

VG SX Reverse Taper Actuator Assembly

Supplement



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Original Instructions

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Introduction

This supplement describes how to assemble, install and remove the VG SX Actuator. Use this information in addition to the *Service Manual* for the hot runner.

Disassembling the VG SX Actuator Assembly

To disassemble the VG SX actuator assembly, do the following:



IMPORTANT!

The actuator must be pulled out from the back. The backing plate must be removed to remove the actuator.

1. Remove the backing plate. Refer to the *Hot Runner Service Manual* for instructions.
2. Using pliers or the snap ring tool, hold the piston in place and remove the screws with a 2.5mm Allen key.

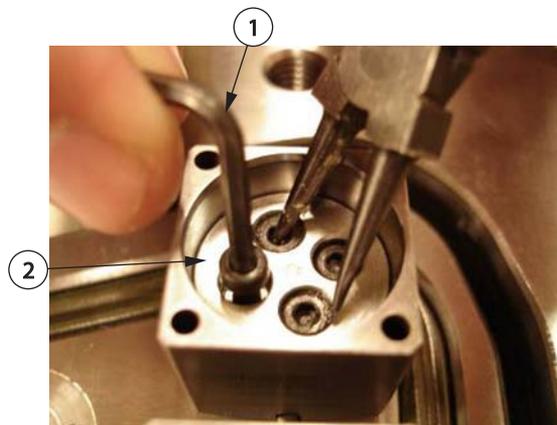


Figure 1-1 Remove the Screws Securing Piston

1. Piston 2. Allen Key

3. Using pliers, grip the piston and pull it up and out of the cylinder.

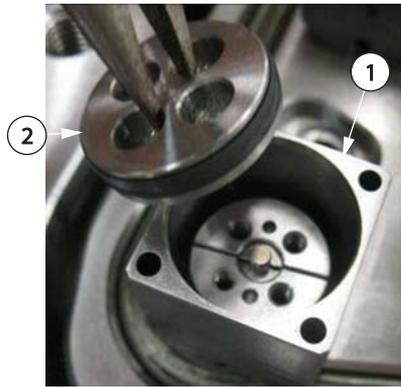


Figure 1-2 Removing the Piston

1. Cylinder 2. Piston

4. Using the snap ring tool, spread the stem retainer apart, and then pull it up and out of the cylinder.

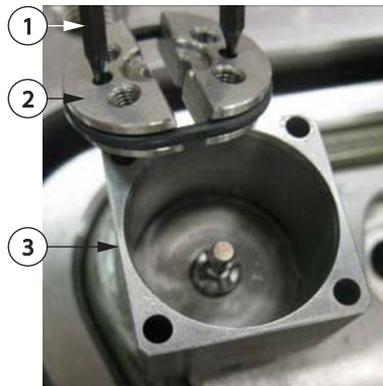


Figure 1-3 Remove the Stem Retainer

1. Snap Ring Tool 2. Stem Retainer 3. Cylinder

5. Using the snap ring tool, spread the snap ring apart, and then pull it up and out of the cylinder.

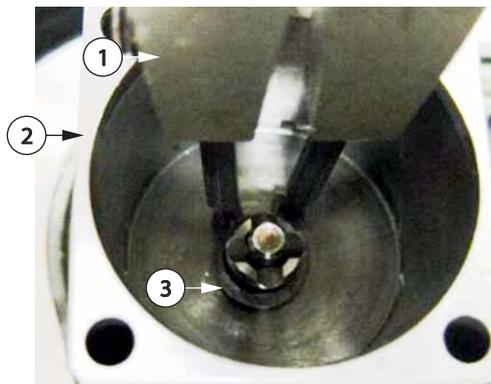


Figure 1-4 Remove the Snap Ring

1. Snap Ring Tool 2. Cylinder 3. Snap Ring

6. On the removal tool, slide the sleeve from the neutral position to the flange end.

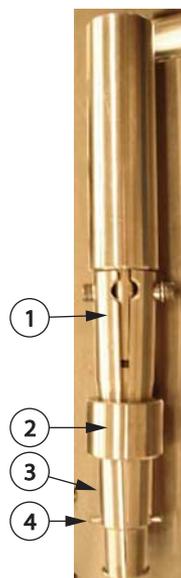


Figure 1-5 Removal Tool

1. Top Position 2. Sleeve at the Neutral Position 3. Bottom Position 4. Pegs

7. Insert the end of the removal tool into the cylinder until it touches the bottom of the cylinder.



IMPORTANT!

