

SHIRE OF DOWERIN

Please note that once complete balance the total expected expense and divide over 10 years so we can put money aside in the reserves

External Parts & Repairs Cost Breakdown 2023/2024

Plant	Materials	Servicing Costs	Damages Costs	Break Down Costs	Tyres	Comments
P512 D299 Skid Steer		\$441.85				Petchell Mechanical 250 hr service
				\$2,691.53		Petchell Mechanical Placed machine in workshop. Drained cooling system. Removed engine covers. Disconnected hydraulic lines, exc. Removed fan and shroud. Craned radiator out of machine. Pressure cleaned radiator and tried to remove all the debris. Took hours to try and clean radiator due to the thickness of cores. Replaced one of the radiator hoses and thermostat. Refitted radiator, hydraulic lines, hoses, fan, exc. Filled with coolant and topped up hydraulic oil. Ran up and tested ok.
				\$625.00		Walker deisel repaired track plate
		\$2,180.50				Petchell Mechanical 500 hr service
			\$4,506.57			Petchell Mechanical have Carry out repairs to tracks on D299 CAT, Placed machine on axle stands, Remove left track, Removed LH side undercarriage, Removed hydraulic hoses, Unbolt track assembly, Pull undercarriage off machine, Cover all hoses and hose fittings, Removed track pin bushes with oxy set, Clean track pins ready for new bearings, Frozen new bushes and fitted to undercarriage, Re installed undercarriage and hydraulic hoses, exc, Refit track and tested, Replaced 3x hydraulic hose the RH wheel motor, Replaced belts, Topped up hydraulic oil.
				\$770.00		Petchell Mechanical investigate and repair de rating fault poor conection to ECU
				\$320.00		Petchell Mechanical refit RH track to machine
				\$780.00		Petchell Mechanical have diagnosed low voltage error and replaced battery
				\$2,717.59		Petchell Mechanical carried out break down repairs burst hydraulic hose and replaced faulty fuel sender unit
				\$8,000.00		Petchell Mechanical have diagnosed an AdBlu computer module failure this is estimated cost for repair without investigating the hydraulic hi flow cooling issues we are currently having with the machine when the rotary axe is fitted.
TOTAL	\$0.00	\$2,622.35	\$4,506.57	\$15,904.12	\$0.00	
Grand Total	\$23,033.04					
P006 CAT Loader				\$506.05		Petchell Mechanical repaired starting issue on loader
	\$1,020.16					Westrac supply bucket tips
	\$1,133.70					New tips and filters
				\$1,800.00		Walker Diesel weld bucket wear plates
		\$6,107.38				Petchell Mechanical Carried out 8000Hr service on 938H. Engine Crankcase Breather - Cleaned Engine Oil and Filter - Changed Fuel System Primary Filter (Water Separator) Element - Replaced Fuel System Secondary Filter - Replaced Fuel Tank Cap and Strainer - Cleaned Hydraulic System Biodegradable Oil Filter Element - Replaced Hydraulic System Oil Filter - Replaced Transmission Oil Filter - Replace Axle Oil Cooler Magnetic Filter - Cleaned Battery Hold-Down - Tighten Drive Shaft Universal Joints - Lubricated Rollover Protective Structure (ROPS) - Inspect Transmission Oil - Changed Brake Discs - Check Differential and Final Drive Oil - Changed Hydraulic System Oil - Changed Hydraulic Tank Breaker Relief Valve - Clean Service Brake Wear Indicator - Check Investigated cooling system leak. Ordered parts. Returned to Workshop. Travelled back to depot. Replaced header tank and hose. Topped up cooling system. Returned to workshop
				\$1,771.80		Petchell Mechanical attended breakdown and replaced steering pressure switch
	\$1,555.52					Cutting Edges supplied specialised high wearing teeth teeth
	\$2,147.13					Petchell Mechanical have supplied for the loader bucket 7 X 4T6695 edge segment, 14 X PB2431 Wear plate bolt, 14 X PB1 Wear plate nut, 1 X 619250 Adaptor, 1 X 619251 Adaptor, 6 X 1U0257 Adaptor double strap ,2 X PB31 Plowbolt, 12 X PB3341 Plowbolt, 2 X PB3141 Powbolt, 8 X 8E6258 Pin, 8 X 8E6259 Retainer
				\$1,101.82		Hydralulic hose replacement
	\$883.96					Petchell Mechanical supply x7 edge segments
				\$360.00		Holberton Float move loader
		\$3,043.70				Carry out valve set adjustment to complete 8000hr service
				\$409.09		Holberton float loader from Petchells
				\$544.20		Petchell Mechanical Investigate & repair fan fault
				\$416.00		Petchell Mechanical Investigate & repair fault codes
			\$8,161.09			Petchell Mechanical Repair damages caused at the tip INSURANCE CLAIM PENDING
Total	\$6,740.47	\$9,151.08	\$8,161.09	\$6,908.96	\$0.00	
Grand Total	\$30,961.60					

Plant	Materials	Servicing Costs	Damages Costs	Break Down Costs	Tyres	Comments
P715 BOMAG Roller				\$1,217.94		Petchell Mechanical Removed seized tyre inflation motor and replaced fan belt
				\$272.00		Petchell Mechanical diagnose fuel leak
		\$132.00				Avon Valley Windscreens reseal widows
		\$1,479.14				Petchell Mechanical carry out 1500hr service
Total	\$0.00	\$1,611.14	\$0.00	\$1,489.94	\$0.00	
Grand Total	\$3,101.08					
12M Grader		\$3,363.90				Petchell Mechanical completed 1000hr service
				\$294.00		Petchell Mechanical investigat and repair auto greaser failure
	\$162.00					supply grease for auto greaser
	\$479.29					supply grease for auto greaser
				\$2,559.59		Petchell Mechanical replace air con compressor and regas
		\$4,301.47				Petchell Mechanical Carried out 3000hr service on 12M. Belts - Inspected Braking System - Tested Engine Oil and Filter - Changed Engine Shutdown Switch - Check Fuel System Filter - Replaced Fuel Tank Cap and Strainer - Cleaned Oil Filter (Hydraulic Tank Return) - Replaced Oil Filter (Implement Controls) - Replaced Tandem Breather - Replaced Wheel Bearing Oil Level (Front) - Check Rollover Protective Structure (ROPS) - Inspect Transmission and Differential Oil - Changed Transmission and Differential Oil Filter and Screens -Cleaned Air Filter Primary/Secondary - Replaced
				\$2,898.58		Petchell Mechanical Travelled to machine, Replaced remaining hydraulic filter from service, Replaced all necessary parts, Disassembled cabin, Remove seat and surrounding parts, Replaced cabin fan and fan resistor, Reassembled and ran up machine.
Total	\$641.29	\$7,665.37	\$0.00	\$5,752.17	\$0.00	
Grand Total	\$14,058.83					
120M Grader					\$5,890.91	Supply and fit new drive tyres x 4
					\$58.18	Supply orings for tyres
				\$209.00		investigate air con fault
		\$672.20				Petchell Mechanical carry out 250hr service
Total	\$0.00	\$672.20	\$0.00	\$209.00	\$5,949.09	
Grand Total	\$6,830.29					
P146 Rotary Axe	\$356.00					Supply new wear strips and bolts
	\$2,070.00					New tooth kit and blades
	\$730.00					New tooth kit
Total	\$3,156.00	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$3,156.00					
P012 Mustang Skid Steer				\$1,494.26		Petchell Mechanical attend break down and replace hydraulic hose
		\$2,518.56				Petchell Mechanical Major service
					\$1,236.36	Dowerin Tyre & Exhaust supply and fit x 4 new tyres
				\$360.00		Petchell Mechanical Investigate engine shut off issue
Total	\$0.00	\$2,518.56	\$0.00	\$1,854.26	\$1,236.36	
Grand Total	\$5,609.18					
P716 CAT Smooth Drum				\$361.80		Petchell Mechanical Investigate and repair electrical fault
Total	\$0.00	\$0.00	\$0.00	\$361.80	\$0.00	
Grand Total	\$361.80					
P203 Hino 300 Series			\$3,633.55			Speciale smash reapirs carry out repairs from incident by staff member INSURANCE CLAIM
					\$100.00	Dowerin Tyres put rear tyre back on bead
Total	\$0.00	\$0.00	\$3,633.55	\$0.00	\$100.00	
Grand Total	\$3,733.55					
P205 Hino 500 Series			\$99.09			Supply new Estop from damages from staff
		\$415.67				Petchell Mechanical Carry out service
Total	\$0.00	\$415.67	\$99.09	\$0.00	\$0.00	
Grand Total	\$514.76					

Plant	Materials	Servicing Costs	Damages Costs	Break Down Costs	Tyres	Comments
P701 Jet Patcher	\$590.91					Dunnings Supply 200L Kerosene
Total	\$590.91	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$590.91					
P003 6-wheeler		\$2,261.03				Petchell Mechanical completed annual major service
					\$1,300.00	Supply and install x 2 new steer tyres
					\$40.00	Bead balancing tyres
		\$348.80				Petchell Mechanical Adjust brakes
	\$106.00					supply hydraulic cap filter
	\$709.09					Dowerin tyre and exhaust supply x2 new batteries
				\$472.40		Petchell Mechanical Repair intercooler bracket & fix air leak
				\$916.50		Telly's Auto Electrical Carry out repairs to airconditioner
	\$69.78					Boekeman Machinery Supply wiper blades
Total	\$884.87	\$2,609.83	\$0.00	\$1,388.90	\$1,340.00	
Grand Total	\$6,223.60					
P004 6-wheeler				\$2,576.99		Petchell Mechanical attended breakdown and repairs gear box linkages
				\$1,379.61		Petchell Mechanical replaced speed sensor faulting truck into limp mode
				\$1,483.03		Petchell Mechanical replaced tipping limit switch
	\$106.00					Supply hydraulic cap filter
				\$152.00		Petchell mechanical repair tipping fault
			\$375.00			Walkers made repairs to tailgate hinge and pin
	\$69.78					Boekeman Machinery Supply wiper blades
					\$1,340.00	Dowerin Tyre & Exhaust supply and fit x2 steer tyres
Total	\$175.78	\$0.00	\$375.00	\$5,591.63	\$1,340.00	
Grand Total	\$7,482.41					
P704 Hino Watercart				\$613.24		Telly replaced air conditioning evaporator core
				\$336.90		Petchell Mechanical investigate smoking issue from exhaust
			\$102.49			Petchell Mechanical replaced damaged trailer socket
	\$43.91					Autopro Northam Supply wiper blades
	\$86.24					WA Hino Supply new fuel cap
Total	\$130.15	\$0.00	\$102.49	\$950.14	\$0.00	
Grand Total	\$1,182.78					
P719 CEO Prado					\$2,043.64	Supply and fit new tyres PLEASE NOTE THIS WAS OLD CEO PRADO
		\$766.65				Boekemans 60,000km service PLEASE NOTE OLD PRADO
	\$18.00					CEO Carwash Expense
	\$18.16					CEO Carwash Expense
	\$20.86					JB HIFI USB cable
Total	\$57.02	\$766.65	\$0.00	\$0.00	\$2,043.64	
Grand Total	\$2,867.31					
P13 HACC Ford Ranger					\$576.36	Dowerin Tyre & Exhaust supply and fit x 2 rear tyres
Total	\$0.00	\$0.00	\$0.00	\$0.00	\$576.36	
Grand Total	\$576.36					

Plant	Materials	Servicing Costs	Damages Costs	Break Down Costs	Tyres	Comments
P7 Ford Ranger				\$170.00		Petchell Mechanical disgnose cooling issue and report
		\$615.10				Petchell Mechanical carried out 90,000km service
				\$1,607.79		Petchell Mechanical have disgnosed coolant leak and replaced intercooler hose and fit low coolant level sensor
		\$569.15				Petchell Mechanical 105,000km Service
Total	\$0.00	\$1,184.25	\$0.00	\$1,777.79	\$0.00	
Grand Total	\$2,962.04					
P8 Ford Ranger		\$1,388.81				Petchell Mechanical 45,000km service and install clow level coolant alarm
	\$49.59					new fuel cap
	\$549.67					Boekemans Supply and install two way radio
		\$572.64				Petchall Mechanical 60,000km Service
Total	\$599.26	\$1,961.45	\$0.00	\$0.00	\$0.00	
Grand Total	\$2,560.71					
P001 HAC Hyundai			\$3,305.93			Petchell Mechanical repaired damaged front bumper and overheating brakes. Need to see if this was claimed by insurance
		\$18.18				Carwash
		\$546.15				Petchell Mechanical 100.000km Service
Total	\$0.00	\$564.33	\$3,305.93	\$0.00	\$0.00	
Grand Total	\$3,870.26					
P028 AWC Hilux			\$1,315.49			Patons Panel and Paint carried out repairs post hitting kangaroo. Need to investigate insurance claim
		\$405.09				Boekeman Machinery 50,000km service
		\$600.32				Boekeman Machinery 60,000km service
		\$456.93				Boekeman Machinery 70,000km service
		\$721.33				Boekeman Machinery 80,000km service
		\$617.70				Petchell Mechanical 90,000km Service
Total	\$0.00	\$2,801.37	\$1,315.49	\$0.00	\$0.00	
Grand Total	\$4,116.86					
P408 Community Bus				\$188.20		Jaimee Newton made repairs to step
		\$241.00				Trayning Ag Repairs Annual license inspection
Total	\$0.00	\$241.00	\$0.00	\$188.20	\$0.00	
Grand Total	\$429.20					
P023 Dulevo Sweeper					\$199.00	supply tyre
	\$612.50					Supply new brushes
					\$39.00	Press new tyre onto rim
Total	\$612.50	\$0.00	\$0.00	\$0.00	\$238.00	
Grand Total	\$850.50					
P2630 Finishing Mower	\$168.50					Purchase of new blades
Total	\$168.50	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$168.50					
P042 Cox Mower	\$47.45					purchase new blades
Total	\$47.45	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$47.45					

Plant	Materials	Servicing Costs	Damages Costs	Break Down Costs	Tyres	Comments
P29 Toro Time Cutter				\$87.50		Telly repaired starting fault
		\$224.88				Petchell Mechanical carry out service
	\$221.14					Purchase New Blades
					\$81.82	Dowerin Tyre & Exhaust supply x2 new tyres
					\$125.00	Dowerin Tyre & Exhaust Supply new battery
Total	\$221.14	\$224.88	\$0.00	\$87.50	\$206.82	
Grand Total	\$740.34					
P030 CASE Tractor		\$1,510.00				Boekemans 3000hr service and repair 3 point linkages
Total	\$0.00	\$1,510.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$1,510.00					
Gardening Equipment				\$386.55		Eastern Hills made repairs to polesaw
				\$59.73		Eastern hills repaired chainsaw MS201T
	\$58.91					Chainsaw files x3 sets
Total	\$58.91	\$0.00	\$0.00	\$446.28	\$0.00	
Grand Total	\$505.19					
P031 Plant Trailer				\$2,615.59		Attend break down and replace all wheel bearings service trailer install new jockey wheel
Total	\$0.00	\$0.00	\$0.00	\$2,615.59	\$0.00	
Grand Total	\$2,615.59					
P029 Fuel Pod Trailer						
Total	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$0.00					
P032 2000L Fuel Trailer						
Total	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$0.00					
P710 TAG Trailer	\$596.08					Petchell Mechanical supply and fit new battery for ramps
			\$925.00			Walkers repair damage from incident INSURANCE CLAIM INVESTIGATION
Total	\$596.08	\$0.00	\$925.00	\$0.00	\$0.00	
Grand Total	\$1,521.08					
P712 P&G Trailer						
Total	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$0.00					
P8006 HACC Trailer				\$875.00		Carry our welding repair to snapped spring hanger
					\$109.09	Dowerin Tyre and Exhaust supply and fit new tyre
Total	\$0.00	\$0.00	\$0.00	\$875.00	\$109.09	
Grand Total	\$984.09					

Plant	Materials	Servicing Costs	Damages Costs	Break Down Costs	Tyres	Comments
P8147 Building Trailer						
Total	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Grand Total	\$0.00					
P711 Sewer Jetter	\$21.77					New controller battery
			\$803.46			New hose from damages
Total	\$21.77	\$0.00	\$803.46	\$0.00	\$0.00	
Grand Total	\$825.23					
TOTAL	\$14,702.10	\$36,520.13	\$23,227.67	\$46,401.28	\$13,139.36	
\$133,990.54						

Report on Plant Replacement Options for 2012 Hino Watercart

Introduction

The Shire of Dowerin currently owns a 2012 Hino FM500 watercart with 153,000km on the clock. This watercart plays a crucial role in various operations, including the capital road program for road reconstruction tasks and road maintenance operations. Additionally, it has served as a nurse tank during the fire season for firefighting efforts. Pickles Auctions have valued the truck at \$60,000.00, indicating the need to explore replacement options to maintain operational efficiency and reliability.

Replacement Options:

1. Isuzu FVZ 6x4 Watercart:

- **Tank Capacity:** 12,000 liters
- **Warranty:** 6 years or 500,000 km
- **Price:** \$287,560

2. Isuzu FYH 8x4 Watercart:

- **Tank Capacity:** 18,000 liters
- **Warranty:** 6 years or 500,000 km
- **Price:** \$350,810

Cost Options Pending:

- **Major Motors:** Awaited
- **WA Hino:** Awaited

Recommendation

Both the Isuzu FVZ 6x4 Watercart and Isuzu FYH 8x4 Watercart offer significant advantages in terms of tank capacity and warranty coverage. However, the selection should be based on the specific requirements of the Shire of Dowerin, considering factors such as operational needs, budget constraints, and long-term benefits. Further analysis and discussions are necessary to determine the most suitable replacement option aligned with the Shire's objectives and priorities.

Conclusion

The replacement of the 2012 Hino FM500 watercart presents an opportunity for the Shire of Dowerin to enhance operational capabilities in road reconstruction tasks, road maintenance operations, and firefighting efforts. Evaluating replacement options such as the Isuzu FVZ 6x4 Watercart and Isuzu FYH 8x4 Watercart provides insight into tank capacity and warranty coverage. A comprehensive assessment considering specific needs and objectives is essential to ensure the selection of the most suitable option that optimizes operational efficiency and reliability. Further discussions and analysis, including awaited cost options from Major Motors and WA Hino, are recommended to make an informed decision.



ATF THE MAJOR MOTORS UNIT TRUST Trading As MAJOR MOTORS
ABN 65 730 475 316 | DL1141 | MRB1908 | ARC AU03039

ISUZU
TRUCKS

HEAD OFFICE
789 Abernethy Rd
Forrestfield WA 6058
Phone: (08) 9365 6333

Branch: BIBRA LAKE
2 Selkis Road
Bibra Lake WA 6163
Phone: (08) 9331 9331

Branch: PORT HEDLAND
1 Quinup Way
Port Hedland WA 6721
Phone: (08) 9172 6900

Branch: MALAGA
65 Crocker Drive
Malaga WA 6090
Phone: (08) 9241 7999



Postal: PO Box 163 Belmont WA 6984 Web: www.majormotors.com.au

Customer :

Shire of Dowerin
PO Box 111,
DOWERIN WA 6461

DOB.: Driver Licence:
Email: jpietrocola@dowerin.wa.gov.au

A.B.N. 35 939 977 194

A.C.N.

Mobile:

Fax:

Business: 08 9631 1202

Private:

Quote Details :

Page 1 / 1
Quote / Deal ID: 60570
Customer Order:
Quotation Date: 27/03/2024
Quote Expiry Date: 26/04/2024
Salesperson: Lauren Nicholls

Vehicle :

Rego No: TBA
VIN No: TBA
Vehicle ID: TBA
Odometer:

Rego Expiry:
EngineNo:
Compliance Date: /
Build Date:

Driver :

D.O.B.:
Driver Lic:
Full Name:
Phone:

NEW VEHICLE:	Make	ISUZU TRUCK	
	Model	FVZJZ-L22 FVZ 240-300 AUTO MWB	\$168,410.00

OPTIONS:

GENUINE ACCESSORIES:

NON GENUINE ACC.:	PTO switch for water tank operation	\$650.00
	Reverse camera	Standard Item
	6 year / 500,000km / 8,000 hour factory warranty	Standard Item

AFTERMARKET ACC.:

	12000 litre water tank as per attached specifications	\$118,500.00
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DEALER DELIVERY:	CARRIED OUT PRE-DELIVERY INSPECTION	\$0.00
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Vehicle Sub-Total excluding G.S.T.	\$287,560.00
G.S.T. Payable	\$28,756.00
Vehicle Sub Total Inclusive of G.S.T.	\$316,316.00

GST EXCLUSIVE ITEMS:

OTHER INSURANCE:

VEHICLE TOTAL INCLUSIVE OF GST	\$316,316.00
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LESS TRADE(S):

LESS DEPOSIT:

BALANCE PAYABLE ON DELIVERY	\$316,316.00
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CONDITIONS OF QUOTATION:

The Dealer reserves the right to amend pricing should the Manufacturer's or third Parties prices or Government charges change prior to delivery.
Trade-in prices are based on vehicle condition at time of Quotation and the quote is valid until 26/04/2024 only. Trade-in values are inclusive of GST.

Salesperson: Lauren Nicholls

Sales Manager



1 Central Avenue HAZELMERE WA 6055
P: +61 8 9250 2250 | W: www.orh.net.au
ABN 26 611 884 498

MODULE SPECIFICATIONS

- ❖ ORH 12000WA Water Cart Module- Fully Lined and fitted with sacrificial anode (Epinamle) **to suit potable water.**
- ❖ Constructed 6mm Mild Steel with a 10mm base, Unit blasted to class 2.5, Finished in 2 pack polyurethane paint
- ❖ Tank fully baffled into 6 compartments.
- ❖ Neoprene packing between chassis with spring loaded type mounting system.
- ❖ Standpipe with broad filler point top of tank
- ❖ 3" Top fill to water tank LHS tray level
- ❖ 200L Hydraulic Oil Tank mounted to front of tank, with is also integrated inside water tank for cooling purposes.
- ❖ **Hydraulic Hot Shift PTO and Pump with RPM/SPEED Parameters set by the dealer.**
- ❖ 3" Hydraulically driven 100 x 65 x 250 (90m head pressure) mounted to rear RHS
- ❖ Titan Fire Electric 24v STAINLESS STEEL Water Cannon 60mm
- ❖ All spray features are air actuated with control module mounted in cab
- ❖ Air actuated adjustable Titan Fire 3 x 3" Rear Sprays (Left & Right, Centre)
- ❖ All plumbing and hose work minimum 3" and
- ❖ 3" Dam fill with camlock at chassis level
- ❖ 4" Dribble bar – gravity fed and 4" end caps with air actuator control in cabin
- ❖ **2 x discharge points- 60mm BIC female (Fire Brigade Fitting) on spray bar passenger side**
- ❖ **1 x Male BIC Fill point 60mm hose passenger side top of tank**
- ❖ **2" Fill points on rear platform with internal riser and cam lock and ball valve**
- ❖ 40mm x 50m Steel Manual Fire Hose mounted on rear of tray with adjustable nozzle.
- ❖ 2m x 1" handheld hose central mounted at front of tank with black out nozzle (TBA)
- ❖ Clear tube tank sight level gauge fitted, visible to operator.
- ❖ 4" Ball valve for drainage
- ❖ Access Manway and tank breather
- ❖ Self-closing gate
- ❖ Swing Down Ladder Access with latch.
- ❖ Fold down safety rails to top of tank.
- ❖ Anti – slip treads on all access steps and anti-slip paint on top of tank.
- ❖ 2 x LED amber flashing light mounted on cab ski bar and rear of tank (ECCO 7660A)
- ❖ 1 X LED Amber Beacon Rear Mounted
- ❖ Module fitted with lights suitable for night servicing
- ❖ Combination Lights (Stop/Tail & Indicator), plus clearance lights all LED.
- ❖ 4 x LED work lights on service module sides
- ❖ 1 x lockable toolbox mounted LHS in available space.
- ❖ 2.5KG Fire extinguisher fitted in cab
- ❖ Hi Vis Striping to water tank and cab.
- ❖ **Combination Pintle and 50mm ball tow hitch- Note: 50mm ball will be derated to suit vehicle GVM**
- ❖ Labels & signage supplied for tank and reel identification.
- ❖ All safety signage and decals to Australia standards
- ❖ Highway fill decal to sight level gauge
- ❖ All product and component are labelling for tanks and reel identification.
- ❖ User Manual

FVZ 240-300 6X4 FVY 240-300 6X4



Truck images shown may vary from actual model specification - Contact Isuzu for further details

WEIGHT RATINGS*

GVM	24,000 kg
GCM	36,000 kg

ENGINE

POWER	221 kW @ 2,400 rpm
TORQUE	981 Nm @ 1,450 rpm

TRANSMISSION

9 speed manual transmission (MT)
6 speed automatic transmission (AT)

* Refer to back page for detailed weight rating information

ISUZU CARE	
WARRANTY	6 Year Standard Warranty
	500,000 km / 8,000 Engine Hours
ROADSIDE ASSIST	6 Year Roadside Support
	24/7 Unlimited km
HARSH APPLICATION WARRANTY (CONCRETE AGITATOR / GARBAGE COMPACTOR)	3 Year Standard Warranty
	200,000 km / no hours stipulation
	3 Year Roadside Support
	24/7 Unlimited km

SERVICE AGREEMENTS			
OPTIONAL SERVICE PACKAGES	ESSENTIALS	ESSENTIALS PLUS	TOTAL
SCHEDULED SERVICINGS	●	●	●
CONSUMABLES		●	●
ENGINE, TRANSMISSION & DRIVELINE			●
EXTRAS	After-hours Servicing, Glass, Fuel Card, Pickup - Dropoff		

INTELLIGENT SAFETY		
ACTIVE SAFETY	Electronic Stability Control	(ESC)
	Anti Lock Braking System	(ABS)
	Anti Skid Regulator	(ASR)
	Electronic Braking System	(EBS)
	Hill Start Aid - except AT models	(HSA)
	Cab Tilt Warning	(CTW)
PASSIVE SAFETY CABIN OCCUPANT SAFETY SYSTEMS (COSS)	Low light capable reversing camera	
	Driver & front passenger airbags	
	Driver & front left hand passenger seatbelt pretensioners	
	ECE-R29 cab with side anti-intrusion beams	
	Door mounted cornering lamps	

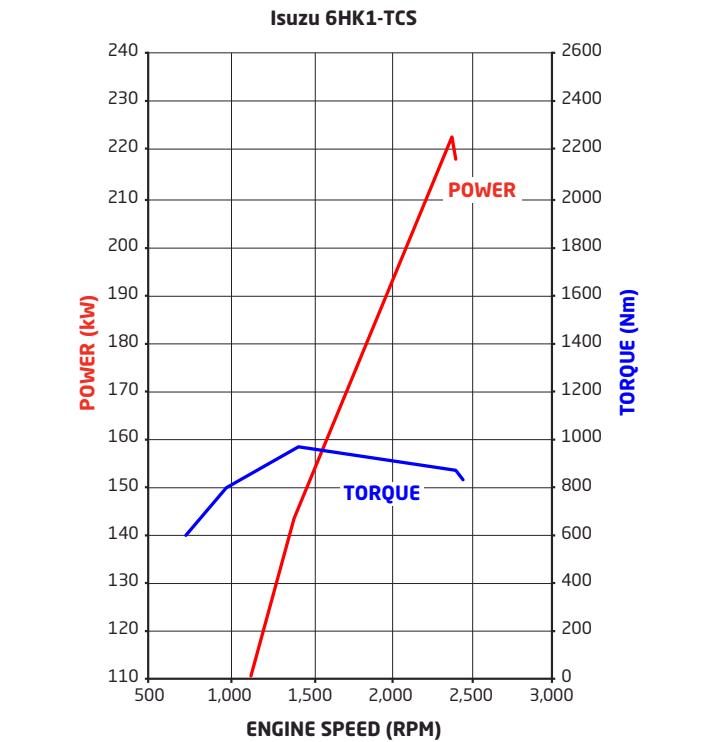


Subject to the conditions outlined in the IAL New Vehicle Warranty. For further information please visit isuzu.com.au or contact your local dealer.

FV2 240-300 6X4

FVY 240-300 6X4

ENGINE	
DESCRIPTION	Isuzu 6HK1-TCS
TYPE	6 cylinder 24 valve SOHC
DISPLACEMENT	7,790 cc
COMPRESSION RATIO	17.5:1
BORE X STROKE	115mm x 125mm
POWER	221kW (300PS) @ 2,400 RPM (DIN NET)
TORQUE	981Nm @ 1,450 RPM (DIN NET)
INDUCTION	Electronically controlled variable nozzle turbocharger with air-to air intercooler.
FUEL INJECTION	Direct injection high pressure common rail system.
EMISSION CONTROL	Cooled EGR with exhaust Diesel Particulate Diffuser (DPD). ADR 80/03 (Euro V / EEV) compliant.



TRANSMISSION		
MT	CLUTCH	Type: Single plate with air assisted hydraulic control
		Clutch plate diameter: 381 mm
		Clutch lining area: 1,363 cm²
	GEARBOX	Description: ZF 9S 1110 TO
		Type: 9 speed with synchromesh on gears 1-8
		Ratios:
AT	GEARBOX	Crawler 1st 2nd 3rd 4th 5th 6th 7th 8th Rev 9.48 6.58 4.68 3.48 2.62 1.89 1.35 1.00 0.75 8.97
		Power Take Off facility: Provision at rear of transmission case
		Other features: Repeat 'H' shift pattern
		Description: Allison 3500
		Type: 6 speed automatic
		Ratios:
AT	GEARBOX	1st 2nd 3rd 4th 5th 6th Rev 4.59 2.25 1.54 1.00 0.75 0.65 5.00
		Power Take Off facility: LHS and top openings on transmission bellhousing. Engine driven PTO drive gear.
		Other features: 5th generation electronic controls with adaptive shift. Long life TranSynd synthetic fluid.

AXLES		
FRONT	Description:	Meritor FG941
	Type:	Reverse Elliot I-beam
	Capacity:	6,600 kg
REAR	Description:	Meritor MT40-144GP (MT models) Meritor MT44-144GP (AT models)
	Type:	Tandem drive
	Other Features:	Inter-axle lock & cross locks fitted to both axles
	Capacity:	20,000 kg
	Ratio:	MT: 6.142, AT: 6.428

SUSPENSION			
FRONT		Type:	Single stage alloy steel taper-leaf springs
		Other features:	Double acting hydraulic shock absorbers. Stabiliser bar.
REAR	FVZ	Type:	Multi-leaf springs with Isuzu 6 rod and trunnion location system
	FVY	Description:	Hendrickson HAS460
		Type:	Airbag
		Capacity:	18,100 kg at ground

BRAKES	
DESCRIPTION	Meritor 'Q-Plus'
TYPE	Full air 'S-Cam' front & rear drum brakes
DIAMETER X WIDTH FRONT	419 x 127 mm
DIAMETER X WIDTH REAR	419 x 178 mm
PARK BRAKE	Spring park brake acting on all rear wheels
AUXILIARY BRAKE	Air controlled exhaust brake

STEERING	
TYPE	Power assisted recirculating ball
GEAR RATIO	22.4:1
TURNS LOCK TO LOCK	5.4
WHEEL LOCK ANGLE	45° (inside wheel) / 35° (outside wheel)

WHEELS & TYRES		
FRONT	Wheels:	22.5 x 8.25 ten stud ISO standard steel wheels (except FVY AUTO MWB)
		22.5 x 8.25 ten stud ISO standard polished Alcoa aluminium wheels (FVY AUTO MWB)
	Tyres:	295/80R22.5 152/148M Michelin X Multi Z Tubeless
	Steer axle tyre rating	7,100 kg
REAR	Wheels:	22.5 x 8.25 ten stud ISO standard steel wheels (except FVY AUTO MWB)
		22.5 x 8.25 ten stud ISO standard polished Alcoa aluminium wheels (FVY AUTO MWB)
	Tyres:	11R22.5 148/145L Michelin X Multi D Tubeless
	Tandem axle tyre rating:	23,200 kg
Spare: Spare wheel and X Multi Z tyre assembly supplied. Winch type carrier (except FVZ MWB and FVY MWB).		

CHASSIS FRAME	
TYPE	Cold rivetted ladder frame with parallel side rails.
MATERIAL	MWB / MLWB: HT540A LWB: SAPH440
DIMENSIONS	MWB / MLWB: Side rail (mm): 254 x 85 x 8.0 Rear frame width (mm): 850 LWB: Side rail (mm): 258 x 85 x 10.0 Rear frame width (mm): 850

FUEL TANK	
TYPE	Frame mounted steel fuel tank (except FVZ LWB & FVY LWB models with MT) Frame mounted aluminium fuel tank (FVZ LWB & FVY LWB models with MT)
CAPACITY	200L (except FVZ LWB & FVY LWB models with MT) 400L (FVZ LWB & FVY LWB models with MT)
FUEL CAP	Lockable

CABIN SPECIFICATIONS & APPOINTMENTS

CABIN GENERAL FEATURES	
ENGINE ACCESS	Electro-hydraulic cab tilt
CAB MOUNTING	Rear coil spring suspension with hydraulic shock absorbers
STEPS	Heavy duty anti slip steps
DOORS	90° opening internally reinforced front doors
MIRRORS	Heated & powered exterior main mirrors with flat glass and additional independantly adjustable convex "spot" mirrors
WIPERS	Two speed windscreen wipers with intermittent wipe mode
EXTERIOR LIGHTING	LED main beam and halogen high beam headlamp assembly with position lamp
	Roof mounted clearance lamps
	Front foglamps
AUDIBLE WARNING	Reverse alarm
GRILLE	Chrome
FRONT BUMPER	Body coloured air dam type
SECURITY	Central locking with remote keyless entry & immobiliser

CABIN INTERIOR	
SEATING	Isri 6860/875 NTS air suspension driver's seat
SEATBELTS	3-point lap sash seatbelts in all outboard seating positions. Driver seatbelt integrated with driver seat. Centre seat lap belts.
STEERING COLUMN	Tilt/telescopic adjustable
ENTRY ASSIST GRIPS	Door & roof pillar mounted
DOOR WINDOWS	Electric control
STORAGE	Overhead compartments
	Twin cup holders
	Centre console box & storage tray
	Front door pockets
POWER OUTLET	24V cigarette lighter
AIRCONDITIONING	Auto control
INTERIOR LIGHTING	Fluorescent lamp
REAR COMPARTMENT	ADR 42 compliant sleeper with mattress

ELECTRICAL SYSTEM	
TYPE	24 volt
ALTERNATOR	90 amp
STARTER MOTOR	5.0 kW
BATTERY	2 x 115E41L (651 CCA) batteries connected in series
CAN BUS PROVISION	Underdash CAN system access plug for connection to a Fleet Management System (FMS) (not supplied)

AUDIO VISUAL UNIT	
SCREEN TYPE	10.1" 1080p High Definition with capacitive touch
NAVIGATION	Truck tailored GPS based system + live feed traffic alerts and live feed route optimisation via smartphone link (live feed component is by subscription with first 3 years provided at no extra cost)
OPERATING SYSTEM	Android Automotive
RADIO	AM/FM/DAB+
INTERNAL STORAGE CAPACITY	32GB
SMARTPHONE INTEGRATION	USB 3.0 socket
	Wi-Fi connectivity
	Android Auto / Apple CarPlay compatible
	Phone storage pocket with wireless charging facility
OTHER CAPABILITY	Provision for external camera inputs, tyre pressure monitoring, low & high position reverse sensor inputs

DRIVER CONTROLS	
SAFETY SYSTEMS	ESC on/off, HSA on/off/sensitivity adjust (except AT models)
ENGINE	Idle speed control
	Cruise control
	DPD manual regeneration switch
TRANSMISSION (AT ONLY)	Pushbutton gear selection control
GENERAL CONTROLS	Headlamp on/off and levelling, windscreen wipers (2 speed and intermittent modes), washers, exhaust brake, turn signals
	Inter-axle and cross lock engage switches

INSTRUMENTATION	
MULTI INFORMATION DISPLAY	CTW indicator
	Low engine oil level alert
	Vehicle systems status
	Low fuel level alert
	Fuel consumption information
	Service interval alerts
	Hourmeter
	Adjustable vehicle speed warning
	Speedometer & tachometer
GENERAL INSTRUMENTATION	Digital odometer with integrated dual tripmeters
	Engine coolant temperature, fuel level and air pressure guages

FVZ 240-300 6X4

FVY 240-300 6X4

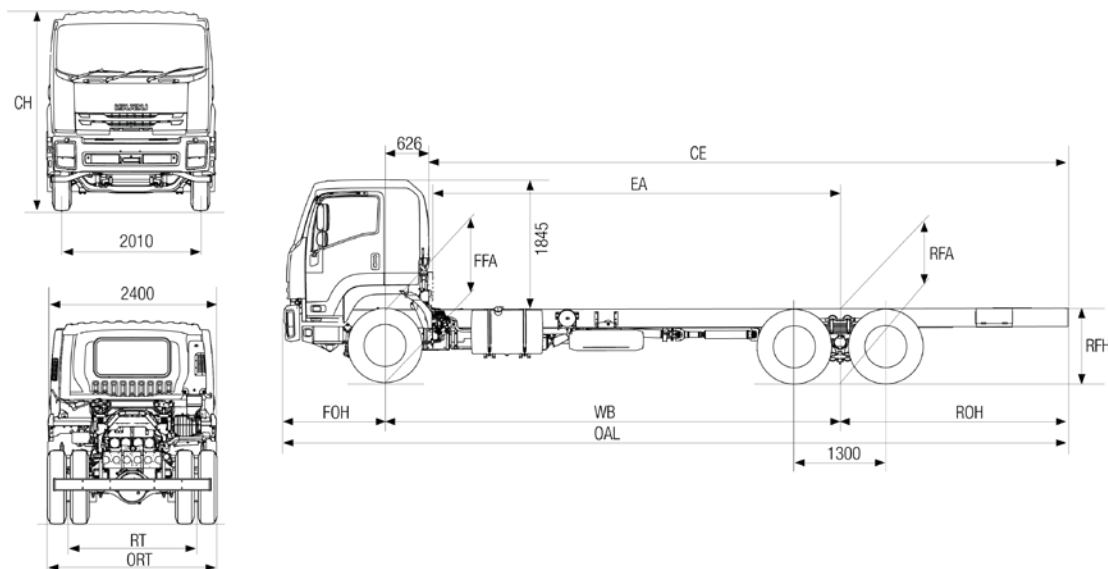
ISUZU
RELIABILITY IS EVERYTHING

WEIGHTS (kg)							
MODELS	RATINGS*		LOADING LIMIT* (at ground)		CAB CHASSIS WEIGHT #		
	GVM	GCM	FRONT	REAR	FRONT	REAR	TOTAL
FVZ 240-300 MWB	24,000	36,000	6,600	20,000	3,290	3,395	6,685
FVZ 240-300 AUTO MWB	24,000	36,000	6,600	20,000	3,370	3,405	6,775
FVZ 240-300 AUTO MLWB	24,000	36,000	6,600	20,000	3,475	3,440	6,915
FVZ 240-300 LWB	24,000	36,000	6,600	20,000	3,545	3,640	7,185
FVY 240-300 AUTO MWB (AW)	24,000	36,000	6,600	18,100	3,425	3,085	6,510
FVY 240-300 LWB	24,000	36,000	6,600	18,100	3,545	3,440	6,985
FVY 240-300 AUTO LWB	24,000	36,000	6,600	18,100	3,595	3,420	7,015

* Vehicle ratings and front/rear weight limits are subject to government regulatory requirements and weight distribution analysis. Consult your Isuzu dealer to select the correct vehicle for your specific application.

Cab chassis only as supplied and including 10 litres of fuel.

DIMENSIONS (mm)													
MODELS	WB	OAL	FOH	ROH	EA	CE	RT	ORT	CH	FFA (unladen)	RFA (unladen)	RFH (unladen)	TURNING CIRCLE KERB TO KERB (m)
FVZ 240-300 MWB / AUTO MWB	4,410	7,605	1,440	1,755	3,710	5,540	1,840	2,445	2,850	1,000	1,075	1,090	15.4
FVZ 240-300 AUTO MLWB	5,300	9,180	1,440	2,440	4,600	7,115	1,840	2,445	2,850	1,000	1,075	1,080	18.5
FVZ 240-300 LWB	6,470	11,150	1,440	3,240	5,770	9,085	1,840	2,445	2,850	1,000	1,065	1,095	22.6
FVY 240-300 AUTO MWB	4,410	7,605	1,440	1,755	3,710	5,540	1,840	2,445	2,810	1,000	1,015	1,015	15.4
FVY 240-300 LWB / AUTO LWB	6,470	11,150	1,440	3,240	5,770	9,085	1,840	2,445	2,850	1,000	1,020	1,025	22.6



PERFORMANCE (calculated - typical paved road)				
		GEARED SPEED~ (top gear at peak power engine rpm)	LOW SPEED GRADEABILITY (lowest forward gear assuming no wheel slip)	ENGINE SPEED (top gear at 100 km/h)
FVZ/FVY 240-300	at 24,000 kg GVM	101 km/h @ 2,400 rpm	41%	2,380 rpm
FVZ/FVY 240-300 AUTO	at 24,000 kg GVM	111 km/h @ 2,400 rpm	41%	2,160 rpm

* Maximum speed achievable depends on vehicle frontal area as well as other factors. Consult your Isuzu dealer for more detailed information. Vehicle is speed limited to 100km/h.

ORDER CODES	
Models	Codes
FVZ 240-300 MWB	FH-FVZJZ-B22
FVZ 240-300 AUTO MWB	FH-FVZJZ-L22
FVZ 240-300 AUTO MLWB	FH-FVZJZ-M22
FVZ 240-300 LWB	FH-FVZJZ-D22
FVY 240-300 AUTO MWB (AW)	FH-FVYJZ-L22
FVY 240-300 LWB	FH-FVYJZ-D22
FVY 240-300 AUTO LWB	FH-FVYJZ-N22

Subject to the conditions outlined in the IAL New Vehicle Warranty, Isuzu F series models carry a standard factory warranty which covers the owner for the first 72 months or 500,000 kilometres or 8,000 Engine Hours (whichever comes first). All Isuzu warranties are subject to mandatory prescribed terms under Australian Consumer Law including consumer guarantees. Harsh Conditions variations to standard factory warranty may apply. For more details visit the Isuzu website at www.isuzu.com.au which explains Isuzu warranties in more detail, or alternatively contact your local Isuzu Truck dealer. All warranties commence from date of initial delivery.

ISUZU AUSTRALIA LIMITED ABN 97 006 962 572 ("IAL"). The information in this spec sheet was correct at time of printing, but all measurements, specifications and equipment are subject to change without notice. Some equipment may have been changed and/or is available at extra cost. IAL may make changes at any time without notice, in prices, colours, materials, equipment and models. IAL makes all reasonable attempts to ensure the availability of all vehicles and equipment. The information in this spec sheet is general in nature. Your Isuzu dealer can confirm all measurements, specifications and vehicle / equipment availability upon request. To the extent permitted by the law, IAL is not liable to any person as result of reliance on the content of this spec sheet.



ATF THE MAJOR MOTORS UNIT TRUST Trading As MAJOR MOTORS
ABN 65 730 475 318 | DL1141 | MRB1908 | ARC AU03039



HEAD OFFICE
789 Abernethy Rd
Forrestfield WA 6058
Phone: (08) 9365 6333

Branch: BIBRA LAKE
2 Selkis Road
Bibra Lake WA 6163
Phone: (08) 9331 9331

Postal: PO Box 163 Belmont WA 6984 Web: www.majormotors.com.au

Branch: PORT HEDLAND
1 Quininup Way
Port Hedland WA 6721
Phone: (08) 9172 6900

Branch: MALAGA
65 Crocker Drive
Malaga WA 6090
Phone: (08) 9241 7999



Customer :

Shire of Dowerin
PO Box 111,
DOWERIN WA 6461

DOB.: Driver Licence:
Email: jpietrocola@dowerin.wa.gov.au

A.B.N. 35 939 977 194

A.C.N.

Mobile:

Fax:

Business: 08 9631 1202

Private:

Quote Details :

Page 1 / 2
Quote / Deal ID: 60563
Customer Order:
Quotation Date: 19/03/2024
Quote Expiry Date: 02/05/2024
Salesperson: Lauren Nicholls

Vehicle :

Rego No: TBA
VIN No: TBA
Vehicle ID: TBA
Odometer:

Rego Expiry:
EngineNo:
Compliance Date: /
Build Date:

Driver :

D.O.B.:
Driver Lic:
Full Name:
Phone:

NEW VEHICLE:	Make	ISUZU TRUCK	
	Model	FYHJJ-L23 FYH 300-350 AUTO MWB	\$192,420.00

OPTIONS:

GENUINE ACCESSORIES:

NON GENUINE ACC.:	PTO switch for water tank operation	\$650.00
	Isuzu alloy bullbar with spotlights	\$8,680.00
	24v-12v reducer in cab	\$450.00
	Ski bar to cab roof with two amber revolving beacons	\$2,610.00
	Reverse camera	Standard Item
	6 year / 600,000km / 10,000 hour factory warranty	Inclusive Item

AFTERMARKET ACC.:

18000 litre water tank as per attached specifications from Shermac	\$144,800.00
Fit tyre to spare wheel and mount to winch carrier on front of body	\$1,200.00

DEALER DELIVERY:	CARRIED OUT PRE-DELIVERY INSPECTION	\$0.00
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Vehicle Sub-Total excluding G.S.T.	\$350,810.00
G.S.T. Payable	\$35,081.00
Vehicle Sub Total Inclusive of G.S.T.	\$385,891.00

GST EXCLUSIVE ITEMS:	Registration - approx - charged at cost (Business)	\$700.00
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OTHER INSURANCE:

VEHICLE TOTAL INCLUSIVE OF GST	\$386,591.00
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LESS TRADE(S):

LESS DEPOSIT:

BALANCE PAYABLE ON DELIVERY	\$386,591.00
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Special Conditions:

OPTIONS (ex GST)
Headlight protectors \$330+
Changeover to alloy wheels including spare \$8800+
Canvas seat covers \$440+
Window tint \$650+
Rubber floor mats \$230+
Stone guard to windscreen \$950+



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Postal: PO Box 163 Belmont WA 6984 Web: www.majormotors.com.au

Customer :

Shire of Dowerin
PO Box 111,
DOWERIN WA 6461

DOB.: Driver Licence:
Email: jpietrocola@dowerin.wa.gov.au

A.B.N. 35 939 977 194

A.C.N.

Mobile:

Fax:

Business: 08 9631 1202

Private:

Quote Details :

Page 2 / 2
Quote / Deal ID: 60563
Customer Order:
Quotation Date: 19/03/2024
Quote Expiry Date: 02/05/2024
Salesperson: Lauren Nicholls

Vehicle :

Rego No: TBA
VIN No: TBA
Vehicle ID: TBA
Odometer:

Rego Expiry:
EngineNo:
Compliance Date: /
Build Date:

Driver :

D.O.B.:
Driver Lic:
Full Name:
Phone:

CONDITIONS OF QUOTATION:

The Dealer reserves the right to amend pricing should the Manufacturer's or third Parties prices or Government charges change prior to delivery.
Trade-in prices are based on vehicle condition at time of Quotation and the quote is valid until 02/05/2024 only. Trade-in values are inclusive of GST.

Salesperson: Lauren Nicholls

Sales Manager

1

RS2000 Water Cart as per following specifications;

Water Tank:

- 18,000 litre water capacity.
- Heavy duty steel tank with longitudinal and transverse baffles, top fill funnel on the right hand side, and tank water level indicator.
- Highway legal level valve.

Water Pump:

- Southern Cross ISO 100 x 65 x 250, hydraulic powered water pump mounted at front of water tank.
- System for filling tank through pump with 80mm camlock.
- 200 litre hydraulic oil tank incorporated in water tank.

Water Cannon:

- Magnum hydraulic powered remote control water cannon controlled via joystick in truck cabin.
- Fitted to unit on right-hand top, rear of tank up to an operational level.

Water Application System:

- One vertical batter spray on left and one vertical batter spray on right with pneumatic valves and stainless steel spray heads on camlocks for adjustability.
- Left, centre and right fan sprays with pneumatic valves and stainless steel spray heads.
- Left and right 6"-3" drop bars with pneumatic valves, camlocks and poly spray bars.
- All pneumatic functions controlled with air switches in cab control panel.
- One spare pressure outlet with butterfly valve and 3" camlock coupling.
- 4" dump valve.

Fire Hose Reel:

- Reel-ezi 15m x 25mm manual rewind hose reel.

Safety Railing:

- Safety railing and ladder fitted for access to top of tank, with self closing gate
- Hand rails, walkways and ladder in accordance with Australian Standards AS1657-2013.

Paint:

- Unit completely blasted to blast class 2.5
- Tank lined inside with two pack epoxy tank lining system to 300um.
- Painted outside with two pack automotive finish to match truck colour.
- All steel pipe work hot dip galvanized.

Electrical:

- Two amber rotating beacons, one on ROPS and one on rear of tank.
- LED high and low level tail lights.
- Main battery isolator, and start isolator with Locksafe lockouts.
- Two work lights on top rear of unit switched on in reverse as well as with work light switch, and one work light at the bottom, front of each side of unit, on swinging brackets.
- One work light for illuminating fill point
- All LED work lights, controlled by switch in truck cabin.
- 24V Cat jump start receptacles.
- Flag pole with LED illumination.
- Low hydraulic oil level warning light.
- Rear view camera fitted.

Emergency Equipment:

- One 9kg ABE type fire extinguisher located on the front right hand side of tank module
- Two (2) emergency stop button to shut down truck engine, one in cab, and one behind cab on right side.

PTO Hydraulics:

- Supply and fit Hot-shift transmission mounted PTO.

Extras Included:

- Reflective tape and asset numbers.
- Wheel nut indicators.
- Wheel chocks with mount.
- TX4500 UHF two way radio.
- Heavy duty galvanise fitting box on rear of module.

ROPS:

- Not Quoted.
- Please confirm if required.

Scope:

- Water cart unit fitted to truck and all systems fitted up to an operational level and tested at Shermac premises.
- Client to collect completed unit from Bayswater, WA.

FYH 300-350 8X4

FYJ 300-350 8X4



FYJ MODEL PICTURED

WEIGHT RATINGS*

GVM	30,000 kg
GCM	45,000 kg

ENGINE

POWER	257 kW @ 2,000 rpm
TORQUE	1,422 Nm @ 1,400 rpm

TRANSMISSION

9 speed manual transmission (MT)
6 speed automatic transmission (AT)

* Refer to back page for detailed weight rating information

ISUZU CARE	
WARRANTY	6 Year Standard Warranty
	600,000 km / 10,000 Engine Hours
ROADSIDE ASSIST	6 Year Roadside Support
	24/7 Unlimited km
HARSH APPLICATION WARRANTY (CONCRETE AGITATOR / GARBAGE COMPACTOR)	3 Year Standard Warranty
	300,000 km / no hours stipulation
	3 Year Roadside Support
	24/7 Unlimited km

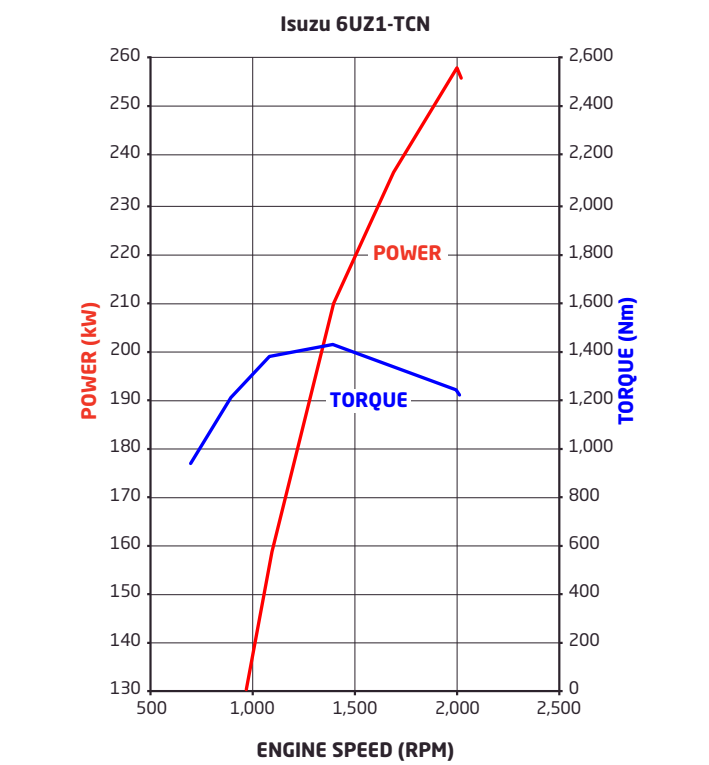


Subject to the conditions outlined in the IAL New Vehicle Warranty. For further information please visit isuzu.com.au or contact your local dealer.

INTELLIGENT SAFETY	
STANDARD FEATURES	Anti-Lock Braking System (ABS)
	Driver airbag
	Driver seatbelt pretensioner
	Low light capable reversing camera

SERVICE AGREEMENTS			
Optional Service Packages	ESSENTIALS	ESSENTIALS PLUS	TOTAL
SCHEDULED SERVICINGS	●	●	●
CONSUMABLES		●	●
ENGINE, TRANSMISSION & DRIVELINE			●
EXTRAS	After-hours Servicing, Glass, Fuel Card, Pickup - Dropoff		

ENGINE	
DESCRIPTION	Isuzu 6UZ1-TCN
TYPE	6 cylinder 24 valve SOHC
DISPLACEMENT	9,839 cc
COMPRESSION RATIO	17.5 : 1
BORE X STROKE	120 mm x 145 mm
POWER	257 kW (350 PS) @ 2,000 rpm (DIN NET)
TORQUE	1,422 Nm @ 1,400 rpm (DIN NET)
INDUCTION	Electronically controlled variable nozzle turbocharger with air-to-air intercooler
FUEL INJECTION	Direct injection high pressure common rail
EMISSION CONTROL	Cooled EGR with exhaust Diesel Oxidation Catalyst (DOC). ADR 80/03 (Euro V) compliant.



TRANSMISSION		
MT	CLUTCH	Type: Single plate with air assisted hydraulic control
		Clutch plate diameter: 432 mm
		Clutch lining area: 1,923 cm ²
	GEARBOX	Description: ZF 9S 1310 TO
		Type: 9 speed with synchromesh on gears 1-8
		Ratios: Crawler 1st 2nd 3rd 4th 5th 6th 7th 8th Rev 9.48 6.58 4.68 3.48 2.62 1.89 1.35 1.00 0.75 8.97
AT		Power Take Off facility: Provision at rear of transmission case
		Other features: Repeat 'H' shift pattern
		Description: Allison 4430
		Type: 6 speed automatic
		Ratios: 1st 2nd 3rd 4th 5th 6th Rev 4.70 2.21 1.53 1.00 0.76 0.67 5.55
		Power Take Off facility: LHS and top openings on transmission bellhousing. Engine driven PTO drive gear.
	Other features: 5th generation electronic controls with adaptive shift. Long life TranSynd synthetic fluid.	

AXLES	
FRONT	Description: 2 x Meritor FG941
	Type: Reverse Elliot I-beam
	Capacity: 6,600 kg each
REAR	Description: Meritor MT-14X
	Type: Tandem drive
	Other features: Inter-axle lock and cross locks fitted to both axles
	Capacity: 18,100 kg
Ratio: 4.875:1 (MT), 5.286:1 (AT)	

SUSPENSION		
FRONT		Type: Single stage alloy steel taper leaf springs
		Load sharing: Front suspension load equaliser and shock absorber
		Other features: Double acting hydraulic shock absorbers fitted to both axles. Stabiliser bar fitted to first front axle.
REAR	FYH	Type: Taper leaf spring with Isuzu 6 rod and trunnion location system
	FYJ	Description: Hendrickson HAS461
		Type: Airbag
		Capacity: 20,865 kg at ground

BRAKES	
DESCRIPTION	Meritor 'Q-Plus'
TYPE	Full air 'S-Cam' front and rear drum brakes
DIAMETER X WIDTH FRONT	419 x 152 mm
DIAMETER X WIDTH REAR	419 x 178 mm
PARK BRAKE	Spring park brake acting on all rear wheels
AUXILIARY BRAKE	Air controlled exhaust brake

STEERING	
TYPE	Power assisted recirculating ball
GEAR RATIO	1st axle: 18.8:1
	2nd axle: 22.9:1
TURNS LOCK TO LOCK	3.8
WHEEL LOCK ANGLE	1st axle: 40.0° (inside wheel) / 32.2° (outside wheel)
	2nd axle: 34.0° (inside wheel) / 28.6° (outside wheel)

WHEELS & TYRES		
FRONT	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels (except FYJ AUTO MWB)
		22.5 x 8.25 ten stud ISO standard Alcoa aluminium wheels (FYJ AUTO MWB)
	TYRES	295/80R22.5 152/148M Michelin X Multi Z 2 Tubeless
	STEER AXLE TYRE RATING	14,200 kg
REAR	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels (except FYJ AUTO MWB)
		22.5 x 8.25 ten stud ISO standard Alcoa aluminium wheels (FYJ AUTO MWB)
	TYRES	11R22.5 148/145L Michelin X Multi D Tubeless
	TANDEM AXLE TYRE RATING	23,200 kg
SPARE		Rim supplied

CHASSIS FRAME	
TYPE	Cold rivetted ladder frame.
MATERIAL	HT540A steel members
DIMENSIONS	Side rail (mm): 285 x 85 x 7.0 Rear frame width (mm): 850

FUEL TANK	
TYPE	Frame mounted aluminium fuel tank
CAPACITY	400 L
FUEL CAP	Lockable

CABIN SPECIFICATIONS & APPOINTMENTS

CABIN GENERAL FEATURES	
ENGINE ACCESS	Electro-hydraulic cab tilt
CAB MOUNTING	Rear coil spring suspension with hydraulic shock absorbers
STEPS	Heavy duty anti-slip steps
DOORS	90° opening internally reinforced front doors
MIRRORS	Heated and powered exterior main mirrors with flat glass and additional independently adjustable convex "spot" mirrors
WIPERS	Two speed windscreen wipers with intermittent wipe mode
EXTERIOR LIGHTING	LED main beam and halogen high beam headlamps. Chrome surround.
	Roof mounted clearance lamps
	Front foglamps
AUDIBLE WARNING	Reverse alarm
GRILLE	Chrome
FRONT BUMPER	Body coloured air dam type
SECURITY	Central locking with remote keyless entry and immobiliser

CABIN INTERIOR	
SEATING	Isri 6860/875 NTS air suspension driver's seat
	Front passenger adjustable bucket seat and front centre seat with folding seat back
SEATBELTS	3-point lap sash seatbelts in all outboard seating positions. Driver seatbelt integrated with driver seat. Centre seat lap belts.
STEERING COLUMN	Tilt/telescopic adjustable
ENTRY ASSIST GRIPS	Door and roof pillar mounted
DOOR WINDOWS	Electric control
STORAGE	Overhead compartments
	Twin cup holders
	Centre console box and storage tray
	Passenger glovebox
POWER OUTLETS	24V cigarette lighter
	2.4A high current fast charge USB socket
AIRCONDITIONING	Auto control
INTERIOR LIGHTING	Fluorescent lamp
REAR COMPARTMENT	ADR 42 compliant sleeper with mattress

ELECTRICAL SYSTEM	
TYPE	24 volt
ALTERNATOR	90 amp
STARTER MOTOR	5.0 kW
BATTERY	2 x 115E41L (651 CCA) batteries connected in series
CAN BUS PROVISION	Underdash CAN system access plug for connection to a Fleet Management System (FMS) (not supplied).

AUDIO VISUAL UNIT	
SCREEN TYPE	10.1" 1080p High Definition with capacitive touch
NAVIGATION	Truck tailored GPS based system + live feed traffic alerts and live feed route optimisation via smartphone link (live feed component is by subscription with first 3 years provided at no extra cost)
OPERATING SYSTEM	Android Automotive
RADIO	AM/FM/DAB+
INTERNAL STORAGE CAPACITY	32GB
SMARTPHONE INTEGRATION	USB 3.0 socket
	Wi-Fi connectivity
	Android Auto / Apple CarPlay compatible
OTHER CAPABILITY	Phone storage pocket with wireless charging facility
	Provision for external camera inputs, tyre pressure monitoring, low and high position reverse sensor inputs

DRIVER CONTROLS	
ENGINE	Idle speed control
	Cruise control
TRANSMISSION (AT ONLY)	Push button gear selection control
GENERAL CONTROLS	Headlamp on/off and levelling, windscreen wipers (2 speed and intermittent modes), washers, exhaust brake, turn signals
	Inter-axle lock and cross lock engage switches

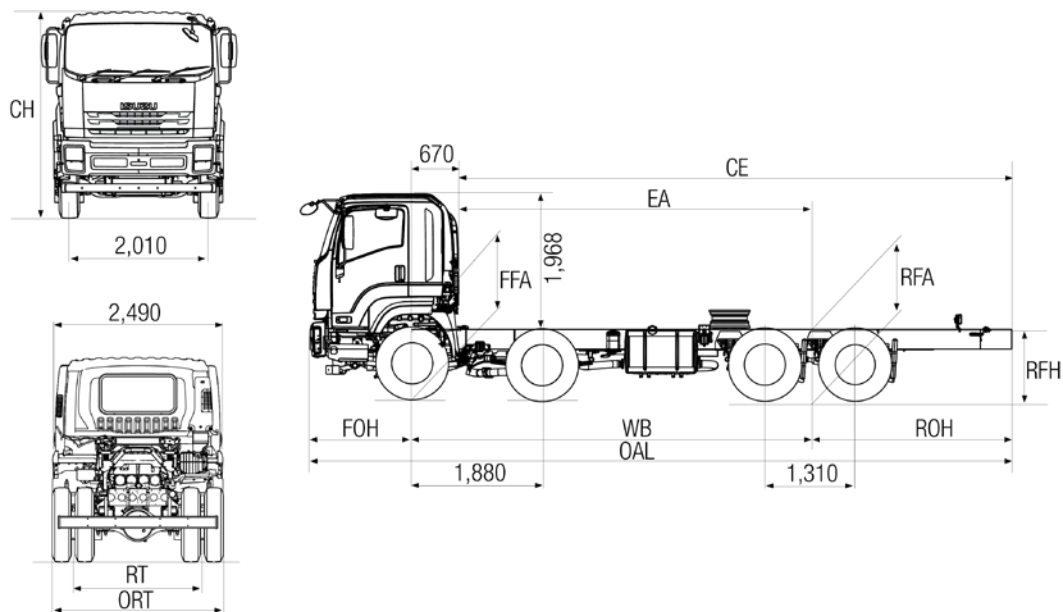
INSTRUMENTATION	
MULTI INFORMATION DISPLAY	Vehicle systems status
	Low fuel level alert
	Fuel consumption information
	Service interval alerts
	Hourmeter
GENERAL INSTRUMENTATION	Adjustable vehicle speed warning
	Speedometer and tachometer
	Digital odometer with integrated dual tripmeters
	Transmission oil level, oil life, filter life, and condition monitor display (AT only)
	Engine coolant temperature, fuel level and air pressure gauges



WEIGHTS (kg)							
MODELS	RATINGS*		LOADING LIMIT* (at ground)		CAB CHASSIS WEIGHT #		
	GVM	GCM	FRONT	REAR	FRONT	REAR	TOTAL
FYH 300-350 AUTO MWB	30,000	45,000	13,200	18,100	5,720	2,830	8,550
FYH 300-350 AUTO LWB	30,000	45,000	13,200	18,100	5,730	2,910	8,640
FYJ 300-350 AUTO MWB	30,000	45,000	12,000	18,100	5,665	2,510	8,175
FYJ 300-350 LWB	30,000	45,000	13,200	18,100	5,480	2,715	8,195
FYJ 300-350 AUTO LWB	30,000	45,000	13,200	18,100	5,730	2,680	8,410
FYJ 300-350 XLWB	30,000	45,000	13,200	18,100	5,500	2,750	8,250
FYJ 300-350 AUTO XLWB	30,000	45,000	13,200	18,100	5,720	2,740	8,460

* Vehicle ratings and front/rear weight limits are subject to government regulatory requirements and weight distribution analysis. Consult your Isuzu dealer to select the correct vehicle for your specific application. # Cab chassis only as supplied and including 10 litres of fuel.

DIMENSIONS (mm)													(m)
MODELS	WB	OAL	FOH	ROH	EA	CE	RT	ORT	CH	FFA (unladen)	RFA (unladen)	RFH (unladen)	TURNING CIRCLE kerb to kerb
FYH 300-350 AUTO MWB	5,770	9,720	1,480	2,470	5,100	7,570	1,840	2,445	3,000	940	1,105	1,135	20.4
FYH 300-350 AUTO LWB	6,010	10,290	1,480	2,800	5,340	8,140	1,840	2,445	3,000	940	1,100	1,140	21.0
FYJ 300-350 AUTO MWB	5,770	9,720	1,480	2,470	5,100	7,570	1,840	2,445	3,000	940	1,050	1,050	20.4
FYJ 300-350 LWB / AUTO LWB	6,010	10,290	1,480	2,800	5,340	8,140	1,840	2,445	3,000	940	1,050	1,050	21.0
FYJ 300-350 XLWB / AUTO XLWB	6,700	10,980	1,480	2,800	6,030	8,830	1,840	2,445	3,000	940	1,050	1,050	23.5



PERFORMANCE (calculated - typical paved road)				
		GEARED SPEED~ (top gear at peak power engine rpm)	LOW SPEED GRADEABILITY (lowest forward gear assuming no wheel slip)	ENGINE SPEED (top gear at 100 km/h)
FYH/FYJ 300-350 AUTO	At 30,000 kg GVM	109 km/h @ 2,000 rpm	48%	1,830 rpm
FYJ 300-350 LWB/XLWB	At 30,000 kg GVM	106 km/h @ 2,000 rpm	38%	1,890 rpm

~ Maximum speed achievable depends on vehicle frontal area as well as other factors. Consult your Isuzu dealer for more detailed information. Vehicle is speed limited to 100km/h

ORDER CODES	
MODELS	CODES
FYH 300-350 AUTO MWB	FH-FYHJJ-L22
FYH 300-350 AUTO LWB	FH-FYHJJ-N22
FYJ 300-350 AUTO MWB	FH-FYJJJ-L22
FYJ 300-350 LWB	FH-FYJJJ-D22
FYJ 300-350 AUTO LWB	FH-FYJJJ-N22
FYJ 300-350 XLWB	FH-FYJJJ-E22
FYJ 300-350 AUTO XLWB	FH-FYJJJ-P22

Subject to the conditions outlined in the IAL New Vehicle Warranty, Isuzu FY series models carry a standard factory warranty which covers the owner for the first 72 months or 600,000 kilometres or 10,000 Engine Hours (whichever comes first). All Isuzu warranties are subject to mandatory prescribed terms under Australian Consumer Law including consumer guarantees. Harsh Conditions variations to standard factory warranty may apply. For more details visit the Isuzu website at www.isuzu.com.au which explains Isuzu warranties in more detail, or alternatively contact your local Isuzu Truck dealer. All warranties commence from date of initial delivery.

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Report on Plant Replacement Options for 2014 Mitsubishi FUSO 6-Wheelers

Introduction

The Shire of Dowerin currently relies on two 2014 Mitsubishi FUSO 6-wheelers, each with approximately 225,000km on the odometer. With each truck incurring an average of \$7000 this year alone in repairs and servicing costs, and another service due shortly, it's evident that the age of these trucks is contributing to increasing breakdowns. Pickles Auctions have recently evaluated both trucks at a value of \$120,000 each, prompting the need to explore replacement options for enhanced reliability and efficiency.

Replacement Options

1. **SHOGUN SERIES FUSO FV70HK2VFAA MWB 395hp AMT 6x4:**
 - **Price:** \$319,888.60
 - **Key Features:** Powerful Mitsubishi FUSO OM470-T2 Diesel engine, Automated manual transmission, Advanced safety features, Multimedia package, Comfortable cab, 11m3 tipper configuration body.
 - **Warranty:** Five (5) years or 500,000km warranty.
 - **GCM:** 53,000kg
2. **HINO 700S FS 2848 13.0L Turbo Diesel AMT LEAF 4275 Single Cab Chassis:**
 - **Price:** \$292,303.00
 - **Key Features:** 13.0L Turbo Diesel engine, Automatic Manual Transmission (AMT), Safety features including reverse camera, 2-way tipper with various accessories, Delivery to depot included.
 - **Warranty:** 3 years or 500,000km, 5-year extended warranty option.
 - **GCM:** 63,000kg
3. **ISUZU TRUCK FXZJJ-L23 FXZ 240-350 AUTO MLWB:**
 - **Price:** \$277,970.00
 - **Key Features:** 240-350 AUTO MLWB model, Additional genuine and aftermarket accessories, PTO switch for tipper operation, Comfort features.
 - **Warranty:** 6 years or 600,000km or 10,000 engine hours.
 - **GCM:** 45000kg
4. **Fuso Shogun 6x4 FV74 510Hp Air Susp. MWB 12 Sp. AMT FV74VK9VFAA Cab Chassis:**
 - **Price:** \$323,401.39
 - **Key Features:** High-performance engine, Advanced safety systems, Multimedia unit with LCD touch screen, Comfortable cab with driver airbag, 11m3 tipper configuration body with various accessories.
 - **Warranty:** Factory standard five (5) year or 500,000km warranty.

- **GCM:** 63,000kg

Recommendation

Neighbouring shires have recently opted for the HINO 700S FS 2848 13.0L Turbo Diesel option. However, it's essential for the Shire of Dowerin to thoroughly evaluate all available options based on their specific operational requirements, budget considerations, and potential long-term benefits. Each option offers unique features and warranty coverage, and a neutral recommendation allows for an objective decision-making process. Further discussions and assessments should be conducted to determine the most suitable replacement option that aligns with the Shire's objectives and priorities.



Conclusion

In conclusion, the replacement of the 2014 Mitsubishi FUSO 6-wheelers for the Shire of Dowerin represents a significant opportunity to enhance operational efficiency and mitigate the risks associated with increasing breakdowns. The evaluation of replacement options has provided valuable insights into the features, pricing, and warranty coverage offered by various manufacturers. While neighbouring shires have recently favoured the HINO option, it is crucial for the Shire of Dowerin to conduct a comprehensive assessment considering their specific needs and objectives.

Each replacement option presents unique advantages, and a thorough evaluation will ensure the selection of the most suitable option that aligns with the Shire's priorities. Further discussions and analysis are recommended to make an informed decision that optimises operational reliability, cost-effectiveness, and long-term performance.

QUOTATION PREPARED FOR THE:



DAIMLER TRUCKS PERTH



PATRICK KENDREW
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Ref: 30823

5th April 2024

Ben Forbes
Asset & Works Coordinator
Shire of Dowerin
13 Cottrell Street
DOWERIN WA 6461

RE: BUDGET QUOTE - SUPPLY OF ONE (1) 6x4 TWO-WAY TIPPING TRUCK

Dear Ben,

Thank you for the opportunity to supply our quote along with details to supply One (1) only
2024 FUSO FV70 SHOGUN 6x4 cab/chassis fitted with Two Way Tipper Body set up and ancillary equipment to the **SHIRE OF DOWERIN** requirements.

For any further details that may be required, please refer to the enclosed specification sheet, or contact the undersigned who will gladly assist.

Yours faithfully
DAIMLER TRUCKS PERTH



PATRICK KENDREW
GOVERNMENT/SHIRE SALES CONSULTANT



MIKE ALLEN
NEW FUSO TRUCK SALES MANAGER



Mailing Address PO Box 1914 Midland DC WA 6936

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SHOGUN SERIES FUSO FV70HK2VFAA MWB 395hp AMT 6x4

AXLE FRONT:	Reverse Elliot 'I' beam. Load rating 6,500 kg.
AXLE REAR:	Mitsubishi Full Floating Hypoid. Tandem drive with inter axle diff lock. Capacity 21,600kg. Ratio 4.625:1
BRAKES:	Full Air dual circuit, Taper Roller, ABS with ASR. Rear wheel spring actuated park brake. Constant throttle brake, 3 levels of retardation. Trailer hand control valve and air lines.
CAB:	All steel forward control 2 seat electric / hydraulic tilt cab. Air suspended front and rear. Heated & Electric external mirrors both sides. Rear Quarter glass windows, LHS Transom door window. Fluoro interior reading lamp, Cruise Control, Keyless locking, power windows, Air Conditioner, Heater, Demister, cup holders. Driver's Airbag & Seat Belt pre-tensioners. Driver's ISRI Air Suspension seat. Dash and centre console storage areas. Overhead storage pocket with lid, RH door storage pocket. Colour info display for fuel consumption, service indicators, hour meter & Oil level check. ADR42/04 Approved sleeping berth. <u>Multi Media Package:</u> 6.1 LCD in dash touch screen with Bluetooth hands free. CD/DVD player with Digital DAB+ Radio. USB iPod port & Aux satellite Navigation with 3year free maps updates. Three reverse Camera compatible. (Cameras not included).
CHASSIS:	Parallel channel. Tensile strength 540mpa. Width 840mm. FUPS. Wheelbase 4300mm. Clear chassis rail, no top rivets.
CLUTCH:	Automated manual, no clutch pedal, single dry plate Fuso K4/430.
ELECTRICAL:	24V neg. earth. Alternator output: 24V-100amp. Halogen High Beam headlamps, Low Beam LED 24V Acc power outlet. 2x12v 150Ah / 20hr batteries. Reverse buzzer.
ENGINE:	Mitsubishi FUSO OM470-T2 Diesel (ADR 80/03 - Euro VI) 10.7 litre, 6cyl In-line OHV. Waste-gate turbocharged / air to air intercooler. SCR after treatment system. Power / 290kw (395hp) @ 1600rpm. Torque: 2000Nm @ 1100. Water cooled with viscous coupling fan.
FUEL:	Rectangle alloy tank 400 litres with locking cap. 60 litres Ad-blue tank with locking cap. Filter with water separator and dash indicator.
STEERING:	Integral Power Assisted Ball and Nut, tilt/telescopic adjustable.
SERVICE:	50,000 kms service intervals.
SUSPENSION FRONT:	Long taper leaf with double acting shock absorbers.
SUSPENSION REAR:	Long taper leave / 6 rod trunnion suspension.
TRANSMISSION:	Fuso G230-12, 12 Speed automated transmission with auto and manual modes. PTO openings, rear of transmission.
WHEELS AND TYRES:	Single piece Alloy disc 10 stud rims 335mm PCD. (11 off) 22.5x8.25DC with 295/80R22.5 front tyres / 11R22.5 rear tyres.
GVM / GCM:	25,400kg / 53,000kg

BODY DETAILS:	Body as described , built to your specifications & manufactured by <u>Park Body Builders</u>
	NOTE: Please refer to our nominated body builders quotation attached, for your information as to construction details.
LICENSING:	Daimler Trucks Perth would licence the vehicle on behalf of the Shire as requested. These licensing costs are <u>NOT INCLUDED</u> in our quotation and would be invoiced separately.
DELIVERY:	To be confirmed at the time of approval
WARRANTY:	Factory Standard five (5) year or 500,000km (whichever occurs first) warranty to the cab/chassis – Bumper to Bumper
TRAINING:	Full training and induction included.
FUEL ECONOMY	Fuso unable to supply due to many variables effecting fuel consumption.
SERVICING:	50,000km or 12 Month Service Intervals
PAYMENT:	Cash on delivery.
NOTE:	Prices are based on manufacturer's prices at the quotation closing date and are subject to CURRENT RULING PRICES or stock available at the quoted price.
24HR ROADSIDE ASSIST	National roadside assist covers Fuso clients for the life of their vehicle from delivery. (Conditions apply) Daimler Trucks Perth for more details
MAIN WORKSHOP	Daimler Trucks Perth Service Centre operates from 8am to Midnight Monday through Friday and Saturday morning where prior arrangements have been made.

SHOGUN SERIES FUSO FV70HK2VFAA MWB 395hp AMT 6x4.

PRICE:	List Price	\$ 224,680.76
	Less Fuso Shire Allowance	-\$ 25,355.84
	2024 Plated Cab Chassis Only	<u>\$ 199,324.92</u>

Cab Chassis Standard Specifications

- GVM 25,400kg
- GCM 53,000kg
- 4300mm wheelbase
- 290kw/ 395hp / 2000nm
- 400 Litre capacity aluminium tank with lockable fuel cap
- 12 speed constant mesh Automatic Manual Transmission (AMT)
- Driver controlled inter-axle lock and cross locks on both axles (LSD option included)
- Rear wheel spring actuated park brake
- ABS plus EBD (Electronic Brake force Distribution)
- 295/80R22.5 (steer) and 11R22.5 (drive)
- Electro-hydraulic cab tilt
- Driver airbag
- Fully integrated auto control air-conditioning
- Electric windows and mirrors
- Radio multimedia unit with LCD touch screen and Bluetooth
- Cruise Control
- Central locking with remote keyless entry
- Adaptative cruise control , lane departure warning, emergency brake warning and stability control
- Drivers air suspension seat
- Fuso toolkit for wheel changes
- Euro IV Standard
- Fuso Telematics now available with free 12-month subscription

11M3 Tipper Configuration Body & Accessories

- 4.5m 2.45m x 1.0m 6mm Hardox Rear and Side Tipping Body(Manufactured by Park Body Builders)
- PTO switch in cab with programming - Please note PTO off Transmission not Engine
- Spare tyre carrier electrical type winch to headboard incudes spare tyre and rim
- Lockable battery isolator
- Ski bar on truck cab fitted with two (2) Narva 85246A LED beacons
- 23L Water tank with soap dispenser
- 80 channel two-way radio
- Window tinting
- H/D Canvas seat covers and H/D rubber floor mats
- Weather shield fitted to driver's side window
- Pit pass and weigh bridge documents
- Delivery to Shire of Dowerin with handover

<u>Body & Accessories Total</u>	<u>\$ 91,482.90</u>
--	----------------------------

PRICE	Sub Total	\$ 290,807.82
	GST	29,080.78
	<u>TOTAL</u>	<u>\$ 319,888.60</u>

STAMP DUTY: EXCEMPT

LICENSING : AT COST

SHOGUN

FUSO

Shogun FV70 6X4 - MY21

10.7L / AMT / MECH SUSP. / MWB



OUR SAFEST AND CLEANEST SHOGUN YET. THE MY21 SHOGUN IS EQUIPPED WITH ABA5, PD, LDWS, ESP, AAA, IHC, DRL AND A EURO VI STEP D ENGINE. ALL BACKED BY OUR CLASS LEADING SERVICE INTERVALS AND 5 YEAR WARRANTY.

GVM

25,400_{KG}

GCM

53,000_{KG}

Power/Torque

290_{KW} / 2000_{NM}

335_{KW} / 2200_{NM}

- Heavy rigid licence required
- Actual vehicle may differ from above image

SHOGUN SPECIFICATIONS

MODEL

A	6x4 FV70 395Hp Steel Susp. MWB 12 Sp. AMT FV70HK2VFAA-MY21
B	6x4 FV70 455Hp Steel Susp. MWB 12 Sp. AMT FV70HK4VFAA-MY21

WHEEL BASE

4300mm
4300mm

GVM

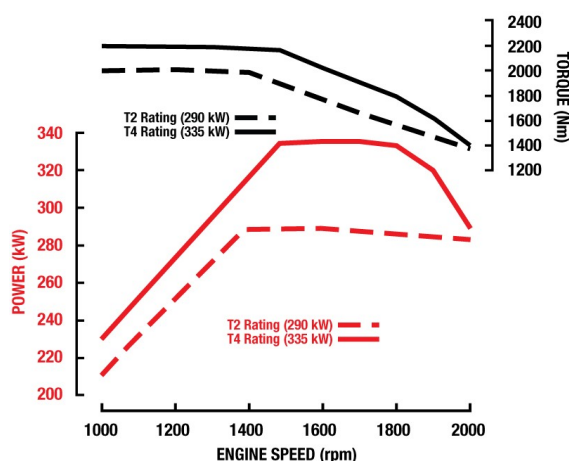
25,400kg
25,400kg

GCM

53,000kg
53,000kg

Engine

Engine Version	A FUSO OM470-T2 Diesel	B FUSO OM470-T4 Diesel
Configuration	6 Cyl. In-line OHV	
Type	Asymmetric Turbocharger, Air to Air Intercooler	
Displacement	10.7 litre (10677 cc)	
Bore	125 mm	
Stroke	145 mm	
Power (DIN)	A 290 kW (395 hp) @ 1600 rpm	B 335 kW (455 hp) @ 1600 rpm
Torque (DIN)	A 2000 Nm (1475 lb.ft) @ 1100 rpm	B 2200 Nm (1622 lb.ft) @ 1100 rpm
Maximum Engine Speed	2100 rpm	
Compression Ratio	18.5:1	
Air Cleaner	Paper Element Type with Restrictor Indicator. Vertical Intake Mounted on Clean Air Side (RH)	
Emission Control	Diesel Particulate Filter (DPF) plus SCR After-Treatment System	
Emission Level	ADR 80/03 - Euro VI	



Fuel

Injection System	Common Rail Direct Injection with Pressure Booster
Tank Type	Rectangular Alloy Tank with Locking Cap
Fuel Capacity *	400 Litres
Filtration	Filter with Water Separator and Dash Indicator
AdBlue Exhaust Fluid Capacity	60 Litres, Tank fitted with locking AdBlue cap
Speed Limiter	Speed Limited 100km/h
Notes	*Max Fill to approx 95% of Air Capacity

Cooling

Fan Drive	Electronically controlled (Viscous)
Radiator	Corrugated Fin with Expansion Tank

Electrical

Voltage	24V Negative Ground
Battery Capacity	2x12V, 150Ah/20hr
Battery Specification	2x145G51 (N150)
Headlamp Type	Automatic Type
	Low Beam: LED
	High Beam: Halogen
Fog Light	Halogen
Daytime Running Lamps	LED

Clutch

Clutch Model	FUSO K4/430
Type	Single Dry Plate
Operation/Specification	Automated Manual (no clutch pedal)

Transmission

Version	FUSO Automated Manual G230-12
Type/Speeds	12 Speed Automated Manual with Auto, Economy and Manual Modes
Features	Crawler Mode Skip Shift Function for Light Loads ECO Mode to Minimise Fuel Usage
Ratios	1st: 11.672 2nd: 9.101 3rd: 7.055 4th: 5.501 5th: 4.400 6th: 3.430 7th: 2.652 8th: 2.068 9th: 1.603 10th: 1.250 11th: 1.000 12th: 0.779 RHigh: 9.101 RLow: 11.672 Torque limited from 1st to 3rd and Reverse
PTO Opening	Rear of Transmission

Propeller Shaft

Type	Single Main Shaft GW5E2200 Inter-axle Shaft P12
------	--

Front Axle

Axle Version	FUSO F900T
Type	Reverse Elliot 'I' Beam
Capacity *	7100kg
Notes	*See MAX LOADING for vehicle capacity.

