

# 580 Super M Loader/Backhoe



## ENGINE

Model ..... Case 4T-390 diesel  
 Type..... 4-stroke, turbocharged  
 Cylinders ..... 4  
 Bore/Stroke ..... 4.02" x 4.72"  
 (102 x 120 mm)  
 Displacement ..... 239 in<sup>3</sup> (3.9 L)  
 Fuel injection..... Direct  
 Fuel..... Diesel  
 Fuel filter ..... In-line strainer  
 Air intake ..... Cross-flow  
 Cooling ..... Liquid  
 Engine speeds\* (rpm)  
 Rated speed, full load ..... 2200  
 Low idle..... 900 - 1100  
 High idle, no load ..... 2355 - 2475  
 Horsepower  
 Gross..... 95 (71 kW) @ 2200 rpm  
 Net ..... 90 (67 kW) @ 2200 rpm  
 Maximum torque @ 1500 rpm  
 Gross ..... 283 lb-ft (384 N-m)  
 Net ..... 279 lb-ft (378 N-m)  
 Torque rise at rated speed ..... 24%

NOTE: \*Engine speeds with standard transmission. Meets federal emission regulations.

## ENGINE COOLING

Radiator (non air-conditioned)  
 Core type..... Square wave  
 Core size area ..... 369 in<sup>2</sup> (.238 m<sup>2</sup>)  
 Rows of tubes..... 5  
 Fan w/standard transmission  
 Style ..... 7 blade suction  
 Diameter ..... 19.6" (500 mm)  
 Ratio ..... 1.1:1  
 Water pump  
 Style ..... Integral  
 Engine oil  
 Pump..... Deep sump plate cooler with pressurized under-piston nozzles  
 Pump operating angle ratings  
 Side-to-side ..... Rated 45°  
 Fore and aft..... Rated 45°  
 Oil filtration..... Replaceable, full-flow cartridge

## POWERTRAIN

Transmission... 4-speed synchromesh with hydraulically actuated clutches and electric F/R shuttle control, clutch disconnect buttons on the transmission shifter and loader control lever  
 Gear ratios      Forward      Reverse  
 1st..... 5.491 ..... 4.550  
 2nd ..... 3.043 ..... 2.522  
 3rd ..... 1.584 ..... 1.313  
 4th ..... 0.793 ..... 0.657  
 Torque converter  
 Ratio ..... 2.63  
 Differential lock..... On-the-go push-button activation  
 Front 4WD axle  
 Differential ratio ..... 2.0  
 Planetary hub ratio ..... 6.0  
 Total reduction ratio..... 12.0  
 Rear axle  
 Differential ratio ..... 2.333  
 Planetary hub ratio ..... 6.923  
 Total reduction ratio..... 16.153  
 Service brakes... Individually applied, hydraulically actuated, maintenance-free, self-adjusting, inboard mounted, wet disc  
 Disc area..... 53 in<sup>2</sup> (.03 m<sup>2</sup>)  
 Parking brakes ..... Mechanically applied with electric activation sensors at each brake  
 Travel speeds – mph (km/h)  
                     1st      2nd      3rd      4th  
 Forward 3.6 ..... 6.6 ..... 12.6 ..... 25.1  
 (5.8)    (10.5)    (20.2)    (40.4)  
 Reverse 4.4..... 7.9 ..... 15.2 ..... 30.3  
 (7.1)    (12.7)    (24.4)    (48.8)

NOTE: Travel speeds at 2348 engine rpm with 19.5L x 24 rear tires. Speeds decrease with 17.5L x 24 rear tires.

