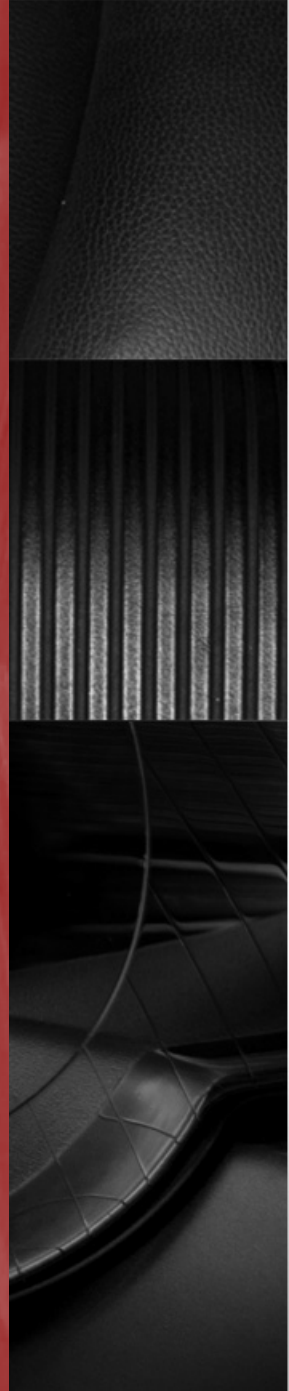


Die Changing Process

Jay Industries, Inc.

March 5, 2020



Die changes

- One step at a time
- Dangerous, but can be simple if managed properly
- Take your time – never rush
- Communicate with other team members
- If you aren't sure, ask your supervisor



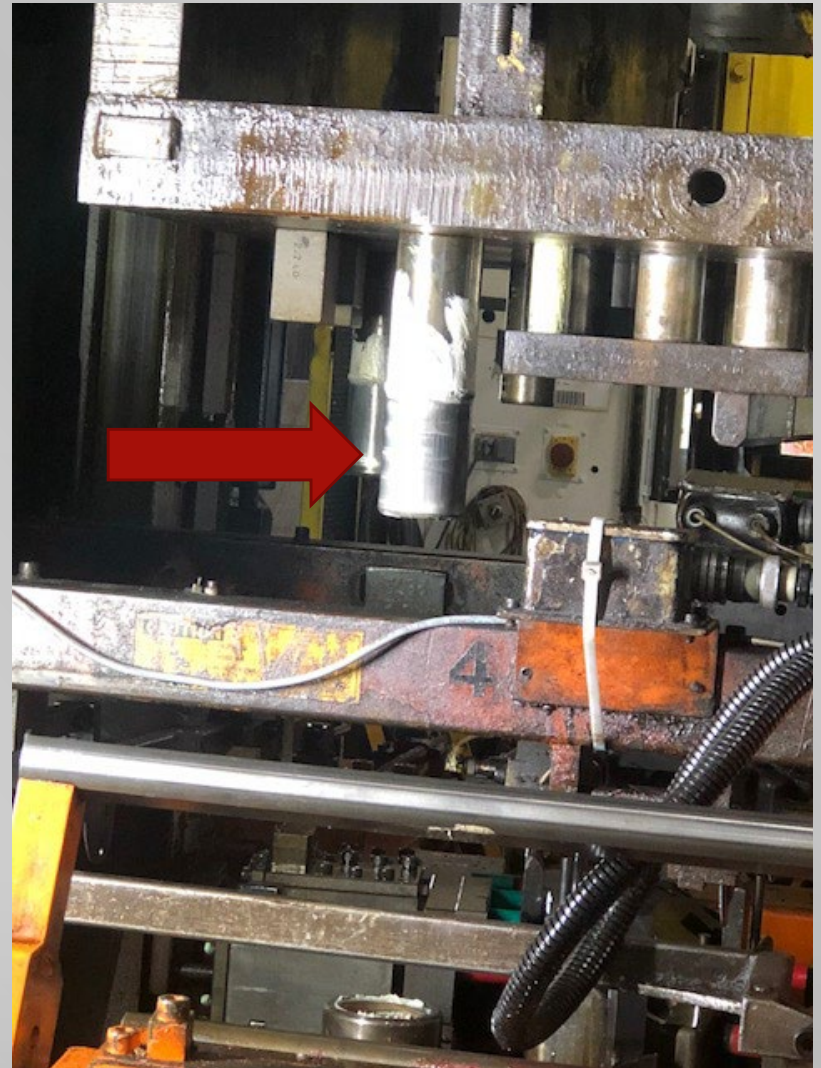
Important Press parts:

- Press Bed = where the Die sets on inside the press
- Ram = the moveable part that raises and lowers the press
- Stock Strip = the last strip of steel that was run through the die
- Shut = the closing of the Ram
- Shut Height = the distance from the top of the stroke to the bottom of the stroke



