SECTION 6E

AUTOMATIC TRANSMISSION

The service procedures for the 1964 Corvair automatic transmission are the same as 1961 except for the addition of service operations for the planet assembly.

In addition, further information concerning front pump testing is being added to the Trouble Shooting procedures carried in the 1961 Corvair Manual.

SERVICE OPERATIONS

Planet Carrier Assembly

Removal and Inspection

1. Remove the planet carrier assembly as outlined in the 1961 Corvair Shop Manual.
2. Wash planet carrier in cleaning solvent, blow out all oil passages and air dry.

   CAUTION: Do not use rags to dry parts.

3. Inspect planet pinions for nicks or other tooth damage.

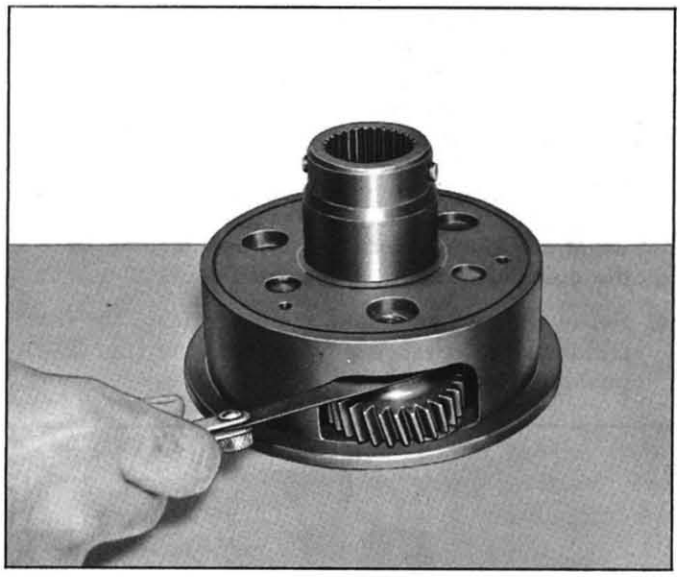

Fig. 6E-1—Checking Planet Gear End Clearance

4. Check end clearance of planet gears. This clearance should be .005"-.035" (fig. 6E-1).
5. Check input sun gear for tooth damage, also check input sun gear thrust washer for damage.
6. Inspect planet carrier splines for nicks or damage. Also, check pinion shaft ends for proper staking.

Repairs

If during inspection, the planet pinions, pinion needle bearings, pinion thrust washers, input sun gear, and/or input sun gear thrust washer should show excessive wear or damage, they should be replaced using the following procedure.

Refer to Figure 6E-2

1. Place the planet carrier assembly in a fixture or vise with the splined end facing down.
2. Starting with a short planet pinion, and using a soft steel drive, drive on the upper end of the pinion shaft until the pinion shaft is driven beyond the staked positions and pressed fit area of the carrier housing. Feed J-9560-1 into the short planet pinion from the upper end (fig. 6E-3), pushing the planet pinion shaft ahead until the tool is centered in the pinion.
3. Remove the short planet pinion and lower pinion thrust washer from the assembly. Complete removal of pinion shaft from assembly.
4. Remove J-9560-1, needle bearings and needle bearing washers (2) from the short planet pinion.

   CAUTION: Use care so as not to lose any of the planet pinion needle bearings. Twenty needle bearings (long) are used with the short planet pinion. Forty needle bearings (short) are used with the long planet pinion, twenty on each end with a spacer in the middle.

5. Remove and disassemble the remaining short planet pinions.
6. Remove the input sun gear and input sun gear thrust washer.
7. By following the procedure as outlined in Steps 2, 3, and 4, remove the long planet pinions and upper and lower pinion thrust washers.
8. Wash all parts in cleaning solvent and air dry.
9. Recheck the planet pinion gears and input sun gear for nicks or other tooth damage, also check the planet pinion thrust washers and input sun gear thrust washer. Replace worn or damaged parts.

