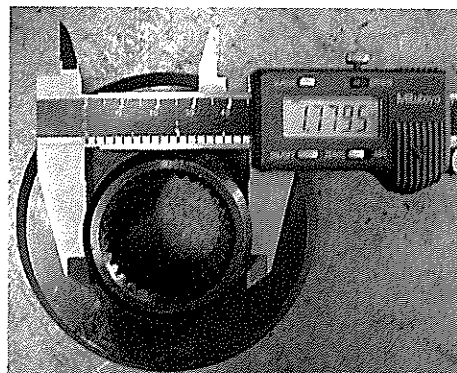


Measuring the OE side gear outside dimension.



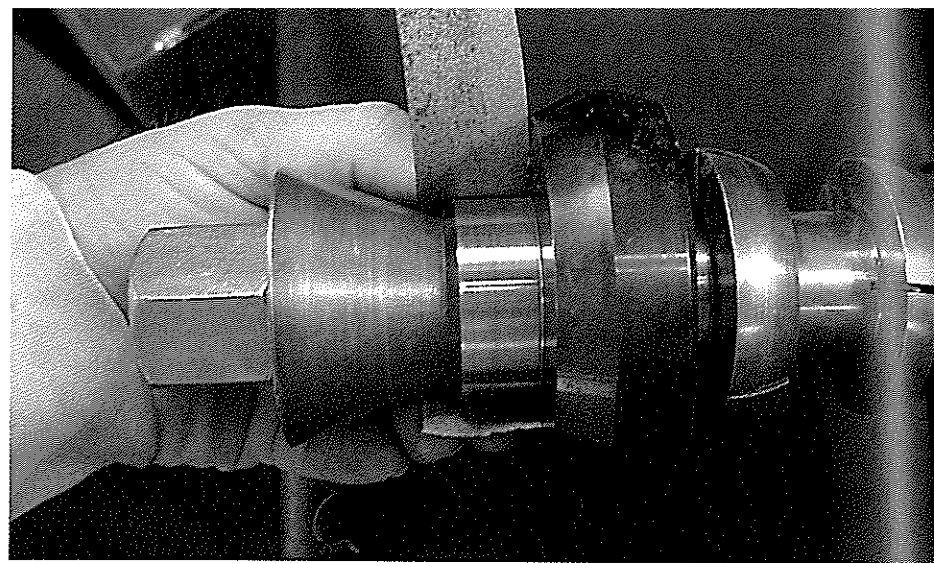
Measuring the spool side gear outside dimension.

them in place. As a side note, I purchased a pair of Poly Performance 4030 Chrome-moly rear axles for my truck. After breaking the short side rear axle in Oklahoma, I decided that an impending upgrade to bigger tires would be too much for 25+-year-old original equipment axles.

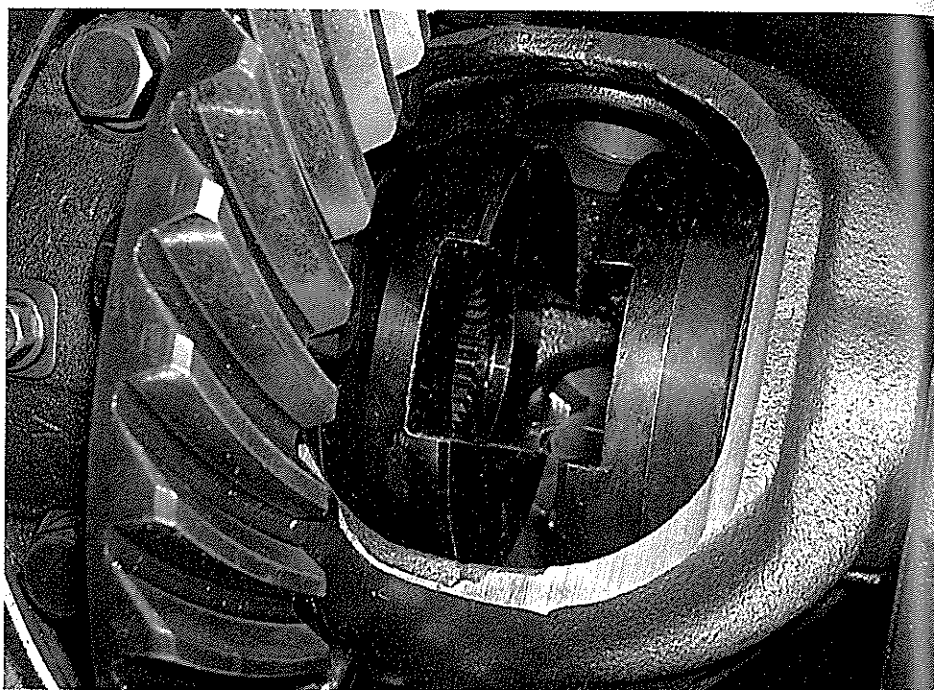
While out of the differential carrier, the c-clip fit easily in the relief designed to hold it. Once in the carrier, however, the spool sidepiece (much thicker than the original side gear) would not allow the axle to protrude far enough to let the c-clip slip on before being pulled into the relief by the axle. I tried many different methods—hammers, body English, angry thoughts—before I finally came to two conclusions.

