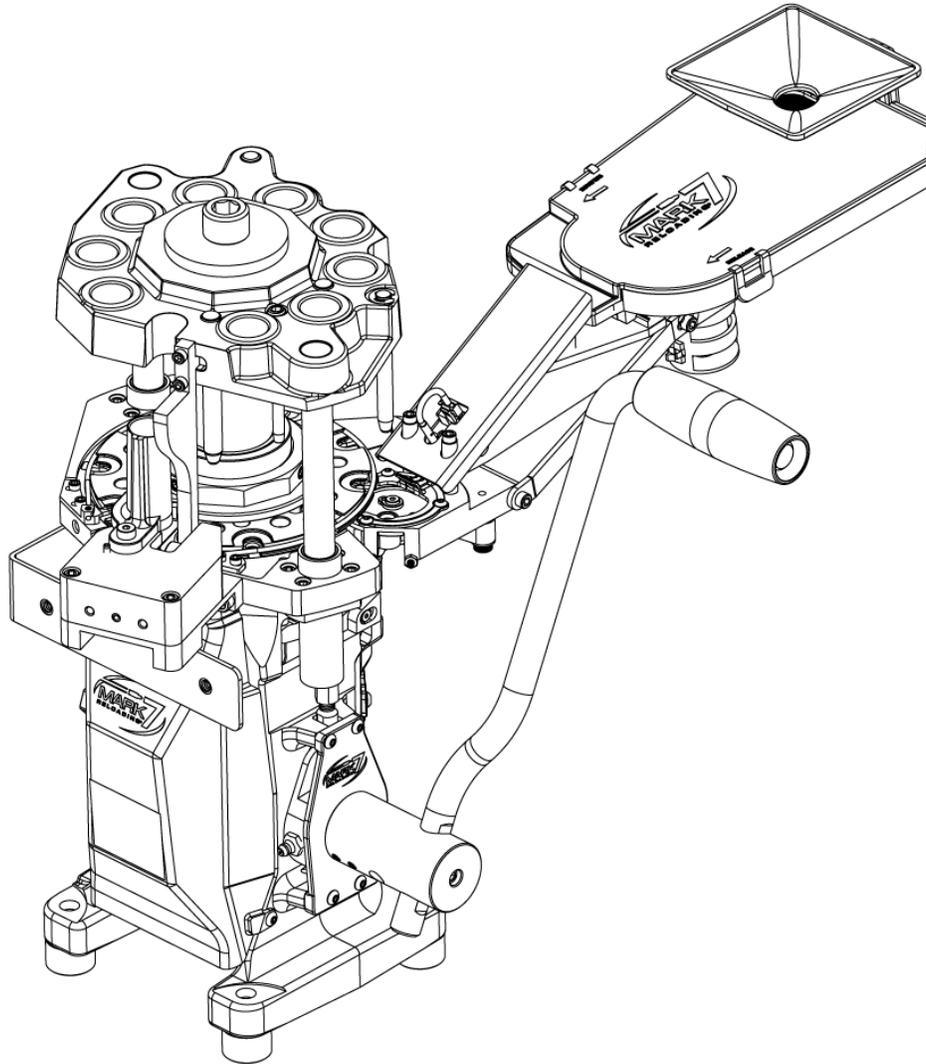




# Mark 7® Primer Xpress Instruction Manual v 1.1



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



Mark 7's Automated Primer Xpress is a totally new, patent pending technology which provides nearly 100% successful primer orientation for your loading machine. This completely unique design features an oscillating primer reservoir which effortlessly orients primers and allows continuous primer feeding. No more stopping your machine to reload primers using clumsy tubes! Simply add more primers into the built-in funnel without interruption to your loading operation. The large hopper can hold 300+ primers and includes a tough polycarbonate safety cover, which also keeps dust and debris out of the system. In the unlikely event that an up-side-down primer does make it into the feed ramp, our failsafe sensor will detect it and sound an alarm for manual presses and stop the operation on automated machines. In addition, change over between small and large size primers is easy to do and all parts are included. Dual optical sensors automatically start/stop the feed system to provide primers as needed. Primers are fed into your machine using a simplified single slot feed disc mechanism for positive, reliable primer positioning.

## **Warning!**

- Primers are explosive and improper handling can lead to primer detonation and injury to the user. Follow all safety guidelines when operating this device.
- Always have the steel safety shield installed before operating this device.
- Always wear safety glass when working with primers.
- Never force any primers. If a jam occurs, carefully remove excess primers, and gently clear the jam.
- Primer dust can accumulate on the surfaces where primers travel. Periodically clean all surfaces of the Primer Xpress with a clean, damp cloth.
- Never smoke when reloading or around primers and/or powder.
- Only store primers in their original packaging. If primers are left in the tray after loading, remove them and return them to the original packaging.
- Always keep the cover on the primer hopper when operating the device.
- Primer pockets should be clean and military cases must have the primer crimp removed before seating primers.



Two versions of the Primer Xpress are offered. One for the APEX-10 and one for Evolution presses.

- **Primer Xpress for APEX-10** includes fully assembled Primer Xpress unit with wiring harness, control box, power adapter, dual I/O cable, steel safety shield and mounting hardware.
- **Primer Xpress for Evolution** includes fully assembled Primer Xpress unit, shuttle disc priming unit with large/small primer discs and punches, wiring harness, control box, steel safety shield, power adapter, dual I/O cable, and mounting hardware.

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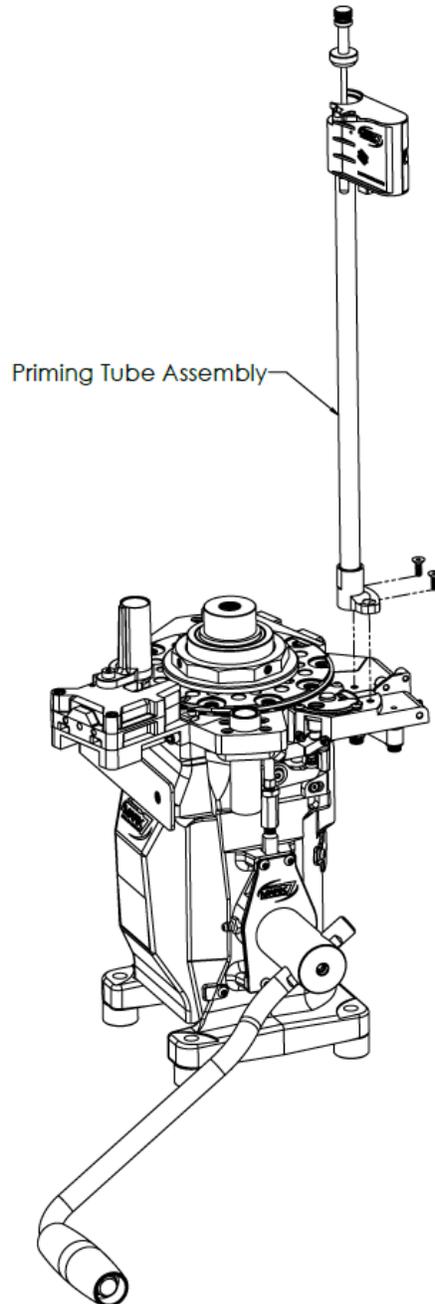
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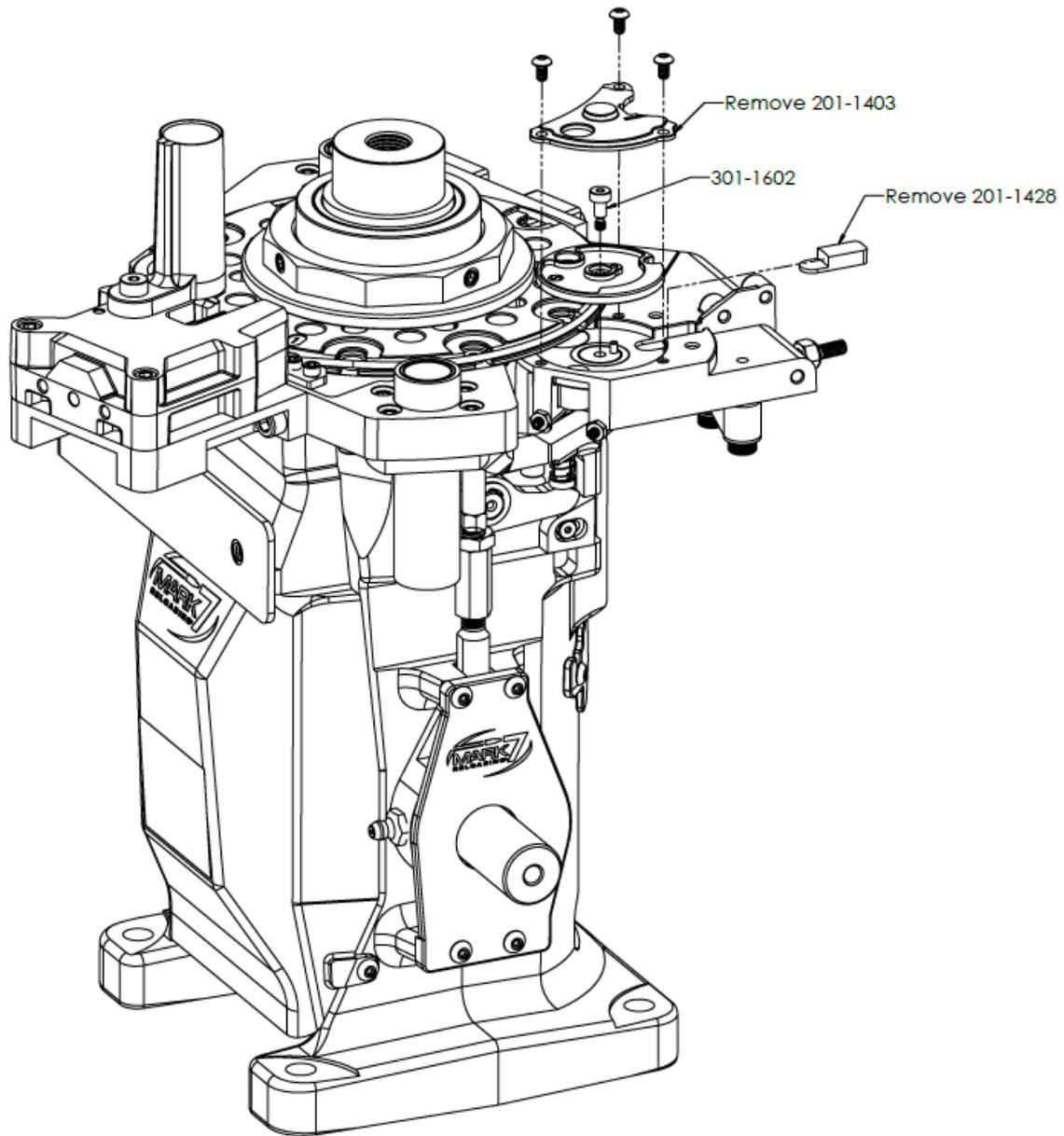
## Assembly

