



Drum Brake Owner's Manual

Drum Brake Information

If your trailer is equipped with hydraulic drum brakes, the brakes are activated by the surge actuator/coupler located on the front end of the trailer tongue. When the tow vehicle stops, the trailer pushes into the tow vehicle, compressing the master cylinder that is located inside the actuator. The master cylinder forces brake fluid to the drum brakes. Inside each drum brake is a wheel cylinder that expands with the surge of brake fluid, pushing the brake shoes against the inside of the brake drum.

Drum brakes must be periodically adjusted. Recommended service intervals are after the first 500 miles and then every 1000 miles. Drum brakes also must be flushed when submerged in saltwater or towed in road conditions where salting of the roads is done to improve driving conditions.

Many marine and trailer accessory companies offer drum brake flush kits. If you use your trailer in these conditions, it is recommended that you install a flush kit, if your trailer did not come equipped with the flush kit.

1. Using an adequate capacity floor or scissors jack, raise the side of the trailer. Block the wheels opposite the side being worked on both front and rear so that the trailer cannot roll. DO NOT rely on the jack as the only means of support. Always support the trailer with adequate capacity support stands.

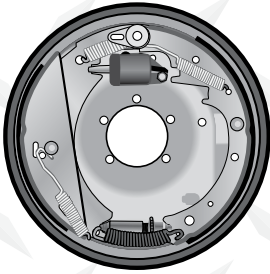
UNDER NO CIRCUMSTANCES IS THE TRAILER TO BE SUPPORTED BY THE TONGUE JACK WHILE BEING RAISED AT THE WHEELS!

NOTE: Check under frames for brake lines BEFORE lifting. DO NOT position jack in areas that may damage brake lines, etc.

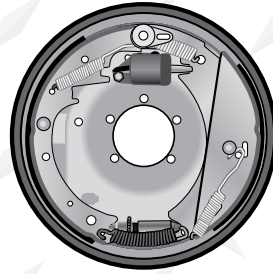
NOTE: For tandem and tri-axle trailers, jack should be placed on the frame between the wheels, or directly under the axle within 8" of the backside of the tire. Single axle trailers can be lifted on the frame just behind the axle or directly under the axle within 8" of the backside of the tire (if lifting at the axle).

2. Remove the wheels
3. Remove the dust cap.
4. If your spindle has a tang washer, pull up on the tab so you can unlock and remove the castle nut. If you have a cotter pin, pull it out and remove the castle nut.
5. Remove the hub. It may be helpful to release tension to the brakes pads by backing off the star adjuster.
6. Disconnect the hydraulic brake lines or the electric brake wires.
7. Remove the backing plate by removing the 4 or 5 mounting bolts holding the brake to the brake flange. Clean the spindle and brake flange.
8. Determine which side the brakes go on. The brakes should be labeled "L" for Drivers side & "R" for Passenger side. If the labels have been removed, simply look at the master cylinder on top (for hydraulic brakes), the piston inside the master cylinder will always point forward. For Electric brakes look at the magnet bracket, the curved bracket should point forward with the open end towards the back. See next page.

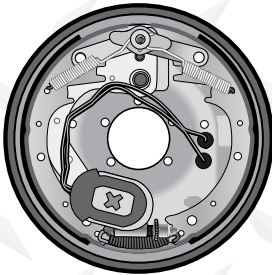
Drum Brake Installation



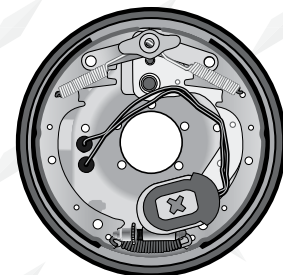
**Hydraulic Brake
"Left" Drivers Side**



**Hydraulic Brake
"Right" Passengers Side**



**Electric Brake
"Left" Drivers Side**



**Electric Brake
"Right" Passengers Side**

9. Mount the brake assembly to the brake flange with the mounting bolts. Mounting bolts should torque to 40 ft lbs.
10. Inspect the original hub. Check the seal & bearings for wear. If there is any doubt whatsoever, go ahead and replace the seal and bearings and repack with fresh grease.
11. Reinstall the hub. Push the hub back into place. Make sure your bearings are seated.
12. Install the washer and use a new tang washer. It is always a good idea to replace it, just like a cotter pin.
13. Reinstall a castle nut, run it down until it stops. Rock the hub back and forth a little bit. Spin the hub a little bit. Make sure everything is seated. Run the castle nut down until it stops and then back off to the next notch, then align hole in castle nut with the hole in the spindle and insert cotter key.

