

Date: May 18, 2020

Subject: Dexter DX Series Electric/Hydraulic Actuator Improvements

Dexter is pleased to introduce new features and performance improvements to the Dexter DX Series Electric/Hydraulic actuators K71-650-00 and K71-651-00.

- Control boards are now completely solid-state with no mechanical relays. Solid-state relays are more reliable than mechanical relays, which wear out over time and are more susceptible to vibration fatigue.
- In addition to making the product more rugged, improved electronics protect the DX Series Actuator from low power, too much power, and electrical shorts.

Additionally, there are some best practices Dexter recommends to get the best performance out of the DX Series Actuator. These include:

- A clean power source, such as a battery, is required when testing the unit. **DO NOT** connect a battery charger or power inverter directly to the DX Series Actuator. Refer to pages 6 and 7 of the DX Series Actuator Service Manual (LIT-608-00) for breakaway battery maintenance in addition to the breakaway testing procedure below. The Service Manual is available on www.dexteraxle.com/resources/manuals.
- Please refer to the chart below for the recommended distance for the brake wire from the 7-way plug to DX Series Actuator.

7-way-to-DX Series EH actuator (Distance in feet)	Required minimum wire size
5' or less	12 AWG
5' to 15'	10 AWG
15' to 25'	8 AWG

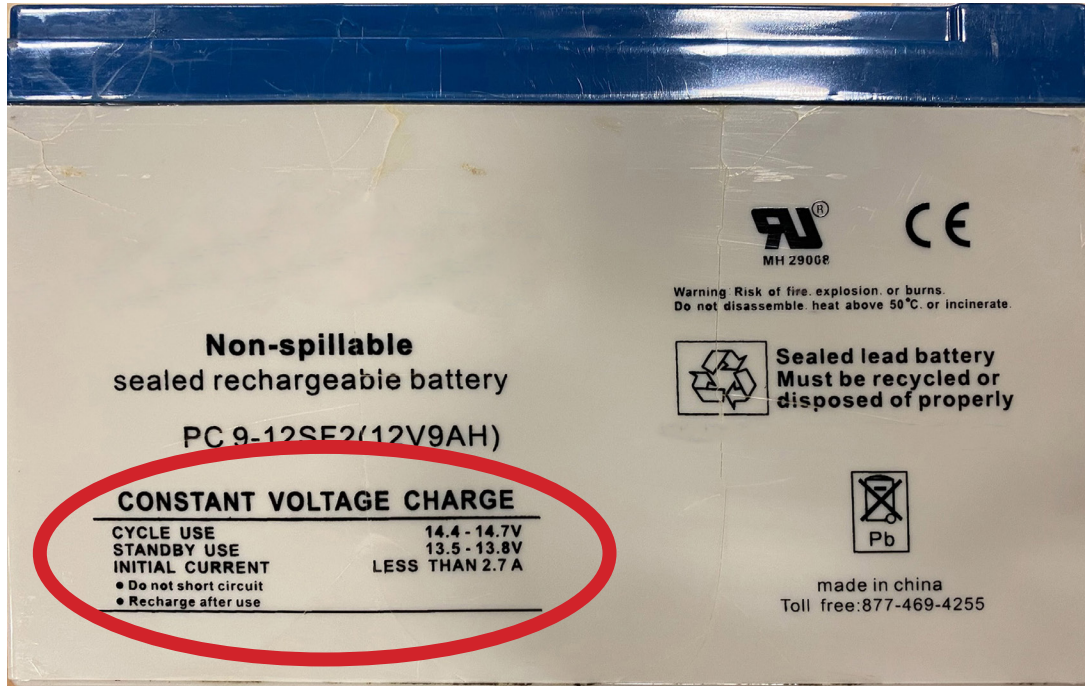
- Only use inertia sensing brake controllers with the DX Series Actuators. The DX Series Actuator is not compatible with Tekonsha® Voyager® brake controller or any time delay brake controllers.