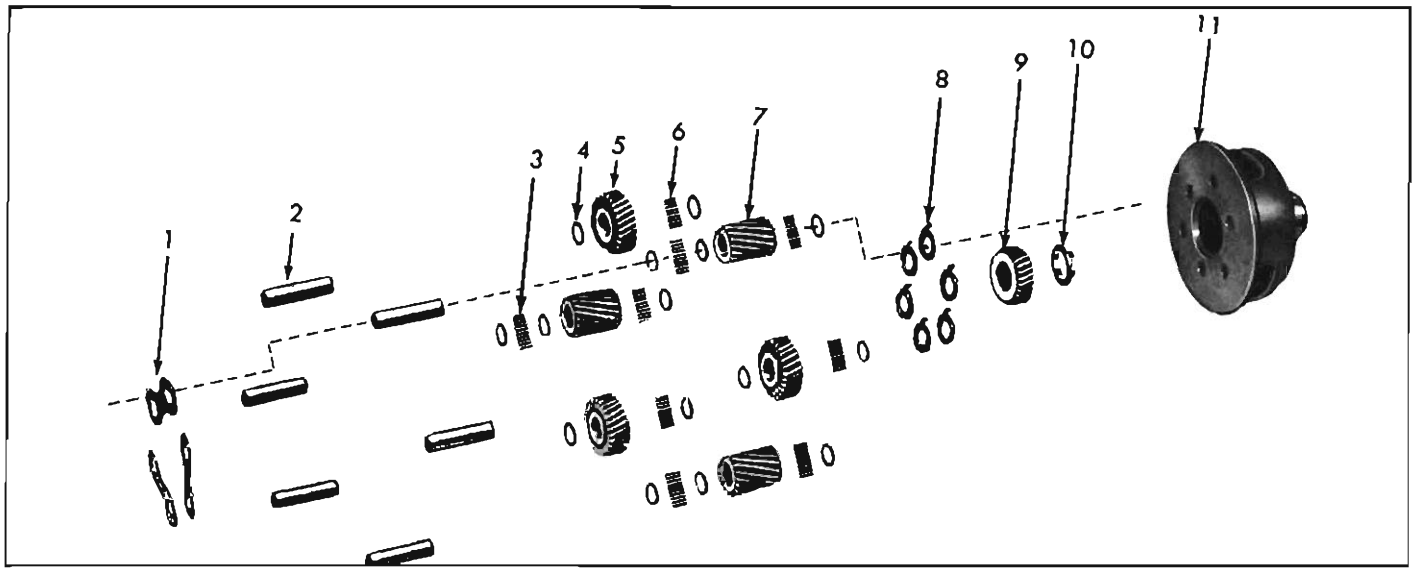

Fig. 6E-2—Planet Carrier Assembly—Exploded View

1. Lower Pinion Thrust Washers
2. Pinion Shafts
3. Needle Bearings—Short
4. Needle Bearing Washers
5. Short Planet Pinion Gear
6. Needle Bearings—Long
7. Long Planet Pinion Gear
8. Upper Pinion Thrust Washers
9. Input Sun Gear
10. Input Sun Gear Thrust Washer
11. Planet Carrier

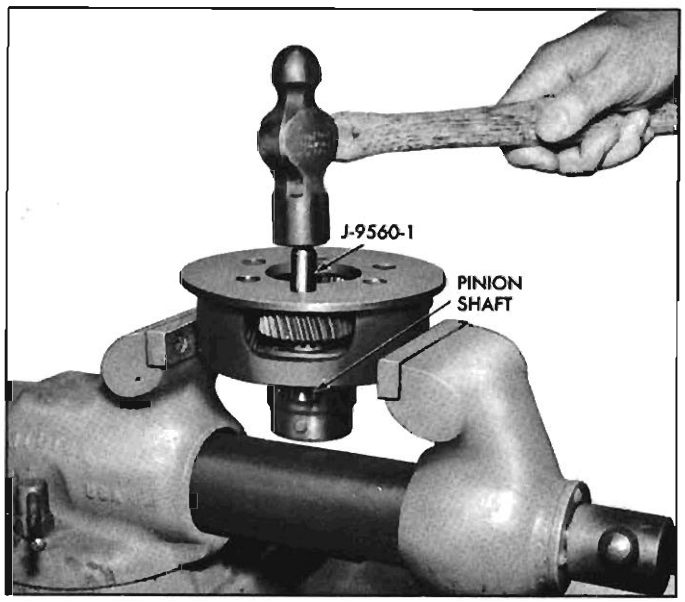

Fig. 6E-3—Removing Planet Pinion

10. Inspect the planet pinion needle bearings closely and, if excessive wear is evident, all the needle bearings must be replaced. Also, inspect pinion shafts closely and, if worn, replace the worn shafts.

