



Installation Instructions

BOOSTER KIT

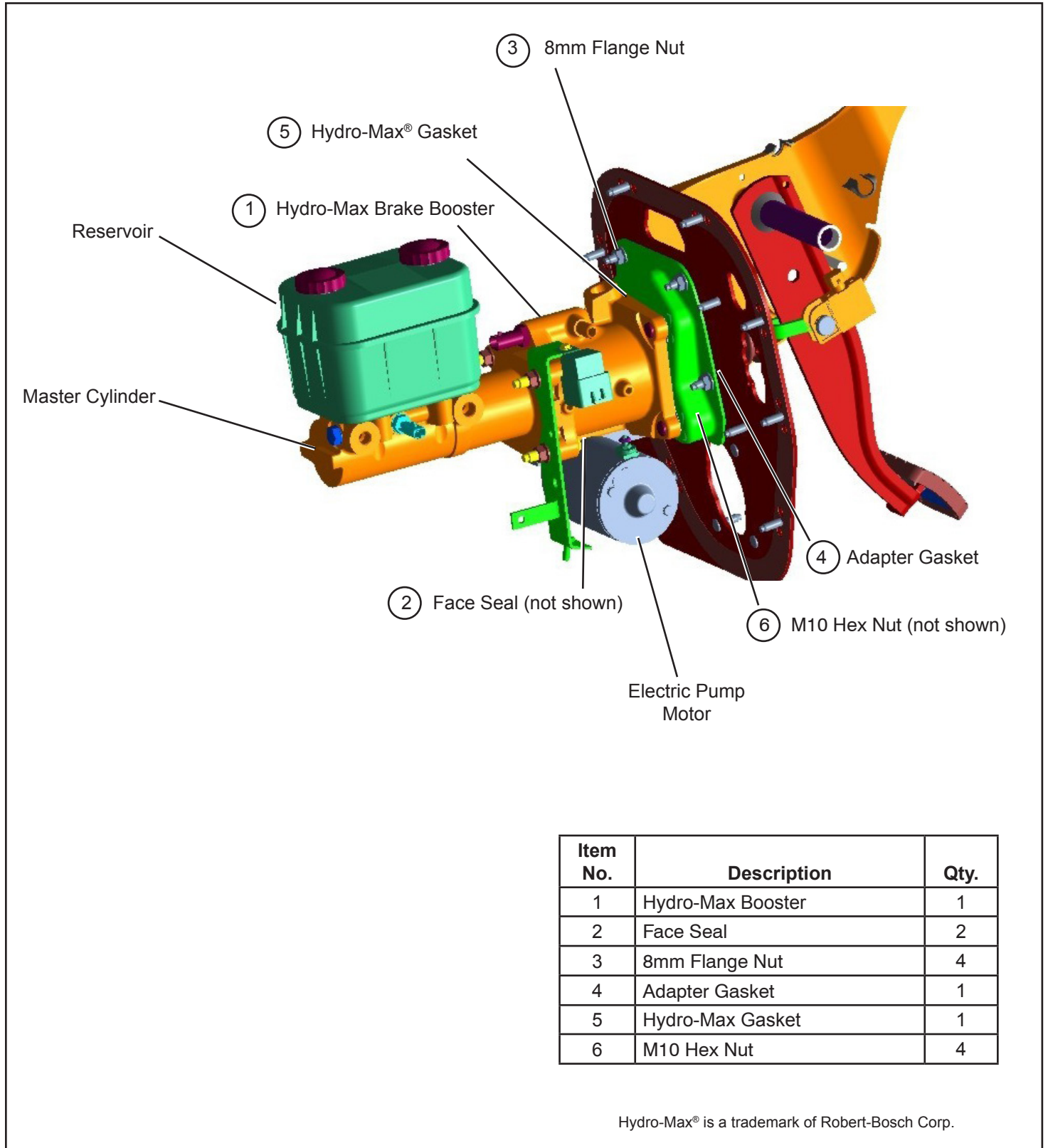


Figure 1 Hydro-Max Booster Kit



GENERAL SAFETY GUIDELINES

WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS

TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following guidelines should be observed AT ALL TIMES:

- ▲ Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically-charged components.
- ▲ Do not attempt to install, remove, disassemble or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, or a Bendix® AD-9si® air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests **USING A DYNAMOMETER** are conducted on a vehicle equipped with a Bendix® Wingman® system.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.

DESCRIPTION

This kit contains all of the components necessary to replace the Hydro-Max brake booster (1).

