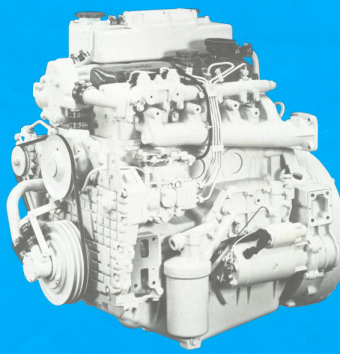
M·A·N

D 0224 ME

66 kW (90 PS/HP)



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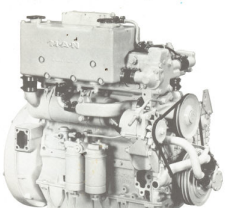


Bezeichnung und Typ:

Dieselmotor für Schiffsantriebe D 0224 ME

Charakteristik:

4-Takt-Dieselmotor, 4 Zylinder in Reihe stehend, wassergekühlt, mit M.A.N.-Direkteinspritzverfahren. Hohe Literleistung, günstiges Leistungsgewicht, niedriger Geräuschpegel. Lange Lebensdauer mit wenig Wartungsaufwand. Alle Wartungsstelle sind gut zugänglich.

Technische Beschreibung:

Kurbelgehäuse und Zylinderblock in einem Stück aus Gußeisen nach unten durch Ölwanne, nach hinten durch Schwungradgehäuse abgeschlossen.
Doppel-Zylinderkolbte mit eingegossenen Drall-Anlaufkanälen und eingeschrumpften Ventilsitzringen.
Hängend angeordnete Ventile, je ein Ventil für Ein- und Auslaß, über 3fach gelagerte Nockenwelle durch Tellerstößel, Stoßstangen und Kipphebel betätigt. Auswechselbare Ventilführungen.
Leichtmetallkolben mit kugelförmigem Verbrennungsraum im Kolbenboden. Kraftstoffeinspritzung durch Einlochdüse auf Innenwand des Kugelraumes. Wartungsfreie Einspritzpumpe.
Geradgeteilte, im Gesenk geschmiedete Pleuel. 5fach gelagerte Kurbelwelle mit angeschmiedeten Gegengewichten und gehärteten Lager- und Kurbelzapfen. Dreischichtgleitlagerschalen. Wassergekühltes, im Motorölkreislauferleichtert integriertes Abgasrohr. Von der Kurbelwelle direkt angetriebene Rohrwasserpumpe. Drehschwingungsdämpfer vorne angeordnet.
Druckumlaufschmierung durch Zahnradpumpe. Schmierölkreislauf im Hauptstrom. Ölfilter und wasserbeaufschlagter Ölkühler in einem Gehäuse.

Anwendungsgebiete:

Wasserfahrzeuge, Arbeitsboote, Zoll- und Polizeiboote, Barkassen und Yachten.

Designation and Model:

Diesel Engine D 0224 ME for Marine Propulsion

Features:

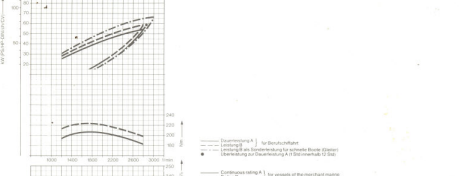
4-stroke Diesel engine, 4-cylinders, vertical in-line type, water-cooled, with M.A.N. direct-injection combustion system.
This engine features high fuel economy, good power/weight ratio, low noise level, long service life, minimum maintenance. Easy of access to all parts calling for maintenance.

Specification:

Crankcase and cylinder block of cast iron in monobloc construction, closed at bottom by oil sump, at rear by flywheel housing.
Double cylinder heads with integral swirl ports and shrunk-in valve seat rings.
Overhead valves; one intake and one exhaust valve per cylinder, operated by 3-bearing camshaft through tappets, pushrods and rocker arms. Replaceable valve guides.
Aluminium alloy pistons with spherical combustion chamber in piston crown. Fuel injection by single-hole injector onto inner wall of combustion chamber. Maintenance-free injection pump.
Die-forged connecting rods split at right angle. Crankshaft supported in 5 bearings with integral forged balance weights and hardened journals and crank pins. Three-layer bearing shells.Water-cooled exhaust manifold integral with engine cooling water circuit. Raw water pump directly driven from crankshaft. Torsional vibration damper at front.
Forced-feed lubrication by gear pump. Full-flow lube oil filter. Oil filter and water-cooled oil cooler in one casing.

Range of application:

Work boats, customs and police patrol boats, motor launches and yachts.



Technische Daten:

Bohrung	102 mm						
Hub	116 mm						
Hubvolumen	3,79 l						
Verdichtungsverhältnis	18:1						
Drehrichtung auf Schwungrad gesehen	links						
Schwungradgehäuse	SAE 3						
Gewicht trocken, mit Kühleinrichtung	ca. 450 kg						
Drehzahl	1500	1800	2100	2400	2800	3000	1/min
Mittlere Kolbengeschwindigkeit	5,80	6,96	8,12	9,28	10,83	11,60	m/s
Dauerleistung A DIN 6270 (1)	32 (43)	38 (52)	44 (60)	49 (67)	54 (73)		kW (PS)
Mittlerer eff. Druck	6,75	6,68	6,63	6,46	6,11		bar
Drehmoment	204	202	200	195	184		Nm
Leistung B DIN 6270 (2)	36 (49)	42 (57)	48 (65)	53 (72)	58 (79)		kW (PS)
Mittlerer eff. Druck	7,60	7,39	7,24	6,99	6,56		bar
Drehmoment	229	223	218	211	198		Nm
Leistung B für schnelle Boote (3)						66 (90)	kW (PS)
Mittlerer eff. Druck						6,97	bar
Drehmoment						210	Nm
Drehzahl max.	3000 1/min						
Drehzahl min. bei Dauerbetrieb	1500 1/min						
Drehzahl min. bei Leerlauf	500 1/min						

(1) Motor 10 % überlastbar.
(2) Motor nicht überlastbar.
(3) Nur für Gleiter, Motor nicht überlastbar. (Yachten, Polizei- und Zollboote, usw.)

Alle Leistungen ohne Abzug für Kühleinrichtungen, Teuer und Abbildungen unverbindlich.
Änderungen, bedingt durch den technischen Fortschritt, vorbehalten.

Technical Data:

Bore	102 mm						
Stroke	116 mm						
Swept volume	3,79 l						
Compression ratio	18:1						
Rotation looking on flywheel	anti-clockwise						
Flywheel housing	SAE 3						
Weight dry, with cooling system	abt. 450 kg						
Speed	1500	1800	2100	2400	2800	3000	r.p.m.
Mean piston velocity	5,80	6,96	8,12	9,28	10,83	11,60	m/sec
Continuous rating A DIN 6270 (1)	32 (43)	38 (52)	44 (60)	49 (67)	54 (73)		kW (HP)
Mean effective pressure	6,75 (6,88)	6,68 (6,81)	6,63 (6,76)	6,46 (6,59)	6,11 (6,23)		bar (kgf/cm²)
Torque	204 (20,8)	202 (20,6)	200 (20,4)	195 (19,9)	184 (18,8)		Nm (kgfm)
Rating B DIN 6270 (2)	36 (49)	42 (57)	48 (65)	53 (72)	58 (79)		kW (HP)
Mean effective pressure	7,60 (7,75)	7,39 (7,54)	7,24 (7,38)	6,99 (7,13)	6,56 (6,69)		bar (kgf/cm²)
Torque	229 (23,4)	223 (22,7)	218 (22,2)	211 (21,5)	198 (20,2)		Nm (kgfm)
Rating B for high-speed craft (3)						66 (90)	kW (HP)
Mean effective pressure						6,97 (7,11)	bar (kgf/cm²)
Torque						210 (21,4)	Nm (kgfm)
Speed, max.	3000 r.p.m.						
Speed for continuous operation, min.	1500 r.p.m.						
Speed at no-load, min.	500 r.p.m.						

(1) Engine 10 % overloadable.
(2) Engine not overloadable.
(3) Only for planing hulls, engine not overloadable. (yachts, police boats, customs boats, etc.)

Gross before deduction of power for cooling equipment.
Text and illustrations are subject to change without notice to keep abreast with engineering progress.

M·A·N
DIESELMOTOREN

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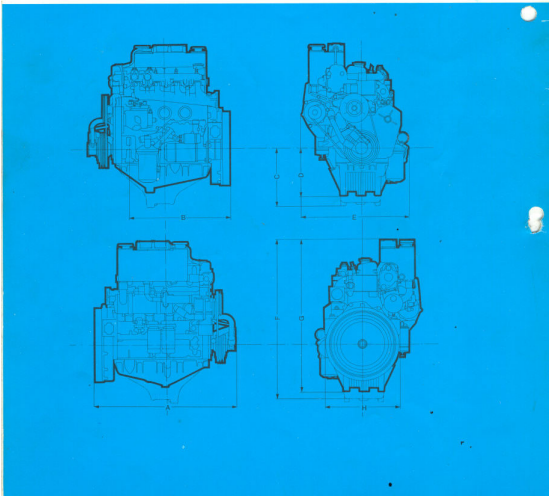
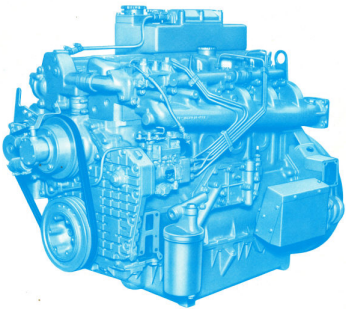
A	B	C	D	E	F	G	H				
860	614	345	262	631	991	897	460				



M·A·N

D 0226 ME

100 kW (136 PS/HP)



