

M&G BREAKAWAY

Step A

Install the air reservoir

- First choose a location for the air reservoir (Figure 1). The air reservoir is mounted in the towed vehicle, most often in the engine compartment, but it may be attached anywhere within four feet of the existing air lines (from the motorhome and to the air cylinder).
 - Choose a location that meets the following requirements:
- Two air lines will be attached to the reservoir in a later step. One end will be attached to the existing air line routed from the motorhome; the other end will be attached to the air line routed to the M&G air cylinder.
- These air lines cannot be closer than two feet to any heat source, such as engine or exhaust system, which might damage the air line.
- The air reservoir must be mounted away from any moving parts.
- The reservoir will be attached with supplied bracket. Loosen hose clamp and remove tank bracket, attach bracket with two supplied self-drill screws. Before drilling, make certain you will not damage any components on the other side.
- Secure reservoir in hose clamp with brass connections accessible.



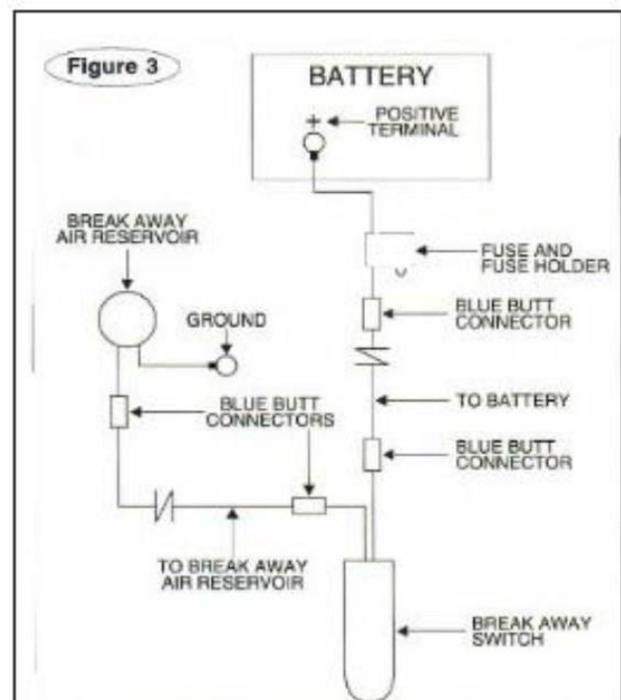
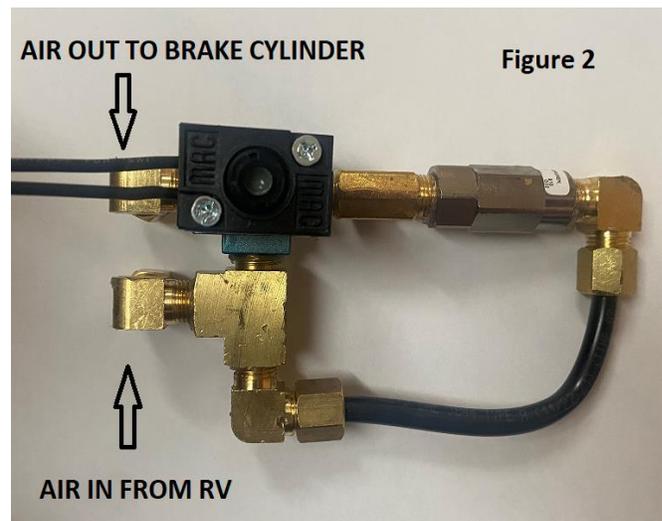
Step B

Mount the breakaway Switch

- Mount the breakaway switch (Figure 1) at the front of the vehicle. Center of vehicle if possible. Choose an area you easily reach, with a surface of sufficient strength to hold the switch firmly in place, so that the breakaway pin will pull freely from the switch. Mount the switch in a horizontal position, with the breakaway pin facing towards the motorhome. Ensure the breakaway pin can be pulled freely away from the towed vehicle, without any obstructions.

WARNING

Do not attach the breakaway switch to the tow bar. In the unlikely event that the tow bar should separate, the breakaway switch will separate with it, preventing the breakaway system from activating. The towed vehicle's brakes will not be applied, which may cause property damage, personal injury or even death.



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WARNING

Step C

Connect the wiring

- Using one of the wire butt connectors, attach one end of the supplied length of black wire to the end of either one of the two wires extending from the breakaway switch. (If necessary, strip ¼" to 3/8" of insulation from the end of the wires before connecting them.) (Figure 3)
- Next, route the wire to the positive terminal on the towed vehicle's battery (figure 3), avoiding moving parts, sharp edges, or hot components such as the engine or exhaust system. Where appropriate, use one or more wire ties to secure the wire in place.
- Cut the wire and strip ¼" to 3/8" of insulation from the end of the wire. Crimp either end of the supplied brown 5 amp fuse onto the end of the wire. Strip the insulation from one end of the remaining length of wire; crimp the other end of the fuse onto the wire.
- If necessary, cut the wire again, leaving no more than 6", and strip ¼" to 3/8" of insulation from the end of the wire. Crimp the larger 3/8" ring terminal onto the end of the wire, and attach the ring terminal to the positive side of the towed vehicle's battery.

Caution

In order to prevent damage from a short circuit, the 5 amp fuse must be within six inches of the positive terminal. If the 5 amp fuse is further than six inches, a short circuit may cause significant damage to the towed vehicle's electric system, an electrical fire or other consequential, non-warranty damage.