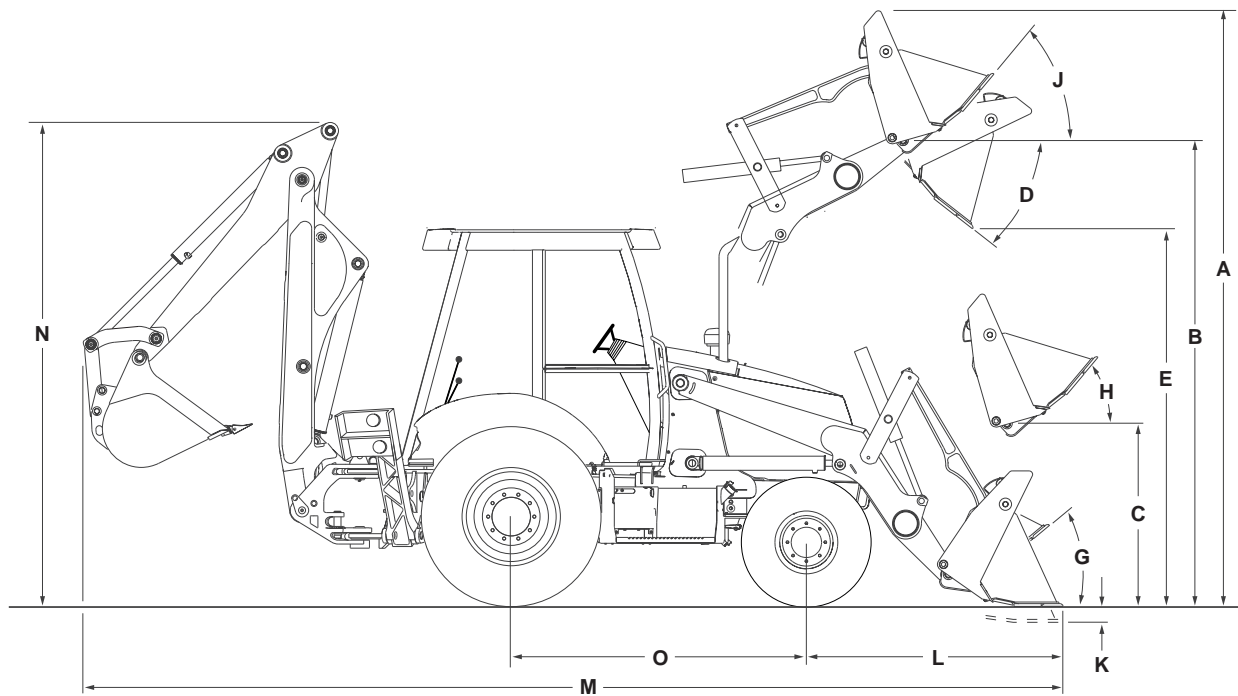
## TIRES

Front  
 2WD – 11L x 16.1, 10-ply rating  
 4WD – 12 x 16.5, 8-ply rating  
 Rear  
 2/4WD – 17.5L x 24, 10-ply rating  
 2/4WD – 19.5L x 24, 10-ply rating

## HYDRAULICS

Pump ..... Gear-type tandem, front mounted, direct drive to engine crankshaft  
 Loader flow @ rated engine rpm  
 28.5 gpm @ 3050 psi  
 (108 L/min @ 210 bar)  
 Loader control valve..... Sectional 2 or 3-spool with single lever control for lift, tilt and auxiliary hydraulics, positive hold float and return-to-dig  
 Backhoe flow @ rated engine rpm  
 38 gpm @ 3050 psi  
 (144 L/min @ 210 bar)  
 Backhoe control valve ..... Sectional 6, 7 or 8-spool, open-center parallel circuits with regeneration.  
 Boom, dipper, and stabilizers with pilot operated check  
 Loader auxiliary hydraulics  
 13 to 28.5 gpm  
 (49 to 108 L/min)  
 Backhoe auxiliary hydraulics  
 Uni-directional flow, with foot pedal activation  
 Low-flow 17 to 28 gpm  
 (64 to 106 L/min)  
 High-flow 26 to 38 gpm  
 (98 to 144 L/min)  
 Handheld auxiliary hydraulics  
 8 to 17 gpm  
 (30 to 64 L/min)  
 Main relief pressure  
 3050 + 50 - 50 psi @ 14 gpm  
 (210 + 3 - 3 bar @ 53 L/min)  
 Filtration ..... 7-micron, full flow replaceable cartridge on return line, condition indicator light for filter  
 Oil cooler..... Heavy-duty  
**ELECTRICAL**  
 Voltage ..... 12 volts, negative ground  
 Alternator..... 65 amp (2.5 kW)  
 Battery ..... 685 cold-cranking amps  
 Optional batteries..... (2) 525 cold-cranking amps  
 Power plugs ..... (2) 30 amps ea.