Align the pegs of the removal tool with the holes on the top of the cylinder.

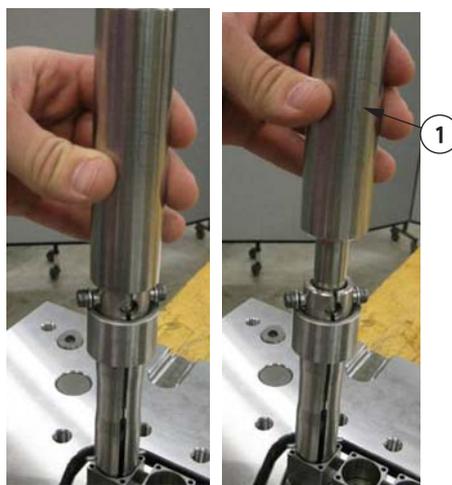


Figure 1-6 Remove the Cylinder

1. Collar

8. Slide the sleeve of the removal tool to the top of the removal tool. This opens the flange of the removal tool and engages the undercut inside the cylinder.
9. Pull up on the collar of the removal tool firmly, as you would with a slide hammer, until the cylinder is free from the stem guide.

- 10.** Slide the sleeve to the flange end of the removal tool to disengage and pull the cylinder off.

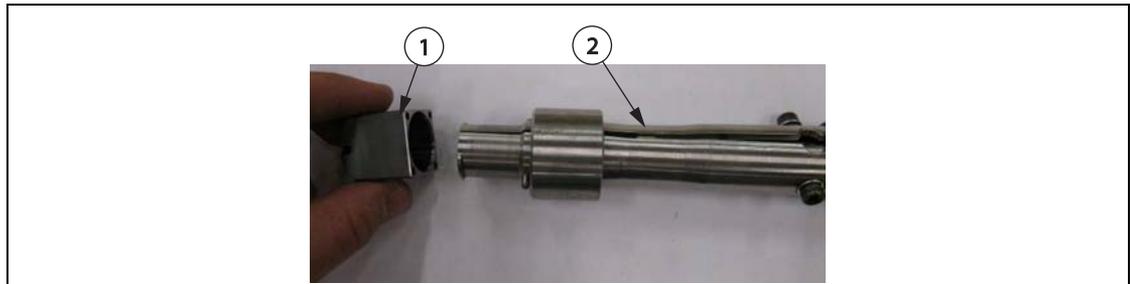


Figure 1-7 Remove the Cylinder from the Removal Tool

- 1.** Cylinder **2.** Removal Tool

- 11.** Slide the sleeve of the removal tool from the neutral position to the top. This opens the flanges of the removal tool.

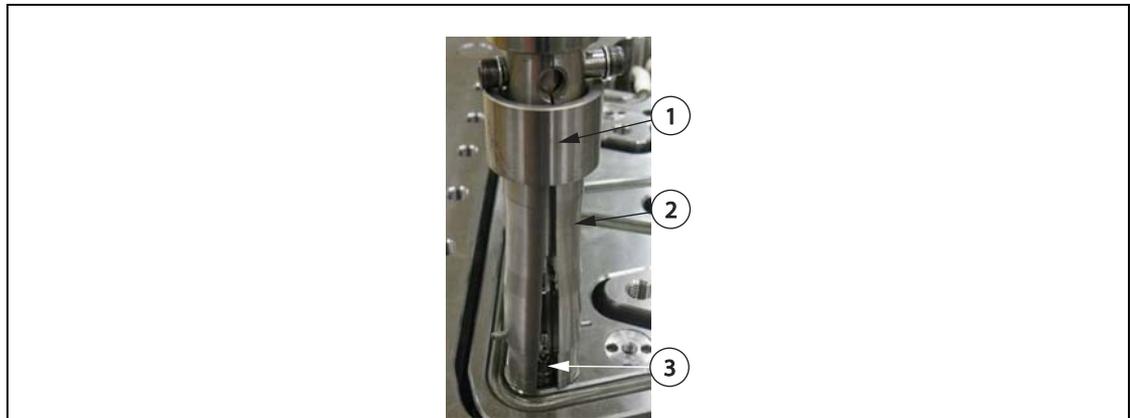


Figure 1-8 Remove the Stem Guide

- 1.** Sleeve in Top Position **2.** Removal Tool **3.** Stem Guide

- 12.** Remove what is left of the Grafoil seal from the stem guide and slide the flange end of the removal tool over top of the stem guide.
- 13.** Slide the sleeve of the removal tool to the bottom. This will close the flanges around the stem guide.

