



5.0 Set-Up and Adjustments

CONNECTING TO ELECTRIC POWER

Check correct voltage and phasing prior to connecting the electrical power. Connect the power and check motor for correct rotation. Rotation is shown by the arrow located on the Feed Roll Wheel in the center of the machine. If rotation is incorrect on the 3 Phase Machine reverse wires T1 and T2 to change the direction of rotation.

Single Phase is pre-set at factory.

Adjustments are in sequential order, the adjustment of a machine should begin with the first set-up and continue in order until the last adjustment.

Tray Box Former



MANDREL SET UP

The height of the Mandrel Guides will vary with the thickness of the Blank. Check for the correct Spacers:

0021101 - 3/16 Inch Thick

0021102 - 3/32 Inch Thick & 0021101 - 3/16 Inch Thick for "A" Flute

0021103 - 3/8 Inch Thick for Double Wall

To change the Mandrel Spacers, remove the Mandrel Base Clamp (0021500) from Mandrel Guide Rails and the Base Clamp Support Stud (0019604). Install the correct Spacer and adjust the Support Stud to hold the Mandrel Base Clamp parallel when 3/8 bolt is tight.

NOTE: There are four (4) Base Clamps and Spacers per Machine.

Next remove the Front Mandrel Spacer Bar (0074700) from the Mandrel and slide the Mandrel Rails (0022101 R/L) into the Mandrel Guides (0021201 and 0026400). Then re-install the Mandrel Spacer Bar (0074700) in front of the Mandrel Operating Arm (0041300).

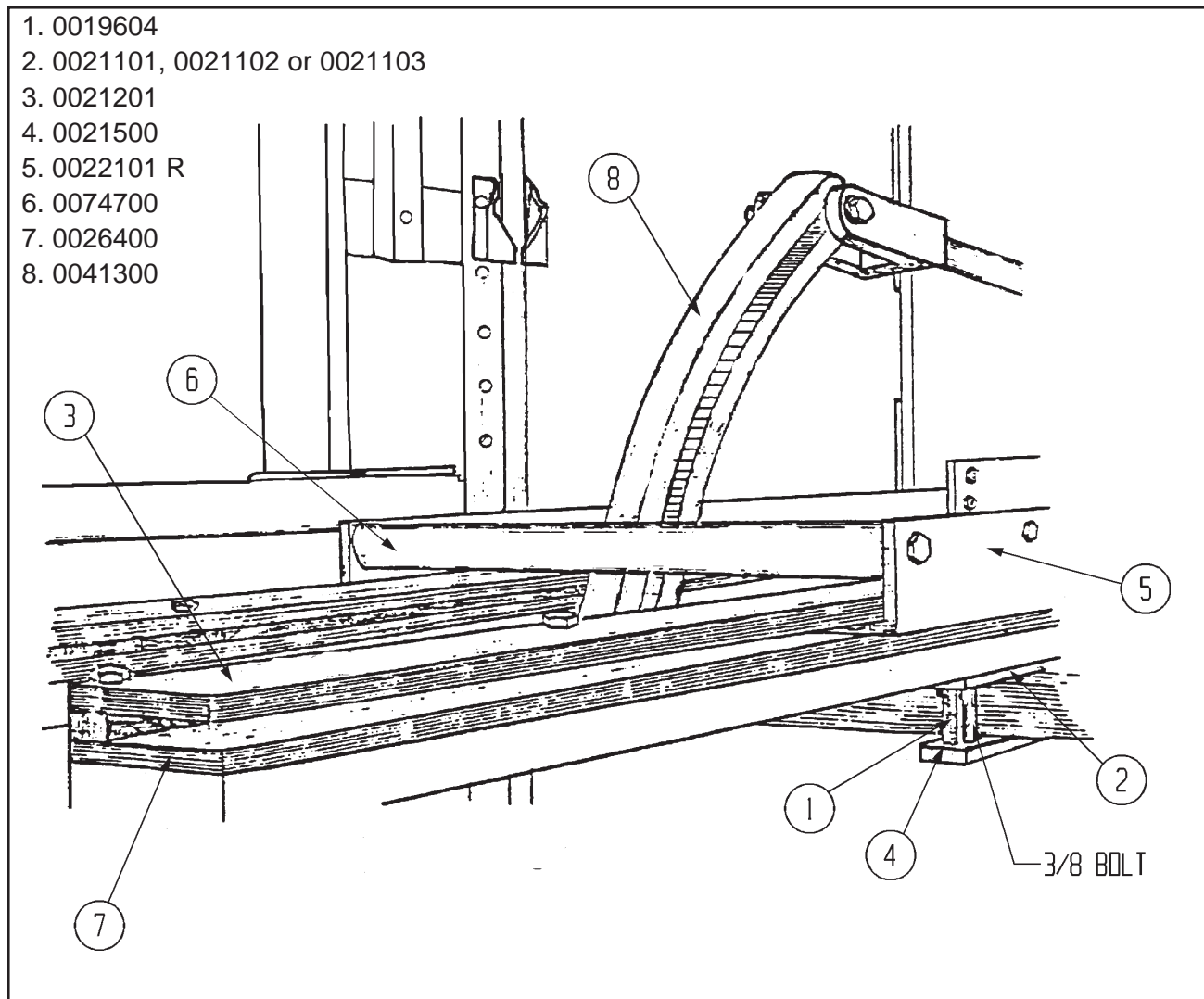


Figure 5-1: Mandrel Set-Up

ADJUSTMENT OF MANDREL GUIDES

Adjust the Guides (0021901 R/L) from the Center Line Mark (C) on the Spreader Bar (0010703, Standard Base.....0010705, Wide Base). The "A" dimension on both sides should be equal. This adjustment should be made keeping in mind the fit of the Mandrel to Guides. The Mandrel should slide freely with minimal play between Guides (0021201), approximately 1/32 inch clearance.

1. 0010703
2. 0021201
3. 0021901 R
4. 0022101L
5. 0022101R

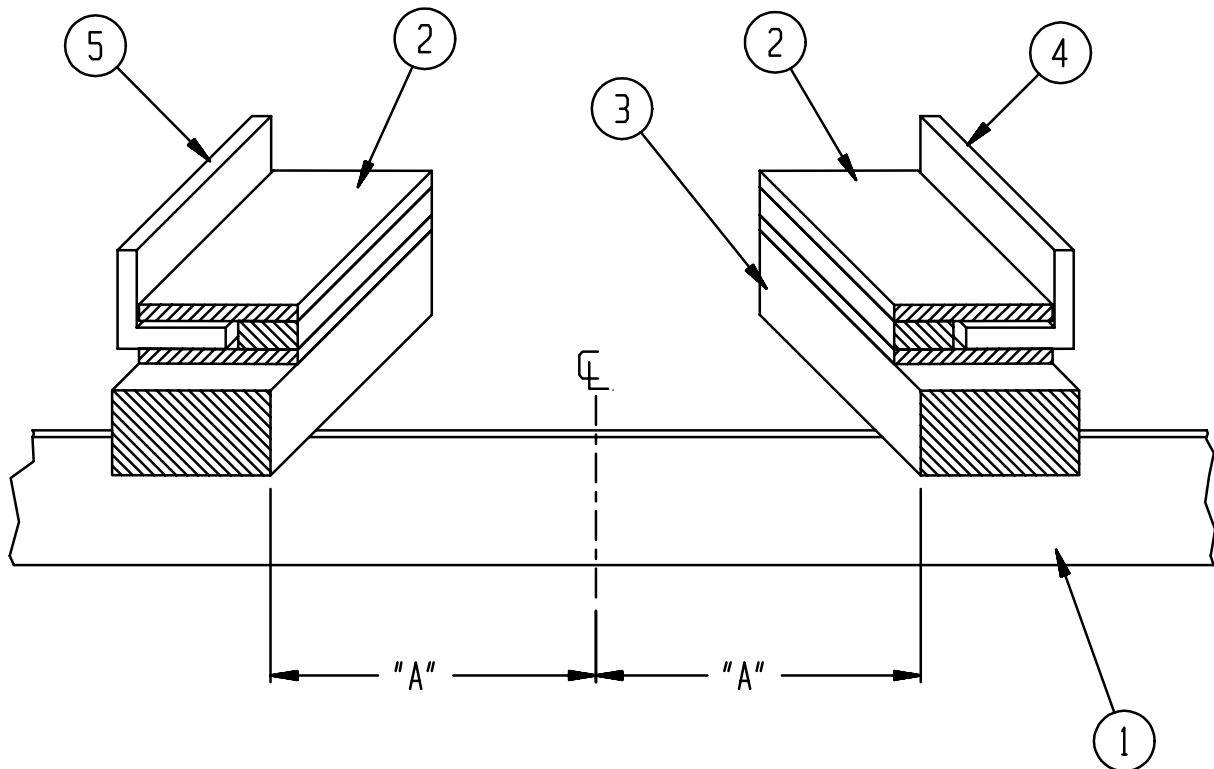


Figure 5-2: Adjustment Mandrel Guides

Tray Box Former



ADJUST MANDREL RETURN STROKE

With Mandrel Operating Arm (0041300) at the end of its return stroke, loosen the set screws on Set Collar (0100600) which slides over the Mandrel Connecting Rod End "Con Rod End" (0011700), and on the Form Spreader Tube (0035600). Adjust the Con Rod End of the Mandrel until the rear end of the Mandrel Guides (0021201) and Mandrel Spreader Bar (0074601) have a 1/16 inch to 1/8 inch clearance.

1. 0011700
2. 0021201
3. 0074601
4. 0035600
5. 0100600

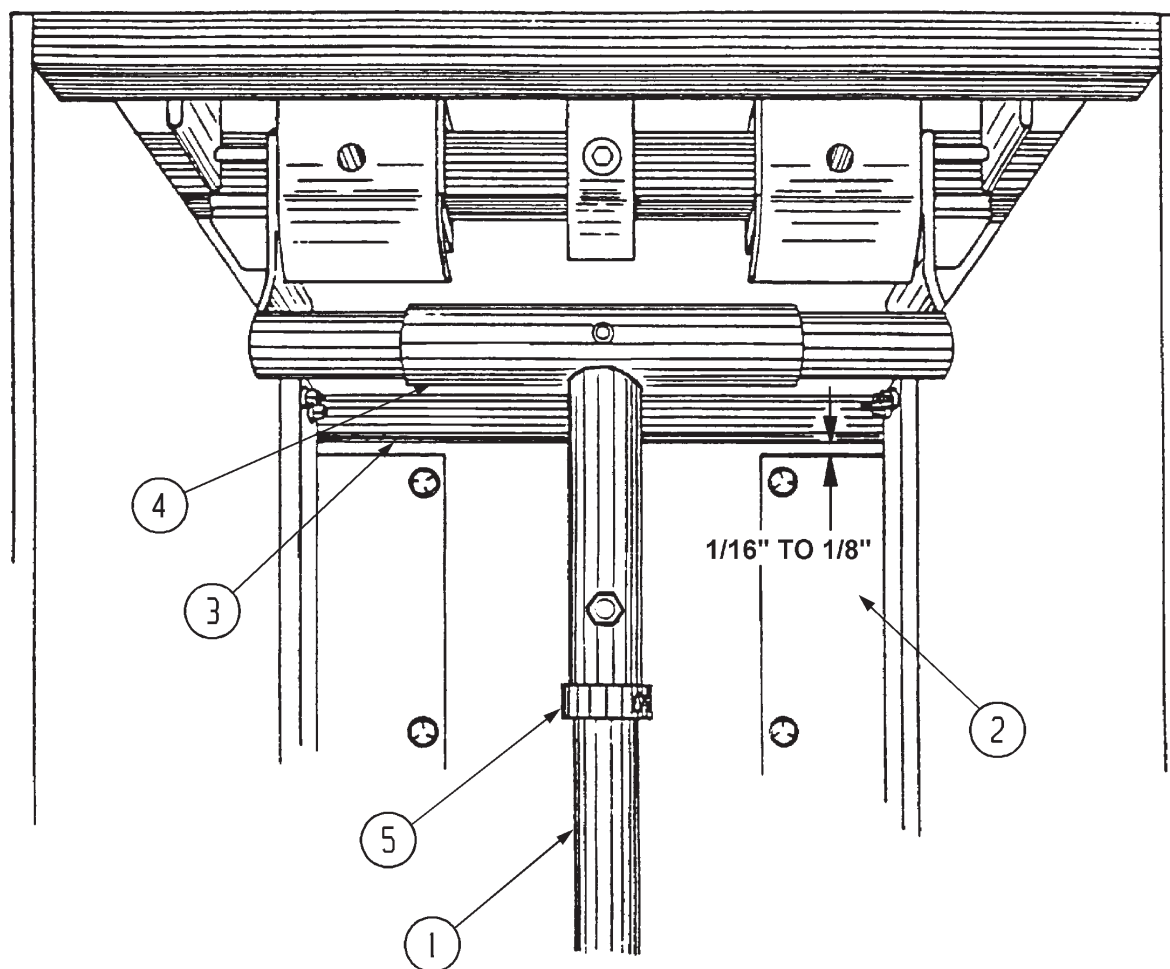


Figure 5-3: Adjust Mandrel Return Stroke

ADJUST SIDE COMPRESSION BARS

With the rear of the Mandrel Spacer Bars (0074601) even with the Side Compression Bars (0022605) loosen eight 5/16 bolts clamping the top and the bottom Compression Shoes (0014701 R/L) to the Upper Mount Bar (0028900, Standard Base.....0028901, Wide Base) and Lower Mount Bar (0010703, Standard Base.....0010705, Wide Base). With the Mandrel still in this position measure all four (4) corners of the Mandrel. Measure from metal of Mandrel to edge of the Compression Bar. This measurement should be 2 blanks thick, plus 1/8 inch. Re-tighten the 5/16 clamping bolts and re-check measurement.

