

MANUAL TRANSMISSION (RA60)

SS1MQ-01

SERVICE DATA

Reverse idle gear thrust clearance	Standard Maximum	0.10 to 0.55 mm (0.0039 to 0.0217 in.) 0.55 mm (0.0217 in.)
Reverse idle gear radial clearance	Standard Maximum	0.015 to 0.050 mm (0.0006 to 0.0020 in.) 0.050 mm (0.0020 in.)
Input shaft gear thrust clearance	3rd 4th 6th	0.09 to 0.52 mm (0.0035 to 0.0205 in.) 0.12 to 0.38 mm (0.0047 to 0.0150 in.) 0.20 to 0.48 mm (0.0079 to 0.0189 in.)
Input shaft gear radial clearance	3rd and 4th 6th	0.015 to 0.067 mm (0.00059 to 0.00264 in.) 0.015 to 0.065 mm (0.00059 to 0.00256 in.)
Synchronizer ring set No. 3 to 3rd gear clearance	Standard Inner Middle Outer Minimum Inner Middle Outer	1.20 to 2.20 mm (0.0472 to 0.0866 in.) 0.60 to 1.80 mm (0.0236 to 0.0709 in.) 0.80 to 1.80 mm (0.0315 to 0.0709 in.) 1.20 mm (0.0472 in.) 0.60 mm (0.0236 in.) 0.80 mm (0.0315 in.)
Synchronizer ring No. 3 to 4th gear clearance	Standard Minimum	0.70 to 1.50 mm (0.0276 to 0.0591 in.) 0.70 mm (0.0276 in.)
Synchronizer ring No. 3 to 6th gear clearance	Standard Minimum	0.70 to 1.50 mm (0.0276 to 0.0591 in.) 0.70 mm (0.0276 in.)
Wide of the hub sleeve – Thickness of the gear shift fork	No. 2 and No. 3	0.26 to 0.84 mm (0.0102 to 0.0331 in.)
Input shaft runout	Maximum	0.03 mm (0.0012 in.)
Input shaft journal diameter (See page MT-34)	Part A Standard Minimum B Standard Minimum C Standard Minimum D Standard Minimum E Standard Minimum	34.002 to 34.015 mm (1.3387 to 1.3392 in.) 34.002 mm (1.3387 in.) 44.985 to 45.000 mm (1.7711 to 1.7717 in.) 44.985 mm (1.7711 in.) 44.985 to 45.000 mm (1.7711 to 1.7717 in.) 44.985 mm (1.7711 in.) 41.985 to 42.000 mm (1.6530 to 1.6535 in.) 41.985 mm (1.6530 in.) 32.967 to 32.980 mm (1.2979 to 1.2984 in.) 32.967 mm (1.2979 in.)
Gear inside diameter	3rd gear Standard Maximum 4th gear Standard Maximum 6th gear Standard Maximum	51.015 to 51.040 mm (2.0085 to 2.0094 in.) 51.040 mm (2.0094 in.) 51.015 to 51.040 mm (2.0085 to 2.0094 in.) 51.040 mm (2.0094 in.) 51.015 to 51.040 mm (2.0085 to 2.0094 in.) 51.040 mm (2.0094 in.)
3rd gear thrust washer thickness	Standard Minimum	7.12 to 7.18 mm (0.2803 to 0.2827 in.) 7.12 mm (0.2803 in.)

