Sponge-Jet® Sponge Blasting System

Sponge-Jet RASP Xtreme™ User Manual

Model:

RASP Xtreme

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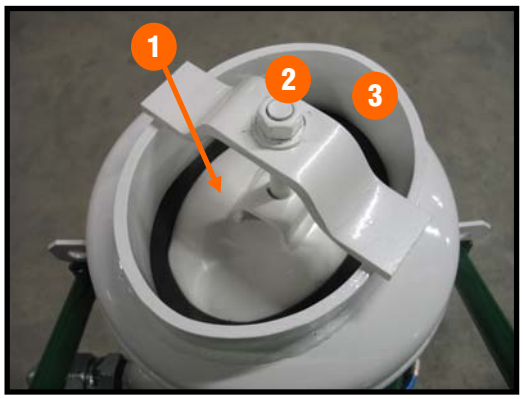

Basic Components *(continued)*

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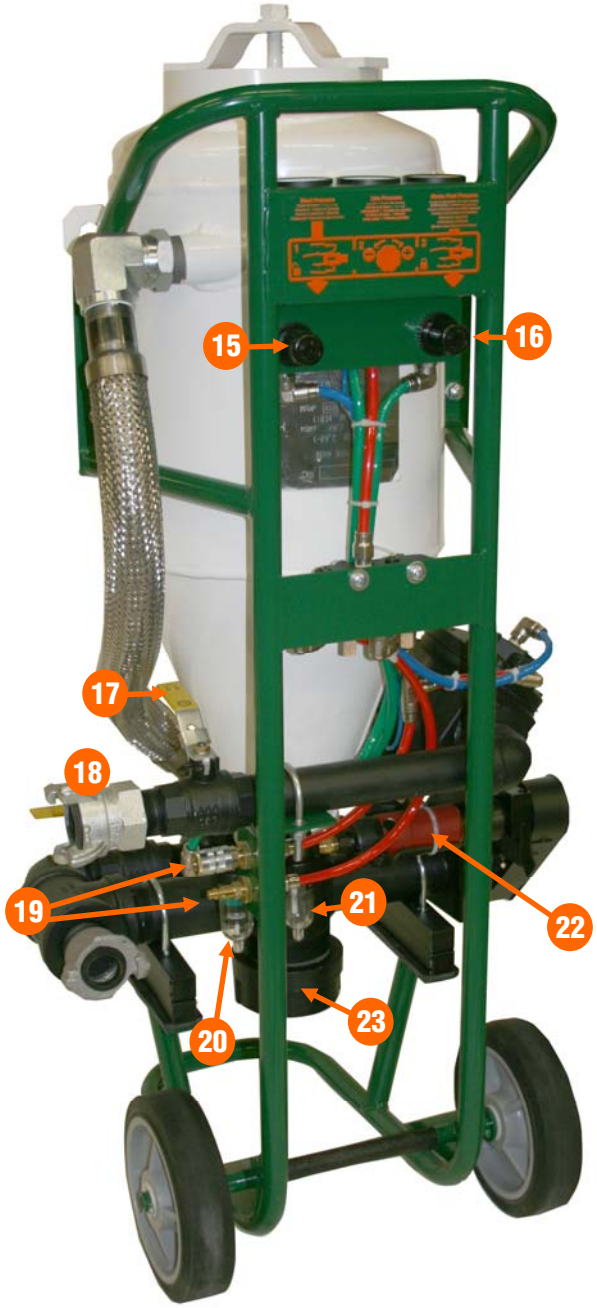
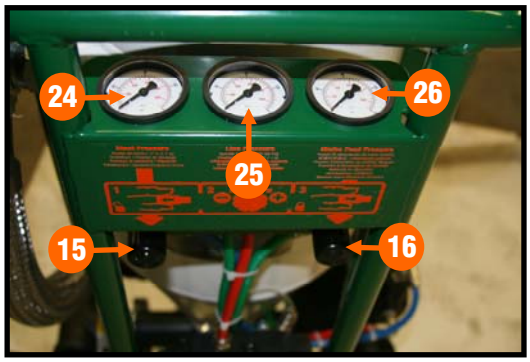
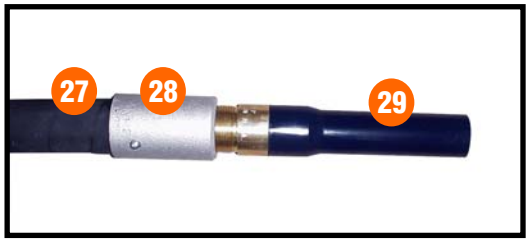






2.0 Safety Checklist

- The Sponge-Jet Inc. Feed Unit is a pressurized system. Only trained operators should adjust, maintain and repair this equipment.
- Inbound pressure should never exceed 8.6bar (125psi).
- 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 the appropriate respiratory equipment and clothing, which may depend on the type of coating or contaminant being removed.
- Never point the **Blast Nozzle** towards yourself or others.
- The use of non-Sponge-Jet **Deadman** handles may cause unintentional start-up and can result in personal injury.