### APEX-10 Press



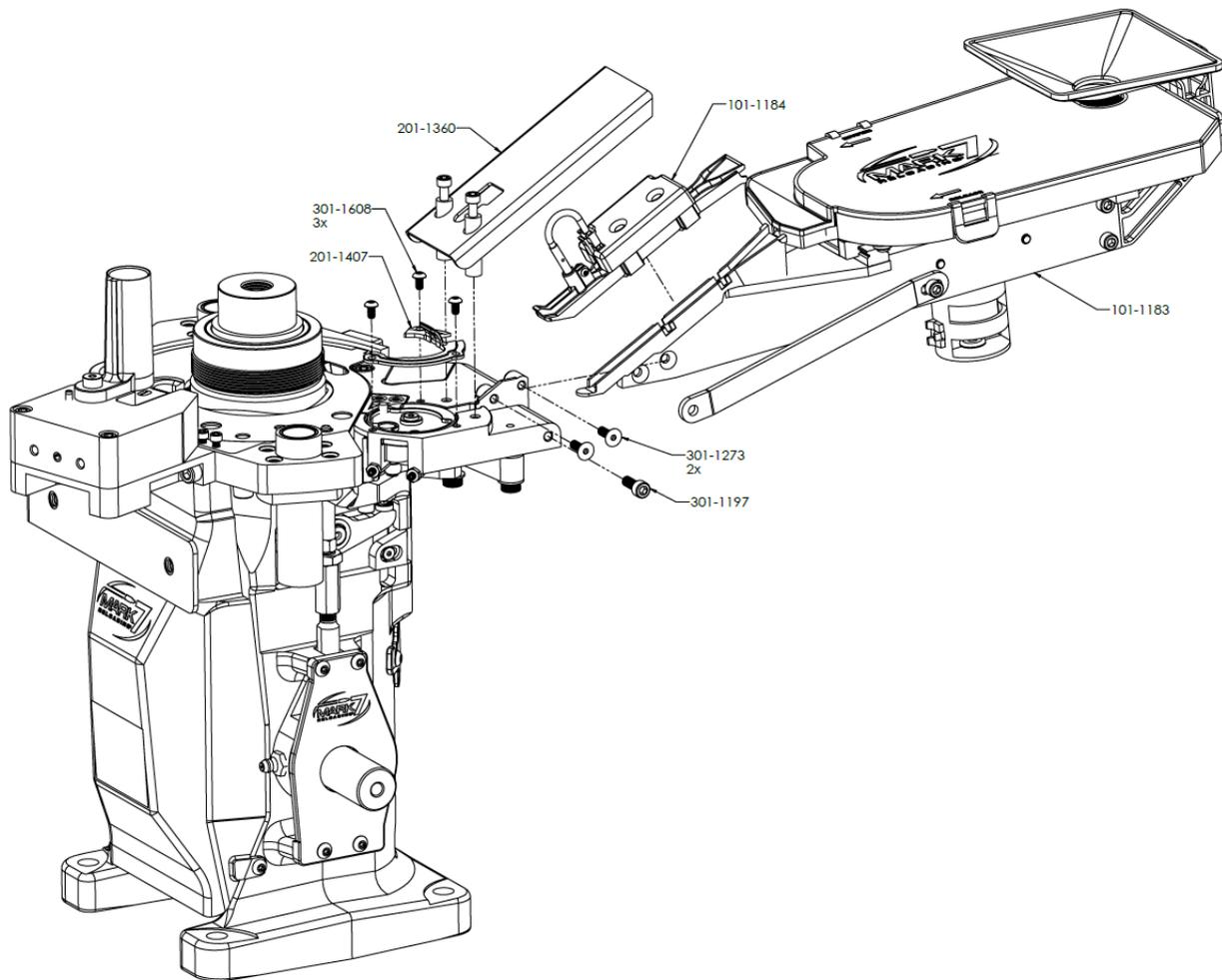
**Figure 1. Priming Tube Assembly removal**

- 1) Remove the priming tube assembly from the press by removing the two flat head screws on the primer tube base.



