USER MANUAL

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 the 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 80 psi (5.5 bar).
- Do not exceed a fluid temperature of 100°F (37°C).
- 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.
- Always flush the unit with fresh water for at least 5 minutes when switching from an alkaline to an acid or an acid to an alkaine.
- Never operate unit without the lid (FST-LID) on.
- Never open ball valves (PBV12M12F) when there is chemical in the tank, unless the ball valves are connected to an appropriate location for chemical discharge. Chemical will flow out of the tank through the open ball valve(s).
- Do not use the unit if an overflow hose is not installed.
- If chemical flows from the overflow port, shut down the unit immediately and correct the problem before proceeding.
- Do not use the unit if it is damaged or leaking.

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.

Options				
	Pump Seal Material		**Air-Operated Valve Seal Material**	
FST	Santoprene (standard)	-	Viton **(V)**	
	Viton **(V)**		Silicone **(SIL)**	
	Kalrez **(K)**			

Add bold option codes to item number as shown. For standard options, no option code is needed.

Examples:

- FST-V (standard unit with Santoprene pump seals and Viton air-operated valve seal material)
- FSTV-V (unit with Viton pump seals and Viton air-operated valve seal material)
- FSTK-SIL (unit with Kalrez pump seals and Silicone air-operated valve seal material)

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REQUIREMENTS	
Compressed air requirements	70 psi (4.8 bar) with 2-3 cfm (56.6-85 l/min)
Liquid temperature range	40-100˚F (4.4-37˚C)
Electrical requirements	100-240 VAC at 60 Hz, 2 amps (GFCI protected outlet)
Operating voltage	24 VDC; unit includes transformer
Chemical compatibility	Chemical products used with this equipment must be formulated for this type of application and compatible with unit materials and pump seals. For more information on chemical compatibility, consult the manufacturer or SDS for your product or contact our customer service department.

SPECIFICATIONS	
Power type	Compressed air and electricity
Chemical pickup type	Draws from concentrated, pre-mixed, or ready-to-use product
Number of products unit can draw from	One product
Suction line length/diameter	20 ft (6.1 m) clear, braided PVC hose with 1/2 in. (12.7 mm) inside diameter
Capacity	2.6 gallons (10 liters)
Discharge hose diameter/length	Discharge hose(s) not included
Flow rate*	2 gal/min (7.6 l/min)
Pump seals	Santoprene, Viton, or Kalrez
Air-operated valve seals	Viton or Silicone o-rings and Sarlink seal
*Dilution rates and flow rates given are based on chemical with viscosity of water and factory air pressure settings.	

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Installation Instructions:

1. Remove all components from packaging.

2. Select desired area to mount the unit.

3. Make sure the mounting bracket is oriented correctly, and secure it to the wall using two of the screws and plastic anchors provided.
   Note: To drill holes for the plastic anchors, use a ⁵⁄₁₆ inch drill bit. The two holes should be 8 inches (20.32 cm) apart horizontally.

4. Mount the unit by connecting the bracket located on the back of the tank to the bracket on the wall.

5. Open the lid by removing all 4 screws and set aside.

6. Connect one or more of the ball valves on the underside of the unit to your existing metering pump(s).
   Note: The ball valves have ½ inch NPT female threads.

7. Connect the suction hose to your chemical source. Maximum draw length is 30 ft (0.3 m).
   Note: Strainer (not included) must be used on suction line. Select strainer based on chemical compatibility.

8. Connect a hose to the overflow port, located on the upper left side of the unit, and run the hose back to your chemical source or to another location that is suitable for chemical discharge.
   Note: The overflow port has ¼ inch NPT female threads.

9. Close the four ball valves located on the underside of the unit.

10. Connect a compressed air supply line to the air inlet fitting.

11. Check to ensure ball valve is in the open position.

12. Solenoid box is preset to only allow the pump to cycle for up to 2 minutes without stopping. If it reaches 2 minutes and is still cycling the unit will automatically shut off and the green and amber LED lights will indicate a failure. Reset by unplugging the unit and reconnecting to power source.
    Note: This can be adjusted on the circuit board up to 10 minutes. Adjust for your application.

