AZIMUTH

Presses & Automation – Since 1975

Azimuth Servo Press
Instruction manual

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Word of Caution

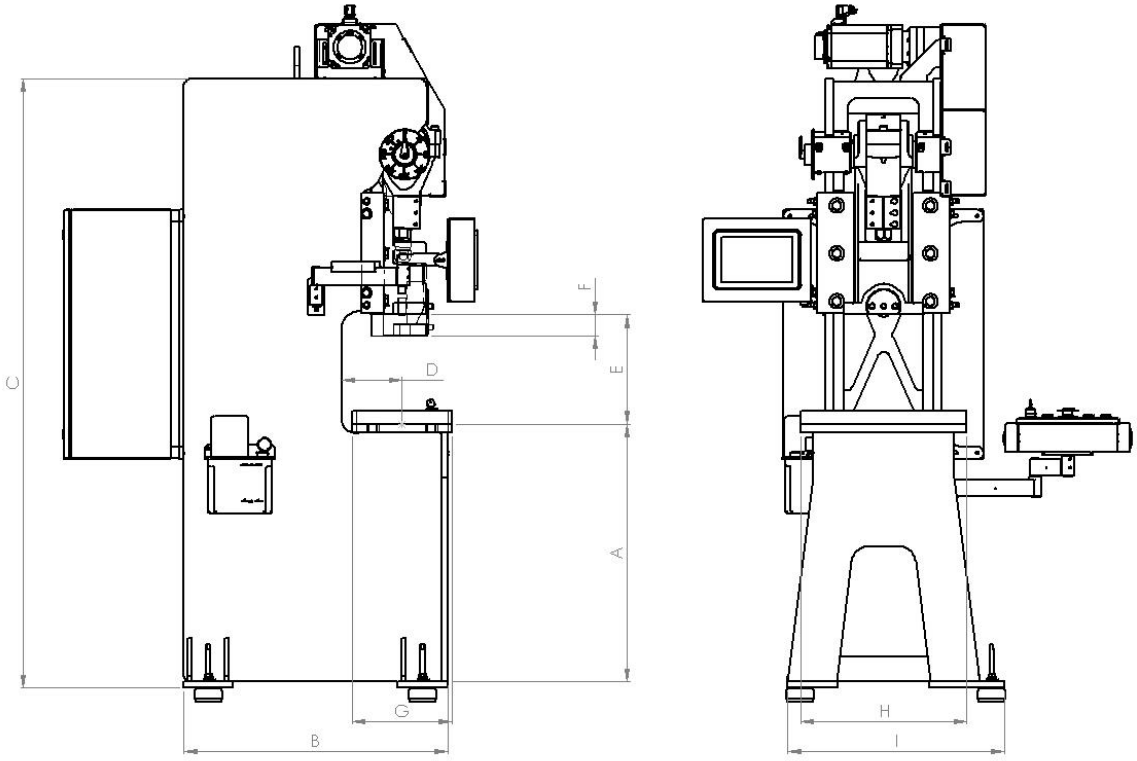
- Before using the machine, make sure the shut height is properly adjusted to your tooling.
- Make sure to review your machine machine electrical schematic prior installation.
- Before using the machine with material, make sure to perform a visual inspection and try to cycle it 5 times to verify that nothing has been damaged during transport (guarding system, pitman enclosure, etc.)
- Do not operate this machine until you've read & understood that this machine is dangerous. Placing your hands or any part of your body in this machine could result in the loss of fingers, limbs or even death.
- Never operate this machine without the use of a guard or safety device that will always protect you from injuries.
- Never work on this machine unless power is turned off and locked out.
- *** Never place your hands in the machine unless the E-Stop is pressed ***

1. *** Never stop the machine using the E-Stop or light curtains! Always stop the machine using the Top Stop and then activate the E-Stop as required above ***

Press Drawings & Dimensions

The drawing below presents Azimuth servo presses.

Figure 0.1 Servo Press General Dimensions



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Press General Dimensions

The table below presents the general dimensions of Azimuth servo presses.

