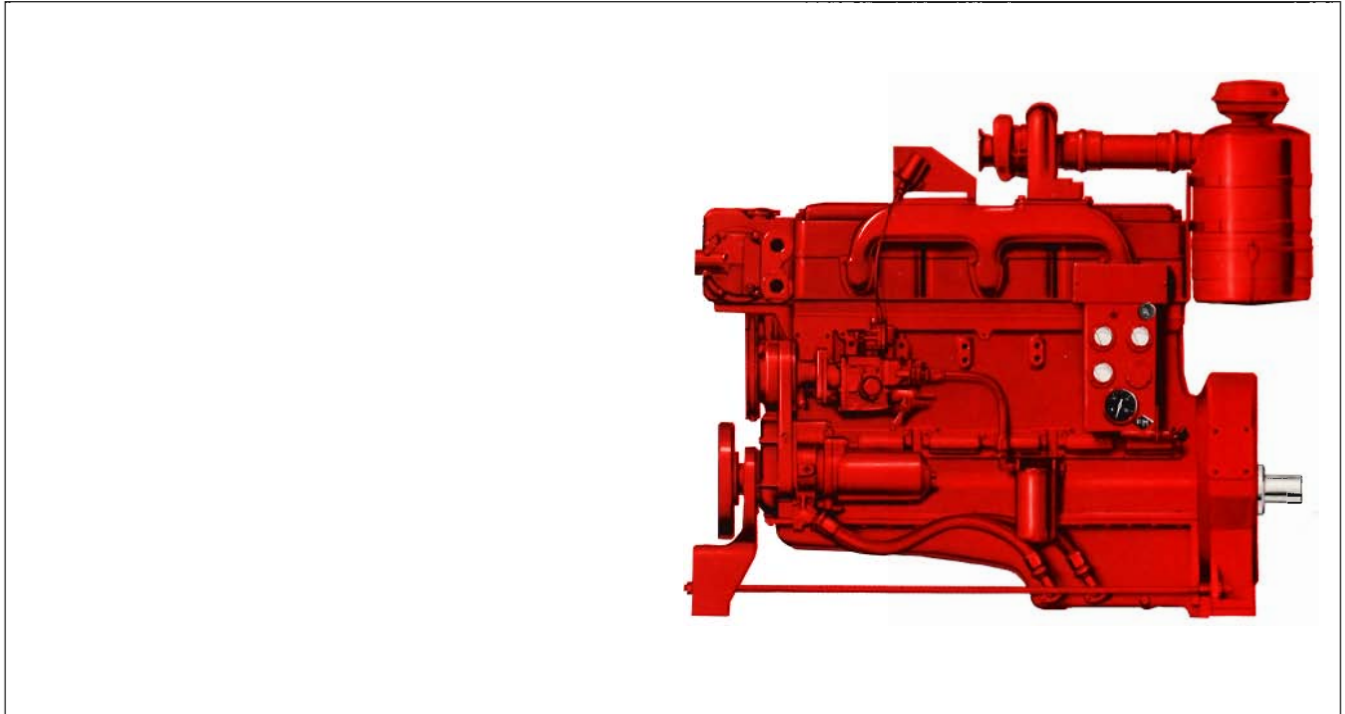


Cummins Diesel

NT-380-IF



Specifications

Number of Cylinders	6
Bore and Stroke	5 1/2" x 6"
Piston Displacement—cu. in.	855
Operating Cycles	4
Crankcase Oil Capacity—gals.	7
Engine Coolant Capacity—gals.	5
Net Weight with Standard Accessories (lbs.) .	3200

Specific ratings are shown on rear page.

Design Features

Bearings: Precision type, steel backed inserts. 7 main bearings, 4 1/2" diameter. Connecting Rod — 3 1/8" 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" 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 PTR Fuel system with integral, fly-ball type, mechanical 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, with three compression and one oil ring. Oil cooled.

Piston Pins: 2" diameter, full floating.

Turbocharger: Cummins, T-50, top mounted.

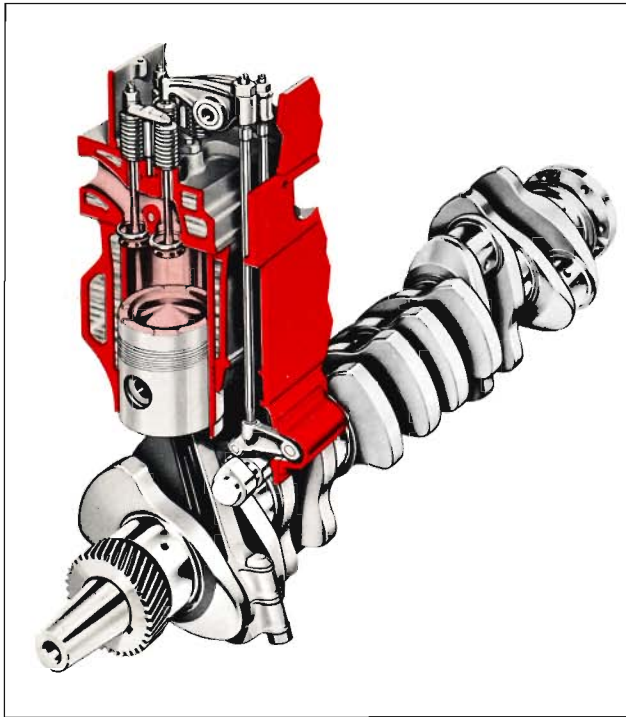
Valves: Dual intake and exhaust each cylinder. Each valve 1 7/8" diameter. Heat and corrosion resistant face on exhaust valve.



