

**KNOWLEDGE BASE**Article Type: **Instructions****Rapid Mold Change (RMC) Parts  
Instructions and Conversion  
Instruction for; 16HF/1600****Description:**

Instructions on “How to” install, properly set-up and adjust Rapid Mold Change on 16HF and 1600 machines. Rapid Mold Change Parts and Conversion Instructions, reference #388.2.13

**WARNING**

Never work on, clean or service this unit, control panel or any machine or open or remove any protective cover, guard, grate, door, or maintenance panel until the power or energy sources has been turned off, locked out / tagged out, and all moving parts have come to a complete stop and or blocked to prevent movement. Machinery is dangerous - avoid personal injury and or death by following manufacture, Local, and OHSAs safety procedures. Contact Columbia Machine for safety decals, guards, horns and beacons.

# **RAPID MOLD CHANGE (RMC) PARTS INSTALLATION & CONVERSION INSTRUCTIONS**

**Columbia Machine, Inc.**  
**Vancouver, Washington**



If you have questions regarding the installation, need further assistance, or would like to schedule service support please contact Columbia Machine Inc. at 1-800-628-4065

# Columbia Concrete Products

## RAPID MOLD CHANGE CONVERSION



Before starting, review the parts lists of items for the conversion to make sure all parts are there and complete. Look over the installation prints and instructions as well to familiarize yourself with the procedure. Prior to removing items from the block machine it is advised to remove all material build-up and clean the machine thoroughly, it will be much easier to make the necessary repairs, parts removal, modifications, parts installation and set-up.



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## RAPID MOLD CHANGE CONVERSION

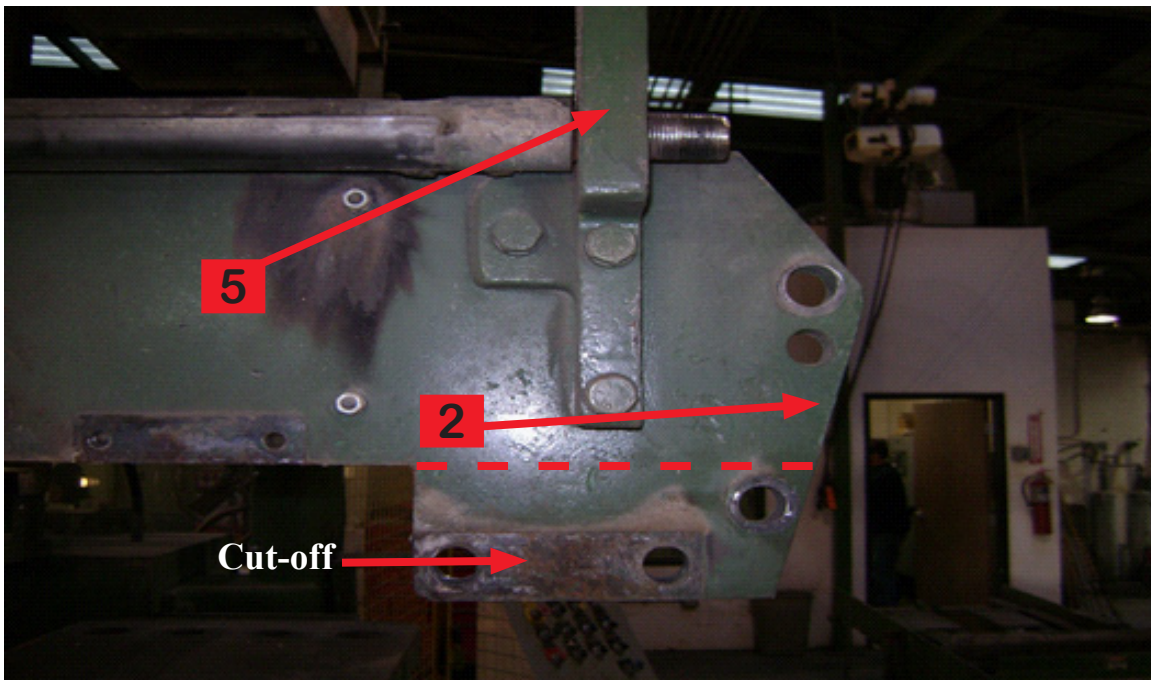
Remove the following items from the block machine:

1. It is not necessary to remove the feed drawer from the machine, but it is necessary to raise the front of the feed drawer and install some spacers or wedges so the front track bars and supports can be removed. With these items removed the feed box side plates can be modified.
2. Remove feed box front pan assembly.



If either the feed box or feed drawer needs to be rebuilt it is advised to have rebuild parts on hand to make these repairs at the same time.

3. Next raise both beams to the full up position. Safety beam stops should be installed at this time.
4. You can leave the shaker shafts, die supports, guide bars, etc. together and remove as an assembly. By keeping the assemblies together you only need to remove the four (4) bolts, nuts, and lock washers holding the guide bars in place at the spacer bracket against the feed box. Also remove the four (4) bolts and lock washers holding the shaker shaft to the vibrator eccentric housing.



5. Remove both guide bar brackets on the side of the feed box.
6. Remove complete pallet feeder assembly from block machine and support pallet



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### RAPID MOLD CHANGE CONVERSION

feeder upon some make shift stands for completing required modifications. (See photos further on in pallet feeder modification portion)

7. Remove pallet feeder lift cylinder and hydraulic hoses. Plug both pressure and return ports until new hydraulics are ready for installation.
8. Remove rubber mold seal brackets from feed box front side plates.
9. Remove pallet table assembly.
10. After you have the machine and parts removed and in position as shown below you should lock-out the pump unit following your specific lock-out/tag-out procedures.
11. Clean machine of addition material.

You are now ready to start the modifications to the machine.

### FEED BOX MODIFICATIONS

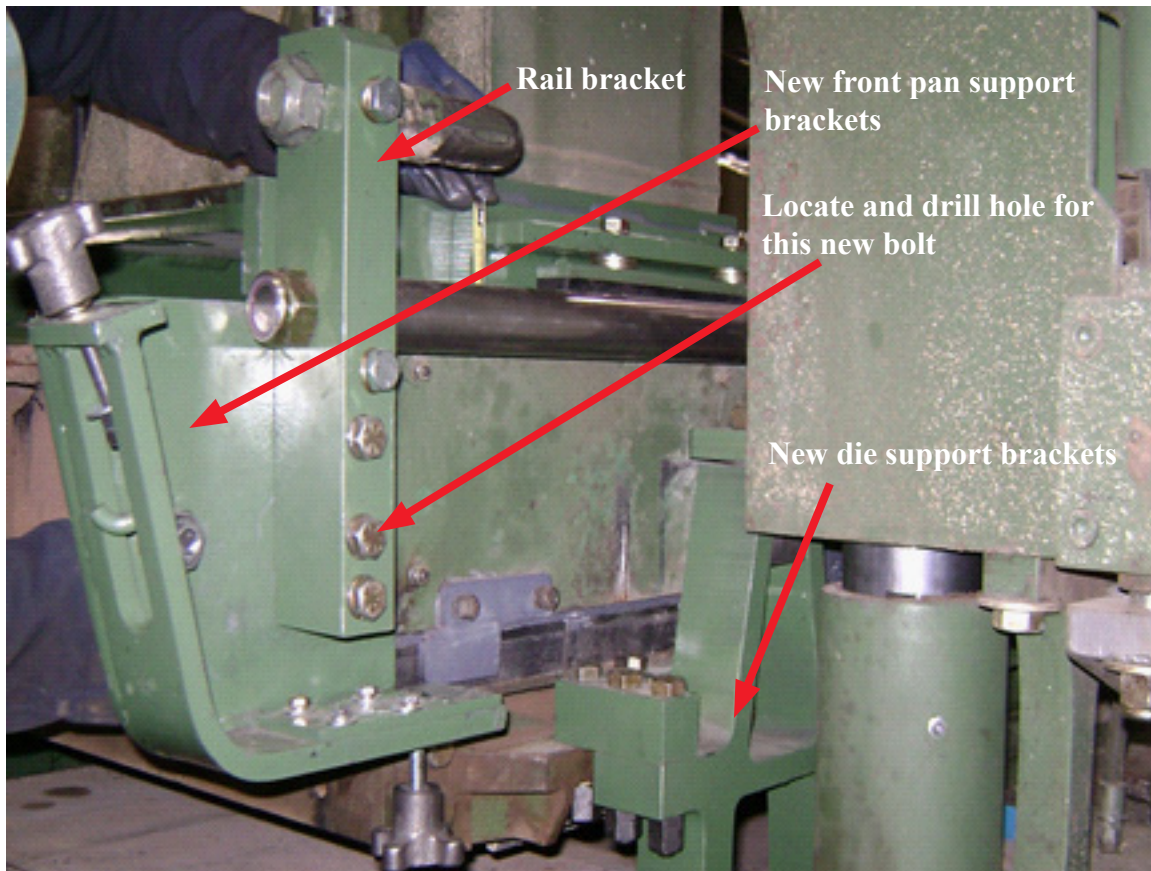


Mark feed box side plate for area to remove. Remove tab using a cutting torch, oxyacetylene set-up. File to remove burrs from edge.

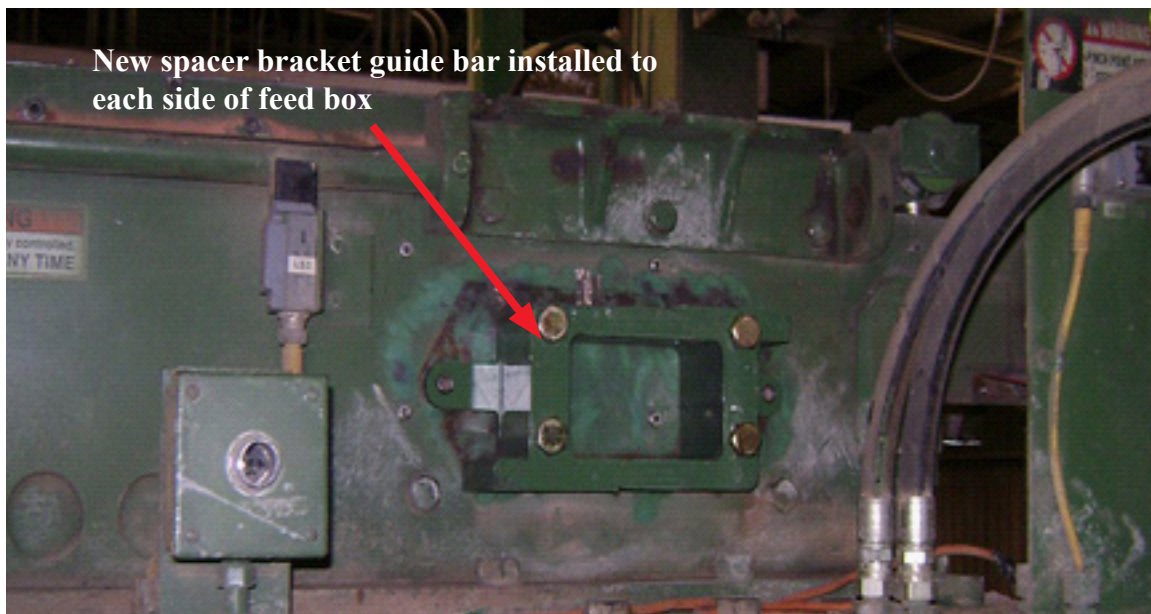
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## RAPID MOLD CHANGE CONVERSION



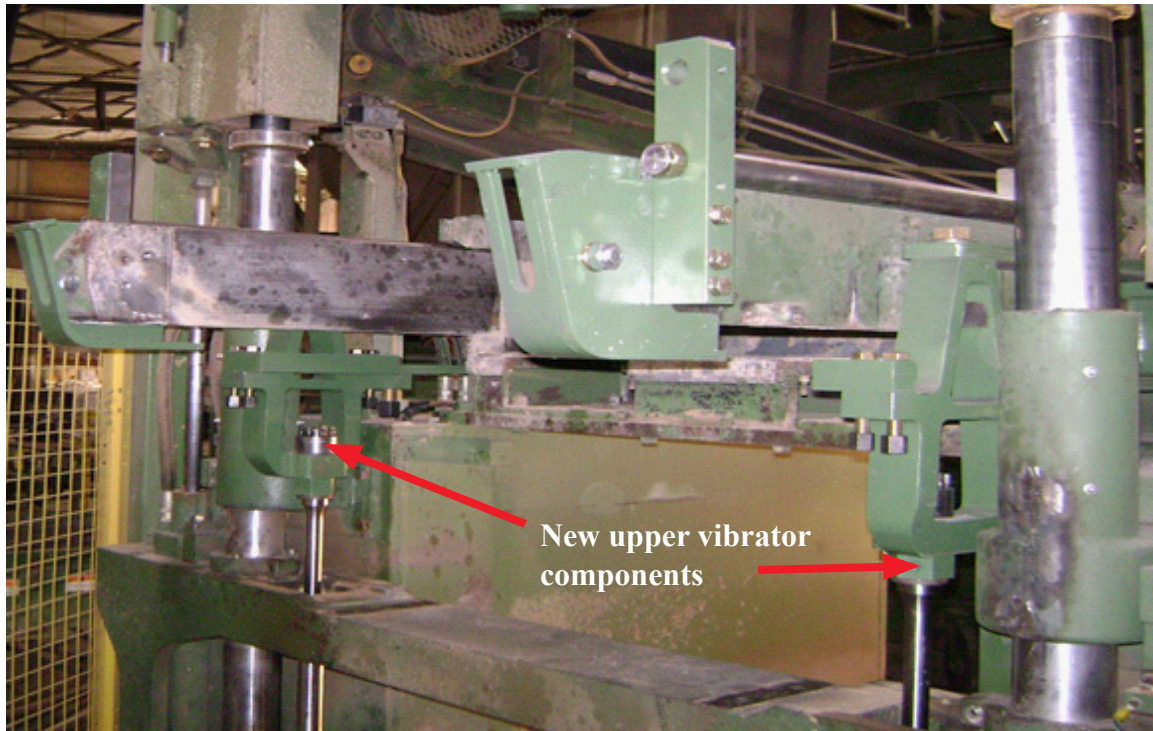
Once the new rail brackets are installed you can use these to locate and drill the added holes and tap  $\frac{1}{2}$  -20 UNF. Clean and file all burn edges. New front pan support brackets installed along with new mold seal brackets and rubbers. Also shown are new die support brackets.



