



## SERVICE BULLETIN

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**Title:** 23XL Slide Valve Rework Procedure  
**Models Affected:** All 23XL

**Number:** C9803  
**Date:** 2/20/98  
**Supersedes:** New

### **Purpose:**

To provide information on how to rebuild the slide valve assembly and a list of repair parts.

### **Compressor-Motor-Drive-Gears**

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**Approved By:** Alan M. Johnson

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## Reference:

Bulletins **C9602A** — Slide Valve Locknuts

**C9703** — O-ring — Hollow hex plug

**C9709** — 23XL Frame 4 Slide Rod Change (new locknut design)

**C9715** — 23XL Slide Valve Spring Retainer

**C9719** — 23XL Slide Valve Operation and Troubleshooting

**C9804** — 23XL Slide Valve Support

23XL Screw Liquid Chillers Stop Major — 039-292

23XL Parts List Catalog

## Tools:

See bulletin **C9802** — Compressor Maintenance Tools.

Retaining Compound — Loctite 603 other acceptable Loctite 675 and 609

## Parts:

See parts list on last two pages of this bulletin.

## Background:

Frame 1 and 2 chillers have C series compressors: C20, C21, C40, C41, C60, C61.

Frame 4 chillers have D series compressors: D40, D41, D60, D61.

Variable V.I. (volumetric index) compressors: C21, C41, C61, D41, D61

## FIXED V. I. COMPRESSORS

### I. Removal of the slide valve assembly from compressor

1. Lock out and tag the starter.
2. Transfer charge to the storage tank or condenser and set up rigging.
3. Identify and tag each of the capacity solenoids and lines before removing them.
4. Remove the capacity control solenoid coils and supply and return oil lines from the top of the slide casing.

**CAUTION:** Make sure the control panel power is off to prevent damaging the solenoid coils.

5. Insert guide bolts or steel threaded rods at 9 and 3 o'clock.

NOTE: Be ready to catch oil spillage when assembly is moved.

6. Support the slide valve assembly with a nylon sling and pull the assembly forward.

**CAUTION:** The slide valve assembly will be heavier on the slide valve end. Be very careful that the assembly does not drop and cause damage to the slide valve and slide stop.

**WARNING:** Before the slide valve (43) clears the housing check to make sure it is still attached to the shaft.

## **FIXED V.I. COMPRESSORS (cont)**

### **II. Disassembly of Slide Valve Assembly**

NOTE: To remove locknuts or bolts that have been sealed with Loctite:

- a. Apply localized heat to locknut or bolt (450° F/232° C) for no longer than 5 minutes.
- b. Disassemble while hot.

1. Set the slide valve assembly on a sturdy, clean work surface.

**CAUTION:** Remove all the hollow hex plugs to relieve the oil pressure.

2. Place a pan in position to catch oil (a quart or more) and remove the slide valve cover.
3. Reach into the compressor slide valve port and remove spring retainer (shaft) (42,50).

Refer to bulletin **C9715**.

4. Remove the piston (45) from capacity rod (44).
5. Bend the lockwasher (if present) and remove the locknut (52) and lockwasher (53) or locking collar using the socket p/n T-144502D or T144504D. Inspect the piston for wear under the locknut/locking collar area.

6. Remove the slide valve (43) from capacity rod (44).

Hint: To prevent the rod from turning, grip the capacity rod next to the slide valve. This area of the rod does not make contact with the seal ring.

7. Remove the two button (Loctite-sealed) screws (76D) from the slide casing by applying localized heat to screws (450° F/232° C) for no longer than 5 minutes.

## ***FIXED V.I. COMPRESSORS (cont)***

8. Remove the slide casing plug (76A) that holds the slide seal assembly. Examine the O-ring for damage and note cause of damage.
9. Remove slide seal adapter (48) from slide casing plug. Inspect seal ring (49). If seal is worn, replace the slide rod or have the rod polished to 22 micro-inches (.55 micro-meter) at a machine shop.
10. Remove the capacity control valve (58) and check the passageway for blockage. Inspect the slide casing bore for wear.

### **III. Slide Valve Reassembly**

#### **A. General**

NOTE: Parts must be clean and threaded parts must be free of oil grease, and residue before Loctite retaining compound is applied.

NOTE: Do not use Locquic (Loctite primer) for cleaning parts. Application of this primer will accelerate curing time of the sealants. Use a degreasing type cleaner.

NOTE: Do not install the two small O-rings on the slide rod. These O-rings are no longer necessary.

