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# USER MANUAL

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MODEL:

**BLX-400**

**Compact Boot Scrubber**

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*English (Original Instructions)*

*Updated: 04/07/21*



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### **WARNING:**

1. All personnel using this unit must be familiar with the information contained in this manual. Follow all installation and maintenance instructions.
2. Always wear appropriate footwear. Secure or remove loose items on footwear.
3. Ensure solid footing and use both hands when operating the unit.
4. Avoid contact of chemicals with skin and eyes. If contact occurs, see MSDS sheet for further first aid measures.
5. Follow safety instructions of chemical manufacturer (MSDS).
6. Always follow plant and OSHA guidelines about the use of equipment.
7. Disconnect power before servicing equipment.
8. Always follow safety precautions and obey warning labels. Failure to do so could result in injury or death.



## Overview

The BLX-400 is a compact semi-automated footwear scrubbing unit built to accommodate 1 user at a time.

The included user manual contain installation, operation, and maintenance instructions for BLX-400 units. For further support or information please contact your sanitation representative, manufacturer, or Clean Logix technical support.

**NOTE:** Instructions and specifications are for standard units only. See page 22 for units equipped with Non-dilution kits (NDF).

## Specifications

- Construction: 304L stainless steel, UHMW, Polypropylene
- Weight: 167 lb (75.75 kg)
- Dimensions: 20.5" x 26" x 47"  
(52 x 66 x 119.4 cm)
- Water Consumption: 1.5 GPM  
(3.8 L/m)
- Minimum Chemical Dilution Ratio: 1:230\*

**\*NOTE:** Unit tested at 70°F using water with 30-50 psi injector inlet pressure.



### WARNING:

DO NOT use flammable liquids (i.e. alcohol based solutions or similar) without dilution.

## System Requirements

### Water Supply

- Flow: 5 GPM (3.8L/m) minimum\*
- Pressure: 35-50 psi (207-414 kPa)\*\*
- Temperature: 40-100°F (4-38°C)

*3/8" supply piping size recommended*



### WARNING:

DO NOT EXCEED maximum water temperature! Damage to brushes can result.

***\*Minimum pressure must be maintained during specified water flow!***

***\*\*For consistent operation of Venturi Injector and spray nozzles, a water pressure regulator and filter is recommended.***

**NOTE:** Back flow prevention must be installed in the water line to this unit. Check local codes to ensure proper installation.

### Electrical

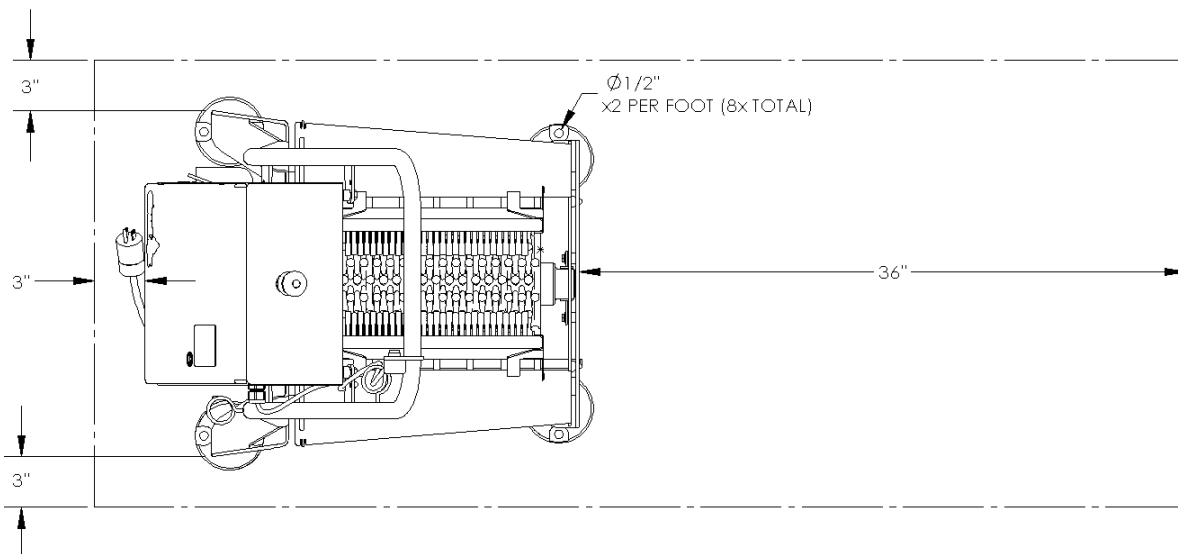
- **BLX-400 (120V):**
  - 120 VAC Single Phase
  - 60 Hz 15 Amps
  - Supplied with 8 ft. power cable with NEMA 5-15P plug
- **BLX-400 (230V):**
  - 230 VAC Single Phase
  - 60 Hz 15 Amps
  - Supplied with 8 ft. power cable with NEMA 5-15P plug

# USER MANUAL: BLX-400

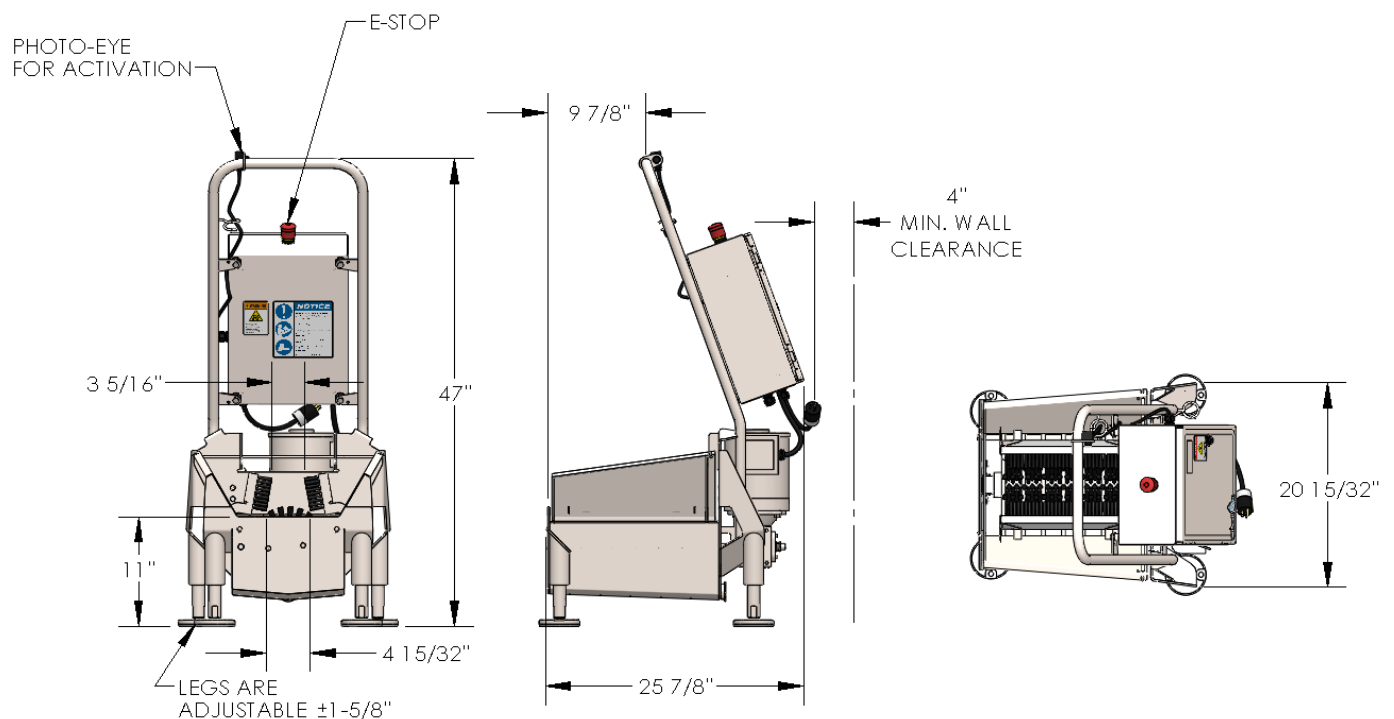
READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT



## Installation



**NOTE:** For fixed installations, area in front of electrical panel must be clear at least 36"



## Installation

### Physical Set Up:

1. Set unit in desired location.
2. Aspects to consider when deciding on placement:
  - Clearance for general use
  - Location of drain
  - Emergency exit paths or egress
  - Access to control box
  - Connections for water and electricity

**NOTE:** To move the unit use a dolly, pallet jack, or a hi-lo to lift from the bottom. Pad the forks to protect the finish.

3. Use a level to make sure the unit is stable and leveled in all directions [Figure 5.1].
4. Adjust leveling feet as necessary by rotating them clockwise/counter-clockwise.
5. Connect unit to electrical supply.

### Plumbing Connections:

1. Connect water source to solenoid valve fitting inlet (located under control box). Fitting is 3/8" [Figure 5.2].
2. Connect the solution source to the hose barb of the Venturi Injector (located under water inlet) using 1/4" PVC tubing [Figure 5.2].
3. If necessary, adjust the dilution ratio using the included metering tips and test [Figure 5.3].
  - The smallest metering tip is a yellow tip with a small tube attached [Figure 5.3]. This tube can be trimmed to alter the dilution ratio.
  - Full length capillary tube results in a dilution ratio of approximately **1:670** at 30-50 psi water inlet pressure.
  - To adjust injector, turn the bypass screen clockwise until solution flows at a desired range. (See page 21 for more information.)

