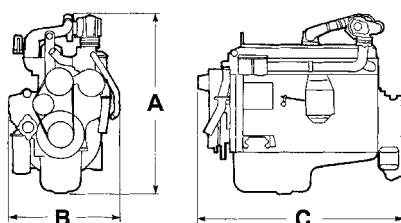


TD164KAE

Engine for industrial applications

TD164KAE

Turbocharged _____
 Diesel fuel _____
 Displacement indication (l) _____
 Generation _____
 Water to air intercooler _____
 Version _____
 Emission controlled _____



mm / in.

A = 1452 / 57.2

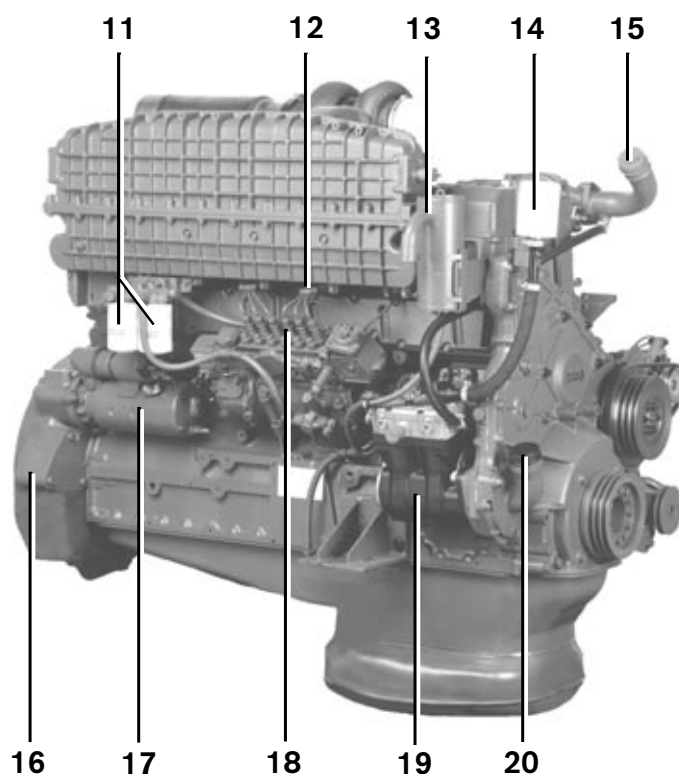
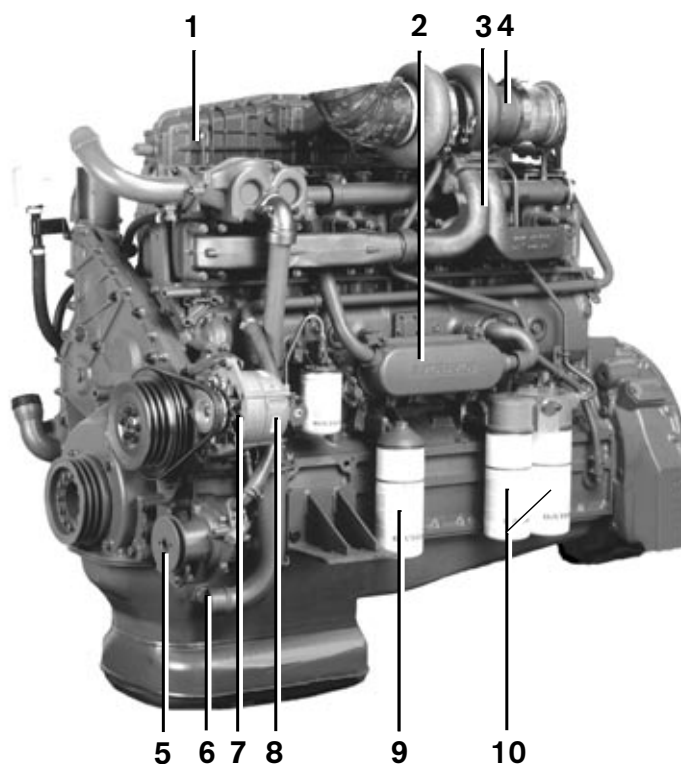
B = 1010 / 39.8

C = 1677 / 66.0

- Based on Volvo's well proven, dependable six-in-line turbocharged engine.
- Built with a high degree of precision to withstand high outputs and at the same time correspond to high demands on operational reliability and service life.
- Low fuel consumption and low noise level.

