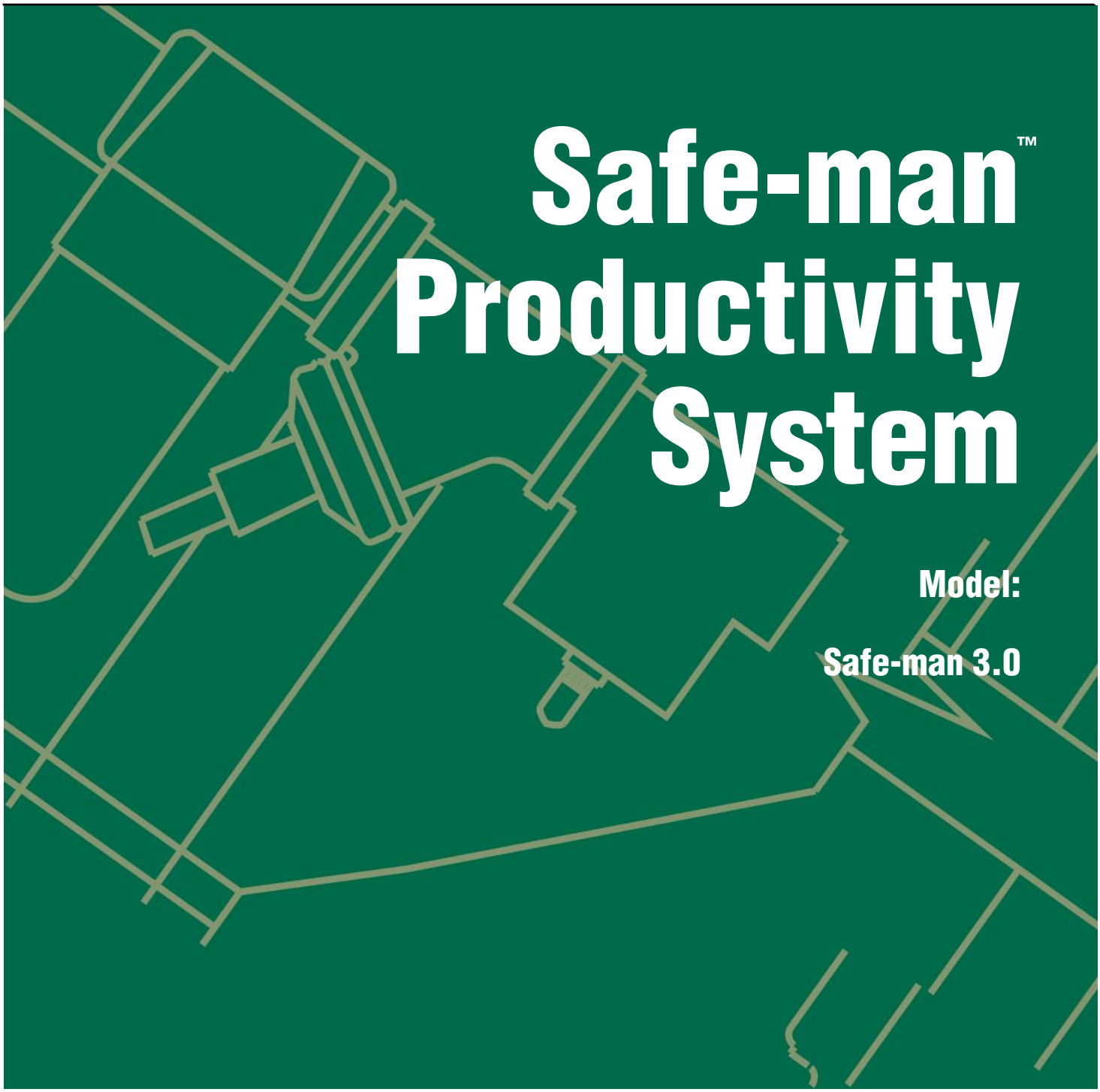


Safe-man™ Productivity System

Model:

Safe-man 3.0

Sponge-Jet, Inc.

