

710B BACKHOE LOADER (w/ 6329 Engine)

20,237 lb (9179 kg)

Transport Height.....13 ft 9 in. (4.2 m)
Transport Length.....25 ft 8 in. (8.13 m)
Machine Width7 ft 7.7 in. (2.33 m)

ENGINE.....John Deere 300 Series

Number of Cylinders and Displacement 6 cylinders, 329 cu in. (5.4 L)
Air intake System.....Turbocharged
Bore and Stroke4.02 x 4.33 in. (102 x 110 mm)
Net hp at 2200 rpm 100 SAE hp (75 kW) DIN 75 kW
Maximum Torque at 1300 rpm.....290 lb-ft (293 N•m)
Nozzle Opening Pressure:
 New3200 ± 50 psi (22 060 ± 345 kPa)
 Used3000 ± 50 psi (20 680 ± 345 kPa)
Valve Clearance (Cold):
 Intake0.014 in. (0.36 mm)
 Exhaust0.018 in. (0.46 mm)
Oil Pressure at Fast Idle 50 ± 15 psi (345 ± 105 kPa)
Static Injection Pump TimingTiming lines aligned w/ flywheel located at TDC
Dynamic Injection Pump Timing at Rated Load rpm* 16 + 0 - 1° BTDC
Speeds:
 Slow Idle825 ± 50 rpm
 Fast Idle.....2375—2400 rpm
 Full Load Rating2200 rpm
Cylinder Pressure Hot.....350 psi (2413 kPa)
Turbo Boost Pressure at Full Rated Load8—9 psi (55—62 kPa)
Flywheel Teeth.....115
Electrical System12 V
Alternator:
 W/ Cab51 amp
 W/o Cab35 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 psi ± 5 (1240 ± 35 kPa)
Pump Flow, Minimum at 1500 rpm and
 180 psi (1240 kPa):
 New12 gpm (45.4 L/min)
 Used11 gpm (41.6 L/min)
Lube Pressure32—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.....	6.1 cu in. (100 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	47 gpm (178 L/min)
Used	40 gpm (151 L/min)
Priority Valve Setting.....	1375 ± 150 psi (9480 ± 1035 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—820 kPa)
System Relief Valve.....	3000—3200 psi (20 700—22 000 kPa)

RELIEF VALVE SETTINGS*

Bucket Rollback and Dump (Loader).....	4500 psi (31 030 kPa)
Crowd Out and In (Backhoe)	2750 psi (18 960 kPa)
Boom Lower (Backhoe)	2030 psi (14 000 kPa)
Boom Raise (Backhoe).....	4000 psi (27 580 kPa)
Bucket Curl (Backhoe).....	3200 psi (22 065 kPa)
Bucket Dump (Backhoe).....	2750 psi (18 960 kPa)
Swing Left and Right (Backhoe)	2750 psi (18 960 kPa)

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

CYCLE TIMES (Maximum at Fast Idle and Hot Oil)

Loader Boom Raise	3.7 sec
Loader Boom Lower:	
Power Down	2.7 sec
Float Down	3.1 sec
Loader Bucket Dump	1.2 sec
Loader Bucket Rollback.....	2.3 sec
Backhoe Boom Raise	2.8 sec
Backhoe Boom Lower	2.8 sec
Crowd In	4.2 sec
Crowd Out	3.3 sec
Backhoe Bucket Dump	1.7 sec
Backhoe Bucket Curl	2.6 sec
Backhoe Swing.....	4.7 sec
Stabilizer Down	3.4 sec
Stabilizer Up.....	4.2 sec
Extendible Dipperstick Extend and Retract	3.7 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]	28 qt	26 L
Crankcase w/ Filter [E].....	20 qt	19 L
Transmission and Hydraulic System [C].....	20 gal	76 L
Fuel Tank	33 gal	125 L
Rear Axle [C]	18 qt	17 L
Front Axle (FWD) [J].....	7 qt	6.5 L
Front Wheel Planetary (FWD) (per Side) [J].....	1.1 qt	1.0 L

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TIRE PRESSURE (Cold Inflation)

Tire Size	Type	Rating	Normal Pressure
Front:			
14.5/75-16.1 w/o FWD	F3	10 PR	40 psi (275 kPa)
14-17.5 w/ FWD	F3	10 PR	60 psi (414 kPa)
Rear:			
21L-24 w/ FWD	R4	16 PR	40 psi (275 kPa)
20.5-25 w/o FWD	L2 or L3	12 PR	35 psi (240 kPa)

