USER MANUAL

MODEL NUMBER:
DS1
DS1K
DS1V
AND RELATED UNITS

Air Operated Pre-Mix Doorway Foam Unit

English (Original Instructions)

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

⚠ WARNING

Read this manual completely and understand the machine before operating or servicing it.

- Read all instructions before installing or operating unit.

- Always wear appropriate personal protective equipment (PPE) when operating or servicing unit.

- Always follow all chemical safety precautions and handling instructions provided by the chemical manufacturer and Safety Data Sheet (SDS).

- If this unit is modified or serviced with parts not listed in this manual, the unit may not operate correctly.

- Do not exceed an incoming air pressure of 100 psi (6.9 bar).

- Do not exceed a fluid temperature of 100˚F (37.8˚C).

- Always flush the unit with fresh water thoroughly when switching from an alkaline to an acid or an acid to an alkaline.

- Never use unit with hydrocarbons or flammable products.

- Only use clean and dry air. Air must be filtered and free of moisture or pump life will be diminished. If needed, install an air dryer before unit.

- Do not use an air lubricator before the unit.

- Never use unit if it is damaged or leaking.

- Disconnect unit from electrical power source before servicing.

PROTECT THE ENVIRONMENT

Please dispose of packaging materials, old machine components, and hazardous fluids in an environmentally safe way according to local waste disposal regulations.

♻ Always remember to recycle.

*Specifications and parts are subject to change without notice.

Air Operated Double Diaphragm Pump Options:

P56..............Flojet polypropylene body with Santoprene diaphragm

P56V............ Flojet polypropylene body with Viton diaphragm

P56K............ Flojet polypropylene body with Kalrez diaphragm

Acceptable Products: Alkaline cleaners, Caustic cleaners, Sanitizers, and Acids.

* D-Limonene and peracetic acid may only be used with Kalrez pump

* Chlorine may only be used with Viton or Kalrez pump

DO NOT USE: All hydrocarbons

Specifications:

Tubing ....25 feet polyethylene, 1/2 inch O.D.
Foam output.........15 gallons/minute
　　　　　　　　　　(56.8 liters/minute)
Foam Pattern....... 5 foot wide X 9 foot in length
　　　　　　　　　　(One nozzle assembly)

Requirements:
Compressed air 40 to 80 PSI (2.8 to 5.5 bar) with 3.5 to 8 CFM (99.1 to 226.5 l/min)
Chemical requirements: follow all instructions from chemical manufacturer.
Electrical requirement........115VAC - 60HZ (GFI Protected Circuit)

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Installation Instructions:

1. Read all instructions before installing the foam unit.
2. Remove all parts from box.
3. Select desired area to mount the control box. It is recommended that the control box is to be mount on a vertical wall
4. Mount the control box using 4 of the screws and anchors provided. **Note:** When drilling holes for the plastic anchors provided with the screws, use a ⁵⁄₁₆ inch drill bit.
5. Mount the spray tip assembly in the desired location using the stainless steel brackets.
6. After the control box and nozzle assembly are mounted, run ½ inch tubing from the solution discharge to the nozzle assembly.
7. Attach a compressed air line from an air compressor to the air inlet valve. **Note:** the air compressor needs to be able to maintain at least 4 cfm @ 60 psi (113.3 l/min @ 4.1 bar).
8. Set the timer. See timer specification and instructions below.
9. Make sure the toggle switch is in the "OFF" position, and plug the unit into GFCI protected 110 VAC outlet.

Operation Instructions:

1. Follow all instructions from chemical manufacturer.
2. Place suction line in pre-mixed solutions.
3. To activate the unit, turn the toggle switch to the "ON" position.

4. If necessary, adjust the needle valve to desired wetness or dryness of foam following the steps below:
   a. Close needle valve completely in clockwise direction.
   b. Open needle valve in counter-clockwise direction 3 complete turns.
   c. Continue to open needle valve in ¼ turn increments allowing 30 seconds between adjustments until proper consistency of foam is achieved.
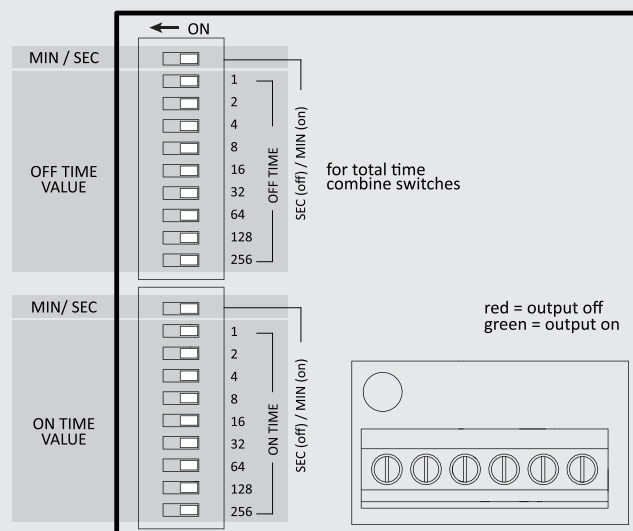
Troubleshooting Instructions:

- Check for proper air pressure on air gauge. The recommended air pressure is 50 to 60 psi (3.4 to 4.1 bar). The maximum air pressure is 90 psi (6.2 bar).
- Check metal air bowl for debris such as water, oil, or rust particles.Clean by unthreading the air bowl from the air regulator.
- Check for plugged strainer). Replace strainer if necessary. Strainer must be used.
- Make sure proper chemical and concentration is being used.
- If the needle valve is open too far the pump will cycle improperly due to lack of air pressure, if this occurs, reset needle valve as described in *operation instruction #4*.
- Make sure proper foaming chemical and concentration is being used.
- If air passes through the pump without cycling, replace the pump.
- If foam solution backs up into the air bowl, the check valve needs to be replaced.
- If foam comes out wet, no matter where the needle valve is positioned, the check valve may need to be replaced.

The timer is an adjustable repeat cycle timer with the ON time operating first. ON and OFF times can range from 1 second to 511 minutes.
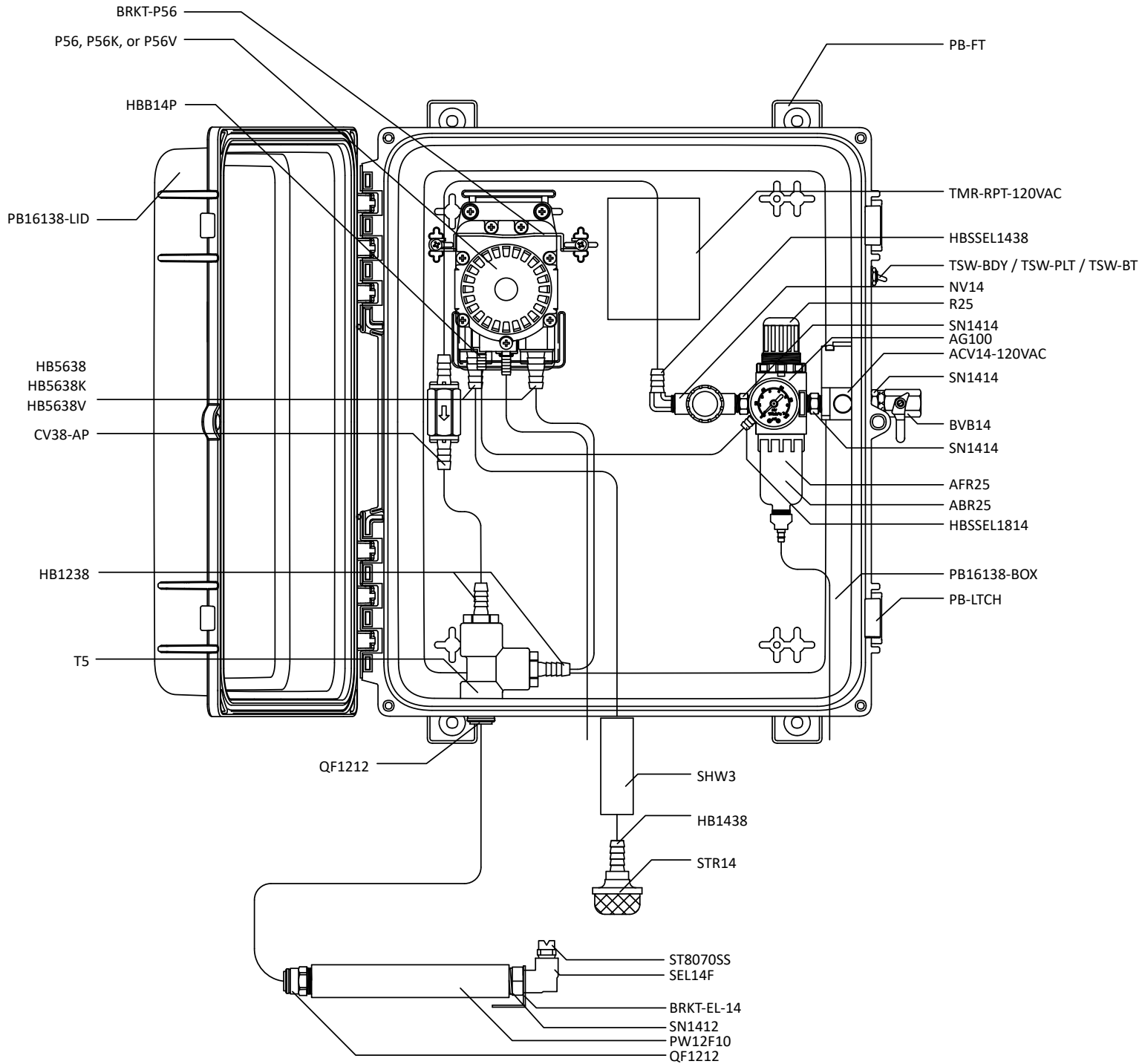
To set the timer:

