

Sponge-Jet® Sponge Blasting System™

Sponge-Jet RASP Xtreme™ User Manual

Model:

RASPX

RASPX-CE



Headquarters/Manufactured By:

Sponge-Jet, Inc. (USA)

14 Patterson Lane, Newington, NH 03801

1-603-610-7950 / www.spongejet.com

Table of Contents

Section		Page
1.0	Introduction	3
2.0	Safety Checklist	5
3.0	Requirements	6
4.0	Operation	10
5.0	Maintenance	15
6.0	Troubleshooting	17
	Notes	23
	Addendum	24

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 and their approximate working capacity:

Model:	Working Capacity:
--------	-------------------

RASPX	42.5 liters (1.5 ft ³)
-------	------------------------------------

RASPX-CE	42.5 liters (1.5 ft ³)
----------	------------------------------------

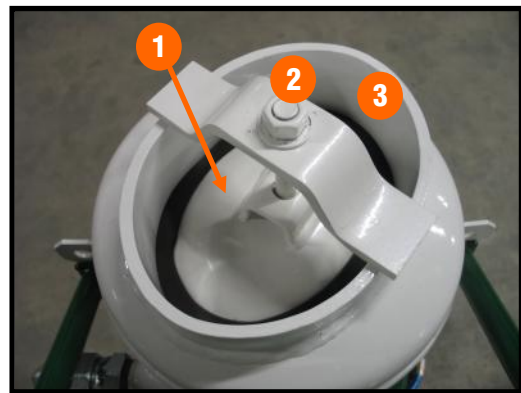
English Language is Original Instructions.

Translated from Original Instructions.

