

Specifications

Number of Cylinders 6
 Bore and Stroke . . . 5½ in. x 6 in.
 Piston Displacement . . . 855 cu. in.
 Operating Cycles 4
 Lube System Oil Cap. . . 8 U.S. gals.
 Engine Coolant Cap. . . 9.5 U.S. gals.
 Net Weight with Std.
 Accessories, Dry 3150 lbs.

Specific ratings are shown on rear page.

Metric

6
 140 x 152mm
 14 l
 4
 30.3 l
 36 l
 1 429 kg

Design Features

Bearings: Precision type, steel backed inserts. 7 main bearings, 4½ in. (114mm) diameter. Connecting Rod — 3½ 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.

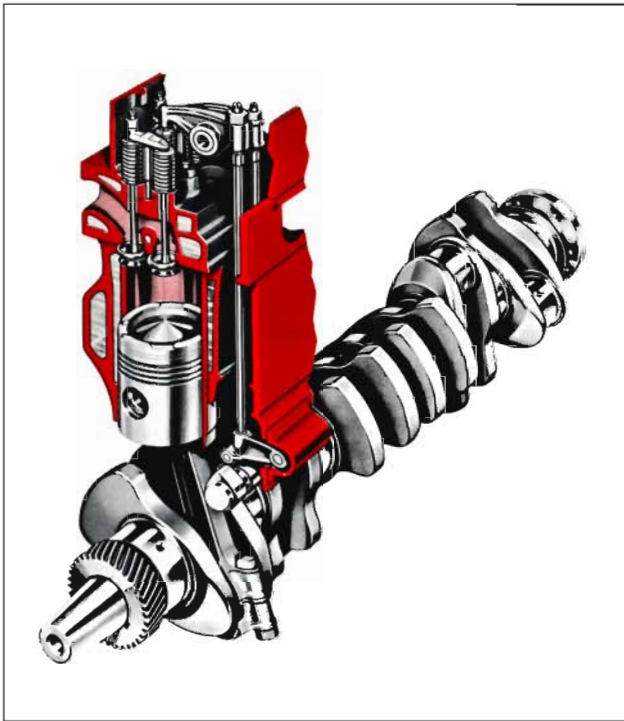
Valves: Dual intake and exhaust each cylinder. Each valve 1½ in. (47mm) diameter. Heat and corrosion resistant face on exhaust valve.



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:

255 HP @ 1750 RPM
255 HP @ 1900 RPM
255 HP @ 2100 RPM

Factory Mutual:

255 HP @ 1750 RPM
255 HP @ 1900 RPM
255 HP @ 2100 RPM

Underwriters' Laboratories of Canada:

255 HP @ 1750 RPM
255 HP @ 1900 RPM
255 HP @ 2100 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 2100 RPM listed rating.

Ventilation air required for engine combustion is 760 CFM at 2100 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

Standard Equipment

Air Cleaner: 16 in. (406 mm) diameter, oil bath type, mounted.

Belt and Damper Shield Guard: Protection from alternator, accessory drive, and water pump belts and vibration damper.

Coolant Pump: Belt driven, centrifugal type.

Corrosion Resistor: Mounted, checks rust and corrosion, controls acidity, and removes impurities from coolant.

Electrical Equipment: 24 volt negative ground system. 24 volt starting motor; 24 volt, 20 ampere alternator; voltage regulator; manually operable contacters; junction box with enclosed terminal strip.

Engine Support: Pedestal type, front and rear.

Exhaust Manifold: Water cooled.

Exhaust Outlet: 5 in. (127 mm) diameter, 90° elbow.

Filters: Lubricating oil, full flow replaceable paper element, mounted. Fuel, paper element throwaway type, mounted.

Flywheel: Machined for stub shaft mounting.

Flywheel Housing: SAE No. 1 with industrial supports.

Governor: Mechanical flyball, mechanical variable speed type.

Heat Exchanger: Tubular type, mounted.

Instrument Panel: Mounted. Includes ammeter, combination tachometer and hourmeter, water temperature gauge, lubricating oil pressure gauge.

Lubricating Oil Cooler: Tubular type, jacket water cooled.

Oil Pan: Cast aluminum, rear sump type, 7 U.S. gallon (26.5 liter) capacity. Optional provision for oil heater.

Oil Pressure Switch: Provides signal to activate alarm (not included) for low oil pressure.

Overspeed Switch: Mounted, overspeed shutdown with manual reset, stop crank contacts.

Stubshaft: Mounted on flywheel.

Throttle Control: Hydraulic type with vernier override.

Vibration Damper: Viscous type.

Water Jacket Heater: Mounts under oil pan. 115 volt, 2500 watt.

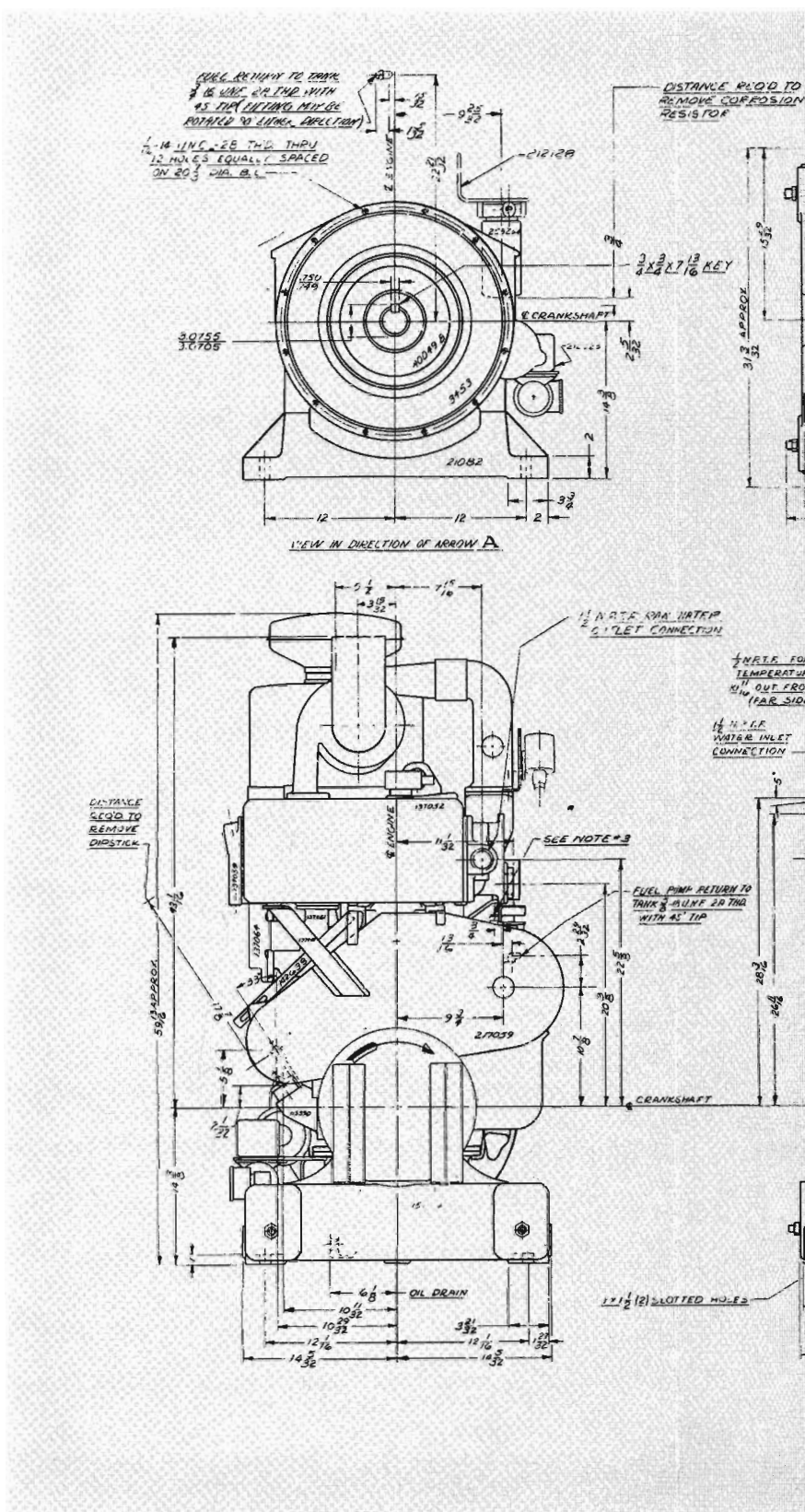
Water Temperature Switch: Provides signal to activate alarm (not included) for high water temperature.

Optional Equipment

Heat Exchanger: Copper-nickel tube bundle for salt water or corrosive water cooling systems.

Left Hand Rotation: Counterclockwise rotation when viewing engine from front end.

Oil Heater: Mounted in side of oil pan.



CUMMINS ENGINE COMPANY, INC.

Engine Data Sheet

Fire Pump Engine Model: NT-855-F1
(for listed/approved ratings see tabulation)

Date: June, 1980

Data Sheet: DS-3550-A

General Engine Data

Type:	4 Cycle; In-Line; 6 Cylinder
Aspiration:	Turbocharged
Bore — in. (mm)	5.5 (140)
Stroke — in. (mm)	6 (152)
Displacement — in. ³ (litre)	855 (14)
Compression Ratio:	14.1:1
Valves per Cylinder: — Intake	2
— Exhaust	2
Engine Weight & Center of Gravity (With Standard Accessories)	
Reference Installation Diagram	208359
Dry Weight — lb. (kg)	3150 (1 429)
Wet Weight — lb. (kg)	3234 (1 467)
C.G. Distance From F.F.O.B. — in. (mm)	n.a.
C.G. Distance Above Crankshaft — in. (mm)	n.a.
Maximum Allowable Bending Moment @ Rear Face of Block — lb.-ft. (N*m)	1000 (1350)

Air Induction System

Maximum Allowable Temperature Rise Between Ambient Air and Engine Air Inlet (Ambients 32°F [0°C] to 100°F [38°C]) — °F (°C)	30 (15)
Maximum Allowable Intake Restriction With a Dirty Air Filter Element — in. H ₂ O (mm H ₂ O)	n.a.
Part Number of Standard Air Filter Element (Dry Type)	oil bath cleaner

Lubrication System

Oil Pressure @ Rated Speeds — PSI (kPa)	50–70 (340–480)
Oil Flow @ Maximum Rated Speeds (Nominal) — U.S. GPM (litre/s)	40 (2.5)
Oil Pan Capacity (High — Low) U.S. gal. (litre)	7–4 (26.5–15.0)
Full Flow Lube Oil Filter Capacity — U.S. gal. (litre)	8 (30.0)
Part Number of Standard Oil Pan	203561
Part Number of Standard Oil Filter Element	LF-516

Application Note: When ambient temperatures will be lower than 70°F (21°C) an oil heater is required. The recommended heater wattage for this engine is 300 down to 40°F (4°C).

Cooling System

Heat Exchanger Cooled (Shell & Tube Type)	
Part Number of Tube Bundle	n.a.
Raw Water Working Pressure Range at Heat Exchanger — PSI (kPa)	65 (450) Max.
Recommended Minimum Water Supply Pipe Size to Heat Exchanger (Reference Only) — in. (mm) dia.	1.25 (30)
Recommended Minimum Water Discharge Pipe Size From Heat Exchanger (Reference Only) — in. (mm) dia.	1.5 (40)
Coolant Water Capacity (Engine Side) — U.S. gal. (litre)	10 (38)
Standard Thermostat — Type	Modulating
— Range — °F (°C)	170–185 (77–85)
Minimum Raw Water Flow with Water Temperatures to 90°F (32°C) — U.S. GPM (litre/s)	34 (2.1)

Note: Minimum raw water requirement is based on water flow required to minimize tube fouling in the heat exchanger tube bundle.

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2500 down to 40°F (4°C).

CUMMINS ENGINE COMPANY, INC.

Engine Data Sheet

Fire Pump Engine Model: NT-855-F1
(for listed/approved ratings see tabulation)

Date: June, 1980

Data Sheet: DS-3550-A

General Engine Data

Type:	4 Cycle; In-Line; 6 Cylinder
Aspiration:	Turbocharged
Bore — in. (mm)	5.5 (140)
Stroke — in. (mm)	6 (152)
Displacement — in. ³ (litre)	855 (14)
Compression Ratio:	14.1:1
Valves per Cylinder: — Intake	2
— Exhaust	2
Engine Weight & Center of Gravity (With Standard Accessories)	
Reference Installation Diagram	208359
Dry Weight — lb. (kg)	3150 (1 429)
Wet Weight — lb. (kg)	3234 (1 467)
C.G. Distance From F.F.O.B. — in. (mm)	n.a.
C.G. Distance Above Crankshaft — in. (mm)	n.a.
Maximum Allowable Bending Moment @ Rear Face of Block — lb.-ft. (N•m)	1000 (1350)

Air Induction System

Maximum Allowable Temperature Rise Between Ambient Air and Engine Air Inlet (Ambients 32°F [0°C] to 100°F [38°C]) — °F (°C)	30 (15)
Maximum Allowable Intake Restriction With a Dirty Air Filter Element — in. H ₂ O (mm H ₂ O)	n.a.
Part Number of Standard Air Filter Element (Dry Type)	oil bath cleaner

Lubrication System

Oil Pressure @ Rated Speeds — PSI (kPa)	50-70 (340-480)
Oil Flow @ Maximum Rated Speeds (Nominal) — U.S. GPM (litre/s)	40 (2.5)
Oil Pan Capacity (High — Low) U.S. gal. (litre)	7-4 (26.5-15.0)
Full Flow Lube Oil Filter Capacity — U.S. gal. (litre)	8 (30.0)
Part Number of Standard Oil Pan	203561
Part Number of Standard Oil Filter Element	LF-516

Application Note: When ambient temperatures will be lower than 70°F (21°C) an oil heater is required. The recommended heater wattage for this engine is 300 down to 40°F (4°C).

Cooling System

Heat Exchanger Cooled (Shell & Tube Type)	
Part Number of Tube Bundle	n.a.
Raw Water Working Pressure Range at Heat Exchanger — PSI (kPa)	65 (450) Max.
Recommended Minimum Water Supply Pipe Size to Heat Exchanger (Reference Only) — in. (mm) dia.	1.25 (30)
Recommended Minimum Water Discharge Pipe Size From Heat Exchanger (Reference Only) — in. (mm) dia.	1.5 (40)
Coolant Water Capacity (Engine Side) — U.S. gal. (litre)	10 (38)
Standard Thermostat — Type	Modulating
— Range — °F (°C)	170-185 (77-85)
Minimum Raw Water Flow with Water Temperatures to 90°F (32°C) — U.S. GPM (litre/s)	34 (2.1)

Note: Minimum raw water requirement is based on water flow required to minimize tube fouling in the heat exchanger tube bundle.

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2500 down to 40°F (4°C).

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>o°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

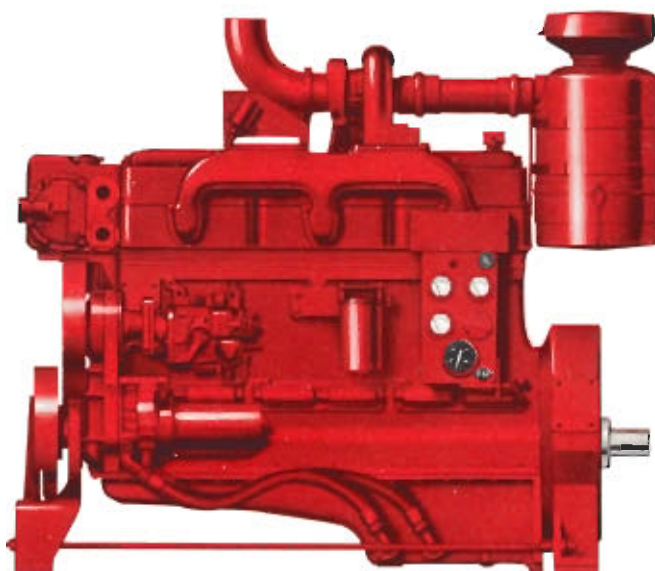
All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air cleaner, and alternator; not included are compressor, fan, optional equipment and driven components. Data is based on operation at SAE standard J816b conditions of 500 feet (150 m) altitude (29.00 in. [736 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							
259 (193)	2100	798 (377)	10,500 (184)	1209 (21.2)	1496 (706)	620 (334)	14.0 (53.0)
259 (193)	1900	693 (328)	10,080 (176)	1140 (20.0)	1344 (634)	656 (353)	13.2 (50.0)
259 (193)	1750	593 (280)	9,870 (173)	1140 (20.0)	1197 (565)	704 (379)	13.2 (50.0)
FM APPROVED RATINGS							
245 (183)	2100	760 (359)	10,000 (176)	900 (15.8)	1425 (673)	590 (310)	14.0 (53.0)
245 (183)	1900	660 (312)	9,600 (169)	900 (15.8)	1280 (604)	625 (329)	13.2 (50.0)
245 (183)	1750	565 (267)	9,400 (165)	900 (15.8)	1140 (538)	670 (354)	13.2 (50.0)

*Does not include exhaust piping.

Fire Pump Engine Model: NT-855-F1
Data Sheet No.: DS-3550-A
Date: June, 1980
Bulletin No.: 3383354



Specifications

Number of Cylinders 6
Bore and Stroke . . . 5½ in. x 6 in.
Piston Displacement . . . 855 cu. in.
Operating Cycles 4
Lube System Oil Cap. . . 8 U.S. gals.
Engine Coolant Cap. . . 9.5 U.S. gals.
Net Weight with Std.
Accessories, Dry 3200 lbs.
 Specific ratings are shown on rear page.

Metric

6
 140 x 152mm
 14 l
 4
 30.3 l
 36 l
 1 452 kg

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.

Standard Equipment

Air Cleaner: 16 in. (406 mm) diameter, oil bath type, mounted.

Belt and Damper Shield Guard: Protection from alternator, accessory drive, and water pump belts and vibration damper.

Coolant Pump: Belt driven, centrifugal type.

Corrosion Resistor: Mounted, checks rust and corrosion, controls acidity, and removes impurities from coolant.

Electrical Equipment: 24 volt negative ground system. 24 volt starting motor; 24 volt, 20 ampere alternator; voltage regulator; manually operable contactors; junction box with enclosed terminal strip.

Engine Support: Pedestal type, front and rear.

Exhaust Manifold: Water cooled.

Exhaust Outlet: 5 in. (127 mm) diameter, 90° elbow.

Filters: Lubricating oil, full flow replaceable paper element, mounted. Fuel, paper element throwaway type, mounted.

Flywheel: Machined for stub shaft mounting.

Flywheel Housing: SAE No. 1 with industrial supports.

Governor: Mechanical flyball, mechanical variable speed type.

Heat Exchanger: Tubular type, mounted.

Instrument Panel: Mounted. Includes ammeter, combination tachometer and hourmeter, water temperature gauge, lubricating oil pressure gauge.

Lubricating Oil Cooler: Tubular type, jacket water cooled.

Oil Pan: Cast aluminum, rear sump type, 7 U.S. gallon (26.5 liter) capacity. Optional provision for oil heater.

Oil Pressure Switch: Provides signal to activate alarm (not included) for low oil pressure.

Overspeed Switch: Mounted, overspeed shutdown with manual reset, stop crank contacts.

Stubshaft: Mounted on flywheel.

Throttle Control: Hydraulic type with vernier override.

Vibration Damper: Viscous type.

Water Jacket Heater: Mounts under oil pan. 115 volt, 2500 watt.

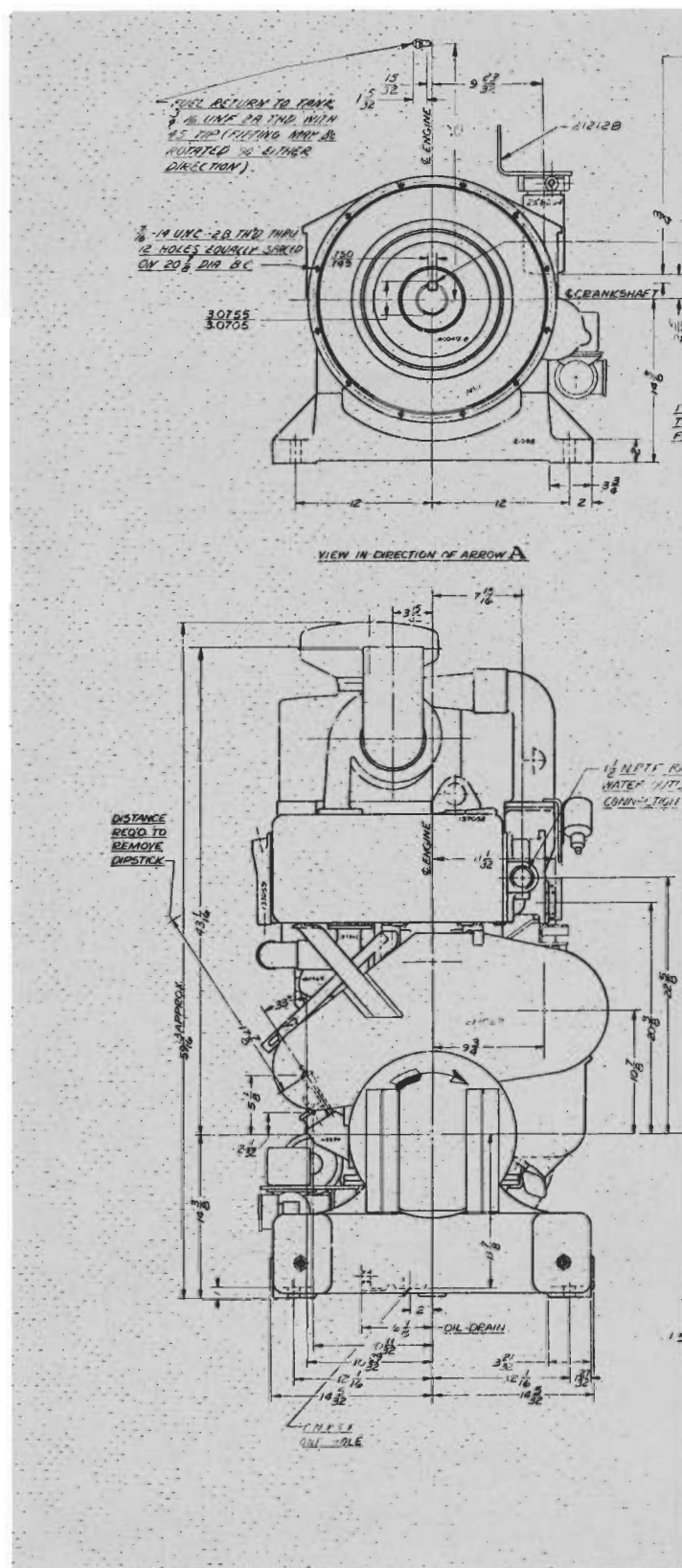
Water Temperature Switch: Provides signal to activate alarm (not included) for high water temperature.

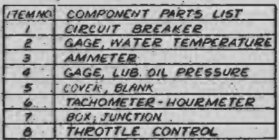
Optional Equipment

Heat Exchanger: Copper-nickel tube bundle for salt water or corrosive water cooling systems.

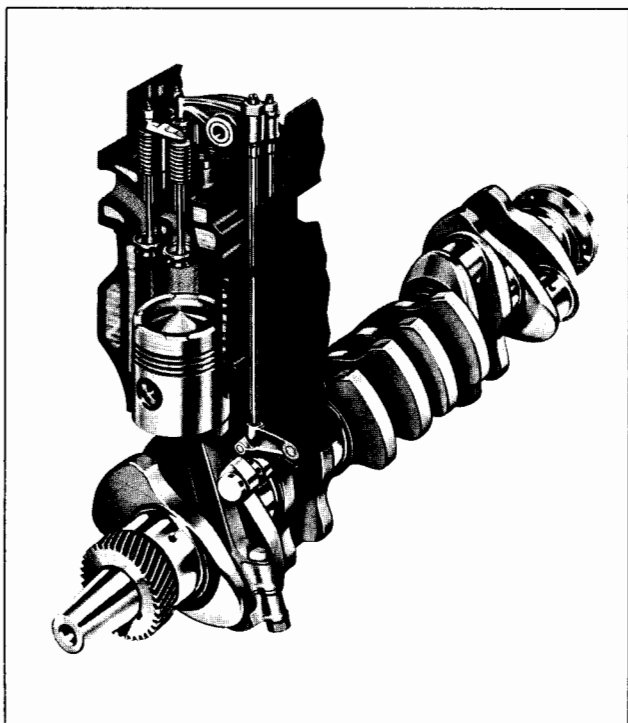
Left Hand Rotation: Counterclockwise rotation when viewing engine from front end.

Oil Heater: Mounted in side of oil pan.





NT-855-F2 Engine Installation Diagram 185583



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

CUMMINS ENGINE COMPANY, INC.

