USER MANUAL

MODEL NUMBER:
BLX-600

Compact Single Boot Scrubber

English (Original Instructions)

CleanLogix

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

CAUTION

Avoid Personal Injury

1. Avoid contact of cleaning agent with skin and eyes. If contact occurs, see MSDS sheet for further first aid measures.
2. Follow safety instructions of chemical manufacturer (MSDS).
3. Always follow plant and OSHA guidelines about the use of hygiene equipment.
4. All personnel using this unit must be familiar with the information contained in this manual. Follow all installation and maintenance instructions.

WARNING

5. *Always wear appropriate footwear. Secure or remove loose items on footwear to prevent entanglement.*
6. Ensure solid footing and use both hands when operating the unit.

DANGER

7. Always disconnect and/or lock out power supply to unit before cleaning or servicing.

Specifications:

Frame.....304 stainless steel construction

Width.....25”

Depth.....24.5”

Height.....46”

Requirements:

Electrical:
110 Volts AC
Single Phase
60 Hz
10 Amps
24 VDC - Control Voltage (Unit has internal power supply)

Water Connection:
Cold Potable Water
35 PSI Minimum Pressure
50 PSI Maximum Pressure
5 GPM Minimum Flow

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

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

General Overview

BLX General Maintenance Instructions

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

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 with the reducer is good for ambient temperature ranges of -10°F to 105°F and is compatible with standard compounded oil.
- Gear reducer oil should be changed every 2 years or 6000 operating hours, whichever comes first.
- The gear reducer is designed with a bladder type vent system. This type of vent consists of an internal bladder that seals the oil chamber from the outside environment at all times - as pressure builds inside the unit, the bladder contracts keeping the internal pressure to a minimum. The advantage to this type of vent system is that the internal oil chamber is completely sealed from the outside environment ensuring that contamination does not enter the oil chamber or that oil is not released causing contamination in the application.

Motor:

- Inspect motor(s) at regular intervals. Keep motor(s) clean and ventilating openings (on TEFC motors) clear of any obstructions. Double check 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 8hr/day service.

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

General Overview

Installation Instructions:

1. Set unit in desired location.
2. Aspects to consider when deciding on placement:
   - Room for entering and exiting.
   - Traffic flow for unit operation.
   - Emergency exit paths or egress in case of emergency.
   - Head room for personnel while using the unit.
   - Space to access control box.
   - Connections for water and electrical.
   - Refer the the below digram (Figure 3) for unit placement restrictions.
3. To move the unit use a pallet jack or a hi-lo and lift the unit from the bottom. To protect the unit, first pad the forks.
4. Once the unit is in the desired location, adjust the four leveling feet (Figure 1) and use a level to make sure the unit is stable and level in all directions (Figure 2).
5. Connect a water line to the water inlet fitting. Unit needs 35 PSI and a 5GPM connection to operate.
6. Attention: A backflow preventer must be installed in the water line to this unit. Check local codes to ensure proper installation
7. Connect unit to electrical power.
8. Fill chemical jug with sanitizer product and connect suction line to Venturi injector.
9. Apply chemical product identification label to chemical jug.

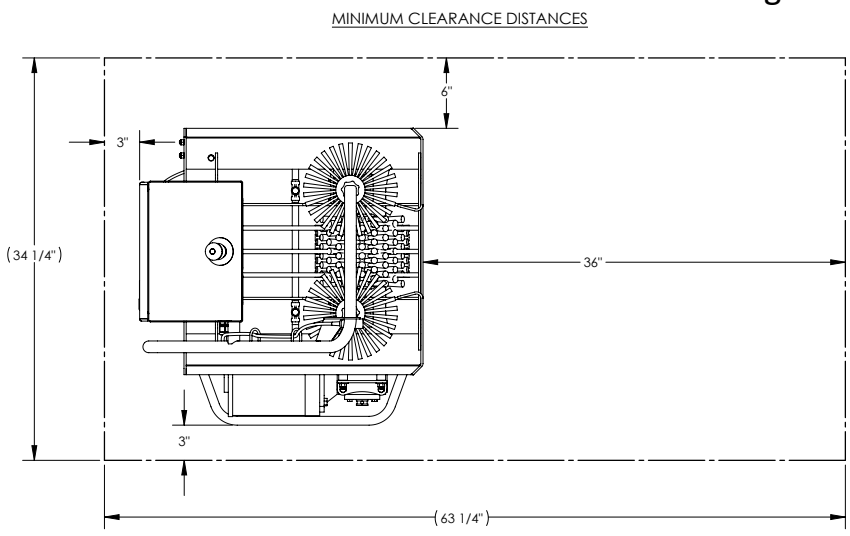
Venturi Injector Setup:

1. Choose appropriate size metering tip to achieve desired sanitizer dilution ratio stated in MSDS.
2. Screw metering tip into hose barb.
3. Drop end of plastic tubing with strainer into fluid product container.
4. Cut tubing to convenient length and slip open end over injector fitting.

Figure 1

Figure 2

Figure 3



READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Operation Instructions:

Start Up:

After completed installation of the unit:

1. Ensure the brushes and grate are properly secured in their correct positions (Figure 4).

Figure 4

Figure 5 shows incorrect grate positioning.

Figure 5

2. Turn ON sanitizing solution and water.
3. Pull the E-STOP switch up and watch for the light on the switch to signal that the unit has power.
4. Wait for 10 seconds for unit to start up completely.
5. The unit is now ready for activation using the sensor.
6. Before placing footwear into the unit, test that the unit is working properly by activating the sensor.

Operation:

Before beginning unit operation, ensure solid footing and use both hands when operating the unit.

1. To begin unit operation, place both hands on the handle bar, breaking the beam on the sensor.
2. The brushes will start to spin.
3. Place single boot in between the side brushes and move back and forth, allowing brushes to clean all areas of the boot.
4. When finished, remove boot and repeat with second boot.

⚠ *WARNING: Always wear appropriate footwear. Secure or remove loose items on footwear to prevent entanglement.*

⚠ *WARNING: All personnel using this unit must be familiar with the information contained in the user manual. Follow all installation and maintenance instructions.*

⚠ *WARNING: Use only for intended use as described in this manual.*

⚠ *WARNING: Always follow safety precautions and obey warning labels. Failure to do so could result in injury or death.*

Shut Down for Maintenance:

To shut down the unit for service or general maintenance:

1. Press the E-STOP switch down on top of the control box.
2. Disconnect power to unit.

   ⚠ *DANGER: Always follow plant and OSHA guidelines about the use of lock-out tags with the disconnect switch. The control box has 110 and 220 VAC inside it. Take proper precautions to avoid personal injury or death.*
3. Shut OFF the sanitizer supply and remove pressure from the line.
4. The unit is now shut down and ready for service and or maintenance.

Shut Down for Cleaning/Washdown:

1. To shut down the unit for cleaning, press down on the E-STOP located on top of the control box.
2. Disconnect power to unit.

   ⚠ *DANGER: Always follow plant and OSHA guidelines about the use of lock-out tags with the disconnect switch. The control box has 110 and 220 VAC inside it. Take proper precautions to avoid personal injury or death.*

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Cleaning/Washdown:

1. Once the unit is properly shut down, it is safe to clean the unit.
2. Remove the horizontal brushes by unscrewing the fastening knobs (M1057) on top of the horizontal brushes so the brushes can be pulled out.
3. Next, remove the grate by lifting the back end and pushing it past the stainless steel tabs in the back of the unit. Then lift up on the front of the grate and pull the piece out.
4. Once the grate has been removed, twist the easy-release lever (M1032) on the right side of the unit 30-45 degrees counter-clockwise and pull to slide shaft outward until it stops.
5. The horizontal brush (M1026) can now be removed.
6. The unit can now be washed down and cleaned by conventional means while the brushes can be cleaned in a COP tank or wash machine.

