

MEASURING FOR AN ARM TYPE PULLOUT HOLDOUT DEVICE

This paper has been prepared to help you understand the measurements necessary to fit an Arm Type Pullout Holdout Device to a press. It describes, explains and makes comments on the selection of brackets and the measurements that must be taken and entered on the measurement sheet.

Before taking any measurements it is a good policy to look the subject press over carefully and decide if an Arm Type device can be mounted on the press and what brackets will be necessary to do so. There are four (4) points that the device must be attached securely to the press.

1. The Support Rod must be attached high on the front of the press frame.
2. The Stroke Rod must be attached to the ram or upper die shoe.
3. The Column must be attached to the rear of the press frame.
4. The Arms must be attached to the bed or bolster of the press.

Illustration I shows the general location of these points. The bracketing and the actual location of these attachment points will vary with the make, size, type and special features of the press. Accurate information and dimensions on the measurement sheet will help assure a properly fitted device.

Upright or Inclined

The A, B, C & D dimensions on an upright press will be taken from the floor to the appropriate point on the press. If the press is inclined, these dimensions will be taken from the bolster level (see Arm Type Measurement Sheet Folder).

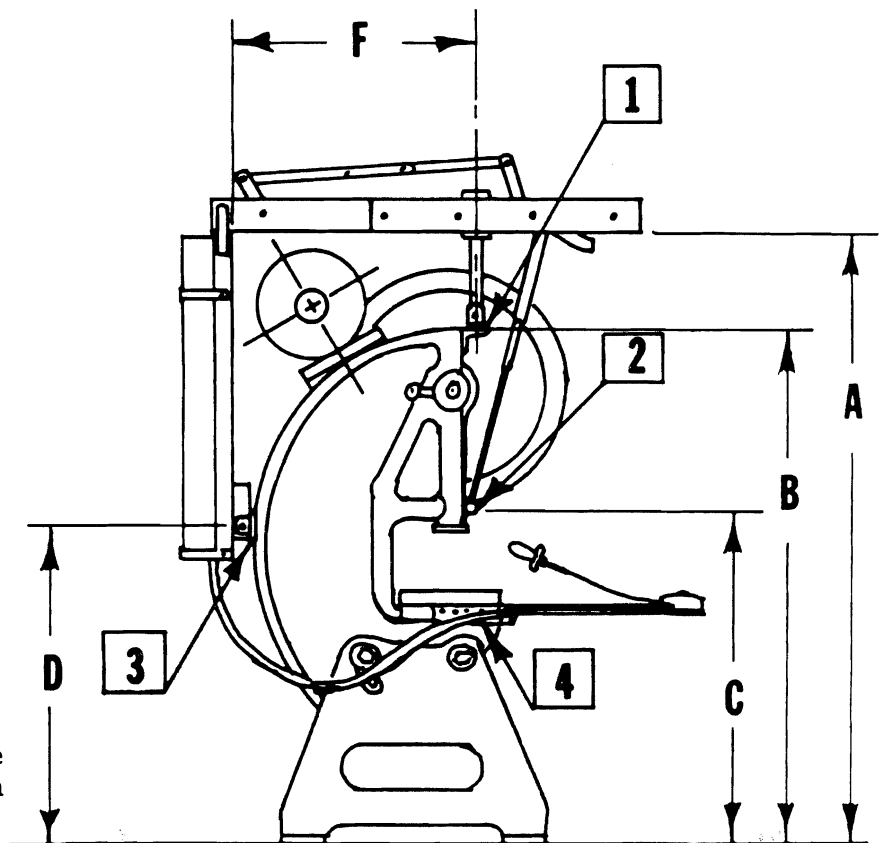


Illustration I

"A" Frame Height

This is the height that the underside of the proposed device frame will be. It should be high enough to clear any obstacles on the press. To provide ample head clearance the "A" dimension should be a minimum of 78" on an upright press and 48" on an inclined press. In no case can "A" be more than 22" greater than "B".

