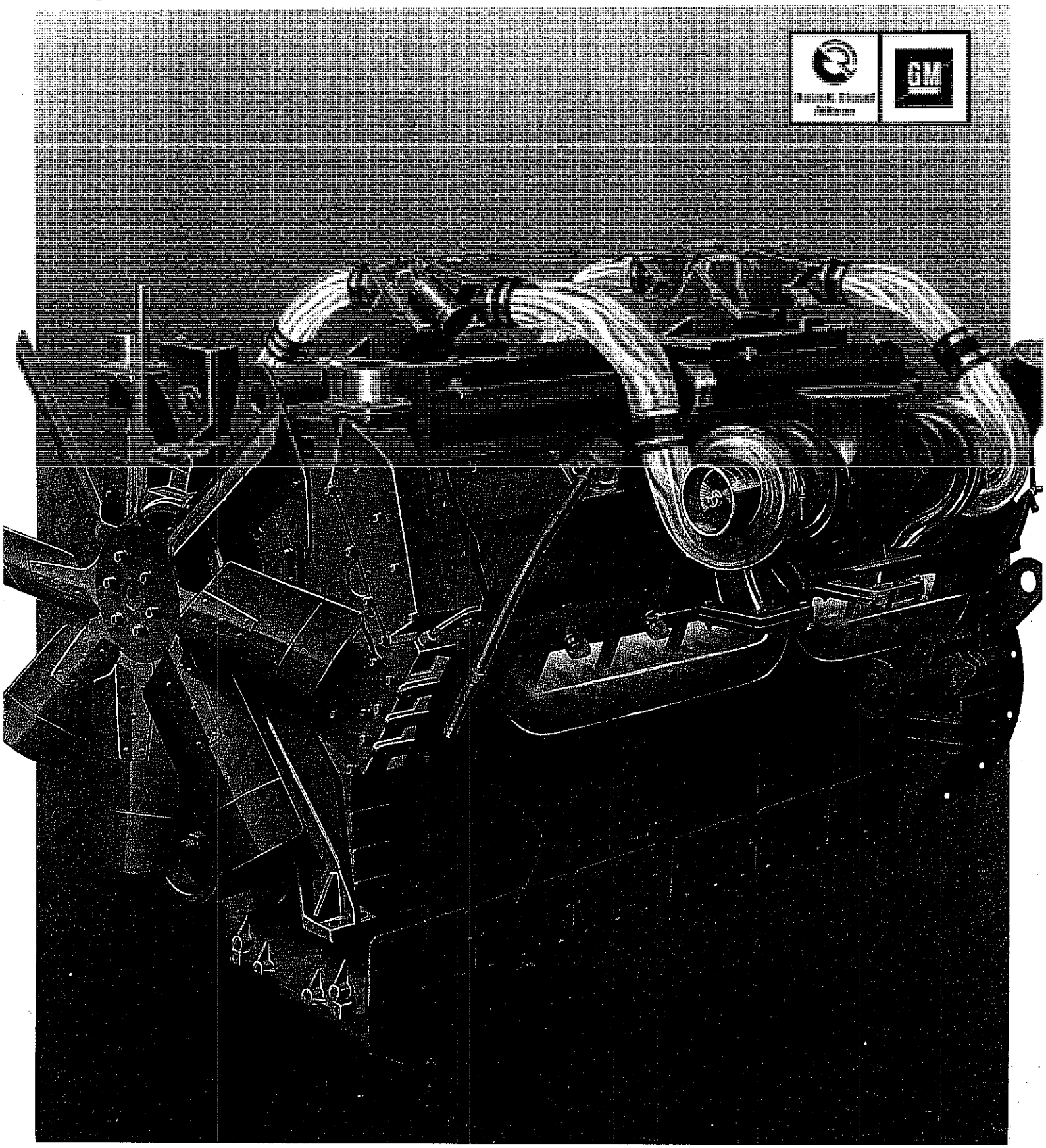
DETROIT DIESEL 149's

High Horsepower - High Efficiency Engines



149's

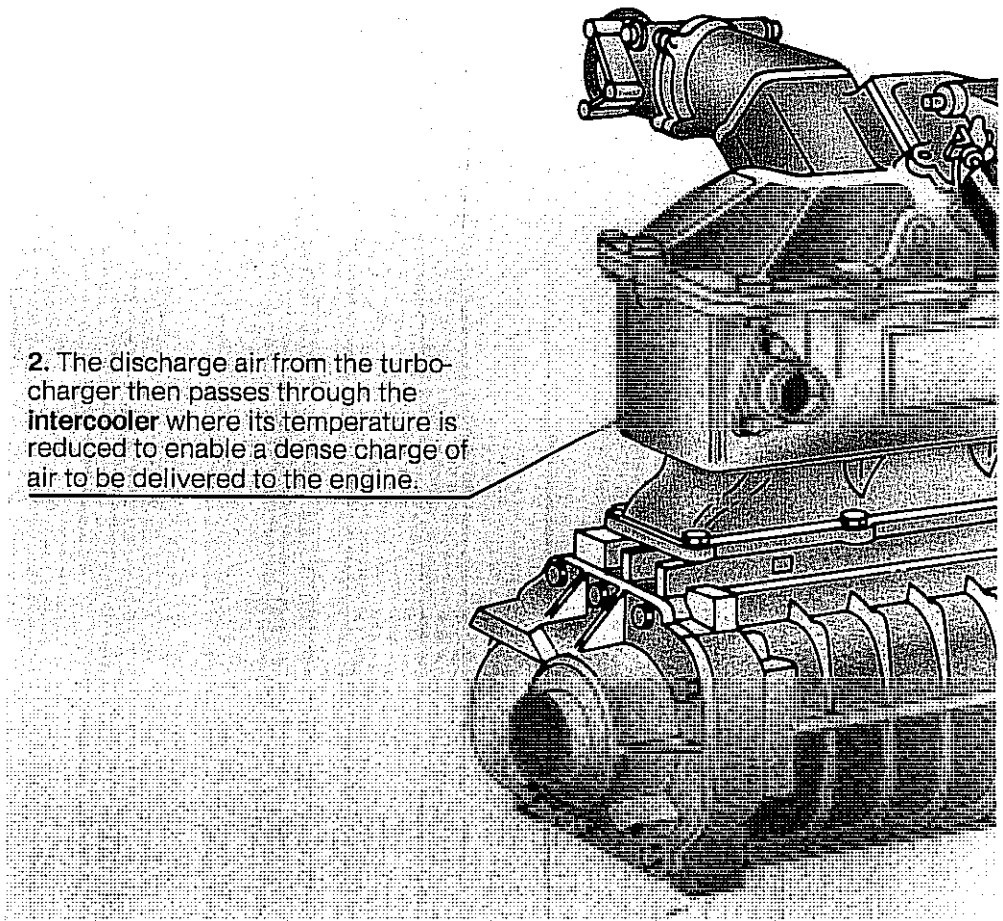
THE RIGHT ENGINES FOR TOUGH, HIGH HORSEPOWER REQUIREMENTS

It takes a lot of engine to withstand 14 years of the toughest field assignments in the world. Detroit Diesel 149's have done just that. They've taken on the greatest challenges and proved their real value by staying on the job, year after year.

The assignments? Typically a large ore hauler, an ocean tug, a hydro-frac unit, or a high-capacity generator set. Whatever the job, these 12V and 16V workhorses provide impressive, economical performance.

149's continue to be sought-after for high horsepower applications...for their distinctive performance and fuel economy features, and their remarkable durability.

