WHEN REMOVING BEARING CONES:

You must first cut the cage from bearing and remove all rollers to expose bearing cone. Make sure all rollers are accounted for before discarding. (Fig. 1)

FIG. 1

TO REMOVE BEARING CONES WHEN MOUNT AREA IS FLUSH OR WITHIN 1/4" ABOVE CONE.

1. Spin **STANDARD TAPERED COLLET NUT** onto **JACK SCREW** and assemble into the **COLLET PULLER ASSEMBLY** as shown in (Fig. 2).
   Use the **LARGE COLLET NUT** on large bearing cones such as in the 604 transmission.
2. To have the **COLLET PULLER ASSEMBLY** in proper configuration for use: Push down on **JACK SCREW** to open the **COLLET PULLER SEGMENTS.** (Fig. 3)
3. Place **PRESSURE PAD** onto bearing mount area. (Fig. 4)
4. Place the entire **PULLER ASSEMBLY** onto the bearing cone by pushing down on the **COLLET PULLER**, pull up on **JACK SCREW** to load **COLLET SEGMENTS** onto outer lip of the cone. (Make sure **JACK SCREW** is backed away from the **PRESSURE PAD** while loading.) (Fig. 4)
5. Adjust the **JACK SCREW NUT**, while maintaining load on the **COLLET PULLER SEGMENTS** until the ball end of **JACK SCREW** touches **PRESSURE PAD.**
   BACK OFF ONE TURN.
6. Place **#1** or **#2 COLLAR CLAMP RING** over the **COLLET PULLER** and tap down using **PLASTIC TUBE** and hammer.

NOTE: TAP **COLLAR CLAMP RING** DOWN LIGHTLY AS SHOWN IN (FIG. 13). **COLLAR CLAMP RING** MUST BE SECURE AND LEVEL ONTO **COLLET PULLER. COLLAR CLAMP RING** MUST BE BELOW TOP O-RING BEFORE REMOVING CONE.

7. Oil exposed threads on **JACK SCREW**.
8. The tool is now ready to remove the cone. Tighten the **JACK SCREW ASSEMBLY** until bearing cone is removed. (Fig. 5)
9. Tap bottom of the **COLLAR CLAMP RING** with the **PLASTIC TUBE** to remove from tool.

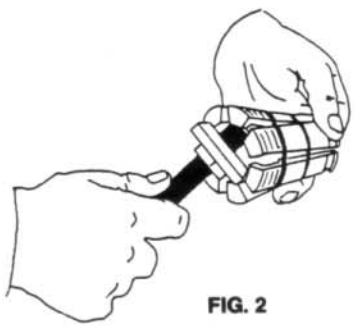

FIG. 2

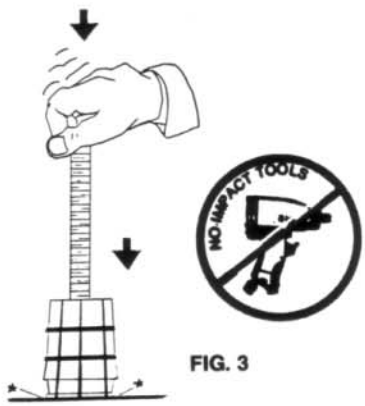

FIG. 3

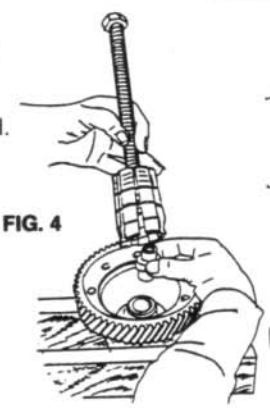

FIG. 4

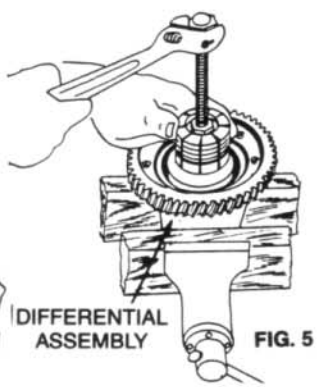

FIG. 5

NOTE: When using the **LARGE TAPERED COLLET NUT** in the **COLLET PULLER ASSEMBLY** you must use the **#3 COLLAR CLAMP RING.**

