TORQUE WRENCH SETTINGS — TRANSFER GEARBOX LT230T

COMPONENT	DESCRIPTION	QUANTITY	Nm	lbf ft
Pinch bolt, operating arm	6 X 25,0 mm bolt	1	7 to 10	5 to 7
Gate plate to grommet plate	6 X 20,0 mm screw	4	7 to 10	5 to 7
End cover	6 X 20,0 mm screw	2	7 to 10	5 to 7
Speedometer cable retainer	6 mm nut	1	7 to 10	5 to 7
Rear output/speedometer housing	6 X 30,0 mm stud	1	See note	
Locating plate to gear change housing	5 mm self lock nut	2	5 to 7	4 to 5
Bottom cover to transfer case	8 X 30,0 mm bolt	10	22 to 28	16 to 21
Front output housing to transfer case	8 X 30,0 mm bolt	7	22 to 28	16 to 21
Front output housing to transfer case	8 X 90,0 mm bolt	1	22 to 28	16 to 21
Cross shaft housing to front output housing	8 X 55,0 mm bolt	6	22 to 28	16 to 21
Gear change housing	8 X 55,0 mm bolt	2	22 to 28	16 to 21
Pivot shaft	8 mm nut	1	22 to 28	16 to 21
Connecting rod	8 mm nut	2	22 to 28	16 to 21
Anti-rotation plate intermediate shaft	8 X 20,0 mm screw	1	22 to 28	16 to 21
Front output housing cover	8 X 25,0 mm screw	7	22 to 28	16 to 21
Gear change housing	8 X 25,0 mm screw	2	22 to 28	16 to 21
Bracket to extension housing	8 X 25,0 mm screw	2	22 to 28	16 to 21
Finger housing to front output housing	8 X 25,0 mm screw	3	22 to 28	16 to 21
Mainshaft bearing housing	8 X 25,0 mm screw	2	22 to 28	16 to 21
Brake drum	8 X 20,0 mm screw	2	22 to 28	16 to 21
Gearbox to transfer box	10 X 40,0 mm bolt	3	40 to 50	29 to 37
Gearbox to transfer box	10 X 45,0 mm bolt	1	40 to 50	29 to 37
Bearing housing to transfer gearbox	10 X 35,0 mm bolt	6	40 to 50	29 to 37
Speedometer housing to transfer gearbox	10 X 30,0 mm screw	5	40 to 50	29 to 37
Speedometer housing to transfer gearbox	10 X 45 mm screw	1	40 to 50	29 to 37
Selector finger to cross shaft high/low	10 mm grub screw	1	22 to 28	16 to 21
Selector fork, high/low to shaft	10 mm grub screw	1	22 to 28	16 to 21
Transmission brake	10 X 25,0 mm bolt	4	65 to 80	48 to 59
Intermediate shaft stake nut	20,0 mm nut	1	130 to 140	96 to 104
Gate plate to grommet plate (auto only)	6 X 20,0 mm screw	4	7 to 10	5 to 7
Gate plate to gear change housing (manual versions only)	6 X 16,0 mm countersunk screw	2	7 to 10	5 to 7

Continued

TORQUE WRENCH SETTINGS (Continued)

Gearbox to transfer case	10 mm nut	2	40 to 50	29 to 37
Gearbox to transfer case	10 mm studs	2	See note	
Oil drain plug	12 X 14 mm hexagon head	1	25 to 35	19 to 26
Differential case	10 X 60 mm bolt	8	55 to 64	40 to 47
Output flanges	20 mm self locking nut	2	146 to 179	108 to 132
Differential case rear	50 mm nut	1	66 to 80	50 to 60
Link arm and cross shaft lever to ball joint	¼ inch UNF self locking nut	2	8 to 12	6 to 9
Oil filler/level plug	¾ inch taper thread	1	25 to 35	19 to 26
Transfer breather	⅛ inch B.S.P.		14 to 16	10 to 12

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.

ZF4HP22 AUTOMATIC GEARBOX

	Nm	lbf/ft.
Coupling shaft to mainshaft	36 to 48	26 to 34*
Filler tube to sump	35 to 42	25 to 30
Gear change lever to gearbox	22 to 28	16 to 21
Cooler pipe adaptor to gearbox	36 to 48	26 to 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 to 42	25 to 30*
Gearbox to engine	36 to 48	26 to 34
Strut (nyloc nut end)	36 to 48	26 to 34
Bottom cover to converter housing	7 to 10	5 to 7
Cover—converter housing	7 to 10	5 to 7
Drive plates to crankshaft adaptor	35 to 46	25 to 33*
Adaptor to crankshaft	77 to 90	55 to 65

NOTE: * These bolts must have threads coated with Loctite 270 prior to assembly.