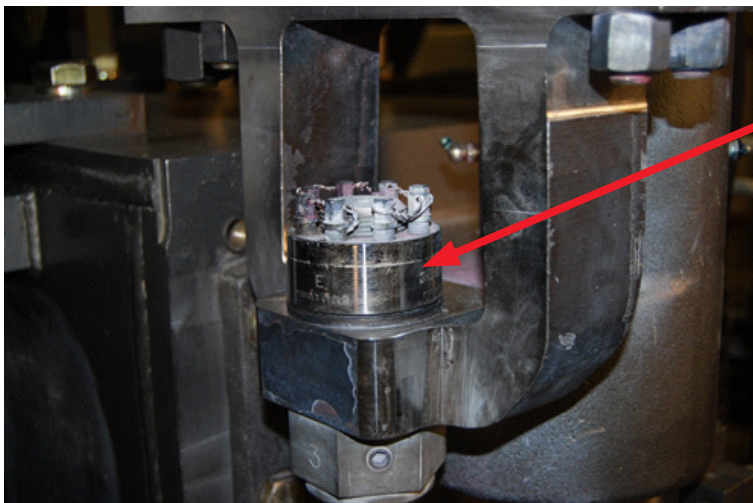


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### RAPID MOLD CHANGE CONVERSION



Prior to installing the remaining parts for the front pan assembly, install the new upper vibrator components after inspection of the vibrator assembly. If necessary replace the vibrator half shafts or grease shaft and or vibrator boots and springs. If everything is in good condition then continue with installation. Make sure you use the new set-up fixtures supplied with your conversion to set the shaker shaft center distances. Additional tools will be required to complete the installation and required torque procedures for the new super nuts. A small 3/8" drive torque wrench from 20 ft. lbs. (33.9 NM) to 100 ft. lbs. (142.4 NM) a socket set 3/8 drive from 5/16 " to 3/4" sockets and several 3/8" drive extensions 3" to 12" long will be required to torque the super nuts to the new shaker shafts.



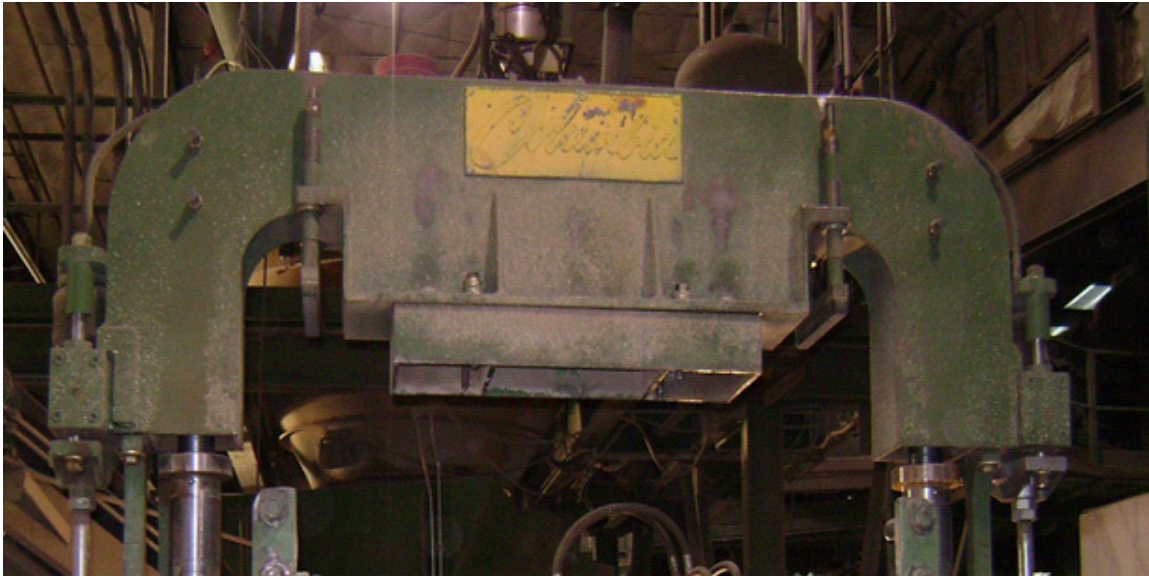
Close up view of super nut after setup has been completed and super nut bolts torque to specifications locking wire installed. Conversion package includes all installation instructions.

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## RAPID MOLD CHANGE CONVERSION

### COMPRESSION HEAD MODIFICATION



Remove head spacer and air manifold on top of compression beam. With manifold removed clean top of beam and follow instructions for welding mount attachment plated to beam.



Follow the installation and assembly guidelines included in your specific package. You may also view the reference print included in the back of this guide.



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## RAPID MOLD CHANGE CONVERSION

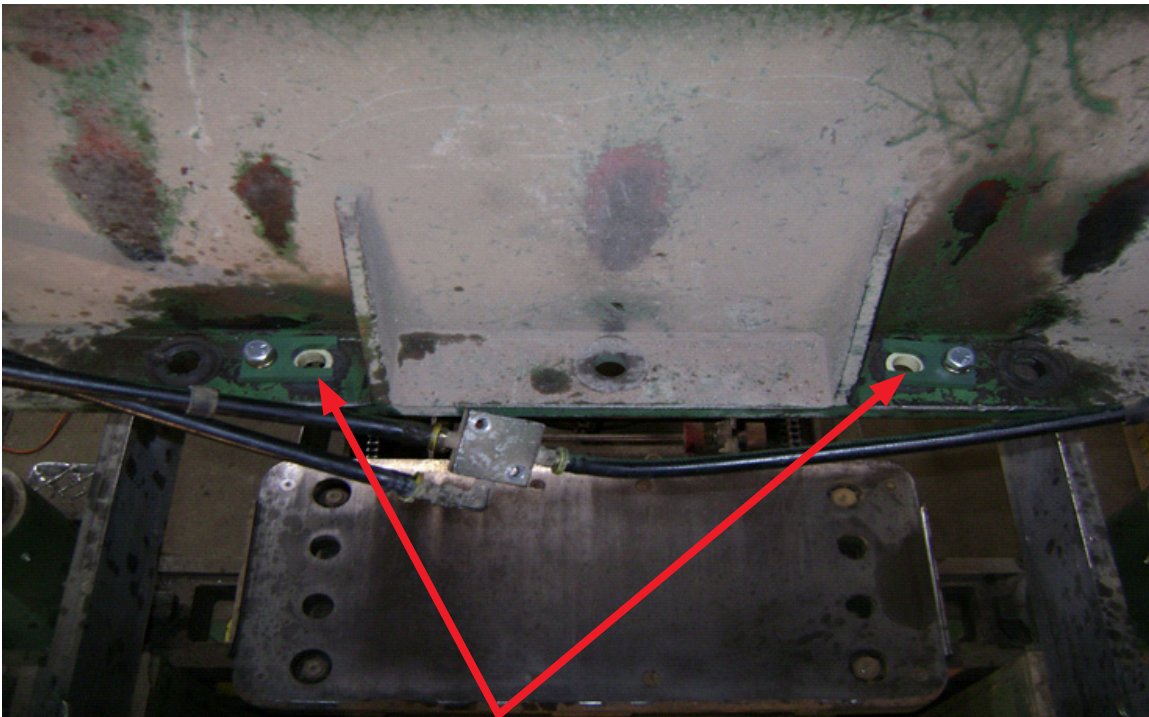


The attachment plate welded to top of compression beam (above). After welding is completed and welds cleaned you may want to touch up using some primer and paint.



### NOTE

Primer and paint is not included with conversion kit.



Shown in this photo (above) is the installation of two flanged bearings, hold down retainers and bolts with lock washers. The layout dimensions for drilling and taping the added bolt holes (4) each front and back of the compression beam head plate are shown on the installation print.

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**RAPID MOLD CHANGE CONVERSION**

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Continue with installation head clamp assembly.

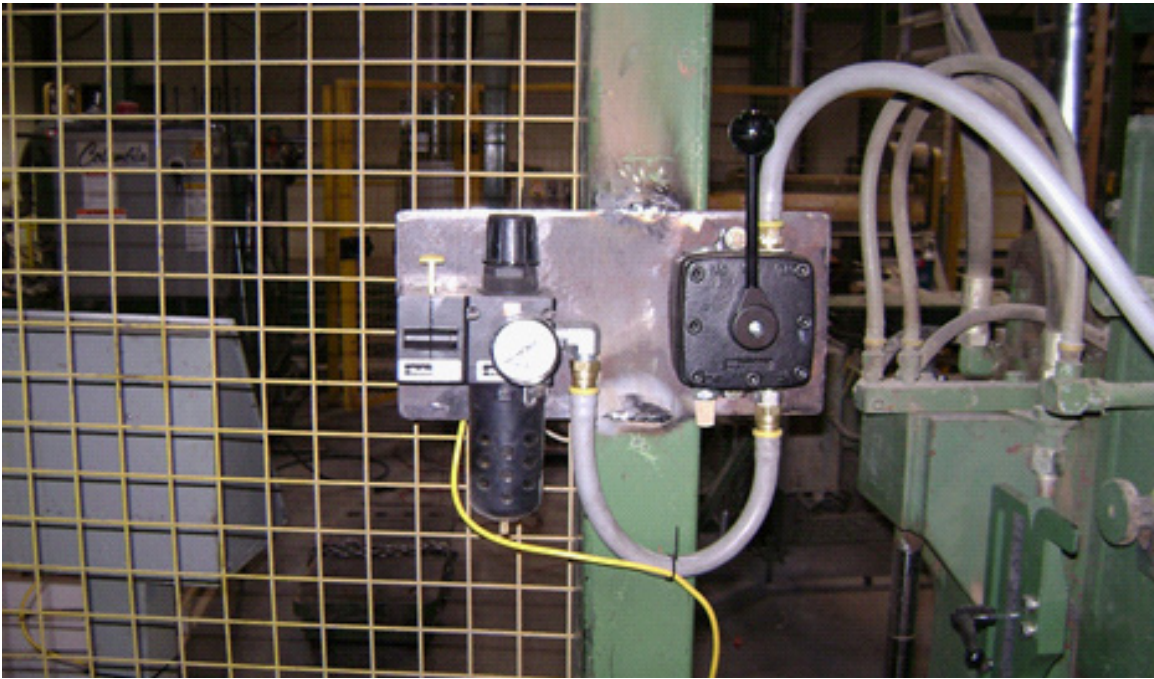


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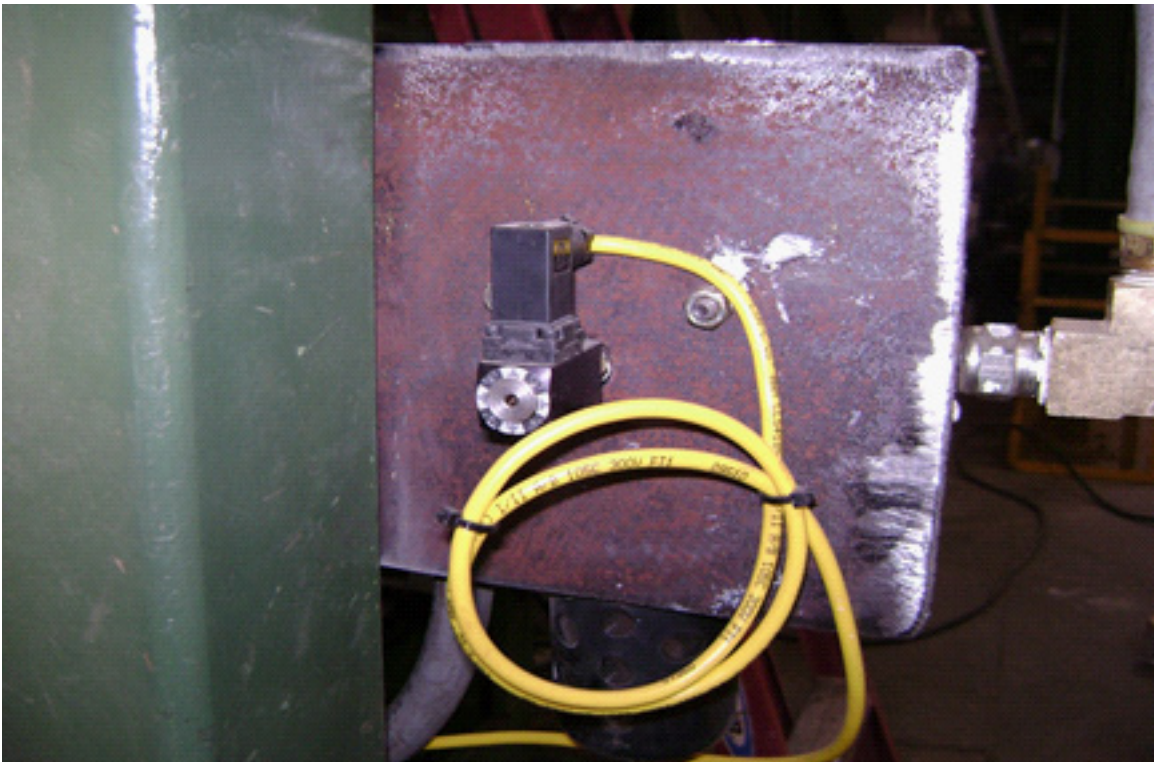
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## RAPID MOLD CHANGE CONVERSION

### HEAD CLAMP PNEUMATICS



Locate air regulator, pressure switch and control valve remote from machine in a position accessible during mold change, but is secure from possible operation during normal machine production. Installation instructions are noted on the pneumatic piping drawing. See reference drawing at the back of this guide.

