

## **A BRIEF EXPLANATION HOW THE SYSTEM WORKS**

**OPERATING INSTRUCTIONS  
MUST BE GIVEN TO OWNER**

M&G Brake System for Hydraulic Brake Coach, which is pneumatically operated, consists of four basic parts, as follows:

1. 12V air compressor
2. Air storage tank
3. Proportioning valve
4. Air cylinder for towed vehicle

The air compressor is controlled by the pressure switch, and keeps the air tank at a mean pressure. The proportioning valve is part hydraulic slave cylinder, and part air control valve.

Pressure from the coach hydraulic brake system is fed through an added 3/16 steel line, to operate the slave cylinder of the proportioning valve. This, in turn, operates the air pressure controller section of the valve. The air pressure is directly related to the hydraulic pressure in the coach braking system, and is completely variable according to the hydraulic pressure being developed by the coach brake system.

The M&G cylinder is mounted between the master cylinder and the vacuum booster on the towed vehicle. A 1/4" O.D. plastic (D.O.T. approved) air line runs from the proportioning valve to the M&G cylinder, with a quick disconnect located at the rear bumper area of coach.

When the coach and the towed vehicle are being operated as a single unit, and the brakes are applied on the coach, the hydraulic pressure of the coach brake system operates the proportioning valve, and regulates the air pressure. The air pressure flows through the air line, and the brakes are applied on the towed vehicle as well as the coach.

When the towed vehicle is being driven independently, there is no effect on the car's braking system. It will operate in a completely normal manner.

## INSTRUCTIONS FOR MOUNTING POWER PACK

Locate a place on the frame closest to the rear axle as possible or in a compartment is best.

Remove tray from the bracket. (See figure 1) Use bracket for template, and drill four 5/16" holes in frame. Mount bracket to frame or cross member, using four 5/16 bolts. Install breather or filter to intake of compressor (gray plastic cylinder supplied). Inspect and clean filter as needed.

Replace tray in the bracket and tighten bolts.

Be sure that the master cylinder is full of fluid, and the cap is tightly secure.

Remove the steel line from the bulk head fitting on frame where flex line meets steel line (figure 2). If RV has left and right brake lines, either line can be used. Install tee fitting (trailer tee). If the brake line on motorhome has metric threads, use tee with three female fittings and short brake line attached. If tee is not supplied, you must cut brake line and reflare for SAE or American nuts to adapt to trailer tee. Reattach steel line. Run a 3/16" steel line to the proportioning valve, cover the end of line to protect it from foreign material. Secure line from vibration.

During installation of the tee fitting, keep steel line upright, to keep fluid from running out.

**MAKE ALL CONNECTIONS AS QUICKLY AS POSSIBLE.** To prevent loss of fluid.

If this procedure is followed, it should be only necessary to bleed the fluid at the proportioning valve only. Just loosen brake line nut at the top of proportioning valve while stepping on RV brake pedal to bleed air from new brake line installed. Check master cylinder fluid level after bleeding.

From the proportioning valve, run a 1/4" plastic air line to the rear bumper area. Keep air line well away from any heat source. Secure.

Run the 12 gauge red wire from a 30 amp ignition or accessory source to the compressor with 30 amp fuse. A 12 volt relay or 30 amp switch can be used to operate the compressor, so compressor will not run when engine is off. Make sure tank is drained and closed before starting compressor. Tank may have air pressure from factory. If coach is equipped with electric entry step, there is a yellow wire that operates step and can be used as ignition source. Power must come directly from battery or 30 amp source.

Turn on ignition of coach, or turn on switch for compressor to operate. After compressor shuts off, step fully on coach brake and check for any hydraulic or air leaks.

**Compressor should not run over three minutes when tank is completely empty.**

**Compressor shall not be used for any purpose other than operating M&G brake system. Use for any other purpose will void warranty.**