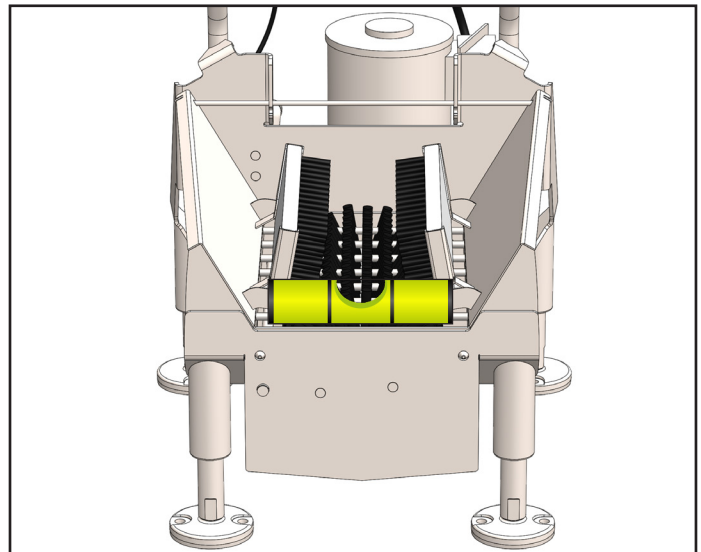


Fig. 5.1: Level and stabilize unit using a leveling device

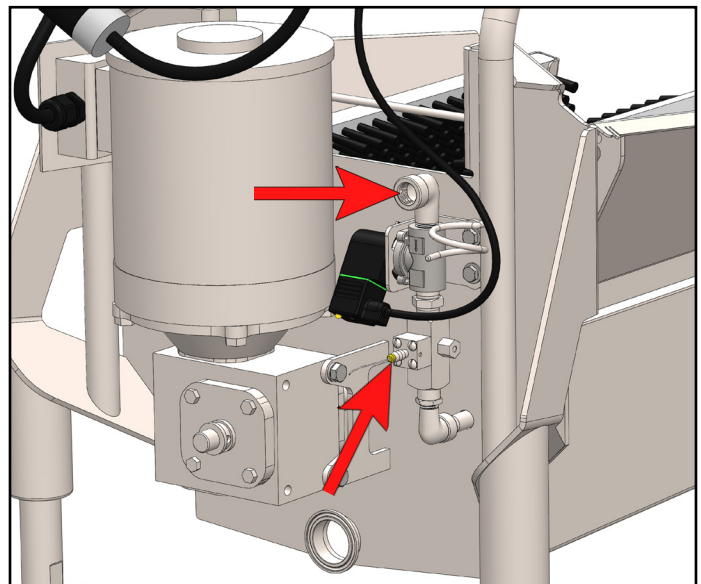


Fig. 5.2: Water and Venturi Injector (solution) inlets

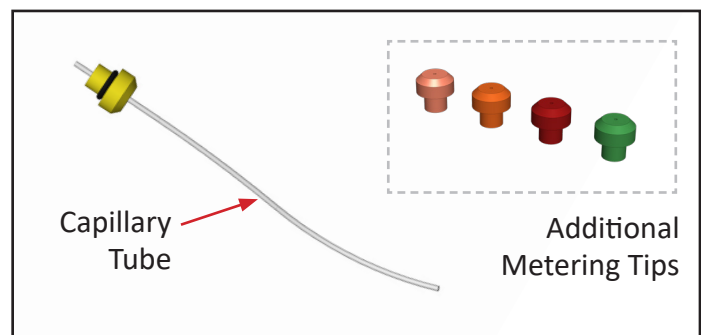


Fig. 5.3: Metering Tips and Capillary Tube

## Installation (continued)

### Motor Speed Adjustment

The speed of the motor(s) is controlled by the Variable Frequency Drive (VFD). To adjust the speed, turn the knob on the front of the VFD while the unit is under power and motor is running.

**Default:** 1750 RPM at 45 Hz

- **Recommended speed:** 45 Hz
- **Minimum speed:** 15 Hz
- **Maximum Speed:** 60 Hz

### To adjust the speed:

1. Open the control box.



### **DANGER:**

Only qualified personnel should open the control box while under power. NEVER open the control box during washdown or cleaning.

2. Activate the sensor to turn on the motor.
3. As the motor is spinning, the unit will display the operating speed in Hz.
4. Turn the knob counter clockwise to decrease the speed, or clockwise to increase speed. [Figure 6.1]



Fig. 6.1: PowerFlex 523 Variable Frequency Drive

## Operation

### Start Up

1. Verify installation has been completed:
  - Brushes and grate are secured
  - Unit is plugged in and receiving power
  - Water and solution have been plumbed
2. Pull the E-STOP switch up to engage power, when illuminated the unit has power [Figure 7.1].

**NOTE:** Prior to placing footwear into the unit, test that it is working properly by activating the sensor (wave hand in front of sensor).

### Use

1. Using both hands, grasp the handrail to activate the sensor.

#### **CAUTION:**

When operating always ensure solid footing and use handrail for stability.

2. When activated, the brush will begin to rotate and the solution/water will spray [Figure 7.1].
3. While maintaining grip on the handrail, place one boot in between the side brushes. With the sole of the boot positioned against the bottom rotating brush, push the boot forward and backwards to scrub the sides ensuring all areas make contact.
4. When complete, remove the first boot and repeat with second.
5. Once the user removes their hands the brushes and sanitizer will stop.

### Shut Down

- Press the red E-STOP button on the control box.
- Disconnect power and follow lockout-tagout procedures as necessary.

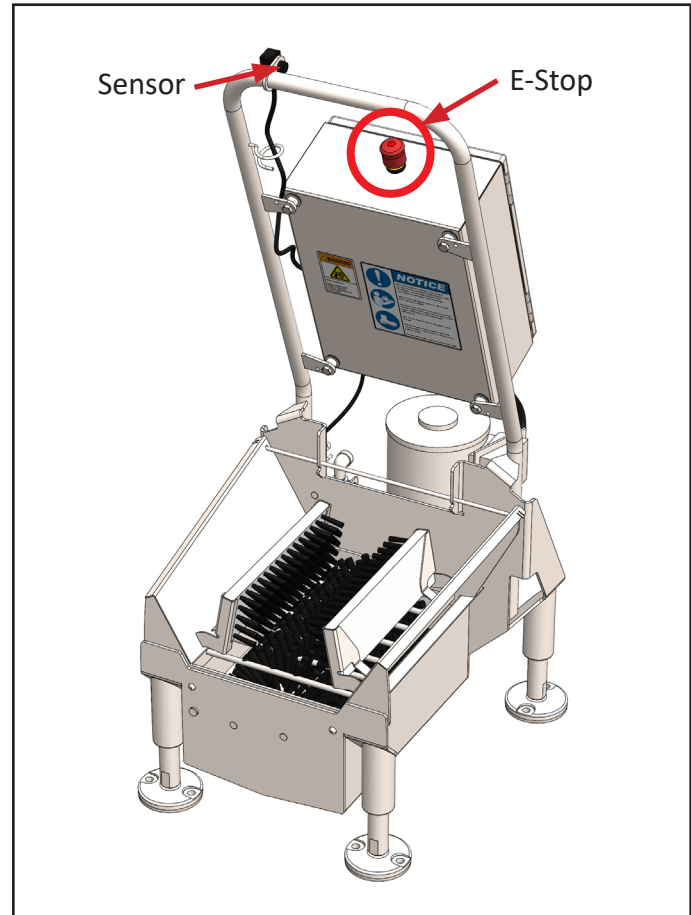


Fig. 7.1: Emergency stop and activation sensor locations



## Cleaning Procedures

### Removing & Replacing Brushes

1. Shut down the unit (see pg. 7).
2. Remove the two side brushes by lifting each of them up and out of their brackets [Figure 8.1].
3. Remove the grate by pulling the grab bar out and away from its alignment notches [Figure 8.2].
4. Once released, the entire grate can be pulled up and out from the tub to be removed.
5. Lift the sole brush out of the tub by grabbing the open end and lifting up to clear the opposing drive shaft anchor [Figure 8.3].
6. Brushes can be washed individually in a COP tank or wash machine.

**NOTE:** It is *NOT* recommended to use hot water (over 120°F) to clean brushes.

7. The tub can be washed by conventional means.

**NOTE:** Chemistry used must be compatible with materials of construction (page 3).

Use Case	Chemical Type
Organic Soils	Chlorinated Alkaline or Alkaline based foaming cleaner
Mineral Buildup	Acid based foaming cleaner



### CAUTION:

Use of high pressure (above 400 PSI) is not Recommended on sensitive areas such as electrical Components, motors, or gearboxes.

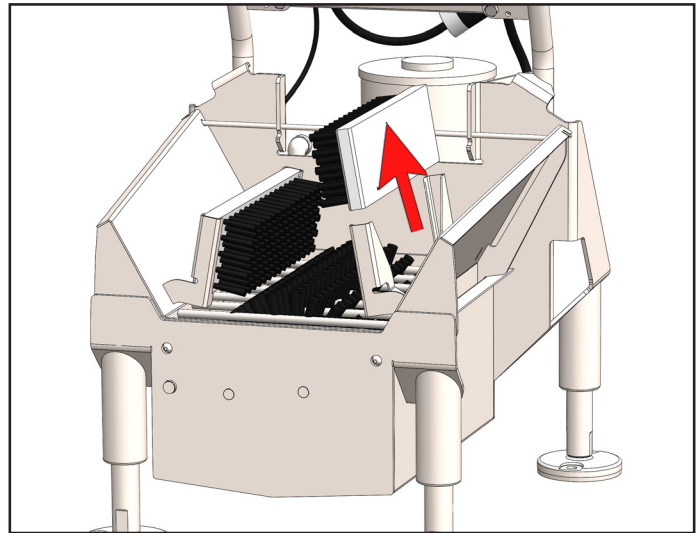


Fig. 8.1: Removing side brushes

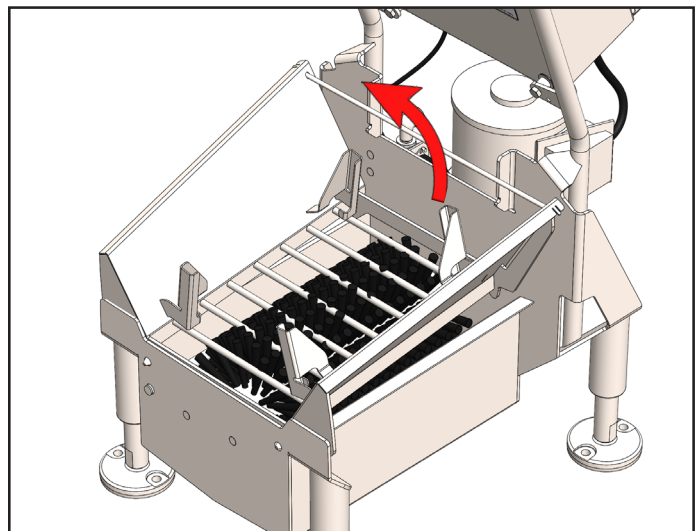


Fig. 8.2: Removing grate

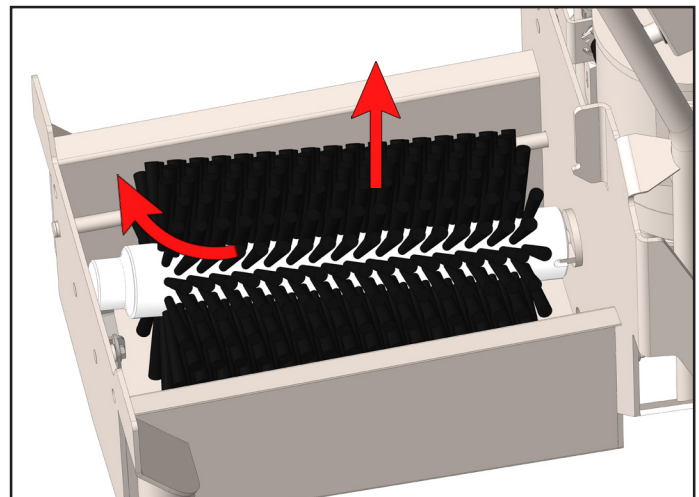


Fig. 8.3: Removing sole brush



## Advanced Configuration Options

## Motor Current Sensor

### Automation Direct ACS-200 Current Switch

The motor current sensor monitors the current draw of the motor and will stop the motor if an over-torque condition occurs.