DISASSEMBLY

1. Disconnect the power source.
2. Identify and mark all hydraulic and electrical lines connected to the Hydro-Max brake booster (1). Disconnect the electrical power lead from the pump motor or relay.
3. Remove the inlet and return port hoses. Plug the open end of the hoses and port fittings. **CAUTION:** Do not apply the brakes after removal of the input hose unless the reserve system is disconnected. Reserve boost pressure will blow the inlet check valve out of the booster.
4. Remove the four cap nuts that secure the master cylinder to the Hydro-Max brake booster (1). Note: Support the master cylinder so that the weight is not exerted upon the steel brake lines. *Refer to Figure 2.*
5. From the passenger side of the cab, remove the cotter pin or bow-tie clip and yoke pin from the brake pedal push rod. A hammer and punch may be necessary for removal. *Refer to Figure 3.* The hydraulic brake pedal switch electrical connector does not need to be disconnected.
6. Mark the orientation of the Hydro-Max brake booster (1) mounting adapter on the dash panel. Remove the four 8mm flange nuts (3) that secure the booster mounting adapter to the dash panel.
7. Slide the Hydro-Max brake booster (1) out, pulling the push rod through the dash panel.
8. As shown in Figure 4, remove the booster mounting adapter and Hydro-Max gasket (5) from the Hydro-Max booster (1) by removing the four M10 hex nuts (6).
9. Clean the booster mounting adapter and dash panel removing all dirt and gasket material.
10. Note the orientation of the electric pump motor on the Hydro-Max brake booster (1). Remove the two cap screws that secure the pump motor to the Hydro-Max body and remove the pump motor. *Note: Approximately three cups of oil will drain out of the Hydro-Max when the pump motor is removed.* Avoid damaging the mating surfaces when removing the pump motor.
11. Remove and discard the two pump motor face seals (2). *Refer to Figure 5.*

ASSEMBLY

1. Lubricate and install the two face seals (2) in the grooves of the electric pump motor assembly. Use fresh, clean power steering fluid as the lubricant. **DO NOT USE BRAKE FLUID.**
2. Before installing the pump motor assembly on the Hydro-Max booster housing, check to be sure that the pump motor check ball and retainer are present in the delivery port. Secure the pump motor to the housing using the two cap screws previously removed. Torque to 216–300 in-lbs.

