Bendix Hydroboost Repair

This image has been resized. Click this bar to view the full image.

Pic 1 the leaky power piston seal... (probably master cyl too.)

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Pic 2 PS fluid after spider removal and MC actuator rod

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Pic 3 Removing the accumulator (note 1/8 pin punch to remove snap ring)

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Pic 4 Take this measurement if removing input rod and replacing with adjustable unit.

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Pic 5 Removal of staked in pedal rod.

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Pic 6 power Hydro halves coming apart.

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Pic 7 Push rod /Power Piston assembly w/ spool valve.

The full kit has many parts. I bought it because I saw all the rust on our "spider" when we removed MC. This spider just supports the output rod to align with MC during installation. (surprisingly the kit did NOT come with the plastic center for that spider, but did have the new spider)

We did not measure, but we probably should have, the output rod protrusion. If you were going to swap hydro boosts among vehicles you could accidentally preload the MC or have slop between output rod and master cylinder that would have to be taken up every time you use the brakes.

The hardest part was removal of the brake pedal rod (ok, maybe brake light switch). We decided to replace the push rod seals, so this staked in rod must be removed. This took 5 hands. (one pair holding the pump, one pair operating the pry-bar, and one person finding and holding shims for the pry bar to have a straight pull.) We should have supported the push rod. We did not, we supported the housing, but on reflection, the proper thing would have been to make a "C" shaped or slotted washer to make all

the resistive force be applied to the push rod and not pulling the whole Power piston assembly against the housing. (I will try to photo shop some pictures with an explanation.)

We tried hard, but the force required to iron out the staking distorts the pedal rod hole. The GM instructions say we should throw this pedal rod out, and install an adjustable replacement rod. I am not doing well finding this replacement rod. So we might just make ours work.

The leaking power piston seal was quite obvious. This seemed to be a fairly new unit, but the power piston seal was quite brittle along the power piston. Maybe the brake fluid hardened the lips? (the OD of the seal was still pretty pliable, but the lips riding the piston were rough and brittle.)

The kit comes with extra parts there seems to be 2 different sizes of Hydro-boosts the kit covers.

I did not replace the check valve nor the dump valve. Again I think this unit was a recently replaced unit, but the leaking master cylinder and about 2 years of non use killed the power piston seal.

I think the less expensive kit will cover most peoples problems.

The two hardest parts are: brake light switch removal on the newer vehicles (my 94 is infinitely easier to remove than the 97) and brake pedal rod removal....

GL HTH

Hag

The following picture shows you the surface I pulled against, but also shows you the surface that should be pulled against. Since I used the housing, all the pulling force I applied went against the fulcrum between the spool valve and the power piston. If you make the proper slotted piece, the force to pull the ball from the stakes will be resolved ONLY in the area by the stakes.

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Here is a picture detailing where to put the shims to keep the pry bar perpendicular. The force required to pull it is pretty high. I know that the pry bar I was using had a pretty good amount of bend in it. (It is a cheap pry bar though) I also cannot say how helpful it was to have a couple extra hands. You can do it yourself, but you will have to make something to hold the hydroboost in place. The shims will fall every time you take pressure off the pry bar.

The only thing I don't have pictures of (and wish I did) was removing the eccentric that we put in the brake push rod end. It wasn't that hard to remove. Do NOT try to hammer it back round from the outside. It must be done with a tapered cone from the inside. I had a large bull pin that Iron workers use to align bolt holes in beams. (a spud wrench would work fine too) (do a goo image search on spud wrench. They have a long shallow taper. (ignore the pipe wrench looking ones.)

The rod had to be tapped to get it back into the hydro boost. We also used a real small nail set to re-stake the rod back in. The metal is soft so it was pretty easy.