

**ENGINE.....John Deere 8.1 L PowerTech
(PIN 822868—)**

Number of Cylinders and Displacement	6 cylinders, 494 cu in. (8.1 L)
Air Intake System.....	Turbocharged
Bore and Stroke	4.56 x 4.75 in. (116 x 121 mm)
Net hp at 1800 rpm.....	185 hp (138 kW)
Maximum Torque at 1400 rpm.....	599 lb-ft (812 N•m)
Nozzle Opening Pressure:	
New	4200 psi (29 000 kPa)
Used	3800 psi (26 200 kPa)
Valve Clearance (Cold):	
Intake.....	0.018 ± 0.002 in. (0.46 ± 0.05 mm)
Exhaust	0.028 ± 0.002 in. (0.71 ± 0.05 mm)
Oil Pressure	40—58 psi (280—400 kPa)
Static Injection Pump Timing	Timing lines aligned with flywheel located at TDC (top dead center)
Dynamic Injection Pump Timing at Rated Load rpm*	4.7 + 0 - 1° BTDC
Dynamic Timing (BTDC) Turbocharged.....	4.7 + 0 - 1°
Speeds:	
Slow and Fast Idle	850C (S.N. 822868—) uses electronic fuel injection, so a mechanical speed adjustment is not necessary. To set slow and fast idle, an engine calibration is performed, see Technical Manual, Calibrate Engine Controller, Section 9015, Group 20.
Rated Full Load	2100 rpm
Cylinder Pressure Hot (Min)	345—405 psi (2380—2790 kPa) cranking with injectors removed
Turbo Boost Pressure at Rated Full Load	14—17 psi (96—117 kPa)
Number of Flywheel Teeth.....	129

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

TRANSMISSION

Model and Speeds.....	Hydrostatic; variable speed, forward and reverse
High Pressure Relief.....	6400 ± 6800 psi (44 128—46 886 kPa)
Maximum Engine rpm Pulldown	1800—1850 rpm

HYDRAULIC SYSTEM—Open-Center

Main System Relief at Fast Idle	2250 + 200 - 0 psi (15 510 + 1379 - 0 kPa)
Pump Flow (Min) Used, at 2000 rpm and 2000 psi (13 700 kPa)	35.3 gpm (134 L/min)

RELIEF VALVE SETTINGS

Auxiliary	2500 psi (17 240 kPa)
Circuit Relief Valve at Slow Idle:	
Blade:	
Raise	2500 psi (17 240 kPa)
Lower.....	1250 psi (8 620 kPa)
System Relief Valve at Fast Idle, Bulldozer	2250 + 200 - 0 psi (15 510 + 1379 - 0 kPa)

LUBRICANTS

See front of this book for the codes [].

CAPACITIES

	U.S.	Metric
Engine:		
Cooling System [N]	9 gal	34 L
Crankcase w/ Filter:		
(S.N. —822867) [E]	30 qt	28.5 L
(S.N. 822868—) [E]	27 qt	25.5 L
Final Drive (Each Side):		
Inner [C or J]	4 gal	15 L
Inner 850C LGP [C or J]	6.75 gal	25.6 L
Outer [C or J]	3.25 gal	12 L
Fuel Tank	92 gal	348 L
Hydraulic System [U or E].....	21 gal	81 L
Hydrostatic Reservoir [U or E]	27 gal	103 L