USER MANUAL

MODEL:

BLX-1000-GEN2

Full Walkthrough Boot Scrubber

English (Original Instructions)
Updated: 02/11/21

BLX-1000S
Sole Only

BLX-1000V
Vertical

BLX-1000R
Regular

Table of Contents



⚠ 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-1000-GEN2 is a full size walkthrough footwear scrubbing unit built to accommodate 1-2 users at a time with the ability to put through 20-25 user per minute.

The included user manual contains installation, operation, and maintenance instructions for all ***BLX-1000-GEN2*** Boot Scrubbers (i.e. ***Regular***, ***Vertical***, and ***Sole-Only*** models). The reference images and diagrams contained within will vary by model, but are subject to the same procedures as outlined.

For further support or information please contact your sanitation representative or Clean Logix technical support.

System Requirements

Water Supply

- Flow: 1:670 GPM (6.32 l/m) minimum*
- Pressure: 30-60 psi (207-414 kPa)**
- Temperature: 40-100°F (4-38°C)

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

Minimum 3/8" supply piping size recommended

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: A back flow preventer must be installed in the water line to this unit. Check local codes to ensure proper installation.

Electrical

- 230VAC, single phase, 60Hz, 12.4A
  (BLX-1000_-GEN2)
- 480VAC, triple phase, 60Hz, 6.2A
  (BLX-1000_-GEN2-480V)

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

Specifications

Materials of Construction

- 304L and 316 stainless steel
- Polyethylene (high density, low density, and UHMW)
- Polypropylene

Dimensions

- 99 3/8” x 45 1/8” x 55” (2.52m x 1.15m x 1.4m)

Test Results

- Water Consumption: 2.5-2.75 GPM (9.46-10.41 L/m)
- Minimum Chemical Dilution Ratio: 1:230*

***NOTE:** Unit tested at 70°F using water with 30-50 psi injector inlet pressure and capillary-tube style injector metering tip.

- Noise level: 72 dBA**

****NOTE:** Measured at 1m distance, VFD set to full speed (60Hz).

Cleaning Methods

See cleaning section (pages 10-12) for model specific disassembly and cleaning instructions. For chemistry recommendations consult the table below:

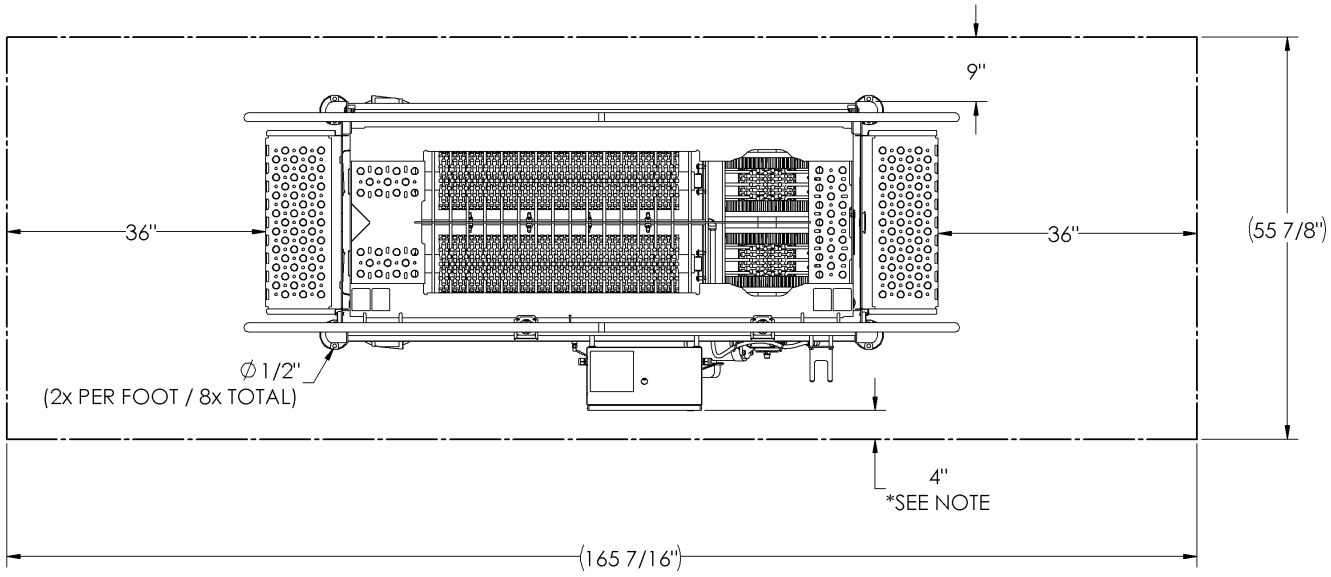
Use Case	***Chemical Type***
Organic Soils	Chlorinated Alkaline or Alkaline based foaming cleaner
Mineral Buildup	Acid based foaming cleaner

NOTE: Chemistry used must be compatible with materials of construction (listed above).

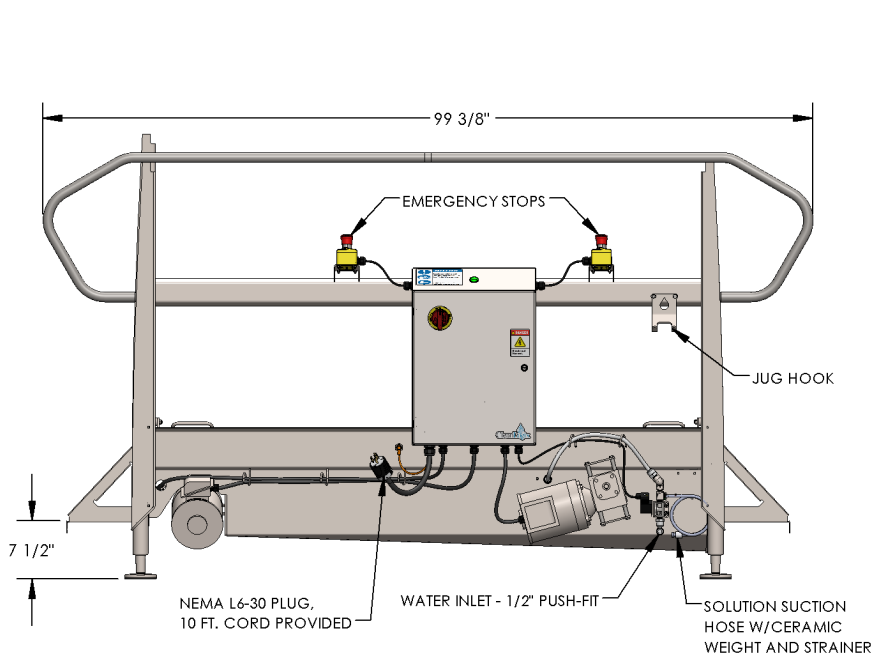
Weights *(dependent on model)*

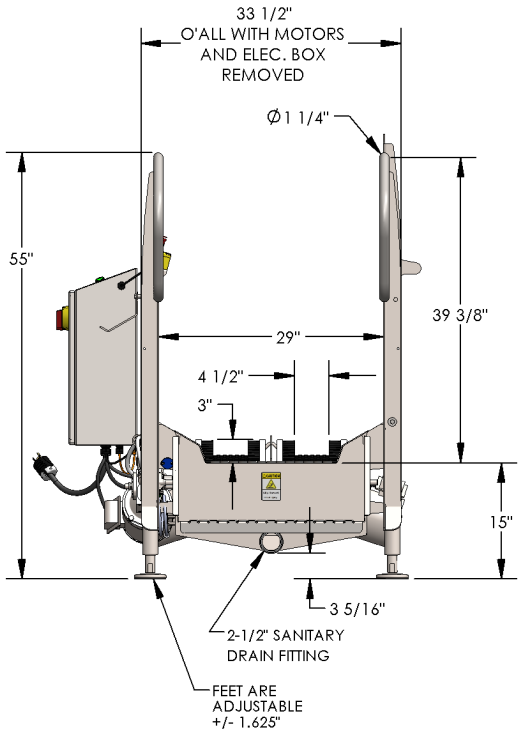
Product / Part	***Weight** (lbs.)*	***Weight** (kg)*
BLX-1000R *(overall)*	687.73 lbs.	312.6 kg
BLX-1000S *(overall)*	676.46 lbs.	307.5 kg
BLX-1000V3 *(overall)*	696.37 lbs.	316.5 lg
BLX-1000V6 *(overall)*	701.45 lbs.	318.8 kg
BLX-1000V9 *(overall)*	711.46 lbs.	323.4 kg
1000R Grate *(hinged)*	32.5 lbs.	14.8 kg
1000R Grate *(overall)*	62.5 lbs.	28.4 kg
1000S Grate *(hinged)*	33.7 lbs.	15.3 kg
1000S Grate *(overall)*	64.8 lbs.	29.5 kg
1000V Grate *(hinged)*	34.7 lbs.	15.8 kg
1000V Grate *(overall)*	66.7 lbs.	30.3 kg
1000V9 Grate *(hinged)*	37.9 lbs.	17.2 kg
1000V9 Grate *(overall)*	72.8 lbs.	33.1 kg
39" Horizontal Brush *(single)*	12 lbs.	5.5 kg
R - 24" Combo Brush	17.8 lbs.	8.1 kg
S - 24" Brush	5.5 lbs.	2.5 kg
V - 6" Bottom Brush *(single)*	1.9 lbs.	0.9 kg
V3 - Vertical Brush *(single)*	1.3 lbs.	0.6 kg
V6 - Vertical Brush *(single)*	2.1 lbs.	1.0 kg
V9 - Vertical Brush *(single)*	2.9 lbs.	1.3 kg
Gear Reducer	20 lbs.	9.1 kg
Motor	25 lbs.	11.4 kg
Motor Cover	7.6 lbs.	3.5 kg
Step *(single)*	11.1 lbs.	5.0 kg

Installation



NOTE: For fixed installations, area in front of electrical panel must have at least 36" of clearance.





Installation

Physical Set Up:

1. Using a pallet jack or hi-lo, set unit in desired location.

> **NOTE:** To move the unit use a pallet jack or a hi-lo to lift from the bottom or using the handrails. Pad the forks to protect the finish. See [Figure 6.1] for lift point recommendations.

> **⚠ CAUTION:**
> Overall weight of unit exceeds 670 lbs. See Specifications section (page 4) for model specific weights.

2. Aspects to consider when deciding on placement:
   - Clearance for entering and exiting
   - Location of drain
   - Emergency exit paths or egress
   - Head room for personnel while using the unit
   - Access to control box
   - Connections for water and electricity
3. Use a level to verify the unit is stable and leveled at each end of the tub [Figure 6.2]. Adjust each leveling foot as necessary by twisting clockwise or counter-clockwise to increase or decrease the height.
4. Connect unit to electrical supply.

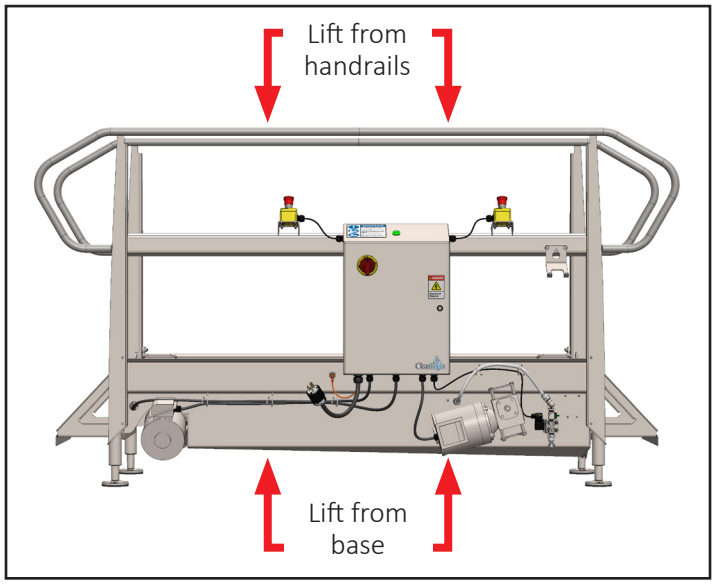


Fig. 6.1: Recommended lift points for moving unit (either from bottom or handrails).

