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Super Crawler Dual Transfer Case 4/26/07

The Wild Horses Super Crawler dual transfer case will give you a 2 to 1 reduction, which means you will have three different four-wheel drive ranges to select from (When using a NP 435). It will also provide two two-wheel drive ranges to select from. The Super Crawler moves the Bronco Dana 20 back about 1-3/8" (NP 435) which will mean only slight driveline modifications, if any. The installation of this kit will require some special tools, shop manuals, and a good knowledge of transmission repair. If you are not familiar with transmission repair, it is recommended that the installation be preformed by a trained technician.

The three main components of the assembly are:
1. NP 435 four speed transmission. Use a Ford two or four-wheel drive with square tail housing bolt pattern. Most of these will have 28-spline output shafts. A few will have 31-spline output shafts. You can use either one because the kit comes with a new custom 23-spline output shaft.

2. NP 203 transfer case from a Dodge (mid to late seventies pickup or Ramcharger) that was installed with an automatic transmission.

3. Dana 20 transfer case from a 66-77 Ford Bronco.

Installation instructions:
The first section of this instruction sheet will cover preparation of components. The second section will cover installation into Bronco. You may want to mock up the whole assembly on the bench as shown in photos. Keep in mind that this instruction sheet is a guideline and there may be slight differences from one installation to the next. This is custom work so some extra trimming here and some grinding there will be considered normal.

Section 1 - Preparation of Components

1. NP 435 output shaft and adapter installation
Replace the output shaft in the NP 435 with the new one provided with your kit. Take notice of the area of the shaft where the two-piece snap ring grove is. There may be some slight metal flashing from the machining of this shaft. Remove this with a screw driver or file until the two-piece snap ring snaps into place easily.

Once the NP 435 is reassembled, place one 3/8 x 1-1/4" NC bolt into the lowest hole of the NP 435 to 203 adapter, with the bolt head towards the NP 435. See photos #1 and 2. Place the adapter on the rear of the NP 435 and check that the bolt head has clearance to the aluminum counter shaft bearing support. If necessary, file bolt head for clearance. When you are ready to install the adapter to the NP 435 place sealer on the NP 435, make sure the 3/8 x 1 -/4" bolt is in place and use three 1/2 x 1-1/2" and one 1/2 x 1-1/4" NC Allen bolts with Loctite to install the adapter to the back of the NP 435. The 1/2 x 1-1/4" goes in the bottom left hole. See photo #1.

2. NP 203 range box preparation
You will have to decide weather or not to completely disassemble the NP 203 or not. You may want to rebuild the unit. Once you have the 203 in the condition you want fit the NP 203 to Dana 20 adapter onto the NP 203. Line up the bolt holes and mark the section as shown in photo #3. Remove the adapter and grind clearance for

the Dana 20 shift rail on the side of the NP 203 as marked. Drill 3 15/32 holes in NP 203 see photo #4. These will be used later for mounting the cross member. In the hardware kit is a small piece of metal with a hole drilled in it, this is for the NP 203s counter shaft to keep it from rotating. Bolt it in place with the flat surface of the counter shaft. Leave out the output shaft assembly.

3. Dana 20 to NP 203 adapter

Use six 3/8 x 1 1/4" NC bolts with Loctite to bolt adapter to Dana 20 as shown in photo #8. Use the Dana 20 bearing retainer as an alignment tool. See photo 7 and 8. Remove the Dana 20 bearing retainer. Install 13 loose roller bearings in boar of Dana 20 output shaft. Use transmission assembly lube to hold them in place. This assembly will now be ready to install onto the NP 203.

