

**200Tdi ENGINE**

	<b>Nm</b>
Bearing cap to cylinder block .....	130 - 136
Camshaft thrust plate to cylinder block .....	7 - 10
Clutch cover plate to flywheel .....	30 - 38
Connecting rod to cap .....	56 - 62
Dipstick tube assembly to cylinder block .....	22 - 28
Dipstick mounting bracket to inlet manifold .....	7 - 10
Engine mounting foot to cylinder block M10 .....	42 - 48
Engine mounting foot to cylinder block M12 .....	80 - 90
Housing flywheel to cylinder block .....	40 - 50
Flywheel to crankshaft .....	139 - 153
Ladderframe to cylinder block .....	22 - 28
Oil filter adaptor to cylinder block .....	40 - 50
Oil pressure switch .....	15 - 19
Oil pump cover to pump body .....	20 - 28
Oil pump relief valve plug .....	27 - 33
Oil pump to cylinder block .....	22 - 28
Oil pump strainer to oil pump .....	40 - 50
Oil squirt jet assembly to cylinder block .....	14 - 20
Oil strainer to mounting bracket .....	22 - 28
Plug - blanking oil gallery .....	32 - 42
Plug - drain oil sump .....	40 - 50
Plug - drain cylinder block .....	25
Plug - drain flywheel housing .....	10 - 14
Plug - inlet manifold (boost take-off) .....	23 - 27
Side cover to cylinder block .....	23 - 30
Starter motor to flywheel housing .....	40 - 50
Sump to ladderframe .....	22 - 28
Sump to ladderframe/cylinder block .....	22 - 28
Sump to cylinder block/front cover .....	20 - 24
Support brackets	
- exhaust manifold to cylinder block .....	22 - 28
Vacuum pump to cylinder block .....	22 - 28
Vertical drive shaft gear to cylinder block .....	22 - 28
Alternator and heat shield to mounting bracket .....	22 - 28
Adjusting link to alternator .....	22 - 28
Adjusting link to pas pump plate .....	22 - 28
Cylinder head to cylinder block .....	See section 12
Breather cyclone to rocker cover .....	7 - 10
Engine lifting bracket to cylinder head .....	22 - 28
Electrical harness clip to cylinder head .....	22 - 28
Exhaust manifold to cylinder head .....	20 - 26
Glow plug terminal nut .....	3 - 5
Glow plug to cylinder head .....	15 - 30
Heater stud (water) to cylinder head .....	15 - 30
Injector clamp stud to cylinder head .....	6 - 10
Injector clamp to injector nut .....	18 - 22
Inlet manifold to cylinder head .....	20 - 26
Rocker cover to cylinder head .....	3,5 - 4,5
Rocker shaft to cylinder head .....	28 - 32
Tappet adjusting nut .....	22 - 26
Thermostat housing to cylinder head .....	22 - 28
Water outlet to thermostat housing .....	7 - 10
Water temperature switch to thermostat housing .....	15 - 19
Cowl mounting bracket to front cover .....	22 - 28
Fan assembly to water pump hub .....	22 - 28
Front cover plate to cylinder block .....	22 - 28
Front cover plate to front cover .....	22 - 28
Front cover to cylinder block .....	22 - 28
Injector pump to front cover .....	22 - 28
Injector pump stud to front cover .....	6 - 10