Input shaft bearing snap ring thickness	Standard clearance Mark	0.1 mm (0.0039 in.) or less A 2.65 to 2.70 mm (0.1043 to 0.1063 in.) B 2.70 to 2.75 mm (0.1063 to 0.1083 in.) C 2.75 to 2.80 mm (0.1083 to 0.1102 in.) D 2.80 to 2.85 mm (0.1102 to 0.1122 in.) E 2.85 to 2.90 mm (0.1122 to 0.1142 in.) F 2.90 to 2.95 mm (0.1142 to 0.1161 in.)
Clutch hub No. 2 snap ring thickness	Standard clearance Mark	0.1 mm (0.0039 in.) or less A 1.77 to 1.82 mm (0.0697 to 0.0717 in.) B 1.82 to 1.87 mm (0.0717 to 0.0736 in.) C 1.87 to 1.92 mm (0.0726 to 0.0756 in.) D 1.92 to 1.97 mm (0.0756 to 0.0776 in.) E 1.97 to 2.02 mm (0.0776 to 0.0795 in.) F 2.02 to 2.07 mm (0.0795 to 0.0815 in.) G 2.07 to 2.12 mm (0.0815 to 0.0835 in.)
3rd gear thrust washer snap ring thickness	Standard clearance Mark	0.1 mm (0.0039 in.) or less A 2.07 to 2.12 mm (0.0815 to 0.0835 in.) B 2.12 to 2.17 mm (0.0835 to 0.0854 in.) C 2.17 to 2.22 mm (0.0854 to 0.0874 in.) D 2.22 to 2.27 mm (0.0874 to 0.0894 in.) E 2.27 to 2.32 mm (0.0894 to 0.0913 in.) F 2.32 to 2.37 mm (0.0913 to 0.0933 in.)
Clutch hub No. 3 snap ring thickness	Standard clearance Mark	0.1 mm (0.0039 in.) or less A 2.10 to 2.15 mm (0.0827 to 0.0846 in.) B 2.15 to 2.20 mm (0.0846 to 0.0866 in.) C 2.20 to 2.25 mm (0.0866 to 0.0886 in.) D 2.25 to 2.30 mm (0.0886 to 0.0906 in.) E 2.30 to 2.35 mm (0.0906 to 0.0925 in.) F 2.35 to 2.40 mm (0.0925 to 0.0945 in.) G 2.40 to 2.45 mm (0.0945 to 0.0965 in.)
Output shaft inside diameter	Standard minimum	45.009 to 45.025 mm (1.7720 to 1.7726 in.) 45.025 mm (1.7726 in.)
Synchronizer ring to 5th gear clearance	Standard Minimum	0.70 to 1.50 mm (0.0276 to 0.0591 in.) 0.70 mm (0.0276 in.)
Counter gear shaft gear thrust clearance	1st and 2nd Reverse	0.10 to 0.42 mm (0.0039 to 0.0165 in.) 0.12 to 0.28 mm (0.0047 to 0.0110 in.)
Counter gear shaft gear radial clearance	1st and 2nd Reverse	0.015 to 0.067 mm (0.00059 to 0.00264 in.) 0.015 to 0.065 mm (0.00059 to 0.00256 in.)
Synchronizer ring set No. 1 to 1st gear clearance	Standard Inner Middle Outer Minimum Inner Middle Outer	1.48 to 2.12 mm (0.0583 to 0.0835 in.) 0.68 to 1.92 mm (0.0268 to 0.0756 in.) 0.88 to 1.72 mm (0.0346 to 0.0677 in.) 1.48 mm (0.0583 in.) 0.68 mm (0.0268 in.) 0.88 mm (0.0346 in.)

SERVICE SPECIFICATIONS – MANUAL TRANSMISSION (RA60)

