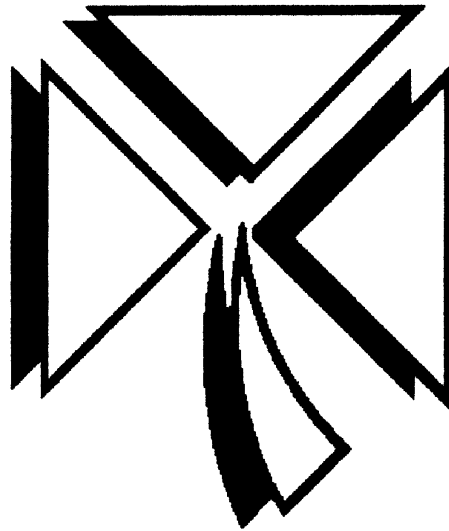


# **AUTOMATIC SPRAY HEAD INSTRUCTION MANUAL**



**SHAMROCK AUTOMATION, INC.**

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# SHAMROCK AUTOMATIC SPRAY HEAD MANUAL FOR MODEL B-1, B-2, & B-3

## ATOMIZING SYSTEM

The patented atomizing system creates a uniformly fine mist by directing the fluid radially outward from the center of the mixing area of the nozzle into a circular curtain of high velocity air. Atomizing does not depend upon air turbulence, which reduces the air required for complete atomization.

## SPRAY PATTERN

Seven spray nozzles are available, providing an extremely large range of spray patterns.

### Fan Pattern

No. 2 Nozzle - 4" x 2" at 10" from Nozzle  
No. 4 Nozzle - 8" x 2" at 10"  
No. 6 Nozzle - 12" x 2" at 10"  
No. 8 Nozzle - 18" x 2" at 10"

### Circular Pattern

No. 0 Nozzle - 1" diameter at 10"  
No. 5 Nozzle - 6" diameter at 10"  
No. 7 Nozzle - 12" diameter at 10"  
No. H Nozzle with hose attachment

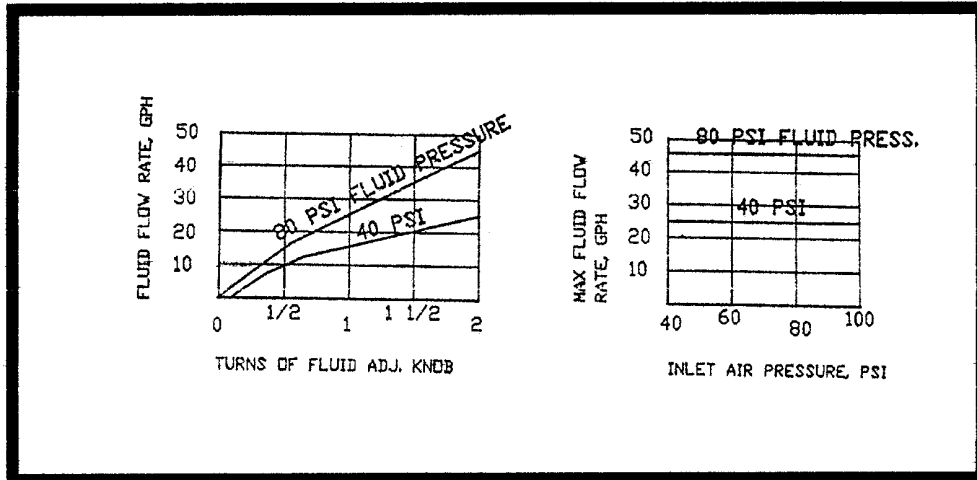
The use of fixed-pattern nozzles allows exact duplication of previous spray pattern set-ups, and provides a much wider range of spray patterns than one adjustable nozzle could provide.

## FLUID ON-OFF CONTROL

Since the fluid metering adjustment is independent of the spring-loaded fluid shut-off poppet, the poppet moves from closed to full open every cycle. This greatly reduces clogging and dripping problems. In addition, very low volume settings can be held consistently, cycle after cycle, to a degree not possible with spray heads which control fluid volume by adjusting the travel of the poppet.