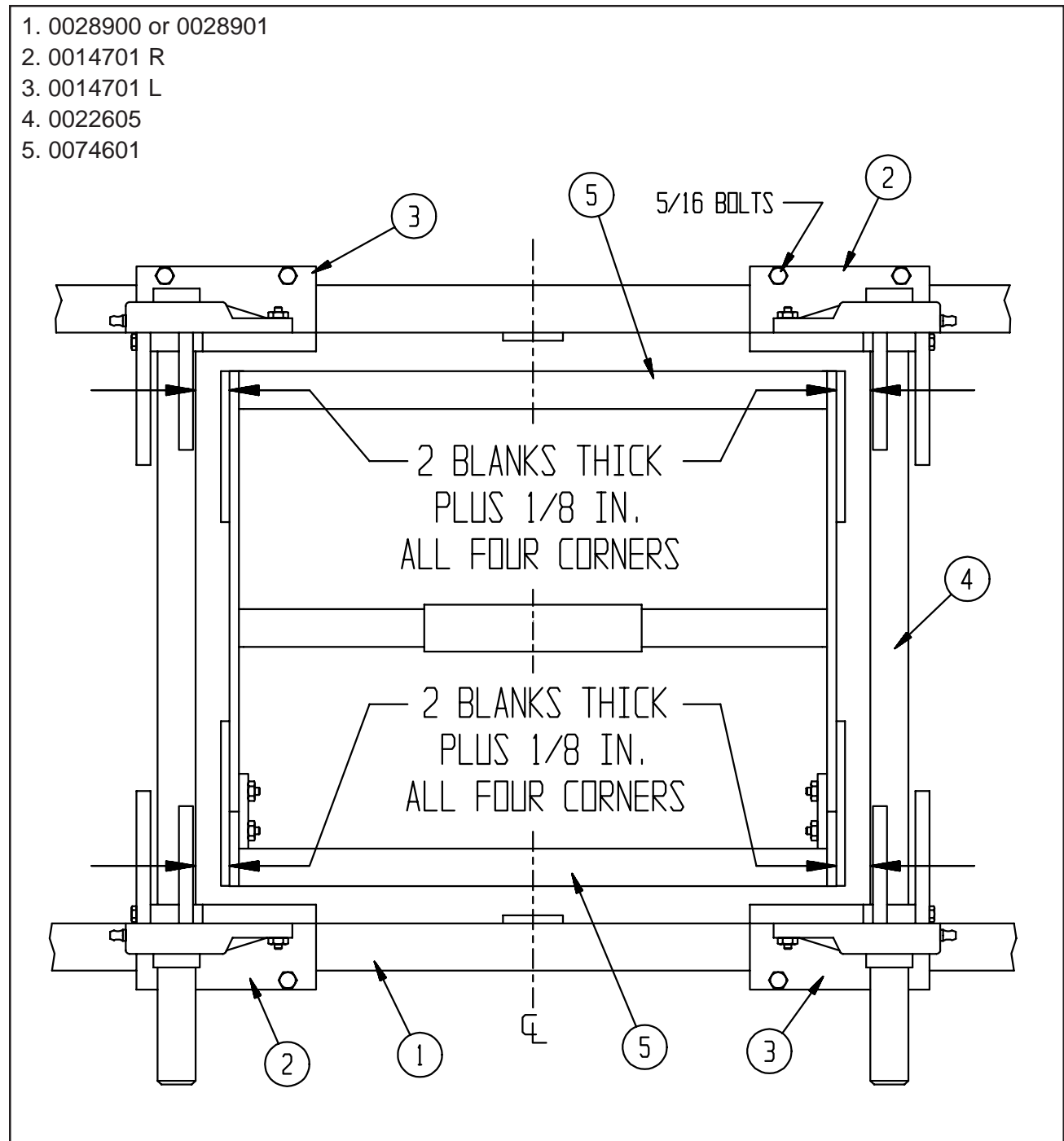


Figure 5-4: Adjust Side Compression Bars

Tray Box Former



ADJUST QUICK CHANGE BOTTOM STOPS AND VERTICAL GUIDE BARS

Move the Forming Mandrel to the end of its return stroke. Place a Blank in forming end of Mandrel, and loosen the Bottom Stops using the set screw located in the Set Collar (0100200) on the Quick Change Adjusting Arm (0050200). Slide the stop up or down on the Vertical Guide Bar (0017901) so that the Blank scores are even at the top and bottom of the Mandrel. The Vertical Guide Bars (0017901) have one bolt at the top and bottom of the machine. To adjust the Vertical Guide Bars, measure the overall width of the Blank and add 1/8 inch; this establishes the distance between the bars. After establishing this dimension, subtract the overall width measurement of the Mandrel. Then divide by 2 the remainder after the subtraction step (See Example Below). This method will give the required distance between the outside of the Mandrel and the inside of the Vertical Guide Bars. The distance should be equal on both sides. This assures that the lower part of the Vertical Guide Bars have been adjusted properly. Run a Blank down the Vertical Guide bars to check clearances set.

Example:

Tray Blank Overall Dimension	18 13/16"
Vertical Guide Bar Clearance	+ 1/8"
Distance between Vertical Guide Bar	18 15/16"
Overall Width of Mandrel	- 14 1/16"
Divide by 2	4 7/8"
	$4 \frac{7}{8} \div 2 = 2 \frac{7}{16}$ "

Dimension from outside of Mandrel to inside edge of Vertical Guide Bars should be 2 7/16".
(Dimension should be equal on each side.)

1. 0017901
2. 0050200
3. 0100200

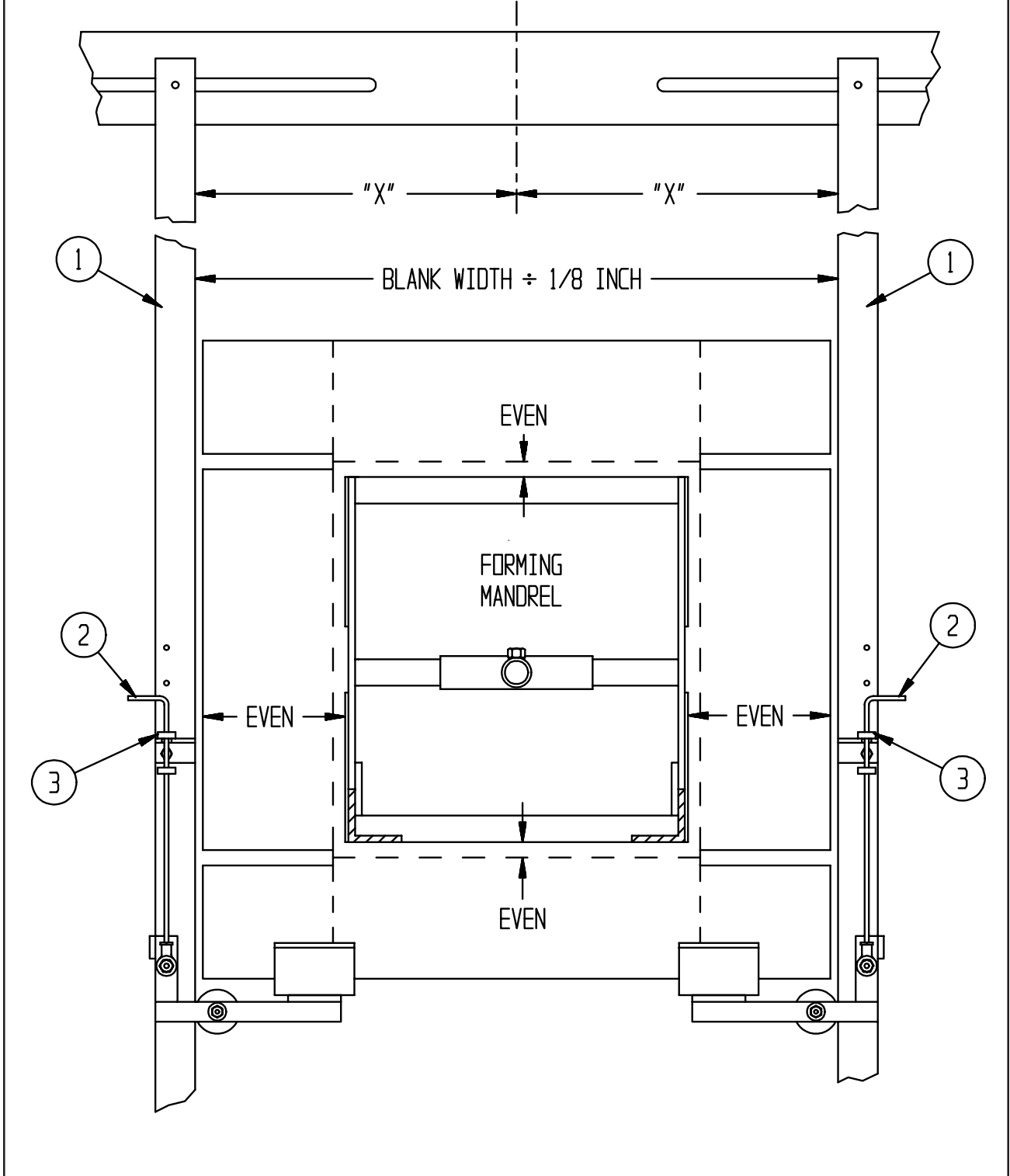


Figure 5-5: Adjust Quick Change Bottom Stops and Vertical Guide Bars

Tray Box Former



ADJUST BLANK FEED ROLL ASSEMBLY

Adjust the Blank Feed Wheel so there is a minimum distance between the bottom of the Blank Feed Idle Roller and the top of the Blank. The following conditions exist and pertain to one of the figures.

Figure 5-6B

1. 1/4" minimum dimension is used when the Blank Rebound Stop is not used (0012701).
2. 1/4" minimum dimension when the minor flaps are smaller than the major flaps.

Figure 5-6C

1. 4 1/4" minimum dimension when the Blank Rebound Stop is used.

Note: If forming multiple tray sizes, set the clearance for the largest size Blank.

To make this adjustment the Feed Chain Idle Sprocket Assembly should be loosened and free to slide on its mounts. Loosen the 5/16" bolts on the Melt Pot Clamp (0019700 R/L) located on the Vertical Guide Bars (0017901) and slide the pots up. Remove the Blank Feed Roll Mounting Bar bolts (4) and move the Feed Roll Assembly to fit the minimum dimension requirements. (Refer to Figure 5-6A for detail). Next slide the pot down until the Glue Pot Support Stud (0031100) rests on the Blank Feed Idle Roller Mount Bar (0020504, Standard Base.....0020505, Wide Base). Tighten bolts and readjust the Chain Idle Sprocket taking up all the slack.

Note: Part (22701 R/L) must be loosened when the Glue Pots are moved into position.

