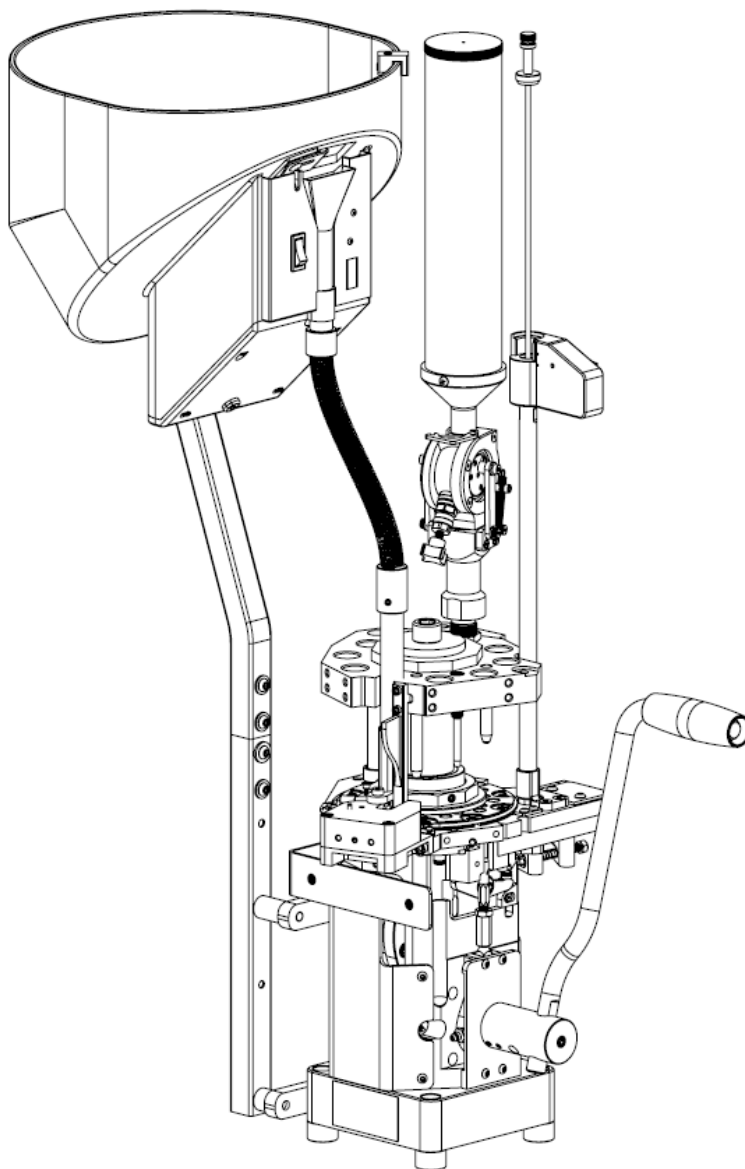




Mark 7® Evolution™

User Manual V 2.0



Read this manual. Understand all safety and operating instructions. Failure to comply with the warnings and instructions may result in serious injury, illness or even death.



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Important Safety Instructions

Read this manual completely prior to installation and operation. Understand all safety and operating instructions. Failure to comply with the WARNINGS and instructions may result in serious injury or death. WARNINGS throughout this manual will be symbolized by the yellow WARNING symbols seen below.



WARNING – Activities using the Mark 7® Evolution™ are inherently dangerous and may lead to injury and even death. Actions as a result of using the Mark 7® product are solely the responsibility of the user – if you get injured through the reloading process or through the use of ammunition as a result of the reloading process it is your fault.



WARNING - Mark 7® equipment should only be operated by trained personnel that follow all safety precautions. Failure to do so could result in serious injury or death.



WARNING – Never operate the Mark 7® Evolution™ while impaired.



WARNING – Never operate the Mark 7® Evolution™ without using high quality brass and always use sufficient lubrication on your brass while operating the Mark 7® Evolution™.

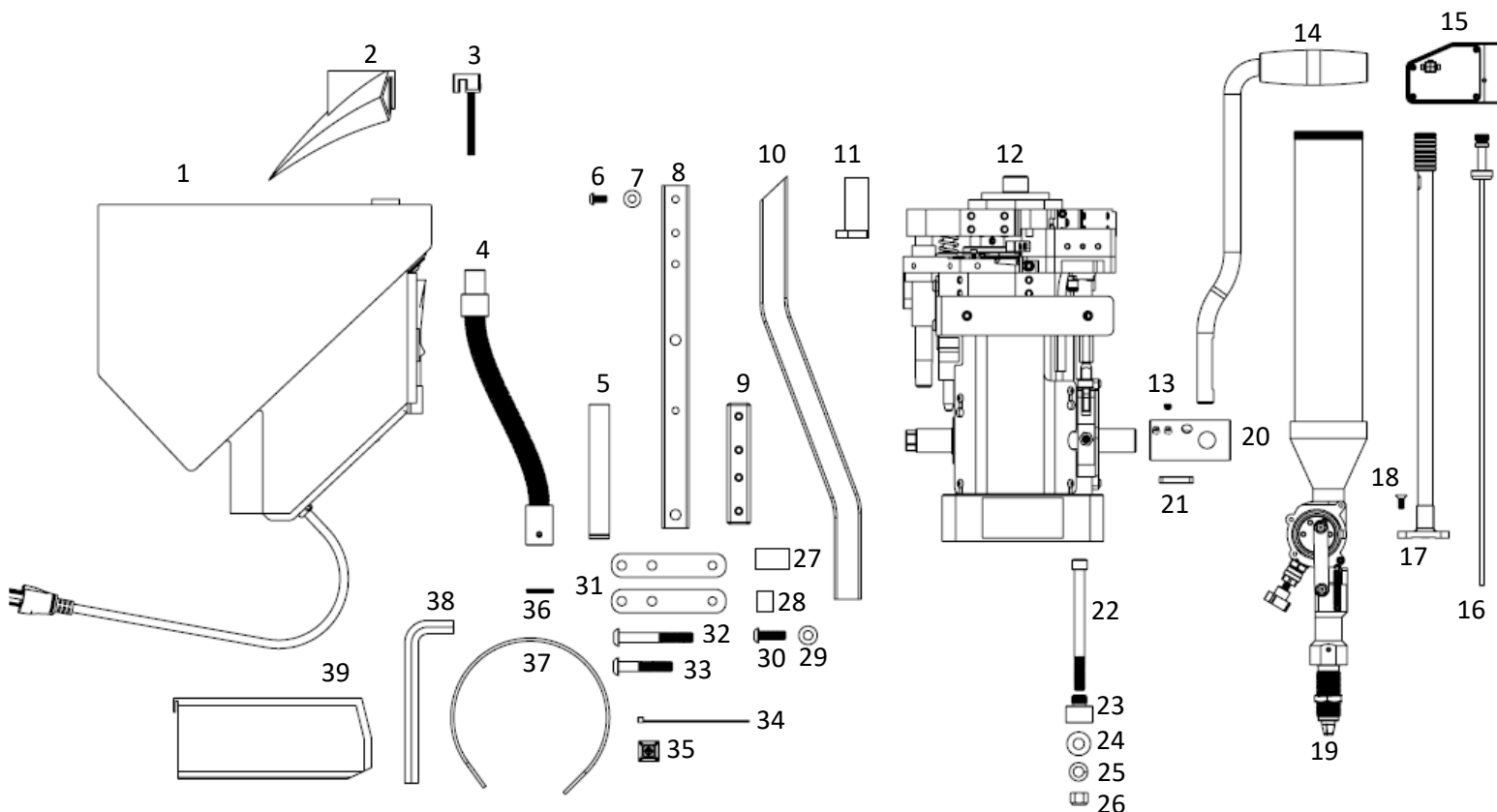


WARNING – Always wear protective eyewear to protect eyes from being injured. Flying debris may result when using this equipment. Always wear protective clothing that covers arms, legs and neck to protect from injury. It is the responsibility of the user to ensure that appropriate protective clothing and equipment are used to provide protection from those hazards to which personnel are exposed or could be exposed while working with this product. Failure to do so could result in serious injury or even death.



Packaging Contents

The Evolution™ press is packaged in a single corrugated box (26" X 21" X 16"). The main unit is heavy (60+ lbs.) Please use caution when handling and removing the Main Unit from the packaging.



Item No.	Description	QTY	Item No.	Description	QTY
1	Case Feeder with Caliber Plate	1	21	Main Shaft Crank Key	1
2	Case Feeder Ramp	1	22	3/8"-16 x 4 1/2" Socket Cap Screw	4
3	Case Feeder Spring Flipper Assy	1	23	Base Plate Feet	4
4	Case Feeder Output Spring Assy	1	24	3/8" Screw Washer	4
5	Case Drop Tube	1	25	3/8" Screw Lock Washer	4
6	1/4"-20 x 1/2" Screw	8	26	3/8"-16 Nut	4
7	1/4" Screw Washer	8	27	Spacer 1 1/4" Long	1
8	Case Feed Pole Lower	1	28	Spacer 5/8" Long	1
9	Case Feeder Pole Connector	1	29	5/16" Screw Washer	4
10	Case Feed Pole Upper	1	30	5/16"-24 x 3/4" Screw	4
11	Case Feed Adapter	1	31	Case Feeder Pole Mounting Bracket	2
12	Evolution Main Unit	1	32	3/8"-16 x 2 3/4" Screw	1
13	1/4"-20 x 3/16" Set Screw	2	33	3/8"-16 x 2" Screw	1
14	Handle	1	34	Zip Tie	4
15	Low Primer Alarm Sensor	1	35	Cable Tie Holder	4
16	Primer Backup Rod	1	36	Case Retention Spring	2
17	Primer Tube Stack Assy	1	37	Shell Plate Retention Spring	2
18	10-32 x 1/2" Flat Head Screw	3	38	1/2" Allen Key	1
19	Mechanical Powder Measure	1	39	AkOffload Bin	1
20	Shaft Handle Adapter	1			



Unpacking instructions

Remove the Evolution™ Main Unit and place on a clean work surface.



WARNING – The Evolution is shipped with the **Tool Head** in the down position secured with a zip tie. The **Tool Head** is spring loaded with a heavy-duty spring. Before cutting the zip-tie place an 11/16" wrench on the **Main Shaft** to secure the **Main Unit** and gently raise the **Tool Head** after the zip tie has been cut.

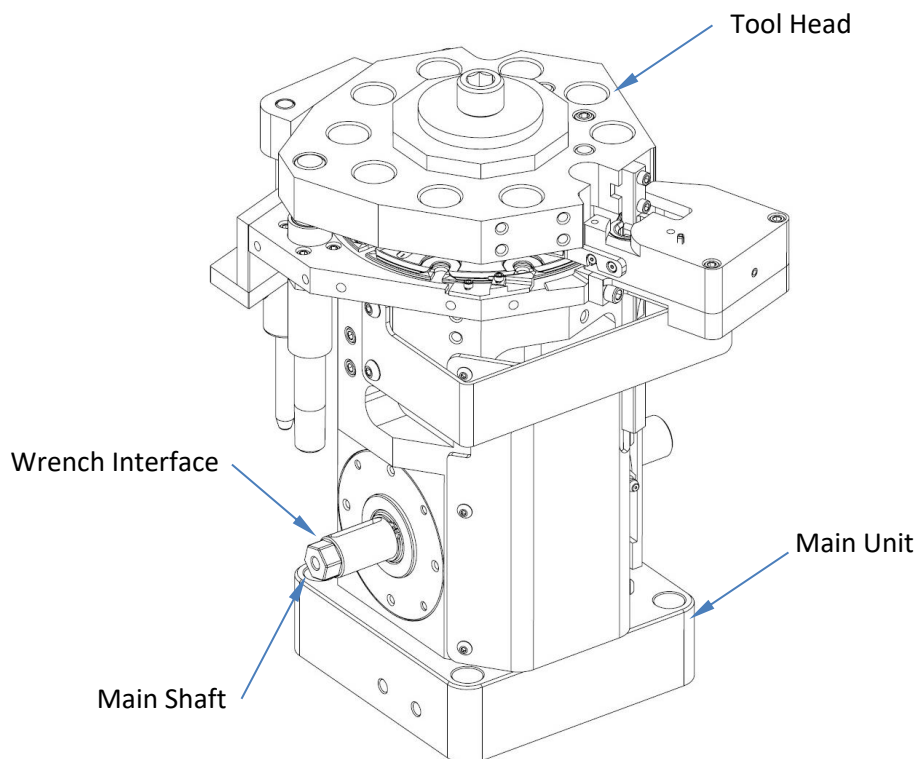


Figure 1: Cutting Zip tie securing Tool Head

Once the main unit is unpacked and placed on a workbench the Evolution™ press can be setup and fitted with the accessories. We recommend the following setup order:

1. Installing Base Plate Feet page 6
2. Handle Installation and Workbench Mounting page 7
3. Case Feeder Installation page 9
4. Installing Case Feeder Spring Flipper Assy page 11
5. Case Feeder Adapter and Drop Tube Assy page 12
6. Installing Primer Tube Stack Assy and Low Primer Alarm page 14
7. Powder Measure Installation..... page 16



Installing Base Plate Feet

Thread in **Base Plate Feet** into **Evolution Main Unit Base Plate**. Apply grease to the threads for easy installation.