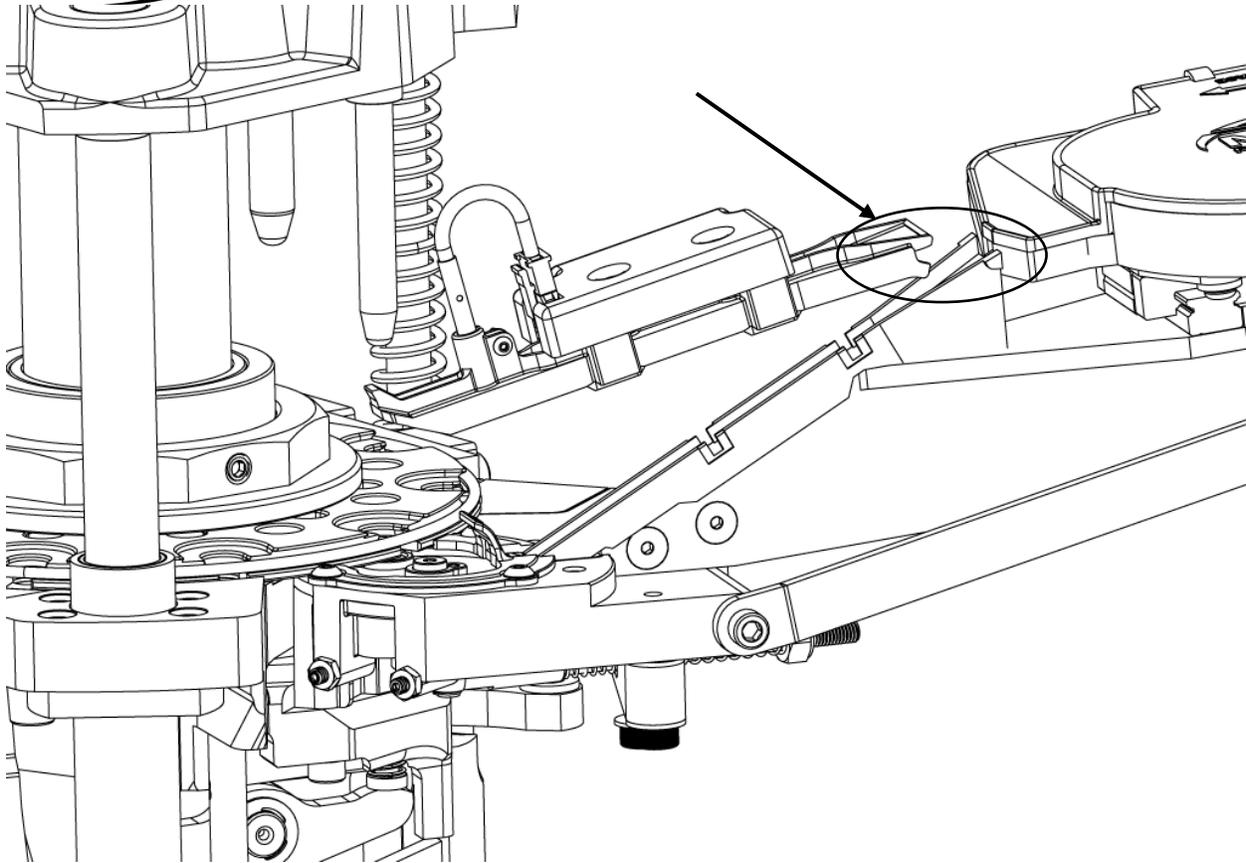
**Figure 2. Primer Tube Assembly component removal**

- 2) Remove plastic primer disc cover (201-1403) and loosen the shuttle disc retaining screw (301-1602) several turns. Remove the plastic insert (201-1428) from the slot in the shuttle housing. See Figure 2.



**Figure 3. Primer Xpress exploded view**

- 3) Slide the Primer Xpress primer chute into the slot in the shuttle primer housing where the insert (201-1428) was removed and under the shuttle disc. Make sure it is fully seated in the slot. Attach the chassis (101-1183) to the shuttle housing using the supplied mounting screws (301-1273). The two flat head screws are positioned into the two chamfered holes and thread into the shuttle housing. The third hex head screw (301-1197) passes through the stabilizing brace and into the shuttle housing. Apply upwards pressure on the rear of the Primer Xpress chassis as the mounting screws are tightened. See Figure 3.
- 4) Re-tighten the shuttle disc retaining screw (301-1602), then install the clear cover (201-1407) over the shuttle disc.



**Figure 4. Primer Chute Cover installation**

- 5) Install the primer chute cover with sensors (101-1184) onto the chute. Note that there are two notches on the top of the cover which fit onto two lugs on the top of the chute. Hold the cover at angle and slide the notches into the lugs, then push the cover down so that it snaps into the latch on the shuttle disc cover. (When needing to remove the cover, release the latch first and then lift the cover up and off the lugs.)
- 6) Attach the plugs from the wiring harness into the receptacles in the back of the control box marked Motor and Sensors.
- 7) Plug the power adapter into the receptacle in the back of the control box marked DC12V.



## Evolution Press

Note: The shuttle disc priming assembly has the small primer disc installed when received. If you want to use large primers, first change the primer punch, primer punch bushing and the shuttle disc following the instructions titled “Primer Size Change”.

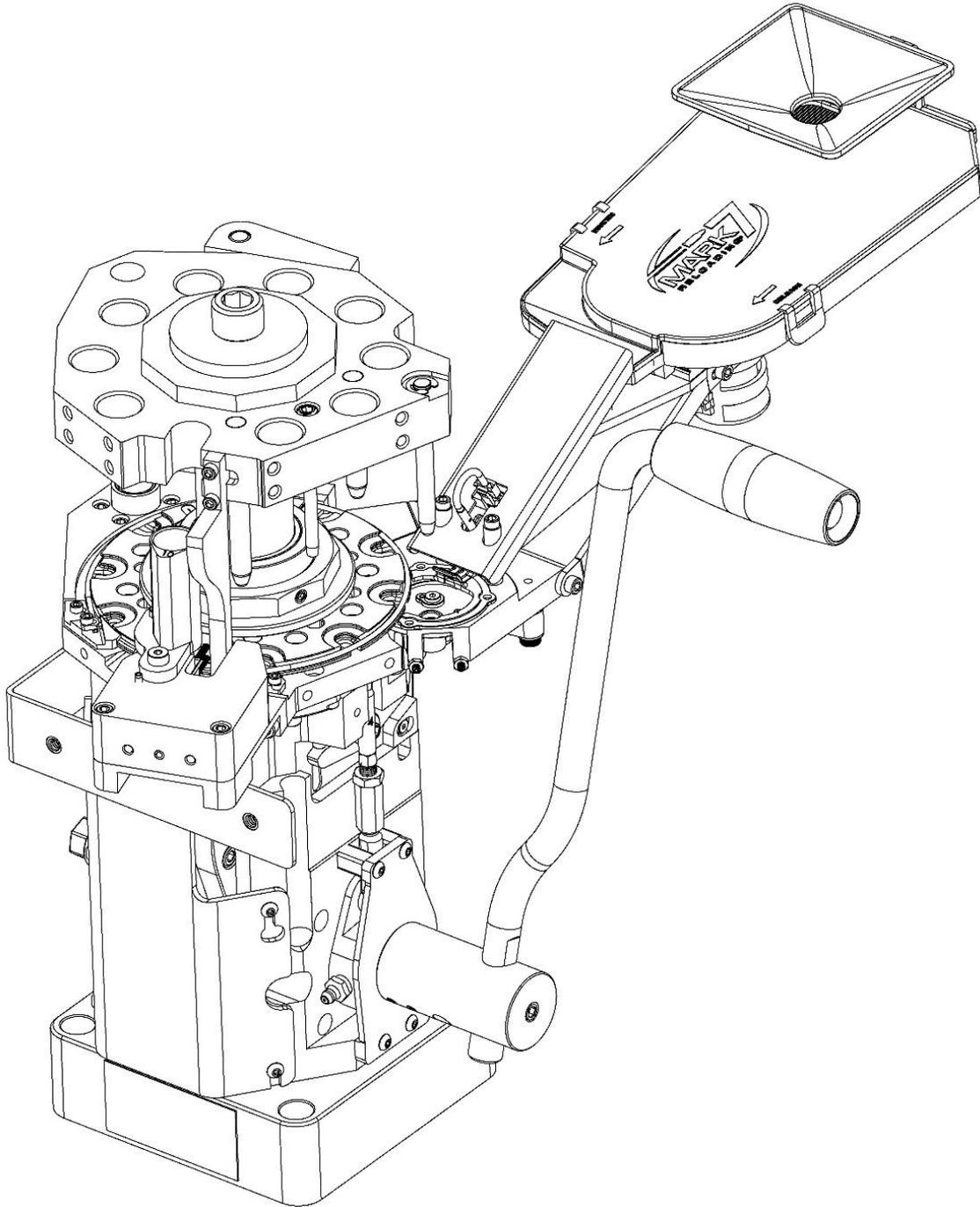
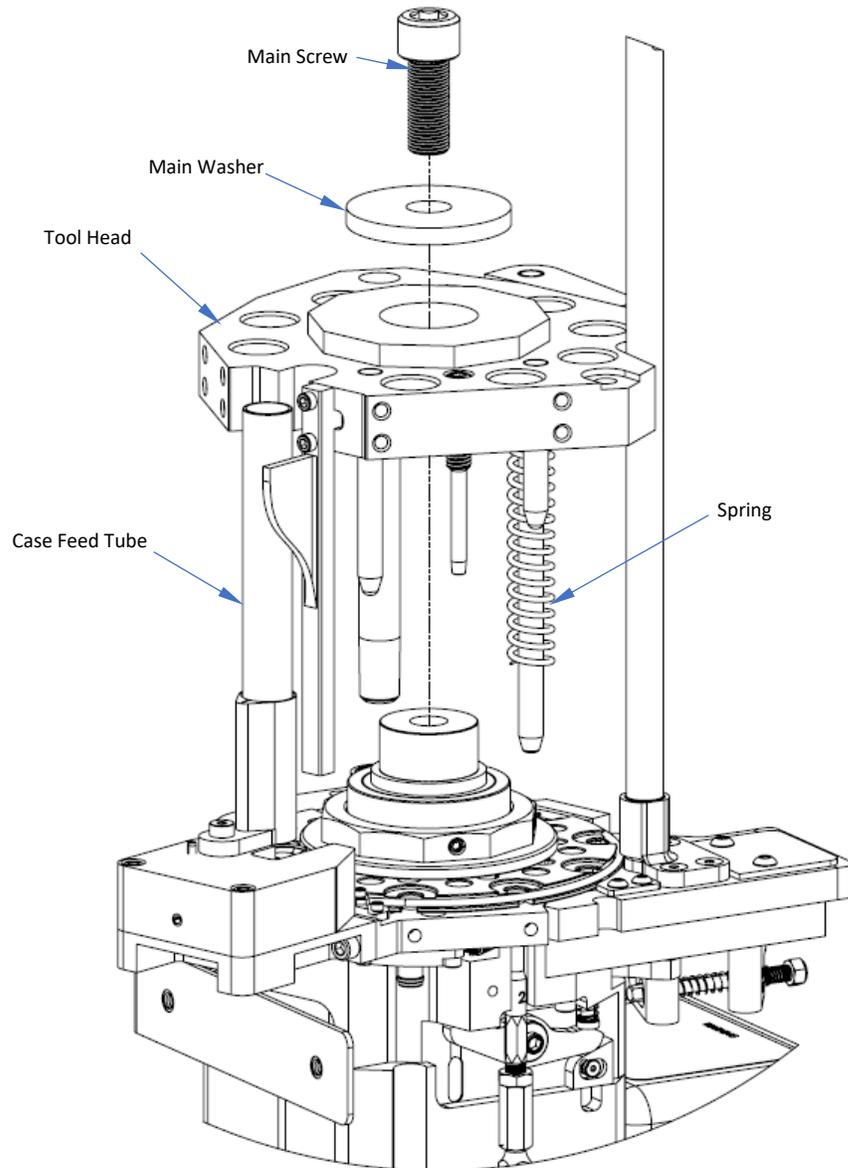


