TECH CORNER

DAVE MONSOUR

Garage doors should live a balanced life

Editor's note:
In this installment of the Tech Corner, DASMA Technical Director Dave Monsour discusses proper and improper balance for garage doors.

The DASMA office in Cleveland recently received a call from a homeowner asking the following question: "My door installing company told me it is normal for an 18'x10' door to require two people to lift it. Is this correct?" The answer is an emphatic "no," and the following Q&A illustrates why.

Q: What does "balance" mean for a garage door?
Almost all garage doors are equipped with large, strong springs – either torsion springs mounted around a shaft at the header or extension springs stretching over a cable above the horizontal tracks. The purpose of these springs is to counteract the door weight, thereby making the door easier to lift. The balance of a garage door refers to how well matched the springs are to the door – i.e., how easy it is to open and close the door.

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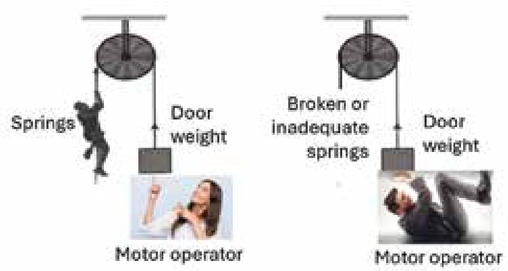
Q: What kind of balance should a homeowner expect for their garage door?
Garage doors should be well-balanced. When manually operated, the door should open and close with minimal effort, gently rest on the floor when closed, and stay up at the header when open. When raised to three to four feet above the floor, the door should remain in place.

Q: Doesn't the motor operator do the heavy lifting of the door?
If it does, something is wrong; the motor operator should not have to do the heavy lifting of the door. Even when electrically operated, the door should be well balanced by the springs. Refer to the illustration below:



Q: You mean the motor operator is not strong enough to lift a door with inadequate springs?
Whether or not the operator is strong enough is not the question, because that is not its job. The motor operator is provided as a convenience to operate the door and to handle imperfections in the door balance. While a door may be able to lift an improperly balanced door, it should not be relied on for that task.

Q: What is wrong with relying on a strong electric motor operator to lift an improperly balanced door?
Using an electric operator on an improperly balanced door can be dangerous for several reasons:

1. Garage doors are designed as systems that rely on proper balance. Several components of a garage door system can be at risk of failure if the spring balance is not correct.
2. The motor operator may be overstressed, leading to failure.
3. Improper balance indicates a problem with the design, installation, and/or maintenance of the door – meaning that there is some underlying (potentially dangerous) condition that has not been addressed.

Any of these reasons can lead to dangerous situations, such as the door falling rapidly, ***and should always be avoided.***

Q: You mentioned imperfections in door balance. What causes them, and how severe can they be?
Not all garage door designs can achieve an exact match between springs and door due to factors such as variances in section weights – e.g., one section having a significantly greater or lesser weight than the other sections due to the presence of glazing. Furthermore, all door assemblies and all their components are subject to normal variances in production, installation, and field conditions. Lastly – and this should not affect new installations – all mechanical components wear over time; for example, springs can relax and lose some of their strength.

DASMA recommends annual inspections and maintenance by a trained door systems technician to keep garage door systems in the best shape. The "severity" of imperfections is heavily dependent on a door's design and size (the bigger and heavier a door, the more you may notice imperfections); contact the door's manufacturer for guidance. But we can safely say that if it takes two people to lift an 18'x10' door, then something is seriously (and perhaps dangerously) wrong. ■

Contact us
If you have questions about this topic or suggestions for future content, please email Dave Monsour at dasma@dasma.com.