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 reexamination 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.

Engines for fire pump service should only be applied at the listed ratings of any one of the following: Underwriters' Laboratories, Inc.; Factory Mutual Fire Insurance Companies; Underwriters' Laboratories of Canada. These ratings are as follows:

Underwriters' Laboratories Ratings:

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

Factory Mutual Ratings:

274 HP @ 1750 RPM
 304 HP @ 2000 RPM
 330 HP @ 2300 RPM

Underwriters' Laboratories of Canada Ratings:

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

Performance

The horsepower ratings listed above represent performance at sea level altitude (29.92 inches of mercury) and 60°F. intake air temperature. Ratings represent performance of the engine with all standardly fitted parasitic losses deducted, including fuel system, lubricating oil pump, water pump, air cleaner and battery charging generator.

Curves represent performance on No. 2 diesel or furnace oil. Equivalent results can be obtained with fuels ranging from heavy furnace oils to light jet and military type fuels without recalibration. The net horsepower ratings are to be derated 5% for each 1000 feet above sea level, in accordance with National Board of Fire Underwriters Standard No. 20.

Cummins Engine Company, Inc., Columbus, Indiana 47201
 Cummins Americas, Inc., Columbus, Indiana, U.S.A.
 Cummins Diesel Australia, Ringwood, Australia
 Cummins Diesel International Ltd.
 Cummins Engine Company Ltd., London, England

MODEL NT-380-IF CUMMINS TURBODIESEL[®]

FIRE PUMP ENGINE



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



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

Bore and Stroke	5½" x 6"
Number of Cylinders	6
Piston Displacement (cu. in.)	855
Horsepower	See Curve
Crankcase Oil Capacity (gals.)	5
Cooling System Capacity (gals.)	5
Air Flow — cfm	830
Net Weight with Standard Accessories (lbs.) Approx.	3200

BEARINGS:

Camshaft: 7 bearings, 2" diameter.

Crank Pin: 3½" diameter by 2½" length. Removable, copper-lead, steel back precision type shells. Projected area per rod 5.4 sq. in.

Main: 7 bearings, 4½" diameter. Removable, shells held in place by "I" beam section caps. Total projected area 61.15 sq. in.

Piston Pin: 3 bearings, 2 in piston and 1 in rod, 2" diameter.

BREATHER, Crankcase: Sealed type element.

CLEANER, Air: Oil bath type (mounted)

COOLER, Oil: Tubular type, jacket water cooled.

CRANKSHAFT: High tensile strength steel forging. All bearing journals induction hardened. Fully counterbalanced, wide web type.

CYLINDERS: Cast enbloc, with removable, heavy-wall, wet type liners.

DAMPER, Vibration: Viscous type.

ELECTRICAL EQUIPMENT: 24-volt system. 24-volt starting motor; 20-ampere generator; voltage regulator and toggle type starting switch.

EXCHANGER, Heat: Tubular type.

FILTERS:

Fuel Oil, Dual Depth Type (mounted).
Lubricating Oil, full flow, horizontally mounted on lube oil pump.
Lubricating Oil, by-pass, mounted on engine.

FLYWHEEL: Machined to fit drive flange.

GOVERNOR: Mechanical variable speed type.

HEADS, Cylinder: Cast in pairs. Stellite inserts on valve seats. Drilled passages for fuel lines to injectors.

HOURLY METER: Electrical type.

HOUSING, Flywheel: S. A. E. No.1 with pedestal mounting supports.

LUBRICATION: Internal oil line design. All lubrication lines are drilled passages, except pan to pump suction line. Full pressure to all bearings. Gear type pump.

MANIFOLD, Exhaust: Water cooled connected to Turbocharger.

PAN, Oil: Rear sump type.

PANEL, Instrument: With ammeter; fuel oil pressure gauge (preheater); lubricating oil pressure gauge; lubricating oil temperature gauge; throttle control; toggle starting switch. Priming pump (preheater).

PISTONS: Aluminum. Cam ground. Oil cooled.

PUMPS:

Fuel—Exclusive Cummins PT pump.

Lubricating Oil—Gear type, located on outside of engine gear case housing.

