BIPPMR07 (Published) Book specs- Dates: 20091116 / 20091116 / 20091116 Lang: ENG01 Applic: PPM

Instructions for Retrofit Kits KYSSPMDR01, 02, 03, and 04: Installation of the Ratchet Mechanism to Turn the Diaphragm—All 1-Station Press Models

This document uses Simplified Technical English.
Learn more at http://www.asd-ste100.org.

NOTICE P1: "Remove electrical power from the machine" means use the necessary safety procedure for your location. In the USA, this is the OSHA lockout/tagout (LOTO) procedure. More local requirements can also apply.

WARNING 2: Risk of Death or Serious Injury: —The container and ram move independently. During operation, these components move without warning. These components can also move down with power off. Spaces can close and cut off your arm.These components can also move down with power off. Spaces can close and cut off your arm.

- Keep personnel not necessary for this maintenance clear of the machine.
- Use special caution when you use the key that bypasses the door guards for maintenance.
- Two qualified technicians are necessary. Each technician must hear the other's voice clearly.

container (can)—the cylinder that the goods, the diaphragm, and the platen go into during operation

ratchet mechanism to turn the diaphragm (diaphragm rotate device) —a mechanism that causes the diaphragm to turn 10 degrees each time that the ram goes up and down. This decreases worn areas and increases the diaphragm life. The primary components of this mechanism are the thrust arm and the ratchet plate (diaphragm rotating plate).

switch operation rod (guide rod) —a vertical rod that moves up and down with the movement of the ram. On 1-station presses made after August, 2009, the switch operation rod is the target for four ram proximity switches. On machines made before this date, this component is the target for all five ram proximity switches. On these machines, the platen and diaphragm cannot turn because the rod is attached to the platen.

Other instructions included with this kit

- BMP080033 "Hydraulic Ram and Diaphragm Assy"
- BIPPMM20 "Ratchet Mechanism to Turn the Diaphragm"
- BIPPMM21 "About the Ram Proximity Switches, the Switch Post, and the Switch Operation Rod"
- 01-10732A "Placard for eyebolt for safety bars"

Special tools and materials :

- Electromagnetic drill (Milwaukee 4270-20 or equal) -- available from Milnor (See Figure 4)

  Note 1: You must put the base of the drill on top of the platen and drill holes in the bottom of the top plate (the drill bit points up). You can adjust the specified drill this way.

- Drill platform -- supplied in the kit
- Loctite 242 threadlocker compound -- supplied in the kit
- Drills and taps shown in Figure 2 -- supplied in the kit. You must supply drill bit lubricant.

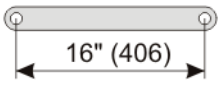
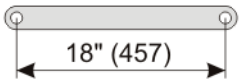
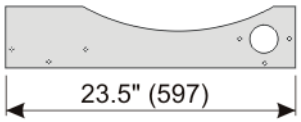
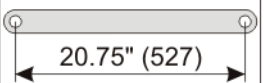
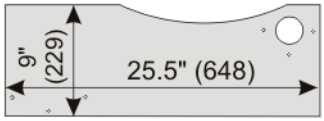
- Hole template for your machine size -- supplied in the kit

CAUTION 3: Machine damage—The incorrect template will cause permanent damage.

- Make sure that you received the correct components for your machine (see Figure 1). Speak to the Milnor factory if you are not sure.