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

Motor Speed Adjustment:

⚠ *DANGER: Do not open control box during washdown conditions or if someone is cleaning the unit.*

⚠ *DANGER: Only authorized personnel should open the control box while power is applied to the unit.*

1. The motor defaults at a speed of 1750 RPM at 60 Hz. The worm gear reducer has a ratio of 20:1.
2. 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.
3. The V.F. drive displays the Hz. on a small display and the knob next to it adjusts the Hz.
4. To adjust the speed, first open the control box.
5. Activate the sensor to turn on the motor.
6. As the motor is spinning, the unit will display the operating speed in Hz.
7. Turn the knob counter-clockwise to decrease the Hz, therefore decreasing the RPMs. Turning the knob clockwise will increase the RPMs.
8. Adjust the Hz. on the variable frequency drive to the desired brush speed. The minimum frequency is 30 Hz and the maximum is 60 Hz Clean-Logix recommends 70 RPM/48 Hz.

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

and

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:

Gear Reduction = 20

Motor Nameplate Frequency (Hz) = 60

Motor Nameplate RPM = 1750

and

Desired Speed in RPM = 70

--> 70 X 20 X 60 / 1750 = 48 Hz

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Drive Parameter Settings:
Allen Bradley 4M Variable Frequency Drive

⚠*DANGER: Do not open control box during washdown conditions or if someone is cleaning the unit.*

⚠*DANGER: Only authorized personnel should open the control box while power is applied to the unit.*

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 In1 Sel	3	N/A
t221	Relay Out Sel	1	N/A

Timer Setting:
Schneider Magnecraft 821TD10H-UNI Timer

1. Function D “Off Delay” (S Break)
2. Time range: 1-10 seconds
3. Setting: 1 second

Venturi Setting:

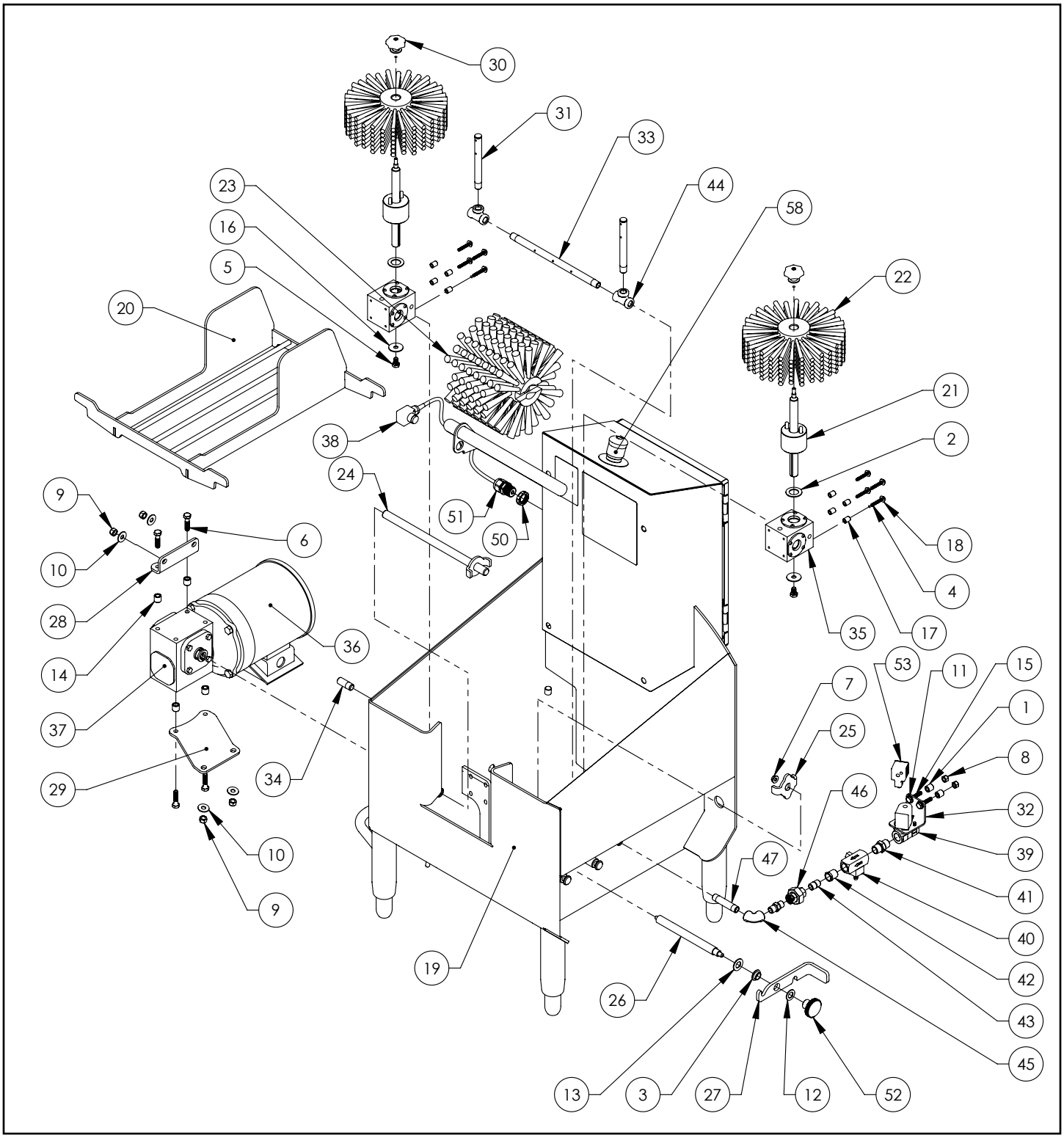
1. Turn adjustment screw clockwise until it stops.
2. Turn adjustment screw counter clockwise 3-1/2 full turns.

