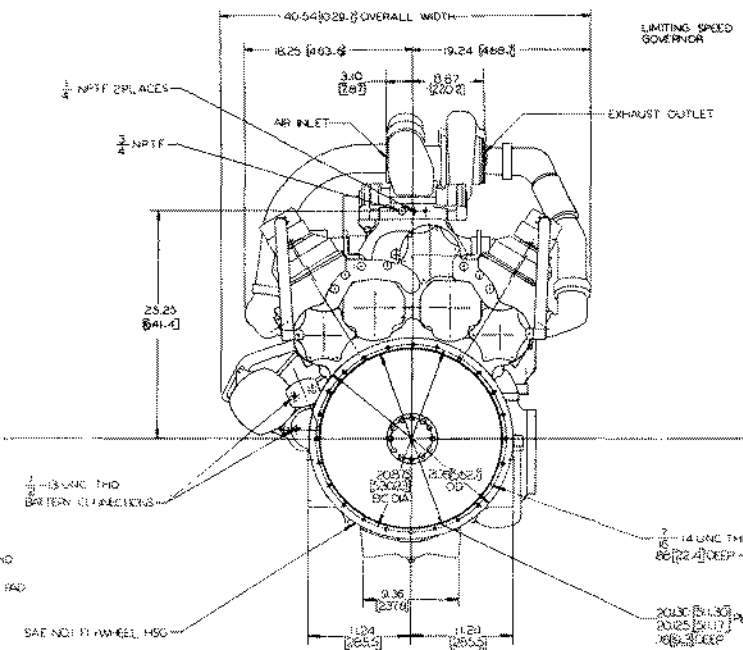
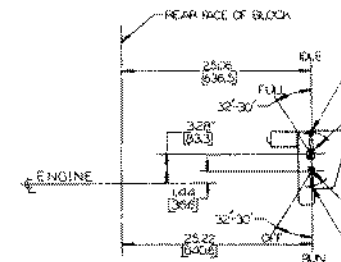
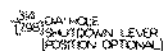


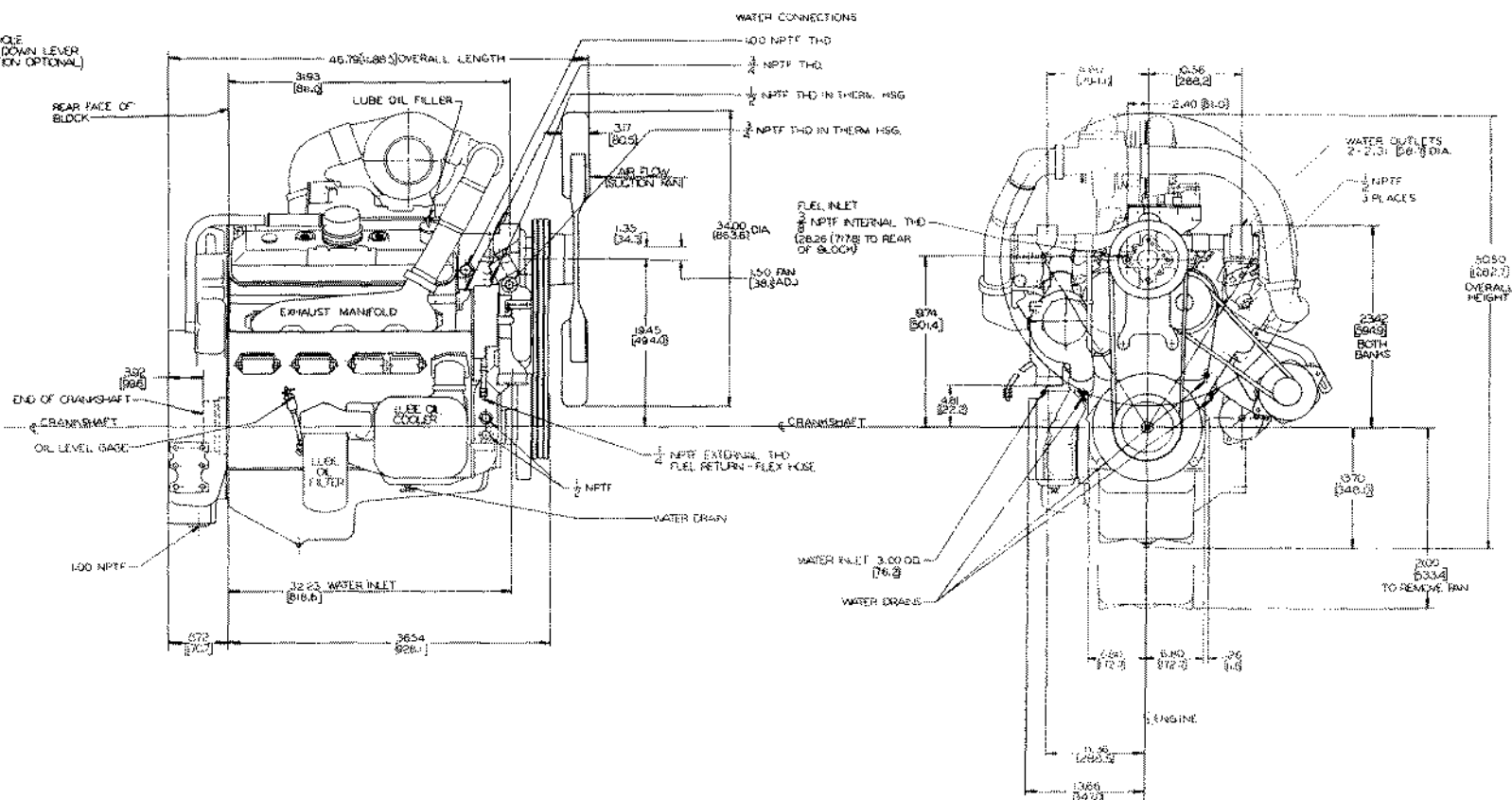


Printed stock tends to be dimensionally unstable due to stretching, shrinking, and folding. Therefore, dimensions which are not shown on this drawing should not be calculated by scaling.



Detroit Diesel Allison
Division of General Motors Corporation

13400 West Outer Drive Detroit, Michigan, 48228



DO NOT SCALE

PRELIMINARY

18925059

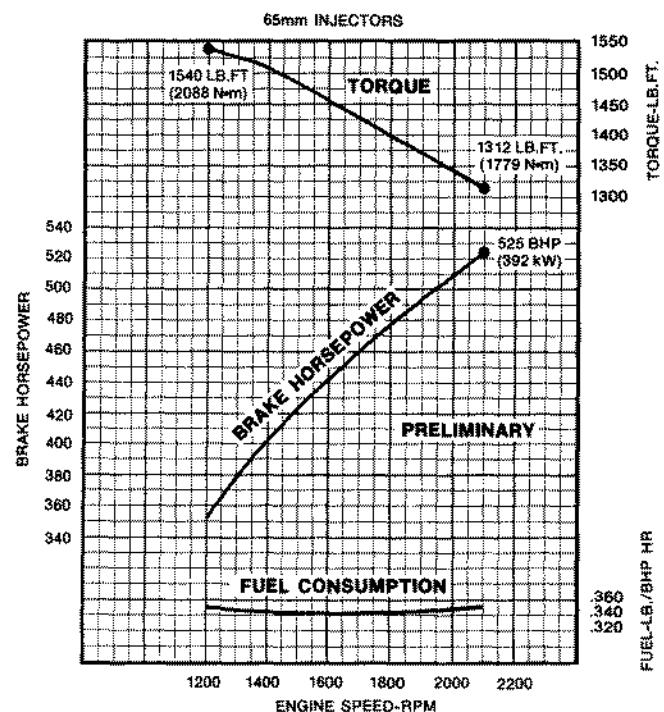
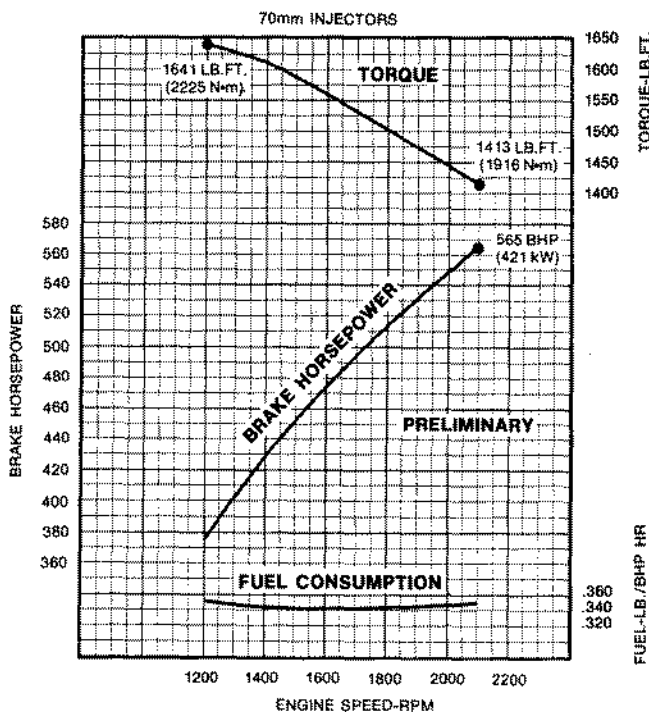
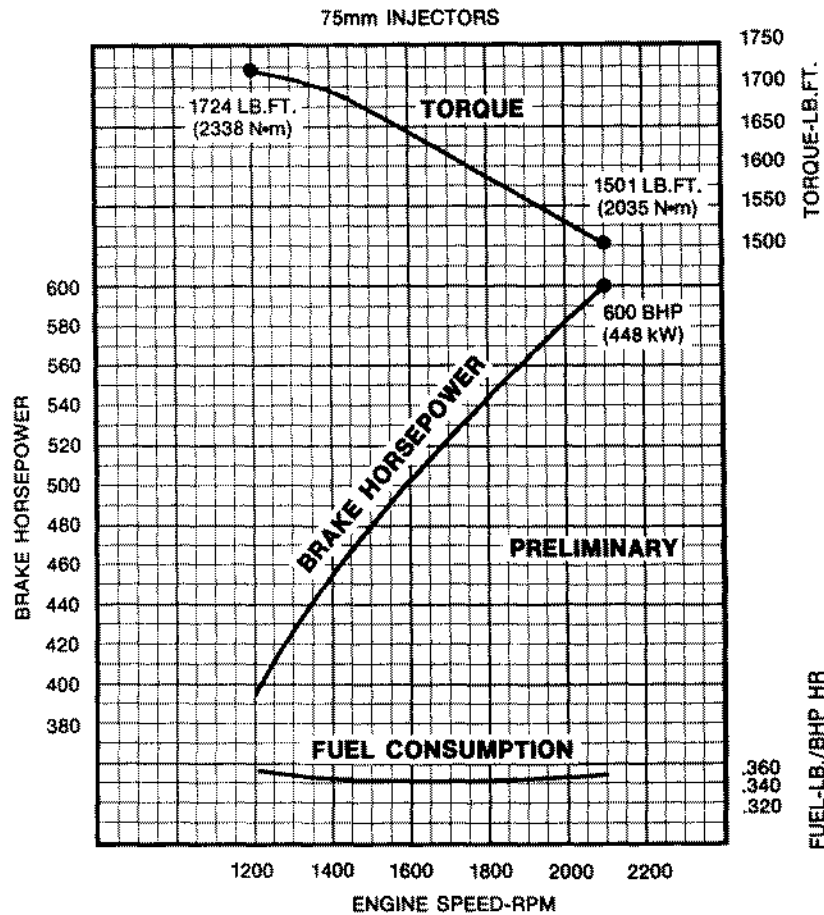
[illegible][illegible]

500-1000 HORSEPOWER

12V-71TA

MODEL 12V-71TA ENGINE PERFORMANCE

Forward
Plan 71



- Rated Power Output is at SAE J1349 Standard Conditions: 77°F (25°C)—air inlet temperature, and 29.31 in. Hg (99kPa)—Barometer (Dry)
- Specific gravity of fuel—0.853 at 60°F (15.6°C)
- Metric conversion factors: Power kW = BHP × 0.746
Torque N-m = lb. ft. × 1.356
Fuel kg/kW hr = lb./BHP hr × 0.608
- This curve is based on preliminary data and is the best estimate of production engine performance.
- Values are derived from currently available data and are subject to change without notice.