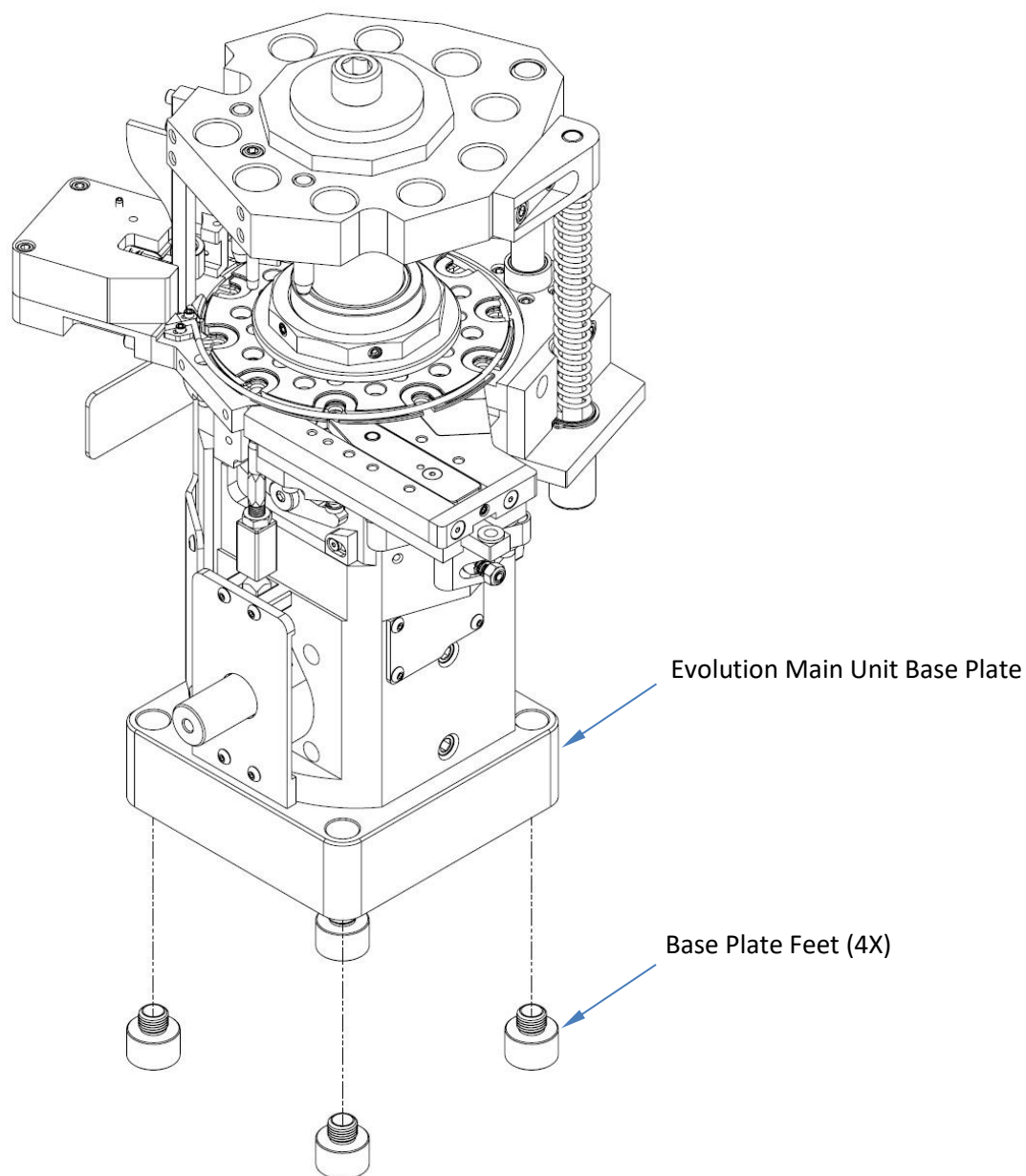


Figure 2: Installing Base Plate Feet



Handle Installation and Workbench Mounting

Next determine the location to mount the Main Unit. We recommend you install the **Handle** first and lower the **Tool Head** to the down position to make sure the **Handle** clears the leading edge of the bench. The Handle can be installed on either the right side or left side of the press. Insert **Main Shaft Crank Key** into **Main Shaft** key slot as shown in **Figure 3**. Slide **Shaft Handle Adapter** over **Crank Key** and **Main Shaft**. Lock in place with the **Set Screws (2X)**. Insert the Handle Assy into Handle Adapter and secure in position with the **Set Screw**.

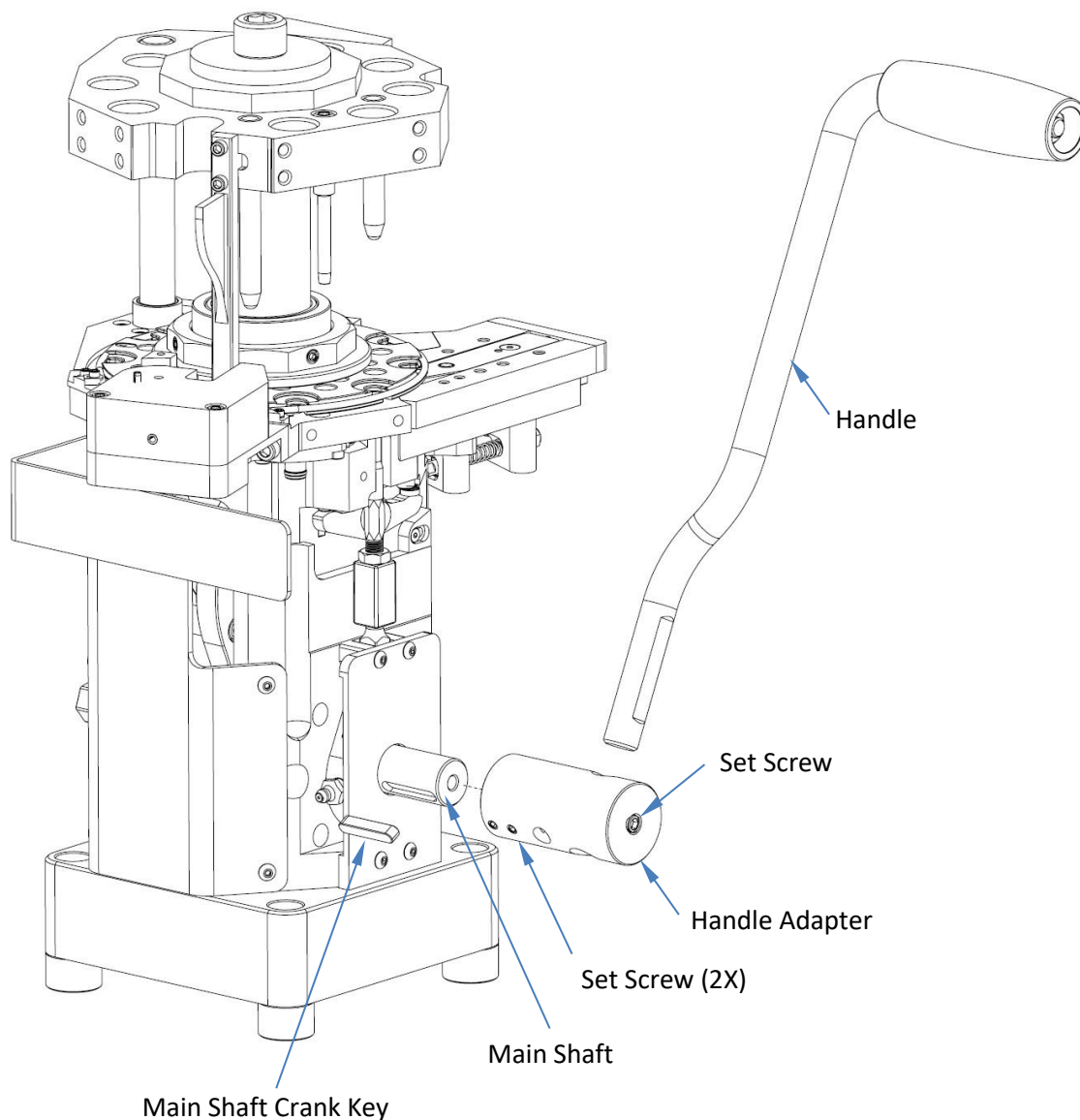


Figure 3: Installing Handle Assy

Position the press so the handle, while tool head is in the bottom position, does not contact the leading edge of the workbench. Using the machine as a template mark the 4-hole locations. For reference the



baseplate mounting holes are 5" square and need be large enough to clear a 3/8" -16 socket head screw. **Mounting Hardware is provided with the press.**

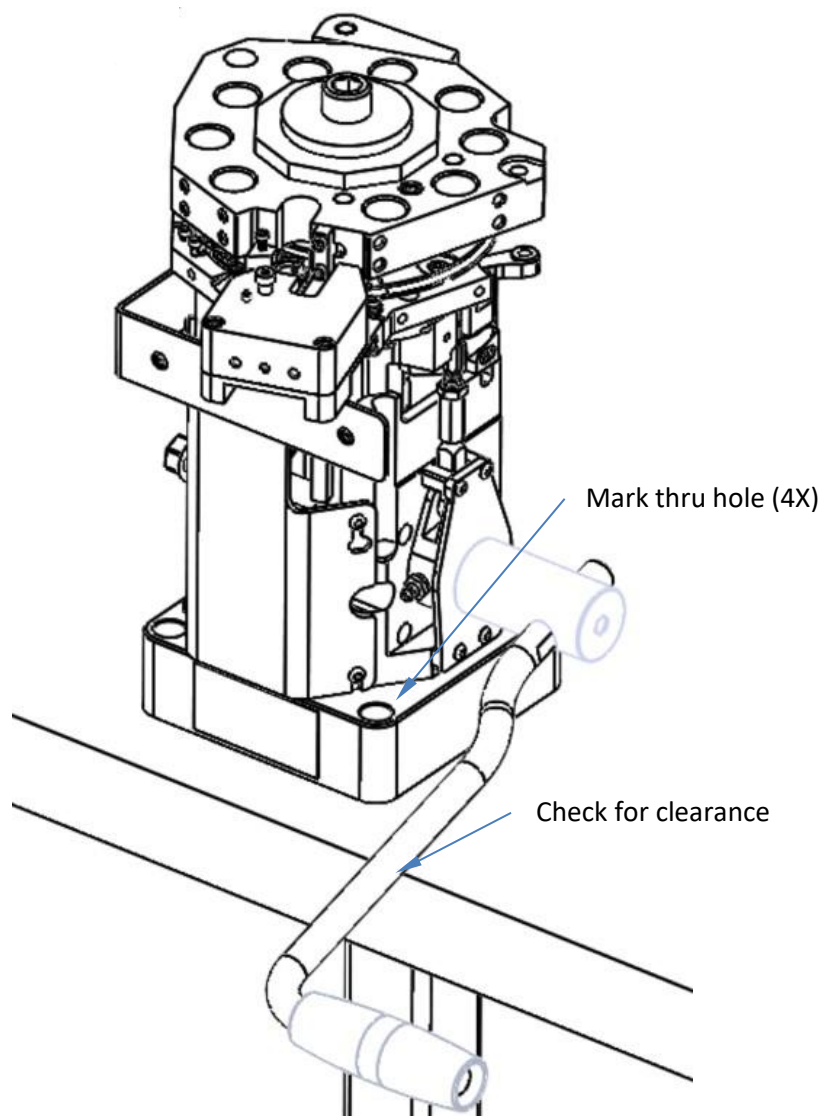


Figure 4: Mount to workbench with the machine orientated as shown.



