

2000-Series

**4-stroke direct injection, marine diesel engines.
1-3 cylinders, a turbo is available on the 3-cylinder model.
– Propeller shaft power* 6.6-33 kW (9-45 hp)**



2001, 2002, 2003 and 2003T equipped with reverse gear MS2B-R

A Complete Engine Programme

The 2000-Series is a complete engine programme, which has been specially developed for powering sailboats and small motor boats. There is a well-tested accessories programme for the 2000-Series for other requirements, such as, heating, cooling, electricity etc.

Direct injected, easily started and fuel-efficient marine diesel. Large flywheel, decompression and cold-start facility which makes cold starts easier. A 12-volt two terminal marine electrical system and AC alternator of 50A assures excellent charging. The engine is carried in vibration-damping rubber mounts providing a low noise level.

Transmissions

There are four transmission alternatives in the 2000-Series, all with easily-operated cone clutch with an overload protection feature: the R, L, V and S versions.

The R-version is angled down at 7 degrees on the output shaft that makes installation easier and saves space.

The L-version is straight.

In the V-version, the reverse gear has been complemented with an angular gear allowing for reversed engine placement.

The S-version is a compact combination of engine and drive, easy to install and with very low sound and vibration levels.



2003T with S-drive

Long service-life

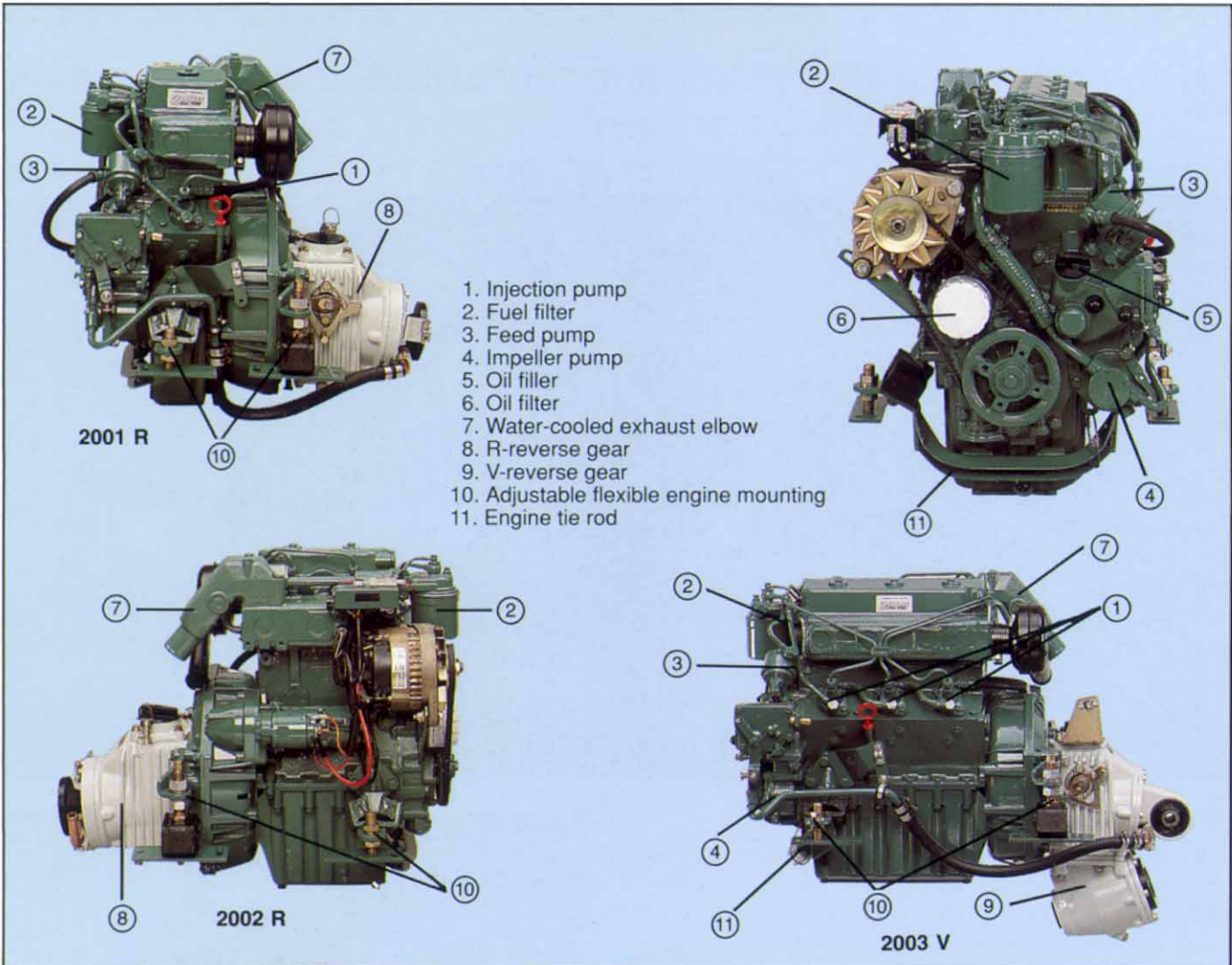
Block and cylinder heads of cast iron, sacrificial anodes of zinc in engine and drive. The sea-water cooled exhaust system offers long service-life and excellent comfort. The flywheel casing is made of aluminium and there is a closed crankcase ventilation system.