13. Close and secure the lid of the tank unit with all 4 screws.

Operation Instructions:

1. Follow all instructions from the chemical manufacturer.

2. Verify that all of the ball valves that will not be used are closed and/or plugged.

3. Verify the cap is secured on the top of the tank.

4. Verify that the pump is connected to the chemical source.

5. Plug in the 24 VDC power adapter to a 100-240 VAC power source to active the unit. When the unit is active, the pump will start to cycle. The pump will stop cycling when product reaches the appropriate fill level, and it will remain inactive until fluid level decreases.

6. Operation cycle of unit will be signaled by LED lights:

Solenoid Box LED Color Signals	
Green	Unit is active and solution is filled to appropiate fill level.
Green and Red	Unit is actively filling tank (pump cycling).
Green and Amber	Error or failure has occurred. Unplug unit, inspect components, and plug back into power source.

7. Open the ball valve(s) that are connected to your metering pump(s). Any ball valves that are not connected to a metering pump should remain closed.

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After Use Instructions:

- Flush the unit with fresh water thoroughly until all chemical has been discharge from system before shutting down unit.
- To shut down unit, unplug the 24 VDC power adapter.

Maintenance Instructions:

To keep your unit operating properly, periodically perform the following maintenance procedures:

Note: Before performing any maintenance, drain the tank and ensure that the unit has been disconnected from compressed air and electrical power.
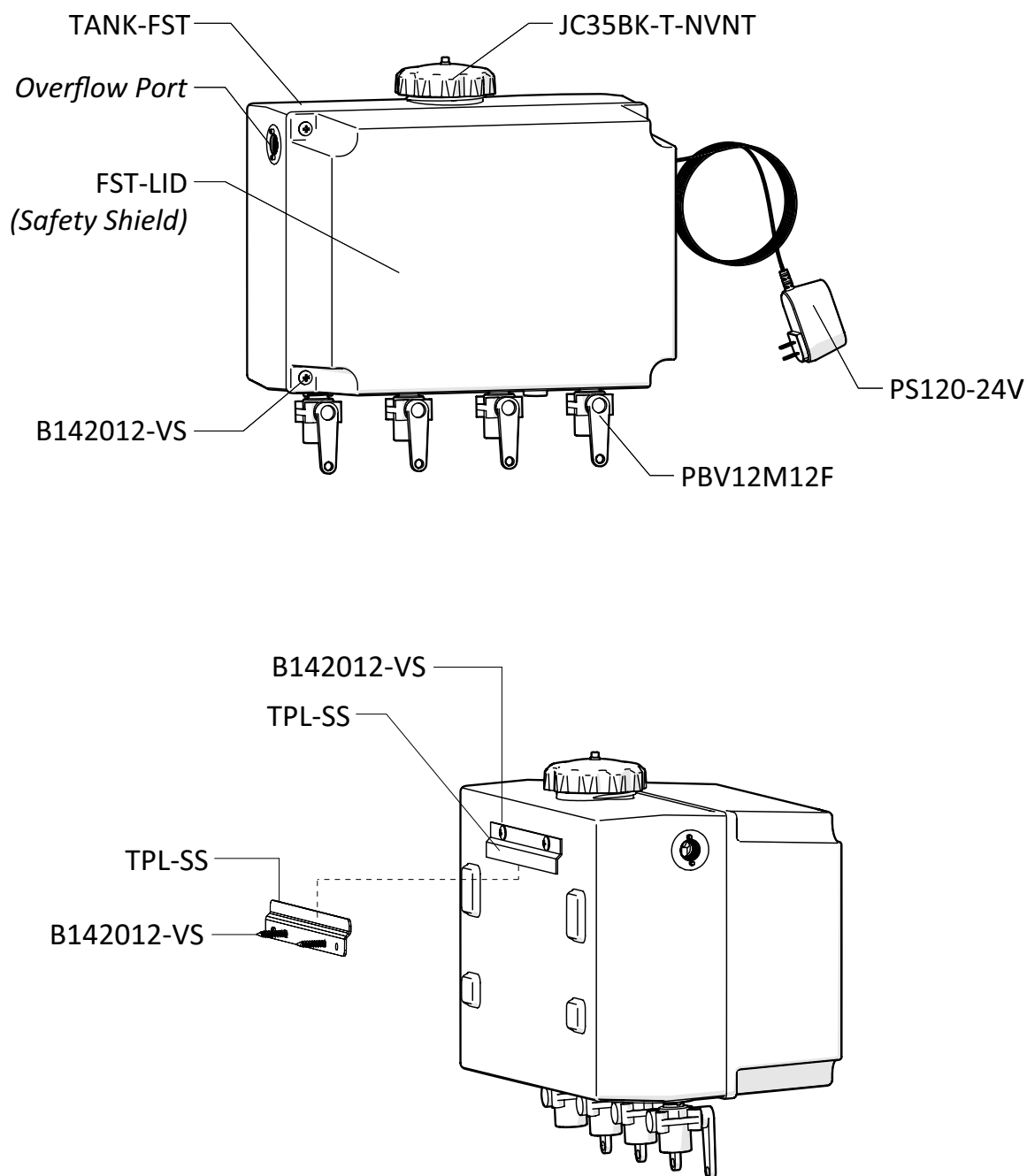
- Inspect the pump for wear and leaks.
- Inspect all hoses for leaks or excessive wear. Make sure all hose clamps are in good condition and properly secured.
- Replace the filter located within the air regulator as needed. Clean by unthreading the air regulator bowl from the air regulator.
- Check the suction line and strainer for debris and clean as needed.
- Drain your air compressor tank on a regular basis to help extend pump life. An air source with a high moisture content will accelerate pump wear. **Note:** If your air source has a high moisture content, you may wish to install a water separator before the unit.