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MEMORANDA

24MAR97

710B BACKHOE LOADER (With 6359 Engine)

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Machine Width	7 ft 7.7 in. (2.33 m)

ENGINE.....John Deere 300 Series

Number of Cylinders and Displacement	6 cylinders, 329 cu in. (5.4 L)
Air Intake System.....	Turbocharged
Bore and Stroke	4.19 x 4.33 in. (106.5 x 110 mm)
Net hp at 2200 rpm	105 SAE hp (78 kW) DIN 78 kW
Maximum Torque at 1300 rpm.....	300 lb-ft (407 N•m)
Nozzle Opening Pressure:	
New	3700 ± 50 psi (25 450 ± 350 kPa)
Used	3500 psi (24 100 kPa) minimum
Valve Clearance (Cold):	
Intake	0.014 in. (0.36 mm)
Exhaust	0.018 in. (0.46 mm)
Minimum Oil Pressure at Slow Idle.....	14 psi (100 kPa)
Static Injection Pump Timing	Timing lines aligned w/ flywheel located at TDC
Dynamic Injection Pump Timing at Rated Load rpm*	15.5 + 0 - 1° BTDC
Speeds:	
Slow Idle	825 ± 50 rpm
Fast Idle.....	2375—2400 rpm
Full Load Rating	2200 rpm
Cylinder Pressure Hot.....	350 psi (2413 kPa)
Turbo Boost Pressure at Full Load Rating.....	6—8 psi (41—55 kPa)
Flywheel Teeth.....	115
Electrical System	12 V
Alternator	65 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 psi ± 5 (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.

HYDRAULIC SYSTEM—Close-Center

Main Hydraulic Pump Size.....	6.1 cu in. (100 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	47 gpm (178 L/min)
Used	40 gpm (151 L/min)
Priority Valve Setting.....	1375 ± 150 psi (9,480 ± 1035 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.....	3000—3200 psi (20 700—22 000 kPa)

RELIEF VALVE SETTINGS*

Loader:

Bucket Rollback and Dump 4500 psi (31 030 kPa)

Backhoe:

Crowd Out and In 2750 psi (18 960 kPa)

Boom Lower 2030 psi (14 000 kPa)

Boom Raise 4000 psi (27 580 kPa)

Bucket Curl 3200 psi (22 065 kPa)

Bucket Dump 2750 psi (18 960 kPa)

Swing Left and Right 2750 psi (18 960 kPa)

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

CYCLE TIMES (Fast Idle and Hot Oil)

Loader Boom Raise 3.7 sec

Loader Boom Lower:

Power Down 2.7 sec max

Float Down 3.1 sec max

Loader Bucket Dump 1.2 sec max

Loader Bucket Rollback 2.3 sec max

Backhoe Boom Raise 2.8 sec max

Backhoe Boom Lower 2.8 sec max

Crowd In 4.2 sec max

Crowd Out 3.3 sec max

Backhoe Bucket Dump 1.7 sec max

Backhoe Bucket Curl 2.5 sec max

Backhoe Swing 4.1 sec max

Stabilizer Down 3.4 sec max

Stabilizer Up 4.2 sec max

Extendible Dipperstick

Extend and Retract 3.7 sec max

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] 28 qt 26 L

Crankcase w/ Filter [E] 20 qt 19 L

Transmission and Hydraulic System [C] 20 gal 76 L

Fuel Tank 33 gal 125 L

Rear Axle [C] 18 qt 17 L

Front Axle (FWD) [J] 7 qt 6.5 L

Front Wheel Planetary (FWD) (per Side) [J] 1.1 qt 1.0 L

TIRE PRESSURE (Cold Inflation)

Tire Size	Type	Rating	Normal Pressure
Front:			
14.5/75-16.1 w/o	F3	10 PR	40 psi (275 kPa)
FWD			
14-17.5 w/	F3	10 PR	60 psi (414 kPa)
FWD			
Rear:			
21L-24 w/	R4	16 PR	40 psi (275 kPa)
FWD			
20.5-25 w/o	L2 or L3	12 PR	35 psi (240 kPa)
FWD			

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