1. Starting with the OFF time, move the top dip switch to the left for MIN (minutes) or to the right for SEC (seconds) to select the desired time interval.

2. The next 9 dip switches will be used to control the total active time. To the left is active and to the right is inactive. Combine the numbers of active dip switches to achieve the desired time. The increments are 1, 2, 4, 8, 16, 32, 64, 128, 256.

3. Repeat the above steps for the ON time setting.

4. Timer indicator light will appear red when unit output is off. The indicator turns green when output is on.

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Inside View - Control Box

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ITEM NUMBER	DESCRIPTION
ACV14-120VAC	AIR CONTROL VALVE - MAC - 1/4IN FPT IN - 2X 1/4IN FPT OUT - ALUMINUM BODY - 120VAC SOLENOID - NORMALLY CLOSED - 18IN 18AWG FLYING LEADS
AG100	AIR GAUGE - 1/8IN NPT - 0-100 PSI MARKINGS - DRY MODEL
B1032114	BOLT - 10-32 X 1 1/4IN - STAINLESS STEEL - TRUSS HEAD PHILLIPS
BRKT-P56	PUMP BRACKET- STAINLESS STEEL
BRKT-EL-14	BRACKET - L-SHAPED MOUNTING - FOR 14NPT FITTINGS - STAINLESS STEEL
BVB14	BALL VALVE - BRASS - NICKEL PLATED - AIR INLET VALVE - 1/4IN FPT X 1/4IN FPT
CB-5	CIRCUIT BREAKER ASSEMBLY - 5 AMP - INCLUDES CLEAR BOOT
CB-BT	CLEAR BOOT FOR CIRCUIT BREAKER
CGRP12	CORD GRIP - 1/2IN MPT - BLACK NYLON - CORD RANGE 0.17IN TO 0.45IN - WATER RESISTANT - FOR 7/8IN HOLE - NO NUT INCLUDED
CGRP12-NUT	NUT - 1/2NPT - BLACK NYLON
CV38-AP	CHECK VALVE-3/8IN BARBS-PVC BODY-HASTELLOY SPRING-TEFLON BALL-WHITE
EC14	EAR CLAMP - OETIKER - STAINLESS STEEL - FOR 1/4IN HOSE
FW14NPT	FLAT WASHER FOR 1/4IN NPT - STAINLESS - 0.57IN ID X 1.28IN OD X 0.08IN THK
H12CL-PV	1/2IN ID 5/8IN OD CLEAR HOSE - PVC - AVAILABLE PER FT
H316CL-PV	3/16IN ID 5/16IN OD CLEAR HOSE - PVC - AVAILABLE PER FT
H14BL-F	1/4IN ID BLUE HOSE-HYBRID TPE-AVAILABLE PER FT
H38BL-F	3/8IN ID BLUE HOSE-HYBRID TPE-AVAILABLE PER FT
HB1238	1/2in MPT X 3/8in HOSE BARB
HB1438	1/4in MPT X 3/8in HOSE BARB (PLASTIC)
HBB14P	1/4IN HOSE BARB-BRASS-FOR G57/P56 AIR FITTING WITH O-RING
HBSS1438	HOSE BARB - STAINLESS STEEL - 1/4IN MPT X 3/8IN BARB
HBSSEL1438	HOSE BARB - STAINLESS STEEL - ELBOW - 1/4IN MPT X 3/8IN BARB
HBSSEL1814	HOSE BARB - STAINLESS STEEL - ELBOW - 1/8IN MPT X 1/4IN BARB
MXPES-1X3	MIXING MEDIA - BROWN POLYESTER - WAD - MEDIUM POROSITY - 1IN X 7/8IN X 3IN TALL
NV14	NEEDLE VALVE-1/4IN NPT-INCLUDES BLACK KNOB
P56	PUMP WITH SANTOPRENE SEALS - INCLUDES HOSE BARBS, AIR FITTING, AND EXHAUST BARB