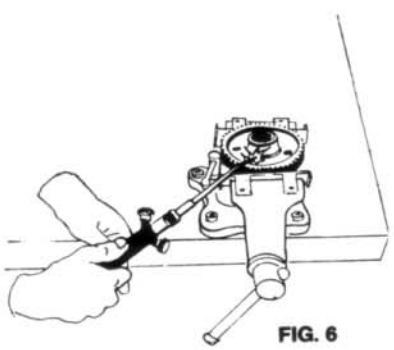

FIG. 6

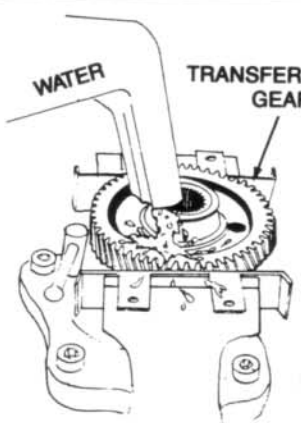

FIG. 7

NOTE: DO NOT OVER STRESS THE TOOL!

IT WILL BE NECESSARY TO HEAT CONE PRIOR TO REMOVING.
Using a torch, heat one spot of cone until light red. (Fig.6)
Then use a watering can, pour a constant flood of water for at least 5 seconds onto hot cone. (Fig.7) Cone should now pull of easily.

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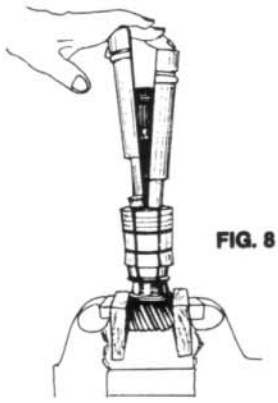
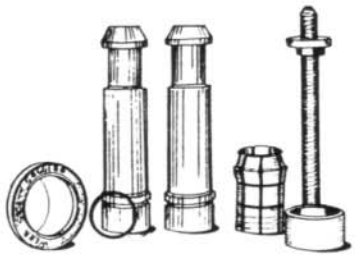
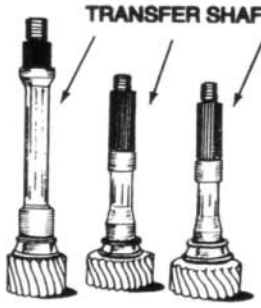


FIG. 8





TO REMOVE THE TRANSFER SHAFT BEARING CONES.

ON THE EARLY MODELS 404 transmissions use the tool as you would when removing bearing cones when shaft extends 1/4" over bearing mount.

TO REMOVE THE TRANSFER SHAFT BEARING CONE ON THE 604 TRANSMISSION.

1. Place the transfer shaft in vice using soft jaws.
2. Place the **COLLET PULLER ASSEMBLY** over the shaft.
3. Insert the **SPLIT TUBE SECTIONS** into **COLLET PULLER ASSEMBLY** as shown and load **COLLET PULLER** onto the bearing cone. **(Fig. 8)**
4. Screw **SPLIT TUBE NUT** onto the **JACK SCREW** 3 turns. **(Fig. 9)**
   NOTE: The SPLIT TUBE NUT is used only with the SPLIT TUBE. DO NOT USE THIS NUT IN THE COLLET PULLER ASSEMBLY.
5. Place the **JACK SCREW ASSEMBLY** into the **SPLIT TUBE** and adjust **JACK SCREW NUT** until the ball end of **JACK SCREW** touches the top of the transfer shaft. **(Fig. 10)** Back off one turn.
6. Place **SMALL PLASTIC TUBE** onto split tube. **(Fig. 11)**
7. Place **#2 COLLAR CLAMP RING** over **COLLET PULLER ASSEMBLY (Fig. 12)** and tap down using **PLASTIC TUBE** and hammer. **(Fig. 13)**
   NOTE: TAP COLLAR CLAMP RING DOWN LIGHTLY. CLAMP RING MUST BE SECURE AND LEVEL ONTO COLLET PULLER.
8. Oil exposed threads on **JACK SCREW.**
9. Now, tighten nut end of **JACK SCREW** until bearing cone is removed. **(Fig. 14)**
10. Reverse procedure to remove old cone from tool.

