NORTHERN LIGHTS
DIESEL ELECTRIC & POWER SYSTEMS

Low Temp Rise Makes New Northern Lights Even Better.

THE NEW GENERATION OF GENERATOR SETS.

New Northern Lights Marine Generators are Proof that Even the Best Can be Improved.

A dedication to quality and constant product improvement have made Northern Lights generator sets the standard of the marine industry.

The New 8, 10, 12, 16 & 20 kW.

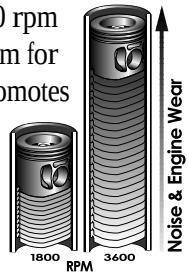
Our existing 8-20 kW range has been completely upgraded and a new 10 kW model has been introduced. All feature generators from our new PX-300K series.

95°C Temp Rise for Long Life.

These brushless generators are manufactured for the rigors of marine operation. They have heavy-duty copper windings for 95 degree temperature rise at 50 degree ambient temperature, which promotes long winding life. Each features an automatic AC voltage regulator that protects your electrical equipment by minimizing power dips and surges. See back page of this brochure.

1800 RPM Lugger.

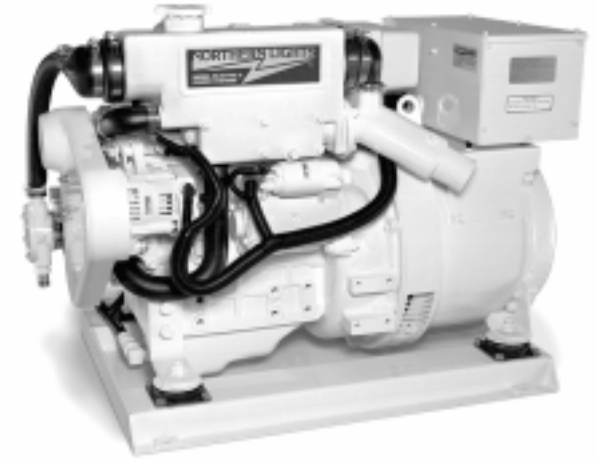
Powered by Lugger diesel engines, these sets operate at 1800 rpm instead of 3600 (1500 rpm for 50 Hz countries). This promotes engine life by reducing internal stresses.



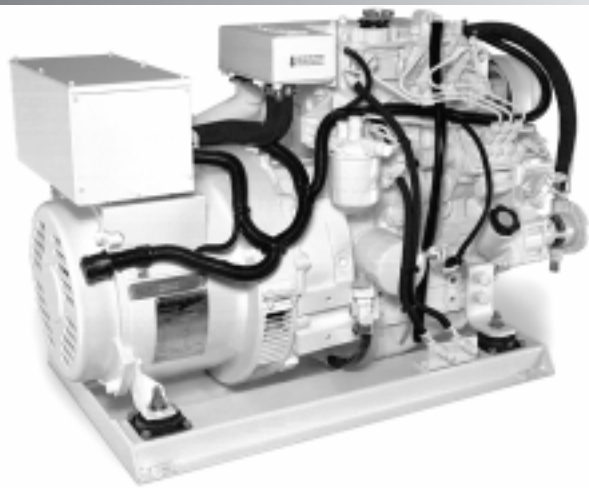
Ask for More Information.

There are individual specification sheets on each new model. Ask your dealer for one and set up an appointment for them to visit your vessel. They will make a recommendation and give you a price quote on the installation.