14. Install the dust cap.
15. Reattach electric brake wires or reconnect hydraulic brake lines and follow instructions for hydraulic bleeding.

Adjusting The Brakes

16. With trailer wheel off the ground and tire mounted, remove the rubber access hole plugs from the rear of the brake backing plate.
17. Inserting a brake spoon or flat screwdriver through the access hole(s), tighten the star adjuster while rotating the wheel in the forward direction.
NOTE: Always spin wheel in the forward direction as if the trailer was traveling forward on the road. Tighten the star adjuster until the wheel reaches a point where the brake shoes start to engage.



18. Loosen the star adjuster one click at a time while turning the wheel in a forward rotation. Continue adjusting one click at a time until the wheel rotates with little effort.
19. Replace the rubber access hole plugs.
20. Repeat this procedure for all braking wheels.

Bleeding the Brake System - Hydraulic Drum Brakes Only

Use only DOT 3 heavy duty fluid in the actuator. Do not re-use brake fluid. Do not use any other type of brake fluid other than DOT 3.

If pressure bleeding equipment is available, follow the manufacturer's instructions in bleeding the system. These types of brake bleeders are available at your local automotive supply store.

Manually Bleeding, Pumping the Actuator: Insert a heavy-duty flat blade screwdriver into the hole provided on top of the actuator near the front. Catch the bleeding latch bracket with a screwdriver and, with a pumping action, tilt the screwdriver front to back in a rocking motion to activate the master cylinder in order to bleed the brakes.

To bleed master cylinder and brakes, install bleeder hose on first wheel cylinder to be bled; if tandem axle trailer, bleed furthest axle first, and the furthest brake on that axle first. Loosen the bleeder screw located in the wheel cylinder one turn, the system is now open to the atmosphere. Attach a loose end of a hose from the bleeder valve with the other end submerged in a glass container of brake fluid. While pumping the actuator watch and observe the bubbling (hose must be submerged into clean brake fluid to keep air from traveling back into the brake cylinder).

The bleeding operation for that brake is complete when bubbling stops. Be sure to tighten bleeder screw securely.

Each wheel cylinder must be bleed until all air is out of the lines. Replenish the brake fluid during the bleeding process so the level does not fall below half full level in the master cylinder reservoir. When bleeding and testing is completed, make sure master cylinder is filled to 3/8" below the top of the reservoir and filler cap is securely in place.

WARNING

Brakes should always be rinsed with fresh water after using trailer in corrosive conditions. This includes salt water, fertilizers and other corrosive materials. Before storing trailer remove brakes and clean thoroughly. It is also wise to repack the bearings at the same time.

WARNING

DO NOT REUSE BRAKE FLUID. Always use fresh DOT 3 fluid from a fresh container. Failure to maintain proper levels of fluid will cause brake failure.

Electric brakes are activated by a brake controller located in the tow vehicle. This is generally an accessory that must be purchased separately. Please research before buying. Some controllers work better with different brand tow vehicles.

Electric drum brakes are not recommended for marine applications.

Electric brakes are individually adjusted in the same way the hydraulic drum brakes are adjusted, which is covered in this manual. The electric drum brakes work by an electrical current going to the brakes and activating a magnet. The magnet is then attracted to the inside wall of the drum hub. This drags the magnet and pushes the brake shoes out against the drum hub. The brake controller is generally adjustable to regulate the amount of current given to the magnets/drum brakes. This adjustment controls the amount of braking force applied.

Wires are connected to the brakes by one of two methods:

1. Plug in wires.
2. Twist wires with a wire cap cover.

There is not a specified positive/negative connection at the brakes.

Hydraulic Drum Brake Trouble Shooting

Symptoms

Possible Cause

Noise or brake chatter

Improper brake adjustment.
Brake fluid or grease on lining.
Improperly adjusted or worn wheel bearing.
Drum out of round.
Dirt on drum or lining surface.
Dust in rivet holes.
Lining glazed or worn.
Scored drum.
Loose backing plate.
Weak or broken return springs.

