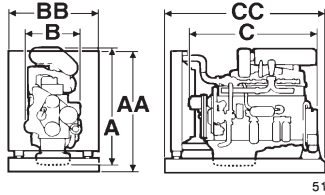


TWD 1630 V

Engine for industrial applications

TWD 1630 V

Turbocharged
Water to air charge air cooler
Diesel fuel
Displacement indication (l)
Generation
Version
Versatility engine



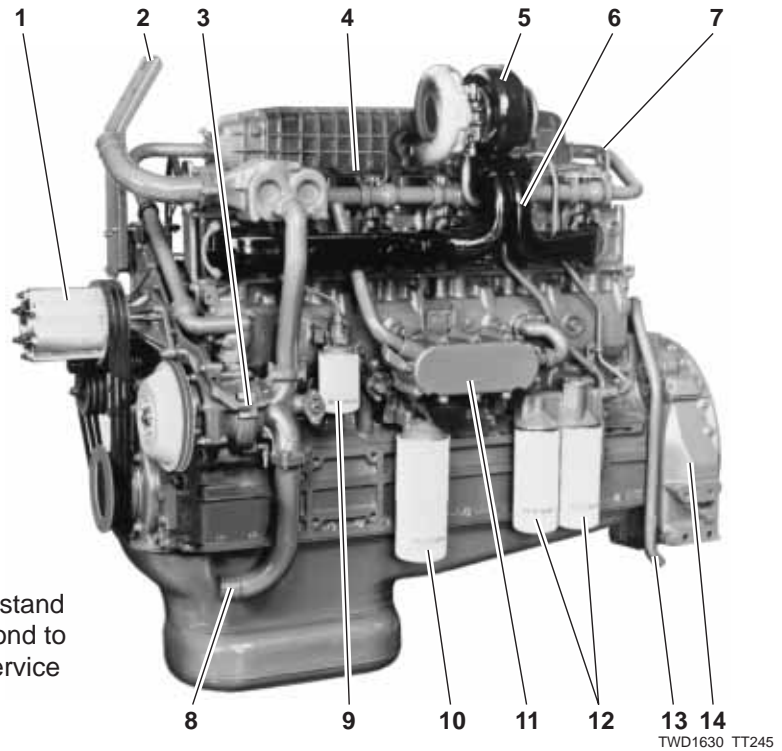
mm / in.

A = 1450 / 57.1 AA = 1713 / 67.4

B = 735 / 28.9 BB = 1173 / 46.2

C = 1677 / 66.0 CC = 2292 / 90.2

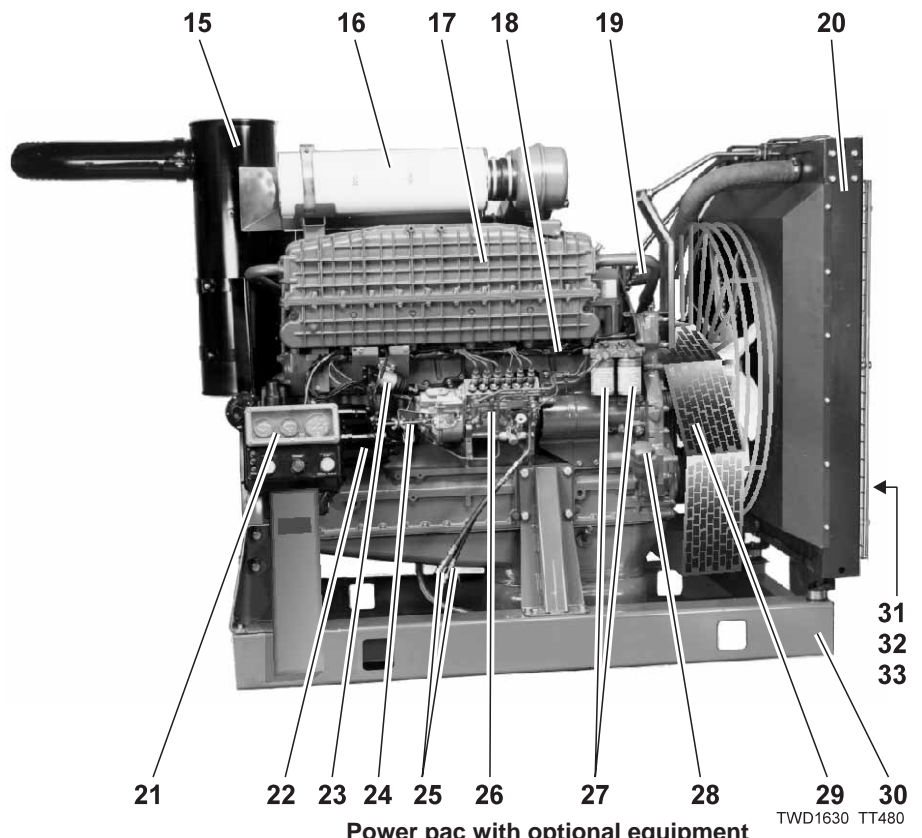
- Based on Volvo's well proven, dependable six-in-line turbocharged engine.
- Built with a high degree of precision to withstand high outputs and at the same time correspond to high demands on operational safety and service life.
- Low fuel consumption and low noise level.



