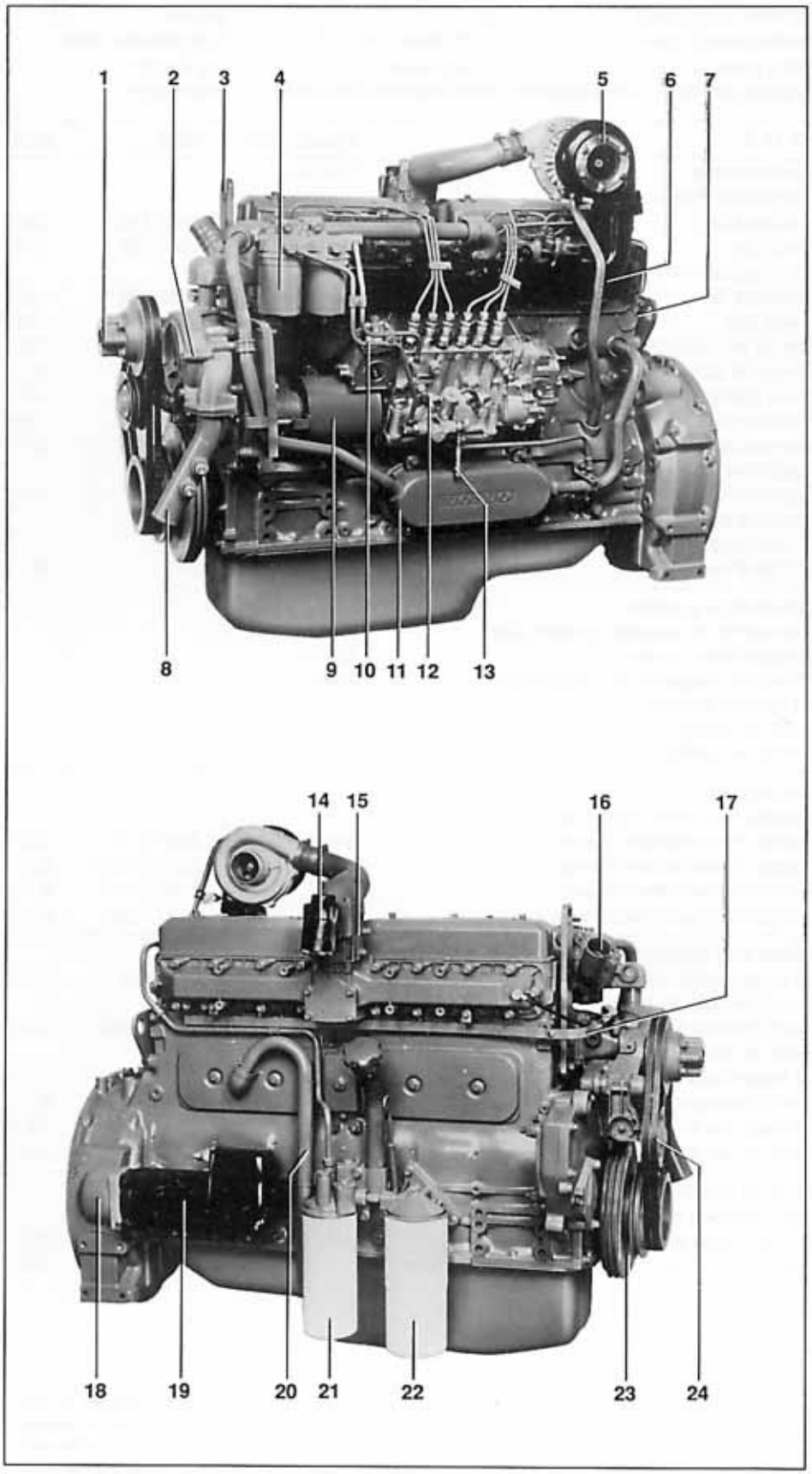
TD 71 A

Engine for mobile applications

TD 71 A
- Turbocharged
- Diesel fuel
- Displacement indication (l)
- Generation
- Version