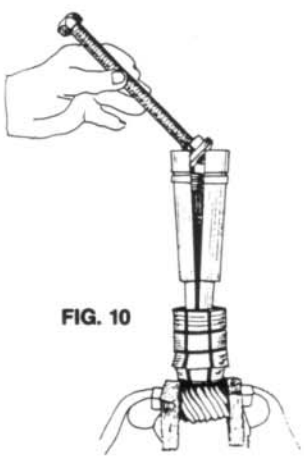


FIG. 10

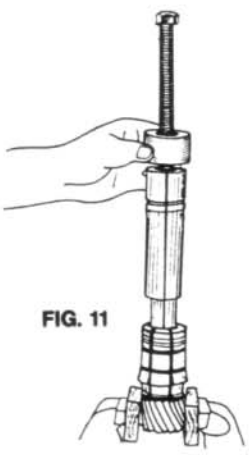


FIG. 11

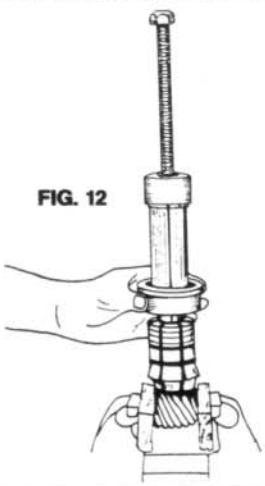


FIG. 12

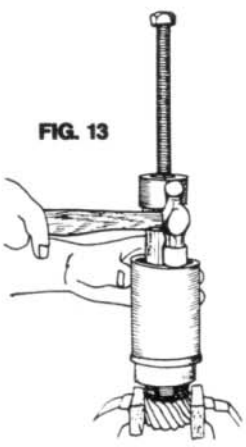


FIG. 13

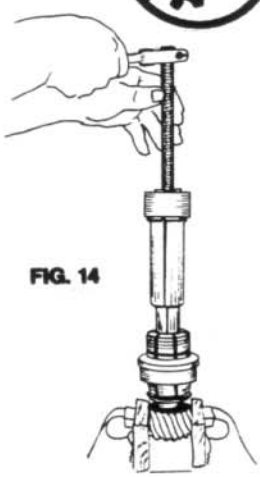


FIG. 14

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TO REMOVE ALL OTHER BEARING CONES WHEN THE SHAFT EXTENDS 1/4" OR MORE ABOVE BEARING MOUNT.

1. Load **SPLIT TUBE SECTIONS** into **COLLET PULLER** as shown. **(Fig. 15)**
2. Place the special **TUBULAR PRESSURE PAD** over the shaft. **(Fig. 16)**
3. Open the **COLLET PULLER SEGMENTS** for easy installation as shown in (Figure 3 on Page 2).
4. Now use the tool the same way as described above in **Figures 9-14.**

NOTE: USING THE SPECIAL **TUBULAR PRESSURE PAD** ELIMINATES THE NEED TO REMOVE THE OUTPUT SHAFT ON THE REAR ANNULUS GEAR.

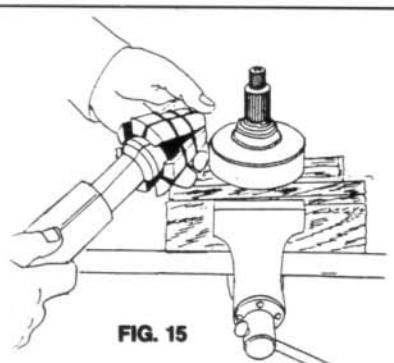

FIG. 15

FIG. 16

INSTALLING NEW BEARING CONES:

- Always place housing on a firm flat surface.
- Place new bearing cone over shaft or bearing mount area.
- Care must be taken so that the bearing cone be started true and not cocked.
- Choose proper end of CUP AND CONE DRIVER. Drive in new bearing cone on upper lip of cone. Do not put pressure on new bearing cage.

DRIVING NEW BEARING CONE ON A FLUSH MOUNT AREA:

1. New bearing cones are driven into position by using the **CUP AND CONE DRIVER PLUG**, and the **DEAD BLOW DRIVER PLUG** as illustrated. **(Fig. 17)**

   MAKE SURE CONE IS DRIVEN TO DEPTH STOP POSITION.

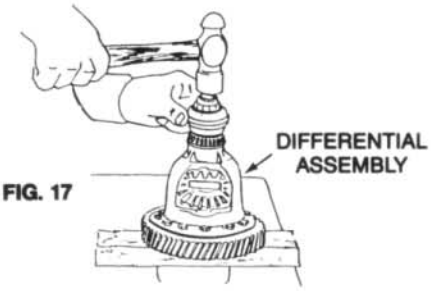

FIG. 17

FIG. 18

DRIVING NEW BEARING CONE WHEN SHAFT IS PROTRUDING FROM BEARING MOUNT AREA:

1. It is necessary in this case to place the **SMALL TUBULAR CONE DRIVER** and the **CUP AND CONE DRIVER PLUG** over the new cone to accommodate the shaft when driving into position. **(Fig. 18)** Use the **LARGE TUBULAR CONE DRIVER** to finish installing the cone if necessary.