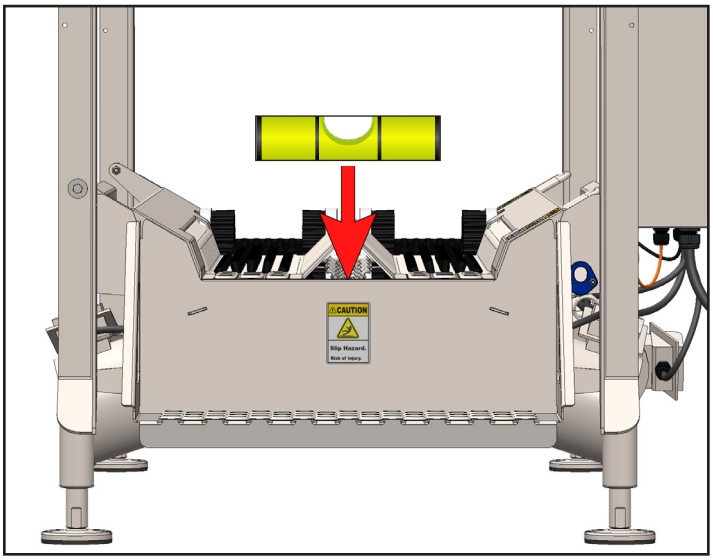


Fig. 6.2: Level and stabilize unit using level against end cap of tub

Installation (continued)

Plumbing Connections:

1. Connect water source to solenoid valve quick fitting inlet using 1/2" Polyethylene tubing or similar [Figure 7.2].
2. If necessary, adjust the dilution ratio by selecting an appropriate metering tip (included) and test.
   - The smallest metering tip is a yellow tip with a small tube attached [Figure 7.3].
   - 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.
3. With the metering tip installed, connect solution source to orange hose barb of the Venturi Injector (located above water inlet) using 1/4" clear PVC tubing (included) [Figure 7.2].

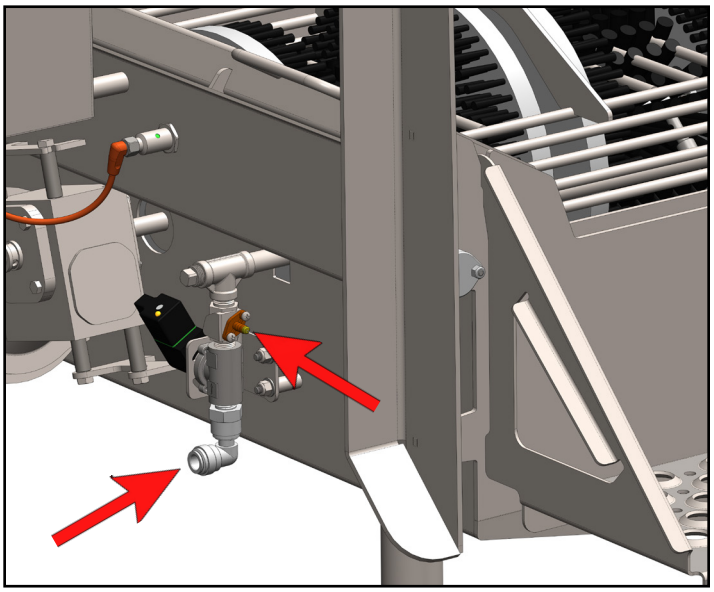


Fig. 7.1: Water and Venturi Injector (solution) inlets

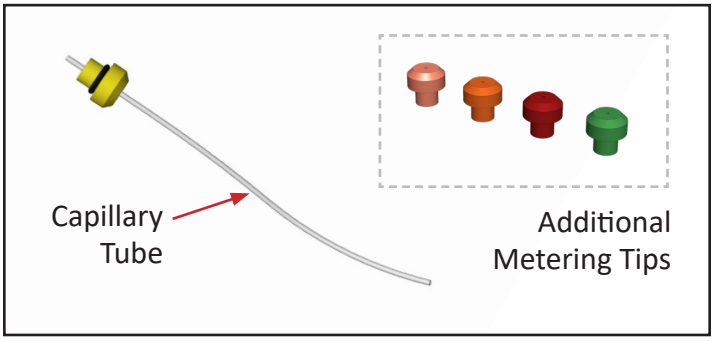


Fig. 7.2: Metering Tips and Capillary Tube

Installation (continued)

Motor Speed Adjustment

The speed of the motor is controlled by a variable frequency motor drive. As the drive decreases the frequency of the motor, the RPMs decrease. The V.F. drive displays the Hz. on a small display and the knob next to it adjusts the Hz. The worm gear reducer has a 20:1 ratio.

Default: 1750 RPM at 60 Hz.

To adjust the speed:

1. Open the control box.
2. Activate the sensor to turn on the motor.

> **⚠ DANGER:**
> Do not open control box during wash down or cleaning. Only authorized personnel should open the control box.

3. As the motor is spinning, the unit will display the operating speed in Hz.
4. Turn the knob counter-clockwise to decrease the Hz, therefore decreasing the RPMs. Turning the knob clockwise will increase the RPMs [Figure 8.1]
5. Adjust the Hz. on the variable frequency drive to the desired brush speed. The minimum frequency is 15 Hz and the maximum is 60 Hz Clean Logix recommends 70 RPM/48 Hz.

Fig. 8.1: PowerFlex 4M Variable Frequency Drive

Operation

Start Up

1. Verify installation has been completed:
   - Brushes are secure
   - Walkway grate is lowered
   - Unit is plugged in and receiving power
   - Water and solution have been plumbed and lines are open
2. Pull the E-STOP switches up and engage power, when the green light on control box is illuminated the unit is receiving power [Figure 9.1].

NOTE: Prior to placing footwear into the unit, test that it is working properly by activating the sensor (put weight on the grate).

Use

1. Step onto the walkway grate.

⚠ CAUTION:
When operating: always ensure solid footing and use both handrails for stability.

2. The walkway grate will depress, activating a proximity sensor which starts the brush rotation and solution spray [Figure 9.2].
3. Walk through the unit, allowing the rotating brushes to clean by moving the boot to make contact with hard to reach areas.
4. One second after the user steps off of the walkway grate 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.

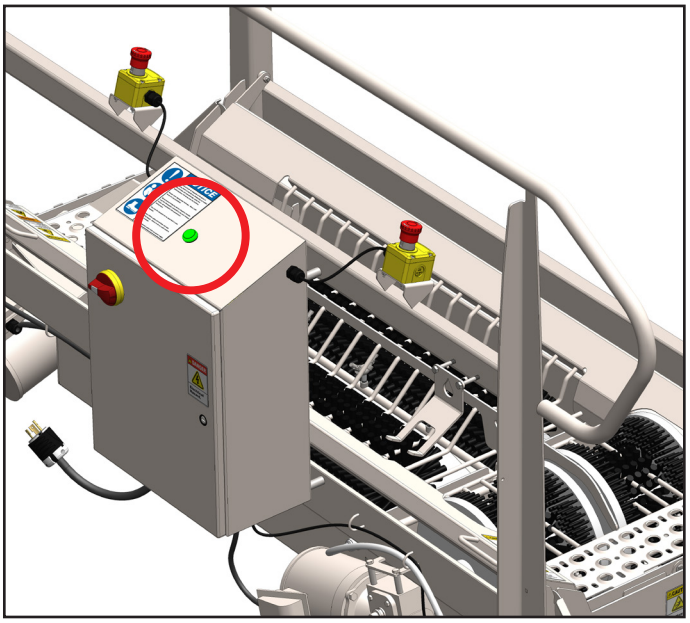


Fig. 9.1: Power indicator on control box, shown on BLX-1000R

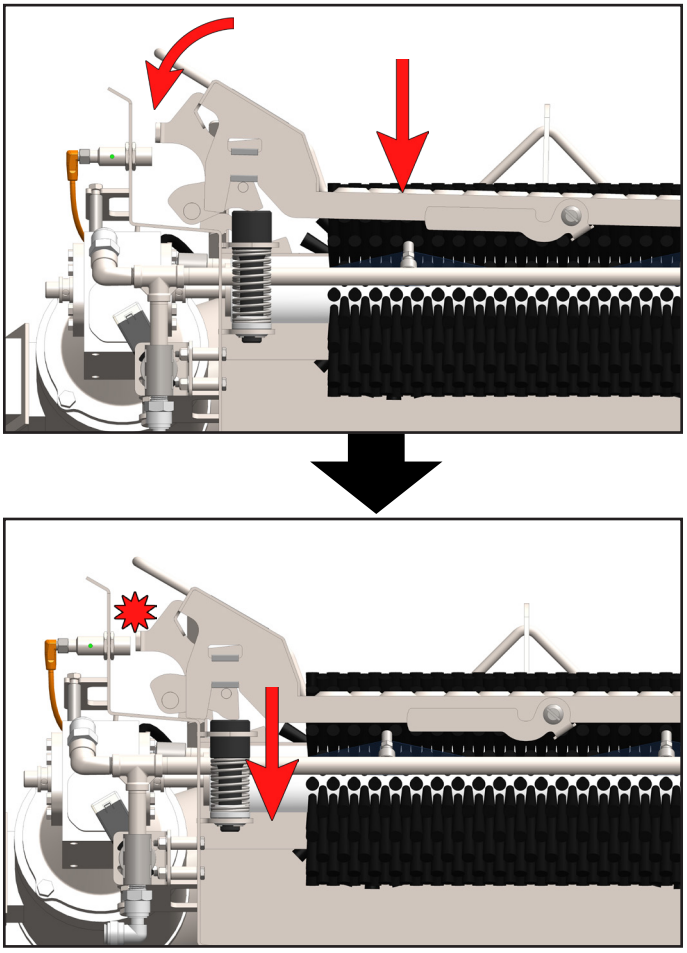


Fig. 9.2: Grate triggering Prox Switch, shown on BLX-1000S

Cleaning Procedures

Opening Grate

1. Shut down the unit (see pg. 9) and lift the grate up by its handle [Figure 10.1].
2. Swing the grate open completely.
3. Latch into place against the pin attached to the corner rail [Figure 10.2].

⚠ CAUTION:
Failure to latch the grate properly could result in grate falling closed unexpectedly.

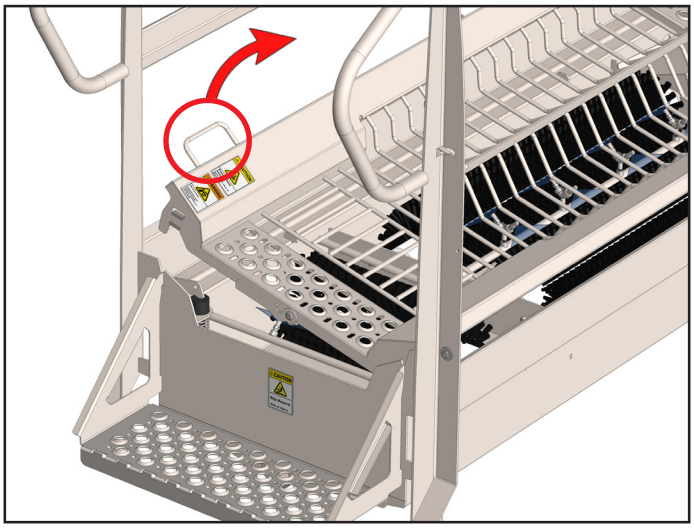


Fig. 10.1: Grate Lifting, shown on BLX-1000S

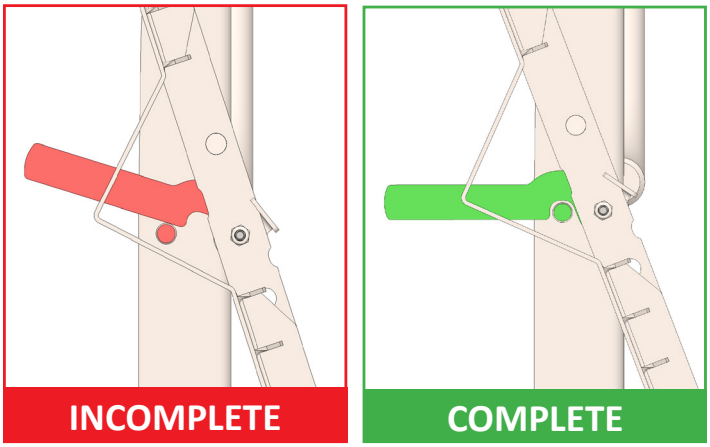


Fig. 10.2: Grate Latch Orientation

Removing & Replacing Brushes (***R*** & ***S*** Models)

1. Shut down the unit and open the grate.
2. Lift each brush out of the tub by grabbing the open end and lifting up [Figure 10.3 - Arrow 1].
3. With the open end lifted, the brush can be detached from its anchor [Figure 10.3 - Arrow 2].
4. Repeat this process to remove other brushes.
5. Brushes can be washed individually in a COP tank or wash machine.
6. The tub can be washed by conventional means.