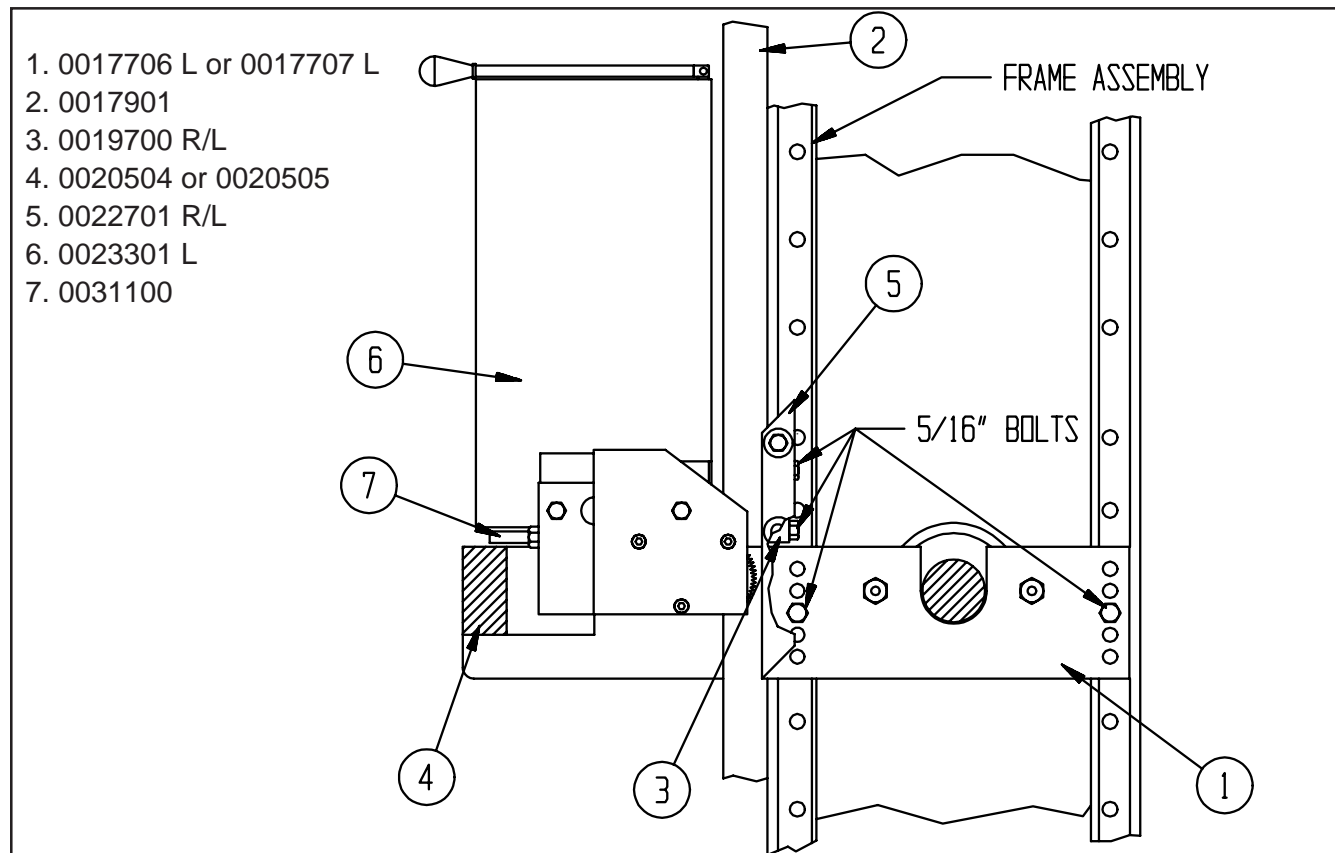


Figure 5-6A: Adjust Blank Feed Roll Assembly

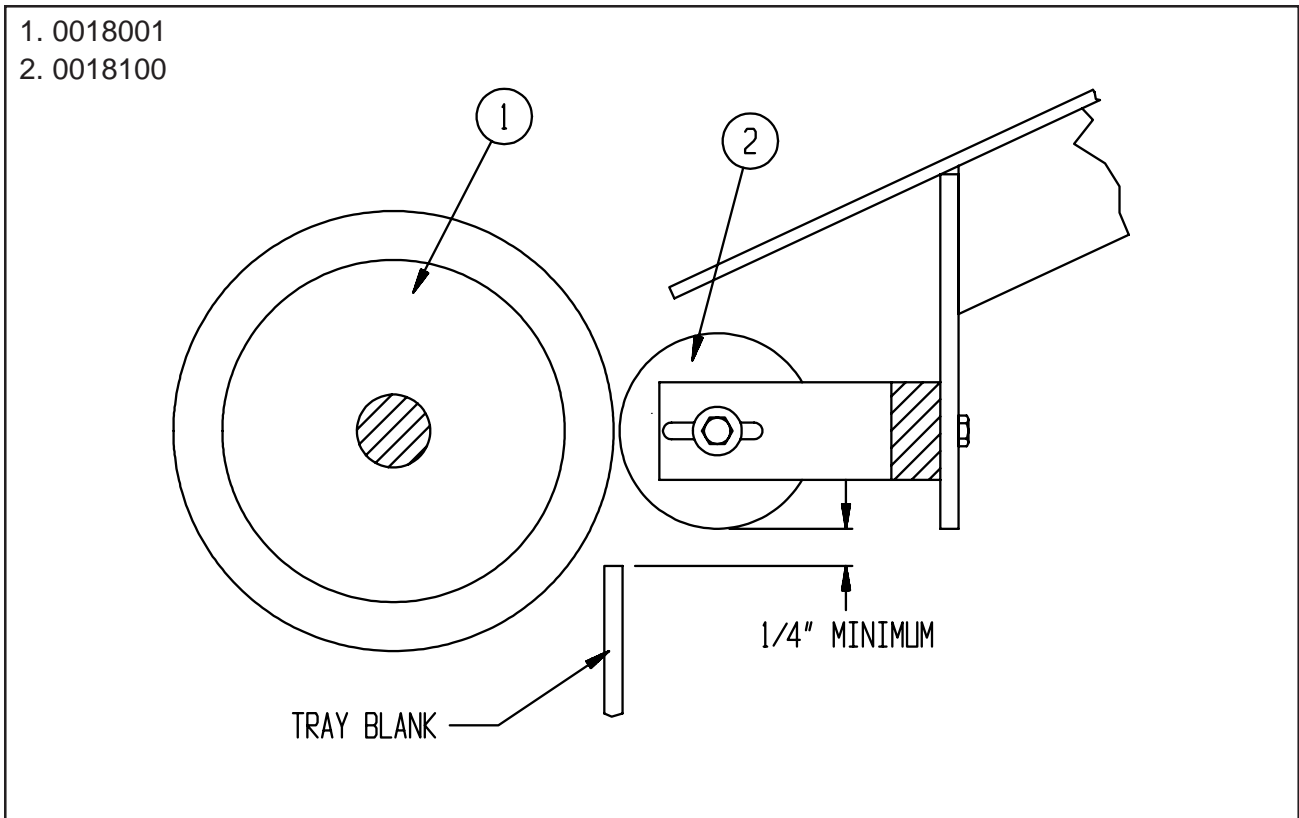


Figure 5-6B: Adjust Blank Feed Roll Assembly/ Without Blank Rebound Stop

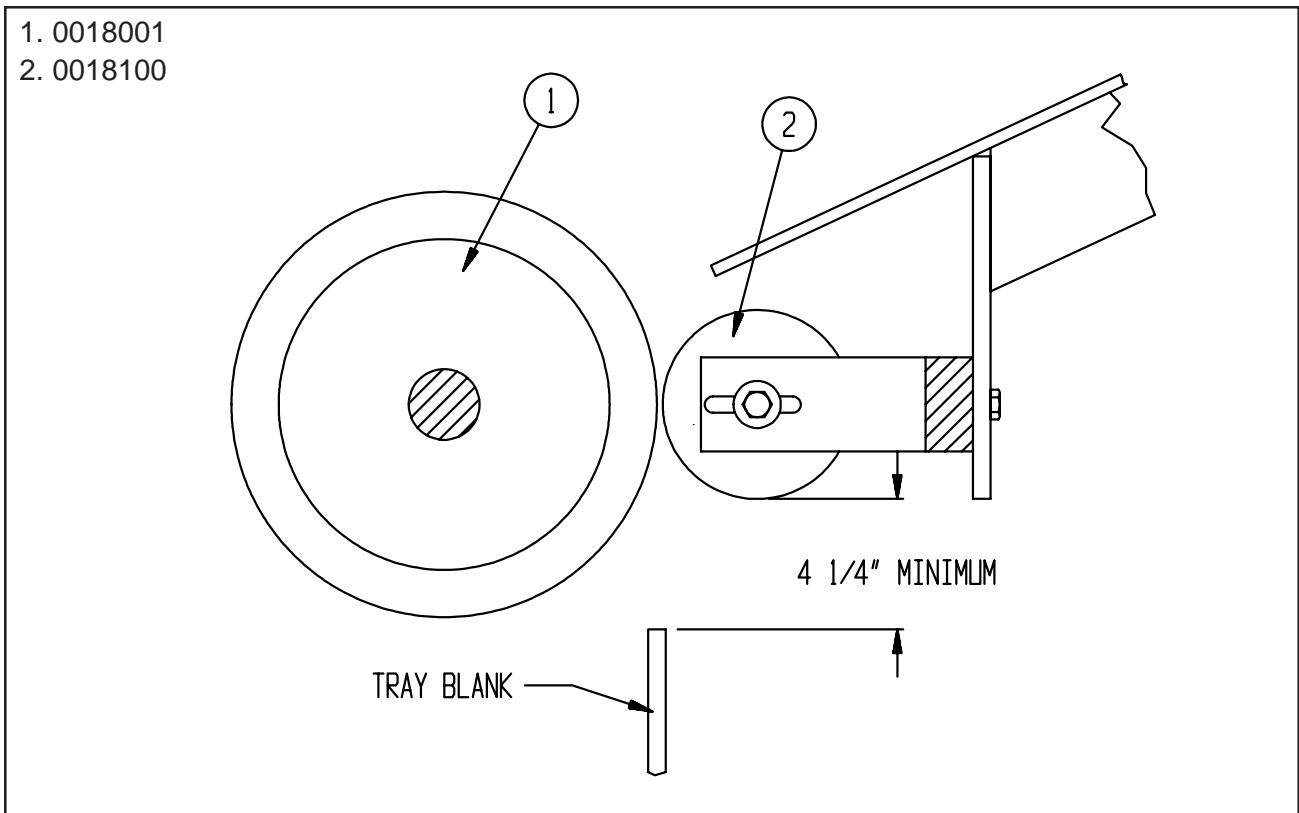


Figure 5-6C: Adjust Blank Feed Roll Assembly/ With Blank Rebound Stop

ADJUST BLANK REBOUND STOP

The Blank Rebound Stop (0012701) which is located on the right hand Vertical Guide Bar (0017901) is adjusted by loosening the 5/16 bolt on the rear side and moving it up or down until 1/8 inch clearance is obtained between the Blank and the Rebound Stop. When the correct adjustment is made, re-tighten the Rebound Stop bolt.