   MAKE SURE CONE IS DRIVEN TO DEPTH STOP POSITION.

DRIVING THE NEW BEARING CONE ON THE REAR CARRIER ASSEMBLY: A604

1. Place the old cone you previously removed, upside down over the new cone. Then place the **CUP AND CONE DRIVER PLUG**, and the **DEAD BLOW DRIVER PLUG** over the old cone and drive into position. **(Fig. 19)**

NOTE: BECAUSE OF THE VARIOUS SIZED BEARING CONES, MAKE SURE YOU ARE USING THE PROPER SIZED CONE FOR THE BEARING MOUNT.

MAKE SURE CONE IS DRIVEN TO DEPTH STOP POSITION.

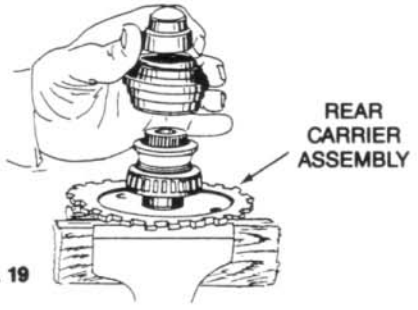

FIG. 19

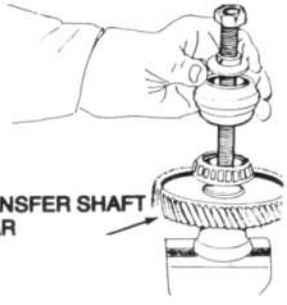

FIG. 20

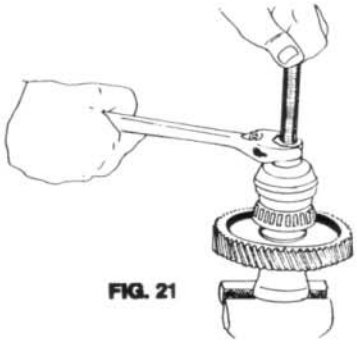

FIG. 21

Always wear safety goggles

PRESSING IN THE NEW BEARING CONE:

1. Place **TAPERED PULLER SHAFT** in vice. Clamp hex end.
2. Place **THICK WASHER** over **PULLER SHAFT.**
3. Place housing over **PULLER SHAFT** so it rests on **THICK WASHER.**
4. Place new bearing cone onto bearing mount area.
5. Set **CUP AND CONE DRIVER PLUG** onto new bearing cone to be installed.
6. Place **5/8 THIN WASHER** over **PULLER SHAFT.** **(Fig. 20)**
7. Place **THRUST BEARING** and **5/8 NUT** onto **PULLER SHAFT**, and tighten until new cone is pressed in to correct depth. **(Fig. 21)**

CHECK TO MAKE SURE CONE IS PRESSED TO DEPTH STOP.

NOTE: DO NOT USE ANY OF THESE TOOL PARTS AS ADAPTORS FOR USE IN ANY PRESS, OR FOR OTHER APPLICATIONS.

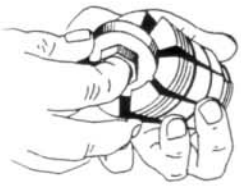

FIG. 22

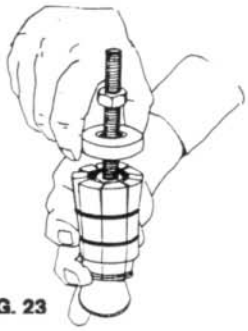

FIG. 23

REMOVING BEARING CUPS WHEN THERE IS ACCESS BEHIND THE CUP IN HOUSING:

1. Install **STANDARD TAPERED COLLET NUT** into **COLLET PULLER ASSEMBLY.** (Fig. 22)
2. Assemble tool as shown with **STANDARD TAPERED PULLER SHAFT, THICK WASHER,** and **5/8 NUT. (Fig. 23)**

NOTE: WHEN SELECTING TAPERED PULLER SHAFT AND COLLET NUT, THE LARGEST DIAMETER PART OF THE PULLER SHAFT SHOULD JUST PASS THRU THE BEARING CUP BEING REMOVED. IF IT IS TOO SMALL, THE COLLET PULLER WILL NOT GRAB THE BEARING CUP PROPERLY, AND MAY DAMAGE THE TOOL. ALWAYS USE THE LARGE COLLET NUT WITH THE LARGE PULLER SHAFT.