Easy to service

All the essential service points are easily accessible at the front of the engine: oil filler, oil filter, fuel filter, sacrificial anode, thermostat, alternator and pump impeller. The alternator drive belt adjustment and bleeding of the fuel system can also be done from the front of the engine.

*Propeller shaft power according to ISO 8665 and NMMA procedure

2000-Series



Standard Equipment

ENGINE BLOCK

Cast-iron cylinder block and cylinder heads of chrome alloy high-quality cast iron which gives excellent corrosion resistance and long service life. Replaceable hardened exhaust valve seats guarantees durability.

FUEL SYSTEM

The fuel system is in most instances self bleeding. Cold start and stop functions are operated by joint pull control. Replaceable fuel filter and feed pump with manual feed. Flexible fuel lines approved by the Swedish Administration of Shipping and Navigation and DNV according to SAE 4-norms.

COOLING SYSTEM

Regulated thermostat sea-water cooling with easily accessible impeller pump. The cylinder heads are protected from corrosion by sacrificial zinc anodes. The 2003 Turbo has fresh-water

cooling as standard, optional on the 2002 and 2003 models.

EXHAUST SYSTEM

Water-cooled exhaust elbow for cooling water outlet for connection for rubber exhaust hose. The exhaust elbow can be turned through 90° where necessary to save space.

REVERSE GEARS R, L and V

Sea-water cooled. Ratios:
R and V, 2.4:1 or 3.0:1
L only 2.3:1.

- L output straight shaft.
- R output shaft at a 7-degree angle downwards.
- V output shaft at a 20-degree angle downwards towards the engine front.

S-DRIVE

Ratio: 2.2:1, complete with flexible diaphragm, sealing ring and mounting to bed. Coolant inlet in the drive with shut-off valve.

Three sacrificial zinc anodes retard corrosion.

LUBRICATING SYSTEM

Pressure lubrication with easily replaced oil filter on front of engine. Closed circuit crankcase ventilation.

ENGINE MOUNTS

2000 R and L: Flexible mounting, consisting of 4 rubber mounts with adjustable attaching plates for noise and vibration insulation.

2000 V: Flexible mounting consisting of 5 rubber mounts with 6 adjustable attaching plates for noise and vibration insulation.

2000 S: The S-drive attachment directly on the engine. Engine and drive are insulated from the hull by a 3-point mounting system and a flexible diaphragm. GRP engine bed. Engine tie rod for the engine in case of going aground.

2000-Series

ELECTRICAL SYSTEM

The system uses 12 V. All cables have two terminals which prevents leakage which can cause corrosion. The AC alternator with charging capacity of 14V/50A is designed for marine use. A provision has also been made for installation of a double diode unit which automatically distributes the charging current to two battery systems independent of each other.

INSTRUMENT PANEL

Equipped with a key switch and tachometer,* control displays for high engine temperature, low oil pressure and low charge. Acoustic alarm for oil pressure and engine temperature, test button for alarm and switch for instrument panel lighting. Cable 3 m with plug-in connector.



