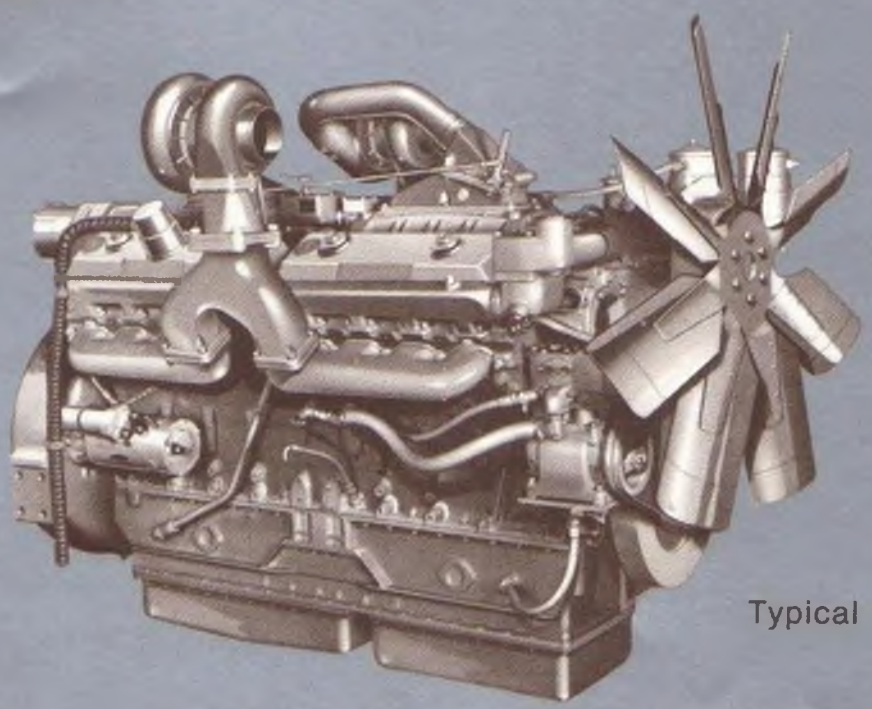
Detroit Diesel Engines

SILVER 92

INDUSTRIAL MODELS

12V-92TA 16V-92TA



Typical 16V-92TA

GENERAL SPECIFICATIONS

Basic Engine	12V-92TA	16V-92TA
Model	8123-7400	8163-7400
Number of Cylinders	12	16
Bore and Stroke	4.84 in × 5 in (123 mm × 127 mm)	4.84 in × 5 in (123 mm × 127 mm)
Displacement	1104 cu in (18.1 liters)	1472 cu in ~~(18.1 liters)~~ 24 4
Compression Ratio	17 to 1	17 to 1
Lube Oil System Capacity•	Low—28 qts (26.5 liters) High—36 qts (34.1 liters)	Low—55 qts (52.1 liters) High—65 qts (61.5 liters)
Coolant Capacity (engine only)	51 qts (48.3 liters)	60 qts (56.8 liters)
Length	68 in (1727 mm)	79 in (2007 mm)
Width	47 in (1194 mm)	47 in (1194 mm)
Height	54 in (1372 mm)	59 in (1499 mm)
Weight (dry)	4280 lbs (1941 kg)	4840 lbs (2195 kg)

•with standard oil pan

Approximate dimensions shown. For complete dimensional information, refer to installation drawing.
For complete coolant specifications, see publication 7SE298. For complete fuel and lubricating oil specifications, see publication 7SE270.

HORSEPOWER VERSATILITY

Basic Engine	12V-92TA	16V-92TA
Injector	9G90	9A98
Rated Gross Power	700 BHP (522 kW) @ 2100 RPM	960 BHP (716 kW) @ 2100 RPM
Peak Torque	2040 lb ft (2766 N•m) @ 1200 RPM	2755 lb ft (3736 N•m) @ 1200 RPM
Injector	9G85	9G85
Rated Gross Power	675 BHP (504 kW) @ 2100 RPM	900 BHP (671 kW) @ 2100 RPM
Peak Torque	1950 lb ft (2644 N•m) @ 1200 RPM	2500 lb ft (3390 N•m) @ 1200 RPM
Injector	9A85	9A85
Rated Gross Power	625 BHP (466 kW) @ 2100 RPM	850 BHP (634 kW) @ 2100 RPM
Peak Torque	1845 lb ft (2502 N•m) @ 1200 RPM	2370 lb ft (3214 N•m) @ 1200 RPM
(Continuous Rating)		
Injector	7E75	7E75
Rated Gross Power	520 BHP (388 kW) @ 1800 RPM	700 BHP (522 kW) @ 1800 RPM

Rating conditions of SAE: 77°F (25°C) and 29.31 in Hg (99 kPa) Barometer (Dry)
These ratings are subject to change without notice or obligation.

