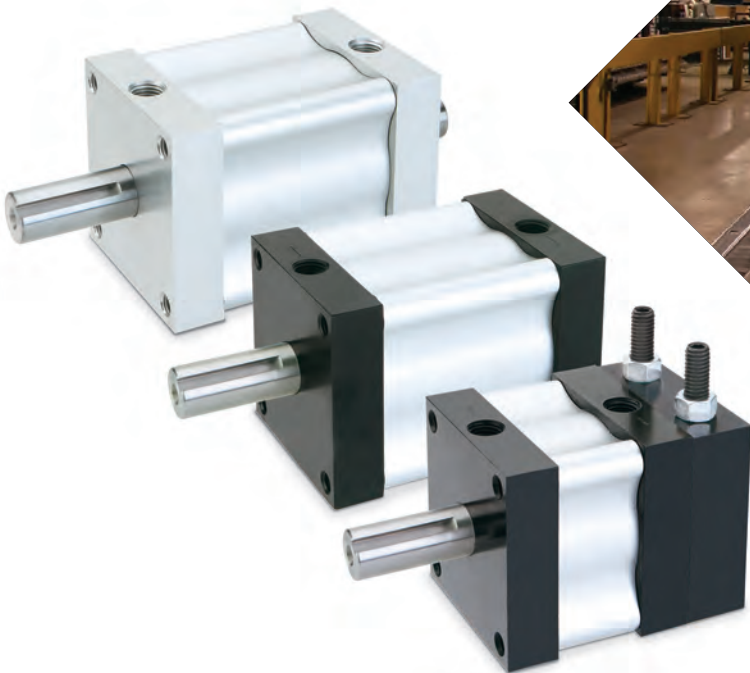
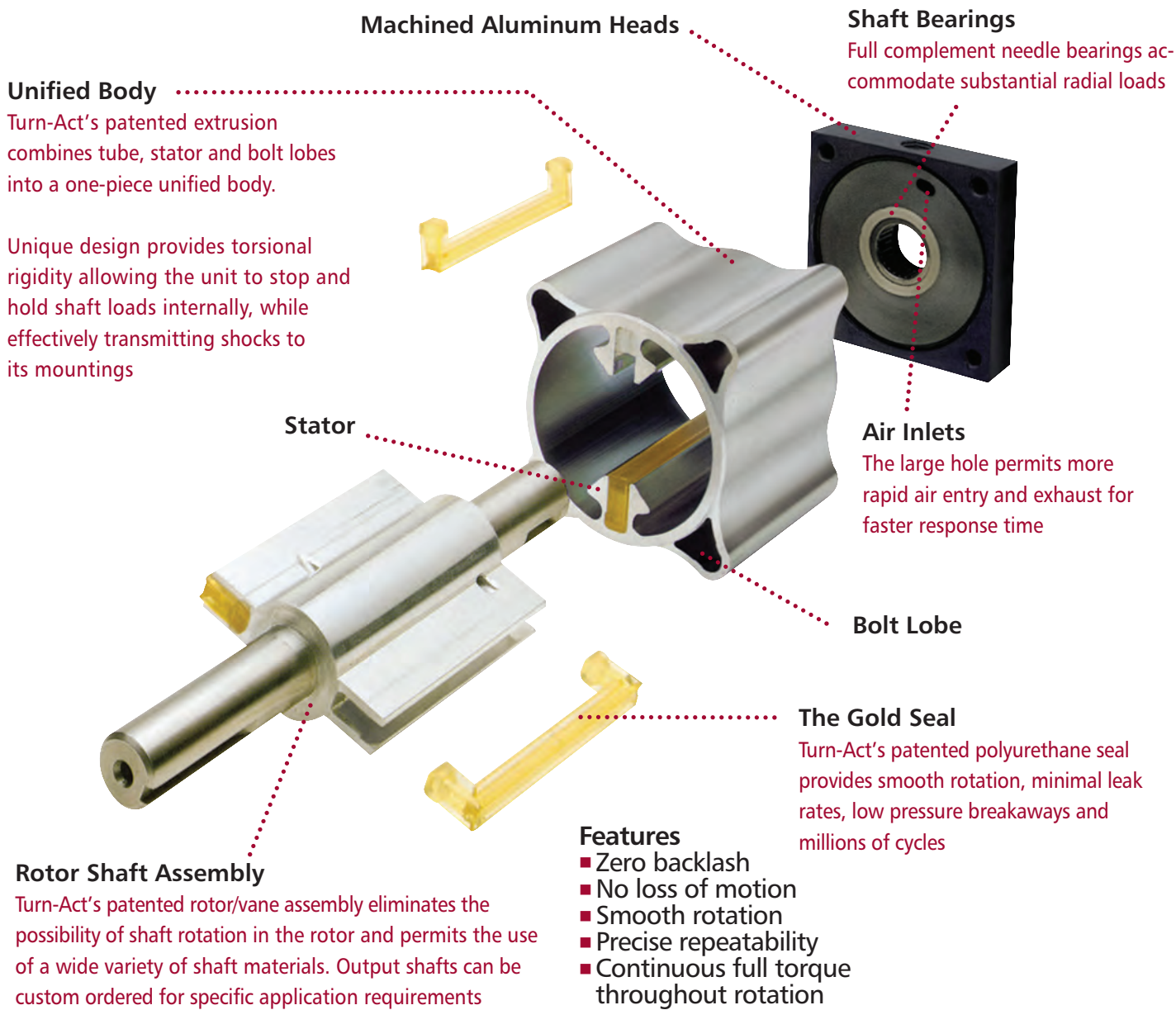


**COMPACT**<sup>®</sup>  
AUTOMATION PRODUCTS

# Turn-Act Rotary Actuator Solutions



# Turn-Act Rotary Vane Actuators at a Glance



1-1/4" Bore



2-1/2" Bore



5" Bore

### Three Bore Sizes

- Comp-Act - 9 to 100 inch pounds
- Turn-Act - 87 to 1000 inch pounds
- Brute - 400 to 5200 inch pounds

**14 Different Models Available**

### Six Standard Rotations

- 45° - Turn- Act Series Only
- 90°
- 110° - Brute Series Only
- 180°
- 270°
- 290° - Brute Series Only

### Custom Rotations Available



# Turn-Act Rotary Vane Actuator Custom Solutions

## Standard Options

### Shaft Materials

- Mild Steel G & P
- Stainless Steel
- Heat Treated

### Shaft Connections

- Single end – no keyway
- Double end – no keyway each end
- Single end – woodruff key
- Double end – woodruff key each end
- Single end – Shaft flat
- Double end – Shaft flat each end
- Single end – keyway
- Double end - keyway

### Actuator Mounting

- Flange mount – rod end
- Flange mount – cap end
- Side angle mounting brackets
- Extended tie rods – rod end
- Extended tie rods – cap end
- Extended tie rods – both ends
- Side mounts



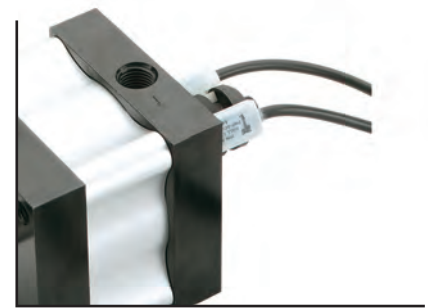
### Adjustable Stroke Control

- Infinite rotational adjustment for the precise rotation required.
- Retract or extend the stop screw to either increase or decrease the rotation.



### Bumpers

- End-of-stroke cushioning
- Reduced noise level
- Absorbs kinetic energy



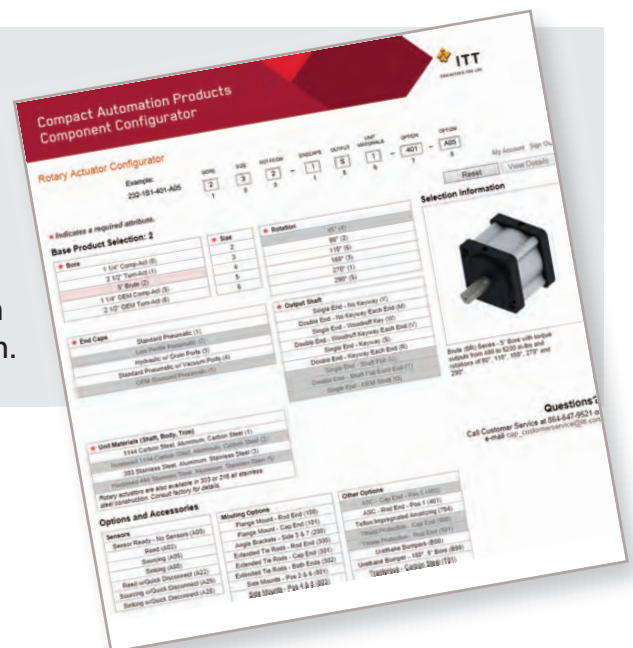
### Switches

- Sinking
- Sourcing
- Reed
- Proximity
- Potentiometers
- Encoders
- Flying leads
- Quick disconnects

