

***For Your Convenience: This Detroit Diesel  
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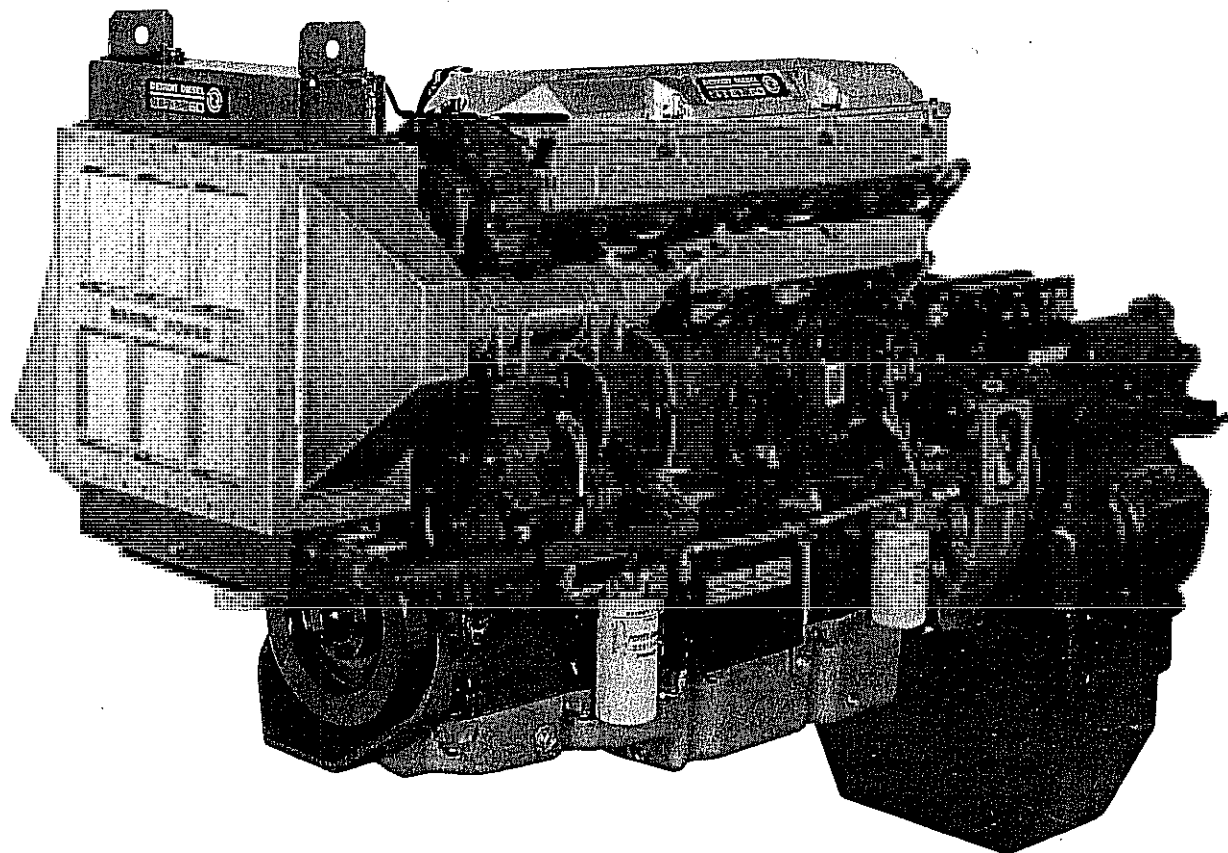
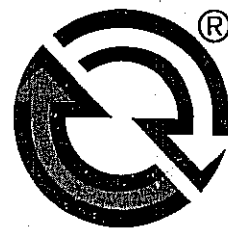
**YOUR ONE STOP SUPERSTORE FOR DIESEL ENGINE PARTS**