MECHANICAL DATA FOR 12V-71TA ENGINES

MAIN BEARINGS

Type Precision Half Shells — 2 Per Journal

Journal Diameter 4.50 in. (114.3 mm)
 Length 1.24 in. (31.5 mm)
 Projected Area/Bearing 5.58 in.² (3600.0 mm²)
 Material Steel Backed Copper Lead

CRANK PIN BEARINGS

Type Precision Half Shells

Number 1 pair/cyl.
 Journal Diameter 3 in. (76.2 mm)
 Length 1.2 in. (30.5 mm)
 Projected Area/Bearing 3.6 in.² (2322.6 mm²)
 Material Steel Backed Copper Lead

CAMSHAFT BEARING—END

Journal Diameter 1.497 in. (38.0 mm)
 Length 2.875 in. (73.0 mm)
 Materials Bronze Steel Backed

CAMSHAFT BEARING—INTERMEDIATE

Journal Diameter 1.498 in. (38.0 mm)
 Length 1.218 in. (30.9 mm)
 Materials Aluminum

PISTON PIN BUSHING

Projected Area/Piston Bushing
 Material Bronze with SAE 19 Overlay, Steel Backed

PISTON

Type and Material Crosshead—Malleable Iron
 Cooling Oil—Cocktail Shaker

PISTON RINGS—COMPRESSION

Type
 Top Ring Chrome Faced Keystone
 Remaining 2 Barrel Faced Chrome Flashed

PISTON RINGS—OIL

Type Double Scraper with Expander
 Number per Piston 2 Sets
 Location Bottom of Skirt

PISTON PIN

Type Crosshead—Polished & Hardened

CONNECTING ROD

Type Forged I Section
 Material Forged Steel

CRANKSHAFT

Material Forged Steel (SAE 1548)
 Type of Balance Dynamic
 Heat Treat Induction Hardened

CAMSHAFT

Material Forged Steel
 Location In Block, 1 Per Bank
 Drive Gear
 Type of Cam Ground

EXHAUST VALVE

Type Poppet
 Arrangement Overhead Valve
 Number/Cylinder 4
 Operating Mechanism Mechanical Rocker Arm
 Type of Lifter Solid
 Valve Spring
 Number/Valve 1 Per Valve
 Valve Seat Insert
 Material Steel Alloy

CYLINDER BLOCK

Type Dry Liner
 Material Cast Iron Alloy

LINERS

Type Dry Liner
 Material Cast Iron
 Ports
 Type Oval
 Number 18
 Height To Be Determined
 Width To Be Determined
 Angle To Be Determined

CYLINDER HEAD

Type 4 Valve
 Material Cast Iron

Preliminary—Specifications subject to change without notice.

OPERATING DATA FOR 12V-71TA ENGINES

GENERAL ENGINE DATA

Type	2 Stroke
Number of Cylinders	12
Bore	4.25 in. (108 mm)
Stroke	5 in. (127 mm)
Displacement	852 in. ³ (139.98 liters)
Number of Exhaust Valves Per Cylinder	4
Compression Ratio	To Be Determined
Firing Order	1L-5L-3R-4R-3L-4L-2R-6R-2L-6L-1R-5R
Turbocharger	To Be Determined
Blower Drive Ratio	To Be Determined
Engine Weight and Dimensions With Standard Accessories—	
Dry Weight (T Engines)	
(TA engines)	3550 lbs. (1610.3 kg)
Length	70 in. (1778.0 mm)
Width	46 in. (1168.4 mm)
Height	55 in. (1397.0 mm)
Engine Center of Gravity With Standard Accessories—	
C.G. Distance from R.F.O.B. (x axis)	16.2 in. (411.5 mm)
C.G. Distance Above Crankshaft (y axis)	9.6 in. (243.8 mm)
C.G. Distance Right of $\bar{C}$ as Viewed From Rear (z axis)	1.26 in. (32.0 mm)
Roll Axis (see installation drawing)	
Maximum Allowable Bending Moment at Rear Face of Block—	
Aluminum Hsg.	0
Cast Iron Hsg.	0

APPLICATION DATA

AIR INTAKE SYSTEM (Ref. Coolant Bulletin #38)

Maximum Allowable Intake Res. With Clean Air Cleaner Element	12 in. H ₂ O (3.0 kPa)
Maximum Allowable Intake Res. With Dirty Air Cleaner Element	20 in. H ₂ O (5.0 kPa)

EXHAUST SYSTEM

Maximum Allowable Exhaust Back Pressure Imposed by Piping & Muffler—

Full Load @ 2100 RPM	3 in. Hg. (10.1 kPa)
----------------------	----------------------

COOLING SYSTEM

Coolant Capacity (Engine Only)	13.75 gal. (52.0 liters)
Standard Thermostat—Type	Full Blocking
Maximum Allowable Top Tank Coolant Temperature	210°F (98.9°C)
Minimum Allowable Dearthation Rate	.1 CFM/cyl. (.003 m ³ /min)
Recommended Pressure Cap	7 psi (48.3 kPa)
Minimum Cooling Capability—Will Vary With Ambient Conditions	
Air to Boil @ 2100 RPM	117°F (47.2°C)
Air to Water @ 2100 RPM	95°F (35.8°C)
Coolant Pump Inlet Restriction—Maximum	3 in. Hg. (10.1 kPa)

LUBRICATION SYSTEM

Oil Pressure @ Idle (500 RPM) Minimum	7 psi (48.3 kPa)
@ Rated Speed (2100 RPM) Minimum	30 psi (206.9 kPa)
Oil Flow @ Rated Speed (2100 RPM) Nominal	60 GPM (227.1 liters/min)
Lube Oil Sump Temperature Normal Range	200–250°F (93.3–121.1°C)
Oil Capacity of Standard Oil Pan (Low-High)	26–34 qts. (24.6–32.2 liters)
Oil Capacity of Total System With Standard Pan	
Angularity of Standard Pan (P/N 5147855 lower, 5128042 upper)	
Front Down	20°
Front Up	33°
Crankcase Pressure @ 2100 RPM Maximum	3.0 in. H ₂ O (.75 kPa)

Preliminary-Specifications subject to change without notice.



APPLICATION DATA (continued)

FUEL SYSTEM (Reference Engineering Bulletin #21)

Model Injector	Brake Specific Fuel Consumption @ Rated HP And Speed lb/BHP-HR	Fuel Consumption @ Rated HP And Speed lb/hr (kg/hr)	GPH (l/hr)	Brake Specific Fuel Consumption @ Peak Torque lb/BHP-HR	Fuel Consumption @ Peak Torque lb/hr (kg/hr)	GPH (l/hr)	Fuel Flow To Pump @ Rated Speed lb/hr (kg/hr) (.8 Orifice)	GPH (l/hr)
12V-71TA 75 mm	.350	209.7 (95.1)	29.6 (112.1)	.353	139.2 (63.1)	19.6 (74.2)	640 (290)	90 (341)
12V-71TA 70 mm	.350	197.9 (89.8)	27.9 (105.7)	.353	132.5 (60.1)	18.7 (70.8)	640 (290)	90 (341)
12V-71TA 65 mm	.350	183 (83.0)	25.8 (97.7)	.353	124.2 (56.3)	17.5 (66.3)	640 (290)	90 (341)

Maximum Allowable Restriction to Pump—

With Clean Filter	6 in. Hg (22.1 kPa)
With Dirty Filter	12 in. Hg (44.1 kPa)
Fuel Pressure Inlet Manifold—Normal Range	50-70 psi (344.8-482.7 kPa)
Fuel Spill Flow—Minimum	.9 gpm (3.4 liters/min)
Fuel Line Size—Minimum Diameter or No.	Depends on length of hose
Fuel System Restricted Fitting Size	.080 in. (2.0 mm)
Filter Micron Size—Primary/Secondary	30/10

ELECTRICAL SYSTEM

Minimum Recommended Battery Capacity—

SAE Cold Cranking, Amps at 0°F to 31°F—24 Volt Starter	900 amps
--	----------

Maximum Allowable resistance of Starting Circuit—

With 24 Volt Starter	.0020 ohms
----------------------	------------

Preliminary-Specifications subject to change without notice.

PERFORMANCE DATA

All data is based on the engine operating with fuel pump, water pump, and lubricating oil pumps; not included are alternator, fan, air compressor, air cleaner, or optional equipment. Engine performance data is based on operating under SAE Standard J1349 conditions of 29.31 in Hg (dry) barometer and 77°F (25°C) intake air temperature, using No. 2 diesel fuel at 60°F (15.6°C) fuel temperature (.853 @ 60°F specific gravity), minimum air intake and exhaust restriction (6 in H₂O and 0.2 in Hg respectively).

Engine	Injector Size	Output BHP at Rated Speed 2100 RPM	Peak Torque lb ft (N·m) @ 1200 RPM	Air Flow CFM (m³/min)	Exhaust Gas CFM Temp °F (m³/min) (°C)	Water Flow GPM (liter/min)	Heat Rej. BTU/min (kW)	BMEP PSI (kPa)	Piston Speed FPM
12V-71TA	75 mm	600	1724 (2337)	1827 (51.7)	3542 587°F (100.3) (308°C)	247 (935)	18,600 (327)	106.5 (734.3)	1750
12V-71TA	70 mm	565	1641 (2225)	1784 (50.5)	3538 611°F (100.2) (321.7°C)	247 (935)	17,515 (308)	100.3 (691.5)	1750
12V-71TA	65 mm	525	1540 (2088)	1731 (49.0)	3238 550°F (91.7) (287.8°C)	247 (935)	16,275 (286)	92.9 (640.5)	1750

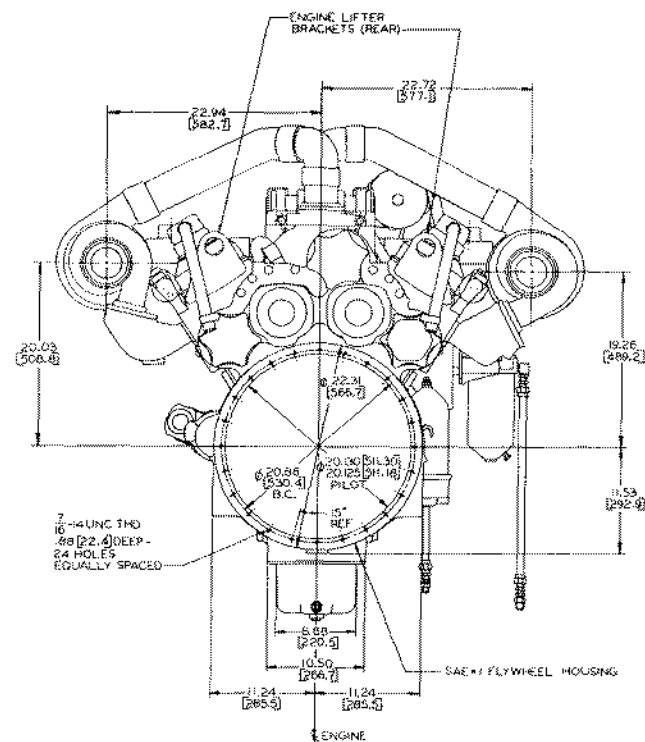
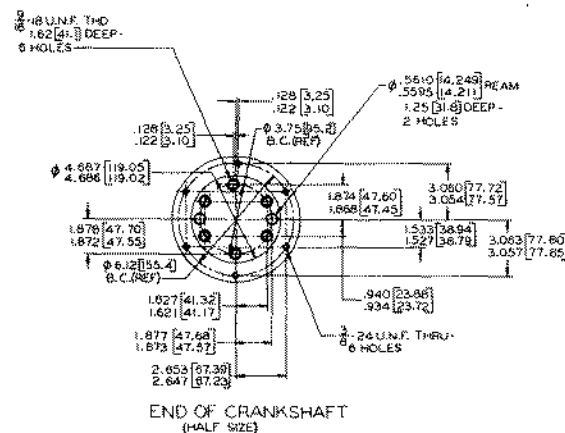
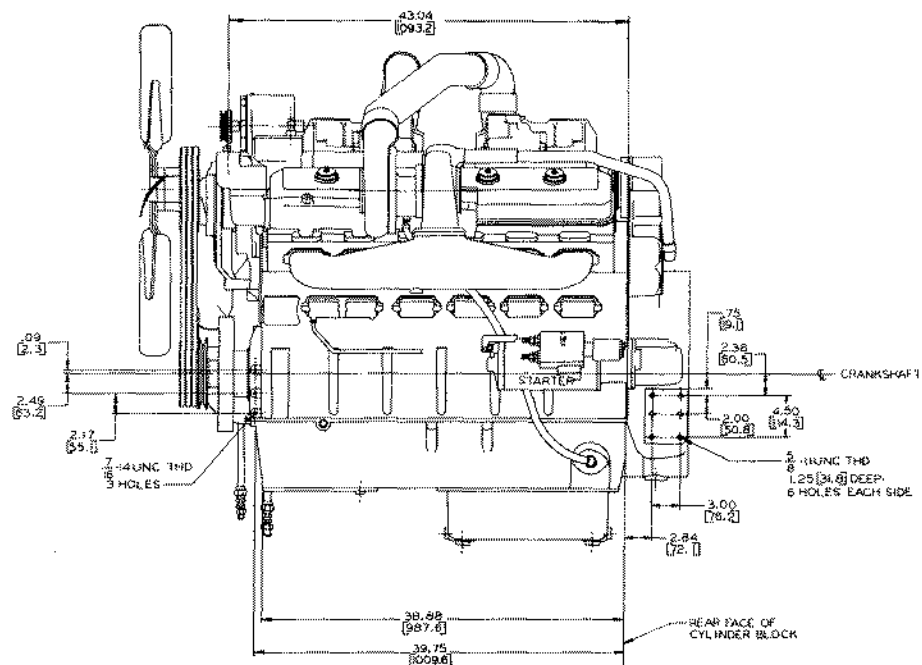
Idle Speed (minimum)	500 RPM
Maximum No-Load Governed Speed	Approx. 200 RPM above Full Load Speed
Normal Operating Coolant Temp.	160-185°F (71.1-85.0°C)
Thrust Bearing Load Limit—Max. Int.	600 lbs. continuous (2669 N) 1800 lbs. intermittent (8006 N)

Preliminary-Specifications subject to change without notice.

