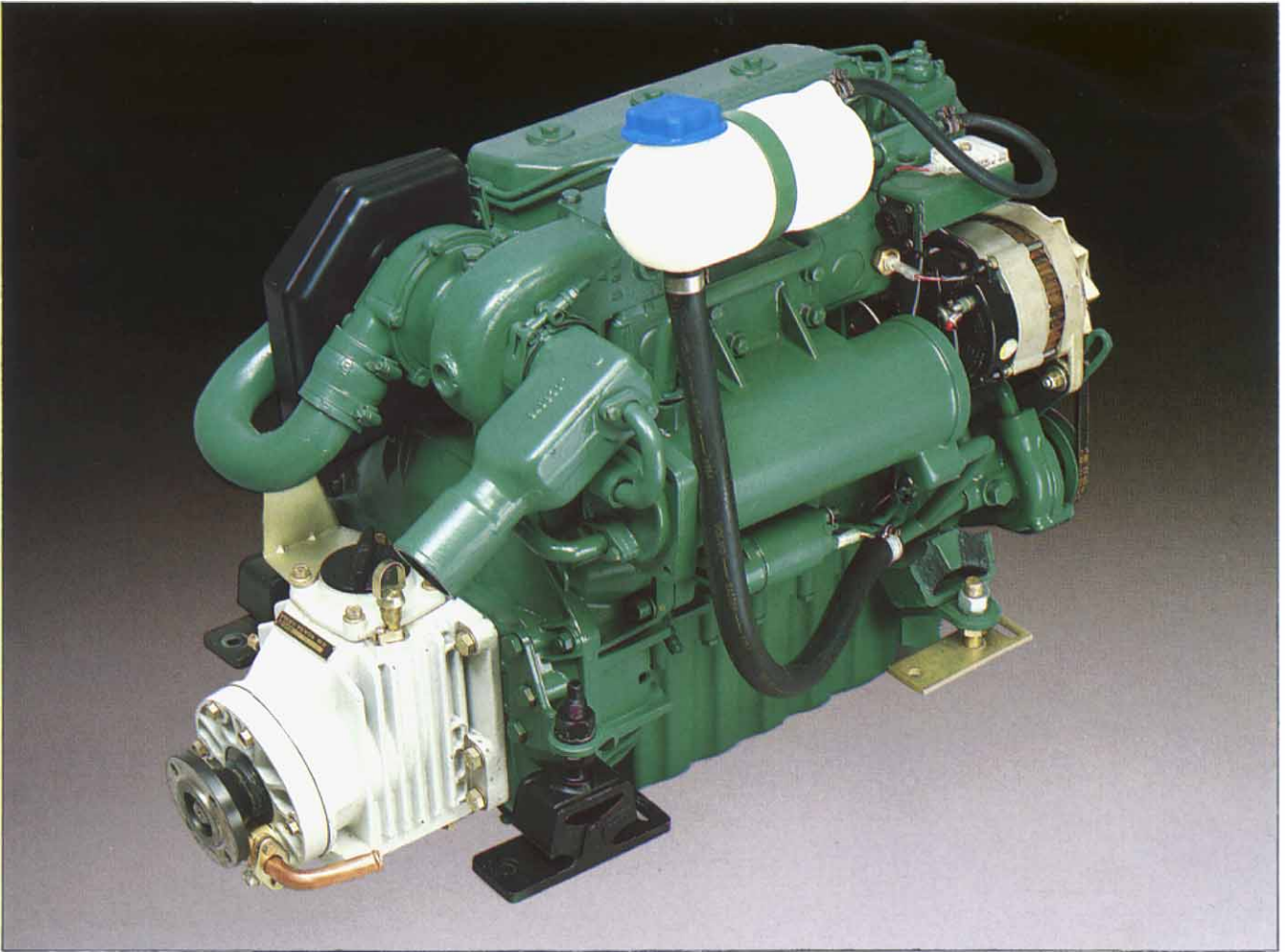


**VOLVO  
PENTA**

# 2003 TURBO



## Three-cylinder, four-stroke, direct injected marine diesel with reverse gear or V-drive. Propeller shaft output for pleasure craft duty 32 kW (43 hp) at 3200 rpm.