Engine Data Sheet

Fire Pump Engine Model: NT-855-F2
(for listed/approved ratings see tabulation)

Date: June, 1980

Data Sheet: DS-3551-A

General Engine Data

Type:	4 Cycle; In-Line; 6 Cylinder
Aspiration:	Turbocharged
Bore — in. (mm)	5.5 (140)
Stroke — in. (mm)	6 (152)
Displacement — in. ³ (litre)	855 (14)
Compression Ratio:	14.1 : 1
Valves per Cylinder: — Intake	2
— Exhaust	2
Engine Weight & Center of Gravity (With Standard Accessories)	
Reference Installation Diagram	208359
Dry Weight — lb. (kg)	3200 (1 452)
Wet Weight — lb. (kg)	3284 (1 490)
C.G. Distance From F.F.O.B. — in. (mm)	n.a.
C.G. Distance Above Crankshaft — in. (mm)	n.a.
Maximum Allowable Bending Moment @ Rear Face of Block — lb.-ft. (N•m)	1000 (1350)

Air Induction System

Maximum Allowable Temperature Rise Between Ambient Air and Engine Air Inlet (Ambients 32°F [0°C] to 100°F [38°C]) — °F (°C)	30 (15)
Maximum Allowable Intake Restriction With a Dirty Air Filter Element — in. H ₂ O (mm H ₂ O)	n.a.
Part Number of Standard Air Filter Element (Dry Type)	oil bath cleaner

Lubrication System

Oil Pressure @ Rated Speeds — PSI (kPa)	50–70 (340–480)
Oil Flow @ Maximum Rated Speeds (Nominal) — U.S. GPM (litre/s)	40 (2.5)
Oil Pan Capacity (High — Low) U.S. gal. (litre)	7–4 (26.5–15.0)
Full Flow Lube Oil Filter Capacity — U.S. gal. (litre)	8 (30.0)
Part Number of Standard Oil Pan	203561
Part Number of Standard Oil Filter Element	LF-516

Application Note: When ambient temperatures will be lower than 70°F (21°C) an oil heater is required. The recommended heater wattage for this engine is 300 down to 40°F (4°C).

Cooling System

Heat Exchanger Cooled (Shell & Tube Type)	
Part Number of Tube Bundle	n.a.
Raw Water Working Pressure Range at Heat Exchanger — PSI (kPa)	65 (450) Max.
Recommended Minimum Water Supply Pipe Size to Heat Exchanger (Reference Only) — in. (mm) dia.	1.25 (30)
Recommended Minimum Water Discharge Pipe Size From Heat Exchanger (Reference Only) — in. (mm) dia.	1.5 (40)
Coolant Water Capacity (Engine Side) — U.S. gal. (litre)	10 (38)
Standard Thermostat — Type	Modulating
— Range — °F (°C)	170–185 (77–85)
Minimum Raw Water Flow with Water Temperatures to 90°F (32°C) — U.S. GPM (litre/s)	34 (2.1)

Note: Minimum raw water requirement is based on water flow required to minimize tube fouling in the heat exchanger tube bundle.

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2500 down to 40°F (4°C).

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 —	Amp-hr.	°F CCA
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)

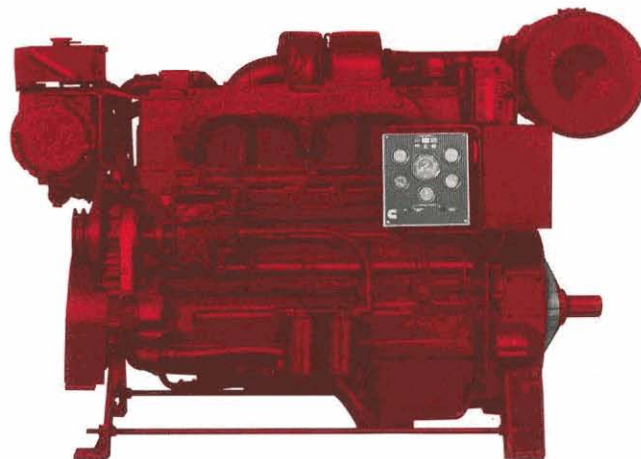
*Does not include exhaust piping.

Fire Pump Engine Model: NT-855-F2
Data Sheet No.: DS-3551-A
Date: June, 1980
Bulletin No.: 3383355

CUMMINS ENGINE COMPANY, INC., Columbus, Indiana 47201



NT-855-F3 FIRE PUMP ENGINE



SPECIFICATIONS

Four Stroke Cycle, Turbocharged,
In-line, 6 Cylinder Diesel Engine

Bore and Stroke	5.50 x 6 in.	(140x152 mm)
Displacement	855 cu. in.	(14 L)
Oil System Capacity	7.6 U.S. gals.	(28.8 L)
Engine Coolant Capacity	10.5 U.S. gal.	(39.7 L)
Net Weight, with Std. Accessories, Dry	3,250 lb.	(1 474 kg)

INSTALLATION CONSIDERATIONS

Maximum raw water pressure must not exceed 50 PSI (345 kPa). Minimum acceptable raw water flow at 90° F (32° C) raw water temperature and 100° F (38° C) ambient air temperature should be at least 34 G.P.M. (129 L/min.) at the 2100 RPM listed rating.

Ventilation air required for engine combustion is 830 CFM (392 L/sec.) at 2100 RPM rating. This is for engine air combustion only and does not take into consideration additional air required for normal room cooling.



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This symbol on the nameplate means the product is approved by the Factory Mutual Research Corporation.



This symbol on the nameplate means the product is Listed by Underwriters' Laboratories of Canada.

LISTED AGENCY RATINGS

290 HP @ 1760 RPM

300 HP @ 2100 RPM

All of the above ratings are listed by the following agencies:

Underwriters' Laboratories Inc.

Factory Mutual

Underwriters' Laboratories of Canada

The agency-approved horsepower ratings published are already derated for fire pump service. The ratings show horsepower available for driving the fire pump at standard SAE J1995 conditions of 29.61 in. (100 kPa) Hg barometer and 77° F (25° C) Inlet air temperature (approximately 300 ft. [91.4 m] above sea level). The only additional deration necessary is for higher ambient temperatures and elevations as follows: 3% for each 1000 ft. (305 m) above 300 ft. (91.4 m) and 1% for each 10° F (5.6° C) above 77° F (25° C) in accordance with National Fire Association Pamphlet No. 20.

DESIGN FEATURES

Bearings: Replaceable, precision type, steel backed inserts. Seven main bearings, 4.5 in. (114 mm) diameter. Connecting rod bearings 3.125 in. (79 mm) diameter.

Camshaft: Single large diameter camshaft precisely controls valve and injector timing. Lobes are induction hardened for long life. Seven replaceable precision type bearings 2.5 in (64 mm) diameter.

Camshaft Followers: Induction hardened, roller type for long cam follower life.

Connecting Rods: Drop forged, I-beam section 12 in. (305 mm) center to center length. Rifle drilled for pressure lubrication of piston pin. Rod is tapered on piston pin end to reduce unit pressures.

Cooling System: Belt driven centrifugal water pump. Large volume water passages provide even flow of coolant around cylinder liners, valves, and injectors. Modulating by-pass thermostat regulates coolant temperature. Spin-on corrosion resistor checks rust and corrosion, controls acidity, and removes impurities.

Crankshaft: Fully counterweighted high tensile steel forging with induction hardened fl ets and journals.

Cylinder Block: Alloy cast iron with removable wet liners.

Cylinder heads: Alloy cast iron. EAcH head serves two cylinders. Drilled fuel supply and return lines. Valve seats are replaceable corrosion resistant inserts. Valve guides and cross head guides are replaceable inserts.

Cylinder Liners: Replaceable wet liners dissipate heat faster than dry liners and are easily replaced without reboring the block.

Fuel System: Cummins exclusive low pressure PT™ system with wear compensating pump and integral dual flyweight governor. Camshaft actuated fuel injectors give accurate metering and timing. Fuel lines are internal drilled passages in cylinder heads. Spin-on fuel filter.

Gear Train: Timing gears and accessory drive gears are induction hardened helical gears driven from crankshaft and located at front of block.

Lubrication: Large capacity gear pump provides pressure lubrication to all bearings. All pressure lines are internal drilled passages in block and heads.

Piston: Aluminum alloy, cam ground and barrel shaped to compensate for thermal expansion assures precise fit at operating temperatures. CeCorr™ grooved skirt finish provides superior lubrication. Oil cooled for rapid heat dissipation. Three compression and one oil ring.

Turbocharger: Cummins exhaust gas driven turbocharger. Turbocharging provides more power, improved fuel economy, altitude compensation, and lower smoke and noise levels.

Valves: Dual 1.875 in. (48 mm) diameter poppet type intake and exhaust valves. Wear resistant face on exhaust valves.

STANDARD EQUIPMENT

Air Cleaner: 15 inch (381 mm) diameter dry air cleaner.

Belt and Damper Shield Guard: Protection from alternator, accessory drive, and water pump belts and vibration damper.

Coolant Pump: Belt driven, centrifugal type.

Corrosion Resistor: Mounted, checks rust and corrosion, controls acidity, and removes impurities from coolant.

Electrical Equipment: 24 volt negative ground system, including: a 24 volt starting motor; a 24 volt, 35 or 45 amp alternator; manually operable contactors; and a junction box with enclosed terminal strip.

Engine Support: Pedestal type, front and rear.

Exhaust Manifold: Dry and insulated.

Exhaust Outlet: 5 in. (127 mm) diameter, 90° elbow.

Filters: Spin-on, replaceable lubricating oil filter. Dual spin-on, replaceable fuel filters.

Flywheel: Machined for stub shaft mounting.

Flywheel Housing: SAE No. 1 with industrial supports.

Governor: Mechanical flyweight, mechanical variable speed type.

Heat Exchanger: Copper nickel tube bundle, mounted.

Instrument Panel: Mounted. Electrical instruments only. Includes charge meter, tachometer, hour meter, water temperature gauge, and lubricating oil pressure gauge.

Lubricating Oil Cooler: Tubular type, jacket water cooled.

Oil Pan: Cast aluminum, rear sump type, 7 U.S. gallon (26.5 litre) capacity. Provision for optional oil heater.

Oil Pressure Switch: Provides signal to activate alarm (not included) for low oil pressure.

Overspeed Switch: Mounted, overspeed shutdown with manual reset, stop crank contacts.

Stubshaft: Mounted on flywheel.

Throttle Control: Hydraulic, with no manual override.

Vibration Damper: Viscous type.

Water Jacket Heater: Mounted beside oil pan, 115 volt, 2500 watt.

Water Temperature Switch: Provides signal to activate alarm (not included) for high water temperature.

OPTIONAL EQUIPMENT

Oil Heater: Mounted on side of oil pan.

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



Cummins Engine Company, Inc.
Box 3005
Columbus, IN 47202-3005
U.S.A.

CUMMINS ENGINE COMPANY, INC.
Engine Data Sheet

Firepump
Pg. No.

F3
31

Engine Model: FIRE PUMP NT855-F3 BIG CAM
Gross Power BHP (kW): 300 (224) @ 2100
Configuration Number: D092399FX02

Data Sheet: FR-1478
Date: 08Mar95
CPL Code: 0552

GENERAL ENGINE DATA

Type.....	4 cycle, Inline, 6 cylinder
Aspiration:	Turbocharged
Bore - in. (mm).....	5.5 (140)
Stroke - in. (mm).....	6.0 (152)
Displacement - in. ³ (litre)	855 (14.0)
Compression Ratio	14.1:1
Valves per Cylinder: - Intake.....	2
- Exhaust.....	2
Engine Weight & Center of Gravity (With Standard Accessories)	
Reference Installation Diagram	3382636
Dry Weight - lb. (kg).....	3250 (1474)
Wet Weight - lb. (kg).....	3385 (1535)
C.G. Distance from F.F.O.B. - in. (mm).....	19 (483)
C.G. Distance Above Crankshaft Centerline - in. (mm).....	5 (127)
Maximum Allowable Bending Moment @ Rear Face of Block - lb.-ft. (N•m).....	1000 (1350)

AIR INDUCTION SYSTEM

Maximum Allowable Temperature Rise Between Ambient Air and Engine Air Inlet (Ambients 50°F [10°C] to 100°F [38°C]) - °F (°C)	30 (15)
Maximum Allowable Intake Restriction With a Dirty Air Filter Element - in. H ₂ O (mm H ₂ O)	25 (635)
Part Number of Standard Air Filter Element (Dry Type)	3022209
Minimum Allowable Ambient Air Temperature - °F (°C).....	50 (10)

LUBRICATION SYSTEM

Oil Pressure @ Rated Speeds - PSI (kPa).....	50 - 70 (345 - 483)
Oil Flow @ Maximum Rated Speeds (Nominal) - U.S. GPM (litre/s).....	33 (2.1)@1760/40 (2.5)@2100
Oil Pan Capacity (High - Low) U.S. gal. (litre)	7-6 (26-23)
Full Flow Lube Oil Filter Capacity - U.S. gal. (litre).....	7.6 (28.8)
Part Number of Standard Oil Pan.....	193631
Part Number of Standard Oil Filter Element	3889310

Application Note: When ambient temperatures will be lower than 70°F (21°C) an oil heater is required. The recommended heater wattage for this engine is 300 down to 50°F (10°C).

COOLING SYSTEM

Heat Exchanger Cooled (Shell & Tube Type)	
Part Number of Tube Bundle	3008844
Raw Water Working Pressure Range at Heat Exchanger - PSI (kPa)	50 (345) MAX
Recommended Minimum Water Supply Pipe Size to Heat Exchanger (Reference Only) - in. (mm) dia	1.25 (31.8)
Recommended Minimum Water Discharge Pipe Size From Heat Exchanger (Reference Only) - in. (mm) dia	1.50 (38.1)
Coolant Water Capacity (Engine Side) - U.S. gal. (litre).....	10.5 (40)
Standard Thermostat - Type.....	Modulating
- Range - °F (°C).....	175-197 (79-92)
Minimum Raw Water Flow with Water Temperatures to 90°F (32°C) - U.S. GPM (litre/s)	34 (2.1)

Note: Minimum raw water requirement is based on water flow required to minimize tube fouling in the heat exchanger tube bundle.

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2500 down to 50°F (10°C).

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 Height Above ^CL Crankshaft - in. (mm) 80 (2030)

Part Number of Standard Fuel Filter 3315847

Part Number of Standard Fuel Filter Element..... FF-105D

Maximum Allowable Restriction to Fuel Pump with Dirty Filter - in. Hg (mm Hg) 8 (200)

Maximum Allowable Return Line Restriction - in. Hg (mm Hg)..... 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..... 35 or 45

Manually Operable Contactors Standard

Minimum Recommended Battery Capacity Amp-hr. 0°F CCA

70°F (21°C) Minimum Temperature 100 450

32°F (0°C) Minimum Temperature 150 640

Reference Wiring Diagram Number 3382636

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 (150)

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%)

FM Approved and UL Listed Ratings For: NT855-F3

Listed/ Approved Ratings	Engine Speed	Ventilation Air Required for Combustion	Heat Rejection to Coolant	Heat Rejection to Ambient Air*	Exhaust Gas		Fuel Consumption
					<u>Flow</u>	<u>Temp.</u>	
BHP (kW)	RPM	CFM (litre/s)	BTU/min (kW)	BTU/min (kW)	CFM (litre/s)	°F (°C)	Gal/h (litre/h)
300 (224)	2100	857 (405)	8600 (151)	1130 (20)	2225 (1050)	850 (454)	16.1 (60.9)
290 (216)	1760	708 (334)	7500 (132)	1060 (19)	1772 (836)	900 (482)	15.9 (60.2)

* - Does not include exhaust piping.

Cummins Engine Company, Inc.

Exhaust Emissions Data Sheet

Firepump
Pg. No.

F3
33

Data Sheet: DS-1478

Date: 08Mar95

Engine

Model:	NT855-F3	Application:	Firepump
Type:	4 cycle, In-Line, 6 Cylinder Diesel	Config. Number:	D092399FX02
Aspiration:	Turbocharged	Bore:	5.50 in. (140 mm)
Compression Ratio:	14.1:1	Stroke:	6.00 in. (152 mm)
Emissions Control Device:	Turbocharger	Displacement:	855 cu. in. (14.0 liters)

<u>Performance Data</u>	<u>2100 RPM</u>	<u>1760 RPM</u>
BHP	300	290
Fuel Consumption (gallons/hour)	16.1	15.9
Air to Fuel Ratio	33.1	27.7
Exhaust Gas Flow (CFM)	2225	1772
Exhaust Gas Temperature (°F)	850	900

Exhaust Emissions Data

(All values are grams/hp-hour)

<u>Component</u>	<u>2100 RPM</u>	<u>1760 RPM</u>
HC (Total Unburned Hydrocarbons)	0.19	0.09
NO_x (Oxides of Nitrogen as NO ₂)	11.20	11.50
CO (Carbon Monoxide)	0.90	0.40
PM (Particulate Matter)	0.50	0.50
SO₂ (Sulfur Dioxide)	0.67	0.69
CO₂ (Carbon Dioxide)	550	560
N₂ (Nitrogen)	4400	3700
O₂ (Oxygen)	760	550
H₂O (Water Vapor)	200	200

Test Conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight) and 42-50 cetane number.
Fuel Temperature:	99° F \pm 9° (at fuel pump inlet)
Intake Air Temperature:	77° F \pm 9°
Barometric Pressure:	29.6 in. Hg \pm 1 in. Hg
Humidity:	NO _x measurement corrected to 75 grains H ₂ O/lb. dry air

The HC, NO_x, and CO emissions data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimates. This data is subject to instrumentation, measurement, and engine-to-engine variability. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

All Data is Subject to Change Without Notice

Data Sheet : DS - 1478

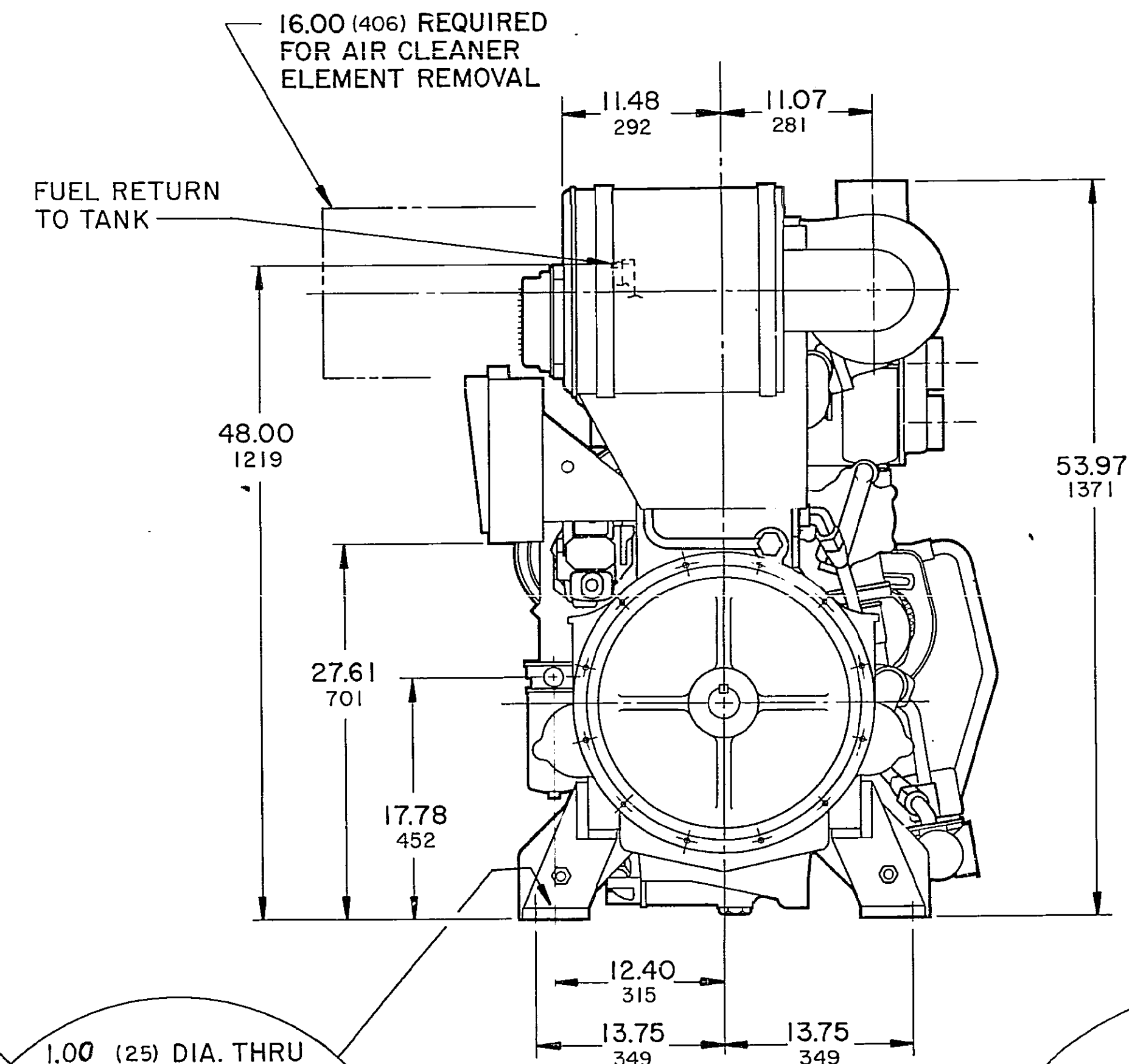
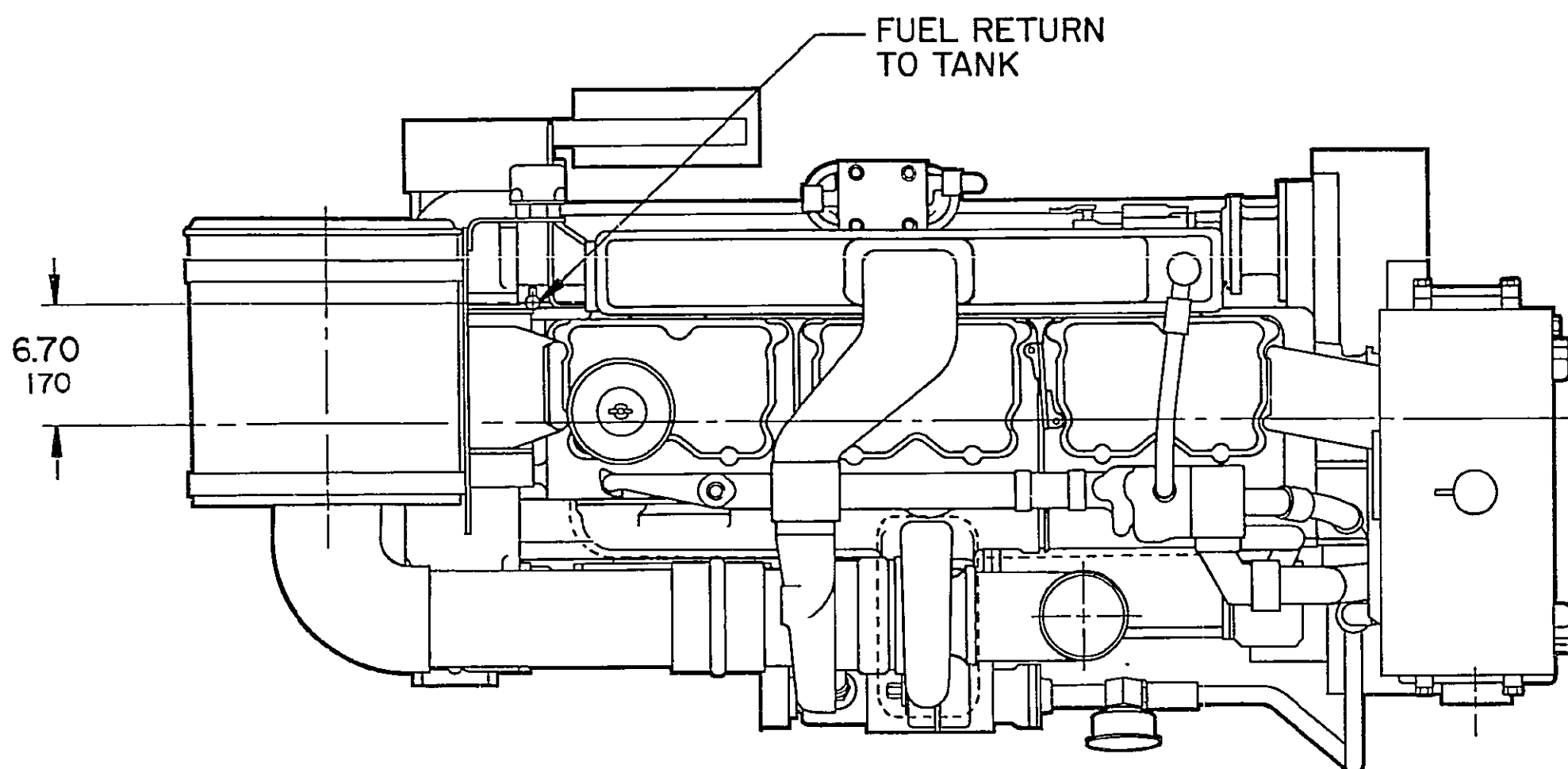
CUMMINS ENGINE COMPANY, INC., Columbus, IN 47202-3005 U.S.A.