1. The c-clip was not going to go on the axle without some sort of modification to the sidepiece, the axle, or the clip.
2. Of those three things, the clip was the part that carries virtually no load, was easy and cheap to replace, and was easy to modify.

Using the smooth stone on my bench grinder, I was able to remove the



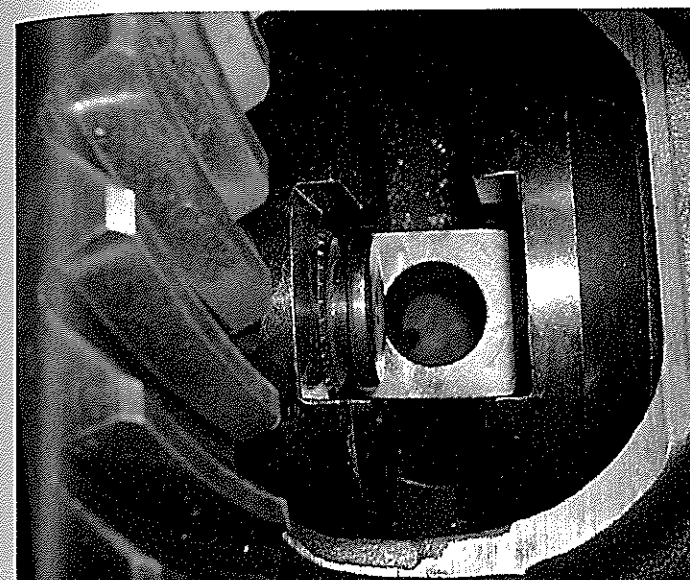
60 seconds with the emory cloth did the trick.



The spool side gear installed into the differential.

minimum necessary from each side of the c-clip, allowing it to slide through the channel into its final resting place within the c-clip relief. Because I did not change the length of the c-clip, I am confident it will not be able to slide away from the axle. Even though I made the c-clip mildly weaker by removing material, the c-clip does not see extended periods of side load and I do not think it will deform and allow the axle to come loose. Of all the modifications I made, this one leaves me the most curious. While the machinists I consulted assured me the clip is still plenty strong enough, I will pull the cover off after my first hard trip and at the end of the season just to check.

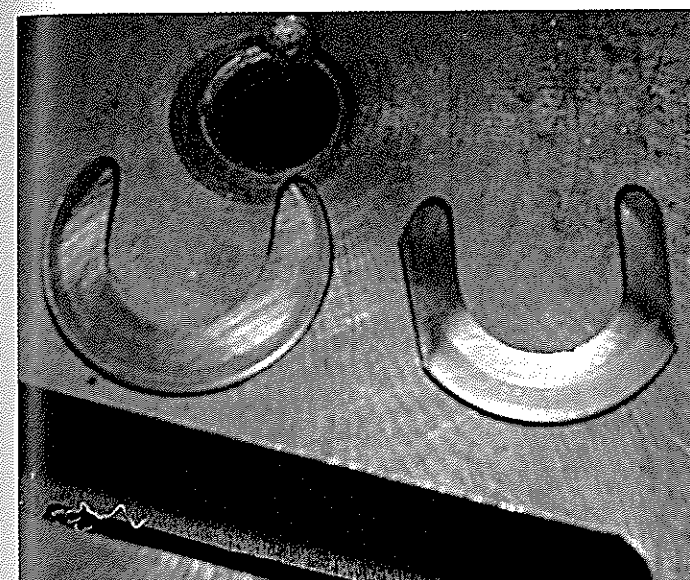
After the clips were installed and the axles pulled out to their ready position, it was time to fit the spider pieces into place. These pieces are designed to ride against the end of the axle on the inside and rub on the carrier where the cross pin rides. The interference with the axles is what keeps them from moving in, allowing the c-clips to fall off. Even with mild persuasion (in the form of a brass hammer), I was unable to get them to slide into place. The solution was to remove a small amount of material from the inside of the spider piece. Again using the bench grinder, I was able to cut a relief into the piece, allowing it to sit deeper against the axle. With the relief cut and the spider pieces swung into place, all that was left was the cross pin.