The 2003 Turbo is the three-cylinder member of Volvo Penta's 2000 series – short, fuel-efficient, and powerful. Thanks to Turbo technology.

Direct injected, easily started, and reliable. A 12-volt marine electrical system with a 14 V/50 A alternator ensures adequate charging. The engine is supported in vibration-damping rubber mounts.

The 2003 Turbo engine can be equipped with two alternative transmissions, both with an easily operated cone clutch with anti-slip feature. The R version is angled down at 7 degrees to facilitate installation and save space. The V version is angled down at 20 degrees for the same purpose. The transmission comes complete with a bevel gear with through shaft and clutch sleeve.

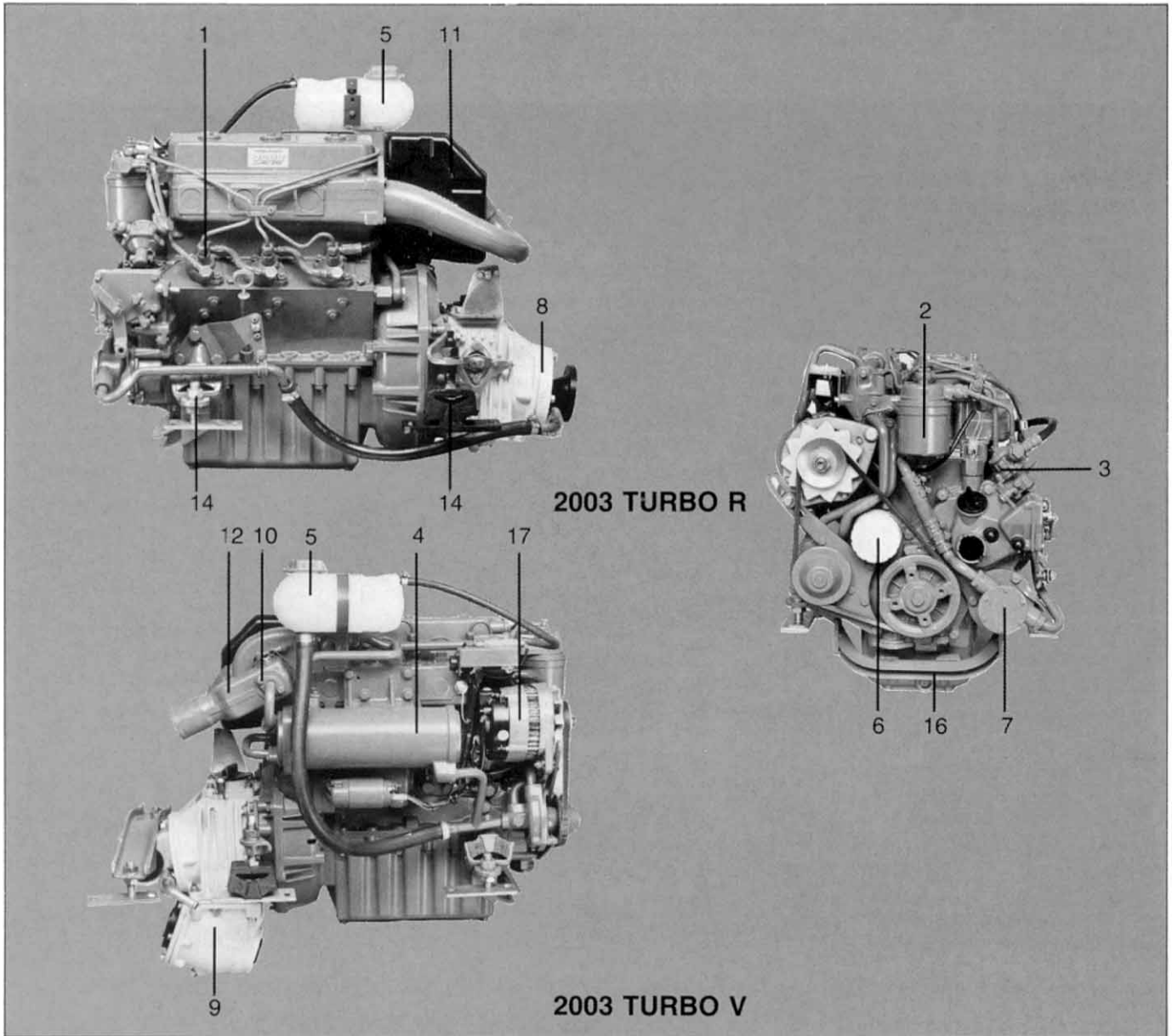
The cast-iron engine block and cylinder head, the closed circuit crankcase ventilation, and the thermostat controlled fresh water cooling system with tubular heat-exchanger contribute to long life and comfort.