[illegible]

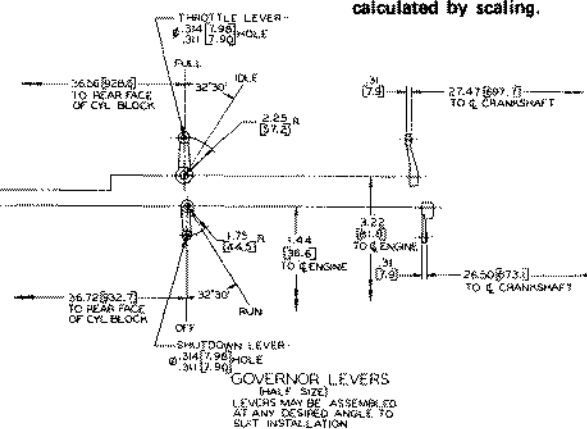
Technical drawing of a vertical air inlet (full size). The drawing shows a vertical pipe with a flange at the top and a 15° angled section at the bottom. Dimensions are given in inches (I) and millimeters (M).

- Top flange: 100 (254) EFFECTIVE LENGTH FOR HHOE.
- Top flange thickness: 0.3 (8) H.
- Top flange outer diameter: 0.6 (16) R.
- Vertical distance from top flange to the 15° section: 5.08 (129) I (27.5) M.
- Vertical distance from the 15° section to the bottom flange: 4.42 (112) I (29.3) M.
- Bottom flange thickness: 0.6 (16) S.
- Bottom flange outer diameter: 1.8 (46) I (4.8) M.
- Angle of the bottom section: 15°.
- Label: AIR INLET (FULL SIZE).



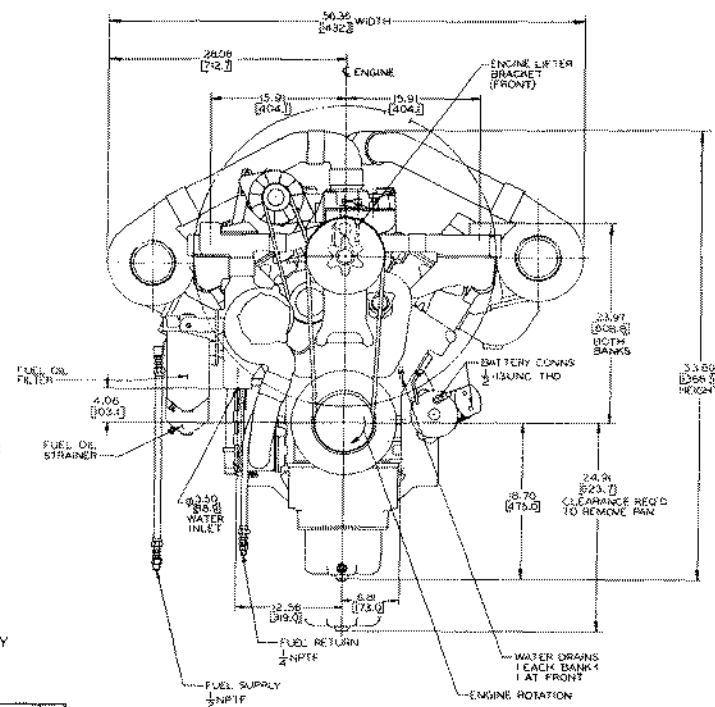
DX-107822

PLATE 2	DX-07822	DATE
---------	----------	------



Technical drawing of a 1000 Series Diesel Engine, showing dimensions and components. The drawing includes the following labels and dimensions:

- Dimensions:**
 - 56.91 [496.3] LENGTH
 - 43.06 [1093.7]
 - 3.24 [82.3]
 - 20.00 [508.0]
 - 2.88 [71.4]
 - 15.00 [381.0] TO 20.00 [508.0] (CRANKSHAFT PULLER GROOVE FULL SIZE)
 - 7.9 [200.3]
 - 7.50 [190.5]
 - 6.72 [170.7]
 - 64.30 [1628.2]
 - 45.56 [1157.2]
 - 2.28 [57.9]
- Components and Labels:**
 - GENERATOR
 - LUBE OIL FILLER
 - OIL LEVEL GAUGE
 - END OF CRANKSHAFT (SEE HALF SIZE)
 - FRONT FACE OF FLYWHEEL HSG.
 - LUBE OIL FILTERS
 - OIL COOLER HOUSING
 - WATER DRAIN
 - 2 NPT x 4 PLACES OIL DRAINS
 - CRANKSHAFT PULLER GROOVE (FULL SIZE)



CRANKSHAFT PULLEY
GROOVE (Full size)

DX-107822

(DRAWING DATE 1-14-83) MODEL 71237600 2SA-479

FIG. 1

REVENUE RECEIPT

NO. 1

DATE

RECEIVED

RECEIPT

INSTALLATION DRAWING

NO. 1

FIG. 1

DX-107822 R

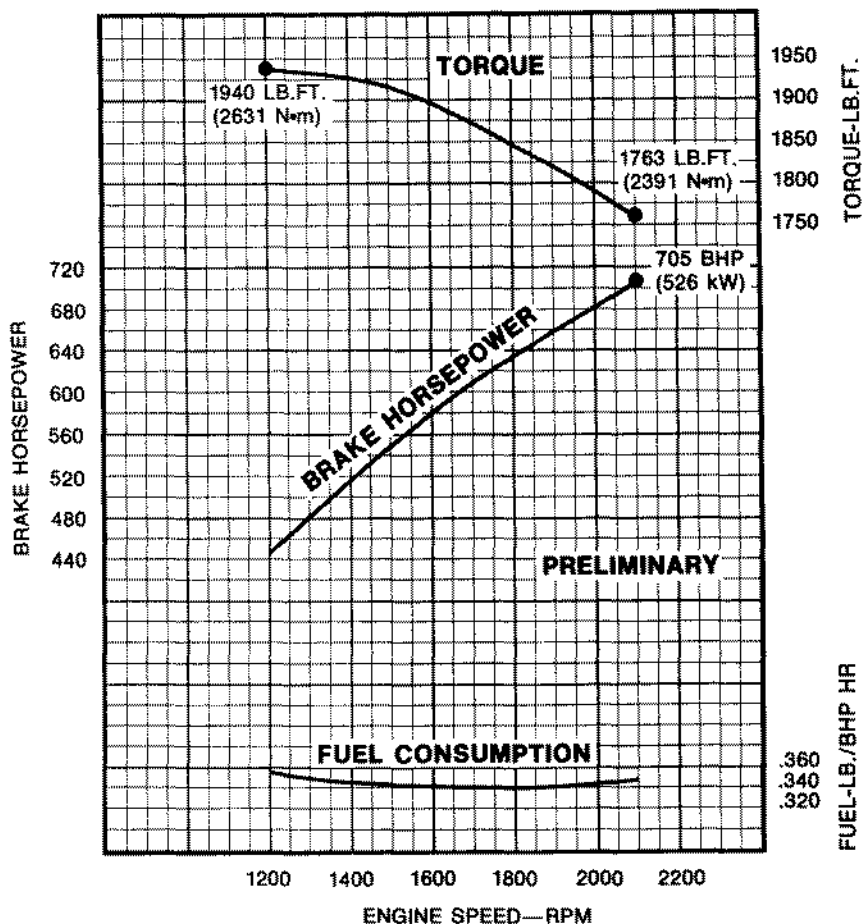
DO NOT SCALE

12V-92TA

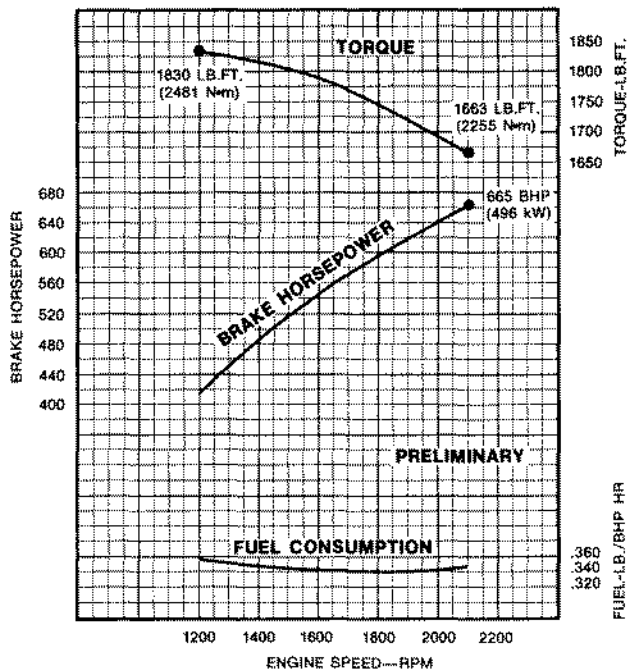
MODEL 12V-92TA ENGINE PERFORMANCE

Forward
Plan **92**

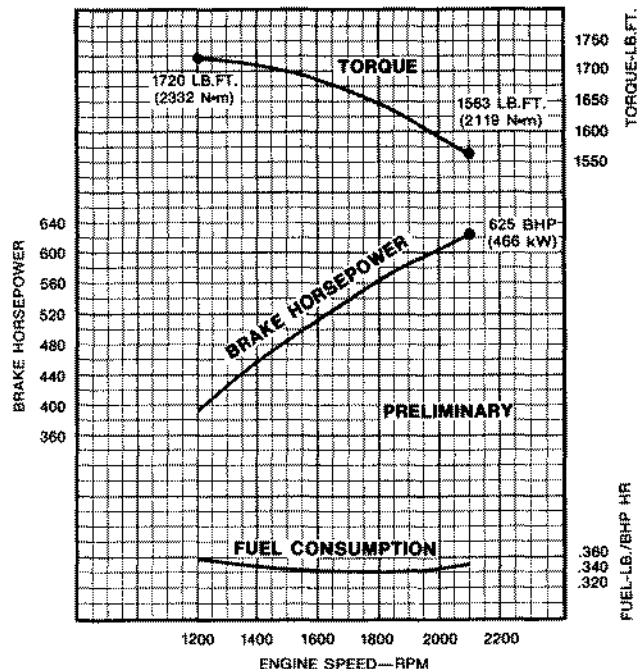
90mm INJECTORS



85mm INJECTORS



80mm INJECTORS



- Rated Power Output is at SAE J1349 Standard Conditions: 77°F (25°C)—air inlet temperature, and 29.31 in. Hg (99kPa)—Barometer (Dry)
- Specific gravity of fuel—.853 at 60°F (15.6°C)
- Metric conversion factors: Power kW = BHP × 0.746
Torque N·m = lb. ft. × 1.356
Fuel kg/kW hr = lb./BHP hr × 0.608
- This curve is based on preliminary data and is the best estimate of production engine performance.
- Values are derived from currently available data and are subject to change without notice.



