

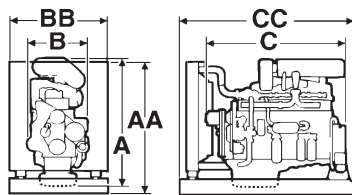
TWD740VE

– 175 kW

Engine for industrial applications

TWD740VE

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



mm / in.

A = 995 / 39.2

AA* = 2102 / 82.8

B = 753 / 29.6

BB = 858 / 33.8

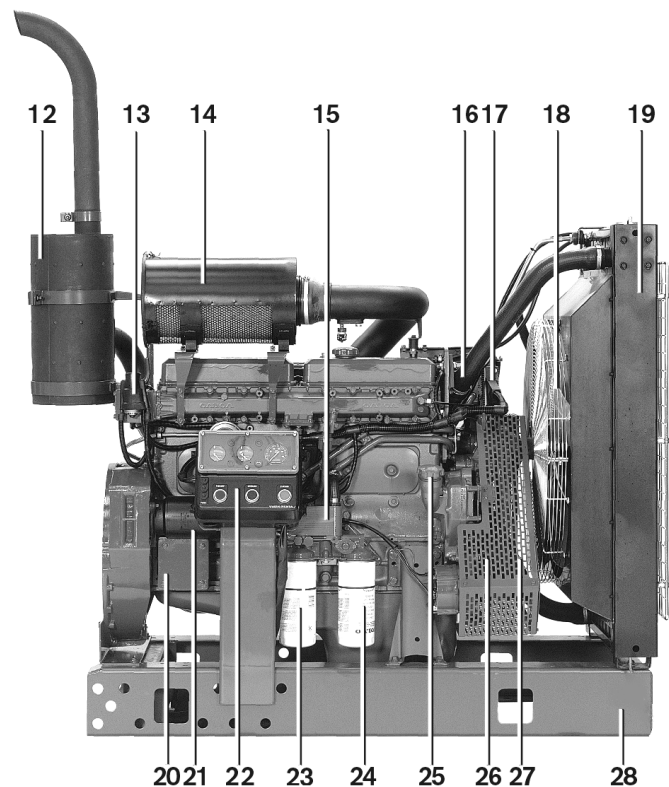
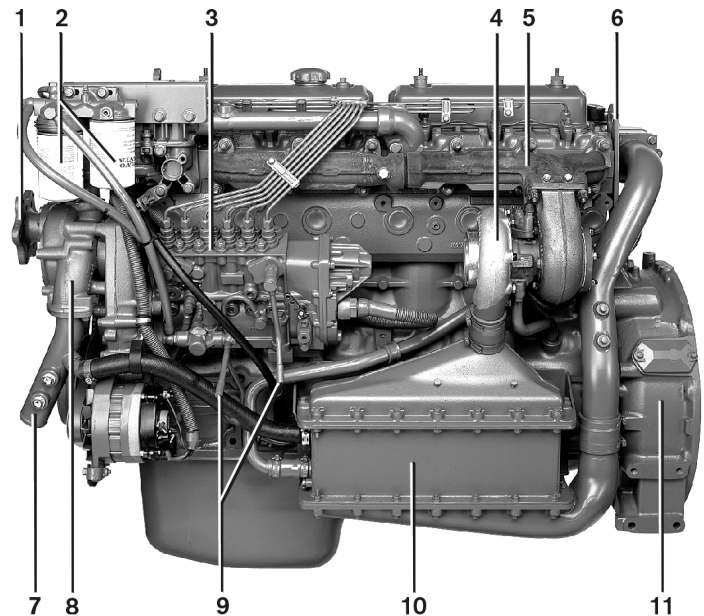
C = 1222 / 48.1

CC* = 1824 / 71.8

* Incl. silencer

- Based on Volvo's well proven reliable 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.
- Electronic Diesel Control (EDC)
- Low fuel consumption and low noise level.

