

NORTHERN LIGHTS



Iyanough built by Gladding-Hearn
One 175 kW Northern Lights Generator Set

Reliability. Durability. Simplicity.

Ask any boat owner what they for in their marine systems and more than likely they will mention one of the above factors. Engines have to run clean and efficiently. Generator sets must be failsafe and quiet. Refrigeration and air conditioning systems must be effective and convenient. If any component of these systems so much as hiccups, a cruise, a vacation or a livelihood can be in jeopardy.

Is there a simple solution to the demands sea-going puts on its generator, engine and cooling systems? For many operators, the answer is an emphatic "Yes". They rely on the long-life, easily maintained reliability of Northern Lights generator sets, Lugger propulsion engines and Technicold cooling systems.

Fifty years ago, the Seattle-based company began manufacturing equipment for the demanding rigors of Alaskan commercial fisherman. Over time, other mariners took notice of the remarkable quality of Northern Lights, Lugger and Technicold and began seeking out these products for their own uses.

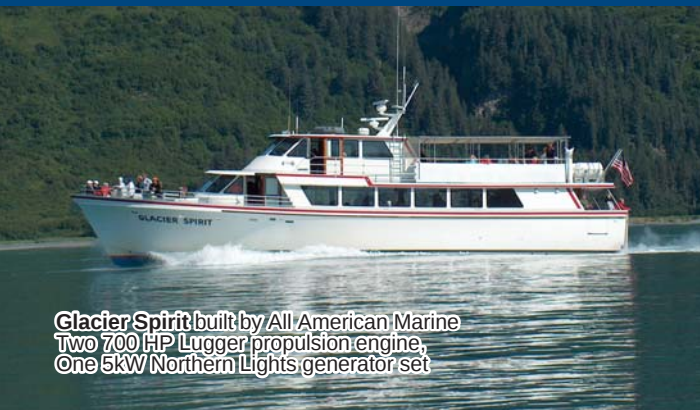
Today, Northern Lights[Lugger]Technicold equipment is used throughout the sea-faring world. With a worldwide dealer network, legendary engineering and uncompromising craftsmanship, Northern Lights products stand as the state of the art in marine power, propulsion and cooling.



LUGGER



NORTHERN LIGHTS



Glacier Spirit built by All American Marine
Two 700 HP Luger propulsion engine,
One 5kW Northern Lights generator set



▲ M843NW3
10 - 12 kW

SPECIAL FEATURES

- Three, four and six cylinder, liquid cooled, naturally aspirated, overhead valve diesel engine block.
- Freshwater cooling in heat exchanger or keel cooled configuration.
- One piece exhaust manifold, expansion tank, and heat exchanger housing.
- Cooling with cupro-nickel tube-type heat exchanger. Gear-driven raw water pump.
- Reliable mechanical fuel lift pump with hand primer.
- Cleanable dry-type air cleaner in cast aluminum, noise attenuating intake manifold.
- Cast-iron wet exhaust elbow.
- Full flow, spin-on oil filter with bypass. Oil drain for quick, clean oil changes.
- DC Logic System.
- 12-volt starter motor and battery charging alternator with integrated regulator and belt guard.
- Remote mount control panel with safety shutdowns.
- Brushless 50 or 60 Hz direct coupled AC generator rated at 90° C rise. Voltage regulated to $\pm 1\%$ no load to full load. AVR circuit breaker overload protection.

Marine Diesel Generators

Models range from 4.5 kW to 520 kW

When it comes to marine power systems, Northern Lights is a favorite with vessel operators worldwide. Built to meet the toughest standards, these rugged marine diesel generators respond with ease to rigorous demands and have no equal in their class.

At 1800 rpm (60 Hz) or 1500 rpm (50 Hz), the Northern Lights generator's Luger diesel engine provides the torque and efficiency necessary for today's loads. A smooth-running diesel operating at a lower rpm means less wear and tear for longer engine life with the trusted reliability of the Northern Lights name.