## ***FIXED V.I. COMPRESSORS (cont)***

NOTE: The slide valve clamp assembly is to be installed only on Frame 4 (D40,D60) compressors with serial numbers lower than 3897V02382. Frame 4 compressors with serial numbers higher than 3897V02382 have a slide valve relief shelf (per bulletin **C9804**) and do not require the slide valve clamp.

NOTE: Follow the instructions supplied with the slide valve clamp for proper fitting, drilling and tapping of the holes for the initial clamp set up.

**B. Reassembly for Frame 4 (D40,D60) compressors with serial numbers lower than 3897V02382.** For Frame 1 and 2 compressors (C20, C40, C60) and Frame 4 (D40,D60) compressors with serial numbers higher than 3897V02382, see Section III. C on page 9.

1. Break sharp edge of the shaft shoulders on the slide rod.
2. Place thin mylar (transparency film) over slide rod threads at slide valve end. Use this method to slide the seal ring (49) into place.

NOTE: Open side of the seal faces towards the slide valve.

3. Install the two new O-rings (63, 76B) on the casing plug (76A).
4. Install slide casing plug separator plate on the slide rod from slide valve end.
5. Install the clamp over capacity slide rod from slide valve end. Index mark must be towards slide piston.

## ***FIXED V.I. COMPRESSORS (cont)***

6. Place the slide valve in the vertical position on the bench and set the capacity slide rod into the valve.
7. Install new O-ring (55) in the slide seal adapter. Raise the slide seal near top of the shaft.
8. Place the slide seal adapter (48) over shaft and lower onto the seal (49). Carefully lower seal adapter into the slide casing plug. Make sure the seal is properly seated. Apply Loctite to the four M6 bolts, install the bolts and torque them to 7 ft-lb (9.5 Nm).
9. Remove the slide rod/seal assembly from slide valve and place in the horizontal position.
10. Clean all the threaded parts.
11. Apply Loctite on slide rod threads at both ends.  
NOTE: After Loctite has been applied, Loctite the locking collars must be installed and torqued in less than 10 minutes.
12. Place the slide valve in the horizontal position and insert the slide rod/seal assembly.
13. Install the piston (45).
14. Apply Loctite to the two locking collars, install them and torque them to 75 ft-lb (102 Nm) with locknut sockets at each end.
15. Apply Loctite to the locking collar set screws, install the screws and torque per **C9709**.

## ***FIXED V.I. COMPRESSORS (cont)***

16. Place the assembly in the vertical position on the slide valve end. Pull the slide casing plug assembly (seal) up to the piston and secure it with a C-clamp.
17. Position slide valve clamp. Install the two  $\frac{5}{16}$ -18 bolts with Loctite and hand tighten with a wrench. Do not torque.
18. Apply Loctite to and install  $\frac{1}{4}$ -20 clamp bolt (hand tighten with an allen wrench).
19. Install one dowel pin with Loctite.
20. Torque the  $\frac{1}{4}$ -20 clamp bolt to 13 ft-lb (17 Nm).
21. Install the second dowel pin with Loctite and torque the two  $\frac{5}{16}$ -18 bolts to 28 ft-lb (38 Nm).
22. Stake the dowel pins with a pin punch.
23. Install the guide seal assembly (piston 45). There are two seal rings (47); the thin one faces the slide valve. Place the thin seal ring on the piston so the open end with spring is toward the slide valve. Check the illustration for orientation.
24. Remove the sharp edges around the two sharp corners on the face of the slide casing to prevent damage to the O-ring during insertion of the casing plug into slide casing.

## ***FIXED V.I. COMPRESSORS (cont)***

25. Oil the slide casing and carefully insert the slide rod assembly into casing (D series) or lower slide casing over the slide valve piston (C series). Do not damage the O-ring/seals.

Hint: Use rubber band number 84 (1/2-in. wide by 7-in. circumference), or nylon or banding strap with vise grip pliers. These suggested methods will compress seal rings into the slot and aid in assembly of the valve piston into slide casing.

### **C. Reassembly for Frame 1 and 2 compressors (C20,C40,C60) and Frame 4 (D40,60) compressors with serial numbers higher than 3897V02382.**

1. Break sharp edge of the shaft shoulders on the slide rod.
2. Place thin mylar (transparency film) over slide rod threads at slide valve end. Use this method to slide the seal ring (49) into place.

NOTE: Open side of the seal faces towards the slide valve.

3. Install the two new O-rings (63, 76B) on the casing plug (76A).
4. Install slide casing plug/separator plate on the slide rod from slide valve end.
5. Place the slide valve in the vertical position on the bench and set the capacity slide rod into the valve.
6. Install new O-ring (55) in the slide seal adapter. Raise the slide seal (49) near top of the slide rod).