Breakaway Testing Procedure for TCV and TCB prefix serial numbers:

Part numbers affected are K71-650-00 and K71-651-00 and the serial numbers begin with TCV and TCB. The image below shows where the serial number on the DX Series Actuator can be located.



1. With a voltage meter, check that the battery is producing proper voltage. The voltage range should be 13.5V to 13.8V (see breakaway battery label picture below).



2. While measuring the voltage at the actuator on the white and yellow wires, pull breakaway switch. If voltage drops more than 1.5 volts, the battery is low and must be charged. If, after charging the battery, the voltage still drops more than 1.5 volts, then the battery needs to be replaced.
3. If voltage drop is less than 1.5 volts and breakaway doesn't function, the wiring should be checked ensuring proper gauge wire is used and all connections are secure.
4. If wiring is the proper gauge and the battery drop is less than 1.5 volts when breakaway is pulled, replace the actuator with new one.



Jay Klinkerman
Market Manager

Electrical Installation Requirements

Requires an Electric Brake Controller – The DX Series Actuator is intended to be used with an electric brake controller in the tow vehicle. The unit will operate with a wide variety of controllers but provides optimum performance when used with a Dexter electric brake controller. The electric brake controller must have an output capacity of at least 5 amps for proper operation of the DX Series Actuator. Although compatible, time based brake controllers are not recommended. Use only inertia sensing brake controllers with the DX Series Actuators such as the Dexter Predator DX2 Trailer Brake Controller. The DX Series Actuator is not compatible with Tekonsha®'s Voyager® brake controller or any time delay brake controllers.

CAUTION

It is the responsibility of the end user to ensure that their electric brake controller is compatible with the DX Series Actuator. Dexter attempts to provide compatibility with most controllers available, but is unable to anticipate design changes that might be introduced by the various controller manufacturers.

Electrical Connections – Make sure all electrical connections are clean, dry, weather tight, and secure to prevent damage to the wiring from dragging or becoming entangled with foreign objects. A dedicated ground connection between the tow vehicle and trailer is also required.

Breakaway Battery Requirement – To comply with federal requirements, the trailer must be equipped with a breakaway switch and battery. The breakaway battery needs to have a minimum capacity of 9 amp hours and needs to be maintained in a fully charged condition at all times. The breakaway battery should be checked for proper charge level before every use.

Charging the Breakaway Battery – The breakaway battery must be kept fully charged at all times in order to function properly. Use only those breakaway battery kits that include a charging device. Do not attempt to charge the breakaway battery directly from the tow vehicle without the appropriate charging device.

Test Electrical Operation

1. Attach the trailer to the towing vehicle. Do not connect trailer plug to tow vehicle until step #2 is completed.
2. Pull the breakaway switch. The DX Series Actuator should run. If the unit does not run, check breakaway battery condition and system wiring. Reset the breakaway switch, which will turn the unit off. Note: When the unit is running, the motor will generate a “hum” that changes pitch as the unit builds pressure. This is normal.
3. Connect trailer plug to tow vehicle.
4. Turn the ignition switch on and turn the electric brake controller on. Inertia type controllers will often require the vehicle to be moving in order for the DX Series Actuator to come on by means of the brake pedal. If the unit does not run, check system wiring.
5. Apply the controller manual slide. The DX Series Actuator should run and brake lights come on.

CAUTION

Testing the DX Series Actuator confirms that it is operating. It DOES NOT confirm that the brakes are operating properly. Regular inspection, adjustment, and maintenance of the brakes, lines, hoses, drums, discs, fluid, and other associated components is necessary to ensure proper brake operation.

6. Some brake controllers will not produce a high enough signal voltage to actuate the trailer brakes when the vehicle is at a standstill. Minimal trailer brake force is produced when the controller voltage output to the DX Series Actuator is at least 3 VDC. Maximum trailer brake force is achieved at 12 VDC on the actuator blue wire.
7. When the tow vehicle brakes are released, the unit may continue to run for a few seconds.