## DANGER:

Do not open control box during wash down or cleaning. Only authorized personnel should open the control box.

To adjust the Set-Point:

1. 1-6A Setting (Jumper Removed)
2. Two loops of wire through sensor.
3. Turn trimpot counterclockwise at least 5 turns.
4. Turn trimpot clockwise for 3-1/2 turns.
5. Test and adjust accordingly in 1/8 turn increments.

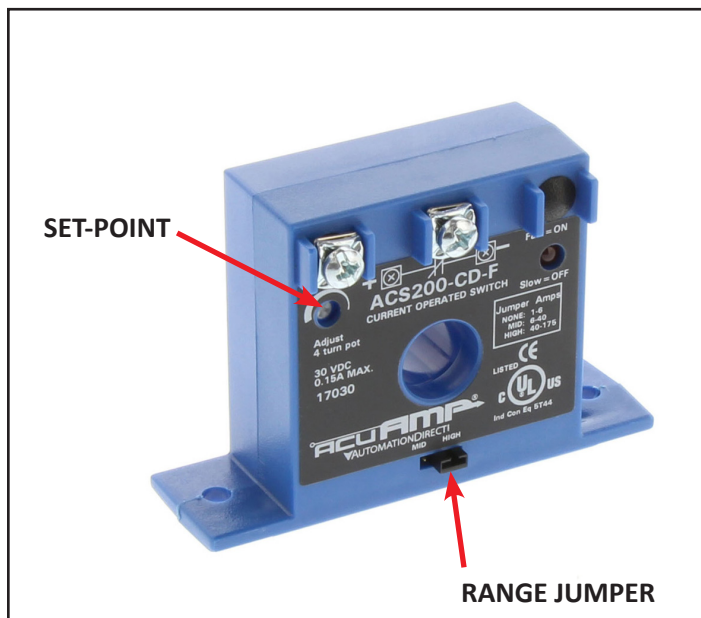


Fig. 9.1: Current Sensor Settings Identification

## Brush RPM Formula

The formula for calculating Speed in RPM from Drive Frequency in Hertz is:

$$\frac{[\text{Motor Nameplate RPM}] \times [\text{Drive Frequency (Hz)}]}{[\text{Motor Nameplate Frequency (Hz)}] \div [\text{Gear Reduction}]}$$

Example:

- Motor Nameplate RPM = **1750**
- Motor Nameplate Frequency (Hz) = **60**
- Gear Reduction = **20**
- Drive Frequency (Hz) = **48**

$$1750 \times 48 \div 60 \div 20 = \underline{70 \text{ RPM}}$$

The formula for calculating Drive Frequency in Hertz from Desired Speed in RPM is:

$$\frac{[\text{Desired Speed RPM}] \times [\text{Gear Reduction}] \times [\text{Motor Nameplate Frequency (Hz)}]}{[\text{Motor Nameplate RPM}]}$$

Example:

- Desired Speed in RPM = **70**
- Gear Reduction = **20**
- Motor Nameplate Frequency (Hz) = **60**
- Motor Nameplate RPM = **1750**

$$70 \times 20 \times 60 \div 1750 = 48 \text{ Hz}$$

### Brush Direction

By default, the rotation direction for the sole brush is clock-wise. To reverse the direction switch 2 of the 3 motor lead wires (T1, T2, or T3).

See electrical schematics on pages 18-19 for more information.

## Advanced Configuration Options (continued)

### Drive Parameter Settings

#### PowerFlex 523 Variable Frequency Drive

PARAMETER NUMBER	DESCRIPTION	SETTING
P031	[Motor NP Volts]	230
P033	[Motor OL Current]	2.8
P034	[Motor NP FLA]	1.7
P041	[Accel Time 1]	1.00
P042	[Decel Time 1]	2.00
P043	[Minimum Freq]	15.00
P046	[Start Source 1]	2
t076	[Relay Out1 Sel]	14
A486	[Shear Pin 1 Level]	2.4
A487	[Shear Pin 1 Time]	0.3



### DANGER:

Only qualified personnel should open the control box while under power. NEVER open the control box during washdown or cleaning.



Fig. 10.1: PowerFlex 523 Variable Frequency Drive

### Timing Relay Settings

#### Eaton TRL04

- **Function:** R (Off Delay)
- **Time Range:** 1.0 sec.

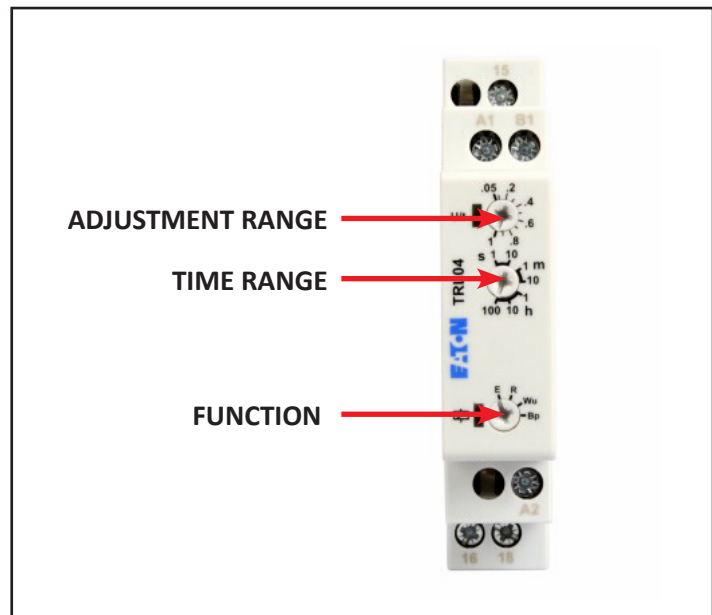


Fig. 10.2 Eaton TRL04 Setting Identification

## Preventative Maintenance

The following maintenance procedures are recommended for normal use. Units which see a high amount of use should be inspected more frequently.

### Weekly:

- Check unit for proper sensor function and brush rotation.
- Ensure grate is secure and functioning properly.
- Inspect brushes for damage or wear. Check for missing or deformed bristles.
- Inspect electrical cords and plumbing for damage.
- Inspect and test function of emergency stop switches.

### Monthly:

- Check all fasteners to ensure they are tight.
- Ensure warning labels and decals are present and in good condition.
- Inspect grate spring assemblies (M1896) and spring balancer bearings (M1904, M1905) for wear
- Inspect motors, gearboxes, and reducers for signs of oil leakage.
- Inspect electrical enclosure for signs of water intrusion.
- Inspect sensors for damage.
- Inspect moving parts for damage or wear.

### Quarterly:

- Inspect structure for cracked welds or bent components.

### Gear Reducer:

- The gear reducer is supplied filled to capacity with **Mobil Cibus SHC 634 NSF H1 Food Grade** or equal synthetic oil.
  - The synthetic lubrication provided is good for ambient temperatures -10°F - 105°F and is compatible with standard compounded oil.
- Oil should be changed every 2 years (or 6,000 operating hrs.)
- Designed with a bladder type vent system:
  - Consists of an internal bladder that seals the oil chamber from the outside environment at all times - as pressure builds, the bladder contracts keeping the internal pressure to a minimum.
  - Advantage: The internal oil chamber is completely sealed, ensuring oil is not released causing contamination in the application.

### Motor:

- Inspect at regular intervals.
- Verify the mounting bolts and couplings to ensure that they are tight and properly adjusted.
- Motor bearings are sealed and not re-greasable.
- Bearings should be replaced approximately every 5 years for 8 hr./day service.

## *Troubleshooting*

### Unit not operating & E-STOP not Illuminated:

- Verify unit is plugged in.
- Verify E-STOP is not pushed down.
- Verify main power going to the unit.
- Verify circuit breakers in the building have not been tripped.

### Unit not operating & E-STOP is Illuminated:

- Check sensor is operating properly and is connected via orange M12 cable.
- Verify all physical connections to the brushes are in place.
- Restart unit by pushing down the E-STOP, waiting 10 seconds, then turning the unit on again.

### Unit will not spray:

- Verify water pressure at the inlet to the water (30 psi min.)
- Verify water and solution lines are attached and firmly in place
- Inspect spray nozzles for clogging.
- Verify that the orange LED light on the solenoid valve connector illuminates when the brushes are rotating.

### Unit is leaking onto floor:

- Check to make sure all joints are sealed.
- Verify water and solution inlets are attached and firmly in place.

### Leaner Dilution Ratios Required:

- Verify metering tip is installed in the injector chemical inlet hose barb
- Change the metering tip for a more appropriate size (see pg. 4 for further information)
- If the desired dilution ratio still cannot be achieved pre-dilution of the chemical may be necessary.

### Venturi will not draw Chemical Solution:

- Verify water supply is sustaining 30 psi at the injector inlet while unit is running
- Elevate the chemical jug above the injector (a jug hook is provided for this purpose)
- Verify spray nozzles are not clogged. The nozzles supplied with the equipment are rated at 0.2GPM @ 10psi (0.28GPM @ 20 psi)
- Ensure the suction filter is not clogged, kinked or obstructed in any way that would restrict flow.

## Troubleshooting

### F063 Fault Code "SW OverCurrent" on Variable Frequency Drive:

**Cause:** The fault occurs when the torque load on any brush exceeds the value set in parameter A486 [Shear Pin 1 Level]. A fault on one drive will prevent the other drives from operating. The solution will stop spraying when a fault occurs.

#### To solve:

- Press e-stop or unplug the unit to cycle power and clear the fault.
- See "advanced configuration options" to adjust the set point

### F004 Fault Code on Variable Frequency Drive:

- If unit is connected to a GFCI, verify its ratings (class, mA restrictions, see recommended GFCI below).
- Verify minimum frequency setting on VFD is set to 15 Hz or greater.
  - **VFD Parameter:** P104 [Minimum Freq.]
  - **Manufacturer Default:** 15 Hz.
- Set the lowest carrier frequency on the VFD (lower carrier = less switching on/off)
  - **VFD Parameter:** P446 [PWM Frequency]
  - **Manufacturer Default:** 4.0 kHz.
  - **Minimum:** 2.0 kHz.

**NOTE:** Clean Logix recommends Leviton's GFI protection device [# **GFRBF-W**] for circumstances where the facility's original GFCI plug is not applicable.



### More Information?

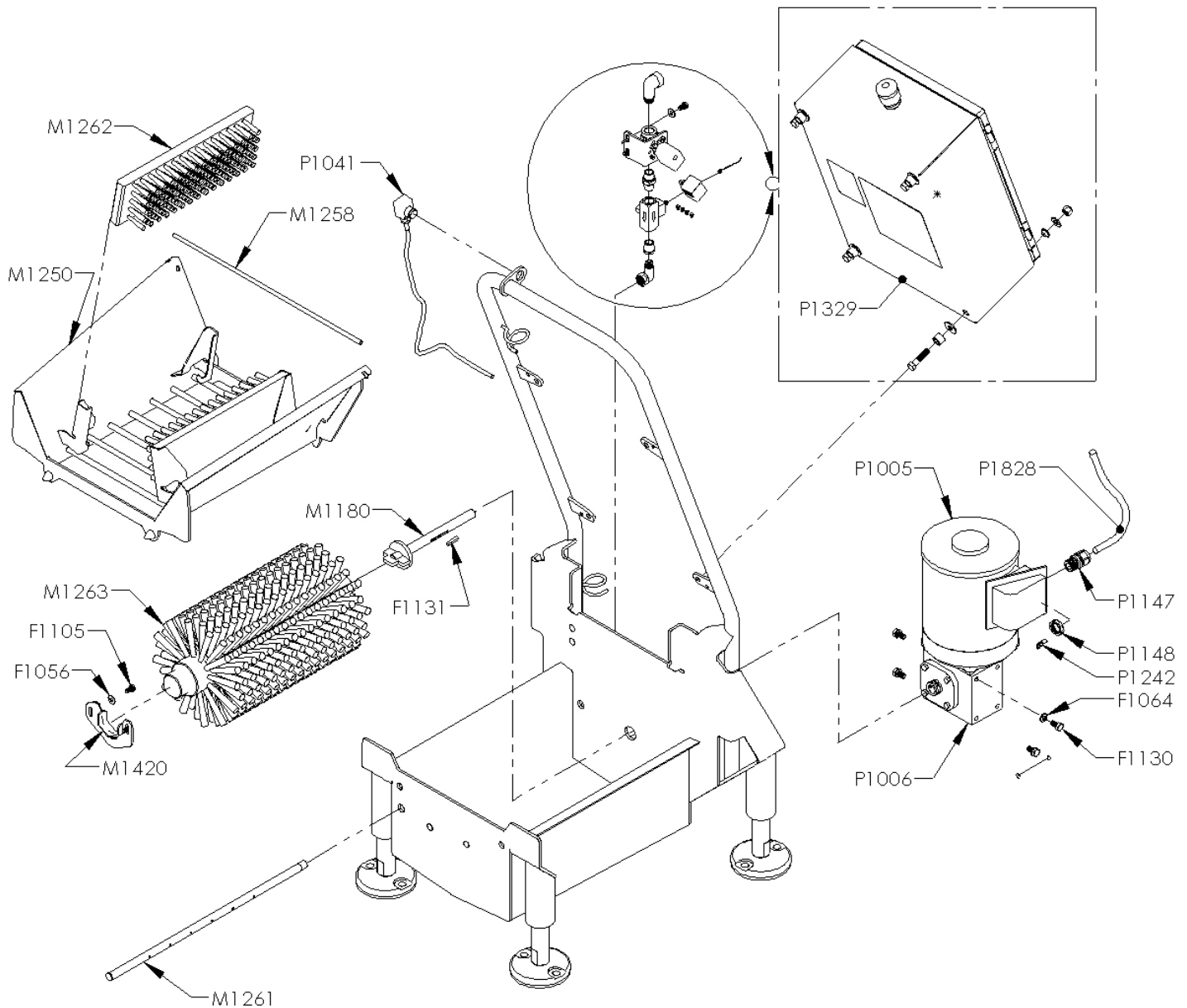
Please contact your equipment representative or manufacturer for further support.

# USER MANUAL: BLX-400

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT



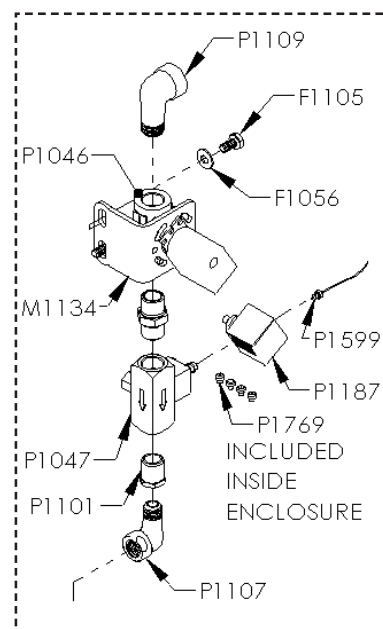
## Appendix A - Parts Callout





## Appendix A - Parts Callout (continued)

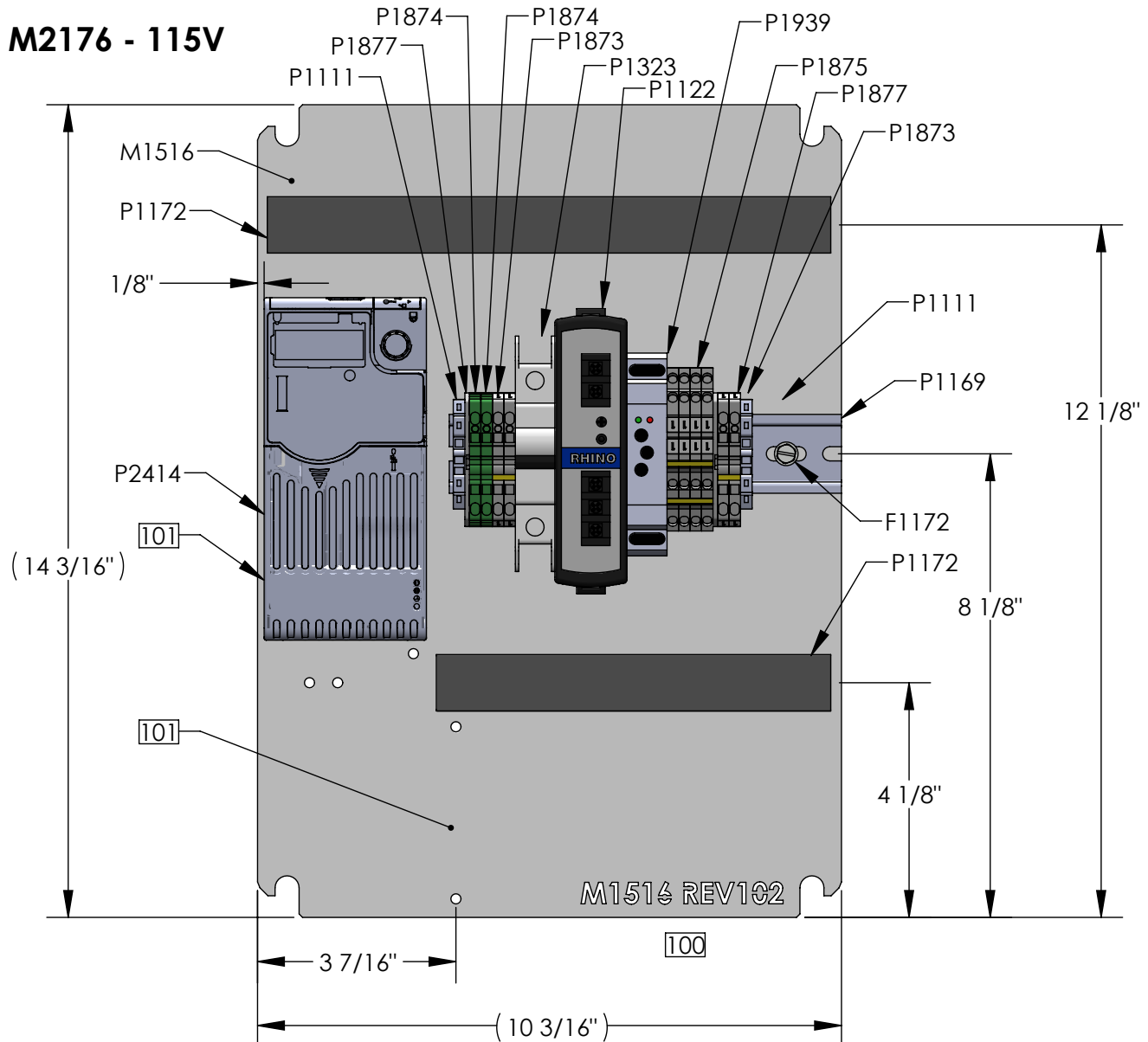
Part No.	Description
F1056	WASHER 1/4 SS TYPE A
F1064	WASHER SPLIT LOCK 5/16 SS
F1105	BOLT HHC 1/4-20 X 1/2 SS
F1130	BOLT HHC 5/16-18 X 5/8" SS
F1131	KEY 3/16" X 3/16" X 1" SS
M1134	SOLENOID BRACKET
M1183	DRIVE SHAFT MOTOR-BRUSH WELDMENT
M1238	TUB WELDMENT BLX-400
M1248	GRATE WELDMENT BLX-400
M1258	GRATE LATCH BAR
M1260	SPRAY BAR WLDMNT BLX-400
M1262	BRUSH FIXED 10-1/2 X 3
M1263	BRUSH LOWER BLX-400
M1319	ELECTRICAL ASSEMBLY BLX-400
M1420	BRUSH SUPPORT WELDMENT
P1005	SS MOTOR 1/2HP, 1800 RPM, 230/460/3/60, TENV, 56C FOOTLESS
P1006	GEAR REDUCER 20:1, 56C, HOLLOW QUILL, .625 HOLLOW OUTPUT, 1.33" CENTER DISTANCE,
P1041	PHOTOEYE SENSOR
P1046	VALVE, SOLENOID, 3/8" SS 24VDC DIN COIL, DEMA 463PS.4D
P1047	VENTURI INJECTOR SS BODY & METER KNOB 3/8"
P1100	PIPE HEX NIPPLE 3/8 SS
P1101	PIPE BUSHING 3/8 x 1/4 SS
P1107	PIPE ELBOW STREET 1/4 SS
P1109	PIPE ELBOW STREET 3/8 SS
P1147	CORD GRIP 1/2 NPT X .170-.450 BLK HEYCO M3231
P1148	CORD GRIP NUT 1/2" NPT BLACK - HEYCO 8463
P1187	SOLENOID CABLE 18MM DIN 24V LED 3M SC18-LS24-3
P1242	CRIMP ON TERMINAL, RING 1/4" ID, 14-16 AWG INSULATED
P1599	METERING TIP, CAPILLARY TUBE
P1677	SPLICE TERMINAL 10-16 AWG NATURAL
P1769	METERING TIPS, ULTRA LEAN 100-15KU
P1934	GREASE, ELECTRIC INSULATING .17OZ ONE TIME USE PACK



### More Information?

Please contact your equipment representative or manufacturer for further support.