Front Suspension

Type	Long Taper Leaf with Stabiliser Bar and Double Acting Shock Absorbers
Size	1500x90mm Leaves

Rear Axle

Type	Full Floating Hypoid Type Tandem Drive with Inter-Axle Diff Lock Optional Limited Slip Differential LSD to both Axles
Axle Version	FUSO R10TT/R10T
Capacity*	21600kg
Ratio	4.625:1
Notes	*See MAX LOADING for vehicle capacities

Rear Suspension

Type	Mechanical Suspension
Details	Long Leaf Taper, 6 Rod Trunnion
Size Main Leaves	1320x90mm

Max Loading

Front	6500kg
Rear	21600kg
Total	25400kg

FUSO

SHOGUN SPECIFICATIONS

MODEL

A	6x4 FV70 395Hp Steel Susp. MWB 12 Sp. AMT FV70HK2VFAA-MY21
B	6x4 FV70 455Hp Steel Susp. MWB 12 Sp. AMT FV70HK4VFAA-MY21

WHEEL BASE

4300mm
4300mm

GVM

25,400kg
25,400kg

GCM

53,000kg
53,000kg

Options		
Options	A Q48: - Limited Slip Differential - LSD Q49: - Limited Slip Differential - LSD - Engine Flywheel PTO 650N	B Q51: - Limited Slip Differential - LSD Q52: - Limited Slip Differential - LSD - Engine Flywheel PTO 650N
Steering		
Type	Integral Ball and Nut	
Steering Column	Tilt/Telescopic Adjustable	
Brakes		
Type	Full Air, Dual Circuit with FUSO Taper Rollers	
Size Front	410x160mm	
Size Rear	410x200mm	
Features	Brake Priority System	
Park Brake	Rear Wheel Spring Actuated	
Engine	Jacobs Brake 3 Levels of Retardation	
Trailer	Hand Control Valve, Air Lines Coupling and Electrical Cable	
Wheels & Tyres		
Wheel Type	10, Single Piece Alloy Disc	
Wheel Size	22.5x8.25DC	
Wheel Stud Pattern	10x335mm PCD	
Tyre Brand	Bridgestone	
Tyre Size Front	295/80R22.5 152/148	
Tyre Size Rear	11R22.5 148/145	
Chassis		
Type	Reinforced Parallel Channel	
Size	300x90x7.0 mm	
Width	840 mm	
Tensile Strength	540 MPa	

Instruments	
Gauges	Speedometer Tachometer Fuel Level Air Pressure AdBlue Level
Colour Information Display	Odometer Tripmeter (x2) Hour Meter (x2) Outside Temperature AdBlue Level DPF Information Driving Range (Fuel and AdBlue) Current Vehicle Speed Cruise Control Lane Departure Warning Active Attention Assist Warning Alarm Clock Level Control Service Indicator & Reminder System Air Pressure Coolant Temperature Engine Oil Level & Running Time
Warning Lamps	ABS ASR ESP ESP Off Turn Signal Headlamps High Beam Hill Holder Auxiliary Brake Parking Brake Engine Over-speed Air Pressure Low Height Control Cab Tilt Lock DPF Regeneration DPF Status AdBlue Empty AdBlue Contamination Active Brake Assist
Warning Lamp/Buzzer	Air Pressure Cab Tilt Engine Over-speed AdBlue Empty AdBlue Contamination
Multi-Media Package	
Satellite Navigation	Maps with heavy vehicle weight, length, height & hazardous material selectable restrictions with 3 years of Map updates
Colour Display	7 inch LCD with touch screen control
Phone Connectivity	Bluetooth® hands free
Audio Visual Entertainment	Bluetooth® music streaming compatible Digital radio DAB+ (also AM/FM for areas not covered by DAB+) USB & 3.5mm/AUX port
Reversing Camera Compatible	Display can accept up to 5 cameras#
Optional Accessories (available at additional cost)	Rear Mounted Parking Sensor Kit High or Low Tyre Pressure Monitoring System
Notes	# Cameras available through spare parts

SHOGUN SPECIFICATIONS

MODEL

A	6x4 FV70 395Hp Steel Susp. MWB 12 Sp. AMT FV70HK2VFAA-MY21
B	6x4 FV70 455Hp Steel Susp. MWB 12 Sp. AMT FV70HK4VFAA-MY21

WHEEL BASE

4300mm
4300mm

GVM

25,400kg
25,400kg

GCM

53,000kg
53,000kg

Standard Features

Cruise Control	Adaptive with Stop and Go
Hill Start System	Yes
Cab Cooling & Heating	Climate Control
Accessory Power	24V Accessory Power Outlet (x2) plus Cigar Lighter
Driving	Suspended Driver's Seat Central Locking Electric Windows LH Transom Window Opening Rear Quarter Glass Cup Holder Fluorescent Cabin Lamp Trailer Package including Trailer 'Stretch Brake'
Storage	Centre Storage Compartments (x3 Total, Lockable x1) Driver's Overhead Storage Door Storage Pockets Coat Hooks
Cab: External	Fog Lights Door Side Impact Beams Roof Mounting Points max. static load 70kg Front End-Outline Marker Lamps External PTO controls
Chassis	Integrated Front Underrun System (FUPS) Reverse Warning Buzzer Clear Top of Chassis Rail for ease of Body Fitment

Cab Features

Type	All Steel Forward Control Elec / Hyd Tilt Cab
Cab Structure	ECE-R29 Standard
Mounting	Air Suspended Front and Rear
Colour	Natural White
Windscreen Wipers	Automatic 2 Speed + Intermittent Cycle with Integrated Washer Nozzles
Rear Vision Mirrors	2 x External Flat Main Mirrors Plus Convex Spotters Motorised Main Mirrors, All Mirrors Heated
Seating Capacity	2
Seat Belts	2 x Lap Sash with ELR. Driver pre-tensioner
Seat (driver)	Air Suspension with Height, Tilt and Dampening Adjustment Integral Headrest and Fabric Trim
Seats (passenger)	Single Fixed
Sleeping	ADR42/04 Approved Sleeping Berth

Active Safety

Safety Systems	ABA5 - Active Brake Assist 5 PD - Pedestrian Detection AAA - Active Attention Assist PCA - Proximity Control Assist Cruise Control LDWS - Lane Departure Warning System ESP - Electronic Stability Program ABS - Anti-lock Braking System ASR - Anti Slip Regulator LED Headlamps DRL - Daytime Running Lamps IHC - Intelligent Headlight Control
Reverse Warning	Wide Dynamic Range Camera and Buzzer
Notes	Active Safety Systems primary function is to provide driver assistance to increase road safety in events of driver inattentiveness. These systems do not allow for lack of attention whilst driving and should not replace safe and alert driving.

Passive Safety

Airbags	SRS Airbag - Driver
Body Strength	ECE-R29 Cab Strength Compliant
Seat Belts - Driver & Driver Assistant	3 Point ELR Lap Sash, Driver Pre-Tensioner.

Service Intervals

Interval*	50,000km or 12 Months (whichever occurs first)
Notes	* based on normal operating conditions and may be reduced when operating under severe conditions.

Warranty

Basic/Powertrain	5 Years or 500,000kms (whichever occurs first)
Cab Perforation/Anti Corrosion	5 Years

Performance

Turning Circle (kerb to kerb - metres)	15.2
Electronically Speed Limited to:	100km/hr Conforms to ADR65/..
Engine Speed (rpm) at 100km/hr (top gear)	1879
Gradeability at Rated GVM (theoretical)*	A 61% B 66%
Gradeability at Rated GCM (theoretical)*	28.5%
Notes	*This is theoretical performance only. Actual performance may vary under different conditions

Mass estimated*

Front*	A 4323kg B 4363kg
Rear*	A 3347kg B 3342kg
Total*	A 7670kg B 7705kg
Notes	* Mass (est.) includes oil and water but excludes spare wheel, tools & fuel. Weights provided are subject to 3.5% variation (+/-)

Dimensions mm

WFF (Width Front Fender) (mm)	2490
WRA (Width Rear Axle) (mm)	2475
WFT (Width Front Track) (mm)	2075
WRT (Width Rear Track) (mm)	1865
Width Frame (mm)	840
A - Length Overall (mm)	7640
B - Extreme Axle Spacing (mm)	4960
C - Front Overhang (mm)	1370
D - Wheelbase (mm)	4300
F - Rear Axle Spacing (mm)	1320
G - Front Axle to Rear of Cab (mm)	700
H - Rear of Cab to Rearmost Item Behind Cab (mm)	145
I - Rearmost Item Behind Cab to Rear Axle (mm)	3455
J - Frame, Rear Axle to End (mm)	1970
N - Height Overall (mm)	3300
O - Air Intake to Cab Roof (mm)	205
P - Height Cab to Ground (mm)	3095
Q - Height Cab to Frame (mm)	2090
R - Height Rear Frame to Ground (mm)	1058

FUSO

SHOGUN SPECIFICATIONS

MODEL	
A	6x4 FV70 395Hp Steel Susp. MWB 12 Sp. AMT FV70HK2VFAA-MY21
B	6x4 FV70 455Hp Steel Susp. MWB 12 Sp. AMT FV70HK4VFAA-MY21

WHEEL BASE	GVM	GCM
4300mm	25,400kg	53,000kg
4300mm	25,400kg	53,000kg

Body Builder's Notes

Notes

Chassis reinforcement must be utilised for Tipper/Demountable type body configurations.

To conform with ADR 13/00 (lighting requirements) the following must be adhered to at body installation.

- If other than a flat type or tipper body is fitted, rear end out-line marker lamps must be installed.
- If overall length exceeds 6.0 metres, side reflectors must be installed.
- If overall length exceeds 7.5 metres, side marker lamps must be installed.

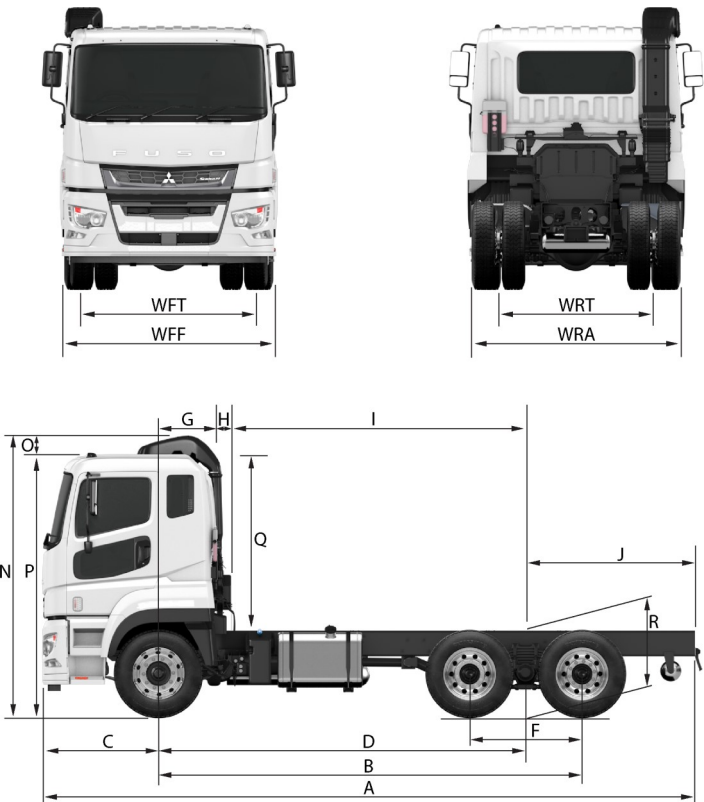
To conform with ADR 42/04 (General Safety), rear wheel guards must be fitted to the vehicle.



Call 1800 033 557

or visit fuso.com.au

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Vehicle Quotation

April 2nd, 2024

SHIRE OF DOWERIN
13 Cottrell Street
Dowerin Wa 6461

PSP#: 20024
QUOTE#: Q31024

Thank you for the opportunity to provide you with the following quotation on a new vehicle and we look forward to your favourable reply.

We are sure that the following detailed specification will meet your operational requirements and I look forward to serving your business needs.

HINO 700S FS 2848 13.0L Turbo Diesel AMT LEAF 4275 Single Cab Chassis Model: FS1ELKA-FSAPEAC

Vehicle Price	220,746.04
2Way Tipper approx 5.0m x 2.45m	59,995.00
RHS & Rear Tip, 5mm floor. HARDOX sides	Included
1.0m fixed side on LHS, RHS hyd door open	Included
Safety Prop, 32.0t hoist, PTO Pump to suit	Included
2way rear Tail gate air operated	Included
PTO Switch & Activation	1,250.00
2 X LED Beacons on Skibar	2,150.00
Toolbox under body	1,250.00
Hand wash station	550.00
Ring feder tow hitch	5,500.00
Air and ABS for trailer to rear ring feder	2,500.00
LED Tail lights c/w mesh protect	995.00
Rubber Guards over drive axles	1,950.00
Spare wheel electric winch to front	2,500.00
Retractable Tarp	3,995.00
UHF Radio 80channel c/w antenna	1,250.00
Window tint darkest legal	395.00
Canvas seat covers, rubber floor mats	800.00
Delivery to Dowerin depot	650.00
Hino Reverse camera to rear	Included
Hino Smart safe factory safety package	Included

Sub-Total	306,476.04
DISCOUNT	40,746.04 -
Sub-Total	265,730.00
GST	26,573.00
Vehicle Total	292,303.00
Less Settlement	

Total Amount Payable

292,303.00

Additional Items for Consideration

OPT - Hydraulics, divertor & return for tip trailers

3,500.00

PLEASE NOTE:

This quote is valid for 30 days.

PLEASE ALSO NOTE:

The Manufacturer's warranty covers the Chassis only. All bodybuilds/ ancillary fitments are provided by third parties on the customer's instructions and are entirely at the customer's risk. The customer may have rights against third parties subject to their warranty provided.

FINANCE & INSURANCE

We have a qualified Business Manager, who has access to daily rates which provides us with the opportunity to secure for you the best possible funding package.

Natasha McColgan is available to discuss the various options and can, if required, design a package to best suit your requirements.

I hope the above quote meets your expectations and look forward to speaking to you soon. Please do not hesitate to contact me should you have any queries.

HINO & THE TOYOTA GROUP:

Under the Hino brand, we represent the Toyota Group in the global market for heavy-duty trucks and buses. We also produce Toyota-badged vehicles on commission, including Toyota's popular sport-utility vehicle, the 4Runner, Dyna trucks, and Toyoace commercial vehicles. We use the Toyota Production System to achieve continuing gains in productivity and in quality throughout our operations. We have adapted that system to our model line to offer our customers the best-possible products at competitive prices. Our operations are growing globally in step with the globalization of the Toyota Group.

PARTS & SERVICE:

We at WA Hino Sales & Service offer you our full Service and Spare Parts facilities, which have a reputation second to none. Our normal trading hours in the Service Centre are 7.30am to 11.30pm Monday through Friday, also Saturday mornings.

Yours sincerely,

Lee Carr
Government and Fleet Sales Con

Eshan Coorey
General Manager

HINO

700 Series



6 x 4 Cab Chassis

*Illustration may contain items not standard to the model

KEY FEATURES

Pre-Collision System (PCS) including AEB & PD
 Vehicle Stability Control (VSC)
 Lane Departure Warning System (LDWS)
 Adaptive Cruise Control
 Transmission Intarder & Engine retarder (Jake) brake
 Reverse camera
 ISRI 6860/870 NTS2 with integrated safety belt
 ADR 80/03 Emission level using Euro 6 Standard
 LED Main beam Headlamps with Daytime running Lamps (DRL)
 Polished Alcoa wheels
 Differential Cross Locks
 Driver Monitor (DM)
 Hino Connect Telematics

KEY SPECIFICATIONS

GVM 27,900 to 28,300kg
GCM 63,000kg
Power 480hp/353kW
Torque 2,157Nm
Transmission ZF TraXon 16 Spd AMT
Wheelbases 4.2m, 4.5m, 6.3m
Max Nominal Body Length 6.1m, 6.5m, 9.3m

ENGINE

Engine model	Hino E13C-BK
Max.output (ISO Net) @ 1,600 to 1,800rpm	480hp/353kW
Max.torque (ISO Net) @ 1,000 to 1,500rpm	2,157Nm
Max. engine rpm	2,200
Engine compliance	ADR 80/03 using Euro 6 Standard
Type	Diesel, turbo & intercooled, 6 cylinder, OHC
Combustion system	Direct injection
Bore & stroke	137 x 146 mm
Piston displacement	12.913L
Fuel injection system	Electric control common rail
Air cleaner & intake	Behind cab mounted with paper element
Exhaust system	Horizontal outlet
Emission control systems	DOC,DPR & SCR after treatments
Engine immobiliser	Equipped

TRANSMISSION & GEAR RATIOS

Make, model & Description	Automated Manual Transmission (AMT)			
	ZF TraXon ZF16TX2441TO 16 speed AMT with Intarder			
Shifter type	Dash mounted rotary switch with Column mounted sequential shifter			
GEAR RATIOS	1	14.682	9	3.216
	2	12.048	10	2.639
	3	9.919	11	2.173
	4	8.139	12	1.783
	5	6.780	13	1.485
	6	5.564	14	1.219
	7	4.565	15	1.000
	8	3.746	16	0.821
	Reverse 1	14.138	Reverse 2	11.602
Rear axle ratio	3.900			

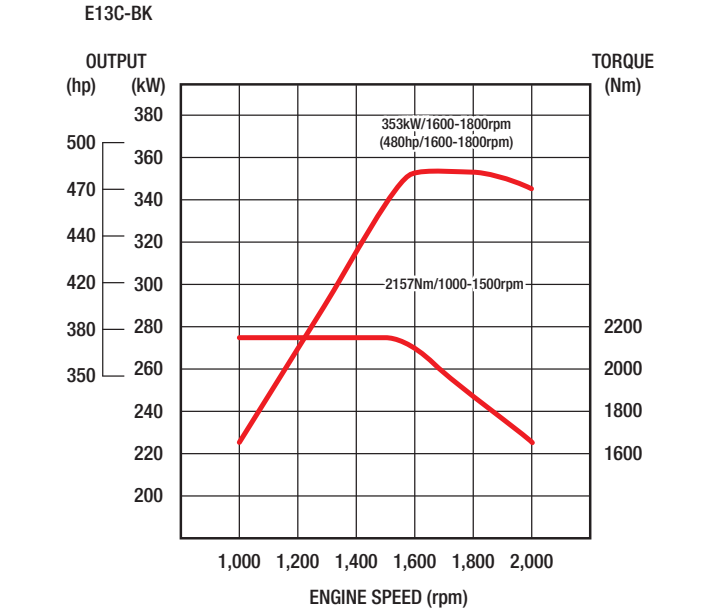
PERFORMANCE

Calculations based on 11R22.5 drive tyres @ 63 t GCM	
Engine RPM @ 100 km/h	1,670
Road Speed limited to	100 km/h
Max theoretical speed km/h	132
Theoretical gradeability % @ GCM	38.1%

BRAKES

Type	Full Air, Taper Roller, Drum	
Control	Electronic Brake System (EBS)	
Drum area dimensions Diameter x width	Front	406.4 x 152 mm
	Rear	406.4 x 216 mm
Park brake	Spring brake acting on the drive axle	
Engine retarder (Jake) Brake	Equipped	
Transmission ZF Intarder	Equipped	
Brake Sync	Brake pedal activated Engine brake	
ES Start (Easy Smooth) Hill assist	Equipped	
Trailer brake controls & Connection	Equipped	

POWER & TORQUE CHART (ISO NET) E13C-BK



SAFETY FEATURES

Active Safety Features – Hino SmartSafe			
Vehicle Stability Control	VSC	Equipped	
Anti-lock Brake System	ABS	Equipped	
Pre-Collision System	PCS	Equipped	
PCS is inclusive of	Autonomous Emergency Braking		AEB
	Pedestrian Detection		PD
Adaptive Cruise Control	ACC	Equipped	
Anti-Slip Regulator	ASR	Equipped	
Lane Departure Warning System	LDWS	Equipped	
Reverse buzzer & camera	RC	Equipped	
Driver Monitor	DM	Equipped	
Daytime Running Lamps	DRL	Equipped	
Safety Eye	SE	Equipped	
Passive Safety Features			
ECE-R29 Cab Strength Certification		Equipped	
SRS airbag for driver		Equipped	
SRS seatbelt pretensioner for driver		Equipped	
Shock absorbing & collapsible steering column		Equipped	
Front Underrun Protection (FUP)		Equipped	

AXLE, SUSPENSION & LOAD LIMITS

FRONT	Front Axle Model & Type	MF 781R Reverse Elliot I-beam	
	Suspension	Taper Leaf Spring, shock absorbers & Stabiliser bar	
	Axle Limit (incl suspension)	7,500 kg	
	Tyre limit	6,900 kg	
REAR	Rear Axle Model & Type	THD 17 Tandem drive axle	
	Inter axle differential lock	Equipped	
	Differential Cross Lock	Front Rear & Rear Rear	
	Model	FS 2848 LEAF	FS 2848 AIR
	Suspension	Hino 6 Rod with Taper leaf springs	Hendrickson HAS with ECAS & Road Friendly Suspension Certified
	Axle Limit (incl suspension)	21,800 kg	21,000 kg
	Tyre Limit	21,800 kg	

CHASSIS FRAME

Type	Ladder-shaped channel section side rails	
Depth, Flange, Thickness	302 x 80 x 9.0 mm	
Chassis width (at rear)	840 mm	
Tensile strength	620 N/mm²	
Front Underrun Protection (FUP)	Equipped	
Front tow hook	Equipped	

WHEELS & TYRES

Wheel type	10-Stud disc wheel (ISO type) PCD 335 mm	
Rim type & size	Polished Alcoa 22.5" x 8.25"	
Tyre size	Front	295/80R22.5
	Rear	11R22.5
Number of wheels and tyres	Seven (11) including spare	
Spare tyre carrier	Equipped	

FUEL TANK & SUPPLY

Diesel tank type & capacity	Aluminium 390 Lts
Diesel tank lockable fuel cap	Equipped
Diesel fuel filtration	Primary, secondary & sedimenter
AdBlue® Tank Capacity	28 Lts

ELECTRICAL

Type	24 volt negative earth system
Batteries	12 volt x 150 AH 145G51 x 2
Alternator capacity	90 amp
Starter type	24v – 6.0kW
Main Beam Headlamps (LED)	Equipped
Daytime Running Lamps (LED)	Equipped
Cornering Lamps	Equipped
Electric operated air horn	Equipped
Reverse buzzer & camera	Equipped
12 Volt 120W power socket	Equipped
USB 2.1A charging port	Equipped

STEERING

Type	Telescopic and Tilt adjustable steering column, recirculating ball integral power steering	
Steering Angle	Inside 49°	Outside 34°

GENUINE ACCESSORY OPTIONS

Bullbar	Rubber floor mats
Chrome wheel covers	Seat covers (Wool, Canvas, Carbon)
Cameras (up to additional 3 extra)	Stone guard
DVR	Sunvisor
Dash mat	Truck spec GPS nav with live traffic
Foot well Liners	Weathershields
Lane Change kit	

Please check with your dealer for availability, price & fitment

CAB EXTERIOR

Type	Forward control, all steel, welded construction, Fully floating air suspended with electro hydraulic power tilt	
ECE R29 Cab Strength	Certified	
Windscreen wipers washers	Triple wet wiper arms	
Grille Colour	Chrome	
Outside rearview mirrors	2 Flat type main, heated & electric control	
	2 convex spotter type, mounted below the main	
	LHS kerb view & front kerb view mirrors	
Windscreen Glass	Heat absorbing laminated glass	

CAB INTERIOR

Seating Capacity	Two (2)	
Driver's seat	ISRI 6860/870 NTS2 with integrated safety belt	
Assistant's Seat	Fixed High-back, reclining	
Seat Covering	Fabric cover	
Seat belts	Driver's seat	3-point Lap/Sash type with ELR
	Assistant's seat	
SRS airbag and pre-tensioner	Driver side	
Sun visor & overhead consoles	Driver & side passenger	
Sleeper berth	ADR 42 Capable	
Multimedia unit	6.5" LCD, HD touch screen display with DAB+AM/ FM radio, AUX input, Bluetooth4.1, Android 6.0 CANBUS connected & Wi-Fi enabled	
Automatic climate control	Equipped	
Central & remote door locking	Equipped with Immobiliser	
Power windows	Equipped	
Drivers footrest	Equipped	
Driver's seat back pocket	Equipped	
Centre document tray	Equipped	
Cup holders	Within centre tray & door pockets	
Tool kit & Jack	Equipped	
LED courtesy & reading lights	Equipped	

INSTRUMENTATION & CONTROLS

Multi Information Display (MID)	Meters & Gauges
Safety feature settings	Speedometer
General information settings	Tachometer
Eco driving	Air Pressure gauges x 2
DPR filter gauge	Dash mounted switches
Cruise control settings	Climate controls
LCD Display	LDWS off
Date & Time	PCS off
Battery warning	VSC off
Drivers seatbelt warning	Headlight leveller
Coolant	Hazard lights
Fuel & AdBlue® gauge	DPR manual regeneration
ODO, trip & hour meters	ECAS height control
Steering wheel & Column controls	Heated mirrors
MID setting	Idle up
Cruise control settings	Powered mirror control
Hands free phone	Inter axle & Differential Cross Locks
Lights & Indicator	Brake Sync
Engine brake & wiper washer	

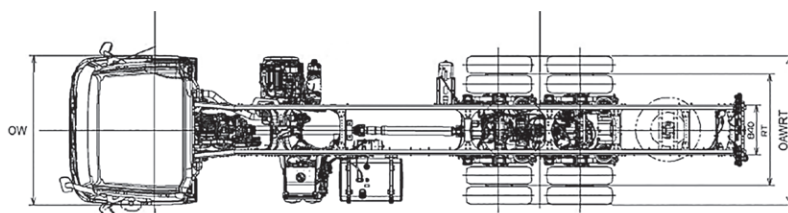
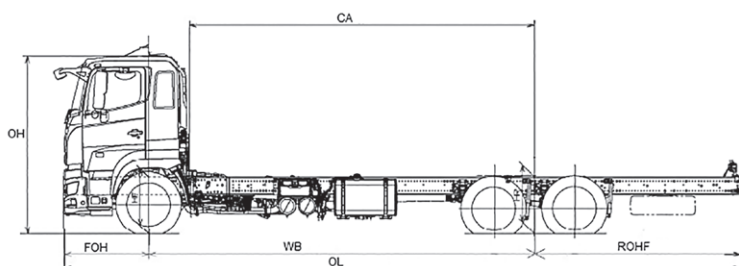
FS 2848

700 Series



DIMENSIONS – MM/WEIGHTS – KG

Model Description		FS 2848 AMT LEAF 4275	FS 2848 AMT AIR 4288	FS 2848 AMT AIR 4588	FS 2848 AMT AIR 6388
Product Code		FS1ELKA-FSAPEAC	FS1ELKH-FSAPEAC	FS1EMKH-FSAPEAC	FS1EWKW-FSAPEAC
Max Nom Body length ((WBx0.6)+CA-80)		6,090	6,107	6,587	9,335
Wheelbase (WB)		4,275	4,288	4,588	6,388
Overall length (OL)		7,635	7,635	7,935	11,200
Cab Width (CW)		2,490			
Over All Width Rear Tyres (OAWRT)		2,460			
Overall height (OH)		3,015			
Cab to rear Axle centre (CA)		3,605	3,615	3,915	5,715
Front Overhang (FOH)		1,400			
Rear Overhang (ROH)		1,960	1,947	1,947	3,412
Front Chassis Height (FCH)		1,005			
Rear Chassis Height (RCH)		1,065	1,055		
Road Clearance		245	240		
Front Track (FT)		2,050			
Rear Track (RT)		1,855			
Turning Circle	Kerb to Kerb	15,800		16,800	22,400
	Wall to Wall	17,600		18,600	24,200
Indicative chassis mass—kg (STD tools, 10 litres of fuel, spare tyre & subject to a +/- 3% tolerance)					
Total		8,304	8,080	8,140	8,494
Front		4,903	4,872	4,911	4,837
Rear		3,401	3,208	3,229	3,657
Standard Ratings	GVM	28,300	27,900		
	GCM	63,000			



Drawings are for reference only to the table. For specific layouts please refer to the Body Mounting Manual drawings.

WARRANTY

New vehicle warranty period

Heavy Duty Model	Standard warranty (whichever comes first)	Engine component warranty (whichever comes first)	Cab corrosion perforation
700 FS 2848	3 years or 500,000km	60 months or 750,000km	36 months

Battery warranty – 12 months from date of delivery

Genuine parts or accessories warranty – 3 years unlimited kilometres when fitted by an authorised Hino dealer *

* For conditions, refer to the Hino Parts & Service warranty brochure



DISCLAIMER

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ATF THE MAJOR MOTORS UNIT TRUST Trading As MAJOR MOTORS
ABN 65 730 475 316 | DL1141 | MRB1908 | ARC AU03039

ISUZU
TRUCKS

HEAD OFFICE
789 Abernethy Rd
Forrestfield WA 6058
Phone: (08) 9365 6333

Branch: BIBRA LAKE
2 Selkis Road
Bibra Lake WA 6163
Phone: (08) 9331 9331

Postal: PO Box 163 Belmont WA 6984 Web: www.majormotors.com.au

Branch: PORT HEDLAND
1 Quininup Way
Port Hedland WA 6721
Phone: (08) 9172 6900

Branch: MALAGA
65 Crocker Drive
Malaga WA 6090
Phone: (08) 9241 7999



Customer :

Shire of Dowerin
PO Box 111,
DOWERIN WA 6461

DOB.: Driver Licence:
Email: jpietrocola@dowerin.wa.gov.au

A.B.N. 35 939 977 194
A.C.N.
Mobile:
Fax:
Business: 08 9631 1202
Private:

Quote Details :

Page 1 / 2
Quote / Deal ID: 60596
Customer Order:
Quotation Date: 28/03/2024
Quote Expiry Date: 27/04/2024
Salesperson: Lauren Nicholls

Vehicle :

Rego No: TBA
VIN No: TBA
Vehicle ID: TBA
Odometer:

Rego Expiry:
EngineNo:
Compliance Date: /
Build Date:

Driver :

D.O.B.:
Driver Lic:
Full Name:
Phone:

NEW VEHICLE:	Make	ISUZU TRUCK	
	Model	FXZJJ-L23 FXZ 240-350 AUTO MLWB	\$178,860.00

OPTIONS:

GENUINE ACCESSORIES:

NON GENUINE ACC.:	PTO switch for tipper operation	\$650.00
	Ski bar to cab roof with two LED amber beacons	\$2,520.00
	4.5kg fire extinguisher to chassis	\$550.00
	2.5kg fire extinguisher in cab	\$220.00
	Canvas seat covers	\$440.00
	Window tint	\$610.00
	Rubber floor mats	\$250.00
	Reverse camera	Standard Item

AFTERMARKET ACC.:

	11 cubic metre two way tipper with:	\$64,800.00
	- 1m high sides and two way air operated tailgate	
	- 5mm Hardox construction	
	- 26t front mount hoist	
	- Access step to both sides with hand rails	
	- Shovel rack to headboard	
	- LED tail lights with mesh protection	
	PH300 air cushion pintle hook tow hitch with 7 pin plug and ABS plug	Inclusive Item
	Hand and foot air trailer brakes	\$2,500.00
	Fit tyre to spare rim	\$1,300.00

DEALER DELIVERY:	CARRIED OUT PRE-DELIVERY INSPECTION	\$0.00
------------------	-------------------------------------	--------

Vehicle Sub-Total excluding G.S.T.	\$252,700.00
G.S.T. Payable	\$25,270.00
Vehicle Sub Total Inclusive of G.S.T.	\$277,970.00

GST EXCLUSIVE ITEMS:

OTHER INSURANCE:

VEHICLE TOTAL INCLUSIVE OF GST	\$277,970.00
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LESS TRADE(S):

LESS DEPOSIT:

BALANCE PAYABLE ON DELIVERY	\$277,970.00
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Special Conditions:

OPTIONS (ex GST)
Upright lockable toolbox between cab and body, 1000x500x500mm \$1350+
Manual Crank N Go tarp to headboard \$4500+
Load weighing system with in cab display \$6200+
Spare tyre carrier to headboard with electric winch \$2350+



ATF THE MAJOR MOTORS UNIT TRUST Trading As MAJOR MOTORS
ABN 65 730 475 316 | DL1141 | MRB1908 | ARC AU03039

ISUZU
TRUCKS

HEAD OFFICE
789 Abernethy Rd
Forrestfield WA 6058
Phone: (08) 9365 6333

Branch: BIBRA LAKE
2 Selkis Road
Bibra Lake WA 6163
Phone: (08) 9331 9331

Branch: PORT HEDLAND
1 Quininup Way
Port Hedland WA 6721
Phone: (08) 9172 6900

Branch: MALAGA
65 Crocker Drive
Malaga WA 6090
Phone: (08) 9241 7999



Postal: PO Box 163 Belmont WA 6984 Web: www.majormotors.com.au

Customer :

Shire of Dowerin
PO Box 111,
DOWERIN WA 6461

DOB.: Driver Licence:
Email: jpietrocola@dowerin.wa.gov.au

A.B.N. 35 939 977 194

A.C.N.

Mobile:

Fax:

Business: 08 9631 1202

Private:

Quote Details :

Page 2 / 2
Quote / Deal ID: 60596
Customer Order:
Quotation Date: 28/03/2024
Quote Expiry Date: 27/04/2024
Salesperson: Lauren Nicholls

Vehicle :

Rego No: TBA
VIN No: TBA
Vehicle ID: TBA
Odometer:

Rego Expiry:
EngineNo:
Compliance Date: /
Build Date:

Driver :

D.O.B.:
Driver Lic:
Full Name:
Phone:

CONDITIONS OF QUOTATION:

The Dealer reserves the right to amend pricing should the Manufacturer's or third Parties prices or Government charges change prior to delivery.
Trade-in prices are based on vehicle condition at time of Quotation and the quote is valid until 27/04/2024 only. Trade-in values are inclusive of GST.

Salesperson: Lauren Nicholls

Sales Manager

FX2 240-350 6X4

FX4 240-350 6X4



FX4 MODEL PICTURED

WEIGHT RATINGS*

GVM	24,000 kg
GCM	45,000 kg

ENGINE

POWER	257 kW @ 2,000 rpm
TORQUE	1,422 Nm @ 1,400 rpm

TRANSMISSION

9 speed manual transmission (MT)
6 speed automatic transmission (AT)

* Refer to back page for detailed weight rating information

ISUZU CARE	
WARRANTY	6 Year Standard Warranty
	600,000 km / 10,000 Engine Hours
ROADSIDE ASSIST	6 Year Roadside Support
	24/7 Unlimited km
HARSH APPLICATION WARRANTY (CONCRETE AGITATOR / GARBAGE COMPACTOR)	3 Year Standard Warranty
	300,000 km / no hours stipulation
	3 Year Roadside Support
	24/7 Unlimited km

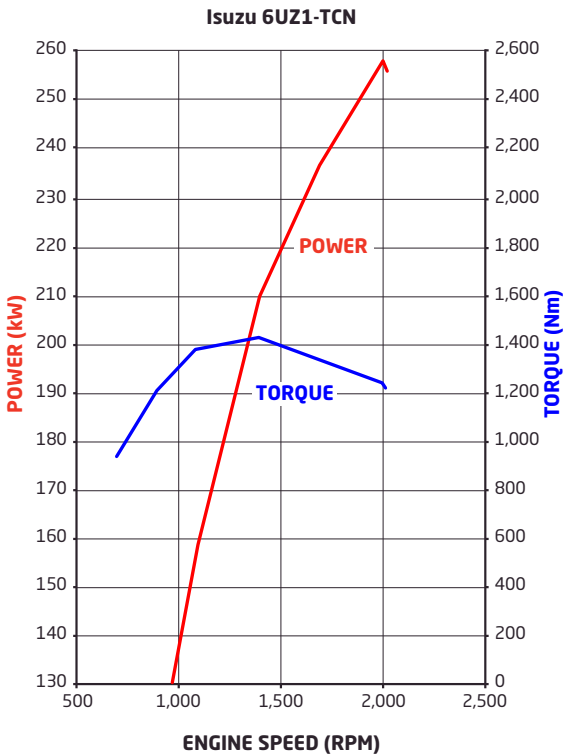


Subject to the conditions outlined in the IAL New Vehicle Warranty. For further information please visit isuzu.com.au or contact your local dealer.

INTELLIGENT SAFETY	
STANDARD FEATURES	Anti-Lock Braking System (ABS)
	Driver airbag
	Driver seatbelt pretensioner
	Low light capable reversing camera
	ECE-R29 compliant cab

SERVICE AGREEMENTS			
Optional Service Packages	ESSENTIALS	ESSENTIALS PLUS	TOTAL
SCHEDULED SERVICINGS	●	●	●
CONSUMABLES		●	●
ENGINE, TRANSMISSION & DRIVELINE			●
EXTRAS	After-hours Servicing, Glass, Fuel Card, Pickup - Dropoff		

ENGINE	
DESCRIPTION	Isuzu 6UZ1-TCN
TYPE	6 cylinder 24 valve SOHC
DISPLACEMENT	9,839 cc
COMPRESSION RATIO	17.5:1
BORE X STROKE	120 mm x 145 mm
POWER	257 kW (350PS) @ 2,000 rpm (DIN NET)
TORQUE	1,422 Nm @ 1,400 rpm (DIN NET)
INDUCTION	Electronically controlled variable nozzle turbocharger with air-to-air intercooler
FUEL INJECTION	Direct injection high pressure common rail
EMISSION CONTROL	Cooled EGR with exhaust Diesel Oxidation Catalyst (DOC). ADR 80/03 (Euro V) compliant.



TRANSMISSION		
MT	CLUTCH	Type: Single plate with air assisted hydraulic control
		Clutch plate diameter: 432 mm
		Clutch lining area: 1,923 cm²
	GEARBOX	Description: ZF 9S 1310 T0
		Type: 9 speed with synchromesh on gears 1-8
		Ratios:
AT		Crawler 1st 2nd 3rd 4th 5th 6th 7th 8th Rev 9.48 6.58 4.68 3.48 2.62 1.89 1.35 1.00 0.75 8.97
		Power Take Off facility: Provision at rear of transmission case
		Other features: Repeat 'H' shift pattern
		Description: Allison 4430
		Type: 6 speed automatic
		Ratios:
		1st 2nd 3rd 4th 5th 6th Rev 4.70 2.21 1.53 1.00 0.76 0.67 5.55
		Power Take Off facility: LHS and top openings on transmission bellhousing. Engine driven PTO drive gear.
		Other features: 5th generation electronic controls with adaptive shift. Long life TranSynd synthetic fluid.

AXLES	
FRONT	Description: Meritor FG941
	Type: Reverse Elliot I-beam
	Capacity: 6,600 kg
REAR	Description: Meritor MT-14X
	Type: Tandem drive
	Other features: Inter-axle lock and cross locks fitted to both axles
	Capacity: 18,100 kg
	Ratio: 4.875:1 (except FXZ/FXY AUTO MLWB models), 5.286:1 (FXZ/FXY AUTO MLWB models)

SUSPENSION		
FRONT		Type: Single stage alloy steel taper-leaf springs
		Other features: Double acting hydraulic shock absorbers. Stabiliser bar.
REAR	FXZ	Type: Taper leaf spring with Isuzu 6 rod and trunnion location system
	FXY	Description: Hendrickson HAS461
		Type: Airbag
		Capacity: 20,865 kg at ground

BRAKES	
DESCRIPTION	Meritor 'Q-Plus'
TYPE	Full air 'S-Cam' front and rear drum brakes
DIAMETER X WIDTH FRONT	419 x 127 mm
DIAMETER X WIDTH REAR	419 x 178 mm
PARK BRAKE	Spring park brake acting on all rear wheels
AUXILIARY BRAKE	Air controlled exhaust brake

STEERING	
TYPE	Power assisted recirculating ball
GEAR RATIO	18.5:1
TURNS LOCK TO LOCK	3.7
WHEEL LOCK ANGLE	40° (inside wheel) / 32° (outside wheel)

WHEELS & TYRES		
FRONT	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels
	TYRES	295/80R22.5 152/148M Michelin X Multi Z 2 Tubeless
	STEER AXLE TYRE RATING	7,100 kg
REAR	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels
	TYRES	11R22.5 148/145L Michelin X Multi D Tubeless
	TANDEM AXLE TYRE RATING	23,200 kg
SPARE		Rim supplied. Winch type carrier (except FXZ MLWB).

CHASSIS FRAME	
TYPE	Cold rivetted ladder frame.
MATERIAL	HT540A steel members
DIMENSIONS	Side rail (mm): 285 x 85 x 7.0 Rear frame width (mm): 850

FUEL TANK	
TYPE	Frame mounted aluminium fuel tank
CAPACITY	400 L
FUEL CAP	Lockable

ELECTRICAL SYSTEM	
TYPE	24 volt
ALTERNATOR	90 amp
STARTER MOTOR	5.0 kW
BATTERY	2 x 115E41L (651 CCA) batteries connected in series
CAN BUS PROVISION	Underdash CAN system access plug for connection to a Fleet Management System (FMS) (not supplied)

CABIN SPECIFICATIONS & APPOINTMENTS

CABIN GENERAL FEATURES	
ENGINE ACCESS	Electro-hydraulic cab tilt
CAB MOUNTING	Rear coil spring suspension with hydraulic shock absorbers
STEPS	Heavy duty anti-slip steps
DOORS	90° opening internally reinforced front doors
MIRRORS	Heated and powered exterior main mirrors with flat glass and additional independently adjustable convex "spot" mirrors
WIPERS	Two speed windscreen wipers with intermittent wipe mode
EXTERIOR LIGHTING	LED main beam and halogen high beam headlamps. Chrome surround.
	Roof mounted clearance lamps
	Front foglamps
AUDIBLE WARNING	Reverse alarm
GRILLE	Chrome
FRONT BUMPER	Body coloured air dam type
SECURITY	Central locking with remote keyless entry and immobiliser

CABIN INTERIOR	
SEATING	Isri 6860/875 NTS air suspension driver's seat
	Front passenger adjustable bucket seat and front centre seat with folding seat back
SEATBELTS	3-point lap sash seatbelts in all outboard seating positions. Driver seatbelt integrated with driver seat. Centre seat lap belts.
STEERING COLUMN	Tilt/telescopic adjustable
ENTRY ASSIST GRIPS	Door and roof pillar mounted
DOOR WINDOWS	Electric control
STORAGE	Overhead compartments
	Twin cup holders
	Centre console box and storage tray
	Passenger glovebox
	Door pockets
POWER OUTLET	24V cigarette lighter
	2.4A high current fast charge USB socket
AIRCONDITIONING	Auto control
INTERIOR LIGHTING	Fluorescent lamp
REAR COMPARTMENT	ADR 42 compliant sleeper with mattress

AUDIO VISUAL UNIT	
SCREEN TYPE	10.1" 1080p High Definition with capacitive touch
NAVIGATION	Truck tailored GPS based system + live feed traffic alerts and live feed route optimisation via smartphone link (live feed component is by subscription with first 3 years provided at no extra cost)
OPERATING SYSTEM	Android Automotive
RADIO	AM/FM/DAB+
INTERNAL STORAGE CAPACITY	32GB
SMARTPHONE INTEGRATION	USB 3.0 socket
	Wi-Fi connectivity
	Android Auto / Apple CarPlay compatible
OTHER CAPABILITY	Phone storage pocket with wireless charging facility
	Provision for external camera inputs, tyre pressure monitoring, low and high position reverse sensor inputs

DRIVER CONTROLS	
ENGINE	Idle speed control
	Cruise control
TRANSMISSION (AT ONLY)	Push button gear selection control
GENERAL CONTROLS	Headlamp on/off and levelling, windscreen wipers (2 speed and intermittent modes), washers, exhaust brake, turn signals
	Inter-axle lock and cross lock engage switches

INSTRUMENTATION	
MULTI INFORMATION DISPLAY	Vehicle systems status
	Low fuel level alert
	Fuel consumption information
	Service interval alerts
	Hourmeter
GENERAL INSTRUMENTATION	Adjustable vehicle speed warning
	Speedometer and tachometer
	Digital odometer with integrated dual tripmeters
	Transmission oil level, oil life, filter life, and condition monitor display (AT only)
	Engine coolant temperature, fuel level and air pressure gauges



FX2 240-350 6X4 FX4 240-350 6X4

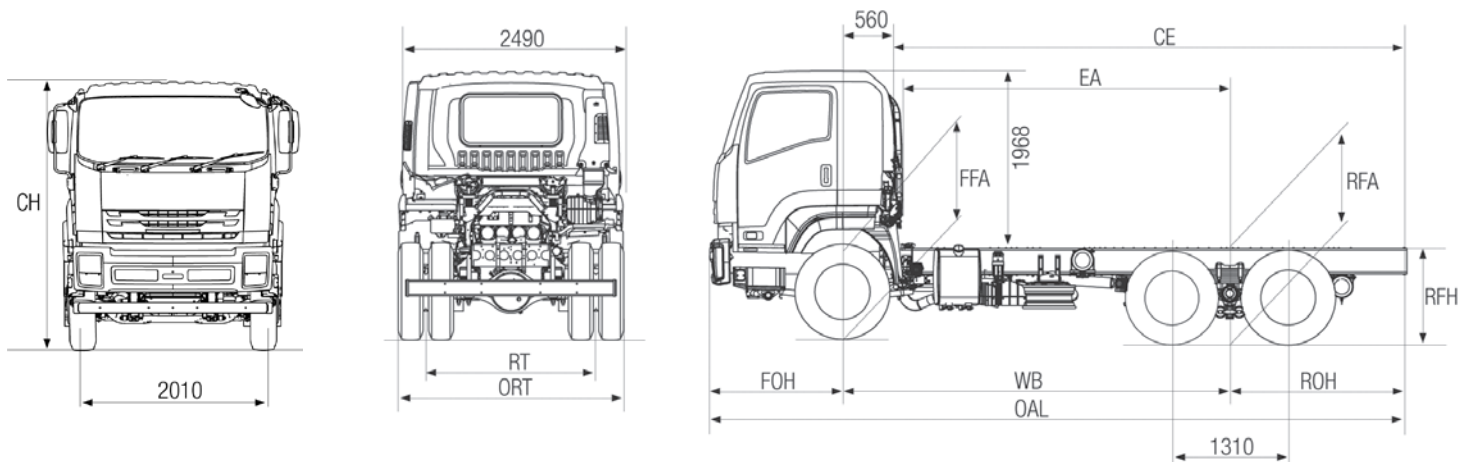
ISUZU
RELIABILITY IS EVERYTHING

WEIGHTS (kg)							
MODELS	RATINGS*		LOADING LIMIT* (at ground)		CAB CHASSIS WEIGHT #		
	GVM	GCM	FRONT	REAR	FRONT	REAR	TOTAL
FXZ 240-350 AUTO MLWB	24,000	45,000	6,600	18,100	4,120	3,340	7,460
FXZ 240-350 LWB	24,000	45,000	6,600	18,100	3,945	3,540	7,485
FXZ 240-350 AUTO LWB	24,000	45,000	6,600	18,100	4,130	3,575	7,705
FX4 240-350 AUTO MLWB	24,000	45,000	6,600	18,100	4,075	3,130	7,205
FX4 240-350 LWB	24,000	45,000	6,600	18,100	3,925	3,320	7,245
FX4 240-350 AUTO LWB	24,000	45,000	6,600	18,100	4,105	3,350	7,455

* Vehicle ratings and front/rear weight limits are subject to government regulatory requirements and weight distribution analysis. Consult your Isuzu dealer to select the correct vehicle for your specific application.

Cab chassis only as supplied and including 10 litres of fuel.

DIMENSIONS (mm)													(m)
MODELS	WB	OAL	FOH	ROH	EA	CE	RT	ORT	CH	FFA (unladen)	RFA (unladen)	RFH (unladen)	TURNING CIRCLE kerb to kerb
FXZ 240-350 AUTO MLWB	4,540	8,000	1,480	1,980	3,860	5,939	1,840	2,450	2,990	920	1,095	1,140	17.1
FXZ 240-350 LWB / AUTO LWB	6,010	10,990	1,480	3,500	5,330	8,950	1,840	2,445	2,990	920	1,100	1,140	22.7
FX4 240-350 AUTO MLWB	4,540	8,000	1,480	1,980	3,860	5,939	1,840	2,450	2,990	920	1,050	1,070	17.1
FX4 240-350 LWB / AUTO LWB	6,010	10,990	1,480	3,500	5,330	8,950	1,840	2,445	2,990	920	1,040	1,065	22.7



PERFORMANCE (calculated - typical paved road)				
		GEARED SPEED [^] (top gear at peak power engine rpm)	LOW SPEED GRADEABILITY (lowest forward gear assuming no wheel slip)	ENGINE SPEED (top gear at 100 km/h)
FXZ/FX4 240-350 LWB	At 24,000 kg GVM	106 km/h @ 2,000 rpm	48%	1,890 rpm
FXZ/FX4 240-350 AUTO MLWB	At 24,000 kg GVM	109 km/h @ 2,000 rpm	60%	1,830 rpm
FXZ/FX4 240-350 AUTO LWB	At 24,000 kg GVM	119 km/h @ 2,000 rpm	55%	1,690 rpm

[^] Maximum speed achievable depends on vehicle frontal area as well as other factors. Consult your Isuzu dealer for more detailed information. Vehicle is speed limited to 100km/h.

ORDER CODES	
MODELS	CODES
FXZ 240-350 AUTO MLWB	FH-FXZJJ-L22
FXZ 240-350 LWB	FH-FXZJJ-D22
FXZ 240-350 AUTO LWB	FH-FXZJJ-N22
FX4 240-350 AUTO MLWB	FH-FXYJJ-L22
FX4 240-350 LWB	FH-FXYJJ-D22
FX4 240-350 AUTO LWB	FH-FXYJJ-N22

Subject to the conditions outlined in the IAL New Vehicle Warranty, Isuzu FX series models carry a standard factory warranty which covers the owner for the first 72 months or 600,000 kilometres or 10,000 Engine Hours (whichever comes first). All Isuzu warranties are subject to mandatory prescribed terms under Australian Consumer Law including consumer guarantees. Harsh Conditions variations to standard factory warranty may apply. For more details visit the Isuzu website at www.isuzu.com.au which explains Isuzu warranties in more detail, or alternatively contact your local Isuzu Truck dealer. All warranties commence from date of initial delivery.

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QUOTATION PREPARED FOR THE:



DAIMLER TRUCKS PERTH



PATRICK KENDREW
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Mailing Address PO Box 1914 Midland DC WA 6936

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Ref: 30829

11th April 2024

Ben Forbes
Asset & Works Coordinator
Shire of Dowerin
13 Cottrell Street
DOWERIN WA 6461

RE: BUDGET QUOTE - SUPPLY OF ONE (1) 6x4 TWO-WAY TIPPING TRUCK (63,000kg GCM)

Dear Ben,

Thank you for the opportunity to supply our quote along with details to supply One (1) only
SHOGUN FV74 6X4 MWB AMT FV74VK9VFAA cab/chassis fitted with Two Way Tipper Body set up and ancillary equipment to the **SHIRE OF DOWERIN** requirements.

For any further details that may be required, please refer to the enclosed specification sheet, or contact the undersigned who will gladly assist.

Yours faithfully
DAIMLER TRUCKS PERTH



PATRICK KENDREW
GOVERNMENT/SHIRE SALES CONSULTANT



MIKE ALLEN
NEW FUSO TRUCK SALES MANAGER



Mailing Address PO Box 1914 Midland DC WA 6936

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Fuso Shogun 6x4 FV74 510Hp Air Susp. MWB 12 Sp. AMT FV74VK9VFAA

ENGINE:	FUSO OM471-T9 Diesel (ADR 80/03 - Euro VI) 12.8 litre, 6cyl In-line OHV. Asymmetric turbocharged / air to air intercooler. Power / 375kw (510hp) @ 1600rpm. Torque: 2500Nm @ 1100rpm	
CLUTCH:	FUSO K7/2X400 twin, dry plate automated (no clutch pedal).	
TRANSMISSION:	FUSO Automated Manual G330-12, 12 Speed automated transmission with auto and manual modes and rear mount PTO.	
AXLE FRONT:	FUSO F900T Reverse Elliot 'I' beam. Load rating 7,100 kg.	
SUSPENSION FRONT:	Long taper leaf with double acting shock absorbers.	
STEERING:	Integral Power Assisted Ball and Nut, tilt/telescopic adjustable.	
AXLE REAR:	FUSO R12TT/R12T Full Floating Hypoid. Tandem drive with inter axle difflock. Capacity 21,600kg. Ratio 4.222:1	
SUSPENSION REAR:	(4) Bag Air Suspension Trailing Arm with Air Dump Control and Double Acting Shock Absorbers.	
BRAKES:	Full Air dual circuit, Taper Roller, ABS with ASR. Rear wheel spring actuated park brake. Constant throttle brake, 3 levels of retardation. Trailer hand control valve and air lines.	
CAB:	All steel forward control 2 seat electric / hydraulic tilt cab. Air suspended front and rear. Heated & Electric external mirrors both sides. Rear Quarter glass windows, LHS Transom door window. Fluoro interior reading lamp, Cruise Control, Keyless locking, power windows, Air Conditioner, Heater, Demister, cup holders. Driver's Airbag & Seat Belt pre-tensioners. Driver's ISRI Air Suspension seat. Dash and centre console storage areas. Overhead storage pocket with lid, RH door storage pocket. Colour info display for fuel consumption, service indicators, hour meter & Oil level check. ADR42/04 Approved sleeping berth.	
CHASSIS:	Parallel channel. Tensile strength 540mpa. Wheelbase 4300mm.	
ELECTRICAL:	24V neg. earth. Alternator output: 24V-100amp. Halogen High Beam headlamps, Beam LED 24V Acc power outlet. 2x12v 150Ah / 20hr batteries. Reverse buzzer.	Low
FUEL:	Rectangle alloy tank 400 litres with locking cap. 60 litres Ad-blue tank with locking cap. Filter with water separator and dash indicator.	
WHEELS AND TYRES:	Single piece Alloy disc 10 stud rims 335mm PCD. (11 off) 22.5x8.25DC with 295/80R22.5 front tyres / 11R22.5 rear tyres. 295/80R22.5 spare tyre loose.	
ACTIVE SAFETY:	ABS plus EBD (Electronic brake force distribution) Active Attention Assist Active Emergency Braking (AEBS/ABA4) Adaptive Cruise (with Stop & Go) Anti Slip Regulator (ASR) Electronic Stability Program (ESP) Lane Departure Warning System (LDWS)	
MULTIMEDIA:	In dash 7" colour LCD with touch screen. Factory satellite navigation with heavy vehicle weight, length & height. Hazardous material selectable restrictions with 3 years free map updates. BlueTooth audio & voice calls (with steering wheel controls). Digital Radio DAB+, AM/FM radio for areas not covered by DAB+. 3.5mm & USB AUX inputs. Reverse camera standard. (Can connect up to 5 cameras).	
GVM / GCM:	26,000kg / 63,000kg	
SERVICE:	50,000 kms service intervals.	
WARRANTY:	Basic/Powertrain - 5 Years OR 500,000km Cab Perforations/Anti Corrosion – 5 years	

BODY DETAILS:	Body as described , built to your specifications & manufactured by <u>Park Body Builders</u>
	NOTE: Please refer to our nominated body builders quotation attached, for your information as to construction details.
LICENSING:	Daimler Trucks Perth would licence the vehicle on behalf of the Shire as requested. These licensing costs are <u>NOT INCLUDED</u> in our quotation and would be invoiced separately.
DELIVERY:	To be confirmed at the time of approval
WARRANTY:	Factory Standard five (5) year or 500,000km (whichever occurs first) warranty to the cab/chassis – Bumper to Bumper
TRAINING:	Full training and induction included.
FUEL ECONOMY	Fuso unable to supply due to many variables effecting fuel consumption.
SERVICING:	50,000km or 12 Month Service Intervals
PAYMENT:	Cash on delivery.
NOTE:	Prices are based on manufacturer's prices at the quotation closing date and are subject to CURRENT RULING PRICES or stock available at the quoted price.
24HR ROADSIDE ASSIST	National roadside assist covers Fuso clients for the life of their vehicle from delivery. (Conditions apply) Daimler Trucks Perth for more details
MAIN WORKSHOP	Daimler Trucks Perth Service Centre operates from 8am to Midnight Monday through Friday and Saturday morning where prior arrangements have been made.

Fuso Shogun 6x4 FV74 510Hp Air Susp. MWB 12 Sp. AMT FV74VK9VFAA

PRICE:	List Price	\$ 265,144.77
	Less Fuso Shire Allowance	-\$ 33,779.30
	2024 Plated Cab Chassis Only	<u>\$ 231,365.47</u>

Cab Chassis Standard Specifications

- GVM 26,000kg
- GCM 63,000kg
- 4300mm wheelbase
- 375kw/ 510hp / 2500nm
- 400 Litre capacity aluminium tank with lockable fuel cap
- 12 speed constant mesh Automatic Manual Transmission (AMT)
- Driver controlled inter-axle lock and cross locks on both axles (LSD is Optional)
- Rear wheel spring actuated park brake
- ABS plus EBD (Electronic Brake force Distribution)
- 295/80R22.5 (steer) and 11R22.5 (drive)
- Electro-hydraulic cab tilt
- Driver airbag
- Fully integrated auto control air-conditioning
- Electric windows and mirrors
- Radio multimedia unit with LCD touch screen and Bluetooth
- Cruise Control
- Central locking with remote keyless entry
- Active Safety Systems , ABA5 ,PD, AAA,PCA,LDWS,ESP,SBS,ASR plus LED headlamps , DRL & IHC
- Drivers air suspension seat
- Fuso toolkit for wheel changes
- Euro IV Standard
- Fuso Telematics now available with free 12-month subscription

11M3 Tipper Configuration Body & Accessories

- 4.5m 2.45m x 1.0m 6mm Hardox Rear and Side Tipping Body(Manufactured by Park Body Builders)
- PTO switch in cab with programming - Please note PTO off Transmission not Engine
- Spare tyre carrier electrical type winch to headboard incudes spare tyre and rim
- Lockable battery isolator
- Ski bar on truck cab fitted with two (2) Narva 85246A LED beacons
- 23L Water tank with soap dispenser
- 80 channel two-way radio
- Window tinting
- H/D Canvas seat covers and H/D rubber floor mats
- Weather shield fitted to driver's side window
- Pit pass and weigh bridge documents
- Delivery to Shire of Dowerin with handover

<u>Body & Accessories Total</u>	<u>\$ 92,035.92</u>
--	----------------------------

PRICE	<u>Sub Total</u>	<u>\$ 323,401.39</u>
	GST	32,340.14
	<u>TOTAL</u>	<u>\$ 355,741.53</u>

STAMP DUTY: EXCEMPT

LICENSING : AT COST

SHOGUN

FUSO

Shogun FV74 6X4 - MY21

12.8 L / AMT / AIR SUSP. / MWB



OUR SAFEST AND CLEANEST SHOGUN YET. THE MY21 SHOGUN IS EQUIPPED WITH ABA5, PD, LDWS, ESP, AAA, IHC, DRL AND A EURO VI STEP D ENGINE. ALL BACKED BY OUR CLASS LEADING SERVICE INTERVALS AND 5 YEAR WARRANTY.

GVM

26,000_{KG}

GCM

63,000_{KG}

Power/Torque

375_{KW} / 2500_{NM}

- Heavy rigid licence required
- Actual vehicle may differ from above image

FUSO

SHOGUN SPECIFICATIONS

MODEL

6x4 FV74 510Hp Air Susp. MWB 12 Sp. AMT FV74VK9VFAA-MY21

WHEEL BASE

4300mm

GVM

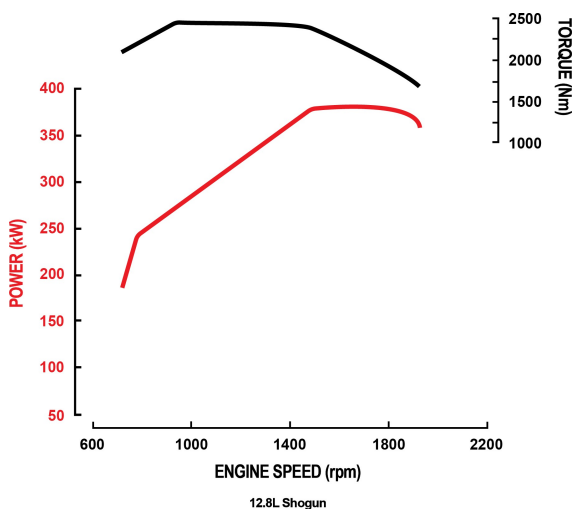
26,000kg

GCM

63,000kg

Engine

Engine Version	FUSO OM471-T9 Diesel
Configuration	6 Cyl. In-line DOHC, 4-Valve
Type	Asymmetric Turbocharger, Air to Air Intercooler
Displacement	12.8 litre 12809 cc
Bore	132 mm
Stroke	156 mm
Power (DIN)	375kW @ 1600 rpm
Torque (DIN)	2500 Nm @ 1100 rpm
Maximum Engine Speed	2100 rpm
Compression Ratio	18.3 : 1
Emission Control	Diesel Particulate Filter (DPF) plus SCR After-Treatment System
Emission Level	ADR 80/03 - Euro VI



Fuel

Injection System	Common Rail Direct Injection with Pressure Booster
Tank Type	Rectangular Aluminium Tank with Locking Cap
Fuel Capacity *	400 Litres
Filtration	Filter with Water Separator and Dash Indicator
AdBlue Exhaust Fluid Capacity	60 Litres, Tank fitted with locking AdBlue cap
Speed Limiter	Speed Limited 100km/h
Notes	*Max Fill to approx 95% of capacity

Cooling

Fan Drive	Electronically controlled (Viscous)
Radiator	Corrugated Fin with Expansion Tank

Electrical

Voltage	24V Negative Ground
Battery Capacity	2x12V, 150Ah/20hr
Battery Specification	2x145G51 (N150)
Headlamp Type	Automatic Type Low Beam: LED High Beam: Halogen
Fog Light	Halogen
Daytime Running Lamps	LED

Clutch

Clutch Model	FUSO K7/2X400
Type	Twin Dry Plate
Operation/Specification	Automated Manual (no clutch pedal)

Transmission

Version	FUSO Automated Manual G330-12
Type/Speeds	12 Speed Automated Manual with Auto, Economy and Heavy Modes
Features	Crawler Mode Rocking-Free Mode Skip Shift Function for Light Loads
Ratios	1st: 11.639 2nd: 9.020 3rd: 7.035 4th: 5.452 5th: 4.400 6th: 3.410 7th: 2.645 8th: 2.050 9th: 1.599 10th: 1.239 11th: 1.000 12th: 0.775 RHigh: 9.900 RLow: 12.774
PTO Opening	Rear of Transmission

Propeller Shaft

Type	Single Main Shaft GW5E2200 Inter-axle Shaft P12
------	--

Front Axle

Axle Version	FUSO F900T
Type	Reverse Elliot 'I' Beam
Capacity *	7100kg
Notes	*See MAX LOADING for vehicle capacity.

Front Suspension

Type	Long Taper Leaf with Double Acting Shock Absorbers
Size	1500x90mm Leaves

Rear Axle

Type	Full Floating Hypoid Type Tandem Drive with differential cross locks between front & rear tandem axles Optional-Limited Slip Differential LSD
Axle Version	FUSO R12TT/R12T
Capacity*	21600kg
Ratio	- Standard 4.222:1 - Optional 4.625:1

Rear Suspension

Type	Two Bag Air Suspension
Details	Trailing Arm with Double Acting Shock Absorber and ECAS with 2 Memory Positions
Road Friendly Certification Number	RF2011

Max Loading

Front	6500kg
Rear	21600kg
Total	26000kg

SHOGUN SPECIFICATIONS

MODEL

6x4 FV74 510Hp Air Susp. MWB 12 Sp. AMT FV74VK9VFAA-MY21

WHEEL BASE

4300mm

GVM

26,000kg

GCM

63,000kg

Options		Instruments	
Options	<p>Q43: - Limited Slip Differential</p> <p>Q41: - 4.625:1 Rear Axle Ratio</p> <p>Q32: - Limited Slip Differential - 4.625:1 Rear Axle Ratio - Spare Tyre</p> <p>Q34: - Limited Slip Differential - Tyre Pressure Monitoring System - 4.625:1 Rear Axle Ratio - Spare Tyre</p>	Gauges	Speedometer Tachometer Fuel Level Air Pressure AdBlue Level
		Colour Information Display	Odometer Tripmeter (x2) Hour Meter (x2) Outside Temperature AdBlue Level DPF Information Driving Range (Fuel and AdBlue) Current Vehicle Speed Cruise Control Lane Departure Warning Active Attention Assist Warning Alarm Clock Level Control Service Indicator & Reminder System Air Pressure Coolant Temperature Engine Oil Level & Running Time
Steering		Warning Lamps	ABS ASR ESP ESP Off Turn Signal Headlamps High Beam Hill Holder Auxiliary Brake Parking Brake Engine Over-speed Air Pressure Low Height Control Cab Tilt Lock DPF Regeneration DPF Status AdBlue Empty AdBlue Contamination Active Brake Assist
Type	Integral Ball and Nut	Warning Lamp/Buzzer	Air Pressure Cab Tilt Engine Over-speed AdBlue Empty AdBlue Contamination
Steering Column	Tilt/Telescopic Adjustable		
Brakes		Multi-Media Package	
Type	Full Air, Dual Circuit with FUSO Taper Rollers	Satellite Navigation	Maps with heavy vehicle weight, length, height & hazardous material selectable restrictions with 3 years of Map updates
Size Front	410x160mm	Colour Display	7 inch LCD with touch screen control
Size Rear	410x200mm	Phone Connectivity	Bluetooth® hands free
Features	Brake Priority System	Audio Visual Entertainment	Bluetooth® music streaming compatible Digital radio DAB+ (also AM/FM for areas not covered by DAB+) USB & 3.5mm/AUX port
Park Brake	Rear Wheel Spring Actuated	Reversing Camera Compatible	Display can accept up to 5 cameras#
Engine	Jacobs Brake 3 Levels of Retardation	Optional Accessories (available at additional cost)	Rear Mounted Parking Sensor Kit High or Low Tyre Pressure Monitoring System
Trailer	Hand Control Valve, Air Lines Coupling and Electrical Cable	Notes	# Cameras available through spare parts
Wheels & Tyres			
Wheel Type	10, Single Piece Alloy Disc		
Wheel Size	22.5x8.25		
Wheel Stud Pattern	10x335mm PCD		
Tyre Brand	Bridgestone		
Tyre Size Front	295/80R22.5 152/149		
Tyre Size Rear	11R22.5 148/145		
Tyre Size Spare	Optional - 295/80R22.5 152/149		
Chassis			
Type	Reinforced Parallel Channel		
Size	300x90x7.0 mm		
Width	840 mm		
Tensile Strength	540 MPa		

SHOGUN SPECIFICATIONS

MODEL

6x4 FV74 510Hp Air Susp. MWB 12 Sp. AMT FV74VK9VFAA-MY21

WHEEL BASE

4300mm

GVM

26,000kg

GCM

63,000kg

Standard Features

Cruise Control	Adaptive with Stop and Go
Hill Start System	Yes
Cab Cooling & Heating	Climate Control
Driving	Suspended Driver's Seat Premium Leather Steering Wheel Central Locking Electric Windows LH Transom Window Opening Rear Quarter Glass Cup Holder Fluorescent Cabin Lamp
Storage	Centre Storage Compartments (x3 Total, Lockable x1) Driver's Overhead Storage Door Storage Pockets Coat Hooks
Cab: External	Fog Lights Door Side Impact Beams Roof Mounting Points max. static load 70kg Front End-Outline Marker Lamps External PTO controls
Chassis	Integrated Front Underrun System (FUPS) Reverse Warning Buzzer Clear Top of Chassis Rail for ease of Body Fitment

Cab Features

Type	All Steel Forward Control Elec / Hyd Tilt Cab
Cab Structure	ECE-R29 Standard
Mounting	Air Suspended Front and Rear
Colour	Natural White
Windscreen Wipers	Automatic 2 Speed + Intermittent Cycle with Integrated Washer Nozzles
Rear Vision Mirrors	2 x External Flat Main Mirrors Plus Convex Spotters Motorised Main Mirrors, All Mirrors Heated
Seating Capacity	2
Seat Belts	2 x Lap Sash with ELR. Driver pre-tensioner
Seats (passenger)	Single Fixed
Sleeping	ADR42/04 Approved Sleeping Berth

Active Safety

Safety Systems	ABA5 - Active Brake Assist 5 PD - Pedestrian Detection AAA - Active Attention Assist PCA - Proximity Control Assist Cruise Control LDWS - Lane Departure Warning System ESP - Electronic Stability Program ABS - Anti-lock Braking System ASR - Anti Slip Regulator LED Headlamps DRL - Daytime Running Lamps IHC - Intelligent Headlight Control
Reverse Warning	Wide Dynamic Range Camera and Buzzer
Notes	Active Safety Systems primary function is to provide driver assistance to increase road safety in events of driver inattentiveness. These systems do not allow for lack of attention whilst driving and should not replace safe and alert driving.

Passive Safety

Airbags	SRS Airbag - Driver
Body Strength	ECE-R29 Cab Strength Compliant
Seat Belts - Driver & Driver Assistant	3 Point ELR Lap Sash, Driver Pre-Tensioner.

Service Intervals

Interval*	50,000km or 12 Months (whichever occurs first)
Notes	* based on normal operating conditions and may be reduced when operating under severe conditions.

Warranty

Basic/Powertrain	5 Years or 500,000kms (whichever occurs first)
Cab Perforation/Anti Corrosion	5 Years

Performance

Turning Circle (kerb to kerb - metres)	15.2
Electronically Speed Limited to:	100km/hr Conforms to ADR65/..
Gradeability at Rated GVM (theoretical)*	88.9%
Gradeability at Rated GCM (theoretical)*	28.2%
Notes	*This is theoretical performance only. Actual performance may vary under different conditions

Mass estimated*

Front*	4513kg
Rear*	3167kg
Total*	7680kg
Notes	* Mass (est.) includes oil and water but excludes spare wheel, tools & fuel. Weights provided are subject to 3.5% variation (+/-)

Dimensions mm

WFF (Width Front Fender) (mm)	2490
WRA (Width Rear Axle) (mm)	2485
WFT (Width Front Track) (mm)	2075
WRT (Width Rear Track) (mm)	1865
Width Frame (mm)	840
A - Length Overall (mm)	7640
B - Extreme Axle Spacing (mm)	4960
C - Front Overhang (mm)	1370
D - Wheelbase (mm)	4300
F - Rear Axle Spacing (mm)	1320
G - Front Axle to Rear of Cab (mm)	700
H - Rear of Cab to Rearmost Item Behind Cab (mm)	145
I - Rearmost Item Behind Cab to Rear Axle (mm)	3455
J - Frame, Rear Axle to End (mm)	1970
N - Height Overall (mm)	3300
O - Air Intake to Cab Roof (mm)	205
P - Height Cab to Ground (mm)	3095
Q - Height Cab to Frame (mm)	2090
R - Height Rear Frame to Ground (mm)	1027

Body Builder's Notes

Notes	Chassis reinforcement must be utilised for Tipper/Demountable type body configurations. To conform with ADR 13/00 (lighting requirements) the following must be adhered to at body installation. - If other than a flat type or tipper body is fitted, rear end out-line marker lamps must be installed. - If overall length exceeds 6.0 metres, side reflectors must be installed. - If overall length exceeds 7.5 metres, side marker lamps must be installed. To conform with ADR 42/04 (General Safety), rear wheel guards must be fitted to the vehicle.
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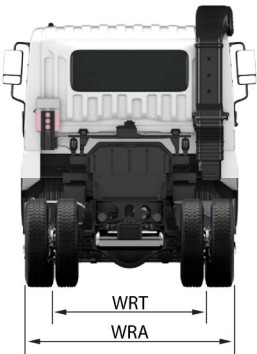
SHOGUN SPECIFICATIONS

MODEL
6x4 FV74 510Hp Air Susp. MWB 12 Sp. AMT FV74VK9VFAA-MY21

WHEEL BASE
4300mm

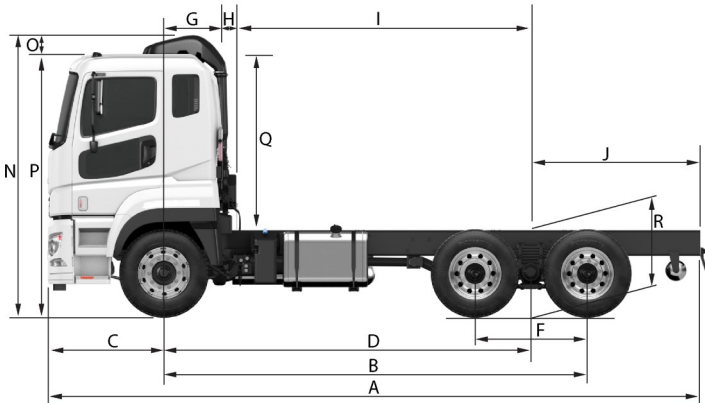
GVM
26,000kg

GCM
63,000kg



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Report on Plant Replacement Options For 2011 CAT 938H Loader

Introduction

The Shire of Dowerin currently operates a 2011 CAT 938H Loader with 8260 hours, experiencing increasing breakdowns leading to significant downtime and repair costs. With \$22,800 already spent on repairs and maintenance this year, the age of the loader poses a considerable risk to operational efficiency and incurs additional expenses due to lost time. Given its critical role in day-to-day road maintenance activities, a reliable replacement is essential to ensure uninterrupted operations.

Trade-in Value: Pickles Auctions have evaluated the current loader at \$55,000, which serves as a significant consideration in the replacement process, impacting the overall cost-effectiveness.

Replacement Options

1. Westrac Options:

- **New 938K Loader:**
 - **Price Range:** \$360,000 - \$370,000 + GST
 - **Description:** Latest model from Westrac, designed as a direct replacement for the 938H Loader.
- **New 950GC Loader:**
 - **Price Range:** \$350,000 - \$360,000 + GST
 - **Description:** Offers upgraded features suitable for heavy-duty applications compared to the 938K model.

2. John Deere Options:

- **New 2023 John Deere 624K-II:**
 - **Price:** \$325,000 + GST
 - **Description:** Equivalent to the 938K Loader, designed for efficiency and versatility.
- **New 2022 John Deere 644K:**
 - **Price:** \$320,000 + GST
 - **Description:** Equivalent to the 950GC Loader, providing enhanced performance and productivity.

3. Hitachi Options:

- **ZW180-7 Loader:**
 - **Price:** \$331,000 + GST
 - **Description:** Comparable to the 938H Loader, offering modern features and improved efficiency.
- **ZW220-7 Loader:**
 - **Price:** \$386,300 + GST

- **Description:** Equivalent to the 950GC Loader, suitable for demanding tasks with advanced capabilities.

Recommendation

Given the Shire of Dowerin's context and neighbouring shires' recent upgrades to CAT equipment, particularly the CAT 950GC, it's prudent to consider CAT options due to their renowned reliability, excellent resale value, and the availability of parts. The CAT 938K and 950GC both offer compelling features and are recognized as suitable choices for day-to-day activities in shire operations.

Conclusion

In conclusion, the replacement of the 2011 CAT 938H Loader for the Shire of Dowerin presents a crucial opportunity to enhance operational efficiency and mitigate downtime. After careful consideration of replacement options, particularly focusing on CAT models due to their proven reliability, excellent resale value, and positive reviews from neighboring shires, it is evident that both the CAT 938K and 950GC loaders offer compelling choices. The reputation of CAT as a reliable supplier, coupled with readily available parts and a strong resale value, underscores the suitability of CAT equipment for the Shire's day-to-day activities.



Cat[®] 938K

WHEEL LOADER

K SERIES – MAKING YOUR CHOICE EASY:

- **Enjoy All Day Comfort** – Have a seat in the updated K Series Small Wheel Loader and enjoy excellent all around visibility and low-effort joystick controls that move with you on a fully adjustable seat suspension. A large spacious operator environment combined with Caterpillar's exclusive hydraulic cylinder damping and smooth predictable controls make this the most comfortable seat on your job site.
- **Work Made Easy** – Move more with Caterpillar's patented quick loading Performance Series buckets and optimized Z-bar linkage that combines the digging efficiency of a traditional Z-bar with tool carrier capabilities. The parallel lift and high tilt forces throughout the working range allow you to safely and confidently handle loads with precise control.

Multi-function work has never been easier with dedicated pumps for each system and a flow sharing implement valve governed by an intelligent power management system. Simultaneously lift, steer and drive without compromise. The K Series Small Wheel Loader simply does what you ask it to do.

- **Efficiently Powerful** – Experience hybrid like fuel efficiency with an intelligent hydrostatic power train and industry leading fuel savings through a lower maximum engine speed of just 1,600 rpm in Standard Mode. Power when you need it with Caterpillar's exclusive Power-by-Range technology that increases power in Range 4 for improved speed on grade. For your toughest and most demanding applications a new Performance Mode will allow you to boost the power and hydraulic speed in all Ranges to get the job done even quicker. Meets U.S. EPA Tier 3/EU Stage IIIA/Brazil MAR-1 equivalent emission standards with a Cat[®] C7.1 engine that is designed to manage itself so you can concentrate on your work.
- **Customize Your Experience** – Meet your application requirements and individual preferences with Caterpillar's industry first Hystat[™] Operator Modes featuring four unique power train settings. Select classic Torque Converter for smooth rollout, conventional Hystat for aggressive engine braking, an Ice Mode that maximizes your control on slippery underfoot, or default mode which blends the best of Hystat and Torque Converter characteristics. Fine tune machine performance with adjustments at your fingertips through the soft touch buttons and optional secondary display. Quickly set hydraulic response along with linkage kick-out positions, maximum wheel torque, and peak ground speed to efficiently perform a multitude of tasks.

Specifications

Engine

Engine Model	Cat C7.1			
Power Mode	Standard Mode		Performance Mode	
Speed Range	Range 1-3*		Range 1-4	
Maximum Gross Power				
Maximum Engine Speed	1,600 rpm		1,800 rpm	
ISO 14396	129 kW	173 hp	140 kW	188 hp
ISO 14396 (metric)		175 hp		190 hp
Net Power	1,600 rpm		1,800 rpm	
SAE J1349	126 kW	169 hp	136 kW	182 hp
ISO 9249 (metric)		173 hp		188 hp

Engine (continued)

	Standard Mode		Performance Mode	
Maximum Gross Torque				
ISO 14396	896 N-m	660 lbf-ft	912 N-m	672 lbf-ft
Maximum Net Torque				
SAE J1349	860 N-m	634 lbf-ft	876 N-m	646 lbf-ft
ISO 9249 (1977)/EEC 80/1269	870 N-m	641 lbf-ft	886 N-m	653 lbf-ft
Displacement	7.01 L	427 in³	7.01 L	427 in³

- Engine meets U.S. EPA Tier 3/EU Stage IIIA/Brazil MAR-1 equivalent emission standards.
- Net power shown is the power available at the flywheel when the engine is equipped with alternator and air cleaner.

*Range 4 power is boosted to be the same as Performance Mode.



938K Wheel Loader

Buckets

Bucket Capacities – General Purpose	2.5-3.2 m³	3.2-4.2 yd³
Bucket Capacities – Light Material	3.1-5.0 m³	4.0-6.5 yd³

Steering

Steering Articulation Angle (each direction)	40°	
Maximum Flow – Steering Pump	130 L/min	34 gal/min
Maximum Working Pressure – Steering Pump	24 130 kPa	3,500 psi
Maximum Steering Torque:		
0 degrees (straight machine)	57 630 N·m	42,506 lbf·ft
40 degrees (full turn)	42 570 N·m	31,398 lbf·ft
Steering Cycle Times (full left to full right):		
At 1,800 rpm: 90 rpm steering wheel speed	2.2 seconds	
Number of Steering Wheel Turns – full left to full right or full right to full left	3.1 turns	

Loader Hydraulic System

Maximum Flow – Implement Pump	190 L/min	50 gal/min
3rd Function Maximum Flow*	190 L/min	50 gal/min
4th Function Maximum Flow*	150 L/min	40 gal/min
Maximum Working Pressure – Implement Pump	28 000 kPa	4,061 psi
Relief Pressure – Tilt Cylinder	30 000 kPa	4,351 psi
3rd Function Maximum Working Pressure	28 000 kPa	4,061 psi
4th Function Maximum Working Pressure	28 000 kPa	4,061 psi

Hydraulic Cycle Times:	Standard Mode	Performance Mode
	At 1,600 rpm	At 1,800 rpm
Raise (ground level to maximum lift)	6.2 seconds	5.5 seconds
Dump (at maximum lift height)	1.7 seconds	1.5 seconds
Float Down (maximum lift to ground level)	2.7 seconds	2.7 seconds
Total Cycle Time	10.6 seconds	9.7 seconds

*Adjustable from 20% to 100% of maximum flow through the secondary display, when equipped.

Service Refill Capacities

Fuel Tank	195 L	51.5 gal
Cooling System	32 L	8.5 gal
Engine Crankcase	19.5 L	5.2 gal
Transmission (gearbox)	11 L	2.9 gal
Axles:		
Front	35 L	9.2 gal
Rear	35 L	9.2 gal
Hydraulic System (including tank)	170 L	44.9 gal
Hydraulic Tank	90 L	23.8 gal

Transmission

Forward and Reverse:		
Range 1*	1-13 km/h	0.6-8 mph
Range 2	13 km/h	8 mph
Range 3	27 km/h	17 mph
Range 4	40 km/h	25 mph

*Creeper control allows maximum speed range adjustability from 1 km/h (0.6 mph) to 13 km/h (8 mph) in Range 1 through the secondary display, when equipped. Factory default is 7 km/h (4.4 mph).

Tires

Standard Size 20.5 R25, radial (L-3)

Other Choice Varies by Region:

20.5-25 16 PR (L-3)

- Other tire choices are available. Contact your Cat dealer for details.
- In certain applications, the loader's productive capabilities may exceed the tire's tonnes-km/h (ton-mph) capabilities.
- Caterpillar recommends that you consult a tire supplier to evaluate all conditions before selecting a tire model.

Cab

ROPS	SAE J1040 MAY94, ISO 3471-1994
FOPS	SAE J/ISO 3449 APR98, Level II, ISO 3449 1992 Level II

- Cab and Rollover Protective Structures (ROPS) are standard.
- A semi-cab option is available.

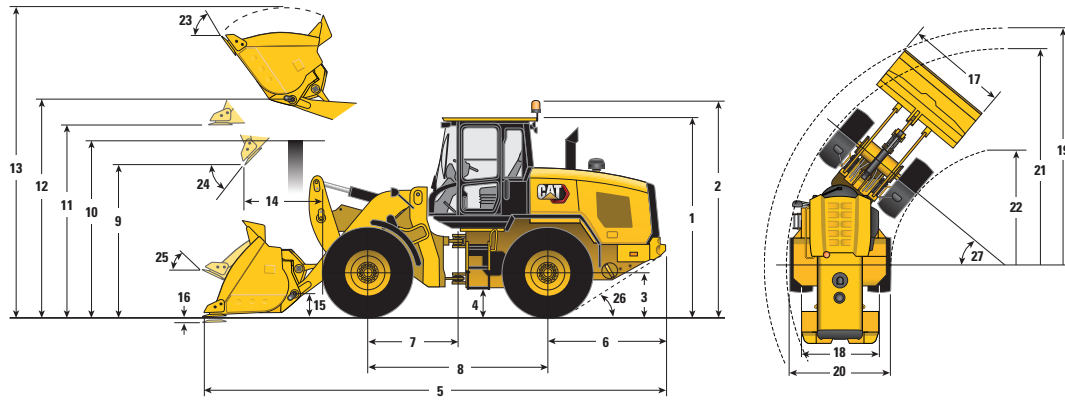
Sound

- The declared dynamic operator sound pressure level is 72 dB(A) when "ISO 6396:2008" is used to measure the value for an enclosed cab.
- The measurement was conducted at 70% of the maximum engine cooling fan speed, with the cab doors and cab windows closed. The cab was properly installed and maintained. The sound level may vary at different engine cooling fan speeds.
- The declared exterior sound power level is 104 dB(A) when the value is measured according to the dynamic test procedures and the conditions that are specified in "ISO 6395:2008."

Axles

Front	Fixed
	Open differential (standard)
	Locking differential (optional)
Rear	Oscillating ±11 degrees
	Open differential (standard)
	Limited slip differential (optional in some regions)

Dimensions and Operating Specifications (All dimensions are approximate. Dimensions vary with bucket and tire choice.)



Counterweight Configuration	Standard Lift		High Lift – Standard Counterweight	
	Standard		Heavy	
** 1 Height: Ground to Cab	3340 mm	10'11"	3340 mm	10'11"
** 2 Height: Ground to Beacon	3707 mm	12'2"	3707 mm	12'2"
** 3 Height: Ground to Axle Center	685 mm	2'3"	685 mm	2'3"
** 4 Height: Ground Clearance	386 mm	1'3"	386 mm	1'3"
* 5 Length: Overall	7666 mm	25'2"	8406 mm	27'7"
6 Length: Rear Axle to Bumper	1968 mm	6'5"	1968 mm	6'5"
7 Length: Hitch to Front Axle	1525 mm	5'0"	1525 mm	5'0"
8 Length: Wheel Base	3050 mm	10'0"	3050 mm	10'0"
* 9 Clearance: Bucket at 45 degrees	2822 mm	9'3"	3403 mm	11'2"
** 10 Clearance: Load Over Height	3354 mm	11'0"	3561 mm	11'8"
** 11 Clearance: Level Bucket	3642 mm	11'11"	4223 mm	13'10"
** 12 Height: Bucket Pin	3969 mm	13'0"	4550 mm	14'11"
** 13 Height: Overall	5301 mm	17'5"	5881 mm	19'4"
* 14 Reach: Bucket at 45 degrees	1146 mm	3'9"	1413 mm	4'8"
15 Carry Height: Bucket Pin	418 mm	1'4"	633 mm	2'1"
** 16 Dig Depth	100 mm	3.9"	135 mm	5.3"
17 Width: Bucket	2750 mm	9'0"	2750 mm	9'0"
18 Width: Tread Center	2083 mm	6'10"	2083 mm	6'10"
19 Turning Radius: Over Bucket	6127 mm	20'1"	6488 mm	21'3"
20 Width: Over Tires	2693 mm	8'10"	2693 mm	8'10"
21 Turning Radius: Outside of Tires	5546 mm	18'2"	5546 mm	18'2"
22 Turning Radius: Inside of Tires	2843 mm	9'4"	2843 mm	9'4"
23 Rack Angle at Full Lift	54 degrees		53 degrees	
24 Dump Angle at Full Lift	49 degrees		47 degrees	
25 Rack Angle at Carry	44 degrees		49 degrees	
26 Departure Angle	33 degrees		33 degrees	
27 Articulation Angle	40 degrees		40 degrees	
* Tipping Load – Straight (ISO 14397-1)	11 312 kg	24,938 lb	8763 kg	19,319 lb
* Tipping Load – Full Turn (ISO 14397-1)	9633 kg	21,236 lb	7397 kg	16,307 lb
* Nominal Material Density 110% Fill Factor	1622 kg/m ³	2,733 lb/yd ³	1245 kg/m ³	2,099 lb/yd ³
* Breakout	13 082 kg	28,841 lb	12 580 kg	27,733 lb
* Operating Weight	15 282 kg	33,689 lb	15 798 kg	34,828 lb

*Vary with bucket.

**Vary with tire.

Dimensions listed are for a machine configured with specified counterweights, Michelin 20.5 R25 (L-3) XHA2 tires, 80 kg (176 lb) operator, and power train guard. Values are listed for a 2.7 m³ (3.5 yd³) general purpose performance series pin on bucket with bolt-on cutting edge.