Table 0.1 Press dimensions

		6-S	8S	10-S	15-S	22-S	33-S
Nominal Capacity		6	8	10	15	22	33
Rated tonnage BDC		0,062	0,062	0,09	0,09	0,1	0,1
Full stroke Length		1,25	1,5	2	2	3	3
Stroke length (fully adjustable)		Up to 1,25	Up to 1,5	Up to 2	Up to 2	Up to 3	Up to 3
MAX SPM @ full stroke		160	160	150	150	65	50
MAX Degrees per seconds		960	960	900	900	390	300
Max. Die Set Height		5,625	6	6	7	7,5	8,5
Die Height Adjustment		1,25	1,5	2	2	2,5	3
Throat Depth		4,5	5	5,5	6	7,25	8,5
RAM DIMENSION	L x R	5,5	6	6,5	8	6,5	14
	F x B	3,5	4	4,5	5,25	9,5	9
Shank diameter	Dia	1,5					
Bolster Size	L x R	11	12	14	17	20	24
	F x B	7	8	9	10	12	14
Floor to Bed Dimension		39,5					
Overall Size	F x B	24	28	28,5	28,5	41,5	48
	L x R	17	22	24,5	36	30,5	30,5
	H	36	60	68	68	80	86

Mechanical Operation

This section covers the mechanical set-up of the servo-press. Please make sure to fully understand these instructions before attempting to make mechanical adjustments to the machine

Adjusting the Shut Height

Adjustment of the shut height is done with the ball screw. **Before adjusting the shut height, make sure power to the machine is turned off and locked out**.

In order to change the shut height, the ball screw must first be unlocked. This can be done by loosening the bolts clamping down on the ball screw.

Unclamping the Ball Screw for Servo-Press Models 6-S to 15-S

Azimuth servo-press models 6-S to 15-S are equipped with a front ball screw clamp held in place by two hexagonal nuts. To unclamp the ball screw, loosen the two nuts until it can turn freely.

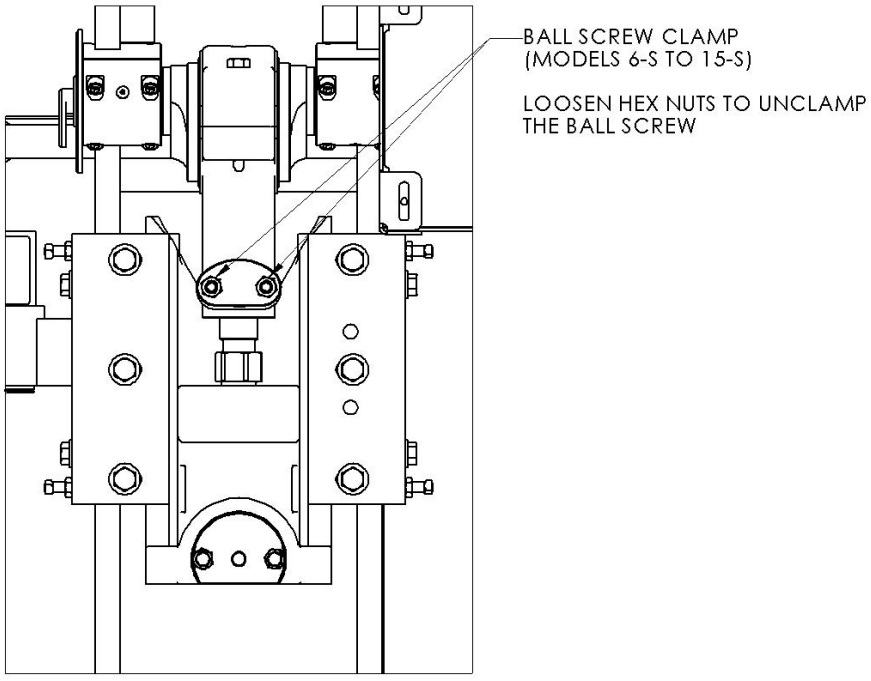


Figure 0.1 Ball Screw Clamp for Models 6-S to 15-S

Unclamping the Ball Screw for Servo-Press Models 22-S and up

Azimuth servo-press models 22-S and up are equipped with a threaded clamping collar which locks the ball screw in place with three socket head cap screws. To unclamp the ball screw, loosen the three bolts until it can turn freely.