## **FIXED V.I. COMPRESSORS (cont)**

7. Place the slide seal adapter over shaft and lower on to the seal. Carefully lower seal adapter into the slide casing plug. Make sure the seal is properly seated. Apply Loctite, install the four M6 screws and torque the screws to 7 ft-lb (9.5 Nm).
8. Remove the slide rod/seal assembly from slide valve and place in the horizontal position.
9. Apply Loctite on slide rod threads both ends.  
NOTE: After Loctite has been applied, the locknuts must be installed and torqued in less than 10 minutes.
10. Place the slide valve in the horizontal and insert the slide rod/seal assembly.
11. Install the piston.
12. Loctite, install and torque the two locknuts with lockwashers to 75 ft-lb (102 Nm) with proper locknut sockets at each end.
13. For C series, bend up the tab on the lockwasher that will match the slot in the locknut after both locknuts have been torqued to specifications in bulletin **C9602A**. For D series, install set screws and torque to specification in bulletin **C9709**.
14. Install the guide seal assembly (piston 45). There are two seal rings (47); the thin one faces the slide valve. Place the thin seal ring on the piston so the open end with spring is toward the slide valve. Check the illustration for orientation.

## ***FIXED V.I. COMPRESSORS (cont)***

15. Remove the sharp edges around the two sharp corners on the face of the slide casing to prevent damage to the O-ring during insertion of the casing plug into slide casing.
16. Oil the slide casing and carefully insert the slide rod assembly into casing (D series) or lower slide casing over the slide valve piston (C series). Do not damage the O-ring/seals.

Hint: Use rubber band number 84 (1/2-in. wide by 7-in. circumference), or nylon or banding strap with vise grip pliers. These suggested methods will compress seal rings into the slot and aid in assembly of the valve piston into slide casing.

17. Install the two oversize washers (76C) and button head screws (76D).

NOTE: It is not necessary to apply Loctite to button screws.

## **IV. Final Assembly**

1. Install the capacity control valves with new O-ring.
2. Install the slide valve cover (46A) with new O-ring (64A) and tighten the bolts but do not torque them.
3. Install the hollow hex plugs.
4. Apply air pressure to open ports to cycle the slide valve and check for seal leaks.

## ***FIXED V.I. COMPRESSORS (cont)***

5. Remove the slide valve cover. Install spring retainer shaft (42) with spring (50).  
Hint: Use a  $\frac{3}{8}$ -in.-16 steel threaded rod about 3 ft (1 meter) long to hold the spring retainer during reassembly.
6. Install the slide valve assembly, remove the steel threaded rod and install the slide valve cover.
7. Torque all the bolts to specifications, reconnect the oil lines and install the solenoid coils.
8. Perform a leak check.

## **VARIABLE V.I. COMPRESSORS**

### **I. Removal of the slide valve assembly from compressor**

1. Lock out and tag the starter.
2. Transfer charge to the storage tank or condenser and set up rigging.
3. Identify and tag each of the capacity solenoids and lines before removing them. The variable V.I. compressor has four solenoids.
4. Remove the capacity control solenoid coils and supply and return oil lines from the top of the slide casing.

**CAUTION:** Make sure the control panel power is off to prevent damaging the solenoid coils.

## ***VARIABLE V.I. COMPRESSORS (cont)***

5. Insert guide bolts or steel threaded rods at 9 and 3 o'clock.

NOTE: Be ready to catch oil spillage when assembly is moved.

6. Support the slide valve assembly with a nylon sling and pull the assembly forward.

**CAUTION:** The slide valve assembly will be heavier on the slide valve end. Be very careful that the assembly does not drop and cause damage to the slide valve and slide stop.

**WARNING:** Before the slide valve clears the housing check to make sure it is still attached to the shaft.

## **II. Disassembly of the Slide Valve Assembly**

NOTE: To remove locknuts or bolts that have been sealed with Loctite:

- a. Apply localized heat to locknut or bolt (450° F/232° C) for no longer than 5 minutes.
- b. Disassemble while hot.

1. Set the slide valve assembly on sturdy clean work surface.

**CAUTION:** Remove all the hollow hex plugs to relieve the oil pressure.

2. Place a pan in position to catch oil (a quart or more) and remove the slide valve cover.
3. Remove the piston (67) from V.I. slide rod (66).

## **VARIABLE V.I. COMPRESSORS (cont)**

4. Bend the lockwasher (73) tabs and remove the locknut (72) using the locknut socket p/n T-144502D. Inspect the piston for wear under the locknut area.