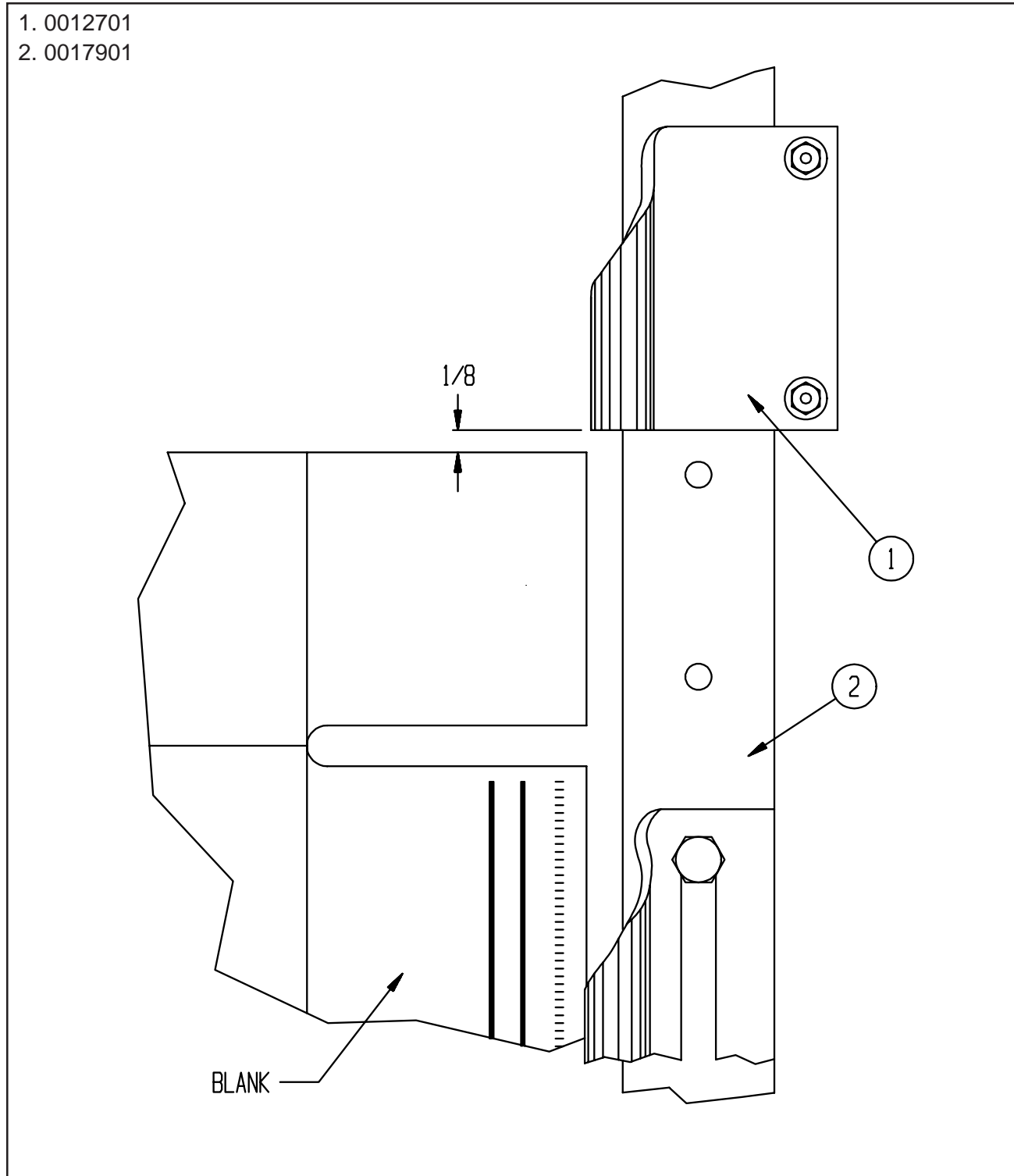


Figure 5-7: Adjust Blank Rebound Stop

ADJUST TOP TRAY FORMING SHOES

With a Blank in the forming end of the Mandrel, rotate the machine by hand until Mandrel Operating Arm (0041300) is at the end of its forming stroke. Adjusts the top Tray Forming Shoes (0014701 R/L) up or down until you have one Blank thickness plus 1/32 inch clearance between the top of the Mandrel and the Tray Forming Shoes. Adjust the Tray Forming Shoes by loosening the two 5/16 bolts on upper Forming Shoe Mounting Bar Clamp Plate (0028800). Slide the Tray Forming Shoes Mounting Bar (0028900, Standard Base.....0028901, Wide Base) up or down on Forming Shoe Mounting Side Bar (0029001) and tighten the 5/16 clamp bolts.

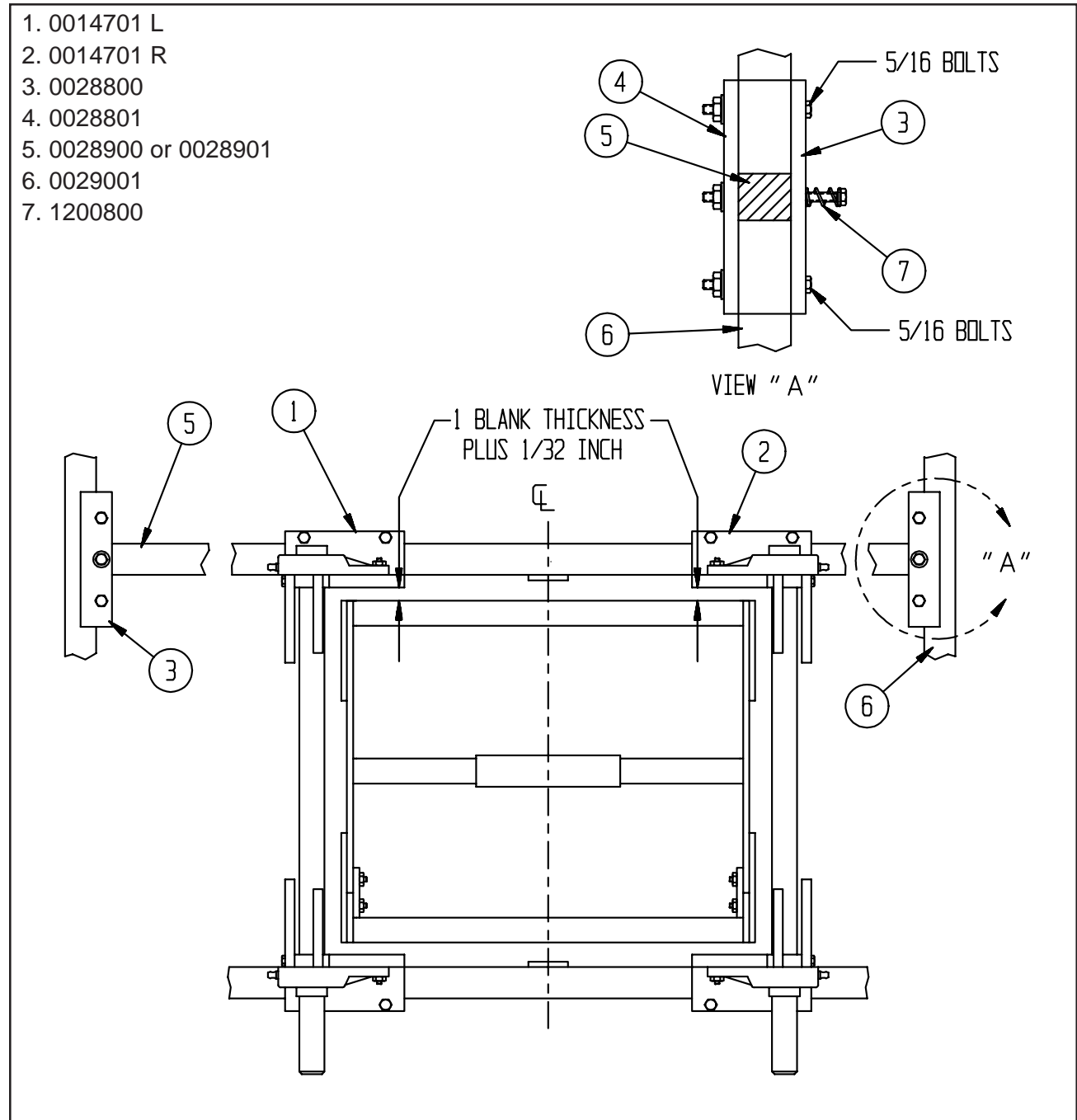


Figure 5-8: Adjust Top Tray Forming Shoes

Tray Box Former



ADJUST LENGTH OF MANDREL TRAVEL

With the Mandrel Operating Arm (0041300) at the end of its forming stroke, loosen the 3/8 bolt holding the Mandrel Yoke (0011700) in the slot on the Mandrel Operating Arm. Adjust this yoke up or down in the slot until the top edge of the tray ends have a clearance of 1/8 inch to 1/4 inch past the Tray Stripper Pawls (0016901) at all four (4) corners of the tray. At this point, the Tray Compression Rod (0022605) should be directly adjacent to the outside of the tray. Re-tighten the 3/8 yoke bolt to the operating arm. Recycle the operating arm and check the clearance measurement.

Set-Up and Adjustments

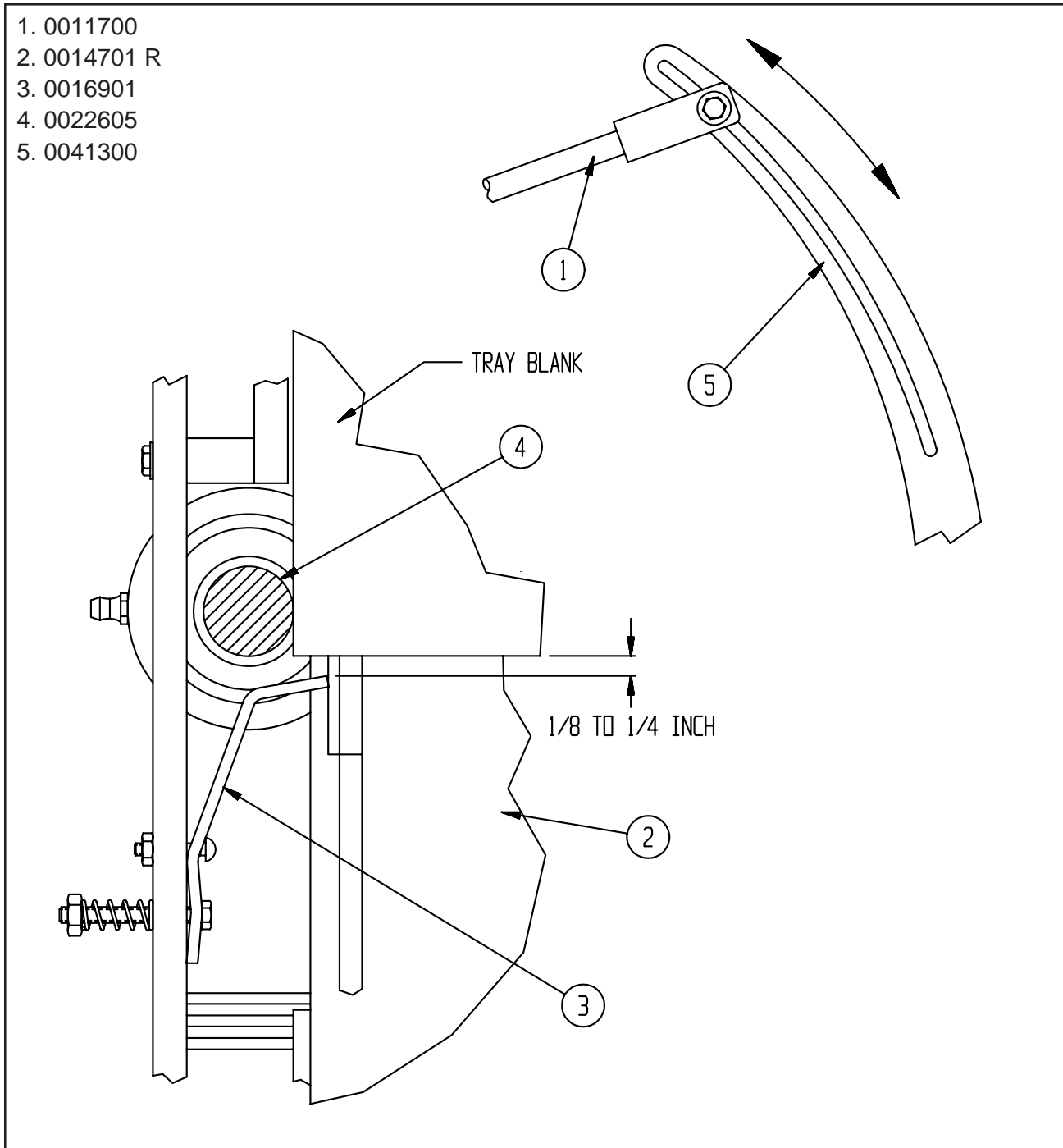




Figure 5-9: Adjust Length of Mandrel Travel

ADJUST BOX STRIPPER PAWL

With the Mandrel out of compression, (end of return stroke), adjust the spring tension until the two points shown in the figure make contact with part number 0019103. Then rotate the Mandrel forward into compression so the Stripper (0016901) will make contact with the Mandrel Side Plates. Tighten the 1/4 inch adjustment screw until the tip of the Stripper just makes contact on the Mandrel Plates (0029400).

	CAUTION	
<p>Caution: The spring tension adjustment should not be too tight; this condition will cause an obvious tear in the forming box.</p>		

