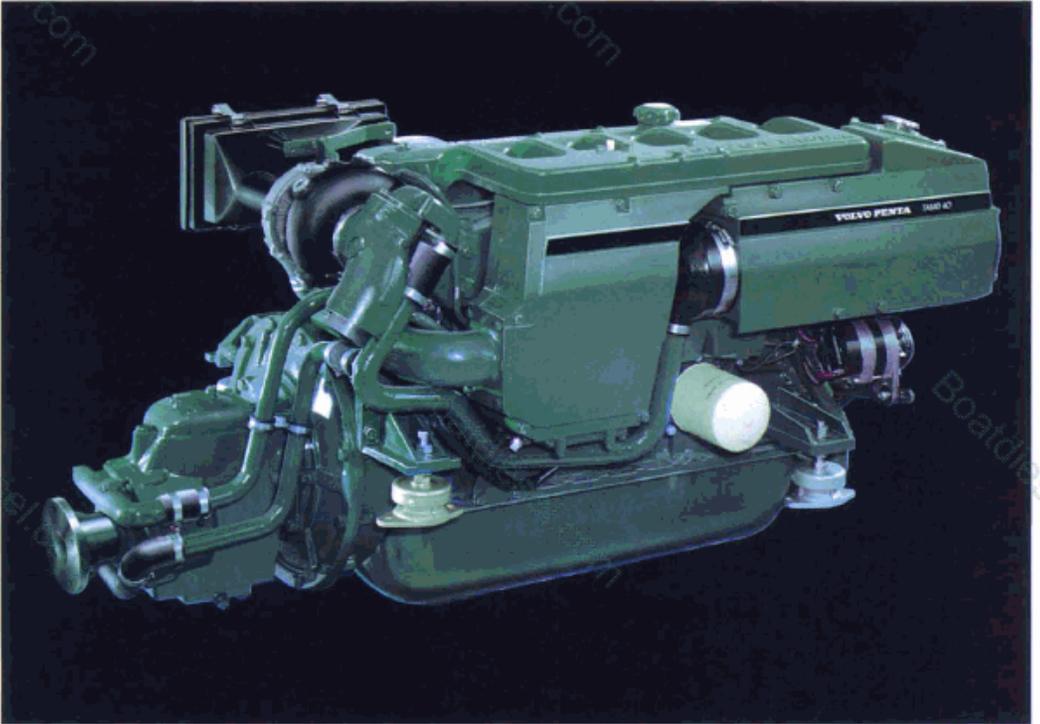


**VOLVO  
PENTA****TAMD40B  
AQAD40B/280**

**Six-cylinder, four-stroke swirl chamber diesels with  
turbo-charging and aftercooler.  
Flywheel output\* 121 kW (165 hp).**

A compact, turbo-charged and charge air cooled swirl chamber diesel. The high engine torque provides lively thrust together with the MS3C reverse gear in the inboard version and the well-tested Aquamatic 280 drive in the I/O version.

The engine block and cylinder head are made of cast-iron. Oil-cooled light-alloy pistons. Replaceable, wet type cylinder liners. Seven-bearing crankshaft. Engine design means a steady operating temperature, a long lifetime and simple servicing.

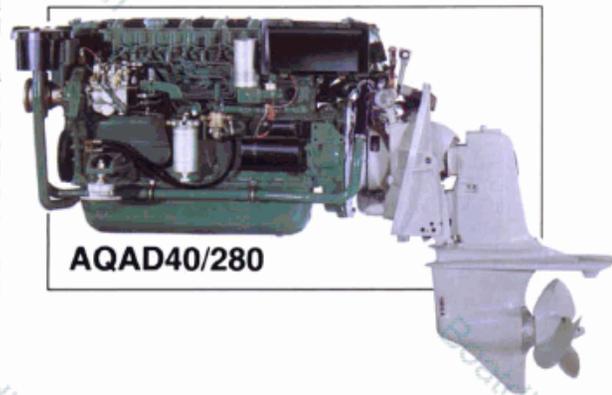
An exhaust-powered turbo-compressor with a fresh-water cooled turbine housing and a sea-water cooled mean effective combustion, good output and excellent fuel economy in relation to engine weight and volume. The smooth swirl chamber principle together with efficient intake silencing and the seven-bearing crankshaft contribute to quiet and smooth running.

