AD41/DP

(AQAD41/DP)

AD41 6-cylinder 4-stroke direct-injected turbocharged marine diesel with aftercooler and DP or SP drive.

AD41 is a compact 3.6 litre direct-injected marine diesel. Direct injection gives lower thermal stresses. It reduces fuel consumption and increases engine service life simultaneously. A noteworthy characteristic of the engine is good fuel economy as a consequence of the excellent volumetric efficiency. As much as 14% lower fuel consumption compared with a swirl chamber engine with the same cylinder volume.

In order to improve volumetric efficiency, the engine features aftercooling which significantly reduces the temperature of the induction air downstream of the turbo. A greater quantity of air can be fed into the engine, resulting in more efficient combustion and thereby lower fuel consumption.

The torque curve pattern shows good acceleration capabilities. Since the the torque rise occurs as engine speed drops under increasing load, speed losses caused by mounting seas etc, are reduced.

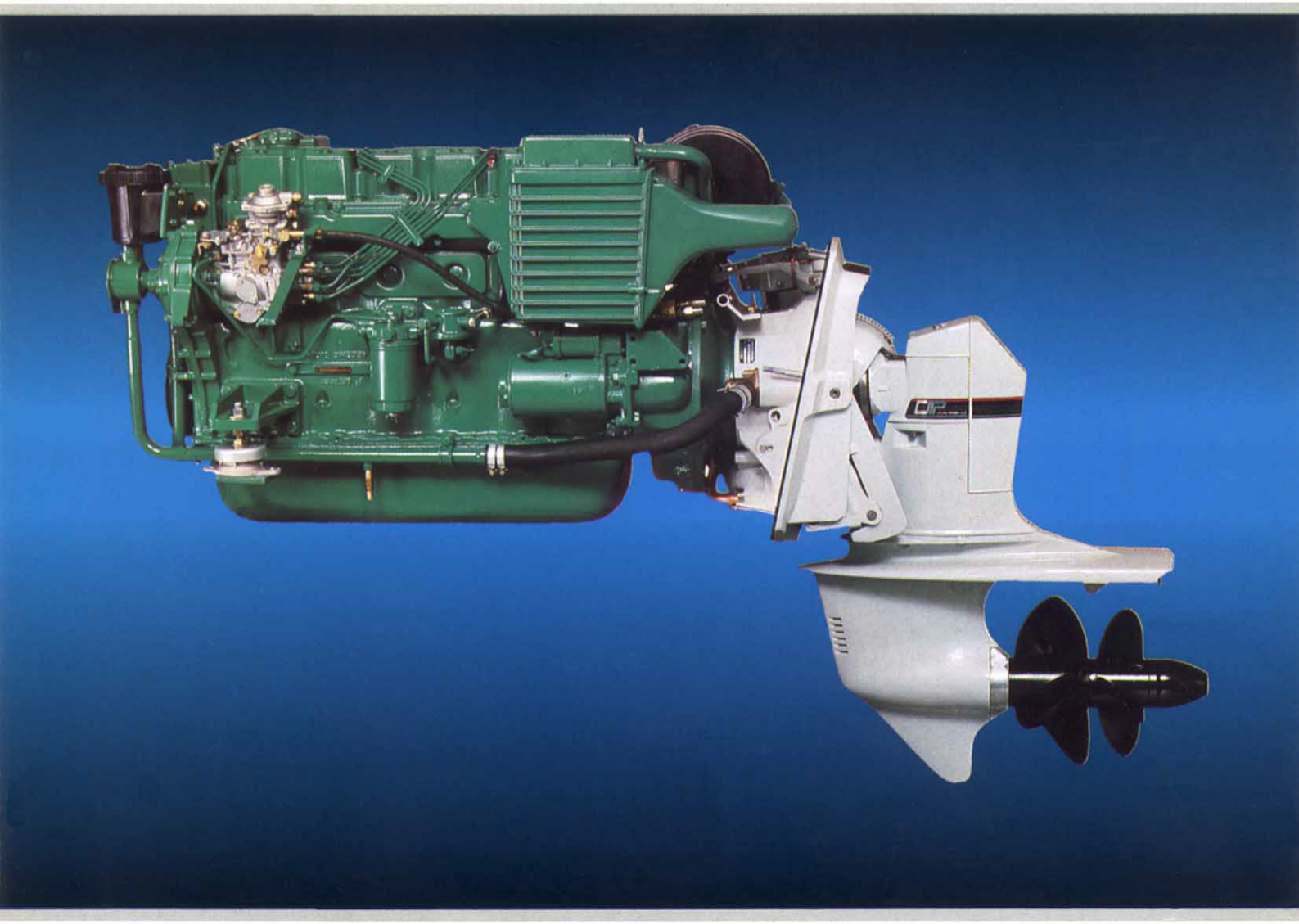
The 12-volt electrical system has an alternator with integral electronic regulator for high charging capacity (14V/50A) and high reliability. The regulator is equipped with a sensor cable which can be used to compensate for voltage drop in the battery cables. In most installations, this means significantly improved charging capacity.

