

790 EXCAVATOR

48,440 lb (21,972 kg)

Transport Height.....	9 ft 9 in. (3.0 m)
Transport Length.....	32 ft 10 in. (10.0 m)
Machine Width.....	10 ft 6 in. (3.1 m)

ENGINE.....John Deere 400 Series

Number of Cylinders and Displacement.....	6 cylinders, 466 cu in. (7.6 L)
Air Intake System.....	Turbocharged and aftercooled
Bore and Stroke.....	4.56 x 4.75 in. (116 x 121 mm)
Compression Ratio.....	14.9 to 1
Net hp at 2200 rpm.....	155 SAE hp (116 kW) DIN 116 kW
Maximum Torque at 1400 rpm.....	515 lb-ft (698 N•m)
Nozzle Opening Pressure:	
New.....	4050 + 50 psi (27 925 + 345 kPa)
Used.....	3800 + 50 psi (26 200 + 345 kPa)
Valve Clearance (Cold):	
Intake.....	0.018 in. (0.46 mm)
Exhaust.....	0.028 in. (0.71 mm)
Static Injection Pump Timing.....	Timing lines aligned w/flywheel located at TDC
Dynamic Injection Pump Timing at 2000 rpm*.....	17 + 0 - 1° BTDC
Speeds:	
Slow Idle.....	900 ± 25 rpm
Fast Idle.....	2175—2200 rpm
Rated Full Load.....	2200 rpm
Turbo Boost Pressure at Rated Full Load.....	15—18 psi (105—125 kPa)
Cylinder Pressure.....	390—450 psi (2690—3105 kPa)
Electrical System.....	24 volt
Alternator.....	16 or 42 amp
Cooling System Pressure.....	10 psi (70 kPa)
Radiator Air Flow Test.....	2.75 volts (minimum combined voltage reading)

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

POWER TRAIN

Propel Motor.....	Axial-piston hydraulic motor with planetary drive
Propel Brake.....	Multiple-disk hydraulically released and spring applied
Crossover Relief Valve Setting.....	3770 psi (26 000 kPa) or 3370 psi (23 200 kPa) plus 1/4 turn

HYDRAULIC SYSTEM—Open-Center

Main Pump:	
Type.....	2 variable-displacement axial-piston
Pressure Setting.....	3770 psi (25 994 kPa)
Maximum Oil Flow.....	2 x 63.4 gpm (2 x 240 L/min)
Pilot Pump:	
Pressure Setting.....	500 psi (3450 kPa)
Maximum Oil Flow.....	11.9 gpm (45 L/min)

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RELIEF VALVE SETTINGS

Boom	3980 psi (27 440 kPa) or 3500 psi (24 130 kPa) + 1/4 turn
Arm	3980 psi (27 440 kPa) or 3500 psi (24 130 kPa) + 1/4 turn
Bucket.....	4270 psi (29 440 kPa) or 3300 psi (22 750 kPa) + 1/2 turn
Propel	3770 psi (25994 kPa) or 3370 psi (22 235 kPa) + 1/4 turn
Swing.....	3000 psi (20 685 kPa) + 1/2 turn

Note: 1/4 turn equals 400—500 psi (2755—3445 kPa).

CYCLE TIMES (Typical at Fast Idle)

Swing.....	16.9 ± 0.7 sec/3 revolutions
Propel:	
Standard Undercarriage	24.8 ± 1.0 sec/3 revolutions forward and reverse
Long Undercarriage.....	27.1 ± 1.0 sec/3 revolutions forward and reverse
Bucket:	
Curl.....	4.2 ± 4.0 sec
Dump.....	2.7 ± 0.4 sec
Arm:	
Arm In.....	4.2 ± 0.4 sec
Arm Out.....	3.4 ± 0.4 sec
Boom	
Up.....	3.0 ± 0.4 sec
Down.....	2.8 ± 0.4 sec

LUBRICANTS

See front of this book for the codes [].

CAPACITIES

	U.S.	Metric
Engine:		
Cooling System [N]	42.3 qt	40 L
Lubrication [E].....	24.3 qt	23 L
Fuel Tank	81.9 gal	310 L
Hydraulic System [R]	79.3 gal	300 L
Hydraulic Reservoir [R].....	38.0 gal	144 L
Propel Motor [C]	12.7 qt	12 L
Swing Motor [C].....	9.5 qt	9 L

PNEUMATIC SYSTEM

Governor Cut-In Pressure.....	85—90 psi (585—620 kPa)
Regulator Pressure.....	13 psi (90 kPa)
Safety Valve.....	24—28 psi (170—195 kPa)