

SPECIFICATIONS H150F MANUAL TRANSMISSION / TRANSAXLE SERVICE DATA

Manual transmission oil

Oil grade	Oil viscosity	Standard capacity
GL-4	SAE 75W-90	2.9 liters (3.1 US qts, 2.6 Imp. qts)

Back-up light switch assembly

Tester Connection	Condition	Specified Condition
1 - 2	Pushed	Below 1 Ω
1 - 2	Released	10 k Ω or higher

Manual transmission unit

Reverse gear	Standard inside diameter	51.015 to 51.040 mm (2.0085 to 2.0094 in.)
	Maximum inside diameter	51.040 mm (2.0094 in.)
Reverse gear thrust clearance	Standard clearance	0.15 to 0.52 mm (0.00591 to 0.02047 in.)
Reverse gear radial clearance	Standard clearance	0.015 to 0.068 mm (0.00060 to 0.00267 in.)
Reverse idler gear	Standard inside diameter	35.015 to 35.036 mm (1.3786 to 1.3793 in.)
	Maximum inside diameter	35.036 mm (1.3793 in.)
Reverse idler gear radial clearance	Standard clearance	0.015 to 0.059 mm (0.00060 to 0.00232 in.)
Reverse idler gear shaft	Standard outside diameter	27.987 to 28.000 mm (1.1019 to 1.1023 in.)
	Minimum diameter	27.987 mm (1.1019 in.)
Reverse synchronizer ring set	Standard clearance	0.90 to 1.96 mm (0.03544 to 0.07716 in.)
	Maximum clearance	1.96 mm (0.07716 in.)
No. 2 synchronizer ring	Standard clearance	0.8 to 1.6 mm (0.03150 to 0.06299 in.)
	Minimum clearance	0.8 mm (0.03150 in.)
Reverse shift fork	Standard thickness	11.75 to 11.85 mm (0.4626 to 0.4665 in.)
	Minimum thickness	11.75 mm (0.4626 in.)
No. 1 gear shift fork	Standard thickness	11.75 to 11.85 mm (0.4626 to 0.4665 in.)
	Minimum thickness	11.75 mm (0.4626 in.)
No. 2 gear shift fork	Standard thickness	11.75 to 11.85 mm (0.4626 to 0.4665 in.)
	Minimum thickness	11.75 mm (0.4626 in.)
No. 3 gear shift fork	Standard thickness	9.76 to 10.24 mm (0.3843 to 0.4031 in.)
	Minimum thickness	9.76 mm (0.3843 in.)
No. 4 transmission hub sleeve	Standard groove	12.0 to 12.1 mm (0.4725 to 0.4763 in.)
	Maximum groove	12.1 mm (0.4763 in.)
Oil pump rotor set Tip clearance	Standard tip Clearance	0.10 to 0.22 mm (0.00394 to 0.00866 in.)
	Maximum tip Clearance	0.22 mm (0.00866 in.)
Oil pump rotor set Tip clearance	Standard body Clearance	0.075 to 0.170 mm (0.00296 to 0.00669 in.)
	Maximum body Clearance	0.170 mm (0.00669 in.)
Transfer adapter straight pin Standard protrusion height	Item A	4.0 to 6.0 mm (0.1575 to 0.2362 in.)
	Item B	7.0 to 9.0 mm (0.2756 to 0.3543 in.)
No. 3 transmission clutch hub shaft snap ring thickness	A	2.40 to 2.45 mm (0.0945 to 0.0964 in.)

	B	2.45 to 2.50 mm (0.0965to 0.0984 in.)
	C	2.50 to 2.55 mm (0.0985to 0.1003 in.)
	D	2.55 to 2.60 mm (0.1004to 0.1023 in.)
	E	2.60 to 2.65 mm (0.1024to 0.1043 in.)
	F	2.65 to 2.70 mm (0.1044to 0.1063 in.)
Front transmission bearing retainer oil seal	Standard drive in depth	15.4 to 16.2 mm (0.6063 to 0.6377 in.)

