

*Shock Absorber
Rebuilding*

SHOCK ABSORBERS

The shock absorbers absorb the road bumps and help prevent excessive up and down movement after having hit a bump. Basically the shock absorber is used for stability. Ford first introduced the shock absorber on the Model A and used this new feature quite extensively in advertising campaigns. The shock absorber uses the principle of hydraulics that being forcing of the glycerine fluid back and forth through small openings thus creating the resistance.

There were several different manufacturers of the shock absorber, however, each is basically the same. In selecting shock absorbers for restoration purposes be sure that the square shaft extending from the shock does not have excessive back and forth movement. This movement is an indication that the shaft arm is broken.

It is advisable to first remove the filler plug located on the side of the shock and immerse the entire unit in a solvent such as carburetor cleaner or grease cutter and allow unit to soak for several weeks.



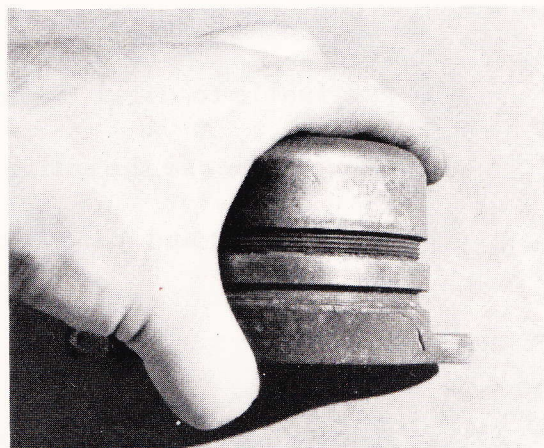
Model A shock absorber removed from car less arm. Before starting restoration of shock check to be sure the shaft is not loose in shock absorber. If this is the case, the shaft is broken and shock cannot be restored. However, it is advisable to hold onto the shock as some components are good and may be reused.



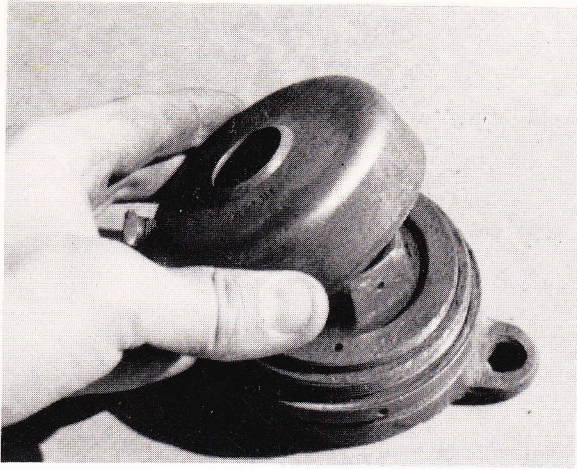
On the backside of the shock absorber you will note that the two bolt mounting holes are offset. These will always point toward the ground when shock is installed on the car.

After the soaking has been completed first remove the shock absorber arm, next the lock ring must be backed off from the shock absorber cover. This can be accomplished by screwing the lock ring down toward the base of the shock absorber. Many restorers use large pipe wrenchs or chain lock type pipe wrenchs to rebuild the shock. If you are having some difficulty in completing this first procedure it may be necessary to return the shock to the solvent for a few more weeks.

The first procedure in dismantling the shock is to back off the center locking ring. This can be accomplished by screwing it down toward the base.



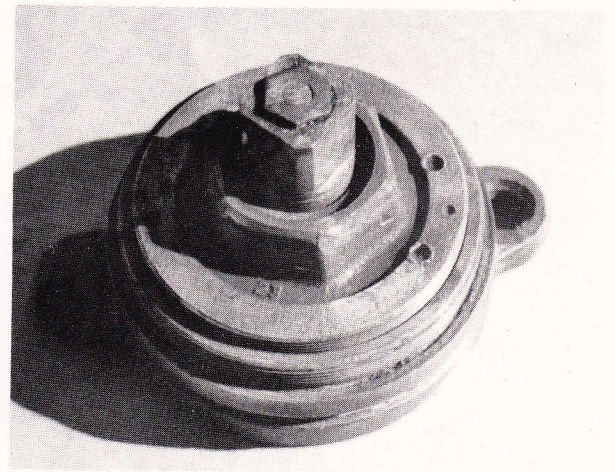
Once the lock ring has been backed off the top cover can be unscrewed.