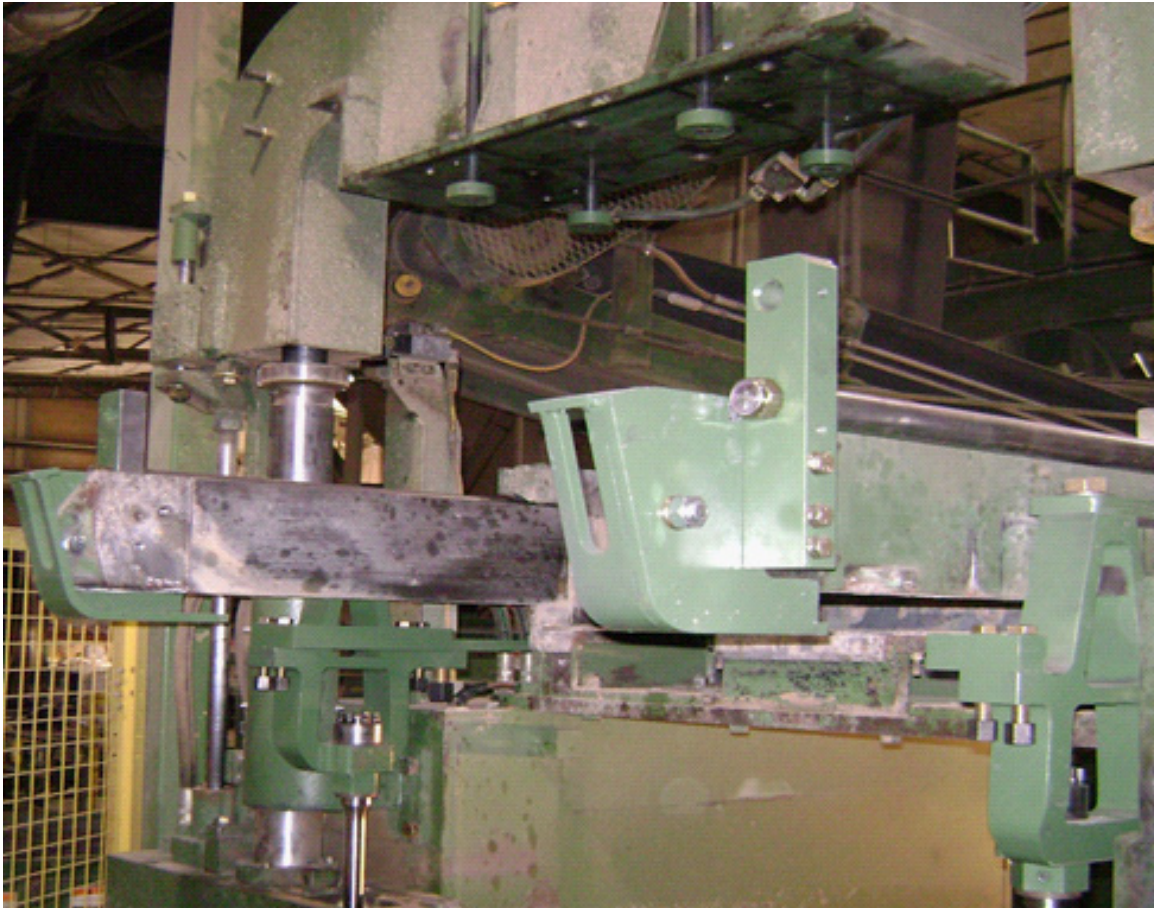




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## RAPID MOLD CHANGE CONVERSION



Finish with all kit conversion parts installation and have a selected mold to install for testing the head clamp assembly.





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### **RAPID MOLD CHANGE CONVERSION**

#### **PALLET FEEDER LIFT MODIFICATIONS**

After removing the pallet feeder assembly from the block machine find some steel flat bar that you can tack weld to the sides of the frame as to support it's as shown below. With the supports welded on it will be necessary to raise the pallet feeder up and using some wood pallets and steel plates if you have extras support the pallet feeder up at least 3 to 4 feet off the ground as it will be much easier to layout the required holes to be drilled through the side plates and support angles.



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### RAPID MOLD CHANGE CONVERSION

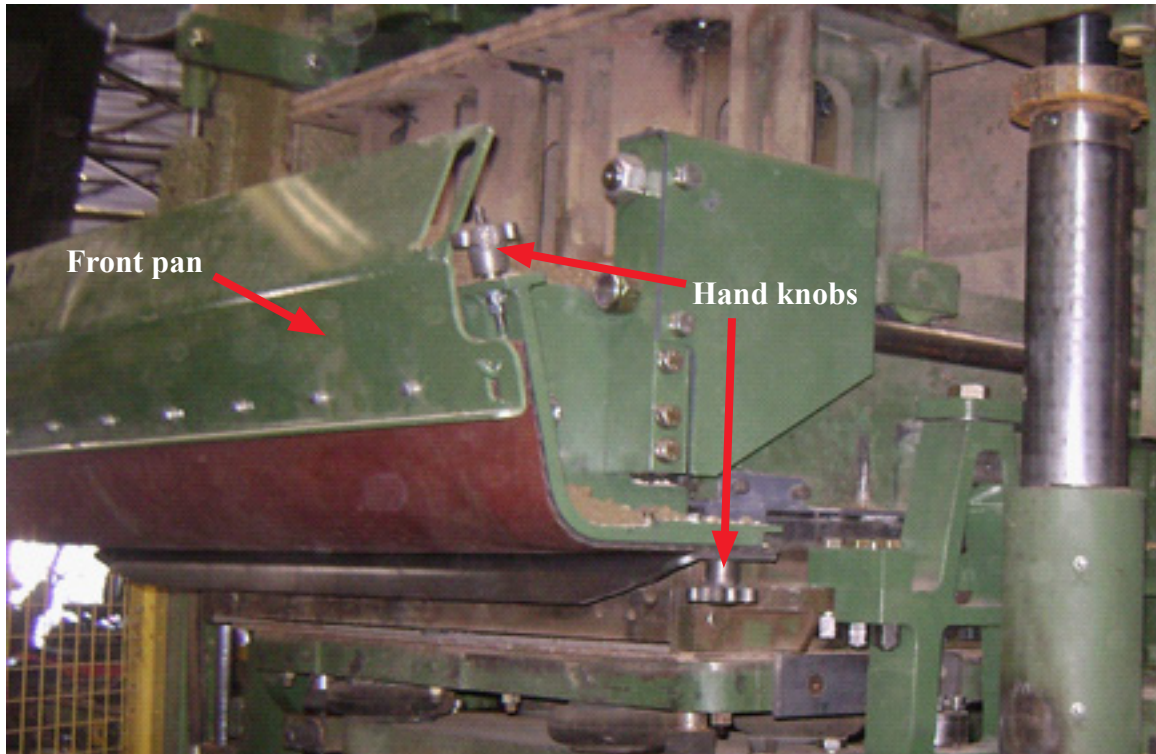


Layout and parts installation drawings along with hydraulic plumbing drawings are provided in the conversion kit. There are approximately fourteen (14) holes to be drilled and some must be tapped per the prints. Again if repairs to the carriage assembly, main frame or wear items replaced now would be the time to complete these repairs at the same time. Install the front support cylinders and guides in the front along with the hydraulic hoses. Drill or weld support hose clamps to the frame were needed.



## Columbia Concrete Products

### RAPID MOLD CHANGE CONVERSION



The feed box is now ready to receive the mold. After installing the mold into the machine the front pan can be installed. The new pan assembly aids with keeping material within the feed box area and seals the front mold area. In the above photo you can see to remove the front pan you only need to loosen the four (4) hand knobs two (2) on each side. This allows for quick removal during mold changes or if you need to inspect mold parts or shoes. If you have sticking material you can quickly clean the front of the pan area and agitator assembly by pulling the pan assembly off the front of the feed box.

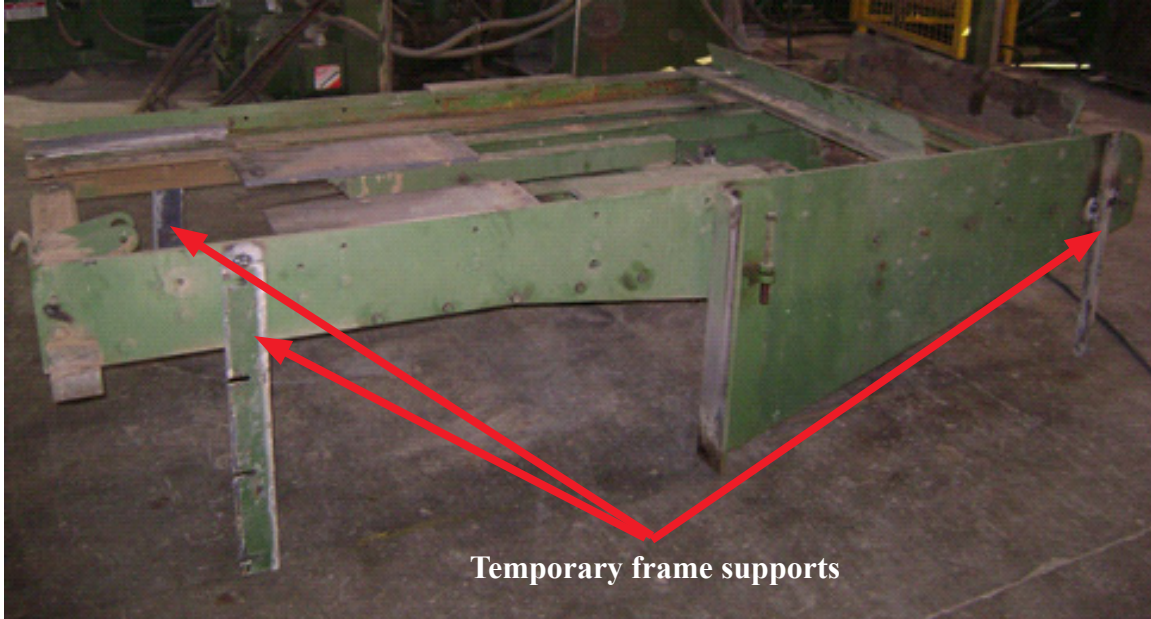
# Columbia Concrete Products

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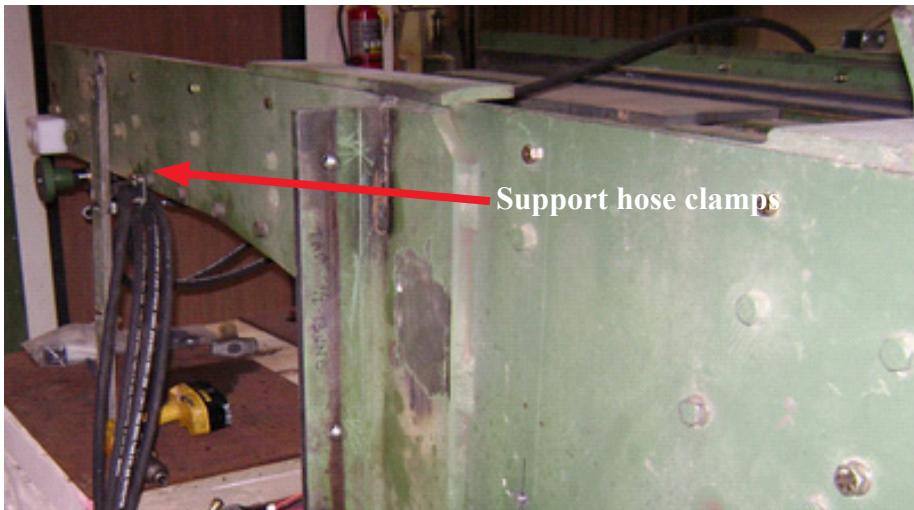
## RAPID MOLD CHANGE CONVERSION

### PALLET FEEDER LIFT MODIFICATIONS

After removing the pallet feeder assembly from the block machine find some steel flat bar that you can tack weld to the sides of the frame to support it, as shown below. With the supports welded on it will be necessary to raise the pallet feeder up 3-4 ft. off the ground using some wood pallets and steel plates as it will be much easier to layout the required holes to be drilled through the side plates and support angles.



Layout and parts installation drawings along with hydraulic plumbing drawings are provided in the conversion kit. There are approximately fourteen (14) holes to be drilled and some must be tapped per the prints. Again if repairs to the carriage assembly, main frame or wear items need replaced, now would be a good time to complete these. Install the front support cylinders and guides in the front along with the hydraulic hoses. Drill or weld support hose clamps to the frame were needed.





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### RAPID MOLD CHANGE CONVERSION

On each support angle, the face of the angle needs to be cleaned of all paint and nicks removed. It is then painted with the supplied Moly Kote 321 dry film lubricant as shown, this lubricant also must be applied to the back of the main box, in the area where the angle face contacts the machine frame.

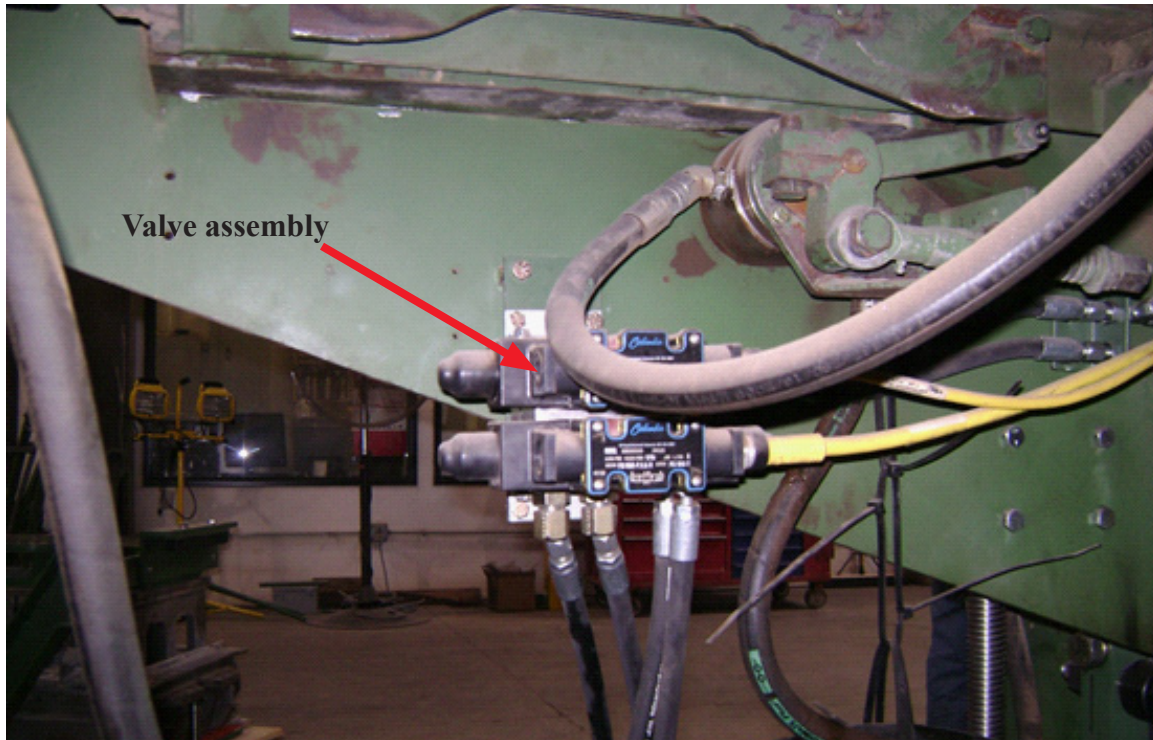


With drilling and painting completed, install the supplied wear bars and socket head screws in place as per the drawing supplied.

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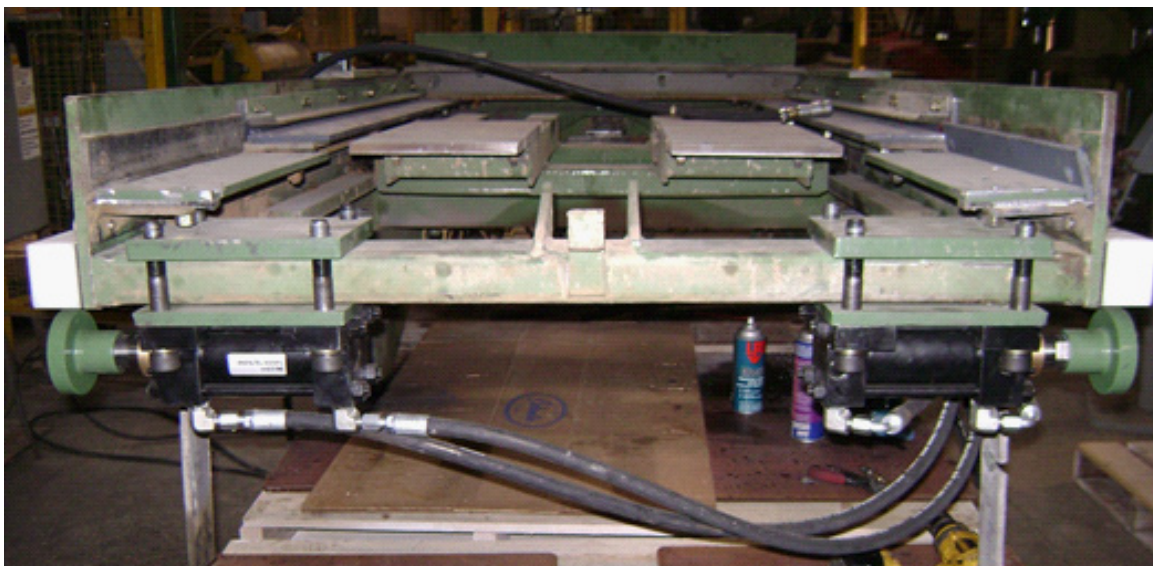
### RAPID MOLD CHANGE CONVERSION

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Continue with the hydraulic parts installation valve assembly, it must be located as shown in the instructions near the pallet feeder rotary valve. It may be necessary to wait until the pallet feeder is installed back into the block machine to see where it locates best. Install the cylinders and brackets, fittings, hoses and route the hoses down the inside of the frame.

In the view below you can see that other wear items are being replaced. Also you can see that the pallet feeder assembly is supported on top of some steel pallets and wood pallets in order to make it easier to work on.





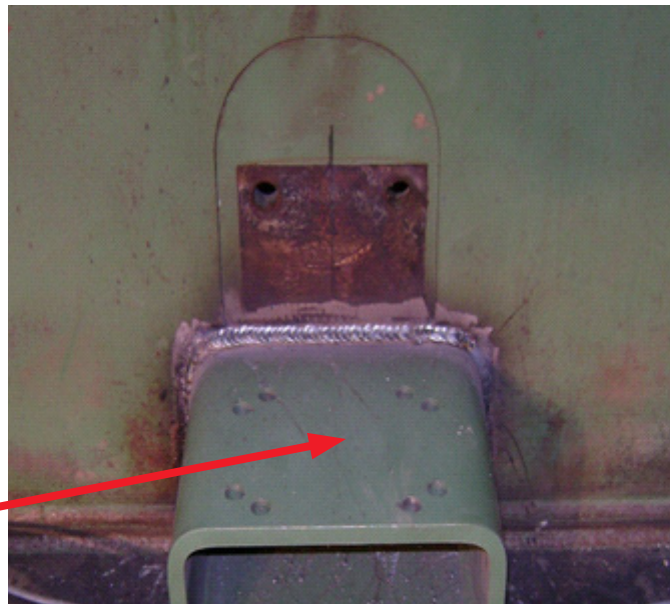
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## RAPID MOLD CHANGE CONVERSION



With the pallet feeder assembly removed, again make any needed repairs. Clean the back face of the machine frame location where the pallet feeder frame angles contact with a soft disc or wire wheel electric grinder. After cleaning tape off this area so that this area can be painted with the Moly Kote 321 dry film lubricant. Apply per instructions on the modification drawings. If any of the tapped holes, where the clamp plates mount, are damaged these tapped holes will need to be repaired. Clean all holes with a new tap 1" 8-14 UNF. In the photo below, in your specific conversion, it may require locating and welding of a support for the hoist support spreader.

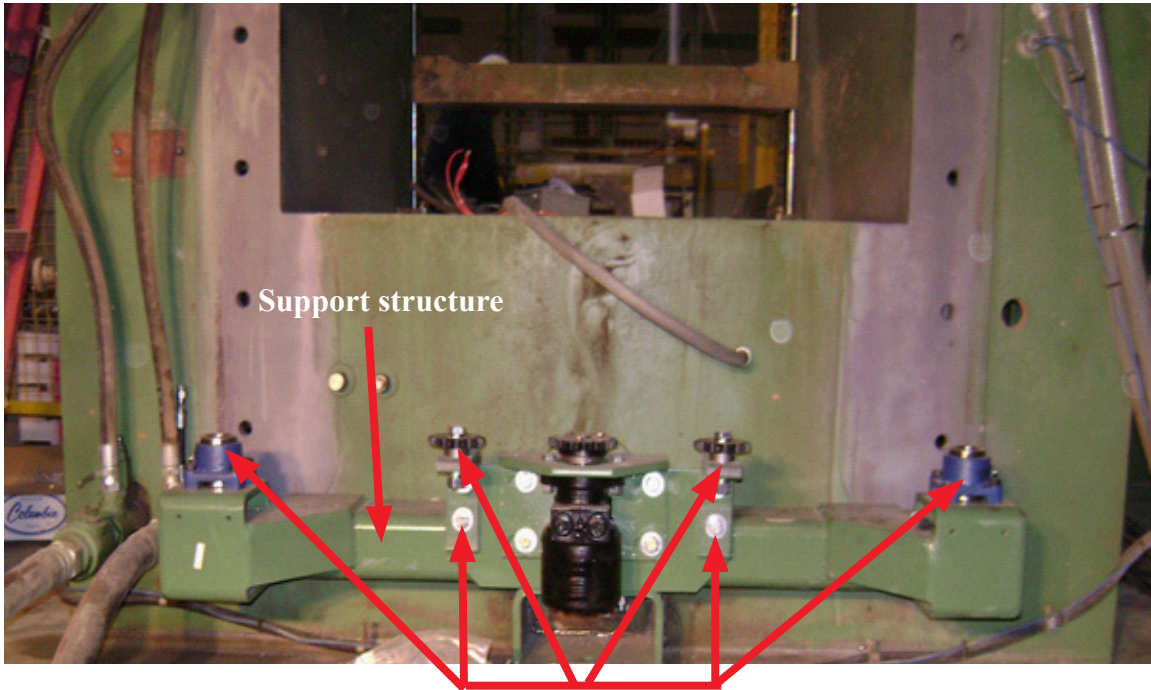


**Support bracket**

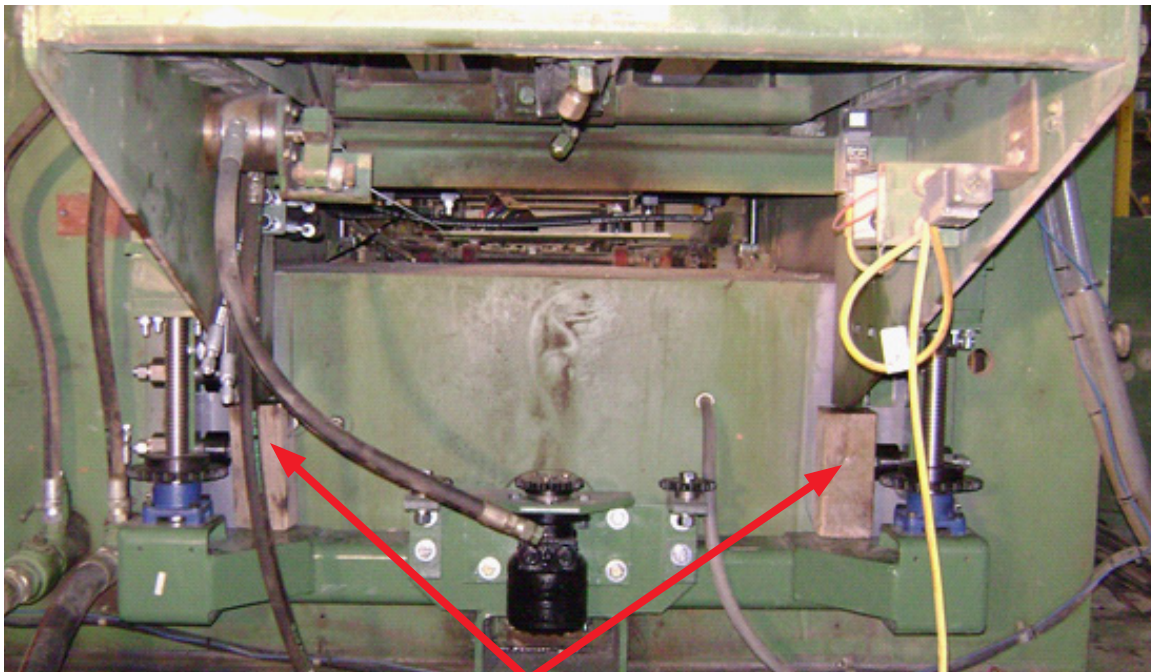
## Columbia Concrete Products

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### RAPID MOLD CHANGE CONVERSION



With the support structure bolted securely to the bottom welded support bracket, install the items shown above prior to installing the pallet feeder assembly. When installing the pallet feeder back into the machine you will need a couple blocks of wood to support the pallet feeder so that the guide cam roller assemblies on each side can be installed and adjusted. Install the jacking screws and bolt them to the pallet feeder side plates. (See below)

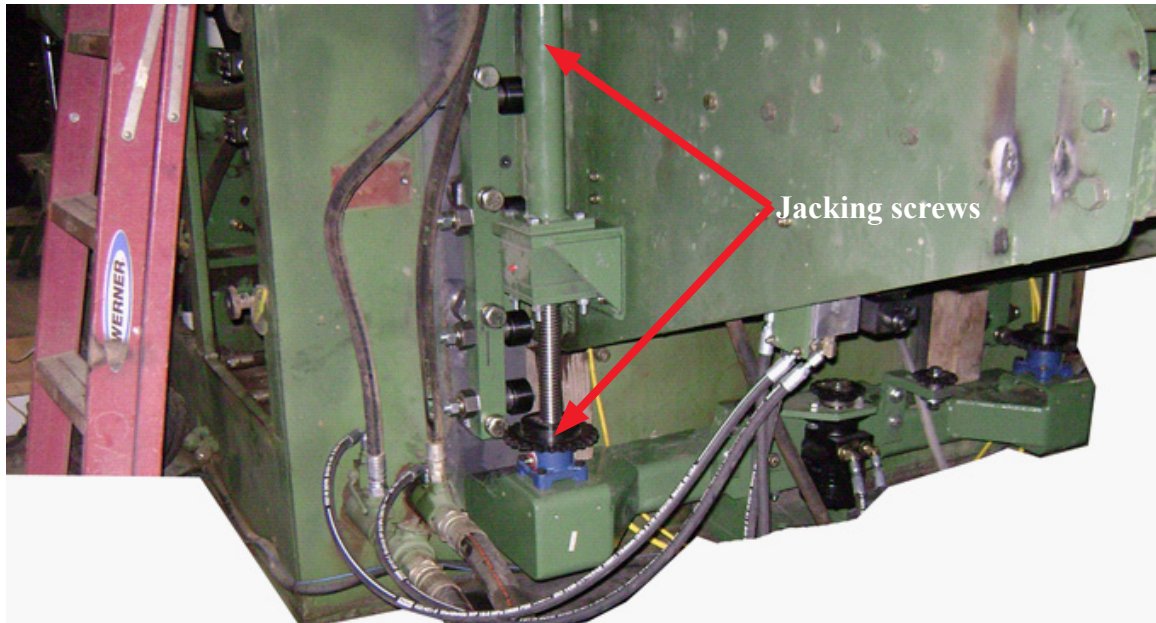


**Temporary wood supporting blocks**



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### RAPID MOLD CHANGE CONVERSION



Continue with installing the jacking screw assemblies and complete initial adjustments to the eccentric rollers on both sides. Final adjustments cannot be completed until the hydraulics are completed and the drive chain installed and tensioned. Check all hydraulic fittings prior to starting the pumping unit. With the pump started check for oil leaks. Release front clamps and manually override the motor valve to raise the pallet feeder off the wood blocks.



Do not use the selector switch at this time as the electrical controls may not be correctly tested.

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## RAPID MOLD CHANGE CONVERSION



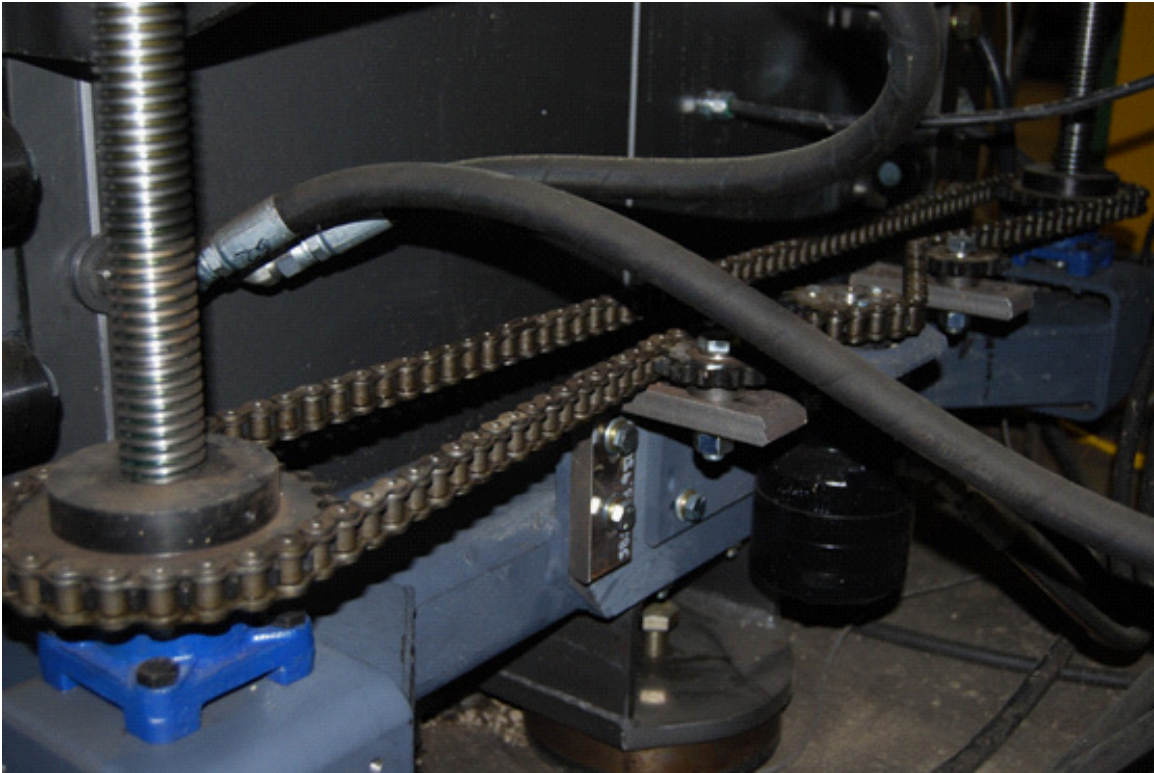
A pushbutton panel is provided with the conversion, but these parts can be removed and installed into your specific PB panel, if you have the room, as shown above.



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## RAPID MOLD CHANGE CONVERSION



These photos are of a model 1600 block machine at Columbia Machine Inc. being prepped for shipment. Notice the hydraulics located on the opposite side of the pallet feeder.

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### RAPID MOLD CHANGE CONVERSION



The stripper down switch has been relocated to the cam on the stripper rotary valve, this eliminates one added set-up step. The locking arm and ruler for setting height adjustments, are included in this portion of the modifications.



The stripper down switch relocated to rotary valve side to reduce set-up time.



## Columbia Concrete Products

### **RAPID MOLD CHANGE CONVERSION**

The below photo is of the pallet table lift strap assemblies. Prior to installing the lift straps, loosen the bolts holding the saddle to the stripper beam. After you have loosened these bolts raise the stripper beam up until it stops. Turn the hydraulics off and follow your safety lock-out procedures. When making a height change to add or remove spacers below the saddle, install the hooked plates over each feedbox side plate and using the other hooked plates install over the sides of the pallet table. Tension the straps taking up the slack. With the bolts and lock washers removed, start the pump and lower the stripper beam allowing the spacers below the saddle to be removed or added. Once the correct spacers are installed, raise the stripper back up, install the bolts, and remove the straps.



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## RAPID MOLD CHANGE CONVERSION

The below photo is showing the agitator rake removal tool. See additional photos showing use of this tool.



With the front pan removed, along with the complete mold, bring the feed drawer forward. Turn pump off and use your safety lock-out procedures. Remove agitator hold down bolts, lock washer, and plates from both sides. Set the rake tool over the top of the front feed drawer spreader and hook the agitator as shown in above photo. Pushing down on the tool handle and lifting the rake out of the pocket wedges allows the agitator to drop down in the front and at the same time lowers the agitator down onto the pallet table. This should be completed in one ease motion. Remove the rake tool from the agitator and remove agitator from the pallet table. Follow these same procedures in reverse for installing the agitator you plan on using.





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## RAPID MOLD CHANGE CONVERSION



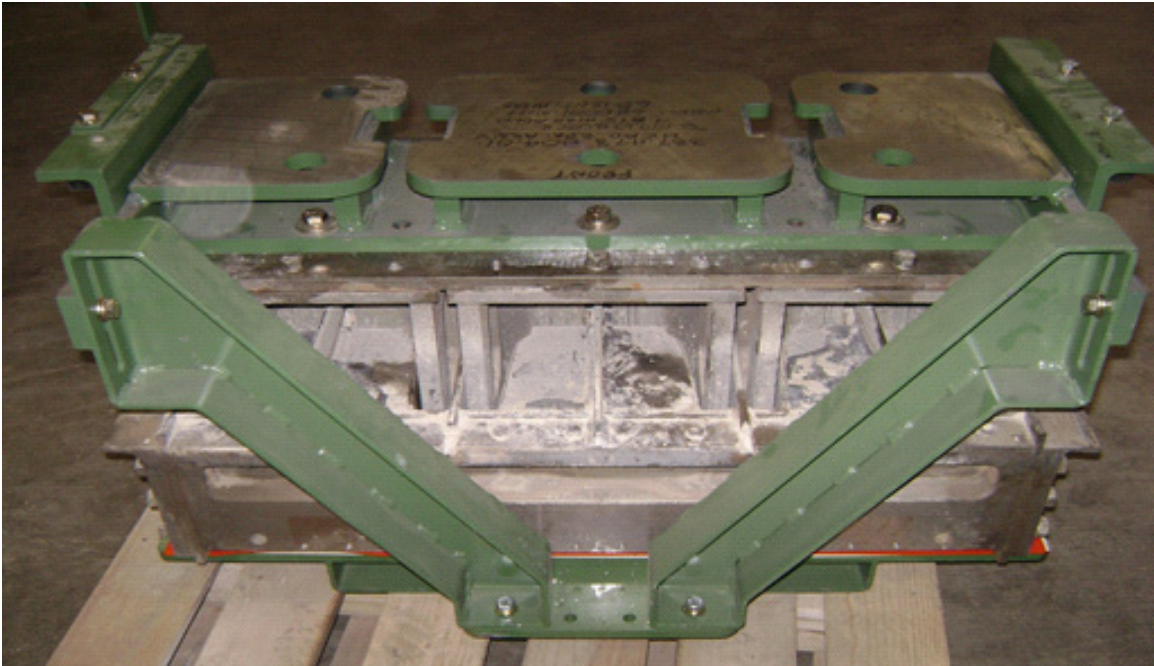
Transit fixture frame with mold (above) and additional transit fixtures shown along with head spacers (below).



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## RAPID MOLD CHANGE CONVERSION



Customers mold ready to be installed (above). The photos below are of the universal mold lifting device and transit fixture. Depending on your specific requirements other options may need to be considered for mold installation.





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### RAPID MOLD CHANGE CONVERSION



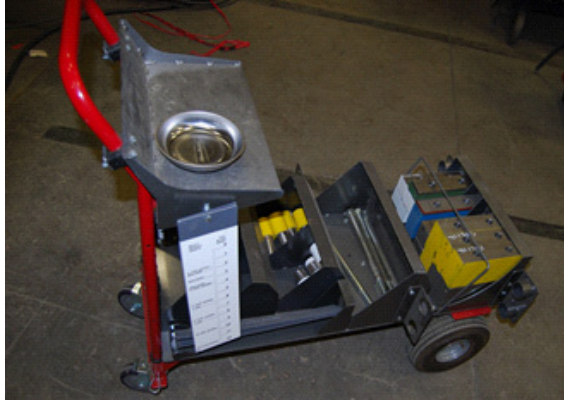
Compression beam stops are now attached to the head plate spacer assembly as shown in photo (above). Also the flag for compression head down is also located on the spacer plate assembly. The compression head switch is relocated on the mounting stand and the adjustable switch flag is removed from the compression beam. See reference print for more details.

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## RAPID MOLD CHANGE CONVERSION

Shown below are the following: pallet table lifting straps, a parts cart (holding pallet table spacers, lower beam stops, pallet table bolts, gauges bolts, nuts and tools as needed), and front removable pan assembly.



If you have questions regarding the installation, need further assistance, or would like to schedule service support please contact Columbia Machine Inc. at 1-800-628-4065.



The following pages of drawings are for reference only. Do not use any dimensions from these pages. Please refer to the complete print package for your specific order.