Case Feeder Installation

During the initial assembly leave all screws loose. Wait until the entire assembly is together before doing the final tightening. Install the **Case Feeder Mounting Pole Brackets (2X)** to the **Evolution Main Unit**. Assemble the **Case Feed Pole Lower** to the **Case Feeder Mounting Pole Brackets** with the **Screws** and **Spacers** as shown in **Figure 5**. Assemble the **Case Feed Pole Upper** to **Case Feed Pole Lower** using **Case Feed Pole Connector**. Tighten all screws.

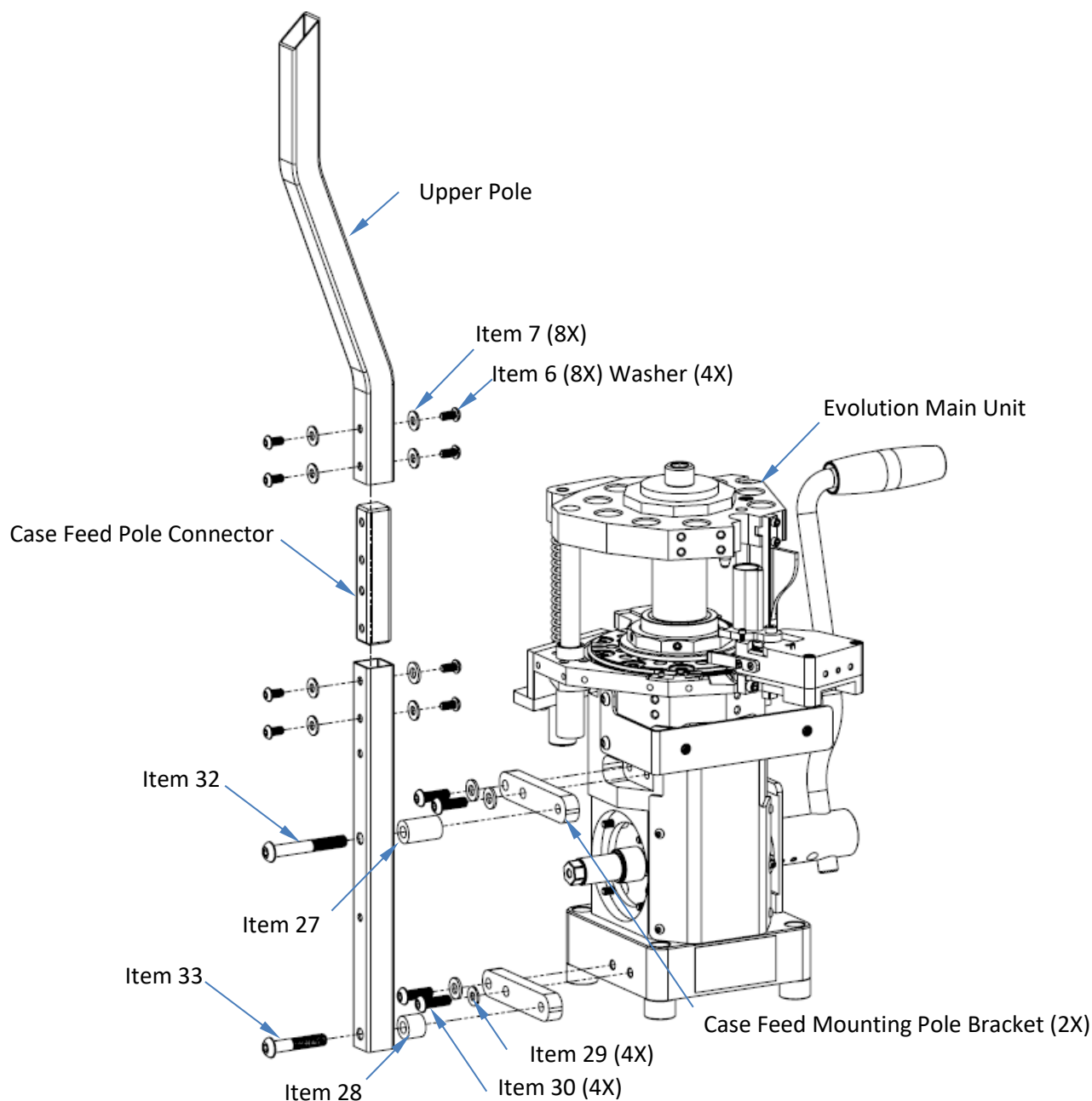


Figure 5: Case Feeder Pole Mounting Hardware



Place the **Case Feeder with Caliber Plate** onto **Case Feed Pole Upper** and slide it down until it is fully seated. Insert the **Caliber Plate** into the bowl as shown below. There are 4 Caliber Plates SM P (Small Pistol), LG P (Large Pistol), SM R (Small Rifle), LG R (Large Rifle.) Confirm the correct plate is included with the machine caliber.

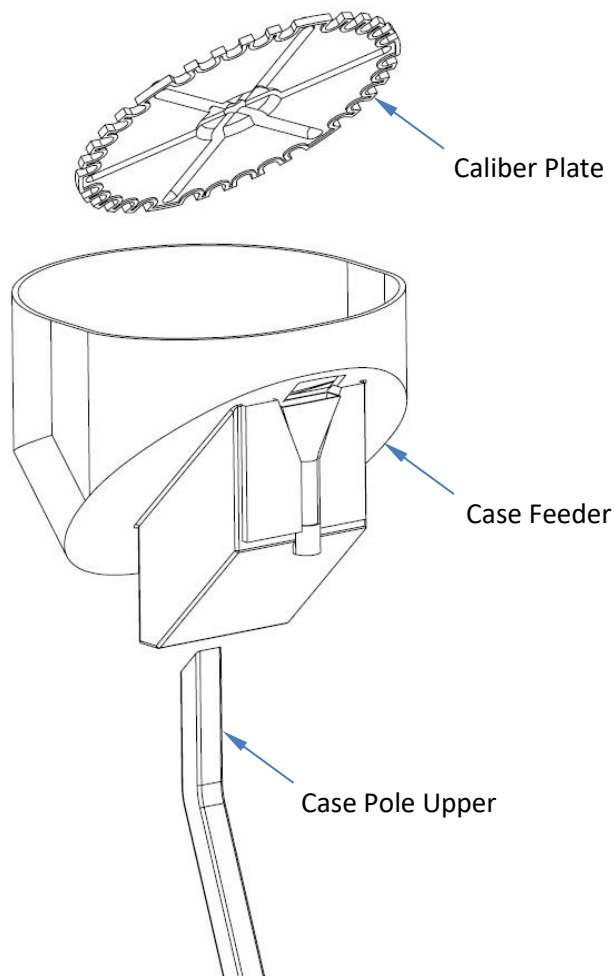
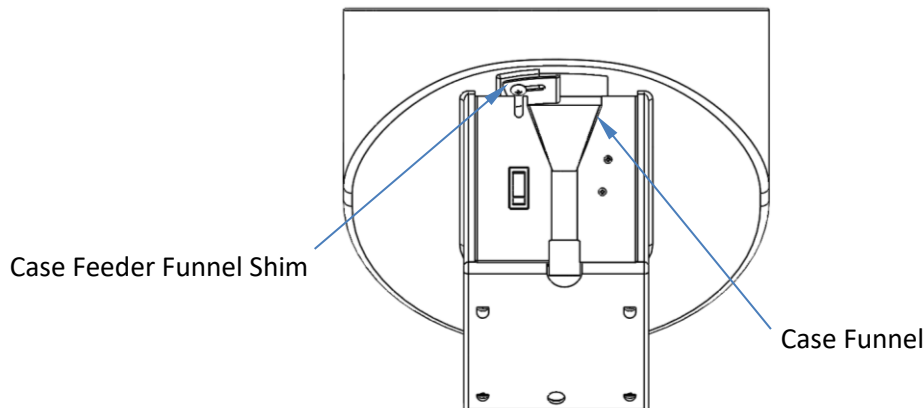


Figure 6: Installing the Case Feeder with Caliber Plate



Case Feeder Funnel Shim Adjustment: At the opening of the **Case Funnel** there is a **Case Feeder Funnel Shim** that needs to be adjusted to the length of the case to prevent jams in the funnel. For standard pistol cases keep the opening small (shim to the right.) For tall pistol or rifle move the shim to the left for a larger opening.



Installing Case Feeder Spring Flipper Assy

Mount the **Case Feeder Spring Flipper Assy** maintaining a 30 degrees angle in the approximate position shown below. This prevents cases from getting picked up on their side and clogging the case funnel or entering the funnel upside-down. Note: do not over-tighten the case feed flipper mount.

Instead of the **Case Feeder Spring Flipper Assy** you may need to install the **Case Feeder Ramp**. It is caliber dependent and you choose which option works best for you.

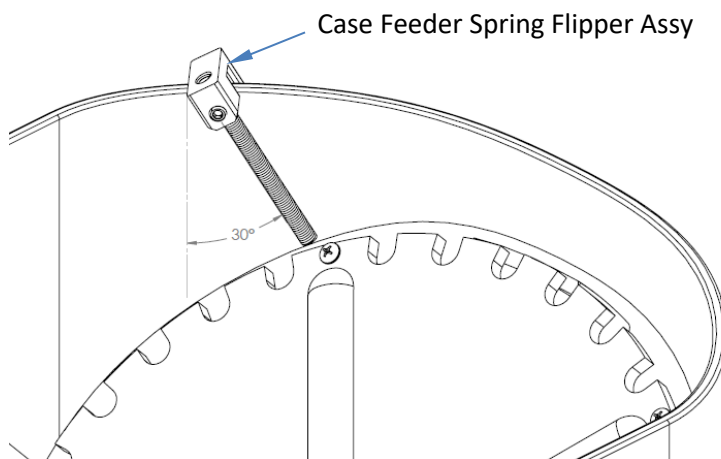


Figure 7: Case Feeder with Spring Case Feeder Flipper Installed

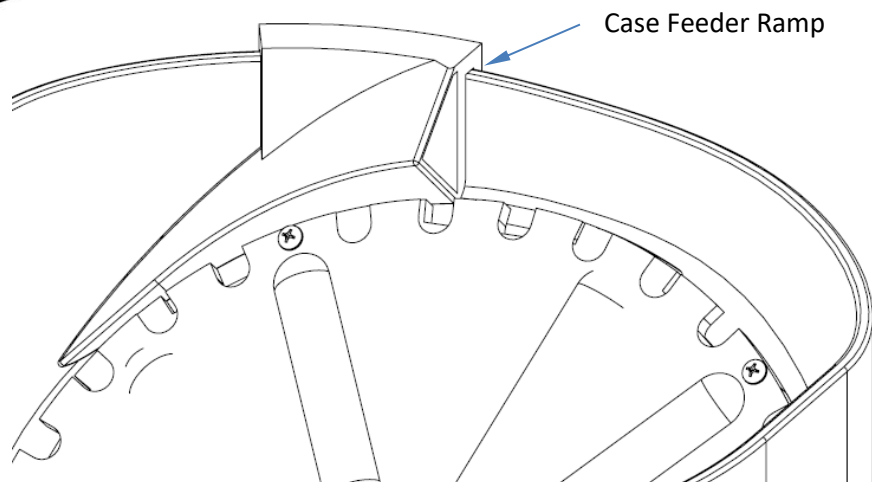


Figure 8: Case Feeder with Case Feeder Ramp installed

Case Feeder Adapter and Drop Tube Assy installation

Install the Case Feed Adapter with shoulder screw and socket cap screw provided to the Case Feed Upper Housing. The Case Feed Adapter is designed to rotate out 90 degrees for quick removal of cases in the Drop Tube assy.

