

C4 Toe Rod Installation

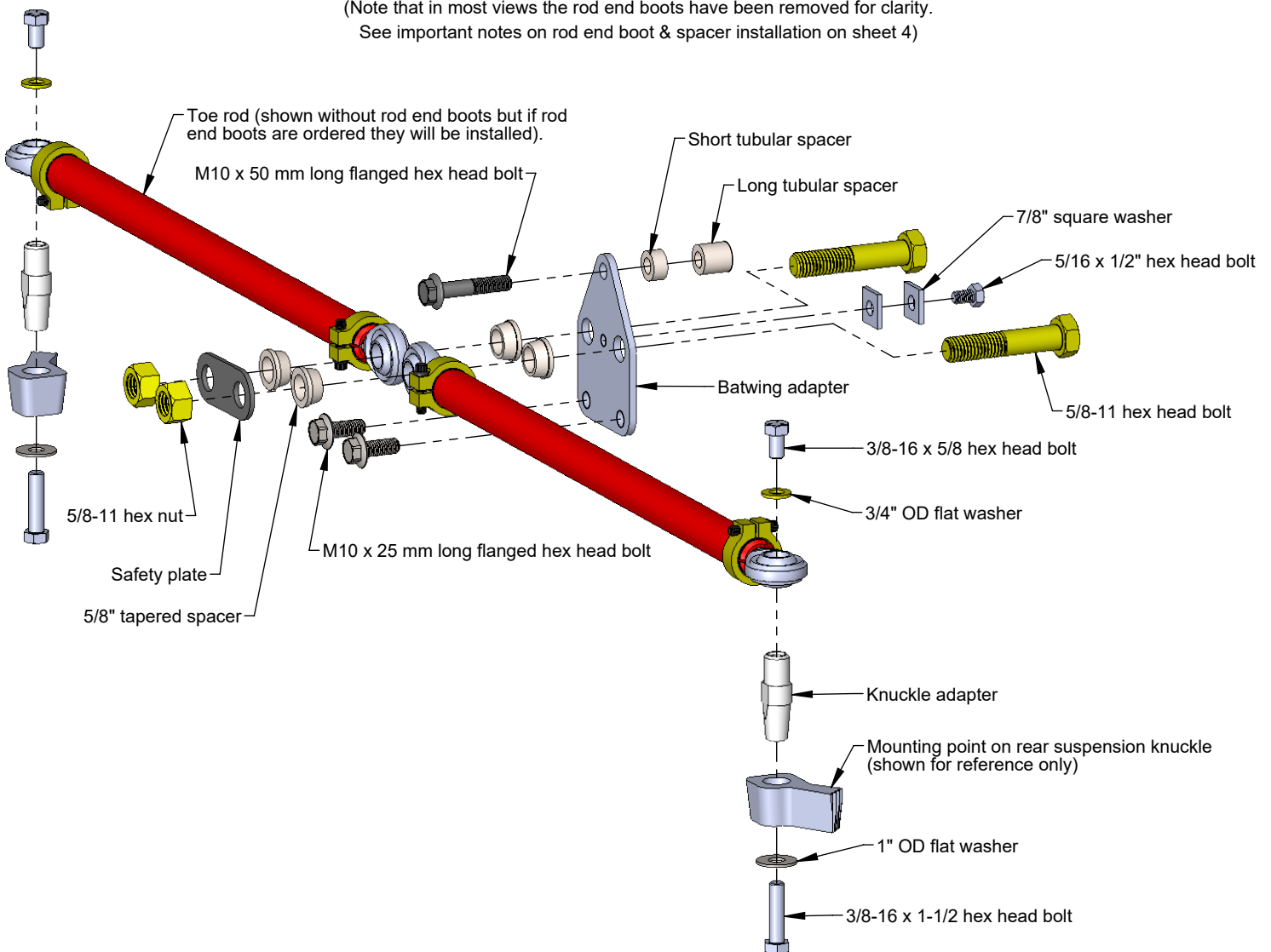
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READ ALL THE INSTRUCTIONS BEFORE BEGINNING INSTALLATION. There are two methods for installing the toe rods. You may find one more suitable to your situation OR you may want to change to the other method after attempting the first. It is best to be familiar with both methods to avoid unnecessary effort.