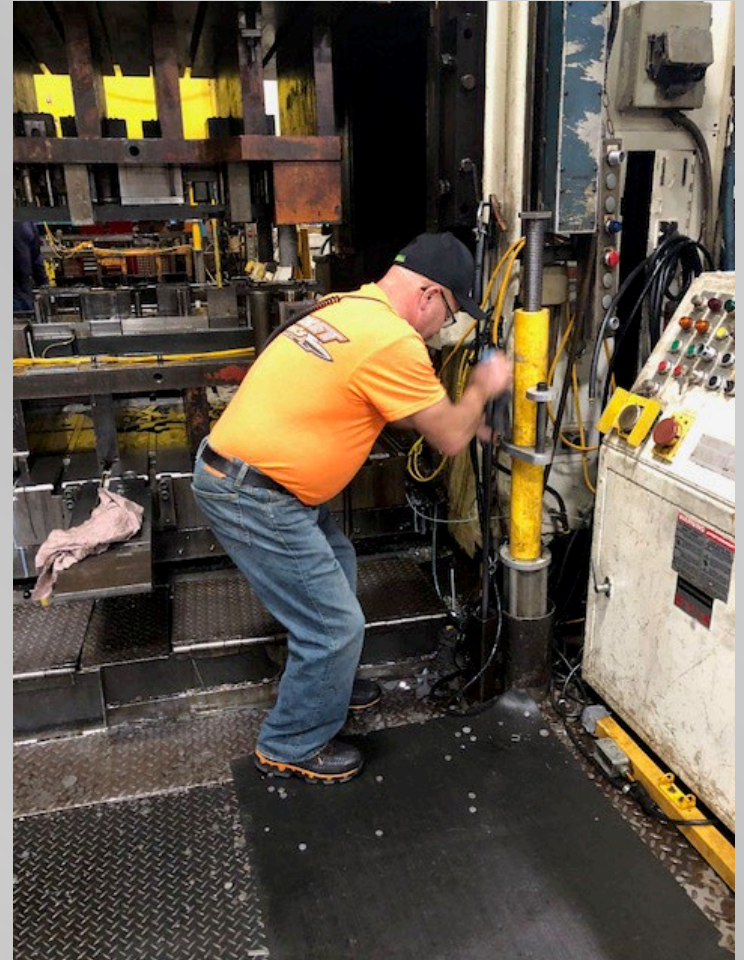
Die Stop Block

- Round cylinders
- In the Die
- .050 grooves nailed on the top
- Used for Lead testing
- Set on all four corners of the die and other places along the die



Press Safety Stop Block

- Approved for use by the Press Manufacturer
- Placed in between the Ram and the Press Bed
- Offers protection to prevent the Ram from closing or drifting downward.
- Has a safety plug attached to it
- Stored on the outside of the Press



Getting Started:

Put the Press Safety
Stop Block in the Press
Bed



Proper use of the Press Safety Block:

- Make sure the Press Safety Block is sitting flat on the Press Bed
- Make sure the adjustable screw is on top of the block
- The screw should be touching the Ram



Apply Lockout- Tagout to the Power Supply



Check the Press for Power



Inspect the Die for Debris and any Tooling Issues

- Mis-formed debris
- Burrs
- Missing holes
- Broken bolts
- Sensor failures
- Gaulding

- If any of these issues are sighted, immediately notify your Supervisor or Tool Maker
- They will determine how to correctly address the issues

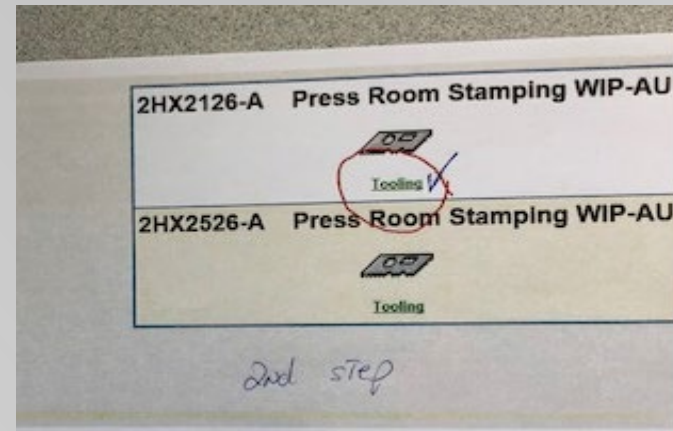
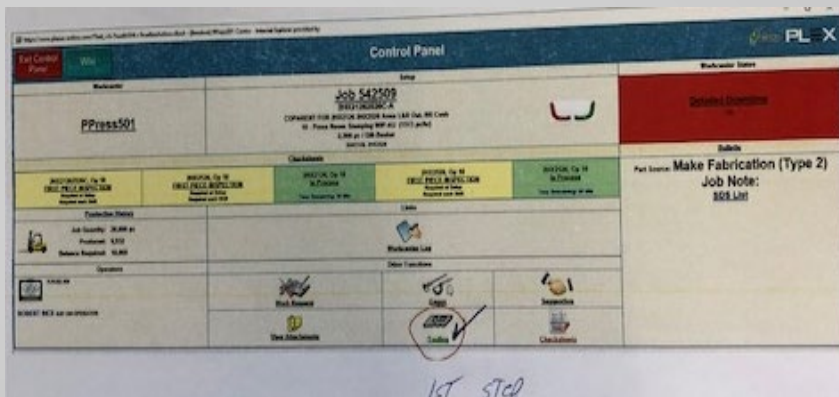


Fill out a Repair order for the Die, if needed.

1. LOG ONTO THE PRESS WORK CENTER FOR THAT PRESS AND DIE.

1. A. CLICK TOOLING.

2. ON THE NEXT SCREEN, CLICK TOOLING AGAIN



Fill out a Repair order for the Die, on Plex

3. ON THE NEXT SCREEN, CLICK REQUEST MAINTENANCE

4. ON THE NEXT SCREEN, CLICK BINOCULARS NEXT TO THE EVENT

Tooling		Available	Loaded
Tool Assembly Required	CRV-2HX21262526C001	CRV-2HX21262526C001	Unload
CRV-2HX21262526C (PROG-TRANS)			Request Maint

Scan Tools into Workcenter

Detail Serial No.: **Load**

UNSCHEDULED REPAIRS					
Tool Set No	Assigned To	Event	Description	Due Date	Status
CRV-2HX21262526C001		TR-Die Repair	Repair Request	1/30/18	New

SCHEDULED MAINTENANCE									
Tool Set No	Assigned To	Event	Production			Calendar Days			Status
			Required Maintenance Frequency	Actual	Remaining	Required Maintenance Frequency	Actual	Remaining	
CRV-2HX21262526C001		Scheduled PM	120,000	46,069	73,931				Requested

Tool Set Maintenance Request

Tool Set Maintenance No:

Tool Set No: CRV-2HX21 x #

Event: **4th step**

Problem Description: Repair Request

Status: New

Assigned To:

Due Date: 3/21/19

Tool Assembly Description:

Owned By: Broshco

Priority: 0

Date Sent to Vendor:

Date Received from Vendor:

Days out at Vendor:

Detailed Description: Times Roman

Filling out a Repair Order for the Die

5. ON THE NEXT SCREEN, ADD AS MUCH DETAILED INFORMATION AS POSSIBLE.

6. WHEN FINISHED, CLICK ADD AT THE TOP OF THE PAGE.

Tool Set Maintenance Request

Tool Set Maintenance No:
Tool Set No: CRV-2HX21 x

Event: TR-Die Repair

Problem Description: Repair Request

Status: New

Assigned To:

Due Date: 3/21/19

Tool Assembly Description:

Owned By: Broshco

Priority: 0

Date Sent to Vendor:

Date Received from Vendor:

Days out at Vendor:

Detailed Description: Times Roman

*Fill out repair using as much
@ 7th step Detail as possible*

Tool Set Maintenance Request

Tool Set Maintenance No:
Tool Set No: CRV-2HX21 x

Event: TR-Die Repair

Problem Description: Repair Request

Status: New

Assigned To:

Due Date: 3/21/19

Tool Assembly Description:

Owned By: Broshco

Priority: 0

Date Sent to Vendor:

Date Received from Vendor:

Days out at Vendor:

Detailed Description: Times Roman

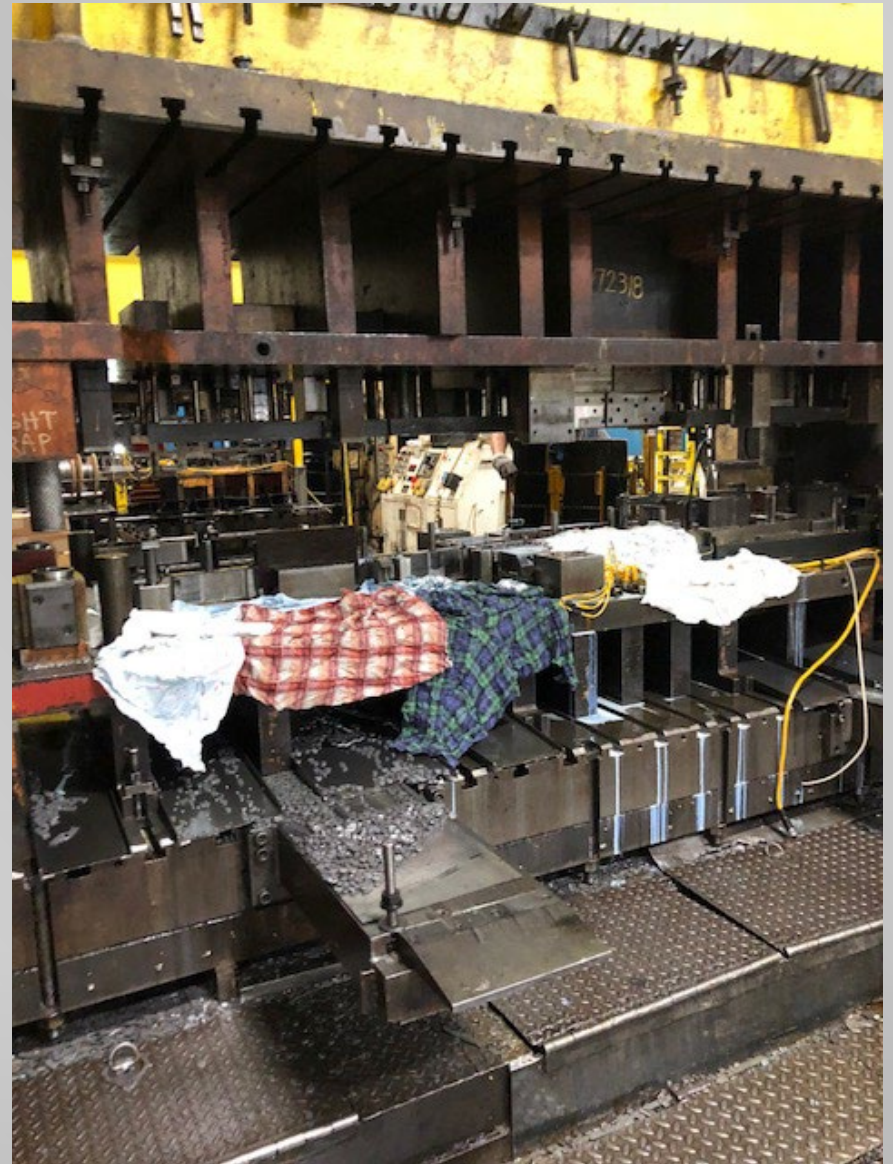
7th step
Finished

Notify the Tool Room of any Tool Repairs, if Needed

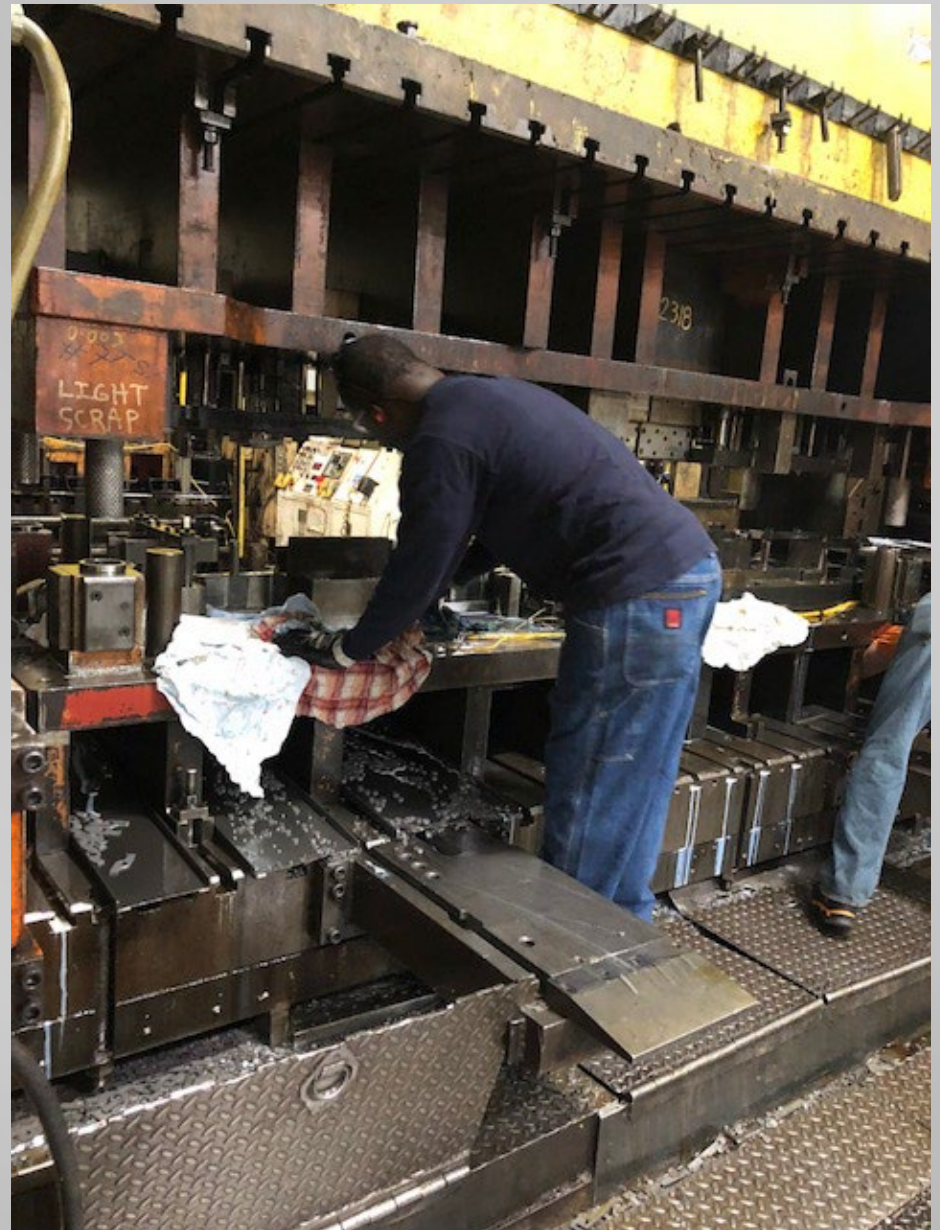
- Call them through the radio or page them on the radio
- Tell them that you filled out a Repair Request Form on PLEX