It's the meticulous craftsmanship that makes Northern Lights power the industry's most reliable. High copper content within the generator end enhances motor starting. The hand-wound, skewed stator makes electricity with a symmetrical sine wave for today's sensitive electrical equipment. And a corrosion-resistant epoxy coating ensures protection against the harsh marine elements.

Maintenance is quick and easy. The single-side servicing feature places all regular maintenance points right at your fingertips on one side of the engine. The self-venting fuel system and mechanical fuel lift pump provide ultimate reliability without depending on electrical components.

Did you know?

1. No zinc anode required on 5-20 kw models. To reduce troublesome gaskets and hoses, Northern Lights' cast-iron exhaust manifold, expansion tank, and heat exchanger housing are combined into a single component, freshwater cooling system. The raw water pump's convenient location makes impeller changes a snap, and it is gear-driven so there is no pump drive belt to fail.
2. Northern Lights' hassle-free DC Logic System continuously controls and monitors vital engine functions to provide unmatched reliability, protection, and easy, inexpensive service for technicians or crew. Low oil pressure, high exhaust temperature, and high coolant temperature safety shutdowns come standard.
3. Durable stainless steel fasteners are used to ensure easy service over the long life of your Northern Lights Generator.
4. Northern Lights use vibration isolation mounts to eliminate 98% of vibration. Along with intake silencers, and cast valve covers, Northern Lights generators are remarkably smooth and quiet. For added luxury, install an optional Northern Lights sound enclosure – the industry leader in noise attenuation technology.
5. Northern Lights 5 - 30 kW generator sets feature auxiliary stator winding. This unique innovation provides a number of benefits, including real 300% short circuit capability, improved AC breaker performance and classification society compliance.

Bering Leader builder: Patti Shipyard

One 40 kW Northern Lights generator set

LUGGER

Marine Propulsion Engines

Models range from 30 HP to 900 HP

When it comes to performing unforgiving jobs, few marine diesel engines compare to Luger by Northern Lights. Equipped with a comprehensive list of features to increase performance and keep your operating and maintenance costs low, no detail has been overlooked. It's no wonder Luger engines are recognized industry-wide as the most reliable marine propulsion engines available.

Luger's design philosophy has been its strength from the beginning. Most hoses and leak points have been engineered away. Most service points are grouped on one side of the engine and are easily accessible. Many fresh and raw water pumps are gear-driven to eliminate belts. And the jacket-water cooled turbocharger has been placed low and at the rear of the engine for ease of installation and service. Many Luggers now feature electronic controls. The steadfast reliability of Luger's mechanical engines are only enhanced by greater electronic control. A wide range of options means that your Luger can be customized to be as unique as your vessel.

Luger has long been known for providing power without compromise to a wide array of marine applications. From trawlers to tugs; passenger vessels to sportsfishers, Luggers are the clean, efficient and reliable power producing solution.

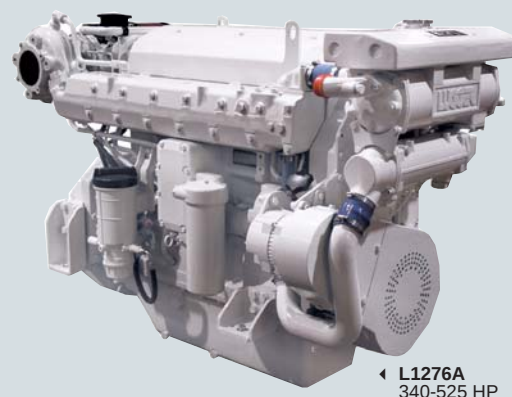
Did you know?