14 Patterson Lane, Newington, NH 03801 USA

+1-603-610-7950 / www.safemansystem.com

Table of Contents

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.

This manual represents the following models:

Safe-man 3.0c

English Language is Original Instructions.

Translated from Original Instructions.

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: **Twinline**
13: **Gorilla Cable™** *(extensions sold separately)*
14: **Touch Screen Display**
15: **Control Panel Power Mains Plug**

Basic Components *(continued)*

16: **Control Panel** (right side view)

17: **Mains AC Power Socket**

18: **Deadman Control Socket**

19: **Control Panel** (left side view)

20: **Control Panel** (inside view)

ABRASIVE CONTROL:

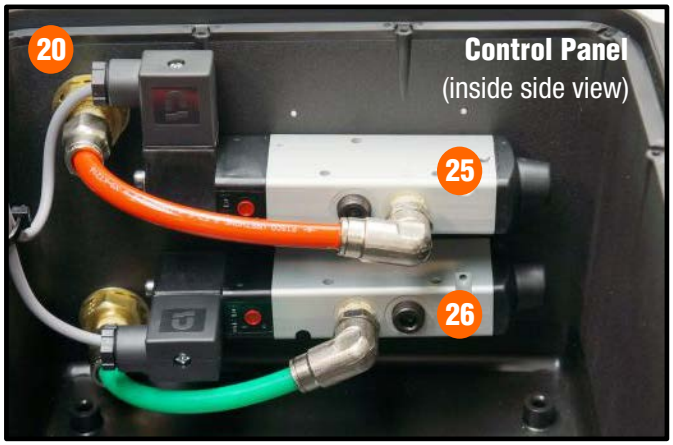
21: **Supply Air** - (Option for non-Sponge-Jet equipment)

22: **Signal Air** - (Option for non-Sponge-Jet equipment)

DEADMAN CONTROL:

23: **Supply Air**

24: **Signal Air – Abrasive Control**



25: **Deadman Control Solenoid Valve**

26: **Abrasive Control Solenoid Valve**

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 7bar (100psi).
- 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

OR

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 is designed to operate using an AC power supply.

AC operating range is 100-240 volts, 50-60Hz (80watts)

For use in areas without power, an automotive inverter connected to a compressor battery is commonly used.