Power Trim enables the drive to be adjusted to the best operating angle for better acceleration, increased top speed or lower fuel consumption at cruising speeds.

The transom shield kit is designed for simple, reliable and time-saving installation work.

The DP drive with its twin counter-rotating propellers provides between 10 and 15% greater thrust than single propellers. This means better acceleration and earlier planing. Top speed is increased while at the same time the boat's manoeuvrability is significantly improved. Directional stability is better beneath the planing threshold and monoeuvrability increases noticeably at both cruising speed and top speed.

Volvo Penta has a well-established service network in more than 100 countries. Authorized workshops, with Genuine Parts and staffed by qualified personnel, make sure you get the best service.



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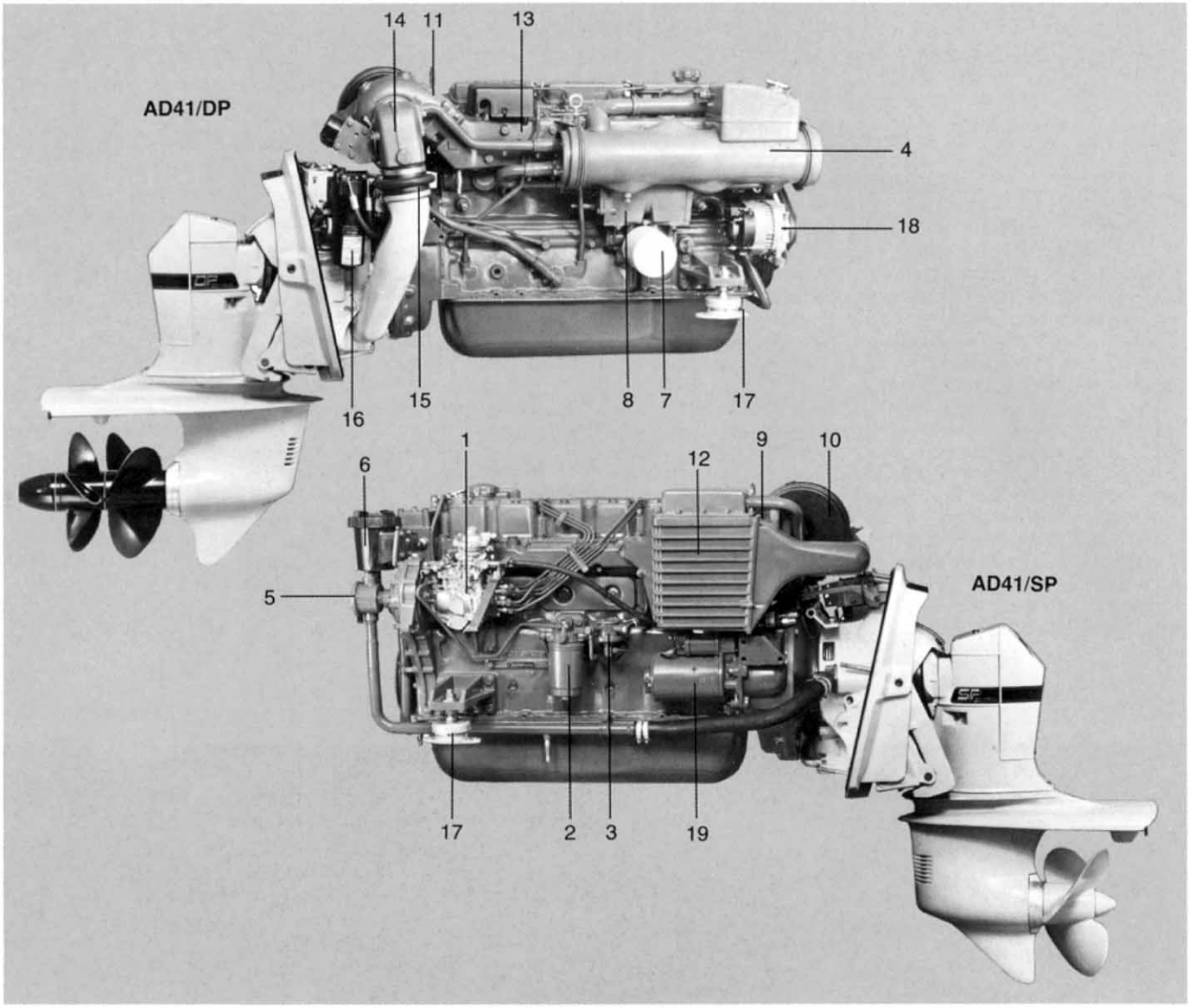