## FLUID ADJUSTMENT

The fluid adjustment knob rotates through only two revolutions from closed to full open. A travel stop pin prevents accidental unscrewing. The metering screw is adjustable, allowing re-adjustment for complete shut-off after extended usage.



## PERFORMANCE CHARACTERISTICS OF SHAMROCK AUTOMATIC SPRAY HEAD

The first graph above shows the nearly linear relationship between adjustment knob rotation and fluid flow rate change. The flow rate at two turns open is almost double the flow rate at one turn open, at any given fluid pressure. This feature helps reduce set-up time, since flow rate change is linear and predictable.

The second graph shows that variations in air pressure have almost no effect on the volume of fluid atomized. This insures consistent spray coverage even when air line pressure varies over a wide range. The resulting consistency normally permits lower fluid flow rate settings, and produces more uniform casting quality.

## SIZE AND WEIGHT

Physical dimensions of the B-2 Spray Head are 2" x 2" x 1½". The complete Spray Head weighs nine (9) ounces. Physical dimensions of the B-3 Spray Head are 1½" diameter x 2¼" length. The complete Spray Head weighs only five (5) ounces.

## **SHAMROCK AUTOMATIC SPRAY HEAD SERVICING INSTRUCTIONS FOR B-1, B-2 AND B-3**

Most problems can be traced to dirty lube or air. Strainers in both supply lines are highly recommended. Low fluid pressure is also recommended. This requires more fully open settings of the fluid adjustment knob, reducing the possibility of clogging in the fluid metering orifice. When using pigmented lube, this is especially important. Also, use a screen size in the lube strainer which traps sediment but passes pigment.

### **DRIPPING OR RESTRICTED FLOW**

Open lube Adjustment Knob all the way and cycle two or three times. If this does not correct the problem, remove spray head, place hand blow-off gun nozzle in center of mounting hole in base, and turn on the air. This back-flushes the lube system. Clean off mounting base and be sure two (2) base sealing O-rings are in place, then remount. If the problem is not corrected, remove and disassemble spray head.

**NOTE:** Backing out the fluid adjustment knob beyond two (2) full turns will not increase fluid flow rate. Increase fluid supply pressure for more fluid flow.

### **REMOVING ADJUSTMENT KNOB**

On all Spray Heads tap out the retainer pin ( $\frac{1}{8}$ " roll pin) and unscrew the adjustment knob all the way. To re-install, slight pressure may be required to engage the threads on the metering screw since the O-ring is being compressed.

### **RE-CALIBRATING ADJUSTMENT KNOB FOR COMPLETE SHUT-OFF**

Remove adjustment knob as described above. Loosen the locking screw recessed in the knurled part of the knob. This allows the metering needle to be turned. Screw the metering needle in  $\frac{1}{8}$  turn being careful not to injure threads. Re-tighten locking screw. Re-install Adjustment Knob and test for complete shut-off. Repeat above steps if necessary.

### **REMOVING POPPET**

Remove the snap ring, which allows the retainer to spring out of the housing. Remove the nozzle. Using a  $\frac{3}{32}$  pin punch inserted in the fluid exit hole under the nozzle, force the poppet out the rear of the housing. A blast of air in the air inlet port can also be used to remove the poppet.

## REMOVING NOZZLE ASSEMBLY

Use  $\frac{7}{8}$  wrench to remove nozzle retaining nut, remove the  $\frac{3}{4}$  OD air jet washer located under the nozzle. In assembly, be sure this washer is seated, with the front face flush with the  $\frac{1}{4}$  diameter center projection of the housing. Rotate fan nozzles to desired spray pattern angle before tightening the  $\frac{7}{8}$  hex retainer nut.

## MOUNTING MODELS B-2 AND B-3

A single  $\frac{1}{4}$ " socket head cap screw mounts the spray head to the manifold, allowing it to be rotated  $360^\circ$  for proper alignment. Two concentric O-rings, recessed in the base, seal the lube and air supply. The mounting screw head has no seal since the metal-to-metal contact seals sufficiently to prevent appreciable air leakage.

