

GROUP 4

CLUTCH, TRANSMISSION, UNIVERSAL JOINT

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All information on the Dynaflow transmission is given separately in the "1948 Buick Dynaflow Transmission Service Manual" (B. P. S. 1.30).

SECTION 4-A

SPECIFICATIONS—CLUTCH, SYNCRO-MESH TRANSMISSIONS, UNIVERSAL JOINT

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SERVICE BULLETIN REFERENCE

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4-1 TIGHTENING SPECIFICATIONS

Use a reliable torque wrench to tighten the parts listed, to insure proper tightness without straining or distorting parts. These specifications are for *clean and lightly lubricated threads only*; dry or dirty threads produce increased friction which prevents accurate measurement of tightness.

a. Clutch

Part	Location	Thread Size	Torque Ft. Lbs.
Nut	Release Equalizer Ball Stud..	1/2-20	55-60
Nut	Clutch Release Rod Adjust Lock.....	3/8-16	20-25
Stud	Clutch Release Yoke Ball....	1/2-20	30-35
Bolt	Clutch Cover to Flywheel, Series 40-50.....	3/8-16	20-25
Bolt	Clutch Cover to Flywheel, Series 70.....	5/16-18	15-20

b. Syncro-Mesh Transmission and Universal Joint

Nut	Lower Shift Rod Adjust Lock	3/8-24	20-25
Nut	Shift Idler Lever Pin....	3/8-24	30-35
Plug	Oil Level and Oil Drain.....	1/2 pipe	35-40
Bolt	Outer Selector Lever.....	1/4-20	7-10
Bolt	Shift Lever to Selector Shaft.	3/8-24	15-20
Bolt	Trans. Support to Frame X Member.....	3/8-24	20-25
Bolt	Trans. Assembly to Flywheel Housing.....	1/2-13	55-60
Bolt	Trans. Cover to Case.....	3/8-16	15-20
Sleeve	Speedometer Driven Gear...	15/16-18	45-50
Screw	Transmission Breather.....	7/16-20	10-15
Bolt	Rear Bearing Retainer to Case	7/16-14	40-45
Bolt	Torque Ball to Rear Bearing Retainers.....	3/8-16	25-30
Bolt	U-Joint to Main Shaft, Series 40-50.....	3/8-24	40-45
Bolt	U-Joint to Main Shaft, Series 70.....	1/2-20	55-60

4-2 CLUTCH SPECIFICATIONS

Items	Series 40-50	1948 Series 70
Type	Single Plate—Dry Disc	Single Plate—Dry Disc
Number of Driving Plates	One	One
Number of Driven Plates	One	One
Diameter of Driven Plate	10"	10½"
Vibration Neutralizer—Type	Coil Springs and Friction Washers	Coil Springs and Friction Washers
Facing on Driven Plates—Type	2 Woven	2 Woven
How Attached to Plate	Riveted	Riveted
Facing Thickness	.125"±.003"	.125"±.003"
Total Frictional Area of Facings	100.6 sq. in.	106.8 sq. in.
Maximum Run-Out of Driven Plate at Rear Facing	.025"	.025"
Number of Clutch Springs	One	12
Total Pressure of Clutch Springs	1350 lbs.	1680 lbs.
Spring Pressure X Length	—	135-143 lbs. at 1¼"
Spring Free Height, New	11¼"	—
Minimum	11¼"	—
Clutch Control	Clutch Pedal and Linkage	Clutch Pedal and Linkage
Clutch Pedal Pressure	35 lbs.	28 lbs.
Clutch Pedal Ratio—Average	58.6 to 1	71 to 1
Clutch Pedal Adjustment (Lash)	¾" to 1"	¾" to 1"
Height of Spring Retainer Ears from Flange Face of Clutch Cover	1¼"	—
Clearance Between Cover and Pressure Plate Driving Lugs	—	.005" — .008"
Height of Inner Ends of Release Levers from Face of Flywheel	—	2⅜"
Maximum Variation in Height of Release Levers, Inner Ends	—	.005"

4-3 SYNCRO-MESH TRANSMISSION AND UNIVERSAL JOINT SPECIFICATIONS

NOTE: Where dimensions and limits for fit of parts are given in these specifications they apply to new parts only. Where limits are given, "T" means tight and "L" means loose.

a. Transmission

Items	Series 40-50	1948 Series 70
Type	Syncro-Mesh	Syncro-Mesh
Type of Gearing	All Helical	All Helical
Location	Unit with Engine	Unit with Engine
Oil Capacity, Pints	1¾"	2½"
Number of Forward Speeds	Three	Three
Transmission Ratio—		
In Third	Direct	Direct
In Second	1.66 to 1	1.53 to 1
In First	2.67 to 1	2.39 to 1
In Reverse	3.02 to 1	2.53 to 1
Main Drive Gear In Pilot Bearing	←.0001" L to .0011" L→	←.0011" L→
Main Drive Gear to Clutch Hub Backlash	←.0005" L→	←.0035" L→
Bearing on Main Drive Gear	←.0003" T→	←.0007" L→
Main Drive Gear Bearing in Case	←.0002" T→	←.001" L→
Reverse Idler Gear on Shaft	←.0002" L→	←.0042" L→
2nd and 3rd Sliding Sleeve (40-50) or Synchronizing Clutch (70) on Main Shaft, Diameter	←.001" L→	←.003" L→
Backlash	←Selective .001" L→	←.003" L→
2nd Speed Gear on Main Shaft	.001" L—.0026" L	Selective .002" L
1st and Rev. Sliding Gear on Sliding Sleeve or Main Shaft, Backlash	←Selective, .003" L→	←.003" L→
Shifter Yoke Shafts in Case	←.003" L→	←.006" L→
Trans. R. Bearing in Case	.0011" T—.0005" L	.0002" T—.001" L
Trans. R. Bearing on Main Shaft	←.0007" T→	←.0002" L→
Counter Gear on Shaft	.0005" L—.0024" L	.0002" L—.0021" L
Counter Gear End Clearance	.0176" L—.0296" L	.010" L—.024" L

b. Universal Joint and Torque Ball

Lubrication	From Transmission
Transmission R. Bearing Retainer Pilot	.000"—.003" L
U-Joint Bearings Number and Type	4 Hardened Steel Bushings
Diameter of Spider Pins	.684"—.685"
Spider Pins in Bushings	.002" L—.004" L
Rear Yoke on Propeller Shaft, Backlash	.0005"—.0045"
Rear Yoke in Torque Ball Bushing	.004" L—.006" L
Torque Ball Material	Malleable Iron
Torque Ball Diameter	4¾"
Torque Ball Adjustment Drag with 5½" Leverage, Without Packing	5 to 10 lbs.
With Packing	15 to 20 lbs.
Outer Retainer Packing, Lengths Furnished for Service	7/16", 15/16", 1/2"

c. Speedometer Gears

Speedometer Worm on Main Shaft	←.0009" T—.0029" L→
Teeth on Worm (Driving Gear)	7
Teeth on Driven Gear, with 3.9 to 1 Axle Ratio	19
3.6 to 1 Axle Ratio	17
4.1 to 1 Axle Ratio	20
4.45 to 1 Axle Ratio	22