**CAUTION:** The assembly contains a coil spring (50) which is compressed to a preload pressure.

5. Remove valve stop from V.I. slide rod.
6. Remove the 3 cylinder stop locking plugs (76 F). Earlier models used snap rings and ratchet snap ring pliers will be required to remove them.
7. Remove cylinder stop.
8. Reach into the compressor slide valve port and remove spring retainer (shaft) (42,50). Refer to bulletin **C9715**.
9. Remove the piston (45) from capacity rod (44).
10. Bend the lockwasher (if present) and remove the locknut (52) and lockwasher (53) or locking collar using the socket p/n T-144502D or T144504D. Inspect the piston for wear under the locknut/locking collar area.
11. Remove the slide valve (43) from capacity rod (44).  
Hint: To prevent the rod from turning, grip the capacity rod next to the slide valve. This area of the rod does not make contact with the seal ring.

## ***VARIABLE V.I. COMPRESSORS (cont)***

12. Remove the two button (Loctite-sealed) screws (76D) from the slide casing by applying localized heat to screws (450° F/232° C) no more than 5 minutes.
13. Remove the slide casing plug (76A) that holds the slide seal assembly. Examine the O-ring for damage and note cause of damage.
14. Remove slide seal adapter (48) from slide casing plug. Inspect seal ring (49). If seal is worn, replace the slide rod or have the rod polished to 22 micro-inches (.55 micro-meter) at a machine shop.
15. Remove the capacity control valve and check the passageway for blockage. Inspect the slide casing bore for wear.

### **III. Slide Valve Reassembly**

#### **A. General**

NOTE: Parts must be clean and threaded parts must be free of oil, grease, and residue before Loctite retaining compound is applied.

NOTE: Do not use Locquic (Loctite primer) for cleaning parts. Application of this primer will accelerate curing time of the sealants. Use a degreasing type cleaner.

NOTE: Do not install the two small O-rings on the slide rod.

## ***VARIABLE V.I. COMPRESSORS (cont)***

**B. Reassembly for Frame 4 (D41,D61) compressors with serial numbers lower than 3897V02382.** For Frame 1 and 2 compressors (C21,41,61) and Frame 4 (D41,D61) compressors with serial numbers higher than 3897V02382, see Section III. C on page 9.

1. Break sharp edge of the shaft shoulders on the slide rod.
2. Place thin mylar (transparency film) over slide rod threads at slide valve end. Use this method to slide the seal ring (49) into place.

NOTE: Open side of the seal faces towards the slide valve.

3. Install the two new O-rings (63, 76B) on the casing plug (76A).
4. Install slide casing plug/separator plate on the slide rod from slide valve end.
5. Install slide valve clamp assembly (Frame 4 D41,D61 compressors only).

NOTE: The slide valve clamp assembly is to be installed only on Frame 4 (D41,D61) compressors with serial numbers lower than 389V702382. Frame 4 compressors with serial numbers higher than 3897V02382 have a slide valve relief shelf (per Bulletin **C9804**) and do not require the slide valve clamp.

NOTE: Follow the instructions supplied with the slide valve clamp for proper fitting, drilling and tapping of the holes for the initial clamp set up.

6. Install the clamp over capacity slide rod from slide valve end. Index mark must be towards slide piston.

## **VARIABLE V.I. COMPRESSORS (cont)**

7. Place the slide valve in the vertical position on the bench and set the capacity slide rod into the valve.
8. Install new O-ring (55) in the slide seal adapter. Raise the slide seal near top of the shaft.
9. Place the slide seal adapter (48) over shaft and lower onto the seal (49). Carefully lower seal adapter into the slide casing plug. Make sure the seal is properly seated. Apply Loctite to the four M6 bolts, install the bolts and torque to 7 ft-lb (9.5 Nm).
10. Remove the slide rod/seal assembly from slide valve and place in the horizontal position.
11. Apply Loctite on slide rod threads at both ends.  
NOTE: After Loctite has been applied, the locking collars must be installed and torqued in less than 10 minutes.
12. Place the slide valve in the horizontal position and insert the slide rod/seal assembly.
13. Install the piston.
14. Apply Loctite, install the two locking collars, and torque to 75 ft-lb (102 Nm) with locknut sockets at each end.
15. Apply Loctite, install the locking collar set screws, and torque per **C9709**.