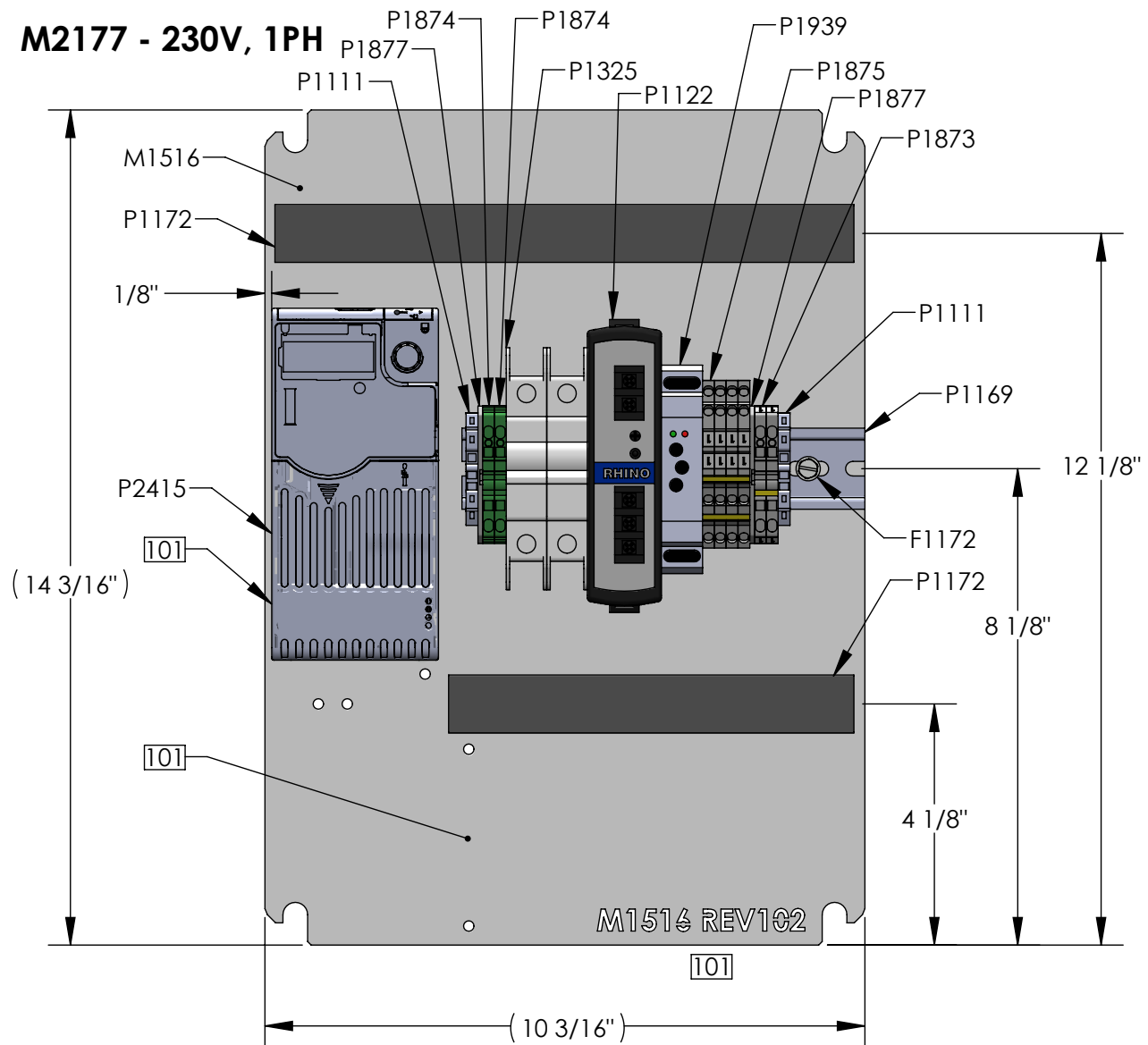
## Appendix B - Electrical Panel Parts Callout (115V)



Part No.	Description
F1172	SCREW THREAD FORMING 10-32 X 1/2 HEX WASHER HEAD ZINC
P1111	END STOP TERMINAL BLOCK
P1122	POWER SUPPLY 24VDC 60W
P1323	CIRCUIT BREAKER 10A SINGLE POLE
P1873	TERMINAL BLOCK SPRING CLAMP 5.1mm GRAY
P1874	TERMINAL BLOCK SPRING CLAMP 5.1mm GROUND

Part No.	Description
P1875	TERMINAL BLOCK SPRING CLAMP 5.1mm DUAL-LEVEL GRAY
P1877	TERMINAL BLOCK END BARRIER L3 SERIES
P1880	TERMINAL JUMPER 5.1mm
P1939	RELAY, TIMER, MULTIFUNCTION 24VDC (REPLACES P1115)
P1940	SWITCH, CURRENT SENSING WITH TIME DELAY, 1-175A ADJUSTABLE, FIXED CORE, NC
P2414	VARIABLE FREQUENCY DRIVE 0.5 HP 115V-1

## Appendix B - Electrical Panel Parts Callout (230V)



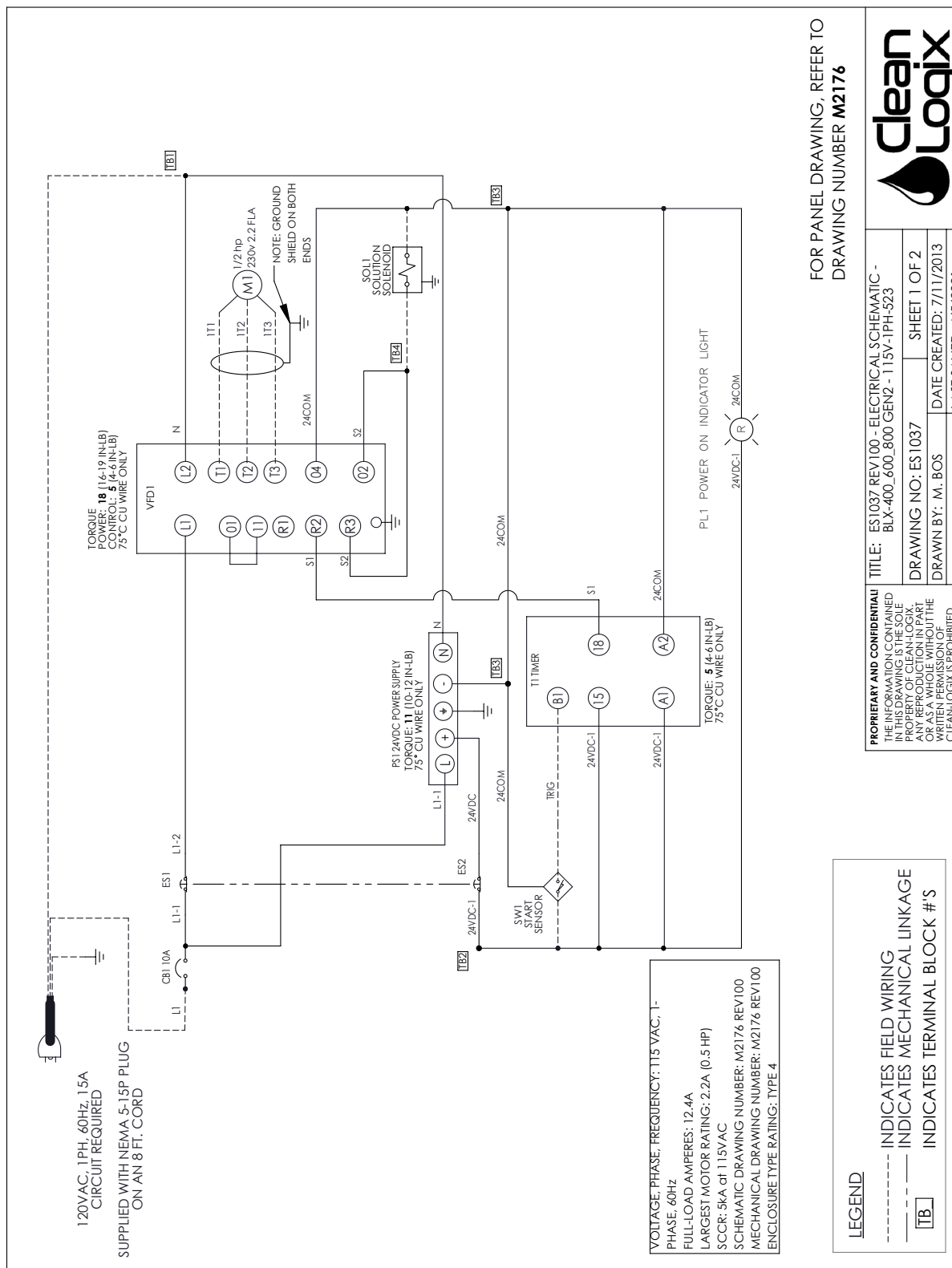
Part No.	Description
F1172	SCREW THEAD FORMING 10-32 X 1/2 HEX WASHER HEAD ZINC
P1111	END STOP TERMINAL BLOCK
P1122	POWER SUPPLY 24VDC 60W
P1325	CIRCUIT BREAKER 13A DOUBLE POLE
P1873	TERMINAL BLOCK SPRING CLAMP 5.1mm GRAY
P1874	TERMINAL BLOCK SPRING CLAMP 5.1mm GROUND

Part No.	Description
P1875	TERMINAL BLOCK SPRING CLAMP 5.1mm DUAL-LEVEL GRAY
P1877	TERMINAL BLOCK END BARRIER L3 SERIES
P1880	TERMINAL JUMPER 5.1mm - 10 POSITION
P1939	RELAY, TIMER, MULTIFUNCTION 24VDC
P1940	SWITCH, CURRENT SENSING WITH TIME DELAY, 1-175A ADJUSTABLE, FIXED CORE, NC
P2414	VARIABLE FREQUENCY DRIVE 0.5 HP 115V-1