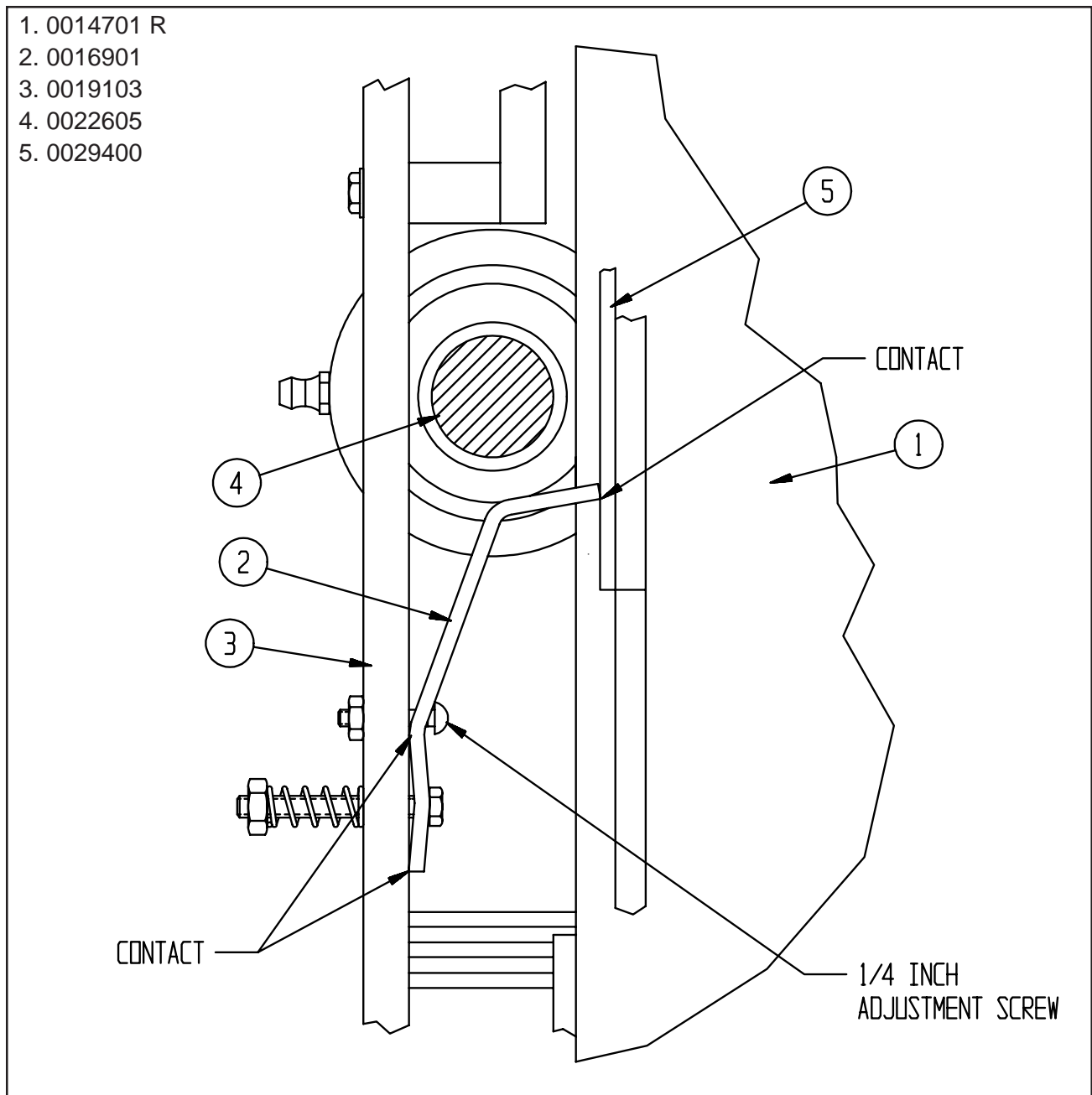


Figure 5-10: Adjust Box Stripper Pawl

Tray Box Former



ADJUST BLANK FEED PICK MECHANISM

With the Blank Pick Cam Roller (0500700) on the low point of the Cam (0015800), adjust the Rod End Bearing (0501001) on the Blank Pick Con Rod (0017501), until the top of bearing is 1/8 inch below the top of the Blank Pick Mounting Bracket (0016703).

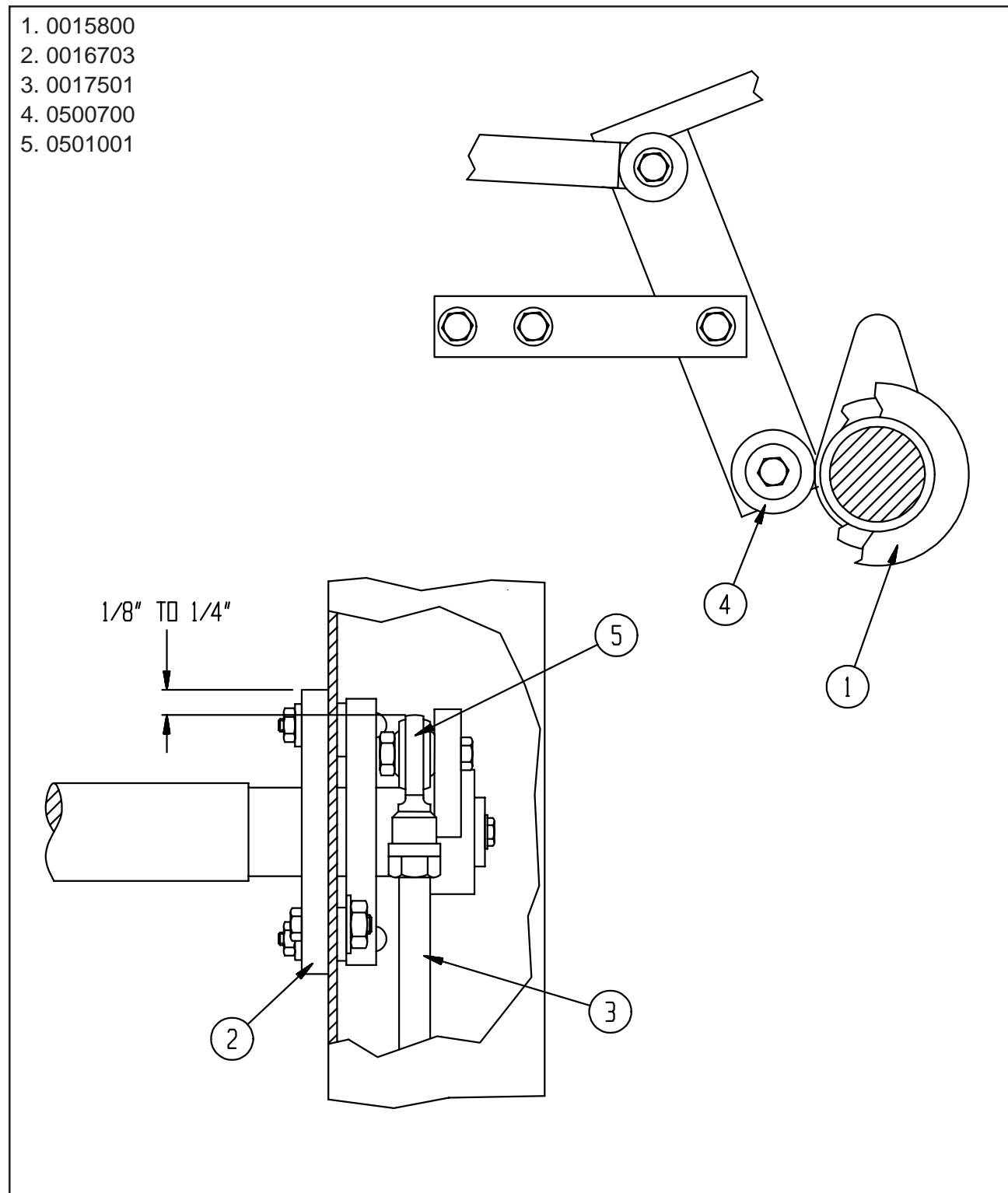


Figure 5-11: Adjust Blank Feed Pick Mechanism

ADJUST BLANK HOPPERS

With Blank setting on the Blank Support (0013603) adjust the Hopper Blade Support Bars (0018902 R/L) by loosening the 5/16 bolt and sliding the bars up or down on the Vertical Guide Bars (0017901) until the Blank Support Blades (0019501 R/L) or Hoppers are in the center of the cut-out slots on the Blank. Secure the 5/16 bolts holding the Hopper Blade Support to the Vertical Guide Bar.

Note: This set up is good only if the Blank Support(s) are aligned properly, and if the Blanks are square with slots accurately cut. If either of these aspects does not check, adjust so that the blank sits straight in the Vertical Guide Bars (0017901).

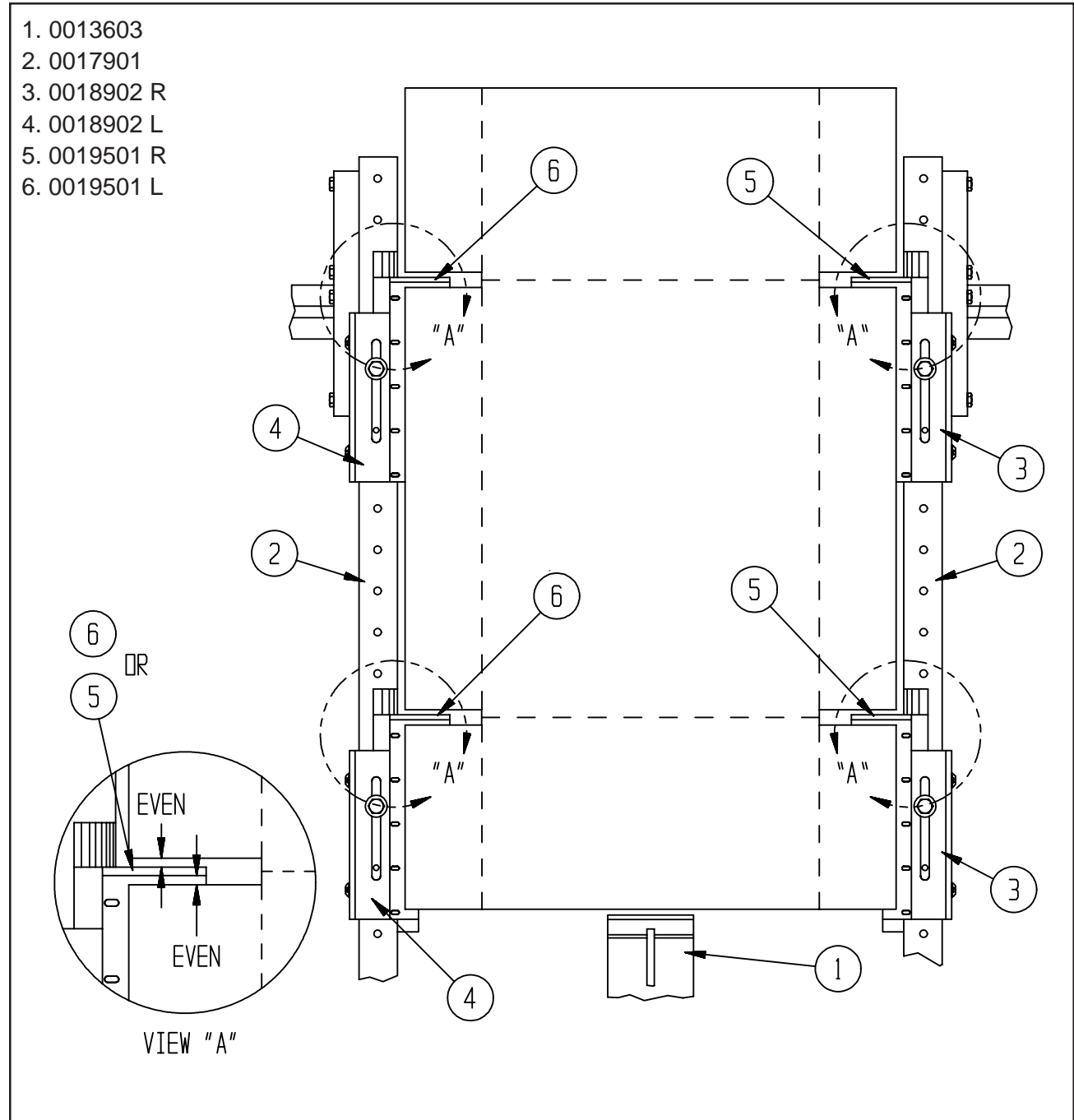


Figure 5-12: Adjust Blank Hoppers

ADJUST BLANK HOPPER GATE

Loosen the five (5) socket head #10-32 machine screws which are located on the bottom side of the Blank Support Blade (0019501 R/L), and slide the blade up or down on the Hopper Blade Support (0018902 R/L) until a measurement of one (1) Blank thickness plus 1/64 inch clearance is obtained between the Blank Support Blade and the Blank Hopper Gate Bar (0019301). This measurement should be taken at the edge of Blank. Re-tighten all #10-32 socket head screws holding the blade to the Hopper Blade Support. The Blank Hopper Gate Bar should be adjusted for a minimum overhang distance depending on where the mounting hole lines up.

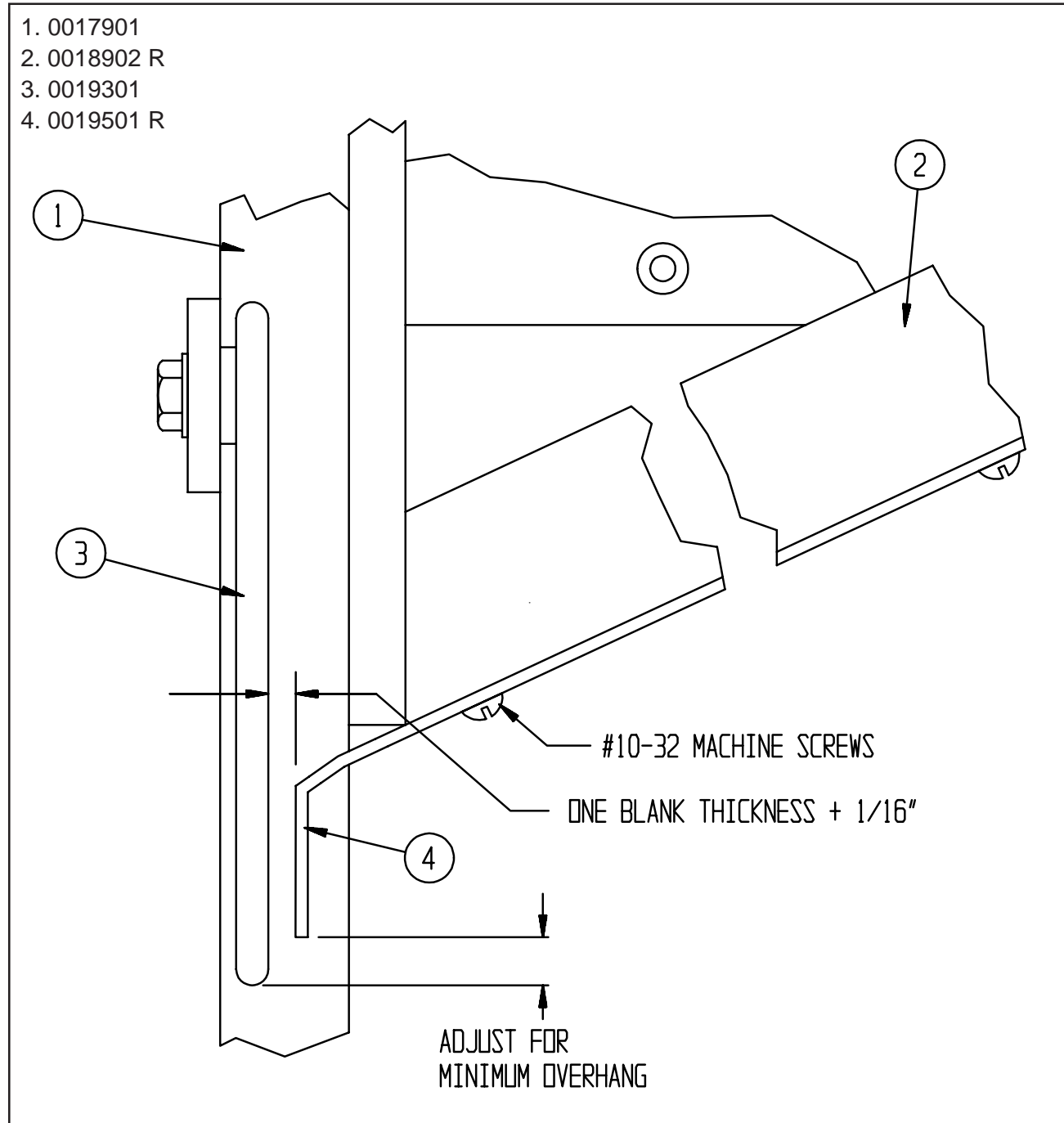


Figure 5-13: Adjust Blank Hopper Gate

ADJUST BLANK PICK CAM

Fill the Blank Hoppers (0019501 R/L) with Blanks. The Mandrel should be on the return stroke. When the front edge of the Mandrel Bar (0074601) is in line with the center line of the Tray Former Compression Rod (0022605), the Cam Follower (0500700) should be starting to rise on the Cam lobe. View the Blank Pick Cam (0015800) from the left side of the machine and loosen the two (2) 1/2 inch set screws which are located in the cam collar. Timing is accomplished by rotating the Blank Pick Cam counterclockwise to pick earlier or clockwise to pick later as the Blank is traveling down, the Mandrel must move to the return position so the Blank does not hit the Mandrel. In addition, the Blank must be on the Bottom Stop (0050100) before the Mandrel moves toward the Tray Forming Shoes (0018801 or 0018802 R/L).

Note: This is a good starting point for most machines. However, on larger size Blanks, this adjustment would be too late and thus a trial and error procedure should be followed until the Blank just misses the Mandrel on the return stroke.

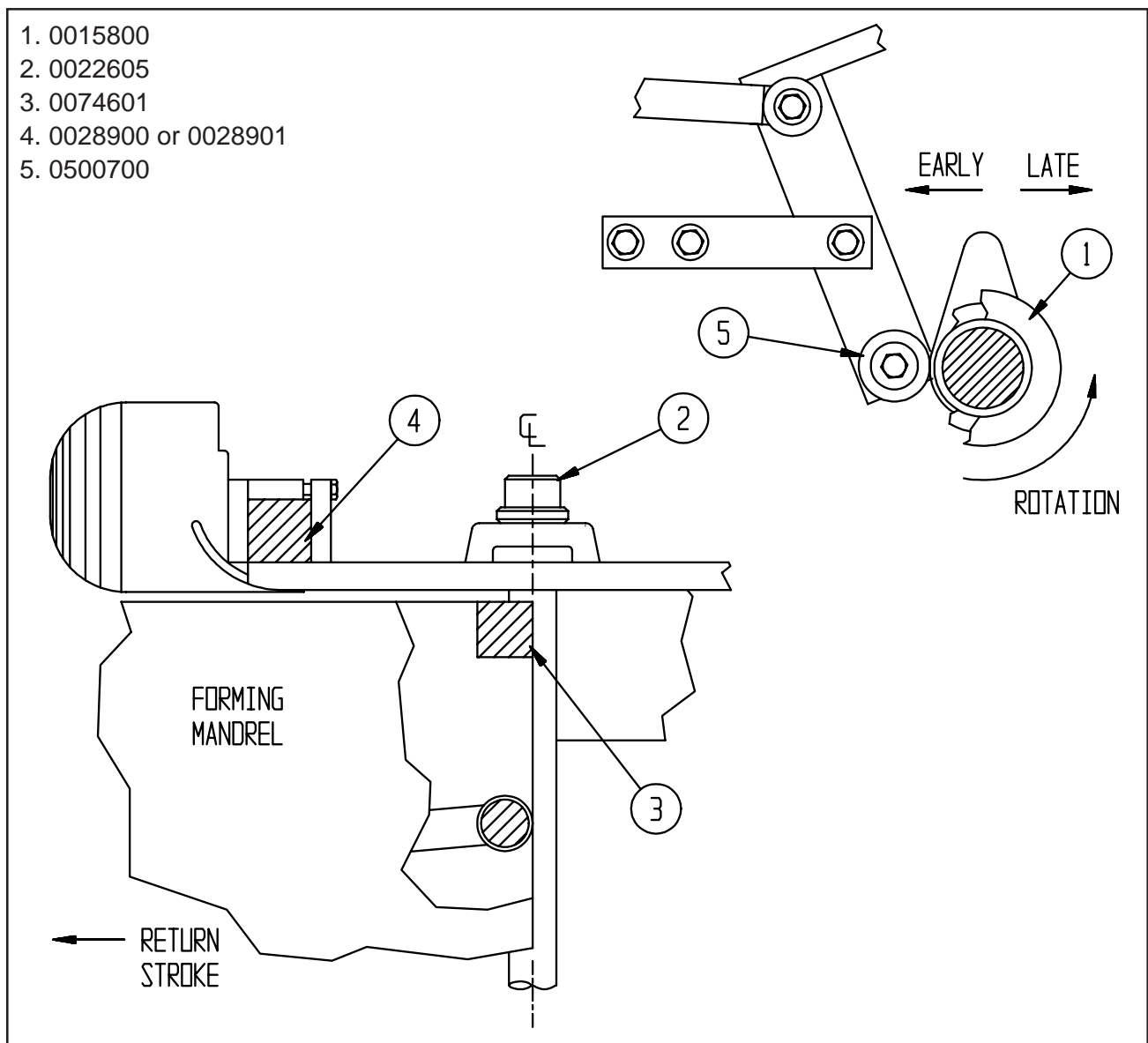


Figure 5-14: Adjust Blank Pick Cam

ADJUST BLANK FEED IDLE ROLLER

This adjustment varies with the thickness of the Blank. Loosen the two (2) 5/16 bolts holding the Blank Feed Idle Roller (0018100) to the Blank Feed Idle Roll Mount (0016400). Adjust the idle roller to the Blank Feed Wheel (0018001) until the pressure between the two is great enough to feed the Blank down in front of the Mandrel without any slippage developing between Feed Roll and the Blank.

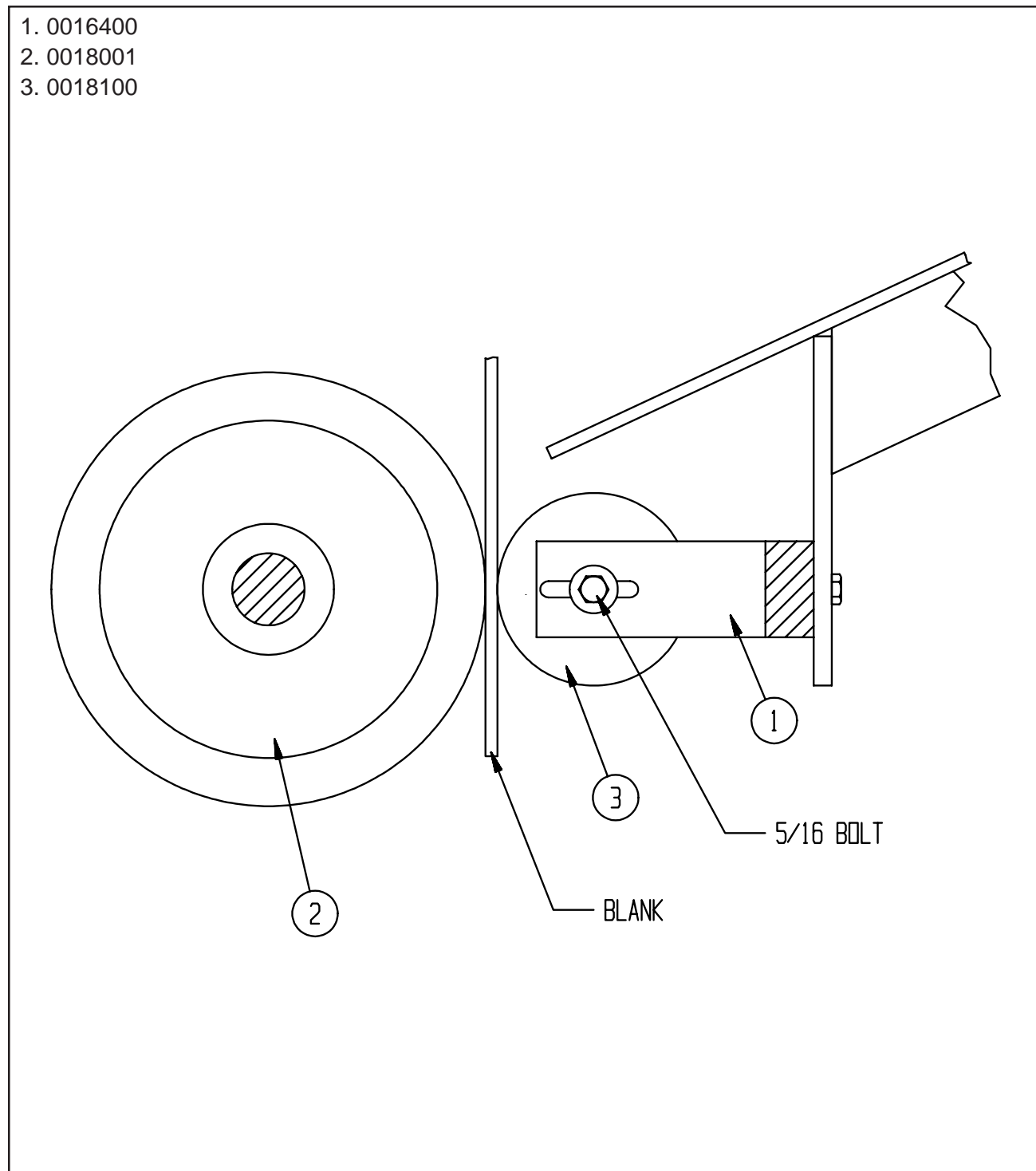


Figure 5-15: Adjust Blank Feed Idle Roller

ADJUST CLEARANCE BETWEEN PROGRAM SEGMENT AND APPLICATOR WHEEL

This clearance varies with the thickness of the Blank. Blanks should show distinct teeth marks from the Adhesive Pump Drive Wheel (0024400). To obtain this adjustment, use the adjustment screw located in front of the Glue Pump Housing (0024002 R/L). When turned, it pushes against the Blank Feed Idle Roller Mount Bar (0020504 or 0020505). Re-tighten the lock nut on the adjustment screw.

	DANGER	
Danger: Do not over adjust. Damage could result.		

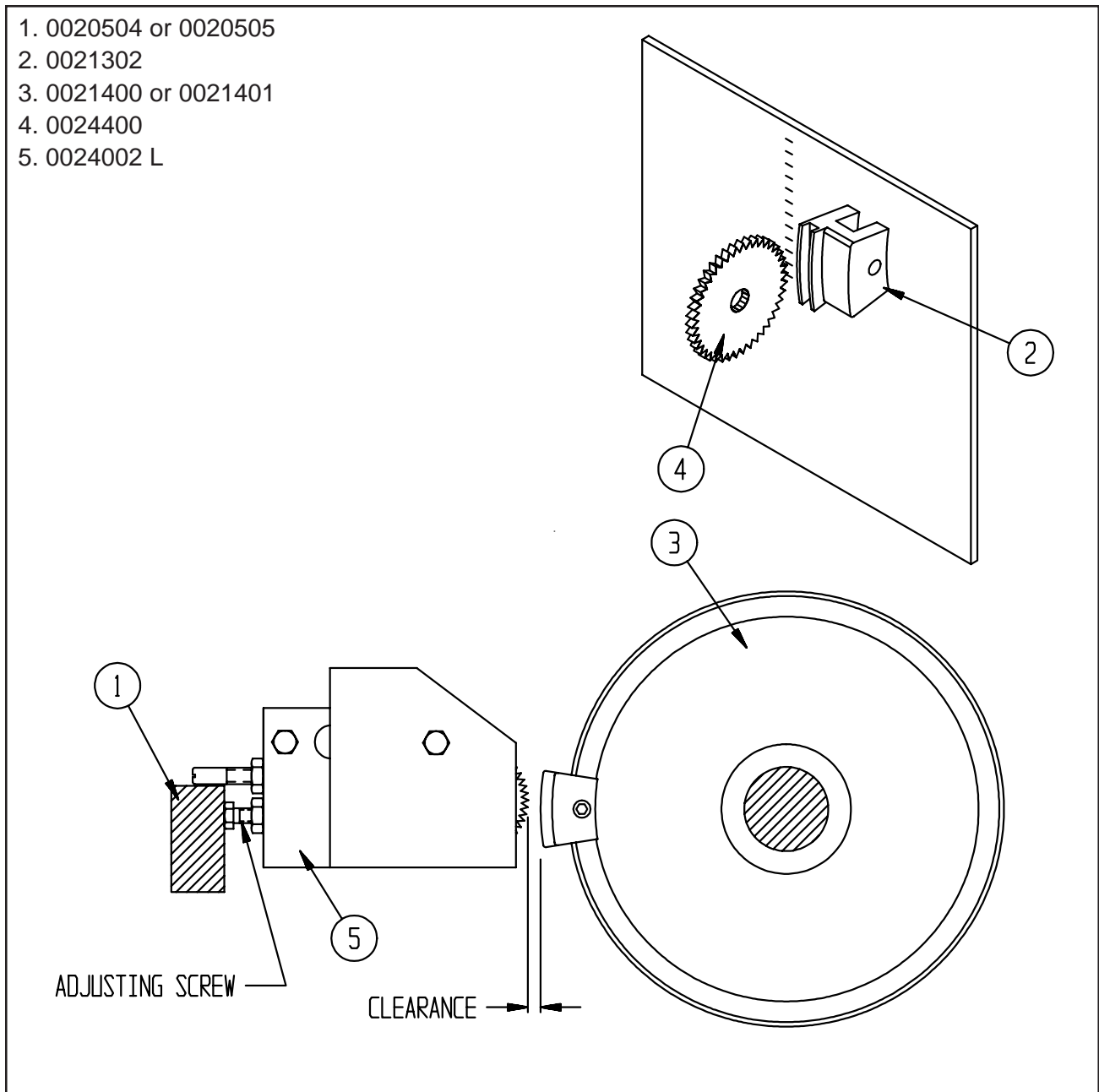


Figure 5-16: Adjust Clearance Between Program Segment and Application Wheel

Tray Box Former



ADJUST ADHESIVE PROGRAM SEGMENTS

The Adhesive Program Segments (0021302) are located on the Adhesive Program Discs (0021400) which are fitted on the Blank Feed Roller Shaft (0015205 or 0015206). To be sure program Segments are centered with the Glue Dump Drive Wheel (0024400), mount one (1) Segment on the Program Disc. Slide the Program Disc (with Segment) over to the Glue Pump Drive Wheel and center the slot in the Segment with the Drive Wheel. After centering, use the Set Collar located outside of the Program Disc as a stop by locating it flush with the Program Disc and tightening the set screw in the Set Collar. With the Hopper full of Blanks, rotate the machine in its correct forming direction feeding the Blank down until the first slot aligns with the Glue Pump Jets (0024500). The Glue Jets are located on the rear face of the Glue Pump Housing (0024002 R/L). Adjustment is made by the 5/16 set screw holding the Program Segment to the Program Wheel. Slide the Program Disc cover to the Set Collar Stops. Referring to Figure 5-17A, slide the first Segment around until its leading edge is 1/4 inch above the cut-out on the Blank. Rotate the machine in its forming direction until the second cut-out of the Blank is aligned with the Glue Pump Jets. Referring to Figure 5-17B, slide the last Program Segment around until its trailing edge is 1/4 inch below the cut-out on the Blank. Be sure the 5/16 set screws are tight in all Segments.

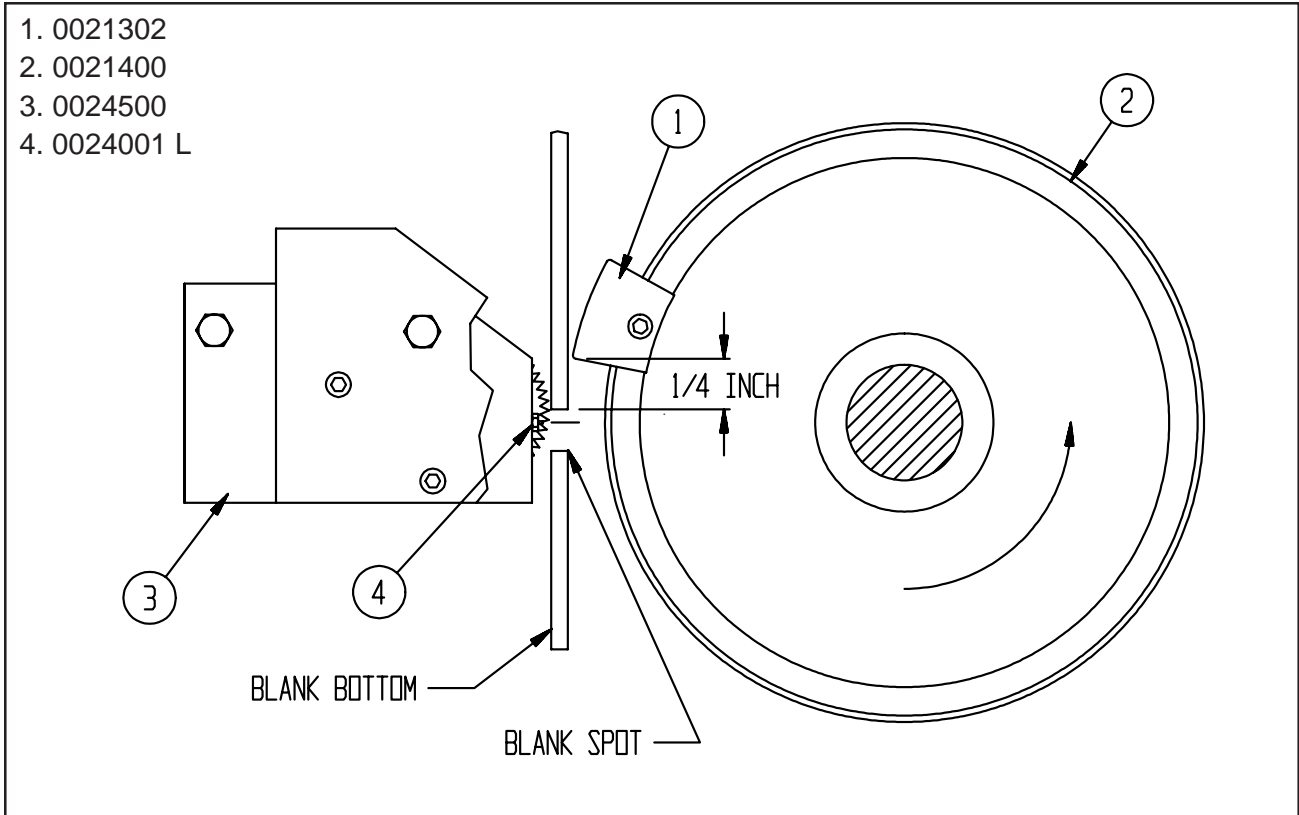


Figure 5-17A: Adjust Adhesive Program Segments

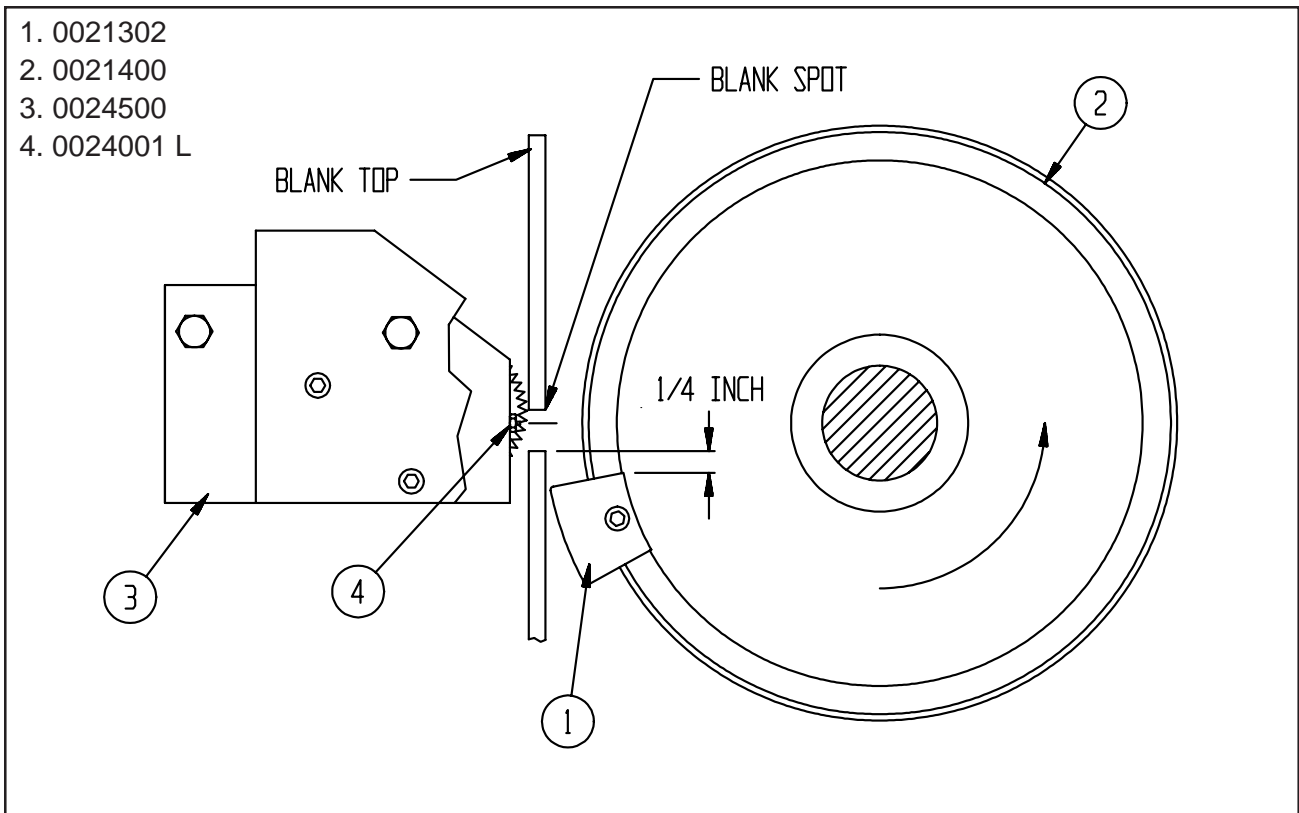


Figure 5-17B: Adjust Adhesive Program Segments

Tray Box Former



ADJUSTMENT OF GLUE BEAD

The adjustment and the initial setting of the Glue Bead is done using the Program Segments as in Figure 5-16B and 5-16C. Each Segment produces approximately 2 inches of glue on the Blank. To achieve the correct length strip measure the dimension "A" on the Blank (length of Minor Flap). Add as many Segments as needed to produce this length glue bead. The glue bead for a Standard Tray (no wax) is $\frac{3}{32}$ inch wide. The width is controlled by the volume of glue dispersed. Figure 10-3 shows the Volume Control Screw (0024800 Needle Valve). If during machine operation more adhesive is required, rotate needle valve screw clockwise with a $\frac{1}{16}$ inch allen wrench. If less is required, rotate counterclockwise.

Note: 1. Do not use excessive amounts of adhesive beyond the quantity necessary to achieve a satisfactory bond. An increase from $\frac{3}{32}$ " to $\frac{1}{8}$ " bead size will increase daily consumption by 75%.

2. In some cases, a skip pattern is sufficient. This is achieved by leaving a space between the segments.

	CAUTION	
Caution: Do Not over tighten needle valve.		

