

# IS YOUR COMMERCIAL DOOR OPERATOR INSTALLATION SAFE?

## Good questions and expert answers

*Editor's note: Mark Northfield of All Seasons Garage Door in Minneapolis sent us the following excellent questions about safety and commercial door operators. For answers, we turned to CDO expert Roy Bardowell.*

### **Q** How do I determine if an existing older commercial operator is safe?

**Bardowell:** At a minimum, you should check to see if an entrapment protection device has been installed and is correctly wired to the operator. Then, check it for correct operation. When closing the door, the device should reverse it to the fully open position.

On operators that are more than 40 years old, the door may only stop when the device is activated. This is to limit the trauma to the operator or door when reversing a heavy door.

Applying a device to stop a door operator manufactured prior to Aug. 29, 2010, is easily done by connecting the device in series with the stop button. For example, if I cut the wire to the stop button and run both ends of the wire to a commercial UL 325-recognized photo eye relay, the photo eye would stop the door when the beam is interrupted. Most operators with a stop button could be used this way.

Another check involves the friction clutch adjustment. Since 1970, most CDOs have a friction clutch or torque limiter built into the operator gear reduction. The clutch provides slippage in the operator in case the door becomes jammed.

If the clutch is properly adjusted, the door will stop moving upward when you add force to the door. I test it by grabbing the bottom of the door while it is going up. The door should stop moving even though the motor is still turning.

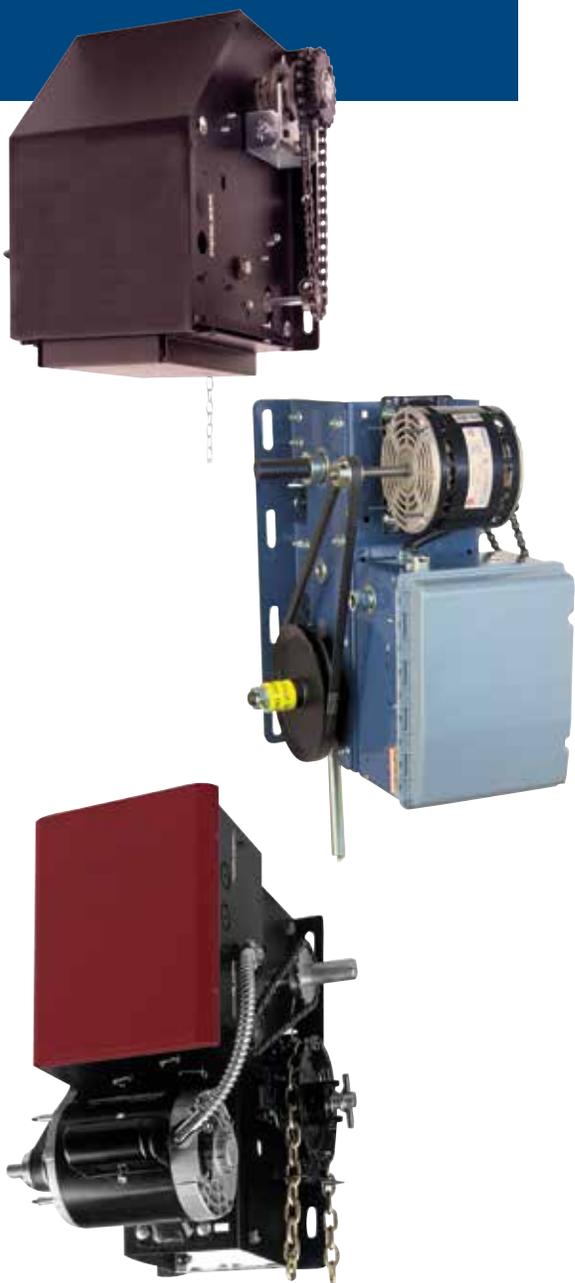
When I do training at a dealer's location, I immediately check out the clutch on their door. I often find that it's improperly adjusted.

### **Q** What do I do if I encounter a commercial operator with questionable pneumatic bottom edges, safety eyes, or push-to-hold features?

**Bardowell:** Push-to-hold or "constant pressure on close" is considered a form of passive entrapment protection. Even today, UL 325 allows CDO manufacturers to provide an operator that is wired to accept an approved external monitored entrapment protection device or provide the unit with constant pressure on the close button. Either mode is considered acceptable.

As of Aug. 29, 2010, manufacturers who are listed with UL must build their operators to accept an approved monitored entrapment protection device. Most manufacturers choose a photoelectric sensor or electric edge, so that if the device showed a fault, the operator could close the door only with constant pressure on the close button.