Synchronizer ring set No. 1 to 2nd gear clearance	Standard	
	Inner	1.48 to 2.12 mm (0.0583 to 0.0835 in.)
	Middle	0.68 to 1.92 mm (0.0268 to 0.0756 in.)
	Outer	0.88 to 1.72 mm (0.0346 to 0.0677 in.)
	Minimum	
	Inner	1.48 mm (0.0583 in.)
	Middle	0.68 mm (0.0268 in.)
	Outer	0.88 mm (0.0346 in.)
Reverse synchronizer ring to reverse gear clearance	Standard	0.70 to 1.30 mm (0.0278 to 0.0512 in.)
	Minimum	0.70 mm (0.0278 in.)
Wide of the hub sleeve – Thickness of the gear shift fork	No. 1	0.15 to 0.35 mm (0.0059 to 0.0138 in.)
	No. 4	0.26 to 0.84 mm (0.0102 to 0.0331 in.)
Counter gear shaft runout	Maximum	0.03 mm (0.0012 in.)
Counter gear shaft journal diameter (See page MT-52)	Part	
	A Standard	34.002 to 34.015 mm (1.3387 to 1.3392 in.)
	Minimum	34.002 mm (1.3387 in.)
	B Standard	36.985 to 37.000 mm (1.4561 to 1.4567 in.)
	Minimum	36.985 mm (1.4561 in.)
	C Standard	47.985 to 78.000 mm (1.8892 to 1.8898 in.)
	Minimum	47.985 mm (1.8892 in.)
	D Standard	53.985 to 54.000 mm (2.1254 to 2.1260 in.)
	Minimum	53.985 mm (2.1254 in.)
	E Standard	34.002 to 34.015 mm (1.3387 to 1.3392 in.)
	Minimum	34.002 mm (1.3387 in.)
Gear inside diameter	1st gear	
	Standard	54.015 to 54.040 mm (2.1266 to 2.1276 in.)
	Maximum	54.040 mm (2.1276 in.)
	2nd gear	
	Standard	60.015 to 60.040 mm (2.3628 to 2.3638 in.)
	Maximum	60.040 mm (2.3638 in.)
Reverse gear	Standard	51.015 to 51.040 mm (2.0085 to 2.0094 in.)
	Maximum	51.040 mm (2.0094 in.)
Clutch hub No. 1 snap ring thickness	Standard	0.1 mm (0.0039 in.) or less
	Mark	
	A	2.28 to 2.33 mm (0.0898 to 0.0917 in.)
	B	2.33 to 2.38 mm (0.0917 to 0.0937 in.)
	C	2.38 to 2.43 mm (0.0937 to 0.0957 in.)
	D	2.43 to 2.48 mm (0.0957 to 0.0976 in.)
	E	2.48 to 2.53 mm (0.0976 to 0.0996 in.)
	F	2.53 to 2.58 mm (0.0996 to 0.1016 in.)
	G	2.58 to 2.63 mm (0.1016 to 0.1035 in.)
Counter gear shaft bearing snap ring thickness	Standard	0.1 mm (0.0039 in.) or less
	Mark	
	A	2.35 to 2.40 mm (0.0925 to 0.0945 in.)
	B	2.40 to 2.45 mm (0.0945 to 0.0965 in.)
	C	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
	D	2.50 to 2.55 mm (0.0984 to 0.1004 in.)
	E	2.55 to 2.60 mm (0.1004 to 0.1024 in.)
	F	2.60 to 2.65 mm (0.1024 to 0.1043 in.)
	G	2.65 to 2.70 mm (0.1043 to 0.1063 in.)
	G	2.70 to 2.75 mm (0.1063 to 0.1083 in.)
	J	2.75 to 2.80 mm (0.1083 to 0.1102 in.)
	K	2.80 to 2.85 mm (0.1102 to 0.1122 in.)
	L	2.85 to 2.90 mm (0.1122 to 0.1142 in.)
	M	2.90 to 2.95 mm (0.1142 to 0.1161 in.)

Needle roller bearing inner race snap ring thickness	Standard	0.1 mm (0.0039 in.) or less
	Mark	
	A	2.35 to 2.40 mm (0.0925 to 0.0945 in.)
	B	2.40 to 2.45 mm (0.0945 to 0.0965 in.)
	C	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
	D	2.50 to 2.55 mm (0.0984 to 0.1004 in.)
	E	2.55 to 2.60 mm (0.1004 to 0.1024 in.)
	F	2.60 to 2.65 mm (0.1024 to 0.1043 in.)
	G	2.65 to 2.70 mm (0.1043 to 0.1063 in.)
	G	2.70 to 2.75 mm (0.1063 to 0.1083 in.)
	J	2.75 to 2.80 mm (0.1083 to 0.1102 in.)
	K	2.80 to 2.85 mm (0.1102 to 0.1122 in.)
	L	2.85 to 2.90 mm (0.1122 to 0.1142 in.)
	M	2.90 to 2.95 mm (0.1142 to 0.1161 in.)
Oil seal drive in depth	Front case oil seal	60.0 to 60.8 mm (2.362 to 2.394 in.)
	Extension housing oil seal	–0.5 to 0.5 mm (–0.0197 to 0.0197 in.)