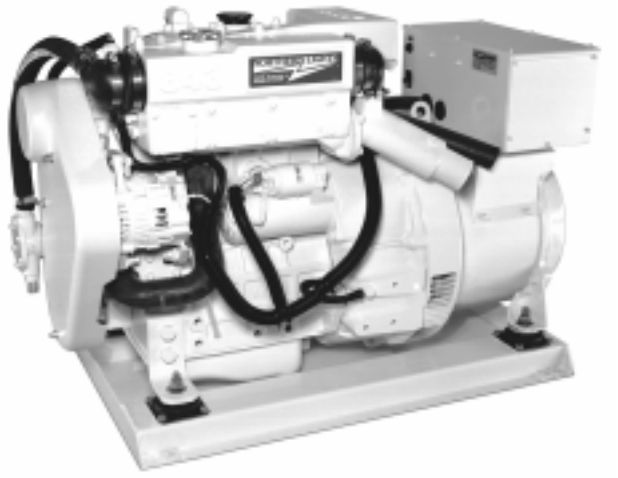
M753K, 8 KW



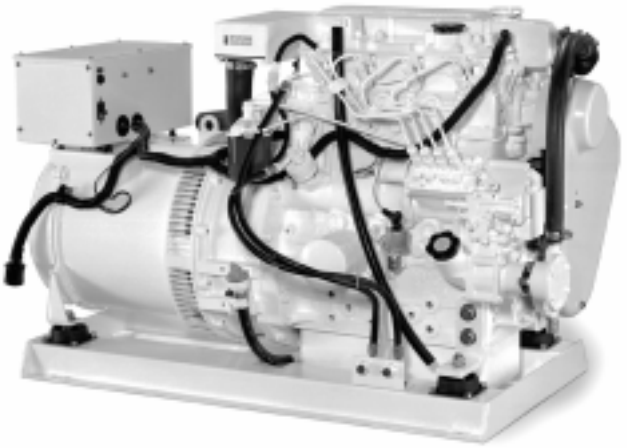
M843JK, 10 KW



M843NK, 12 KW

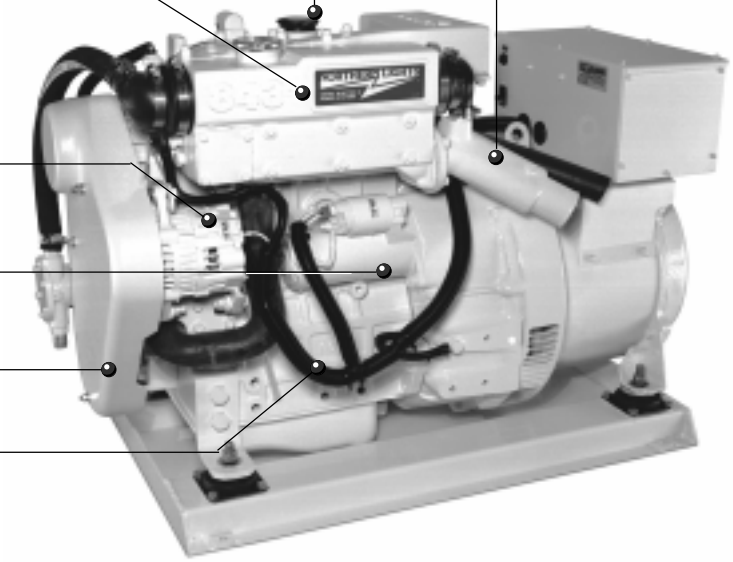


M844LK, 20 KW



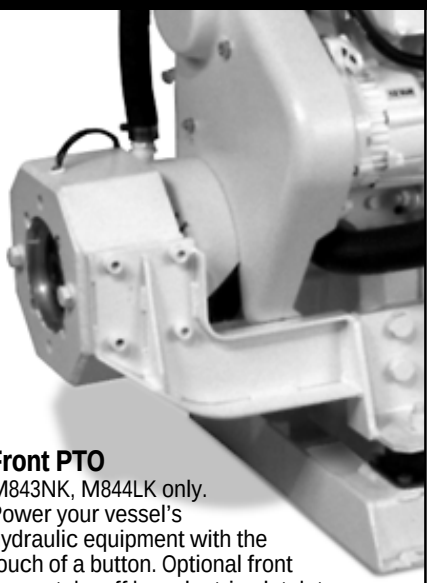
M843NK Generator Set

12 kW, 60 Hz, 1800 RPM (10 kW, 50 Hz, 1500 RPM)



- Top and side oil fills.
- Cast iron wet exhaust elbow standard. Dry exhaust elbows available.
- Cast iron, mono-component liquid cooled exhaust manifold, expansion tank and heat exchanger.
- 12 volt DC battery charging alternator.
- 12 volt DC electric starter.
- Beltguard.
- DC wiring is protected by wire loom.