Motor Overload Sensor Setting:
Automation Direct ACS-200 Current Switch

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

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Model: BLX-600 | Exploded View



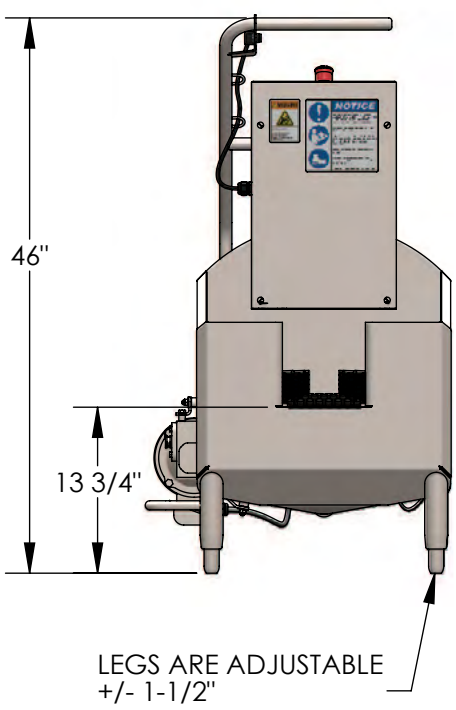
READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

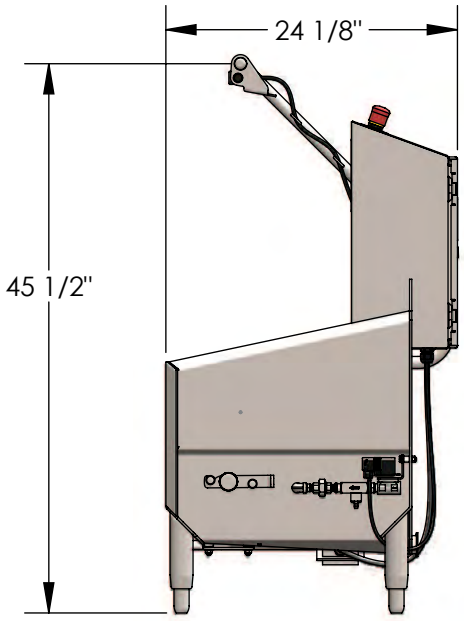
Model: BLX-600 | Parts Callout

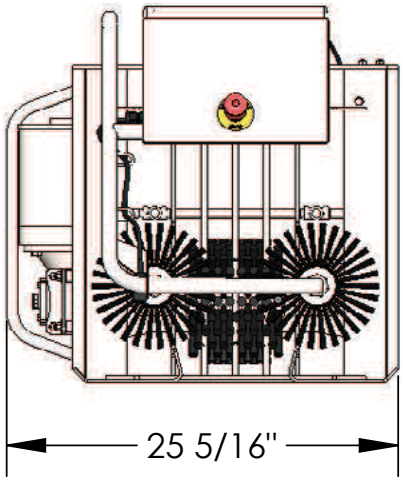
NO.	PART NUMBER	DESCRIPTION	QTY.
1	F1000	STANDOFF 1/4 X 1/2 X 1/2 SS	2
2	F1001	WASHER 3/4 X 1-1/4 X 1/16 PTFE	2
3	F1002	BEARING FLANGED 1/2" X 5/8" X 1/4" PTFE	1
4	F1017	BOLT HHC 10-32 X 1-1/4 SS	8
5	F1035	BOLT HHC 5/16-18 X 1/2 SS	2
6	F1040	BOLT SHCS 5/16-18 X 1-1/4 SS	4
7	F1046	NUT FLANGED 1/4-20 SS	1
8	F1047	NUT NYLOCK 1/4-20 SS	2
9	F1052	NUT NYLOCK 5/16-18 SS	4
10	F1054	WASHER 5/16 316SS TYPE B	4
11	F1056	WASHER 1/4 SS TYPE A	2
12	F1078	WASHER1/2" X 7/8" X 1/16" UHMW	1
13	F1079	WASHER 1/2 SS TYPE B NARROW	1
14	F1080	STANDOFF 5/16 X 17/32 X 1/2 SS	4
15	F1083	BOLT HHC 1/4-20 X 1-1/4 SS	2
16	F1085	WASHER FENDER 5/16 SS	2
17	F1106	STANDOFF #10 X 3/8 X 1/2 SS	8
18	F1119	WASHER #10 SS TYPE A	8
19	M1000	TUB WELDMENT BLX-600	1
20	M1016	GRATE WELDMENT BLX-600	1
21	M1021	BRUSH SHAFT WELDMENT BLX-600	2
22	M1025	BRUSH 8 X 2-1/2	2
23	M1026	Horizontal Brush 8" Dia. X 6" Wide	1
24	M1027	DRIVE SHAFT 1 WELDMENT	1
25	M1030	BRUSH COUPLER	1
26	M1031	DRIVE SHAFT 2	1
27	M1032	SHAFT LATCH	1
28	M1033	SS MOTOR MOUNT UPPER	1
29	M1034	SS MOTOR MOUNT LOWER	1
30	M1057	BRUSH KNOB WELDMENT FEMALE	2
31	M1085	VERTICAL SPRAY BAR WELDMENT	2
32	M1134	SOLENOID BRACKET	1
33	M1135	SPRAY POLE BLX-600	1
34	M1136	PIPE SUPPORT POST	1
35	P1000	GEARBOX RIGHT ANGLE 5/8 X 5/8 RH SS	2
36	P1005	MOTOR 1/2 HP 1750RPM SS 56C	1
37	P1006	GEAR REDUCER 20:1 5/8 SS	1
38	P1041	PHOTO EYE	1
39	P1046	SOLENOID 3/8 SS	1
40	P1047	VENTURI INJECTOR 3/8 SS	1
41	P1100	PIPE HEX NIPPLE 3/8 SS	1
42	P1101	PIPE BUSHING 3/8 X 1/4 SS	1
43	P1102	PIPE NIPPLE 1/4 CLOSE SS	1
44	P1103	PIPE TEE 1/4 SS	2
45	P1104	PIPE ELBOW 1/4 X 90 SS	1
46	P1105	PIPE UNION 1/4 SS	1
47	P1106	PIPE NIPPLE 1/4 X 2-1/2 SS	1
48	P1117	LEGEND PLATE E-STOP	1
49	P1147	CORD GRIP 1/2 NPT X .17-.45 NYL	3
50	P1148	CORD GRIP NUT 1/2 NPS NYL	5
51	P1184	CORD GRIP 1/2" NPT X .095" - .290" NYLON	2
52	P1186	KNOB 5/16-18 BLIND KNURLED SS	1
53	P1187	SOLENOID CABLE 18mm DIN 24V	1
54	P1188	PIPE HEX NIPPLE 1/4 SS	1
55	P1245	LABEL MOVING PARTS	1
56	P1246	LABEL DANGER ELECTRICAL	1
57	P1247	LABEL NOTICE BLX	LABEL NOTICE BLX
58	P1449	E-STOP PUSH PULL ILLUMINATED 22mm 2NC	1
59	M1330	PANEL ASSY BLX 16X12 CSD	1

