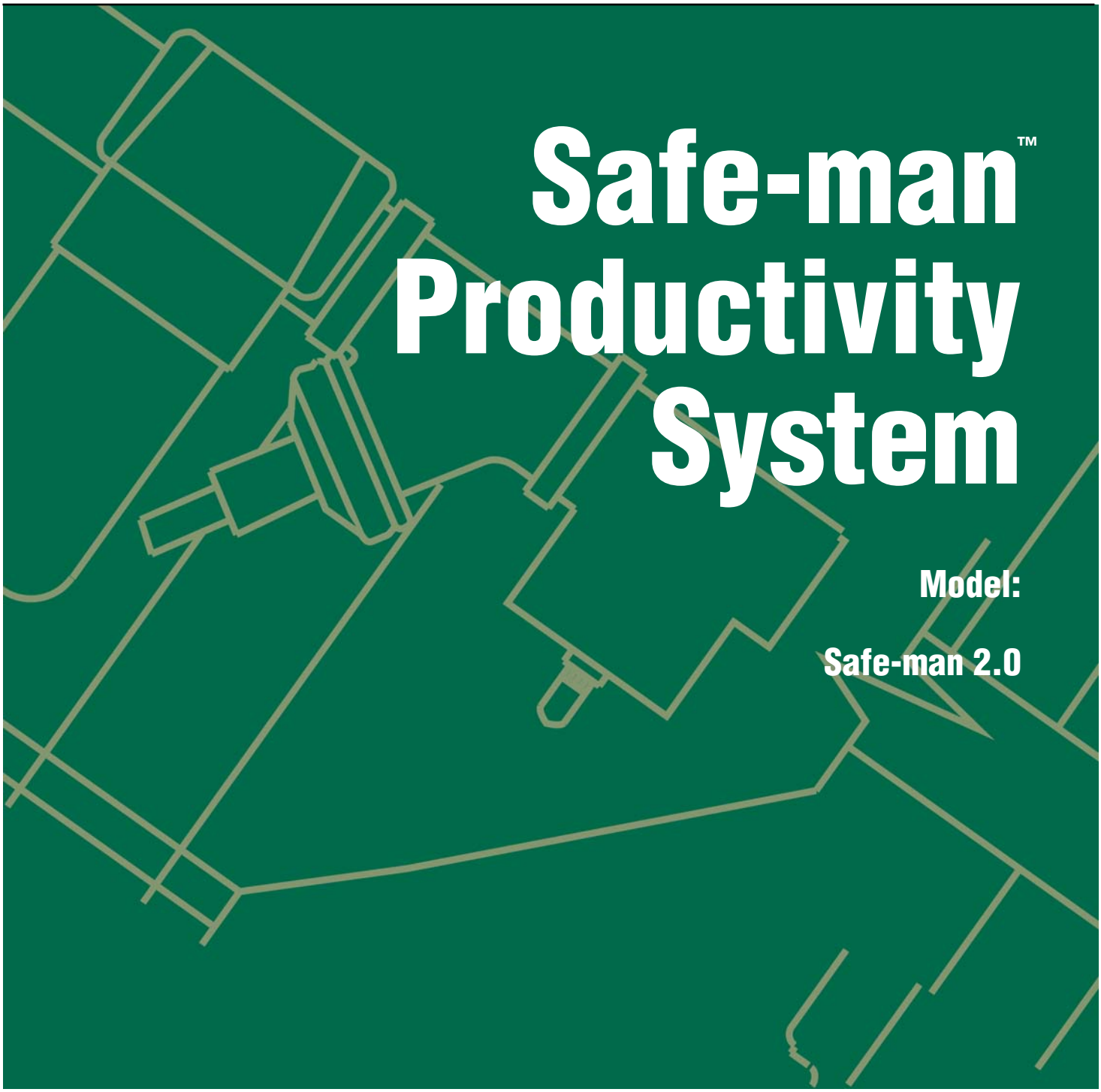


Safe-man™ Productivity System

Model:

Safe-man 2.0

Sponge-Jet, Inc.

235 Heritage Ave., Suite 2, Portsmouth, NH 03801 USA
+1-603-610-7950 / www.spongejet.com

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IMPORTANT NOTE: While parts, systems, components, operational procedures may be the same between equipment models, the images provided in this manual may vary from model to model.

1.0 Introduction



Basic Components

1: **Control Panel**
2: **Nozzle Holder** (not included)
3: **Control Pad**
4: **Nozzle** (not included)
5: **LED Light Assembly**
6: **Protective Lens Cover**
7: **Mounting Screw**
8: **O-Ring**
9: **Green Tubing**
10: **In-line Deadman**
11: **Neoprene Sleeve**
12: **In-line Deadman Equalizing Valve**
13: **Gorilla Cable™** *(extensions sold separately)*
14: **Hanging Bracket**
15: **Control Panel Power Mains Plug**