6

Bezeichnung und Typ:	**Dieselmotor für Schiffsantriebe D 0226 ME**
Charakteristik:	4-Takt-Dieselmotor, 6 Zylinder in Reihe stehend, wassergekühlt, mit M.A.N.-Direkteinspritzverfahren. Hohe Literleistung, niedriger Geräuschpegel, weicher, ruhiger Lauf und wirtschaftlicher Kraftstoffverbrauch. Lange Lebensdauer sowie geringer Wartungsaufwand. Alle Wartungsteile sind gut zugänglich.
Technische Beschreibung:	Kurbelgehäuse und Kurbeltrieb Zylinderblock aus Grauguß 7fach gelagerte Kurbelwelle in Dreischichtlagern mit Stahlstützschalen, angeschmiedete Gegengewichte im Gesenk geschmiedete Pleuel
Zylinderköpfe:	Doppelzylinderköpfe aus Grauguß hängend angeordnete Ventile, je 1 Ventil für Ein- und Auslaß Ventilsteuerung über Stößel, Stößelstangen und Kipphebel, 4fach gelagerte Nockenwelle
Schmierölanlage:	Druckumlaufschmierung durch Zahnradpumpe Wasserbeaufschlagter Ölkühler, Ölfilter im Hauptstrom, auf Wunsch umschaltbar
Kraftstoffanlage:	Bosch Verteilereinspritzpumpe mit mechanischem Drehzahlregler, Kraftstofförderpumpe, Kraftstoffilter auf Wunsch umschaltbar
Ansaug- und Abgasanlage:	Trockenluftfilter Wassergekühltes Abgasrohr im Motorkühlkreislauf
Elektrische Anlage:	zweipoliger Anlasser 4 kW, 24 V zweipolige Lichtmaschine 28 V, 27 A
Anwendungsgebiete:	Arbeitsboote, Zoll- und Polizeiboote, Yachten

Designation and model:	**Diesel engine D 0226 ME for marine propulsion**
Features:	Four-stroke Diesel engine, 6-cylinder in-line vertical, water-cooled with M.A.N. direct-injection system. High unit output, low noise level, smooth and quiet running, and efficient fuel utilization. Long service life and low upkeep. All parts to be serviced are readily accessible.
Specification:	Crankcase and crankshaft cylinder block of grey cast iron 7-bearing crankshaft with integral forged balance weights and steelbacked lead-bronze bearing shells dieforged connecting rods
Cylinder heads:	douple cylinder heads of grey cast iron overhead valves, one inlet and one exhaust valve per cylinder, valve actuation via tappets, push rods and rocker arms, 4-bearing camshaft
Lubrication system:	forced feed lubrication by gear pump oil-to-water oil cooler, full flow oil filter, optionally changeover type
Fuel system:	Bosch distributor injection pump with mechanical speed governor, fuel supply pump, fuel filter optionally changeover type
Intake and exhaust system:	water-cooled exhaust manifold connected in engine cooling circuit
Electrical system:	two-pole starter, 4 kW, 24 V two-pole alternator 28 V, 27 A
Applications:	Work boats, customs and police patrol boats and yachts

Technische Daten:

Bohrung	102 mm			
Hub	116 mm			
Hubvolumen	5,69 l			
Verdichtungsverhältnis	18:1			
Drehrichtung auf Schwungrad gesehen	links			
Schwungradgehäuse	SAE 3			
Gewicht trocken, mit Kühleinrichtung ca.	520 kg			
Drehzahl	2400	2800	3000	1/min
Dauerleistung (MCR) (1)	79 (107)	87 (118)		kW (PS)
effektiver Mitteldruck	6,9	6,6		bar
Drehmoment	314	297		Nm
Dauerleistung bis 3000 Betriebsstunden/Jahr (2)	83 (113)	95 (130)		kW (PS)
effektiver Mitteldruck	7,3	7,2		bar
Drehmoment	330	324		Nm
Leistung für schnelle Boote (3)			100 (136)	kW (PS)
effektiver Mitteldruck			7,0	bar
Drehmoment			318	Nm
mittl. spez. Kraftstoffverbrauch (+ 5%)	226	232	235	g/kWh

(1) Blockierte Leistung für Boote in **Verdrängerausführung** für uneingeschränkten Dauerbetrieb (MCR = Maximum Continuous Rating).
(2) Blockierte Leistung für Boote in **Verdrängerausführung** wie: Passagierboote im Saisonbetrieb, Reiseyachten, Barkassen, in **Halbgleiterausführung** wie: Seenotkreuzer, Feuerlöschboote
(3) Blockierte Leistung für Boote in **Gleiterausführung** wie: Hochgeschwindigkeitsyachten, Zoll- und Polizeiboote.

Die Nennleistungen gelten für einen Bezugszustand gemäß DIN 6271/ISO 3046 bei 27 °C, 1000 mbar, 0 m und 60% relative Luftfeuchtigkeit.

Technical data:

Bore	102 mm			
Stroke	116 mm			
Swept volume	5.69 l			
Compression ratio	18:1			
Rotation looking on flywheel	anti-clockwise			
Flywheel housing	SAE 3			
Weight, dry with cooling system, approx.	520 kg			
Speed	2400	2800	3000	rpm
Continuous rating (MCR) (1)	79 (107)	87 (118)		kW (HP)
Mean effective pressure	6.9	6.6		bar
Torque	314	297		Nm
Continuous rating up to 3000 operating hours/year (2)	83 (113)	95 (130)		kW (HP)
Mean effective pressure	7.3	7.2		bar
Torque	330	324		Nm
Rating for high-speed craft (3)			100 (136)	kW (HP)
Mean effective pressure			7.0	bar
Torque			318	Nm
Mean specific fuel consumption (+ 5%)	226	232	235	g/kWh

(1) Blocked output for boats with **displacement hull** for unlimited continuous operation (MCR = Maximum Continuous Rating).
(2) Blocked output for boats with **displacement hull** such as: Passenger boats for seasonal operation, cruising yachts, launches, with **semi-planing hull** such as: life boats, fire boats.
(3) Blocked output for boats with **planing hull** such as: high-speed yachts, customs and police patrol boats.

Nominal ratings are for reference conditions to DIN 6271/ISO 3046 of 27 °C, 1000 mbar, 0 m and 60 % relative humidity.

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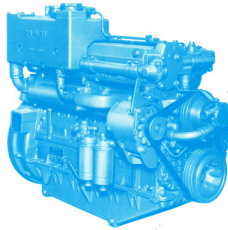
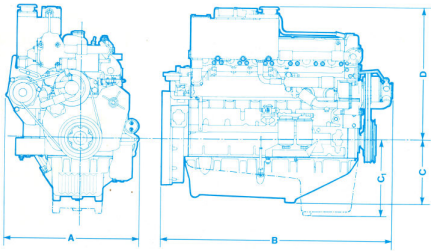




A	=	650
B	=	1045
C	=	277
C1	=	400
D	=	635

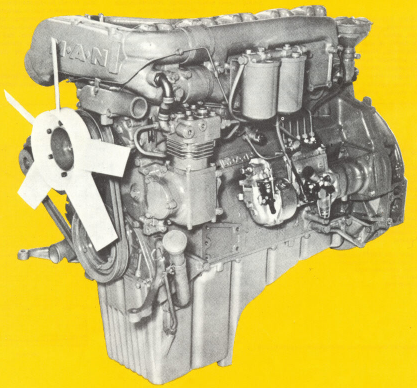
M·A·N MOTOR

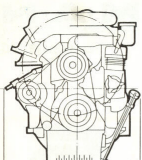
D 2565 M

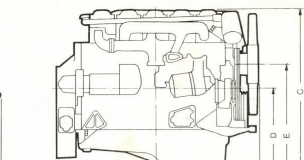
5

Silindir

Dizel Motoru







Motorun Kısaca Tarifi:

D 2565 M.Motoru M.A.N.'ın "M" sistemiyle çalışır.

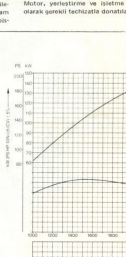
Özellikleri: Yumuşak, sakin çalışma, bütün devir sayılarında yüksek elastikiyet, düşük yakıt sarfiyatı, düşük birim güç ağırlığı, uzun ömür, silindir bloku ve krank mili bloku yekpare dökümdür. Krank mili blokunun altında karter, arkasında zamanlama ve volan kapağı bulunmaktadır. Silindir gömlekleri nitale tabiidir ve değiştirilebilir. Silindir kafaları müstakil olup, emme kanalla-rı ile birlikte dökülmüştür. Süpap oturma halkaları geçmedir. Pistonlar hafif metalden mamüldür, baş kısmında küresel yanma hücresi bulunmaktadır. Pistonların soğutulması basınçlı yağ hüzmeleyle sağlanır.

Biyel kolları dövmedir. Biyel kolu ve krank mili yatakları çelik kalıflı kurşun-bronz alaşımından mamüldür. Krank mili altı yerden yataklanmış, karşı ağırlıkları civatalarla tesbit edilmiştir. Milin yatak tamas yüzeyleri sertleştirilmiştir. Her bir silindirde biner adet emme ve egzoz süpapı mevcuttur. Süpap kovanları değiştirilebilir. Kam mili altı yerden yataklanmıştır. Kam Mili, krank mili ve biyel kolu yatakları ile pistonun pimi burçları ve külbütörler, sirkülâsyonu dişli pompası ile sağlanan basınçlı yağla yağlanır. Yakıt pompası bakım gerektirmez, motor yağlama sistemi ile irtibatlıdır. Enjektörler tak-hüzmelidir. Y-ğ, ana sirkülâsyon devresinde bulunan filtre ile temizlenir. Yağ filtresi ve sulu yağ soğutucu aynı gövde içindedir. Starter dişlisi özel kavramalıdır. Şarj dinamosu alternatif akım verir.

Motor, yerleştirme ve işletme şartlarına bağlı olarak şeraiti tachizatla donatılabilir.

Teknik Özellikler

	D 2565 M
Motor tipi	dört stroklu dizel
Motor devri	Direkt enjeksiyonlu "M" yanma sistemli
Ya ma sistemi	5
Silindir sayısı	125 mm.
Strok	155 mm.
Silindir hacmi	9,51 litre
Kompresör oranı	18 :1
Dönme yönü	Saat yönü tersi
Volan muhafazası	SAE 1
Kuru ağırlık	665 kg.
Taşıt gücü DIN 70020'ye göre	141 kW (192 HP metric) at 2,200 r.p.m.
Maksimum çevirme momenti	667 Nm (68 kgm) at 1,500 r.p.m.
Minimum yakıt sarfiyatı	215 g/kWh
Yağ sarfiyatı	1.35 g/kWh
Maksimum hızı	2,200 r.p.m.