11. Using J-9560-2 assemble needle bearing spacer and short needle bearings (20 in each end) in one of the long planet pinions. Use petroluem jelly to aid in assembling and holding the needle bearings in position. Place needle bearing washer at each end of planet pinion.

12. Reverse position of carrier in fixture.

13. Position the long planet pinion with J-9560-2 centered in the pinion assembly and with thrust washers at each end, in the planet carrier. Oil grooves on thrust washers must be towards gears. Align thrust washers with the carrier holes.

    NOTE: The long planet pinions are located opposite the closed portions of the carrier, while the short planet pinions are located in the openings.

14. Select the proper pinion shaft, lubricate the shaft and install it by tapping with a hammer (fig. 6E-4), pushing the assembling tool ahead of it.

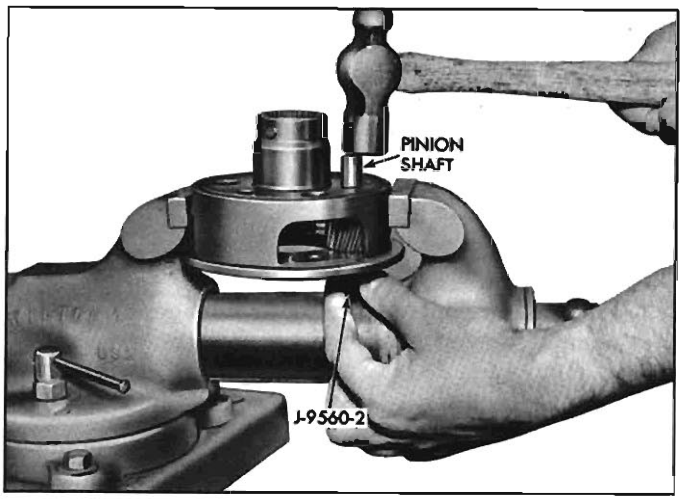

Fig. 6E-4—Installing Planet Pinion

15. With a brass or soft steel drift, drive the pinion shaft until the lower end engages the staked positions on the lower face of the carrier.
16. Assemble and install the remaining long planet pinions.
17. Install the input sun gear thrust washer and input sun gear.
18. Following the same general procedure as outlined in Steps 11-15, assemble and install the short planet pinions in the planet carrier. Each short pinion uses 20 long needle bearings with a needle bearing washer on each end.

    NOTE: Paired thrust washers are used on the pinion thrust surface toward the flanged side of the planet carrier, from the short to the long planet pinions while the opposite thrust surface has an individual thrust washer.

19. Check end clearance of planet gears. This clearance should be .005"-.035" (fig. 6E-1).
20. Using a chisel or center punch, restake the pinion shaft at four places on both ends of planet carrier (fig. 6E-5).

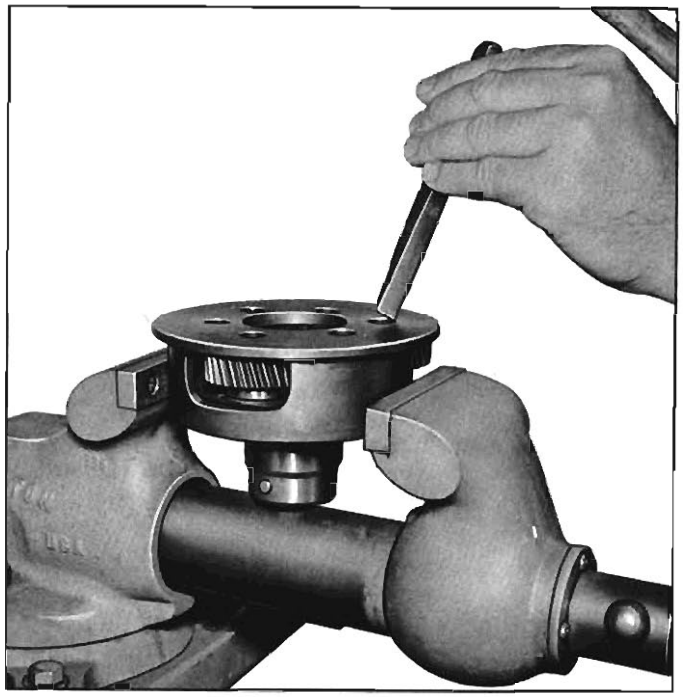

Fig. 6E-5—Staking Planet Pinion Shaft

Corvair Powerglide—Exploded View

Figure 6E-29 on page 6E-15 of the 1961 Corvair and Corvair 95 Shop Manual shows an incorrect position for the front pump gasket. The corrected figure as shown in Figure 6E-6 illustrates the gasket between the front pump body and the transmission case.