4.0 Installation

4.1 Connect Power Cord

4.2 Connect Gorilla Cable

4

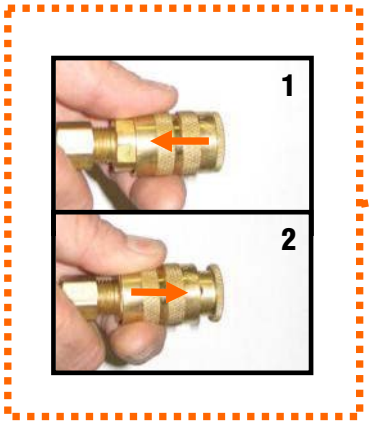
4.3 Connect Twinlines

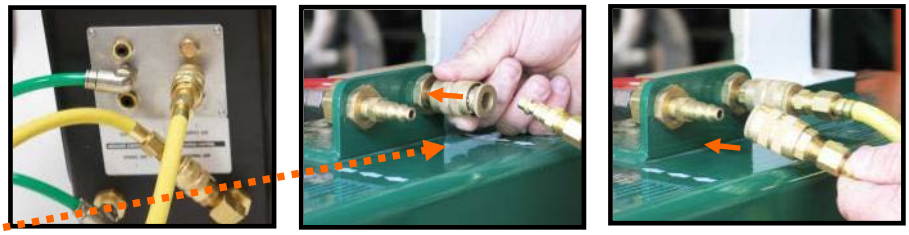
4

4.4 Remove Items from Inside Safe-man

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).**

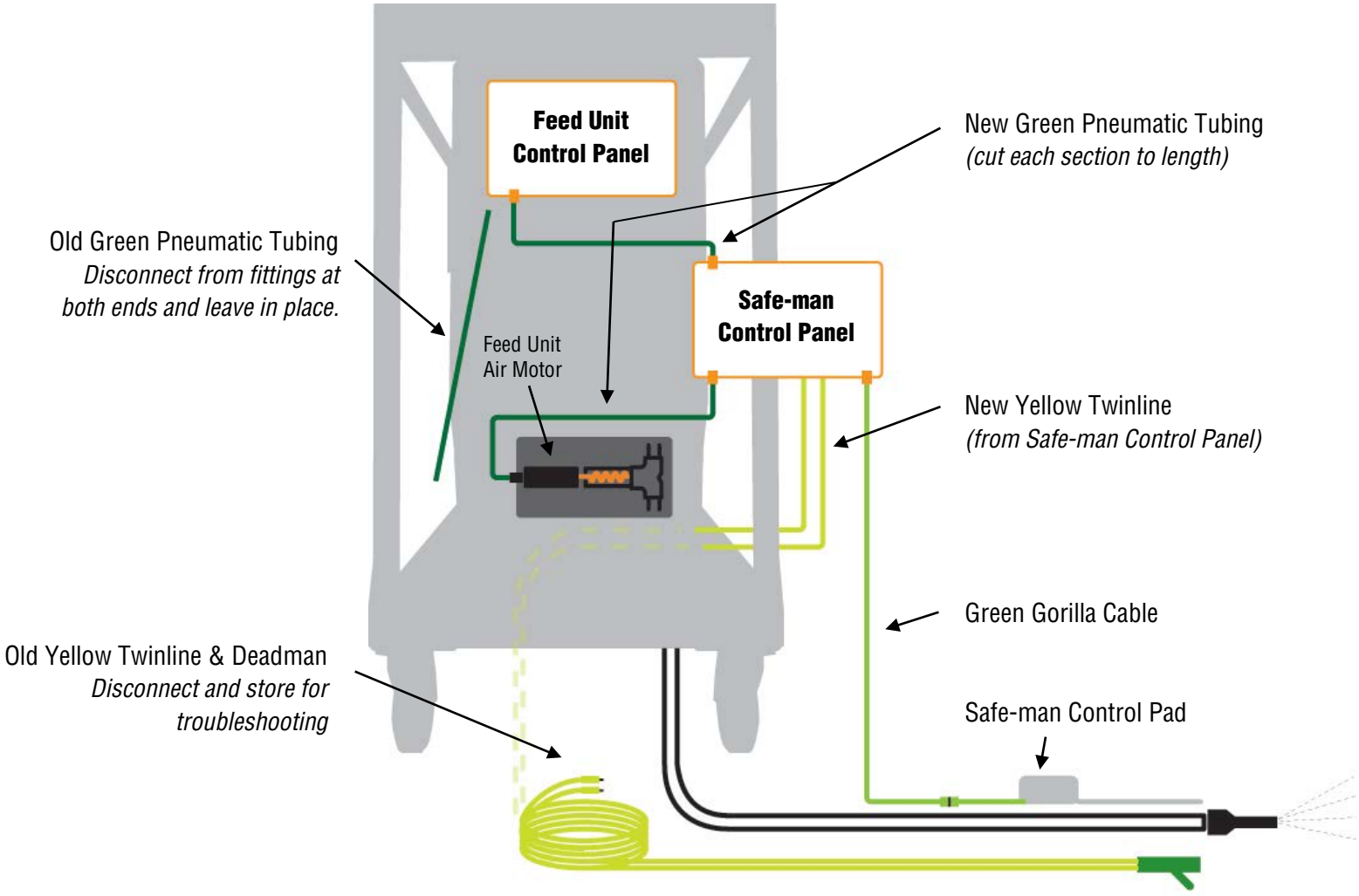




(Sponge-Jet Models ONLY)