## LOADER DIMENSIONS

### General Purpose Bucket\* 4 IN 1® Bucket

A. Overall operating height – fully raised.....	13'11" (4.25 m)	14'3" (4.34 m)
Height to –		
B. Bucket hinge pin fully raised.....	11'2" (3.4 m)	11'2" (3.4 m)
C. Bucket hinge pin @ SAE carry .....	13.1" (334 mm)	14.6" (372 mm)
D. Dump angle @ full height.....	45°	45°
E. Dump clearance @ full height, 45° dump –		
Bucket.....	8'10" (2.69 m)	8'11" (2.72 m)
Clam open.....	NA	9'8" (2.95 m)
F. Dump reach @ full height, 45° dump –		
Bucket .....	27.7" (703 mm)	25.5" (647 mm)
Clam open.....	NA	11.9" (302 mm)
Bucket rollback –		
G. @ groundline .....	40°	40°
H. @ SAE carry .....	45°	45°
J. @ full height.....	Adjustable	Adjustable
K. Digging depth below grade –		
Bucket flat.....	5.9" (149 mm)	6.8" (180 mm)
Clam open (dozing) .....	NA	4.1" (103 mm)
L. Reach from front axle centerline – bucket on ground .....	75.2" (1.91 m)	72.7" (1.85 m)
Lift capacity to full height .....	6,182 lb (2804 kg)	5,514 lb (2501 kg)
Breakout force –		
Lift cylinders.....	9,164 lbf (40 760 N)....	8,904 lbf (39 600 N)
Dump cylinders .....	9,480 lbf (42 170 N)..	10,302 lbf (45 820 N)
Bucket cutting edge width.....	82" (2.08 m)/93" (2.36 m)	82" (2.08 m)
Maximum grading angle .....	116°	116°
Maximum clam opening.....	NA	38.3" (972 mm)
Moldboard height .....	NA	36.8" (934 mm)
Raising time to full height .....	3.4 sec	3.4 sec
Bucket dumping time.....	1.5 sec	1.5 sec
Lowering time –		
Power down .....	2.4 sec	2.4 sec
Return-to-dig.....	3.2 sec	3.2 sec
Clam –		
Open time .....	NA	2.3 sec
Close time .....	NA	3.1 sec

NOTE: Loader dimensions taken with 4WD,  
19.5L x 24 rear tires and 82" (2.08 m) general  
purpose bucket \*without bolt-on cutting edge.

# DIMENSIONS

	Standard Backhoe		Extendahoe®	
			Retracted	Extended
M. Overall transport length –				
General purpose bucket.....	22'7" (6.89 m)	22'7" (6.89 m)	22'7" (6.89 m)	NA
4 IN 1® bucket.....	22'4" (6.82 m)	22'6" (6.86 m)	22'6" (6.86 m)	NA
Overall transport width.....	7'2" (2.18 m)	7'2" (2.18 m)	7'2" (2.18 m)	NA
Height –				
To top of canopy.....	8'9" (2.67 m)	8'9" (2.67 m)	8'9" (2.67 m)	8'9" (2.67 m)
To top of cab.....	8'10" (2.69 m)	8'10" (2.69 m)	8'10" (2.69 m)	8'10" (2.69 m)
To top of exhaust stack.....	8'6" (2.59 m)	8'6" (2.59 m)	8'6" (2.59 m)	8'6" (2.59 m)
N. Transport .....	10'10" (3.29 m)	11'3" (3.42 m)	11'3" (3.42 m)	NA
Ground clearance at backhoe frame.....	14.6" (371 mm)	14.6" (371 mm)	14.6" (371 mm)	14.6" (371 mm)
Angle of departure .....	20°	20°	20°	20°
Front wheel tread –				
2WD.....	67.5" (1.71 m)	67.5" (1.71 m)	67.5" (1.71 m)	67.5" (1.71 m)
4WD.....	67.7" (1.72 m)	67.7" (1.72 m)	67.7" (1.72 m)	67.7" (1.72 m)
Width across tires				
17.5L x 24 .....	81.7" (2.07 m)	81.7" (2.07 m)	81.7" (2.07 m)	81.7" (2.07 m)
19.5L x 24 .....	81.4" (2.67 m)	81.4" (2.67 m)	81.4" (2.67 m)	81.4" (2.67 m)
19.5L x 24 Wide Track .....	88.0" (2.24 m)	88.0" (2.24 m)	88.0" (2.24 m)	88.0" (2.24 m)
O. Wheelbase –				
2WD.....	84" (2.13 m)	84" (2.13 m)	84" (2.13 m)	84" (2.13 m)
4WD.....	84.5" (2.15 m)	84.5" (2.15 m)	84.5" (2.15 m)	84.5" (2.15 m)