**200Tdi ENGINE (continued)**

	<b>Nm</b>
Injector pump to support bracket .....	22 - 28
Tensioner (timing belt) to cylinder block .....	40 - 50
Timing pulley to camshaft .....	40 - 50
Timing pulley to injector pump hub .....	22 - 28
TV damper pulley to crankshaft .....	333 - 350
Water pump to cylinder block .....	23 - 30
Water pump to cylinder block - stud .....	23 - 30
Water pump to front cover .....	22 - 28
Oil drain adaptor to cylinder block - Turbo .....	22 - 28
Oil drain pipe to turbo .....	32 - 48
Oil feed pipe adaptor to cylinder block - Turbo .....	22 - 28
Oil feed pipe to turbo .....	15 - 22
Outlet elbow to turbo - nut .....	21 - 26
Outlet elbow to turbo - stud .....	22 - 28
Turbocharger to exhaust manifold .....	21 - 26
Belt tensioner assembly	
to front cover plate compressor .....	14 - 16
Compressor to mounting bracket .....	40 - 50
Compressor mounting bracket	
to front cover and plate .....	40 - 50
Banjo bolt - fuel pump .....	10 - 14
Banjo bolt - boost pipe .....	8 - 12
Banjo bolt - spill rail .....	20 - 30
Banjo bolt - fuel filter .....	14 - 20
Banjo bolt - injector spill rail .....	2
Fuel lift pump to fuel filler unions .....	10 - 14
Fuel lift pump to cylinder block .....	22 - 28
Injector pipes to injectors and injector pump .....	22 - 25
P.A.S. pump to mounting plate .....	14 - 16
P.A.S. pump mounting plate to front cover .....	22 - 28
P.A.S. pump pulley to hub .....	14 - 16
Tappet guide retaining screw .....	14 - 15

**V8 PETROL ENGINE**

	<b>Nm</b>	<b>lbf ft</b>
Air intake adaptor to carburettors .....	24	17
Alternator mounting bracket to cylinder head .....	34	25
Alternator to mounting bracket .....	24	17
Alternator to adjusting link .....	24	17
Chainwheel to camshaft .....	54 - 61	40 - 45
Connecting rod bolt .....	47 - 54	35 - 40
Clutch attachment to flywheel .....	24 - 30	18 - 22
<b>Cylinder head:</b>		
Outer row .....	54 - 61	40 - 45
Centre row .....	88 - 95	65 - 70
Inner row .....	88 - 95	65 - 70
Distributor clamp nut .....	19 - 22	14 - 16
Exhaust manifold to cylinder head .....	19 - 22	14 - 16
Fan attachment .....	11,5	9
Flywheel to crankshaft .....	74 - 81	55 - 60
Inlet manifold to cylinder heads .....	47 - 54	35 - 40
Lifting eye to cylinder heads .....	24	17
Main bearing cap bolts .....	68 - 75	50 - 55
Main bearing cap rear bolts .....	88 - 95	65 - 70
Manifold gasket clamp bolt .....	13,5 - 20	10 - 15
Oil pump cover to timing cover .....	11 - 14	8 - 10
Oil plug .....	25 - 30	18 - 22
Oil relief valve cap .....	61	45
Oil sump drain plug .....	40,6 - 47	30 - 35
Oil sump to cylinder block .....	8 - 11	5 - 8
Oil sump - cylinder block - rear .....	17,6 - 20,3	13 - 15
Rocker cover to cylinder head .....	7	5
Rocker shaft bracket to cylinder head .....	34 - 40	25 - 30
Spark plug .....	19 - 21	14 - 16
Starter motor attachment .....	40,6 - 47,4	30 - 35
Damper to crankshaft .....	257 - 285	190 - 210
Timing cover to cylinder block .....	24 - 30	18 - 22
Tempatrol unit to water pump .....	36 - 40	27 - 30
Water pump pulley to water pump hub .....	23	17
Water pump and timing cover to cylinder block .....	24 - 30	18 - 22

**V8i PETROL ENGINE****Emission control**

	<b>Nm</b>
Lambda sensor .....	20
Evaporative loss flexible hose clips .....	1,7

**Fuel system**

Air bypass valve (Stepper motor) .....	17-22
All flexible hose clips .....	1,1 - 1,3
Fuel feed pipe to hose to fuel rail .....	22
Plenum chamber to ram housing .....	22 - 28
Fuel filter union nuts .....	27 - 34
Fuel temperature sensor .....	15 - 20
Coolant temperature sensor .....	15 - 20

**Cooling system**

Radiator filler plug .....	5 - 6
Fill tower filler plug .....	5 - 6

**Gearbox**

Oil cooler pipes union nuts .....	26 - 34
Thermostat housing attachment bolts .....	22 - 28

