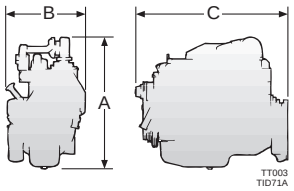
TWD 1031 VE

Engine for industrial applications

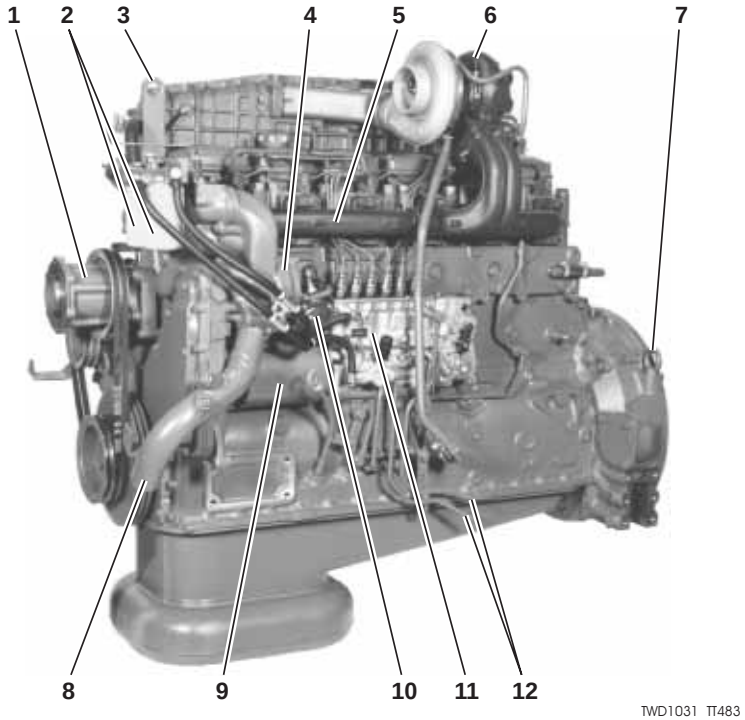
TWD 1031 VE

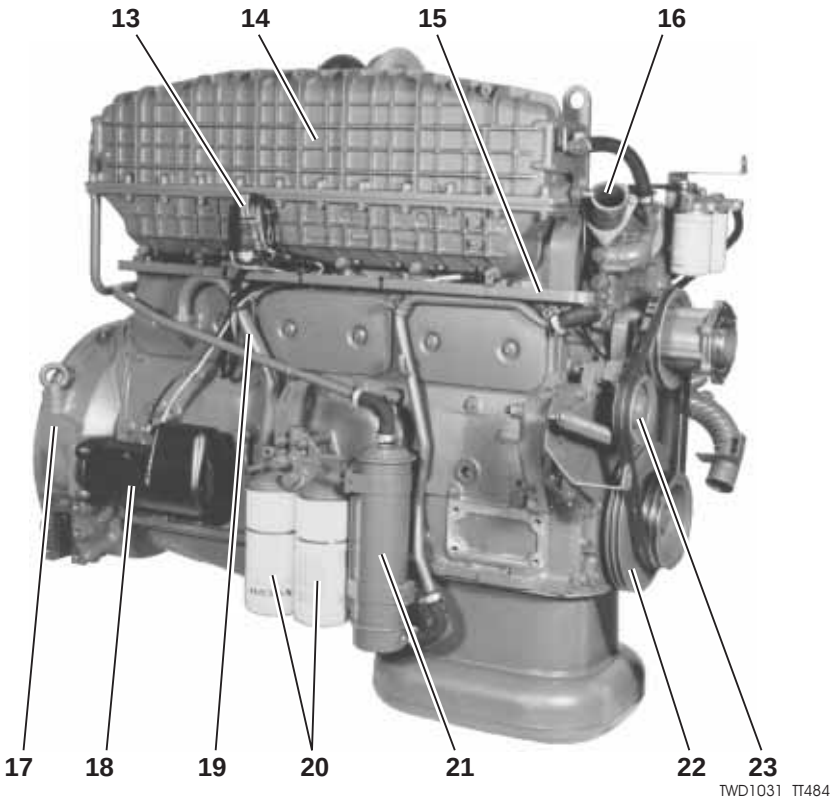
- Turbocharged
- Water to air intercooled
- Diesel fuel
- Displacement indication (l)
- Generation
- Version
- Versatility engine
- Emission controlled



A = 1249 mm / 49.2 in.
B = 752 mm / 29.6 in.
C = 1379 mm / 54.3 in.

- 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 safety and service life.
- Exhaust gas emission controlled.
- Smoke control through effective smoke limiter.
- Low fuel consumption and low noise level.