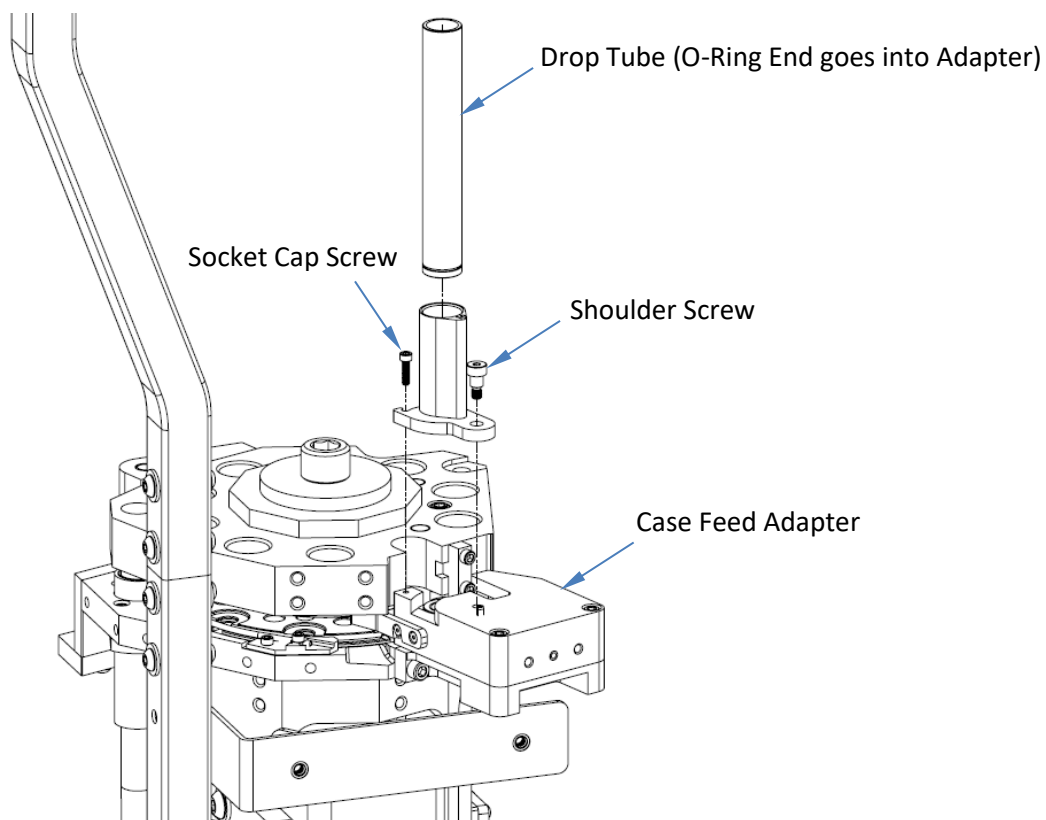


Figure 9: Case Feed Adapter installation.



Install the **Case Feeder Output Spring Assy** between the **Case Feeder Housing** and the **Case Drop Tube** as shown below. **Note:** You may need to thread the spring in/out of the fitting ends to achieve the proper spring tension/slack.

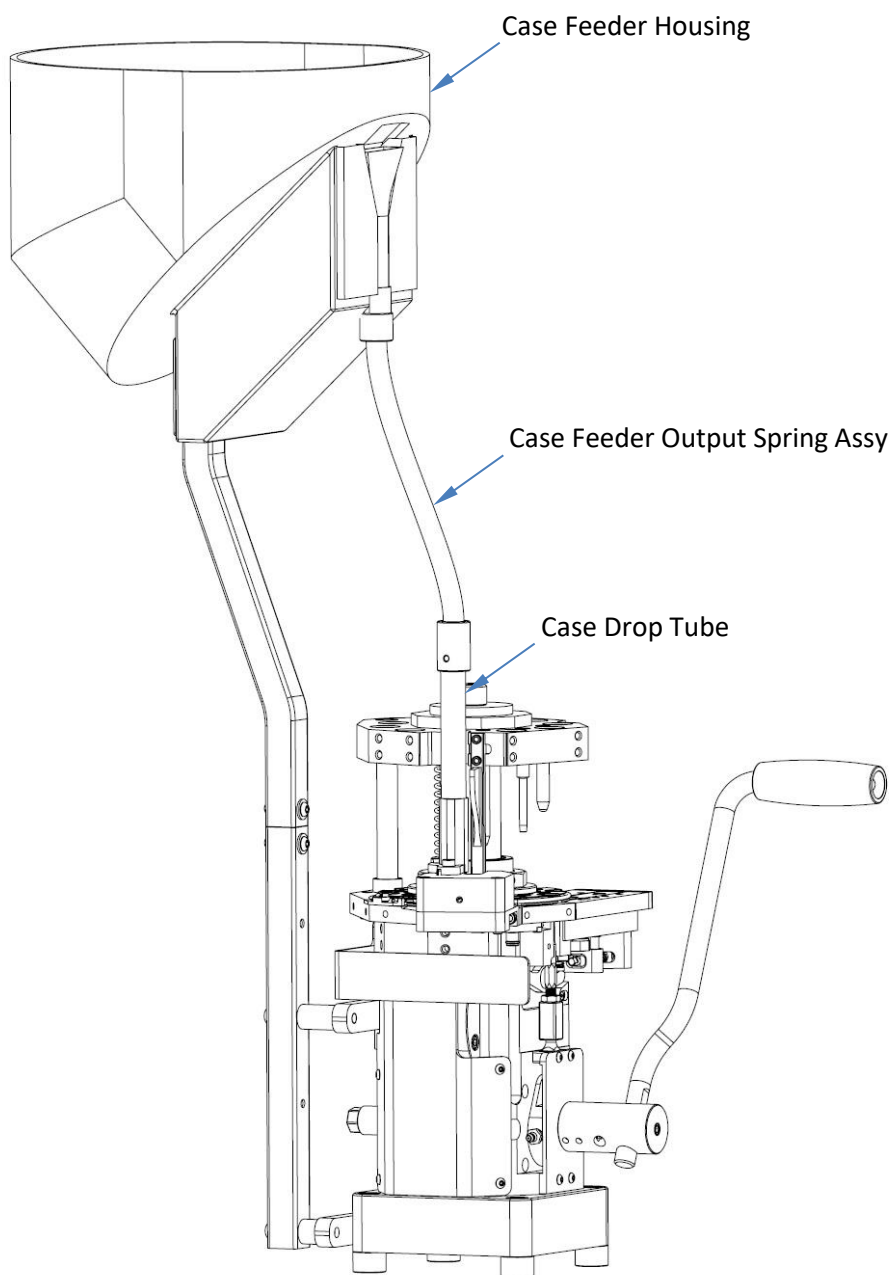


Figure 10: Case Feeder Assy Installed



Installing Primer Tube Stack Assy and Low Primer Alarm

During the initial assembly leave all screws loose. Wait until the entire assembly is together before doing the final tightening. Using the **10-32 Flat Head Screws (3X)** mount the **Primer Tube Stack Assembly** to the **Primer Housing**.

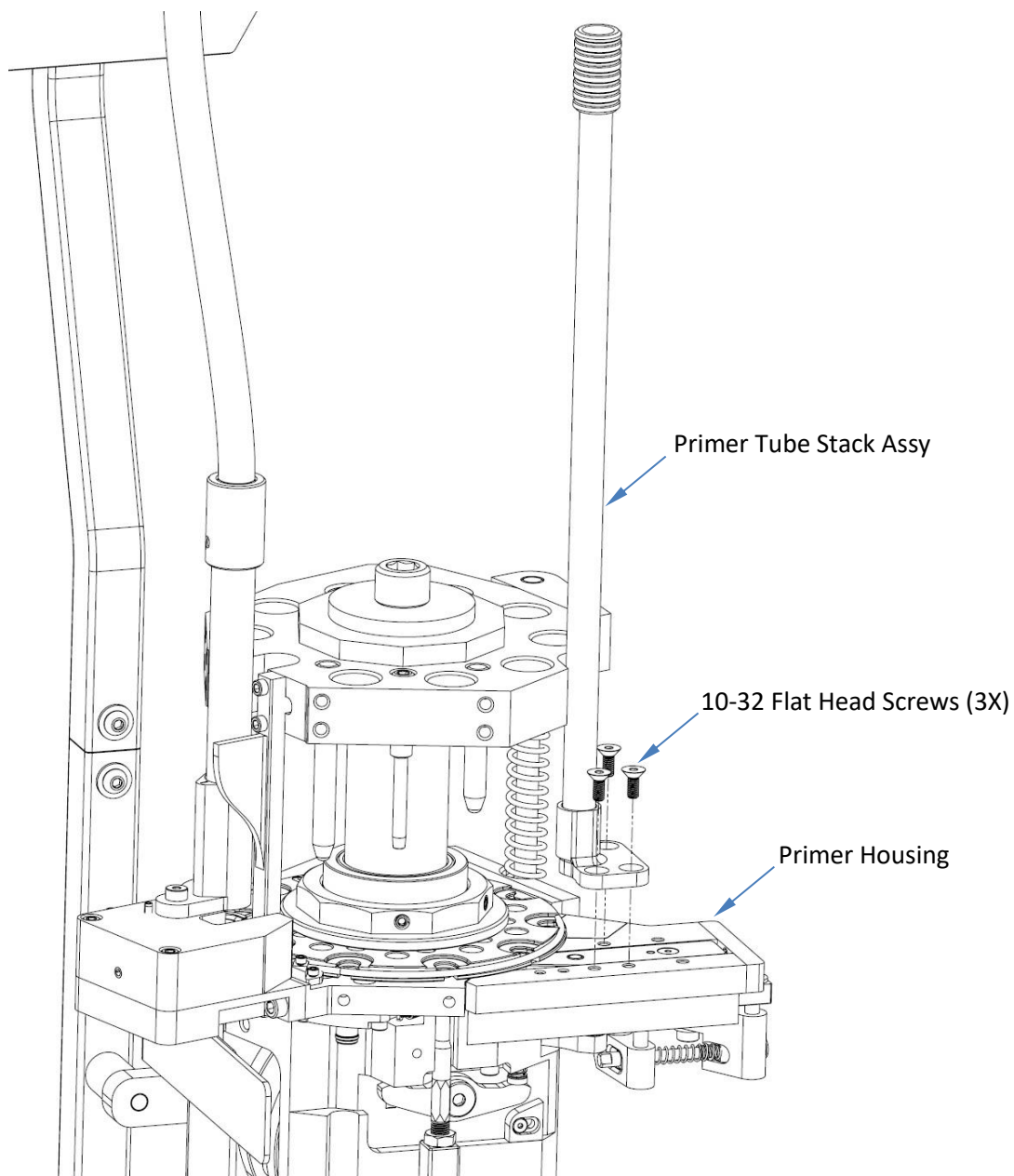


Figure 11: Installing Primer tube Assy



Install the **PrimerSense®** onto the **Primer Tube Stack Assembly**. Then install the **Primer Back Up Rod** into the **Primer Tube Stack Assembly**. Once the sensor is oriented in the desired position tighten the **Set Screw** to lock in place. Back up rod to be installed after loading primers. If installed without primers, press will not index.

Note: When connecting the Evolution™ to the autodrives platform remove the battery before powering on the machine.