Front Power Take Offs

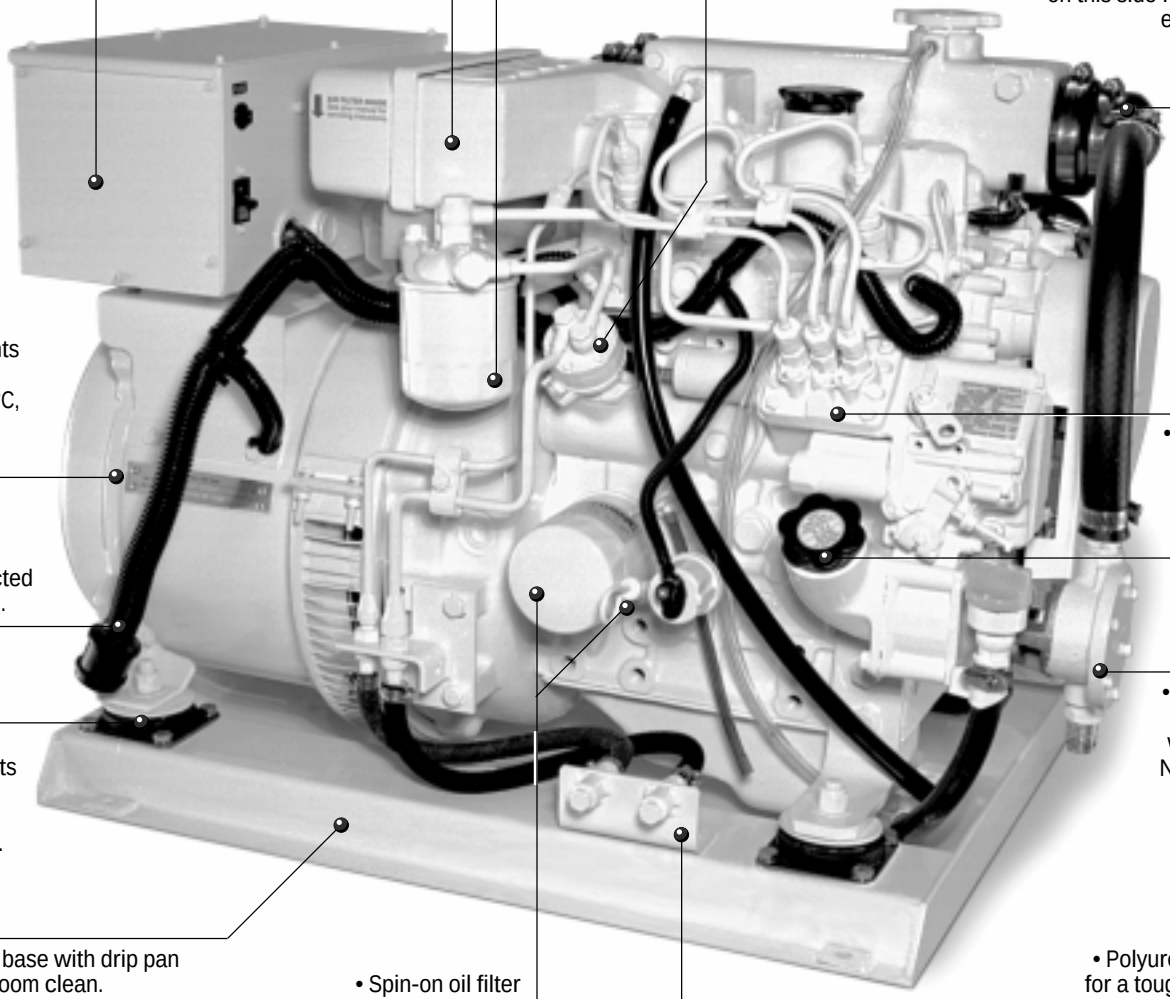


Front PTO

M843NK, M844LK only. Power your vessel's hydraulic equipment with the touch of a button. Optional front power take off has electric clutch to run hydraulic pump for bow thrusters, winches and deck gear. Mounting pad is for SAE-B spline, 2 or 4 bolt hydraulic pump.