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

⚠ CAUTION:
Use of high pressure (above 400 PSI) is not recommended on sensitive areas such as electrical components, motors, or gearboxes.

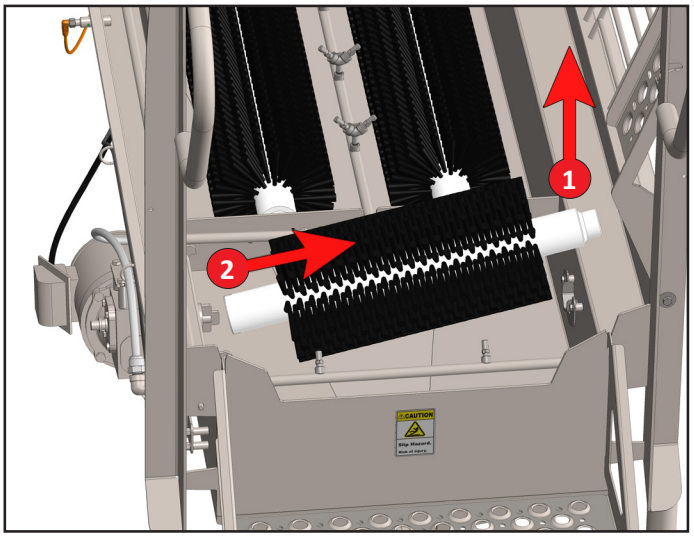
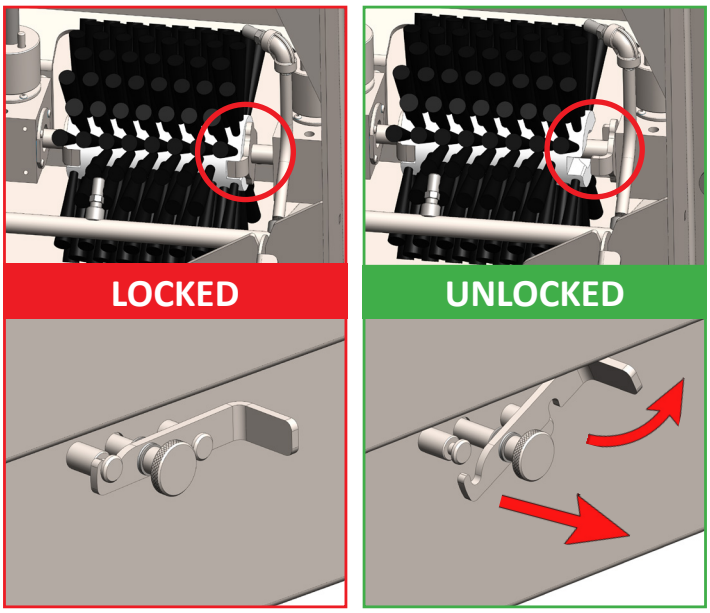


Fig. 10.3: Brush removal process, shown on BLX-1000S

Cleaning Procedures (continued)

Removing & Replacing Brushes (***V** Models*)

1. Shut down the unit and open the grate (see pg. 9).
2. Remove the three vertical brushes by unscrewing the stainless knobs at the top of each brush and lifting them up and off of their shafts [Figure 11.1]
3. With the vertical brushes removed the sole brushes can be released from their anchors. To release the sole brushes: turn and pull the anchor lever located on the side of the tub (opposite side of control box) as shown below:



4. Lift the first sole brush out of the tub by grabbing the open end and lifting up to clear the opposing drive shaft anchor [Figure 11.2].
5. With the first sole brush removed, the second brush's drive shaft anchor can be shifted to remove the final sole brush [Figure 11.3].
6. Brushes can be washed individually in a COP tank or wash machine.
7. The tub can be washed by conventional means.

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

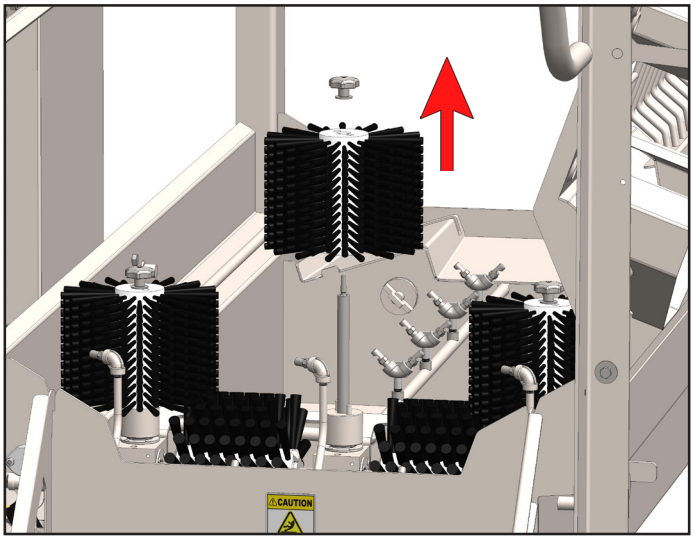


Fig. 11.1: Removing vertical brushes

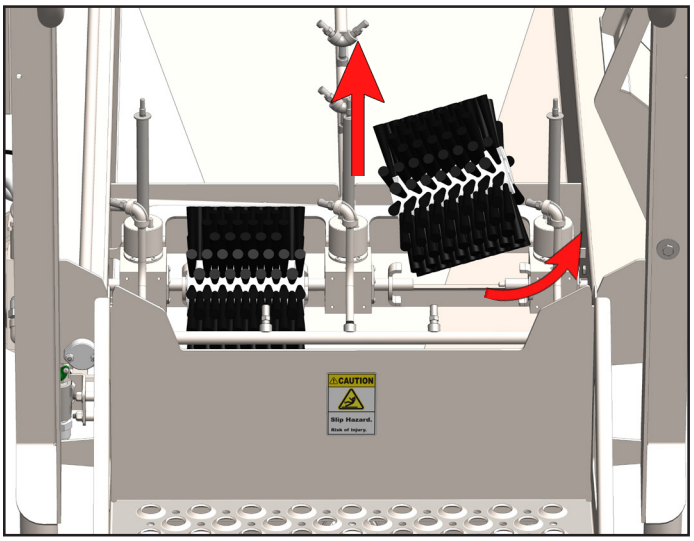


Fig. 11.2: Removing soles brushes (1 of 2)

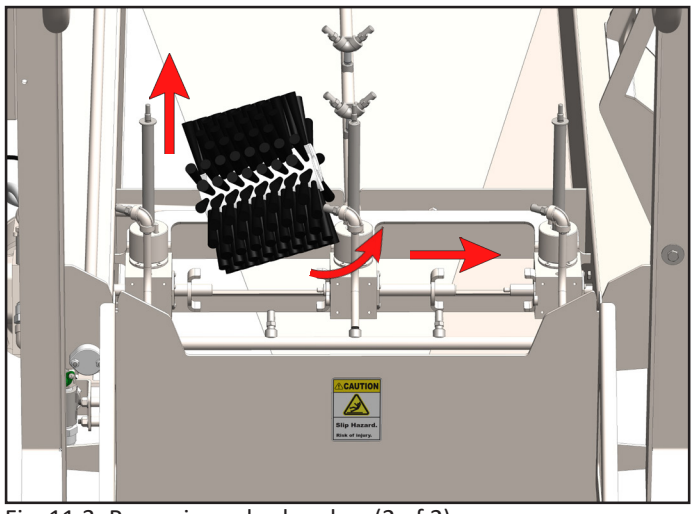


Fig. 11.3: Removing soles brushes (2 of 2)

Cleaning Procedures (continued)

Removing Steps

1. Shut down the unit.
2. Grab either side of the step by the handles.
3. Lift up to remove from tub [Figure 12.1].
4. Steps can be washed individually in a COP tank or wash machine.
5. Replace steps before enabling power and/or use.

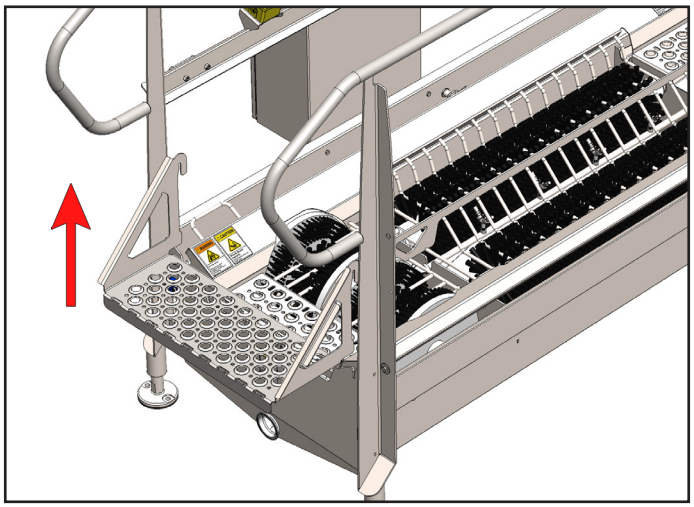


Fig. 12.1: Step removal, shown with BLX-1000R

Removing Grate Spring Balancer & Springs

1. Open the Grate.
2. Lift the end of the Spring Balancer into the upper section of its keyhole. [Figure 12.2 - Arrow 1]
3. Slide the Spring Balancer through the upper section of the keyhole to release its other end. [Figure 12.2 - Arrow 2]
4. Lift the free end up while sliding the Spring Balancer out the keyhole to remove from the tub. [Figure 12.2 - Arrow 3]
5. Slide each spring up to remove them from the tub [Figure 12.3].
6. Springs and Balancer Weldment can be washed individually in a COP tank or wash machine.

