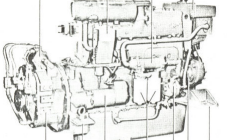
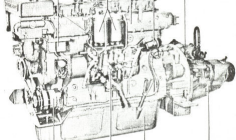
MD 70B

6-cylinder, direct-injected 4-stroke diesel engine.
Propeller shaft output 78 kW (106 hp) heavy-duty operation.





STANDARD EQUIPMENT

ENGINE BODY — Cylinder block and cylinder heads of special-alloy cast iron. Double cylinder heads with steel gaskets. Replaceable, wet-type cylinder liners. Pistons of light-alloy with cast iron ring carriers.
Three compression rings and two oil scraper rings. The upper compression ring is chromed. Crankshaft and camshaft are journalled in seven bearings and have surface-hardened bearing races. Main- and big-end bearing shells of lead-bronze. At the front the crankshaft has a polygon profile intended for driving winches, pumps, etc. The camshaft, drive outputs, sea-water, injection and lubricating oil pumps are gear-driven. Overhead valves with replaceable valve seats.
Tool kit is supplied.

FUEL SYSTEM — Injection pump with centrifugal governor (14) and feed pump as well as flexible hoses with fuel pipe connections for the suction and return lines. Electrically operated stop device (12). Twin fine filters (10).

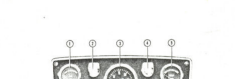
COOLING SYSTEM — Fresh-water cooling with heat exchanger (3) and removable, tubular type insert. 1" sea-water pump (4). The engine temperature is regulated by means of two thermostats.

LUBRICATING SYSTEM — Pressure lubricating system with double lubricating oil filters of spin-on type (6).
Sea-water cooled oil cooler (2). Scavenging pump for lubricating oil (5). Oil sump with inspection covers for lower crankcase (13).

INTAKE SYSTEM — Air cleaner with removable insert.

EXHAUST SYSTEM — Fresh-water cooled exhaust manifold with exhaust manifold flange (11).

ELECTRICAL SYSTEM — Two-pole electrical system in marine design, complete instrument panel. Connector on instrument panel and terminal board on engine (16). Alternator (15), 24 V/25 A (600 W) or 12 V/38 A (460 W), with fully transistorized charging regulator (9). Over-voltage protector of 24 V type. Starter motor (7), output 2.9 kW (4 h.p.).



Instrument panel with:

1. Oil pressure gauge
2. Stop contact
3. Rev counter
4. Start contact
5. Temperature gauge
6. Switch, extra lighting
7. Key switch
8. Battery charging warning lamp
9. Switch, instrument lighting

ENGINE MOUNTING — The engine is supplied with engine brackets for fixed mounting (17).

POWER TRANSMISSION — The engine is supplied with hydraulically operated reverse gear equipped with oil cooler (1) and pre-drilled propeller shaft flange according to the following alternatives:
Alt. 1. Borg Warner 73 CR red. ratio 2:1 for R-H prop. (18)
2. red. ratio 2:1 for L-H prop. (18)
3. Twin Disc MG 506 red. ratio 2:1 for L-H and R-H prop. (8)
4. red. ratio 3:1 for L-H and R-H prop. (8)
5. red. ratio 4.5:1 for L-H and R-H prop. (8)

CLASSIFICATION — The engine can be delivered classified in accordance with the requirements of the major classification societies.

EXTRA EQUIPMENT

FUEL SYSTEM
Twin fuel filters
Water-separating fuel filter with glass or metal housing

COOLING SYSTEM
Fresh-water filter
Cooling-water intake complete

LUBRICATING SYSTEM
Shallow oil sump

EXHAUST SYSTEM
Hull through-fitting, complete
Flexible compensator hose
Compensator for straight installation
Silencer, dry

POWER TRANSMISSION
Disengagable front-mounted power take-off
Vee-belt pulley and flat belt pulleys for power take-off
Drive output at front and rear of timing gear casing
Vee-belt pulley for crankshaft

ELECTRICAL SYSTEM
Alternator, 24 V, 60 A
Charging distributor for charging 2-battery system
Electrically operated hourmeter
Automatic alarm for oil pressure and water temperature — optical or acoustical
Master switch

ENGINE MOUNTING
Flexible engine mounting

BOAT ACCESSORIES
Bilge pump direct-driven mounted on timing gear casing
Bilge pump for separate mounting
Ejector for bilge pump
Oils
Paints
Anti-freeze
Rustproofing

PARTS
Parts for classifiable engines

CONTROLS AND CONTROL SYSTEM
VP single-control lever for both speed and forward-reverse operation, top-mounted or side-mounted. Single or twin installation
Neutral position switch — automatic safety interlock for VP-controls
S-type control. Top-mounted, only speed regulation
Control cables

PROPELLER EQUIPMENT
Flexible propeller shaft coupling
Propeller shafts
Propeller shaft sleeves
Propellers

DATA

Type of operation . . . . . 4-stroke, diesel engine with direct injection and overhead valves

Designation . . . . . MD 70B

Propeller shaft output, heavy-duty operation (C) [1] . . . . . 78 kW/33.3 r/s (106 h.p./2000 rpm)

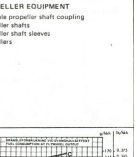
Number of cylinders 6

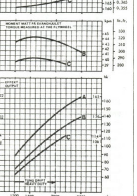
Capacity, total, dm³ (cubic inch) 6.73 (410)

Bore, mm (in.) 104.77 (4.125)

Stroke, mm (in.) 130 (5.12)

Total weight, engine with BW rev. gear, approx. kg (lb.) 885 (1940)





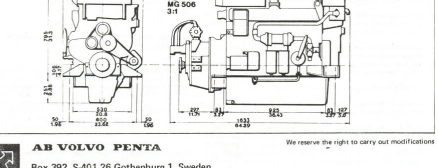
1)

A: Max. flywheel output acc. to. DIN 6270 Höchstleichtung N_H

B. 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 max. 1 hour per 12-hour period.

C. Continuous output measured on the propeller shaft acc. to DIN 6270 Leistung B für Dauerbetrieb (corresponds for practical use also to continuous output acc. to BS 649, 1958). On delivery from Volvo Penta, the engine is adjusted acc. to curve C 33.3 r/s (2000 rpm).
The flywheel output for the engine is approx. 4% higher than the indicated values for B and C curves. All measurements apply to a run-in engine.

DIMENSION DRAWING



We reserve the right to carry out modifications

AB VOLVO PENTA

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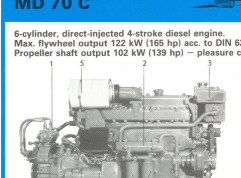
Printed in Sweden, Gotab, Kungsbr. 74, 1978

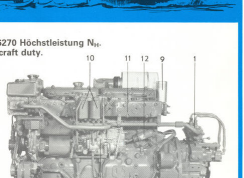
VOLVO PENTA

Ref. no 8253
Turk.

MD 70 C

6-cylinder, direct-injected 4-stroke diesel engine.
Max. flywheel output 122 kW (165 hp) acc. to DIN 6270 Höchstleistung N_H.
Propeller shaft output 102 kW (139 hp) — pleasure craft duty.





STANDARD EQUIPMENT

ENGINE BODY – Cylinder block and cylinder heads of specialalloy cast iron. Double cylinder heads with steel gaskets. Replaceable, wet-type cylinder liners. Pistons of light-alloy with cast iron ring carriers. Three compression rings and one oil scraper ring. The upper compression ring is chromed. Crankshaft and camshaft are journalled in seven bearings and have surface-hardened bearing races. Main- and big-end bearing shells of lead-bronze. At the front the crankshaft has a polygon profile intended for driving winches, pumps, etc. The camshaft, drive outputs, sea-water, injection and lubricating oil pumps are gear-driven. Overhead valves with replaceable valves seats. The engine is supplied with engine brackets for fixed mounting (17).

FUEL SYSTEM – Injection pump with centrifugal governor (14) and feed pump as well as flexible hoses with fuel pipe connections for the suction and return lines. Electrically operated stop device (12). Twin fine filters (10).

COOLING SYSTEM – Fresh water cooling with plate heat exchanger (3), tubular heat exchanger or equipment for keelcooling, 1" seawater pump(4). The engine temperature is regulated by means of two thermostats.

LUBRICATING SYSTEM – Pressure lubricating system with double lubricating oil filter of spin-on type (6).
Sea-water cooled oil cooler (2). Oil sump with inspection covers for lower crankcase (13). Oil separating filter for crankcase ventilation (9).

INTAKE SYSTEM – Air cleaner with paper element (5).

EXHAUST SYSTEM – Fresh-water cooled exhaust manifold with exhaust manifold flange (11).

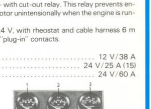
ELECTRICAL SYSTEM – 24 V with starter motor 3 kW (4 hp) (7).

EXTRA EQUIPMENT

ELECTRICAL SYSTEM – with cut-out relay. This relay prevents engagement of the starter motor unintensionally when the engine is running.
Instrument panel, 12 or 24 V, with rheostat and cable harness 6 m (21 ft). Ready-connected "plug-in" contacts.
Alternator alternatives

Alternator	12 V/38 A
Alternator	24 V/25 A (15)
Alternator	24 V/60 A

Instrument panel with:



1. Temperature gauge
2. Oil pressure gauge
3. Voltmeter
4. Start contact
5. Stop contact
6. Rheostat, instrument lighting
7. Rev. counter
8. Key switch

Electrically operated hourmeter
Automatic alarm for oil pressure and water temperature – optical or acoustical
Master switch

POWER TRANSMISSION – The engine is supplied with hydraulically operated reverse gear equipped with oil cooler (1) and predrilled propeller shaft flange according to the following alternatives:

Alt.	1. Borg Warner 73 CR	red. ratio 2:1 for R-H prop.
	2.	red. ratio 3:1 for L-H prop.
	3. Twin Disc MG 506	red. ratio 1:1 for L-H and R-H prop. (8)
	4.	red. ratio 2:1 for L-H and R-H prop. (8)
	5.	red. ratio 3:1 for L-H and R-H prop. (8)
	6.	red. ratio 3,8:1 for L-H and R-H prop (8)
	7.	red. ratio 4,5:1 for L-H and R-H prop.(8)

CLASSIFICATION – The engine can be delivered classified in accordance with the requirements of the major classification societies.

PRODUCT BULLETIN

EXTRA EQUIPMENT Cont.

FUEL SYSTEM
Twin fuel filters
Water-separating fuel filter with glass or metal housing

COOLING SYSTEM
Fresh-water filter
Cooling-water intake complete

LUBRICATING SYSTEM
Shallow oil sump
Electrical scavenging pump

EXHAUST SYSTEM
Hull through fitting, complete
Flexible compensator hose
Compensator for straight installation
Silencer, dry

POWER TRANSMISSION
Disengagable front-mounted power take-off
Vee-belt pulley and flat belt pulleys for power take-off
Drive outputs at front and rear of timing gear casing
Vee-belt pulley for crankshaft

ENGINE MOUNTING
Flexible engine mounting

BOAT ACCESSORIES
Tool kit
Bilge pump direct-driven mounted on timing gear casing
Bilge pump for separate mounting
Ejector for bilge pump
Oils
Paints
Anti-freeze
Rustproofing

PARTS
Parts for classifiable engines

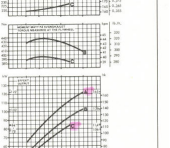
CONTROLS AND CONTROL SYSTEM
VP single-control lever for both speed and forward-reverse operation, top-mounted or side-mounted. Single or twin installation
Neutral position switch – automatic safety interlock for VP-controls
S-type control. Top-mounted, only speed regulation
Control cables

PROPELLER EQUIPMENT
Flexible propeller shaft coupling
Propeller shafts
Propeller shaft sleeves
Propellers

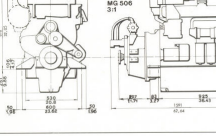
DATA

Type of operation	4-stroke, diesel engine with direct injection and overhead valves
Designation	MD 70C
Propeller shaft output, heavy-duty operation (C)[1]	78 kW / 33.3 r/s (106 h.p./2000 rpm)
Number of cylinders	6
Capacity, total, dm³ (liters) (in.³)	6.73 (410)
Bore, mm (in.)	104.77 (4.125)
Stroke, mm (in.)	130 (5.12)
Total weight, engine with BW rev. gear, approx. kg (lb.)	885 (1945)

[1]
A. Max. flywheel output acc. to. DIN 6270 Höchstleistung N_H
B. Intermittent output measured on propeller shaft acc. to. DIN 6270 Leistung B (corresponds for practical use to 1 hour's output acc. to BS 649, 1958). May be taken out max. 1-hour per 12-hour period.
C. Continuous output measured on the propeller shaft acc. to DIN 6270 Leistung B für Dauerbetrieb (corresponds for practical use also to continuous output acc. to BS 649, 1958). On delivery from Volvo Penta, the engine is adjusted acc. to curve C 33.3 r/s (2000 rpm).
The flywheel output for the engine is approx. 4% higher than the indicated values for B and C curves. All measurements apply to a run-in engine.



