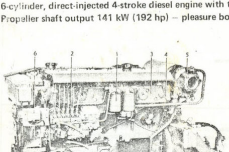
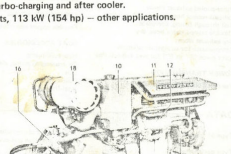
TAMD 60A

6-cylinder, direct-injected 4-stroke diesel engine with turbo-charging and after cooler.
Propeller shaft output 141 kW (192 hp) – pleasure boats, 113 kW (154 hp) – other applications.





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.
Two compression rings and one oil scraper ring. All rings are 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 gear-driven. Overhead valves with replaceable valve seats.
Tool kit is supplied.

FUEL SYSTEM – Injection pump with centrifugal governor (2) 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 heat exchanger and expansion tank (11) removable, tubular type insert. 1" sea-water pump (15). The engine temperature is regulated by means of two thermostats.

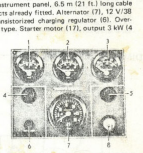
LUBRICATING SYSTEM – Pressure lubricating system with double lubricating oil filters of spin-on type (14).
Sea-water cooled oil cooler (12). Lubricating oil sump (8).
Oil dip-stick on right or left side.

SUPERCHARGING SYSTEM – Exhaust gas driven turbo-compressor for supercharging the intake air (5). Fresh-water cooled turbine housing. Sea-water cooled aftercooler (10) for cooling compressor air, which gives a higher degree of efficiency. Air cleaner with changeable filter (18).

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

ELECTRICAL SYSTEM – Two-pole 12 V electrical system in marine design, complete instrument panel, 6,5 m (21 ft.) long cable harness with plug-in contacts already fitted. Alternator (7), 12 V/38 A (460 W), with fully transistorized charging regulator (6). Overvoltage protector of 24 V type. Starter motor (17), output 3 kW (4 h.p.).

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



ENGINE MOUNTING – The engine is supplied with engine brackets (13) for fixed mounting.

POWER TRANSMISSION – The engine is supplied with hydraulically operated reverse gear equipped with oil cooler (16) and pre-drilled propeller shaft flange according to the following alternatives:
Alt. 1. TD MG 502 (10° down angle) red. 1.5:1 for L-H and R-H prop. (9)
Alt. 2. TD MG 502 (10° down angle) red. 2:1 for L-H and R-H prop. (9)
Alt. 3. TD MG 502 (10° down angle) red. 2.5:1 for L-H and R-H prop. (9)
Alt. 4. BW 73 CR red. 2:1 for R-H prop.
Alt. 5. BW 73 CR red. 3:1 for L-H prop.
Alt. 6. BW V-drive 10–05 red. 1.5:1 for L-H prop.
Alt. 7. BW V-drive 10–05 red. 1.5:1 for R-H prop.
Alt. 8. BW V-drive 10–05 red. 2:1 for L-H prop.
Alt. 9. BW V-drive 10–05 red. 2:1 for R-H prop.

EXTRA EQUIPMENT

FUEL SYSTEM

Water-separating fuel filter with glass or metal housing

COOLING SYSTEM

Fresh-water filter
Cooling-water intake complete
Separate expansion tank
Sea-water filter

EXHAUST SYSTEM

Water-cooled exhaust elbow
Exhaust rubber hose for wet exhaust line
Hull through-fitting, complete
Flexible compensator hose, dry
Dry exhaust elbow
Compensator for straight installation
Joint piece (6° to 5°) for wet exhaust line

POWER TRANSMISSION

Vee-belt pulley for crankshaft

ELECTRICAL SYSTEM

Alternator, 24 V, 25 A or 60 A
Charging distributor for charging 2-battery system
Master switch
Instrument panel with, among others, hour-meter, 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

Hydraulic pump
Oil scavenging pump, electrical
Oils
Paints
Anti-freeze

CONTROLS AND CONTROL SYSTEM

VP single-control lever for both speed and forward-reverse operation, top-mounted or side-mounted. Single or twin installation
S-type control. Top-mounted, only speed regulation
Control cables
Dual station control unit

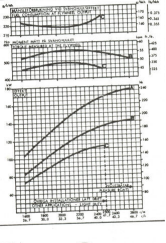
PROPELLER EQUIPMENT

Flexible propeller shaft coupling
Propeller shafts
Propeller shaft sleeves
Propellers

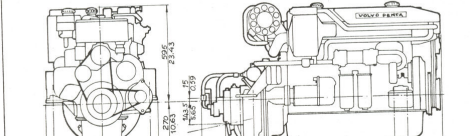
DATA

Type of operation	4-stroke turbo-charged after-cooled diesel with direct injection and overhead valves
Type designation	TAMD 60A
Propeller shaft output, pleasure boats (IB)[1]	141 kW at 46.7 r/s (192 h.p. at 2800 r/m)
Propeller shaft output, other installations, light operation (C)[1]	113 kW at 41.7 r/s (154 h.p. at 2500 r/m)
Displacement	5.48 dm³ (334 in³)
Bore/stroke	98.425/120 (3.88/4.72")
Number of cylinders	6
Total weight, engine, compl. with reverse gear TD 502 approx.	750 kg (1655 lb.)

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. On delivery from Volvo Penta, the engine is adjusted acc. to curve B 46.7 r/s (2800 r/m).
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).
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



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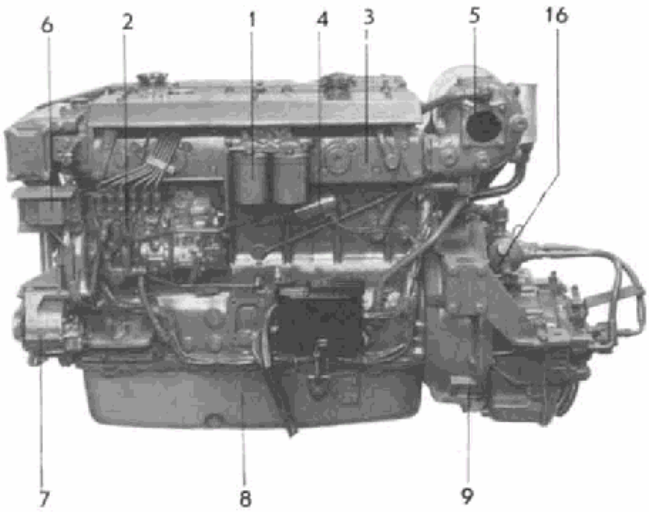
Printed in Sweden. Gotab, Kungälv 71

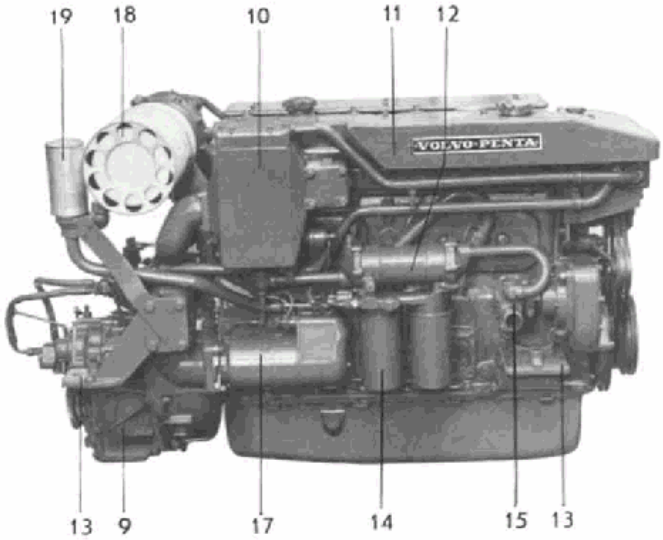
VOLVO PENTA

Ref. No. 7541 D
Eng.