3. Clamp part being worked on in vice. (Use soft jaws.)
4. Place the **PULLER ASSEMBLY** into the bearing cup. With the **COLLET SEGMENTS** under the cup, push down on the **THICK WASHER** while pulling up on the **PULLER SHAFT**, and spin the **5/8 NUT** down against the **THICK WASHER.** Then tighten the **NUT** no more than 15 to 20 ft./lbs. **(Fig. 24)**
5. Place **METAL TUBE** over **COLLET PULLER ASSEMBLY.**
6. Place **CUP DRIVER PLUG** over **PULLER SHAFT** onto top of tube.
7. Place **THRUST BEARING** over **PULLER SHAFT.**
8. Spin **5/8 NUT** onto **PULLER SHAFT**, and tighten until bearing cup is removed. **(Fig. 25)**

NOTE: When using LARGE PULLER SHAFT and COLLET NUT combination use the PLASTIC TUBE in place of METAL TUBE.

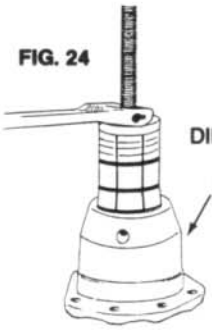

FIG. 24

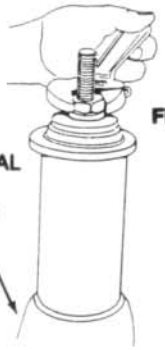

FIG. 25

REMOVING THE BEARING CUP FROM THE TRANSFER SHAFT BEARING CUP RETAINER:

THERE ARE TWO SIZED COLLETS USED TO REMOVE THESE CUPS.
THE SMALL ONE IS FOR USE ON THE EARLY MODELS.
THE LARGE ONE IS FOR USE IN THE LATE MODEL (A604).

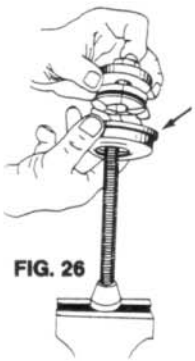

FIG. 26

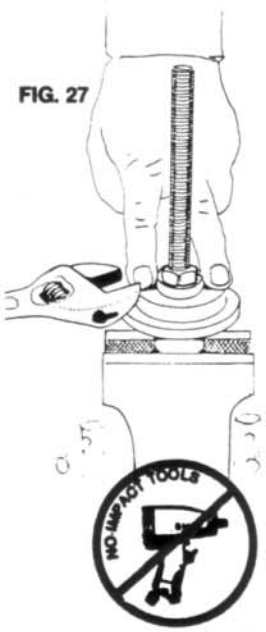

FIG. 27

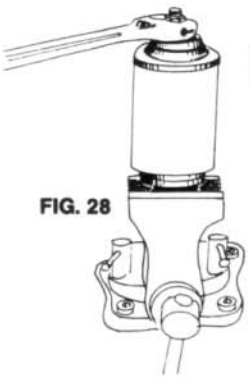

FIG. 28

1. Place **SMALL TAPERED PULLER SHAFT** in vice, tighten jaws against hex end.
2. Place bearing cup retainer over **PULLER SHAFT** with cup side up.
3. Select proper sized **COLLET**, and put into retainer so it will fit tapered part of **PULLER SHAFT.**
4. Slide **THICK WASHER** over **PULLER SHAFT** so it sets on **COLLET.**
5. Spin **HALF NUT** down so it just touches washer. **(Fig. 26)**
6. Press down firmly on **THICK WASHER** to expand **COLLET**, now pull up on bearing cup retainer until **COLLET** snaps into place under cup. Continue to hold pressure on washer, and spin nut down to hold **COLLET** in place. Using wrench, torque to 10 to 15 ft./lbs. (Fig. 27)
7. Place **METAL TUBE** over **ASSEMBLY** in vice. (For A604, use **PLASTIC TUBE.**)
8. Place **CUP DRIVER PLUG** onto tube.
9. Place **THRUST BEARING** over **PULLER SHAFT.**
10. Loosen vice slightly, so tool still stands, but nut will not turn in vice.
11. Spin **5/8 NUT** onto **PULLER SHAFT** and tighten until bearing cup is removed from retainer. (Fig. 28)

TO INSTALL TRANSFER SHAFT BEARING CUP.
THERE ARE AGAIN TWO WAYS TO INSTALL THIS BEARING CUP:

1. **DRIVE INTO POSITION:** As described on page 7, section 1.
   —OR—
2. **PRESS INTO POSITION:** As described on page 7, section 2. (Fig. 29)

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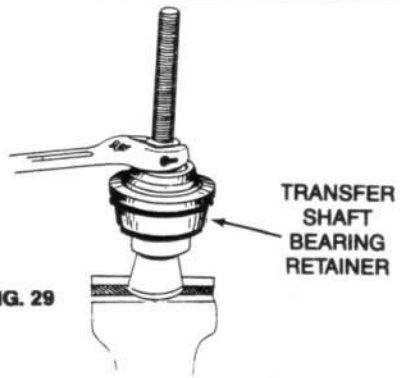

FIG. 29

REMOVING THE OIL BAFFLE AND OIL SEAL IN THE DIFFERENTIAL BEARING RETAINER, PRIOR TO REMOVING BEARING CUP.