4. NP 203 output assembly

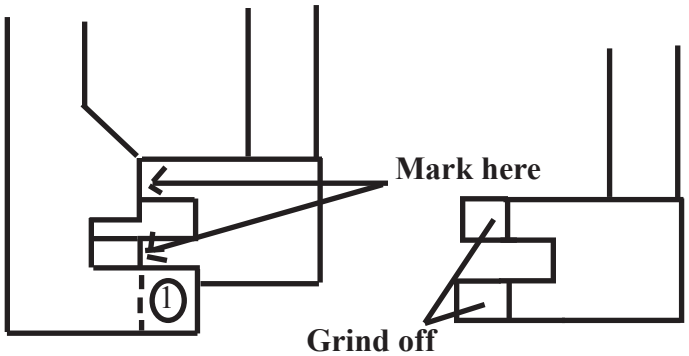
Place the new output shaft large end down on work table. The order of this assembly is as follows:

1. New output shaft (new in kit)
2. Low range gear (from 203)
3. Thrust washer retaining pin (from 203)
4. Thrust washer (from 203)
5. Output shaft bearing retainer (from 203)
6. Output shaft bearing (from 203)
7. Large bearing retaining snap ring (from 203)
8. Small bearing retaining snap ring (from 203)
9. Dana 20 bearing retainer (new in kit)
10. Large O-ring (new in kit)
11. Dana 20 sealed bearing (new in kit)
12. Sealed bearing snap ring (new in kit)
13. Dana 20 input gear (from Dana 20)
14. Snap ring (from Dana 20)

Finished assembly will look like photo #7. Install 15 loose roller bearings in bore of output shaft. Transmission assembly lube will hold them in place. Install complete assembly into NP 203 as shown in photo #4 and #14.

5. Dana 20 J-style shift rail modification

This step is only for Dana 20s which have the J style shift pattern. If your Dana 20 is the T style proceed to the next step. This modification is made to the shift rails so that they will work with the twin stick shifter.



1. If you want completely independent shifting for front and rear you will need to grind off this section as noted by the #1. Beware that if you do this it will allow you to put the front and rear in opposing ranges at the same time i.e. front in high and rear in low. This will destroy the T-case and possibly damage other components as well if the Bronco is driven.

6. Dana 20 to NP 203 adapter

Use six 3/8 x 1 1/4" NC bolts with Loctite to bolt adapter to Dana 20 as shown in photo #8. Install 13 loose roller bearings in boar of Dana 20 output shaft. Use transmission assembly lube to hold them in place. This assembly will now be ready to install onto the NP 203.

7. Shifter preparation

Mount the Dana 20 shifter bracket to the top of the NP 435 cover with two 3/8 x 2" NC bolts and lock washers as shown in photo #9. Set the completed assembly aside for installation into Bronco later. Remove Z bracket from NP 203 and weld NP 203 shifter to Z bracket as shown in photo #10. Test fit and remove shifter for installation later.

8. Dana 20 to NP 203 and cross member assembly

Place sealer on the adapter and line up the Dana 20 with the NP 203. The NP 203s output shaft bearing retainer will need to be in line with the machined slot on the adapter (see photo #8). Bring the two units together being careful not to drop out of any of the 13 loose bearings which were installed into the boar of the Dana 20 output shaft. Align the holes and attach the cross member with three 7/16 x 5" NC bolts, nuts, and lock washers. Use the spacers that have been provided with your kit (see photo #12). *Do not tighten at this time.* There are three taped holes in the adapter use three 3/8 x 1 1/2" NC bolts with loctite. The bolts go through the NP 203 into the adapter. Use two 3/8 x 1-1/4" NC bolts with Loctite. The bolts go through the adapter and into the NP 203. Now tighten all the bolts down evenly so that the NP 203, Dana 20, and the cross member are all one assembly. Refer to photos #11 and #12.