A corrosion-protected 12 V electrical system and a 50 A, 600 W alternator take care of charging

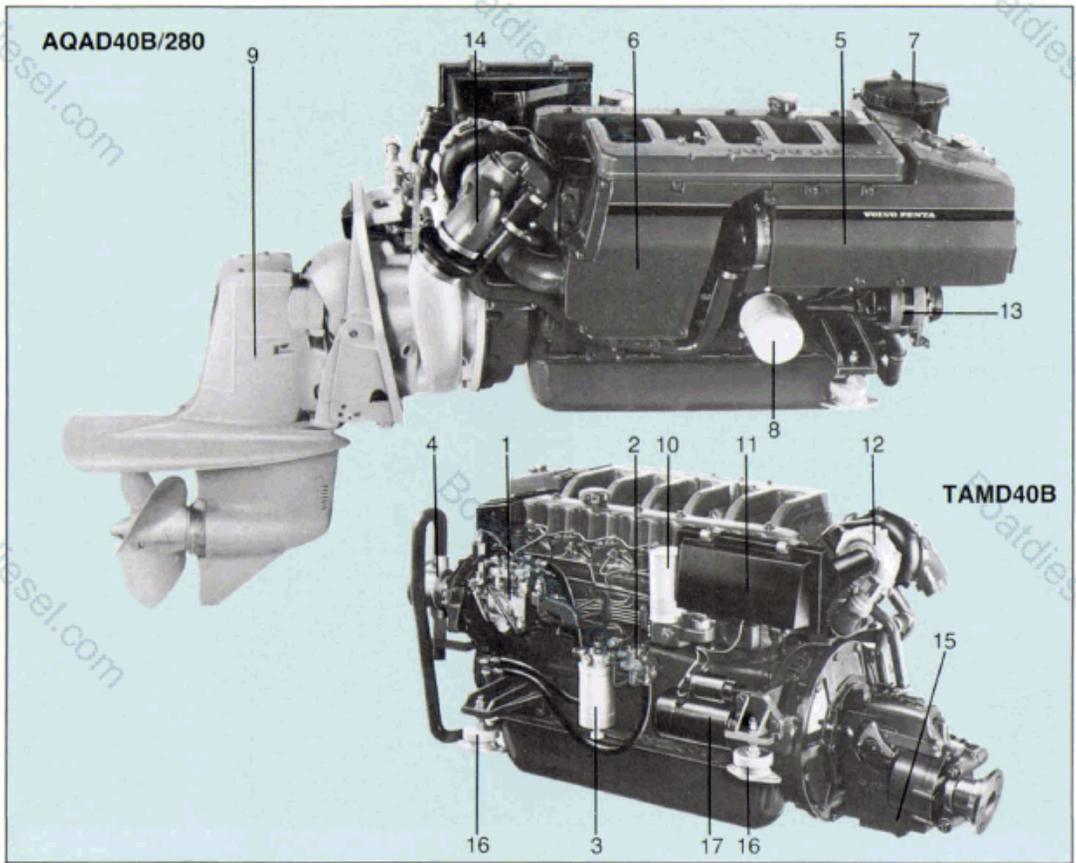
\* Acc. to DIN 6270 Leistung B

and electric power supply. Extra equipment available includes a distributor unit for the charging of two batteries and extra 12 V or 24 V alternators.

Two power packs with compact installed dimensions, high output and relatively low weight which can, in many cases, replace petrol (gasoline) engines even in fast boats.



**AQAD40/280**



## Standard equipment

### ENGINE BODY

Cylinder block and cylinder head of cast-iron. Replaceable wet type cylinder liners. Oil-cooled pistons with two compression rings and one oil scraper ring on each. Crankshaft carried in seven bearings. Replaceable valve seats and cylinder head.

### FUEL SYSTEM

Rotor type fuel injection pump with mechanical governor for precise speed control (1). Feed pump (2) with hand primer. Fine filter (3) with water deflector. Electrically actuated engine stopping system.

### COOLING SYSTEM

Thermostat-controlled fresh-water cooling with tubular heat exchanger (5), expansion vessel and circulation pump. Sea-water pump with neoprene rubber impeller (4). The AQAD40B is fitted with a sea-water strainer (7) (available as accessory for TAMD40B).

### LUBRICATING SYSTEM

Pressure lubricating system with full-flow oil filter of spin-on type (8). Cleanable oil cooler of tubular type. Filter for crankcase ventilation (10).

### INTAKE SYSTEM

Intake silencer with replaceable filter (11).

### SUPERCHARGING SYSTEM

Exhaust-powered turbo-compressor with fresh-water cooled turbine housing (12). Sea-water cooled aftercooler (6) to decrease temperature of air fed by compressor, the result being a better volumetric efficiency.

### EXHAUST SYSTEM

Fresh-water cooled exhaust manifold. Sea-water cooled exhaust elbow bend of cast-iron (14) with stainless steel insert. AQAD40B – exhaust line for connection to drive included.

### TRANSMISSION

TAMD40B – MS3C reverse gear, reduction ratio 1.93:1 (15) or 2.73:1. The output shaft is angled 8° downwards. AQAD40B – 280B outboard drive (9), reduction ratio 1.61:1. Complete with mounting collar and installation parts. Standard version with electro-mechanical lifting system to tilt up drive. Power Trim version with hydraulic system driven by electric motor to trim driving angle while running and to tilt up drive.

