

**EMD  
KITS  
&  
SERVICE  
INSTRUCTIONS**

**SERVICE PARTS LIST**  
**FOR**  
**EMD NOZZLE CONVERSION KIT**  
**KT 7822-1**

(Supersedes KT 7822)

EMD 567 B-1500H.P. EMD INJ. ASSY 5227852  
EMD 567 C-1750H.P. EMD INJ. ASSY 5228230  
EMD 567 D-2000H.P. EMD INJ. ASSY 5228605

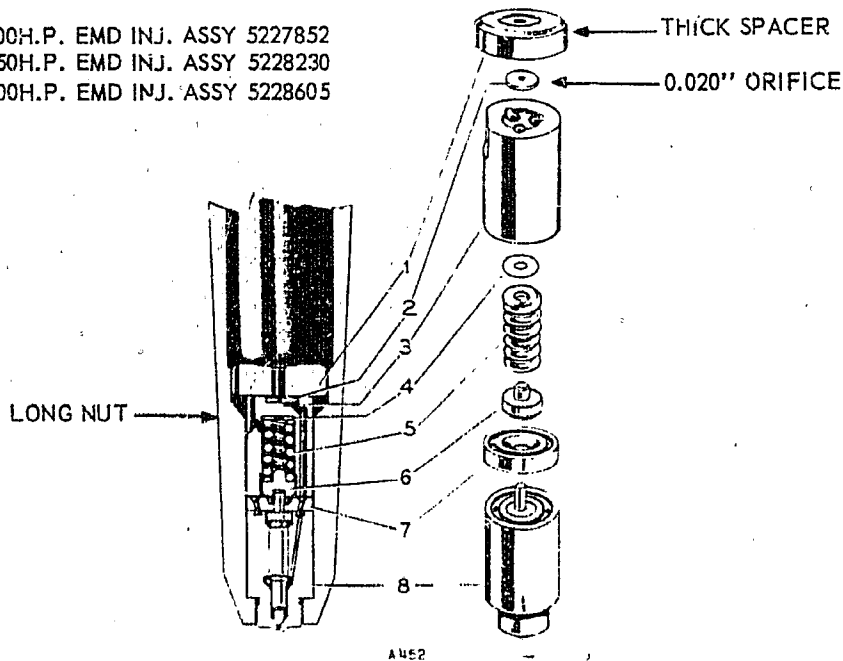
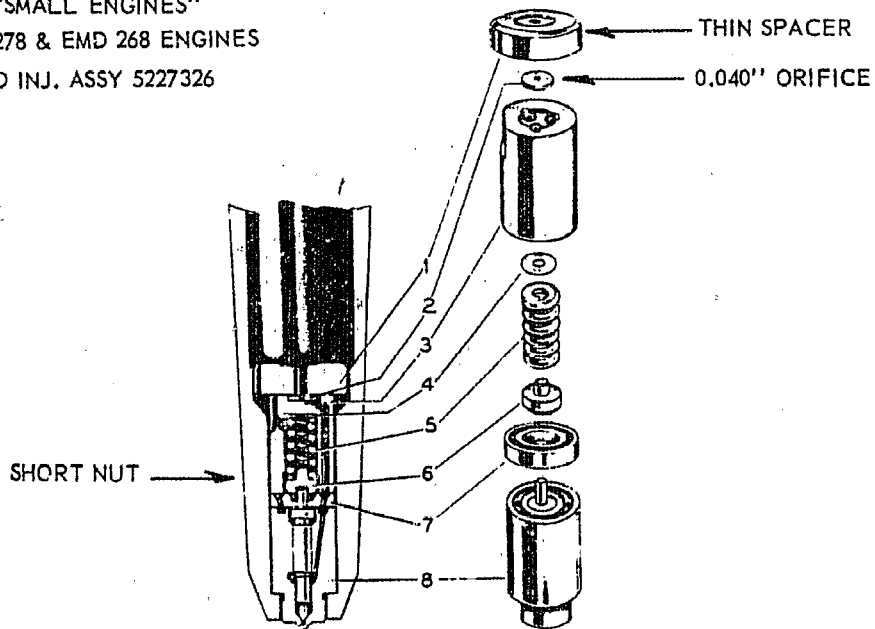


Illustration Number	Part Number	Quantity Used	Description of Part
1	SR 7824	1	SPACER, disc valve stop
2	VA 7815	1	DISC, valve
3	SR 7826	1	SPACER VALVE SPRING
4	SR 7830-1	as required	SHIM — pressure adjusting .0015 — .0025" thick
	SR 7830-2	as required	SHIM — pressure adjusting .0063 — .0078" thick
	SR 7830-3	as required	SHIM — pressure adjusting .0092 — .0112" thick
	SR 7830-4	as required	SHIM — pressure adjusting .0240 — .0260" thick
	SR 7830-5	as required	SHIM — pressure adjusting .0355 — .0395" thick
	SR 7830-6	as required	SHIM — pressure adjusting .1230 — .1270" thick
5	SP 7823	1	SPRING, pressure adjusting
6	GU 7836	1	SEAT, lower spring
7	SR 7825	1	SPACER, nozzle valve stop
8	ADB 150SP 127-6	1	NOZZLE ASSEMBLY

Supersedes Manual Page D1905/1  
Issued January, 1962

**SERVICE PARTS LIST**  
**FOR**  
**EMD NOZZLE CONVERSION KIT**  
**KT 7823**

"SMALL ENGINES"  
EMD 278 & EMD 268 ENGINES  
EMD INJ. ASSY 5227326



A452

Illustration Number	Part Number	Quantity Used	Description of Part
1	SR 7832	1	SPACER, disc valve stop
2	VA 76184	1	DISC, valve
3	SR 7826	1	SPACER VALVE, spring
4	SR 7830-1	as required	SHIM - pressure adjusting .0015 - .0025" thick
	SR 7830-2	as required	SHIM - pressure adjusting .0063 - .0078" thick
	SR 7830-3	as required	SHIM - pressure adjusting .0092 - .0112" thick
	SR 7830-4	as required	SHIM - pressure adjusting .0240 - .0260" thick
	SR 7830-5	as required	SHIM - pressure adjusting .0355 - .0395" thick
	SR 7830-6	as required	SHIM - pressure adjusting .1230 - .1270" thick
5	SP 7823	1	SPRING, pressure adjusting
6	GU 7856	1	SEAT, lower spring
7	SR 7825	1	SPACER, nozzle valve stop
8	ADB 150 SP 120-6	1	NOZZLE ASSEMBLY

COMMERCIAL SALES DIVISION



SPRINGFIELD 7, MASS. U.S.A.

*Supersedes Manual Pages D1905/100 thru  
D1905/102, Issued February, 1959*

**GENERAL SERVICE INSTRUCTIONS**  
**For**  
**EMD NOZZLE CONVERSION KIT**  
**KT 7822 And KT 7823**



## SERVICE INSTRUCTIONS FOR EMD NOZZLE CONVERSION KIT KT 7822 And KT 7823

### DESCRIPTION

Referring to exploded view (Figure 1), the kit consists essentially of Nozzle Assembly (8) loaded by the nozzle pressure adjusting spring (5). In operation the fuel enters the duct (a) of valve seat spacer (1) and flows around the valve disc (2) into the 3 fuel ducts (b) drilled in valve spring spacer (3). Fuel then flows into the annular groove (c) and through 3 ducts (d) in valve stop spacer (7), into the annular groove (e) in the nozzle body (8), through ducts (f) and into the nozzle sump (g). When the fuel pressure is raised to the nozzle opening pressure, the nozzle valve lifts against the spring (5) and fuel flows past the nozzle valve seat through the nozzle orifices and into the engine.

The nozzle valve is a lapped fit in the nozzle body. A certain amount of seepage of fuel between the valve and body, which is necessary for lubrication, is provided by means of the controlled clearance between the nozzle valve and body. This fuel drains into the spring compartment and is returned to the injector sump through duct (h).

### REMOVAL OF NOZZLE CONVERSION KIT FROM INJECTOR

Disassembly procedure for the injector is the same as used with the original equipment. In servicing the nozzle conversion kit, clamp the injector upside down in the same manner used in normally servicing the injector. Remove cap nut. Remove, in order, all parts as shown in exploded view.

Wash all parts in a suitable cleaning solvent, such as Bendix or Karbonoff cleaners. Note that cleaning fluids must be used in accordance with the cleaning fluid manufacturer's instructions.

Examine carefully all parts for wear or other factors which prevent further service. Replace all questionable parts which are worn.

All lapped surfaces must be free of cracks or scratches which would cause an imperfect seal. Lap any damaged surface as may be required being certain during the lapping operations to maintain square and optically flat surfaces.

**NOTE:** Examine carefully the bottom surface of valve stop spacer (7) for possible spalling at the valve contact area. If spalling exists and is less than 0.003" deep, the spacer can be reused without refacing the surface. If spalling depth is 0.003 to 0.005", the surface must be refaced. This refacing can be done only once due to the limited depth of hard case at this location and must be etched with the letter "x" on the side of the spacer. This

will indicate that the surface has been ground once. If spalling exceeds 0.005", the part must be replaced.

