VOLVO PENTA

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp. Nr
Group. No.
20 130

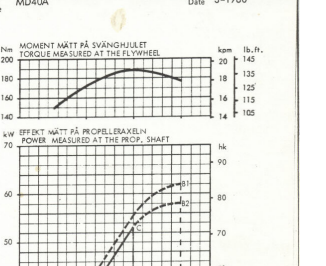
Distr. 40
Serisi

Motor / Engine MD40A

Date 3-1980

Allmänna data
General data

Fyrtakts dieselmotor med: Direktinsprutning. Virvelkammare. Toppventiler.	
Four stroke diesel engine with Direct injection. Swirl chamber. Overhead valves.	
Cylinderantal / No. of cylinders	6
Slagvolym total / Displacement total	dm^3 3,59 cu. in. 220
Slaglängd / Stroke	mm 90 in. 3,54
Cylinderdiameter / Bore	mm 92 in. 3,62
Kompressionsförhållande / Compression ratio	21:1
Motorrotation sedd mot svänghjul / Motors	
Engine rotation viewed towards flywheel	Anti clockwise
Max. tillåten lutning bakåt under gång	18°
Max. permissible inclination backwards under way	18°



B: B1. Effekt för nöjesbåtar med MS3-backslag.
B2. Effekt för nöjesbåtar med BW-backslag.
Intermittent effekt mätt på propelleraxeln enligt DIN 6270 Leistung B (motsvarar för praktisk bruk även 1-timmes effekt enl BS 649, 1958 och SAE J 270). Får utnyttjas högst 1 tim per 12-timmarsperiod. Vid lev från Volvo Penta är motorn inställd enligt kurva B 60 r/s (3600 r/min).

C: Effekt övriga installationer - lätt kommersiell drift. Kontinuerlig effekt mätt på propelleraxeln enligt DIN 6270 Leistung B für Dauerbetrieb (motsvarar för praktisk bruk även kontinuerlig effekt BS 649, 1958 och SAE J 270). Motorns svänghjulseffekt är ca 0% högre för B1 kurvan och 12% högre för B2 kurvan in angivna värden. Samtliga värden gäller inkörd motor.

B: B1. Power pleasure boats with MS3-reverse gear.
B2. Power pleasure boats with BW-reverse gear.
Intermittent power measured on propeller shaft acc to DIN 6270 Leistung B (corresponds for practical use also to 1-hour power acc to BS 649, 1958 and SAE J 270). Must be taken out max 1-hour per 12-hour period. On delivery from Volvo Penta, the engine is adjusted acc to curve B 60 r/s (3600 r/min).

C: Light commercial duty measured on the propeller shaft acc to DIN 6270 Leistung B für Dauerbetrieb (corresponds for practical use also to continuous power acc to BS 649, 1958 and SAE J270).
The flywheel power for the engine is approx 0% higher for B1 curve and 12% higher for B2 curve than the indicated values. All measurements apply to a run-in engine.

Postal address
S-405 08 Göteborg Sweden

Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

VOLVO PENTA

MOTORDIAGRAM
ENGINE DIAGRAM
MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No: 20 130-1

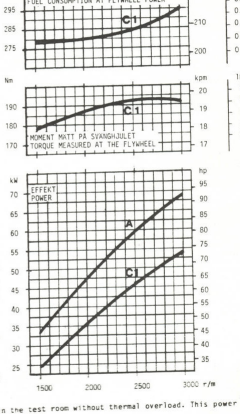
Distr.

Motor / Engine: MD40A LATT KOMMERSIELL DRIFT / LIGHT COMMERCIAL DUTY

Date: 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Overhead valves.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	3.59 / 220
Slaglängd / Stroke	mm / in	90 / 3.54
Cylinderdiameter / Bore	mm / in	92 / 3.62
Kompressionsförhållande / Compression ratio		21:1 / 21:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18° / 18°
Rotationsriktning, moturs sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva C1: Intermittent effekt för lätt kommersiell drift mätt på propelleraxeln *) enligt DIN 6270 Leistung B für Dauerbetrieb (motsvarar för praktiskt bruk även kontinuerlig effekt enligt BS 649, 1958). Full effekt får endast utnyttjas några få timmar/dag. Vidare får den totala körtiden inte överskrida 2000 timmar/år.

*) med BW-backslag.

Motorns svänghjulseffekt är ca 10% högre än angivna värden för C1-kurvan.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve C1: Intermittent power for light commercial duty measured on the propeller shaft *) according to DIN 6270 Leistung B (corresponds for practical use also to continuous power according to BS 649, 1958). May be taken out max 4-hour per 12-hour period. Total operating time max 2000 hours/year.

*) with reverse gear BW.

The flywheel power for the engine is approx 10% higher than the indicated values for the C1-curve.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

VGV/PTO

Postal address

Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Goteborg

Telex
20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No	
20	130-1

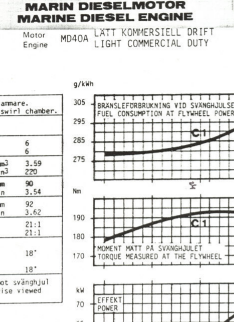
Distr.

Motor / Engine: MD40A LÄTT KOMMERSIELL DRIFT / LIGHT COMMERCIAL DUTY

Date: 3/1982

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Overhead valves.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm³ / in³	3.59 / 220
Slaglängd / Stroke	mm / in	90 / 3.54
Cylinderdiameter / Bore	mm / in	92 / 3.62
Kompressionsförhållande / Compression ratio		21:1 / 21:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18° / 18°
Rotationsriktning, motors sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva C1: Intermittent effekt för lätt kommersiell drift mätt på propelleraxeln *) enligt DIN 6270 Leistung B für Dauerbetrieb (motsvarar för praktiskt bruk även kontinuerlig effekt enligt BS 649, 1958). Full effekt får endast utnyttjas några få timmar/dag. Vidare får den totala körtiden inte överskrida 2000 timmar/år.

*) med BW-backslag.

Motorns svänghjulseffekt är ca 10% högre än angivna värden för C1-kurvan.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve C1: Intermittent power for light commercial duty measured on the propeller shaft *) according to DIN 6270 Leistung B (corresponds for practical use also to continuous power according to BS 649, 1958). Highest power may be utilized only a few hours/day. Total operating time max 2000 hours/year.

*) with reverse gear BW.

The flywheel power for the engine is approx 10% higher than the indicated values for the C1-curve.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

V G V / P T U

Postal address
S-405 08 Göteborg Sweden

Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr
Group No

20 130

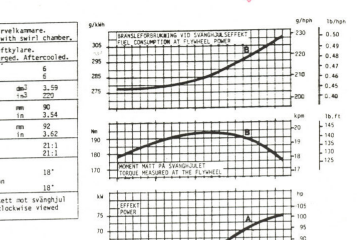
Distr.

Motor / Engine MD40A NÖJESBÅTSDRIFT / PLEASURE CRAFT DUTY

Date 3/1982

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Turbo. Ladluftkylare. Overhead valves. Turbo charged. Aftercooled.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	3,59 / 220
Slaglängd / Stroke	mm / in	90 / 3,54
Cylinderdiameter / Bore	mm / in	92 / 3,62
Kompressionsförhållande / Compression ratio		21:1 / 21:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18° / 18°
Rotationsriktning, moturs sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva B2* och B3**: Propelleraxeleffekt för nöjesbåtsdrift enligt DIN 6270 Leistung B (motsvarar för praktiskt bruk även 1-timmes effekt enligt BS 649, 1958). Full effekt får endast utnyttjas undantagsvis. Båtens marschfart måste dessutom ligga avsevärt under maxfarten.

* Propelleraxeleffekt med MS3 backslag.
** Propelleraxeleffekt med BW backslag.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve B2* and B3**: Propeller shaft power for pleasure craft duty according to DIN 6270 Leistung B (corresponds for practical use also to 1-hour's power according to BS 649, 1958). Only occasional use at full engine throttle. Normal cruising is expected to be at a comfortable part-throttle operation.

* Propeller shaft power with reverse gear MS3.
** Propeller shaft power with reverse gear BW.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

CEMBERG Svenska Motor- Nöjesbåts- Industri

VGV/PTO

Postal address: S-405 08 Göteborg Sweden
Telephone: Switchboard + 46 31 23 54 60
Cables: Penta Göteborg
Telex: 20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

VOLVO PENTA

Grupp Nr Group No	
20	135

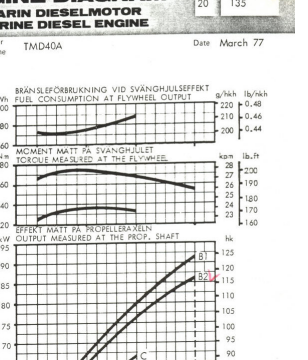
Distr. 1,2,3,4,3,14,19,20

Motor Engine TMD40A

Date March 77

Allmänna data
General data

Fyrtakts dieselmotor med: Direktinsprutning. Virvelkammare. Toppventiler. Turbo.		
Four stroke diesel engine with Direct injection. Swirl chamber. Overhead valves. Turbo charged.		
Cylinderantal No. of cylinders		6
Slagvolym total Displacement total cu. in.	dm3	3.59
		220
Slaglängd Stroke	mm	90
	in.	3.54
Cylinderdiameter Bore	mm	92
	in.	3.62
Kompressionsförhållande Compression ratio		20.5:1
Motorrotation sedd mot svanghjul		- Moturs
Engine rotation viewed towards flywheel		- Anti clockwise
Max. tillåten lutning bakåt under gång		18°
Max. permissible inclination backwards under way		18°



B: B1. Effekt för nöjesbåtar med MS3-backslag.
B2. Effekt för nöjesbåtar med BW-backslag.
Intermittent effekt mätt på propelleraxeln enligt DIN 6270 Leistung B (motsvarar för praktiskt bruk även 1-timmes effekt enl BS 649, 1958). För uttagas högst 1 tim av 12-timmarsperiod. Vid lev från Volvo Penta är motorn inställd enligt kurva B 60 r/s (3600 r/m).

C: Effekt övriga installationer - lätt drift. Kontinuerlig effekt mätt på propelleraxeln enligt DIN 6270 Leistung B för Dauerbetrieb (motsvarar för praktiskt bruk även kontinuerlig effekt enligt BS 649, 1958).
Motorns svanghjulseffekt är ca 4,8% högre för B1 kurvan och 11% högre för B2 kurvan än angivna värden.
Samtliga mätningar gäller inkörd motor.

B: B1. Output pleasure boats with MS3-rev.gear.
B2. Output pleasure boats with BW-rev.gear.
Intermittent output measured on propeller shaft acc. to DIN 6270 Leistung B (corresponds for practical use also to 1-hour's output acc. to BS 649, 1958). May be taken out for 1-hour per 12-hour period. On delivery from Volvo Penta, the engine is adjusted acc. to curve B 60 r/s (3600 r/m).

C: Continuous output measured on the propeller shaft acc. to DIN 6270 Leistung B for Dauerbetrieb (corresponds for practical use also to continuous output acc. to BS 649, 1958).
The flywheel output for the engine is approx. 4.8% higher for B1 curve and 11% higher for B2 curve than the indicated values. All measurements apply to a run-in engine.

Postal address
S-405 08 Göteborg Sweden

Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM
MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No	
20	135

Distr.

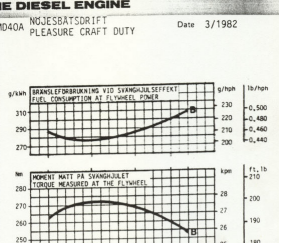
Motor / Engine: TMD40A

NÖJESBÅTSDRIFT / PLEASURE CRAFT DUTY

Date: 3/1982

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Turbo. Overhead valves. Turbo charged.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	3.59 / 220
Slaglängd / Stroke	mm / in	90 / 3.54
Cylinderdiameter / Bore	mm / in	92 / 3.62
Kompressionsförhållande / Compression ratio		20,5:1 / 20,5:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18°
Rotationsriktning, moturs sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		18°



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva B2* och B3**: Propelleraxeleffekt för nöjesbåtsdrift gäller DIN 6270 Leistung B (motsvarar för praktiskt bruk även 1-timmes effekt enligt BS 649, 1958). Full effekt får endast utnyttjas undantagsvis. Båtens marschfart måste dessutom ligga avsevärt under maxfarten.

* Propelleraxeleffekt med MS3 backslag.
** Propelleraxeleffekt med BW backslag.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve B2* and B3**: Propeller shaft power for pleasure craft duty according to DIN 6270 Leistung B (corresponds for practical use also to 1-hour's power according to BS 649, 1958). Only occasional use at full engine throttle. Normal cruising is expected to be at a comfortable part-throttle operation.

* Propeller shaft power with reverse gear MS3.
** Propeller shaft power with reverse gear BW.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

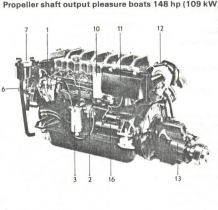
VGV/PTO

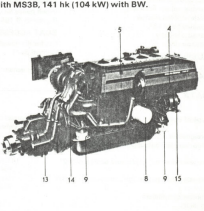
Postal address
Telephone Växelbordsnr + 46 31 23 54 60
Cables Penta Göteborg
Telex 20755 PENTA S

Ref. No. 8111
Eng.

TAMD 40A

6-cylinder, 4-stroke turbo-charged marine diesel engine with swirl chambers and aftercooler. Propeller shaft output pleasure boats 148 hp (109 kW) with MS3B, 141 hk (104 kW) with BW.





STANDARD EQUIPMENT

ENGINE BODY – Cast iron cylinder block and cylinder head. Replaceable wet cylinder liners. Oilcooled pistons made of light-alloy with two compression rings and one oil scraper ring. Crankshaft journalled in seven bearings. The cylinder head is provided with replaceable valve seats and valves of high quality material.
Tool kit for minor adjustments supplied with engine.

