

Slip Yoke Eliminator Kit Installation

Instructions For The NP241C Transfer Case

Manufactured By Tom Woods Custom Drive Shafts

Note: This kit can be installed without removing the transfer case from the vehicle however, a bench top installation is highly recommended.



Figure 1
Components Included With The SYE Kit



Figure 2
Original Configuration



Figure 3
With Kit Installed

- 1) Ensure you have a NP241C transfer case by inspecting the identification tag affixed to the rear case half (Fig. 4)

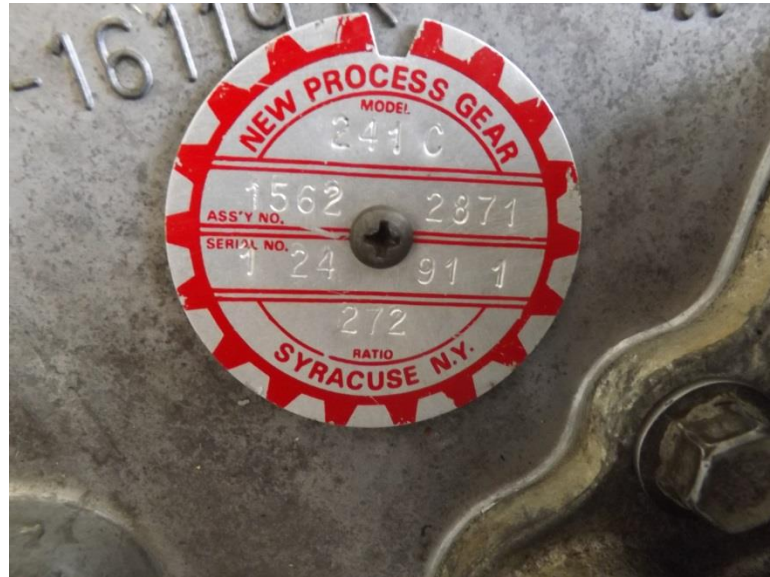


Figure 4

- 2) Drain the oil from the transfer case.
- 3) If the bench top installation method is chosen you can support the unit upright as shown (Fig. 5).



Figure 5

- 4) Remove the four bolts (15mm hex head) holding the tail cone onto the bearing housing. Lightly tap the side with a soft-faced hammer to break the silicone seal and remove the tail cone (Fig. 6A, 6B).



Figure 6A



Figure 6B

- 5) Remove the retaining ring from the rear output shaft just behind the bearing (Fig. 7A-7B).
Note: This ring will not be reused in the re-assembly process.



Figure 7A



Figure 7B

- 6) Remove the four bolts (13mm hex flanged-head) holding the bearing housing onto the rear case half. Gently pry the bearing housing from the rear case half using care not to damage either part and set it aside for reuse (Fig. 8A-8D).



Figure 8A



Figure 8B

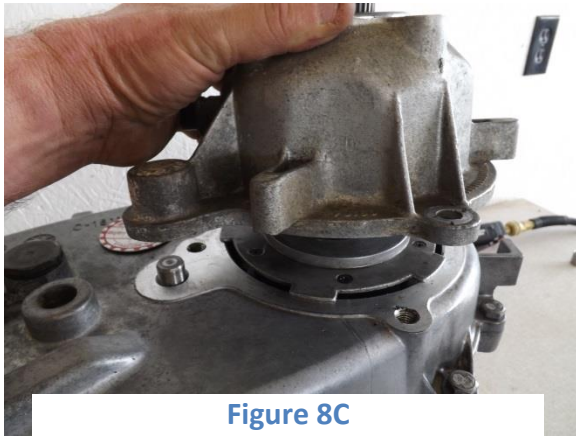


Figure 8C

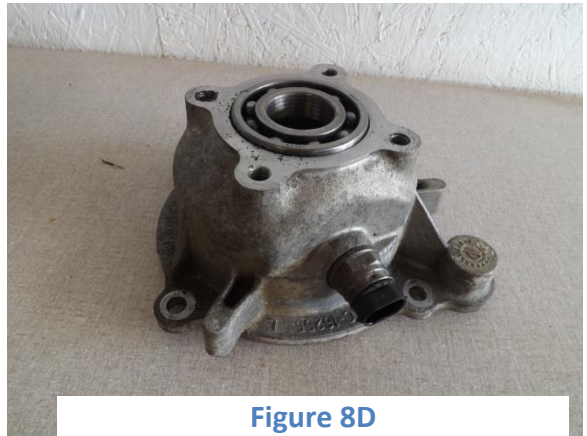


Figure 8D

- 7) Remove the outside retaining ring, tone wheel, and inside retaining ring and save all for reuse (Fig. 9A-9C).



