



SURGE ACTUATORS

HYDRAULIC SURGE BRAKE ACTUATION

INSTALLATION AND SERVICE INSTRUCTIONS

DX8.0 Actuator

CAUTION

DO NOT submerge actuator. To minimize the damaging effects of corrosion on a braking system used under corrosive conditions, actuator should be externally flushed after use with a high pressure water hose. Lubricate all moving parts after the unit has dried. Failure to properly and adequately clean, grease, and maintain the actuator can cause failure and result in serious injury.

This actuator arrives completely assembled and ready to install.

RATED CAPACITY AND TONGUE LOADS VARY. PLEASE REFERENCE THE COUPLER CASTING AND TOP PLATE OF ACTUATOR FOR CAPACITIES.

When used with disc brakes or non free-backing brakes, a solenoid backup valve will allow the trailer to be backed without activating the brakes. Do not block actuator movement in and out to back up the trailer. Failure to remove the blocking device will prevent all trailer braking.

1. Bolt or weld the actuator to the tongue. Spacer tubes are required for light-weight tongues. Attachment strength should equal 1-1/2 times trailer G.V.W.R.
2. Install brakes and brake lines per manufacturers instructions. **FLEXIBLE BRAKE LINE HOSE MUST BE USED** when connecting the master cylinder to the hydraulic line on the trailer to provide overload protection.

CAUTION

Incorrectly filling or bleed the brakes can result in brake failure. Only use fresh brake fluid from sealed container. DO NOT reuse fluid. After filling and bleeding, remember to refill the actuator. Failure to maintain an adequate fluid level may cause failure.

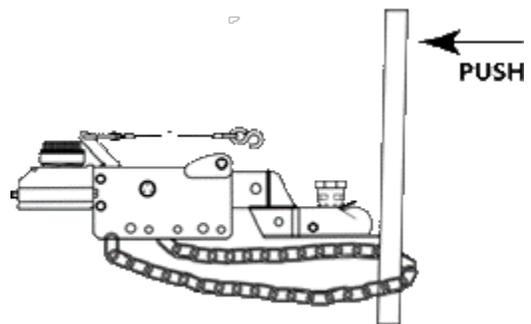
3. Fill and bleed the brake system per manufacturer's instructions.
4. Fill master cylinder to 3/4 full with DOT-3 brake fluid. DO NOT allow brake fluid to contact painted surfaces since it will damage the finish. Wipe up any spills immediately and wash the area with water.
5. When the air bubbling stops inside the master cylinder, install a bleeder hose on the bleeder screw of the first wheel cylinder or disc brake caliper to be bled. Be sure to use the bleeder screw on top of the caliper. Start with the rear axle on tandem axle trailers. Submerge the other end of the hose in a glass container of clean brake fluid so that air bubbles can be observed. Open the bleeder screw one turn before pushing the coupler case in. When the coupler is pushed completely in, the bleeder screw should be closed to prevent air from being pulled back into the system. Air trapped in the brake lines will greatly reduce your braking efficiency. Repeat this process until no more bubbles are released with each stroke. Be sure to close the bleeder screw securely.

6. Repeat the bleeding operation at each wheel cylinder. During the bleeding process, replenish the brake fluid so the level does not fall below half full level in the master cylinder reservoir. When bleeding is complete, fill the reservoir to within 3/8" of the top. Install the filler cap securely.

System Test

This procedure only indicates if the trailer brake system is functional. Regular inspection, maintenance, and adjustments of all brake system components are still required to ensure brake operation and performance.

1. Move the trailer to flat, level ground, pulling FORWARD several feet before parking. This forward motion will ensure trailers equipped with free-backing brakes are in their normal operating mode. Chock wheels, allowing for small testing motion. Disconnect the trailer from tow vehicle and jack the trailer's tongue until it is horizontal.
2. Hook the trailer's safety chains (NOT the actuator's breakaway cable/chain) together to form a loop, which is centered below the actuator's coupler as shown below.
3. Place a sturdy board, into the chain loop below the coupler. The board should be 4 feet or longer so it will extend several feet above the actuator. Keep the end of the board a few inches off the ground, and position it to press against the front end of the actuator's coupler.



4. Stand in front of the trailer and face the rear. Apply force to the top end of the board to use it as a lever. Press back towards the rear of the trailer. The board will begin moving the inner member into the actuator's outer housing.
5. Keep pressing the top of the board to stroke the actuator and its internal master cylinder. If the trailer brake system is operational, the brakes will apply and keep the trailer from rolling away from you. Properly adjusted uni-servo or duo-servo type brakes will prevent you from moving the trailer back more than a few inches. Free-backing type brakes will initially provide rolling resistance, but continued force on the board will switch them into free-backing mode, and you'll be able to move the trailer backwards.

- If stroking the actuator causes the trailer to roll away from you freely or with only minimal resistance, the brakes are NOT applying properly. Evaluate the brake system to determine cause. Corrective action MUST be taken before the trailer is used.

Hitching Trailer

Attach the actuator's breakaway chain S-hook securely to one of the tow vehicle hitch safety chain connection points. Confirm that the trailer's safety chains are adjusted relative to the actuator's breakaway chain as noted above. DO NOT loop the breakaway chain around a bracket and hook it back onto itself.

CAUTION

Safety chains must be used. The length MUST be set short enough so the actuator's breakaway cable is NOT pulled if the coupler separates from the tow vehicle's hitch but remains connected by the safety chains.

Resetting the Breakaway Lever

The hydraulic pressure held in the system may cause the lever to snap back quickly. Keep hands and fingers clear as you reset the breakaway mechanism.

CAUTION

DO NOT use breakaway systems as a parking brake.

When the breakaway lever is engaged, it is in the vertical position. It must be reset before the trailer is moved.

- Carefully loosen the pressure line fitting to the master cylinder to relieve hydraulic pressure.
- Remove the four bolts that secure the master cylinder assembly to the outer member. The flat front tab of the "U" shaped breakaway spring can then be placed in the top notch of the breakaway lever.
- Then position the back tab of the breakaway spring on the top of the master cylinder mounting bracket as you line up the master cylinder assembly bolt holes.
- Tighten the bolts and check the breakaway lever position – it should be at about a forty five degree angle.
- Tighten the brake line fitting and re-bleed the brakes as necessary.
- Sway control devices that restrict operation of the actuator cannot be used. The actuator must be free to telescope in response to braking requirements.

Pre-Towing Check List

CAUTION

An incorrect lever or chain position may cause the trailer brakes to drag and overheat, or may keep the brakes from being applied in a breakaway situation. After any usage of the breakaway mechanism, either real or accidental, check all system components for damage. Replace any damaged items with genuine Dexter service parts.

- Check that the brake fluid reservoir is 3/4-full of DOT-3 brake fluid. Check for leaks and repair as required.

CAUTION

Use only fresh brake fluid from sealed container. DO NOT reuse fluid. Failure to maintain an adequate fluid level may cause brake failure.

- Examine the actuator for wear, bent parts, corroded/seized parts, or other damage. Have the affected components replaced with genuine Dexter service parts. Check to determine that the actuator mounting bolts are torqued to 80 ft.-lbs.
- Test the actuator and brake function as previously described. Actuator travel over 1" indicates that the brakes need adjustment. Adjust the brakes according to manufacture instructions if needed. There are no adjustments on the actuator.
- A film of grease on the hitch ball will extend coupler and ball life while eliminating squeaking. Wipe clean and renew film each time trailer is used.