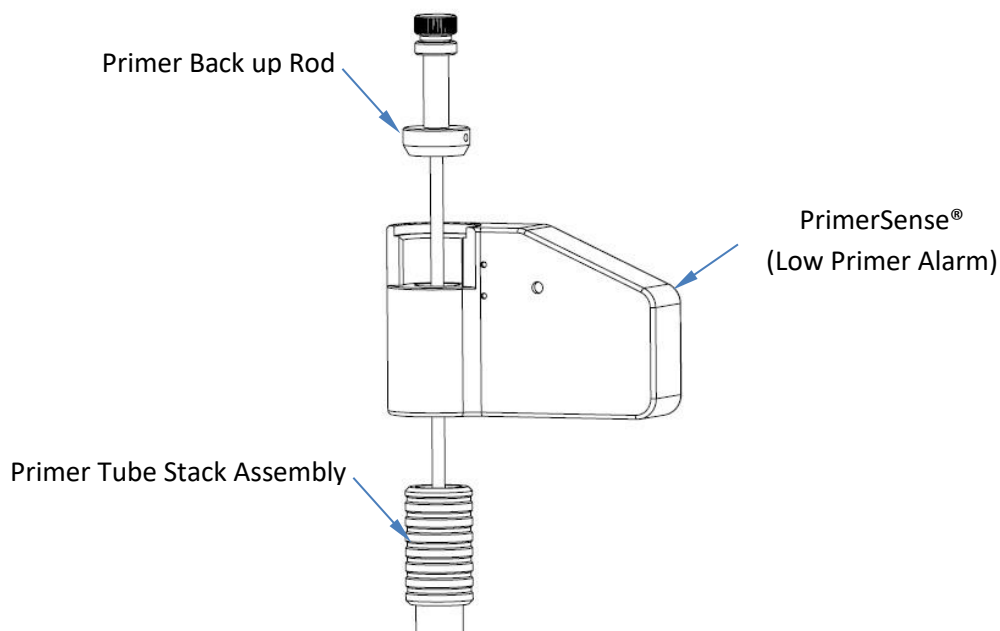


Figure 12: Low Primer Sensor (Front) exploded view

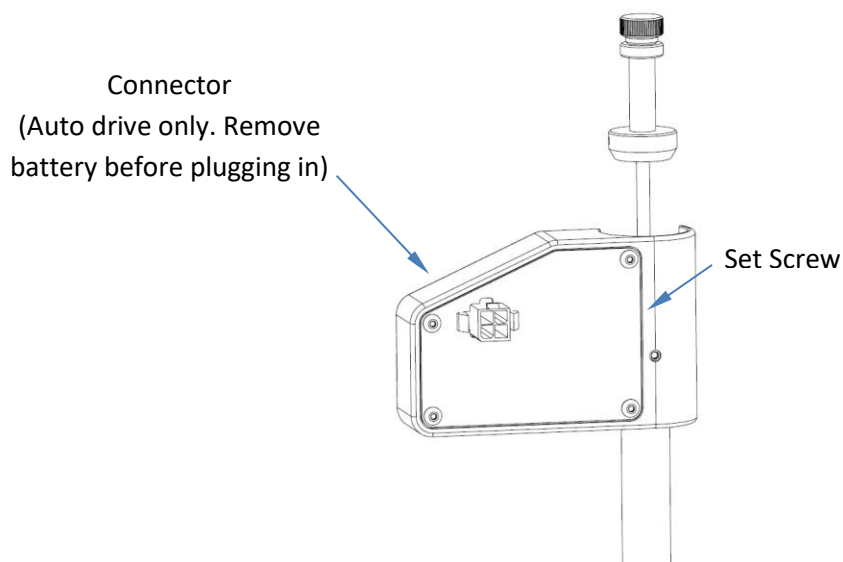


Figure 13: Low Primer Sensor (Rear)

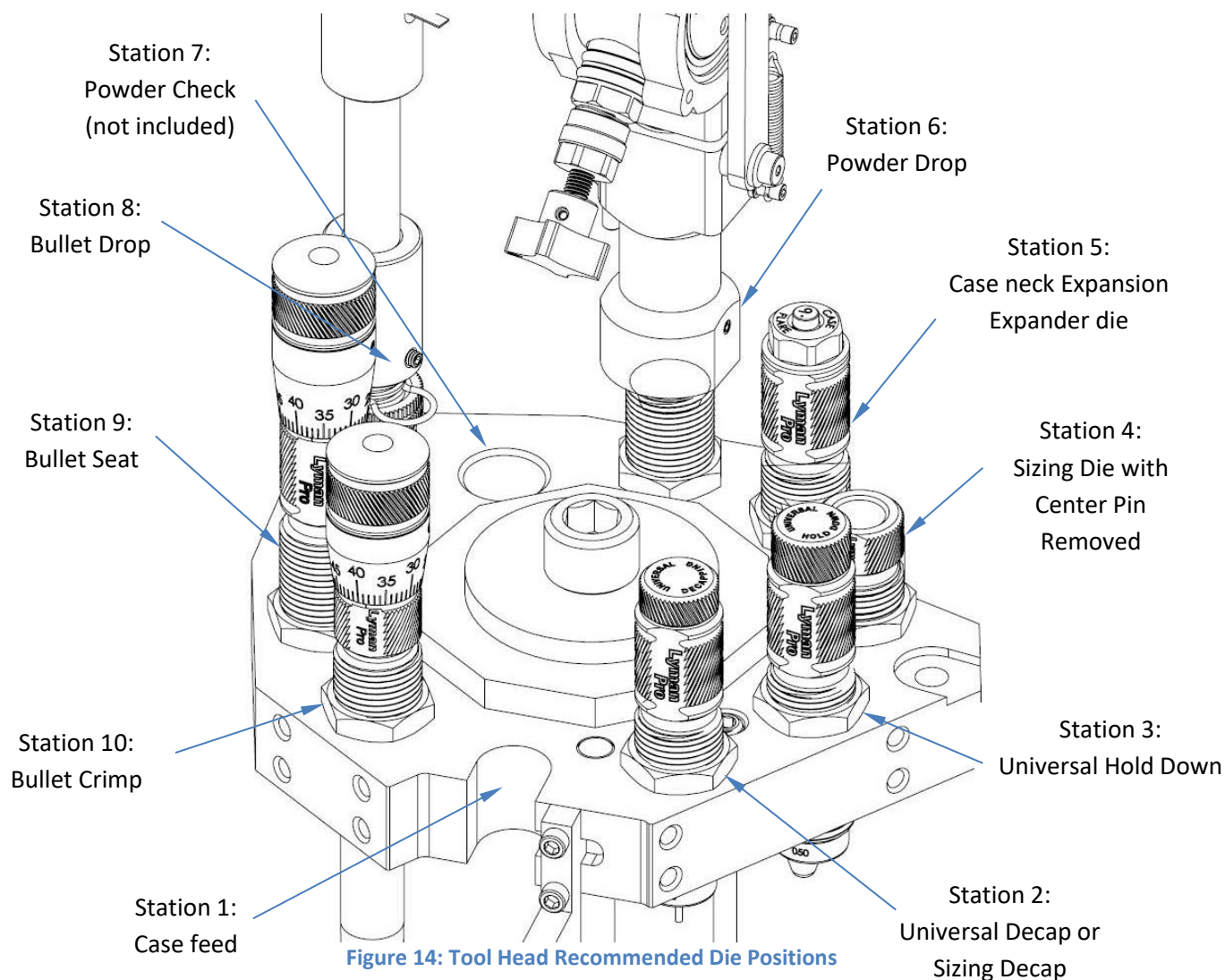


Powder Measure Installation

Assemble Powder measure per insert instructions included in powder measure box. Install into station 6 recommended station per Figure 15.

Tool Head Recommended Die Positions

With 9 available Tool Head die locations there are many setups the Evolution™ can be configured / customized for to achieve your loading/processing requirements. We recommend the Following setup for standard processing and loading in one pass.





Operating Instructions

Once the machine is fully assembled and setup, we recommend the following steps to configure the press for operation

- Determine intended use of machine (processing, loading, processing/loading combined and setup press accordingly – please feel free to contact us to discuss your requirements.
- Thread the dies into Tool Head but do not set final adjustments at this time – keep dies partially backed off.
- Cycle the machine a few times without components to ensure smooth operation and is indexing properly.

1. Case Feed – Universal Decap or Sizing/Decap – Station 1 and 2

Universal decap die can be used as an alternative in station with sizing/decap die. Warning: If universal decap die is set too far low, it can cause primers to jump and cause primer seating issues.

Add cases to the Case feeder in the caliber that you are loading. Before powering on we recommend detaching case drop tube from the press and directing it into a bucket and running the case feeder continuously while watching the cases inside the bowl. Adjust the clutch in the Case feeder plate and the location of the spring flipper as needed. On the front of the case feeder there is a metal shim that adjusts the case funnel mouth opening. Keep this opening small for pistol and large for rifle.

Once the Case feeder is dialed in and the cases are feeding properly re-connect the case drop tube for the press and run a few cases into the machine. Run cases around the shell plate to ensure proper feeding. Install the Akro bin provided with the press as the case offload.

Remove the cases from the shell plate and move the Tool head to the down position. Thread the sizing die all the way down so that it just starts to touch the shell plate and lock the die in place. Connect the decapping hose. Always use case lube when re-sizing once fired cases. Run a few cases through the sizing die and check cases using a sizing gauge to confirm they are being fully sized and decapped properly.



2. Swage Setup- Station 3

The Evolution™ is shipped with the swage rod fully backed off in the down position. We recommend to cut an empty case in half (cross-section) and insert it into the shell plate in station 3. **Always use a hold down die over the swaging station and never run the machine without the tool head on to avoid damaging the shellplate during a jam.**

- Move the Tool head to the bottom.
- Lower a swage back up die until the center contacts the bottom of the case. Lower the hold down die a ¼ turn more and lock down.
- Raise the swage rod until the swage rod enters the primer pocket and the shoulder contacts the bottom of the case. Turn ¼ more and lock in place.
- Remove the case used to adjust the rods and install a case that has been previously decapped.
- Perform a cycle with the case in station 3 -then remove and inspect the primer pocket to confirm that the pocket is swaged properly. Adjust as needed.
- We recommend using a primer pocket gauge especially if uses crimped/military brass.

3. Primer Seating

The Evolution™ comes standard with a 100-stack primer tube either configured for SM or LG primers. Primers can be filled manually using a flip tray and primer pick up tube (included) or using a 3rd party vibratory feed accessory to fill pick up tubes. **We recommend using a sizing die in priming station to center case to pin properly.** Follow the steps below when setting up the priming system:

- Insert 5-10 primers initially into the primer tube assy – install backup rod.
- Cycle the press without a case present to ensure proper primer feeding into the slide.
- Pause with the Tool Head in the down position and verify that the primer punch is inserted in the shellplate with a primer.
- Place a case that has been decapped and has a verified primer pocket
- Cycle the press – there will be some resistance as you get to the bottom of the stroke – use caution. Remove the case and check primer insertion depth
- Adjust the primer insertion pin until the proper primer depth is achieved.

There are 3 primer adjustments on the Evolution™ press – refer to Figure 15.

1. Primer Depth – This adjusts the primer insertion depth – Never adjust more than a ¼ of a turn without checking new depth.
2. Primer Punch lower height – This adjustment sets the height of the punch when the primer is fully retracted. It should be flush with the bushing in the primer housing.



3. Primer slide limit- This adjustment sets the location of the slide under the tube stack for primer feeding.

A sizing die with the center removed can be used to hold down the cases in station 4 in order to provide additional support to the cases during primer insertion.

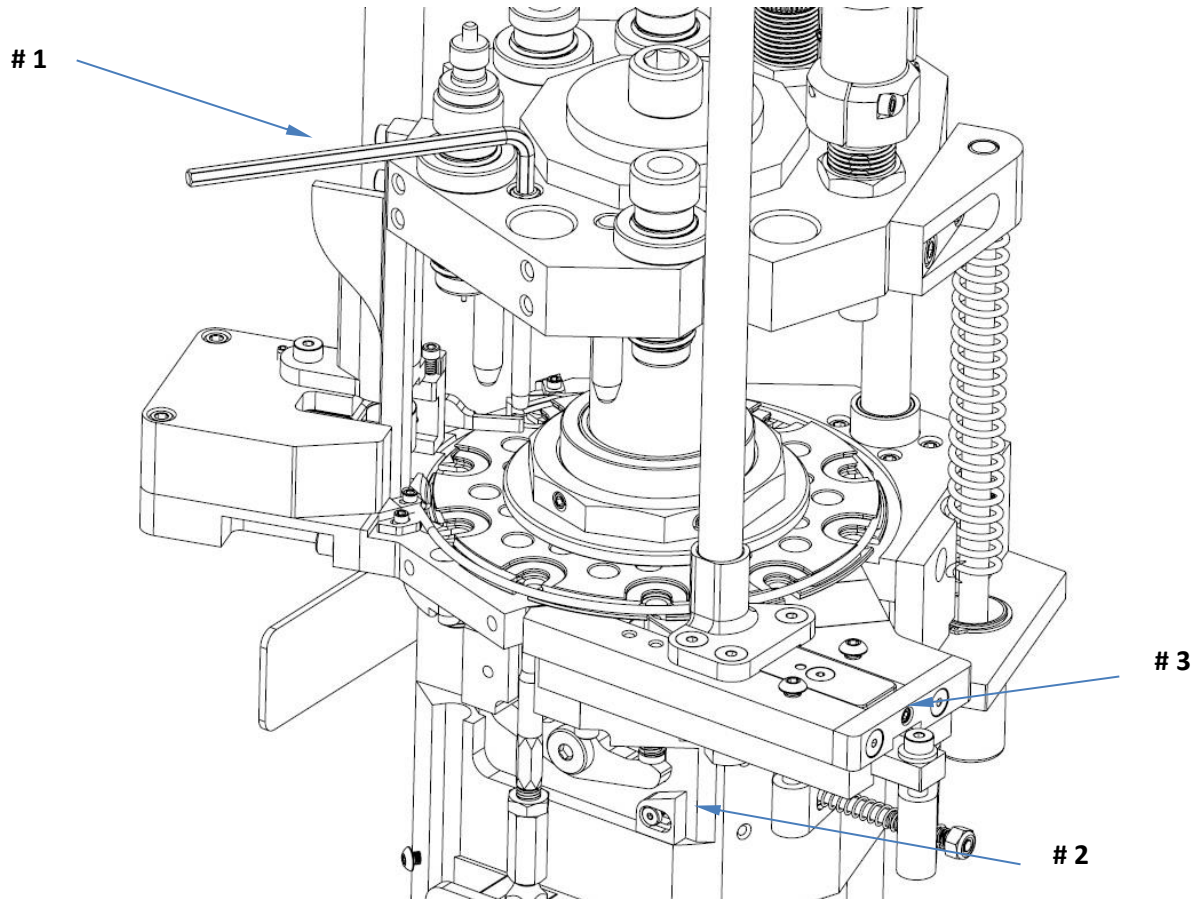


Figure 15: Primer Adjustments



WARNING – Never install more than 100 Primers at once. Always wear protective eyewear and hearing protection when loading primers into the machine and loading. Activities using the Mark 7® Evolution™ are inherently dangerous and may lead to injury and even death.



