

3. TIGHTENING TORQUE

Name	Bolt Size	Quantity	Tightening Torque (Nm)	
			D20DT (EURO 4)	D20DT
Main bearing cap	M11 x 67	10	55 ± 5 120° ± 10°	55 ± 5 120° ± 10°
Connecting rod cap	M9 x 51	8	40 ± 5 90° ± 10°	40 ± 5 90° ± 10°
Rear cover	M6 x 20	6	10 ± 1	10 ± 1
Oil pump	M8 x 35SOC	3	25 ± 2.5	25 ± 2.5
T.G.C.C	M6 x 40	6	10 ± 1	10 ± 1
	M6 x 60	3	10 ± 1	10 ± 1
	M6 x 70	2	10 ± 1	10 ± 1
Flywheel	M10 x 22	8	45 ± 5 90° ± 10°	45 ± 5 90° ± 10°
Crankshaft hub	M20 x 85	1	200 180° ± 10°	200 180° ± 10°
Oil pan	M6 x 20	20	10 ± 1	10 ± 1
	M6 x 35	3	10 ± 1	10 ± 1
	M6 x 85	3	10 ± 1	10 ± 1
	M8 x 40	4	25 ± 2.5	25 ± 2.5
High pressure pump mounting bolt	M8 x 55	3	25 ± 2.5	25 ± 2.5
High pressure pump main nut (intershaft)	M14 x 1.5	1	65 ± 5	65 ± 5
Cylinder head	M8 x 25	2	25 ± 2.5	25 ± 2.5
	M8 x 50	2		
	M10 x 158	1	85 ± 5	85 ± 5
	M10 x 177	9	270° ± 10°	270° ± 10°
Camshaft sprocket (Intake)	M11 x 40	1	25 ± 2.5	25 ± 2.5
Camshaft sprocket (Exhaust)			90° ± 10°	90° ± 10°
Chain tensioner	M24	1	65 ± 5	65 ± 5
Auto tensioner	M12 x 90 (UP)	1	82 ± 6	82 ± 6
	M8 x 45 (LOWER)	1	32 ± 3	32 ± 3
Water pump assembly	M6 x 50	7	10 ± 1	10 ± 1
Water pump pulley	M6 x 10	4	10 ± 1	10 ± 1
Hot water inlet pipe assembly	M6 x 12	2	10 ± 1	10 ± 1
Alternator bracket	M8 x 80	1	25 ± 2.5	25 ± 2.5
	M8 x 34	2	25 ± 2.5	25 ± 2.5
	M8 x 30	2	25 ± 2.5	25 ± 2.5
Alternator	M10 x 90	1	46 ± 4.6	46 ± 4.6
	M10 x 116	1	46 ± 4.6	46 ± 4.6

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			D20DT (EURO 4)	D20DT
Air conditioner compressor bracket assembly	M8 x 25	1	25 ± 2.5	25 ± 2.5
	M8 x 60	3	25 ± 2.5	25 ± 2.5
Air conditioner compressor sub bracket assembly	M6 x 16	1	10 ± 1.0	10 ± 1.0
	M8 x 20	1	25 ± 2.5	25 ± 2.5
Intake manifold	M8 x 50	5	25 ± 2.5	25 ± 2.5
	M8 x 133	5	25 ± 2.5	25 ± 2.5
Acoustic cover bracket	M6 x 16	2	25 ± 2.5	25 ± 2.5
	M8 x 105	1	25 ± 2.5	25 ± 2.5
Knock sensor	M8 x 28	1	20 ± 2.6	20 ± 2.6
Camshaft position sensor	M8 x 14	1	12 ± 1.7	12 ± 1.7
Booster pressure sensor	M6 x 20	2	10 ± 1.0	10 ± 1.0
Exhaust manifold stud bolt	M8 x 46	8	15 ± 1.5	15 ± 1.5
	M8 x 35	2	15 ± 1.5	15 ± 1.5
Exhauster manifold nut	M8	8	40 ± 4.0	40 ± 4.0
Turbo charger assembly	M8	3	25 ± 2.5	25 ± 2.5
Turbocharger hollow bolt	M10 x 1.0	1	18 ± 1.8	18 ± 1.8
Turbocharger oil feed pipe	M16 (Cylinder block side)	1	25 ± 2.5	25 ± 2.5
Turbocharger support bar (nut)	M8	1	23 ± 2.3	23 ± 2.3
Turbocharger support bar (bolt)	M8 x 20	1	25 ± 2.5	25 ± 2.5
Turbocharger return pipe	M6 x 16 (T/C side)	2	10 ± 1.0	10 ± 1.0
	M6 x 16 (Cylinder block side)	2	10 ± 1.0	10 ± 1.0
EGR valve assembly	M6 x 25	4	10 ± 1.0	10 ± 1.0
EGR-LH pipe nut	M8	2	35 ± 3.5	35 ± 3.5
EGR-RH pipe nut	M6 x 16	2	10 ± 1.0	10 ± 1.0
EGR center bolt	M6 x 16	4	10 ± 1.0	10 ± 1.0
EGR center pipe	M8 x 25	2	25 ± 2.5	25 ± 2.5
	M8 x 30	2	25 ± 2.5	25 ± 2.5
Glow plug	M5	5	15 ± 3.0	15 ± 3.0
Vacuum pump	M6 x 20	3	10 ± 1.0	10 ± 1.0
	M6 x 25	5	10 ± 1.0	10 ± 1.0
Cooling fan bracket assembly	M6 x 55	1	10 ± 1.0	10 ± 1.0
	M6 x 85	3	10 ± 1.0	10 ± 1.0
Cylinder head cover	M6 x 35	18	10 ± 1.0	10 ± 1.0
Vacuum modulator	M6 x 16	4	10 ± 1.0	10 ± 1.0

Modification basis	
Application basis	
Affected VIN	

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			D20DT (EURO 4)	D20DT
Oil dipstick tube	M6 x 16	1	10 ± 1.0	10 ± 1.0
	M8 x 35	1	25 ± 2.5	25 ± 2.5
Oil filter assembly	M8 x 55	2	25 ± 2.5	25 ± 2.5
	M8 x 125	1	25 ± 2.5	25 ± 2.5
Fuel rail assembly	M8 x 35	2	25 ± 2.5	25 ± 2.5
Injector	M6 x 60	4	10 ± 1.0	10 ± 1.0
			180° + 20°	180° + 20°
Fuel pipe clip (H-C)	M14	2	40 ± 4.0	40 ± 4.0
Fuel pipe clip (C-I)	M14	8	40 ± 4.0	40 ± 4.0
Crankshaft position sensor	M6 x 14	1	0.8 ± 0.4	0.8 ± 0.4
	GAP	-	0.7 ± 1.5 mm	0.7 ± 1.5 mm
Power steering pump	M8 x 100	2	25 ± 2.5	25 ± 2.5
Head screw plug	-	1	25 ± 2.5	25 ± 2.5
Cam shaft cap bolt	M8 x 60	20	25 ± 2.5	25 ± 2.5
Piston topping	-	-	0.765 ~ 1.055 mm	0.765 ~ 1.055 mm
Connecting rod end play	-	-	0.500 ~ 1.500 mm	0.500 ~ 1.500 mm
Cam shaft end play	-	-	0.100 ~ 0.350 mm	0.100 ~ 0.350 mm
Crank shaft end play	-	-	0.100 ~ 0.254 mm	0.100 ~ 0.254 mm

Modification basis	
Application basis	
Affected VIN	