



## ALADCO Gripper & Clamp Basics

Pneumatic and hydraulic Grip-Clamps® from ALADCO can provide smooth, rapid and accurate handling and positioning of parts in numerous material handling, clamping and workholding applications. Grip-Clamps® are ideal for pallet, carriage and conveyor stops, overhead gantries, floor level transfers, positioning/locating, and clamping. In properly designed applications the durability of Grip-Clamps® can result in very high production line equipment reliability and low cost of ownership.

**Grip-Clamps® (2500 & 2600 series) use one of two types of clamping techniques:**

- **Toggle lock** – where the cylinder to arm linkage goes through an over-center condition to produce a positive lock when the arm is in the closed position.
- **Power lock** – where the cylinder to arm linkage does not go through an over-center condition enabling clamping on variable thickness, flexible control of the clamping force, or flexible position control.

The standard Toggle Lock and Power Lock Styles are:

One arm – 0 degrees when closed or 90 degrees when closed.

Two arm – 0 degrees when closed.

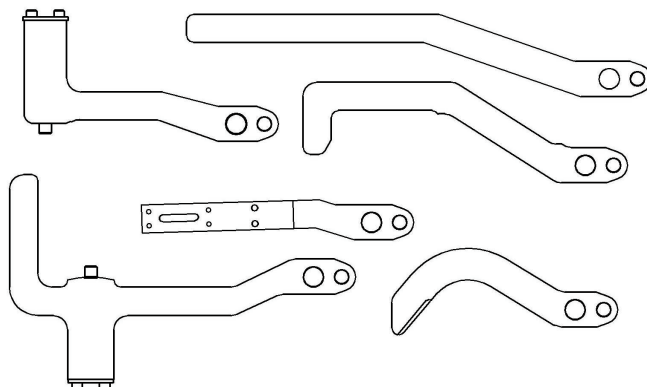
The cylinder shaft is protected by the enclosed base of the clamp housing and the Grip-Clamp linkage being designed so that the piston shaft is fully retracted in the arm closed orientation.

The clamp housing and cylinder attachment is designed to resist shifting and loosening due to repeated heavy loading and vibrations.

### 2500 Grip-Clamp® Family

The 2500 Grip-Clamps® have an arm torque load capacity of 56,000 in-lbs and a standard arm swing of 90 degrees. Arm swings of less than 90 degrees can be obtained by customized designs.

There are two types of standard 10" long arms: 1. Straight, solid arm 2. Straight arm with holes drilled in the plane of arm rotation.

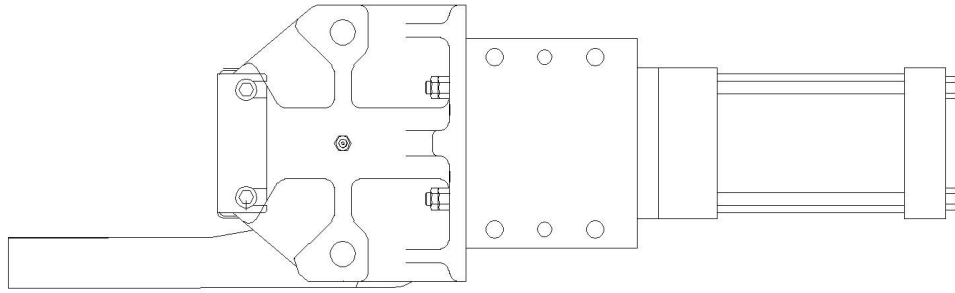


The Grip-Clamps® can be supplied with custom arms (lengths up to 30" from the main pivot). General classes of custom arms are straight, hooked, and spring contact loaded. Some examples of custom arms are illustrated in the figure to the left.

