MANUAL TRANSMISSION / TRANSAXLE

030FO−03

SERVICE DATA

Transmission case oil seal driven in depth		3.5 ± 0.5 mm (0.138 ± 0.020 in.)
Front transaxle case cover oil seal drive in depth		0 ± 0.5 mm (0 ± 0.020 in.)
Manual transaxle assy		
5th gear thrust clearance	Standard clearance	0.10 to 0.65 mm (0.0039 to 0.0256 in.)
5th gear radial clearance	Standard clearance	0.009 to 0.050 mm (0.0004 to 0.0020 in.)
Reverse idler gear sub−assy inside diameter	Standard inside diameter Maximum inside diameter	20.056 to 20.074 mm (0.7896 to 0.7903 in.) 20.074 mm (0.7903 in.)
Reverse idler gear shaft outer diameter	Standard outer diameter Minimum outer diameter	19.984 to 20.000 mm (0.7868 to 0.7874 in.) 19.984 mm (0.7868 in.)
Transmission hub sleeve No.3 groove − thickness of the claw part on gear shift fork No.3	Standard clearance	0.15 to 0.35 mm (0.0059 to 0.0138 in.)
5th gear inside diameter	Standard inside diameter Maximum inside diameter	34.981 to 34.997 mm (1.3772 to 1.3778 in.) 34.997 mm (1.3778 in.)
Control shaft cover bimetal formed bush clearance		0.081 to 0.149 mm (0.0032 to 0.0059 in.)
Front transaxle case cover oil seal driven in depth		0 ± 0.5 mm (0 ± 0.020 in.)
Transmission case oil seal driven in depth		3.5 ± 0.5 mm (0.138 ± 0.020 in.)
Output shaft rear bearing clearance		3.8 to 4.4 mm (0.150 to 0.173 in.)
Output shaft bearing preload	New bearing Used bearing	0.8 to 1.6 N·m (8.16 to 16.32 kgf·cm, 7.1 to 14.2 in.·lbf) 0.5 to 1.0 N·m (5.10 to 10.20 kgf·cm, 4.4 to 8.9 in.·lbf)
Output shaft rear bearing shim thickness	0 1 2 3 4 5 6 7 8 9 A B C D E F G H J K L M N P Q	1.30 mm (0.0512 in.) 1.35 mm (0.0531 in.) 1.40 mm (0.0551 in.) 1.45 mm (0.0571 in.) 1.50 mm (0.0591 in.) 1.55 mm (0.0610 in.) 1.60 mm (0.0630 in.) 1.65 mm (0.0650 in.) 1.70 mm (0.0669 in.) 1.75 mm (0.0689 in.) 1.80 mm (0.0709 in.) 1.85 mm (0.0728 in.) 1.90 mm (0.0748 in.) 1.95 mm (0.0768 in.) 2.00 mm (0.0787 in.) 2.05 mm (0.0807 in.) 2.10 mm (0.0827 in.) 2.15 mm (0.0846 in.) 2.20 mm (0.0866 in.) 2.25 mm (0.0886 in.) 2.30 mm (0.0906 in.) 2.35 mm (0.0925 in.) 2.40 mm (0.0945 in.) 2.45 mm (0.0965 in.) 2.50 mm (0.0984 in.)
Front differential case tapered roller bearing preload	New bearing Used bearing	0.8 to 1.6 N·m (8.16 − 16.32 kgf·cm, 7.1 to 14.2 in.·lbf) 0.5 to 1.0 N·m (5.10 − 10.20 kgf·cm, 4.4 to 8.9 in.·lbf)