4. Case Neck expansion

The Evolution™ uses a dedicated station for neck expansion/flare in Station 5. For pistol calibers we recommend using a Lyman Expander die with the Lyman expander powder funnel installed. For rifle there are several 3rd party expansions dies that can be used including the Lee Universal Flaring die with the rifle insert. We recommend doing an initial setup at this point to achieve just enough flare for the bullet to fit inside the case mouth. The final adjustment is best to be dialed in later during the bullet drop setup.

5. Powder Measure Die Height and Powder Charge Adjustment

Install the Powder Measure onto the Tool Head in Station 6. Set the die height so when a case is present the upper assembly lifts up and rotates the drum to the complete dump position – Refer to right image in the figure below. **NOTE: If the Powder Measure die height is not set properly the drum may not rotate fully to the dump position which may cause inconsistent powder charges.**

Before filling the powder hopper with powder setup minimal drop (about 2 grains). To do so move plunger halfway and turn powder adjustment knob all the way in (clockwise) and 5 full turns out (counterclockwise).

- To set the powder charge place a pre-primed case in station 6 under the Powder Measure.
- Perform a single press cycle to actuate the Powder Measure.
- Verify the Adjustment lever completes the full stroke range as shown in the Figure below. If it doesn't adjust die height.
- Remove the case and weigh the charge.
- Empty the case and adjust the charge to the desired level by turning the adjustment knob. Turning clockwise will decrease the charge, counter clock wise will increase the charge.
- Once the desired charge is achieved perform a few dumps – We recommend checking a minimum of 5 dumps to make sure the charge is consistent. **Note: Always discard the first powder dump after making a charge adjustment and make sure to allow for enough drop time for a given load by pausing at the bottom of the stroke before returning the Tool Head to the top of the stroke.**
- Check the die nut and adjustment charge nut for tightness.

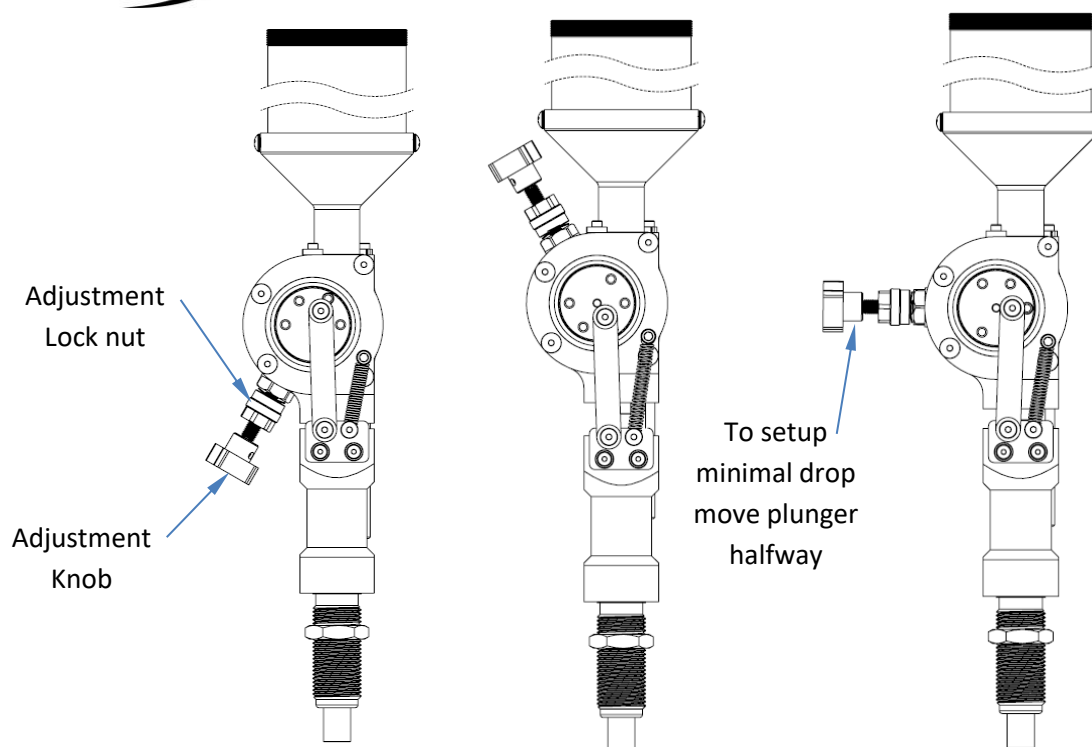


Figure 16: Powder Measure – Fill position (left), Dump position (center), Minimal Drop setup (right)

Additional Flare (optional) for pistol only - when using an internal powder funnel a flare can be achieved by slightly threading the powder measure die lower in the Tool Head. Depending on what type of projectile you are loading adding an additional flare with the powder funnel may give you better results.

6. Setting up Mr.Bulletfeeder and Bullet Drop Assy (optional Accessory)

There are a few adjustments that are critical on the Mr.bulletfeeder to ensure that it's operating properly, further detail on this is located in the Mr.bulletfeeder user manual. We recommend removing the Mr.bulletfeeder spring and running the bullets into a bucket while making the bowl adjustments until the proper adjustments are achieved. The spring tube assembly may need to be cut between the dropper and the drop tube assembly to the correct length for your setup – This is largely dependent on where the feeder is mounted on the case feeder.

There is a delicate interaction between the bullet dropper and the amount of brass flair provided by expander die for pistol. Setting the right amount of flare is critical to reduce bullet topple and to ensure proper bullet seating with every cycle. The expansion die should open the case mouth just enough for the bullet to slip in – the bullet dropper will provide a slight amount of pressure which will keep the bullet in place.



A way to check a properly adjusted is to remove a round from the shellplate after the bullet has been dropped (but not yet seated) and turn the case upside down. If the bullet falls out of the case there is likely too much flare.

Adjust the bulletfeeder drop tube assembly so that a single bullet drops when it encounters a case. If more than one bullet drops it's likely the drop tube assembly is adjusted too low in the Tool Head.

7. Bullet Seating / Crimping Setup

The OAL and crimp can be set in station 9 and station 10. It's always best to set these adjustments with a fully loaded shell plate. Run a few rounds through until consistent OAL are achieved. The station 10 Spring retaining clamp retains the round in station 10 – to remove a casing slightly advance the shell plate a few degrees remove the case then move it back into position.



Mark 7® Evolution™ Recommended Maintenance

Daily recommended service:

- Light weight machine oil indicated interfaces/components.
- Check for main grease points for potential repacking/service.