Water—Circulating, centrifugal type, belt driven. 105 gpm @ 2300 rpm.

Piston Cooling.

RINGS, Piston: 4 compression rings, 1 oil ring.

RODS, Connecting: High strength, drop-forged, 12" center to center. Rifle drilled for pressure lubrication to piston pin.

STARTING AID: Pre-heater in intake manifold.

THERMOSTAT: Single unit type.

THROTTLE, Hand Control: On panel.

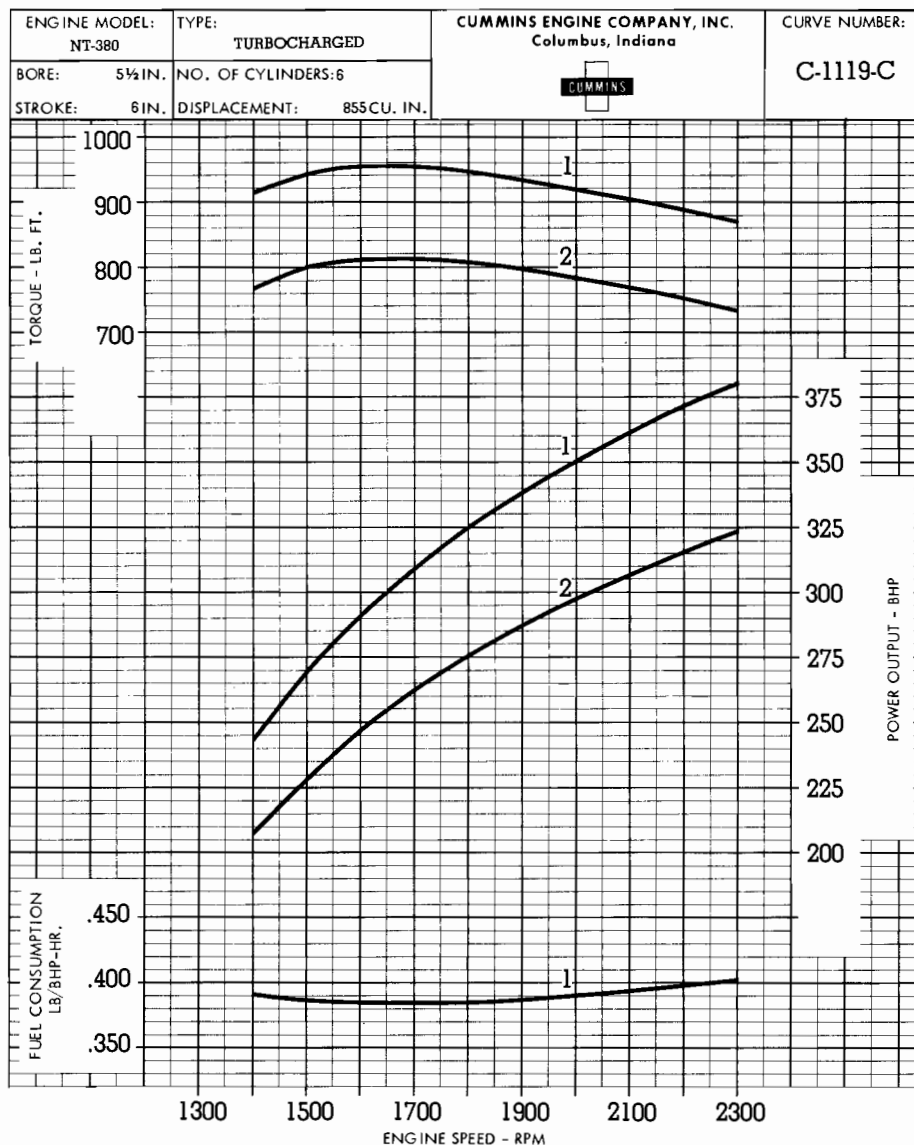
TURBOCHARGER: Cummins T-590, top mounted.

VALVES, Dual Intake and Exhaust: Heat resisting alloy steel. diameter, 1½". Stellite face on intake and exhaust valves.

CEX 157
VOL 2
FIG 12

Reman

CUMMINS FIRE PUMP ENGINE PERFORMANCE



For fire pump applications, the engines are to be applied on the No. 2 performance curve. This is the net torque and horsepower available for fire pump service with all auxiliary equipment connected. The engines are capable of operating on the No. 1 curve at sea level, 60° F. conditions, which is 15% above the stated net ratings.

The net horsepower ratings are to be derated 5% for each 1000 ft. above sea level, in accordance with National Board of Fire Underwriters Standard No. 20.

Refer to the listing of either Factory Mutual or Underwriters Laboratories for determination of the specific approved rating points.

REVIEWED BY ENGINEERING DEPT.
ISSUED BY LABEL SERVICE DEPT.
NOV 8 1968
UNDERWRITERS' LABORATORIES
OF CANADA

CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA



