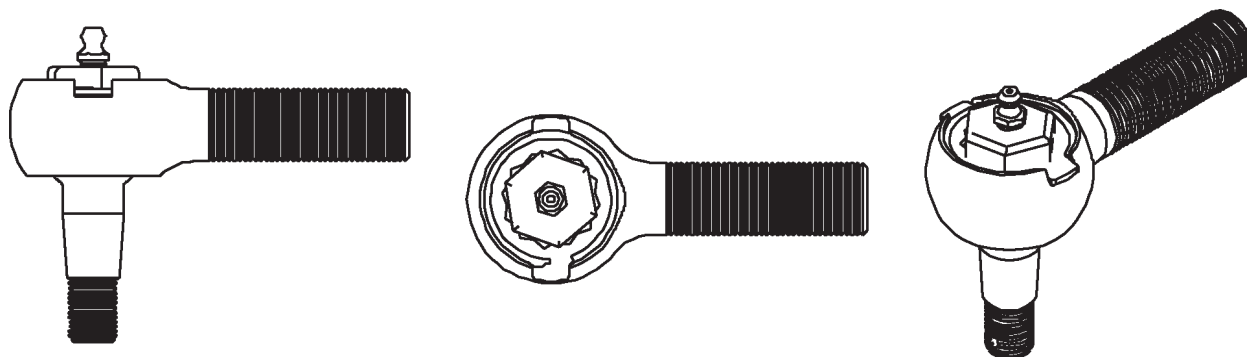




## HOWE PRECISION XD TIE ROD END MAINTENANCE INSTRUCTIONS



| Unit  | OEM Part # | Style               | Stock Application   | Racing Application                     | Housing | Stud  |
|-------|------------|---------------------|---|--|---------|-------|
| 23220 | ES150R     | 3/4"x16 RH Thread   | 61-66 Chevy 1/2 & 3/4 ton 4x4, 48-76 Ford 1/2 ton 4x4 w/ DANA | Grand National chassis w/ large taper  | 23244   | 23200 |
| 23230 | ES150L     | 3/4"x16 LH Thread   | 61-66 Chevy 1/2 & 3/4 ton 4x4, 48-76 Ford 1/2 ton 4x4 w/ DANA | Grand National chassis w/ large taper  | 23245   | 23200 |
| 23240 | ES2847R    | 3/4"x16 RH Thread   | 86-96 Dodge 1/2, 3/4, 1 ton 4x4 w/ 3500lb. axle (DANA 44)     | Most GrandNational chassis             | 23244   | 23290 |
| 23250 | ES2847L    | 3/4"x16 LH Thread   | 86-96 Dodge 1/2, 3/4, 1 ton 4x4 w/ 3500lb. axle (DANA 44)     | Most GrandNational chassis             | 23245   | 23290 |
| 23260 | ES361R     | 11/16"x18 RH Thread | 66-78 Eldorado & Toronado                                     | Camaro based racing front ends (outer) | 23246   | 23290 |
| 23270 | ES370R     | 5/8"x18 LH Thread   | 65-68 Bel Air, Biscayne, Caprice, Impala                      | Interchanges with 5/8" rod end         | 23247   | 23210 |
| 23280 | ES370R     | 5/8"x18 RH Thread   | 65-68 Bel Air, Biscayne, Caprice, Impala                      | Interchanges with 5/8" rod end         | 23248   | 23210 |

**Common Parts:** Grease Zerk **22328**, Cap **23236**, Retainer **23237**, Snap Ring **23238**, Race **23243**

### Installation

- 1) Assembled tie rod ends are shipped from Howe Racing Enterprises internally lubricated, adjusted and ready to install.
- 2) Apply Anti-Seize to the threads of the tie rod housing.
- 3) Run a jam nut onto the threaded end of the tie rod housing.
- 4) Install the tie rod end into the sleeve adjusting it to the desired position and then lock it in place with the jam nut.

### Disconnecting from the Spindle

- 1) Place a jack stand under the lower A Frame for support.
- 2) Make sure the A Frame is near level and the taper of the tie rod stud is centered in the housing.
- 3) Use a pickle fork to push evenly on both sides of the housing until the taper is free from the spindle.
- 4) The taper of a Howe tie rod is more precise than other tie rod tapers, which can cause it to be more difficult to remove. Difficult tapers may be separated from the spindle by wedging a pickle fork between the tie rod housing and the spindle to hold pressure, and then apply heat to the tapered area of the spindle until they separate.

### Maintenance

Grease after every 300 to 400 laps with low friction grease. We use Citgo MP Lithoplex 3 or Red Line CV2. Unlike conventional tie rods, a Howe tie rod will only accept grease until it is full (typically, one pump or less is required). Once the grease passages are full they will not vent, the pressure from the grease gun can make it difficult to remove it from the zerk. To relieve the pressure work the tie rod stud around to vent grease onto the ball, if the tie rod end is on the vehicle, turn the steering back and forth for the same result. Disassemble annually or every 2000 laps to adjust the lash.

### Adjusting the Lash

Lash can be set with the tie rod attached to the car if the taper is free from the spindle. If you choose to remove the tie rod from the car, gently clamp a piece of threaded sleeve in a vise and thread your tie rod end into it to disassemble.

### Disassembly

- 1) Remove the snap ring and then the cap retainer.
- 2) With a 7/8" socket turn the cap counterclockwise to remove.
- 3) Clean moving parts to inspect for excessive wear. Replace any parts that are worn or damaged. The tie rod stud is concentric and should be checked for straightness. Install the tie rod stud upside down in the housing and spin the stud against the side of the housing with your fingers. If the tie rod stud is bent, you will see it wobble.

### Assembly

- 1) Install the tie rod end into a threaded sleeve and gently clamp the sleeve in a vise.
- 2) Install the race into the housing ungreased and push it down completely.
- 3) Install the tie rod stud into the housing without grease.
- 4) Dip the bottom lip of the cap in grease and apply a small amount to the threads of the cap, install and tighten the cap until it snugs down.
- 5) Set the lash on the ball by loosening the cap until the retainer fits over the hex. The retainer can be flipped if necessary to best capture the hex of the cap.
- 6) Install the snap ring over the retainer to finish assembly.
- 7) Using a grease gun, grease and rotate the tie rod stud by hand until the grease is visible on the bottom of the ball.