FUEL SYSTEM – Rotor-type injection pump with mechanical governor for accurate speed regulation (1).
Feed pump (2) with hand primer and flexible hoses with fuel pipe connection for suction and return lines.
Fine filter (3) with water separator.
Electrical stop device.

COOLING SYSTEM – Thermostat-controlled fresh-water cooling with heat exchanger (4) and circulation pump. Expansion tank. Sea-water pump with neoprene rubber impeller (6). Cleanable sea-water filter (7).

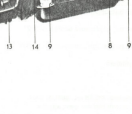
LUBRICATING SYSTEM – Pressure lubricating system with full-flow lubricating oil filter of the spin-on type (8). Cleanable, tubular-type oil cooler. Crankcase ventilation with replaceable filter (10).

INTAKE SYSTEM – Intake silencer with replaceable filter (11).

SUPERCHARGING SYSTEM – Exhaust gas driven turbo compressor with fresh-water cooled turbine housing (12). Sea-water-cooled aftercooler (5) for cooling of the turbo-charged air for better degree of efficiency.

EXHAUST SYSTEM – Fresh-water cooled exhaust manifold (13). Sea-water cooled exhaust manifold elbow of cast iron/stainless steel (14) can be fitted in any angle.

ELECTRICAL SYSTEM – Corrosionproof 12 V electrical system, with complete instrument panel. Automatic fuse with resetting button fitted on engine. Brushless alternator with built-in transistor regulator, 35 A, 420 W (15). Starter motor output 3 kW (4 hp) (16). Automatic alarm for oil pressure and water temperature.



The instrument panel is provided with a key switch, rev counter, temperature gauge, oil pressure gauge and voltmeter, warning lamp for connection of glow plugs, reostated switch for instrument panel light. Cable harness, 7 m (23 ft.) in length, with plug-in contact already fitted, for connection to engine and instrument.

ENGINE MOUNTING – The engine is supplied with flexible mounting (9).

EQUIPMENT

POWER TRANSMISSION – Reverse gear type MS3B with cone clutch and 8° propeller shaft angle or hydraulic reverse gear type Borg Warner. Delivered without prop. shaft flange.
Reverse gear type MS3B red. ratio 1.54:1, L and R-H prop. (13).
Reverse gear type MS3B ratio 1.93:1, L and R-H prop. (13).
Reverse gear type BW red. ratio 1.91:1, R-H prop.
Reverse gear type BW red. ratio 2.1:1, L-H prop.
Reverse gear type BW red. ratio 2.9:1, L-H prop.

EXTRA EQUIPMENT

FUEL SYSTEM
Water-separating filter with or without flexible hoses.
Water separator.
Copper fuel pipe.

COOLING SYSTEM
Cooling water intake complete with cock and hose.

EXHAUST SYSTEM
Hull through fitting.
Exhaust rubber hose wet.
Water-cooled silencer.
Exhaust bend 45°.
Exhaust line dry.
Silencer dry.

LUBRICATING SYSTEM
Electrical oil scavenging pump 12 V or 24 V

ELECTRICAL SYSTEM
Extra alternator 12 V 35 A.
Extra alternator 24 V 25 A.
Charging distributor for charging 2-battery system.
Instrument panel for extra instrument.
Master switch.
Cable harness extension for instrument panel.
Safety contact for stop of engine.

POWER TRANSMISSION
V-belt pulley for crankshaft 3.
8-grooves Ø 185 mm.

BOAT ACCESSORIES
Electrically operated bilge pump.
Original paint.
Oils.
Electro-mechanical trim tabs.

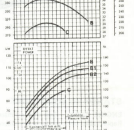
CONTROL and CONTROL SYSTEM
VP singal-control lever for both speed and forward-reverse operation, topmounted or side-mounted. Single of twin installation.
Neutral position switch – automatic safety interlock, VP controls.
Control cables.
Steering gears.
Steering wheel.
Steering cables.
Ball joint and fork kit for steering cable.
Dual station control unit.

PROPELLER EQUIPMENT
Propeller shaft flange.
Propeller shaft coupling, clamping type.
Propeller shaft.
Propeller shaft sleeves.
Propellers.

DATA

Type of operation	4-stroke turbo charged diesel engine with swirl chambers and aftercooler
Designation	TAMD40A
Propeller shaft output pleasure boats MS3B "B1"	148 hp at 3600 r.p.m. (109 kW at 60 r.p.s.)
Propeller shaft ouput pleasure boats BW "B2"	141 hp at 3600 r.p.m. (104 kW at 60 r.p.s.)
Propeller shaft output light commercial use BW	110 hp at 3000 r.p.m. (81 kW at 50 r.p.s.)
Number of cylinders	6 in-line
Capacity	3.59 dm³ (220 in³)
Bore/stroke	92/90 mm (3.62/3.54 in)
Valves	overhead
Weight, engine with MS3B rev. gear, approx.	485 kg (1069 lb)
Weight, engine with BW rev. gear, approx.	505 kg (1113 lb)

B. The diagram indicates intermittent power at flywheel acc. to DIN 6270.
B1. The diagram indicates the propeller shaft output for a run-in engine with mechanical reverse gear type MS3B according to DIN 6270 Leistung B.
B2. The diagram indicates the propeller shaft output for a run-in engine with hydraulic reverse gear type BW according to DIN 6270 Leistung B.
C. The diagram indicates continuous power at flywheel, light commercial use, according to DIN 6270.



DIMENSIONS DRAWING

VOLVO PENTA

S-405 08 GÖTEBORG, Sweden
Telephone: 031/23 54 60
Cables: Penta Göteborg
Telex: 207 55 PENTA S

VOLVO PENTA

MOTORDIAGRAM
ENGINE DIAGRAM
MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr
Group No. 20 140

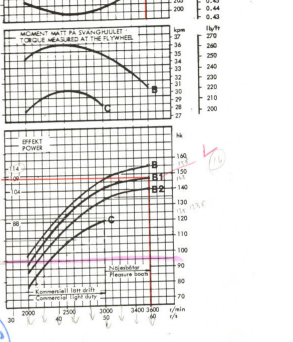
Distr.

Motor
Engine TAMD40 A

Date 5-1980

Allmänna data
General data

Fyrtakts dieselmotor med:		
Virvelkammare. Toppventiler. Turbo. Efterkyld.		
Four stroke diesel engine with		
Swirl chamber. Overhead valves. Turbo charged. After-cooled		
Cylinderantal No. of cylinders		6
Slagvolym total Displacement total cu. in.	dm³	3, 59
		220
Slaglängd Stroke	mm	90
	in.	3, 54
Cylinderdiameter Bore	mm	92
	in.	3, 62
Kompressionsförhållande Compression ratio		21:1
Motorrotation sedd mot svänghjul		Motsurs
Engine rotation viewed towards flywheel		Anti clockwise
Max. tillåten lutning bakåt under gång		18°
Max. permissible inclination backwards under way		18°



B. Intermittent effekt på svänghjul.

B1. Effekt för nöjesbåtar med MS3-backslag.

B2. Effekt för nöjesbåtar med BW-backslag.

Intermittent effekt mätt på propelleraxeln enligt DIN 6270 Leistung B (motsvarar för praktiskt bruk även 1-timmes effekt enl BS 649, 1958). Får uttagas högst 1 tim per 12-timmarsperiod. Vid lev från Volvo Penta är motorn installd enligt kurva B 60 r/s (3600 r/min).

C. Effekt övriga installationer - lätt drift. Kontinuerlig effekt mätt på svänghjul enligt DIN 6270 Leistung B für Dauerbetrieb (motsvarar för praktiskt bruk även kontinuerlig effekt enligt BS 649, 1958).

Samtliga mätningar gäller inkörd motor.

B. Intermittent power measured at flywheel.

B1. Power pleasure boats with MS3-reverse gear.

B2. Power pleasure boats with BW-reverse gear.

Intermittent power measured on propeller shaft acc to DIN 6270 Leistung B (corresponds for practical use also to 1-hour's power acc to BS 649, 1958). May be taken out max 1-hour per 12-hour period. On delivery from Volvo Penta, the engine is adjusted acc to curve B 60 r/s (3600 r/min).

C. Continuous power measured at flywheel acc to DIN 6270 Leistung B für Dauerbetrieb (corresponds for practical use also to continuous power acc to BS 649, 1958).

All measurements apply to a run-in engine.

Postal address
S 405 08 Göteborg Sweden

Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr Group No	
20	135

Distr.

Motor / Engine TMD40A NÖJESBÅTSDRIFT / PLEASURE CRAFT DUTY

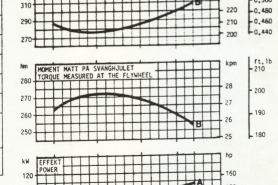
Date 3/1982

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare.
Four stroke diesel engine with swirl chamber.

Toppventiler. Turbo.
Overhead valves. Turbo charged.

Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm³ / in³	3.59 / 220
Slaglängd / Stroke	mm / in	90 / 3.54
Cylinderdiameter / Bore	mm / in	92 / 3.62
Kompressionsförhållande / Compression ratio		20.5:1 / 20.5:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18° / 18°
Rotationsriktning, motors sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva B2* och B3**: Propelleraxeleffekt för nöjesbåtsdrift enligt DIN 6270 Leistung B (motsvarar för praktiskt bruk även 1-timmes effekt enligt BS 649, 1958). Full effekt får endast utnyttjas undantagsvis. Båtens narrschfart måste dessutom ligga avsevärt under maxfarten.

* Propelleraxeleffekt med MS3 backslag.
** Propelleraxeleffekt med BW backslag.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve B2* and B3**: Propeller shaft power for pleasure craft duty according to DIN 6270 Leistung B (corresponds for practical use also to 1-hour's power according to BS 649, 1958). Only occasional use at full engine throttle. Normal cruising is expected to be at a comfortable part-throttle operation.

* Propeller shaft power with reverse gear MS3.
** Propeller shaft power with reverse gear BW.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

CEMBREC
Motorfabriken i Stockholm
Nöjesbåts-avdelning

VGV/PTO

Postal address Telephone Cables Telex
20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No: 20 140-1

Distr.

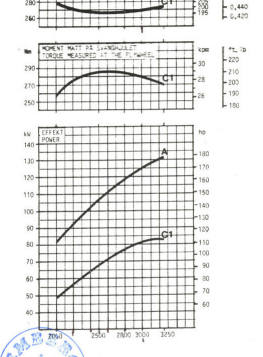
Motor / Engine: TAMD40A

LÄTT KOMMERSIELL DRIFT
LIGHT COMMERCIAL DUTY

Date: 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Turbo. Laddluftkylare. Overhead valves. Turbo charged. Aftercooled.		
Cylinderantal / No. of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	3.59 / 220
Slaglängd / Stroke	mm / in	90 / 3.54
Cylinderdiameter / Bore	mm / in	92 / 3.62
Kompressionsförhållande / Compression ratio		21:1 / 21:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18° / 18°
Rotationsriktning, moturs sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva C1: Intermittent effekt för lätt kommersiell drift mätt på propelleraxeln *) enligt DIN 6270 Leistung B (för Dauerbetrieb motsvarar för praktiskt bruk även kontinuerlig effekt enligt BS 649, 1958). Full effekt får endast utnyttjas några få timmar/dag. Vidare får den totala körtiden inte överskrida 2000 timmar/år.

*) med BW-backslag.

Motorns svänghjulseffekt är ca 10% högre än angivna värden för C1-kurvan.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve C1: Intermittent power for light commercial duty measured on the propeller shaft *) according to DIN 6270 Leistung B (corresponds for practical use also to continuous power according to BS 649, 1958). May be taken out max 4-hour per 12-hour period. Total operating time max 2000 hours/year.

*) with reverse gear BW.

The flywheel power for the engine is approx 10% higher than the indicated values for the C1-curve.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

VGV/PTO

Postal address
S-405 08 Göteborg, Sweden

Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Group No
Group No

20	140

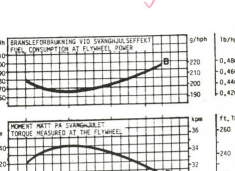
Distr.

Motor
Engine TAMD40A NÖJESBÅTSDRIFT
PLEASURE CRAFT DUTY

Date 3/1982

ALMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Overhead valves.		
Cylinderantal No of cylinders		6 6
Slagvolym total Displacement total	dm3 in3	3.59 220
Slag/längd Stroke	mm in	90 3.54
Cylinderdiameter Bore	mm in	92 3.62
Kompressionsförhållande Compression ratio		21:1 21:1
Max tillåten lutning bakåt under gång Max permissible inclination backwards under way		18°
Rotationsriktning, moturs sett mot svänghjul Rotation direction, anti-clockwise viewed towards flywheel		



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva B2* och B3**: Propelleraxeleffekt för nöjesbåtsdrift enligt DIN 6270 Leistung B (motsvarar för praktiskt bruk även 1-timmes effekt enligt BS 649, 1958). Full effekt får endast utnyttjas undantagsvis. Båtens marschfart måste dessutom ligga avsevärt under maxfarten.

- * Propelleraxeleffekt med MS3B backslag.
- ** Propelleraxeleffekt med BW backslag.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve B2* and B3**: Propeller shaft power for pleasure craft duty according to DIN 6270 Leistung B (corresponds for practical use also to 1-hour's power according to BS 649, 1958). Only occasional use at full engine throttle. Normal cruising is expected to be at a comfortable part-throttle operation.

- * Propeller shaft power with reverse gear MS3B.
- ** Propeller shaft power with reverse gear BW.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

VGV/PTO

Postal address
S-405 08 Göteborg Sweden

Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

MOTORDIAGRAM
ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No	
20	140-1

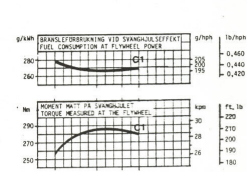
Distr.