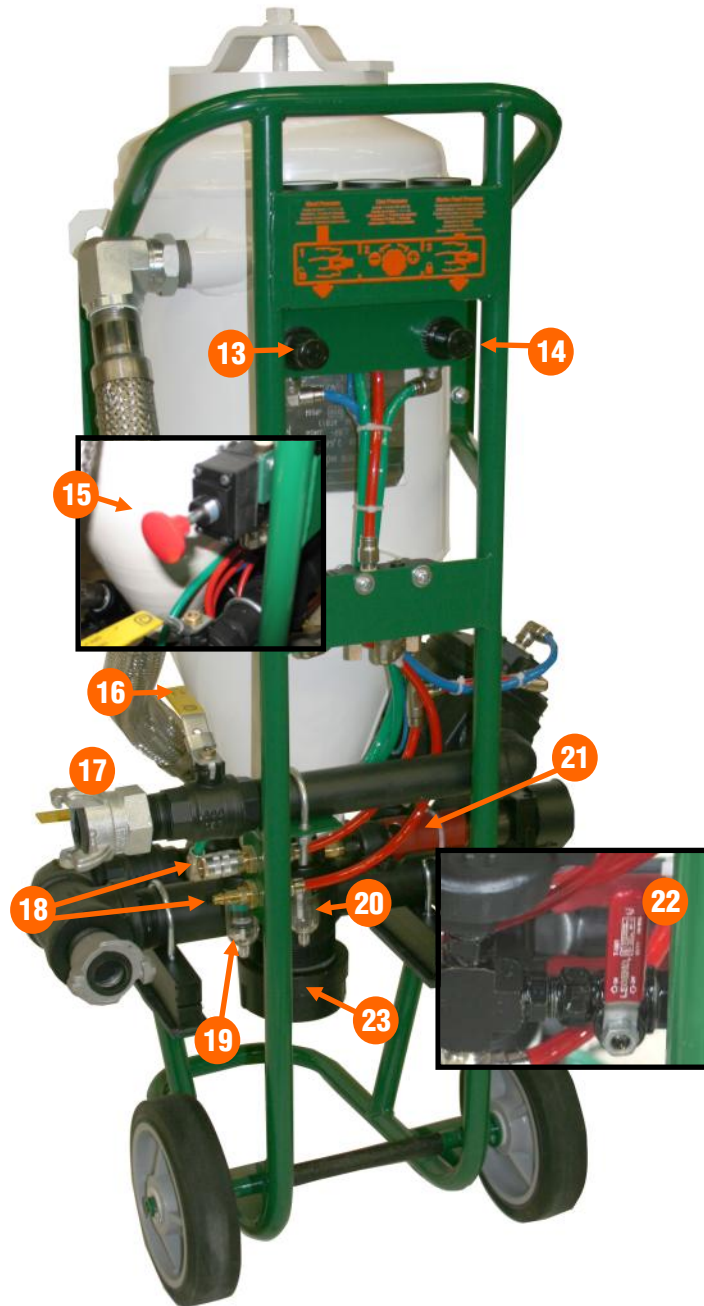
1.0 Introduction

Basic Components

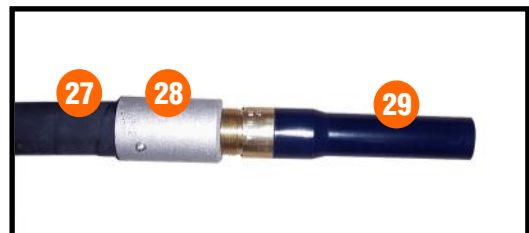
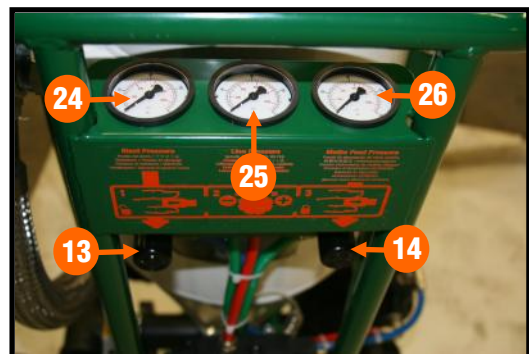
1. Handhole Cover
2. Crab Assembly
3. Handhole
4. Lifting Eye
5. Pressure Vessel
6. Regulator
7. Blast Hose Connection
8. Vibrator
9. Vibrator Muffler
10. Choke Valve
11. Manual Rotation Knob
12. Auger Chain Guard



Basic Components *(continued)*



- 13. **Blast Pressure** Regulator Handle
- 14. **Media Feed Pressure** Regulator Handle
- 15. **Emergency Stop** Button
- 16. **Main Air Ball Valve**
- 17. **Supply Line Connection**
- 18. **Twinline Quick Connect Fittings**
- 19. **Air Motor Moisture Separator**
- 20. **Air Motor Lubricator**
- 21. **Air Motor**
- 22. **Accessory Air Supply Valve**
- 23. **Clean Out Trap**
- 24. **Blast Pressure** Gauge
- 25. **Line Pressure** Gauge
- 26. **Media Feed Pressure** Gauge
- 27. **Blast Hose**
- 28. **Nozzle Holder**
- 29. **Nozzle**
- 30. **Twinline**
- 31. **Deadman Handle**



2.0 Safety Checklist

- **ENSURE THE CAPACITY OF THE OVER-PRESSURE RELIEF VALVE EQUALS OR EXCEEDS THE CAPACITY OF THE COMPRESSED AIR SUPPLY.**
- **This Unit is equipped with an Emergency Stop System. Its location and usage should be understood before operation.**
- This Unit is a pressurized system. Only trained operators should adjust, maintain and repair it.
- **Inbound pressure should never exceed 8.6bar (125psi) regardless of model.**
- To prevent electrostatic buildup and possible electric discharge, the unit and work piece must be properly grounded / bonded.
- 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.
- **The operator and anyone within 1m (3ft) of the nozzle can be exposed to sound emission in excess of 120 dB(A)**
- **Never** point the **Blast Nozzle** towards yourself or others.
- Use of non-supported Sponge-Jet **Deadman** handles may cause unintentional start-up, unreliable shut down and can result in personal injury.
- **Never** perform maintenance or repairs when the unit is pressurized.
- **Never** operate the machine with any worn or malfunctioning component.
- **Never** weld or make modifications to the pressure vessel as this will void certifications.