NOTE: Dimensions taken with 19.5L x 24 rear tires and 11L x 16 front tires except that data marked 4WD is taken with 12 x 16.5 front tires.

# CYLINDERS

	Bore Diameter	Rod Diameter	Stroke
Loader			
Lift (2) .....	3.25" (82.6 mm)	1.75" (44.5 mm)	30.2" (766 mm)
Bucket (2) .....	3.0" (76 mm)	1.5" (38.1 mm)	20.6" (522 mm)
4 IN 1® clam (2) .....	3.0" (76 mm)	1.75" (44.5 mm)	9.1" (231 mm)
Backhoe			
Boom.....	5.0" (127 mm)	2.25" (57.2 mm)	33.2" (842 mm)
Dipperstick .....	5.0" (127 mm)	2.5" (63 mm)	22.9" (583 mm)
Bucket .....	3.5" (89 mm)	2.5" (63 mm)	34.3" (872 mm)
Extendahoe® .....	3.0" (76 mm)	1.75" (44.5 mm)	42.0" (1.07 m)
Swing (2) .....	4.0" (101.6 mm)	2.0" (50.8 mm)	11.5" (292 mm)
Stabilizer (2).....	4.25" (108 mm)	2.0" (50.8 mm)	21.8" (553 mm)
Steering			
2WD .....	2.75" (69.9 mm)	1.5" (38.1 mm)	6.7" (170 mm)
4WD .....	2.48" (63 mm)	1.5" (38.1 mm)	9.53" (242 mm)