DRAWING NO.
3032671

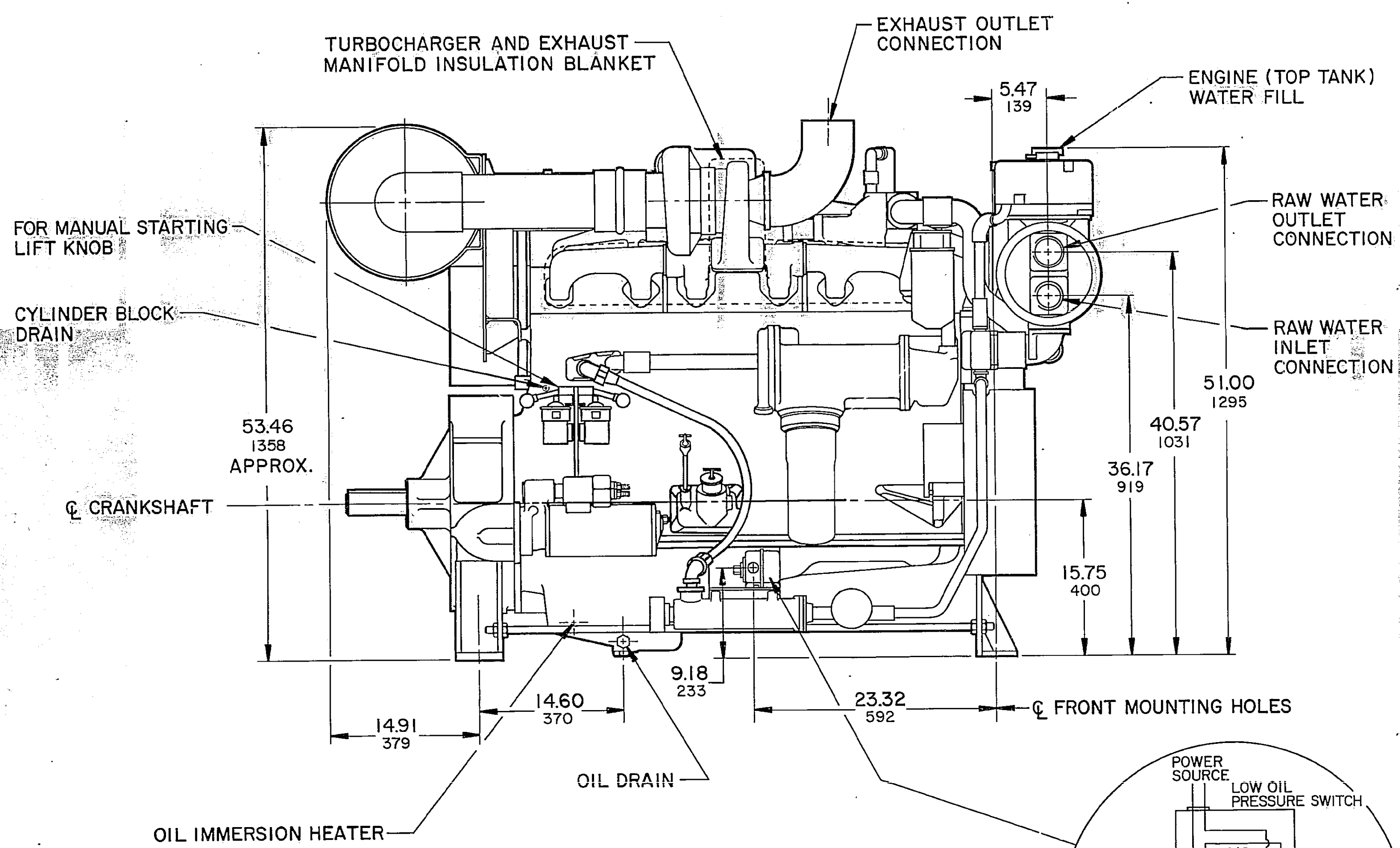
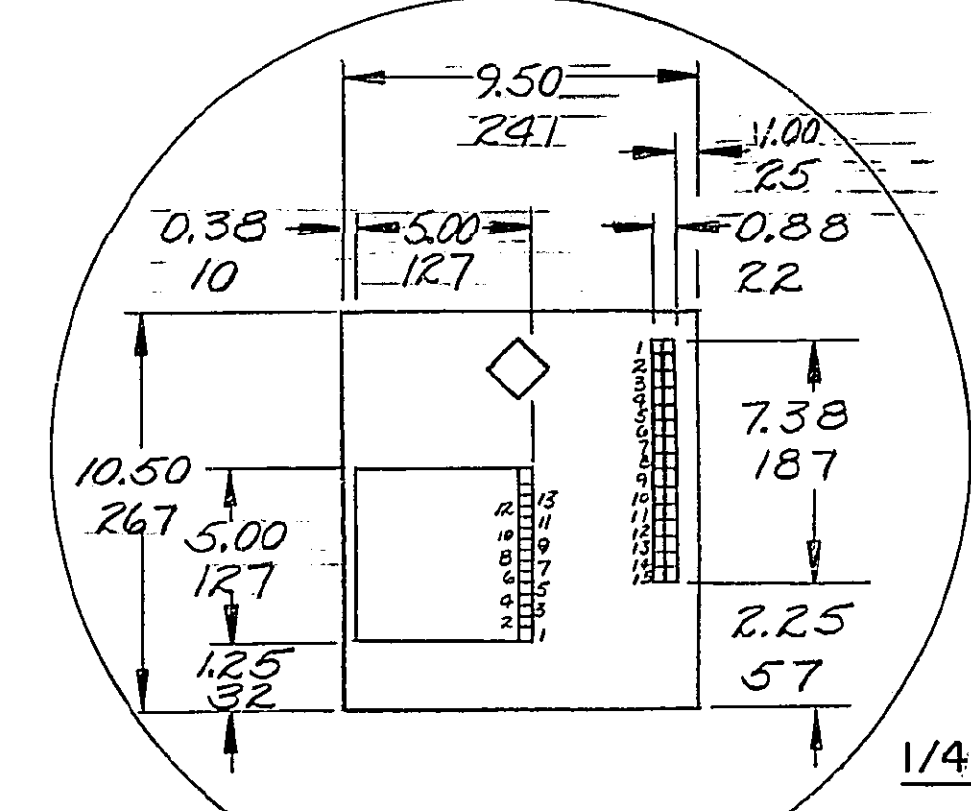
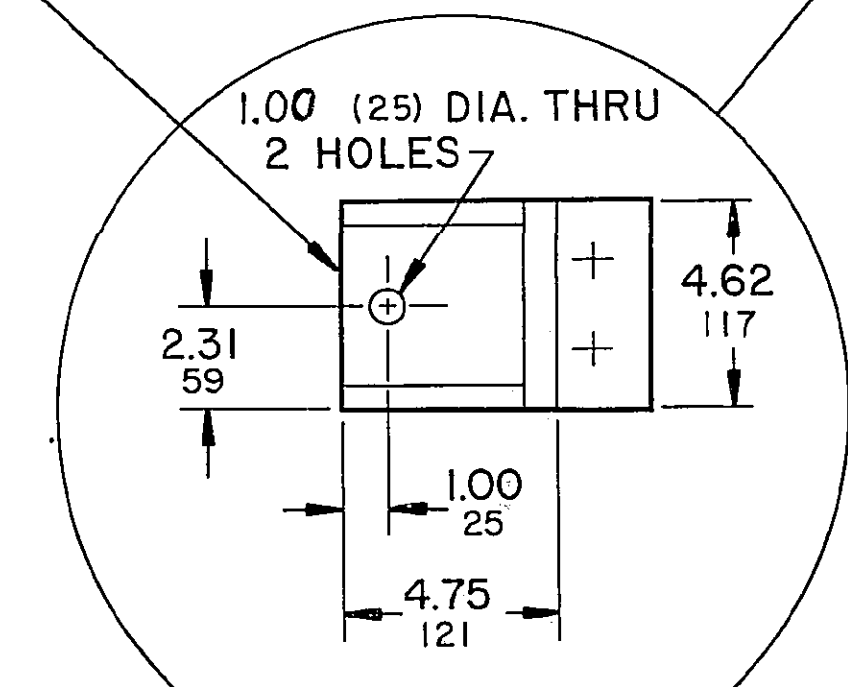
REVISIONS					
REV.	DESCRIPTION	DATE	APP'D.	DATE	APP'D.
01	REV. PER 871061	05/88	WSP	06/87	
02	REV. PER 883088	05/88	WSP	06/87	
03	REV. PER 921077	05/88	WSP	06/87	

SERVICE CONNECTIONS

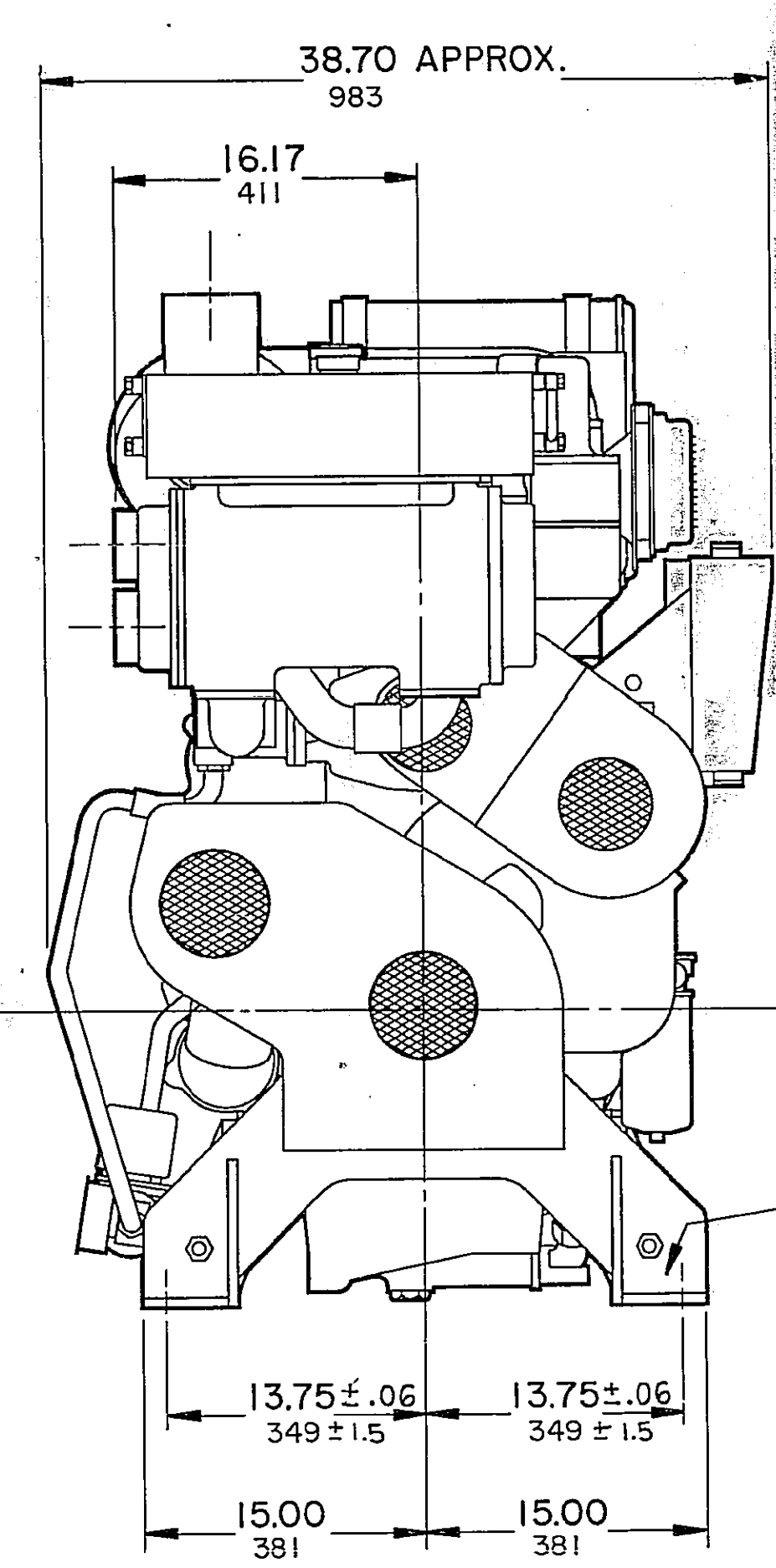
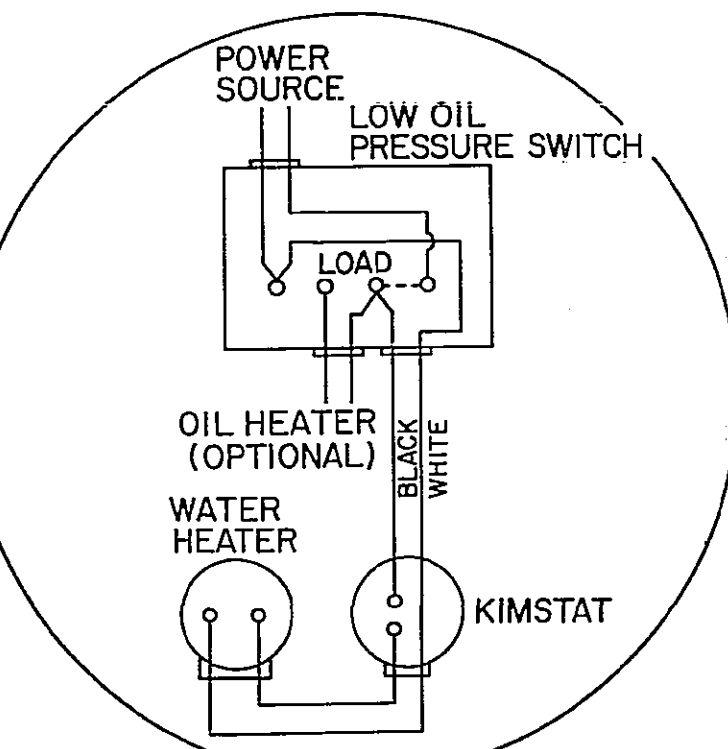
FUEL INLET CONN: 7/8-14 UNF-2A TH'D. WITH 45° TIP
 FUEL RETURN TO TANK: 3/4-16 UNF-2A TH'D. WITH 45° TIP
 OIL DRAIN: 1 NPTF
 CYLINDER BLOCK DRAIN: 1/4 NPTF
 EXHAUST OUTLET CONN: 5.00 (127) O.D.
 RAW WATER INLET CONN.: 2 NPTF
 RAW WATER OUTLET CONN.: 2 1/2 NPTF
 OIL IMMERSION HEATER: 1 NPTF
 WIRING DIAGRAM NO. 3031644



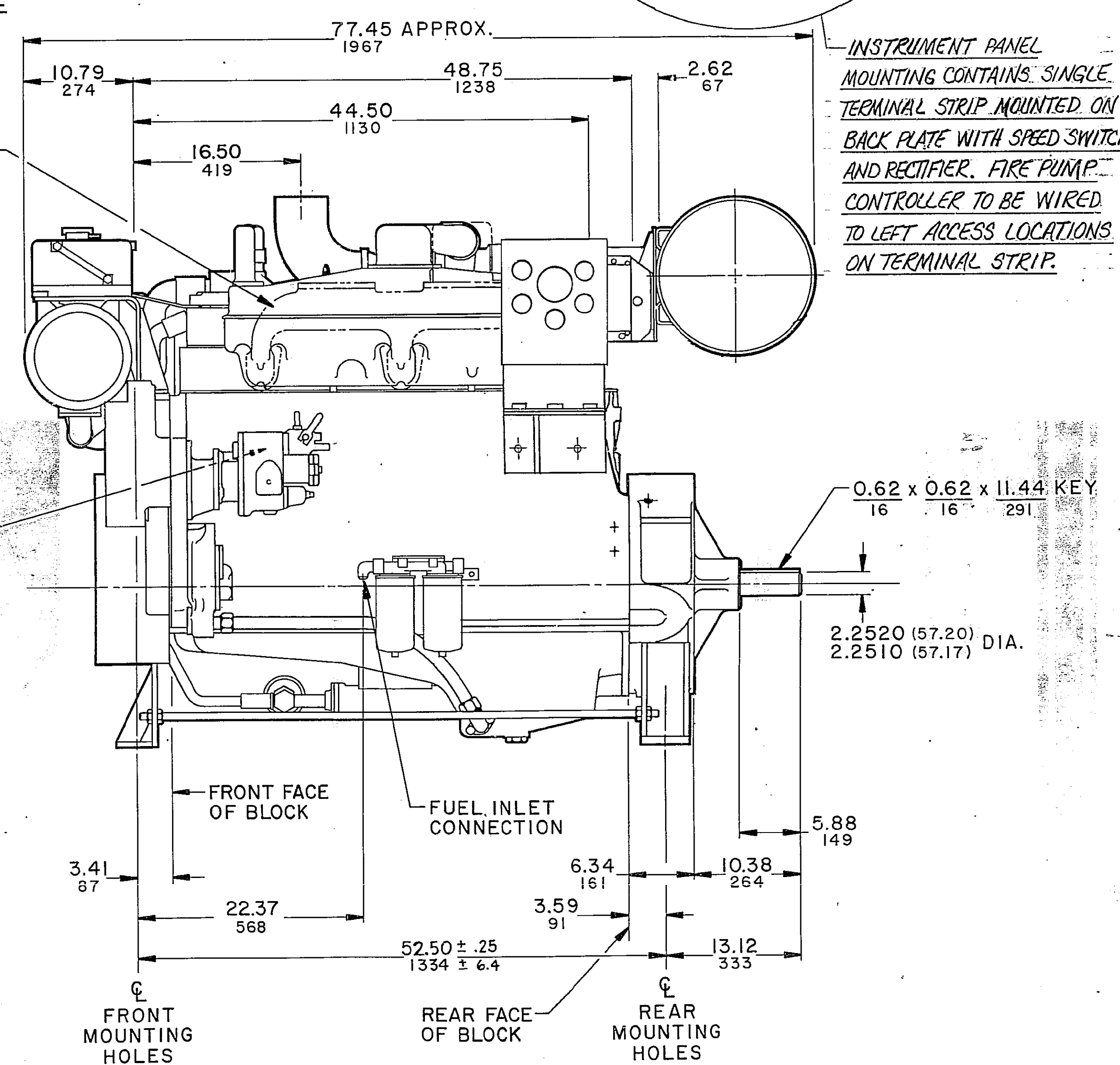
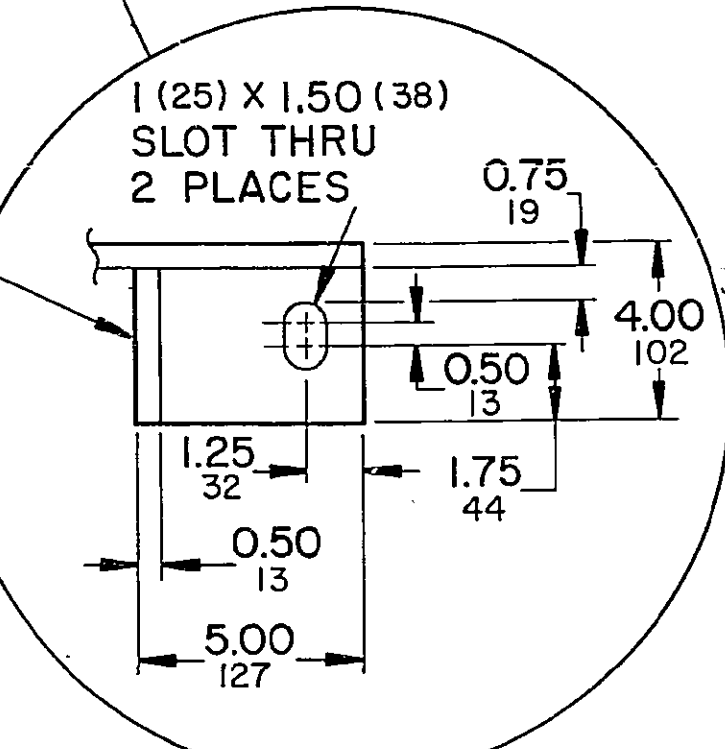
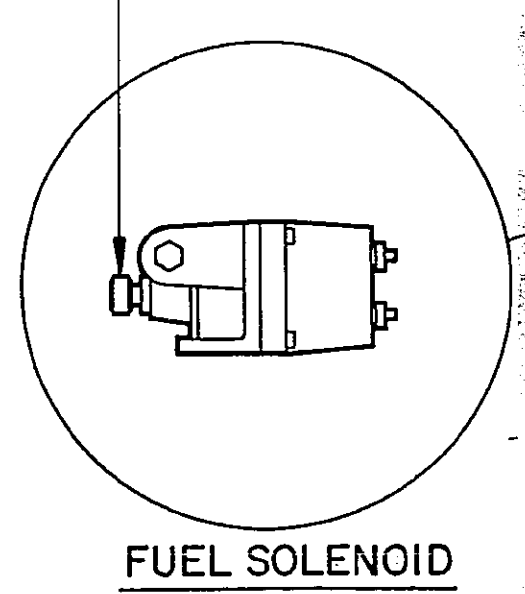
REAR MOUNTING CROSS SECTION



POWER SOURCE IS 115V, OIL HEATER IS 115V AND 300W, AND KIM HOT START WATER HEATER IS 115V AND 2500W. KIMSTAT OPENS AT 100°F AND CLOSSES AT 120°F.



TURN KNOB CLOCKWISE TO OPEN FOR MANUAL STARTING



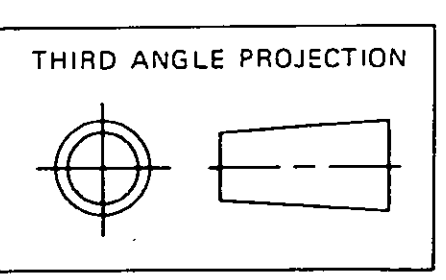
INSTRUMENT PANEL MOUNTING CONTAINS SINGLE TERMINAL STRIP MOUNTED ON BACK PLATE WITH SPEED SWITCH AND RECTIFIER. FIRE PUMP CONTROLLER TO BE WIRED TO LEFT ACCESS LOCATIONS ON TERMINAL STRIP.

DO NOT SCALE THIS DRAWING

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DATE	10/16/81	Cummins	
CHD			
REV		ITEM NAME	
TRCD		NT/NTA FIRE PUMP	
APPO		IDENTIFIER	
APPO		INSTALLATION DIAGRAM	
APPO		SIZE	DRAWING NO.
APPO		E	3032671
APPO		SCALE	SHEET
APPO		1/8	OF

NOTE: ALL DIMENSIONS IN INCHES AND MILLIMETERS.





NT-855-F4 FIRE PUMP ENGINE



SPECIFICATIONS

Four Stroke Cycle, Turbocharged,
In-line, 6 Cylinder Diesel Engine

Displacement	855 cu. in.	(14 L)
Oil System Capacity	7.6 U.S. gals.	(28.8 L)
Engine Coolant Capacity	10.5 U.S. gal.	(39.7 L)
Net Weight, with Std. Accessories, Dry	3,250 lb.	(1 474 kg)

INSTALLATION CONSIDERATIONS

Maximum raw water pressure must not exceed 50 PSI (345 kPa).
Minimum acceptable raw water flow at 90° F (32° C) raw water
temperature and 100° F (38° C) ambient air temperature should be at
least 35 G.P.M. (132 L/min.) at the 2100 RPM listed rating.

Ventilation air required for engine combustion is 884 CFM (417 L/sec.)
at 2100 RPM rating. This is for engine air combustion only and does
not take into consideration additional air required for normal room
cooling.



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This symbol on the nameplate means the product is
Listed by Underwriters' Laboratories of Canada.

LISTED AGENCY RATINGS

329 HP @ 1760 RPM

340 HP @ 2100 RPM

All of the above ratings are listed by the following agencies:

Underwriters' Laboratories Inc.

Factory Mutual

Underwriters' Laboratories of Canada

The agency-approved horsepower ratings published are already
derated for fire pump service. The ratings show horsepower available
for driving the fire pump at standard SAE J1995 conditions of 29.61
in. (100 kPa) Hg barometer and 77° F (25° C) inlet air temperature
(approximately 300 ft. [91.4 m] above sea level). The only additional
deration necessary is for higher ambient temperatures and elevations
as follows: 3% for each 1000 ft. (305 m) above 300 ft. (91.4 m) and
1% for each 10° F (5.6° C) above 77° F (25° C) in accordance with
National Fire Association Pamphlet No. 20.

DESIGN FEATURES

Bearings: Replaceable, precision type, steel backed inserts. Seven main bearings, 4.5 in. (114 mm) diameter. Connecting rod bearings 3.125 in. (79 mm) diameter.

Camshaft: Single large diameter camshaft precisely controls valve and injector timing. Lobes are induction hardened for long life. Seven replaceable precision type bearings 2.5 in (64 mm) diameter.

Camshaft Followers: Induction hardened, roller type for long cam follower life.

Connecting Rods: Drop forged, I-beam section 12 in. (305 mm) center to center length. Rifle drilled for pressure lubrication of piston pin. Rod is tapered on piston pin end to reduce unit pressures.

Cooling System: Belt driven centrifugal water pump. Large volume water passages provide even flow of coolant around cylinder liners, valves, and injectors. Modulating by-pass thermostat regulates coolant temperature. Spin-on corrosion resistor checks rust and corrosion, controls acidity, and removes impurities.

