

Shocks

Spares - Shock Absorber Information

This month we feature World Wide Auto Parts of Madison Wisconsin. World Wide has an excellent reputation as a shock rebuilders.

(New shocks from Moss are actually MGB shocks with Healey arms and require fender modification, I asked Peter Caldwell to tell us why his product is special and here is his reply.

First. What fails in a lever shock? Almost all of the (non-traumatic) failures result from lack of oil in the shock. The manuals always recommend checking or topping-up your shocks in various intervals 3000 miles or so. Why? Because they leak!.. what a surprise! They don't leak just because they are British, they leak by design (now there's a bumper sticker). Speaking here of the rear shox... the shaft that protrudes from the body of the shock is rotating in the body without a bearing. To ensure sufficient lubrication there is often a channel or groove in the shaft bore. At the outside there is a rubber packing retained by a thin metal washer. A packing needs some lubrication to work at all and the weeping of oil acts as a deterrent to dirt getting in. Dirt getting in will score the shaft at the seal area hastening the demise of the packing and wearing the bearing surface in the body.

The solution that all of us rebuilders use is to machine the body and install a bearing. We use Delrin, others use bronze. Bronze requires oil, Delrin doesn't. We also machine the body for a rotary oil seal (others don't) (in fact we use a double lip seal with dust excluder). One guy does use a rotary single lip seal and the others use several rubber washers held in place with a steel washer or two. To solve the pitted and scored shaft problem, others sand or grind the shaft down.(you don't need to be precise with rubber washers) We have manufactured for us, to our specs, stainless steel sleeves that allows us to have a 3 micron finish and consistent diameter and concentricity of the shaft. After many years, we have found this to be very reliable. Our shocks don't leak.

The process... step by step. Receive grimy old shock, tumble clean in a deburring/tumble cleaner. Glass bead blast entire shock. Disassemble. Tumble and hot wash internals. Bead blast the rest of the arm. Machine for the bearing and for the seal. Wash again. Press in bearing and seal. Press on sleeve. Inspect and repair/replace as necessary the pistons and the valving. Reassemble components using all new hardware of proper thread and style. Fill with oil and bleed. Compare valving with NOS shock, adjust if necessary. Wash AGAIN. Paint 2 coats primer and 3 coats high heat black enamel. Date code and ship.

There you have it. I can provide details of the valving and design changes over the years, etc. But my carpal tunnel is acting up.

As I said, I'd be very happy to talk with you. Do call.

Thanks for asking. Peter Caldwell President

World Wide Auto Parts
2517 Seiferth Rd., Madison, WI 53716
(800) 362-1025 Fax (608) 223-9403
<http://www.mailbag.com/users/nosimport>Worldwide charges the following:
Fronts for Large Healeys \$67.95 each plus \$60.00 refundable core deposit.
Rears..... \$47.95 plus \$30.00 core
* prices subject to change

(Compare to Apple 69.95/ 49.95)

Cores are fully refunded on receipt of a rebuildable old unit of same application. Deductions will be assessed for damaged or frozen units. (esp. watch for oblong mounting holes on these... -50% value)
Heavy duty valving is also available for \$10.00 additional per shock. We can and often do shocks on an individual R&R basis. Some ask for different paint schemes... we can usually accommodate that as well.

Peter

Shock Test

I received this from another shock rebuilder. The traditional test for checking shocks is to push down on the fender and release. If the car bounces too much, shocks should be replaced. That test doesn't work on a Lever Shocks and Russ describes what to do.

As your car ages and miles accumulate both shocks and rings will wear and lose their effectiveness. If your car suspension sags slightly, rides a bit low or lopsided then your springs are in need of replacement.

If the springs are in good condition then the best way to tell if your shocks need replacement is to disconnect the shock links and manually stroke the shock by hand.

The shock should give firm even resistance in both directions and not bind anywhere in its travel. As a shock wears it does lose its strength so it is also possible to have a weak shock and not really know it when driving the car. As someone who rebuilds lever arm shocks I would not recommend the stiffening upgrade as they are really too stiff for normal daily driving. If you really want to transform the car put in a little stiffer springs and new shocks and you will probably be surprised.

Good Luck, Russ Bamsey

Shock Upgrading

The easiest way to upgrade your shocks is to change to thicker oil. By substituting 30 wt. (AW100 hydraulic oil you will gain about 25% more resistance. This will only work if the car is not being used in freezing temperatures. Anything thicker than 30 wt oil will

be too thick and prevent the shock from working properly. The other method of increasing resistance is to adjust the valves. By adjusting the valves you can hope for maybe a 5% to 10% increase in resistance. To adjust the valves you must pack thin spacers (washers) under the large valve spring to increase resistance in one direction. Gently heat the solder on the nut above the small valve spring, then turn the nut clockwise about 1/2 turn; this will increase tension in the opposite direction. The maximum number of turns on the small nut is 1 1/2 revolutions. The more you compress the valve springs the stronger the resistance of the shock. You will know you have gone too far when the arm has so much resistance that it won't move, then just back off 1/2 turn or one washer.

When installing the valve in the body I hold the body upside down filling it with oil as I move the arms up and down. When the cavity is full and no more air is being pushed out of the cylinders then I install the valve. This gets rid of most air, speeds the bleeding of the valve and time till you have an accurate feel of the resistance.

Russ Bamsey