Tüm değerler önceden ikaz edilmeksizin değiştirilebilir.

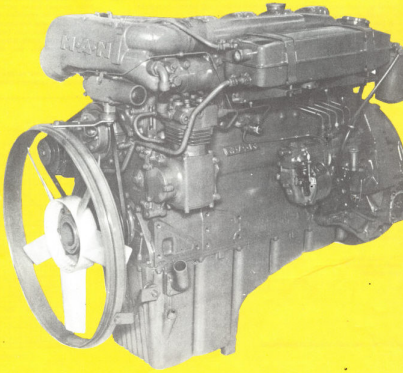
M·A·N MOTOR Sanayi ve Tic. A.Ş. Fabrika : Esenboğa Yolu 22. Km. ANKARA

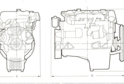
M·A·N MOTOR

D 2565 MF

5 Silindir

Dizel Motoru





A =	900
B =	1207
C =	1115
D =	501

Motorun Kısaca Tarifi

D 2565 MF Motoru M.A.N.'ın "M" sistemiyle çalışır.

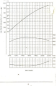
Özellikleri: Yumuşak, sakin çalışma, bütün devir sayılarında yüksek elastikiyet, düşük yakıt sarfiyatı, düşük bakım güç ağırlığı, uzun ömür, silindir bloku ve krank mili bloku yekpare dökümdür. Krank mili bloklarının altında karter, arkasında zamanlama ve volan kapağı bulunmaktadır. Silindir gömlekleri ıslak tiptendir ve değiştirilebilir. Silindir kafaları müstakil olup, emme kanalları ile birlikte dökülmüştür. Süpap oturma halkaları geçmedir. Pistonlar hafif metalden mamüldür, baş kısmında küresel yanma hücresi bulunmaktadır. Pistonların soğutulması basınçlı yağ hüzmesiyle sağlanır.

Biyel kolları dövmedir. Biyel kolu ve krank mili yatakları çelik kütlü kurşunbronz alaşımından mamüldür. Krank mili altı yerden yataklanmış, karşı ağırlıkları civatalarla tesbit edilmiştir. Mille yatak temas yüzeyleri sertleştirilmiştir. Her bir silindirde birer adet emme ve egzoz süpapı mevcuttur. Süpap kovanları değiştirilebilir. Kam mili altı yerden yataklanmıştır. Kam mili, krank mili ve biyel kolu yatakları ile piston pimi burçları ve külbütörler, sirkülasyonu dişli pompa ile sağlanan basınçlı yağla yağlanır. Vakum pompası bakım gerektirmez, motor yağlama sistemi ile irtibatlıdır. Enjektörler tek hüzmelidir. Yağ, ana sirkülasyon devresinde bulunan filtre ile temizlenir. Yağ filtresi ve sulu yağ soğutucu aynı gövde içindedir. Starter dişlisi özel kavramalıdır. Şarj dinamosu alternatif akım verir.

Motor, yerleştirme ve işletme şartlarına bağlı olarak gerekli teçhizatla donatılabilir.

Teknik Özellikler

Motor tipi	**D 2565 MF**
Motor devri	dört zamanlı dizel
Yanma sistemi	Direkt enjeksiyonlu "M" yanma sistemli
Silindir sayısı	6
Silindir çapı	125 mm.
Strok	155 mm.
Silindir hacmi	11,41 litre
Kompresyon oranı	18 : 1
Dönme yönü	Saat yönü tersi
Volan muhafazası	SAE 1
Kuru ağırlık	965 kg.
Taşıt gücü DIN 70020'ye göre	141 kW (192 HP metric) at 2,200 r.p.m.
Maksimum çevirme momenti	667 Nm (68 kgm) at 1,500 r.p.m.
Minimum yakıt sarfiyatı	215 g/kWh
Yağ sarfiyatı	1,35 g/kWh
Maksimum hızı	2,200 r.p.m.

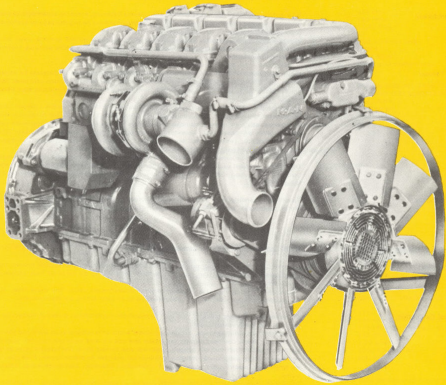


Tüm değerler önceden ikaz edilmeksizin değiştirilebilir.

M·A·N
MOTOR

D 2566 MKF

235 kW (320 PS / HP)



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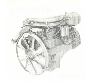
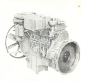




Model: Ticari Kara Taşıtları için D 2566 MKF Dizel Motoru

Karakteristikleri: Su soğutmalı, MAN tipi direkt enjeksiyonlu yanma sistemli, kombine süperşarj (rezonans sistemi), turbokompresörden çıkan sıcak emme havasının hava ile soğutulduğu ara soğutucu (intercooler) ihtiva eden 6 silindirli dört zamanlı dizel motor.
Büyük ölçüde yakıt tasarrufu, yüksek güç/ağırlık oranı, düşük gürültü seviyesi, uzun ömür, minimum bakım ve onarım ile bakım gerektirdiği tüm parçalara erişebilme kolaylığı motorun belli başlı özelliklerdir.

Teknik Tanımı: Blok monoblok konstrüksiyon olup, alttan yağ karteri arkadan volan muhafazası ile kapatılmıştır. [illegible]

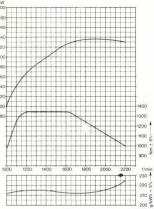
Uygulama Sahası: Ticari taşıtlar, şehirler arası otobüsler, belediye otobüsleri ve özel maksatlı taşıtlar.
Motor, özel maksat ve çalışma koşulları için her türlü aksesuar ile beraber temin edilebilir.

Designation and Model: Diesel Engine D 2566 MKF for Commercial Vehicles

Characteristics: 4-stroke Diesel engine, water-cooled, with M.A.N. direct-injection combustion system, combined turbocharging/induction ram pipe system, intercooling by air-to-air heat exchanger. In-line vertical engine.
This engine features high fuel economy, good power/weight ratio, low noise level, long service life, minimum maintenance. Ease of access to all parts calling for maintenance.

Technical Description: Crankcase and cylinder block of cast iron in monobloc construction, closed at bottom by oil sump, at rear by flywheel housing.
Replaceable wet cylinder liners, individual cylinder heads with integral inlet ports and shrunk-in valve seat rings. Overhead valves, one intake and one exhaust valve per cylinder, operated by 7-bearing camshaft through tappets, pushrods and rocker arms. Replaceable valve guides.
Aluminium alloy pistons with spherical combustion chamber in piston crown. Fuel injection by single-hole injector onto inner wall of combustion chamber. Maintenance-free injection pump.
Die-forged obliquely split connecting rods. Crankshaft supported in 7 bearings with bolted-on balance weights and hardened journals and crank pins. Steel-backed bearing shells with lead-bronze lining and tertiary running layer. Torsional vibration damper at front.
Forced-feed lubrication by gear pump. Full-flow lube oil filter. Oil filter and water-cooled oil cooler in one casing.
Turbocharger, radial gas flow, connected to engine lubrication system.

Fields of Application: Commercial vehicles, buses and coaches, municipal vehicles, special-purpose vehicles.
The engine is available with a wide range of accessories to suit specific installation and operating conditions.



Teknik Özellikleri:

Silindir çapı	125 mm.
Strok	155 mm.
Silindir hacmi	11,41 litre
Silindir sayısı	6
Dönme yönü (volan tarafından bakıldığında)	Saat yönünün tersi
Volan muhafazası	SAE I
Alternatör	28 V 35 A
Marş dinamosu	Çalıştırma mekanizması
Kompresör oranı	17:1
Taşıt gücü DIN 70020'ye göre	235 kW (320 PS);1900 1/dk.
Maksimum çevirme momenti	1350 Nm (137 kgm); 1600 1/dk
Yakıt sarfiyatı	212 g/kWh
Yağ sarfiyatı	1,35 g/kWh
Dönme hızı	2200 1/dk.
Kuru ağırlık	850 kg.

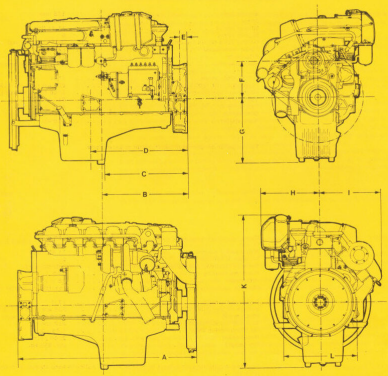
Tüm değerler önceden ikaz edilmeksizin değiştirilebilir.

Technical Data:

Bore	125 mm.
Stroke	155 mm.
Piston swept volume	11,41 litres
Number of cylinders	6
Sense of rotation, looking onto flywheel	anti-clockwise
Flwwheel housing	SAE I
Alternator	28 V 35 A
Starter	coaxial-type starter motor
Compression ratio	17:1
Vehicle rating (DIN 70020)	235 kW (320 HP) at 1900 r.p.m.
Max. torque	1350 Nm (137 kgm) 1600 r.p.m
Min. fuel consumption	212 g/kWh
Oil consumption abt.	1,35 g/kWh
Rated speed	2200 r.p.m.
Dry weight	abt. 850 kg.

Text and illustrations are subject to change without notice to keep abreast with engineering progress.

A	B	C	D	E	F	G	H	J	K	L				
1401,5	673,5	652,5	752,5	53,75	287	531	460	490	1216	571,6				

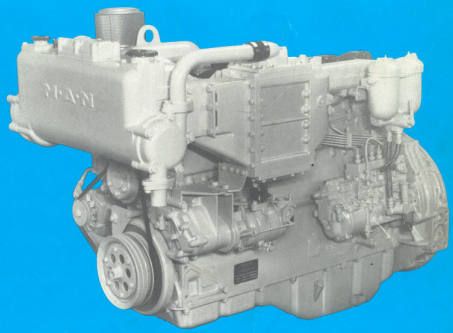


M·A·N MOTOR Sanayi ve Tic. A.Ş.
Fabrika : Esenboğa Yolu 22. Km. ANKARA
Tel : 12 69 02-06 Fab. Telex : 42085 manm tr.

