

***For Your Convenience: This Northern  
Lights File Is Shared By Diesel Parts Direct***



**YOUR ONE STOP SUPERSTORE FOR DIESEL ENGINE PARTS**

**SHOP NOW**

**You don't have to resort to 3600 r-r-r-rpm to have a set that fits.**

Only have inches to spare? The 1800 rpm, M643 will fit.

Even in a sound shield its smaller than other sets that produce less power. Its lighter too. Only 345 pounds. 135 less than the competition.

But don't compare this 1800 rpm workhorse to the 3600 rpm sets you've seen -- and heard! We trimmed size, not quality.

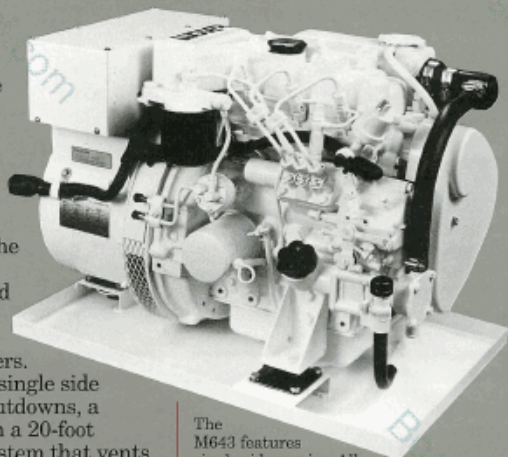
Instead of a rough, two cylinder diesel, the M643 has a smooth, quiet Lugger three.

The unitized freshwater cooling and gear driven water pump minimize troublesome belts, hoses and gaskets. And to resist corrosion, the manifold is cast iron instead of aluminum.

Strong but gentle. The AC generator has an automatic voltage regulator that protects your electronics with "clean" closely regulated power. Special AC windings power the AVR so it can respond faster and start larger electric motors and air conditioners.

To all this add single side service, safety shutdowns, a control panel with a 20-foot harness, a fuel system that vents itself, a coat of sparkling polyurethane paint and you now have a set that's every inch a Northern Lights.

There are just fewer inches.



The M643 features single side service. All maintenance points are within easy reach. View shows: oil drain, spin-on oil and fuel filters, gear driven raw water pump, mechanical fuel lift pump, dipstick, control panel plug-in, two oil fills, self venting fuel system and steel fuel lines.

One piece heat exchanger, expansion tank and exhaust manifold. Eliminates gaskets and hoses. Cast iron construction; no aluminum parts.

Valve cover/intake manifold with oil fill and washable air filter/silencer. Cast construction dampens intake and valve noise.

Removable end covers make cleaning heat exchanger a snap.

Battery charging 12 volt, 14 amp alternator and solid state DC regulator.

Belt guard.

Polyurethane paint. Sparkling white finish.

Platform vibration mounts for smooth operation.

Welded steel base with drip pan. Stronger than individual rails.

Large oil capacity for better lubrication.

Junction box contains DC relays, AC fuses, DC circuit breaker and solid state AC voltage regulator.

Liquid cooled exhaust elbow for safety.

Northern Lights direct coupled generator end with oversized cooling fan.



## M643 SPECIFICATIONS

### AC Output

5 kW ... 60 Hz, 1800 RPM, 1 Ph, 1.0 PF  
120-240 V/20.8 A, 120 V/41.6 A  
3.5 kW ... 50 Hz, 1500 RPM, 1 Ph, 1.0 PF  
110-220 V/15.9 A, 110 V/31.8 A  
Voltage regulation ..... 5%

### Engine

Lugger marine diesel ..... L643  
Cylinders ..... Vertical inline 3  
Displacement ..... 37.6 cid (.61 ltr)  
Bore/Stroke ..... 2.5/2.5 in (64/64mm)  
HP @ 1800 RPM ..... 8.4  
Approx. fuel rate, full load ..... 0.51 gph