Figure 1: Correct Components for Each Press Model

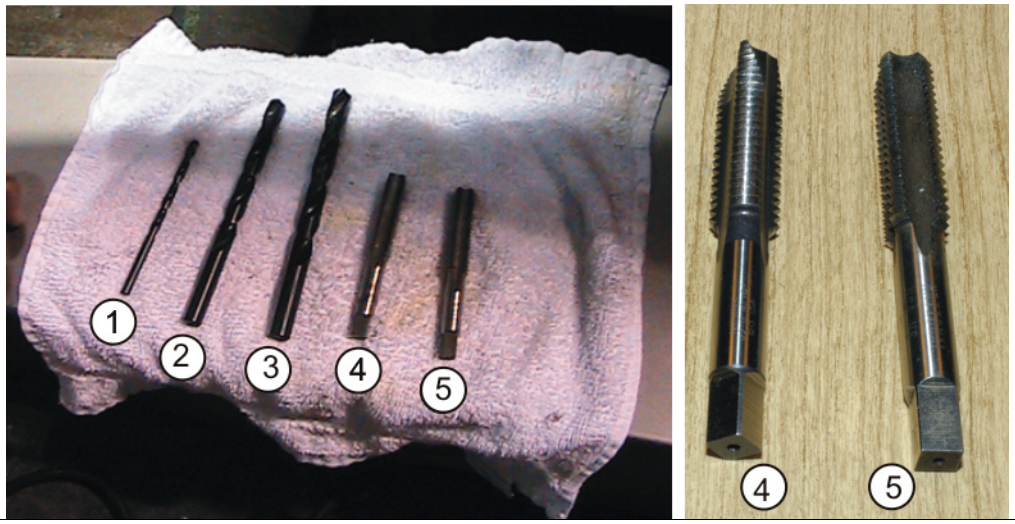
Table of Machine Models and Components

1	2	3
MP1601_ MP1603_ MP1550_		
MP1602_ MP1604_		
MP1A03_		

Legend

1. Machine model. See the nameplate on the machine.
2. Ratchet arm
3. Hole template

Figure 2: Drill Bits and Taps in supplied in the Kits



Legend

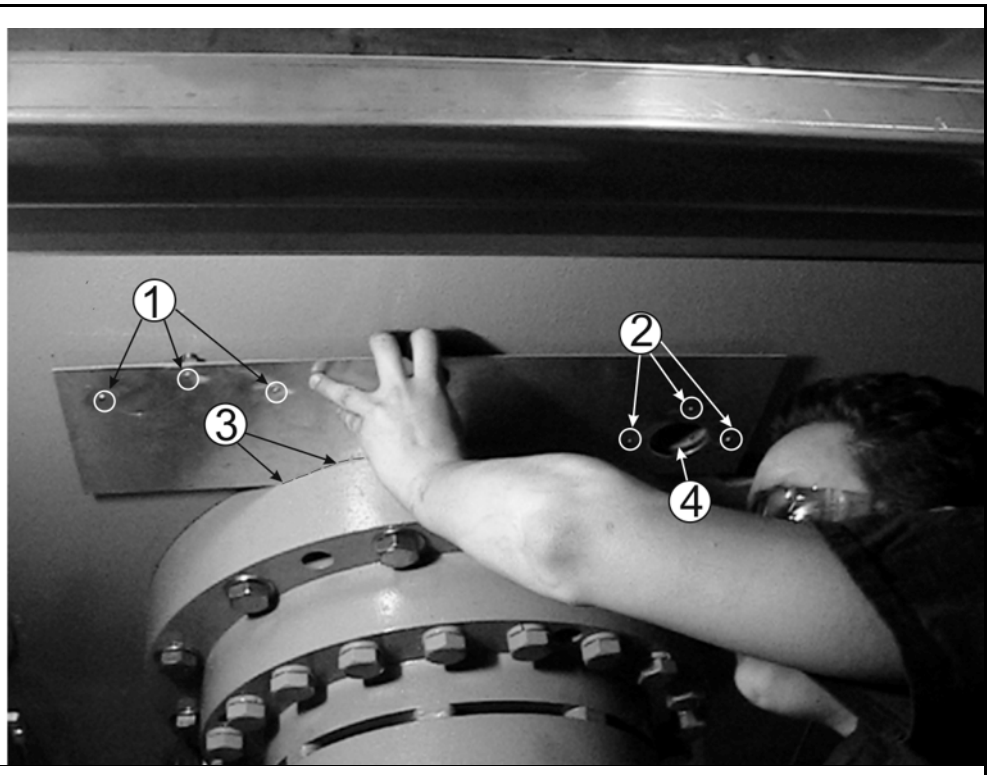
1. 3/16"drill bit -Milnor P/N 97A316T (HS-SS NAT.#12312)
2. 3/8" drill bit - Milnor P/N 97A138T (HS-SS NAT.#12324)
3. 27/64" drill bit - Milnor P/N 97A2764T (HS-SS NAT.#12327)
4. 1/2-13 spiral point gun tap - Milnor P/N 97C087T
5. 1/2-13 bottom tap - Milnor P/N 97C086A