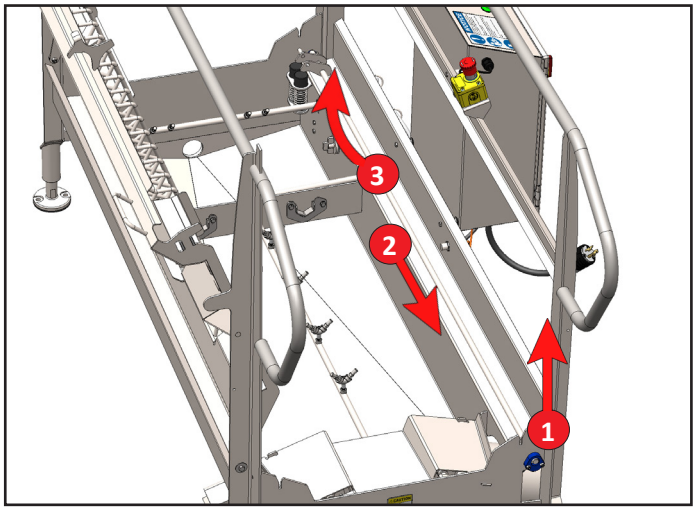
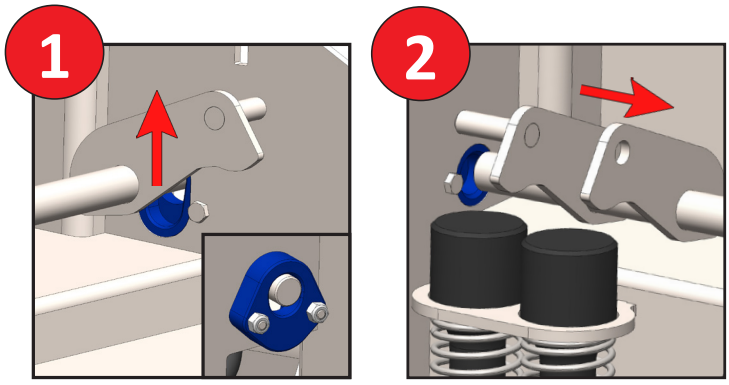


Fig. 12.2 Balancer Weldment removal procedure



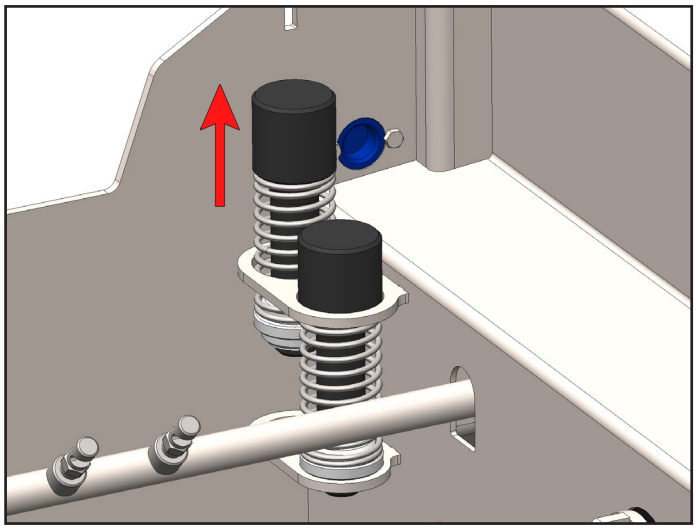


Fig. 12.3: Spring removal procedure

Advanced Configuration Options

Motor Current Sensor

The motor current sensor monitors the current draw of the motor and will stop the motor if an over-torque condition occurs, resulting in an F002 fault code on the VFD.

Default Set Point = 10 turns clockwise

Raise the Set-Point:

1. Turn screw clockwise ½ turn and test

To Start Over:

1. Turn screw counter-clockwise until it clicks.
2. Turn the screw clockwise 10 turns and test.

The sensor also features a time delay that is adjustable from 0.12 to 15 seconds. The current draw of the motor MUST exceed the time delay set point continuously for this duration in order for a fault to occur.

Default Time Delay = 1/8 turn (about 0.3sec / 300ms)

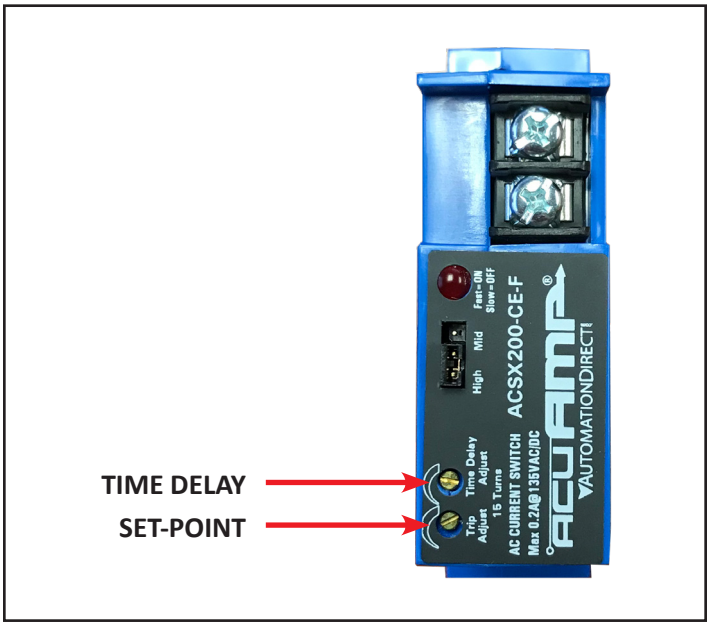


Fig. 13.1: Current Sensor Settings Identification

Brush RPM Formula:

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

[Motor Nameplate RPM] x [Drive Frequency (Hz)] ÷ [Motor Nameplate Frequency (Hz)] ÷ [Gear Reduction]

Example:

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

1750 x 48 ÷ 60 ÷ 20 = **70 RPM**

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

[Desired Speed RPM] x **[Gear Reduction]** x **[Motor Nameplate Frequency (Hz)]** ÷ **[Motor Nameplate RPM]**

Example:

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

70 x 20 x 60 ÷ 1750 = **48 Hz**

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

Advanced Configuration Options (continued)

Drive Parameter Settings

PowerFlex 4M Variable Frequency Drive

Parameter Number	Description	Setting	Units
P102	Motor NP Hertz	60	Hz
P104	Minimum Freq	30	Hz
P105	Maximum Freq	60	Hz
P106	Start Source	2	N/A
P109	Accel Time	1	s
P110	Decel Time	2	s
t201	Digital In 1 Sel	3	N/A
t221	Relay Out Sel	1	N/A

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

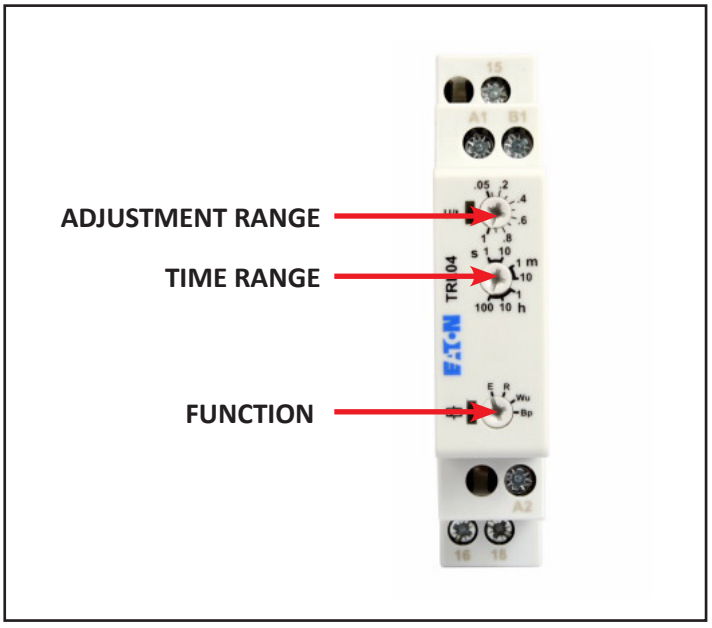


Fig. 14.1: Eaton TRL04 Setting Identification

Timing Relay Settings

Eaton TRL04

- **Function:** R (Off Delay)
- **Time Range:** 1 sec.

Schneider Electric Magnecraft

- **Function:** S (Off Delay)
- **Time Range:** 1 sec.

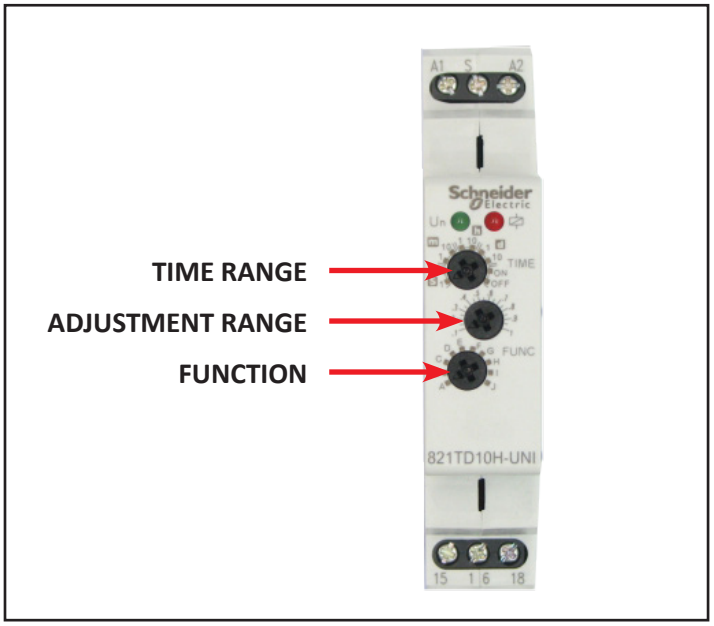


Fig. 14.2: Schneider Magnecraft Setting Identification

Preventative Maintenance

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

NOTE: Control box is equipped with a Lock-Out/ Tag-Out switch for restricted power access when performing maintenance procedures.

Weekly:

- Check unit for proper sensor function and brush rotation.
- Ensure spring loaded grate (if applicable) is 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 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.
- Keep clean and ventilating openings (on TEFC motors) clear of any obstructions.
- 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 will not operate:

- Follow the startup procedure (pg. 9)
- Verify the control box is closed and the power-disconnect switch is in the ON position.
- Verify that there is power going to the unit.
    - Verify the circuit breakers in the building have not been tripped.

Unit will not spray:

- Verify water pressure at the inlet to the water/ solution solenoid (35 psi min.)
- Inspect spray nozzles for clogging.
- Verify that the orange LED light on the solenoid valve connector illuminates when the brushes are rotating.

Green START button is illuminated, but one or more brushes will not rotate when unit is activated:

- Power cycle the unit by turning the disconnect switch to OFF and then back to ON. Follow the start up procedure on Page 9.

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
- Use the yellow “Capillary Tube” style metering tip (see pg. 7 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

F002 Fault Code on Variable Frequency Drive:

Cause: Power may have been cycled to the unit while it was "ON". To solve:

1. While power is still applied, turn the unit "off" by pushing down hard on the e-stop button
2. Wait at least 5 seconds, then pull the e-stop button out again. *DO NOT stand on the walkway grate during this process.*
3. The unit should now be ready for use.

Cause: If the brushes stop suddenly during normal use and the fault is displayed, the Motor Current Sensor set point may be too low. To solve:

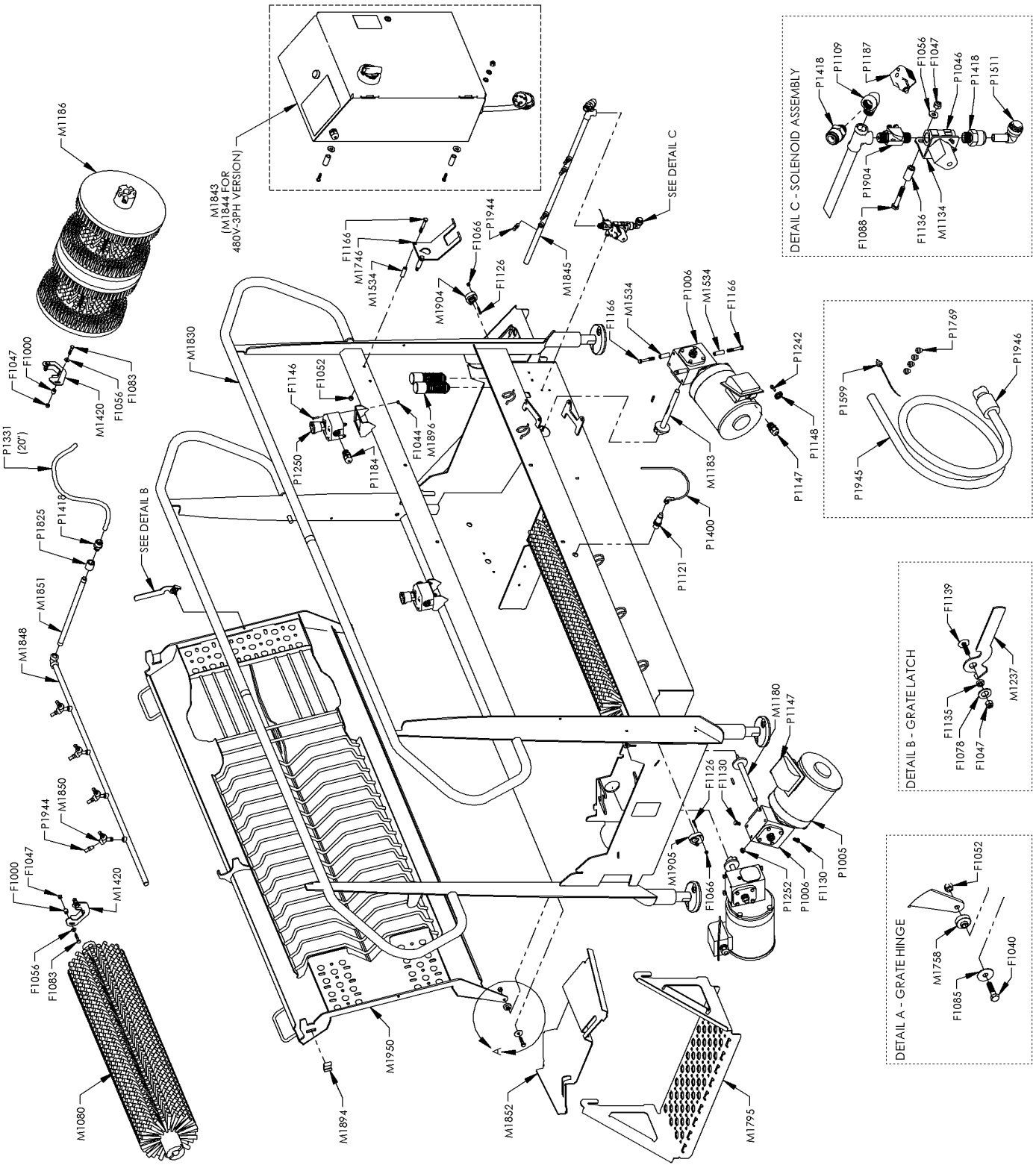
1. Turn the set point adjusting screw clockwise ½ turn to raise the set point and re-test.