938K Wheel Loader

STANDARD EQUIPMENT

POWER TRAIN

- Auto idle shut down feature
- Cat C7.1 engine
 - Power modes (Standard and Performance)
 - Power by range (High Power in Range 4)
 - Turbocharged and aftercooled
 - Filtered crankcase breather
- Coded start (requires secondary display)
- Coolant protection to -34° C (-29° F)
- Enclosed wet disc full hydraulic brakes
- Fuel priming pump, automatic
- Hydraulically driven demand cooling fan
- Hydrostatic transmission with electronic control
 - Operator modes (Default, TC, Hystat, and Ice)
 - Directional Shift Aggressiveness (fast, medium, slow)
 - Rimpull control, adjust wheel torque
 - Creeper control, adjust ground speed
- Parking brake, electric
- Single plane cooling package wide six fins per inch density
- Throttle lock and max speed limiter

HYDRAULICS

- Automatic lift and bucket kickouts, adjustable in-cab
- Bucket and fork modes, adjustable in-cab
- Cylinder damping at kickout and mechanical end stops
- Fine mode control (fast, medium, slow) in fork mode
- Hydraulic response setting (fast, medium, slow)
- Hydraulic diagnostic connectors and S-O-SSM ports
- Load sensing hydraulics and steering

ELECTRICAL

- Alternator, 115 amp, heavy duty
- 12V power supply in cab (2)
- Batteries, 1,000 CCA (2) 24V system, disconnect switch
- Back-up alarm
- Emergency shutdown switch
- Halogen work and roading lights, LED rear tail lights
- Remote jump start post
- Resettable main and critical function breakers

OPERATOR ENVIRONMENT

- 75 mm (3 in) retractable seat belt, with audible alarm and indicator
- Automatic temperature control
- External mirrors with lower parabolic
- Hydraulic control lockout
- Interior cab lighting, door and dome
- Interior rear view mirrors (2)
- Lunch box storage
- Radio ready speakers
- Seat-mounted electronic implement controls, adjustable
- Column mounted multi function control – lights, wipers, turn signal
- Tilt and telescopic steering wheel
- Tinted front glass

OTHER STANDARD EQUIPMENT

- Large-access enclosure doors with adjustable close/open force
- Parallel lift loader linkage

OPTIONAL EQUIPMENT

- Auto lube, integrated in secondary display
- Auxiliary flow, third and fourth function, adjustable through secondary display
- Beacon light, strobe
- Cab, deluxe
 - Camera, roof mounted, front view with separate display*
 - Rear window defroster (standard in Europe)
 - Secondary display to adjust settings (standard in Europe)
 - Sunscreen, front and rear
 - Wet arm wiper/washer, front and rear
- Camera, rear view (standard in Europe)
- Cold start package
- Corrosion protection package
- Counterweight, (heavy and logger)
- Coupler, (FusionTM and ISO 23727)
- Debris packages (low, medium, high)
- Differential lock, front axle
- Fenders (extended cover and full coverage)
- Guarding (machine and operator)
- Linkage, high lift
- Lights, auxiliary, halogen or LED with engine compartment lights
- Lights, LED front roading
- Load check valves
- Object Detection
- Product LinkTM PRO and ELITE with capabilities for software push, data logging, histogram and trend mapping
- Radio packages
- Rear wiper
- Ride Control System, adjustable through secondary display
- Seats
 - Deluxe seat – fully adjustable fabric air suspension seat with mid backrest and mechanical lumbar support
 - Premium seat – fully adjustable leather and fabric air suspension with high backrest and air lumbar support. Seat is heated and ventilated on bottom cushion and backrest.
- Steering
 - Dual mode and secondary
- CE Certification (standard in Europe)
- NOTE: Not all features are available in all regions.

*Forward facing camera system may be required for local EU requirements.

Consult your local Cat dealer for additional information.



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AEHQ7682-01 (04-2021)
Replaces AEHQ7682 and AEHQ7990
(AME, AUZ, CIS, LACD,
Southeast Asia, Turkey)



Features

938K | 950 GC



938K



950 GC



THE "VERSATILITY" CHAMPION

Lowest Fuel Consumption (30%)
Low Noise Level

Intelligent Power management
Operator Modes (TC, Hystat, Ice)

Electro Hydraulic - Control Customization

Digging and Parallel Lift capability

Wide range of application specific attachments

Wide range of application specific Tires

World Class Comfort Control features

Smooth, customizable controls

High Debris environment protection

Engine

Transmission

Hydraulics

Linkage

Work Tools

Tires

Cab

Axles

Service

THE "LOADING AND STOCKPILING" MACHINE

Hibernate Engine Idle
Ambient temperature Capability

Caterpillar designed Countershaft Powershift
High Contact Ratio gears; 4F / 3R

Pilot Operated Implement system

Superior Standard Dump Clearance
Higher Payload (up to 15% more production)

Performance Series Buckets

Limited base offering

Basic Features for target applications

Caterpillar designed; In-board wet disk brakes

Service Centers

Specifications

938K | 950 GC CAT



938K with 2.9m³ (3.8yd³) Pin-on GP Bucket w/ BOCE, 20.5R25 Michelin XHA2 Tires	
Engine	Cat C7.1
Gross Power (ISO14396)	140 kW (188 hp)
Transmission Hydrostatic	4 Speed Ranges, Creep Mode, Rimpull Control and Throttle Lock
Max Ground Speed	40 km/h (25 mph)
Operating Weight	15228kg (33572 lb.)
Full Turn Static Tipping Load (w/o tire deflection)	10145 kg (22366 lb.)
Breakout Force	123kN (27651 lbf)
Dump Clearance, max Lift and 45° dump	2796mm (9'1")
B-Pin Height	3969mm (13'0")
Load Over Clearance	3354mm (11'0")
Overall Length	7715mm (25'3")
Wheelbase	3050mm (10'0")
Width over tires	2675mm (8'9")
Turning Radius – Outside of tires	5537mm (18'1")
Height to top of ROPS	3340mm (10'11")
Ground Clearance	397mm (1'3")
Hydraulics	Load Sensing – Variable Piston Pump
Impl. pump max flow	190 l/min (50 gal/min)
Impl. Syst. max pressure	28000 kPa (4061 psi)
Cycle time	9.7 sec

950 GC with 3.3m³ (4.3yd³) Pin-on GP Bucket w/ BOCE, 23.5R25 Triangle TB516 Tires	
Engine	Cat C7.1
Gross Power (ISO14396)	168kW (225 hp)
Transmission Powershift w/ Torque Converter	Countershaft 4F/3R, HCR gears
Max Ground Speed	34 km/h (21 mph)
Operating Weight	18676kg (41174 lb.)
Full Turn Static Tipping Load (w/o tire deflection)	11197kg (24685 lb.)
Breakout Force	147kN (33047 lbf)
Dump Clearance, max Lift and 45° dump	3012mm (9'10")
B-Pin Height	4188mm (13'9")
Load Over Clearance	3649mm (12')
Overall Length	8288mm (27'2")
Wheelbase	3300mm (10'10")
Width over tires	2751mm (9')
Turning Radius – Outside of tires	6164mm (20'3")
Height to top of ROPS	3458mm (11'4")
Ground Clearance	460mm (1'6")
Hydraulics	Load Sensing Variable Piston Pump
Impl. pump max flow	248 l/min (65 gal/min)
Impl. Syst. max pressure	27900 kPa (4047 psi)
Cycle time	10.1 sec

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950 GC

Wheel Loader



Engine

Engine Model	Cat® C7.1
Rated Net Power @ 2,200 rpm – ISO 9249	151 kW (202 hp)
Rated Gross Power @ 2,200 rpm – ISO 14396	168 kW (225 hp)

Buckets

Bucket Capacities	2.5 m ³ to 4.4 m ³
-------------------	--

Weights

Operating Weight	18 676 kg
------------------	-----------

- For 3.3 m³ general purpose buckets with BOCE.

950 GC Key Features and Benefits

Linkage

The proven Cat Z-bar linkage geometry with Performance Series Buckets offer excellent penetration into the pile and high breakout forces. The results are low fuel consumption and exceptional production capabilities.

Engine

C7.1 built on a proven block with a new injection system specifically designed for fuel available in emerging markets.

Hydraulics

Load sensing hydraulics produce flow and pressure for the implement system upon demand and only in amounts necessary to perform the needed work functions. This state of the art system results in low fuel consumption.

Serviceability

Our electrical and hydraulic service centers, along with additional key serviceability features, help make servicing customer machines and in-field component exchange quick, easy, and efficient.

Structures

Caterpillar design and manufacturing techniques assure outstanding service life.

Operator Station

The spacious cab features easy and intuitive controls and excellent visibility. The cab provides a comfortable working environment for efficient all day operation.

Contents

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Optional Equipment.....18





The new Cat 950 GC Wheel Loader is designed specifically to handle all the jobs on your worksite from material handling and truck loading, to general construction, to stockpiling. This machine is purpose-built to be just the right machine to get your everyday jobs done. Great machine performance combined with low owning and operating costs make the 950 GC the right choice for your business.

Operator Environment

Work Comfortably and Efficiently.



Entry and Exit

Ladders are available on both sides of the machine to easily access the platforms. Platforms are equipped with guard and hand rails for safe access to the cab. The main cab door opens to the front and provides wide access to the operator environment.

Controls and Display

The complete operator interface has been designed with the operator in mind: easy to operate and simple to understand. The pilot-operated hydraulic implement controls deliver comfortable, low-effort operation. Two single axis levers or a joystick are available. Both arrangements are equipped with a remote kick-down switch. The joystick features an F-N-R switch as well. The adjustable steering column includes the manual shifter and turn signal control lever.

The dashboard display contains 5 analog-like gauges, several colored indicator lights and an LCD screen. This intuitive system allows the operator to monitor that the machine systems are operating properly.

Visibility

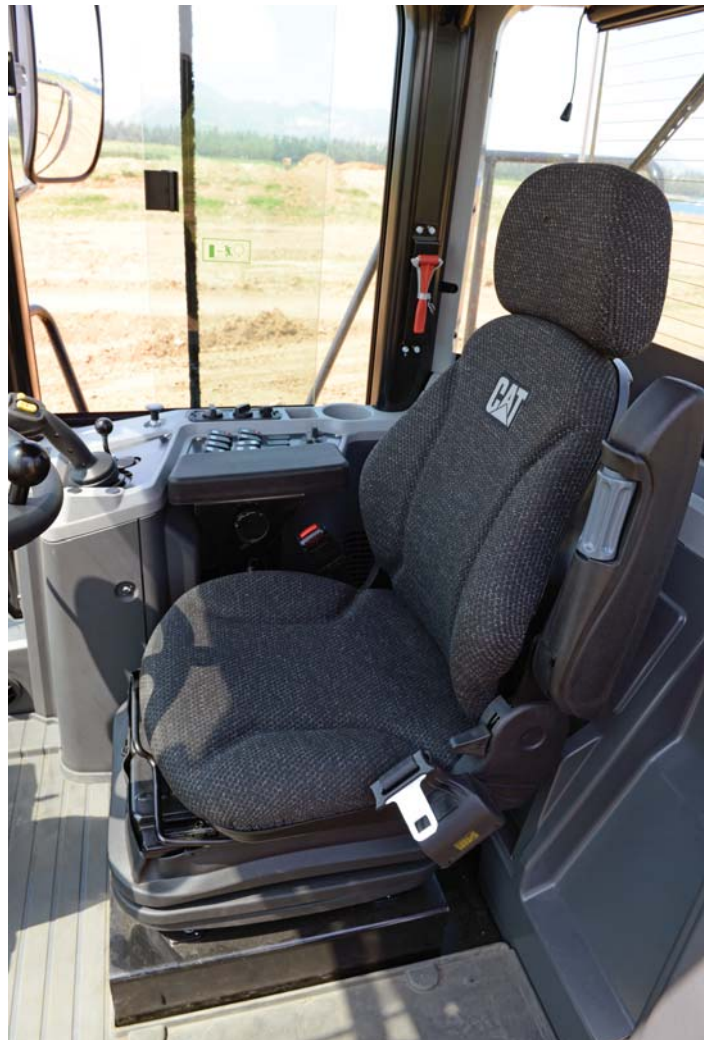
The 950 GC cab offers an unmatched viewing area with a wide, flat, and distortion-free front windshield. The glass stretches to the floor of the cab for excellent visibility to the bucket. The cab roof has channels which direct rain off the corners of the cab keeping windows clear. Front and back wiper ensure that a clear view is maintained. Internal and external rearview mirrors are standard. An optional rearview camera is available to clearly monitor movement behind the machine.

Climate Control

Air conditioning system is standard on the 950 GC. Ten louvered vents allow the operator to direct the air flow to remain productive and efficient all shift long. The controls are comfortably located on the right hand console. The cab air filters are located in the main unit outside of the operator environment for superior filtration and easy cleaning.

Seat

The comfort cloth mechanical suspension seat provides a variety of adjustments to suit the operator's size and weight including fore/aft, height and weight. An air suspension seat is offered as an option. The left-hand armrest and headrest are also adjustable.



Power Train

Powerful Efficiency.



Cat C7.1 Engine

The 950 GC is powered by a Cat C7.1 engine that meets Stage IIIA (Tier 3) emission standards and features a fuel-injection system specifically designed for fuel available in emerging markets.

The Engine Idle Management System (EIMS) minimizes fuel consumption by reducing engine rpm after a specified amount of idle time.

On-Demand Fan

Electronically controlled, hydraulically driven variable speed fan adjusts to meet the varying cooling requirements of the machine. This results in a reduced average fan speed lowering fuel consumption, noise levels and radiator plugging. In very cold operating conditions, an optional fan drive bypass valve allows the machine systems to warm up faster to operating temperatures.

Transmission

The power-shift countershaft transmission, designed and built by Caterpillar, features high contact ratio gears, meaning that there are always up-to three teeth in contact. These heat treated gears complemented by heavy duty bearings make this transmission durable, fuel efficient and produce low noise and vibration levels during operation. It is commanded by the proven Cat Electronic Long Range Transmission (ELRT) control valve, which allows full-power shifts and directional shift changes. The fully modulated shifts ensures smoothness for operators and contributes significantly to fast cycles and extended component life.

Axles

Heavy-duty axles with inboard-planetary final drives and specially heat-treated bevel gears feature hydraulically actuated wet-disc brakes. Limited-slip differentials are available for applications where increased traction is needed.

Reliability/Serviceability

Tested and Proven – Ready to Work.

Service Centers

The hydraulic and electrical service centers provide grouped ground level access to numerous maintenance and service points enhancing safety and convenience for operators and service technicians. These are conveniently located under the access ladders on each side of the machine.

Grease Points

Grease fittings for difficult to reach components are grouped conveniently, allowing easy and quick preventive lubrication.



Caterpillar Designed

Components used to build Cat Wheel Loaders are designed and manufactured to Caterpillar quality standards throughout all Caterpillar facilities. The 950 GC is built on a long legacy of high performance and highly reliable wheel loaders.

Renowned Cat Dealer Support

Cat products are designed with superior quality, unsurpassed reliability, ease of serviceability and repairability and outstanding support, provided almost exclusively by Cat dealers. Cat dealers are with customers every step of the way to maximize machine uptime by providing unsurpassed worldwide parts support, trained technicians and customer support agreements. Dealers around the globe have been working with Cat customers for generations.

Cat Product Link™

Cat Product Link is a telematics solution, deeply integrated into the machine systems, allowing you to monitor the overall health of your machine including location tracking, fuel consumption and more.



Productivity

Work Smart. Move More.



Performance Series Buckets

Performance Series Buckets feature an optimized shape, longer floor, curved side walls and wider opening, allowing short load times, high fill factors ranging from 100% to 115% and better material retention. They load easy and carry more! A unique spill guard protects the cab and linkage components from material overflow. This design results in safer operation, shorter cycle times, reduced fuel consumption and overall higher production efficiency.

Z-bar Linkage

The 950 GC linkage generates excellent breakout force and good rack back angle for better bucket loading and load retention. Lift arms provide excellent dump clearance and reach for exceptional matching to various truck body heights. Lift and return-to-dig positions can be adjusted on the linkage.

Load Sensing Hydraulics

The 950 GC features a load sensing hydraulic system that only produces flow and pressure for the implement system when required, improving machine productivity and resulting in low fuel consumption. Operators will also notice an excellent power balance between rimpull and implements.

Ride Control

The optional Ride Control System improves ride, performance and load retention when traveling over rough terrain. Operators gain confidence moving at higher speeds in load and carry operations decreasing cycle times and increasing productivity.

Work Tools/Fusion Quick Coupler

Work Tool Options to Meet Your Needs.

Work Tool Attachments for All Support Functions on Your Job Site

A variety of pin-on and coupler attachments are available for 950 GC applications. Cat Work Tools are durable, reliable and designed for performance and efficiency with your Cat Wheel Loader.

Fusion™ Quick Coupler

The Fusion Quick Coupler System gives one common interface across a range of medium and small wheel loaders. A quick coupler allows one machine to use a range of different work tools on the job site. Fusion allows one work tool to be picked up by the entire range of medium and small wheel loaders.

With a Fusion Coupler, performance is virtually identical to pin-on attachments. The coupler sits back, close into the loader arms – minimizing offset, enabling increased machine performance. An advanced wedging mechanism creates a tight, rattle-free fit which results in a longer coupler and attachment service life. An open coupler frame design clears sight lines from the operator's seat to the load. Loading and unloading is done confidently and quickly with good visibility to the tool and load.



950 GC Wheel Loader Specifications

Engine

Engine Model	Cat C7.1
Rated Net Power @ 2,200 rpm – ISO 9249	151 kW (202 hp)
Rated Gross Power @ 2,200 rpm – ISO 14396	168 kW (225 hp)
Max Gross Power @ 2,000 rpm – ISO 14396	171 kW (229 hp)
Max Gross Torque @ 1,400 rpm	1020 N·m
Max Net Torque @ 1,300 rpm	931 N·m
Bore	105 mm
Stroke	135 mm
Displacement	7.01 L

Weights

Operating Weight	18 676 kg
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- For 3.3 m³ general purpose buckets with BOCE.

Operating Specifications

Static Tipping Load Full 40° Turn – ISO 14397-1*	10 503 kg
Static Tipping Load Full 40° Turn – Rigid Tires**	11 197 kg
Breakout Force	147 kN

- For 3.3 m³ general purpose buckets with BOCE.
- *Full compliance to ISO (2007) 14397-1 Sections 1 thru 6, which requires 2% verification between calculations and testing.
- **Compliance to ISO (2007) 14397-1 Sections 1 thru 5.

Transmission

Forward 1	7.0 km/h
Forward 2	12.5 km/h
Forward 3	22.0 km/h
Forward 4	34.0 km/h
Reverse 1	7.0 km/h
Reverse 2	12.5 km/h
Reverse 3	22.0 km/h

- Maximum travel speeds (23.5-25 tires).
- Maximum travel speed in standard vehicle with empty bucket and standard L3 tires with 760 mm (30 in) roll radius.

Service Refill Capacities

Fuel Tank Size	290 L
Cooling System	48 L
Crankcase	20 L
Transmission	45 L
Differentials and Final Drives – Front	40 L
Differentials and Final Drives – Rear	38 L
Hydraulic Tank	120 L

Hydraulic System

Implement System Pump Type	Piston
Steering System Pump Type	Piston
Implement System – Maximum Pump Output @ 2,200 rpm	248 L/min
Implement System – Maximum Operating Pressure @ 50 ± 1.5 L/min	27 900 kPa
Implement System – Optional 3rd Function Maximum Pressure @ 70 L/min	20 680 kPa
Implement System – Optional 3rd Function Maximum Flow	280 L/min
Hydraulic Cycle Time – Raise from Carry Position	6.1 Seconds
Hydraulic Cycle Time – Dump at Maximum Raise	1.2 Seconds
Hydraulic Cycle Time – Lower, Empty, Float Down	2.8 Seconds
Hydraulic Cycle Time – Total Cycle Time	10.1 Seconds

Tires

- Choices include:
23.5-25 16PR, L3 (Triangle)
23.5R25 ★★, L3 (Triangle)
23.5R25 ★, L3 (Bridgestone)

Sound

- The sound values indicated below are for specific operating conditions only. Machine and operator sound levels will vary at different engine and/or cooling fan speeds. The cab was properly installed and maintained. The tests were conducted with the cab doors and the cab windows closed. Hearing protection may be needed when the machine is operated with a cabin that is not properly maintained, or when the doors and/or windows are open for extended periods or in a noisy environment.
- The declared dynamic operator sound pressure level for a standard machine configuration, measured according to the procedures specified in “ISO 6396:2008,” is 75 dB(A) with a cooling fan speed set at maximum value.
- The declared dynamic machine sound power level for a standard machine configuration, measured according to the procedures specified in “ISO 6395:2008,” is 108 dB(A) with the cooling fan speed set at maximum value.

Sound Level Information for Machines in Countries that Adopt the “EU Directives”:

- The declared dynamic operator sound pressure level for a standard machine configuration, measured according to the procedures specified in “ISO 6396:2008,” is 75 dB(A) with a cooling fan speed set at 70 percent of the maximum value.
- The declared machine sound power level that is labeled on the machine is 106 L_{WA}. The measurement of the sound power level was made according to the test procedures and conditions that are specified in the European Union Directive “2000/14/EC” as amended by “2005/88/EC.”

Cab

ROPS/FOPS	ROPS/FOPS meet ISO 3471 and ISO 3449 Level II standards
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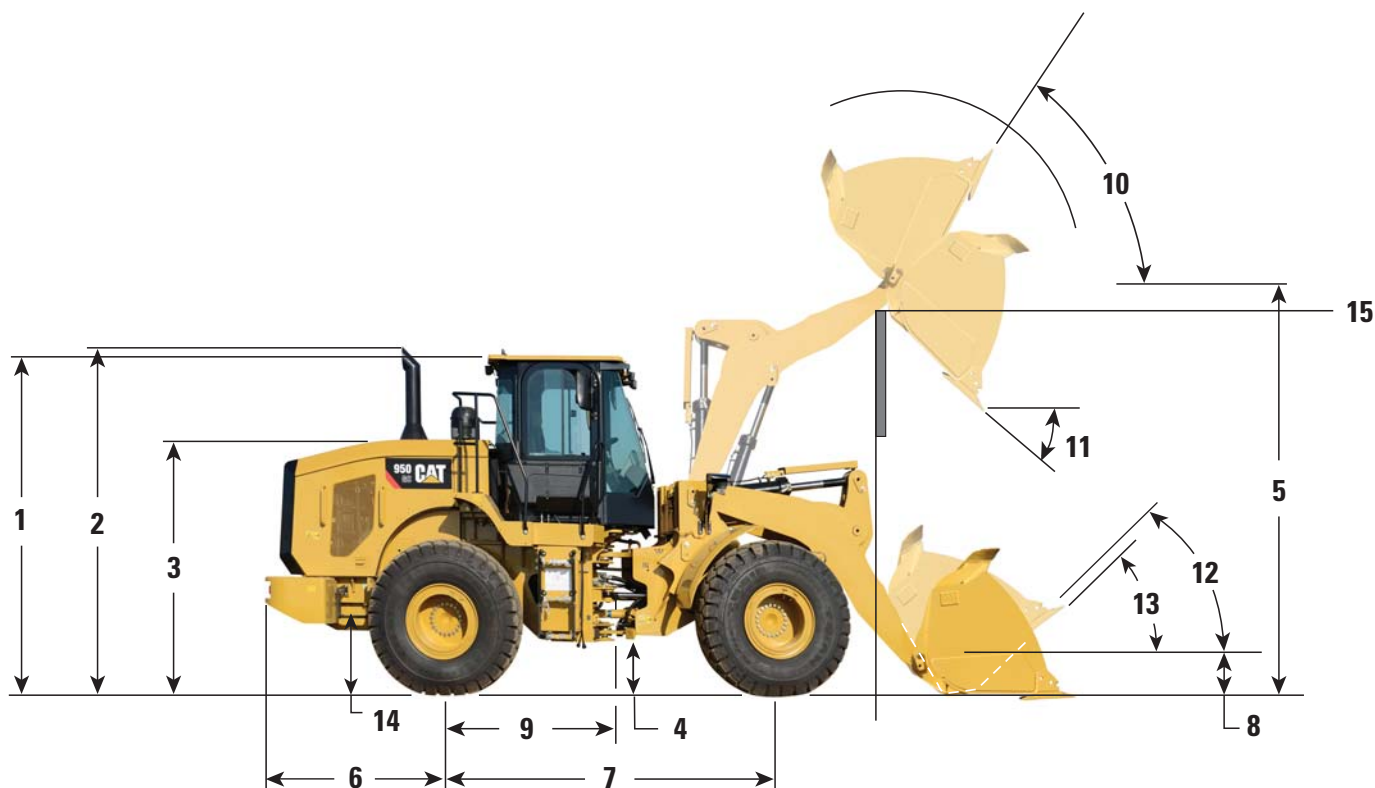
Brakes

Brakes	Brakes meet ISO 3450
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950 GC Wheel Loader Specifications

Dimensions

All dimensions are approximate and based on L3 Triangle 23.5-25 Bias tires.



1 Height to Top of ROPS	3458 mm
2 Height to Top of Exhaust Pipe	3596 mm
3 Height to Top of Hood	2568 mm
4 Ground Clearance	460 mm
5 B-Pin Height	4188 mm
6 Center Line of Rear Axle to Edge of Counterweight	2001 mm
7 Wheelbase	3300 mm
8 B-Pin Height @ Carry	655 mm
9 Center Line of Rear Axle to Hitch	1650 mm
10 Rack Back @ Maximum Lift	60 degrees
11 Dump Angle @ Maximum Lift	52 degrees
12 Rack Back @ Carry	45 degrees
13 Rack Back @ Ground	40 degrees
14 Height to Center Line of Axle	750 mm
15 Lift Arm Clearance	3649 mm

Turning Radius

All dimensions are approximate and based on L3 Triangle 23.5-25 Bias tires.

Turning Radius to Outside of Tires	6164 mm
Turning Radius to Inside of Tires	3419 mm
Width Over Tires	2745 mm
Turning Radius to Outside Edge of Counterweight	6190 mm

950 GC Wheel Loader Specifications

Operating Specifications

Bucket Type		General Purpose – Pin On								
Edge Type		Bolt-On Cutting Edges	Teeth and Segments	Teeth	Bolt-On Cutting Edges	Teeth and Segments	Teeth	Bolt-On Cutting Edges	Teeth and Segments	Teeth
Capacity – Rated	m ³	2.70	2.70	2.50	3.10	3.10	2.90	3.30	3.30	3.10
Capacity – 110% Rated	m ³	2.97	2.97	2.75	3.41	3.41	3.19	3.63	3.63	3.41
Width	mm	2927	2994	2994	2927	2994	2994	2927	2994	2994
Dump Clearance at Maximum Lift and 45° Discharge	mm	3130	3015	3015	3050	2933	2933	3012	2893	2893
Reach at Maximum Lift and 45° Discharge	mm	1212	1326	1326	1262	1374	1374	1292	1403	1403
Reach at Level Lift Arm and Bucket Level	mm	2626	2787	2787	2720	2881	2881	2770	2931	2931
Digging Depth	mm	86	86	56	86	86	56	86	86	56
Overall Length	mm	8138	8312	8312	8238	8412	8412	8288	8462	8462
Overall Height with Bucket at Maximum Lift	mm	5557	5557	5557	5519	5519	5519	5693	5693	5693
Loader Clearance Circle with Bucket at Carry Position	mm	13 764	13 928	13 928	13 819	13 984	13 984	13 847	14 013	14 013
Static Tipping Load, Straight with Tire Squash*	kg	11 924	11 787	12 106	12 178	12 040	12 365	12 082	11 943	12 266
Static Tipping Load, Straight without Tire Squash*	kg	12 582	12 444	12 773	12 854	12 714	13 050	12 759	12 619	12 952
Static Tipping Load, Articulated with Tire Squash*	kg	10 408	10 271	10 576	10 594	10 455	10 764	10 503	10 363	10 671
Static Tipping Load, Articulated without Tire Squash*	kg	11 053	10 915	11 228	11 286	11 147	11 466	11 197	11 057	11 374
Breakout Force	kN	168	166	184	154	152	167	147	146	160
Operating Weight	kg	17 903	18 011	17 854	18 631	18 739	18 582	18 676	18 784	18 627
Reach @ 2134 mm Height, 45° Dumped	mm	1908	1970	1970	1923	1978	1978	1935	1986	1986
Clearance at Full Raise and Dump (on Stops)	mm	3028	2897	2897	2954	2823	2823	2917	2786	2786
Dump Angle at Full Raise and Dump (on Stops)	degrees	53	53	53	52	52	52	52	52	52

*Static tipping loads and operating weights shown are based on standard machine configuration with 26.5R25 L3 Triangle TB516 radial tires, full fuel tank, coolants, lubricants, air conditioner and operator.

(ISO) Full compliance to ISO 14397-1 (2007) Sections 1 thru 6, which requires 2% verification between calculations and testing.

(Rigid Tire) Compliance to ISO 14397-1 (2007) Sections 1 thru 5.

950 GC Wheel Loader Specifications

Operating Specifications

Bucket Type		General Purpose – Pin On					
Edge Type		Bolt-On Cutting Edges	Teeth and Segments	Teeth	Bolt-On Cutting Edges	Teeth and Segments	Teeth
Capacity – Rated	m ³	3.40	3.40	3.20	3.60	3.60	3.40
Capacity – 110% Rated	m ³	3.74	3.74	3.52	3.96	3.96	3.74
Width	mm	2927	2994	2994	2927	2994	2994
Dump Clearance at Maximum Lift and 45° Discharge	mm	2985	2867	2867	2939	2820	2820
Reach at Maximum Lift and 45° Discharge	mm	1314	1425	1425	1351	1460	1460
Reach at Level Lift Arm and Bucket Level	mm	2805	2966	2966	2865	3026	3026
Digging Depth	mm	86	86	56	86	86	56
Overall Length	mm	8323	8497	8497	8383	8557	8557
Overall Height with Bucket at Maximum Lift	mm	5723	5723	5723	5781	5781	5781
Loader Clearance Circle with Bucket at Carry Position	mm	13 867	14 034	14 034	13 902	14 069	14 069
Static Tipping Load, Straight with Tire Squash*	kg	12 020	11 880	12 198	11 904	11 763	12 084
Static Tipping Load, Straight without Tire Squash*	kg	12 699	12 558	12 885	12 584	12 442	12 774
Static Tipping Load, Articulated with Tire Squash*	kg	10 444	10 304	10 607	10 333	10 193	10 499
Static Tipping Load, Articulated without Tire Squash*	kg	11 140	10 998	11 311	11 031	10 889	11 205
Breakout Force	kN	143	142	155	137	135	147
Operating Weight	kg	18 706	18 814	18 657	18 764	18 872	18 715
Reach @ 2134 mm Height, 45° Dumped	mm	1945	1994	1994	1958	2003	2003
Clearance at Full Raise and Dump (on Stops)	mm	2891	2760	2760	2846	2716	2716
Dump Angle at Full Raise and Dump (on Stops)	degrees	52	52	52	51	51	51

*Static tipping loads and operating weights shown are based on standard machine configuration with 26.5R25 L3 Triangle TB516 radial tires, full fuel tank, coolants, lubricants, air conditioner and operator.

(ISO) Full compliance to ISO 14397-1 (2007) Sections 1 thru 6, which requires 2% verification between calculations and testing.

(Rigid Tire) Compliance to ISO 14397-1 (2007) Sections 1 thru 5.

Operating Specifications

Bucket Type		General Purpose – Hook On			Material Handling – Pin On
Edge Type		Bolt-On Cutting Edges	Teeth and Segments	Teeth	Bolt-On Cutting Edges
Capacity – Rated	m ³	3.10	3.10	2.90	4.4
Capacity – 110% Rated	m ³	3.41	3.41	3.19	4.84
Width	mm	2927	2994	2994	3059
Dump Clearance at Maximum Lift and 45° Discharge	mm	3008	2891	2891	2782
Reach at Maximum Lift and 45° Discharge	mm	1299	1410	1410	1362
Reach at Level Lift Arm and Bucket Level	mm	2775	2936	2936	3002
Digging Depth	mm	94	94	64	102
Overall Length	mm	8299	8473	8473	8527
Overall Height with Bucket at Maximum Lift	mm	5662	5662	5662	5910
Loader Clearance Circle with Bucket at Carry Position	mm	13 850	14 017	14 017	14 110
Static Tipping Load, Straight with Tire Squash*	kg	11 577	11 439	11 755	11 184
Static Tipping Load, Straight without Tire Squash*	kg	12 240	12 101	12 427	11 664
Static Tipping Load, Articulated with Tire Squash*	kg	10 016	9878	10 179	9641
Static Tipping Load, Articulated without Tire Squash*	kg	10 697	10 557	10 868	10 186
Breakout Force	kN	146	145	159	123
Operating Weight	kg	19 109	19 217	19 060	18 330
Reach @ 2134 mm Height, 45° Dumped	mm	1940	1993	1993	1883
Clearance at Full Raise and Dump (on Stops)	mm	2907	2777	2777	2739
Dump Angle at Full Raise and Dump (on Stops)	degrees	52	52	52	47.7

*Static tipping loads and operating weights shown are based on standard machine configuration with 26.5R25 L3 Triangle TB516 radial tires, full fuel tank, coolants, lubricants, air conditioner and operator. Hook On Bucket includes Quick Coupler.

(ISO) Full compliance to ISO 14397-1 (2007) Sections 1 thru 6, which requires 2% verification between calculations and testing.

(Rigid Tire) Compliance to ISO 14397-1 (2007) Sections 1 thru 5.

950 GC Wheel Loader Specifications

Bucket Selection Chart

Material Density			kg/m³	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
Standard Linkage	General Purpose	Pin On	2.70 m³												3.11 m³				2.70 m³				
			3.10 m³										3.57 m³				3.10 m³						
			3.30 m³									3.80 m³					3.30 m³						
			3.40 m³									3.91 m³					3.40 m³						
			3.60 m³									4.14 m³					3.60 m³						
	Hook On	3.10 m³										3.57 m³				3.10 m³							
		Material Handling	Pin On	4.40 m³				5.06 m³				4.40 m³											
Bucket Fill Factors																							
115% 110% 105% 100% 95%																							
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All buckets are showing Bolt-On Edges.

Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

POWER TRAIN

- Engine – Cat C7.1 ATAAC Stage IIIA/Tier 3
- Torque converter
- Transmission, automatic, power shift (4F/3R), kick-down function, overspeed protection
- Brakes, full hydraulic enclosed wet-disc
- EIMS (Engine Idle Management System)
- Fan, radiator, electronically controlled, hydraulically driven, temperature sensing, on demand
- Filter, fuel primary/secondary/tertiary
- Fuel/water separator
- Filters, engine air, primary/secondary
- Fuel priming pump (manual)
- Muffler, sound suppressed
- Radiator, unit core (9.5 fpi) with ATAAC
- Starting aid, glow plugs
- Switch, transmission neutralizer lockout

HYDRAULICS

- Load sensing implement system pilot operated
- Dedicated load sensing steering pump
- Dedicated brake and fan gear pump

ELECTRICAL

- Alarm, back-up/main disconnect switch
- Alternator (115-amp, brush type)
- Batteries, maintenance free (2×900 CCA)
- Ignition key; start/stop switch
- Lighting system, halogen (6 total)
 - Four (4) halogen work lights
 - Two (2) halogen roading lights
- Starting and charging system (24-volt)
- Starter, electric (heavy duty)

OPERATOR ENVIRONMENT

- Air conditioning with 10 vents and filter unit located outside of cab
- Bucket/work tool function lockout
- Cab, pressurized and sound suppressed
- Hydroformed (ROPS/FOPS) structure
- 12V power port (10A)
- Coat hook
- Pilot hydraulic controls, lift and tilt function; two (2) single axis levers or joystick
- Heater and defroster
- Horn
- Cup holders and personal tray on right console
- Storage tray behind seat
- Mirrors, rearview internal and external
- Seat, Cat Comfort (cloth) mechanical suspension, auto-retractable seat belt
- Steering column, adjustable angle
- Wipers/washers (front and rear)
- Window, sliding (left and right side)
- Computerized monitoring system

OTHER STANDARD EQUIPMENT

- Lift and return-to-dig kick outs (Electro-Magnetic), mechanical adjustment
- Doors, service access (locking)
- Fenders (front and rear) steel
- Grill, airborne debris
- Hitch, drawbar with pin
- Hood, non-metallic on steel structure
- Counterweight, 1800 kg
- Linkage, Z-bar, fabricated crosstube/tilt lever
- S-O-SSM oil sampling valves
- Product Link Ready

950 GC Optional Equipment

Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

- Cold weather starting (batteries 2×1,400 CCA and ether starting aid)
- Third hydraulic function, one single axis lever
- Quick coupler control
- Limited slip differentials
- Autolube system
- Air precleaner turbine
- Ride control
- Heated rear window
- Air suspended seat
- Secondary steering, electrical
- Reversing cooling fan (auto/manual controlled)
- Toolbox
- Warning beacon
- Extra working lights (4), Halogen or HID
- Rearview camera
- Radio
- Fender extensions/roading

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at **www.cat.com**

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Materials and specifications are subject to change without notice.
Featured machines in photos may include additional equipment.
See your Cat dealer for available options.

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AEHQ7152-02 (12-2014)
Replaces AEHQ7152-01



CAT 950 GC “THE LOADING AND STOCKPILING MACHINE”

HYDRAULICS:

- Pilot Hydraulic Controls
- Independent Implement & Steering
- **Electro-Magnetic** Kick-Outs
- 3rd Function - Option
- Ride Control – Option
- **Mono Block Implement Valve**

OPERATOR ENVIRONMENT: ROPS

- Comfortable Cab & **Simplified Controls**
- **Floor Mount Controls** - Levers or Joystick
- Sound Levels - **78 dB** Typical
- **Basic Electronics** – Fault Codes Only
- **3 Piece Flat Front Glass**
- Two Seat Options - Mechanical or Air

Z-BAR LINKAGE:

- Digging Efficient Z-bar
- **Class Leading B-Pin Height**
- **High Payload (up to 15% more production)**
- High Tilt Forces at Ground
- Fusion Coupler - Option

OPTIONS

- Aux Lights
- Cold Start
- AutoLube
- Camera
- Rooding Fenders
- Product Link (std)

ACCESS:

- 3x Swing Up Doors
- Ground Level Access
- **Ladders on both sides**
- **Multi Plane** Fixed Coolers (**9fpi**)
- Hydraulic & Electrical Service Centers
- Jumper Studs
- Engine Kill Switch
- S.O.S Ports

AXLES / TIRES:

- Front LSD - Option
- Rear LSD – Option
- 23.5 Bias and Radial L3

TARGET SEGMENTS:

- Truck & Hopper Loading
- Stockpiling
- Heavy & General Construction

COUNTERSHAFT TRANSMISSION:

- **Powershift** Transmission 4F/3R
- High Contact Ratio Gears with Speed Protection
- Single Stage **Torque Converter**
- Automatic 2-4 with Kick-Down and Manual Modes

WORK TOOLS:

- Performance Series Buckets (**2.7-4.4 m³**)
- Construction Forks

The information contained herein is intended for circulation only to Caterpillar and dealer employees whose duties require knowledge of such reports and is intended exclusively for their information and training. CAT, CATERPILLAR, their respective logos, “Caterpillar Yellow”, the “Power Edge” trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission. © All rights reserved 2014

K-II SERIES
WHEEL LOADERS



JOHN DEERE

524K-II / 544K-II / 624K-II



**KEEP MOVING
FORWARD**



RELIABLE



PRODUCTIVE





POWERFUL.
AND PROVEN.



*CUSHION ROUGH TERRAIN
WITH OPTIONAL
RIDE CONTROL*



THE K-II SERIES LINEUP.

Got a material-handling app that demands extra agility and ability? There's a John Deere K Series-II Loader for that. Built on the highly reliable platform of their predecessors, these models are loaded with even more customer-inspired productivity- and uptime-increasing features. John Deere PowerTech™ EPA Tier 3/EU Stage IIIA and Tier 2/Stage II diesels provide generous displacement, power, and lugging ability. Daily checks and maintenance access are even easier. And all new K Series-II Loaders come with a standard five-speed transmission and an adaptive clutch cutoff that will help improve productivity compared to previous K-Series models. Get more in a K Series-II.

DESIGNED TO HIT DEADLINES AND **REACH NEW HEIGHTS.**

K Series-II Loaders come equipped with plenty of production-boosting features to help you handle almost anything you throw their way. But if yours isn't just any application, we've got you covered with a wide variety of factory- or dealer-installed options. So you can equip your loader with exactly what you need to maximize your efforts and expand your opportunities.

Let it ride

With optional ride control, the lift cylinders act as shock absorbers, cushioning bumps to enable quick and easy navigation over rough ground without losing the load. Auto-actuation travel speed is adjustable from 1.5 to 24.0 km/h (1.0 to 15.0 mph) in increments of 0.5 units.

See clearly now

Two side-mounted mirrors enable additional visibility to the jobsite outside the machine.

The bucket list

General-purpose or excavating buckets are available in pin-on or coupler configurations from 1.9–2.7 m³ (2.5–3.5 cu. yd.).

Shake it off

Full-tire front and rear fenders and flaps help keep the machine free of mud and debris.

Material matters

Opt for forks with 1.52-m (60 in.) tines for versatility in handling a variety of material-moving tasks.

Keep it clean

Self-cleaning steps and convenient handrails provide right-side access to the skid-resistant platform for cleaning windows.

On the grid

Optional corrosion package shields electrical components and connections to help prevent corrosive materials from short-circuiting productivity.



CONTROL YOUR PRODUCTIVITY

SEE WHAT YOU CAN DO NOW.

If you want maximum productivity, a K Series-II Loader should be on your jobsite. It's not just their big torque reserves that make them such impressive performers. Single-lever joystick or two-lever fingertip controls provide smooth effortless control. Excavator-style hydraulics sense the load and deliver the flow needed for smooth combined functions and fast work cycles. PowerShift™ torque-converter transmission on the 524K-II employs smart shift technology to continuously evaluate speed and load conditions, and adjusts clutch-pack engagement to suit. 544K-II and 624K-II feature standard five-speed transmission with lockup torque converter in gears 2–5, to increase acceleration, speed cycles, and optimize power and fuel efficiency during transport, roading, and ramp climbing. You won't find a smoother-shifting loader.

Speed cycles

Boom-height kick-out and return-to-carry functions help speed production in repetitive loading applications.

Power when you need it

Engine/hydraulic match maintains good boom and bucket power into and out of the pile, for big loads, even in wet or packed materials.

Masters of maneuverability

Responsive steering and full 80-deg. articulation increase maneuverability in tight quarters, for faster cycle times and fewer three-point turns.

Get a grip

Optional wheel-spin control boosts productivity by improving traction in troublesome material or underfoot conditions. Reduces tire wear, fuel costs, and operator fatigue, too.

Refill it up

Hinged panel tilts away for quick ground-level access to the fuel tank, making refills convenient and easy.

Clutch control

Adaptive clutch cutoff automatically provides more power to the hydraulic system, delivers smooth control at high engine rpms and low speeds, and allows for better machine handling in all terrain without the operator having to change settings.





WHEEL-SPIN CONTROL
OPTION HELPS IMPROVE TRACTION IN
TROUBLESOME GROUND CONDITIONS





EASY RIDER

SEE WHAT COMFORT IN THE CAB FEELS LIKE.

Long days seem shorter when you're getting things done. And what operator wouldn't be more productive in the high-back air-ride seat of a K Series-II Loader? Up-front, an enhanced multifunction monitor displays operating, diagnostic, and maintenance info on a color LCD screen with easy-on-the-eyes clarity. Generous tinted glass and a low-profile console allow a commanding view of the work ahead. Spacious and quiet cab boasts plenty of legroom and fatigue-beating ergonomics, including convenience features such as seat-mounted loader controls. And sealed-switch module (SSM) with keyless start and effortless push-button operation of numerous machine functions. So you can work harder with less effort.

Get in the flow

Adjustable automotive-style louvers provide effective airflow to keep the glass clear and the pressurized cab comfortable.

Have a seat

Cushioning deluxe fabric-covered seat with backrest extension features full adjustment, lumbar support, and air suspension with full-damping capability.

Security you can count on

To help prevent unauthorized machine operation, the keyless-start security system requires a numeric pass code (when activated).



AUTOMOTIVE- STYLE LOUVERS

ENABLE COMFORTABLE
CAB AIRFLOW



In the know

Multi-language color LCD monitor provides push-button access to a wealth of machine data and functions:

- **Vital and general operating info**, including transmission mode, gear, engine rpm, ground speed, fuel level, and fluid temps.
- **Enhanced onboard diagnostics** with speed, pressure, and temperature readings and real-time switch status.
- **Customized machine settings** such as Quick Shift, Auto-to-1st, and optional Ride Control let you match operating characteristics to specific jobs and conditions.

The choice is yours

Choose single-lever joystick or two-lever fingertip pilot-operated hydraulic controls. Joystick F-N-R selector provides convenient direction and full-range gear changes. Both include innovative Quick-Shift feature for push-button gear changes, one gear at a time.



Bringing the jobsite into view

Optional rearview camera and radar object-detection system or rearview camera only displays the activity behind the machine on the LCD screen. Emits an audible alert for extra awareness in tight quarters and high-traffic areas.



All sealed up

Backlit touchpad in the SSM controls keyless start and 24 other machine functions, allowing the operator to activate boom-height kick-out, return-to-carry, and return-to-dig from the seat.



Cool and collected

Cooler compartment and beverage holder make it handy to stow your lunch.

BUILT TO TACKLE

WHATEVER YOU'VE GOT.

It's all about uptime. So we gave the K Series-II plenty of resources to help you succeed. All three loaders come loaded with traditional John Deere durability features such as heavy-duty wet-sleeve diesels, Quad-Cool™, and solid-state electrical systems. Reinforced articulation joints with double-tapered roller bearings. Plus, booms and mainframes so tough they're warranted for three years or 10,000 hours. When you know how they're built, you'll run a Deere.



***HEAVY-DUTY
COMPONENTS
HELP EXTEND WEAR LIFE***



Put the brakes on

Planetary final drives are mounted inboard. Hydraulic wet-disc brakes on all models self-adjust.

You'll be a fan

Optional programmable fan automatically reverses at predetermined intervals, ejecting debris from the radiator and cooler cores. Or set individual cleaning cycles through the monitor.

Think outside the box

Quad-Cool places the radiator, air-conditioner condenser, intercooler, and hydraulic, transmission, and axle coolers (standard on the 624K-II, optional on the 524K-II and 544K-II) in a unique boxed configuration that's isolated from engine heat, boosting efficiency and durability.

Never idle

Auto-idle applies the brakes and automatically reduces engine speed to help conserve fuel after an operator-determined period of inactivity. Auto shutdown turns off the engine after extended idleness.

At the starting gate

Standard starter protection limits cranking time and requires cool-down periods between attempts.

Fuel saver

Hydraulically driven fan runs only as needed for efficient cooling. Helps conserve precious fuel, too.

Simplified system

Electrical-distribution center employs highly reliable circuit-board technology and solid-state switches that eliminate numerous wiring harnesses, fuses, relays, and connectors. Sealed gold-pin electrical connectors resist corrosion, for superior long-term integrity.

Keep it out

3-mm (0.12 in.) side-shield perforations block most airborne debris. Unlike stacked coolers, Quad-Cool cores resist plugging and are easily accessible from either side, for quick and easy cleanout.

Switch things off

Master electrical-disconnect switch is enclosed in a lockable compartment beneath the right-side step, for ground-level convenience.



SAVE TIME

AND YOUR BOTTOM LINE.

Give it a spin

Vertical spin-on filters allow quick, no-spill changes. 500-, 2,000-, and 4,000-hour engine, transmission, and hydraulic oil-change intervals help reduce operating costs.

Be informed

Easy-to-navigate LCD monitor displays diagnostic messages if problems occur, and even offers possible solutions to help get you back up and running quickly.

Time to take sides

All daily service points including fuel are conveniently grouped on the left side of the machine.

Easy service

Color-coded fluid-sample and diagnostic test ports help speed preventative maintenance and troubleshooting. Noninvasive design helps keep out contaminants.

Know on sight

Conveniently located, easy-to-read sight gauges and see-through reservoirs let you check transmission, hydraulic, coolant, and windshield washer fluid levels at a glance.

Keep it clean

Greasing is less messy, with centralized lube banks providing easy access to difficult-to-reach zerks. Periodic lube and maintenance chart conveniently confirms that nothing gets overlooked.



Get valuable insight with

PRECISION CONSTRUCTION

This suite of construction technology delivers **Productivity Solutions** to help you get more done, more efficiently. In-base JDLink™ connectivity provides machine location, utilization data, and alerts to help you maximize productivity and efficiency. Other productivity solutions include grade-management options for multiple machine forms and payload weighing for wheel loaders and articulated dump trucks.

To maximize uptime and lower costs, JDLink also enables **John Deere Connected Support.™** John Deere's centralized Machine Health Monitoring Center analyzes data from thousands of connected machines, identifies trends, and develops recommended actions, called Expert Alerts, to help prevent downtime. Dealers use Expert Alerts to proactively address conditions that may otherwise likely lead to downtime. Your dealer can also monitor machine health and leverage remote diagnostics and programming capability to further diagnose problems and even update machine software without a time-consuming trip to the jobsite.





524K-II SPECIFICATIONS

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Engine		524K-II Z-BAR / HIGH-LIFT
Manufacturer and Model	John Deere PowerTech™ E 6068H	John Deere PowerTech™ Plus 6068H
Non-Road Emission Standard	EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions	EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions
Cylinders	6	6
Valves per Cylinder	2	4
Displacement	6.8 L (414 cu. in.)	6.8 L (414 cu. in.)
Peak Power (ISO 9249)		
Net	106 kW (142 hp) at 1,900 rpm	106 kW (142 hp) at 1,900 rpm
Gross	112 kW (150 hp) at 2,000 rpm	112 kW (150 hp) at 2,000 rpm
Peak Torque (ISO 9249)		
Net	644 Nm (475 lb.-ft.) at 1,300 rpm	645 Nm (476 lb.-ft.) at 1,100 rpm
Gross	670 Nm (494 lb.-ft.) at 1,400 rpm	670 Nm (494 lb.-ft.) at 1,700 rpm
Net Torque Rise	43%	64%
Fuel System (electronically controlled)	High-pressure common rail	High-pressure common rail
Lubrication	Full-flow spin-on filter and integral cooler	Full-flow spin-on filter and integral cooler
Aspiration	Turbocharged, charge air cooled	Turbocharged, charge air cooled
Air Cleaner	Under-hood dual-element dry type, restriction indicator in cab monitor for service	
Cooling		
Fan Drive	Hydraulically driven, proportionally controlled, fan aft of coolers	
Electrical		
Electrical System	24 volt with 80-amp alternator (optional 100-amp alternator)	
Batteries (2 – 12 volt)	750 CCA (each)	
Lights	Driving lights with guard, turn signals, and flashers; stop- and taillight; work lights: front (4) and rear (2)	
Transmission System		
Type	Countershaft-type PowerShift™	
Torque Converter	Single stage, single phase	
Shift Control	Electronically modulated, adaptive, load and speed dependent	
Operator Interface	Steering-column or joystick-mounted F-N-R and gear-select lever; Quick-Shift button on hydraulic lever	
Shift Modes	Manual/auto (1st-D or 2nd-D); Quick-Shift button with 2 selectable modes: kick-down or kick-up/down; and adaptive clutch cutoff	
Maximum Travel Speeds (with 20.5 R 25 tires)	<i>Forward</i>	<i>Reverse</i>
Gear 1	5.5 km/h (3.4 mph)	5.8 km/h (3.6 mph)
Gear 2	11.7 km/h (7.3 mph)	12.3 km/h (7.6 mph)
Gear 3	17.9 km/h (11.1 mph)	27.6 km/h (17.1 mph)
Gear 4	25.8 km/h (16.0 mph)	N/A
Gear 5	38.5 km/h (23.9 mph)	N/A
Axles/Brakes		
Final Drives	Heavy-duty inboard-mounted planetary	
Differentials	Conventional non-locking rear and front – standard; hydraulic locking front with rear conventional – optional; dual locking front and rear – optional	
Rear Axle Oscillation, Stop to Stop (with 20.5 R 25 tires)	24 deg. (12 deg. each direction)	
Brakes (conform to ISO 3450)		
Service	Hydraulically actuated, inboard sun-shaft mounted, single disc; oil cooled – optional	
Parking	Automatic spring applied, hydraulically released, driveline mounted, sealed wet multi disc	
Tires/Wheels (see page 16 for complete tire adjustments)		
	<i>Tread Width</i>	<i>Width Over Tires</i>
Michelin 20.5 R 25, 1 Star L-3	1950 mm (76.8 in.)	2574 mm (101.3 in.)
Serviceability		
Refill Capacities		
Fuel Tank With Lockable Cap	220 L (58 gal.)	
Cooling System	22.5 L (23.8 qt.)	
Engine Oil With Vertical Spin-On Filter	19 L (20 qt.)	
Transmission Reservoir With Vertical Filter	21.5 L (22.7 qt.)	
Axle Oil (front and rear, each)	18 L (19 qt.)	
Hydraulic Reservoir and Filter	92 L (24.3 gal.)	
Park Brake Oil (wet disc)	0.3 L (10 oz.)	
Hydraulic System/Steering		
Pump (loader and steering)	Variable-displacement, axial-piston pump; closed-center, pressure-compensating system	
Maximum Rated Flow at 6895 kPa (1,000 psi) and 2,200 rpm	177 L/m (47 gpm)	
System Relief Pressure (loader and steering)	24 994 kPa (3,625 psi)	
Loader Controls	2-function valve, joystick control or fingertip controls, hydraulic-function enable/disable, optional 3rd- and 4th-function valve with auxiliary lever	
Steering (conforms to ISO 5010)	Steering-column-mounted, twist-grip shift lever; Quick-Shift button on hydraulic lever	
Type	Power, fully hydraulic	
Articulation Angle	80-deg. arc (40 deg. each direction)	

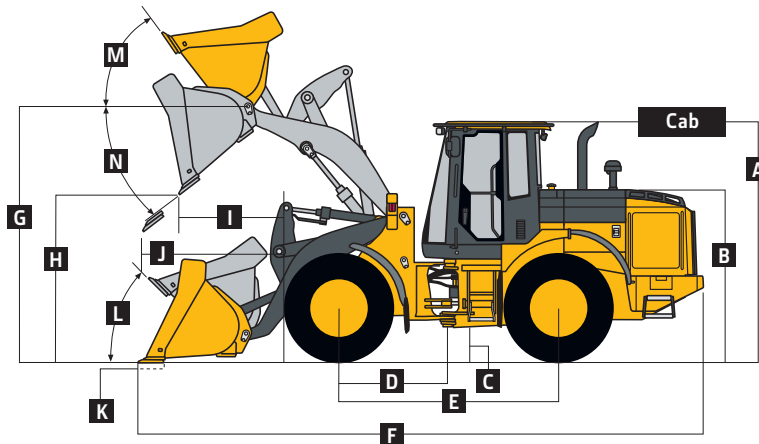
524K-II SPECIFICATIONS



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Hydraulic System/Steering <i>(continued)</i>		524K-II Z-BAR / HIGH-LIFT
Turning Radius (measured to centerline of outside tire)		5.00 m (16 ft. 5 in.)
Hydraulic Cycle Times		
Raise		6.1 sec.
Dump		1.4 sec.
Lower (float down)		3.0 sec.
Total		10.5 sec.

Dimensions and Specifications with Pin-On Bucket



524K-II Z-BAR AND HIGH-LIFT LOADERS WITH PIN-ON BUCKET

	Z-Bar 1.9-m ³ (2.5 cu. yd.) general-purpose with bolt-on edge	Z-Bar 2.1-m ³ (2.75 cu. yd.) general-purpose with bolt-on edge	High-Lift 1.9-m ³ (2.5 cu. yd.) general-purpose with bolt-on edge	High-Lift 2.1-m ³ (2.75 cu. yd.) general-purpose with bolt-on edge
Dimensions With Bucket				
A Height to Top of Cab	3.25 m (10 ft. 8 in.)	3.25 m (10 ft. 8 in.)	3.25 m (10 ft. 8 in.)	3.25 m (10 ft. 8 in.)
B Hood Height	2.30 m (7 ft. 7 in.)	2.30 m (7 ft. 7 in.)	2.30 m (7 ft. 7 in.)	2.30 m (7 ft. 7 in.)
C Ground Clearance	0.40 m (15.7 in.)	0.40 m (15.7 in.)	0.40 m (15.7 in.)	0.40 m (15.7 in.)
D Length From Centerline to Front Axle	1.45 m (4 ft. 9 in.)	1.45 m (4 ft. 9 in.)	1.45 m (4 ft. 9 in.)	1.45 m (4 ft. 9 in.)
E Wheelbase	2.93 m (9 ft. 7 in.)	2.93 m (9 ft. 7 in.)	2.93 m (9 ft. 7 in.)	2.93 m (9 ft. 7 in.)
F Overall Length, Bucket on Ground	7.25 m (23 ft. 9 in.)	7.34 m (24 ft. 1 in.)	7.58 m (24 ft. 10 in.)	7.67 m (25 ft. 2 in.)
G Height to Hinge Pin, Fully Raised	3.77 m (12 ft. 5 in.)	3.77 m (12 ft. 5 in.)	4.12 m (13 ft. 6 in.)	4.12 m (13 ft. 6 in.)
H Dump Clearance, 45 deg., Full Height	2.77 m (9 ft. 1 in.)	2.77 m (9 ft. 1 in.)	3.16 m (10 ft. 4 in.)	3.12 m (10 ft. 3 in.)
I Reach, 45-deg. Dump, Full Height	0.81 m (32 in.)	0.98 m (3 ft. 2 in.)	0.90 m (4 ft. 0 in.)	0.99 m (3 ft. 3 in.)
J Reach, 45-deg. Dump, 2.13-m (7 ft. 0 in.) Clearance	1.41 m (4 ft. 7 in.)	1.44 m (4 ft. 9 in.)	1.70 m (5 ft. 7 in.)	1.73 m (5 ft. 8 in.)
K Maximum Digging Depth	78 mm (3.1 in.)	97 mm (3.8 in.)	160 mm (6.3 in.)	222 mm (8.7 in.)
L Maximum Rollback at Ground Level	41 deg.	41 deg.	41 deg.	41 deg.
M Maximum Rollback, Boom Fully Raised	55 deg.	55 deg.	50 deg.	50 deg.
N Maximum Bucket Dump Angle, Fully Raised	51 deg.	51 deg.	47 deg.	47 deg.
Loader Clearance Circle, Bucket Carry Position	11.50 m (37 ft. 8 in.)	11.60 m (38 ft. 1 in.)	11.80 m (38 ft. 8 in.)	11.90 m (39 ft. 1 in.)
Specifications with Bucket				
Capacity, Heaped	1.9 m ³ (2.5 cu. yd.)	2.1 m ³ (2.75 cu. yd.)	1.9 m ³ (2.5 cu. yd.)	2.1 m ³ (2.75 cu. yd.)
Capacity, Struck	1.5 m ³ (2.0 cu. yd.)	1.7 m ³ (2.27 cu. yd.)	1.5 m ³ (2.0 cu. yd.)	1.7 m ³ (2.27 cu. yd.)
Bucket Weight With Bolt-On Cutting Edge	968 kg (2,134 lb.)	1013 kg (2,233 lb.)	968 kg (2,134 lb.)	1013 kg (2,233 lb.)
Bucket Width	2.54 m (8 ft. 4 in.)	2.54 m (8 ft. 4 in.)	2.54 m (8 ft. 4 in.)	2.54 m (8 ft. 4 in.)
Breakout Force	9638 kg (21,248 lb.)	9060 kg (19,974 lb.)	8922 kg (19,670 lb.)	8371 kg (18,455 lb.)
Tipping Load, Straight, No Tire Deflection	10 828 kg (23,872 lb.)	10 688 kg (23,563 lb.)	9240 kg (20,371 lb.)	9111 kg (20,086 lb.)
Tipping Load, Straight, With Tire Deflection	10 296 kg (22,699 lb.)	10 158 kg (22,394 lb.)	8841 kg (19,491 lb.)	8709 kg (19,200 lb.)
Tipping Load, 40-deg. Full Turn, No Tire Deflection	9411 kg (20,748 lb.)	9281 kg (20,461 lb.)	8007 kg (17,652 lb.)	7887 kg (17,388 lb.)
Tipping Load, 40-deg. Full Turn, With Tire Deflection	8739 kg (19,266 lb.)	8607 kg (18,975 lb.)	7479 kg (16,488 lb.)	7365 kg (16,237 lb.)
Rated Operating Load, 50% Full-Turn Tipping Load, No Tire Deflection (conforms to ISO 14397-1)*	4706 kg (10,374 lb.)	4640 kg (10,229 lb.)	4003 kg (8,826 lb.)	3943 kg (8,693 lb.)
Rated Operating Load, 50% Full-Turn Tipping Load, With Tire Deflection (conforms to ISO 14397-1)*	4369 kg (9,633 lb.)	4303 kg (9,486 lb.)	3739 kg (8,244 lb.)	3682 kg (8,117 lb.)
Operating Weight	12 622 kg (27,827 lb.)	12 667 kg (27,926 lb.)	12 792 kg (28,201 lb.)	12 837 kg (28,300 lb.)

Loader operating information is based on machine with identified linkage and standard equipment, PowerTech E 6068H (EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions) engine, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator. This information is affected by changes in tires, ballast, and different attachments, and assumes no tire deflection per the standard ISO 14397-1 section 5.

*Rated operating capacity based on Deere attachments only.

Adjustments to Operating Weights and Tipping Loads

With Buckets

524K-II Z-BAR / HIGH-LIFT

Adjustments to operating weights, tipping loads, and tires are based on Z-Bar machine with pin-on 2.1-m³ (2.75 cu. yd.) general-purpose bucket with bolt-on cutting edge, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator*

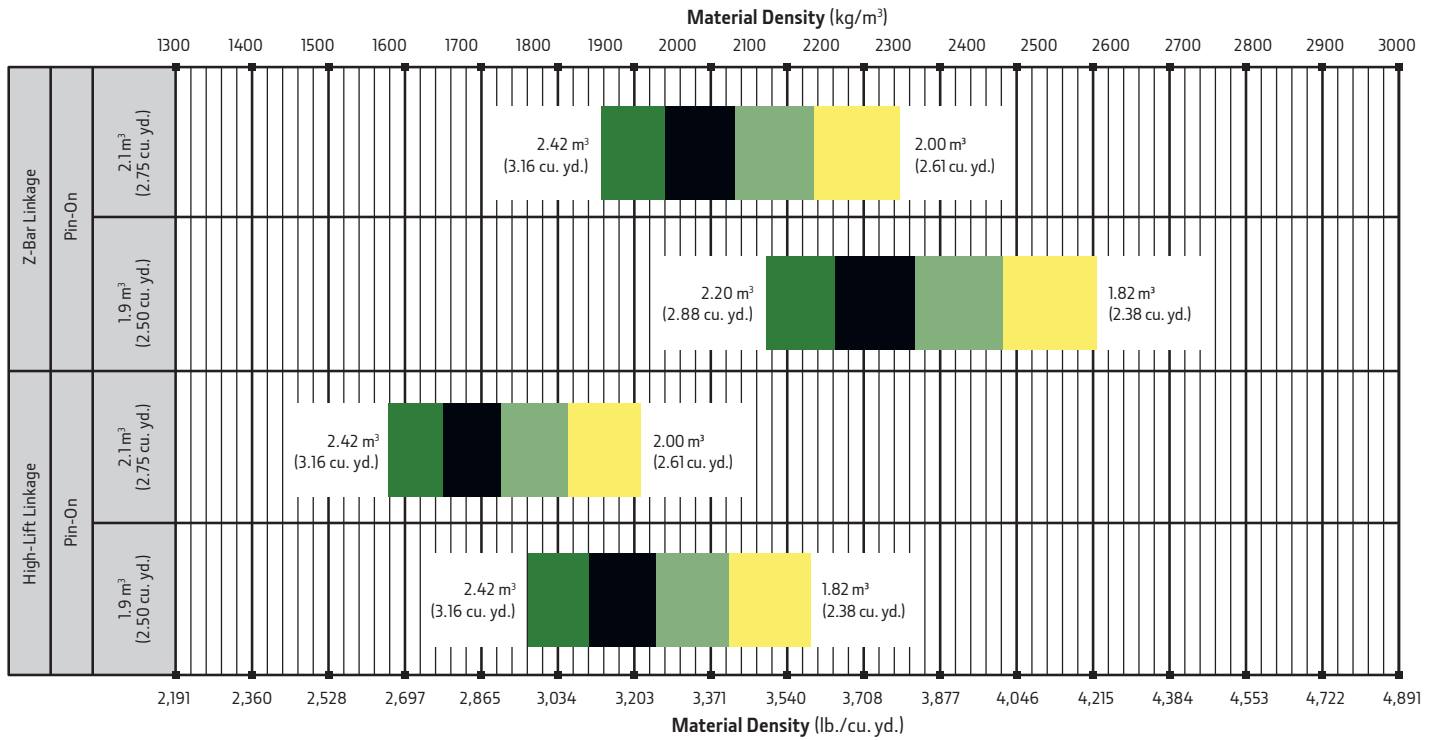
Add (+) or deduct (–) kg (lb.) as indicated for loaders with 3-piece rims	Operating Weight	Tipping Load, Straight	Tipping Load, 40-deg. Full Turn	Tread Width	Width Over Tires	Vertical Height
John Deere PowerTech E 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
John Deere PowerTech Plus 6068H	28 kg (90 lb.)	90 kg (198 lb.)	73 kg (162 lb.)	N/A	N/A	N/A
Michelin 20.5 R 25, 1 Star L-3	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	0 mm (0 in.)	0 mm (0 in.)	0 mm (0 in.)
Bridgestone 20.5 R 25, 1 Star L-3	+44 kg (+97 lb.)	+32 kg (+70 lb.)	+28 kg (+62 lb.)	0 mm (0 in.)	–5 mm (–0.2 in.)	–5 mm (–0.2 in.)
Titan 20.5-25, 16 PR L-2	–256 kg (–564 lb.)	–187 kg (–412 lb.)	–165 kg (–368 lb.)	0 mm (0 in.)	–2 mm (–0.1 in.)	+3 mm (+0.1 in.)
Firestone 20.5-25, 16 PR L-2	–276 kg (–608 lb.)	–201 kg (–443 lb.)	–178 kg (–392 lb.)	0 mm (0 in.)	–2 mm (–0.1 in.)	+3 mm (+0.1 in.)
Firestone 20.5-25, 16 PR L-3	–296 kg (–652 lb.)	–216 kg (–476 lb.)	–190 kg (–419 lb.)	0 mm (0 in.)	–2 mm (–0.1 in.)	+9 mm (+0.4 in.)
Pirelli 17.5-25 16 PR L-3	–476 kg (–1,049 lb.)	–347 kg (–765 lb.)	–306 kg (–675 lb.)	0 mm (0 in.)	–78 mm (–3 in.)	–63 mm (–2.5 in.)
Titan 17.5-25 16 PR L-3	–476 kg (–1,049 lb.)	–347 kg (–765 lb.)	–306 kg (–675 lb.)	0 mm (0 in.)	–78 mm (–3 in.)	–63 mm (–2.5 in.)
Pirelli 20.5 R 25 1 Star L-3	–16 kg (–35 lb.)	–12 kg (–26 lb.)	–10 kg (–22 lb.)	0 mm (0 in.)	+32 mm (+1.3 in.)	+7 mm (+0.3 in.)
Titan 20.5-25 16 PR L-3	–296 kg (–653 lb.)	–216 kg (–476 lb.)	–190 kg (–419 lb.)	0 mm (0 in.)	+2 mm (+0.08 in.)	+7 mm (+0.3 in.)
Michelin 20.5 R 25 XLDN L-3	–16 kg (–35 lb.)	–12 kg (–26 lb.)	–10 kg (–22 lb.)	0 mm (0 in.)	–8 mm (–0.3 in.)	–3 mm (–0.1 in.)
Michelin 17.5 R 25 G3 XHA	–348 kg (–767 lb.)	–254 kg (–560 lb.)	–224 kg (–494 lb.)	0 mm (0 in.)	–78 mm (–3 in.)	–73 mm (–2.8 in.)
CaCl ₂ in 20.5-25, L-3 Rear Tires, 75% Fill	+825 kg (+1,820 lb.)	+1010 kg (+2,227 lb.)	+891 kg (+1,964 lb.)	N/A	N/A	N/A

*May change based on vehicle configuration, weight, or tire-pressure adjustments.

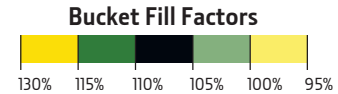
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Bucket Selection Guides*

524K-II Z-BAR / HIGH-LIFT



LOOSE MATERIALS		kg/m³	lb./cu. yd.	LOOSE MATERIALS		kg/m³	lb./cu. yd.
Chips, pulpwood		288	486	Limestone, coarse, sized		1570	2,646
Cinders (coal, ashes, clinkers)		673	1,134	Limestone, mixed sizes		1682	2,835
Clay and gravel, dry		1602	2,700	Limestone, pulverized or crushed		1362	2,295
Clay, compact, solid		1746	2,943	Sand, damp		2083	3,510
Clay, dry in lump loose		1009	1,701	Sand, dry		1762	2,970
Clay, excavated in water		1282	2,160	Sand, voids, full of water		2083	3,510
Coal, anthracite, broken, loose		865	1,458	Sandstone, quarried		1314	2,214
Coal, bituminous, moderately wet		801	1,350	Shale, broken crushed		1362	2,295
Earth, common loam, dry		1218	2,052	Slag, furnace granulated		1955	3,294
Earth, mud, packed		1843	3,105	Stone or gravel, 37.5 to 87.5-mm (1.5 to 3.5 in.) size		1442	2,430
Granite, broken		1538	2,592	Stone or gravel, 18.75-mm (0.75 in.) size		1602	2,700
Gypsum		2275	3,834				



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544K-II SPECIFICATIONS

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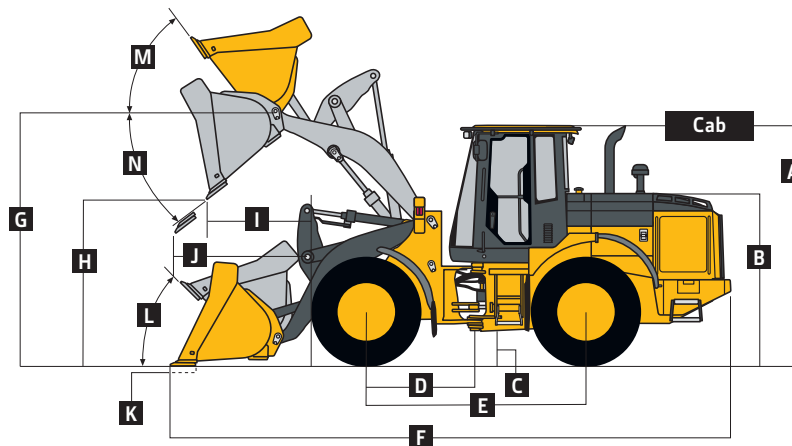
Engine	544K-II Z-BAR / HIGH-LIFT			
Manufacturer and Model	John Deere PowerTech™ E 6068H		John Deere PowerTech™ Plus 6068H	
Non-Road Emission Standard	EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions		EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions	
Cylinders	6		6	
Valves per Cylinder	2		4	
Displacement	6.8 L (414 cu. in.)		6.8 L (414 cu. in.)	
Peak Power (ISO 9249)				
Net	122 kW (163 hp) at 1,900 rpm		122 kW (163 hp) at 1,800 rpm	
Gross	128 kW (172 hp) at 1,900 rpm		128 kW (172 hp) at 1,900 rpm	
Peak Torque (ISO 9249)				
Net	659 Nm (486 lb.-ft.) at 1,600 rpm		683 Nm (504 lb.-ft.) at 1,100 rpm	
Gross	687 Nm (507 lb.-ft.) at 1,600 rpm		713 Nm (526 lb.-ft.) at 1,700 rpm	
Net Torque Rise	39%		45%	
Fuel System (electronically controlled)	High-pressure common rail		High-pressure common rail	
Lubrication	Full-flow spin-on filter and integral cooler		Full-flow spin-on filter and integral cooler	
Aspiration	Turbocharged, charge air cooled		Turbocharged, charge air cooled	
Air Cleaner	Under-hood, dual-element dry type, restriction indicator in cab monitor for service			
Cooling				
Fan Drive	Hydraulically driven, proportionally controlled, fan aft of coolers			
Electrical				
Electrical System	24 volt with 80-amp alternator (optional 100-amp alternator)			
Batteries (2 – 12 volt)	750 CCA (each)			
Lights	Driving lights with guard, turn signals, and flashers; stop- and taillight; work lights: front (4) and rear (2)			
Transmission System				
Type	Countershaft-type PowerShift™			
Torque Converter	Single stage, single phase			
Shift Control	Electronically modulated, adaptive, load and speed dependent			
Operator Interface	Steering-column or joystick-mounted F-N-R and gear-select lever; kick-down button on hydraulic lever			
Shift Modes	Manual/auto (1st–D or 2nd–D); Quick-Shift button with 2 selectable modes: kick-down or kick-up/down; and adaptive clutch cutoff			
	Standard 5-Speed With Lockup Torque Converter [LUTC]		Optional 5-Speed Without LUTC	
Maximum Travel Speeds (with 20.5 R 25 tires)	Forward	Reverse	Forward	Reverse
Gear 1	5.8 km/h (3.6 mph)	6.3 km/h (3.9 mph)	5.2 km/h (3.2 mph)	5.5 km/h (3.4 mph)
Gear 2	12.0 km/h (7.5 mph)	12.7 km/h (7.9 mph)	10.9 km/h (6.8 mph)	11.5 km/h (7.2 mph)
Gear 3	18.6 km/h (11.6 mph)	29.1 km/h (18.1 mph)	16.6 km/h (10.3 mph)	25.3 km/h (15.7 mph)
Gear 4	27.7 km/h (17.2 mph)	N/A	23.8 km/h (14.8 mph)	N/A
Gear 5	40.0 km/h (24.9 mph)	N/A	37.6 km/h (23.4 mph)	N/A
Axles/Brakes				
Final Drives	Heavy-duty inboard-mounted planetary			
Differentials	Hydraulic locking front with conventional rear – standard; dual locking front and rear – optional			
Rear Axle Oscillation, Stop to Stop (with 20.5 R 25 tires)	24 deg. (12 deg. each direction)			
Brakes (conform to ISO 3450)				
Service	Hydraulically actuated, inboard sun-shaft mounted, single disc; oil cooled – optional			
Parking	Automatic spring applied, hydraulically released, driveline mounted, sealed wet multi disc			
Tires/Wheels (see page 20 for complete tire adjustments)				
	Tread Width	Width Over Tires		
Michelin 20.5 R 25, 1 Star L-3	1950 mm (76.8 in.)	2574 mm (101.3 in.)		
Serviceability				
Refill Capacities				
Fuel Tank With Lockable Cap	325 L (86 gal.)			
Cooling System	22.5 L (23.8 qt.)			
Engine Oil With Vertical Spin-On Filter	19 L (20 qt.)			
Transmission Reservoir With Vertical Filter	18.5 L (19.5 qt.)			
Axle Oil (front and rear, each)	17 L (18 qt.)			
Hydraulic Reservoir and Filter	92 L (24.3 gal.)			
Park Brake Oil (wet disc)	0.3 L (10 oz.)			
Hydraulic System/Steering				
Pump (loader and steering)	Variable-displacement, axial-piston pump; closed-center, pressure-compensating system			
Maximum Rated Flow at 6895 kPa (1,000 psi) and 2,200 rpm	188 L/m (50 gpm)			
System Relief Pressure (loader and steering)	25 166 kPa (3,650 psi)			
Loader Controls	2-function valve, joystick control or fingertip controls, hydraulic-function enable/disable, optional 3rd- and 4th-function valve with auxiliary lever			
Steering (conforms to ISO 5010)	Steering-column-mounted, twist-grip shift lever; Quick-Shift button on hydraulic lever			
Type	Power, fully hydraulic			
Articulation Angle	80-deg. arc (40 deg. each direction)			

544K-II SPECIFICATIONS



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Hydraulic System/Steering <i>(continued)</i>		544K-II Z-BAR / HIGH-LIFT
Turning Radius (measured to centerline of outside tire)		5.00 m (16 ft. 5 in.)
Hydraulic Cycle Times		
Raise		5.8 sec.
Dump		1.2 sec.
Lower (float down)		3.2 sec.
Total		10.2 sec.
Dimensions and Specifications with Pin-On Bucket		



544K-II Z-BAR AND HIGH-LIFT LOADERS WITH PIN-ON BUCKET

	Z-Bar <i>Narrow 2.3-m³ (3.0 cu. yd.) general-purpose with bolt-on edge</i>	High-Lift <i>Narrow 2.3-m³ (3.0 cu. yd.) general-purpose with bolt-on edge</i>
Dimensions With Bucket		
A Height to Top of Cab	3.24 m (10 ft. 8 in.)	3.24 m (10 ft. 8 in.)
B Hood Height	2.30 m (7 ft. 7 in.)	2.30 m (7 ft. 7 in.)
C Ground Clearance	0.40 m (15.7 in.)	0.40 m (15.7 in.)
D Length From Centerline to Front Axle	1.45 m (4 ft. 9 in.)	1.45 m (4 ft. 9 in.)
E Wheelbase	2.93 m (9 ft. 7 in.)	2.93 m (9 ft. 7 in.)
F Overall Length, Bucket on Ground	7.43 m (24 ft. 4 in.)	7.75 m (25 ft. 5 in.)
G Height to Hinge Pin, Fully Raised	3.82 m (12 ft. 6 in.)	4.17 m (13 ft. 8 in.)
H Dump Clearance, 45 deg., Full Height	2.76 m (9 ft. 1 in.)	3.11 m (10 ft. 3 in.)
I Reach, 45-deg. Dump, Full Height	0.99 m (3 ft. 3 in.)	0.99 m (3 ft. 3 in.)
J Reach, 45-deg. Dump, 2.13-m (7 ft. 0 in.) Clearance	1.46 m (4 ft. 10 in.)	1.76 m (5 ft. 9 in.)
K Maximum Digging Depth	95 mm (3.72 in.)	221 mm (8.7 in.)
L Maximum Rollback at Ground Level	42 deg.	37 deg.
M Maximum Rollback, Boom Fully Raised	55 deg.	50 deg.
N Maximum Bucket Dump Angle, Fully Raised	49 deg.	46 deg.
Loader Clearance Circle, Bucket Carry Position	11.65 m (38 ft. 3 in.)	11.96 m (39 ft. 3 in.)
Specifications with Bucket		
Capacity, Heaped	2.3 m ³ (3.0 cu. yd.)	2.3 m ³ (3.0 cu. yd.)
Capacity, Struck	2.0 m ³ (2.6 cu. yd.)	2.0 m ³ (2.6 cu. yd.)
Bucket Weight With Bolt-On Cutting Edge	1066 kg (2,350 lb.)	1066 kg (2,350 lb.)
Bucket Width	2.54 m (8 ft. 4 in.)	2.54 m (8 ft. 4 in.)
Breakout Force	10 115 kg (22,300 lb.)	9351 kg (20,615 lb.)
Tipping Load, Straight, No Tire Deflection	11 103 kg (24,478 lb.)	9528 kg (21,006 lb.)
Tipping Load, Straight, With Tire Deflection	10 533 kg (23,221 lb.)	9090 kg (20,040 lb.)
Tipping Load, 40-deg. Full Turn, No Tire Deflection	9619 kg (21,206 lb.)	8228 kg (18,140 lb.)
Tipping Load, 40-deg. Full Turn, With Tire Deflection	8883 kg (19,584 lb.)	7656 kg (16,878 lb.)
Rated Operating Load, 50% Full-Turn Tipping Load, No Tire Deflection (conforms to ISO 14397-1)*	4809 kg (10,602 lb.)	4114 kg (9070 lb.)
Rated Operating Load, 50% Full-Turn Tipping Load, With Tire Deflection (conforms to ISO 14397-1)*	4441 kg (9,791 lb.)	3828 kg (8439 lb.)
Operating Weight	13 121 kg (28,927 lb.)	13 240 kg (29,189 lb.)

Loader operating information is based on machine with identified linkage and standard equipment, PowerTech E 6068H (EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions) engine, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator. This information is affected by changes in tires, ballast, and different attachments, and assumes no tire deflection per the standard ISO 14397-1 section 5.

*Rated operating capacity based on Deere attachments only.

Adjustments to Operating Weights and Tipping Loads

With Buckets

544K-II Z-BAR / HIGH-LIFT

Adjustments to operating weights, tipping loads, and tires are based on Z-Bar machine with pin-on 2.3-m³ (3.0 cu. yd.) general-purpose bucket with bolt-on cutting edge, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator*

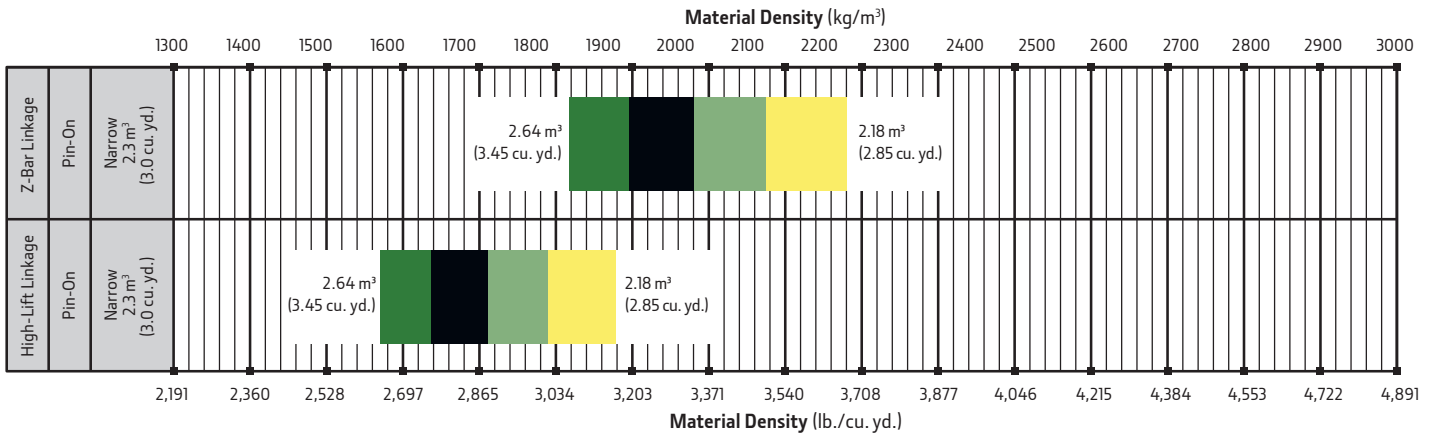
Add (+) or deduct (–) kg (lb.) as indicated for loaders with 3-piece rims	<i>Operating Weight</i>	<i>Tipping Load, Straight</i>	<i>Tipping Load, 40-deg. Full Turn</i>	<i>Tread Width</i>	<i>Width Over Tires</i>	<i>Vertical Height</i>
John Deere PowerTech E 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
John Deere PowerTech Plus 6068H	28 kg (90 lb.)	90 kg (198 lb.)	73 kg (162 lb.)	N/A	N/A	N/A
Michelin 20.5 R 25, 1 Star L-3	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	0 mm (0 in.)	0 mm (0 in.)	0 mm (0 in.)
Bridgestone 20.5 R 25, 1 Star L-3	+44 kg (+97 lb.)	+32 kg (+71 lb.)	+28 kg (+62 lb.)	0 mm (0 in.)	–5 mm (–0.2 in.)	–5 mm (–0.2 in.)
Titan 20.5-25, 16 PR L-2	–256 kg (–564 lb.)	–186 kg (–410 lb.)	–164 kg (–362 lb.)	0 mm (0 in.)	–2 mm (–0.1 in.)	+3 mm (+0.1 in.)
Firestone 20.5-25, 16 PR L-2	–276 kg (–608 lb.)	–201 kg (–443 lb.)	–180 kg (–397 lb.)	0 mm (0 in.)	–2 mm (–0.1 in.)	+3 mm (+0.1 in.)
Firestone 20.5-25, 16 PR L-3	–296 kg (–653 lb.)	–215 kg (–474 lb.)	–190 kg (–419 lb.)	0 mm (0 in.)	–2 mm (–0.1 in.)	+9 mm (+0.4 in.)
Pirelli 20.5 R 25 1 Star L-3	–16 kg (–35 lb.)	–12 kg (–26 lb.)	–10 kg (–22 lb.)	0 mm (0 in.)	+2 mm (+0.1 in.)	+7 mm (+0.3 in.)
Titan 20.5-25 16 PR L-3	–296 kg (–653 lb.)	–215 kg (–474 lb.)	–190 kg (–419 lb.)	0 mm (0 in.)	+2 mm (+0.1 in.)	+7 mm (+0.3 in.)
Michelin 20.5 R 25 XLDN L-3	–16 kg (–35 lb.)	–12 kg (–26 lb.)	–10 kg (–22 lb.)	0 mm (0 in.)	+2 mm (+0.1 in.)	–3 mm (–0.11 in.)
CaCl ₂ in 20.5-25, L-3 Rear Tires, 75% Fill	+825 kg (+1,820 lb.)	+1010 kg (+2,227 lb.)	+891 kg (+1,964 lb.)	N/A	N/A	N/A

*May change based on vehicle configuration, weight, or tire-pressure adjustments.