Crankshaft: Fully counterweighted high tensile steel forging with induction hardened fillets and journals.

Cylinder Block: Alloy cast iron with removable wet liners.

Cylinder heads: Alloy cast iron. Each head serves two cylinders. Drilled fuel supply and return lines. Valve seats are replaceable corrosion resistant inserts. Valve guides and cross head guides are replaceable inserts.

Cylinder Liners: Replaceable wet liners dissipate heat faster than dry liners and are easily replaced without reboring the block.

Fuel System: Cummins exclusive low pressure PT™ system with wear compensating pump and integral dual flyweight governor. Camshaft actuated fuel injectors give accurate metering and timing. Fuel lines are internal drilled passages in cylinder heads. Spin-on fuel filter.

Gear Train: Timing gears and accessory drive gears are induction hardened helical gears driven from crankshaft and located at front of block.

Lubrication: Large capacity gear pump provides pressure lubrication to all bearings. All pressure lines are internal drilled passages in block and heads.

Piston: Aluminum alloy, cam ground and barrel shaped to compensate for thermal expansion assures precise fit at operating temperatures. CeCorr™ grooved skirt finish provides superior lubrication. Oil cooled for rapid heat dissipation. Three compression and one oil ring.

Turbocharger: Cummins exhaust gas driven turbocharger. Turbocharging provides more power, improved fuel economy, altitude compensation, and lower smoke and noise levels.

Valves: Dual 1.875 in. (48 mm) diameter poppet type intake and exhaust valves. Wear resistant face on exhaust valves.

STANDARD EQUIPMENT

Air Cleaner: 15 inch (381 mm) diameter dry air cleaner.

Belt and Damper Shield Guard: Protection from alternator, accessory drive, and water pump belts and vibration damper.

Coolant Pump: Belt driven, centrifugal type.

Corrosion Resistor: Mounted, checks rust and corrosion, controls acidity, and removes impurities from coolant.

Electrical Equipment: 24 volt negative ground system, including: a 24 volt starting motor; a 24 volt, 35 or 45 amp alternator; manually operable contactors; and a junction box with enclosed terminal strip.

Engine Support: Pedestal type, front and rear.

Exhaust Manifold: Dry and insulated.

Exhaust Outlet: 5 in. (127 mm) diameter, 90° elbow.

Filters: Spin-on, replaceable lubricating oil filter. Dual spin-on, replaceable fuel filters.

Flywheel: Machined for stub shaft mounting.

Flywheel Housing: SAE No. 1 with industrial supports.

Governor: Mechanical flyweight, mechanical variable speed type.

Heat Exchanger: Copper nickel tube bundle, mounted.

Instrument Panel: Mounted. Electrical instruments only. Includes charge meter, tachometer, hour meter, water temperature gauge, and lubricating oil pressure gauge.

Lubricating Oil Cooler: Tubular type, jacket water cooled.

Oil Pan: Cast aluminum, rear sump type, 7 U.S. gallon (26.5 litre) capacity. Provision for optional oil heater.

Oil Pressure Switch: Provides signal to activate alarm (not included) for low oil pressure.

Overspeed Switch: Mounted, overspeed shutdown with manual reset, stop crank contacts.

Stubshaft: Mounted on flywheel.

Throttle Control: Hydraulic, with no manual override.

Vibration Damper: Viscous type.

Water Jacket Heater: Mounted beside oil pan, 115 volt, 2500 watt.

Water Temperature Switch: Provides signal to activate alarm (not included) for high water temperature.

OPTIONAL EQUIPMENT

Oil Heater: Mounted on side of oil pan.

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



Cummins Engine Company, Inc.
Box 3005
Columbus, IN 47202-3005
U.S.A.

CUMMINS ENGINE COMPANY, INC.
Engine Data Sheet

Firepump
Pg. No.

F4
35

Engine Model: FIRE PUMP NT855-F4 BIG CAM
Gross Power BHP (kW): 340 (255) @ 2100
Configuration Number: D092399FX02

Data Sheet: FR-1479
Date: 08Mar95
CPL Code: 0552

GENERAL ENGINE DATA

Type	4 cycle, Inline, 6 cylinder
Aspiration:	Turbocharged
Bore - in. (mm).....	5.5 (140)
Stroke - in. (mm).....	6.0 (152)
Displacement - in. ³ (litre)	855 (14.0)
Compression Ratio	14.1:1
Valves per Cylinder: - Intake.....	2
- Exhaust.....	2
Engine Weight & Center of Gravity (With Standard Accessories)	
Reference Installation Diagram	3382636
Dry Weight - lb. (kg).....	3250 (1474)
Wet Weight - lb. (kg).....	3385 (1535)
C.G. Distance from F.F.O.B. - in. (mm).....	19 (483)
C.G. Distance Above Crankshaft Centerline - in. (mm).....	5 (127)
Maximum Allowable Bending Moment @ Rear Face of Block - lb.-ft. (N•m).....	1000 (1350)

AIR INDUCTION SYSTEM

Maximum Allowable Temperature Rise Between Ambient Air and Engine Air Inlet
(Ambients 50°F [10°C] to 100°F [38°C]) - °F (°C).....30 (15)

Maximum Allowable Intake Restriction With a Dirty Air Filter Element -
in. H₂O (mm H₂O) 25 (635) || Part Number of Standard Air Filter Element (Dry Type) | 3022209 |
| Minimum Allowable Ambient Air Temperature - °F (°C)..... | 50 (10) |

LUBRICATION SYSTEM

Oil Pressure @ Rated Speeds - PSI (kPa).....	50 - 70 (345 - 483)
Oil Flow @ Maximum Rated Speeds (Nominal) - U.S. GPM (litre/s).....	33 (2.1)@1760/40 (2.5)@2100
Oil Pan Capacity (High - Low) U.S. gal. (litre)	7 - 6 (26 - 23)
Full Flow Lube Oil Filter Capacity - U.S. gal. (litre).....	7.6 (28.8)
Part Number of Standard Oil Pan	193631
Part Number of Standard Oil Filter Element	3889310

Application Note: When ambient temperatures will be lower than 70°F (21°C) an oil heater is required. The recommended heater wattage for this engine is 300 down to 50°F (10°C).

COOLING SYSTEM

Heat Exchanger Cooled (Shell & Tube Type)	
Part Number of Tube Bundle	3008844
Raw Water Working Pressure Range at Heat Exchanger - PSI (kPa).....	50 (345) MAX
Recommended Minimum Water Supply Pipe Size to	
Heat Exchanger (Reference Only) - in. (mm) dia	1.25 (31.8)
Recommended Minimum Water Discharge Pipe Size From	
Heat Exchanger (Reference Only) - in. (mm) dia	1.50 (38.1)
Coolant Water Capacity (Engine Side) - U.S. gal. (litre).....	10.5 (40)
Standard Thermostat - Type	Modulating
- Range - °F (°C).....	175 - 197 (79 - 92)
Minimum Raw Water Flow with Water	
Temperatures to 90°F (32°C) - U.S. GPM (litre/s)	34 (2.1)

Note: Minimum raw water requirement is based on water flow required to minimize tube fouling in the heat exchanger tube bundle.

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2500 down to 50°F (10°C).

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 Height Above ^C_L Crankshaft - in. (mm) 80 (2030)

Part Number of Standard Fuel Filter 3315847

Part Number of Standard Fuel Filter Element..... FF-105D

Maximum Allowable Restriction to Fuel Pump with Dirty Filter - in. Hg (mm Hg) 8 (200)

Maximum Allowable Return Line Restriction - in. Hg (mm Hg)..... 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..... 35 or 45

Manually Operable Contactors Standard

Minimum Recommended Battery Capacity Amp-hr. 0°F CCA

70°F (21°C) Minimum Temperature 100 450

32°F (0°C) Minimum Temperature 150 640

Reference Wiring Diagram Number 3382636

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)..... 300 (90)

Correction Factor per 1000 ft. (300 m) above Altitude Limit 3%

Temperature Above Which Output Should be Limited -°F (°C)..... 77 (25)

Correction Factor per 10°F (11°C) Above Temperature Limit 1% (2%)

FM Approved and UL Listed Ratings For: NT855-F4

Listed/ Approved Ratings BHP (kW)	Engine Speed RPM	Ventilation Air Required for Combustion CFM (litre/s)	Heat Rejection to Coolant BTU/min (kW)	Heat Rejection to Ambient Air* BTU/min (kW)	Exhaust Gas		Fuel Consumption Gal/h (litre/h)
					<u>Flow</u> CFM (litre/s)	<u>Temp.</u> °F (°C)	
340 (255)	2100	884 (417)	9300 (164)	1410 (25)	2409 (1137)	890 (477)	18.2 (68.9)
320 (239)	1760	722 (341)	8400 (148)	1200 (21)	1903 (898)	930 (499)	16.5 (62.5)

* - Does not include exhaust piping.

Cummins Engine Company, Inc.

Exhaust Emissions Data Sheet

Firepump
Pg. No.

F4
37

Data Sheet: DS-1479

Date: 08Mar95

Engine

Model:	NT855-F4	Application:	Firepump
Type:	4 cycle, In-Line, 6 Cylinder Diesel	Config. Number:	D092399FX02
Aspiration:	Turbocharged	Bore:	5.50 in. (140 mm)
Compression Ratio:	14.1:1	Stroke:	6.00 in. (152 mm)
Emissions Control Device:	Turbocharger	Displacement:	855 cu. in. (14.0 liters)

Performance Data

	<u>2100 RPM</u>	<u>1760 RPM</u>
BHP	340	320
Fuel Consumption (gallons/hour)	18.2	16.5
Air to Fuel Ratio	30.2	27.2
Exhaust Gas Flow (CFM)	2409	1903
Exhaust Gas Temperature (°F)	890	930

Exhaust Emissions Data

(All values are grams/hp-hour)

<u>Component</u>	<u>2100 RPM</u>	<u>1760 RPM</u>
HC (Total Unburned Hydrocarbons)	0.22	0.09
NOx (Oxides of Nitrogen as NO ₂)	13.00	11.40
CO (Carbon Monoxide)	1.20	0.50
PM (Particulate Matter)	0.50	0.50
SO₂ (Sulfur Dioxide)	0.67	0.64
CO₂ (Carbon Dioxide)	550	530
N₂ (Nitrogen)	4000	3500
O₂ (Oxygen)	640	500
H₂O (Water Vapor)	200	190

Test Conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight) and 42-50 cetane number.
Fuel Temperature:	99° F \pm 9° (at fuel pump inlet)
Intake Air Temperature:	77° F \pm 9°
Barometric Pressure:	29.6 in. Hg \pm 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H ₂ O/lb. dry air

The HC, NOx, and CO emissions data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimates. This data is subject to instrumentation, measurement, and engine-to-engine variability. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

DRAWING NO.
3032671

REVISIONS					
REV.	DESCRIPTION	DATE	APP'D.	DATE	APP'D.
01	REV. PER 871061	05/88	WSP	06/87	
02	REV. PER 883088	05/88	WSP	06/87	
03	REV. PER 921077	05/88	WSP	06/87	

SERVICE CONNECTIONS

FUEL INLET CONN: 7/8-14 UNF-2A TH'D. WITH 45° TIP

FUEL RETURN TO TANK: 3/4-16 UNF-2A TH'D. WITH 45° TIP

OIL DRAIN: 1 NPTF

CYLINDER BLOCK DRAIN: 1/4 NPTF

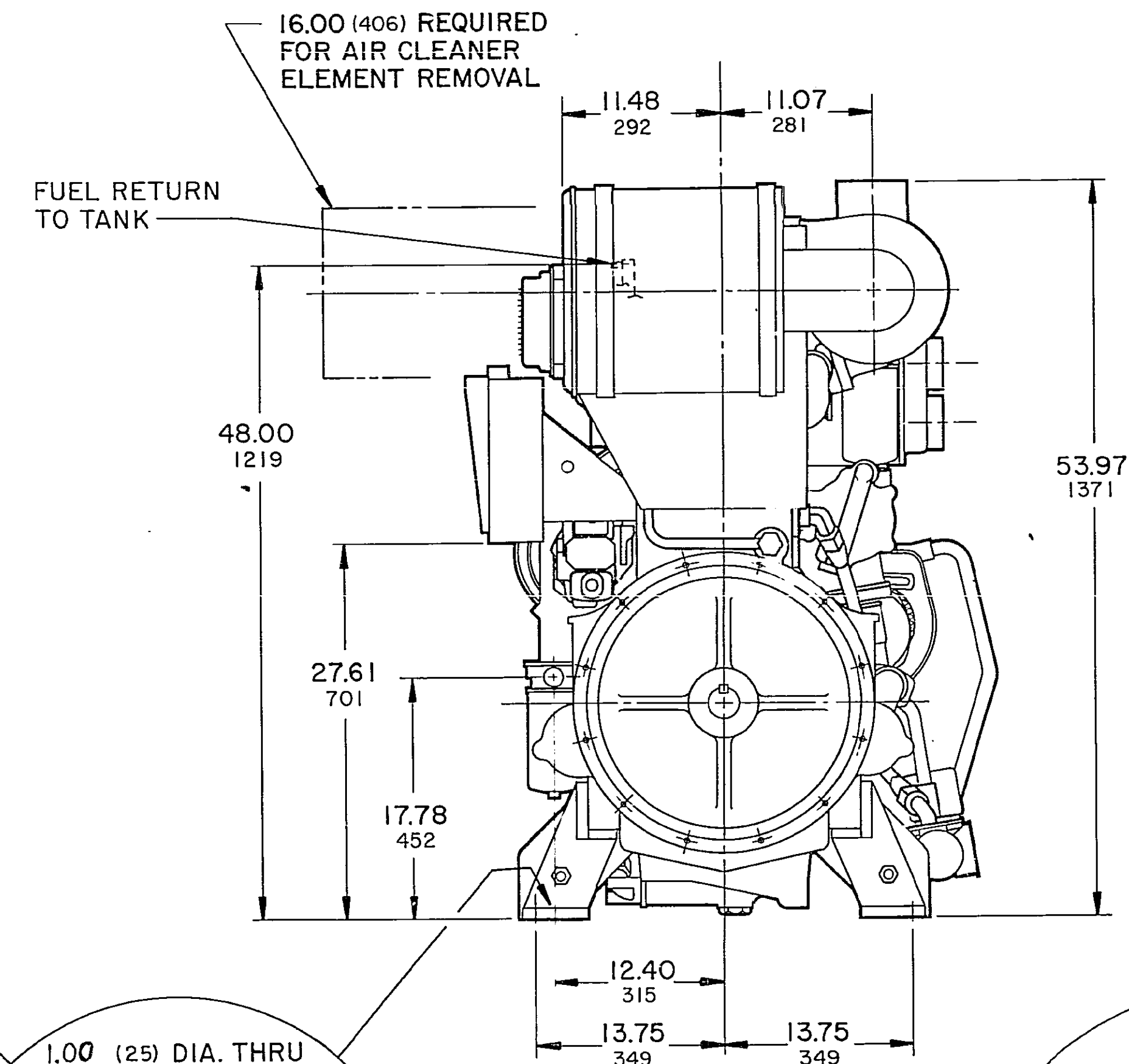
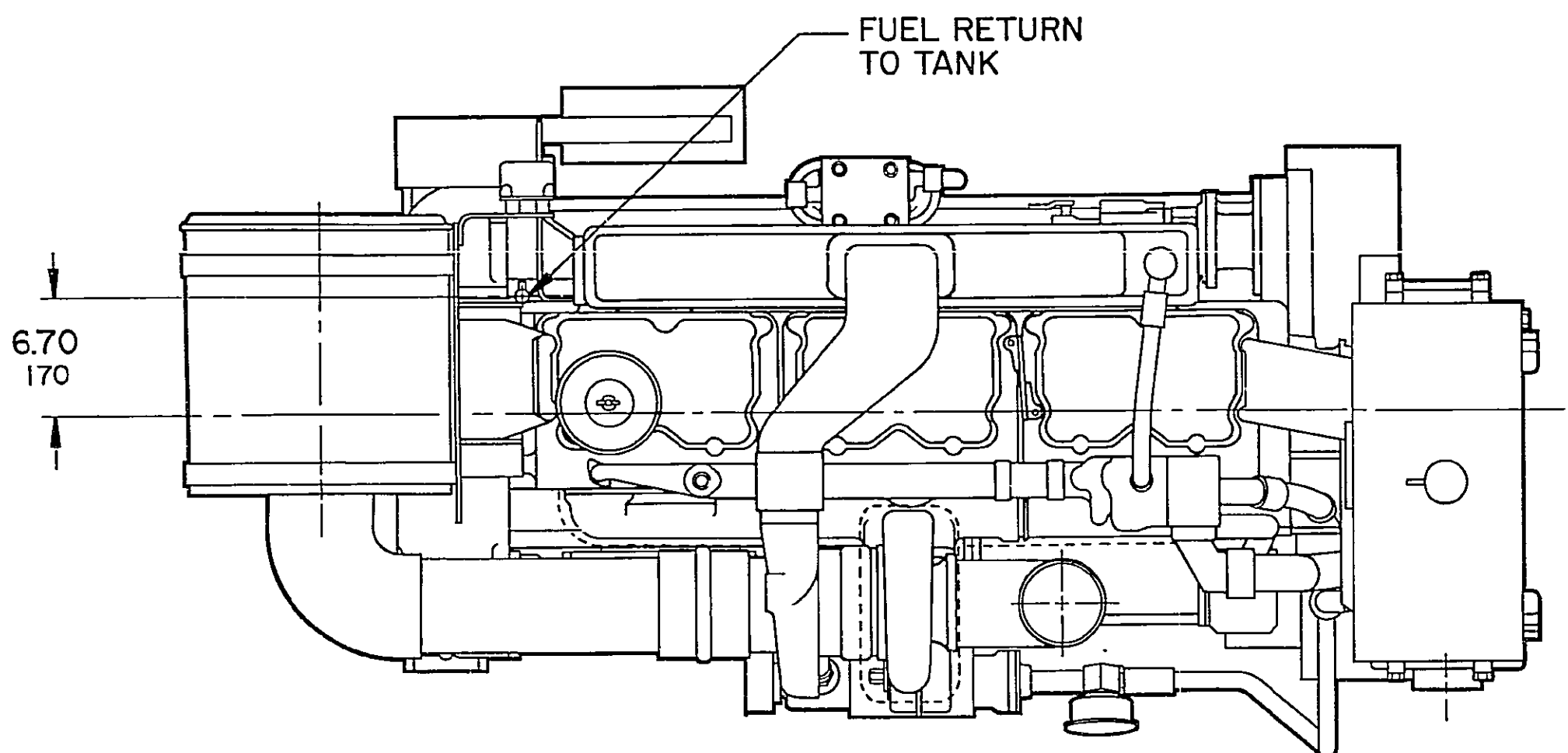
EXHAUST OUTLET CONN: 5.00 (127) O.D.