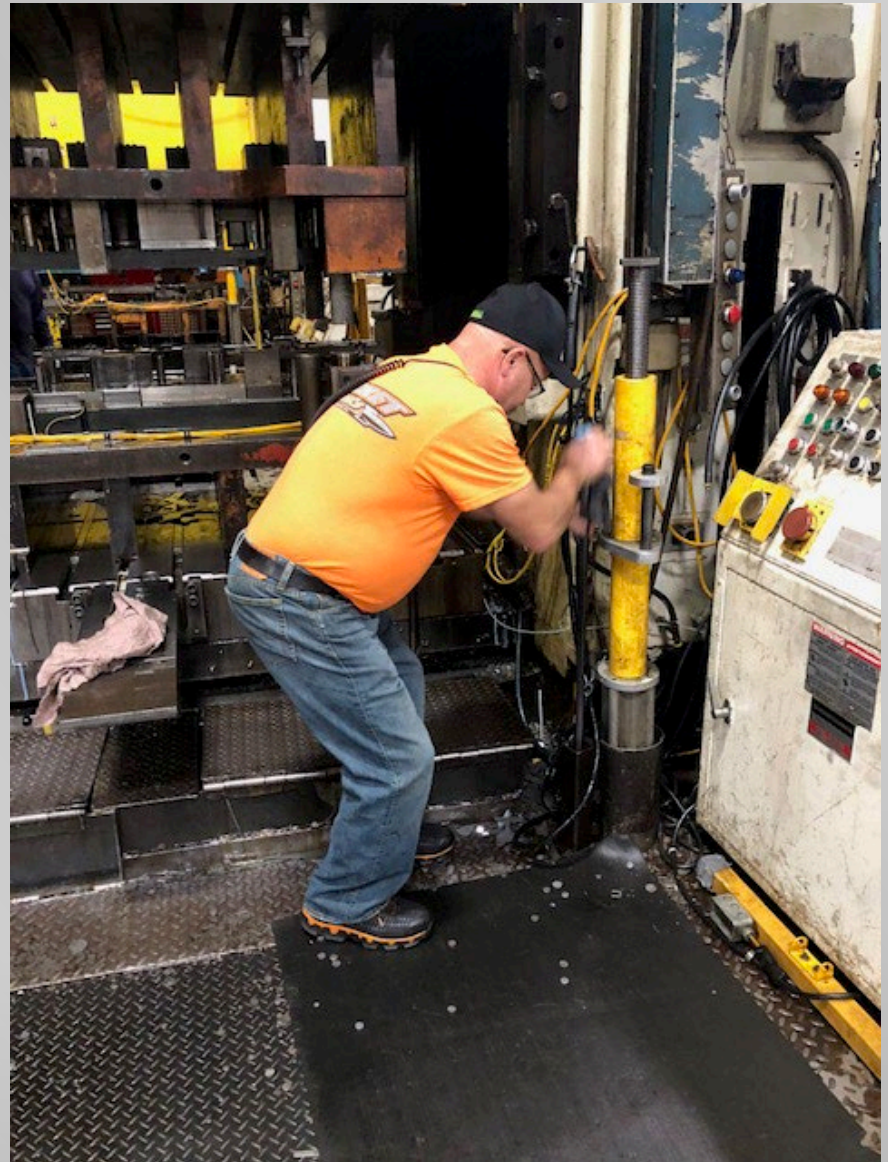
Use rags to clean up
the oil from the die