## Online Configuration

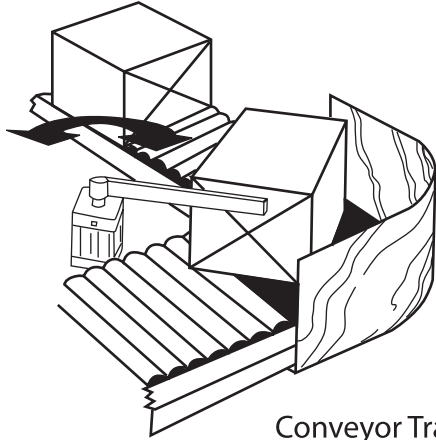
We have the industry's best product configurator with a simple to use online interface. Getting complex products configured and quoted is just a mouse click away. Simply go to [www.compactautomation.com](http://www.compactautomation.com) and select **CONFIGURATORS** from the drop down list.

Select **ROTARY ACTUATORS** to launch our configuration tool and begin the selection process to a unique solution.

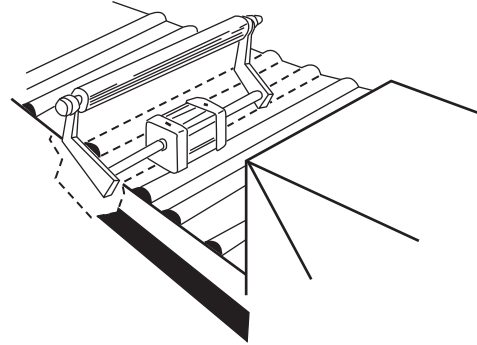


# Turn-Act Rotary Vane Actuator Applications

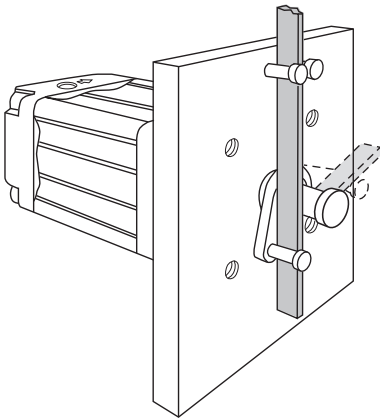
Turn-Act rotary vane actuators whether used independently or with other fluid power motion devices promise long term performance. The following pages represent only a few of the application possibilities. Feel free to contact one of our authorized distributors or the Compact office for your specific application requirements



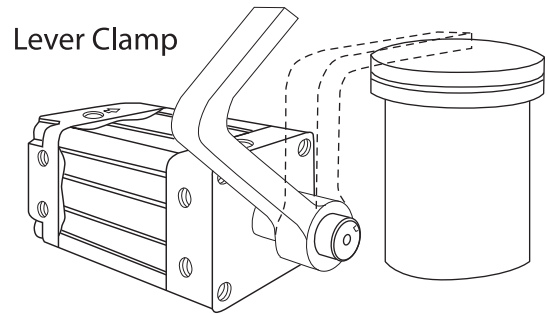
Conveyor Transfer



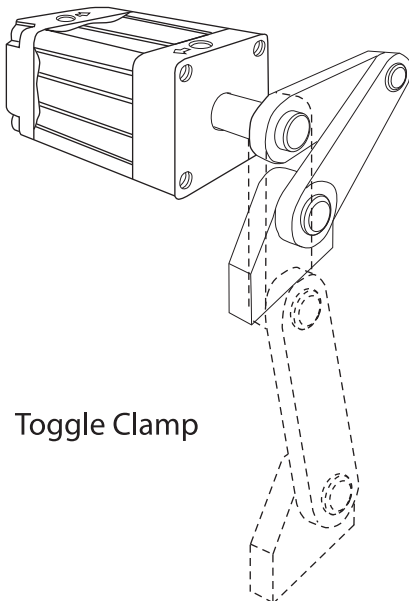
Automatic Conveyor Stop



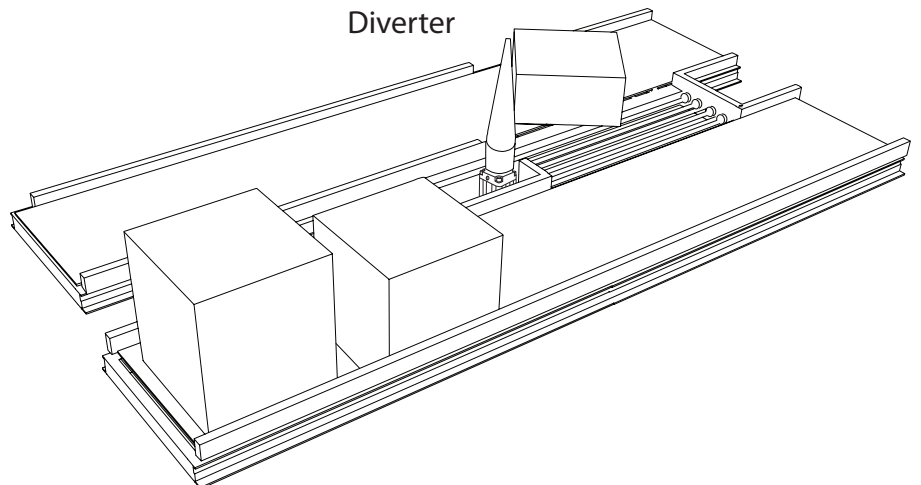
Metal and Tube Bending



Lever Clamp

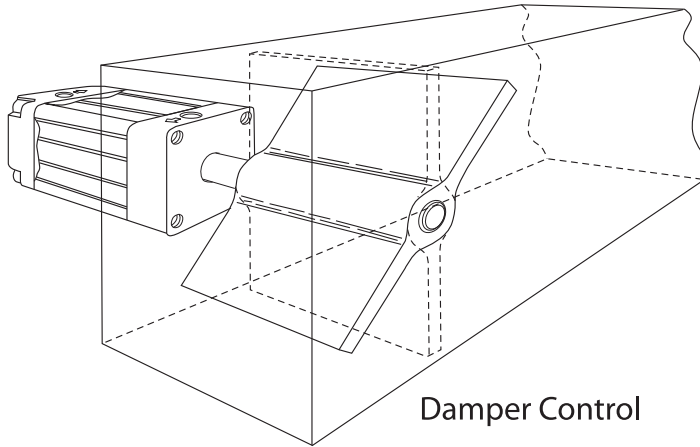


Toggle Clamp

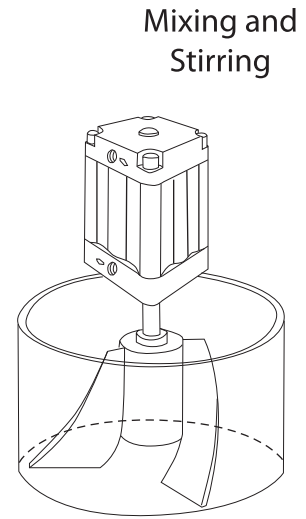


Diverter

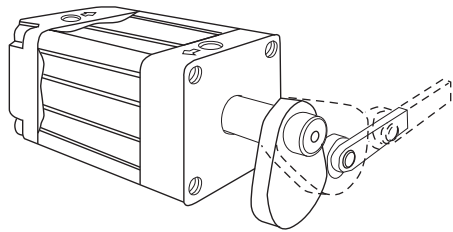
# Turn-Act Rotary Vane Actuator Applications