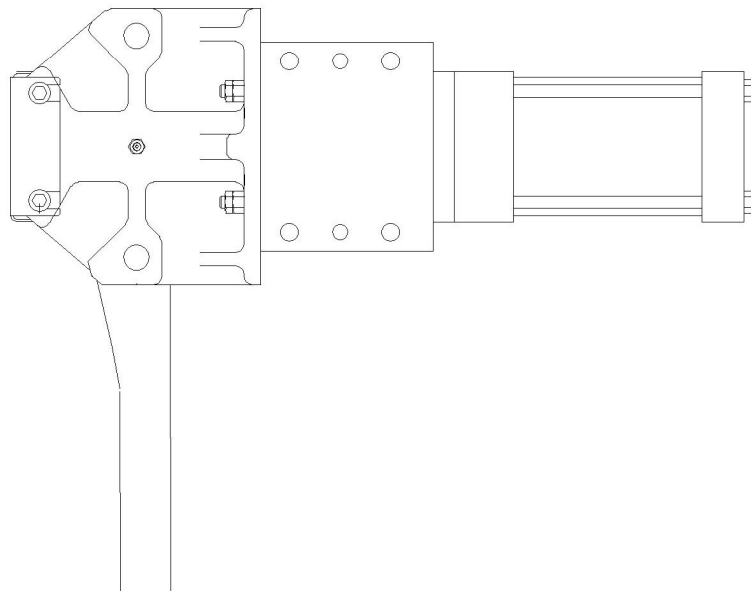
The standard spring contact pin is preloaded to 80 lbs. and will apply up to 150 lbs. when fully depressed to its 1/2" of travel.

A variety of pneumatic and hydraulic cylinders, cylinder porting, and clamping position indicator switch options are available. Cylinder flow control orifices are standard with each clamp (closing or opening times are less than 1 second for pressures above 20 PSI). A variety of cylinder port, cylinder cushion, and cylinder or plate mounted switch positions can be specified.

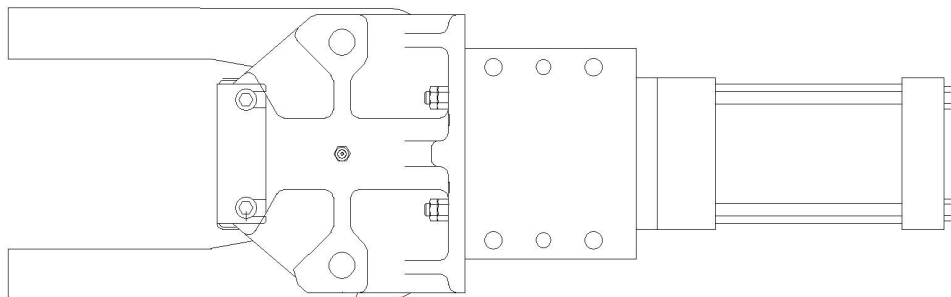
# ALADCO Gripper & Clamp Basics



Grip-Clamp<sup>®</sup> one arm style (2511 or 2501) in 0 degrees closed position.



Grip-Clamp<sup>®</sup> one arm style (2506 or 2516) in 90 degree closed position.



Grip-Clamp<sup>®</sup> two arm style (2502 or 2512) in 0 degree closed position.



## ALADCO Gripper & Clamp Basics

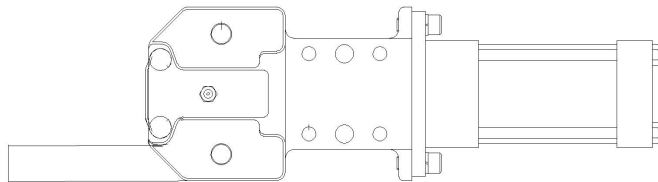
### 2600 Grip-Clamp® Family

The 2600 Grip-Clamps® have an arm torque load capacity of 9,400 in-lbs and a standard arm swing of 90 degrees. Arm swings of less than 90 degrees can be obtained by customized designs.

