

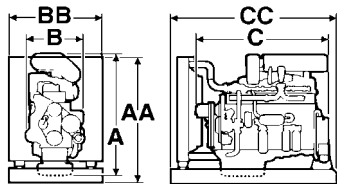
VOLVO PENTA INDUSTRIAL DIESEL

TWD630VE

140 kW (190 hp) crankshaft power acc. to ISO 3046

TWD 630 VE

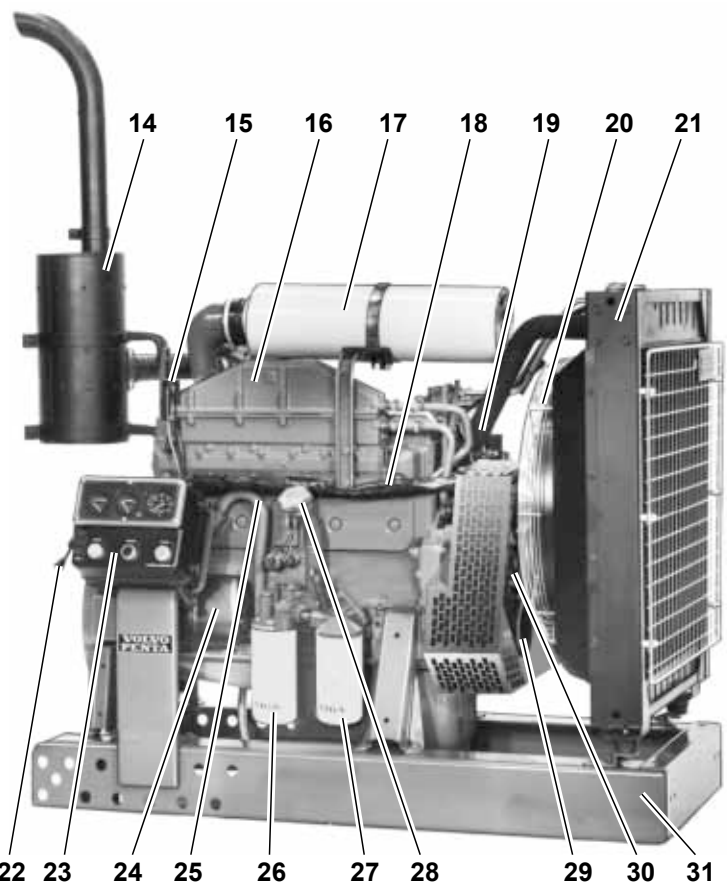
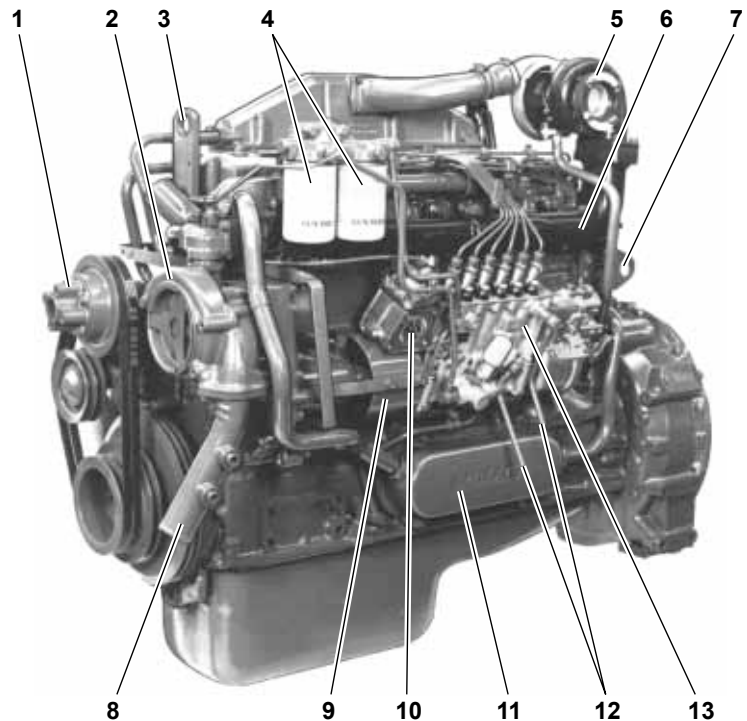
Turbocharged _____
 Water to air intercooled _____
 Diesel fuel _____
 Displacement indication (l) _____
 Generation _____
 Version _____
 Versatility engine _____
 Emission controlled _____



mm / in. 51
 A = 1095 mm / 43.1 in. AA = 1371 / 54.0
 B = 621 mm / 24.4 in. BB = 1029 / 40.5
 C = 1202 mm / 47.3 in. CC = 1796 / 70.7

- Based on Volvo's well proven dependable six-in-line turbocharged and water to air intercooled 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. Gear-driven coolant pump
3. Lift eyelet
4. Twin fuel filters of throw-away type
5. Turbocharger
6. Air cooled exhaust manifold
7. Lift eyelet
8. Coolant pipe, inlet
9. Pump coupling guard
10. Smoke limiter
11. Oil cooler
12. Fuel pipes for tank connection
13. Injection pump
14. Silencer
15. Relay for inlet manifold heater
16. Intercooler
17. Air filter
18. Cable iron
19. Coolant pipe, outlet
20. Fan guard
21. Tropical radiator
22. Speed control
23. Instrument panel
24. Starter motor
25. Crankcase ventilation
26. Full-flow oil filter of spin-on type
27. By-pass oil filter of spin-on type
28. Oil filler
29. Vibration damper
30. Automatic belt tensioner
31. Base frame