"B" Support Rod Attachment Height

This is the height at which the Support Rod will be attached to the press. Before you enter a measurement you may have to select a Support Rod Bracket. The Support Rod should be located as far forward as is practical. A good "rule of thumb" is that the Support Rod should always be located forward of the centerline of the ram.

Direct Mount

If there is enough horizontal surface on the press frame, at the right location, the Support Rod may be attached directly as in Illustration II. Never attach directly to a vertical surface. Use a front mount bracket. If there is a horizontal surface but it is not forward of the ram centerline, then use an appropriate bracket to locate the Support Rod forward.

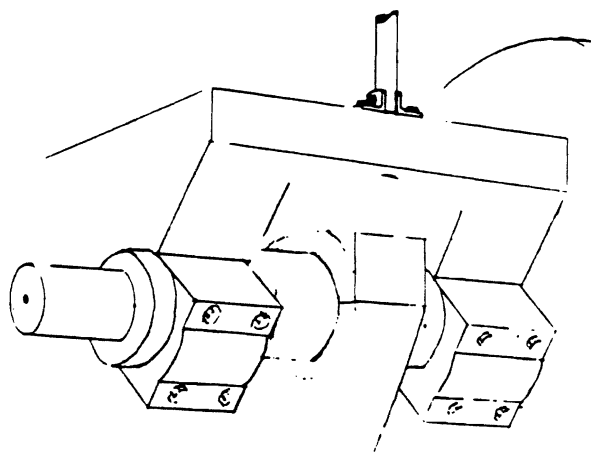


Illustration II

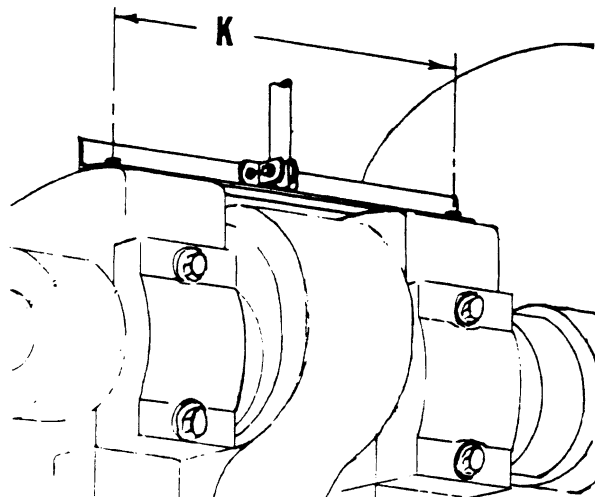


Illustration III

Top Mount (Fig. 1)

A top mounted bracket, Illustration III, should be selected to bridge across horizontal surfaces on the press frame. If there is a clearance problem for this "bridge" due to oil cups or grease fittings on the bearing cap, use dimension "L" to specify the height of spacers required. If the mounting surface is curved or crowned, check the measurement sheet for leveling screws.

Front Mount (Fig. 2)

A front mounted bracket, Illustration IV, should be selected to bridge across vertical mounting surfaces, perhaps the tie rod bosses, on a press. When using a front mount bracket you must check to see that the crank will not extend to or beyond the bracket when the press is cycled. It may be necessary to cycle the press to determine this.