F004 Fault Code on Variable Frequency Drive:

- If unit is connected to a GFCI, verify its ratings (class, mA restrictions, etc.)
- Verify minimum frequency setting on VFD is set between 15 to 20 Hz.
  - ***VFD Parameter:*** P104 [Minimum Freq.]
  - ***Manufacturer Default:*** 30 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.

Appendix A - Parts Callout (BLX-1000R-GEN2 : Regular)



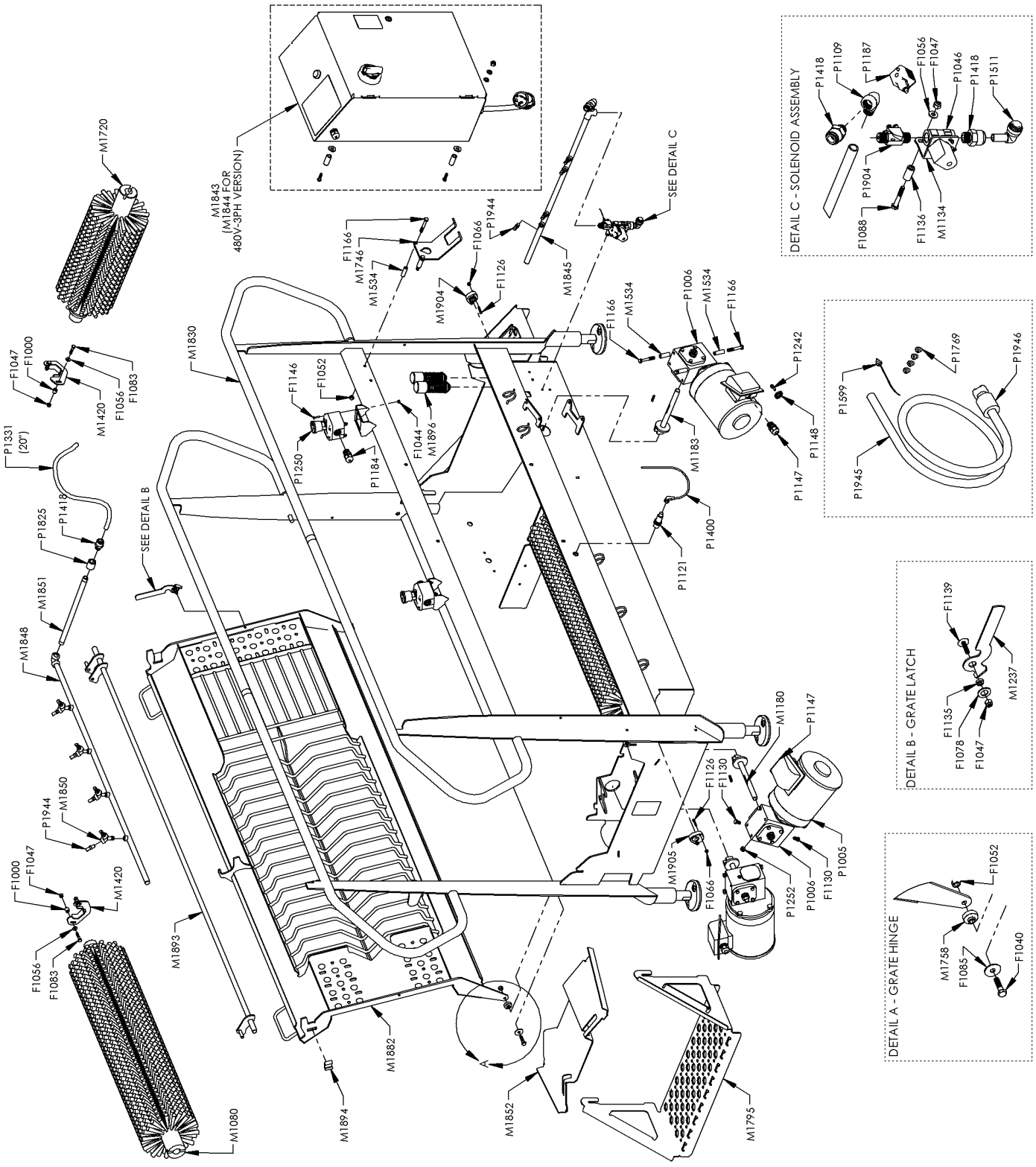
Appendix A - Parts Callout (BLX-1000R-GEN2 : Regular)

Part No.	Description
F1000	STANDOFF 1/4 X 1/2 X 1/2 SS
F1040	BOLT SHCS 5/16-18 X 1-1/4 SS
F1044	NUT NYLOCK 8-32 SS
F1047	NUT NYLOCK 1/4-20 SS
F1052	NUT NYLOCK 5/16-18 SS
F1056	WASHER 1/4 SS TYPE A
F1066	NUT NYLOCK 10-32 SS
F1078	WASHER1/2" X 7/8" X 1/16" UHMW
F1083	BOLT HHC 1/4-20 X 1-1/4 SS
F1085	WASHER FENDER 5/16 SS
F1088	BOLT HHC 1/4-20 X 1-3/4 SS
F1126	BOLT HHC 10-32 X 1 SS
F1130	BOLT HHC 5/16-18 X 5/8" SS
F1135	STANDOFF 1/4 X 1/2 X 3/16 SS
F1136	STANDOFF 1/4 X 1/2 X 1 SS
F1139	BOLT SHUTTER 1/4-20 X 1 SS
F1146	SCREW 8-32 X 3/4 SS PHILLIPS PAN HD
F1166	BOLT HHC 5/16-18 X 2-1/4 SS
M1080	HORIZONTAL BRUSH BLX-1000
M1134	SOLENOID BRACKET
M1183	DRIVE SHAFT MOTOR-BRUSH WELDMENT
M1186	COMBINATION BRUSH ASSEMBLY
M1237	GRATE LATCH
M1420	BRUSH SUPPORT WELDMENT
M1534	SPACER .313 X .5 X 1.5 SS
M1746	JUG HOOK V2
M1758	GRATE STEPPED HINGE PIN
M1795	BLX FORMED STEP 24 INCH
M1830	BLX-1000 GEN2 TUB WELDMENT
M1843	BLX-1000 GEN2 ELECTRICAL ASSY 230V 1PH
M1845	BLX GEN2 SPRAY MANIFOLD WELDMENT - R AND S MODELS
M1848	BLX-1000 GEN2 SPRAY MANIFOLD WELDMENT
M1850	BLX-1000 GEN2 SPRAY NOZZLE RISER WELDMENT
M1851	BLX-1000 GEN2 PIPE NIPPLE
M1852	BLX-1000 GEN2 MOTOR COVER

Part No.	Description
M1893	BLX-1000 GEN2 SPRING BALANCER WELDMENT V3
M1894	BLX C-CHANNEL GRATE LIFT PIN GLIDE
M1896	BLX GEN2 GRATE SPRING ASSEMBLY
M1904	BLX GEN2 SPRING BALANCER BEARING ROUND
M1905	BLX GEN2 SPRING BALANCER BEARING SLOTTED
M1950	BLX-1000R GEN2 GRATE V3 WELDMENT
P1005	MOTOR 1/2 HP 1750RPM SS 56C
P1005	MOTOR 1/2 HP 1750RPM SS 56C
P1006	GEAR REDUCER 20:1 5/8 SS
P1046	SOLENIOD SS BODY 3/8"
P1109	PIPE ELBOW STREET 3/8" SS
P1121	PROXIMITY SENSOR 18mm
P1147	CORD GRIP 1/2 NPT X .170 - .450 BLK
P1148	CORD GRIP NUT 1/2 NPS NYL
P1184	CORD GRIP 1/2 NPT X .095-.260 BLK
P1187	SOLENOID CABLE 18mm DIN 24V
P1242	TERMINAL, 1/4" RING, 14-16 AWG INS
P1250	EMERGENCY STOP UNIT
P1331	TUBING, 1/2" OD POLYETHYLENE
P1400	CABLE M12 4-POLE 5m IP69K
P1418	QUICK FIT 3/8 NPT X 1/2 TUBE
P1511	QUICK FIT STEM ELBOW 1/2" X 1/2"
P1599	METERING TIP, CAPILLARY TUBE
P1769	METERING TIPS, ULTRA LEAN
P1825	PIPE COUPLER 3/8" 304SS
P1828	WIRE, VFD-MOTOR, 14 AWG, 4-CONDUCTOR, SHIELDED, XLPE/PVC
P1904	VENTURI INJECTOR DEMA ROCKET, DARK GREEN, .125", 3.7GPM AT 100PSI, SINGLE BARB
P1934	GREASE, ELECTRIC INSULATING .17OZ ONE TIME USE PACK
P1944	NOZZLE, FAN SPRAY, 110 DEGREE, 1/8 MNPT, 0.2 GPM AT 10PSI (1/8KSS-2)
P1945	VENTURI INJECTOR 1/4" SUCTION LINE AND STRAINER
P1946	VENTURI INJECTOR SUCTION WEIGHT CERAMIC FOR 1/4" TUBE

NOTE: For brush replacement orders reference Part # ***BLX-1000R-CBS***

Appendix A - Parts Callout (BLX-1000S-GEN2 : Sole)



