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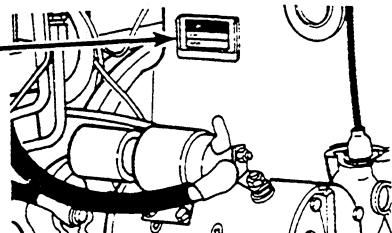
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Section 1010

GENERAL ENGINE SPECIFICATIONS

680 CK Series E Loaders

THE MODEL AND ENGINE SERIAL NUMBER PLATE IS LOCATED ON THE RIGHT HAND SIDE OF THE ENGINE ABOVE THE CRANKING MOTOR.



General

DIESEL ENGINES

Type	4 Cylinder, 4 Stroke Cycle, Valve-in-Head
Firing Order	1-3-4-2
Bore	4-5/8 Inches
Stroke	5 Inches
Piston Displacement	336 Cubic Inches
Compression Ratio	16.5 to 1
No Load Governed Speed	2330 to 2370 RPM
Rated Engine Speed	2200 RPM
Engine Idling Speed	700 to 750 RPM
*Valve Tappet Clearance (Exhaust)	(Hot) .020 Inch (Cold) .025 Inch
(Intake)	(Hot and Cold) .015 Inch

*Hot Settings Are Made After The Engine Has Operated At Thermostat Controlled Temperature For At Least Fifteen Minutes.

Piston and Connecting Rods

Rings per Piston	3
Number of Compression Rings	2
Number of Oil Rings	1
Type Pins	Full Floating Type
Type Bearing	Replaceable Precision, Steel Back, Copper-Lead Alloy Liners

Main Bearings

Number of Bearings	5
Type Bearings	Replaceable Precision, Steel Back, Copper-Lead Alloy Liners

Engine Lubricating System

Oil Pressure	45 to 60 Pounds with Engine Warm and Operating at Rated Engine Speed
Type System	Pressure and Spray Circulation
Oil Pump	Gear Type
Oil Filter	Full Flow Spin on Type
Oil Capacity With Filter	11 U.S. Quarts
Without Filter	10 U.S. Quarts

Fuel System

Fuel Injection Pump	Robert Bosch, Type PES Multiple Plunger
Pump Timing	34 Degrees Before Top Dead Center (Port Closing)
Fuel Injectors	Pencil Type (Opening Pressure 3200 PSI)
Fuel Transfer Pump	Plunger Type, Integral Part of Injection Pump
Governor	Variable Speed, Fly-Weight Centrifugal Type, Integral Part of Injection Pump
1st Stage Fuel Filter	Full Flow Spin on Type
2nd Stage Fuel Filter	Full Flow Spin on Type

Section 1050

**MAINTENANCE
AND
LUBRICATION**

FUEL, FLUIDS AND LUBRICANTS

COMPONENT	CAPACITY		SPECIFICATIONS
	U.S.	Metric	
Fuel tank	30 gallons	113.5 liters	
Engine crankcase oil			
With filter change	11 quarts	10.4 liters	Engine oil: Case HDM oil (CD Commercial class D) MIL-L-45199B
Without filter change	10 quarts	9.5 liters	Above 32° F (0° C) SAE 30 10° to 50° F (-12° to 10° C) SAE 20W Below 40° F (4° C) SAE 10W
Hydraulic system			
Total	35 gallons	133 liters	Case TCH Fluid Alternate oils Engine oil -
Reservoir refill	13.8 gallons	52.2 liters	SD - Service class D or CA - Commercial class A Above 32° F (0° C) SAE 10W Below 32° F. (0° C) SAE 5W
			Type C-2 Transmission and hy- draulic fluid such as Tenneco Hytrans Fluid.
Forward/Reverse transmission refill	12 quarts	11.4 liters	Case TCH Fluid
Synchromesh transmission	6.4 pints	3.0 liters	Case FDL Multipurpose Gear Lubricant or (SAE 90, API-GL-4, MIL-L-2105B)
Rear Axle			Hypoid Gear Oil, API-GL-5 SAE 90 or SAE 80W/90 - -15° F. (-26° C) and above SAE 80W - -15° F. (-26° C) to + 70° F. (+21° C) SAE 75W - -40° F. (-40° C) to + 35° F. (+2° C)
Cooling System	32 quarts	30.2 liters	Ethylene glycol type antifreeze and water should be mixed for prevailing temperatures. Follow manufacturer's specifications.
Alcohol evaporator	1 pint	0.5 liters	Clean wood alcohol
Batteries	As required		Add colorless, odorless drinking water.
Grease fittings	As required		No. 2 moly disulfide grease Alternate grease: Multipurpose lithium-soap base grease.
Wheel bearings	As required		Number 2 wheel bearing grease.

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