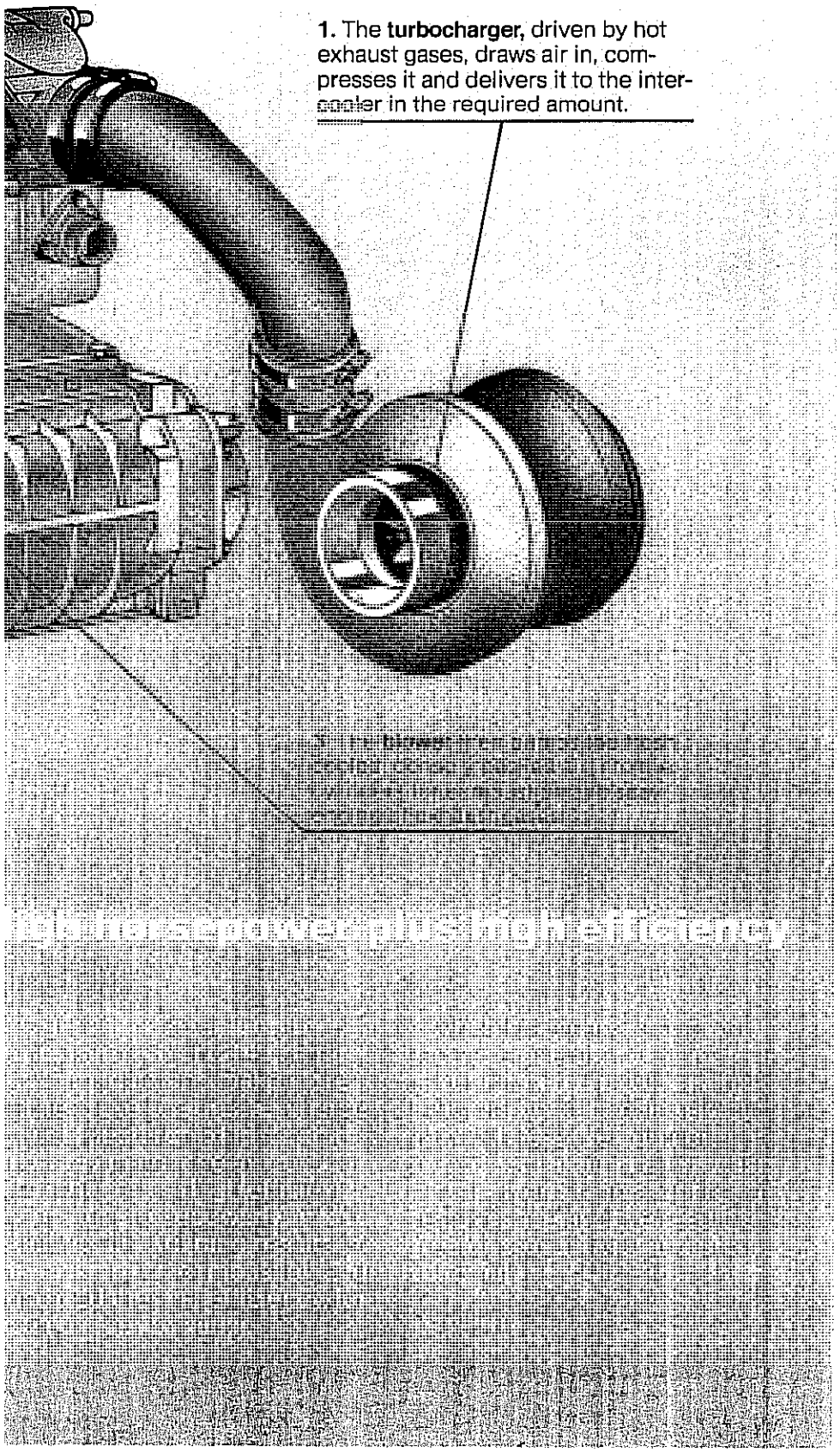
The key factor in overall 149 efficiency is the air for highly efficient combustion, resulting in



2. The discharge air from the turbocharger then passes through the **intercooler** where its temperature is reduced to enable a dense charge of air to be delivered to the engine.

Performance-balanced 149 engines

ir system. It supplies just the right amount of high work output. Briefly, here's how it works:



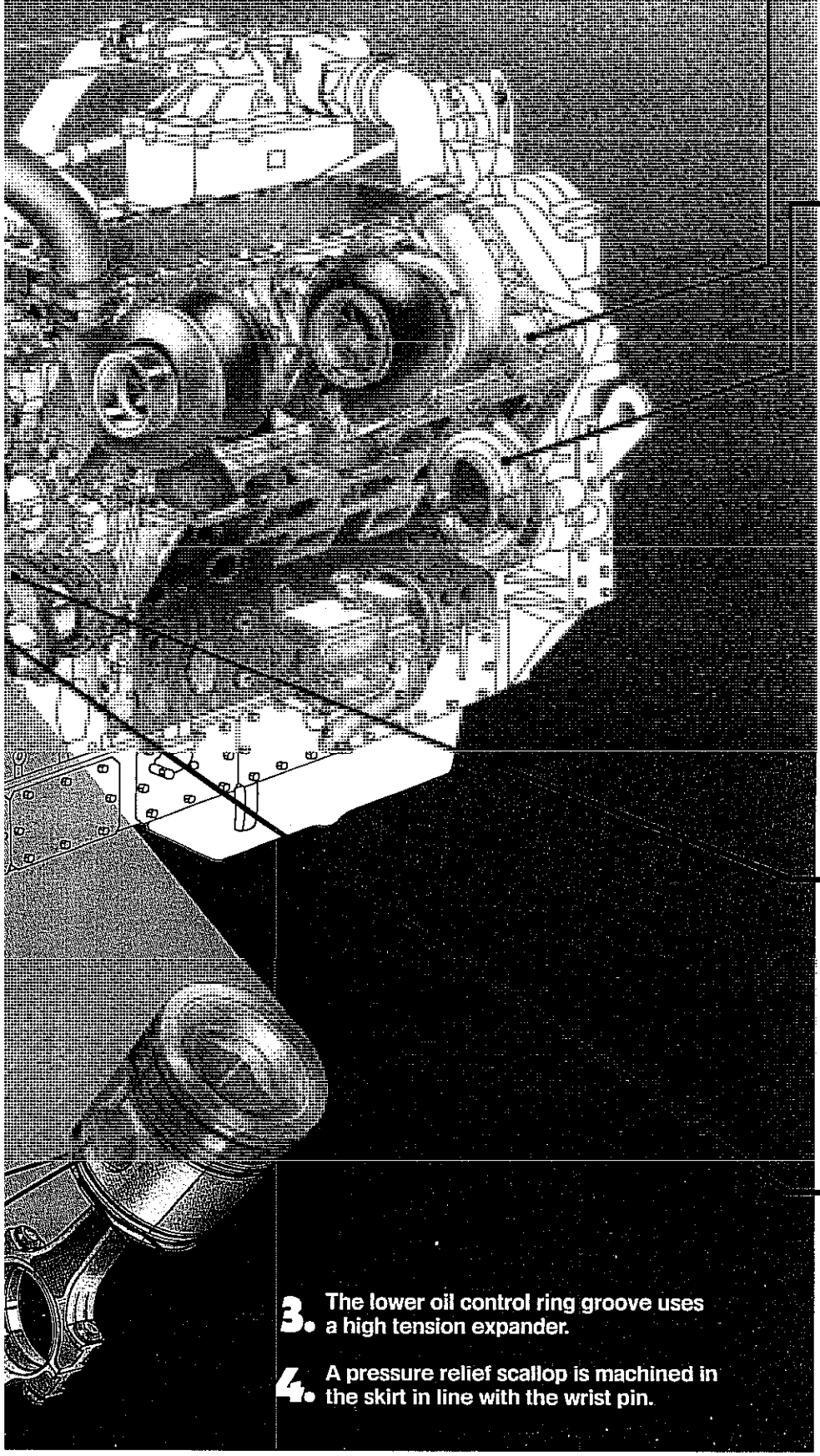
1. The **turbocharger,** driven by hot exhaust gases, draws air in, compresses it and delivers it to the intercooler in the required amount.

Actual 149 Fuel Consumption vs. "Full Load" Comparisons

Claims of lower fuel consumption made by competitors are frequently based on marginally better BSFC curves but are largely unsubstantiated in reality. An important point to consider is that published fuel consumption curves always show BSFC values at rated full load conditions and these values are then applied to load factors to theoretically show calculated gal/hr advantages. This method, however, ignores real world applications where the engine operates at less than full load conditions most of the time. For example, a recent part load fuel consumption analysis, one that compared a competitive engine to the 16V-149TI with high efficiency components, showed the 149 to have a clear advantage when operating at the average load factors experienced in normal operating ranges.

ring & Design

In the excellent durability of Series 149 engines:



3. The lower oil control ring groove uses a high tension expander.

4. A pressure relief scallop is machined in the skirt in line with the wrist pin.

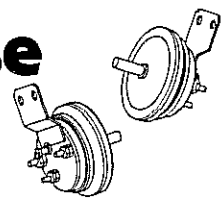
Blocks

149's have two-piece block construction. These cast iron, water-cooled blocks are constructed to encase "pot-type" heads. The narrow "V" angle of Series 149 engines (63.5°) provides great block strength by effectively spreading the load. In the unlikely event of a block failure, replacement of one block section is possible at a greatly reduced cost over one-piece blocks.

Rear outboard bearing support

The addition of a rear outboard bearing support—similar to the front outboard bearing—provides added support for crankshaft loads imposed by driven components. Side loading and bending are thus prevented from deflecting the crankshaft's normal revolution.

Crankcase pressure monitor



Standard on all 149's, this device triggers an alarm that indicates piston blow-by or seal leakage, etc. And it can prevent failure and high cost repairs if the alarm is heeded.