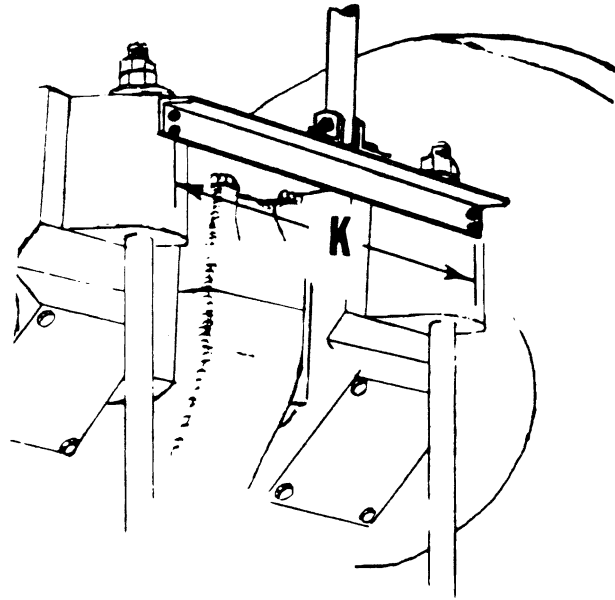


Illustration IV

Once the bracket is decided upon, measure from the floor to the proposed point that the Support Rod will attach to the bracket or press and enter on the measurement sheet. Enter the "K" dimension, hole center distance, as indicated in Illustrations III and IV.

Avoid covering or blocking empty tie rod holes unless you can be assured that tie rods will never be used.

"C" Ram Attaching Height

This is the point where the Ram Blocks will be attached to the ram. In most cases this height can be measured by visualizing the Ram Blocks on the press. If there are unusual circumstances the "Ram Block Brackets" and offset, dimension "G", should be considered first.

"D" Column Attaching Height

This is the height, on the rear of the press, where the bracket will be attached to support the vertical Column which houses the adjusting rod.

Direct Mount

If there is a solid web across the rear of the press frame, the Column may be attached directly by using the appropriate Column Extension.

Flat Bracket (Fig. 9)

If there are no obstructions to be cleared on the rear of the press a flat bracket, Illustration V, may suffice. On curved frames this bracket will usually be located on the rearmost point of the press frame. It is desirable, at times, to locate the Column bracket high enough to allow the opening at the rear of the press to be used for parts or scrap chutes. The connection from the bracket to the Column can be any where within the height of the Column or an extension can accommodate any bracket location below the Column.

Extension Brackets

Look again at Illustration I. Note that the Column of the device extends straight down from the rear of the device frame to the point of attachment. If obstructions, such as the motor, prevent this it will be necessary to use an extension bracket.

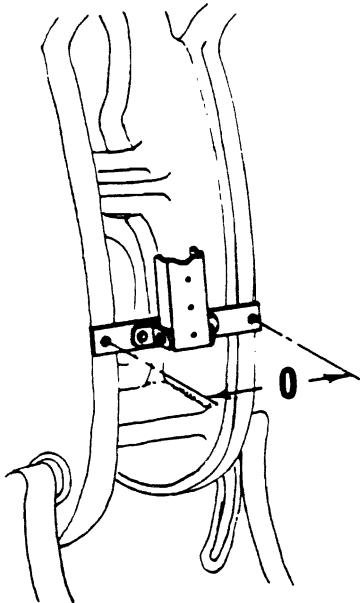


Illustration V

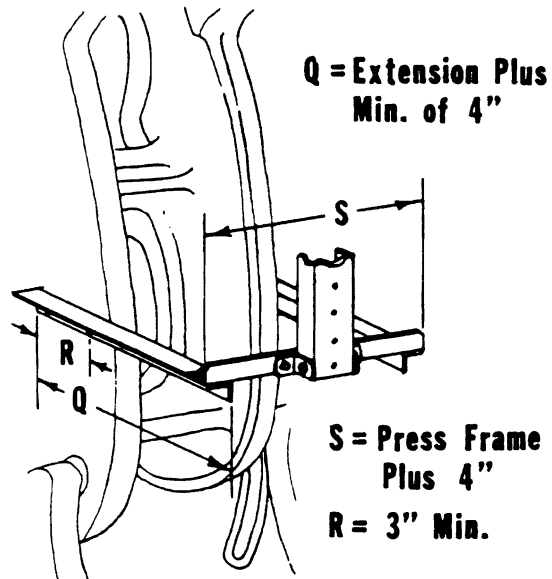


Illustration VI

Side Mounted (Fig. 11)

If the sides of the press offer enough mounting surface a side mounted extension bracket, Illustration VI, can be used. Three dimensions will be necessary if this bracket is chosen. The "Q" dimension is the length of the bracket necessary to provide the desired clearance for the Column. It is the extension plus the amount of mounting surface to be used on the sides of the press. There should be a minimum of 4" overlap on the press sides with a minimum of 3" "R" dimension. The "S" dimension will be the width of the press frame plus 4".

