



DASMA
Door & Access Systems
Manufacturers Association
International

COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

TECHNICAL DATA SHEET

#1501

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Standard Lift Garage Doors with Jackshaft Operation

Introduction

Garage doors with standard lift track, when motor operated, are commonly paired with drawbar operators, also known as trolley operators. Occasionally a jackshaft operator is preferred for these applications. Using a jackshaft operator on standard lift track introduces important considerations not present in a drawbar installation. This Technical Data Sheet (TDS) provides guidance for specifiers, dealers, installers, and users of these door systems.

Definitions

Refer to DASMA TDS #160 and #350 for definitions of terms. For purposes of this TDS, the term “jackshaft operator” includes the terms “hoist electric operator” and “chain hoist operator” as defined in TDS #160.

Why the Concern?

Jackshaft and drawbar operators control door movement in dissimilar ways. Drawbar operators connect directly to the top garage door section to control the door movement. Jackshaft operators, on the other hand, *indirectly* move the door by turning the shaft to move the door. This requires strong cable tension. That tension is primarily caused by the weight of the door pulling down on the cables, which is at a minimum (for standard lift track) when the door is open. The concern is, what can be done to ensure that the cables remain taut when the operator begins to close the door?

Best Practices

Providing a door system that uses a jackshaft operator and standard lift track should only be done according to the instructions of the door and operator manufacturers. The practices below can be used, in various combinations, to provide secure installations. **WARNING: Failure to obtain and follow the door and operator manufacturer's guidance for jackshaft operation on standard lift doors can result in cable slack and disengagement, leading to uncontrolled door movement, door damage, severe injury, or death.**

Note: Technical Data Sheets are information tools only and should not be used as substitutes for instructions from individual manufacturers. Always consult with individual manufacturers for specific recommendations for their products and check the applicable local regulations.

This Technical Data Sheet was prepared by the members of DASMA's Commercial & Residential Garage Door Division Technical Committee. DASMA is a trade association comprising manufacturers of rolling doors, fire doors, grilles, counter shutters, sheet doors, and related products; upward-acting residential and commercial garage doors; operating devices for garage doors and gates, sensing devices, and electronic remote controls for garage doors and gate operators; as well as companies that manufacture or supply either raw materials or significant components used in the manufacture and installation of the Active Members' products.

1. Use a door compliant with ANSI/DASMA 102, *Specifications for Sectional Doors*. Check with the door manufacturer for compliance. One requirement of ANSI/DASMA 102 that is particularly relevant is, “Motorized jackshaft operators shall not be used on standard lift and low headroom applications unless provisions are made to maintain adequate cable tension as specified by the door system manufacturer.”
2. Provide adequate cable tension for the door’s open position. Ways to enhance the cable tension include:
 - Horizontal Track Pitch. Pitching the horizontal track (aka roof pitch), i.e., lifting the back of the track, puts the open door in a ramp position, leaning downward onto the cables. Additional headroom may be required.
 - Push Down Springs. Properly installed push down springs increase cable tension when the door is open, and during the initial portion of the closing cycle. Additional backroom may be required.
 - Use extended vertical tracks or a larger horizontal track transition radius. Additional headroom will be required.
 - Add struts to the bottom section. Spring changes may be required.
3. Enhance cable security. Use devices such as cable keepers or operators with internal or external cable tension monitoring systems.
4. Reduce the door speed. Slower door speed results in less opportunity for the cables to go slack. For operators with a sprocket-and-chain connection to the door shaft, using a larger door shaft sprocket will reduce the door speed. Operators that couple directly to the door shaft may have a speed setting that can be adjusted. Since the main challenge in cable retention occurs when a fully open door begins to close, consider using an operator with “soft start” technology.
5. Use entrapment protection that complies with ANSI/CAN/UL 325. Consult the operator manufacturer or refer to the operator manufacturer’s instruction manual for suitable entrapment protection devices. NOTE: Entrapment protection does not ensure cable retention on the drums.
6. Ensure free and smooth operation. Adjust and clean track, hardware, and rollers, so that the door operates smoothly and does not bind during operation. Horizontal track that sags or twists when the door is up should be stiffened with angle braces or back hangs.

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7. Perform regular maintenance and inspection. A trained door systems technician should regularly inspect and test for proper cable engagement and full door system condition and operation.
8. Consult the door and operator manufacturer. Discuss the application with the door and operator manufacturer for additional features and options that may be available.

Low Headroom Track

Low headroom (LHR) track presents additional challenges. An open door with LHR track is almost totally horizontal, resulting in little to no cable tension. Consult with the door and operator manufacturers before using jackshaft operators with LHR track.

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