

TIGHTENING TORQUES

TARMAC / FRONT AXLE

Location	Application	Bolt	Qty	Loctite	Torque N.m
Crossmember	Front X-member / Chassis	CHC M12x175 L45	4	243	100
A-Arm	A-Arm / X-member	TH M12x150 L70	4	243	100
	Caster arm / Front arm	TH M12x150 L40	2	Copper Grease	100
	A-Arm / Lower upright bracket	CHC M8x125 L16	2		35
Damper	Camberblock / Upright	CHC M10x150 L35	4	Copper Grease	65
		CHC M10x150 L60	2	Copper Grease	65
	Strut / Upright	CHC M10x150 L60	2	Copper Grease	65
	Strut UP / Camberblock UP	CHC M10x150 L30	2	Copper Grease	65
	Strut / Camberblock LOW	CHC M10x150 L50	2	Copper Grease	65
	Top Mount / Chassis	CHC 10x150 L25	8		65
	Damper / Top mount	-	2		-
Upright	Lower upright bracket / Upright	CHC M10x150 L20	2	243	65
		CHC 8x125 L25	4	243	35
		CHC M12x150x40	2	243	100
	Steering bracket / Upright	CHC 10x150 L35	4	243	65
		CHC 8x125 L25	4	243	35
	Steering Rod / Steering bracket	CHC 10x150 L55	2		55
	Wheel nut	-	10	Copper Grease	90
A.R.B	Blade / A.R.B	CHC 8x125 L30	2		35
	Connecting rod / Front arm	CHC 6x100 L45	2		12
Transmission	Gearbox / Engine	HR EMB M10x150 L55	6		40
	Gearbox bracket / Gearbox	CHC M8 L40	1		35
		CHC M8 L35	1		
	Gearbox Bracket / Engine	CHC M10 L55	1		55
		CHC M10 L25	1		
	Propshaft center bearing	CHC M10x150 L20	1	Copper Grease	65
	Clutch / Flywheel	CHC M6x100 L45	12	243	18
Brakes	Driveshaft	-	2		50
	Caliper UP / Upright	CHC 10x150 L80	2	Copper Grease	55
	Caliper LOW / Upright	CHC 10x150 L90	2	Copper Grease	55
	Hat / Disk	CHC M5x20	24		12
Steering	Bleeder	-	4		12
	Steering rack / X-Member	CHC 8x125 L40	4	Copper Grease	35
	Steering rod / Steering rack	-	2	270	80

TIGHTENING TORQUES

TARMAC / REAR AXLE

Location	Application	Bolt	Qty	Loctite	Torque N.m
Crossmember	Rear X-member / Chassis	CHC 12x175 L45	4	243	100
A-Arm	A-Arm / X-Member	TH M12x150 L65	4	243	100
	Caster arm / Front arm	TH M12x150 L40	2	Copper Grease	100
	A-Arm / Lower upright bracket	CHC M8x125 L16	2		35
Damper	Camberblock / Upright	CHC M10x150 L35	4	Copper Grease	65
		CHC M10x150 L60	2	Copper Grease	65
	Strut / Upright	CHC M10x150 L60	2	Copper Grease	65
	Strut UP / Camberblock UP	CHC M10x150 L30	2	Copper Grease	65
	Strut / Camberblock LOW	CHC M10x150 L50	2	Copper Grease	65
	Damper / Top mount	-	2		-
Upright	Lower upright bracket / Upright	CHC 10x150 L20	2	243	65
		CHC 8x125 L25	4	243	35
		CHC M12x150x40	2	243	100
	Steering bracket / Upright	CHC 10x150 L35	4	243	65
		CHC 8x125 L25	4	243	35
	Track rod / Steering bracket pin	CHC M8x125 L16	2	243	35
	Steering bracket pin / Steering bracket	-	2	270	90
	Wheel nut	-	10	Copper Grease	90
A.R.B	Blade / A.R.B	CHC 8x125 L30	2		35
	Connecting rod / Lower Control arm	CHC 6x100 L45	2		12
Transmission	Rear diff / X-Member	CHC M10x125 L60	2	Copper Grease	65
		CHC M10x150 L40	2	Copper Grease	
	Disconnect clutch / Rear diff	M8 Simmond nut	6	-	25
	Driveshaft	-	2		50
Brakes	Caliper UP / Upright	CHC 10x150 L80	2	Copper Grease	55
	Caliper LOW / Upright	CHC 10x150 L90	2	Copper Grease	55
	Hat / Disk	CHC M5x20	24	-	12
	Bleeder	-	4		12
Toe	Track rod / X-Member	H M12x150 L70	2	243	100

