

INSTALLATION & OPERATION DATA (I&O Data)

USA Produced

Basic Engine Description

| | |
|---|-------------------------|
| Engine Manufacturer | John Deere Co. |
| Ignition Type | Compression (Diesel) |
| Number of Cylinders | 4 |
| Bore and Stroke - in (mm) | 4.19 (106) X 5 (127) |
| Displacement - in ³ (L) | 275 (4.5) |
| Compression Ratio | 19.0:1 |
| Valves per cylinder | |
| Intake | 1 |
| Exhaust | 1 |
| Combustion System | Direct Injection |
| Engine Type | In-Line, 4 Stroke Cycle |
| Fuel Management Control | Mechanical, Rotary Pump |
| Firing Order (CW Rotation) | 1-3-4-2 |
| Aspiration | Turbocharged |
| Charge Air Cooling Type | None |
| Rotation, viewed from front of engine, Clockwise (CW) | Standard |
| Engine Crankcase Vent System | Open |
| Installation Drawing | D653 |
| Weight - lb (kg) | 873 (396) |

Power Rating

| | | |
|---------------------------|--------------------|--------------------|
| | <u>2100</u> | <u>2350</u> |
| Nameplate Power - HP (kW) | 74 (55) | 74 (55) |

Cooling System - [C051128]

| | | |
|---|-------------------------|--------------------|
| | <u>2100</u> | <u>2350</u> |
| Engine Coolant Heat - Btu/sec (kW) | 41 (43.3) | 46 (48.5) |
| Engine Radiated Heat - Btu/sec (kW) | 17 (17.9) | 17 (17.9) |
| Heat Exchanger Minimum Flow | | |
| 60°F (15°C) Raw H ₂ O - gal/min (L/min) | 8 (30.3) | 8 (30.3) |
| 95°F (35°C) Raw H ₂ O - gal/min (L/min) | 9 (34.1) | 10 (37.9) |
| Heat Exchanger Maximum Cooling Raw Water | | |
| Inlet Pressure - psi (bar) | 60 (4.1) | |
| Flow - gal/min (L/min) | 40 (151) | |
| Typical Engine H ₂ O Operating Temp - °F (°C) ^[1] | 180 (82.2) - 195 (90.6) | |
| Thermostat | | |
| Start to Open - °F (°C) | 180 (82.2) | |
| Fully Opened - °F (°C) | 201 (93.9) | |
| Engine Coolant Capacity - qt (L) | 15.3 (14.5) | |
| Coolant Pressure Cap - lb/in ² (kPa) | 9 (62.1) | |
| Maximum Engine Coolant Temperature - °F (°C) | 221 (105) | |
| Minimum Engine Coolant Temperature - °F (°C) | 105 (40.6) | |
| High Coolant Temp Alarm Switch - °F (°C) | 205 (96.1) | |

Electric System - DC

| | <u>Standard</u> | | <u>Optional</u> | |
|--|------------------------|-------------------|------------------------|-----------------|
| System Voltage (Nominal) | 12 | | 24 | |
| Battery Capacity for Ambients Above 32°F (0°C) | | | | |
| Voltage (Nominal) | 12 | [C07633] | 24 | [C07633] |
| Qty. Per Battery Bank | 1 | | 2 | |
| SAE size per J537 | 8D | | 8D | |
| CCA @ 0°F (-18°C) | 1400 | | 1400 | |
| Reserve Capacity - Minutes | 430 | | 430 | |
| Battery Cable Circuit, Max Resistance - ohm | 0.0012 | | 0.0012 | |
| Battery Cable Minimum Size | | | | |
| 0-120 in. Circuit Length ^[2] | 00 | | 00 | |
| 121-160 in. Circuit Length ^[2] | 000 | | 000 | |
| 161-200 in. Circuit Length ^[2] | 0000 | | 0000 | |
| Charging Alternator Maximum Output - Amp, | 40 | [C07639] | 40 | [C071048] |
| Starter Cranking Amps, Rolling - @60°F (15°C) | 345 | [RE59595/RE59589] | 250 | [C07819/C07820] |

NOTE: This engine is intended for indoor installation or in a weatherproof enclosure. ¹Engine H₂O temperature is dependent on raw water temperature and flow. ²Positive and Negative Cables Combined Length.