Standard equipment

ENGINE

Engine block and cylinder head of cast iron for good corrosion resistance and long service life. Replaceable wet cylinder liners. Oil-cooled pistons with two compression rings and one oil scraper ring. Replaceable valve seats in cylinder head. Crankshaft with 7 main bearings.

FUEL SYSTEM

Injection pump (1) of rotor type with mechanical regulator for accurate speed control and with smoke limiter to adapt fuel quantity to turbo boost pressure. Fine filter (2) with water trap. Feed pump (3) with hand pump. Flexible fuel connections (approved by Swedish marine authorities and DNV) for connection of copper tubing. Electrically operated stop device.

COOLING SYSTEM

Thermostatically-controlled freshwater cooling with tubular heat exchanger (4), expansion tank and circulation pump. Cooling system prepared for hot water supply. Raw water pump with neoprene impeller (5). The system has a raw water strainer which can be removed for cleaning (6).

LUBRICATING SYSTEM

Pressurized lubricating system with full-flow oil filter of spin-on type (7). Oil cooler of tubular type that can be opened for cleaning (8). Filter for crankcase ventilation (9).

INTAKE SYSTEM

Intake silencer with replaceable filter (10).

TURBOCHARGING SYSTEM

Exhaust-powered turbocharger with freshwater cooled turbine housing (11). Raw water cooled aftercooler (12) reduces temperature of boost air downstream of turbo for better volumetric efficiency.

EXHAUST SYSTEM

Freshwater cooled exhaust manifold (13). Raw water cooled exhaust riser of cast iron (14) with stainless steel insert and incorporating exhaust pressure regulator. Complete exhaust system (15) for connection to drive unit.

DRIVE

Complete with transom shield, flywheel casing and installation parts. All gearwheels are helically-cut and for reasons of durability the lower gear has been balanced for operation in both directions.
Cone clutch (patented) for reliable, smooth and light engagement.
The drive unit can be lifted 48°.
Sacrificial zinc ring to counteract corrosion.
Coolant inlet in leading edge and at bottom of drive for reliable supply of cooling water to the engine.
Reverse latch of patented design for reliable reversing action in all angles of trim permits the drive to kick up if run aground or in collision with objects in the water.
Power Trim version with electric motor powered hydraulic system (16) for trimming of drive angle

while running. (The motor-powered hydraulic pump is mounted on a bulkhead or the transom.)
Drive SP:
The shift mechanism has an easily reversible link rod for switching from counterclockwise to clockwise propeller rotation.
Attachment for steering cable mounted on shield.

ENGINE MOUNTS

Flexible mounting for insulation from noise and vibration. The engine has two adjustable rubber mounting points at the front and a rubber mounting between the flywheel casing and the rear of the shield.

STEERING SYSTEM

Power steering is also available as an optional extra. (Only one kit supplied as standard for a twin installation.)

ELECTRICAL SYSTEM

12V corrosion-protected electrical system complete with instrument panel. Alternator (18) with 14V/50A charging capacity. Designed for marine operation. Automatic fuse with resetting button mounted on engine. Starter motor output 2.2 kW (3 hp) (19).

TRIM INDICATOR (CD)

The trim angle is indicated by five green diode lamps plus a digital display. A continuous red light indicates when the drive is in the "beach" sector. The red light flashes when the drive is in the "tilt" position.
The control panel has two switches with easy-to-read symbols; one for up/down drive control and one override switch to come from "tilt" sector into "beach" sector.