### Installation Data

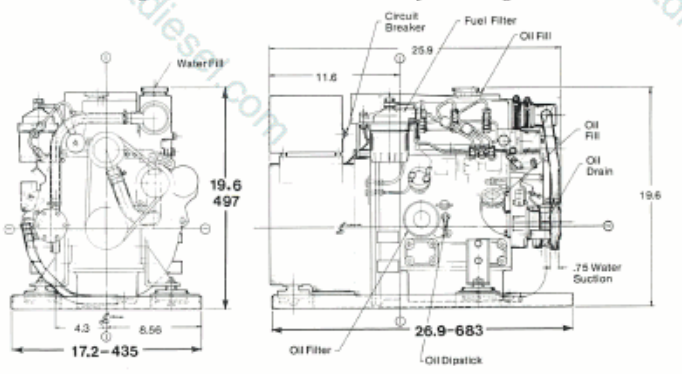
Wet exhaust elbow ..... 1.5" (38mm) OD  
Raw water inlets ..... 0.75" (19mm) OD  
Fuel inlet and return ..... 5/16" ID Hose

### Weight

Approx. dry weight ..... 345 lbs (157 kg)

## DIMENSIONAL DATA

Main dimensions given in inches (mm). Dimensions subject to change without notice.



## M643 FEATURES AND BENEFITS

### Engine Block

- Lugger, four cycle, 3 cylinder, liquid cooled, naturally aspirated, overhead valve marine diesel.
- Swirl combustion chambers improve fuel efficiency and reduce smoke.
- Glow plugs for quick, cold starting.

### Cooling System

- Freshwater cooling system.
- One piece heat exchanger, expansion tank and exhaust manifold. Fewer hoses and gaskets. Cast iron construction resists corrosion, electrolysis and heat better than aluminum extrusions.
- Cast iron exhaust manifold is freshwater cooled for safety and long life.
- Zinc anode electrolysis protection.
- Heat exchanger cooling is standard. Easy to clean, tube-type heat exchanger. Jabsco-type raw water pump of brass and stainless steel is gear driven: no belts to break.
- Keel cooling configuration optional.

### Fuel System

- Fuel system is self venting.
- Injection pump with 3-5% mechanical governor for close AC power frequency control.
- Pintle injectors with replaceable tips.
- Mechanical lift pump with hand primer. No electric pump to fail.
- Large spin-on fuel filter.
- Steel fuel lines.
- Stop solenoid controls fuel rack, not throttle. Eliminates speed variance.

### Intake and Exhaust

- Cleanable air cleaner in cast intake manifold reduces intake noise.

- 1-1/2 inch water lift muffler optional.
- Cast iron, wet exhaust elbow for safety. Dry exhaust elbow is optional.

### Lubrication System

- Full flow, spin-on oil filter with bypass.
- 3 US quart oil capacity for superior lubrication and oil change intervals.
- Oil drain for quick, clean oil changes.
- Closed crankcase vent system keeps engine room clean.

### DC Electrical System

- 12 volt starter motor and 14 amp battery charging alternator with integrated regulator and belt guard.
- Standard panel: Remote mount S-1B has hour meter, stop-start switch with run light and preheat switch.
- Optional: Remote mount S-3C panel has gauges for oil pressure, water temperature, hours and DC volts. S-4 panel has engine gauges and AC meters.
- 20 foot plug-in panel harness lets you mount your panel anywhere onboard. Better than inaccessible unit mount panels that are prone to vibration problems. Harness extensions and Ys for multi-panel systems are available.
- Low oil pressure and high water temperature safety shutdowns standard. Shutdowns and alarms for high exhaust temperature, low oil level, low water level and overspeed are optional.



### AC Generator

- Northern Lights direct coupled, 4 pole, revolving field, 4 lead reconnectable generator with Class F insulation and prelubricated bearing.
- External automatic voltage regulator gives you 5% voltage regulation. This "clean" power protects your sensitive electronic equipment. AVR is powered by a dedicated AC winding for improved motor starting.
- AVR and mainline fuses protect generator from AC overloads and shorts.

### Special Equipment

- Steel base frame with drip pan. Easy to mount. Keeps engine room clean.
- Platform mounts isolate vibration.
- White polyurethane paint for long-life finish and service visibility.
- Operator's, parts manuals standard.

Northern Lights sound enclosures maximize your onboard comfort. Powder coated marine aluminum panels lined with foam deaden noise yet allow easy service access. M643 enclosure is L 28.52 (725) x W 18.64 (474) x H 21.26 (540) and weighs 42 lbs (17 kg).



### DEALER:



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Materials and specifications subject to change without notice.  
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