Figure 5. Primer Xpress installed on an Evolution



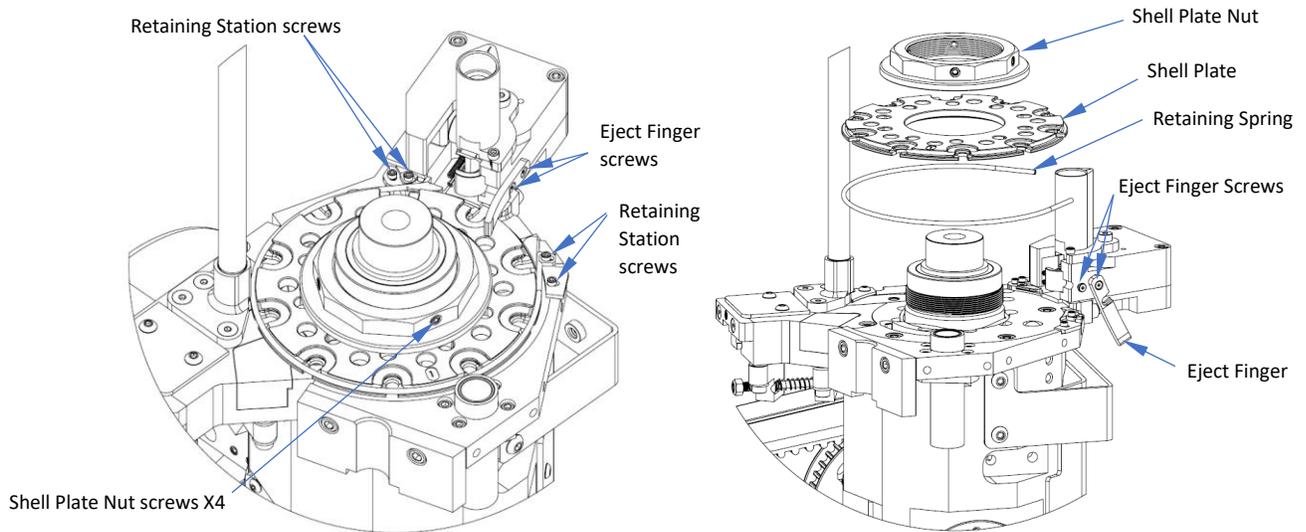
## Removing Standard Priming System

1. Clear the Shell Plate and Priming System of components and detach Case Feed Tube. Power off Autodrive (if installed) and move Tool head to down position. Loosen and remove the Main Screw, Main Washer, Tool Head and Spring (see below).

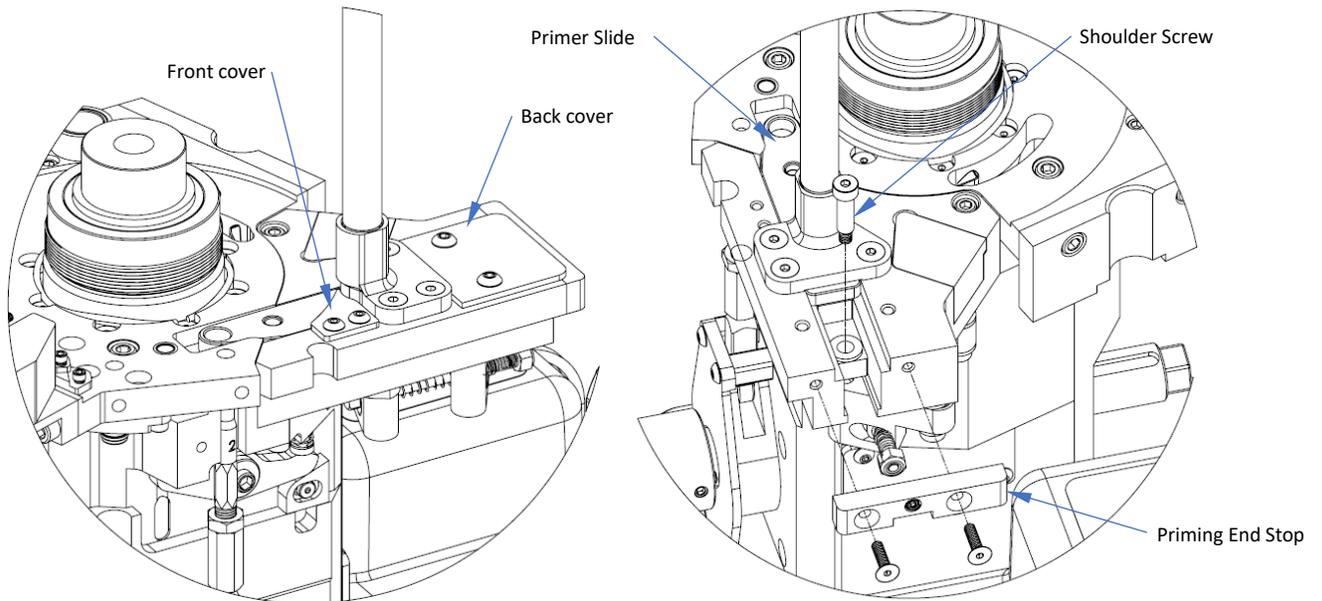




2. Loosen Eject Finger screws and swing the Eject Finger down. Loosen Retaining Station screws. Loosen 4X Shell Plate Nut screws and remove the Shell Plate Nut. Remove Shell Plate and Retaining Spring.

