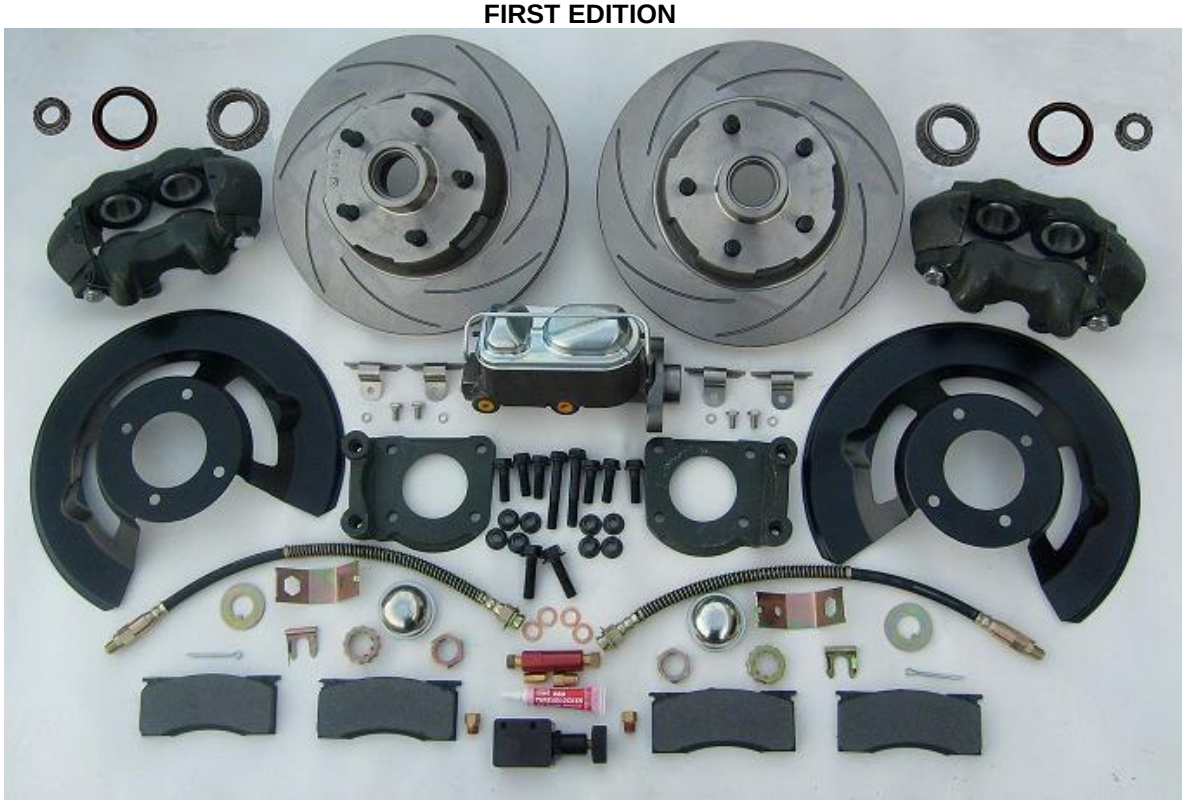
CLASSIC SERVICES RESTORATION PARTS

Installation Guide for the SWAP.1 FORD/KH 4 Piston Caliper Type Front Disc Brake Conversion for Mustang, Falcon, and Equivalent Applications

FIRST EDITION



The SWAP.1 Ford/KH type kit contents

I. INTRODUCTION

The Kelsey-Hayes produced front disc brake system was available as original equipment for 8 cylinder equipped 65-67 Mustangs. Ford chose this system because of its simple application onto the standard 8 cylinder drum type steering knuckle (spindle). The system is comprised of a stamped sheet metal dust shield, a cast caliper bracket, an 11.3" cast iron rotor, and a 4 piston rigid mounted iron caliper. Early production calipers suffered from problems with corrosion of the carbon steel pistons. Revised production materials have corrected this problem.

The system will mount to any of the many Falcon chassis based cars equipped with the Falcon/Mustang type 8 cylinder steering knuckle. The system can be applied to 6 cylinder cars, as well, provided they are fitted with direct bolt on 8 cylinder type drum steering knuckles. Knuckles made prior to 1967 have slightly different steering arm geometry and tie rod mount hole dimensions. Drum steering knuckles from 67-69 are identical. Those from 70-73 are identical and have a larger diameter spindle pin and larger tie rod mount hole than the earlier production. At this time, SWAP.1 kits are available for cars using 65-69 model steering knuckles.

What does the conversion involve?

The swap involves replacing everything connected to the steering knuckle, as well as the soft brake hoses, the master cylinder, and installing proportioning and residual pressure valves. Many installers will also replace suspension components at this time. This discussion is limited to the swap itself. The swap will require a set of serviceable basic tools and a torque wrench. A floor jack will make the job easier.

II. DISASSEMBLY

A. Removing the drum assembly

1. Loosen the lug nuts slightly. Jack the front of the car off the ground and place jack stands on a chassis hard point just to the rear of the front wheels. Perform steps 2-10 on one wheel at a time.
2. Remove the wheel.
3. Have a jar or basin ready. Cut the brake hose near the wheel cylinder. Direct the flow of leaking brake fluid to the container.
4. Turn the steering wheel as to align the drums in the normal forward driving position.

5. Knock the dust cap off of the drum. Remove the cotter pin that retains the spindle nut.
6. Remove the spindle nut retainer and then unscrew the spindle nut.
7. Locate the four 3/8” fine thread nuts on the back side of the spindle. Remove these with a 9/16” socket or spanner wrench.
8. The entire drum assembly, including the backing plate, can now be removed from the steering knuckle (spindle).