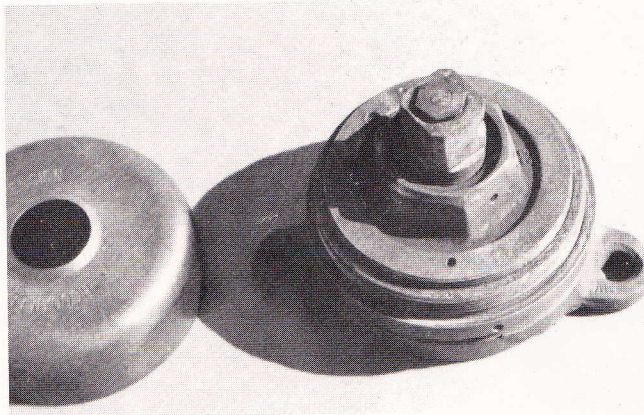
Once the center locking ring has been backed off the reservoir cap can then be unscrewed. At this time it should be noted that all parts are right hand threaded.

Once removed, the restrictor tube plugs must be driven downward toward the base. This will allow any excess fluid to escape thus relieving pressure as you remove the next plate.

Depending on which type shock absorber you have, there may be two or three restrictor plugs. This particular shock has two and using a punch they must be driven downward into the shock absorber. This will relieve any pressure of fluid inside the shock. Once the restrictor tubes have been opened, it is advisable to re-soak the shock absorber in cleaning fluid. This will allow fluid to flow throughally inside this area of the shock. Be sure to keep the restrictor tubes once the shock has been disassembled - they can be reinstalled.

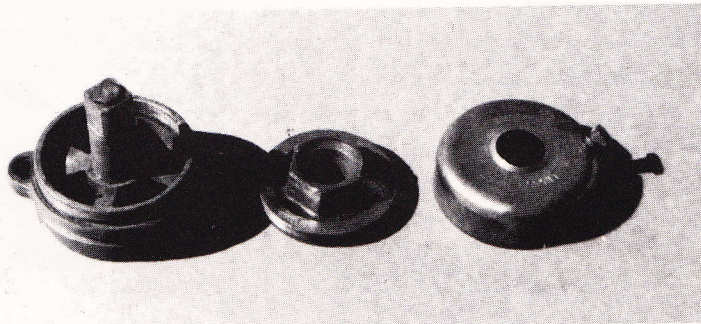


At this point you should pay particular attention to mark each item. It is imperative that each component be reassembled together as originally removed.

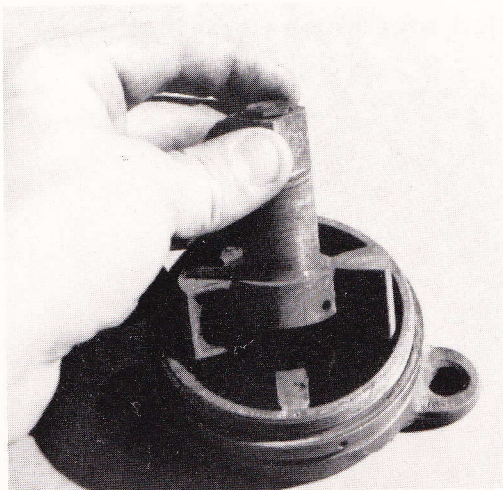


Once the restrictor tubes have been removed, the cast plate with the large hex on top can be unscrewed.

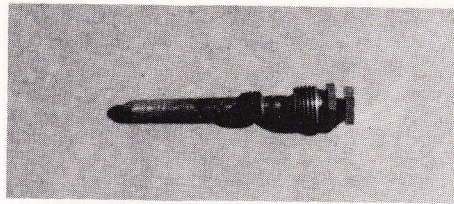
After removing the plate, the shaft assembly can be removed. Once removed, the valve needle can be unscrewed from the center of the shaft. The valve needle is a setting control for firm or soft ride given by the shock. Setting depends on type of roads on which the "A" will be driven.



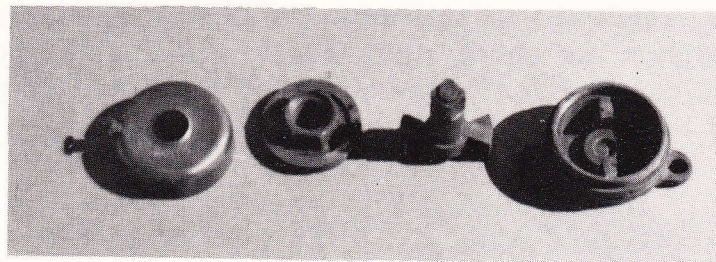
Once the plate has been unscrewed, the shaft can be removed.