1. Gain access to the work area.

1. Open access doors and remove all panels necessary to get access to the work area. Document BIPPMM20 shows the installed ratchet mechanism.
2. Use the manual mode to move the can fully down.
3. Move the ram fully up.
4. Install the safety bars.
5. **Remove electrical power from the machine (see Notice P1).**
6. Look at document BMP080033. The steps that follow refer to items shown in document BMP080033.
7. Remove the nut (item 16) and the rod end adapter (item 42) from the switch operation rod (item 7).
8. Remove the switch operation rod through the top plate. Remove and discard the brass guide bushing bolted to the top of the top plate.

2. Put marks in the top plate for the holes you will drill.

Figure 3: Align the template on the ram flange and the rod hole.



Legend

1. Hole positions for the thrust arm assembly
2. Hole positions for the lower guide plate for the rod
3. The curve in the template must be tight against the ram flange.
4. Hole for the switch operation rod

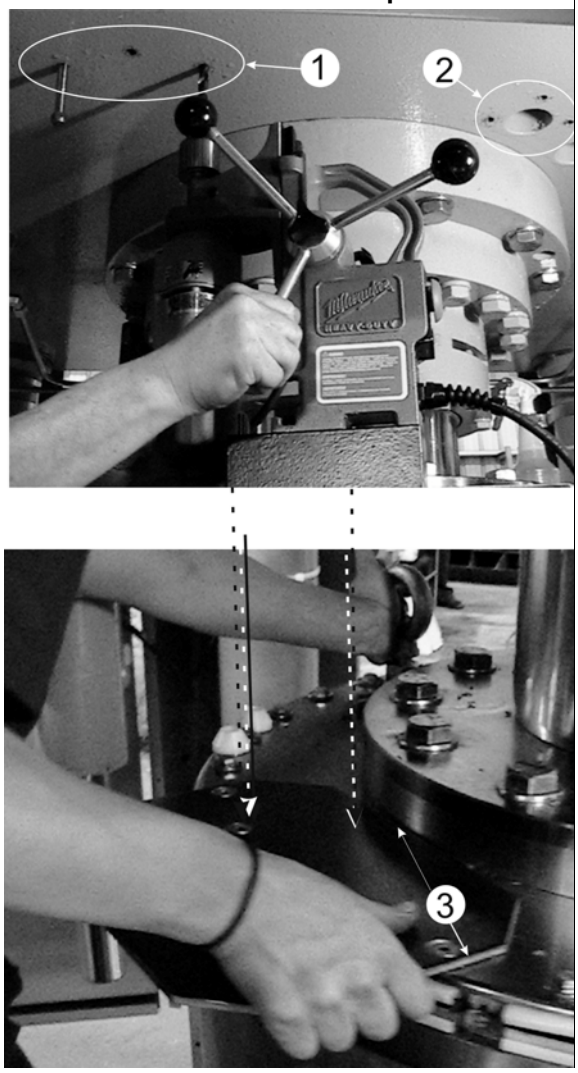
1. Hold the template in the position shown in Figure 3.
2. Use the template and a punch to set the position of the six holes you will drill in the top plate.

3. Drill holes. Cut threads in the drilled holes.

CAUTION 4: Risk of Machine Malfunction—If you drill these holes incorrectly, the mechanism will not turn the diaphragm.

- Do this procedure accurately.