1. It is first necessary to remove the oil baffle and oil seal before removing the bearing cup to allow access behind the bearing cup.
2. Place the **CUP DRIVER PLUG** and **SMALL METAL TUBE** against the oil baffle.
3. Set the **DEAD BLOW PLUG** into the **CUP DRIVER PLUG** and tap lightly to remove both the oil baffle and oil seal at one time. **(Fig. 30)**

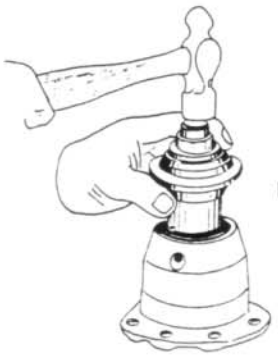

FIG. 30

INSTALLING THE OIL BAFFLE INTO HOUSING PRIOR TO INSTALLING THE BEARING CUP INTO THE DIFFERENTIAL BEARING RETAINER.

1. Place new oil baffle into bore, with lip up.
2. Place selective shim to be used on top of baffle.
3. Set **THICK WASHER** over selective shim and tap lightly with **DEAD BLOW PLUG** to set baffle into place.
4. Now drive bearing cup into position using the **CUP DRIVER PLUG,** and the **DEAD BLOW PLUG** as described on the following page.

REMOVING AND INSTALLING THE OIL SEAL IN THE DIFFERENTIAL BEARING CUP RETAINER, WITHOUT REMOVING THE OIL BAFFLE.

REMOVING THE OIL SEAL:

1. Place **OIL SEAL REMOVER/INSTALLER** into old oil seal.
2. Using a nut driver, install the three screws into the seal thru the three holes in the **OIL SEAL REMOVER/INSTALLER.** A light tap is required to start screws. (three turns, for each screw) **DO NOT TIGHTEN ANY SCREWS UNTIL ALL THREE SCREWS ARE STARTED INTO THE SEAL. TIGHTEN IN SEQUENCE. (Fig. 31)**
3. Assemble the **SMALL TAPERED PULLER SHAFT, 5/8 NUT, THRUST BEARING, CUP DRIVER PLUG,** and **METAL TUBE** as illustrated. **(Fig. 32)**
4. Screw assembly into **OIL SEAL REMOVER/INSTALLER.**
5. Tighten **5/8 NUT** with wrench until seal is removed. **(Fig. 33)**

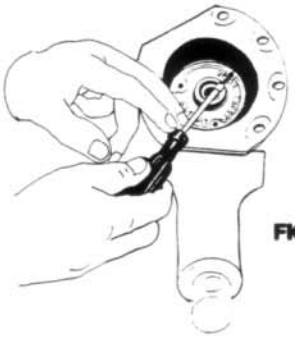

FIG. 31

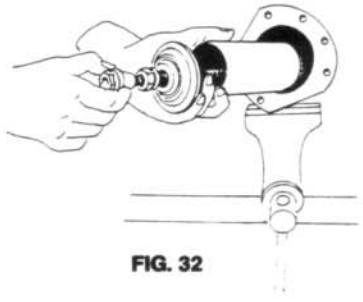

FIG. 32

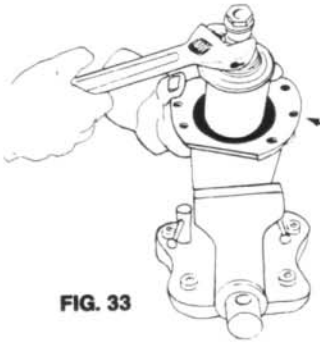

FIG. 33

FIG. 34

INSTALLING A NEW SEAL INTO THE DIFFERENTIAL BEARING RETAINER OR THE EXTENSION HOUSING:

1. Place new seal onto the **OIL SEAL REMOVER/INSTALLER.** (Fig. 34)
2. Put **DEAD BLOW PLUG** into the **OIL SEAL REMOVER/INSTALLER.**
3. While keeping the oil seal aligned with housing, drive in seal with hammer until seal bottoms. **(Fig. 35)**

