

TORQUE VALUES , TRANSFER GEARBOX LT230

WARNING: Components in bold type must not be reused.

COMPONENT	Nm		ft lb
Pinch bolt • operating arm to crank arm	7 to 10		5 to 7
End cover gear change housing	7 to 10		5 to 7
Speedometer cable retainer	7 to 10		5 to 7
Rear output/speedometer housing		See note	
Bottom cover to transfer case	22 to 28		16 to 21*
Front output housing to transfer case	22 to 28		16 to 21*
Cross shaft housing to front output housing	22 to 28		16 to 21
Gear change housing	22 to 28		16 to 21
Pivot shaft to link arm	22 to 28		16 to 21
Connecting rod to adjustable clevis	22 to 28		16 to 21
Anti-rotation plate intermediate shaft	22 to 28		16 to 21'
Front output housing cover	22 to 28		16 to 21'
Pivot bracket to extension housing	22 to 28		16 to 21*
Finger housing to front output housing	22 to 28		16 to 21'
Bearing housing to transfer case	22 to 28		16 to 21
Brake drum to coupling flange	22 to 28		16 to 21
Bearing housing cover to transfer gearbox	40 to 50		29 to 37'
Rear output speedometer housing to transfer gearbox	40 to 50		29 to 37*
Selector finger to cross shaft high/low	22 to 28		16 to 21*
Selector fork, high/low to shaft	22 to 28		16 to 21*
Transmission brake to speedometer housing	65 to 80		48 to 59
Intermediate shaft stake nut		See text	
Gate plate to grommet plate	7 to 10		5 to 7
Plunger switch setting	6.75 max		4.82 max
Gearbox to transfer case	40 to 50		29 to 37
Gearbox to transfer case		See note	
Oil drain plug	25 to 35		19 to 26
Differential case (front to rear)	55 to 64		40 to 47
Output flanges	146 to 179		108 to 132
Differential case rear stake nut	66 to 80		50 to 59
Oil filler/level plug	25 to 35		19 to 26
Transfer breather	14 to 16		10 to 12
Transfer box front drive flange to drive shaft	41 to 52		30 to 38
Transfer box rear drive flange to drive shaft	41 to 52		30 to 38
Transfer gearbox mounting brackets to chassis	33 to 27		24 to 20
Mounting brackets to transfer gearbox	52		38
Mounting rubbers to mounting brackets	20 to 22		13 to 16

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.

NOTE: These bolts must have threads coated with Loctite 290 prior to assembly.

ZF4HP22 AUTOMATIC GEARBOX

	Nm	ft lb
Coupling shaft to mainshaft	36 to 48	26 to 34'
Filler tube to sump	60 to 75	45 to 55
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 (threaded 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.

FRONT AXLE

	Nm	ft lb
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 drive 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

FRONT AXLE ABS VEHICLES

Hub driving member to hub	60 to 70	44 to 52*
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	60 to 70	44 to 52
Lower swivel pin to swivel pin housing.....	22 to 28	16 to 21*
Oil seal retainer to swivel pin housing	9 to 12	7 to 9
Swivel pin bearing housing to axle case	65 to 80	48 to 59'
Disc shield to bracket lower	7 to 10	5 to 7

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

REAR AXLE	Nm	ft lb.	in lb
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 drive 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	

REAR AXLE ABS VEHICLES

Hub driving member to hub	60 to 70	44 to 52'	
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	
Disc shield to axle case	9 to 12	7 to 9	
Sensor ring to brake disc	7 to 10	5 to 7	

NOTE: • These bolts to be coated with loctite 270 prior in assembly.

BORG WARNER TRANSFER GEARBOX

Brake drum back plate to rear output housing	65-80	48-59	
Brake drum to drive flange	22-28	16-21	
Centre differential (front to rear)	36-41	27-30	
Centre differential to sprocket	41-61	30-45	
Drive flanges to transfer gearbox	203-244	150-180	
Drive shafts to drive flanges	41-52	30-38	
Front cover to rear cover-main case	30-49	22-36	
Front output housing to main case	24-31	18-23	
Gearbox mounting brackets to chassis	52	29-37	
Mounting bracket to gearbox	52	68-83	
Neutral warning switch	14-19	10-14	
Oil drain plug	1V-30	14-22	
Oil filler/level plug	1V-30	14-22	
Oil pump fixings.. ..	4-8.5		35-75
Rear output housing to main case	30-49	22-36	
Selector lever shaft-Torx screw	7-9	5-7	60-84
Selector fork operating arm-Torx screw	7-9	5-7	60-84

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

SIZE	METRIC		SIZE	UNC		UNF	
	Nm	ft lb		Nm	ft lb	Nm	ft lb
M5	5-7	3.7-5.2	1/4	6.8-9.5	5-7	8.1-12.2	6-9
M6	7-10	5.2-7.4	5/16	20.3-27.1	15-20	20.3-27.1	15-20
M8	22-28	16.2-20.7	3/8	35.3-43.4	26-32	35.3-43.4	26-32
M10	40-50	29.5-36.9	7/16	67.8-88.1	50-65	67.8-88.1	50-65
M12	80-100	59.0-73.8	1/2	81.3-101.7	60-75	81.3-101.7	60-75
M14	90-120	66.4-88.5	5/8	122.0-149.1		122.0-149.1	90-110
M16	160-200	118.0-147.5					