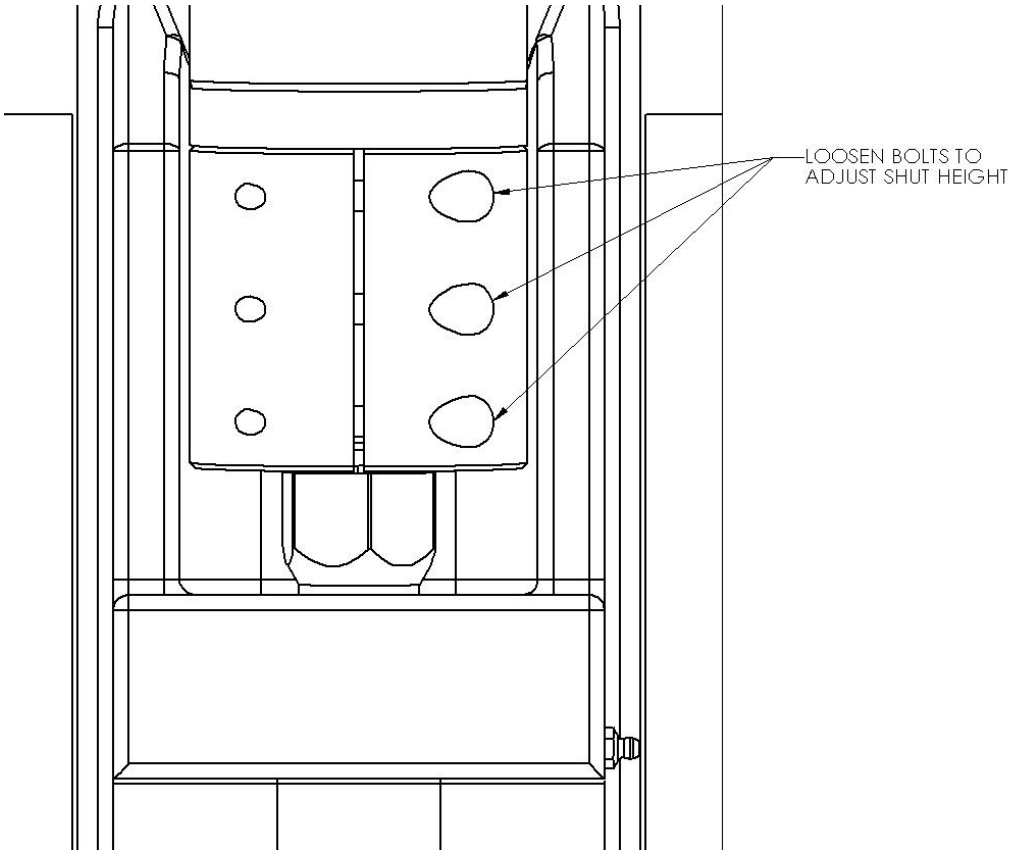


Figure 0.2 Ball Screw Clamp for Models 22-S and Up

Making Adjustments with the Ball Screw

Once the ball screw is unclamped, the ball screw can be turned to adjust the shut height of the press. To increase shut height, turn the ball screw from left to right. To decrease shut height, turn the ball screw from right to left. **Once the desired shut height is reached, clamp the ball screw tightly.**

