

Isuzu Heavy Duty Tie Rod End How-To

Isuzu Small and Mid size trucks built from 1987 until 2002 with a steering box all used the same 14mm tie rod ends. This setup serves perfectly fine for any daily driver, even one with oversized tires. However once you start to put stress on the steering with off road use then they become the weak point in the steering system and broken adjuster links are the common result. The adjuster link is different from most trucks on the road that use an adjuster sleeve that has female threads. The Isuzu system uses rod ends with female threads and an adjuster rod with male threads. This has one big down side. The outer most surface that sees the majority of the stress is cut with threads that have a 14mm outside diameter and a 12mm minor diameter that act as stress risers at every peak and valley. Not something you want to have for durability. Most other setups have a solid or split-clamp sleeves with inside threads spanning the gap between rod ends. This means the sleeve will be a much larger diameter than the rod end threads and the outside surface that sees the most stress will be smooth and free of stress risers. So we know what we want for strength but how do we go about upgrading without buying every part on the shelf and trying them? Well if you search "Universal Tie Rod End Chart" you will come up with some resources where you can sort all the ends by the size of their components and even see pictures. This can take some time and trial and error itself so luckily I have done the work for you.

First lets look at the stock parts. I am going to use MOOG part numbers for this whole article since they are the most common and easiest find or cross reference to another brand.



Above are the stock type tie rod ends ES2953 (right hand thread) and ES2954 (left hand thread) you will find on your Isuzu truck. These are completely fine under stock conditions.



Above you will see the only two adjuster rods sold by MOOG for the Isuzu. The longer one on the top ES3089S measures 8.42" from end to end and is listed for 2WD Isuzu Pickup Trucks. The shorter one on the bottom ES3090S measures 6.63" from end to end and is listed for Amigo 1988-1994, 4WD pickup 1988-1995, Rodeo 1991-1995, Trooper 1987-1991.

1992 to 1995 Trooper (without fender flares) and 1996 to 1997 Rodeo applications use slightly longer adjuster rods. Which are not sold. However, the longer rod at the top is 1.79" longer than the bottom one and should work fine for such applications. It may just need to be shortened slightly. The 1995 to 2002 models can use this rod too.

So now we see what we have to work with so how do we narrow our search down? Well if you looked at the chart you will see there is actually a few pairs of ends that will physically fit and make the connection between the center link and the knuckle with little to no modification. The number one reason I chose the upgraded parts below was for availability. Lots of part numbers give us the strength and fitment we want but some are hard to get off the shelf and some even use odd threads that you cannot buy an adjuster sleeve for. So after figuring out what works, and calling parts stores to see what was always in stock, that led me to ES3369T and ES3370T these ends happen to be for a 1997 to 2003 Ford F150 4WD truck. Is doesn't get much more "common" than that.



Above is Moog ES3369T and ES3370T which upgrades the rod thread to 18mm but keeps the same stud thread and taper so it will bolt up to the stock knuckle.



These sleeves are what makes these ordinary parts so much stronger than the stock ones. These solid sleeves are available off the shelf from MOOG one is ES3201S which measures out at 3.35" end to end and will cover Amigo 1988-1994, 4WD pickup 1988-1995, Rodeo 1991-1995, Trooper 1987-1991. All of these application will require cutting off 7/8" from the male threads on the tie rod end to make them shorter so they don't bottom out against each other

in the sleeve and allow for proper alignment.

1992 to 1995 Trooper (without fender flares) and 1996 to 1997 Rodeo applications can use the other sleeve which is ES3368S which measures out at 4.53". 1995 Troopers with the fender flares and all years until 2002 are an extra inch per side wider than the previous model. This means that each tie rod ends will protrude from the sleeve an extra half inch which should not pose any problem. There are no other sleeves that are longer with M18 threads.

The very last thing you need to address is the rod end stud. It uses same size fastener as the original however the new stud is a bit longer. This allows the nut to bottom out to the taper before it clamps down on the knuckle. So you simply need to install a thick washer or lock washer to take up the space. You will know you have it right when the castle nut groove lines up nicely with the hole in the stud. The cotter pin should have full engagement in the castle grooves and should not stick up above it.



Here is the finished installation on a 1990 Trooper. Remember to set the length of the tie rods as best you can to match the old ones you take off. This will get you close enough to drive to the alignment shop. If the caster and camber were good before then all you will

need is the toe set along with a centering of the steering wheel. These parts should be in stock at any of your local parts store in several brands to choose from. They are a great upgrade for the stock parts and also more available.

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