Always wear safety goggles

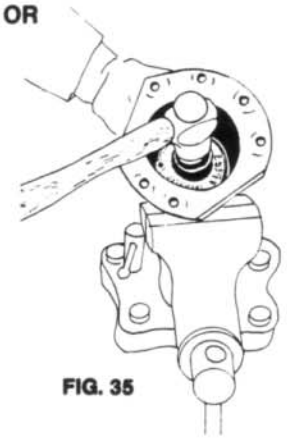

FIG. 35

TO INSTALL NEW BEARING CUPS:

THERE ARE TWO WAYS TO INSTALL BEARING CUPS WITH THIS TOOL.

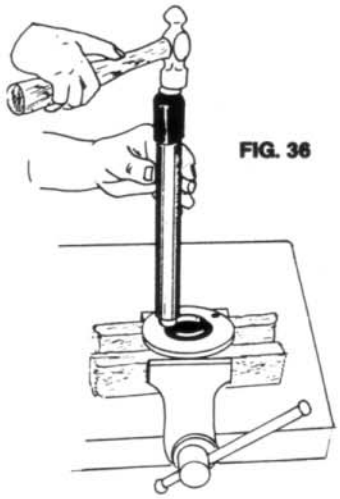

FIG. 36

1. **DRIVE INTO POSITION,** USING THE CUP DRIVER PLUG AND THE DEAD BLOW PLUG.

   A. Place housing or retainer on a firm flat surface.

   B. Set the cup 1/4 to 1/3 of the way into housing using the **LONG REACH DRIVING TOOL.** (Fig. 36)

   C. Care must be taken so that the cup is started true and not cocked, otherwise you risk scoring or pealing the retainer, and the cup may not seat into proper position.

   D. Place cup onto proper step of **CUP DRIVER PLUG.** (Fig. 37)

NOTE: THE STEP OF THE DRIVER PLUGS, DRIVES CUPS INTO POSITION. IF THE CUP DOES NOT SEAT AGAINST THE PROPER STEP OF THE CUP DRIVER, THE BEARING CUP MAY FRACTURE DURING INSTALLATION. (Fig. 38)

   E. Place **DEAD BLOW PLUG** into **CUP DRIVER PLUG** and drive in with 24 oz. hammer until cup is seated to depth stop. (Fig. 39)

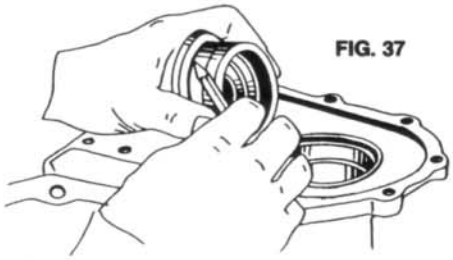

FIG. 37

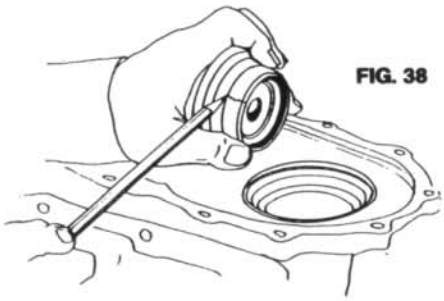

FIG. 38

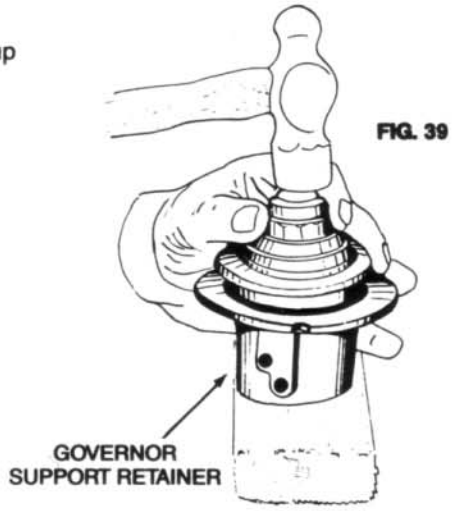

FIG. 39

-OR-

2. **PRESS IN BEARING CUP:**

   A. Set cup 1/4 to 1/3 of the way into housing, using the **LONG REACH DRIVING TOOL.** Keeping cup parallel with housing.

   B. Clamp **TAPERED PULLER SHAFT** vertically in vice.

   C. Place **THICK WASHER** over **PULLER SHAFT.**

   D. Place **CUP AND CONE DRIVER PLUG** over **PULLER SHAFT.**

   E. Place housing over **PULLER SHAFT** so it fits into **CUP AND CONE DRIVER PLUG** securely. If necessary, flip **CUP AND CONE DRIVER** over to accommodate housing.