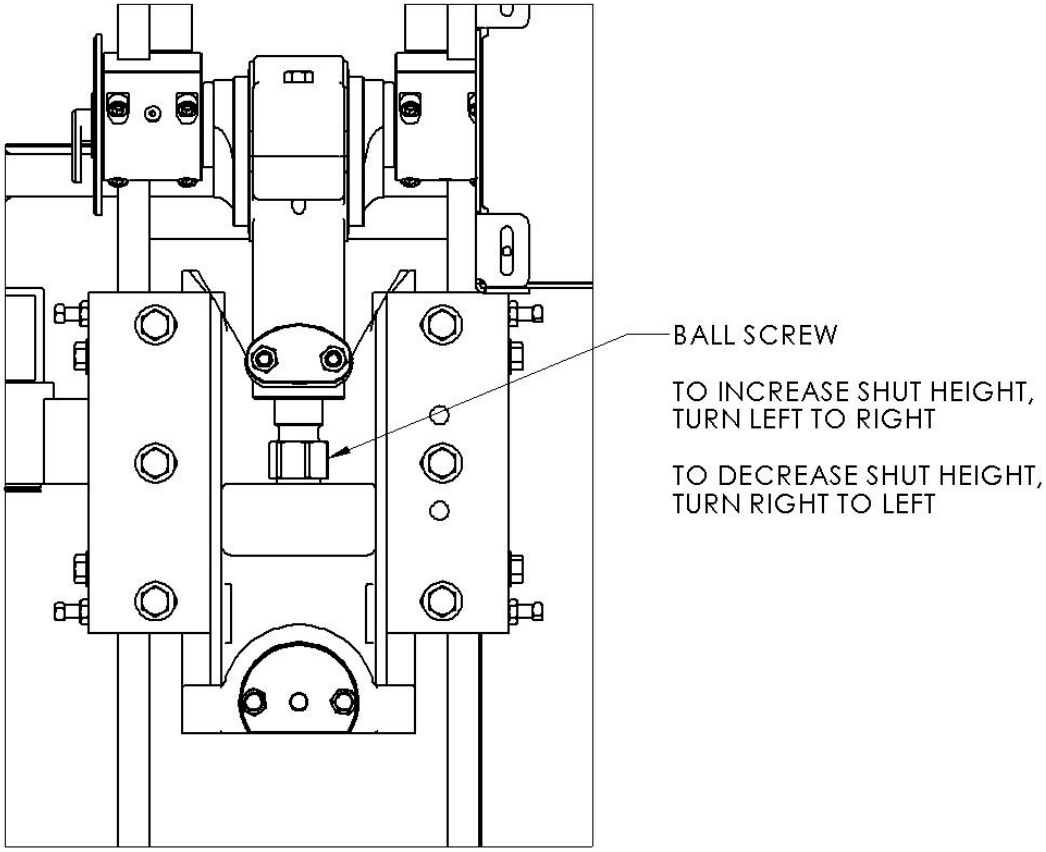


Figure 0.3 Ball Screw Adjustment

Oiling system

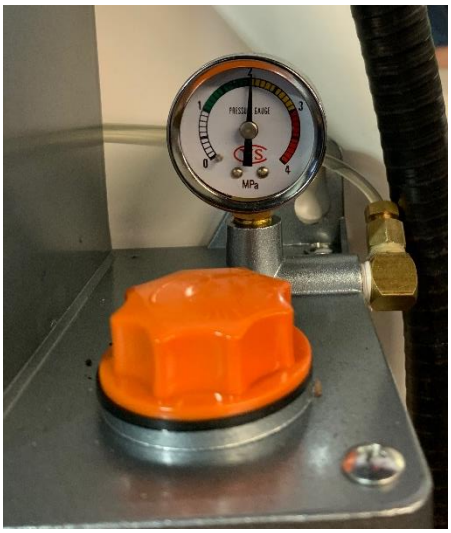
Azimuth presses are equipped with an automatic lubrication centralized system for main bearing, bushing & gibs. The table below gives the important information relative to the oiling system.

Table 2 - Automatic Oiling parameter

Idling time	800 minutes
Running time	At start-up, 5sec & after idling time
Oil type	SHELL TELLUS S2 M68 or EQUIVALENT

To change the oiling parameter:

- Press & hold the *Set* key
- Running time will appear, in **seconds**
  - Change with the arrow if needed
- Press & hold the *Set* key
- Idle time will appear, in **minutes**
  - Change with the arrow, if needed
- To run the oiling system manually, simply press the *Set* key once.



Maintenance

Ram and Gibs Maintenance

For the press to function correctly and to ensure its long life, the ram and gibs must be periodically inspected, cleaned and adjusted.

Cleaning the Ram Contact Surfaces

To avoid premature wear of the sliders, always make sure there is no dust or debris stuck on the sliding surfaces.