DIMENSION DRAWING



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

MD 70 C Pleasure Craft Duty

Grupp Nr
Group No

21 110

ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

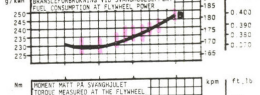
Distr. 70 Serisi

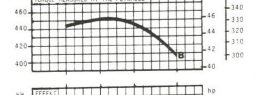
Motor Engine MD70C NÖJESBÅTSDRIFT PLEASURE CRAFT DUTY

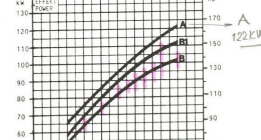
Date 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med direktinsprutning. Four stroke diesel engine with direct injection.		
Topventiler. Overhead valves.		
Cylinderantal No of cylinders		6 6
Slagvolym total Displacement total	dm3 in3	6,73 410
Slaglängd Stroke	mm in	130 5,12
Cylinderdiameter Bore	mm in	104,77 4,125
Kompressionsförhållande Compression ratio		17:1 17:1
Max tillåten lutning bakåt under gång Max permissible inclination backwards under way		15°
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 B1: Svänghjulseffekt för nöjesbåtsdrift vid havets nivå, lufttryck 1,01 bar (760 mm Hg), temperatur + 15,0°C.

Kurva B: 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. Bättens marschfart måste dessutom ligga avsevärt under maxfarten.

Motorns svänghjulseffekt är ca 4% högre än angivna värden för B-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 B1: Flywheel power for a pleasure craft duty (sea level conditions). Air pressure = 1,01 bar (29.2 in merc), temperature = 15.0°C (60°F).

Curve B: 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.

The flywheel power for the engine is approx 4% higher than the indicated values for B-curve.

All measurements apply to a run-in engine.

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

VOLVO PENTA

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MD 70C Commercial Duty

ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No: 21 110-1

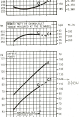
Distr.

Motor / Engine: MD70C KOMMERSIELL DRIFT / COMMERCIAL DUTY

Date: 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med direktinsprutning. Four stroke diesel engine with direct injection.		
Toppventiler. Overhead valves.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm³ / in³	6.73 / 410
Slaglängd / Stroke	mm / in	130 / 5.12
Cylinderdiameter / Bore	mm / in	104.77 / 4.125
Kompressionsförhållande / Compression ratio		17:1 / 17:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		15° / 15°
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.

Kurva C: Effekt för kontinuerlig drift mätt på propelleraxeln enligt DIN 6270 Leistung B für Dauerbetrieb (motsvarar för praktiskt bruk även kontinuerlig effekt enligt BS 649, 1958).

Motorns svänghjulseffekt är ca 4% högre än angivna värden för C1- resp C-kurven.

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.

Curve C: Power for continuous duty measured on the propeller shaft according to DIN 6270 Leistung B für Dauerbetrieb (corresponds for practical use also to continuous power according to BS 649, 1958). Highest power may be utilized only a few hours per day and the total annual usage must not exceed 2000 hours.

The flywheel power for the engine is approx 4% higher than the indicated values for C1- and C-curves.

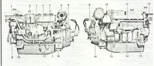
All measurements apply to a run-in engine.

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

VOLVO PENTA

TMD 70B

6-cylinder, direct-injected 4-stroke diesel engine with turbo-charging.
Propeller shaft output 141 kW (192 hp) — pleasure boats, 115 kW (156 hp) — commercial use.



STANDARD EQUIPMENT

ENGINE BODY — Cylinder block and cylinder heads of special-alloy cast iron. Double cylinder heads with steel gaskets. Replaceable, wet-type cylinder liners. Pistons of light-alloy with cast iron ring carriers.
Three compression rings and two oil scraper rings. The upper compression ring is chromed. Crankshaft and camshaft are journalled in seven bearings and have surface-hardened bearing races. Main- and big-end bearing shells of lead-bronze. At the front the crankshaft has a polygon profile intended for driving winches, pumps, etc. The camshaft, drive outputs, sea-water, injection and lubricating oil pumps are gear-driven. Overhead valves with replaceable valve seats.
Tool kit is supplied.

FUEL SYSTEM — Injection pump with centrifugal governor (3) and feed pump as well as flexible hoses with fuel pipe connections for the suction and return lines. Electrically operated stop device (5). Twin fine filters (2).

COOLING SYSTEM — Fresh-water cooling with heat exchanger (12) and removable, tubular type insert. 1" sea-water pump (13). The engine temperature is regulated by means of two thermostats.

LUBRICATING SYSTEM — Pressure lubricating system with double lubricating oil filters of spin-on type (14).
Sea-water cooled oil cooler (11). Scavenging pump for lubricating oil (7). Oil sump with inspection cover for lower crankcase (17).

SUPERCHARGING SYSTEM — Exhaust gas driven turbo-compressor for supercharging the intake air (6). Fresh-water cooled turbine housing. Air cleaner with removable insert. Turnable air intake with connection pipe for hose.

EXHAUST SYSTEM — Fresh-water cooled exhaust manifold (4). The turbo-compressor exhaust outlet has a flange for connection of exhaust line.

ELECTRICAL SYSTEM — Two-pole electrical system in marine design, complete instrument panel. Connector on instrument panel and terminal board on engine (10). Alternator (8), 24 V/25 A (600 W) or 12 V/38 A (460 W), with fully transistorized charging regulator (1). Overvoltage protector of 24 V type. Starter motor (16), output 2.9 kW (4 h.p.).

Instrument panel with:

1. Oil pressure gauge
2. Stop contact
3. Rev counter
4. Start contact
5. Temperature gauge
6. Switch, extra lighting
7. Key switch
8. Battery charging warning lamp
9. Switch, instrument lighting

ENGINE MOUNTING — The engine is supplied with engi[ne] brackets for fixed mounting (18).

POWER TRANSMISSION — The engine is supplied with hydra[u]lically operated reverse gear equipped with oil cooler (9) a[nd] pre-drilled propeller shaft flange according to the following alter[na]tives:

Alt. 1.	Borg Warner 73 CR	red. ratio 2:1 for R-H prop.
2.		red. ratio 3:1 for L-H prop.
3.	Twin Disc MG 506	red. ratio 2:1 for L-H and R-H prop. (1
4.		red. ratio 3:1 for L-H and R-H prop. (1
5.		red. ratio 4.5:1 for L-H and R-H prop. (1

PRODUCT BULLETIN

EXTRA EQUIPMENT

FUEL SYSTEM
Twin fuel filters
Water-separating fuel filter with glass or metal housing

COOLING SYSTEM
Fresh-water filter
Cooling-water intake complete

LUBRICATING SYSTEM
Shallow oil sump

EXHAUST SYSTEM
Water-cooled exhaust elbow
Exhaust rubber hose for wet exhaust line
Hull through-fitting, complete
Dry exhaust elbow
Flexible compensator hose
Compensator for straight installation
Silencer, dry

POWER TRANSMISSION
Disengagable front-mounted power take-off
Vee-belt pulley and flat belt pulleys for power take-off
Drive outputs at front and rear of timing gear casing
Vee-belt pulley for crankshaft

ELECTRICAL SYSTEM
Alternator, 24 V, 60 A
Charging distributor for charging 2-battery system
Electrically operated hourmeter
Automatic alarm for oil pressure and water temperature – optical or acoustical
Master switch

ENGINE MOUNTING
Flexible engine mounting

BOAT ACCESSORIES
Bilge pump direct-driven mounted on timing gear casing
Bilge pump for separate mounting
Ejector for bilge pump

Oils
Paints
Anti-freeze
Rustproofing

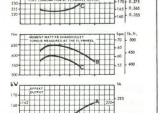
CONTROLS AND CONTROL SYSTEM
VP single-control lever for both speed and forward-reverse operation, top-mounted or side-mounted. Single or twin installation
Neutral position switch – automatic safety interlock for VP-controls
S-type control. Top-mounted, only speed regulation
Control cables

PROPELLER EQUIPMENT
Flexible propeller shaft coupling
Propeller shafts
Propeller shaft sleeves
Propellers

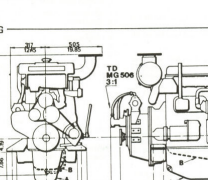
DATA

Type of operation	4-stroke, turbo-charged diesel engine with direct injection and overhead valves
Designation	TMD 70B
Propeller shaft output, pleasure boats (B)[1]	141 kW/41.7 r/s (192 hp/2500 rpm)
Propeller shaft output, commercial use, heavy-duty operation (C)[1]	115 kW/33.3 r/s (156 hp/2000 rpm)
Number of cylinders	6
Capacity, total, dm³ (liters) (in.³)	6.73 (410)
Bore, mm (in.)	104.77 (4.125)
Stroke, mm (in.)	130 (5.12)
Total weight, engine with BW rev. gear, approx. kg (lb.)	885 (1945)

1)
A: Max. flywheel output acc. to. DIN 6270 Höchsteichrung N_H.
B. 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 max. 1 hour per 12 hour period.
C. Continuous output measured on the propeller shaft acc. to DIN 6270 Leistung B für Dauerbetrieb (corresponds for practical use also to continuous output acc. to BS 649, 1958). On delivery from Volvo Penta, the engine is adjusted acc. to curve C 33.3 r/s (2000 rpm).
The flywheel output for the engine is approx. 5% higher than the indicated values for B and C curves. All measurements apply to a run-in engine.



DIMENSION DRAWING



We reserve the right to carry out modifications.

AB VOLVO PENTA
Box 392, S-401 26 Gothenburg 1, Sweden
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MD 70B - TAMD 70B

Technical data

Engine

	MD70B	TAMD70B
Type designation		
Number of cylinders		6
Bore		104.77 mm (4.13")
Stroke		130 mm (5.12")
Displacement		6.73 litres (410 cu.in.)
Marine cont. output (DIN 6270 Dauerleistung B)		
2200 r.p.m., h.p.	120	185*)
2000 r.p.m., h.p.	110	170*)
1800 r.p.m., h.p.	100	155*)
Torque, kpm (lb.ft.)/r.p.m.	40.2 (290)/1400	61.3 (442)/1600*
*) Light operation, max. 2500 hours/year.		
Output, pleasure boats – max. 500 hours/year (DIN 6270 Dauerleistung B)		
2500 r.p.m., h.p.		250
2200 r.p.m., h.p.		230
2000 r.p.m., h.p.		215
1800 r.p.m., h.p.		200
Torque, kpm (lb.ft.)/r.p.m.		80.6 (581)/1600
Operating speed/max. speed, r.p.m.		2500/2650
	2200/2330	2200/2350
	2000/2110	2000/2150
	1800/1910	1800/1950
Idling speed, r.p.m.	400–450	500–550
Compression pressure at 180		

TMD 70C Commercial Duty

Grupp Nr / Group No	
21	115-1

ENGINE DIAGRAM
MARIN DIESELMOTOR
MARINE DIESEL ENGINE

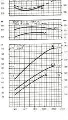
Distr.