4.5 Connecting Control Panel (Abrasive Control Valve)

Figure 1 – Feed Unit Set-up Schematic

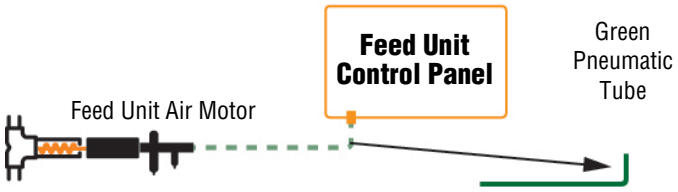


4.6 Connecting Control Panel (Abrasive Control Valve)

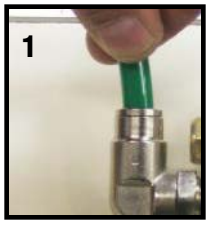
(continued)

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;



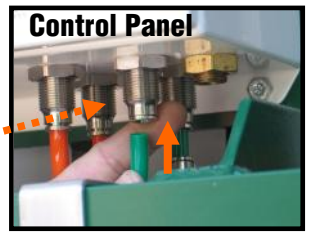
How to Disconnect Pneumatic Tubing



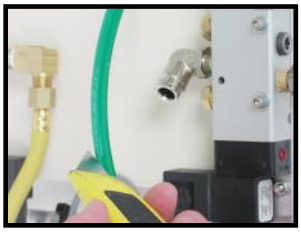
Press tube down

Hold return ring down

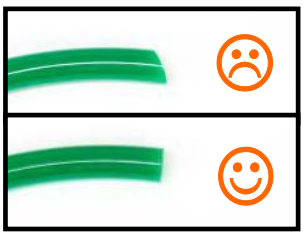
Pull tube out



Replace old Green Tubing with new Green Tube



Cut new Green Tubing to needed length

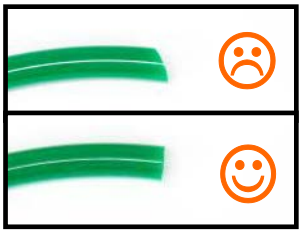


Insert leftover new Green Tubing into "Signal Air" fitting of Abrasive Control Solenoid Valve of Safe-man Control Panel