Front differential case shim RR thickness	0	2.00 mm (0.0787 in.)
	1	2.05 mm (0.0807 in.)
	2	2.10 mm (0.0827 in.)
	3	2.15 mm (0.0846 in.)
	4	2.20 mm (0.0866 in.)
	5	2.25 mm (0.0886 in.)
	6	2.30 mm (0.0906 in.)
	7	2.35 mm (0.0925 in.)
	8	2.40 mm (0.0945 in.)
	9	2.45 mm (0.0965 in.)
	A	2.50 mm (0.0984 in.)
	B	2.55 mm (0.1004 in.)
	C	2.60 mm (0.1024 in.)
	D	2.65 mm (0.1043 in.)
	E	2.70 mm (0.1063 in.)
	F	2.75 mm (0.1083 in.)
	G	2.80 mm (0.1102 in.)
	H	2.85 mm (0.1122 in.)
Front differential case oil seal clearance		1 to 2 mm (0.0394 to 0.0787 in.)
Input shaft front bearing clearance		4.28 to 4.60 mm (0.1685 to 0.1811 in.)
Reverse restrict pin clearance		12.5 to 13.5 mm (0.492 to 0.531 in.)
Transmission clutch hub No.3 snap ring clearance		0.1 mm or less (0.0039 in. or less)
Transmission clutch hub No.3 snap ring thickness	a	1.75 to 1.80 mm (0.0689 to 0.0709 in.)
	b	1.80 to 1.85 mm (0.0709 to 0.0728 in.)
	c	1.85 to 1.90 mm (0.0728 to 0.0748 in.)
	d	1.90 to 1.95 mm (0.0748 to 0.0768 in.)
	e	1.95 to 2.00 mm (0.0768 to 0.0787 in.)
	f	2.00 to 2.05 mm (0.0787 to 0.0807 in.)
	g	2.05 to 2.10 mm (0.0807 to 0.0827 in.)
	h	2.10 to 2.15 mm (0.0827 to 0.0846 in.)
	j	2.15 to 2.20 mm (0.0846 to 0.0866 in.)
5th gear radial clearance	Standard clearance	0.009 to 0.050 mm (0.0004 to 0.0020 in.)
5th gear thrust clearance	Standard clearance	0.10 to 0.65 mm (0.0039 to 0.0260 in.)
Input shaft assy		
4th gear thrust clearance	Standard clearance	0.10 to 0.57 mm (0.0039 to 0.0224 in.)
3rd gear thrust clearance	Standard clearance	0.10 to 0.35 mm (0.0039 to 0.0138 in.)
4th gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
3rd gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
Input shaft run out	Maximum run out:	0.03 mm (0.0012 in.)
Input shaft standard outer diameter	A	35.984 to 36.000 mm (1.4167 to 1.4173 in.)
	B	35.984 to 36.000 mm (1.4167 to 1.4173 in.)
	C	27.957 to 27.972 mm (1.1007 to 1.1013 in.)
Input shaft minimum outer diameter	A	35.984 mm (1.4167 in.)
	B	35.984 mm (1.4167 in.)
	C	27.957 mm (1.1007 in.)
4th gear inside diameter	Standard inside diameter	42.009 to 42.025 mm (1.6539 to 1.6545 in.)
	Maximum inside diameter	42.025 mm (1.6545 in.)
3rd gear inside diameter	Standard inside diameter	43.009 to 43.025 mm (1.6933 to 1.6939 in.)
	Maximum inside diameter	43.025 mm (1.6939 in.)
Between the 4th gear spline end and synchronizer outer ring back clearance		0.75 to 1.65 mm (0.0295 to 0.0650 in.)
Between the 3rd gear spline end and synchronizer outer ring back clearance		0.65 to 1.75 mm (0.0256 to 0.0689 in.)
Transmission hub sleeve No.3 groove − thickness of the claw part on gear shift fork No.1	Standard clearance	0.11 to 0.69 mm (0.0043 to 0.0272 in.)
Transmission clutch hub No.2 snap ring clearance	Standard clearance	0.1 mm or less (0.0039 in. or less)