TAMD 60B

6-cylinder, direct-injected 4-stroke diesel engine with turbo-charging and after cooler.
173 kW, 235 hp. Fly-wheel power at sea-leavel conditions. (Barometric pressure 760 mm hg/ 15,0°C 29,2 in. merc./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. Two compression rings and one oil scraper ring. All rings are 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 gear-driven. Overhead valves and replaceable valve seats.
The engine is delivered with engine brackets (13) for fixed mounting.

FUEL SYSTEM – Injection pump with centrifugal governor (2) 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 heat exchanger and expansion tank (11) removable insert. 1" sea-water pump (15). 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 (12). Lubricating oil sump (8) with oil dip-stick on right or left side. Oil separating filter for crankcase ventilation (19).

TURBOCHARGING SYSTEM – Exhaust gas driven turbo-compressor for supercharging the intake air (5). Fresh-water cooled turbine housing. Sea-water cooled aftercooler (10), for cooling compressor air, which gives a higher degree of efficiency. Air cleaner with changeable filter(18).

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

ELECTRICAL SYSTEM – 12 V starter motor 3 kW (4 hp) Electrical stopping device.

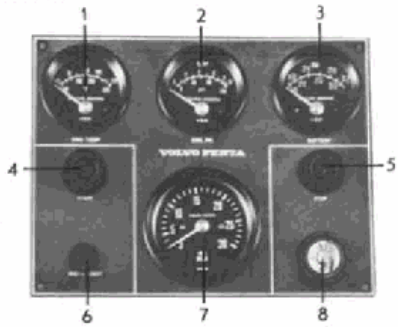
EQUIPMENT

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
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.



POWER TRANSMISSION – The engine can be supplied with hydraulically operated reverse gear equipped with oil cooler (16) and pre-drilled propeller shaft flange according to the following alternatives:

Alt. 1. TD MG 502 (10° down angle) red. 1.5:1 for L-H and R-H prop. (9).
Alt. 2. TD MG 502 (10° down angle) red. 2:1 for L-H and R-H prop. (9).
Alt. 3. TD MG 502 (10° down angle) red. 2.5:1 for L-H and R-H prop. (9).
Alt. 4. BW 73 CR red. 2:1 for R-H prop.
Alt. 5. BW 73 CR red. 3:1 for L-H prop.
Alt. 6. BW V-drive red. 1.51:1 for R-H prop.
Alt. 7. BW V-drive red. 1.53:1 for L-H prop.
Alt. 8. BW V-drive red. 1.99:1 for R-H prop.
Alt. 9. BW V-drive red. 1.98:1 for L-H prop.

EXTRA EQUIPMENT

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

COOLING SYSTEM
Fresh-water filter.
Cooling-water intake complete.
Separate expansion tank.
Sea-water filter.

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

POWER TRANSMISSION
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
Hydraulic 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 S-type control. Top-mounted, only speed regulation.
Control cables.
Dual station control unit.

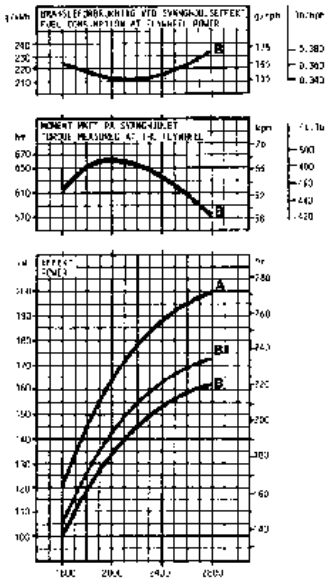
PROPELLER EQUIPMENT
Flexible propeller shaft coupling.
Propeller shafts.
Propeller shaft sleeves.
Propellers.

DATA

Type of operation . . . . . 4-stroke turbo-charged after-cooled diesel with direct injection and overhead valves
Type designation . . . . . TAMD 60B
Flywheel power at
sea-level conditons (B1)[1] . . . . . 173 kW at 46,7 r/s (235 hp at 2800 r/min)
Propeller shaft output, pleasure boats (B)[1] . . . . . 163 kW at 46.7 r/s (221 hp at 2800 r/min)

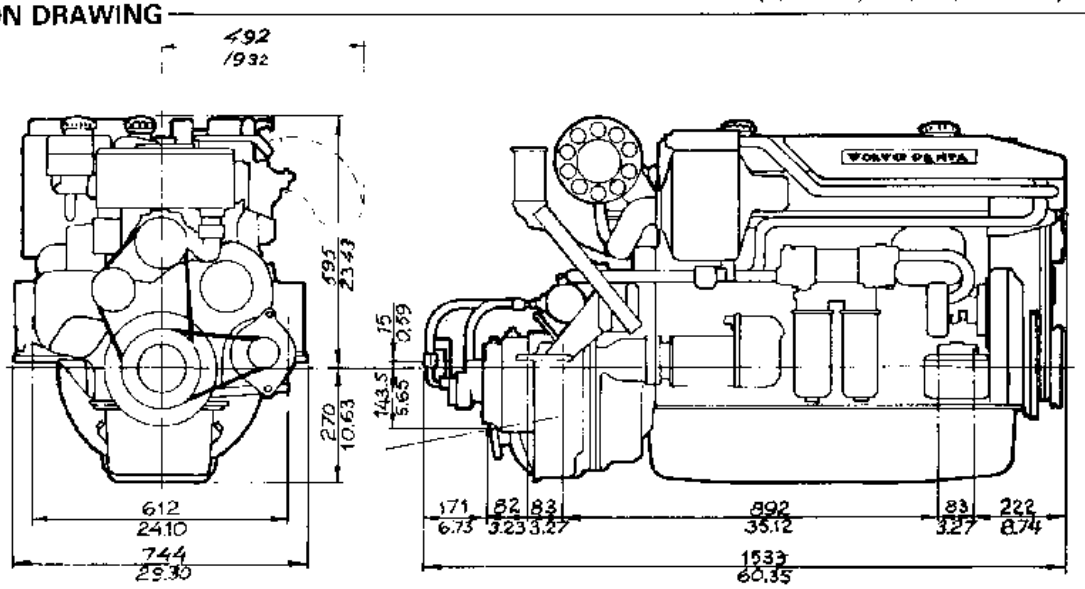
Propeller shaft output
light commercial duty (C1)[2] . . . . . 135 kW at 41.7 r/s (184 hp at 2500 r/min)
Displacement . . . . . 5.48 dm³ (334 in³)
Bore/stroke . . . . . 98.425/120 (3.88/4.72")
Number of cylinders 6
Total weight, engine, compl. with reverse gear TD 502 approx . 750 kg (1655 lb.)