Input shaft

Input shaft rear bearing shaft snap ring thickness	A	2.50 to 2.55 mm (0.0985to 0.1003 in.)
	B	2.55 to 2.60 mm (0.1004to 0.1023 in.)
	C	2.60 to 2.65 mm (0.1024to 0.1043 in.)
	D	2.65 to 2.70 mm (0.1044to 0.106299 in.)
	D	2.70 to 2.75 mm (0.1063to 0.1082 in.)
	F	2.75 to 2.80 mm (0.1083to 0.1102 in.)

Output shaft

1st gear thrust clearance	Standard clearance	0.10 to 0.45 mm (0.00394 to 0.01771 in.)
	Maximum clearance	0.45 mm (0.01771 in.)
2nd gear thrust clearance	Standard clearance	0.10 to 0.35 mm (0.00394 to 0.01378 in.)
	Maximum clearance	0.35 mm (0.01378 in.)
3rd gear thrust clearance	Standard clearance	0.10 to 0.45 mm (0.00394 to 0.01771 in.)
	Maximum clearance	0.45 mm (0.01771 in.)
5th gear thrust clearance	Standard clearance	0.10 to 0.35 mm (0.00394 to 0.01378 in.)
	Maximum clearance	0.35 mm (0.01378 in.)
1st gear radial clearance	Standard clearance	0.020 to 0.073 mm (0.00079 to 0.00287 in.)
	Maximum clearance	0.073 mm (0.00287 in.)
2nd gear radial clearance	Standard clearance	0.015 to 0.068 mm (0.00060 to 0.00267 in.)
	Maximum clearance	0.068 mm (0.00267 in.)
3rd gear radial clearance	Standard clearance	0.020 to 0.073 mm (0.00079 to 0.00287 in.)
	Maximum clearance	0.073 mm (0.00287 in.)
5th gear radial clearance	Standard clearance	0.015 to 0.068 mm (0.00060 to 0.00267 in.)
	Maximum clearance	0.068 mm (0.00267 in.)
Output shaft	Maximum runout	0.03 mm (0.00118 in.)
Output shaft journal diameter		
Measuring point A	Standard diameter	37.979 to 37.995mm (1.4953 to 1.4958 in.)
	Minimum diameter	37.979 mm (1.4953 in.)
Measuring point B	Standard diameter	45.984 to 46.000mm (1.8104 to 1.8110 in.)
	Minimum diameter	45.984 mm (1.8104 in.)
Measuring point C	Standard diameter	57.984 to 58.000mm (2.2829 to 2.2834 in.)