RAW WATER INLET CONN.: 2 NPTF

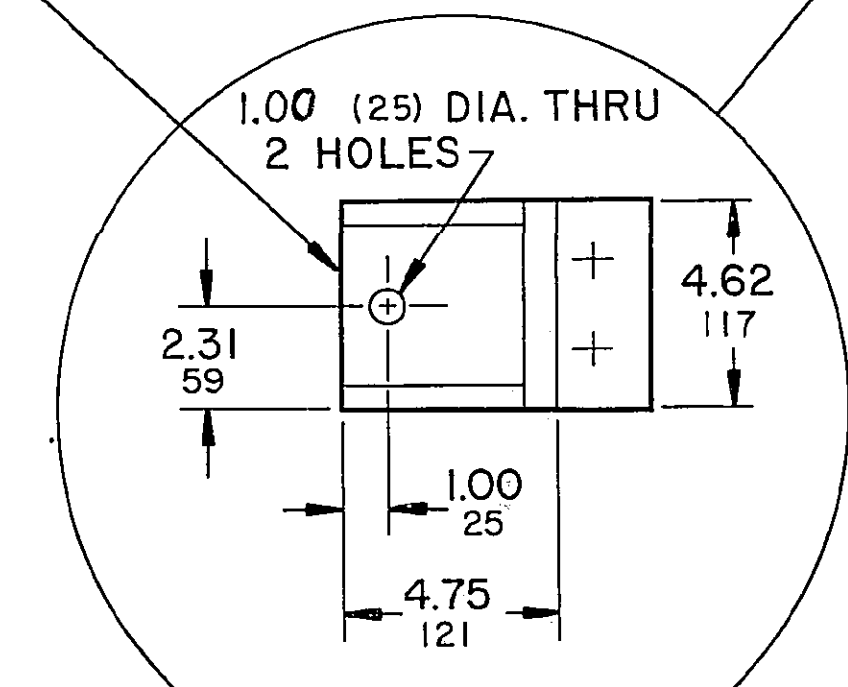
RAW WATER OUTLET CONN.: 2 1/2 NPTF

OIL IMMERSION HEATER: 1 NPTF

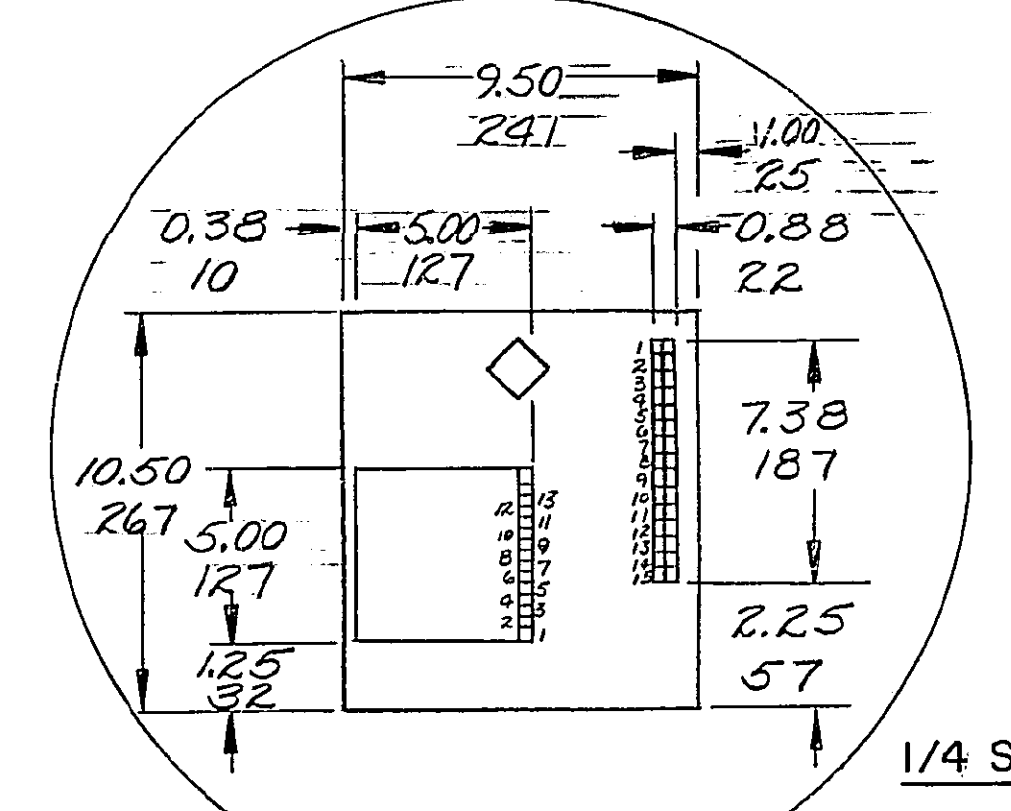
WIRING DIAGRAM NO. 3031644



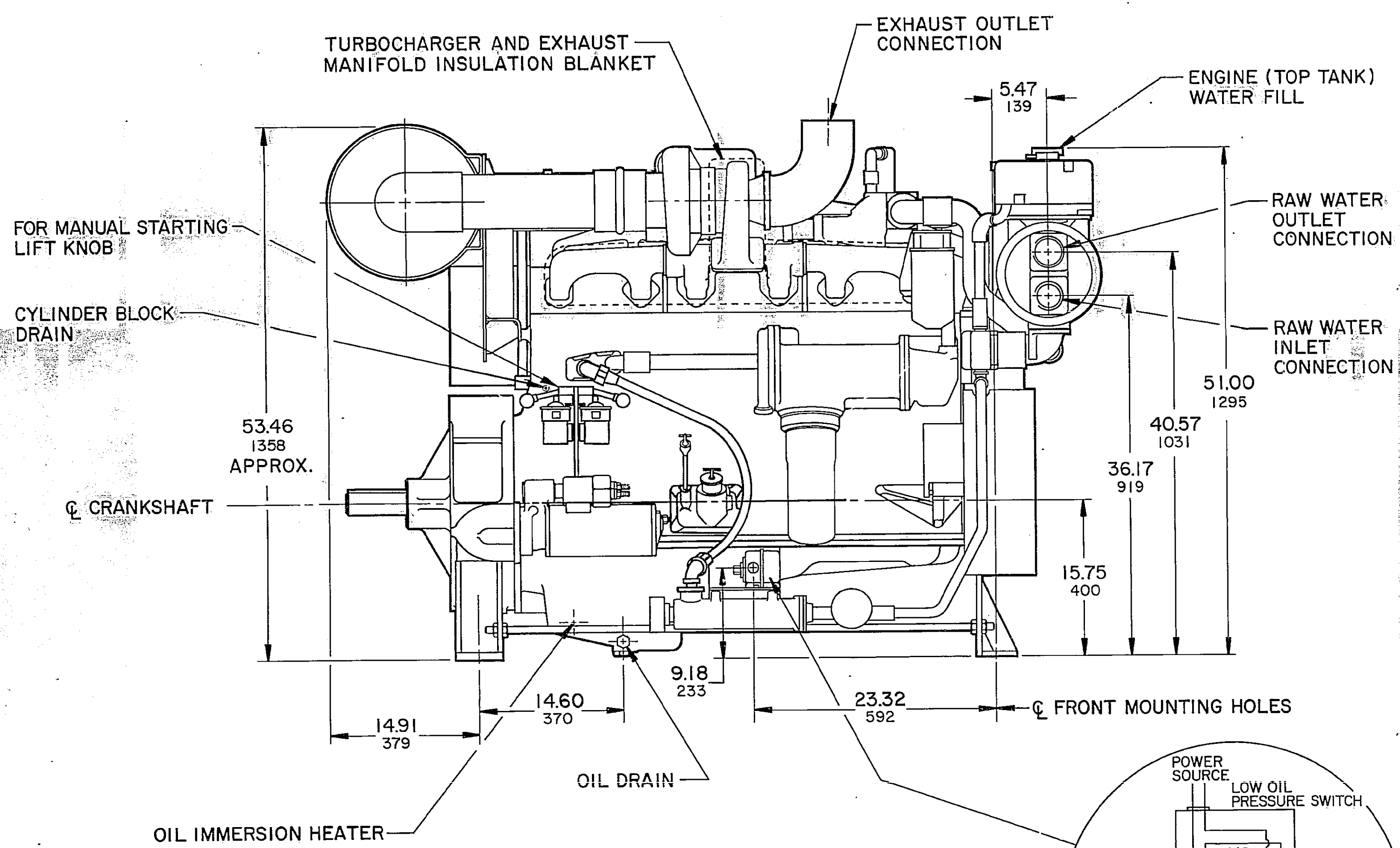
REAR MOUNTING CROSS SECTION



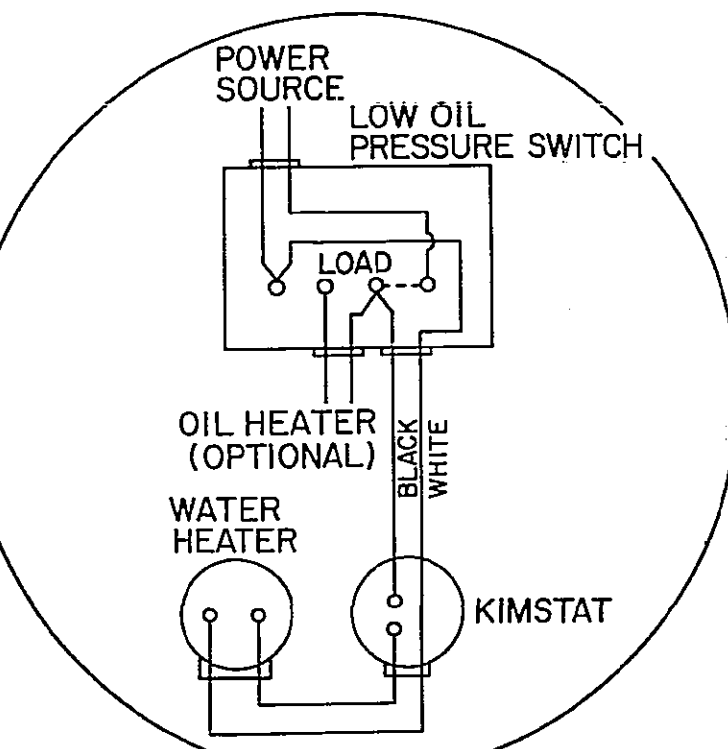
1/4 SCALE



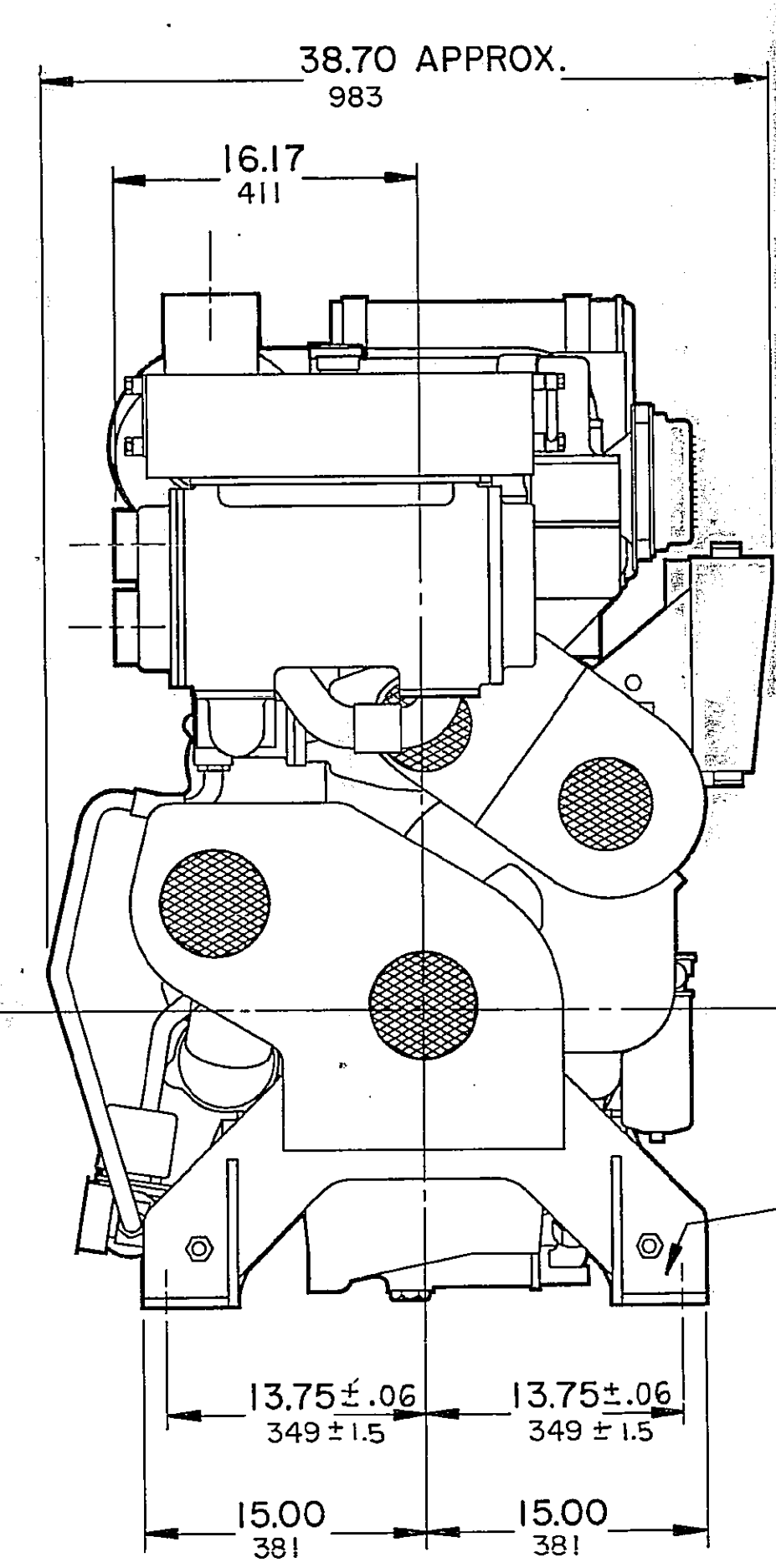
1/4 SCALE



POWER SOURCE IS 115V, OIL HEATER IS 115V AND 300W, AND KIM HOT START WATER HEATER IS 115V AND 2500W. KIMSTAT OPENS AT 100°F AND CLOSSES AT 120°F.

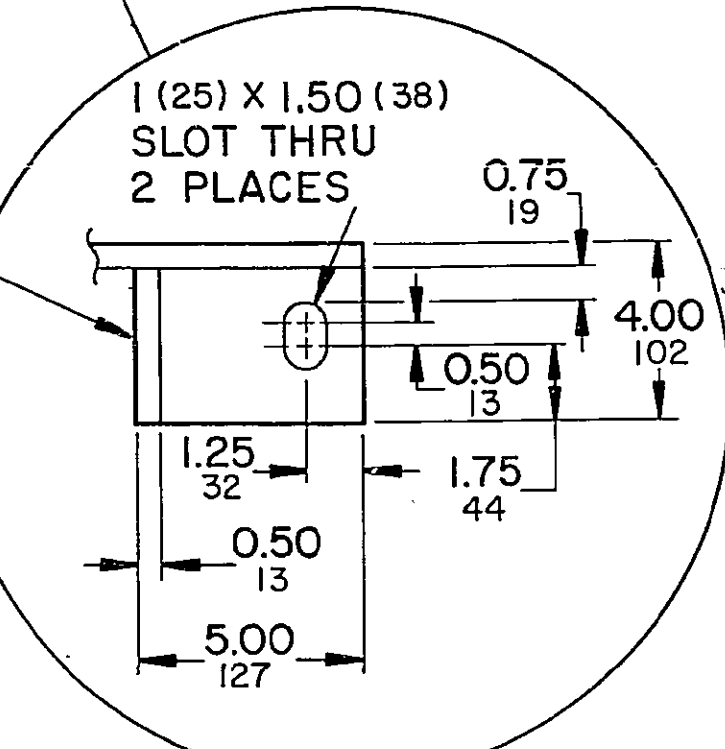
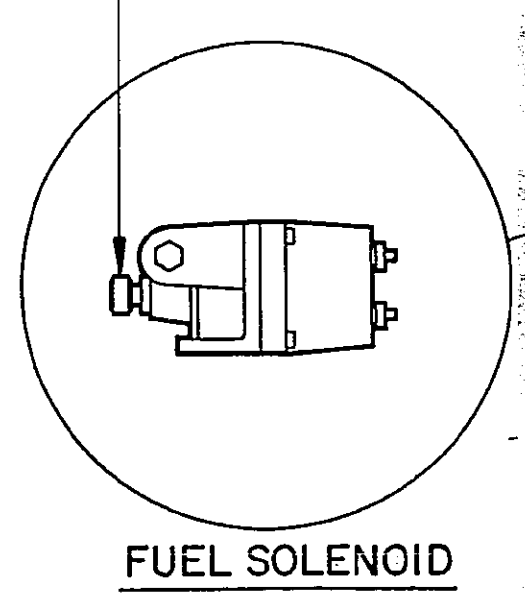


LOW OIL PRESSURE SWITCH WIRING DIAGRAM

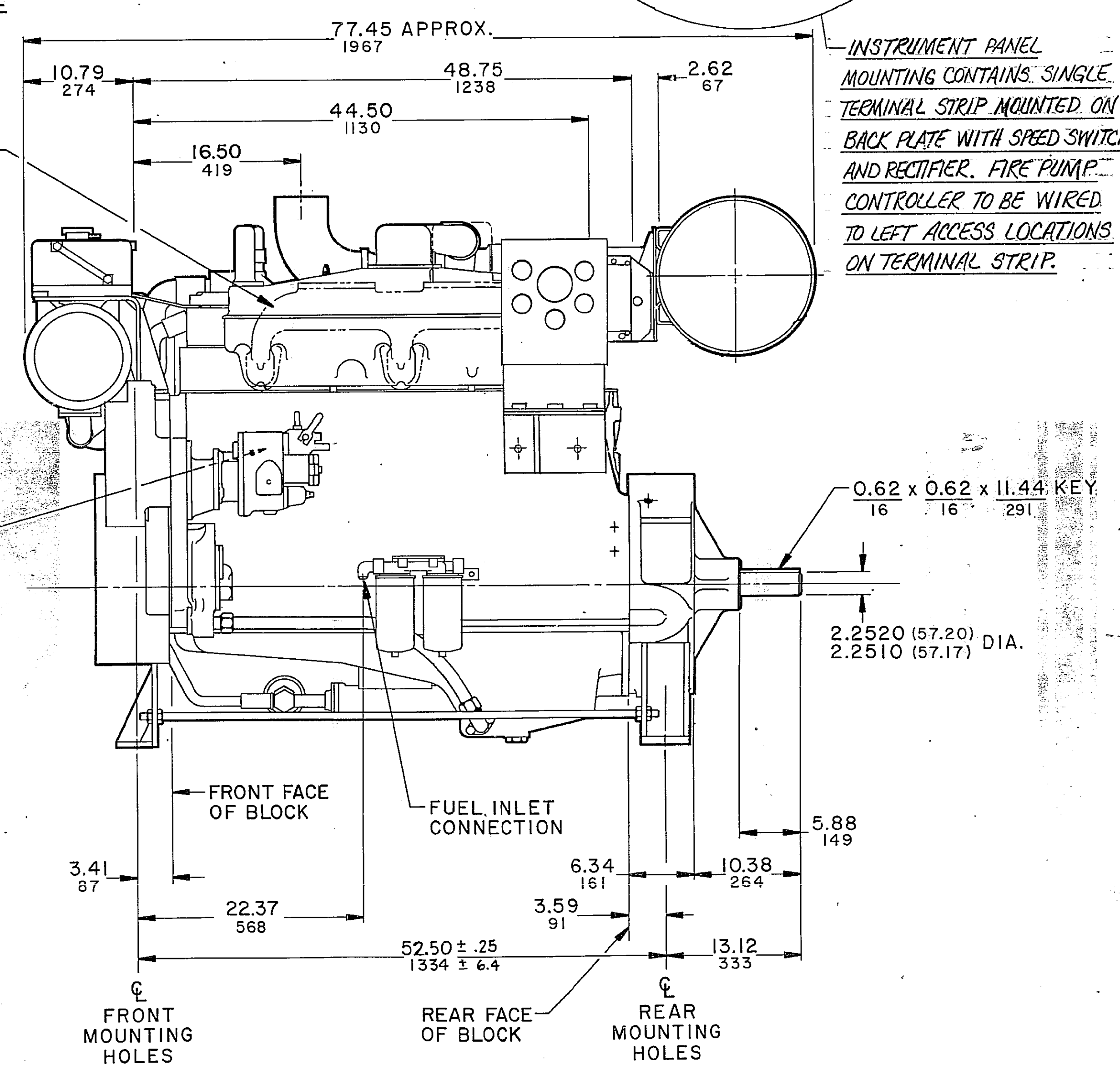


FRONT MOUNTING CROSS-SECTION

TURN KNOB CLOCKWISE TO OPEN FOR MANUAL STARTING



1/4 SCALE



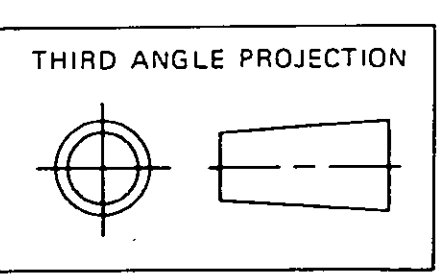
INSTRUMENT PANEL MOUNTING CONTAINS SINGLE TERMINAL STRIP MOUNTED ON BACK PLATE WITH SPEED SWITCH AND RECTIFIER. FIRE PUMP CONTROLLER TO BE WIRED TO LEFT ACCESS LOCATIONS ON TERMINAL STRIP.

DO NOT SCALE THIS DRAWING

THIS DRAWING AND THE DATA SHOWN THEREON IS CONFIDENTIAL AND PROPRIETARY AND SHALL NOT BE USED OR REPRODUCED FOR ANY PURPOSE EXCEPT FOR QUOTATION OF TECHNICAL DATA BY CUMMINS ENGINE COMPANY, INC. AND/OR ITS SUBSIDIARIES WITHOUT THE WRITTEN CONSENT TO THE USE OF SUCH DRAWING AND/OR DATA.

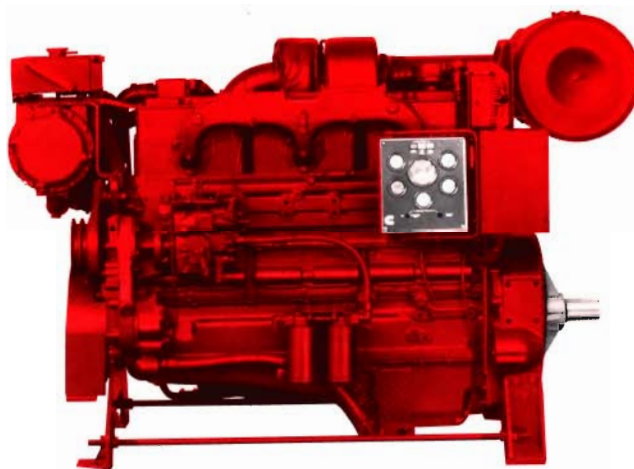
DATE	10/16/81	Cummins	
CHD			
REV		ITEM NAME	
TRCD		NT/NTA FIRE PUMP	
APPD		IDENTIFIER	
APPD		INSTALLATION DIAGRAM	
APPD		SIZE	DRAWING NO.
APPD		E	3032671
APPD		SCALE	SHEET
APPD		1/8	OF

NOTE: ALL DIMENSIONS IN INCHES AND MILLIMETERS.





NT-855-F5 FIRE PUMP ENGINE



SPECIFICATIONS

**Four Stroke Cycle, Turbocharged,
In-Line, 6 Cylinder Diesel Engine.**

Bore and Stroke	140x152 mm	(5½x6 in.)
Displacement	14 L	(855 cu. in.)
Lube System Oil Cap.	28.8 L	(7.6 U.S. gals.)
Engine Coolant Cap.	39.7 L	(10.5 U.S. gals.)
Net Weight, with Std. Accessories, Dry	1 474 kg	(3,250 lbs.)

INSTALLATION CONSIDERATIONS

Maximum raw water pressure must not exceed 345 kPa (50 PSI). Minimum acceptable raw water flow at 32°C (90°F) raw water temperature and 38°C (100°F) ambient air temperature should be at least 129 L/min. (34 G.P.M.) at the 2100 RPM listed rating.

Ventilation air required for engine combustion is 396 L/sec. (840 CFM) at 2100 RPM rating. This is for engine air combustion only and does not take into consideration additional air required for normal room cooling.



This symbol on the nameplate means the product is Listed by Underwriters' Laboratories Inc.



This symbol on the nameplate means the product is approved by the Factory Mutual Research Corporation.



This symbol on the nameplate means the product is Listed by Underwriters' Laboratories of Canada.

LISTED AGENCY RATINGS

230 H.P. @ 1760 RPM

250 H.P. @ 2100 RPM

All of the above ratings are listed by the following

agencies:

Underwriters' Laboratories

Factory Mutual

Underwriters' Laboratories of Canada

The agency-approved horsepower ratings published are already derated for fire pump service. The ratings show horsepower available for driving the fire pump at standard SAE J1349 conditions of 752 mm (29.61 in.) Hg barometer and 25°C (77°F) inlet air temperature (approximate 91.4 m [300 ft.] above sea level). The only additional deration necessary is for higher ambient temperatures and elevations as follows: 3% for each 305 m (1000 ft.) above 91.4 m (300 ft.) and 1% for each 5.6°C (10°F) above 25°C (77°F) in accordance with National Fire Association Pamphlet No. 20.

DESIGN FEATURES

Bearings: Replaceable, precision type, steel backed inserts. Seven main bearings, 114 mm (4.5 in.) diameter.

Connecting rod bearings 79 mm (3.125 in.) diameter.

Camshaft: Single large diameter camshaft precisely controls valve and injector timing. Lobes are induction hardened for long life. Seven replaceable precision type bushings 64 mm (2.5 in.) diameter.

Camshaft Followers: Induction hardened, roller type for long cam and follower life.

Connecting Rods: Drop forged, I-beam section 305 mm (12 in.) center to center length. Rifle drilled for pressure lubrication of piston pin. Rod is tapered on piston pin end to reduce unit pressures.

Cooling System: Belt driven centrifugal water pump. Large volume water passages provide even flow of coolant around cylinder liners, valves, and injectors. Modulating by-pass thermostat regulates coolant temperature. Spin-on corrosion resistor checks rust and corrosion, controls acidity, and removes impurities.

Crankshaft: Fully counterweighted high tensile steel forging with induction hardened fillets and journals.

Cylinder Block: Alloy cast iron with removable wet liners.

Cylinder Heads: Alloy cast iron. Each head serves two cylinders. Drilled fuel supply and return lines. Valve seats are replaceable corrosion resistant inserts. Valve guides and cross head guides are replaceable inserts.

Cylinder Liners: Replaceable wet liners dissipate heat faster than dry liners and are easily replaced without reboring the block.

Fuel System: Cummins exclusive low pressure PT™ system with wear compensating pump and integral dual flyweight governor. Camshaft actuated fuel injectors give accurate metering and timing. Fuel lines are internal drilled passages in cylinder heads. Spin-on fuel filter.

Gear Train: Timing gears and accessory drive gears are induction hardened helical gears driven from crankshaft and located at front of block.

Lubrication: Large capacity gear pump provides pressure lubrication to all bearings. All pressure lines are internal drilled passages in block and heads.

Pistons: Aluminum alloy, cam ground and barrel shaped to compensate for thermal expansion assures precise fit at operating temperatures. CeCorr™ grooved skirt finish provides superior lubrication. Oil cooled for rapid heat dissipation. Three compression and one oil ring.

Turbocharger: Cummins exhaust gas driven turbocharger. Turbocharging provides more power, improved fuel economy, altitude compensation, and lower smoke and noise levels.

Valves: Dual 48 mm (1.875 in.) diameter poppet type intake and exhaust valves. Wear resistant face on exhaust valves.

STANDARD EQUIPMENT

Air Cleaner: 381 mm (15 inch) diameter dry air cleaner.

Belt and Damper Shield Guard: Protection from alternator, accessory drive, and water pump belts and vibration damper.

Coolant Pump: Belt driven, centrifugal type.

Corrosion Resistor: Mounted, checks rust and corrosion, controls acidity, and removes impurities from coolant.

Electrical Equipment: 24 volt negative ground system, including: a 24 volt starting motor; a 24 volt, 35 or 45 amp alternator; manually operable contactors; and a junction box with enclosed terminal strip.

Engine Support: Pedestal type, front and rear.

Exhaust Manifold: Dry and insulated.

Exhaust Outlet: 127 mm (5 in.) diameter, 90° elbow.

Filters: Spin-on, replaceable lubricating oil filter. Dual spin-on replaceable fuel filters.

Flywheel: Machined for stub shaft mounting.

Flywheel Housing: SAE No. 1 with industrial supports.

Governor: Mechanical flyweight, mechanical variable speed type.

Heat Exchanger: Copper nickel tube bundle, mounted.

Instrument Panel: Mounted. Electrical instruments only.

Includes charge meter, tachometer, hour meter, water temperature gauge, lubricating oil temperature gauge, and lubricating oil pressure gauge.

Lubricating Oil Cooler: Tubular type, jacket water cooled.

Oil Pan: Cast aluminum, rear sump type, 26.5 litre (7 U.S. gallon) capacity. Provision for optional oil heater.

Oil Pressure Switch: Provides signal to activate alarm (not included) for low oil pressure.

Overspeed Switch: Mounted, overspeed shutdown with manual reset, stop crank contacts.

Stubshaft: Mounted on flywheel.

Throttle Control: Hydraulic, with no manual override.

Vibration Damper: Viscous type.

Water Jacket Heater: Mounted beside oil pan. 115 volt, 2500 watt.

Water Temperature Switch: Provides signal to activate alarm (not included) for high water temperature.

OPTIONAL EQUIPMENT

Oil Heater: Mounted in side of oil pan.

Cummins has always been a pioneer in product improvement. Thus specifications may change without notice. Illustrations may include optional equipment. See specific proposal bill of material for actual equipment being furnished.



Cummins Engine Company, Inc.
Columbus, IN 47202
U.S.A.

Firepump
Pg. No.

F5
23

Data Sheet: FR-1480
Date: 08Mar95
CPL Code: 0552

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2500 down to 50°F (10°C).

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 Height Above ^CL Crankshaft - in. (mm) 80 (2030)

Part Number of Standard Fuel Filter..... 3315847

Part Number of Standard Fuel Filter Element..... FF-105D

Maximum Allowable Restriction to Fuel Pump with Dirty Filter - in. Hg (mm Hg) 8 (200)

Maximum Allowable Return Line Restriction - in. Hg (mm Hg)..... 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..... 35 or 45

Manually Operable Contactors Standard

Minimum Recommended Battery Capacity Amp-hr. 0°F CCA

70°F (21°C) Minimum Temperature 100 450

32°F (0°C) Minimum Temperature 150 640

Reference Wiring Diagram Number..... 3382636

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)..... 300 (90)

Correction Factor per 1000 ft. (300 m) above Altitude Limit 3%

Temperature Above Which Output Should be Limited -°F (°C)..... 77 (25)

Correction Factor per 10°F (11°C) Above Temperature Limit 1% (2%)

FM Approved and UL Listed Ratings For: NT855-F5

Listed/ Approved Ratings BHP (kW)	Engine Speed RPM	Ventilation Air Required for Combustion CFM (litre/s)	Heat Rejection to Coolant BTU/min (kW)	Heat Rejection to Ambient Air* BTU/min (kW)	Exhaust Gas		Fuel Consumption Gal/h (litre/h)
					<u>Flow</u> CFM (litre/s)	<u>Temp.</u> °F (°C)	
250 (187)	2100	840 (396)	6850 (120)	1750 (30.7)	1960 (925)	800 (427)	13.5 (51.1)
230 (172)	1760	680 (321)	6050 (106)	1530 (26.9)	1610 (760)	820 (438)	11.8 (44.7)

* - Does not include exhaust piping.