TROUBLE SHOOTING

While trouble shooting information remains the same for 1964 as covered in the 1961 Corvair Shop Manual, the following will aid in more accurately interpreting the hydraulic pressure test procedures.

Front Pump Check

Front pump pressures as measured on the front pump pressure gauge are actual pump pressures, not mainline pressures, and **must** be obtained with the engine speed at idle (16" Hg.).

Low Band Adjustment

Also since no periodic adjustment of the low band is recommended; access to the adjusting screw, from inside the vehicle via the parcel compartment area, has been **eliminated.**

Downshift Timing Valve

A downshift timing valve is now used in the transmission assembly on all engine models. The use of this valve is to improve the quality of closed throttle downshifts.

FRONT PUMP PRESSURES (PSI)

Condition	Range Selector Position			
	R	N	D	L
At idle (16" Hg)	104-122	52-64	52-64	94-105
At idle, with vacuum hose disconnected at balance tube	184-200	94-105	94-105	94-105

THROTTLE VALVE (TV) PRESSURES (PSI)

Condition	R	N	D	L
Disconnect TV rod at carburetor and vacuum hose at balance tube. Depress accelerator to W.O.T.*	0	0	45-47	94-105

*By disconnecting TV rod at carburetor, engine remains at idle speed throughout test.

CORVAIR POWERGLIDE
SHIFT POINT—MPH CHART

AXLE	3.27	3.55
UPSHIFTS	**MPH**	
Minimum Throttle	14-16	12-15
Full Throttle	46-52	42-48
Part Throttle (Detent Touch)	35-44	33-40
DOWNSHIFTS		
Closed Throttle	12-15	11-14
Full Throttle	42-48	38-44
Part Throttle (Detent Touch)	24-33	22-30
Manual Low (Inhibited)	56-61	52-57