TIGHTENING TORQUES

GRAVEL / FRONT AXLE

Location	Application	Bolt	Qty	Loctite	Torque N.m
Crossmember	Front X-member / Chassis	CHC M12x175 L45	4	243	100
A-Arm	A-Arm / X-member	TH M12x150 L70	4	243	100
	Caster arm / Front arm	TH M12x150 L40	2	Copper Grease	100
	A-Arm / Lower upright bracket	CHC M8x125 L16	2	243	35
Damper	Camberblock / Upright	CHC M10x150 L35	4	Copper Grease	65
		CHC M10x150 L60	2	Copper Grease	65
	Strut / Upright	CHC M10x150 L60	2	Copper Grease	65
	Strut UP / Camberblock UP	CHC M10x150 L30	2	Copper Grease	65
	Strut / Camberblock LOW	CHC M10x150 L50	2	Copper Grease	65
	Top Mount / Chassis	CHC 10x150 L25	8		65
	Damper / Top mount	-	2		-
Upright	Lower upright bracket / Upright	H Emb M10x150 L40	2	270	100
		CHC 8x125 L30	2	243	35
	Steering bracket / Upright	CHC 10x150 2xL35 1xL20	6	243	65
	Steering Rod / Steering bracket	CHC 10x150 L55	2		55
	Wheel nut	-	10	Copper Grease	90
A.R.B	Blade / A.R.B	CHC 8x125 L30	2		35
	Connecting rod / Front arm	CHC 6x100 L45	2		12
Transmission	Gearbox / Engine	HR EMB M10x150 L55	6		40
	Gearbox bracket / Gearbox	CHC M8 L40	1		35
		CHC M8 L35	1		
	Gearbox Bracket / Engine	CHC M10 L55	1		55
		CHC M10 L25	1		
	Propshaft center bearing	CHC M10x150 L20	1	Copper Grease	65
	Clutch / Flywheel	CHC M6x100 L45	12	243	18
Brakes	Driveshaft	-	2		50
	Caliper UP / Upright	CHC 10x150 L55	2	Copper Grease	55
	Caliper LOW / Upright	CHC 10x150 L65	2	Copper Grease	55
	Hat / Disk	CHC M5x20	24		12
Steering	Bleeder	-	4		12
	Steering rack / X-Member	CHC 8x125 L40	4	Copper Grease	35
	Steering rod / Steering rack	-	2	270	80

TIGHTENING TORQUES

GRAVEL / REAR AXLE

Location	Application	Bolt	Qty	Loctite	Torque N.m
Crossmember	Rear X-member / Chassis	CHC 12x175 L45	4	243	100
A-Arm	A-Arm / X-Member	TH M12x150 L65	4	243	100
	Caster arm / Front arm	TH M12x150 L40	2	Copper Grease	100
	A-Arm / Lower upright bracket	CHC 8x125 L16	2	243	35
Damper	Camberblock / Upright	CHC M10x150 L35	4	Copper Grease	65
		CHC M10x150 L60	2	Copper Grease	65
	Strut / Upright	CHC M10x150 L60	2	Copper Grease	65
	Strut UP / Camberblock UP	CHC M10x150 L30	2	Copper Grease	65
	Strut / Camberblock LOW	CHC M10x150 L50	2	Copper Grease	65
	Damper / Top mount	-	2		-
Upright	Lower upright bracket / Upright	H Emb M10x150 L40	2	270	100
		CHC 8x125 L30	2	243	35
	Steering bracket / Upright	CHC 10x150 L35	4	243	65
		CHC 8x125 L45	2	243	35
	Track rod / Steering bracket pin	CHC M8x125 L16	2	243	35
	Steering bracket pin / Steering bracket	-	2	270	90
	Wheel nut	-	10	Copper Grease	90
A.R.B	Blade / A.R.B	CHC 8x125 L30	2		35
	Connecting rod / Lower Control arm	CHC 6x100 L45	2		12
Transmission	Rear diff / X-Member	CHC M10x125 L60	2	Copper Grease	65
		CHC M10x150 L40	2	Copper Grease	
	Disconnect clutch / Rear diff	M8 Simmond nut	6	-	25
	Driveshaft	-	2		50
Brakes	Caliper UP / Upright	CHC 10x150 L55	2	Copper Grease	55
	Caliper LOW / Upright	CHC 10x150 L65	2	Copper Grease	55
	Hat / Disk	CHC M5x20	24	-	12
	Bleeder	-	4		12
Toe	Track rod / X-Member	H M12x150 L70	2	243	100