**MAIN GEARBOX**

	<b>Nm</b>	<b>lbf ft</b>
Bottom cover to clutch housing .....	7 - 10	5 - 7
Oil pump body to extension case .....	7 - 10	5 - 7
Clip - clutch release lever .....	7 - 10	5 - 7
Attachment plate to gearcase .....	7 - 10	5 - 7
Extension case to gearcase .....	22 - 28	16 - 21
Pivot - clutch lever to bell housing .....	22 - 28	16 - 21
Guide clutch release sleeve .....	22 - 28	16 - 21
Slave cylinder to clutch housing .....	22 - 28	16 - 21
Front cover to gearcase .....	22 - 28	16 - 21
5th support bracket .....	22 - 28	16 - 21
Clutch housing to gearbox .....	65 - 80	48 - 59
Oil drain plug .....	45 - 54	35 - 40
Oil filter plug .....	65 - 80	48 - 59
Breather .....	14 - 16	10 - 12
Oil level plug .....	25 - 35	19 - 26
Upper gear lever to lower gear lever .....	22 - 28	16 - 21
Upper gear lever to lower gear lever - pinch bolt ....	22 - 28	16 - 21
5th layshift gear retaining nut .....	204 - 231	150 - 170
Attachment plate to gear change housing .....	7 - 10	5 - 7
Gear change housing to extension case .....	22 - 28	16 - 21
Plunger housing to gear change housing .....	22 - 28	16 - 21
Adjustment plate to gear change housing .....	22 - 28	16 - 21
Cover to gear change housing .....	7 - 10	5 - 7
Bell housing to cylinder block bolts .....	36 - 45	27 - 33
Yoke to selector shaft .....	22 - 28	16 - 21

**ZF4HP22 AUTOMATIC GEARBOX**

	<b>Nm</b>	<b>lbf ft</b>
Coupling shaft to mainshaft .....	36 - 48	26 - 34
Filler tube to sump .....	60 - 75	45 - 55
Gear change lever to gearbox .....	22 - 28	16 - 21
Cooler pipe adaptor to gearbox .....	36 - 48	26 - 34
Securing screws - clutch F .....	10	7
Securing screw - parking pawl .....	10	7
Securing screws - pump .....	10	7
Intermediate plate plugs (M20) .....	50	37
Intermediate plate plugs (M14) .....	40	29
Bell housing mounting bolts .....	46	34
Governor mounting screws .....	10	7
Extension housing bolts .....	23	17
Control unit mounting bolts .....	8	6
Sump plug .....	10	7
Mounting screws for sump .....	8	6
Drive plate to converter .....	35 - 42	25 - 30
Gearbox to engine .....	36 - 48	26 - 34
Strut (threaded end) .....	36 - 48	26 - 34
Bottom cover to converter housing .....	7 - 10	5 - 7
Cover - converter housing .....	7 - 10	5 - 7
Drive plates to crankshaft adaptor .....	35 - 46	25 - 33
Adaptor to crankshaft .....	77 - 90	55 - 65

