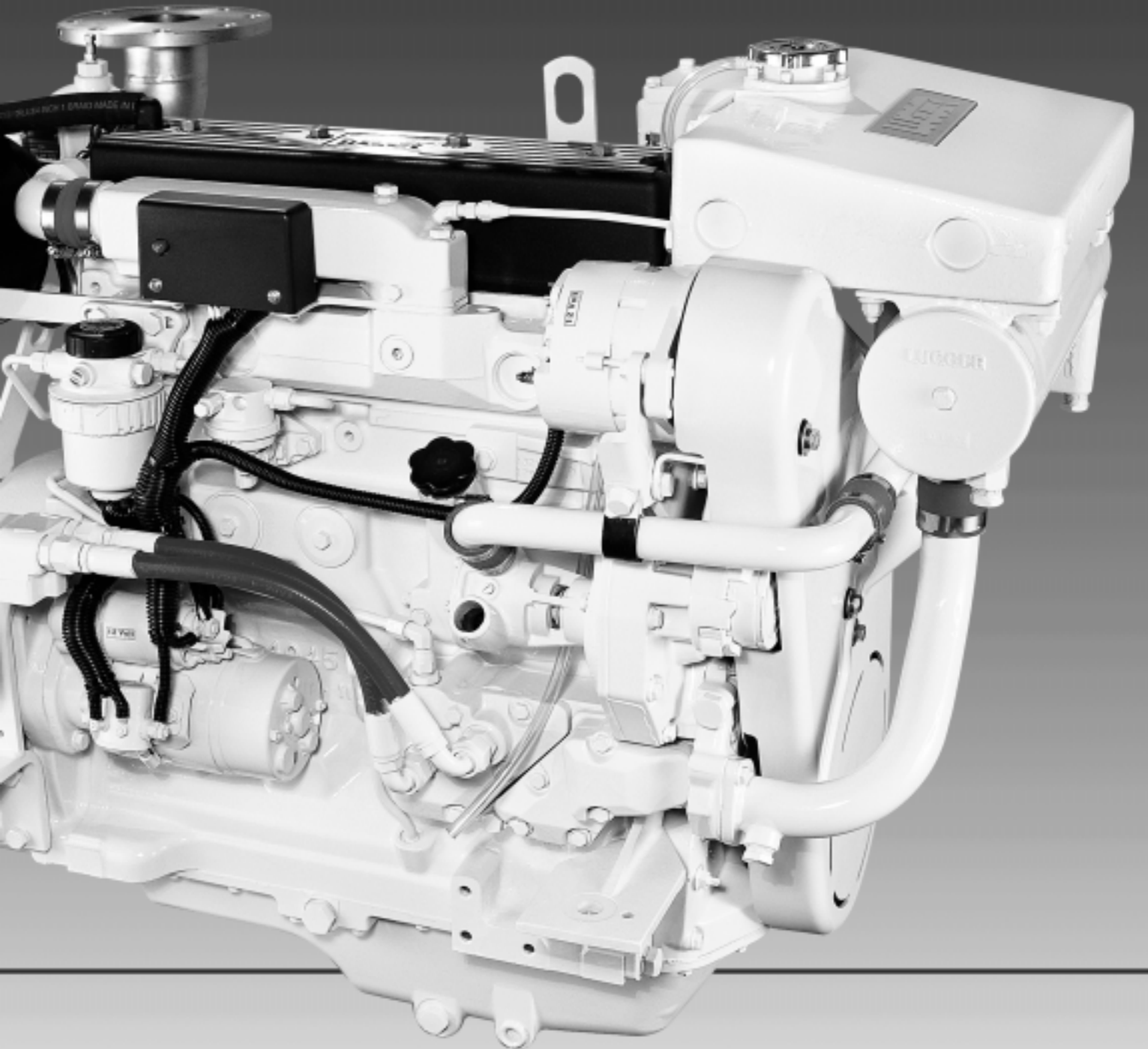


**WUZZER**

**LP445**

**65 to 135  
Horsepower**



# LP445

**Serious iron with power from displacement, not high revolutions.**

When it comes to your vessel's propulsion, the only bargain is an engine that works when you need it. Luger engines are serious iron, built for the rigors of commercial fleets. The best quality components and careful engineering make this engine

the best of proven technology and modern efficiency.