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

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

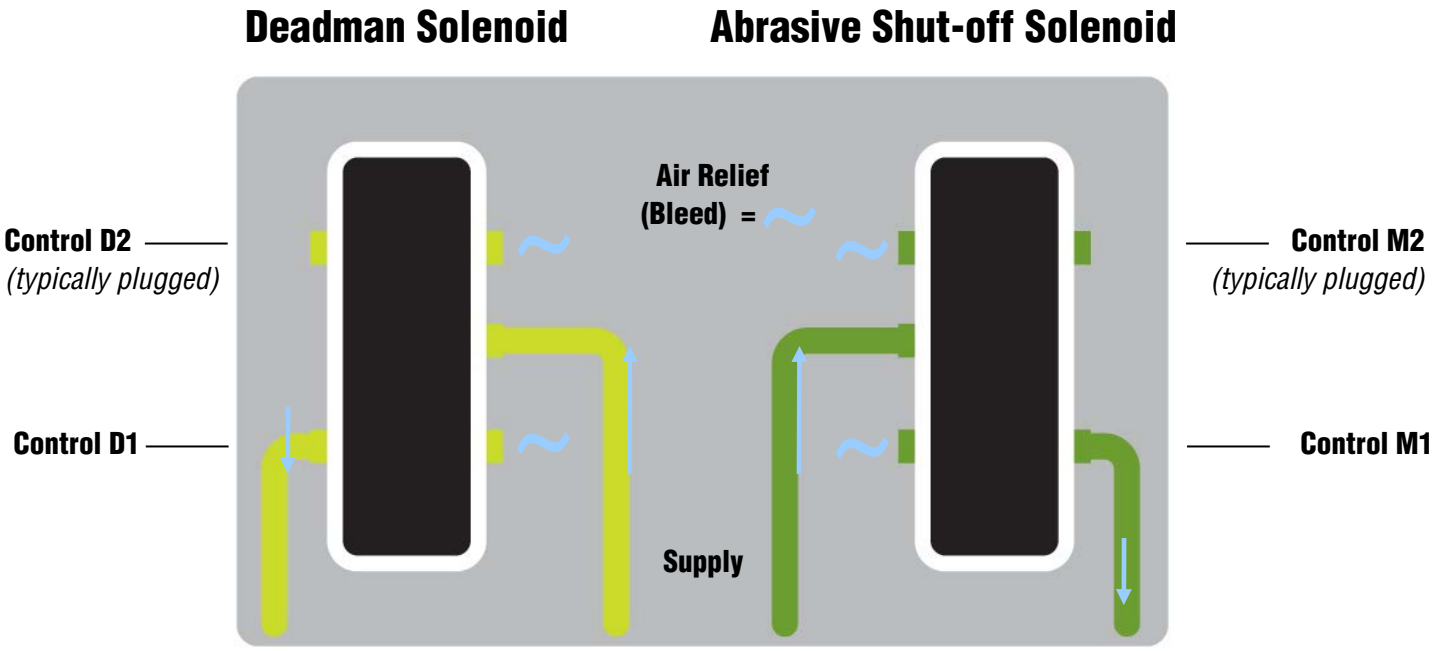
Cut excess Green Tubing if desired



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 a variety of signal requirements. 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)



