

# **ATS** **BILLET** **SHAFTS**

## **Installation Manual v1.1** **Dodge Ram Billet Input Shaft**

1. Remove shift linkage from transmission-Figure 1.

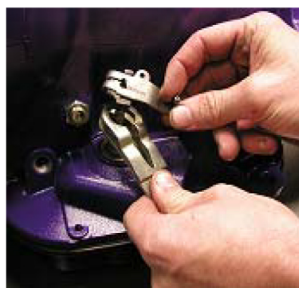


Figure 1

2. Place transmission on bench, pan side up.
3. Remove pan from transmission.
4. Remove ten (10) 7/16" head Valve Body bolts-Figure 2.

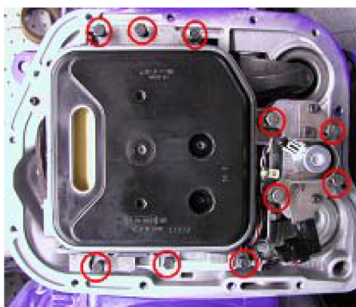


Figure 2

5. Remove Valve Body from transmission. You may have to turn the output shaft to release the park rod from the rear of case.
6. Loosen the front band adjusting screw, using 3/4" wrench, and remove band struts from both sides of band-Figure 3. Leave band loose for now.



Figure 3

7. Stand transmission on end (bellhousing up).
8. Remove seven (7) ½” head pump bolts.
9. Remove front pump by using a slide hammer in the two threaded holes in the front of pump-Figure 4).



Figure 4



Figure 5

10. Remove band from case by turning it to the side so lugs will clear the case – Figure 6.



Figure 6



Figure 7

11. Remove Forward and Direct drums by picking up on the input shaft-Figure 8.



Figure 8

12. Take Direct (front) drum off of Forward (rear) drum and set aside-Figure 9.



Figure 9

13. Turn Forward (rear) drum over – input shaft pointing down, remove first snap ring that holds clutches in-Figure 10.



Figure 10

14. Remove forward clutch steels and pressure plates.

15. Remove “wavy” snap ring in bottom of drum-Figure 11.



Figure 11

16. Remove plastic spacer ring and return spring-Figure 12.



Figure 12

17. Remove input shaft from forward clutch retainer-Figure 13.



Figure 13

18. Remove piston from old input shaft-Figure 14, and install new input shaft-Figure 15.



Figure 14



Figure 15

19. Place new input into clutch retainer-Figure 16.



Figure 16

20. Install return spring on piston in retainer-Figure 17.



Figure 17

21. Install plastic spacer ring on return spring.

22. Install “wavy” snap ring on top of plastic ring-Figure 18.



Figure 18

23. Install beveled lower pressure plate-Figure 19 and alternate clutches and steels-Figure 20. You should end up with a clutch on top.



Figure 19



Figure 20

24. Install pressure plate and snap ring-Figure 21 – clutch clearance should be .025 - .035.



Figure 21

25. Install three-tab washer on drum with assembly grease-Figure 22.



Figure 22

26. Turn drum over (shaft up).

27. Make sure three sealing rings are installed on the input shaft-Figure 23.



Figure 23

28. Install thin plastic washer over shaft-Figure 24.



Figure 24

29. Install Direct drum onto Forward drum/Input assembly by turning it until all clutches are “splined”-Figure 25.



Figure 25

30. Make sure washer is still in place on intermediate shaft-Figure 26, and install the Forward and Direct assembly by turning the input shaft until all clutches are “splined”-Figure 27.



Figure 26



Figure 27

31. Lightly pick up on the input shaft, and drop it down, to see if the drum is past the clutches. You should hear and feel a solid “bump” when the two washers touch.
32. Install band in case by turning it to the side, so the thick parts of the band are at the opening.
33. Install the two (2) band struts on the band, and turn the adjustment screw “hand-tight” only – it will be adjusted later-Figures 28 & 29.



Figure 28



Figure 29

34. Make sure washer and sealing rings are on pump-Figure 30.



Figure 30

35. Make sure pump gasket is in place.
36. Lube pump bore for easier installation. Lube all sealing rings.
37. Install pump over input shaft – use a thin punch or screwdriver to “line up” boltholes and start bolts-Figure 31.



Figure 31

38. After all bolts are started, lightly tap pump into bore. When pump is seated, torque all seven (7) bolts to 20 ft lbs, or 240 inch lbs in a criss-cross pattern-Figure 32.



Figure 32

39. Place transmission back on bench, pan side up.
40. Install valve body (you may have to turn the output shaft to get park linkage to line up).
41. Install and tighten ten (10) 7/16" head valve body bolts to 100 inch lbs or 9 ft lbs- Figure 33.



Figure 33

42. Use shift lever to shift valve body back and forth to make sure park works and valve body shifts smoothly.
43. Install the pan.
44. Turn transmission over, pan side down.



45. Install shift and throttle linkage, and adjust band – torque adjustment screw to 72 inch lbs-Figure 34, then back screw out 1 ¼ turns to 2 turns, then tighten jamb nut to 30 ft lbs with ¾” wrench-Figure 35.



Figure 34



Figure 35

### **Have Any Questions?**

Thank you for purchasing the ATS Billet Input Shaft. Please check our website at <http://www.atsdiesel.com> for technical support and other performance products such as the Five Star™ torque converter, and the ATS High Performance Transmission, along with our full line of power enhancers. Please call or e-mail our Sales or Technical Service Department, 8:00am to 5:30pm Mountain Time, Monday through Friday.

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