

# Training: Issue 7, Brakes and Clutches

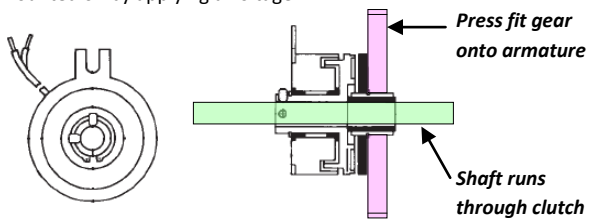
Precision motion systems often require rotary input to be controlled by shaft mounted clutches and brakes. The ability to add components that manipulate speed and torque can increase the functionality of a single power source. PIC Design offers three main types of brakes and clutches that can be used with our standard shafting, gears, pulleys and bearings.

### Shaft Mounted Component Clutches

These clutches slide over a shaft and attach with a set screw or clamp. Each clutch has a mounting provision to attach a gear or pulley concentric with the shaft. This configuration allows for the engagement or controlled slip of a shaft mounted drive component. PIC offers several styles, each with a unique function:

#### Electrical Engagement

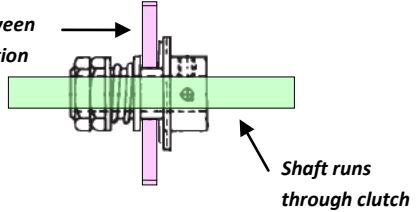
This clutch allows you to engage or disengage a gear from the shaft it is mounted on by applying a voltage.



*Press fit gear onto armature*  
*Shaft runs through clutch*

#### Adjustable Overload Protection

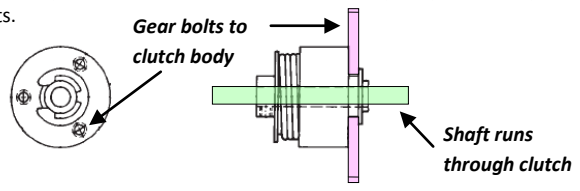
Use these parts to allow for momentary slip between a gear and drive shaft. This will protect components from load spikes. Torque limit can be adjusted with a pre-load nut.



*Gear held between spring and friction surface*  
*Shaft runs through clutch*

#### Wrap Spring Continuous Slip

These parts can be used where constant slip is desired between the shaft and gear. User can choose from a wide range of pre-set torque limits.

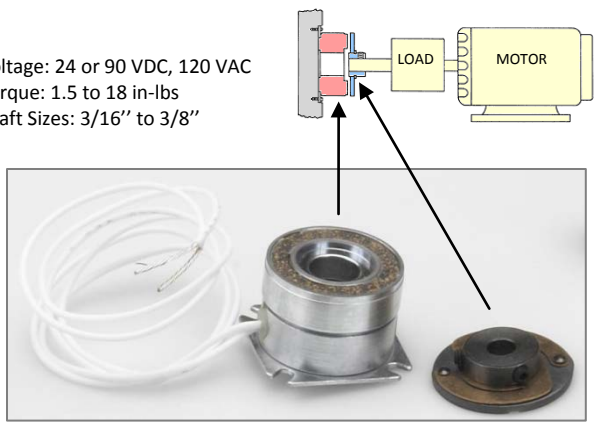


*Gear bolts to clutch body*  
*Shaft runs through clutch*

### Flange Mounted Brakes – Electrically Actuated

These electrically actuated shaft brakes slide over a shaft and attach using set screws or a keyway. The brake has a square flange that must be attached to a fixed surface like a shaft hanger or plate to provide stopping torque.

**Specs:**  
Voltage: 24 or 90 VDC, 120 VAC  
Torque: 1.5 to 18 in-lbs  
Shaft Sizes: 3/16" to 3/8"

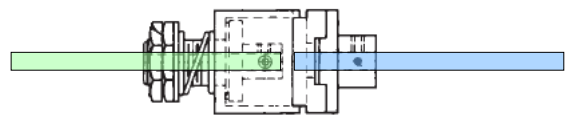


### Shaft to Shaft Clutches

This type of clutch is used to join two shafts while allowing for slip between them. These "slip couplings" are available in two different styles.

#### Adjustable Intermittent Duty

Use these parts to allow momentary slip between two shafts. Torque limit can be adjusted with a pre-load nut. One end of the coupling features an Oldham style joint to allow for misalignment.



#### Continuous Slip

This style allows constant slip between shafts. User can choose from a wide range of pre-set torque limits.