[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 4% higher than the indicated values for B-curve.
All measurements apply to a run-in engine.
[2] See separate sheet "Engine Diagram" Group 21 no 100-1.



1 hk = 1 hp (metric system) = 0,986 HP (Imp US meas. system)

DIMENSION DRAWING



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TAMD 60 B Pleasure Craft Duty

ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No: 21 100

Distr. 60 Serisi

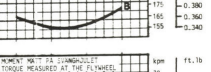
Motor / Engine: TAMD60B NÖJESBÅTSDRIFT / PLEASURE CRAFT DUTY

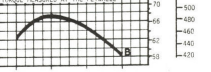
Date: 10/1981

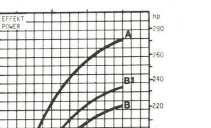
TAMD 60B

ALLMÄNNA DATA / GENERAL DATA

Fyrtakts dieselmotor med direktinsprutning. Four stroke diesel engine with direct injection.		
Toppventiler. Turbo. Laddluftsyklare. Overhead valves. Turbo charged. Aftercooled.		
Cylindrar / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	5.48 / 334
Slaglängd / Stroke	mm / in	120 / 4.72
Cylinderdiameter / Bore	mm / in	98.425 / 3.88
Kompressionsförhållande / Compression ratio		16:1 / 16:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		20°
Rotationsriktning, motors sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		20°







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

Kurva B1: Svänghjulseffekt för nöjesbåtsdrift vid havsnivå, 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 4% högre än angivna värden för B-kurvan.

Samtliga mätningar gäller för inkörd motor.

OBS! Önskad effektinställning skall anges på motorordern.

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

Kurva 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).

Kurva 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.

V C-4 1981-10-01

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Tamd 60B Light Commercial Duty

ENGINE DIAGRAM

MARIN DIESELMOTOR
MARINE DIESEL ENGINE

Grupp Nr / Group No: 21 100-1

Distr.

Motor / Engine: TAMD60B LATT KOMMERSIELL DRIFT / LIGHT COMMERCIAL DUTY

Date: 10/1981

ALLMÄNNA DATA
GENERAL DATA

Fyrtakts dieselmotor med direktinsprutning. Four stroke diesel engine with direct injection.		
Topventiler. Turbo. Laddluftkylare. Overhead valves. Turbo charged. Aftercooled.		
Cylinderantal / No of cylinders		6 / 6
Slagvolym total / Displacement total	dm3 / in3	5.48 / 334
Slaglängd / Stroke	mm / in	120 / 4.72
Cylinderdiameter / Bore	mm / in	98.425 / 3.88
Kompressionsförhållande / Compression ratio		16:1 / 16:1
Max tillåten lutning bakåt under gång / Max permissible inclination backwards under way		20° / 20°
Rotationsriktning, motors sett mot svänghjul / Rotation direction, anti-clockwise viewed towards flywheel		

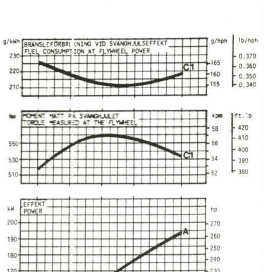
Kurva A: Högsta svänghjulseffekt som kan tas ut i provrun utan termisk överbelastning. Effekten motsvarar DIN 6270 "Höchstleistung".

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.

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

Samtliga nätningar 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.

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.

CEMBRE

VGV/PTO

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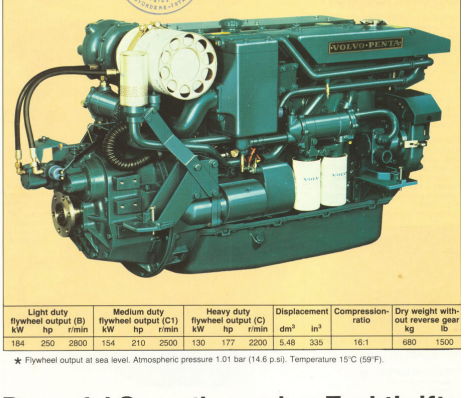
VOLVO PENTA

TAMD 60 C/187 kW*
(255 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
184	250	2800	154	210	2500	130	177	2200	5.48	335	16:1	680	1500

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

Powerful. Smooth-running. Fuel-thrifty.

The TAMD60C is a four-stroke, in-line, six-cylinder marine diesel with direct injection, turbocharging and aftercooler. Designed right from the very start for demanding operation.

- **Good performance.** Efficient turbocharging in combination with aftercooler has made it possible to attain a weight/output ratio of only 2.7 kg/hp. Good speed resources and compact installed volume.
- **Low specific fuel consumption.** At an engine speed of 2200 r/min, consumption is 156 grams/hp/h, a figure that is considerably lower than those for most competitor engines in the same output class and operation mode.
- **Excellent dependability, long operational lifetime.** The TAMD60C has been developed on the basis of the Volvo Penta in-line six, a design that has clearly shown its reliability and long lifetime in thousands of pleasure craft and workboats all over the world.
- **Smooth and vibration-free running.** Well-balanced design with sturdy crankshaft support. Low noise levels.
- **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 60 C

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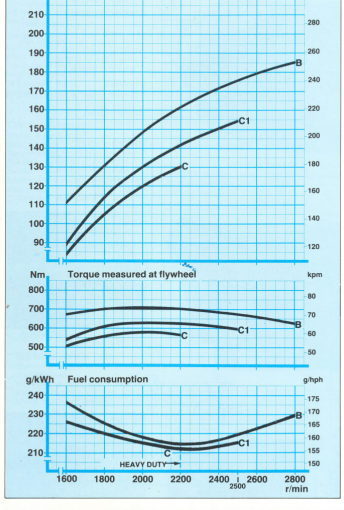


Curve B: Light duty.
The use of rated power at rated speed is limited to short periods followed by extended cruising at reduced speed. In commercial applications operation is limited to 200 hours per year.
Ex. Pleasure boats, fireboats, certain patrol boats and rescue boats.