M·A·N

D 2566 MLE

250kW(340 PS/HP)



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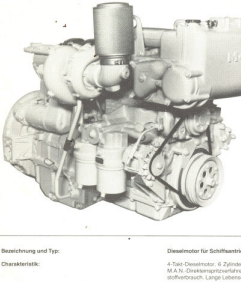
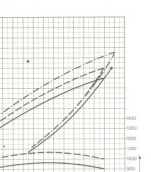


Bezeichnung und Typ:	**Dieselmotor für Schiffsantriebe D 2566 MLE**
Charakteristik:	4-Takt-Dieselmotor, 6 Zylinder in Reihe stehend, wassergekühlt, mit Ladeluftkühler und wassergekühltem Abgasturbolader. M.A.N.-Direkteinspritzverfahren. Hohe Literleistung, niedriger Geräuschpegel, weicher, ruhiger Lauf und wirtschaftlicher Kraftstoffverbrauch. Langer Lebenslauf sowie geringer Wartungsaufwand. Alle Wartungsteile sind gut zugänglich.
Technische Beschreibung:	Kurbelgehäuse zusammen mit Zylinderblock in einem Stück aus Gußeisen, nach unten durch Ölwanne, nach hinten durch Schwungrad-Steuergehäuse abgeschlossen. Auswechselbare, nasse Zylinderlaufbuchsen. Einzelzylinderköpfe mit eingegossenen Kühlwasserdurchgangskanälen und eingeschrumpften Ventilsitzringen. Leichtmetallkolben mit kugelförmigem Verbrennungsraum im Kolbenboden. Kolbenkühlung durch Druckölstrahl über Ölsprühdüsen, die an die Motorschmierung angeschlossen sind. Wasserpaketkühler, im Motorkühlwasserkreislauf integrierter Abgasrohr. Zahnradgetriebene, integrierte seewasserbeständige Rohrwasser Einspeise- oder Doppelpumpe. Rohrwasserwärmetauscher. Pleuelstangen schräggeteilt, in Gesenk geschmiedet, 7fach gelagerte Kurbelwelle mit angeschraubten Gegengewichten. Drosselschlitzkolbengeschalten. Drehschwingungsdämpfer vorne angeordnet. Hängend angeordnete Ventile mit auswechselbaren Ventilführungen. Pro Zylinder je ein Ein- und Auslaßventil. Nockenwelle 7fach gelagert. Druckumlaufschmierung mit Zahnradpumpe für Kurbelwellen-, Pleuel- und Nockenwellenlager sowie Kolbenbolzenbüchsen und Kipphebel. Wartungsfreie Einspritzpumpe an die Motorschmierung angeschlossen. Einlochmündungsdüsen. Schneidenlagerung durch Filterpatrone im Hauptstrom. Ölfilter und wasserbeaufschlagter Ölkühler in einer Einheit. Schutztrieblanlasser und Drehstromlichtmaschine.
Anwendungsgebiete:	Arbeitsboote, Zoll- und Polizeiboote, Barkassen und Yachten.

Designation and Model:	**Diesel Engine D 2566 MLE for Marine Propulsion**
Features:	Four-stroke Diesel engine, six cylinder, vertical in-line, water-cooled, with intercooler and water-cooled turbocharger. M.A.N. direct-injection system. High specific output, low noise level, smooth and quiet running and high fuel economy. Long life and low maintenance. Ease of access to all parts calling for maintenance.
Technical Description:	Integral crankcase and cylinder block of cast iron, closed at bottom by oil sump, at rear by integral flywheel timing gear case. Replaceable wet cylinder liners. Individual cylinder heads with integral swirl ports and shrunk-in valve seat inserts. Aluminum alloy pistons with spherical combustion chamber in piston crown. Piston cooling by oil spray jets connected to engine lubrication system. Water-cooled exhaust manifold integrated into engine cooling system. Seawater resistant integral panel raw water single or twin pump. Raw water heat exchanger. Diagonally split deforged connecting rods. Crankshaft on 7 bearings with screwed-on balance weights. Three-layer bearing shells. Torsional vibration damper at front. Overhead valves with replaceable valve guides. One intake valve and one exhaust valve per cylinder. Camshaft on 7 bearings. Forced-feed lubrication by gear pump for main and big-end bearings, camshaft bearings as well as small-end bearings and rocker arms. Maintenance-free injection pump connected to engine lubrication system. Single-hole injectors. Lube oil cleaning system by full flow filter cartridge. Integral oil filter and oil-to-water heat exchanger. Solenoid-operated starter motor and three-phase alternator.
Range of application:	Work boats, customs and police boats, motor launches and yachts.



für Berufsschiffahrt

für vessels of the merchant marine

Technische Daten:

Bohrung	125 mm				
Hub	155 mm				
Hubvolumen	11,41 l				
Verdichtungsverhältnis	17 : 1				
Drehrichtung auf Schwungrad gesehen	links				
Schwungradgehäuse	SAE 1				
Gewicht trocken, mit Kühleinrichtung	ca. 980 kg				
Drehzahl	1500	1800	2100	2200	1/min
Mittlere Kolbengeschwindigkeit	7,7	9,3	10,8	11,4	m/s
Dauerleistung A DIN 6270 **(1)**	150 (204)	179 (243)	200 (272)	–	kW (PS)
Mittlerer eff. Druck	10,52	10,49	10,02	–	bar
Drehmoment	955	950	909	–	Nm
Leistung B DIN 6270 **(2)**	166 (226)	197 (268)	220 (299)	–	kW (PS)
Mittlerer eff. Druck	11,64	11,51	11,02	–	bar
Drehmoment	1057	1045	1000	–	Nm
Leistung B für schnelle Boote **(3)**	–	–	–	250 (340)	kW (PS)
Mittlerer eff. Druck	–	–	–	11,95	bar
Drehmoment	–	–	–	1083	Nm
Drehzahl max.	2200 1/min				
Drehzahl min. bei Dauerbetrieb	1500 1/min				
Drehzahl min. bei Leerlauf	500 1/min				

(1) Motor 15% überlastbar.
(2) Motor nicht überlastbar.
(3) Nur für Gleiter, Motor nicht überlastbar. (Yachten, Polizei- und Zollboote, usw.)

Alle Leistungen ohne Abzug für Kühleinrichtungen. Text und Abbildungen unverbindlich.

Änderungen, bedingt durch den technischen Fortschritt, vorbehalten.

Technical Data:

Bore	125 mm				
Stroke	155 mm				
Swept volume	11.41 l				
Compression ratio	17 : 1				
Rotation looking on flywheel	anti-clockwise				
Flywheel housing	SAE 1				
Weight dry, with cooling system	abt. 980 kg				
Speed	1500	1800	2100	2200	r.p.m.
Mean piston velocity	7.7	9.3	10.8	11.4	m/sec
Continuous rating A DIN 6270 **(1)**	150 (204)	179 (243)	200 (272)	–	kW (HP)
Mean effective pressure	10.52 (10.72)	10.49 (10.66)	10.02 (10.21)	–	bar (kgf/cm²)
Torque	955 (97.4)	950 (96.9)	909 (92.7)	–	Nm (kgfm)
Rating B DIN 6270 **(2)**	166 (226)	197 (268)	200 (272)	–	kW (HP)
Mean effective pressure	11.64 (11.86)	11.51 (11.73)	11.02 (11.23)	–	bar (kgf/cm²)
Torque	1057 (107.8)	1045 (106.6)	1000 (102.0)	–	Nm (kgfm)
Rating B for high-speed craft **(3)**	–	–	–	250 (340)	kW (HP)
Mean effective pressure	–	–	–	11.95 (12.19)	bar (kgf/cm²)
Torque	–	–	–	1085 (110.7)	Nm (kgfm)
Speed, max.	2200 r.p.m.				
Speed for continuous operation, min.	1500 r.p.m.				
Speed at no-load, min.	500 r.p.m.				

(1) Engine 10% overloadable.
(2) Engine not overloadable.
(3) Only for planing hulls, engine not overloadable (yachts, police boats, customs boats, etc.)

Without power deduction for cooling equipment.

Text and illustrations are subject to change without notice to keep abreast with engineering progress.

M·A·N
DIESELMOTOREN

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P 322.640 d./engl. Printed in W. Germany MP 03825

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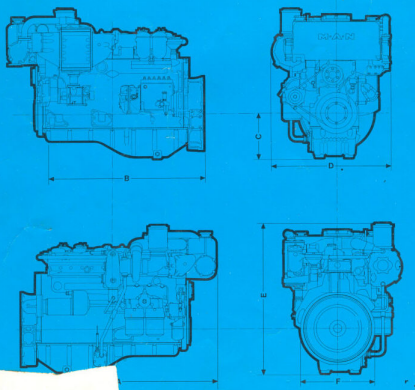
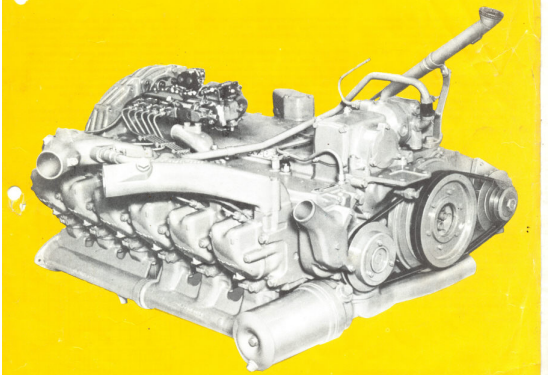


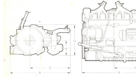
M·A·N
MOTOR

D 2566 MUH

6
Silindir

Dizel Motoru





Özellikleri

Normal emişli D 2566 MUH yatık motoru sessiz ve yumuşak çalışmayı, tüm hız değerlerinde yüksek stabiliteyi, yakıttan tasarrufu, yüksek güç/ağırlık oranını, uzun ömürlülüğü temin eden M.A.N. tarafından geliştirilmiş "M" tipi yanmayı ihtiva eder.