Before beginning installation you should put a small amount of anti-seize on the threads of the rod ends to help prevent corrosion over time. If your toe rods are not yet assembled simply apply a thin film of anti-seize to the threads before assembly. If your toe rods are assembled, unscrew the rod end from the body almost all the way out (it is considerably easier if you do not fully unthread the rod end, only so there is approximately 1-1/2" of thread showing). Apply anti-seize to the threaded portion of the rod end such that there is a thin film all the way around it, then thread the rod end back into the body. Keep in mind that one of the rod ends is a left handed thread so it will need to be turned in the opposite direction than the other.

EXPLODED VIEW

(Note that in most views the rod end boots have been removed for clarity.
See important notes on rod end boot & spacer installation on sheet 4)



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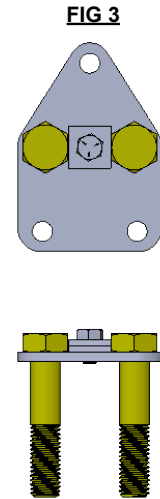
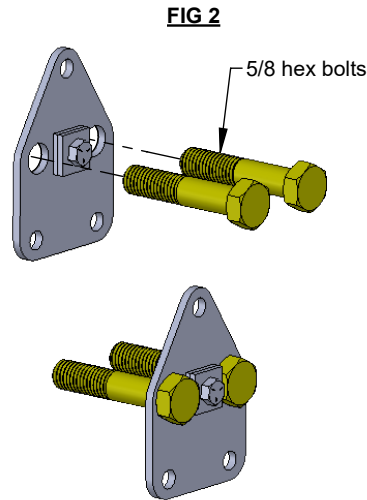
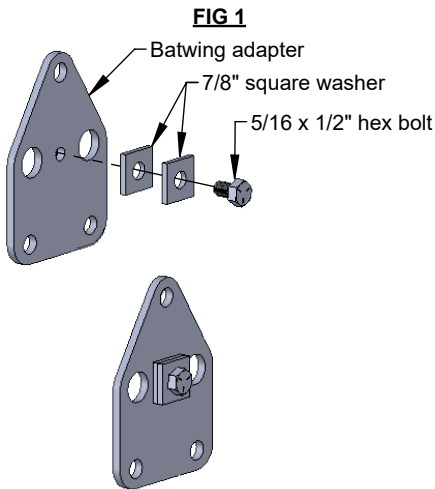
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Use the procedures outlined in your GM service manual to disassemble the OE toe rods. None of the OE parts will be re-used.

Begin by assembling the batwing adapter as shown in FIG 1. Stack the two 7/8" square washers and use the 5/16" x 1/2" long hex bolt to fasten them to one side of the batwing adapter (it does not matter which side at this point). Do not tighten the 5/16" hex head bolt however as you will need it loose for the next step.

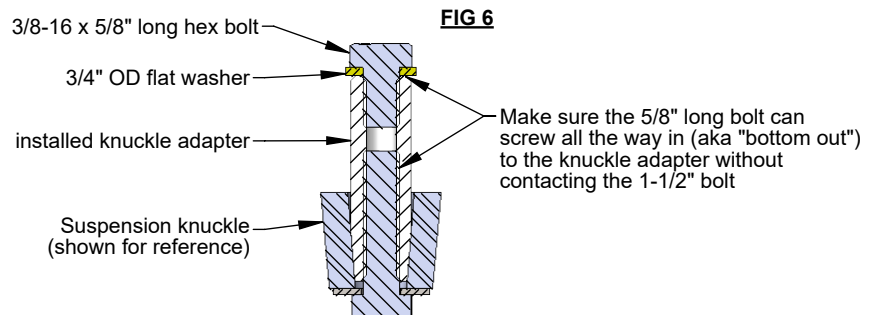
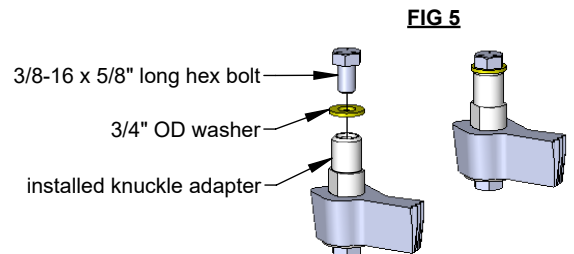
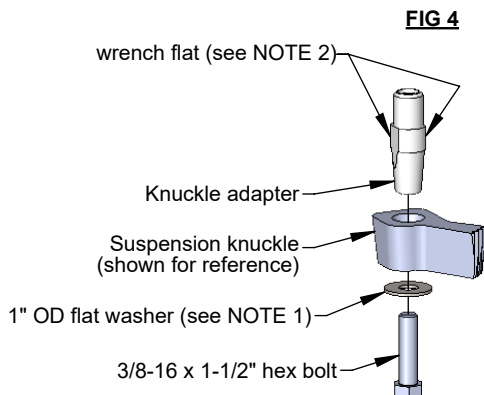
Insert the two 5/8" hex bolts through the holes in the batwing adapter and rotate the heads of the bolts and the square washers such that the heads of the bolts are flat against the batwing adapter and the square washers are holding the heads of the 5/8" bolts in place (see FIGs 2 & 3). The square washers will not prevent the 5/8" bolts from falling out of their holes but they will prevent them from rotating, which will be very important during the final steps. It may be helpful to use some tape to hold the 5/8" hex bolts against the batwing adapter so they do not slide out of their holes while handling. Now tighten the 5/16 hex bolt.