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 semi-planing 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 502	TDMG 506	TDMG 507
Light duty	183 kW (221 hp)	176 kW (240 hp)	–
Medium duty	Ratio 1.5:1 and 2:1 135 kW (184 hp)	135 kW (184 hp)	148 kW (202 hp)
Heavy duty			Ratio 1:1, 1.5:1 and 2:1 125 kW (170 hp)

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

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

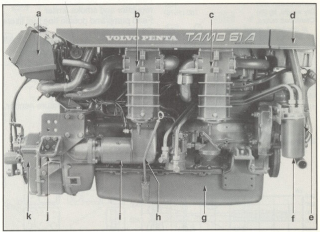
Your Volvo Penta representative:

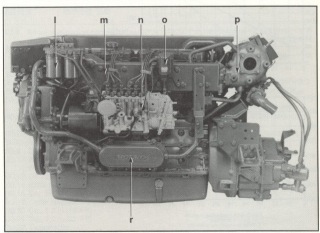
TAMD 61A

6-cylinder, 4-stroke, direct injected turbocharged marine diesel with aftercooler

Powerful, reliable and economical

- A high performance, long life engine built on the dependable in-line six design.
- Designed for
  - planing hulls with great demands on speed and acceleration characteristics.
  - semiplaning workboats in Medium duty operation
- Built for effective turbocharging with high output/fuel consumption ratio, thus achieving excellent fuel economy.
- Designed for easiest, fastest and most economical installation.
- Reduced white smoke emission during start and low load operation. Also reduced smoke emission during acceleration and heavy loads.
- Well balanced with steady and vibrationfree running for highest possible degree of boat comfort.
- Comprehensive programme of factory fitted equipment for perfect matching to specific customer requirements, e.g. reverse gears, PTO's, cooling systems, electrical systems.
- Simplified, thus time and cost saving, servicing. Well established service network in more than 100 countries using genuine parts and skilled personnel – minimizes non operational time and costs.





The engine shown is not an entirely standard unit.

*Optional

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. Twin fuel filter
m. Water cooled exhaust elbow
n. Injection pump
o. Stop solenoid
p. Turbo charger
r. Oil cooler

General data

Type designation	TAMD 61A
No of cylinders	6
Configuration	4-stroke direct-injected turbocharged and charge air cooled diesel engine
Fuel grade ASTM	1D or 2D
Bore, mm (in)	98,42 (3,87)
Stroke, mm (in)	120 (4,7)
Displacement, litres (in³)	5,46 (333)
Compression ratio	15:1
Dry weight, kg (lb)	760 (1676)
Crankshaft output, [1] at crankshaft speed, r/min	
LD, kW (hp) (2800 r/min)	225 (306)
MD, kW (hp) (2500 r/min)	168 (228)
Torque [2]	
LD, Nm (ft, lb)	769 (567)
MD, Nm (ft, lb)	644 (475)
Spec. fuel consumption [2]	
LD, g/kWh (lb/hph)	237 (0,38)
MD, g/kWh (lb/hph)	225 (0,36)

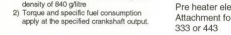
1) Technical data according to ISO 2046 Standard Fuel Stop Power. Fuel 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre
2) Torque and specific fuel consumption apply at the specified crankshaft output.

Standard equipment

Flywheel housing, flange size SAE 2
Expansion tank
Engine brackets
Freshwater cooled turbocharger 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
Electrical system 12 V, fully wired
Incl. alarms for oil pressure and temperature
Starter motor 12 V
Stop solenoid 12 V
Oil pressure and temperature sender units
Electrical terminal box
Pre heater element 12 V, incl. relay
Attachment for control cable, type 333 or 443

Technical features in brief

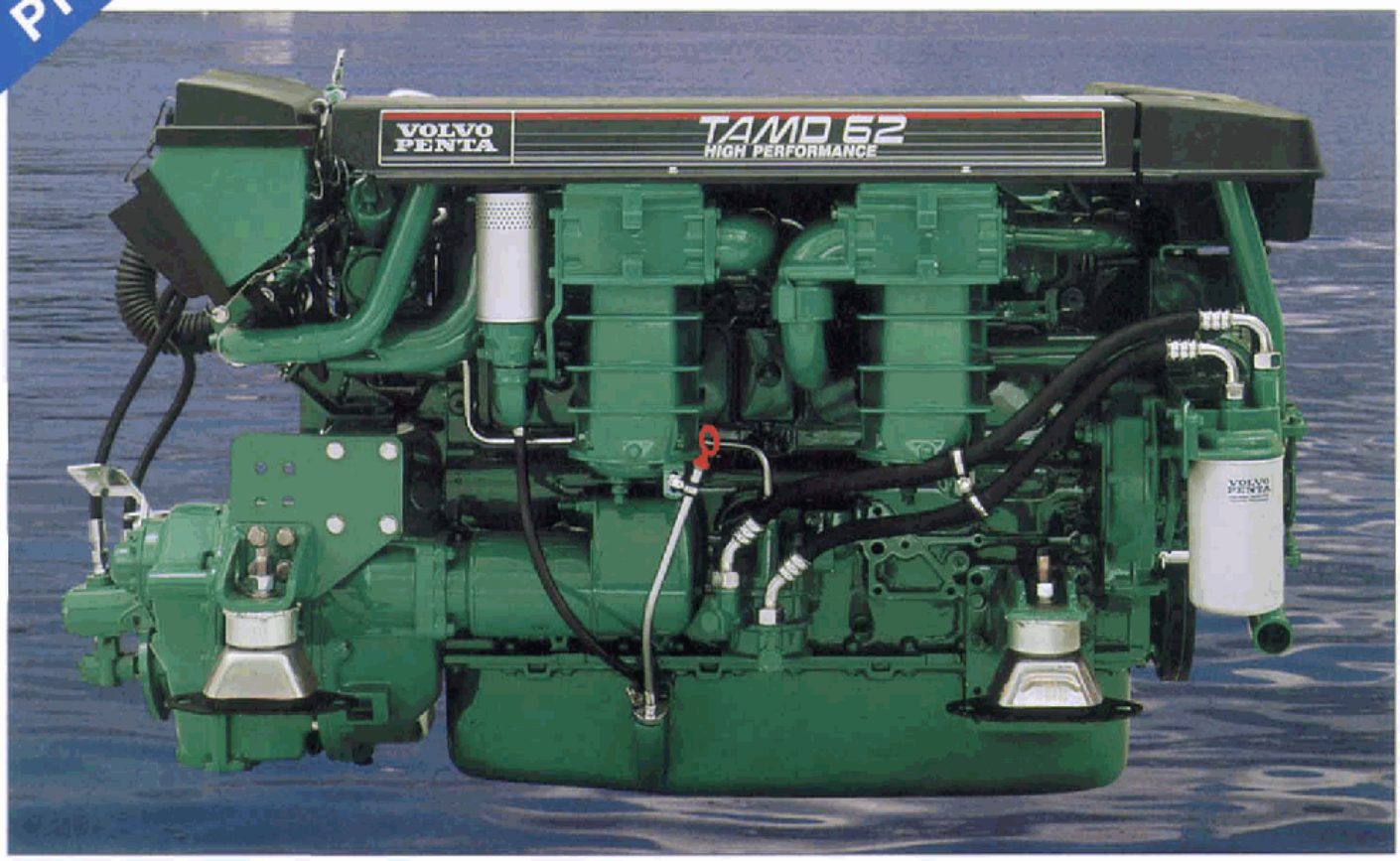
- Engine block and cylinder heads are iron castings.
- The cylinder heads incorporate a flame barrier which protects the cylinder head gasket. The cylinder heads are tightened with 20 bolts.
- Oil cooled, pistons, reduces carbon deposits. Keystone rings minimize oil consumption.
- Waste-gate controlled turbocharger for the degree of boost, either through the aftercooler or, at low speeds, directly through the induction manifold.
- By-pass valve between the turbocharger and aftercooler – less white smoke on starting and low load operation.
- Identical matrix for heat exchanger and aftercooler make them fully interchangeable.
- Plug-compatible electrical system with complete wiring.
- Automatic induction air heating gives reliable low temperature starting.
- Gear wheel driven coolant pump and front mounted raw water pump allows easy service.
- Front mounted easy serviceable spin-on oil filter and filler.