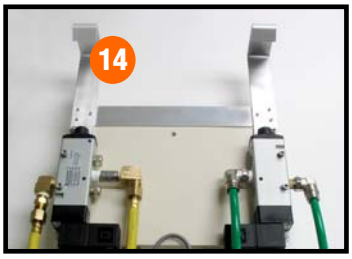






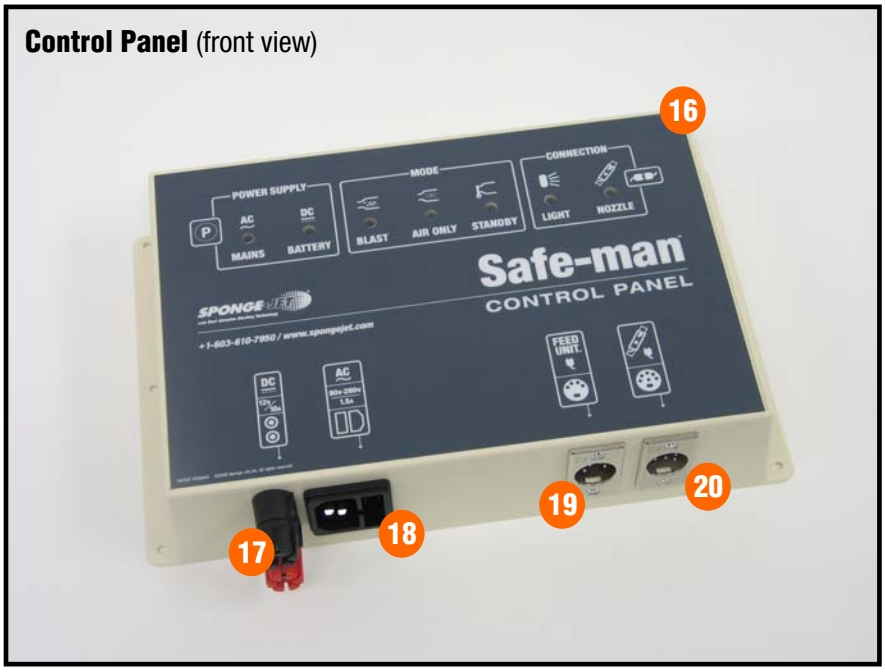








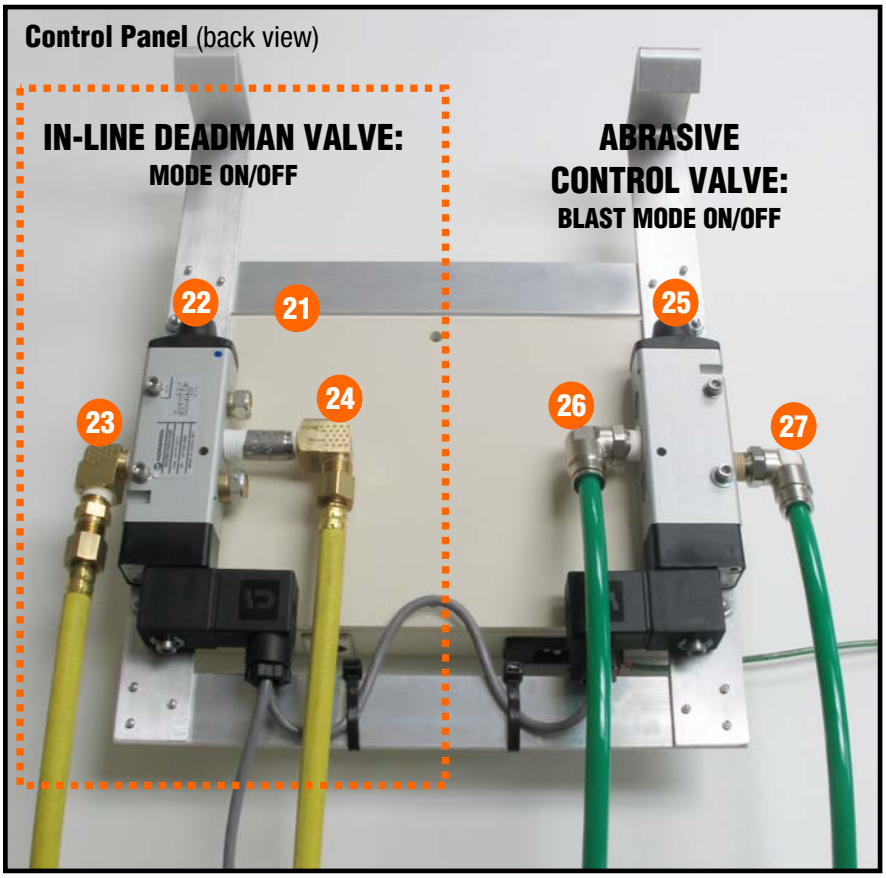
Control Panel (front view)



Basic Components *(continued)*

16: **Control Panel** (front view)
17: **DC Power Terminal**
18: **Mains AC Power Socket**
19: **Feed Unit Socket (Solenoid Valves)**
20: **Deadman Control Socket**

Control Panel (back view)



21: **Control Panel** (rear view)
22: **Deadman Solenoid Valve**
23: **Signal Air – Deadman** (Blasting)
24: **Supply Air**
25: **Abrasive Solenoid Valve**
26: **Supply Air**
27: **Signal Air – Abrasive Control**

2.0 Safety Checklist

- This Unit contains electrical and pressurized components which control a pressurized system. Only trained operators should adjust, maintain and repair it.
- Be sure to observe all applicable safety requirements from the blast unit manufacturer as well as industrial, local, state/province and government regulations.
- Inbound pressure should never exceed 8.6bar (125psi).
- To prevent electrostatic buildup and possible electric discharge, the unit must be grounded at the black DC Power Terminal.
- Operators and people in proximity to blasting should always wear eye and hearing protection with appropriate respiratory equipment and clothing, which may depend on the type of coating or contaminant being removed.
- Improper configuration and installation may cause unintentional start-up and can result in personal injury. Contact Sponge-Jet Technical Services at techservices@spongejet.com/+1-603-610-7950 for assistance.
- This unit is not designed to operate in heavy rain, snow or temperature extremes.

3.0 Requirements

3.1 Equipment Requirements

Safe-man™ Systems are designed to operate with Sponge-Jet Feed Unit™s and other conventional abrasive blast vessels. Unit functionality depends on functionality of the abrasive blasting vessel. This unit is designed to operate up to 91m (300 ft) from the abrasive blasting vessel.