	Minimum diameter	57.984 mm (2.2829 in.)
Measuring point D	Standard diameter	49.979 to 49.995 mm (1.9677 to 1.9683 in.)
	Minimum diameter	49.979 mm (1.9677 in.)
Measuring point E	Standard diameter	44.484 to 44.500 mm (1.7514 to 1.7519 in.)
	Minimum diameter	44.484 mm (1.7514 in.)
1st gear	Standard inside diameter	57.015 to 57.040 mm (2.2447 to 2.2456 in.)
	Maximum inside diameter	57.040 mm (2.2456 in.)
2nd gear	Standard inside diameter	65.015 to 65.040 mm (2.5597 to 2.5606 in.)
	Maximum inside diameter	65.040 mm (2.5606 in.)
3rd gear.	Standard inside diameter	44.015 to 44.040 mm (1.7329 to 1.7338 in.)
	Maximum inside diameter	44.040 mm (1.7338 in.)
5th gear	Standard inside diameter	53.015 to 53.040 mm (2.0872 to 2.0881 in.)
	Maximum inside diameter	53.040 mm (2.0881 in.)
No. 1 transmission hub sleeve	Standard clearance	12.0 to 12.1 mm (0.4725 to 0.4763 in.)
	Maximum clearance	12.1 mm (0.4763 in.)
No. 2 transmission hub sleeve	Standard clearance	12.0 to 12.1 mm (0.4725 to 0.4763 in.)
	Maximum clearance	12.1 mm (0.4763 in.)
No. 3 transmission hub sleeve	Standard clearance	10.5 to 10.6 mm (0.4134 to 0.4173 in.)
	Maximum clearance	10.6 mm (0.4173 in.)
No. 2 synchronizer ring set	Standard clearance	1.23 to 2.13 mm (0.0485 to 0.0838 in.)
	Minimum clearance	1.23 mm (0.0485 in.)
No. 3 synchronizer ring set	Standard clearance	1.15 to 2.05 mm (0.0453 to 0.0807 in.)
	Minimum clearance	1.15 mm (0.0453 in.)
No. 1 synchronizer ring set	Standard clearance	1.25 to 2.15 mm (0.0493 to 0.0846 in.)
	Minimum clearance	1.25 mm (0.0493 in.)
No. 3 synchronizer ring	Standard clearance	0.80 to 1.60 mm (0.0315 to 0.0629 in.)
	Minimum clearance	0.80 mm (0.0315 in.)
No. 3 transmission clutch hub shaft snap ring thickness	Mark A	2.40 to 2.45 mm (0.0945 to 0.0964 in.)
	Mark B	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
	Mark C	2.50 to 2.55 mm (0.0985 to 0.1003 in.)
	Mark D	2.55 to 2.60 mm (0.1004 to 0.1023 in.)
	Mark E	2.60 to 2.65 mm (0.1024 to 0.1043 in.)
	Mark F	2.65 to 2.70 mm (0.1044 to 0.1062 in.)
No. 2 clutch hub setting shaft snap ring thickness	Mark 4	1.90 to 1.95 mm (0.0748 to 0.0767 in.)
	Mark 5	1.95 to 2.00 mm (0.0768 to 0.0787 in.)
	Mark 6	2.00 to 2.05 mm (0.0788 to 0.0807 in.)
	Mark 7	2.05 to 2.10 mm (0.0808 to 0.0826 in.)
	Mark 8	2.10 to 2.15 mm (0.0828 to 0.0846 in.)

	Mark 9	2.15 to 2.20 mm (0.0847 to 0.0866 in.)
No. 1 clutch hub shaft snap ring	Mark A	2.90 to 2.95 mm (0.1142 to 0.1161 in.)
	Mark B	2.95 to 3.00 mm (0.1162 to 0.1181 in.)
	Mark C	3.00 to 3.05 mm (0.1182 to 0.1200 in.)
	Mark D	3.05 to 3.10 mm (0.1201 to 0.1220 in.)
	Mark E	3.10 to 3.15 mm (0.1221 to 0.1240 in.)
	Mark F	3.15 to 3.20 mm (0.1241 to 0.1259 in.)
Output shaft bearing shaft snap ring	Mark A	2.40 to 2.45 mm (0.0945 to 0.0964 in.)
	Mark B	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
	Mark C	2.50 to 2.55 mm (0.0985 to 0.1003 in.)
	Mark D	2.55 to 2.60 mm (0.1004 to 0.1023 in.)
	Mark E	2.60 to 2.65 mm (0.1024 to 0.1043 in.)
	Mark F	2.65 to 2.70 mm (0.1044 to 0.1063 in.)
	Mark G	2.70 to 2.75 mm (0.1063 to 0.1082 in.)
	Mark H	2.75 to 2.80 mm (0.1083 to 0.1102 in.)

Counter gear

Standard journal diameter Measuring point A	Standard journal diameter	30.002 to 30.015 mm (1.1812 to 1.1817 in.)
	minimum journal diameter	30.002 mm (1.1812 in.)
Standard journal diameter Measuring point B	Standard journal diameter	35.957 to 35.970 mm (1.4156 to 1.4161 in.)
	minimum journal diameter	35.957 mm (1.4156 in.)
Snap ring thickness	Mark A	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
	Mark B	2.50 to 2.55 mm (0.0985 to 0.1003 in.)
	Mark C	2.55 to 2.60 mm (0.1004 to 0.1023 in.)
	Mark D	2.60 to 2.65 mm (0.1024 to 0.1043 in.)
	Mark E	2.65 to 2.70 mm (0.1044 to 0.10629 in.)
	Mark F	2.70 to 2.75 mm (0.10623 to 0.10826 in.)