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT



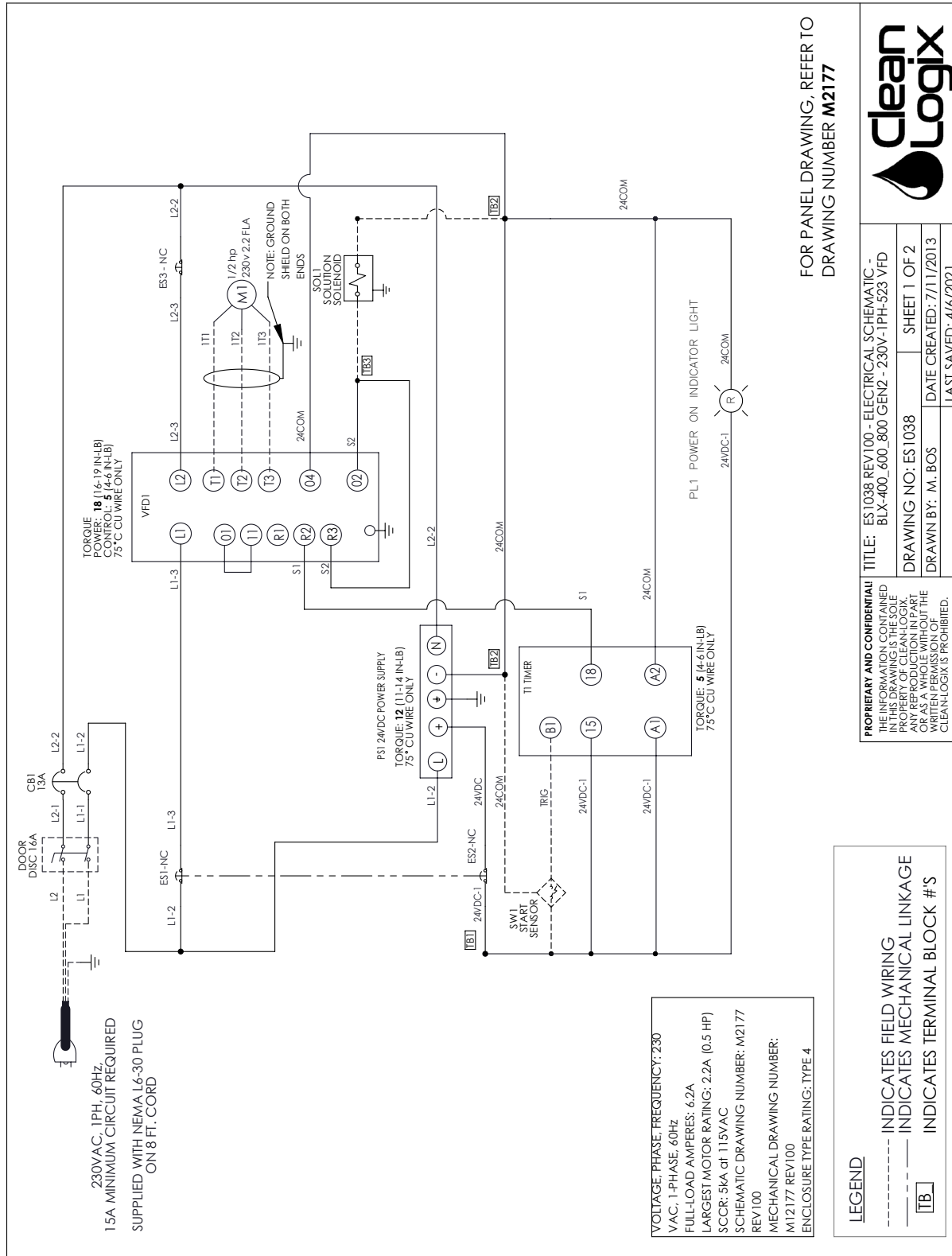
FOR PANEL DRAWING, REFER TO  
DRAWING NUMBER **M2176**



READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT



## Appendix C - Electrical Schematic (230V)



FOR PANEL DRAWING, REFER TO  
DRAWING NUMBER **M2177**



**PROPRIETARY AND CONFIDENTIAL**

**TITLE:** ES1038 REV100 - ELECTRICAL SCHEMATIC -  
PLV 400-700-800 GENO 600V 1 PLV 500 VFD

DRAWING NO: ES1038	SHEET 1 OF 2
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DRAWN BY: M. BOS	DATE CREATED: 7/11/2011
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LAST SAVED: 4/6/2021

## LEGEND

----- INDICATES FIELD WIRING  
----- INDICATES MECHANICAL LINKAGE  
[TB] INDICATES TERMINAL BLOCK #'S

INDICATES TERMINAL BLOCK #'S

## Appendix D - Venturi System Maintenance

### Solenoid & Venturi Injector Disassembly:

1. Shut down the unit (see page 7)
2. Shut OFF the sanitizer supply and remove pressure from the line.
3. Using a small phillips screwdriver, loosen the set-screw from the solenoid to the control box.
4. Using a 7/16" socket wrench, remove the bolts holding the solenoid bracket to the unit.
5. Pull the assembly away from the unit and unscrew the Venturi injector and solenoid assembly from the spray bars.
6. Unscrew the Venturi injector from the 3/8" pipe nipple.
7. Take a 1/4" socket wrench and remove the solenoid from the solenoid bracket. The insides of the solenoid and Venturi can now be accessed and cleaned to remove any debris or residue.

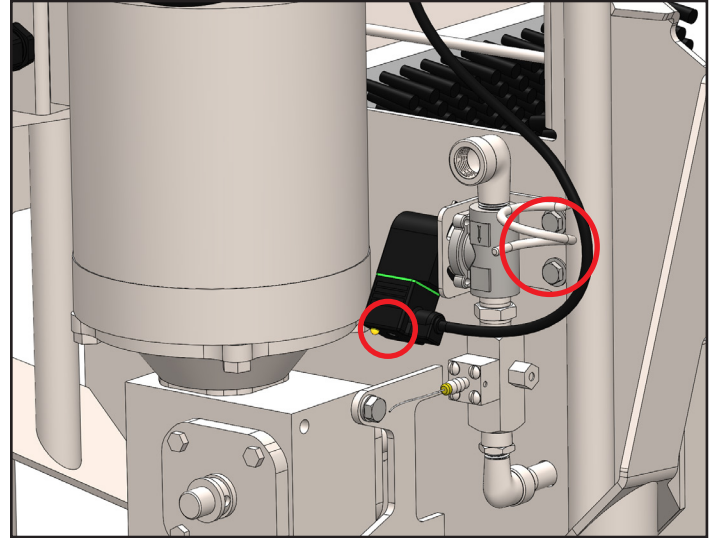


Fig. 10.1: Solenoid set screw and mounting bolts

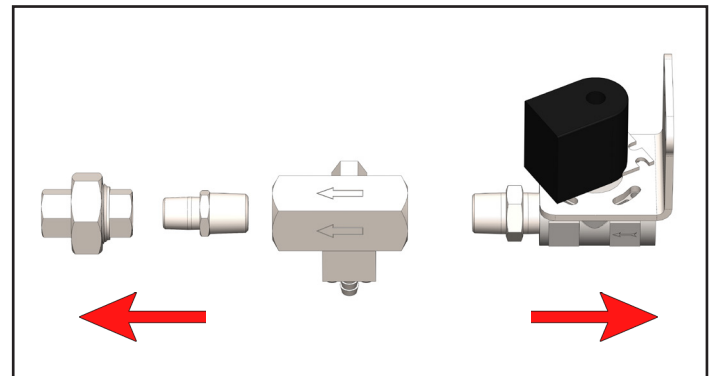
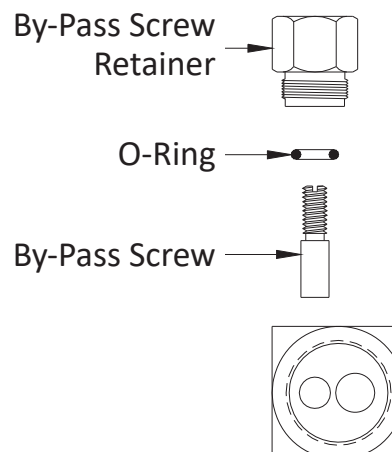
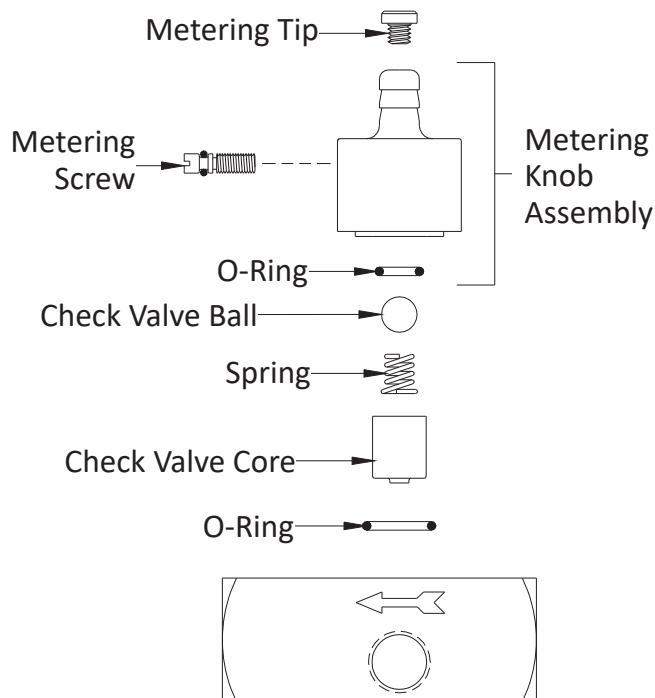


Fig. 10.2: Removing Venturi and Solenoid from pipe fittings





## Appendix E - Venturi System Metering Tips

### Metering Tips and Flow Rates:

1. See [Figure 19.1] for location of water bypass screw and fine metering adjustment screw.
2. Turn on water supply valve.
  - The injector may draw momentarily as the system is filling but will stop as it builds up to full pressure.
3. To actuate injector, turn the bypass screw clockwise until product begins to be drawn from the container.
4. After the fluid reaches the injector, the feed rate may be adjusted to the desired rate by turning the bypass screw:
  - For low injection rates, it is advisable to set the bypass screw for more injection than required; then turn the metering screw clockwise to reduce to the desired rate.
  - **Common Issues:**
    - **Injector will not draw with bypass screw full-in** = water flow is *below* range of the injector.
    - **Injector draws with screw full-out, but pressure loss is excessive** = flow is *above* the range.