Motor / Engine TAKD40A LÄTT KOMMERSIELL DRIFT / LIGHT COMMERCIAL DUTY

Date 3/1982

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Turbo. Laddluftkylare. Overhead valves. Turbo charged. Aftercooled.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	cm^3 / in^3	3.59 / 220
Slaglängd / Stroke	mm / in	90 / 3.54
Cylinderdiameter / Bore	mm / in	92 / 3.62
Kompressionsförhållande / Compression ratio		21:1 / 21:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18° / 18°
Rotationsriktning, motors sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		



Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva C1: Intermittent effekt för lätt kommerciell drift mätt på propellerskaft *) enligt DIN 6270 Leistung B för Dauerbetrieb (motsvarar för praktisk bruk även kontinuerlig effekt enligt BS 649, 1958). Full effekt får endast utnyttjas några få timmar/dag. Vidare får den totala körtiden inte överskrida 2000 timmar/år.

*) med BW-backslag.

Motorns svänghjulseffekt är ca 10% högre än angivna värden för C1-kurvan.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve C1: Intermittent power for light commercial duty measured on the propeller shaft *) according to DIN 6270 Leistung B (corresponds for practical use also to continuous power according to BS 649, 1958). Highest power may be utilized only a few hours/day. Total operating time max 2000 hours/year.

*) with reverse gear BW.

The flywheel power for the engine is approx 10% higher than the indicated values for the C1-curve.

All measurements apply to a run-in engine.

NOTE! Desired power set should be stated on the engine order.

VGV/PTO

Postal address
S-405 08 Göteborg Sweden

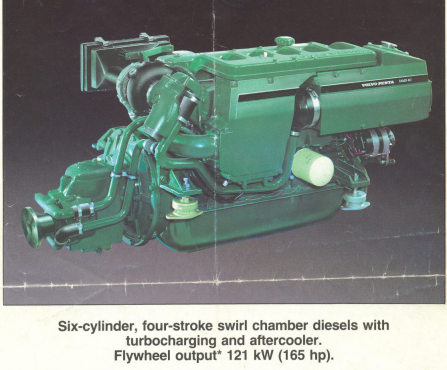
Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

VOLVO PENTA

TAMD40B



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

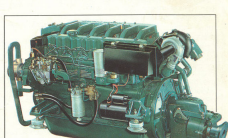
A compact, turbo-charged and aftercooled swirl chamber diesel. The high engine torque provides lively thrust together with the MS3C reverse gear.

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 turbocharger with a fresh-water cooled turbine housing and a sea-water cooled aftercooler give 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 sevenbearing crankshaft contribute to quiet and smooth running.

A corrosion-protected 12 V electrical system and a 14 V/50 A alternator take care of charging and electric power supply. Extra equipment available includes a distributor unit for the charging of two batteries and extra 14 V/50 A or 28 V/55 A alternators.

One power pack with compact installed dimensions, high output and relatively low weight which can, in many cases, do the same job as petrol (gasoline) engines even in fast boats.



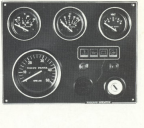
* Acc. to DIN 6270 Output B

ELECTRICAL SYSTEM

Corrosion-protected electrical system, 12 V, with instrument panel. 14 V/50 A alternator (13). Automatic fuse with resetting button fitted on engine. Starter motor rating 2.2 kW (3 hp) (17).

INSTRUMENT PANEL

Includes ignition switch, floating key, tachometer gauge, oil pressure gauge and voltmeter. Visual alarm display for low oil pressure, high engine temperature, battery charge and glow plugs operation. Audible alarm for oil pressure and water temperature. Test button for alarm check and switch for instrument lighting. Cable harness 5 m (16.4 ft) with plug-in connector contacts for single harness connection of panel to engine.



Data

Type of operation ..... Four-stroke swirl chamber diesel

	Light duty	Medium duty
Flywheel output*	121 kW (165 hp)	105 kW (143 hp)
Propeller shaft output*	116 kW (158 hp)	100 kW (136 hp)
Engine speed r/min	3600	3250

Number of cylinders 6

Bore/stroke, mm (in) 92/90 (3.62/3.54)

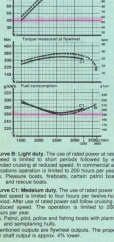
Capacity, dm^3 (cu.in) 3.59 (219)

Valves ..... Overhead

Weight of engine with MS3C reverse gear, approx. kg (lb) 475 (1047)

* Acc. to DIN 6270 output B

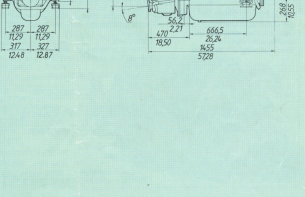
Output diagram, TAMD40B



Curve B: Light duty. The use of rated power at rated speed is limited to short periods followed by extended cruising at reduced speed. In commercial applications operation is limited to 250 hours per year. Ex. Pleasure boats, fireboats, certain patrol boats and rescue boats.

Curve C1: Medium duty. The use of rated power at rated speed is limited to 1000 hours per year. Operation period. After use of rated power call follow cruising at reduced speed. The operation is limited to 2000 hours per year.
Ex. Patrol, pilot, police and fishing boats with planing hulls and displacement hulls.

Mentioned outputs are flywheel outputs. The propeller shaft output is approx. 4% lower.



MOTORDIAGRAM
ENGINE DIAGRAM
MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr Group No	
20	140

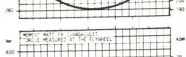
Distr.

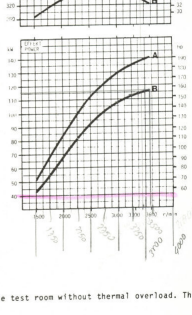
Motor / Engine TAMD40B NÖJESBÅTSDRIFT / PLEASURE CRAFT DUTY

Date 9/1982

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med virvelkammare. Four stroke diesel engine with swirl chamber.		
Toppventiler. Overhead valves.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	3,59 / 220
Slaglängd / Stroke	mm / in	90 / 3.54
Cylinderdiameter / Bore	mm / in	92 / 3.62
Kompressionsförhållande / Compression ratio		21:1 / 21:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		18° / 18°
Rotationsriktning, motors sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		





Kurva A: Högsta svänghjulseffekt som kan tas ut i provrum utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

Kurva B: Propelleraxeleffekt för nöjesbåtsdrift med MS3C backslag enligt DIN 6270 Leistung B (motsvarar för praktiskt bruk även 1-timmes effekt enligt BS 649, 1958). Full effekt får endast utnyttjas undantagsvis. Båtens marschfart måste dessutom ligga avsevärt under maxfarten.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

Curve A: Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".

Curve B: Propeller shaft power for pleasure craft duty with MS3C reverse gear according to DIN 6270 Leistung B (corresponds for practical use also to 1-hour's power according to BS 649, 1958). Only occasional use at full engine throttle. Normal cruising is expected to be at a comfortable part-throttle operation.

All measurements apply to a run-in engine.

CERTIFICAT
Service-Test
MÜHENSE-INTERNAL

VGV/PTO

Postal address
S-405 08 Göteborg Sweden

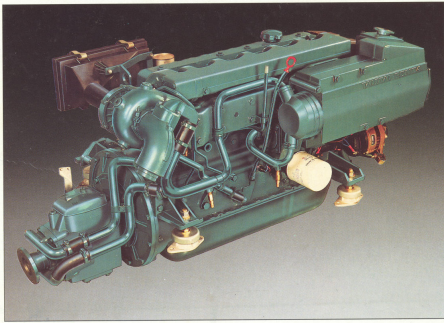
Telephone
Switchboard + 46 31 23 54 60

Cables
Penta Göteborg

Telex
20755 PENTA S

VOLVO PENTA

TMD40C



Six-cylinder, 4-stroke turbocharged, swirl-chamber marine diesel engine. Power output* 100 kW (136 hp).

A compact 3.59 litre (219 cu.in.), swirl-chamber diesel engine. The high torque of this engine together with the Volvo Penta MS3C reverse gear provides fast acceleration and powerful thrust even at low speed. Maximum power output is produced at 3600 r/min, giving excellent reserves of speed and good fuel economy. The swirl-chamber system and the seven-bearing crankshaft, together with flexible engine mountings, contribute to quiet and vibration-free running.

The turbocharger with fresh-water cooled turbine housing and seawater cooled exhaust system, together with effective oil-cooling, provide high output, a steady working temperature and long life. Cast iron engine block and cylinder head with oil-cooled light-alloy pistons and replaceable, wet cylinder liners give longer working life and simplified servicing.

The 12 V electrical system is equipped with a brushless alternator with integrated electronic regulator producing high charging capacity and electricity reserves, (14 V/50 A).

Starter motor rating 2,2 kW (3 hp)

In order to ensure compact installed dimensions, the reverse gear is angled 8° downwards.

* Flywheel output according to DIN 6270B.

ENGINE MOUNTS

Flexible engine mounts provide insulation från noise and vibrations. The engine is fitted with four adjustable rubber mounts (16).

ELECTRICAL SYSTEM

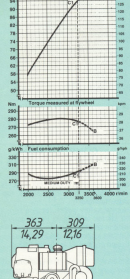
Corrosion-proofed 12 V electrical system with instrument panel. Alternator 14 V/50 A. Automatic fuse with reset button mounted on the engine. Starter motor rating, 2.2 kW (3 hp) (17).

INSTRUMENT PANEL

Fitted with key switch, tachometer, temperature gauge, oil pressure gauge, voltmeter, indicator lamp for glow plug operation, audible alarm for oil pressure and water temperature, rheostat-switch for instrument lighting. Cable harness, length 7 m (23 ft), with plug-in contacts for connection to the engine and instruments.

TOOL KIT

Intended for minor repair work.



Data

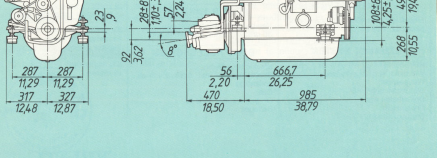
	Light duty	Medium duty
Type of operation	4-stroke swirl-chamber diesel engine	
Flywheel output*	100 kW (136 hp)	94 kW (128 hp)
Propeller shaft output*	95 kW (129 hp)	90 kW (122 hp)
Engine speed r/min	3600	3250
Number of cylinders	6	
Cylinder bore/stroke, mm (in)	92/90 (3.62/3.55)	
Capacity, dm³ (in³)	3.59 (219)	
Valve configuration	Overhead	
Weight of engine with MS3C reverse gear, approx. kg (lbs)	460 (1014)	

* According to DIN 6270 output B.

Curve B: Light duty. The use of rated power at rated speed is limited to short periods followed by reduced power or lower speed. The operation in commercial applications operation is limited to 300 hours per year. Ex. Pleasure boats, fireboats, certain patrol boats and rescue boats.

Curve C1: **Medium duty.** The use of rated power at rated speed is limited to four hours per twelve-hour period. After use of rated power shall follow cruising at reduced speed. The operation is limited to 2000 hours per year.
Ex. Patrol, pilot, police and fishing boats with planing and semiplaning hulls.

Mentioned outputs are flywheel outputs. The propeller shaft output is approx. 4% lower.



D41L

Pleasure Duty (PD)

6-cylinder, 4-stroke, direct injected, turbo-charged marine diesel engine with Duoprop®-drive – crankshaft power* 110 kW (150 hp)

* Power rating – see General Data

Reliable marine engine

D41L is a reliable and economic marine engine with considerable power resources and is specially developed for planing craft. With its compact dimensions, it is ideal for twin installation.

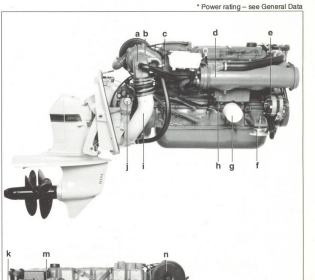
Turbo-charging
The engine is turbo-charged for efficient operation with high power/fuel consumption ratio. The turbo-charging contributes to reduced exhaust emission levels. The turbo-charger also acts as an additional silencer on both induction and exhaust sides of the engine.

Direct injection
Direct injection (DI) results in low thermal load and low fuel consumption compared to swirl chamber engines (IDI) of the same cylinder volume. Direct injected engines also have a longer service life.

Low exhaust emission levels
The advanced combustion system minimizes noxious exhaust emissions. The engine is certified for use on lake Constance – where exhaust emission regulations are probably the toughest in the world.

DP drive
The DP drive with its twin counter-rotating propellers produces a harmonius drive unit with unbeatable characteristics in terms of speed, acceleration and fuel economy. It also produces less noise and vibrations, better steering and manoeuvering characteristics, better grip in the water and a shorter time to planing compared with single propeller systems.

Comprehensive service network
Volvo Penta has a well established network of authorized service agents in more than 100 countries throughout the world. These service centers offer Original Volvo Penta parts as well as skilled personnel to ensure the best possible service.



The engine shown may vary from the standard unit.

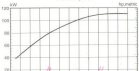
a. Exhaust elbow, wet type
b. Turbo-charger
c. Freshwater cooled exhaust manifold
d. Freshwater cooling
e. Alternator 14 V/80 A
f. Flexible front engine mounting
g. Lubrication oil filter
h. Oil cooler
i. Exhaust line
j. Power Trim pump
k. Seawater pump
m. Injection pump
n. Air filter
o. Starter motor 3.0 kW
p. Feed pump
r. Fuel filter
s. DP drive

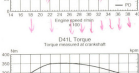
VOLVO PENTA

General data

Type designation	D41L (PD)
No of cylinders	6
Configuration	4-stroke, direct injected, turbo-charged diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	92 (3.62)
Stroke, mm (in)	90 (3.54)
Displacement, litres (in^3)	3.59 (219)
Compression ratio	17.5:1
Crankshaft power [1]	
PD (3800 r/min) kW (hp)	110 (150)
Propeller shaft power [1]	
PD (3800 r/min) kW (hp)	102 (139)
Outboard drive DP ratio	1.78:1
Dry weight, kg (lb)	
Dry weight with DP drive, kg (lb)	510 (1124)

1) Technical data in accordance with ISO 8665 and ISO 3046 Standard Fuel Stop power. Fuel temp 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre.





