

ENGINE - 2.5 litre Diesel	Nm
DPS pump studs to front cover	8
DPS pump to front cover	25
DPS pump to support bracket	25
Pulley to DPS pump	45
Distributor pipe banjo bolts	17
Tensioner assembly	25
Vacuum pump to cylinder block	25
Oil squirt to cylinder block	17
Throttle linkage to DPS pump	6
Throttle bracket to DPS pump	6
Front cover to cylinder block	25
Front cover plate to cylinder block	25
Cover plate to front cover plate	25
Cowl mounting bracket to front cover	25
Timing pointer to front cover	25
Drain plate to front cover	9

TURBO-CHARGER FIXINGS- 2.5 LITRE DIESEL

Banjo bolt DPS boost capsule	6,75
Stud-Turbo charger to exhaust manifold	25
Nut-Turbo charger to exhaust manifold	24
Adaptor-Oil feed to cylinder block	25
Adaptor-Oil drain to cylinder block	25
Pipe-Oil feed to cylinder block	19
Pipe-Oil drain	40
Stud-Outlet elbow to turbo charger	25
Nut-Outlet elbow to turbo charger	24
Heat shield support to inlet manifold	25
Stud-Exhaust manifold to cylinder head	35
Nut-Exhaust manifold to cylinder head	32
Screw-Inlet and exhaust manifold to cylinder head	35

Tdi DEFENDER ENGINE

Bearing cap to cylinder block	133
Camshaft thrust plate to cylinder block	9
Clutch cover plate to flywheel	34
Connecting rod to cap	59
Dipstick tube assembly to cylinder block	25
Dipstick mounting bracket to inlet manifold	9
Earthing strap stud to cylinder block	25
Engine mounting foot to cylinder block	85
Housing flywheel to cylinder block	45
Flywheel to crankshaft	147
Ladderframe to cylinder block	25
Oil filter adaptor to cylinder block	45
Oil pressure switch	17
Oil pump cover to pump body	24
Oil pump relief valve plug	30
Oil pump to cylinder block	25
Oil pump strainer to oil pump	45
Oil squirt jet assembly to cylinder block	17
Oil strainer to mounting bracket	25
Plug-blanking oil gallery	37
Plug-drain oil sump	45
Plug-drain cylinder block	25
Plug-drain flywheel housing	12
Plug-inlet manifold (boost take-off)	25
Side cover to cylinder block	27

Tdi DEFENDER ENGINE-(continued)

	Nm
Starter motor to flywheel housing	45
Sump to ladderframe	25
Sump to ladderframe/cylinder block	25
Sump to cylinder block/front cover	22
Support brackets-exhaust manifold to cylinder block	25
Vacuum pump to cylinder block	25
Vertical drive shaft gear to cylinder block	25
Alternator and heat shield to mounting bracket	25
Adjusting link to alternator	25
Adjusting link to pas pump plate	25
Cylinder head to cylinder block	See section 12
Breather cyclone to rocker cover	8
Engine lifting bracket to cylinder head	25
Electrical harness clip to cylinder head	25
Exhaust manifold to cylinder head	23
Glow plug terminal nut	4
Glow plug to cylinder head	23
Heater stud (water) to cylinder head	23
Injector clamp stud to cylinder head	8
Injector clamp to injector nut	20
Inlet manifold to cylinder head	23
Rocker cover to cylinder head	4
Rocker shaft to cylinder head	30
Tappet adjusting nut	24
Thermostat housing to cylinder head	25
Water outlet to thermostat housing	9
Water temperature switch to thermostat housing	17
Cowl mounting bracket to front cover	25
Fan assembly to water pump hub	25
Front cover plate to cylinder block	25
Front cover plate to front cover	25
Front cover to cylinder block	25
Injector pump to front cover	25
Injector pump stud to front cover	8
Injector pump to support bracket	25
Tensioner (timing belt) to cylinder block	45
Timing pulley to camshaft	45
Timing pulley to injector pump hub	25
TV damper pulley to crankshaft	341
Water pump to cylinder block	27
Water pump to cylinder block-stud	27
Water pump to front cover	25
Oil drain adaptor to cylinder block-Turbo	25
Oil drain pump to turbo	40
Oil feed pipe adaptor to cylinder block-Turbo	25
Oil feed pipe to turbo	19
Outlet elbow to turbo-nut	24
Outlet elbow to turbo-stud	25
Turbocharger to exhaust manifold	24
Belt tensioner assembly to front cover plate	
compressor	15
Compressor to mounting bracket	45
Compressor mounting bracket to front cover and plate	45
Banjo bolt-fuel pump	12
Banjo bolt-boost pipe	10
Banjo bolt-spill rail	25
Banjo bolt-fuel filter	17
Banjo bolt-injector spill rail	9
Fuel lift pump to fuel filter unions	12

