BRAKE MASTER CYLINDER ADAPTER KIT

THIS KIT IS NEEDED FOR BUSES UP TO 1966 RUNNING DISC BRAKES. IT WILL ALSO REPLACE A 1967 ONLY MASTER CYLINDER.

KIT SHOULD INCLUDE:

- 1 Aluminum adapter ring
- 1 Master cylinder boot
- 2 Mounting bolts
- 2 Rubber grommets

SUPPLIES YOU WILL NEED:

- 1 Bus master cylinder 71-79 PN(211-611-021AA)
- 1 Rabbit master cylinder reservoir 78-83 with cap or
  1 Bus 1967 master cylinder reservoir
- Brake fluid

TOOLS NEEDED:

- 7, 11, 13, 14mm wrenches
- 13, 19mm sockets
- Large crescent wrench
- Vice grip pliers
- Clear bottle (i.e., plastic soda bottle)
- 1 ½' of T-1 fuel line
- Torque wrench
- A friend to help

TAKING OFF OLD MASTER CYLINDER:

1. Pull off the wires that go to the master cylinder switch(es). Using your large crescent wrench, just loosen the switch(es). With your 11mm wrench, break the metal lines loose that go into the master cylinder.
2. Using your 13mm wrench and 13mm socket, loosen the two bolts that hold the master cylinder to the bracket. Take the bolts out.
3. Unthread the lines by hand and pull the master cylinder down and out. Be careful where you set it: as it still has a lot of fluid in it and the fluid is corrosive.

INSTALLING THE MASTER CYLINDER ADAPTER KIT:

1. Put some brake fluid on the outside of the rubber plugs that come with the kit and push the rubber plugs into the master cylinder. Next take the master cylinder reservoir, put some fluid on the inlet ports and push the reservoir into the master cylinder. The cap side of the reservoir should go forward towards the flange end of the master cylinder.
2. Place the boot onto the new master cylinder and slide the aluminum ring over the boot with the large inside diameter towards the master cylinder. Loosely line up the bolt holes and bolt it up to the bracket. Do not tighten. Bend the brake lines around and hand thread them into the master cylinder. It is important that the two metal lines that go to the front wheels be threaded into the end of the master

cylinder farthest away from the plunger. The rear line and the switch should go into the holes closest to the master cylinder push rod. NOTE: The brake switch will now be coming out of the side of the master instead of the nose of it.

3. Once the lines have been hand tightened into the cylinder, go ahead and tighten the two bolts that hold the cylinder in place. Now go back with your 11mm wrench and tighten the brake lines. While here, use your crescent wrench and tighten the switch.
4. Put your wires back onto the brake switch.

BUSES 1967

1. Put some brake fluid on the outside of the rubber plugs that came in the kit. Then push the rubber grommets into the master cylinder. Next, take the master cylinder reservoir and put some fluid on the inlet ports. Push the reservoir into the master cylinder. Again make sure the cap side of the reservoir goes forward towards the flange end of the master cylinder.
2. Place the boot onto the new master cylinder. Slide the aluminum ring over the boot with the large inside diameter towards the master cylinder. Loosely line up the bolt holes and bolt it up to the bracket. Do not tighten; bend the brake lines around and hand thread them into the master cylinder. It's important that the metal line that goes towards the front wheels is threaded in the end of the master cylinder farthest away from the plunger. The rear line should go into the hole closest to the master cylinder push rod. Now screw in both switches. NOTE: The brake switches come out of the side of the master cylinder one angled down and the other straight.
3. Once the lines have been hand tightened into the cylinder, go ahead and tighten the two bolts that hold the cylinder in place. Go back with your 11mm wrench and tighten the brake lines. While you're there, use your crescent wrench and tighten the switches.
4. Put your wires back onto the brake switches.

ADJUSTING THE MASTER CYLINDER BRAKE ROD:

1. Check the rod that goes into the master cylinder from the pedal. It should have a 1/8" of play before you can feel the rod make contact with the plunger. NOTE: If there is no play, the plunger will not come back far enough to let the fluid into the cylinder. If it has too much play you will be pushing the pedal long before the master cylinder even does anything. This measurement is really important here so spend some time and get it right.
2. To adjust the rod use either a 13mm or 14mm wrench and loosen the jam nut on the rod. Now with your vise grips, adjust the rod in or out until it feels right. Holding the rod still, tighten the jam nut.

BLEEDING YOUR BRAKES:

It may be easier to bleed your brakes if you remove the wheel first, in fact in earlier Buses, it's a must. If you have adapters, remove them also.

The idea of bleeding the brakes is to remove the air that has collected in the brake system. Air is a compressible gas and brake fluid is relatively incompressible; you want the brake fluid as incompressible as possible.

The first thing you have to do is adjust all the brake shoes. If you have disc brakes there is no adjustment. For drum brakes: Take your clear bottle and put a couple of inches of fluid into the bottom of the bottle. Start with the passenger side front, place your fuel line into the bottle so that the end is in the fluid and place the other end over the bleeder valve. Place your 7mm wrench over the bleeder valve and fuel line, have a friend pump the brake pedal slowly making sure it returns all the way. Open the bleeder valve while your friend is pumping. Watch the bubbles in the bottle, when they stop and you are just getting fluid, close the bleeder valve and go to the next wheel (the driver side front). Always make sure that the reservoir stays full as you are doing this.

After you finish the front, go to the passenger side rear and then finally the driver side rear.

HINT: If a bleeder valve has broken off, just replace the whole wheel cylinder. The broken bleeder valve is next to impossible to get out and wheel cylinders are cheap. If you step on the pedal and then let off, each drum should spin free. If it doesn't, replace the flexible brake hose for that wheel cylinder. If you have any brake fluid on the shoes, replace them as they make the shoes sticky and this will cause the bus to pull to one side.

LAST STEPS:

1. Once the brakes are bled, put your wheels back on and hand tighten. Put the Bus back on the ground. While your friend is stepping on the brakes, tighten the wheel adapter bolts and wheel bolts to 80 ft. lbs. with your torque wrench and a 19mm socket. If the bus moves, you did something wrong or you have air still in the lines or a leak in the lines. Find and fix it now or you may rest in peace.
2. Drive the bus out a couple of feet and test the brakes, if they feel good go a little faster and farther and test again. If everything is working, stop and have your friend step on the brakes really hard and check for any leaks.
3. If your bus pulls to one side it is more than likely the flex line or like we said earlier its fluid on the shoes. If you know the shoes or pads don't have fluid on them, replace the flex line on that wheel; bleed the brakes again and that should do the trick.