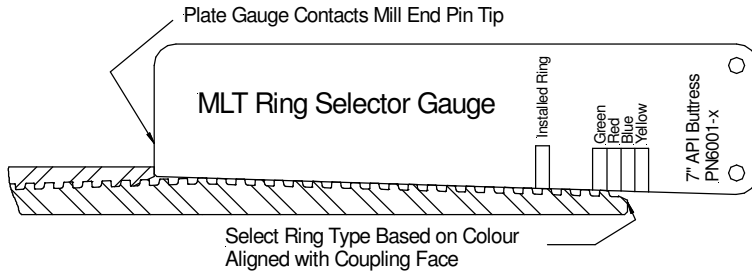


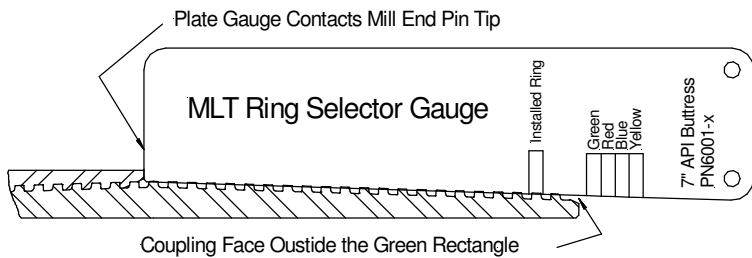
# **Multi-Lobe Torque (MLT) Ring**

## **Ring Selection and Installation Procedure**

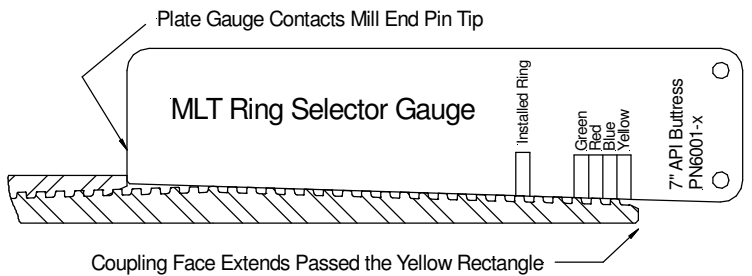
## Step-by-step procedure for selecting and installing Multi-Lobe Torque (MLT) Rings in API connections



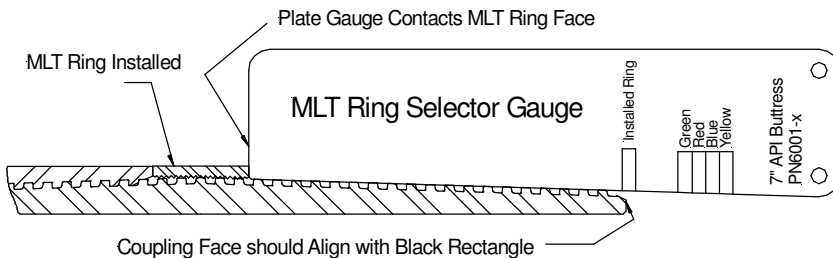
**Figure 1 - Illustration of plate gauge being used to select ring type**



**Figure 2 – Illustration showing excessive mill end pin penetration**



**Figure 3 – Illustration showing too little mill end pin penetration**



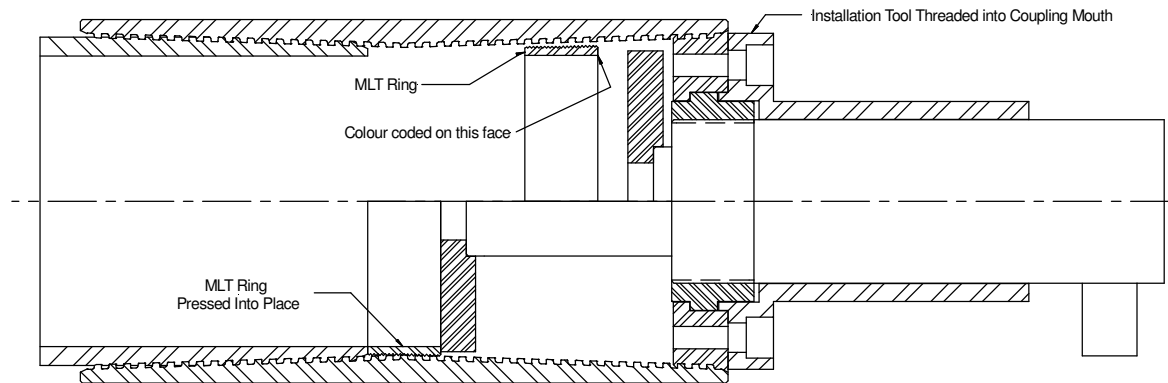
**Figure 4 - Illustration of plate gauge being used to verify ring installation**

### To Select a Ring and Verify Ring Installation

1. Before beginning, ensure that the mill end is made up- properly:
  - For API Buttress, the face of the coupling should be within one thread turn of the base of the triangle stamp for minimum power tight makeup and to the apex of the triangle for maximum makeup.
  - For API 8-round, the face of the coupling should be flush with the thread vanish point or within two thread turns, plus or minus, of the thread vanish point.
2. Place the MLT Ring Selector Gauge against the coupling thread crests and slide it until it contacts the mill end pin tip.
3. Normally, the plate gauge contacts the mill end pin tip and the coupling face aligns with one of the colored rectangles as shown in Figure 1. In this case select a ring of the color corresponding to the color which aligns with the coupling face. In the example shown in Figure 1, a blue ring is selected.
4. If with the plate gauge contacting the mill end pin tip, the coupling face does not reach the green rectangle, as shown in Figure 2, the mill end pin is made up too far and the joint should be set aside.
5. If with the plate gauge contacting the mill end pin and, the coupling face extends beyond the yellow rectangle, as shown in Figure 3, the mill end pin is not made up far enough or the coupling is excessively long and the joint should be set aside.
6. Install the Ring as per the ring installation procedure on the next page.
7. With a ring installed, place the plate gauge against the coupling thread crests and slide it until it contacts the installed ring face.
8. The coupling face should land within the "Installed Ring" black rectangle.