NOTE: Heaters may be turned on to soften plastic for easier removal; however, be careful not to overheat.



IMPORTANT!

If overheated, the stem guide may be removed without the stem. If this happens, use brass pliers to remove the remaining stem.

- Slide the collar of the removal tool upward firmly, like a slide hammer, until the stem is freed from the manifold or until it can be pulled freely by hand.



Figure 1-9 Remove Stem Guide

NOTE: Keep the removal tool perpendicular to the manifold to prevent the stem from bending or breaking.

- Slide the sleeve back to the top of the removal tool to release the stem guide.



WARNING!

Burn Hazard — There may be plastic in the stem guide holding the stem in place. Heat may need to be applied to remove the stem. Personal protective equipment must be worn to prevent serious injury.

- Hold the stem.

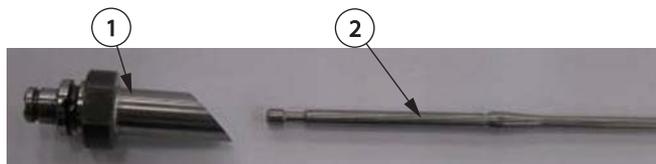


Figure 1-10 Remove the Stem

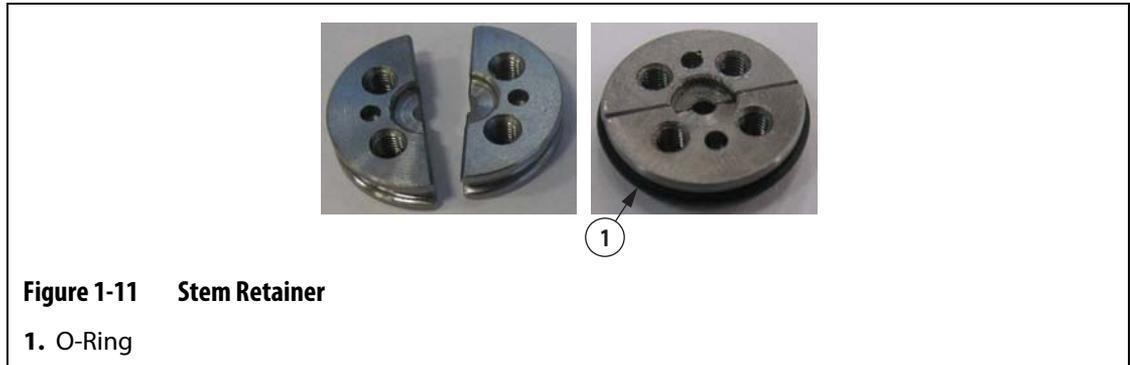
1. Stem Guide **2.** Stem

- Using a torch, heat the stem guide until the plastic has softened.
- While the plastic is soft, pull the stem guide until the stem is completely removed.

Assembling the VG SX Actuator Assembly

To assemble the VG SX actuator assembly, do the following:

1. Place both halves of the stem retainer so that the three-holed side is up and the straight edge of the half circles are together.