Only one brake is activating

Improper brake adjustment.
(see brake adjustment)
Brake line is restricted.
Improperly adjusted or worn wheel bearing.
Drum out of round.
Loose backing plate.
Faulty wheel cylinder.
Weak or broken shoe return spring.
Glazed or worn lining.
Loose lining.
Air in hydraulic system.
Dirty brake fluid.

All brakes drag

Faulty actuator.
Mechanical resistance at actuator or shoes.
Brake lines restricted.
Dirty brake fluid.
Faulty back up solenoid (if used).

Brakes do not apply

Leaks or insufficient brake fluid.
Air in hydraulic system.
Improper brake adjustment.
Faulty actuator.
Lining glazed or worn.
Brake fluid or grease on lining.
Dirty brake fluid.

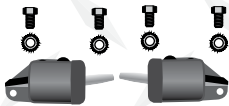
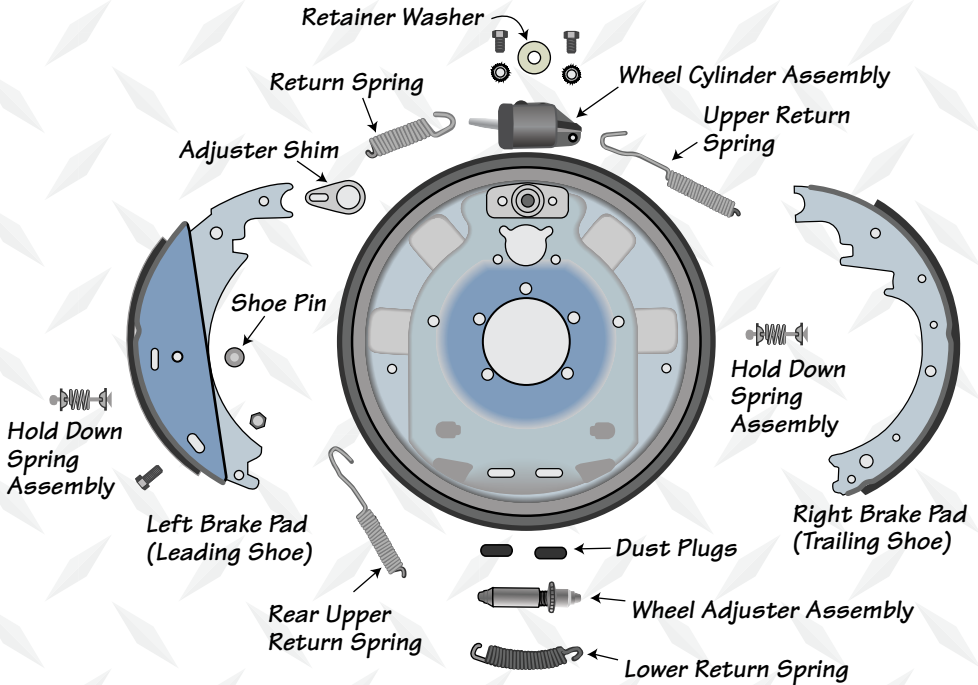
Leaking wheel cylinder

Check and replace wheel cylinder and bleed brakes.

Seized wheel cylinder piston

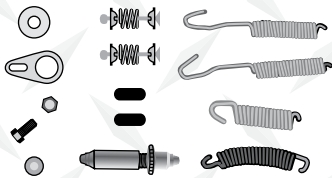
Check and replace wheel cylinder and bleed brakes.

Hydraulic Drum Brake Parts



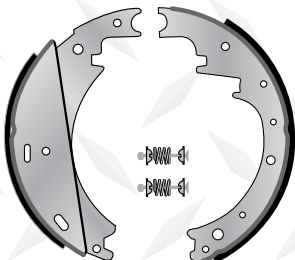
Drum Wheel Cylinder Kit for 10" & 12" Brakes
includes; LH & RH Wheel Cylinder and mounting screws

Part #80994



Drum Replacement Parts Kit
(Free backing & Uni-Servo) includes all parts shown, excluding pads, back plate and wheel cylinder

10" Parts Kit Part #81096
12" Parts Kit Part #81095



Brake Pad Replacement Kits

Kits include brake pad sets for left and right side brakes

7" Free backing Shoe (lining) Kit Part #81113
10" Free backing Shoe (lining) Kit Part #81108
12" Free backing Shoe (lining) Kit Part #81109

Electric Drum Brake Trouble Shooting

Symptoms

Possible Cause

Noise or brake chatter

Improper brake adjustment.
Oil or grease on lining.
Improperly adjusted or worn wheel bearing.
Drum out of round.
Dirt on drum or magnet surface.
Dust in rivet holes.
Lining glazed or worn.
Scored drum.
Loose backing plate.
Weak or broken return springs.

