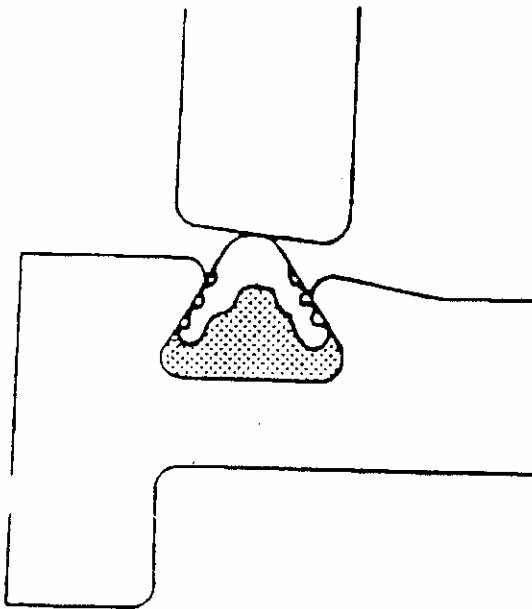


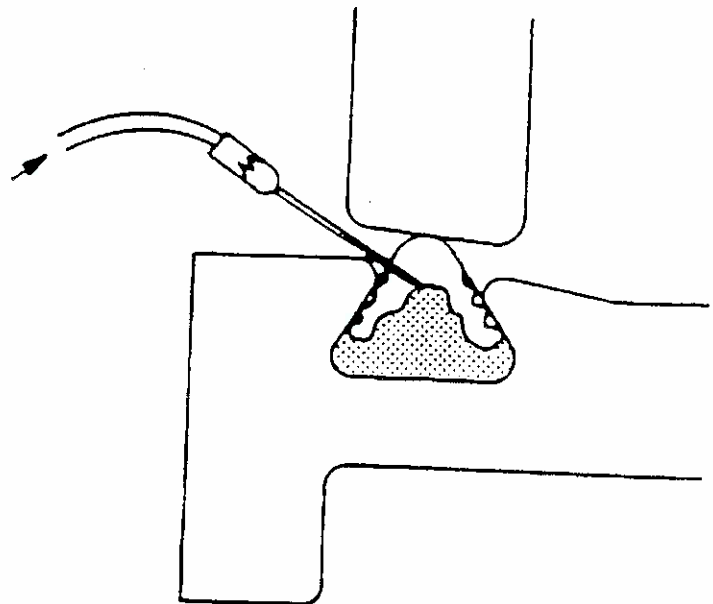
Competition's Epoxy Bonded Seat Adjustment and Replacement Procedures

SEAT ADJUSTMENT (LOCAL INJECTIONS)

The sketches below show the general method of adjusting the interference between the rubber seat and the disc edge of the E-LOK style valves. Epoxy is injected through a needle to the base of the seat moving the rubber seat toward the disc edge thus creating a tighter seal.



CROSS SECTION E-LOK SEAT



CROSS SECTION E-LOK SEAT
DEMONSTRATING LOCAL INJECTION

EQUIPMENT LIST FOR LOCAL INJECTION KIT

<u>Item</u>	<u>Quantity</u>	<u>Description</u>
1	2	Alemite grease guns
2	3	Hypo needles with couplings
3	4	Extension tubes (rubber hose)
4	2 quarts	Part "A" Resin
5	2 bottles	Part "B" Epoxy catalyst
6	1 tube	Silicon grease

PROCEDURE

1. Take gun apart.
2. Retract piston.

3. Attach extension and hypo needle.
4. Thoroughly mix one quart part "A" epoxy resin with one bottle part "B" epoxy catalyst.
5. Pour in gun.
6. Replace gun assembly.
7. Release piston.
8. Squeeze out some epoxy to purge the unit of air.
9. Grease needle with silicone grease.
10. Insert needle into seat at 45° angle in center of leak area. Observe seat movement while pumping epoxy. (NOTE: Squirt some epoxy while inserting and retracting needle).
11. If leakage spot is over 6" long, re-inject every 6".
12. Check temperature of gun and discard if over 120°F .
13. Use second gun as above if necessary.