Motor / Engine TMD70C KOMMERSIELL DRIFT / COMMERCIAL DUTY

Date 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med direktinsprutning. Four stroke diesel engine with direct injection.		
Toppventiler. Turbo. Overhead valves. Turbo charged.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm³ / in³	6.73 / 410
Slaglängd / Stroke	mm / in	130 / 5.12
Cylinderdiameter / Bore	mm / in	104.77 / 4.125
Kompressionsförhållande / Compression ratio		16:1 / 16:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		15° / 15°
Rotationsriktning, motorn 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.

Kurva C: Effekt för kontinuerlig drift mätt på propelleraxeln enligt DIN 6270 Leistung B für Dauerbetrieb (motsvarar för praktiskt bruk även kontinuerlig effekt enligt BS 649, 1958).

Motorns svänghjulseffekt är ca 4% högre än angivna värden för C1- resp C-kurvan.

Samtliga mätvärden 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.

Curve C: Power for continuous duty measured on the propeller shaft according to DIN 6270 Leistung B für Dauerbetrieb (corresponds for practical use also to continuous power according to BS 649, 1958). Highest power may be utilized only a few hours per day and the total annual usage must not exceed 2000 hours.

The flywheel power for the engine is approx 4% higher than the indicated values for C1- and C-curves.

All measurements apply to a run-in engine.

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

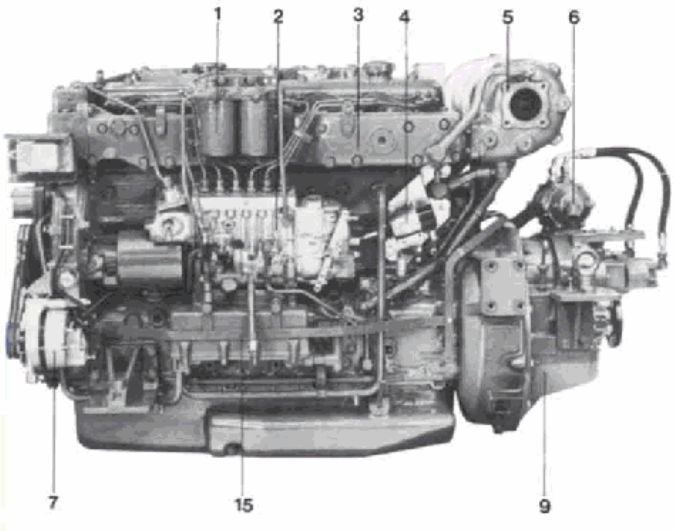
234 hp 2200 rpm,182 hp 2200 rpm , 156 hp 2000 rpm

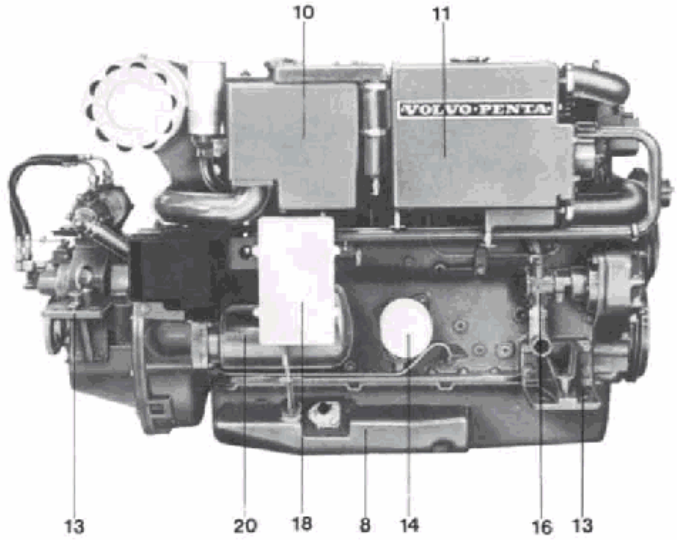
VOLVO PENTA

Ref. no 8501
Eng.

TAMD 70D

6-cylinder, direct-injected 4-stroke diesel engine with turbo-charging and after cooler.
Flywheel power at sea-level conditions 210 kW (286 hp). Air pressure 1,01 bar (29,2 in merc), temperature 15°C (60°F).





STANDARD EQUIPMENT

ENGINE BODY – Cylinder block and cylinder heads of special-alloy cast iron. Double cylinder heads with steel gaskets. Replaceable, wet-type cylinder liners. Pistons of light-alloy with cast iron ring carriers. Three compression rings and one oil scraper ring. The upper compression ring is chromed. Crankshaft and camshaft are journalled in seven bearings and have surface-hardened bearing races. Main- and big-end bearing shells of lead-bronze. The camshaft, drive outputs, sea-water, injection and lubricating oil pumps are geardriven. Overhead valves and replaceable valve seats.
The engine is delivered with engine brackets for fixed mounting (13).

FUEL SYSTEM – Injection pump (2) with centrifugal governor and feed pump as well as flexible hoses with fuel pipe connections for the suction and return lines. Electrically operated stop device (4). Twin fine filters (1).

COOLING SYSTEM – Fresh-water cooling with plate heat exchanger (11) or tubular heat exchanger. Raw-water pump 1" (16). The engine temperature is regulated by means of two thermostats. The engine has lubricating oil cooled pistons.

LUBRICATING SYSTEM – Pressure lubricating system with lubricating oil filter of spin-on type (14).
Fresh-water cooled oil cooler (15). Lubricating oil sump (8) with shallow profile.

TURBOCHARGING SYSTEM – Exhaust gas driven turbo-compressor for supercharging the intake air (5). Fresh-water cooled turbine housing. Raw-water cooled aftercooler (10) for cooling compressor air, which gives a higher degree of efficiency. Air filter of changeable type with insert of special paper. Air preheater with electric wiring box (18) for rapid starting and reduced exhaust smoke.

EXHAUST SYSTEM – Fresh-water cooled exhaust manifold (3). The turbo-compressor exhaust outlet has a flange for connection of exhaust line.

ELECTRICAL SYSTEM – 24 V starter motor 3 kW (4 hp) (20). Electrical stopping device.

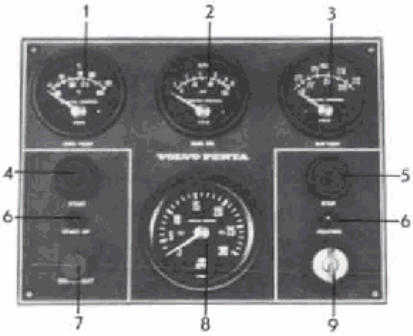
EXTRA EQUIPMENT

ELECTRICAL SYSTEM – Volvo Penta electrical system with cut-out relay. This relay prevents engagement of the starter motor unintensionally when the engine is running.
Instrument panel, 12 or 24 V, with rheostat and cable harness 6 m (21 ft.). Ready-connected "plug-in" contacts.
Alternator alternatives

Alternator	12 V/38 A
Alternator	24 V/25 A (7)
Alternator	24 V/60 A

Instrument panel with:

1. Temperature gauge
2. Oil pressure gauge
3. Voltmeter
4. Start contact
5. Stop contact
6. Warning lamps for air pre-heating
7. Rheostat, instrument lighting
8. Rev counter
9. Key switch



POWER TRANSMISSION – The engine is supplied with hydraulically operated reverse gear equipped with oil cooler (6) and pre-drilled propeller shaft flange according to the following alternatives:

Alt. 1.	Twin Disc MG 506	red. ratio 1:1 for L-H and R-H prop. (9)
2.		red. ratio 1,5:1 for L-H and R-H prop. (9)
3.		red. ratio 2:1 för L-H and R-H prop. (9)
4.		red. ratio 3:1 for L-H and R-H prop. (9)
5.	Twin Disc MG 507*	red. ratio 1:1 for L-H and R-H prop.
6.		red ratio 1,5:1 for L-H and R-H prop.
7.		red. ratio 1,98:1 for L-H and R-H prop.
8.		red. ratio 2,99:1 for L-H and R-H prop.

* For light commercial duty

PRODUCT BULLETIN

EXTRA EQUIPMENT

FUEL SYSTEM
Twin fuel filters
Water-separating fuel filter with glass or metal housing

COOLING SYSTEM
Fresh-water filter
Cooling-water intake complete

EXHAUST SYSTEM
Water-cooled exhaust elbow
Exhaust rubber hose for wet exhaust line
Hull through-fitting, complete
Exhaust boot
Dry exhaust elbow
Compensator for straight installation
Joint piece (6" to 5") for wet exhaust line

POWER TRANSMISSION
Drive outputs at front of timing gear casing.
Vee-belt pulley for crankshaft.

ELECTRICAL SYSTEM
Charging distributor for charging 2-battery system
Master switch
Instrument panel with, among others, hourmeter, warning lamps, warning siren and pressure gauge for reverse gear oil pressure and turbo charging pressure
Instrument panel with rudder indicator and tank gauge
Cable harness extension

ENGINE MOUNTING
Flexible engine mounting

BOAT ACCESSORIES
Bilge pump direct-driven mounted on timing gear casing
Bilge pump for separate mounting
Ejector for bilge pump
Oil scavenging pump, electrical
Oils
Paints
Anti-freeze
Tool kit

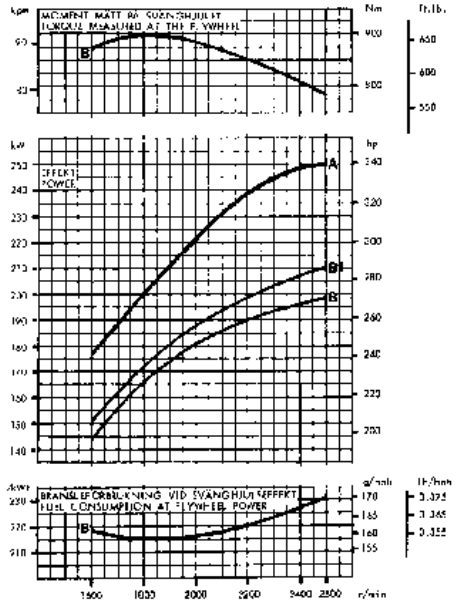
CONTROLS AND CONTROL SYSTEM
VP single-control lever for both speed and forward-reverse operation, top-mounted or side mounted. Single or twin installation
Neutral position switch – automatic safety interlock for VP-controls
S-type control. Top-mounted, only speed regulation
Control cables
Dual station control unit

PROPELLER EQUIPMENT
Flexible propeller shaft coupling
Propeller shafts
Propeller shaft sleeves
Propellers

DATA

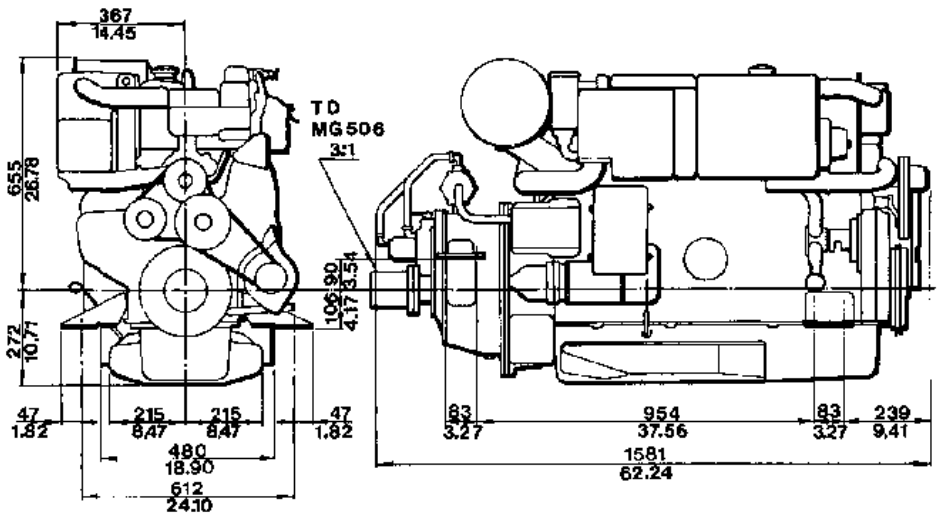
Type of operation	4-stroke, turbo-chrged aftercooled diesel engine with direct injection and overhead valves
Type designation	TAMD 70D
Propeller shaft power, pleasure craft duty (B)[1]	199 kW (270 hp) at 2500 r/min
Propeller shaft power, light commercial duty (CI)[2]	177 kW (240 hp) at 2500 r/min
Number of cylinders	6
Capacity, total	6.73 dm³ (410 in.³)
Bore	104.77 mm (4.13 in.)
Stroke	130 mm (5.12 in.)
Total weight, engine with rev. gear TD MG 506 approx	920 kg (2030 lb.)