9. Cross member support bracket preparation

The cross member support brackets will have to be modified to work with the new cross member and mounts. You can use a hole saw or plasma cutter to cut the hole in the brackets. The hole size is 1 3/8". Test fit mount in the hole to make sure it fits. Some trimming of the smaller lower mount may need to be done for clearance to the bracket. (see photo #6)

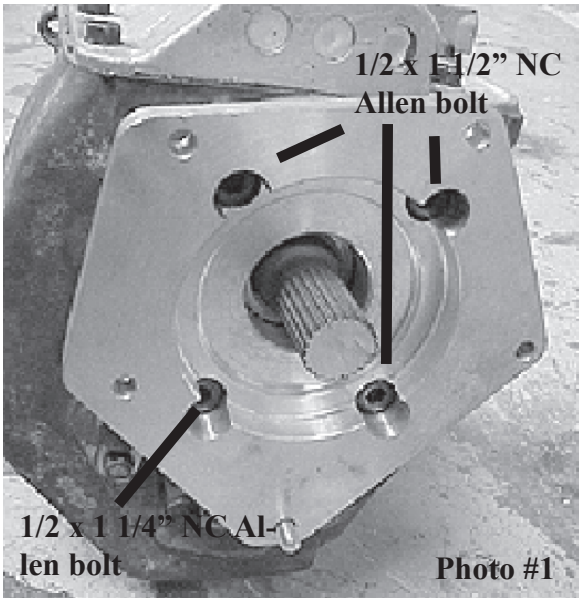
Section 2 - Installation into Bronco

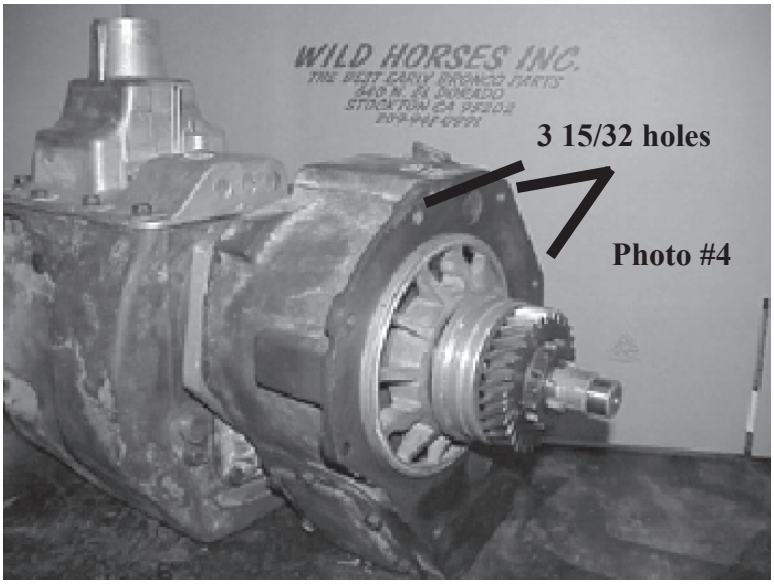
Super Crawler installation into Bronco

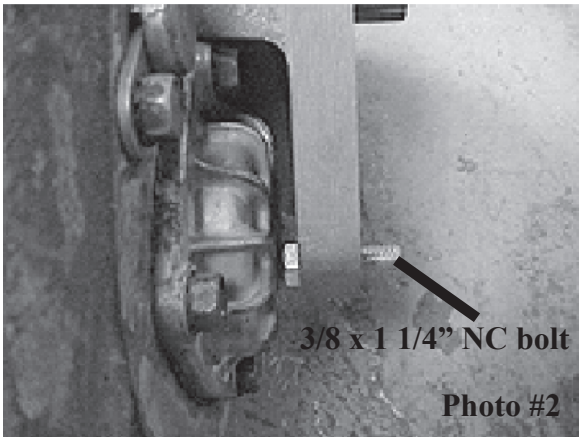
Install the NP 435 with the NP 203 adapter at this time. *IF this is the first time the NP 435 is being installed* you will need to cut out the tunnel cover in order to install the transmission. Cut out the tunnel to make clearance for the shifter tower. Secure the transmission to the bell housing with four bolts. We recommend using Loctite on the bolts. *If the NP 435 was previously installed* simply reinstall it the same as when you removed it.