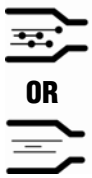
This unit provides three basic functions:



LED Nozzle Light



In-line Deadman; functions as on/off control of blast vessel



Blast mode setting switches between blasting with air only (air wash) and blasting with air and abrasives (normal blasting). TO UTILIZE THIS FUNCTION, THE ABRASIVE BLAST VESSEL MUST HAVE THIS PNEUMATIC CONTROL FEATURE.
NOTE: all Sponge-Jet Feed Unit™ models have this feature.

3.2 Power Requirements

This unit can operate with either AC or DC power supply.

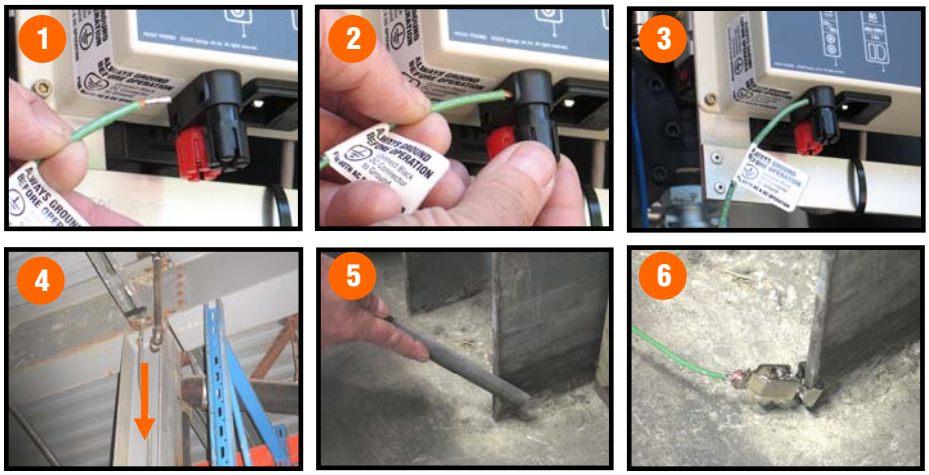
AC operating range is 90-264 volts, 47-63Hz (80watts)

DC operating range is 10-15 volts 10amp (120watts). **Note:** DC is typically connected to compressor battery with an adequate sized alternator.

4.0 Installation

4.1 Grounding

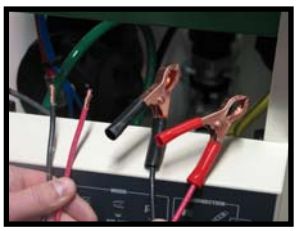
To prevent electrostatic buildup and possible electric discharge, harm to the unit or to the operator, the unit must ALWAYS be properly grounded / bonded.



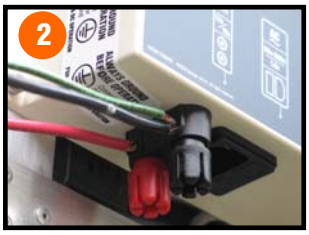
4.2 Connecting AC Power

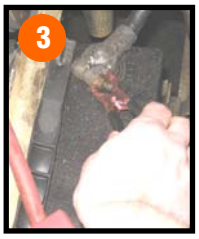


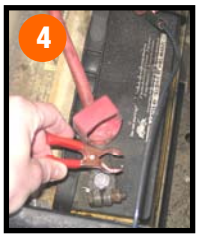
4.3 Connecting DC Power











DC Power Wire Gauge Requirements

Maximum Distance	Wire Gauge
Up to 7.5m (25ft)	14
Up to 15m (50ft)	12
Up to 28m (75ft)	10

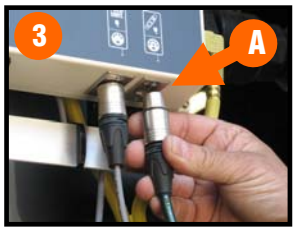
4.4 Connecting Control Panel (Cables)





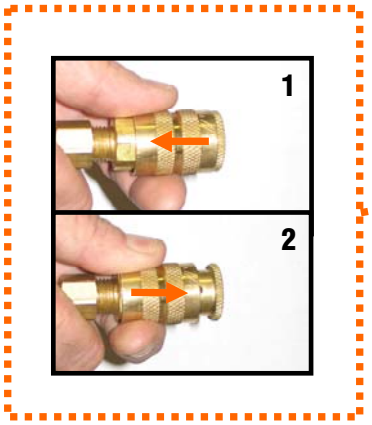


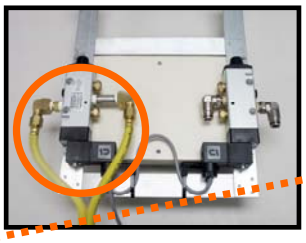


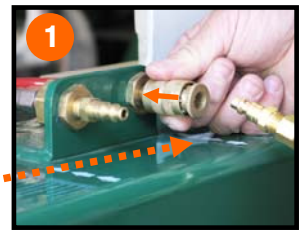


4.5 Connecting Control Panel (In-line Deadman Valve)

Connect yellow twinlines where pneumatic Deadman typically connect. If system architecture and fittings are not the same, see section **4.7 Connecting Control Panel (Customized Connection).**