MAIN GEARBOX (FIVE-SPEED)

	Nm	lbf ft.
Bottom cover to clutch housing	7 to 10	5 to 7
Oil pump body to extension case	7 to 10	5 to 7
Clip to clutch release lever	7 to 10	5 to 7
Attachment plate to gearcase	7 to 10	5 to 7
Extension case to gearcase	22 to 28	16 to 21
Pivot—clutch lever to bell housing	22 to 28	16 to 21
Guide clutch release sleeve	22 to 28	16 to 21
Slave cylinder to clutch housing	22 to 28	16 to 21
Front cover to gearcase	22 to 28	16 to 21
5th support bracket	22 to 28	16 to 21
Clutch housing to gearbox	65 to 80	48 to 59
Plug—detent spring	22 to 28	16 to 21
Oil drain plug	40 to 47	30 to 35
Oil filter plug	65 to 80	48 to 59
Breather	14 to 16	10 to 12
Oil level plug	25 to 35	19 to 26
Upper gear lever to lower gear lever	22 to 28	16 to 21
5th gear retaining nut	204 to 231	150 to 170
Attachment plate to gear change housing	7 to 10	5 to 7
Gear change housing to extension case	22 to 28	16 to 21
Plunger housing to gear change housing	22 to 28	16 to 21
Adjustment plate to gearchange housing	22 to 28	16 to 21
Cover to gear change housing	7 to 10	5 to 7
Bell housing to cylinder block bolts	36 to 45	27 to 33
Pivot plate to bell housing	22 to 28	16 to 21
Yoke to selector shaft	22 to 28	16 to 21
Locknut—plus reverse knockout	22 to 28	16 to 21

FRONT AXLE

	Nm	lbf ft.
Hub driving shaft to hub	41 to 52	30 to 38
Brake disc to hub	65 to 80	48 to 59
Stub axle to swivel pin housing	60 to 70	44 to 52*
Brake caliper to swivel pin housing	75 to 88	55 to 65
Upper swivel pin to swivel pin housing	68 to 88	50 to 65*
Lower swivel pin to swivel pin housing	68 to 88	50 to 65*
Oil seal retainer to swivel pin housing	9 to 12	7 to 9
Swivel bearing housing to axle case	65 to 80	48 to 59*
Pinion housing to axle case	36 to 46	26 to 34
Crown wheel to differential housing	55 to 61	40 to 45
Differential bearing cap to pinion housing	80 to 100	59 to 74
Differential drive flange to propeller shaft	41 to 52	30 to 38
Mudshield to bracket lower swivel pin	9 to 12	7 to 9
Bevel pinion nut	95 to 163	70 to 120
Draglink to hub arm	40	30
Panhard rod to axle bracket	88	65
Radius arm to axle	190	140
Radius arm to chassis side member	190	140

* These bolts to be coated with Loctite 270 prior to assembly.

REAR AXLE

	Nm	lbf ft.
Axle shaft to hub	41 to 52	30 to 38
Brake disc to hub	65 to 80	48 to 59
Stub axle rear to axle case	60 to 70	44 to 52
Brake caliper to axle case	75 to 88	55 to 65
Pinion housing to axle case	36 to 46	26 to 34
Crown wheel to differential case	55 to 61	40 to 45
Differential bearing cap to pinion housing	80 to 100	59 to 74
Differential drive flange to propeller shaft	41 to 52	30 to 38
Mudshield to axle case	9 to 12	7 to 9
Bevel pinion nut	95 to 163	70 to 120
Lower link to axle	176	130
Pivot bracket ball joint to axle	176	130

CHARTS BELOW GIVE TORQUE SETTINGS FOR ALL SCREWS AND BOLTS USED EXCEPT FOR THOSE THAT ARE SPECIFIED OTHERWISE

SIZE	METRIC		SIZE	UNC		UNF	
	Nm	lbf ft		lbf ft	Nm	lbf ft	Nm
M5	5–7	3,7–5,2	¼	5–7	6,8–9,5	6–9	8,1–12,2
M6	7–10	5,2–7,4	5/16	15–20	20,3–27,1	15–20	20,3–27,1
M8	22–28	16,2–20,7	3/8	26–32	35,2–43,4	26–32	35,2–43,4
M10	40–50	29,5–36,9	7/16	50–65	67,8–88,1	50–65	67,8–88,1
M12	80–100	59,0–73,8	½	60–75	81,3–101,7	60–75	81,3–101,7
M14	90–120	66,4–88,5	5/8	90–110	122,0–149,1	122,0–149,1	90–110
M16	160–200	118,0–147,5					