STARTING SYSTEM

The starter motor is geared and has an output of 1 kW. In cold weather, starts are made easier by a decompression handle.

*) The tachometer is an accessory on 2001.

PD and LD:

Operational Definitions:

PD: Pleasure Duty.

Engines with this power setting are intended *exclusively* for pleasure craft applications. The term pleasure craft is defined as a boat used by its owner for recreational purposes.

LD: Light Duty.

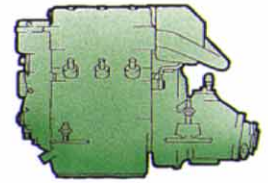
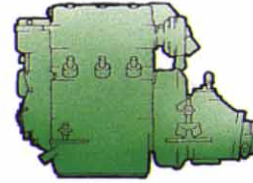
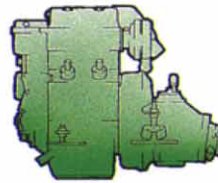
Engines with this power setting are intended for use in areas where weight and the number of revolutions per minute change and maximum output is only used for one hour in a twelve hour period.

2001

2002

2003

2003T



Technical data

Engine type

Configuration:

4-stroke diesel engine with direct injection

No. of cylinders

Propeller shaft power at 3200 rpm*: kW
hp

Diameter of cylinders/stroke, mm (in)

Displacement, dm³ (cu.in)

L-reverse gear ratio

R/V-reverse gears ratio

S-drive ratio

Weight including reverse gears R and L

approx. kg (lbs)

Weight incl. rev. gear V approx. kg (lbs)

Weight incl. S-drive approx. kg (lbs)

2001

2002

2003

2003T

1

6.6

9

79/87 (3.1/3.4)

0.43 (26)

2.3:1

2.4:1/3.0:1

2.2:1

112 (247)

118 (260)

126 (278)

2

13

18

79/87 (3.1/3.4)

0.85 (52)

2.3:1

2.4:1/3.0:1

2.2:1

139 (306)

145 (320)

153 (373)

3

20.5

28

79/87 (3.1/3.4)

1.28 (78)

2.3:1

2.4:1/3.0:1

2.2:1

159 (351)

165 (364)

173 (381)

3

33

45

79/87 (3.1/3.4)

1.28 (78)

2.3:1

2.4:1/3.0:1

2.2:1

176 (388)

182 (401)

190 (419)

*According to ISO 8665 (=SAE J1228=ICOMIA 28-83).

Engine types

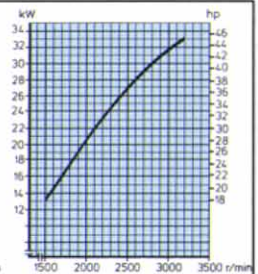
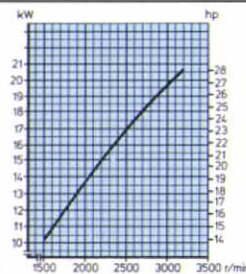
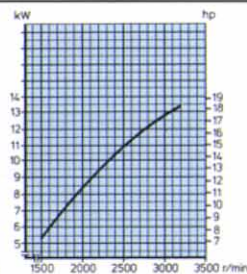
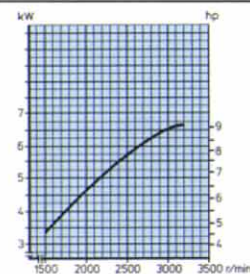
2001

2002

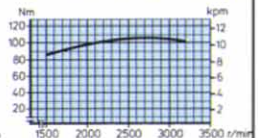
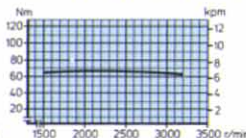
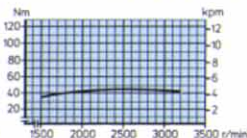
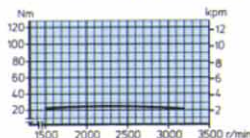
2003