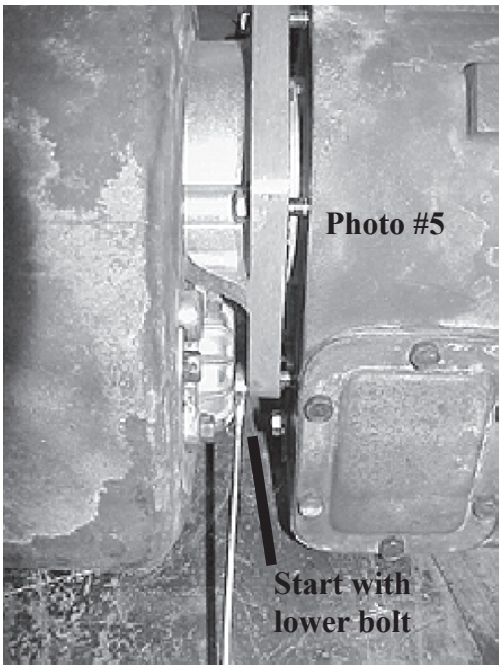
Next install the NP 203, Dana 20, and crossmember assembly. Start with the bottom bolt, use Loctit and tighten down the five 3/8 x 1-1/4" NC bolts evenly. See photo #5. Now install the shifters for the Dana 20 and the NP 203. Jack the entire assembly into place and install the crossmember brackets as shown in photo #13.

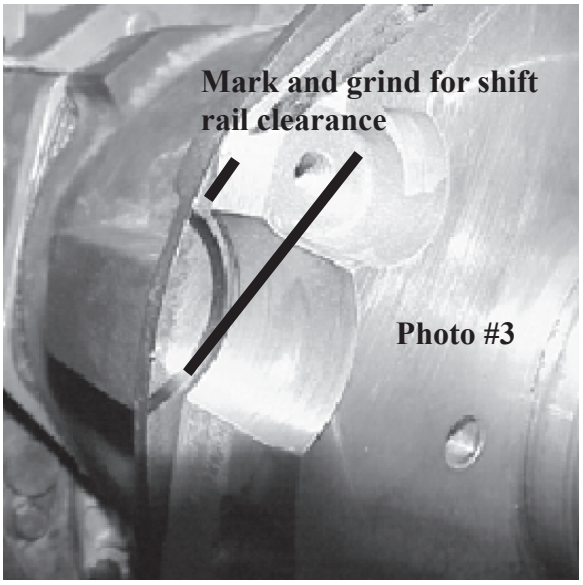
Fill NP 435, NP 203, and Dana 20 with oil. Install front and rear drivelines. Remember the whole assembly is about 1-3/8" longer than stock so you may need to shorten the rear and lengthen the front driveline. Install the NP 435 shifter at this time. You may need to bend the shifter for clearance from the dash, heater, and transfer case shifters. Make sure all shifter work does not interfere with each other. Install tunnel covers and shifter boots. Test completed assembly and head for the Rubicon, Moab, Tellico or wherever you go four wheeling!

