

04 - GENERAL SPECIFICATION DATA

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INFORMATION

200Tdi ENGINE1





200Tdi ENGINE

Type	Direct injection, turbocharged, intercooled
Number of cylinders	4
Bore	90,47 mm (3.562 in)
Stroke	97,00 mm (3.822 in)
Capacity	2495 cc
Compression ratio	19.5:1 +- 0.5:1
Valve operation	O.H.V. pushrod operated
Turbo charger	Garrett T25

Crankshaft

Main bearing journal diameter	63,475 - 63,487 mm (2.499 - 2.4993 in)
Regrind dimensions	63,2333 - 63,246 mm (2.4895 - 2.490 in)
	Use 0.010 in U/S bearings
Crankpin journal diameter	58,725 - 58,744 mm (2.312 - 2.31275 in)
Regrind dimensions	58,4708 - 58,48985 mm (2.30200 - 2.30275 in)
	Use 0.010 in U/S bearings
Crankshaft end thrust	Taken on thrust washers at centre main bearing
Crankshaft end float	0,05 - 0,15 mm (0.002 - 0.006 in)

Main bearings

Number and type	5 halved shells with oil grooves
Diametrical clearance	0,0792 - 0,0307 mm (0.0031 - 0.0012 in)

Connecting rods

Length between centres	175,38 - 175,43 mm (6.905 - 6.907 in)
Diametrical clearance (big-end bearings)	0,025 - 0,075 mm (0.001 - 0.003 in)
End float on crankpin	0,15 - 0,356 mm (0.006 - 0.014 in)

Pistons

Type	Aluminium alloy, combustion chamber in crown
Skirt diametrical clearance (at right angle to gudgeon pin)	0,025 - 0,05 mm (0.001 - 0.002 in)
Maximum height above combustion face	0,8 mm (0.031 in)

Gudgeon pins

Type	Floating
Fit in piston	Hand push fit
Diameter	30,1564 - 30,1625 mm (1.18726 - 1.18750 in)
Clearance in connecting rod	0,0036 - 0,0196 mm (0.00014 - 0.00077 in)

Piston rings

Type:	
Top	Chamfered friction edge, chrome plated
Second	Taper faced
Oil control	Expander and rails
Gap in bore:	
Top	0,40 - 0,65 mm (0.0157 - 0.0255 in)
Second	0,30 - 0,50 mm (0.0118 - 0.0196 in)
Oil control	0,3 - 0,6 mm (0.011 - 0.023 in)
Clearance in piston grooves:	
Top	0,167 - 0,232 mm (0.0065 - 0.0091 in)
Second	0,05 - 0,08 mm (0.0019 - 0.0031 in)
Oil control	0,05 - 0,08 mm (0.0019 - 0.0031 in)

Camshaft

Drive	30 mm (1.2 in) wide dry toothed belt
Location	Right hand side (thrust side)
End float	0,1 - 0,2 mm (0.004 - 0.008 in)
Number of bearings	4
Material	Steel shell, white metal lined

Valves

Tappet clearance:	
Inlet and exhaust	0,20 mm (0.008 in)
Seat angle:	
Inlet	30°
Exhaust	45°
Head diameter:	
Inlet	39,35 - 39,65 mm (1.549 - 1.560 in)
Exhaust	36,35 - 36,65 mm (1.431 - 1.443 in)
Stem diameter:	
Inlet	7,960 - 7,975 mm (0.313 - 0.314 in)
Exhaust	7,940 - 7,960 mm (0.212 - 0.313 in)
Valve lift:	
Inlet	9,93 mm (0.401 in)
Exhaust	10,26 mm (0.404 in)
Cam lift:	
Inlet	6,81 mm (0.268 in)
Exhaust	7,06 mm (0.278 in)
Valve head stand down	
Inlet and exhaust	0,9 - 1,1 mm (0.035 - 0.040 in)

Valve springs

Type	Single coil
Length, free	46,28 mm (1.822 in)
Length, under 21 kg (46 lb) load	40,30 mm (1.587 in)



Lubrication

System	Wet sump, pressure fed
Pressure, engine warm at normal operating speeds	25 - 55 p.s.i. (1.76 - 3.86 kgf/cm ²)
Oil pump:	
Type	Double gear 10 teeth, sintered iron gears
Drive	Splined shaft from camshaft skew gear
End float of both gears	0,026 - 0,135 mm (0.0009 - 0.0045 in)
Radial clearance of gears	0,025 - 0,075 mm (0.0008 - 0.0025 in)
Backlash of gears	0,1 - 0,2 mm (0.0034 - 0.0067 in)
Oil pressure relief valve	Non-adjustable
Relief valve spring:	
Full length	67,82 mm (2.670 in)
Compressed length at 2.58 kg (5.7 lb) load	61,23 mm (2.450 in)
Oil filter	Screw-on disposable canister
Engine oil cooler	Combined with coolant radiator and intercooler

FUEL SYSTEM

Injection pump type	Bosch rotary VE4/11F (see section 05)
Injection pump timing	1.54 mm lift at T.D.C.
Injectors	(see section 05)
Heater plugs	(see section 05)
Fuel lift pump type	Mechanical with hand primer
Fuel lift pump pressure	42 - 55 kpa at 1800 rpm
Fuel filter	Paper element in disposable canister
Air cleaner	Paper element type
Turbocharger	Garrett T25 (see section 05)

COOLING SYSTEM

System type	Pressurised, spill return, thermostatically controlled water and anti freeze mixture. Pump assisted thermo syphon. Coolant radiator combined with oil cooler and turbo intercooler.
Cooling fan	7 blade axial flow 395 mm diameter. 1.1:1 drive ratio. Viscous coupling.
Pump type	Centrifugal, impellor, belt driven.
Thermostat opening	82°
Expansion tank cap pressure	15 p.s.i. (system pressure)

CLUTCH

Type	Valeo diaphragm spring
Centre plate diameter	235 mm (9.25 in)
Facing material	Verto F202 grooved
Number of damper springs	8
Damper spring colour	2 off white/green - suffix 'C' 2 off pigeon blue - suffix 'A' 4 off ruby red - suffix 'B'
Release bearing	Ball journal

TRANSMISSION

Main gearbox manual

Type LT77 Single helical constant mesh

Speeds 5 forward 1 reverse

Synchromesh All forward speeds

Ratios:

Fifth 0.770:1

Fourth (direct) 1.000:1

Third 1.397:1

Second 2.132:1

First 3.692:1

Reverse 3.429:1