M753K Generator Set

Like all Northern Lights marine sets, this M753K, 8 kW has all its maintenance points grouped on this side for quick and easy service.



- Junction box contains AC terminal strip, solid state AC automatic voltage regulator with circuit breaker and engine's DC circuit breaker.
- Cast intake manifold with washable air filter and air intake silencer hose.
- Spin-on fuel filter.
- Fuel lift pump with hand primer.
- Heat exchanger end covers make cleaning element easy.
- Northern Lights brushless, 50 or 60 Hz, 95°C, direct coupled generator end.
- Bosch-type in-line fuel injection pump.
- DC wire harness with plug-ins protected by plastic loom.
- Top and side oil fills.
- Gear driven Jabsco sea water pump. No drive belt.
- Four platform vibration mounts for smooth operation and lateral stability.
- Welded steel base with drip pan keeps engine room clean. Stronger than rail-type base.
- Spin-on oil filter and dipstick.
- Fuel manifold.
- Polyurethane paint for a tough, sparkling white finish.

Standard Features and Optional Equipment

Engine Block.

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

Cooling System.

- Freshwater cooling in heat exchanger or keel cooled configuration with thermostatic temperature control.
- One piece heat exchanger, expansion tank and exhaust manifold. Troublesome hoses and gaskets are minimized. The cast iron construction resists corrosion, electrolysis and overheating better than aluminum extrusions used on some competitive sets.
- Heat exchanger cooling includes: Easy to clean, tube-type heat exchanger. Jabsco-type raw water pump of bronze and stainless steel. Pump is mounted for easy access and is gear driven. No belts to fail.
- High exhaust temperature switch standard.

Fuel System.

- Fuel system is self venting.
- Bosch type injection pump with 3-5% mechanical governor for close AC output frequency control.
- Pintle injectors with replaceable tips.
- Mechanical fuel lift pump with hand primer. No electric pump to fail.
- Large spin-on fuel filter.
- Flexible fuel lines routed to base for easy connection to fuel system.
- Stop solenoid controls fuel rack, not throttle. Eliminates speed variance.

Intake and Exhaust.

- Cleanable dry-type air cleaner in cast intake manifold silences intake noise.
- Cast iron, wet exhaust elbow for safety. Dry exhaust elbow optional.
- 2 inch water lift muffler optional.

Lubrication System.

- Full flow, spin-on oil filter with bypass.
- Oil drain for quick, clean oil changes.

DC Electrical System.

- System uses reliable relays instead of unrepairable printed circuit board.
- 12 volt starter motor and DC battery charging alternator with integrated regulator and belt guard.
- Standard panel: Remote mount S-1B with hour meter, stop-start switch with run light and preheat switch.

S-1B control panel

- 20' (6 meter) plug-in panel harness lets you monitor your set from the bridge. 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.

AC Generator.

- Northern Lights direct coupled, brushless AC generator is maintenance free.
- 4 lead/1 phase 50 or 60 hertz AC power output standard. 12 lead/3 phase optional.
- Generator features: high quality epoxy insulation, accessible diodes, oversized bearings and junction box for AC wiring.
- Automatic voltage regulator gives quick response to load changes. Voltage regulated to ±1% RMS no load to full load.
- AVR circuit breaker protects your generator from overload damage.

Special Equipment.

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

Classification Standards.

- Sets built to major classification society standards.

CE

Optional Equipment.

See separate brochure for complete line of optional and accessory equipment for your set.

- Optional panels: Remote mount S-3C has gauges for oil pressure, water temperature, hours and DC voltage. S-4 panel has DC gauges and AC meters.
- Shutdowns for high exhaust temperature, low oil level, low water level and overspeed.
- Wet and dry exhaust mufflers.
- Keep your fuel clean and dry with Northern Lights fuel filter.
- Sound enclosures maximize your onboard comfort. Powder coated aluminum panels lined with foam deaden noise and allow easy access.