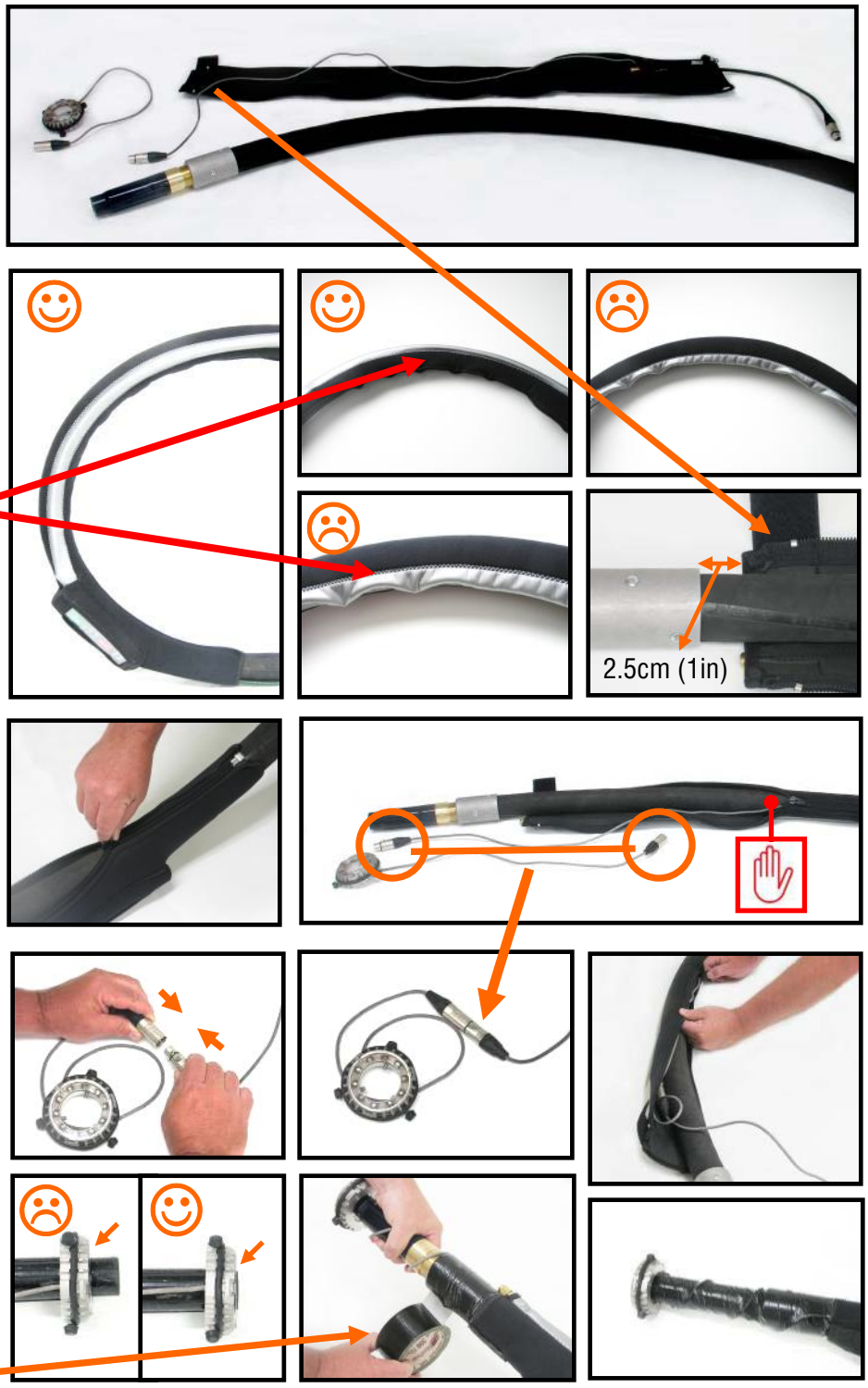
Deadman Solenoid

In-line Deadman Function	**Control D1** *(Installed from Factory)*	**Control D2** *(Plugged from Factory)*
Activated / ON – Blast Mode	Air Signal	No Air Signal
Deactivated / 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)*

One end of Gorilla Cable plugs into Safe-man

+

+

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™ (or abrasive blast unit) 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 are properly grounded.

Figure 2 – Safe-man Control Panel Operation

BLAST:
Indicates Air and Abrasives are exiting the Nozzle

AIR ONLY:
Indicates Air only is exiting Nozzle

WARNING: AIR ONLY mode can still produce the presence of some abrasives material exiting the nozzle.

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

NOZZLE:
Indicates Control Pad is not properly connected

Upon connecting power to the system, the LCD display will illuminate green in “Standby Mode” (Image 1) confirming proper connection - and the Control Pad and Control Panel have successfully communicated. If there is a failure of communication, the Control Panel LCD will illuminate red and read “Safe-man Not Connected” (Image 2).

Once in “Standby Mode” the system is only controlled using the Control Pad mounted at the nozzle. In addition to Images 1 and 2, images 3 and 4 are indicated on the Control Panel LCD.

NOTE: Manipulation of the Control Pad must follow a specific sequence intended to prevent unintentional startup.

All initiations and changes must occur while the In-line Deadman is depressed. if not the system will automatically shut down.

1. To initiate Air and Media Blasting Mode (Image 5), hold the Inline Deadman and simultaneously depress the Green Safety Switch
2. To initiate Air Only Mode while blasting (without a full shutdown) remain in constant contact with the Inline Deadman and depress the Red Mode Button once, within one second depress the green safety switch. If the green safety switch is not depressed within one second the system will shut down.

Note: All Mode Changes will be reflected in a change in the LCD display.

WARNING: AIR ONLY mode can still produce the presence of some abrasives material exiting the nozzle.