**SHOP NOW**

# DETROIT DIESEL

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## SERIES 60

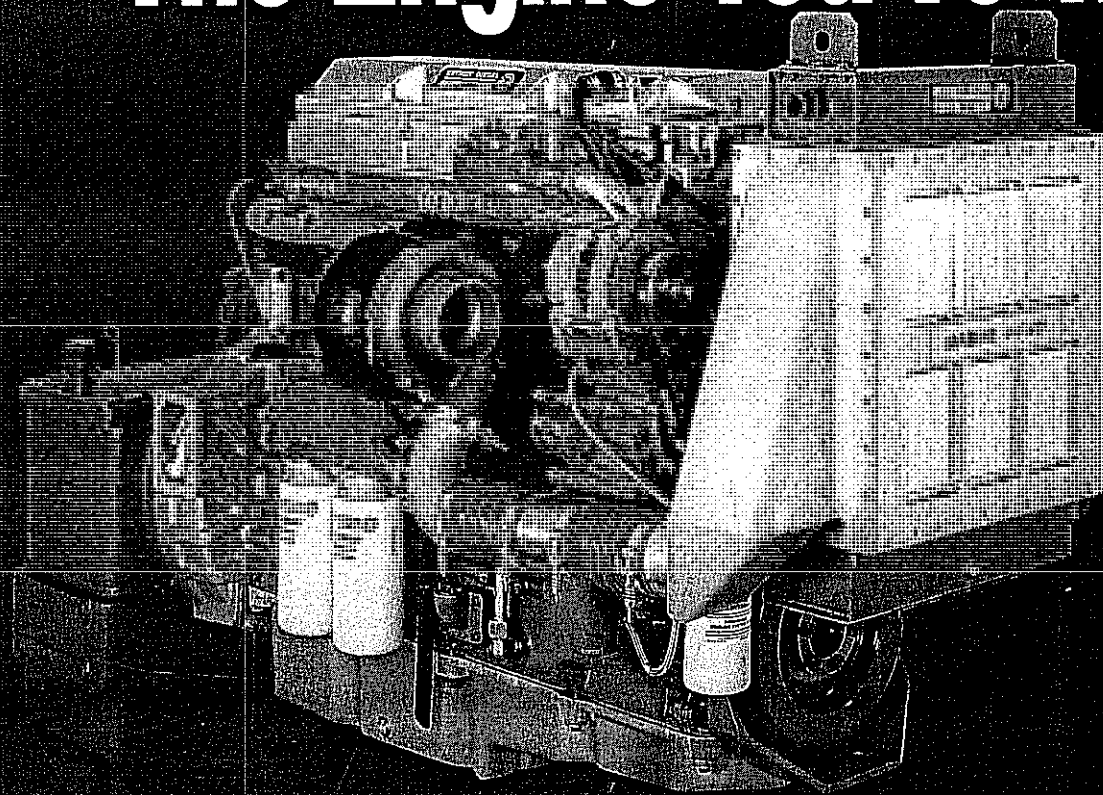


*Commercial Marine Power*

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# ***Finally...***

## **The Engine You've Wanted**



***With The Fuel Economy  
You Deserve***

***And The Service  
You Expect***

**375 BHP (280 kW) @ 1800 RPM**  
**400 BHP (298 kW) @ 1800 RPM**

Air To Water Charge Cooler—Remote Mounting Required  
Photograph illustrates a typical marine engine

## Series 60® Features

**DDEC®**—Detroit Diesel Electronic Controls are standard on all Series 60 engines. The electronic unit fuel injector and engine management control system is the most advanced system in the industry. DDEC includes state-of-the-art diagnostics for critical engine functions.

**Overhead Camshaft**—This design optimizes intake and exhaust air passages in the cylinder head for easier breathing, and minimizes valve train losses by eliminating the need for push rods.

**Short Intake and Exhaust Ports**—The cylinder head has very short intake and exhaust ports for efficient air flow, low pumping losses and reduced heat transfer.