Check for excessive dust or abrasive particles such as metal chips. These particles will scratch and damage the ram and gibs with time.

It is always recommended to wipe down the sliding surfaces before running the machine. **Do not use a compressed air jet to clean the ram and gibs; it will force debris between the ram and the gibs**.

Checking Gibs Clearance

Periodically check the clearance between the gibs and the ram sliders to make sure it stays within specification. Use feelers gauges to determine clearance. Refer to table 2.2.1 to check what is the specification for each servo-press model.

Table 0.1 Specified Gibs Clearance

Servo-Press Model	Specified Clearance Between Gibs & Ram (inches)
6-S	0.001
8-S	0.001 – 0.0015
10-S	0.0015
15-S	0.0015-0.002
22-S	0.002
33-S	0.002 – 0.003
44-S	

Adjusting Gibs Clearance

When the measured clearance between the gibs and the ram is out of specification, please follow these instructions to adjust it.

Only work on one side when adjusting the clearance. Failure to do so may affect the parallelism between the ram and the bed of the press. Do not loosen the front hexagonal bolts – they must be tight at all times.

To adjust the clearance, use the bolts on the side of the gibs. Make sure to turn them by the same amount.

The square head set screws push against the frame of the press and increase the clearance, should the measured clearance be too tight. Loosen the jam nuts before trying to turn the set screws.

The hexagonal bolts pull the gib towards the frame of the press and close in the gap between the ram and the gibs.

Use the correct size feeler gauge to check the clearance periodically while adjusting it until specified clearance is reached. **Make sure all the bolts are tight before running the press.**

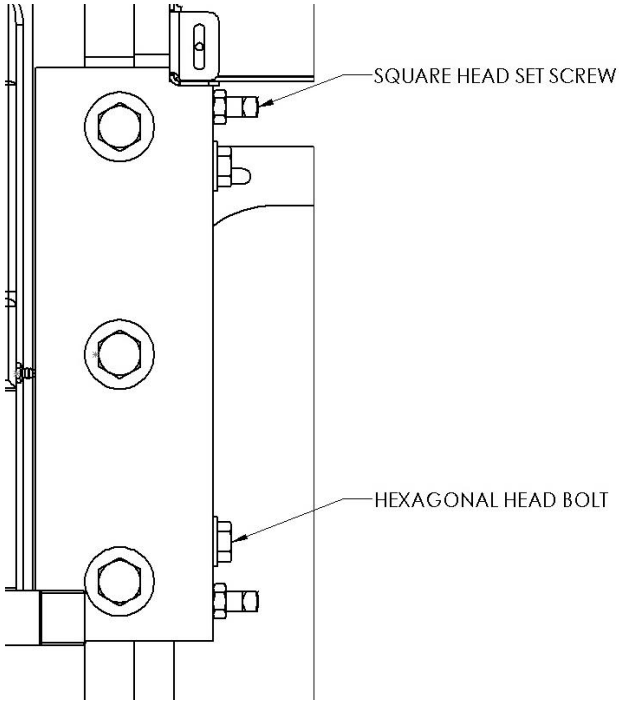


Figure 0.1 Gib Bolts

Checking Taper Locks Tightness

The timing pulleys are connected to the crankshaft and output shaft of the gearhead through the use of taper locks. Over time, the bolts may come loose with the vibrations from the press.

These bolts must be periodically checked to make sure the shafts do not spin in the taper locks under heavy load.

Please make sure to check the tightness **every 300,000 strokes of the press**.