Removing the shaft from the shock absorber. You will note in the shaft that there are small holes through which glycerine fluid inside shock is pushed back and forth thus delivering resistance giving stability to up and down motion of the car.



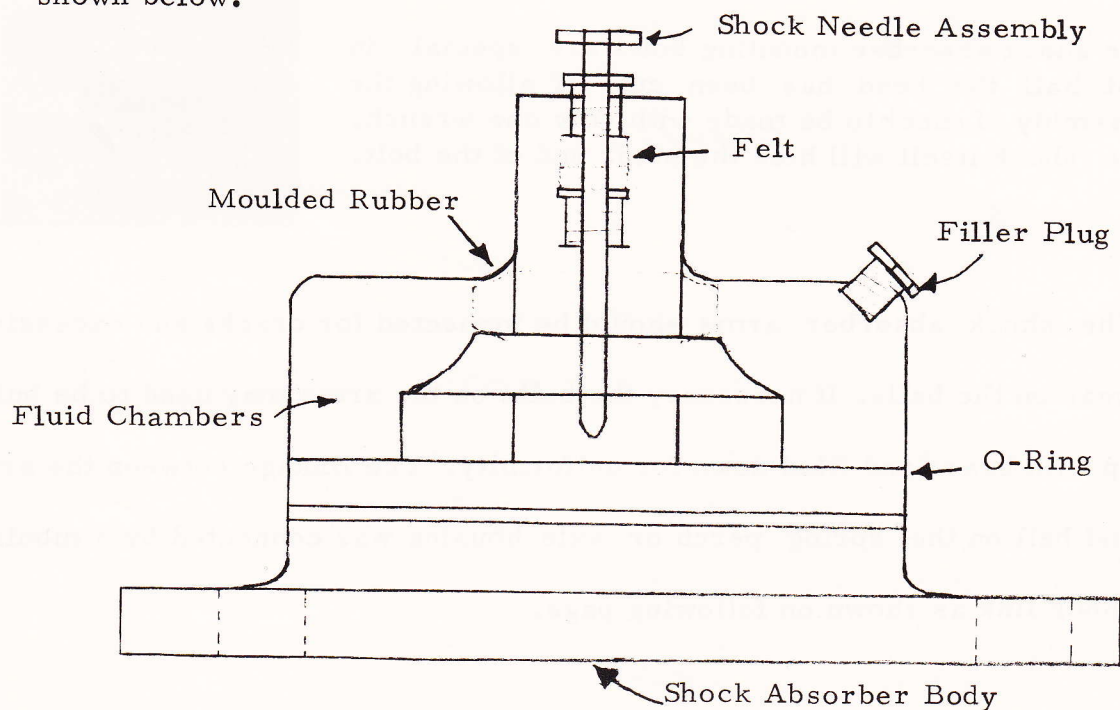
The adjusting needle valve assembly can now be removed from the shaft. It should be examined for pits and scars and replaced if necessary. This needle valve gives the adjustment to the shock absorber by adjusting the flow of glycerine through small holes in shaft as described in previous photo.

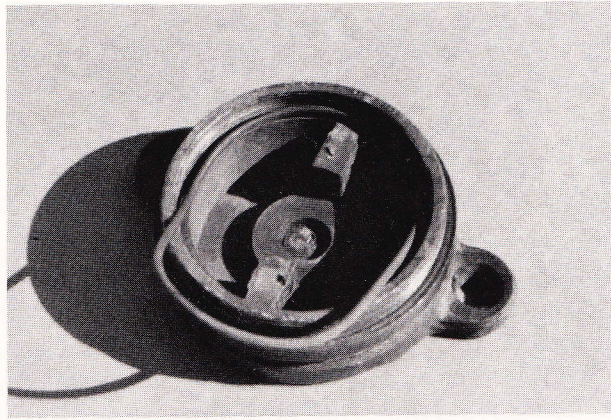


The order of assembly of the shock absorber.