Next, assemble the knuckle adapters to the toe rod mounting points on the suspension knuckles by inserting the tapered end of the knuckle adapter into the hole in the suspension knuckle. Fasten the adapter to the knuckle with the 3/8-16 x 1-1/2" long hex bolt and the 1" OD flat washer, as shown in FIG 4 (see notes 1 & 2).

NOTE 1: it is important to make sure you use the 1" OD washer in this position and save the 3/4" OD washer for fastening the toe rod to the adapter later

NOTE 2: for convenience there is a wrench flat on the knuckle adapter for a 5/8" wrench so the adapter can be held in place while tightening the 3/8-16 x 1-1/2" hex bolt



Before proceeding, and as a precautionary check, thread the 3/8-16 x 5/8" long hex bolt, using the 3/4" OD washer, into the top of the knuckle adapter as shown in FIG 5. Make sure that the bolt can "bottom out" on the knuckle adapter without contacting the 3/8 x 1-1/2" bolt that is attaching the adapter to the knuckle (see FIG 6). It is extremely unlikely that this will happen but if it does do not continue with the installation and contact us for assistance.

After performing this check remove the 3/8-16 x 5/8" hex bolt & 3/4" OD washer.

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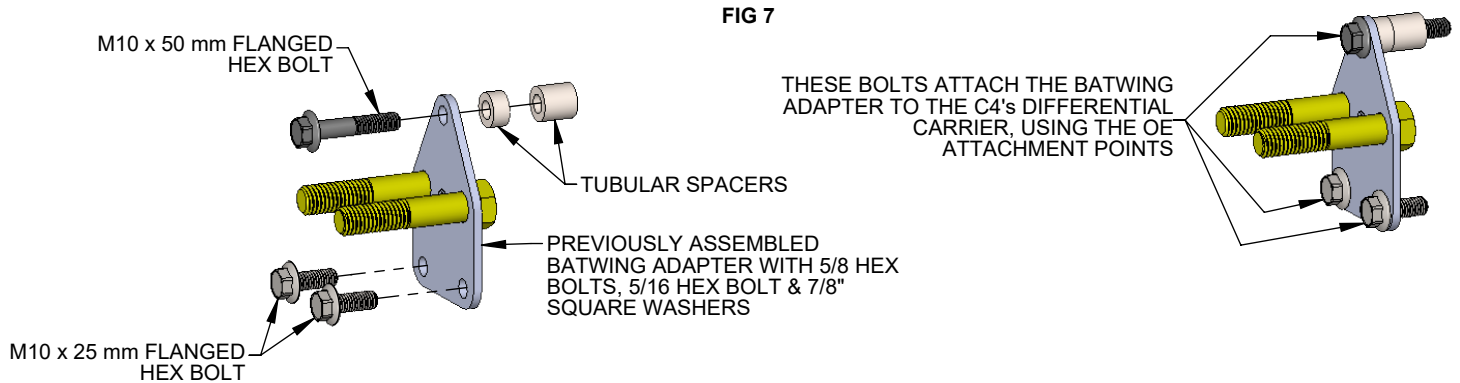
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It is at this point that the two methods of installation diverge. Below is the remainder of the first method, which attaches the batwing adapter to the differential carrier, then attaches the toe rods to the bolts in the adapter. The second method is detailed on page 5.