Transmission clutch hub No.2 snap ring thickness	H	2.30 to 2.35 mm (0.0906 to 0.0925 in.)
	J	2.35 to 2.40 mm (0.0925 to 0.0945 in.)
	K	2.40 to 2.45 mm (0.0945 to 0.0965 in.)
	L	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
	M	2.50 to 2.55 mm (0.0984 to 0.1004 in.)
	N	2.55 to 2.60 mm (0.1004 to 0.1024 in.)
	P	2.60 to 2.65 mm (0.1024 to 0.1043 in.to
Input shaft rear radial ball bearing snap ring clearance	Standard clearance	0.1 mm or less (0.0039 in. or less)
Input shaft rear radial ball bearing snap ring thickness	1	2.35 to 2.40 mm (0.0925 to 0.0945 in.)
	2	2.40 to 2.45 mm (0.0945 to 0.0965 in.)
	3	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
	4	2.50 to 2.55 mm (0.0984 to 0.1004 in.)
	5	2.55 to 2.60 mm (0.1004 to 0.1024 in.)
	6	2.60 to 2.65 mm (0.1024 to 0.1043 in.)
	7	2.65 to 2.70 mm (0.1043 to 0.1063 in.)
	8	2.70 to 2.75 mm (0.1063 to 0.1083 in.)
3rd gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
4th gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
3rd gear thrust clearance	Standard clearance	0.10 to 0.35 mm (0.0039 to 0.0138 in.)
4th gear thrust clearance	Standard clearance	0.10 to 0.57 mm (0.0039 to 0.0224 in.)
Output shaft assy		
1st gear thrust clearance	Standard clearance	0.25 to 0.40 mm (0.0098 to 0.0157 in.)
2nd gear thrust clearance	Standard clearance	0.10 to 0.35 mm (0.0039 to 0.0138 in.)
1st gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
2nd gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
Output shaft run out	Maximum run out	0.03 mm (0.0012 in.)
Output shaft standard outer diameter	A	37.610 to 37.626 mm (1.4807 to 1.4813 in.)
	B	34.502 to 34.512 mm (1.3583 to 1.3587 in.)
Output shaft minimum outer diameter	A	37.610 mm (1.4807 in.)
	B	34.502 mm (1.3702 in.)
2nd gear inside diameter	Standard inside diameter	50.009 to 50.025 mm (1.9689 to 1.9695 in.)
	Maximum inside diameter	50.025 mm (1.9695 in.)
1st gear inside diameter	Standard inside diameter	51.009 to 51.025 (2.0082 to 2.0089 in.)
	Maximum inside diameter	51.025 mm (2.0089 in.)
Between the 2nd gear while and synchronizer ring No.2 back clearance		0.70 to 1.45 mm (0.0276 to 0.0571 in.)
Between the 1st gear while and synchronizer ring set No.1 back clearance		0.70 to 1.45 mm (0.0276 to 0.0571 in.)
Reverse gear groove − thickness of the claw part on gear shift fork No.1 clearance	Standard clearance	0.15 to 0.35 mm (0.0059 to 0.0138 in.)
2nd gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
1st gear radial clearance	KOYO made	0.009 to 0.053 mm (0.0004 to 0.0021 in.)
	NSK made	0.009 to 0.051 mm (0.0004 to 0.0020 in.)
2nd gear thrust clearance	Standard clearance	0.10 to 0.35 mm (0.0039 to 0.0138 in.)
1st gear thrust clearance	Standard clearance	0.25 to 0.40 mm (0.0098 to 0.0157 in.)
Differential case assy		
Front differential side gear backlash	Standard backlash	0.10 to 0.20 mm (0.0039 to 0.0079 in.)
Front differential pinion thrust washer thickness	Minimum thickness	0.9 mm (0.035 in.)
Front differential pinion shaft No.1 thickness	Minimum thickness	17.975 mm (0.70768 in.)
Front differential side gear backlash	Standard backlash	0.05 to 0.20 mm (0.0020 to 0.0079 in.)
Front differential side gear thrust washer thickness	1	1.00 mm (0.0394 in.)
	2	1.10 mm (0.0433 in.)
	3	1.20 mm (0.0472 in.)
	4	1.30 mm (0.0512 in.)

Shift & select lever shaft assy	
Control shaft cover bimetal formed bush drive in depth	0 ± 0.25 mm (0 ± 0. 010 in.)
Control shaft cover oil seal drive in depth	28.5 ± 0.50 mm (1.122 ± 0. 020 in.)
Shift lever slotted pin clearance to the shift lever inner assy	−0.5 to 0.5 mm (−0.0197 to 0.0197 in.)
Shift lever slotted pin clearance to the shift lever inner No.2	5.8 to 6.8 mm (0.228 to 0.268 in.)