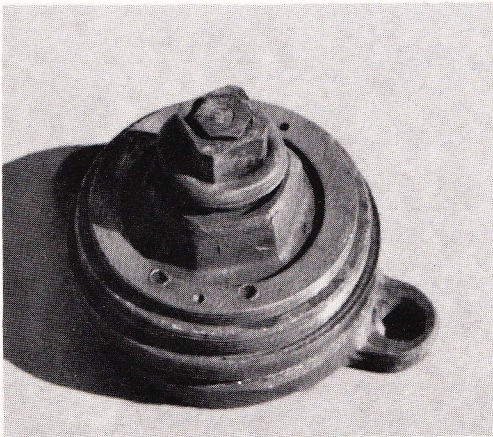
After thoroughly cleaning each component, the reassembly is just the reverse of disassembly with the exception that new seals need to be installed.

There are three separate seals, two o-rings in one felt. Their location is shown below.



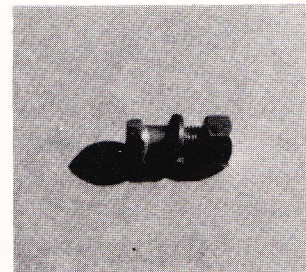


Once the shock absorber has been thoroughly cleaned it is ready to reassembly. It is not advisable to sandblast the shock since small particles of dirt or sand can interfere in the action of the shock and pits will be left on the machined surface.

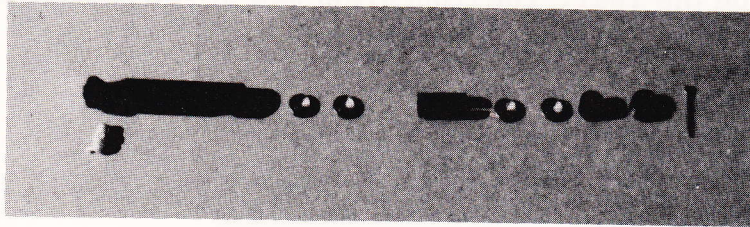


The first procedure of reassembly is installation of the large outer seal. In further reassembly of the shock there are two more seals which must be installed: Felt ring which fits around the shock absorber adjusting needle as shown in chart above, followed by the last seal which fits around the shaft before reinstallation of top cover.

The shock absorber mounting bolts are special in that half the head has been cut off allowing the assembly of shock to be made with only one wrench. The shock itself will hold the other end of the bolt.

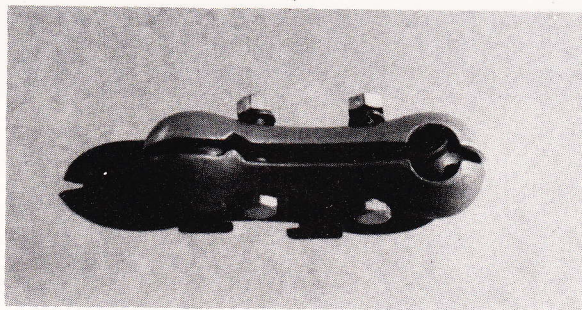


The shock absorber arms should be inspected for cracks and excessive wear on the balls. If necessary the balls on the arms may need to be built up with brass and filed down for uniformity. The linkage between the arm and ball on the spring perch or axle housing was connected by a tubular shock link as shown on following page.



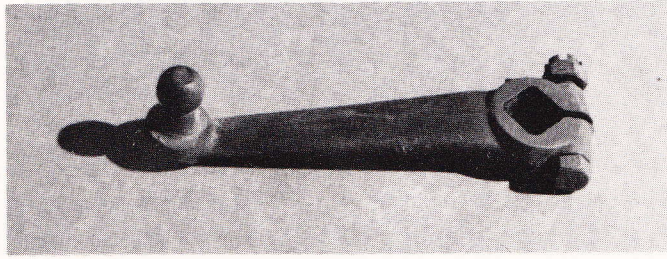
Originally all Model A's were equipped with tubular shock links. In order of assembly from left to right: cotter pin, threaded end plug, spring, and two brass bushings. These two brass bushings fit around the shock absorber arm ball. Next a spacer, then two more brass bushings fitting around ball on either spring perch or rear axle. All these components fit inside the tubular shock link which has one grease fitting and should be lubricated every 1,000 miles.

Some restorers prefer the later 1932 Ford dogbone type shock links which are made from cast iron and have rubber bushings to enclose the balls on the arm in the axle. It should be noted that there are rights and lefts in shock absorbers. This can be determined by examining the shock absorber arm. You will note that the bolt for attachment is located at the rear of the arm. For the shock absorber to be correct either right or left, the notch in the shaft should be located accordingly for the fit of the arm.