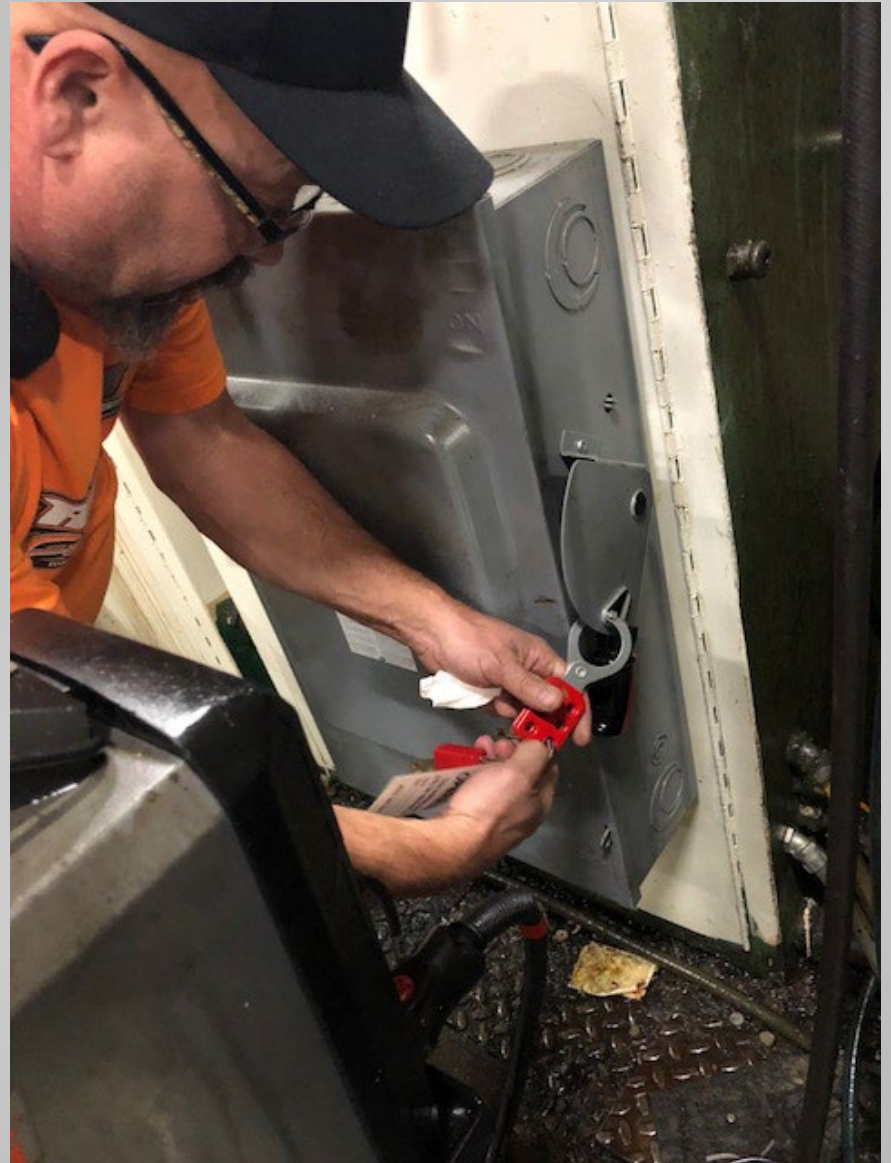
Wipe Die Clean of Oil and Metal Debris



Pull the Press
Safety Stop Block
out of Press Bed
and place it back
on the Press



Remove Lockout- Tagout from Power Supply



Power Press back ON



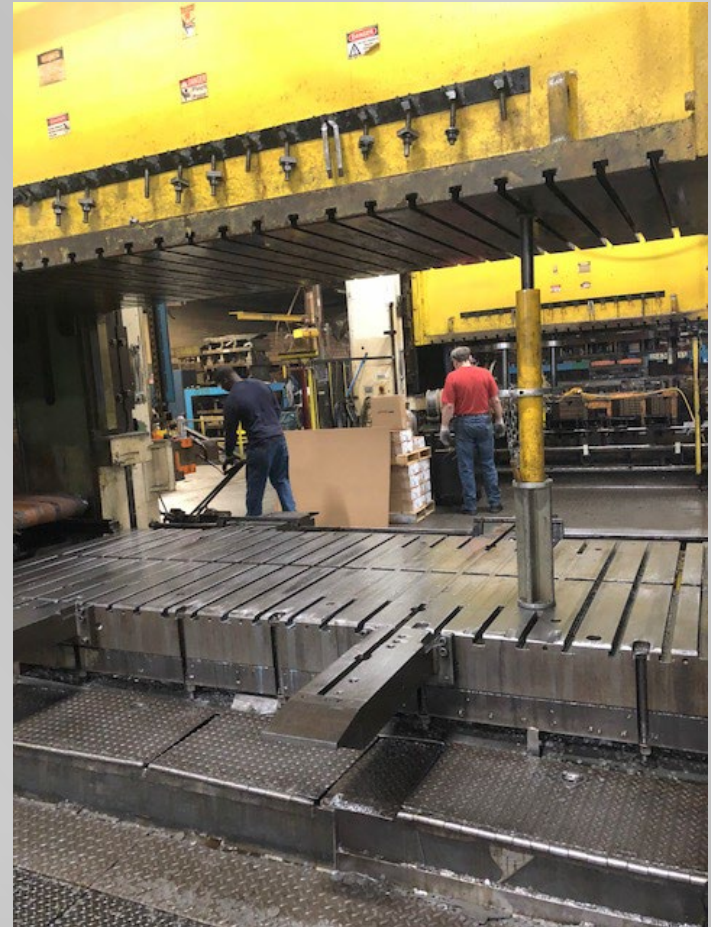
Raise the Slide (Ram) up

-use the Ram
adjustment key and
Button marked “slide
up.



Look in through the Die

- Make sure that the die is clear of harmful objects or debris left in the die





Notify others of Upcoming Actions

- Call out, “Coming Down”
- Use loud and clear commands
- Make sure other team members can hear you
- Make sure others acknowledge with “Clear”
- Good communications is the key to safety



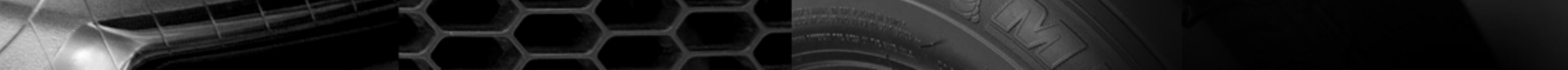
Inch the Press down through the Bottom of the Stroke

- Keep watching to insure no one approaches the press

Unbolting the Die from the Press

- Unbolt the die from the press
- Visually check and make sure all the bolts have been removed
- Call out, “All Bolts Out”
- Get acknowledgement that all bolts are out, “OK”





Inch the Press up easily and slowly until Separation occurs between the Die and the Ram

- After separation, take the Ram to Top Dead Center
- Zero Degrees
- Go slowly and carefully
