AUTOMATIC TRANSMISSION / TRANSAXLE

0305K–01

SERVICE DATA

Oil pump		
Body clearance	STD	0.10 – 0.17 mm (0.0039 – 0.0067 in.)
	Max.	0.17 mm (0.0067 in.)
Tip clearance	STD	0.07 – 0.15 mm (0.0028 – 0.0059 in.)
	Max.	0.15 mm (0.0059 in.)
Side clearance	STD	0.02 – 0.05 mm (0.0008 – 0.0020 in.)
	Max.	0.05 mm (0.0020 in.)
Drive gear thickness	Mark	
	1	10.690 – 10.699 mm (0.4209 – 0.4212 in.)
	2	10.700 – 10.709 mm (0.4213 – 0.4216i n.)
	3	10.710 – 10.720 mm (0.4217 – 0.4220i n.)
	4	10.721 – 10.730 mm (0.4221 – 0.4224i n.)
	5	10.731 – 10.740 mm (0.4225 – 0.4228 in.)
Driven gear thickness	Mark	
	1	10.690 – 10.699 mm (0.4209 – 0.4212 in.)
	2	10.700 – 10.709 mm (0.4213 – 0.4216i n.)
	3	10.710 – 10.720 mm (0.4217 – 0.4220i n.)
	4	10.721 – 10.730 mm (0.4221 – 0.4224i n.)
	5	10.731 – 10.740 mm (0.4225 – 0.4228 in.)
Pump body bushing inside diameter	STD	38.113 – 38.138 mm (1.50050 – 1.50149 in.)
	Max.	38.138 mm (1.50149 in.)
Stator shaft bushing inside diameter	STD	21.500 – 21.526 mm (0.84646 – 0.84748 in.)
	Max.	21.526 mm (0.84748 in.)

Multiple disc clutch		
Inside diameter	STD	23.025 – 23.045 mm (0.9065 – 0.9073 in.)
	Max.	23.09 mm (0.9091 in.)

Forward clutch		
Pack clearance	1MZ–FE	2.08 – 2.42 mm (0.0819 – 0.0953 in.)
	2AZ–FE	1.74 – 2.08 mm (0.0685 – 0.0819 in.)
Return spring free length		28.23 mm (1.1102 in.)
Flange thickness	Mark	
	1	3.00 mm (0.1181 in.)
	2	3.15 mm (0.1240 in.)
	3	3.30 mm (0.1299 in.)
	4	3.45 mm (0.1358 in.)
	5	3.60 mm (0.1417 in.)

Direct clutch		
Pack clearance:		0.605 – 0.825 mm (0.02382 – 0.03248 in.)
Return spring free length		22.58 mm (0.8898 in.)
Flange thickness	Mark	
	1	3.0 mm (0.118 in.)
	2	3.1 mm (0.122 in.)
	3	3.2 mm (0.126 in.)
	4	3.3 mm (0.130 in.)
	5	3.4 mm (0.134 in.)
	6	3.5 mm (0.138 in.)
End play: 0.198		0.936 mm (0.00800 – 0.03685 in.)

2nd brake	
Pack clearance	0.62 – 0.91 mm (0.0244 – 0.0358 in.)

Return spring free length		16.61 mm (0.6539 in.)
Flange thickness	Mark	
	1	3.0 mm (0.118 in.)
	2	3.1 mm (0.122 in.)
	3	3.2 mm (0.126 in.)
	4	3.3 mm (0.130 in.)
	5	3.4 mm (0.134 in.)
	6	3.5 mm (0.138 in.)
	7	3.6 mm (0.142 in.)

Input shaft		
End play		0.262 – 1.249 mm (0.0103 – 0.0492 in.)

U/D clutch		
Pack clearance		1.51 – 1.90 mm (0.0594 – 0.0748 in.)
U/D clutch drum bushing inside diameter	STD	37.06 – 37.08 mm (1.4591 – 1.4598 in.)
	Max.	37.13 mm (1.4618 in.)
Return spring free length		17.14 mm (0.6752 in.)
Flange thickness	Mark	
	1	3.0 mm (0.118 in.)
	2	3.2 mm (0.126 in.)
	3	3.4 mm (0.134 in.)

U/D brake		
Return spring free length		14.04 mm (0.5528 in.)
Pack clearance		1.81 – 2.20 mm (0.0713 – 0.0866 in.)
Flange thickness	Mark	
	1	3.0 mm (0.118 in.)
	2	3.2 mm (0.126 in.)
	3	3.4 mm (0.134 in.)

