StangersSite.com BRAKE PROPORTIONING VALVE

1965-1966 Disc Brake Proportioning Valve

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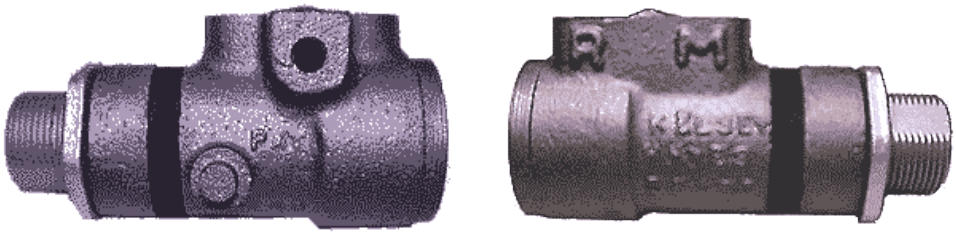
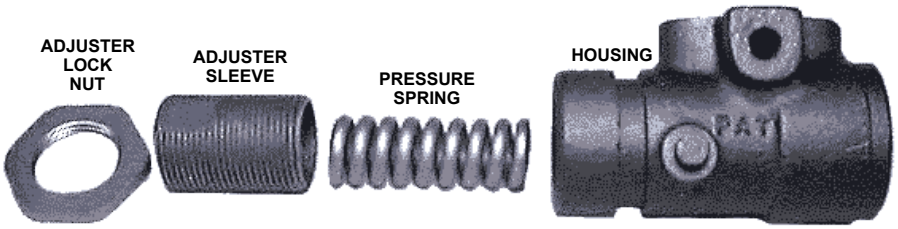


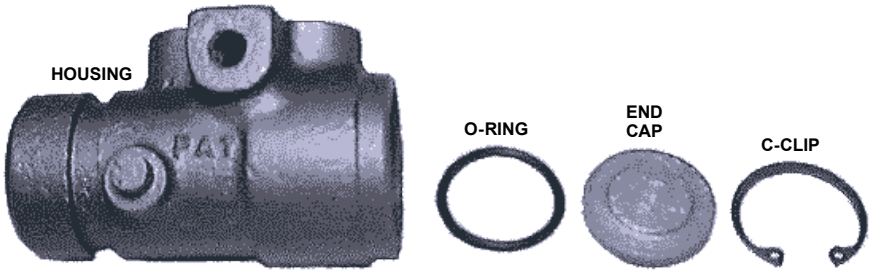
This section deals with the *Proportioning Valve* used primarily on the 1965 & 1966 Ford Mustangs with *Front Disc Brakes*. It mounted on the drivers side rear fender apron, between the shock tower and the firewall, under the hood hinge. This is not to be confused with the *Distribution Block*, a brass piece that distributes the fluid coming from the master cylinder.

A Proportioning Valve is only found on cars with *disc brakes*. It is spliced in the brake line running from the master cylinder to the rear wheels. Its purpose is to dampen and reduce brake pressure going to the rear brakes.
Because front disc brakes are not self-energizing like drum brakes, they require more pressure to work properly. Also, front brakes do most of the stopping and thus require more pressure. Without a Proportioning Valve in the system, both the front and rear brakes receive the same pressure. This will cause the rear brakes to lock up long before the front brakes are engaged enough to stop the car. The Proportioning Valve allows full pressure to the front brakes and dampens the pressure to the rear brakes, allowing the correct pressure so both can stop equally. The valve is adjustable to allow for differences in front-to-rear brake pressure due to variations of weight distribution, tire size and compounds, brake pad/shoe material and brake fade.

DISCLAIMER: This section deals with the Proportioning Valve made by Kelsey-Hayes as shown above. I have heard that K-H did not consider the valve to be a rebuildable unit since it was constructed with high tolerances by professionals. Indeed, Ford never sold rebuild kits or individual parts for this valve or ever offered a breakdown of it in any shop manual. Recently two different seal kits have become available to rebuild this valve but caution should be observed. Due to differences in valves, production and accumulated wear and corrosion often present in these valves, a sucessful rebuild is not quaranteed. This section shows the teardown and reassembly of a K-H valve but in no way represents this as a quaranteed or foolproof rebuild. The sucess of the rebuild lies with the quality of the part being rebuilt, the parts used and the skill of the mechanic. The author of this article in no way implies or accepts any responcibility as to the use of this article.
Please note: This webpage is the result of several rebuilds that I did for my own cars. In researching for the rebuild, I found that there was virtually no pictures or information available on these valves. I built this webpage so that others would have as much information as possible if they decided to undertake their own rebuild. I do not do any rebuilding of these valves for others, nor do I sell any of the parts and kits to rebuild them.