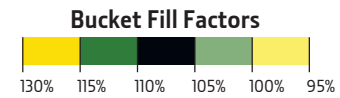
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Bucket Selection Guides*

544K-II Z-BAR / HIGH-LIFT



LOOSE MATERIALS			LOOSE MATERIALS		
	kg/m³	lb./cu. yd.		kg/m³	lb./cu. yd.
Chips, pulpwood	288	486	Limestone, coarse, sized	1570	2,646
Cinders (coal, ashes, clinkers)	673	1,134	Limestone, mixed sizes	1682	2,835
Clay and gravel, dry	1602	2,700	Limestone, pulverized or crushed	1362	2,295
Clay, compact, solid	1746	2,943	Sand, damp	2083	3,510
Clay, dry in lump loose	1009	1,701	Sand, dry	1762	2,970
Clay, excavated in water	1282	2,160	Sand, voids, full of water	2083	3,510
Coal, anthracite, broken, loose	865	1,458	Sandstone, quarried	1314	2,214
Coal, bituminous, moderately wet	801	1,350	Shale, broken crushed	1362	2,295
Earth, common loam, dry	1218	2,052	Slag, furnace granulated	1955	3,294
Earth, mud, packed	1843	3,105	Stone or gravel, 37.5 to 87.5-mm (1.5 to 3.5 in.) size	1442	2,430
Granite, broken	1538	2,592	Stone or gravel, 18.75-mm (0.75 in.) size	1602	2,700
Gypsum	2275	3,834			



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624K-II SPECIFICATIONS

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Engine		624K-II Z-BAR / HIGH-LIFT		
Manufacturer and Model	John Deere PowerTech™ Plus 6068H		John Deere PowerTech™ 6068H	
Non-Road Emission Standard	EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions		EPA Tier 2/EU Stage II	
Cylinders	6		6	
Valves per Cylinder	4		4	
Displacement	6.8 L (414 cu. in.) standard and lockup torque converter (LUTC) transmissions			
Peak Power (ISO 9249)				
Net	141 kW (188 hp) at 1,800 rpm		141 kW (188 hp) at 1,800 rpm	
Gross	149 kW (200 hp) at 1,800 rpm		149 kW (200 hp) at 1,800 rpm	
Peak Torque (ISO 9249)				
Net	804 Nm (593 lb.-ft.) at 1,400 rpm		804 Nm (593 lb.-ft.) at 1,400 rpm	
Gross	844 Nm (623 lb.-ft.) at 1,600 rpm		844 Nm (623 lb.-ft.) at 1,600 rpm	
Net Torque Rise	57% standard transmission / 50% LUTC transmission		57% standard transmission / 50% LUTC transmission	
Fuel System (electronically controlled)	High-pressure common rail		High-pressure common rail	
Lubrication	Full-flow spin-on filter and integral cooler		Full-flow spin-on filter and integral cooler	
Aspiration	Turbocharged, charge air cooled		Turbocharged, charge air cooled	
Air Cleaner	Under-hood, dual-element dry type, restriction indicator in cab monitor for service			
Cooling				
Fan Drive	Hydraulically driven, proportionally controlled, fan aft of coolers			
Electrical				
Electrical System	24 volt with 80-amp alternator (optional 100-amp alternator)			
Batteries (2 – 12 volt)	750 CCA (each)			
Lights	Driving lights with guard, turn signals, and flashers; stop- and taillight; work lights: front (4) and rear (2)			
Transmission System				
Type	Countershaft-type PowerShift™			
Torque Converter	Single stage, single phase			
Shift Control	Electronically modulated, adaptive, load and speed dependent			
Operator Interface	Steering-column or joystick-mounted F-N-R and gear-select lever; Quick-Shift button on hydraulic lever			
Shift Modes	Manual/auto (1st-D or 2nd-D); Quick-Shift button with 2 selectable modes: kick-down or kick-up/down; and adaptive clutch cutoff			
	Standard 5-Speed With LUTC		Optional 5-Speed Without LUTC	
Maximum Travel Speeds (with 20.5 R 25 tires)	Forward	Reverse	Forward	Reverse
Gear 1	6.2 km/h (3.85 mph)	6.6 km/h (4.1 mph)	6.4 km/h (4.0 mph)	6.7 km/h (4.2 mph)
Gear 2	11.1 km/h (6.9 mph)	11.8 km/h (7.3 mph)	11.3 km/h (7.0 mph)	11.9 km/h (7.4 mph)
Gear 3	17.1 km/h (10.6 mph)	28.1 km/h (17.5 mph)	17.0 km/h (10.6 mph)	26.5 km/h (16.5 mph)
Gear 4	26.7 km/h (16.6 mph)	N/A	25.4 km/h (15.8 mph)	N/A
Gear 5	40.0 km/h (24.9 mph)	N/A	36.3 km/h (22.5 mph)	N/A
Axles/Brakes				
Final Drives	Heavy-duty inboard-mounted planetary			
Differentials	Hydraulic locking front with conventional rear – standard; dual locking front and rear – optional			
Rear Axle Oscillation, Stop to Stop (with 20.5 R 25 tires)	24 deg. (12 deg. each direction)			
Brakes (conform to ISO 3450)				
Service	Hydraulically actuated, spring-retracted, self-adjusting, inboard sun-shaft mounted, oil cooled, single disc			
Parking	Automatic spring applied, hydraulically released, driveline mounted, oil cooled, multi disc			
Tires/Wheels (see page 24 for complete tire adjustments)				
	Tread Width	Width Over Tires		
Michelin 20.5 R 25, 1 Star L-3	2050 mm (80.7 in.)	2670 mm (105.1 in.)		
Serviceability				
Refill Capacities				
Fuel Tank With Lockable Cap	352 L (93 gal.)			
Cooling System	27 L (29 qt.)			
Engine Oil With Vertical Spin-On Filter	19 L (20 qt.)			
Transmission Reservoir With Vertical Filter	22 L (23 qt.)			
Axle Oil				
Front	22 L (23 qt.)			
Rear	17 L (18 qt.)			
Hydraulic Reservoir and Filter	110 L (29 gal.)			
Park Brake Oil (wet disc)	0.3 L (10 oz.)			
Hydraulic System/Steering				
Pump (loader and steering)	Variable-displacement, axial-piston pump; closed-center, pressure-compensating system			
Maximum Rated Flow at 6895 kPa (1,000 psi) and 2,200 rpm	208 L/m (55 gpm)			
System Relief Pressure (loader and steering)	24 821 kPa (3,675 psi)			
Loader Controls	2-function valve, joystick control or fingertip controls, hydraulic-function enable/disable, optional 3rd- and 4th-function valve with auxiliary lever			

624K-II SPECIFICATIONS



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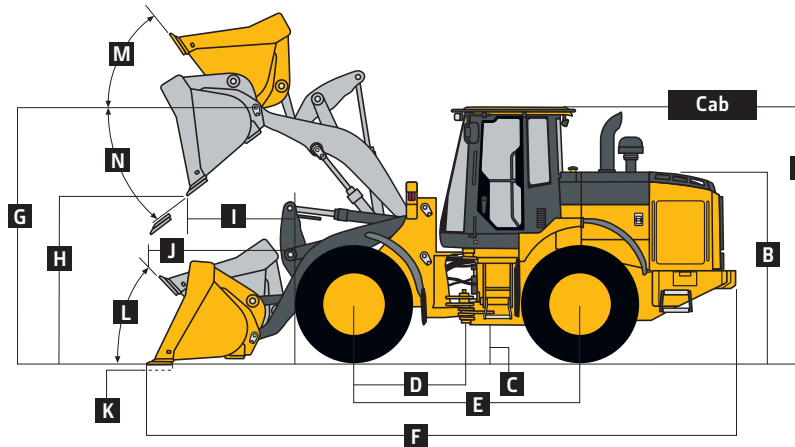
Hydraulic System/Steering *(continued)*

624K-II Z-BAR / HIGH-LIFT

Steering (conforms to ISO 5010)

Type	Power, fully hydraulic
Articulation Angle	80-deg. arc (40 deg. each direction)
Turning Radius (measured to centerline of outside tire)	5.27 m (17 ft. 4 in.)
Hydraulic Cycle Times	
Raise	5.9 sec.
Dump	1.3 sec.
Lower (float down)	2.7 sec.
Total	9.9 sec.

Dimensions and Specifications with Pin-On Bucket



624K-II Z-BAR AND HIGH-LIFT LOADERS WITH PIN-ON BUCKET

	Z-Bar	High-Lift
Dimensions With Bucket	<i>2.7-m³ (3.5 cu. yd.) general-purpose with bolt-on edge</i>	<i>2.7-m³ (3.5 cu. yd.) general-purpose with bolt-on edge</i>
A Height to Top of Cab	3.32 m (10 ft. 11 in.)	3.32 m (10 ft. 11 in.)
B Hood Height	2.46 m (8 ft. 1 in.)	2.46 m (8 ft. 1 in.)
C Ground Clearance	384 mm (15.1 in.)	384 mm (15.1 in.)
D Length From Centerline to Front Axle	1.52 m (5 ft. 0 in.)	1.52 m (5 ft. 0 in.)
E Wheelbase	3.09 m (10 ft. 1 in.)	3.09 m (10 ft. 1 in.)
F Overall Length, Bucket on Ground	7.76 m (25 ft. 5 in.)	8.17 m (26 ft. 9 in.)
G Height to Hinge Pin, Fully Raised	3.95 m (13 ft. 0 in.)	4.30 m (14 ft. 2 in.)
H Dump Clearance, 45 deg., Full Height	2.86 m (9 ft. 5 in.)	3.23 m (10 ft. 7 in.)
I Reach, 45-deg. Dump, Full Height	1.02 m (3 ft. 4 in.)	1.11 m (3 ft. 8 in.)
J Reach, 45-deg. Dump, 2.13-m (7 ft. 0 in.) Clearance	1.57 m (5 ft. 2 in.)	1.93 m (6 ft. 4 in.)
K Maximum Digging Depth	95 mm (3.8 in.)	203 mm (8.0 in.)
L Maximum Rollback at Ground Level	37 deg.	36 deg.
M Maximum Rollback, Boom Fully Raised	50 deg.	49 deg.
N Maximum Bucket Dump Angle, Fully Raised	45 deg.	46 deg.
Loader Clearance Circle, Bucket Carry Position	12.24 m (40 ft. 2 in.)	12.61 m (41 ft. 4 in.)
Specifications with Bucket		
Capacity, Heaped	2.7 m ³ (3.5 cu. yd.)	2.7 m ³ (3.5 cu. yd.)
Capacity, Struck	2.3 m ³ (3.0 cu. yd.)	2.3 m ³ (3.0 cu. yd.)
Bucket Weight With Bolt-On Cutting Edge	1148 kg (2,532 lb.)	1148 kg (2,532 lb.)
Bucket Width	2.69 m (8 ft. 10 in.)	2.69 m (8 ft. 10 in.)
Breakout Force	12 821 kg (28,266 lb.)	11 662 kg (25,709 lb.)
Tipping Load, Straight, No Tire Deflection	13 849 kg (30,532 lb.)	11 628 kg (25,636 lb.)
Tipping Load, Straight, With Tire Deflection	13 158 kg (29,008 lb.)	10 836 kg (23,889 lb.)
Tipping Load, 40-deg. Full Turn, No Tire Deflection	12 006 kg (26,470 lb.)	10 044 kg (22,144 lb.)
Tipping Load, 40-deg. Full Turn, With Tire Deflection	11 043 kg (24,346 lb.)	9114 kg (20,093 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, No Tire Deflection (conforms to ISO 14397-1)*	6003 kg (13,234 lb.)	5022 kg (11,072 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, With Tire Deflection (Conforms to ISO 14397-1)*	5522 kg (12,173 lb.)	4557 kg (10,046 lb.)
Operating Weight	15 614 kg (34,423 lb.)	15 818 kg (34,872 lb.)

Loader operating information is based on machine with identified linkage and standard equipment, PowerTech Plus 6068H (EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions) engine, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator. This information is affected by changes in tires, ballast, and different attachments, and assumes no tire deflection per the standard ISO 14397-1 section 5.

*Rated operating capacity based on Deere attachments only.

Adjustments to Operating Weights and Tipping

Loads With Buckets

624K-II Z-BAR / HIGH-LIFT

Adjustments to operating weights, tipping loads, and tires are based on Z-Bar machine with pin-on 2.7-m³ (3.5 cu. yd.) general-purpose bucket with bolt-on cutting edge, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator*

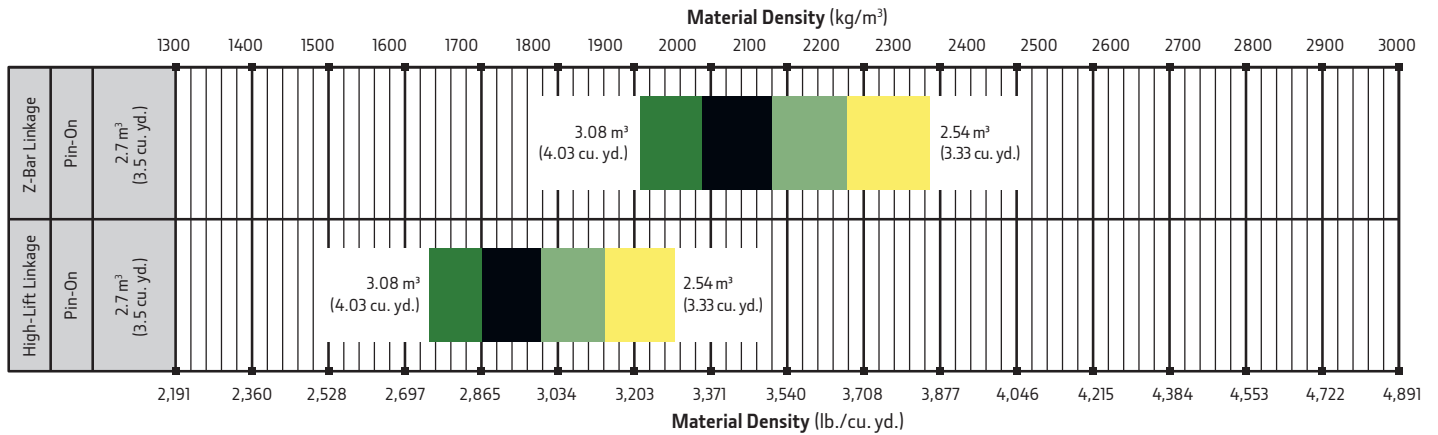
Add (+) or deduct (–) kg (lb.) as indicated for loaders with 3-piece rims	Operating Weight	Tipping Load, Straight	Tipping Load, 40-deg. Full Turn	Tread Width	Width Over Tires	Vertical Height
John Deere PowerTech Plus 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
John Deere PowerTech 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
Michelin 20.5 R 25, 1 Star L-3	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	0 mm (0 in.)	0 mm (0 in.)	0 mm (0 in.)
Bridgestone 20.5 R 25, 1 Star L-3	+44 kg (+97 lb.)	+33 kg (+73 lb.)	+29 kg (+64 lb.)	0 mm (0 in.)	–16 mm (–0.6 in.)	0 mm (0 in.)
Firestone 20.5-25, 16 PR L-3	–252 kg (–556 lb.)	–189 kg (–417 lb.)	–167 kg (–367 lb.)	0 mm (0 in.)	–12 mm (–0.5 in.)	+13 mm (+0.5 in.)
Firestone 20.5-25, 16 PR L-2	–280 kg (–617 lb.)	–210 kg (–464 lb.)	–185 kg (–408 lb.)	0 mm (0 in.)	–12 mm (–0.5 in.)	+6 mm (+0.2 in.)
Michelin 20.5 R 25 XLDN L-3	–32 kg (–76 lb.)	–24 kg (–53 lb.)	–21 kg (–46 lb.)	0 mm (0 in.)	–16 mm (–0.6 in.)	–3 mm (–0.1 in.)
Titan 20.5-25 16 PR L-3	–204 kg (–450 lb.)	–153 kg (–337 lb.)	–135 kg (–298 lb.)	0 mm (0 in.)	–16 mm (–0.6 in.)	–3 mm (–0.1 in.)
Pirelli 20.5 R 25 1 Star L-3	–32 kg (–76 lb.)	–24 kg (–53 lb.)	–21 kg (–46 lb.)	0 mm (0 in.)	–12 mm (–0.5 in.)	+6 mm (+0.2 in.)
CaCl ₂ in 20.5-25, L-3 Rear Tires	+1166 kg (+2,571 lb.)	+1432 kg (+3,157 lb.)	+1305 kg (+2,878 lb.)	N/A	N/A	N/A

*May change based on vehicle configuration, weight, or tire-pressure adjustments.

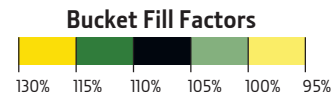
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Bucket Selection Guides*

624K-II Z-BAR / HIGH-LIFT



LOOSE MATERIALS			LOOSE MATERIALS		
	kg/m³	lb./cu. yd.		kg/m³	lb./cu. yd.
Chips, pulpwood	288	486	Limestone, coarse, sized	1570	2,646
Cinders (coal, ashes, clinkers)	673	1,134	Limestone, mixed sizes	1682	2,835
Clay and gravel, dry	1602	2,700	Limestone, pulverized or crushed	1362	2,295
Clay, compact, solid	1746	2,943	Sand, damp	2083	3,510
Clay, dry in lump loose	1009	1,701	Sand, dry	1762	2,970
Clay, excavated in water	1282	2,160	Sand, voids, full of water	2083	3,510
Coal, anthracite, broken, loose	865	1,458	Sandstone, quarried	1314	2,214
Coal, bituminous, moderately wet	801	1,350	Shale, broken crushed	1362	2,295
Earth, common loam, dry	1218	2,052	Slag, furnace granulated	1955	3,294
Earth, mud, packed	1843	3,105	Stone or gravel, 37.5 to 87.5-mm (1.5 to 3.5 in.) size	1442	2,430
Granite, broken	1538	2,592	Stone or gravel, 18.75-mm (0.75 in.) size	1602	2,700
Gypsum	2275	3,834			



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Additional equipment

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

524	544	624	Engine
●	●	●	Wet-sleeve cylinder liners
		●	Automatic glow plugs for cold start
●	●	●	Programmable auto-idle and auto shutdown
●	●	●	Selected idle adjustment from 900–1,250 rpm
●	●	●	Starter protection
●	●	●	Automatic derating for exceeded system temperatures
●	●	●	Serpentine drive belt for automatic tensioner
●	●		Under-hood prescreened air intake
		●	Electrical fuel-priming pump
●	●	●	Dual-stage fuel filter and water separator
●	●	●	500-hour vertical spin-on oil filter
▲	▲	▲	Centrifugal engine air pre-cleaner
▲	▲	▲	Chrome exhaust stack
▲	▲		Automatic ether starting aid (recommended for cold starts below –12 deg. C [10 deg. F])
Powertrain			
●	●	●	Axle oil temperature sensing
●	●	●	Programmable maximum high gear
●	●	●	Clutch calibration engaged from monitor
●	●	●	2,000-hour vertical spin-on transmission filter
●	●	●	Transmission fill tube and sight gauge
▲	●	●	Front locking differential
▲	▲	▲	Rear locking differential
●	●	●	Transmission diagnostic ports
	●	●	5-speed transmission with lockup torque converter
●	▲	▲	5-speed transmission with non-lockup torque converter
▲	▲	▲	Automatic differential lock
▲	▲	▲	Wheel-spin control
Quad-Cool™ Cooling System			
●	●	●	Heavy-duty, trash-resistant radiator and high-ambient cooling package
●	●	●	2-side access to all coolers
●	●	●	Isolated from engine compartment
●	●	●	Engine radiator
●	●	●	Integral engine oil cooler
●	●	●	Hydraulic oil cooler (oil to air)
●	●	●	Transmission oil cooler (oil to air)
●	●	●	Charge air cooler (air to air)
●	●	●	Coolant recovery tank
●	●	●	Antifreeze, –37 deg. C (–34 deg. F)
●	●	●	Cool-on-demand, hydraulically driven, swing-out fan
●	●	●	Enclosed fan safety guard
▲	▲	▲	Automatic reversing fan drive
▲	▲	●	Axle and service-brake coolers

524	544	624	Hydraulics
●	●	●	Automatic return-to-dig bucket positioner
●	●	●	In-cab adjustable automatic boom-height kickout/return to carry
●	●	●	Reservoir with sight gauge and fill strainer
●	●	●	Hydraulic diagnostic ports
●	●	●	4,000-hour in-tank filter
●	●	●	2 function — joystick with F-N-R
▲	▲	▲	2 function — joystick with steering column F-N-R
▲	▲	▲	2 function — 2-lever fingertip controls and steering column F-N-R
▲	▲	▲	3 function — joystick with F-N-R and 3rd-function auxiliary lever
▲	▲	▲	3 function — 3-lever fingertip controls and steering column F-N-R
▲	▲	▲	Ride control, automatic with monitor-adjustable speed settings
Steering Systems			
●	●	●	Conventional steering wheel with spinner knob
Electrical			
●	●	●	Solid-state electrical power-distribution system
●	●	●	Lockable master electrical-disconnect switch
●	●	●	Battery-terminal safety covers
●	●	●	By-pass start safety cover at starter
●	●	●	Pre-wired for beacon/strobe light
●	●	●	Lights: Halogen driving lights with guards (2) / Front (4) and rear (2) cab work lights / Turn signals and flashers / LED stop- and taillights
▲			Lights: Halogen driving lights with guards (2) / Front cab work lights (2) and rear (2) / Turn signals and flashers / LED stop- and taillights
▲	▲	▲	Heavy-duty front LED turn signal and marker lights
●	●	●	Programmable courtesy lights
●	●	●	Horn, electric
●	●	●	Reverse warning alarm
●	●	●	Multi-function/multi-language LCD color monitor includes: Digital instruments — Analog display (hydraulic oil temperature, engine coolant temperature, transmission oil temperature, and engine oil pressure) / Digital display (engine rpm, transmission gear/direction indicator, hour meter, fuel level, speedometer, and odometer)
●	●	●	Indicator lights: Standard and selected options / Amber caution and red stop
●	●	●	Operator-warning messages

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Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan at test conditions per ISO 9249. No derating is required up to 3050-m (10,000 ft.) altitude. Specifications and design subject to change without notice. Specifications with the exception of bucket capacity are in accordance with all applicable ISO standards. Except where otherwise noted, these specifications are based on units with applicable linkage and standard equipment, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator.

Additional equipment *(continued)*

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

524	544	624	Electrical <i>(continued)</i>
●	●	●	Built-in diagnostics: Diagnostic-code details / Sensor values / Calibrations / Individual circuit tester
▲	▲	▲	Electrical corrosion-prevention package
▲	▲	▲	AM/FM/Weather-Band (WB) radio
●	●	●	24- to 12-volt, 8-amp converter
Operator's Station			
●	●	●	Quiet Cab with air conditioning/heater
●	●	●	Keyless start with multiple security modes
●	●	●	Sealed-switch module with function indicators
●	●	●	Seat with deep foam, fabric cover, and adjustable air suspension
●	●	●	Seat with backrest extension, deep foam, fabric cover, and adjustable air suspension
●	●	●	Hydraulic controls integrated to seat
●	●	●	Seat belt, 76 mm (3 in.), with retractor
●	●	●	Cup holders (2)
●	●	●	Lunch-box/cooler holder
●	●	●	Dome and reading light
●	●	●	12-volt power port
●	●	●	Rubber floor mat
●	●	●	Tilt steering column
●	●	●	Operator's manual storage compartment
●	●	●	Outside (2) and inside (1) rearview mirrors
●	●	●	Left-side operator-station access
●	●	●	Slip-resistant steps and ergonomic handholds
●	●	●	Sun visor
●	●	●	Front and rear intermittent windshield wiper and washers
▲	▲	▲	Beacon bracket
▲	▲	▲	Rear camera
▲	▲	▲	Rear camera with radar object-detection system
●	●	●	LOADRITE™ L2180™ Payload Scale Ready
Loader Linkage			
●	●	●	Z-Bar loader linkage
▲	▲	▲	High-lift Z-Bar loader linkage

524	544	624	Buckets and Attachments
●	●	●	Full line of Deere pin-on buckets
▲	▲	▲	Full line of Deere hook-on buckets and forks
Overall Vehicle			
●	●	●	JDLink™ Ultimate wireless communication system (available in specific countries; see your dealer for details)
●	●	●	NeverGrease™ rear-axle oscillation
▲	▲	▲	NeverGrease steering cylinders
●	●	●	Front and rear tie-downs
●	●	●	Rear cast bumper with rear hitch and locking pin
●	●	●	Articulation locking bar
●	●	●	Loader boom service locking bar
●	●	●	40-deg. steering articulation to each side with rubber-cushion stops on frame
●	●	●	Vandal protection with lockable engine enclosures, right counterweight storage, battery box, and filler access for radiator/fuel/hydraulic transmission
●	●	●	Left-side service steps and handholds
●	●	●	Storage compartment
●	●	●	Fuel-tank fill strainer
●	●	●	Heavy-duty fuel-tank guard
●	●	●	Ground-level fueling
●	●	●	Same-side ground-level daily servicing
●	●	●	20.5-25 L3 16 PR tires on 3-piece rims
▲			17.5-25 L3 16 PR tires on 3-piece rims
●	●	●	Environmental drains for engine, transmission, hydraulic oils, and engine coolant
●	●	●	Fluid-sampling ports for engine, transmission, hydraulic and axle oils, and engine coolant
●	●	●	Fenders, front
▲	▲	▲	Fender, full-coverage, front
▲	▲	▲	Fenders, full-coverage, front and rear
▲	▲	▲	Transmission side-frame guards
▲	▲	▲	Bottom guards, front frame and transmission
▲	▲	▲	Lift eyes

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JOHN DEERE



K-SERIES LOADERS

644K/724K

167–197 kW (224–264 net hp)




JOHN DEERE



Job driven. Customer inspired.

Secured keyless start. Advanced onboard diagnostics. Innovative Quad-Cool™ system with cool-on-demand swing-out fan. These and the many other features found in our 644K and 724K come from listening to customer needs and responding with exceptionally productive, durable, and versatile loaders. Check out the K-Series Loader line today. And be prepared to become an inspired customer yourself.



Key Specifications	644K	724K
Net Peak Power	167 kW (224 hp)	197 kW (264 hp)
Bucket Capacity	3.1–3.2 m³ (4.0–4.25 cu. yd.)	3.1–3.6 m³ (4.0–4.75 cu. yd.)
Z-Bar:		
Tipping Load, 40-deg. Full Turn, No Tire Deflection	12 879 kg (28,393 lb.)	14 279 kg (31,481 lb.)
Breakout Force	15 378 kg (33,903 lb.)	15 607 kg (34,408 lb.)
Operating Weight	18 333 kg (40,417 lb.)	19 299 kg (42,548 lb.)

K-Series Loaders ride on a wide stance that provides additional lateral stability for handling heavy loads and working on rough terrain. Overall balance is exceptional.

Fluid-efficient John Deere PowerTech™ Plus Tier 3/Stage IIIA/Brazil MAR-I and PowerTech™ Tier 2/Stage II diesels provide generous displacement, power, and lugging ability. They maintain impressive torque reserves for great boom and bucket speeds in and out of the pile, delivering heaped loads — even in wet- or hard-packed material.

John Deere WorkSight™ is an exclusive suite of telematics solutions that increases uptime while lowering operating costs. At its heart, JDLink™ Ultimate machine monitoring provides real-time utilization data and alerts to help you maximize productivity and efficiency while minimizing downtime. Remote diagnostics enable your dealer to read codes and record performance data without a trip to the jobsite.



A detailed view of the operator's seat and controls inside a K-Series Loader cab. The seat is a high-back air-ride seat with a grey fabric cover. In front of the seat is a black steering wheel and a multifunction monitor displaying various icons. To the right of the seat is a control panel with a joystick and several buttons. A red cup is visible in a holder on the right side of the cab. The background shows the metal frame of the cab and the view through the windows.

Hard work made simple.

What operator wouldn't be more productive in the high-back air-ride seat of a K-Series Loader? Up front, an enhanced multifunction monitor displays operating, diagnostic, and maintenance info on a color LCD screen with easy-on-the-eyes clarity. Generous tinted glass and a low-profile console allow a commanding view of the jobsite. Spacious and quiet cab boasts seat-mounted controls, fatigue-beating ergonomics, and plenty of limb-stretching legroom. And their sealed-switch modules with keyless start and push-button operation of other machine functions help you work harder with less effort.



To help prevent unauthorized machine operation, the keyless-start security system requires a numeric pass code (when activated).

Available premium heated air-ride arm-chair seat adjusts multiple ways for extra comfort and cushioning.

Standard eight-amp converter (15 amp optional) and a 12-volt outlet provide convenient power for cell phones and other electronic devices.

Brake and throttle pedals are conveniently positioned, allowing plenty of legroom and easy entrance and exit.

Adjustable automotive-style louvers provide effective airflow to keep the glass clear and pressurized cab comfortable.

1. Multi-language color LCD monitor provides push-button access to a wealth of machine data and functions:

Vital information, including transmission mode, gear, engine rpm, and ground speed.

Enhanced onboard diagnostics with speed, pressure, temperature readings, and switch status.

Customized machine settings — Quick Shift, Auto-to-1st, and ride control (standard on the 724K, optional on the 644K) match your operating characteristics to specific jobs and conditions.

2. Backlit touchpad in the sealed-switch module controls keyless start and 24 other machine functions, allowing the operator to activate boom-height kick-out, return-to-carry, and return-to-dig from the seat.

3. Optional rearview camera provides maximum visibility via an LCD screen. Available dealer-installed radar object-detection system includes an audible alert for extra awareness in tight quarters and high-traffic areas.

4. Spacious cab with a cooler compartment and beverage holder provides plenty of room to stow your stuff.



More power and control mean more productivity.

If you've got maximum productivity in mind, put a 644K or 724K Loader at the top of your list. It's not just big torque reserves that make them such impressive performers. Single-lever joystick or two-lever fingertip controls provide smooth, near-effortless control. Excavator-style hydraulics sense the load to better deliver the flow needed for combined functions and fast work cycles. And you won't find a smoother-shifting loader — the standard PowerShift transmission with smart shift technology continuously evaluates speed and load conditions, and adjusts clutch-pack engagement to suit.



1. New adaptive clutch cutoff automatically provides more power to the hydraulic system, ensures smooth control at high engine rpms and low speeds, and allows for better machine handling in all terrain without the operator having to change settings.
2. Choose between a single-lever joystick or...
3. ...two-lever fingertip pilot-operated hydraulic controls.



Standard five-speed transmission with lockup torque converter for gears 2–5 increases acceleration, speeds cycles, and optimizes power and fuel efficiency during transport, roading, and ramp climbing.

Even when working with large, wet loads, K-Series Loaders maintain excellent boom and bucket power into and out of the pile.

Wheel-spin control (standard on 724K, optional on 644K) boosts productivity by improving traction in troublesome under-foot conditions, reducing tire wear, fuel costs, and operator fatigue.

Boom-height kickout and return-to-carry functions speed production in repetitive loading applications.


Joystick F-N-R selector provides convenient direction and full-range gear changes, and includes an innovative Quick-Shift feature for push-button gear changes.

Responsive steering and full 80-deg. articulation increase maneuverability in tight quarters, delivering faster cycle times with fewer three-point turns.



Discover your options.

K-Series Loaders come standard with plenty of production-boosting features to help you handle almost anything you throw their way. But yours isn't just any application, so we've got you covered with a wide variety of factory- or dealer-installed options. Equip your loader with exactly what you need to maximize your efforts and expand your opportunities.

- 
1. Automatic differential lock engages as soon as a tire begins to slip. It's ideal for inexperienced operators or applications requiring high traction, such as stockpiling silage, plowing snow, and handling pipe.
 2. With ride control (standard on 724K, optional on 644K), lift cylinders act as shock absorbers, cushioning bumps to navigate over rough ground without losing material. Auto-actuation travel speed is adjustable from 1.5 to 24.0 km/h (1.0 to 15.0 mph).
 3. Worksite Pro™ Hi-Vis couplers increase jobsite versatility and make switchover of a broad range of Deere and other attachments push-button easy.



General-purpose or excavating buckets are available in pin-on or coupler configurations from 3.1–3.6 m³ (4.0–4.75 cu. yd). Or opt for forks with 1.52- and 1.83-m (60 and 72 in.) tines, depending on model.

Powered cab pre-cleaner is a smart addition in high airborne-debris environments.

Optional corrosion package to shields electrical components and connections, and helps prevent corrosive materials from short-circuiting your productivity.

Need to take productivity to another level? High-Lift option extends lift height up to 356 mm (14 in.).

Integrated tire-pressure monitor helps maximize tire life and fuel efficiency. You can quickly check tire pressure via JDLink.

Opt for full-tire front and rear fenders and flaps to help keep the machine free of mud and debris.

Standard left-side service steps and handholds are slip resistant, providing safe access to the cab. Optional right-side steps and handrails are also available.



Nothing runs — or is built — like a Deere.

It's all about uptime. So we gave both K-Loaders traditional John Deere durability features. They boast standard heavy-duty wet-sleeve diesels, Quad-Cool, and solid-state electrical systems. Other uptime-boosting features include reinforced articulation joints with double-tapered roller bearings, and booms and mainframes so tough they're warranted for three years or 10,000 hours. When you know how they're built, you'll run a Deere.



Electrical-distribution center employs reliable circuit-board technology and solid-state switches to eliminate many wiring harnesses, fuses, relays, and connectors. Sealed gold-pin electrical connectors resist corrosion for long-term integrity.

Standard features like bypass-start protection, automatic park brake, and convenient handholds help keep the operator out of harm's way. Slip-resistant steps and platforms are available on both sides of the machine to provide safer access.

John Deere PowerTech Plus Tier 3/Stage IIIA/Brazil MAR-I and PowerTech Tier 2/Stage II diesel engines meet emission regulations without sacrificing power or torque.

1. Optional programmable fan automatically reverses at predetermined intervals, ejecting debris from the radiator and cooler cores. Or choose your own cleaning cycles through the monitor.

2. Efficient and rugged Quad-Cool places the radiator, air-conditioner condenser, intercooler, and hydraulic, transmission, and standard axle coolers in a unique boxed configuration that's isolated from engine heat.

3. Planetary final drives are mounted inboard. Hydraulic wet-disc brakes on both models are self-adjusting.



Sealed-switch module keeps out dust, moisture, and debris, and virtually never wears out. Proven marine-grade touchpad eliminates rocker switches and nearly 100 wires, keeping things simple and durable.

Four steel plates support the loader tower, extending pin life and protecting the boom-cylinder hoses.

Standard starter protection limits cranking time and requires cool-down periods between attempts.

Wet-sleeve engine liners provide uniform engine cooling for less oil breakdown and longer durability than cast-in-block designs.

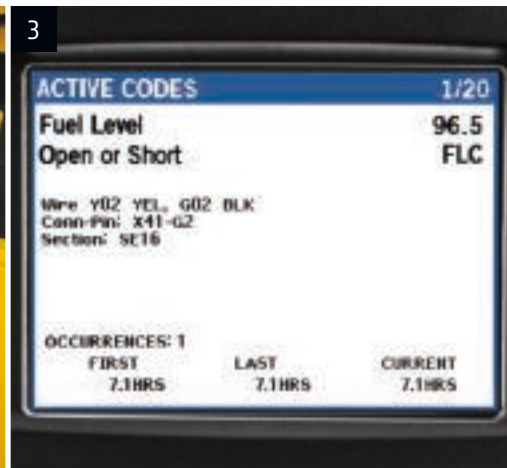
Wide-mouth fuel tank allows quick and convenient ground-level fill-ups — generous tank capacity lets you work longer.

Heavy-duty axles employ cooling, filtration, and temperature monitoring to increase durability.

Stretches your dollars, not your service techs.

Controlling daily owning and operating costs shouldn't be a reach — and it's not on a K-Series Loader. Same-side ground-level service points make quick work of the daily routine. Unique Quad-Cool system provides wide-open access to both sides of the coolers for easy cleanout. Extended service intervals let you work longer between changes. And because no maintenance beats low maintenance, standard self-adjusting serpentine engine belts and wet-disc brakes seldom, if ever, require attention. That's just for starters. The list of K-Series features that help minimize maintenance goes on and on. And so will the owning and operating cost savings you'll enjoy.

1. Vertical spin-on filters allow quick, no-spill changes. Extended 500-, 2,000-, and 4,000-hour engine, transmission, and hydraulic oil-service intervals help reduce operating costs.
2. Ground-level fuel fill access helps speed servicing for more uptime.
3. If something goes wrong, the easy-to-navigate LCD monitor displays diagnostic messages and offers possible solutions to help get you back up and running quickly.
4. Color-coded fluid-sample and diagnostic test ports help speed preventive maintenance and troubleshooting. Noninvasive design helps keep out contaminants.
5. Conveniently located, easy-to-read sight gauges and see-through reservoirs let you check transmission, hydraulic, coolant, and windshield washer fluid levels at a glance.
6. Master electrical-disconnect switch is enclosed in a lockable compartment beneath the right-side step, for ground-level convenience.





Greasing is less messy thanks to centralized lube banks that provide easy access to zerks. Conveniently located periodic lube and maintenance chart confirms that nothing gets overlooked.

Inboard planetary final drives and self-adjusting wet-disc brakes are virtually maintenance-free.

Hydraulically driven fan runs only as needed for efficient cooling. Helps conserve fuel, too.

All daily service points including fueling are grouped on the left side for quick and convenient ground-level access.

3-mm (0.12 in.) side-shield perforations block most airborne debris. Unlike stacked coolers, Quad-Cool cores resist plugging and are easily accessible from either side, for quick and easy cleanout.

Auto-idle automatically reduces engine speed to help conserve fuel after an operator-determined period of inactivity. Auto shutdown turns off the engine after extended inactivity.



4



5



6

644K

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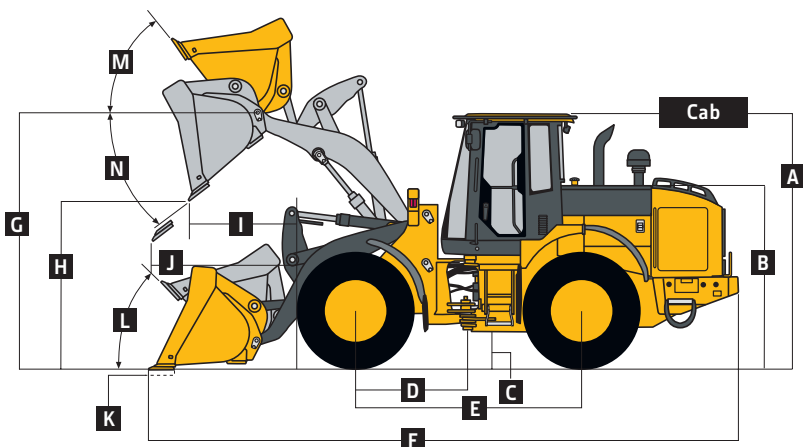
Engine	644K Z-BAR / HIGH-LIFT			
Manufacturer and Model	John Deere PowerTech™ 6068H		John Deere PowerTech™ Plus 6068H	
Non-Road Emission Standard	EPA Tier 2/EU Stage II		EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions	
Cylinders	6		6	
Valves Per Cylinder	4		4	
Displacement	6.8 L (414 cu. in.)		6.8 L (414 cu. in.)	
Peak Power (ISO 9249)				
Net	167 kW (224 hp) at 1,700 rpm		167 kW (224 hp) at 1,700 rpm	
Gross	175 kW (234 hp) at 1,700 rpm		175 kW (234 hp) at 1,700 rpm	
Peak Torque (ISO 9249)				
Net	985 Nm (726 lb.-ft.) at 1,400 rpm		985 Nm (726 lb.-ft.) at 1,400 rpm	
Gross	1024 Nm (755 lb.-ft.) at 1,400 rpm		1024 Nm (755 lb.-ft.) at 1,400 rpm	
Net Torque Rise	44%		44%	
Fuel System (electronically controlled)	High-pressure common rail		High-pressure common rail	
Lubrication	Full-flow spin-on filter and integral cooler		Full-flow spin-on filter and integral cooler	
Aspiration	Turbocharged, charge air cooled		Turbocharged, charge air cooled	
Air Cleaner	Under-hood, dual-element dry type, restriction indicator in cab monitor for service			
Cooling				
Fan Drive	Hydraulically driven, proportionally controlled, fan aft of coolers			
Electrical				
Electrical System	24 volt with 80-amp alternator (optional 100-amp alternator)			
Batteries (2 – 12 volt)	750 CCA (each)			
Lights	Driving lights with guard, turn signals, and flashers; stop- and taillight; work lights: front (2) and rear (2); halogen engine-compartment light and switch (option)			
Transmission System				
Type	Countershaft-type PowerShift™			
Torque Converter	Single stage, single phase			
Shift Control	Electronically modulated, adaptive, load and speed dependent			
Operator Interface	Steering-column or joystick-mounted F-N-R and gear-select lever; Quick-Shift button on hydraulic lever			
Shift Modes	Manual/auto (1st–D or 2nd–D); Quick-Shift button with 2 selectable modes: kick-down or kick-up/down; and 1 clutch cutoff setting			
	Standard 5-Speed with Lockup Torque Converter		Optional 4-Speed	
Maximum Travel Speeds (with 23.5 R 25 tires)	Forward	Reverse	Forward	Reverse
Range 1	6.8 km/h (4.2 mph)	7.2 km/h (4.5 mph)	6.9 km/h (4.3 mph)	7.3 km/h (4.5 mph)
Range 2	12.4 km/h (7.7 mph)	13.1 km/h (8.1 mph)	11.3 km/h (7.0 mph)	11.9 km/h (7.4 mph)
Range 3	20.9 km/h (13.0 mph)	26.6 km/h (16.5 mph)	21.7 km/h (13.5 mph)	22.7 km/h (14.1 mph)
Range 4	25.3 km/h (15.7 mph)	N/A	33.1 km/h (20.6 mph)	N/A
Range 5	40.0 km/h (24.9 mph)	N/A	N/A	N/A
Axles/Brakes				
Final Drives	Heavy-duty inboard-mounted planetary			
Differentials	Hydraulic locking front with conventional rear – standard; dual locking front and rear – optional			
Rear Axle Oscillation, Stop to Stop (with 23.5 R 25 tires)	26 deg. (13 deg. each direction)			
Brakes (conform to ISO 3450)				
Service	Hydraulically actuated, spring-retracted, self-adjusting, inboard sun-shaft mounted, oil cooled, single disc			
Parking	Automatic spring applied, hydraulically released, driveline mounted, oil cooled, multi disc			
Tires/Wheels (see page 16 for complete tire adjustments)				
	Tread Width		Width Over Tires	
Michelin 23.5 R 25, 1 Star L-3	2170 mm (85.4 in.)		2875 mm (113.2 in.)	
Serviceability				
Refill Capacities	EPA Tier 2/EU Stage II and EPA Tier 3/EU Stage IIIA			
Fuel Tank with Lockable Cap	352 L (93 gal.)			
Engine Cooling System	29.5 L (31.2 qt.)			
Engine Oil with Vertical Spin-On Filter	24.5 L (26 qt.)			
Transmission Reservoir with Vertical Filter	27 L (28.5 qt.)			
Axle Oil (front and rear, each)	22 L (23 qt.)			
Hydraulic Reservoir and Filter	110 L (29 gal.)			
Park Brake Oil (wet disc)	0.6 L (20 oz.)			
Hydraulic System/Steering				
Pump (loader and steering)	Variable-displacement, axial-piston pump; closed-center, pressure-compensating system			
Maximum Rated Flow at 6895 kPa (1,000 psi) and 2,250 rpm	297 L/m (78 gpm)			
System Relief Pressure (loader and steering)	25 166 kPa (3,650 psi)			
Loader Controls	2-function valve, joystick control or fingertip controls, hydraulic-function enable/disable, optional 3rd- and 4th-function valve with auxiliary lever			



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Hydraulic System/Steering <i>(continued)</i>		644K Z-BAR / HIGH-LIFT
Steering (conforms to ISO 5010)		Steering-column-mounted, twist-grip shift lever; Quick-Shift button on hydraulic lever
Type		Power, fully hydraulic
Articulation Angle		80-deg. arc (40-deg. each direction)
Turning Radius (measured to centerline of outside tire)		5.57 m (18 ft. 3 in.)
Hydraulic Cycle Times		
Raise		6.4 sec.
Dump		1.6 sec.
Lower (float down)		3.0 sec.
Total		11.0 sec.

Dimensions and Specifications with Pin-On Bucket



644K Z-BAR AND HIGH-LIFT LOADERS WITH PIN-ON BUCKET

	Z-Bar	High-Lift
Dimensions with Bucket	<i>3.2-m³ (4.25 cu. yd.) general-purpose with bolt-on edge</i>	<i>3.2-m³ (4.25 cu. yd.) general-purpose with bolt-on edge</i>
A Height to Top of Cab	3.43 m (11 ft. 3 in.)	3.43 m (11 ft. 3 in.)
B Hood Height	2.53 m (8 ft. 4 in.)	2.53 m (8 ft. 4 in.)
C Ground Clearance	461 mm (18.1 in.)	461 mm (18.1 in.)
D Length from Centerline to Front Axle	1.60 m (5 ft. 3 in.)	1.60 m (5 ft. 3 in.)
E Wheelbase	3.26 m (10 ft. 8 in.)	3.26 m (10 ft. 8 in.)
F Overall Length, Bucket on Ground	8.30 m (27 ft. 3 in.)	8.77 m (28 ft. 9 in.)
G Height to Hinge Pin, Fully Raised	4.12 m (13 ft. 6 in.)	4.54 m (14 ft. 11 in.)
H Dump Clearance, 45 deg., Full Height	2.91 m (9 ft. 6.5 in.)	3.33 m (10 ft. 11.1 in.)
I Reach, 45-deg. Dump, Full Height	1.06 m (3 ft. 5.7 in.)	1.19 m (3 ft. 10.9 in.)
J Reach, 45-deg. Dump, 2.13-m (7 ft. 0 in.) Clearance	1.61 m (5 ft. 3.4 in.)	2.06 m (6 ft. 9.1 in.)
K Maximum Digging Depth	106 mm (4.2 in.)	200 mm (7.9 in.)
L Maximum Rollback at Ground Level	42 deg.	41 deg.
M Maximum Rollback, Boom Fully Raised	55 deg.	47 deg.
N Maximum Bucket Dump Angle, Fully Raised	50 deg.	45 deg.
Loader Clearance Circle, Bucket Carry Position	13.19 m (43 ft. 3.1 in.)	13.62 m (44 ft. 8.2 in.)
Specifications with Bucket		
Capacity, Heaped	3.2 m ³ (4.25 cu. yd.)	3.2 m ³ (4.25 cu. yd.)
Capacity, Struck	2.8 m ³ (3.7 cu. yd.)	2.8 m ³ (3.7 cu. yd.)
Bucket Weight with Bolt-On Cutting Edge	1735 kg (3,826 lb.)	1736 kg (3,827 lb.)
Bucket Width	3.04 m (10 ft. 0 in.)	3.04 m (10 ft. 0 in.)
Breakout Force	15 378 kg (33,903 lb.)	13 782 kg (30,384 lb.)
Tipping Load, Straight, No Tire Deflection	14 906 kg (32,862 lb.)	12 237 kg (26,978 lb.)
Tipping Load, Straight, with Tire Deflection	14 250 kg (31,416 lb.)	11 829 kg (26,078 lb.)
Tipping Load, 40-deg. Full Turn, No Tire Deflection	12 879 kg (28,393 lb.)	10 508 kg (23,165 lb.)
Tipping Load, 40-deg. Full Turn, with Tire Deflection	11 967 kg (26,383 lb.)	9882 kg (21,786 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, No Tire Deflection (conforms to ISO 14397-1)*	6440 kg (14,197 lb.)	5254 kg (11,583 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, with Tire Deflection (conforms to ISO 14397-1)*	5984 kg (13,191 lb.)	4941 kg (10,893 lb.)
Operating Weight	18 333 kg (40,417 lb.)	18 700 kg (41,226 lb.)

Loader operating information is based on machine with identified linkage and standard equipment, PowerTech Plus 6068H (EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions) engine, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator. This information is affected by changes in tires, ballast, and different attachments, and assumes no tire deflection per the standard ISO 14397-1 section 5.

*Rated operating capacity based on Deere attachments only.

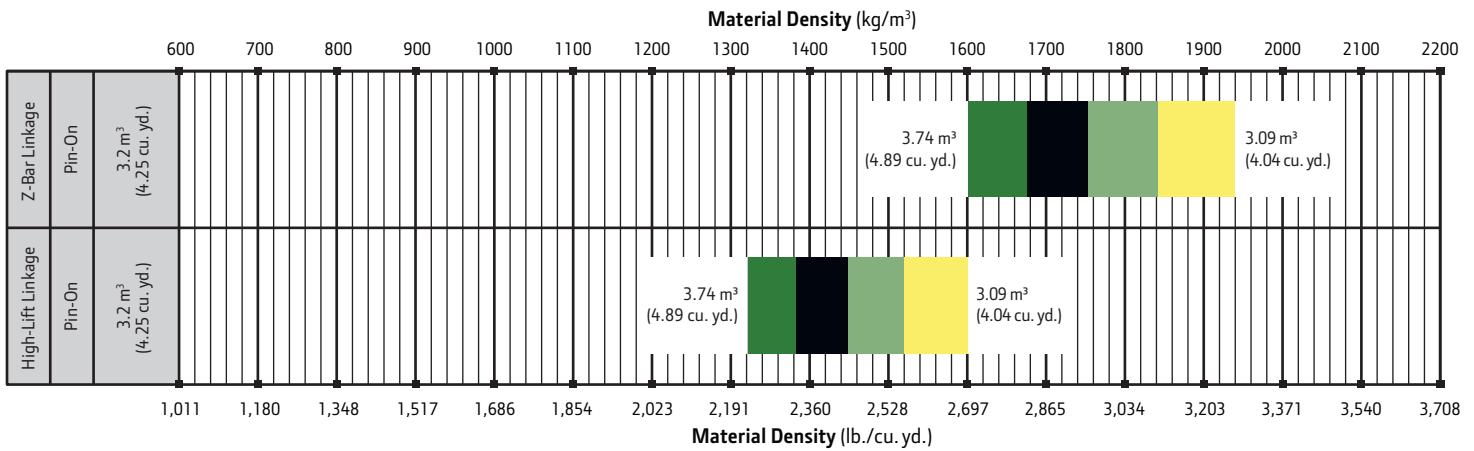
Adjustments to Operating Weights and Tipping Loads with Buckets

644K Z-BAR / HIGH-LIFT

Adjustments to operating weights, tipping loads, and tires are based on Z-Bar machine and standard equipment with pin-on 3.2-m³ (4.25 cu. yd.) general-purpose bucket with bolt-on cutting edge, ROPS cab, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator*

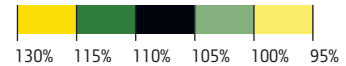
Add (+) or deduct (–) kg (lb.) as indicated for loaders with 3-piece rims	Operating Weight	Tipping Load, Straight	Tipping Load, 40-deg. Full Turn	Tread Width	Width Over Tires	Vertical Height
John Deere PowerTech Plus 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
John Deere PowerTech 6068H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
Michelin 23.5 R 25, 1 Star L-3	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	0 mm (0 in.)	0 mm (0 in.)	0 mm (0 in.)
Firestone 23.5-25 L3 20 PR	–50 kg (–110 lb.)	–37 kg (–81.5 lb.)	–33 kg (–73 lb.)	–220 mm (–8.7 in.)	+8 mm (+0.3 in.)	+8 mm (+0.3 in.)
Michelin 23.5 R 25 L3 XLDN	–6 kg (–13.2 lb.)	–4 kg (–9 lb.)	–4 kg (–9 lb.)	0 mm (0 in.)	0 mm (0 in.)	–3 mm (–0.1 in.)
Bridgestone Radial 23.5 R 25, 1 Star L3 GP	–22 kg (–48.5 lb.)	–16 kg (–35.3 lb.)	–14 kg (–30.9 lb.)	–220 mm (–8.7 in.)	+18 mm (+0.7 in.)	–6 mm (–0.2 in.)
Firestone 23.5-25 L5 20 PR	+82 kg (+180.8 lb.)	+61 kg (+134.5 lb.)	+54 kg (+119 lb.)	0 mm (0 in.)	+16 mm (+0.6 in.)	+29 mm (+1.1 in.)

*May change based on vehicle configuration, weight, or tire-pressure adjustments.



LOOSE MATERIALS		kg/m³	lb./cu. yd.	LOOSE MATERIALS		kg/m³	lb./cu. yd.
Chips, pulpwood		288	486	Limestone, coarse, sized		1570	2,646
Cinders (coal, ashes, clinkers)		673	1,134	Limestone, mixed sizes		1682	2,835
Clay and gravel, dry		1602	2,700	Limestone, pulverized or crushed		1362	2,295
Clay, compact, solid		1746	2,943	Sand, damp		2083	3,510
Clay, dry in lump loose		1009	1,701	Sand, dry		1762	2,970
Clay, excavated in water		1282	2,160	Sand, voids, full of water		2083	3,510
Coal, anthracite, broken, loose		865	1,458	Sandstone, quarried		1314	2,214
Coal, bituminous, moderately wet		801	1,350	Shale, broken crushed		1362	2,295
Earth, common loam, dry		1218	2,052	Slag, furnace granulated		1955	3,294
Earth, mud, packed		1843	3,105	Stone or gravel, 37.5 to 87.5-mm (1.5 to 3.5") size		1442	2,430
Granite, broken		1538	2,592	Stone or gravel, 18.75-mm (3/4") size		1602	2,700
Gypsum		2275	3,834				

Bucket Fill Factors



724K

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Engine		724K Z-BAR / HIGH-LIFT																																	
Manufacturer and Model		John Deere PowerTech™ 6090H	John Deere PowerTech™ Plus 6090H																																
Non-Road Emission Standard		EPA Tier 2/EU Stage II	EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions																																
Cylinders		6	6																																
Valves Per Cylinder		4	4																																
Displacement		9.0 L (548 cu. in.)	9.0 L (548 cu. in.)																																
Peak Power (ISO 9249)																																			
Net		197 kW (264 hp) at 1,800 rpm	197 kW (264 hp) at 1,800 rpm																																
Gross		206 kW (276 hp) at 1,800 rpm	206 kW (276 hp) at 1,800 rpm																																
Peak Torque (ISO 9249)																																			
Net		1159 Nm (855 lb.-ft.) at 1,300 rpm	1159 Nm (855 lb.-ft.) at 1,300 rpm																																
Gross		1200 Nm (885 lb.-ft.) at 1,600 rpm	1200 Nm (885 lb.-ft.) at 1,600 rpm																																
Net Torque Rise		67%	67%																																
Fuel System (electronically controlled)		High-pressure common rail	High-pressure common rail																																
Lubrication		Full-flow spin-on filter and integral cooler	Full-flow spin-on filter and integral cooler																																
Aspiration		Turbocharged, charge air cooled	Turbocharged, charge air cooled																																
Air Cleaner		Under-hood, dual-element dry type, restriction indicator in cab monitor for service																																	
Cooling																																			
Fan Drive		Hydraulically driven, proportionally controlled, fan aft of coolers																																	
Electrical																																			
Electrical System		24 volt with 100-amp alternator																																	
Batteries (2 – 12 volt)		750 CCA (each)																																	
Lights		Driving lights with guard, turn signals, and flashers; stop- and taillight; work lights: front (2) and rear (2); halogen engine-compartment light and switch (option)																																	
Transmission System																																			
Type		Countershaft-type PowerShift™																																	
Torque Converter		Single stage, single phase																																	
Shift Control		Electronically modulated, adaptive, load and speed dependent																																	
Operator Interface		Steering-column or joystick-mounted F-N-R and gear-select lever; Quick-Shift button on hydraulic lever																																	
Shift Modes		Manual/auto (1st-D or 2nd-D); Quick-Shift button with 2 selectable modes: kick-down or kick-up/down; and 1 clutch cutoff setting																																	
		<table> <tr> <th colspan="2">Standard 5-Speed with Lockup Torque Converter</th><th colspan="2">Optional 4-Speed</th></tr> <tr> <th></th><th>Forward</th><th>Reverse</th><th></th></tr> <tr> <td>Maximum Travel Speeds (with 23.5 R 25, 1 Star L3 tires)</td><td></td><td></td><td></td></tr> <tr> <td>Range 1</td><td>6.8 km/h (4.2 mph)</td><td>7.2 km/h (4.5 mph)</td><td>7.0 km/h (4.3 mph)</td></tr> <tr> <td>Range 2</td><td>12.4 km/h (7.7 mph)</td><td>13.1 km/h (8.1 mph)</td><td>11.9 km/h (7.4 mph)</td></tr> <tr> <td>Range 3</td><td>20.9 km/h (13.0 mph)</td><td>26.6 km/h (16.5 mph)</td><td>22.4 km/h (13.9 mph)</td></tr> <tr> <td>Range 4</td><td>25.3 km/h (15.7 mph)</td><td>N/A</td><td>35.2 km/h (21.9 mph)</td></tr> <tr> <td>Range 5</td><td>40.0 km/h (24.9 mph)</td><td>N/A</td><td>N/A</td></tr> </table>		Standard 5-Speed with Lockup Torque Converter		Optional 4-Speed			Forward	Reverse		Maximum Travel Speeds (with 23.5 R 25, 1 Star L3 tires)				Range 1	6.8 km/h (4.2 mph)	7.2 km/h (4.5 mph)	7.0 km/h (4.3 mph)	Range 2	12.4 km/h (7.7 mph)	13.1 km/h (8.1 mph)	11.9 km/h (7.4 mph)	Range 3	20.9 km/h (13.0 mph)	26.6 km/h (16.5 mph)	22.4 km/h (13.9 mph)	Range 4	25.3 km/h (15.7 mph)	N/A	35.2 km/h (21.9 mph)	Range 5	40.0 km/h (24.9 mph)	N/A	N/A
Standard 5-Speed with Lockup Torque Converter		Optional 4-Speed																																	
	Forward	Reverse																																	
Maximum Travel Speeds (with 23.5 R 25, 1 Star L3 tires)																																			
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Range 5	40.0 km/h (24.9 mph)	N/A	N/A																																
Axles/Brakes																																			
Final Drives		Heavy-duty inboard-mounted planetary																																	
Differentials		Hydraulic locking front with conventional rear – standard; dual locking front and rear – optional																																	
Rear Axle Oscillation, Stop to Stop (with 23.5 R 25, 1 Star L3 tires)		26 deg. (13 deg. each direction)																																	
Brakes (conform to ISO 3450)																																			
Service		Hydraulically actuated, spring-retracted, self-adjusting, inboard sun-shaft mounted, oil cooled, single disc																																	
Parking		Automatic spring applied, hydraulically released, oil cooled, multi disc																																	
Tires/Wheels (see page 20 for complete tire adjustments)																																			
		Tread Width	Width Over Tires																																
Michelin 23.5 R 25, 1 Star L-3		2170 mm (85.4 in.)	2880 mm (113.4 in.)																																
Serviceability																																			
Refill Capacities		EPA Tier 2/EU Stage II and EPA Tier 3/EU Stage IIIA																																	
Fuel Tank with Lockable Cap		352 L (93 gal.)																																	
Cooling System		33.8 L (35.7 qt.)																																	
Engine Oil with Vertical Spin-On Filter		29.6 L (28 qt.)																																	
Transmission Reservoir with Vertical Filter		24 L (25 qt.)																																	
Axle Oil (front and rear, each)		22 L (23 qt.)																																	
Hydraulic Reservoir and Filter		110 L (29 gal.)																																	
Park Brake Oil (wet disc)		0.6 L (20 oz.)																																	
Hydraulic System/Steering																																			
Pump (loader and steering)		Variable-displacement, axial-piston pump; closed-center, pressure-compensating system																																	
Maximum Rated Flow at 6895 kPa (1,000 psi) and 2,250 rpm		297 L/m (78 gpm)																																	
System Relief Pressure (loader and steering)		25 166 kPa (3,650 psi)																																	
Loader Controls		2-function valve, joystick control or fingertip controls, hydraulic-function enable/disable, optional 3rd- and 4th-function valve with auxiliary lever																																	



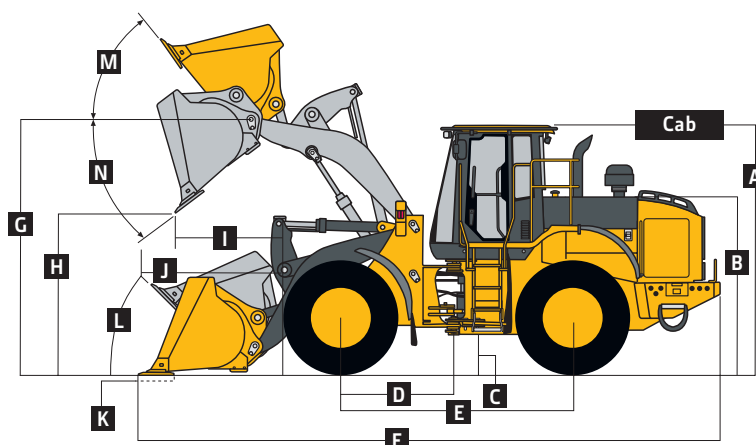
While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Hydraulic System/Steering (continued)

724K Z-BAR / HIGH-LIFT

Steering (conforms to ISO 5010)		
Type	Power, fully hydraulic	
Articulation Angle	80-deg. arc (40-deg. each direction)	
Turning Radius (measured to centerline of outside tire)	5.64 m (18 ft. 6 in.)	
Hydraulic Cycle Times	Z-Bar	High-Lift
Raise	6.4 sec.	6.4 sec.
Dump	1.4 sec.	1.6 sec.
Lower (float down)	3.0 sec.	3.0 sec.
Total	10.8 sec.	11.0 sec.

Dimensions and Specifications with Pin-On Bucket



724K Z-BAR AND HIGH-LIFT LOADERS WITH PIN-ON BUCKET

Dimensions with Bucket	Z-Bar	Z-Bar	High-Lift	High-Lift
	3.2-m ³ (4.25 cu. yd.) general-purpose with bolt-on edge	3.6-m ³ (4.75 cu. yd.) general-purpose with bolt-on edge	3.2-m ³ (4.25 cu. yd.) general-purpose with bolt-on edge	3.6-m ³ (4.75 cu. yd.) general-purpose with bolt-on edge
A Height to Top of Cab	3.43 m (11 ft. 3 in.)	3.43 m (11 ft. 3 in.)	3.43 m (11 ft. 3 in.)	3.43 m (11 ft. 3 in.)
B Hood Height	2.53 m (8 ft. 4 in.)	2.53 m (8 ft. 4 in.)	2.53 m (8 ft. 4 in.)	2.53 m (8 ft. 4 in.)
C Ground Clearance	461 mm (18.1 in.)	461 mm (18.1 in.)	461 mm (18.1 in.)	461 mm (18.1 in.)
D Length from Centerline to Front Axle	1.60 m (5 ft. 3 in.)	1.60 m (5 ft. 3 in.)	1.60 m (5 ft. 3 in.)	1.60 m (5 ft. 3 in.)
E Wheelbase	3.26 m (10 ft. 8 in.)	3.26 m (10 ft. 8 in.)	3.26 m (10 ft. 8 in.)	3.26 m (10 ft. 8 in.)
F Overall Length, Bucket on Ground	8.20 m (26 ft. 11 in.)	8.31 m (27 ft. 3 in.)	8.67 m (28 ft. 5 in.)	8.78 m (28 ft. 10 in.)
G Height to Hinge Pin, Fully Raised	4.12 m (13 ft. 6 in.)	4.12 m (13 ft. 6 in.)	4.54 m (14 ft. 11 in.)	4.54 m (14 ft. 11 in.)
H Dump Clearance, 45 deg., Full Height	2.91 m (9 ft. 7 in.)	2.84 m (9 ft. 4 in.)	3.33 m (10 ft. 11 in.)	3.26 m (10 ft. 8 in.)
I Reach, 45-deg. Dump, Full Height	1.06 m (3 ft. 6 in.)	1.13 m (3 ft. 9 in.)	1.19 m (3 ft. 11 in.)	1.25 m (4 ft. 1 in.)
J Reach, 45-deg. Dump, 2.13-m (7 ft. 0 in.) Clearance	1.61 m (5 ft. 3 in.)	1.67 m (5 ft. 6 in.)	2.06 m (6 ft. 9 in.)	2.12 m (6 ft. 11 in.)
K Maximum Digging Depth	123 mm (5.0 in.)	123 mm (5.0 in.)	216 mm (8.5 in.)	216 mm (8.5 in.)
L Maximum Rollback at Ground Level	41 deg.	41 deg.	42 deg.	42 deg.
M Maximum Rollback, Boom Fully Raised	55 deg.	55 deg.	47 deg.	47 deg.
N Maximum Bucket Dump Angle, Fully Raised	50 deg.	50 deg.	45 deg.	45 deg.
Loader Clearance Circle, Bucket Carry Position	13.19 m (43 ft. 3 in.)	13.25 m (43 ft. 6 in.)	13.62 m (44 ft. 8 in.)	13.68 m (44 ft. 11 in.)
Specifications with Bucket				
Capacity, Heaped	3.2 m ³ (4.25 cu. yd.)	3.6 m ³ (4.75 cu. yd.)	3.2 m ³ (4.25 cu. yd.)	3.6 m ³ (4.75 cu. yd.)
Capacity, Struck	3.0 m ³ (3.5 cu. yd.)	3.2 m ³ (4.2 cu. yd.)	2.8 m ³ (3.7 cu. yd.)	3.2 m ³ (4.2 cu. yd.)
Bucket Weight with Bolt-On Cutting Edge	1736 kg (3,827 lb.)	1822 kg (4,016 lb.)	1736 kg (3,827 lb.)	1822 kg (4,017 lb.)
Bucket Width	3.04 m (10 ft. 0 in.)	3.04 m (10 ft. 0 in.)	3.04 m (10 ft. 0 in.)	3.04 m (10 ft. 0 in.)
Breakout Force	15 607 kg (34,408 lb.)	14 398 kg (31,742 lb.)	13 884 kg (30,610 lb.)	12 968 kg (28,590 lb.)
Tipping Load, Straight, No Tire Deflection	16 552 kg (36,490 lb.)	16 278 kg (35,888 lb.)	13 368 kg (29,472 lb.)	13 137 kg (28,961 lb.)
Tipping Load, Straight, with Tire Deflection	15 594 kg (34,379 lb.)	15 327 kg (33,790 lb.)	12 696 kg (27,990 lb.)	12 468 kg (27,487 lb.)
Tipping Load, 40-deg. Full Turn, No Tire Deflection	14 279 kg (31,481 lb.)	14 029 kg (30,928 lb.)	11 477 kg (25,302 lb.)	11 263 kg (24,831 lb.)
Tipping Load, 40-deg. Full Turn, with Tire Deflection	13 074 kg (28,823 lb.)	12 828 kg (28,281 lb.)	10 602 kg (23,373 lb.)	10 392 kg (22,910 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, No Tire Deflection (conforms to ISO 14397-1)*	7140 kg (15,741 lb.)	7015 kg (15,465 lb.)	5739 kg (12,652 lb.)	5632 kg (12,416 lb.)
Rated Operating Load, 50% Full Turn Tipping Load, with Tire Deflection (conforms to ISO 14397-1)*	6537 kg (14,412 lb.)	6414 kg (14,140 lb.)	5301 kg (11,687 lb.)	5196 kg (11,455 lb.)
Operating Weight	19 299 kg (42,548 lb.)	19 392 kg (42,752 lb.)	19 526 kg (43,047 lb.)	19 619 kg (43,252 lb.)

Loader operating information is based on machine with identified linkage and standard equipment, PowerTech Plus 6090H (EPA Tier 3/EU Stage IIIA and Brazil MAR-I emissions) engine, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator. This information is affected by changes in tires, ballast, and different attachments, and assumes no tire deflection per the standard ISO 14397-1 section 5.

*Rated operating capacity based on Deere attachments only.

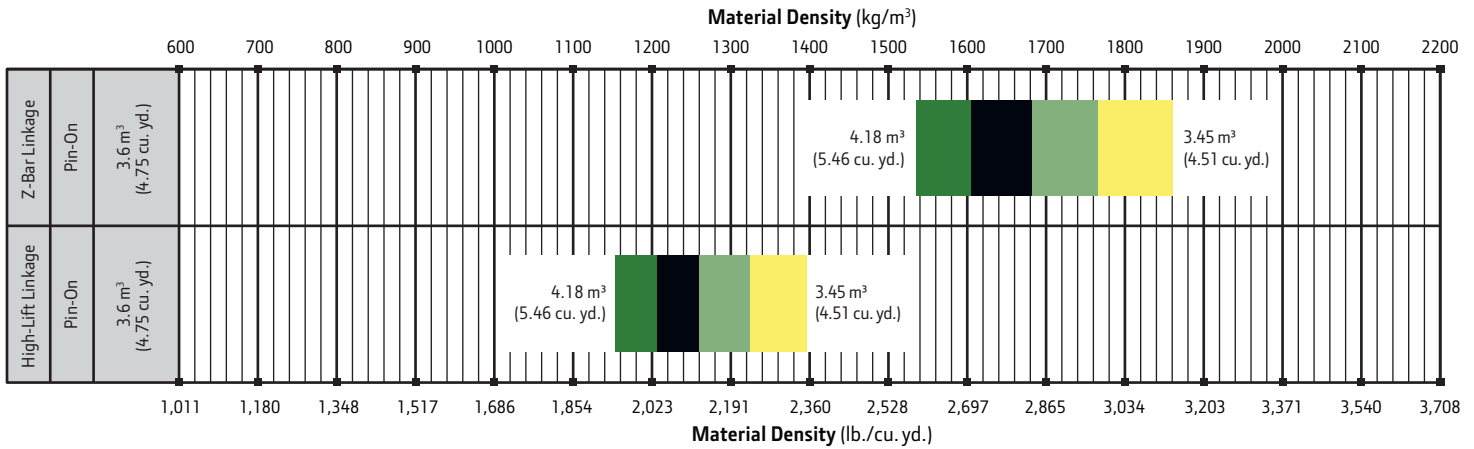
Adjustments to Operating Weights and Tipping Loads with Buckets

724K Z-BAR / HIGH-LIFT

Adjustments to operating weights, tipping loads, and tires are based on Z-Bar machine and pin-on 3.6-m³ (4.75 cu. yd.) general-purpose bucket with bolt-on cutting edge, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator*

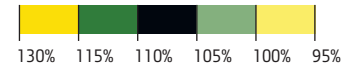
Add (+) or deduct (–) kg (lb.) as indicated for loaders with 3-piece rims	Operating Weight	Tipping Load, Straight	Tipping Load, 40-deg. Full Turn	Tread Width	Width Over Tires	Vertical Height
John Deere PowerTech Plus 6090H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
John Deere PowerTech 6090H	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	N/A	N/A	N/A
Michelin 23.5 R 25, 1 Star L-3	0 kg (0 lb.)	0 kg (0 lb.)	0 kg (0 lb.)	0 mm (0 in.)	0 mm (0 in.)	0 mm (0 in.)
Firestone 23.5-25 L3 20 PR	–50 kg (–110 lb.)	–37 kg (–81.5 lb.)	–33 kg (–73 lb.)	–220 mm (–8.7 in.)	+8 mm (+0.3 in.)	+8 mm (+0.3 in.)
Michelin 23.5 R 25 L3 XLDN	–6 kg (–13.2 lb.)	–4 kg (–9 lb.)	–4 kg (–9 lb.)	0 mm (0 in.)	0 mm (0 in.)	–3 mm (–0.1 in.)
Bridgestone 23.5 R 25, 1 Star L3	–22 kg (–48.5 lb.)	–16 kg (–35.3 lb.)	–14 kg (–30.9 lb.)	–220 mm (–8.7 in.)	+18 mm (+0.7 in.)	–6 mm (–0.2 in.)
Firestone 23.5-25 L5 20 PR	+82 kg (+180.8 lb.)	+61 kg (+134.5 lb.)	+54 kg (+119 lb.)	0 mm (0 in.)	+16 mm (+0.6 in.)	+29 mm (+1.1 in.)

*May change based on vehicle configuration, weight, or tire-pressure adjustments.



LOOSE MATERIALS		kg/m³	lb./cu. yd.	LOOSE MATERIALS		kg/m³	lb./cu. yd.
Chips, pulpwood		288	486	Limestone, coarse, sized		1570	2,646
Cinders (coal, ashes, clinkers)		673	1,134	Limestone, mixed sizes		1682	2,835
Clay and gravel, dry		1602	2,700	Limestone, pulverized or crushed		1362	2,295
Clay, compact, solid		1746	2,943	Sand, damp		2083	3,510
Clay, dry in lump loose		1009	1,701	Sand, dry		1762	2,970
Clay, excavated in water		1282	2,160	Sand, voids, full of water		2083	3,510
Coal, anthracite, broken, loose		865	1,458	Sandstone, quarried		1314	2,214
Coal, bituminous, moderately wet		801	1,350	Shale, broken crushed		1362	2,295
Earth, common loam, dry		1218	2,052	Slag, furnace granulated		1955	3,294
Earth, mud, packed		1843	3,105	Stone or gravel, 37.5 to 87.5-mm (1.5 to 3.5") size		1442	2,430
Granite, broken		1538	2,592	Stone or gravel, 18.75-mm (3/4") size		1602	2,700
Gypsum		2275	3,834				

Bucket Fill Factors



Additional equipment

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

644 724 Engine

- ● Wet-sleeve cylinder liners
- ● Automatic glow plugs for cold start
- ● Programmable auto-idle and auto shutdown
- ● Selected idle adjustment from 900–1,250 rpm
- ● Starter protection
- ● Automatic derating for exceeded system temperatures
- ● Serpentine drive belt for automatic tensioner
- Under-hood prescreened air intake
 - Electrical fuel-priming pump
- ● Dual-stage fuel filter and water separator
- ● 500-hour vertical spin-on oil filter
- ▲ ▲ Engine-compartment light
- ▲ ▲ Centrifugal engine air pre-cleaner
- ▲ ▲ Chrome exhaust stack
 - ▲ Automatic ether starting aid (recommended for cold starts below –12 deg. C [10 deg. F])

Powertrain

- ● Axle oil temperature sensing
- ● Programmable maximum high gear
- ● Clutch calibration engaged from monitor
- ● 2,000-hour vertical spin-on transmission filter
- ● Transmission fill tube and sight gauge
- ● Front locking differential
- ▲ ▲ Rear locking differential
- ● Transmission diagnostic ports
- ● 5-speed transmission with lockup torque converter
- ▲ ▲ 4-speed transmission with non-lockup torque converter
- ● Brake retractors and adjusters
- ▲ ▲ Automatic differential lock
- ▲ ● Wheel-spin control

Quad-Cool™ Cooling System

- ● Heavy-duty, trash-resistant radiator and high-ambient cooling package
- ● 2-side access to all coolers
- ● Isolated from engine compartment
- ● Engine radiator
- ● Integral engine oil cooler
- ● Hydraulic oil cooler (oil to air)
- ● Transmission oil cooler (oil to air)
- ● Charge air cooler (air to air)
- ● Coolant recovery tank
- ● Antifreeze, –37 deg. C (–34 deg. F)
- ● Cool-on-demand, hydraulically driven, swing-out fan
- ● Enclosed fan safety guard
- ▲ ▲ Automatic reversing fan drive
- ● Axle and service-brake coolers

644 724 Hydraulics

- ● Automatic return-to-dig bucket positioner
- ● In-cab adjustable automatic boom-height kickout/return to carry
- ● Reservoir with sight gauge and fill strainer
- ● Hydraulic diagnostic ports
- ● 4,000-hour in-tank filter
- ▲ ▲ 2 function — joystick with F-N-R
- ▲ ▲ 2 function — joystick with steering column F-N-R
- ● 2 function — 2-lever fingertip controls and steering column F-N-R
- ▲ ▲ 3 function — joystick with F-N-R and 3rd-function auxiliary lever
- ▲ ▲ 3 function — 3-lever fingertip controls and steering column F-N-R
- ▲ ▲ 4 function — 4 levers with steering column F-N-R
- ▲ ● Ride control, automatic with monitor-adjustable speed settings
- ▲ ▲ Cold-temperature hydraulic fluid recommended between –10 and –25 deg. C [14 and –13 deg. F]

Steering Systems

- ● Conventional steering wheel with spinner knob

Electrical

- ● Solid-state electrical power-distribution system
- ● Lockable master electrical-disconnect switch
- ● Battery-terminal safety covers
- ● By-pass start safety cover at starter
- ● Pre-wired for beacon/strobe light
- ● Lights: Halogen driving lights with guards (2) / Front (2) and rear (2) cab work lights / Turn signals and flashers / LED stop-and-taillights
- ▲ ▲ Heavy-duty front LED turn signal and marker lights
- ● Programmable courtesy lights
- ● Horn, electric
- ● Reverse warning alarm
- ● Multi-function/multi-language LCD color monitor includes: Digital instruments — Analog display (hydraulic oil temperature, engine coolant temperature, transmission oil temperature, and engine oil pressure) / Digital display (engine rpm, transmission gear/direction indicator, hour meter, fuel level, speedometer, and odometer)
- ● Integrated cycle counter with 5 categories
- ● Indicator lights: Standard and selected options / Amber caution and red stop
- ● Operator-warning messages
- ● Built-in diagnostics: Diagnostic-code details / Sensor values / Calibrations / Individual circuit tester
- ▲ ▲ Electrical corrosion-prevention package

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Actual machine configuration may differ from image. Not all models available in all countries.

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan at test conditions per ISO 9249. No derating is required up to 3050-m (10,000 ft.) altitude. Specifications and design subject to change without notice. Specifications with the exception of bucket capacity are in accordance with all applicable ISO standards. Except where otherwise noted, these specifications are based on units with applicable linkage and standard equipment, ROPS cab, rear cast bumper/counterweight, transmission side-frame guards, bottom guards, standard tires, full fuel tank, and 79-kg (175 lb.) operator.

Additional equipment *(continued)*

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

644 724 Electrical *(continued)*

- ▲ ▲ AM/FM/Weather-Band (WB) radio with CD player
- ▲ ▲ 24- to 12-volt, 15-amp converter
- ● 24- to 12-volt, 8-amp converter

Operator's Station

- ● Quiet Cab with air conditioning/heater
- ● Keyless start with multiple security modes
- ● Sealed-switch module with function indicators
- ● Seat with backrest extension, deep foam, fabric cover, and adjustable air suspension
- ● Hydraulic controls integrated to seat
- ● Seat belt, 76 mm (3 in.), with retractor
- ● Cup holders (2)
- ● Lunch-box/cooler holder
- ● Dome and reading light
- ● 12-volt power port
- ● Rubber floor mat
- ● Tilt steering column
- ● Operator's manual storage compartment
- ● Outside (2) and inside (1) rearview mirrors
- ● Left-side operator-station access
- ● Slip-resistant steps and ergonomic handholds
- ● Sun visor
- ● Front and rear intermittent windshield wiper and washers
- ▲ ▲ Beacon bracket
- ▲ ▲ Rear camera
- ▲ ▲ Rear camera with radar object-detection system
- ● LOADRITE™ L2180™ Payload Scale Ready

Loader Linkage

- ● Z-Bar loader linkage
- ▲ ▲ High-lift Z-Bar loader linkage

Buckets and Attachments

- ● Full line of Deere pin-on buckets
- ▲ ▲ Hi-Vis hydraulic coupler which accepts Euro-pattern attachments (Volvo)
- ▲ ▲ Full line of Deere hook-on buckets and forks

644 724 Overall Vehicle

- ● JDLink™ Ultimate wireless communication system (available in specific countries; see your dealer for details)
- ● NeverGrease™ rear-axle oscillation
- ▲ ▲ NeverGrease steering cylinders
- ● Front and rear tie-downs
- ● Rear cast bumper with rear hitch and locking pin
- ● Articulation locking bar
- ● Loader boom service locking bar
- ● 40-deg. steering articulation to each side with rubber-cushion stops on frame
- ● Vandal protection with lockable engine enclosures, right counterweight storage, battery box, and filler access for radiator/fuel/hydraulic transmission
- ● Right and left platforms with handrails
- ● Left-side service steps and handholds
- ▲ ▲ Right-side service steps and handholds
- ● Storage compartment
- ● Fuel-tank fill strainer
- ● Heavy-duty fuel-tank guard
- ● Ground-level fueling
- ● Same-side ground-level daily servicing
- ● Michelin 23.5 R 25, 1 Star L-3 tires on 3-piece rims
- ● Environmental drains for engine, transmission, hydraulic oils, and engine coolant
- ▲ ▲ Quick fluid service (engine, transmission, hydraulic oils, and engine coolant)
- ● Fluid-sampling ports for engine, transmission, hydraulic and axle oils, and engine coolant
- ● Fenders, front
- ▲ ▲ Fender, full-coverage, front
- ▲ ▲ Fenders, full-coverage, front and rear
- ▲ ▲ Transmission side-frame guards
- ▲ ▲ Bottom guards, front frame and transmission
- ▲ ▲ Lift eyes

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JOHN DEERE



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories **NOT AVAILABLE** in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

JohnDeere.com

CUSTOMER QUOTATION

Quote No: QUO-119855-N2P4S5

Revision No: 0

Date: 03/04/2024

Model: ZW220-7

Hitachi Wheel Loader



PREPARED FOR

Ben Forbes

Shire of Dowerin

13 Cottrell Street

Dowerin

WA, 6461

Australia

PREPARED BY

Gavin Edge

CE Sales Representative - EAST

Mobile: 0418 448 954

Hitachi Construction Machinery (Australia)

Ben Forbes
Shire of Dowerin
13 Cottrell Street
Dowerin
WA, 6461
Australia

Dear Ben Forbes,

Thank you for the opportunity to present this Quotation, I trust that it will meet the objectives required.

The ZW220-7 is more than a quality piece of equipment, it's an investment in the future success of your business.

At Hitachi Construction Machinery (Australia) Pty Ltd we believe that a machine is worth more than the initial purchase price, its true value lies in the many years of service that both the machine and the people supporting you can provide.

Our organisation focuses on your total machine ownership experience, not just the upfront sale. You will benefit from the support of more than 1250 employees and a company owned branch network that spans over 22 outlets nationally. Of our employees, 75% are dedicated to customer support roles. They understand the importance of machine up-time and are focussed on providing the products and services you need to remain productive.

Our Product Support Staff are connected into a Global Network that operates 24 hours a day, 365 days a year to ensure that the latest information is available. They can also assist you with protecting your investment and maximising its return with quality consumables and spare parts that will keep your equipment in optimum condition and reduce operating costs.

I look forward to discussing this with you in the near future and provide you with any further information.

Yours Sincerely,

Gavin Edge
CE Sales Representative - EAST
Hitachi Construction Machinery (Australia)

Perry Maxwell
Sales/Branch Manager
Hitachi Construction Machinery (Australia)



Hitachi Parts Online

MACHINE SPECIFICATIONS

ENGINE & EXHAUST EMISSIONS

- Cummins B6.7 (HVO Renewable Diesel Ready)
- EU Stage V Exhaust Emissions Certified Delivers Exceptional Efficiency.
- Displacement: 6.69lt.
- Maximum Torque: 990Nm at 1300 rpm.
- Automatic Engine Shut Down after a Pre-Defined Period.
- Automatic Power Up Function for Demanding Tasks.
- Maximum Power: 157kW (210HP) at 1900 rpm.

POWERTRAIN & TYRES

- Powershift Transmission with Computer Controlled Automatic Shift (5F/3R).
- Torque Proportioning Differential (TPD) Standard On All Axles.
- 23.5R25 (L3) Michelin XHA2 Radial Tyres.

HYDRAULICS & PRODUCTIVITY

- 275 l/min Load Sensing Variable Displacement Implement Pump.
- 65.8 l/min Fix Displacement Fan Pump.
- Z-Bar Lift Arm with Bucket Cylinder Rod Guard and 3rd Function Piping.
- 3.4m³ GP Bucket with 2910mm BOCE.
- Lift Arm Raise, Lower, Bucket Tilt, Dump Angle, Auto Level and Stop Position can be Easily Adjusted from the Multifunction Switch and Sub Monitor.
- Intelligent Ride Control System (Auto-Off).
- Parallel Tandem Hydraulic Circuit - Ensures Smooth Digging Operation Prioritises the Bucket Movement During Loading Operation.
- Approach Speed Control - Maximises Fuel Efficiency on Loading Operations.
- Payload Checker - Payload Measurement with Tip Off Function can be Displayed in Real Time On Sub Monitor.

OPERATOR CAB & COMFORT

- Pressurised ROPS/FOPS Cab with First-Class Interior, Ultimate Comfort, Quality and Superior View of Your Surroundings.
- Heated Heavy Duty Seat with Horizontal Suspension and 75mm Wide Seat Belt
- Seat-Mounted Electric Control Multifunction Proportional Lever (3 spools)
- Armrest-Integrated with Sub Monitor Controller (Dial + Switches).
- Electric Joystick Steering System (Optional).
- 3.5" Colour Liquid Crystal Display in the Front Dashboard is Easy To View.
- High-Resolution 8" Secondary Display on Right Hand A Pillar.
- Double Intake Filtered Auto Climate Controlled Air-Conditioner for Australian Conditions.
- Roller Type Sunshade.
- Storage Space (Heater/Cooler Box), Drink Holder and Document Holder.
- USB Power Supply, Smartphone and Tablet Holder.

IN CONTROL OF YOUR SAFETY

- Cabin Top Handrails with Installed Foot Plates Deliver Better Safe Access to The Front/Rear Window for Easier Cleaning and Wiper Maintenance.
- LED Headlights for High Brightness and Unbeatable Durability with LED Rear Combination Lights.
- 4 Front and 2 Rear Cabin Mounted LED Work Lights for Working in Dusty or Low Visibility Environments + 2 LED Lights on the Rear Grill.
- Outside Heated Electric Adjustable Mirrors Provide a Clear Rear View with Retractable Bracket.
- Seatbelt Reminder with Audible Alarm Until Seat Belt Has Been Fastened.
- Bluetooth® for HANDS-FREE Calls and DAB+ Radio for Music While You Work.
- Anti-Slip Steering Wheel for Effortless Operation.
- Emergency Steering and Rear-View Camera.
- Control Your Safety with the 270-Degree View Aerial Angle® Camera System (Optional).
- Safety Can Be Further Enhanced by the Rear Obstacle Detection and Warning System (Optional).



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MACHINE & EASY MAINTENANCE

- Safe and Rapid Opening Engine Covers and Radiator Grill Enables Convenient Ground-Level Access for Daily Inspections & Regular Maintenance Checks.
- Front and Rear Belly Guards Protect Machine Powertrain and Driveshaft from Damage.
- Anti-Clogging Radiators (Wide Fin Pitch) and Radiator Screen.
- Automatic Reversible Cooling Fan with Heat Sensing.
- Front and Full Covered Rear Fenders with Mud Flaps.
- Remote Engine Oil Drain Point.
- Auto Lubrication System (Optional).

REPORTING & TELEMATICS

- Global E-Service and Satellite Communication (GSM Optional for Indoor Use)
- ConSite Operational Reports and Emergency Notification Via E-Mail.
- ConSite Pocket App Allows You to Manage and Monitor Your Fleet Remotely.
- In Cab Display Daily Inspection Reminders and Alerts in Plain English.

DISCLAIMER

- The above machine specification is for the standard model in this range. It may not be the tailored specification of the machine quoted below.