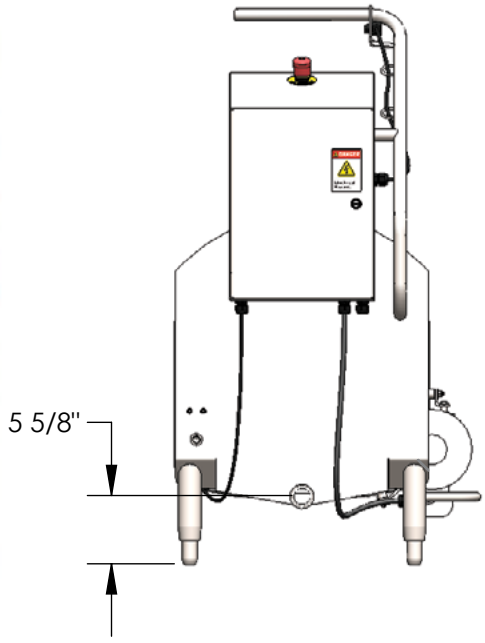
READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Model: BLX-600 | Dimensions Diagram



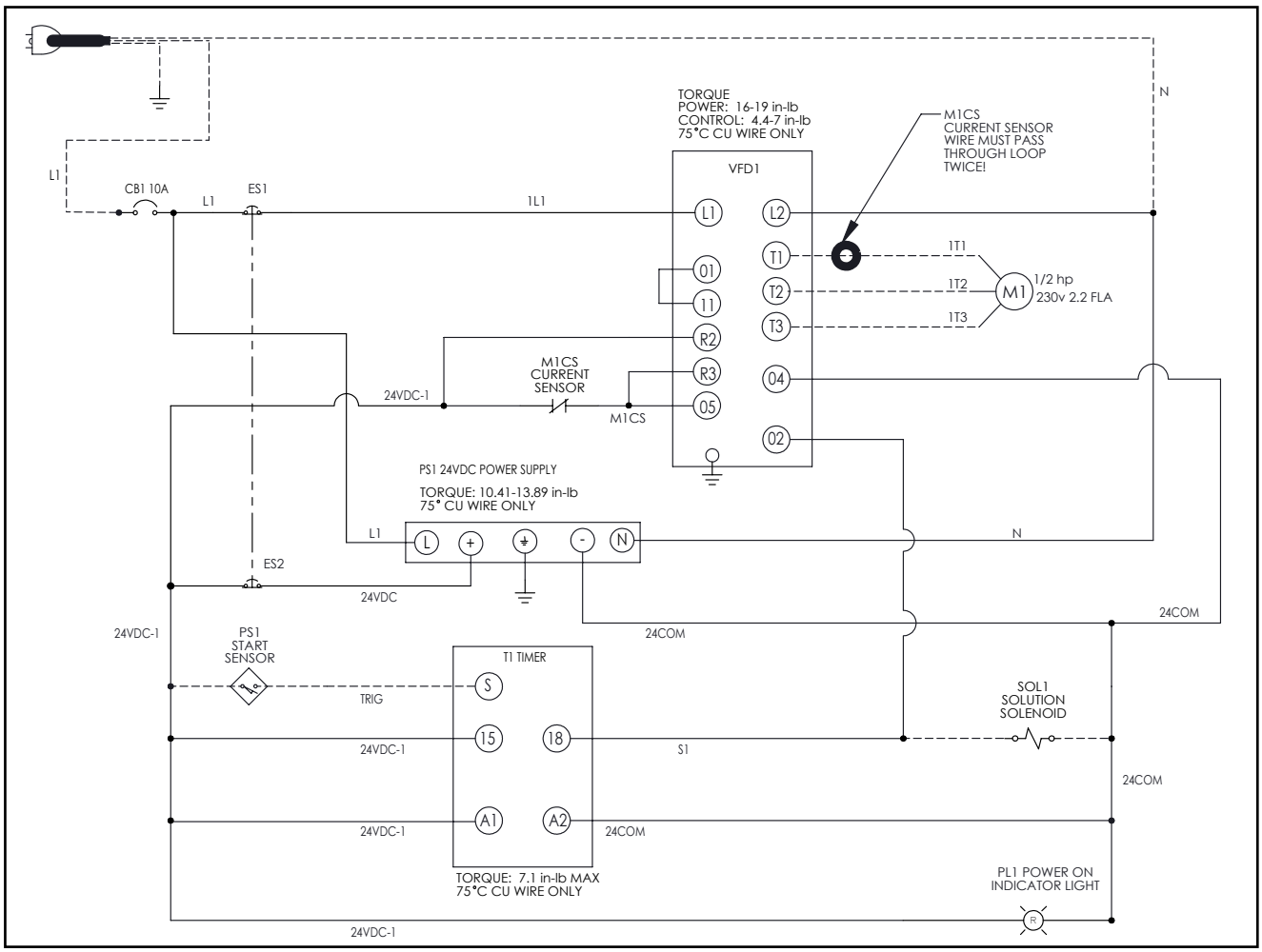






READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Electrical Diagram:



LEGEND

---------- INDICATES FIELD WIRING
- – —— – – – INDICATES MECHANICAL LINKAGE

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Troubleshooting Instructions:

Unit will not operate and E-STOP is not illuminated:

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

Unit will not operate and E-STOP is illuminated.

- Check that the sensor is operating properly.
- Make sure 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:

- Check that water line is attached, reads at least 35 PSI, and is turned on.
- Check spray bar and make sure the holes are not clogged with debris.
- Check that the water and sanitizer connections to the solenoid are firmly in place.
- Check that chemical jug has liquid in it.

Unit is leaking onto floor:

- Check to make sure all joints are sealed.

READ ALL INSTRUCTIONS BEFORE OPERATING EQUIPMENT

Operation Instructions:

Solenoid & Venturi Injector Maintenance:

1. Press the E-STOP switch down on top of the control box.
2. Disconnect power to unit.

   ⚠ *DANGER: Always follow plant and OSHA guidelines about the use of lock-out tags with the disconnect switch. The control box has 110 and 220 VAC inside it. Take proper precautions to avoid personal injury or death.*
3. Shut OFF the sanitizer supply and remove pressure from the line.
4. The unit is now shut down and ready for maintenance.
5. Take a small phillips screwdriver to remove the connection from the solenoid to the control box.
6. Take a 7/16” socket wrench and remove the locknuts holding the solenoid bracket to the unit.
7. Once the locknuts and washers are removed from the bracket, pull the assembly away from the unit so the Venturi injector and solenoid can be twisted off from the spray bars.
8. Unscrew the Venturi injector from the 3/8” pipe nipple.
9. 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 any debris can be removed.