- Watch for problems and stop if need be

Use the Tow Motor
and remove the Die
from the Press Bed



A close-up photograph of a car's front grille and tire. The grille features a honeycomb pattern, and the tire has a visible tread pattern. The image is partially obscured by a yellow horizontal bar at the top.

Use the proper tow motor to pull the die out of the press

If using the Silent Hoist (Oversized Tow Motor)

- The Operator must have regular Tow Motor certification to operate the Silent Hoist.
- Be aware of weight limits
- Stay focused on the surroundings
- The Silent Hoist has blind areas
- Have a spotter on the ground
- The Weight Limit is 30,000 pounds



Once the Die is removed:

- Pull the Press Safety Stop Block and Apply it to the press bed
- Apply Lockout-Tagout to Power Supply
- Check to insure there is no power to the press by trying to power the Press back on with the “Power On” button
- Clean the Press Bed of All Debris
- Visually check for any Debris



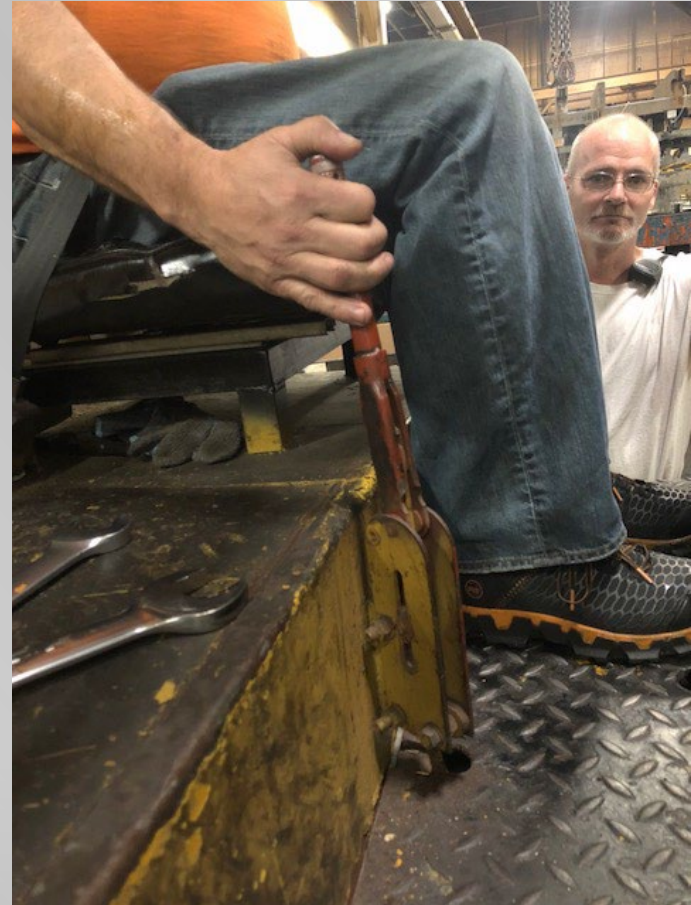
Old Die that has been removed

- Put the Die away on the rack
- Put the Die on the rack that is labeled for that specific die
- Don't leave a mess for the next shift
- Clean up any oil leaks on the path to and from the rack