PRICING DETAILS - STANDARD ITEMS

Quantity EACH	Description	Custom Details
1	ZW220-7	
1	(Standard) (Factory standard) 3.4m3 GP Bucket with BOCE	
1	Kerfab Quick Coupler (ISO Standard)	
1	Kerfab Hook On Clear View Pallet Forks 7000kg SWL, 1600mm Wide, 1220mm Tines, No Backrest	
1	Fire Extinguisher 1.0kg Mounted inside Cab (EAD1S)	
1	First Aid Kit	
1	Hose Burst Protection	
1	Jump Start Connector	
1	Rotating Beacon (LED Guard only)	LED Beacon in Black Steel Mesh Guard
1	Sign Writing	Shire of Dowerin Company Logo Supplied and Fitted to New Loader
1	Tinted Windows	
1	SWL Decal and Safety Stickers	
1	Canvas Seat Cover	
1	GME 80 Ch UHF Radio	
1	Red Locksafe Mining Battery Isolator	
1	Yellow Locksafe Mining Battery Isolator	
1	Front and Rear Oversize Signs Supplied and Installed to the Top Windows	
1	Yellow Hi Vis Tape	
1	Wheel Chocks Supplied and Fitted to the front Mud Guards	
1	Fire Extinguisher 9.0kg Mounted on Handrail (Ext9.0)	
1	Quick Reference Guide for Muffler Filter [ER10003012]	
1	Risk Assessment	
1	Shire of Dowerin Concessional WA State Plates	
1	New Spare Rim and Tyre Supplied	
1	Transport of New Loader from Hitachi Forrestdale Yard to Shire of Dowerin Yard	
1	Groeneveld-BEKA 8kg Progressive Auto Lube System with In-Cab Low Level Indicator	
1	Warranty Coverage	Standard Machine = 12 Months / Unlimited Hours.... Extended Machine = 12 Months / Unlimited Hours.... Extended Powertrain = 48 Months / 8,000 Hours

Note: All warranty coverages will run concurrently, with each warranty coverage commencing from the delivery date.

TRADE IN DETAILS	
Description	Custom Details
Number of Machines Quoted	1

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Pricing Information	Excl. GST	GST	Incl. GST
Single Machine Price	\$ 386,300.00	\$ 38,630.00	\$ 424,930.00
Trade In	\$ 0.00	\$ 0.00	\$ 0.00
Change Over Amount	\$ 386,300.00	\$ 38,630.00	\$ 424,930.00
Multiple Machine Price	\$ 386,300.00		\$ 424,930.00

OPTIONAL ITEMS at Additional Cost				
Description	Custom Description	Excl. GST	GST	Incl. GST

ADDITIONAL COMMENTS	
Description	

QUOTE VALIDITY

This machine price is valid for **7 days** from this document date and unless specifically stated, is subject to prior sale. Please refer to the standard terms and conditions below.

TERMS AND CONDITIONS

Hitachi Construction Machinery (Australia) Pty Ltd terms and conditions of sale EF123-09 (11/02/2022) can be found here.
<https://hitachicm.com.au/terms-of-sale>



PREMIUM SERVICE AGREEMENTS

PRODUCT RANGE

UPFRONT AGREEMENT

Premium service package providing significant savings and exceptional value. The service package includes a comprehensive maintenance plan with all of the benefits with a "one off" upfront payment. Our Team will proactively manage your maintenance providing ease of mind.

BEST
VALUE

MONTHLY AGREEMENT

Premium service package that contains the features of the upfront package, but with monthly payments instead of an upfront payment.

CAPPED PRICE AGREEMENT (CPA)

Comprehensive maintenance package that provides you the flexibility to service equipment at your convenience. The package provides you the transparency of knowing your ongoing associated maintenance costs without escalations for the duration of the agreement.

PARTS ONLY AGREEMENT

The Parts Only package provides you the required service parts to OEM guidelines within two weeks of the service due date. It provides you the flexibility to manage labour resources accordingly.

DISCOUNTS AVAILABLE UP TO 17.5%

AGREEMENT HOURS	UP FRONT	MONTHLY	CAPPED PRICE	PART S ONLY
1,000	12.5%	7.5%	5.0%	5.0%
2,000	15.0%	10.0%	5.0%	7.5%
3,000-6,000	17.5%	12.5%	5.0%	10.0%

Plus⁺ 1 YEAR POWERTRAIN WARRANTY*

Sign up to a Consol Premium Service Agreement, and you will also receive an additional **1 Year Powertrain Warranty*** on your new machine purchase on top of the current attractive standard warranty offering **PLUS other loyalty benefits.**

*Valid for models ZX75 to ZX890 and ZW120 to ZW550. Applicable to Upfront and Monthly agreements only. Conditions apply.

Hitachi Construction Machinery (Australia) Pty Ltd

ABN 62 000 080 179

ORDER FOR SUPPLY OF GOODS

Name: Shire of Dowerin
Address: 13 Cottrell Street, Dowerin, WA, 6461 Australia
Phone No: 0429 311 160

DESCRIPTION OF GOODS

1 ZW220-7, Hitachi Wheel Loader

Acceptance of Goods and Terms as per Quote Number : QUO-119855-N2P4S5 Revision: 0

DELIVERY ARRANGEMENTS

CONDITIONS OF SALE ☐ Subject to Management Approval

PRICING SUMMARY	Excl GST	Incl GST
Purchase Price	\$ 386,300.00	\$ 424,930.00
Trade In		
C/O Price	\$ 386,300.00	\$ 424,930.00
Less Deposit		\$ 0.00
Balance		\$ 424,930.00

Balance to be paid in full prior to delivery

TRADE 1		TRADE 2	
Machine		Machine	
Model		Model	
Serial No.		Serial No.	
Engine No.		Engine No.	
Encumbered Declaration		Encumbered Declaration	

I/We hereby declare that the above mentioned equipment to be traded-in is my/our own property and is not subject to lien/bill of sale or any other encumbrance whatsoever.

I/We hereby declare that the above mentioned equipment to be traded-in is my/our own property and is not subject to lien/bill of sale or any other encumbrance whatsoever.

TARGET DELIVERY DATE: _____

Customer Initials _____

(Purchaser's Signature)

(Purchaser's Signature)

Trade Payout Details

Trade Payout Details

Amount Owning \$

Amount Owning \$

Date

Date

Bank

Bank

I/We hereby offer to purchase from Hitachi Construction Machinery (Australia) Pty Ltd hereinafter called "The Seller" the above mentioned goods in accordance to the Terms of Sale found here: <https://hitachicm.com.au/terms-of-sale>.

For new customers a Trading Account with a maximum limit of \$1000 will immediately be established upon invoicing of above mentioned goods. I / We acknowledge that we will need to complete a Credit Application ±Trading Account within 90 days of machine invoice and accept the Terms and Conditions of trade, otherwise the Trading Account will be suspended until the Trading Account documentation is complete. New **ConSol** customers please read our [ConSol Terms and Conditions](#).

(Customer Name) (Signature) (Date)

(Witness Name) (Signature) (Date)

(Sales Rep Name) (Signature) (Date)

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(Customer Name) (Signature) (Date)

(Witness Name) (Signature) (Date)

(Sales Rep Name) (Signature) (Date)

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Equipment Finance

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Report on Plant Replacement Options For 2018 CAT 299D2 Posi-Track

Introduction

The current CAT 299D2 forestry spec posi track has exhibited significant reliability issues, resulting in substantial downtime and financial losses for the shire. With 1,650 operational hours and \$23,000 in total expenses this year, primarily due to breakdowns, coupled with ongoing repair requirements, urgent action is required to address these concerns. This report assesses potential replacement options provided by various suppliers, considering specifications, features, and costs to facilitate an informed decision.

Pickles Auctions have conducted an assessment of the CAT 299D2 forestry spec posi track, valuing it at \$100,000. However, there's a belief that its value could surpass this appraisal once repairs are undertaken.

Replacement Options

1. ASV Equipment: ASV RT-135 Forestry MAX-Series Posi-Track Loader

- Purchase Price: \$237,150.00
- Specifications: WA Conditional Registration, Civil Spec enhancements, RS 2050mm Super Duty GP Bucket, window tinting.
- Pros: Enhanced safety features, specialized forestry capabilities.

2. Clark Equipment: T86 Forestry

- Estimated Price: \$220,000 + GST
- Features: Air-conditioned/heated cabin, GP bucket, joystick controls.
- Pros: Competitive pricing, emphasis on operator comfort and convenience with features like large entry doors, interior storage, push-button controls, multiple radio options, automatic heat and air conditioning, heated air-ride seat, controls that move with the seat, and hydraulically cushioned cylinders.

3. AFGRI Equipment - John Deere: New 2022 John Deere 333G Compact Track Loader

- Price: \$150,000 + GST
- Features: Cab with Heat/AC, Power QT, Hi Flow, SL & RC, 2Spd, LED Lights, Rev Fan, Chrome, Heat Seat, Radio, ISO Joystick Controls, EH Joystick Performance Package, EH Boom Performance Package, Offset Block Lug Tread Pattern.
- Pros: Competitive pricing, comprehensive features package including advanced controls, comfort amenities, and reputed brand reliability.

4. Westrac: Awaiting Replacement Cost

- Pending information on pricing and specifications.

Recommendation

After thorough consideration and consultation with industry experts, including the supplier of the rotary axe at DIGGA West and an experienced forestry professional from Twinkarri, it is evident that the ASV RT-135 Forestry MAX-Series Posi-Track Loader is the optimal choice for replacement. With strong endorsements from reliable sources within the forestry sector, coupled with its specialized

capabilities and enhanced safety features, the ASV machine emerges as the most suitable option to address the shire's operational needs. Furthermore, the endorsement from both DIGGA West and Twinkarri underscores the ASV RT-135's reputation for reliability and performance, making it the clear frontrunner for plant replacement.

Conclusion

The replacement of the CAT 299D2 with a more reliable and efficient machine is essential to mitigate operational disruptions and ensure timely project execution. By evaluating available options based on specifications, features, and costs, informed decisions can be made to optimise performance and maximise return on investment. Further assessment and comparison with Westrac's offering will enable the shire to select the most suitable replacement option.

Purchase Quotation Prepared For:

Shire of Dowerin

Dowerin WA 6461

M: 0477357175

E: bforbes@dowerin.wa.gov.au

Quotation Information:

Quote No: 021860.V1

Date: 12/04/2024

Salesperson: Rick Way

Valid Until: 25/04/2024

Dear Ben,

We are pleased to be able to present you with the following sales quotation for the supply of one only, new ASV RT-135 Forestry MAX-Series Posi-Track Loader.

Level 2 ROPS/FOPS Certified Operator Station incl 7 inch Touchscreen Display and 360 Degree Visibility, Sealed and Pressurised Cabin with Heat & A/C, Hydraulic Quick Attach, High Performance Cooling Package with Hydraulic Demand Fan, AM/FM Radio w/ Bluetooth, Full Instrumentation Panel, Gauges, Hour Meter, Warning Lights, Deluxe Suspension Seat w/ 2 inch Seat Belt, Lap Bar, Front and Rear LED Working Lights, Automatic Integrated Parking Brake, 12V Outlet, OH&S Kit (Rotating Amber Beacon, Reverse Alarm, Horn, Safety Decals).

Please note: this order is subject to manufacturer pricing variations that may occur after the date of quotation and prior to machine delivery. All product features, inclusions and warranties are indicative only and subject to amendment. Errors and omissions excluded. In addition, delivery of your product is not included in the below Quotation unless specified. All purchases are to be picked up from our branch address noted in the header of this Quote document. If you require delivery to your location and this is not mentioned on the below Quotation, please contact us to arrange.

Machine Specifications

Engine: Cummins QSF 3.8L Tier 4, Turbo After Cooled

Operating Weight: 5892Kg

Rated Safe Working Load: 1882 kg @ 35% of tipping load

Height/Width: 2276mm Height x 1980mm Wide

Auxiliary Hydraulics: Low Flow 75.7 lpm @ 3,300 psi / High Flow 189 lpm @ 4,060 psi

Track System: 20" (508mm) General Purpose Tracks, Nylon Reinforced, with Fully Independent Posi-Track Suspension Undercarriage and 48 High Density Polyurethane Wheels.

Standard Equipment: **ASV RT-135 Forestry MAX-Series Posi-Track Loader**
Premium Max Series, Plus Hydraulic Package (Bucket Positioning & High Flow Hydraulics) with Deluxe Air Ride Seat, rear window, sound insulation, cab, Level II ROPS/FOPS Certified Operator Station, Sealed and Pressurised Cabin with Heat & A/C, Bluetooth radio, reverse camera, reverse fan, 7" touch screen display, OH&S Kit (Rotating Amber Beacon, Reverse Alarm, Horn, Safety Decals), Hydraulic Quick Attach, Full Instrumentation Panel, Gauges, Hour Meter, Warning Lights, Lap Bar, Front and Rear LED Working Lights, , Lockable Hood, brush guard kit, 2-speed and Automatic Integrated Parking Brake. Lexan Forestry door included.



Proud Factory Authorised Distributor For:



ASV Sales & Service (WA) Pty Ltd
ABN 16 139 960 580
Welshpool
WA 6106
T: 08 9458 9280
F: 08 9258 6597

Proud Factory Authorised Distributor For:



One (1) Only New ASV RT-135 Forestry MAX-Series Posi-Track Loader

Purchase Quotation Detail

Included Machine and Attachments:	– ASV RT-135 Forestry MAX-Series Posi-Track Loader	
	– WA Conditional Registration	
	– Civil Spec: 2 x E-Stops, Dual Pole Isolator, Lockout Switch, 2.0kg Fire Extinguisher, UHF Radio, Reflective Tape	
	– RS 2050mm Super Duty GP Bucket c/w bolt on cutting edge	
	– Window Tinting	
	Subtotal:	\$ 237,150.00
	Purchase Price:	\$ 237,150.00
	10% GST Amount:	\$ 23,715.00
	Changeover/ Net Sale Price:	\$ 260,865.00

Other Important Notes Relating to This Quotation (If Required):

Thank you for your interest in our machines. We sincerely appreciate the opportunity to provide you with this quotation and we look forward to providing an equipment solution for your business.

Best Regards,

Rick Way
M: 0412 637 637

Proud Factory Authorised Distributor For:



ASV Sales & Service (WA) Pty Ltd
ABN 16 139 960 580
Welshpool
WA 6106
T: 08 9458 9280
F: 08 9258 6597

Acceptance of Order:

To accept the above proposal, please sign below and return via email.

Quotation Number:	021860	Quotation Valid Until:25/04/2024
Authorised Signature:	_____	Date: _____
Print Name:	Shire of Dowerin - Ben	
Title:	_____	

Proud Factory Authorised Distributor For:



THE CUSTOMER AGREES THAT THE SAID GOODS ARE TO BE PURCHASED UNDER THE FOLLOWING TERMS & CONDITIONS:

1. The manufacturer may at its discretion make changes in the designs or specifications of the goods and may discontinue the sale of any of the goods and in such the Company will incur no liability to the customer in respect thereof.
2. The customers will take delivery of the goods at the company's address within seven (7) days from the notification by the company that the goods are ready for delivery. The company will use its best endeavors to make goods available on the delivery date herein before mentioned but shall not be responsible for any delay or failure to do so. Should failure to so deliver continue for a period exceeding two (2) calendar months after the said delivery date or should the company be dissatisfied with the condition or state of the trade-in the Company will have the right by notice in writing to cancel this order.
3. No claims by the customer shall be made except provided for in this order.
4. The price quoted for the goods is subject to any tax or taxes other than those included herein imposed by any duly constituted authority at or prior to the time-of delivery to the customer, and pricing may change subject to manufacturer variations.
5. If the Company agrees to accept a trade-in in whole or in part payment for the purchase price of the goods the items to be traded in will be delivered to the company at its above address prior or at the time of taking delivery of the goods and the customer warranty to the company that he has the free and unfettered right and title to sell any such items to the company and further warrants that there is no lien, bill of sales, mortgage, unpaid balance, under any hire purchase agreement or other encumbrance of any kind or character include lien or any judgment or execution over such items pending delivery to the company the customer will maintain such items in the same condition or state as there are now in.
6. The customer will pay to the company interest at the rate of 14 per cent per annum on any overdue payments to the date of the payment.
7. The customer will not assign any of his rights hereunder without the prior written consent of the company.
8. If the services of the company or any of its employees, servants or agents is provided whether for driving instructions, delivery effecting adjustments or repairs otherwise the customer accept the responsibility for all damage occasioned to the person or property and will indemnify the company against all actions, suits, claims and demand in respect thereof.
9. The risk in the goods sold by the company to the customer shall pass to the customer at the same time as the goods are delivered to the customer and from that time until the company receives payment in full the company shall insure at the customers expense the goods against all risks which the company in its sole discretion deems necessary if the goods are delivered to the customer at any place other than the abovementioned address of the company delivery shall for the purpose of this instrument be deemed to be made as of the time when it left the said address.
10. If the customer fails to punctually observe and perform all its obligations hereunder all moneys paid, any items traded in hereunder shall be absolutely forfeited to the company and this order and all the customers rights hereunder shall be ipso facto determined without prejudice to any action, suit, claim of demand the Company made against the company the customer as a result of any such breach or breaches hereunder.
11. If this order is cancelled under the Clause 2 hereof the company will return to the customer any moneys paid, any items traded in hereunder or the lieu of such trade-in the amount of the allowance mentioned above and upon any such cancellation all rights and obligation of the parties hereunder the customer shall ease and determine except the provisions of this clause which shall be the limit of the company's liability.
12. Until the purchase price is paid in full and the customer has otherwise performed and observed all its obligations hereunder the customer shall have no ownership property or rights in the goods and if possession of the same shall be a bailee thereof only.
13. No warranty is given in respect of any goods which are second hand as their quality and/or their suitability for any work required by the customer and any implied warrant statutory or otherwise is expressly excluded in relation to second-hand goods the customer admits and acknowledges that:
 - a) he has had the fullest opportunity to inspect the goods
 - b) the goods are sold subject to all faults
 - c) the company shall not be responsible for any loss or damage to the goods whatsoever arising.
14. Where the goods are new the company warrants the goods supplied by it to be free from defects in material and workmanship as per the manufactured warranty documents.

All parts replaced under warranty become the property of the company. The company reserves the right to make the final decision on the warranty claims when the reason for the cause of the failure is open to question. Warranty on parts replaced by the company under warranty shall be limited to the obligation to make good only the defective part or parts installed by the company and does not cover labour required for the removal or refitting of the said part or parts. Warranty is back to base and does not cover associated travel costs. Parts replaced under warranty by the company will be warranty for ninety (90) days from the date of installation or the balance of the un-expired warranty period of the basic machine whichever shall be the longer. The exchange of a new part or the defective part shall be constituting compliance with this warranty. A claim will be approved only for the part concerned and not for any associated parts. The part replaced must be returned to the company for inspection prior to approval of any claim. In all other respects the conditions relating to the warranty in respect of whole goods set out above shall apply.
- Except for its expressed liability under this warranty the company does not assume any obligation or liability whatsoever for any direct or indirect consequences of faults or defecting material workmanship or design whether it be loss or damage to the product, injury or damage to the persons or property loss of property or loss of profit. The warranty is given in lieu of all other conditions and warranties express or implemented which might otherwise be binding to the company (all of which the hereby expressly excluded) and all other obligations or liabilities on the part of the company except as may be otherwise stated in order form from the Agents or employees of the company are not authorized to give warranty verbal or otherwise on the company's behalf.
15. If in any case extended terms of payment are allowed to the Customer the company shall have an unpaid seller's lien upon the goods concerned and the customer shall rot part with the title to or possession of those goods to any purchase, bailee or lessee until payment in full to the company of the purchase price is made.
16. The customer will not incorporate the goods into any other equipment, products or machinery dealt in by the customer without prior written approval from the company.
17. In entering into this agreement the customer depends entirely on its own judgment and acknowledges that this order form embodies the entire terms, inducements and representations whatsoever made or given to the customer by the company or any other person. Taking or delivery of the goods by the customer shall be conclusive evidence that the same are in satisfactory order and condition and fit for the purpose for which they are required by the customer and despite any error or misdescription, no claim or objection in respect of the goods shall be admissible after such delivery.

18. a) If this order form has been signed by or on behalf of more than one person they shall be jointly and severally.

b) In the interpretation of this order form and these conditions where the context so admits the singular of the words "company" and "person" shall be deemed to include the plural and the word "person" and pronouncing of the first person shall be deemed to refer to the person company or corporation by whom or on whose behalf the order form has been signed.

19. Notice posted by ordinary prepaid post to the customer's last known address shall be sufficiently served on the customer and shall be deemed to have been received by the customer on the following postage.

20. While the Customer holds possession of the Machinery as bailee, he/she:

- a) is responsible for its proper care and maintenance;
- b) is responsible for its safe use;
- c) is responsible for ensuring all information in relation to its use and the use of accompanying accessories and components is provided to those using the Machinery for work purposes;

21. Where the Dealer is entitled to reclaim possession of the Machinery, the Customer authorises the Dealer, its servants and agents to lawfully enter the Customer's property for the purposes of retaking possession.

22. Where the Customer requires finance to be provided by a provider of credit ("Financier"), for the payment of the Machinery, the Customer shall promptly provide the Dealer and/or the Financier with information necessary to allow a determination of the Customer's finance application.

23. Where the Customer advises the Dealer before entering into the Contract that he/she requires credit to be provided for the payment of the Machinery and having taken reasonable steps has been unable to obtain credit, the customer may within a reasonable period by notice in writing given to the Dealer rescind the Contract.

24. Where the Customer refuses or fails to take delivery of the Machinery or is otherwise in breach of his obligations under this contract, the Dealer may terminate this Contract by written notice to the Customer.

If that occurs, any deposit paid or payable by the Customer to any amount not exceeding 5% of the total Purchase Price of the Machinery shall be forfeited to the Dealer. Both parties acknowledge that the Dealer shall be entitled to claim by way of pre-estimated liquidated damages from the Customer an amount equal to 5% of the Purchase Price less any deposit forfeited.

Privacy Statement:

1. The Dealer is an organization bound by the National Privacy Principles under the Privacy Act 1988. A copy of the Principles is available for perusal at the Dealer's premises or from the Office of the National Privacy Commissioner.

2. The kind of information the dealer holds is that detailed within this contract document or other information necessary to establish the Customer's identification.

3. The main purposes for which the Dealer will use this information will be to facilitate the delivery of the goods which are the subject of this contract; and to meet the requirements of government authorities and third party suppliers associated with the supply of the Machinery and related goods. Associated services will include with the provision of warranty and servicing for the Machinery; insurance and registrations of the Machinery; and the provision of information about new products related to Machinery use which becomes available from time to time.

4. The kinds of people which may be provided with information relating to you will include the NSW Roads and Traffic Authority, insurance companies, suppliers of cars and other. If you have any query or concerns about the way the Dealer manages your personal information, you should contact the dealership.

MAX-SERIES™
RT-135
FORESTRY

**UNLEASH A
STAMPEDE
OF POWER.**



Introducing the MAX-Series™ RT-135 Forestry Posi-Track® loader. Featuring an industry-leading 132hp engine, our most powerful compact track loader delivers more power without compromise while offering a premium operator experience. With forestry-rated guarding and safety features, the RT-135F sets a high-performance benchmark that you have to experience for yourself.

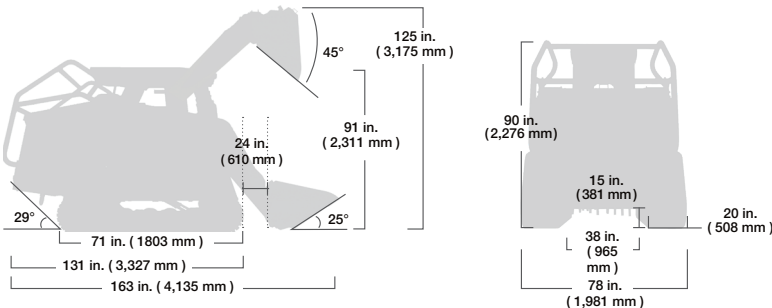
// BEST-IN-CLASS PERFORMANCE / SUPERIOR POWER / PREMIUM COMFORT

asv

RT-135 FORESTRY COMPACT TRACK LOADER

OPERATING SPECIFICATIONS	
LOADER ARMS	Radial
OPERATING WEIGHT	12,990 lbs (5892 kg)
SHIPPING WEIGHT	11,958 lbs (5424 kg)
GROUND PRESSURE AT OPERATING WEIGHT	4.6 psi (32 kPa)
RATED OPERATING CAPACITY (35% of tipping load)	4,150 lbs (1882 kg)
OPERATING CAPACITY (50% of tipping load)	5,929 lbs (2683 kg)
TIPPING LOAD	11,858 lbs (5379 kg)
TRAVEL SPEED, MAXIMUM - 1ST SPEED	6.0 mph (9.7 kph)
TRAVEL SPEED, MAXIMUM - 2ND SPEED	10 mph (16 kph)
ENGINE	
TYPE	Diesel, 4-cylinder, turbo charged
MODEL	Cummins QSF3.8
GROSS POWER RATING	132 hp (98.4 kW)
TORQUE, PEAK	360 ft-lb (488 Nm)
COOLING SYSTEM	Temperature-controlled, variable speed and operator time-selectable, hydraulically-driven, auto-reversing fan and coolant/anti-freeze-filled radiator
INTAKE AIR CLEANER	Three-stage
EMISSION CONTROLS	Meets all U.S. EPA Tier 4 final standards
STANDARD FEATURE	Auto idle
UNDERCARRIAGE	
TRACK TYPE: General purpose track constructed of rubber compound with embedded co-polymer cords and all-purpose treads.	
TRACK WIDTH	20 in. (508 mm)
LENGTH OF TRACK ON GROUND	71 in. (1,803 mm)
GROUND CONTACT AREA	2,840 in. ² (1.83 m ²)
DRIVE SYSTEM	Two hydrostatic direct drive sprockets controlled by a single joystick
TRACK DRIVE SPROCKET	Elevated with low friction, replaceable sprocket rollers
UNDERCARRIAGE SUSPENSION	Two independent torsion axles per undercarriage
ROLLER WHEELS	24 high-density polyurethane and rubber wheels per track. Wheels include sealed bearings
ROLLER WHEEL DIAMETER	Front & rear wheels: 15 in. (381 mm) Middle wheels: 10 in. (254 mm)

AUXILIARY HYDRAULIC SYSTEM	
PUMP CAPACITY	Low - variable from 0-20 gpm (0-75.7 lpm) High - variable from 30-50 gpm (114-189 lpm)
SYSTEM PRESSURE, MAX.	Low - 3,300 psi (22,750 kPa) High - 4,060 psi (27,993 kPa)
CONTROLS	Intermittent via joystick button or continuous via console switch. High-flow is adjustable and loader/auxiliary sharing is adjustable via machine display
COUPLERS	Push-to-connect quick couplers mounted on loader arms. Pressure relief valve on coupler block
COOLING SYSTEM	High efficiency side-by-side radiator and oil cooler
ELECTRICAL SYSTEM	
NOMINAL CHARGE	12 V
BATTERY	950 CCA
CHARGING SYSTEM	120 amp alternator
OUTLETS	1-12 V port inside operator station
WIRING	Pre-wired for all factory-available accessories
STANDARD FEATURES	Attachment control kit, block heater
OPERATOR STATION	
SEAT: Adjustable air ride contour vinyl seat with built-in operator presence switch, lap bar and 2 in. (51 mm) wide seat belt, operator manual pouch	
LOADER CONTROL: Right-hand electronic joystick controls loader lift, lower and tilt, plus intermittent control of auxiliary hydraulic. Loader speed is adjustable and selectable from ISO or H control pattern	
DRIVE CONTROL: Left-hand electronic joystick controls machine speed and direction. Track speed is adjustable, includes a Creep Mode and is selectable from ISO or H control pattern	
ENGINE SPEED	Hand-operated throttle and foot throttle
7-INCH COLOR MACHINE DISPLAY: Engine RPM, engine oil pressure, hydraulic oil high temperature, engine coolant temperature, battery voltage, hour meter, fuel level, trip meter, engine diagnostics, system monitoring, fault logging, integrated rear view camera, password protection with user profiles, job clock, maintenance schedules, Def level, Adjustable controls, Adjustable hydraulic flows, winch (optional) control.	
ROPS	ISO 8082-Forestry
FOPS	ISO 8083-Forestry
OPS	ISO 8084-Forestry BC WCB G603 - Window guards for forestry BC WCB G604 - Light duty screen guards for off highway BC WCB G608 - Heavy duty roof structure ISO 6683 - Seat belt anchors CAL OSHA 1596 - Seat belt SAE J2292 - Shoulder restraint (when equipped with 3 point options) ISO 11839 - Forestry thrown object guard
ILLUMINATION	2 - Adjustable forward-facing LED lights 2 - Adjustable rear-facing LED lights 1 - Interior light 2 - LED side lights
CONVENIENCE	12 V power port
STANDARD FEATURES	Horn, backup alarm, cup holder, phone holder, behind seat storage, rear view mirror, lapbar, roof escape hatch, roof panel & rear cab windows. Adjustable joystick & arm rest positions, adjustable directional & air flow HVAC vents, radio with bluetooth & USB, frameless front door, attachment control kit, wiper/washer, beacon switch/ outlet, easy-off door





Bobcat®

R-Series Compact Loaders

60, 70 & 80 Platforms



***One Tough
Animal®***



BRING REVOLUTIONARY TO YOUR JOB.

More than ever, owners and operators depend on compact equipment to do more – in all kinds of applications – and new R-Series compact track and skid-steer loaders have been completely redesigned to meet the demand. With a total focus on quality, Bobcat® loaders offer uncompromising reliability and durability, enhanced performance, and an unmatched operator experience.



MORE HORSEPOWER AND GREATER LIFTING CAPACITY IN THE NEW T86 AND S86

The T86 and S86 are the most powerful loaders ever built by Bobcat, offering more usable engine and hydraulic horsepower than ever before. With boosted horsepower and optimized machine weight in these models, you get greater lifting capabilities, impressive breakout forces and leading maneuverability for fast cycle times. With the excellent weight-to-horsepower ratio of the Bobcat T86 and S86, you'll command all-around performance that dominates today's most demanding jobs.



REVOLUTIONARY PERFORMANCE

These powerful loaders easily handle your most challenging jobs today, while giving you the confidence to meet your challenges tomorrow.

INCREASED LIFTING CAPABILITIES

R-Series loaders not only look tougher, they are tougher. Lift arms feature cast-steel sections for increased material strength and rigidity. They also have a slimmer profile in the right areas to enhance visibility.

Newly optimized work group geometry improves lift capacity throughout your loader's range of motion. Increased lift height enables easy dumping into high-sided trucks and hoppers.

COUNTERWEIGHT READY

R-Series loaders readily accept frame-mounted counterweights to optimize lifting performance on tough jobs.

TWO-SPEED TRAVEL

Spend less time traveling. Move faster and get it done sooner. Available as an option on some models – or standard equipment on the S66, S86 and T86.

IT'S ABOUT MAKING YOU **STRONGER.**

When it comes to performance, Bobcat skid-steer loaders and compact track loaders are in a class by themselves.

POWERFUL BREAKOUT FORCES

High-efficiency hydraulic pumps deliver more power matched to demand and provide leading breakout forces.

MORE TORQUE

Bobcat loaders reach maximum torque at a low rpm, minimizing stalling while saving time and fuel.

FAST CYCLE TIMES

Hydraulic pumps in Bobcat loaders are matched to cylinder size and loader lift capacity to provide fast cycle times.

PREMIUM POWER PERFORMANCE

Get smoother, faster control – along with maximum power where and when you need it most. Premium Power Performance for the high- and super-flow-equipped S86 and T86 features a Bobcat-exclusive electronic displacement control pump. It efficiently provides more power when it's needed during multitasking operations.



REDESIGNED INLINE ENGINE



A new Tier-4, non-DPF Bobcat engine and durable direct-drive system provide the performance you need while reducing and simplifying routine maintenance.

- Improved cold-weather operation
- New fuel filter that lasts longer, and is easier to monitor and change
- New lift pump and self-priming fuel system
- Adjustment-free belts



TRACKS AND TIRES

PUT YOUR WORK ON SOLID FOOTING.

Since inventing the world's first true compact loader in 1958, Bobcat has constantly improved on its original concept: a tough, agile and versatile compact machine that can tackle an incredible number of jobs. Today, the innovation continues.

COMPACT TRACK LOADERS: HIGH FLOTATION AND TRACTION, LOW GROUND PRESSURE

Compact track loaders are heavier to deliver maximum pushing power. That weight is also spread out over a wider area to decrease ground disturbance and allow lifting of larger loads.

TOUGH TRACKS FOR TOUGH JOBS

Dual-flange front idlers and triple-flange rollers ride on rubber tracks to dampen ground vibrations and improve ride quality while producing less wear on the track. The large circumference of the rear idlers further decreases track wear while maintaining optimal contact for improved tension and less detracking.

- Hydraulic hoses are routed inside the undercarriage to reduce snags and impacts.
- The torsion axle system contains a heat-treated inner bar for maximum strength.
- The track tensioning system minimizes the chance of loosening and detracking.

TRACK OPTIONS

Bobcat offers seven different tread patterns to accommodate various applications and optimize your compact track loader's performance for the jobs you do.

Ask your Bobcat dealer about tires and tracks specifically designed for your work.

SOLID-MOUNTED UNDERCARRIAGE

The solid-mounted Bobcat undercarriage features a small number of moving parts to reduce required maintenance and stabilize both the loader and work group. It delivers the best possible grading performance.

5-LINK TORSION SUSPENSION UNDERCARRIAGE

Designed for the best combination of comfort and work performance, this patented suspension uses torsion axles to dampen vibration and provide a smoother ride that you can feel. The triple-flange rear idler on the T86 solidly holds and guides the track belt to minimize detracking. A fifth link located on the rear axle provides additional ride comfort when grading or lifting.

EASE OF CLEANOUT

A horizontally mounted grease track tension cylinder opens up more room between the carriage and track for easier cleanout. The undercarriage is sloped on both sides to shed material, such as sand, dirt, mud and debris. Additionally, raised cutouts between the rollers allow for easier cleaning.



SKID-STEER LOADERS: QUICK-TURNING, COMPACT MANEUVERABILITY

Compact, nimble and able to pivot 360 degrees, Bobcat skid-steer loaders can easily maneuver in close quarters and bring responsive, well-balanced turns to the jobsite. R-Series skid-steer loaders have a longer wheelbase for ideal performance in a compact machine profile.

TIRE OPTIONS

Bobcat has an extensive offering of tire styles and tread patterns. Choosing the best tire is important for machine traction, flotation, wear and overall performance.

MAINTENANCE-FREE CHAINCASE

Instead of spending time in the shop, spend time on the job with Bobcat skid-steer loaders. Many brands will tout the ability to adjust their loaders' drive chains. These periodic adjustments cost you in time, productivity and money. Bobcat has offered a better way for years in its skid-steer loaders: no adjustments.



COOLING

PUSH IT HARD. KEEP IT COOL.

As operators trust compact equipment to run longer and do bigger, more difficult jobs, better cooling is essential. The R-Series cooling system is designed for optimal operation and maximum uptime.





LARGER, REVERSIBLE FAN

The large fan achieves more cooling at a slower rotation. This consumes less power and reduces noise in the cab and around the machine. A reversible fan option purges debris buildup from the rear screen, reducing the need for manual cleaning. An auto mode reverses airflow automatically, and operator-controlled purge mode gives you the ability to reverse the fan at any time.

BOBCAT TOUGH

LARGER RADIATOR AND OIL COOLER

Increases cooling ability in most operating conditions.

PROTECTIVE STEEL TAILGATE

Heavy-duty steel louvers allow the airflow needed to significantly reduce temperatures. A steel screen inside the tailgate adds a second layer of protection.

LARGER AUXILIARY HYDRAULIC HOSES

Auxiliary hydraulic hoses and tubelines on select high-flow models have increased in size from $\frac{3}{4}$ -inch to 1-inch diameter. Hydraulic oil can flow with less restriction, leading to cooler operating temperatures.



A white Bobcat S76 skid steer loader is shown from a side-front perspective. The lift arm is raised, and the Bobcat logo is visible on its side. The machine has orange accents on the grille and wheels. The background shows a construction site with stone walls and Tyvek wrap.

LIFT ARMS

CAST-STEEL LIFT ARM SECTIONS

R-Series loaders not only look tougher, they are tougher. Bobcat lift arms feature cast-steel construction in specific areas for increased material strength and rigidity. Cast steel allows more material where it's needed, which provides greater strength. Because cast steel provides more strength with a slimmer profile arm, it also enhances visibility to the bucket corners.

STRONGARM YOUR WAY TO A PERFECT FINISH.

R-Series loaders have an innovative new lift arm design with strong cast-steel sections, plus newly optimized linkages and work group geometry. As always with Bobcat loaders, this durable, patented lift arm design gives you a choice of lift path to help you meet the unique demands of your job.

VERTICAL LIFT PATH

A vertical lift path provides higher lift capacity and more reach at full lift height than radius lift path, keeping the load closer to the machine while you raise the loader arms.

Because you achieve maximum reach at full lift height, it's easier to clear high-sided truck boxes and hoppers. It's also better for placing heavy pallets of block or sod.



RADIUS LIFT PATH

A radius lift path provides maximum reach at truck bed height. Arm movement forms an arc. More than 80% of that arc delivers better reach at truck bed height. A radius lift path excels in jobs at mid-range heights, like dumping over a wall, backfilling or unloading flatbed trucks.

**COMFORT**

COMFORT IS **A MUST,** AND YOU GET **THE MOST.**

Few tools are more useful than a Bobcat loader, and when you trust your machine with more work, you spend more hours in the cab. Today's operators require more comfort, and R-Series loaders deliver an unmatched cab experience that keeps productivity high.

ONE-PIECE SEALED AND PRESSURIZED CAB

The cab design provides a near-seamless interior for a new level of operator comfort. The roomier design offers a sealed and pressurized environment that minimizes dust and dirt in the cab, isolates the operator from engine and hydraulic noise, and enhances the efficiency of heating and air conditioning.

FRONT DOOR SEAL

A specially designed front door seal increases cab pressurization to keep dust out and keep clean heated or air-conditioned air inside.



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AN INDUSTRY-LEADING OPERATOR EXPERIENCE

1. LARGE ENTRY

On machines with enclosed cabs, large swing-open doors provide ample room for entry and exit. A wide step provides sure footing in and out of the cab.

2. MORE INTERIOR STORAGE

There are plenty of cup holders and cubbies, and a large storage compartment.

3. PUSH-BUTTON CONTROLS

Bobcat puts major controls within easy reach and at eye level.

4. RADIO OPTIONS

There are multiple options, including radio-ready cabs for plug-and-play radio installation or the touch display with integrated radio with Bluetooth® connectivity to stream audio from your device.

5. AUTOMATIC HEAT AND AIR CONDITIONING

Heat and air conditioning automatically adjust to maintain a consistent temperature. Available with select option packages.

6. HEATED AIR-RIDE SEAT

This optional seat is upholstered in comfortable, breathable cloth and equipped with operator-controlled heat. Provides peak operator comfort, with air suspension that adjusts to your weight, smoothing out bumps on the jobsite.

CONTROLS THAT MOVE WITH YOUR SEAT

On machines with Selectable Joystick Control (SJC), the joysticks move with the seat. This helps reduce arm movement and fatigue. Joystick mounts slide forward and backward, adjusting to different-sized operators.

HYDRAULICALLY CUSHIONED CYLINDERS

Lift cylinders are cushioned when lowered, and tilt cylinders are cushioned at both the full dump and rollback positions. This reduces noise and increases comfort.



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DISPLAY OPTIONS

New Bobcat display options for R-Series loaders make it easier than ever to change settings, monitor your machine and match performance to the job.



Rear view camera display



5-INCH DISPLAY

The easy-to-read cab display panel provides full-featured machine interaction and monitoring capabilities from right in the cab. Run your loader more efficiently and solve more problems in the field with on-screen content. The display also supports multiple languages, as well as imperial and metric units.

OTHER STANDARD DISPLAY FEATURES

- Access monitoring, troubleshooting and error conditions, including system voltage, engine oil pressure, engine coolant temperature and more.
- Get convenient visibility to all machine vitals to better manage maintenance, utilization, productivity and more.
- Jog shuttle control enables easy navigation and input.
- Hideaway navigation bar helps you quickly move from screen to screen.
- Set one owner profile and up to four operator profiles.
- Password-protected keyless start eliminates downtime from lost keys.
- Activate or deactivate auto throttle.
- Activate or deactivate auto idle.
- Track engine hours from any screen on the display.
- Timed screen lock allows a set period for code-free machine restarts.
- Integrated rear view camera display automatically switches your display to the camera view when traveling in reverse (rear view camera required).
- Monitor and change attachment settings.
 - Laser positioning for laser-guided grading attachments
 - Sonic tracer/slope sensor control



7-INCH TOUCH DISPLAY

It's the most advanced in-cab display for compact equipment. With the optional touch display for R-Series loaders, you'll receive detailed machine information and experience unprecedented device connectivity. The wide, easy-to-use touch screen delivers machine performance information for more efficient operation and improved productivity. The display also supports multiple languages.

GLOVE SENSITIVITY

The screen works with your light-duty work gloves, providing convenient touch operation without the inconvenience of glove removal.

SCREEN DURABILITY

The high-resolution, full-color touch display is designed to work with open cabs and extreme weather. The tempered glass screen is rated 9H on the Mohs hardness scale for a high level of scratch protection. The display is pressure-washer tested to ensure superior waterproofing that stands up to wet, humid environments.

PHONE AND DEVICE CONNECTIVITY

An integrated radio with Bluetooth allows for a wide range of on-the-job entertainment – plus the ability to make and receive hands-free phone calls.

ACTIVE NOISE CANCELING DURING PHONE CALLS

Active noise canceling on the high-fidelity in-cab microphone allows call recipients to hear operators easily and clearly.

DETAILED FAULT CODE INFORMATION

Save time troubleshooting with more detailed fault code information. You'll also see which codes are currently active, what time inactive codes occurred and the name of the operator who was logged in when the fault code occurred. For select codes, you can access extended descriptions that give you information on the root cause of the issue and its impact.

JOG SHUTTLE

If your hands are wet or you are working with dirty gloves, the jog shuttle provides an easy backup input.

OTHER INNOVATIVE TOUCH-SCREEN FEATURES

- Track engine hours, idle hours and fuel usage by operator.
- Set a new clock for each job to track machine productivity and employee performance.
- Add favorite screens for easy access.
- Unique radio includes presets for each operator.
- USB power port keeps devices charged and supports MTP for playing music.
- Auxiliary input via 3.5 mm jack.
- An ambient light sensor automatically adjusts screen brightness.
- Timed screen lock allows a set period for code-free machine restarts.
- Supports multiple languages.
- Import contacts from your mobile phone.
- Keep a customizable contacts list for each operator.
- Access detailed operator statistics and provide jobsite security with 20 unique operator codes.
- Enable feature lockouts and maximum travel speeds to customize the experience per operator.

ATTACHMENTS



**ALL THE
POSSIBILITIES
ARE IN FRONT OF YOU.**

Even if you just want to dig today, tomorrow's job could demand more from your machine. Bobcat loaders have your business expansion built right in. Whether it's breaking concrete, breaking down buildings or bringing computer-generated designs to life with a 3D grade control system, Bobcat attachments help you take on new jobs and get more use from your machine.



MULTI-CARRIER VERSATILITY

You can share some attachments between Bobcat excavators, telehandlers, compact track loaders and Toolcat™ utility work machines. This gives you the most versatility for your dollar and improved profitability.



ATTACHMENTS

BOBCAT-BUILT TO BOBCAT STANDARDS

Bobcat is the only major compact equipment manufacturer that also manufactures a majority of its own attachments. This means they are engineered to be integrated with the electronics, hydraulics and geometry of your Bobcat machines.



BETTER MACHINE INTEGRATION

Some attachments that perform best with high-flow hydraulics will automatically engage high flow, ensuring maximum performance and great results at the end of the job. Smart hydraulics allows Bobcat machines to identify the attachment and lock out non-required functions (like high flow and super flow) to limit damage to attachment and machine.

AUXILIARY COUPLER BLOCK

The pressure-release quick couplers are mounted into the front of the lift arm for convenient access. A steel guard extends beyond the coupler block to protect it and hydraulic hoses from damage. The integrated, five-coupler auxiliary manifold available for the T86 and S86 supports three hydraulic flow options for industry-leading attachment versatility. The manifold, required for optimum super-flow performance, includes larger couplers that reduce heat and send more hydraulic power to super-flow attachments.

FINGERTIP CONTROLS

Fingertip controls make your attachment operation comfortable and controllable, and allow attachment adjustments while driving.

- The detent feature allows your attachment flow to be engaged continuously without needing to hold the switch. Flow can be locked in both directions. It's handy for attachments like sweepers, soil conditioners and tillers that can be operated in either direction.
- Variable/max. flow allows variable, or "featherable," flow to be used for grapples and combination buckets to slowly move the cylinders, or choose a maximum flow rate to quickly shake the dirt from an auger bit.

THREE HYDRAULIC FLOW OPTIONS

Bobcat Company offers three hydraulic flow options to set the standard in attachment versatility.



STANDARD-FLOW HYDRAULICS

Select standard flow to operate attachments that require lower hydraulic horsepower.

HIGH-FLOW HYDRAULICS

Get more hydraulic power to boost production of attachments like the Bobcat flail cutter, trencher, planer and stump grinder. Machines with this option have two flow ranges so attachments that require lower flow can still be used by selecting standard flow mode.

SUPER-FLOW HYDRAULICS

Available in the T86 and S86 loaders, super-flow hydraulics provide even more performance for the most demanding attachment applications. Tackle pavement milling, snowblowing, tree clearing, heavy brushwork and more with attachments designed specifically for super-flow hydraulics.



VISIBILITY

YOU HAVE THE ULTIMATE VANTAGE POINT.

The Bobcat approach to visibility is simple. With each generation of equipment, we maximize open viewing areas and improve sightlines. Through innovative engineering, robust materials and cutting-edge manufacturing, our newest Bobcat loaders provide the best view on the jobsite.

IN FRONT

Comfortably see your work from the seat through a single curved pane of glass. Keep working at night or in darker environments with powerful LED lighting. Hoses and fittings have been repositioned on the tilt cylinders to further enhance your visibility.

The cab-forward design places the operator area closer to the attachment, giving you a better vantage point to see your work.

STANDARD LED LIGHTS

Bright, efficient and reliable standard front and rear LED lights provide far-reaching visibility in low light levels.

PREMIUM LED LIGHTS

Upgrade to optional premium LED lights that wrap around the cab's upper corners. This gives you a wider beam to illuminate more of the jobsite.

Optional premium LED lights

TO THE REAR

REAR VISIBILITY

The optimally sized rear window and low tailgate provide an ideal view behind the machine.

REAR CAMERA

The S86 and T86 include a standard-equipped rear camera. All other R-Series loaders come rear camera ready. When installed, rear cameras integrate seamlessly into R-Series displays. There's no need to have another screen taking up room in the cab. You can display the rear view automatically (when you travel in reverse), on demand or continuously.





TO THE SIDES

CLEAR-SIDE ENCLOSURE OPTION

Maneuver more confidently. Enhance your productivity. Easily see to the sides of your machine. A new, optional enclosure maximizes visibility by removing sections of the steel mesh screens from the side windows. The clear-side windows are made from $\frac{3}{8}$ -inch thick polycarbonate with an abrasion-resistant coating to allow the optimal view you demand with the durability you expect.

SIDE VISIBILITY

By repositioning the stabilizer linkage to the rear of the machine, vertical lift R-Series loaders maximize side visibility, allowing the best possible view to the wheels or tracks.

SIDE LIGHTING KIT

Optional side lights are integrated into the machine design, with improved placement and protection against jobsite debris.

UP TOP

A top window with a large viewing area gives you an unbeatable view when raising a load above the cab.



TAKE CONTROL YOUR WAY.

Bobcat offers operators intuitive, precise and adaptable control options to maximize your productivity and put you in total control of the task.

Selectable Joystick Control, or SJC, offers low-effort hand control of all machine work group functions.

ISO or H patterns can be easily activated with the push of a button inside the cab.

SELECTABLE JOYSTICK CONTROL (SJC)

ADAPT PERFORMANCE TO THE JOB.

These low-effort joysticks allow the operator to control all machine functions with their hands. Bobcat offers the most advanced SJC on the market, loaded with several exclusive features that adapt the loader's performance to specific job requirements:

Enhanced Drive Response:

Tailor your loader's drive response and watch your productivity soar. Set the drive response for slow, smooth movements or adjust to a faster response drive when applications require faster cycle times.

Speed Management: Simply "dial in" your required travel speed in small increments to match speed to your operation requirements. A full range of joystick motion gives you precise control of machine movements at slow speeds while maintaining maximum driveline torque and full hydraulic power.

Steering Drift Compensation:

Steering drift compensation keeps you on a straight path by helping you make minor adjustments to the steering. It's beneficial when you side-shift certain attachments, such as planers or trenchers.

Horsepower Management:

Bobcat horsepower management automatically maximizes pushing and digging power while minimizing your chance of stalling. Unlike other anti-stall systems, you can obtain maximum engine and drive torque, and if you prefer to work without it, simply disengage with the push of a button.

Enhanced Workgroup Response: Designed for both Bobcat standard controls or Selectable Joystick Controls (SJC), three workgroup response settings allow you to adjust the sensitivity of lift and tilt functions to match your operation preference with the demands of the job. Adjust between slower and smoother movements or enable faster lift and tilt functions for applications that require more speed.

STANDARD CONTROLS

TRADITIONAL HAND AND FOOT CONTROLS

This tried and true system is still a popular style of control today. A lever controls the drive on each side independently, while your feet control the lift arms and bucket. The farther you stroke the lever, the faster you go. The shorter the stroke, the more torque that is delivered to the wheels or tracks, allowing maximum power for pushing into a pile.

Low-effort, low-fatigue foot pedals offer comfort for long days and precise, responsive control. The flat floor gives your feet more freedom to move for comfortable positioning and less fatigue from long hours in the cab.



KEEP IT WORKING AND KEEP WORKING.

R-Series machines make it easy to perform regular maintenance – so you can **protect your productivity from unplanned downtime**. And whenever you do require service, components are easy to find and reach, enabling you to quickly get back to work.

EASY ROUTINE MAINTENANCE

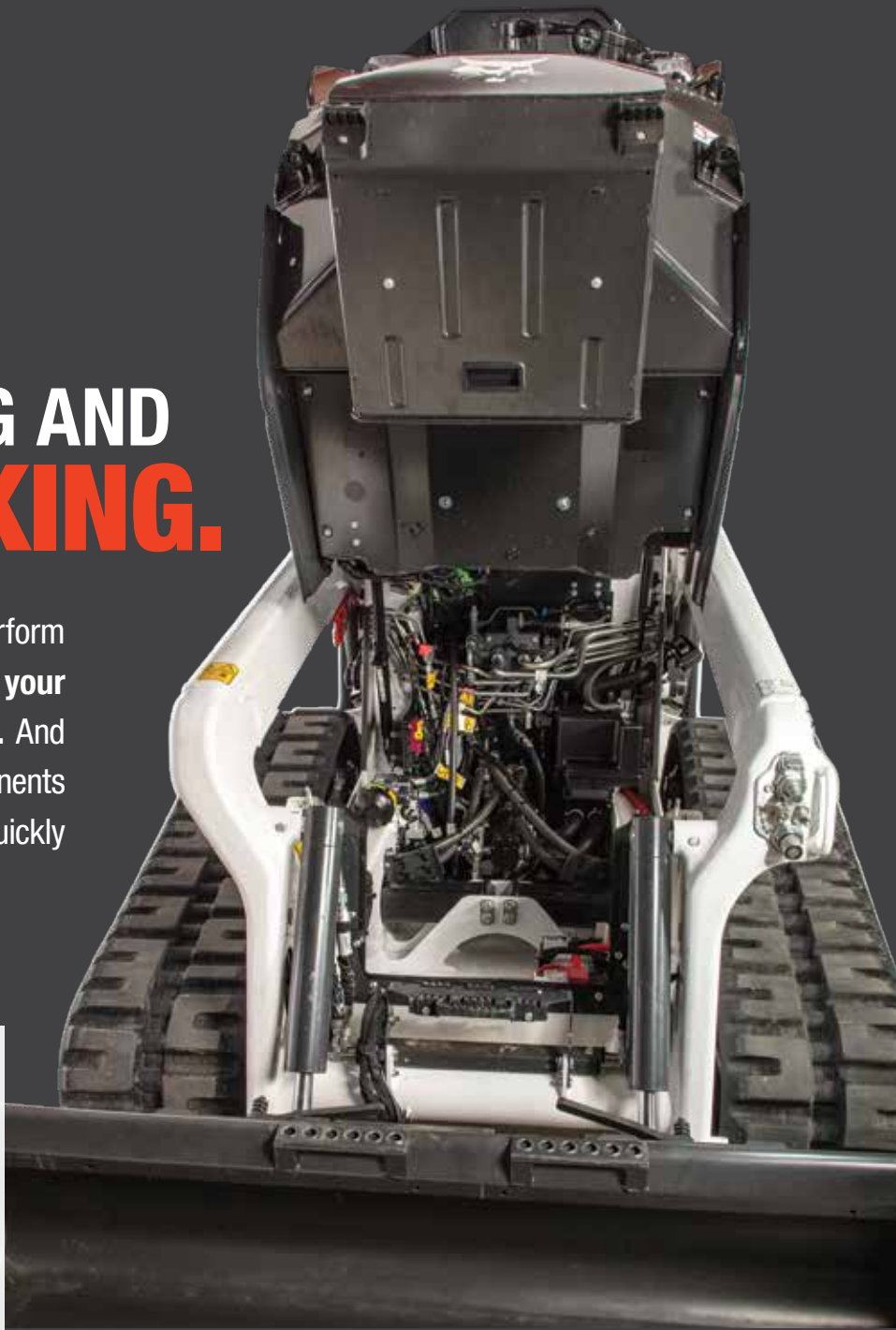
Engine checkpoints are within easy reach, and preventative maintenance is quick and simple with R-Series loaders.

ONE-PIECE, TIP-UP CAB

When it's time for maintenance or repairs, the entire R-Series cab lifts out of the way to provide improved service access – with hardware on the cab exterior for easy removal.

PROTECTED BATTERY WITH REMOTE JUMPSTART

In R-Series loaders, the battery is located under the cab. Lift the one-piece cab away for easy access. This service location protects the condition of your battery and provides more room for component access in the engine compartment. A remote terminal, located in the engine compartment, makes it easy to jumpstart the loader if needed.





BOBCAT PROTECTS YOUR UPTIME.

It's the foundation of your productivity and the backbone of Bobcat loader design. R-Series loaders are backed by a total focus on quality. The new R-Series loaders bring uncompromising reliability and durability to the job: toughness you can see and smart designs that protect your ability to work steadily.

MACHINE PROTECTION

Bobcat loaders monitor engine and hydraulic functions. If conditions risk damage to the engine or hydraulic components, the system will alert the operator and, if necessary, de-rate engine power. It still allows the operator to complete the job at hand or move the loader to an area for diagnosis.

SELF-DIAGNOSTICS

Track machine performance in real time and access historical machine alerts via the bright, easy-to-read LCD monitor.

SEALED CONNECTORS

Bobcat loaders won't let you down. All the controls and electrical systems are engineered for durability and peace of mind. Bobcat electronics feature watertight, corrosion-resistant connectors.

AUTOMATIC LIGHT SHUTOFF

The lighting circuit automatically shuts down to prevent accidental battery discharge.

ELECTRONIC PROTECTION

Bobcat electronics meet or exceed IP67 requirements for sealing, moisture, shock and vibration. Work in tough, humid conditions with less worry about corrosion, or power wash your loader without wondering if it will start when you are finished.

PROTECTED HOSES AND QUICK COUPLERS

The integrated, pressure-release quick couplers are mounted directly into the front of the lift arm – with no exposed hoses to damage. A steel guard extends beyond the coupler block, protecting it even further.



BOB-TACH SYSTEM IMPROVEMENTS

A new cast-steel Bob-Tach® attachment mounting system provides a stronger connection point, with more metal where it's really needed. It has fewer welds overall, plus openings that allow dirt and debris to pass through.



FEATURES ON DEMAND

Your authorized Bobcat dealership can activate optional features in an instant, as your work demands and your budget allows. There is no installation. No waiting. Just contact your dealer to activate a new feature, and you're ready to work. Available on select models.

- High-flow auxiliary hydraulics
- Two-Speed travel
- Reversible fan
- Dual-direction bucket positioning
- Automatic ride control



OWNER PORTAL

The Bobcat Owner Portal is your key to access and interact with machine data to better utilize your machine while making maintenance and asset management more efficient.



MACHINE IQ[®]

WIRELESS COMMUNICATIONS

Machine IQ uses electronic communications technology to keep you connected to your machine's status at any time, from a computer or mobile device. The device enables you and your dealer to monitor machines remotely for:

- Unplanned maintenance
- Planned maintenance
- Machine security
- Reporting and analytics
- Basic telematics

BOBCAT MAXCONTROL REMOTE OPERATION

Use your iPhone® to control your machine remotely. Bobcat MaxControl remote operation is an iOS app that makes operating your machines easier and more convenient than ever before. It acts like an extra set of hands when help is limited. Two-person jobs can now be handled by one worker, and you can say goodbye to unnecessary trips in and out of the cab.

RADIO REMOTE CONTROL

Loaders equipped with Selectable Joystick Control can be operated by a remote-control system, without having to have an operator in the cab. This can be beneficial to people operating in hot or dusty environments or when you would rather work outside the machine.

The remote control is completely portable. If you have multiple machines, you can quickly remove the remote from one machine and attach it to another in minutes. Sealed and protected electronics can withstand the harshest environments.



SPECIFICATIONS



Model	S62	S64	S66	S76
Loader Series	R-Series	R-Series	R-Series	R-Series
Rated Operating Capacity (ROC) (35% of tipping load)	—	—	—	—
ROC With 200 lb. (90 kg) Counterweight (optional)	2250 lb. (1021 kg)	2450 lb. (1111 kg)	2550 lb. (1157 kg)	3050 lb. (1384 kg)
ROC With 300 lb. (136 kg) Counterweight (optional)	—	—	—	3100 lb. (1406 kg)
ROC With 400 lb. (181 kg) Counterweight (optional)	—	—	—	—
ROC (50% of tipping load)	2100 lb. (952 kg)	2300 lb. (1043 kg)	2400 lb. (1089 kg)	2900 lb. (1315 kg)
Tipping Load	4200 lb. (1905 kg)	4600 lb. (2087 kg)	4800 lb. (2177 kg)	5800 lb. (2631 kg)
ROC With Torsion	—	—	—	—
Height to Bucket Hinge Pin	114.5 in. (2908 mm)	120.0 in. (3048 mm)	120.0 in. (3048 mm)	128.3 in. (3259 mm)
Lift Arm Path	Radius	Vertical	Vertical	Vertical
Size and Speed				
Operating Weight	6884 lb. (3123 kg)	6974 lb. (3163 kg)	7154 lb. (3245 kg)	8615 lb. (3908 kg)
Width With Bucket	68.0 in. (1727 mm)	68.0 in. (1727 mm)	68.0 in. (1727 mm)	74.0 in. (1880 mm)
Height With Cab	80.5 in. (2045 mm)	80.5 in. (2045 mm)	80.5 in. (2045 mm)	81.8 in. (2078 mm)
Travel Speed - Low Range	7.4 mph (11.9 km/hr.)	7.4 mph (11.9 km/hr.)	7.4 mph (11.9 km/hr.)	6.8 mph (10.9 km/hr.)
Travel Speed - High Range (optional Two-Speed travel)	11.0 mph (17.7 km/hr.)	11.0 mph (17.7 km/hr.)	11.0 mph (17.7 km/hr.)	11.8 mph (18.9 km/hr.)
Engine				
	Tier 4	Tier 4	Tier 4	Tier 4
Horsepower	68.0 hp (50.7 kW)	68.0 hp (50.7 kW)	74.0 hp (55.2 kW)	74.0 hp (55.2 kW)
Type	Turbo Diesel	Turbo Diesel	Turbo Diesel	Turbo Diesel
Fuel Tank Capacity	28.3 gal. (107.1 L)	28.3 gal. (107.1 L)	28.3 gal. (107.1 L)	31.7 gal. (120.0 L)
Horsepower Management	Included With SJC Option	Included With SJC Option	Included With SJC Option	Included With SJC Option
Tires				
Bobcat Heavy Duty	Opt	Opt	Opt	Std
Bobcat Standard	Std	Std	Opt	Opt
Bobcat Super Float	Opt	Opt	Std	Opt
Bobcat Severe Duty	—	—	—	—
Tracks/Undercarriage				
Track Width - Standard	—	—	—	—
Track Width - Optional	—	—	—	—
Ground Pressure (with standard tracks)	—	—	—	—
Ground Pressure (with optional tracks)	—	—	—	—
Length of Track on Ground	—	—	—	—
5-Link Torsion Suspension Undercarriage	—	—	—	—
Grease Cylinder Track Tensioning	—	—	—	—
Control Options				
Bobcat Standard (foot pedals/steering levers)	Std	Std	Std	Std
Selectable Joystick Control (SJC)	Opt	Opt	Opt	Opt
Radio Remote Control (SJC required)	Opt	Opt	Opt	Opt
Machine Features				
Two-Speed Travel	Opt	Opt	Std	Opt
Heated Cloth Air-Ride Seat	Opt	Opt	Opt	Opt
Back-Up Alarm and Horn	Std	Std	Std	Std
Bobcat Interlock Control System (BICS)	Std	Std	Std	Std
Cab With Heat	Opt	Opt	Opt	Opt
Cab With Heat and Air Conditioning	Opt	Opt	Opt	Opt
Standard Display (includes keyless start)	Std	Std	Std	Std
LED Front and Rear Lights	Std	Std	Std	Std
Dual-Direction Bucket Positioning	Opt	Opt	Opt	Opt
Mechanical Suspension Seat	Std	Std	Std	Std
Radio	Opt	Opt	Opt	Opt
Reversing Fan	Opt	Opt	Opt	Opt
Automatic Ride Control	Opt	Opt	Opt	Opt
ROPS/FOPS-Approved Cab Structure	Std	Std	Std	Std
Side Lighting Kit	Opt	Opt	Opt	Opt
Sound Reduction Package	Opt	Opt	Opt	Opt
Features for Attachments				
Attachment Control Kit	Opt	Opt	Opt	Opt
Bob-Tach Mounting System	Std	Std	Std	Std
Power Bob-Tach System	Opt	Opt	Opt	Opt
Fingertip Auxiliary Hydraulics Control	Std	Std	Std	Std
Hydraulic System Pressure (Standard and High Flow)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)
Hydraulic System Pressure (Super Flow)	—	—	—	—
Hydraulic Standard Flow	17.6 gpm (66.6 L/min.)	17.6 gpm (66.6 L/min.)	17.6 gpm (66.6 L/min.)	23.3 gpm (88.2 L/min.)
Hydraulic High Flow (optional)	26.9 gpm (101.8 L/min.)	26.9 gpm (101.8 L/min.)	26.9 gpm (101.8 L/min.)	30.3 gpm (114.7 L/min.)
Hydraulic Super Flow (optional)	—	—	—	—
Pressure Release Hydraulic Quick Couplers	Std	Std	Std	Std
Speed Management	Included With SJC Option	Included With SJC Option	Included With SJC Option	Included With SJC Option



S86	T62	T64	T66	T76	T86
R-Series	R-Series	R-Series	R-Series	R-Series	R-Series
—	2150 lb. (.975 kg)	2300 lb. (1043 kg)	2450 lb. (1111 kg)	2900 lb. (1315 kg)	3800 lb. (1723 kg)
3550 lb. (1610 kg)	2250 lb. (1021 kg)	2450 lb. (1111 kg)	Std	3025 lb. (1372 kg)	3950 lb. (1792 kg)
3625 lb. (1644 kg)	—	—	—	3100 lb. (1406 kg)	4025 lb. (1826 kg)
3700 lb. (1678 kg)	—	—	—	—	4100 lb. (1860 kg)
3400 lb. (1542 kg)	3071 lb. (1393 kg)	3286 lb. (1491 kg)	3500 lb. (1588 kg)	4143 lb. (1879 kg)	5429 lb. (2462 kg)
6800 lb. (3084 kg)	6143 lb. (2786 kg)	6571 lb. (2981 kg)	7000 lb. (3175 kg)	8285 lb. (3758 kg)	10,857 lb. (4924 kg)
—	2050 lb. (930 kg)	2200 lb. (998 kg)	2350 lb. (1066 kg)	2800 lb. (1270 kg)	3700 lb. (1678 kg)
132.0 in. (3352 mm)	114.5 in. (2908 mm)	120.0 in. (3048 mm)	120.0 in. (3048 mm)	128.3 in. (3259 mm)	132.0 in. (3352 mm)
Vertical	Radius	Vertical	Vertical	Vertical	Vertical
9728 lb. (4412 kg)	8612 lb. (3906 kg)	8727 lb. (3958 kg)	8927 lb. (4049 kg)	10,250 lb. (4649 kg)	12,393 lb. (5621 kg)
74.0 in. (1880 mm)	68.0 in. (1727 mm)	68.0 in. (1727 mm)	68.0 in. (1727 mm)	74.0 in. (1880 mm)	80.0 in. (2032 mm)
83.1 in. (2110 mm)	80.5 in. (2045 mm)	80.5 in. (2045 mm)	80.5 in. (2045 mm)	81.8 in. (2078 mm)	83.1 in. (2110 mm)
6.9 mph (11.1 km/hr.)	7.2 mph (11.6 km/hr.)	7.2 mph (11.6 km/hr.)	7.2 mph (11.6 km/hr.)	6.8 mph (10.9 km/hr.)	5.5 mph (8.9 km/hr.)
12.3 mph (19.8 km/hr.)	10.2 mph (16.4 km/hr.)	10.2 mph (16.4 km/hr.)	10.2 mph (16.4 km/hr.)	9.2 mph (14.8 km/hr.)	10.7 mph (17.2 km/hr.)
Tier 4	Tier 4	Tier 4	Tier 4	Tier 4	Tier 4
105.0 hp (78.2 kW)	68.0 hp (50.7 kW)	68.0 hp (50.7 kW)	74.0 hp (55.2 kW)	74.0 hp (55.2 kW)	105.0 hp (78.2 kW)
Turbo Diesel	Turbo Diesel	Turbo Diesel	Turbo Diesel	Turbo Diesel	Turbo Diesel
31.6 gal. (119.6 L)	28.3 gal. (107.1 L)	28.3 gal. (107.1 L)	28.3 gal. (107.1 L)	31.7 gal. (120.0 L)	31.6 gal. (119.6 L)
Included With SJC Option	Included With SJC Option	Included With SJC Option	Included With SJC Option	Std	Std
Std	—	—	—	—	—
—	—	—	—	—	—
Opt	—	—	—	—	—
Opt	—	—	—	—	—
—	12.6 in. (320 mm)	12.6 in. (320 mm)	12.6 in. (320 mm)	12.6 in. (320 mm)	17.7 in. (450 mm)
—	15.7 in. (398 mm)	15.7 in. (398 mm)	15.7 in. (398 mm)	17.7 in. (450 mm)	—
—	5.6 psi (0.039 MPa)	5.7 psi (0.039 MPa)	5.9 psi (0.040 MPa)	6.2 psi (0.043 MPa)	4.8 psi (0.033 MPa)
—	4.7 psi (0.032 MPa)	4.7 psi (0.032 MPa)	4.8 psi (0.032 MPa)	4.6 psi (0.031 MPa)	—
—	54.3 in. (1379 mm)	54.3 in. (1379 mm)	54.3 in. (1379 mm)	59.2 in. (1504 mm)	66.3 in. (1684 mm)
—	Opt	Opt	Opt	Opt	Opt
—	Std	Std	Std	Std	Std
Std	Std	Std	Std	—	—
Opt	Opt	Opt	Opt	Std	Std
Opt	Opt	Opt	Opt	Opt	Opt
Std	Opt	Opt	Opt	Opt	Std
Opt	Opt	Opt	Opt	Opt	Std
Std	Std	Std	Std	Std	Std
Std	Std	Std	Std	Std	Std
Std	Std	Std	Std	Std	Std
Opt	—	—	—	—	—
Opt	Opt	Opt	Opt	Opt	Std
Std	Std	Std	Std	Std	Std
Std	Std	Std	Std	Std	Std
Opt	Opt	Opt	Opt	Opt	Std
Opt	Opt	Opt	Opt	Opt	Std
Std	Std	Std	Std	Std	Std
—	Opt	Opt	Opt	Opt	—
Opt	Opt	Opt	Opt	Opt	Std
Opt	Opt	Opt	Opt	Opt	Std
Std	Std	Std	Std	Std	Std
Opt	Opt	Opt	Opt	Opt	Std
Std	Std	Std	Std	Std	Std
Opt	Opt	Opt	Opt	Opt	Std
Std	Std	Std	Std	Std	Std
3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)
4061 psi (28.0 MPa)	—	—	—	—	4061 psi (28.0 MPa)
23.6 gpm (89.3 L/min.)	17.6 gpm (66.6 L/min.)	17.6 gpm (66.6 L/min.)	17.6 gpm (66.6 L/min.)	23.3 gpm (88.2 L/min.)	23.6 gpm (89.3 L/min.)
36.6 gpm (138.5 L/min.)	26.9 gpm (101.8 L/min.)	26.9 gpm (101.8 L/min.)	26.9 gpm (101.8 L/min.)	30.3 gpm (114.7 L/min.)	36.6 gpm (138.5 L/min.)
42.0 gpm (158.9 L/min.)	—	—	—	—	42.0 gpm (158.9 L/min.)
Std	Std	Std	Std	Std	Std
Included With SJC Option	Included With SJC Option	Included With SJC Option	Included With SJC Option	Std	Std

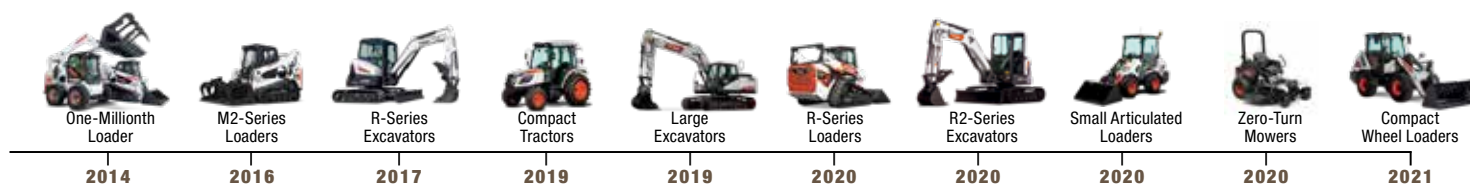
One Tough



B O B C A T T I M E L I N E



h Animal[®]





YOU ARE ONE TOUGH ANIMAL.®

Everything we put into Bobcat equipment is designed to make more of whatever you bring to the job. Whether it's strength, versatility, speed or agility, it's built around you.

Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing, operating conditions, and other factors.

DOOSAN

Bobcat Company is a member of the Doosan Group. Doosan is a global leader in construction, grounds maintenance and material handling equipment, power and water solutions, and engineering that has proudly served customers and communities for more than a century. Bobcat®, the Bobcat logo and the colors of the Bobcat machine are registered trademarks of Bobcat Company in the United States and various other countries. ©2023 Bobcat Company. All rights reserved.



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Bobcat Company
250 East Beaton Drive • West Fargo, ND 58078

Bobcat.com



Bobcat®

One Tough Animal.

333G

Compact Track Loader



JOHN DEERE



GET ON THE WINNING TRACK

When we asked owners and operators like you — the ones who run them — for your ideas on what makes a great compact track loader, you helped us redefine our proven G-Series models. You wanted more power under the hood. And increased lift height, reach, stability, and breakout force. Plus optional LED side lighting, rearview camera, anti-vibration undercarriage system, and flexible grade-control solutions including fully integrated SmartGrade™. Putting us through the paces has helped put the 333G on track for even more performance — and your operation in the running for some pretty big wins.

Armed forces

Extreme pushing power and bucket breakout forces deliver the tractive effort and leverage to carve out clay, plow through piles, and handle large loads.

Smooth operator

Optional anti-vibration undercarriage system* allows higher travel speeds over rough terrain with better material retention and lower operator fatigue. Bogie system enables smoother transitions over uneven surfaces.

*Only for zigzag-bar tracks; not compatible with SmartGrade or SmartGrade with Slope Control.

Put production on repeat

Optional electrohydraulic (EH) boom performance package shortens cycle times and speeds production in repetitive boom applications.

Load warrior

Height to hinge pin of 11 feet enables the 333G to easily load tandem-axle dump trucks, fill hoppers, and feed mixers. Additional reach comes in handy for moving pallets of pavers or other weighty cargo.

Take control your way

EH ISO-pattern joystick controls that allow customized machine operations based on operator preference come standard. EH four-way controls, including EH foot control, ISO joystick control, H-pattern joystick control, and ISO and foot controls, are optional.



+



RELIABLE

PRODUCTIVE

333G COMPACT TRACK LOADER



GRADE IT EASY

WITH JOHN DEERE GRADE-CONTROL OPTIONS

- **Onboard grade-indication** provides a real-time readout of cross-slope (machine roll) and mainfall slope (machine pitch) on the in-cab monitor. Use relative value readout to alter grades relative to existing or reference grades.
- **Slope Control** lets operators automatically maintain blade position without using external lasers or GNSS, to hold grade with less effort, corrections, and adjustments. Laser option helps make Slope Control even more productive.
- The first CTL to feature fully integrated 3D-grade-control technology, the **333G SmartGrade** includes our operator-friendly DozerMode control system. Pushing a button on the sealed-switch module switches to the EH control pattern to enable intuitive crawler operation. Deere-designed and -built six-way SG96 Dozer Blade is tough enough to cut grade but can also smoothly spread or precisely fine-grade materials.

Packed for productivity

Low center of gravity, 35-degree bucket rollback, optional ride control, and optional hydraulic self-leveling help keep forks loaded and buckets full. Add capacity with up to three sets of rear counterweights.

Balanced by design

Longer track frames and optimized roller spacing improve balance and stability, to enhance agility and operator comfort compared to previous models.

Room with a view

Large cab entryway with swing-out door, generous foot- and legroom, sealing and pressurization to minimize dust and noise, and deluxe vinyl suspension seat optimize operator comfort. Easy-to-read LCD monitor reveals a wealth of vital operating info and advanced diagnostics.

Seeing is believing

Clear sightlines to the cutting edge and bucket corners, above and below the lift arms, and the jobsite ahead and behind instill confidence in close quarters. Optional LED side lighting and rearview camera further enhance visibility.

Within easy reach

Tilt the hood up for convenient ground-level access to the dipstick, filters, and fuel and fluid fills. Neat freaks and rental yards can appreciate the convenient cab-footwell access that helps speed cleaning.

Choose to connect

Equip your CTL with your choice of over 100 available John Deere attachments to expand the flexibility of your operation. Increased auxiliary hydraulic flow and power compared to previous models boosts attachment performance.



333G COMPACT TRACK LOADER



**SWITCHING ATTACHMENTS
ENABLES VERSATILITY IN
ANY WEATHER OR SEASON**

Safety first

Standard personal-protection features include in-cab-activated boom lock and triple-interlock system that detects the presence of the operator to help keep harm's way at bay.

Remote diagnostics and support

To maximize uptime and lower costs, JDLink™ connectivity provides machine location, utilization data, and alerts to help you maximize productivity and efficiency. JDLink also enables John Deere Connected Support™. Dealers use Expert Alerts based on data from thousands of connected machines to proactively address conditions that may otherwise likely lead to downtime. Your dealer can also monitor machine health and leverage remote diagnostics and programming capability to further diagnose problems and even update machine software without a time-consuming trip to the jobsite.*

*Availability varies by region. Options not available in every country.

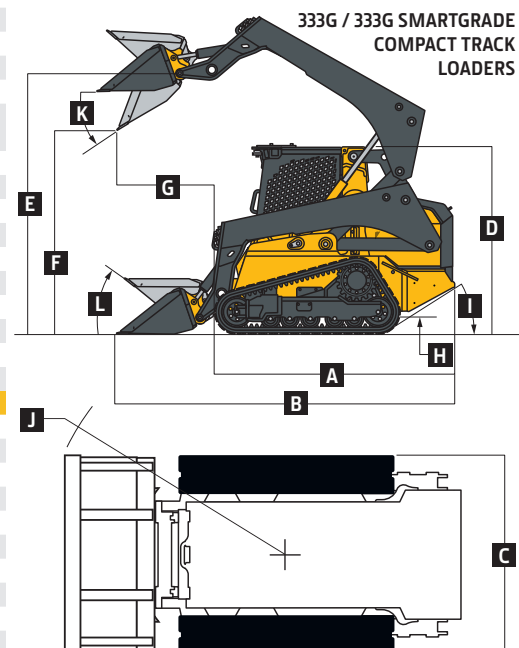


333G

COMPACT TRACK LOADER SPECIFICATIONS

Engine		333G / 333G SMARTGRADE™	
Manufacturer and Model	Yanmar 4TNV94FHT	Displacement	3.1 L (186.3 cu. in.)
Non-Road Emission Standards	EPA Final Tier 4/EU Stage IV	Rated Engine Speed	2,500 rpm
Cylinders	4	Torque Rise	39% at 1,700 rpm
Gross Rated Power (ISO 14396)	74.6 kW (100 hp) at 2,500 rpm	Aspiration	Turbocharged, intercooled
Net Peak Power (SAE J1349 / ISO 9249)	72.0 kW (96.6 hp) at 2,500 rpm	Air Cleaner	Dry dual element
Peak Torque	395 Nm (291.3 ft.-lb.) at 1,700 rpm		
Cooling			
Fan Type	Variable-speed hydraulic drive standard / reversing fan drive optional		
Powertrain			
Pump	Axial-piston hydrostatic	Travel Speeds (continued)	
Controls	Electrohydraulic	2 Speed, High	12.6 km/h (7.8 mph)
Travel Speeds		Brakes	Integral, automatic, spring-applied, hydraulically released wet-disc brake
2 Speed, Low	8.5 km/h (5.3 mph)		
Undercarriage			
Rubber Tracks	New-Generation smooth-ride long-life rubber with steel inserts	Ground Pressure (continued)	
Track Width		With Optional 400-mm (15.8 in.) Track	38.4 kPa (5.6 psi)
Standard	450 mm (17.7 in.)	Track Rollers (per side)	5 triple-flange smooth-ride all-steel rollers
Optional	400 mm (15.8 in.)	Track Idlers (per side)	2 double-flange smooth-ride all-steel rollers
Ground Pressure		Bearings/Seals (rollers/idlers)	Heavy-duty journal bearings and metal face seals
With Standard 450-mm (17.7 in.) Track	34.1 kPa (5.0 psi)	Tractive Effort	5221 kgf (11,500 lbf)
Hydraulics			
Pump Flow		Hydraulic Horsepower Flow (calculated)	
Standard	95 L/m (25.0 gpm)	Standard	38 kW (50 hp)
Total With High-Flow Option	156 L/m (41.1 gpm)	High	62 kW (83 hp)
System Pressure at Couplers	23 787 kPa (3,450 psi)		
Cylinders			
Type	John Deere heat-treated, chrome-plated, polished cylinder rods, hardened steel (replaceable bushings) pivot pins		
Electrical			
Voltage	12 volt	Lights	Halogen: 2 front and 1 rear standard / deluxe LED: 4 front and 1 rear optional
Battery Capacity	925 CCA		
Alternator Rating	90 amp		
Operator's Station		Serviceability	
ROPS (ISO 3471) / FOPS (ISO 3449) structure with quick-pivot standard		Refill Capacity	
		Fuel Tank	114 L (30 gal.)
Operating Weights		333G 333G SMARTGRADE	
With Standard 450-mm (17.7 in.) Track	5493 kg (12,100 lb.)	6356 kg (14,000 lb.) (includes 3 sets of counterweights and dozer blade)	
With Optional 400-mm (15.8 in.) Track	5448 kg (12,000 lb.)	6311 kg (13,900 lb.)	
Machine Dimensions			
A Length Without Bucket	3.10 m (122 in.) (10 ft. 2 in.)	3.10 m (122 in.) (10 ft. 2 in.)	
B Length With Foundry Bucket	3.71 m (146 in.) (12 ft. 2 in.)	3.71 m (146 in.) (12 ft. 2 in.)	
C Width Without Bucket			
With 400-mm (15.8 in.) Track	2.00 m (78.9 in.) (6 ft. 7 in.)	2.00 m (78.9 in.) (6 ft. 7 in.)	
With 450-mm (17.7 in.) Track	2.05 m (80.7 in.) (6 ft. 9 in.)	2.05 m (80.7 in.) (6 ft. 9 in.)	
D Height to Top of ROPS	2.20 m (86.7 in.) (7 ft. 3 in.)	2.30 m (90.5 in.) (7 ft. 7 in.) (including GNSS)	
E Height to Hinge Pin	3.35 m (132 in.) (11 ft. 0 in.)	3.35 m (132 in.) (11 ft. 0 in.)	
F Dump Height With Foundry Bucket	2.69 m (106.1 in.) (8 ft. 10 in.)	2.69 m (106.1 in.) (8 ft. 10 in.)	
G Dump Reach			
With Foundry Bucket	0.71 m (28 in.)	0.71 m (28 in.)	
With Construction Bucket (no edge)	0.88 m (34.6 in.)	0.88 m (34.6 in.)	
H Ground Clearance	0.24 m (9.4 in.)	0.24 m (9.4 in.)	
I Angle of Departure	31 deg.	31 deg.	
J Front Turn Radius With Foundry Bucket	2.18 m (85.7 in.) (7 ft. 2 in.)	2.18 m (85.7 in.) (7 ft. 2 in.)	
K Dump Angle (full lift height)	48 deg.	48 deg.	
L Bucket Rollback (ground level)	35 deg.	35 deg.	
Loader Performance			
Tipping Load With Foundry Bucket	4799 kg (10,570 lb.)	5280 kg (11,630 lb.)	
SAE Rated Operating Capacity			
At 35% Tipping Load	1680 kg (3,700 lb.)	1848 kg (4,071 lb.)	
At 50% Tipping Load	2399 kg (5,285 lb.)	2640 kg (5,815 lb.)	
Boom Breakout Force			
With Foundry Bucket	3746 kg (8,250 lb.)	3746 kg (8,250 lb.)	
With Construction Bucket	3519 kg (7,750 lb.)	3519 kg (7,750 lb.)	
Bucket Breakout Force			
With Foundry Bucket	6243 kg (13,750 lb.)	6243 kg (13,750 lb.)	
With Heavy-Duty Construction Bucket	4200 kg (9,250 lb.)	4200 kg (9,250 lb.)	

The diagram illustrates the 333G / 333G SMARTGRADE COMPACT TRACK LOADERS. It includes a side view of the machine with dimensions A through L labeled. A is the length without the bucket, B is the length with the foundry bucket, C is the width without the bucket, D is the height to the top of the ROPS, E is the height to the hinge pin, F is the dump height with the foundry bucket, G is the dump reach, H is the ground clearance, I is the angle of departure, J is the front turn radius with the foundry bucket, K is the dump angle, and L is the bucket rollback. The loader performance section shows the tipping load with the foundry bucket, SAE rated operating capacity at 35% and 50% tipping load, boom breakout force with foundry and construction buckets, and bucket breakout force with foundry and heavy-duty construction buckets.

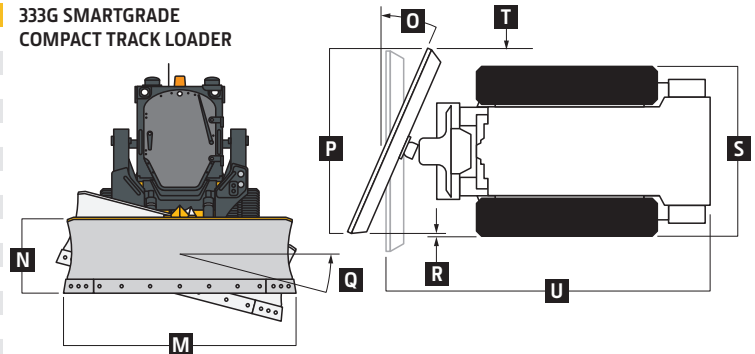


While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

333G SmartGrade Dozer Dimensions

Blade Type	Power-Angle-Tilt (PAT)
M Blade Width	2440 mm (96 in.) (8 ft. 0 in.)
N Blade Height	740 mm (29 in.)
SAE Capacity	1.18 m ³ (1.54 cu. yd.)
Weight	640 kg (1,400 lb.)
O Blade Angle	±24 deg.
P Overall Width With Blade Angled	2258 mm (88 in.) (7 ft. 4 in.)
Q Blade Tilt	±8 deg.
R Cut Reach	
With 400-mm (15.8 in.) Narrow Track	15.3 mm (0.6 in.)
With 450-mm (17.7 in.) Wide Track	-22.2 mm (-0.8 in.)
S Width Over Track	
With 400-mm (15.8 in.) Narrow Track	2000 mm (78.9 in.) (6 ft. 6.9 in.)
With 450-mm (17.7 in.) Wide Track	2047 mm (80.7 in.) (6 ft. 8.7 in.)
T Cast Reach	
With 400-mm (15.8 in.) Narrow Track	246 mm (9.7 in.)
With 450-mm (17.7 in.) Wide Track	223.8 mm (8.8 in.)

333G SMARTGRADE COMPACT TRACK LOADER



U Length With Dozer Blade Installed	
With 400-mm (15.8 in.) Narrow Track	3940 mm (155 in.) (12 ft. 11 in.)
With 450-mm (17.7 in.) Wide Track	3940 mm (155 in.) (12 ft. 11 in.)

Additional equipment

Key: ● Standard ▲ Optional or special

See your John Deere dealer for further information.