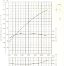
Silindir bloku monoblok konstrüksiyon olup, silindir gömlekleri değiştirilebilen ıslak tiptendir. Silindir kafaları emme havasının dönmesini temin eden sıkacakla beraber alaşımlı dökümdendir. Yanma odası pistonun ... ve üst kısmında enjeksiyonu kontrol etme özelliğini haiz küresel yanma odasını ihtiva eder. Yanma odası, alt kısımdan yağ püskürtülerek soğutulur.

Piston soğutma yağı motor yağlama sistemine bağlıdır. Biyel kolu, dövülmüş tenek geçmeli iki kısımdan ibarettir. Kaymalı yataklar, çelik gövde ve iç kısımda kurşun-bronz alaşımlı tabakayı ihtiva eder. Krank mili denge ağırlıkları civata ile bağlanmış olarak 7 yerinden yataklanmış olup, yataklama yerleri sertleştirilmiştir. Titreşim damperi mevcuttur. Supaplar değiştirilebilir supap kılavuzları ile yataklanmıştır. Her silindir için bir emme bir de egzost supabı vardır. Kam mili 7 yerden yataklanmıştır. Krank mili, kam mili ve külbütör yatakları dişli pompa ile cebri olarak yağlanır. Bakım onarım gerektirmeyen enjeksiyon pompası motor yağlama sistemine bağlıdır. Enjektörler tek bünyelidir. Filtre ana yağlama devresine bağlıdır. Yağ filtresi ve su soğutmalı yağ soğutucusu tek bir muhafaza içinde mevcuttur. Havalama tipinde ... marş motoru ve 3 fazlı alternatör vardır.

Motor ilave yer ve çalışma şartlarına bağlı olarak muhtelif aksesuarları ile temin edilebilir.

Teknik Özellikler

Motor tipi	D 2566 MUH
Motor devri	dört zamanlı dizel
Yanma sistemi	Direkt enjeksiyonlu "M" yanma sistemi
Silindir sayısı	6
Silindir çapı	125 mm.
Strok	155 mm.
Silindir hacmi	11,41 litre
Kompresyon oranı	18:1
Dönme yönü	Saat yönü tersi
Volan muhafazası	SAE 1
Kuru ağırlık	830 kg.
Taşıt gücü DIN 70020'ye göre	177 kW (240 HP metrik) at 2,200 r.p.m.
Maksimum çevirme momenti	824 Nm (84 kgm) at 1,500 r.p.m.
Minimum yakıt sarfiyatı	223 g/kWh
Yağ sarfiyatı	1,35 g/kWh
Maksimum hızı	2,200 r.p.m.



Tüm değerler önceden ikaz edilmeksizin değiştirilebilir.

M·A·N

D 2840 ME

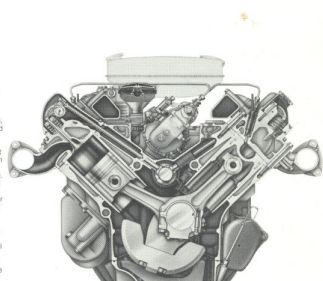
268 kW (365 HP) **268 kW (365 HP)**

Specification

Four-stroke Diesel engine, 10-cylinder V-form, water-cooled with M.A.N. direct-injection system.

Integral crankcase and cylinder block of cast iron, closed at bottom by oil sump, at rear by combined flywheel/timing gear case. Replaceable wet-type cylinder liners. Individual cylinder heads with integral swirl ports and shrunk-in valve seat inserts. Aluminium alloy pistons with combustion chamber in piston crown. Piston cooling by oil sprayers connected to engine lubricating system. Die-forged connecting rods with diagonally split big-end bearings, 6-bearing crankshaft with screwed-on balance weights, running on 3-layer steel-backed plain bearings. Torsional vibration damper at front. Overhead valves with replaceable valve guides. One inlet and one exhaust valve per cylinder. 6-bearing camshaft. Force-feed lubrication by gear pump for main and big-end bearings, camshaft bearings as well as small-end bearings and rocker arms. Maintenance-free injection pump connected to engine lubrication system. Fullflow filter cartridge to clean the lubricating oil. Integral oil filter and oil-to-water heat exchanger. Solenoidoperated starter motor and three-phase alternator.

Applications include industrial machines, marine propulsion and shipboard auxiliaries. For marine propulsion or auxiliary drive the engine is – in its basic design (water-cooled exhaust manifold in fresh water circuit with integral thermostat) – equipped for connection to a keel cooling system or a raw water heat exchanger.



Diesel Engine D 2840 ME for Industrial Applications.

Technical Data:

Bore	128 mm
Stroke	142 mm
Swept volume	18.27 l
Compression ratio	17 : 1
Rotation looking on flywheel	anti-clockwise
Flywheel housing	SAE 1
Weight dry, without cooling system abt.	920 kg

Speed	1500	1800	2100	2300	r.p.m.
Mean piston velocity	7.1	8.5	9.9	10.9	m/sec
Continuous rating A (1) DIN 6270 (3)	173(235)	205(279)	221(307)	235(320)	kW (HP)
Mean effective pressure	7.58(7.73)	7.48(7.63)	7.07(7.21)	6.71(6.84)	bar (kgf/cm²)
Torque	1101(112.3)	1088(110.9)	1028(104.8)	976(99.5)	Nm (kgfm)
Rating B (2) DIN 6270 (3)	193(262)	228(310)	252(343)	221(355)	kW (HP)
Mean effective pressure	8.45(8.62)	8.32(8.48)	7.88(8.04)	7.45(7.60)	bar (kgf/cm²)
Torque	1229(125.3)	1210(123.4)	1146(116.8)	1084(110.5)	Nm (kgfm)
Automotive rating DIN 70020 (4)				268(365)	kW (HP)
Mean effective pressure				7.65(7.80)	bar (kgf/cm²)
Torque				1113(113.5)	Nm (kgfm)
Torque, max.	1285(131) Nm (kgfm) at 1300 r.p.m.				
Speed, max.	2300 r.p.m.				
Speed for continuous operation, min.	1500 r.p.m.				

(1) Engine 10 % overloadable.
(2) Engine not overloadable.
(3) Gross before deduction of power for cooling equipment.
(4) Net after deduction of fan power.

Diesel Engine D 2840 ME for Marine Propulsion.

Technical Data:

Bore	128 mm
Stroke	142 mm
Swept volume	18.27 l
Compression ratio	17 : 1
Rotation looking on flywheel	anti-clockwise
Flywheel housing	SAE 1
Weight dry, with cooling system abt.	960 kg

Speed	1500	1800	2100	2300	r.p.m.
Mean piston velocity	7.1	8.5	9.9	10.9	m/sec
Continuous rating A DIN 6270 (1)	173(235)	205(279)	226(307)	235(320)	kW (HP)
Mean effective pressure	7.58(7.73)	7.48(7.63)	7.07(7.21)	6.71(6.84)	bar (kgf/cm²)
Torque	1101(112.3)	1088(110.9)	1028(104.8)	976(99.5)	Nm (kgfm)
Rating B DIN 6270 (2)	193(262)	228(310)	252(343)	261(355)	kW (HP)
Mean effective pressure	8.45(8.62)	8.32(8.48)	7.88(8.04)	7.45(7.60)	bar (kgf/cm²)
Torque	1229(125.3)	1210(123.4)	1146(116.8)	1084(110.5)	Nm (kgfm)
Rating B for high-speed craft (3)				268(365)	kW (HP)
Mean effective pressure				7.65(7.80)	bar (kgf/cm²)
Torque				1113(113.5)	Nm (kgfm)
Speed, max.	2300 r.p.m.				
Speed for continuous operation, min.	1500 r.p.m.				

(1) Engine 10 % overloadable.
(2) Engine not overloadable.
(3) Only for planing hulls, engine not overloadable, (yachts, police boats, customs boats, etc.)

Gross before deduction of power for cooling equipment.
Text and illustrations are subject to change without notice to keep abreast with engineering progress.

M·A·N

D 2540 MTE

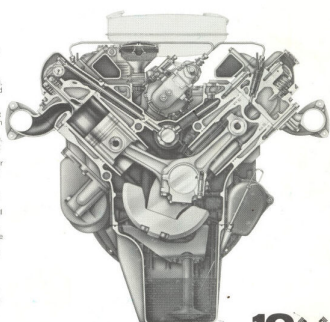
323 kW (440 HP) **301 kW (409 HP)** **338 kW (460 HP)**

Specification

Four-stroke Diesel engine, 10-cylinder V-form, water-cooled with M.A.N. direct-injection system.

Integral crankcase and cylinder block of cast iron, closed at bottom by oil sump, at rear by combined flywheel/timing gear case. Replaceable wet-type cylinder liners. Individual cylinder heads with integral swirl ports and shrunk-in valve seat inserts. Aluminium alloy pistons with combustion chamber in piston crown. Piston cooling by oil sprayers connected to engine lubricating system. Die-forged connecting rods with diagonally split big-end bearings, 6-bearing crankshaft with screwed-on balance weights, running on 3-layer steel-backed plain bearings. Torsional vibration damper at front. Overhead valves with replaceable valve guides. One inlet and one exhaust valve per cylinder. 6-bearing camshaft. Force-feed lubrication by gear pump for main and big-end bearings, camshaft bearings as well as small-end bearings and rocker arms. Maintenance-free injection pump connected to engine lubrication system. Fullflow filter cartridge to clean the lubricating oil. Integral oil filter and oil-to-water heat exchanger. Solenoidoperated starter motor and three-phase alternator.

Applications include industrial machines, power generating sets, marine propulsion and shipboard auxiliaries. For marine propulsion or auxiliary drive the engine is – in its basic design (water-cooled exhaust manifold in fresh water circuit with integral thermostat) – equipped for connection to a keel cooling system or a raw water heat exchanger.