Cummins Engine Company, Inc.

Exhaust Emissions Data Sheet

Firepump
Pg. No.

F5
25

Data Sheet: DS-1480

Date: 08Mar95

Engine

Model:	NT855-F5	Application:	Firepump
Type:	4 cycle, In-Line, 6 Cylinder Diesel	Config. Number:	D092399FX02
Aspiration:	Turbocharged	Bore:	5.50 in. (140 mm)
Compression Ratio:	14.1:1	Stroke:	6.00 in. (152 mm)
Emissions Control Device:	Turbocharger	Displacement:	855 cu. in. (14.0 liters)

Performance Data

	<u>2100 RPM</u>	<u>1760 RPM</u>
BHP	250	230
Fuel Consumption (gallons/hour)	13.5	11.8
Air to Fuel Ratio	38.6	35.8
Exhaust Gas Flow (CFM)	1960	1610
Exhaust Gas Temperature (°F)	800	820

Exhaust Emissions Data

(All values are grams/hp-hour)

<u>Component</u>	<u>2100 RPM</u>	<u>1760 RPM</u>
HC (Total Unburned Hydrocarbons)	0.17	0.09
NOx (Oxides of Nitrogen as NO ₂)	10.30	9.20
CO (Carbon Monoxide)	0.60	0.45
PM (Particulate Matter)	0.50	0.50
SO₂ (Sulfur Dioxide)	0.67	0.64
CO₂ (Carbon Dioxide)	560	530
N₂ (Nitrogen)	5100	4500
O₂ (Oxygen)	980	820
H₂O (Water Vapor)	200	190

Test Conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight) and 42-50 cetane number.
Fuel Temperature:	99° F \pm 9° (at fuel pump inlet)
Intake Air Temperature:	77° F \pm 9°
Barometric Pressure:	29.6 in. Hg \pm 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H ₂ O/lb. dry air

The HC, NOx, and CO emissions data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimates. This data is subject to instrumentation, measurement, and engine-to-engine variability. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

DRAWING NO.
3032671

REVISIONS					
REV.	DESCRIPTION	DATE	APP'D.	DATE	APP'D.
01	REV. PER 871061	05/88	WSP	06/87	
02	REV. PER 883088	05/88	WSP	06/87	
03	REV. PER 921077	05/88	WSP	06/87	

SERVICE CONNECTIONS

FUEL INLET CONN: 7/8-14 UNF-2A TH'D. WITH 45° TIP

FUEL RETURN TO TANK: 3/4-16 UNF-2A TH'D. WITH 45° TIP

OIL DRAIN: 1 NPTF

CYLINDER BLOCK DRAIN: 1/4 NPTF

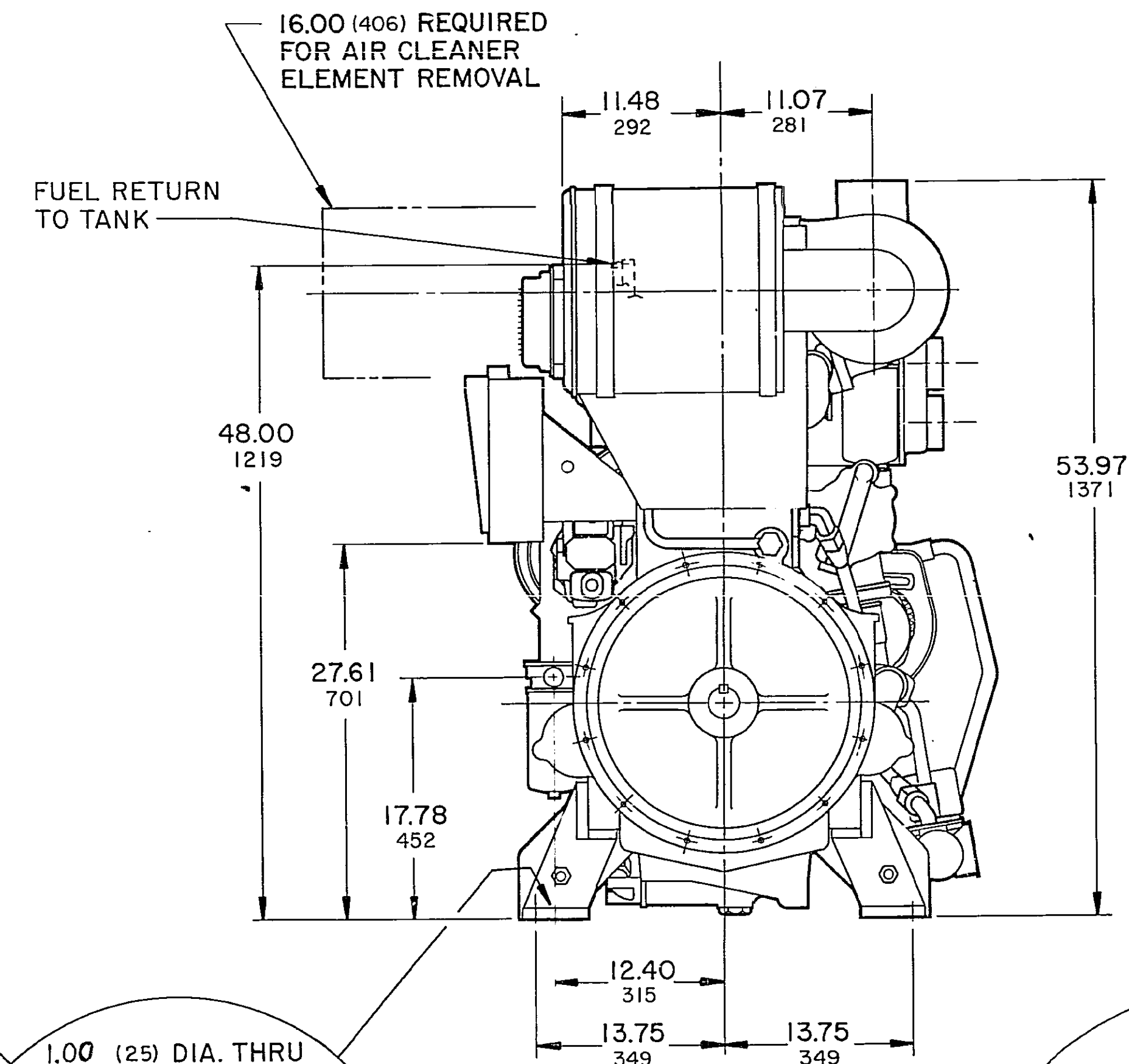
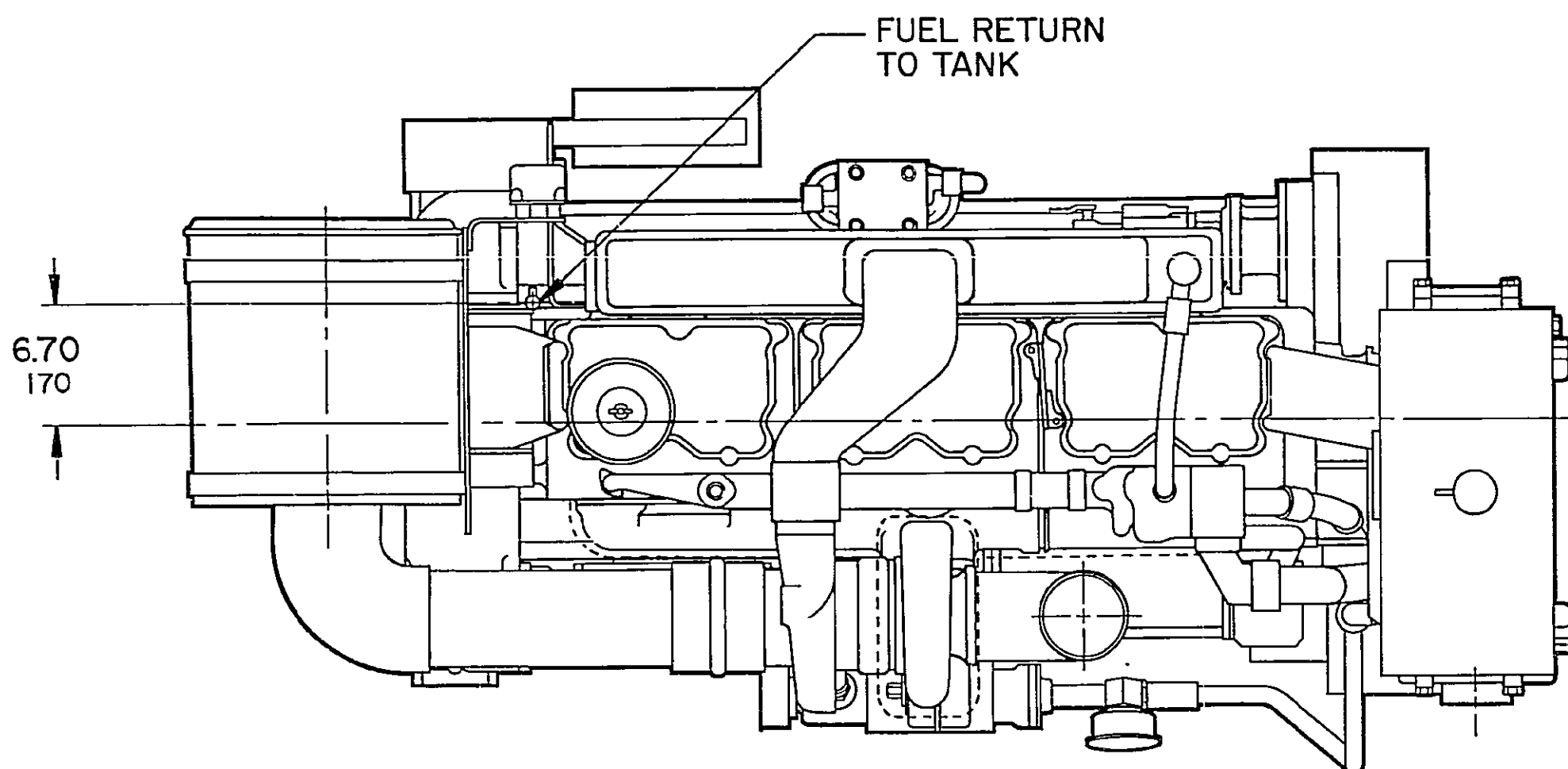
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RAW WATER INLET CONN.: 2 NPTF

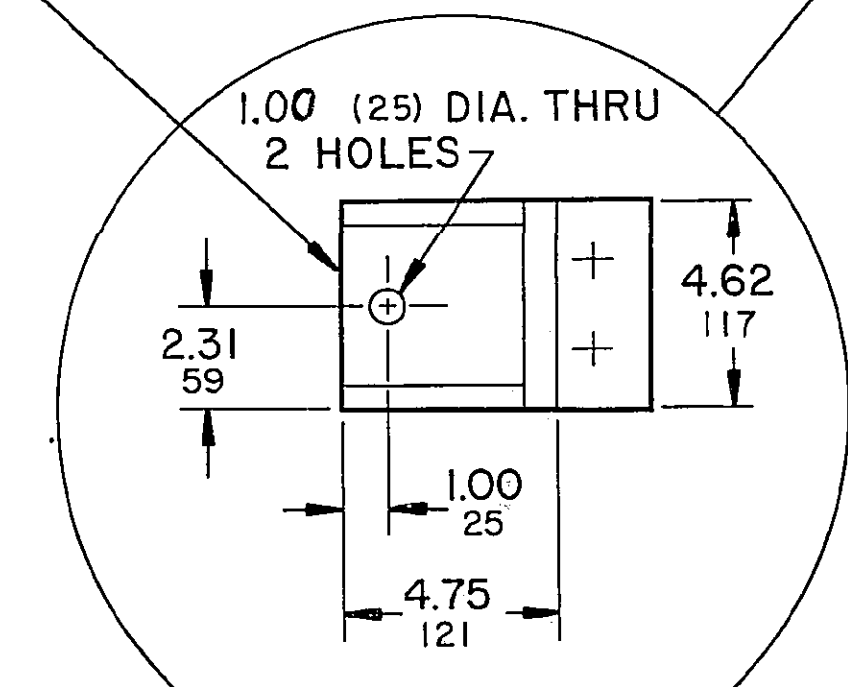
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OIL IMMERSION HEATER: 1 NPTF

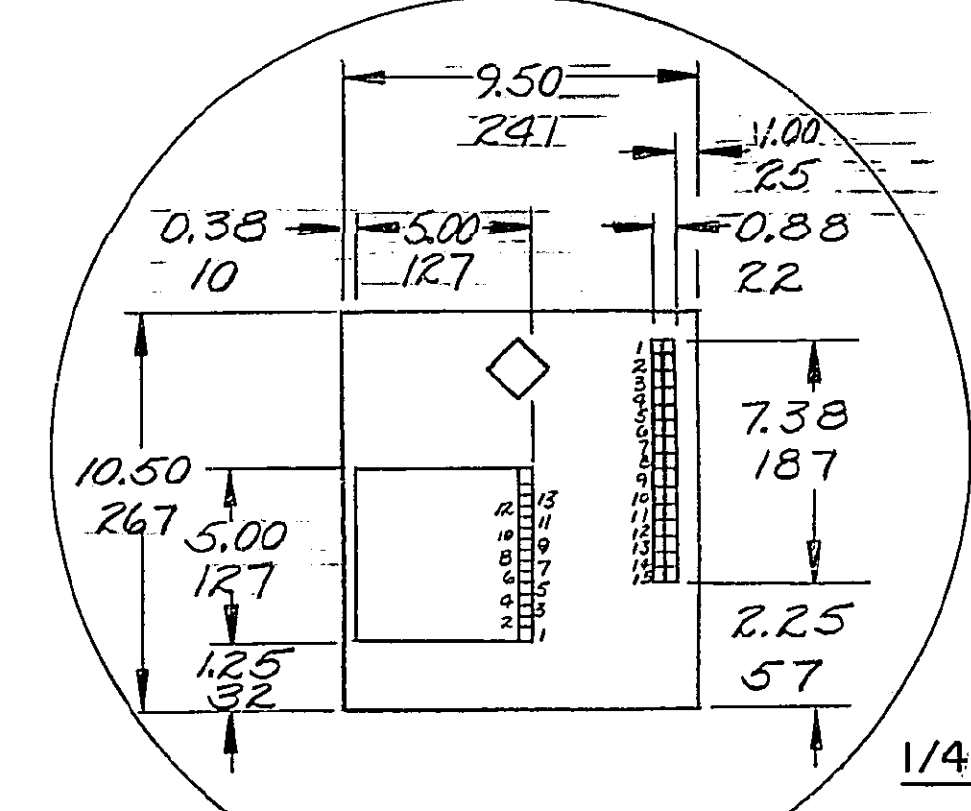
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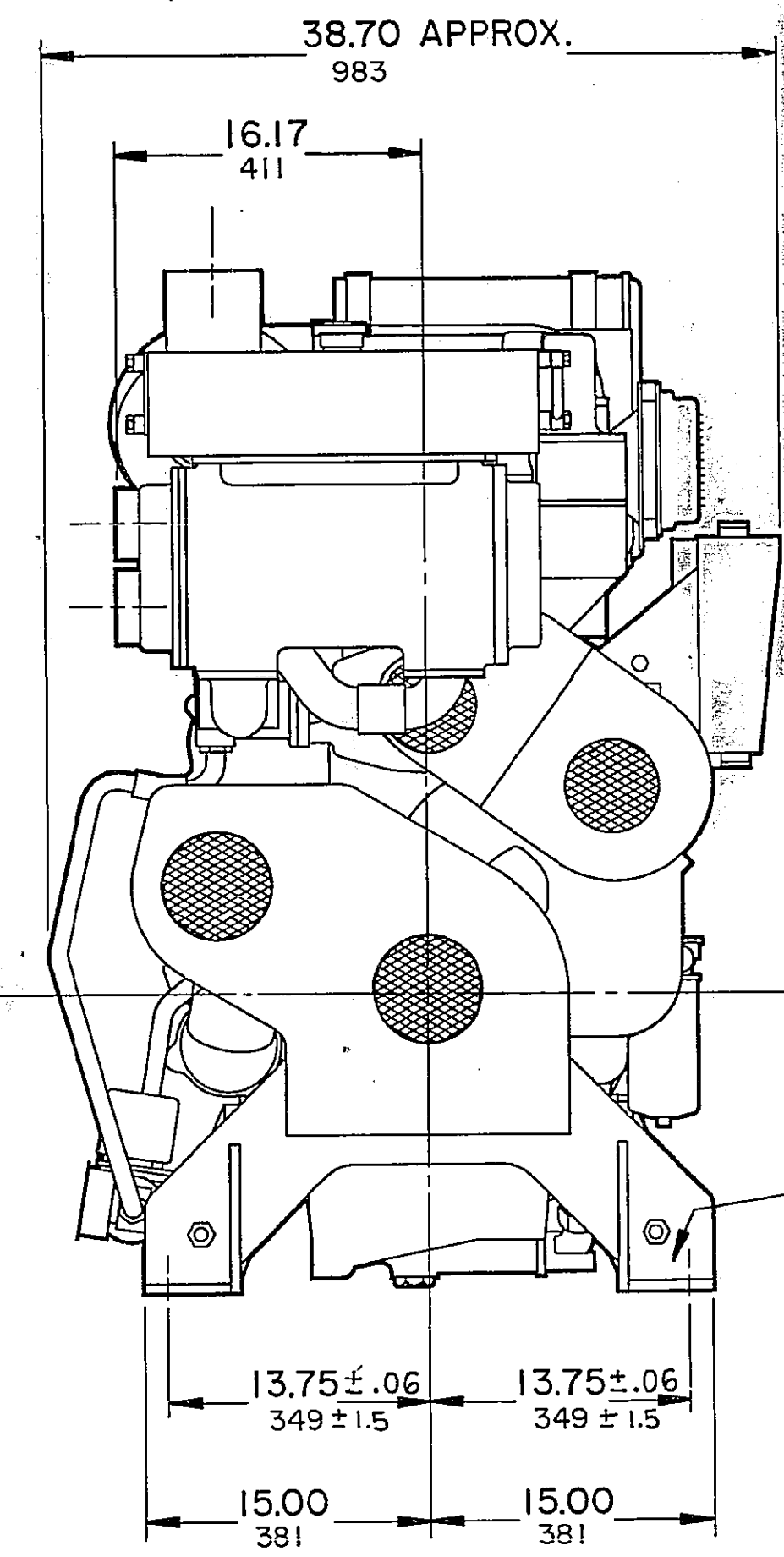
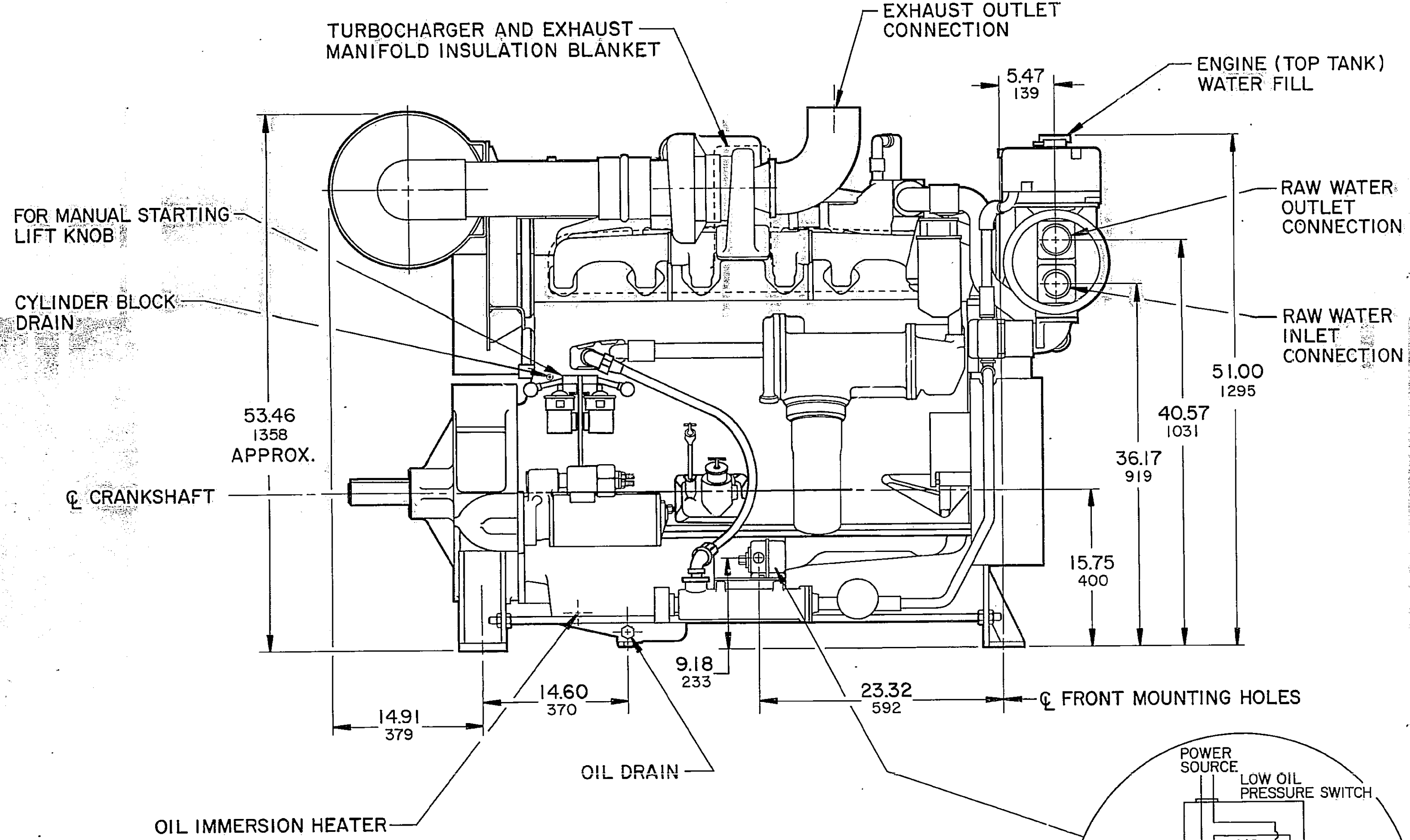
REAR MOUNTING CROSS SECTION