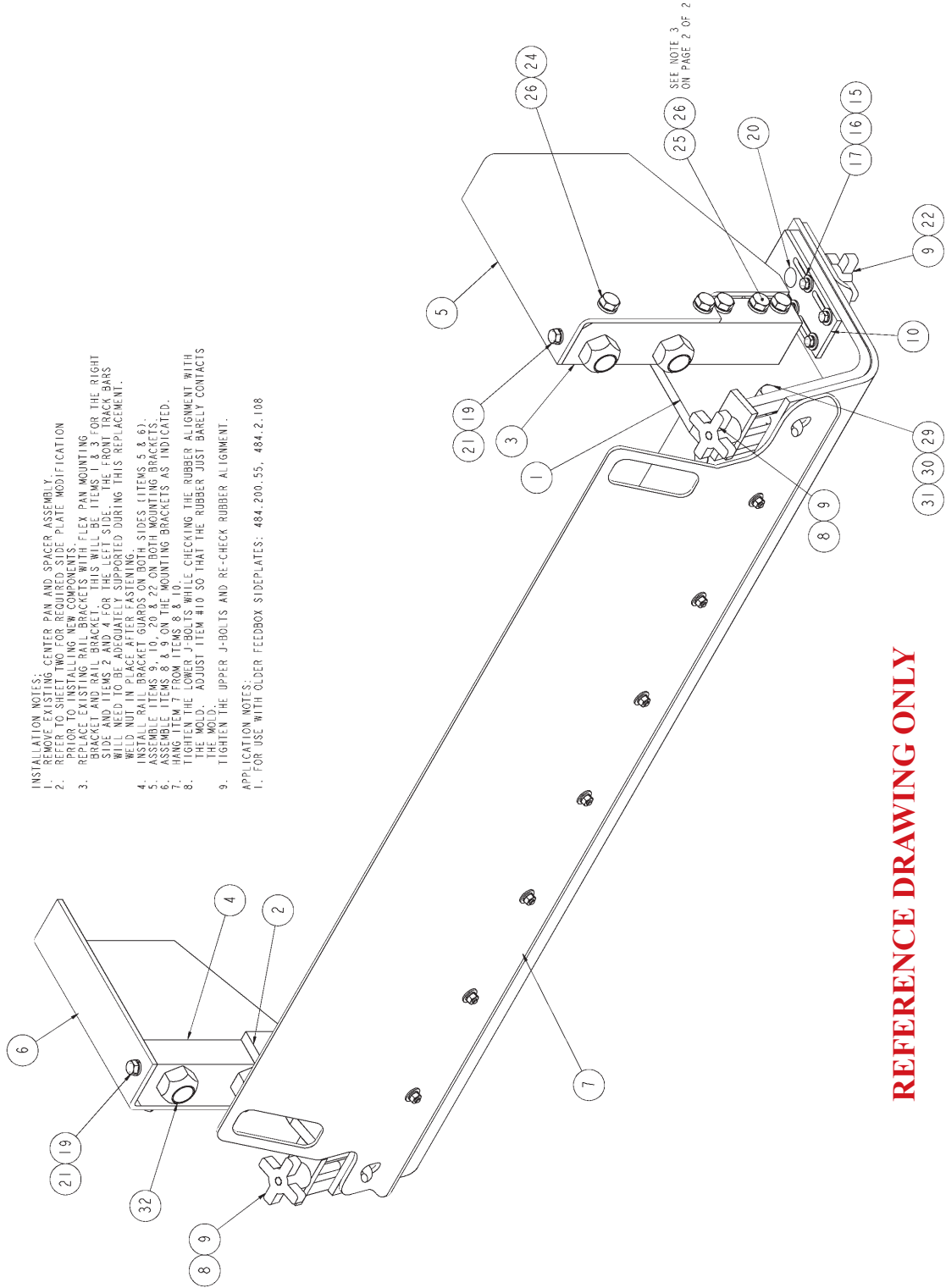


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## RAPID MOLD CHANGE CONVERSION

- INSTALLATION NOTES:
1. REMOVE EXISTING CENTER PAN AND SPACER ASSEMBLY.
  2. REFER TO SHEET TWO FOR REQUIRED SIDE PLATE MODIFICATION.
  3. PERIOD TO INSTALLING NEW COMPONENTS. FLEX PAN MOUNTING BRACKET AND RAIL BRACKET (THIS WILL BE ITEMS 1 & 3 FOR THE RIGHT SIDE AND ITEMS 2 AND 4 FOR THE LEFT SIDE). THE FRONT TRACK BARS WILL NEED TO BE ADEQUATELY SUPPORTED DURING THIS REPLACEMENT. WELD NUT IN PLACE AFTER FASTENING.
  4. INSTALL RAIL BRACKET GUARDS ON BOTH SIDES (ITEMS 5 & 6).
  5. ASSEMBLE ITEMS 9, 10, 20, 3, 22 ON BOTH MOUNTING BRACKETS.
  6. HANG ITEM 7 FROM ITEMS 8 & 10.
  7. TIGHTEN THE LOWER J-BOLTS WHILE CHECKING THE RUBBER ALIGNMENT WITH THE MOLD. ADJUST ITEM #10 SO THAT THE RUBBER JUST BARELY CONTACTS THE MOLD.
  8. TIGHTEN THE UPPER J-BOLTS AND RE-CHECK RUBBER ALIGNMENT.

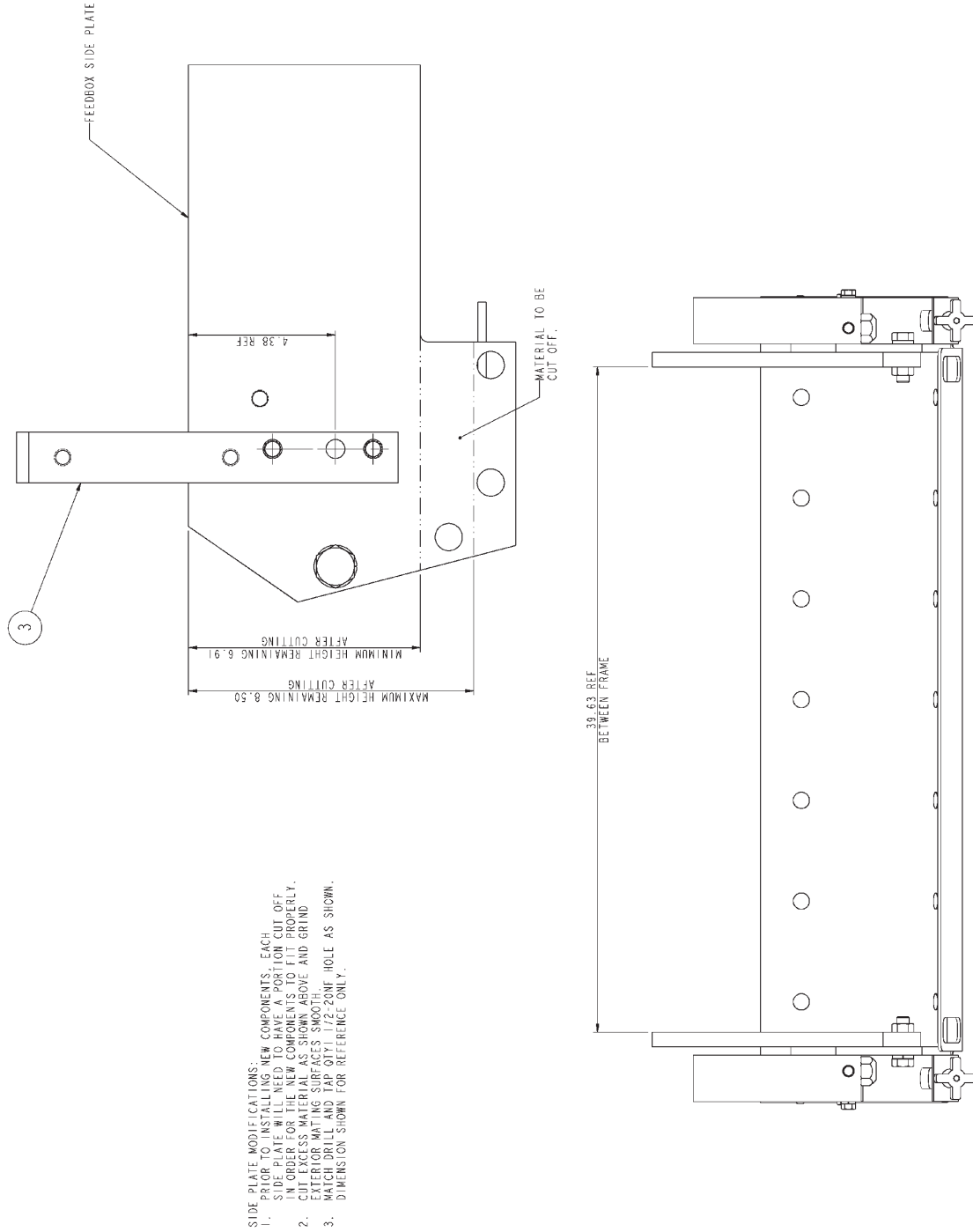
- APPLICATION NOTES:
1. FOR USE WITH OLDER FEEDBOX SIDEPLATES: 484.200.55, 484.2.108