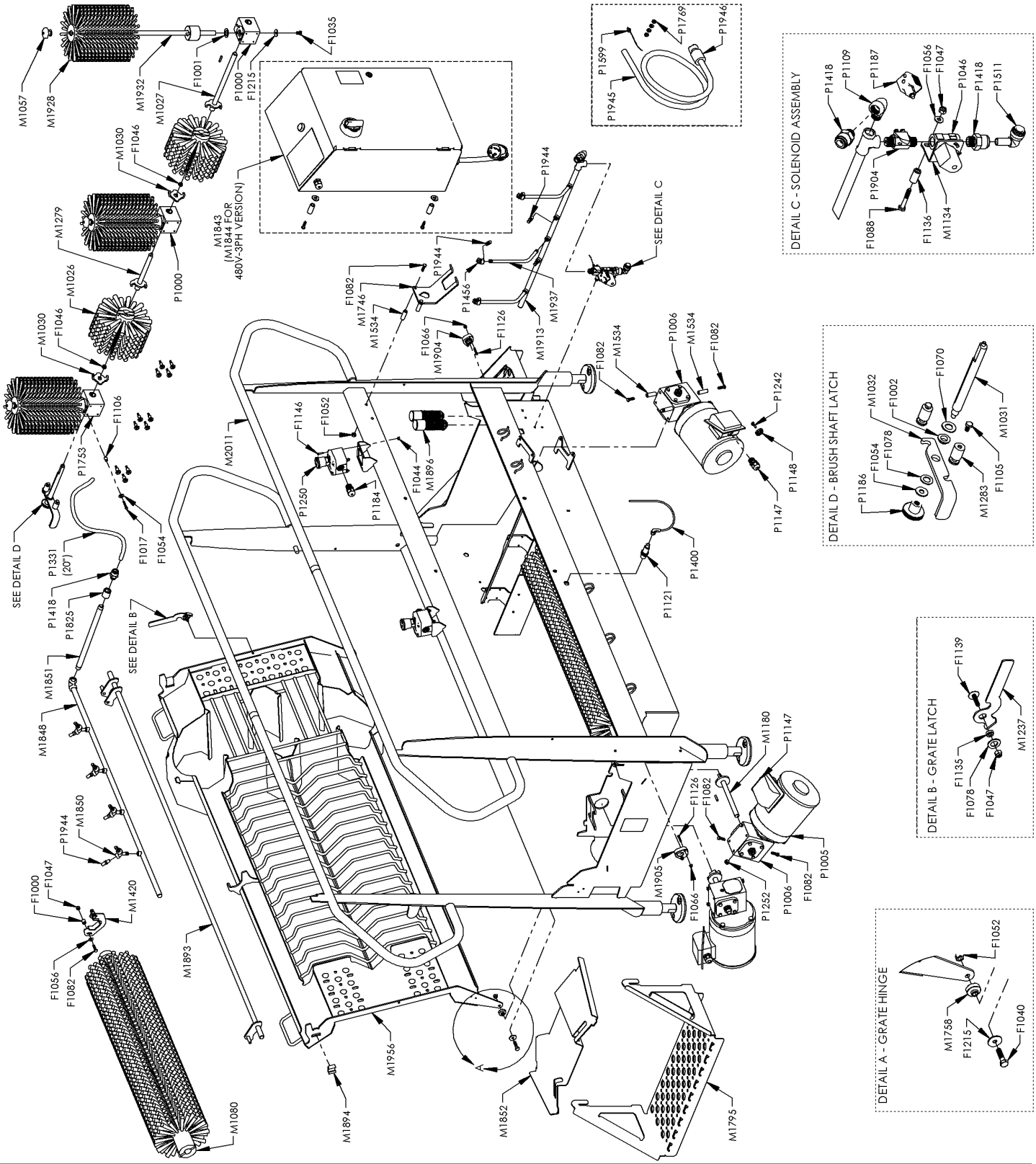
Appendix A - Parts Callout (BLX-1000S-GEN2 : Sole)

Part No.	Description
F1000	STANDOFF 1/4 X 1/2 X 1/2 SS
F1040	BOLT SHCS 5/16-18 X 1-1/4 SS
F1044	NUT NYLOCK 8-32 SS
F1047	NUT NYLOCK 1/4-20 SS
F1052	NUT NYLOCK 5/16-18 SS
F1056	WASHER 1/4 SS TYPE A
F1066	NUT NYLOCK 10-32 SS
F1078	WASHER1/2" X 7/8" X 1/16" UHMW
F1083	BOLT HHC 1/4-20 X 1-1/4 SS
F1085	WASHER FENDER 5/16 SS
F1088	BOLT HHC 1/4-20 X 1-3/4 SS
F1126	BOLT HHC 10-32 X 1 SS
F1130	BOLT HHC 5/16-18 X 5/8" SS
F1135	STANDOFF 1/4 X 1/2 X 3/16 SS
F1136	STANDOFF 1/4 X 1/2 X 1 SS
F1139	BOLT SHUTTER 1/4-20 X 1 SS
F1146	SCREW 8-32 X 3/4 SS PHILLIPS PAN HD
F1166	BOLT HHC 5/16-18 X 2-1/4 SS
M1080	HORIZONTAL BRUSH BLX-1000
M1134	SOLENOID BRACKET
M1183	DRIVE SHAFT MOTOR-BRUSH WELDMENT
M1237	GRATE LATCH
M1420	BRUSH SUPPORT WELDMENT
M1534	SPACER .313 X .5 X 1.5 SS
M1720	BRUSH BLX HORIZONTAL SOLE
M1746	JUG HOOK V2
M1758	GRATE STEPPED HINGE PIN
M1795	BLX FORMED STEP 24 INCH
M1830	BLX-1000 GEN2 TUB WELDMENT
M1843	BLX-1000 GEN2 ELECTRICAL ASSY 230V 1PH
M1845	BLX GEN2 SPRAY MANIFOLD WELDMENT - R AND S MODELS
M1848	BLX-1000 GEN2 SPRAY MANIFOLD WELDMENT
M1850	BLX-1000 GEN2 SPRAY NOZZLE RISER WELDMENT
M1851	BLX-1000 GEN2 PIPE NIPPLE
M1852	BLX-1000 GEN2 MOTOR COVER

Part No.	Description
M1882	BLX-1000S GEN2 GRATE V3 WELDMENT
M1893	BLX-1000 GEN2 SPRING BALANCER WELDMENT V3
M1894	BLX C-CHANNEL GRATE LIFT PIN GLIDE
M1896	BLX GEN2 GRATE SPRING ASSEMBLY
M1904	BLX GEN2 SPRING BALANCER BEARING ROUND
M1905	BLX GEN2 SPRING BALANCER BEARING SLOTTED
P1005	MOTOR 1/2 HP 1750RPM SS 56C
P1005	MOTOR 1/2 HP 1750RPM SS 56C
P1006	GEAR REDUCER 20:1 5/8 SS
P1046	SOLENIOD SS BODY 3/8"
P1109	PIPE ELBOW STREET 3/8" SS
P1121	PROXIMITY SENSOR 18mm
P1147	CORD GRIP 1/2 NPT X .170 - .450 BLK
P1148	CORD GRIP NUT 1/2 NPS NYL
P1184	CORD GRIP 1/2 NPT X .095-.260 BLK
P1187	SOLENOID CABLE 18mm DIN 24V
P1242	TERMINAL, 1/4" RING, 14-16 AWG INS
P1250	EMERGENCY STOP UNIT
P1331	TUBING, 1/2" OD POLYETHYLENE
P1400	CABLE M12 4-POLE 5m IP69K
P1418	QUICK FIT 3/8 NPT X 1/2 TUBE
P1511	QUICK FIT STEM ELBOW 1/2" X 1/2"
P1599	METERING TIP, CAPILLARY TUBE
P1769	METERING TIPS, ULTRA LEAN
P1825	PIPE COUPLER 3/8" 304SS
P1828	WIRE, VFD-MOTOR, 14 AWG, 4-CONDUCTOR, SHIELDED, XLPE/PVC
P1904	VENTURI INJECTOR DEMA ROCKET, DARK GREEN, .125", 3.7GPM AT 100PSI, SINGLE BARB
P1934	GREASE, ELECTRIC INSULATING .17OZ ONE TIME USE PACK
P1944	NOZZLE, FAN SPRAY, 110 DEGREE, 1/8 MNPT, 0.2 GPM AT 10PSI (1/8KSS-2)
P1945	VENTURI INJECTOR 1/4" SUCTION LINE AND STRAINER
P1946	VENTURI INJECTOR SUCTION WEIGHT CERAMIC FOR 1/4" TUBE

NOTE: For brush replacement orders reference Part # ***BLX-1000S-CBS***

Appendix A - Parts Callout (BLX-1000V-GEN2 : Vertical)



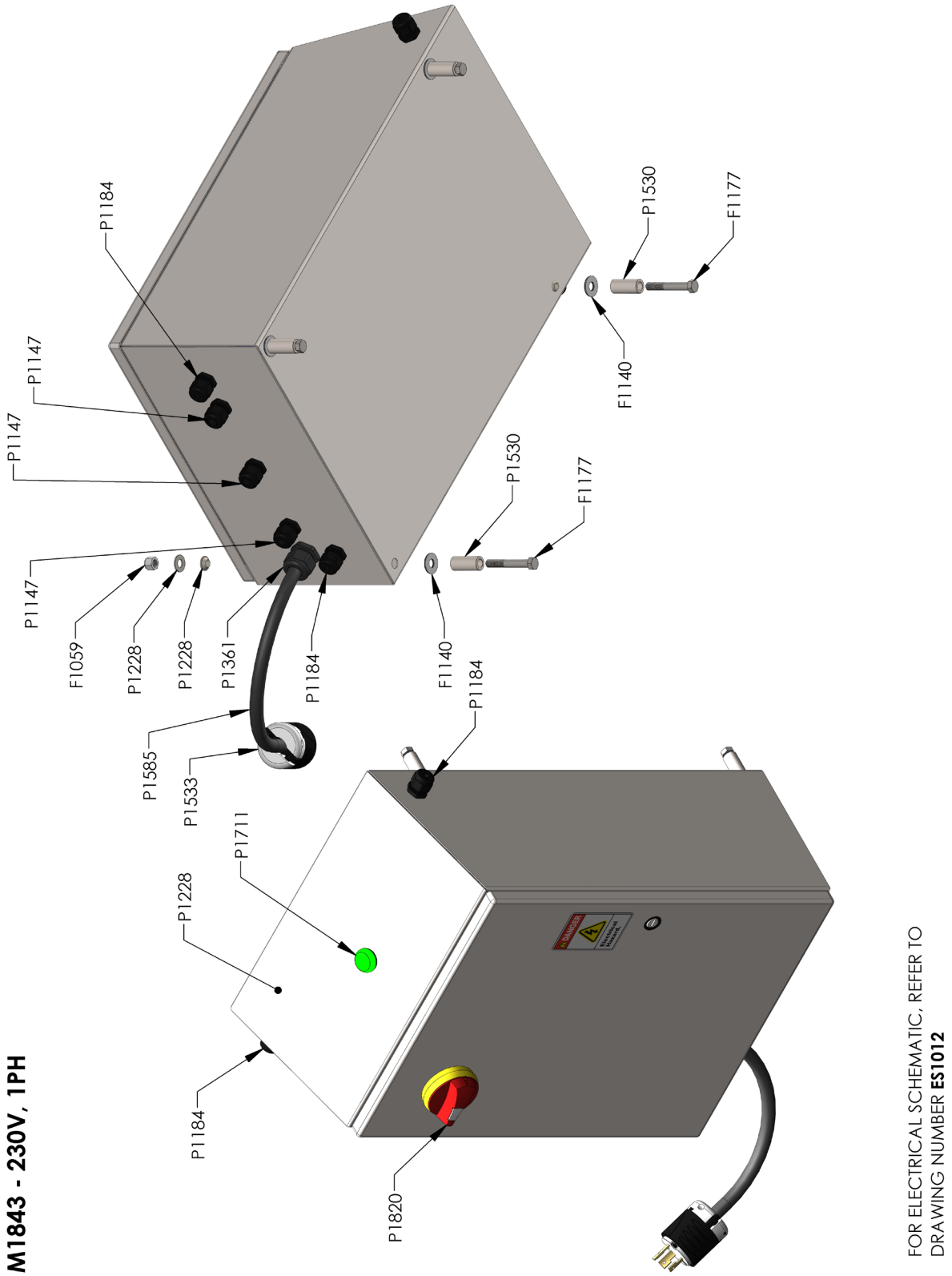
Appendix A - Parts Callout (BLX-1000V-GEN2 : Vertical)