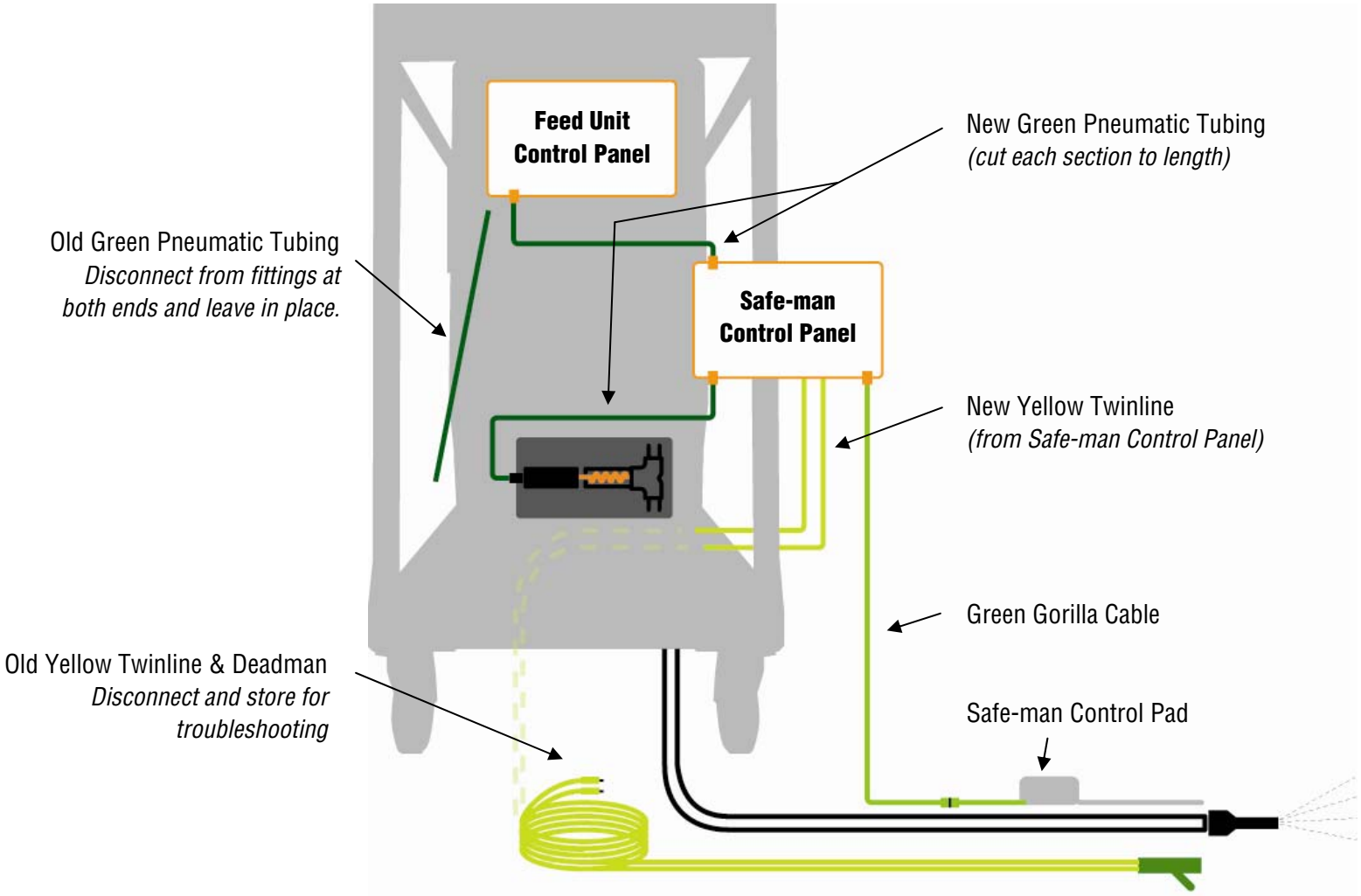




(Sponge-Jet Models ONLY)

4.6 Connecting Control Panel (Abrasive Control Valve)

Figure 1 – Feed Unit Set-up Schematic

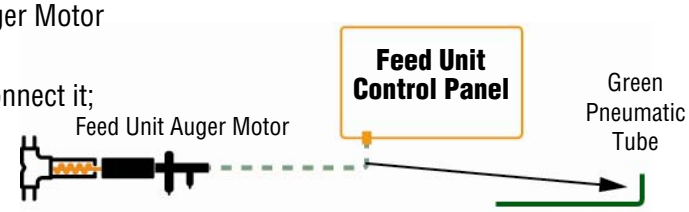


4.6 Connecting Control Panel (Abrasive Control Valve)

(continued)

For Sponge-Jet Models ONLY

1. Locate Green Tubing which connects to Feed Unit Auger Motor
2. Disconnect Green Tubing; do not discard
3. Follow Green Tubing to Feed Unit Control Panel, disconnect it; do not discard
4. Go to Step 5



How to Disconnect Pneumatic Tubing



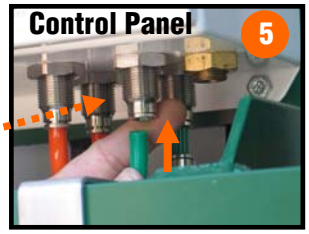
Press tube down



Hold return ring down



Pull tube out

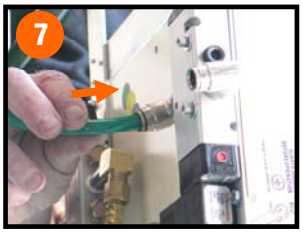


Replace old Green Tubing with new Green Tube

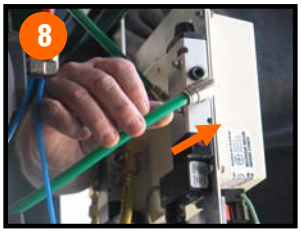


Cut new Green Tubing to needed length





Insert new Green Tubing from Feed Unit Control Panel into Supply of Abrasive Control Solenoid Valve on Safe-man Control Panel



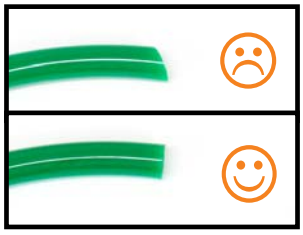
Insert leftover new Green Tubing into "Signal Air" fitting of Abrasive Control Solenoid Valve of Safe-man Control Panel



Insert the other end of new Green Tubing into fitting that leads to Feed Unit Auger Motor



