

610C BACKHOE LOADER

16,300 lb (7400 kg)

Transport Height.....	11 ft (3.35 m)
Transport Length.....	23 ft 4 in. (7.1 m)
Machine Width.....	7 ft 1 in. (2.18 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. (106.5 x 127 mm)
Net hp at 2200 rpm.....	95 SAE hp (71 kW) DIN 71 kW
Maximum Torque at 1300 rpm.....	284 lb-ft (385 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.....	850 ± 25 rpm
Fast Idle.....	2375—2400 rpm
Rated Full Load.....	2200 rpm
Cylinder Pressure Hot.....	350 psi (2415 kPa)
Turbo Boost Pressure at Rated Full Load.....	13—15 psi (89—103 kPa)
Flywheel Teeth.....	115
Electrical System.....	12 V
Alternator:	
With Cab.....	51 amp/65 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 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.

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HYDRAULIC SYSTEM—Close-Center

Main Hydraulic Pump Size.....	4 cu in. (65.5 cm ³)
Main Pump Standby Pressure	2755 ± 50 psi (19 000 ± 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 (10 500 ± 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.....	3200—3400 psi (22 000—23 450 kPa)

RELIEF VALVE SETTINGS*

Loader:

 Bucket Rollback and Dump

4500 psi (31 030 kPa)

Backhoe:

 Crowd Out and In

2975 psi (20 500 kPa)

Boom:

 Lower

2400 psi (16 550 kPa)

 Raise

4000 psi (27 580 kPa)

 Curl

3480 psi (24 000 kPa)

 Dump

2975 psi (20 500 kPa)

 Swing Left and Right

2825 psi (19 480 kPa)

*Note: *Tolerance is + 200 - 0 psi (+ 1380 - 0 kPa)*

CYCLE TIMES (Maximum at Fast Idle)

Oil Temperature

150 ± 10°F (65 ± 5°C)

Loader:

 Boom Raise

4.7 sec

Boom Lower:

 Power Down

3.5 sec

 Float Down

3.6 sec

 Bucket Dump (at Full Height)

2.3 sec

 Bucket Rollback.....

3.0 sec

Backhoe:

Boom:

 Raise (to Cushion).....

2.7 sec

 Lower

3.9 sec

 Crowd In

4.6 sec

 Crowd Out

3.4 sec

Bucket:

 Dump

1.9 sec

 Curl

2.6 sec

 Swing.....

4.9 sec

 Stabilizer Down (Both at Once)

3.4 sec

 Stabilizer Up (Both at Once).....

4.4 sec

 Extendible Dipperstick Extend and Retract

3.2 sec

Steering Right to Left:

 (S.N. —734227)

4.5 turns

 (S.N. 734228—)

3.2 turns

Steering Left to Right:

 (S.N. —734227)

3.5 turns

 (S.N. 734228—)

2.4 turns

LUBRICANTS

See front of this book for the codes [].

CAPACITIES

	U.S.	Metric
Differential (Rear Axle) [C].....	4.5 gal	17 L
Engine:		
Coolant (w/o Heater) [N]	14 qt	13 L
Coolant (w/ Heater).....	16 qt	15 L
Oil 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:		
Main	23 gal	87 L
Auxiliary	15 gal	57 L
Transmission-Hydraulic System [C]:		
Without FWD	5.75 gal	22 L
With FWD)	7.25 gal	27 L

TIRE PRESSURE (Cold Inflation)

Tire Size	Type	Rating	Normal Pressure
Front:			
11-16 (w/o FWD)	F3	12 PR	40 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	40 psi (275 kPa)