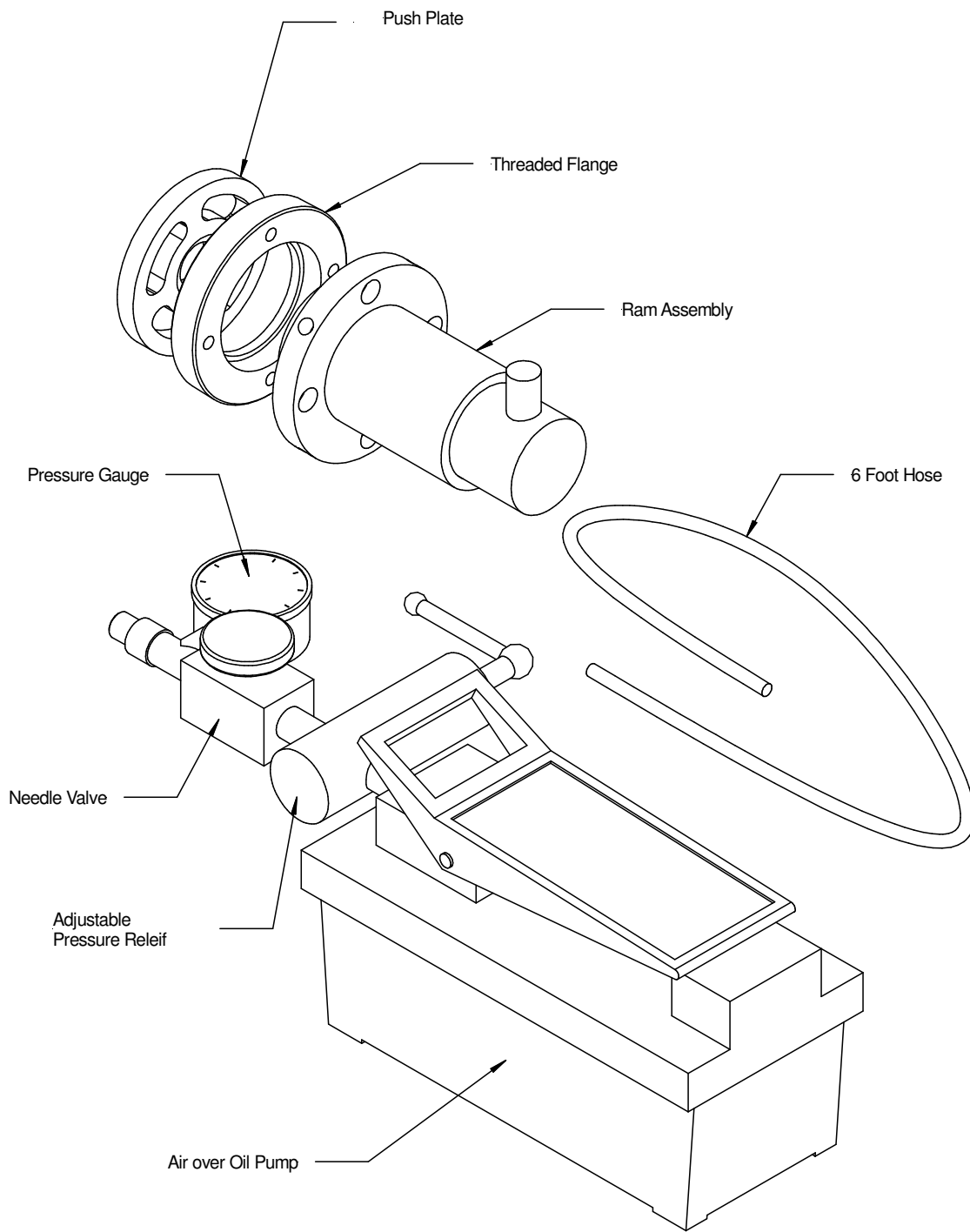
## To Install a Multi Lobe Torque (MLT) Ring

1. Select a ring according to the procedure on the preceding page
2. Place the selected ring in the coupling with the large end (painted) toward the coupling face as shown in Figure 4, upper half of the schematic.
3. Install the hydraulic installation tool into coupling by engaging the threaded flange into the coupling and tightening until hand tight. See installation tool assembly diagram for assembly instructions.
4. Extend the installation tool using the hydraulic pump until the ring is seated against the mill end pin tip as shown in the lower half of Figure 5.
5. Retract and Remove the installation tool.
6. Visually inspect the installed ring to ensure proper alignment within the coupling, and that it is landed against the pin face.
7. Complete the verification by performing Step 7 & 8 on the previous page.



**Figure 5 – Schematic of installation tool used to press torque ring into place**

Note: When removing Capscrew From Hydraulic ram, ensure that ram is fully extended to remove. Removal without extending ram can cause return spring to back off.



**Installation tool Assembly**