Cut excess Green Tubing if desired

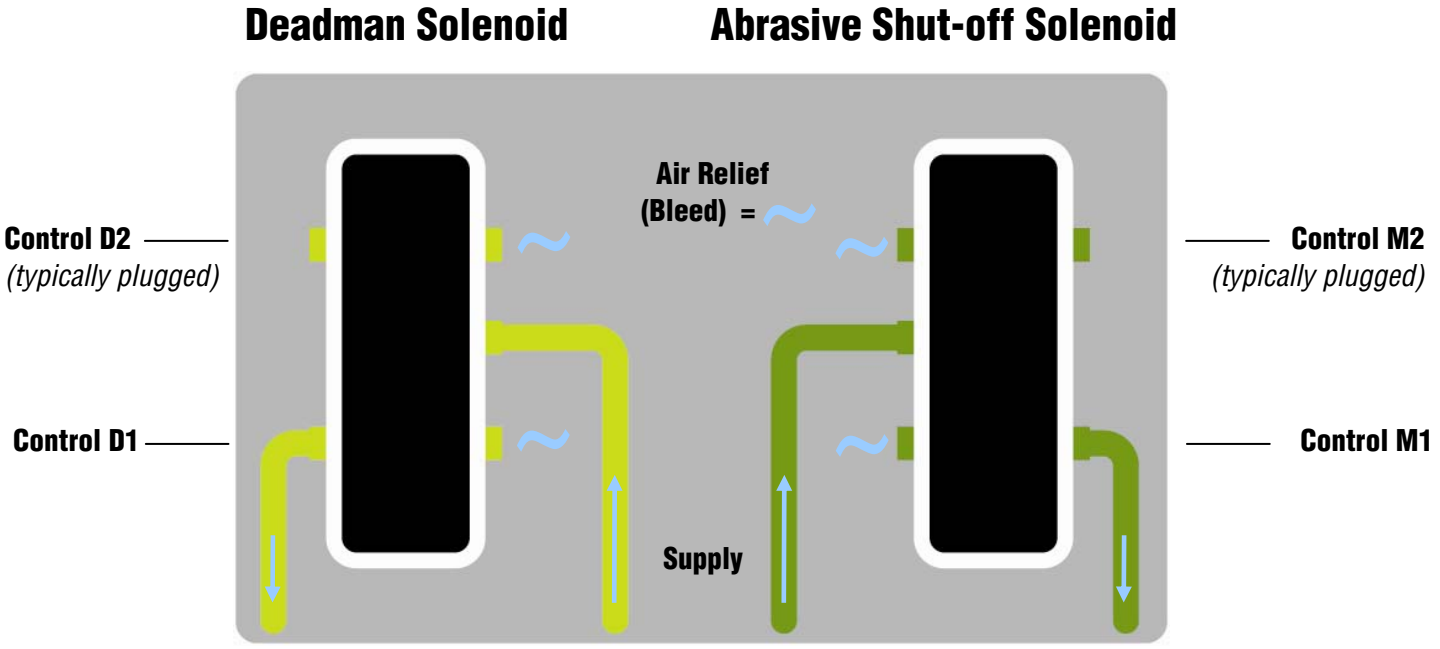




4.7 Connecting Control Panel (Customized Connection)

The Safe-man controls pneumatic solenoid valves which send signals to the blast vessel. Solenoid valves can be customized to accommodate the on/off or off/on requirements of other non-Sponge-Jet blast vessels. This unit is factory-configured to work with Sponge-Jet Feed Units and works with most other units. Use Figure 2 to match the air signal function to the desired function of your blast vessel.

Figure 2 – Safe-man Solenoid Schematic (Safe-man Back View)