INSTALLATION AND SERVICE MANUAL FOR 24" AND SMALLER
E-LOK STYLE RUBBER SEATED BUTTERFLY VALVES

SEAT REPLACEMENT PROCEDURE

For a detailed description of the epoxy injection procedure and the materials required, see Appendix A of this manual.

1. With the valve disc in the closed position, set the valve horizontally on its flange with the seat side up so that there is sufficient clearance to rotate the disc 180° .

CAUTION: When the valve is horizontal with the seat side up, the valve disc is in an unstable condition and has a tendency to rotate 180° when the actuator or the valve shaft key is removed. Care must be taken to keep everything out of the path of the rotating disc edge.
2. Rotate the disc 180° from the closed position. To accomplish this usually requires the removal of either the actuator or the valve shaft key.
3. Cut and pull out old rubber seat from valve body.

DOUBLE-ACTING THRUST BEARING ADJUSTMENT

PRATT RUBBER SEATED BUTTERFLY VALVE

The tight seal of your Pratt Rubber Seat Butterfly Valve is achieved by making the disc diameter somewhat larger than the inside diameter of the rubber seat. To ensure equal interference of disc and rubber in the areas adjacent to the disc hubs, a double acting thrust bearing is provided at the lower end of the shaft. The thrust bearing has been properly set at the factory, and further adjustments will not be necessary.

4. Carefully chip and remove the epoxy and remaining seat from the seat groove so as not to damage the side walls or outer radius of the seat groove. Small nicks on the bottom of the groove will cause no harm.
5. Drill out the two injection holes being careful not to damage the pipe tap connections.
6. Using the correct pipe tap to fit the injection ports, retap the ports to clean up the threads.
7. Remove burrs and hand sand out any rough spots on seat groove wall or outer radius; nicks on bottom of groove can be ignored. Clean groove with a rag dipped in Methylene Chloride and spray base of body seat groove with approved release agent.
8. Insert seat in the following manner:
 - A. Wipe seat clean with a dry rag.
 - B. Position seat splice 45° to shaft bore in body.
 - C. Squeeze seat together and insert at beginning point 45° to shaft bore in body.
 - D. Insert seat from starting point counter-clockwise for 180° stuffing seat back towards starting point.
 - E. Insert second half of seat from starting point clockwise for 180° stuffing seat back towards starting point.
 - F. Inspect seat installation making sure seat is in straight. The serrations in the seat must be parallel with the machined edge. This can be checked by measuring distance from the serrations to the edge on the machined seat groove.
9. Close disc and remount actuator or replace valve shaft key.
10. Position disc parallel to body flange within $1/32$ " by using a combination square.
11. Inject epoxy behind seat in accordance with the epoxy injection procedure in Appendix "A" of this manual.
12. After completion of at least the required time limit, release the back pressure and cut the injection tubing flush with the face of the flange.
14. Close the valve.
15. Leak test the valve from both sides at the pressure specified for that job.

PRATT E-LOK STYLE RUBBER SEATED BUTTERFLY VALVE

APPENDIX A

DETAILED INJECTION PROCEDURE

Materials: (See Figure 1)

- A. One - two-way valve - inlet side
- B. One - pressure regulator - inlet side (0 to 100 psig)
- C. One - pressure gauge 0-100 psig - inlet side
- D. One - two-way valve - inlet side - air exhaust
- E. One - epoxy reservoir and pressure pot - 2 or 5 gallon capacity for epoxy - 100 psi rating
- F. Three - 1/2" NPT x 1/2" I.D. tube or 1/4" NPT x 3/8" I.D. tube disposable plastic adapters to fit tapped holes in valve body and injection pot
- G. Varying lengths - 1/2" I.D. x 5/8" O.D. or 3/8" O.D. x 1/2" O.D. low density Polyethylene tubing - disposable - to match adapters.
- H. One - tubing clamp - on/off, inlet side
- I. One - 1/2" x 1/2" x 1/2" I.D. tube or 3/8" x 3/8" x 3/8" I.D. tube plastic disposable tee to match tubing
- J. One - tubing clamp - on/off - outlet side
- K. One - tubing clamp - on/off - outlet side
- L. One - one gallon waste bucket - outlet side
- M. One - pressure regulator - outlet side (0 to 100 psi)
- N. One - pressure gauge - outlet side (0 to 100 psi)
- O. One - two-way valve - outlet side