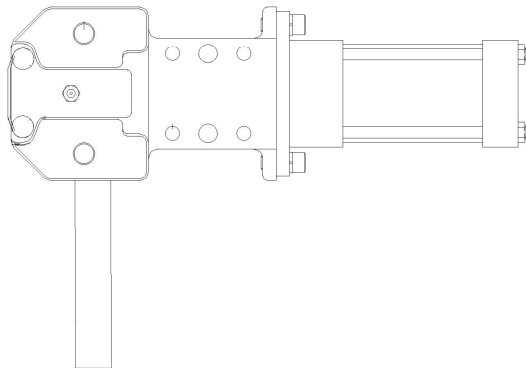
There are two types of standard 6" long arms: 1. Straight, solid arm 2. Straight arm with holes drilled in the plane of arm rotation. The Grip-Clamps can be supplied with custom arms (lengths up to 22" from the main pivot). General classes of custom arms are straight, hooked, and spring contact loaded.

The standard spring contact pin is preloaded to 26 lbs. and will apply up to 50 lbs. when fully depressed to its 1/2" of travel.

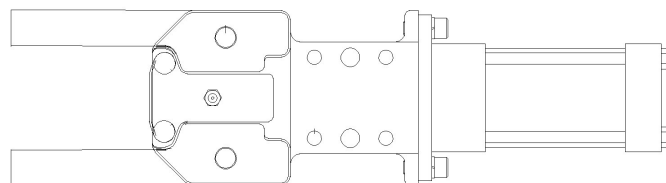
A variety of pneumatic and hydraulic cylinders, cylinder porting, and clamping position indicator switch options are available. Cylinder flow control orifices are standard with each clamp (closing or opening times are less than 1 second for pressures above 20 PSI). A variety of cylinder port, cylinder cushion, and cylinder or plate mounted switch positions can be specified.



Grip-Clamp® one arm style (2601 or 2611) in 0 degree closed position.



Grip-Clamp® one arm style (2606 or 2616) in 90 degree closed position.



Grip-Clamp® two arm style (2602 or 2612) in 0 degree closed position.



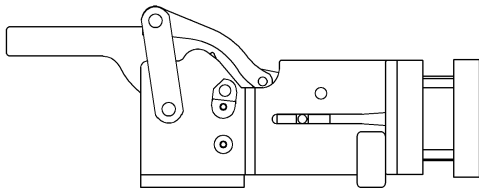
## ALADCO Gripper & Clamp Basics

### 200 Roller-Cam™ Clamp Family

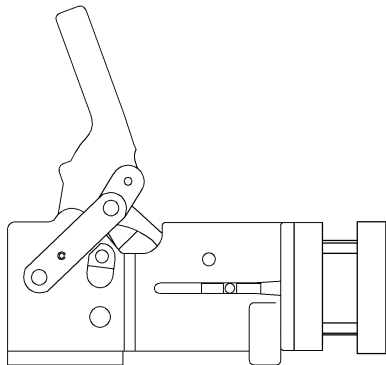
The Roller-Cam™ clamp is a pneumatic clamp that can produce clamping forces over 300 pounds. The unique design of the Roller Cam clamp enables stable clamping forces to be obtained for (end of arm) contact range of 1/8" (3mm). The stable clamping force allows consistent clamping forces to be obtained even when part thickness varies and as equipment wears.

The Roller-Cam™ standard arm will swing 70 degrees, so the open arm and some arm attachments will clear the front edge of the clamp housing. Arm swings of less than 70 degrees can be obtained by customized designs. The standard arm (in closed position) extends 3.5 " from the front edge of the housing and the arm pivot point is 2.25" back from the front edge of the housing. The torque capacity of the standard arm is 7,000 in-lbs. The standard arm is the solid straight arm shown in the figures below. The straight section of the arm can be machined and the clamps can be supplied with custom arms and arm attachments.

Aluminum wall or stainless steel wall pneumatic cylinders are available. A variety of cylinder port positions can be specified. Add on options can include clamping position indicator switches and an arm opening bumper kit.



Roller-Cam™ Clamp with standard solid arm in fully closed position.



Roller-Cam™ Clamp with standard solid arm in fully opened position.