TIGHTENING TORQUES - ENGINE

Location	Application	Bolt	Qty	Misc	Loctite	Torque N.m
Moving parts	Damper pulley	M8	3		243	28
	Damper pulley screw		1	The final tightening torque should be between 175 and 320 Nm	243	50Nm + 180°
	Flywheel / crankshaft	M9X125 L20	6	Criss-cross tightening at 30Nm (bolts are loctite pre-applied) then add 90° tightening		30 + 90°
Cylinder head	Vaccum pump closing plate / VVT	M6x100 L18	4		243	12
	Cylinder head cover			Pre tightening at 2Nm (tightening path to ask) . Blow- by valve must be always fitted		10
Lubrication	Oil gauge guide / Engine	M6x100 L25	1			8
	Oil sump	CHC M6x100 L25	16	2 tightening torques checks	243	15
	Oil filter cover	CHC M6x100 L35	3	Change seal each oil filter change		15
	Oil filter cover holder		1	Tightening mark to control every oil filter replacement	648	25
	Oil heat exchanger plate	1 x M8 + 3 x M6	1 + 3	M8 at 20Nm, M6 at 12Nm	243	20 / 12
	Oil sump plug	M16 x 150	1			30
Cooling	Water pump support	CHC M8	3		243	15
	Water intake pipe / Engine	CHC M5 L12	3		243	10
	Thermostat housing	CHC M6	3			10
	Water line collar		3			2
	Water/Oil cooler	CHC M8	4		243	20
Fuel Supply	High pressure fuel pump support	M6x50	3		243	15
	High pressure fuel ramp	M8	4	High pressure sensor not removable	243	20
	High pressure pump	M6	2	Approach bolts before final thgtening. Slightly lubricate the seal	243	10
	High pressure pipe (single use)	2 couplings	-	Tighten at 15Nm then 30Nm. Change pipe every unfitting		30
Air Circuit	Intake manifold / Engine	M8x125	5		243	20
	Intake manifold support	M6	2			12
	Popoff	M6	2			12
	Air lines collar		8			4
	Intake manifold entry pipe	M6	3			8
Turbo	Support sonde T3		-		Copper Grease	10
	Oil feeding and oil return hose	1 coupling M10/Dash3 + 2 x M6 L12	-			15
	Turbo support	M6 + M8	2 + 1	15 Nm for M6 bolt (+ ond washer) - 20Nm M8 bolt		15 - 20
	Turbo support connecting rod	CHC M6	2	Rod as to be free (rotation wise) after fitting		12
Alternator	Alternator	M8x125 L114	3			20
	Alternator pulley		1			85
Starter	Starter	CHC M12 L35	2			45
Ignition	Spark plug		4	R2556G-9	Copper Grease	23
Sensors	Throttle body	M6	4			12
	P2T2 / P2P	M6 L10	2	slightly lubricate seal		8
	VVT electrovalve	TH RDL M6x100 L16	2			10
	Cam RPM	TH RDL M6x100 L16	2			10
	Engine RPM		1			5
	Knock	M8x125 L35	1	Oriented to the top		20
	T3		-		Copper Grease	10
Exhaust	Exhaust manifold / Engine	Copper nut M8x125	10	nuts, exhaust manifold and turbo seals to change every unfitting		20
	Exhaust Manifold/Turbo collar	V-clamp collar	1			12
	Exhaust line collars	V-clamp collar	1 + 3	Turbo/Exhaust (D109) + exhaust line (3 x D85)		8
Power Unit mounts	Engine mount / Engine	CHC M10 L30	3		Copper Grease	65
	Engine mount / Chassis	CHC M12x175 L60	1		Copper Grease	100
	Antitorque blade / X-Member	CHC M12x150 L35	1		Copper Grease	100
	Antitorque blade / Gearbox	CHC M10x150 L35	2		Copper Grease	65
	Gearbox mount / Gearbox	CHC M10 L30	3		Copper Grease	65
	Gearbox mount / Chassis	CHC M12x175 L60	1		Copper Grease	100
PS pump	PS pump bracket	CHC Emb M8x125 L35	3			20
	PS pump pulley	CHC M8x125 L16	3			20
	PS pump / Bracket	CHC M8 L25-30	1+2	1 x L25 + 2 x L30		20

Engine oil	4,5L max (cf gauge)	Total Quartz Ineo First 0W30
Gearbox oil	1,5 L if draining (1,7L with cooling lines)	Total H50168B 75W90
Rear diff oil	0,8 L if draining (1,1L with cooling lines)	Total H50168B 75W90