
USER MANUAL

**MODEL NUMBER:
DS5
DS5K
DS5V
AND RELATED UNITS**

Air Operated 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 for 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:

- Tubing50 feet polyethylene, 1/2 inch O.D.
- Foam output.....25 gallons/minute
(94 liters/minute)
- Foam Pattern..... 5 foot wide X 12 foot in length
(one nozzle assembly)

Requirements:

Compressed air 40 to 80 psi (2.8 to 5.5 bar) with 5 to 10 cfm (141.6 to 283.2 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 the shipping box.
3. Select the desired area to mount the control box. The control box should be mounted on a vertical wall.
4. Mount the control box using four of the screws and anchors provided
Note: When drilling holes for the plastic anchors provided with the screws, use a 3/16 inch drill bit
5. Mount the spray tip assembly in the desired location using the two SS brackets
6. After the control box and nozzle assembly are mounted, run 1/2 inch tubing from the solution discharge to the elbow fitting of the nozzle assembly. It is important the solution line is plugged into the elbow fitting of the nozzle assembly or the foam quality will be reduced. Run the 1/2 inch tubing from the air output of the control box to the nozzle assembly.
7. Attach a compressed air line from your air compressor to the air inlet valve
Note: The air compressor needs to be able to maintain at least 4 cfm @ 60 psi.
8. Set the timer (See timer adjustment instructions)
9. Make sure the toggle switch is in the "off" position and plug the unit into a GFCI protected 110 VAC outlet

c. With the unit running, continue to open the valve in 1/4 turn increments allowing 30 seconds between adjustments until desired foam consistency is achieved.

Note: If the valve is opened too far, it can cause the pump to stall. If this occurs, repeat steps a, b, and c.

3. When running multiple tip assemblies off one control box, it is recommended to change spray nozzle based on chart specification below:

Item Number	Number of Tip Assembly	Recommended Spray Nozzle
NZA-DS-TL-1	1	ST80200SS
NZA-DS-TL-2	2	ST80100SS
NZA-DS-TL-3	3	ST8060-12SS

Air operation range: 40 to 80 psi (2.8 to 5.5 bar) with 5 to 10 cfm (141.6 to 283.2 l/min)

Troubleshooting Instructions:

Disconnect power before servicing.

1. Check for proper air pressure (60 psi or more into unit, 60 psi on the air gauge).
2. Check the air regulator bowl and air filter for debris such as water, oil, or rust particles. Clean by unthreading the air regulator bowl from the air regulator.
3. If needle valve is open too far the pump will cycle improperly due to lack of air pressure, if this occurs, reset valve as described in operation instruction.
4. Make sure proper foaming chemical and concentration is being used.
5. If air passes through the pump without cycling, replace pump.
6. If solution backs up into the air regulator bowl, the check valve needs to be replaced.
7. If foam comes out wet, no matter where the needle valve is positioned, the check valve may need to be replaced.

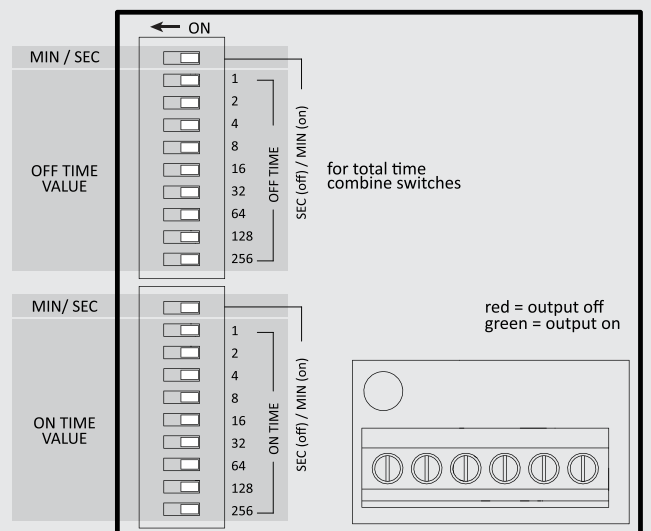
Operation Instructions:

1. To activate the unit, turn the toggle switch to the "on" position
2. If necessary, adjust the "wet foam/dry foam" valve to desired wetness or dryness of foam following the steps below:
 - a. Close valve completely in clockwise direction
 - b. Open valve in clockwise direction 2-3 turns

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.