8-20 kW Specifications

Model Number	M753K	M843JK	M843NK	M844K	M844LK
60 Hz, 1800 RPM,	8 kW	10 kW	12 kW	16 kW	20 kW
50 hz, 1500 RPM,	6 kW	8 kW	10 kW	12 kW	16 kW
Phase	All are: 1 phase standard (3 phase opt)				
Voltage regulation	All are: Plus or minus 1% RMS				
Temperature Rise, 1800 RPM	All are: 95°C at 50°C ambient				
Engine					
Lugger marine diesel	753	843J	843N	844	844L
Vertical inline cylinders	3	3	3	4	4
Cubic inch displacement	58	81	91	121	135
Bore/Stroke - mm	75/72	84/80	84/90	84/90	84/100
HP @ 1800 RPM	13.5	17.5	20.1	26	32
Approx. fuel rate at 1800 rpm full load - gph	0.9	1.1	1.2	1.4	1.7
Installation Data					
Wet exhaust outlet - inches	2	2	2	2	2
Raw water inlet - inch OD	0.75	0.75	0.75	0.75	0.75
Fuel inlet-return - inch NPT	1/4	1/4	1/4	5/16	5/16
Weight - pounds	529	659	697	873	970
Length - inches	32.5	36.6	36.6	42.0	43.4
Width - inches	19.2	19.3	19.3	19.3	19.3
Height - inches	23.7	24.2	24.7	26.7	27.5
Sound Shield Dimensions					
Length - inches	37.3	40.2	40.2	50.4	50.4
Width - inches	23.7	23.7	23.7	25.7	25.7
Height - inches	25.9	27.1	27.1	29.5	29.5
Weight - pounds	88	97	97	165	165

A look inside the PX-300K generators used on 8 to 20 kW sets.

PX-300K Series Generators Are Small, Light And High Performance.

We gave our engineers a task that was simple to define but difficult to execute; "Increase generator performance without increasing generator set size." The PX-300K series of 8, 10, 12, 16, and 20 kW generators achieve the goal of higher performance and better electrical efficiency while decreasing generator set length.

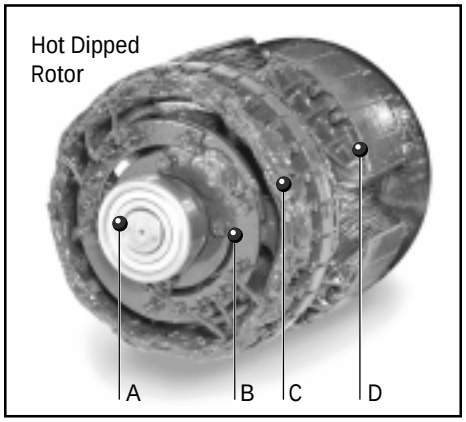
More Copper.

Adding copper throughout the generator means better performance.

A. Generator efficiency is increased.
B. Motor starting capability is increased.
C. The PX-300K has only a 95°C temperature rise with 50°C ambient air. This extends generator life.

The Rotor.

The rotor is made up of a shaft, large sealed bearing (A), an easily accessible rotating rectifier (B), a large diameter exciter rotor (C) and main rotor (D). The rotor, exciter and stator are totally hot dipped in epoxy for protection against the marine environment.



The Skewed Stator.

The stator is hand wound by experienced craftsmen. The winder's eyes are a constant quality control check. The skewed design (angled grooves) makes electricity with a clean, symmetrical wave form that today's electrical equipment demands.

The stator is encased in a strong, rolled steel generator frame which has machined ends to mate with the cast iron bearing housing and SAE housing ring.

Bearing Housing & Exciter Stator.

The bearing housing is cast iron, not aluminum. Iron is stronger, resists corrosion and has a thermal expansion rate that more closely matches the bearing on the rotor. This helps to prevent "spun bearing" failures that plague generators with aluminum housings.