TAMD 61A

NEW PRODUCT

The new TAMD 62



More performance

Volvo Penta's TAMD 62 has been specially developed to combine top performance with minimum fuel consumption.
Powerful, reliable and economical, the new TAMD 62 offers the perfect match for fast planing and semi-planing pleasure craft of up to 40 feet.
The TAMD 62 is completely in line with Volvo Penta's overall concept, that of producing marine diesel engines that develop high torque throughout the register to give the highest possible standards of comfort, reliability and fuel economy, and features direct fuel injection, turbocharging and aftercooling.

The in-line six configuration, with its few moving parts and large bearing surfaces makes for balanced running and problem-free operation and servicing. The torsionally rigid engine block and crank movement will cope with many demanding hours of operation.
To maintain a stable temperature in the cylinders and combustion chambers the engine is equipped with freshwater-cooled oil cooler and piston cooling. The low-profile cast aluminium sump means less engine weight, less corrosion, less dirt and less noise.
High torque combined with high power output guarantees top performance, right from the start and up through the whole register.
But more performance is not all the TAMD 62 has to offer. It is backed by Volvo Penta's service network in more than 100 countries, where spare parts, a wide range of accessories and skilled personnel are on hand to guarantee you the extra measure of comfort and peace of mind that is part and parcel of owning a marine diesel from Volvo Penta.

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

Technical data

Application Pleasure Craft Duty (PD)

Engine

Type designation.....TAMD 62
Number of cylinders and configuration .....in-line-six
Method of operation:.....4-stroke, direct injected, turbocharged
.....diesel engine with aftercooler
Fuel grade .....DIN 51601
Bore, mm (in) 98,4 (3,87)
Stroke, mm (in) 120 (4,7)
Displacement, dm³ (cu in).....5,48 (333)
Compression ratio 15,0:1
Weight, less water and oil, kg (lb) 760 (1676)
Rated power* kW (hp).....250 (340)
Crankshaft power** kW (hp) 243 (330)
at crankshaft speed, rpm.....2800

Reverse gear

Type designation .....IRM 220 A–1
Gear ratios.....1,53:1
.....2,04:1

Engine with reverse gear***

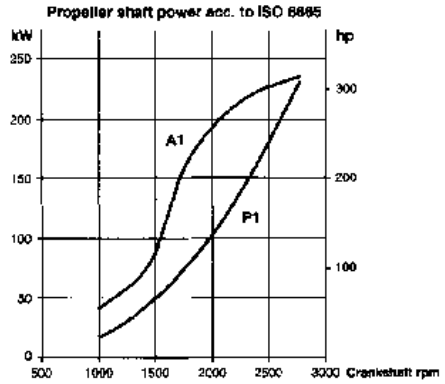
Propeller shaft power** kW (hp).....235 (320)
at crankshaft speed, rpm 2800
Weight, less water and oil, IRM 220 A–1, kg (lb).....829 (1826)

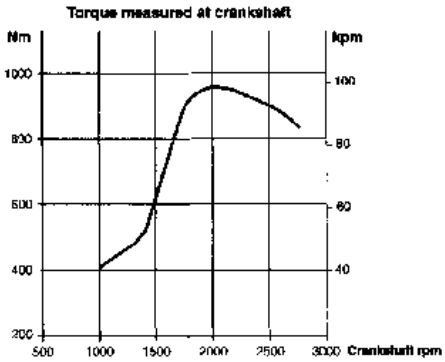
*ISO 3046. Fuel temp 25°C.
**ISO 8665 (=SAE J1228=ICOMIA 28-83)
***Ratings apply at the first reverse gear specified under "reverse gear" and the first specified ratio. Propeller shaft power and weight can differ for other reverse gears and ratios.

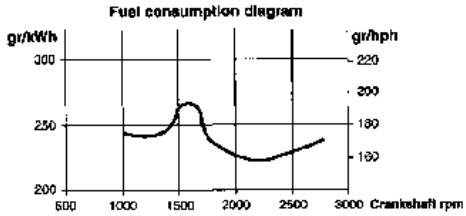
The power, torque and fuel consumption ratings are based on an engine that has been run in according to the ISO standard atmospheric conditions, 25°, 100 kPa and 30% relative humidity. For practical purposes this data also applies to DIN 6271 and BS 5514, but the lower heat value of the fuel is 42,700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

Propeller shaft power, Torque and Fuel consumption graphs





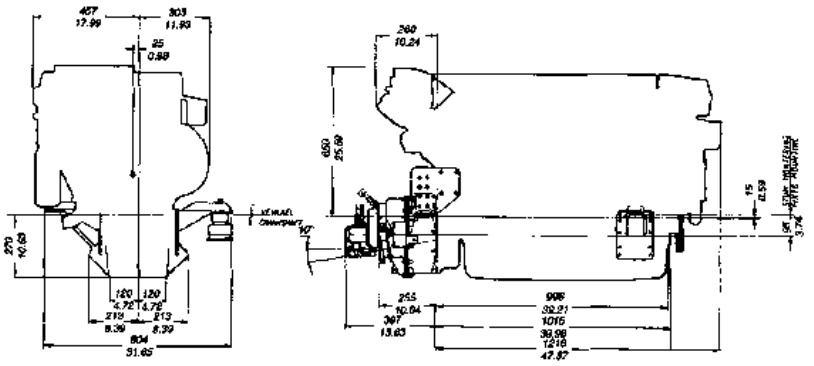


Propeller shaft curves according to ISO 8665
A1 = Full load power curve

Estimated propeller load curves for fixed propeller
P1 = exponent 2,5 (planing boats)

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

Dimensions TAMD 62 with reverse gear IRM 220 A–1



Not for installation

More features

- Cylinder block and cylinder heads made of cast iron alloy
- Replaceable cylinder liners and valve seats
- Nitrocarburized crankshaft, seven bearings
- Two cylinder heads
- Oil-cooled forged aluminium pistons
- Three piston rings. Upper ring of keystone type
- Oil pressure and coolant temperature sensors
- Seawater-cooled charge air cooler
- Injection pump with centrifugal governor and smoke limiter
- Seawater-cooled heat exchanger with expansiontank
- Front-mounted spin-on oil filter
- 12 V or 24 V electrical system
- AC alternator, 12 V 60 A or 24 V 60 A
- Terminal box with automatic fuses
- Electrical air preheating
- Electrical stop device
- Fuel supply pump
- Twin fine filters
- Freshwater-cooled turbocharger
- Freshwater-cooled oil cooler
- Freshwater-cooled exhaust manifold
- Charge air bypass valve, to reduce white smoke emissions during start and low load operation

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

Ref. No. 7735033 Eng Printed in Sweden Oct. 1992. Falkenbergs Trycheri AB 92 739

VOLVO PENTA INBOARD DIESEL

TAMD63L/P

6-cylinder, 4-stroke, direct-injected, turbocharged marine diesel engine with aftercooler – crankshaft power* 173–272 kW (235–370 hp)

* Power rating – see Technical Data

Compact performance

The TAMD63 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 engines.

