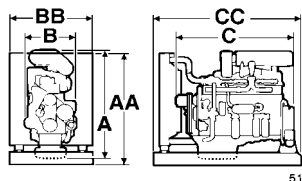
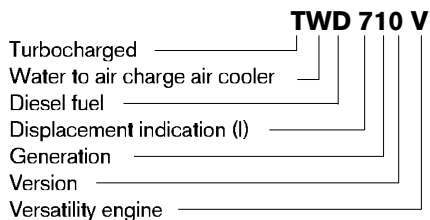


VOLVO PENTA INDUSTRIAL DIESEL

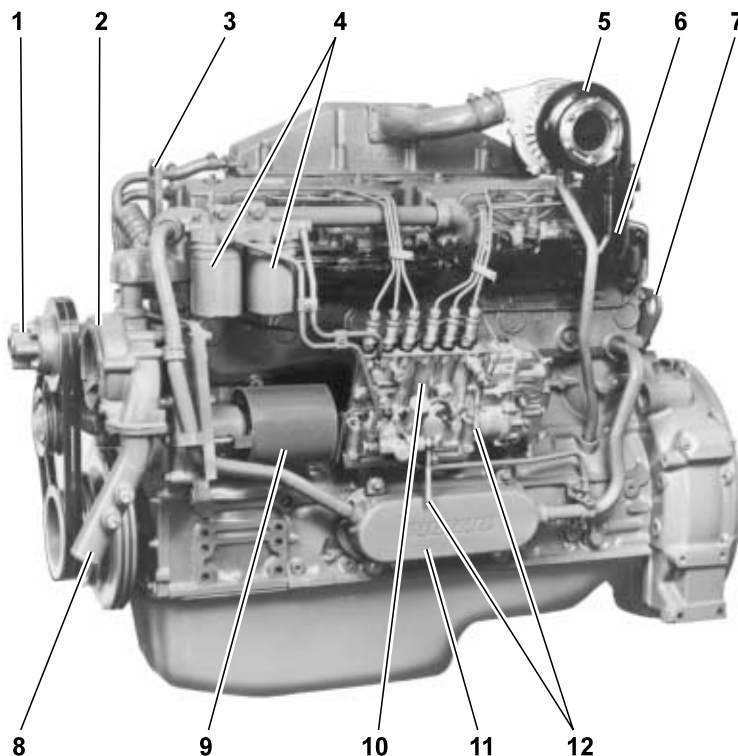
TWD710V

168 kW (228 hp) crankshaft power acc. to ISO 3046



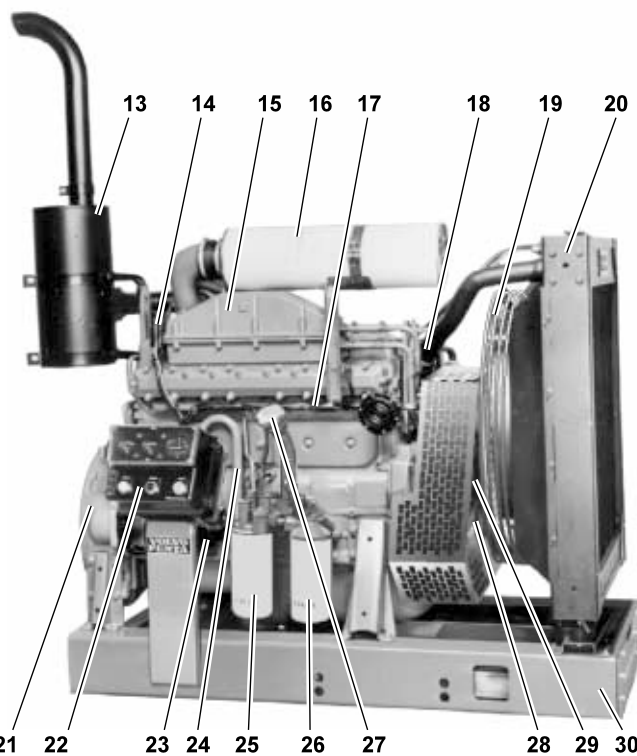
A = 1155 / 45.5 AA = 2140 / 84.3 mm / in.
 B = 641 / 25.2 BB = 845 / 33.3 mm / in.
 C = 1265 / 49.8 CC = 1626 / 64.0 mm / in.