Figure 2 – Safe-man Control Pad Operation

Green Safety Switch = and Indicator Light

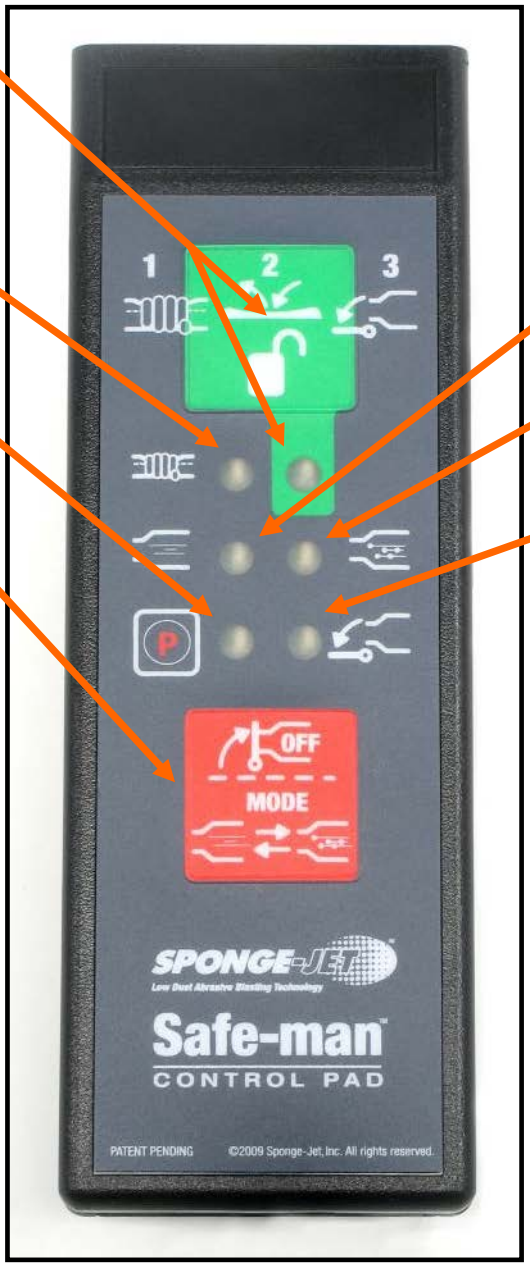
Indicator lights…

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

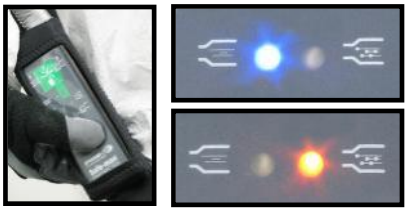
As a Deadman…

Press and Hold to Blast

+

Press and Release (Green Safety)