INSTRUMENT PANEL

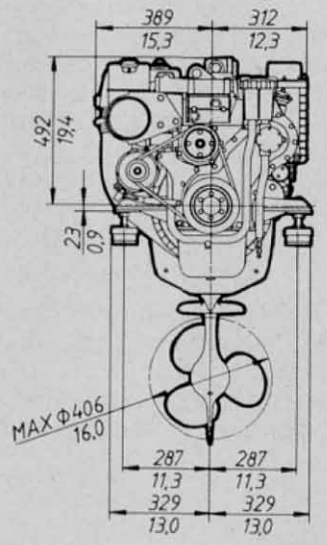
(Extra equipment on selective markets)
Equipped with key-operated switch, tachometer, temperature gauge, oil pressure gauge, and voltmeter. Control displays for low oil pressure, high engine temperature and charging. Acoustical alarm for oil pressure and coolant temperature. Test button for alarm and switch for instrument lighting. Cable, length 7 m (23 ft), complete with plug-in contacts for connection of engine and instrument panel.

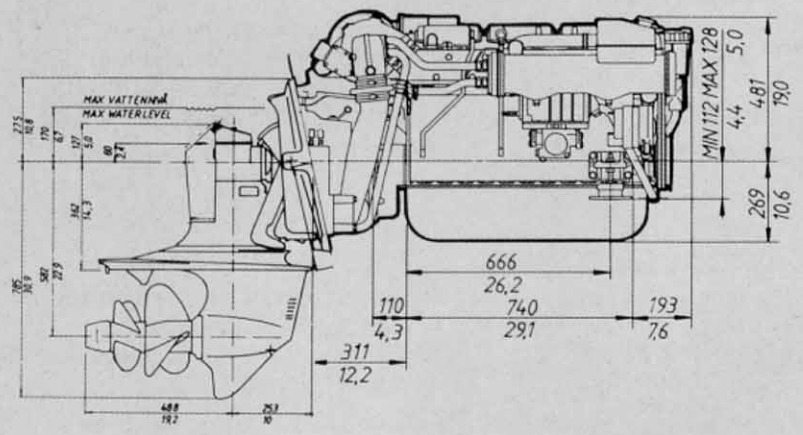
DATA

Type designation	AD41
Configuration	4-stroke, direct-injected diesel engine.
Crankshaft power (light duty)[1)2)]	147 kW (200 hp)
Prop. shaft power[3)4)5)]	136 kW (185 hp)
Engine speed r/min	3800–3900
Outboard drive SP ratio	1,61:1
Outboard drive DP ratio[6)]	1,78:1, 1:95:1
Number of cylinders	6
Bore/stroke mm (in)	92/90 (3.62/3.54)
Displacement, litres (in^3)	3.59 (219)
Valve system	Overhead
Dry weight, engine with SP drive approx kg (lb)	513 (1131)
Dry weight, engine with DP drive approx kg (lb)	520 (1146)

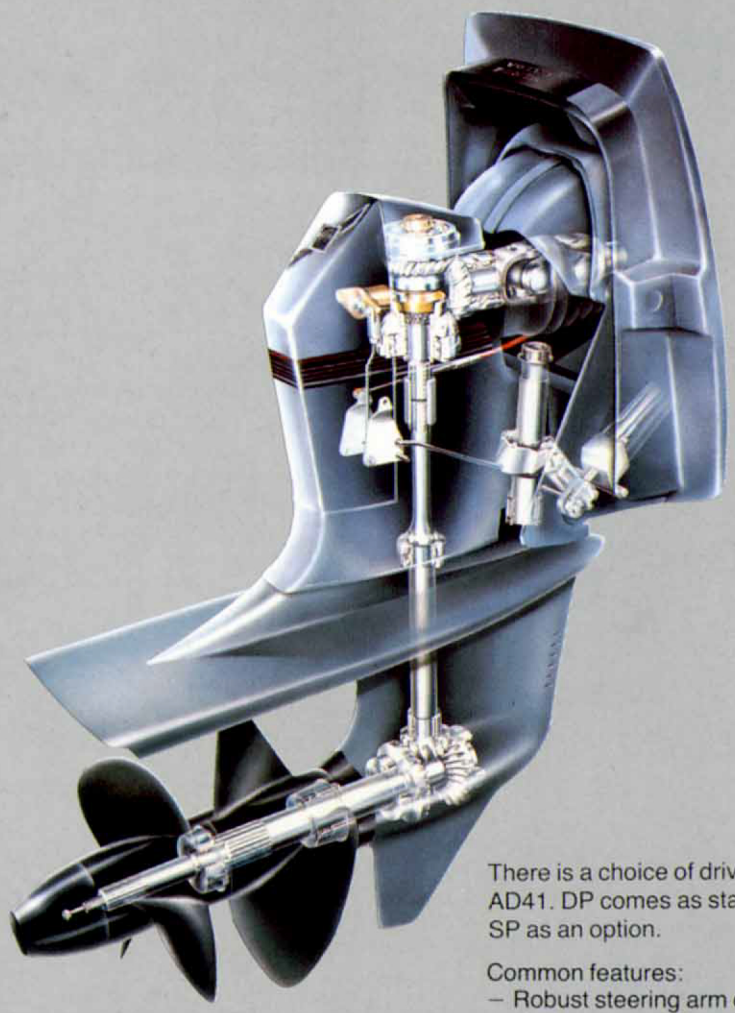
1) Crankshaft power acc. to SAE J607, and ISO 8665.
2) Usable power will be reduced by transmisson or gearbox losses.
3) Prop.shaft power acc. to ISO 8665 or acc. to the technically identical standards SAEJ1228 and ICOMIA 28–83.
4) Prop.shaft power indicated at mid of recommended speed range.
5) The power will be different for other optional configurations.
6) The DP drive enables utilization of about 10% higher propeller thrust at full throttle when compared with a SP drive.