Figure 4: Put the drill on the support platform

View of the drill and the platform	Legend
	**1.** The holes for the thrust arm assembly **2.** The holes for the lower guide plate for the rod **3.** The support platform for the drill

3.1. Three holes for the thrust arm assembly

1. Attach the support platform (Figure 4, item 3) to the platen to make a support for the drill. Use two diaphragm bolts from the kit.
2. Set the drill as shown in Figure 4. The base of the drill is on the platform. The drill bit holder points up.
3. Drill the holes.
   - You must drill all holes vertically.

- Use gradually larger drill bits (Figure 2, items 1, 2, 3).
- Make sure that the electromagnet holds the drill firmly each time you put the drill in a new location.
- Apply fluid to the bits when you drill.

4. Tap threads in the drilled holes.
   - Cut threads with the tools shown in Figure 2, (items 4 and 5).
   - First use item 4. Then use item 5.
5. Remove the support platform.

3.2. Three holes for the lower guide plate for the switch operation rod

—The holes for the lower guide plate for the rod are above the platen. You do not need to bolt the platform to the platen to drill these holes.

- Put the drill on the platen to make these holes.
- Use the same procedure you did for the first three holes.

4. Install the related components.

1. Supply electrical power to the machine. Remove the safety bars.
2. Put the ram and the can fully down.
3. If there are water valves on the platen, do one of these steps:
   - If you use gum rubber in the diaphragm, remove the water valves from the platen. Put a plug in the hole.
   - If you use water in the diaphragm, keep the two valves. Tighten the valve until the valve handle points to the ram.
4. Remove the eight white guide buttons from the platen (BMP080033, item 29).

4.1. Install the guide plates for the switch operation rod.

1. Find the two plastic (UHMW) guide plates and the necessary bolts and washers in the kit. (BIPPMM20, items 5,14,25)
2. Install the lower guide plate for the rod.
   a. Apply Loctite 272 to each bolt.
   b. Tighten to 15 ft-lbs.
3. If you haven't already done so, remove and discard the brass guide bushing bolted to the top of the top plate at the rod hole.
4. Install the top guide plate (BMP080033, item 15) on top of the ram. Follow the same procedure as step 2.

4.2. Install the thrust arm assembly.

1. Find the bolts and flat washers in the kit (BIPPMM20, items 5, 7, 8).
2. Attach the thrust arm assembly to the holes shown in Figure 4.
   a. Apply Loctite 272 to each bolt.
   b. Tighten to 15 ft-lbs.