Figure 9A



Figure 9B



Figure 9C

- 8) Remove the eleven bolts (15mm hex head) holding the two case halves together (Fig. 10A-10C).
Note: Nine bolts are 10mm X 28mm and the two bolts on either end are 10mm X 35mm with flat washers included.

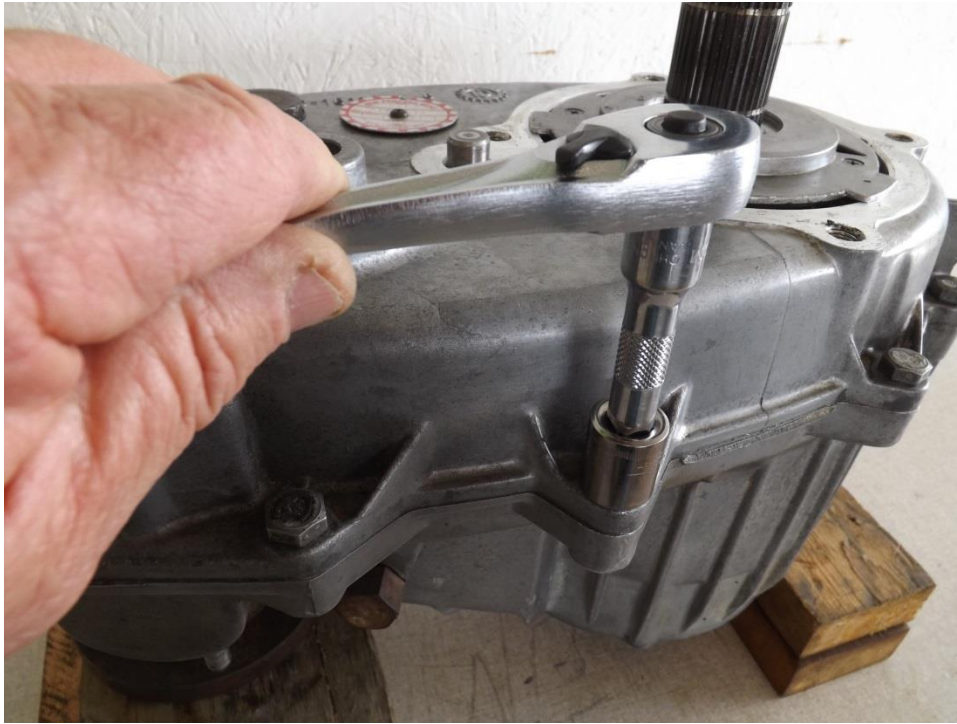


Figure 10A



Figure 10B

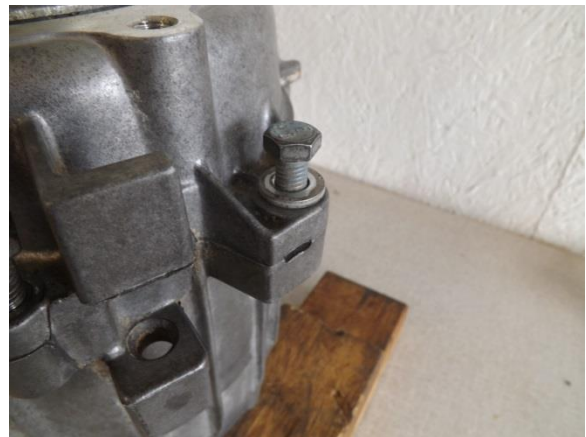


Figure 10C

- 9) Locate the pry points located on either end of the case halves and use a flat blade screwdriver to gently pry the two case halves apart using care not to damage either part (Fig. 11A-11B).



Figure 11A



Figure 11B

- 10) Remove the rear case half using care to retain the oil pump assembly (Fig. 12).



Figure 12

11) Remove the compression spring from the mode fork shaft and save it for reuse (Fig. 13).



Figure 13

12) Remove the retaining ring from the front output shaft just behind the sprocket and save it for reuse (Fig. 14A-14B).



Figure 14A



Figure 14B

13) Remove the main drive sprocket assembly from the shaft noting the orientation of the three components (Fig. 17).