[1] **Curve A:** Highest flywheel power obtainable in the test room without thermal overload. This power corresponds to DIN 6270 "Höchstleistung".
Curve B1: Flywheel power for pleasure craft duty (sea level conditions). Air pressure = 1,01 bar (29.2 in merc), temperature = 15.0°C (60°F).
Curve B: 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.
The flywheel power for the engine is approx 3% higher than the indicated values for B-curve. All measurements apply to a run-in engine.
[2] Engine Diagram see separate sheet Group 21 no 120-1.



1 hk = 1 hp (metric system) = 0.986 HP (Imp./US meas. system)

DIMENSION DRAWING



VOLVO PENTA

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Cables: Penta Göteborg
Telex: 207 55 PENTA S

TAMD 70D Pleasure Craft Duty

ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No: 21 120

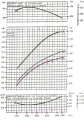
Distr.

Motor / Engine: TAMD70D NÖJESBÅTSDRIFT / PLEASURE CRAFT DUTY

Date: 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med direktinsprutning. Four stroke diesel engine with direct injection.		
Toppventiler. Turbo. Laddluftkylare. Overhead valves. Turbo charged. Aftercooled.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	6,73 / 410
Slaglängd / Stroke	mm / in	130 / 5.12
Cylinderdiameter / Bore	mm / in	104,77 / 4.125
Kompressionsförhållande / Compression ratio		14,5:1 / 14.5:1
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 B1: Svänghjulseffekt för nöjesbåtsdrift vid havets nivå. Lufttryck 1,01 bar (760 mm Hg), temperatur = 15,0°C.

Kurva B: 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.

Motorns svänghjulseffekt är ca 3% högre än angivna värden för B-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 B1: Flywheel power for pleasure craft duty (sea level conditions). Air pressure = 1,01 bar (29.2 in merc), temperature = 15.0°C (60°F).

Curve B: 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.

The flywheel power for the engine is approx 3% higher than the indicated values for B-curve.

All measurements apply to a run-in engine.

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

VGV/PTO

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TAMD 70D Light Commercial Duty

MOTORDIAGRAM
ENGINE DIAGRAM
MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No: 21 120-1

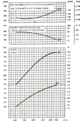
Distr.

Motor / Engine: TAMD70D LÄTT KOMMERSIELL DRIFT / LIGHT COMMERCIAL DUTY

Date 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med direktinsprutning. Four stroke diesel engine with direct injection.		
Toppventiler. Turbo. Laddluftkylare. Overhead valves. Turbo charged. Aftercooled.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm^3 / in^3	6,73 / 410
Slaglängd / Stroke	mm / in	130 / 5,12
Cylinderdiameter / Bore	mm / in	104,77 / 4,125
Kompressionsförhållande / Compression ratio		14,5:1 / 14,5:1
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 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.

Motorns svänghjulseffekt är ca 4% högre än angivna värden för C1-kurvan.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motororder.

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.

The flywheel power for the engine is approx 4% higher than the indicated values for the C1-curve.

All measurements apply to a run-in engine.

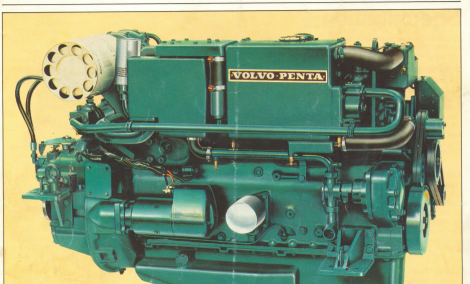
NOTE! Desired power set should be stated on the engine order.

V G V / P T O

Postal address | Telephone | Cables | Telex 20256 PENTA S

VOLVO PENTA

TAMD 70 E/225 kW*
(306 hp)*



Light duty flywheel output (B)			Medium duty flywheel output (C1)			Heavy duty flywheel output (C)			Displacement		Compression-ratio	Dry weight without reverse gear	
kW	hp	r/min	kW	hp	r/min	kW	hp	r/min	dm^3	in^3		kg	lb
221	300	2500	198	270	2500	155	211	2000	6,73	411	14.5:1	810	1786

★ Flywheel output at sea level. Atmospheric pressure 1.01 bar (14.6 p.si). Temperature 15°C (59°F).

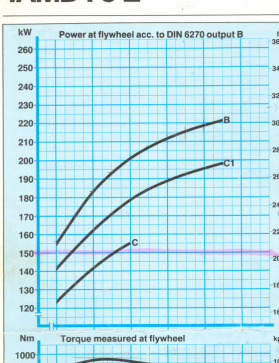
Powerful. Fuel-thrifty. Dependable in use.

The TAMD70E is a four-stroke, direct injection, in-line, six-cylinder diesel that has been built for marine operation. Designed right from the very start for turbocharging and aftercooling. Some of the advantages:

- **High output.** Compact outer dimensions and low weight in relation to output facilitate installation and provide the conditions for excellent performance. At maximum output utilization, the weight/output ratio is 2.7 kg/hp.
- **Low fuel consumption.** The extensive experience of Volvo Penta and intensive work on turbocharging and aftercooling have resulted in extremely efficient combustion of the fuel throughout the entire engine speed range.
- **High level of operational dependability.** The TAMD70E is based on the reliable and well-tested six-cylinder Volvo engine. A robust and well-balanced design that paves the way to superb dependability and a long lifetime.
- **An extensive range of accessories.** For example flushing and bilge pumps, power take-offs, generators, alternative cooling systems, etc. This permits individual customization for both pleasure craft and workboats.
- **Easy to install.** Compact. Low profile. In order to facilitate installation, all cables terminate in an electrical connector box where the cable harness to the instrument panel is attached by means of bayonet connectors.

TAMD 70 E

VOLVO PENTA
3-405.06 Göteborg, Sweden



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 200 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.

Curve C: Heavy duty.
The use of rated power at rated speed may be continuous. No interruption or load cycling is expected other than for service purposes. Unlimited operation time per year.

Ex. Tugboats, ferries, freighters, fishing boats. Most commercial applications in displacement hulls.

Mentioned outputs are flywheel outputs. The propeller shaft output is approx 4 % lower. Otherwise see table below.

Maximum propeller shaft output.

	TDMG 506	TDMG 507	TDMG 5
Light duty	*199 kW (270 hp)*	*Ratio 1:1, 1.5:1, and 2:1 211 kW (288 hp)*	
Medium duty	–	*177 kW (240 hp)*	
		Ratio 1:1, 1.5:1 and 2:1 191 kW (259 hp)	
Heavy duty			*Not ratio 3:3 and 4.95:1 149 kW (20*

Density of diesel fuel: 830 g/litre. Conversion from g/kWh and g/hph to litre/h:

$$\frac{g/kWh \times kW}{830} = litre/h$$

$$\frac{g/hph \times hp}{830} = litre/h$$

Your Volvo Penta representative:

TAMD 71 A

6-cylinder, 4-stroke, direct-injected, turbocharged marine diesel with aftercooler – crankshaft power* 257 kW (350 hp)

The TAMD 71A is a powerful, reliable and economical marine diesel. Thanks to Volvo Penta´s extremely comprehensive range of equipment, this engine can be perfectly matched to specific customer and market demands.

The engine block and cylinder heads are made of cast-iron. The cylinder linings incorporate a flame barrier which protects the cylinder head gasket. The cylinder heads are tightened down with 20 screws. The pistons are oil-cooled, which reduces the amount of carbon deposits. The heat exchanger and charge air cooler (aftercooler) matrices are identical, which means that they are fully interchangeable.

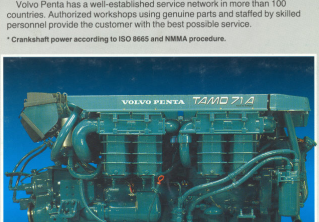
The electrical system is a 24 V system of the plug-in variety with all electrical wiring included. Alternatively a 12 V electrical system may be specified. Automatic heating of the induction air ensures reliable starting at low temperatures.

The injection pump is equipped with a smoke limiting device which reduces the emission of smoke during swift acceleration and under heavy loads. A bypass valve between the turbocharger and the charge air cooler (aftercooler) reduces the emission of white fumes when the engine is started and when it is operated under conditions of low load. An automatic wastegate controls the degree of boost, either through the charge air cooler (aftercooler) or at low speeds directly through the induction manifold.

The coolant pump is gear-operated and the raw water pump is mounted on the front of the timing case for ease of service. The oil filter and oil filler are also mounted on the front of the engine.

Volvo Penta has a well-established service network in more than 100 countries. Authorized workshops using genuine parts and staffed by skilled personnel provide the customer with the best possible service.

*** Crankshaft power according to ISO 8665 and NMMA procedure.**



TAMD 71A with reverse gear Twin Disc MG 507A.

Technical description of the engine:

- Cylinder block and head of alloyed cast-iron
- Replaceable cylinder liners and valve seats
- Nitro-carbonated crankshaft with seven main bearings
- Two cylinder heads
- Forged pistons featuring oil cooling
- Injection pump with centrifugal regulator and smoke limiter
- Feed pump
- Double fine filters
- Freshwater-cooled turbocharger
- Freshwater-cooled exhaust manifold
- UNIQUE bypass valve for charge air cooling. This produces less white fumes when the engine is started and when it is operated under low load conditions
- Engine suspension
- Expansion tank
- 24 V starter motor
- Electrical engine cut-out control 24 V
- Oil pressure and temperature sensors
- Electrical pre-heater element
- Electrical junction box with automatic fuses
- Front-mounted oil filler of spin-on type for ease of service
- Freshwater-cooled oil cooler
- Oil cooler for reverse gear

Extra equipment

Engine:
- Flexible mounting for engine and reverse gear
- Oil filling on right-hand side

Cooling system:
- Heat exchanger with seawater pump or keel cooling
- Seawater filter

Fuel system:
- Single fuel filter/water separator
- Double fuel filter/water separator

Controls:
- Stop solenoid and engine speed control panel for control cables

Electrical system:
- 12 V electrical system
- 12 V/50 A or 24 V/60 AC alternator
- For more demanding charging requirements, it is possible to specify an extra 12 V/130 A or 24 V/100 A alternator
- Instrument panels and connecting cables between the engine and the intrument panel

Power transmission:
- Crankshaft pulley
- Hydraulic pump for steering and other purposes
- Reverse gear:
  Twin Disc MG507-1 ratio 1.10:1 – 2.99:1
  Twin Disc MG507A-1 ratio 1.51:1 – 1.98:1
  Twin Disc MG5061A ratio 1.13:1 – 2.47:1
  Twin Disc MG5061SC ratio 1.15:1 – 2.43:1
  Twin Disc MG509 ratio 2.00:1 – 4.50:1.
- Slip valve for TDMG507-1 and TDMG507A-1

Exhaust system:
- Flexible exhaust pipe
- Dry silencer
- Exhaust elbow, wet or dry

Miscellaneous:
- Tool kit and replacement parts for the engine and reverse gear

Please contact your Volvo Penta dealer for further information.