2. Place the O-ring in the groove around the rim to hold the two halves together.

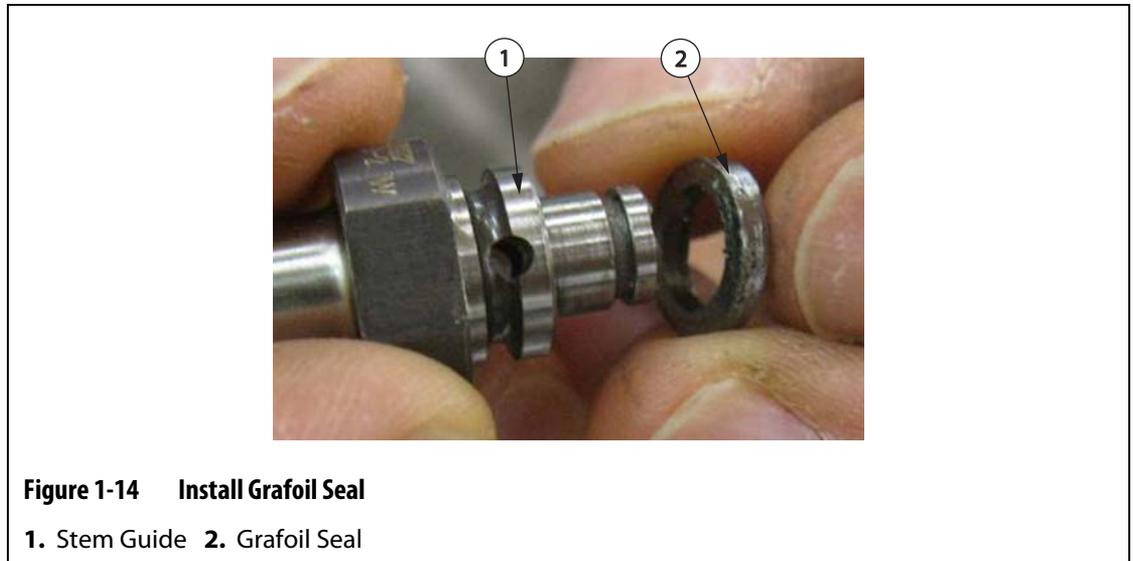


3. With the piston counter-bore side up, place the green inner double delta seal into the groove around the metal piston's rim. No tools are required.
4. Place the seal installation tool on top of the piston.
5. Install the outer O-ring seal by pushing the seal over the seal installation tool until it sits over the interior O-ring seal.
6. Remove the seal installation tool.

7. Make sure the outer seal is uniform around the circumference of the piston.



8. Make sure stem guide surfaces are clean prior to assembly.
9. With the pointed end of the stem guide down, slide the Grafoil seal over the top of the guide.



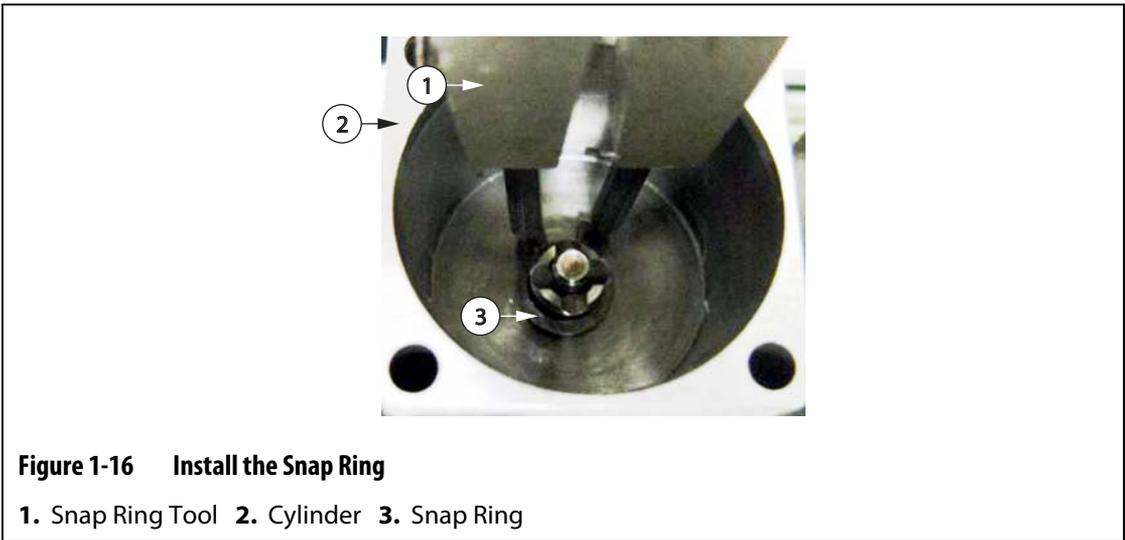
10. Insert the stem guide into the bottom of the cylinder.

NOTE: Make sure the guide is in as far as possible.