4.3. Install four ratchet plates and four platen guards

Supplement 1

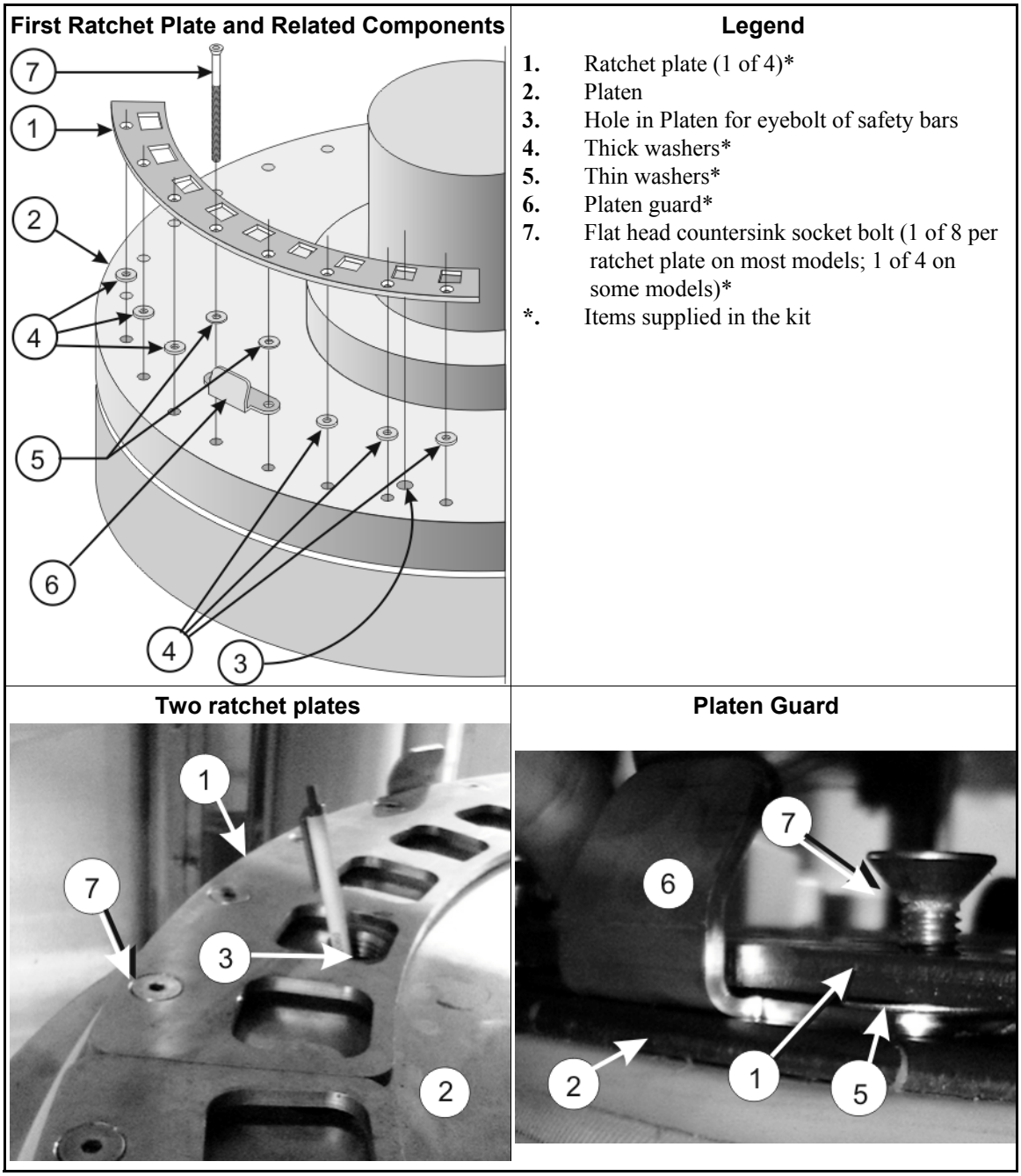
Important Data About the Safety Bars and the Platen Eye Bolt

You must remove the eye bolt for the safety bars from the platen before you install the ratchet plates. After the ratchet plates are installed, you can only put in the eye bolt when it is necessary to install the safety bars. You must remove the eye bolt before you operate the machine. **If you do not remove the eye bolt, it will cause damage to the machine when the ratchet arm hits it.**

There are two eye bolt holes in the platen. These are 180 degrees apart. When you install the ratchet plates, make sure that these holes fall below a hole in the ratchet plate. It must be possible to install the eye bolt through the hole in the ratchet plate. When you install the safety bars, one of the eye bolt holes must be below the eye bolt in the press top plate. You must move the ram up and down until the ratchet mechanism turns the platen sufficiently to align these components.

When you stow the safety bars, attach the removed eye bolt to them to make sure that you can find it.

Figure 5: Install the ratchet plate and related components



Look at Figure 5. Put the first ratchet plate where one of the ratchet holes in the plate aligns with one of the eyebolt holes in item 3 of the platen.

1. Install each of the four ratchet plates as follows:
   a. Remove the diaphragm bolts from the part of the platen where the ratchet plate will go (eight bolts on most models; four bolts on some models). Discard the bolts and flatwashers. Do not remove more than the necessary bolts at one time. The diaphragm can disconnect from the platen.
   b. Install the ratchet plate and the related components as shown in Figure 5.
      1. Apply Loctite 272 to each bolt.