TWD1630 TT245

1. Fan hub
2. Radiator support
3. Gear-driven coolant pump
4. Relay for inlet manifold heater
5. Turbocharger
6. Air cooled exhaust manifold
7. Lift eyelet
8. Coolant pipe, inlet
9. Coolant filter
10. By-pass filter of spin-on type
11. Oil cooler
12. Twin full-flow oil filter of spin-on type
13. Crankcase ventilation
14. Flywheel housing SAE 1
15. Silencer
16. Air filter
17. Intercooler
18. Cable iron
19. Coolant pipe, outlet
20. Tropical radiator
21. Instrument panel
22. Starter motor
23. Stop solenoid
24. Speed control
25. Fuel pipes for tank connection
26. Injection pump
27. Twin fuel filters of throw-away type
28. Oil filler
29. Automatic belt tensioner
30. Base frame
31. Alternator *
32. Oil drain pump *
33. Battery box *

* Left hand side



Power pac with optional equipment

TWD1630 TT480

**VOLVO
PENTA**

Technical data TWD 1630 V

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		Bore	144.0 mm / 5.67 in
Turbocharged and water to air intercooled		Stroke	165 mm / 6.50 in
Number of cylinders	6	Compression ratio	15.0:1
Displacement, total	16.12 liters / 984 in ³	Dry weight, kg/lb Power Pac	1714/3776 Engine only 1409/3104
Firing order	1-5-3-6-2-4	Wet weight, kg/lb Power Pac	1835/4043 Engine only 1501/3307
Rotation direction, anti-clockwise viewed towards flywheel			

TWD 1630 V	Speed, rpm	1200	1500	1600	1800
Performance	Test no.	23000380			
ICFN Power					
without fan	kW / hp	293 / 399	351 / 477	363 / 493	383 / 520
with fan	kW / hp	288 / 392	342 / 465	353 / 480	368 / 500
Torque at					
ICFN Power	Nm / lbft	2332 / 1720	2225 / 1649	2170 / 1601	2033 / 1500
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 at ICFN Power	MPa / psi	1.82 / 264	1.73 / 251	1.68 / 244	1.56 / 226
Max combustion pressure at ICFN Power	MPa / psi	15.2 / 2204	15.1 / 2190	15.0 / 2175	14.5 / 2103
Total mass moment of inertia, J (mR ²)	kgm ² / lbft ²	4.09 / 97.06			
Degree of irregularity at ICFN Power		1:34	1:74	1:99	1:180
Residual speed droop					
at load increase from 0 to 100% at ICFN Power %		40	24	20	14
Friction Power	kW	27	40	44	54

Lubrication system

Lubricating oil consumption at ICFN Power	liter/h / US gal/h	0.14 / 0.037 at 1800 rpm
Oil system capacity including filters	liters	64
Oil change interval		
VDS-2	h	600
VDS	h	400
CCMC D5	h	200

Fuel system

Specific fuel consumption at					
25% of ICFN Power	g/kWh / lb/hph	232 / 0.376	236 / 0.383	248 / 0.402	263 / 0.426
50% of ICFN Power	g/kWh / lb/hph	209 / 0.339	210 / 0.340	216 / 0.350	223 / 0.361
75% of ICFN Power	g/kWh / lb/hph	204 / 0.331	203 / 0.329	207 / 0.336	215 / 0.349
100% of ICFN Power	g/kWh / lb/hph	204 / 0.331	203 / 0.329	206 / 0.334	213 / 0.345

Intake and exhaust system

Air consumption at ICFN Power	m ³ /min / cfm	18.9 / 670	24.9 / 880	26.7 / 940	29.7 / 1050
Max allowable air intake restriction	kPa / In wc		5 / 20		
Heat rejection to exhaust at ICFN Power	kW / BTU/min	228 / 12970	279 / 15870	301 / 17120	349 / 19850
Exhaust gas temperature after turbine at ICFN Power	°C / °F	550 / 1020	500 / 930	500 / 930	505 / 940
Max allowable back-pressure in exhaust line	kPa / In wc	2.0 / 8.0	6.5 / 26.1	8.0 / 32.1	10.0 / 40.1
Exhaust gas flow at ICFN Power	m ³ /min / cfm	54.6 / 1930	66.7 / 2350	70.5 / 2490	77.5 / 2740
Exhaust gas smoke	Bosch units	1.1	0.7	0.5	1.4

Cooling system

Heat rejection radiation from engine at ICFN Power	kW / BTU/min	18 / 1020	21 / 1190	22 / 1250	23 / 1310
Heat rejection to coolant at ICFN Power	kW / BTU/min	169 / 9610	197 / 11200	202 / 11490	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.

ICFN Power rating corresponds to ISO Standard Power for continuous operation. It is intended for constant load applications with uninterrupted service at full load for extended periods of time.

Derating

The engine may be operated up to 1000 m altitude and 50 °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	1.5% / 5 °C.
Humidity	No derating