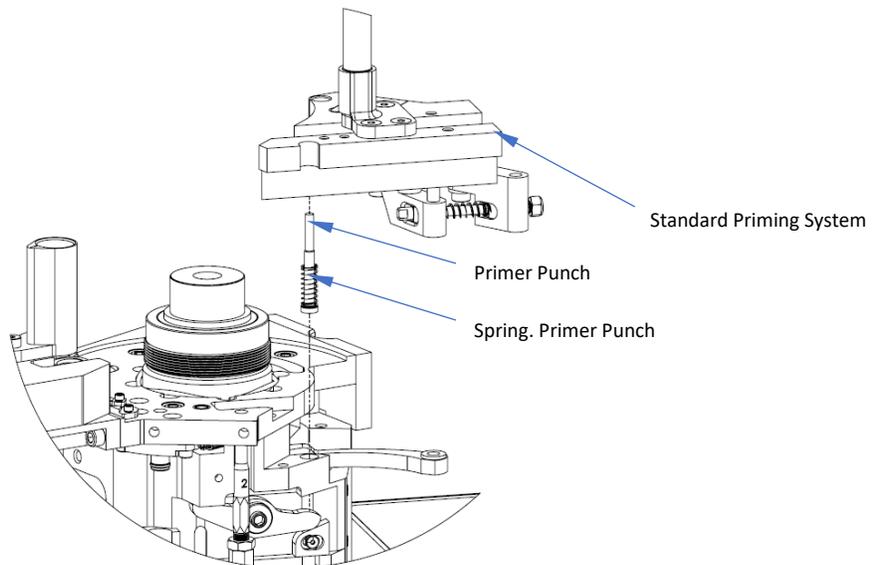
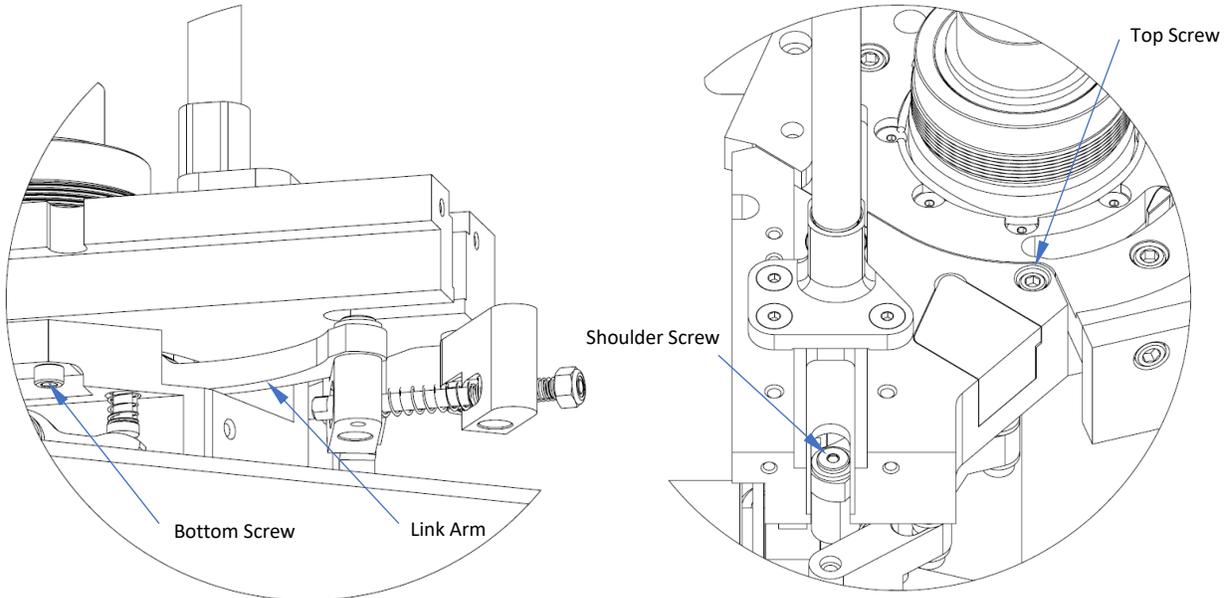


3. Remove Front and Back covers, then remove Priming End Stop. Underneath the Back cover remove the Shoulder Screw and underneath the Front cover slide out the Primer Slide.





4. Pull the Link Arm out until the Shoulder Screw is accessible, then remove the Shoulder Screw. Remove the Top and Bottom Screws, then pull the Standard Priming System up to remove it.



5. Place the Shuttle Disc Priming assembly onto the press frame and secure it using the two supplied hex head screws (301-1125 & 301-1170). The 301-1125 will be installed from below the press frame and 301-1170 will install from the top.

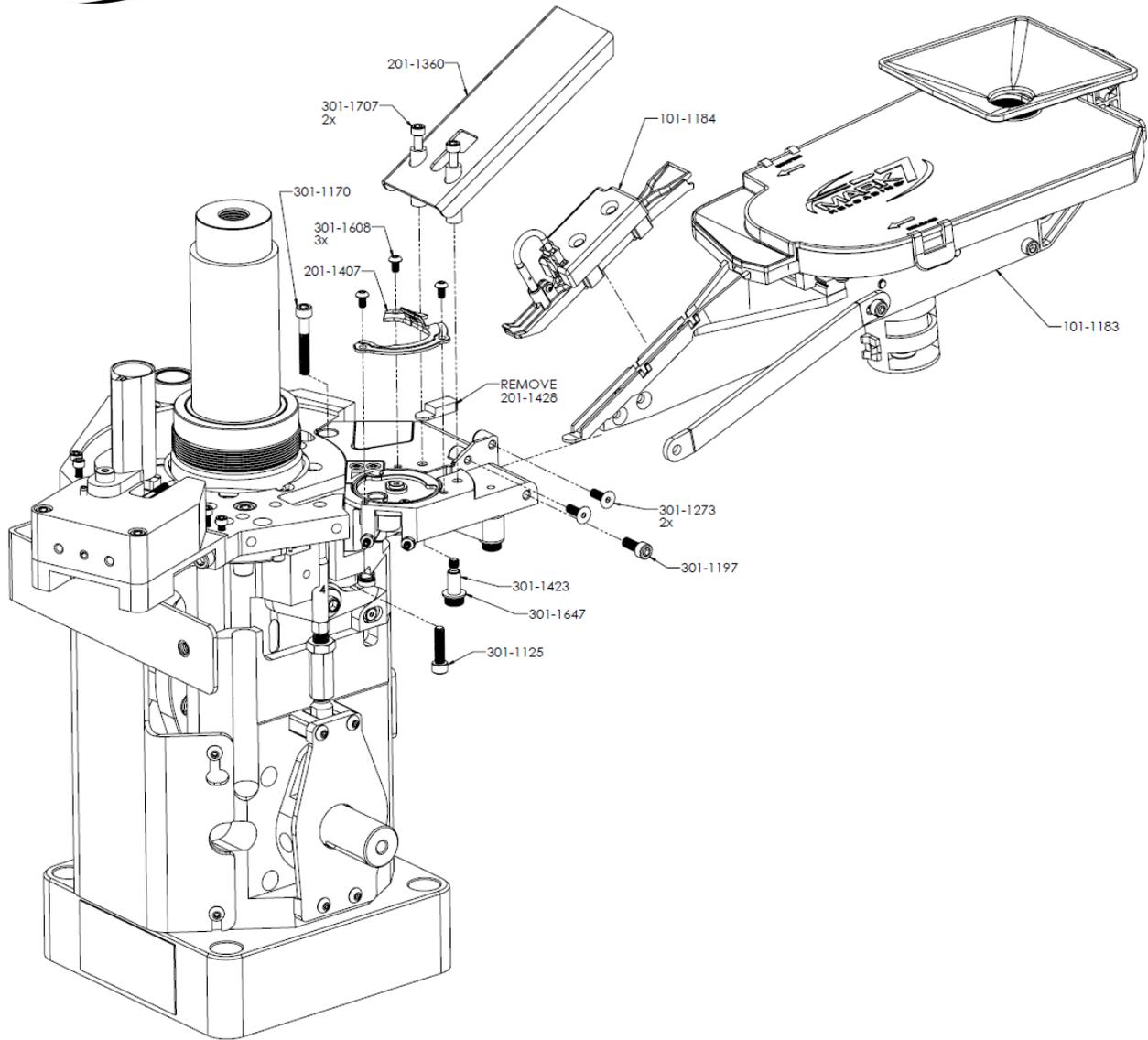


6. Attach the Link Arm of the press to the Pivot Arm on the bottom of the Shuttle Disc Assembly using the shouldered hex head screw (301-1423) and washer (301-1647).
7. Loosen the Shuttle Disc by unscrewing the hex head screw in the center of the disc and lifting the disc off the alignment pin, then remove the plastic insert (201-1428) from the slot in the shuttle housing and put away.
8. Place the Primer Ramp in the slot in the shuttle primer housing where the insert was removed. Make sure it is fully seated in the slot. Attach the chassis to the shuttle housing using the supplied mounting screws (301-1273). The two flat head screws are positioned into the two chamfered holes and thread into the shuttle housing. The third hex head screw (301-1197) passes through the stabilizing brace and into the shuttle housing. Apply upwards pressure on the back of the Primer Xpress chassis as the mounting screws are tightened.
9. Tighten the Shuttle Disc back down.
10. Install the clear cover (201-1407) over the shuttle disc.
11. Install the Primer Ramp Cover (101-1184) onto the ramp.