VOLVO PENTA

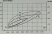
TAMD 71 A

Technical data, TAMD 71A marine engine

ENGINE:

Type designation .... TAMD 71A
No. of cylinders and configuration .... in-line six cylinder unit
Design principle ... 4-stroke direct-injected, turbocharged and charge air cooled diesel engine
Fuel quality ASTM .... 1D or 2D
Cylinder bore, mm (in) 104.7 (4.12)
Stroke, mm (in) 130 (5.12)
Displacement, litres (in³) 6.73 (411)
Compression ratio 14:1
Weight excluding water and oil, kg (lb) 880 (1940)

	APPLICATION		
	LD ✓	MD	HD
Crankshaft power**, kW (hp)	257 (350)	210 (286)	160 (218)
at crankshaft, rpm	2800	2500	2000
Torque***, Nm (ft.lb)	1008 (738)	821 (606)	778 (574)
Spec. fuel consumption***, g/kWh (lb/hph)	238 (0.39)	236 (0.38)	218 (0.35)
REVERSE GEAR			
Type designation	MG507A-1	MG507A	MG509
Ratios	1.51:1	1.51:1	2.00:1
	1.98:1	1.88:1	2.48:1
			2.95:1
			3.83:1
			4.50:1
ENGINE WITH REVERSE GEAR***			
Propeller shaft power**, kW (hp)	246 (335)	203 (276)	154 (210)
at crankshaft, rpm	2800	2500	2000
Weight excluding water and oil, kg (lb)	1041 (2295)	1041 (2295)	1139 (2511)



Propeller shaft power according to ISO 8665

Propeller shaft power curves according to ISO 8665.
A_1 = application LD
A_2 = application MD
A_3 = application HD

Calculated propeller load curves for fixed propellers.
P_1 = exponent 2.0 (planing boats)
P_2 = exponent 2.5 (semi-planing boats)
P_3 = exponent 3.0 (displacement boats)

Definition of the different applications

Curve LD: Light Commercial Applications
Engines with this power rating are intended for applications in which loads and engine speed vary and maximum power is used for a maximum of 1 hour per 12 hour operational period.
Primarily intended for planing boats.
Examples: fire tenders, rescue boats, certain patrol boat applications and charter boats.

Curve MD: Medium Duty Commercial Applications
Engines with this power rating are intended for applications in which load and engine speed vary, and maximum power is utilised for a maximum of 4 hours per 12 hour operational period.
Planing, semi-planing or displacement boats.
Examples: Coastal fishing vessels, patrol boats, police and lootboats, passenger ferries etc.

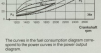
Curve HD: Heavy Duty Commercial Applications
Engines with this power rating are intended for applications in which load and engine speed are usually constant. Maximum power can be utilised constantly.
Mainly displacement boats.
Examples: Large-capacity trawlers, tugboats, ferries and cargo boats in continuous operation.

*ISO 8665 (= SAE J1228 = ICOMIA 28–83)

**Torque and specific consumption relate to stated crankshaft power output.

***The stated data applies to the first reverse gear specified under the "Reverse Gears" heading and the first ratio in the table. Propeller shaft power and weight may vary with different reverse gears and ratios.

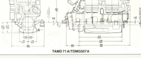
Power, torque and fuel consumption figures refer to a run-in engine and ISO standard atmospheric conditions, 25°, 100 kPa and 30% relative humidity. For practical purposes, the data is similar to the DIN 6271 and BS 5514 standards, with the difference that the fuel has a density of 840 g/litre and a lower energy value of 42,700 kJ/kg.



Fuel consumption diagram

The curves in the fuel consumption diagram correspond to the power curves in the power output diagram.

Dimensions



TAMD 71 A/TDMG507 A

VOLVO PENTA

AB Volvo Penta

All specifications are subject to change without prior notice. The product range may differ in different markets.

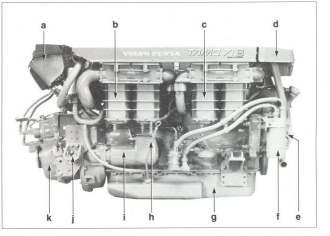
TAMD 71B

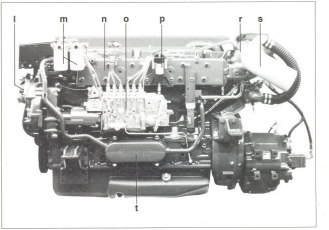
Special Light Duty (SLD), Light Duty (LD), Medium Duty (MD), Heavy Duty (HD)
6-cylinder, 4-stroke, direct injected turbo-charged marine diesel engine with after-cooler – crankshaft power 280 kW (380 hp)*

* Power rating – see General Data

Compact, powerful marine diesel

- A powerful, reliable and economical marine diesel built on the dependable in-line six design.
- Developed for
  - fast planing craft of up to 50 feet
  - planing hulls with great demands on speed and acceleration characteristics
  - semi-planing workboats in Medium duty operation
  - displacement workboats in Heavy duty operation
- Automatic heating of induction air ensures reliable starting at low temperatures.
- Designed for easiest, fastest and most economical installation.
- Well balanced to produce smooth and vibration-free operation with low noise level.
- Comprehensive programme of factory fitted equipment for perfect matching to specific customer requirements, e.g. reverse gears, PTO's, cooling systems, electrical systems.
- Freshwater-cooled oil cooler and piston cooling for maintaining of stable temperature in cylinders and combustion chambers.
- Smoke limiter for reduction of smoke during acceleration and heavy loads.
- A by-pass valve between turbocharger and aftercooler reduces white fume emission during start and low load operation.
- Generously sized air exchange and injection system produces optimum fuel-air mixture and contributes to reduced emission levels and reduced fuel consumption.
- Simple, thus time and cost saving servicing with gear-driven circulation and seawater pumps and location of the oil filter in front of the engine.
- Well-established network of authorized service in more than 100 countries, providing Genuine Parts and skilled personnel to ensure that you enjoy the best possible service.





The engine shown may vary from the standard unit.

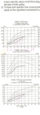
a. Air filter, paper type
b. Aftercooler, watercooled
c. Heat exchanger
d. Thermostat housing
e. Sea water pump
f. Front mounted oil filter
g. Oil sump
h. Oil dipstick
i. Starter motor
j. Adjustable rear engine mounting
k. Reverse gear
l. Extra alternator
m. Twin fuel filter
n. Wet exhaust manifold
o. Injection pump
p. Stop solenoid
r. Turbo charger
s. Exhaust elbow, dry type
t. Oil cooler

VOLVO PENTA

General data

Type designation	TAMD 71B
No of cylinders	6
Configuration	4-stroke direct-injected turbocharged with aftercooler diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	104.7 (4.12)
Stroke, mm (in)	130 (5.12)
Displacement, litres (in³)	6.73 (411)
Compression ratio	14:1
Dry weight, kg (lb)	880 (1940)
Crankshaft output, [1] at crankshaft speed, r/min	
SLD, kW (hp) (2600 r/min)	280 (380)
LD, kW (hp) (2600 r/min)	257 (350)
MD, kW (hp) (2500 r/min)	210 (286)
HD, kW (hp) (2000 r/min)	160 (218)
Torque [2]	
SLD, Nm (ft. lb)	1027 (757)
LD, Nm (ft. lb)	1000 (738)
MD, Nm (ft. lb)	821 (606)
HD, Nm (ft. lb)	776 (574)
Spec. fuel consumption [2]	
SLD, g/kWh (lb/hph)	230 (0.37)
LD, g/kWh (lb/hph)	238 (0.38)
MD, g/kWh (lb/hph)	236 (0.38)
HD, g/kWh (lb/hph)	218 (0.35)
Propeller shaft power kW (hp) at crankshaft speed	271 (367)

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.
2) Torque and specific fuel consumption apply at the specified crankshaft output.



Basic engine equipment

Flywheel housing, flange size SAE 2
Engine brackets
Freshwater cooled turbocharger and exhaust manifold
Seawater cooled aftercooler
Air cleaner, paper type
Fuel injection pump with centrifugal regulator and smoke limiter
Feed pump and double fine fuel filters
Oil and fuel filters of spin-on type
Fresh water cooled oil cooler
Starter motor 24 V
Oil separating filter for crankcase ventilation
Pump coupling cover
Two-pole electrical system, 24 V
Alternator 24 V/60 A
Stop solenoid, 24 V
Pre-heater element, incl relay
Oil pressure and coolant temperature senders
Alarm switches for oil pressure and coolant temperature
Electrical terminal box with semi-automatic fuses
Flywheel
Attachment for control cable, type 333 or 443
Engine frame

Technical description

- Engine block and cylinder heads are made of cast iron alloy.
- Two cylinder heads. A flame barrier protects the cylinder head gasket.
- Replaceable cylinder liners and valve seatings.
- Nitrocarbonized crankshaft with seven bearings
- Oil-cooled, forged aluminium pistons.
- Three piston rings the upper of which is of the keystone type.
- Identical matrix for heat exchanger and aftercooler make them fully interchangeable.
- Induction air heater for reliable low temperature starting.

Fuel system

- Injection pump with centrifugal governor and smoke limiter
- Fuel feed pump
- High pressure fuel lines
- Twin fine fuel filters

Cooling system

- Seawater-cooled charge air cooler
- Gear-driven freshwater pump and front mounted sea water pump with neoprene impeller.

Lubrication system

- Fresh water cooled oil cooler
- Frontmounted oil filter of spin-on type

Turbo-charger

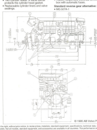
- Freshwater cooled turbo-charger
- By-pass valve between the turbocharger and aftercooler - less white smoke on starting and low load operation.

Electrical system

- 12 or 24 V electrical system incl alternator, 60 or 40 A respectively, and charging sensor.
- Rubber suspended electrical terminal box with automatic fuses.

Standard reverse gear alternative:

- MG 507A-1



AB Volvo Penta
S-405 08 Göteborg, Sweden

TAMD 72

6-cylinder, 4-stroke, direct injected turbocharged marine diesel with aftercooler – crankshaft power* 316 kW (430 hp)

Compact, powerful marine diesel
The TAMD 72 is a powerful, reliable and economic marine diesel engine which has been specially developed for powering fast planing and semi-planing pleasure craft of up to 50 feet.

High torque
Thanks to the turbo and the wastegate valve, the engine produces high torque at low engine speeds. This produces a fast response and excellent acceleration properties over a wide engine speed range.

Good endurance and low noise level
Volvo's in-line six is well-balanced to produce smooth and vibrationfree operation with a low noise level. The torsionally-rigid engine block and crank movement are generously designed to cope with many demanding hours of use.

To maintain a stable temperature in the cylinders and combustion chambers there is a freshwater-cooled oil cooler and piston cooling.

The engine is also equipped with replaceable cylinder liners and valve seats to ensure maximum wear strength and service life.

A low-profile cast aluminium sump is also standard.

Low emission levels
A generously-sized air exchange and injection system with 5-hole injectors produces the optimum fuel-air mixture. Together with efficient combustion this contributes to low emission levels and low fuel consumption.

Sacrificial zinc anodes to counteract corrosion and a two-pole electrical system are standard.

Simple maintenance
The circulation pump and the seawater pump are gear-driven. This fact, together with the location of the oil filter in front of the transmission cover, contributes to simple service and maintenance.

The heat exchanger and the turbo cooler are designed for simple cleaning if this should be necessary.

Large service network
Volvo Penta has a comprehensive service network in more than 100 countries. Authorised workshops with original spares and qualified staff provide extra security for the best service.

* Crankshaft power according to ISO 8665.

TAMD 72 fitted with the Twin Disc MG507A reverse gear.

The engine illustrated above is not entirely identical to production standard engines.

Technical description of the engine
- Cylinder block and cylinder head made of cast iron alloy.
- Two cylinder heads.
- Replaceable cylinder liners and valve seats.
- Nitrocarburised crankshaft with seven bearings.
- Oil-cooled forged aluminium pistons.
- Three piston rings of which the upper ring is of the keystone type.
- Injection pump with centrifugal governor and smoke limiter. The operating level has low setting forces.
- Fuel supply pump.
- High pressure fuel lines.
- Five-hole injectors.
- Twin fine filters.
- Seawater-cooled turbo air cooler.
- Freshwater-cooled oil cooler.
- Heat exchanger cooler with seawater pump.
- Front-mounted spin-on oil filter.
- Freshwater-cooled turbo.
- 12 V or 24 V electrical system.
- Electrical terminal box with automatic fuses.
- Electrical stopping device.

Extra equipment

Engine:
- Flexible mountings for the engine and reverse gear.
- Oil bilge pump.

Cooling system:
- Seawater filter.
- Hot water supply.
- Separate hot water tank.

Fuel system:
- Single fuel filter/water separator.
- Twin fuel filters/water separator.

Electrical system:
- Alternator, 12 V 60 A or 24 V 60 A.
- 12 V 130 A or 24 V 100 A extra alternators can be supplied if there are high charging loads.
- Instrument panel.
- Electrical air preheating.
- Cable harness in different lengths.

Power transmission:
- Twin Disc MG 507, 507A reverse gear, ratios: 1.1, 1.58:1, 1.99:1.
- Crankshaft pulley.
- Hydraulic pump for steering and other duties.

Exhaust system:
- Exhaust elbow, wet.
- Exhaust riser.

Miscellaneous:
- Tool kit plus set of spare for the engine.

Contact your local Volvo Penta dealer for further information.

25 MAYIS 1989

VOLVO PENTA

TAMD 72

Technical data for the TAMD 72
Marine power unit for pleasure craft

ENGINE

Type designation	TAMD72
Number of cylinders and configuration	in-line six
Method of operation:	4-stroke, direct injected, turbocharged diesel engine with aftercooler
Fuel grade ASTM	1D or 2D
Bore, mm (in)	104.7 (4.12)
Stroke, mm (in)	130 (5.12)
Displacement (cu.in)	6.73 (411)
Compression ratio	15.6:1
Weight, less water and oil, kg (lb)	890 (1962)
Crankshaft power** kW (hp)	316 (430)
at crankshaft speed, r/min	2600
Torque***, Nm	1300
Specific fuel consumption*** g/kWh	255
Optimum specific fuel consumption at full load, g/kWh	225

REVERSE GEAR

Type designation	MG 507A
Gear ratios	1:1
	1.51:1
	1.77:1
	1.98:1

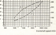
ENGINE WITH REVERSE GEARS **

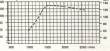
Propeller shaft power** kW (hp)	303 (412)
at crankshaft speed, r/min	2600
Weight, less water and oil, MG 507A kg (lb)	1046 (2306)

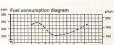
** ISO 8665 (=SAE J1228=ICOMIA 28-83)
*** Torque and specific consumption apply at the specified crankshaft power.
**** Ratings apply at the first reverse gear specified under "reverse gear" and the first specified ratio. Propeller shaft power and weight can differ for other reverse gears and ratios.

The power, torque and fuel consumption ratings are based on an engine that has been run in according to the ISO standard atmospheric conditions, 25°, 100 kPa and 30% relative humidity. For practical purposes this data also applies to DIN 6271 and BS 5514, but the lower heat value of the fuel is 42,700 kJ/kg and its density is 840 g/litre.

Definition of types of operation: PD = Pleasure Craft Duty
Engines with this power setting are intended exclusively for use in pleasure craft. Normal pleasure craft operation means that the boat is used by the owner for recreation purposes.





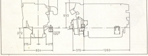


Propeller shaft curves according to ISO 8665
A1 = Full load power curve

Estimated propeller load curves for fixed propeller.
P1 = exponent 2.5 (planing boats)

The curves on the fuel consumption diagram correspond to the full load power curve.

Dimensions *TAMD 72 with reverse gear MG 507A*



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

Reservation for changes.
The product range may vary from market to market.

TAMD 72WJ

Special Light Duty, Exclusively for waterjet
6-cylinder, 4-stroke, direct injected, turbo-charged marine diesel engine with after-cooler – crankshaft power* 331 kW (450 hp)

* Power rating – see General Data

Exclusively for waterjet applications

The TAMD 72WJ is a high-performance engine with a very long service life. The engine has been specially developed for waterjet applications in fast planing craft.

The advantageous power – to weight ratio makes it excellent for both single and twin installation.

High power att full speed
As a waterjet has little resistance at low speed, the turbo-charger is designed to deliver high power at full speed and is not required to develop high boost at low speed.

Durability and low noise levels
The Volvo in-line six cylinder engine is a well balanced unit with even, vibration-free operation and low noise levels which together, provide the highest level of onboard comfort.

To maintain a stable working temperature in both cylinders and combustion chambers, the engine is equipped with freshwater-cooled oil cooler and piston cooling.

The engine is also fitted with replaceable cylinder liners and valve seatings to ensure maximum durability and service life of the engine.

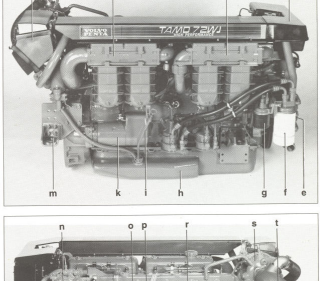
Low exhaust emission levels
Efficient air-flow and a high pressure injection system ensure an optimum mixture of fuel and air. This greatly contributes to reduced noxious emission levels.

Marine electrics
The two pole electrical system is specifically adapted to demanding marine environments with remote and flex-mounted senders and moisture proof connectors.

Ease of service and maintenance
Gear-driven sea water and fresh water pumps together with a front-mounted oil filter contribute to ease of service and maintenance.

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

Note: This engine **is not** suitable for propeller installations.



The engine shown may vary from the standard unit.

a. Air filter, paper type
b. Aftercooler, watercooled
c. Heat exchanger
d. Thermostat housing
e. Sea water pump
f. Front mounted oil filter
g. By-pass oil filter
h. Oil sump
i. Oil dipstick
k. Starter motor
m. Adjustable rear engine mounting
n. Twin fuel filter
o. Wet exhaust manifold
p. Injection pump
r. Stop solenoid
s. Turbo-charger
t. Exhaust elbow, wet type
u. Oil cooler
v. Fuel pipes for tank connection

03 NISAN

VOLVO PENTA

General data

Type designation	TAMD 72WJ
No of cylinders	6
Configuration	4-stroke direct-injected turbo-charged and charge air cooled diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	104.7 (4.12)
Stroke, mm (in)	130 (5.12)
Displacement, litres (in³)	6.73 (411)
Compression ratio	15.6:1
Dry weight, kg (lb)	890 (1962)
Crankshaft output, at crankshaft speed, r/min	
SLD, kW (hp) (2600 r/min)[1]	331 (450)
SLD, kW (hp) (2600 r/min)[2]	324 (440)
Torque [3]	
SLD, Nm (ft. lb)	1250 (922)
Spec. fuel consumption [3]	
SLD, g/kWh	230

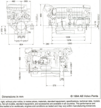
1) Technical data according to ISO 3046 Fuel Stop Power. Fuel 25°C (77°F)
2) Technical data according to ISO 3046 Fuel Stop Power. Fuel 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre at 15°C (60°F)
3) Torque and specific fuel consumption apply at the specified crankshaft output.

Engine equipped with

Flywheel housing, flange size SAE 2
Expansion tank
Engine brackets
Freshwater cooled turbo-charger and exhaust manifold
Watercooled aftercooler
Air cleaner, paper type
Fuel injection pump with centrifugal regulator and smoke limiter
Feed pump and double fine fuel filters
Oil filter of spin-on type
Fresh water cooled oil cooler
Starter motor 24 V
Heat exchanger
Alternator 24 V
Engine frame

Technical features in brief

- Engine block and cylinder heads are iron castings.
- Two cylinder heads.
- Replaceable cylinder linings and valve seats.
- Nitrocarburized crankshaft with seven bearings.
- The cylinder heads incorporate a flame barrier which protects the cylinder head gasket. The cylinder heads are tightened with 20 bolts.
- Oil cooled, forged pistons, reduces carbon deposits. Keystone rings minimize oil consumption.
- Injection pump with centrifugal governor and smoke limiter. Low setting forces.
- Waste-gate controlled turbo charger for the degree of boost, either through the aftercooler or, at low speeds, directly through the induction manifold.
- Identical matrix for heat exchanger and aftercooler make them fully interchangeable.
- Plug-compatible electrical system.
- Gear wheel driven coolant pump and front mounted raw water pump allows easy service.
- Front mounted easy serviceable spin-on oil filter and filler.



Dimensions in mm

Ref. No. 7736089-1 Eng

AB Volvo Penta
S-405 08 Göteborg, Sweden

Volvo Penta Inboard Diesel

TAMD73P EDC

6-cylinder, 4-stroke, direct-injected, turbocharged marine diesel engine with aftercooler – crankshaft power* 316 kW (430 hp)

* Power rating – see Technical Data

Compact performance

The TAMD73P EDC is a powerful, reliable and economical marine diesel engine, specially developed for fast planing and semi-planing craft. The installation volume is approx. 30% less than that of the preceding engine.

EDC – innovative technology in diesel control and monitoring

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 engine is turbocharged and aftercooled, with superior torque characteristics, low fuel consumption, excellent acceleration and load variation response.

Higher on-board comfort

The Volvo Penta in-line six cylinder engine is a traditional well-balanced unit with powerfully dimensioned crankshaft bearings. This ensures smooth, vibration-free operation and low noise levels.

The EDC system gives improved engine response with lower and more stable idling.

The electrical control levers are operated more smoothly and precisely, requiring much less force.

Automatic twin engine synchronization reduces noise and vibration level.

High-pressure injection in combination with the EDC system optimizes fuel-air mixture. This greatly contributes to more efficient combustion with higher power and reduced noxious exhaust emissions.

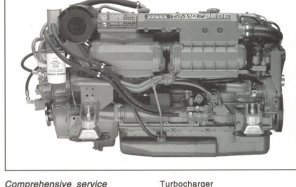
Combined, these features provide the highest level of onboard comfort.

Easy installation and maintenance

Plug-in electrical connectors instead of conventional cabling. The EDC system makes planning and performing multistation installations easy.

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

TAMD73P EDC with MG507A-E reverse gear



Comprehensive service network

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

Technical description:

Engine and block
- Cylinder block and cylinder heads made of cast iron alloy
- Two cylinder heads. A flame barrier protects the cylinder head gasket.
- Replaceable wet cylinder liners and valve seats
- Nitrocarburized crankshaft with seven main bearings
- Oil-cooled forged aluminum pistons
- Three piston rings, upper of keystone type

Fuel system
- Injection pump with electronic actuator
- EDC unit for precise engine governing
- Five-hole injectors
- Twin fine fuel filters

Cooling system
- Seawater-cooled aftercooler
- Tubular heat exchanger
- Gear-driven seawater pump

Lubrication system
- Freshwater-cooled oil cooler
- Side-mounted spin-on oil filter

Turbocharger
- Freshwater-cooled turbocharger with wastegate

Electrical system
- 12 V or 24 V electrical system incl. alternator (60A) with charging sensor
- Rubber suspended electrical terminal box with semi-automatic fuses

Equipment:

Engine
- Flexible mountings
- Oil bilge pump
- Rear-mounted oil filters

Fuel system
- Single or twin fuel filters/water separators

Cooling system
- Hot water outlet
- Separate expansion tank

Electrical system
- 12V 130A or 24V 100A extra alternators
- Various instrument panels
- Cable harness in different lengths
- EDC Monitoring panels
- Multistation unit
- Electrical control lever

Power transmission
- MG507-E, 507A-E, 5061A-E, 5062V-E, IRM301A-D and 302V-LD-EB reverse gear, electrically shifted
- Extra crankshaft pulley
- Hydraulic pump for steering and other duties

Exhaust system
- Exhaust elbow, wet
- Exhaust riser

VOLVO PENTA

TAMD73P EDC

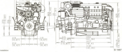
Technical Data

Engine designation .... TAMD73P EDC
Number of cylinders and configuration .... in-line 6
Method of operation .... 4-stroke, direct-injected, turbocharged diesel engine with aftercooler
Bore, mm (in.) 104.7 (4.12)
Stroke, mm (in.) 130 (5.12)
Displacement, l (cu. in.) 6.73 (411)
Compression ratio 15.6:1
Dry weight, kg (lb) 850 (1873)
Crankshaft power, kW (hp) 2600 rpm[1]* 316 (430)
Prop shaft power with MG507A-E, kW (hp)[1]* 303 (412)
Torque, Nm (ft.lb) 2600 rpm[1] 1161 (856)
Recommended fuel to conform to .... ASTM-D975 No 1-D & 2-D
EN 590
JIS KK 2204
Specific fuel consumption, g/kWh (lb/hph) 2600 rpm 257 (0.42)
Weight with reverse gear MG507A-E excl. water and oil, kg (lb) 1029 (2267)

Technical data according to ISO 3046 Fuel Stop Power.
Fuel with lower calorific value of 42700 kJ/kg and density of 840 g/litre at 15°C (60°F).
1) Fuel temperature 5-33 °C (41-131 °F)
* 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 TAMD73P EDC with MG507A-E (from installation drawing No. 3590251)



Not for installation

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

Ref. No. 7736365-1 Eng 7-1997

VOLVO PENTA INBOARD DIESEL

TAMD74A

6-cylinder, 4-stroke, direct-injected, turbocharged marine diesel engine with aftercooler – crankshaft power* 154–257 kW (209–350 hp)

* Power rating – see Technical Data

Reliable and powerful

The TAMD74A is a powerful, reliable and economical marine diesel built on the dependable in-line six design.