Diesel Engine D 2540 MTE for Industrial Applications.
Technical Data:

Bore	125 mm
Stroke	142 mm
Swept volume	17.43 l
Compression ratio	17 : 1
Rotation looking on flywheel	anti-clockwise
Flywheel housing	SAE 1
Weight dry, without cooling system abt.	1020 kg

Speed	1500	1800	2100	2300	r.p.m.
Mean piston velocity	7.1	8.5	9.9	10.9	m/sec
Continuous rating A (1) DIN 6270 (3)	206(280)	240(326)	269(366)	286(389)	kW (HP)
Mean effective pressure	9.4(9.65)	9.1(9.36)	8.8(8.99)	8.56(8.73)	bar (kgf/cm²)
Torque	1311(133.7)	1273(129.8)	1223(124.7)	1187(121.0)	Nm (kgfm)
Rating B (2) DIN 6270 (3)	220(299)	254(345)	285(388)	303(412)	kW (HP)
Mean effective pressure	10.1(10.4)	9.72(9.91)	9.35(9.53)	9.07(9.25)	bar (kgf/cm²)
Torque	1401(142.9)	1348(137.5)	1296(132.2)	1258(128.3)	Nm (kgfm)
Automotive rating DIN 70020 (4)				323(440)	kW (HP)
Mean effective pressure				9.67(9.86)	bar (kgf/cm²)
Torque				1341(136.7)	Nm (kgfm)
Torque, max.	1510(154) Nm (kgfm) at 1500 r.p.m.				
Speed, max.	2300 r.p.m.				
Speed for continuous operation, min.	1500 r.p.m.				

(1) Engine 10% overloadable.
(2) Engine not overloadable.
(3) Gross before deduction of power for cooling equipment.
(4) Net after deduction of fan power.

Diesel Engine D 2540 MTE for Power Generating Sets.
Technical Data:

Bore	125 mm
Stroke	142 mm
Swept volume	17.43 l
Compression ratio	17 : 1
Rotation looking on flywheel	anti-clockwise
Flywheel housing	SAE I
Weight, dry without cooling system abt.	1080 kg

Speed	1500	1800	r.p.m.
Mean piston velocity	7.1	8.5	m/sec
Continuous rating A DIN 6270 10% overloadable.	235(320)	274(373)	kW (HP)
Mean effective pressure	10.79(11.0)	10.48(10.69)	bar (kgf/cm²)
Torque	1496(152.5)	1454(148.3)	Nm (kgfm)
Continuous rating A DIN 6270 5% overloadable for limited continuous duty not exceeding 1000 h/a	246(335)	287(390)	kW (HP)
Mean effective pressure	11.29(11.51)	10.98(11.20)	bar (kgf/cm²)
Torque	1566(159.7)	1523(155.3)	Nm (kgfm)
Rating B DIN 6270 not overloadable, emergency generating duty not exceeding 300 h/a	258(351)	301(409)	kW (HP)
Mean effective pressure	11.84(12.7)	11.52(11.75)	bar (kgf/cm²)
Torque	1642(167.5)	1597(162.8)	Nm (kgfm)

Fuel consumption in continuous operation A (+ 5%)

Full load abt.	219	221	g/kWh
75% load abt.	221	228	g/kWh
50% load abt.	235	243	g/kWh
Oil consumption abt.	260	310	g/h

No allowance is included for power required for cooling equipment.

Diesel Engine D 2540 MTE for Marine Propulsion.
Technical Data:

Bore	125 mm
Stroke	142 mm
Swept volume	17.43 l
Compression ratio	17 : 1
Rotation looking on flywheel	anti-clockwise
Flywheel housing	SAE 1
Weight dry, with cooling system abt.	1060 kg

Speed	1500	1800	2100	2300	r.p.m.
Mean piston velocity	7.1	8.5	9.9	10.9	m/sec
Continuous rating A DIN 6270 (1)	206(280)	240(326)	269(366)	286(389)	kW (HP)
Mean effective pressure	9.4(9.65)	9.1(9.36)	8.8(8.99)	8.56(8.73)	bar (kgf/cm²)
Torque	1311(133.7)	1273(129.8)	1223(124.7)	1187(121.0)	Nm (kgfm)
Rating B DIN 6270 (2)	220(299)	254(345)	285(388)	303(412)	kW (HP)
Mean effective pressure	10.1(10.3)	9.72(9.91)	9.35(9.53)	9.07(9.25)	bar (kgf/cm²)
Torque	1401(142.9)	1348(137.5)	1296(132.2)	1258(128.3)	Nm (kgfm)
Rating B for high-speed craft (3)				338(460)	kW (HP)
Mean effective pressure				10.12(10.32)	bar (kgf/cm²)
Torque				1403(143.1)	Nm (kgfm)
Speed, max.	2300 r.p.m.				
Speed for continuous operation, min.	1500 r.p.m.				

(1) Engine 10% overloadable.
(2) Engine not overloadable.
(3) Only for planing hulls, engine not overloadable, yachts, police boats, customs boats, etc.)

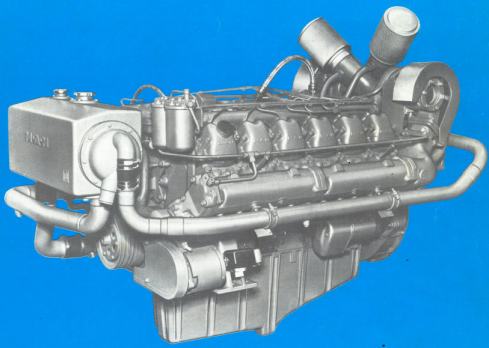
Gross before deduction of power for cooling equipment.

Text and illustrations are subject to change without notice to keep abreast with engineering progress.

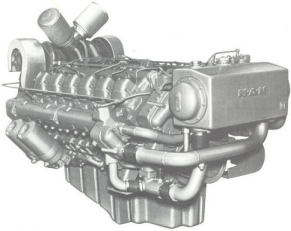
M·A·N

D 2542 MTE

405 kW (550 PS/HP)

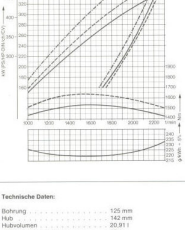


12V



Bezeichnung und Typ:	**Dieselmotor für Schiffsantriebe D 2542 MTE**
Charakteristik:	4-Takt-Dieselmotor, 12 Zylinder in V-Form wassergekühlt, mit M.A.N.-Direkteinspritzverfahren. Hohe Literleistung, günstiges Leistungsgewicht, niedriger Geräuschpegel. Lange Lebensdauer sowie geringer Wartungsaufwand. Alle Wartungsteile sind gut zugänglich. Weicher, ruhiger Lauf, große Elastizität im ganzen Drehzahlbereich und geringer Kraftstoffverbrauch.
Technische Beschreibung:	Kurbelgehäuse zusammen mit Zylinderblock in einem Stück aus Gußeisen, nach unten durch Ölwanne, nach hinten durch Schwungrad-Steuergehäuse abgeschlossen. Auswechselbare, nasse Zylinderlaufbüchsen. Einzelzylinderköpfe mit eingegossenen Drallerzeugungskanälen und eingepreßtem Ventilsitzringen. Leichtmetallkolben mit kugelförmigem Verbrennungsraum im Kolbenboden. Kolbenkühlung des Brennraumbodens durch Druckölstrahl über Düsenrohr, die an die Motorschmierung angeschlossen sind. Wassergekühlte Abgasrohre. Pleuelstangen schräggeteilt, im Gesenk geschmiedet. 7fach gelagerte Kurbelwelle mit angeschraubten Gegengewichten, in Drehschwingungsstellagern mit Stahlschützschalen gelagert. Drehschwingungsdämpfer vorne angeordnet. Hängend angeordnete Ventile mit auswechselbaren Ventilführungen. Pro Zylinder je ein Ein- und Auslaßventil. Nockenwelle 7fach gelagert. Druckumlaufschmierung mit Zahnradpumpe für Kurbelwellen-, Pleuel- und Nockenwellenlager sowie Kolbenbolzenbuchsen und Kipphebel. Wartungsfreie Einspritzpumpe an die Motorschmierung angeschlossen. Einlocheinspritzdüsen. Schmierölreinigung durch Filterpatrone im Hauptstrom. Ölfilter und wasserbeaufschlagter Ölkühler in einer Einheit. Schubtriebanlasser und Drehstromlichtmaschine.
Anwendungsgebiete:	Arbeitsboote, Zoll- und Polizeiboote, Barkassen und Yachten.

Designation and Model:	**Diesel Engine D 2542 MTE for Marine Propulsion**
Features:	Four-stroke Diesel engine, 12-cylinder V-form, water-cooled with turbocharger. M.A.N. direct-injection system. High unit output, low noise level, smooth and quiet running, and efficient fuel utilisation. Long service life and low upkeep. All parts to be serviced are readily accessible.
Specification:	Integral crankcase and cylinder block of cast iron, closed at bottom by oil sump, at rear by combined flywheel/timing gear case. Replaceable wet-type cylinder, liners. Individual cylinder heads with integral swirl ports and shrunk-in valve seat inserts. Aluminium alloy pistons with spherical combustion chamber in piston crown. Piston cooling by oil sprayers connected to engine lubricating system. Turbocharger with radial gas flow and lubrication via engine lubricating. Water-cooled exhaust manifold. Die-forged connecting rods with diagonally split big-end bearing. 7-bearing crankshaft with screwed-on balance weights, running on 3-layer steel-backed plain bearings. Torsional vibration damper at front. Overhead valves with replaceable valve guides. One inlet and one exhaust valve per cylinder 7-bearing camshaft. Forced-feed lubrication by gear pump for main and big-end bearings, camshaft bearings, as well as small-end bearings and rocker arms. Maintenance-free injection pump connected to engine lubrication system. Single-hole injectors. Full-flow filter cartridge filter to clean the lubricating oil. Integral oil filter and oil-to-water heat exchanger. Solenoid-operated starter motor and three-phase alternator.
Range of application:	Work boats, customs and police boats, motor launches and yachts.