1. Luger starts with heavy duty industrial and off-highway base engine – no truck engines here! Low rpm, high torque, durable engines designed for long life and customized for marine use.
2. Every Luger features simple cooling system designs with gear driven pumps, and use minimal hoses and clamps reducing parts and service needs. Most Luggers can be configured for keel or heat exchanger cooling.
3. Each Luger is custom built to exact customer specification. This allows for factory installed options like PTOs, accessory drives, and multiple alternators to be installed and tested before delivery.
4. Each Luger is dyno tested after marinization is complete. The marine gear is installed and it's run again.
5. Horsepower is further maximized on select models thanks to Luger's superefficient aftercooler. A liquid-cooled turbocharger and replaceable air filter allow the engine to "breathe" and increase its service life. The optional Air-Sep® further enhances the engines capabilities.

6.  Luggers are designed to meet IMO and Tier II EPA Marine requirements. Rest assured that your diesel engine is safe and environmentally friendly.



Ocean Warrior
One 700 HP Luger Propulsion Engine



L1276A
340-525 HP

SPECIAL FEATURES

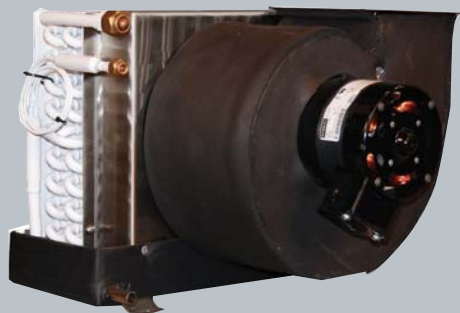
- Two-pass jacket water cooled exhaust manifold.
- Replaceable wet-type cylinder liners.
- Gear driven overhead camshaft with oversized bearings.
- Engine mounted electronic control unit (ECU).
- CAN Bus interface.
- Gear driven jacket water and raw water pumps.
- Freshwater cooled gear oil cooler.
- Turbo is rear mounted to back of wet manifold.
- Two thermostats for safety and fast warm-ups.
- Keel cooled unit has pads for both SAE-A and SAE-B pumps.
- Customizable with a full-line of options and accessories.
- Modern 4 valves-per-cylinder design places electronic unit injector in the center of the combustions chamber.



Stiletto builder: Knight and Carver
One 55kW Northern Lights generator set
2006 © M Ship/Bobby Greiser



Chilled Water Air Conditioning CW30B



Blow Through Air Handler RA16B



Remote Condensing Unit RC16



Technicold Air Conditioning and Refrigeration Systems

Since its inception, Technicold has been dedicated to producing the finest possible marine cooling systems. Founded as Rich Beers Marine in 1981, Technicold has always been an engineer-based, quality oriented company with a deep commitment to customer service and satisfaction.

Technicold products are designed for the demanding and unforgiving marine environment. Every piece of equipment produced is to the exacting standards that our customers have come to expect. Whether on a 30-foot sailing vessel, a 50-foot fishing boat, or on a 300-foot motor yacht, Technicold has the cooling solution that is most suitable for your needs.

Because reliability is critical in the marine environment, Technicold cooling systems are functional as well as low maintenance. Value is a cumulative quality, so we never compromise performance or reliability by cutting corners. This ensures that an investment in a Technicold air conditioner or refrigeration system will be as solid tomorrow as it is today.

Technicold offers a comprehensive line of chilled water air conditioners from 24,000 to 720,000 BTU and a line of chilled water air handlers 8,000 to 32,000 BTU. In addition to a wide range of "plug and play" systems that are ready to install, Technicold offers fully customizable cooling systems for virtually any application. Stackable and fully customizable, Technicold can produce the cooling solution that is right for your yacht, trawler or commercial application.

Technicold's engineering department and professional staff stand ready for assistance and follow up. Skilled, factory trained technicians ensure that any challenge is answered swiftly and completely. Technicold features an extensive parts inventory, in-house fabrication systems and EPA licensed technicians.

Innovative design, quality control, aesthetics and reliability have made Technicold the recognized symbol of excellence in the industry.



LUGGER



www.northern-lights.com

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