**Injector Rocker Arm with Ceramic Rollers**—The cam follower roller in the Series 60 injector rocker arm is made of silicon nitride. The low wear properties of this ceramic makes it possible to operate at very high injection pressures while maintaining long life of the roller.

**Iron Crosshead Pistons**—The top ring can be placed much closer to the top of the iron crosshead piston. This reduces the dead volume above the top ring and improves fuel economy.

**Bearings**—The Series 60 engine features large main and connecting rod bearings for long life.

**Eight Head Bolts per Cylinder**—The head bolts provide a uniform load on the gasket and liner to reduce stress on the liner flange and back counterflange.

**High Efficiency Turbocharger**—Combined with a pulse-recovery exhaust manifold, the high efficiency turbocharger provides an efficient transfer of energy for improved fuel economy.

**Top Liner Cooling**—The Series 60 engine features top liner cooling. This has been accomplished by machining a coolant channel high up on the block, so that the top of the liner is surrounded by coolant, resulting in longer ring life.



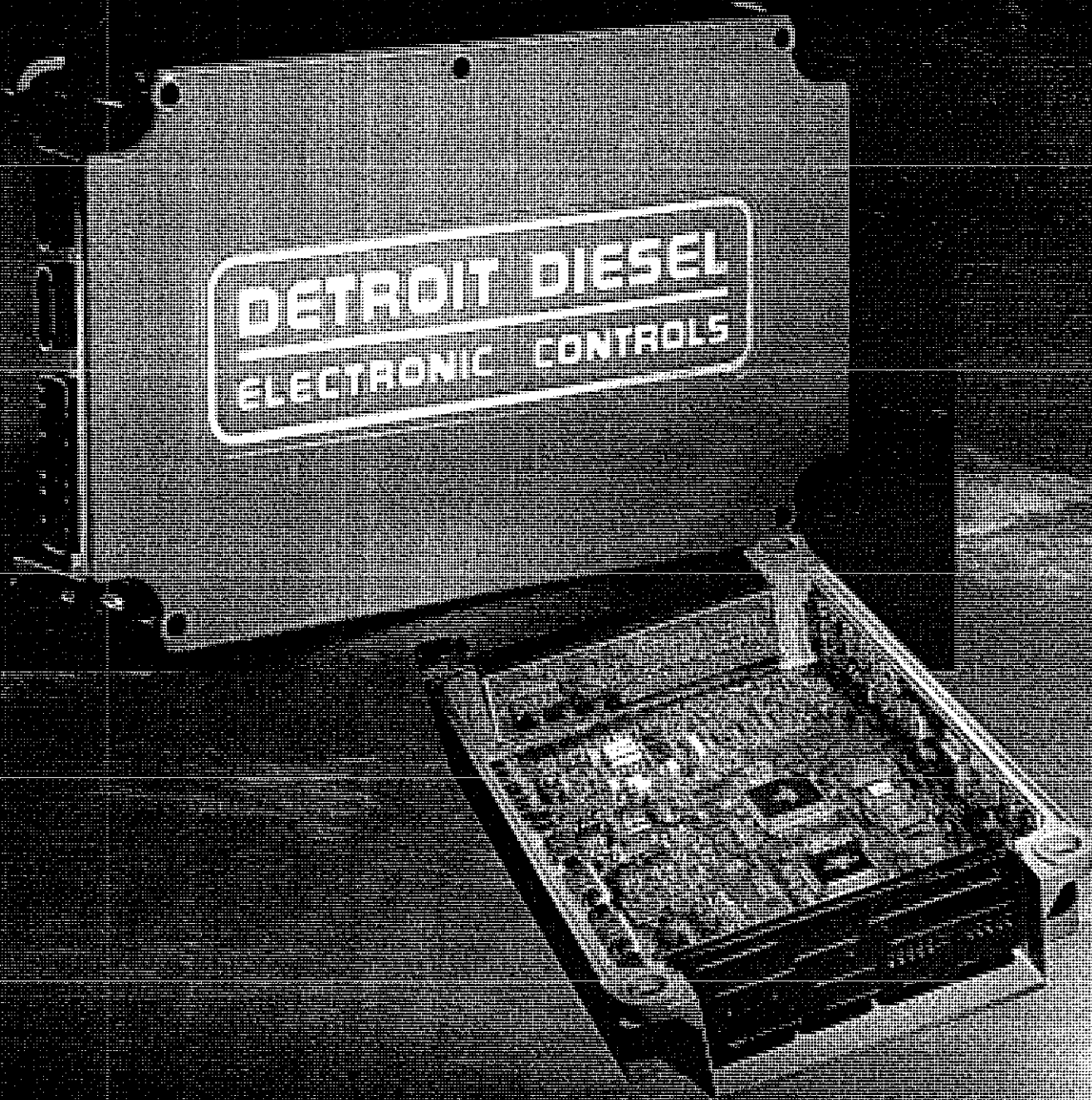


## **Detroit Diesel Electronic Controls (DDEC®)**

"Detroit Diesel is the industry leader of electronically controlled engines. First introduced in 1985, there are now over 400,000 DDEC equipped engines operating all over the

world. DDEC is a computerized electronic engine governing and fuel injection system that replaces mechanical controls in Detroit Diesel engines. In addition, within

its onboard computer DDEC offers engine protection and self-diagnostics to identify malfunctions in its components as well as the ability to troubleshoot engine problems."



## Major Components of DDEC are the Electronic Control Module (ECM) and the Electronic Unit Injector (EUI)

### The ECM Contains:

- A microprocessor that continuously monitors and analyzes the DDEC system with electronic sensors during engine operation.
- A programmable read-only memory (PROM) that provides instructions for basic engine control functions.
- Electronically erasable, programmable read-only memory (EEPROM) that stores engine calibration values.
- A backup microprocessor to operate the engine should the main microprocessor fail.

With this redundancy built into the ECM, reliability is assured. In fact, of the over 400,000 DDEC units in operation all over the world, there has never been a claim of the backup microprocessor.

### Electronic Unit Injector (EUI)

- Built on our patented mechanical unit injector design.
- Design simplifies plunger and replaces mechanical rack with an electronic solenoid.
- Allows precise metering and injection timing.

The EUI is actually simpler in the area of the plunger and bushing than the mechanical unit injector.

The amount of fuel injected and the timing are determined by information fed into the ECM from sensors located on the engine.



## DDEC Features

### Reduced Smoke

A sensor tells the ECM how much turbo boost or air is available. The ECM matches the proper amount of fuel to insure complete combustion, virtually eliminating black smoke on acceleration. During cold starting, DDEC advances injection timing which reduces fueling to minimize white smoke.

### Improved Performance

Another advantage of matching the Air/Fuel Ratio is improved horsepower. The increased torque for improved vessel acceleration, the ability to maneuver a tow quicker and more efficiently, engine performance is improved at all times.

### Improved Governing Control

DDEC maintains constant governed speed by automatically compensating for intermittent accessory loads. For example, if you are coming into a harbor at idle and an engine driven accessory comes on, your engine's RPM will not drop off. DDEC also provides a low idle speed option.

### Improved Engine Synchronization

With DDEC, add-on mechanical synchronization devices for multiple engine installations are a thing of the past. Your engines can be synchronized at the touch of a button and there is no power lag. Engines run smoother and accelerate faster because the engines are running at the same speed, versus one following the other. This is even more evident in full power turns where variance is less than 10 rpm between engines.

### Parts and Service

DDEC is fully warranted under the Detroit Diesel warranty provisions. The Electronic Control Module (ECM) and the Electronic Unit Injectors (EUI) are serviced on an exchange basis.

## **Detroit Diesel Electronic Controls Deliver Performance and Reliability**

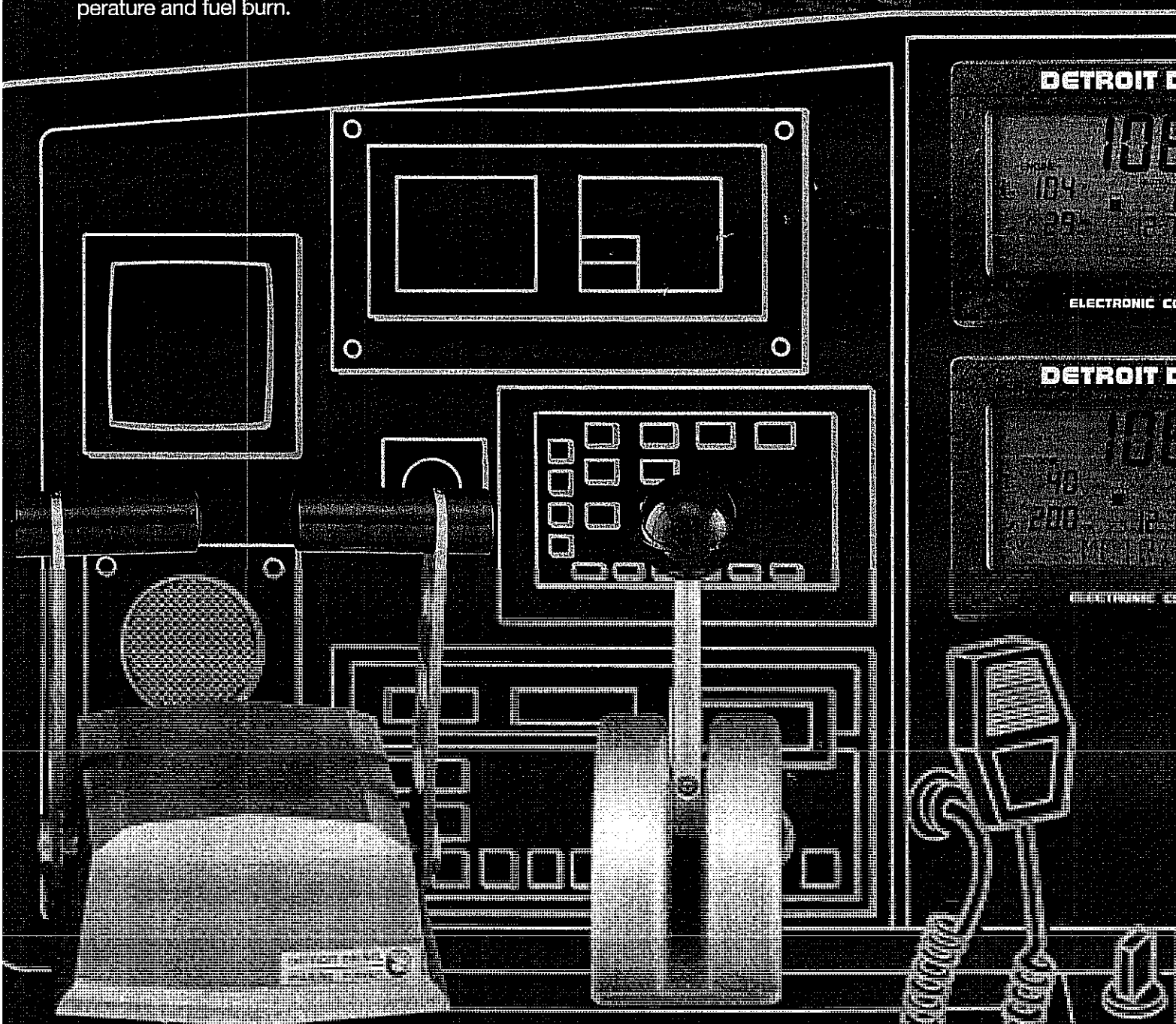
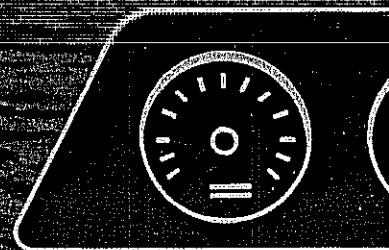
DDC supplies a complete system including single or dual controls for throttle and mechanical or our new electronic gears. Engines can be synchronized at the touch of a button and a low idle is also provided. The Electronic Display Module (EDM) replaces mechanical gauges. It displays engine RPM, oil pressure, engine temperature and fuel burn.