The flywheel casing, oil sump, valve cover and transmission case are of aluminium.

All essential servicing points are accessible from the front of the engine: dipstick, oil filler, oil filter, fuel filter, and impeller. V-belt adjustment and oil filling are also done from the front. Provision for driving refrigeration compressor, extra



alternator, bilge pump, etc, can be fitted on the front of the engine.



## Standard equipment

### ENGINE BLOCK

Cylinder block and cylinder head of cast iron for corrosion resistance and long life. Crankshaft burnished for longer life and journalled in four main bearings.

### FUEL SYSTEM

Individual injection pump (1) for each cylinder. The fuel system is self-bleeding under most circumstances. Cold starting and stop functions operated by single pull control. Replaceable fuel filter (2), feed pump (3) with manual priming, flexible fuel lines (approved by Swedish National Administration of Shipping and Navigation and by Det Norske Veritas) for copper couplings.

### COOLING SYSTEM

Thermostat controlled fresh water cooling with tube heat exchanger (4), expansion tank (5) (mounted on bulkhead), and circulation pump. Sea-water pump with neoprene rubber impeller (7).

### LUBRICATION SYSTEM

Pressure lubrication with conveniently replaced oil filter (6) on front of engine. Closed circuit crankcase ventilation.

### INTAKE SYSTEM

Intake silencer with filter (11).

### SUPERCHARGE SYSTEM

Exhaust turbo-charger with fresh-water cooled turbine housing (10).

### EXHAUST SYSTEM

Sea water cooled cast iron exhaust elbow (riser) (12) with stainless steel insert and connection for rubber exhaust hose. The elbow can be turned in the line of the engine.

### REVERSE/REDUCTION GEAR

R and V version, ratio 2.4:1 or 3.0:1. Output shaft of R version (8) is angled

down at 7 degrees. Output shaft of V version (9) angled at 20 degrees (down from front of engine).

### ENGINE MOUNTS

Engine tie rod (16) to prevent excessive movement if aground.

Model 2003R: Flexible mounting consisting of four rubber mounts with adjustable attaching plates (14) to isolate noise and vibration.

Model 2003V: Flexible mounting consisting of five rubber mounts and six adjustable attaching plates to isolate noise and vibration.

### ELECTRICAL SYSTEM

12 volt marine electrical system, protected against corrosion and complete with instrumentation. Alternator (17) with charging capacity 14 V/50 A, designed for marine operation. The alternator is prepared for installation of double diode unit to automatically distribute charging current among two or more battery banks.

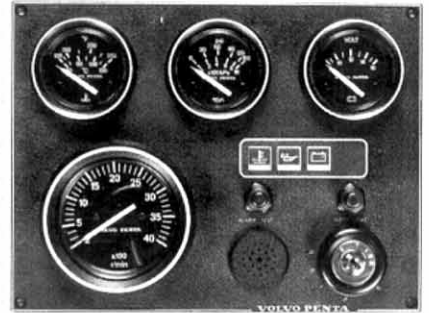
## STARTING SYSTEM

Starting motor output 1.4 kW.

## INSTRUMENT PANEL



Complete with key switch, tachometer, warning indicators for high engine temperature, low oil pressure and low battery. Acoustic warning signal for oil pressure and engine temperature, test button for alarm functions, and switch operated panel lighting. Five metre extension cable with plug-in connector.



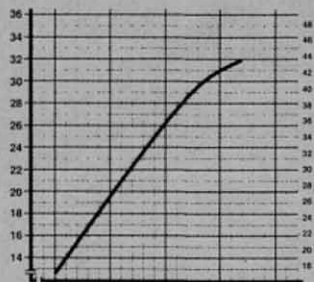
water temperature gauge, oil pressure gauge and voltmeter.