Part No.	Description
F1000	STANDOFF 1/4 X 1/2 X 1/2 SS
F1001	WASHER 3/4 X 1-1/4 X 1/16 PTFE
F1002	BEARING FLANGED 1/2" X 5/8" X 1/4" PTFE
F1017	BOLT HHC 10-32 X 1-1/4 SS
F1035	BOLT HHC 5/16-18 X 1/2 SS
F1040	BOLT SHCS 5/16-18 X 1-1/4 SS
F1044	NUT NYLOCK 8-32 SS
F1046	NUT FLANGED 1/4-20 SS
F1047	NUT NYLOCK 1/4-20 SS
F1052	NUT NYLOCK 5/16-18 SS
F1054	WASHER 5/16 316SS TYPE B
F1056	WASHER 1/4 SS TYPE A
F1066	NUT NYLOCK 10-32 SS
F1070	WASHER THIN 1/2 SS
F1078	WASHER1/2" X 7/8" X 1/16" UHMW
F1083	BOLT HHC 1/4-20 X 1-1/4 SS
F1085	WASHER FENDER 5/16 SS
F1088	BOLT HHC 1/4-20 X 1-3/4 SS
F1105	BOLT HHC 1/4-20 X 1/2 SS
F1106	STANDOFF #10 X 3/8 X 1/2 SS
F1119	WASHER 3/8 SS
F1126	BOLT HHC 10-32 X 1 SS
F1130	BOLT HHC 5/16-18 X 5/8" SS
F1135	STANDOFF 1/4 X 1/2 X 3/16 SS
F1136	STANDOFF 1/4 X 1/2 X 1 SS
F1139	BOLT SHUTTER 1/4-20 X 1 SS
F1146	SCREW 8-32 X 3/4 SS PHILLIPS PAN HD
F1166	BOLT HHC 5/16-18 X 2-1/4 SS
M1026	HORIZONTAL BRUSH 8" DIA. X 6" WIDE
M1027	DRIVE SHAFT 1 WELDMENT
M1030	BRUSH COUPLER
M1031	DRIVE SHAFT 2
M1032	SHAFT LATCH
M1057	BRUSH KNOB WELDMENT FEMALE
M1080	HORIZONTAL BRUSH BLX-1000
M1134	SOLENOID BRACKET
M1183	DRIVE SHAFT MOTOR-BRUSH WELDMENT
M1237	GRATE LATCH
M1279	CENTER SHAFT WLDMNT
M1283	LATCH STUD THREADED
M1420	BRUSH SUPPORT WELDMENT
M1534	SPACER .313 X .5 X 1.5 SS
M1618	BRUSH, CYLINDER, 8" DIA. X 6" LONG, BLACK PP FILAMENT
M1623	BRUSH SHAFT WLDMNT V-6
M1746	JUG HOOK V2
M1758	GRATE STEPPED HINGE PIN
M1795	BLX FORMED STEP 24 INCH

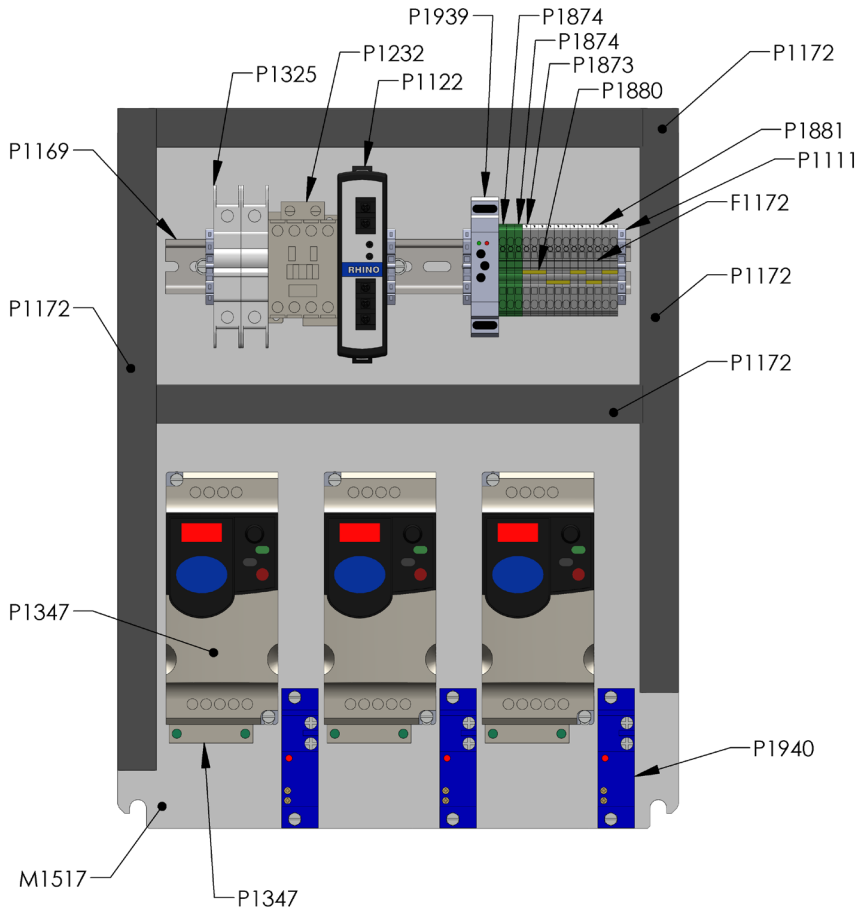
Part No.	Description
M1830	BLX-1000 GEN2 TUB WELDMENT
M1843	BLX-1000 GEN2 ELECTRICAL ASSY 230V 1PH
M1850	BLX-1000 GEN2 SPRAY NOZZLE RISER WELDMENT
M1851	BLX-1000 GEN2 PIPE NIPPLE
M1852	BLX-1000 GEN2 MOTOR COVER
M1893	BLX-1000 GEN2 SPRING BALANCER WELDMENT V3
M1894	BLX C-CHANNEL GRATE LIFT PIN GLIDE
M1896	BLX GEN2 GRATE SPRING ASSEMBLY
M1904	BLX GEN2 SPRING BALANCER BEARING ROUND
M1905	BLX GEN2 SPRING BALANCER BEARING SLOTTED
M1913	BLX GEN2 SPRAY MANIFOLD WELDMENT - V MODEL
M1914	BLX GEN2 V GEARBOX PLATE
M1923	BLX GEN2 V-MODEL SPRAY RISER 6" BENT
M1955	BLX-1000V GEN2 GRATE V3 WELDMENT (FOR 3" AND 6" VERTICAL BRUSHES)
P1000	RIGHT ANGLE GEARBOX, 5/8" IN/OUT, RIGHT HAND ROTATION, SS (REPLACES M1036)
P1005	MOTOR 1/2 HP 1750RPM SS 56C
P1005	MOTOR 1/2 HP 1750RPM SS 56C
P1006	GEAR REDUCER 20:1 5/8 SS
P1046	SOLENIOD SS BODY 3/8"
P1109	PIPE ELBOW STREET 3/8" SS
P1121	PROXIMITY SENSOR 18mm
P1147	CORD GRIP 1/2 NPT X .170 - .450 BLK
P1148	CORD GRIP NUT 1/2 NPS NYL
P1184	CORD GRIP 1/2 NPT X .095-.260 BLK
P1186	KNOB 5/16-18 BLIND KNURLED SS
P1187	SOLENOID CABLE 18mm DIN 24V
P1242	TERMINAL, 1/4" RING, 14-16 AWG INS
P1250	EMERGENCY STOP UNIT
P1331	TUBING, 1/2" OD POLYETHYLENE
P1400	CABLE M12 4-POLE 5m IP69K
P1418	QUICK FIT 3/8 NPT X 1/2 TUBE
P1456	PIPE ELBOW 1/8 X 90 SS
P1511	QUICK FIT STEM ELBOW 1/2" X 1/2"
P1599	METERING TIP, CAPILLARY TUBE
P1753	RIGHT ANGLE GEARBOX, 5/8" IN/OUT, LEFT HAND ROTATION, SS (REPLACES M1682)
P1769	METERING TIPS, ULTRA LEAN
P1825	PIPE COUPLER 3/8" 304SS
P1828	WIRE, VFD-MOTOR, 14 AWG, 4-CONDUCTOR, SHIELDED, XLPE/PVC
P1904	VENTURI INJECTOR DEMA ROCKET, DARK GREEN, .125", 3.7GPM AT 100PSI, SINGLE BARB
P1934	GREASE, ELECTRIC INSULATING .17OZ ONE TIME USE PACK
P1944	NOZZLE, FAN SPRAY, 110 DEGREE, 1/8 MNPT, 0.2 GPM AT 10PSI (1/8KSS-2)
P1945	VENTURI INJECTOR 1/4" SUCTION LINE AND STRAINER
P1946	VENTURI INJECTOR SUCTION WEIGHT CERAMIC FOR 1/4" TUBE

NOTE: For brush replacement orders reference Part # ***BLX-1000V3-CBS*** for 3", ***BLX-1000V6-CBS*** for 6", or ***BLX-1000V9-CBS*** for 9"

Appendix A - Parts Callout (M1843 : 230V, 1PH)



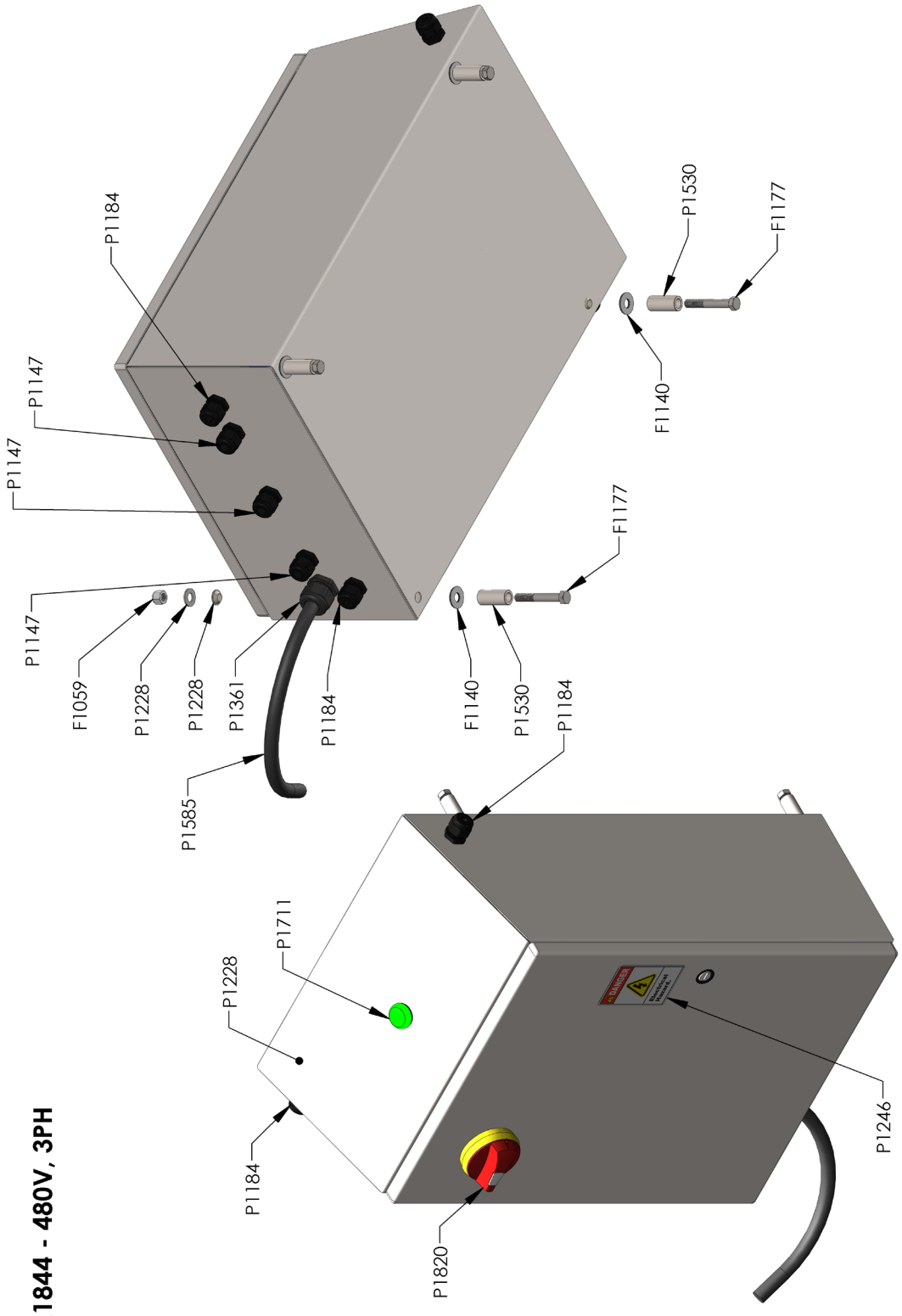
Appendix A - Parts Callout (M1843 : 230V, 1PH)