## **VARIABLE V.I. COMPRESSORS (cont)**

16. Place the assembly in the vertical position on the slide valve end. Pull the slide casing plug assembly (seal) up to the piston and secure it with a C-clamp.
17. Position slide valve clamp. Install the two  $\frac{5}{16}$ -18 bolts with Loctite and hand tighten with a wrench. Do not torque.
18. Loctite and install  $\frac{1}{4}$ -20 clamp bolt (hand tighten with an allen wrench).
19. Install one dowel pin with Loctite.
20. Torque the  $\frac{1}{4}$ -20 clamp bolt to 13 ft-lb (17 Nm).
21. Install the second dowel pin with Loctite and torque the two  $\frac{5}{16}$ -18 bolts to 28 ft-lb (38 Nm).
22. Stake the dowel pins with a pin punch.
23. Install the guide seal assembly (piston 45). There are two seal rings (47); the thin one faces the slide valve. Place the thin seal ring on the piston so the open end with spring is toward the slide valve. Check the illustration for orientation.
24. Remove the sharp edges around the two sharp corners on the face of the slide casing to prevent damage to the O-ring during insertion of the casing plug into slide casing.

## **VARIABLE V.I. COMPRESSORS (cont)**

25. Oil the slide casing and carefully insert the slide rod assembly into casing (D series) or lower slide casing over the slide valve piston (C series). Do not damage the O-ring/seals.

Hint: Use rubber number 84 (1/2-in. wide by 7-in. circumference) or nylon or banding strap with vise grip pliers. This method will compress seal rings into the slot and aid in assembly of the valve piston into slide casing.

26. Install the two oversize washers (76C) and button head screws (76D).

NOTE: It is not necessary to apply Loctite to button screws.

27. Install the cylinder stop (68A) and O-ring (76G) without the slide seal retainer (71) assembly.

NOTE: Do not install the two small O-rings on the V.I. capacity slide rod.

28. Install V.I. capacity slide rod (66) into the valve stop (65) and apply 2 drops of Loctite. Install the lockwasher and locknut.

NOTE: Do not bend up the tab in the lockwasher until torquing the locknut at the other end.

29. Insert the spring (D series has two) on the V.I. slide rod and lower the slide valve assembly over the V.I. slide rod to compress the springs.

## **VARIABLE V.I. COMPRESSORS (cont)**

30. Place thin mylar over V.I. slide rod threads. Use this method to slide the seal ring into place.

NOTE: Open side of the seal faces towards the slide cover.

31. Next put on the slide seal retainer (71) and tighten the four screws.

32. Install the V.I. valve piston (67). Apply Loctite, install and torque the two locknuts with lockwashers to 75 ft-lb (102 Nm) with proper locknut sockets at each end.

33. Bend up a tab on lockwasher that matches with slot in the locknut after both locknuts have been torqued to specifications.

34. Bend up a tab on lockwasher that matches with slot in the locknut after both locknuts have been torqued to specifications.

35. Install the guide seal assembly. There are two seal rings (47); the thin one faces the slide valve. Place the thin seal ring on the piston (67) so the open end with spring is toward the slide valve. Check the illustration for orientation.

Hint: Use rubber number 84 (1/2-in. wide by 7-in. circumference) or nylon or banding strap with vise grip pliers. This method will compress seal rings into the slot and aid in assembly of the valve piston into slide casing.

36. Raise the slide valve assembly and carefully insert the V.I. piston into the slide casing.

## ***VARIABLE V.I. COMPRESSORS (cont)***

### **C. Reassembly for Frame 1 and 2 compressors (C21,C41,C61) and Frame 4 (D41, D61) compressors with serial numbers higher than 3897V02382.**

1. Break sharp edge of the shaft shoulders on the slide rod.
2. Place thin mylar (transparency film) over slide rod threads at slide valve end. Use this method to slide the seal ring (49) into place.

NOTE: Open side of the seal faces towards the slide valve.

3. Install the two new O-rings (63, 76B) on the casing plug (76A).
4. Install slide casing plug/separator plate on the slide rod from slide valve end.
5. Place the slide valve in the vertical position on the bench and set the capacity slide rod into the valve.
6. Install new O-ring (55) in the slide seal adapter. Raise the slide seal (49) near top of the slide rod).
7. Place the slide seal adapter over shaft and lower on to the seal. Carefully lower seal adapter into the slide casing plug. Make sure the seal is properly seated. Apply Loctite to the four M6 screws, install the screws and torque to 7 ft-lb (9.5 Nm).
8. Remove the slide rod/seal assembly from slide valve and place in the horizontal position.

## ***VARIABLE V.I. COMPRESSORS (cont)***

9. Apply Loctite on slide rod threads both ends.

NOTE: After Loctite has been applied, the locknuts must be installed and torqued in less than 10 minutes.