The engine has been specifically constructed for efficient turbocharging with a high power/fuel consumption ratio. Thus offering excellent fuel economy.

Durability and low noise levels

The Volvo Penta in-line six is a well-balanced unit with smooth and vibration-free operation and low noise levels. The torsionally-rigid cylinder block and crank mechanism are designed to withstand many hours of demanding operation.

To maintain a stable 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.

Low exhaust emission levels

A low-air rotation combustion technique, producing optimum airflow, and a high-pressure injection system with 5-hole injectors ensure an optimum fuel-air mixture. This greatly contributes to reduced noxious exhaust emission levels. The direct injection (DI) system ensures a low fuel consumption. The engines are certified according to SAV, IMO and IMO US/EPA.

Marine electrics

The two-pole electrical system is specially adapted to demanding marine environments with remote and flex-mounted senders as well as moisture-proof connectors.

Ease of service and maintenance

The single poly-V drive belt driving the alternator and freshwater circulation pump (a single service point at the front of the engine) together with the oil filter and the by-pass filter contribute to ease of service and maintenance.

TAMD63L/P with
ZF 220A 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 that you enjoy 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/guides
- Nitrocarburized crankshaft with seven main bearings
- Oil-cooled forged aluminum pistons
- Three piston rings, the upper of which is of the keystone type

Lubrication system

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

Fuel system

- Fuel injection pump with centrifugal governor, smoke limiter and fuel feed pump
- Five-hole injectors
- Twin fine fuel filters of spin-on type
- Electrical fuel valve stopping device

Turbocharger

- Freshwater-cooled turbocharger
- Wastegate for high torque at low speed (TAMD63P)

Cooling system

- Tubular heat exchanger with integrated expansion tank or 2-circuit keel cooling
- Seawater-cooled tubular aftercooler
- Poly-V driven freshwater pump and geardriven seawater pump with neoprene impeller

Electrical system

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

VOLVO PENTA

TAMD63L/P

Technical Data

Engine designation **TAMD63L/P**
No. of cylinders and configuration ..... in-line 6
Method of operation ..... 4-stroke, direct-injected, turbocharged diesel engine with aftercooler
Bore, mm (in.) 98.42 (3.87)
Stroke, mm (in.) 120 (4.7)
Displacement, l (cu.in.) 5.46 (333)
Compression ratio 15:1
Dry weight TAMD63L, kg (lb) 742 (1636)
Dry weight incl. ZF 220A, kg (lb) 821 (1810)
Dry weight TAMD63P, kg (lb) 754 (1662)
Dry weight incl. ZF 220A, kg (lb) 833 (1836)
Crankshaft power TAMD63L,
Rating 3, kW (hp) 2800 rpm[1] 234 (318)
Rating 3, kW (hp) 2800 rpm[2] 228 (310)
Rating 2, kW (hp) 2500 rpm[2] 173 (235)
Crankshaft power TAMD63P,
Rating 4, kW (hp) 2800 rpm[1] 272 (370)
Rating 4, kW (hp) 2800 rpm[2] 265 (360)
Torque TAMD63L,
Rating 3, Nm (lbf.ft) 2800 rpm[2] 778 (574)
Rating 2, Nm (lbf.ft) 2500 rpm[2] 663 (489)
Torque TAMD63P,
Rating 4, Nm (lbf.ft) 2800 rpm[2] 904 (667)
Recommended fuel to conform to ..... ASTM-D975 1-D & 2-D, ... EN 590 or JIS KK 2204
Specific fuel consumption TAMD63L,
R3, g/kWh (lb/hph) 2800 rpm[2] 235 (0.381)
R2, g/kWh (lb/hph) 2500 rpm[2] 228 (0.369)
Specific fuel consumption TAMD63P,
R4, g/kWh (lb/hph) 2800 rpm[2] 248 (0.402)

1) Fuel temperature 25 °C (77 °F)
2) Fuel temperature 40 °C (104 °F)

The diagrams relate to a fuel temperature of 25 °C (77 °F)

Technical data according to ISO 3046 Fuel Stop Power and ISO 8665. Fuel with a lower calorific value of 42700 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 engines are certified according to SAV, IMO and IMO US/EPA.

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

Optional equipment:

Engine
- Flexible suspension for the engine and reverse gear

Lubrication system
- Bulkhead-mounted full-flow oil filter
- Electrically operated oil drain pump

Fuel system
- Fuel filter with water separator

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

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

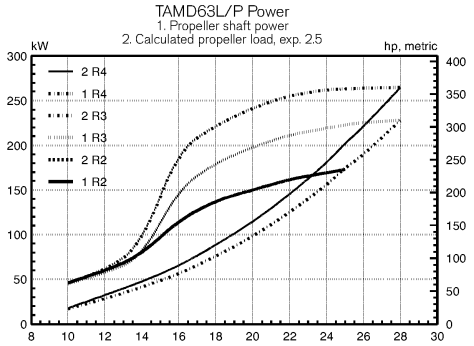
Reverse gear
- ZF 220A
- ZF 220IV
- MG 5061A
- MG 5062V

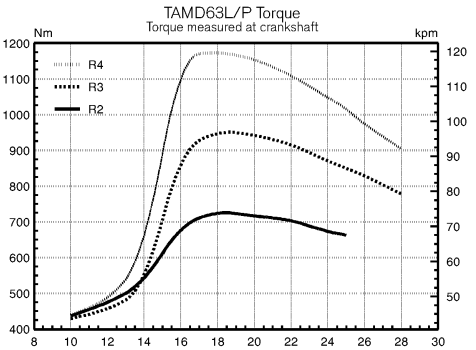
Other equipment
- Belt guard
- White-painted engine and reverse gear

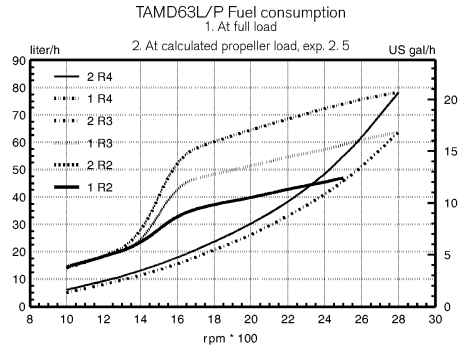
Contact your local Volvo Penta dealer for further information.