# BACKHOE LIFT CAPACITIES

Boom Lift	Standard Backhoe		Extendahoe®			
	Distance from swing pivot (m)	Backhoe lift capacity - lb (kg)	Retracted		Extended	
			Distance from swing pivot (m)	Backhoe lift capacity - lb (kg)	Distance from swing pivot (m)	Backhoe lift capacity - lb (kg)
+16' (4.87 m)					12'5" (3.79)	1,140 (517)
+14' (4.27 m)	8'7" (2.62)	2,240 (1016)	9'6" (2.89)	1,840 (835)	14'7" (4.45)	1,450 (658)
+12' (3.66 m)	11'2" (3.40)	2,680 (1216)	11'10" (3.61)	2,220 (1007)	16'2" (4.93)	1,580 (717)
+10' (3.05 m)	12'9" (3.89)	2,750 (1247)	13'4" (4.06)	2,400 (1089)	17'2" (5.23)	1,660 (753)
+8' (2.44 m)	13'11" (4.24)	2,710 (1229)	14'5" (4.40)	2,410 (1093)	18'0" (5.49)	1,690 (767)
+6' (1.83 m)	14'7" (4.45)	2,680 (1216)	15'2" (4.62)	2,390 (1084)	18'7" (5.67)	1,700 (771)
+4' (1.22 m)	15'0" (4.57)	2,630 (1193)	15'6" (4.72)	2,370 (1075)	18'10" (5.74)	1,700 (771)
+2' (0.61 m)	15'1" (4.60)	2,560 (1161)	15'7" (4.75)	2,330 (1057)	18'11" (5.77)	1,700 (771)
Ground Level	14'11" (4.55)	2,550 (1157)	15'5" (4.70)	2,270 (1030)	18'10" (5.74)	1,690 (767)
-2' (0.61 m)	14'5" (4.40)	2,460 (1116)	15'0" (4.57)	2,230 (1011)	18'5" (5.62)	1,650 (748)
-4' (1.22 m)	13'7" (4.14)	2,380 (1079)	14'2" (4.32)	2,140 (971)	17'9" (5.41)	1,640 (744)
-6' (1.83 m)	12'4" (3.76)	2,380 (1079)	12'10" (3.91)	2,150 (975)	16'9" (5.11)	1,640 (744)
-8' (2.44 m)	10'5" (3.18)	2,380 (1079)	11'2" (3.40)	2,150 (975)	15'7" (4.75)	1,640 (744)
-10' (3.05 m)	7'6" (2.28)	2,590 (1175)	8'7" (2.62)	2,260 (1025)	13'11" (4.24)	1,700 (771)
-12' (3.66 m)					11'7" (3.53)	1,860 (844)
-14' (4.27 m)					7'11" (2.41)	2,260 (1025)
<b>Dipper Lift</b>						
+14' (4.27 m)					13'4" (4.06)	2,580 (1170)
+12' (3.66 m)	10'1" (3.08)	4,940 (2241)	10'7" (3.23)	4,360 (1978)	14'3" (4.35)	2,680 (1216)
+10' (3.05 m)	10'7" (3.23)	4,650 (2109)	11'2" (3.40)	4,190 (1901)	14'6" (4.42)	2,700 (1225)
+8' (2.44 m)	10'6" (3.20)	4,680 (2123)	10'11" (3.33)	4,160 (1887)	14'5" (4.40)	2,880 (1306)
+6' (1.83 m)	9'7" (2.92)	5,290 (2400)	10'2" (3.10)	4,680 (2123)	13'11" (4.24)	2,910 (1320)
+4' (1.22 m)	7'5" (2.25)	6,610 (2998)	8'3" (2.58)	5,590 (2536)	12'11" (3.94)	3,050 (1383)

# BACKHOE OPERATIONAL DATA

	Standard Backhoe		Extendahoe®	
			Retracted	Extended
<b>Digging depth –</b>				
Maximum	14'5" (4.39 m)		14'10" (4.52 m)	18'3" (5.56 m)
Maximum w/hi-capacity bucket	14'10" (4.52 m)		15'3" (4.65 m)	18'8" (5.69 m)
2' (610 mm) flat bottom	14'3" (4.34 m)		14'8" (4.47 m)	18'2" (5.54 m)
8' (2.44 m) flat bottom	13'4" (4.06 m)		13'9" (4.19 m)	17'6" (5.33 m)
<b>Overall reach from –</b>				
Rear axle centerline	21'5" (6.53 m)		22'0" (6.70 m)	25'5" (7.75 m)
Swing pivot	18'1" (5.51 m)		18'5" (5.61 m)	21'10" (6.65 m)
Loading height	11'2" (3.40 m)		11'5" (3.48 m)	13'3" (4.04 m)
Loading reach – dipper retracted	8'9" (2.67 m)		8'8" (2.64 m)	11'6" (3.50 m)
Swing arc	180°		180°	180°
<b>Bucket rotation –</b>				
#1 position	164°		164°	164°
#2 position	200°		190°	190°
Stabilizer spread – operating	9'5" (2.87 m)		9'5" (2.87 m)	9'5" (2.87 m)
<b>Digging force –</b>				
Bucket cylinder	12,821 lbf (57 031 N)		12,821 lbf (57 031 N)	12,821 lbf (57 031 N)
Dipper cylinder	8,224 lbf (36 582 N)		7,784 lbf (25 066 N)	5,635 lbf (25 066 N)
	w/bucket @ 50°		w/bucket @ 50°	w/bucket @ 51°
<b>Leveling angle</b>				
maximum slope that backhoe will make vertical cut	12°		12°	12°

NOTE: Lift capacities apply straight to the rear of prime mover. Equipped with 24" (610 mm) Universal H.D. trenching bucket, Case coupler and link except as noted.

