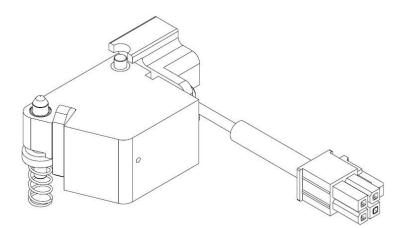# 101-1040: Mark 7® Primer Orientation Sensor Evolution / Revolution / Apex 10
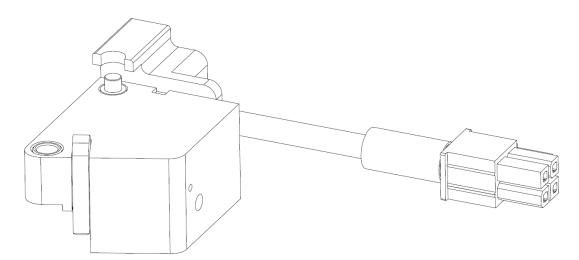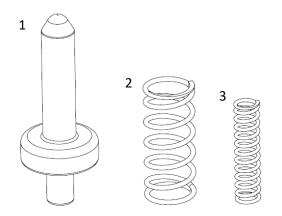
Instruction Manual V 1.1

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

Packaging Contents:

       The Primer Orientation Sensor is compatible on all Revolution, Evolution and APEX 10 Press platforms, including systems equipped with No priming, Standard priming and Automated priming Systems. The sensor is packaged in a single corrugated box (6" X 6" X 1-1/4"). Please check the packaging contents below before installing the sensor.
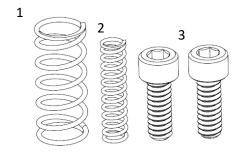

Bag 1: Primer Orientation Sensor Main Body (QTY 1)

Bag 2: Hardware
1. Probe (QTY 1)
2. Probe Spring (QTY 1)
3. Indicator Spring (QTY 1)

Bag 3: Spare Hardware
1. Probe Spring (QTY 1)
2. Indicator Spring (QTY 1)
3. Mounting Hardware: 8-32 Thread Size, 1/2" Long, Socket Head Screw (QTY 2)

Installation Instructions:

The Primer orientation sensor installs into station # 5, the station after the primer seating station. To install the sensor the Shellplate must be removed or lifted to remove the spacer housing. Although it's not required, we do recommend to remove the tool head for full access. Below are the installation steps for installing the sensor on a Revolution (shown). Evolution and Apex10 process is the same.

Step 1: Removing Press Top End

1. Remove Tool Head
2. Remove Shellplate nut
3. Loosen the Shellplate retainer clamps and remove the Shellplate spring.
4. Remove the Shellplate
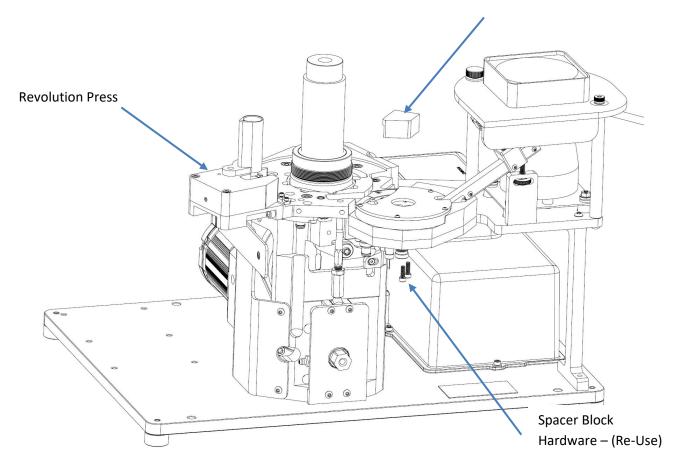5. Remove Spacer Block by loosening 2X 10-32 from the underside of the Priming Assembly with a 9/64" Allen Key

Revolution Press

Spacer Block Hardware – (Re-Use)

Figure 1: Revolution Press Top End disassembled for Sensor Installation

Step 2: Installing Probe Retractor and Springs

Place the two springs into the spring wells in the primer housing as shown. Apply a small amount of red and tacky grease on the springs. Once the springs are installed, insert the probe retractor into the large spring.
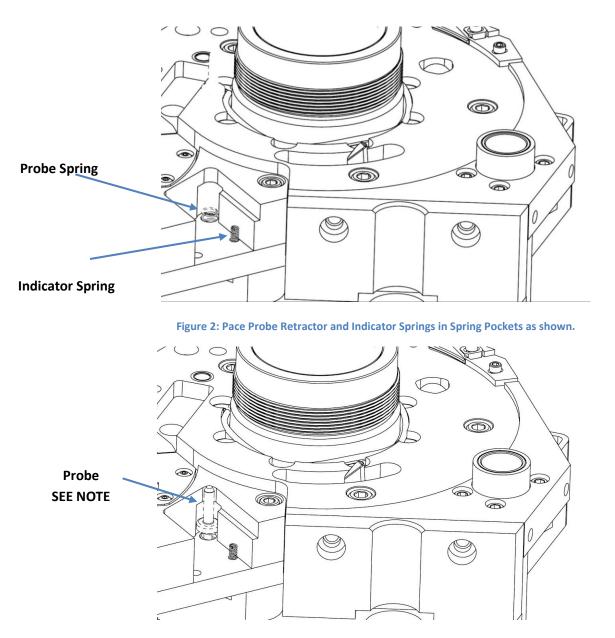

Probe Spring

Indicator Spring

Figure 2: Pace Probe Retractor and Indicator Springs in Spring Pockets as shown.