B. Disassembly of the hydraulics

1. Separate the old hose from the hard line. It’s best to use a flare wrench when tightening or loosening brake fittings. It helps to apply penetrating oil and or heat prior to the attempt to remove flare fittings.
2. Evaluate if the tubes are serviceable. Replace or repair any corroded or crimped tubes, or any bad fittings.
3. Remove the one or two hard lines from the master cylinder (depending on the year model of your application). Label these lines front and rear port. A flare wrench makes the job much neater. You may find that the fittings will not come off or that the nut becomes stripped. In this case clamp a vise-grip onto the fitting snugly and strike it with a hammer in order to break the threads loose. It is possible that you will destroy the fitting or tube. The most important tube is the rear brake lead, the next important are the front leads.
4. Remove the two bolts that connect the master cylinder to the firewall.
5. Try to pull the master cylinder straight out from the firewall. Sometimes the master cylinder push rod is mechanically retained in the master cylinder. If so, you will be required to wedge yourself under the dash and disconnect the push rod from the brake pedal. Remove the master cylinder. Be careful not to spill brake fluid on the paint. Immediately remove any spills from the paintwork.

III. ASSEMBLY

A. Mounting the caliper bracket/Dust shield assembly

1. The assembly order is bolts/dust shield/caliper bracket/steering knuckle flange/nuts.
2. The cutout in the shield, and the caliper brackets are oriented forward (9:00 o’clock on the driver side, 3:00 o’clock on the passenger side). The fasteners are 3/8” fine thread grade 8 bolts and Stover nuts (flanged prevailing torque nut that do not require a thread locking device or fluid).

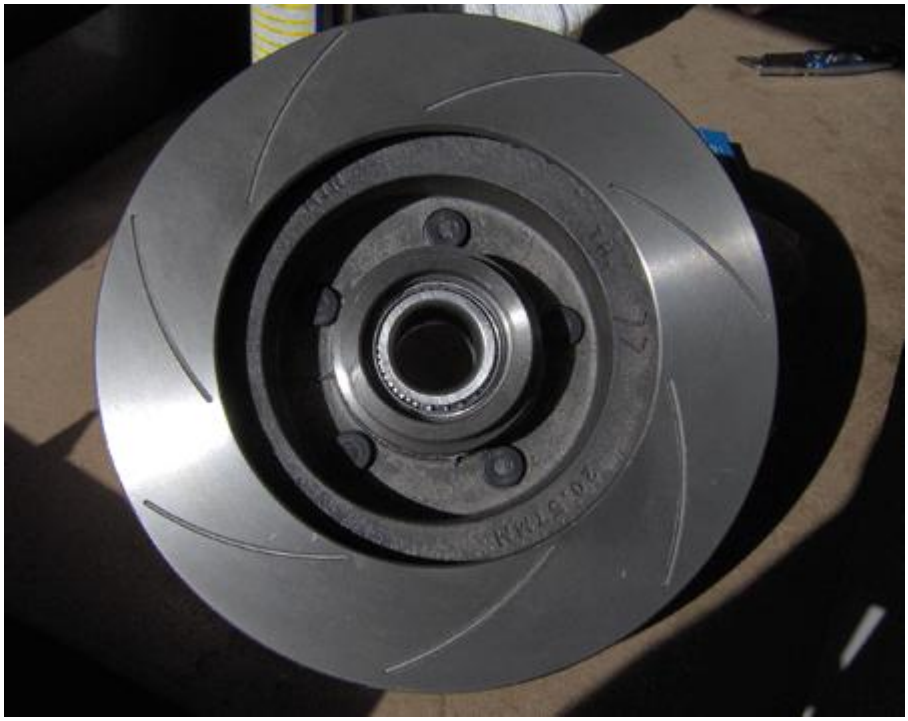
3. Three of the bolts are the same size and one is about an inch longer. Their relative placement through the knuckle is quite obvious.
4. Thread the nuts and torque to 42-50 ft-lb. Prevailing torque nuts have an oval distortion at the top of their threads that provide locking force when a stud or bolt is threaded through them. The threads reform to nearly circular. The manufacturers claim that they should not be reused.

B. Mounting the rotor

1. Remove the rotors from their packaging. Remember that the rotor slots on the outboard sides should radiate from the hub to the edge in a clockwise fashion for the passenger side, and anti-clockwise for the driver side.
2. Pack the wheel bearings with Disc Brake Service type wheel bearing grease. This author makes a mess of himself and my surroundings every time I pack bearings. The least messy method I know of is to put a bearing in a baggie along with a small quantity of grease and knead the grease into the bearing for a few minutes. Repeat with all four bearings. Make sure to add some more grease after each bearing.
3. Stage the bearings on a clean piece of paper until they are used.
4. Inspect the interior of the hub for excessive casting flash (unwanted metal), and casting sand. Use a wire brush and compressed gas to

remove any sand present (not common). Remove any flash that would interfere with the pin (very uncommon).

5. Prepare the rotor. Apply a thick layer of the disc brake wheel bearing grease to the inside of the rotor hub and the bearing races. Careful, there may be sharp casting flash inside the hub.
6. Insert the inside (larger bearing) into the inside of the rotor hub such that it seats onto its race. See the photo below.
7. Place a wheel grease seal onto its recess on the inside of the hub. Carefully tap the edge of the seal until it becomes secured into place. Tap around the seal to insure it is completely seated. See the photo below.
8. Grease the rotor's outer race.
9. Apply a scant amount of grease to the wheel seal's sealing surface on the spindle.
10. Carefully insert the rotor onto the spindle. Don't scrape the seal over the threads on the end of the spindle. You should be able to feel the seal slip over the sealing surface on the spindle.
11. Insert the outer (smaller) wheel bearing onto the spindle until it seats upon the hub race. The smaller ends of the two tapered bearings should be facing each other.
12. Fit the bearing retainer (large washer) onto the spindle.
13. Fit the wheel nut onto the spindle. Hand tighten the nut.
14. Using a properly calibrated torque wrench, torque the wheel nut, while spinning the rotor, to 17-25 ft-lb. Spin the rotor several revolutions. The wheel bearings are now pre-loaded and subsequent retightening will torque accurately.