   F. Place **CUP DRIVER PLUG** into cup, so it fits proper step as described above.

   G. Set **THRUST BEARING** over **PULLER SHAFT** onto top of **CUP DRIVER PLUG.**

   H. Spin **5/8 NUT** onto **PULLER SHAFT** and tighten until cup is installed to depth stop. (Fig. 40)

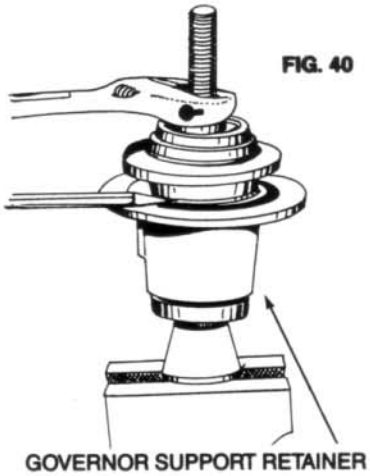

FIG. 40

Always wear
safety goggles

REMOVING AND INSTALLING BOTH OUTPUT GEAR BEARING CUPS:

1. Remove the cups as you would any other cup where you have access behind the cup in its housing.
2. Remove the smallest of the two bearing cups first.
3. It will be necessary to change from the **STANDARD** to the **LARGE PULLER SHAFT AND COLLET NUT** before removing the large bearing cup in the 604 model transmission.

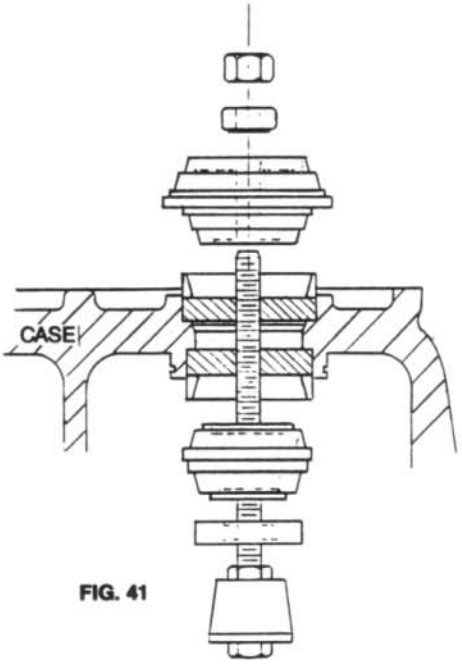

FIG. 41

INSTALLING BOTH OUTPUT GEAR BEARING CUPS AT THE SAME TIME:

1. When installing the bearing cups, the ideal condition is to set the cups into their housings 1/4 to 1/3 of the way in using the **LONG REACH DRIVING TOOL**. Hit the high side of the cup until it is parallel with the housing.
2. Select the correct **CUP AND CONE DRIVER** and **CUP DRIVER** to securely fit both of the cups.
3. Assemble tool in the case as illustrated. (Fig. 41)
4. Hold nut end of **TAPERED PULLER SHAFT** securely, and tighten **NUT** on the **THRUST BEARING** end until both cups are seated to the depth stop.
5. Inspect both cups to confirm that they are fully seated to the depth stop.

NOTE: BOTH CUPS CAN ALSO BE INSTALLED INDIVIDUALLY AS DESCRIBED ON PAGE 7.

BONUS BONUS

WITH GOOD JUDGEMENT, THESE TOOLS CAN BE USED ON MANY OTHER BEARING CUPS, AND CONES ON OTHER TRANSMISSIONS, REAR ENDS, AND DIFFERENTIALS. FOREIGN AND DOMESTIC.

Always wear safety goggles

ALSO AVAILABLE (Not included in Chrysler kit)

SPECIAL LARGE PRESSURE PAD

#4 COLLAR CLAMP RING

BY PURCHASING THESE ITEMS SEPARATELY, IT WILL BE POSSIBLE TO REMOVE LARGE BEARING CONES, SUCH AS IN THE FULL SIZED DOMESTIC VEHICLES.

THIS KIT WILL NOW REMOVE CONES FROM 1-3/8" to 1-13/16" DIA. BORE.

ALSO AVAILABLE

E-Z SQUEEZE
NISSAN RL4FO2A
&
RN3FO1A
Bearing Cup & Cone Tool