# STANDARD EQUIPMENT

## OPERATOR'S COMPARTMENT

See page 2

## ENGINE

Case 4T-390 turbocharged diesel  
Automatic fan belt tensioner  
Integral engine oil cooling  
Fuel filter w/water trap  
Air intake pre-cleaner  
Dual element air cleaner  
65 amp alternator  
685 CCA 12-volt battery  
Heavy-duty radiator w/coolant recovery bottle  
Non-spark-arresting muffler

## LOADER

See page 2

## BACKHOE

See page 2

## POWERTRAIN

2WD  
4F/4R Power shuttle synchromesh transmission  
Torque converter  
Transmission de-clutch  
Electro-hydraulic differential lock  
Hydrostatic steering  
Wet disc brakes  
Remote lube front axle pivot

## HYDRAULICS

2-spool loader control valve  
6-spool backhoe control valve  
Heavy-duty oil cooler

## OTHER

Forward tilt engine hood  
Replaceable, molded front bumpers  
Front/rear tie downs  
Reflective logos  
Lights - Cab and Canopy  
2 Rear tail/stop  
2 Front flashers/turn  
2 Rear flashers/turn  
4 Front & 4 rear adjustable halogen lights (55 w)

# OPTIONAL EQUIPMENT

## OPERATOR'S COMPARTMENT

Cab with –  
Heater  
Defroster  
Dome light - door activated w/switch  
Wipers, front and rear  
Tinted glass  
Floor mat  
Side window partial hold open  
Inside release for side windows  
Operator Convenience Package  
Tilt wheel  
Windshield washer w/adjustable nozzles (front & rear)  
Sun visor  
Deluxe Cab Package  
Operator Convenience Package  
PLUS  
Vinyl-covered interior  
Radio-ready kit w/antenna and speakers  
Reduced sound level to 72 dB(A)  
Vinyl or cloth-covered mechanical suspension seat  
Air Ride suspension seat  
3" (76 mm) retractable seat belt  
Cab air-conditioning, 100% filtered air, in-cab access filter, 8 adjustable roof vents, 2 floor vents, w/heater  
Ride Control

Cab right door  
Canopy Convenience Package  
Front windshield w/wiper & washer  
85 dB(A) sound  
Floor mat  
Sun visor

## ENGINE

Cold weather ether starting aid  
Alternator, 95 amp  
Dual, 12-volt, 525 CCA batteries  
Chaff screen  
Fuel tank, 40 gal (151 L)

## LOADER

Hydraulic attachment coupler  
Attachment auxiliary hydraulics  
Buckets (see page 2)

## BACKHOE

Case integrated hydraulic coupler  
Buckets (see page 2)  
Extendahoe®  
Two-lever control  
Stabilizer pads  
Flip-over  
Rubber pad  
Front counterweights  
440 lb (200 kg)  
900 lb (408 kg)

## POWERTRAIN

4WD w/outboard planetary drive, on-the-go push-button activation and 12 x 16.5 front tires  
Powershift transmission (4WD unit only)

## HYDRAULICS

Auxiliary hydraulics for handheld equipment

## OTHER

17.5L x 24 rear tires  
19.5L x 24 rear tires  
Tool box  
Special paint  
Galaxy tires - Front  
4WD 12 L x 16.5 Soft Flex-Poly Fill  
Galaxy tires - Rear  
2/4WD 19.5 L x 24 w/Tyrllyner™

## WIDE TRACK OPTION

Offset tires - rear  
19.5L x 24 12PR 88" (2.24 m) track width  
93" (2.36 m) long lip loader bucket

NOTE: All specifications are stated in accordance with SAE Standards or Recommended Practices, where applicable.

Form No. CE 252-10-00  
Replaces Form No. - None

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