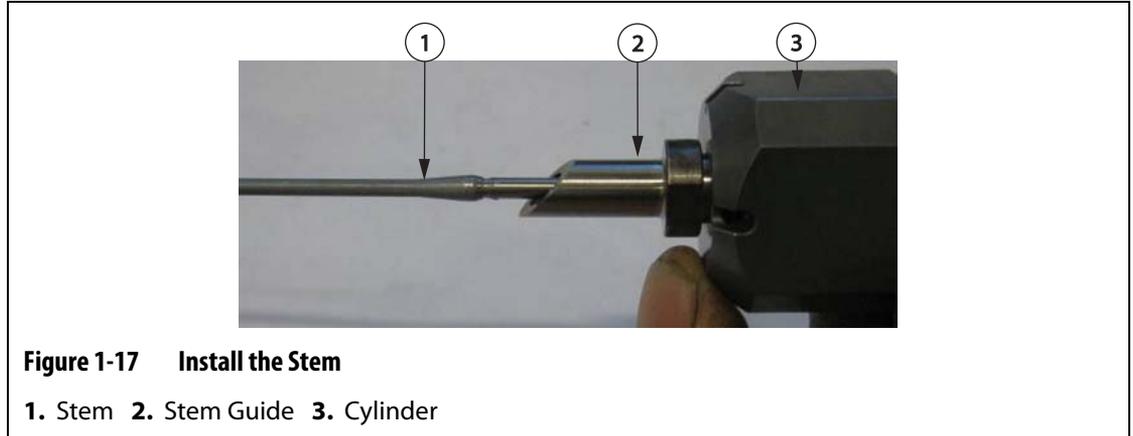


11. Using the snap ring tool, place the snap ring over the top of the stem guide that is now inside of the cylinder.

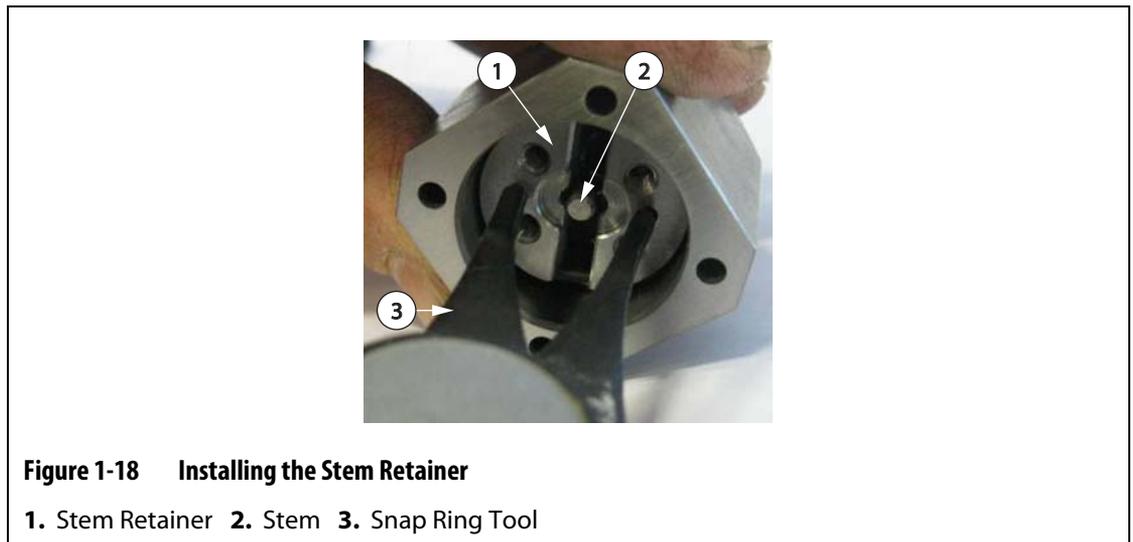
NOTE: If positioned correctly the ring should snap into the groove around the top of the guide preventing it from falling out.



