

# MANUAL TRANSMISSION (W59)

## SERVICE DATA

SS059-01

Output shaft 2nd gear journal diameter	Min.	42.975 mm (1.6919 in.)	
Output shaft 3rd gear journal diameter	Min.	31.969 mm (1.2586 in.)	
Output shaft flange thickness	Min.	5.60 mm (0.2205 in.)	
Output shaft runout	Max.	0.06 mm (0.0024 in.)	
1st gear inner race flange thickness	Min.	4.78 mm (0.1881 in.)	
1st gear inner race outer diameter	Min.	42.975 mm (1.6919 in.)	
Counter gear bearing journal diameter	Min.	29.950 mm (1.1791 in.)	
Counter 5th gear journal diameter	Min.	26.975 mm (1.0620 in.)	
1st, 2nd and 3rd gear thrust clearance	STD	0.10 – 0.25 mm (0.0039 – 0.0098 in.)	
	Max.	0.30 mm (0.0118 in.)	
Counter 5th gear thrust clearance	STD	0.10 – 0.41 mm (0.0039 – 0.0161 in.)	
	Max.	0.46 mm (0.0181 in.)	
1st, 2nd and counter 5th gear radial clearance	STD	0.009 – 0.060 mm (0.0004 – 0.0024 in.)	
	Max.	0.150 mm (0.0059 in.)	
3rd gear radial clearance	STD	0.015 – 0.066 mm (0.0006 – 0.0026 in.)	
	Max.	0.200 mm (0.0079 in.)	
Reverse idler gear radial clearance	STD	0.041 – 0.074 mm (0.0016 – 0.0029 in.)	
	Max.	0.194 mm (0.0076 in.)	
Reverse idler gear to shift arm shoe clearance	STD	0.20 – 0.41 mm (0.0080 – 0.0161 in.)	
	Max.	0.90 mm (0.0354 in.)	
Shift fork to hub sleeve clearance	Max.	1.0 mm (0.039 in.)	
Synchronizer ring to 1st and 4th gear clearance	Min.	0.5 mm (0.020 in.)	
Synchronizer ring to 2nd and 3rd gear clearance	Min.	0.7 mm (0.028 in.)	
Input shaft snap ring thickness	Mark 1	2.05 – 2.10 mm (0.0807 – 0.0827 in.)	
	2	2.10 – 2.15 mm (0.0827 – 0.0846 in.)	
	3	2.15 – 2.20 mm (0.0846 – 0.0866 in.)	
	4	2.20 – 2.25 mm (0.0866 – 0.0886 in.)	
	5	2.25 – 2.30 mm (0.0886 – 0.0906 in.)	
	11	2.30 – 2.35 mm (0.0906 – 0.0925 in.)	
	12	2.35 – 2.40 mm (0.0925 – 0.0945 in.)	
Output shaft snap ring thickness No. 2 clutch hub	Mark C-1	1.75 – 1.80 mm (0.0689 – 0.0709 in.)	
	D	1.80 – 1.85 mm (0.0709 – 0.0728 in.)	
	11	1.86 – 1.91 mm (0.0732 – 0.0752 in.)	
	12	1.92 – 1.97 mm (0.0756 – 0.0776 in.)	
	13	1.98 – 2.03 mm (0.0780 – 0.0799 in.)	
	14	2.04 – 2.09 mm (0.0803 – 0.0823 in.)	
	15	2.10 – 2.15 mm (0.0827 – 0.0846 in.)	
	Rear bearing	Mark 8	2.31 – 2.36 mm (0.0909 – 0.0929 in.)
		9	2.37 – 2.42 mm (0.0933 – 0.0953 in.)
		10	2.43 – 2.48 mm (0.0957 – 0.0976 in.)
11		2.49 – 2.54 mm (0.0980 – 0.1000 in.)	
12		2.55 – 2.60 mm (0.1004 – 0.1024 in.)	
	13	2.61 – 2.66 mm (0.1028 – 0.1047 in.)	
	14	2.68 – 2.73 mm (0.1055 – 0.1075 in.)	
	15	2.74 – 2.79 mm (0.1079 – 0.1098 in.)	

Output shaft snap ring thickness (cont'd) Reverse gear	Mark 5 11 12 13 14 15 16 17 18 19 20 21 22 23	2.25 – 2.30 mm (0.0886 – 0.0906 in.) 2.30 – 2.35 mm (0.0906 – 0.0925 in.) 2.35 – 2.40 mm (0.0925 – 0.0945 in.) 2.40 – 2.45 mm (0.0945 – 0.0965 in.) 2.45 – 2.50 mm (0.0965 – 0.0984 in.) 2.50 – 2.55 mm (0.0984 – 0.1004 in.) 2.55 – 2.60 mm (0.1004 – 0.1024 in.) 2.61 – 2.66 mm (0.1028 – 0.1047 in.) 2.67 – 2.72 mm (0.1051 – 0.1071 in.) 2.73 – 2.78 mm (0.1075 – 0.1094 in.) 2.79 – 2.84 mm (0.1098 – 0.1118 in.) 2.85 – 2.90 mm (0.1122 – 0.1142 in.) 2.91 – 2.96 mm (0.1146 – 0.1165 in.) 2.97 – 3.02 mm (0.1169 – 0.1189 in.)
Coutner gear snap ring thickness Front bearing  No. 3 clutch hub  Rear bearing	Mark A B C D E F Mark 2 3 4 5 Mark 1 2 3 4 5 6 7	2.05 – 2.10 mm (0.0807 – 0.0827 in.) 2.10 – 2.15 mm (0.0827 – 0.0846 in.) 2.15 – 2.20 mm (0.0846 – 0.0866 in.) 2.20 – 2.25 mm (0.0866 – 0.0886 in.) 2.25 – 2.30 mm (0.0886 – 0.0906 in.) 2.30 – 2.35 mm (0.0906 – 0.0925 in.) 2.06 – 2.11 mm (0.0811 – 0.0831 in.) 2.12 – 2.17 mm (0.0835 – 0.0854 in.) 2.18 – 2.23 mm (0.0858 – 0.0878 in.) 2.24 – 2.29 mm (0.0882 – 0.0902 in.) 1.90 – 1.95 mm (0.0748 – 0.0768 in.) 1.96 – 2.01 mm (0.0772 – 0.0791 in.) 2.02 – 2.07 mm (0.0795 – 0.0815 in.) 2.08 – 2.13 mm (0.0819 – 0.0839 in.) 2.14 – 2.19 mm (0.0843 – 0.0862 in.) 2.20 – 2.25 mm (0.0866 – 0.0886 in.) 2.26 – 2.31 mm (0.0890 – 0.0909 in.)
Oil seal drive in depth Speedometer drive gear Front bearing retainer (from retainer end) Extension housing Transfer adaptor		25 mm (0.98 in.) 12.2 ± 0.5 mm (0.480 ± 0.020 in.) 0 ± 0.5 mm (0 ± 0.020 in.) 45.5 ± 0.5 mm (1.969 ± 0.020 in.)