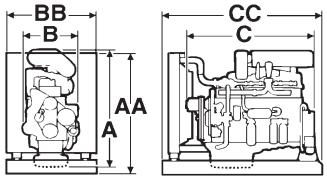
TWD 1211 V

Engine for industrial applications

TWD 1211 V

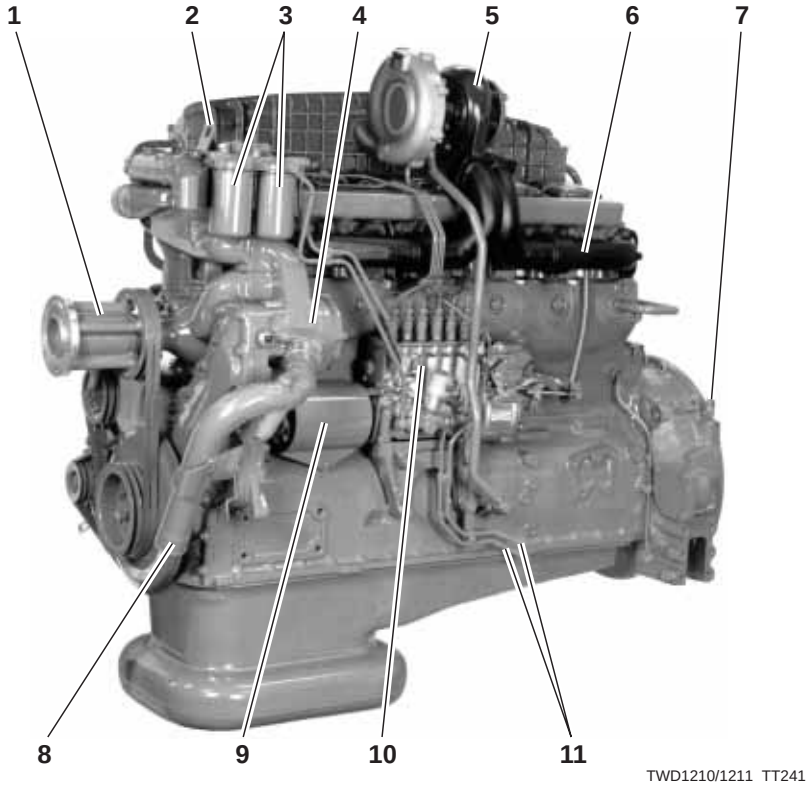
- Turbocharged
- Water to air charge air cooler
- Diesel fuel
- Displacement indication (l)
- Generation
- Version
- Versatility engine



mm / in.

A = 1365 / 53.7	AA = 1620 / 63.8
B = 755 / 29.7	BB = 1173 / 46.2
C = 1504 / 59.2	CC = 2059 / 81.1

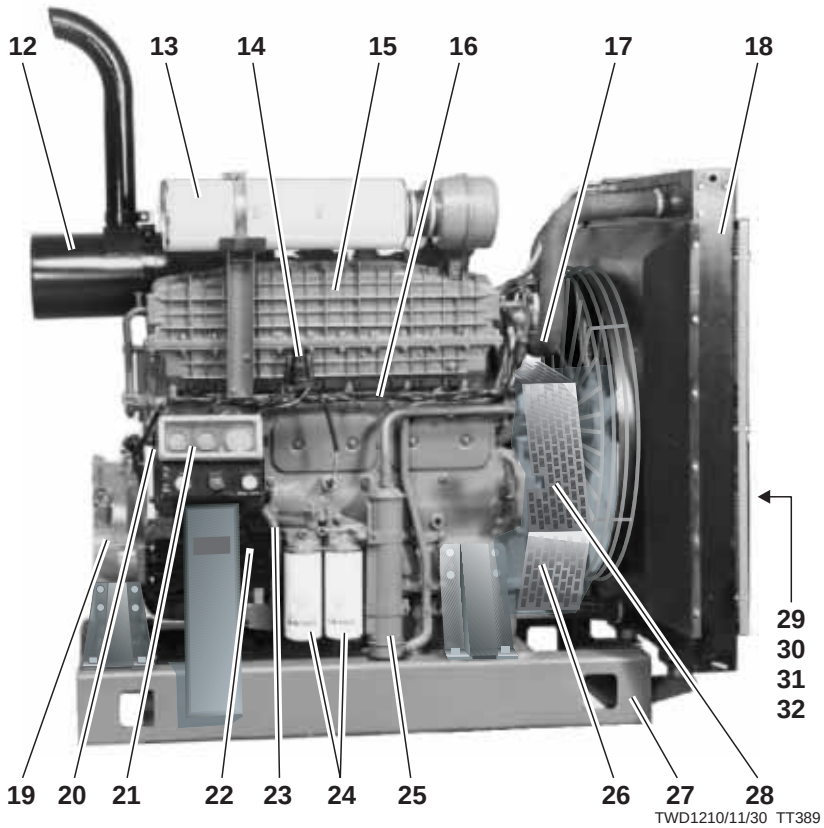
- Based on Volvo's well proven, dependable six-in-line turbocharged engine.
- Built with a high degree of precision to withstand high outputs and at the same time correspond to high demands on operational safety and service life.
- Low fuel consumption and low noise level.