Before Feed Unit Pressurization and Operation:

- Verify this Unit is secure and stable.
- All pneumatic lines should be inspected for holes, wear and proper fit.
- The **Handhole Cover** must be in place and secure prior to and during operation.
- Safety pins and restraints should be fitted at all Air Supply Hose and **Blast Hose** couplings to prevent accidental disconnection.
- Do not operate without the **Auger Chain Guard** in place.
- Before all activities (other than normal operation), ensure the entire system is depressurized.

3.0 Requirements

3.1 Air Supply / Compressor

Clean, dry compressed air must be supplied in adequate volume and pressure to accommodate the nozzle size at the desired blast pressure.

Inbound pressure is typically **8.6bar (125psi)**, **minimum 1bar (15psi)**

Note: High humidity environments require additional moisture separators.



(Metric) m³/min Requirements

Nozzle Size		4.1bar	4.8bar	5.5bar	6.2bar	6.9bar	8.3bar
No. 6 9.5mm	Nozzle	3.6	4.0	4.6	4.9	5.5	6.2
	Unit	1.1	1.1	1.1	1.1	1.1	1.1
	Reserve	0.9	1.0	1.1	1.2	1.3	1.5
	Total	5.6	6.2	6.8	7.2	8.0	8.8
No. 7 11mm	Nozzle	4.8	5.5	6.1	6.8	7.2	8.5
	Unit	1.1	1.1	1.1	1.1	1.1	1.1
	Reserve	1.2	1.3	1.5	1.6	1.7	1.9
	Total	7.1	7.9	8.7	9.5	10.0	11.5
No. 8 12.5mm	Nozzle	6.3	7.1	7.9	8.7	9.6	11.1
	Unit	1.1	1.1	1.1	1.1	1.1	1.1
	Reserve	1.5	1.7	1.8	2.0	2.1	2.4
	Total	9.0	9.9	10.9	11.9	12.8	14.7
No. 10 15mm	Nozzle	10.1	11.4	12.8	14.3	15.5	17.3
	Unit	1.1	1.1	1.1	1.1	1.1	1.1
	Reserve	2.2	2.5	2.8	3.1	3.3	3.7
	Total	13.4	15.1	16.7	18.5	20.0	22.1
No. 12 18mm	Nozzle	14.2	16.3	18.4	19.8	22.6	28.6
	Unit	1.1	1.1	1.1	1.1	1.1	1.1
	Reserve	3.1	3.5	3.9	4.2	4.8	5.9
	Total	18.3	20.9	23.4	25.1	28.5	35.7

(Imperial) CFM Requirements

Nozzle Size		60psi 4.1bar	70psi 4.8bar	80psi 5.5bar	90psi 6.2bar	100psi 6.9bar	120psi 8.3bar
No. 6 9.5mm 3/8in	Nozzle	126	143	161	173	196	220
	Unit	40	40	40	40	40	40
	Reserve	33	37	40	43	47	52
	Total	199	220	241	256	283	312
No. 7 11mm 7/16in	Nozzle	170	194	217	240	254	300
	Unit	40	40	40	40	40	40
	Reserve	42	47	51	56	59	68
	Total	252	281	308	336	353	408
No. 8 12.5mm 1/2in	Nozzle	224	252	280	309	338	392
	Unit	40	40	40	40	40	40
	Reserve	53	58	64	70	76	86
	Total	317	350	384	419	454	518
No. 10 15mm 5/8in	Nozzle	356	404	452	504	548	611
	Unit	40	40	40	40	40	40
	Reserve	79	89	98	109	118	130
	Total	475	533	590	653	706	781
No. 12 18mm 3/4in	Nozzle	500	575	650	700	800	1,010
	Unit	40	40	40	40	40	40
	Reserve	108	123	138	148	168	210
	Total	648	738	828	888	1,008	1,260

3.2 Air Supply Requirements

This unit has a 32mm (1.25in) standard pipe typically fitted with a 32mm (1.25in) universal (4 lug) coupling. The air supply hose should be fitted with a mating connector or replace both connectors as desired.