Engine equipped with

Freshwater cooled turbo-charger
Freshwater cooling, thermostat-controlled with tubular heat exchanger
Seawater strainer
Seawater pump with rubber impeller
Seawater cooled tubular oil cooler
Prewired d.system for connection to instrument panel
Alternator 12 V/60 A
Starter motor 12 V/3.0 kW
Engine brackets in front
Flexible engine mounts
Flywheel housing, rear AQ type
Exhaust elbow, wet type

Technical description

Engine and block

- Cylinder block and cylinder head are made of cast iron alloy for good corrosion resistance and long service life.
- Replaceable valve seatings and cylinder linings.
- Oil-cooled, forged aluminium pistons with two compression rings and one oil scraper ring.
- Nitrocarbonized crankshaft with five bearings.

Fuel system

- Rotor-type injection pump with a mechanical governor and smoke limiter.
- Fuel feed pump with hand primer.
- Fine fuel filter with water separator.
- Electrically operated stopping device.

Cooling system

- Thermostatically controlled freshwater cooling, prepared for hot water outlet.
- Tubular heat exchanger with separate transparent expansion tank.
- Gear-driven seawater pump with rubber impeller.

Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine.
- Tubular, cleanable oil cooler.

Inlet system

- Inlet silencer with replaceable filter.
- Freshwater cooled turbo-charger and seawater-cooled charge air cooler.

Exhaust system

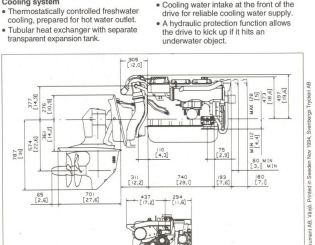
- Seawater-cooled exhaust elbow, made of cast iron with stainless steel insert. Complete connection for exhaust through the drive.

Electrical system

- 12 V corrosion-protected electrical system, complete with instrumentation and 14 V/60 A marine alternator. The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits.
- Charging regulator with battery sensor for voltage drop compensation.
- Automatic 40 A fuse with reset button.
- Starter motor power 3.0 kW.

Drive

- Transom shield with power trim and installation components. The drive can be tilted up by 42°.
- Protective zinc anodes prevent corrosion.
- Cooling water intake at the front of the drive for reliable cooling water supply.
- A hydraulic protection function allows the drive to kick up if it hits an underwater object.



Dimensions in mm (in)

Ref. No. 7736373-2 Eng AdCo-Dokument AB, Vaxjö. Printed in Sweden Nov 1994, Sverborgs Tryckeri AB

AB Volvo Penta
S-405 08 Göteborg, Sweden

AD41L, AD41P

Pleasure Duty (PD), Light Duty (LD), Medium Duty (MD) 6-cylinder, 4-stroke, direct injected, turbo-charged marine diesel engine with aftercooler and Duoprop®-drive – crankshaft power* 147 kW (200 hp)

* Power rating – see General Data

Reliable marine engine

AD41 is a reliable and economic marine engine with considerable power resources and is specially developed for planing craft. With its compact dimensions, it is ideal for twin installation.

Turbo-charging

The engine is turbo-charged for efficient operation with high power/fuel consumption ratio. The turbo-charging contributes to reduced exhaust emission levels. The turbo-charger also acts as an additional silencer on both induction and exhaust sides of the engine.

Direct injection

Direct injection (DI) results in low thermal load and low fuel consumption compared to swirl chamber engines (IDI) of the same cylinder volume. Direct injected engines also have a longer service life.

Aftercooler

The aftercooler cools the compressed and heated air, thus raising its oxygen content. This enables the engine to use the fuel more efficiently.

Low exhaust emission levels

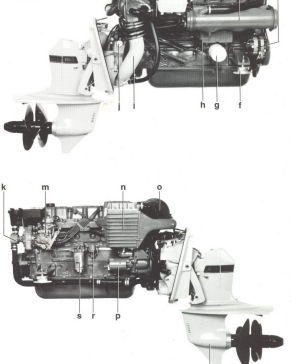
The advanced combustion system minimizes noxious exhaust emissions. AD41P is certified for use on lake Constance – where exhaust emission regulations are probably the toughest in the world.

DP drive

The DP drive with its twin counter-rotating propellers produces a harmonious drive unit with unbeatable characteristics in terms of speed, acceleration and fuel economy. It also produces less noise and vibrations, better steering and manoeuvering characteristics, better grip in the water and a shorter time to planing compared with single propeller systems.

Comprehensive service network

Volvo Penta has a well established network of authorized service agents in more than 100 countries throughout the world. These service centers offer Original Volvo Penta parts as well as skilled personnel to ensure the best possible service.



The engine shown may vary from the standard unit.

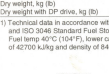
a. Exhaust elbow, wet type
b. Turbo-charger
c. Freshwater cooled exhaust manifold
d. Freshwater cooling
e. Alternator 14 V/60 A
f. Flexible front engine mounting
g. Lubricating oil filter
h. Oil cooler
i. Exhaust line
j. Power Trim pump
k. Seawater pump
m. Injection pump
n. Seawater cooled aftercooler
o. Air filter
p. Starter motor 3.0 kW
r. Feed pump
s. Fuel filter
t. DP drive

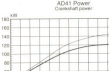
VOLVO PENTA

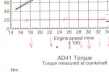
General data

Type designation	AD41L (PD/MD)
	AD41P (PD/LD)
No of cylinders	6
Configuration	4-stroke, direct injected, turbo-charged, aftercooled, diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	92 (3.62)
Stroke, mm (in)	90 (3.54)
Displacement, litres (in^3)	3.59 (219)
Compression ratio	17.5:1
Crankshaft power [1]	
PD/MD (3600 r/min) kW (hp)	121 (165)
PD/LD (3800 r/min) kW (hp)	147 (200)
Propeller shaft power [1]	
PD/MD (3600 r/min) kW (hp)	113 (154)
PD/LD (3800 r/min) kW (hp)	138 (188)
Outboard drive DP ratio	1.78:1
Dry weight, kg (lb)	
Dry weight with DP drive, kg (lb)	520 (1146)

1) Technical data in accordance with ISO 8665 and ISO 3046 Standard Fuel Stop power. Fuel temp 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre.







Engine equipped with

Freshwater cooled turbo-charger
Freshwater cooling, thermostat-controlled with tubular heat exchanger
Seawater strainer
Seawater pump with rubber impeller
Seawater cooled tubular oil cooler
Prewired el system for connection to instrument panel
Alternator 12 V/60 A
Starter motor 12 V/3.0 kW
Engine brackets in front
Flexible engine mounts
Flywheel housing, rear AQ type
Exhaust elbow, wet type

Technical description

Engine and block

- Cylinder block and cylinder head are made of cast iron alloy for good corrosion resistance and long service life.
- Replaceable valve seatings and cylinder linings.
- Oil-cooled, forged aluminium pistons with two compression rings and one oil scraper ring.
- Nitrocarborized crankshaft with five bearings.

Fuel system

- Rotor-type injection pump with a mechanical governor and smoke limiter.
- Fuel feed pump with hand primer.
- Fine fuel filter with water separator.
- Electrically operated stopping device.

Cooling system

- Thermostatically controlled freshwater cooling, prepared for hot water outlet.
- Tubular heat exchanger with separate transparent expansion tank.
- Gear-driven seawater pump with rubber impeller.

Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine.
- Tubular, cleanable oil cooler.

Inlet system

- Inlet silencer with replaceable filter.
- Freshwater cooled turbo-charger and seawater-cooled charge air cooler.

Exhaust system

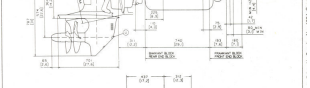
- Seawater-cooled exhaust elbow, made of cast iron with stainless steel insert. Complete connection for exhaust outlet through the drive.

Electrical system

- 12 V corrosion-protected electrical system, complete with instrumentation and 14 V/60 A marine alternator. The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits.
- Charging regulator with battery sensor for voltage drop compensation.
- Automatic 40 A fuse with reset button.
- Starter motor power 3.0 kW.

Drive

- Transom shield with power trim and installation components. The drive can be tilted up by 42°.
- Protective zinc anodes prevent corrosion.
- Cooling water intake at the front of the drive for reliable cooling water supply.
- A hydraulic protection function allows the drive to kick up if it hits an underwater object.



Dimensions in mm (in)

AB Volvo Penta
S-405 08 Göteborg, Sweden

Ref. nr. 7730736-1 eng

TMD41A

6-cylinder, 4-stroke, direct-injected turbocharged marine diesel – crankshaft output* 110 kW (150 hp).

A compact 3.6 litre direct-injected marine diesel. Direct injection gives lower thermal stresses. It simultaneously reduces fuel consumption and increases engine service life. Other salient features of the engine include good fuel economy as a consequence of the excellent volumetric efficiency. As much as 15% lower fuel consumption throughout the entire engine speed range.

The high torque of the engine, together with the Volvo Penta MS4A reverse gear, make up a combination giving excellent performance. The torque curve shows very good acceleration resources. Since the torque rise occurs as engine speed drops under increasing load, speed losses caused by mounting seas etc, are reduced.

The engine block and cylinder head of cast iron, aluminium-alloy pistons and replaceable, wet cylinder liners lengthen service life and facilitate servicing. The pistons are oil-cooled to minimize the risk of deposits, particularly on the top piston ring, thereby increasing engine service life.

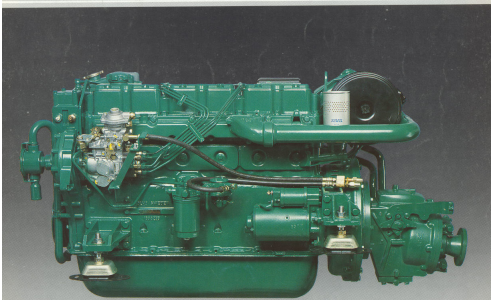
The injection pump has a smoke limiter to reduce black fumes when accelerating.

The 12-volt electrical system has a brushless 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 a significantly improved charging capacity.

To give a lower installation height, the output shaft of the MS4A reverse gear has been angled 8° downwards.

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.

*** Crankshaft ISO 3046 standard fuel stop power. Usable power will be reduced by transmission or gearbox losses. This power cannot be exceeded.**



VOLVO PENTA

ENGINE MOUNTS

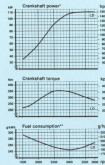
Flexible mounting consisting of 4 adjustable rubber blocks (16) for insulation from noise and vibration.

ELECTRICAL SYSTEM

12V corrosion-protected electrical system complete with instrument panel. Alternator (17) with 14V/50A charging capacity. Designed for marine operation. Automatic fuse with resetting button mounted on engine. Starter motor output 2.6 kW (3.5 hp) (18).

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 5 m (16.4 ft), complete with plug-in contacts for connection of engine and instrument panel.



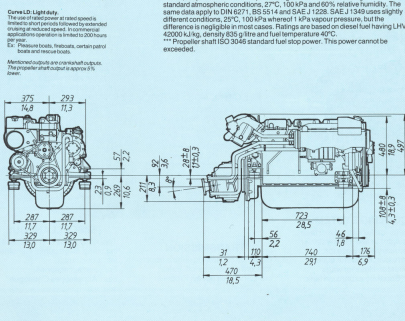
Curve LD: Light duty.
The use of rated power at rated speed is limited to short periods followed by extended periods at lower power. Typical intermittent applications operation is limited to 200 hours per year.
Ex.: Pleasure boats, fireboats, certain patrol boats and rescue boats.

Mentioned outputs are crankshaft outputs. The propeller shaft output is approx 5% lower.

DATA

Type designation	TMD41A
Configuration	4-stroke, direct-injected diesel engine. Light duty
Crankshaft output*	110 kW (150 hp)
Propeller shaft output***	105 kW (143 hp)
Engine speed r/min	3800
Number of cylinders	6
Bore/stroke mm (in)	92/90 (3.62/3.54)
Displacement, litres (in³)	3.59 (219)
Valve system	Overhead
Dry weight, engine with MS4A reverse gear approx kg (lb)	455 (1003)

* Crankshaft ISO 3046 standard fuel stop power. Usable power will be reduced by transmission or gearbox losses. This power cannot be exceeded.
** ISO 3046 specific fuel consumption referred to crankshaft ISO standard fuel stop power.
Power, torque and fuel consumption ratings are based on run in engine at ISO standard atmospheric conditions, 27°C, 100 kPa and 60% relative humidity. The same data apply to DIN 6271, BS 5514 and SAE J 1228. SAE J 1349 uses slightly different conditions, 25°C, 100 kPa wheereof 1 kPa vapour pressure, but the difference is negligible in most cases. Ratings are based on diesel fuel having LHV 42000 kJ/kg, density 835 g/litre and fuel temperature 40°C.
*** Propeller shaft ISO 3046 standard fuel stop power. This power cannot be exceeded.



TMD41L/HS1

Pleasure Duty (PD)

6-cylinder, 4-stroke, direct-injected turbocharged marine diesel engine with HS1 reverse gear. 110 kW (150 hp)*

* Crankshaft power according to ISO 8665

Economic marine engine

TMD41L is a reliable and economic marine engine with considerable power resources and is specially developed for planing craft. With its compact dimensions, it is excellent for twin installation.