MECHANICAL DATA FOR 12V-92TA ENGINES

MAIN BEARINGS

Type Precision Half Shells — 2 Per Journal
 Journal Diameter 4.50 in. (114.3 mm)
 Length 1.24 in. (31.5 mm)
 Projected Area/Bearing 5.58 in.² (3600.0 mm²)
 Material Steel Backed Copper Lead

CRANK PIN BEARINGS

Type Precision Half Shells — 2 Per Journal
 Number 1 Pair Per Cylinder
 Journal Diameter 3.0 in. (76.2 mm)
 Length 1.2 in. (30.5 mm)
 Projected Area/Bearing 3.60 in.² (2322.6 mm²)
 Material Steel Backed Copper Lead

CAMSHAFT BEARING—END

Journal 1.4962 in. (38.0 mm)
 Length 2.875 in. (73.0 mm)
 Materials Bronze/Steel Backed

CAMSHAFT BEARING—INTERMEDIATE

Journal Diameter 1.76 in. (44.7 mm)
 Length 1.23 in. (31.2 mm)
 Materials Aluminum

PISTON PIN BUSHING

Projected Area/Piston Bushing
 Material Bronze with SAE 19 Overlay,
 Steel Back

PISTON

Type and Material Crosshead Malleable Iron
 Cooling Oil Cocktail Shaker

PISTON RINGS—COMPRESSION

Type
 Top Ring Chrome Faced Keystone
 Remaining 2 Barrel Faced Chrome Flashed

PISTON RINGS—OIL

Type Double Scraper with Expander
 Number per Piston 2 Sets
 Location Bottom of Skirt

PISTON PIN

Type Crosshead-Polished and Hardened

CONNECTING ROD

Type Forged I Section
 Material Forged Steel

CRANKSHAFT

Material Forged Steel (SAE 1548)
 Heat Treat Induction Hardened
 Type of Balance Dynamic

CAMSHAFT

Material Forged Steel
 Location In Block, 1 Per Bank
 Drive Gear
 Type of Cam Honed

EXHAUST VALVE

Type Poppet
 Arrangement Overhead Valve
 Number/Cylinder 4
 Operating Mechanism Mechanical Rocker Arm
 Type of Lifter Solid
 Valve Spring Number/Valve 1 Per Valve
 Valve Seat Insert Material GM 3544M

CYLINDER BLOCK

Type Wet Liner
 Material Cast Iron Alloy

LINERS

Type Wet Liner
 Material Cast Iron
 Ports
 Type Oval
 Number 18
 Height To Be Determined
 Width To Be Determined
 Angle To Be Determined

CYLINDER HEAD

Type 4 Valve
 Material Cast Iron

Preliminary-Specifications subject to change without notice.

OPERATING DATA FOR 12V-92TA ENGINES

GENERAL ENGINE DATA

Type	Two Stroke Diesel
Number of Cylinders	12
Bore	4.84 in. (122.9 mm)
Stroke	5.0 in. (127.0 mm)
Displacement	1104 cu. in. (18.1 liters)
Number of Exhaust Valves Per Cylinder	4
Compression Ratio	17:1
Firing Order	RH: 1L, 6L, 3R, 5R, 3L, 5L, 2R, 4R, 2L, 4L, 1L, 6R
Turbocharger	To Be Determined
Blower Drive Ratio	To Be Determined
Engine Weight and Dimensions With Standard Accessories—	
Dry Weight (T engines)	
(TA engines)	4290 lbs. (1945.9 kg)
Length	68 in. (1727.2 mm)
Width	47 in. (1193.8 mm)
Height	54 in. (1371.6 mm)
Engine Center of Gravity With Standard Accessories—	
C.G. Distance from R.F.O.B. (x axis)	20.4 in. (518.2 mm)
C.G. Distance Above Crankshaft (y axis)	7.9 in. (200.7 mm)
C.G. Distance Right of $\bar{Q}$ as Viewed From Rear (z axis)	1.2 in. (30.5 mm)
Roll Axis (see installation drawing)	
Maximum Bending Moment at Rear Face of Block—	
Aluminum Hsg.	0
Cast Iron Hsg.	0

APPLICATION DATA

AIR INTAKE SYSTEM

Maximum Allowable Intake Res. With Clean Air Cleaner Element	12 in. H ₂ O (3.0 kPa)
Maximum Allowable Intake Res. With Dirty Air Cleaner Element	20 in. H ₂ O (5.0 kPa)

EXHAUST SYSTEM

Maximum Allowable Exhaust Back Pressure Imposed by Piping & Muffler—	
Full Load @ 2100 RPM	3 in. Hg (10.1 kPa)

COOLING SYSTEM

Coolant Capacity (engine only)	
Standard Thermostat—Type	Full Blocking
Maximum Allowable Top Tank Coolant Temperature	210°F (98.9°C)
Minimum Allowable Dearation Rate	1 CFM/CYL. (.003 m ³ /min)
Recommended Pressure Cap	7 PSI (48.3 kPa)
Minimum Cooling Capability—	
Air to Boil @ 2100 RPM	117°F (47.2°C)
Air to Water @ 2100 RPM	95°F (35°C)
Coolant Pump Inlet Restriction— Maximum	3 in. Hg (10.1 kPa)

LUBRICATION SYSTEM

Oil Pressure @ Idle (500 RPM) Minimum	7 PSI (48.3 kPa)
@ Rated Speed (2100 RPM) Minimum	30 PSI (20.6 kPa)
Oil Flow @ Rated Speed (2100 RPM) Nominal Range	NA
Lube Oil Sump Temperature Normal Range	200-250°F (93.3-121.1°C)
Oil Capacity of Standard Oil Pan (low-high)	34 Low-42 High (32.2 liters-39.7 liters)
Oil Capacity of Total System With Standard Pan	38 Low-46 High (36.0 liters-43.5 liters)
Angularity of Standard Pan (P/N 5106631)	
Front Down	20°
Front Up	20°
Crankcase Pressure @ 2100 RPM Maximum	3 in. H ₂ O (.75 kPa)

Preliminary-Specifications subject to change without notice.



APPLICATION DATA (Continued)

FUEL SYSTEM (REF. ENG. BULLETIN #21)

Model Injector	Brake Specific Fuel Consumption @ Rated HP And Speed lb/BHP-HR	Fuel Consumption @ Rated HP And Speed lb/hr (kg/hr)	GPH (l/hr)	Brake Specific Fuel Consumption @ Peak Torque lb/hr (kg/hr)	Fuel Consumption @ Peak Torque lb/hr (kg/hr)	GPH (l/hr)	Fuel Flow To Pump @ Rated Speed lb/hr (kg/hr)	GPH (l/hr)
12V-92TA 90 mm	.347	243 (110)	34.2 (129.5)	.358 (.1624)	156 (70.7)	21.9 (82.9)	840 (381)	120 (455)
12V-92TA 85 mm	.348	230 (104)	32.4 (122.7)	.359 (.1628)	148 (67.1)	20.8 (78.8)	840 (381)	120 (455)
12V-92TA 80 mm	.349	217 (98.4)	30.6 (115.9)	.360 (.1633)	140 (63.5)	19.6 (74.2)	840 (381)	120 (455)

Maximum Allowable Restriction to Pump—

With Clean Filter	6 in. Hg (22.1 kPa)
With Dirty Filter	12 in. Hg (44.1 kPa)
Fuel Pressure Inlet Manifold—Normal Range	50-70 PSI (344.8-482.7 kPa)
Fuel Spill Flow—Minimum	1.4 GPM (5.3 liters/min)
Fuel System Restricted Fitting Size	.070 in. (1.8 mm)
Filter Micron Size—Primary/Secondary	30/10

ELECTRICAL SYSTEM

SAE Cold Crank, Amps @ 0°F — 12 Volt Starter	No 12V Starter Avail.
24 Volt Starter	1800 CCA
Maximum Allowable resistance of Starting Circuit—	
With 12 Volt Starter	NA
With 24 Volt Starter	.002 ohms

Preliminary-Specifications subject to change without notice.

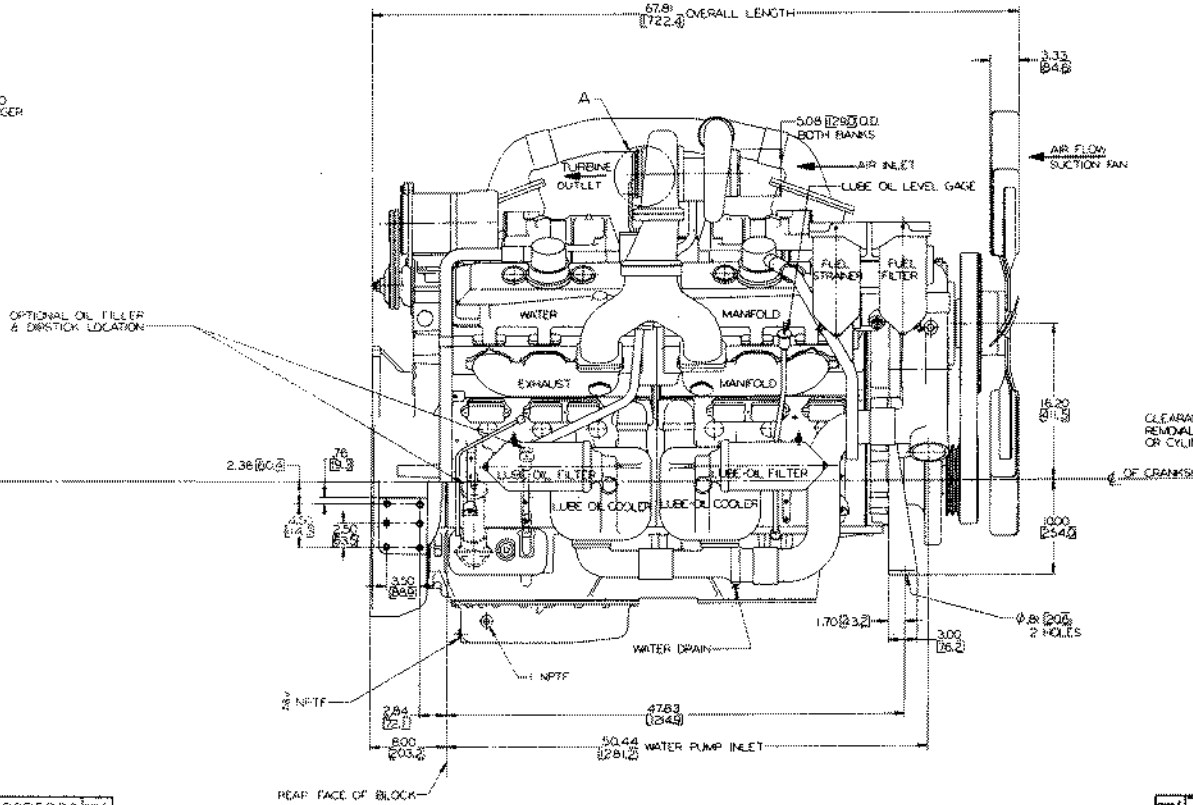
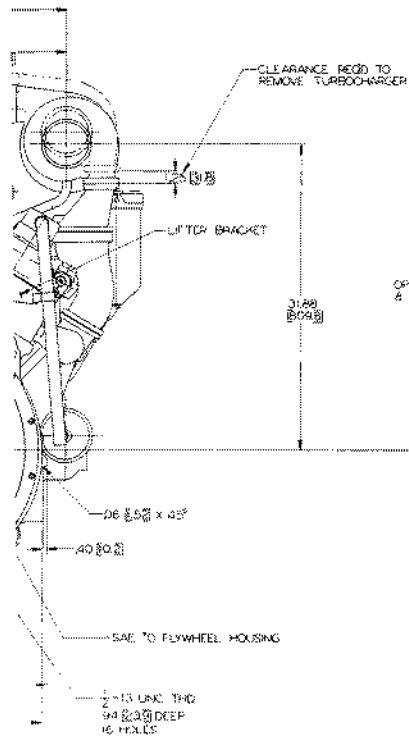
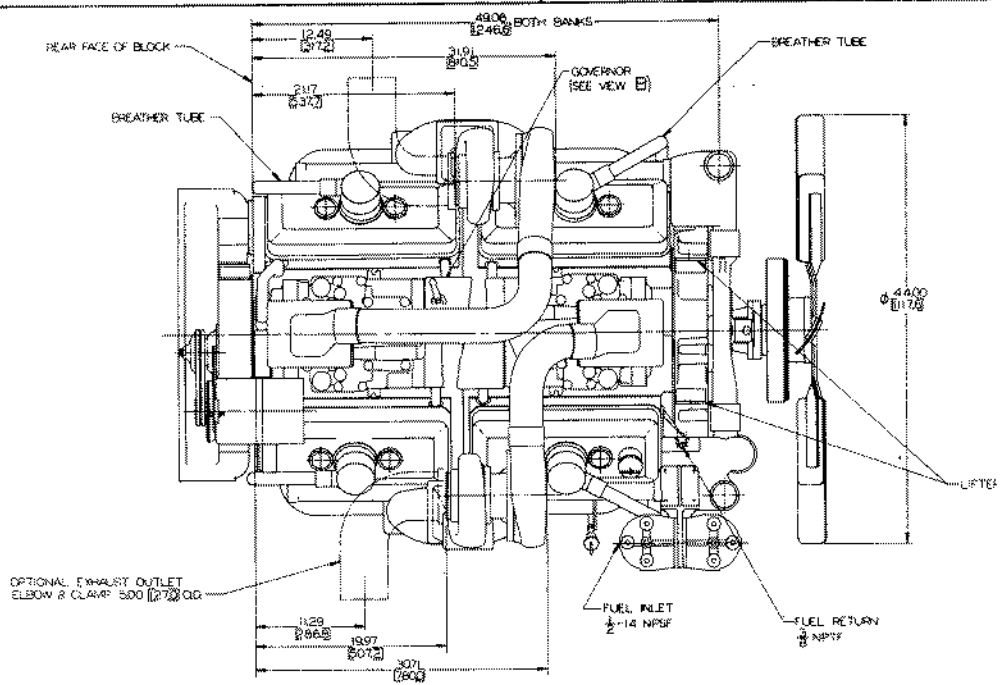
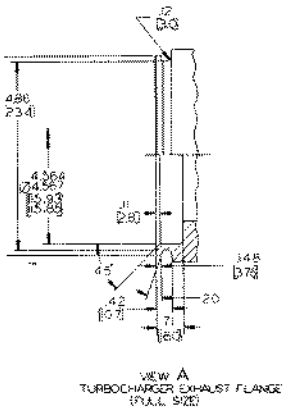
PERFORMANCE DATA

All data is based on the engine operating with fuel pump, water pump, and lubricating oil pump; not included are alternator, fan, air compressor, air cleaner, or optional equipment. Engine performance data is based on operating under SAE Standard J1349 conditions of 29.31 in Hg (dry) barometer and 77°F (25°C) intake air temperature, using No. 2 diesel fuel at 60°F (15.6°C) fuel temperature (.853 @ 60°F specific gravity), minimum air intake and exhaust restriction (6 in H₂O and 0.2 in Hg respectively).