2. Tighten the eight bolts in the ratchet plate by hand to approximately 5 ft-lbs.

2. When all four ratchet plates are installed, re-torque all diaphragm bolts (32 bolts on most models; 16 bolts on some models). Do not to exceed 15 ft-lbs. Use an alternating pattern.

CAUTION 5: Risk of bolt Damage —You can break the diaphragm bolts if you tighten them too much.

- Do not tighten the bolts more than the values in this procedure.
- Use the correct torque wrench with a maximum value of 30 ft-lbs.

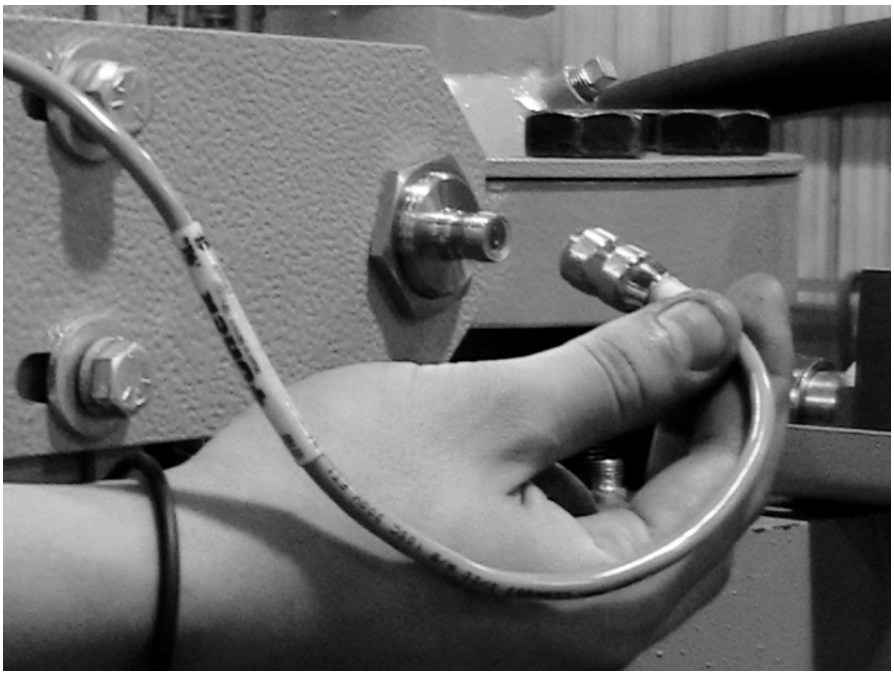
5. Assemble and install the switch operation rod.

1. Look at Figure 6. Attach the UHMW base to the switch operation rod, as follows:
   a. Turn the brass nut as far as it will go on the threads.
   b. Use wrenches to turn the UHMW base until it is against the brass nut.
   c. Tighten the brass nut against the base.
2. Lower the switch operation rod through the plate to the platen.

Figure 6: Attach the UHMW base for the rod to the switch operation rod

6. Move the proximity switches and make the adjustments

Figure 7: The top proximity switch (PXST)



6.1. Move the top proximity switch (PXST) to the thrust arm assembly.

1. Disconnect the switch cable as shown in Figure 7.
2. Remove the switch and attach it to the bracket on the trust arm assembly. The switch target is the ratchet arm. You can see the new location in BIPPMM21.
3. Move the switch cable as necessary to connect the switch. Fasten the cable to the machine. Use plastic cable fasteners.

6.2. Move the other switches and test all switches.

1. Move each of the other four switches 3.5 " (89 mm) higher on the switch post. This is the approximate change in the position at which the switch will operate due to the higher position of the rod.
2. Test and adjust all five switches as explained in document BIPPMM21 supplied in the kit.

6.3. Test and adjust the ratchet arm.—Refer to document BIPPMM20 supplied in the kit.

7. Put the machine in operation.

1. Clean all unwanted material.
2. Close the access doors. Make sure that the machine can operate safely.

— End of BIPPMR07 —