Tdi DEFENDER ENGINE (continued)	Nm
Fuel lift pump to cylinder block	25
Injector pipes to injectors and injector pump	28
P.A.S pump to mounting plate	15
P.A.S pump mounting plate to front cover	25
P.A.S pump pulley to hub	15
Tappet guide retaining screw	14

ENGINE - V8 Petrol engine	
Air intake adaptor to carbs	24
Alternator mounting bracket to cylinder head	34
Alternator to mounting bracket	24
Alternator to adjusting link	24
Chainwheel to camshaft	58
Connecting rod bolt	51
Clutch attachment to flywheel	27
Cylinder head:	
Outer row	58
Centre row	92
Inner row	92
Distributor clamp bolt	21
Exhaust manifold to cylinder heads	21
Fan attachment	11
Flywheel to crankshaft	78
Inlet manifold to cylinder heads	51
Lifting eye to cylinder heads	24
Main bearing cap bolts	72
Main bearing cap rear bolts	92
Manifold gasket clamp bolt	17
Oil pump cover to timing cover	13
Oil plug	28
Oil relief valve cap	40
Oil sump drain plug	45
Oil sump to cylinder block	10
Oil sump rear to cylinder block	18
Rocker cover to cylinder head	7
Rocker shaft bracket to cylinder head	37
Spark plug	15
Starter motor attachment	44
Damper to crankshaft	271
Timing cover to cylinder block	27
Tempatrol unit to water pump	38
Water pump pulley to water pump hub	23
Water pump timing cover to cylinder block	27

FUEL LINES

V8, 90 and 110	
Connections at straight connector	16
Pipe connections at filter	16
Hose clips	2
2.5 Petrol 90 and 110	
Connections at filter	16
Connections at vapour separator	16
Connections at Tee-piece	16
Hose clips	2

FUEL LINES - (continued)

2.5 Diesel 90 and 110	Nm
Connections at lift pump	20
Connections at sediment	20
Connections at side tank	20
Connections at rear tank	20
Changeover tap connections	12
Spill pipe connections to rear tank	16
Hose clips	2

CLUTCH - V8 Petrol engine

Clutch cover bolts	27
Slave cylinder bolts	27

CLUTCH - 4-cylinder Petrol and Diesel engine

Clutch cover bolts	34
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MAIN GEARBOX (FIVE-SPEED) LT 77 mm and LT77S - 4-cylinder Petrol and Diesel engine

Oil pump body to extension case	9
Clip to clutch release lever	9
Attachment plate to gearcase	9
Attachment plate to remote housing	9
Extension case to gearcase	25
Pivot plate	25
Remote selector housing to extension case	25
Gear lever housing to remote housing	25
Guide clutch release sleeve	25
Slave cylinder to clutch housing	25
Front cover to gearcase	25
5th support bracket	25
Plunger housing to remote housing	25
Blanking plug extension case	9
Gear lever retainer	9
Yoke to selector shaft	25
Fixing gear lever assembly nut	44
Reverse pin to centre plate nut	25
Clutch housing to gearbox bolt	72
Plug - detent spring	25
Oil drain plug	51
Oil filter plug	72
Plug oil filler - remote housing	30
Breather	9
Oil level plug	30
Blanking plug - reverse switch hole	24
Fifth gear layshaft nut	217

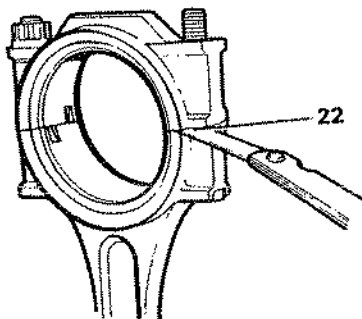
MAIN GEARBOX (FIVE-SPEED) LT85 - also LT85 divided Case Version

V8 engine	
Stop - 4th speed adjustment	9
Clip to clutch release lever	9
Spring housing to top cover	9
Plate - lower (retained with Loctite 270)	25
Slave cylinder to clutch housing	25
5th fork bracket	25
Front cover to bearing plate	25
Plate - Lower (upper fixings)	25
Selector fork to shaft and reverse beam to shaft	25

20. Connecting rod bearings that are worn, pitted, scored and show signs of overheating must be discarded. If more than one of the bearings show these signs they must all be renewed. When fitting new or used bearings to serviceable crankpins the clearances must be checked.

Big end bearing nip and clearance

21. Clean the protective coating from new bearings before fitting.
22. Fit the bearing shells to each connecting rod and cap ensuring that the location tags are correctly seated and aligned. Fill and tighten both bolts to the correct torque, next release one nut on each cap then check for a nip clearance of between 0,10 to 0,20 mm.