1. Fan hub
2. Twin fuel filter of throw-away type
3. Lift eyelet
4. Gear-driven coolant pump
5. Air cooled exhaust manifold
6. Turbocharger
7. Lift eyelet
8. Coolant pipe, inlet
9. Pump coupling guard
10. Smoke limiter
11. Injection pump
12. Fuel pipes for tank connection
13. Relay for inlet manifold heater
14. Intercooler
15. Cable iron
16. Coolant pipe, outlet
17. Flywheel housing SAE 1
18. Starter motor
19. Crankcase ventilation
20. Full-flow oil filter of spin-on typ
21. Oil cooler
22. Vibration damper
23. Automatic belt tensioner

VOLVO PENTA

Technical data TWD 1031 VE

Volvo Penta reserves the right to make changes at any time, without notice, as to technical data, prices, materials, standard equipment, specifications and models, and to discontinue models.

General

In line four stroke diesel engine with direct injection
Turbocharged and water to air intercooled

Number of cylinders	6	Bore	120.65 mm / 4.75 in
Displacement, total	9.60 liters / 586 in^3	Stroke	140.0 mm / 5.51 in
Firing order	1-5-3-6-2-4	Compression ratio	18.0:1
Rotation direction, anti-clockwise viewed towards flywheel		Dry weight , kg/lb	Power Pac 1230/2710 Engine only 975/2150
		Wet weight, kg/lb	Power Pac 1289/2840 Engine only 1010/2227

TWD 1031 VE	Speed, rpm	1500	1800	2000	2200
Performance	Test no.		20000091		
IFN Power					
without fan	kW / hp	219 / 297	232 / 315	235 / 320	235 / 320
with fan	kW / hp	216 / 293	226 / 307	227 / 308	226 / 307
ICXN Power					
without fan	kW / hp	195 / 265	210 / 285	212 / 288	–
with fan	kW / hp	192 / 261	204 / 277	204 / 277	–
Torque at					
IFN Power	Nm / lbft	1390 / 1024	1233 / 908	1130 / 832	1078 / 794
ICXN Power	Nm / lbft	1241 / 914	1114 / 821	1008 / 743	–
Mean piston speed	m/s / ft/sec	7.0 / 23.0	8.4 / 27.6	9.3 / 30.5	9.8 / 32.1
Effective mean pressure at ICXN Power	MPa / psi	1.82 / 264	1.61 / 234	1.48 / 215	1.41 / 205
Max combustion pressure at ICXN Power	MPa / psi	14.1 / 2042	14.5 / 2100	14.9 / 2165	15.1 / 2195
Total mass moment of inertia, J (mR^2)	kgm^2 / $lbft^2$		2.51 / 59.6		
Degree of irregularity at ICXN Power		–	–	–	–
Residual speed droop					
at load increase from 0 to 100% at IFN Power					6–8
Friction Power	kW	24	33	40	45
Lubrication system					
Lubricating oil average consumption at					
ICXN Power	g/kwh		0.5 at 2000 rpm		
Oil system capacity including filters	liters		36		
Oil change interval					
VDS-2	h		600		
VDS	h		400		
CCMC D5	h		200		
Fuel system					
Specific fuel consumption at					
25% of IFN Power	g/kWh / lb/hph	235 / 0.381	257 / 0.416	281 / 0.455	289 / 0.468
50% of IFN Power	g/kWh / lb/hph	209 / 0.338	219 / 0.354	232 / 0.375	237 / 0.384
75% of IFN Power	g/kWh / lb/hph	203 / 0.329	209 / 0.338	219 / 0.354	225 / 0.364
100% of IFN Power	g/kWh / lb/hph	202 / 0.327	209 / 0.338	219 / 0.354	222 / 0.359
Intake and exhaust system					
Air consumption at IFN Power	m^3/ min / cfm	15.2 / 536	20.8 / 734	23.6 / 834	24.8 / 875
Max allowable air intake restriction	kPa / In wc		5 / 20		
Heat rejection to exhaust at IFN Power	kW / BTU/min	169 / 9616	190 / 10811	210 / 11949	229 / 13030
Exhaust gas temperature after turbine at					
IFN Power	°C / °F	490 / 910	415 / 772	405 / 753	410 / 762
Max allowable back-pressure in exhaust line	kPa / In wc	4.0 / 16.0	6.5 / 26.0	8.0 / 32.0	10.0 / 40.0
Exhaust gas flow at IFN Power	m^3/min / cfm	40.1 / 1415	48.2 / 1701	52.4 / 1849	54.6 / 1927
Exhaust gas smoke	Bosch units	0.5	0.5	0.6	0.6
Cooling system					
Heat rejection radiation from engine					
at IFN Power	kW / BTU/min	13 / 740	14 / 797	14 / 796	15 / 853
Heat rejection to coolant at IFN Power	kW / BTU/min	121 / 6885	139 / 7909	154 / 8758	159 / 9042

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 Guidelines

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.

ICXN Power rating corresponds to ISO Standard Power for continuous operation with 10% overload available. It is intended for constant load applications with uninterrupted service for extended periods of time. The ICXN power can be exceeded by 10% 1 hour within any period of 12 hours of continuous operation. The average load factor must not exceed the continuous rating.

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