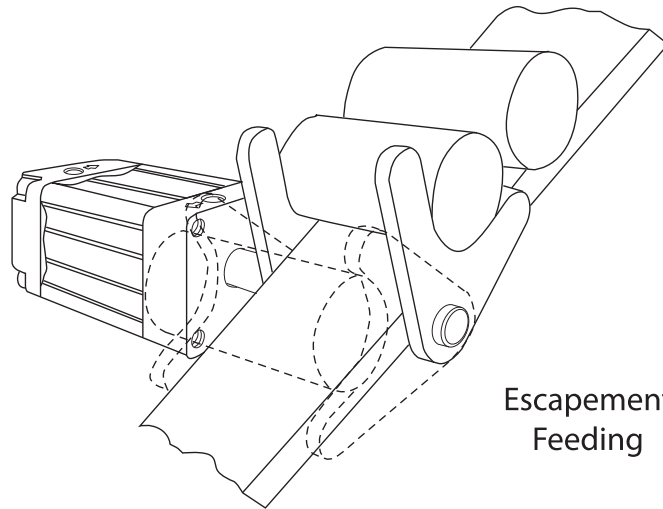
Damper Control



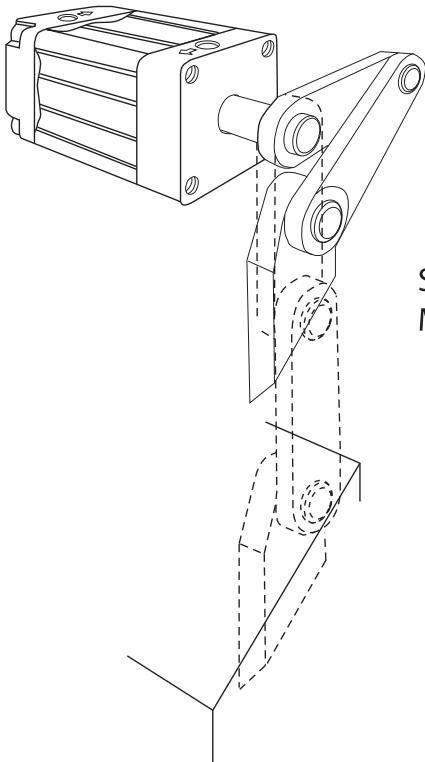
Mixing and Stirring



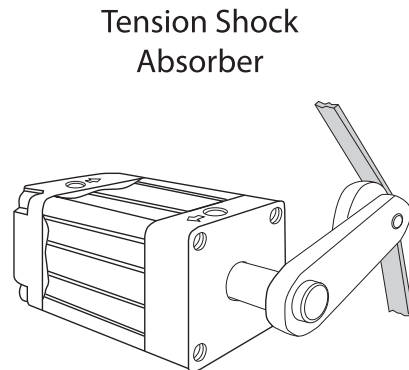
Cam Indexing



Escapement Feeding



Shearing Materials



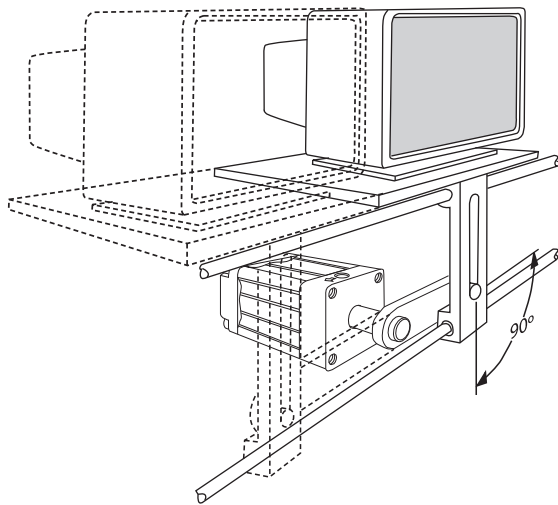
Tension Shock Absorber

# Turn-Act Rotary Vane Actuator Applications

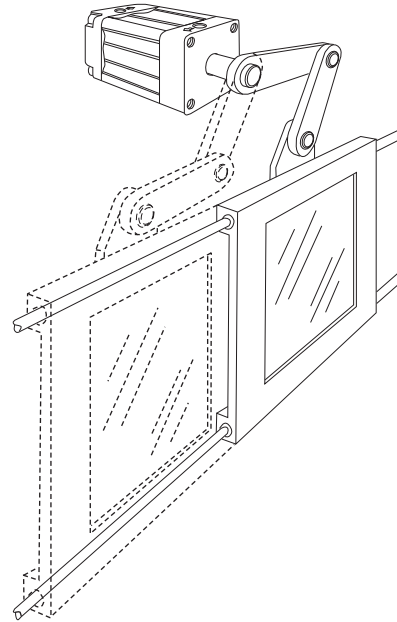
## Linear Motion

Turn-Act brand rotary vane actuators have two distinct advantages over conventional cylinders for linear motion applications.

- Extended cylinder rods are subject to side forces and bending. Our Turn-Act rotary vane actuators are designed for side load applications.
- Extended cylinder rods corrode and accumulate grime. When retracting the rod wears its bushing and rod seal leading to cylinder failure. Turn-Act actuator rods do not extend nor retract, they just rotate making them an excellent choice for clean or dirty environments.