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.

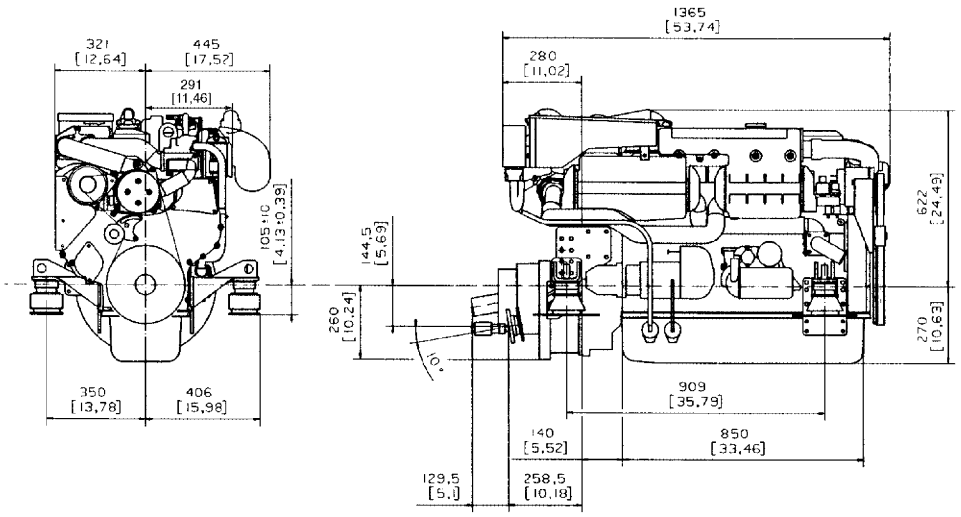






Dimensions TAMD63L/P with ZF 220A

Not for installation



http://www.marinepartsexpress.com/

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

TAMD 63L

Special Light Duty (SLD), Light Duty (LD), Medium Duty (MD)
6-cylinder, 4-stroke, direct injected turbo-charged marine diesel engine with after-cooler – crankshaft power* 234 kW (318 hp)

* Power rating – see Technical Data

Compact performance

The TAMD 63L is a powerful, reliable and economical diesel engine specially devel-oped for fast planing and semi-planing commercial craft. The installation volume of the engine is approx. 30% less than that of the TAMD61.

The engine has been specifically constructed for efficient turbo-charging with a high power/fuel consumption ratio. Thus offering excellent fuel economy.

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. The torsionally rigid engine block and crankcase are designed to withstand many hours of demanding operation.

To maintain a stable working temperature in both cylinders and combustion chambers, the engine is equipped with fresh water-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

A low air-rotation combustion technique, providing optimum air-flow and a high pressure injection system with 5-hole injectors ensure an optimum mixture of fuel and air. This greatly contributes to reduced noxious emission levels. The direct injection system (DI) ensures low fuel consumption.

Marine electrics

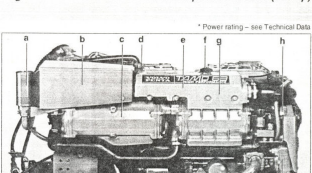
The two pole electrical system is specifically adapted to demanding marine environments with remote and flex-mounted senders and moisture proof connectors.

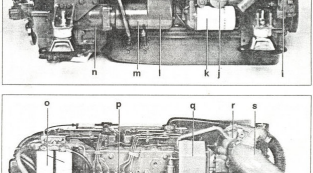
Ease of service and maintenance

The single poly-V belt driving the alternator and fresh water circulation pump (a single service point at the front of the engine) together with the by-pass 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.





The engine shown may vary from the standard unit.

a. Crankcase ventilation
b. Air filter
c. Aftercooler
d. Oil filter
e. Expansion tank, freshwater
f. Fresh water filter
g. Heat exchanger
h. Alternator
i. Gear-driven sea water pump
j. By-pass oil filter
k. Full-flow oil filter
l. Starter motor
m. Oil dipstick, both sides of engine
n. Reverse gear
o. Twin fuel filter
p. Injection pump
q. Electric terminal box
r. Turbo-charger with waste-gate valve
s. Exhaust elbow, wet type
t. Oil sump
u. Fuel shut off valve, electrically operated
v. Oil cooler
x. Flexible engine mounting
y. Poly-V belt for alternator and freshwater pump

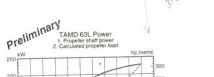
TAMD 63L

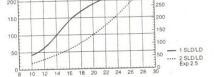
General data

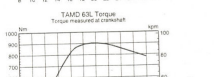
Type designation	TAMD 63L
No of cylinders	6
Configuration	4 stroke direct-injected turbocharged and charge air cooled diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	98.42 (3.87)
Stroke, mm (in)	120 (4.7)
Displacement, litres (in³)	5.46 (333)
Compression ratio	15:1
Dry weight, kg (lb)	760 (1676)
Crankshaft output, at crankshaft speed, r/min	
SLD,LD, kW (hp) (2500 r/min)[1]	234 (318)
SLD,LD, kW (hp) (2500 r/min)[2]	228 (310)
MD, kW (hp) (2500 r/min)[3]	173 (235)
Torque [3]	
SLD,LD, MD, Nm (ft, lb)	
Spec. fuel consumption [3]	
LD, MD, g/kWh (lb/hph)	

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.

Preliminary







Basic engine equipment

Flywheel housing, flange size SAE 2
Freshwater cooled turbocharger and exhaust manifold
Seawater cooled aftercooler
Fuel injection pump
Oil and fuel filters of spin-on type
Fresh water cooled oil cooler
Starter motor 12 V
Two-pole electrical system, 12 V
Flywheel
Attachment for control cable, type 333 and 443
Engine frame
Seawater cooled heat exchanger
Air cleaner including oil trap for crankcase ventilation
Alternator 12 V/60 A
Electrical terminal box
Power setting crankshaft power 265 kW (360 hp) at 2800 r/min

228 kW
310 hp

Technical description

- Engine block and cylinder heads 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. Induction air heater for reliable low temperature starting.

Fuel system

- Injection pump with centrifugal governor and smoke limiter
- Fuel feed pump
- Five hole injectors
- High pressure fuel lines
- Twin fine fuel filters
- Electrical fuel stopping device

Cooling system

- Seawater-cooled charge air cooler
- Poly-V-driven freshwater pump and gear driven sea water pump with neoprene impeller.

Lubrication system

- Fresh water cooled oil cooler
- Oil filter of spin-on type
- Oil dip-sticks on both sides of engine

Turbo-charger

- Freshwater cooled turbo-charger for high torque at low speed.

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.