For supply hose up to 50m (150ft) use a Minimum Air Line Internal Diameter (I.D.) as listed below. For lengths 50 to 90m (150 to 300ft) use a minimum of one diameter size greater than listed below. Larger hoses decrease pressure loss.

NOTE: Occasionally a compressor is equipped with undersized outlets. The compressor air outlet should be no smaller than the recommended Supply diameters below.

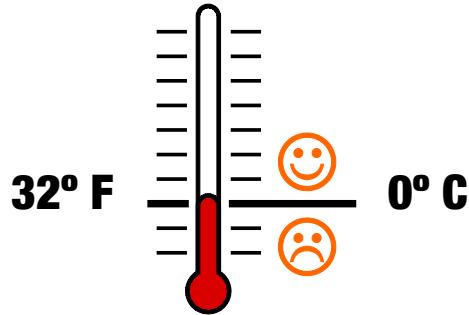
Nozzle Number/Orifice	Minimum Air Line I.D.
#6 / 9.5mm (3/8in)	38mm (1½in)
#7 / 11mm (7/16in)	50mm (2in)
#8 / 12.5mm (1/2in)	50mm (2in)
#10 / 16mm (5/8in)	64mm (2½in)
#12 / 19mm (3/4in)	76mm (3in)

3.3 Blast Hoses

Sponge Media abrasive has been successfully blasted through 90m (300ft) of **Blast Hose**. However, when choosing between long Air Supply Lines or long Blast Hoses, keep the Blast Hoses as short as practical. Below are recommended maximum lengths of Blast Hoses:

- Up to 15m (50ft) use 32mm (1.25in) I.D. Whipline connected to the machine or to a blast hose extension.
- Extensions up to 30m (100ft) must have a minimum 32mm (1.25in) I.D.
- Extensions over 30m (100ft) shall use a minimum 38mm (1.5in) I.D. Blast Hose Extension. Larger hoses decrease pressure loss.

3.4 Ambient Temperature



Ambient temperature should be above 0° Celsius (32° Fahrenheit).

Otherwise:

- a) Use winter grade pneumatic tool oil in lubricator.
- b) Minimize moisture in supply air.
- c) Ice build-up in controls or vessel may require thawing prior to restarting machine. Minimize down time that might result in freezing.

3.5 Containment

Containment is an integral part of the Sponge-Jet process, as Sponge-Jet Sponge Media is recyclable. To take advantage of this, containment must be used to capture and recycle Sponge Media.

Sponge-Jet is easily containable with light plastic sheeting or mesh. Projects involving hazardous materials, high wind load or other conditions may require more complex containment and negative air dust collection.

Pre-cleaning of the area will minimize both dust and debris which can also cause equipment malfunctions.

Always follow local, state and federal guidelines concerning proper containment, containment ventilation and monitoring procedures.

4.0 Operation

This equipment is designed to be operated in a manner consistent only with the instructions contained in this manual.

Before Feed Unit Pressurization and Operation:

- Verify unit is secure and stable.
- All pneumatic lines should be inspected for holes, wear and proper fit.
- **Handhole Cover** must be in place and secure prior to and during operation.
- Safety pins and restraints should be fitted at all Air Supply Hose and **Blast Hose** couplings to prevent accidental disconnection.
- Do not operate without **Auger Chain Guard** in place.
- Before all activities (other than normal operation), ensure the entire system is depressurized.

Verify unit is secured in an appropriate manner for operation.

Inspect all **Blast Hose** and connections. Repair or replace worn or damaged components. Ensure all couplings are equipped with coupling gaskets, safety pins and hose restraints. Confirm all are properly installed.