EQUIPMENT SPECIFICATIONS

Aftercooler

Alternator—24 volt, 50 amp

Blower—With bypass valve

Camshaft—Drop forged with induction hardened polished lobes

Connecting Rod—Rifle drilled, drop forging

Crankshaft—Drop forged, dynamically and statically balanced, induction hardened journals and fillets

Cylinder Block—Cast iron alloy replaceable cylinder liners

Cylinder Head—Cast iron alloy, 4 exhaust valves per cylinder, replaceable valve seats

Engine Lifter Brackets

Fan—44 in (1118 mm), 8 blade, 12V-92TA; 48 in (1219 mm), 8 blade, 16V-92TA

Flywheel—SAE #0

Flywheel Housing—SAE #0

Fuel Filters—Spin-on type, includes both primary and secondary filter

Governor—Variable speed

Injectors—Cam operated, unit type, clean tip

Lube Oil Cooler—Thermatic plate type

Lube Oil Filter—Spin-on, full-flow, no bypass filter required

Oil Pan—20° inclination angle

Piston—Crosshead design, cast iron alloy

Starting Motor—24 volt

Turbocharger—Improved design, high efficiency model, TV7301, 1.08 A/R 12V; TV8301, 1.39 A/R 16V

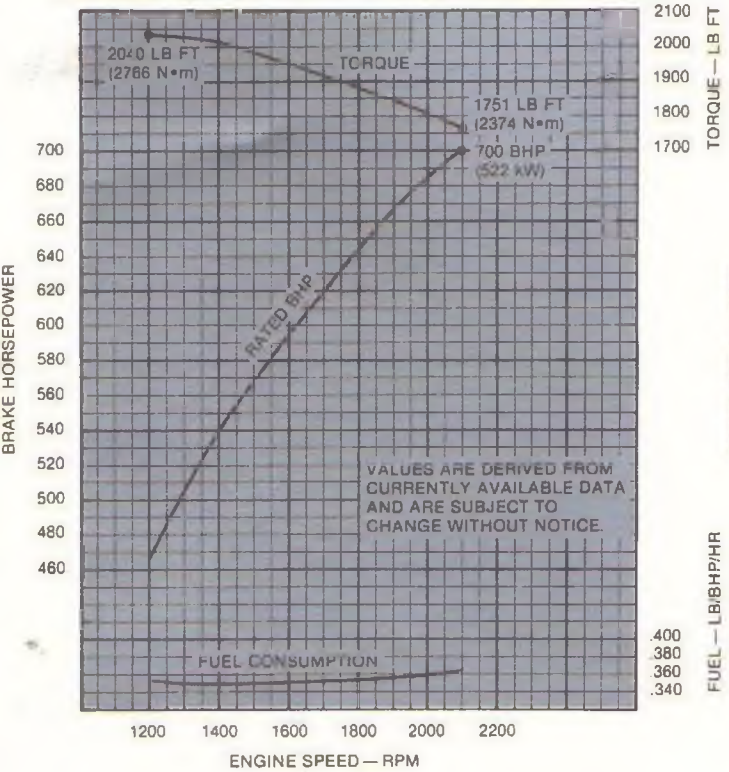
Vibration Damper

Water Pump—Impeller type with ceramic seal

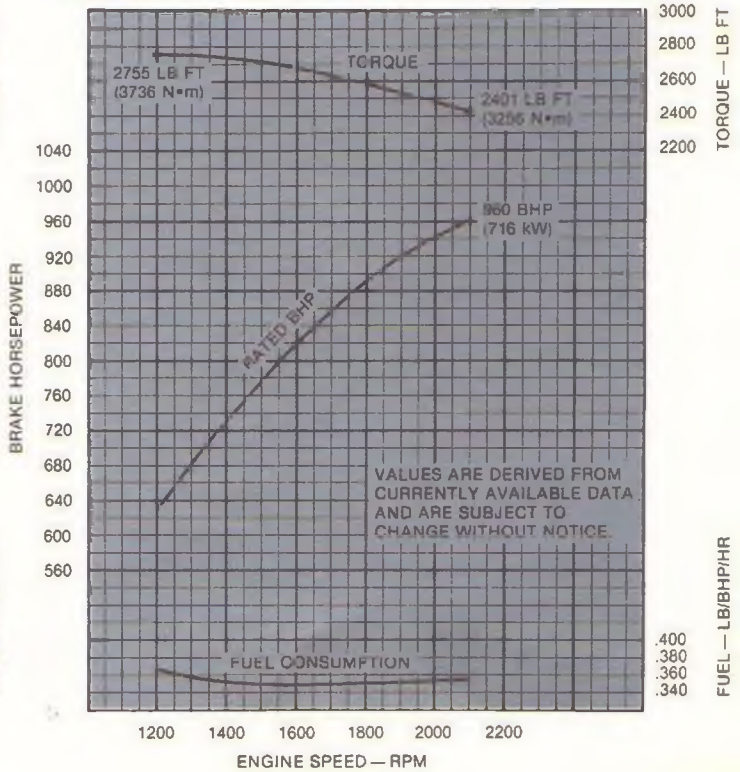
Additional options are also available for most of these items. For a complete listing of standard and optional equipment, consult your authorized Detroit Diesel Allison representative.

PERFORMANCE CURVES

BASIC ENGINE PERFORMANCE MODEL 12V-92TA WITH 9G90 INJECTORS†



BASIC ENGINE PERFORMANCE MODEL 16V-92TA WITH 9A98 INJECTORS†



Rating Explanation

RATED BHP is the power rating for variable speed and load applications where full power is required intermittently.

FUEL CONSUMPTION CURVE shows fuel used in pounds per brake horsepower hour.

POWER OUTPUT guaranteed within 5% at standard ambient conditions.

THIS RATING does not include power requirements for accessory and standard equipment.

For complete engine specifications for your particular requirements, see your distributor or authorized Detroit Diesel Allison representative.

†Rating conditions of SAE: 77°F (25°C) and 29.31 in Hg (99 kPa) Barometer (Dry)

SILVER 92

DESIGN FEATURES AND BENEFITS

Unit Injector Fuel System
The main components of this system are the simple and efficient Needle Valve Injectors that precisely meter the fuel individually to each cylinder.

The injector creates the high pressure needed for efficient combustion . . . meters and injects the fuel in the exact amount required at the correct time . . . and atomizes it for proper burning with the air in the combustion chamber.

The injectors in the Silver 92 engines aid combustion efficiency with modified plunger and bushing timing and improved spray tips.