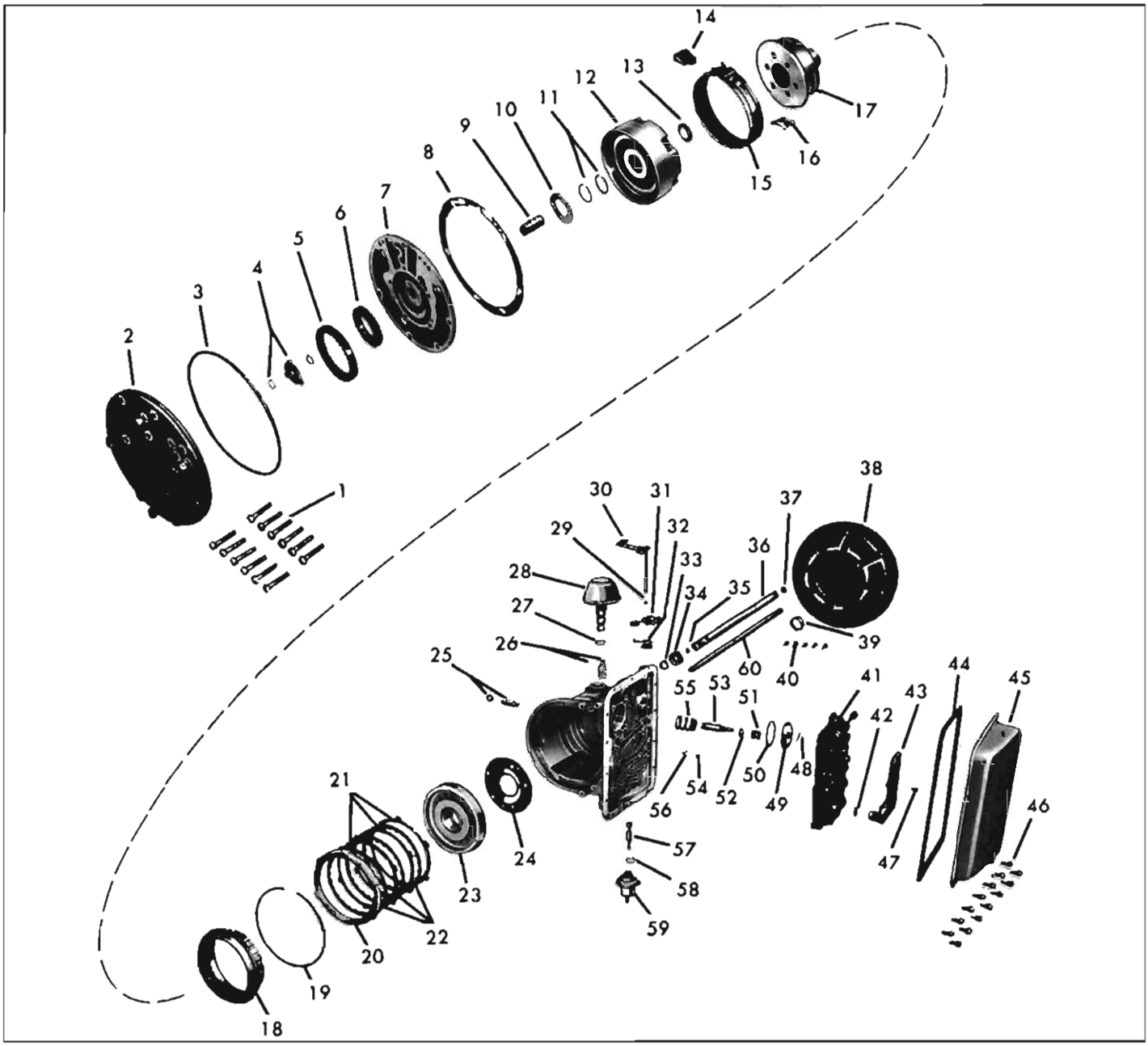

Fig. 6E-6—Corvair Powerglide—Exploded View

1. Front Pump Mounting Bolts
2. Front Pump Cover
3. Front Pump Seal Ring
4. Front Pump Shaft Drive Hub and Retaining Rings
5. Front Pump Driven Gear
6. Front Pump Drive Gear
7. Front Pump Body
8. Front Pump Gasket
9. Front Pump Body Bushing
10. Clutch Drum Selective Thrust Washer
11. Front Pump Body Hub Iron Seal Rings
12. Clutch Drum Assembly
13. Low Sun Gear-to-Input Sun Gear Thrust Washer
14. Low Band Reaction Strut
15. Low Band
16. Low Band Apply Strut
17. Planet Carrier Assembly
18. Ring Gear
19. Reverse Clutch Plates Retaining Ring
20. Reverse Clutch Front Reaction Plate (Thick)
21. Reverse Clutch Reaction Plates
22. Reverse Clutch Faced Plates
23. Rear Pump and Reverse Piston Assembly
24. Rear Pump Wear Plate
25. Low Band Adjusting Screw and Lock Nut
26. Governor Driven Gear and Retaining Pin
27. Governor "O" Ring Seal
28. Governor Assembly
29. Transmission Throttle Valve Lever Shaft Seal
30. Transmission Throttle Valve Lever and Shaft
31. Manual Valve Lever
32. Transmission Throttle Valve Inner Lever
33. Governor Gear Thrust Spacer
34. Governor Drive Gear
35. Turbine Shaft Front Bushing
36. Turbine Shaft
37. Turbine Shaft Rear Bushing
38. Converter Assembly
39. Converter Hub Bushing
40. Rear Pump and Reverse Piston Assembly Attaching Screws
41. Valve Body Assembly
42. Oil Pick-up Pipe "O" Ring Seal
43. Oil Pick-up Pipe Assembly
44. Oil Pan Gasket
45. Oil Pan
46. Oil Pan Attaching Screws
47. Oil Pick-up Pipe Attaching Screw
48. Low Servo Piston Retaining Clip
49. Low Servo Piston
50. Low Servo Piston Ring
51. Low Servo Piston Cushion Spring
52. Low Servo Piston Cushion Spring Seat
53. Low Servo Piston Shaft
54. Relief Ball Spring Retainer
55. Low Servo Piston Return Spring
56. Relief Ball
57. Vacuum Modulator Valve
58. Vacuum Modulator Gasket
59. Vacuum Modulator
60. Front Pump Shaft
61. Downshift Timing Valve