Crankshafts

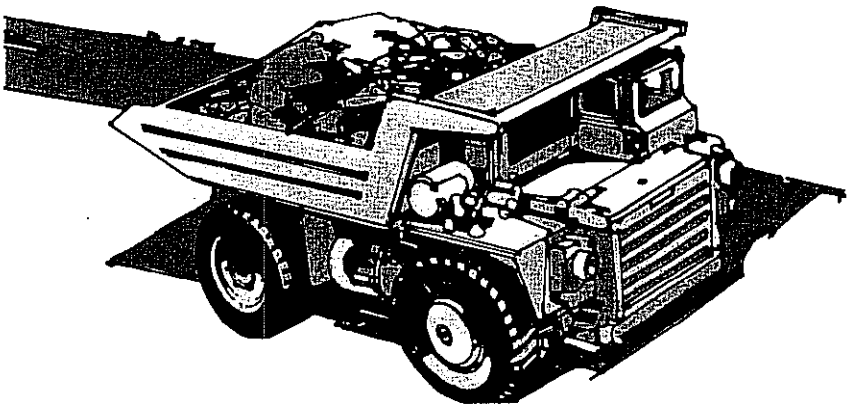
The crankshaft is of two-piece construction (two crankshafts that are bolted together) made from a steel forging that is heat-treated for strength and durability. Fillets are induction hardened for strength. Should replacement of one crankshaft be necessary, this two-piece design greatly reduces cost over one piece crankshafts.

Piston Dome

The piston dome casting seam has been redesigned with a thicker section for greater strength. The upper compression ring groove has been given a radius rather than a square corner, to reduce stress.

These durability features are designed to give pistons a long service life.

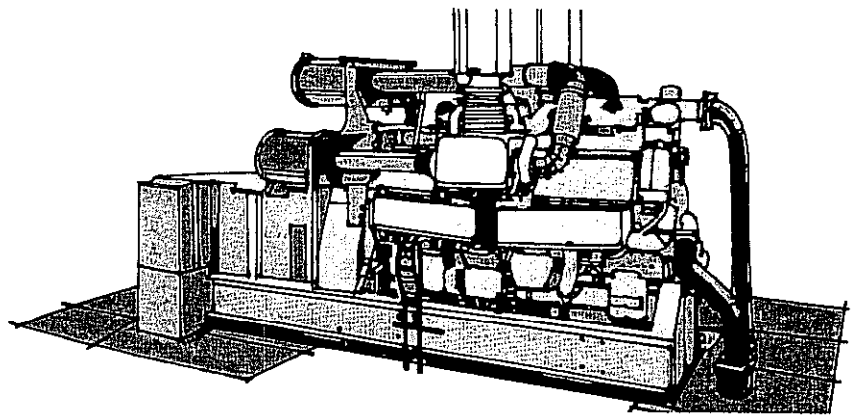
149 Engine Specifications..



for Construction Applications

Model	Rated HP (kW) @ RPM*	Length in (mm)	Width in (mm)	Height in (mm)	Weight lbs. (kg)
12V-149	800 (597 kW) @ 1900	92 (2337)	59 (1499)	61 (1549)	8360 (3792)
12V-149T	1050 (783 kW) @ 1900	91 (2311)	62 (1575)	64 (1626)	8560 (3883)
12V-149TI	1200 (895 kW) @ 1900	93 (2362)	62 (1575)	68 (1727)	8650 (3924)
12V-149TI**	1350 (1007 kW) @ 1900	93 (2362)	62 (1575)	68 (1727)	8650 (3924)
16V-149	1060 (791 kW) @ 1900	109 (2769)	54 (1372)	60 (1524)	10,540 (4781)
16V-149T	1400 (1049 kW) @ 1900	106 (2692)	64 (1626)	72 (1829)	10,840 (4917)
16V-149TI	1600 (1194 kW) @ 1900	106 (2692)	64 (1626)	72 (1829)	10,840 (4917)
16V-149TI**	1800 (1343 kW) @ 1900	105 (2667)	64 (1626)	68 (1727)	10,790 (4894)

*SAE J816b conditions.
**High horsepower engine.



for Generator Set Applications

Model	60 Hertz HP (kW) Ratings* Standby 1800 RPM	50 Hertz HP (kW) Ratings* Standby 1500 RPM	Length in (mm)	Width in (mm)	Height in (mm)	Weight lbs. (kg)
12V-149	770 (574)	660 (492)	93 (2355)	59 (1499)	66 (1644)	8430 (3824)
12V-149T	1130 (843)	950 (709)	92 (2347)	64 (1613)	65 (1661)	8580 (3874)
12V-149TI	1175 (877)	1015 (757)	92 (2347)	64 (1613)	67 (1699)	8680 (3937)
12V-149TI**	1300 (970)	1100 (821)	92 (2347)	64 (1613)	67 (1699)	8680 (3937)
16V-149T	1515 (1130)	1310 (977)	103 (2634)	66 (1644)	65 (1649)	10,840 (4917)
16V-149TI	1580 (1179)	1370 (1022)	103 (2634)	66 (1644)	66 (1644)	10,990 (4985)
16V-149TI**	1735 (1294)	1470 (1097)	103 (2634)	66 (1644)	66 (1644)	10,990 (4985)

*SAE J816b conditions. **High horsepower engine.