Troubleshooting Instructions:

- 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.
- If air passes through the pump without cycling, the pump needs to be replaced.
- If chemical flows from the overflow port, the solenoid valve or air operated valve (AOV38) may need to be replaced.
- If air operated valve does not open, check for proper air pressure on air gauge. Air regulator factory set at 70 psi (4.8 bar).
- Check to ensure ball valve is in the open position.
- If green and amber color lights appear in solenoid box unplug the unit to resent. Inspect components and plug back in to power source once lights have faded.
- If the unit operates at a reduced pressure:
  - If the air supply is 50 psi (3.4 bar) or above, check the air gauge, which should read near 50 psi (3.4 bar). If the air gauge reads more or less than 50 psi (3.4 bar), adjust the pressure by turning the knob on the top of the air regulator.
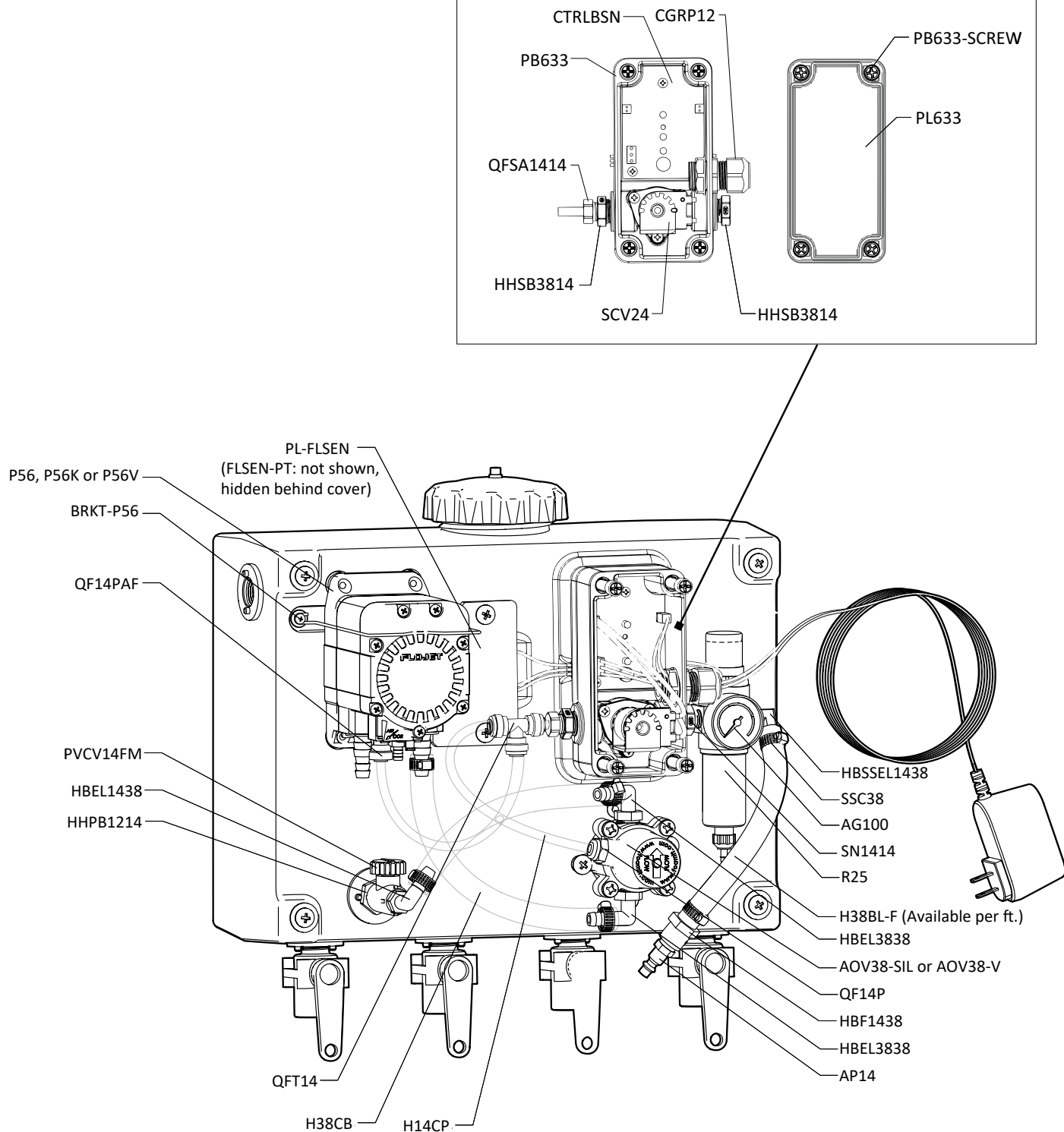
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TANK ASSEMBLY