Putting the New Die in place (Tow Motor)

- Find the proper die
- Remove it from the die rack
- Approach the press slowly and cautiously with the tow motor
- Tow Motor driver should apply the emergency brake
- Place the Tow Motor in Neutral position
- Raise the Die to the proper height (eye level)



Putting the New Die in Place (Die Setter)

- Locate the Long-Handled Die Scraper
- Use the Long-Handled Die Scraper from a safe distance
- Remove debris from the bottom of the die
- When finished, call out to the Tow Motor driver “Clear”
- This signals to lower the die



Putting the New Die in place

- Tow Motor driver lowers the die down
- Enter the Press bed with the die
- Set the die slowly and gently on the press bed
- Locate the Center locaters
- Locate the Die Feet Center in the T slots
- Carefully remove the Tow Motor from the Die





Checking the New Die

- Check the top of the Die for debris and the Stock Strip
- Remove any debris
- Check the lower half of the Die for flatness and gaps
- If the Die has gaps or is not flat, repeat the steps of putting the New Die in place

Getting ready for operations

- Remove Press Safety Stop Block from Press Bed
- Put the Press Safety Stop Block back on the outside of the Press
- Remove Lockout-Tagout from Power Supply
- Power the Press back ON

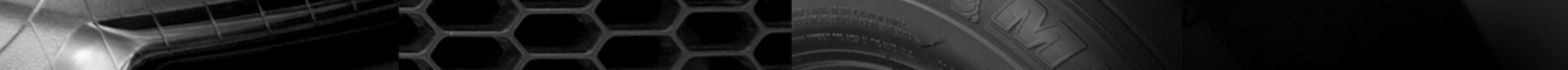


Setting Proper Shut Height

**MEASURE FOR PROPER SHUT
HEIGHT WITH AN ADDITIONAL ½
INCH CLEARANCE**

**ADJUST RAM BY USING THE SLIDE KEY
AND BUTTON**



A close-up photograph of industrial machinery, showing a metal die with a hexagonal pattern and a ram. The image is partially obscured by a dark overlay at the top.

Closing the New Die for Mounting to the Ram and Press Bed

- Call out, “COMING DOWN”
- Get acknowledgement, “CLEAR”
- Bring Ram down slowly to meet the top of the Die
- Listen for sounds such as metal breaking, catching, or rubbing
- If any sounds or smoke rise from the die STOP and get the supervisor and Tool & Die maker
- Stroke the Die and Ram through the bottom, past 180 degrees, to between 185 and 200 degrees

Bolting up the Die

- Bolt up Die to Ram and Press Bed
- Call out, “ALL TIGHT”
- Acknowledgement from others, “ALL TIGHT AND CLEAR”
- Visually check all bolts are in and tight
- Bolt safety is critical to prevent injury



Bolt Safety

- High priority when bolting a metal-forming die to a press
- Check EVERY bolt for stretches
- Check EVERY bolt for anything that would not allow a bolt to be securely tightened down.
- Make sure the all-thread is through the T-nut no less than halfway
- AND
- Make sure the all-thread is not past the bottom of the T-nut
- If a bolt is not fastened properly, a sheared or flying bold could cause SEVERE INJURY or DEATH





Raising the Ram

- Raise the Ram to Top Dead Center
- Zero Degrees
- Adjust Shut Height according to Die Lead Specifications
- Apply Press Safety Stop Block to Press Bed
- Apply Lockout-Tagout to Press Power Supply
- Make sure the Press has NO Power
- Press Power Button ON to check

Stencil

- Removable Die Block that has numbers that identify the part number, running Julien date, and year



Stencil

- Remove Stencil from Die (if applicable)
- Apply any Oil Lines or Sensor Cords, according to Die Specifications found on the Die
- Bolt new Stencil back on to Die (if applicable)



Powering Back Up

- Remove Die Block from Press Bed
- Plug the Die Block back into the Press in the proper place
- Removed the Lockout-Tagout from the Power Supply
- Power the Press back ON
- The Die change is complete



In Summary:

- Know the terminology
- Know each step of the process
- Go slow and make sure it is right
- Make sure to follow safe procedures every step of the way
- Keep all equipment clean and in good repair