Only one brake is activating

Improper brake adjustment. (see brake adjustment)
Improperly adjusted or worn wheel bearing.
Drum out of round.
Loose backing plate.
Weak or broken shoe return spring.
Glazed or worn lining.
Loose lining.
Bad connection at tow vehicle.
Broken or disconnected wire.
Bad magnet.
Dirt or grease inside hub surface.

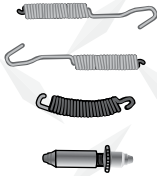
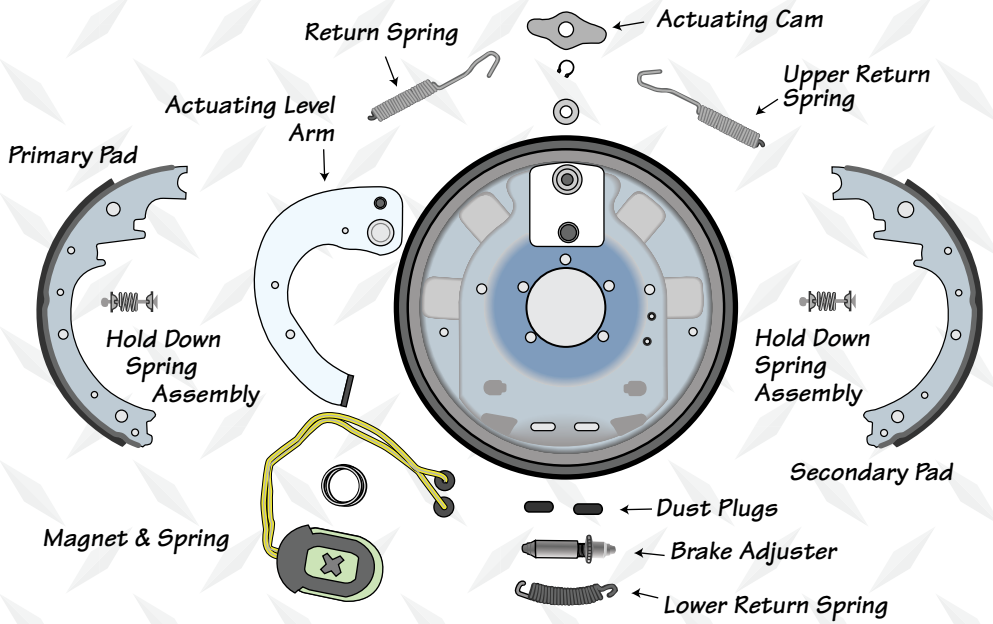
All brakes drag

Faulty or improperly adjusted brake controller.
Improperly wired brake connection.
Mechanical resistance at actuator or shoes.

Brakes do not apply

Faulty brake controller.
Improperly adjusted brake controller.
Brake wires not connected to tow vehicle.
Bad Magnets.
Improper brake adjustment.
Lining glazed or worn.
Dirt or grease inside hub surface.
Damaged wiring.

Electric Drum Brake Parts



Spring/Adjuster Replacement Kit
for 10" & 12" brakes

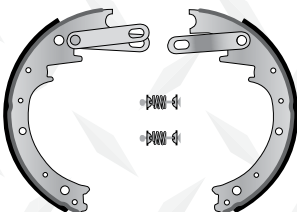
Part #82075



Magnet, Wiring & Spring Assembly

10" Magnet Assembly
12" Magnet Assembly

Part #82078
Part #82079



Pad Replacement Kits

10" Electric Shoe (lining) Kit
12" Electric Shoe (lining) Kit

Part #82076
Part #82077



Drum Brake Owner's Manual



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