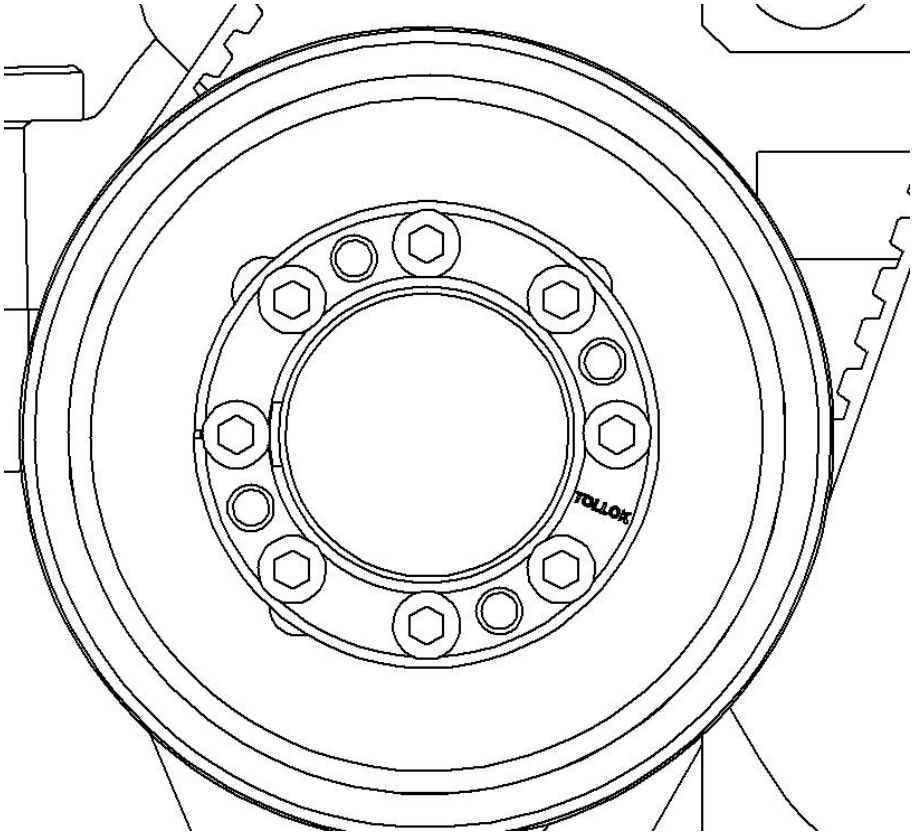


Figure 0.1 Taper Lock Bolts

Checking Ram and Bed Parallelism

It is important to check the parallelism of the ram and bed periodically. **It must stay under 0.002" to be within specification.**

To check parallelism, use a dial gauge with a magnetic base on the bed or bolster plate of the press. Make sure the dial gauge is making contact with the ram. Slide the dial gauge on its magnetic base along the bed or bolster plate, and check for variation in the distance from the bed to the ram.

If the press is out of specification, please contact Azimuth for further assistance.