2003T

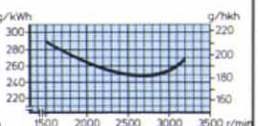
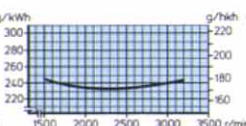
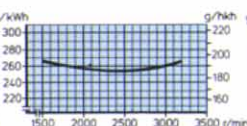
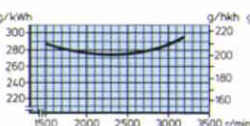
Propeller shaft power



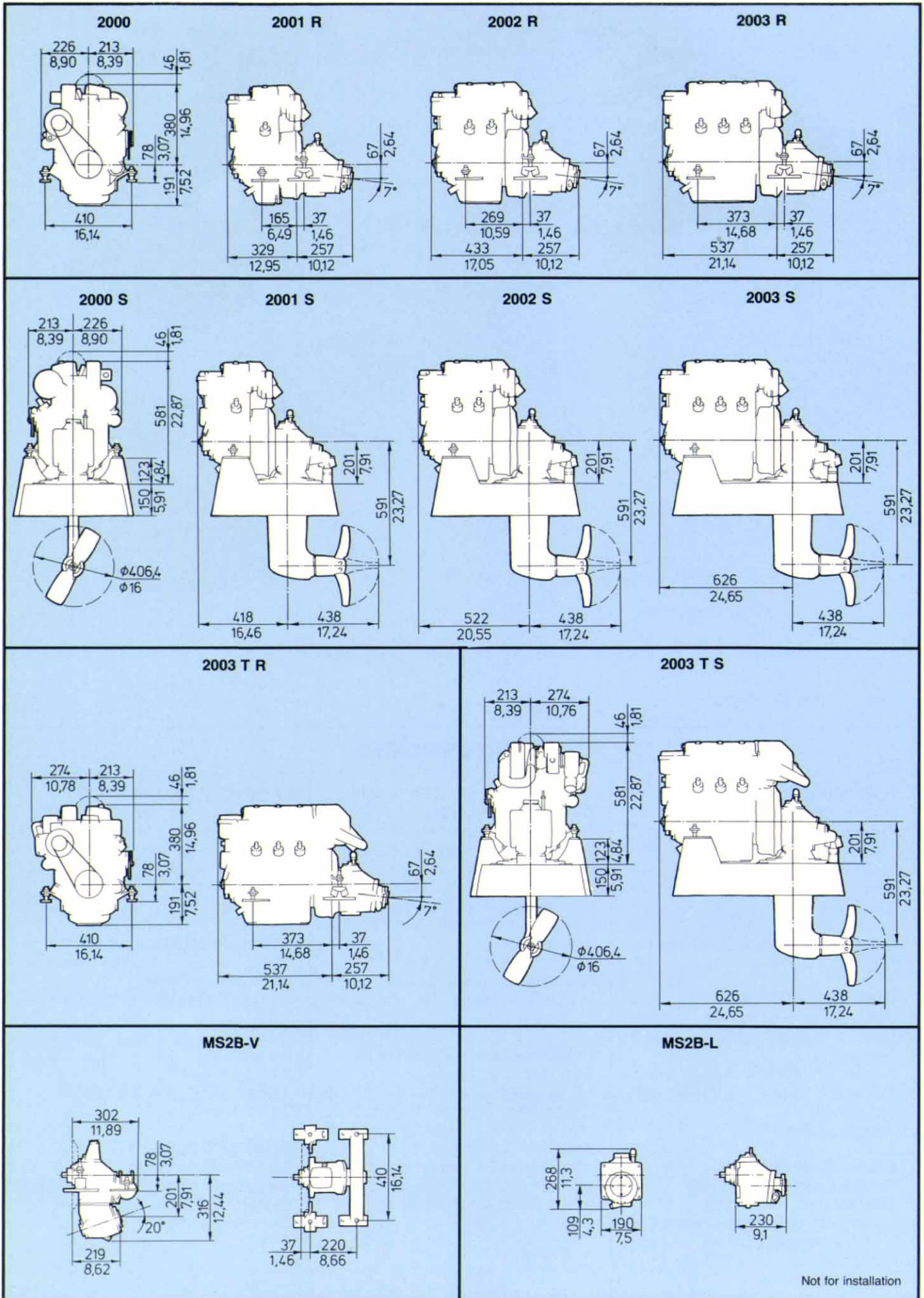
Torque



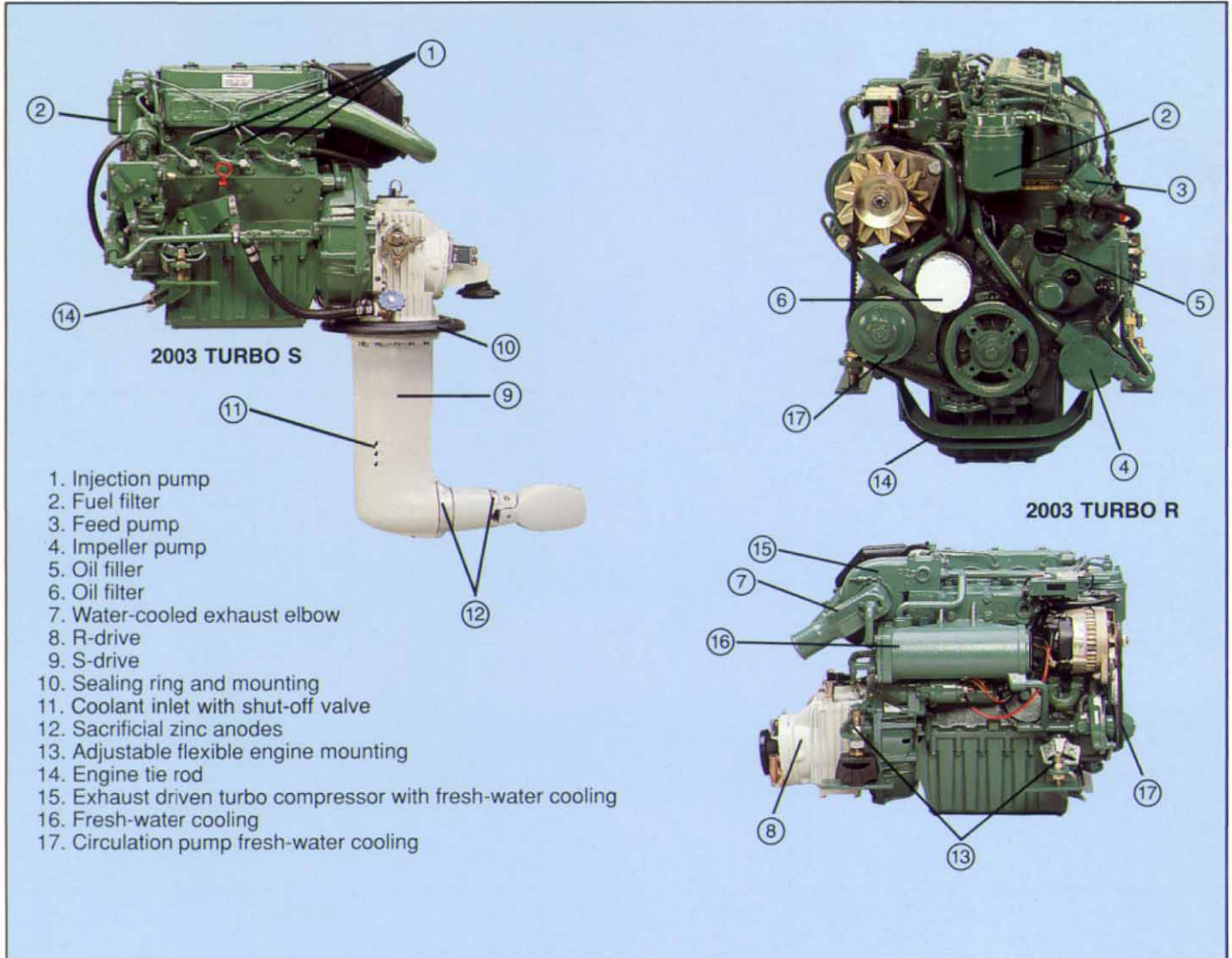
Fuel consumption diagram



Operational definitions PD LD. The diagrams show propeller shaft power according to ISO 8665.