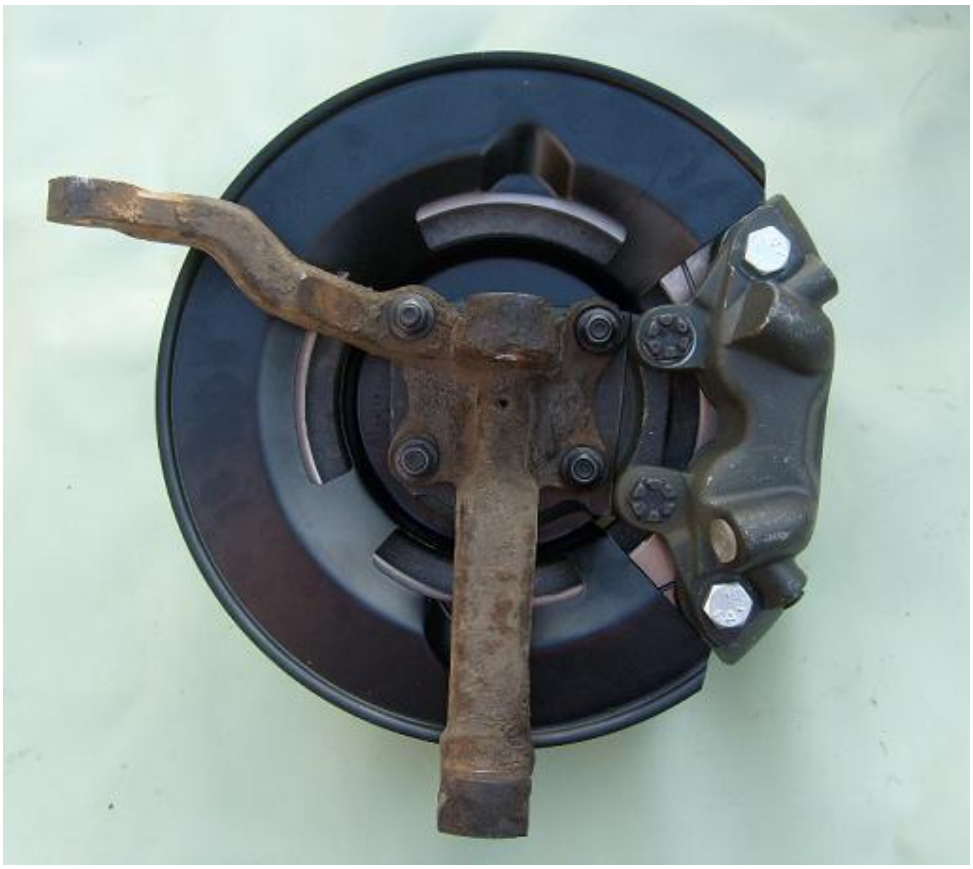
15. Back off the wheel nut a half turn.
16. Retighten the nut such that it torques to 10-15 ft-lb with the retainer fit over the nut such that the cotter pin can fit through both the hole in the spindle and through a castellation on the retainer.

17. Insert a cotter pin and bend the exposed end to make it secure.

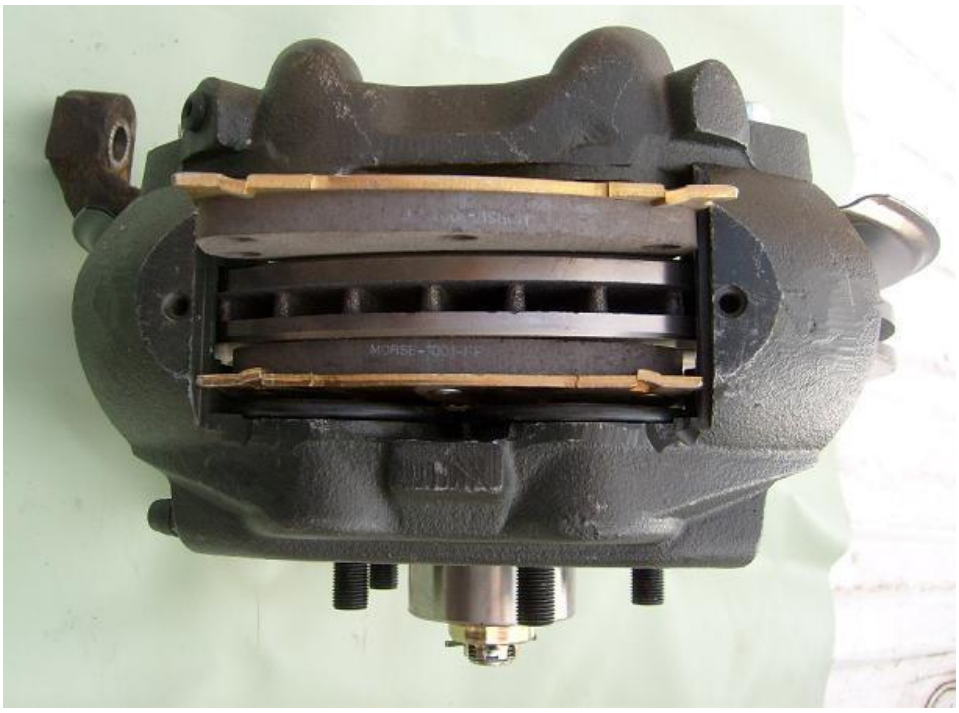
18. The rotor should rotate freely and should not scrape against the shield.
19. Coat the inside of the dust cap with grease. Don't fill the cap like Dad tells you to do.
20. Fitting the dust cap can be a very frustrating ordeal. It is made easier if you have some form of mandrel to aid in the pressing. The mandrel can be a short length of 1.5" pipe or similar devise that will fit over the hemispherical part of the cap, but not the flat flange part.
21. Ever so slightly crimp the skirt of the dust cap at three places at 120 degree intervals. Don't over do it or the crimped spot will interfere against the bearing retainer.
22. Using three or four of your hands, place the dust cap in place and put the mandrel on top of the dust cap. Strike the mandrel with a big hammer.
23. The cap will tend to go on crooked. Aim the hammer blows to even out the progress.
24. Once the cap goes in a bit, the progress will even out. Drive it home.
25. Wash your hands. Wipe everything with a clean cloth, and clean the rotor with brake cleaner.