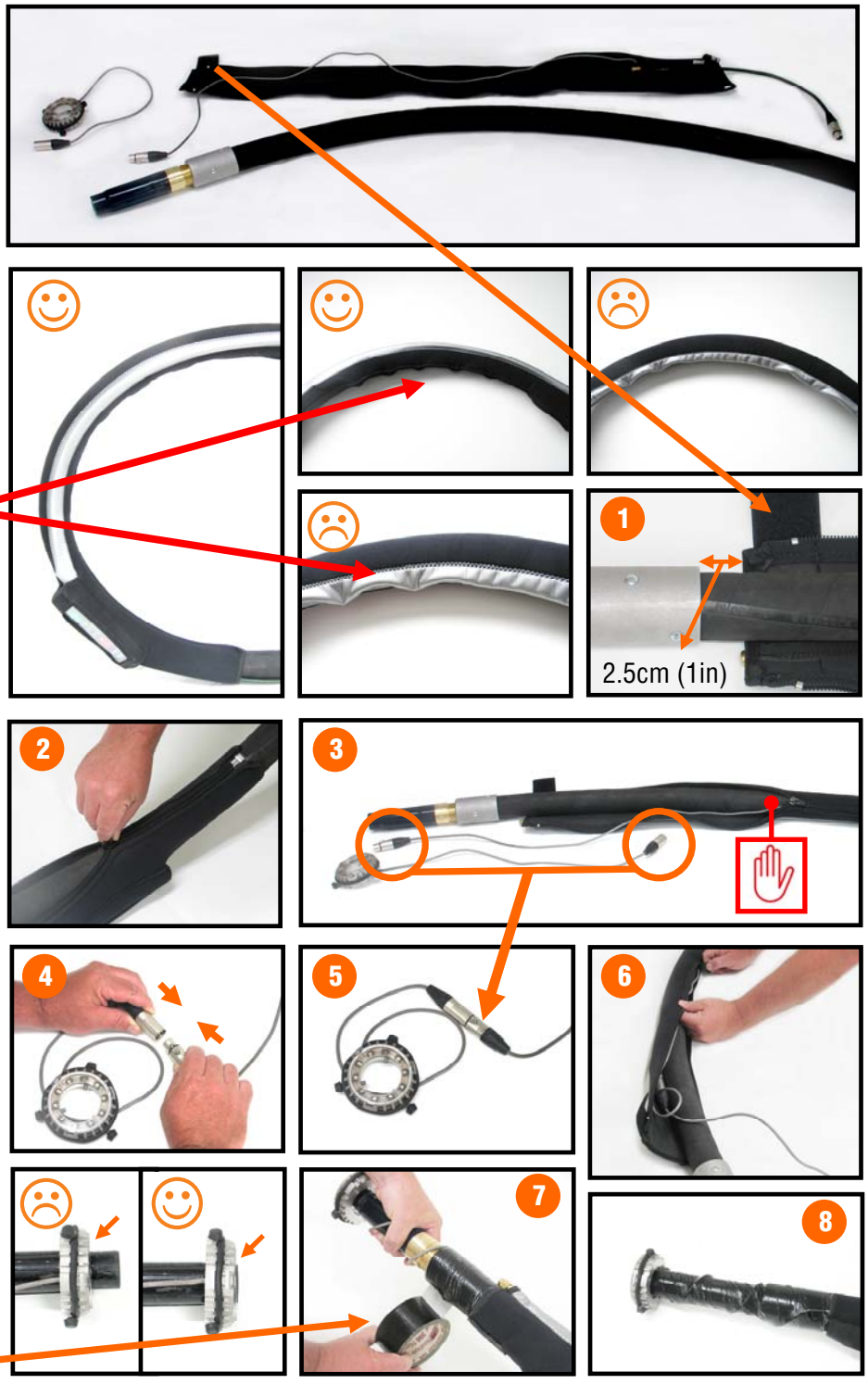
Deadman Solenoid

In-line Deadman Function	**Control D1** *(Installed from Factory)*	**Control D2** *(Plugged from Factory)*
Activated / ON – Blast Mode	Air Signal	No Air Signal
Inactivated / OFF – Not Blasting	No Air Signal	Air Signal
Shut Down (no power)	No Air Signal	Air Signal

Abrasive Shut-Off Valve

Control Pad Mode	**Control M1** *(Installed from Factory)*	**Control M2** *(Plugged from Factory)*
Abrasive	Air Signal	No Air Signal
No Abrasive	No Air Signal	Air Signal
Shut Down (no Power)	No Air Signal	Air Signal

4.8 Assembling Control Pad and In-line Deadman



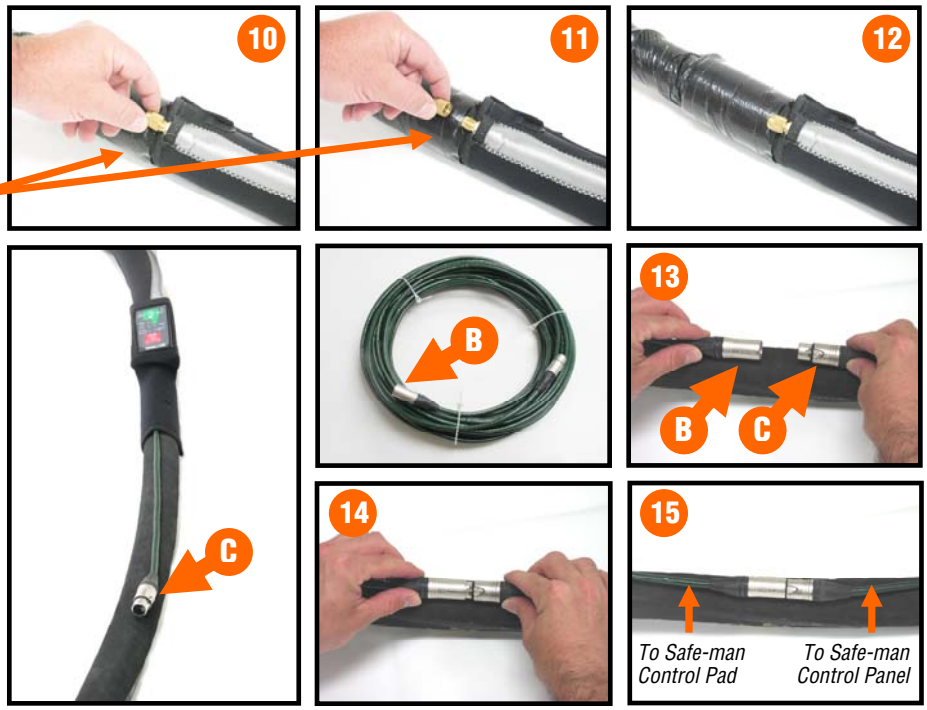
NOTE: *Adjust Safe-man Neoprene Sleeve to lay flat. NEVER locate In-line Deadman on inside curve of blast hose*

CAUTION: Never use Safe-man when In-line Deadman has severe creases or folds. This condition can uncontrollably activate blasting.

