

Specifications

	<u>Metric</u>
Number of Cylinders	6
Bore and Stroke	140 x 152mm
Piston Displacement	14 /
Operating Cycles	4
Lube System Oil Cap.	30.3 /
Engine Coolant Cap.	36 /
Net Weight with Std. Accessories, Dry	1 452 kg

Specific ratings are shown on rear page.

Design Features

Bearings: Precision type, steel backed inserts. 7 main bearings, 4½ in. (114mm) diameter. Connecting Rod – 3¼ in. (79mm) diameter.

Camshaft: Single camshaft controls all valve and injector movement. Induction hardened alloy steel with gear drive.

Camshaft Followers: Roller type for long cam and follower life.

Connecting Rods: Drop forged, 12 in. (305mm) center to center length. Rifle drilled for pressure lubrication of piston pin. Taper piston pin end reduces unit pressures.

Cooler, Lubricating Oil: Tubular type, jacket water cooled.

Crankshaft: High tensile strength steel forging. Bearing journals are induction hardened. Fully counterweighted.

Cylinder Block: Alloy cast iron with removable, wet liners.

Cylinder Heads: Each head serves two cylinders. Drilled fuel supply and return lines. Corrosion resistant inserts on intake and exhaust valve seats.

Fuel System: Cummins PT™ Fuel system with integral, flyball type, variable speed governor. Camshaft actuated injectors.

Gear Train: Heavy duty, located at front of cylinder block.

Lubrication: Force feed to all bearings, gear type pump. All lubrication lines are drilled passages, except pan to pump suction line.

Pistons: Aluminum, cam ground. Oil cooled.

Piston Pins: 2 in. (51mm) diameter, full floating.

Turbocharger: Cummins, T-50, top mounted.

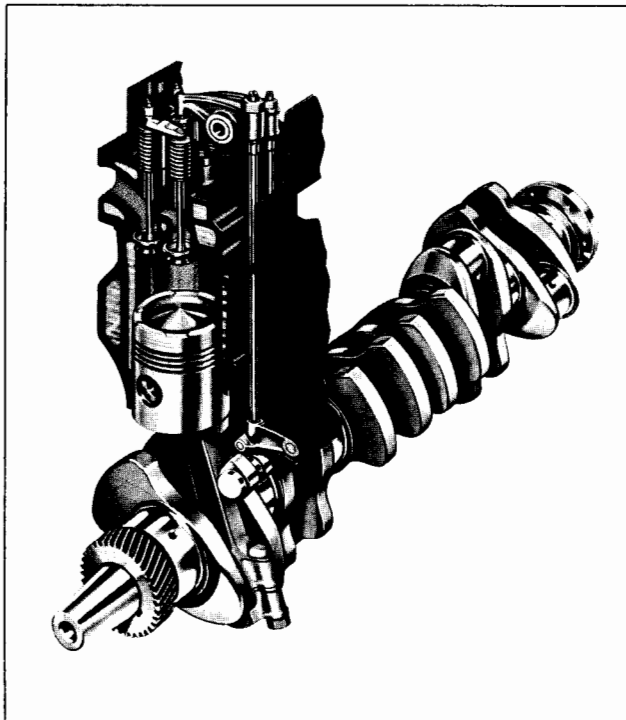
Valves: Dual intake and exhaust each cylinder. Each valve 1½ in. (47mm) diameter. Heat and corrosion resistant face on exhaust valve.



Listed under Underwriters' Laboratories, Inc., reexamination service for fire protection applications.

Listed by Associated Factory Mutual Fire Insurance Companies for fire protection applications.

Listed under Underwriters' Laboratories of Canada label service for fire protection applications.



Big Displacement Design Features

- 1 **Internal Fuel Lines:** Drilled passages in cylinder heads eliminate threaded fuel line connectors and external lines.
- 2 **Large Intake and Exhaust Passages:** Minimize restriction of air and exhaust flow. Allows maximum air charge for clean burning, top economy.
- 3 **Overhead Valves:** Precision machined from high strength alloy steel. Intake valves are of silichrome steel. Exhaust valves of big displacement models are nitrogen steel for high temperature strength and faced with corrosion resistant material.
- 4 **Open Type Combustion Chamber:** Gives most efficient combustion . . . most power from each gallon of fuel.
- 5 **Replaceable Wet-type Cylinder Liners:** Dissipate heat faster. Liners are easily replaced without reboring block.
- 6 **Conventional Push Rod and Rocker Lever Arrangement:** Activates valves and injectors from a single camshaft. Roller type camshaft followers are used for long life.
- 7 **Cam-ground Pistons:** Assure perfect fit at operating temperatures.
- 8 **Alloy Cast Iron Cylinder Block:** Follows proven design and material specification to achieve maximum durability.
- 9 **Large Volume Water Passages:** Give even flow of coolant around cylinder liners, valves, and injectors to draw excess heat from combustion chamber. Centrifugal pump circulates large volumes of water.
- 10 **Connecting Rods:** Forged from high tensile strength alloy steel. I-beam section gives maximum strength. Large diameter piston pins are full-floating. Tapered piston pin end used for superior load distribution and maximum crown material on piston.
- 11 **Counterweighted Crankshafts:** Precision machined from high tensile strength steel forgings. Bearing journals are induction hardened for long life.