Developed for Medium and Heavy duty operation for displacement, semi-planing and planing craft.

Durability and low noise levels

Designed for easiest, fastest and most economical installation.

Well-balanced to produce smooth and vibration-free operation with low noise level.

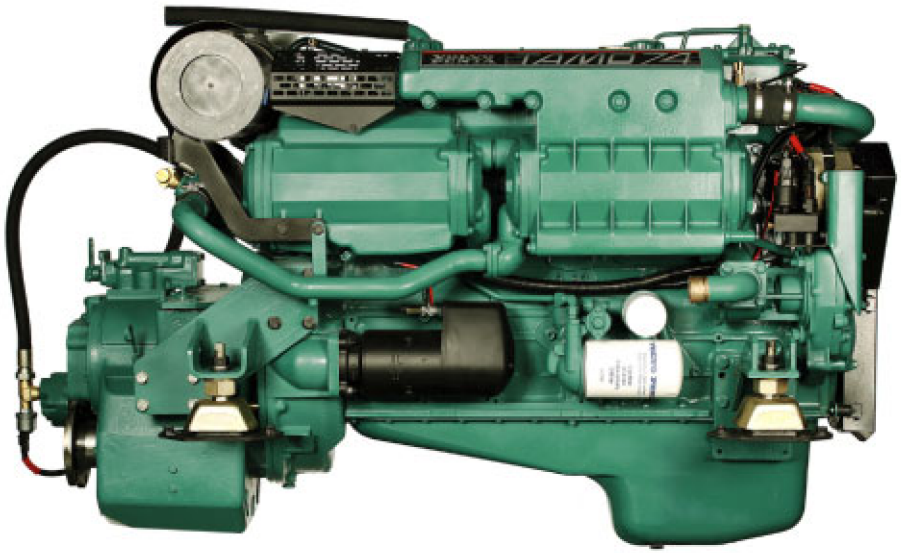
Comprehensive program of factory-fitted equipment for perfect matching to specific customer requirements, e.g. reverse gears, PTO's, cooling systems, electrical systems.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling and freshwater-cooled oil cooler. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission levels

The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption. The TAMD74A is certified according to IMO – the R2 (257 kW) according to IMO US/EPA.

TAMD74A
with MG5091DC



Ease of service and maintenance

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. These service centers offer genuine Volvo Penta parts as well as skilled personnel to ensure the best possible service.

Technical description:

Engine and block

- Cylinder block and cylinder heads made of cast iron alloy
- Two cylinder heads
- Replaceable wet cylinder liners and valve seats/guides
- Nitrocarburized crankshaft with seven main bearings
- Oil-cooled forged aluminum pistons
- Three piston rings, upper of keystone type

Lubrication system

- Freshwater-cooled oil cooler
- Side-mounted full-flow and by-pass filter of spin-on type

Fuel system

- Fuel injection pump with centrifugal governor, and fuel feed pump
- High pressure fuel lines
- Twin fine fuel filters of spin-on type
- Fuel shut-off valve, electrically operated
- 7-hole injectors

Turbocharger

- Freshwater-cooled turbocharger

Cooling system

- Tubular heat exchanger with integrated expansion tank or adapted for 1- and 2-circuit keel cooling
- Seawater-cooled tubular aftercooler
- Belt-driven seawater pump

Electrical system

- 12 V or 24 V electrical system incl. alternator (60A) with charging sensor
- Rubber suspended electrical terminal box with semi-automatic fuses

VOLVO PENTA

TAMD74A

Technical Data

Engine designation	**TAMD74A**
No. of cylinders and configuration	in-line 6
Method of operation	4-stroke, direct-injected, turbocharged diesel engine with aftercooler
Bore, mm (in.)	107 (4.21)
Stroke, mm (in.)	135 (5.31)
Displacement, l (in³)	7.28 (444)
Compression ratio	17.2:1
Dry weight, kg (lb)	860 (1896)
Weight with reverse gear MG5075A, excl. water and oil, kg (lb)	1045 (2304)
Crankshaft power,	
Rating 2, kW (hp) 2200 rpm*	257 (350)
Rating 2, kW (hp) 2200 rpm	210 (287)
Rating 1, kW (hp) 2100 rpm	184 (250)
Rating 1, kW (hp) 2000 rpm	160 (218)
Rating 1, kW (hp) 1800 rpm	154 (209)
Torque,	
Rating 2, Nm (lbf.ft) 2200 rpm	1117 (824)
Rating 2, Nm (lbf.ft) 2200 rpm	912 (673)
Rating 1, Nm (lbf.ft) 2100 rpm	836 (617)
Rating 1, Nm (lbf.ft) 2000 rpm	765 (564)
Rating 1, Nm (lbf.ft) 1800 rpm	819 (604)
Recommended fuel to conform to	ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204
Specific fuel consumption,	
R 2, g/kWh (lb/hph) 2200 rpm	229 (0.371)
R 2, g/kWh (lb/hph) 2200 rpm	222 (0.360)
R 1, g/kWh (lb/hph) 2100 rpm	222 (0.360)
R 1, g/kWh (lb/hph) 2000 rpm	222 (0.360)
R 1, g/kWh (lb/hph) 1800 rpm	209 (0.339)

Fuel temperature 40°C (104°F)
Technical data according to ISO 3046 Fuel Stop Power and ISO 8665. With fuel having an LHV of 42,700 kJ/kg and density of 840 g/liter at 15°C (60°F). Merchant fuel may differ from this specification which will influence engine power output and fuel consumption.

N.B. The product can also be used in an application with a higher rating than stated, e.g. R2 can be used for R3, R4 or R5.

The engine is certified according to IMO.
* R2 (257 kW) is certified according to IMO US/EPA.

Optional equipment:

Engine
- Flexible suspension for engine and reverse gear

Lubrication system
- Electrically and manually operated oil drain pump
- Rear-mounted full-flow oil filters of spin-on type
- Shallow oil sump
- Classifiable oil system

Fuel system
- Single or twin fuel filters/water separators
- Classifiable fuel system

Exhaust system
- Exhaust elbow, wet or dry
- Exhaust riser, wet
- Exhaust boot, wet
- Silencer, dry
- Flexible compensator, dry

Cooling system
- Seawater strainer
- Hot water outlet
- Separate expansion tank

Electrical system
- 12V 130A or 24V 100A extra alternators
- Various instrument panels
- Cable harness in different lengths
- Classifiable electric equipment acc. to IP44

Power transmission
- PTO crankshaft front end, type stub shaft incl. universal bracket
- Hydraulic pump for steering and other duties

Reverse gear
- MG5075SC and MG5091SC/DC

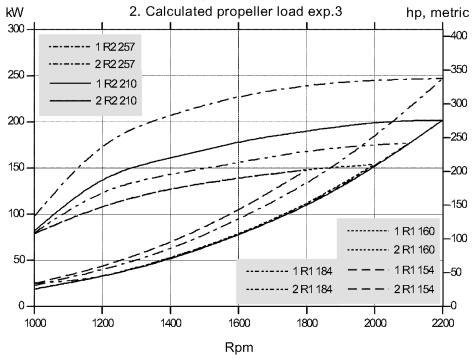
Other equipment
- Flush and bilge pump
- Belt guard
- White-painted engine and reverse gear
- Engine heater 2000 W, separately fitted

Contact your local Volvo Penta dealer for further information.

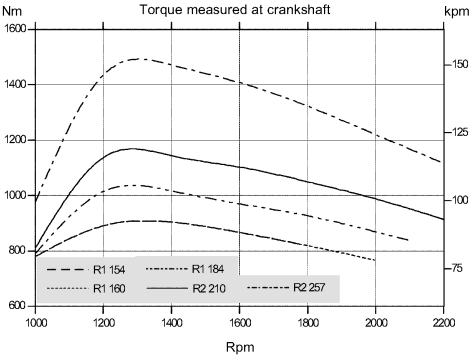
Not all models, standard equipment and accessories are available in all countries. All specifications are subject to change without notice.

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

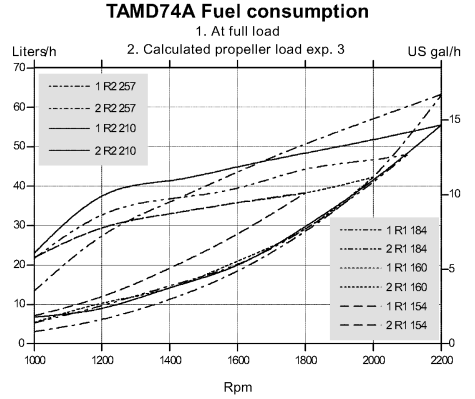
TAMD74A Power



TAMD74A Torque

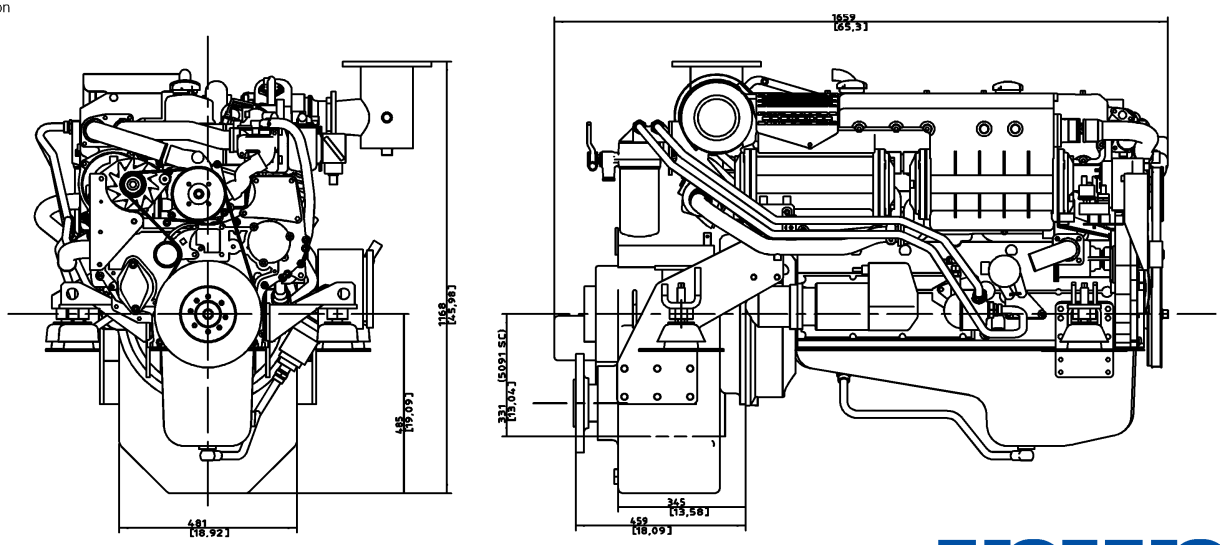


TAMD74A Fuel consumption



Dimensions TAMD74A with 5091SC/DC

Not for installation



AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com

VOLVO PENTA INBOARD DIESEL

TAMD74LEDC

6-cylinder, 4-stroke, direct-injected, turbocharged marine diesel engine with aftercooler – crankshaft power* 316 kW (430 hp)