10. Place the slide valve in the horizontal position and insert the slide rod/seal assembly.
11. Install the piston (45).
12. Apply Loctite to the two locknuts with lockwashers, install the locknuts and torque to 75 ft-lb (102 Nm) with proper locknut sockets at each end. Install the guide seal assembly (piston 45). There are two seal rings (47).
13. For C series bend up a tab on lockwasher that matches with slot in the locknut after both locknuts have been torqued to specifications in bulletin **C9602A**. For D series install set screws and torque to specification in bulletin **C9709**.
14. Install the guide seal assembly (piston). There are two seal rings (47). The thin one faces the slide valve. Place the thin seal ring on the piston so the open end with spring is toward the slide valve. Check the illustration for orientation.
15. Remove the sharp edges around the two sharp corners on the face of the slide casing to prevent damage to the O-ring during insertion of the casing plug into slide casing.

## **VARIABLE V.I. COMPRESSORS (cont)**

16. Oil the slide casing and carefully insert the slide rod assembly into casing (D series) or lower slide casing over the slide valve piston (C series). Do not damage the O-ring/seals.

Hint: Use rubber band number 84 (1/2-in. wide by 7-in. circumference) or nylon or banding strap with vise grip pliers. These suggested methods will compress seal rings into the slot and aid in assembly of the valve piston into slide casing.

17. Install the two oversize washers (76C) and button head screws (76D).

NOTE: It is not necessary to apply Loctite to button screws.

18. Install the cylinder stop (68A) and O-ring (76G) without the slide seal retainer (71) assembly.

NOTE: Do not install the two small O-rings on the V.I. capacity slide rod.

19. Install V.I. capacity slide rod (66) into the valve stop (65), apply 2 drops of Loctite. Install the lockwasher and locknut.

NOTE: Do not bend up the tab in the lockwasher until torquing the locknut at the other end.

20. Insert the spring (D series has two) on the V.I. slide rod and lower the slide valve assembly over the V.I. slide rod to compress the springs.

## **VARIABLE V.I. COMPRESSORS (cont)**

21. Place thin mylar over V.I. slide rod threads. Use this method to slide the seal ring into place.

NOTE: Open side of the seal faces towards the slide cover.

22. Install the slide seal retainer (71) and tighten the four screws.

23. Install the V.I. valve piston (67). Loctite, install and torque the two locknuts with lockwashers to 75 ft-lb (102 Nm) with proper locknut sockets at each end.

24. Bend up the tab on the lockwasher that will match the slot in the locknut after both locknuts have been torqued to specifications.

25. Install the guide seal assembly (67). There are two seal rings (47); the thin one faces the slide valve. Place the thin seal ring on the piston so the open end with spring is toward the slide valve. Check the illustration for orientation.

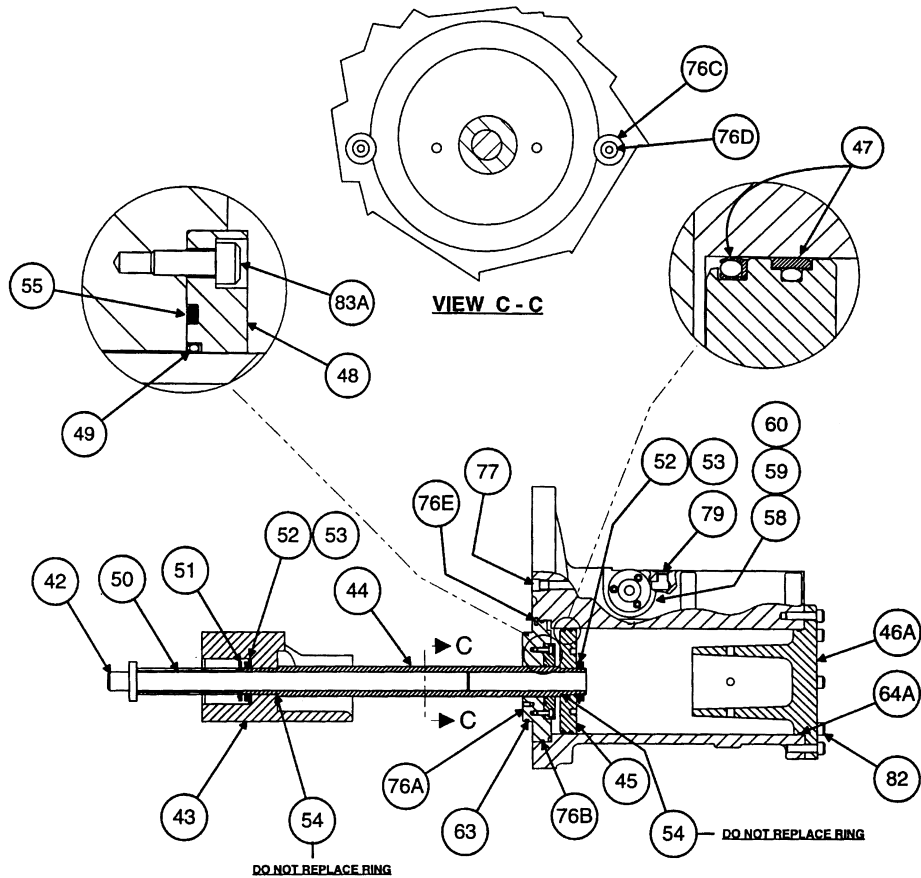
Hint: Use rubber band number 84 (1/2-in. wide by 7-in. circumference) or nylon or banding strap with vise grip pliers. These suggested methods will compress seal rings into the slot and aid in assembly of the valve piston into slide casing.