Water Pressure psi	Operating Range Gal/Min
10	0.50- 3.50
20	0.55- 4.40
40	0.70- 5.40
60	0.80 - 6.40
100	1.00- 8.00
200	1.40 - 11.00
400	1.90 - 15.00
500	2.10 - 17.00
*700	2.50 - 20.00
*1000	3.00 - 23.00
*1500	3.50 - 28.00
*2000	4.70 - 37.00
*3000	5.00 - 45.00

Table 19.3: Operation Range of injector

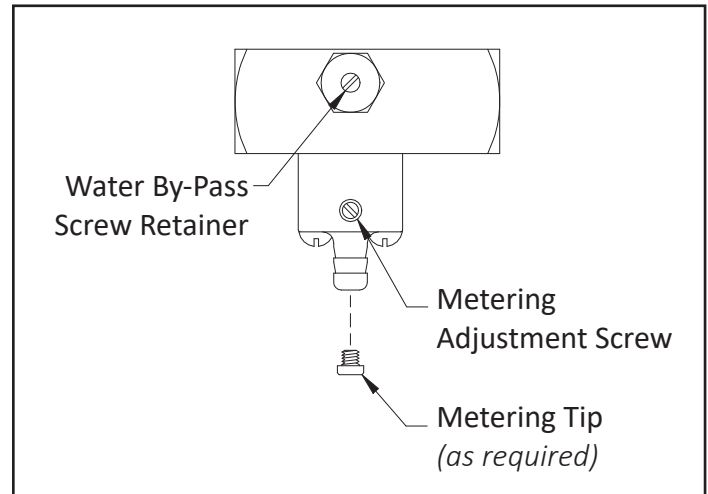


Fig. 19.1: Venturi Metering tip and adjustment screw locations

Fluid Viscosity cps	Maximum Injection Oz/Min
1	16
75	8
200	4

Table 19.1: Maximum Injection Rates

Metering Tip Color	Viscosity cps		
	1	75	200
Tan	1.1	0.8	0.5
Orange	1.4	1.0	0.7
Turquoise	2.0	1.4	1.0
Pink	2.7	1.8	1.3
Clear	3.5	2.4	1.6
Brown	4.0	2.7	1.7
Red	4.9	3.3	2.0
White	5.9	3.9	2.3
Green	6.5	4.4	2.5
Blue	7.2	4.9	2.7
Yellow	9	5.9	2.9
Black	12	6.7	3.0
Purple	14	6.7	3.1
Gray	15	7.1	3.3
NONE	16	8.0	3.7

Table 19.2: Injection rates using metering tips

## Appendix E - Non-Dilution Flojet

The following instructions overview installation, set-up, and general use for BLX boot scrubbers equipped with a Non-Dilution Flojet kit, for use with sanitizer solutions that do not require dilution. Follow standard instructions for other sections (i.e. cleaning, brush removal, motor adjustments, etc.)

### Physical Set Up:

1. Set unit in desired location.

**NOTE:** To move the unit use a dolly, pallet jack, or a hi-lo to lift from the bottom. Pad the forks to protect the finish.

2. Aspects to consider when deciding on placement:
  - Clearance for entering and exiting
  - Location of drain
  - Emergency exit paths or egress in case of emergency
  - Head room for personnel while using the unit
  - Access to control box
  - Connections for air and electricity
3. Use a level to make sure the unit is stable and leveled at each end of the tub [Figure 22.1].
4. Connect unit to electrical supply.

### Plumbing Connections:

1. Connect compressed air (40 psi min.) to solenoid valve quick fitting inlet using 3/8" LDPE tubing or similar [Figure 22.2].
2. Connect solution source to check valve of pump inlet using 3/8" clear LDPE tubing (included) [Figure 22.2].

**NOTE:** Compressed air should be regulated at 40 psi. A stand-alone air regulator is included with NDF kits for this purpose.

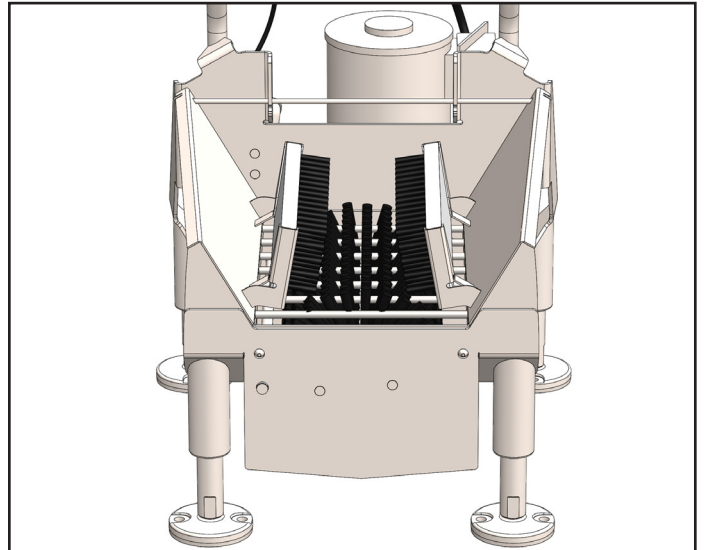


Fig. 22.1: Level and stabilize unit using a leveling device

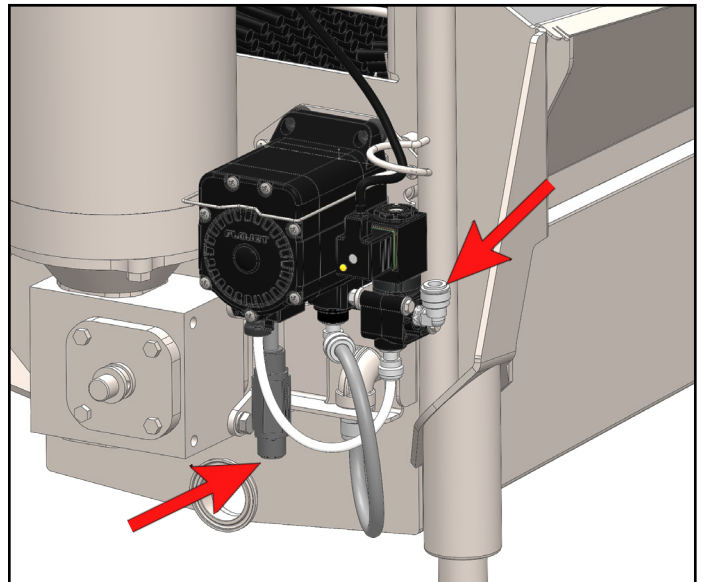


Fig. 22.2: Air and solution inlets

## Appendix E - Non-Dilution Flojet

### General Use

1. Using both hands, grasp the handrail to activate the sensor.
2. When activated, the brush will begin to rotate and the pump will activate to spray solution.

**NOTE:** The pump will spray solution for a specified amount of time and will stop.

3. While maintaining grip on the handrail, place one boot in between the side brushes. With the sole of the boot positioned against the bottom rotating brush, push the boot forward and backwards to scrub ensuring all areas make contact.
4. When complete, remove the first boot and repeat steps 1-3 for the other.
5. Remove hands from handrail to stop brushes.

**NOTE:** To spray sanitizer between 1st and 2nd boot, remove hands to reactivate pump.

### Altering Spray Amount

1. Power down the unit and open the electrical enclosure.



#### **DANGER:**

Only authorized personnel should open the control box.

2. Locate the timer relay for the solenoid valve (see electrical schematic) and adjust the value as necessary
  - **Default Function:** Wu (Single Shot)
  - **Default Time Range:** 1 sec.