Engine	Injector Size	Output BHP (kW)	Rated Speed @ RPM	Peak Torque lb ft (N·m) @ RPM	Air Flow CFM (m³/min)	Exhaust Gas CFM Temp °F (m³/min) (°C)	Water Flow GPM (liter/min)	Heat Rej. BTU/min (kW)	BMEP PSI (kPa)	Piston Speed FPM
12V-92TA	90 mm	705 (526)	2100	1940 (2631) @ 1200	1915 (54.2)	4172 710°F (118.2) (377°C)	270 (1022)	19560 (344)	120 (827)	1750
12V-92TA	85 mm	665 (495)	2100	1830 (2481) @ 1200	1840 (52.1)	3974 700°F (112.5) (371°C)	270 (1022)	18400 (323)	114 (786)	1750
12V-92TA	80 mm	625 (466)	2100	1720 (2332) @ 1200	1764 (50.0)	3779 690°F (107.0) (365°C)	270 (1022)	17480 (307)	107 (738)	1750

Idle Speed (minimum)	500 RPM
Maximum No-Load Governed Speed	Approx. 200 RPM Above Full Load Speed
Normal Operating Coolant Temp.	160-185°F (71.1-85°C)
Thrust Bearing Load Limit — Max. Int.	1800 lbs (8006 N)
Max. Cont.	600 lbs (2669 N)

Preliminary-Specifications subject to change without notice.



5925060

SPECIFICATIONS SUBJECT TO CHA



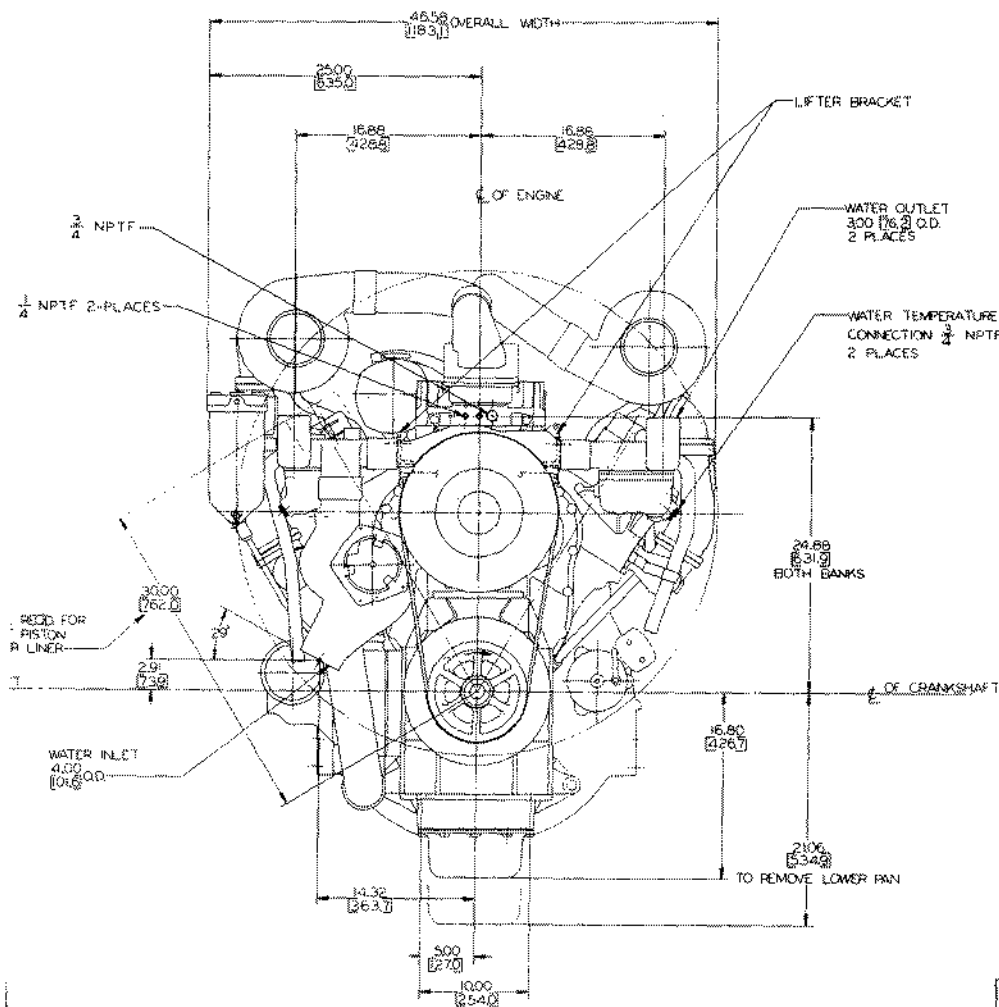
Detroit Diesel Allison

Division of General Motors Corporation

13400 West Outer Drive Detroit, Michigan, 48228

REV	DATE	BY	CHKD	DESCRIPTION
1				ISSUED FOR PRODUCTION

ACKET



DO NOT SCALE

PRELIMINARY

SHEET 1 OF 1 SCALE

WATER FILTER ASM SHIPPED LOOSE

ITEMS SHOWN BY PHANTOM LINES ARE OPTIONAL EQUIPMENT

DRIVING ENGINES IN L. LINE EXPRESSED IN MILLIMETERS	THIS DRAWING IS IN TRUE ANGLE PROJECTION	INCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	MILLIMETERS 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
---	--	--	---

8925060	
28282	
DO NOT SCALE THIS	
DRAWING IS IN TRUE ANGLE PROJECTION	
WATER FILTER ASM SHIPPED LOOSE	
ITEMS SHOWN BY PHANTOM LINES ARE OPTIONAL EQUIPMENT	
DRAWING ENGINES IN L. LINE EXPRESSED IN MILLIMETERS	
THIS DRAWING IS IN TRUE ANGLE PROJECTION	
INCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	
MILLIMETERS 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200	
INSTALLATION DRAWING	
8925060 R	

8925060

GE WITHOUT NOTICE.

LITHO IN U.S.A.

SCALE 3/4" TO 1"

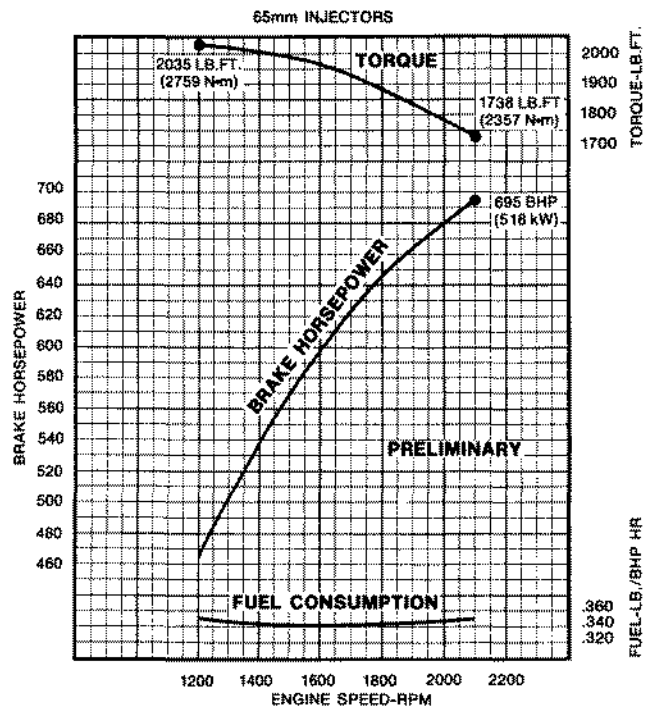
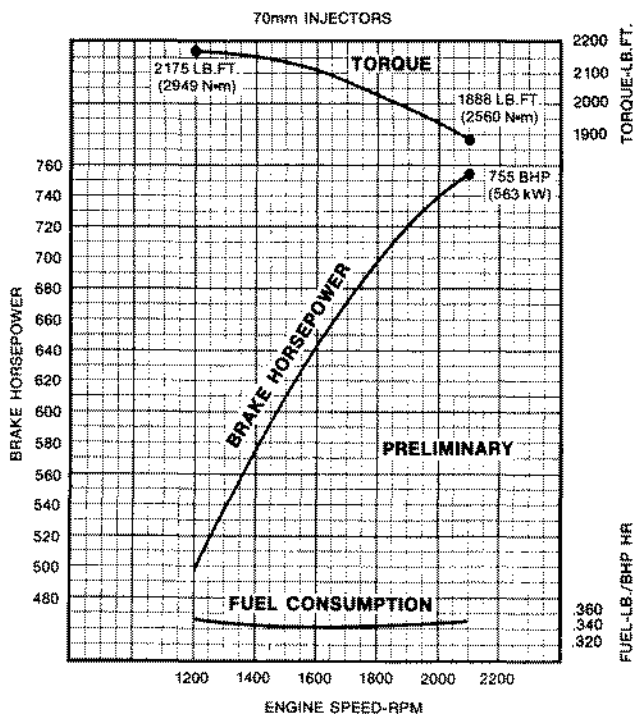
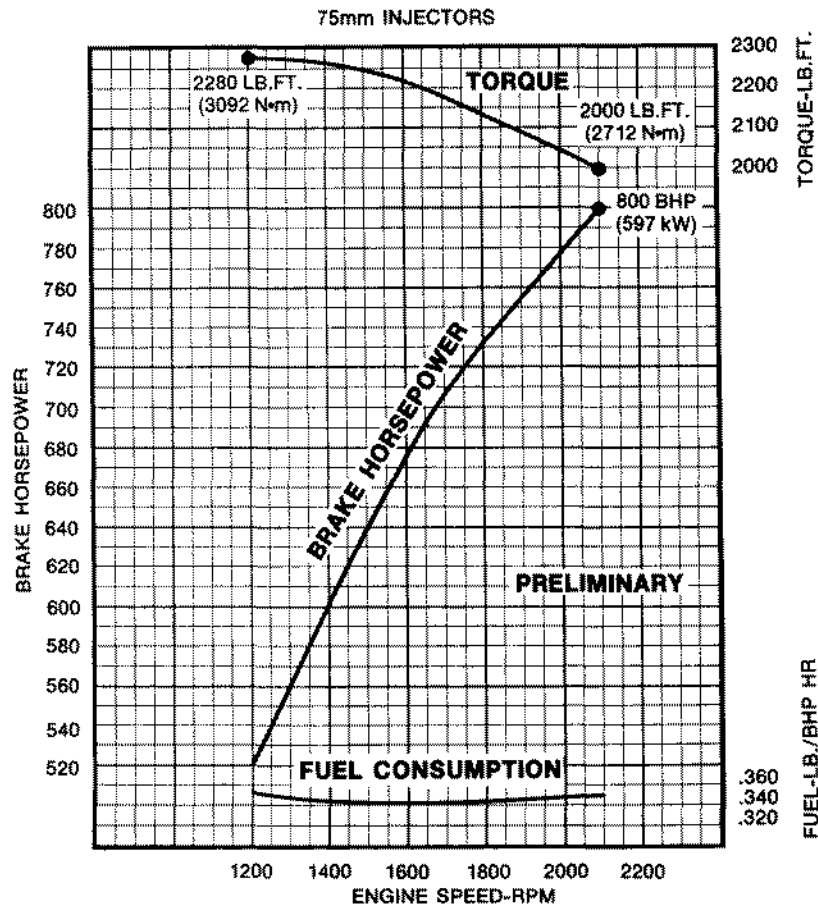
(DRAWING DATE 12/28/82 MODEL 81237400

2SA-486

16V-71TA

MODEL 16V-71TA ENGINE PERFORMANCE

Forward
Plan **71**



- Rated Power Output is at SAE J1349 Standard Conditions: 77°F (25°C)—air inlet temperature, and 29.31 in. Hg (99kPa)—Barometer (Dry)
- Specific gravity of fuel—853 at 60°F (15.6°C)
- Metric conversion factors: Power kW = BHP × 0.746
Torque N-m = lb. ft. × 1.356
Fuel kg/kW hr = lb./BHP hr × 0.608
- This curve is based on preliminary data and is the best estimate of production engine performance.
- Values are derived from currently available data and are subject to change without notice.