333G Engine

- Meets EPA Final Tier 4/EU Stage IV emissions
- Yanmar 4TNV94FHT
- Auto-idle
- Automatic fan tensioner
- Automatic preheat
- Electronic injection system
- ▲ Engine air precleaner kit
- Fuel tank, 114 L (30 gal.)
- John Deere COOL-GARD™ II Extended-Life Engine Coolant
- John Deere Plus-50™ 10W30 initial engine oil fill*
- 4-cylinder 74.6 kW (100 gross hp)/72.0 kW (96.6 net hp), 3.1-L (186.3 cu. in.) displacement
- 5-micron primary fuel filter and water separator
- ▲ Cold-weather starting package

Cooling System

- Coolant surge tank
- Variable-speed hydraulically driven fan cooling system
- ▲ Reversing fan drive

Powertrain

- High-torque heavy-duty planetary-reduction final drive
- Automatic spring-applied hydraulically released wet-disc park brake
- Wet-disc brakes
- Transmission, 2 speed

Hydraulic System

- John Deere hydraulic cylinders with cushioned boom cylinders
- John Deere heat-treated, chrome-plated cylinder rods with replaceable bushings
- Connect-under-pressure auxiliary couplers
- Quick-check hydraulic fluid-level sight glass
- 1,000-hour, 5-micron hydraulic filter
- ▲ High-flow hydraulics
- Axial-piston hydrostatic pump

Electrical

- Automatic engine/hydraulic shutdown protection system
- Auxiliary hydraulics operator-presence system
- Courtesy lighting
- Deluxe instrumentation EMU with: Operator-selectable monitoring – Hour meter, engine rpm, battery voltage, diagnostics, EMU configuration, engine coolant temperature, hydraulic oil temperature / LED

333G Electrical (continued)

- warning indicators – Glow plug, seat switch, seat belt, door open, auxiliary hydraulics, park brake engaged, 2-speed engaged, stop, low engine oil pressure, engine coolant over-temperature, battery not charging, air filter restriction, and hydraulic filter restriction
- ▲ Deluxe LED lighting package with additional cab-integrated side lights (2)
- Front and rear halogen work lights
- Triple-interlock operator-presence control system
- Backup alarm
- Battery, 925 CCA
- Horn
- ▲ Hazard warning lights
- ▲ Strobe light, amber

Operator's Station

- Deluxe cab headliner
- Electrohydraulic (EH) ISO-pattern joystick controls
- ▲ ISO-H switchable joystick controls and EH joystick performance package*
- ▲ 4-way switchable controls include EH foot control, ISO joystick control, H-pattern joystick control, and ISO and foot controls
- ▲ ISO controls with programmable detents and EH boom performance package;† also includes EH joystick performance package*
- Keyless-start sealed-switch module with integrated anti-theft system and operator memory preference settings
- Electronic push-button auxiliary controls
- Pull-down adjustable lap bar
- Quick-pivot ROPS
- Rear window
- Removable top window
- ▲ Sliding/locking/removable glass side windows
- ROPS/FOPS operator structure
- ▲ Glass cab enclosure
- Seat belt, 51 mm (2 in.), retractable
- ▲ Shoulder belt, 51 mm (2 in.) or 76 mm (3 in.)
- ▲ Severe-duty cab door and wiper system
- ▲ Water-shedding deluxe vinyl suspension seat
- ▲ Air-ride cloth, heated seat
- ▲ Air-ride vinyl seat
- 12-volt power port / Dome light / Cargo storage / Beverage holder

333G Operator's Station (continued)

- ▲ Air conditioning with heater/defroster
- ▲ AM/FM radio with auxiliary input and Bluetooth® for audio streaming
- ▲ Floor mat with left footrest
- Rearview mirror
- ▲ Rearview camera
- Loader**
- In-cab boom lockout to secure loader before exiting seat
- Patented John Deere Quik-Tatch™ (no grease required)
- ▲ Power Quik-Tatch
- Patented John Deere vertical-lift boom
- Hydraulic self-leveling on/off and ride control
- Other**
- ▲ SmartGrade™
- ▲ Slope Control
- ▲ Laser Slope Control
- ▲ Onboard grade indication: This option delivers onboard readout within LCD monitor that provides slope of blade (cross-slope direction) and mainfall (fore/aft direction) within ±0.5-percent accuracy
- Convenient front and rear tie-downs
- Environmental drains for all fluid reservoirs
- Chrome exhaust stack
- ▲ Engine oil/hydraulic fluid-sampling kit
- ▲ Forestry protection packages
- ▲ Heavy-duty rear grille
- ▲ Rear counterweights (available in sets of 1, 2, or 3), 78 kg (172 lb.) (each set)
- ▲ Single-point lift kit
- ▲ SMV sign kit
- ▲ Anti-vibration undercarriage system
- ▲ Track, 400-mm (15.8 in.) wide
- ▲ Track, 450-mm (17.7 in.) wide
- ▲ JDLink™ wireless communication system (available in specific countries; see your dealer for details)

*500-hour engine oil-change intervals when John Deere Plus-50 oil and John Deere oil filter are used.

*EH joystick performance package features switchable accelerator/decelerator, selectable propel speeds, creep control, boom- and bucket-speed settings, and 12-volt 3- and 14-pin attachment-control harness with dash-mounted 4th-function rocker switch.

†EH boom performance package features include EH bucket self-level up and down, return to dig, return to carry, and boom-height kick-out.

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 6270B, using No. 2-D fuel at 35 API gravity. Gross power is without cooling fan. Specifications and design subject to change without notice.

Wherever applicable, specifications are in accordance with SAE standards. Except where otherwise noted, these specifications are based on a unit with standard equipment, full fuel tank, and 79-kg (175-lb.) operator.



DKAGCTL333 (22-10)



JOHN DEERE

Report on Plant Replacement Options For 2006 Mustang 2054 Skid Steer

Introduction

The need to replace our current 2006 Mustang 2054 skid steer arises from its continuous unreliability, which severely impacts operational efficiency. With a substantial \$5,600 spent this year alone in futile attempts to maintain its operation, coupled with significantly low utilisation levels, it is evident that a dependable replacement is imperative. The requirement for a smaller skid steer within our fleet is multifaceted. Specifically, the parks and gardens team utilise it for fire mitigation and block slashing activities around town. Moreover, the small skid steer is also utilised for loading sand and other materials essential for routine maintenance tasks and private works, where ratepayers purchase materials like gravel and sand. Additionally, during rotary axe slashing operations on the seal road network conducted by the road maintenance team, there is a pressing need to efficiently sweep off debris behind the rotary axe to mitigate operational interruptions. This requirement addresses a significant complaint from last year's slashing program, highlighting the importance of a reliable machine to streamline operations. Furthermore, on gravel road networks, the smaller skid steer plays a vital role in cleaning up behind the rotary axe with a rake bucket. These utilisation benefits underscore the necessity for a reliable replacement machine that can effectively fulfill these operational requirements.

Trade-in Value

In addition to assessing potential replacement options, it's noteworthy that Pickles Auctions have provided a trade-in value of \$15,000 for the current skid steer, which contributes to the financial aspects of the replacement process. This trade-in value can be factored into the decision-making process to optimise the overall cost-effectiveness of the replacement endeavour.

Replacement Options

1. Clark Equipment: T450 Compact Track Loader

- Price: \$105,000 + GST
- Specifications: 61 HP Turbo Diesel, Pressurized enclosed cab, manoeuvrability, powerful hydraulic performance.
- Pros: Manoeuvrability, Tier 4 emissions compliance without a DPF, premium comfort features.

2. Clark Equipment: S550 Wheel Skid Steer

- Price: \$78,000 + GST
- Specifications: 50.7 kW Bobcat 2.4L engine, 93.70 L fuel tank.
- Pros: Lower upfront cost, air conditioning, heated cabin, joystick controls, no ADBLU or DPF.

3. ASV Equipment: ASV RT-60 Posi-Track Loader

- Purchase Price: \$119,700.00

- Specifications: WA Conditional Registration, Civil Spec enhancements, RS 1600 Super Duty GP Bucket, air conditioning, Open ROPS with duo cone undercarriage, Suspension Seat, rear window, sound insulation, OH&S Kit, Standard Quick Attach.
- Pros: Specialized Posi-Track technology, enhanced safety features, reliability.

4. AFGRI Equipment - John Deere: 316GR Skid Steer and 317G Compact Track Loader

- Prices: \$80,000.00 for the 316GR Skid Steer, \$98,000.00 for the 317G Compact Track Loader
- Features: Cab/Heat/AC, Power QT, SL, 2spd, Att Perf, various comfort and safety features.
- Pros: Competitive pricing, reputable brand reliability.

5. WESTRAC Equipment: 239D3 Posi-Track

- Price: \$120,000+GST
- Features: Industry-leading sealed and pressurized cab, high-back, heated, air ride seat, high performance power train, high flow hydraulic system, electronically controlled Cat C2.2 engine.
- Pros: Advanced features for operator comfort and productivity, superior traction and stability.

Recommendation

Given the paramount importance of reliability, versatility, and efficiency in our operations, the ASV RT-60 Posi-Track Loader stands out as the optimal choice for replacement. Its specialized Posi-Track technology, coupled with enhanced safety features and a reputation for reliability, seamlessly align with the diverse operational demands outlined in our requirements. Moreover, endorsements from industry experts add weight to its suitability for our fleet. However, it's worth noting that the Clark T450 and S550 options, with their absence of AdBlue, represent a significant advantage from a maintenance perspective.



Bobcat®

**New M2-Series
Compact Track Loaders**



One Tough Animal®



Why Compact Track Loaders?

Since inventing the world's first true compact loader in 1958, Bobcat has constantly improved on its original concept: a tough, agile and versatile compact machine that can tackle an incredible number of jobs. | Today, the innovation continues. The Bobcat® compact track loader features a superior design that outperforms other brands while maximizing your uptime and delivering unmatched comfort.



Performance

Move Faster. Finish Sooner.

Now you'll spend less time traveling across a jobsite or between jobs. Move faster – and get the job done sooner – with new two-speed for Bobcat compact track loaders. This time-saving feature boosts your top travel speed by as much as 57 percent.

Big Results – Small Package

Compact track loaders weigh more than skid-steer loaders of the same size. Thanks to tracks, that weight is spread out over a wider area for increased flotation, minimal ground disturbance, higher pushing force and better lifting of larger loads.

Designed for Durability

Heavy-duty construction, component protection and superior design with minimal moving parts increase the service life of your loader – no matter which undercarriage you choose.

Great performance doesn't only come from a high horsepower engine. Bobcat loaders use the machine's design and balance to deliver more usable horsepower. We build machines with the right balance between engine and pump, plus a weight distribution that delivers powerful breakout forces and faster cycle times. If you need to work quicker, lift more and outperform the competition, Bobcat compact track loaders are the only choice.

Superior Pushing Force

With more surface area in contact with the ground, direct-drive motors and a perfect balance between machine weight and horsepower, the pushing force of Bobcat compact track loaders is second to none.

Expand Your Season

Compact track loaders have a low ground pressure that allows you to work more productively in soft, sandy, wet or muddy conditions. You could gain as much as two months of extra work per year: get on the job a month sooner in the spring, and get off the job a month later in the fall.

Low Impact

High-flotation Bobcat compact track loaders minimize damage to lawns, natural terrain and other established surfaces for fewer profit-eating surface repairs.

Faster Cycle Times

Hydraulic pumps in Bobcat loaders are matched to cylinder size and loader lift capacity to provide fast cycle times that help you get the job done faster.

Hydraulic Bucket Positioning

Optional hydraulic bucket positioning keeps your bucket level when raising lift arms, reducing spillage and allowing you to work more efficiently.

Powerful Breakout Forces

High-efficiency hydraulic pumps deliver more power matched to demand and provide better breakout forces.

More Torque

Bobcat loaders reach maximum torque at a lower rpm to minimize stalling while saving time and fuel.

Control in Your Hands

With Bobcat compact track loaders, you can feel and control the loader's drive, engine torque and tractive effort – so you can push your machine to the limit without an engine anti-stall system robbing you of power when you need it the most.

Deluxe Instrumentation Panel

Deluxe instrumentation enables operators to set the parameters of the grading system and get real-time information during operation – such as distance-to-target for both elevation and slope – without the need for a separate control box inside the cab.

Optional non-marking multi-bar lug rubber tracks won't leave black rubber marks on hard surfaces like concrete.





Improved Visibility

Visibility is increased in all directions on M-Series loaders. The rear window is 14 percent larger, and the top window is 43 percent larger. This provides a big advantage when loading a truck or using attachments. All-around visibility is central to the design of the cab on Bobcat loaders.

Cab-Forward Design

The new cab-forward design moves the operating area closer to the attachment, giving you a better vantage point to see your work.

Front Visibility

Comfortably see your work from the seat through a single, curved pane of glass that delivers as much as 50 percent more glass surface area than other manufacturers. Powerful lighting gives you a great view for night operation.

Pressurized Cab

In your line of work, you have to dive right in – where the dirt, dust, mud and debris are at their worst. Bobcat M-Series loaders with enclosed cabs have a best-in-class pressurized interior space that keeps dust to a minimum, keeping operators clean and comfortable.

Optional Keyless Panel

If you're not ready for the robust functionality of deluxe instrumentation, but you'd like the convenience of keyless start with the added security of an owner-defined numeric code, choose the optional security panel upgrade.



NEW SONIC

Sonic Tracer/Slope Sensor Control

The sonic tracer/slope sensor kit enables operators to create an accurate cross-slope or precisely grade when laser receivers and transmitters are limited by jobsite obstacles or the grade needed does not follow a plane.

Uptime Protection



Machine Shutdown Protection

Bobcat loaders come standard with automatic shutdown that monitors engine and hydraulic functions. The system alerts the operator and actually shuts the machine down – lessening the chance of damage to the engine or hydraulic components.

Self Diagnostics

On-board diagnostics efficiently troubleshoot problems in the field, and in many cases, prevent them from occurring in the first place. Downloadable machine performance history cuts a huge chunk out of the time needed to identify problems and correct them.

Battery Run-Down Protection

The lighting circuit automatically shuts down to prevent accidental battery discharge.

Electronic Protection

Bobcat electronics meet or exceed military IP67 requirements for sealing, moisture, shock and vibration. You can work in harsh conditions, or power wash your loader without having to worry if it will start when you are finished. Bobcat electronics feature more watertight, corrosion-resistant connectors than other manufacturers – so you don't slow down from faulty connections.

Protected Hoses and Quick Couplers

The integrated, pressure-release quick couplers are mounted directly into the front plate of the lift arm – with no exposed hoses to damage. A steel guard extends beyond the coupler, protecting it even further.

BobcatAdvantage.com/comprack

Smart Cooling



The Bobcat cooling system is smarter because of its superior protection, dual-path cooling efficiency and exclusive SmartFAN.

Quieter Operation

Up to 30 percent quieter than ordinary cooling fans, the hydraulically powered SmartFAN senses the temperature of the machine and only turns as fast as needed. Work in extreme conditions with less concern about overheating.

More Efficient Cooling

Bobcat loaders have a patented, dual-path cooling system that draws cool, clean air from above, pulls warm air out of the engine compartment and forces it out two side vents, directing hot air away from the operator, cooling more efficiently and keeping engine components clean. Other systems usually pull dirty air over the top of the tires or from the rear of the loader.

Protected Cooling Location

Some manufacturers still place radiators immediately inside the tailgate where the cooling package can be damaged by rebar, sticks or other items that can poke through the tailgate ventilation holes. The Bobcat radiator and hydraulic oil cooler are well-protected between the frame uprights, above the engine. This also leaves the rear of the engine freely accessible for maintenance checks.



Better cooling
in extreme conditions.

Specifications and Features Compact Track Loaders

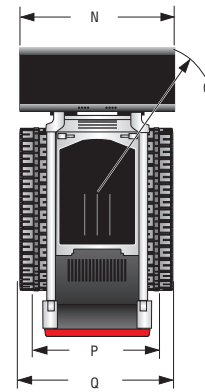
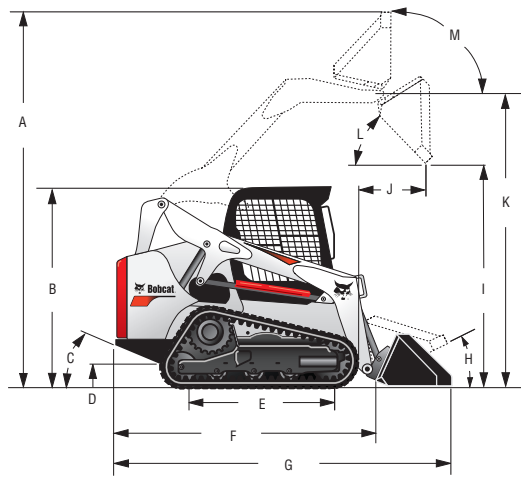


	T450	T550	T590	T595
Loader Series	M2-Series	M2-Series	M2-Series	M2-Series
Rated Operating Capacity (ROC) (35% of tipping load)	1,400 lb. (635 kg)	1,995 lb. (905 kg)	2,100 lb. (953 kg)	2,200 lb. (998 kg)
ROC with Counterweight (optional)	Counterweight kits are available to increase ROC. See dealer on availabilities and ROC increases for your loader.			
Operating Capacity (50% of tipping load)	2,000 lb. (907 kg)	2,850 lb. (1293 kg)	3,000 lb. (1361 kg)	3,142 lb. (1425 kg)
Tipping Load	4,000 lb. (1814 kg)	5,700 lb. (2585 kg)	6,000 lb. (2722 kg)	6,285 lb. (2851 kg)
ROC with optional Roller Suspension	—	1,895 lb. (860 kg)	1,950 lb. (885 kg)	2,050 lb. (930 kg)
Height to Hinge Pin	109.5 in. (2781 mm)	114.5 in. (2908 mm)	119.0 in. (3023 mm)	119.0 in. (3023 mm)
Lift Arm Path	Radius	Radius	Vertical	Vertical
Size and Speed				
Operating Weight	6,148 lb. (2789 kg)	7,557 lb. (3428 kg)	7,822 lb. (3548 kg)	8,055 lb. (3654 kg)
Bucket Width	56 in. (1422 mm)	68 in. (1727 mm)	68 in. (1727 mm)	68 in. (1727 mm)
Cab Height	77.8 in. (1972 mm)	77.8 in. (1972 mm)	77.8 in. (1972 mm)	77.8 in. (1972 mm)
Travel Speed – Single Speed	7.3 mph (11.7 km/hr.)	7.1 mph (11.4 km/hr.)	7.1 mph (11.4 km/hr.)	7.1 mph (11.4 km/hr.)
Travel Speed – High Range (optional 2-Speed travel)	11.0 mph (17.7 km/hr.)	10.4 mph (16.7 km/hr.)	10.4 mph (16.7 km/hr.)	10.4 mph (16.7 km/hr.)
Engine				
Horsepower	61 hp	66 hp	66 hp	74 hp
Type	Turbo Diesel	Turbo Diesel	Turbo Diesel	Turbo Diesel
Fuel Tank Capacity	17.3 gal. (65.5 L)	36.5 gal. (138.2 L)	36.5 gal. (138.2 L)	36.5 gal. (138.2 L)
Horsepower Management	Included with SJC Option			
Diesel Particulate Filter (DPF) Requirement	No	No	No	No
Diesel Exhaust Fluid (DEF)	No	No	No	No
Uptime Protection				
Bobcat SmartFAN	Std	Std	Std	Std
Cooling System	Std	Std	Std	Std
Machine Shutdown Protection	Std	Std	Std	Std
Tracks/Undercarriage				
Track Width – Standard	11.8 in. (300 mm)	12.6 in. (320 mm)	12.6 in. (320 mm)	12.6 in. (320 mm)
Track Width – Optional	—	15.75 in. (400 mm)	15.75 in. (400 mm)	15.75 in. (400 mm)
Ground Pressure (with standard tracks)	4.7 psi (0.032 MPa)	4.9 psi (0.03 MPa)	5.1 psi (0.04 MPa)	5.1 psi (0.04 MPa)
Ground Pressure (with optional tracks)	—	4.0 psi (0.03 MPa)	4.1 psi (0.03 MPa)	4.1 psi (0.03 MPa)
Length of Track on Ground	50.2 in. (1275 mm)	54.1 in. (1374 mm)	54.1 in. (1374 mm)	54.1 in. (1374 mm)
Roller Suspension	—	Opt	Opt	Opt
Grease Cylinder Track Tensioning	Std	Std	Std	Std
Roller Per Side	3 (Triple Flange)	4 (Triple Flange)	4 (Triple Flange)	4 (Triple Flange)
Control Options				
Bobcat Standard (Foot Pedals/Steering Levers)	Std	Std	Std	Std
Advanced Control System (ACS)	Opt	Opt	Opt	Opt
Selectable Joystick Control (SJC)	Opt	Opt	Opt	Opt
Radio Remote Control (SJC required)	Opt	Opt	Opt	Opt
Standard Control Power Assist	—	—	—	—
Machine Features				
2-Speed Travel	Opt	Opt	Opt	Opt
Air-Ride Seat	Opt	Opt	Opt	Opt
Back-Up Alarm and Horn	Std	Std	Std	Std
Bobcat Interlock Control System (BICS™)	Std	Std	Std	Std
Cab with Heat	Opt	Opt	Opt	Opt
Cab with Heat and Air Conditioning	Opt	Opt	Opt	Opt
Deluxe Instrumentation (includes keyless start)	Opt	Opt	Opt	Opt
Hydraulic Bucket Positioning	Opt	Opt	Opt	Opt
Mechanical Suspension Seat	Std	Std	Std	Std
Front and Rear Work Lights	Std	Std	Std	Std
Radio	Opt	Opt	Opt	Opt
Reversing Fan	Opt	Opt	Opt	Opt
Ride Control	Opt	Opt	Opt	Opt
ROPS/FOPS Approved Cab Structure	Std	Std	Std	Std
Side Lighting Kit	—	Opt	Opt	Opt
Sound Reduction Package	Opt	Opt	Opt	Opt
Features for Attachments				
Attachment Control Kit	Opt	Opt	Opt	Opt
Bob-Tach Mounting System	Std	Std	Std	Std
Power Bob-Tach System	Opt	Opt	Opt	Opt
Fingertip Auxiliary Hydraulics Control	Std	Std	Std	Std
Hydraulic System Pressure	3,300 psi (22.75 MPa)	3,500 psi (24.1 MPa)	3,500 psi (24.1 MPa)	3,500 psi (24.1 MPa)
Hydraulic Standard Flow	16.7 gpm (63.2 L/min.)	17.1 gpm (64.7 L/min.)	17.1 gpm (64.7 L/min.)	17.1 gpm (64.7 L/min.)
Hydraulic High Flow (optional)	—	26.7 gpm (101.1 L/min.)	26.7 gpm (101.1 L/min.)	26.7 gpm (101.1 L/min.)
Pressure Release Hydraulic Quick Couplers	Std	Std	Std	Std
Speed Management	Included with SJC Option			

Specifications and Features Compact Track Loaders



	T630	T650	T770	T870
Loader Series	M2-Series	M2-Series	M2-Series	M2-Series
Rated Operating Capacity (ROC) (35% of tipping load)	2,100 lb. (953 kg)	2,570 lb. (1166 kg)	3,475 lb. (1578 kg)	3,525 lb. (1599 kg)
ROC with Counterweight (optional)	Counterweight kits are available to increase ROC. See dealer on availabilities and ROC increases for your loader.			
Operating Capacity (50% of tipping load)	3,000 lb. (1361 kg)	3,670 lb. (1665 kg)	4,960 lb. (2250 kg)	5,030 lb. (2282 kg)
Tipping Load	6,000 lb. (2722 kg)	7,343 lb. (3331 kg)	9,929 lb. (4503 kg)	10,072 lb. (4569 kg)
ROC with optional Roller Suspension	2,100 lb. (953 kg)	2,570 lb. (1166 kg)	3,325 lb. (1508 kg)	—
Height to Hinge Pin	121.0 in. (3073 mm)	124.0 in. (3149 mm)	132.0 in. (3353 mm)	144.0 in. (3657 mm)
Lift Arm Path	Radius	Vertical	Vertical	Vertical
Size and Speed				
Operating Weight	8,655 lb. (3926 kg)	9,320 lb. (4227 kg)	10,465 lb. (4796 kg)	12,925 lb. (5862 kg)
Bucket Width	74 in. (1880 mm)	74.0 in. (1880 mm)	80.0 in. (2032 mm)	84.8 in. (2153 mm)
Cab Height	81.3 in. (2065 mm)	81.3 in. (2065 mm)	81.3 in. (2065 mm)	83.4 in. (2118 mm)
Travel Speed – Single Speed	6.6 mph (10.6 km/hr.)	6.6 mph (10.6 km/hr.)	6.6 mph (10.6 km/hr.)	7.2 mph (11.5 km/hr.)
Travel Speed – High Range (optional 2-Speed travel)	10.7 mph (17.2 km/hr.)	10.7 mph (17.2 km/hr.)	10.7 mph (17.2 km/hr.)	11.4 mph (18.3 km/hr.)
Engine				
Horsepower	74 hp	74 hp	92 hp	100 hp
Type	Turbo Diesel	Turbo Diesel	Turbo Diesel	Turbo Diesel
Fuel Tank Capacity	43.9 gal. (166.4 L)	43.9 gal. (166.4 L)	43.9 gal. (166.4 L)	32.3 gal. (122.3 L)
Horsepower Management				Std
Diesel Particulate Filter (DPF) Requirement	No	No	No	No
Diesel Exhaust Fluid (DEF)	No	No	No	No
Uptime Protection				
Bobcat SmartFAN	Std	Std	Std	Std
Cooling System	Std	Std	Std	Std
Machine Shutdown Protection	Std	Std	Std	Std
Tracks/Undercarriage				
Track Width – Standard	12.6 in. (320 mm)	12.6 in. (320 mm)	17.7 in. (450 mm)	17.7 in. (450 mm)
Track Width – Optional	17.7 in. (450 mm)	17.7 in. (450 mm)	—	—
Ground Pressure (with standard tracks)	5.3 psi (0.037 MPa)	5.7 psi (0.039 MPa)	4.2 psi (0.029 MPa)	4.9 psi (0.033 MPa)
Ground Pressure (with optional tracks)	3.8 psi (0.027 MPa)	4.2 psi (0.029 MPa)	—	—
Length of Track on Ground	58.5 in. (1486 mm)	58.5 in. (1486 mm)	63.7 in. (1618 mm)	68.9 in. (1749 mm)
Roller Suspension	Opt	Opt	Opt	Std
Grease Cylinder Track Tensioning	Std	Std	Std	Std
Roller Per Side	4 (Triple Flange)	4 (Triple Flange)	5 (Triple Flange)	4 (Triple Flange)
Control Options				
Bobcat Standard (Foot Pedals/Steering Levers)	Std	Std	Std	—
Advanced Control System (ACS)	Opt	Opt	Opt	—
Selectable Joystick Control (SJC)	Opt	Opt	Opt	Opt
Radio Remote Control (SJC required)	Opt	Opt	Opt	Opt
Standard Control Power Assist	—	—	—	Std
Machine Features				
2-Speed Travel	Opt	Opt	Opt	Std
Air-Ride Seat	Opt	Opt	Opt	Opt
Back-Up Alarm and Horn	Std	Std	Std	Std
Bobcat Interlock Control System (BICS™)	Std	Std	Std	Std
Cab with Heat	Opt	Opt	Opt	Opt
Cab with Heat and Air Conditioning	Opt	Opt	Opt	Opt
Deluxe Instrumentation (includes keyless start)	Opt	Opt	Opt	Opt
Hydraulic Bucket Positioning	Opt	Opt	Opt	Opt
Mechanical Suspension Seat	Std	Std	Std	Std
Front and Rear Work Lights	Std	Std	Std	Std
Radio	Opt	Opt	Opt	Opt
Reversing Fan	Opt	Opt	Opt	Opt
Ride Control	Opt	Opt	Opt	Opt
ROPS/FOPS Approved Cab Structure	Std	Std	Std	Std
Side Lighting Kit	Opt	Opt	Opt	Opt
Sound Reduction Package	Opt	Opt	Opt	Opt
Features for Attachments				
Attachment Control Kit	Opt	Opt	Opt	Opt
Bob-Tach Mounting System	Std	Std	Std	Std
Power Bob-Tach System	Opt	Opt	Opt	Opt
Fingertip Auxiliary Hydraulics Control	Std	Std	Std	Std
Hydraulic System Pressure	3,500 psi (24.1 MPa)	3,500 psi (24.1 MPa)	3,500 psi (24.1 MPa)	3,500 psi (24.1 MPa)
Hydraulic Standard Flow	23.0 gpm (87.1 L/min.)	23.0 gpm (87.1 L/min.)	23.0 gpm (87.1 L/min.)	23.0 gpm (87.1 L/min.)
Hydraulic High Flow (optional)	30.5 gpm (115.5 L/min.)	30.5 gpm (115.5 L/min.)	36.6 gpm (138.5 L/min.)	36.6 gpm (138.5 L/min.)
Pressure Release Hydraulic Quick Couplers	Std	Std	Std	Std
Speed Management				Std



	T450	T550	T590	T595
A	141.9 in. (3604 mm)	149.1 in. (3787 mm)	153.6 in. (3901 mm)	153.6 in. (3901 mm)
B	77.8 in. (1972 mm)	77.8 in. (1972 mm)	77.8 in. (1972 mm)	77.8 in. (1972 mm)
C	28°	27.8°	28.8°	28.8°
D	8.4 in. (213 mm)	7.4 in. (188 mm)	7.4 in. (188 mm)	7.4 in. (188 mm)
E	50.2 in. (1275 mm)	55.2 in. (1402 mm)	55.2 in. (1402 mm)	55.2 in. (1402 mm)
F	98.4 in. (2499 mm)	104.6 in. (2657 mm)	104.6 in. (2657 mm)	104.6 in. (2657 mm)
G	126.6 in. (3216 mm)	133 in. (3378 mm)	133 in. (3378 mm)	133 in. (3378 mm)
H	28°	30°	30°	30°
I	83.8 in. (2199 mm)	86.8 in. (2205 mm)	91.3 in. (2319 mm)	91.3 in. (2319 mm)
J	23.5 in. (597 mm)	19.3 in. (490 mm)	34.9 in. (887 mm)	34.9 in. (887 mm)
K	109.5 in. (2781 mm)	114.5 in. (2908 mm)	119 in. (3023 mm)	119 in. (3023 mm)
L	40°	42°	42°	42°
M	91°	97°	97°	97°
N	56.0 in. (1422 mm)	68 in. (1727 mm)	68 in. (1727 mm)	68 in. (1727 mm)
O	77.9 in. (1979 mm)	80 in. (2032 mm)	80 in. (2032 mm)	80 in. (2032 mm)
P	43.2 in. (1097 mm)	54.4 in. (1382 mm)	54.4 in. (1382 mm)	54.4 in. (1382 mm)
Q	55.0 in. (1397 mm)	67 in. (1702 mm)	67 in. (1702 mm)	67 in. (1702 mm)

	T650	T750	T770	T870
A	158.5 in. (4026 mm)	166.6 in. (4232 mm)	166.6 in. (4232 mm)	184.6 in. (4689 mm)
B	81.3 in. (2065 mm)	81.3 in. (2065 mm)	81.3 in. (2065 mm)	83.4 in. (2118 mm)
C	31°	31°	31°	33°
D	8.1 in. (206 mm)	8.1 in. (206 mm)	8.1 in. (206 mm)	8.6 in. (218 mm)
E	59 in. (1499 mm)	63.7 in. (1618 mm)	63.7 in. (1618 mm)	68.9 in. (1749 mm)
F	108.4 in. (2753 mm)	114.3 in. (2903 mm)	114.3 in. (2903 mm)	119.3 in. (3030 mm)
G	136.8 in. (3474 mm)	141.6 in. (3597 mm)	141.6 in. (3597 mm)	153.9 in. (3910 mm)
H	31°	32°	32°	31°
I	96.3 in. (2447 mm)	104.3 in. (2649 mm)	104.3 in. (2649 mm)	112.3 in. (2853 mm)
J	34.2 in. (870 mm)	33.6 in. (853 mm)	33.6 in. (853 mm)	36.5 in. (927 mm)
K	124 in. (3149 mm)	132 in. (3353 mm)	132 in. (3353 mm)	144 in. (3657 mm)
L	42°	42°	42°	42°
M	97°	98°	98°	98°
N	74 in. (1880 mm)	80 in. (2032 mm)	80 in. (2032 mm)	84.8 in. (2153 mm)
O	87.7 in. (2228 mm)	88 in. (2235 mm)	88 in. (2235 mm)	99 in. (2514 mm)
P	60.3 in. (1532 mm)	60.3 in. (1532 mm)	60.3 in. (1532 mm)	65.3 in. (1658 mm)
Q	72.9 in. (1851 mm)	78 in. (1981 mm)	78 in. (1981 mm)	83 in. (2108 mm)



Training Resources

Train operators and technicians in the safe operation and servicing of Bobcat equipment. Operator training courses, safety videos and other training materials are available at your Bobcat dealer's parts department or online at Bobcat.com/training

*Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Bobcat equipment will vary based on normal variations in design, manufacturing, operating conditions, and other factors.

Purchase Quotation Prepared For:

Shire of Dowerin

Dowerin WA 6461
 M: 0477357175
 E: bforbes@dowerin.wa.gov.au

Quotation Information:

Quote No: 021861.V2

Date: 12/04/2024

Salesperson: Rick Way

Valid Until: 25/04/2024

Dear Ben,

We are pleased to be able to present you with the following sales quotation for the supply of one only, new ASV RT-60 Posi-Track Loader.

ASV Posi-Track Loaders are one of the premier CTLs in Australia, built with the most advanced undercarriage in the market featuring the revolutionary Posi-Track suspension system. They deliver extremely low ground pressure and unsurpassed tractive effort, for go-anywhere performance and outstanding durability.

Your new ASV Posi-Track Loader comes with a full 2 year / 2,000 hour full machine warranty. (12 months Perkins Engine warranty)

Warranty covers compact track loader tracks for the entire warranty period and no derailment guarantee plus the support of ASV Sales & Service and their national network of expert service partners.

Please note: this order is subject to manufacturer pricing variations that may occur after the date of quotation and prior to machine delivery. All product features, inclusions and warranties are indicative only and subject to amendment. Errors and omissions excluded. In addition, delivery of your product is not included in the below Quotation unless specified. All purchases are to be picked up from our branch address noted in the header of this Quote document. If you require delivery to your location and this is not mentioned on the below Quotation, please contact us to arrange.

Machine Specifications

Engine:	Perkins 404D-22, Tier 4, 2.2L 60HP Turbo Diesel
Operating Weight:	2812 kg
Rated Safe Working Load:	725 kg at 35% of tipping load
Height/Width:	1956mm Height x 1524mm Wide
Auxiliary Hydraulics:	61.7 lpm @ 3000 psi
Transmission & Controls:	1-Speed (13km/h), Variable Hydrostatic Drive, Pilot Hydraulic Joystick Control
Track System:	15" (381mm) General Purpose Tracks constructed of rubber compound with embedded co-polymer cords and all-purpose treads. Single row of track drive lugs moulded in.
Standard Equipment:	ASV RT-60 Posi-Track Loader Open ROPS with duo cone undercarriage, Suspension Seat, rear window, sound insulation, OH&S Kit (Rotating Amber Beacon, Reverse Alarm, Horn, Safety Decals), Standard Quick Attach, Full Instrumentation Panel, Gauges, Hour Meter, Warning Lights, ROPS/FOPS Certified Operator Station, Seat Belt, Lap Bar, Front and Rear Working Lights.



Proud Factory Authorised Distributor For:



ASV Sales & Service (WA) Pty Ltd
ABN 16 139 960 580
Welshpool
WA 6106
T: 08 9458 9280
F: 08 9258 6597

Optional Air conditioning kit and enclosure kit RT60

Proud Factory Authorised Distributor For:



One (1) Only New ASV RT-60 Posi-Track Loader

Purchase Quotation Detail

Included Machine and Attachments:	–	WA Conditional Registration	
	–	Civil Spec: 2 x E-Stops, Dual Pole Isolator, Lockout Switch, 2.0kg Fire Extinguisher, UHF Radio, Reflective Tape	
	–	RS 1600 Super Duty GP Bucket c/w bolt on cutting edge	
	–	Window Tinting	
	–	Air Conditioning to suit RT-60	
	–	ASV RT-60 Posi-Track Loader	
Subtotal:			\$ 119,700.00
Purchase Price:			\$ 119,700.00
10% GST Amount:			\$ 11,970.00
Changeover/ Net Sale Price:			\$ 131,670.00

Other Important Notes Relating to This Quotation (If Required):

Thank you for your interest in our machines. We sincerely appreciate the opportunity to provide you with this quotation and we look forward to providing an equipment solution for your business.

Best Regards,

Rick Way
M: 0412 637 637

Proud Factory Authorised Distributor For:



ASV Sales & Service (WA) Pty Ltd
ABN 16 139 960 580
Welshpool
WA 6106
T: 08 9458 9280
F: 08 9258 6597

Acceptance of Order:

To accept the above proposal, please sign below and return via email.

Quotation Number:	021861	Quotation Valid Until:25/04/2024
Authorised Signature:	_____	Date: _____
Print Name:	Shire of Dowerin - Ben	
Title:	_____	

Proud Factory Authorised Distributor For:



THE CUSTOMER AGREES THAT THE SAID GOODS ARE TO BE PURCHASED UNDER THE FOLLOWING TERMS & CONDITIONS:

1. The manufacturer may at its discretion make changes in the designs or specifications of the goods and may discontinue the sale of any of the goods and in such the Company will incur no liability to the customer in respect thereof.
2. The customers will take delivery of the goods at the company's address within seven (7) days from the notification by the company that the goods are ready for delivery. The company will use its best endeavors to make goods available on the delivery date herein before mentioned but shall not be responsible for any delay or failure to do so. Should failure to so deliver continue for a period exceeding two (2) calendar months after the said delivery date or should the company be dissatisfied with the condition or state of the trade-in the Company will have the right by notice in writing to cancel this order.
3. No claims by the customer shall be made except provided for in this order.
4. The price quoted for the goods is subject to any tax or taxes other than those included herein imposed by any duly constituted authority at or prior to the time-of delivery to the customer, and pricing may change subject to manufacturer variations.
5. If the Company agrees to accept a trade-in in whole or in part payment for the purchase price of the goods the items to be traded in will be delivered to the company at its above address prior or at the time of taking delivery of the goods and the customer warranty to the company that he has the free and unfettered right and title to sell any such items to the company and further warrants that there is no lien, bill of sales, mortgage, unpaid balance, under any hire purchase agreement or other encumbrance of any kind or character include lien or any judgment or execution over such items pending delivery to the company the customer will maintain such items in the same condition or state as there are now in.
6. The customer will pay to the company interest at the rate of 14 per cent per annum on any overdue payments to the date of the payment.
7. The customer will not assign any of his rights hereunder without the prior written consent of the company.
8. If the services of the company or any of its employees, servants or agents is provided whether for driving instructions, delivery effecting adjustments or repairs otherwise the customer accept the responsibility for all damage occasioned to the person or property and will indemnify the company against all actions, suits, claims and demand in respect thereof.
9. The risk in the goods sold by the company to the customer shall pass to the customer at the same time as the goods are delivered to the customer and from that time until the company receives payment in full the company shall insure at the customers expense the goods against all risks which the company in its sole discretion deems necessary if the goods are delivered to the customer at any place other than the abovementioned address of the company delivery shall for the purpose of this instrument be deemed to be made as of the time when it left the said address.
10. If the customer fails to punctually observe and perform all its obligations hereunder all moneys paid, any items traded in hereunder shall be absolutely forfeited to the company and this order and all the customers rights hereunder shall be ipso facto determined without prejudice to any action, suit, claim of demand the Company made against the company the customer as a result of any such breach or breaches hereunder.
11. If this order is cancelled under the Clause 2 hereof the company will return to the customer any moneys paid, any items traded in hereunder or the lieu of such trade-in the amount of the allowance mentioned above and upon any such cancellation all rights and obligation of the parties hereunder the customer shall ease and determine except the provisions of this clause which shall be the limit of the company's liability.
12. Until the purchase price is paid in full and the customer has otherwise performed and observed all its obligations hereunder the customer shall have no ownership property or rights in the goods and if possession of the same shall be a bailee thereof only.
13. No warranty is given in respect of any goods which are second hand as their quality and/or their suitability for any work required by the customer and any implied warrant statutory or otherwise is expressly excluded in relation to second-hand goods the customer admits and acknowledges that:
 - a) he has had the fullest opportunity to inspect the goods
 - b) the goods are sold subject to all faults
 - c) the company shall not be responsible for any loss or damage to the goods whatsoever arising.
14. Where the goods are new the company warrants the goods supplied by it to be free from defects in material and workmanship as per the manufactured warranty documents.

All parts replaced under warranty become the property of the company. The company reserves the right to make the final decision on the warranty claims when the reason for the cause of the failure is open to question. Warranty on parts replaced by the company under warranty shall be limited to the obligation to make good only the defective part or parts installed by the company and does not cover labour required for the removal or refitting of the said part or parts. Warranty is back to base and does not cover associated travel costs. Parts replaced under warranty by the company will be warranty for ninety (90) days from the date of installation or the balance of the un-expired warranty period of the basic machine whichever shall be the longer. The exchange of a new part or the defective part shall be constituting compliance with this warranty. A claim will be approved only for the part concerned and not for any associated parts. The part replaced must be returned to the company for inspection prior to approval of any claim. In all other respects the conditions relating to the warranty in respect of whole goods set out above shall apply.
- Except for its expressed liability under this warranty the company does not assume any obligation or liability whatsoever for any direct or indirect consequences of faults or defecting material workmanship or design whether it be loss or damage to the product, injury or damage to the persons or property loss of property or loss of profit. The warranty is given in lieu of all other conditions and warranties express or implemented which might otherwise be binding to the company (all of which the hereby expressly excluded) and all other obligations or liabilities on the part of the company except as may be otherwise stated in order form from the Agents or employees of the company are not authorized to give warranty verbal or otherwise on the company's behalf.
15. If in any case extended terms of payment are allowed to the Customer the company shall have an unpaid seller's lien upon the goods concerned and the customer shall rot part with the title to or possession of those goods to any purchase, bailee or lessee until payment in full to the company of the purchase price is made.
16. The customer will not incorporate the goods into any other equipment, products or machinery dealt in by the customer without prior written approval from the company.
17. In entering into this agreement the customer depends entirely on its own judgment and acknowledges that this order form embodies the entire terms, inducements and representations whatsoever made or given to the customer by the company or any other person. Taking or delivery of the goods by the customer shall be conclusive evidence that the same are in satisfactory order and condition and fit for the purpose for which they are required by the customer and despite any error or misdescription, no claim or objection in respect of the goods shall be admissible after such delivery.

18. a) If this order form has been signed by or on behalf of more than one person they shall be jointly and severally.
- b) In the interpretation of this order form and these conditions where the context so admits the singular of the words "company" and "person" shall be deemed to include the plural and the word "person" and pronouncing of the first person shall be deemed to refer to the person company or corporation by whom or on whose behalf the order form has been signed.
19. Notice posted by ordinary prepaid post to the customer's last known address shall be sufficiently served on the customer and shall be deemed to have been received by the customer on the following postage.
20. While the Customer holds possession of the Machinery as bailee, he/she:
- a) is responsible for its proper care and maintenance;
 - b) is responsible for its safe use;
 - c) is responsible for ensuring all information in relation to its use and the use of accompanying accessories and components is provided to those using the Machinery for work purposes;
21. Where the Dealer is entitled to reclaim possession of the Machinery, the Customer authorises the Dealer, its servants and agents to lawfully enter the Customer's property for the purposes of retaking possession.
22. Where the Customer requires finance to be provided by a provider of credit ("Financier"), for the payment of the Machinery, the Customer shall promptly provide the Dealer and/or the Financier with information necessary to allow a determination of the Customer's finance application.
23. Where the Customer advises the Dealer before entering into the Contract that he/she requires credit to be provided for the payment of the Machinery and having taken reasonable steps has been unable to obtain credit, the customer may within a reasonable period by notice in writing given to the Dealer rescind the Contract.
24. Where the Customer refuses or fails to take delivery of the Machinery or is otherwise in breach of his obligations under this contract, the Dealer may terminate this Contract by written notice to the Customer.

If that occurs, any deposit paid or payable by the Customer to any amount not exceeding 5% of the total Purchase Price of the Machinery shall be forfeited to the Dealer. Both parties acknowledge that the Dealer shall be entitled to claim by way of pre-estimated liquidated damages from the Customer an amount equal to 5% of the Purchase Price less any deposit forfeited.

Privacy Statement:

1. The Dealer is an organization bound by the National Privacy Principles under the Privacy Act 1988. A copy of the Principles is available for perusal at the Dealer's premises or from the Office of the National Privacy Commissioner.
2. The kind of information the dealer holds is that detailed within this contract document or other information necessary to establish the Customer's identification.
3. The main purposes for which the Dealer will use this information will be to facilitate the delivery of the goods which are the subject of this contract; and to meet the requirements of government authorities and third party suppliers associated with the supply of the Machinery and related goods. Associated services will include with the provision of warranty and servicing for the Machinery; insurance and registrations of the Machinery; and the provision of information about new products related to Machinery use which becomes available from time to time.
4. The kinds of people which may be provided with information relating to you will include the NSW Roads and Traffic Authority, insurance companies, suppliers of cars and other. If you have any query or concerns about the way the Dealer manages your personal information, you should contact the dealership.



RT-60

Compact Track Loader



RT-60

Brief Specifications

Operating weight:	6,520 lbs 2957 kg
Tipping load:	4,570 lbs 2072 kg
Ground pressure:	3.7 psi 25.5 kPa
Gross engine power	60 hp 37.3 kW

OPERATING SPECIFICATIONS

Loader arms	Radial
Operating weight	6,520 lbs 2957 kg
Shipping weight	5,867 lbs 2661 kg
Ground pressure @ operating weight	3.7 psi 25.5 kPa
Rated operating capacity, 35% of tipping load	1,600 lbs 725 kg
Operating capacity, 50% of tipping load	2,285 lbs 1036 kg
Tipping load	4,570 lbs 2072 kg
Travel speed, maximum	8 mph 13 kph

ENGINE

Type	Diesel, 4-cylinder, turbocharged
Model	Perkins 404D-22T
Displacement	134 in ³ 2.2 L
Gross power rating @ 2800 rpm	60 hp 44.7 kW
Torque, peak	140 ft-lb 190 Nm
Cooling system	Engine-driven fan and coolant/ anti-freeze-filled radiator
Intake air cleaner	Dual stage
Emission controls	Meets all U.S. EPA Tier 4 standards

UNDERCARRIAGE

Track type: General purpose track constructed of rubber compound with embedded co-polymer cords and all-purpose treads. Single row of track drive lugs molded in. Turf Track with smooth tread available as an option. Extreme Terrain Track with aggressive treads and 16.5 in. 419 mm width available as an option.	
Track width	15 in. 381 mm
Length of track on ground	59 in 1499 mm
Ground contact area	1,770 in ² 1.14 m ²
Drive system	Two hydrostatic direct drive sprockets controlled by a single joystick
Track drive sprockets	Elevated, with low-friction replaceable sprocket rollers
Undercarriage suspension	Two independent torsion axles per undercarriage
Roller wheels	12 high-density polyurethane and rubber wheels per track. Wheels include sealed bearings.
Roller wheel diameter:	
Front and rear wheels	14 in. 365 mm
Middle wheels	10 in. 254 mm

AUX. HYDRAULIC SYSTEM

Pump capacity:	16.3 gpm 61.7 lpm
System pressure, max.	3,000 psi 20 670 kPa
Controls	Intermittent via joystick button or continuous via console switch, mode selectable via dash-mounted switch
Couplers	Push-to-connect quick couplers mounted on loader arms Pressure relief valve mounted to coupler block
Cooling system	High efficiency side-by-side radiator and oil cooler

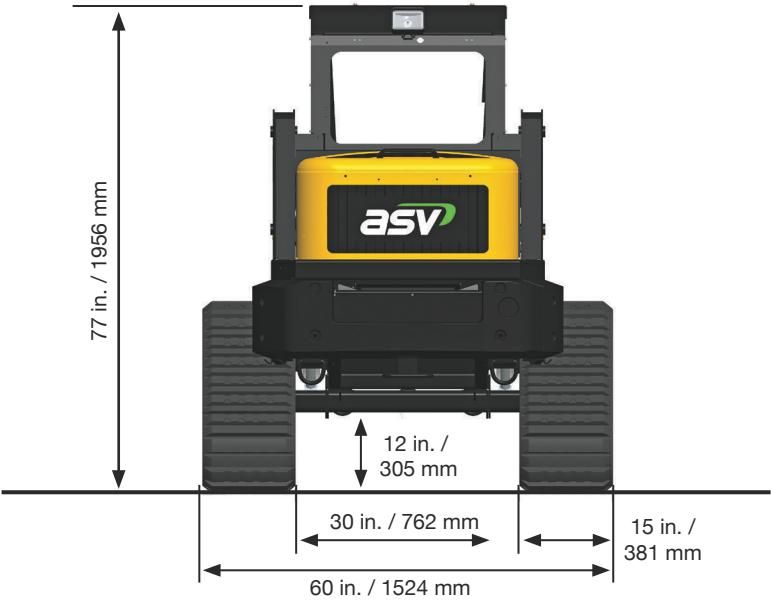
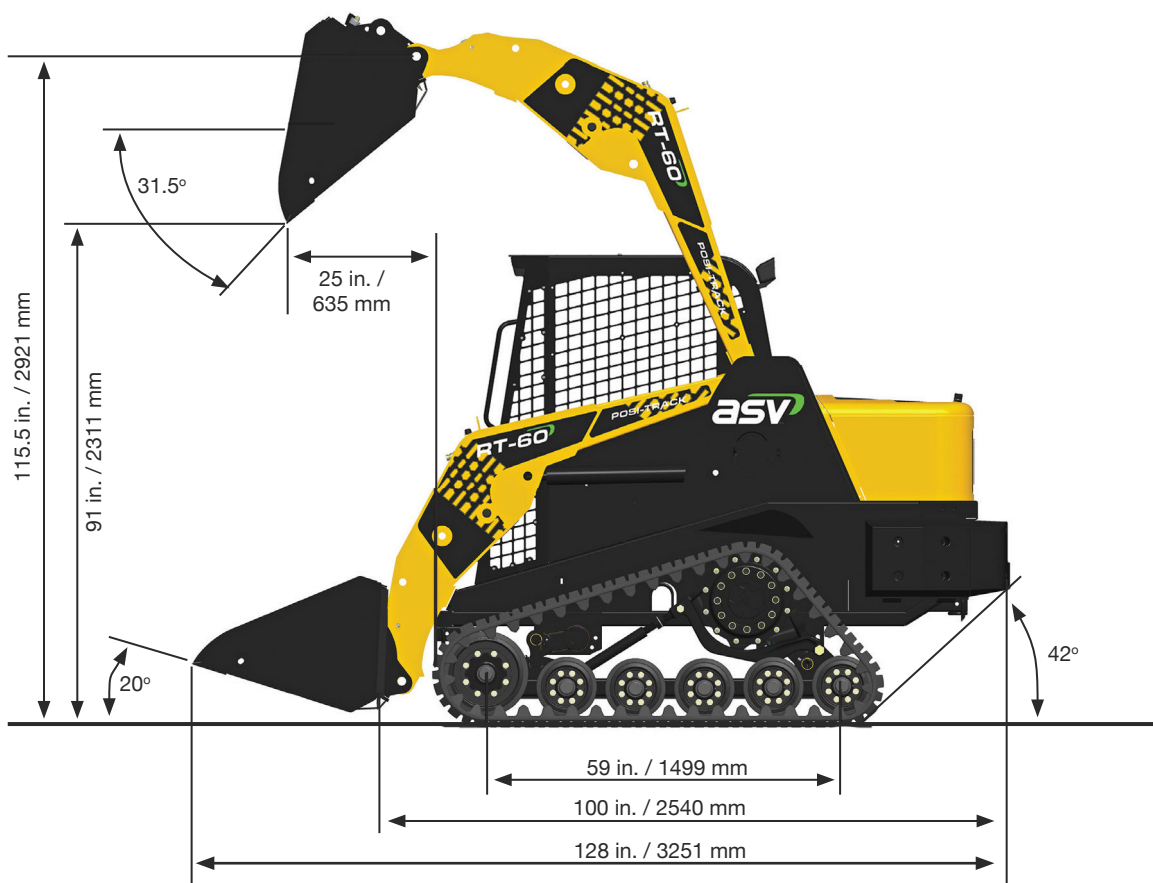
ELECTRICAL SYSTEM

Nominal charge	12 V
Battery	770 CCA
Charging system	65 amp alternator
Outlets	1-12 V port inside operator station
Engine Block Heater	Standard
Wiring	Pre-wired for all factory-available accessories

OPERATOR STATION

Seat: Adjustable contour vinyl with built-in operator presence switch, lap bar and 2 in 51 mm wide seat belt	
Loader control: Right-hand pilot hydraulic joystick controls loader lift, lower and tilt, plus intermittent control of auxiliary hydraulic	
Drive control: Left-hand pilot hydraulic joystick controls machine speed and direction	
Engine speed	Foot pedal and hand-operated throttle lever
Indicators / Gauges	Engine oil low-pressure light Hydraulic oil high-temperature light Engine high-temperature light Battery low-voltage light Hour meter Fuel level
ROPS	Meets SAE J1040 MAY94, ISO 3471
FOPS	Meets SAE J1043 SEPT87, ISO 3449
Illumination	4 fixed forward-facing halogen lights 1 adjustable rear-facing halogen lights 1 Interior light
Convenience	12 V power port
Horn	
Backup alarm	

* Machine tested with foundry bucket



SERVICE REFILL CAPACITIES

Fuel tank	13.7 gal 51.9 L
Hydraulic tank	8 gal 30.3 L
Engine coolant/antifreeze	2 gal 7.5 L
Engine oil, including filter	11.2 quarts 10.6 L

OPTIONAL ATTACHMENTS

Auger drive and bits	Grapple bucket
Backhoe	Pallet forks
Broom, rotary	Power box rake
Bucket, general purpose	Snow blade
Bucket, light material	Snow blower
Bucket, multi-purpose	Stump grinder
Brush cutter, rotary	Trencher
Dozer blade	Vibratory roller
Eliminator rake	

Effective Date: September, 2016.

Product specifications and prices are subject to change without notice or obligation. The photographs and/or drawings in this document are for illustrative purposes only. Refer to the appropriate Operator's Manual for instructions on the proper use of this equipment. Failure to follow the appropriate Operator's Manual when using our equipment or to otherwise act irresponsibly may result in serious injury or death. The only warranty applicable to our equipment is the standard written warranty applicable to the particular product and sale and ASV makes no other warranty, express or implied. © 2016, ASV LLC. ASV, the ASV logo design and Positrack are trademarks of ASV, LLC.

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316GR

Skid Steer



JOHN DEERE



A John Deere 316GR skid steer loader is shown in a construction setting, positioned on a pile of dirt. The machine is yellow and black, with the John Deere logo and model number clearly visible. It is a compact, four-wheeled vehicle with a large front bucket. The background features a brick building with arched windows. The overall scene is brightly lit, suggesting a sunny day.

316GR SKID STEER

SMALL MACHINE, SIZABLE RESULTS

When you need small equipment that can rise high, master heavy loads, and deliver impressive boom- and bucket breakout forces, the John Deere 316GR Skid Steer can be the do-it-all machine that fits the work you do. Its radial-boom configuration, amped-up performance, and wide range of options are the result of some of the best ideas we've heard — and put into action — from users just like you. Whether you're buying your first machine or boosting the flexibility of an existing fleet, this reimagined compact is designed to elevate your bottom line.



FEATURES



It's easy to take control

Electrohydraulic (EH) ISO-pattern joystick controls that allow customized machine operations based on operator preference are standard on the 316GR.

Elevated by design

Radial-lift boom provides generous reach at mid-range lift heights and enables the 316GR to excel at digging, grading, and backfilling applications.

Try it on for size

Weighing only 6,180 pounds, this compact is easy to trailer behind a standard pickup truck using the convenient front and rear tie-downs. Heavy-duty tire option slims the 316GR down to a narrow 60-inch width.

Imagine the possibilities

Ample axle torque and optimized boom and bucket breakout forces help carve out clay, push through piles, and heap the load.

Step up the pace

Two-speed transmission option provides faster transport speeds of up to 10 miles per hour, to move around the jobsite quicker and push productivity even further.



RELIABLE



PRODUCTIVE

Packed for productivity

Low center of gravity, 30-degree bucket rollback, optional ride control, and optional hydraulic self-leveling help keep forks loaded and buckets full. Add capacity with up to two sets of rear counterweights.

Big ideas that deliver

Large cab entryway with swing-out door, generous foot- and legroom, sealing and pressurization to minimize dust and noise, and adjustable high-back sculpted seat optimize operator comfort. Overhead panel conveniently puts machine data on the left and control switches on the right. Easy-to-read LCD monitor reveals a wealth of vital operating info and advanced diagnostics.

Seeing is believing

Clear sightlines to the cutting edge and bucket corners, above and below the lift arms, and the jobsite ahead and behind instill confidence in close quarters. Optional LED side lighting and rearview camera further enhance visibility.

Tackle the to-do list

Swing-out rear door enables easy, ground-level access to daily service checkpoints and cooling system components. Neat frecks and rental yards can appreciate the convenient cab-footwell access that helps speed cleaning.

Work your connections

Equip your skid steer with your choice of over 100 available John Deere attachments to expand the flexibility of your operation. Increased auxiliary hydraulic flow and power compared to previous models boosts attachment performance. Add a snow blower, snow pusher, or angle broom to make quick work of winter's white stuff.



316GR SKID STEER



**SWITCHING ATTACHMENTS
ENABLES VERSATILITY IN
ANY WEATHER OR SEASON**

Safety first

Standard personal-protection features include in-cab-activated boom lock and triple-interlock system that detects the presence of the operator to help keep harm's way at bay.

Remote diagnostics and support

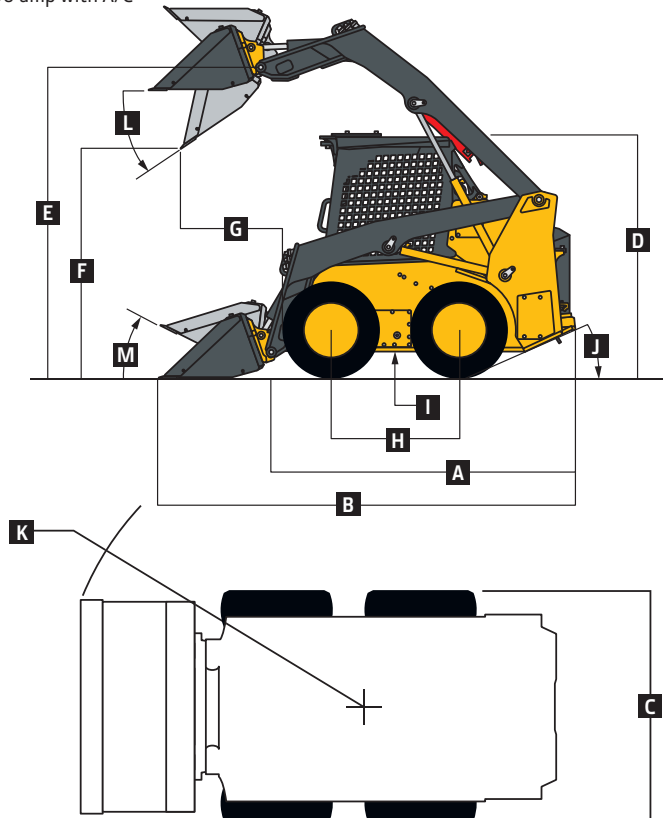
To maximize uptime and lower costs, JDLink™ connectivity provides machine location, utilization data, and alerts to help you maximize productivity and efficiency. JDLink also enables John Deere Connected Support™. Dealers use Expert Alerts based on data from thousands of connected machines to proactively address conditions that may otherwise likely lead to downtime. Your dealer can also monitor machine health and leverage remote diagnostics and programming capability to further diagnose problems and even update machine software without a time-consuming trip to the jobsite.*

*Availability varies by region. Options not available in every country.



316GR SKID STEER SPECIFICATIONS

Engine		316GR	
Manufacturer and Model	Yanmar 4TNV86CHT	Displacement	2.1 L (128 cu. in.)
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV	Rated Engine Speed	2,600 rpm
Cylinders	4	Torque Rise	21% at 1,690 rpm
Net Power (SAE J1349 / ISO 9249)	45.6 kW (61 hp) at 2,600 rpm	Aspiration	Turbocharged
Gross Rated Power (ISO 14396)	48.5 kW (65 hp) at 2,600 rpm	Air Cleaner	Dry dual element
Peak Torque	207 Nm (153 ft.-lb.) at 1,690 rpm		
Cooling			
Fan Type	Direct belt drive		
Powertrain			
Type	Hydrostatic-manual or electrohydraulic (EH); 4 – 80 heavy-duty (HD) continuous-loop chain		
Speeds			
Single	11.1 km/h (6.9 mph)		
2 Speed, High	16.3 km/h (10.1 mph)		
Axles		Induction-hardened, 1-piece forged axle shafts with maintenance-free oil-bath lubrication of inner and outer axle bearings	
Maximum Axle Torque	6459 Nm (4,764 lb.-ft.)		
Tractive Effort	3552 kgf (7,831 lbf)		
Final Drive		High-strength, adjustment-free chains	
Brakes		Integral, automatic, spring-applied, hydraulically released, wet-disc park brake	
Hydraulics			
Pump Flow, Standard	63 L/m (17 gpm)		
System Pressure at Couplers	23 787 kPa (3,450 psi)		
Hydraulic Horsepower Flow (calculated), Standard	25 kW (33 hp)		
Auxiliary Hydraulics	Optional connect-under-pressure with flat-faced couplers		
Cylinders			
Type	John Deere heat-treated, chrome-plated polished cylinder rods, hardened steel (replaceable bushings) pivot pins		
Electrical			
Voltage	12 volt		
Battery Capacity	750 CCA standard / 925 CCA with optional cold weather start package		
Alternator Rating	70 amp with no air conditioning (A/C) / 90 amp with A/C		
Lights			
Standard	Halogen: 2 front and 1 rear		
Deluxe	LED: 2 front, 2 side, and 1 rear		
Operator's Station			
ROPS (ISO 3471) / FOPS (ISO 3449) structure with quick pivot standard			
Tires/Wheels			
Standard Tire Size	10 x 16.5		
Serviceability			
Refill Capacity			
Fuel Tank	71 L (19 gal.)		
Operating Weight			
Base Machine	2806 kg (6,180 lb.)		
Machine Dimensions			
A Length Without Bucket	2.63 m (103.0 in.) (8 ft. 7 in.)		
B Length With Foundry Bucket	3.24 m (127.6 in.) (10 ft. 8 in.)		
C Width Without Bucket	1.60 m (62.9 in.) (5 ft. 3 in.)		
D Height to Top of ROPS	1.96 m (77.2 in.) (6 ft. 5 in.)		
E Height to Hinge Pin	2.92 m (115.1 in.) (9 ft. 7 in.)		
F Dump Height With Foundry Bucket	2.25 m (88.6 in.) (7 ft. 5 in.)		
G Dump Reach			
With Foundry Bucket	0.40 m (15.8 in.)		
With Construction Bucket	0.58 m (22.8 in.)		
H Wheelbase	1.05 m (41.5 in.) (3 ft. 5 in.)		
I Ground Clearance	0.18 m (7.0 in.)		
J Angle of Departure	22.3 deg.		
K Front Turn Radius With Foundry Bucket	2.01 m (79.0 in.) (6 ft. 7 in.)		
L Dump Angle (full lift height)	45 deg.		
M Bucket Rollback (ground level)	30 deg.		



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Loader Performance		316GR	
Tipping Load		1589 kg (3,500 lb.)	Boom Breakout Force <i>(continued)</i>
SAE Rated Operating Capacity		795 kg (1,750 lb.)	With Construction Bucket 2043 kg (4,500 lb.)
With Counterweight		863 kg (1,900 lb.)	Bucket Breakout Force
Boom Breakout Force			With Foundry Bucket 2384 kg (5,250 lb.)
With Foundry Bucket		2157 kg (4,750 lb.)	With Construction Bucket 1816 kg (4,000 lb.)

Additional equipment

Key: ● Standard ▲ Optional or special

See your John Deere dealer for further information.

316GR	Engine
●	Meets EPA Final Tier 4/EU Stage IV emissions
●	Yanmar 4TNV86CHT
●	Auto-idle
●	Automatic preheat
●	Electronic injection system
▲	Engine air precleaner kit
●	Fuel tank, 71 L (19 gal.)
●	John Deere COOL-GARD™ II Extended-Life Engine Coolant
●	John Deere Plus-50™ II 0W40 initial engine oil fill*
●	4-cylinder 48.5 kW (65 gross hp)/ 45.6 kW (61 net hp), 2.1-L (128 cu. in.) displacement
●	5-micron primary fuel filter and water separator
▲	Cold-weather starting package with 925-CCA battery
Cooling System	
●	Coolant overflow bottle recovery tank
●	Direct belt-drive cooling fan system
●	No-tools-required swing-out oil cooler
Powertrain	
●	High-strength adjustment-free final-drive chains
●	Automatic spring-applied hydraulically released wet-disc park brake
●	Transmission, single speed
▲	Transmission, 2 speed
Hydraulic System	
●	John Deere heat-treated, chrome-plated cylinder rods with replaceable bushings
▲	Connect-under-pressure auxiliary couplers
●	Quick-check hydraulic fluid-level sight glass
●	1,000-hour, 5-micron hydraulic filter
●	Axial-piston hydrostatic pump
Electrical	
●	Automatic engine/hydraulic shutdown protection system
●	Auxiliary hydraulics operator-presence system
●	Courtesy lighting

316GR	Electrical <i>(continued)</i>
●	Deluxe instrumentation EMU with: Operator-selectable monitoring – Hour meter, engine rpm, battery voltage, diagnostics, EMU configuration, engine coolant temperature, hydraulic oil temperature / LED warning indicators – Glow plug, seat switch, seat belt, door open, auxiliary hydraulics, park brake engaged, 2-speed engaged, stop, low engine oil pressure, engine coolant over-temperature, battery not charging, air filter restriction, hydraulic filter restriction
▲	Deluxe LED lighting package with additional side lights (2), front lights (2), and rear light (1)
●	Front and rear halogen work lights
●	Triple-interlock operator-presence control system
●	Backup alarm
●	Battery, 750 CCA
●	Horn
Operator's Station	
●	Deluxe cab headliner
▲	Keyless-start sealed-switch module with integrated anti-theft system
●	Pull-down adjustable lap bar
●	Quick-pivot ROPS
●	Rear window
●	Top window
●	Removable top window
▲	Vinyl cab enclosure
▲	Glass cab enclosure
▲	Sliding/locking/removable glass side windows
●	ROPS/FOPS operator structure
●	Seat belt, 51-mm (2-in.), retractable
▲	Seat belt, 76-mm (3-in.), retractable
▲	Shoulder belt
●	Water-shedding deluxe vinyl seat
▲	Air-ride cloth, heated seat
▲	Air-ride vinyl seat

316GR	Operator's Station <i>(continued)</i>
●	12-volt power port / Dome light / Cargo storage / Beverage holder
▲	Air conditioning with heater/defroster
▲	AM/FM radio with Bluetooth® for audio streaming
●	Electrohydraulic (EH) ISO-pattern joystick controls
▲	EH joystick performance package: Switchable ISO-H pattern / Creeper mode / Boom/bucket speed settings / Adjustable propel settings / Attachment controls
▲	Floor mat with left footrest
●	Rearview mirror
▲	Boom-mounted side mirrors
▲	Rearview camera
Loader	
●	In-cab boom lockout to secure loader before exiting seat
●	John Deere Quik-Tatch™
▲	Power Quik-Tatch
●	John Deere radial-lift boom
▲	Hydraulic self-leveling on/off
▲	Ride control
Other	
●	Convenient front (1) and rear (2) tie-downs
●	Environmental drains for all fluid reservoirs
▲	10 x 16.5 10 PR Galaxy "Beefy Baby III" heavy-duty (HD) tires for 1.52-m (60 in.) machine width
▲	Tire options: SKS Xtra Wall, Galaxy Beefy Baby III, Galaxy Hulk, and Brawler Solid-Flex
▲	Chrome exhaust stack
▲	Rear counterweights (2), 45.36 kg (100 lb.)
▲	Single-point lift kit
▲	SMV sign kit
▲	JDLINK™ wireless communication system (available in specific countries; see your dealer for details)

*500-hour engine oil-change intervals when John Deere Plus-50 II oil and John Deere oil filter are used.

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Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 6270B, using No. 2-D fuel at 35 API gravity. Gross power is without cooling fan. Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE standards. Except where otherwise noted, these specifications are based on a unit with standard equipment, full fuel tank, and 79-kg (175-lb.) operator.



JOHN DEERE

317G

Compact Track Loader



JOHN DEERE





SMALL MACHINE, SIZABLE RESULTS

When you need small equipment that can rise high, master heavy loads, and deliver impressive boom- and bucket-breakout forces, the John Deere 317G Compact Track Loader (CTL) can be the do-it-all machine that fits the work you do. Its vertical-lift configuration, amped-up performance, and wide range of options are the result of some of the best ideas we've heard — and put into action — from users just like you. Whether you're buying your first machine or boosting the flexibility of an existing fleet, this reimagined compact is designed to elevate your bottom line.

317G COMPACT TRACK LOADER

FEATURES



Tread lightly

Equipped with standard 12.6-inch-wide track, the 317G's ground pressure is only 5.5 psi. Step even more lightly with optional 15.8-inch-wide track exerting just 4.5 psi, for work in soft underfoot conditions and side-slope stability.

Unleash the beast

Exceptional pushing power and breakout force deliver the tractive effort and leverage to dig in where other machines just spin.

In the lift zone

Vertical-lift boom combines height and reach at the top of the lift path with outstanding stability. Along with a rated operating capacity of 2,125 pounds, the 317G CTL can precisely place pallets and carry big loads.

On the move

With its small stature, this compact is easy to trailer behind a standard pickup truck using the convenient front and rear tie-downs. Narrow-track option slims the 317G down to a maneuverable 65-inch width.

It's all about control

Electrohydraulic (EH) ISO-pattern joystick controls that allow customized machine operations based on operator preference are standard on the 317G.



RELIABLE



PRODUCTIVE

Packed for productivity

Low center of gravity, 30-degree bucket rollback, optional ride control, and optional hydraulic self-leveling help keep forks loaded and buckets full. Add capacity with up to two sets of rear counterweights.

Big ideas that deliver

Large cab entryway with swing-out door, generous foot- and legroom, sealing and pressurization to minimize dust and noise, and adjustable high-back sculpted seat optimize operator comfort. Overhead panel conveniently puts machine data on the left and control switches on the right. Easy-to-read LCD monitor reveals a wealth of vital operating info and advanced diagnostics.

Seeing is believing

Clear sightlines to the cutting edge and bucket corners, above and below the lift arms, and the jobsite ahead and behind instill confidence in close quarters. Optional LED side lighting and rearview camera further enhance visibility.

Tackle the to-do list

Swing-out rear door enables easy, ground-level access to daily service checkpoints and cooling system components. Neat freaks and rental yards can appreciate the convenient cab-footwell access that helps speed cleaning.

Make the connection

Equip your CTL with your choice of over 100 available John Deere attachments to expand the flexibility of your operation. Increased auxiliary hydraulic flow and power compared to previous models boosts attachment performance. Add a snow blower, snow pusher, or angle broom to make quick work of winter's white stuff.



317G COMPACT TRACK LOADER



**SWITCHING ATTACHMENTS
ENABLES VERSATILITY IN
ANY WEATHER OR SEASON**

Safety first

Standard personal-protection features include in-cab-activated boom lock and triple-interlock system that detects the presence of the operator to help keep harm's way at bay.

Remote diagnostics and support

To maximize uptime and lower costs, JDLink™ connectivity provides machine location, utilization data, and alerts to help you maximize productivity and efficiency. JDLink also enables John Deere Connected Support™. Dealers use Expert Alerts based on data from thousands of connected machines to proactively address conditions that may otherwise likely lead to downtime. Your dealer can also monitor machine health and leverage remote diagnostics and programming capability to further diagnose problems and even update machine software without a time-consuming trip to the jobsite.*

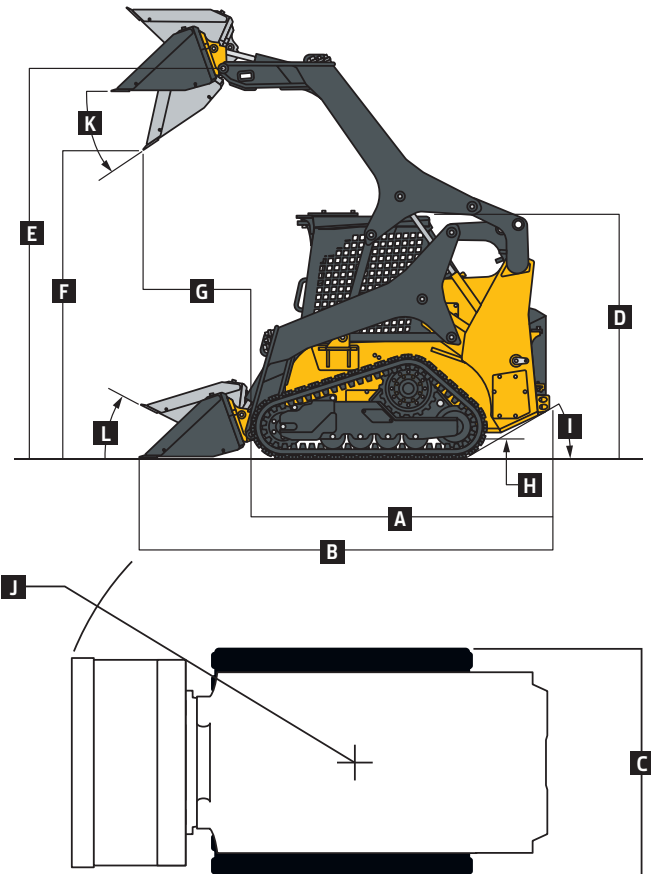
*Availability varies by region. Options not available in every country.



317G

COMPACT TRACK LOADER SPECIFICATIONS

Engine		317G	
Manufacturer and Model	Yanmar 4TNV86CHT	Displacement	2.1 L (128 cu. in.)
Non-Road Emission Standard	EPA Final Tier 4/EU Stage IV	Rated Engine Speed	2,600 rpm
Cylinders	4	Torque Rise	16% at 1,690 rpm
Net Power (SAE J1349 / ISO 9249)	45.6 kW (61 hp) at 2,600 rpm	Aspiration	Turbocharged
Gross Rated Power (ISO 14396)	48.5 kW (65 hp) at 2,600 rpm	Air Cleaner	Dry dual element
Peak Torque	207 Nm (153 ft.-lb.) at 1,690 rpm		
Cooling			
Fan Type	Direct belt drive		
Powertrain			
Pump	Axial-piston hydrostatic	Gearbox	High-drive direct-drive motor
Motors	Axial-piston hydrostatic	Brakes	Integral, automatic, spring-applied, hydraulically released, wet-disc park brake
Single Speed	11.3 km/h (7.0 mph)		
Undercarriage			
Rubber Tracks	Smooth-ride long-life rubber with steel inserts	Track Rollers (per side)	4 triple-flange smooth-ride all-steel rollers
Ground Pressure		Track Idlers (per side)	1 double-flange and 1 single-flange smooth-ride all-steel rollers
With Standard 320-mm (12.6 in.) Track	38 kPa (5.5 psi)	Bearings/Seals (rollers/idlers)	Heavy-duty journal bearings and metal face seals
With Optional 400-mm (15.8 in.) Wide Track	31 kPa (4.5 psi)	Tractive Effort	3632 kgf (8,000 lbf)
Hydraulics			
Type	3-spool open-center valve	Hydraulic Horsepower (calculated)	25 kW (33 hp)
Pump Flow, Standard	63 L/m (17 gpm)	Auxiliary Hydraulics	Standard connect-under-pressure with flat-faced couplers
System Pressure at Couplers	23 787 kPa (3,450 psi)		
Cylinders			
Type	John Deere heat-treated, chrome-plated, polished cylinder rods, hardened steel (replaceable bushings) pivot pins		
Electrical			
Voltage	12 volt		
Capacity			
Battery	750 CCA standard / 925 CCA with optional cold weather start package		
Reserve	180 min.		
Alternator Rating	70 amp with no air conditioning (A/C) / 90 amp with A/C		
Lights			
Standard	Halogen: 2 front and 1 rear		
Deluxe (optional)	LED: 2 front, 2 side, and 1 rear		
Operator's Station			
ROPS (ISO 3471) / FOPS (ISO 3449) structure with quick pivot standard; keyless-start option with sealed-switch module			
Serviceability			
Refill Capacities			
Fuel Tank	71 L (19 gal.)		
Cooling System	12 L (12.7 qt.)		
Operating Weights			
With Standard 320-mm (12.6 in.) Track	3824 kg (8,423 lb.)		
With Optional 400-mm (15.8 in.) Wide Track	3942 kg (8,683 lb.)		
Machine Dimensions			
A Length Without Bucket	2.63 m (103.0 in.) (8 ft. 7 in.)		
B Length			
With Foundry Bucket	3.24 m (127.6 in.) (10 ft. 8 in.)		
With Construction Bucket	3.49 m (137.4 in.) (11 ft. 5 in.)		
C Width Without Bucket			
With Standard 320-mm (12.6 in.) Track	1.65 m (65.1 in.) (5 ft. 5 in.)		
With Optional 400-mm (15.8 in.) Track	1.82 m (71.5 in.) (5 ft. 11 in.)		
D Height to Top of ROPS	1.99 m (78.5 in.) (6 ft. 6 in.)		
E Height to Hinge Pin	3.07 m (121.0 in.) (10 ft. 1 in.)		
F Dump Height			
With Foundry Bucket	2.43 m (95.6 in.) (8 ft. 0 in.)		
With Construction Bucket	2.26 m (89.0 in.) (7 ft. 5 in.)		
G Dump Reach			
With Foundry Bucket	0.79 m (31.0 in.)		
With Construction Bucket With Edge	0.98 m (38.6 in.) (3 ft. 3 in.)		
H Ground Clearance	0.21 m (8.3 in.)		
I Angle of Departure	32.3 deg.		
J Front Turn Radius With Foundry Bucket	1.97 m (77.7 in.) (6 ft. 6 in.)		
K Dump Angle (full lift height)	42 deg.		
L Bucket Rollback (ground level)	30 deg.		



While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Loader Performance		317G	
Tipping Load		2756 kg (6,070 lb.)	Boom Breakout Force
SAE Rated Operating Capacity			With Foundry Bucket 2384 kg (5,250 lb.)
At 35% Tipping Load	965 kg (2,125 lb.)		With Construction Bucket 2270 kg (5,000 lb.)
At 50% Tipping Load	1378 kg (3,035 lb.)		Bucket Breakout Force
With Counterweight	1022 kg (2,250 lb.)		With Foundry Bucket 2724 kg (6,000 lb.)
			With Construction Bucket 1930 kg (4,250 lb.)

Additional equipment

Key: ● Standard ▲ Optional or special See your John Deere dealer for further information.

317G Engine
● Meets EPA Final Tier 4/EU Stage IV emissions
● Yanmar 4TNV86CHT
● Auto-idle
● Automatic preheat
● Electronic injection system
▲ Engine air precleaner kit
● Fuel tank, 71 L (19 gal.)
● John Deere COOL-GARD™ II Extended-Life Engine Coolant
● John Deere Plus-50™ II OW40 initial engine oil fill*
● 4-cylinder 48.5 kW (65 gross hp)/ 45.6 kW (61 net hp), 2.1-L (128 cu. in.) displacement
● 5-micron primary fuel filter and water separator
▲ Cold-weather starting package with 925-CCA battery
Cooling System
● Coolant overflow bottle recovery tank
● Direct belt-drive cooling fan system
● No-tools-required swing-out oil cooler
Powertrain
● High-drive direct-drive motor
● Automatic spring-applied hydraulically released wet-disc park brake
● Transmission, single speed
Hydraulic System
● John Deere heat-treated, chrome-plated cylinder rods with replaceable bushings
● Connect-under-pressure auxiliary couplers
● Quick-check hydraulic fluid-level sight glass
● 1,000-hour, 5-micron hydraulic filter
● Axial-piston hydrostatic pump
Electrical
● Automatic engine/hydraulic shutdown protection system
● Auxiliary hydraulics operator-presence system
● Courtesy lighting

317G Electrical (continued)
● Deluxe instrumentation EMU with: Operator-selectable monitoring – Hour meter, engine rpm, battery voltage, diagnostics, EMU configuration, engine coolant temperature, hydraulic oil temperature / LED warning indicators – Glow plug, seat switch, seat belt, door open, auxiliary hydraulics, park brake engaged, 2-speed engaged, stop, low engine oil pressure, engine coolant over-temperature, battery not charging, air filter restriction, hydraulic filter restriction
▲ Deluxe LED lighting package with additional side lights (2), front lights (2), and rear light (1)
● Front and rear halogen work lights
● Triple-interlock operator-presence control system
● Backup alarm
● Battery, 750 CCA
● Horn
Operator's Station
● Deluxe cab headliner
▲ Keyless-start sealed-switch module with integrated anti-theft system
● Pull-down adjustable lap bar
● Quick-pivot ROPS
● Rear window
● Top window
● Removable top window
▲ Vinyl cab enclosure
▲ Glass cab enclosure
▲ Sliding/locking/removable glass side windows
● ROPS/FOPS operator structure
● Seat belt, 51-mm (2-in.), retractable
▲ Seat belt, 76-mm (3-in.), retractable
▲ Shoulder belt
● Water-shedding deluxe vinyl seat
▲ Air-ride cloth, heated seat
▲ Air-ride vinyl seat

317G Operator's Station (continued)
● 12-volt power port / Dome light / Cargo storage / Beverage holder
▲ Air conditioning with heater/defroster
▲ AM/FM radio with Bluetooth® for audio streaming
● Electrohydraulic (EH) ISO-pattern joystick controls
▲ EH joystick performance package: Switchable ISO-H pattern / Creeper mode / Boom/bucket speed settings / Adjustable propel settings / Attachment controls
▲ Floor mat with left footrest
● Rearview mirror
▲ Boom-mounted side mirrors
▲ Rearview camera
Loader
● In-cab boom lockout to secure loader before exiting seat
● John Deere Quik-Tatch™
▲ Power Quik-Tatch
● John Deere vertical-lift boom
▲ Hydraulic self-leveling on/off
▲ Ride control
Other
● Convenient front (1) and rear (2) tie-downs
● Environmental drains for all fluid reservoirs
● 320-mm (12.6 in.) tracks, 173-m (68 in.) wide machine stance
▲ 320-mm (12.6 in.) tracks, 165-m (65 in.) narrow machine stance
▲ 400-mm (15.8 in.) tracks, 180-m (71 in.) wide machine stance
▲ Chrome exhaust stack
▲ Rear counterweights (2), 45.36 kg (100 lb.)
▲ Single-point lift kit
▲ SMV sign kit
▲ JDLINK™ wireless communication system (available in specific countries; see your dealer for details)

*500-hour engine oil-change intervals when John Deere Plus-50 II oil and John Deere oil filter are used.

While general information, pictures, and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions, and in some countries products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries.

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 6270B, using No. 2-D fuel at 35 API gravity. Gross power is without cooling fan. Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE standards. Except where otherwise noted, these specifications are based on a unit with standard equipment, full fuel tank, and 79-kg (175-lb.) operator.



JOHN DEERE

Cat® 239D3

COMPACT TRACK LOADER

FEATURES:

The Cat® 239D3 Compact Track Loader, with its radial lift design, delivers impressive mid-lift reach and excellent digging performance with outstanding drawbar power. Its standard, suspended undercarriage system provides superior traction, flotation, stability and speed to work in a wide range of applications and underfoot conditions. The 239D3 features the following:

- **Industry leading sealed and pressurized cab option** provides a cleaner and quieter operating environment with excellent work tool visibility.
- **Available high-back, heated, air ride seat with seat mounted adjustable joystick controls** makes the D3 Series the industry leader in operator comfort.
- **High performance power train** provides maximum performance and production capability through the Electronic Torque Management system, standard two speed travel and an electronic hand/foot throttle with decel pedal capability.
- **High Flow hydraulic system** is available for applications that demand maximum hydraulic work tool performance.
- **Broader range of applications** with an optional wide bar-tread track that delivers better traction in snow, more flotation and less ground disturbance.
- **Electronically controlled Cat C2.2 engine** provides high horsepower and torque while meeting U.S. EPA Tier 4 Final and EU Stage IIIB* emission standards.
- **Cat "Intelligent Leveling" system** provides industry leading technology, integration, and available features such as dual direction self level, work tool return to dig, and work tool positioner.
- **Standard fully independent torsion axle suspension** combined with the optional Speed Sensitive Ride Control system improves operation on rough terrain, enabling better load retention, increased productivity and greater operator comfort.
- **Maximize machine capability and control** with the available Advanced Display providing on-screen adjustments for implement response, hystat response and creep control. Also features multi-language functionality with customizable layouts, security system and rearview camera.
- **Ground level access** to all daily service and routine maintenance points helps reduce machine downtime for greater productivity.
- **Broad range of performance matched Cat Work Tools** make the Cat Compact Track Loader the most versatile machine on the job site.

*Stage IIIB engines comply with the transition provisions of the EU non-road emission regulation.

Specifications

Engine

Engine Model	Cat C2.2 CRDI	
Gross Power SAE J1995	50.1 kW	67.1 hp
Net Power SAE 1349	49.1 kW	65.8 hp
Net Power ISO 9249	49.6 kW	66.5 hp
Peak Torque at 1,500 rpm SAE J1995	208 N-m	153 lbf-ft
Displacement	2.2 L	134.3 in ³
Stroke	100 mm	3.9 in
Bore	84 mm	3.3 in

Weights*

Operating Weight	3372 kg	7,434 lb
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*Operating Weight, Operating Specifications and Dimensions all based on 75 kg (165 lb) operator, all fluids, 1730 mm (68 in) low profile bucket, 320 mm (12.6 in) tracks, standard flow hydraulics, C1 cab (ROPS, mechanical seat), 850 CCA battery, manual quick coupler, no self level and no optional counterweights (unless otherwise noted).