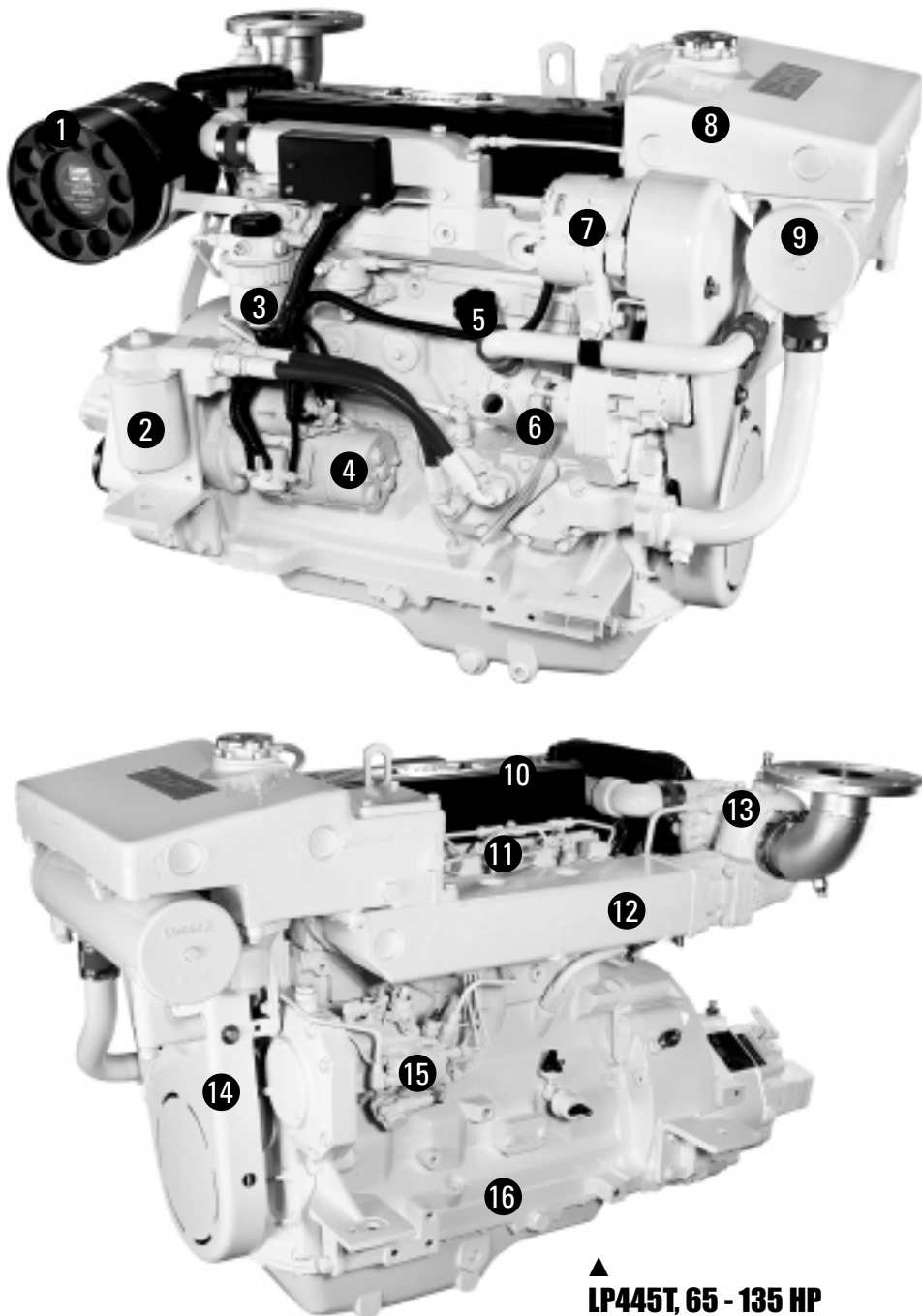
The 4.5 liter LP445 series ranges from 65 to 135 horsepower in natural and turbocharged configurations.

The tractor-tough, four cycle LPs have ample displacement and low-end torque, making them perfect for running quietly, smoothly at lower RPMs for thousands of hours. Oil spray cooling and keystone piston rings keep pistons running at peak efficiency.

Should maintenance be required, there are replaceable wet cylinder liners for in-vessel rebuilds.

Marinization is the most critical element in any propulsion system and the most difficult to get right. Luger engineers have created an unparalleled cooling system. The 445's cooling system features a double pass cast-iron exhaust manifold, three-pass heat exchanger and two thermostats. These combine for fast warm-ups and even temperature throughout the system.