LIGHT DUTY.
Engines with this power setting are intended for applications where load and engine speed change, and full power is used max. 1 hour per 12-hour operational period.
Primarily for planing boats.
E.g. Fireboats, rescue boats, certain patrol boats and charter boats.





Volvo Penta DP and SP



There is a choice of drives for the AD41. DP comes as standard and SP as an option.

Common features:
- Robust steering arm on inside of shield prepared for steering cable connection.
- Robust, double universal joint.
- Quiet helical gears.
- Patented cone clutch works smoothly and silently with little effort.
- Stainless steel pipes connect trim cylinders to hydraulics.
- Cavitation plate at exhaust outlet.
- Sacrificial zinc anode in front of propeller and extra zinc anode on shield for effective protection from corrosion.
- Cooling water intake.
- Patented reverse latch provides good astern capabilites while preventing the drive from floating up due to sudden reverse acceleration. Also permits the drive to kick up if run aground or obstructed.
- Electric motor powered hydraulic pump fitted either to bulkhead or transom.

DP
The DP drive removes propeller cavitation and provides lower noise levels and a low planing theshold, plus improved acceleration and better fuel economy. One gear drives both the 3-blade and the 4-blade propellers. The rear propeller shaft rotates inside the front propeller shaft.

SP
Optional drive for AD41. Together with the engine, this results in a stable and reliable power package with a long working life.

Space for a propeller of up to 16". Propeller rotation direction is easily altered by repositioning the articulated rod in the drive. Oil pump is of the impeller type.

Accessories

FUEL SYSTEM
Suction and return pipes of copper. Fuel filter with water separator. Fuel valve. Separate connecting cover for fuel tank.

COOLING SYSTEM
Hot water outlet. Hose for water heater. Separate expansion tank.

ELECTRICAL SYSTEM
Mirror-image instrument panel (main panel). Instrument panel for upper station "Flying Bridge". T-connector "Flying Bridge". Display for alarm panel. Panel for extra instruments. Extra instruments: Hour meter. Fuel tank gauge. Water tank gauge. Extension cable, instrument panel. Extension cable, trim equipment. Extra alternator. Double diode charging distributor. Main switch. Battery.

TRANSMISSION
Universal console on engine front for extra power take-off. Extra crankshaft belt pulley. Extension for drive. Propellers.

CONTROLS
Single-lever control for single installations. Single-lever control for twin installations. Control cables. DS-units (mechanical units which combine control cables from two control stations to a joint outgoing control cable). Manual stop control. Wheel steering incl. cables. Tie rod.

MISCELLANEOUS
Tool kit. On-board kit. Oil scavenging pump. Bilge pump. Touch-up paints. Lubricants.
For other accessories, see Accessories Catalogue.

Printed in Sweden Feb. 1990. Falkenbergs Tryckeri AB 90 242

VOLVO PENTA

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Not all models, standard equipment, and accessories are available in all countries. All specifications are subject to change without notice.

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02-1990