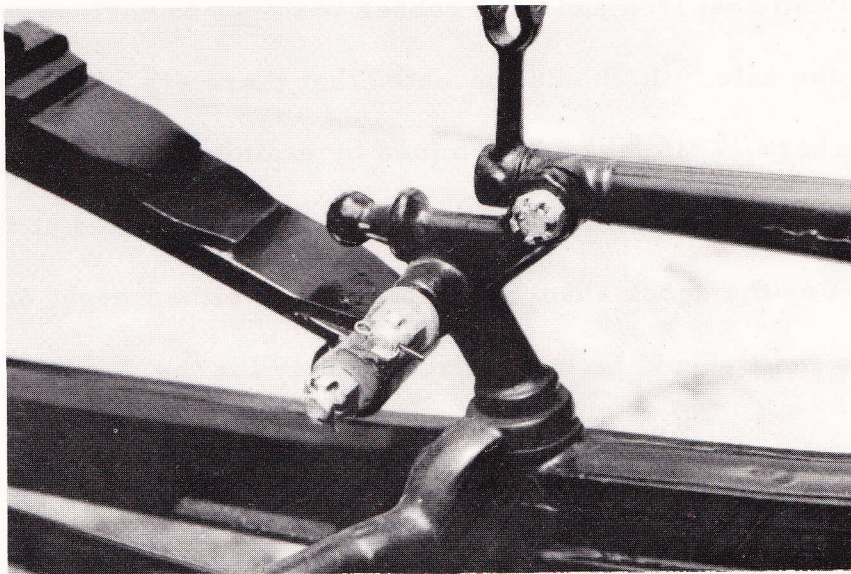


Many restorers prefer the dogbone type shock link. They were used in 1932-34. It is less complicated than the tubular shock link and is more readily available. As you can see in the photo inside each end of this shock link there is a rubber bushing. Each rubber bushing fits around the ball on either the shock absorber arm and the ball on spring perch or the rear axle.

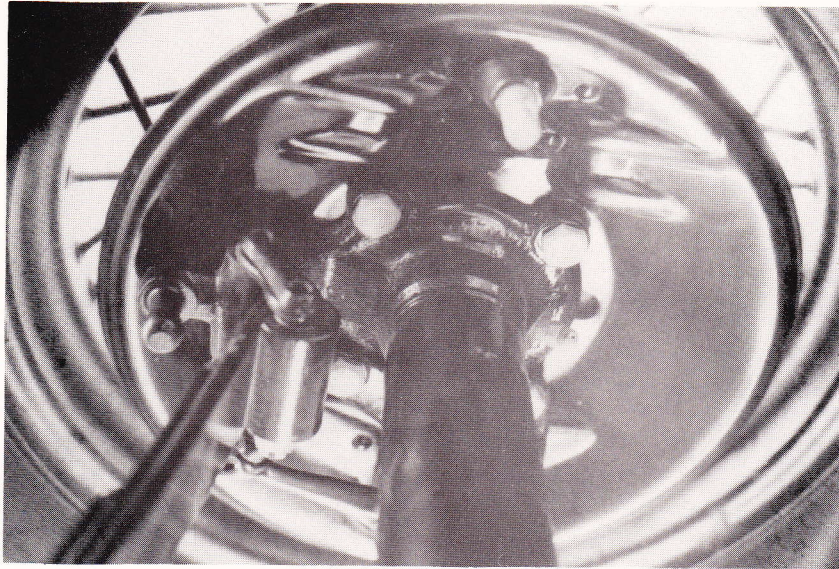
The shock absorber arms are the same for either side on the front and for either side on the rear. The front arms are slightly shorter than those in the rear.



Check the shock absorber arm to be sure that it is not bent and that the ball is uniform. There is a difference between the front and rear shock absorber arm. Front arm is approximately 5" long, rear arm is approximately 6-1/2" long. There is no difference between right and left, front and rear.



Front spring perch has a ball similar to shock absorber arm. This is where the front shock absorbers are connected.



Each rear axle housing has a ball similar to shock absorber arm located at the upper part of the rear backing plate. This is where the rear shock absorbers are connected.

Once shock absorber restoration has been completed the shock absorbers should be painted black and the reservoir topped off with glycerine. Reservoir should be checked frequently and filled when necessary.