But perhaps the LP series' greatest strength is the package as a whole. Belts and hoses are all but engineered away. Maintenance points are on one side and easy to reach. Each engine is tested and painted with polyurethane before leaving the factory.



▲  
**LP445T, 65 - 135 HP**

## LP445 FEATURES

1. Air filter/intake silencer.
2. Spin-on lube oil filter.
3. Spin-on fuel filter.
4. 12 volt starter.
5. Side oil fill.
6. Gear driven, Jabsco seawater pump with ceramic seals.
7. Battery charging 12 volt alternator and solid state DC regulator.
8. Cast iron expansion tank. No broken welds.
9. Cupro-nickel heat exchanger.
10. Rocker arm cover/oil vapor trap.
11. Fuel injectors.
12. Cast iron, liquid cooled exhaust manifold with two pass coolant flow.
13. Liquid cooled turbocharger for improved performance, fuel economy and safety.
14. Molded belt guard.
15. Mechanical fuel injection pump.
16. Sparkling white polyurethane paint.

Not shown: Instrument panel plug-in.

# FEATURES

## Proven Technology For Proven Performance

### Engine Block

- 4 cylinder, 4 cycle in-line, liquid cooled, overhead valve, diesel engine blocks originally designed for tractor service.
- Large oil capacity.
- Forged-steel crankshaft. Induction hardened bearing surfaces.
- 5 main bearings.
- Forged steel connecting rods.

- Replaceable liquid-cooled cylinder liners.
- Cast-iron cylinder head with steel alloy valves.
- Replaceable valve seats and valve rotators on some models.
- Three ring aluminum alloy pistons with iron ring inserts. Keystone piston ring reduces carbon buildup.
- Two gear-driven, counter-rotating balancing shafts.

### Fuel System

- Distributor-type injection pump.
- Small diameter injectors with exclusive edge filter design.
- Electric fuel rack solenoid.

- Mechanically driven fuel transfer pump.
- Fuel filter with replaceable element.

### Lubrication System

- Positive displacement oil pump.
- Full-flow, spin-on oil filter with bypass.
- Oil spray cooling reduces piston crown wear.
- Cast vapor trap rocker arm cover.

### Cooling System

- Gear oil cooler.
- Freshwater oil cooler.
- Freshwater cooling.
- Two thermostats.
- Unit-mounted explanation tank.
- Double pass freshwater flow.
- (Heat Exchanger version) Axial driven Jabsco-type seawater pump.
- Zinc anodes.

### Intake and Exhaust Systems

- Cast-iron exhaust manifold.
- (LP445T) Freshwater cooled turbocharger.
- Sound attenuating air filter.

### DC Electrical System

- Negative ground, 12-volt system with DC circuit breaker.
- Starter motor.
- 78 amp batter charging alternator with voltage regulator.
- Safety alarm horn for oil pressure loss or high coolant temperature.
- Series 3 panel with VDO instruments includes: tachometer, coolant temperature gauge, oil pressure gauge, hour meter, DC voltage meter and key switch.
- 20-foot wire harness.

### Special Equipment

- Polyurethane paint.
- Centerline mounting feet.
- Belt guard.
- Operator's and parts manuals.

### Options

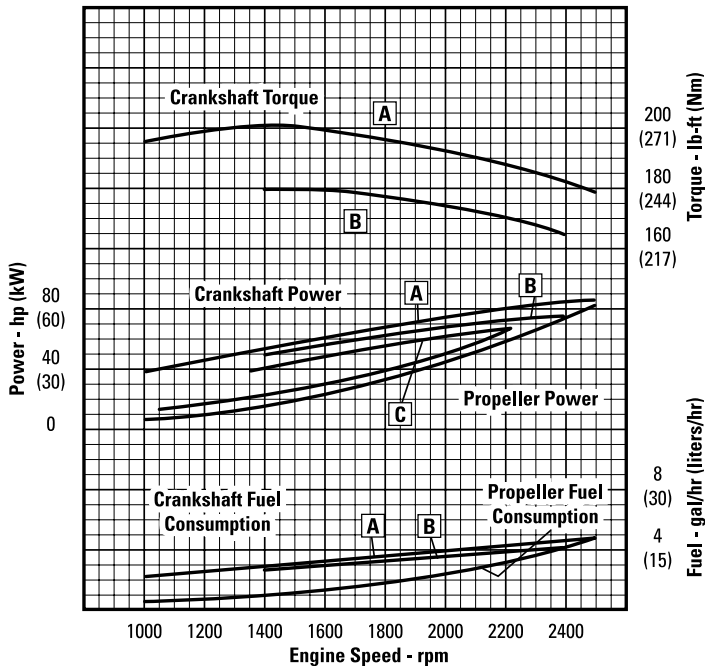
- Flybridge Instrument Panel.
- Coolant Level Sensor.
- 12V isolated ground, 24V negative ground, 24 V isolated ground DC electrical systems.
- Second or larger alternator with up to 160 amps capacity.
- 4-inch cast iron wet exhaust elbow with water injection fitting. Dry exhaust elbows. 4" fiberglass water lift muffler.