The EDM also monitors gear temperature and pressure, identifies which station is active and gear selection of forward, neutral or astern.

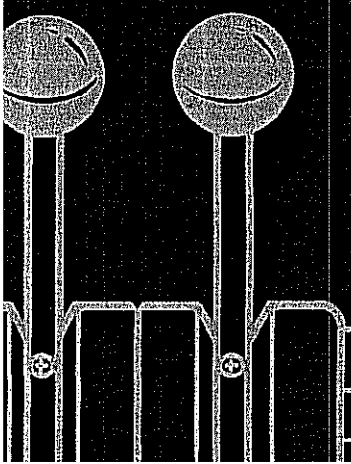
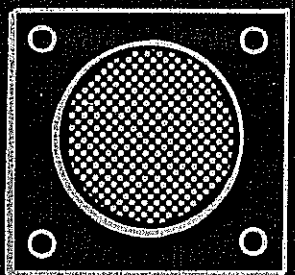
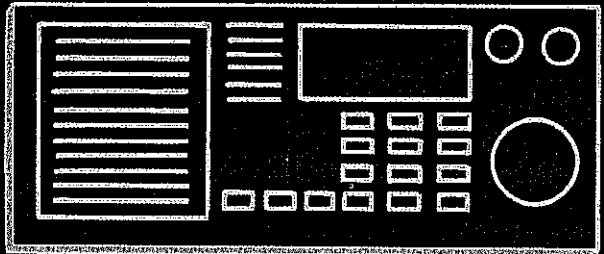
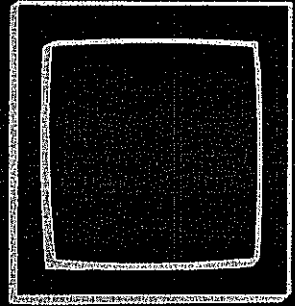
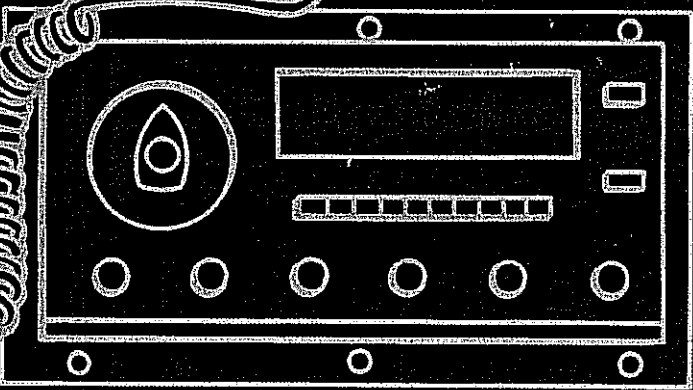
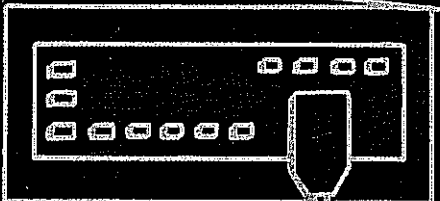
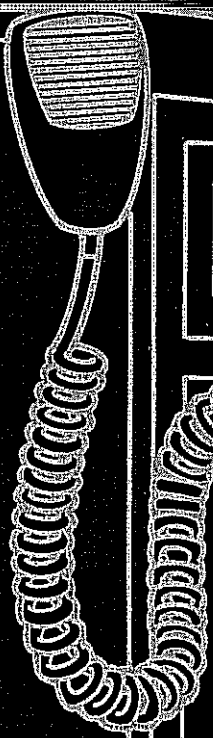
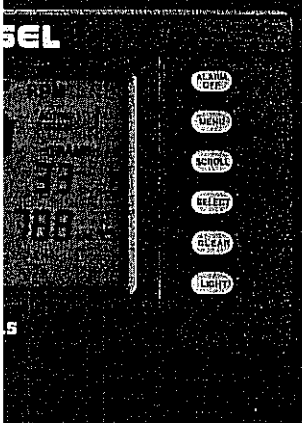
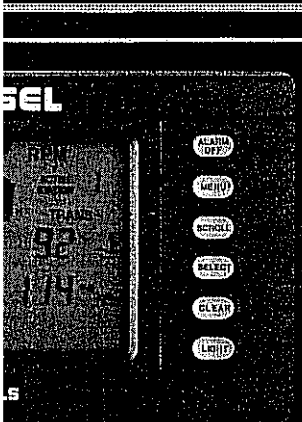
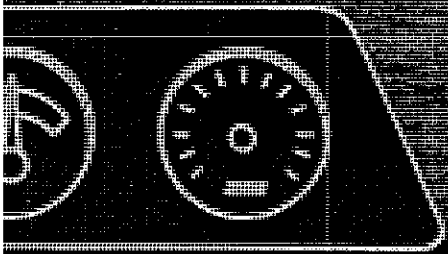
Alarm messages scroll across the lower part of the screen to precisely describe an alarm.

