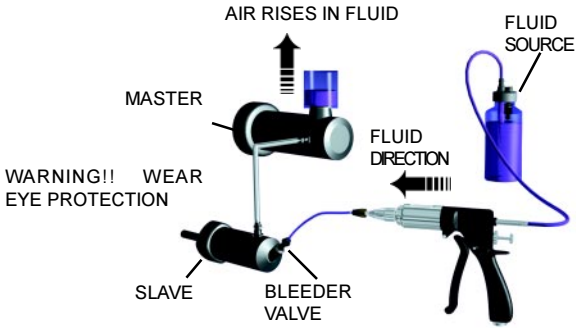


RFI™ FOR CLUTCHES



RFI CLUTCH BLEEDING

RFI is a process where fluid is introduced at the slave cylinder and fed back up to the master cylinder.

* If the reservoir is very small like Ford Ranger, it is helpful to allow the system to gravity bleed prior to Step 1. This will reduce the amount of RFI™ required, to prevent over filling reservoir.

1. To perform RFI bleeding first drain and clean the master cylinder reservoir. If necessary fill the reservoir before draining so an accurate measure of fluid can be taken. Note the amount of fluid removed. This will be necessary to avoid overfilling the master cylinder during the RFI bleeding process. For vehicles with tilted master cylinders raise the vehicle to allow the master cylinder to level. This will allow the air to exit the vent ports.
2. Remember, caution is to be used when raising the vehicle to avoid an unsafe condition or vehicle damage. If the master cylinder cannot positioned in this manner get it to at least a point where the body is level. If this cannot be accomplished see "Difficult Systems" p. 27
3. First follow directions for Priming the Injector and lines.
4. Connect the injection side of the tool to the slave bleeder and the input end to the fluid supply container making sure it is full.
5. With the tool connected, open the bleeder screw and stroke the handle until the reservoir is full. The amount of fluid that could be injected was determined in Step 1.
6. Once complete remove the adapter from the bleeder and let the slave cylinder burp or gravity bleed until a solid stream of fluid is achieved. This will allow any air trapped at the top of the slave or bleeder valve to exit. Close the bleeder.
7. Check pedal and repeat if necessary.

HELPFUL HINTS

If fluid will not inject in reverse manner:

1. Make sure reservoir cap is removed.
2. Remove the bleeder valve and inspect for blockage.
3. Check for check valve in bleeder valve.
4. Clutch master cylinder may have faulty check valve. Make sure pedal is not "hanging".

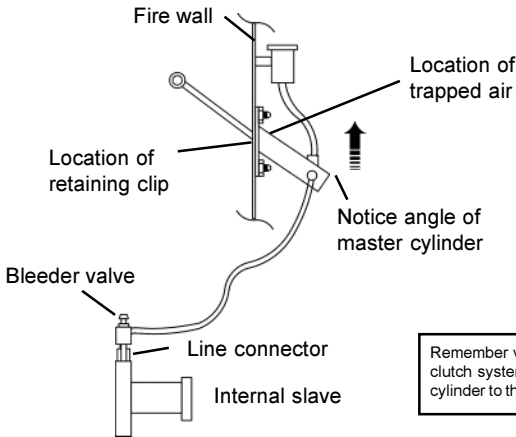
- Any one component of the clutch system can be bled independently.
- Some Mazda or other vehicles are equipped with a check ball in the bleeder valve. The check ball must be removed prior to RFI™ and reinstalled after system is bled.
- Due to the small volume of the clutch master reservoir it is helpful to gravity bleed the clutch first. Some clutches may require (2) RFI procedures to remove trapped air.
- Increasing injection pressure on clutch systems will assist removal of trapped air.
- If you are having trouble with a Ford Ranger, unbolt master cylinder and turn upward. If replacing the master cylinder bleed system prior to mounting.
- Use of short rapid strokes (Pulse Generator Technique) is most effective for difficult bleeding jobs. Your Injector has an adjustment to change the stroke of the piston.

It may also be necessary to raise the front of the vehicle, to improve angle of master cylinder.



CLUTCH BLEEDING

Difficult Systems i.e. Ford Ranger/Explorer



Remember when installing a new master cylinder the clutch system can be bled prior to bolting the master cylinder to the fire wall. Tip the master cylinder upward.

Some clutch systems can be very difficult to bleed due to component orientation. These procedures should bleed even the most difficult systems.

1. Use Pulse Generator technique (See p. 28). Use quick short injections (2-3ml- 2 to 4 times per second) alternating with aggressive full injection strokes. You may have to drain the reservoir and repeat.
2. This procedure requires two technicians. Complete procedure #1 first.
 - a) One technician will depress clutch pedal 1/2 way down and hold. This will close the master cylinder check valve not allowing any fluid movement.
 - b) With the clutch pedal depressed a second technician will squeeze the Injector handle building pressure in the system. (May require one hand to hold adapter to bleeder valve due to high pressure.)
 - c) Slowly release clutch pedal while maintaining pressure in the system. When the pedal is released, opening the check valve, a pressure surge will force trapped air out of system. Repeat several times.
3. If the clutch pedal is not firm after using the previous procedures, try loosening the master cylinder retaining bolts and tip the master cylinder upward. This will allow all trapped air to be easily removed from system. The front end of the vehicle can be raised to assist.
4. (Complete procedures #1 and #2 prior to using this procedure) There is a retaining clip accessible from the passenger compartment which holds master cylinder piston in place. With this clip removed the piston can be quickly removed and reinstalled. Fluid will leak out and the air bubble will be forced out. It is not easy to get to the retaining clip. Use this procedure as a last resort.

New Style Clutch

Some GM and Ford applications do not utilize a conventional bleeder valve. Loosen the recessed bleed screw and insert taper adapter in bleed hole and inject. If bleed hole is inaccessible attach taper adapter to Luer male fitting and insert.