## Specifications & Installation Data

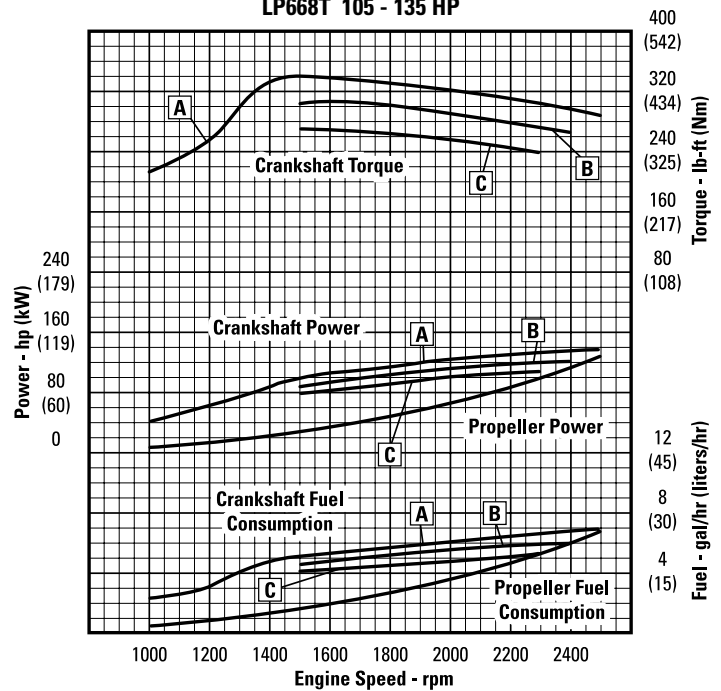
Model Number	LP445D	LP445T
Data for High Output Rating	85 hp at 2500 RPM	135 hp at 2500 rpm
<b>Cooling (General)</b>		
Freshwater circulating pump flow	US gal (ltr)/rpm ..... 39 (148)/2500	77 (291)/2500
Heat rejection to jacket water	BTU-min ..... 2194	3465
<b>Cooling (Heat Exchanger)</b>		
Raw water intake and discharge dia.	inch ..... 1.5	1.5
Raw water pump flow @ RPM	gpm (lpm)/rpm ..... 31 (117)/2500	31 (117)/2500
Raw water pump max. suction head	in (m) ..... 39 (1)	39 (1)
Maximum raw water temp. at inlet	°F (°C) ..... 86° (30°)	86° (30°)
Freshwater system capacity	US gal (ltr) ..... 4.5 (17)	4.75 (18)
<b>Cooling (Keel Cooled) Based on 70° F seawater and minimum boat speed</b>		
of 8 knots at full speed. Return water on keel cooling 70° to 130° F.		
Water hose inside diameter	in (mm) ..... 2-3/8 (60)	2-3/8 (60)
Head diameter	in (mm) ..... 1-1/2 (38)	1-1/2 (38)
Turbo tube length*	ft (m) ..... 12 (4)	16 (5)
One inch plain round tube length*	ft (m) ..... 28 (8.5)	36 (11)
Skin cooler aluminum / steel*	sq ft (m <sup>2</sup> ) ..... 12 (1.1) / 40 (3.7)	17 (1.6) / 55 (5)
<b>Electrical</b>		
Minimum battery capacity	CCA 12V ..... 640	640
Battery cable size up to 10 ft run	"0" ..... "0"	"0"
Standard panel harness length	ft (m) ..... 20 (6)	20 (6)
<b>Air</b>		
Engine air consumption at rpm	cfm (m <sup>3</sup> /min)/rpm ..... 166 (4.7)/2500	254 (7.2)/2500
Minimum engine room vent area	sq in (m <sup>2</sup> ) ..... 48 (.03)	73 (.047)
Exhaust gas flow at rpm	cfm (m <sup>3</sup> /min)/rpm ..... 487 (13.8)/2500	544 (15.3)/2500
Exhaust gas temperature at rpm	°F (°C)/rpm ..... 1184 (640)/2500	738 (392)/2500
Maximum exhaust back pressure	in (mm) H <sub>2</sub> O ..... 48 (1219)	30 (750)
Suggested dry/wet exhaust I.D.	in (mm) ..... 3 (75) / 4 (100)	3 (75) / 4 (100)
<b>Fuel and Oil</b>		
Minimum fuel suction and return line	in (mm) ..... 3/8 (10)	3/8 (10)
Maximum fuel pump head	in (m) ..... 39 (1)	39 (1)
Crankcase oil capacity	US qts (ltr) ..... 14.3 (13.5)	14.3 (13.5)
Engine rotation (facing flywheel)	Counter-CW ..... Counter-CW	Counter-CW
Flywheel housing size	SAE # ..... 4	4
Front PTO size (optional)	SAE # ..... 5	5
Max. intermittent operating angle	front/rear ..... 0° / 15°	0° / 15°