Direct injection

Direct injection (DI) results in a low thermal load and low fuel consumption compared with swirl chamber engines (IDI) with the same cylinder capacity. The engines also have a longer service life.

The advanced combustion system minimizes noxious exhaust emissions and enhances overall enjoyment of boating. The engine is certified for use on Lake Constance – where exhaust emission regulations are probably the toughest in the world.

Turbocharging

The engine is turbocharged with an exhaust-driven turbocompressor. More air can be forced into the cylinder in this way with the result that more fuel can be injected and the engine runs more efficiently. Since combustion takes place in a turbo engine with excess air, the exhaust gases are cleaner than in a naturally-aspirated engine.

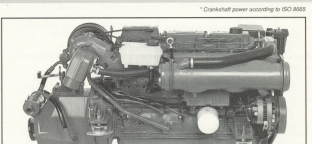
The turbo also acts as an additional silencer both on the induction side and on the exhaust side.

HS1 reverse gear

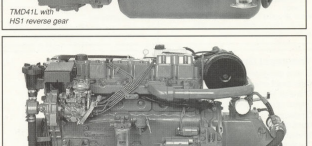
Volvo Penta's hydraulically shifted reverse gear has been specially developed with a view to increasing the standard of comfort on board leisure craft in terms of quiet running, greater reliability and enhanced efficiency.

These benefits originate from a hydraulic shifting mechanism and advanced gear technology that uses spiral bevel gears throughout the gear train. Volvo Penta's new reverse gear is unique in this respect, resulting in an overall efficiency as high as 96%.

Another unique solution is the vertical shaft that together with an 8° down angle provides for both compact installation and the ability to run left- and right-hand rotation with the same ratio, efficiency and durability.



TMD41L with HS1 reverse gear



At Volvo Penta, focus is on developing the complete drive line ensuring perfectly matched engine/transmission packages for high torque, operational reliability, reduction of engine noise and vibrations. Standards of comfort unsurpassed giving the maximum of boating pleasure.

Technical description:

Engine and block

- Cylinder block and cylinder head made of cast iron for good corrosion resistance and long service life
- Oil-cooled pistons with two compression rings and one oil scraper ring
- Replaceable wet cylinder liners
- Replaceable valve seats
- Seven-bearing crankshaft

Fuel system

- Rotor-type injection pump with a mechanical governor for accurate speed control
- Smoke limiter
- Fine filter with water separator
- Feed pump with hand primer
- Electrically-operated stopping device

Cooling system

- Thermostatically regulated freshwater cooling
- Tubular heat exchanger with separate transparent expansion tank
- Gear-driven seawater pump with rubber impeller
- Coolant system prepared for hot water outlet

Inlet system

- Inlet system designed to produce optimal air rotation which provides perfect combustion. This results in high power and low fuel consumption.
- Inlet silencer with replaceable filter
- Closed crankcase vent system

Exhaust system

- Seawater-cooled exhaust elbow of cast iron with a stainless steel insert

VOLVO PENTA

TMD41L/HS1

Turbocharging system

- Exhaust-driven freshwater-cooled turbocharger

Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine
- Tubular oil cooler that can be cleaned

Engine mounting

- Elastic suspension consisting of 4 rubber pads with adjustable anchorage plates for damping of sound and vibration

Reverse gear

- Spiral bevel gears which results in smooth running at all speeds
- Hydraulically operated clutch for smooth shifting
- Matched drop center and 8° down angle for compact installation and minimum propeller shaft angle
- Retrofit, fits into the same installation measurements as MS4-5 reverse gear and features integrated SAE4 adaptor flange
- When under sail propeller shaft can rotate 24 hours without engine start
- Seawater-cooled oilcooler

Electrical system

- 12V corrosion-protected electrical system, complete with instrumentation
- 14V/60A marine alternator
- Charging regulator with battery sensor for voltage drop compensation
- The alternator is prepared for a bulk-head-mounted double-diode set which automatically distributes the charge current to two separate battery circuits
- Automatic 40 A fuse with reset button
- Starter motor power 3.0 kW

Instrument panel:

Complete panel or separate instruments fitted with:

- Key switch
- Voltmeter
- Temperature gauge
- Rev counter
- Instrument lighting
- Hour meter
- Oil pressure gauge
- Fuses
- Alarm for temperature, oil pressure and charging
- Alarm test

Miscellaneous

- 3, 5 or 7 m extension cable for the instrument panel with plug-in connector

Accessories

An extensive range of accessories for:

- Fuel system
- Cooling system
- Control system
- Instruments
- Electric system
- Comfort & Safety
- Propellers
- Maintenance

For detailed information, please see Accessory catalogues.

Contact your local Volvo Penta dealer for further information.

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

The engine illustrated may not be entirely identical to production standard engines.

Technical Data

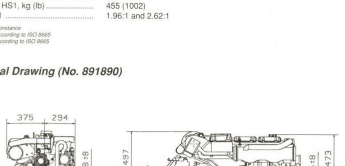
	TMD41L*
Engine designation	
Crankshaft power [1] kW (hp)	110 (150)
Propeller shaft power [2] kW (hp)	102 (139)
Engine speed range, rpm	3700–3900
Displacement, l (cu. in.)	3.6 (219)
Number of cylinders	6
Bore/stroke, mm (in.)	92/90 (3.62/3.54)
Compression ratio	17.5:1
Dry weight with HS1, kg (lb)	455 (1002)
Gear ratios HS1	1.96:1 and 2.62:1

* *Certified for Lake Constance*

1) Crankshaft power according to ISO 8665

2) Prop.shaft power according to ISO 8665

Dimensional Drawing (No. 891890)



Not for installation

VOLVO PENTA

AB Volvo Penta
S-405 08 Göteborg, Sweden

Ref. no 7733525-5 Eng.

TAMD 41 B

6-cylinder, 4-stroke, direct-injected, turbocharged and aftercooled marine diesel engine—crankshaft power* 147 kW (200 hp)

A compact 3.6 litre direct-injected marine diesel. Direct injection brings benefits in the form of lower thermal load, at the same time as fuel consumption is reduced and the engine's service life is extended. The outstanding characteristic of this engine is its excellent fuel economy, a result of the engine's high output ratio. Up to 15 % lower fuel consumption throughout the engine's speed range.

In order to achieve this excellent output ratio, the engine is equipped with an aftercooler which considerably reduces the temperature of the inlet air. The oxygen content of the inlet air increases and the result is more effective combustion of fuel, which in turn leads to a reduction in fuel consumption.

The torque curve ensures excellent acceleration characteristics. Since torque increases if engine speed decreases from the maximum owing to added load, there is less speed reduction as a result of such factors as increased wave resistance.

The cast iron engine block and cylinder head, the aluminium pistons and the replaceable, wet cylinder linings all ensure a long service life and simple service. The pistons are oil-cooled so as to minimize the risk of deposits, particularly on the top-most piston ring. This increases the engine's service life.

The engine produces extremely low exhaust emission levels during starts and at low load conditions. This has been achieved in a variety of ways, such as a new design of combustion chamber, higher compression ratio and a new type of six-hole nozzle with "minisack". As a result, the engine no longer needs to be equipped with either an exhaust pressure regulator or heater plugs.

There is a choice between a 12 volt and a 24 volt electric system which features a brushless alternator with an integrated electronic regulator, it offers a high charge capacity (14 V/50 A or 28 V/55 A) and excellent operational reliability.

Volvo Penta has a well developed service network in more than 100 countries. Authorized workshops manned by qualified personnel using genuine parts ensure that you get the best service.

*** Crankshaft output according to ISO 8665.**

Technical description of the engine:

Engine block:
- Cylinder block and cylinder head of cast iron for excellent 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 rings in the cylinder head.
- Crankshaft with 7 main bearings.

Fuel system:
- Injection pump of rotor type with mechanical regulator for accurate engine speed regulation.
- Fine filter for filtering of water.
- Feed pump with manual pump.
- Flexible fuel pipe connections (approved by the Swedish Administration for Shipping and Navigation and DNV) for connection of copper pipes.
- Electrically operated stop control.

Cooling system:
- Thermostat-regulated freshwater cooling with tubular heat exchanger, expansion tank and circulation pump.
- Cooling system prepared for hot water extraction.
- Seawater pump with pump rotors made of neoprene rubber.
- Keel cooling: the engine can be supplied in a keel cooling variant.

Lubrication system:
- Pressurized lubrication system with full-flow oil filter of spin-on type.
- Cleanable tubular oil cooler.
- Filter for crankcase ventilation.

Induction system:
- Induction silencer with replaceable filter.

Turbocharger:
- Exhaust gas driven turbo-compressor with freshwater-cooled turbine housing.
- Seawater-cooled aftercooler for cooling of compressed air, which results in improved output ratio.

Exhaust system:
- Freshwater-cooled exhaust system.
- Seawater-cooled exhaust pipe elbow of cast iron with stainless steel insert.

Transmission:
- MS4 reverse gear, ratio 1.93:1 or 2.63:1.
- Seawater-cooled.
- Output shaft angled 8° downwards.
- Supplied with propeller shaft flange.
- Reverse gear PRM 402, ratio 1.96:1, 2.90:1 or 3.95:1.
- Supplied with propeller shaft flange.

Engine suspension:
- Elastic suspension consisting of 4 rubber pads with adjustable anchorage plates for dampening of sound and vibration.

Electrical system:
- Corrosion-protected electrical system with instruments. 12 V or 24 V.
- Choice of alternator: 14 V/50 A or 28 V/55 A charge capacity.
- Automatic fuse with reset button fitted to the engine.
- Starter motor output 12 V/2.6 kW (3.5 hp) or 24 V/4 kw (5.4 hp).

VOLVO PENTA

TAMD41B

Instrument panel:
- ("Extra equipment on certain markets").
- Key-operated main switch.
- Tachometer.
- Temperature gauge.
- Oil pressure gauge and voltmeter.
- Display monitor for low oil pressure, high engine temperature and charge.
- Audible alarm for oil pressure and water temperature.
- Test button for alarm and switch for instrument illumination.
- 3 m long cable with pre-connected plug-in contacts for connection to engine and instruments.

Extra equipment

Cooling system:
- Seawater inlet with tap.
- Hose for seawater inlet.
- Sea-water filter.
- Vacuum valve.
- Hose for vacuum valve.
- Hot water outlet.
- Hose for water heater.
- Separately mounted expansion tank.
- Hull pass through for outlet cooling water (for dry exhaust systems).

Fuel system:
- Copper pipes for suction and return lines.
- Fuel filter with water separator.
- Fuel tap.
- Separate connection cover for fuel tank.

Control system:
- Single-lever control for single installation.
- Single-lever control for dual installation.
- Control cables.
- DS units (mechanical units which connect the control cables from two manoeuvre panels to one common outgoing control cable).
- Manual stop control.

Electrical system:
- Reversed instrument panel (main panel).
- Instrument panel for "Flying Bridge" upper control station.
- "Flying Bridge" T connector.
- Display for alarm panel.
- Panel for extra instruments.

Extra instruments:
- Time gauge.
- Rudder indicator including sender.
- Fuel tank gauge.
- Water tank gauge.
- Extension cable for instrument panel.
- Extra alternator.
- "Twin Diode" charge distributor.
- Main current cut-out switch.
- Battery.

Power transmission:
- Universal bracket at the front for extra power take-off.
- Extra crankshaft pulley.
- Propeller shaft joint with clamp connection.
- Propeller shaft joint with conical locking pin and V-groove.
- Flexible propeller shaft joint.
- Rubber packbox.
- Propellers.

Exhaust system:
- Rubber exhaust hose.
- Watercooled silencer.
- Exhaust elbow 60°, wet exhaust pipe.
- Hull pass through for wet exhaust hose.
- Silencer, dry.
- Compensator (for dry exhaust pipe).

Miscellaneous:
- Tool kit.
- On-board kit.
- Oil bilge pump.
- Bilge pump.
- Genuine factory-specification paint.
- Lubricating oils.

Please refer to the "Accessories Catalogue" for details of other accessories.

Technical data for TAMD41B

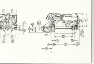
ENGINE:

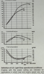
Type designation		TAMD41B
Configuration		4-stroke direct-injected diesel engine
	Light Duty	Medium Duty
Crankshaft output [1]	147 kW (200 hp)	125 kW (170 hp)
Propeller shaft output [2]	144 kW (195 hp)	122 kW (165 hp)
Engine speed, rpm	3800	3250
No. of cylinders		6
Bore/stroke	92/90 mm	
Displacement, litres		3.6
Valve system		Overhead
Dry engine weight with MS4 reverse gear, approx. kg		465
Dry engine weight with PRM 402 reverse gear, ratio 1.96 – 2.90:1, approx. kg		505
Dry engine weight with PRM 402 reverse gear, ratio 3.95:1, approx. kg		513

[1] Crankshaft output according to ISO 8665.
The output will be reduced by transmission or reverse gear losses.

[2] Propeller shaft output according to ISO 8665 or the technically identical SAE J1228 and ICOMIA 28-83 standards.

Scale diagram (mm/inch)





Definition of LD. Light Duty operational conditions
Engines with this power setting are intended for applications in which load and engine speed vary and full power is exploited no more than **1 hour per 12 hours** operational duty.
Applies mainly to planing craft.
E.g. fire-fighting vessels, rescue vessels, certain patrol boats, charter vessels.

Definition of MD. Medium Duty operational conditions
Engines with this power setting are intended for applications in which load and engine speed vary and full power is exploited no more than **4 hour per 12 hours** operational duty.
Applies to planing, semi-planing and displacement vessels.
E.g. Coastal fishing vessels, patrol boats, police boats, passenger ferries etc.