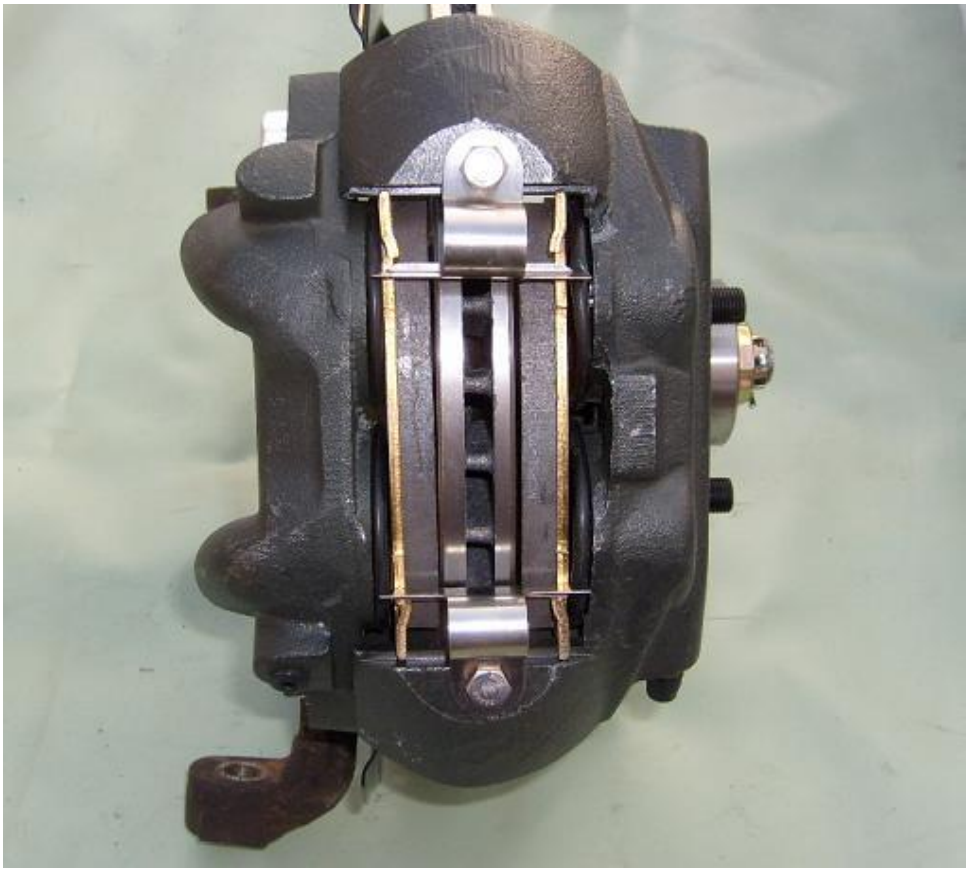
C. Mounting the calipers, pads, anti-rattle clips, and the crossover tubes, hoses

1. Fit the caliper over the rotor and onto the caliper bracket.
2. Secure the caliper with the 2 bolts provided. Use a small amount of #271 (red) thread locker on these bolt's threads and torque them to 65 ft-lbs.
3. The calipers are side specific. The bleeder must be oriented upward. If not, you have the wrong caliper installed.



4. Place a pad into place along each side of the rotor. The 4 pads are identical and interchangeable. See the photo below.
5. Fit an anti-rattle clip onto the 2 mounting holes as shown in the second picture below. Secure the stainless steel bolt with the lock washer and a small amount of #241 (blue) thread locker.
6. Manipulate the caliper piston rubber boots so that they are not pinched under the clips.
7. Fit the caliper with a crossover tube. Use anti-seize lube on the tube's male flare fitting. The crossover tubes are side specific and only 1 of the pair will fit.
8. Tighten the fitting only 30-45 degrees past when the fitting contacts its seat. It is impractical to torque these type fittings to their proper torque since few installers possess a spanner type torque wrench.





9. Fit the male end of the brake hose with one of the copper crush washers provided. The 2 hoses provided are identical and are interchangeable.
10. Apply a small amount of anti-seize lube to this thread.
11. Screw the fitting into the hose inlet on the caliper and tighten it about 30-45 degree past where the fitting bottoms against its seat.
12. Connect the female end of the hose to the end of the original hardline. Again, use a small amount of anti-seize lube on the fitting.
13. Tighten it about 30-45 degree past where the fitting bottoms against its seat.
14. Use a c-clip to secure the hose to the bracket, either the original, or the one provided.
15. Repeat assembly sections A, B, and C to the other side.

E. Mounting the master cylinder

1. Bench bleed the master cylinder.
2. Secure the master cylinder in a vise.
3. If a vise isn't available you can build a wood jig comprised of a 6" length of 1" X 4" nailed vertically into the end of a horizontal12" piece of 2" X 4".

You will have made an L piece with the 1” X 4” being the small leg. Bore a 1 ¼” hole into the center of the 1” X 4” about 2 ½” from its bottom. The master cylinder can now be mounted to the 1” X4” through the hole and secured with 1” long ¼” lag bolts.

4. Following the instructions supplied with the bench bleeding kit, bleed the master cylinder. Cover the reservoir and cap off the outlets. Some master cylinders come with a bench bleeding kit. If not, they are available for a few dollars.
5. Mount the master cylinder to the firewall or booster. Use the adjustable push rod supplied with the kit for a manual brake application, and the one with the booster for a power application.
6. Be aware of any spills of brake fluid on the painted surfaces of the car. It is a strong solvent and will damage the paint if allowed to stand.