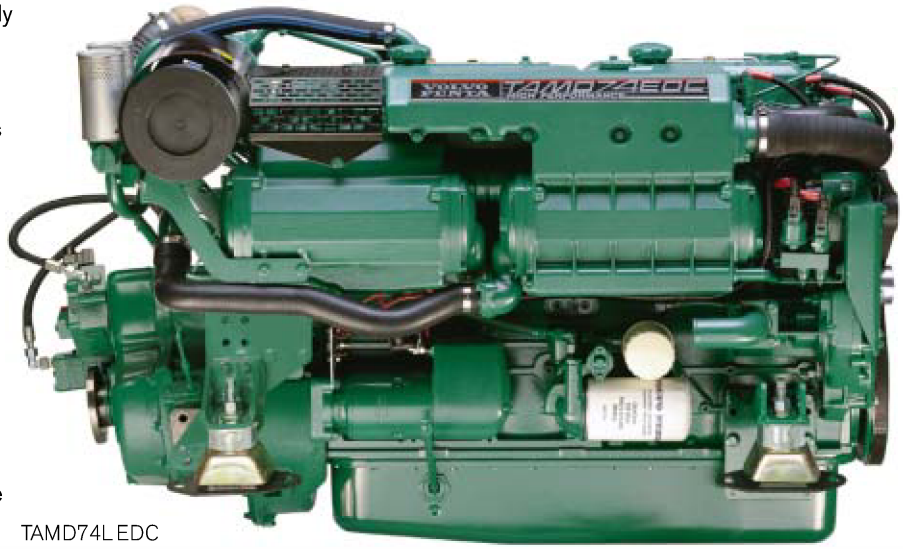
* Power rating – see Technical Data

Powerful performance

The TAMD74L EDC marine diesel is specially developed for fast planing and semi-planing craft. The engine's high output combined with a rich torque curve ensures excellent performance, acceleration and response. Its compact dimensions optimizes boat layout, minimizes impact on living space onboard and improves service accessibility.

EDC – optimizing engine performance

EDC (Electronic Diesel Control) – an electronically controlled processing system that determines the precise quantity of fuel required at any given moment. The EDC system takes full account of variation in operating temperature, air pressure and other contributing factors, which optimizes engine performance and efficiency, reducing fuel consumption and emissions.



TAMD74L EDC
with MG5075A-E

Enhanced onboard comfort

The Volvo Penta in-line six cylinder engine is an uncomplicated design with a minimum of moving parts, specially developed for highly demanding marine applications. The engine is a well-balanced unit with powerfully dimensioned crankshaft bearings. This ensures smooth, vibration-free operation and low noise levels.

The EDC system improves engine response with lower and more stable idling.

The electrical control levers are operated more smoothly and precisely, requiring much less force.

Automatic twin engine synchronization reduces noise and vibration levels, increasing service life of engine.

High-pressure injection in combination with six-hole nozzles and the EDC system optimizes fuel-air mixture. This greatly contributes to more efficient combustion with higher power and reduced noxious exhaust emissions. The engine is certified according to IMO and IMO US/EPA.

Easy installation and maintenance

Plug-in electrical connectors, compact dimensions and the EDC system ensures an easy, simple and time-saving installation. The EDC system's self-diagnostic facility and easily accessible service and maintenance points contributes to the ease of service of the engine.

Worldwide service support in more than 100 countries

The Volvo Penta Parts and service dealer network is a truly international operation with authorized service dealers around the world. These service centers offer Genuine Volvo Penta Parts as well as skilled personnel to ensure the best possible service. Continuous product and service training ensures that our products are well supported.

Technical description:

Engine and block

- Cylinder block and cylinder heads made of cast iron alloy
- Two cylinder heads
- Replaceable wet cylinder liners and valve seats/guides
- Nitrocarburized crankshaft with seven main bearings
- Oil-cooled forged aluminum pistons
- Three piston rings, upper of keystone type

Lubrication system

- Freshwater-cooled oil cooler
- Side-mounted full-flow and by-pass filter of spin-on type
- Oil dipsticks on both sides of oil sump

Fuel system

- Fuel injection pump incl. fuel feed pump and electronically controlled actuator
- Electronically controlled central processing system (EDC – Electronic Diesel Control) with integrated stop function
- Compensation to allow max output at fuel temperatures of 5–55°C (41–131°F)
- Six-hole injectors
- Twin fine fuel filters of spin-on type

Turbocharger

- Freshwater-cooled turbocharger with wastegate

Cooling system

- Tubular heat exchanger with integrated expansion tank or 2-circuit keel cooling
- Seawater-cooled tubular aftercooler
- Gear-driven seawater pump

Electrical system

- 12 V or 24 V electrical system incl. alternator (60A) with charging sensor
- Rubber suspended electrical terminal box with semi-automatic fuses

VOLVO PENTA

TAMD74LEDC

Technical Data

Engine designation	**TAMD74L EDC**
No. of cylinders and configuration	in-line 6
Method of operation	4-stroke, direct-injected, turbocharged diesel engine with aftercooler
Bore, mm (in.)	107 (4.21)
Stroke, mm (in.)	135 (5.31)
Displacement, l (in³)	7.28 (444)
Compression ratio	17.2:1
Dry weight, kg (lb)	860 (1896)
Weight with reverse gear MG5075A-E, excl. water and oil, kg (lb)	1045 (2304)
Crankshaft power, kW (hp) 2500 rpm	316 (430)
Propshaft power with MG5075A-E, kW (hp) 2500 rpm	303 (412)
Torque, Nm (lbf.ft) 2500 rpm	1202 (887)
Recommended fuel to conform to	ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204
Specific fuel consumption, g/kWh (lb/hph) 2500 rpm	229 (0.372)

Fuel temperature 5–55°C (41–131°F).
Rating: 5
Technical data according to ISO 3046 Fuel Stop Power and ISO 8665. Fuel with lower calorific value of 42,700 kJ/kg and density of 840 g/liter at 15°C (60°F). Merchant fuel may differ from this specification which will influence engine power output and fuel consumption.
The engine is certified according to IMO and IMO US/EPA.

Optional equipment:

Engine
- Flexible suspension for engine and reverse gear

Lubrication system
- Electrically operated oil drain pump
- Rear-mounted full-flow and by-pass oil filters of spin-on types

Fuel system
- Single or twin fuel filters/water separators

Exhaust system
- Exhaust elbow, wet
- Exhaust riser, wet
- Exhaust boot, wet
- Exhaust elbow, dry
- Silencer, dry
- Flexible compensator, dry

Cooling system
- Seawater strainer
- Hot water outlet
- Separate expansion tank

Electrical system
- 12V 130A or 24V 100A extra alternators
- Various instrument panels
- Cable harness in different lengths
- EDC Monitoring panels
- Multistation unit
- Electrical control lever

Power transmission
- PTO crankshaft front end, type stub shaft incl. universal bracket
- Hydraulic pump for steering and other duties

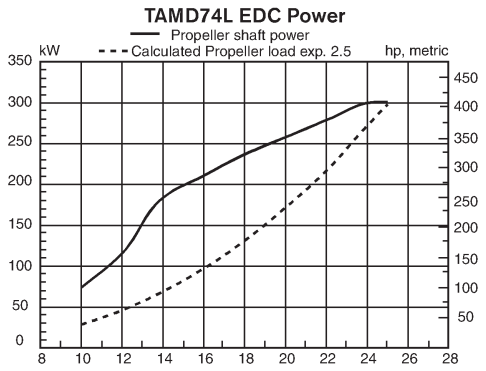
Reverse gear
- MG5075A-E, MG5085A-E, MG5085SC-E, ZF 280A-EB, ZF 301A-EB, ZF 280IV-EB and ZF 302IV-EB, electrically shifted

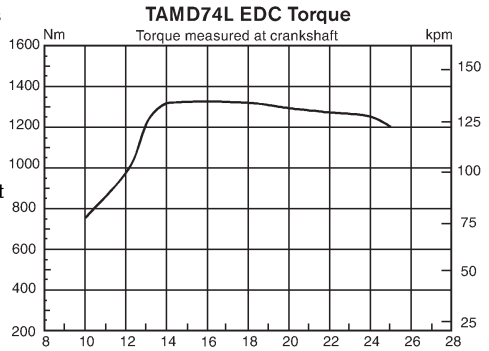
Other equipment
- Belt guard
- White-painted engine and reverse gear

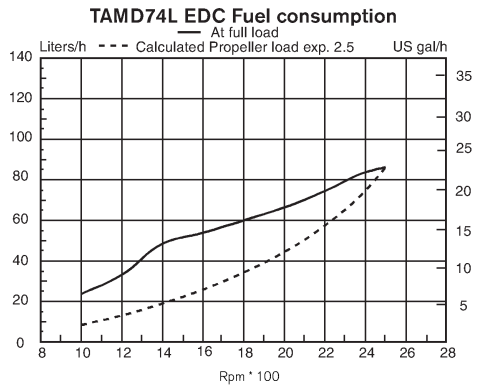
Contact your local Volvo Penta dealer for further information.

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.

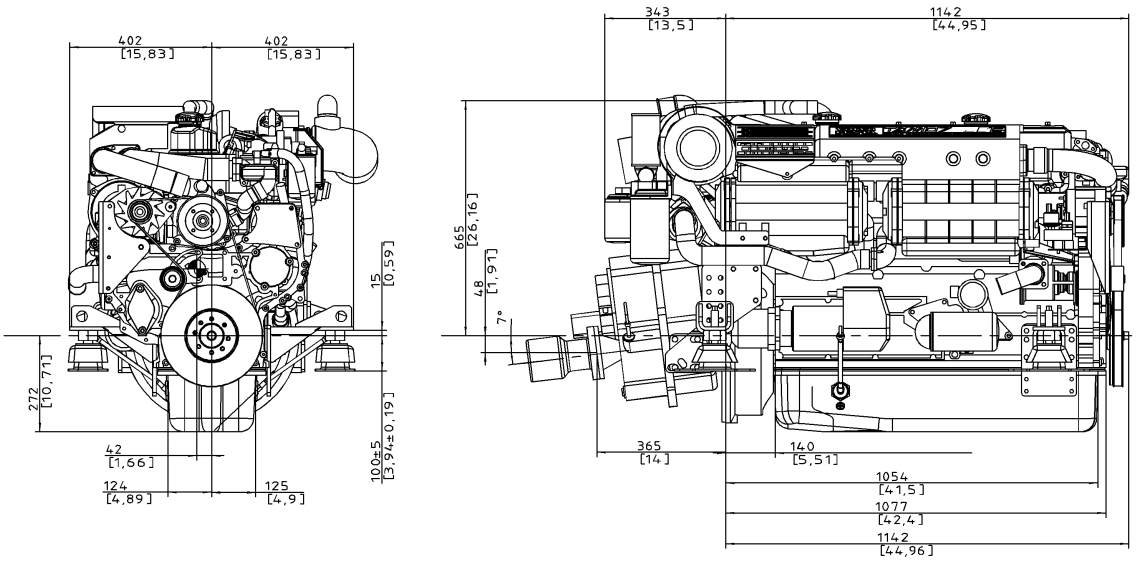






Dimensions TAMD74L EDC with MG5075A-E

Not for installation



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