26. Raise the slide valve assembly and carefully insert the V.I. piston into the slide casing.

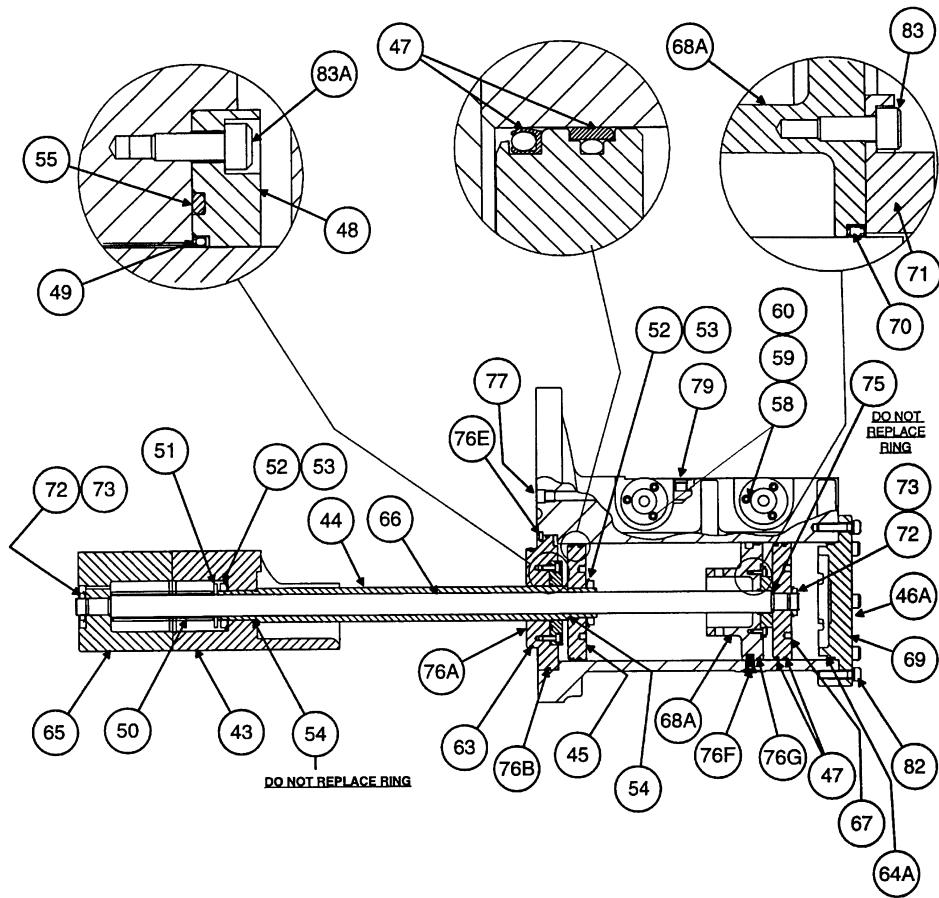
## ***VARIABLE V.I. COMPRESSORS (cont)***

### **IV. Final Assembly**

1. Install the capacity control valves with new O-ring.
2. Install the slide valve cover (46A) with new O-ring (64A) and tighten the bolts.
3. Install the hollow hex plugs.
4. Apply air pressure to open ports to cycle the slide valve and check for seal leaks.
5. Install the slide valve assembly with new O-ring.
6. Install the slide valve assembly, remove the steel threaded rod and install the slide valve cover.
7. Torque all the bolts to specifications, reconnect the oil lines and install the solenoid coils.
8. Perform a leak check.