Power Train

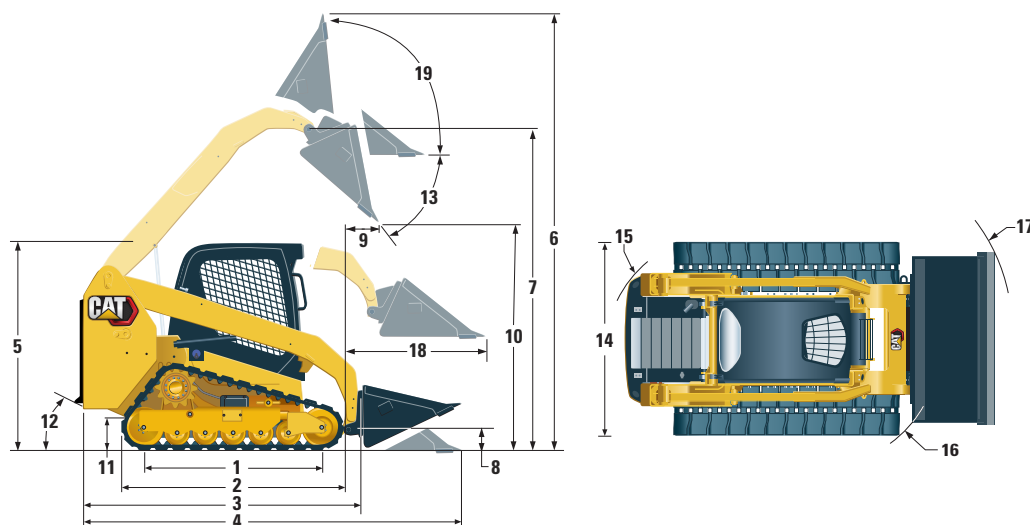
Travel Speed (Forward or Reverse)			
One Speed	8.1 km/h	5 mph	
Two Speed	12.2 km/h	7.6 mph	

Hydraulic System

Hydraulic Flow – Standard:			
Loader Hydraulic Pressure	23 000 kPa	3,336 psi	
Loader Hydraulic Flow	69 L/min	18 gal/min	
Hydraulic Power (calculated)	26.5 kW	35.5 hp	
Hydraulic Flow – High Flow:			
Loader Hydraulic Pressure	23 000 kPa	3,336 psi	
Loader Hydraulic Flow	99 L/min	26 gal/min	
Hydraulic Power (calculated)	38.0 kW	50.9 hp	



239D3 Compact Track Loader



Dimensions*

1	Length of Track on Ground	1384 mm	54.5 in	11	Ground Clearance	195 mm	7.7 in
2	Overall Length of Track	1808 mm	71.2 in	12	Departure Angle	34.5°	
3	Length without Bucket	2522 mm	99.3 in	13	Maximum Dump Angle	50.3°	
4	Length with Bucket on Ground	3234 mm	127.3 in	14	Vehicle Width (320 mm/12.6 in tracks)	1676 mm	66.0 in
5	Height to Top of Cab	2034 mm	80.1 in		Vehicle Width (400 mm/15.7 in tracks)	1756 mm	69.1 in
6	Maximum Overall Height	3645 mm	143.5 in	15	Turning Radius from Center – Machine Rear	1458 mm	57.4 in
7	Bucket Pin Height at Maximum Lift	2825 mm	111.2 in	16	Turning Radius from Center – Coupler	1159 mm	45.6 in
8	Bucket Pin Height at Carry Position	218 mm	8.6 in	17	Turning Radius from Center – Bucket	2069 mm	81.5 in
9	Reach at Maximum Lift and Dump	563 mm	22.2 in	18	Maximum Reach with Arms Parallel to Ground	1356 mm	53.4 in
10	Clearance at Maximum Lift and Dump	2057 mm	81.0 in	19	Rack Back Angle at Maximum Height	85.5°	

Operating Specifications*

Rated Operating Capacity:			
35% Tipping Load	695 kg	1,530 lb	
50% Tipping Load	995 kg	2,185 lb	
Rated Operating Capacity with Optional Counterweight			
Tipping Load	1090 kg	2,400 lb	
Breakout Force, Tilt Cylinder	1775 kg	3,913 lb	
Ground Contact Area (320 mm/12.6 in track)	0.89 m ²	1,373 in ²	
Ground Contact Area (400 mm/15.7 in track)	1.11 m ²	1,716 in ²	
Ground Pressure (320 mm/12.6 in track)	37.3 kPa	5.4 psi	
Ground Pressure (400 mm/15.7 in track)	30.6 kPa	4.4 psi	

Cab

ROPS	ISO 3471:2008
FOPS	ISO 3449:2005 Level I

Service Refill Capacities

Cooling System	12 L	3.2 gal
Engine Crankcase	10 L	2.6 gal
Fuel Tank	57 L	15.1 gal
Hydraulic System	45 L	11.9 gal
Hydraulic Tank	34 L	9.0 gal

Noise Level

Inside Cab**	83 dB(A)
Outside Cab***	103 dB(A)

- Cab and Rollover Protective Structures (ROPS) are standard in North America and Europe.

**The declared dynamic operator sound pressure levels per ISO 6396:2008. The measurements were conducted with the cab doors and windows closed and at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.

***The labeled sound power level for the CE marked configurations when measured according to the test procedure and conditions specified in 2000/14/EC.

Air Conditioning System (if equipped)

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 0.81 kg of refrigerant which has a CO₂ equivalent of 1.158 metric tonnes.

MANDATORY EQUIPMENT

- Hydraulics, Standard or High Flow
- Quick Coupler, Mechanical or Powered
- High Visibility Seat Belt, 50 mm (2 in) or 75 mm (3 in)
- EU Preparation Package (Europe only)
- Steel Imbed Rubber Track – 320 mm (12.6 in) Block Tread or 400 mm (15.7 in) Bar Tread
- Dual Flange Front Idler/Single Flange Rear Idler

PERFORMANCE PACKAGES

- Performance Package H1: *Standard Flow Hydraulics (No Self Level)*
- Performance Package H2: *Standard Flow Hydraulics, Dual Direction Electronic Self Level (Raise and Lower), Work Tool Return to Dig, Work Tool Positioner, and Electronic Snubbing (Raise and Lower)*
- Performance Package H3: *High Flow Hydraulics, Dual Direction Electronic Self Level (Raise and Lower), Work Tool Return to Dig, Work Tool Positioner, and Electronic Snubbing (Raise and Lower)*

COMFORT PACKAGES

- Open ROPS (C0): *Static Seat (No Foot Throttle, Headliner, Heater or Door)*
- Open ROPS (C1): *Foot Throttle, Headliner, Cup Holder, and choice of Seat (Mechanical Suspension or High Back, Heated, Air Ride Seat) (No Heater or Door)*
- Enclosed ROPS with Heater (C2): *Foot Throttle, Headliner, Heater and Defroster, Side Windows, Cup Holder, Radio Ready, choice of Seat (Mechanical Suspension or High Back, Heated, Air Ride Seat) and Door (Glass or Polycarbonate)*
- Enclosed ROPS with A/C (C3): *C2 + Air Conditioner*

STANDARD EQUIPMENT

ELECTRICAL

- 12 volt Electrical System
- 80 ampere Alternator
- Ignition Key Start/Stop Switch
- Lights: *Gauge Backlighting, Two Rear Tail Lights, Two Adjustable Front and Rear Halogen Lights, Dome Light*
- Backup Alarm
- Heavy Duty Battery, 850 CCA

OPERATOR ENVIRONMENT

- Gauges: *Fuel Level, Hour Meter*
- Operator Warning System Indicators: *Air Filter Restriction, Alternator Output, Armrest Raised/Operator Out of Seat, Engine Coolant Temperature, Engine Oil Pressure, Glow Plug Activation, Hydraulic Filter Restriction, Hydraulic Oil Temperature, Park Brake Engaged*
- Adjustable Vinyl Seat
- Fold In Ergonomic Contoured Armrest
- Control Interlock System, when operator leaves seat or armrest raised: *Hydraulic System Disables, Hydrostatic Transmission Disables, Parking Brake Engages*
- ROPS Cab, Open, Tilt Up
- FOPS, Level I
- Top and Rear Windows
- Floor Mat
- Interior Rearview Mirror
- 12 volt Electric Socket
- Horn
- Hand (Dial) Throttle, Electronic
- Adjustable Joystick Controls
- Anti-theft Security System with 6-button Keypad
- Storage Compartment with Netting

POWER TRAIN

- Cat C2.2, Turbo Diesel Engine, Meeting Tier 4 Final and Stage IIIB* emission standards
- Air Cleaner, Dual Element, Radial Seal
- S-O-SSM Sampling Valve, Hydraulic Oil
- Filters, Cartridge-type, Hydraulic
- Filters, Canister-type, Fuel and Water Separator
- ATAAC/Radiator/Hydraulic Oil Cooler (side-by-side)
- Spring Applied, Hydraulically Released Parking Brakes
- Hydrostatic Transmission, One Speed Travel
- Suspension – Independent Torsion Axles (4)

*Stage IIIB engines comply with the transition provisions of the EU non-road emission regulation.

OTHER

- Engine Enclosure, Lockable
- Extended Life Antifreeze, –36° C (–33° F)
- Machine Tie Down Points (6)
- Support, Lift Arm
- Hydraulic Oil Level Sight Gauge
- Radiator Coolant Level Sight Gauge
- Radiator, Expansion Bottle
- Cat ToughGuardTM Hose
- Auxiliary, Hydraulics, Continuous Flow
- Heavy Duty, Flat Faced Quick Disconnects with Integrated Pressure Release
- Split D-Ring to Route Work Tool Hoses Along Side of Left Lift Arm
- Electrical Outlet, Beacon
- Belly Pan Cleanout
- Variable Speed Demand Fan
- Product LinkTM PL240, Cellular

239D3 Compact Track Loader

OPTIONAL EQUIPMENT

- Hand-Foot Style Controls
- External Counterweights
- Beacon, Rotating
- Engine Block Heater – 120V
- Oil, Hydraulic, Cold Operation
- Paint, Custom
- Product Link PL641, Cellular
- Ride Control
- Advanced Display with Rearview Camera: *Full Color, 127 mm (5 in) LCD screen, Advanced Multi-operator Security System, On-screen Adjustments for Implement Response, Hystat Response and Creep Control*
- Work Tool Return to Dig and Work Tool Positioner
- Bluetooth® Radio with Microphone (AM/FM/Weather Band Receiver with USB and Auxiliary Input Jack)

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AEHQ8195-01 (08-2019)
Replaces AEHQ8195
(Am North, EU, APD, ANZP)





Cat® 249D3

COMPACT TRACK LOADER

FEATURES:

The Cat® 249D3 Compact Track Loader, with its vertical lift design, delivers extended reach and lift height for quick and easy truck loading. Its standard, suspended undercarriage system provides superior traction, flotation, stability and speed to work in a wide range of applications and underfoot conditions. The 249D3 features the following:

- **Industry leading sealed and pressurized cab option** provides a cleaner and quieter operating environment with excellent work tool visibility.
- **Available high-back, heated, air ride seat with seat mounted adjustable joystick controls** makes the D3 Series the industry leader in operator comfort.
- **High performance power train** provides maximum performance and production capability through the Electronic Torque Management system, standard two speed travel and an electronic hand/foot throttle with decel pedal capability.
- **High Flow hydraulic system** is available for applications that demand maximum hydraulic work tool performance.
- **Broader range of applications** with an optional wide bar-tread track that delivers better traction in snow, more flotation and less ground disturbance.
- **Electronically controlled Cat C2.2 engine** provides high horsepower and torque while meeting U.S. EPA Tier 4 Final and EU Stage V emission standards.
- **Cat "Intelligent Leveling" system** provides industry leading technology, integration, and available features such as dual direction self level, work tool return to dig, and work tool positioner.
- **Standard fully independent torsion axle suspension** combined with the optional Speed Sensitive Ride Control system improves operation on rough terrain, enabling better load retention, increased productivity and greater operator comfort.
- **Maximize machine capability and control** with the available Advanced Display providing on-screen adjustments for implement response, hystat response and creep control. Also features multi-language functionality with customizable layouts, security system and rearview camera.
- **Ground level access** to all daily service and routine maintenance points helps reduce machine downtime for greater productivity.
- **Broad range of performance matched Cat Work Tools** make the Cat Compact Track Loader the most versatile machine on the job site.

Specifications

Engine

Engine Model	Cat C2.2 CRDI	
Gross Power SAE J1995	50.1 kW	67.1 hp
Net Power SAE 1349	49.1 kW	65.8 hp
Net Power ISO 9249	49.6 kW	66.5 hp
Peak Torque at 1,500 rpm SAE J1995	208 N-m	153 lbf-ft
Displacement	2.2 L	134.3 in ³
Stroke	100 mm	3.9 in
Bore	84 mm	3.3 in

Weights*

Operating Weight	3552 kg	7,831 lb
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*Operating Weight, Operating Specifications and Dimensions all based on 75 kg (165 lb) operator, all fluids, 1730 mm (68 in) low profile bucket, 320 mm (12.6 in) tracks, standard flow hydraulics, C0 cab (OROPS, static seat), 850 CCA battery, manual quick coupler, no self level and no optional counterweights (unless otherwise noted).

Power Train

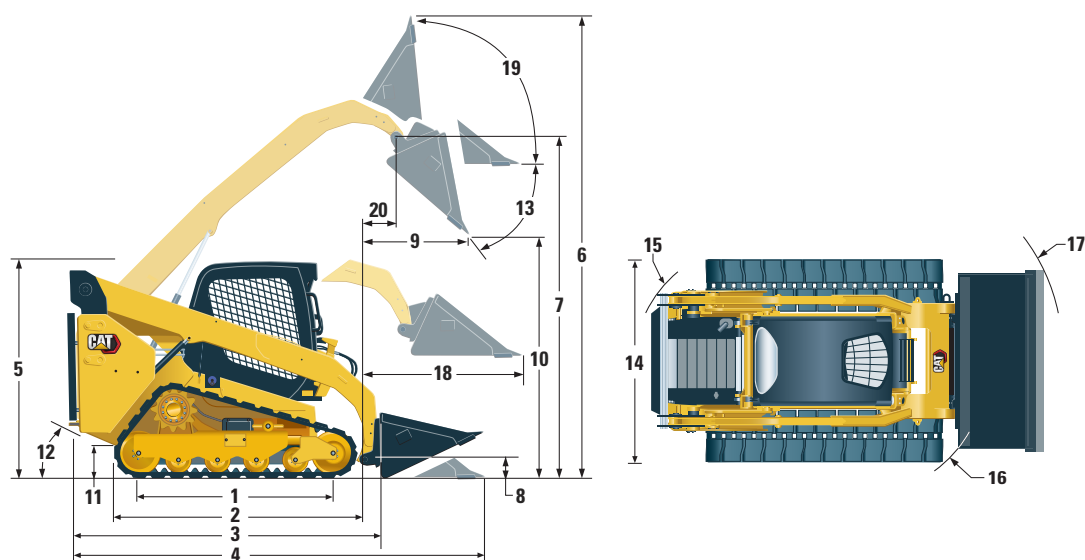
Travel Speed (Forward or Reverse)			
One Speed	8.1 km/h	5 mph	
Two Speed	12.2 km/h	7.6 mph	

Hydraulic System

Hydraulic Flow – Standard:			
Loader Hydraulic Pressure	23 000 kPa	3,336 psi	
Loader Hydraulic Flow	69 L/min	18 gal/min	
Hydraulic Power (calculated)	26.5 kW	35.5 hp	
Hydraulic Flow – High Flow:			
Loader Hydraulic Pressure	23 000 kPa	3,336 psi	
Loader Hydraulic Flow	99 L/min	26 gal/min	
Hydraulic Power (calculated)	38.0 kW	50.9 hp	



249D3 Compact Track Loader



Dimensions*

1 Length of Track on Ground	1384 mm	54.5 in	12 Departure Angle	34.5°
2 Overall Length of Track	1808 mm	71.2 in	13 Maximum Dump Angle	48°
3 Length without Bucket	2523 mm	99.3 in	14 Vehicle Width (320 mm/12.6 in tracks)	1676 mm 66.0 in
4 Length with Bucket on Ground	3233 mm	127.3 in	Vehicle Width (400 mm/15.7 in tracks)	1756 mm 69.1 in
5 Height to Top of Cab	2039 mm	80.3 in	15 Turning Radius from Center – Machine Rear	1458 mm 57.4 in
6 Maximum Overall Height	3831 mm	150.8 in	16 Turning Radius from Center – Coupler	1160 mm 45.7 in
7 Bucket Pin Height at Maximum Lift	3002 mm	118.2 in	17 Turning Radius from Center – Bucket	2060 mm 81.1 in
8 Bucket Pin Height at Carry Position	219 mm	8.6 in	18 Maximum Reach with Arms Parallel to Ground	1317 mm 51.8 in
9 Reach at Maximum Lift and Dump	727 mm	28.6 in	19 Rack Back Angle at Maximum Height	87.5°
10 Clearance at Maximum Lift and Dump	2253 mm	88.7 in	20 Bucket Pin Reach at Maximum Lift	311 mm 12.2 in
11 Ground Clearance	194 mm	7.6 in		

Operating Specifications*

Rated Operating Capacity:		
35% Tipping Load	790 kg	1,740 lb
50% Tipping Load	1130 kg	2,485 lb
Rated Operating Capacity with Optional Counterweight		
Tipping Load	1225 kg	2,700 lb
Breakout Force, Tilt Cylinder	2260 kg	4,970 lb
Ground Contact Area (320 mm/12.6 in track)	1772 kg	3,907 lb
Ground Contact Area (400 mm/15.7 in track)	0.89 m ²	1,373 in ²
Ground Pressure (320 mm/12.6 in track)	1.11 m ²	1,716 in ²
Ground Pressure (400 mm/15.7 in track)	39.3 kPa	5.7 psi
	32.2 kPa	4.7 psi

Cab

ROPS	ISO 3471:2008
FOPS	ISO 3449:2005 Level I

Service Refill Capacities

Cooling System	12 L	3.2 gal
Engine Crankcase	10 L	2.6 gal
Fuel Tank	57 L	15.1 gal
Hydraulic System	45 L	11.9 gal
Hydraulic Tank	34 L	9.0 gal

Noise Level

Inside Cab**	83 dB(A)
Outside Cab***	103 dB(A)

- Cab and Rollover Protective Structures (ROPS) are standard in North America and Europe.

**The declared dynamic operator sound pressure levels per ISO 6396:2008. The measurements were conducted with the cab doors and windows closed and at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.

***The labeled sound power level for the CE marked configurations when measured according to the test procedure and conditions specified in 2000/14/EC.

Air Conditioning System (if equipped)

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 0.81 kg of refrigerant which has a CO₂ equivalent of 1.158 metric tonnes.

MANDATORY EQUIPMENT

- Hydraulics, Standard or High Flow
- Quick Coupler, Mechanical or Powered
- High Visibility Seat Belt, 50 mm (2 in) or 75 mm (3 in)
- EU Preparation Package (Europe only)
- Steel Imbed Rubber Track – 320 mm (12.6 in) Block Tread or 400 mm (15.7 in) Bar Tread
- Dual Flange Front Idler/Single Flange Rear Idler

PERFORMANCE PACKAGES

- Performance Package H1: *Standard Flow Hydraulics (No Self Level)*
- Performance Package H2: *Standard Flow Hydraulics, Dual Direction Electronic Self Level (Raise and Lower), Work Tool Return to Dig, Work Tool Positioner, and Electronic Snubbing (Raise and Lower)*
- Performance Package H3: *High Flow Hydraulics, Dual Direction Electronic Self Level (Raise and Lower), Work Tool Return to Dig, Work Tool Positioner, and Electronic Snubbing (Raise and Lower)*

COMFORT PACKAGES

- Open ROPS (C0): *Static Seat (No Foot Throttle, Headliner, Heater or Door)*
- Open ROPS (C1): *Foot Throttle, Headliner, Cup Holder, and choice of Seat (Mechanical Suspension or High Back, Heated, Air Ride Seat) (No Heater or Door)*
- Enclosed ROPS with Heater (C2): *Foot Throttle, Headliner, Heater and Defroster, Side Windows, Cup Holder, Radio Ready, choice of Seat (Mechanical Suspension or High Back, Heated, Air Ride Seat) and Door (Glass or Polycarbonate)*
- Enclosed ROPS with A/C (C3): *C2 + Air Conditioner*

STANDARD EQUIPMENT

ELECTRICAL

- 12 volt Electrical System
- 80 ampere Alternator
- Ignition Key Start/Stop Switch
- Lights: *Gauge Backlighting, Two Rear Tail Lights, Two Adjustable Front and Rear Halogen Lights, Dome Light*
- Backup Alarm
- Heavy Duty Battery, 850 CCA

OPERATOR ENVIRONMENT

- Gauges: *Fuel Level, Hour Meter*
- Operator Warning System Indicators: *Air Filter Restriction, Alternator Output, Armrest Raised/Operator Out of Seat, Engine Coolant Temperature, Engine Oil Pressure, Glow Plug Activation, Hydraulic Filter Restriction, Hydraulic Oil Temperature, Park Brake Engaged*
- Adjustable Vinyl Seat
- Fold In Ergonomic Contoured Armrest
- Control Interlock System, when operator leaves seat or armrest raised: *Hydraulic System Disables, Hydrostatic Transmission Disables, Parking Brake Engages*
- ROPS Cab, Open, Tilt Up
- FOPS, Level I
- Top and Rear Windows
- Floor Mat
- Interior Rearview Mirror
- 12 volt Electric Socket
- Horn
- Hand (Dial) Throttle, Electronic
- Adjustable Joystick Controls
- Anti-theft Security System with 6-button Keypad
- Storage Compartment with Netting

POWER TRAIN

- Cat C2.2, Turbo Diesel Engine, Meeting Tier 4 Final and Stage V emission standards
- Air Cleaner, Dual Element, Radial Seal
- S-O-SSM Sampling Valve, Hydraulic Oil
- Filters, Cartridge-type, Hydraulic
- Filters, Canister-type, Fuel and Water Separator
- ATAAC/Radiator/Hydraulic Oil Cooler (side-by-side)
- Spring Applied, Hydraulically Released Parking Brakes
- Hydrostatic Transmission, Two Speed Travel
- Suspension – Independent Torsion Axles (4)

OTHER

- Engine Enclosure, Lockable
- Extended Life Antifreeze, –36° C (–33° F)
- Machine Tie Down Points (6)
- Support, Lift Arm
- Hydraulic Oil Level Sight Gauge
- Radiator Coolant Level Sight Gauge
- Radiator, Expansion Bottle
- Cat ToughGuardTM Hose
- Auxiliary, Hydraulics, Continuous Flow
- Heavy Duty, Flat Faced Quick Disconnects with Integrated Pressure Release
- Split D-Ring to Route Work Tool Hoses Along Side of Left Lift Arm
- Electrical Outlet, Beacon
- Belly Pan Cleanout
- Variable Speed Demand Fan
- Product LinkTM PL240, Cellular

249D3 Compact Track Loader

OPTIONAL EQUIPMENT

- Hand-Foot Style Controls
- External Counterweights
- Beacon, Rotating
- Engine Block Heater – 120V
- Oil, Hydraulic, Cold Operation
- Paint, Custom
- Product Link PL641, Cellular
- Ride Control
- Advanced Display with Rearview Camera: *Full Color, 127 mm (5 in) LCD screen, Advanced Multi-operator Security System, On-screen Adjustments for Implement Response, Hystat Response, and Creep Control. (Standard Equipment in Europe Only)*
- Work Tool Return to Dig and Work Tool Positioner
- Bluetooth® Radio with Microphone (AM/FM/Weather Band Receiver with USB and Auxiliary Input Jack)

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com

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AEHQ8196-02 (01-2021)
Replaces AEHQ8196-01
(Am North, EU, APD, ANZP)





Cat® 259D3

COMPACT TRACK LOADER

FEATURES:

The Cat® 259D3 Compact Track Loader, with its vertical lift design, delivers extended reach and lift height for quick and easy truck loading. Its standard, suspended undercarriage system provides superior traction, flotation, stability and speed to work in a wide range of applications and underfoot conditions. The 259D3 features the following:

- **Industry leading sealed and pressurized cab option** provides a cleaner and quieter operating environment with excellent work tool visibility.
- **Available high-back, heated, air ride seat with seat mounted adjustable joystick controls** makes the D3 Series the industry leader in operator comfort.
- **High performance power train** provides maximum performance and production capability through the Electronic Torque Management system, standard two speed travel and an electronic hand/foot throttle with decel pedal capability.
- **High Flow hydraulic system** is available for applications that demand maximum hydraulic work tool performance.
- **Cat C3.3B engine and high performance power train** provide high engine horsepower and torque, allowing partial-throttle operation for lower sound levels and fuel consumption.
- **Cat “Intelligent Leveling” system** provides industry leading technology, integration, and available features such as dual direction self level, work tool return to dig, and work tool positioner.
- **Standard fully independent torsion axle suspension** combined with the optional Speed Sensitive Ride Control system improves operation on rough terrain, enabling better load retention, increased productivity and greater operator comfort.
- **Maximize machine capability and control** with optional Advanced Display providing on-screen adjustments for implement response, hystat response and creep control. Also features multi-language functionality with customizable layouts, security system and rearview camera.
- **Ground level access** to all daily service and routine maintenance points helps reduce machine downtime for greater productivity.
- **Broad range of performance matched Cat Work Tools** make the Cat Compact Track Loader the most versatile machine on the job site.

Specifications

Engine

Engine Model	Cat C3.3B DIT (turbo)	
Gross Power SAE J1995	55.4 kW	74.3 hp
Net Power SAE 1349	53.8 kW	72.1 hp
	54.2 kW†	72.7 hp†
Net Power ISO 9249	54.3 kW	72.8 hp
	54.8 kW†	73.5 hp†
Peak Torque at 1,600 rpm SAE J1995	265 N-m	195 lbf-ft
Displacement	3.3 L	203 in³
Stroke	120 mm	4.7 in
Bore	94 mm	3.7 in

†Engine meeting Brazil MAR-1 and China Nonroad Stage III emission standards emits equivalent to U.S. EPA Tier 4 Interim and is offered only for Australia/New Zealand, Brazil, China, French Polynesia, Hong Kong, Macedonia and New Caledonia.

Weights*

Operating Weight	4076 kg	8,987 lb
------------------	---------	----------

*Operating Weight, Operating Specifications and Dimensions all based on 75 kg (165 lb) operator, all fluids, two speed, OROPS, 1730 mm (68 in) low profile bucket, 320 mm (12.6 in) tracks, dual flange front idler/single flange rear idler, standard flow hydraulics, mechanical suspension seat, no optional counterweights and manual quick coupler (unless otherwise noted).

Power Train

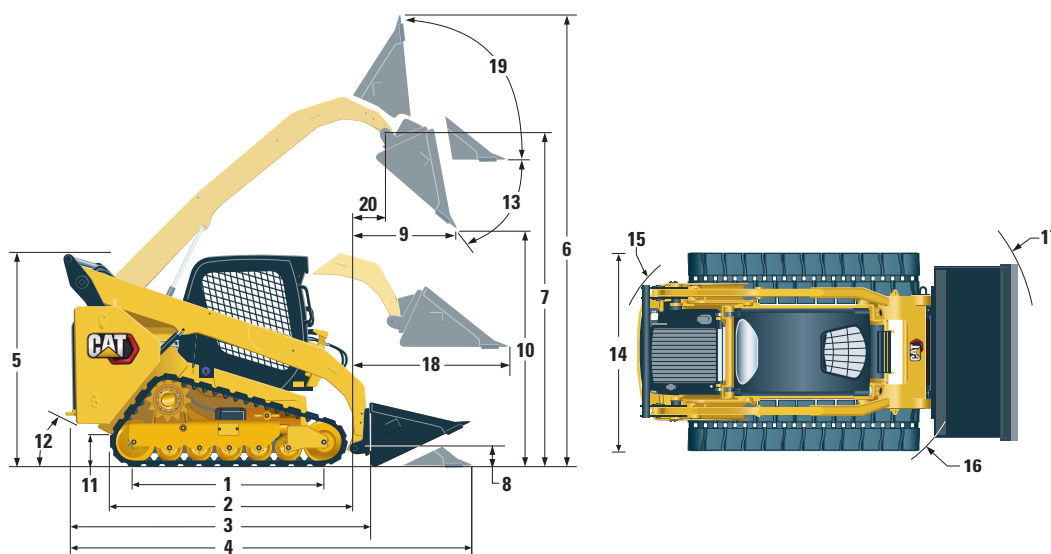
Travel Speed (Forward or Reverse)			
One Speed	9.5 km/h	5.9 mph	
Two Speed	13.7 km/h	8.5 mph	

Hydraulic System

Hydraulic Flow – Standard:			
Loader Hydraulic Pressure	23 000 kPa	3,335 psi	
Loader Hydraulic Flow	76 L/min	20 gal/min	
Hydraulic Power (calculated)	29 kW	39 hp	
Hydraulic Flow – High Flow:			
Loader Hydraulic Pressure	23 000 kPa	3,335 psi	
Loader Hydraulic Flow	112 L/min	30 gal/min	
Hydraulic Power (calculated)	43 kW	58 hp	



259D3 Compact Track Loader



Dimensions*

1	Length of Track on Ground	1499 mm	59.0 in	12	Departure Angle	35°
2	Overall Length of Track	1999 mm	78.7 in	13	Maximum Dump Angle	52°
3	Length without Bucket	2767 mm	108.9 in	14	Vehicle Width (320 mm/12.6 in tracks)	1676 mm 66.0 in
4	Length with Bucket on Ground	3486 mm	137.3 in		Vehicle Width (400 mm/15.7 in tracks)	1755 mm 69.0 in
5	Height to Top of Cab	2111 mm	83.1 in	15	Turning Radius from Center – Machine Rear	1561 mm 61.5 in
6	Maximum Overall Height	3915 mm	154.1 in	16	Turning Radius from Center – Coupler	1392 mm 54.8 in
7	Bucket Pin Height at Maximum Lift	3075 mm	121.0 in	17	Turning Radius from Center – Bucket	2184 mm 86.0 in
8	Bucket Pin Height at Carry Position	198 mm	7.8 in	18	Maximum Reach with Arms Parallel to Ground	1305 mm 51.4 in
9	Reach at Maximum Lift and Dump	608 mm	23.9 in	19	Rack Back Angle at Maximum Height	87°
10	Clearance at Maximum Lift and Dump	2283 mm	89.9 in	20	Bucket Pin Reach at Maximum Lift	238 mm 9.4 in
11	Ground Clearance	226 mm	8.9 in			

Operating Specifications*

Rated Operating Capacity:		
35% Tipping Load	915 kg	2,010 lb
50% Tipping Load	1305 kg	2,870 lb
Rated Operating Capacity with Optional Counterweight		
Tipping Load	2610 kg	5,745 lb
Breakout Force, Tilt Cylinder	2252 kg	4,965 lb
Ground Contact Area (320 mm/12.6 in track)	0.96 m ²	1,483 in ²
Ground Contact Area (400 mm/15.7 in track)	1.19 m ²	1,848 in ²
Ground Pressure (320 mm/12.6 in track)	41.8 kPa	6.1 psi
Ground Pressure (400 mm/15.7 in track)	34.0 kPa	4.9 psi

Cab

ROPS	ISO 3471:2008
FOPS	ISO 3449:2005 Level I

Service Refill Capacities

Cooling System	14 L	3.7 gal
Engine Crankcase	11 L	3.0 gal
Fuel Tank	94 L	24.8 gal
Hydraulic System	50 L	13.2 gal
Hydraulic Tank	39 L	10.3 gal

Noise Level

Inside Cab**	83 dB(A)
Outside Cab***	103 dB(A)

**The declared dynamic operator sound pressure levels per ISO 6396:2008. The measurements were conducted with the cab doors and windows closed and at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.

***The labeled sound power level for the CE marked configurations when measured according to the test procedure and conditions specified in 2000/14/EC.

Air Conditioning System (if equipped)

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 0.81 kg of refrigerant which has a CO₂ equivalent of 1.158 metric tonnes.

MANDATORY EQUIPMENT

- Hydraulics, Standard or High Flow
- Quick Coupler, Mechanical or Powered
- High Visibility Seat Belt, 50 mm (2 in) or 75 mm (3 in)
- EU Preparation Package
- Steel Imbed Rubber Track – 320 mm (12.6 in) or 400 mm (15.7 in)
- Dual Flange Front Idler/Single Flange Rear Idler or Triple Flange Front/Rear Idlers

PERFORMANCE PACKAGES

- Performance Package H1: *Standard Flow Hydraulics (No Self Level)*
- Performance Package H2: *Standard Flow Hydraulics, Dual Direction Electronic Self Level (Raise and Lower), Work Tool Return to Dig, Work Tool Positioner, and Electronic Snubbing (Raise and Lower)*
- Performance Package H3: *High Flow Hydraulics, Dual Direction Electronic Self Level (Raise and Lower), Work Tool Return to Dig, Work Tool Positioner, and Electronic Snubbing (Raise and Lower)*

COMFORT PACKAGES

- Open ROPS (C0): *Static Seat (No Foot Throttle, Headliner, Heater or Door)*
- Open ROPS (C1): *Foot Throttle, Headliner, Cup Holder, and choice of Seat (Mechanical Suspension or High Back, Heated, Air Ride Seat) (No Heater or Door)*
- Enclosed ROPS with Heater (C2): *Foot Throttle, Headliner, Heater and Defroster, Side Windows, Cup Holder, Radio Ready, choice of Seat (Mechanical Suspension or High Back, Heated, Air Ride Seat) and Door (Glass or Polycarbonate)*
- Enclosed ROPS with A/C (C3): *C2 + Air Conditioner*

STANDARD EQUIPMENT

ELECTRICAL

- 12 volt Electrical System
- 80 ampere Alternator
- Ignition Key Start/Stop Switch
- Lights: *Gauge Backlighting, Two Rear Tail Lights, Two Adjustable Front and Rear Halogen Lights, Dome Light*
- Backup Alarm
- Heavy Duty Battery, 850 CCA

OPERATOR ENVIRONMENT

- Advanced Display with Rearview Camera: *Full Color, 127 mm (5 in) LCD screen; Advanced Multi-operator Security System; On-screen Adjustments for Implement Response, Hystat Response, and Creep Control*
- Gauges: *Fuel Level, Hour Meter*
- Operator Warning System Indicators: *Air Filter Restriction, Alternator Output, Armrest Raised/Operator Out of Seat, Engine Coolant Temperature, Engine Oil Pressure, Glow Plug Activation, Hydraulic Filter Restriction, Hydraulic Oil Temperature, Park Brake Engaged, Engine Emission System*
- Adjustable Vinyl Seat
- Fold In Ergonomic Contoured Armrest
- Control Interlock System, when operator leaves seat or armrest raised: *Hydraulic System Disables, Hydrostatic Transmission Disables, Parking Brake Engages*
- ROPS Cab, Open, Tilt Up
- FOPS, Level I
- Top and Rear Windows
- Floor Mat
- Interior Rearview Mirror
- 12 volt Electric Socket
- Horn
- Hand (Dial) Throttle, Electronic
- Adjustable Joystick Controls
- Anti-theft Security System with 6-button Keypad
- Storage Compartment with Netting

POWER TRAIN

- Cat C3.3B, Turbo Diesel Engine
- Air Cleaner, Dual Element, Radial Seal
- S-O-SSM Sampling Valve, Hydraulic Oil
- Filters, Cartridge-type, Hydraulic
- Filters, Canister-type, Fuel and Water Separator
- Radiator/Hydraulic Oil Cooler (side-by-side)
- Spring Applied, Hydraulically Released Parking Brakes
- Hydrostatic Transmission, Two Speed Travel
- Suspension – Independent Torsion Axles (4)

OTHER

- Engine Enclosure, Lockable
- Extended Life Antifreeze, –36° C (–33° F)
- Machine Tie Down Points (6)
- Support, Lift Arm
- Hydraulic Oil Level Sight Gauge
- Radiator Coolant Level Sight Gauge
- Radiator, Expansion Bottle
- Cat ToughGuardTM Hose
- Auxiliary, Hydraulics, Continuous Flow
- Heavy Duty, Flat Faced Quick Disconnects with Integrated Pressure Release
- Split D-Ring to Route Work Tool Hoses Along Side of Left Lift Arm
- Electrical Outlet, Beacon
- Belly Pan Cleanout
- Variable Speed Demand Fan
- Product LinkTM PL240, Cellular

259D3 Compact Track Loader

OPTIONAL EQUIPMENT

- Hand-Foot Style Controls
- External Counterweights
- Beacon, Rotating
- Engine Block Heater – 120V
- Oil, Hydraulic, Cold Operation
- Paint, Custom
- Product Link PL641, Cellular
- Speed Sensitive Ride Control
- Bluetooth® Radio with Microphone (AM/FM/Weather Band Receiver with USB and Auxiliary Input Jack)



For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com

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Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

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AEHQ8219 (07-2019)
(S Am, AME, CIS,
APD-LRC Regions)



Prepared For SHIRE OF DOWERIN
13 COTTRELL ST 13
COTTRELL STREET
DOWERIN, WA 6461
Work Phone: 08-9631-1202
CSO@DOWERIN.WA.GOV.AU

Prepared By Dylan Sexton
80 Great Eastern Highway
South Guildford, WA 6055
Phone: 90414100
dsexton@afgri.com.au

Quote ID 829590
Created On 27-Mar-2024
Expiration Date 03-Apr-2024



JOHN DEERE

Quote ID 829590

28-Mar-2024

SHIRE OF DOWERIN

13 COTTRELL ST 13 COTTRELL STREET

DOWERIN, WA 6461

Hi Ben,

Please see below for the build details of the requested models:

John Deere 624K-II- 938H CAT Equivalent

John Deere 333G- 299D CAT Track Loader Equivalent

John Deere 316GR Skid Steer- Mustang 2054 Equivalent

John Deere 317G Compact Track Loader- Mustang 2054 Equivalent

John Deere 644K- 950GC CAT Equivalent

The builds are basic but inclusive of some shire additional requirements. There aren't any attachments included for the SkidSteers/CTL's and there is also no additional warranty included.

Dylan Sexton

Phone: 90414100

AFGRI Equipment

Prepared For SHIRE OF DOWERIN
 13 COTTRELL ST 13
 COTTRELL STREET
 DOWERIN, WA 6461
 Work Phone: 08-9631-1202
 CSO@DOWERIN.WA.GOV.AU

Prepared By Dylan Sexton
 80 Great Eastern Highway
 South Guildford, WA 6055
 Phone: 90414100
 dsexton@afgri.com.au

Quote ID 829590
Created On 27-Mar-2024
Expiration Date 03-Apr-2024

Quote Summary

(Pricing Displayed Excludes 10.00% GST except where stated)

Equipment Summary

	Selling Price	Qty	Extended
New 2023 John Deere 624K-II LOADER-1BZ624KACPD002052	325,000.00	1	325,000.00
New 2022 John Deere 333G COMPACT TRACK LOADER-1T0333GMENF421986	150,000.00	1	150,000.00
New 2023 John Deere 316GR SKID STEER-1T0316GKVNG429807	80,000.00	1	80,000.00
New 2023 John Deere 317G COMPACT TRACK LOADER	98,000.00	1	98,000.00
New 2022 John Deere 644K LOADER-1BZ644KXKND001394	320,000.00	1	320,000.00

Equipment Total	\$973,000.00
GST	\$97,300.00
Equipment Total (Inc GST)	\$1,070,300.00

Quote Summary

Equipment Total	\$973,000.00
GST	\$97,300.00
Subtotal (Inc GST)	\$1,070,300.00
Plus Trade Payout	\$0.00
Less Rental Applied	\$0.00
Balance Due (Inc GST)	\$1,070,300.00
Order Confirmation Fee (OCF)	\$0.00

Salesperson : X _____

Accepted By : X _____

Balance Due after OCF (Inc GST)

\$1,070,300.00

* Not applicable for GST

Salesperson : X _____

Accepted By : X _____

Selling Equipment

Quote Id 829590

Customer SHIRE OF DOWERIN

New 2023 John Deere 624K-II LOADER - 1BZ624KACPD002052

Equipment Notes - - -

Hours 0

Serial Number 1BZ624KACPD002052

Stock Number 250243

Base and Options

7652BZ	New 2023 John Deere 624K-II LOADER	1
0851	International Gathering Group	1
0910	John Deere PowerTech Engine	1
1010	Standard Loader	1
1120	5-Speed Transmission with Lock-Up Torque Converter	1
1212	100 amp Alternator	1
1310	Engine Exhaust with Flat Black Curved Stack	1
1430	Air Intake System with Centrifugal Precleaner Engine	1
1520	Reversing Fan Drive	1
1620	Severe Duty Fuel Filter & Water Separator with Heater	1
170K	JDLink™	1
1915	NeverGrease Steering Cylinder Joints	1
2010	Standard Z-BAR	1
2120	Steering Wheel Only	1
2220	Standard Fabric, Back Rest Extension, Air Suspension Seat	1
2432	3 Function -- Joystick with FNR and 3rd Function Auxiliary Control Lever	1
2510	Ride Control	1
2605	English Labels and Decals	1
2715	24 Volt to 12 Volt - 15 Amp Converter	1
3046	Front Hydraulically Locking Differential and Rear Conventional Differential Axles	1
3120	Manual Axle Differential Lock	1
4421	20.5R25 L3 Single Star XHA2 Michelin Radial Tires w/ 3 pc. Rims	1
5540	Full Coverage Front Fenders	1
7120	Halogen Work and Drive Lights	1
8210	Rear Cast Bumper/Std Counterweight with Rear Hitch and Locking Pin	1
8422	ROPS Quiet Cab with Air Conditioning	1
8450	Cab with Air A/C Charge	1
8550	Bucket Pins Only - Less Bucket and Coupler	1
8561	Hi-Vis Z-BAR Hydraulic Attachment Coupler	1
8586	Hi-Vis Coupler Fork Frame Carriage with 1524 mm Tines	1
8851	3.5 Cu. Yd. (2.7 Cu. M.) 106 in. Wide GP Hi-Vis Coupler Bucket with Bolt-on Cutting Edge	1

Selling Equipment

Quote Id 829590
Customer SHIRE OF DOWERIN

9043	Environmental Drains and Sampling Ports	1
9050	Wheel Spin Control	1
9106	AM/FM/Weather Band (WB) Radio with Remote AUX Port	1
9131	Rear Camera Only	1
9210	Electrical Corrosion Prevention Package	1
9420	Transmission Side Frame Guards	1
9430	Bottom Guards	1
9510	Lift Hooks	1

Other Charges

- 2x Emergency Stops
- Lockable Starter Isolator
- Window Tint & Oversize Signage
- 1kg Fire Extinguisher
- Canvas Seat Cover
- LED Beacon Slim Line Under Roof Height
- UHF Radio 80 Channel
- Hi Vis Tape
- Topcon Weighing System Alpha 100
- Operators Manual
- Test & Repair Manuals (Electronic) & Hard Copy
- Sign Writing Shire of Dowerin
- 9KG Fire Extinguisher External
- 8KG Groeneveld Auto Greasing System with Remote Fill

Selling Equipment

Quote Id 829590
Customer SHIRE OF DOWERIN

New 2022 John Deere 333G COMPACT TRACK LOADER -
1T0333GMENF421986

Equipment Notes - - -
Hours 0
Serial Number 1T0333GMENF421986
Stock Number 244740

Base and Options

0BF2T	New 2022 John Deere 333G COMPACT TRACK LOADER	1
0770	Cab/Heat/AC, Power QT, Hi Flow, SL & RC, 2Spd, LED Lights, Rev Fan, Chrome, Heat Seat, Radio	1
0995	ISO Joystick Controls with Integrated Detents & EH Joystick Performance Package & EH Boom Performance Package	1
1501	English Operator's Manual and Decals	1
2605	Offset Block Lug Tread Pattern - 17.7 in. (450 mm) Tracks	1
4001	2-Inch Seat Belt with Shoulder Harness	1
6006	Air Suspension Seat (Cloth with Heat)	1
8060	Engine Air Precleaner	1
8380	Footrest with Floormat	1
9280	Australian Compliance Certificate and Hearing Protection Caution Label	1

Other Charges

Canvas Seat Cover
Lockable Battery Isolator
Emergency Stops 1x Internal 2x External
L.E.D Amber Slim Line Flashing Light
UHF Radio 80 Channel
Sign Writing Shire of Dowerin
Operators Manual (Electronic)
Test & Repairs Manuals (Electronic) & Hard Copy
2x Sets of Keys
Tinted Windows & Oversize Sign
Cabin Pressuizer System
Reverse Camera Perimeter Alarm System Kit (Brigade BS-745)

Selling Equipment

Quote Id 829590
Customer SHIRE OF DOWERIN

New 2023 John Deere 316GR SKID STEER - 1T0316GKVNG429807

Equipment Notes - - -
Hours 0
Serial Number 1T0316GKVNG429807
Stock Number 243640

Base and Options

06G2T	New 2023 John Deere 316GR SKID STEER	1
0745	EH, Cab/Heat/AC, Power QT, SL, 2spd, Att Perf	1
1310	Engine - Turbocharged	1
1503	English Operator's Manual and No Text Decals	1
2285	10x16.5 NHS, CAMSO SKS	1
4001	2-Inch Seat Belt with Shoulder Harness	1
6003	Vinyl, Air-Ride Seat	1
8042	Rear View Camera	1
8340	Radio, AM/FM/WB with Aux Input	1
8395	Keyless Start (Sealed Switch Module)	1
9280	Australian Compliance Certificate and Hearing Protection Caution Label	1

Other Charges

Canvas Seat Cover
Window Tint
80 Channel UHF Radio
LED Beacon
Lockable Battery Isolator
1KG Fire Extinguisher
Shire Sign Writing / Safety Decals with SWL

Selling Equipment

Quote Id 829590
Customer SHIRE OF DOWERIN

New 2023 John Deere 317G COMPACT TRACK LOADER

Equipment Notes - - -
Hours 1
Serial Number 1T0317GJJNJ425768
Stock Number - - -

Base and Options

06L2T	New 2023 John Deere 317G COMPACT TRACK LOADER	1
0760	EH Joystick Perf, Cab/Heat/AC, Power QT, SL & RC, 1spd, Att Perf, LED Lights	1
1501	English Operator's Manual and Decals	1
2510	Offset Block Lug Tread Pattern - 12.6 in. (320mm) Tracks	1
4001	2-Inch Seat Belt with Shoulder Harness	1
6006	Air Suspension Seat (Cloth with Heat)	1
8042	Rear View Camera	1
8342	Radio, AM/FM with Bluetooth	1
8395	Keyless Start (Sealed Switch Module)	1
9280	Australian Compliance Certificate and Hearing Protection Caution Label	1

Other Charges

Canvas Seat Cover
Amber LED Beacon
1KG Fire Extinguisher
Window Tint
RTA Inspection
Licensing
Electronic Copy of Manuals
80 Channel UHF Radio
Lockable Battery Isolator
Shire Sign Writing / Safety Decals with SWL
Test & Repair Manuals (Electronic) & Hard Copy

Selling Equipment

Quote Id 829590

Customer SHIRE OF DOWERIN

New 2022 John Deere 644K LOADER - 1BZ644KXKND001394

Equipment Notes - - -

Hours 0

Serial Number 1BZ644KXKND001394

Stock Number 247085

Base and Options

7661BZ	New 2022 John Deere 644K LOADER	1
0851	International Gathering Group	1
0910	John Deere PowerTech Engine	1
1010	Standard Loader	1
1120	5-Speed Transmission with Lock-Up Torque Converter	1
1212	100 amp Alternator	1
1310	Engine Exhaust with Flat Black Curved Stack	1
1430	Air Intake System with Centrifugal Precleaner Engine	1
1520	Reversing Fan Drive	1
1620	Severe Duty Fuel Filter & Water Separator with Heater	1
170K	JDLink™	1
1915	NeverGrease Steering Cylinder Joints	1
2010	Standard Z-BAR	1
2120	Steering Wheel Only	1
2432	3 Function -- Joystick with FNR and 3rd Function Auxiliary Control Lever	1
2510	Ride Control	1
2605	English Labels and Decals	1
2715	24 Volt to 12 Volt - 15 Amp Converter	1
3046	Front Hydraulically Locking Differential and Rear Conventional Differential Axles	1
3120	Manual Axle Differential Lock	1
4622	23.5R25 L3 GP BRIDGESTONE 3PC STD RIM	1
5530	Front Fenders	1
7120	Halogen Work and Drive Lights	1
8422	ROPS Quiet Cab with Air Conditioning	1
8450	Cab with Air A/C Charge	1
8760	Bucket with Bolt-On Cutting Edge	1
9045	Quick Fluid Service	1
9050	Wheel Spin Control	1
9106	AM/FM/Weather Band (WB) Radio with Remote AUX Port	1
9131	Rear Camera Only	1
9240	Engine Compartment Light	1
9410	Transmission and Bottom Guards	1

Selling Equipment

Quote Id 829590

Customer SHIRE OF DOWERIN

Other Charges

2x Emergency Stop

Lockable Battery Isolator

Window Tint & Oversize Sign

1kg Fire Extinguisher

Canvas Seat Cover

LED Beacon Slim line Under Roof Height

UHF Radio 80 Channel

Safety Decals

Hi Vis Tape

Topcon Weighing System Alpha 100

8KG Groeneveld Auto Greasing System with Remote Fill

Operators Manual

Test & Repair Manuals (Electronic) & Hard Copy

Sign Writing Shire Of Dowerin

9KG Fire Extinguisher

Kahli Rose

From: Brian Slater <Brian.Slater@westrac.com.au>
Sent: Tuesday, 14 November 2023 2:40 PM
To: Ben Forbes
Subject: WesTrac budget pricing for CAT 950GC 938K wheel loaders and 259D3, 239D3/249D3 compact track loaders
Attachments: 950 GC AEHQ7152-02 Specalog.pdf; 950GC at a glance 1page.pdf; Two pager 938K_950 GC features and specs APPROVED (1).pdf; 938K AEHQ7682-01.pdf; 249D3 AEHQ8196-02.pdf; 239D3 specalog AEHQ8195-01.pdf; 259D3 Specalog AEHQ8219-00.pdf

G'day Ben

As per our conversation yesterday, please see info below on budget pricing and availability. The 950 GC has been a great replacement for 938 pin on bucket loaders. Have delivered 950GC loader units in the Shire's of Victoria Plains, Moora, Cunderdin, Mukinbudin and Bruce Rock. All replaced 938G pin on wheel loaders and exceed expectations for a material handling loader.

Budget pricing on

938K with fusion & Hook on bucket 2.7CUM \$360-370,000+gst
We only bring in tool carrier type loader with hook on bucket. 3-4 month availability
Pin on bucket unit would have to be special order.

950GC \$350-360,000+gst
With pin on bucket 3.2CUM, we have units in stock and on order. 1-2 months availability
950GC is equivalent sizing for 938K pin on bucket unit.

259D3 \$130-140,000.00+gst 3-5 month availability

239D3/249D3 \$110-120,000+gst 1-3 month availability.

Will catch up shortly

Brian Slater | WesTrac Pty Ltd |
Equipment Sales Representative | Marketing
Caterpillar Certified Sales Professional
t: (08) 9377-9427 | f: (08) 9379-4218 | m: 0427 191 121 | i: www.westrac.com.au



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Kahli Rose

From: Chris Dawes <Chris.Dawes@clarkeequipment.com>
Sent: Thursday, 11 April 2024 5:12 PM
To: Ben Forbes
Cc: Chris Dawes
Subject: FW: Shire of Dowerin - Budget Quotes
Attachments: Track loaders M2 - 2020.pdf; Bobcat_R-Series_Loaders_Brochure.pdf

Hi Ben.

Our machine range in Australia is currently.

Track loaders

T450
T590
T66
T76
T770
T86

Wheel loaders.

S70
S450
S550
S590
S650
S66
S76
S770

So to match up the cat299 we would look at the T86 forestry – pricing around \$220k + GST or a T770 forestry for around \$180k + GST

A small track loader will be the T450 machine priced around \$105,000 + GST

The 2054 will be around S550 model – price around \$78k + GST

All these machines will have air con / heated cabin, GP bucket, joystick controls. (standard controls are an option if needed)

The R series machines are the newest models, The M series will eventually change to the R series design.

None of the machine have ADBLU or run a DPF which is a bonus. (maybe the T86 has adblu we have not seen one yet)

All Track loaders coming to Australia have suspension on the under carriage.

I will be away until next Friday, please send me a email if you have any questions.

Regards

Chris Dawes
0417 042 685
Clark Equipment
1711 Albany Hwy
Kenwick, WA. 6107

www.clarkeequipment.com.au
www.bobcatofaustralia.com.au

Bobcat Sales

Capital Roads Proposal 2024/2025

Road Name & SLK	Category	Bus Route	Condition	Traffic Data	Total Project
Kalguddering Road SLK 0.00 to 3.91 (2km)	Access		5	6.16 VPD (Off Peak Jan/Feb)	\$183,770
Kalguddering East Road SLK 0.00 to 1.90 (1.9km)	Access		5	Traffic Data currently being collected	\$89,300
Thornett Road SLK				Traffic Data Not Available	
Rabbit Proof Fence Road SLK 20.40 to 23.76 (3.36km)	Access		3-4	Traffic Data Not Available	\$157,920
Rabbit Proof Fence Road SLK 23.76 to 25.80 (2.04km)	Access		3-4	Traffic Data Not Available	\$95,880
Rabbit Proof Fence Road SLK 25.80 to 28.50 (2.70km)	Access		4	Traffic Data Not Available	\$126,900
Rabbit Proof Fence Road SLK 28.50 to 30.61 (2.11km)	Access		4-5	12.31 VPD (Off Peak Feb/March) 15.71 VPD (Peak Oct/Nov)	\$99,170
Rabbit Proof Fence Road SLK 30.61 to 32.20 (1.59km)	Access		4	12.31 VPD (Off Peak Feb/March) 15.71 VPD (Peak Oct/Nov)	\$74,730
Rabbit Proof Fence Road SLK 32.20 to 33.20 (1.00km)	Access		3	12.31 VPD (Off Peak Feb/March) 15.71 VPD (Peak Oct/Nov)	\$47,000
Rabbit Proof Fence Road SLK 33.20 to 36.68 (3.48km)	Access		3	12.31 VPD (Off Peak Feb/March) 15.71 VPD (Peak Oct/Nov)	\$163,560
Rabbit Proof Fence Road SLK 36.68 to 38.54 (1.86km)	Access		4	12.31 VPD (Off Peak Feb/March) 15.71 VPD (Peak Oct/Nov)	\$87,420
Rabbit Proof Fence Road SLK 38.54 to 43.15 (4.61km)	Access	Yes	4	12.31 VPD (Off Peak Feb/March) 15.71 VPD (Peak Oct/Nov)	\$216,670
Hindmarsh Road SLK 6.17 to 8.71 (2.54km)	Access		5	12.70 VPD (Off Peak Feb/March) 11.33 VPD (Peak Oct/Feb)	\$119,380

Amery Benjaberring Road SLK 6.00 – 8.67 (2.67km)	Distributor		4	13.90 VPD (Peak Oct/Feb)	\$125,490
Old Koorda Road SLK 5.55-6.55 (1.0km)	Access		5	45.18 VPD (Off Peak Sep/Oct)	\$47,000

Gravel Resheeting

<u>Pavement Condition Legend</u>	
1	Excellent
2	Good
3	Average
4	Poor
5	Very Poor

Available Funding	
Roads to Recovery (Budget amount is not confirmed, rumors saying double)	\$365,000.00
LCRIP Phase 4 Part B	\$221,353.00
RRG	\$154,587.00
Total	\$740,940.00

Outstanding Flood Damage Gaps

- Metcalf Road SLK 0.00 – 1.00 = 1km
- Old Koorda Road SLK 0.00 – 10.00 = 10km
- Rabbit Proof Fence Road SLK 28.5 – 30.61 = 2.11km
- Rabbit Proof Fence Road SLK 33.20 – 37.30 = 4.10 km
- Rabbit Proof Fence Road SLK 37.60 – 43.14 = 5.54km
- Spark Road SLK 7.40 – 9.24 = 1.84km
- Thomas Road SLK 3.30 – 5.88 = 2.58 km
- Uberin Road SLK 0.1 – 8.77 = 8.67km
- Uberin Road SLK 19.5 – 24.09 = 4.59km
- Wilkins Road SLK 6.35 – 8.45 = 2.1km
- Windsor Road SLK 5.8 – 7.06 = 1.26km

Current LCRIP Phase 4 Part B – Reseals and Culvert Repairs

- 1. Dowerin Meckering Road (SLK 18.4 -21.50 – 3.05km) – LCRIP \$142,000, Council \$0, Total Cost \$142,000**
C170 Bitumen reseal with 10mm stone, SLK 18.45 to SLK 21.50, total 3.05km
- 2. Koorda Wongan Hills Road (SLK 17.08-18.20 – 1.12km) – LCRIP \$55,000, Council \$0, Total Cost \$55,000**
C170 Bitumen reseal with 10mm stone, SLK17.08 to SLK18.20, total 1.12km
- 3. Metcalf Road (SLK 3.58) – LCRIP \$14,794, Council \$0, Total Cost \$14,794**
Culvert failure repair, 750mm HDPE sleeving of failed culvert with a 32mpa slurry encasement and rebuild end treatments with rock.

4. Harris East Road (SLK4.38) – LCRIP \$9,559, Council \$21,471, Total Cost \$31,030

Install 6 x 600mm HDPE Pipes, remove existing structure to spoil site.
Supply 40 ton of armour rock, Approx 130t of gravel, prepare stabilised subbase, lay geofabric
backfill with 6% cement & gravel, Rock Armour as per generic drawings. Overlay with stabilised gravel. Daylight entry & exit, Improve catchment & entry 'V' drain.

Revised LCRIP Phase 4 Part B Funding Allocation:

1. **Dowerin Meckering Road (SLK 18.4 -21.50 – 3.05km):**
 - Original Plan: C170 Bitumen reseal with 10mm stone - \$142,000.
 - Revised Options:
 - C170 Bitumen reseal with 14mm stone - \$166,281.20.
 - S45R Rubber Bitumen reseal with 14mm stone - \$172,430.
2. **Koorda Wongan Hills Road (SLK 17.08-18.20 – 1.12km):**
 - Recommendation: Bench this project and utilise the jet patcher for widening. Reschedule the reseal for the following year due to the current width of 6.7m, which warrants widening before resealing.
3. **Metcalf Road (SLK 3.58):**
 - Original Plan: Culvert failure repair with a budget of \$14,794
 - Recommendation: Continue with the project as planned but increase allocation to \$16,273 to accommodate any unforeseen costs.
4. **Harris East Road (SLK4.38):**
 - Original Plan: Install 6 x 600mm HDPE Pipes with a budget of \$31,030.
 - Recommendation: Proceed with the project and increase allocation to \$32,581.50 to cover revised costs.

With the removal of the reseal project on the Koorda Wongan Hills Road, the total combined project costs amount to \$221,284.50. Considering the current funding allocation at \$221,353 and the revised plan, we no longer need to contribute the \$21,471.00 that was initially planned. This adjustment enables us to reseal the Dowerin Meckering Road with a superior S45R product while also absorbing the anticipated cost inflation on the drainage works.

Other Considerations

1. Dowerin Koorda Road (SLK 15.52 – 22.13 – 6.61km) Total Cost \$113,692.00

Proposed works for shoulder widening.
Box out 100mm, condition and compact.
Precondition gravel in gravel pit.
Load and transport material from gravel pit up to 10km.
Balance, spread and compact at 1.5m or 2.0m width.
Sweep edges.
Estimated cost per km \$15,200.00 @ 1.5m
Estimated cost per km \$17,200.00 @ 2.0m

2. Redding Road & Stewart Street Intersection

Project Summary: Redding Road and Stewart Street Intersection

Project Overview: The proposed project aims to enhance the Redding Road and Stewart Street intersection in alignment with the current concept designs developed by Zone 50 Survey. The project entails various stages including vegetation removal, road reconstruction, surfacing, and installation of new infrastructure elements to improve traffic flow and safety.

Scope of Works:

1. Vegetation Removal and Stump Grinding:
 - Clearing of designated trees without the need for a clearing permit.

- Stump grinding estimated at \$5,000.
- 2. Road Reconstruction:
 - Removal of existing kerb and tree roots, followed by boxing out to the new formation width as per designs.
 - Importing new gravel, compaction, and trimming.
 - Estimated cost: \$26,000.
- 3. Surface Treatment:
 - Application of paveline jet patcher truck to lay an emulsion 7mm primer seal on new works.
 - Estimated cost: \$2,000.
- 4. Resealing:
 - S45R reseal on the 100m section of Redding Road's approach.
 - Estimated cost: \$5,000.
- 5. Asphalt Works:
 - Application of tack coat over existing asphalt followed by laying a 40mm hotmix intersection.
 - Estimated cost for 1,250m² intersection: \$56,250.
- 6. Infrastructure Installation:
 - Installation of new kerbing.
 - Estimated installation cost: \$7,700.
- 7. Line Marking:
 - Marking of road lines for traffic guidance.
 - Estimated cost: \$7,500.
- 8. Additional Expenses:
 - Survey costs: \$5,000.
 - Traffic control (if handled in-house): \$5,000.
 - Gravel royalties: \$1,000.

Total Project Cost:

- Estimated project cost: \$120,450.
- Contingency allowance (5%): \$6,022.50.

Conclusion: The proposed project for the Redding Road and Stewart Street intersection involves comprehensive road improvements including vegetation removal, road reconstruction, surfacing, and installation of new infrastructure elements. With a detailed cost analysis and contingency allowance, the project aims to enhance traffic flow and safety in the area.

3. Cottrell Street & Stewart Street Intersection

The Cottrell Street and Stewart Street intersection is regularly traversed by heavy truck combinations, yet its narrow approach poses challenges for safe turning maneuvers. Discussions are underway within the Asset and Works Committee (AWC) regarding whether shire staff should initiate engagement with concept designs to evaluate potential improvements for this intersection. Drawing parallels from the recently costed Redding Road intersection project, preliminary estimations suggest that enhancements to the Cottrell Street intersection could amount to approximately \$100,000.

In the interim, the Asset & Works Coordinator has proposed interim measures to address immediate concerns. This includes extending the current culvert, removing obstructive planted trees that impede drainage alignment, and reinforcing the intersection's wings with cement-stabilised gravel. These actions aim to facilitate smoother navigation for heavy vehicles, ensuring safer passage through the intersection. Additionally, routine shoulder maintenance grading of Cottrell Street is recommended to uphold ongoing maintenance standards and ensure optimal road conditions.

4. Koombekine North Road Regional Road Group Savings

Due to efficient project management and competitive tender pricing, we have accomplished the full 2-coat seal for Koombekine North Road SLK 1.10-1.90 and 4.45-6.62. Consequently, the budget initially designated for a planned second coat seal in the 2024/2025 financial year from the regional road group, amounting to \$154,587.00, is now accessible for expenditure in the 2024/2025 road program. It is recommended by officers to extend the already approved project on Cunderdin Minnivale Road by 730m which would bring the total job length to 2.73km from SLK 24.50 – 27.23.

5. Allocation For Twinkarri Machine to Conduct Verge Maintenance

The Twinkarri's efforts in 2023, involving the use of an excavator with a mulching head to trim overgrown vegetation in the maintenance zone, have garnered highly favorable responses from the community. There is a pressing need to sustain this method of road verge maintenance and deliberate on funding options for its continuation. Specific sections along 26 Gates Road, Uberin Road, McMoran Road, Eaton Road and Ward Road necessitate careful consideration in this regard.

6. Town Road Reseals

Road Name	SLK	Proposed Treatment	Estimated Cost
Memorial Avenue	0.00-0.84 (840m)	S45R 7mm	\$53,650
Stacy Street	0.00-0.57 (570m)	S45R 7mm	\$39,875
Maisey Street	0.00-0.38 (380m)	S45R 7mm	\$29,203
Amery Benjaberring Road	8.40-8.98 (580m)	S45R 14mm	\$30,000
Minnivale NE Road	0.00-0.10 (100m)		
Meckering Road	0.63-0.85 (220m)	S45R 7mm	\$15,950

Quotation for Revegetation

Date: 1/03/2024

Quote No.: 2024 03 006

Attention: Ben Forbes

Company: Shire of Dowerin

Email: bforbes@dowerin.wa.gov.au

Project: Namelcatchem Nature Reserve Revegetation Plan Implementation

Prepared by: Katherine Evans

Phone: 0418 535 957

Email: Katherine.evans@naturalarea.com.au

The following quotation is provided to the Shire of Dowerin for the implementation of the '*Namelcatchem Nature Reserve Revegetation Plan*' prepared by Natural Area. Namelcatchem Nature Reserve within the Shire of Dowerin (Figure 1) requires weed control, revegetation and monitoring to restore the historical gravel pit to a condition similar to that of the surrounding environment as required by Vegetation Conservation Notice CPS 10216/1.

Indicative pricing for the works detailed in the revegetation plan are as per Table 1-3.



Quotation for Revegetation



Figure 1:
Namelcatchem Pit Boundary
Namelcatchem Nature Reserve, Dowerin

Client: Shire of Dowerin
Date: 13/02/2023
Created by: K. Evans
Image Source: Google Satellite, 2023
Datum: GDA 94

0 25 50 m



Quotation for Revegetation

Table 1: Cost Schedule years 1 – 3

Activity	Year 1 (2024)				Year 2 (2025)				Year 3 (2026)			
	Unit	Qty	Unit rate	Cost (\$ ex GST)	Unit	Qty	Unit rate	Cost (\$ ex GST)	Unit	Qty	Unit rate	Cost (\$ ex GST)
Site Preparation - Weed Control	Event	1	1,900.00	1,900.00	Event				Event			
Seed Collection/ processing	Event				Event	1	2,375.00	2,375.00	Event			
Seed Treatment and dispersal	Event				Event	1	760.00	760.00	Event			
Plant Installation	Ea	3,247	2.00	6,494.00	Ea				Ea			
Infill Plant Supply	Ea				Ea	974	2.10	2,045.61	Ea	292	2.21	645.83
Infill plant Installation	Ea				Ea	974	2.52	2,454.73	Ea	292	2.65	774.41
Weed Control	Event	1	1,900.00	1,900.00	Event	2	1,995.00	3,990.00	Event	2	2,094.75	4,189.50
Initial vegetation Survey	Event	1	3,000.00	3,000.00								
Vegetation Survey/ Monitoring	Event				Event	1	3,150.00	3,150.00	Event	1	3,307.50	3,307.50
Reports	Event	1	1,200.00	1,200.00	Event	1	1,260.00	1,260.00	Event	1	1,323.00	1,323.00
Yearly Total (ex GST)				14,494.00				16,035.34				10,240.24
GST				1,449.40				1,603.53				1,024.02
Yearly Total (inc GST)				15,943.40				17,638.88				11,264.26

Quotation for Revegetation

Table 2: Cost Schedule years 4 – 6

Year 4 (2027)					Year 5 (2028)				Year 6 (2029)			
Activity	Unit	Qty	Unit rate	Cost (\$ ex GST)	Unit	Qty	Unit rate	Cost (\$ ex GST)	Unit	Qty	Unit rate	Cost (\$ ex GST)
Weed Control	Event	2	2,199.49	4,398.98	Event	1	2,309.46	2,309.46	Event	1	2,424.93	2,424.93
Vegetation Survey/ Monitoring	Event	1	3,472.88	3,472.88	Event	1	3,646.52	3,646.52	Event	1	3,828.85	3,828.85
Reports	Event	1	1,389.15	1,389.15	Event	1	1,458.61	1,458.61	Event	1	1,531.54	1,531.54
Yearly Total (ex GST)				9,261.01	7,414.59				7,785.32			
GST				926.10	741.46				778.53			
Yearly Total (inc GST)				10,187.11	8,156.05				8,563.85			

Table 3: Cost Schedule years 7- 10

Year 7 (2030)					Year 8 (2031)				Year 9 (2032)				Year 10 (2033)			
Activity	Unit	Qty	Unit rate	Cost (\$ ex GST)	Unit	Qty	Unit rate	Cost (\$ ex GST)	Unit	Qty	Unit rate	Cost (\$ ex GST)	Unit	Qty	Unit rate	Cost (\$ ex GST)
Weed Control	Event	1	2,546.18	2,546.18	Event	1	2,673.49	2,673.49	Event	1	2,807.16	2,807.16	Event	1	2,947.52	2,947.52
Vegetation Survey/ Monitoring	Event	1	4,020.29	4,020.29	Event	1	4,221.30	4,221.30	Event	1	4,432.37	4,432.37	Event	1	4,653.99	4,653.99
Reports	Event	1	1,608.12	1,608.12	Event	1	1,688.53	1,688.53	Event	1	1,772.96	1,772.96	Event	1	1,861.61	1,861.61
Yearly Total (ex GST)				8,174.59	8,583.32				9,012.49				9,463.12			
GST				817.46	858.33				901.25				946.31			
Yearly Total (inc GST)				8,992.05	9,441.65				9,913.74				10,409.43			

Pricing Note:

- All pricing is an estimate and is subject to change at the time of quoting
- Additional accommodation and incidentals costs may be included at time of quoting dependent on extent of works

Quotation for Revegetation

Date: 13/03/2024
Quote No.: 2024 03 006
Attention: Ben Forbes
Company: Shire of Dowerin
Email: bforbes@dowerin.wa.gov.au
Project: Namelcatchem Nature Reserve Revegetation Plan Implementation
Prepared by: Steph Geard
Phone: (08) 9209 2767
Email: Steph.geard@naturalarea.com.au

The following quotation is provided to the Shire of Dowerin for the implementation of the '*Namelcatchem Nature Reserve Revegetation Plan*' prepared by Natural Area. Namelcatchem Nature Reserve within the Shire of Dowerin (Figure 1) requires weed control, revegetation, and monitoring to restore the historical gravel pit to a condition similar to that of the surrounding environment as required by Vegetation Conservation Notice CPS 10216/1.

Weed control

Natural Area will undertake an initial non-selective herbicide application of Glyphosate 2% prior to revegetation works. Following revegetation, Natural Area will undertake maintenance herbicide applications bi-annually in spring and autumn, for two years.

All herbicide application will be undertaken by Natural Area's licenced Herbicide Technicians and applied according to the Health (Pesticides) Regulations 2011. Our technicians receive mandatory training during licencing as well as ongoing in-house on the job training and are required to complete Natural Area's Employee Training Manuals "Weed Control: Application of Herbicides" and "Weed Control: Manual Weed Control". Training and on ground experience have led our staff to developed extensive knowledge of native and weed flora species resulting in quality outcomes with no off-target damage. Natural Area personnel will ensure that chemical application forms are completed and provided to the City within 24 hours.

All herbicides will be mixed at Natural Area's operations depot within bunded chemical mixing areas which comply with Department of Health regulations. Wetting agents/adjuvants will be added as per manufacturer's instructions. An environmentally friendly marker dye will be incorporated at a concentration that will result in dye being visible for 7 days after herbicide application, to identify treated areas. Wetting agents/adjuvants will be added as per manufacturer's instructions and no wetting agent will be utilised for herbicide application within 20 metres of a water body.

Quotation for Revegetation

All chemicals are handled and stored according to the manufacturer's instructions (label or SDS), and appropriate PPE is worn when handling all chemicals at all times. Required PPE for herbicide use (which exceeds SDS requirements) includes:

- safety boots/wellington boots with cut retardant material, non-slip soles and steel toe caps (to comply with AS/NZS 2210)
- protective eyewear/face shield (to comply with AS 1337)
- nitrile chemical gloves (to comply with AS/NZS 2161)
- respiratory masks (A1/P3 gas particle filters) fitted with airtight seal
- spray suit/pants
- chemical apron
- high visibility long-sleeved shirt and long trousers.

Upon arrival to site, we will set up herbicide application signage (minimum of 4 and/or placed at all entries to a reserve) in accordance with the Department of Health (Pesticides) Regulation 2011, to inform the public of ongoing works (Figure 7). Where public paths and tracks need to be closed due to herbicide application, temporary worksite signage (e.g. footpath closed) will be erected. All vehicles are fitted with high visibility beacons and reversing buzzers to ensure safe movement of vehicles within the reserve.



Figure 1: Natural Area signage in accordance with regulations (Regulation 89(5) of the Health (Pesticides) Amendment Regulations 2011).

At all times during the implementation of works, Natural Area will implement quality, safety, and environmental protocols, including:

- SOP-HSEQ-037 Chemical Weed Control
- SOP-HSEQ-038 Working with Hazardous Substances
- SOP-HSEQ-023 Manual Handling
- Sop-HSEQ-026 Safe Vehicle Use
- SOP-HSEQ-065 Protection of the Natural Environment

Quotation for Revegetation

Implementation of these procedures will guarantee works are undertaken in a safe, efficient, and environmentally sustainable manner, ensuring the City received the best value for money service. Herbicide application will not be conducted during inappropriate weather conditions including:

- wind speeds above 15 km/h
- when temperatures reach above 35 degrees centigrade
- during rainfall

Seed Treatment and Distribution

Natural Area will treat, and batch seed collected, and undertake direct seeding of the area at a rate of 4 kg per hectare. Seed distribution will occur in April-May to coincide with winter rains. Prior to broadcasting, seed will be pre-treated to help alleviate dormancy issues. Pre-treatment of seed may include:

- hot water
- scarification
- aerosol smoke application
- removal of physical inhibitors.

Following dormancy pre-treatment, seed will be batched according to species and densities and mixed with bulking media as required for even distribution. A species list for seed distribution is provided below (Table 2). Given the expected size of revegetation areas and accessibility, seed will be broadcast by hand and/or via Natural Area's GP1200 Autoseeder at a rate of 4 kg per ha. Seed does not need to be covered over as the species selected in Table 4 will embed to suitable depths following rainfall events.

Table 2: Seed Species list.

Species	
<i>Allocasuarina acutivalvis</i>	<i>Hakea scoparia</i>
<i>Allocasuarina campestris</i>	<i>Maireana brevifolia</i>
<i>Banksia armata</i>	<i>Melaleuca acuminata subsp. websteri</i>
<i>Calothamnus gilesii</i>	<i>Melaleuca adnata</i>
<i>Calothamnus quadrifidus subsp. angustifolius</i>	<i>Melaleuca conothamnoides</i>
<i>Eucalyptus armillata</i>	<i>Melaleuca johnsonii</i>
<i>Eucalyptus rigidula</i>	<i>Melaleuca laxiflora</i>
<i>Eucalyptus subangusta subsp. subangusta</i>	<i>Melaleuca marginata</i>
<i>Eucalyptus tenera</i>	<i>Melaleuca radula</i>
<i>Hakea francisiana</i>	<i>Melaleuca scalena</i>

Quotation for Revegetation

Revegetation

Natural Area will install a total of 3,245 native, provenance specific tubestock in winter 2024. A species list for All the tubestock will be stored within Natural Area's accredited facility and taken to site daily, on each day of planting. This allows us the ability to manage and guarantee the supply of quality plant stock specifically for this site. Planting works will occur in May/June after the first significant rain event of the season to ensure seedling survival. Natural Area are experienced in the installation of tubestock and will undertake the following methodology:

- Tubestock will be installed using Pottiputki or augers depending on the soil type.
- holes will be created deep enough to ensure that the entire root ball of the plant will be covered, but not too deep as to bury parts of the plant.
- Plants will be installed into each hole, covered, and patted down firmly to ensure that no air is left around the root ball.

Pricing for the above works has been provided below (Table 1).



Figure 2:
Namelcatchem Pit Boundary
Namelcatchem Nature Reserve, Dowerin

Client: Shire of Dowerin
Date: 13/02/2023
Created by: K.Evans
Image Source: Google Satellite, 2023
Datum: GDA 94

0 25 50 m



Quotation for Revegetation

Table 1: Cost Schedule Year 1

Activity	Unit	Qty	Year 1 (2024)	
			Unit rate (\$ ex GST)	Cost (\$ ex GST)
Site Preparation - Weed Control	Event	1	1,900.00	1,900.00
Seed Treatment and Dispersal	Event	1	760.00	760.00
Plant Installation	Each	3,247	2.00	6,494.00
Weed Control	Event	1	1,900.00	1,900.00
Accommodation	Nights	3	500.00	1,500.00
			Total (ex GST)	12,554.00
			GST	1,255.40
			Total (inc GST)	13,809.40

Pricing Notes:

- Seed quantities to be supplied as per previous quote
- Plant supply as per previous plant propagation order.



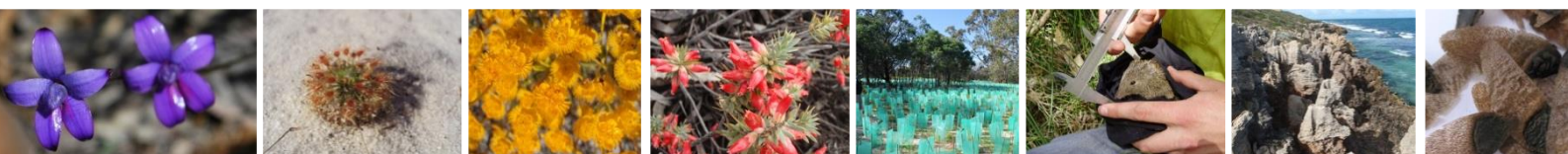
Natural Area
CONSULTING MANAGEMENT SERVICES

Shire of Dowerin

Namelcatchem Nature Reserve

Revegetation Plan

Natural Area Holdings Pty Ltd
Whadjuk Country
57 Boulder Road, Malaga WA 6090
Ph: (08) 9209 2767
info@naturalarea.com.au
www.naturalarea.com.au



Acknowledgement of Country

Ngala kaaditj Noongar moort keyen kaadak nidja boodja.

Natural Area acknowledges the Traditional Owners of the lands on which we operate, and recognises their continuing connection to lands, waters and communities.

Disclaimer

Natural Area Holdings Pty Ltd, trading as Natural Area Consulting Management Services (Natural Area), has prepared this report for the sole use of the Client and for the purposes as stated in the agreement between the Client and Natural Area under which this work was completed. This report may not be relied upon by any other party without the express written agreement of Natural Area. No part of this document may be copied, duplicated, or disclosed without the express written permission of the Client and Natural Area.

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Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time Natural Area performed the work. Any changes in such circumstances and facts upon which this document is based may adversely affect any recommendations, opinions or findings contained in this document.

System Certifications

Environmental management system registered to ISO 14001:2015

Quality management system registered to ISO 9001:2015

Occupational health and safety management system registered to ISO 45001:2018

Document Title		Namelcatchem Nature Reserve Revegetation Plan			
Location		ConsultingSP/Shared Documents/Shire of Dowerin/2023 09 091 VCN Namelcatchem/SOD-R-Namelcatchem Nature Reserve Revegetation Plan.docx			
Draft/Version No.	Date	Changes	Prepared by	Approved by	Status
D1	30/01/2023	New Document	KE	BC	Draft for Client comment

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1.0 Introduction

Natural Area Consulting Management Services (Natural Area) was commissioned by the Shire of Dowerin to produce a revegetation plan associated with two gravel extraction locations within the Shire's reserves. On 4 September 2023, a Vegetation Conservation Notice (VCN) CPS 10216/1 (DWER, 2023) was given under section 70(2)(b) of the *Environmental Protection Act* 1986 (EP Act) for one of the two reserves. Natural Area was commissioned to revise the revegetation plan to meet conditions within the VCN for Namelcatchem Nature Reserve (Figure 2).

This revegetation plan will:

- describe revegetation area
- outline management aims and objectives
- describe revegetation activities and methodology
- outline revegetation objectives, success criteria and monitoring requirements
- outline weed and pest control activities
- outline reporting requirements
- describe contingency plans if success criteria are not met
- provide indicative implementation schedule.

1.1 Project Outline and History

Namelcatchem is a 259.4 ha A1 Reserve (Crown Reserve 687) located 17km East of Dowerin. The Shire of Dowerin has extracted gravel from Namelcatchem Nature Reserve expanding the historical gravel pit. The Namelcatchem Pit originally had gravel extracted from an area of approximately 2,940 m² and has been expanded to an area of approximately 7,400 m². As per Clearing Permit CPS 3825/1 (Exp. January 2, 2016) the Shire of Dowerin was required to revegetate and rehabilitate the outlined area (Figure 2) by:

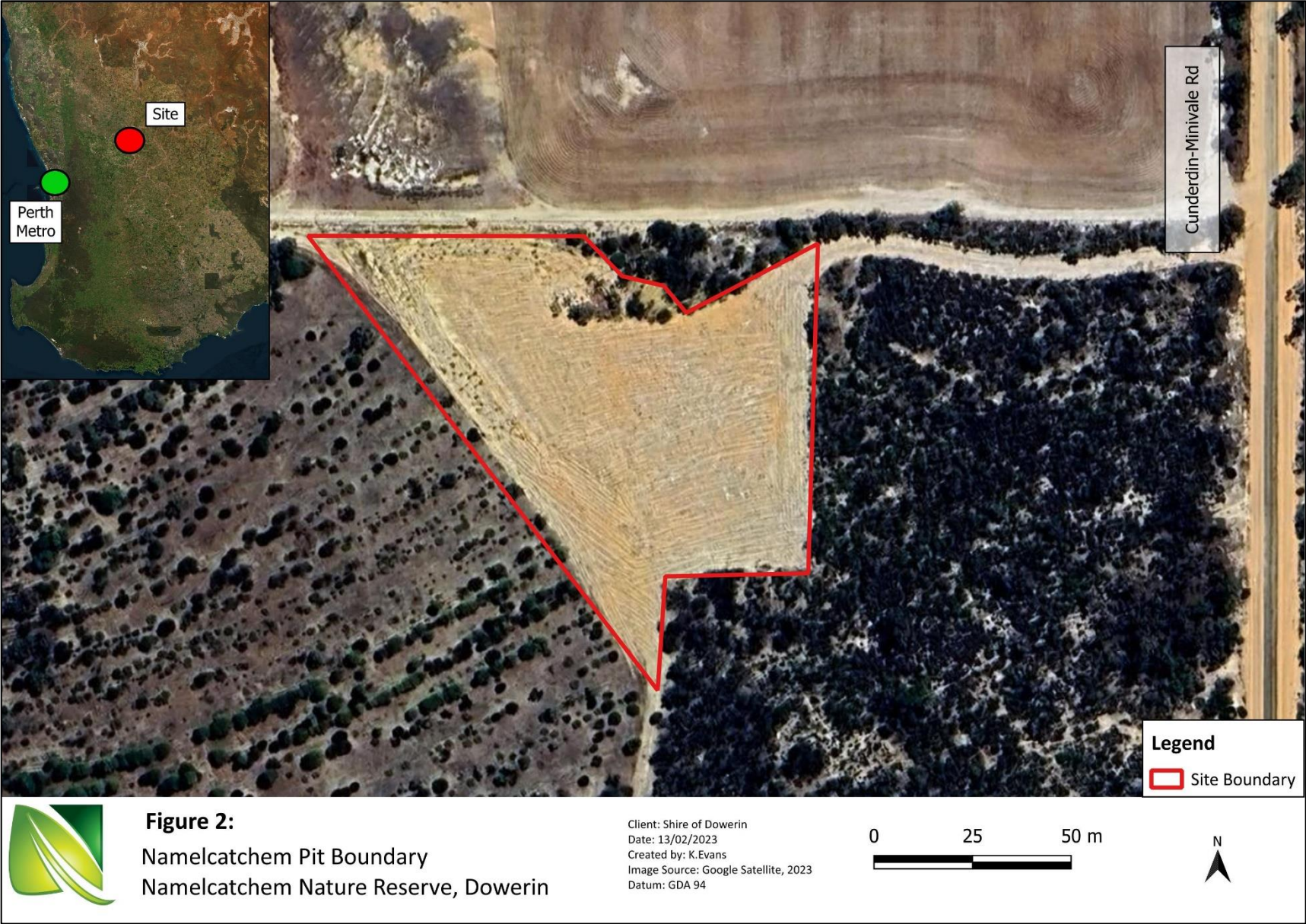
- retain as much brush mulch removed by clearing and stockpile the vegetative material in the area that has already been cleared
- rip the ground on the contour to remove soil compaction
- lay brush material retained
- revegetate area deliberately by planting or direct seeding native vegetation ensuring only provenance seeds and propagating material are used ensuring that a density of 300-350 plants per area is established (approx. 1 per 5 m²)
- engage environmental specialist to determine the species composition, structure and density of area revegetated and rehabilitated
- in the event that the environmental specialist determines species composition, structure and density for the revegetated area does not meet pre-clearing vegetation types further planting and direct seeding of local provenance plants is to be undertaken.

Some minor revegetation works had been undertaken in 2022 (Figure 4). Further revegetation is required to reverse the damage caused to the site and restore them back to a condition similar to the adjacent vegetation surrounding the site. Revegetating the site will provide connective habitat to the broader landscape, increasing biodiversity and habitat potential within the landscape.

Appropriate reference ecosystems were identified (Figure 1) to guide project targets (e.g. species selection and composition) and completion criteria. With the section of Namelcatchem Nature Reserve adjacent to Namelcatchem Pit. A control plot was established on the 26 September 2023 as required by CPS 10216/1.



Figure 1: Namelcatchem reference site



2.0 Site Description

The Namelcatchem Pits is located within the Shire of Dowerin's municipality. The Namelcatchem Pit (Figure 2) is located within the Namelcatchem Nature Reserve and is adjacent to Cunderdin-Minnivale Road. Namelcatchem has had revegetation implemented in the north-eastern strip of the site (Figure 4).

According to the Interim Biogeographical Regionalisation of Australia (IBRA) database, the sites are located within the Merredin subregion of the Avon Wheatbelt (Mitchell *et al.*, 2002). Vegetation condition within the cleared site has been categorised as 'Completely Degraded' according to the Keighery scale provided in Appendix 1 (Keighery, 1994). Example of vegetation condition observed within the sites is shown in Figure 3. Vegetation condition within the established control plot within the adjacent Namelcatchem Nature Reserve has been categorized as 'Very Good' Quadrat data is located in Appendix 2.

One soil type was identified within the proposed rehabilitation site: Kwolyin, Kwelkan subsystem is described as undulating granitic low hills, in the central cone of ancient drainage with bare rock, deep sandy duplex (grey and red), shallow sand (red and yellow/brown) and red loamy duplex (DPIRD 2024).

Within Namelcatchem Nature Reserve there is one heritage site (05020). This site consists of Namelcatchem Well built sometime before 1865 (2018 DPLH). Namelcatchem Well located approximately 715 m Southeast of the revegetation site. There are no known Aboriginal heritage sites within the survey area or adjacent bushland.