F. Mounting an adjustable proportioning valve onto a 65-66 Mustang or 63-65 Falcon or equivalent

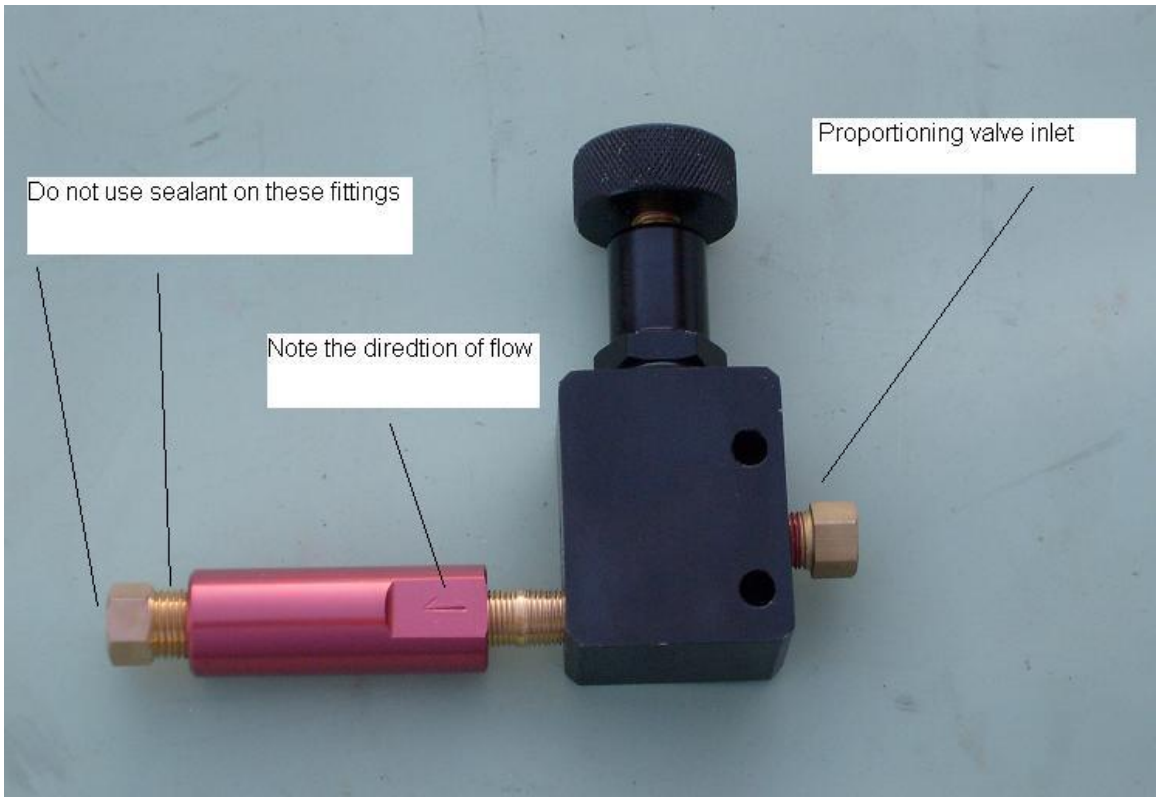
1. Connect the brake tube which formerly connected the distribution block to the original master cylinder to the rearward port of the new master cylinder. An adapter is included if required. If the line doesn’t reach the master cylinder outlet, replace or adapt it. Use pre-made brake lines that are available in lengths of 8”, 12”, 20”, and in 8” longer increments up to 72”. Make 1 ½”-2” diameter loops or U’s in the line to use up extra line. It is, in fact, good practice to put a loop into short tubes to provide flex relief. The distribution block is the brass block that interconnects the front and rear brake lines to the master cylinder.
2. Disconnect the brake tube going to the rear brakes at the distribution block.
3. Plug the resulting hole in the distribution block with the 3/8-24” flare plug provided for this purpose. Do not use sealant on this or any flare type fitting.
4. Connect a short length of brake tube from the forward outlet of the master cylinder to the inlet of the proportioning valve-residual pressure valve assembly.
5. Connect the outlet of the residual pressure valve to the brake line coming from the rear brakes. Space is limited, so plan ahead. Do not use sealant on the flare connections.
6. Adapt or re-fabricate the front brake lines (recommend re-fabrication) so that they terminate at a point on the frame rail below and centered on the upper control arm.
7. Working one wheel at a time. Remove the old L-bracket from the inner fender.
8. Slip the old or new L-bracket over the end of the hard line.

9. Securely connect the hard line to the brake hose such that the hose is not twisted.
10. Fit the L-bracket onto the brake hose such that the bracket is correctly oriented and secure it with a C-clip.
11. Establish the correct location for the L-bracket on the frame rail. Secure the L-bracket with the drill point hex head screw provided.
12. Manipulate the hard line to make it tidy.
13. Check all connections.
14. Repeat steps 7-13 on the other side.

G. Mounting an adjustable proportioning valve onto a 67-73 Mustang or 66-69 Falcon or equivalent

1. Connect the brake line which formerly connected to the rear outlet of the original master cylinder to the rear port of the new master cylinder. An adapter is supplied if required.
2. Connect the brake line which formerly connected to the front outlet of the original master cylinder to the front port of the new master cylinder. An adapter is supplied if required. If the lines don't reach the master cylinder port, fit a new one(s).
3. Disconnect the brake tube leading from the rear brakes at the distribution block. The distribution block is the brass block that interconnects the front and rear brake lines to the master cylinder line.
4. Connect a short length of brake tube from the rear brake outlet of the distribution block to the inlet of the proportioning valve-residual pressure valve assembly (see the picture below).
5. Connect the outlet of the residual pressure valve to the brake line coming from the rear brakes. Space is limited, so plan ahead. Make a loop(s) in the line if necessary to make the lines fit. Do not use sealant on the flare connections.
6. The front brake lines coming from the distribution block terminate centered under the upper control arms. They may be looped 180 degrees and point rearward. The lines are anchored with L-brackets. It would be optimal to re-fabricate these lines.
7. Working one wheel at a time, remove the L-bracket.
8. Carefully straighten the loop such that the end of the line points forward.
9. Slide the line straight back about 4" so that the end is below and centered under the upper control arm.
10. Slip the old or new L-bracket over the terminal end of the front hard brake line.
11. Securely connect the hard line to the brake hose such that the hose is not twisted.

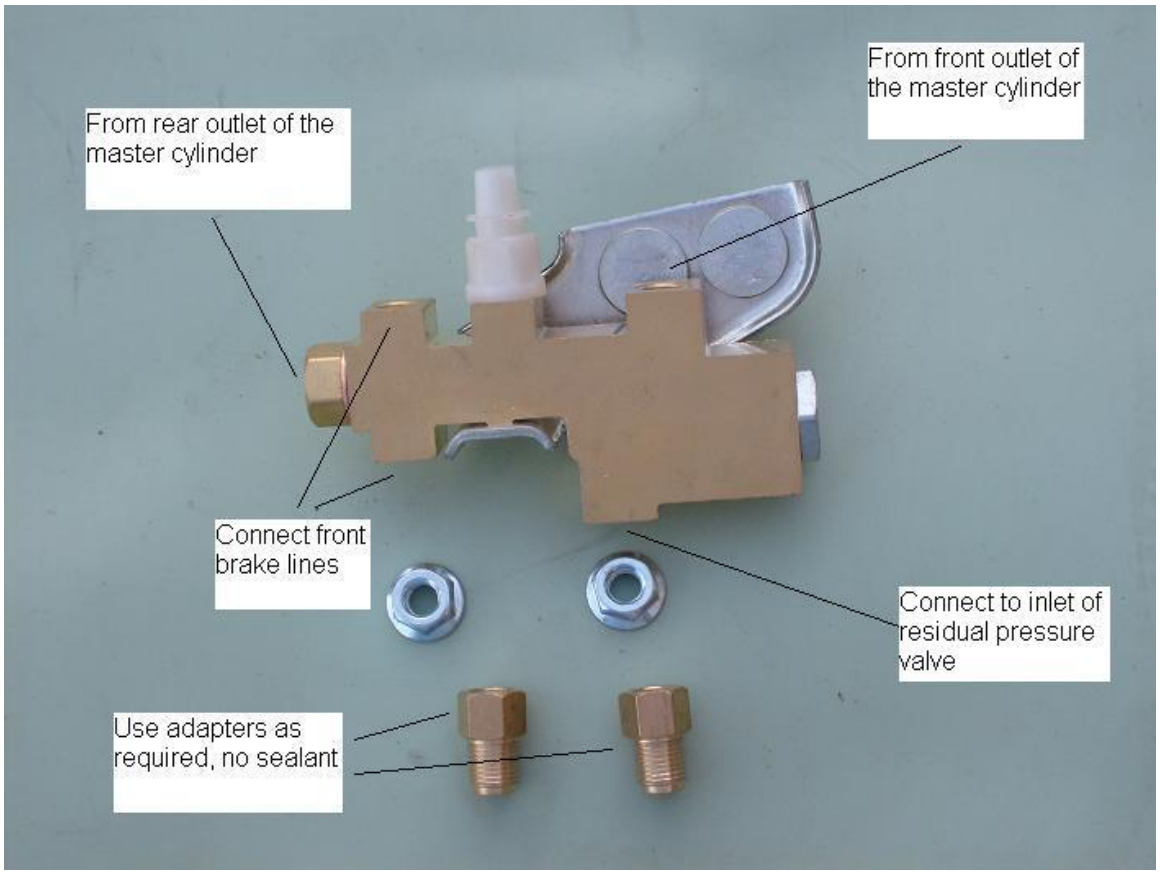
12. Fit the L-bracket onto the brake hose such that the bracket is correctly oriented and secure it with a C-clip.
13. Establish the correct location for the L-bracket on the frame rail. Secure the L-bracket with the drill point hex head screw provided.
14. Manipulate the hard line to make it tidy.
15. Check all connections.
16. Repeat steps 7-15 on the other wheel.



H. Mounting a combo valve onto a 65-66 Mustang or 63-65 Falcon or equivalent

1. Remove the distribution block. The distribution block is the brass block that interconnects the front and rear brake lines to the master cylinder line.
2. Noting the plumbing indications on the picture below, connect a short length of tubing from the combo valve's rear brake outlet to the inlet of the residual pressure valve.
3. Connect the rear brake line to the outlet of the residual pressure valve. Rearrange the rear line to make it tidy.
4. The line that originally led from the aft master cylinder outlet to the distribution block is plumbed from the aft port of the new master cylinder to the combo valve inlet for the front brakes. An adapter(s) may be required. If a line doesn't reach, make a new line from pre-made tubing.

5. The line that originally led from the forward master cylinder outlet to the distribution block is plumbed from the forward port of the new master cylinder to the combo valve inlet for the rear brakes. An adapter(s) may be required. If a line doesn't reach, make a new line from pre-made tubing. Working on one wheel at a time, remove the old front brake line L-bracket from the inner fender.
6. Adapt or re-fabricate the front brakes line (recommend re-fabrication) so that it terminates at a point on the frame rail below and centered on the upper control arm.
7. Slip the old or new L-bracket over the terminal end of the front hard brake line.
8. Securely connect the hard line to the brake hose such that the hose is not twisted.
9. Fit the L-bracket onto the brake hose such that the bracket is correctly oriented and secure it with a C-clip.
10. Establish the correct location for the L-bracket on the frame rail. Secure the L-bracket with the drill point hex head screw provided.
11. Manipulate the hard line to make it tidy.
12. Check all connections.
13. Repeat steps 4, 5 and 8-13 on the other side.



I. Mounting a combo valve onto a 67-73 Mustang or 66-69 Falcon or equivalent

1. Remove the distribution block. The distribution block is the brass block that interconnects the front and rear brake lines to the master cylinder line.
2. Noting the plumbing indications on the picture above, connect a short length of tubing from the combo valve's rear brake outlet to the inlet of the residual pressure valve.
3. Connect the rear brake line to the outlet of the residual pressure valve. Rearrange the rear line to make it tidy.
4. Plumb the existing or replacement lines from the front brakes to the new combo valve. The line that originally led from the aft master cylinder outlet to the distribution block is plumbed from the aft port of the new master cylinder to the combo valve inlet for the front brakes. An adapter(s) may be required. If a line doesn't reach, make a new line. Use pre-made brake lines that are available in lengths of 8", 12", 20", and in 8" longer increments up to 72". Make 1 ½"-2" diameter loops or U's in the line to use up extra line. It is, in fact, good practice to put a loop into short tubes to provide flex relief.
5. The line that originally led from the forward master cylinder outlet to the distribution block is plumbed from the forward port of the new master cylinder to the combo valve inlet for the rear brakes. An adapter(s) may be required. If a line doesn't reach, make a new line from pre-made tubing.
6. The front brake lines formerly coming from the distribution block terminate centered under the upper control arms. They may be looped 180 degrees and point rearward. The lines are anchored with L-brackets. It would be optimal to re-fabricate these lines.
7. Working one wheel at a time, remove the L-bracket.
8. Carefully straighten the loop such that the end of the line points forward.
9. Slide the line straight back about 4" so that the end is below and centered under the upper control arm.
10. Slip the old or new L-bracket over the terminal end of the front hard brake line.
11. Securely connect the hard line to the brake hose such that the hose is not twisted.
12. Fit the L-bracket onto the brake hose such that the bracket is correctly oriented and secure it with a C-clip.
13. Establish the correct location for the L-bracket on the frame rail. Secure the L-bracket with the drill point hex head screw provided.
14. Manipulate the hard line to make it tidy.
15. Check all connections.
16. Repeat steps 7-15 on the other wheel.

J. Bleed the brakes

1. Follow the instructions included with the master cylinder or bleeding aid to bleed the brakes.
2. The task of brake bleeding is made easier if a vacuum or pressure bleeder is used. The use of speed bleeder screws also makes the task easier.
3. The brake pedal should be firm and high when the brakes are properly bled. A spongy feel at the pedal is indicative of the failure to bleed all of the air out of the system or the calipers being installed on the wrong sides.

K. Front wheel alignment and steering issues

The SWAP.1 kit installation does not affect the steering alignment

L. Pad and rotor bedding-in.

1. Perform the break-in in an area with no traffic or obstacles.
2. Accelerate car to approx. 35 mph.
3. Apply brakes using light to moderate effort to reduce speed to approximately 5 mph (DO NOT stop, if possible)**.**
4. Repeat 1 & 2 at least 10 times allowing 1/3 mile between cycles.
5. Allow pads to cool.

The brake swap is complete. Carefully inspect all of the work.

IV. CSRP BRAKE SWAP FAQ

Q. Does the kit come with a dual reservoir master cylinder?

A. Yes, the kit comes with the proper dual reservoir master cylinder. Specify manual or power brakes when ordering. Manual applications come with an adjustable push rod.

Q. What size are the rotors?

A. The slotted rotors supplied with the kit are 11.3” diameter 5 lug type.

Q. Can I use the outer tie rod ends from my car with the kit?

A. Yes, the kit installation does not affect or change your tie rods.

Q. Why do I need to adapt my hard brake lines?

A. The brake line needs to be adapted or re-fabricated to fit in the proportioning valve and the new master cylinder. Rear lines can usually be used without major modification. It is often easier to fabricate new front lines, especially on 65-66 Mustang models where one also needs to adapt the line to accommodate the brake hose. Unless you possess a very good double flare tool, we recommend that you use pre-made straight lengths of lines that already have the proper fittings attached. These come in 8” or so increments from 8” to 72”. Put loops in the line to use up extra length. You can make a mock-up of the brake line using a coat hanger. The master cylinder may require the use of an adapter fitting at its’ outlet. These will be provided. Be certain that you use the master cylinder’s rearward outlet for the front brakes.

Q. What does the kit include?

A. The kit has all NEW parts including caliper brackets, splash shields, an adjustable proportioning valve, performance 11.3" SLOTTED rotors, corrosion protection coated calipers, semi-metallic or copper-organic or carbon-organic pads, hoses, master cylinder, bearings and seals, an adjustable push rod (manual applications), Wheel hardware, caliper hardware, grade 8 attachment bolts, blue and red thread locker, and our renown installation guide via download. You need only bolt the kit on and adapt or re-fabricate your hard lines to fit the proportioning valve, the master cylinder, and brake hoses. Bleed the system, mount the wheels, and the installation is complete.

Q. My car has power steering. Will the kit work?

A. Yes, the kit installation does not affect or change your tie rods.

Q. My 65-66 Mustang has power brakes (or I want power brakes). Will the master cylinder provided work with the SWAP.1 kit?

A. The original booster/bracket system used on 65-66 Mustangs is not compatible for use with a dual reservoir master cylinder. There is not enough space between this booster and the shock tower to mount one. This is because Ford located the mechanical clutch linkage in a place that interferes with the direct mounting of the booster to the firewall. In order to accommodate both manual and automatic transmission applications with one assembly type, a standoff bracket is employed. This bracket places the booster about 3” away from the firewall. In this position, it will not mechanically interfere with the operation of the clutch linkage. This works fine with the single reservoir master

cylinder which is standard to the model, but will not allow the mounting of the dual reservoir master cylinder necessary for a safe modern brake system.

This presents the kit installer with a couple of options. In any case, the original booster/bracket must be removed. On an automatic transmission equipped car, CSRP offers a compatible booster/ bracket system that will allow the use of the original pedal. One could also install the kit in manual brake mode. When purchasing the SWAP kit for these cars, the installer must specify a manual or power master cylinder, or a power brake upgrade kit which includes a proper master cylinder.

On a manual transmission car with original power brakes, the installer must still remove the original booster/bracket, but has fewer practical options for power brakes. CSRP offers a power brake upgrade for this application only if the clutch linkage has been replace with a cable or hydraulic type that eliminates the interference. Otherwise, the user must install the system as manual brakes or find other options.

Q. My 67-69 Mustang car has power brakes (or I want power brakes). Will the master cylinder provided work with the SWAP.2 kit?

A. The kit can be provided with a power type master cylinder at no extra cost when specified. This master cylinder will work with all existing boosters present on 67-69 cars. Those users wishing to upgrade their manual brakes to power, can purchase our power brake upgrade kit for 67-69 cars. We do not offer power brake upgrades for 70-73 cars.

Q. Will the SWAP.1 kit give me bumpsteer? What is bumpsteer?

A. No, the SWAP.1 kit installation does not affect the steering.

Bumpsteer is the change in steering output that occurs without driver input when the suspension moves. Basically, the wheels turn a little in response to going over bumps. This is a result of the fact that the radius of movement for the tie rods and the ball joints are different. Large deflections of the suspension cause different rates of movement of the control arms vs. the tie rods causing a small steering input. This affect is most noticeable, if at all, in performance situations.

All Mustangs and many other 60’s and 70’s cars are based on the Falcon chassis that Ford developed in the early 60’s. The suspension and steering gear for all of these cars are very similar. The suspension mounting configuration for the class, including most years of Falcon, Comet, Mustang, Cougar, Fairlane, Torino, Montego, Maverick, Granada, and Monarch remains the same from 63-80. There were basically two steering geometries during the period. The 64-66 Mustang and 63-65 Falcon models have a slightly different geometry than the later models. The later models have identical geometry.

It is generally recognized the Falcon class chassis had poor suspension geometry, especially the early applications. It is generally agreed that making major modifications to the suspension like using lowering coil springs, or cutting coil springs, or excessive lowering of the control arms can exacerbate the inherent poor steering dynamics of the early Mustang.

Q. Can I use my original wheels with the swap?

A. In general, original 14" stamped steels wheels prior to 1969 will fit onto the rotor hub of the swap. The availability of 14" tires is becoming increasingly poor and the change to 15" or greater aftermarket wheels is very popular.

Q. Will the swap work with my 6 cylinder car, and will I need to change the steering gear?

A. The SWAP.1 kit is incompatible with the steering knuckle (spindle) on 6 cylinder Mustangs prior to 67. Those from 67-69 are compatible. One may install the kit if the 6 cylinder steering knuckle are replaced from the same year class 8 cylinder type.

Q. Can I keep my 4 lug wheels with the swap?

A. The current version of this and nearly all other swaps have a 5 lug rotor included. This can make the selection of wheels awkward with 6 cylinder cars that have the original 4 lug wheels in the back. We have determined that providing a 4 lug kit is not feasible. The selection of suitable aftermarket 4 lug wheels is poor and it is difficult to provide a suitable rotor/caliper set that will fit standard 14" 4 lug wheels.

Q. How long does it take to do the swap?

A. The removal of the old parts and installation of the new ones can easily be done in one weekend. The refitting of the brake lines may take a part of another.

Q. What does a proportioning valve do?

A. A proportioning valve is a vital component of a disc brake system. It is a metering valve that controls the flow of brake fluid to the rear wheel cylinders. It functions to delay the full implementation of the rear brakes. Without the valve, the rear brakes would lock prematurely. There are 2 types of proportioning valves available with the kit, either an adjustable, or an OEM combo type. An adjustable type is the standard one included with the kit. It has an adjustment knob that functions much like a water faucet except that the flow of fluid is never stopped, just restricted. This valve is simple to plumb, but requires that the installer tune it by trial and error to give the desired rear braking performance.

One may elect to purchase the optional OEM type combo valve. This valve has the proportioning function along with a front brake metering function, as well as leak isolation and indication functions. The pressure switch is a hydraulic system that reacts to pressure loss in a circuit (front and back are plumbed separately) and isolates that circuit from the other circuit. This prevents the total loss of brakes in the event of a leak. This valve is plumb and forget.

Q. Will I need to buy anything else?

A. With the exception of parts necessary to adapt the hard brake lines to make the connections of the new master cylinder and proportioning valve, all parts are included. Nothing from your drum system is used. You can sell your drum system.

Q. Does the kit include instructions?

A. The kit includes internet access to the installation guide. This guide goes through the history of the swap, and includes a complete installation guide.

Q. Is the swap safe?

A. The system is based on an original Ford OEM design. The components are the best available. The installer must be reasonably proficient in mechanics. Brakes are a **seriously** necessary component of the safety system of your car. Have the new system inspected by a qualified mechanic before driving the car.

CSRP will not accept the liability that the owner assumes when making the swap.

IV. LEGAL NOTICE

This document is only a guide. It in no way represents the ultimate authority on the subject presented. The user must exercise good judgment in relying on its content. It is incumbent upon the user to verify the guidance contained within. The seller of these parts and the authors of this guide provide the service of compiling parts that are generally recognized, when properly assembled, to provide a safe and effective front disc brake substitute for the antiquated drum brakes originally present on certain classic Fords from the 60’s and 70’s. The buyer must determine if is appropriate or prudent to undertake this front disc brake conversion using this kit and guide. The swap should only be undertaken by those who are competent in automotive brake system mechanics. The completed system must be installed or inspected by a certified mechanic, and any necessary adjustments made. The purchaser of the parts assumes all liability associated with their use. The seller does not accept liability associated

with the use of these parts. The parts are warranted to be free of manufacturing defects for a period of 1 year from the time of purchase. This limited warranty is applied to replacement of the defective part(s) only. The warranty does not apply to any labor associated with installation of the part(s). Please see our terms of purchase located at our website www.discbrakeswap.com. The provisions contained there apply to this install and the parts herein.

Thank you for purchasing the CSRP front disc brake conversion kit. Good luck and good motoring.