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Specifications

Sealers

Item	Land Rover Part No.
Engine timing cover to cylinder block	STC 50550
Rear main bearing cap to cylinder block	8510302

Lubricant - UK, Europe and ROW - Not NAS/Japan

Item	Specification
* Recommended lubricant	The use of 5W/30 oil to Specification WSS - M2C929-A is preferred. Where oil to this specification is not available, then 5W/30 oil meeting specifications ACEA A1/A3 or API SJ or SL may be used.

* WSS is a Ford prefix to the oil specification **Lubricant - NAS/Japan**

Item	Specification
* Recommended lubricant	Use 5W/30 oil meeting Specification WSS-M2C929-A (GF4) and 'Certified for Gasoline Engines' by the American Petroleum Institute (API).

* WSS is a Ford prefix to the oil specification **Capacity**

Item	Capacity
Dry fill including filter	6.4 litres (11.2 pints) (6.7 US quarts)
Oil and filter change - Maximum	5.7 litres (10.0 pints) (6.0 US quarts)
Amount of oil required to bring the level from the lower to the upper holes on the dipstick	1.4 litres (2.4 pints) (1.5 US quarts)

General Specification

Item	Specification
Type	4.0 litre, 60 degree 'V', petrol engine, single overhead camshaft per cylinder head, 2 valves per cylinder
Cylinder arrangement	V6, numbers 1 and 4 cylinders at front of engine when engine is viewed from rear
Cylinder numbering	Number 1 cylinder - right hand bank; Number 4 cylinder - left hand bank
Bore - nominal	100.4 mm (3.952 in)
Stroke	84.4 mm (3.322 in)
Capacity	4009 cm ³ (244.5 in ³)
Firing order	1 - 4 - 2 - 5 - 3 - 6
Compression ratio	9.75:1
Direction of rotation	Anti-clockwise viewed from rear of engine
Maximum power	156 Kw (209 bhp) @ 4750 rev/min
Maximum torque	346 Nm (255 lb-ft) @ 3500 rev/min
Dimensions:	
Length	669 mm (26.3 in)

Width	712 mm (28.0 in)
Height	747 mm (29.4 in)
Maximum permissible cylinder head warp	0.08 mm (0.003 in)
Engine oil pressure:	
At Idle	1.8 - 2.0 bars (180 - 200 kPa) (26.0 - 29.0 lb/in ²)
At 3500 rev/min	3.3 to 3.6 bars (330 - 360 kPa) (48.0 - 52.0 lb/in ²)

Torque Specifications

Description	Nm	lb-ft
Engine RH mounting bracket bolts	80	59
Engine RH mounting bracket nut	90	66
* Engine RH mounting to bracket bolts:		
Stage 1	45	33
Stage 2	Further 60°	Further 60°
+ LH and RH Exhaust manifold nuts	25	18
Dipstick tube bolt	10	7
* Exhaust system to exhaust manifold bolts	40	30
+ RH valve cover bolts/studs	10	7
+ LH valve cover bolts/studs	10	7
CMP sensor bolt	6	4
++ LH/RH camshaft cap bolts:		
Stage 1	6	4
Stage 2	16	12
*+ # Cylinder head bolts:		
Stage 1 - M12 bolts	30	22
Stage 2 - M12 Bolts	Further 80°	Further 80°
Stage 3 - M12 bolts	Further 80°	Further 80°
M8 bolts	35	26
Cylinder head coolant flange bolts	10	7
RH Cylinder head ground connector bolt	10	7
Generator mounting bracket bolts	45	33
+ Generator bolts	45	33
Generator electrical connector nut	10	7
A/C compressor mounting bracket bolts	45	33
Knock sensor bracket bolt	10	7
Knock sensor retaining clip bolt	10	7
Electrical harness bridge bolt	45	33
EGR pipe nuts:		
Stage 1	Lightly tighten	Lightly tighten
Stage 2	40	30
Battery terminal clamp nut(s)	5	3.5
Wiring harness clamp bolt - RHD only	10	7
Oil pick-up pipe Torx screws	10	7
Oil strainer bolt	10	7
Oil pump Torx screws	20	15

Oil cooler lines nut and bolt	25	18
Oil cooler adapter	60	44
Transmission fluid lines bolt	10	7
Transmission fluid lines nut	10	7
Transmission support bracket nut	20	15
Transmission bolts	45	33
Engine front cover:		
M6 bolts	10	7
M8 bolts and studs	20	15
Coolant pump bolts	10	7
Ground cable nut	20	15
+ Cylinder block cradle:		
Stage 1	Lightly tighten 2 rear bolts	Lightly tighten 2 rear bolts
Stage 2	Loosen 2 rear bolts	Loosen 2 rear bolts
Stage 3	Lightly tighten 2 rear bolts	Lightly tighten 2 rear bolts
Stage 4 - Outer bolts, nuts and Torx screws	10	7
Stage 5 - 2 rear bolts	43	32
Stage 6 - Cylinder block cradle set screws	7	5
Stage 7 - Cylinder block cradle bolts	15	11
Stage 8 - Cylinder block cradle bolts	34	25
* Crankshaft pulley bolt:		
Stage 1	45	33
Stage 2	Further 85°	Further 85°
LH and RH camshaft sprocket bolts:		
Stage 1	20	15
Stage 2	Further 100°	Further 100°
Oil temperature sensor	20	15
Radiator access panel bolts	10	7
Oil pan bolts	10	7
Wiring harness to oil pan nuts	6	4
** Balance shaft Torx bolts	29	21
LH camshaft drive cassette chain guide bolt	25	18
RH camshaft drive cassette bolt	12	9
* RH cassette jackshaft drive sprocket bolt (Rear):		
Stage 1	40	35
Stage 2	Further 45°	Further 45°
* Jackshaft sprocket Torx bolt (Front):		
Stage 1	45	33
Stage 2	Further 70°	Further 70°
Crankshaft position sensor (CKP) bolt	8	6
* Steering column lower universal joint 'Patchlok' bolts	25	18
Jackshaft thrust plate Torx bolts	10	7
Oil pump drive gear bolt	20	15
LH and RH hydraulic timing chain tensioner	45	33
Primary timing chain tensioner bolt	10	7
Oil filter	18	13

Oil drain plug	25	18
+* Starter motor cable nut	10	7
Starter motor bolts	45	33
Fuel rail bolts	25	18
Valve cover fuel line clip bolt	10	7
+ Intake manifold bolts	10	7
* RH catalytic converter to the exhaust manifold bolts	22	16
* LH catalytic converter to the exhaust manifold bolts	22	16
Flexplate to torque converter Torx bolts	45	33
Road wheel nuts	140	103

* New nuts/bolt(s) must be fitted ** New Torx bolts must be fitted + Bolts/Torx bolts/studs must be tightened in sequence
++ Bolts must be tightened in a diagonal sequence commencing with the 2 centre bearing caps # Lubricate threads of bolts with engine oil prior to fitting +* Damage to internal components will result if this torque is exceeded