Pneumatic edges are not easily monitored. But if you install an approved monitored photo sensor on a CDO, then a pneumatic edge would be fine as an ancillary entrapment protection device. Once an approved monitored entrapment protection device is wired and working correctly with an operator, you may install any other device as ancillary protection.



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**Q On commercial operator jobs like this, how can we protect our customers and ourselves from serious injury?**

**Bardowell:** All users must be briefed and instructed on the proper use of the door, and protocols must be put in place. Since it is difficult to limit “proper users,” I encourage the use of a keyless entry or key switch. That way, only the trained personnel can access the operator.

**Q How do we educate our techs and the customer about the acceptable safety features?**

**Bardowell:** Each operator manufacturer does things differently. I suggest that you speak directly with customer support of the manufacturer in question.

You want solid answers and not 10 different answers. I recommend that you start by asking the manufacturer about the specific entrapment protection devices that are compatible with the operator for that specific job.

**Q Does the industry offer any approved stickers for commercial operators?**

**Bardowell:** The UL or equivalent mark is already on most door operators. This mark tells you the operator has gone through the UL process, is considered state of the art, and complies with the latest requirements for entrapment protection.

DASMA has created several industry-approved labels for a variety of our products. You can view them and order what you need at <http://www.dasma.com/PDF/Publications/DASMALabels.pdf>. ■

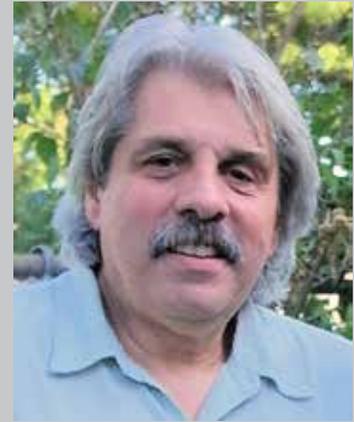
*In the door industry for 43 years, Roy Bardowell is arguably the industry's most experienced CDO (Commercial Door Operator) technician and trainer. In 2017, he received IDA's Jerry R. Reynolds Volunteer Service Award.*

## WHAT MAKES A CDO SAFE? Check these 10 factors

By Roy Bardowell

Operator installers typically believe that operator safety is the responsibility of the manufacturer. In reality, the installer is responsible for perhaps 75 percent of the safety factors for a safe installation. Some assume that entrapment protection is the only safety issue for CDOs, but that's not true.

So, what constitutes a safe operator? Here are several factors to consider.



- 1 Architect's specs.** Architects draft specifications that are sometimes hard to translate, and they might have contradictory demands that could result in an unsafe operator.
- 2 Balanced door.** Install an operator only on a properly operating and balanced door. A door that is operating improperly can cause severe injury. Before installing the operator, a qualified door technician should make repairs to cables, spring assemblies, and other hardware, thus ensuring that the door operates as intended.
- 3 Code-compliant wiring.** Do the electrical connections and wiring meet the code? Is the wiring properly grounded? When the operator chassis is not properly grounded, it can become live with electricity. If the operator is powered by 460 volts and a power line comes loose and lands on the chassis, you'll get a 460-volt shock when you touch the operator. Proper grounding sends any rogue electricity to earth and not to you.
- 4 The right operator.** Has the appropriate operator been installed for this door? I see incorrect applications all the time.
- 5 The right environment.** Has the correct operator been installed for the surrounding environment? In a wet area, you definitely want to apply an operator with a NEMA 4 modification. Water and electricity do not mix well. If a standard NEMA 1 operator is used where a NEMA 4 should have been used, you could have a potential disaster.
- 6 Secure mounting.** Has the operator been mounted and strongly secured to the wall or ceiling? A poorly secured operator can come loose and fall on someone. An operator that is not securely mounted is a definite safety problem.
- 7 The right controls.** Have the appropriate controls been applied to the operator? I discourage the use of radio controls on large industrial doors because of potential safety issues when operating such a door outside of the line of sight.
- 8 Follow UL.** As of Aug. 29, 2010, the UL 325 standard places more emphasis on line of sight and entrapment protection. CDO manufacturers must place certain UL 325 requirements in their instruction manuals. The installer must obey these instructions to the letter, no matter how much better or safer you think your personal procedures might be.
- 9 The right devices.** Have approved entrapment protection devices been purchased, wired, and connected to the operator? Not all entrapment protection devices are approved for all CDOs. Some CDO manufacturers provide an approved device; however, in some cases, you need to order a UL 325-recognized and approved device from a third party.
- 10 Follow the instructions** in the manufacturer's manual. I personally know of several cases when the installer ignored these instructions, and it led to a serious injury.