Connect compressor to **Supply Line Connection** and secure safety pins and restraints.



Fill unit through **Handhole**.



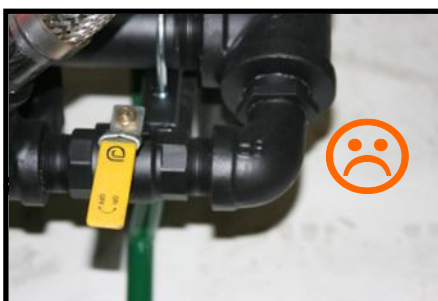
Attach **Handhole Cover** with gasket in place.



Connect **Blast Hose** and secure with safety pins.



Confirm **Choke Valve** is open.



Connect Return and Supply **Twinline Quick Connect Fittings**.



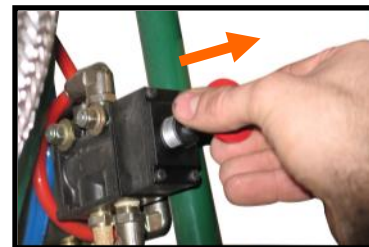
Check **Main Air Ball Valve** and **Accessory Air Supply Valve** are closed. Charge supply line from air source.



Open **Main Air Ball Valve**.



Pull **Emergency Stop** Button.



To begin blasting, unlock **Deadman Handle** by depressing safety flap.



Depress **Deadman Handle** and wait 5 to 10 seconds for Sponge Media to flow.

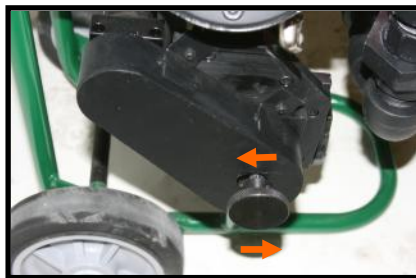


Set **Media Feed Pressure** to 0.7bar(10psi) and adjust as required.

Adjust **Blast Pressure** to desired levels.

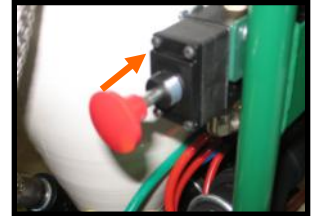


Confirm **Manual Rotation Knob** is rotating, **Air Motor Lubricator** rate is 1-2 drops per minute.



Shutdown of the Feed Unit

Normal shutdown during operation is by releasing **Deadman Handle**. Alternatively the **Emergency Stop** Button may be used. **Note:** During inspection, maintenance or any non-operational activity, always shut off (push in) **Emergency Stop Valve**.



Close **Main Air Ball Valve**. Shut down compressor and close compressor supply line ball valve.



After compressor has completely shutdown, open **Main Air Ball Valve**.

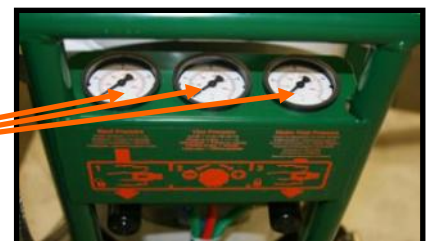


Point **Blast Nozzle** at working substrate (away from people) and depress safety flap and then **Deadman Handle**.

Keep **Deadman Handle** depressed until all remaining air is vented.



Once all **Control Panel** gauges read "0"psi, confirm that supply line from compressor is depressurized.