We bolt the exciter stator in the removable bearing housing for easy access. Some manufacturers weld the exciter inside the frame so it can't be replaced.

AVR = 1% RMS.

The DST-51 solid state automatic voltage regulator (AVR) allows the generator to produce 50 *OR* 60 hertz power at 100 *OR* 200 class voltage. Boatbuilders: you can stock one set for both domestic and foreign markets. It also produces clean ±1% RMS voltage to protect delicate electronics and extend the life of electric motors.

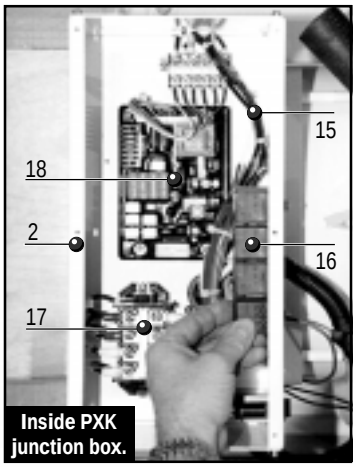
1 Phase Standard – 3 Optional.

Standard PX300K generators are 1 phase, 4 wire. If you need 3 phase power, order your set with an optional 12 wire PXK generator.

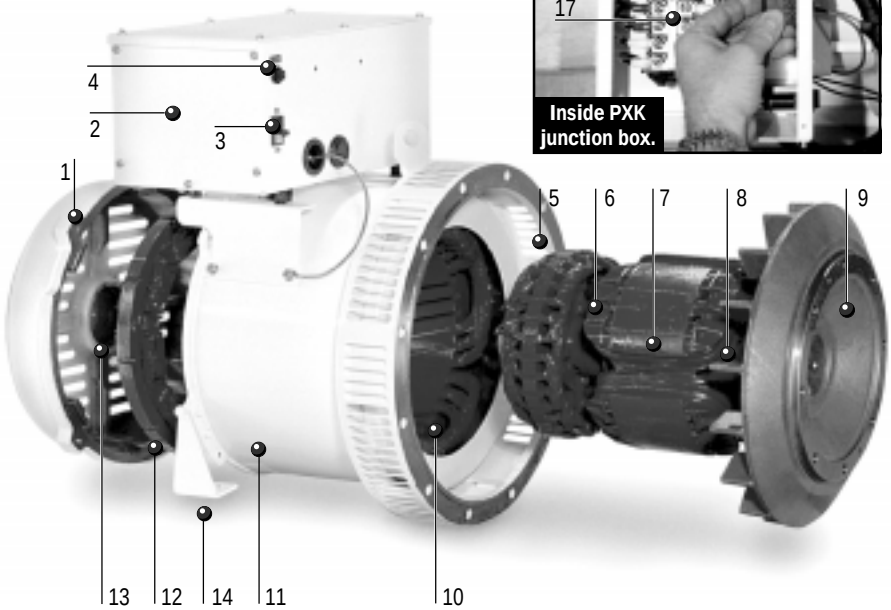
The Leader Uses Leads.

Some manufacturers use the solid copper magnet wire to connect the set to the load. This "leadless" design is cheaper but prone to failure from vibration. We use multi-strand wire leads with high temperature insulation. These leads go to a terminal strip in the junction box for easy connection to the boat's AC system.

1. Cast iron bearing housing.
2. Junction box with vibration isolation mounts.
3. 2 amp AVR AC circuit breaker.
4. Circuit breaker for engine's DC system.
5. Cast iron SAE housing.
6. Large diameter exciter rotor.
7. Large diameter main rotor.
8. Cooling fan.
9. SAE, cast iron mounting ring.
10. Hand wound skewed stator.
11. Rolled steel generator frame.
12. Exciter stator bolts into bearing housing.
13. Bearing carrier.
14. Mounting foot.
15. Multi-strand generator leads.
16. Engine DC system relays.
17. AVR junction block.
18. DST-51 Automatic Voltage Regulator.



Inside PXK junction box.



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DEALER: