ZIM.42.020.DUAL
Installation instructions for the Dual Stage master cylinder replacement for a 356
This kit will fit either drum or disc brake cars

To install this dual stage master cylinder system it takes a certain amount of mechanical expertise and common sense in order for the job to go smoothly and more importantly, safely. Remember you are working on your brake system. Failure of this system is dangerous and serious injury or death can occur.

Our kit is designed to replace the old single stage master cylinder with a dual circuit unit that is safer in that, it now has two separate circuits that are independent of each other in case one or the other fails.

Using common safe practices lift and support the vehicle so that you may have easy access to the bottom of the vehicle near the master cylinder area. Remove the left front wheel & tire assembly to gain better access. You may remove the steering box access plate from in the trunk area after taking out the front trunk mat. Using a proper tubing fitting wrench, loosen all of the hard brake line connections at the old master cylinder before you unbolt it. Care & common sense must be used here to insure that you do not damage these fittings or lines. Sometimes it takes some penetrating oil & or heat to get these lines loose. BE CAREFUL. DO NOT SET YOUR CAR ON FIRE! THE GAS TANK IS CLOSE BY!

Remove the wires that attach to brake light switch on the very front of the old unit. You will have to pull back the bell shaped boot (if it is still there) to do this.

Now remove the two 8mm nuts and washers that retain the old master cylinder from the firewall. Pull the old unit out and away from the car. Wipe up any spilled brake fluid.

Inspect the dual stage master cylinder we have provided you.

NOTE: NO CONNECTIONS ARE TIGHT!!!!! We only assemble the unit by hand to show you where all of the components go. It is YOUR responsibility to TIGHTEN ALL connections.

Install the new master cylinder onto the studs using the new hardware provided. Make sure that the push rod attached to the pedal engages into the CENTER of the hole in the back of the master cylinder properly. You should also seal the master cylinder to the firewall with a little silicone to keep water and wind from entering the cockpit. Don't over do the sealer. The clearance distance of the end of the push rod to the master cylinder piston is **very critical**. YOU MUST CHECK IT and if it is needed, YOU must ADJUST it by shortening or lengthening the push rod. The proper clearance is 1mm (.04"). If this is too close or non existent, the brakes can lock up after they get hot and expand a little or you will **not be able to bleed it properly**. If the clearance is too much you will have a very low pedal. MAKE SURE THIS IS RIGHT! Make sure you retighten the jamb nut on the pushrod if you disturb it.

Now you must begin to hook up each brake line back to the new unit. Because of the different design of the dual stage circuit you will have to bend and finesse some of the lines to get them to hook back up properly. Care must be taken to NOT crimp or break the lines. When you bend them, support them with you hands to make gentle bends. DO NOT try to bend them with pliers or you will destroy them. We have had reported from a few that we have sold these kits to that the old left front line is just slightly too short to be used back. We now include 20" metric brake line with each kit that can be used if your left front won't reach. Simply bend it in a manner by hand to fit properly making sure it does not interfere with tire rotation or any other suspension movement.

If you are looking at the new master cylinder with it facing you and the flange bolted to the firewall, the top (upper) front (towards front of car) female hole is to be attached to the line going to right front wheel (passenger side of car).
The right side front middle port has the brake light switch in it. **The switch is not tight. You must tighten it.** The right side front lower port will get the line going to the left front wheel (drivers side). Use the new 20" brake line we have provided here.

The right side back upper port gets the short adapter line with the female union on one end TIGHTENED into it. This union is to be attached to the systems rear brake line coming out of the tunnel. You may have to bend these lines a little to get them to line up properly. Make sure all connections are tight and DO NOT cross thread them. DO NOT over tighten them. The right side lower back port gets a plug TIGHTENED into it.

Hook up the two brake light wires. We provide you with two, crimp on female connectors since the new switch has male spade connectors. It does not matter which wire goes where.

Now you will move up to the trunk area and mount the brake fluid container. We have supplied you with a dual chamber canister that is very compact and easy to mount.

There are two (2) ways in which to mount this canister. The first version is for the 356,356A, through T5B cars. This would be the cars with the gas tank and filler hole under the hood. The second version is for the 356B, T6 and 356C cars. It does not matter if the car is a drum or disc brake car. It only has to do with the fact that the gas tank in the T6 car is different (filler neck in the right front fender), and this effects where and how to mount the canister.

356,356A, through 356BT5 cars. The canister comes with bolts and nuts already assembled through the two mounting ears. For this type of installation remove them and discard. You will only need the hose clamp that is already mounted on the can. You simply clamp it to the drivers side vertical gas tank strap. Position the can up high enough on the strap so that you can access the two ports that stick out the bottom of the can. You will have to be able to get the two blue braided brake hoses onto those hose bungs. You do not need hose clamps. It will be easier to put them on before the final mount of the can. Position the can on the gas tank strap and mark two holes below on the horizontal gas tank floor between the tank and the steering box cover lid for the hoses to go through and then down to the new master cylinder. Drill the holes

large enough for the lines to pass through without rubbing them. This completes this type of canister mounting. Skip the next step which is the 356T6 type installation and go on to running the blue hoses.

356BT6, and 356C cars. Due to the fact that there are no gas tank straps as above, you must mount the canister in a different location. The easiest place we have found to do so is over on the left (drivers) side upper inner fender well area. The can comes with the mounting hardware (bolts, nuts, and washers), already installed in their relative positions. You can remove the hose clamp around the canister as it is not used on this version. Position the can just in front of the fresh air control box. It will fit about 2-3 inches in front of the inlet where the screen is over the snout. The exact position is not that critical, but if you pay attention to the plastic trunk liner mat there is a notch already cut that if you keep it close enough to the vent inlet will allow it to fit and not have to trim any more material off of the trunk plastic liner. This will not affect the air flow into the air box. Drill the two mounting holes for the bolts to pass through into the inner fender area and install the washers and nuts over the bolt ends to fasten the can to the inner fender. Mark the two holes where you will need to drill in the horizontal panel for the hoses to pass through on their way down to the master cylinder. Drill the holes large enough for the hoses to pass through without rubbing them. They will pass into the fender well area and then you will route them through the large round hole into the area above the master cylinder under the gas tank.

Now take the special blue hose and run the two lines from the tank to the master cylinder. A little brake fluid on the hose bung or in the end of the hose will allow it to go onto the fitting easier. We now supply with these kits with 7 feet of some white poly tubing to be used in between short pieces of the blue special brake hose. Use the blue hose for short connectors at the canister and the master cylinder, but run the poly tubing in between. Put a small amount of brake fluid on the tubing and in the end of the blue hose then simply push the tubing into the hose. It does not require a hose clamp. Just make sure you push it in at least an inch or so and it won't come off or leak. You must take care and make sure that the routing of these lines do not get in the way of the tire or any of the steering linkage as it moves back and forth through its entire travel. YOU MUST BE SURE OF THIS. Use zip ty's to secure these lines away from anything that could get tangled with them.

Using a small funnel, fill the reservoir with brake fluid to the marked correct level. DO NOT GET IT ON YOUR PAINT! Using normal brake bleeding procedure's, bleed the entire brake system. Remember, always start at the wheel farthest from the master cylinder first and work your way around the car. We suggest the use of the Motive Products power bleeder (which we sell). It makes it so easy and it can be done by yourself.

Sometimes we have found that it helps to raise the car on the end you are trying to bleed. In other words if you are bleeding the rear, jack up the rear higher than the front and vice versa. It can also help to tap on the wheel cylinders or calipers to vibrate loose trapped air.

Test the brakes BEFORE you move the car to insure all is well. Also check all connections for leaks and re-tighten fittings if necessary. DO NOT over tighten fittings.

Go out and drive your 356 and enjoy the fact that you are much safer now with your new dual stage conversion system. Dwb/z/3/2005/7

Please note that NO connections, nuts, bolts, or any hardware is tight in this kit.

YOU are responsible for tightening all connections and hardware. Then check carefully all connections for leaks BEFORE driving vehicle.