If one end of the toe rod is easier to grip than the other, it's recommended to orient the toe rod so that the easier to grip side of the rod is attached to the suspension knuckle. This gives the user a good surface to grab onto when making adjustments.

METHOD 1:

Now assemble the batwing adapter, with the 5/8 hex bolts to the differential carrier of the rear end. Use the (2) M10 x 25 mm flanged hex bolts, (1) M10 x 50 mm flanged hex bolt and (2) tubular spacers to do so. Use the (2) tubular spacers with the 50 mm flanged hex bolt to attach the top mounting point and the (2) 25 mm flanged hex bolts for the two lower mounting points (see FIG 7).

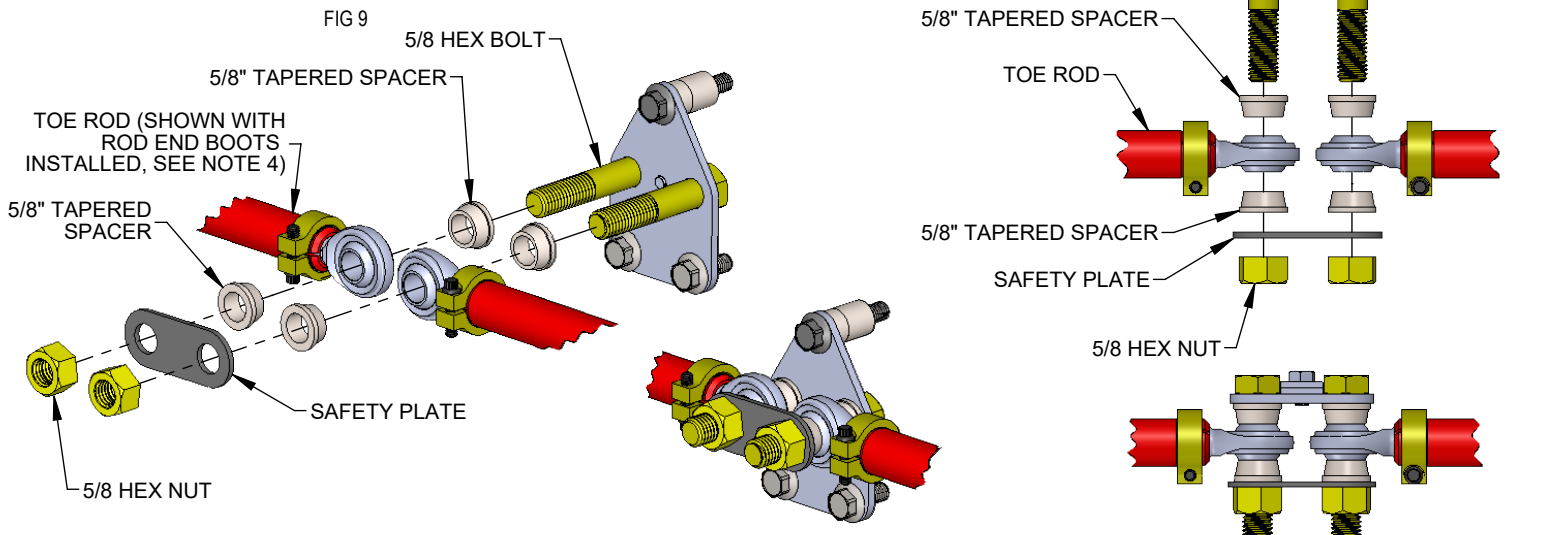


It does not matter in what order the tubular spacers are placed under the batwing adapter, only that they are both used (see FIG 8).

You are now ready to install the toe rods onto the new mounting points. Start with the inner end(s) by sliding a 5/8" tapered spacer onto the 5/8 hex bolt in the batwing adapter. Then slide one rod end over the 5/8 hex bolt and place another 5/8" tapered spacer on the bolt. Repeat for the other toe rod and then place the safety plate over the ends of both 5/8 hex bolts and thread a 5/8 hex nut onto each 5/8 hex bolt. (see FIGs 9 & 10). ADJUST THE NUTS TO BE HAND TIGHT (SEE NOTE 3).

