



# Loader/Backhoe 590 Super L

## ENGINE

Model..... Case 4T-390  
 Type ..... 4-stroke, turbocharged  
 Cylinders ..... 4  
 Fuel injection ..... Direct  
 Bore/Stroke..... 4.02" x 4.72"  
 Displacement ..... 239 in<sup>3</sup>  
 Horsepower  
 Gross..... 95 @ 2200 rpm  
 Net ..... 88 @ 2200 rpm  
 Maximum torque  
 Gross..... 281 lb-ft @ 1400 rpm  
 Net ..... 260 lb-ft @ 1400 rpm

## DRIVELINE

Fully synchronized 4-speed forward reverse shuttle transmission with hydraulically actuated clutches and clutch disconnect buttons on the transmission shifter and loader control lever. Electronically activated forward/reverse shuttle shift and 4WD engagement with optional mechanical front wheel drive. 4WD activation on-the-go. Maintenance-free, self-adjusting, inboard mounted, wet disc brakes are hydraulically actuated.

### TRAVEL SPEEDS (MPH)

	1st	2nd	3rd	4th
Forward.....	3.8	6.8	13.2	26.3
Reverse.....	4.6	8.2	15.8	31.6

NOTE: Engine at 2351 r/min and 21L x 24 rear tires.

## OPERATOR ENVIRONMENT

Optional ROPS canopy or 2-door pressurized cab with heater and defroster – A/C optional. Optional deluxe cab interior. Optional non-suspension or deluxe suspension seats. Hand and foot throttles. Key start. Beverage holders. Storage box.

### GAUGES AND WARNING LIGHTS

Converter oil temperature – Engine coolant temperature – Fuel – Rear axle oil temperature – Tachometer/hourmeter – Voltmeter – Alternator – Engine oil pressure – Hydraulic system filter – Air cleaner – Parking brake

## HYDRAULIC SYSTEM

Front mounted, positive displacement, gear-type tandem. Heavy-duty oil cooler.

### LOADER HYDRAULIC PUMP CAPACITY

30 gpm @ 2200 rpm @ 3000 psi

### LOADER CONTROL VALVE

2 or 3-spool sectional valve with single lever control for lift, tilt and auxiliary hydraulics. Positive hold “float” and “return-to-dig”.

### BACKHOE HYDRAULIC PUMP CAPACITY

41 gpm @ 2200 rpm @ 3000 psi

47 gpm @ 2350 rpm @ 100 psi

### BACKHOE CONTROL VALVE

6 or 7-spool, sectional, open-center, parallel circuits with regeneration for boom, dipperstick, bucket, swing, two stabilizers and Extendahoe dipperstick. Load-sensing priority swing system.

### CONTROL VALVE MAIN RELIEF PRESSURE

3000 + 100 - 0 psi

### FILTRATION

7-micron, full flow replaceable cartridge on return line. Condition

## SERVICE CAPACITIES

Fuel tank..... 31.4 gal  
 Hydraulic reservoir..... 13.9 gal  
 Total hydraulic system ..... 33.0 gal  
 Transmission  
 2WD Total system..... 19.5 qt  
 4WD Total system..... 22.0 qt  
 4WD Front axle  
 Differential..... 6.9 qt  
 Planetaries (each) ..... 1.1 qt  
 Rear axle  
 Differential..... 14.8 qt  
 Planetaries (each) ..... 2.1 qt  
 Engine oil w/filter..... 11.6 qt  
 Cooling system  
 w/heater..... 17.4 qt  
 w/o heater..... 16.7 qt

## STEERING

Hydrostatic power steering with on-demand priority flow from the main hydraulic pump. 2350 psi operating pressure. One, double-acting steering cylinder with a stop-to-stop turning ratio of 2.75 turns.