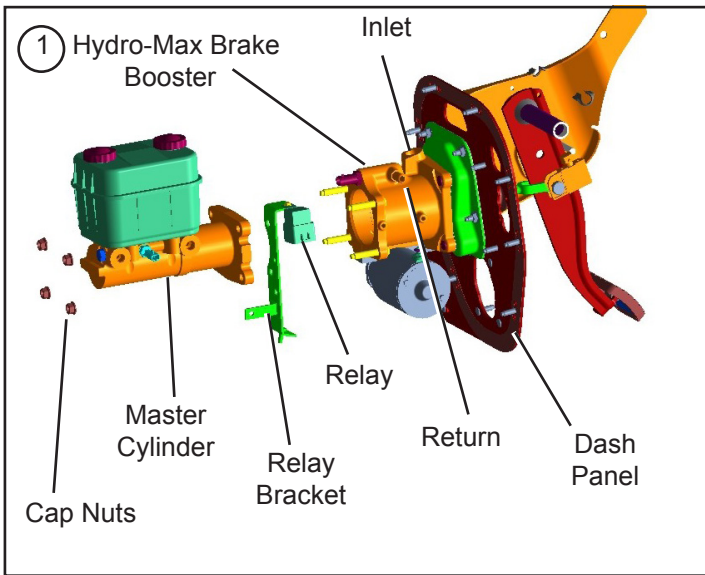


Figure 2 Master Cylinder Removal

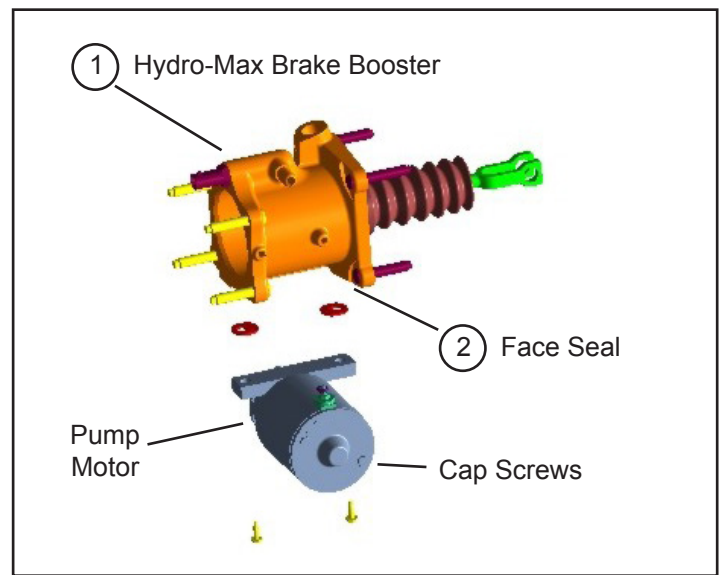


Figure 5 Master Cylinder Pump Motor Removal

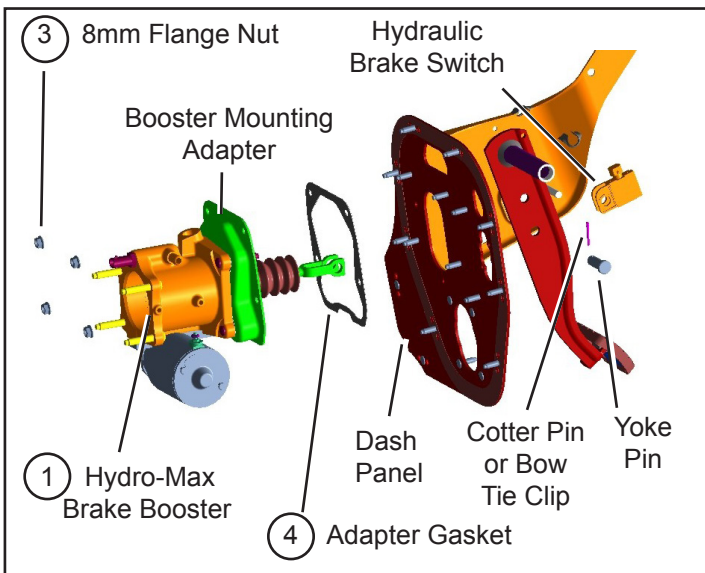


Figure 3 Hydro-Max Booster Removal

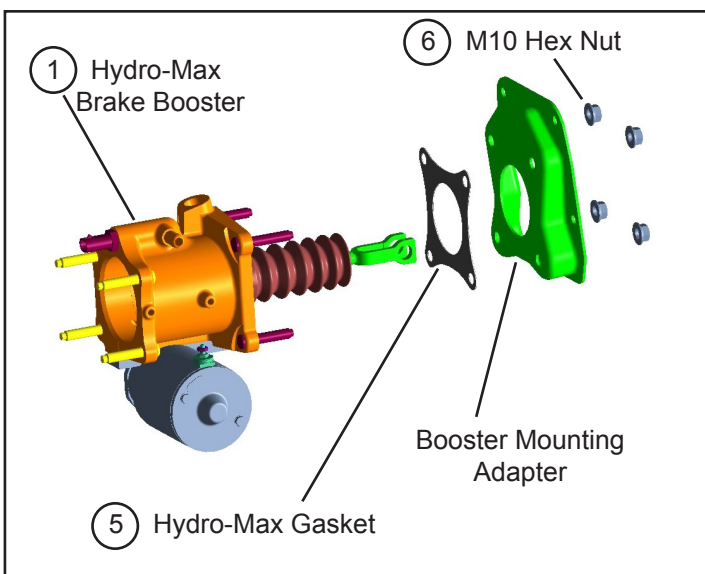


Figure 4 Booster Mounting Adapter Removal

CAUTION: The electrical pump motor assembly CAN BE INCORRECTLY installed. The pump motor MUST be installed with its delivery port closest to the pedal rod end of the booster housing. The position of the inlet and return ports on the booster housing should have the same relationship to the delivery and return of the electric pump motor assembly. A check ball is visible in the delivery port of the electric pump motor. Do not mar the mating surfaces when installing the pump motor on the booster housing.

3. Mount the new Hydro-Max booster (1) and Hydro-Max gasket (5) onto the booster mounting adapter. Secure using the four M10 hex nuts (6), tighten to 300–360 in-lbs.
4. Install the adapter gasket (4) on the mounting adapter. Slide the push rod end of the Hydro-Max brake booster (1) through the opening in the dash panel. While aligning the mounting studs with the holes in the booster mounting adapter and adapter gasket (4), position the yoke so that it straddles the brake pedal.
5. Secure the Hydro-Max (1) to the vehicle dash panel using the four new 8mm flange nuts (3). Tighten to 200–240 in-lbs.
6. Position the hydraulic brake pedal switch such that the electrical connector is pointed up and the yoke pin hole is towards the vehicle dash panel.
7. Slide the switch into place, straddle the left side of the brake pedal yoke and depress the switch spring. This will allow the yoke pin holes in the yoke and brake pedal switch to align. *Refer to Figure 6.*
8. Insert the yoke pin from the driver's side of the vehicle. Note that the yoke pin head contains two flats, or reliefs, to facilitate the installation. While holding the brake switch in place, use a hammer and punch to gently tap the yoke pin through the aligned holes.
9. Reinstall the bow-tie clip or cotter pin in the yoke pin hole. If using a cotter pin, bend the ends back to approximately 45°.