TAMD 63P

Special Light Duty (SLD)

6-cylinder, 4-stroke, direct injected turbo-charged marine diesel engine with after-cooler – crankshaft power* 272 kW (370 hp)

* Power rating – see Technical Data

Compact performance

The TAMD 63P is a powerful, reliable and economical diesel engine specially devel-oped for fast planing and semi-planing commercial craft. The installation volume of the engine is approx. 30% less than that of the TAMD61.

The engine has been specifically constructed for efficient turbo-charging with a high powerfuel consumption ratio. Thus offering excellent fuel economy.

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. The torsionally rigid engine block and crankcase are designed to withstand many hours of demanding operation.

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

A low air-rotation combustion technique, providing optimum air-flow and a high pressure injection system with 5-hole injectors ensure an optimum mixture of fuel and air. This greatly contributes to reduced noxious emission levels. The direct injection system (DI) ensures low fuel consumption.

Marine electrics

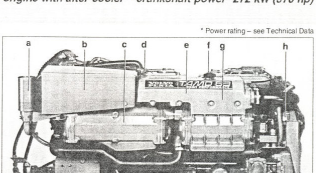
The two pole electrical system is specifically adapted to demanding marine environments with remote and flex-mounted senders and moisture proof connectors.

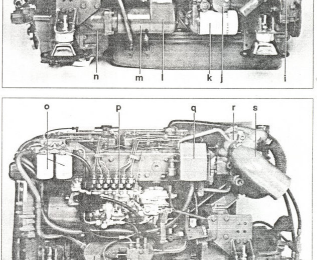
Ease of service and maintenance

The single poly-V belt driving the alternator and fresh water circulation pump (a single service point at the front of the engine) together with the by-pass 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 trained personnel to ensure the best possible service.





The engine shown may vary from the standard unit.

a. Crankcase ventilation
b. Air filter
c. Aftercooler
d. Oil filter
e. Expansion tank, freshwater
f. Fresh water filter
g. Heat exchanger
h. Alternator
i. Gear-driven sea water pump
j. By-pass oil filter
k. Full-flow oil filter
l. Starter motor
m. Oil dipsticks, both sides of engine
n. Reverse gear
o. Twin fuel filter
p. Injection pump
q. Electric terminal box
r. Turbo-charger with waste-gate valve
s. Exhaust elbow, wet type
t. Oil sump
u. Fuel shut off valve, electrically operated
v. Oil cooler
x. Flexible engine mounting
y. Poly-V belt for alternator and freshwater pump

22 ARALIK 1994

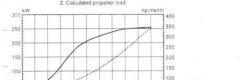
General data

Type designation	TAMD 63P
No of cylinders	6
Configuration	4-stroke direct-injected turbocharged and charge air cooled diesel engine
Fuel grade EN590	10 or (2)
Bore, mm (in)	98.42 (3.87)
Stroke, mm (in)	120 (4.7)
Displacement, litres (in³)	5.46 (333)
Compression ratio	15:1
Dry weight, kg (lb)	760 (1676)
Crankshaft power at crankshaft speed, r/min	
SLD, kW (hp) (2800 r/min) [1]	272 (370)
SLD, kW (hp) (2800 r/min) [2]	265 (360)
Torque [3]	
SLD, Nm (ft, lb)	904 (667)
Spec. fuel consumption [3]	
SLD, g/kWh (lb/hph)	248 (0.40)

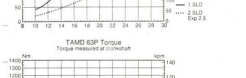
1) Technical data according to ISO 3046 Fuel Stop Power. Fuel 25°C (77°F)
2) Technical data according to ISO 3046 Fuel Stop Power. Fuel 42°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre at 15°C (60°F)
3) Torque and specific fuel consumption apply at the specified crankshaft output.

TAMD 63P Power
1. Complete shaft power
2. Calculated propeller load

TAMD 63P Torque
Torque measured at crankshaft



TAMD 63P Fuel consumption
1. At full load
2. Based on calculated propeller load



Basic engine equipment

Flywheel housing, flange size SAE 2
Freshwater cooled turbocharger and exhaust manifold
Seawater cooled aftercooler
Fuel injection pump
Oil and fuel filters of spin-on type
Fresh water cooled oil cooler
Starter motor 12 V
Two-pole electrical system, 12 V
Flywheel
Attachment for control cable, type 333 and 443
Engine frame
Seawater cooled heat exchanger
Air cleaner including oil trap for crankcase ventilation
Alternator 12 V/60 A
Electrical terminal box
Power setting crankshaft power 265 kW (360 hp) at 2800 r/min

Technical description

- Engine block and cylinder heads 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.
- Induction air heater for reliable low temperature starting.

Fuel system

- Injection pump with centrifugal governor and smoke limiter
- Fuel feed pump
- Five hole injectors
- High pressure fuel lines
- Twin fine fuel filters
- Electrical fuel stopping device

Cooling system

- Seawater-cooled charge air cooler
- Poly-V driven freshwater pump and gear driven sea water pump with neoprene impeller.

Lubrication system

- Fresh water cooled oil cooler
- Oil filter of spin-on type
- Oil dip-sticks on both sides of engine

Turbo-charger

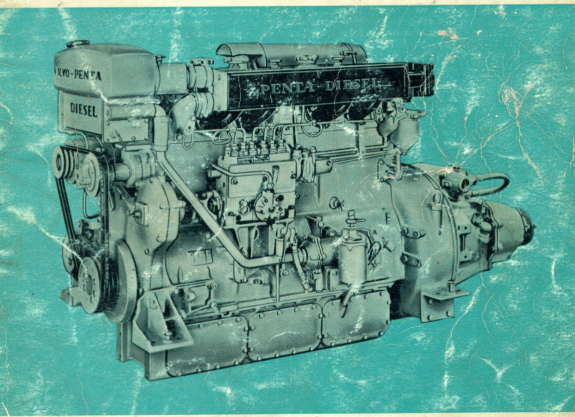
- Freshwater cooled turbo-charger with waste-gate for high torque at low speed.

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.

VOLVO PENTA

MD 67 C



MARINE DIESEL ENGINE

Technical data

Engine

Type designation	**MD 67 C**
Specifikation no.	9423/496233
Number of cylinders	6
Bore	104,77 mm (4.125")
Stroke	130 mm (5.118")
Displacement	6,73 litres (410 cu.in.)
Marine output, maximum	112 h.p./2400 r.p.m.
Marine torque, maximum	39 kgm/1200 r.p.m.
Compression pressure at 200 r.p.m. (starter motor r.p.m.)	28 kg/cm² (398 lb./sq.in.)
Order of injection	1—5—3—6—2—4
Operating speed/maximum speed, r.p.m. with vacuum governor	1800/2050 2000/2275
Operating speed/maximum speed, r.p.m. with centrifugal governor	1800/1950 2000/2200
Idling speed r.p.m.	400—450
Direction of rotation, viewed from front end of engine	Clockwise
Cylinder liners	Wet type, replaceable
Valves	Overhead
Valve clearances, warm engine	
Inlet	0,40 mm (0.016")
Exhaust	0,45 (0.018")
Weight, engine without reverse gear or clutch, approx.	785 kg (1730 lb.)