Depressing the clutch pedal pushes brake fluid from the clutch master cylinder bore into the steel line then into the flexi-line, then into the slave cylinder, in turn pushes the slave cylinder piston rearwards, the piston pushes the release bearing fork rearwards, via a push-rod. The release bearing is pushed forward against the pressure plate or clutch cover and the sandwiching effect on the clutch disc is released. The clutch disc can now freewheel or stop while the flywheel and clutch cover spin around it.

There is a mechanical advantage between the master cylinder (smaller diameter, longer stroke) and the slave cylinder (larger diameter, shorter stroke). In turn there is a mechanical advantage between the slave cylinder and the release bearing. The fork is longer, centre to pushrod, and shorter, centre to release bearing centre. Resistance to pedal movement is the stiffness of the springs in the clutch cover.

The system is 'self adjusting'. Fluid increases in the slave cylinder bore over a period of time as the release bearing and clutch disc wear. Resultingly, the master cylinder level slowly lowers.

As the clutch cover gets older and the springs weaken, the sandwiching effect lessens. Less hydraulic pressure is then necessary to 'throw out' the clutch. The master and slave cylinders wear during this time too, the rubbers fatiguing. The master cylinder loses its ability to create higher pressures. If a new clutch assembly (cover, disc, release bearing, etc) is fitted, the hydraulic system usually fails soon after.

So, in all disengagement problems, it is wisest to rebuild the clutch hydraulics first. If the problem is internal, the hydraulics will have to be rebuilt anyway.
Most Common Faults

1. Master cylinder faulty, internal leak, no fluid loss, MGB creeps away with the clutch depressed.
2. Master cylinder faulty, external leak, fluid loss brake fluid drips down the pedal onto the floor or your foot.

3. Clutch internals faulty sometimes accompanied by a vibration in the clutch pedal.
4. Slave cylinder faulty, external leak, fluid loss (if it leaks, it's bad; if it's bad, it leaks).
5. Pedal spring faulty, causing no serious problems, but a lack of freeplay and low pedal height.

Bizarre, Infrequent, Uncommon Faults

1. Clutch disc rusted to flywheel or pressure plate after a winter's or more storage. Cure this by driving the car and repeatedly pumping the pedal while attempting to rev the engine. The clutch disc will finally spin free.
2. Clutch pedal worn through at clevis pin making it impossible to operate the master cylinder pushrod.
3. Incorrectly fitted parts that reach the end of their life or adjustment. Sometimes this is difficult for the owner to determine, as it's the only assembly he's seen.

Note: Nothing concerning the slave cylinder hose or the steel hydraulic line has been mentioned. These two items don't cause disengagement problems, although if damaged or split they certainly would. But this is very rare.

Rebuilding the System

Several rules, first cleanliness, second use Lockheed parts only. Open and inspect contents of the cylinder rebuild kits prior to beginning. Ensure that you
have the right tools. Warning: Brake fluid is an unforgiving, speedy, paint, remover. Do not drop any on the bodywork!

The slave cylinder should be rebuilt first, allowing the remainder of the system to drain.

Prior to working under the bonnet, cover the wings with covers, blankets, something to prevent handprints, damage from tools and damage from brake fluid. Remove the bonnet stay (where fitted) and lift the bonnet as high as it will go using a broomstick handle to hold the bonnet aloft, one end under the front bonnet lip, the other end against a bolt head in the fender/engine bay 'tray'.

1. Place a pan under the slave cylinder assembly to catch brake fluid.
2. Remove the bleeder screw (7/16AF socket). If it's frozen, heat it red hot if necessary to break down the corrosion between the steel screw and the aluminium body. Do not break it off. A new slave cylinder is expensive, and any attempt to remove a broken bleeder is futile.
3. Pump the pedal until the system is bled dry - about ten slow strokes.
4. Crack the slave cylinder hose loose from the slave cylinder - about 1/16th turn (7/16BSF open end).
5. Remove the two coarse bolts holding the slave cylinder to the gearcase (9/16AF socket).
6. Pull slave cylinder off pushrod, spin off from the hose. Don't lose the copper washer.