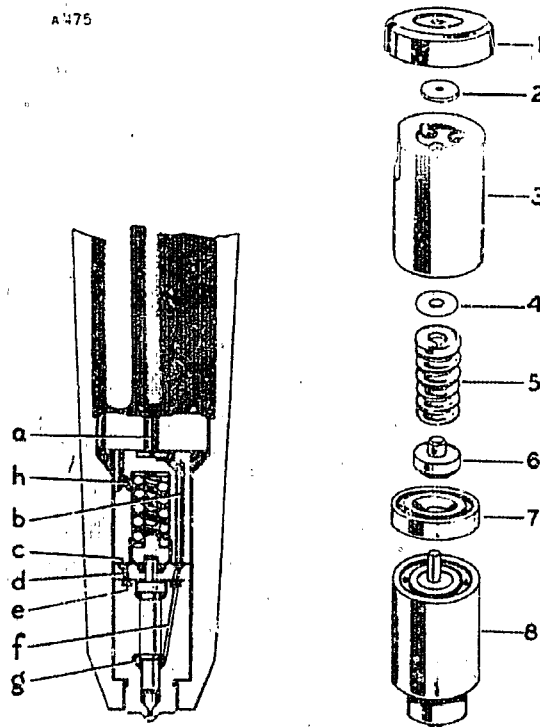


Figure 1

### SETTING NOZZLE OPENING PRESSURE

Prior to reassembly of nozzle kit parts to the injector, it is necessary to adjust the kit for proper nozzle opening pressure. Assemble all kit parts to the test holder TSE 7973 in the same manner as followed when assembling the kit to the injector, as shown in Figure 2. Attach nozzle holder assembly to a suitable nozzle tester. Close the pressure gauge valve to protect the gauge and actuate the test stand rather rapidly (about 25 strokes per minute) to expel air from the nozzle holder and to "settle" nozzle loading parts.

Open the pressure gauge valve  $\frac{1}{2}$  turn and depress the operating lever slowly to raise the pressure. Note, on gauge, pressure at which nozzle opens. Opening pressure should be within 2750-2700 psi. If the opening pressure is other than specified, adjust to

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correct setting by adding or removing pressure adjusting shims (4).

When a new pressure adjusting spring is used, adjust the opening pressure to 3000-3150 psi; this is to allow for setting which normally results with new springs within a short period of operation.

*The Nozzle opening pressure is permitted to drop to 2400 psi during engine operation with no deterioration of engine performance being experienced.*

### TESTING FOR NOZZLE SEAT LEAKAGE AND CHATTER

Actuate the operating lever slowly to build up pressure and as the correct opening point is approached, observe the spray orifices of the nozzle. If drops of fuel form or oil issues as a stream at pressure 100 psi below opening pressure, the nozzle is leaking and must be relapped.

If the assembly passes the leakage test without leaking, the spray pattern should be examined. Close the

gauge valve to protect the gauge when lever of the test stand is actuated rapidly.

Operate lever at a rate of approximately 15 strokes per minute. The spray formation should be sharp with a rather solid pattern and the angles formed by the individual sprays should be uniform.

Make sure that all holes are open and appear to be spraying the same quantity of fuel.

The nozzle chatter must be distinct and regular. A sharp pitch sound is not mandatory and an occasional skip or variation in the chatter pitch sound is acceptable.

Any nozzle which may require correcting should be reconditioned according to American Bosch standard nozzle reconditioning procedures, Manual section D3006/100.

Remove nozzle kit parts from test holder and install in injector as described in Reassembly Procedure.

All leakage tests performed with the original injector should also be made in the same manner after the AB nozzle conversion kit is installed. The only exception is the nozzle opening pressure test, which should be performed in accordance with the instructions outlined.

### REASSEMBLY OF NOZZLE CONVERSION KIT TO INJECTOR

Replace parts on injector in reverse order to disassembly. Before reassembly rinse thoroughly all parts, including cap nut, in clean test oil to assure clean seating of lapped surfaces. Torque cap nut to 125-135 lb./ft.

Replacement of nozzle cap nut seal ring should be in accordance with the Injector manufacturer's instructions.

### INSTALLATION OF INJECTORS ON ENGINE

After the unit has been tested for opening pressure, nozzle valve action, pressure sealing, etc. and found to be operating satisfactorily, the injector is ready to be installed in the engine.

Installation and timing of the injector to the engine should be performed in the same manner as presently followed with the original injector.

Final adjustments and balancing of the cylinders should be made in accordance with the engine manufacturer's instructions.

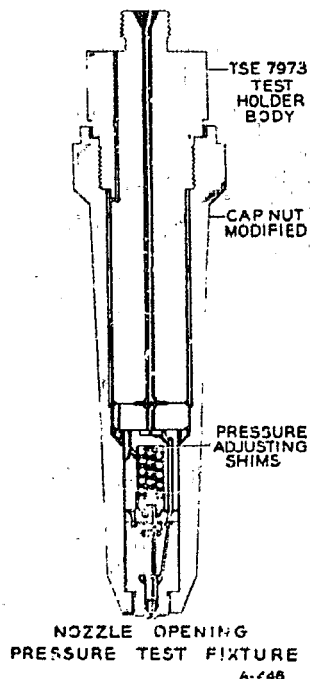


Figure 2