### TIRE SIZE

Front  
 2WD ..... 14.5/.75 x 16.1, 10PR  
 4WD ..... 14 x 17.5, 10PR  
 Rear ..... 21L x 24, 10PR

### CURB CLEARANCE CIRCLE

2 WD  
 w/o brakes..... 24'8"  
 w/brakes ..... 21'2"  
 4 WD w/axle disengaged  
 w/o brakes..... 25'2"  
 w/brakes ..... 21'10"  
 4 WD w/axle engaged  
 w/o brakes..... 28'2"  
 w/brakes ..... 22'0"

### FRONT AXLE OSCILLATION

2 WD & 4 WD 22° total (11° each side)

## ELECTRICAL SYSTEM

Voltage..... 12 Volts, negative ground  
 Alternator ..... 12 Volts, 65 amp  
 Battery ..... Maintenance-free  
 685 cold-cranking amps  
 @ 0° F

## OPERATING WEIGHT

Base Unit: 4WD, loader, 93" 4-in-1 loader bucket, backhoe, Extendahoe dipperstick, 500 lb counterweight, 24" heavy-duty trenching bucket, Cab, 14 x 17.5 front tires, 21L x 24 rear tires, dual batteries, full fuel tank and 175 lb operator ..... 15,414 lb

### Deduct:

ROPS canopy ..... -477 lb  
 2WD..... -286 lb  
 Standard loader bucket..... -712 lb  
 Standard dipperstick\* ..... -950 lb

NOTE: \*Deduction includes 500 lb Extendahoe counterweight.

## LOADER

Single-lever control for lift and tilt with positive hold float and return-to-dig. Automatic self-leveling throughout the lift cycle. In-line, reverse linkage with dual parallel dump cylinders. Optional front-end auxiliary hydraulics with combined single-lever control for lift, tilt and auxiliary. Clutch disconnect button on the loader control disengages the transmission for fast loading cycles. Optional General Purpose or 4-in-1 buckets available. Both buckets are 93" wide with 1.25 yd<sup>3</sup> capacity and feature bolt-on cutting edge.

### LOADER BUCKET SIZES AND WEIGHTS

General Purpose Bucket			
Width	Weight	Struck	Heaped
93"	993 lb	1.1 yd <sup>3</sup>	1.25 yd <sup>3</sup>

  

4-in-1 Bucket			
Width	Weight	Struck	Heaped
93"	1,705 lb	0.98 yd <sup>3</sup>	1.2 yd <sup>3</sup>

## BACKHOE

Over-center backhoe reduces transport length and increases bucket clearance with a higher angle of departure. Open-center hydraulics at 41 gpm for responsive, precision control. Variable flow priority swing circuit provides a constant, smooth swing speed for out-standing multi-function control. 194,200 in·lb swing torque to swing heavy loads uphill or push dirt when backfilling. 12" maximum width for excellent visibility. Two or three lever control pattern. Foot swing with three lever pattern. Optional Extindahoe<sup>®</sup> and variable-flow auxiliary hydraulics.

### BACKHOE BUCKET SIZES AND WEIGHTS

Heavy-Duty Universal Trenching Bucket		
Width	Weight	Heaped
12"	311 lb	2.9 ft <sup>3</sup>
16"	346 lb	3.6 ft <sup>3</sup>
18"	359 lb	4.3 ft <sup>3</sup>
24"	429 lb	6.4 ft <sup>3</sup>
30"	496 lb	8.6 ft <sup>3</sup>
36"	571 lb	10.8 ft <sup>3</sup>

### Heavy-Duty High-Capacity Trenching Bucket

Width	Weight	Heaped
24"	450 lb	8.5 ft <sup>3</sup>
30"	517 lb	10.6 ft <sup>3</sup>

## LOADER DIMENSIONS

	GENERAL PURPOSE	4-IN-1 <sup>®</sup>
Overall operating height	14'2"	14'6"
Bucket rollback @ groundline	40°	40°
Dump angle @ full height	45°	45°
Digging depth below grade –		
Bucket flat	3.8"	4.4"
Clam open (dozing)	NA	1.8"
Dump clearance @ full height, 45° dump –		
Bucket	9'0"	9'10"
Clam open	NA	9'1"
Dump reach @ full height, 45° dump –		
Bucket	25.9"	23.7"
Clam open	NA	10.2"
Reach from front axle centerline,		
bucket on ground	75.2"	72.7"
Lift capacity to full height	7,000 lb	6,200 lb
Height to bucket hinge pin raised	11'5"	11'5"
Breakout force (dump cylinders)	8,900 lbf	9,200 lbf
Bucket cutting edge width	93"	93"
Maximum grading angle	116°	116°
Maximum clam opening	NA	38.3"
Moldboard height	NA	36.8"
Raising time to full height	5.6 sec	5.6 sec
Bucket dumping time	0.9 sec	0.9 sec
Lowering time, power down	2.5 sec	2.5 sec
Lowering time, return-to-dig	3.2 sec	3.2 sec

NOTE: Specifications taken with 4WD and 19.5L x 24 rear tires.