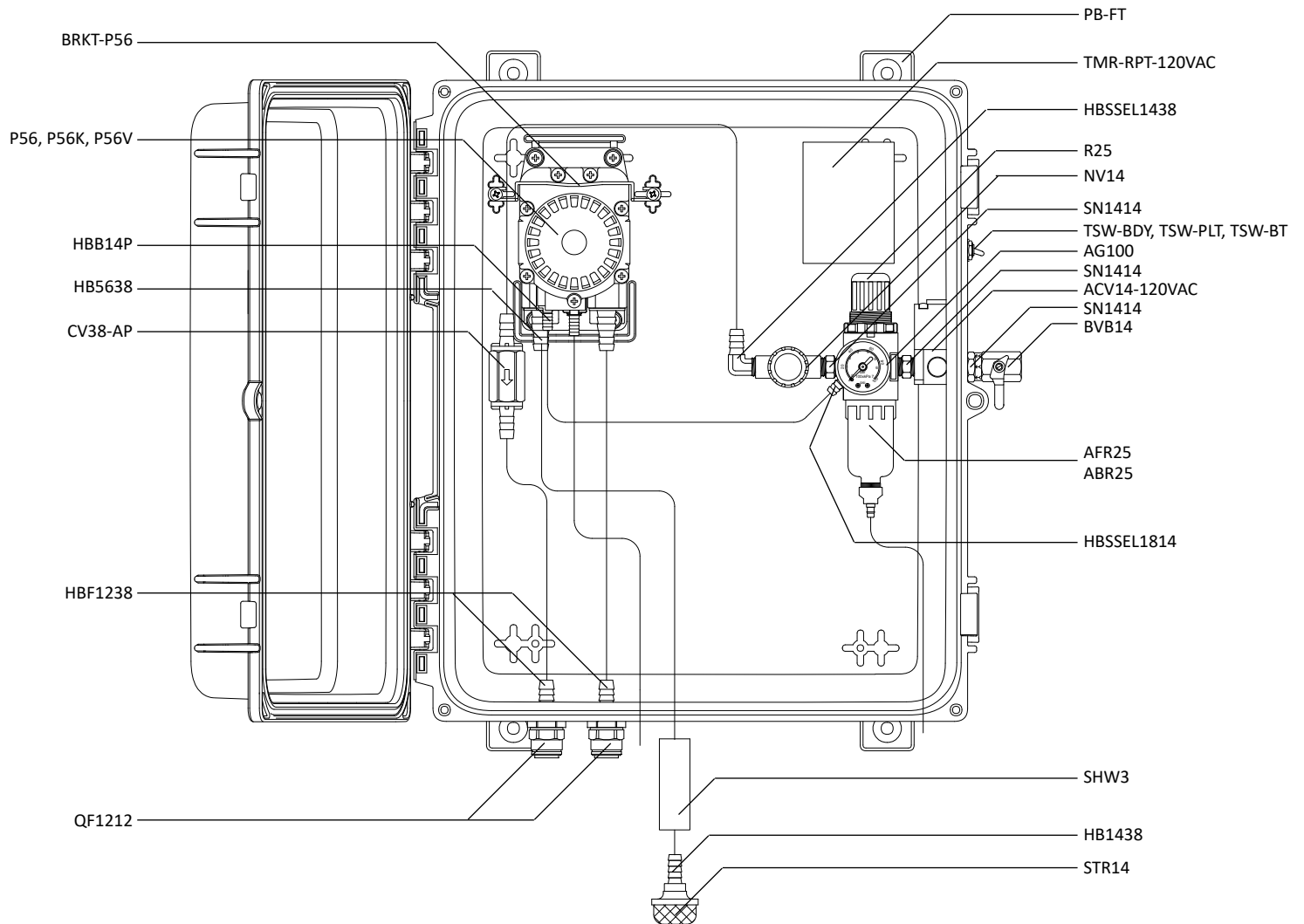
To set the timer:

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.