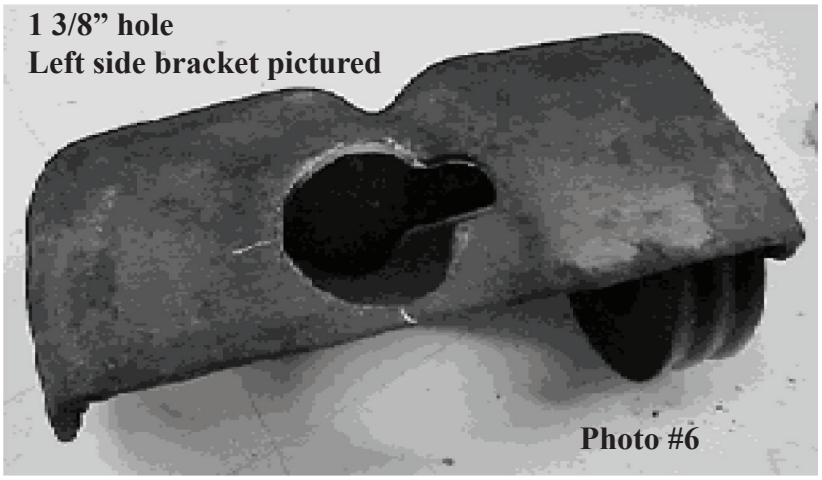

1/2 x 1 1/2" NC
Allen bolt
1/2 x 1 1/4" NC Al-
len bolt
Photo #1


WILD HORSES INC.
3 15/32 holes
Photo #4


3/8 x 1 1/4" NC bolt
Photo #2


Photo #5
Start with
lower bolt


Mark and grind for shift
rail clearance
Photo #3


1 3/8" hole
Left side bracket pictured
Photo #6

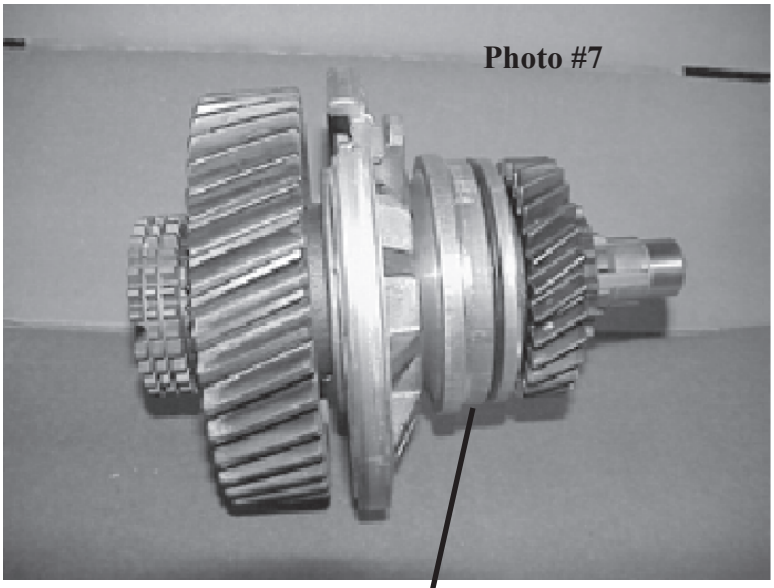


Photo #7

Before assembly of the 203 output shaft use this bearing retainer as an alignment tool when installing the 203 to Dana 20 adapter. Do not have the o-ring installed when you do this.