## Fuel Usage and Power Curves

**LP445D 65 - 85 HP**



**LP668T 105 - 135 HP**

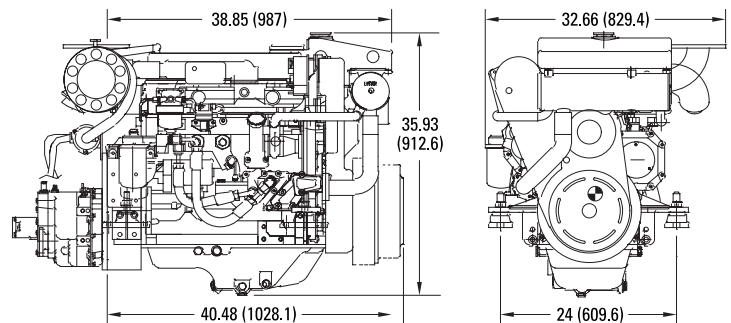


### Performance Data and Specifications

Model Number	LP445D	LP445T
<b>Performance<sup>1</sup></b>		
High Output Rating <sup>A</sup> ..... FWHP (kW)/rpm	<b>85</b> (63)/2500	<b>135</b> (100)/2500
Medium Duty Rating <sup>B</sup> ..... FWHP (kW)/rpm	<b>75</b> (56)/2400	<b>120</b> (89)/2400
Continuous Duty Rating <sup>C</sup> ... FWHP (kW)/rpm	<b>65</b> (48)/2200	<b>105</b> (78)/2300
<b>Fuel Consumption<sup>2</sup></b>		
1600 RPM ..... US gph (lph)	1.2 (4.6) ..... 1.8 (7.0)	
1800 RPM ..... US gph (lph)	1.7 (6.3) ..... 2.5 (9.6)	
2000 RPM ..... US gph (lph)	2.2 (8.5) ..... 3.5 (13.1)	
2200 RPM ..... US gph (lph)	3.0 (11.3) ..... 4.6 (17.3)	
2400 RPM ..... US gph (lph)	4.0 (15) ..... 6.0 (22.7)	
2500 RPM ..... US gph (lph)	4.6 (17.3) ..... 6.9 (26.3)	
<b>Specifications</b>		
Cylinders .....	4 Inline	4 Inline
Displacement..... CID (ltr)	276 (4.5)	276 (4.5)
Operating Cycle/Aspiration .....	4/Natural	4/Turbo
Bore ..... in (mm)	4.19 (106)	4.19 (106)
Stroke ..... in (mm)	5.0 (127)	5.0 (127)
Approx. Wt. w/o gear Keel cooled .....	1070 (485)	1160 (526)
Approx. Wt. w/o gear Heat Exchanger ....	1100 (499)	1190 (540)

Notes: 1. Max. cruise rpm for High Output and Medium Duty ratings is 200 rpm below highest attainable rpm. 2. "Fuel consumption is in U.S. gallons per hour based on High Output theoretical prop shaft horsepower draw. Your fuel consumption will vary higher or lower depending on your vessel and operating conditions.

### Dimensional Data



**Note:** Dimensions are given in inches and (millimeters). Dimensions subject to change without notice. Scale drawings are available upon request. Optional PTP shown.

### Notes



Manufactured by: **Alaska Diesel Electric, Inc.**  
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Specifications, materials and dimensions subject to change without notice.  
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