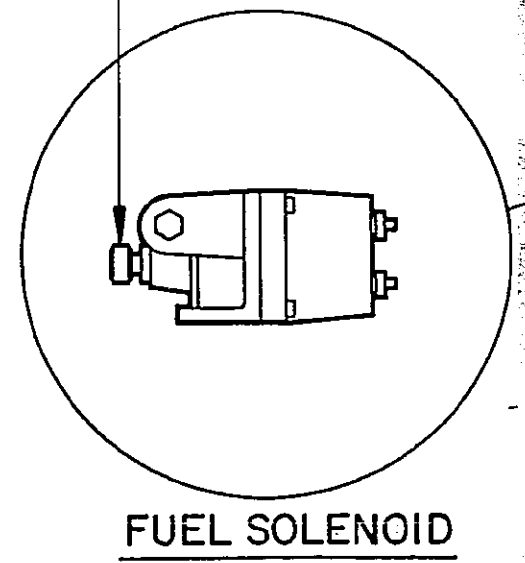
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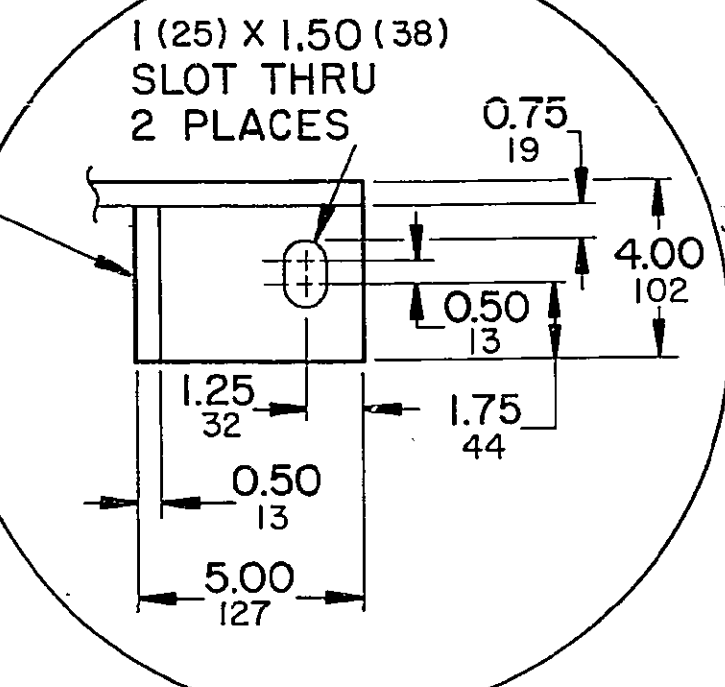
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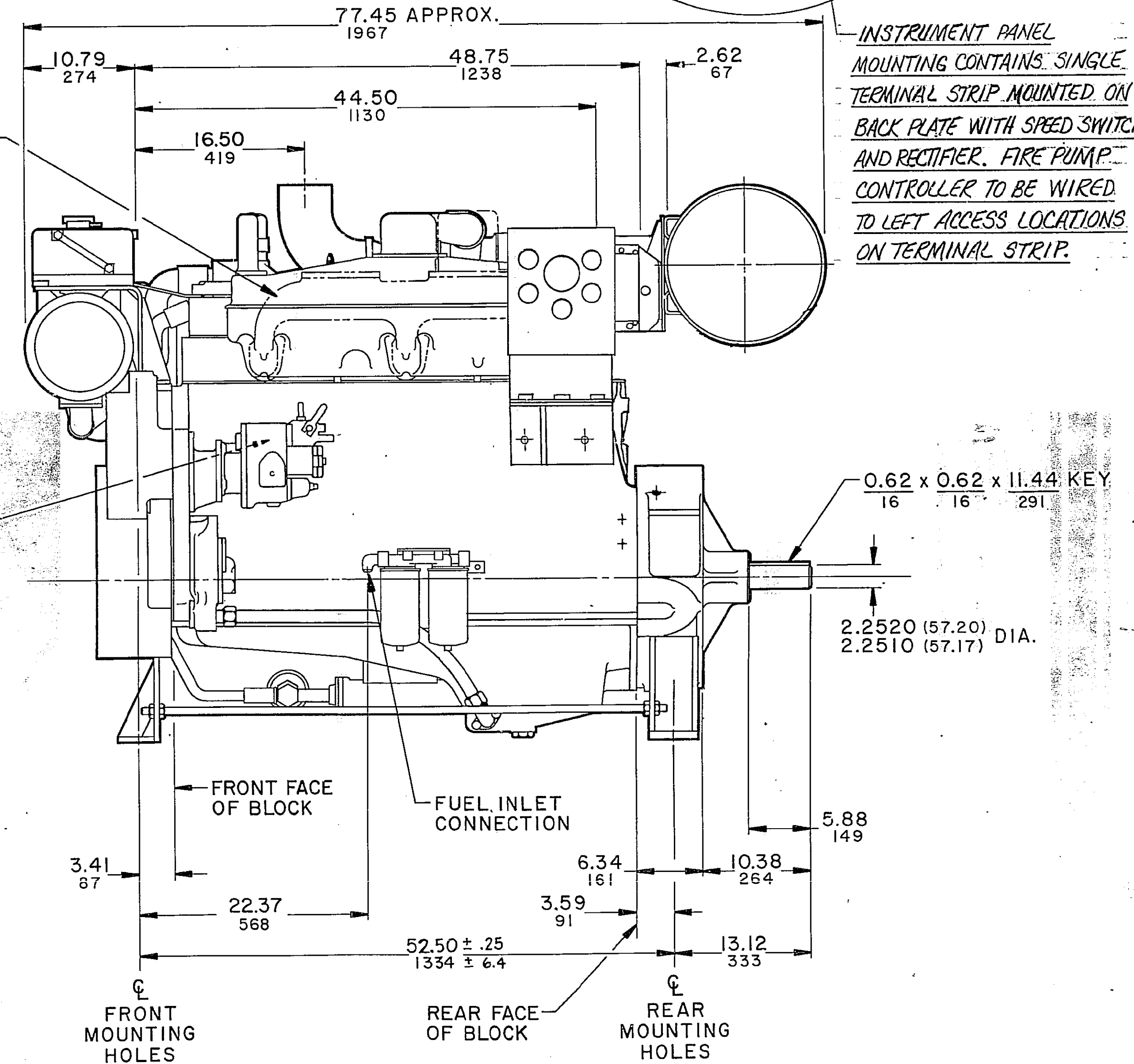
TURN KNOB CLOCKWISE TO OPEN FOR MANUAL STARTING



FRONT MOUNTING CROSS-SECTION

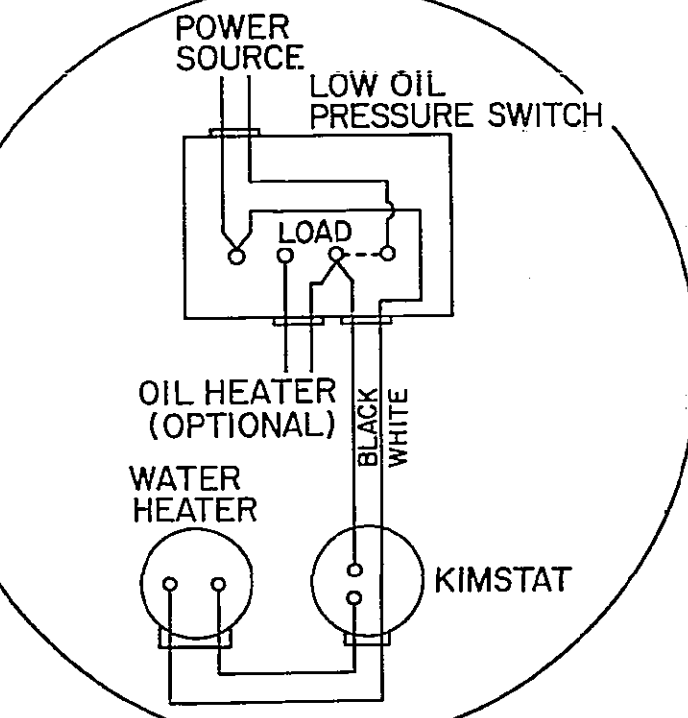


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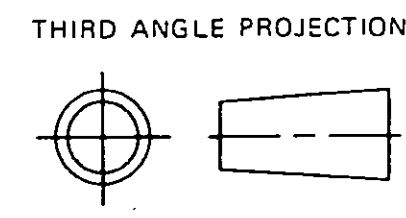
INSTRUMENT PANEL MOUNTING CONTAINS SINGLE TERMINAL STRIP MOUNTED ON BACK PLATE WITH SPEED SWITCH AND RECTIFIER. FIRE PUMP CONTROLLER TO BE WIRED TO LEFT ACCESS LOCATIONS ON TERMINAL STRIP.

POWER SOURCE IS 115V, OIL HEATER IS 115V AND 300W, AND KIM HOT START WATER HEATER IS 115V AND 2500W. KIMSTAT OPENS AT 100°F AND CLOSSES AT 120°F.



LOW OIL PRESSURE SWITCH WIRING DIAGRAM

NOTE: ALL DIMENSIONS IN INCHES AND MILLIMETERS.



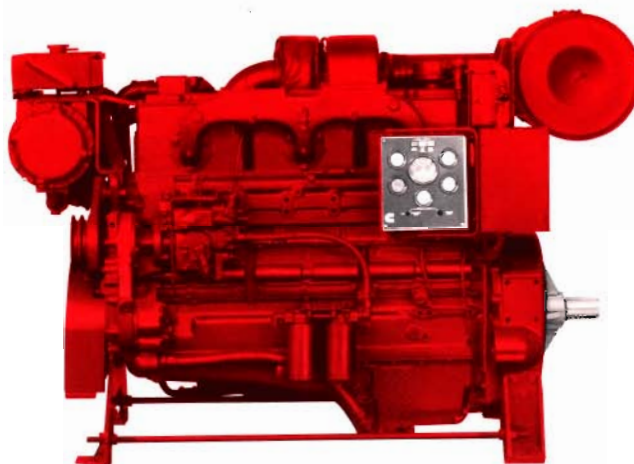
DO NOT SCALE THIS DRAWING

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DATE: 10/16/81		Cummins	
CHD		ITEM NAME: NT/NTA FIRE PUMP	
REV		IDENTIFIER: INSTALLATION DIAGRAM	
TRCD		SIZE: E	
APPD		CODE IDENT NO: 3032671	
APPD		DRAWING NO: 3032671	
APPD		SHEET: 1 OF 1	



NT-855-F6 FIRE PUMP ENGINE



SPECIFICATIONS

**Four Stroke Cycle, Turbocharged,
In-Line, 6 Cylinder Diesel Engine.**

Bore and Stroke	140x152 mm	(5½x6 in.)
Displacement	14 L	(855 cu. in.)
Lube System Oil Cap.	28.8 L	(7.6 U.S. gals.)
Engine Coolant Cap.	39.7 L	(10.5 U.S. gals.)
Net Weight, with Std. Accessories, Dry	1 474 kg	(3,250 lbs.)

INSTALLATION CONSIDERATIONS

Maximum raw water pressure must not exceed 345 kPa (50 PSI). Minimum acceptable raw water flow at 32°C (90°F) raw water temperature and 38°C (100°F) ambient air temperature should be at least 129 L/min. (34 G.P.M.) at the 2100 RPM listed rating.

Ventilation air required for engine combustion is 411 L/sec. (870 CFM) at 2100 RPM rating. This is for engine air combustion only and does not take into consideration additional air required for normal room cooling.



This symbol on the nameplate means the product is Listed by Underwriters' Laboratories Inc.



This symbol on the nameplate means the product is approved by the Factory Mutual Research Corporation.



This symbol on the nameplate means the product is Listed by Underwriters' Laboratories of Canada.

LISTED AGENCY RATINGS

250 H.P. @ 1760 RPM

270 H.P. @ 2100 RPM

All of the above ratings are listed by the following
agencies:

Underwriters' Laboratories

Factory Mutual

Underwriters' Laboratories of Canada

The agency-approved horsepower ratings published are already derated for fire pump service. The ratings show horsepower available for driving the fire pump at standard SAE J1349 conditions of 752 mm (29.61 in.) Hg barometer and 25°C (77°F) inlet air temperature (approximate 91.4 m [300 ft.] above sea level). The only additional deration necessary is for higher ambient temperatures and elevations as follows: 3% for each 305 m (1000 ft.) above 91.4 m (300 ft.) and 1% for each 5.6°C (10°F) above 25°C (77°F) in accordance with National Fire Association Pamphlet No. 20.

DESIGN FEATURES

Bearings: Replaceable, precision type, steel backed inserts. Seven main bearings, 114 mm (4.5 in.) diameter.

Connecting rod bearings 79 mm (3.125 in.) diameter.

Camshaft: Single large diameter camshaft precisely controls valve and injector timing. Lobes are induction hardened for long life. Seven replaceable precision type bushings 64 mm (2.5 in.) diameter.

Camshaft Followers: Induction hardened, roller type for long cam and follower life.

Connecting Rods: Drop forged, I-beam section 305 mm (12 in.) center to center length. Rifle drilled for pressure lubrication of piston pin. Rod is tapered on piston pin end to reduce unit pressures.

Cooling System: Belt driven centrifugal water pump. Large volume water passages provide even flow of coolant around cylinder liners, valves, and injectors. Modulating by-pass thermostat regulates coolant temperature. Spin-on corrosion resistor checks rust and corrosion, controls acidity, and removes impurities.

Crankshaft: Fully counterweighted high tensile steel forging with induction hardened fillets and journals.

Cylinder Block: Alloy cast iron with removable wet liners.

Cylinder Heads: Alloy cast iron. Each head serves two cylinders. Drilled fuel supply and return lines. Valve seats are replaceable corrosion resistant inserts. Valve guides and cross head guides are replaceable inserts.

Cylinder Liners: Replaceable wet liners dissipate heat faster than dry liners and are easily replaced without reboring the block.

Fuel System: Cummins exclusive low pressure PT™ system with wear compensating pump and integral dual flyweight governor. Camshaft actuated fuel injectors give accurate metering and timing. Fuel lines are internal drilled passages in cylinder heads. Spin-on fuel filter.

Gear Train: Timing gears and accessory drive gears are induction hardened helical gears driven from crankshaft and located at front of block.

Lubrication: Large capacity gear pump provides pressure lubrication to all bearings. All pressure lines are internal drilled passages in block and heads.

Pistons: Aluminum alloy, cam ground and barrel shaped to compensate for thermal expansion assures precise fit at operating temperatures. CeCorr™ grooved skirt finish provides superior lubrication. Oil cooled for rapid heat dissipation. Three compression and one oil ring.

Turbocharger: Cummins exhaust gas driven turbocharger. Turbocharging provides more power, improved fuel economy, altitude compensation, and lower smoke and noise levels.

Valves: Dual 48 mm (1.875 in.) diameter poppet type intake and exhaust valves. Wear resistant face on exhaust valves.

STANDARD EQUIPMENT

Air Cleaner: 381 mm (15 inch) diameter dry air cleaner.

Belt and Damper Shield Guard: Protection from alternator, accessory drive, and water pump belts and vibration damper.

Coolant Pump: Belt driven, centrifugal type.

Corrosion Resistor: Mounted, checks rust and corrosion, controls acidity, and removes impurities from coolant.

Electrical Equipment: 24 volt negative ground system, including: a 24 volt starting motor; a 24 volt, 35 or 45 amp alternator; manually operable contactors; and a junction box with enclosed terminal strip.

Engine Support: Pedestal type, front and rear.

Exhaust Manifold: Dry and insulated.

Exhaust Outlet: 127 mm (5 in.) diameter, 90° elbow.

Filters: Spin-on, replaceable lubricating oil filter. Dual spin-on replaceable fuel filters.

Flywheel: Machined for stub shaft mounting.

Flywheel Housing: SAE No. 1 with industrial supports.

Governor: Mechanical flyweight, mechanical variable speed type.

Heat Exchanger: Copper nickel tube bundle, mounted.

Instrument Panel: Mounted. Electrical instruments only. Includes charge meter, tachometer, hour meter, water temperature gauge, lubricating oil temperature gauge, and lubricating oil pressure gauge.

Lubricating Oil Cooler: Tubular type, jacket water cooled.

Oil Pan: Cast aluminum, rear sump type, 26.5 litre (7 U.S. gallon) capacity. Provision for optional oil heater.

Oil Pressure Switch: Provides signal to activate alarm (not included) for low oil pressure.

Overspeed Switch: Mounted, overspeed shutdown with manual reset, stop crank contacts.

Stubshaft: Mounted on flywheel.

Throttle Control: Hydraulic, with no manual override.

Vibration Damper: Viscous type.

Water Jacket Heater: Mounted beside oil pan. 115 volt, 2500 watt.

Water Temperature Switch: Provides signal to activate alarm (not included) for high water temperature.

OPTIONAL EQUIPMENT

Oil Heater: Mounted in side of oil pan.

Cummins has always been a pioneer in product improvement. Thus specifications may change without notice. Illustrations may include optional equipment. See specific proposal bill of material for actual equipment being furnished.



Cummins Engine Company, Inc.
Columbus, IN 47202
U.S.A.

CUMMINS ENGINE COMPANY, INC.
Engine Data Sheet

Firepump
Pg. No.

F6
27

Engine Model: FIRE PUMP NT855-F6 BIG CAM
Gross Power BHP (kW): 270 (202) @ 2100
Configuration Number: D092399FX02

Data Sheet: FR-1481
Date: 08Mar95
CPL Code: 0552

GENERAL ENGINE DATA

Type	4 cycle, Inline, 6 cylinder
Aspiration:	Turbocharged
Bore - in. (mm)	5.5 (140)
Stroke - in. (mm)	6.0 (152)
Displacement - in. ³ (litre)	855 (14.0)
Compression Ratio	14.1:1
Valves per Cylinder: - Intake	2
- Exhaust	2
Engine Weight & Center of Gravity (With Standard Accessories)	
Reference Installation Diagram	3382636
Dry Weight - lb. (kg)	3250 (1474)
Wet Weight - lb. (kg)	3385 (1535)
C.G. Distance from F.F.O.B. - in. (mm)	19 (483)
C.G. Distance Above Crankshaft Centerline - in. (mm)	5 (127)
Maximum Allowable Bending Moment @ Rear Face of Block - lb.-ft. (N•m)	1000 (1350)

AIR INDUCTION SYSTEM

Maximum Allowable Temperature Rise Between Ambient Air and Engine Air Inlet (Ambients 50°F [10°C] to 100°F [38°C]) - °F (°C)	30 (15)
Maximum Allowable Intake Restriction With a Dirty Air Filter Element - in. H ₂ O (mm H ₂ O)	25 (635)
Part Number of Standard Air Filter Element (Dry Type)	3022209
Minimum Allowable Ambient Air Temperature - °F (°C)	50 (10)

LUBRICATION SYSTEM

Oil Pressure @ Rated Speeds - PSI (kPa)	50 - 70 (345 - 483)
Oil Flow @ Maximum Rated Speeds (Nominal) - U.S. GPM (litre/s)	33 (2.1)@1760/40 (2.5)@2100
Oil Pan Capacity (High - Low) U.S. gal. (litre)	7 - 6 (26 - 23)
Full Flow Lube Oil Filter Capacity - U.S. gal. (litre)	7.6 (28.8)
Part Number of Standard Oil Pan	193631
Part Number of Standard Oil Filter Element	3889310

Application Note: When ambient temperatures will be lower than 70°F (21°C) an oil heater is required. The recommended heater wattage for this engine is 300 down to 50°F (10°C).

COOLING SYSTEM

Heat Exchanger Cooled (Shell & Tube Type)	
Part Number of Tube Bundle	3008844
Raw Water Working Pressure Range at Heat Exchanger - PSI (kPa)	50 (345) MAX
Recommended Minimum Water Supply Pipe Size to Heat Exchanger (Reference Only) - in. (mm) dia	1.25 (31.8)
Recommended Minimum Water Discharge Pipe Size From Heat Exchanger (Reference Only) - in. (mm) dia	1.50 (38.1)
Coolant Water Capacity (Engine Side) - U.S. gal. (litre)	10.5 (40)
Standard Thermostat - Type	Modulating
- Range - °F (°C)	175 - 197 (79 - 92)
Minimum Raw Water Flow with Water Temperatures to 90°F (32°C) - U.S. GPM (litre/s)	34 (2.1)

Note: Minimum raw water requirement is based on water flow required to minimize tube fouling in the heat exchanger tube bundle.

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2500 down to 50°F (10°C).

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 Height Above ^CL Crankshaft - in. (mm)..... 80 (2030)

Part Number of Standard Fuel Filter 3315847

Part Number of Standard Fuel Filter Element..... FF-105D

Maximum Allowable Restriction to Fuel Pump with Dirty Filter - in. Hg (mm Hg) 8 (200)

Maximum Allowable Return Line Restriction - in. Hg (mm Hg) 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 35 or 45

Manually Operable Contactors Standard

Minimum Recommended Battery Capacity Amp-hr. 0°F CCA

70°F (21°C) Minimum Temperature 100 450

32°F (0°C) Minimum Temperature 150 640

Reference Wiring Diagram Number 3382636

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)..... 300 (90)

Correction Factor per 1000 ft. (300 m) above Altitude Limit 3%

Temperature Above Which Output Should be Limited -°F (°C)..... 77 (25)

Correction Factor per 10°F (11°C) Above Temperature Limit 1% (2%)

FM Approved and UL Listed Ratings For: NT855-F6

Listed/ Approved Ratings BHP (kW)	Engine Speed RPM	Ventilation Air Required for Combustion CFM (litre/s)	Heat Rejection to Coolant BTU/min (kW)	Heat Rejection to Ambient Air* BTU/min (kW)	Exhaust Gas		Fuel Consumption Gal/h (litre/h)
					<u>Flow</u> CFM (litre/s)	<u>Temp.</u> °F (°C)	
270 (202)	2100	870 (411)	7409 (130)	1830 (32)	2060 (972)	820 (438)	14.1 (53.4)
250 (187)	1760	650 (307)	6562 (115)	1650 (29)	1565 (738)	840 (449)	12.7 (48.1)

* - Does not include exhaust piping.

Cummins Engine Company, Inc.**Exhaust Emissions Data Sheet****Data Sheet: DS-1481****Date: 08Mar95****Engine**

Model:	NT855-F6	Application:	Firepump
Type:	4 cycle, In-Line, 6 Cylinder Diesel	Config. Number:	D092399FX02
Aspiration:	Turbocharged	Bore:	5.50 in. (140 mm)
Compression Ratio:	14.1:1	Stroke:	6.00 in. (152 mm)
Emissions Control Device:	Turbocharger	Displacement:	855 cu. in. (14.0 liters)

Performance Data

	<u>2100 RPM</u>	<u>1760 RPM</u>
BHP	270	250
Fuel Consumption (gallons/hour)	14.1	12.7
Air to Fuel Ratio	35.7	31.8
Exhaust Gas Flow (CFM)	2060	1565
Exhaust Gas Temperature (°F)	820	840

Exhaust Emissions Data

(All values are grams/hp-hour)

<u>Component</u>	<u>2100 RPM</u>	<u>1760 RPM</u>
HC (Total Unburned Hydrocarbons)	0.16	0.09
NOx (Oxides of Nitrogen as NO ₂)	10.90	9.80
CO (Carbon Monoxide)	0.60	0.40
PM (Particulate Matter)	0.50	0.50
SO₂ (Sulfur Dioxide)	0.65	0.63
CO₂ (Carbon Dioxide)	540	520
N₂ (Nitrogen)	4600	4000
O₂ (Oxygen)	830	660
H₂O (Water Vapor)	200	190

Test Conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight) and 42-50 cetane number.
Fuel Temperature:	99° F \pm 9° (at fuel pump inlet)
Intake Air Temperature:	77° F \pm 9°
Barometric Pressure:	29.6 in. Hg \pm 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H ₂ O/lb. dry air