Part No.	Description
F1059	NUT NYLOCK 3/8-16 SS
F1140	WASHER SEALING 3/8 X 1 SS
F1172	SCREW THEAD FORMING 10-32 X 1/2 HEX WASHER HEAD ZINC
F1177	BOLT HHC 3/8-16 X 2-1/2 SS
P1111	END STOP TERMINAL BLOCK
P1122	POWER SUPPLY 24VDC 60W
P1147	CORD GRIP 1/2 NPT X .170 - .450 BLK
P1148	CORD GRIP NUT 1/2 NPS NYL
P1184	CORD GRIP 1/2 NPT X .095-.260 BLK
P1232	IEC CONTACTOR 3P 12A 24VDC COIL 1 N/O AUX CONTACT
P1325	CIRCUIT BREAKER 13A DOUBLE POLE
P1347	VARIABLE FREQUENCY DRIVE 0.5HP 240VAC
P1361	CORD GRIP 3/4 NPT X .435-.705 BLK
P1363	CORD GRIP NUT 3/4 NPT NYLON
P1530	TUBING, 304SS, .625 X .12 X.385 - CUT TO 1-1/2"

Part No.	Description
P1533	250V 30A L6-30 MALE PLUG
P1585	WIRE SJOOW 12AWG 4 CONDUCTOR BLACK (0.650 OD) 600V 02726.41T.01
P1711	INDICATOR LIGHT 24V MODULAR LED GREEN
P1819	DISCONNECT SWITCH 25A 3-POLE
P1820	DISCONNECT HANDLE KIT RED/YELLOW FOR P1819
P1873	TERMINAL BLOCK SPRING CLAMP 5.1mm GRAY
P1874	TERMINAL BLOCK SPRING CLAMP 5.1mm GROUND
P1880	TERMINAL JUMPER 5.1mm - 10 POSITION CUT TO 2
P1880	TERMINAL JUMPER 5.1mm - 10 POSITION CUT TO 3
P1939	RELAY, TIMER, MULTIFUNCTION 24VDC (REPLACES P1115)
P1940	SWITCH, CURRENT SENSING WITH TIME DELAY, 1-175A ADJUSTABLE, FIXED CORE, NC
P1880	TERMINAL JUMPER 5.1mm - 10 POSITION CUT TO 2
P1939	RELAY, TIMER, MULTIFUNCTION 24VDC
P1940	SWITCH, CURRENT SENSING WITH TIME DELAY, 1-175A ADJUSTABLE, FIXED CORE, NC

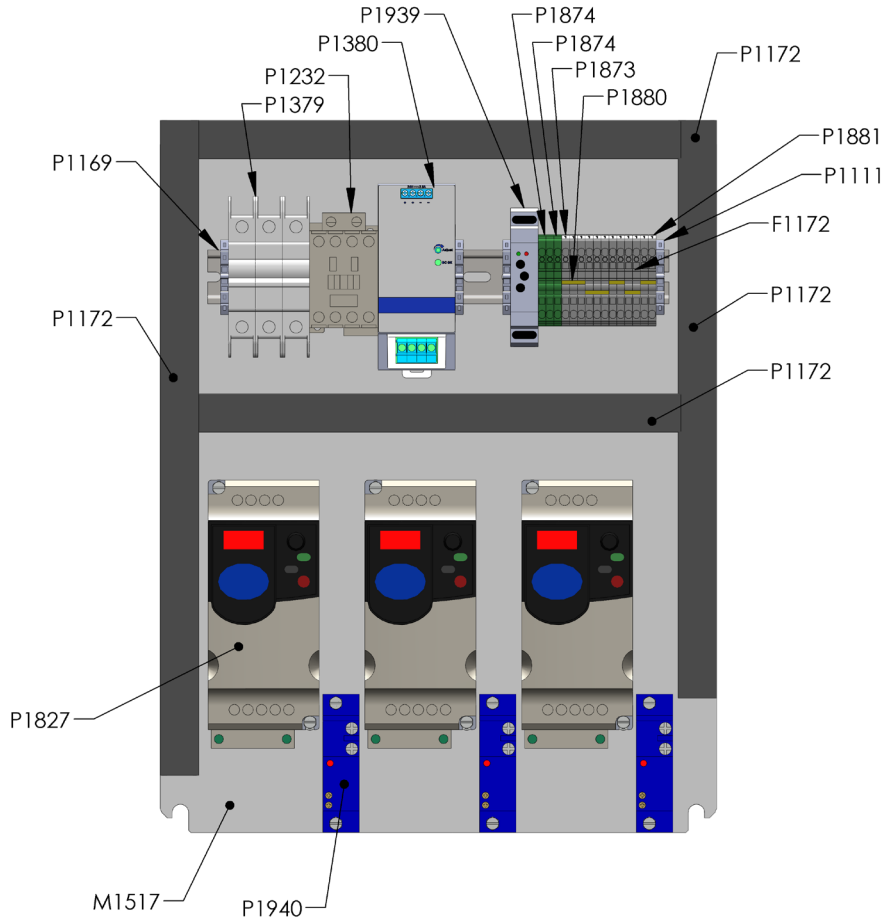
Appendix A - Parts Callout (M1844 : 480V, 3PH)



M1844 - 480V, 3PH

FOR ELECTRICAL SCHEMATIC, REFER TO DRAWING NUMBER **ES1013**

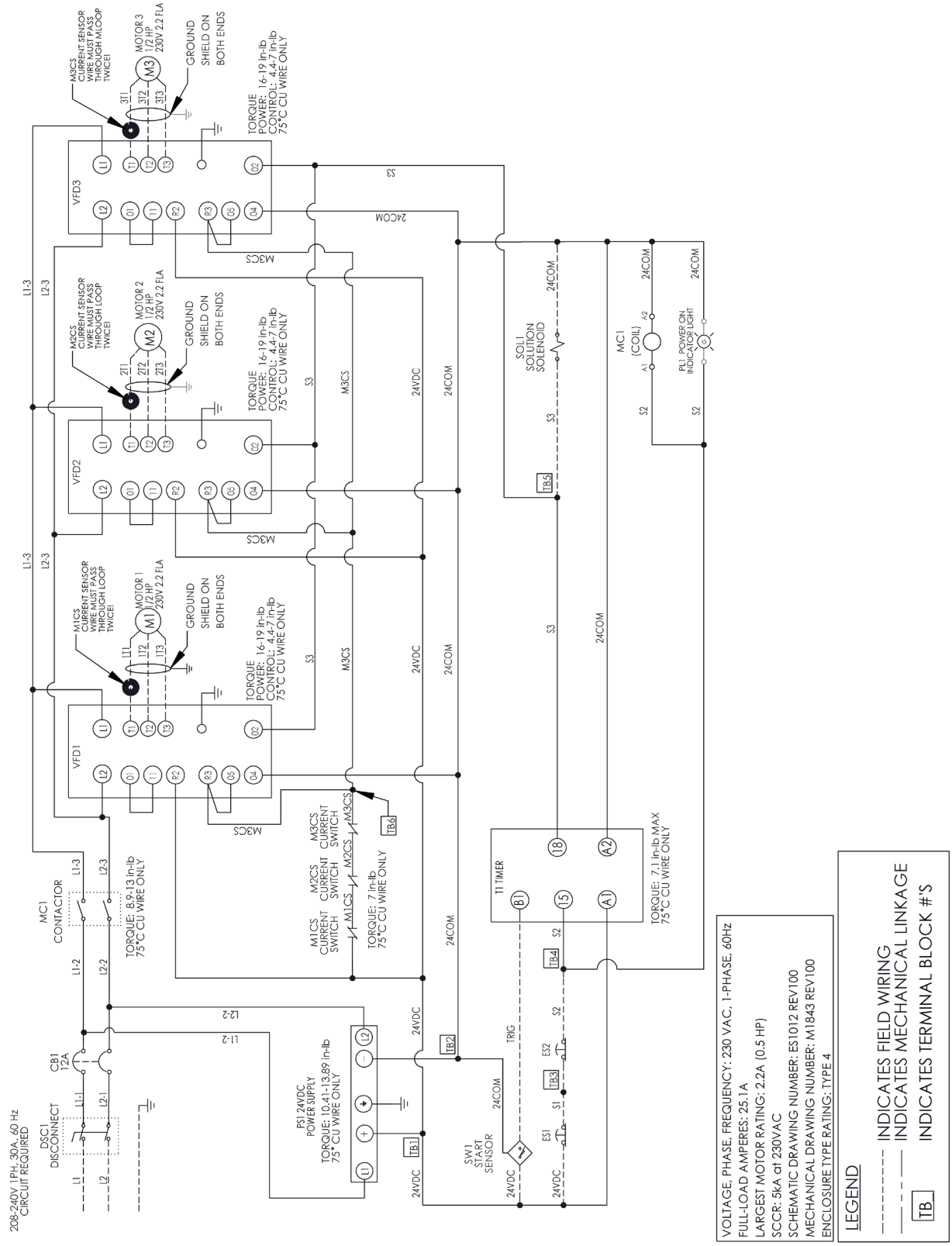
Appendix A - Parts Callout (M1844 : 480V, 3PH)



Part No.	Description
F1059	NUT NYLOCK 3/8-16 SS
F1140	WASHER SEALING 3/8 X 1 SS
F1172	SCREW THEAD FORMING 10-32 X 1/2 HEX WASHER HEAD ZINC
F1177	BOLT HHC 3/8-16 X 2-1/2 SS
P1111	END STOP TERMINAL BLOCK
P1147	CORD GRIP 1/2 NPT X .170 - .450 BLK
P1148	CORD GRIP NUT 1/2 NPS NYL
P1184	CORD GRIP 1/2 NPT X .095-.260 BLK
P1232	IEC CONTACTOR 3P 12A 24VDC COIL 1 N/O AUX CONTACT
P1361	CORD GRIP 3/4 NPT X .435-.705 BLK
P1363	CORD GRIP NUT 3/4 NPT NYLON
P1379	CIRCUIT BREAKER 4A 3 POLE
P1380	POWER SUPPLY 24V, 60W, 480-3PH
P1530	TUBING, 304SS, .625 X .12 X.385 - CUT TO 1-1/2"
P1585	WIRE SJOOW 12AWG 4 CONDUCTOR BLACK (0.650 OD) 600V 02726.41T.01

Part No.	Description
P1711	INDICATOR LIGHT 24V MODULAR LED GREEN
P1819	DISCONNECT SWITCH 25A 3-POLE
P1820	DISCONNECT HANDLE KIT RED/YELLOW FOR P1819
P1827	VARIABLE FREQUENCY DRIVE POWERFLEX 4M 1/2 HP 480V 3PH
P1873	TERMINAL BLOCK SPRING CLAMP 5.1mm GRAY
P1874	TERMINAL BLOCK SPRING CLAMP 5.1mm GROUND
P1880	TERMINAL JUMPER 5.1mm - 10 POSITION CUT TO 2
P1880	TERMINAL JUMPER 5.1mm - 10 POSITION CUT TO 3
P1939	RELAY, TIMER, MULTIFUNCTION 24VDC (REPLACES P1115)
P1940	SWITCH, CURRENT SENSING WITH TIME DELAY, 1-175A ADJUSTABLE, FIXED CORE, NC
P1880	TERMINAL JUMPER 5.1mm - 10 POSITION CUT TO 2
P1939	RELAY, TIMER, MULTIFUNCTION 24VDC
P1940	SWITCH, CURRENT SENSING WITH TIME DELAY, 1-175A ADJUSTABLE, FIXED CORE, NC

Appendix B - Electrical Schematic (230V, 1PH)



Appendix B - Electrical Schematic (480V, 3PH)