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Exhaust System

| | <u>2100</u> | <u>2350</u> |
|---|-------------|-------------|
| Exhaust Flow - ft. ³ /min (m ³ /min) ----- | 476 (13.5) | 524 (14.8) |
| Exhaust Temperature - °F (°C) ----- | 787 (419) | 790 (421) |
| Maximum Allowable Back Pressure - in H ₂ O (kPa) ----- | 30 (7.5) | 30 (7.5) |
| Minimum Exhaust Pipe Dia. - in (mm) ^[3] ----- | 3 (76.2) | 3 (76.2) |

Fuel System

| | <u>2100</u> | <u>2350</u> |
|---|-----------------------------|-------------|
| Fuel Consumption - gal/hr (L/hr) ----- | 9.2 (34.8) | 8.7 (32.9) |
| Fuel Return - gal/hr (L/hr) ----- | 9.8 (37.1) | 13.3 (50.3) |
| Fuel Supply - gal/hr (L/hr) ----- | 19 (71.9) | 22 (83.3) |
| Fuel Pressure - lb/in ² (kPa) ----- | 3 (20.7) - 6 (41.4) | |
| Minimum Line Size - Supply - in. ----- | .50 Schedule 40 Steel Pipe | |
| Pipe Outer Diameter - in (mm) ----- | 0.0848 (2.2) | |
| Minimum Line Size - Return - in. ----- | .375 Schedule 40 Steel Pipe | |
| Pipe Outer Diameter - in (mm) ----- | 0.675 (17.1) | |
| Maximum Allowable Fuel Pump Suction Lift with clean Filter - in H ₂ O (mH ₂ O) ----- | 31 (0.8) | |
| Maximum Allowable Fuel Head above Fuel pump, Supply or Return - ft (m) ----- | 4.5 (1.4) | |
| Fuel Filter Micron Size ----- | 5 | |

Heater System

| | <u>Standard</u> | <u>Optional</u> |
|-----------------------------|-----------------|-----------------|
| Engine Coolant Heater | | |
| Wattage (Nominal) ----- | 1000 | 1000 |
| Voltage - AC, 1 Phase ----- | 115 (+5%, -10%) | 230 (+5%, -10%) |
| Part Number ----- | [C122188] | [C122192] |

Air System

| | <u>2100</u> | <u>2350</u> | |
|--|-------------------------------------|-------------|---------------------------|
| Combustion Air Flow - ft. ³ /min (m ³ /min) ----- | 205 (5.8) | 225 (6.4) | |
| Air Cleaner | <u>Standard</u> | | <u>Optional</u> |
| Part Number ----- | [C03749] | | [C03327] |
| Type ----- | Indoor Service Only, with Shield | | Canister, Single-Stage |
| Cleaning method ----- | Washable | | Disposable |
| Air Intake Restriction Maximum Limit | | | |
| Dirty Air Cleaner - in H ₂ O (kPa) ----- | 10 (2.5) | | 10 (2.5) |
| Clean Air Cleaner - in H ₂ O (kPa) ----- | 5 (1.2) | | 5 (1.2) |
| Maximum Allowable Temperature (Air To Engine Inlet) - °F (°C) ^[4] ----- | 130 (54.4) | | |

Lubrication System

| | |
|--|-----------------------|
| Oil Pressure - normal - lb/in ² (kPa) ----- | 35 (241) - 50 (345) |
| Low Oil Pressure Alarm Switch - lb/in ² (kPa) ----- | 30 (207) |
| In Pan Oil Temperature - °F (°C) ----- | 220 (104) - 245 (118) |
| Total Oil Capacity with Filter - qt (L) ----- | 15.5 (14.7) |

Lube Oil Heater

| | <u>Optional</u> | <u>Optional</u> |
|-------------------------|------------------|------------------|
| Wattage (Nominal) ----- | 150 | 150 |
| Voltage ----- | 120V (+5%, -10%) | 240V (+5%, -10%) |
| Part Number ----- | C04430 | C04431 |

Performance

| | <u>2100</u> | <u>2350</u> |
|---------------------------------------|-------------|-------------|
| BMEP - lb/in ² (kPa) ----- | 101 (696) | 91 (627) |
| Piston Speed - ft/min (m/min) ----- | 1750 (533) | 1958 (597) |
| Mechanical Noise - dB(A) @ 1m ----- | C133766 | |
| Power Curve ----- | C133641 | |

³Based on Nominal System. Back pressure flow analysis must be done to assure maximum allowable back pressure is not exceeded. (Note: minimum exhaust Pipe diameter is based on: 15 feet of pipe, one 90° elbow, and a silencer pressure drop no greater than one half of the maximum allowable back pressure.) ⁴Review for horsepower derate if ambient air entering engine exceeds 77°F (25°C). [] indicates component reference part number.