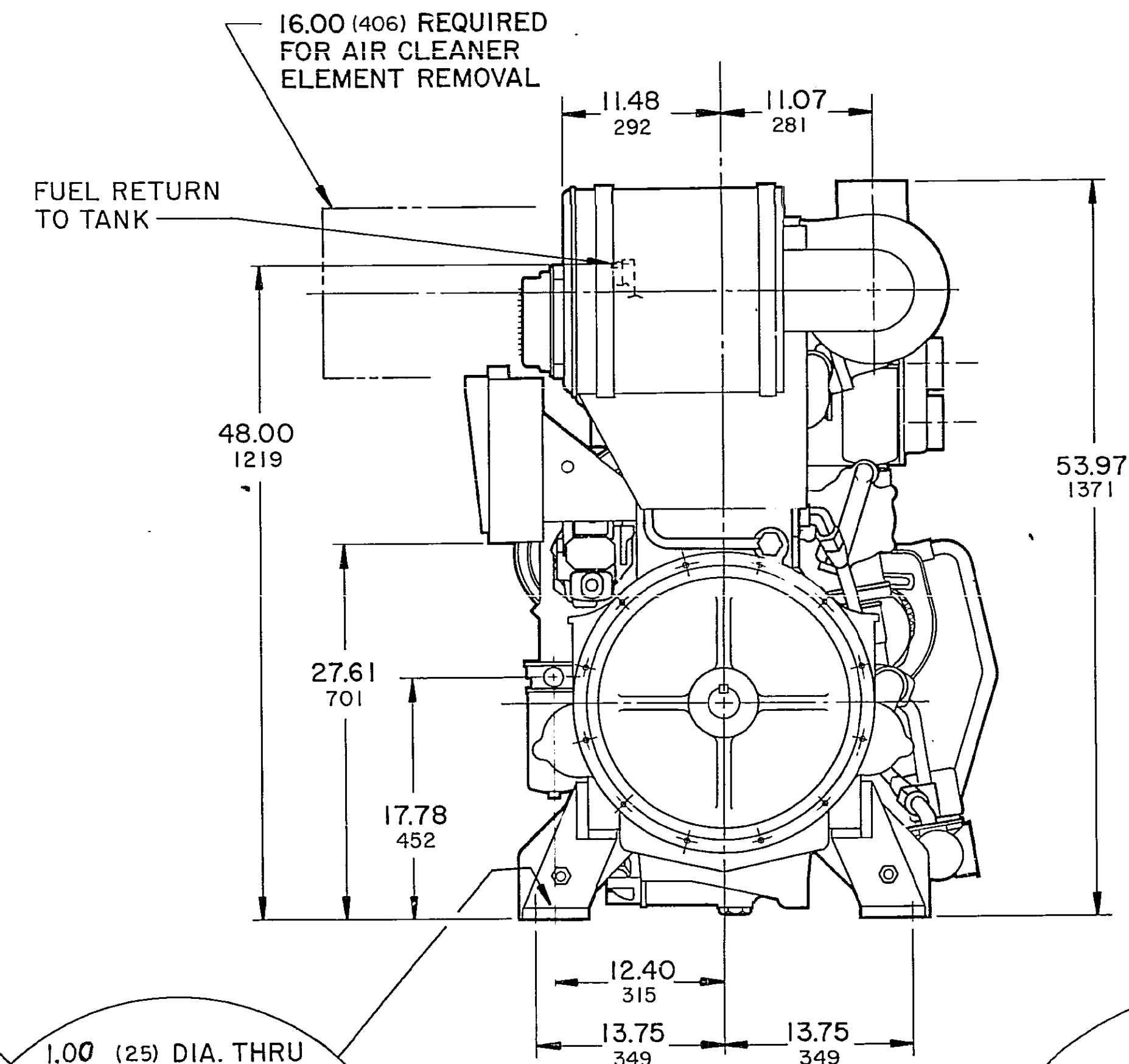
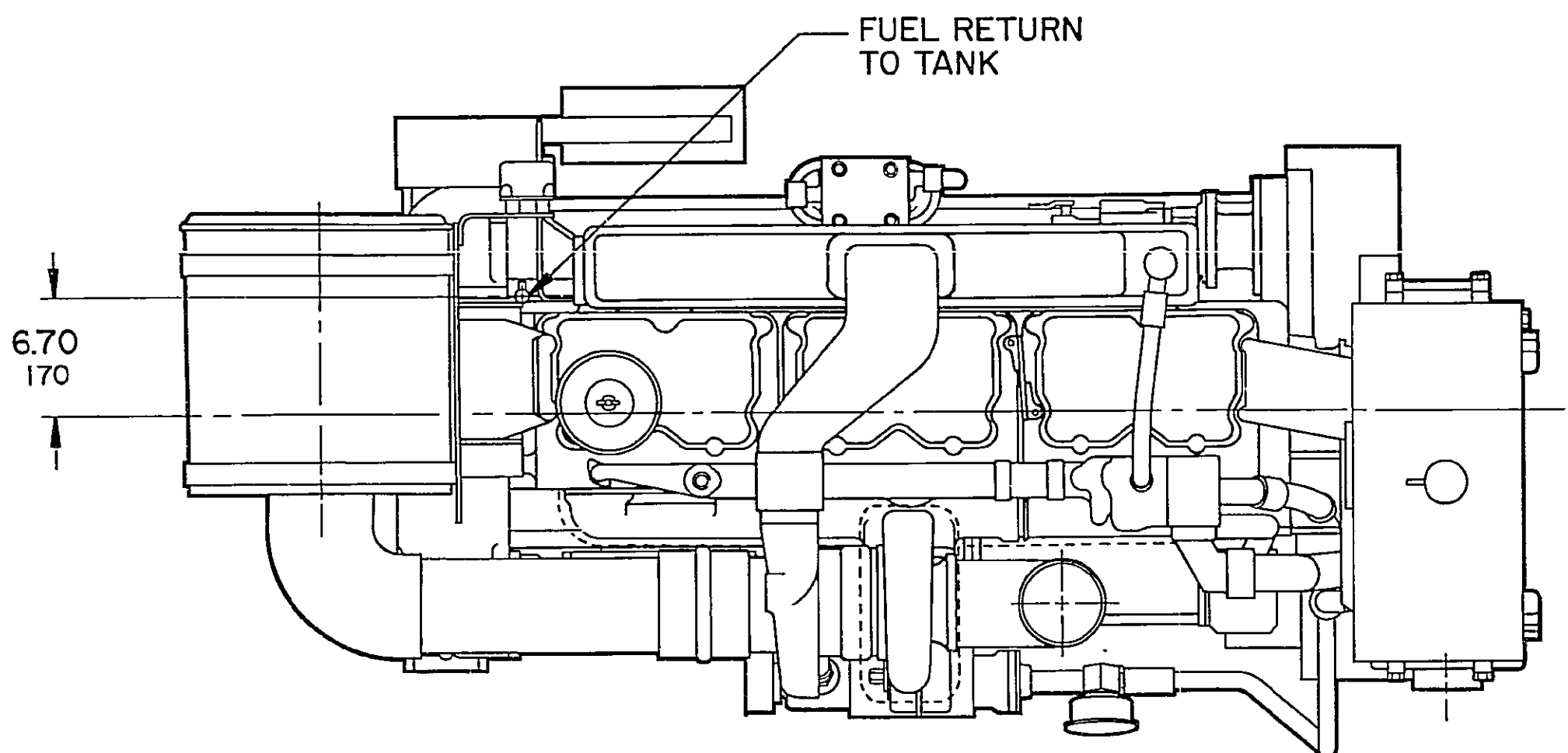
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DRAWING NO.
3032671

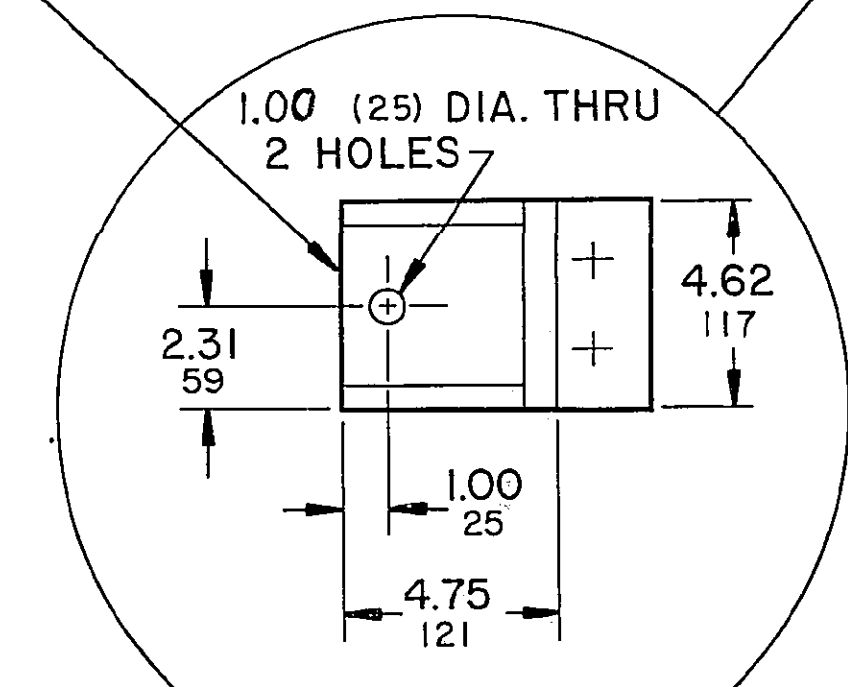
REVISIONS					
REV.	DESCRIPTION	DATE	APP'D.	DATE	APP'D.
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SERVICE CONNECTIONS

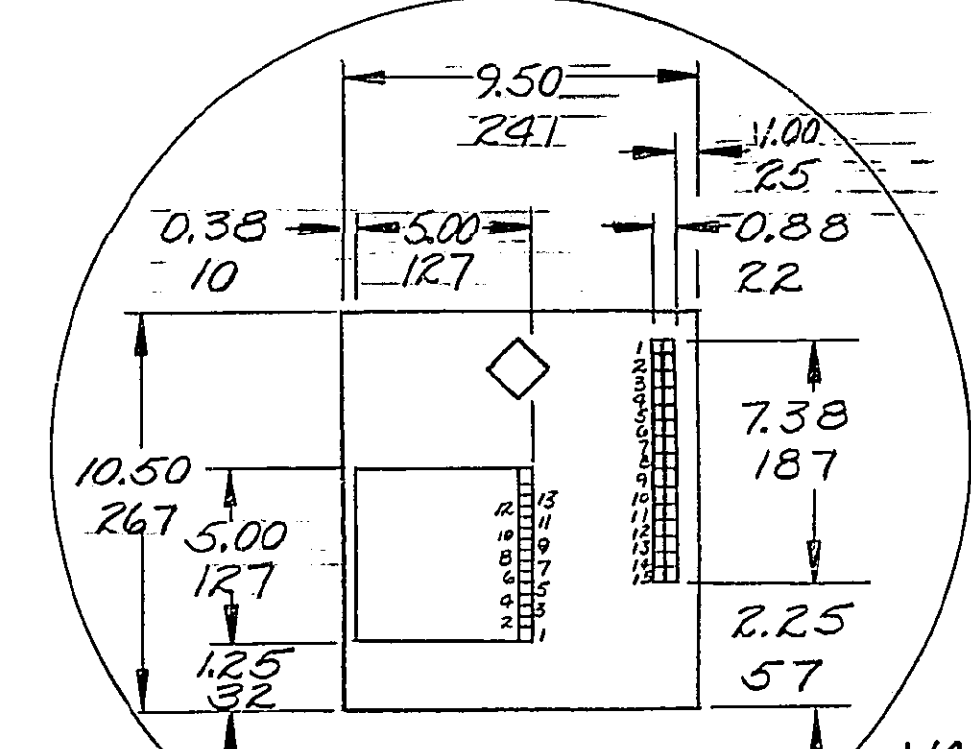
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 RAW WATER INLET CONN.: 2 NPTF
 RAW WATER OUTLET CONN.: 2 1/2 NPTF
 OIL IMMERSION HEATER: 1 NPTF
 WIRING DIAGRAM NO. 3031644



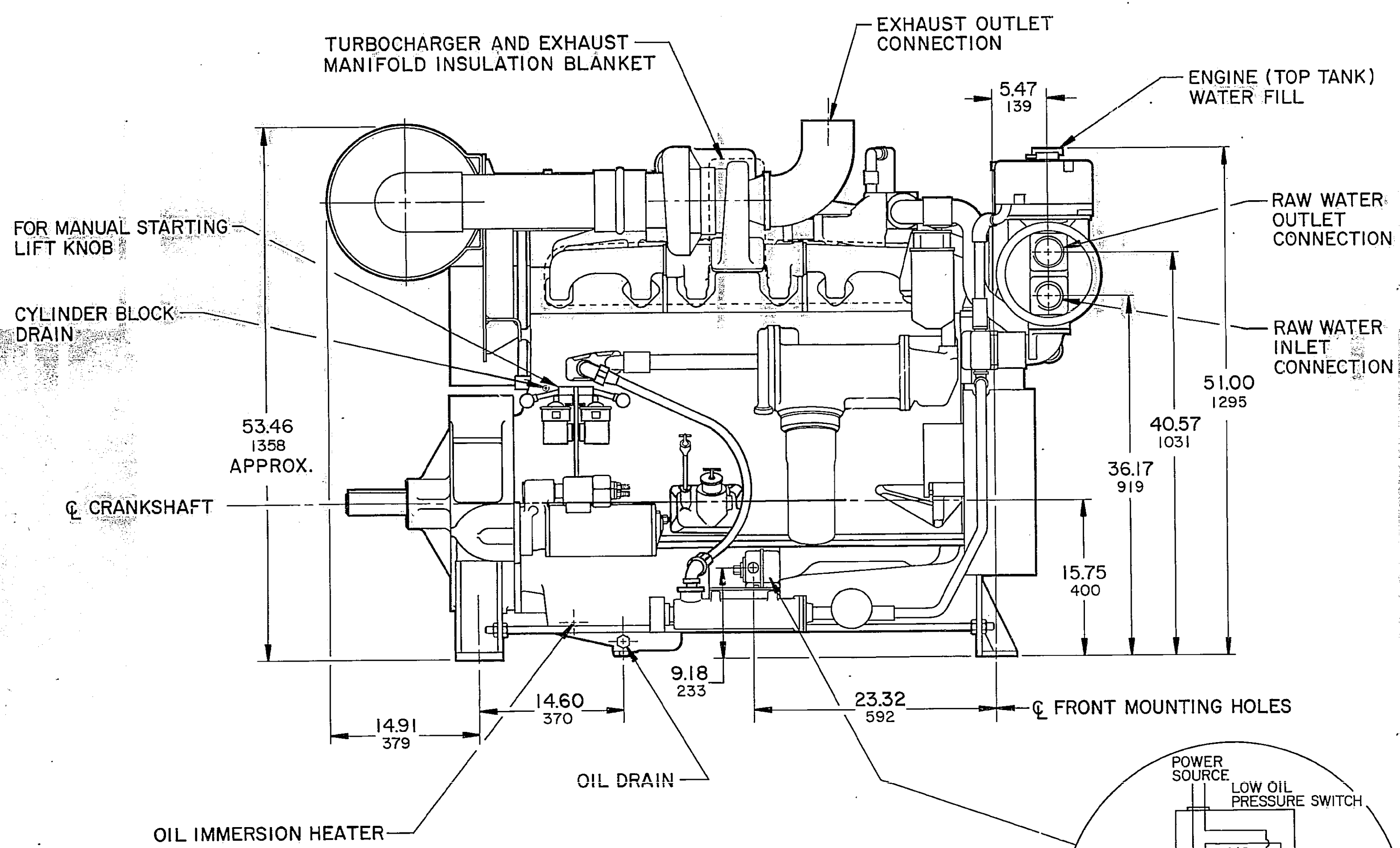
REAR MOUNTING CROSS SECTION



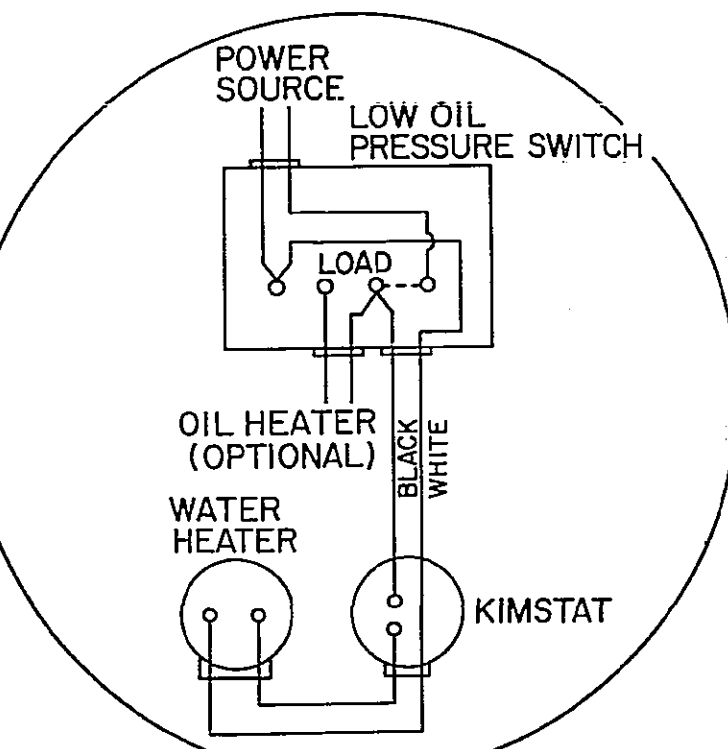
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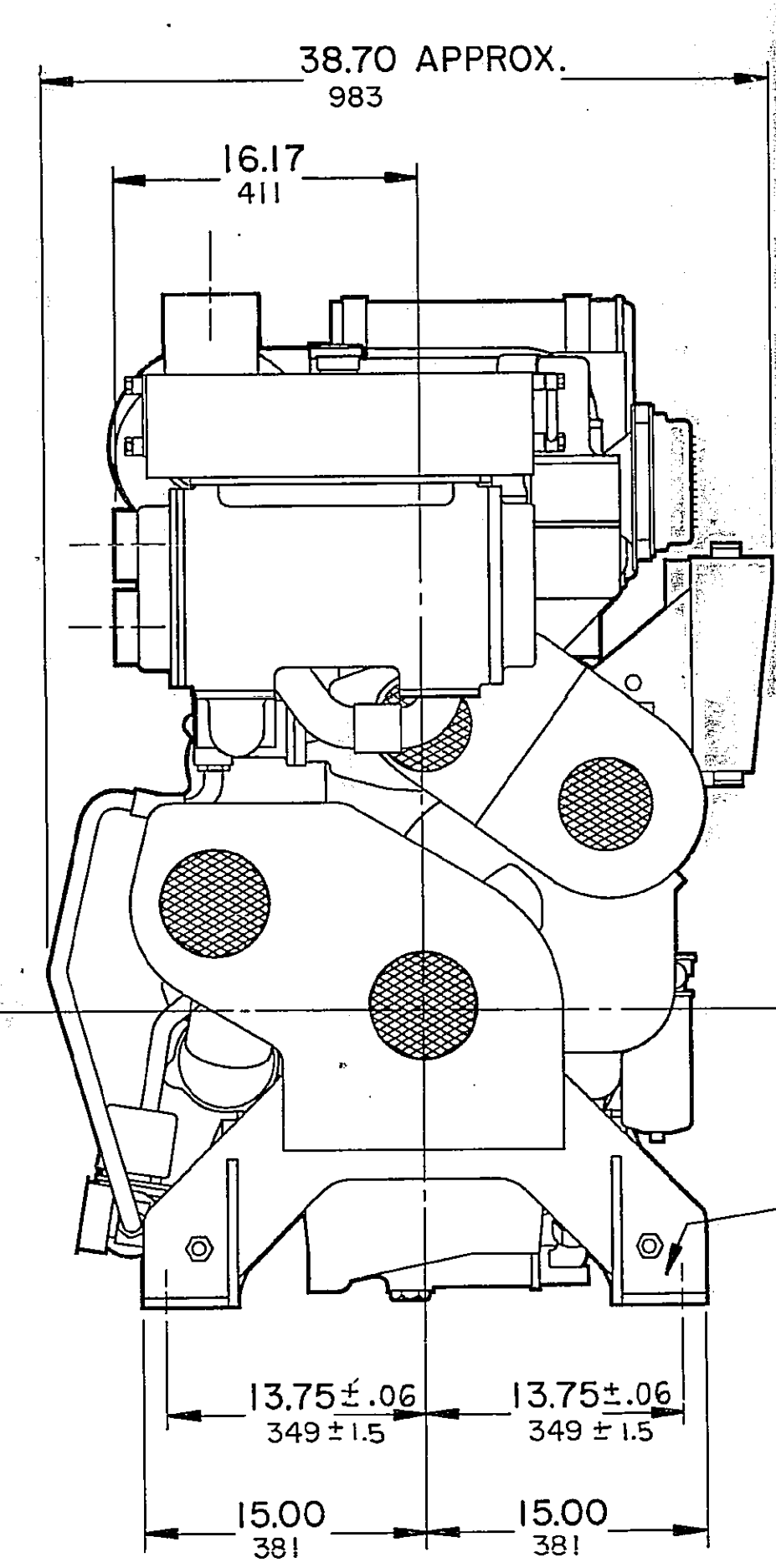
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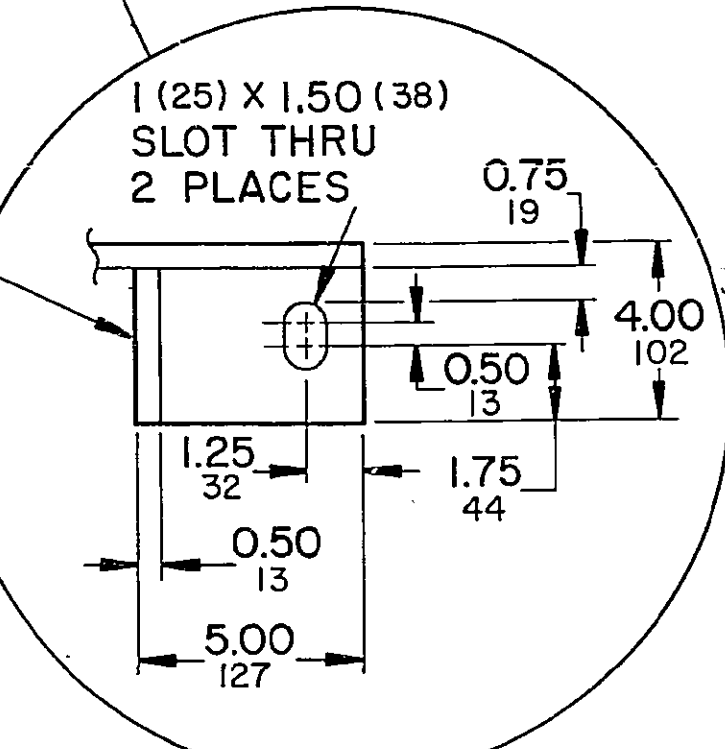
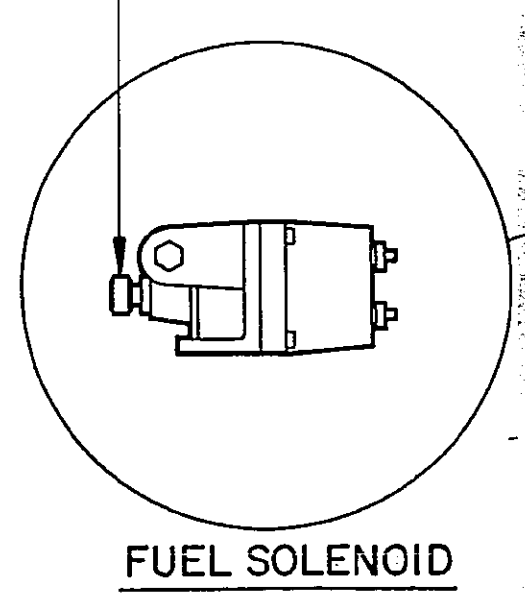
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LOW OIL PRESSURE SWITCH WIRING DIAGRAM

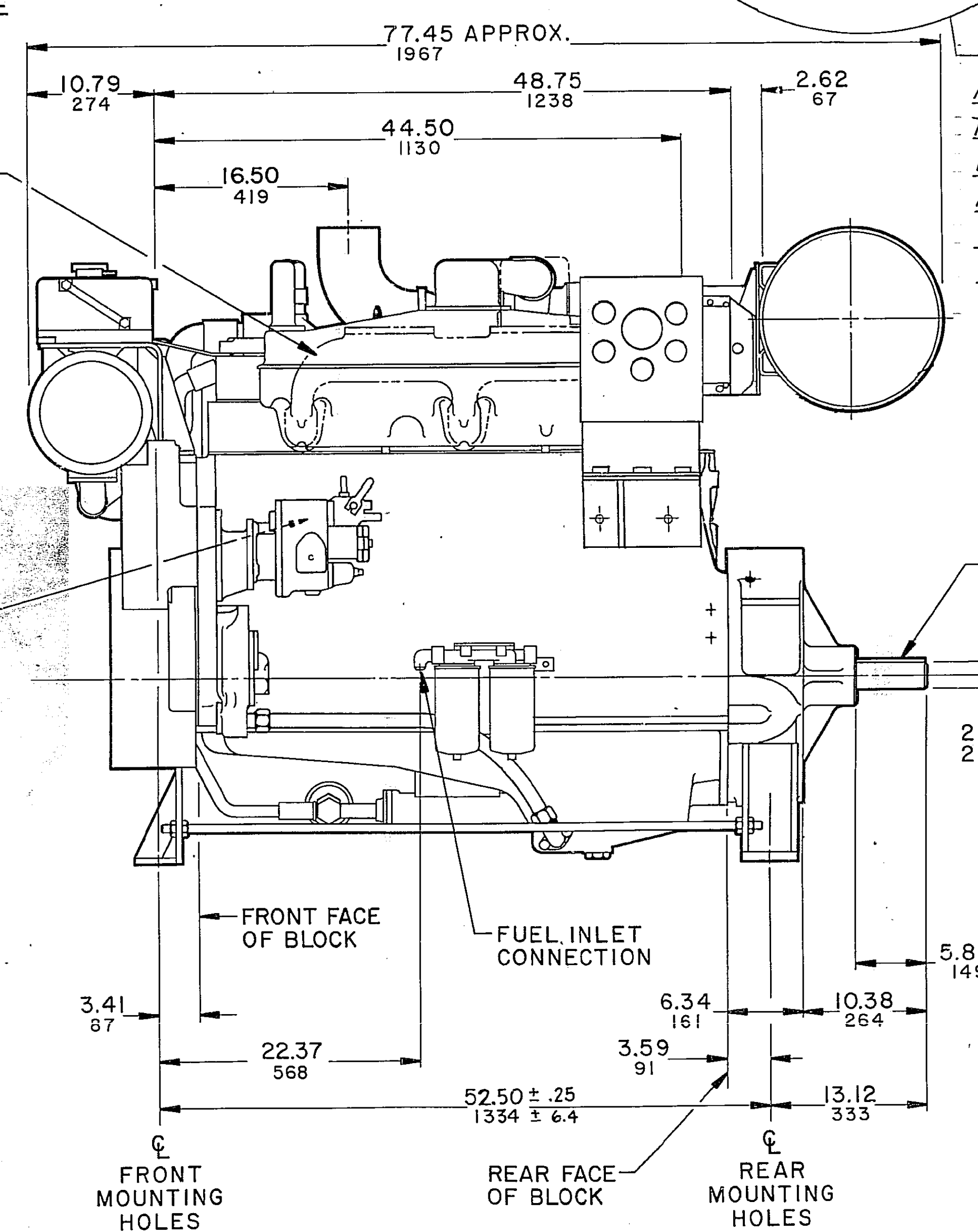


TURN KNOB CLOCKWISE TO OPEN FOR MANUAL STARTING



1/4 SCALE

NT MODEL INTAKE MANIFOLD



INSTRUMENT PANEL MOUNTING CONTAINS SINGLE TERMINAL STRIP MOUNTED ON BACK PLATE WITH SPEED SWITCH AND RECTIFIER. FIRE PUMP CONTROLLER TO BE WIRED TO LEFT ACCESS LOCATIONS ON TERMINAL STRIP.

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DATE		10/16/81	
CHD			
REV			
TRCD			
APPD			
APPD			
APPD			
APPD			
APPD			
DATE			
ITEM NAME		NT/NTA FIRE PUMP	
IDENTIFIER		E	
INSTALLATION DIAGRAM		3032671	
SCALE	1/8	DRAWING CONTROL	SHEET 1 OF 1

NOTE: ALL DIMENSIONS IN INCHES AND MILLIMETERS.