Technische Daten:

Bohrung	125 mm						
Hub	142 mm						
Hubvolumen	20,91 l						
Verdichtungsverhältnis	17:1						
Drehrichtung auf Schwungrad gesehen	links						
Schwungradgehäuse	SAE 1						
Gewicht trocken ohne Kühleinrichtung	ca. 1265 kg						
Drehzahl	1500	1800	2100	2230	2300	1/min	
Mittlere Kolbengeschwindigkeit	7,1	8,5	9,9	10,6	10,9	m/s	
Dauerleistung A DIN 6270(1)	240 (326)	287 (390)	323 (439)	343 (466)		kW (PS)	(1) Motor 10 % überlastbar
Mittlerer eff. Druck	9,18	9,15	8,83	8,83		bar	(2) Motor nicht überlastbar
Drehmoment	1528	1523	1469	1469		Nm	(3) Nur für Gleiter, Motor nicht überlastbar (Yachten, Polizei- und Zollboote, usw.).
Leistung B DIN 6270(2)	254 (345)	304 (413)	342 (465)		364 (495)	kW (PS)	Alle Leistungen ohne Abzug für Kühleinrichtungen. Text und Abbildungen unverbindlich. Änderungen, bedingt durch den technischen Fortschritt, vorbehalten.
Mittlerer eff. Druck	9,72	9,69	9,35		9,08	bar	
Drehmoment	1617	1613	1555		1511	Nm	
Leistung B für schnelle Boote(3)					405 (550)	kW (PS)	
Mittlerer eff. Druck					10,11	bar	
Drehmoment					1682	Nm	
Drehzahl max.	2300 1/min						
Drehzahl min. bei Dauerbetrieb	1500 1/min						

Technical Data:

Bore	125 mm						
Stroke	142 mm						
Swept volume	20.91 l						
Compression ratio	17:1						
Rotation looking on flywheel	anti-clockwise						
Flywheel housing	SAE 1						
Weight, dry without cooling system	abt. 1265 kg						
Speed	1500	1800	2100	2230	2300	r.p.m.	
Mean piston velocity	7.1	8.5	9.9	10.6	10.9	m/s	
Continuous rating A DIN 6270(1)	240 (326)	287 (390)	323 (439)	343 (466)		kW (HP)	(1) Engine 10 % overloadable
Mean effective pressure	9.18 (9.36)	9.15 (9.33)	8.83 (9.00)	8.83 (9.00)		bar (kgf/cm²)	(2) Engine not overloadable
Torque	1528 (155.8)	1523 (155.3)	1469 (149.8)	1469 (149.8)		Nm (kgfm)	(3) Only for planing hulls, engine not overloadable (yachts, police boats, customs boats, etc.).
Rating B DIN 6270(2)	254 (345)	304 (413)	342 (465)		364 (495)	kW (HP)	Without power deduction for cooling equipment.
Mean effective pressure	9.72 (9.91)	9.69 (9.88)	9.35 (9.53)		9.08 (9.26)	bar (kgf/cm²)	Text and illustrations are subject to change without notice to keep abreast with engineering progress.
Torque	1617 (164.9)	1613 (164.5)	1555 (158.6)		1511 (154.1)	Nm (kgfm)	
Rating B for high-speed craft(3)					405 (550)	kW (HP)	
Mean effective pressure					10.11(10.31)	bar (kgf/cm²)	
Torque					1682 (171.5)	Nm (kgfm)	
Speed, max.	2300 r.p.m.						
Speed for continuous operation, min.	1500 r.p.m.						

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A	B	C	D										
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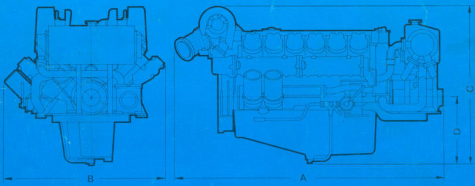
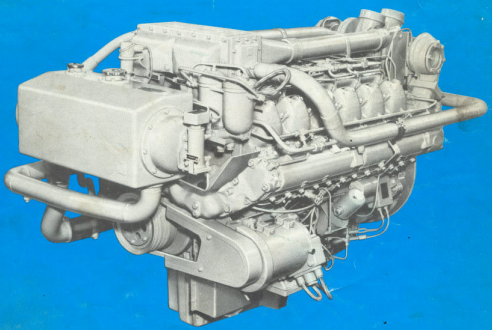


M·A·N

Urnula-S_Tekten
D2842LE 760HP
Piston 128mm

D 2542 MLE

478 kW (650 PS/HP)



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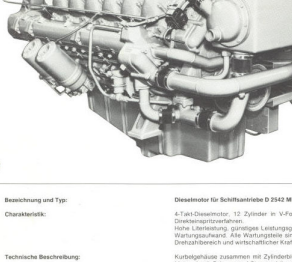
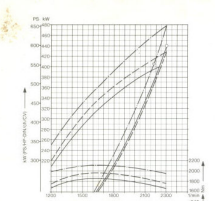


Bezeichnung und Typ:	**Dieselmotor für Schiffsantriebe D 2542 MLE**
Charakteristik:	4-Takt-Dieselmotor, 12 Zylinder in V-Form wassergekühlt mit Abgasturbolader und Ladeluftkühler. M.A.N.-Direkteinspritzverfahren. Hohe Literleistung, günstiges Leistungsgewicht, niedriger Geräuschpegel. Lange Lebensdauer sowie geringer Wartungsaufwand. Alle Wartungsteile sind gut zugänglich. Weicher, ruhiger Lauf, große Elastizität im ganzen Drehzahlbereich und wirtschaftlicher Kraftstoffverbrauch.
Technische Beschreibung:	Kurbelgehäuse zusammen mit Zylinderblock in einem Stück aus Gußeisen, nach unten durch Ölwanne, nach hinten durch Schwungrad-Steuergehäuse abgeschlossen. Auswechselbare, nasse Zylinderlaufbüchsen. Einzelzylinderköpfe mit eingegossenen Drallansaugkanälen und eingeschrumpften Ventilsitzringen. Leichtmetallkolben mit kugelförmigem Verbrennungsraum im Kolbenboden. Kolbenkühlung des Brennraumbodens durch Druckölstrahl über Düspritzdüsen, die an die Motorschmierung angeschlossen sind. Abgasturbolader mit radialer Gasführung und Schmierung über den Motor-Schmierölkreislauf. Wassergekühlte Abgasrohre. Pleuelstangen schräggeteilt, im Gesenk geschmiedet. 7fach gelagerte Kurbelwelle mit angeschraubten Gegengewichten und Lagerschalen mit Stahlrücken, Bleibronzeguß und feinlaier Laufschicht. Drehschwingungsdämpfer vorne angeordnet. Hängend angeordnete Ventile mit auswechselbaren Ventilführungen. Pro Zylinder je ein Ein- und Auslaßventil. Nockenwelle 7fach gelagert. Druckumlaufschmierung mit Zahnradpumpe für Kurbelwellen-, Pleuel- und Nockenwellenlager sowie Kolbenbolzenbuchsen und Kipphebel. Wartungsfreie Einspritzpumpe an die Motorschmierung angeschlossen. Einlochein-spritzdüsen. Schmierölreinigung durch Filterpatrone im Hauptstrom. Ölfilter und wasserbeaufschlagter Ölkühler in einer Einheit. Schubtriebanlasser und Drehstromlichtmaschine.
Anwendungsgebiete:	Arbeitsboote, Zoll- und Polizeiboote, Barkassen und Yachten.

Designation and Model:	**Diesel Engine D 2542 MLE for Marine Propulsion**
Features:	Four-stroke Diesel engine, 12-cylinder V-form, water-cooled with turbocharger and intercooler. M.A.N. direct-injection system. High unit output, low noise level, smooth and quiet running, and efficient fuel utilisation. Long service life and low upkeep. All parts to be serviced are readily accessible.
Specification:	Integral crankcase and cylinder block of cast iron, closed at bottom by oil sump, at rear by combined flywheel-timing gear case. Replaceable wet-type cylinder liners. Individual cylinder heads with integral swirl ports and shrunk-in valve seat inserts. Aluminium alloy pistons with spherical combustion chamber in piston crown. Piston cooling by oil sprayers connected to engine lubricating system. Turbocharger with radial gas flow and lubrication via engine lubricating. Water-cooled exhaust manifold. Die-forged connecting rods with diagonally split big-end bearing. 7-bearing crankshaft with screwed-on balance weights and steel-backed lead-bronze type bearing shells with ternary alloy running layer. Torsional vibration damper at front. Overhead valves with replaceable valve guides. One inlet and one exhaust valve per cylinder 7-bearing camshaft. Forced-feed lubrication by gear pump for main and big-end bearings, camshaft bearings as well as small-end bearings and rocker arms. Maintenance-free injection pump connected to engine lubrication system. Single-hole injectors Full-flow filter cartridge filter to clean the lubricating oil. Integral oil filter and oil-to-water heat exchanger. Solenoid-operated starter motor and three-phase alternator.
Range of application:	Work boats, customs and police boats, motor launches and yachts.



Technische Daten:

Bohrung	125 mm						
Hub	142 mm						
Hubvolumen	20,91 l						
Verdichtungsverhältnis	17:1						
Drehrichtung auf Schwungrad gesehen	links						
Schwungradgehäuse	SAE 1						
Gewicht trocken, ohne Kühleinrichtung	ca. 1295 kg						
Drehzahl	1500	1800	2100	2230	2300		1/min
Mittlere Kolbengeschwindigkeit	7,1	8,5	9,9	10,6	10,9		m/s
Dauerleistung A DIN 6270(1)	285 (388)	342 (465)	382 (519)	400 (544)			kW (PS)
Mittlerer eff. Druck	10,9	10,9	10,4	10,3			bar
Drehmoment	1814	1814	1737	1713			Nm
Leistung B DIN 6270(2)	302 (411)	362 (492)	405 (550)		429 (583)		kW (PS)
Mittlerer eff. Druck	11,6	11,5	11,1		10,7		bar
Drehmoment	1923	1920	1842		1781		Nm
Leistung B für schnelle Boote(3)					478 (650)		kW (PS)
Mittlerer eff. Druck					11,9		bar
Drehmoment					1985		Nm

Drehzahl max. 2300 1/min
Drehzahl min. bei Dauerbetrieb . . . 1500 1/min

(1) Motor 10 % überlastbar
(2) Motor nicht überlastbar
(3) Nur für Gleiter. Motor nicht überlastbar (Yachten, Polizei- und Zollboote, usw.)

Alle Leistungen ohne Abzug für Kühleinrichtungen. Text und Abbildungen unverbindlich.
Änderungen, bedingt durch den technischen Fortschritt, vorbehalten.