10. Connect the master cylinder to the Hydro-Max booster (1) using the hardware previously removed. Tighten to 300–360 in-lbs. **Do not over or under tighten!**
11. Reconnect the inlet and return hoses to the Hydro-Max (1) and torque the inlet hose fitting to 190–360 in-lbs. Do not over tighten the inlet hose, stripping of the aluminum booster housing will result.
12. Reconnect the power lead to the pump motor or relay.
13. Reconnect the power source.
14. Before placing the vehicle in service, perform the Refilling & Bleeding and Testing Procedures that follow in this document.

REFILLING & BLEEDING THE HYDRO-MAX

NOTE: DO NOT USE BRAKE FLUID: Use only clean power steering fluid.

1. Check hydraulic pump or power steering pump reservoir supplying the Hydro-Max (1) and fill with clean power steering fluid.
2. Crank the engine several revolutions. (Do not start engine.) Check the pump reservoir and refill if necessary.
3. Again crank the engine several revolutions. (Do not start engine.) Check the pump reservoir and refill if necessary.

TESTING THE SYSTEM

Before moving the vehicle, check the system for correct operation.

1. With the engine off, depress the brake pedal. The warning light and/or buzzer should come on and the electric motor should run, giving you some brake assistance.
2. Start the engine. Depress the brake pedal. No warning lights, buzzer or electric motor should come on. Check for leaks.
3. Stop the engine. Check the fluid level in the pump reservoir. Add fluid if necessary.

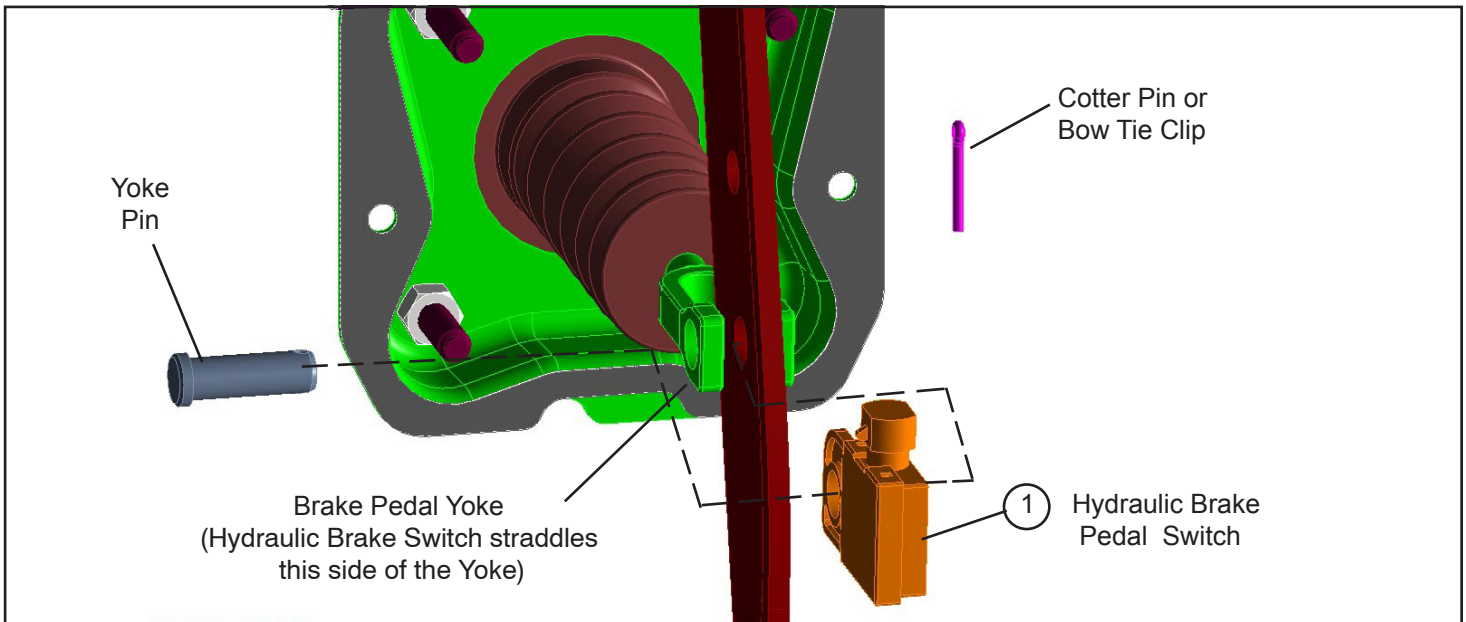


Figure 6 Hydraulic Brake Switch Kit Installation

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