The stated power outputs refer to crankshaft output. Propeller shaft output is generally approximately 5 % lower.

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VOLVO PENTA

AB Volvo Penta

TAMD41H

Heavy Duty (HD)

6-cylinder, 4-stroke, direct injected, turbo-charged marine diesel engine with aftercooler – crankshaft power* 107 kW (145 hp)

Power rating – see General Data

Reliable marine engine

TAMD41H is a reliable and economic marine engine with considerable power resources and is specially developed for semiplaning and displacement craft, e.g. patrol boats, coastal fishing boats, large yachts etc. With its compact dimensions, it is ideal for twin installation.

Turbo-charging

The engine is turbo-charged for efficient operation with max torque at low engine speed. This, in turn, gives outstanding acceleration characteristics and minimum speed reduction due to increased load or wave resistance. The turbo-charging contributes to reduced exhaust emission levels. The turbo-charger also acts as an additional silencer on both induction and exhaust sides of the engine.

Direct injection

Direct injection (DI) results in low thermal load and low fuel consumption compared to swirl chamber engines (IDI) of the same cylinder volume. Direct injected engines also have a longer service life.

Aftercooler

The aftercooler cools the compressed and heated air, thus raising its oxygen content. This enables the engine to use the fuel more efficiently.

HS1 marine gearbox

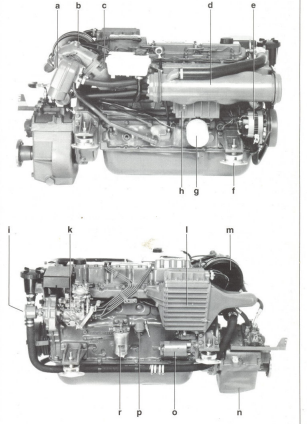
Volvo Penta's hydraulically shifted marine gearbox has been specially developed with a view to increasing the standard of onboard comfort in terms of quiet running, greater reliability and increased efficiency. PRM402 is available as a choice of marine gearbox.

High capacity electrical system

12 or 24 V electrical system with excellent operational reliability.

Comprehensive service network

Volvo Penta has a well established network of authorized service agents in more than 100 countries throughout the world. These service centers offer Original Volvo Penta parts as well as skilled personnel to ensure the best possible service.



The engine shown may vary from the standard unit

a. Exhaust elbow, wet type
b. Turbo-charger
c. Freshwater cooled exhaust manifold
d. Freshwater cooling
e. Alternator 14 V/50 A
f. Flexible front engine mounting
g. Lubrication oil filler
h. Oil cooler
i. Seawater pump
k. Injection pump
l. Seawater cooled aftercooler
m. Air filter
n. Marine gearbox
o. Starter motor 3.0 kW
p. Fuel pump
r. Fuel filter

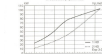
VOLVO PENTA

General data

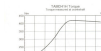
Type designation	TAMD41H (HD)
No of cylinders	6
Configuration	4-stroke direct-injected turbo-charged aftercooled diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	92 (3.62)
Stroke, mm (in)	90 (3.54)
Displacement, litres (in³)	3.59 (219)
Compression ratio	17.5:1
Crankshaft power ¹⁾	
HD (2500 r/min) kW (hp)	107 (145)
Propeller shaft power ¹⁾	
HD (2500 r/min) kW (hp)	99 (135)
Dry weight, kg (lb)	455 (1003)
Dry weight, kg (lb)	513 (1131)
incl PRM 402 (3.95:1) marine gearbox	

1) Technical data in accordance with ISO 8665 and ISO 3046 Standard Fuel Stop Power. Fuel 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre.

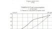
TAMD41H Power
1. Propeller shaft power
2. Calculated propeller load



TAMD41H Torque
Torque measured at crankshaft



TAMD41H Fuel consumption
1. At full load
2. Based on calculated propeller load



Engine equipped with

Freshwater cooled turbo-charger
Freshwater cooling, thermostat-controlled with tubular heat exchanger
Seawater pump with rubber impeller
Seawater cooled aftercooler
Seawater cooled tubular oil cooler
Prewired el.system for connection to instrument panel
Alternator 14 V/60 A
Starter motor 12 V/3.0 kW
Engine brackets in front
Engine brackets at rear
Flexible engine mounts
Flywheel housing, SAE 4 size
Flywheel, heavy type
Exhaust elbow, wet type

Technical description

Engine and block

- Cylinder block and cylinder head are made of cast iron alloy for good corrosion resistance and long service life.
- Replaceable valve seatings and cylinder linings.
- Oil-cooled, forged aluminium pistons with two compression rings and one oil scraper ring.
- Nitrocarbonized crankshaft with five bearings.

Fuel system

- Rotor-type injection pump with a mechanical governor and smoke limiter.
- Fuel feed pump with hand primer.
- Fine fuel filter with water separator.
- Electrically operated stopping device.

Cooling system

- Thermostatically controlled freshwater cooling, prepared for hot water outlet.
- Tubular heat exchanger with separate transparent expansion tank.
- Gear-driven seawater pump with rubber impeller.

Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine.
- Tubular, cleanable oil cooler.

Inlet system

- Inlet silencer with replaceable filter.
- Freshwater cooled turbo-charger and seawater-cooled charge air cooler.

Exhaust system

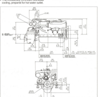
- Seawater-cooled exhaust elbow, made of cast iron with stainless steel insert.
- Exhaust elbow, dry type (optional).

Electrical system

- 12 V corrosion-protected electrical system, complete with instrumentation and 14 V/60 A marine alternator. The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits.
- Charging regulator with battery sensor for voltage drop compensation.
- Automatic 40 A fuse with reset button.
- Starter motor power 3.0 kW.

Marine gearbox

- HS1 marine gearbox with spiral bevel gears and hydraulically operated clutch.
- PRM402 marine gearbox of twin countershaft design with separate hydraulically operated multi-disc clutches.



Dimensions in mm (in)

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TAMD41M, TAMD41P

Pleasure Duty (PD), Light Duty (LD), Medium Duty (MD)
6-cylinder, 4-stroke, direct injected, turbo-charged marine diesel engine with aftercooler – crankshaft power* 147 kW (200 hp)

* Power rating – see General Data

Reliable marine engine

TAMD41 is a reliable and economic marine engine with considerable power resources and is specially developed for planing craft. With its compact dimensions, it is ideal for twin installation.

Turbo-charging
The engine is turbo-charged for efficient operation with high power/fuel consumption ratio. The turbo-charging contributes to reduced exhaust emission levels. The turbo-charger also acts as an additional silencer on both induction and exhaust sides of the engine.

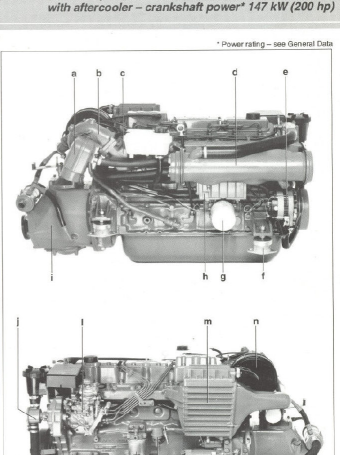
Direct injection
Direct injection (DI) results in low thermal load and low fuel consumption compared to swirl chamber engines (IDI) of the same cylinder volume. Direct injected engines also have a longer service life.

Aftercooler
The aftercooler cools the compressed and heated air, thus raising its oxygen content. This enables the engine to use the fuel more efficiently.

Low exhaust emission levels
The advanced combustion system minimizes noxious exhaust emissions. TAMD41P is certified for use on lake Constance – where exhaust emission regulations are probably the toughest in the world.

HS1 marine gearbox
Volvo Penta's hydraulically shifted marine gearbox has been specially developed with a view to increasing the standard of onboard comfort in terms of quiet running, greater reliability and increased efficiency. PRM402 is available as a choice of marine gearbox.

Comprehensive service network
Volvo Penta has a well established network of authorized service agents in more than 100 countries throughout the world. These service centers offer Original Volvo Penta parts as well as skilled personnel to ensure the best possible service.



The engine shown may vary from the standard unit.

a. Exhaust elbow, wet type
b. Turbo charger
c. Freshwater cooled exhaust manifold
d. Freshwater cooling
e. Alternator 14 V/50 A
f. Flexible front engine mounting
g. Lubrication oil filter
h. Oil cooler
i. Marine gearbox
j. Seawater pump
l. Injection pump
m. Seawater cooled aftercooler
n. Air filter
o. Starter motor 3.0 kW
p. Feed pump
r. Fuel filter

VOLVO PENTA

General data

Type designation	TAMD41M (PD/MD) TAMD41P (PD/LD)
No of cylinders	6
Configuration	4-stroke direct-injected turbo-charged aftercooled, diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	92 (3.62)
Stroke, mm (in)	90 (3.54)
Displacement, litres (in^3)	3.59 (219)
Compression ratio	17.5:1
Crankshaft power [1]	
PD/MD (3250 r/min) kW (hp)	125 (170)
PD/LD (3800 r/min) kW (hp)	147 (200)
Propeller shaft power [1]	
PD/MD (3250 r/min) kW (hp)	119 (162)
PD/LD (3800 r/min) kW (hp)	138 (188)
Dry weight, kg (lb)	455 (1003)
Dry weight with HS1, kg (lb)	515 (1131)

1) Technical data in accordance with ISO 8665 and ISO 3046 Standard Fuel Stop Power. Fuel 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre.

TAMD41 Power
1. Propeller shaft power
2. Calculated propeller load

TAMD41 Torque
Torque measured at crankshaft

TAMD41 Fuel consumption
1. At full load
2. Based on calculated propeller load

Engine equipped with

Freshwater cooled turbo-charger
Freshwater cooling, thermostat-controlled with tubular heat exchanger
Seawater pump with rubber impeller
Seawater cooled aftercooler
Seawater cooled tubular oil cooler
Prewired el.system for connection to instrument panel
Alternator 14 V/60 A
Starter motor 12 V/3,0 kW
Engine brackets in front
Engine bracket at rear
Flexible engine mounts
Flywheel housing, SAE 4 size
Flywheel, heavy type
Exhaust elbow, wet type

Technical description

Engine and block

- Cylinder block and cylinder head are made of cast iron alloy for good corrosion resistance and long service life.
- Replaceable valve seatings and cylinder linings.
- Oil-cooled, forged aluminium pistons with two compression rings and one oil scraper ring.
- Nitrocarbonized crankshaft with five bearings.

Fuel system

- Rotor-type injection pump with a mechanical governor and smoke limiter.
- Fuel feed pump with hand primer.
- Fine fuel filter with water separator.
- Electrically operated stopping device.

Cooling system

- Thermostatically controlled freshwater cooling, prepared for hot water outlet.
- Tubular heat exchanger with separate transparent expansion tank.
- Gear-driven seawater pump with rubber impeller.

Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine.
- Tubular, cleanable oil cooler.

Inlet system

- Inlet silencer with replaceable filter.
- Freshwater cooled turbo-charger and seawater-cooled charge air cooler.

Exhaust system

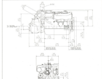
- Seawater-cooled exhaust elbow, made of cast iron with stainless steel insert.
- Exhaust elbow, dry type (optional)

Electrical system

- 12 V corrosion-protected electrical system, complete with instrumentation and 14 V/60 A marine alternator. The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits.
- Charging regulator with battery sensor for voltage drop compensation.
- Automatic 40 A fuse with reset button.
- Starter motor power 3.0 kW.

Marine gearbox

- HS1 marine gearbox with spiral bevel gears and hydraulically operated clutch.
- PRM402 marine gearbox of twin countershaft design with separate hydraulically operated multi-disc clutches.



Dimensions in mm (in)

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Volvo Penta reserves the right, without prior notice, to revise prices, materials, standard equipment, specifications, technical data, models and to discontinue models. Not all models, standard equipment, and accessories are available in all countries. The performance and power data presented in this leaflet is for workboats, engines and conditions as tested and may vary within manufacturing tolerances.

TAMD 41 S.O.L.A.S.*

Life-and Rescue boat specification.

*1983 amendments to the international convention for the Safety of Life at Sea,1974.

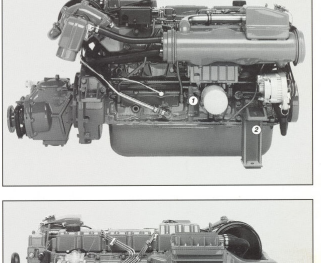
The TAMD 41 Life and Rescue boat engine is designed to comply with the S.O.L.A.S. regulations – and tested according to the standard of the following authorities:

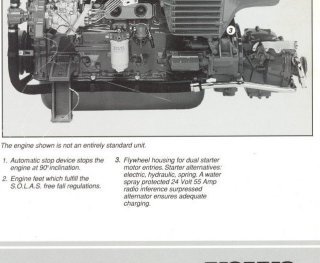
■ Department of Transport, United Kingdom. ■ Norwegian Maritime Directorate, Norway. ■ National Board of Navigation, Finland. ■ National Board of Navigation, Sweden. ■ USSR register of shipping, USSR. ■ Marine marchande, France. ■ US coast guard USA.

The various transmission alternatives which are available, are to be choosen in accordance with the regulations of the societies.

The S.O.L.A.S. regulations specify the following demands that the engines should fulfill:

- ☐ Withstand free fall in a lifeboat from 3 m.
- ☐ Start safely within 2 minutes at -15°C.
- ☐ Stop automatically when capsizing.
- ☐ Work submerged in water to the crankshaft center line.
- ☐ Run properly at an angle of 10° list and 10° trim simultanously.
- ☐ Power starting system by two independent rechargeable energy sources.





The engine shown is not an entirely standard unit.