Optional - for infrequent nozzle changes

4.8 Assembling Control Pad and In-line Deadman *(continued)*

Open and close Deadman Equalizing Valve





One end of Gorilla Cable plugs into Safe-man

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+



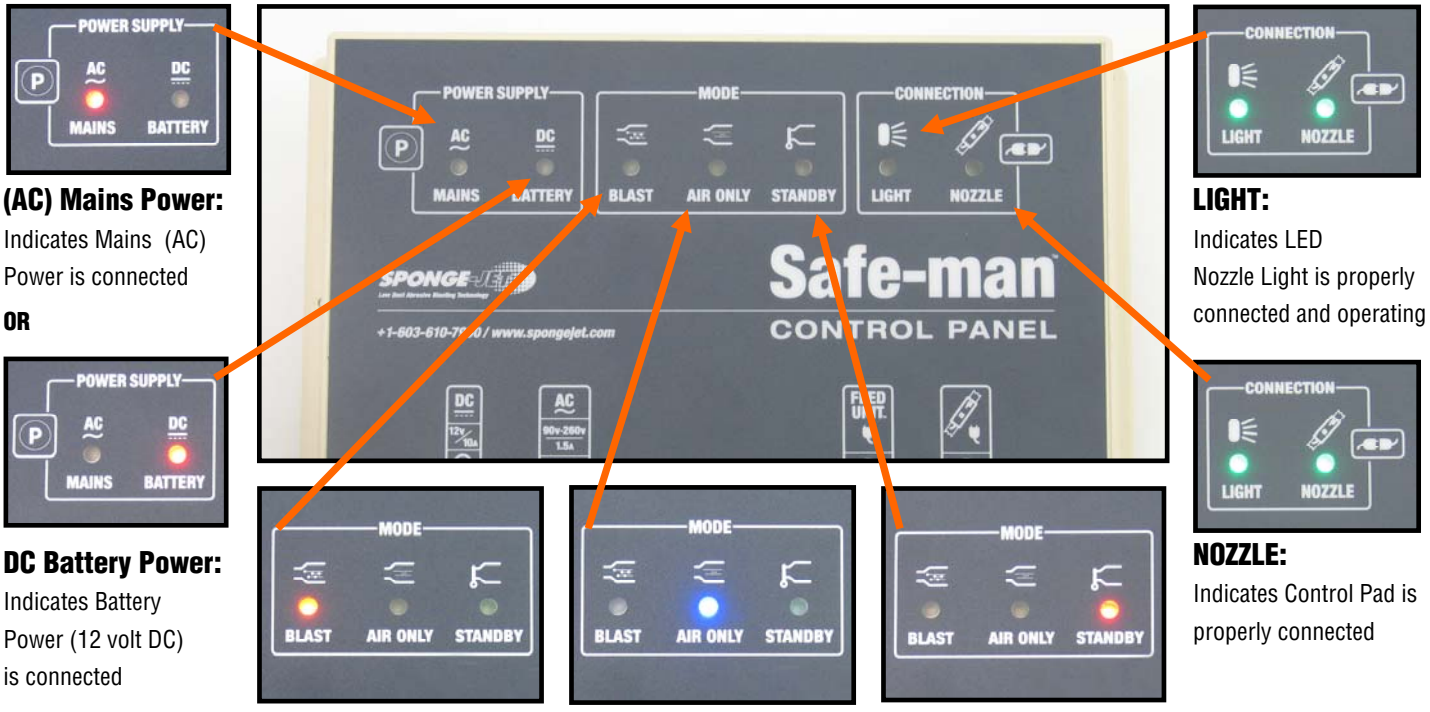
The other end of Gorilla Cable plugs into Gorilla Cable leading to Safe-man Control Pad. ***Note:*** *additional Gorilla™ cable extensions can be added as needed.*

5.0 Operation

Before Operating the Safe-man:

- Verify the Feed Unit™ (blast vessel) is properly setup and operating correctly – as directed by manufacturer.
- Verify that unit is secured in an appropriate manner for operation.
- Inspect all **Blast Hoses** and connections. Repair or replace worn or damaged components. Ensure all couplings are equipped with coupling gaskets, safety pins and hose restraints – and all are properly installed.
- Insure blast vessel, its hoses and Safe-man black DC port are properly grounded.

Figure 2 – Safe-man Control Panel Operation



(AC) Mains Power:
Indicates Mains (AC) Power is connected

OR

DC Battery Power:
Indicates Battery Power (12 volt DC) is connected

LIGHT:
Indicates LED Nozzle Light is properly connected and operating

NOZZLE:
Indicates Control Pad is properly connected

BLAST:
Indicates Air and Abrasives are exiting the Nozzle

AIR ONLY:
Indicates Air only is exiting Nozzle

STANDBY:
Indicates neither Air nor Abrasives and Air are exiting the nozzle

Figure 2 – Safe-man Control Pad Operation

Green Safety Switch = and Indicator Light

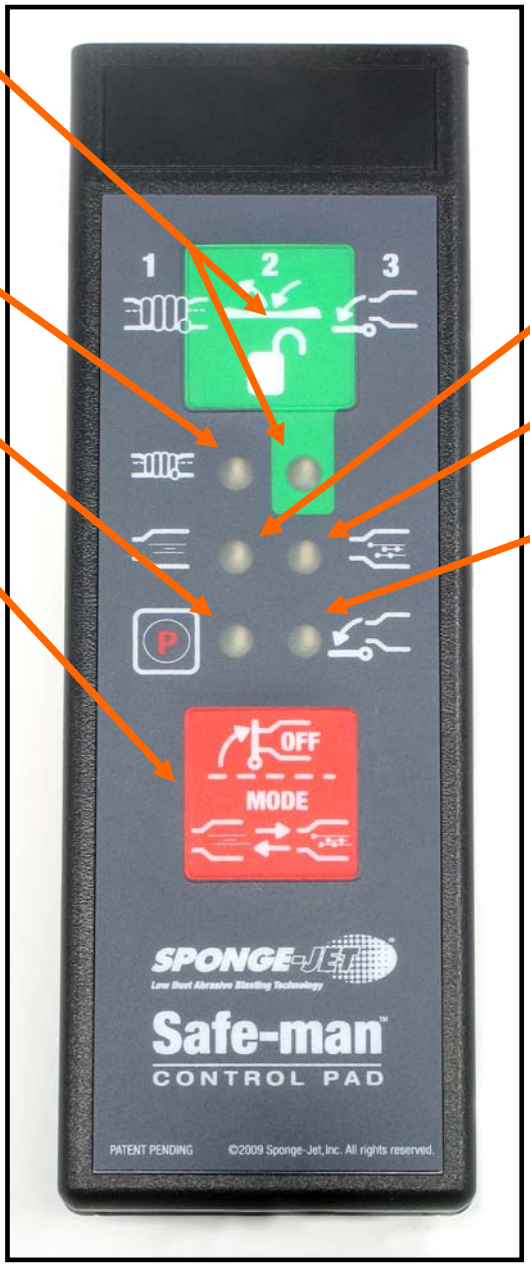
Indicator lights…

In-line Deadman =

Connection to a powered control box =

Red ON/OFF Mode Switch =

- Toggles Abrasive Cut-off Valve ON/OFF.
- Also deactivates Deadman (Off).