12. Make sure the stem shaft is clean, debris can cause sealing problems.

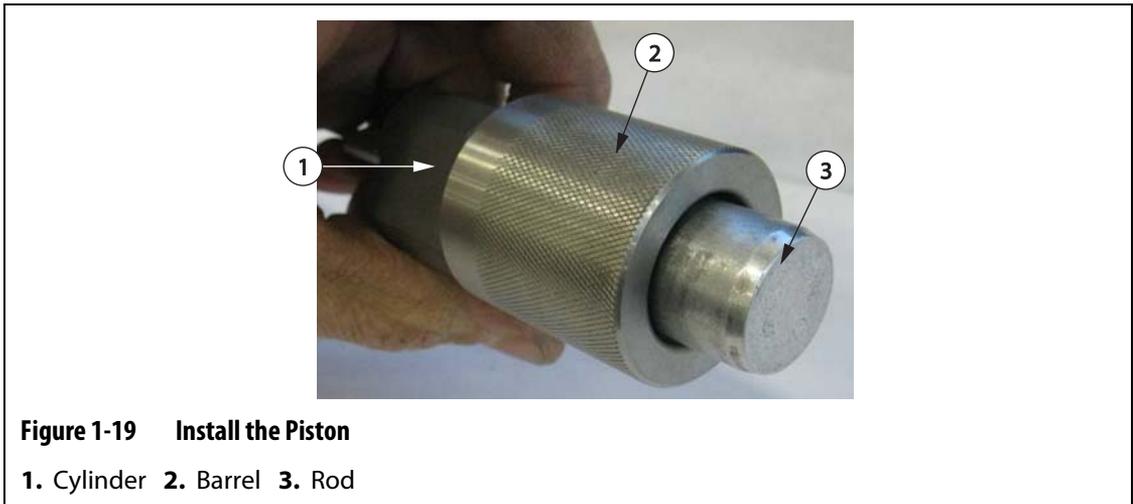


13. With the plunger end of the stem pointing towards the stem guide, slide the stem into the bottom on the cylinder assembly.
14. Using the snap ring tool, spread the stem retainer assembly apart.



15. Slide the stem retainer into the cylinder and around the stem making sure the retainer clips are around the notch of the stem.
16. Using the piston installation tool, insert the piston into the cylinder
- Place the barrel onto the top of the cylinder so that the hole on top lines up with the pegs of the barrel.
- NOTE:** The holes and pegs align diagonal corners.

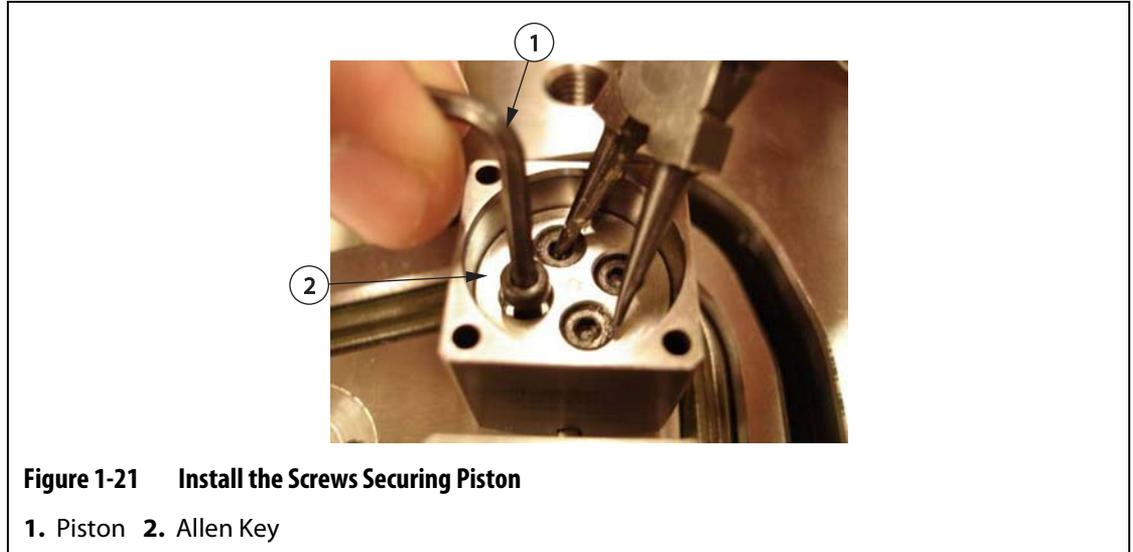
- b. Place the piston, with the counter-bore side away from the cylinder, into the barrel.
- c. Using the rod, push the piston into the cylinder until it engages the spacer.



- 17. Look into the cylinder and make sure that the bolt holes of the stem retainer and the piston are aligned, align if necessary.



18. Apply Loctite to the screws provided.



19. Using pliers or the snap ring tool, hold the piston in place and hand-tighten the piston to the stem retainer using a 2.5mm Allen key.
20. Torque the screws to 2.2 N·m (1.6 lbf·ft).

Installing the Actuator Assembly into the Manifold Plate

To install the actuator assembly into the manifold plate, do the following:

1. Make sure that the surface of the manifold and the bottom of the stem guide is clean.



2. Place the locating dowel into the locating hole on the manifold.

3. Place the crush ring into the groove in the manifold slot.



Figure 1-23 Install the Crush Ring

1. Crush Ring



IMPORTANT!

The stem guide is keyed, make sure the stem guide is oriented so that the high side is toward the melt channel, if not, plastic will not be able to flow into the channel.

4. Slide the actuator assembly into the stem opening on the manifold.



Figure 1-24 Install the Actuator Assembly

1. High Side

5. Press firmly on the top of the cylinder to make sure that it is in place.