1. *Automatic stop device stops the engine at 90° inclination.*
2. *Engine feat which fulfill the S.O.L.A.S. free fall regulations.*
3. *Flywheel housing for dual starter motor entries. Starter alternatives: electric, hydraulic, spring. A water spray protected 24 Volt 55 Amp radio inference surpressed alternator ensures adequate charging.*

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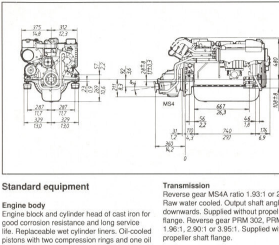
Dimension drawing (mm/inch)

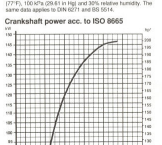


General data
TAMD 41B S.O.L.A.S.

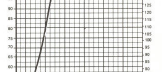
Type designation	TAMD 41B
Configuration	4-stroke direct-injected diesel engine
Crankshaft power	147 kW (200 hp)
Propeller shaft power	144 kW (195 hp)
No. of cylinders	6
Bore/stroke	92/90 mm
Displacement, litres	3,6
Valve system	Overhead
Dry engine weight with reverse gear, kg:	
MS4	465
PRM 302	505
PRM 402, ratio 3.95:1	513

Crankshaft ISO 8665 standard fuel stop power. Usable power will be reduced by transmission or gearbox losses.
ISO 8665 specific fuel consumption referred to ISO standard fuel stop power.
Power, torque and fuel consumption ratings are based on run in engines at ISO standard atmospheric conditions, 25°C (77°F), 100 kPa (29.81 in Hg) and 30% relative humidity. The same data applies to DIN 6271 and BS 5514.

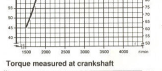
Crankshaft power acc. to ISO 8665



Torque measured at crankshaft



Fuel consumption



* metric

Crankshaft speed

Standard equipment

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

Cooling system
Tubular heat exchanger: Thermostatically-controlled freshwater cooling with tubular heat exchanger, expansion tank and circulation pump. Cooling system prepared for hot water supply. Raw water pump with impeller enables the engine to run at idle for five minutes whilst the boat is in the davits.

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

Intake system
Intake silencer with replaceable filter.

Turbocharging system
Exhaust-powered turbocharger with freshwater cooled turbine housing. Raw water cooled after-cooler reduces temperature of boost air downstream of turbo for better volumetric efficiency.

Exhaust system
Freshwater cooled exhaust manifold. Raw water cooled exhaust elbow of cast iron with stainless steel insert and incorporating exhaust pressure regulator.

Transmission
Reverse gear MS4A ratio 1.93:1 or 2.63:1. Raw water cooled. Output shaft angled 8° downwards. Supplied without propeller shaft flange. Reverse gear PRM 302, PRM 402 ratio 1.96:1, 2.90:1 or 3.95:1. Supplied without propeller shaft flange.

Engine mounts
Flexible reinforced mounting consisting of 4 adjustable rubber blocks for insulation from noise and vibration.

Electrical system
12 volt electrical system to IP 44 standard. Radio suppressed charging alternator 14 V/ 60 A. Inversion stop device including micro-switches, relay and stop solenoid.

Starting system
Electrical 12 volt 3 kW starter motor. Electrical glow plugs for preheating, 4x360 W.

Instrument panel
Complete with tachometer, control displays for high engine temperature, low oil pressure and low charging. Acoustic alarm for low oil pressure and high engine temperature. Test button for alarm functions. Cable harness 5 m with plug-in connector.

Miscellaneous
Tool kit.

Extra equipment

Flywheel housing SAE4 with dual starter motor entries, 24 volt el. system. Fuel tanks. Pre-filter with watertrap. Silencer. Charging distributor for charging of two battery systems. Control system for throttle and gear shifting. Propeller shaft couplings. Shafts. Propeller sleeves. Stuffing boxes. Propellers. Bilge pumps. Paints. Oils. Hydraulic or Spring starter motors can be mounted. (Not supplied by Volvo Penta.)

Please refer to the "Accessories Catalogue" for details of other accessories.

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

VOLVO PENTA
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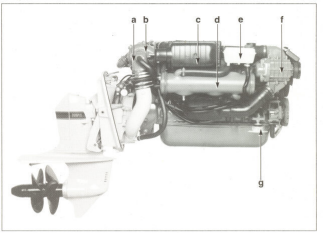
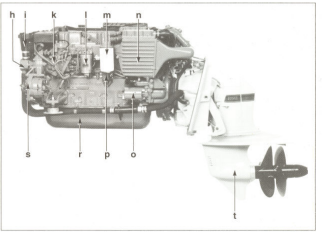
KAD 42B/DP

Special Light Duty (SLD)

6-cylinder, 4-stroke, direct injected turbocharged marine diesel with charge air compressor and aftercooler

- Volvo Penta's 6 cylinder KAD 42B/DP is a turbocharged, aftercooled high performance engine equipped with charge air compressor. It has all the advantages of a diesel engine and is specially developed for planing craft.
- Reliable and economic with considerable power rescources, excellent for twin installation.
- Direct injected with low thermal load and low fuel consumption compared with swirl chamber engines of same cylinder capacity. Also longer service life.
- The mechanical compressor is driven by the crankshaft and operates during acceleration, giving high torque at low speeds before the turbocharger is active. The compressor also gives a kick-down function up to 3100 r/min. The compressor is disengaged when engine speed has increased and the turbocharger is operating at a maximum.
- The DuoProp drive with its twin counter-rotating propellers produces a harmonious drive unit with unbeatable characteristics in terms of speed, acceleration and fuel economy. It also produces less vibrations, better steering and manoeuvring characteristics, better grip in the water and a shorter time to planing compared with single propeller systems.





* Optional

a. Exhaust elbow, wet type.*
b. Turbo charger
c. Air filter
d. Heat exchanger
e. Expansion tank
f. Compressor
g. Flexible front engine mounting
h. Sea water pump
i. Sea water strainer
k. Injection pump
l. Fuel filter
m. Oil filter
n. Aftercooler, watercooled
o. Starter motor 2.6 kW
p. Feed pump
r. Oil sump
s. Alternator
t. DP drive *

General data

Operating mode	SLD – Special Light Duty
Type designation	KAD 42B/DP
No of cylinders	6
Configuration	4-stroke direct-injected turbocharged aftercooled, compressor driven diesel engine
Fuel quality ASTM	1D or 2D
Cylinder bore, mm (in)	92 (3.62)
Stroke, mm (in)	90 (3.54)
Displacement, litres (in^3)	3.59 (219)
Compression ratio	17.8:1
Dry weight, kg (lb)	542 (1195) incl DP
Crankshaft power kW (hp) [1] at crankshaft speed, r/min	170 (230) 3600
Drive ratio DP	1.78:1

1) Technical data according to ISO 3046
Standard Fuel Stop Power. Fuel 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre.
Power rated in accordance NMMA procedures. The power will be reduced by transmission losses.

Engine equipped with

Compressor, belt-driven
Freshwater cooled turbocharger
Freshwater cooling, thermostat-controlled with tubular heat exchanger
Seawater strainer
Seawater pump with rubber impeller
Seawater cooled aftercooler
Seawater cooled tubular oil cooler
Prewired el.system for connection to instrument panel
Alternator 14 V/60 A
Starter motor 12 V/2.6 kW (3.5 hp)
Engine brackets in front
Flexible engine mounts
Flywheel housing, rear AQ type
Transom shield kit with Power Trim (See Order Specification.)

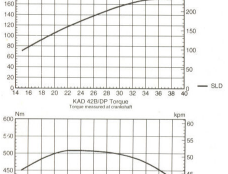
Optional equipment

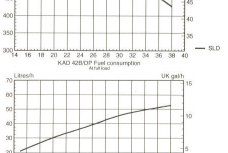
Installation equipment for:
- Fuel system
- Cooling system
- Exhaust system
- Electrical system
- Control systems
- Steering systems
- Instruments and extension cables
- Electric and electronics
- Comfort and safety
- Transmission
- Propellers

See further Volvo Penta separate accessories catalogue and brochures for a complete and comprehensive marine programme. Ref. no. 7735276

Engine technical features in brief

- Engine cylinder block and head are made of cast iron for good corrosion resistance and long service life.
- Oil cooled pistons with two compression rings and an oil scraper ring.
- Replaceable valve seats.
- Replaceable cylinder liners.
- Seven bearing crankshaft.
- Thermostat controlled freshwater cooling with easily accessible impeller purrp.
- Coolant system prepared for hot water outlet.





Ref. no. 7734369- ENG

KAMD42

4-stroke, Direct Injected, Marine Diesel Engine with Charge Air Compressor, Turbocharger and Aftercooler. - Crankshaft power* 170 kW (230 hp)

Compressor-driven, compact Hi-Tech engine

Volvo Penta's 6 cylinder KAMD 42 is a *compressor-driven, turbocharged* high performance engine with *aftercooler* producing high torque at low engine speeds. This means unique acceleration properties and excellent driveability.

The engine is compact and has an advantageous weight to power ratio making it excellent for both single and multi-engine installation.

Economic and reliable marine engine

KAMD 42 is a reliable and economical marine engine with considerable power resources specially developed for planing pleasure craft.

The engine is equipped with replaceable cylinder liners and valve seats. The pistons are oil-cooled and the engine is freshwater-cooled to ensure reliability and long service life.

Direct injection (DI) results in a reduced thermal load and reduced fuel consumption compared with swirl chamber engines (IDI) with the same cylinder capacity.

Supercharging system

The engine is supercharged with a mechanically driven compressor and an exhaust turbocharger. The compressor supplies compressed air at low engine speeds and while accelerating. The turbo takes over when the charging pressure has reached the proper level.

The interaction of compressor and turbo produces high torque over the whole speed range and this contributes to cleaner exhaust gases and fuel economy giving excellent acceleration and excellent driving characteristics.

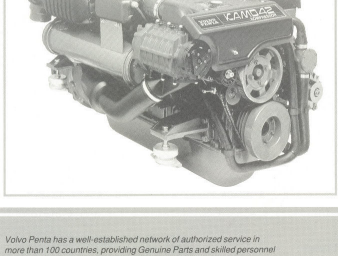
Aftercooler

Air heats up and expands when it is compressed. In other words, it takes up more space. The aftercooler cools the compressed / heated air and raises its oxygen content so that the engine can use fuel more efficiently.

Easy to service

The engine is designed for easy maintainance and service.
All the important service points on the engine are conveniently located at the top and the port side.

* Crankshaft power according to ISO 8665.



Technical description:

Engine and block
- The cylinder block and cylinder head are made of cast iron.
- Oil-cooled pistons with two compression rings and one oil scraper ring.
- Replaceable cylinder liners.
- Replaceable valve seats.
- Seven-bearing crankshaft.
- Oil sump of stainless steel.

Fuel system
- The rotary-type injection pump has a mechanical governor for accurate engine speed control.
- Smoke limiter.
- Fine filter with water separator.
- Feedpump with hand primer.
- Flexible fuel line connections.
- Electrically-operated stopping device.

Cooling system
- Thermostatically regulated freshwater cooling with easily accessible impeller pump.
- Tubular heat exchanger with expansion tank.
- Coolant system prepared for hot water outlet.

Air inlet system
- The air inlet system is designed so as to give optimal air rotation and to maintain efficient combustion which resultes in high power and low fuel consumption.
- Air inlet silencer with replaceable filter.

Exhaust system
- Seawater-cooled exhaust elbow made of cast iron with a stainless steel insert.

Supercharging system
- Mechanically-driven compressor.
- Exhaust-driven freshwater-cooled turbo compressor.

Lubrication system
- Pressure lubrication system with easily replaceable fullflow oil filter.
- Tubular oil cooler.

Engine mounting
- Flexible mounting comprising 4 adjustable rubber cushions which provide sound and vibration insulation.

Power transmission
- Reverse gear MS5B, ratios 1.94:1 or 2.40:1, 8° angled down.

Electrical system
- 12 V corrosion-protected electrical system, complete with instrumentation.
- Alternator with a charging capacity of 14 V 50 A designed for marine use.
- Charging regulator with battery sensor for voltage drop compensation.
- The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits.
- Automatic 40 A fuse with reset button.
- Starter motor power 2.2 kW.

KAMD42

Instrument panel
Includes:
- Key switch.
- Temperature gauge.
- Instrument lighting.
- Oil pressure gauge.
- Alarm for temperature, oil pressure and charging.
- Voltmeter.
- Tachometer.
- Hour meter.
- Fuses.
- Alarm test button.

Miscellaneous
- 5 m (16.4 ft.) extension cable for the instrument panel with plug in connector.

Accessories

Fuel system
- Fuel filter with water separator.
- Fuel pipes.
- Fuel cock.
- Separate connection cap for fuel tank.
- Tank vent.
- Shut off valve.

Coolant system
- Coolant water intake.
- Hot water outlet.
- Water heater.
- Separate expansion tank.
- Seawater filter.

Exhaust system
- Exhaust temperature sensor.
- Exhaust hose.
- Through hull fitting.
- Watercooled silencer.
- 45° and 90° exhaust elbows.

Electrical system
- Distributor for charging two independent battery systems.
- Main switch.
- Handed instrument panel.
- Extra instruments: tachometer, fuel, water tank , voltmeter, turbo pressure and rudder indicator.
- Extension cable 3, 5 and 7 meters. (10, 16.5 and 23 ft.)
- Flybridge instrument panel.
- T connector for Flybridge.
- Extra alternator 12V/50A.

Control and steering system
- Single lever control for engine speed and gear control, top or side mounted. For single or double installation.
- Neutral safety switch for VP control.
- Control cables, steering gear, steering cables, ball joints and fork for steering cables.
- Steering wheels

Transmission
- Propellers.
- Propshaft clamp coupling.
- Propshaft coupling, with pilot bore.
- Propshafts.
- Rubber stuffing box.