NOTE 3: Because of the clearances necessary to allow all the parts to go together, you may find that the square washers are not sufficient to hold the heads of the 5/8 hex bolts when you are trying to install the toe rods onto those bolts and the batwing adapter is already attached to the differential carrier. If you find this to be case, you may want to disassemble the toe rods from the batwing adapter and remove the batwing adapter from the differential carrier and proceed to Method 2 (beginning on page 5). If you are not having difficulty with assembling the toe rods to the batwing adapter as described you may continue with Method 1 (go to page 6).

NOTE 4: It is recommended that you place the spacers such that the bolt hole openings of the boots stretch over the outside of the spacer (see Fig 11 on page 4). This can be a challenge and is sometimes easiest when done on a bench before installation on the car.

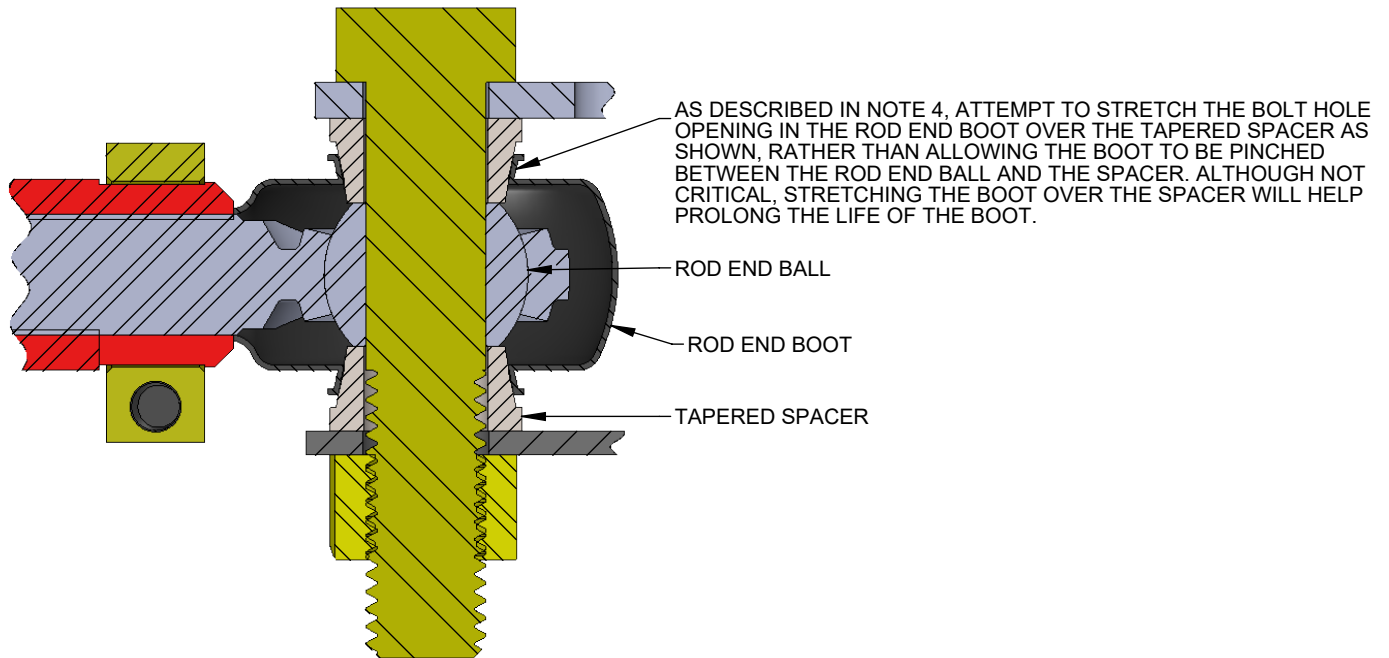
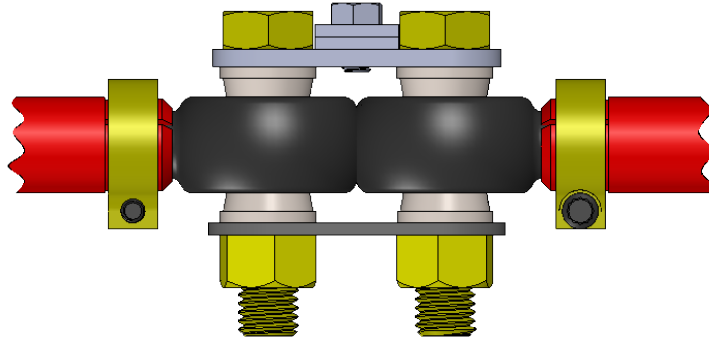