Indicator lights…

= Air Only Mode

= Air and Abrasives Mode

= Blast Mode Activated

USING THE CONTROL PAD

As a Deadman…



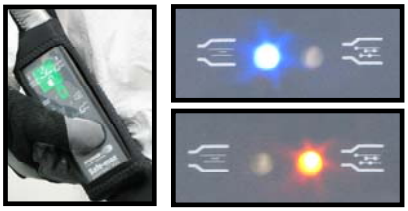
Press and Hold to Blast

+



Press and Release (Green Safety)

MODE



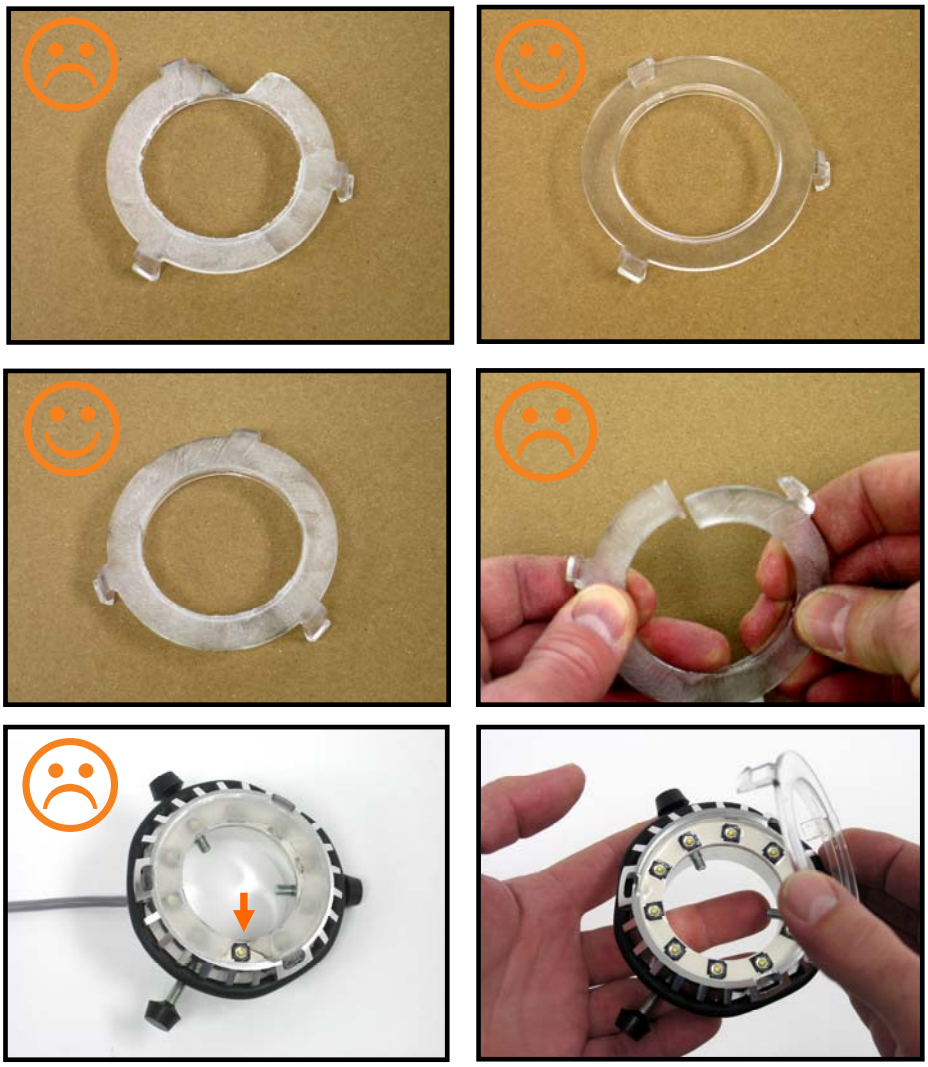
Press Switch and Release; toggles between ON/OFF of abrasive shut-off valve

6.0 Maintenance

Routine maintenance is required to provide long and reliable equipment life. This Unit must be shut down and disconnected prior to conducting maintenance.

Prior to each use:

- Inspect all hoses, cables, connections and buttons for excessive or abnormal wear and damage.
- Inspect **Protective Lens Cover** for damage.



If sensitivity of Deadman changes:

- Reset In-line Deadman pressure by removing and reinserting the cap on **In-line Deadman Equalizing Valve**





7.0 Troubleshooting

No nozzle output when depressing In-line Deadman and triggering (press and release) Green Safety Button	Check Control Panel indicator “Nozzle” light is illuminated. **If Control Panel indicator has power but “Nozzle” light is NOT illuminated…** Check connections from Control Pad to In-line Deadman and Gorilla Cable extensions. If **Control Panel Indicator “Nozzle”** light is illuminated and Control Panel indicator lights work when switches are depressed, inspect/replace solenoid. Confirm **In-line Deadman Equalizing Valve** is tightly mounted, check for obstructions; check rubber seal. If necessary remove, clean/replace, insert and re-tighten.
LED Nozzle Light shuts off or blinks slowly	This is normal operation, IF Safe-man has been sitting without air flow from blasting. To remain cool (in absence of air flow) LED Nozzle Light shuts down intermittently - protecting it from overheating. If LED Nozzle Light flashes during blasting and the nozzle is mounted properly at end of the nozzle, inspect for loose connections to light.

NOTES:

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MODEL#: _____

SERIAL#: _____