Figure 17

14) If needle bearings are present inside of the main drive sprocket they must be removed for installation onto the new shaft (Fig. 18).



Figure 18

15) A piece of 2-1/4" diameter X 3" long solid round bar can be used with a basic shop press to remove the bearings. The front drive sprocket can be used as a spacer to allow clearance for the bearings if needed (Fig. 19, 20).



Figure 19



Figure 20

16) Install the main sprocket assembly components onto the new main drive shaft in the same orientation as they were on the original shaft and reinstall the original retaining ring (Fig. 21).



Figure 21

17) Ensure the synchro hub ring is in place with the mode shift fork (Fig. 22)

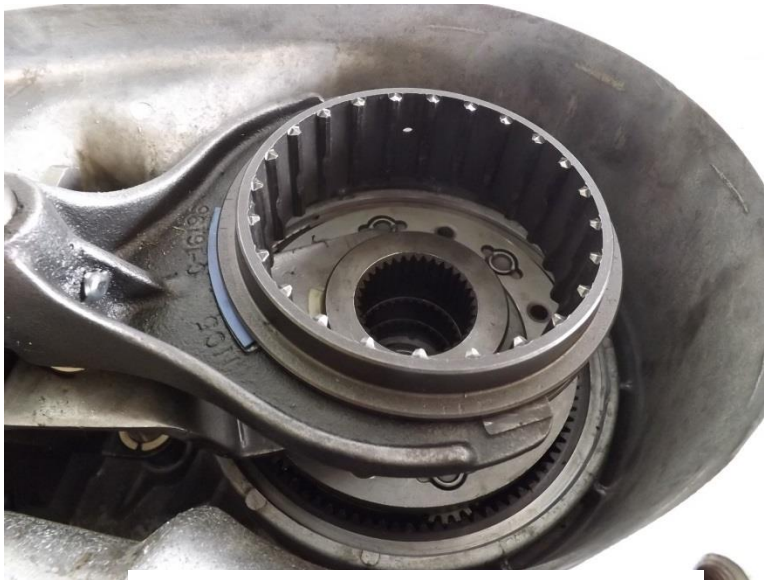


Figure 22

18) Loop the chain around the front output and main drive sprockets and reinsert as an assembly into the case. Use care to align the main shaft assembly in the synchro hub ring and range selection gear. Ensure the main shaft is completely settled by rotating it with smooth operation (Fig. 23).



Figure 23

19) Reinstall the retaining on the front output shaft just behind the sprocket (Fig. 24).



Figure 24

20) Reinstall the mode fork spring (Fig. 25).

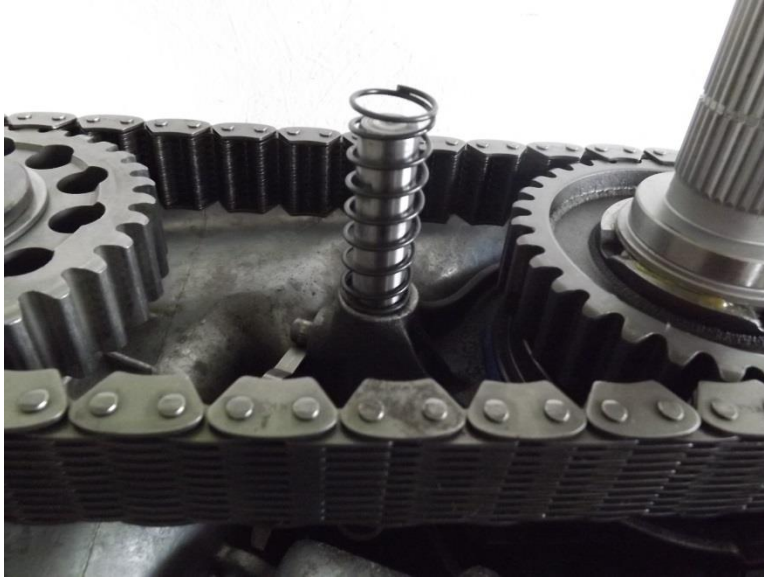


Figure 25

21) Ensure the debris collection magnet is in place (Fig. 26).