## TRANSFER GEARBOX LT230

**WARNING: Components in bold type must not be re-used.**

COMPONENT	Nm		lbf ft
Pinch bolt - operating arm to crank arm.....	7 - 10		5 - 7
End cover gear change housing .....	7 - 10		5 - 7
Speedometer cable retainer .....	7 - 10		5 - 7
Rear output/speedometer housing .....		See note	
Bottom cover to transfer case .....	22 - 28		16 - 21*
Front output housing to transfer case .....	22 - 28		16 - 21*
Cross shaft housing to front output housing .....	22 - 28		16 - 21
Gear change housing .....	22 - 28		16 - 21
Pivot shaft to link arm.....	22 - 28		16 - 21
Connecting rod to adjustable clevis .....	22 - 28		16 - 21
Anti-rotation plate intermediate shaft .....	22 - 28		16 - 21*
Front output housing cover.....	22 - 28		16 - 21*
Pivot bracket to extension housing .....	22 - 28		16 - 21*
Finger housing to front output housing .....	22 - 28		16 - 21*
Bearing housing to transfer case .....	22 - 28		16 - 21
Brake drum to coupling flange .....	22 - 28		16 - 21
Bearing housing cover to transfer gearbox.....	40 - 50		29 - 37*
Rear output speedometer housing to transfer gearbox .....	40 - 50		29 - 37*
Selector finger to cross shaft high/low .....	22 - 28		16 - 21*
Selector fork, high/low to shaft .....	22 - 28		16 - 21*
Transmission brake to speedometer housing .....	65 - 80		48 - 59
<b>Intermediate shaft stake nut</b> .....		See text	
Gate plate to grommet plate .....	7 - 10		5 - 7
Plunger switch setting .....	6.75 max		4.82 max
Gearbox to transfer case .....	40 - 50		29 - 37
Gearbox to transfer case .....		See note	
Oil drain plug .....	25 - 35		19 - 26
Differential case (front to rear) .....	55 - 64		40 - 47
Output flanges .....	146 - 179		108 - 132
<b>Differential case rear stake nut</b> .....	66 - 80		50 - 59
Oil filler/level plug .....	25 - 35		19 - 26
Transfer breather .....	14 - 16		10 - 12
Transfer box front drive flange to drive shaft .....	41 - 52		30 - 38
Transfer box rear drive flange to drive shaft .....	41 - 52		30 - 38
Transfer gearbox mounting brackets to chassis .....	33 - 27		24 - 20
Mounting brackets to transfer gearbox.....	52		38
Mounting rubbers to mounting brackets.....	20 - 22		13 - 16

**NOTE: Studs to be assembled into casings with sufficient torque to wind them fully home, but this torque must not exceed the maximum figure quoted for the associated nut on final assembly.**

**NOTE: \*These bolts must have threads coated with Loctite 290 prior to assembly.**

Charts below give torque settings for all screws and bolts used except for those that are specified otherwise.

SIZE	METRIC		SIZE	UNC		UNF	
	Nm	ft lb		Nm	ft lb	Nm	ft lb
M5	5-7	3.7-5.2	1/4	6.8-9.5	5-7	8.1-12.2	6-9
M6	7-10	5.2-7.4	5/16	20.3-27.1	15-20	20.3-27.1	15-20
M8	22-28	16.2-20.7	3/8	35.3-43.4	26-32	35.3-43.4	26-32
M10	40-50	29.5-36.9	7/16	67.8-88.1	50-65	67.8-88.1	50-65
M12	80-100	59.0-73.8	1/2	81.3-101.7	60-75	81.3-101.7	60-75
M14	90-120	66.4-88.5	5/8	122.0-149.1	90-110	122.0-149.1	90-110
M16	160-200	118.0-147.5					

**FRONT AND REAR DIFFERENTIALS**

	<b>Nm</b>	<b>lbf ft</b>
Pinion housing to axle case .....	36 - 46	26 - 34
Crown wheel to differential case .....	55 - 61	40 - 45
Bearing cap to pinion housing .....	80 - 100	59 - 74
Drive flange to propeller shaft .....	41 - 52	30 - 38
Bevel pinion nut .....	95 - 163	70 - 120

**POWER STEERING BOX**

	<b>Nm</b>	<b>lbf ft</b>
Drop arm nut .....	176	130
Steering wheel nut .....	38	28
Sector shaft cover to steering box .....	22 - 27	16 - 20
Clamp bolt nuts .....	14	10
Ball joint nuts .....	40	30
Universal joint pinch bolt .....	35	26
Tie bar to steering box .....	81	60
Steering box to chassis .....	81	60
Power steering pump mounting .....	35	26
Pulley bolts, power steering pump .....	8 - 12	6 - 9
Union nut, inlet adaptor, power steering pump .....	38 - 41	28 - 30
Steering column bracket nuts .....	27	20