MECHANICAL DATA FOR 16V-71TA ENGINES

MAIN BEARINGS

Type Precision Half Shells — 2 Per Journal

Journal Diameter 4.50 in. (114.3 mm)
 Length 1.24 in. (31.5 mm)
 Projected Area/Bearing 5.58 in.² (3600.0 mm²)
 Material Steel Backed Copper Lead

CRANK PIN BEARINGS

Type Precision Half Shells

Number 1 pair/cyl.
 Journal Diameter 3 in. (76.2 mm)
 Length 1.2 in. (30.5 mm)
 Projected Area/Bearing 3.6 in.² (2322.6 mm²)
 Material Steel Backed Copper Lead

CAMSHAFT BEARING—END

Journal Diameter 1.497 in. (38.0 mm)
 Length 2.875 in. (73.0 mm)
 Materials Bronze Steel Backed

CAMSHAFT BEARING—INTERMEDIATE

Journal Diameter 1.498 in. (38.0 mm)
 Length 1.218 in. (30.9 mm)
 Materials Aluminum

PISTON PIN BUSHING

Projected Area/Piston Bushing
 Material Bronze with SAE 19 Overlay, Steel Backed

PISTON

Type and Material Crosshead—Malleable Iron
 Cooling Oil—Cocktail Shaker

PISTON RINGS—COMPRESSION

Type
 Top Ring Chrome Faced Keystone
 Remaining 2 Barrel Faced Chrome Flashed

PISTON RINGS—OIL

Type Double Scraper with Expander
 Number per Piston 2 Sets
 Location Bottom of Skirt

PISTON PIN

Type Crosshead—Polished & Hardened

CONNECTING ROD

Type Forged I Section
 Material Forged Steel

CRANKSHAFT

Material Forged Steel (SAE 1548)
 Type of Balance Dynamic
 Heat Treat Induction Hardened

CAMSHAFT

Material Forged Steel
 Location In Block, 1 Per Bank
 Drive Gear
 Type of Cam Ground

EXHAUST VALVE

Type Poppet
 Arrangement Overhead Valve
 Number/Cylinder 4
 Operating Mechanism Mechanical Rocker Arm
 Type of Lifter Solid
 Valve Spring
 Number/Valve 1 Per Valve
 Valve Seat Insert
 Material Steel Alloy

CYLINDER BLOCK

Type Dry Liner
 Material Cast Iron Alloy

LINERS

Type Dry Liner
 Material Cast Iron
 Ports
 Type Oval
 Number 18
 Height To Be Determined
 Width To Be Determined
 Angle To Be Determined

CYLINDER HEAD

Type 4 Valve
 Material Cast Iron

Preliminary-Specifications subject to change without notice.

OPERATING DATA FOR 16V-71TA ENGINES

GENERAL ENGINE DATA

Type	2 Stroke
Number of Cylinders	16
Bore	4.25 in. (108 mm)
Stroke	5 in. (127 mm)
Displacement	113.6 in. ³ (18.64 liters)
Number of Exhaust Valves Per Cylinder	4
Compression Ratio	To Be Determined
Firing Order (RH Rotation)	1L-2R-8L-6R-2L-4R-6L-5R-4L-3R-5L-7R-3L-1R-7L-8R
Turbocharger	To Be Determined
Blower Drive Ratio	To Be Determined
Engine Weight and Dimensions With Standard Accessories—	
Dry Weight (T Engines)	
(TA Engines)	4800 lbs. (2225.3 kg)
Length	78 in. (1981.2 mm)
Width	47 in. (1193.8 mm)
Height	58 in. (1473.2 mm)
Engine Center of Gravity With Standard Accessories—	
C.G. Distance from R.F.O.B. (x axis)	28 in. (711.2 mm)
C.G. Distance Above Crankshaft (y axis)	8 in. (203.2 mm)
C.G. Distance Right of $\bar{C}$ as Viewed From Rear (z axis)	1.4 in. (35.6 mm)
Roll Axis (see installation drawing)	
Maximum Allowable Bending Moment at Rear Face of Block—	
Aluminum Hsg.	0
Cast Iron Hsg.	0

APPLICATION DATA

AIR INTAKE SYSTEM (Ref. Coolant Bulletin #38)

Maximum Allowable Intake Res. With Clean Air Cleaner Element	12 in. H ₂ O (3.0 kPa)
Maximum Allowable Intake Res. With Dirty Air Cleaner Element	20 in. H ₂ O (5.0 kPa)

EXHAUST SYSTEM

Maximum Allowable Exhaust Back Pressure Imposed by Piping & Muffler—

Full Load @ 2100 RPM	4 in. Hg (13.5 kPa)
----------------------	---------------------

COOLING SYSTEM

Coolant Capacity (Engine Only)	19.75 gal. (74.8 liters)
Standard Thermostat—Type	Full Blocking
Maximum Allowable Top Tank Coolant Temperature	210°F (98.9°C)
Minimum Allowable Deaeration Rate	1 CFM/cyl. (.003 m ³ /min)
Recommended Pressure Cap	7 psi (48.3 kPa)
Minimum Cooling Capability—Will Vary With Ambient Conditions	
Air to Boil @ 2100 RPM	117°F (47.2°C)
Air to Water @ 2100 RPM	95°F (35.0°C)
Coolant Pump Inlet Restriction—Maximum	3 in. Hg (10.1 kPa)

LUBRICATION SYSTEM

Oil Pressure @ Idle (500 RPM) Minimum	7 psi (48.3 kPa)
@ Rated Speed (2100 RPM) Minimum	30 psi (206.9 kPa)
Oil Flow @ Rated Speed (2100 RPM) Nominal	81 GPM (306.7 liters/min)
Lube Oil Sump Temperature Normal Range	200–250°F (93.3–121.°C)
Oil Capacity of Standard Oil Pan (Low-High)	57–67 qts. (53.9–63.4 liters)
Angularity of Standard Pan (P/N 5146711 Upper, 5145777 Lower)	
Front Down	22.5°
Front Up	22.5°
Crankcase Pressure @ 2100 RPM Maximum	4.0 in. H ₂ O (1.0 kPa)

Preliminary—Specifications subject to change without notice.



APPLICATION DATA (continued)

FUEL SYSTEM (Reference Engineering Bulletin #21)

Model Injector	Brake Specific Fuel Consumption @ Rated HP And Speed lb/BHP-HR	Fuel Consumption @ Rated HP And Speed lb/hr (kg/hr)	GPH (l/hr)	Brake Specific Fuel Consumption @ Peak Torque lb/BHP-HR	Fuel Consumption @ Peak Torque lb/hr (kg/hr)	GPH (l/hr)	Fuel Flow To Pump @ Rated Speed lb/hr (kg/hr) (.8 Orifice)	GPH (l/hr)
16V-71TA 75 mm	.350	279.2 (126.6)	39.4 (149.2)	.353	183.9 (83.4)	26.0 (98.5)	640 (290)	90 (341)
16V-71TA 70 mm	.350	263.8 (119.7)	37.2 (140.9)	.353	175.3 (79.5)	24.7 (93.6)	640 (290)	90 (341)
16V-71TA 65 mm	.350	244 (110.7)	34.4 (130.3)	.353	164 (74.3)	23.1 (87.5)	640 (290)	90 (341)

Maximum Allowable Restriction to Pump—

With Clean Filter	6 in. Hg (22.1 kPa)
With Dirty Filter	12 in. Hg (44.1 kPa)
Fuel Pressure Inlet Manifold—Normal Range	50-70 psi (344.8-482.7 kPa)
Fuel Spill Flow—Minimum	1.4 gpm (5.3 liters/min)
Fuel Line Size—Minimum Diameter or No.	Depends on length of hose
Fuel System Restricted Fitting Size	.080 in. (2.0 mm)
Filter Micron Size—Primary/Secondary	30/10

ELECTRICAL SYSTEM

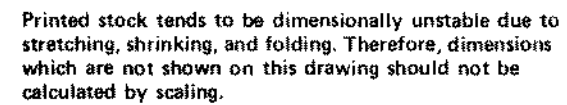
Minimum Recommended Battery Capacity—

SAE Cold Cranking, Amps at 0°F to 31°F—24 Volt Starter	900 amps
--	----------

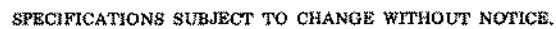
Maximum Allowable resistance of Starting Circuit—

With 24 Volt Starter	.0020 ohms
----------------------	------------

Preliminary—Specifications subject to change without notice.



PRELIMINARY



LITHO IN U.S.A.

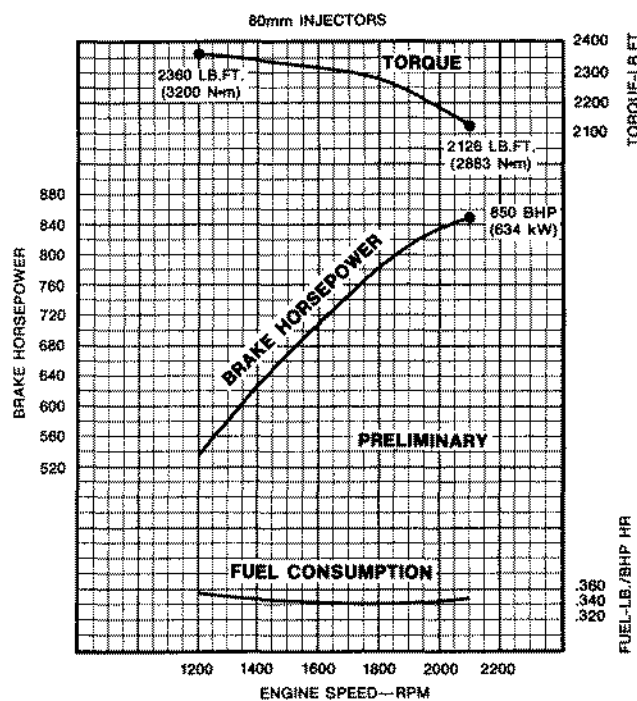
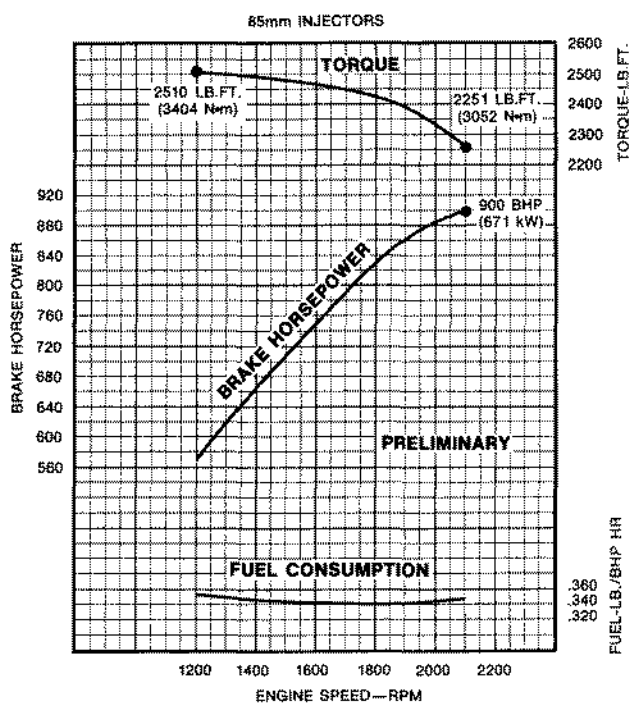
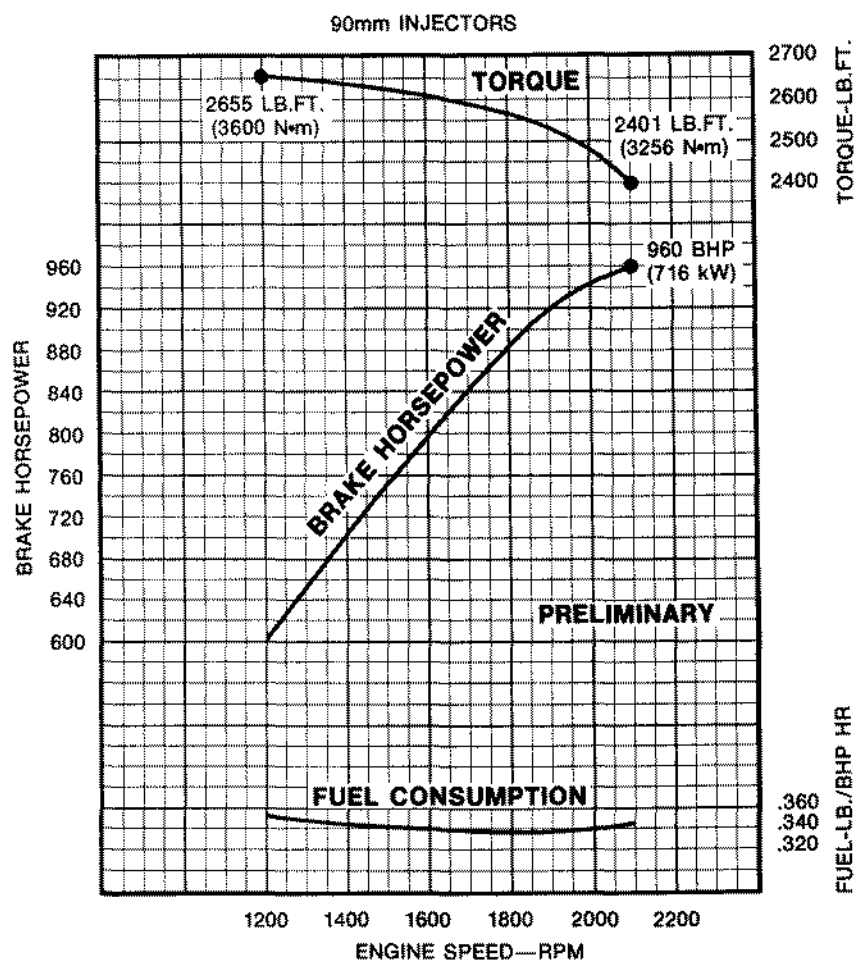
SCALE 3/4" TO 1'