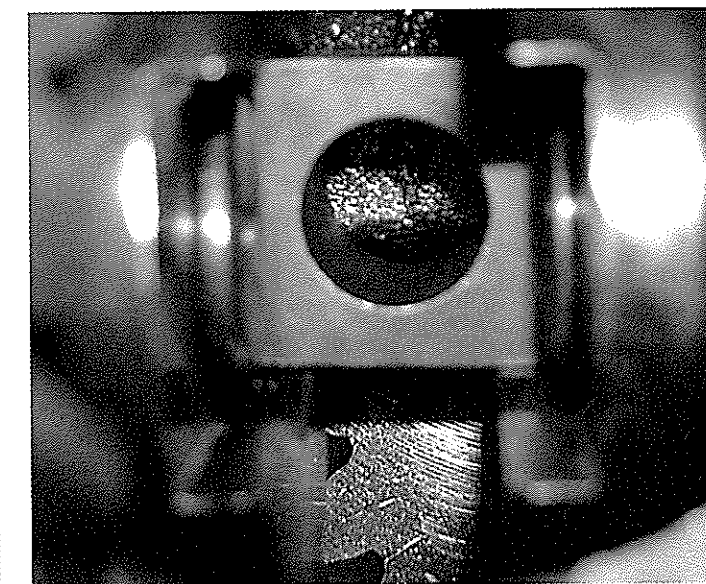
Placement for the axle c-clip.



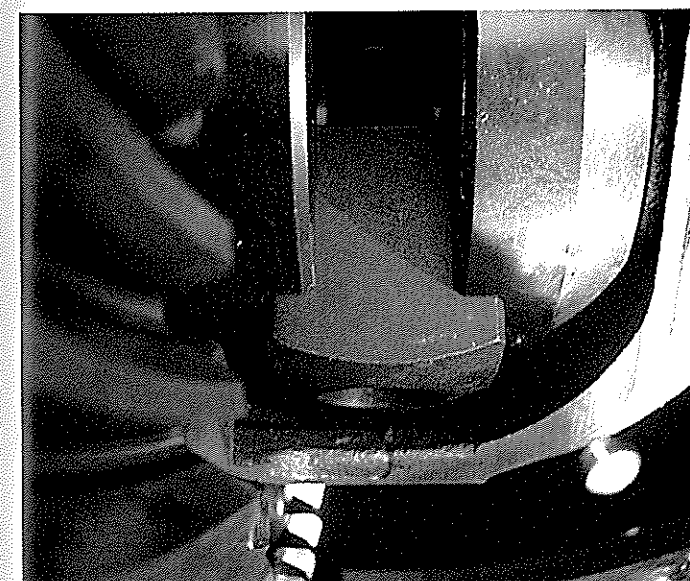
The spider piece after grinding.



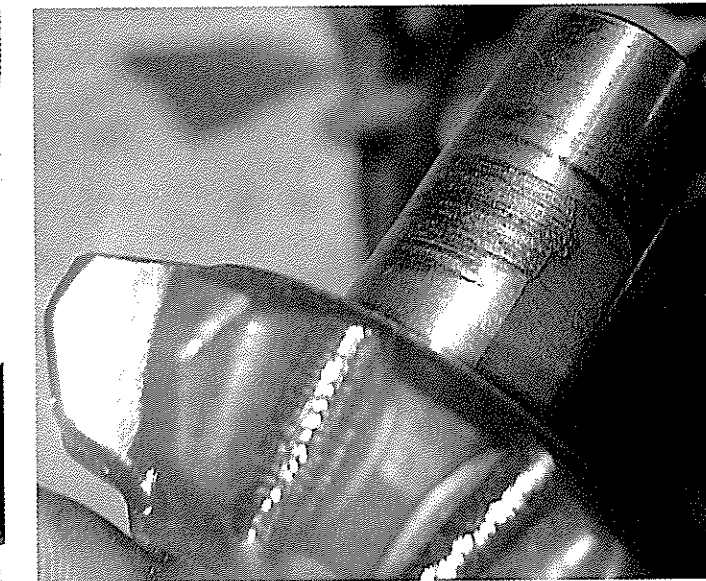
The modified c-clips.



The side piece in place.



The spool in the carrier.



Scoring on the cross pin.