Face Mounted (Fig. 10)

If there are interferences or the press frame shape is such that the side mount bracket cannot be used, then a face mount bracket can be used; Illustration VII. This bracket needs but two dimensions. The "P" dimension will be the amount of extension needed and the "S" dimension will be the press frame width.

Consider the Side Mounted extension to be the standard. Use the Face Mount Extension only when absolutely necessary.

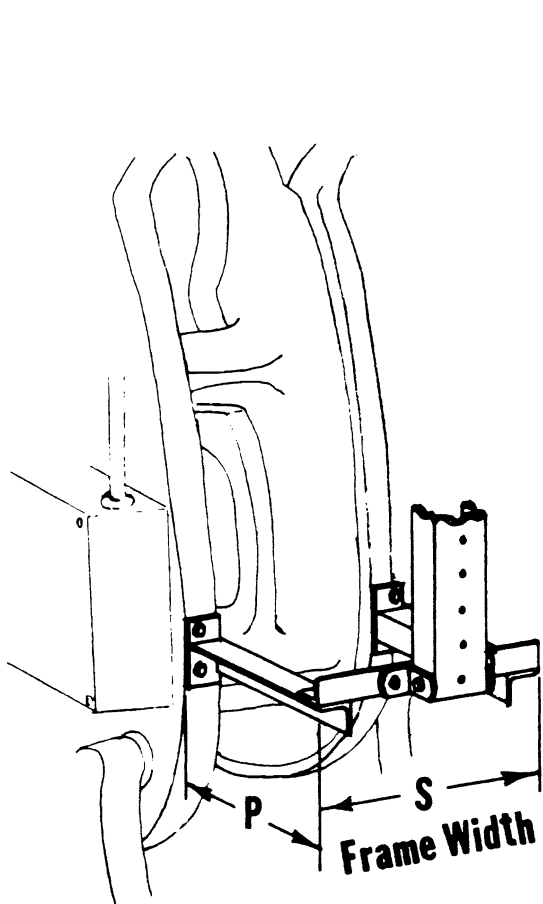


Illustration VII

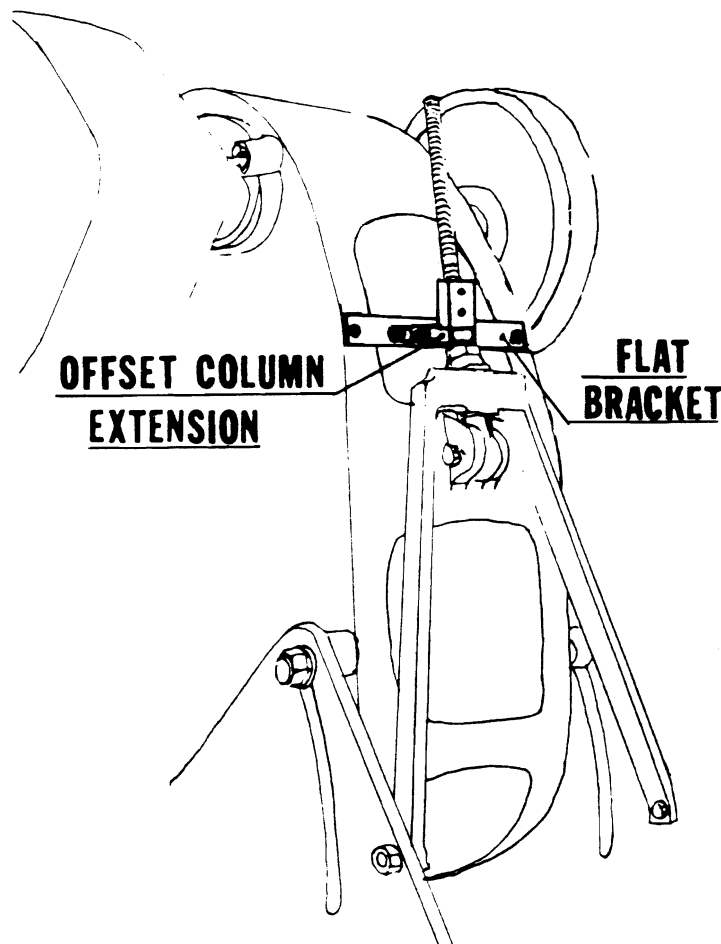


Illustration VIII

Offset Column Extension (Fig. 7 or 8)

The offset column extensions were made to extend the Column enough to clear the jacking attachment on "A" series Niagara presses. They are designed to be used from either end thus offering 4", 6" or 8" extension. Illustration VII shows a typical Offset Column Extension application using a Flat Bracket.

"E" Length of Tubes