(DRAWING DATE 1-12-83) MODEL 71637600 2SA-480

16V-92TA

MODEL 16V-92TA ENGINE PERFORMANCE

Forward
Plan **92**



- Rated Power Output is at SAE J1349 Standard Conditions: 77°F (25°C)—air inlet temperature, and 29.31 in. Hg (99kPa)—Barometer (Dry)
- Specific gravity of fuel—.853 at 60°F (15.6°C)
- Metric conversion factors: Power kW = BHP × 0.746
Torque N·m = lb. ft. × 1.356
Fuel kg/kW hr = lb./BHP hr × 0.608
- This curve is based on preliminary data and is the best estimate of production engine performance.
- Values are derived from currently available data and are subject to change without notice.



MECHANICAL DATA FOR 16V-92TA ENGINES

MAIN BEARINGS

Type Precision Half Shells — 2 Per Journal
 Journal Diameter 4.50 in. (114.3 mm)
 Length 1.24 in. (31.5 mm)
 Projected Area/Bearing 5.58 in.² (3600.0 mm²)
 Material Steel Backed Copper Lead

CRANK PIN BEARINGS

Type Precision Half Shells — 2 Per Journal
 Number 1 Pair Per Cylinder
 Journal Diameter 3.0 in. (76.2 mm)
 Length 1.2 in. (30.5 mm)
 Projected Area/Bearing 3.60 in.² (2322.6 mm²)
 Material Steel Backed Copper Lead

CAMSHAFT BEARING—END

Journal 1.4962 in. (38.0 mm)
 Length 2.875 in. (73.0 mm)
 Materials Bronze/Steel Backed

CAMSHAFT BEARING—INTERMEDIATE

Journal Diameter 1.76 in. (44.7 mm)
 Length 1.23 in. (31.2 mm)
 Materials Aluminum

PISTON PIN BUSHING

Projected Area/Piston Bushing
 Material Bronze with SAE 19 Overlay,
 Steel Back

PISTON

Type and Material Crosshead Malleable Iron
 Cooling Oil Cocktail Shaker

PISTON RINGS—COMPRESSION

Type
 Top Ring Chrome Faced Keystone
 Remaining 2 Barrel Faced Chrome Flashed

PISTON RINGS—OIL

Type Double Scraper with Expander
 Number per Piston 2 Sets
 Location Bottom of Skirt

PISTON PIN

Type Crosshead-Polished and Hardened

CONNECTING ROD

Type Forged I Section
 Material Forged Steel

CRANKSHAFT

Material Forged Steel (SAE 1548)
 Heat Treat Induction Hardened
 Type of Balance Dynamic

CAMSHAFT

Material Forged Steel
 Location In Block, 1 Per Bank
 Drive Gear
 Type of Cam Honed

EXHAUST VALVE

Type Poppet
 Arrangement Overhead Valve
 Number/Cylinder 4
 Operating Mechanism Mechanical Rocker Arm
 Type of Lifter Solid
 Valve Spring Number/Valve 1 Per Valve
 Valve Seat Insert Material GM 3544M

CYLINDER BLOCK

Type Wet Liner
 Material Cast Iron Alloy

LINERS

Type Wet Liner
 Material Cast Iron
 Ports
 Type Oval
 Number 18
 Height To Be Determined
 Width To Be Determined
 Angle To Be Determined

CYLINDER HEAD

Type 4 Valve
 Material Cast Iron

Preliminary-Specifications subject to change without notice.

OPERATING DATA FOR 16V-92TA ENGINES

GENERAL ENGINE DATA

Type	Two Stroke Diesel
Number of Cylinders	16
Bore	4.84 cu. in. (122.9 mm)
Stroke	5.0 cu. in. (129.0 mm)
Displacement	1472 cu. in. (24.1 liters)
Number of Exhaust Valves Per Cylinder	4
Compression Ratio	17:1
Firing Order	RH: 1L, 2R, 8L, 6R, 2L, 4R, 6L, 5R, 4L, 3R, 5L, 7R, 3L, 1R, 7L, 8R
Turbocharger	
Blower Drive Ratio	
Engine Weight and Dimensions With Standard Accessories—	
Dry Weight (T engines)	4840 lbs. (2195.4 kg)
(TA engines)	
Length	79 in. (2006.6 mm)
Width	47 in. (1193.8 mm)
Height	58 in. (1473.2 mm)
Engine Center of Gravity With Standard Accessories—	
C.G. Distance from R.F.O.B. (x axis)	26.9 in. (683.3 mm)
C.G. Distance Above Crankshaft (y axis)	8.4 in. (213.4 mm)
C.G. Distance Right of $\bar{C}$ as Viewed From Rear (z axis)	1.3 in. (33.0 mm)
Roll Axis (see installation drawing)	
Maximum Bending Moment at Rear Face of Block —	
Aluminum Hsg.	0
Cast Iron Hsg.	0

APPLICATION DATA

AIR INTAKE SYSTEM

Maximum Allowable Intake Res. With Clean Air Cleaner Element	12 in. H ₂ O (3.0 kPa)
Maximum Allowable Intake Res. With Dirty Air Cleaner Element	20 in. H ₂ O (3.0 kPa)

EXHAUST SYSTEM

Maximum Allowable Exhaust Back Pressure Imposed by Piping & Muffler—	
Full Load @ 2100 RPM	3 in. H ₂ O (10.1 kPa)

COOLING SYSTEM

Coolant Capacity (engine only)	
Standard Thermostat—Type	Full Blocking
Maximum Allowable Top Tank Coolant Temperature	210°F (98.9°C)
Minimum Allowable Deaeration Rate	.1 CFM (.003 m ³ /min)
Recommended Pressure Cap	7 PSI (48.3 kPa)
Minimum Cooling Capability—	
Air to Boil @ 2100 RPM	117°F (47.2°C)
Air to Water @ 2100 RPM	95°F (35°C)
Coolant Pump Inlet Restriction—Maximum	3 in. Hg (10.1 kPa)

LUBRICATION SYSTEM

Oil Pressure @ Idle (500 RPM) Minimum	7 PSI (48.3 kPa)
@ Rated Speed (2100 RPM) Minimum	30 PSI (206.9 kPa)
Oil Flow @ Rated Speed (2100 RPM) Nominal	
Lube Oil Sump Temperature Normal Range	200-250°F (93.30-121.1°C)
Oil Capacity of Standard Oil Pan (low-high)	60 Qt. Low-80 Qt. High (56.8 liters-75.7 liters)
Oil Capacity of Total System With Standard Pan	64 Qt. Low-84 Qt. High (60.6 liters-79.5 liters)
Angularity of Standard Pan (P/N 5106631)	
Front Down	20°
Front Up	20°
Crankcase Pressure @ 2100 RPM Maximum	3 in. H ₂ O (.75k Pa)

Preliminary-Specifications subject to change without notice.



APPLICATION DATA (Continued)

FUEL SYSTEM (REF. ENG. BULLETIN #21)

Model Injector	Brake Specific Fuel Consumption @ Rated HP And Speed lb/BHP-HR	Fuel Consumption @ Rated HP And Speed lb/hr (kg/hr)	GPH (l/hr)	Brake Specific Fuel Consumption @ Peak Torque lb/hr (kg/hr)	Fuel Consumption @ Peak Torque lb/hr (kg/hr)	GPH (l/hr)	Fuel Flow To Pump @ Rated Speed lb/hr (kg/hr)	GPH (l/hr)
16V-92TA 90 mm	.349	335 (152)	47.2 (178.8)	.355 (.1610)	214 (97)	30.1 (114.0)	840 (381)	120 (455)
16V-92TA 85 mm	.350	315 (143)	44.4 (168.2)	.356 (.1615)	202 (92)	28.5 (107.9)	840 (381)	120 (455)
16V-92TA 80 mm	.351	298 (135)	42.0 (159.1)	.357 (.1619)	191 (87)	26.9 (101.9)	840 (381)	120 (455)

Maximum Allowable Restriction to Pump—

With Clean Filter	6 in. Hg (22.1 kPa)
With Dirty Filter	12 in. Hg (44.1 kPa)
Fuel Pressure Inlet Manifold—Normal Range	50-70 PSI (344.8-482.7 kPa)
Fuel Spill Flow—Minimum	1.4 GPM (5.3 liters/min)
Fuel System Restricted Fitting Size	.070 in. (1.8 mm)
Filter Micron Size—Primary/Secondary	30/10

ELECTRICAL SYSTEM

Minimum Recommended Battery Capacity—

SAE Cold Crank, Amps @ 0°F — 12 Volt Starter	No 12V Starter Available
24 Volt Starter	1200 CCA Per Starter, 2 Starters Required

Maximum Allowable resistance of Starting Circuit—

With 12 Volt Starter	NA
With 24 Volt Starter	.002 ohms

Preliminary-Specifications subject to change without notice.

PERFORMANCE DATA

All data is based on the engine operating with fuel pump, water pump, and lubricating oil pump; not included are alternator, fan, air compressor, air cleaner, or optional equipment. Engine performance data is based on operating under SAE Standard J1349 conditions of 29.31 in Hg (dry) barometer and 77°F (25°C) intake air temperature, using No. 2 diesel fuel at 60°F (15.6°C) fuel temperature (.853 @ 60°F specific gravity), minimum air intake and exhaust restriction (6 in. H₂O and 0.2 in. Hg respectively).

Engine	Injector Size	Output BHP (kW)	Rated Speed @ RPM	Peak Torque lb ft (N·m) @ RPM	Air Flow CFM (m³/min)	Exhaust Gas CFM Temp °F (m³/min) (°C)	Water Flow GPM (liter/min)	Heat Rej. BTU/min (kW)	BMEP PSI (kPa)	Piston Speed FPM
16V-92TA	90 mm	960 (716)	2100	2655 (3600) @ 1200	2553 (72.3)	5563 710°F (157.5) (377°C)	330 (1249)	27680 (486)	123 (848)	1750
16V-92TA	85 mm	900 (671)	2100	2510 (3404) @ 1200	2453 (69.5)	5299 700°F (150.1) (371°C)	330 (1249)	26000 (457)	115 (793)	1750
16V-92TA	80 mm	850 (634)	2100	2360 (3200) @ 1200	2353 (66.6)	5039 690°F (142.7) (365°C)	330 (1249)	24740 (435)	109 (751)	1750