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FIG 11
(M10 FLANGED HEX HEAD BOLTS
REMOVED FOR CLARITY)



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Method 2 below uses the same first few steps as Method 1, as detailed on sheet 2. At this point the knuckle adapters should be installed and the batwing adapter assembled with the square washers and 5/8 hex bolts as shown in FIGs 2 & 3.

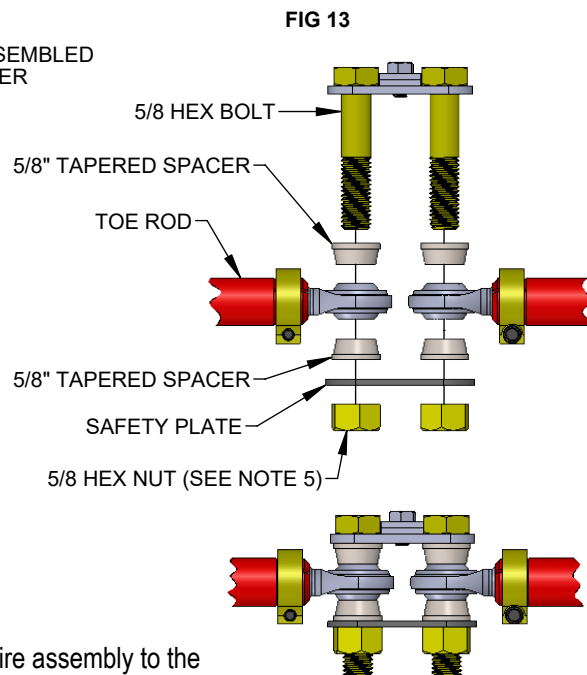
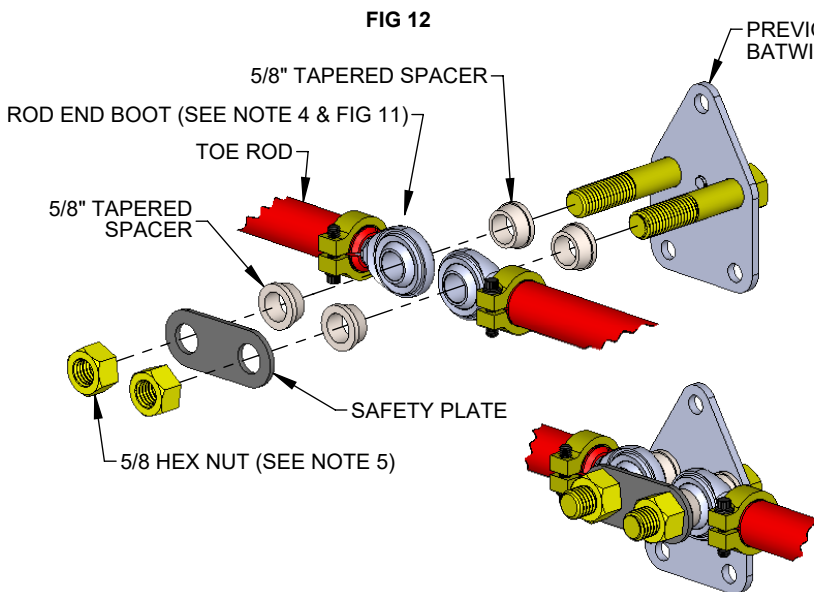
METHOD 2:

You are now ready to install the toe rods onto the 5/8 hex bolts in the batwing adapter. Start by sliding a 5/8" tapered spacer onto the 5/8 hex bolt. Then slide one rod end over the 5/8 hex bolt and place another 5/8" tapered spacer on the bolt.

Repeat for the other toe rod and then place the safety plate over the ends of both 5/8 hex bolts and thread a 5/8 hex nut onto each 5/8 hex bolt. Adjust the nuts to be hand tight (see NOTE 5 below as well as FIGs 12 & 13).