**Note:** There are two notches on the top of the cover which fit onto two lugs on the top of the chute. Hold the cover at angle and slide the notches into the lugs, then push the cover down so that it snaps into the latch on the clear cover (201-1407). (When needing to remove the cover, release the latch first and then lift the cover up and off the lugs.)

12. Install the Blast Shield (201-1360) over the Primer Ramp Cover using two hex head screws (301-1707).
13. Attach the plugs from the wiring harness into the receptacles in the back of the control box marked Motor and Sensors.
14. Plug the power adapter into the receptacle in the back of the control box marked DC12V.

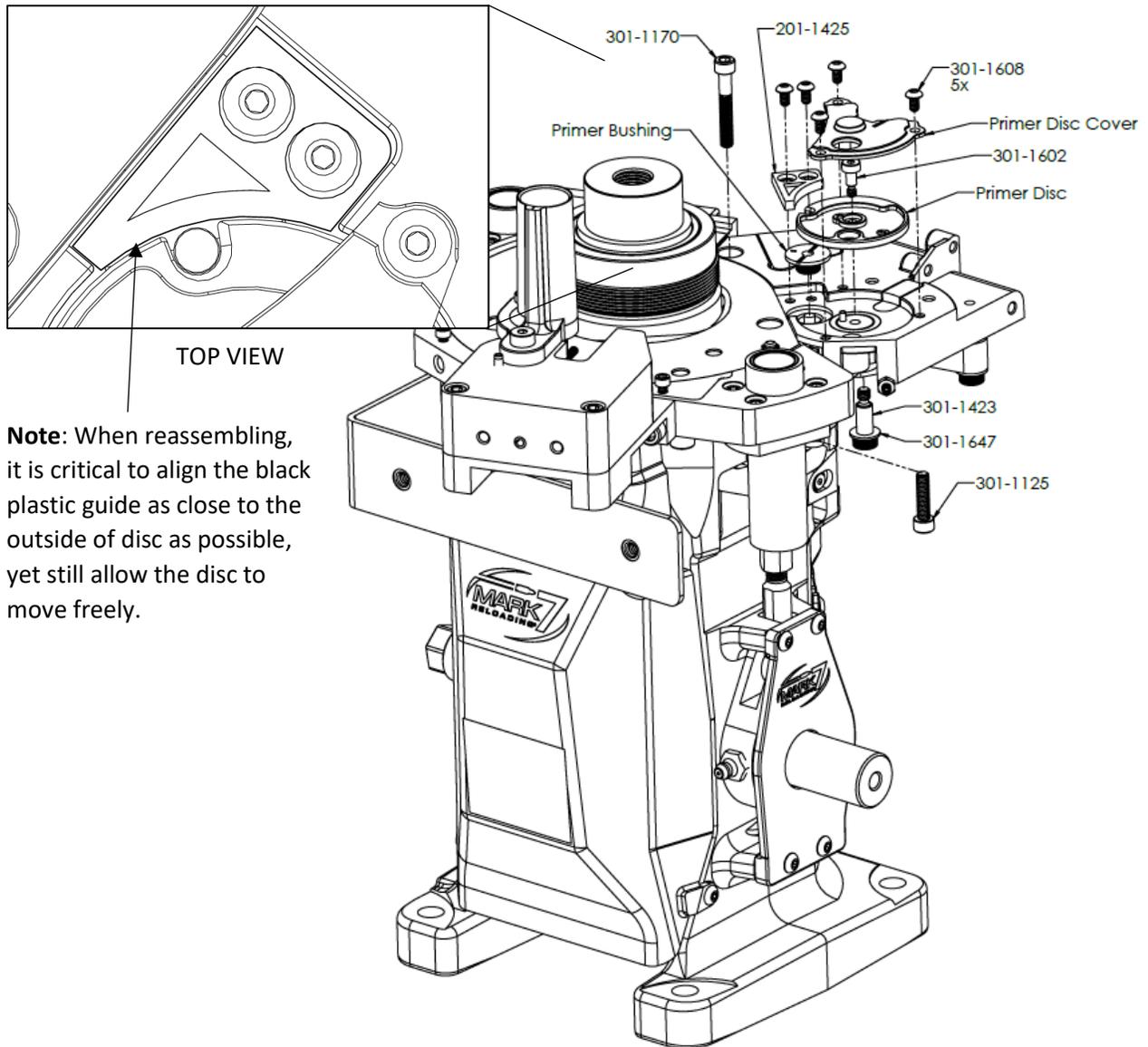
*See Figure 6 on next page for visual guidance.*



**Figure 6. Primer Xpress exploded view on Evolution**



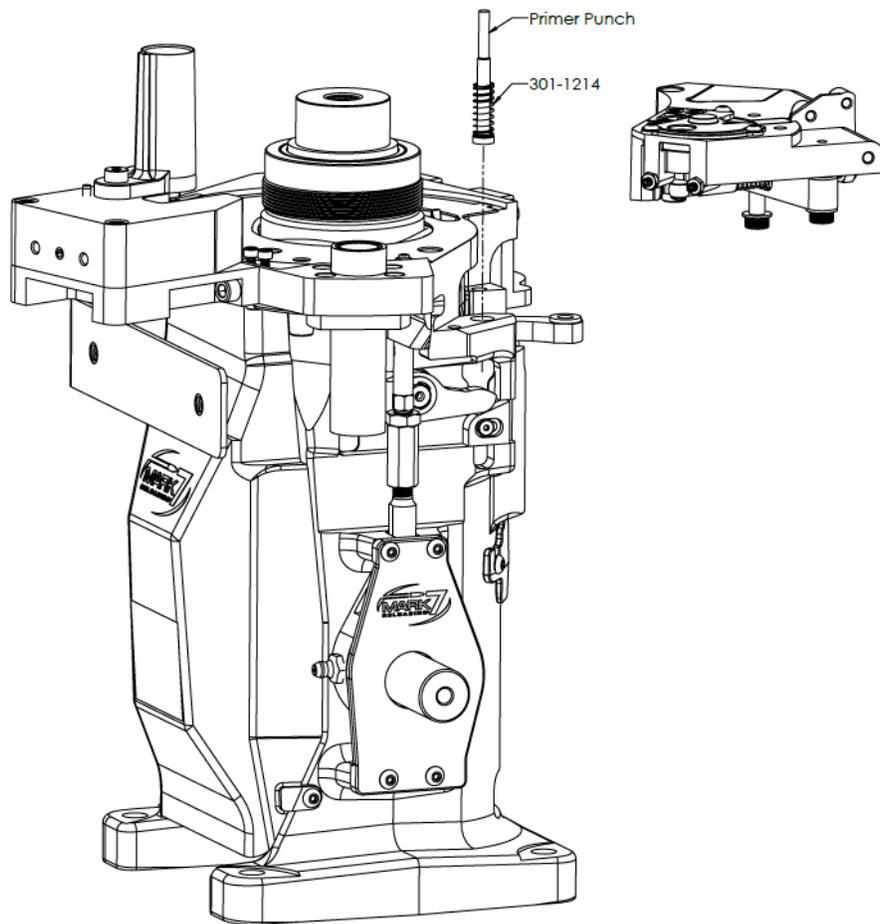
## Changing Primer Size



**Note:** When reassembling, it is critical to align the black plastic guide as close to the outside of disc as possible, yet still allow the disc to move freely.

**Figure 7. Priming assembly exploded view**

- 1) Remove the 3 screws (301-1608) holding the Primer Disc Cover and remove the cover.
- 2) Remove the bolt (301-1602) in the center of the Primer Disc and lift off the disc.
- 3) Remove the 2 screws (301-1608) holding the primer guide plate (201-1425) and remove it.
- 4) Remove the 2 screws (301-1125 & 301-1170) holding the body of the priming mechanism to the press frame and the 1 bolt (301-1423) connecting the link arm from the press to the primer mechanism. Be careful not to lose the bushing in the link arm.



**Figure 8. Primer Punch removal**

- 5) Move the priming mechanism up and away from the press body and lift out the Primer Punch as shown above.
- 6) Using a large, proper fitting, slotted screwdriver, unthread and remove the Primer Bushing from the priming mechanism. Replace the punch with the provided desired size punch and reassemble the unit in reverse order from above. Be sure to install the correct size Primer Bushing and Primer Disc.



## Control Box Functions

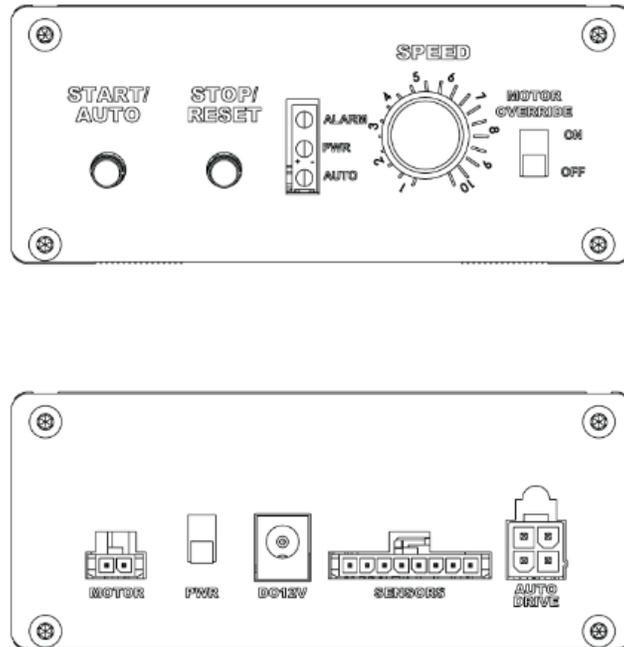


Figure 9. Control Box faceplates

**Power Switch:** Located at the back of the control box, the switch turns the power On and Off.

**Start/Auto Button:** This button is pressed to turn on the oscillation unit and to set the unit to run automatically.

**Stop/Reset:** This button is used to stop the action of the unit and to clear alarm signals.

**Speed:** This dial is used to control the oscillation speed of the unit.

**Motor Override:** This switch is used to override the sensors and allow the oscillation to continue non-stop when the **Start/Auto** button is pressed. Oscillation will continue until the **Stop/Reset** button is pressed. This feature is useful when a new batch of primers are added to the hopper and you want to oscillate them down to fill the primer chute.

**Alarm, PWR, Auto Lights:** The alarm light will go on and a tone will sound when the primer sensor detects an improperly oriented (anvil end facing down rather than up) primer. The alarm is also triggered when out of primers. If the unit oscillates for approximately 15 seconds without sensing a primer in the chute, the alarm will sound. **Note:** this is with the **Motor Override** in the Off position.

The power light will be on when the power switch on the back of the unit is in the On position and will go off when the switch is moved to the Off position. The auto light will be on when the unit is running and the start and stop sensors are working.



## Operating the Primer Xpress

- 1) Add 100 to 300 primers by pouring them into the funnel over the hopper.
- 2) Set the **Motor Override** to On and press the **Start/Auto** button.
- 3) Move the **Speed** knob to a low setting and slowly increase the oscillation speed until primers start to move along the guides inside the hopper and primers upset so that the anvils are facing up.

**Note:** Different brand and different size primers will require their own speed settings. You may need to experiment with the speed setting until the best results are obtained each time primers are changed.

- 4) Once primers begin to enter the chute, press the **Stop/Reset** button. Then switch the **Motor Override** to Off.
- 5) Press the **Start/Auto** button and the unit will run until primers reach the stop sensor.
- 6) Install the steel **Safety Shield** over the primer chute with the two provided screws. We recommend that the shield **always** be in place when loading.
- 7) Press the **Start/Auto** and begin operating your press. Refill the hopper with primers as needed while reloading.



## Autodrive Setup

Using the provided Dual I/O cable, plug one end into the Autodrive port on the Primer Xpress control box and the other end into Port #1 on the Autodrive. See Figure 10. The Autodrive will detect the Primer Xpress under PrimerSense. If either the upside-down primer sensor or the low primer sensor trigger, the machine will stop and send a notification to the tablet. See Figure 11.

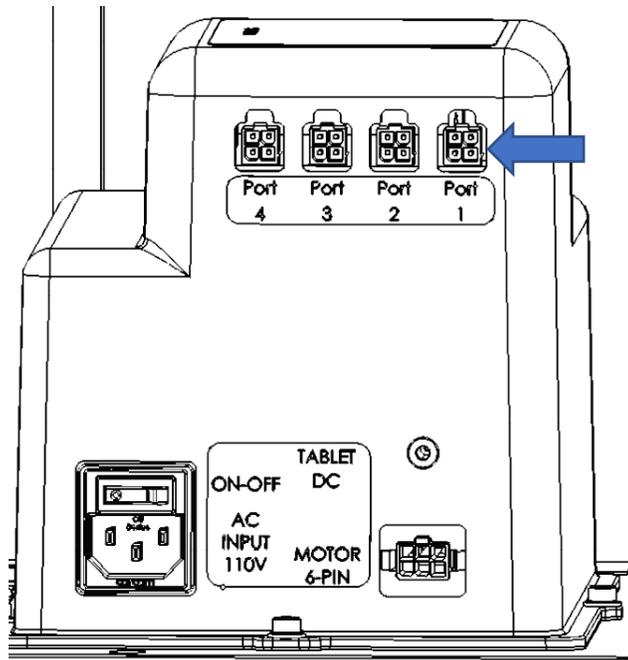


Figure 10. Side of Autodrive Console Inputs

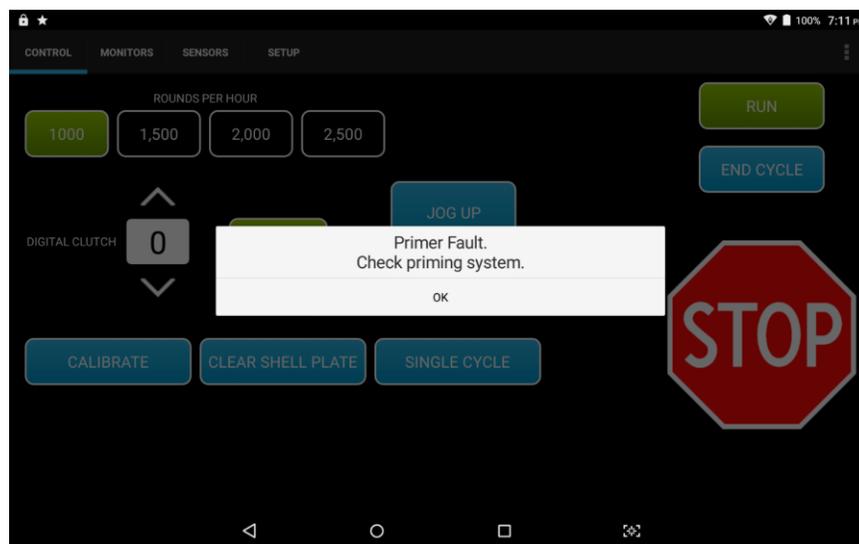


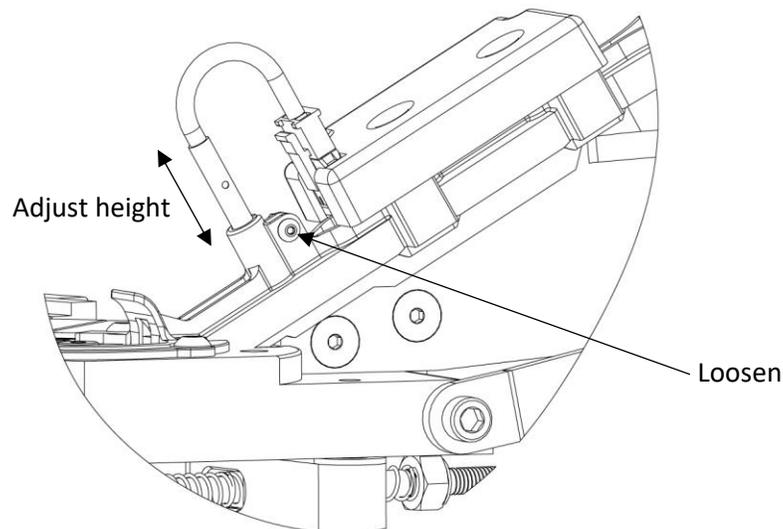
Figure 11. PrimerSense Alarm Message



## Setting the Upside-Down Primer Sensor

**Note:** The **Upside-Down Primer Sensor** is factory set for generic small primers but be sure to check sensor height is correct for your primers. Primer heights may vary between manufacturers.