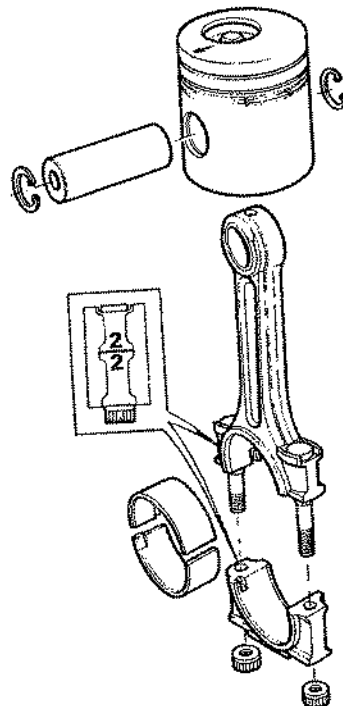
ST2977M

23. Check the joint face of faces of both cap rod and bearing shells if the nip clearance is excessive. Too little nip clearance will allow the shell bearings to move (possibly rotate) inside the connecting rod when the engine is running. After satisfactory fitting of the bearings temporary retain the shells and caps to the appropriate connecting rod.

Assembling pistons to connecting rods

The piston must be assembled to the connecting rod so that the arrow on the piston crown points to the front of the engine and the off-set combustion chamber, bearing shell tags and connecting rod number are all on the same, right hand side of the cylinder block viewed from the rear of the engine (camshaft side).

24. Insert a circlip in one side of the gudgeon pin boss and assemble the piston to the connecting rod with the gudgeon pin. Secure the assembly with a circlip on the opposite side of the piston.



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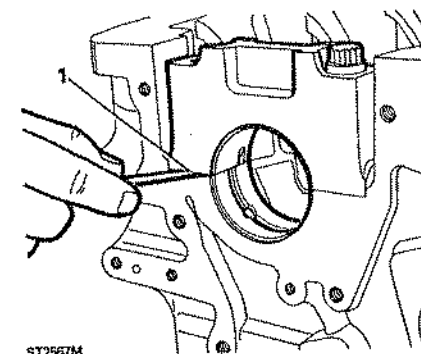
ASSEMBLE ENGINE

Ensure that the cylinder block and all oilways are thoroughly clean using an air line, if available, prior to assembly.

Refitting cylinder lubrication jet tubes

Oil jet tubes are fitted to lubricate the pistons and bores directly from the main oil gallery.

1. Assemble and fit the jet tube as illustrated ensuring that the dowels locate in the holes in the cylinder block, and that the larger diameter washer fits under the bolt head. Tap the jet blocks down to ensure that the locating dowel is fully home. Fit and tighten the retaining bolts to the correct torque.

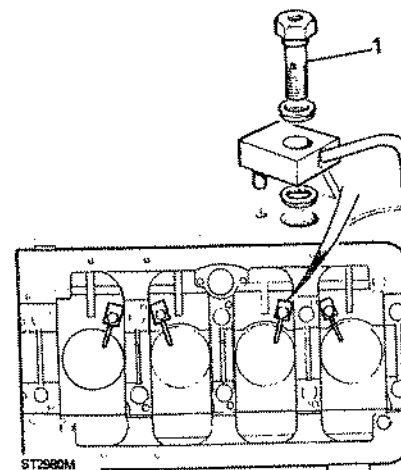


ST2567M

The nip clearance which ensures that the bearings are correctly clamped, must be within 0,10 to 0,15 mm. Investigate and correct any nip clearance errors before removing the main bearing caps prior to fitting the crankshaft.

Fitting crankshaft

1. Insert two standard thickness thrust washers each side of the centre main bearing location with the oil grooves towards the crank thrust faces.
2. Lubricate the cylinder block bearing shells and carefully install the crankshaft.



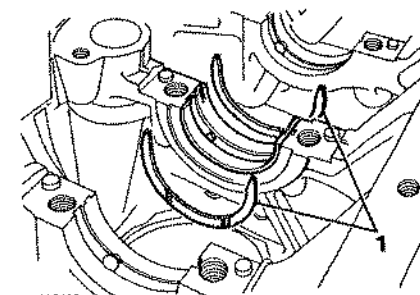
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Crankshaft bearings

Main bearing nip clearance

Clean the protective coating from new bearings before fitting.

1. Fit the bearing halves to the cylinder block ensuring full engagement of the location tags.
2. Install the other half bearing shells into the main bearing caps, again ensuring that the tags locate correctly.
3. Fit all the main bearing caps to their original locations tightening the bolts to the correct torque, then release one bolt on each cap.
4. Check the clearance between the cap and the block as illustrated.



ST2581M