1. Fan hub
2. Twin fuel filters of disposable type
3. Injection pump
4. Turbocharger
5. Air cooled exhaust manifold
6. Lift eyelet
7. Coolant pipe, inlet
8. Gear driven coolant pump
9. Fuel pipes for tank connection
10. Intercooler
11. Flywheel housing SAE 2
12. Silencer
13. Relay for inlet manifold heater
14. Air filter
15. Oil cooler
16. Coolant pipe, outlet
17. EDC control unit
18. Fan guard
19. Radiator
20. Electrical distribution unit
21. Starter motor
22. Instrument panel
23. Full-flow oil filter of spin-on type
24. By-pass oil filter of spin-on type
25. Oil filler
26. Vibration damper
27. Automatic belt tensioner
28. Base frame



Power pac with optional equipment

**VOLVO
PENTA**

TWD740VE

– 175 kW

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

Technical data

General

In-line four stroke diesel engine with direct injection	Number of cylinders	6
Turbocharged and water to air intercooled	Displacement, total	7.28 liters / 445 in ³
Rotation direction, anti-clockwise viewed towards flywheel	Firing order	1-5-3-6-2-4
	Bore	107 mm / 4.21 in
Dry weight, kg / lb	Stroke	135 mm / 5.31 in
Engine only 795 / 1753	Compression ratio	17.2:1
Power Pac 1095 / 2414		
Wet weight, kg / lb		
Engine only 835 / 1841		
Power Pac 1158 / 2553		

TWD740VE,	Speed, rpm	1800	2000	2200	2400
Performance	Test no.	24001572			
IFN Power, without fan	kW / hp	157 / 214	160 / 218	167 / 227	175 / 238
with fan	kW / hp	151 / 205	152 / 207	156 / 212	161 / 219
Torque at IFN Power	Nm / lbft	831 / 613	764 / 564	724 / 534	696 / 513
Mean piston speed	m/s / ft/sec	7.8 / 25.6	8.7 / 28.5	9.5 / 31.2	10.4 / 34.1
Effective mean pressure at IFN Power	MPa / psi	1.44 / 209	1.32 / 192	1.25 / 181	1.20 / 174
Max combustion pressure at IFN Power	MPa / psi	12.3 / 1784	12.7 / 1842	13.3 / 1929	14.8 / 2074
Total mass moment of inertia, J (mR ²)	kgm ² / lbft ²	1.63 / 38.61			
Degree of irregularity at ICXN Power		1:103	1:181	1:296	1:472
Residual speed droop at load increase from 0 to 100% at IFN Power	%	5			
Friction Power	kW / hp	24 / 33	28 / 38	31 / 42	37 / 50

Lubrication system

Lubricating oil average consumption	g/kwh / lb/hph	0.30 / 0.22 at 2200 rpm			
Oil system capacity including filters	liter / US gal	29 / 7.7			
Oil change interval					
VDS-2	h	600			
VDS, ACEA E3	h	400			
ACEA E2, API CF, CF-4, CG4	h	200			

Fuel system

Specific fuel consumption at					
25% of IFN Power	g/kWh / lb/hph	270 / 0.437	320 / 0.518	320 / 0.518	302 / 0.489
50% of IFN Power	g/kWh / lb/hph	220 / 0.356	229 / 0.371	243 / 0.394	266 / 0.431
75% of IFN Power	g/kWh / lb/hph	208 / 0.337	221 / 0.358	230 / 0.373	245 / 0.397
100% of IFN Power	g/kWh / lb/hph	203 / 0.329	212 / 0.343	224 / 0.323	242 / 0.392

Intake and exhaust system

Air consumption at IFN Power	m ³ /min / cfm	12.5 / 441	14.5 / 512	16.5 / 583	18.7 / 660
Max allowable air intake restriction	kPa / In wc	5 / 20			
Heat rejection to exhaust at IFN Power	kW / BTU/min	121 / 6887	133 / 7570	150 / 8538	175 / 9961
Exhaust gas temperature after turbine at IFN Power	°C / °F	435 / 841	415 / 805	414 / 803	429 / 830
Max allowable back-pressure in exhaust line	kPa / In wc	5.4 / 21.6	8.0 / 32	11.5 / 46	15.0 / 60
Exhaust gas flow at IFN Power	m ³ /min / cfm	32.3 / 1140	35.3 / 1245	38.1 / 1345	40.5 / 1430
Exhaust gas smoke	Bosch units	0.5	0.5	0.6	0.7

Cooling system

Heat rejection radiation from engine at IFN Power	kW / BTU/min	10 / 569	10 / 569	12 / 683	13 / 740
Heat rejection to coolant at IFN Power	kW / BTU/min	96 / 5464	105 / 5976	121 / 6887	139 / 7912

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 40 °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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