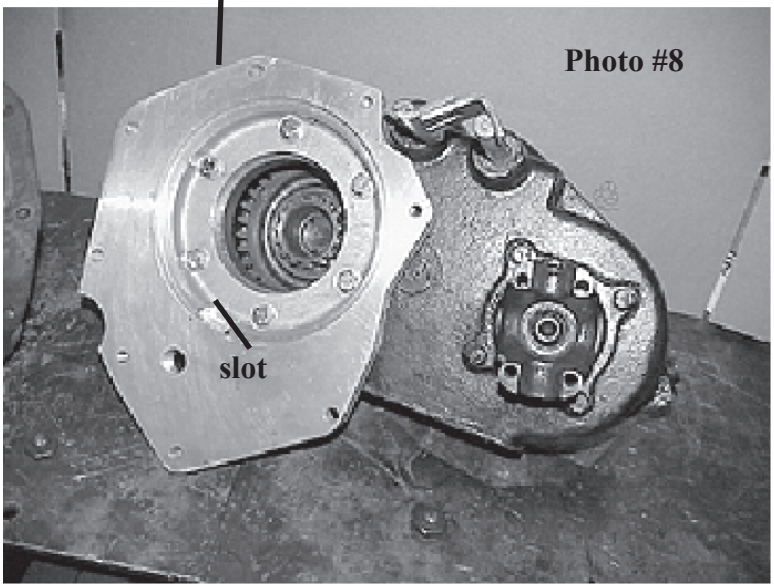


Photo #8



Photo #9

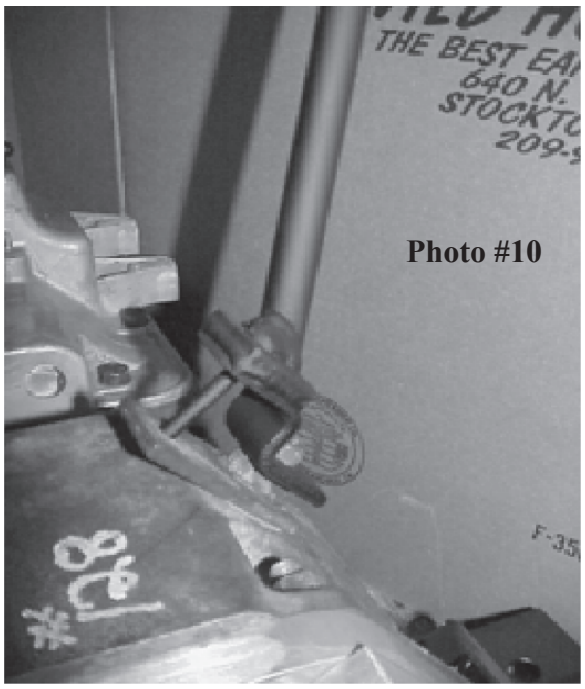


Photo #10