**REFERENCE DRAWING ONLY**

# Columbia Concrete Products

## RAPID MOLD CHANGE CONVERSION

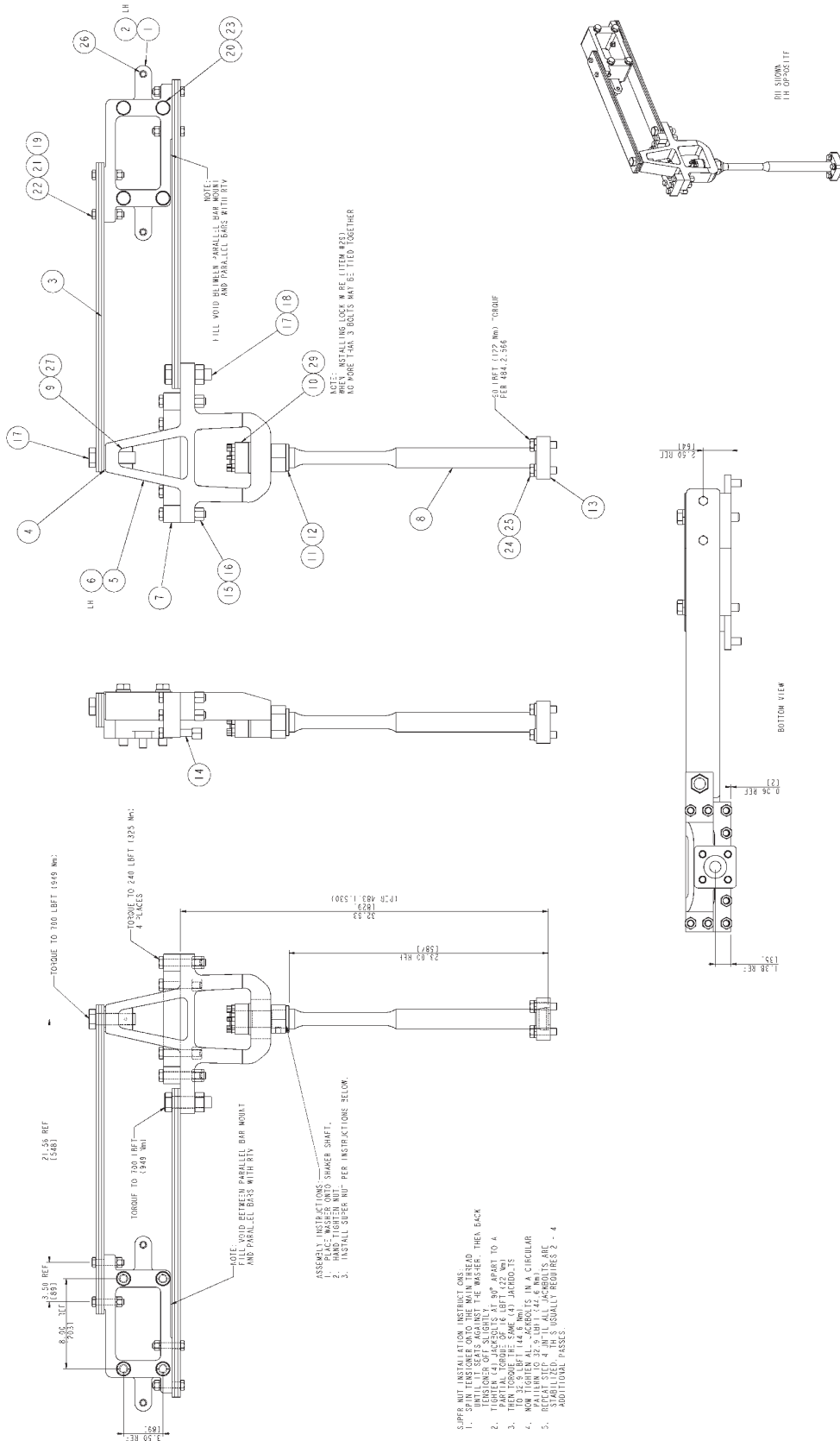


**REFERENCE DRAWING ONLY**



# Columbia Concrete Products

## RAPID MOLD CHANGE CONVERSION



**REFERENCE DRAWING ONLY**

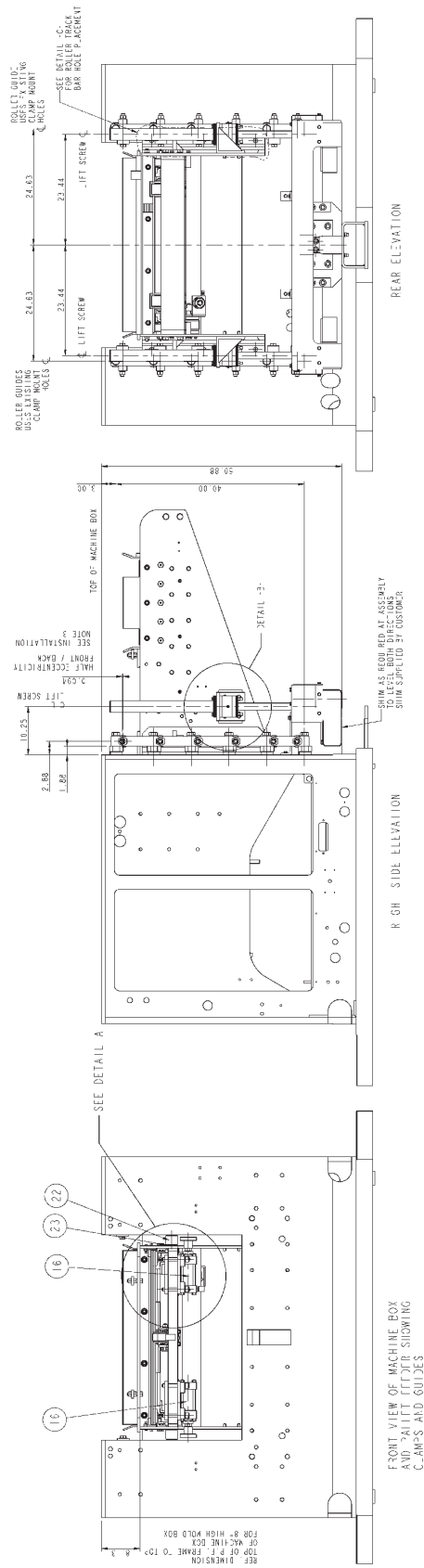
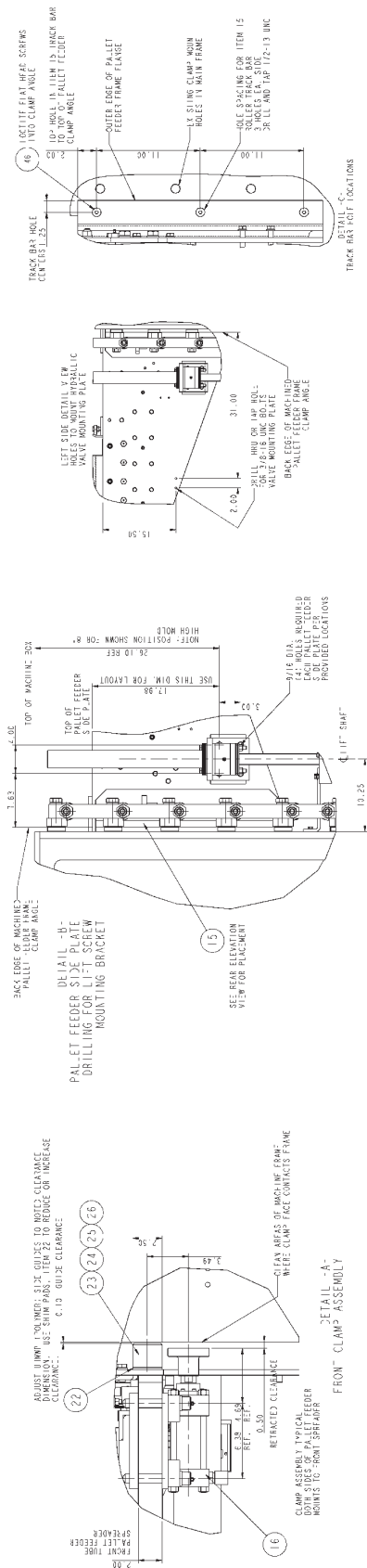






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## RAPID MOLD CHANGE CONVERSION



- GENERAL NOTES:**
- 1) HYDRAULIC PALLET FEEDER - LIFT CONVERSION
  - 2) INTERCHANGEABILITY / APPLICATION REFERENCES:
    - A) MA N BOX: 484-100-24
    - B) PALLET FEEDER: 484-700-1
    - C) SELL STILL: 2 - OR DUAL-ILD COMPONENT CALLCULIS

**NOTE:**

- a) INTER SPACE BETWEEN MACHINE BOX AND PALLET FEEDER CLAMP ANGLE FACE THAT IS TO BE USED TO CLAMP BOTH SIDES OF BORE METAL SURFACES TO A
- b) APPLY TO BOTH SIDES OF BORE METAL SURFACES TO A
- c) AREA OF BOX AND BORE METAL SURFACES THAT WOULD BE UNDER SURFACE OF ANGLE IN ALL DIRECTIONS
- d) ALLOW PRODUCT TO DRY AND FULLY CURE - (MOLD 4 HOURS), BEFORE REASSEMBLY.

**3) FILM LUBRICANT APPLICATION**

**NOTE:**

SEE DRAWING FOR DIMENSIONS AND TOLERANCES

SEE DRAWING FOR DIMENSIONS AND TOLERANCES

SEE DRAWING FOR DIMENSIONS AND TOLERANCES

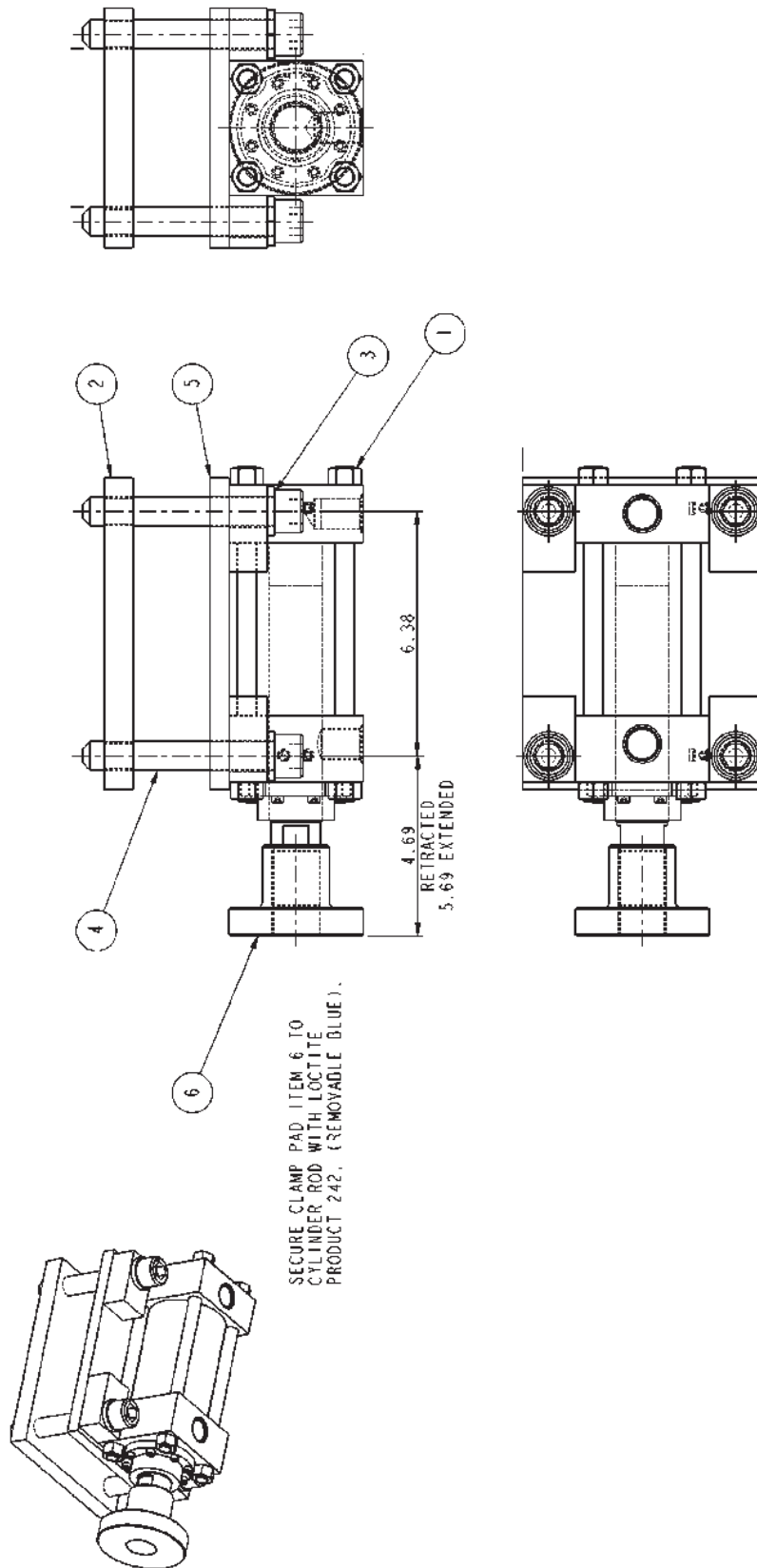
SEE DRAWING FOR DIMENSIONS AND TOLERANCES

**REFERENCE DRAWING ONLY**



# Columbia Concrete Products

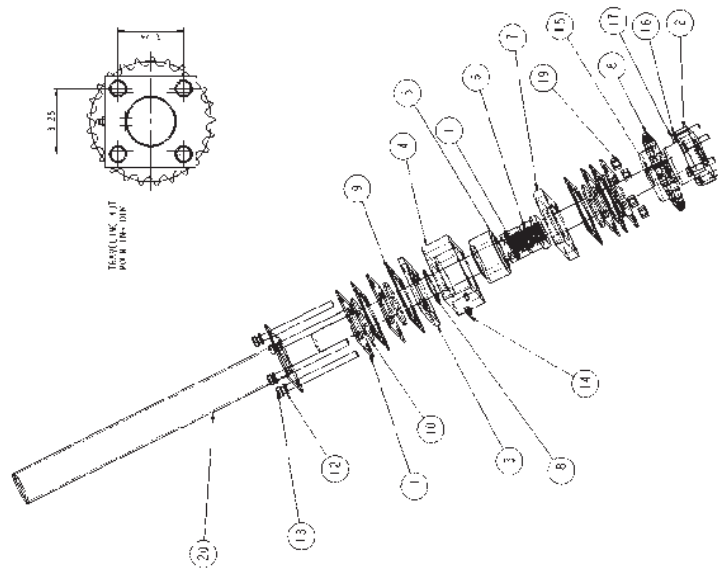
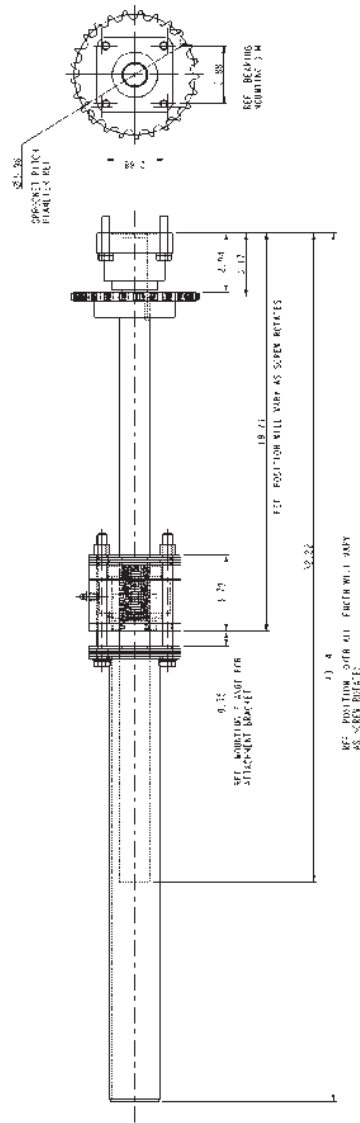
## RAPID MOLD CHANGE CONVERSION



**REFERENCE DRAWING ONLY**

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## RAPID MOLD CHANGE CONVERSION