## REPLACEMENT PARTS

Order from Shamrock Automation, Inc. Just ask for our Sales Department.

### **Shamrock Automation, Inc.**

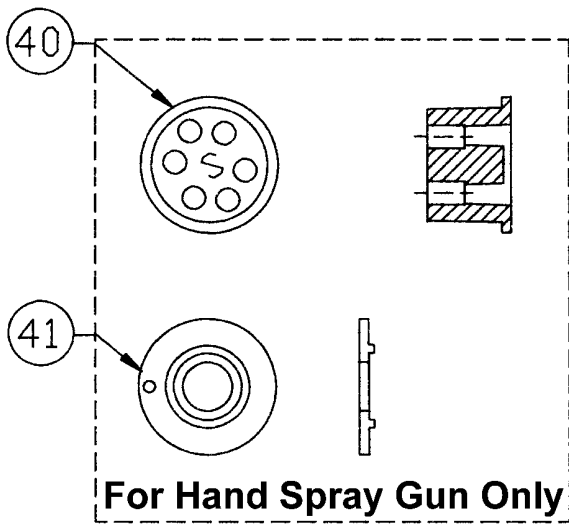
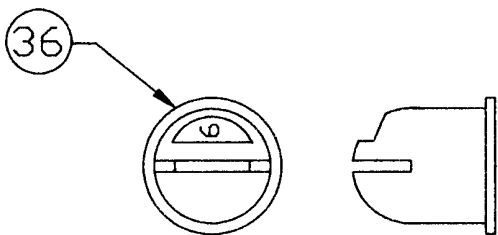
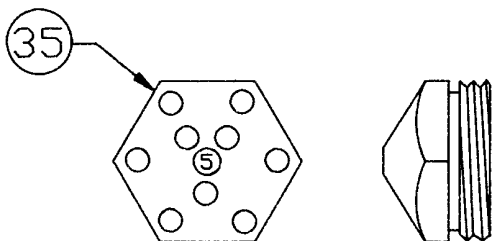
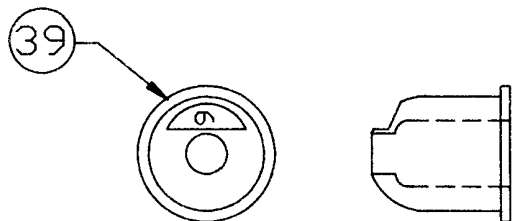
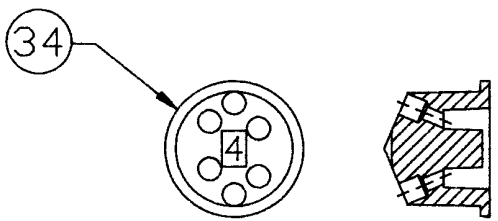
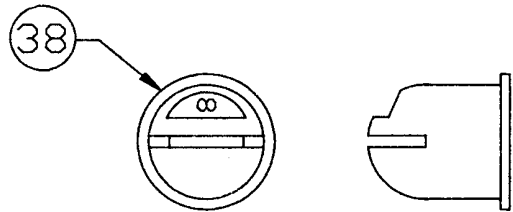
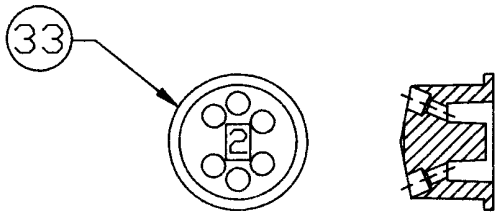
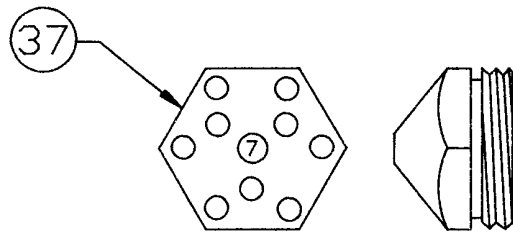
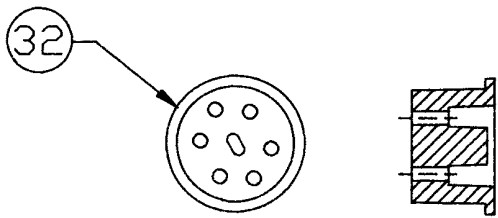
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**NOTE:** To service the Spray Head, or to re-aim it, when it is located on a swivel mount, first snap off the lube supply line quick-disconnect plug. Then loosen or remove the  $\frac{1}{4}$ " spray head attachment screw. This procedure prevents any loss of pressurized lube since the quick-disconnect plug has a check valve which closes when it is snapped off its mounting nipple.