## BACKHOE LIFT CAPACITIES

### HEIGHT ABOVE & BELOW GROUND LEVEL

	STANDARD BACKHOE	EXTINDAHOE <sup>®</sup>	
		RETRACTED	EXTENDED
<b>BOOM LIFT</b>			
+18'			1,940 lb
+16'			2,200 lb
+14'	3,430 lb	3,130 lb	2,260 lb
+12'	3,550 lb	3,240 lb	2,290 lb
+10'	3,540 lb	3,250 lb	2,230 lb
+8'	3,500 lb	3,230 lb	2,300 lb
+6'	3,460 lb	3,140 lb	2,290 lb
Ground Level	3,270 lb	2,980 lb	2,240 lb
-6'	3,100 lb	2,780 lb	2,150 lb
-8'	3,150 lb	2,760 lb	2,100 lb
-10'	3,190 lb	2,850 lb	2,140 lb
-12'	3,420 lb	3,050 lb	2,170 lb
-14'			2,334 lb
-16'			2,780 lb

### DIPPER LIFT

+16'			2,700 lb
+14'	4,850 lb	4,600 lb	2,910 lb
+12'	5,220 lb	5,000 lb	3,050 lb
+10'	5,250 lb	5,090 lb	3,100 lb
+8'	5,440 lb	5,320 lb	3,100 lb
+6'	5,530 lb	5,390 lb	3,140 lb

NOTE: Stated figures apply straight to the rear of prime mover. Equipped with 24" general purpose trenching bucket and links. For heavy-duty universal bucket and coupler, deduct 150 lb.

## BACKHOE OPERATIONAL DATA

	STANDARD BACKHOE	EXTENDAHOE®	
		RETRACTED	EXTENDED
Digging depth			
24" flat bottom .....	15'6"	15'6"	19'6"
Maximum .....	15'7"	15'7"	19'7"
Overall reach from			
Rear axle centerline .....	23'3"	23'3"	27'2"
Swing pivot .....	19'8"	19'8"	23'7"
Loading height .....	11'5"	11'5"	14'1"
Loading reach .....	9'6"	9'6"	12'11"
Swing arc .....	180°	180°	180°
Bucket rotation			
#1 position .....	180°	180°	180°
#2 position .....	160°	160°	160°
Stabilizer spread			
Operating position .....	11'1"	11'1"	11'1"
Digging force			
Bucket cylinder .....	13,126 lbf	12,859 lbf	12,859 lbf
Dipper cylinder .....	8,449 lbf	7,946 lbf	5,720 lbf
Leveling angle			
(maximum slope that backhoe will make vertical cut .....	12°	12°	12°

## DIMENSIONS

	STANDARD BACKHOE	EXTENDAHOE®	
		RETRACTED	EXTENDED
Overall length – transport			
General purpose bucket .....	23'6"	23'6"	NA
4-in-1 bucket .....	23'4"	23'4"	NA
Overall height, maximum .....	15'7"	20'11"	24'10"
Transport height .....	11'6"	11'11"	NA
Overall width — over tires .....	7'8"	7'8"	7'8"
Angle of departure .....	20°	20°	20°
Height –			
To top of canopy .....	8'9"	8'9"	NA
To top of cab .....	8'11"	8'11"	NA
To top of exhaust stack .....	8'8"	8'8"	NA
Ground clearance at			
backhoe frame .....	12.9"	12.9"	NA
Front wheel tread –			
2WD .....	68.5"	68.5"	NA
4WD .....	67.0"	67.0"	NA
Rear wheel tread .....	63.8"	63.8"	NA
Wheelbase –			
2WD .....	84"	84"	NA
4WD .....	84.5"	84.5"	NA

NOTE: Specifications taken with 14.5 x 16.1 front tires (except that data marked 4WD is taken with 14 x 17.5 front tires), 21L x 24 rear tires, Cab, 15' backhoe with

24" heavy-duty trenching bucket, loader with 93" general purpose bucket and standard equipment unless otherwise specified.

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