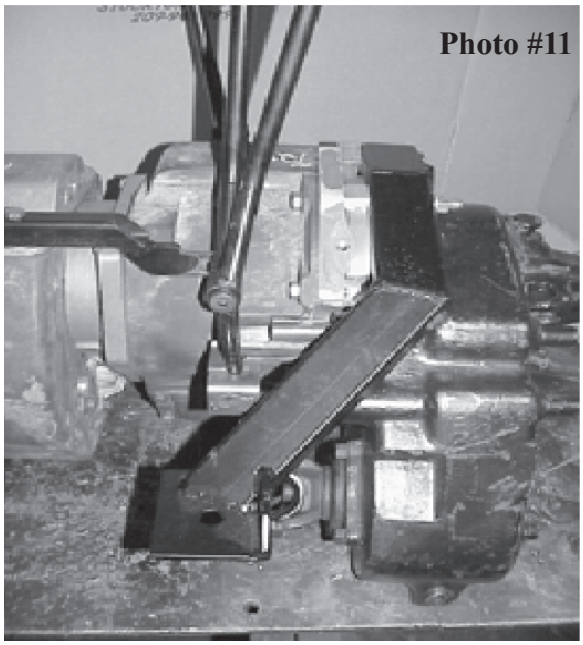


Photo #11

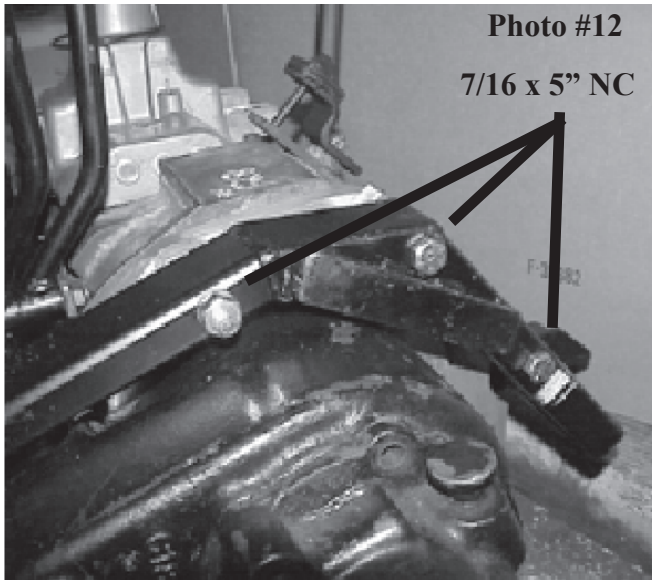
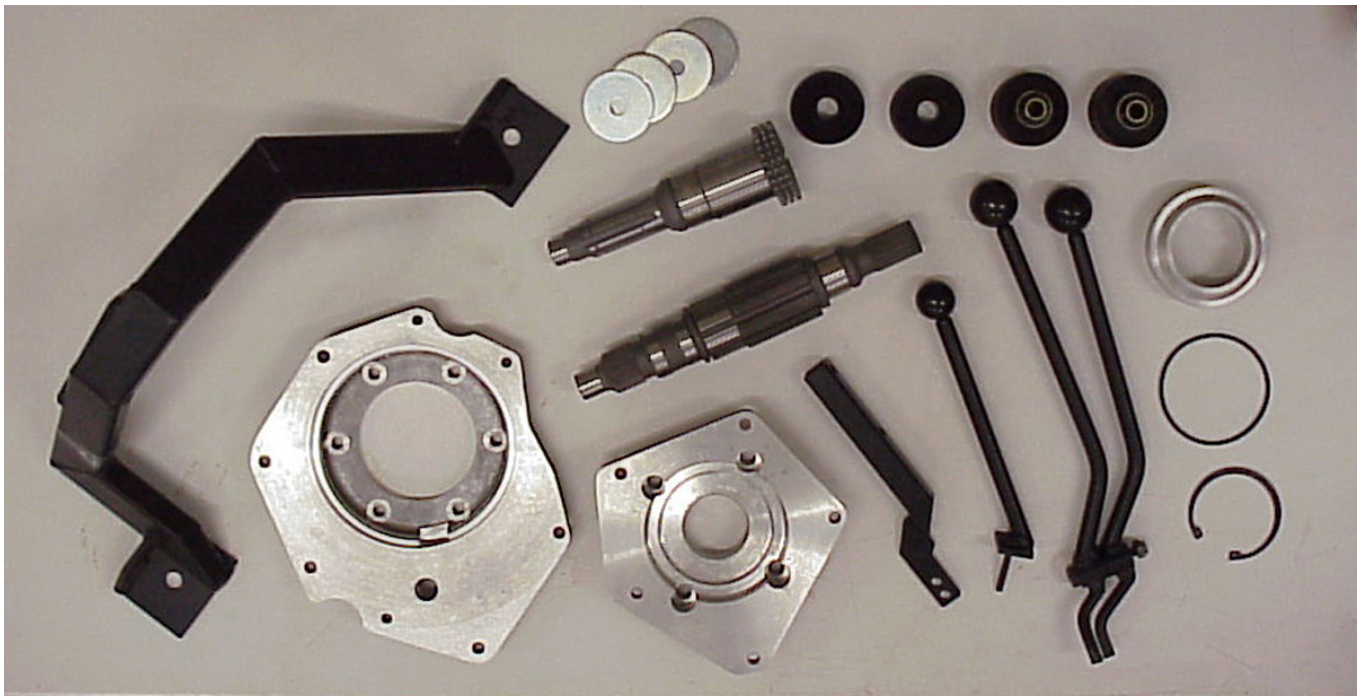