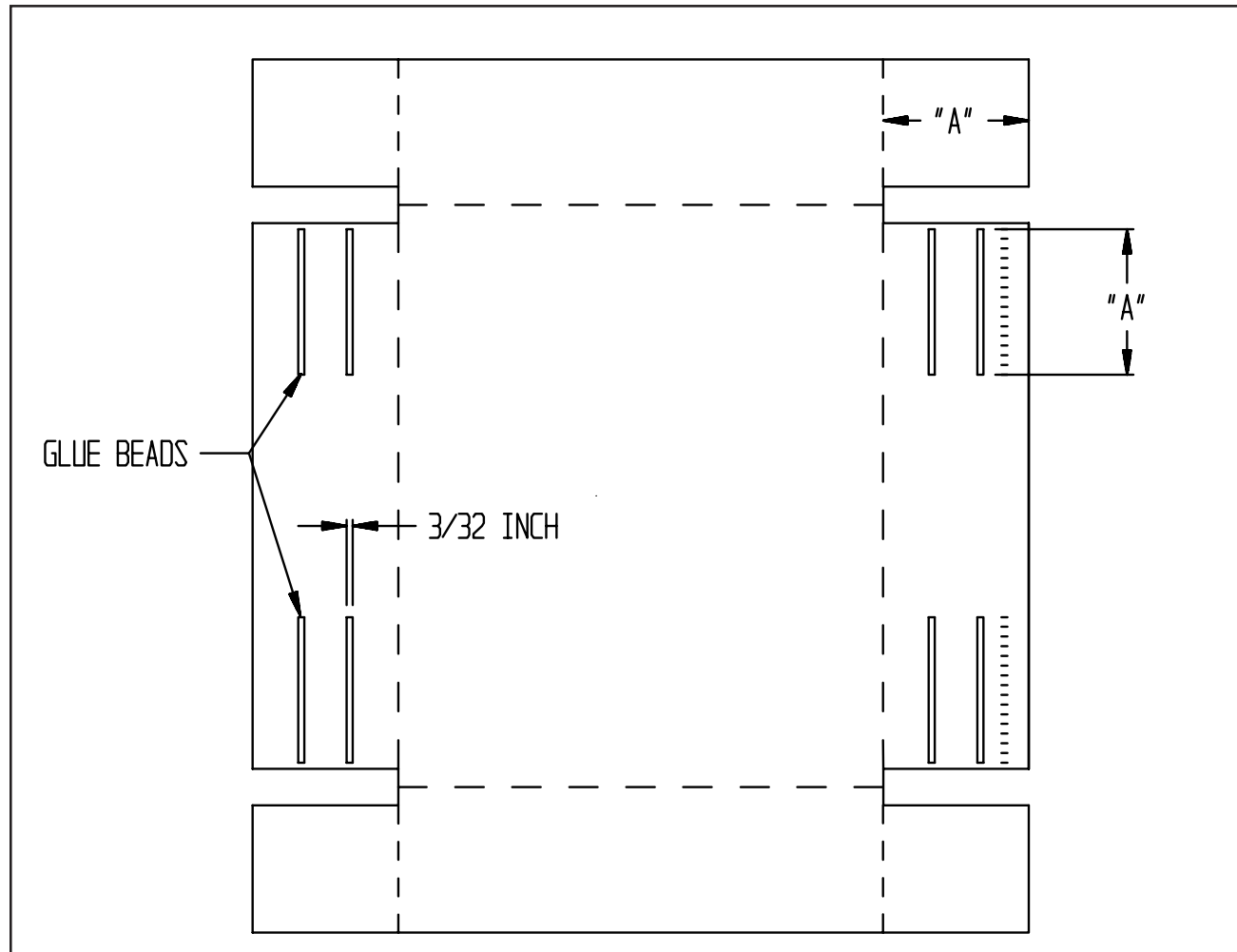


Figure 5-18: Adjustment of Glue Bead

ADJUST MACHINE STOP MICRO SWITCH CAM

The Micro Limit Switch Cam is located on the right hand end of the Transmission Gear Shaft (0011302) inside the access cover. With the Mandrel Operating Arm (0041300) at the end of its forming stroke, loosen the 1/2 inch flathead allen bolt holding the Machine Stop Micro Switch Cam (0028601) and rotate it until the Micro Switch Operating Arm (0400500) just travels onto the high point of the cam lobe. Re-tighten the 1/2 inch flathead allen screw. This will vary with speed of machine. This is to stop former at compression end of stroke when operating switch is turned to "OFF" position.

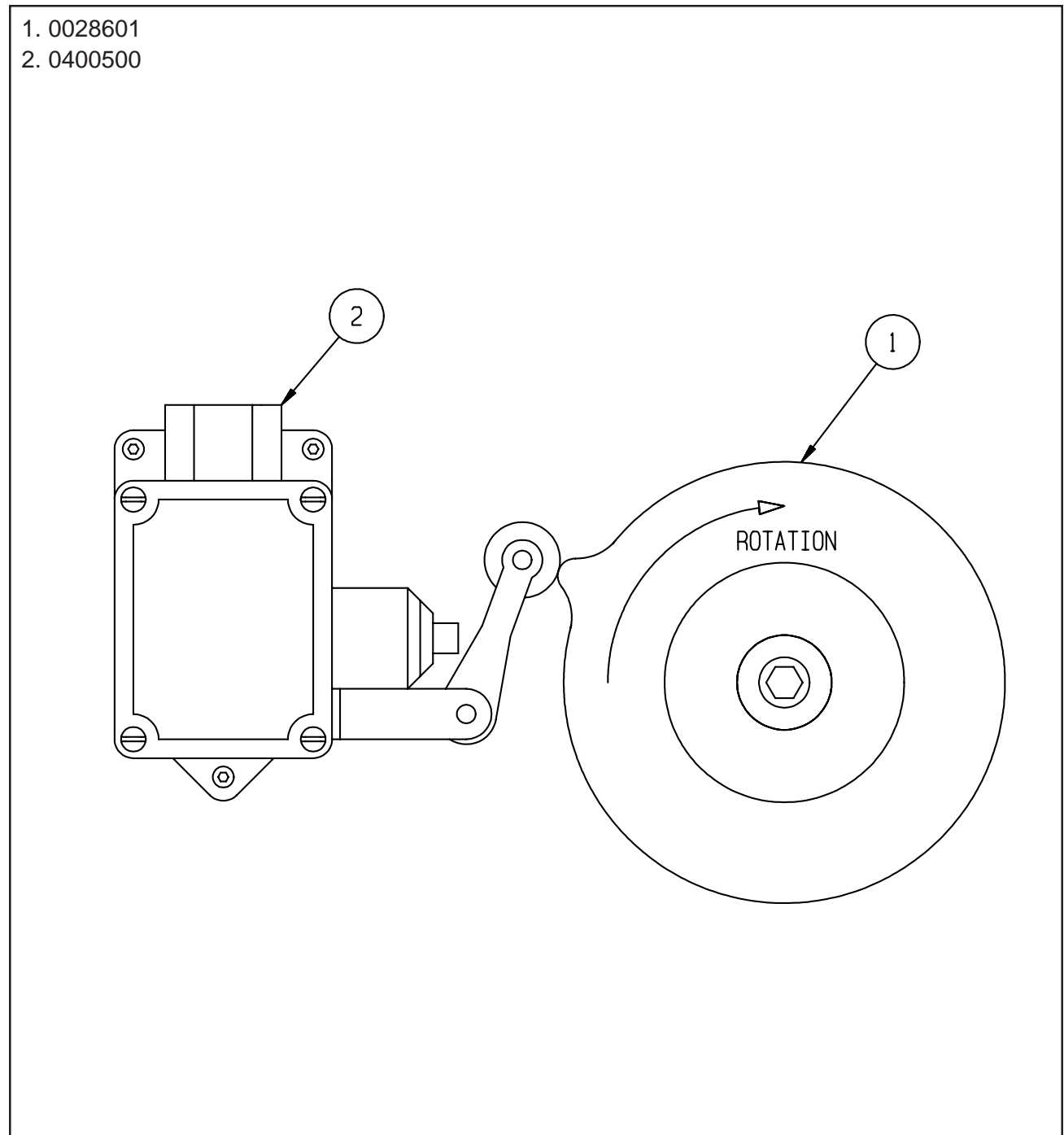


Figure 5-19: Adjust Machine Stop Micro Switch Cam

Tray Box Former



MANDREL STOP BRAKE WEAR ADJUSTMENT

The Mandrel Brake Wear Adjustment Screw (0028101) is located inside the right frame. Loosen the lock nut on the set screw, and adjust it until there is a 1/4 inch air gap between the Brake Release Solenoid Magnet (0027802) and the Brake Release Solenoid Plunger. The Brake Release Solenoid is within the right hand access cover.

	CAUTION	
Caution: Do not attempt to adjust the Return Spring Assembly (1200400) and 5/16 bolt.		

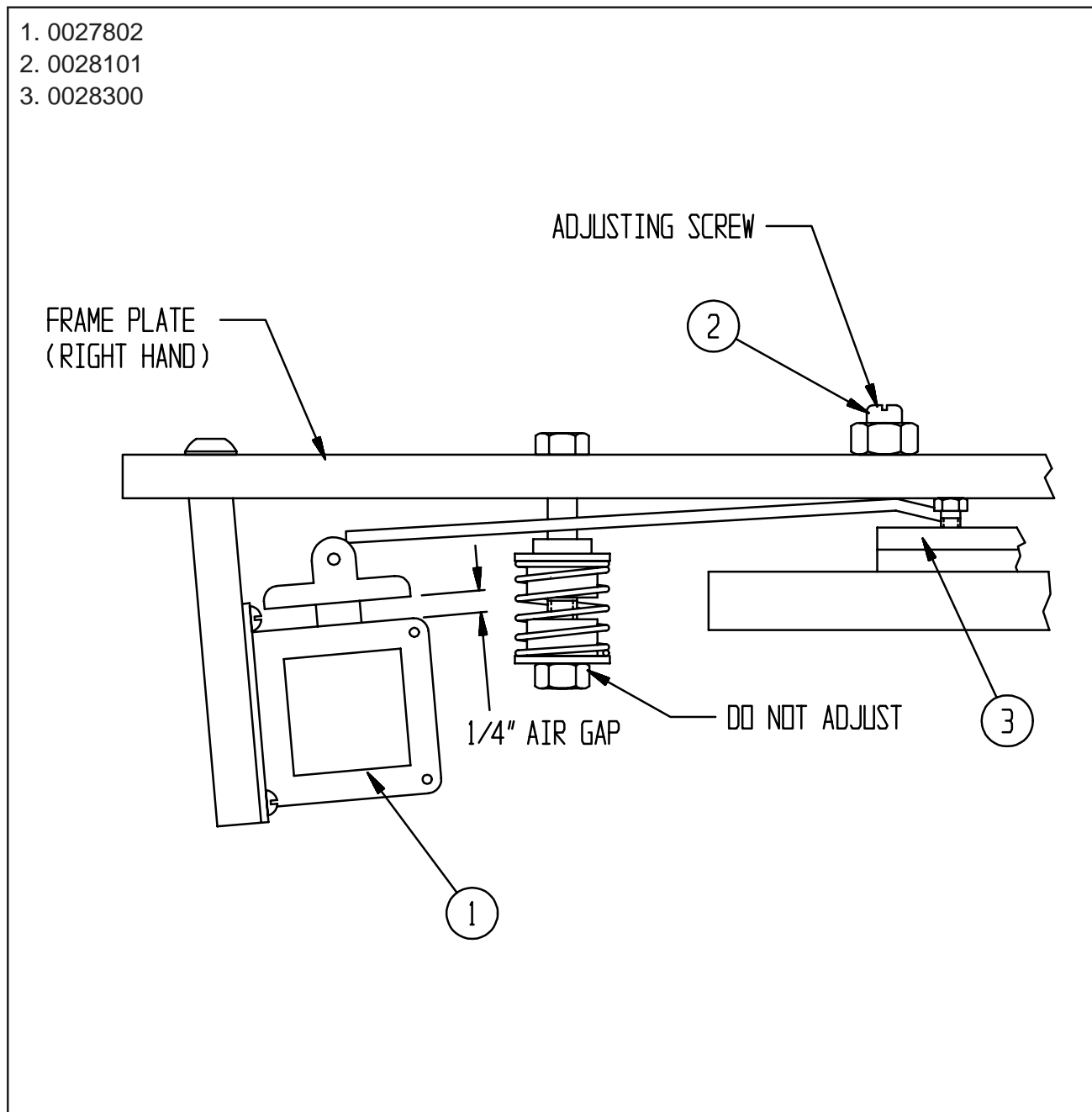


Figure 5-20: Mandrel Stop Brake Wear Adjustment