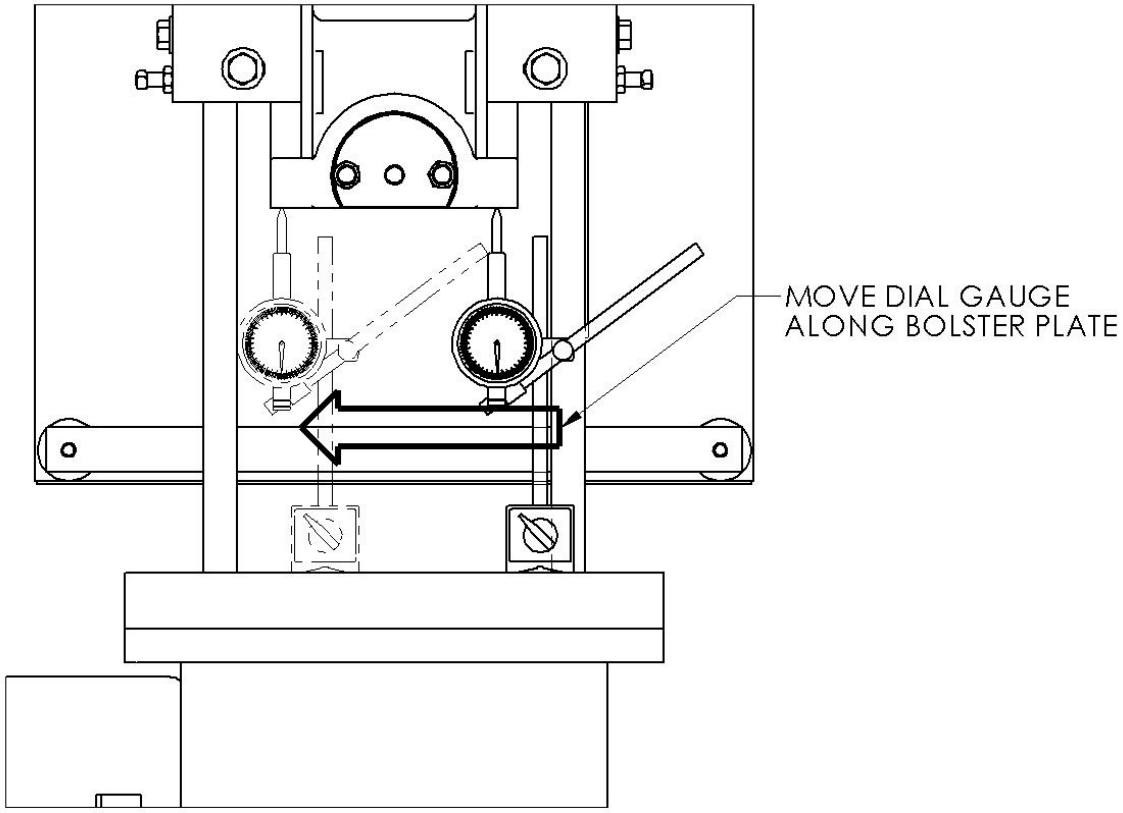


Figure 0.1 Checking Bed Parallelism

Operating the Press

This section explains how to operate the press and how to use the different modes the servo press comes with. Please make sure to understand theses instructions before attempting to operate the press.

Using the Operator Station

The Operator Station allows the user to start, stop and jog the press, and operate its safeties.

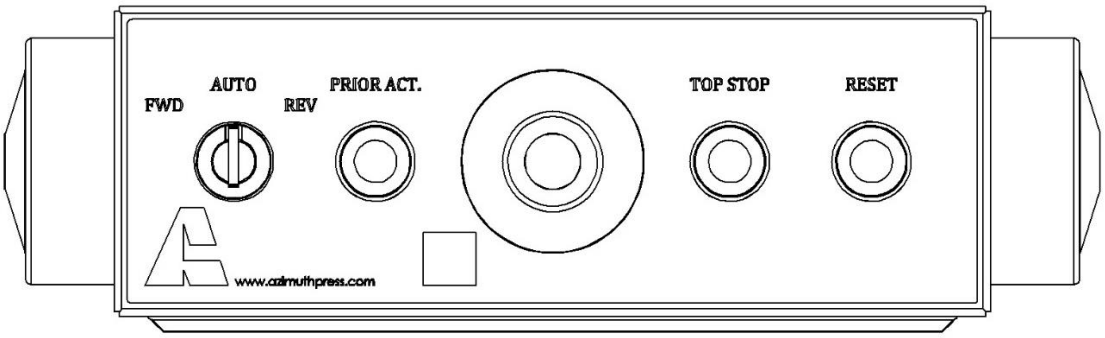


Figure 0.1 Operator Station

The two buttons on the sides, called the dual-palms, trigger the start of the press.

The key selector switches between forward and reverse jog or regular operation of the press.

When set to FWD or REV, the press jogs forward when the palms are pressed. When set to AUTO, the press will do whichever cycle is selected on the HMI.

The Prior Act. button allows the press to start in automatic mode. Once it is pressed, the machine must be started within 5 seconds using the dual-palms.

The Prior Act. button is not necessary when using the regular pendulum and full modes. It is only necessary when using full auto or pendulum auto modes.

The Emergency Stop button immediately stops the press and should only be used to stop the press when there is an emergency. **Using it unnecessarily or frequently while the press is running can cause premature wear on the motor drive and may cause problems with the sequence of the machine.**

When activated, the Emergency Stop button cuts the power to the motor, causing the press to rapidly decelerate to a full stop.

The Top Stop button stops the press at the top of its motion. It must be pressed before changing operating modes.

The Reset button only resets the security when the Emergency Stop is pressed; it does not reset general alarms.