### ENGINE MOUNTINGS

Flexible mountings to provide insulation from noise and vibrations. TAMD40B – the engine has four adjustable rubber blocks (16). AQAD40B – the engine has two adjustable rubber blocks at the front and a rubber mounting between the flywheel housing and the rear edge of the mounting collar.

T786066 - Downloaded from www.volvopenta.com 3/27/2015 7:09:06 PM

### ELECTRICAL SYSTEM

Corrosion-protected electrical system, 12 V, with instrument panel, 50 A, 600 W alternator (13). Automatic fuse with resetting button fitted on engine. Starter motor rating 2.2 kW (3 hp) (17).



### INSTRUMENT PANEL

Fitted with key switch, tachometer, temperature gauge, oil pressure gauge,

voltmeter, indicator lamp for activation of glow plugs, acoustic alarm for oil pressure and water temperature, rheostat switch for instrument lighting. Cable harness 7 m long with completely connected up plug-in contacts for connection to engine and instruments. AQAD40B – indicator lamp and actuating switch to lift outboard drive.

### TOOL KIT

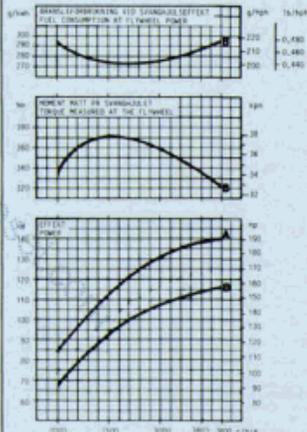
Designed for minor repair work.

## Data

Type of operation	Four-stroke swirl chamber diesel
Flywheel output*	121 kW (165 hp) at 3600 r/min
TAMD40B – propeller shaft output* (B) <sup>1)</sup>	116 kW (158 hp) at 3600 r/min
Number of cylinders	6
Bore/stroke, mm	92/90
Capacity, litres	3,59
Valves	Overhead
Weight of engine with MS3C reverse gear, approx., kg (lb)	475 (1047)
Weight of engine with outboard drive, approx., kg (lb)	520 <sup>2)</sup> (1147 <sup>2)</sup> )

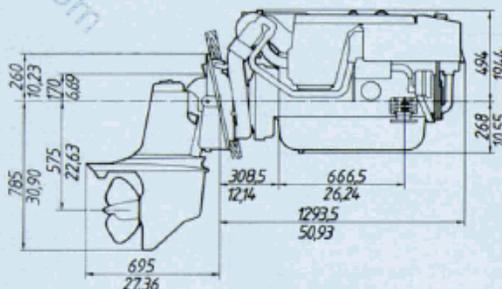
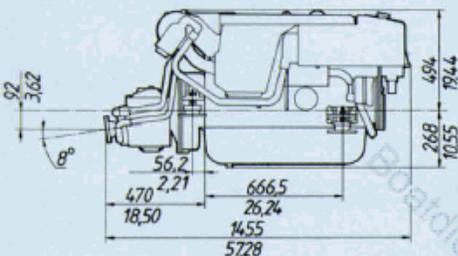
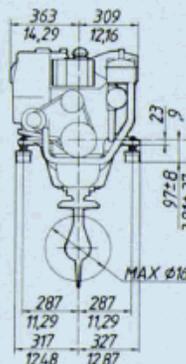
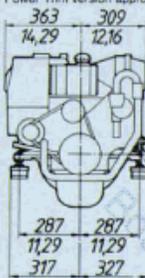
\* Acc. to DIN 6270 Leistung B  
<sup>2)</sup> Supplement for Power Trim version approx. 25 kg (55 lb)

### Output diagram, TAMD40B



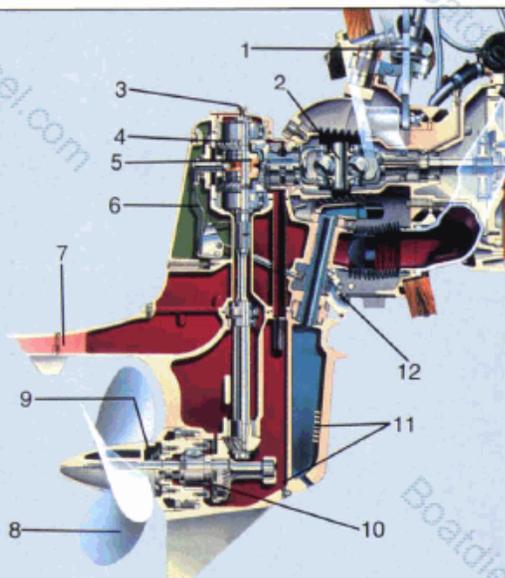
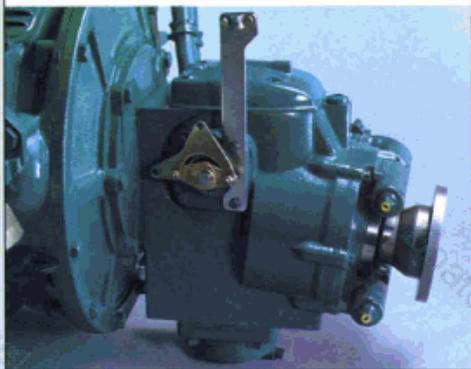
<sup>1)</sup> Graph A: The highest flywheel output that can be obtained in the test room without thermal overloading. Output corresponding to DIN 6270 "Hochleistungsleistung".