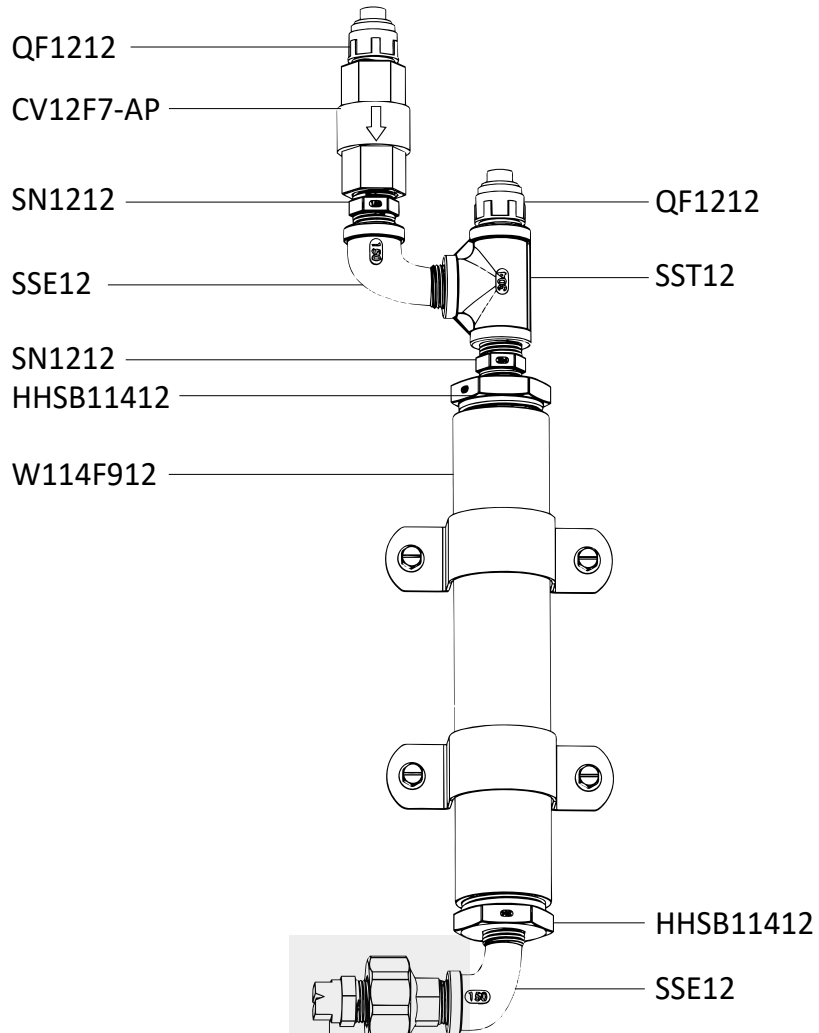
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Inside View - Control Box



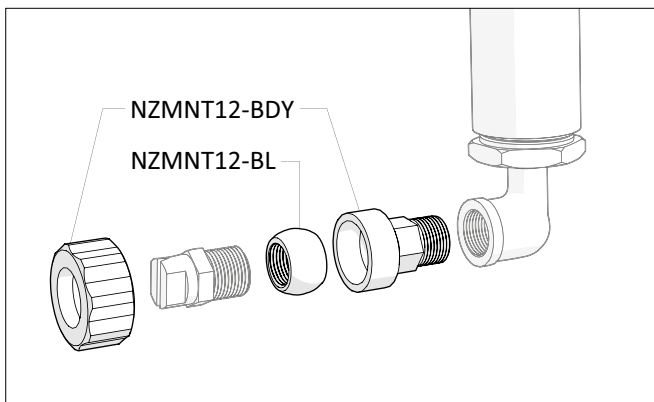
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NOZZLE ASSEMBLY



NOZZLE ASSEMBLY DETAIL

This unit includes an adjustable ball-type nozzle that may be installed to hold the spray tip as shown.



ST80200SS,
ST80100SS
or ST8060-12SS

Note: Spray tip size varies based on number of nozzle assemblies used - see specifications chart for more information.