## AUTOMATIC SPRAYHEADS PART LIST

NR	PNUM	PNAME	RQTY
1	30230180	HOUSING, B1 SPRAYHEAD	1
	30230200	HOUSING, B2 SPRAYHEAD	1
	30230220	HOUSING, B3 SPRAYHEAD	1
2	30230090	FLUID METERING SCREW, B1/B3	1
	30230100	FLUID METERING SCREW, B2	1
3	30230080	FLUID ADJUSTMENT KNOB	1 (2 on B-2)
4	30270030	"0" SPRAY NOZZLE	1
	30270040	#2 SPRAY NOZZLE	1
	30270050	#4 SPRAY NOZZLE	1
	30270060	#5 SPRAY NOZZLE	1
	30270070	#6 SPRAY NOZZLE	1
	30270080	#7 SPRAY NOZZLE	1
	30270090	#8 SPRAY NOZZLE	1
	30270095	#9 SPRAY NOZZLE	1
	30270096	#10 SPRAY NOZZLE (HUNTER)	1
	30230130	#H SPRAY NOZZLE	1
5	30270020	AIR JET WASHER	1
6	33090100	O'RING	1
7	30270100	NOZZLE RETAINING NUT	1
8	30230135	POPPET RETAINER	1
9	30230140	SNAP RING	1
10	30230150	POPPET RETURN SPRING	1
11	30230160	POPPET	1
12	33090140	O'RING	1
13	33090040	O'RING	1
14	33090010	O'RING	1
15	33090060	O'RING	1
16	34800950	8 - 32 X 3/16 SSS	1 (2 on B-2)
32	30270030	"0" Spray Nozzle	1 (2 on B-2)
33	30270040	#2 Spray Nozzle	1 (2 on B-2)
34	30270050	#4 Spray Nozzle	1 (2 on B-2)
35	30270060	#5 Spray Nozzle	1 (2 on B-2)
36	30270070	#6 Spray Nozzle	1 (2 on B-2)
37	30270080	#7 Spray Nozzle	1 (2 on B-2)
38	30270090	#8 Spray Nozzle	1 (2 on B-2)
39	30270095	#9 Spray Nozzle	1 (2 on B-2)





**For Hand Spray Gun Only**

See Page 7 for Parts Description



**SHAMROCK**

P.O. BOX 1813 HARRISON, ARKANSAS 72601

## WARRANTY

Seller fully warrants that equipment, service, repair or parts supplied shall conform to the description in the quotation and agrees to repair or replace F.O.B. shipping point, any parts (excepting expendable items such as ladle cups, ladle attachment brackets, ladle attachment arms, hydraulic seals, fuses, etc), services, or repairs that fail due to defects in material or workmanship within (1) one year of start-up of equipment or eighteen (18) months after shipment, whichever occurs first, or in the case of service, repairs, or part within one (1) year of supplying such service, repair, or part. If the equipment, service, repair, part includes software, Seller warrants, for a period of one (1) year of start-up or eighteen (18) months after shipment, whichever occurs first, that the software supplied or serviced will meet its published functional specifications. Should software fail to meet the specifications, or be otherwise defective, Seller shall promptly correct errors or non-conformities. If correction is not possible, Seller shall replace defective software, or, at Seller's option, refund the purchase price paid for such software. Other than those expressly state herein, THERE ARE NO OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, AND SPECIFICALLY EXCLUDED, BUT NOT BY WAY OF LIMITATION, ARE THE IMPLIED WARRANTIES OF FITNESS FOR PARTICULAR PURPOSE AND MERCHANTABILITY.

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