LISTED AGENCY RATINGS

Underwriters' Laboratories:

285 HP @ 1750 RPM
 303 HP @ 1900 RPM
 325 HP @ 2100 RPM
 340 HP @ 2300 RPM

Factory Mutual:

285 HP @ 1750 RPM
 303 HP @ 1900 RPM
 325 HP @ 2100 RPM
 340 HP @ 2300 RPM

Underwriters' Laboratories of Canada:

285 HP @ 1750 RPM
 303 HP @ 1900 RPM
 325 HP @ 2100 RPM
 340 HP @ 2300 RPM

The agency-approved horsepower ratings shown are already derated for fire pump service and available for driving the fire pump at sea level altitude (29.92 in. Hg and 60°F. intake air temperature). The only additional deration necessary is for higher ambient temperatures and elevations as follows: 3% for each 1000 feet above sea level and 1% for each 10 degrees above 60°F. in accordance with National Fire Protection Association Pamphlet No. 20.

Installation Considerations

Maximum raw water pressure must not exceed 65 PSI. Minimum acceptable raw water flow at 90°F. raw water temperature and 100°F. ambient air temperature should be at least 34 G.P.M. at the 2300 RPM listed rating.

Ventilation air required for engine combustion is 900 CFM at 2300 RPM rating. This is for engine air combustion only and does not take into consideration additional air required for normal room cooling.

Cummins has always been a pioneer in product improvement. Thus specifications may change without notice. Illustrations may include optional equipment.

Cummins Engine Company, Inc., Columbus, Indiana 47201

Exhaust System

Maximum Allowable Back Pressure Imposed by Piping & Silencer — in. Hg (mm Hg)	3 (75)
Exhaust Pipe Size Normally Acceptable — in. (mm) dia.	5 (125)

Fuel System

Supply Line Size — in. (mm)	0.625 (16) O.D. Tube
Drain Line Size — in. (mm)	0.625 (16) O.D. Tube
Maximum Fuel Line Length Between Supply Tank & Fuel Pump — ft. (m)	40 (12)
Maximum Fuel Height Above Crankshaft — in. (mm)	80 (2030)
Part Number of Standard Fuel Filter	156171
Part Number of Standard Fuel Filter Element	FF-105-D
Maximum Allowable Restriction to Fuel Pump With Dirty Filter — in. Hg (mm Hg)	8 (200)
Maximum Allowable Return Line Restriction — in. Hg (mmHg)	4 (100)

Electrical System

Battery Voltage	24	
Battery Cable Size (Maximum Cable Length Not to Exceed 10 ft. (3.0 m) AWG) ...	00	
Wiring for Automatic Starting (Negative Ground)	Standard	
Alternator (Standard) 24 Volt, Internally Regulated — Ampere		
Manually Operable Contactors	Standard	
Minimum Recommended Battery Capacity —	<u>Amp-hr.</u>	<u>°F CCA</u>
70°F (21°C) Minimum Temperature	100	450
32°F (0°C) Minimum Temperature	150	640
Reference Wiring Diagram Number	212461	

Performance Data

All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air cleaner, and alternator; not included are compressor, fan, optional equipment and driven components. Data is based on operation at SAE standard J816b conditions of 500 feet (150 m) altitude (29.00 in. [736 mm] Hg dry barometer), 85 °F (29 °C) intake air temperature and 0.38 in. (9.6 mm) Hg water vapor pressure, using No. 2 diesel or a fuel corresponding to ASTM D2. All data is subject to change without notice.

Altitude Above Which Output Should be Limited — ft. (m)	500' (150m)
Correction Factor per 1000 ft. (300 m) above Altitude Limit	3%
Temperature Above Which Output Should be Limited — °F (°C)	85 (29)
Correction Factor per 10 °F (11 °C) Above Temperature Limit	1% (2%)

Listed/Approved Ratings BHP (kW)	Speed RPM	Ventilation Air Req'd. For Combustion CFM (litre/s)	Heat Rejection to Cooling Water BTU/min. (kW)	Heat Rejection to Ambient Air* BTU/min. (kW)	Exhaust Gas Flow CFM (litre/s)	Exhaust Gas Temp. °F (°C)	Fuel Consumption gal./hr. (litre/h)
UL LISTED RATINGS							
345 (257)	2300	945 (447)	13,755 (241)	1649 (28.9)	1943 (917)	685 (369)	19.1 (72.3)
330 (246)	2100	851 (403)	13,125 (230)	1528 (26.7)	1691 (798)	650 (350)	17.7 (67.0)
308 (230)	1900	714 (338)	12,285 (215)	1364 (23.9)	1418 (669)	650 (350)	15.8 (59.8)
289 (216)	1750	641 (303)	11,550 (202)	1312 (23.0)	1334 (630)	700 (377)	15.2 (57.5)
FM APPROVED RATINGS							
326 (243)	2300	900 (425)	13,100 (230)	1200 (21.1)	1850 (873)	680 (360)	19.1 (72.3)
312 (233)	2100	810 (382)	12,500 (220)	1100 (19.3)	1610 (760)	645 (341)	17.7 (67.0)
291 (217)	1900	680 (321)	11,700 (206)	1000 (17.6)	1350 (637)	645 (341)	15.8 (59.8)
273 (204)	1750	610 (288)	11,000 (193)	1000 (17.6)	1270 (599)	695 (368)	15.2 (57.5)

*Does not include exhaust piping.

Fire Pump Engine Model: NT-855-F2
 Data Sheet No.: DS-3551-A
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