Figure 3: Vegetation condition within the Namelcatchem Pit site is categorised as 'Completely Degraded'.



Figure 4: Revegetation tubestock installed within the north-eastern section of the Namelcatchem Pit site.

3.0 Species Selection

The species lists below have been collated from the Control Quadrat (Appendix 2) and site visit (Tables 1 and 2). These species have been assessed for suitability of use in revegetation works and combined with Naturemap to create a species list for revegetation works (Section 3.1). Many of the species listed are not suited for installation during the first years of revegetation due to their sensitivity to exposed conditions though should be installed in subsequent years. Through linking areas of 'Very Good' vegetation condition with surrounding revegetation areas, it is expected that over time a natural migration of some species will occur to build biodiversity within the site.

Table 1: Species within Control Quadrat

Family	Species	Common Name
Asparagaceae	<i>Thysanotus manglesianus</i>	Mangles Fringed Lily
Asteraceae	<i>Waitzia acuminata</i>	Orange Immortelle
Chenopodiaceae	<i>Rhagodia drummondii</i>	
Cyperaceae	<i>Lepidosperma tubercalatum</i>	
Ericaceae	<i>Brachyloma preissii</i>	Globe Heath
Fabaceae	<i>Acacia acuminata</i>	Jam
Fabaceae	<i>Acacia lasiocarpa</i> var. <i>bracteolata</i>	
Hemerocallidaceae	<i>Dianella revoluta</i>	Blueberry lily
Myrtaceae	<i>Eucalyptus tenera</i>	Glazed Mallee
Myrtaceae	<i>Melaleuca hamata</i>	
Poaceae	<i>Austrostipa elegantissima</i>	
Polygalaceae	<i>Comesperma integerrimum</i>	

Table 2: Species present within Namelcatchem Nature Reserve adjacent to Namelcatchem Gravel Pit

Family	Species	Common Name
Amaranthaceae	<i>Ptilotus polystachyus</i>	Prince of Wales Feather
Apocynaceae	<i>Alyxia buxifolia</i>	Dysentery Bush
Casuarinaceae	<i>Allocasuarina acutivalvis</i>	
Casuarinaceae	<i>Allocasuarina campestris</i>	
Chenopodiaceae	<i>Maireana brevifolia</i>	Small Leaf Bluebush
Chenopodiaceae	<i>Enchylaena tomentosa</i>	Barrier Saltbush
Cyperaceae	<i>Lepidosperma squamatum</i>	
Malvaceae	<i>Sida calyxhymentia</i>	Tall Sida
Myrtaceae	<i>Calothamnus quadrifidus</i> subsp. <i>angustifolius</i>	

Family	Species	Common Name
Myrtaceae	<i>Calothamnus sanguineus</i>	Silky-leaved Blood Flower
Myrtaceae	<i>Eucalyptus capillosa</i>	Wheatbelt Wandoo
Myrtaceae	<i>Melaleuca marginata</i>	
Myrtaceae	<i>Melaleuca spicegera</i>	
Poaceae	<i>Aristida contorta</i>	Bunched Kerosene Grass
Poaceae	<i>Austrostipa elegantissima</i>	
Poaceae	<i>Austrostipa macalpinei</i>	
Poaceae	<i>Neurachne alopecuroides</i>	Foxtail Mulga Grass
Santalaceae	<i>Santalum acuminatum</i>	Quandong
Sapindaceae	<i>Dodonaea pinifolia</i>	



Figure 5: Vegetation surrounding Namelcatchem Gravel Pit

3.1 Revegetation Species List

Flora species included in the revegetation species list (Table 3) are comprised of species occurring within the reference ecosystems (Namelcatchem Nature Reserve). A review of NatureMap search outcomes (DBCA, 2023) was also used to formulate the proposed list. The proposed target density for revegetation is 1 plant per every 1 m², to achieve this a total of 3,247 native tubestock and 2.96 kg of mixed native seed is recommended.

The proposed species list is subject to change, depending on seed availability during collection events. Individual quantities of each species have therefore not been provided. Species quantities should reflect the adjacent vegetation with 50% of species to be made up of middle storey species, 30% of understorey and 20% of overstorey.



Waitzia acuminata (Orange immortal)



Thysanotus Manglesianus (Mangles Fringed Lily)



Eucalyptus tenera (Glazed Mallee)

Figure 6: Species present in control quadrat 2023.

Table 3: Indicative species list for revegetation areas

Family	Species	Suitable for Direct Seeding (Y/N)	Indicative Plant Numbers
<i>Understorey Species</i>			
Amaranthaceae	<i>Ptilotus polystachyus</i>	Y	1,480
Araliaceae	<i>Trachymene cyanopetala</i>	Y	
Araliaceae	<i>Trachymene ornata</i>	Y	
Asparagaceae	<i>Laxmannia squarrosa</i>	Y	
Asparagaceae	<i>Thysanotus manglesianus</i>	Y	
Asteraceae	<i>Brachyscome pusilla</i>	Y	
Asteraceae	<i>Podotheca angustifolia</i>	Y	
Asteraceae	<i>Podotheca gnaphalioides</i>	Y	

Family	Species	Suitable for Direct Seeding (Y/N)	Indicative Plant Numbers
Asteraceae	<i>Rhodanthe laevis</i>	Y	
Asteraceae	<i>Waitzia acuminata</i>	Y	
Boryaceae	<i>Borya sphaerocephala</i>	N	
Chenopodiaceae	<i>Enchylaena tomentosa</i>	Y	
Chenopodiaceae	<i>Rhagodia drummondii</i>	Y	
Chenopodiaceae	<i>Sclerolaena dicantha</i>	Y	
Cyperaceae	<i>Lepidosperma squamatum</i>	N	
Cyperaceae	<i>Lepidosperma tubercalatum</i>	N	
Cyperaceae	<i>Schoenus brevisetis</i>	N	
Cyperaceae	<i>Schoenus sesquispiculus</i>	N	
Fabaceae	<i>Acacia bidentata</i>	Y	
Fabaceae	<i>Gompholobium obcordatum</i>	Y	
Goodeniaceae	<i>Brunonia australis</i>	Y	
Goodeniaceae	<i>Dampiera lavandulacea</i>	N	
Goodeniaceae	<i>Goodenia berardiana</i>	N	
Goodeniaceae	<i>Lechenaultia biloba</i>	N	
Hemerocallidaceae	<i>Chamaescilla corymbosa</i>	Y	
Hemerocallidaceae	<i>Dianella revoluta</i>	N	
Lauraceae	<i>Cassythia pomiformis</i>	N	
Malvaceae	<i>Sida calyxhymenia</i>	N	
Poaceae	<i>Amphipogon turbinatus</i>	Y	
Poaceae	<i>Aristida contorta</i>	Y	
Poaceae	<i>Austrostipa elegantissima</i>	Y	
Poaceae	<i>Austrostipa macalpinei</i>	Y	
Poaceae	<i>Austrostipa trichophylla</i>	Y	
Poaceae	<i>Neurachne alopecuroidea</i>	Y	
Polygalaceae	<i>Comesperma calymega</i>	N	
Polygalaceae	<i>Comesperma integerrimum</i>	N	
Stylidiaceae	<i>Stylidium leptophyllum</i>	N	
Middle Storey Species			
Apocynaceae	<i>Alyxia buxifolia</i>	N	
Asteraceae	<i>Olearia muelleria</i>	Y	3,700

Family	Species	Suitable for Direct Seeding (Y/N)	Indicative Plant Numbers
Chenopodiaceae	<i>Maireana brevifolia</i>	Y	
Chenopodiaceae	<i>Maireana marginata</i>	Y	
Dilleniaceae	<i>Hibbertia glaucophylla</i>	N	
Fabaceae	<i>Acacia erinacea</i>	Y	
Fabaceae	<i>Acacia hemiteles</i>	Y	
Fabaceae	<i>Acacia lasiocarpa</i> var. <i>bracteolata</i>	Y	
Fabaceae	<i>Acacia spinosissima</i>	Y	
Fabaceae	<i>Acacia lasiocalyx</i>	Y	
Fabaceae	<i>Jacksonia fasciculata</i>	Y	
Fabaceae	<i>Templetonia sulcata</i>	Y	
Myrtaceae	<i>Calothamnus quadrifidus</i> subsp. <i>angustifolius</i>	Y	
Myrtaceae	<i>Calothamnus sanguineus</i>	Y	
Myrtaceae	<i>Calytrix leschenaltii</i>	N	
Myrtaceae	<i>Calytrix strigosa</i>	N	
Myrtaceae	<i>Ericomyrtus drummondii</i>	N	
Myrtaceae	<i>Melaleuca carrii</i>	Y	
Myrtaceae	<i>Melaleuca conothamnoides</i>	Y	
Myrtaceae	<i>Melaleuca hamata</i>	Y	
Myrtaceae	<i>Melaleuca marginata</i>	Y	
Myrtaceae	<i>Melaleuca radula</i>	Y	
Myrtaceae	<i>Melaleuca scaleana</i>	Y	
Myrtaceae	<i>Melaleuca spicegera</i>	Y	
Myrtaceae	<i>Melaleuca vinnula</i>	Y	
Myrtaceae	<i>Verticordia chrysantha</i>	N	
Myrtaceae	<i>Verticordia tumisa</i> subsp. <i>tumida</i>	N	
Proteaceae	<i>Banksia armata</i>	N	
Proteaceae	<i>Grevillea didymobotrya</i>	N	
Proteaceae	<i>Grevillea eriostachya</i>	N	
Proteaceae	<i>Grevillea paradoxa</i>	N	
Proteaceae	<i>Hakea scoparia</i>	N	
Proteaceae	<i>Persoonia saundersiana</i>	N	

Family	Species	Suitable for Direct Seeding (Y/N)	Indicative Plant Numbers
Rhamnaceae	<i>Stenanthemum pomaderroides</i>	N	
Rutaceae	<i>Diploleana velutina</i>	N	
Sapindaceae	<i>Dodonaea pinifolia</i>	N	
Overstorey Species			
Casuarinaceae	<i>Allocasuarina acutivalvis</i>	Y	
Casuarinaceae	<i>Allocasuarina campestris</i>	Y	
Fabaceae	<i>Acacia acuminata</i>	Y	
Myrtaceae	<i>Eucalyptus armillata</i>	Y	
Myrtaceae	<i>Eucalyptus capillosa</i>	Y	
Myrtaceae	<i>Eucalyptus loxophleba</i>	Y	
Myrtaceae	<i>Eucalyptus rigidula</i>	Y	2,200
Myrtaceae	<i>Eucalyptus subangusta</i> subsp. <i>subangusta</i>	Y	
Myrtaceae	<i>Eucalyptus tenera</i>	Y	
Myrtaceae	<i>Melaleuca atriviridis</i>	Y	
Proteaceae	<i>Hakea francisiana</i>	N	
Santalaceae	<i>Santalum acuminatum</i>	N	

3.2 Installation Density

The proposed offset revegetation works will require 3,247 tubestock will be installed across the offset site to allow for the targeted installation of 0.5 stems per m². An additional density of 1 stem per m² will be targeted using direct seeding, with a total of 2.96 kg of seed being applied to the site at 4 kg/ha. The final seed quantities per species will be determined using seeding calculations of expected presenting species found on site. It is recommended that seeding calculations are adjusted based on the seed presenting, prior to collection activities commencing, to guide collection quantities to target the desired stem count.

Seeding is to only occur in the first year of establishment. As natural deaths of plants are expected, it is anticipated that subsequent infill planting of 30 % of the original installation number of tubestock may be required in the second year to ensure a final completion density of 1 stem per m² is achieved. Infill numbers will be determined based on monitoring of the site and adjusted accordingly. Further infill may be required in subsequent years if the target density is not achieved. The timeframe may extend if the completion criteria have not been met and upon discussions with DWER and the Shire. General revegetation across the site will target a natural composition of *Eucalyptus tenera* and *Melaleuca hamata* Open Woodland ensuring that strata layers meet the following ratios:

- 20% Upper storey
- 50% Middle storey
- 30% Lower storey

4.0 Completion Criteria and Timeframe

Monitoring will take place during maintenance events and formal monitoring events to determine the success of revegetation works. To assess the revegetation, the following completion criteria are to be achieved by the final monitoring event:

- weed cover is <10% across the site by the end of the maintenance period
- no Weeds of Significance or Declared Pests on site
- species diversity is at least 70% of the original species list by the end of the maintenance period
- native species density is >1 stem per every 1 m² or an average of 10% vegetation coverage at the end of the maintenance period
- no erosion present within revegetation area
- no rubbish present within revegetation area.

4.1 Project Limitations and Contingencies

There are several limitations which may affect the final outcome of the project. The following limitations have been identified and have been considered during the planning process with contingency measures provided in Table 4. It should be noted that this is not an exhaustive list of potential occurrences at the site and is meant as a guide only. Any contingency actions should be discussed and approved by the Shire prior to implementation.

Table 4: Limitations that may affect revegetation success and potential contingency actions

Potential Limitation	Potential impact on site	Potential contingency actions
Herbivory from kangaroos and rabbits	Herbivores may damage seedlings while grazing reducing survival and native coverage of plants.	<ul style="list-style-type: none">▪ Use hardened tubestock which are less palatable to grazing▪ Monitor for presence of rabbits, consider biological control▪ Exclusion by fencing or tree guards is expensive and not considered necessary▪ The use of tubestock, soil stored seed and direct seeding should produce enough stems to outweigh any herbivory impacts
Fire	While fire may benefit native species recruitment from seed, it may also result in an increase in weed species germination. If the fire passes through the site, it will result in the temporary decrease in foliar cover, species diversity and loss.	<ul style="list-style-type: none">▪ Monitoring the site closely after fire and adjust weed control schedule according to site conditions▪ Monitor native species germination to establish site response to fire▪ Infill planting if required

Potential Limitation	Potential impact on site	Potential contingency actions
Drought	Whilst native species are adapted to the dry Australian climate, dry hot weather during seedling phase of a plants life cycle has the potential to decrease the survival rates, species presence and foliar cover at the site.	<ul style="list-style-type: none"> ▪ Infill planting in the following season if required ▪ Watering of revegetation areas during summer months if required
Weed cover in excess of 10%	Due a variety of environmental factors, weed cover may exceed the success criteria for the site.	<ul style="list-style-type: none"> ▪ Alteration to the weed control schedule based on site conditions
Native species density/cover/ diversity less than the success criteria	Due to a variety of environmental factors, native species establishment and recruitment may not meet the success criteria.	<ul style="list-style-type: none"> ▪ Supplementary revegetation work (tubestock planting)
Unauthorised access and disturbance from trampling	Unauthorised access to the revegetation area may be an issue through the potential for introduction of weed seeds or pathogens, and damage to vegetation through vandalism, creation of tracks and dumping of rubbish on top of vegetation.	<ul style="list-style-type: none"> ▪ Supplementary revegetation work (tubestock planting)
Introducing of <i>Phytophthora cinnamomi</i> (Dieback) to the area	Whilst there are no current signs of Dieback infestation within the project area, the introduction would significantly alter species composition.	<ul style="list-style-type: none"> ▪ Supplementary revegetation work (tubestock planting) ▪ The Shire of Dowerin average rainfall is less than optimal to support <i>Phytophthora cinnamomi</i> (400mm) however precautions should still be taken.

4.2 Monitoring and Reporting

Monitoring of revegetation activities within the rehabilitation sites will occur annually in September or October for a 3 year period following initial plant installation. Following the three-year period monitoring should take place biennially with the last event taking place in 2033. Monitoring events will consist of:

- monitoring of three 10 x 10 m² quadrats (1 control and 2 monitoring) to record:
 - species composition, structure and density
 - vegetation condition
 - percentage cover of weed species
 - images from the northwestern corner of control and monitoring quadrats
- establishment of at least 1 photo monitoring point
- a general assessment of the entire site, including an assessment of native and non-native species, maintenance issues including rubbish presence and signs of herbivory by pest animal species
- preparation and submission of monitoring results in the form of a brief report in accordance with reporting requirements listed in VCN (Table 6).

An initial vegetation survey will be conducted in September 2024. A control quadrat was established as per VCN on the 29 September 2023; two monitoring quadrats will be established at the first monitoring event in August 2024 at the locations in Table 5. Quadrats will be 10 x 10 m marked with a metal star picket on the north-western point. Survey results should be compiled over the years to compare and monitor the revegetation success against the completion criteria and to assess if additional revegetation works are required.

Table 5: Quadrat locations as specified by CPS 10216/1

Quadrat	Latitude	Longitude
Control Quadrat 1	-31.17512719	117.1904041
Monitoring Quadrat 1	-31.17467503	117.189454
Monitoring Quadrat 2	-31.17498494	117.1900179

Table 6: Monitoring and reporting schedule

Event	Monitoring	Report Due to DWER
Initial Vegetation Survey	Sept/Oct 2024	June 2025
Survey 1	Sept/Oct 2025	N/A
Survey 2	Sept/Oct 2026	June 2027
Survey 3	Sept/Oct 2028	June 2029
Survey 4	Sept/Oct 2030	June 2031
Survey 5	Sept/Oct 2032	June 2033
Final Vegetation Survey	Aug 2033	Dec 2033

5.0 Site Preparation and Revegetation Methodology

The objectives of this revegetation plan include:

- reduction of weed competition
- replacement of any flora lost due to excavation activities
- establishment of completion criteria
- maintenance program for a 10-year period
- monitoring program for a 10-year program

To fulfil these objectives, revegetation works will include:

- management of weeds to reduce their impact on site biodiversity and native species establishment
- rehabilitation of the sites using native seed collected from adjacent reserves and tubestock species propagated from local seed
- maintenance for 10 years following completion of initial revegetation works
- monitoring program for 10 years.

5.1 Site Preparation

Earthworks have been undertaken at Namelcatchem Pit to restore the topsoil across the cleared areas and rip compacted areas to a depth of 0.5 m (Figure 7). The landform has been contoured to best match a natural gradient with no piles or windrows present being created. Access tracks have not been ripped to allow for access to the site.



Figure 7: Namelcatchem revegetation area before (Left) and after (Right) ripping and contouring June 2023.

5.2 Pest Animal Control

Signs of the European Rabbit (*Oryctolagus cuniculus*) were observed on site. The European Rabbit is listed as a C3 declared pest on the Western Australian Organism List (WAOL) under the *Biosecurity and Agriculture Management Act 2007* (WA), this classification requires management by the landowner/manager to reduce the impact and spread of the species. Removal/treatment of any warrens present within the offset site is recommended ahead of planting activities.

The use of 1080 baits can occur due to the rural location of the sites, meaning there would be little chance of the bait being taken by domestic animals. If signs of rabbit presence and predation on revegetation seedlings are observed during monitoring events, further baiting may be required.

It is recommended that an integrated pest management approach to pest animals on site is taken. Providing as many control techniques as possible will allow the most effective management of detrimental effects from herbivory. Integrated pest management strategies should be ongoing and adaptively managed throughout the establishment period.

Table 7 outlines suggested management and rationalisation for each action. Pest management may not totally exclude herbivory on site; however, is expected to increase survival rates of vegetation. Integrated pest management should be implemented by a registered Vertebrate Pest Ecologist who specialises in working in natural areas and sensitive sites. Management works are to be undertaken during the establishment period when tubestock is most palatable. Further management may be required following this and is to be determined during monitoring events.

Table 7: Integrated Pest Management Actions and Rationalisation

Target	Management Action	Rationalisation
Rabbits, Kangaroos, Sheep	Upgrade perimeter fencing	<p>The perimeter fence is currently constructed with 70/90/30 ring lock mesh and barbed wire. This has historically been used to contain sheep; however, is not suitable to manage rabbits or Kangaroos.</p> <p>As the alignment of this fence is already clear of vegetation, it is recommended that the fence be upgraded to the minimum standard of:</p> <ul style="list-style-type: none"> ▪ Minimum of 1.5 m finished height ▪ Top white sighter wire ▪ Mesh apron to deter rabbits <p>Fencing will also provide benefit to the surrounding landscape by deterring illegal tracks being made in surrounding bushland and manage unrestricted access.</p>
Rabbits	Implement biological control	<p>Biological control is an effective and targeted management tool for rabbits. A release of Rabbit Haemorrhagic Disease (RHDV1- K5) is expected to reduce rabbit numbers and should be released in spring and autumn or as recommended by an experienced Vertebrate Pest Ecologist.</p>
Rabbits and Foxes	Conduct night shooting	<p>Due to the rural setting and adequate back stop provided by the terrain, night shooting is deemed a safe and targeted management tool to manage pests. Night shooting should be implemented to target rabbits which may build resistance to RHDV1-K5 following each release event. This will reduce further likelihood of resistance within the local population.</p>

Although foxes do not pose a threat to vegetation, as local rabbit populations decline, foxes may increase predation on native species. Foxes should be targeted during the night shoot programs.

Night shoots are highly targeted and efficient management practice and should be conducted by a registered Vertebrate Pest Ecologist following a thorough risk assessment.

5.3 Pre-Planting Weed Control

Since ripping of the site occurred in 2023 it is expected that weed load may have increased from the initial site inspection in March 2023. Initial (pre-planting) and maintenance herbicide applications will be required prior to direct seeding and plant installation for revegetation to be successful. Weed control will reduce competition for resources such as nutrients, water and space for the establishing native seedlings and promote natural regeneration during the maintenance period.



Figure 8: Weed species observed; Wild Oats (*Avena barbata*) (left) and Doublegee (*Emex australis*) (right) within the adjacent vegetation to the Namelcatchem Pit March 2023.

The initial weed control event and maintenance events to the revegetation areas will follow the implementation schedule outlined in Section 6. Weed control will utilise a non-selective herbicide (Glyphosate) to target the range of weed species present. The weed control schedule has been formulated based on the expected weed germination levels and species presence onsite; however, the treatment schedule should be flexible to respond to any unexpected events (e.g. increased weed germination and unseasonal rainfall).

It is recommended to conduct weed control works pre and post planting activities:

- Spot spray weed treatment prior to initial planting to keep weed cover low and ensure successful germination/establishment rates and to reduce seed load in the seed bank within the soil.
- Maintenance spot spray weed treatments, to be undertaken during the maintenance events.

Weed control should only be undertaken by trained Pest Management Technicians, licenced by the Department of Health, and should only utilise herbicides with an Australian pesticides and Veterinary Medicines Authority (APVMA) permit approving use to treat environmental weeds in wetlands, bushlands and forests. Herbicide application should always occur as per the manufacturer's usage and safety specifications as detailed on labels and Safety Data Sheets (SDS), which can be provided by the manufacturer or accessed online. Herbicide application works can enable the targeting and treatment of several species during the same management event.

5.4 Sourcing Revegetation Stock

It is recommended plants are ordered by December and seed collected (for direct seeding) by April of the year to planting. Plants and seed utilised should meet the following requirements:

- plants will be preferentially sourced from a Nursery Industry Accreditation Scheme Australia (NIASA) facility which undertake dieback testing and can propagate the majority of stock from seed
- seed will be preferentially sourced from a Revegetation Industry Association WA (RIAWA) facility and collected from the provenance
- all plant stock and seed to be free from pest and diseases
- only healthy, true to form plants and seed will be installed on the site
- plant stock is to be (preferentially) propagated from provenance specific seed
- plant stock to have a healthy root system with no evidence of having been restricted or damaged (e.g. root bound) and the root ball of the plant shall remain intact with only minor amount of loose soil present
- all seed should be appropriately pre-treated prior to broadcast.

5.5 Revegetation Techniques

Revegetation activities will primarily involve direct seeding and planting at the site to restore the vegetation structure. Revegetation methodology is discussed in the following sections.

5.5.1 Seed Collection

An experienced revegetation seed collection consultant will be engaged to conduct seed collection throughout the remnant bushland to provide provenance specific seed which will produce a similar vegetation representation from the immediate area. Seed collectors will be licenced, and Revegetation Industry Association of Western Australia (RIAWA) accredited. All seed will be handled under RIAWA standards.

Seed collection for direct seeding commenced in September 2023 and should continue to approximately April 2024 to ensure the broadest range of diversity is captured. Seed collectors should ideally be the same contractor implementing the works and/or propagating plants to ensure continuity of quality and accountability of supplied stock. Seed will be collected in quantities to target an initial stem count target of 1 per m². Final weights will be determined by the species collected and availability. Further seed collection

may be required in the 2024 -2025 seed collection season to increase the diversity of middle and lower strata species to be propagated and planted in infill planting events.

5.5.2 Direct Seeding

Direct seeding is most commonly conducted when autumn and early winter rainfall presents adequate soil moisture and rain to settle seed. Seeding is only to be carried out by a competent revegetation consultant. Seed is to be treated to alleviated dormancy and stimulate germination prior to distribution. Incorrect treatment and handling of seed can be detrimental to final stem counts. Seed treatments will include:

- heat treatment
- scarification
- smoke treatment
- removal of physical dormancy inhibitors.

Following review and adjustments of seeding calculations based on seed collected over the 2023-2024 collection period, seed will be broadcast over the site. It is recommended that direct seeding occur at an application rate of 4 kg per ha. The areas to be seeded will need to be scarified to allow an appropriate settlement of seed within the soil and appropriate seed to soil contact is made. It is preferential that equipment that can direct drill seeds to an appropriate depth and cover the seed with minimal seed disturbance. Seed which requires light for germination does not need drilling or covering. Deep ripping is not suitable and will cause excessive disturbance throughout the site.

5.5.3 Tubestock Installation

The proposed target density for revegetation is 1 plant per every 1 m². To ensure species density and diversity is established, infill planting of tubestock in subsequent years may be required. It is estimated that 30% infill planting will be required in the three subsequent years following initial revegetation works, with infill planting quantities to be determined following maintenance and monitoring events. Table 8 outlines the quantities of plants to be installed during the initial revegetation works and the infill planting requirements.

Table 8: Initial and infill planting quantities

	Year 1	Year 2	Year 3
Planting Area (m²):	7,400	7,400	7,400
Planting Quantities:	3,247	974	292
Seed Quantities:	2.96 Kg	N/A	N/A

*Infill planting numbers (year 2 and 3) are indicative and will be subject to change based on the outcome of monitoring events.



Figure 9:
Namelcatchem Pit Revegetation Zones
Namelcatchem Nature Reserve, Dowerin

Client: Shire of Dowerin
Date: 13/03/2024
Created by: J. McKercher
Image Source: Google Satellite, 2023
Datum: GDA 94



5.6 Maintenance

Weed control is to be undertaken annually in July or August for a ten-year period. During weed control events the following should also be undertaken:

- minor rubbish collection (on an as-needs basis), if any large items (e.g. furniture) are observed the Shire will be notified
- informal monitoring of revegetation

Ongoing maintenance may be required to meet the completion criteria and is based on the outcomes from the revegetation monitoring.

DRAFT

6.0 Implementation Schedule

Table 9: Project Schedule Initial Works (January 2024 – June 2024)

	2024					
Activity	J	F	M	A	M	J
Seed Collection						
Procurement of Tubestock						
Direct Seeding						
Initial planting						
Initial Weed Control						

Table 10: Project Schedule Year 1 (July 2024 – June 2025)

	Maintenance Year 1											
	2024						2025					
Activity	J	A	S	O	N	D	J	F	M	A	M	J
Procurement of Tubestock												
Seed Collection												
Maintenance & Weed Control												
Infill Planting												
Monitoring												
Reporting												Submit to DWER

Table 11: Project Schedule Year 2 (July 2025 – June 2026)

Activity	Maintenance Year 2											
	2025						2026					
	J	A	S	O	N	D	J	F	M	A	M	J
Procurement of Tubestock												
Maintenance & Weed Control												
Infill Planting												
Monitoring												
Reporting												

Table 12: Project Schedule Year 3 (July 2026 – June 2027)

Activity	Maintenance Year 3											
	2026						2027					
	J	A	S	O	N	D	J	F	M	A	M	J
Maintenance & Weed Control												
Monitoring												
Reporting												

Submit
to
DWER

Table 13: Project Schedule Year 4 (July 2027 – June 2028)

	Maintenance Year 4											
	2027						2028					
Activity	J	A	S	O	N	D	J	F	M	A	M	J
Maintenance & Weed Control												
Monitoring												
Reporting												

Table 14: Project Schedule Year 5 (July 2028 – June 2029)

	Maintenance Year 5											
	2028						2029					
Activity	J	A	S	O	N	D	J	F	M	A	M	J
Maintenance & Weed Control												
Monitoring												
Reporting												Submit to DWER

Table 15: Project Schedule Year 6 (July 2029 – June 2030)

	Maintenance Year 6											
	2029						2030					
Activity	J	A	S	O	N	D	J	F	M	A	M	J
Maintenance & Weed Control												
Monitoring												
Reporting												

Table 16: Project Schedule Year 7 (July 2030 – June 2031)

	Maintenance Year 7											
	2030						2031					
Activity	J	A	S	O	N	D	J	F	M	A	M	J
Maintenance & Weed Control												
Monitoring												
Reporting												Submit to DWER

Table 17: Project Schedule Year 8 (July 2031 – June 2032)

	Maintenance Year 8											
	2031						2032					
Activity	J	A	S	O	N	D	J	F	M	A	M	J
Maintenance & Weed Control												
Monitoring												
Reporting												

Table 18: Project Schedule Year 9 (July 2032 – June 2033)

	Maintenance Year 9											
	2032						2033					
Activity	J	A	S	O	N	D	J	F	M	A	M	J
Maintenance & Weed Control												
Monitoring												
Reporting												Submit to DWER

Table 19: Project Schedule Year 10 (July 2033- Dec 2033)

Maintenance Year 10						
2033						
Activity	J	A	S	O	N	D
Maintenance & Weed Control						
Monitoring						
Report						Submit to DWER

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Appendix 1: Vegetation Condition Scale

Vegetation Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species
Very Good	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing
Completely Degraded	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs

Vegetation Condition/ Scale (*Keighery 1994*).

Appendix 2: Quadrat Data

Quadrat No.:	Control 1
Survey Date:	26/09/2023
Personnel:	KG, LC
Latitude:	-31.17512719
Longitude:	117.1904041
Topography:	Slight Slope
Aspect:	South-East
Slope:	1-3%
Soil:	Grey Clay Silt
Gravel:	0%
Rock:	0%
Leaf Litter:	0%
Bare Ground:	20%
Drainage:	Well
Condition:	Very Good



Notes: *Melaleuca hamata* over *Waitzia acuminata*

Native Species	Cover (%)	Height (m)	Weed Species	Height (m)	Cover (%)
<i>Acacia acuminata</i>	2	1	* <i>Ursinia anthemoides</i>	0.1	1
<i>Acacia lasiocarpa</i> var. <i>bracteolata</i>	1	0.4	* <i>Vulpia myuros</i>	0.1	5
<i>Austrostipa elegantissima</i>	2	0.3			
<i>Brachyloma preissii</i>	5	0.5			
<i>Comsperma integerrimum</i>	1	0.5			
<i>Dianella revoluta</i>	1	0.3			
<i>Eucalyptus tenera</i>	10	3			
<i>Lepidosperma tubercalatum</i>	2	0.2			
<i>Melaleuca hamata</i>	70	2			
<i>Rhagodia drummondii</i>	5	0.3			
<i>Thysanotus manglesianus</i>	1	0.3			
<i>Waitzia acuminata</i>	5	0.1			

SMARTER STANDPIPE CONTROLLER

For use with Water Utility
supply lines or tanks

The Smarter Control
standpipe controller from
Industrial Automation
provides secure access
and data logging for
invoice purposes

Smarter Control Standpipe Controller

The standpipe controller has been designed to prevent water theft by individuals and/or organisations as a result of not entering the water consumption correctly or not at all. The controller can be used on the Water Utility distribution network or using water tanks. The controller can also be used to charge different rates between types of users (say commercial users one rate and residents another rate)

The design is based on a standard swipe card design similar to that used in accessing buildings or via the standpipe app.

Each control system consists of five components:

- A stainless-steel enclosure with a processor, an indicator light and two push buttons enclosed with a free-standing frame
- A wireless router with antenna
- A solar panel with regulator and batteries (or mains powered)
- A water meter with pulse output
- A motorised valve

The water meter and motorised valve are installed within the yellow frame in the standpipe supply line after the existing water meter. The solar panel is installed higher up on the standpipe support structure complete with rotation options. Depending on the signal reception level, we either supply the antenna on the side of the frame or on top of the solar panel frame.

The controller is as standard, provided with two flanged fittings at the bottom of the frame for linking the water supply line and the standpipe (or camlock fittings).

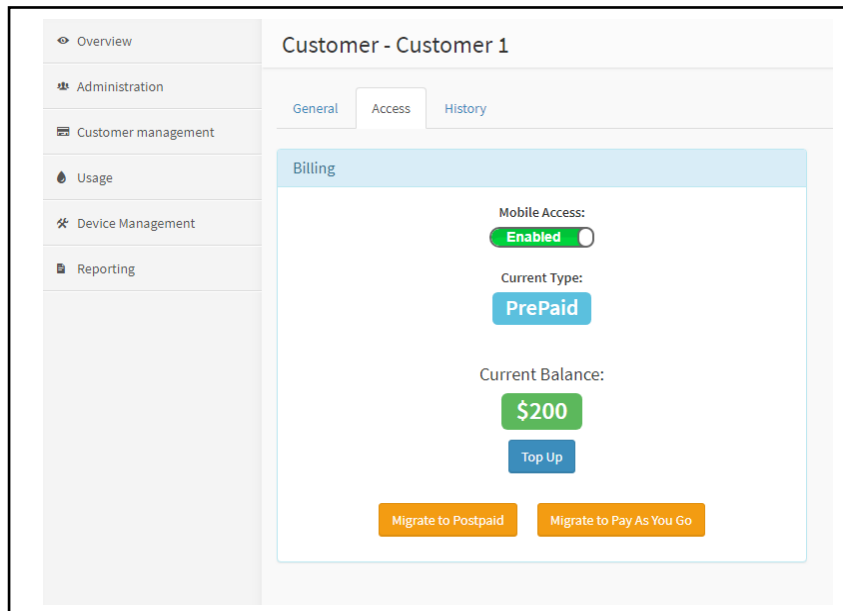
It is also possible to provide the frame with camlock fittings on the front in which case the outlet flange is deleted.

Swipe cards are to be issued by the council to individuals and organisations who wish to use the standpipes within the council boundaries. Swipe cards will carry the council's logo and are available in lots of 100 from Industrial Automation. In addition, when using a smart phone, access can be provided via a recorded email address.

Payments

Various payment methods are available to provide access to the controller.

- Post payment will allow the provider to issue an invoice based on the recorded use of the water. This is available as a excel compatible file
- Pre-payment allows the system to allocate funds to individual accounts which are then reduced when water is used. Payment can be via credit card directly to the provider or via PayPal
- Pay as you go. This option allows for the supply of water based on a set amount of water and associated cost. This does not require a recorded email address. Payment is via Paypal
- At all times information of the status of the account for provider as well as user is available via the app on mobile or PC



Operation is as follows:

- The user swipes his/her card across the indicator light that doubles as a swipe card access point or use the standpipe app or use his/her smart phone to get access.
- The indicator light flashes slowly indicating acceptance
- The user presses the start button and the motorised valve opens. The indicator light now flashes rapidly indicating that a recording is in progress
- At this time the card user has been logged as well as the start time of the operation.
- During filling, the water meter sends pulses to the processor
- On completion of the fill, the user presses the stop button which stops the flow and the light goes off. The total water consumption has now been logged, as has the finish time.

Gathering of data

The usage data will be stored in the controller and on the cloud server for extraction by council personnel and end users. Access to this data is available via unique email addresses and passwords and is device independent, which means it can be seen on PCs as well as mobiles.

As part of the data being transmitted to the cloud server, it is now possible to provide pre-paid cards to end users which substantially reduces admin cost.

The linking of card numbers to users is done using master access to the software.

Users can be deactivated by a simple tick against their name.

Fire mode

In case of a fire, it is important to take away the need for swipe cards and as such we have provided a fire mode. This allows the Shire to bypass the swipe card requirements and lock the controller to fire mode. During this period, all water used will be allocated to a designated account. Access to the fire mode is via the standpipe app using the Shire's access code.

Ease of installation

Industrial Automation has been installing Standpipe controllers since 2010 and of course, over the years new developments have taken place that has made the Smarter Control standpipe controller the controller of choice for many WA councils. More than 180 units are currently in use with the latest design making it easier than ever to install a standpipe controller.

The new design is fully fitted with all the required equipment and can be installed by your local plumber while a small concrete pad can no doubt be installed by the Shire itself. Each controller can be fitted with 50, 80 or 100 mm pipework and can either be solar powered or mains powered.

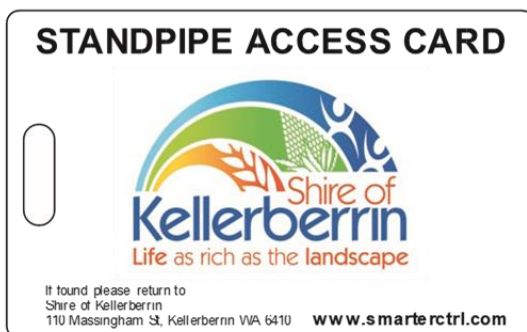
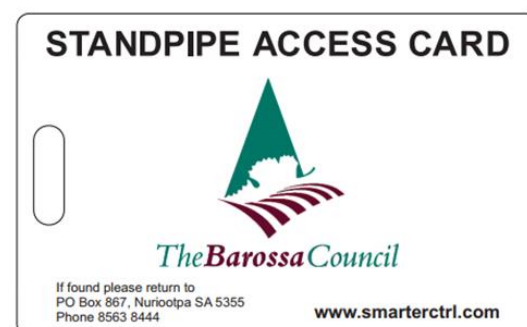
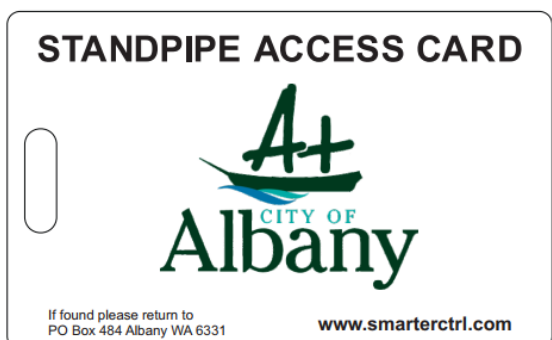
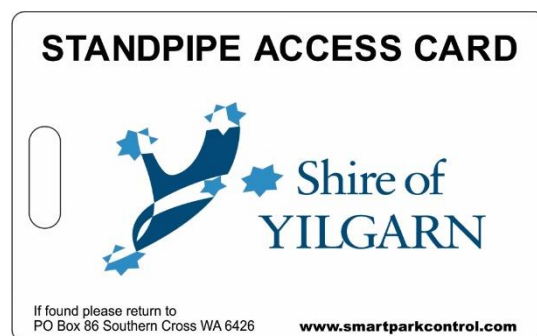
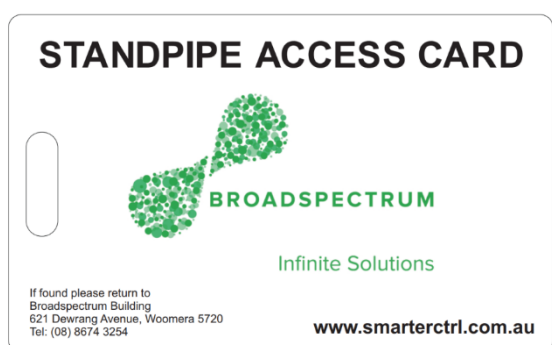
The installation procedure is as follows:

- Once the detailed order is received, the unit is manufactured in our Joondalup workshop and fully tested prior to transport. This includes the wireless connection so that once on-site we can remotely activate the controller
- During manufacture, the swipe cards are produced and sent to the Shire complete with video based operating instructions
- The Shire constructs a 1m x 1m x 150 mm concrete pad at the required location
- The controller is packed in two crates (one for the controller and one for the solar panel) and sent to the Shire
- The local plumber bolts the frame to the concrete pad and bolts the solar panel frame to the top of the standpipe frame using the multi directional flanges to aim the solar panel north. The extra low voltage cable (12 V) between the solar panel and the batteries can be connected without the need for an electrical license.
- The existing link between the standpipe overhead connection (or camlock outlets) is cut and rerouted to the two flange connections at the bottom of the frame.
- Once installed, the plumber connects our office to activate the controller and do the operational test
- Our office contacts the Shire to provide telephone-based training of the new installation



Infinite Possibilities

Our most recent installations:



The Industrial Automation Group, providing automation and control solutions to Local Governments and Industry.
Tel 1300 IND AUTO www.ia-group.com.au



Smarter Control

A product of the Industrial Automation Group
39 Winton Rd, Joondalup Business Park
Perth, Western Australia 6027
PO Box 199, Joondalup 6919
Tel: 1300 IND AUTO
www.smarterctrl.com



Email message

From:	Michael de Graaf	Date:	16/8/2023
To:	Ben forbes	Our Ref:	11747
Company:	Dowerin (Shire)	Tel:	0477 357 175
Email:	bforbes@dowerin.wa.gov.au	Pages:	3
Subject:	Standpipe controllers		

Hello Ben

Thank you for the opportunity to provide you with our standpipe control system. The unit features a swipe card access system which allows you to issue pre or post-paid access to the water.

All data is sent in real time to our cloud-based platform where you will be able to manage users, export data and even remotely unlock the standpipe in case of emergency fire access

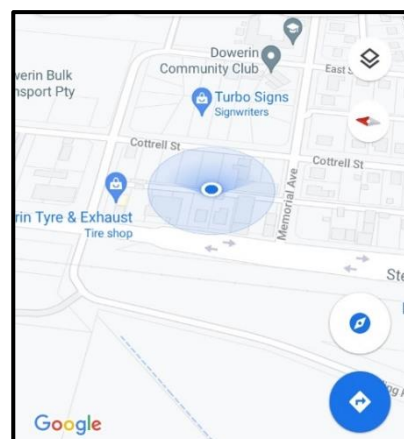
With our PayPal payment feature, end users can access their customer area and add credit to their account directly without assistance from shire admin, and the option for pay on site is made available too where no swipe card is necessary

The system is available as a mains powered or solar powered which can be installed by your local plumber

After assessing the site we identified the following:

- 50mm pipe work
- Overhead stand pipe with operation ball valve
- Has a backflow prevention device
- Is within cell phone range

Location:



Recommendation:



The Industrial Automation Group Pty Ltd, providing automation and control solutions to Local Governments and Industry





Capital Expenditure:

Standpipe Control System with 50mm Flange in/out connection which can be connected directly to overhead

\$14,949 mains
\$16,484 Solar

External camlock assembly with an 80mm and 50mm camlock (reduces liability claims should someone fall from their truck)

\$1,350

Operational Costs:

SIM card and telephone support fee

\$51 per month

Annual cloud server fee (per shire)

\$695

50 swipe cards with council logo

\$800 or

100 swipe cards with council logo

\$1500

Optional Extras:

3x Safety Bollards

\$299

PayPal self pay feature

\$49 per month

Shipping & Installation

A. Should you wish to install yourself the cost of shipping (tbc) will be charged to your nominated courier account and requires a packaging create

\$989

B. IAG to deliver & install. (Includes travel time & installation materials)

\$3,196

Installation recommendations

Shire to arrange for a 1m x 2.5m x 10cm footing and should start where existing pipe work ends. (see picture)

Safety bollards will also be a good idea (3) to protect the controller, pipework & Standpipe providing it is safe to dig



Terms and conditions:

- All the above prices are ex GST and ex works
- Delivery is 3-4 weeks from receipt of order with sufficient
- Warranty is 12 months from delivery date
- Payment is 50% with order and 50% upon delivery

I trust that this offer meets your requirements and look forward to an order in due course

Regards

Michael de Graaf Sales & Marketing 0408 945 132

Water Management System

Brief description of standard service options

In all cases, Avdata will collect, process and keep data which is communicated to us by your equipment, and will make this data available to you online. If we notice that equipment is not communicating with our system, or we observe indications that there may be problems with your equipment, or we are notified by third parties (eg your users) of issues with your facility then we will attempt to communicate this to you using the contact information that you have given us.

You are responsible for providing and maintaining satisfactory internet connection for the equipment. Avdata cannot monitor the data or take responsibility for data backup until after the data has been received by the servers in our office. You are also responsible for maintenance of all onsite equipment, including proper calibration of pulse meters; if pulse meter settings are not correct then customer invoicing and/or limitation of access to pre-purchased water may not be correct.

Option A: Data reporting only, all keys to be unlimited use with no invoicing by Avdata

All keys will be allocated to you in our database. It will be your responsibility to maintain - outside the Avdata system - any further records of key distribution, calculation of usage charges, invoicing and receipt of payments. The use of prepaid keys is not included in service option A.

Option B: Prepaid keys; option of unlimited keys but no invoicing by Avdata for their use

All keys will initially be allocated to you in our database. You will notify us of the charge rates to be used for calculating the cost of prepaid key credits, and you will inform us in a timely fashion of any updates to these rates.

If a customer with a prepaid key purchases credit through Avdata (either online or by telephone) then a customer record will be set up for them in our database with a name of their choosing, and this name will appear in subsequent records of facility use by that key. Any payments accepted by Avdata for pre-purchased water credits will be receipted into the Avdata trust account, with the balance of funds deposited into your bank account on a monthly basis.

It will be your responsibility to maintain any further records outside the Avdata system. This includes distribution of any unlimited use keys as well as any prepaid keys for which you choose to allow customers to purchase prepaid credit directly from you. It also includes any calculation of usage charges, invoicing or collection of payments associated with unlimited use keys.

Option C: Prepaid and account keys (with invoicing by Avdata)

Keys will initially be allocated to you in our database and tagged as either 'prepaid' or 'in stock'. When you sell an 'in stock' key to a customer and notify us of their contact details we will create a customer account for them; the key will be allowed unlimited use of your specified facility/facilities and we will invoice that customer on your behalf for that use.

If a user with a prepaid key purchases credit through Avdata (either online or by telephone) then a customer record will be set up for them with a name of their choosing, and this name will appear in subsequent records of facility use by that key. You may also choose to allow customers to purchase prepaid credit directly from you; in that circumstance, you will record the credit purchase in our online system and this transaction will not create or update a customer record in connection with that key (the payment accepted by you will be recorded in the system as being from a generic 'prepaid key holders' customer).

All payments accepted by Avdata on your behalf will be receipted into the trust account, with the balance of funds deposited to your bank account on a monthly basis.

Meanings of some terms we use:

You - the facility owner or their employee(s)/agent(s).

Unlimited use key administered by you - an access key which is permitted to take unlimited quantities of water from the standpipe(s) to which it has access. Tracking of keyholder details and any associated invoicing is your responsibility. We can terminate this access for any key(s) upon your instruction (provided that the onsite controller is communicating with our central system and is not manually placed in 'override' mode).

Account key - an unlimited use access key for which Avdata creates and maintains a customer account based on information passed on by you when the key is sold to the customer. Usage charges are invoiced to the customer monthly on your behalf, and non-payment will automatically trigger suspension of access. All invoices are issued using your ABN and charges are calculated according to the charge rates that you specify to us.

Prepaid key - key for which access to water at any particular standpipe is limited to the number of kilolitres which has been pre-purchased for that particular standpipe. Pre-purchased water credits can be added to prepaid keys by one or more of the following methods:

- Online customer portal (see below).
- By phone - Avdata staff can process credit card payments by phone. Note that customers choosing to use this service will be charged an additional processing fee by Avdata at the time of the transaction.
- Over the counter (optional) - if you choose to accept over-the-counter payments, then Council staff will receive the payment from the customer and record the pre-purchased water amount through a simple form in our secure online WebView portal.

Customer portal - online access to Avdata's system for your customers.

- Prepaid key holders can pre-purchase water and view their recent transactions and current credit balance at the standpipe(s) to which they have access; and
- Account holders can view their recent statements and the key tags for which they are responsible, and pay their bills.

Summary of options

	Option A	Option B	Option C
Technical support and data monitoring	✓	✓	✓
Capacity to limit facility access to specified keys	✓	✓	✓
Online reports of facility usage	✓	✓	✓
Disconnection of particular keys at request of facility owner	✓	✓	✓
Customisation of access by particular keys to subsets of locations	Limited	Limited	✓
Response to customer enquiries	Limited	Limited	✓
Customisation of services to suit specialised local requirements ¹	X	Limited	✓
Use of prepaid keys ²	X	✓	✓
Receipt of keyholder payments ³	X	✓	✓
Customer access to online customer portal ⁴	X	✓	✓
Tracking of keys 'in stock' for re-sale to customer	X	X	✓
Creation and maintenance of customer account records, including allocation of keys ⁵	X	X	✓
Post-purchase invoicing of keyholders on account	X	X	✓
Reporting of overdue accounts	X	X	✓
Automatic disconnection of keys associated with overdue accounts	X	X	✓

¹ Specialised programming or service may incur additional costs by negotiation.

² Requires up-to-date notification to Avdata of applicable charging rate.

³ It is up to the facility owner to decide whether prepaid key holders can also pre-purchase water 'over the counter' direct from the facility owner. Keyholders choosing to telephone Avdata to purchase prepaid credit will incur an administration fee at the time of the transaction.

⁴ Avdata's customer portal allows keyholders access to options such as viewing and paying invoices, purchasing and checking prepaid key credits, etc.

⁵ When the facility owner notifies Avdata that a key has been on-sold to a particular customer, a customer account will be created and the key will be connected to that customer account. The customer account details will be maintained using information subsequently supplied by the facility owner or the customer.



Avdata Water Management System

Overview and
installation planning

Avdata Pty Ltd trading as Avdata Australia
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1. Introduction

The Avdata Water Management System is highly flexible and can be adapted to a range of water supply and management contexts. Potential applications include monitoring water use for management and billing purposes, restricting who is able to access water from standpipes or grey water outlets, or even keeping track of discharge into effluent systems.

1.1. About this guide

This document will provide an introductory guide to how the system can operate and what you will need in order to begin using it. Professional advice should be sought from your appropriately licensed plumber and electrician regarding installation and safety requirements for your specific circumstances.



Compliance with all relevant regulations, including those associated with plumbing and electrical installations and workplace health and safety issues, is the responsibility of the facility owner.

1.2. Other useful information

If you decide to install an Avdata Water Management System then we recommend that you also consult the other Avdata publications listed below.

Existing Avdata clients can access these documents by logging in to WebView (<http://members.avdata.com.au>) and choosing 'Information sheets' under the 'Miscellaneous' menu. Alternatively, contact Avdata to request a copy.

<i>Avdata Water Management System – Instructions for installation and use</i>	<ul style="list-style-type: none">• Detailed instructions for installing and connecting your MACS<i>Plus</i> controller, control panel and modem.• Instructions for connecting the MACS<i>Plus</i> unit to the equipment which is to be controlled.• Recommended post-installation checks (technical and administrative).• Overview of equipment use.• Summary of ongoing responsibilities of facility owner.
<i>Maintenance and Troubleshooting for MACS-based Systems</i>	<ul style="list-style-type: none">• Information to help you with looking after your system and with working out what action to take if problems occur.
<i>Avdata Control Systems – Guide for Administrators</i>	<ul style="list-style-type: none">• Information about administration of access keys.• Guide to using Avdata's online WebView interface.

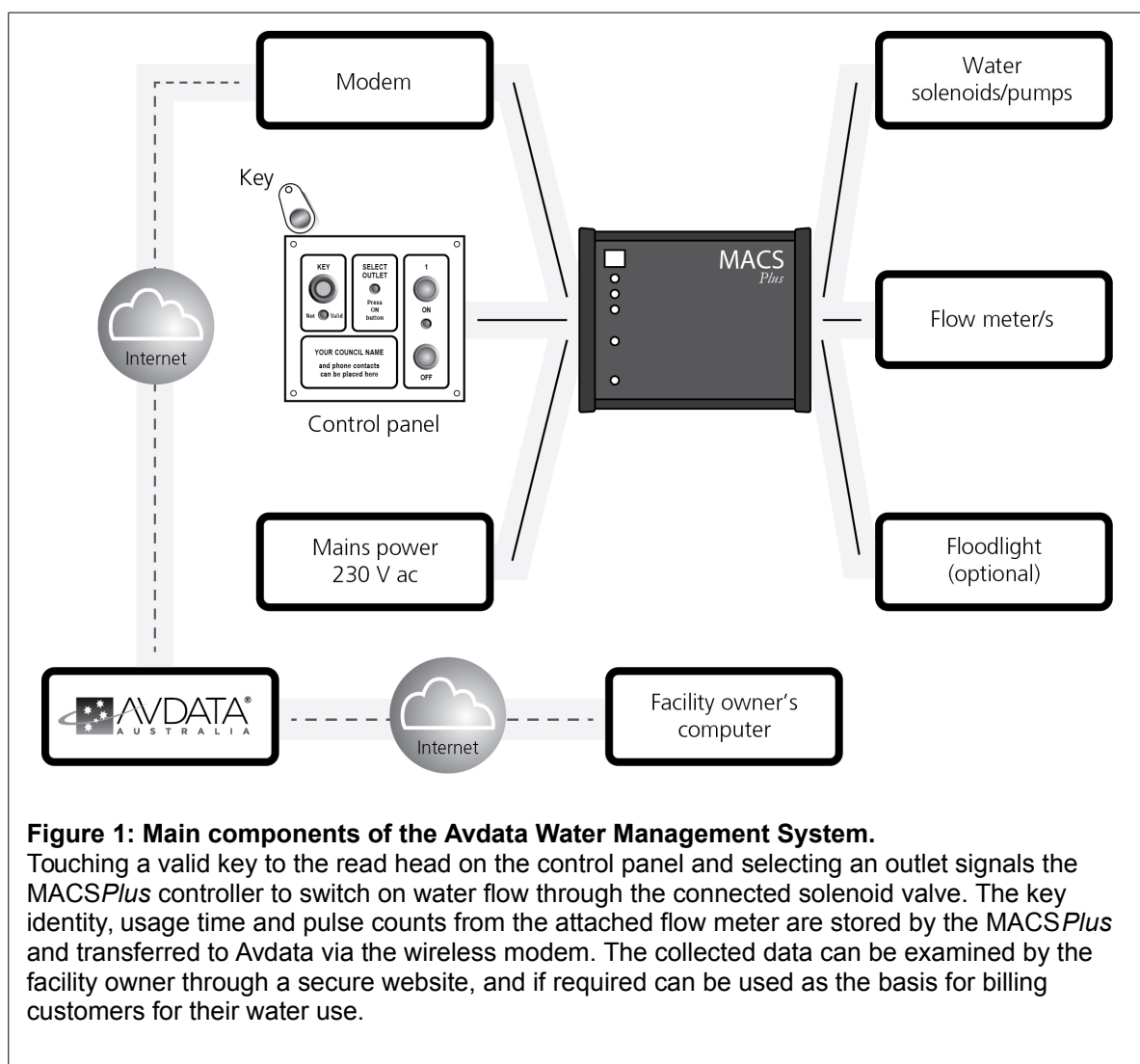
2. Water Management System – overview

The parts of a Water Management System are summarised in Figure 1. Avdata supplies the MACS*Plus* controller (described in Section 2.1), a customised control panel, and a wireless modem. Flow from the standpipe or other water outlet is controlled via a solenoid valve (not supplied) installed in the supply line and connected to the controller. A flow meter (also not supplied) allows water volume to be measured and recorded by the controller; alternatively, usage can be recorded simply as the length of time for which the outlet is switched on (noting that this will give a less accurate record of the amount of water delivered).

Access to water from outlets - or ability to discharge waste in an effluent control system - requires an electronic 'key'. When the key is touched against a read head on the control panel it is read by the controller. If the key is valid, the user can switch on the chosen outlet and water flow begins.

Each key is identified and recorded by the electronic controller each time it is used. The MACS*Plus* unit communicates with Avdata's systems over the Internet via the wireless modem. Records of water use can then be examined, customers can be billed for their water usage, and access privileges for keys can be managed securely online.

Use of additional equipment such as floodlights can also be controlled as part of the system.



2.1. Avdata Monitoring and Access Control System Plus (MACSPlus)

The electronic controller for the Water Management system is the Avdata Monitoring and Access Control System Plus (MACSPlus). This purpose-built unit is essentially a small computer with a number of inputs and outputs, each of which can be set up to perform a different role as required.

MACS controllers are also used across Australia in a variety of other applications. These include the National Truckwash System (in which they enable drivers to use any of the facilities in the national network and receive a single account) as well as in systems controlling access to facilities such as doors, gates, winches and sporting field lights.

MACSPlus controller

Features of the Avdata MACSPlus controller include:

- Recognition of iButton® devices as keys to uniquely identify customers.
- Up to four outlet relays, each of which can be connected to a pump, solenoid etc. to control water flow from a standpipe or other outlet.
- An extra relay (e.g. for floodlighting), which can be set to turn on while any outlet is in use and then turn off after a fixed time.
- Plug-in connections for simple installation.
- Supplied with a pre-fabricated, plug-in control panel.
- Operation from regular 230 V AC mains power, or alternative sources such as solar power when required.
- Time-out capacity to turn off the water flow if a user forgets to press the OFF button.
- Storage of a circular time-stamped log of events, which can be analysed for reporting and/or billing purposes.
- Recording of key usage (including attempts to use invalid keys) and outlet operating time and can count flow meter pulses.
- Capacity to manage large numbers of keys (over 12,000) and events.
- Internal battery for memory backup in case of power interruption.
- Recognition of a range of commands for management of keys, data logging and other functions.
- Automatic connection (via the connected modem) to Avdata's central system to exchange data.
- Capacity to enter commands and extract data via the connected modem.
- Communications error checks.
- Switch-operated override mode.



Access keys

The keys issued to customers and recognised by the controller are iButton® devices, which are about the size of a watch battery.

- Each key stores a unique identification number.
- Keys are simple and rugged, and are not affected by dirt, water, oil or magnetic fields.
- Keys are mounted on metal tags stamped with an easily readable number; an Avdata database keeps track of the tags and serial numbers.

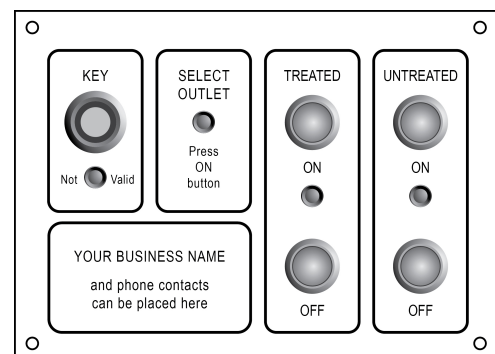


Two types of key are available. 'Account' keys simply record water usage associated with the key and can be set up to allow use at all of your standpipes or at specific standpipes only. 'Prepaid' keys may be used in the same way as prepaid phone cards, allowing a customer to purchase specific quantities of water from a particular water point in advance. See page 13 for further details about key use.

Control panel

Users access the facilities via a control panel. The panel is made from heavy gauge aluminium plate and is engraved to suit the requirements of the application and number of outlets. It can include customised labelling and contact details, and is fitted with:

- A stainless steel contact (the 'read head') on which the keys are touched to be read.
- ON and OFF buttons for each outlet that are designed to be resistant to weather and vandalism.
- High intensity LEDs to indicate the result of a key being read and status of outlets; e.g. whether the key can be used at this water point, which outlet is in use, and when credit is low for a prepaid key.



Tracking usage

When a user's key has been recognised as valid by the MACS*Plus* controller and they press the ON button for an outlet, the following takes place:

- A time-stamped entry is stored in the controller's log to identify the key and the outlet.
- Counting is commenced for the outlet timer and the flow meter.
- The controller keeps track of the remaining allowed usage if the key is a prepaid key; an LED on the control panel will flash when credit is low, and the controller will turn the outlet off if the prepaid limit is reached.
- When the user presses the OFF button (or the controller time-out function turns the outlet off), a time-stamped entry is stored in the log recording the time and number of flow meter pulses.

The log data can be extracted from the controller, and analysed to determine which key was used, the times at which the outlet was turned on and off, and the volume of water taken (or

discharged in the case of an effluent disposal system). If customers are to be charged, then this information provides the basis for calculation of charges that can then be entered into a billing system.

Floodlights

Floodlights can also be operated by the same controller that is controlling water access. The appropriate controller relay contact will be closed (switching the light on) whenever any outlet is operating, and the light remains on for a set period (3 to 5 minutes) after all outlets are turned off. This contact could be used in conjunction with a daylight sensor so that the floodlights would be turned on only at night, saving on power costs.

Use of MACS*Plus* to control other equipment

A MACS or MACS*Plus* controller can also be used to switch on and off other electronically operated equipment such as access gates, doors, winches etc. Use of this additional equipment can then be controlled and recorded using the same (or other) electronic keys as those used to operate your water outlets. (Note that these functions would normally require installation of another controller unit(s) in addition to the one used to control water access).

3. Setup and installation considerations

Installation of your Water Management System will require planning of plumbing and wiring and purchase of additional hardware to suit your needs. Avdata can supply general advice, but it is your responsibility to ensure that your system design and installation satisfies all necessary regulations and safety requirements.

3.1. Equipment supplied by Avdata

The MACSP^{Plus} controller, outlet control panel, modem and access keys are supplied by Avdata. Some details you will need to consider regarding set up and installation of these items are noted below. To order, please contact Avdata.

MACSP^{Plus} controller and wireless modem

Installation requirements include:

- The controller and connected modem each require a power supply (see page 9).
- The controller and modem should be located inside a suitable housing (not provided by Avdata) located near the water outlet. The housing must be designed to keep the equipment dry – that is, to be not only weather-proof but also to exclude water spray generated during use of the facility. Appropriate locations include a meter box or inside a shed or other building.
- The housing should be secured to prevent unauthorised access (e.g. to prevent vandalism or switching of the unit to override mode).
- The MACSP^{Plus} controller is supplied in a box designed for wall mounting which is approximately 110 mm high, 150 mm wide and 60 mm deep.
- Sufficient clearance must be allowed around the installed units for connector plugs, power supply connections and appropriate air flow. Provision of extra space may be useful to allow for possible future equipment changes.
- The controller and modem are electronic devices and should be protected against temperature extremes, pests, moisture and dust.
- There must be consistent mobile phone network coverage at the proposed installation site if data transfer via the modem is to be successful. This can be confirmed by looking at the signal strength on a mobile phone that uses your proposed network provider. If you suspect that there may be issues with signal strength then please contact Avdata to discuss options.
- Wireless modems typically use an aerial, which may be mounted discretely overhead or on a building and wired to the modem. A standard aerial is supplied with the modem; if this is

Avdata supplies...

- Control panel
- MACSP^{Plus} controller (plugs into 230 V AC mains supply)
- Wireless modem (plugs into 230 V AC mains supply)
- Access keys (to order)

Avdata does not supply...

- Plumbing fixtures and fittings (including manual valve(s), strainer(s), backflow preventer(s), flow meter(s), solenoid valve(s), hose connections)
- Associated electrical components
- 230 V AC power supply
- Cabling and trenching
- Control box or other equipment housing
- Reliable mobile phone coverage at the site (for data transfer via the supplied modem)
- SIM card and Internet data plan
- Other equipment specific to your installation (e.g pumps, floodlights, daylight sensors etc.)

insufficient for your circumstances then you will need to source an alternative from another supplier.

- You will need to purchase a mini SIM card with an Internet data plan (see further details on page 11), or arrange for Avdata to supply a SIM card (monthly fee applies).

Outlet control panel

The outlet control panel (illustrated on page 6) is approximately 135 mm high. For a one-outlet controller the panel is approximately 145 mm wide; the panel width increases by 40 mm for each additional outlet, up to a maximum of about 270 mm (for a four-outlet controller). The panel is supplied with a pre-wired cable and plug for connection into a socket on the MACSP*lus* controller. The standard cable is 1.8 m long – this length will be supplied unless Avdata is advised that a longer cable is required (to a maximum of 10 m). The outlet control panel can be engraved with the name of your organisation and contact details.

The control panel would normally be mounted on the surface of a wall or housing box. Sealant must be applied around the panel to ensure that water cannot reach the components at the rear.

We suggest that signage be posted near the control panel to explain the new access arrangements to your customers.

Power supply considerations

The MACSP*lus* controller and wireless modem are powered from the 230 V AC mains and should be protected from transient spikes, surges, lightning etc. Avdata can supply a surge protector suitable for reducing the risk of equipment damage under normal conditions. If your locality is particularly subject to such problems then you should consult your local electrician about appropriate protection.

The controller and modem are each supplied with a transformer that plugs into a mains power socket. Please ensure that these connections are secure, and that transformers cannot fall out of their power sockets as a result of vibration or accidental contact etc.

Solar power can be used as an alternative to mains power (for example, if your installation is in a remote location). Contact Avdata for further details about this option.

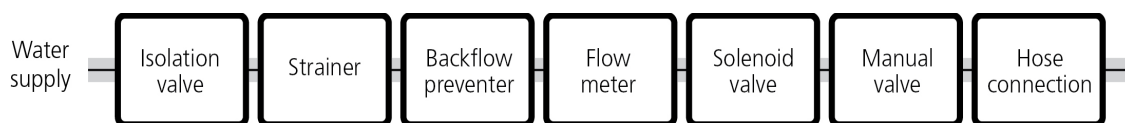
3.2. Equipment not supplied by Avdata

Items and services that are not supplied by Avdata and will need to be sourced locally include: all plumbing fixtures and fittings, associated electrical works (e.g. solenoids and contactors), 230 V AC mains or alternative power supply, cabling, trenching, housing, pumps, floodlights and daylight sensors (if used), SIM card and Internet access.

Avdata does not endorse or recommend any particular equipment or supplier for these additional items and services. However, we can arrange for you to make contact with other users of our systems if you wish to discuss specific equipment choices with them and/or see an existing system in operation.

A typical arrangement of plumbing components required for an access-controlled water supply outlet (e.g. a standpipe) is shown in Figure 2. Functions of the various components are described in the figure, and additional notes about these and other elements of your system are provided on following pages.

Figure 2: Schematic diagram illustrating typical installation of plumbing components for a water supply outlet controlled by a MACS*Plus* unit.



Component	Function
Isolation valve	A manual valve to isolate the outlet and its fittings from the water supply
Strainer	Filter out larger particles that could otherwise cause problems in the flow meter (ESSENTIAL)
Backflow preventer	May be required by local authorities to prevent flow of potentially contaminated water back into the water supply
Flow meter	Measures the flow of water and provides an electrical output that can be read by the MACS <i>Plus</i> unit
Solenoid valve	An electrically operated valve which is switched on and off by the MACS <i>Plus</i> unit to start and stop the flow of water
Manual valve	Allows operator to manually stop the flow of water (e.g. if tank is full, to prevent overflow and wastage)
Hose connection	A suitable connection point for hoses

PLEASE NOTE:

- Equipment listed in this table is not supplied by Avdata.
- Controlled electrical equipment (e.g. solenoid valves, pumps etc.) will require a separate power supply – power to run this equipment is not supplied from the MACS*Plus*.

Flow meters

A flow meter measures the volume of water that passes through a pipe. Output from the meter will be an electrical pulse that can be read by the MACS*Plus* unit.

Various types of flow meter are available, with a variety of pulse rates. In most situations (e.g. standpipes), Avdata recommends that the chosen flow meter emits 1 pulse per 10 litres. Larger volumes (e.g. 1 pulse per 100 litres) may not give a satisfactory degree of precision and can result in questionable charges, while lower volumes (e.g. 1 pulse per 1 litre) may lead to miscounting of pulses.

Ensure that your chosen meter is designed to handle variable water flow rates. Mechanical flow meters are not recommended; magnetic flow meters have generally proved more reliable.

Note that one flow meter will be required for each outlet that will be controlled.

Solenoid valves

A solenoid valve allows the flow of water to be turned on and off by the *MACSPlus* controller – when power is supplied to the solenoid the water is on, and when power is removed the water is shut off. The type of solenoid valve that is normally used for irrigation purposes has generally been found to be suitable.

The *MACSPlus* unit is fitted with relays that have switched contacts that open and close, switching the solenoid on and off. Note that the *MACSPlus* relays provide contact closure only – the controlled equipment will require separate connection to a power supply for operation.



Note

The *MACSPlus* relay contacts are rated for low voltage applications (2 A at 24 V AC/DC) and must NOT be directly connected to a 230 V AC supply.

If equipment with a higher voltage and/or current rating is to be connected to the *MACSPlus* then appropriate external relays or contactors with high voltage/current contacts must be connected so that they are operated by the controller's relays.

High and low water outlets

Users of your facility may have different requirements regarding the physical placement of hoses and taps for water delivery. For example, many operators of standpipes with high canvas hoses designed for truck use also provide an additional low tap to reduce inconvenience and safety risks for other users. An installation like this with two water delivery points could be achieved in several ways, including:

- A *MACSPlus* controller with a single outlet could allow water flow to both high and low points; manual valves/taps could then be used to select where the water actually flows.
- A *MACSPlus* controller with two outlets could be used for electronic control of the water flows: the user would select “Outlet 1” on the control panel for the high point or “Outlet 2” for the low point.

Backflow preventer

The type of backflow prevention valve that is normally used for irrigation purposes is generally suitable. It is your responsibility to ensure that your choice of components and installation satisfies any relevant regulations.

SIM card

If mobile phone coverage is available at your site then you can either obtain a SIM card through Avdata (for a monthly fee) or purchase an **Internet-enabled mini SIM card** for the

modem. If you decide to purchase your own SIM card, please make sure that it is 'mini' size and tell your chosen network provider (e.g. Telstra, Optus, Vodafone etc.) that you require:

- an account or plan with a data allowance of at least 1 GB per month (normally sufficient for transfer of MACSP^{Plus} data); and
- any message bank, diversion or SMS features permanently deactivated (not just turned off).

You will also need to turn off any activation PIN (or “SIM lock”). This can be done by inserting the SIM card into a normal mobile phone and turning off this feature via the appropriate menus.

We recommend that you arrange to send the activated SIM card to Avdata prior to dispatch of your ordered equipment. We can then test communications and send your modem to you with the SIM card already installed.

3.3. Other points to consider

Water hammer

Avdata recommends that you consult your plumber about appropriate measures for avoiding problems related to water hammer.

Power failure

The MACSP^{Plus} system will not operate without power. Avdata recommends that a manual override be incorporated into your system design if operation may be required during a power failure.

Potable and non-potable water

If your system(s) provide access to both potable and non-potable water then you must determine and take adequate precautions to prevent cross-contamination. The MACSP^{Plus} can be set to allow a particular key access to only designated outlets; however, if the 'override' switch is employed at any time then any iButton[®] key will operate any outlet.



Compliance with all relevant regulations, including those associated with plumbing and electrical installations and workplace health and safety issues, is the responsibility of the facility owner.

4. System management options

The Avdata Water Management System is highly flexible, and can easily be adapted to the requirements of facilities with different numbers and types of water access points. It can be used purely for restriction of access and/or monitoring of water use, or as a mechanism for requiring payment from customers. If customers are to be charged, then this can be achieved through a prepayment system or an account billing system (or a combination of both). The billing process for account customers can be completely taken care of by Avdata or can be undertaken by the facility owner.

Avdata's central system manages the *MACSPlus* controller by regular communications (multiple times each day) through the connected wireless modem. During each of these communication sessions, logged data is extracted to guard against data loss, the status of individual keys is updated, pulse limits associated with prepaid keys are updated, the clock is checked, and communications are rescheduled.

4.1. Operation of Keys

'Account' keys

The facility owner may purchase a specified number of pre-activated account keys from Avdata and provide them to customers (usually by selling them). If Avdata is providing a Billing Service then the facility owner will use supplied "Sale of key" forms to tell Avdata the name and address of each customer. If the facility is not using Avdata's Billing Service then any record keeping with respect to key distribution will remain the responsibility of the facility owner.

Avdata instructs the appropriate *MACSPlus* controller(s) to accept those keys, and the users holding the keys can obtain water as required from one or more water points. Water usage information is logged by the *MACSPlus* and transferred into Avdata's central system so that it can be used as a basis for billing the appropriate customers.

Avdata can remove the access of a particular key at any time if required (e.g. if a key is lost or a customer has failed to pay bills).

'Prepaid' keys

The facility owner can order prepaid keys from Avdata, specifying the pulse count limit (equivalent to a fixed number of litres) or time limit and the location at which each key can be used. If appropriate, access can also be limited to a specified outlet (e.g. if both potable and non-potable water are available at the location then access can be restricted to one or the other). The owner then sells these keys to customers, allowing them to obtain water at the associated location until the limit on the key is reached.

A warning light will flash on the control panel to alert the user when credit associated with the key is low. Additional credit can be purchased by the customer online or by phoning Avdata (fees apply for telephone transactions). If the facility owner chooses to accept payments directly from customers (for example, over the counter) then the facility owner can record the transaction and add the associated credit to the key using their online login to Avdata's system.

'Management' keys

One 'management' key will be supplied by Avdata with each MACS*Plus* controller. This key will operate the system without generating any usage charges. Additional management keys can be purchased from Avdata if required.

4.2. Online access to data using WebView

Facility owners can use Avdata's WebView site to examine customer account and usage details and/or to record credit purchases for prepaid keys. Access over the Internet requires a login identity and password provided by Avdata.

Reports of water usage at each water point can be viewed and/or downloaded, including:

- Water usage at each outlet;
- Water usage for each key; and
- Remaining allowed usage amounts for a prepaid key.

4.3. Service options

As noted above, Avdata offers a variety of service options and we encourage you to discuss your requirements with us. This may simply be a need to limit and/or monitor access to your facilities, or it may include management of prepaid water purchases and/or post-purchase invoicing of keyholders on your behalf by Avdata.

Ongoing monthly fees will apply.

5. Getting started

The list below provides some brief prompts that may be helpful in planning your Water Management System. Each client's requirements will be unique, and this list is not intended to be comprehensive. You are welcome to contact Avdata at any stage in the planning and installation process to discuss your requirements.

5.1. Planning your installation

- ❑ Decide how many water points will be in your system. Each water point can have up to four outlets (standpipes) that are close together. When placing your order with Avdata, you will need one MACS*Plus* controller (with control panel and modem) for each water point and you will also need to tell us how many outlets will be controlled at each one.
- ❑ Identify who will do the hardware installation, which will require plumbing and electrical expertise. You may want to discuss requirements with them before ordering equipment.
- ❑ Use this guide to consider siting and equipment needs at each water point. For example:
 - Is mains power available, or will you need to install a suitable alternative (e.g. solar)?
 - What additional plumbing and electrical components will be required and where can they be obtained? Examples include flow meters, valves, strainers, backflow preventers, pipes, connections, external relays, surge protectors, cabling etc.
 - What type of housing will be used to protect and secure the MACS*Plus*, and where will the control panel be located?
 - What customised engraving will be required on the control panel?
 - Is there reliable mobile phone coverage at the site? (If not, be sure to consult Avdata about whether the installation is feasible). Will you obtain a SIM card from Avdata? (If not, which telecommunications provider will provide the mini SIM card and data plan for the modem?)
 - What signage will be needed to explain the new access system to your customers?
- ❑ Does your planned installation meet relevant safety and other regulatory requirements?

5.2. Decisions about system management

- ❑ Do you want customers to pay for access? If so, at what rate?
- ❑ What kind of keys do you expect to use (account keys, prepaid keys, or a combination)?
- ❑ If your customers are to be charged on account, will you engage Avdata to take care of data processing, invoicing, payment collection and receipting?
- ❑ If you plan to use prepaid keys, how will these be administered? For example:
 - Where will customers be able to purchase a key?
 - Will you accept payments directly from customers for prepaid water credit (for example, over the counter)? If so, which staff will be responsible for entering these into Avdata's system?

5.3. Making arrangements with Avdata

Please contact Avdata by phone (02 6262 8111) or email (mail@avdata.com.au) to obtain current pricing details and order forms.

6. Glossary

Account key	A key that allows an unlimited quantity of water to be delivered from specified <i>outlets</i> . Billing for the delivered water is by way of invoices.
Avdata P/L	Company which manufactures and sells the <i>Monitoring and Access Control System Plus</i> (MACSPlus) and manages the system on behalf of the <i>facility owner</i> .
Control panel	Panel with which the <i>user</i> interacts. Each panel contains a <i>read head</i> for access <i>keys</i> , status LEDs, and one or more push buttons (if required).
Customer	The entity that has financial responsibility for use of a <i>key</i> . In many cases this will be the <i>user</i> .
Facility owner	The owner of the <i>water point</i> at which the MACSPlus is installed. Note that a facility owner may operate several <i>water points</i> .
Flow meter	Device that allows recording of water usage by generating an electrical pulse for each fixed volume of water flowing through the system. See page 10 for notes regarding equipment selection.
Key	An electronic button attached to a labelled <i>key tag</i> , which is identified by the <i>read head</i> on the <i>control panel</i> and (if found to be valid) allows water to be delivered.
Key tag	Metal tag attached to a <i>key</i> . The term is sometimes also used to refer to the number engraved on the tag which uniquely identifies the <i>key</i> in the Avdata database.
MACSPlus	Electronic controller supplied by Avdata (the Avdata Monitoring and Access Control System Plus) to control and record events at a <i>water point</i> . These units are also used in other applications, for example in the National Truckwash System.
Outlet	The standpipe or access point through which water is delivered (or collected in the case of an effluent discharge system). Outlets are usually numbered on the <i>control panel</i> from 1 to 4. Note that use of a <i>key</i> may be restricted to certain outlets. Also usage from different outlets can be charged at different rates.
Prepaid key	A <i>key</i> that allows water to be delivered up to a defined limit. Note that a prepaid key credit is assigned to one particular <i>water point</i> . Water usage associated with a prepaid key is normally paid for in advance.
Pulse	An electronic signal emitted by a <i>flow meter</i> to indicate that a specific quantity of water has been delivered. Recommended rate is 10 litres per pulse.
Read head	The contact point on the <i>control panel</i> that reads the identity of a <i>key</i> that is touched against it.
Solenoid valve	An electronically controlled valve. When power is supplied to the solenoid water is allowed to flow through it, and when power is removed the water flow is shut off.
User	The person who holds a <i>key</i> and uses it to access a <i>water point</i> . In many cases this person will also be the <i>customer</i> .
Water point	A location fitted with water <i>outlets</i> controlled by a MACSPlus. A water point may have up to 4 <i>outlets</i> in close proximity. Each <i>outlet</i> is normally fitted with a <i>flow meter</i> , so that the MACSPlus unit can record how much water has been delivered.

7. MACS Specification

Designed and made in Australia

Processor	24 MHz CPU, 4K RAM, 1 to 4 Mbytes Flash data memory (build option).
Power Supply	<ul style="list-style-type: none">• Auto-sensing AC or DC input. 10 to 22 V AC (RMS) or 10 to 31 V DC. Reverse polarity protected. Onboard self-resetting fuse.• Rectified power output. Onboard self-resetting fuse.
Real-time clock	Battery backed temperature compensated clock.
Serial Interfaces	Two independent. Both either 5-wire RS232 or 2-wire RS-485.
External Interfaces	<ul style="list-style-type: none">• Two sets, each consisting of: 2 LEDs, switch, switched power, iButton® ReadHead.• One set consisting of: 6 LEDs, 8 switches, switched power, iButton® ReadHead.
Relays	5 total, 4 SPST Normally open, 1 SPDT, 24 V AC/DC 2 A.
Digital Inputs	5 digital inputs, 4 of which can also be used as pulse counter inputs.
Temperature Sensor	Internal, range exceeds –15° to +85°C.
Interface Protection	<ul style="list-style-type: none">• All interface signals protected by 600 W bi-directional protection diodes.• Relays fitted with 100 V bi-directional protection diodes.• RS232 and RS485 designed for +/-15 kV Human Body Model.• Power input and outputs protected with 1.5 A self-resetting fuses on power inputs and outputs.
In-circuit programming	Programmed through onboard J-Tag header or remotely over network.
Identification Number	Unique 64-bit identification number.
Case	<ul style="list-style-type: none">• Screen-printed aluminium.• 106 x 144 x 63 mm maximum overall dimension excluding mounting bracket and cables.
Standard Operating Modes	One or more of each of the following modes can be operated simultaneously and independently.



- Water management role (1 to 4 outlets).
- Truckwash control (1 to 4 bays).
- 1-way Gate/Door (uses 1 control panel for 1-way access through a controlled gate).
- 2-way Gate/Door (uses two control panels for entry and exit through a controlled gate).
- Additional modes on request.
- All modes can use time-based schedules, database authentication and event logging as required.

SECTION 5 – Equipment required^{2,3}

Item	Price (ex-GST) ⁴	Order qty	Amount
<u>CONTROLLER</u>			
MACSPlus Controller [WS-MACS-Plus]	\$2,250.00	<input type="text"/>	<input type="text"/>
<u>CONTROL PANEL</u>			
Control panel DB25 – 1 outlet ⁵ [WS-Panel-DB-1]	\$550.00	<input type="text"/>	<input type="text"/>
Control panel DB25 – 1 outlet & 10-digit keypad ⁵ [WS-Panel-KP-DB-1]	\$1,200.00	<input type="text"/>	<input type="text"/>
Control panel DB25 – 2 outlet ⁵ [WS-Panel-DB-2]	\$700.00	<input type="text"/>	<input type="text"/>
Control panel DB25 – 2 outlet & 10-digit keypad ⁵ [WS-Panel-KP-DB-2]	\$1,350.00	<input type="text"/>	<input type="text"/>
Control panel DB25 – 3 outlet ⁵ [WS-Panel-DB-3]	\$850.00	<input type="text"/>	<input type="text"/>
Control panel DB25 – 4 outlet ⁵ [WS-Panel-DB-4]	\$1,000.00	<input type="text"/>	<input type="text"/>
<u>MODEM⁶</u>			
Wireless Modem [WS-Modem-04]	\$585.00	<input type="text"/>	<input type="text"/>
SIM card supplied by Avdata (optional) ⁷	\$0.00	<input type="text"/>	No upfront cost; monthly fee as per applicable fee schedule
<u>ACCESS KEYS</u>			
Access Key with Avdata branding ⁸ [WS-Key-Wsale]	\$22.00	<input type="text"/>	<input type="text"/>
Management key (1 complimentary key per controller) ⁹ [WS-Key-Mgt]	\$0.00	<input type="text"/>	<input type="text"/>
Extra management key ⁹ [WS-Key-Mgt]	\$22.00	<input type="text"/>	<input type="text"/>
<u>ADDITIONAL SUPPORT¹⁰</u>			
Technical support/Special programming [WS-Support]	Hourly rate	<input type="text"/>	<input type="text"/>
<u>ADDITIONAL PARTS – NOT REQUIRED FOR NEW INSTALLATIONS</u>			
Replacement Touch Memory Read Head for control panel [TMRH-(1+)]	POA	<input type="text"/>	<input type="text"/>
Replacement vandal-resistant control panel switch [MACS-Panel-Switch]	POA	<input type="text"/>	<input type="text"/>
Discount Code [WS-Discount]	<input type="text"/>	<input type="text"/>	<input type="text"/>
SUBTOTAL			<input type="text"/>
Add 10% GST			<input type="text"/>
TOTAL COST (EXCLUDING FREIGHT)¹¹			<input type="text"/>



Water Management System

Standard fee schedule - effective 1 July 2022¹

This information is commercial-in-confidence. We ask that you do not distribute, reproduce or share it outside of your organisation.

Please contact Avdata if you have any questions or require further information.

Name	Charge (ex-GST) ¹	Description	Applies to
Base service fee	\$52.50 per month if standard Billing Service used (Otherwise – by negotiation)	Applies for each month in which data from any of the facilities associated with the 'Enterprise' ² has been processed to create 'Usages' records in the Avdata system.	Options A, B, C
Locations fee	\$26.25 ³ per controller ⁴ per month	Applies for each MACSP ^{Plus} controller unit which communicates water usage data to Avdata.	Options A, B, C
Key use fee	\$1.05 ³ per key tag used per month	Applies for each access key recorded as having been touched against a read head at any location. Applies only once for each key in each calendar month. Applies for all keys (regardless of whether they are prepaid, account, management or other key types).	Options A, B, C
Data fee	\$0.11 ³ per usage data line	Applies to each usage data line ⁵ recorded for the Enterprise. Applies to all usage types, regardless of whether billed on account, prepaid, or exempted from charging.	Options A, B, C
Revenue component	6% ³ of the first \$31,500.00 value of user charges in a month, plus 3% of any further charges	Calculated on the value (ex-GST) of all charges to your customers in a particular month (including prepaid key credits, postpaid usage charges, monthly minimum invoicing etc).	Options B, C
Statement send fee	\$3.65 ³ per active customer account per month	Applies for each post-paid customer account for which a statement is generated in a given month. Does not apply for customers with exclusively prepaid keys.	Option C
SIM card fee	\$18.00 per SIM per month	Applies for each SIM card supplied by Avdata (optional) ⁶ .	Only if Avdata supplies SIM
Credit card processing fee	Applies for each customer credit card payment processed	Covers bank charges associated with accepting credit card payments from customers on your behalf.	Options B, C

Notes

¹Listed charges are current at printing date of 4 July 2022 and are subject to change at any time without notice. Annual review of fees and thresholds will occur on 1 July each year, with increases to be applied in line with Australian CPI and costs to Avdata.

²An Enterprise is a business unit in the Avdata system, which may report data and billing activity for a single facility or for multiple facilities. A client may own more than one Enterprise. If multiple facilities are included under one Enterprise then the combined total of the billing activity across all facilities will be reported on each Billing Statement issued for the Enterprise. If the client requires that account activity be reported separately for each facility, then each facility should be set up as a separate Enterprise in the Avdata system and Avdata service fees (including the 'Base service fee') will be calculated separately for each Enterprise.

³Discounted rate may be negotiated for larger numbers of controllers, usages, keys, data lines or revenue value.

⁴A 'controller' is an electronic MACSP^{Plus} unit supplied by Avdata for access control and monitoring at the water facility. In many cases there will be only one controller installed at each site; however, multiple controllers may be required to manage large or complex facility requirements.

⁵A line of usage data is generated for each occasion that an access key is touched to a control panel and the water point is turned on (noting that several close-in-time actions for the same key may be grouped into one data line in some cases).

⁶This fee does not apply to an Enterprise which sources all SIM cards and internet data plans from another supplier.