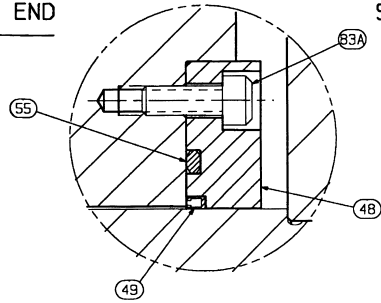
**Slide Valve Assembly Fixed V.I.**



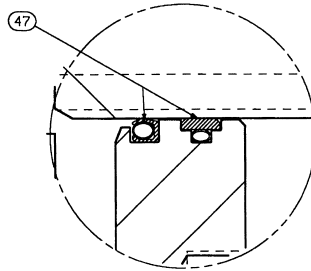
**Slide Valve Assembly Variable V.I.**

MOTOR END

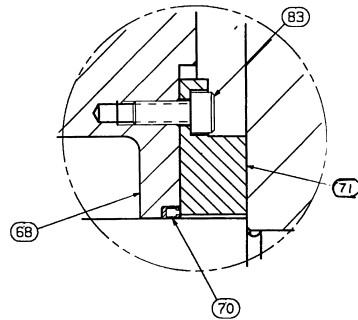
SLIDE VALVE END



SEAL RING



GUIDE SEAL



SEAL RING VI

Parts required to perform a major stop routine on slide valve assembly.

ITEM (Qt.)	COMPRESSOR			DESCRIPTION
	D40, D60	C20,C40,C60 Prior s/n 5193J	C20,C40,C60 Starting s/n 5193J	
	P/N	P/N	P/N	
5	8TD0082C	8TC0117C	8TC0117C	O-ring
47	8TD0075D	8TC0053C	8TC0053C	Guide Seal, piston
49	8TC0057C	8TC0057C	8TC0057C	Seal Ring, shaft
52 (2)	*	8TC0048C	8TC0048C	Locknut 35mm
53 (2)	*	8TC0051C	8TC0051C	Lockwasher 35mm
54 (2)	not required	not required	not required	O-ring, slide rod
55	KK71EW228	KK71EW228	KK71EW228	O-ring
56,76b	8TC0119C	8TC0119C	8TC0418C	O-ring
59 (4)	8TC0154C	8TC0154C	8TC0154C	O-ring, solenoid
63	8TD0089C	KK71EW245	KK71EW245	O-ring
64,64a	8TD0087C	8TC0120C	8TC0420C	O-ring, cover
76c (2)	8TD0206C	—	8TD0206C	Washer
76d (2)	8TD0207C	—	8TD0207C	Screw, button
78a (2)	KK71EW904	KK71EW904	KK71EW904	O-ring, hex plug
79a (3)	KK71EW906	KK71EW906	KK71EW906	O-ring, hex plug

\*For fixed V.I. compressors built after November, 1996 order locking collar P/N KT51HZ100. For fixed V.I. compressors built prior to November 1996 a new slide rod and locking collars will be required. Refer to bulletin **C9709** for part numbers. For variable V.I. compressors order locknut P/N 8TC0048C and lockwasher 8TC0051C.

For Variable V.I. compressors order above plus these additional parts.

ITEM (Qt.)	COMPRESSOR			DESCRIPTION
	D41, D61	C21,C41,C61	C21,C41,C61	
<b>47</b>	8TD0075D	8TD0053C	8TD0053C	Guide Seal, piston V.I.
<b>59 (4)</b>	8TC0154C	8TC0154C	8TC0154C	O-ring, solenoid
<b>64,76,76g</b>	8TC0087C	8TC0237C	KK71EW252	O-ring, cylinder stop
<b>70</b>	8TC0056C	8TC0056C	8TC0056C	Seal Ring, slide rod V.I.
<b>72 (2)</b>	8TC0047C	8TC0047C	8TC0047C	Locknut, 20mm
<b>73 (2)</b>	8TC0050C	8TC0050C	8TC0050C	Lockwasher, 20mm
<b>75 (2)</b>	not required	not required	not required	O-ring, slide rod V.I.

\*For fixed V.I. compressors built after November, 1996 order locking collar P/N KT51HZ100. For fixed V.I. compressors built prior to November 1996 a new slide rod and locking collars will be required. Refer to bulletin **C9709** for part numbers. For variable V.I. compressors order locknut P/N 8TC0048C and lockwasher 8TC0051C.

Frame 4 Slide Valve Clamping Kit 23XL660021 refer to bulletin **C9804**.