Photo #12

7/16 x 5” NC

Main kit components



NP 203 output shaft assembly

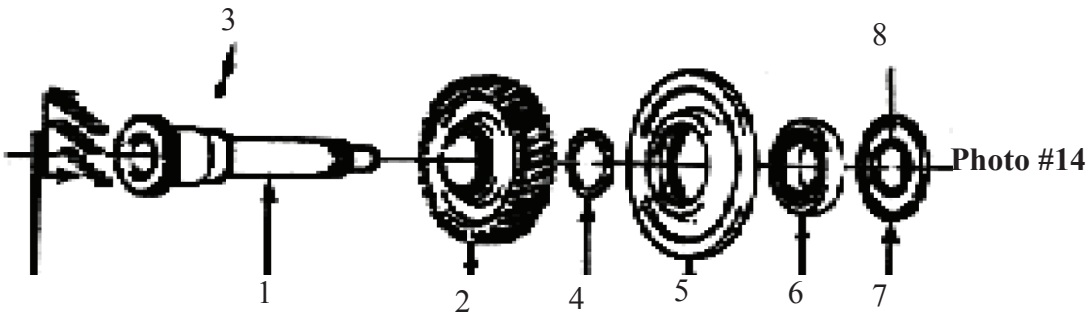


Photo #14

Hardware kit NP 435 to 203
5) 3/8x1 1/4" NC bolts
2) 3/8x2" NC bolts & lock washers
3) 7/16x5" NC bolts, nuts, & washers
1) 1/2x1 1/4" NC allen bolt
3) 1/2x1 1/2" NC allen bolt
2) 9/16x3 1/2" NC bolts & nuts
4) Large 9/16" washers

Hardware kit NP 203 to Dana 20
8) 3/8x1 1/4" NC bolts
3) 3/8x1 1/2" NC bolts
3) 7/16x3" NC bolts, nuts, & washers
1) Oil plug
1) Shaft retaining plate

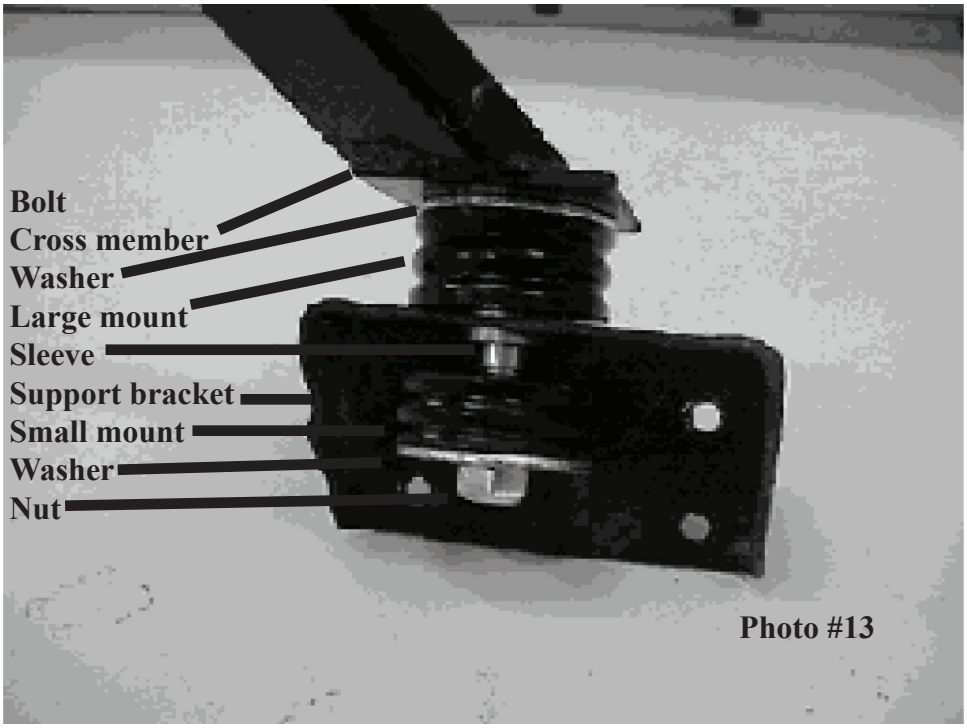


Photo #13