Sufficient quantity of pre-weighed two-component epoxy resin and hardener (catalyst). Resin component to specification HPCO XR-70 - EC-3. Packaged one gallon kits. Approximately 10 1/2 lb. pre-mixed gallon (available from Henry Pratt Company). Sufficient quantity of approved release agent (available from Henry Pratt Company). Disposable towels or rag for clean up. Spatula or paint stirrer for epoxy materials transfer.

Stirring rod (propeller type) for mixing epoxy for 3/8" or 1/2" electric or pneumatic drill.

Several one-gallon slop buckets - cardboard okey.

Methylene Chloride or Chloroethene NU safety solvent for clean up. CAUTION: Concentrated solvent fumes could be toxic; should be used in well ventilated area.

Tubing pinch-on clamps (or screw type) at least 7 per valve.

TUBE FITTING FOR EPOXY INJECTIONS

1. Pipe and fit as per Figure 1.
2. Valve (A) and (O) to be closed.
3. Regulators (B) and (M) to be off.
4. Valve (D) to be open.
5. Close tubing clamps (H), (J), and (K).
6. Remove pressure pot lid.

SEAT AIR PRESSURE TEST PRIOR TO EPOXY INJECTION

1. On outlet side, open valve (O).
2. Adjust regulator (M) to 80 psig as shown on gauge (N).
3. Snap open clamp (J) quickly. This will snap seat out to disc edge and seal in seat groove. Air leaks can be heard. If not properly sealed, adjust seat, using blunt edge screwdriver or shut off air and readjust seat in groove. Seat must be air-tight before injection.
4. Adjust regulator (M) to specified injection pressures as shown on gauge (N). (See Table "A").
5. Close clamp (J).
6. Open clamp (K) to exhaust air.

PREPARATION OF EPOXY MATERIALS

1. Sit pre-weighed resin component in original container -- gallon can.
2. Step "3" through "6" must be done as quickly as possible -- no longer than five minutes to allow maximum pot life.
3. Add pre-weighed hardener component to resin component in original resin component container and mix thoroughly.

4. While mixing additional gallon as specified, pour each container into epoxy reservoir and pressure pot (E) as quickly as possible and add each additional container as soon as they are mixed.
5. Check to confirm that the lid seal is in its proper position.
6. Attach pressure pot lid.