REFERENCE DRAWING ONLY





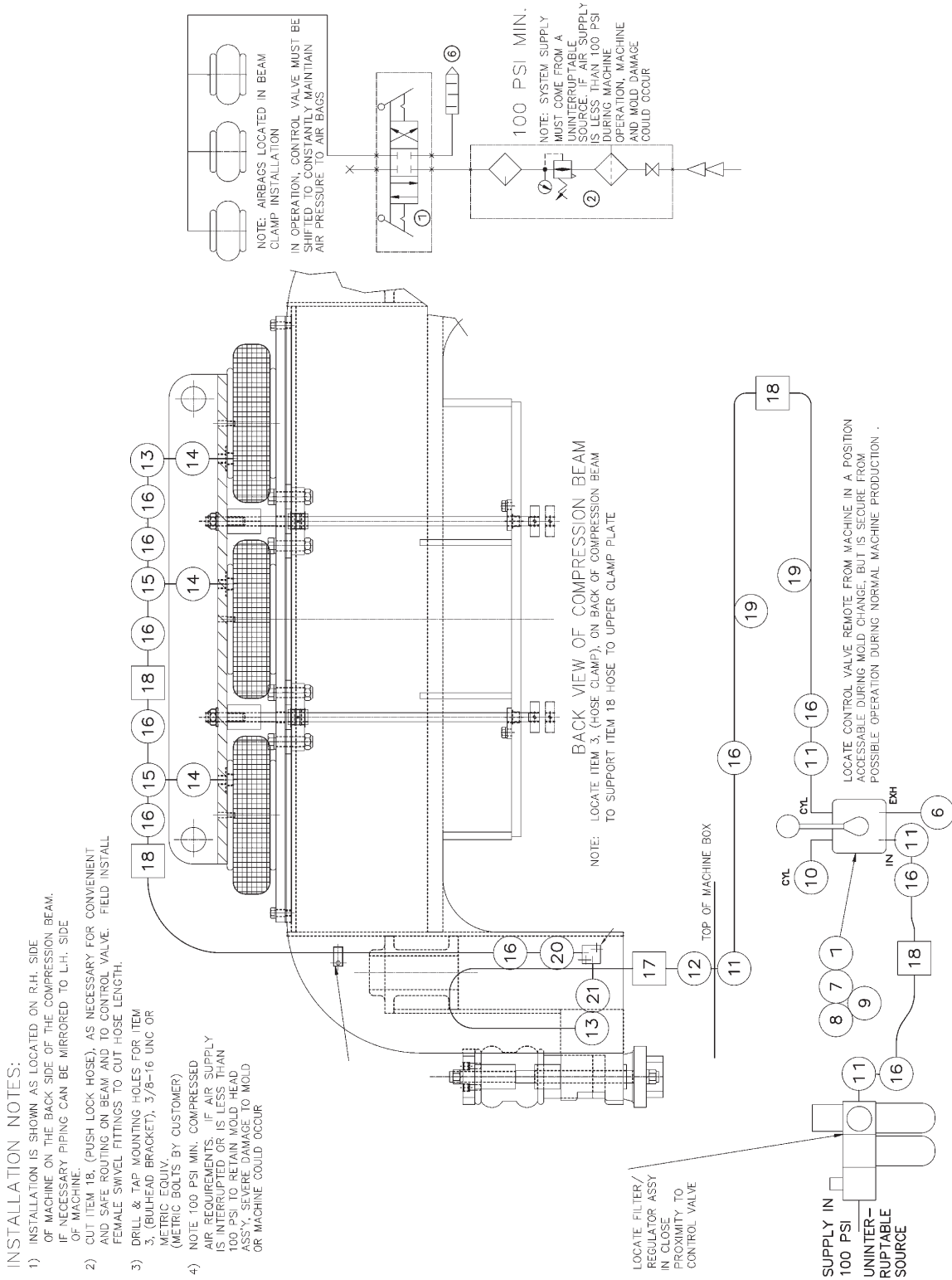






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## RAPID MOLD CHANGE CONVERSION

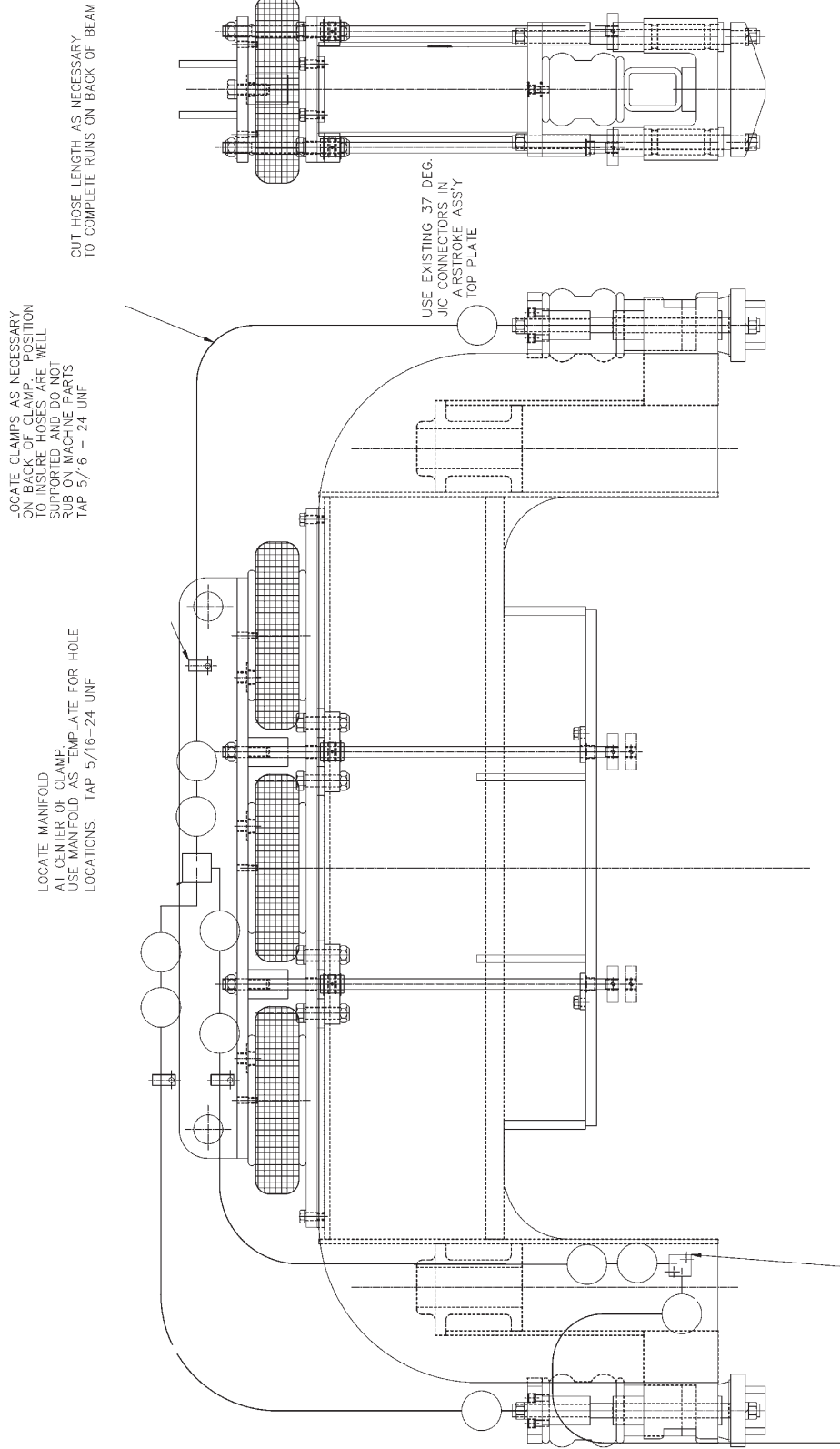


**REFERENCE DRAWING ONLY**



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## RAPID MOLD CHANGE CONVERSION



BACK VIEW OF COMPRESSION BEAM

LOCATE MANIFOLD IN EXISTING HOLES ON BACK OF COMPRESSION BEAM. POSITION MANY VARY SLIGHTLY FROM WHAT IS SHOWN

TO AIR CONTROL DRAPE HOSE FROM MANIFOLD TO MACHINE FRAME

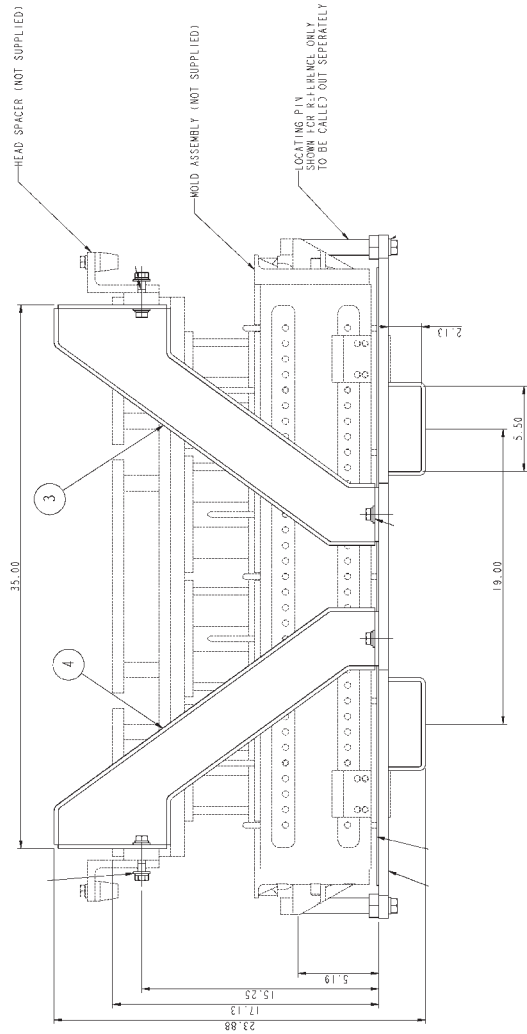
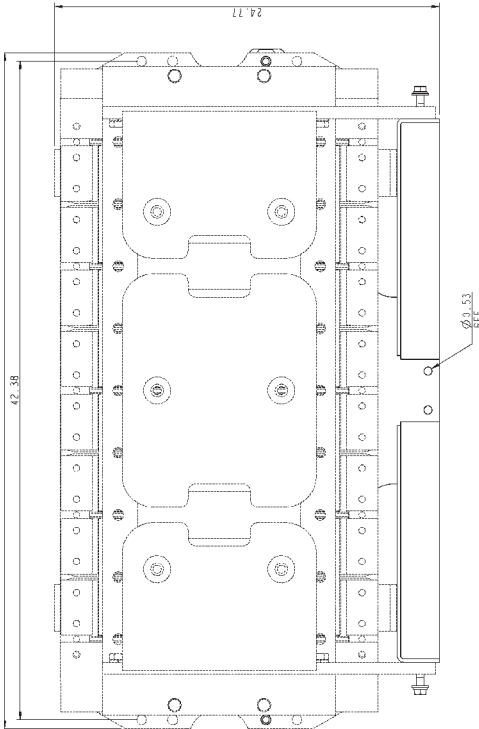
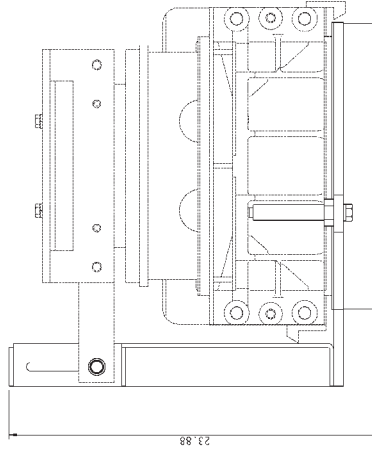
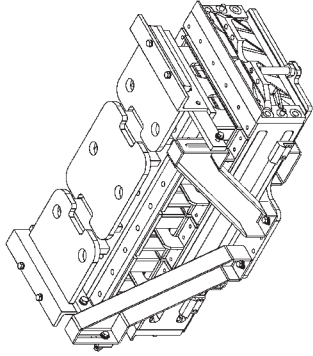
**REFERENCE DRAWING ONLY**





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## RAPID MOLD CHANGE CONVERSION

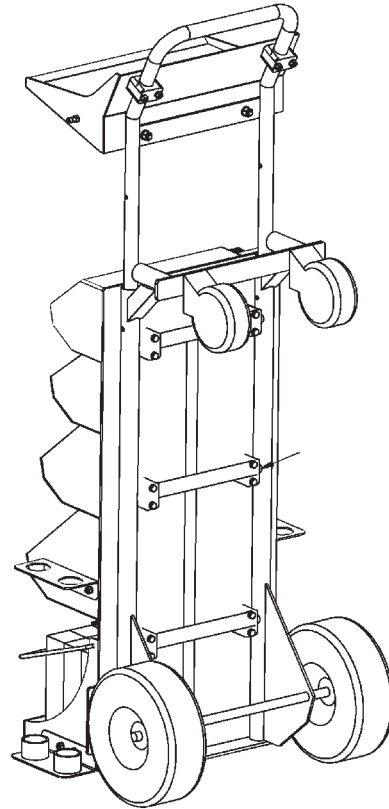
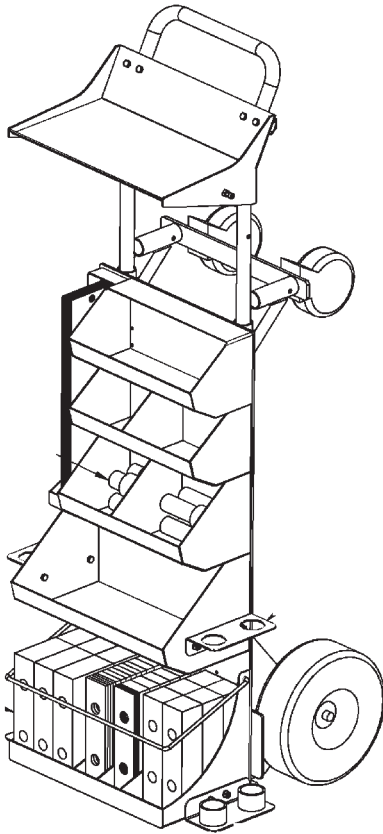


**REFERENCE DRAWING ONLY**

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## RAPID MOLD CHANGE CONVERSION



### APPROXIMATE WEIGHT

WITHOUT SPACERS: 1211b (55kg)  
WITH SPACERS: 3521b (160kg)

**REFERENCE DRAWING ONLY**