The tubes are the protective housing for the cables that run from the Column to each Arm Assembly. The "E" dimension is simply the length that these tubes must be. Using Illustration IX as a guide, find the approximate location of the bottom of the Column on the proposed device. With a flexible measuring tape measure from 6" to 8" above that point in a sweeping curve to a point 6" to 8" in front of the bolster or bed of the press. This is the only measurement that should be entered in feet rather than inches. Round off the measurement to the nearest 1/2 foot above what you actually measure. If the device is to be offset (see "G" dimension) the tube opposite the offset direction will be longer. If the offset is to be extreme or the tube must take an irregular course use your best judgment or contact the manufacturer of the device for advice.

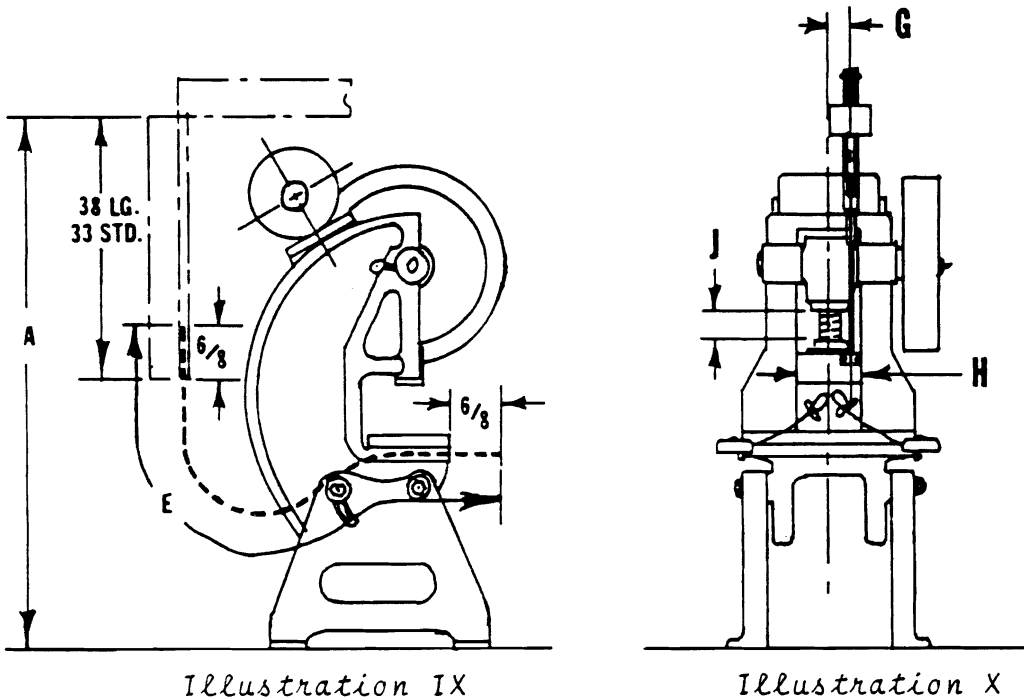


Illustration IX

Illustration X

"F" Distance from Column to Support Rod

This is the approximate distance from the proposed Column location to the point that the Support Rod will be attached. (See Illustration I.) The minimum "F" dimension will be 16" and maximum 66".