Power pac with optional equipment

TWD630VE

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

Displacement, total 5.48 liters / 335 in³

Firing order 1-5-3-6-2-4

Rotation direction, anti-clockwise viewed towards flywheel

Bore 98.43 mm / 3.88 in

Stroke 120 mm / 4.72 in

Compression ratio 18.3:1

Dry weight, kg/lb Power Pac 898/1978 Engine only 665/1465

Wet weight, kg/lb Power Pac 964/2124 Engine only 700/1542

| TWD630VE | Speed, rpm | 1800 | 2000 | 2200 | 2400 |
|--|--------------------------------------|-------------|-------------|-------------|-------------|
| Performance | Test no. | A 1535 | | | |
| IFN Power | | | | | |
| without fan | kW / hp | 121 / 165 | 130 / 177 | 137 / 186 | 140 / 190 |
| with fan | kW / hp | 118 / 160 | 126 / 171 | 131 / 178 | 131 / 178 |
| ICXN Power | | | | | |
| without fan | kW / hp | 110 / 150 | 118 / 160 | 124 / 169 | 127 / 173 |
| with fan | kW / hp | 107 / 145 | 114 / 155 | 118 / 160 | 118 / 160 |
| Torque at | | | | | |
| IFN Power | Nm / lbft | 642 / 473 | 621 / 458 | 595 / 439 | 535 / 395 |
| ICXN Power | Nm / lbft | 584 / 431 | 563 / 415 | 538 / 397 | 485 / 358 |
| Mean piston speed | m/s / ft/sec | 7.2 / 23.6 | 8 / 26.2 | 8.8 / 28.9 | 10.0 / 32.8 |
| Effective mean pressure at ICXN Power | MPa / psi | 1.34 / 194 | 1.29 / 187 | 1.23 / 178 | 1.11 / 161 |
| Max combustion pressure at ICXN Power | MPa / psi | 10.4 / 1508 | 11.5 / 1668 | 12.1 / 1755 | 11.2 / 1624 |
| Total mass moment of inertia, J (mR ²) | kgm ² / lbft ² | | 1.50 / 35.6 | | |
| Degree of irregularity at IFN Power | | 1:121 | 1:190 | 1:295 | 1:630 |
| Residual speed droop | | | | | |
| at load increase from 0 to 100% at IFN Power | % | | | 6-8 | |
| Friction Power | kW | 17 | 20 | 23 | 26 |
| Lubrication system | | | | | |
| Lubricating oil average consumption at ICXN Power | g/kWh | | | 0.4 | |
| Oil system capacity including filters | liters | | | 24 | |
| Fuel system | | | | | |
| Specific fuel consumption at | | | | | |
| 25% of IFN Power | g/kWh / lb/hph | 284 / 0.461 | 292 / 0.473 | 308 / 0.499 | 346 / 0.561 |
| 50% of IFN Power | g/kWh / lb/hph | 232 / 0.376 | 232 / 0.376 | 240 / 0.389 | 256 / 0.415 |
| 75% of IFN Power | g/kWh / lb/hph | 219 / 0.355 | 218 / 0.353 | 220 / 0.356 | 235 / 0.381 |
| 100% of IFN Power | g/kWh / lb/hph | 217 / 0.352 | 214 / 0.347 | 217 / 0.352 | 232 / 0.376 |
| Intake and exhaust system | | | | | |
| Air consumption at IFN Power | m ³ / min / cfm | 8.4 / 297 | 9.5 / 335 | 10.5 / 371 | 11.8 / 417 |
| Max allowable air intake restriction | kPa / In wc | 5 / 20 | | | |
| Heat rejection to exhaust at IFN Power | kW / BTU/min | 98 / 5573 | 101 / 5744 | 110 / 6256 | 131 / 7450 |
| Exhaust gas temperature after turbine at IFN Power | °C / °F | 523 / 973 | 492 / 918 | 474 / 885 | 473 / 883 |
| Max allowable back-pressure in exhaust line | kPa / In wc | 6 / 24 | 7.5 / 30 | 9 / 36 | 12 / 48 |
| Exhaust gas flow at IFN Power | m ³ /min / cfm | 24.0 / 848 | 25.5 / 901 | 27.3 / 964 | 30.2 / 1067 |
| Exhaust gas smoke | Bosch units | 0.8 | 0.6 | 0.7 | 0.8 |
| Cooling system | | | | | |
| Heat rejection radiation from engine at IFN power | kW / BTU/min | 7 / 398 | 8 / 455 | 8 / 455 | 9 / 512 |
| Heat rejection to coolant at IFN power | kW / BTU/min | 77 / 4379 | 81 / 4606 | 86 / 4890 | 93 / 5289 |

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.

VOLVO PENTA

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