The engine may alternatively be ordered with the "De Luxe" instrument panel. This incorporates all the functions of the standard model plus

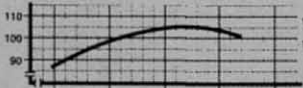
## TOOL KIT

Adequate for minor repairs.

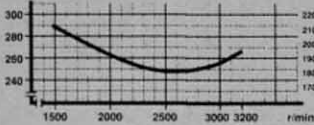
Propeller shaft output acc. to ISO 3046



Torque measured at flywheel



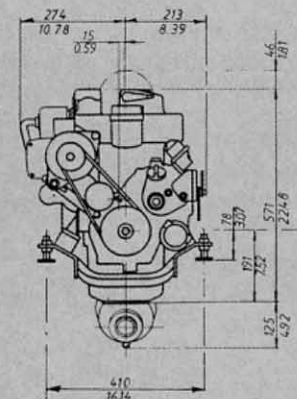
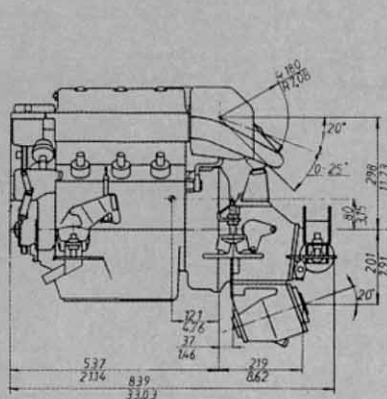
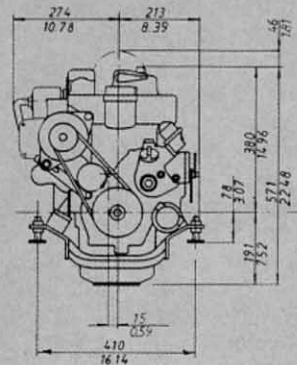
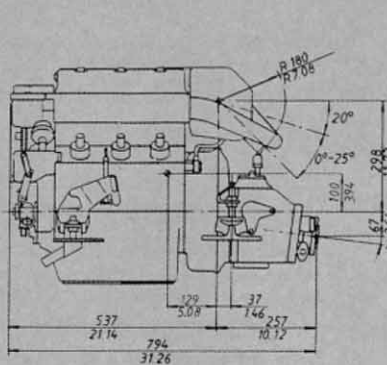
Fuel consumption



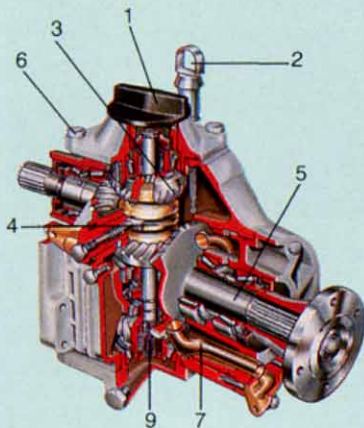
The curves show propeller shaft output of run-in engines of R and V types according to ISO 3046.

## Data

Configuration . . . . . 4-stroke diesel engine with direct injection  
 Propeller shaft output\* for pleasure craft duty  
 2003 Turbo R/V . . . . . 32 kW (43 hp) at 3200 rpm  
 No. of cylinders . . . . . 3  
 Bore/stroke mm (in) . . . . . 79/87 (3.1/3.4)  
 Displacement dm<sup>3</sup> (cu.in) . . . . . 1.280 (78)  
 Valve mechanism . . . . . Overhead  
 2003 R/V (model MS2B) ratio . . . . . 2.4:1 or 3.0:1  
 Weight, 2003 Turbo R, approx. kg (lbs) . . . . . 176 (388)  
 Weight, 2003 Turbo V, approx. kg (lbs) . . . . . 182 (401)  
 \*Acc. to ISO 3046.