"G" Offset from Center of Press

The offset of an Arm Type Pullout Holdout device is the distance from the centerline of the press ram to the centerline of the device when facing the front of the press as in Illustration X. The offset should be expressed to the right or left as you face the press.

It is good policy to offset the device toward the flywheel, normally to the right, for ease of adjustment of the pitman screw. A little offset helps considerably so it is not necessary to go to extremes. You should let the style and size of the ram help dictate the offset you should use. Another reason for offsetting might be to allow the frame of the device to clear any interference, such as a motor, rather than go over it. As a rule it is better to keep the offset small and to the right and go over the interference providing the difference between "A" and "B" does not exceed 22".

Ram Attachments - Direct

The Ram Blocks require a flat surface of 1" height by 2" width to be attached. Illustration XI shows a typical ram face with the Ram Blocks fastened direct. The maximum offset for an installation such as this will be 1" less than 1/2 of the "H" dimension.

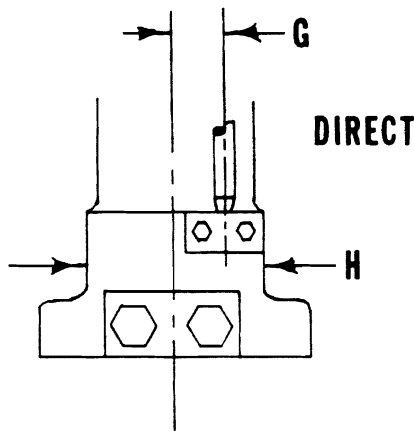


Illustration XI

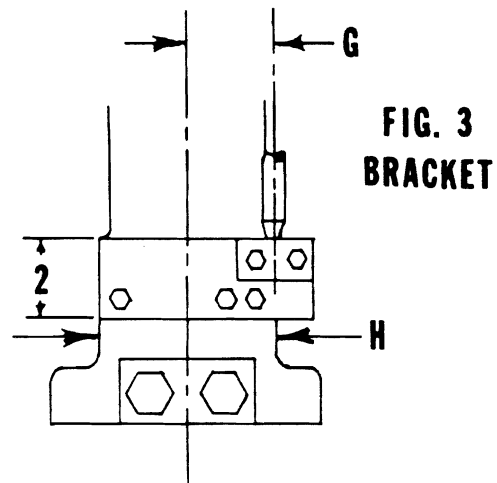


Illustration XII

Fig. 3 and 4 Ram Block Brackets

If the offset gained by a direct mount is not enough, perhaps a Fig. 3 or Fig. 4 Ram Block bracket can be used. The Fig. 3 bracket will afford an offset of 1/2 of "H". The Fig. 4 bracket will provide an offset of 1" more than 1/2 of "H". Illustrations XII and XIII show how these brackets apply. When these brackets are selected they dictate the offset of the device.

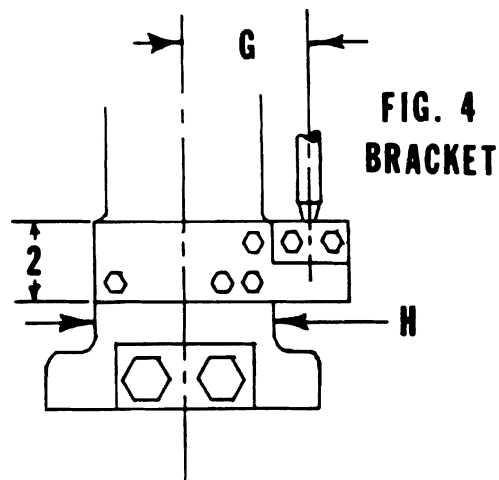


Illustration XIII

Fig. 5 Ram Block Bracket

If the press has a round breech block die clamp a Fig. 5 bracket can be used; see Illustration XIV. The offset will be 1/2" less than the radius of the breech block. For a Fig. 5 bracket just check the appropriate box on the measurement sheet and fill in the "M" and "N" dimensions. The "M" dimension is the diameter of the breech block and "N" is the width of the flat surface around it. If the standard offset will suffice enter the "G" dimension according to the formula or leave it blank. Avoid confusion by not entering contradictory dimensions.