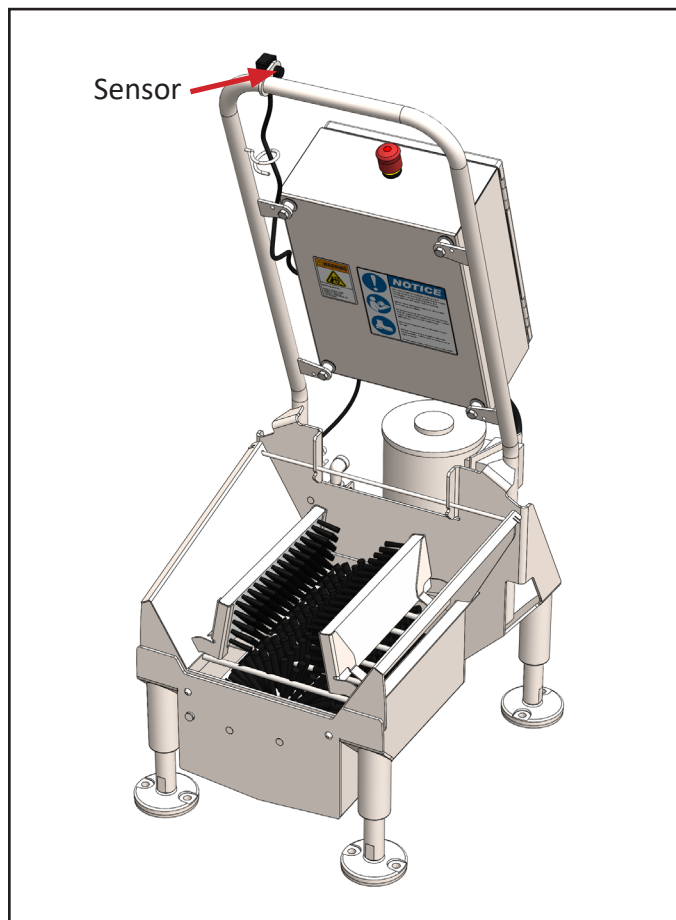


Fig. 23.1: Handrail sensor location

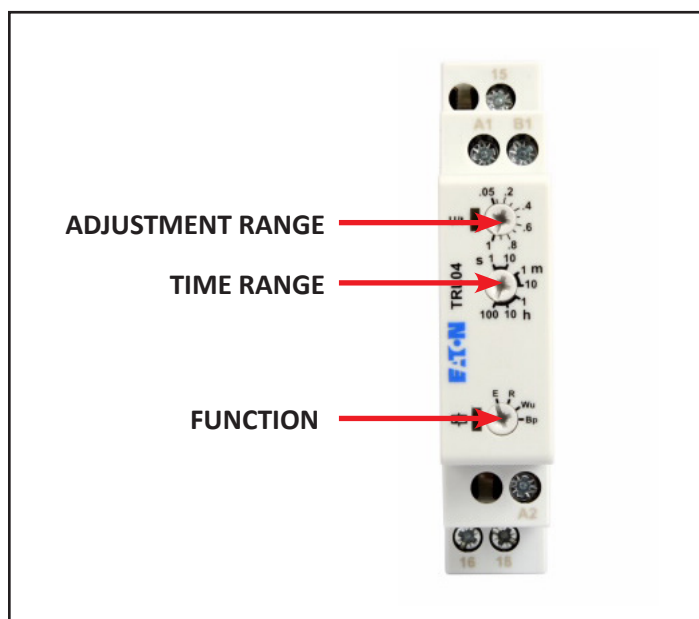


Fig. 23.2: Eaton TRL04 Setting Identification

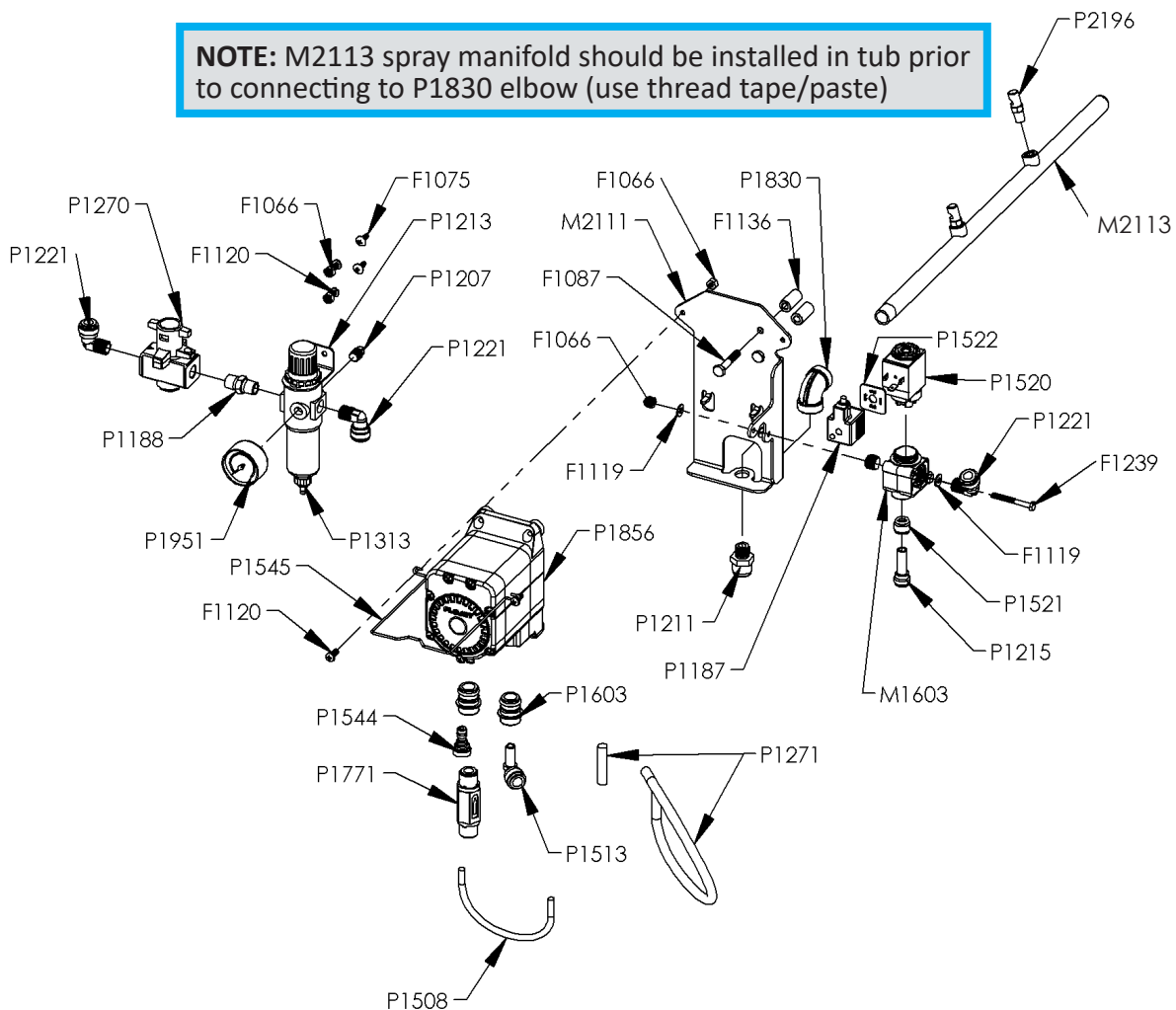
# USER MANUAL: BLX-400

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT



## Appendix E - Non-Dilution Flojet (Parts Callout)

**NOTE:** M2113 spray manifold should be installed in tub prior to connecting to P1830 elbow (use thread tape/paste)



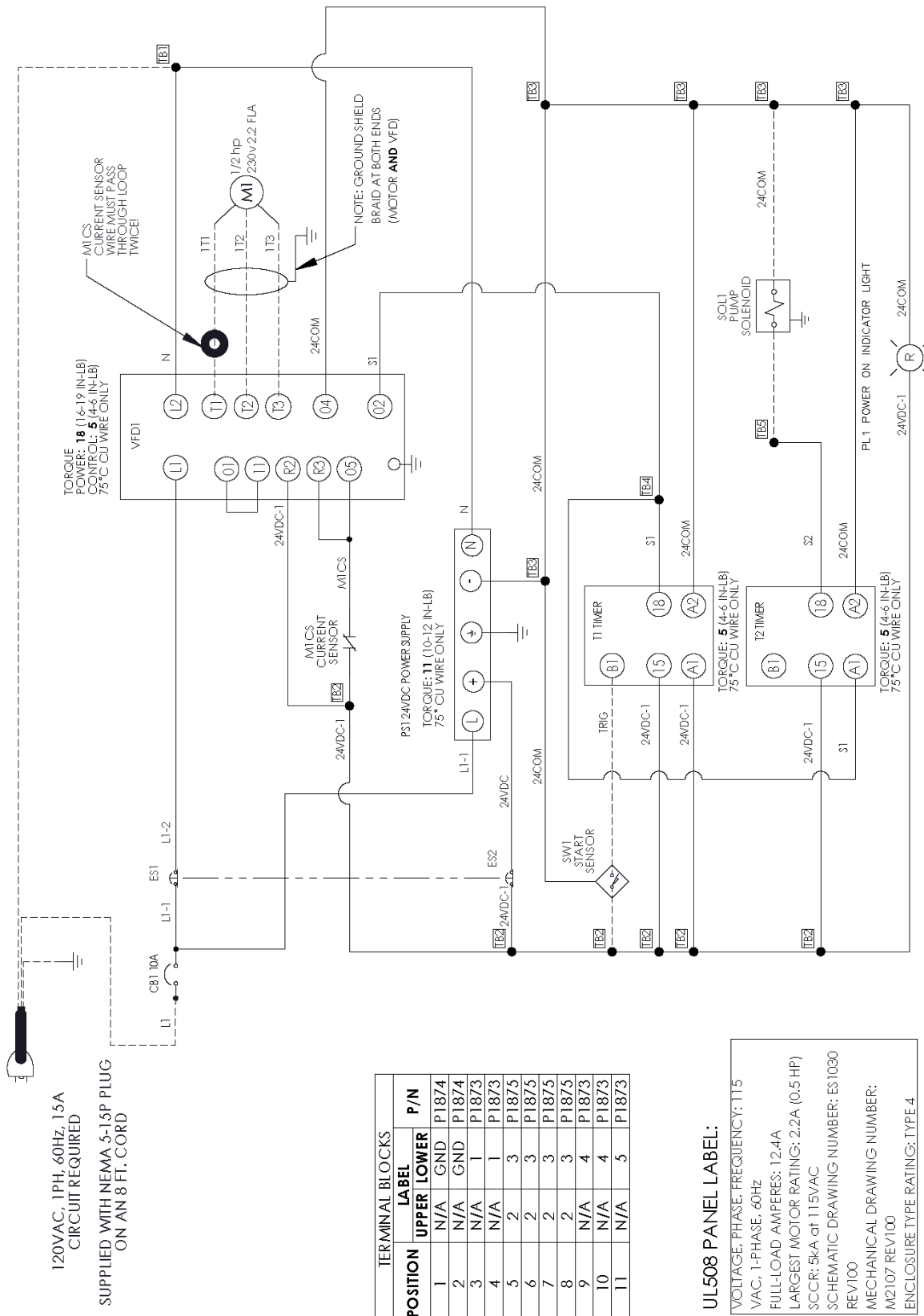
Part No.	Description
F1066	NUT NYLOCK 10-32 SS
F1075	SCREW SELF TAP 10-16 X 1/2 SS
F1087	BOLT HHC 1/4-20 X 1-1/2 SS
F1119	WASHER #10 SS TYPE A
F1120	SCREW MACHINE 10-32 X 1/2 SS PHILLIPS PAN HD
F1136	STANDOFF 1/4 X 1/2 X 1 SS
F1239	BOLT HHC 10-32 x 1-3/4" SS
M1603	VALVE BODY 3-WAY
M2111	BLX-400 NDF BRACKET SS
M2113	BLX-400 GEN2 SPRAY MANIFOLD WELDMENT
P1187	SOLENOID CABLE 18mm DIN 24V
P1188	PIPE HEX NIPPLE 1/4 SS
P1207	PIPE PLUG 1/8 SQUARE SS
P1211	QUICK FIT 1/4 NPT X 3/8 TUBE
P1213	MOUNTING BRACKET A33-82
P1215	QUICK FIT REDUCER 3/8" X 1/4"
P1221	QUICK FIT ELBOW 1/4" NPT x 3/8" TUBE
P1252	PIPE PLUG 1/4" NPT SOCKET HD SS

Part No.	Description
P1270	SHUTOFF/LOCKOUT VALVE 1/4 NPT
P1271	.375 OD TUBING
P1313	REGULATOR 1/4"
P1508	1/4" OD TUBING
P1513	QUICK FIT STEM ELBOW 3/8" X 3/8"
P1520	VALVE COMPONENT KIT 3-WAY 3mm
P1521	PUSH CONNECT CARTRIDGE 3/8" PP2812W
P1522	GASKET DIN COIL FORM A EPDM
P1544	QUICK FIT AIR INLET 1/4" FLOWJET P56
P1545	CLIP P56 PUMP
P1603	QUICK DISCONNECT INLET/OUTLET FOR FLOJET PUMPS 3/8"
P1771	CHECK VALVE, 3/8 QUICK FIT X 3/8 QUICK FIT
P1830	PIPE ELBOW 3/8" x 90 304SS
P1856	FLOJET P56 PUMP SANTO
P1951	GAUGE, PRESSURE, 1-1/2" 0-100psi 1/8 NPT SS CENTER BACK MOUNT
P2196	"NOZZLE, FAN SPRAY, 110 DEGREE, 1/8 MNPT, 304SS, FLOODJET TYPE K, 0.03 GPM"

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT



## Appendix E - Non-Dilution Flojet (Electrical Schematic)



### LEGEND

INDICATES FIELD WIRING  
INDICATES MECHANICAL LINKAGE  
INDICATES TERMINAL BLOCK #S

**TB** INDICATES TERMINAL BLOCK #'S

## UL508 PANEL LABEL:

VOLTAGE, PHASE, FREQUENCY: 115VAC, 1-PHASE, 60Hz  
FULL-LOAD AMPERES: 12.4A  
LARGEST MOTOR RATING: 2.2A (0.5 HP)  
SCCR: 5kA at 115VAC  
SCHEMATIC DRAWING NUMBER: ES1030  
REV100  
MECHANICAL DRAWING NUMBER: M2107 REV100  
ENCLOSURE TYPE RATING: TYPE 4

REV 100  
MECHANICAL DRAWING NUMBER:

M2107 REV100

ENCLOSURE TYPE RATING: TYPE 4

LEGEND

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INDICATES T  
INDICATES W

**TB** INDICATES T

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Appendix

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# Appendix



oubleshooting

# Maintenance

# Configuration

# Operation

# Installation

# General