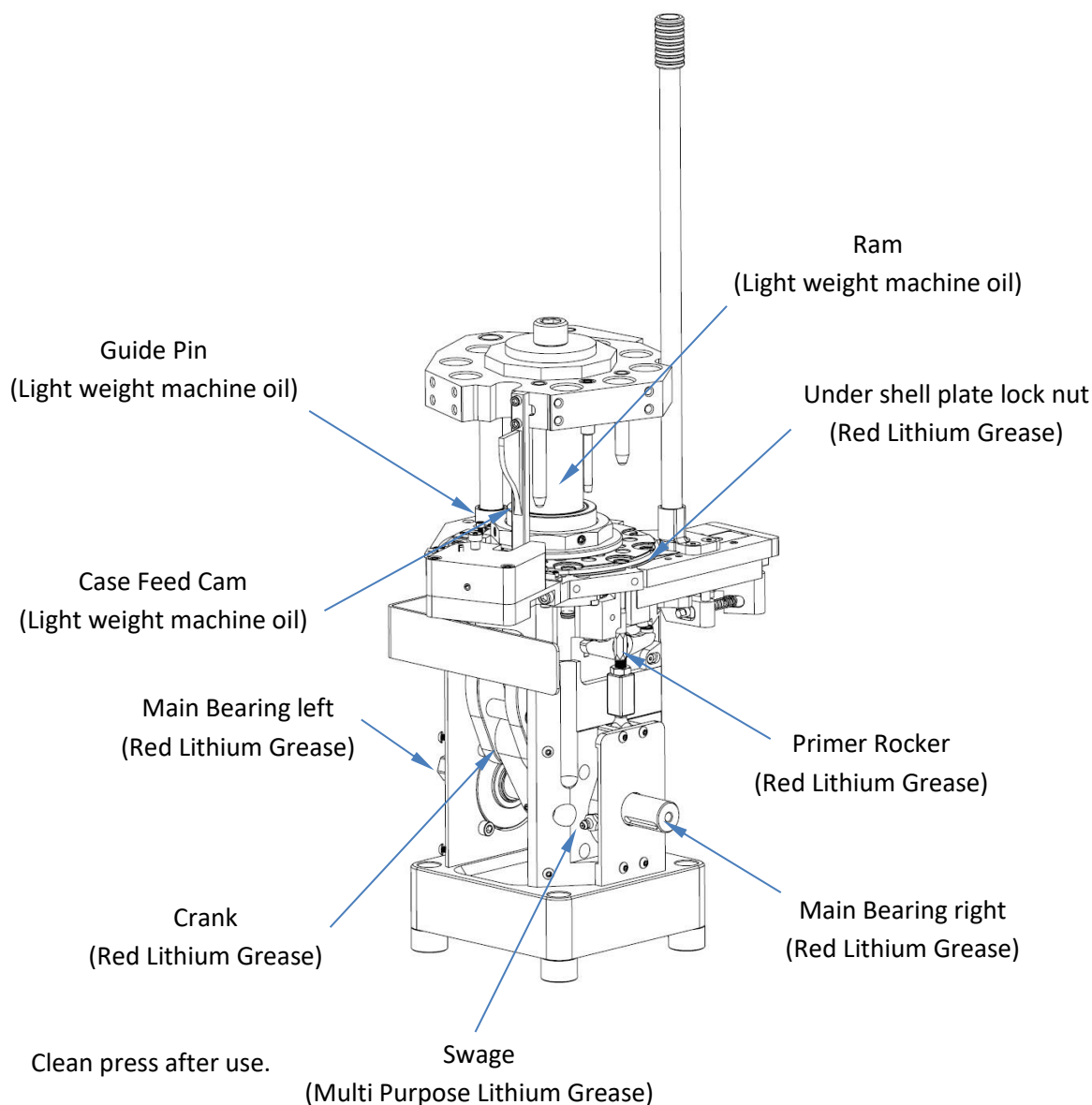


Figure 17: Grease Points

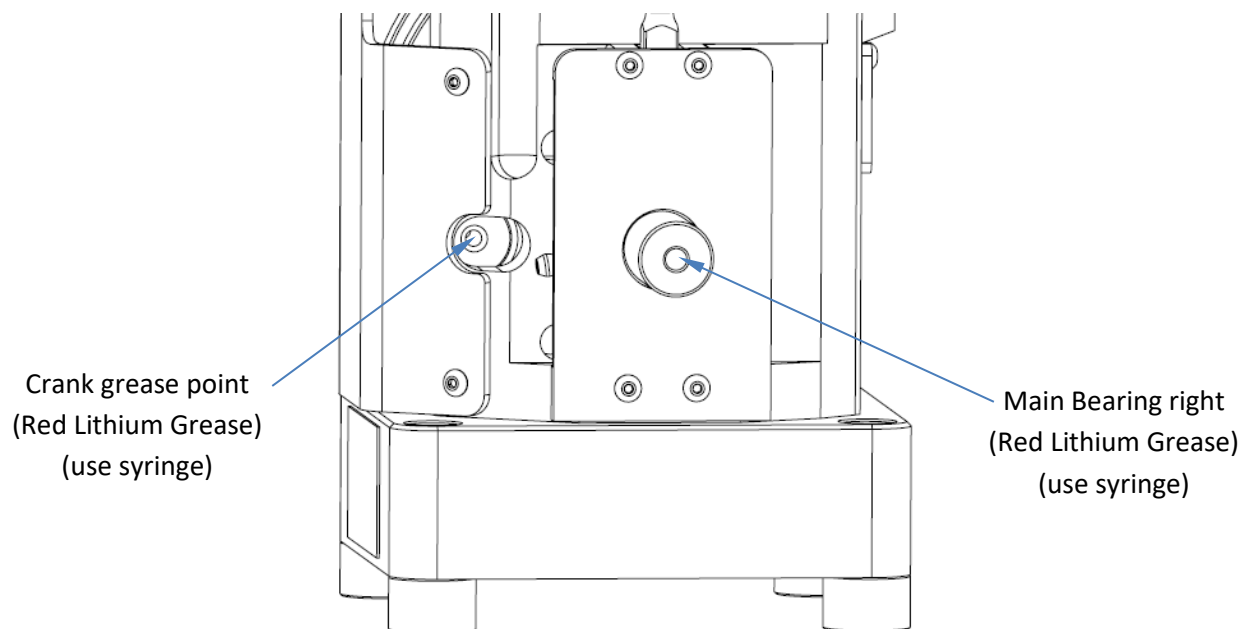


Figure 18: Main Bearing right and Crank grease points

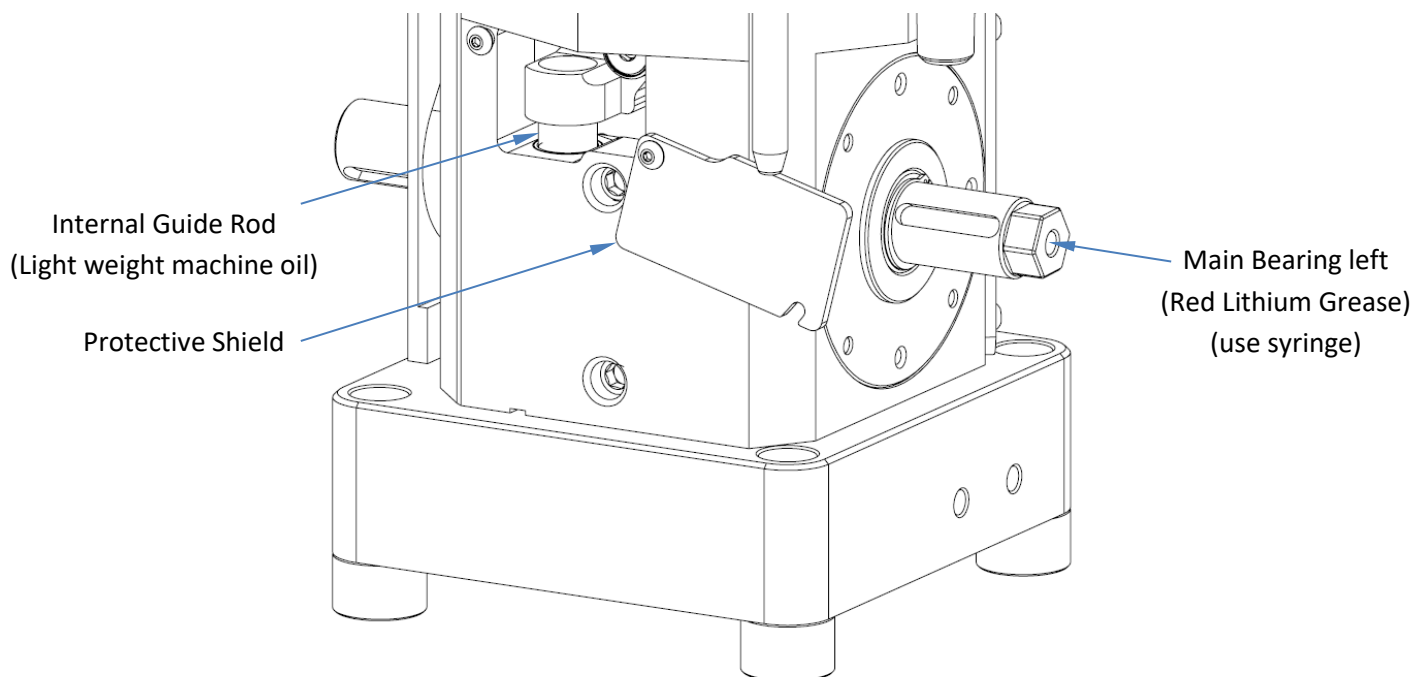


Figure 19: Main Bearing left and Internal Guide Rod lubrication points

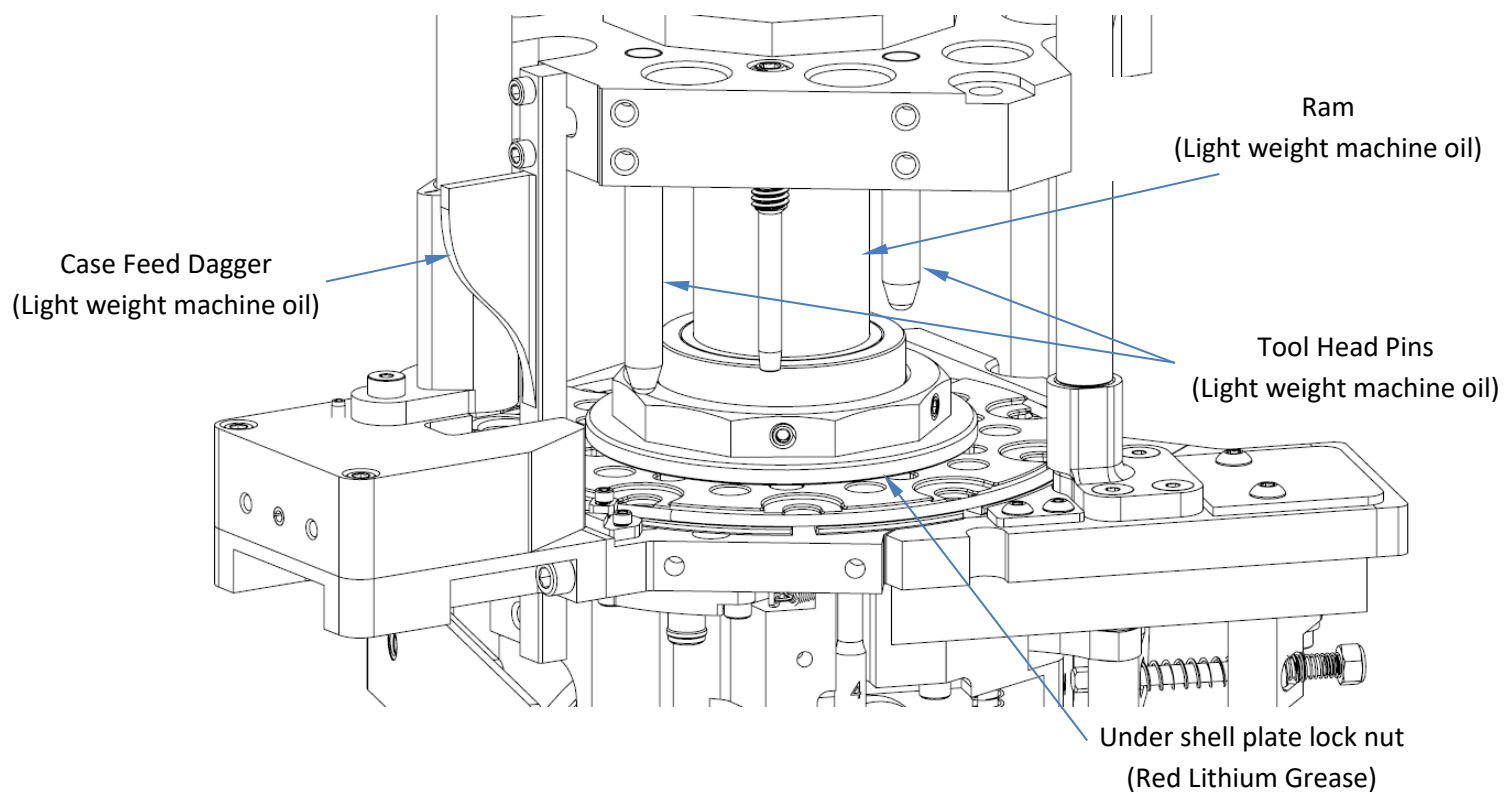
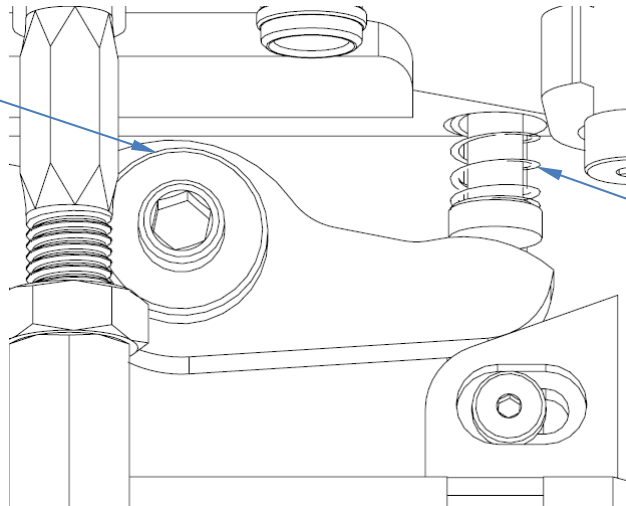


Figure 20: Tool Head lubrication points



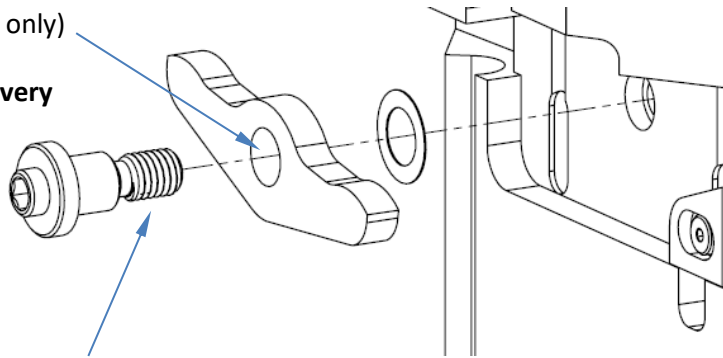
Behind the Rocker
(Light weight machine oil)

Primer Punch
(Red Lithium Grease)



Rocker
(Red Lithium Grease)
(if Rocker was removed only)

***Check for tightness every
10,000 RDS**



Apply Blue Loctite 243
when re-installing

Figure 21: Swage lubrication points

Each 25,000 rounds or as needed

- Remove Tool head and clean shell plate and top plate.

Major Service required (100,000+ Rounds:)

- If play develops in crank assembly or index assembly:
 - Core re-alignment should be performed.
 - Full cleaning and grease packing/lubrication of press required.



Shellplate Indexing Adjustments

It is important to check the indexing adjustment whenever performing routine press maintenance.