Not for installation



1. Injection pump
2. Fuel filter
3. Feed pump
4. Impeller pump
5. Oil filler
6. Oil filter
7. Water-cooled exhaust elbow
8. R-drive
9. S-drive
10. Sealing ring and mounting
11. Coolant inlet with shut-off valve
12. Sacrificial zinc anodes
13. Adjustable flexible engine mounting
14. Engine tie rod
15. Exhaust driven turbo compressor with fresh-water cooling
16. Fresh-water cooling
17. Circulation pump fresh-water cooling

Accessories

FUEL SYSTEM

Electric fuel pump
Pre-filter with water trap for connection to 5/16" copper pipe.
Water trap.
Fuel tank 18 and 40 litres respectively.
Inspection plate with connections for fuel filler, feed pipe, fuel gauge and tank ventilation.

COOLING SYSTEM

Fresh-water cooling in models 2002 and 2003 and hot water heater.
Sea-water inlet and shut-off valve.
Sea-water filter complete with mountings.
Vacuum valve.

EXHAUST SYSTEM

Rubber exhaust hose.
Exhaust through hull fitting.
Water-cooled silencer assembly.
Exhaust temperature guard, wet exhaust.
Dry exhaust system.

ELECTRICAL SYSTEM AND INSTRUMENTATION

Extra charging alternator.
Charging distributor for charging two battery systems.
Extra instruments: tachometer, time gauge, fuel and water tank gauges, voltmeter and rudder indicator.
Master switch.
Extension cables 3, 5, 7 m.
Instrument panel for extra instruments.

CONTROL AND OPERATION SYSTEM

VP single-lever control for engine speed and gear shifting, top or side mounted. Neutral position switch for VP control, pull control, control cables, steering gears, steering cables, ball joints and yokes for steering cables.

PROPELLER EQUIPMENT

Propeller shaft coupling, complete. Flexible propeller shaft coupling. Propeller shafts, propeller sleeves and lubricated stuffing boxes.
Lubricated stuffing box, lubricated press.
Water lubricated completely drop-free rubber stuffing boxes (patented by Penta).
Complete propeller programme.