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



TWD710 TT382

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. Injection pump
11. Oil cooler
12. Fuel pipes for tank connection
13. Silencer
14. Relay for inlet manifold heater
15. Intercooler
16. Air filter
17. Cable iron
18. Coolant pipe, outlet
19. Fan guard
20. Tropical radiator
21. Flywheel housing SAE 2
22. Instrument panel
23. Starter motor
24. Crankcase ventilation
25. Full-flow oil filter of spin-on type
26. By-pass oil filter of spin-on type
27. Oil filler
28. Vibration damper
29. Automatic belt tensioner
30. Base frame



TWD710 TT379

Power Pac with optional equipment

**VOLVO
PENTA**

TWD710V

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.

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

Dry weight kg/lb Engine only 770 / 1698 Power Pac 1048 / 2310

Wet weight kg/lb Engine only 812 / 1790 Power Pac 1109 / 2445

Number of cylinders 6

Displacement, total 6.73 liter / 411 in³

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

Bore 104.77 mm / 4.12 in

Stroke 130 mm / 5.12 in

Compression ratio 14.5:1

TWD 710 V	Speed, rpm	1500	1800	2000	2200
Performance	Test no.	24000652			
ICFN Power without fan	kW / hp	135 / 184	153 / 208	162 / 220	168 / 228
with fan	kW / hp	133 / 181	149 / 203	157 / 214	162 / 220
Torque at ICFN Power	Nm / lbft	860 / 634	812 / 599	774 / 571	729 / 538
Mean piston speed	m/s / ft/sec	6.5 / 21.3	7.8 / 25.6	8.7 / 28.5	9.5 / 31.2
Effective mean pressure at ICFN Power	MPa / psi	1.60 / 232	1.52 / 335	1.44 / 209	1.36 / 197
Max combustion pressure at ICFN Power	MPa / psi	13.0 / 1890	12.8 / 1860	12.6 / 1830	12.2 / 1770
Total mass moment of inertia, J (mR ²)	kgm ² / lbft ²	1.63 / 38.7			
Degree of irregularity at ICFN Power		1:58	1:112	1:181	1:299
Residual speed droop					
at load increase from 0 to 100%	%		6-8		
Friction Power	kW	20	24	28	31

Lubrication system

Lubricating oil average consumption at ICFN Power

liter/h / US gal/h

0.13 / 0.034 at 1800 rpm

Oil system capacity including filters

liter / US gal

29 / 7.7

Fuel system

Specific fuel consumption at

25% of ICFN Power

g/kWh / lb/hph

255 / 0.413

265 / 0.429

274 / 0.444

295 / 0.478

50% of ICFN Power

g/kWh / lb/hph

220 / 0.356

223 / 0.361

232 / 0.376

245 / 0.397

75% of ICFN Power

g/kWh / lb/hph

209 / 0.339

211 / 0.342

216 / 0.350

226 / 0.366

100% of ICFN Power

g/kWh / lb/hph

208 / 0.337

210 / 0.340

217 / 0.352

225 / 0.364

Intake and exhaust system

Air consumption at ICFN Power

m³/min / cfm

8.3 / 290

11.0 / 390

12.6 / 440

13.7 / 480

Max allowable air intake restriction

kPa / In wc

5 / 20

Heat rejection to exhaust at ICFN Power

kW / BTU/min

99 / 5630

117 / 6650

133 / 7560

152 / 8640

Exhaust gas temperature after turbine

at ICFN Power

°C / °F

550 / 1020

520 / 970

500 / 930

510 / 950

Max allowable back-pressure in exhaust line

kPa / In wc

5.6 / 22.5

8.0 / 32.1

9.9 / 39.8

12.0 / 48.2

Exhaust gas flow at ICFN Power

m³/min / cfm

24.2 / 850

29.5 / 1040

33.0 / 1170

35.2 / 1240

Exhaust gas smoke

Bosch units

1.1

0.6

0.8

1.0

Cooling system

Heat rejection radiation from engine at

ICFN Power

kW / BTU/min

8 / 450

9 / 510

10 / 570

10 / 570

Heat rejection to coolant at ICFN Power

kW / BTU/min

88 / 5000

99 / 5630

108 / 6140

113 / 6430

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 derating.

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

VOLVO PENTA

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