

TECHNICAL BULLETIN

TB NO.1008

REV. 2

**Subject: Procedure for Assembly
of Ajax Injection Valve
P-YAE-5098-T-4**

I. VALVE ASSEMBLY

- A. The valve seat and guide are held in place by an interference fit. They should be frozen by placing in a freezer, dry ice, or liquid nitrogen. The intent is to reduce the size of the part which reduces the amount of pressure required for installation.

The seat (P-BM-10141-B) should be installed in the housing (P-A-2562-2) so that the seat bottoms-out in the counter bore.

The guide (P-K-7891-A) should be installed so it protrudes into the gas passage. The proper position can be confirmed by measuring from the outer most surface of the housing (seat-end) to the end of the guide. The guide is properly located when the dimension is 1 5/8 inches.

A hole must be drilled in the guide after installation to emit lubrication. A 1/8" drill bit is required. Insert the drill in the lubrication passage of the housing and drill through the guide wall.

- B. The installed guide bore should be .437-.438 inches. In the event reaming is required, a .437 inch straight reamer should be used.
- C. Standard automotive type valve seat grinding equipment can be used to finish grind the seat.

A pilot mandrel is inserted into the guide bore, to insure the seat surface will be centered to the guide bore.

A power driven stone and holder is then piloted onto the mandrel and grinding can begin.

The stone should touch the seat lightly at first to verify the seat is located in the housing bore properly. If the stone contacts the seat in one small area, check to insure the seat is set squarely in the counter bore and not cocked.

Grinding should continue until the stone makes full contact 360° around the seat.

- D. Once grinding is completed the valve (P-BM-10140-A) should be lapped to the seat with fine lapping compound.
- E. Wash all parts before final assembly.
- F. Lubricate the valve, seat, and guide bore with a good grade motor oil. Install the valve into the guide. Install spring (P-BM-10869-A) and retainer (P-BM-10145-A). Using a valve spring compressor, compress the valve spring and retainer far enough to expose the two grooves cut into the upper valve stem and install two locks (P-BM-10143).

Option: If fuel injection pressure is 18-20 psi, use fuel injection spring (P-BM-10869-B). This spring is longer and provides additional valve seat pressure.
- G. Install the grease fitting (P-BM-10046-A) and pre-lube the valve stem with two to three pumps of high-temperature grease (P-BM-11738).

II. VALVE ACTUATOR

- A. Install seal (P-BM-11736-A) into bore of plunger barrel. The flat side of the seal must be toward the head of the injection valve.

Lubricate the plunger and insert it into the barrel from the flanged-end. A short boss is machined on one end of the plunger and must be away from the injection valve when installed.

- B. Install the o-ring (P-BM-16348-A-215) and lubricate with a good grade of motor oil. Install the plunger and barrel assembly (P-YAE-5097-H-3) through the barrel retainer plate (P-A-4371-2), from the o-ring side. The barrel flange will seat against the o-ring.
- C. Install o-ring (P-BM-16348-A-212) and spring (P-A-2728-A) into cap (P-A-2565-F-3) and assemble the cap to the barrel and retainer assembly, securing them with three socket head cap screws (P-BM-11473-0420-06).
- D. Install two roll pins (P-BM-10245-B) into housing (P-A-2561-1). Install o-ring (P-BM-16348-F-214) into the groove in the barrel bore of housing (P-A-2561-1).

- E. With the valve housing sitting in an upright position, place six springs (P-BM-11654) in the shallow counter bores of the housing.
- F. Carefully install the cap and barrel assembly into the valve housing.

Lubricate the adjusting collar (P-A-4370) threads with "Never-Seez" or a good grade anti-seize and install collar over the cap assembly.

III. FINAL ASSEMBLY AND PRE-ADJUSTMENT

- A. Install gasket (P-A-2569) between the valve assembly and the actuator.

The assembly is held together with four (P-BM-11900-0813-32) cap-screws and 1/2" nuts (P-BM-11467-0813) installed through four bolt holes. These bolts should be tight enough to hold the assembly snug, but do not over tighten. At valve installation time, remove and discard 1/2" nuts.