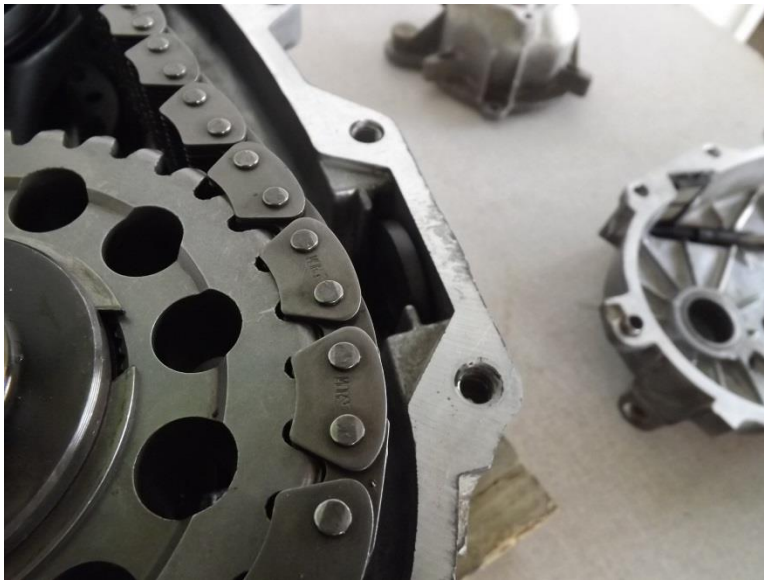


Figure 26

22) Check for the O-ring to be in the oil pump (Fig. 27). Place the oil pump assembly in the rear case as shown (Fig. 28).

Figure 27



Figure 28



23) Apply silicone sealant to the front case half mating surface, per the manufacturer's instructions, and replace the rear case half using care to maintain the orientation of the oil pump assembly (Fig. 29).



Figure 29

24) Reinstall the eleven bolts (15mm hex head) which hold the two case halves together using a light thread-locking compound (Fig. 30A-30C).

Note: Nine bolts are 10mm X 28mm and the two bolts on either end are 10mm X 35mm with flat washers included. The recommended torque value is 20-25 ft. lbs. (240-300 inch lbs.).



Figure 30A



Figure 30B



Figure 30C

25) Reinstall the tone wheel with retaining rings on either side (Fig. 31A-31D).



Figure 31A



Figure 31B



Figure 31C



Figure 31D

26) Apply silicone sealant, per the manufacturer's instructions, to the mating surface of the bearing housing and reinstall it on the rear case half. Fasten the bearing housing to the rear case half with the original bolts using a light thread-locking compound (Fig. 32A-32B).

Note: Four bolts, 10mm X 30mm w/ flanged head. The recommended torque value is 20-25 ft. lbs. (240-300 inch lbs.). **Do not install the original retaining ring on the shaft behind the bearing. The new rear output flange will retain the shaft in the proper position.**



Figure 32A

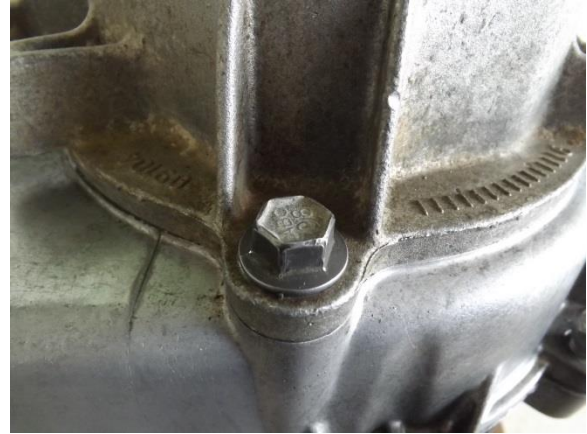


Figure 32B

27) Apply silicone sealant, per the manufacturer's instructions, to the mating surface of the new rear seal assembly (supplied with the kit) and install it on the bearing housing. Fasten the seal assembly to the bearing housing with the original tail cone bolts using a light thread-locking compound (Fig. 33A-33B).

Note: Four bolts, 10mm X 28mm. The recommended torque value is 20-25 ft. lbs. (240-300 inch lbs.).



Figure 33A



Figure 33B

28) Apply a thin film of general grease to the boss of the new rear drive flange and install the flange onto the rear output shaft gently working it through the new rear seal (Fig. 34).



Figure 34

29) Apply a thin bead of sealant to the flange of the supplied lock nut and use it to secure the drive flange to the output shaft (Fig. 35).

Note: The recommended torque value is 90-130 ft. lbs.



Figure 35

30) Check for proper operation of the reassembled transfer case by rotating the input shaft by hand with the mode selection lever in all four positions. Refill the case with the recommend oil before use.



Completed Conversion