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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-W114	BRACKET - STAINLESS STEEL - FOR MOUNTING 1 1/4IN DISCHARGE WAND
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
CV12F7-AP	1/2 CHECK VALVE 7 LB SPRING - HASTELLOY SPRING - EP SEALS - ACID PROOF - BLK/WHT CHK
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
H14BL-F	1/4IN ID BLUE HOSE-HYBRID TPE-AVAILABLE PER FT
H316CL-PV	3/16IN ID 5/16IN OD CLEAR HOSE - PVC - AVAILABLE PER FT
H38BL-F	3/8IN ID BLUE HOSE-HYBRID TPE-AVAILABLE PER FT
HB1438	1/4in MPT X 3/8in HOSE BARB (PLASTIC)
HBF1238	HOSE BARB - POLYPROPYLENE - 1/2IN FPT X 3/8IN BARB
HB5638	HOSE BARB FOR P56 PUMP
HBSSSEL1438	HOSE BARB - STAINLESS STEEL - ELBOW - 1/4IN MPT X 3/8IN BARB
HBSSSEL1814	HOSE BARB - STAINLESS STEEL - ELBOW - 1/8IN MPT X 1/4IN BARB
HHSB11412	HEX HEAD STAINLESS BUSHING 1-1/4 MPT X 1/2 FPT
NZMNT12-BDY	NOZZLE MOUNT BODY - 1/2IN MPT - BLACK AND GRAY POLYPROPYLENE - ACCEPTS NOZZLE MOUNT BALL
NZMNT12-BL	NOZZLE MOUNT BALL - 1/2IN FPT - BLACK POLYPROPYLENE - FOR NOZZLE MOUNT BODY
NV14	NEEDLE VALVE-1/4IN NPT-INCLUDES BLACK KNOB
NV14-HNDL	BLACK KNOB FOR NEEDLE VALVE
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
PB16138-BOX	POLY BOX - GRAY POLYPROPYLENE - FOR PBA-16138
PB16138-LID	POLY BOX LID - GRAY POLYPROPYLENE - FOR PBA-16138 - INCLUDES PB-GSKT ROPE SEAL

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
PRCH-MXSS-MSH	MIXING MEDIA - STAINLESS - BALL - AS PURCHASED
QF1212	QUICK FIT-1/2 MPT X 1/2 OD TUBE-POLYPROPYLENE
QFT12	UNION TEE 1/2in TUBE - POLYPROPYLENE
R25	REGULATOR - AIR - 2X 1/4IN FPT AND 2X 1/8IN FPT PORTS WITH BOWL AND FILTER - NO GAUGE
AFR25	AIR FILTER for R25
ABR25	METAL AIR BOWL for R25
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
SHW3	SUCTION HOSE WEIGHT - 15/16IN ID X 1 1/2IN OD X 3 1/4IN LONG - PVC COATED STAINLES
SN1212	STAINLESS HEX NIPPLE 1/2 MPT X 1/2 MPT
SN1414	STAINLESS HEX NIPPLE 1/4 MPT X 1/4 MPT
SSC38	SCREW BAND CLAMP - STAINLESS STEEL - FOR 3/8IN HOSE
SSE12	STAINLESS STREET ELBOW - 304 STAINLESS STEEL - 1/2IN FPT X 1/2IN MPT
SST12	STAINLESS TEE 1/2 FPT
ST80100SS	SPRAY TIP-80 DEGREE-10.0 GPM-STAINLESS-1/2 MPT
ST80200SS	SPRAY TIP-80 DEGREE-20.0 GPM-STAINLESS-1/2 MPT
ST8060-12SS	SPRAY TIP-80 DEGREE-6.0 GPM-STAINLESS-1/2 MPT
STR14	40 MESH SUCTION LINE STRAINER 1/4 FNPT
STRD1116	STRAINER - STAINLESS DISC - 11/16IN DIAMETER - #10 MESH
STRD114	STRAINER - 316 STAINLESS DISC - 1 1/4IN DIAMETER - #20 MESH
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
W114F912	1 1/4IN FNPT AND 1 1/4IN FNPT FOAM TUBE - POLISHED STAINLESS - 9 1/2IN LONG
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