**FRONT SUSPENSION**

	<b>Nm</b>	<b>lbf ft</b>
Drag link to axle .....	40	30
Securing ring for mounting turret .....	14	10
Radius arm to chassis .....	176	130
Panhard rod mounting arm to chassis .....	88	65
Panhard rod to axle .....	88	65
Panhard rod to mounting bracket .....	88	65
Tie bar to Panhard rod .....	88	65
Radius arm to axle (front only) .....	197	145

**REAR SUSPENSION**

	<b>Nm</b>	<b>lbf ft</b>
Top link to mounting bracket .....	176	130
Upper joint to levelling unit .....	34	25
Lower joint to levelling unit .....	34	25
Bottom link to axle .....	176	130
Bottom link to chassis .....	176	130
Top link bracket to rear cross member .....	47	35
Levelling unit to cross member .....	47	35
Shock absorber to axle .....	37	28

**WHEEL NUTS**

	<b>Nm</b>	<b>lbf ft</b>
All four wheels to hubs .....	129	95

<b>BRAKES</b>	<b>Nm</b>
Brake pipe connections to:	
- Brake calipers .....	12
- Jump hoses to brackets .....	12
- Jump hose to three-way connection .....	12
-Front caliper jump hoses .....	12
-Rear caliper jump hoses .....	12
Jump hoses to calipers (all) .....	12
Brake caliper to swivel pin housing .....	82
Parking brake linkage to transfer box .....	29
Brake disc to hubs .....	73
Bleed screws .....	10
Servo assembly to pedal box .....	24
Brake pipes to master cylinder .....	10
Master cylinder to servo .....	25

**CLUTCH PIPES**

Master cylinder union .....	15
Pipe joint .....	15
Pipe to damper .....	15
Pipe out of damper .....	15
Pipe to jump hose .....	15
Jump hose to pipe .....	15
Pipe to slave cylinder .....	15

**MAINTENANCE Mpi** **Nm**

Timing belt upper cover bolts .....	5
Timing belt centre cover bolts .....	5
Timing belt lower cover bolts .....	5
Crankshaft pulley centre bolt .....	85
Crankshaft pulley to timing gear bolts .....	10
Tensioner pulley bolt .....	30
Spark plugs .....	27

**COOLING Mpi**

Radiator fans to radiator nuts .....	6
Thermostatic switch .....	15
Coolant pump housing bolts .....	25

**MANIFOLDS AND EXHAUSTS Mpi**

Inlet manifold nuts and bolts .....	25
Fuel pipe to fuel rail .....	10
Exhaust manifold nuts .....	45
Exhaust frontpipe to manifold .....	10
Exhaust downpipe to silencer box .....	30
Manifold chamber gasket .....	10

**ENGINE Mpi**

Timing belt upper backplate bolts .....	10
Camshaft gear bolts .....	65
Timing belt upper cover bolts .....	5
Timing belt centre cover bolts .....	5
Exhaust camshaft rear oil seal cover plate bolts .....	10
Inlet camshaft rear oil seal cover plate bolts .....	10
Crankshaft rear oil seal housing bolts .....	10
Engine sump bolts .....	Stage 1 - 3 Stage 2 - 10
Bell housing nuts .....	40
L.H. and R.H. engine mounting nuts .....	85
Exhaust manifold to downpipe nuts .....	10
Exhaust downpipe to silencer box nuts .....	30
Air conditioning compressor to engine block bolts .....	45
Cylinder head bolts .....	Stage 1 - 45 Stage 2 - 80 Stage 3 - Further 90°
Camshaft cover bolts .....	10
Knock sensor .....	15
Ignition coil bracket bolts .....	25
Coolant temperature sensor .....	15
Crankshaft sensor bolts .....	7
Fuel temperature sensor .....	7
Intake air temperature sensor .....	7
Fuel rail to inlet manifold bolts .....	10
Fuel feed hose stiffening bracket bolts .....	7
Throttle housing mounting nuts .....	7
Fuel pressure regulator steady bracket bolts .....	7
Oxygen sensor .....	55

**ELECTRICAL Mpi**

Alternator pulley nut .....	80
Alternator mounting bolts .....	25
Starter motor bolts .....	85
Starter solenoid nuts .....	5