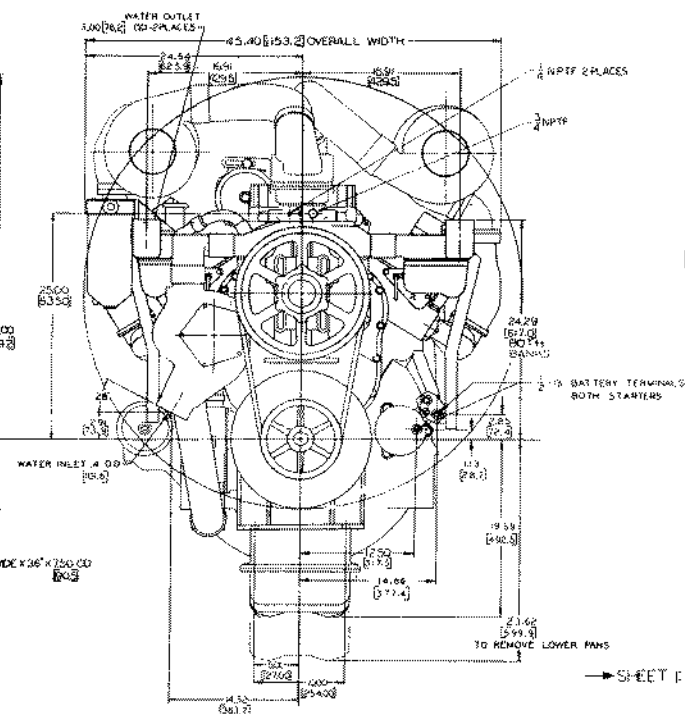
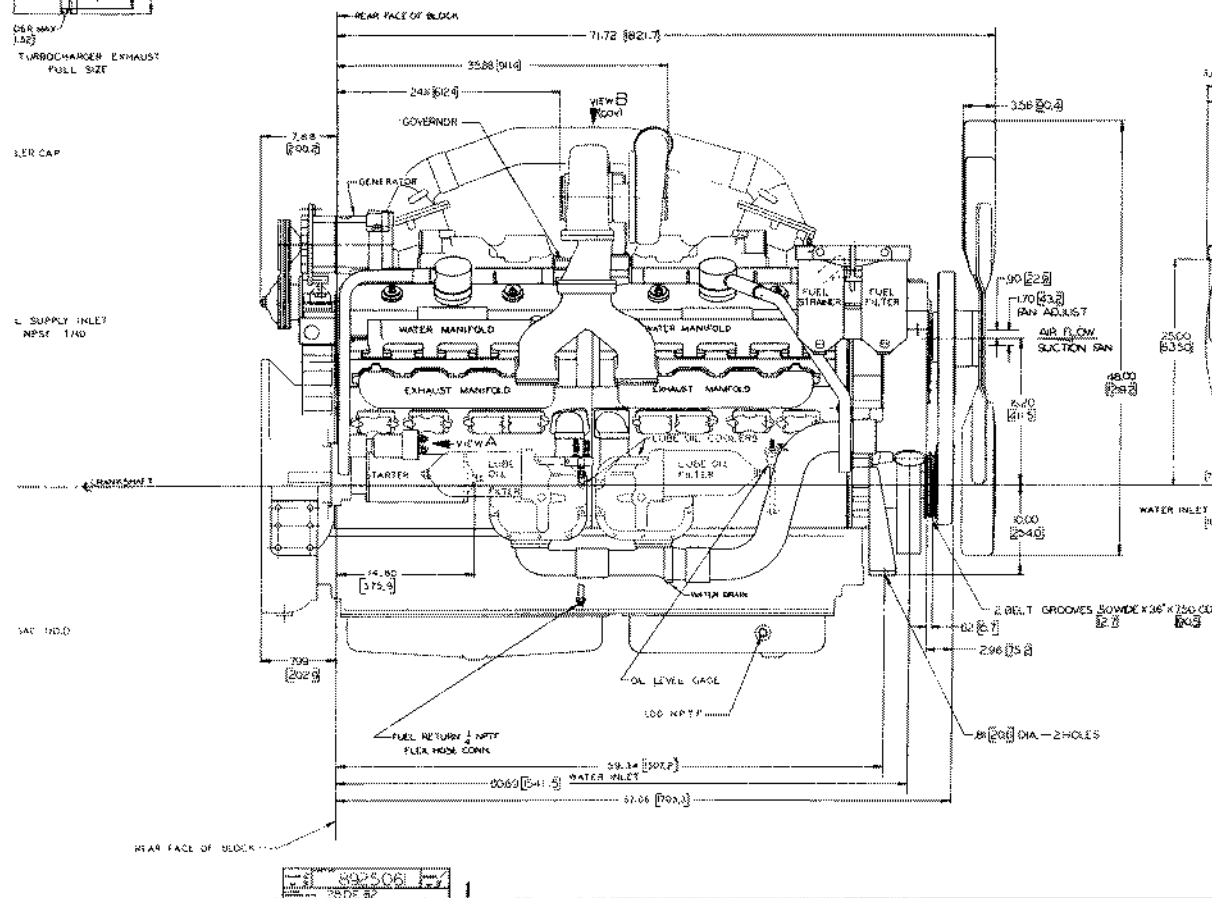
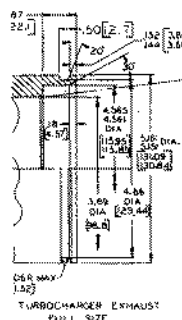
Idle Speed (minimum)	500 RPM
Maximum No-Load Governed Speed	Approx. 200 RPM Above Full Load Speed
Normal Operating Coolant Temp.	160–185°F (71.1°–85°C)
Thrust Bearing Load Limit — Max. Int.	1800 lbs (8006 N)
Max. Cont.	600 lbs (2669 N)

Preliminary-Specifications subject to change without notice.



CONICAL STRAIGHT DIFFUSER WITH WAX INCLUDED ANGLE OF 18° RECOMMENDED FOR BEST PERFORMANCE (LENGTH AS INSTALLATION PERMITS OR DIA OF 5.25 IS REACHED)

Printed stock tends to be dimensionally unstable due to stretching, shrinking, and folding. Therefore, dimensions which are not shown on this drawing should not be calculated by scaling.



DO NOT SCALE

PRELIMINARY

[illegible]

COMPETITIVE COMPARISONS

Forward Plan 71&92

VS CUMMINS

	Engine Model	Injector Size cu. mm.	Rated HP	RPM	Peak Torque lb-ft	RPM	% Torque Rise	BSFC lb/BHP-HR	
								Rated	Best
Cummins	NT-855		250	2100	750	1500	20	.380	.347
Forward Plan 71	6-71T	65	255	2100	774	1200	21.3	.356	.338
	6-71TA	65	260	2100	770	1200	18.4	.350	.337
Cummins	NT-855		280	2100	840	1500	20	.376	.346
Forward Plan 71	6-71T	70	280	2100	840	1200	20	.356	.338
	6-71TA	70	285	2100	832	1200	16.7	.350	.337
Cummins	NT-855		310	2100	930	1500	20	.382	.352
Forward Plan 71&92	6-71TA	75	300	2100	875	1200	16.7	.350	.337
	6V-92T	80	305	2100	880	1200	15.3	.352	.343
	6V-92TA	80	320	2100	890	1200	11.3	.347	.338
Cummins	NT-855		335	2100	1006	1500	20	.380	.350
Forward Plan 92	6V-92T	90	345	2100	995	1200	15.3	.350	.341
	6V-92TA	85	340	2100	945	1200	11.2	.346	.337
Cummins	NTA-855		360	2100	1080	1500	20	.370	.352
Forward Plan 71&92	6V-92TA	90	360	2100	1000	1200	11.1	.345	.336
	8V-71T	70	370	2100	1125	1200	21.6	.356	.338
	8V-71TA	70	375	2100	1116	1200	19	.350	.337
Cummins	NTA-855		400	2100	1150	1500	15	.380	.364
Forward Plan 71&92	8V-71TA	75	400	2100	1173	1200	17.3	.350	.337
	8V-92T	80	415	2100	1150	1200	10.8	.354	.344
Cummins	KT-1150		450	2100	1350	1500	20	.372	.352
Forward Plan 92	8V-92TA	85	450	2100	1245	1200	10.6	.346	.336
		90	480	2100	1330	1200	10.8	.345	.335
Cummins	KTA-1150		525	2100	1575	1500	20	.367	.341
Forward Plan 71	12V-71TA	65	525	2100	1540	1200	17.4	.350	.343
Cummins	KTA-1150		600	2100	1650	1600	10	.362	.344
Forward Plan 71	12V-71TA	75	600	2100	1724	1200	14.8	.350	.343

NOTE: Based upon most recent published data available and is subject to change without notice.



Forward Plan 71&92

VS
CUMMINS

	Engine Model	Injector Size cu. mm.	Rated HP	RPM	Peak Torque lb-ft	RPM	% Torque Rise	BSFC lb/BHP-HR	
								Rated	Best
Cummins	KTTA-1150		650	2100	1869	1600	15	.360	.340
Forward Plan 92	12V-92TA	85	665	2100	1830	1200	10	.348	.341
Cummins	V-903		265	2600	657	1500	22.8	.400	.376
Forward Plan 71	6-71TA	65	260	2100	770	1200	18.4	.350	.337
Cummins	V-903		295	2600	700	1800	17.4	.400	.380
Forward Plan 71	6-71T	75	295	2100	875	1200	18.6	.356	.338
	6-71TA	75	300	2100	875	1200	16.7	.350	.337
Cummins	VT-903		320	2600	775	1800	19.9	.392	.354
Forward Plan 92	6V-92T	85	325	2100	940	1200	15.6	.351	.342
	6V-92TA	80	320	2100	890	1200	11.3	.347	.338
Cummins	VT-903		350	2600	848	1800	19.9	.386	.360
Forward Plan 92	6V-92T	90	345	2100	995	1200	15.3	.350	.341
	6V-92TA	85	340	2100	945	1200	11.2	.346	.337
Cummins	VT-903		375	2600	848	1800	11.9	.372	.360
Forward Plan 71	8V-71T	70	370	2100	1125	1200	21.6	.356	.338
	8V-71TA	70	375	2100	1116	1200	19	.350	.337
Cummins	VT-1710		635	2100	1747	1500	10	.390	.372
Forward Plan 92	12V-92TA	80	625	2100	1720	1200	10	.349	.342
Cummins	VTA-1710		675	2100	2026	1500	20	.380	.362
Forward Plan 92	12V-92TA	85	665	2100	1830	1200	10	.348	.341
		90	705	2100	1940	1200	10	.347	.340
Cummins	VTA-1710		700	2100	1925	1500	10	.382	.368
Forward Plan 92	12V-92TA	90	705	2100	1940	1200	10	.347	.340

NOTE: Based upon most recent published data available and is subject to change without notice.



Forward Plan 71&92

VS CUMMINS

	Engine Model	Injector Size cu. mm.	Rated HP	RPM	Peak Torque lb-ft	RPM	% Torque Rise	BSFC lb/BHP-HR	
								Rated	Best
Cummins	VTA-1710		725	2100	2176	1500	20	.380	.360
Forward Plan 71&92	12V-92TA	90	705	2100	1940	1200	10	.347	.340
	16V-71TA	70	755	2100	2175	1200	15.2	.350	.341
Cummins	VTA-1710		800	2100	2200	1500	10	.375	.367
Forward Plan 71	16V-71TA	75	800	2100	2280	1200	14	.350	.341
Cummins	KT-2300		900	2100	2700	1500	20	.370	.352
Forward Plan 92	16V-92TA	85	900	2100	2510	1200	11.5	.350	.340
		90	960	2100	2655	1200	10.6	.349	.339

NOTE: Based upon most recent published data available and is subject to change without notice.



Forward Plan 71&92

VS CATERPILLAR

	Engine Model	Injector Size cu. mm.	Rated HP	RPM	Peak Torque lb-ft	RPM	% Torque Rise	BSFC lb/BHP-HR	
								Rated	Best
Caterpillar	3304PCT		165	2200	455	1400	15.5	.430	.407
Forward Plan 71	4-71T	65	180	2100	543	1200	20.6	.356	.338
Caterpillar	3306PCT		250	2200	684	1500	14.6	.425	.402
Forward Plan 71	6-71T	65	255	2100	774	1200	21.3	.356	.338
	6-71TA	65	260	2100	770	1200	18.4	.350	.337
Caterpillar	3306PCTA		270	2200	742	1400	15	.403	.390
Forward Plan 71	6-71T	70	280	2100	840	1200	20	.356	.338
	6-71TA	65	260	2100	770	1200	18.4	.350	.337
Caterpillar	3406DIT		325	2100	1015	1200	24.8	.381	.360
Forward Plan 92	6V-92T	85	325	2100	940	1200	15.6	.351	.342
	6V-92TA	80	320	2100	890	1200	11.3	.347	.338
Caterpillar	3406PCTA		375	2100	1084	1300	15.6	.407	.384
Forward Plan 71	8V-71TA	70	375	2100	1116	1200	19	.350	.337
Caterpillar	3406DITA		380	2100	1160	1200	22.1	.365	.351
Forward Plan 71	8V-71T	75	390	2100	1190	1200	22	.356	.338
	8V-71TA	70	375	2100	1116	1200	19	.350	.337
Caterpillar	3408DIT		425	2100	1296	1250	21.9	.380	.361
Forward Plan 71&92	8V-71TA	75	400	2100	1173	1200	17.3	.350	.337
	8V-92TA	80	425	2100	1175	1200	10.5	.347	.337
	8V-92T	85	440	2100	1215	1200	10.5	.353	.343
Caterpillar	3408PCTA		475	2100	1390	1500	17	.402	.391
Forward Plan 92	8V-92TA	90	480	2100	1330	1200	10.8	.345	.335

NOTE: Based upon most recent published data available and is subject to change without notice.

