

OVERVIEW

On occasion, linear valves such as wedge gate, knife gate, and globe valves are installed in areas where it is difficult to access a hand wheel or in environments not conducive to the health of a closely mounted actuator. Valves may be installed below grade, in vaults, under grates and cat walks, in the ceiling, or through ceiling or walls. As a premier valve automation center, Wolseley Industrial Group Valve & Automation (WIGVA) can provide fabricated stem and shaft extensions made to specific requirements.

PREFERENCES

In order to reduce engineering and shipping difficulties, WIGVA prefers to adhere to the following preferences. However, should installation requirements fall outside these preferences, discuss the application with our sales associates during the quotation process. Often there are multiple solutions to an installation issue. WIGVA stem extension preferences are:

- Lengthy extensions are sectioned at 10 foot bolt-together intervals (longer single-section extensions may have additional engineering and/or shipping fees)
- At least one project valve, if not all, must be provided to our fabrication facility for assembly testing

EXTENSION TYPES

Extensions come in all shapes and sizes and the finished product is often driven by the valve configuration and/or installation requirements. That said, extensions for linear valves fall into one of two main categories. These are:

Rising Stem - For rising stem extensions, the stem of the valve is moved to, driven by, and supported from, the extension end. A reach rod extends from the clevis connection on the valve to the threaded rod. The valve's torque and thrust is generated at the extension's end. Drives can be ratchets, hand wheels, bevel gears, or electric actuators.

Non-Rising Stem - For non-rising extensions, the threaded stem remains with the valve. A non-rising stem adapter or torque tube is attached to the valve's drive sleeve and from that the reach rod extends. The valve's thrust stays with the valve and torque is generated at the extension's end. Drives can be square drive nuts, ratchets, hand wheels, multi-turn gears, or pneumatic or electric actuators.

Within each category above, there are also two configuration types dependent on the installation needs. These are:

Self Supported - Self supported extensions have all components, including reach rod, actuator, and actuator mount, supported by the valve (and subsequently the piping). This type is typically for shorter extensions or where installation doesn't permit external structural supports.

Externally Supported - Externally supported extensions require structural supports at the installation. At a minimum, support is needed for the actuator. Depending on the installation, guides may also be necessary.

Special consideration must be given to rising stem extensions with external supports. The thrust generated at the actuator and imparted to the extension's reach rod also acts upon the actuator mount. Additional reinforcement of the support structure may be necessary. In addition, long rising stem extension lengths may require guides along the reach rod to prevent loss of thrust through side loading.



DIMENSIONS

In addition to the type of extension needed, it is also necessary to provide the length needed for an accurate assembly as well as any external support dimensions. For this purpose the dimensions below, as applicable to the type of extension and nature of the actuator, are required:

Lift - Lift describes the change in elevation of the standard actuator (i.e. hand wheel or gear-operator) as measured by a specific point on that actuator.

OAL - OAL is the overall length measured from the center line of pipeline to the top of the actuation device (or to center line of hand wheel if it is vertical).

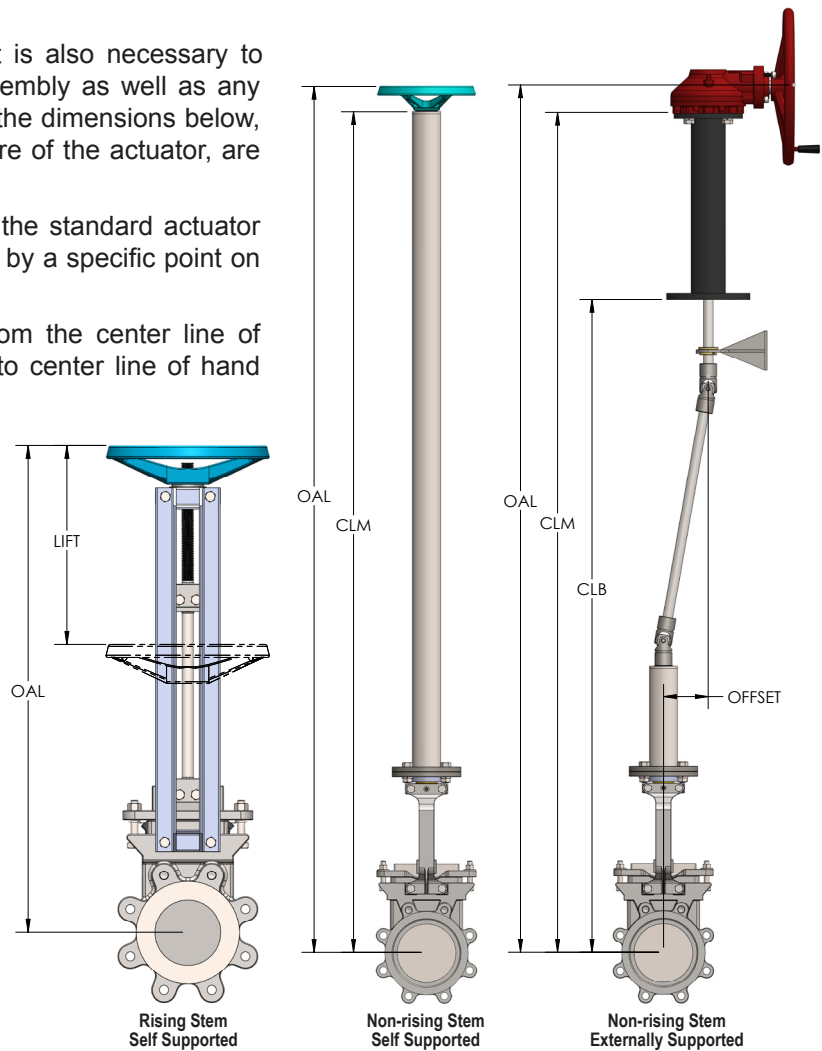
CLM - CLM is the measurement from center line of the pipeline to the mounting pad of the actuation device.

CLB - CLB is the measurement from the center line of the pipeline to the base of a pedestal or similar support apparatus.

Offset - Offset describes the distance between the axis of a valve stem and axis of an actuator drive that are not collinear.

Since valves and tolerances vary from manufacturer to manufacturer, additional dimensions may be required. It is always preferred to have one of each size and type, if not all, project valves for assembly and testing.

For these reasons, extensions for non-stocked or non-provided valves cannot be guaranteed.



OPTIONS & ACCESSORIES

Standard extensions are made from A53A carbon steel pipe and/or 1018 cold rolled steel. The finish is stainless steel impregnated paint for corrosion resistance. Fasteners are typically 304 stainless steel. Alternate materials are available upon request. Many extension options and accessories are also available, including, but not limited to:

- Actuators (Pneumatic, Electric & Hydraulic)
- Gear-Operators
- Miter Gears
- Square Drive Nuts
- Tee Handles (for Square Drive Nuts)
- Mechanical Lock Outs
- Stem Covers & Boots
- Chain Wheel Operators
- Pedestals (Position Indicating & Non-indicating)
- Guides & Supports (Plates & Brackets)
- Bolting Tabs (for External Support)
- Universal Joints (for Stem/Drive Offsets)

Typical accessories are available for pneumatic, electric, and hydraulic actuators, including solenoids, switches, and positioners. Contact WIGVA with specific application needs.

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