

610B BACKHOE LOADER

14,651 lb (6645 kg)

Transport Height.....	12 ft 2 in. (3.71 m)
Transport Length.....	23 ft 2 in. (7.1 m)
Machine Width	7 ft 8 in. (2.34 m)

ENGINE.....John Deere 300 Series

Number of Cylinders and Displacement	4 cylinders, 276 cu in. (4.5 L)
Air Intake System.....	Turbocharged
Bore and Stroke	4.19 x 5.00 in. (106 x 127 mm)
Net HP at 2200 rpm	80 SAE hp (60 kW) DIN 60 kW
Maximum Torque at 1300 rpm.....	248 lb-ft (336 N•m)
Nozzle Opening Pressure:	
New	3700 ± 50 psi (25 510 ± 345 kPa)
Used	3500 ± 50 psi (24 135 ± 345 kPa)
Valve Clearance (Cold):	
Intake	0.014 in. (0.36 mm)
Exhaust	0.018 in. (0.46 mm)
Oil Pressure at Fast Idle	50 ± 15 psi (345 ± 105 kPa)
Static Injection Pump Timing	Timing lines aligned w/flywheel located at TDC
Dynamic Injection Pump Timing at 2500 rpm*	16 + 0 - 1° BTDC
Speeds:	
Slow Idle	825 ± 25 rpm
Fast Idle.....	2375—2400 rpm
Rated Full Load	2200 rpm
Cylinder Pressure Hot (Min)	350 psi (2415 kPa)
Turbo Boost Pressure at Rated Full Load	8—9 psi (55—62 kPa)
Flywheel Teeth.....	115
Electrical System	12 V
Alternator:	
With Cab.....	51 amp
Without Cab.....	35 amp

*Note: *For latest information, see Dealer Technical Assistance Center (DTAC) Solution K000413.*

TRANSMISSION

Model and Speeds.....	Powershift: 8 forward, 4 reverse
Transmission System Pressure at 1500 rpm	180 ± 5 psi (1240 ± 35 kPa)
Pump Flow (Min) at 1500 rpm and and 180 psi (1240 kPa):	
New	12 gpm (45.4 L/min)
Used	11 gpm (41.6 L/min)
Lube Pressure	32—42 psi (220—290 kPa)

FRONT WHEEL DRIVE

Engaged on-the-go hydraulically. Automatic self-locking differential.

HYDRAULIC SYSTEM—Close-Center

Main Hydraulic Pump Size.....	4 cu in. (65.5 cm ³)
Main Pump Standby Pressure	2550 ± 50 psi (17 585 ± 345 kPa)
Main Pump Flow at 2000 psi (13 790 kPa) and 2000 rpm:	
New	30 gpm (113.4 L/min)
Used	26.5 gpm (105.5 L/min)
Priority Valve Setting.....	1525 ± 145 psi (10 515 ± 1000 kPa)
Charge Pressure (Min)	70 psi (480 kPa)
Hydraulic Filter Relief Valve.....	120—130 psi (830—900 kPa)
Cooler Relief Valve	100—120 psi (690—830 kPa)
System Relief Valve.....	2700—3200 psi (18 630—22 000 kPa)

RELIEF VALVE SETTINGS

Loader:

Bucket Rollback and Dump	4500 psi (31 030 kPa)
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Backhoe:

Crowd Out and In	2750 psi (18 962 kPa)
Boom Lower	2025 psi (13 965 kPa)
Boom Raise	4000 psi (27 580 kPa)
Bucket Curl	3500 psi (24 135 kPa)
Bucket Dump	2750 psi (18 960 kPa)
Swing Left and Right	2610 psi (17 995 kPa)

CYCLE TIMES (Typical at Fast Idle)

Oil Temperature	150 ± 10°F (65 ± 5°C)
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Loader:

Boom Raise	4.5 sec
Boom Lower:	
Power Down	2.9 sec
Float Down	3.3 sec
Bucket Dump	1.9 sec
Bucket Rollback.....	2.5 sec

Backhoe:

Boom Raise	2.4 sec
Boom Lower	3.0 sec
Crowd In	3.9 sec
Crowd Out	3.1 sec
Bucket Dump	1.5 sec
Bucket Curl	2.0 sec
Backhoe Swing.....	2.8 sec
Stabilizer Down	3.9 sec
Stabilizer Up	5.1 sec
Extendible Dipperstick	
Extend and Retract.....	2.8 sec
Steering Right to Left (w/o FWD)	4.5 turns
Steering Left to Right (w/o FWD)	3.5 turns

LUBRICANTS

See front of this book for the codes [].

CAPACITIES

U.S.

Metric

Engine:

Cooling System [N]	17 qt	16.1 L
Crankcase w/ Filter [E]	9 qt	8.5 L
Front Axle (FWD) [J]	7 qt	6.5 L
Front Wheel Planetary (FWD) (Per Side) [J]	1.1 qt	1.0 L
Fuel Tank	23 gal	87.1 L
Rear Axle [C]	18 qt	17 L
Transmission and Hydraulic System [C]	20 gal	76 L

TIRE PRESSURE (Cold Inflation)

Tire Size	Type	Rating	Normal Pressure
Front:			
11-16 (w/o FWD)	F3	12 PR	64 psi (440 kPa)
14.5/75-16.1 (w/o FWD)	F3	10PR	40 psi (275 kPa)
12-16.5 (w/ FWD)	F3	8 PR	60 psi (415 kPa)
Rear:			
18.4-28 (w/o FWD)	R4	12 PR	36 psi (250 kPa)
19.5L-24 (w/o FWD)	R4	12 PR	34 psi (235 kPa)
21L-24 (w/ FWD)	R4	10 PR	26 psi (179 kPa)
21L-24 (w/FWD)	R4	16 PR	40 psi (275 kPa)