- Based on Volvo's well proven, dependable six-in-line turbo-charged engine.
- Built with 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. Turbo-charger
6. Air cooled exhaust manifold
7. Lift eyelet
8. Coolant pipe, inlet
9. Pump coupling guard
10. Smoke limiter
11. Oil cooler
12. Injection pump
13. Fuel pipes for tank connection
14. Relay for inlet manifold heater
15. Inlet manifold heater
16. Coolant pipe, outlet
17. Cable iron
18. Flywheel housing SAE 2
19. Starter motor
20. Crankcase ventilation
21. Full-flow filter of spin-on type
22. By-pass filter of spin-on type
23. Vibration damper
24. Automatic belt tensioner

VOLVO PENTA

Technical data TD 71 A

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		Bore	104.77 mm / 4.12 in
Number of cylinders	6	Stroke	130 mm / 5.12 in
Displacement, total	6.73 litres / 411 in^3	Compression ratio	14.5:1
Firing order	1-5-3-6-2-4	Dry weight	760 kg / 1676 lb
Rotation direction, anti-clockwise viewed towards flywheel		Wet weight	802 kg / 1768 lb

TD 71 A	Speed, rpm	1800	2000	2200	2400
Performance	Test no.		348702016		
Intermittent Power					
without fan	kW / hp	142 / 193	154 / 210	160 / 218	167 / 227
with fan	kW / hp	138 / 188	150 / 204	154 / 210	159 / 217
Continuous Power					
without fan	kW / hp	132 / 180	142 / 193	145 / 197	-
with fan	kW / hp	128 / 174	138 / 188	139 / 189	-
Torque at Intermittent Power	Nm / lbft	753 / 556	735 / 542	695 / 513	665 / 491
Torque at Continuous Power	Nm / lbft	700 / 517	678 / 500	630 / 465	-
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 Continuous Power	MPa / psi	1.3 / 188	1.26 / 182	1.18 / 171	-
Max combustion pressure at Continuous Power	MPa / psi	13.0 / 1880	13.0 / 1880	12.5 / 1810	-
Total mass moment of inertia, J (mR^2)	kgm^2 / $lbft^2$		1.63 / 38.67		
Degree of irregularity at Intermittent Power		1:175	1:300	1:475	-
Residual speed droop					
at load increase from 0 to 100%	%				6–8
Friction Power	kW	24	28	31	37
Lubrication system					
Lubricating oil average consumption					
at intermittent power	litre / h		0.25 at 2000 rpm		
Oil system capacity including filters	litres		29		
Oil change interval					
CD oil quality	h		200		
VDS oil quality	h		400		
Fuel system					
Specific fuel consumption at					
25% of Intermittent Power	g/kWh / lb/hph	254 / 0.411	300 / 0.486	320 / 0.518	340 / 0.551
50% of Intermittent Power	g/kWh / lb/hph	225 / 0.346	230 / 0.373	240 / 0.389	256 / 0.415
75% of Intermittent Power	g/kWh / lb/hph	214 / 0.347	217 / 0.352	224 / 0.363	232 / 0.376
100% of Intermittent Power	g/kWh / lb/hph	212 / 0.343	214 / 0.347	224 / 0.363	232 / 0.376
Intake and exhaust system					
Air consumption at Intermittent Power	m^3/ min / cfm	9.5 / 336	11.0 / 388	12.5 / 441	13.5 / 477
Max allowable air intake restriction	kPa / In wc		5 / 20		
Heat rejection to exhaust at Intermittent Power	kW / BTU/min	109 / 6199	122 / 6939	138 / 7848	155 / 8815
Exhaust gas temperature after turbine					
at Intermittent Power	°C / °F	523 / 973	517 / 962	524 / 975	537 / 999
Max allowable back-pressure in exhaust line	kPa / In wc	6.5 / 26.0	8.0 / 32.0	9.0 / 36.0	10.0 / 40.0
Exhaust gas flow at Intermittent Power	m^3/min / cfm	28.0 / 989	33.0 / 1165	37.0 / 1307	41.0 / 1448
Exhaust gas smoke	Bosch units	0.6	0.5	0.5	0.5
Cooling system					
Heat rejection radiation from engine					
at intermittent power	kW / BTU/min	11 / 626	12 / 683	13 / 740	13 / 740
Heat rejection to coolant at intermittent power	kW / BTU/min	95 / 5403	103 / 5858	114 / 6484	125 / 7109

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 Guidlines

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

INTERMITTENT 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.

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