Probe
SEE NOTE

Figure 3: Probe Retractor Installed with Springs

NOTE: The probe must be installed at a slight angle in order to clear the undercut in the priming housing.

Step 3: Installing the Primer Orientation Sensor Main Body

Carefully lower the sensor body straight down so the probe retractor enters the bronze sleeve bearing and the indicator finger pin enters the spring. The sensor should mount fully flush into the pocket with no resistance. If it does not seat properly remove and reseat. Re-use the QTY 2 8-32 screws from the underside of the priming system to secure the sensor the priming assembly. Spare screws are included if needed.
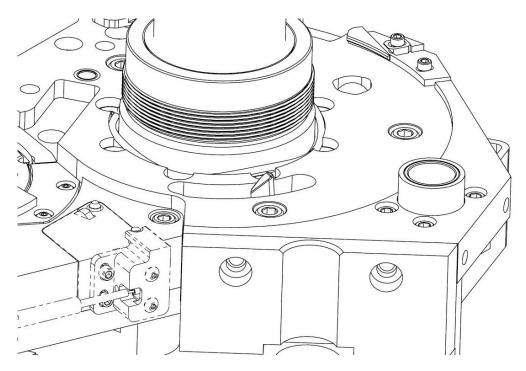

Figure 4: Primer Orientation Sensor Installed

Once the Sensor is fully installed add a couple drops of light weight oil on the probe retractor and moving components and manually actuate the sensor to make sure it is moving smoothly.

Step 4: Re-install the Press components

1. Install Shellplate
2. Install Shellplate Spring and set tension
3. Install Shellplate Nut
4. Install Tool Head*

Note: When installing the Tool Head always perform the final tightening of the Tool Head with the crank assembly in the down position.

Step 5: Adjusting Optical Sensor to Desired Primer Depth

With the machine powered off and the tool head in the **UP POSITION** place a case with a seated primer to the desired depth into station #5. Make sure the Shellplate nut is fully threaded down to the desired tightness. When you Install the Primed case, you will notice the indicator Pin will move up slightly. With the case installed the top of the indicator pin should be **FLUSH** with the top of the Sensor Housing. If the sensor Housing is higher or lower loosen the two socket head Screws on the back of the sensor housing and reset the height.
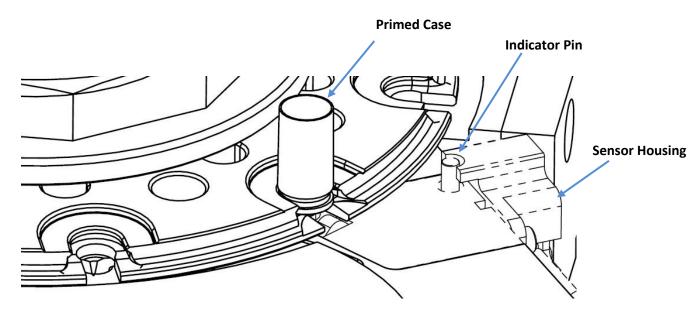

Figure 5: Setting Optical Sensor Position

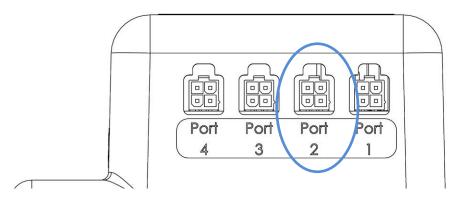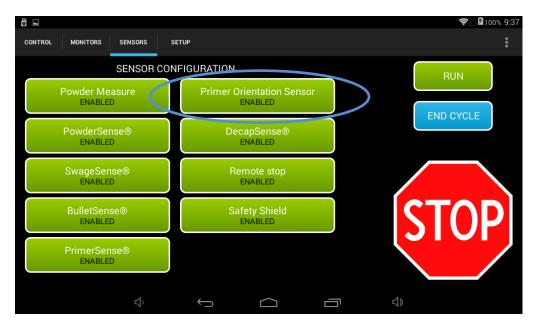**Step 6: Plug the Sensor into Port #2 on the rear of the electronics unit**

Figure 6: Plug Sensor into Port #2 as Shown

Operating Instructions:

Software version 2.11 or newer is required for the sensor to operate properly. Visit https://www.markvii-loading.com/knowledgebase navigate to the appropriate section depending on your unit. Then click on the User Manual and Firmware Updates dropdown to find the latest software.

Before entering the Loader application make sure the press manually cycles smoothly with the sensor installed and the sensor is plugged into Port #2. Enter the Loader Application and Perform Calibration. Once the calibration is complete, select the sensor tab and enable the sensor as shown below.

Figure 1 : Enabling Sensor

The sensor checks the primer depth when initiating a single cycle or pressing Run. If a case is not present in station #5 or a case has an upside down, no primer or a primer set at a depth +/- .025" off the desired primer depth a notification can appear. You must clear the notification before continuing or disable the sensor.

The Primer Orientation sensor if set properly will also detect a Shellplate index fault. If the sensor is enabled and a case is located in station 5 with a primer installed properly the sensor will allow the machine to perform a cycle. During the cycle if the sensor doesn't detect the advancement of the Shellplate on the upstroke a notification can appear. If the notification appears on the screen clear the Shellplate and check the mechanical indexing components before continuing operating the press.

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/knowledgebase

Please contact us for technical support

Phone: 1-888-462-7577

Hours: 9:00am-4:30pm, ET, M–F