Centrifugally Cast Liners
Closely controlled metallurgical and heat treatment specifications allow for precise machining. Liner working surfaces are processed to insure proper piston ring lubrication. Our heat treating method assures the liner has proper strength and geometry that promotes long piston and liner life.

In addition, the height and shape of the liner ports have been modified for optimum air inlet timing and maximum air swirl in the combustion chamber in conjunction with the newly timed camshaft.

Crosshead Piston
A key durability improvement is the use of crosshead pistons in all Silver 92 engines. This patented design features separate crown and skirt components that work independently of each other: the crown absorbs combustion forces while the skirt absorbs thrust loads. Proven in larger Detroit Diesel engines, crosshead pistons extend ring life and reduce cylinder bore wear.

New Piston Ring Designs
New, longer-wearing compression rings feature barrel-faced grooveless compression rings with hard molybdenum coating replacing conventional chrome rings. This new design extends ring life from 30-50%. The new rings reduce friction, thereby helping to improve fuel economy. Reduced oil consumption is an additional benefit.

Air Induction System
The Silver 92 air induction system, which incorporates a blower bypass valve and passage, reduces pumping losses and provides a savings of up to 7 horsepower. The design is essentially a spring loaded poppet type bypass valve in the blower end plate. At suitable engine speed and load, the valve opens, allowing air box pressure to equalize with blower inlet pressure, thus reducing pumping horsepower requirements. This optimizes thermal efficiency through improved air-fuel ratio control.

High-Efficiency Turbocharger
Silver 92 engines feature a new, more efficient family of turbochargers that more closely meet the air delivery requirements of the specific engine and its application. This improvement aids combustion efficiency, fuel economy, smoke control, and engine response.

Parts Interchangeability
Silver 92 engines offer up to 70% moving parts interchangeability. In addition, much of the external, optional equipment, such as starting systems, air compressors, and alternators, are also interchangeable throughout the Series. Your current engine can also be upgraded to Silver without major investment. As an owner you benefit four ways: 1) Reduced Parts Inventory, 2) Low Parts Cost, 3) Good Parts Availability, 4) Ease of Service.

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