1st & reverse brake		
Pack clearance	1MZ–FE	1.10 – 1.29 mm (0.0433 – 0.0508 in.)
	2AZ–FE	1.02 – 1.21 mm (0.0402 – 0.0476 in.)
Return spring free length		15.51 mm (0.6106 in.)
Flange thickness	Mark	
	1	1.8 mm (0.071 in.)
	2	1.9 mm (0.075 in.)
	3	2.0 mm (0.079 in.)
	4	2.1 mm (0.083 in.)
	5	2.2 mm (0.087 in.)
	6	2.3 mm (0.091 in.)
	7	2.4 mm (0.094 in.)
	8	2.5 mm (0.098 in.)

U/D planetary gear		
Preload (at 60 rpm)		0.10 – 4.41 N·m (1.0 – 45 kgf·cm, 0.9 – 39 in.·lbf)

Front planetary gear		
Turning torque (at 60 rpm)	New Bearing	0.51 – 1.02 N·m (5.1 – 10.0 kgf·cm, 4.4 – 8.7 in.·lbf)
	Used Bearing	0.3 – 0.5 N·m (3.1 – 5.1 kgf·cm, 2.7 – 4.4 in.·lbf)

Transaxle rear cover		
Bearing press fit depth		12.05 – 12.75 mm (0.4744 – 0.5020 in.)

Transmission valve body		
Valve body installation bolt length	A	25 mm (0.984 in.)
	B	41 mm (1.614 in.)
	C	45 mm (1.771 in.)

Accumulator			
Spring		Free length/Outer diameter	Color
B_3 (1MZ–FE)	Inner	60.24 (2.3716) / 15.9 (0.626)	Green
	Outer	74.61 (2.9374) / 21.7 (0.854)	Blue
B_3 (2AZ–FE)	Inner	60.24 (2.3716) / 15.9 (0.626)	Yellowish Green
	Outer	74.61 (2.9374) / 21.7 (0.854)	Blue
C_1 (1MZ–FE)		90.53 (3.5642) / 18.5 (0.728)	Red
C_1 (2AZ–FE)		81.53 (3.2098) / 18.5 (0.728)	Pink
C_3		90.49 (3.5626) / 19.2 (0.756)	White

Front differential (U140E)		
Backlash		0.05 – 0.20 mm (0.0020 – 0.0079 in.)
Thrust washer thickness	Mark	
	–	1.625 mm (0.0640 in.)
	–	1.725 mm (0.0679 in.)
	–	1.825 mm (0.0719 in.)
Praload (at 60 rpm)	New bearing	0.20 – 0.69 N·m (2.0 – 7.0 kgf·cm, 1.8 – 6.1 in.·lbf)
	Used bearing	0.10 – 0.35 N·m (1.0 – 3.6 kgf·cm, 0.9 – 3.1 in.·lbf)
Flange thickness	Mark	
	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 (U140F)		
Side gear backlash		0.05 – 0.20 mm (0.0020 – 0.0079 in.)
Thrust washer thickness = Clearance – 0.162 – 0.265 mm (0.0064 – 0.0104 in.)		
	Mark	
	A	0.95 mm (0.0373 in.)
	B	1.00 mm (0.0393 in.)
	C	1.05 mm (0.0413 in.)
	D	1.10 mm (0.0433 in.)
	E	1.15 mm (0.0453 in.)
	F	1.20 mm (0.0472 in.)
	G	1.25 mm (0.0492 in.)
	H	1.30 mm (0.0512 in.)
	J	1.35 mm (0.0532 in.)
	K	1.40 mm (0.0552 in.)
Pinion's backlash		0.05 – 0.20 mm (0.0020 – 0.0079 in.)

Thrust washer thickness	Mark	
	MA	0.80 mm (0.0313 in.)
	MB	0.85 mm (0.0333 in.)
	MC	0.90 mm (0.0353 in.)
	MD	0.95 mm (0.0373 in.)
	ME	1.00 mm (0.0393 in.)
	MF	1.05 mm (0.0413 in.)
	MG	1.10 mm (0.0433 in.)
	MH	1.15 mm (0.0453 in.)
	MJ	1.20 mm (0.0472 in.)
	MK	1.25 mm (0.0492 in.)
	ML	1.30 mm (0.0512 in.)
	MM	1.35 mm (0.0532 in.)
	MN	1.40 mm (0.0552 in.)
Praload (at 60 rpm)	New bearing	0.20 – 0.69 N·m (2.0 – 7.0 kgf·cm, 1.8 – 6.1 in.·lbf)
	Used bearing	0.10 – 0.35 N·m (1.0 – 3.6 kgf·cm, 0.9 – 3.1 in.·lbf)
Flange thickness	Mark	
	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.)
Oil seal press in depth		5.5 – 6.5 mm (0.217 – 0.256 in.)