NOTE 5: You may find that you need to initially hold the head of the 5/8 hex bolt(s) while installing the 5/8 hex nut as described above. The closer the hex nut gets to the safety plate and pushes it against the 5/8 tapered spacer(s) you should find that the head of the 5/8 hex bolt gets tighter to the square washers. Once the nut is fully hand tight to the safety plate you should find that the 5/8 bolts move very little, if any at all, allowing tightening of the nuts without needing a wrench for the 5/8 bolts.

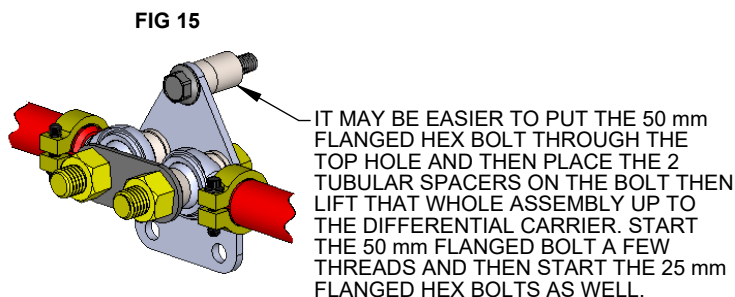
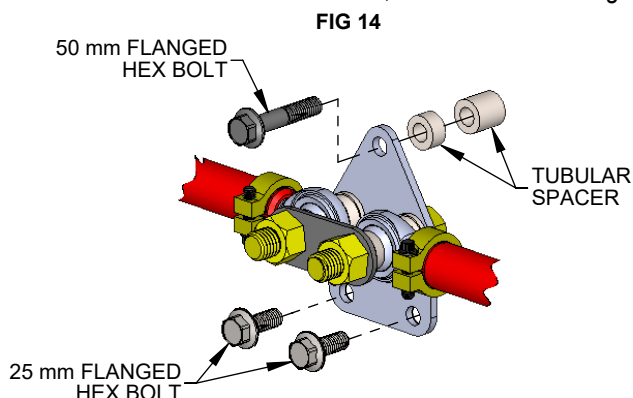
It is recommended that the nuts be tightened with a wrench or socket ONLY SLIGHTLY. An eighth of a turn is quite sufficient, you only need to ensure the nut does not back off during handling.



Now that the toe rods are assembled to the batwing adapter you will install this entire assembly to the differential carrier (see FIG 14).

Lift the toe rod & batwing assembly up to the OE mounting points, place the M10 x 50 mm flanged hex bolt through the top mounting hole and place the (2) tubular spacers over the threaded end of the the flanged hex bolt. It does not matter the order the tubular spacers are placed on the 50 mm flanged hex bolt, only that both are used to properly space the batwing adapter from the differential carrier.

You may find it easier to place the 50 mm bolt through the top mounting hole and the spacers onto the bolt BEFORE attempting to lift this assembly in place (see FIG 15), making it easier to get the 50 mm flanged hex bolt started in its mounting hole. Once it is in a few threads you can install the (2) 25 mm flanged hex bolts. It may be easiest to leave all 3 flanged hex bolts loose until you get the other end of the toe rods installed on the knuckle, and then return to tighten them to the differential carrier.



