



Rear Monoball - Installation Instructions

Part # 2020901

Cars applicable:

1965 – 1989 911/912/930

Parts list:

Qty	Description
2	Monoball cartridge
2	Beveled retaining ring

Tools Recommended

Elephant Racing part # 2020903 - Trailing Arm Bushing Removal Tool
Elephant Racing part # 2020904 - Trailing Arm Bushing Installation Tool

Alternate Tools

Propane Torch
Cold chisel or drift
Hammer
Shop press



Rear Monoball Kit

Introduction –

Monoball cartridges replace the rubber bushings and metal cups of the trailing arm inner mount.

Use of our bushing removal tool #2020903 and installation tool #2020904 is highly recommended.

The monoball cartridges are pre-assembled. Installation entails pressing the cartridge into the trailing arm, then securing each with a single retaining ring.

Weatherseals are internal to the cartridge housing. Do not pull the spacers out from the housing as this will pull them from the seals.



The monoball cartridges have maintenance free PTFE linings and require no supplemental lubrication.

Do not install monoball cartridge backwards – be sure to follow the instructions and properly orient the monoball cartridge.

Do not install retaining ring backward – be sure to follow the instructions and properly orient the retaining ring with the red mark visible.

Failure to properly install cartridge or retaining ring will result in an unsafe condition.

Read this first:

 A long, silver metal tool with a U-shaped handle on the right side. The handle has "ELEPHANT RACING" engraved on it. The tool has a threaded end on the left side.	 A cylindrical metal tool with a threaded end on the left side and a wider, flanged section on the right side.
<p>Trailing Arm bushing removal tool #2020903</p>	<p>Trailing Arm installation tool #2020904</p>

Use of our bushing removal tool #2020903 and installation tool #2020904 is highly recommended. With these tools one can do the job without removing the trailing arms from the car. Even if the arms are off the car, the tools greatly ease the job.

The tools can be ordered from our website, here:

http://www.elephantracing.com/suspension/rubberbushings/bushings_removal_tool.htm

a video demonstrating the tools can be seen here:

<https://youtu.be/4bilewM7Zsw>

Step-by-Step Installation -

If you are using the recommended bushing removal and installation tools use the instructions provided with them, then jump to step 5.

1 – Remove trailing arms from the car.

On some early cars the bolt holding the inner mount is oriented such that the bolt head is facing the transaxle and cannot be withdrawn. In such case, slide the bolt towards the transaxle and cut the head off with an appropriate tool. Purchase new bolts.

2 – Remove the rubber bushings.

Secure the trailing arm in a bench vise.

Heat the center metal spacers with a propane torch until a small wisps of smoke is visible. The center spacers can then be pried off with a screwdriver. Pull out the rubber bushings.



3 – Remove bushing metal cups.

Secure the trailing arm in a bench vise. The cup halves meet in the center of the bore. Using caution not to damage the soft aluminum of the trailing arm, position a chisel in the union between cup halves and drive them out from the bore. Heating the aluminum around the cups with a propane torch will expand it and make it easier to drive them out.



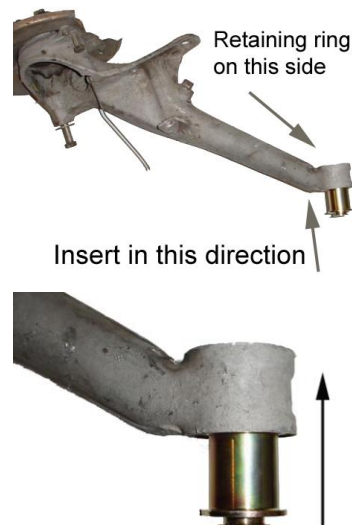
4 – Install monoball cartridges into trailing arms.

Inspect the trailing arm inner mount. Remove any dirt and file smooth any nicks or cuts on the face of the mount. This surface needs to smooth and flat to ensure the retaining ring seats properly.

Orient cartridge so the retaining ring side is facing the hub assembly such that, when installed in the car the retaining ring is towards the outside of the car. This orientation is very important, be sure to get it right!

Press the cartridge into the trailing arm in the direction shown. The trailing arm end should be heated with boiling water (210°F). The heat will expand the arm and make it easier to press the cartridge into place. Torch-heating is not recommended, it may overheat and cause damage to the bearing once pressed in.

Use an appropriately sized socket or suitable cylindrical device to distribute the press load on the body of the cartridge, not the spacer or center bearing.



5 – Install the retaining ring.

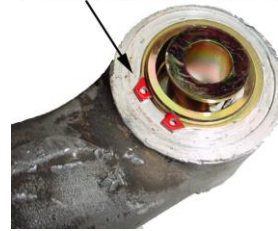
Note the retaining rings have a slight bevel on one side only. This side is marked with red dots. The red side with bevel MUST face out such that the red dots are visible after installation.

The bevel tightens the retaining ring against the trailing arm face. If it is installed upside down, the ring will not tighten properly. Be sure to install the retaining ring properly.

Use proper snap ring pliers and avoid over expansion of the retaining ring during installation.

After installation there should be no noticeable play between retaining ring and trailing arm face. In the event that any play is present a shim should be fashioned from shim stock and used to eliminate the play.

Red marks up, bevel side up



6 – Install trailing arms into car.