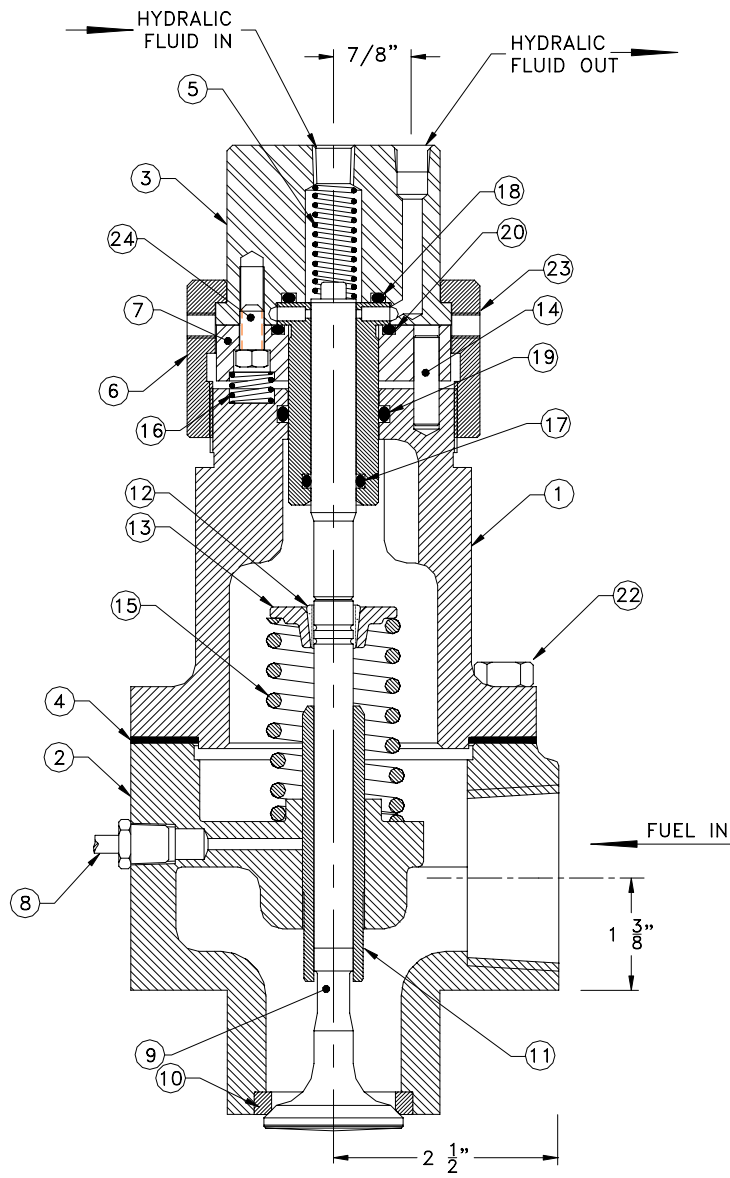
- B. The final bench adjustment can now be made.

Turn the adjusting collar clockwise (looking from the cap-end), until it bottoms out. **!!CAUTION!!** Do not force the collar. Then turn the collar counter clockwise one and one half turns.

Install socket head set screws (P-BM-11921-0420-04-CP)) into the threaded holes in the collar and tighten until snug. Do not over tighten. These screws are designed to prevent the collar from turning once set.

For further information concerning Ajax injection valves, please contact **EnDyn's** Technical Service Department direct or your local authorized **PowerParts®** Distributor.

9-14-2011



P-YAE-5098-T-4
BILL OF MATERIALS

ITEM	QTY.	P/N	DESCRIPTION
1	1	P-A-2561-1	HOUSING
2	1	P-A-2562-2	HOUSING
3	1	P-A-2565-F-3	CAP
4	1	P-A-2569	GASKET
5	1	P-A-2728-A	SPRING
6	1	P-A-4370	COLLAR
7	1	P-A-4371-2	RETAINER
8	1	P-BM-10046-A	FITTING
9	1	P-BM-10140-A	VALVE
10	1	P-BM-10141-A	SEAT
11	1	P-K-7891-B	GUIDE
12	2	P-BM-10143	KEEPERS
13	1	P-BM10145-A	RETAINER
14	2	P-BM-10245-B	ROLL PINS
15	1	P-BM-10869-A	SPRING (ALT.-B)
16	6	P-BM-11654	SPRINGS
17	1	P-BM-11736-A	SEAL (w/ P/B ASSY.)
18	1	P-BM-16348-A-212	O-RING
19	1	P-BM-16348-214	O-RING
20	1	P-BM-16348-A-215	O-RING
21	1	P-YAE-5097-H-3	PLUNGER/BARREL ASSY
22	4	P-BM-11900-0813-32	CAPSCREWS
23	2	P-BM-11921-0420-04-CP	SETSCREWS