- 1) Fill the ramp with primers.
- 2) Loosen the screw behind the **Upside-Down Primer Sensor** and lift the sensor up so the bottom of the sensor is about  $\frac{1}{2}$  halfway up the cylinder. See Figure 12.



**Figure 12. Upside-Down Primer Sensor**

- 3) Slowly push the **Upside-Down Primer Sensor** downwards until the alarm sounds. Press the **Stop/Reset** button to silence the alarm, then carefully pull the sensor back upwards slightly. There is a light on the sensor itself that will go on when it is too close to a primer and go off when it is further away. This light will go off when you pull the sensor up slightly. It is recommended that the sensor position be tested by placing a primer into the chute oriented incorrectly (anvil down). The alarm should sound when positioned over this primer but should not sound when over correctly oriented primers.
- 4) Tighten the screw behind the **Upside-Down Primer Sensor** once the sensor is properly positioned.

**Note:** Large and small primers will need different settings for the sensor height. Sometimes even different brand primers of the same size may require sensor adjustment.

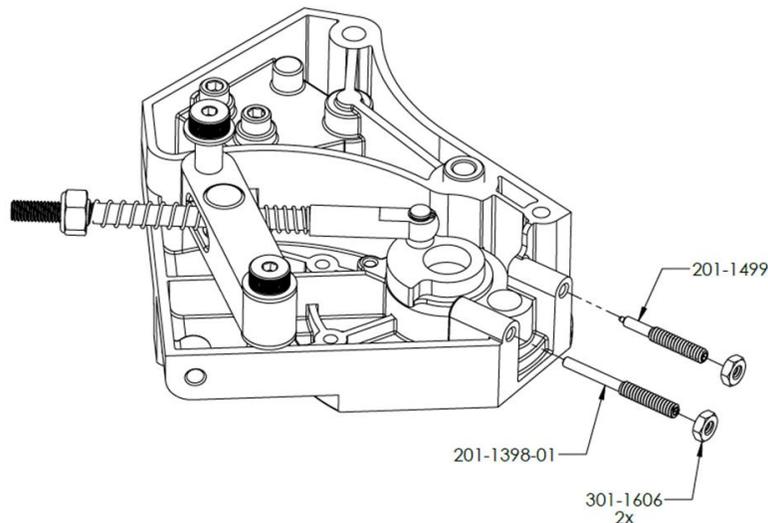


## Troubleshooting

- The Primer Xpress should be level side to side. If not level, adjust the press feet to correct this.
- If primers settle on one side of the hopper and do not move down the guides, the press feet may need to be lowered slightly on the opposite side of where the primers settle.
- If the shuttle disc binds after installing the Primer Xpress, make sure that the tab at the end of the primer chute is fully seated into the slot under the shuttle disc.
- If primers are repeatedly flipping over (correct orientation to incorrect orientation) in the hopper, the speed setting is too high.
- If primers travel down the hopper too slowly, the rear press feet may need to be raised to increase the hopper angle.
- If primers are having difficulty being picked up by the Primer Disc, follow the steps in Adjusting the Primer Disc Stops.

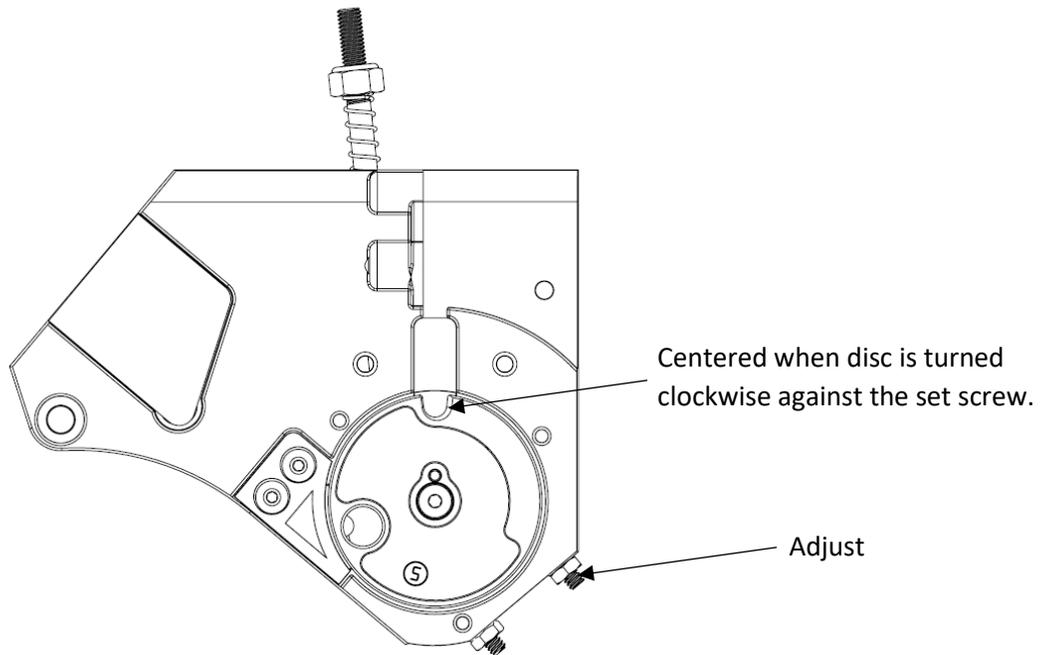
## Adjusting the Primer Disc Stops

- Find the set screw (201-1398-01) and spring plunger (201-1499) underneath the housing. **Note:** Assembly does not need to be removed from the press.



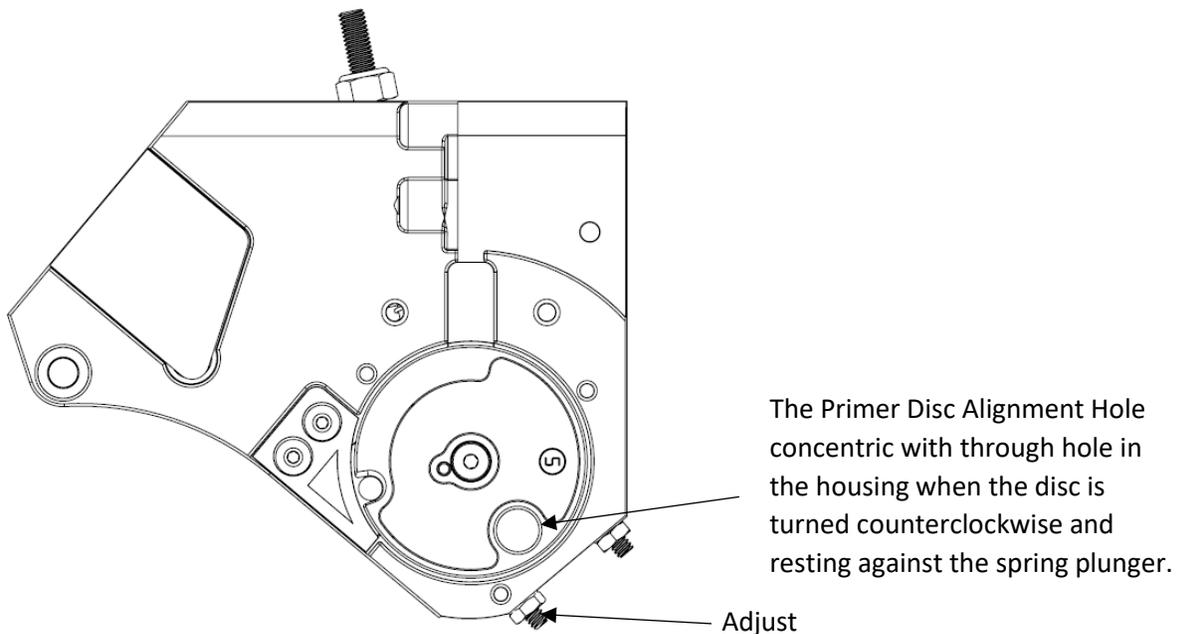
**Figure 13. Primer Disc Stop Screws**

- Set the set screw (201-1398-01) so that the Primer Slot is centered at the bottom of the Primer Ramp.



**Figure 14. Primer Disc Set Screw Adjustment**

- Set the spring plunger (201-1499) so that the Primer Disc Alignment Hole is concentric with the bushing below it in the housing. **Note:** To double check if set correctly, watch the alignment pin on the tool head enter the alignment hole on the primer disc. The pin should not be pulling the disc into alignment.



**Figure 15. Primer Disc Spring Plunger Adjustment**