Technical Data:

Bore	125 mm						
Stroke	142 mm						
Swept volume	20.91 l						
Compression ratio	17:1						
Rotation looking on flywheel	anti-clockwise						
Flywheel housing	SAE 1						
Weight, dry without cooling system	abt. 1295 kg						
Speed	1500	1800	2100	2230	2300		r.p.m.
Mean piston velocity	7.1	8.5	9.9	10.6	10.9		m/s
Continuous rating A DIN 6270(1)	285 (388)	342 (465)	382 (519)	400 (544)			kW (HP)
Mean effective pressure	10.9 (11.1)	10.9 (11.1)	10.4 (10.6)	10.3 (10.5)			bar (kgf/cm²)
Torque	1814 (185)	1814 (185)	1737 (177)	1713 (175)			Nm (kgfm)
Rating B DIN 6270(2)	302 (411)	362 (492)	405 (550)		429 (583)		kW (HP)
Mean effective pressure	11.6 (11.8)	11.5 (11.7)	11.1 (11.3)		10.7 (10.9)		bar (kgf/cm²)
Torque	1923 (196)	1920 (196)	1842 (188)		1781 (182)		Nm (kgfm)
Rating B for high-speed craft(3)					478 (650)		kW (HP)
Mean effective pressure					11.9 (12.1)		bar (kgf/cm²)
Torque					1985 (202)		Nm (kgfm)

Speed, max. . . . . 2300 r.p.m.
Speed for continuous operation, min. 1500 r.p.m.

(1) Engine 10 % overloadable
(2) Engine not overloadable
(3) Only for planing hulls, engine not overloadable (yachts, police boats, customs boats, etc.)

Without power deduction for cooling equipment.
Text and illustrations are subject to change without notice to keep abreast with engineering progress.

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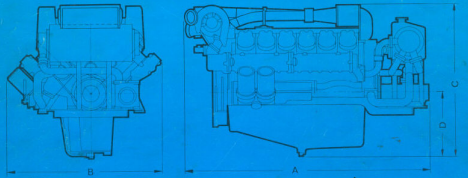
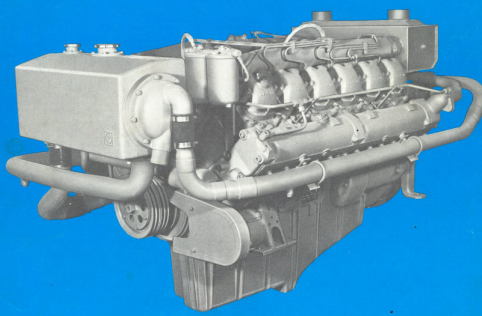
A	B	C	D											
2045	1200	1195	503											



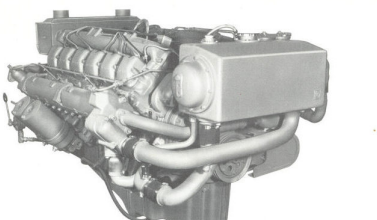
M·A·N

D 2842 ME

338 kW (460 PS/HP)

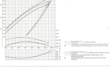


12V



Bezeichnung und Typ: Modell	**Dieselmotor für Schiffsantriebe D 2842 ME**
Charakteristik: Kurzcharakteristik	4-Takt-Dieselmotor, 12 Zylinder in V-Form wassergekühlt, mit M.A.N.-Direkteinspritzverfahren. Hohe Literleistung, niedriger Gewichtsgrad, weicher, ruhiger Lauf und wirtschaftlicher Kraftstoffverbrauch. Lange Lebensdauer sowie geringer Wartungsaufwand. Alle Wartungsstelle sind gut zugänglich.
Technische Beschreibung: Technik Text	Kurbelgehäuse zusammen mit Zylinderblock in einem Stück aus Gußeisen, nach unten durch Ölwanne, nach hinten durch Schwungrad-Steuergehäuse abgeschlossen. Ausgeschnittene, nasse Zylinderlaufbüchsen. Einzelzylinderköpfe mit eingegossenen Drallansaugkanälen und eingeschrumpften Ventilsitzringen. Leichtmetallkolben mit kugeltörmigem Verbrennungsraum im Kolbenboden. Kolbenkühlung durch Druckölstrahl über Düsenstöcke, die an die Motorschmierung angeschlossen sind. Wassergekühlte Abgasrohre. Pleuelstangen schräggeteilt, im Gesenk geschmiedet. Tlach gelagerte Kurbelwelle mit angeschraubten Gegengewichten, in Dreischichtgleitlagern mit Stahlschutzschalen gelagert. Drehschwingungsdämpfer vorne angeordnet. Hängend angeordnete Ventile mit auswechselbaren Ventilführungen. Pro Zylinder je ein Ein- und Auslaßventil. Nockenwelle Tlach gelagert. Druckumlaufschmierung mit Zahnradpumpe für Kurbelwellen-, Pleuel- und Nockenwellenlager sowie Kolbenbolzenbuchsen und Kipphebel. Wartungsfreie Einspritzpumpe an die Motorschmierung angeschlossen. Einlochein spritzdüsen. Schmierölreinigung durch Filterpatrone im Hauptstrom. Ölfilter und wasserbeaufschlagter Ölkühler in einer Einheit. Schutzbrelianlasser und Drehstromlichtmaschine.
Anwendungsgebiete: Uygulama Sahalari	Arbeitsboote, Zoll- und Polizeiboote, Barkassen und Yachten.

Designation and Model:	**Diesel Engine D 2842 ME for Marine Propulsion**
Features:	Four-stroke Diesel engine, 12-cylinder V-form type, water-cooled, using the M.A.N. direct-injection system. High specific output, low noise, smooth running and low fuel consumption. Long service life and low upkeep. All parts to be serviced are readily accessible.
Specification:	Integral crankcase and cylinder block of cast iron, closed at bottom by oil sump, at rear by combined flywheel/timing gear case. Replaceable wet-type cylinder liners. Individual cylinder heads with integral swirl ports and shrunk-in valve seat inserts. Aluminium alloy pistons with spherical combustion chamber in piston crown. Piston cooling by oil sprayers connected to engine lubricating system. Water-cooled exhaust manifold. Die-forged connecting rods with diagonally split big-end bearings. 7-bearing crankshaft with screwed-on balance weights, running on 3-layer steel-backed plain bearings. Torsional vibration damper at front. Overhead valves with replaceable valve guides. One inlet and one exhaust valve per cylinder. 7-bearing camshaft. Forced-feed lubrication by gear pump for main and big-end bearings, camshaft bearings as well as small-end bearings and rocker arms. Maintenance-free injection pump connected to engine lubrication system. Single-hole injectors. Full-flow cartridge filter to clean the lubricating oil. Integral oil filter and oil-to-water heat exchanger. Solenoid-operated starter motor and three-phase alternator.
Range of application:	Work boats, customs and police boats, motor launches and yachts.



Technische Daten: Teknik özellikleri

Bohrung	128 mm	silindir çapı
Hub	142 mm	strok
Hubvolumen	21,93 l	silindir hacmi
Verdichtungsverhältnis	17:1	kompresyon oranı
Drehrichtung auf Schwungrad gesehen	links	
Schwungradgehäuse	SAE 1	
Gewicht des Motors trocken, ohne Kühleinrichtung	ca. 1200 kg	

Drehzahl	1500	1800	2100	2300	2400	1/min
Mittlere Kolbengeschwindigkeit	7,1	8,5	9,9	10,9	11,4	m/s
Dauerleistung A DIN 6270 (1)	211 (287)	250 (340)	285 (388)	300 (408)		kW (PS)
Mittlerer eff. Druck	7,7	7,6	7,43	7,14		bar
Drehmoment	1343	1326	1296	1246		Nm
Leistung B DIN 6270 (2)	232 (315)	275 (374)	305 (415)	315 (428)		kW (PS)
Mittlerer eff. Druck	8,46	8,36	7,95	7,50		bar
Drehmoment	1477	1459	1387	1308		Nm
Leistung B für schnelle Boote (3)					338 (460)	kW (PS)
Mittlerer eff. Druck					8,04	bar
Drehmoment					1403	Nm

Drehzahl max. . . . 2400 1/min
Drehzahl min. bei Dauerbetrieb . . . 1500 1/min

(1) Motor 10 % überlastbar
(2) Motor nicht überlastbar
(3) Nur für Gleiter
(Yachten, Polizei- und Zollboote, usw.)

Alle Leistungen ohne Abzug für Kühleinrichtungen. Text und Abbildungen unverbindlich.
Änderungen, bedingt durch den technischen Fortschritt, vorbehalten.

Technical Data:

Bore	128 mm
Stroke	142 mm
Swept volume	21.93 l
Compression ratio	17:1
Rotation looking on flywheel	anti-clockwise
Flywheel housing	SAE 1
Weight, dry, without cooling system	abt. 1200 kg

Speed	1500	1800	2100	2300	2400	r.p.m.
Mean piston velocity	7.1	8.5	9.9	10.9	11.4	m/s
Continuous rating A DIN 6270 (1)	211 (287)	250 (340)	285 (388)	300 (408)		kW (HP)
Mean effective pressure	7.7 (7.85)	7.6 (7.75)	7.43 (7.58)	7.14 (7.28)		bar (kgf/cm²)
Torque	1343 (136.9)	1326 (135.2)	1296 (132.2)	1246 (127.1)		Nm (kgfm)
Rating B DIN 6270 (2)	232 (315)	275 (374)	305 (415)	315 (428)		kW (HP)
Mean effective pressure	8.46 (8.63)	8.36 (8.52)	7.95 (8.11)	7.50 (7.65)		bar (kgf/cm²)
Torque	1477 (150.6)	1459 (148.8)	1387 (141.4)	1308 (133.4)		Nm (kgfm)
Rating B for high-speed craft (3)					338 (460)	kW (HP)
Mean effective pressure					8.04 (8.20)	bar (kgf/cm²)
Torque					1405 (143.1)	Nm (kgfm)

Speed, max. . . . 2400 r.p.m.
Speed for continuous operation, min. . 1500 r.p.m.

(1) Engine 10 % overloadable
(2) Engine not overloadable
(3) Only for planing hulls
(yachts, police boats, customs boats, etc.)

Without power deduction for cooling equipment.
Text and illustrations are subject to change without notice to keep abreast with engineering progress.

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