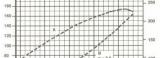
Boat accessories
- Electric bilge pump.
- Oil scavenging pump.
- Touch-up paints.
- Onboard kit.
- Batteries.
- Oils.
- Toolkit.

The complete marine programme
Volvo Penta has a complete and comprehensive programme for marine use.
– See the separate accessories catalogue and brochures for shaft systems, propellers and control systems.
Specially-designed and tested products to suit your installation.

Technical Data

Engine designation	KAMD 42
Crankshaft power DIN 6270 kW (hp)	170 (230)
Propellershaft power DIN 6270 kW (hp)	164 (223)
Engine speed, rpm	3800 - 3900
Displacement, l (cu.in)	3.59 (219)
Number of cylinders	6
Bore/stroke, mm (in.)	92/90 (3.62/3.54)
Compression ratio	17,8:1
Weight with reverse gear MS5B, kg (lb)	500 (1102)

Operating mode: PD = Pleasure duty
1) Crankshaft power according to ISO 8665 or SAE J 1228
2) Power at 3800 rpm, 25°C and 100 kPa on heads
3) Propshaft power according to ISO 8665 or the basically compatible standards SAE J 1228 and ICOMIA 39-83
4) Power rated in accordance with NMMA procedure



A = Crankshaft power
B = Calculated propeller shaft curve
exponent 2.5 (planing boats)

Dimension Drawing

Not for installation

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VOLVO PENTA
AB Volvo Penta
S-405 80 Göteborg, Sweden

Volvo Penta Aquamatic Duoprop

KAD43P/DP

6-cylinder, direct-injected marine diesel engine with charge air compressor, turbocharger, aftercooler and Duoprop-drive. 170 kW (230 hp)*

* Crankshaft power according to ISO 8665

Compressor-driven Hi-Tech engine

Volvo Penta's 6-cylinder KAD43P is a compressor-driven, turbocharged high performance engine with aftercooler producing high torque at low engine speeds. This means unique acceleration properties and excellent drivability.

Economic marine engine

KAD43P is a reliable and economic marine engine with considerable power resources and is specially developed for planing craft.

The engine is compact and has an advantageous weight to power ratio making it excellent for both single and multi-engine installation.

Direct injection

Direct injection (DI) results in a low thermal load and low fuel consumption compared with swirl chamber engines (IDI) with the same cylinder capacity. The engines also have a longer service life.

The advanced combustion system minimizes noxious exhaust emissions and enhances overall enjoyment of boating.

Supercharging

The engine is supercharged with a mechanically driven compressor and an exhaust turbocharger. The compressor fitted with silencers – supplies compressed air at low engine speeds and while accelerating. The turbo takes over when the charging pressure has reached the proper level.

The interaction of compressor and turbo produces high torque over the whole speed range and this contributes to cleaner exhaust gases and fuel economy giving excellent acceleration and driving characteristics.

Aftercooler

The air heats up and expands when it is compressed. In other words, it takes up more space. The aftercooler cools the compressed and heated air and raises its oxygen content so that the engine can use the fuel more efficiently.

Easy to service

The engine is designed for easy maintenance and service.

KAD43P with DP-E drive

All the important service points on the engine are conveniently located at the top and the port side.

DP drive

The DP drive with its twin counter-rotating propellers produces a harmonious drive unit with unbeatable characteristics in the boat in terms of speed, acceleration and fuel economy.

It also produces less noise and vibrations, better steering and maneuvering characteristics, better grip in the water and a shorter time to planing compared with single propeller systems.

The drive features standard power steering for maximum driving comfort.

Technical description:

Engine and block

- Cylinder block and cylinder head made of cast iron for good corrosion resistance and long service life
- Oil-cooled pistons with two compression rings and one oil scraper ring
- Replaceable wet cylinder liners
- Replaceable valve seats
- Seven-bearing crankshaft

Fuel system

- Rotor-type injection pump with a mechanical governor for accurate speed control
- Smoke limiter
- Fine filter with water separator
- Feed pump with hand primer
- Electrically operated stopping device

Cooling system

- Thermostatically regulated freshwater cooling
- Tubular heat exchanger with separate transparent expansion tank
- Coolant system prepared for hot water outlet
- Seawater strainer and easily accessible impeller pump

VOLVO PENTA

KAD43P/DP

Inlet system

- Inlet system designed to produce optimal air rotation which provides perfect combustion. This results in high power and low fuel consumption.
- Inlet silencer with replaceable filter
- Closed crankcase vent system
- Air silencer on inlet and outlet side of compressor

Exhaust system

- Seawater-cooled exhaust elbow of cast iron with a stainless steel insert
- Complete connection for exhaust outlet through the drive

Supercharger system

- Exhaust-driven freshwater-cooled turbocharger
- Mechanically driven compressor

Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine
- Tubular oil cooler that can be cleaned

Engine mounting

- Flexible mounting which provides sound and vibration insulation. The engine has two adjustable rubber mounts in front and rubber suspension between flywheel housing and transom shield

Drive

- Complete with transom shield, flywheel cover and installation components
- The drive can be tilted up by 42°
- Protective zinc anodes prevent corrosion
- Coolant water inlet at the front of the drive
- Built-in kick-up function to reduce possible damage, in the event the drive strikes an underwater object

Power Trim

- Power Trim is an electrically-operated hydraulic system for trimming the drive angle while in use. The actual trim angle is indicated with five LEDs and a digital display on the CD Trim instrument
- An analog instrument is also available

Electrical system

- 12V corrosion-protected electrical system, complete with instrumentation
- 14V/60A marine alternator
- Charging regulator with battery sensor for voltage drop compensation
- The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits
- Automatic 8 A fuse with manual reset
- Starter motor power 3.0 kW

Instrument panel:

Complete panel or separate instruments fitted with:

- Key switch
- Temperature gauge
- Instrument lighting
- Oil pressure gauge
- Alarm for temperature, oil pressure and charging
- Voltmeter
- Rev counter
- Hour meter
- Fuses
- Alarm test

Miscellaneous

- 3, 5 or 7 m extension cable for the instrument panel with plug-in connector

Accessories

An extensive range of accessories for:

- Fuel system
- Control system
- Instruments
- Comfort & Safety
- Maintenance
- Cooling system
- Steering system
- Electric system
- Propeller & Drive

For detailed information, please see Accessory catalogs.

Technical Data

	KAD43P
Engine designation	
Crankshaft power[1] kW (hp)*	170 (230)
Propeller shaft power[2] kW (hp)*	159 (216)
Engine speed range, rpm	3700–3900
Displacement, l (cu. in.)	3.6 (219)
Number of cylinders	6
Bore/stroke, mm (in.)	92/90 (3.62/3.54)
Compression ratio	17.8:1
Volvo Penta Duoprop® drive	DP-E
Ratio	1.78:1
Dry weight with DP, kg (lb)	542 (1195)

1) Crankshaft power according to ISO 8665
2) Prop shaft power according to ISO 8665
** Duty rating: Pleasure*

Contact your local Volvo Penta dealer for further information.

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

The engine illustrated may not be entirely identical to production standard engines.

Dimensions (from installation drawing No. 3590299)

Not for installation

VOLVO PENTA
AB Volvo Penta
S-405 08 Göteborg, Sweden

Volvo Penta Inboard Diesel

KAMD44P EDC/HS1E

6-cylinder, 24-valve, direct-injected marine diesel engine with charge air compressor, turbocharger, aftercooler and HS1E reverse gear. 191 kW (260 hp)*

* Crankshaft power according to ISO 8665

Hi-Tech marine engine

Volvo Penta's 6-cylinder KAMD44P EDC is a compressor- and turbocharged high performance engine with unique acceleration properties and excellent drivability.

Innovative EDC

Equipped with EDC (Electronic Diesel Control) – an electronically controlled processing system which optimizes engine performance. The system determines the precise quantity of fuel required at any given moment, taking full account of variation in operating temperatures, air pressure and other contributing factors.

The EDC system includes electric control and wiring giving precise and smooth operation with no noise transmitted along the cables.

High output, excellent power/weight ratio

KAMD44P EDC is a reliable and economic direct-injected marine engine with considerable power resources developed for modern yachts.

The engine is compact and has an advantageous weight to power ratio making it excellent for both single and multi-engine installation.

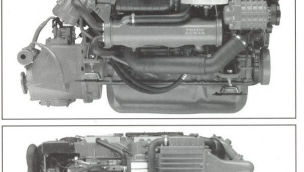
The 4-valve technology and the advanced combustion system minimize noxious exhaust emissions and enhance overall enjoyment of boating.

The compressor – fitted with silencers – is controlled by the EDC unit and acts as a "torque controller". It supplies compressed air at low engine speed and while accelerating when the extra torque is needed.

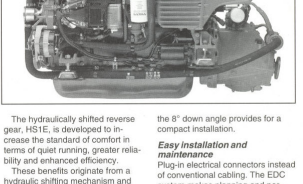
The interaction of compressor and turbo produces high torque over the whole speed range, and this contributes to cleaner exhaust gases and fuel economy giving excellent acceleration and driving characteristics.

Total driveline fully matched and tested from a single supplier

The combination of power and total efficiency ensures maximum thrust at all speeds.



KAMD44P EDC with HS1E reverse gear



The hydraulically shifted reverse gear, HS1E, is developed to increase the standard of comfort in terms of quiet running, greater reliability and enhanced efficiency.

These benefits originate from a hydraulic shifting mechanism and advanced gear technology that uses spiral bevel gears throughout the gear train. Volvo Penta's reverse gear is unique in this respect, resulting in an overall efficiency as high as 96%.

In order to get full benefit of the EDC system the reverse gear is equipped with electromagnetic valves for electric gear shifting.

HS1E is ideal also for twin installation with ability to run left- and right-hand rotation with same ratio, efficiency and durability. Furthermore, the 8° down angle provides for a compact installation.

Easy installation and maintenance

Plug-in electrical connectors instead of conventional cabling. The EDC system makes planning and performing multi-installations easy, allowing for up to eight control stations.

The EDC system includes a self-diagnostic facility. Easily accessible service and maintenance points contribute to the ease of service of the engine.

Comprehensive service network

Volvo Penta has a well-established network of authorized service dealers in more than 100 countries throughout the world.

VOLVO PENTA

KAMD44P EDC/HS1E

Technical description:

Engine and block
- Cylinder block and cylinder head made of cast iron for good corrosion resistance and long service life
- 4-valve technology
- Oil-cooled pistons with two compression rings and one oil scraper ring
- Replaceable wet cylinder liners
- Replaceable valve seats
- Seven-bearing crankshaft

Fuel system
- Rotor-type injection pump with electric actuator
- EDC unit for processing the input for precise engine governing
- Two-stage injectors
- Fine filter with water separator
- Feed pump with hand primer
- Electrically operated stopping device

Cooling system
- Thermostatically regulated freshwater cooling
- Tubular heat exchanger with separate transparent expansion tank
- Coolant system prepared for hot water outlet
- Easily accessible seawater impeller pump

Inlet system
- Inlet system designed to produce optimal air rotation which provides perfect combustion
- Inlet silencer with replaceable filter
- Crankcase gases vented into the air inlet

Exhaust system
- Seawater-cooled exhaust elbow of cast iron with a stainless steel insert

Supercharger system
- Exhaust-driven freshwater-cooled turbocharger
- Mechanically driven compressor with silencer of absorption type on both inlet and outlet port

Lubrication system
- Pressure lubrication system with easily replaced full-flow oil filter
- Tubular oil cooler that can be cleaned

Engine mounting
- Elastic suspension consisting of 4 rubber pads with adjustable anchorage plates for dampening of sound and vibration

Reverse gear
- Spiral bevel gears which results in smooth running at all speeds
- Hydraulically operated clutch for smooth shifting
- Electrical shifting performed by electromagnetic valves
- Matched drop center and 8° down angle for compact installation and minimum propeller shaft angle
- Retrofit, fits into the same installation measurements as MS5 reverse gear and features integrated SAE4 adaptor flange
- When under sail propeller shaft can rotate with a stainless steel insert
- Seawater-cooled oilcooler

Electrical system
- 12V two-pole electrical system
- 14V/60A marine alternator with Zener-diodes to protect entire system from peak voltage
- Charging regulator with battery sensor for voltage drop compensation
- Automatic 8 A fuses with manual reset
- Starter motor power 3.0 kW

Instruments/control
- Complete engine panel with key switch, instruments and alarm panel or separate instruments
- EDC monitoring panels and multistation units
- Electrical remote control for EDC
- Plug-in cables

Accessories
An extensive range of accessories are available. For detailed information, please see Accessory catalogs.

Technical Data

	KAMD44P EDC
Engine designation	
Crankshaft power [1] kW (hp)*	191 (260)
Propeller shaft power [2] kW (hp)*	179 (243)
Engine speed range, rpm	3700–3900
Displacement, l (cu. in.)	3.6 (219)
Number of cylinders	6
Bore/stroke, mm (in.)	92/90 (3.62/3.54)
Compression ratio	16.5:1
Dry weight with HS1E, kg (lb)	515 (1135)
Gear ratio HS1E	1.96:1 and 2.62:1

1) Crankshaft power according to ISO 8665
2) Prop shaft power according to ISO 8665
** Duty rating: Pleasure*

Contact your local Volvo Penta dealer for further information.

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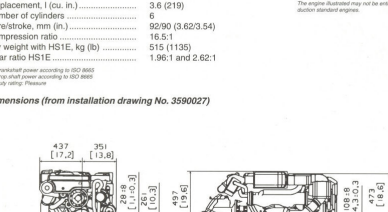
Dimensions (from installation drawing No. 3590027)



Not for installation

VOLVO PENTA
AB Volvo Penta
S-405 08 Göteborg, Sweden

Sal No. 7729001A Eng 7-1997