1. Intercooler
2. Oil cooler
3. Air cooled exhaust manifold
4. Turbocharger
5. Water pump (intercooler circuit)
6. Coolant pipe, inlet
7. Alternator (option)
8. Gear driven coolant pump
9. By-pass oil filter of spin-on type
10. Full-flow oil filters of spin-on type
11. Twin fuel filters
12. Cable iron
13. Crankcase ventilation
14. Air filter compressor (option)
15. Coolant pipe, outlet
16. Flywheel housing SAE 1
17. Starter motor
18. Injection pump
19. Air compressor (option)
20. Oil filler

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



**VOLVO
PENTA**

Technical Data

General

In-line four stroke diesel engine with direct injection
Turbocharged and water to air intercooled
Rotation direction, anti-clockwise viewed towards flywheel

Number of cylinders 6
Displacement, total 16.12 liter / 984 in³
Firing order 1-5-3-6-2-4
Bore 144 mm / 5.67 in
Stroke 165 mm / 6.50 in
Compression ratio 17.5:1

Dry weight, kg / lb 1456 / 3210

Wet weight, kg / lb 1511 / 3331

TD164KAE	Speed, rpm	1200	1400	1600	1800
Performance	Test number	MM2_940125_53			
IFN Power					
without fan	kW / hp	292 / 397	327 / 445	356 / 484	371 / 505
with fan	kW / hp	288 / 392	324 / 441	351 / 477	367 / 499
Torque at IFN Power	Nm / lbft	2317 / 1709	2239 / 1646	2123 / 1566	1968 / 1452
Mean piston speed	m/s / ft/sec	6.6 / 21.6	8.3 / 27.2	8.8 / 28.9	9.9 / 32.5
Effective mean pressure	MPa / psi	1.81 / 262	1.74 / 252	1.66 / 241	1.53 / 222
Max combustion pressure	MPa / psi	13.2 / 1914	14.3 / 2074	16.2 / 2060	15.4 / 2016
Total mass moment of inertia, J (m2)	kgm ² / lbft ²	4.09 / 97.06			
Degree of irregularity at IFN Power		1:37	1:58	1:84	1:132
Residual speed droop at load increase from 0 to 100% at IFN Power	%	40	24	20	14
Friction Power	kW	27 / 37	40 / 54	44 / 60	54 / 73
Lubrication system					
Lubricating oil average consumption at IFN Power	l/h / US gal/h	0.15 / 0.039			
Oil system capacity including filters	liter / US gal	61 / 16.1			
Oil change interval/ specifications					
VDS-2	h	600			
VDS, ACEA E3	h	400			
ACEA E2, API CF, CF-4, CG-4	h	200			
Fuel system					
Specific fuel consumption at					
25% of IFN Power	g/kWh / lb/hph	—	—	—	390 / 0.632
50% of IFN Power	g/kWh / lb/hph	—	—	—	221 / 0.358
75% of IFN Power	g/kWh / lb/hph	—	—	—	213 / 0.345
100% of IFN Power	g/kWh / lb/hph	200 / 0.324	199 / 0.322	205 / 0.332	216 / 0.350
Intake and exhaust system					
Air consumption at IFN Power	m ³ /min / cfm	18.9 / 667	22.8 / 805	27.3 / 837	31.1 / 1098
Max allowable air intake restriction	kPa / In wc	5 / 20			
Max allowable back-pressure in exhaust line	kPa / In wc	10 / 40,2			
Exhaust gas flow at IFN Power	m ³ /min / cfm	54.4 / 1921	63.0 / 2225	72.8 / 2571	81.2 / 2868
Exhaust gas smoke	Bosch units	0.32	0.25	0.33	0.48
Cooling system					
Heat rejection radiation from engine at IFN Power	kW / BTU/min	18 / 1023	21 / 1194	22 / 1251	23 / 1310
Heat rejection to coolant at IFN Power	kW / BTU/min	169 / 9611	197 / 11203	202 / 11481	217 / 12340

Power Standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ/kg (18360 BTU/lb) and a density of 0.84 kg/litre (7.01 lb/US gal, 8.42 lb/imp gal), also where this involves a deviation from the standards.

Rating Guideline

IFN Power rating corresponds to ISO Overload Power. It is intended for applications where intermittent power is utilized less than 1 hour within any period of 12 hours of continuous operation. The average load factor must not exceed the continuous rating.

Derating

The engine may be operated up to 1000 m altitude and 40 °C ambient air temperature without deration.

For operation at higher altitudes and temperatures the power should be derated according to the following factors:

Altitude deration factor <3000 m 4% / 500 m
Altitude deration factor >3000 m 6% / 500 m
Ambient temperature deration factor 2% / 5 °C.
Humidity No derating

VOLVO PENTA

AB Volvo Penta
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