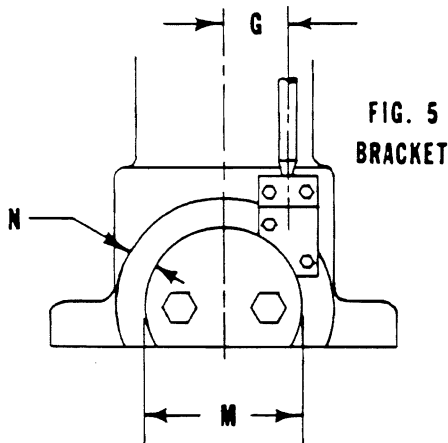
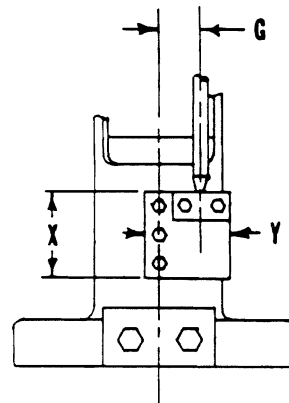


Illustration XIV



Round Ram

If the press has a round ram a special bracket can be had to attach the Ram Blocks. Illustration XV shows such a bracket. Again it is good policy to offset the device toward the fly-wheel. Draw a simple sketch on the measurement sheet showing the "X" and "Y" dimensions. The offset, with a round ram bracket, should not exceed 1/2 of the "X" dimension.

"H" Width of Ram at Attaching Point

Refer to Illustrations X and XIII.

"I" Width of Press at Bolster Height

This dimension should be the width of the bolster or bed of the press at the height that the Arms will be attached.

"J" Amount of Thread Showing on Pitman

This dimension helps determine the length that the Stroke Rod will be.

Front or Side Mounted Arms

Side Mounted Arms should be standard. Use Front Mounted only when absolutely necessary. Illustrations XVI and XVII show the typical brackets used for each. Check the appropriate box on the measurement sheet.

The above descriptions cover most of the normal situations you will encounter when measuring a press for an Arm Type Pullout Holdout device. Keep in mind that the device must be securely attached to the press at the aforementioned four points. When all else fails contact the manufacturer of the device for advice.

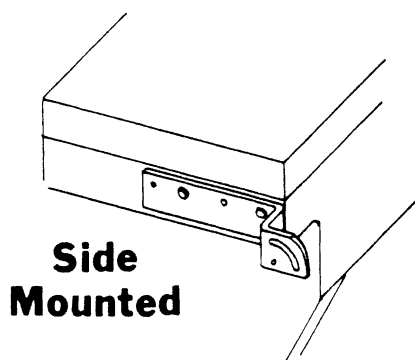


Illustration XVI

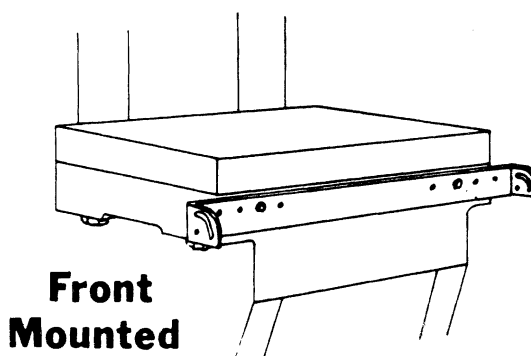


Illustration XVII