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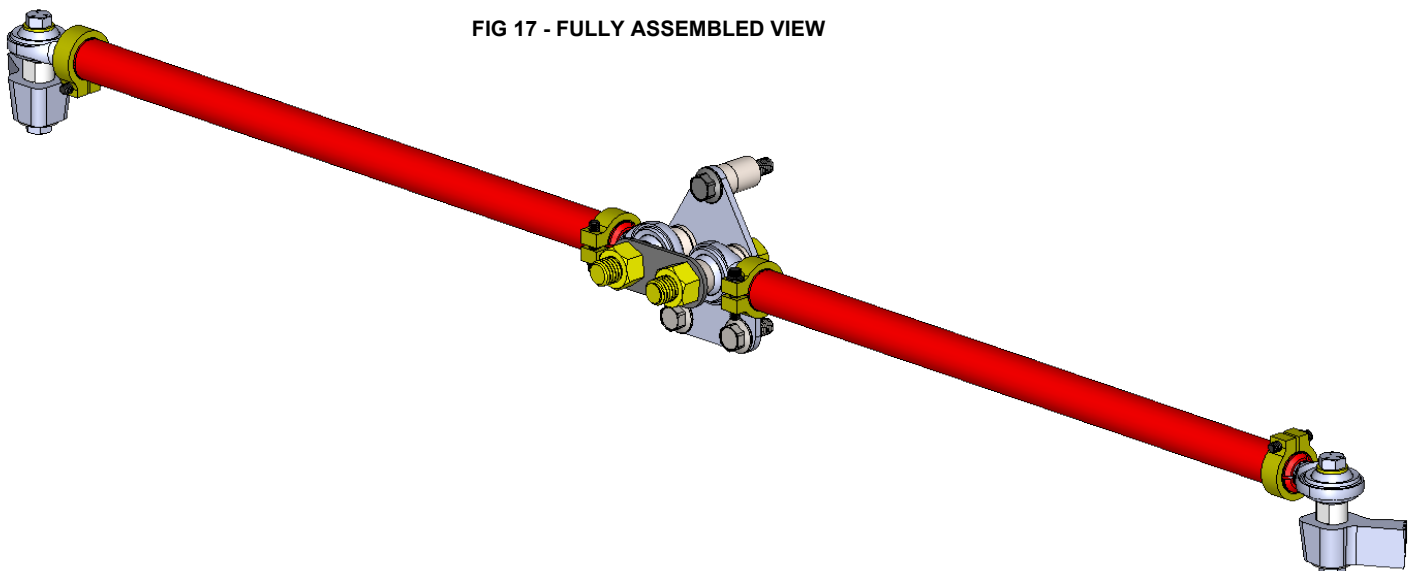
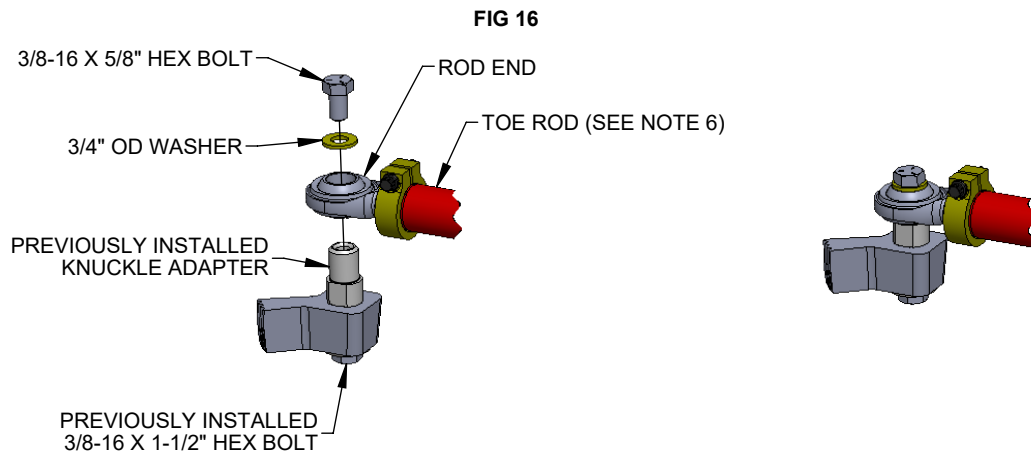
At this point both methods converge and will proceed as described below to attach the toe rods to the knuckle side and complete installation.

Next, assemble the knuckle side of the toe rod by sliding the rod end over the round portion of the previously installed knuckle adapter. Fasten the rod end to the knuckle adapter using the 3/4" OD washer & 3/8 x 5/8" long hex bolt (see FIG 16). If necessary loosen the 5/8 hex nuts on the bolts in the batwing adapter to allow more play to install the rod end onto the knuckle adapter.

NOTE 6: *You may also twist the body of the toe rod to lengthen or shorten the toe rod as necessary to aid in installing the knuckle side rod end.*

Once the 5/8" long 3/8 hex bolt is sufficiently started, tighten the bolt to fasten the rod end to the knuckle adapter. Double check to ensure the 1-1/2" long 3/8 hex bolt that fastens the knuckle adapter to the suspension knuckle is also tight.

Finally, return to the batwing adapter and tighten any bolts that may be loose and double check all others.



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