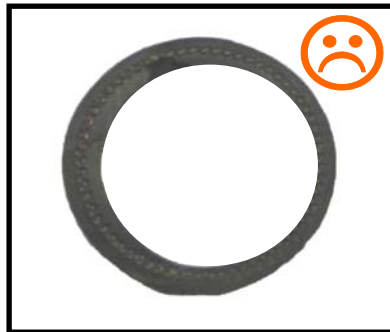


5.0 Maintenance

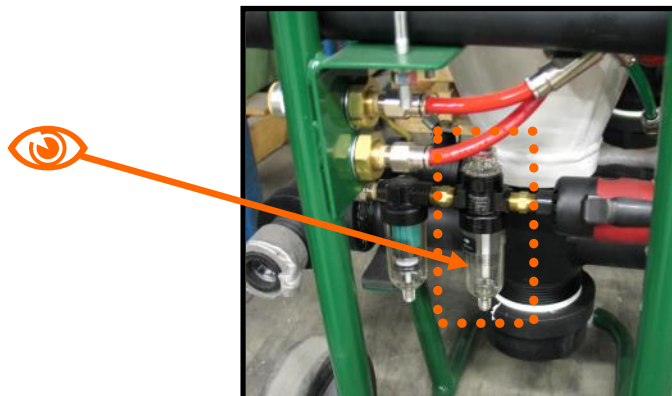
Routine maintenance is required to provide long and reliable equipment life. Unit must be shut down and fully depressurized prior to any maintenance.

Prior to each use:

- Inspect **Blast Nozzle** for wear.
Once nozzle throat has worn 1.5mm (1/16in) beyond its original intended diameter, it should be replaced.
- Thoroughly inspect **Blast Hose** components and connections.
Replace worn hose. Ensure all couplings are properly equipped with coupling gaskets, safety pins and hose restraints.



- Confirm adequate pneumatic tool oil is present in **Air Motor Lubricator**.
USE SAE 5W (ISO 32) NON-DETERGENT OIL ONLY





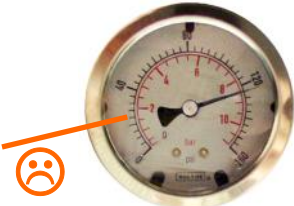


Performed monthly (or as needed):

- Remove **Auger Chain Guard** and inspect **Auger Drive Chain**. Apply lightweight lubricating oil as necessary then replace **Auger Chain Guard**.



6.0 Troubleshooting

<p>Unit does not operate when Deadman Handle is depressed</p>	
	<p>Check Main Air Ball Valve is open.</p> 
	<p>Check Twinline Quick Connect Fittings are connected and secure.</p> 
	<p>Check for damage to Twinline.</p> 
	<p>Check Line Pressure is above 1.7bar(25psi) when Deadman is depressed.</p> 

Air will not stop exiting nozzle when Deadman Handle is released

Disconnect **Return** side of the **Twinline**.

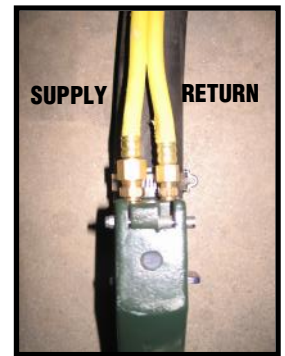
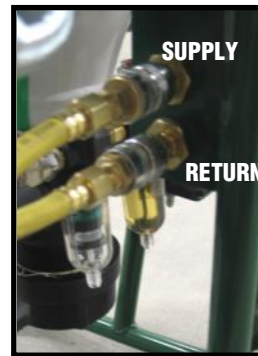


If unit stops,
likely problems are:

1. Incorrect **Deadman**.
Replace with
Sponge-Jet **Deadman**



2. **Twinline** air lines from unit to **Deadman** have been reversed






3. **Deadman** is broken; replace with Sponge-Jet **Deadman**.

If Unit does not stop, likely problems are:

1. **On/Off Control Valve**
is malfunctioning.