P56K	PUMP WITH KALREZ SEALS - INCLUDES HOSE BARBS, AIR FITTING, AND EXHAUST BARB
P56V	PUMP WITH VITON SEALS - INCLUDES HOSE BARBS, AIR FITTING, AND EXHAUST BARB
PBA-16138	POLY BOX ASSEMBLY - 16IN X 13IN X 8IN - GRAY POLYPROPYLENE - INCLUDES BRAND LABEL AND MOUNTING HARDWARE
PB-FT	POLY BOX FOOT - GRAY POLYPROPYLENE - FOR PBA-12117 AND PBA-16138
PB-LTCH	POLY BOX LATCH - GRAY POLYPROPYLENE - TWO PIECES ASSEMBLED - FOR PBA-12117 AND PBA-16138
PB-PIN	STAINLESS STEEL HINGE PIN FOR PB16138 AND PB12117
PB12117-BOX	POLY BOX - GRAY POLYPROPYLENE - FOR PBA-12117
PB12117-LID	POLY BOX LID - GRAY POLYPROPYLENE - FOR PBA-12117 - INCLUDES PB-GSKT ROPE SEAL
PW12F10	1/2IN FNPT AND 1/2IN FNPT WAND - BLACK POLYPROPYLENE - 10IN LONG
QF1212	QUICK FIT-1/2 MPT X 1/2 OD TUBE-POLYPROPYLENE
R25	REGULATOR - AIR - 2X 1/4IN FPT AND 2X 1/8IN FPT PORTS WITH BOWL AND FILTER - NO GAUGE
S1012-HL	SCREW - #10 X 1/2IN - STAINLESS STEEL - ROUND HEAD PHILLIPS - HILO THREAD
S1034-FH-HL	SCREW - #10 X 3/4IN - STAINLESS STEEL - FLAT HEAD PHILLIPS - HILO THREAD
SEL14F	S.S. ELBOW 1/4in FPT X 1/4in FPT
SHW3	SUCTION HOSE WEIGHT - 15/16IN ID X 1 1/2IN OD X 3 1/4IN LONG - PVC COATED STAINLESS
SN1412	1/4IN X 1/2IN MPT STAINLESS NIPPLE
SN1414	STAINLESS HEX NIPPLE 1/4 MPT X 1/4 MPT
SSC38	SCREW BAND CLAMP - STAINLESS STEEL - FOR 3/8IN HOSE
ST8070SS	SPRAY TIP-80 DEGREE-7.0 GPM-STAINLESS-1/4 MPT
STR14	40 MESH SUCTION LINE STRAINER 1/4 FNPT
T5	1/2 POLY TEE
TB12N-PE	1/2IN OD NATURAL TUBE - POLYETHYLENE - AVAILABLE PER FT
TMR-RPT-120VAC	TIMER - REPEAT CYCLE - SECONDS AND MINUTES ADJUSTABLE DIGI-SET - 120VAC - SCREW TERMINAL BLOCK - INCLUDES INSTRUCTIONS
TSW-BDY	TOGGLE SWITCH - BODY - SINGLE POLE SINGLE THROW - NICKEL-PLATED BRASS - 1/4IN SPADE TERMINALS - 1/2IN MOUNTING HOLE - 15/32-32 KEYED THREADED BUSHING
TSW-PLT	TOGGLE SWITCH - ON/OFF PLATE - NICKEL-PLATED STEEL - MOUNTING HOLE FOR 15/32 KEYED BUSHING
TSW-BT	TOGGLE SWITCH - MOUNTING BOOT - BLACK SILICONE RUBBER - 15/32-32 INTEGRATED NUT
TW14NPT	TOOTH LOCK WASHER FOR 1/4IN NPT - STAINLESS - 0.56IN ID X 0.96IN OD X 0.06IN THK
WC1416-FSPD14	WIRE CONNECTOR - FOR 14 TO 16 GAUGE WIRE - 1/4IN FEMALE SPADE - BLUE PVC INSULATED
WMS14	WALL MOUNT SCREW - #14 X 1 1/4IN - STAINLESS STEEL - HEX HEAD SLOTTED
WMS14A	WALL MOUNT SCREW ANCHOR -#14 X 1 1/4IN - PLASTIC - 5/16IN DRILL SIZE
WR183-8-WPLG	WIRE CORD WITH US STANDARD UNPOLARIZED GROUNDED PLUG - 18AWG 3 CONDUCTOR - 8FT LONG - BLACK RUBBER JACKET - EPDM INSULATION - TYPE SJOOW - 10A RATING