There are 3 main adjustments points /areas to check:

1. Crank Upper Stop Limit- This sets the upper position of the stroke of the machine and is adjusted via the upper set screw on the rear of the machine as shown in the figure below. If this comes out of adjustment the machine may start indexing too far or not far enough – It is important to check the position of the set screw and make sure the jam screw is locked in place.
2. Index Cam Bearing - Check Mount and bearing for tightness – keep grease on bearing surface

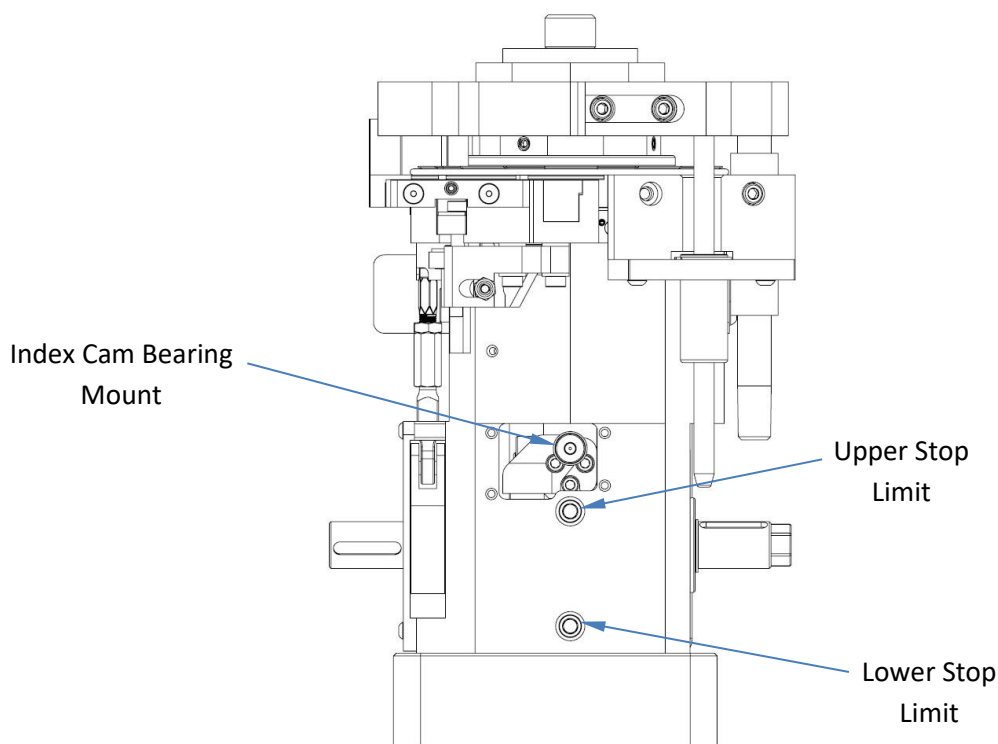


Figure 22: Rear of Press – Crank Stop Adjustments

3. Index Pawl engagement/height adjustment- The index pawl has an internal set screw that can be accessed from the left side of the machine. Turning the set screw clockwise will engage the index pawl more lowering the height and increasing index engagement. Turning the set screw counterclockwise will back off the index pawl engagement and increase the height engagement.



The height of the index pawl is critical if it set too low or too high the shell plate will miss indexing altogether.

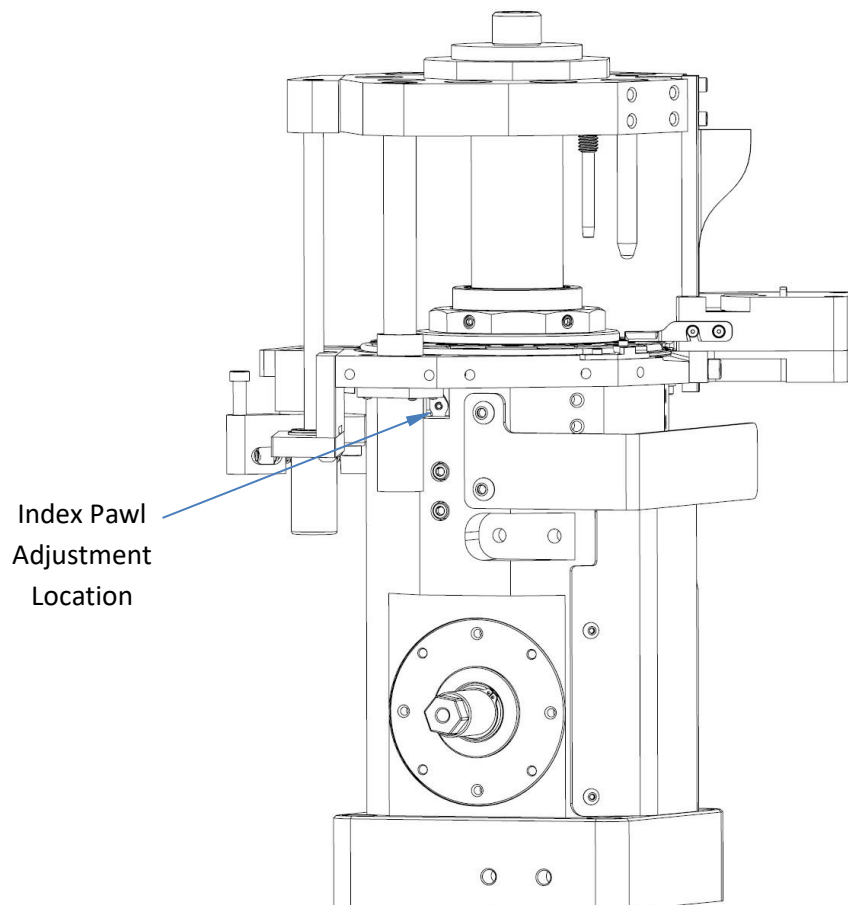


Figure 23: Index Pawl Adjustment Location (left side of Machine)

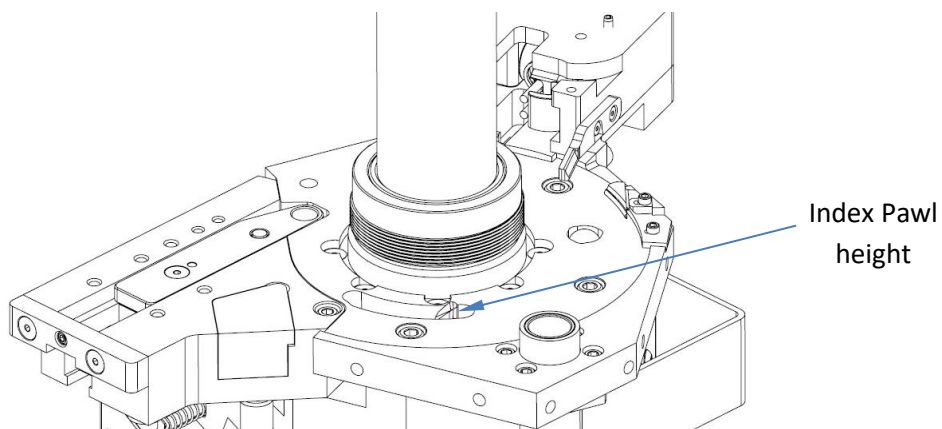


Figure 24: Checking Height of Index Pawl engagement – Between .060 - .100"

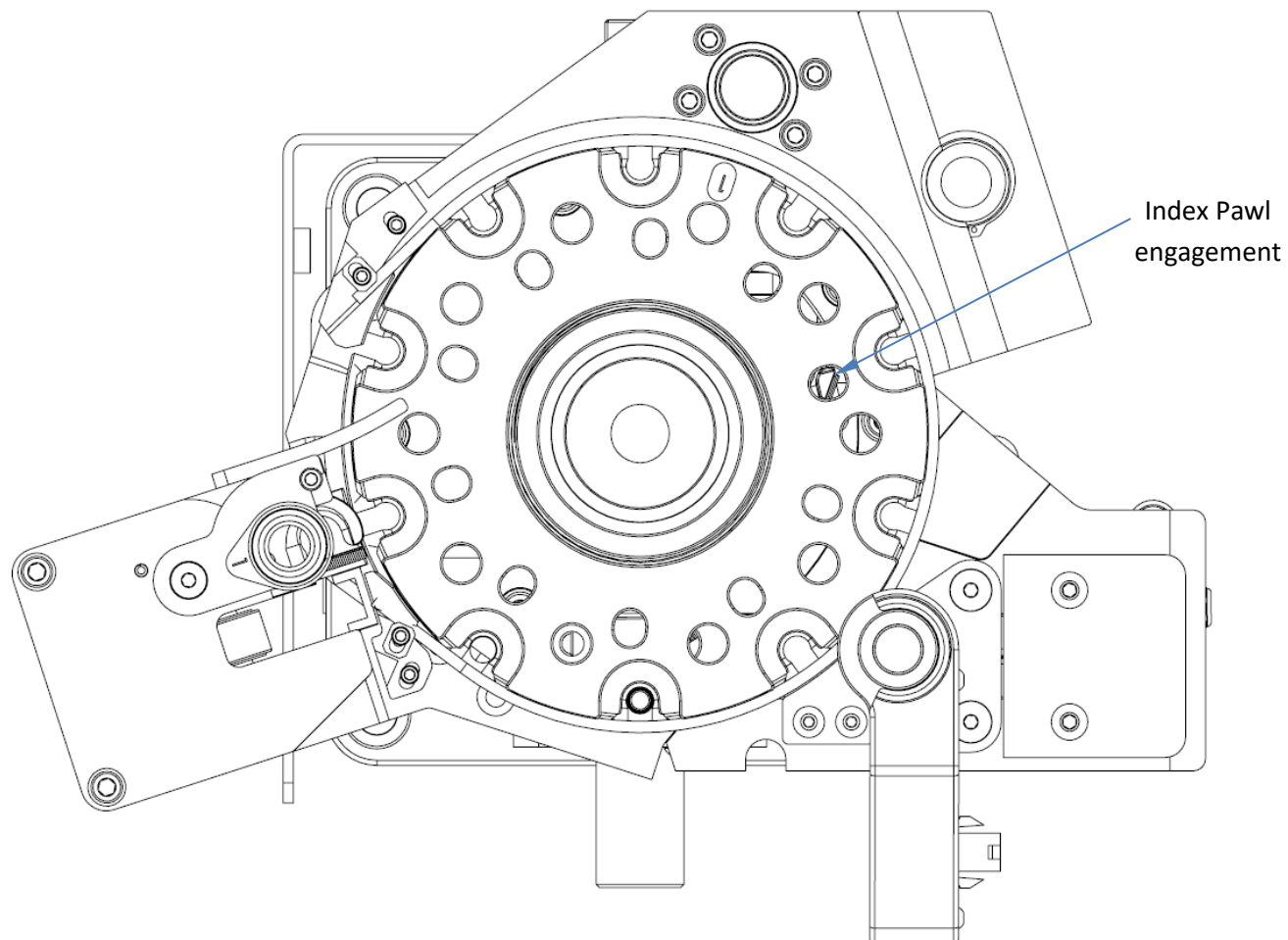


Figure 25: Visually checking index pawl engagement



When adjusting the index pawl its best practice to remove the Tool Head and shell plate nut so the index pawl can be seen in the shell plate indexing hole. With the machine at the top of the stroke the index pawl should be adjusted so the leading edge of the pawl is in contact with the inside wall of the shell plate indexing hole. Once this is set remove the shell plate and confirm that the index pawl is between .060 - .100" above the top plate surface.

Storage Recommendations

The following is the proper procedure for storage after a session of use:

1. Ensure that the shell plate is clear of any brass and clean any powder or brass shavings
2. Apply a light weight coat of oil to all black oxide fasteners and metal surfaces.
3. Check the need for lubrication after every session and apply it as necessary at the key lubrication points outlined in the user manual. Insufficient lubrication creates a potentially dangerous situation and may lead to unreliable results
4. Turn off the power to the case feeder and the bullet feeder
5. Keep light weight oil on all metal surfaces.

Troubleshooting

Refer to the knowledge base section on our website under **SUPPORT** for troubleshooting articles relating to setup and operation.

<http://www.markvii-loading.com/>

[Mark 7® Digital Community at www.markvii-loading.com](http://www.markvii-loading.com/)

Please contact us for technical support

<https://www.markvii-loading.com/supports/customer-service-support.html>

Phone: 1-888-462-7577

Hours: 8:30am-5:00pm, ET, M-F