INJECTING THE VALVE

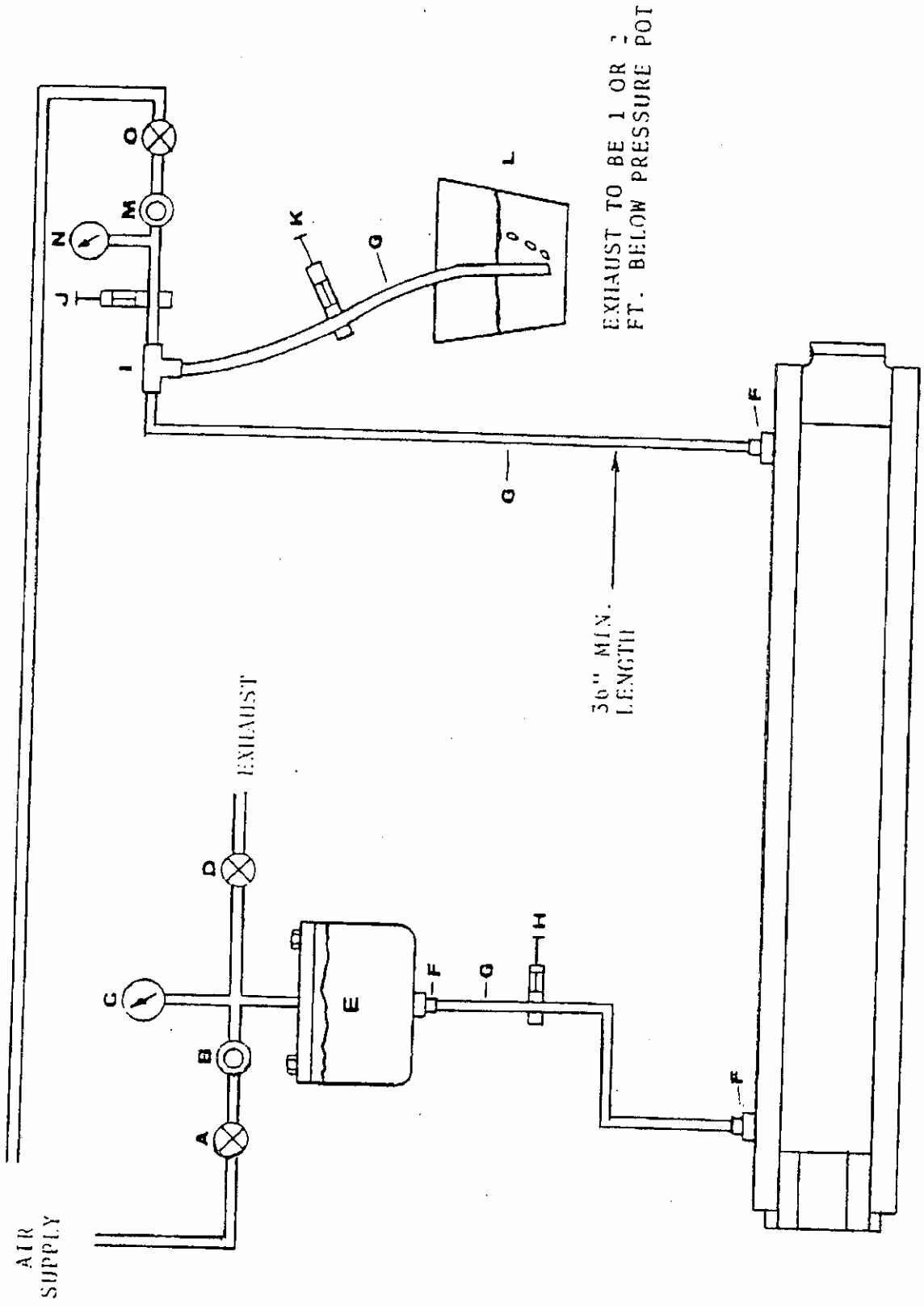
(Steps 1 through 20 should be completed within 20 minutes)

1. Clamp (H) open.
2. Clamp (K) open.
3. Clamp (J) closed.
4. Close valve (D).
5. Open valve (A) and adjust regulator to approximately 20 psi. This pressure will move the epoxy through the system with a certain rate of flow. However, larger valves may require more volume and a faster rate of flow. The main idea is to push the epoxy through the valve slow enough so as not to entrap air in the epoxy and fast enough so that the epoxy will not start to set up during the injection process.
6. Epoxy will come out of exhaust tube at waste bucket (L) in several minutes. Allow epoxy to exhaust with end of tube under liquid to check for air bubbles. Exhaust no more than 1/2 of slop bucket.
7. Close clamp (K).
8. Adjust pressure regulator (B) to show exact specified holding pressure on gauge (C). (See Table A).
9. Close clamp (H).
10. Valve (O) open.
11. Adjust pressure regulator (M) to show specified holding pressure on gauge (N). (See Table A).
12. Open clamp (J).
13. Close valve (A).
14. Open valve (D) to release the pressure in the pot.
15. Cut tubing between pressure pot (E) and clamp (H).

16. Close valve (D).
17. Using 10 to 15 psig pressure on pot. exhaust remaining epoxy from pressure pot. Shut-off valve (A), open valve (D), open lid and clean pot with safety solvent.
18. Clean up all tools with safety solvent.

TABLE "A"

Valve Size (Inches)	Bubble Test Pressure (PSIG)	Epoxy Holding Pressure (PSIG)
6 to 24	0 - 200	60
	200 - 300	70
30 and Larger	0 - 50	40
	51 - 75	50
	76 - 200	60
	201 - 300	70



EXHAUST TO BE 1 OR 2
 FT. BELOW PRESSURE POT

EPOXY INJECTION SCHEMATIC