TWD1210/1211 TT241

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

*) *Left hand side*



TWD1210/11/30 TT389

Power pac with optional equipment

VOLVO PENTA

Technical data TWD 1211 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
Turbocharged and water to air intercooled
Number of cylinders 6
Displacement, total 11.98 liters / 731 in^3
Firing order 1-5-3-6-2-4
Rotation direction, anti-clockwise viewed towards flywheel

Bore 130.17 mm / 5.12 in
Stroke 150 mm / 5.91 in
Compression ratio 13.3:1
Dry weight Power Pac, kg/lb 1350/2974 Engine only 1105/2434
Wet weight Power Pac, kg/lb 1439/3170 Engine only 1165/2566

TWD 1211 V	Speed, rpm	1200	1500	1600	1800
Performance	Test no.		29000155		
ICFN Power					
without fan	kW / hp	235 / 320	284 / 386	295 / 401	310 / 422
with fan	kW / hp	232 / 316	278 / 378	288 / 391	302 / 410
Torque at ICFN Power	Nm / lbft	1870 / 1380	1807 / 1333	1760 / 1299	1644 / 1213
Mean piston speed	m/s / ft/sec	6.0 / 19.7	7.5 / 24.6	8.0 / 26.2	9.0 / 29.5
Effective mean pressure at					
ICFN Power	MPa / psi	1.94 / 281	1.9 / 276	1.85 / 286	1.73 / 251
Max combustion pressure at					
ICFN Power	MPa / psi	13.0 / 1885	13.6 / 1970	13.7 / 1985	13.2 / 1915
Total mass moment of inertia, J (mR^2)	kgm^2 / $lbft^2$		2.80 / 66.4		
Degree of irregularity at ICFN Power		1:29	1:59	1:76	1:134
Residual speed droop					
at load increase from 0 to 100% at					
ICFN Power	%				6–8
Friction Power	kW	24	32	34	40
Lubrication system					
Lubricating oil consumption at ICFN Power	liter/h / US gal/h		0.35 / 0.093 at 1800 rpm		
Oil system capacity including filters	liters		38		
Oil change interval					
DVS-2	h		600		
VDS	h		400		
CCMC D5	h		200		
Fuel system					
Specific fuel consumption at					
25% of ICFN Power	g/kWh / lb/hph	228 / 0.370	235 / 0.381	240 / 0.389	252 / 0.408
50% of ICFN Power	g/kWh / lb/hph	207 / 0.336	209 / 0.339	222 / 0.360	224 / 0.363
75% of ICFN Power	g/kWh / lb/hph	206 / 0.334	208 / 0.337	214 / 0.347	218 / 0.353
100% of ICFN Power	g/kWh / lb/hph	212 / 0.344	214 / 0.347	215 / 0.348	220 / 0.357
Intake and exhaust system					
Air consumption at ICFN Power	m^3/ min / cfm	15.8 / 560	22.1 / 780	24.0 / 850	27.6 / 970
Max allowable air intake restriction	kPa / In wc		5 / 20		
Heat rejection to exhaust at ICFN Power	kW / BTU/min	195 / 11090	231 / 13140	240 / 13650	268 / 15240
Exhaust gas temperature after turbine at					
ICFN Power	°C / °F	630 / 1165	565 / 1050	550 / 1020	540 / 1005
Max allowable back-pressure in exhaust line	kPa / In wc	3.9 / 15.6	4.9 / 19.6	5.4 / 21.6	6.9 / 27.6
Exhaust gas flow at ICFN Power	m^3/min / cfm	40.4 / 1430	59.2 / 2090	64.2 / 2265	71.4 / 2520
Exhaust gas smoke	Bosch units	1.8	1.6	1.6	1.3
Cooling system					
Heat rejection radiation from engine at					
ICFN Power	kW / BTU/min	21 / 1190	23 / 1310	24 / 1370	28 / 1590
Heat rejection to coolant at ICFN Power	kW / BTU/min	153 / 8700	165 / 9380	175 / 9950	195 / 11090

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 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

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