MODE



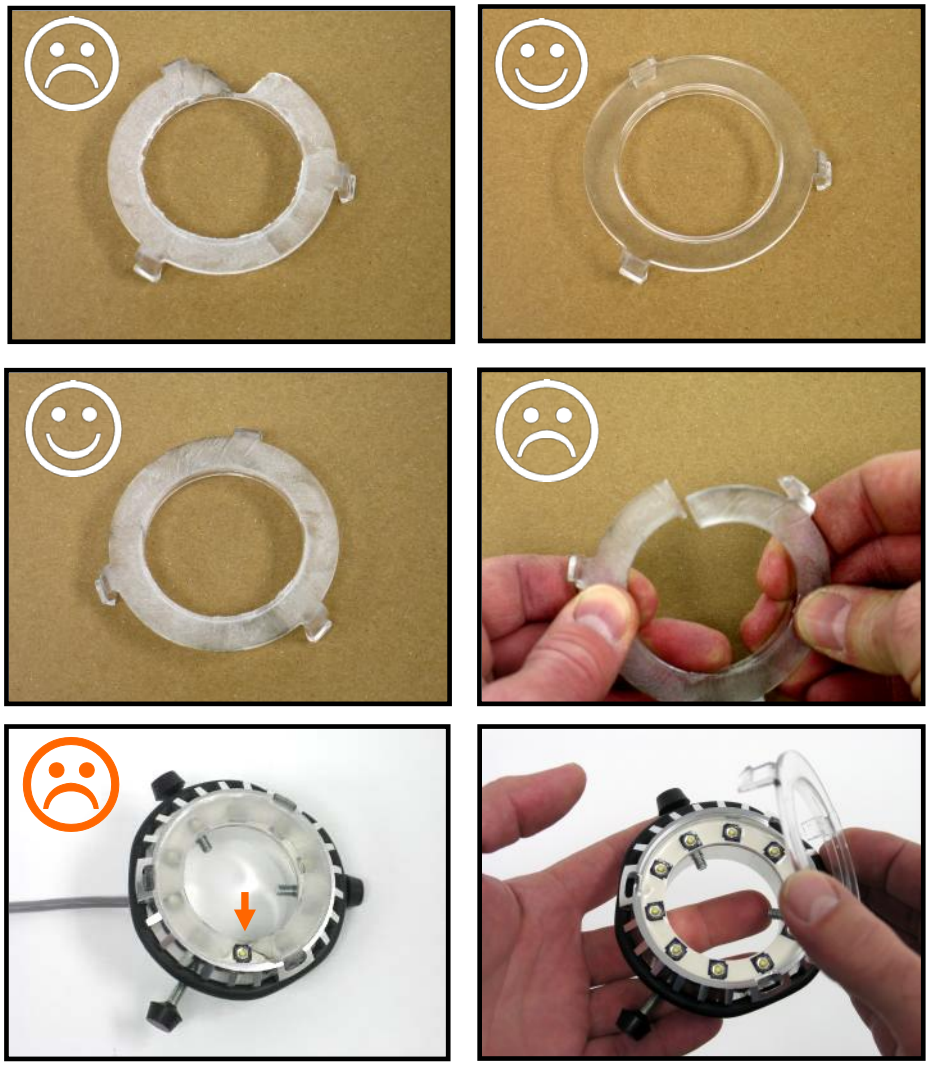
Press Switch and Release; toggles between ON/OFF of abrasive shut-off valve

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.

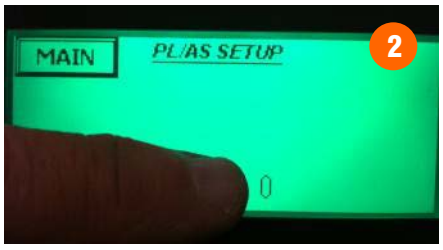


Adjustment of In-line Deadman Shut Off Delay:

- The operator can delay time from when the In-line Deadman is released to when it signals for shutdown (to the Control Panel). **Note:** the default setting is (0) which represents an immediate transition from loss of contact to shutdown initiation. For usage conditions where contact could be interrupted, but control not lost, this delay can be increased:

To change the In-Line Deadman Shutoff Delay…

1. From STANDBY Mode touch the DELAY SETUP (Image 1)
2. See current setting (in this case "0"). Touch "0" (Image 2) which will display a keypad (Image 3)
3. Enter desired Deadman Shutoff Delay time using the key pad (single digit only) up to a maximum "9"
4. Once the number is selected, touch the Enter key or ↵ (Image 4, figure 4a) and then touch "MAIN" (Image 4, figure 4b)
5. STANDBY MODE will display and the change has been made (Image 5)



7.0 Troubleshooting

No nozzle output when depressing In-line Deadman and triggering (press and release) Green Safety Button	Confirm that Main Air Ball Valve on Sponge-Jet Blasting Unit is open. Confirm that Emergency Stop Button on Sponge-Jet Blasting Unit is in the "Run" Position. Confirm Control Panel is not displaying a red "SAFEMAN NOT CONNECTED" LCD readout indicating a loose or fully disconnected Gorilla Cable.
LED Nozzle Light dims, 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. This feature intervenes at 145 F (62.7 C) and shuts off until cool at 150 F (65.5 C) 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:

MODEL#: _____

SERIAL#: _____