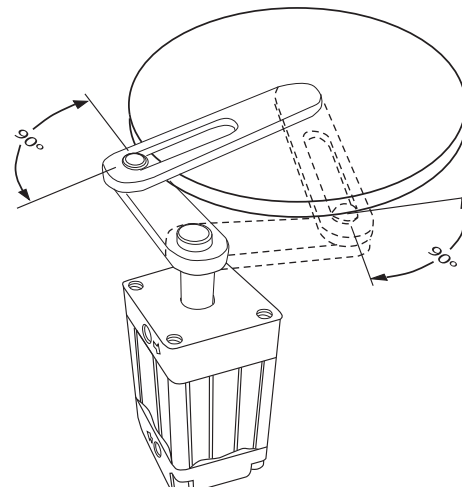
**HARMONIC MOTION:** Ideal transfer system providing maximum speed with sinusoidal acceleration and deceleration. Angle at ends of rotary actuator strokes must be  $90^\circ$ .



**LEVER MOTION:** Gates on machinery such as molding presses, machine centers and furnaces.

## Rotary Harmonic Motion

High speed rotary reciprocation is best accomplished with harmonic motion. This system provides sinusoidal acceleration and deceleration. Angle at end of rotary actuator strokes must be  $90^\circ$ .



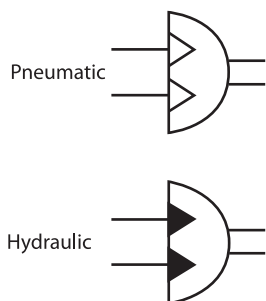
# Turn-Act Rotary Vane Actuator Sizing

## Definitions

**Actuator:** A mechanical device to convert pneumatic (air) or hydraulic pressure into rotary motion, Compact's Turn-Act rotary vane actuators develop more torque in less space than any other types of actuator.

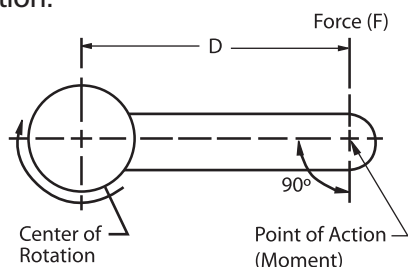
Maximum rotation is 290°.

International Standards Organization (ISO) symbol for actuators is:



**Torque:** As torque applies to rotary actuators is defined as follows:

A force multiplied by the perpendicular distance between the point of action and center of rotation.



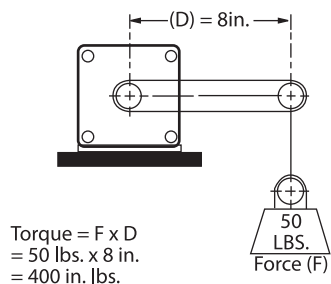
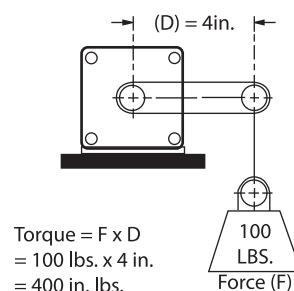
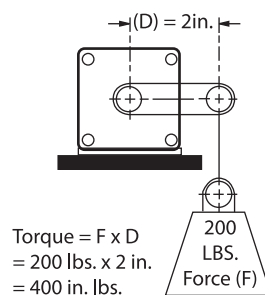
$$\text{Torque} = F \times D$$

Generally for actuators F is in pounds. D is in inches and torque is expressed as in. lbs.

Torque can only be specified or used as the combination of (so many) pounds acting at a distance of (so many) inches or feet. This combination of force working at a certain distance from the fulcrum is called a "moment". Therefore, torque is always called out in units which include a unit of distance and a unit of force, such as "inch-pounds", "foot-pounds" and "inch-ounces".

There is an infinite number of combinations of force x distance which equal the same torque. Three possible combinations are shown in these figures all equaling 400 in. pounds. A weight of 200 pounds at a distance of 2 in. from fulcrum point = 400 in. pounds, and 50 pounds x 8 in. = 400 in. pounds. Any of these combinations would produce the same twisting effect on the shaft, or would require the same output torque from an actuator to lift the weights.

## Examples Of Equal Torques





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**AUTOMATION PRODUCTS**

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