**Graph B:** propeller shaft output for leisure craft with MS3C reverse gear according to DIN 6270 Leistung B (Corresponds in practical use also to one-hour output according to BS649, 1956). Full output may only be utilized occasionally. All the measurements apply to a run-in engine.



## MS3C reverse gear

Helically cut gearwheels for low noise level.  
Torque-limiting clutch (slip clutch) comes into operation, for example if boat should run aground.  
Possibility to operate propellers in both directions.  
A spring-loaded mechanic cone clutch makes gear-changing easier and smoother.  
Built-in oil cooler.  
Same type of lubricating oil in reverse gear and engine.  
High efficiency 96–97%.  
Output shaft angled 8° downwards.



- 9. Zinc ring in front of propeller, together with extra zinc anode on mounting collar, give efficient corrosion protection.
- 10. Oil pump, vane type.
- 11. Cooling water intake.
- 12. Reverse pawl mechanism, patented design gives full reverse capability and prevents drive from tilting up when throttle is pulling back quickly. Also allows drive to kick up on striking underwater objects.

## 280 drive

- 1. Robust steering arm on inside of mounting collar. Ready for coupling to steering cable.
- 2. Double universal joint. Strongly designed and completely maintenance-free.
- 3. Easily accessible oil dipstick.
- 4. Helical-cut gears for low noise level.
- 5. Patented cone clutch. Silent Shift typ. Operates smoothly and quietly and requires little effort.
- 6. Link rod for clutch. Direction of rotation of propeller can be reversed by relocating the rod.
- 7. Cavitation plate with exhaust outlet.
- 8. Space for propellers up to 16" diameterr.

## Accessories

### FUEL SYSTEM

Water-deflecting filter with or without flexible hoses.  
Copper fuel pipelines.  
Cover with connections for fuel tank.

### COOLING SYSTEM

Hot water outlet point.  
TAMD40B:  
Cooling water intake with cock.  
Cooling water hose.  
Sea-water strainer, cleanable.  
AQAD40B: installation parts for separately fitted expansion tank.

### LUBRICATING SYSTEM

12 V or 24 V electric oil scavenging pump.

### EXHAUST SYSTEM

Hull through-put fitting.  
Exhaust rubber hose, wet type.  
Silencer, wet type.  
Elbow bend, wet type 45°.  
Exhaust line, dry type.  
Silencer, dry type.  
Compensator, dry type.

We reserve the right to introduce modifications.

### ELECTRICAL SYSTEM AND INSTRUMENTS

Extra 12 V, 50 A alternator.  
Extra 24 V, 25 A alternator.  
Charging distributor for charging of two battery systems.  
Instrument panel for extra instruments.  
Extra instruments: Electric hour meter, rudder indicator, fuel and water tank gauges.  
Main switch.  
Extension cable harness for instrument panel.  
Safety contact to stop engine.

### POWER TAKE-OFF

Vee-belt pulley for crankshaft, 3B-grooves, diam. 165 mm.

### BOAT ACCESSORIES

Electric bilge pump.  
Original paint.  
Oils.  
Electro-mechanical trim tabs.  
On-board kit.

### CONTROLS AND MANOEUVRING SYSTEMS

The VP Single-lever control for both speed and gear-changing, top or side fitted.  
Single or double installation.  
Neutral position switch for VP control – the engine can only be started with the gear in the neutral position.  
Controls for two manoeuvring points.  
Speed control kit.  
Flying bridge.  
Control cables.  
Steering gears.  
Wheels.  
Steering cables.  
Ball joint and fork for control cables.

### PROPELLER EQUIPMENT, TAMD40B

Propeller shaft flange.  
Clamp type coupling.  
Flexible propeller shaft coupling.  
Propeller shaft.  
Propeller shaft sleeves.  
Propellers.

### AQUAMATIC PROPELLERS AQAD40B



S-405 08 Göteborg, Sweden