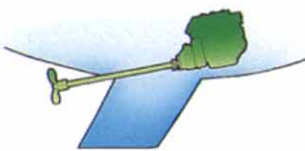
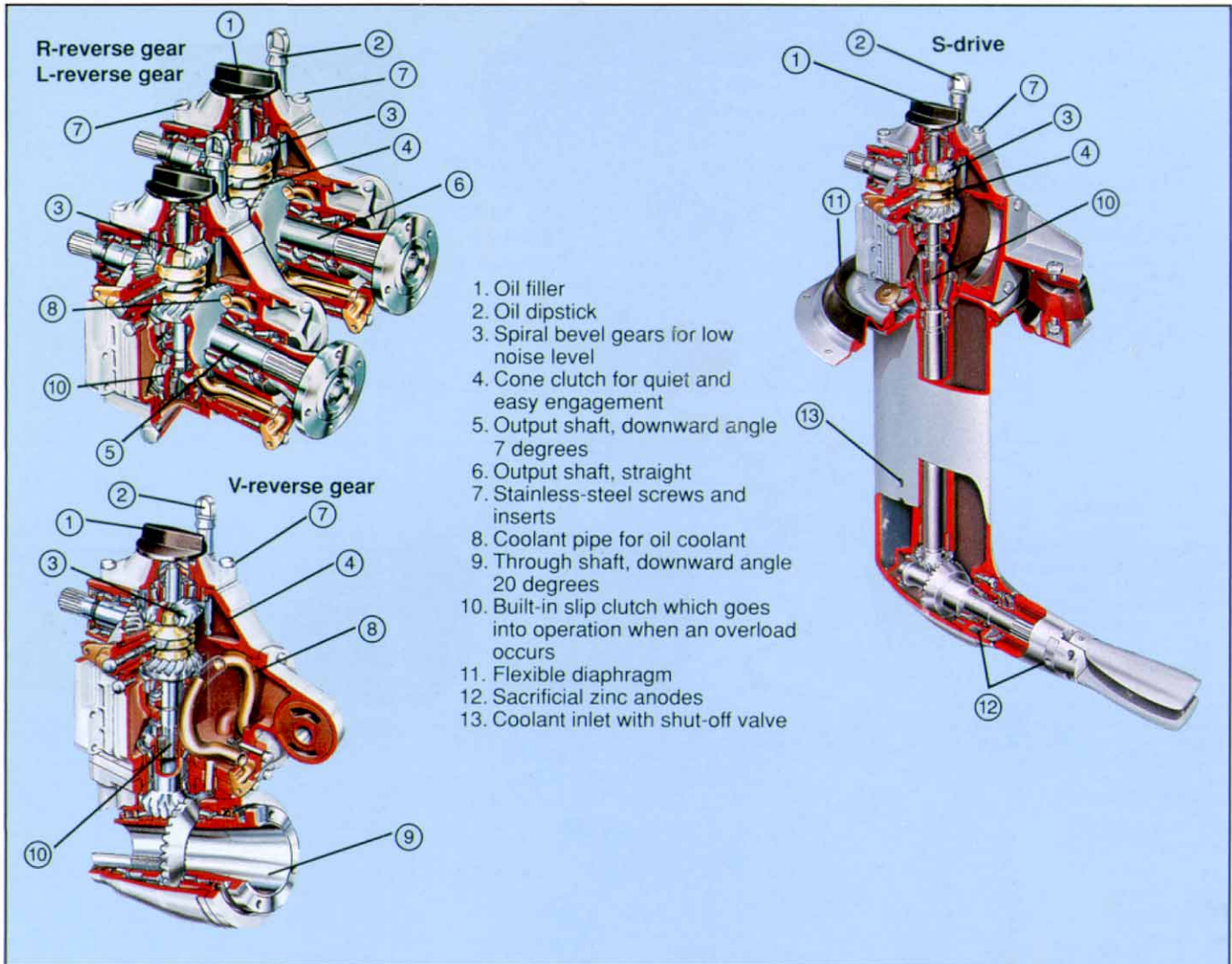
S-DRIVE

Propellers:
2-blade folding.
2-blade I.O.R. and 3-blade.
Drive extensions: 2" and 4"

BOAT ACCESSORIES

Electrical bilge pump.
Mechanical oil bilge pump.
Electrical oil bilge pump.
Genuine paints.
Oils.

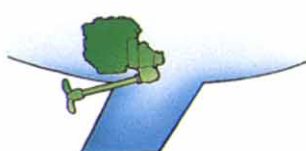
2000-Series



MS2B-L (L-reverse gear)
Straight propeller shaft



MS2B-R (R-reverse gear)
Propeller shaft, 7 degree angle



MS2B-V (V-reverse gear)
Propeller shaft, 20 degree angle
Reverse engine installation



S-Drive
Extremely quiet running and
vibration-free drive unit

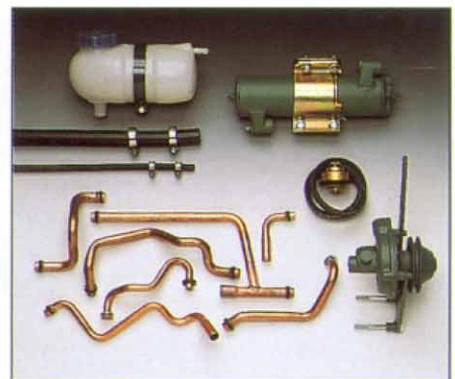
The Complete Marine Programme

Volvo Penta offers a complete all-inclusive marine programme. See our separate Accessory Guide and Accessory Catalogue for the 2000-Series and Volvo Penta's brochures about shaft systems, bronze propellers and control systems; specially tested and evaluated products tailor-made to fit your installation and engine.

A number of our solutions are revolutionary, e.g. the Volvo Penta S-drive. The rubber stuffing box is another example of Volvo Penta's vision and how we are striving to make life problem-free for boat owners.



Fresh-water cooling



Extra alternator unit

**VOLVO
PENTA**

AB Volvo Penta
S-405 08 Göteborg

*The product programme can vary from market to market.
All specifications are subject to change without notice.*