- Now, connect the remaining wire at the breakaway switch to either of the two wires extending from the top of the solenoid valve on the air reservoir (Figure 2 and 5). If necessary, use the remaining length of black wire to reach the top of the solenoid valve. As before, strip the ends of the wires before connecting them with the supplied butt connectors. Where appropriate, use one or more wire ties to secure the wire in place.
- Crimp the smaller (#10) ring terminal onto the end of the remaining wire extending from the top of the solenoid valve, and attach the ring terminal to any good chassis ground. (If necessary, extend the wire to reach a good ground).

If the battery must be disconnected for towing, the breakaway must be connected directly to positive and negative terminals of towed vehicle's battery (or the breakaway system must have a complete circuit to the towed vehicle's battery to properly function after battery is disconnected for towing purposes). Failure to do so could result in property damage, personal injury or even death.

Step D

Install the air lines

- At the top of the breakaway air reservoir (Figure 2), attach one end of the included air line to the brass "air in" WHITE compression fitting. – first, if necessary, trim the end of the air line, to make a smooth and straight cut. Then slide the compression nut and the ferrule (Figure 4) over the air line Position the ferrule ¼" from the end of the air line.
 - Next, slide one of the brass inserts (Figure 4) into the end of the line.
 - Note: if the brass inserts are omitted, the fittings will not be airtight.
 - Now, push the air line into the compression fitting as far as it can go. Then push the ferrule into the compression fitting, and tighten the compression nut onto the fitting.
 - Note: if the compression nut is overtightened, the fitting will not be airtight. After completing the installation, check all the fittings for leaks-see "Test the system".
- Next, trim the air line from the "air in" compression fitting and attach it to the existing air line routed from the motorhome.
 - Do not kink the air line as you attach it, or bend it to the extent that it crimps or creases. Where appropriate, use wire ties to secure the air line in place.

CAUTION

Do not position the air line closer than two feet from any heat source. The heat will soften the plastic, which will cause the air line to rupture. If the air line is ruptured, the supplemental braking system will not function.

Do not kink the air line, or bend it to the extent that it crimps or creases – air pressure will be substantially reduced, or blocked entirely, at the kink in the line.

If the air pressure is reduced, the supplemental braking system will not function, or may only function intermittently.

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- Now, attach one end of the remaining length of air line to the "air out" BLUE compression fitting at the top of the air reservoir (Figure2). Use the same method described in step 1 (above) to attach the air line.
- Trim the air line from the "air out" compression fitting and attach it to the existing air line routed to the M&G Brake air cylinder.

Step E Test the System

Note: both the motorhome and the towed vehicle must be stationary for the system test, with the motorhome engine on and the parking brake released. (If necessary, chock the motorhome wheels).

1. Test for air leaks, connect and pressurize the supplemental braking system. Then have an assistant apply the motorhome brakes and continue to hold the brake pedal down. Cover each of the four connections at the air reservoir and air lines with a leak check solution.

Caution

The air system now contains pressurized air, which may cause severe eye or ear injury if it is inadvertently released. Wear appropriate eye and ear protection before adjusting the air system connections and fittings.

- Tighten any fittings, if necessary, and repeat until all connections are airtight.
2. Test for proper operation – first charge the Breakaway air reservoir...
On motorhome with engine on and air pressure at maximum capacity, depress the brake pedal fully for 10 seconds – apply firm pressure.

Warning

The break away air reservoir must be charged, as described above, every time the motorhome and towed vehicle are connected. If the air reservoir is not charged, the break away system will not apply braking pressure if the towed vehicle separates from the motorhome, which may cause property damage, personal injury or even death.

3. After air reservoir is charged, release motorhome brake and turn off engine. Remove break away pin at the front of the break away switch.

The air cylinder will activate and apply towed vehicle brakes. If Original Brake is used, brake pedal will not move. Hold firm pressure on towed vehicle's brake pedal, you will feel pedal move when breakaway pin is pulled. Reconnect the break away pin.

Before towing, charge the air reservoir, as described above.

Warning

When using the break away system, always make certain that the following conditions are met:

1. **Connect the breakaway cable by clipping the included steel cable to the breakaway pin (Figure1) on the break away switch. Clip the other end of the cable to the rear of the motorhome, close to the center. Connecting the cable toward either end of the motorhome may cause the break away pin to be pulled when the motorhome turns, activating the break away system.**

2. **Be sure there are no obstructions which will prevent the cable from pulling freely away from the break away switch. Do not wrap the cable around anything – doing so could keep the cable from pulling the break away pin, preventing the system from activating in a break away situation.**

3. **The air reservoir must be charged, as described in "Test the system," every time the motorhome and towed vehicle are connected.**

4. **Make certain the cable is the correct length...**

- A. **The cable must be long enough to prevent the break away pin from being pulled out during normal towing – make certain there is enough slack to allow for sharp turns. If the break away cable is not long enough, the break away system will activate even though the towed vehicle has not detached.**

- B. **The break away cable must be longer than the safety cables. This will prevent the break away system from activating if a component of the towing system has separated, but the towed vehicle is still held by the safety cables.**

- C. **Make certain the cable is not too long – it should not hang down to the extent it may catch on obstructions, or drag on the ground. This much slack could allow the cable to be pulled inadvertently, activating the breakaway system.**

- D. **If you have a telescoping tow bar, allow enough slack for the tow bar to be fully extended.**

- E. **Leave the break away pin in place, even when the vehicle is not being towed. The break away system will be activated if the pin is removed, which will drain the towed vehicle's battery. Failure to follow these instructions may cause property damage, personal injury or even death.**