The EDM also has a menu that allows the captain to monitor such functions as engine load, trip fuel and trip hours (see DDC literature 6SA395 for more details).

Both controls and displays are completely waterproof and designed to withstand the marine environment.









## **Repower with Detroit Diesel for Performance and Dependability**

When you choose a Detroit Diesel marine engine, you're selecting a complete propulsion system. All of the equipment necessary to operate the engine reliably and efficiently is standard. DDC marine transmissions are mounted as an integral part of the engine.

### **Efficient, Affordable Installations**

Detroit Diesel offers a marine engine configuration to accommodate nearly every hull plan. And the simplicity of our engine design allows easier, clean, more efficient, and more affordable installations.

### **Performance and Reliability Are Designed-In**

Detroit Diesel has rugged features designed for long-term performance. For example, the cylinder block and crankcase are sturdy iron alloy castings. Cylinder liners are heat-treated cast iron with a hard, scuff-resistant surface to

stretch time between overhauls. Connecting rods are drop-forged steel. Crosshead pistons are cast iron — not aluminum — as is the case with many competitors of Detroit Diesel. The cylinder head is cast iron for distortion resistance, and the camshaft is drop-forged steel with hardened cams and journals.

### **Engineering Design Assistance**

Detroit Diesel Corporation offers you their expertise as you design your new boat, or as you plan the repowering of your existing craft. We can work with you or your naval architect to make certain your vessel has the best propulsion system powered with Detroit Diesel marine engines.

### **Simplified Maintenance**

Detroit Diesel marine engines have planned simplified maintenance. Major parts, such as the unit injectors, are quickly accessible and easily inspected and replaced. Most components are built into modular, easily replaced sub-assemblies.

## **A Worldwide Supplier of Reliable Parts and Outstanding Service**

As a Detroit Diesel customer, you can depend on our extensive network of distributors and dealers. These experienced professionals have the parts, general service and emergency service you need to get on the water and keep you there. Detroit Diesel maintains a complete inventory of service parts for all marine engines at distributors, who are strategically located throughout the world and at our parts distribution center in Canton, Ohio, Ridderkerk, Holland and Singapore. This gives DDC the ability to fill your parts requests overnight.

**DETROIT DIESEL**  
CORPORATION



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