TANK-FST

Overflow Port

JC35BK-T-NVNT

FST-LID
(Safety Shield)

PS120-24V

B142012-VS

PBV12M12F

B142012-VS

TPL-SS

TPL-SS

B142012-VS

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CONTROL BOX ASSEMBLY

SOLENOID BOX ASSEMBLY

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ITEM NUMBER	ITEM DESCRIPTION
2TH	2 POSITION TERMINAL HOUSING CONN RCPT HSNG 2POS CST-100 II
AG100	AIR GAUGE-1/8IN NPT-100 PSI DRY MODEL
AOV38-SIL	AIR OPERATED VALVE WITH 3/8 IN FPT-SILICONE O RINGS
AOV38-ORK-SIL	O RING KIT FOR AOV38-SIL
AOV38-V	AIR OPERATED VALVE WITH 3/8 IN FP-VITON O RINGS
AOV38-ORK-V	O RING KIT FOR AOV38-V
AP14	AIR FITTING 1/4 MPT X PLUG-NICKEL-PLATED BRASS
B142012-VS	1/4-20 X 1/2IN BOLT-STAINLESS-TRUSS HEAD PHILLIPS-VIBRASEAL
B63212	Screw, 6-32 Thread, 1/2" Length
B63234	6-32 3/4 IN FLAT HEAD STAINLESS SCREW
BRKT-P56	PUMP BRACKET- STAINLESS STEEL
CGRP12	CORD GRIP 1/2 INCH
CTRLBSN	CONTROL BOARD FOR SENSOR ON FST UNITS
FLSEN-PT	FLUID LEVEL DETECTION SENSOR FOR PLASTIC TANK-3 WIRE MODEL
FST-LID	LID FOR TANK-FST
FW38X78	FLAT WASHER-.406 X .875 OD X .05 THK-18-8 SS
GS1-SIL	GROMMET SEAL FOR AOV38-SILICONE
H12CB	1/2 IN (ID) CLEARBRAID RF SERIES
H14CP	1/4IN OD POLYETHYLENE TUBING-NATURAL COLOR - Available per ft.
H38BL-F	3/8IN BLUE HOSE-HYBRID TPE-AVAILABLE PER FT
H38CB	3/8in CLEARBRAID RF SERIES - Available per ft.
H38CP	3/8 IN OD POLYETHYLENE TUBING - NATURAL - Available per ft.
HB1238	1/2in MPT X 3/8in HOSE BARB
HBEL1438	HOSE BARB ELBOW 1/4 MPT X 3/8 HOSE BARB
HBEL3838	HOSE BARB ELBOW 3/8 X 3/8
HBF1438	1/4in FPT X 3/8in HOSE BARB - POLYPRO
HBSSEL1438	STAINLESS HOSE BARB 1/4 MPT X 3/8 BARB ELBOW
HHPB1214	HEX HEAD POLY BUSHING 1/2 MPT X 1/4 FPT
HHSB3814	HEX HEAD STAINLESS BUSHING 3/8 MPT X 1/4 FPT
JC35BK-T-NVNT	BLACK 3.5 INCH UNVENTED CAP POLYPROPYLENE - TEFLON GASKET - NO CHECK VALVE - NO BEAD CHAIN
JC35B-P	BLACK 3.5 INCH CAP - POLYPROPYLENE
JC-G35-T	JUG CAP GASKET 3.5 INCH CAP TEFLON
P12	HEX HEAD PLUG WITH 1/2 M.P.T.
P18	PLUG 1/8 MPT HEX HEAD 304 SS
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