Rebuild the Slave Cylinder

1. Remove the old dust boot and metal securing ring and discard the boot.
2. Shake the piston out; use air pressure to blow the piston out use extreme caution! or push piston all the way into the bore then lightly sandpaper the walls (400 grit or finer) until the piston can be shaken out.
3. Remove the rubber cup, disc and spring.
4. Hone the cylinder bore with a brake hone or use sandpaper and lightly work it around the bore. Hone just until all the crud is removed -usually about five seconds.
5. Wire brush the piston, the dust boot ring, and the bleeder threads. Further clean out the bleeder hole with wire.
6. Thoroughly clean all parts. Carb cleaner works well. Dry thoroughly.
7. Lightly grease (rubber grease) rubber cup and dust boot.
8. Reassemble. Fitting the outside ring can be a problem. Grease lightly the
bleeder screw.
9. Remove clevis pin from release bearing fork and replace it with a new one and new split pin. Sometimes the pin comes out by hand, sometimes it must be squeezed out with pliers sometimes it must be punched out (9A6 punch and hammer), sometimes it must be heated red hot and driven out. Liberally grease the new pin with multi-purpose grease. The pin is fitted from the top.

Rebuild the Master Cylinder

1. 63-74 Remove the rear air cleaner can, 1/2AF wrench or socket (LHD cars).
2. 63-74 Clean out crud from crosses on Phillips screws holding the pedal box cover.
3. 68-74 Disconnect the brake light switch from the wiring loom (needle nosed pliers). Remove the brake light switch from the pedal box cover (9/16AF open end).
4. 63-80 Remove screws to pedal box cover. Position the screwdriver in the slots and smack the screw driver with a hammer. This seats the screwdriver into the screw heads lessening the chance of stripping out the screw heads and it shakes the screw loose from rust and its nut. Sometimes it is necessary to really lean on the screwdriver to break the screws loose. But don't strip out the screw heads, or they'll have to be drilled out - and that's no fun!
5. 63-80 Peel back the driver's carpeting or mat. Place newspapers flat on the floor to catch the brake fluid which will drip from the master cylinder bore. The fluid drips straight down to under the pedals.
6. 63-80 Remove the split pin, clevis pin (vice-grips, needle nose pliers). Grip the head of the clevis with the vice-grips to keep it from turning while the split pin is removed with the needle nose pliers.
7. 63-80 Pull the dust boot back on the push-rod remove circlip (circlip or internal snap ring pliers), the piston will push forward and can be removed. Now all that fluid (several tablespoons) will fall on the cockpit floor.
8. 63-80 Use a 'dentist tool' and pull the piston cup and spring out of the master cylinder bore.
9. 63-80 Remove the old rubbers from the piston, clean the piston with care cleaner, along with the spring. Allow to dry thoroughly.
10. 63-80 Lightly grease the rubber cups and refit to cylinder bore. The piston can be used to carefully push the rubber cup down the bore. Then fit the seal onto the piston (ensure this is correctly fitted!), and fit piston to bore.
11. 63-80 Fit dustboot to new pushrod, then fit circlip to pushrod.
12. 63-80 Push piston in bore, position pushrod, slide new clevis into place temporarily. Have an associate hold the pedal part way down while you fit the snap ring, then fit dust boot to front of master cylinder. Remove clevis pin.
13. 63-80 Liberally grease clevis pin and refit (vicegrips and needle nose). Fit split pin. Also, liberally grease the brake master cylinder clevis pin (or change it if it is worn).
14. 63-74 Grease four new screws (so they will not rust, and so the lockwashers will stay on them without hassle), refit the pedal box cover (Phillips screwdriver).
15. 75-80 Refit pedal box cover.
16. 68-74 Grease brake switch threads and refit, allowing about 1/2" pedal freeplay. Tighten lock nut (9/16 open end). Reconnect (needle nose). It doesn't matter which wire (green or green/purple) connects to which.
17. 73-74 Refit rear air cleaner (LHD cars).
18. Get rid of newspapers, clean floor, replace mat.

Refit Slave Cylinder

1. Fit copper washer to hose and spin cylinder onto hose as tightly as possible by hand.
2. Fit cylinder onto pushrod, and replace the two 3/8 coarse bolts (put a trace of grease on their threads first. (9/16AF socket). Tighten slave cylinder hose (7/16BSF).
3. Remove bleeder screw.