STEP 1: Measure the height of the *adjuster sleeve* from where it comes out of the *housing*. You will want to return the sleeve to this height on reassembly to get a basic adjustment.
STEP 2: Remove *adjuster lock nut*. Unscrew *adjuster sleeve* from housing and remove *pressure spring*.

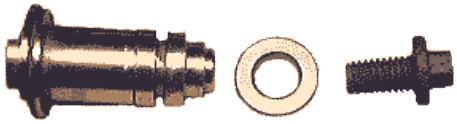


STEP 3: Remove *C-Clip, End Cap* and *O-Ring*.

STEP 4: Working from other end, push out and remove the inner piston assemblies.

NOTE: There are two different versions of the K-H Proportioning Valve. *Style "A"* is the "later" version and the most common. It uses a one-piece inner piston assembly. *Style "B"* is the "earlier" version and has a removable washer retained by a special bolt. Each style uses a different pressure spring, the inside diameter being different depending on whether it fits over the larger end of Style "A" or the head of the special bolt on the Style "B" (smaller). The housings are also different due to the different inside diameters and therefore require different seal kits.

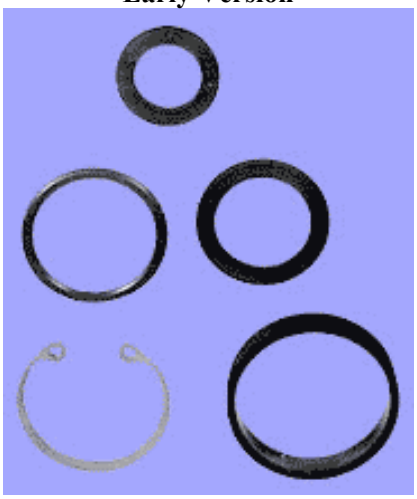
STYLE "A"
Later Version



STYLE "B"
Early Version

You must determine which style of valve you have in order to get the correct seal kit. You must then compare the seals in the kit and the old seals to make sure they are of the correct diameters for your valve.

STYLE "B" KIT
Early Version



Sold by
National Parts Depot

Part # 2B091-BK

$27.95 (8/1/08)

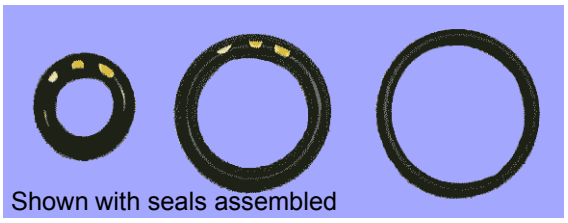
Also sold by
Scott Drake Dealers

STYLE "A" KIT
Later Version

Sold by
National Parts Depot

Part # 2B091-1K

$14.95 (8/1/08)



This seal kit uses O'rings inside of standard seals. The original seals this kit replaces may not have had this style of seal from the factory

You must check the condition of the bores inside the *valve housing* because they are often pitted from rust and corrosion. Surface rust can be polished out with a ScotchBrite pad. In some instances, a light touch with a brake wheel cylinder hone will help clean them up. If the bored are pitted, the seals will leak or blow-out. It is possible to have them "sleeved" to return them to new condition. This operation involves boring out the inside of the housing and pressing in a metal liner which is them machined to the original factory specifications.

One person that is familiar with the Kelsey-Hayes valve is Mark Frappier. He specializes in re-sleeving wheel cylinders and master cylinders, and so is experianced in the operation. He will sleeve the *valve housing* with stainless steel sleeves for about $80.00 plus $10 return shipping (as of Dec 2008). This returns them to original specifications and the stainless inserts make the unit more impervious to corrosion than the original unit. He can be contacted at:

Mark Frappier
82 Mountainview Drive
Agawam, MA 01001
800-528-5235

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