ITEM NUMBER	ITEM DESCRIPTION
P56V	PUMP WITH VITON SEALS - INCLUDES HOSE BARBS, AIR FITTING, AND EXHAUST BARB
20756103B	Polypro G57 Air Port x HB Straight, w/ Viton o-ring
HB14P	1/4in BRASS HB AIR FITTING /G57/P56
HB5638	HOSE BARB FOR P56 PUMP
HB5638K	HOSE BARB FOR P56K PUMP
HB5638V	HOSE BARB FOR P56V PUMP
PB633	CONTROL BOX BODY - POLYPROPYLENE - 6x3x3
PB633-GSKT	GASKET FOR POLY CONTROL BOX 6x3x3
PB633-SCREW	SCREW FOR PB633 CONTROL BOX - POLYPROPYLENE
PBV12M12F	POLYPROPLENE BALL VALVE-1/2 MPT TO 1/2 FPT
PL633	CONTROL BOX LID - POLYPROPYLENE - 6x3x3
PL-FLSEN	PLATE FOR FST (FLUID SENSOR COVER) - PL-4X8
PS120-24V	PLUG-IN VOLTAGE TRANSFORMER, 120 VAC INPUT, 24VDC OUTPUT
PVCV14FM	PVC BALL VALVE-1/4FPT X 1/4MPT-VITON SEALS
QF14P	QUICK FIT-1/4 MPT X 1/4 OD TUBE-POLYPROPYLENE
QF14PAF	QUICK FIT-1/4 MPT PUMP AIR FITTING
QFSA1414	STEM ADAPTER 1/4in STEM X 1/4in NPT - POLYPROPYLENE
QFT14	UNION TEE 1/4in TUBE - POLYPROPYLENE
R25	AIR REGULATOR-TWO 1/4IN FPT PORTS-TWO 1/8IN FPT PORTS-INCLUDES FILTER AND BOWL
AFR25	AIR FILTER for R25
ABR25	METAL AIR BOWL for R25
S142034ST	1/4-20 X 3/4 INCH SELF TAPPING SCREW 410 STAINLESS STEEL
S61358	410 Stainless Steel, Pan Head Phillips, 6-13 Thread, 5/8" Length
S81838	HI LO 8/18 SCREW 3/8 LONG
SCV24	SOLENOID COIL VALVE-24VDC (NO VALVE BODY)
SN1414	STAINLESS HEX NIPPLE 1/4 MPT X 1/4 MPT
SSC12	STAINLESS SCREW BAND CLAMP FOR 1/2 IN HOSE
SSC38	STAINLESS SCREW BAND CLAMP FOR 3/8 IN HOSE
TANK-FST	TANK FOR FST
TPL-SS	PLATE FOR MOUNTING TANK TO BRACKET, DUAL PURPOSE FST
WC22	CONN SOCKET 22-26AWG TIN CRIMP
WC22-26	CONN SOCKET 22-26AWG TIN CRIMP
WCH3P	CONN HOUSING 3POS .156 W/RAMP
WMS14	14 X 1 1/4 HEX W/H SMS SLOTT, S/S
WMS14A	5/16 X 1 1/2 STRAIGHT PLASTIC ANCHOR