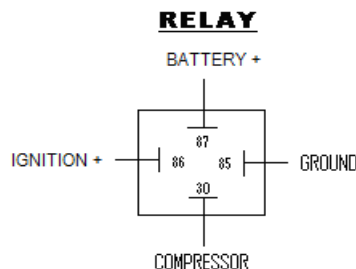


Figure 2

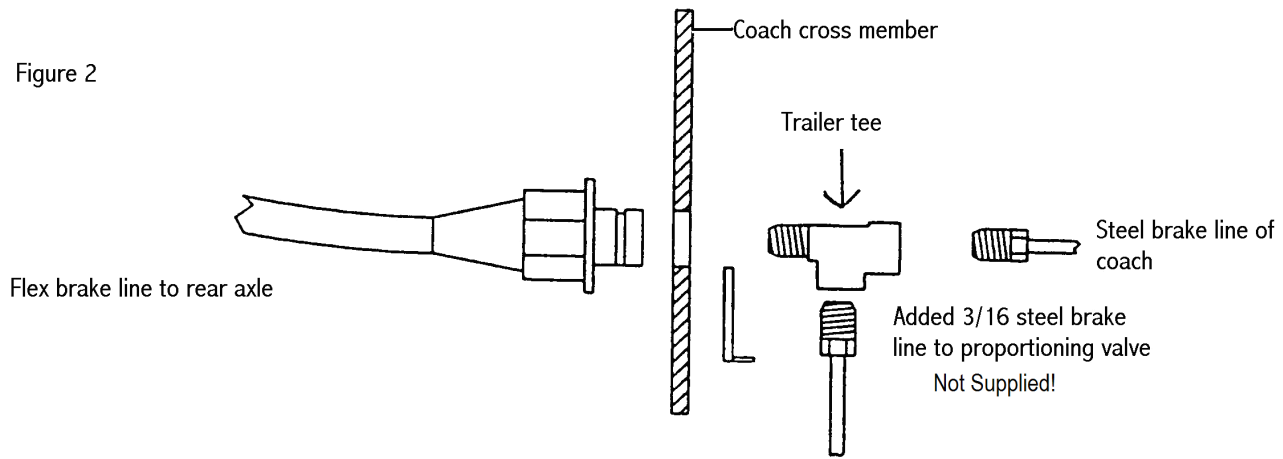
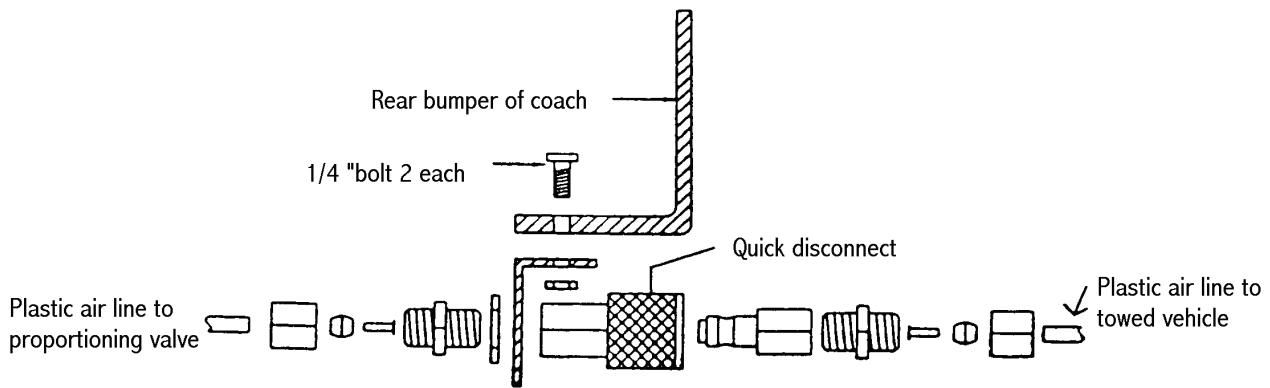
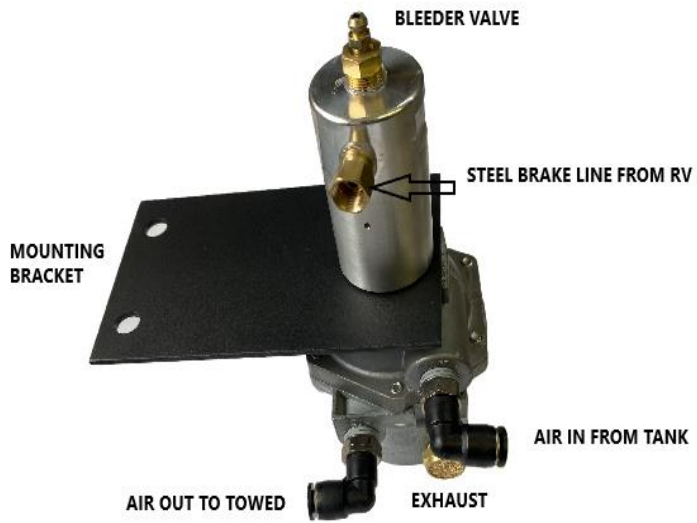


Figure 3



**SERVICE NEEDED:** The air tank must be drained of moisture on a regular basis (once a week), when the coach is driven. There may be some rust inhibitor expelled on the first few drains. Compressor filter cleaned as needed.



## **PROPORTIONING VALVE**