<p>Air Motor sticks during startup; becomes sluggish at lower Media Pressures</p>	<p>Check Air Motor Lubricator oil level and oil lubrication rate.</p> 
<p>Auger will not begin rotating</p>	<p>Confirm Media Feed Pressure Gauge reads 0.7bar(10psi) or greater.</p>  <p>Turn Manual Rotation Knob clockwise to start the rotation.</p> <p>If excessive force is required, clear obstruction (see next section).</p> 

Auger stops rotating during normal operation

1. Release **Deadman Handle** and depressurize unit.



2. Close **Main Air Ball Valve**.



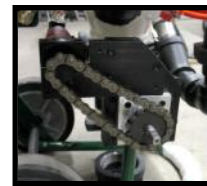
3. Remove **Clean Out Trap**; rotate **Manual Rotation Handle** clockwise and counter-clockwise until obstruction falls out. **Auger** should move smoothly. Replace **Clean Out Trap**.



4. If obstruction cannot be cleared:






a. Remove **Auger Chain Guard and Chain**.




b. Remove four screws, pull **Auger** from shaft and remove obstruction.



c. Reassemble **Auger**; test for smooth rotation.

d. Re-install **Auger Chain Guard and Chain**.

<p>Air flow through nozzle suddenly stops</p>	<ol style="list-style-type: none"> 1. Depressurize unit and close Main Air Ball Valve.  <ol style="list-style-type: none"> 2. Remove Blast Nozzle from Blast Hose; inspect for and remove obstructions.  <ol style="list-style-type: none"> 3. Disconnect all Blast Hose connections; inspect for and remove obstructions. 4. If obstruction was from Sponge Media, turn Media Feed Pressure to 0bar(0psi). Check Choke Valve is in full open position; or parallel to pipe. Resume blasting. When stream of air without Sponge Media is achieved, slowly return Media Feed Pressure Gauge to desired pressure.  
<p>Too much Sponge Media exits Nozzle or is pulsing</p>	<ol style="list-style-type: none"> 1. Check Choke Valve is in full open position; or parallel to pipe. 2. Check Media Feed Pressure Gauge below 3.4bar(50psi). Resume Blasting. 

<p>Blast Pressure increases and decreases continuously</p>	<p>1. Check for damage to Twinline and for air leaks at all fittings and connections. Repair, replace or tighten as necessary.</p> <div data-bbox="578 289 888 527">  </div> <div data-bbox="907 289 1190 527">  </div> <div data-bbox="1209 289 1503 527">  </div>
<p>Air flows through Nozzle without Sponge Media while Auger is rotating</p>	<p>After depressing Deadman, Sponge Media flow through Nozzle can take up to ± 15 seconds with normal hose length.</p> <p>Check for adequate Sponge Media amount in Pressure Vessel.</p>

MODEL#: _____

SERIAL#: _____



Dry, Low Dust
Abrasive Blasting
Technology

Sponge-Jet, Inc.
14 Patterson Lane,
Newington, NH 03801
USA / 1-603-610-7950
USA / Fax: 603-431-6043
www.spongejet.com

EC Declaration of Conformity

We Of:

Sponge Jet Inc.
14 Patterson Lane,
Newington, N.H. 03801
Telephone Inquiries to: 1-603-610-7950
Email: sjadmin@spongejet.com



Hereby declare that:

Equipment: Sponge-Jet Feed Unit Vessel
Model: RASPX-CE
Serial Number: XXXX
Year of construction: XXXX

Is in conformity with the applicable requirements of the following standard documents

The Directives covered by this Declaration:

European Pressure Vessels Directive: (PED) 97/23/EC
Machinery Directive: 2006/42/EC (Formerly 98/37/EC)


The PED Directive 97/23/EC Standards:

EN-288 - (Approval of Welding Procedure)

The Machinery Directive 2006/42/EC Standards:

EN-792-10:2000+A1:2008 - (Hand Held Non-Electric Power Tools)
EN ISO 14121-1-2007 - (Safety of Machinery—Risk Assessment)

I hereby declare that the equipment named above has been designed to comply
With the relevant sections of the above referenced specifications. The unit complies
With all applicable Essential Requirements of the Directives.

Signed: 
Name: Michael T. Merritt
Position: President
On This Date: XX/XX/XXXX

Authorised Representative:

Eurolink (Europe) limited
Avalon House
Marcham Road
Abingdon OX14 1UD
US