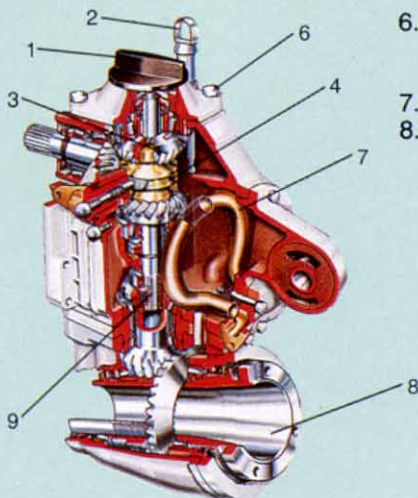


## Reverse gear



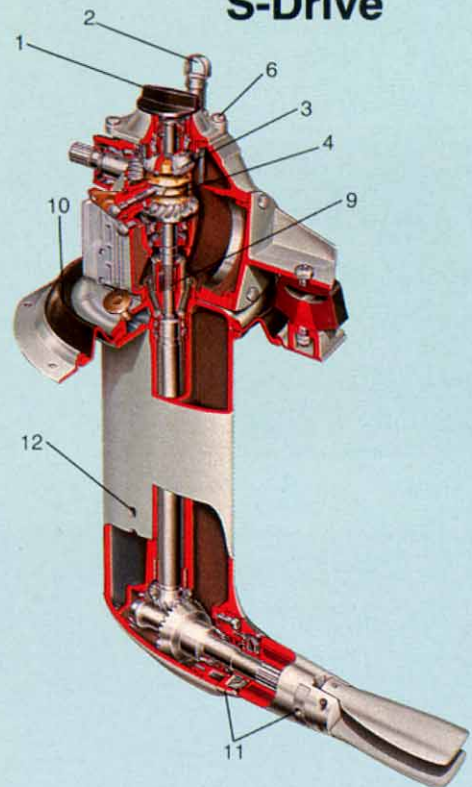
1. Easy access oil filler.
2. Oil dipstick.
3. Spiral bevel gears for quiet, efficient operation.
4. Volvo Penta's patented cone clutch gives smooth quiet engagement of forward and reverse. Single lever control of both speed and forward/reverse.
5. Output shaft with 7° down angle. Enables installation of engine in less space.

## V-Drive



6. All joints have stainless steel screws in stainless steel thread inserts.
7. Coolant pipe for oil cooling.
8. Through-running output shaft featured angled 20° (to engine) facilitates installation and saves space.

## S-Drive



9. Integral slip coupling safeguards against over-loading (e.g. running aground) thereby protecting the transmission.
10. Flexible diaphragm, complete with sealing ring and mounting collar to engine bed.
11. Sacrificial zinc anode ring to counteract corrosion.
12. Coolant intake in leg.

# Accessories

### FUEL SYSTEM

Electric fuel pump. Pre-filter with water trap and 5/16" copper pipe. Water trap. Fuel tank 18 or 40 litres (4,8 or 10,6 US gal). Inspection plate with connections for fuel filler pipe, feed pipe, fuel gauge and tank ventilation.

### COOLING SYSTEM

Fresh water cooling.  
Warm water outlet.  
Sea water inlet with shut-off valve.  
Sea water filter complete with mountings.  
Vacuum valve.

### EXHAUST SYSTEM

Rubber exhaust hose.  
Exhaust through hull fitting.

Water cooled silencer, complete.  
Dry exhaust system.

### ELECTRICAL SYSTEM and INSTRUMENTATION

Charging distributor for charging of two battery systems. Extra instruments. Electric hour counter, fuel and water tank gauges, voltmeter and rudder indicator.  
Main circuit breaker.  
Extension cables 3, 5, 7 m (9.8, 16.4 or 23.0 ft). Instrument panel for extra instruments.

### CONTROL SYSTEMS

VP single-lever control for engine speed and gear shifting, top mounted 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

2000R 2000V

Propeller shaft coupling, complete; flexible propeller shaft coupling; propeller shafts, propeller sleeves and stuffing boxes.  
Complete two and three blade bronze fixed propeller programme.

### PROPELLERS S-DRIVE

Two-blade folding with zinc anodes.  
Two-blade I.O.R fixed.  
Three-blade fixed.

### MISCELLANEOUS

Power take-off engine front end.  
Electrical bilge pump, genuine paints, oils, etc.