Before Feed Unit Pressurization and Operation:

- Verify the Feed 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) m^3/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
	Feed 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
	Feed 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
	Feed 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
	Feed 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
	Feed 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
	Feed 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
	Feed 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
	Feed 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
	Feed 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
	Feed 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

Sponge-Jet Feed Units have a 50mm (2in) standard pipe typically fitted with a 50mm (2in) universal crowfoot (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.

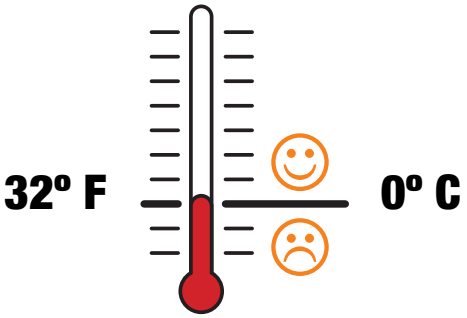
Nozzle Number/Orifice	Minimum Air Line I.D.
#6 / 9.5mm (3/8in)	38mm (1½in)
#7 / 11mm (7/16in)	50mm (2in)
#8 / 12.5mm (1/2in)	50mm (2in)
#10 / 16mm (5/8in)	64mm (2½in)
#12 / 19mm (3/4in)	76mm (3in)

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

Before Feed Unit Pressurization and Operation:

- Verify the Feed 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.

Verify that the machine 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 Feed Unit through **Handhole**.

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

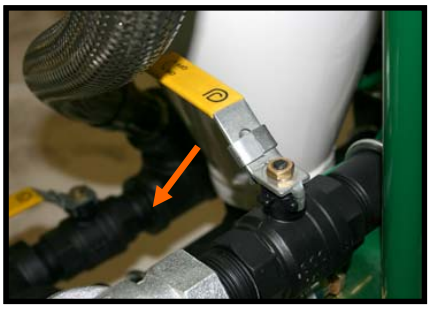
Connect **Blast Hose** and secure with safety pins.

Confirm **Choke Valve** is open.

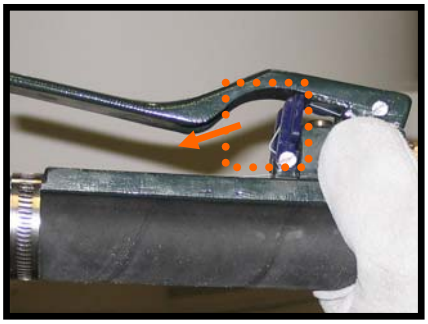
Connect Return and Supply **Twinline Quick Connect Fittings**.

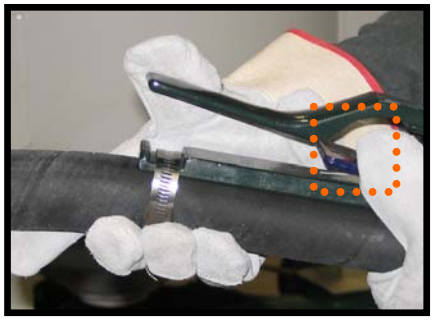
Check **Main Air Ball Valve** is in closed position. Charge supply line from air source.

Open **Main Air Ball Valve**.

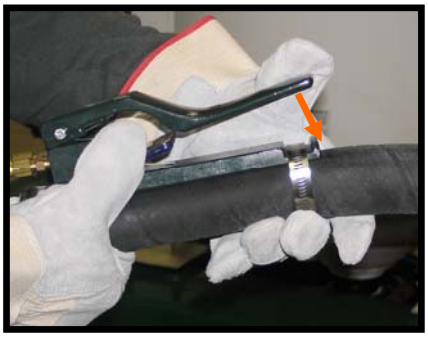


To begin blasting, unlock **Deadman Handle** by depressing safety flap.





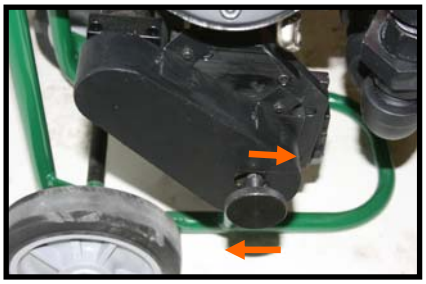
Depress **Deadman Handle** and wait 5 to 10 seconds for Sponge Media to flow.

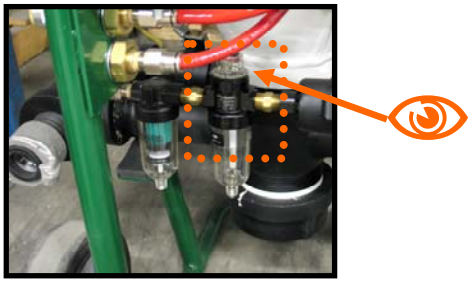


Adjust **Blast Pressure** and **Media Feed Pressure** to the desired levels.

Typical Media Feed Pressures								
Nozzle Size			**Sponge Media Recycles**					
			1 – 3		**4 – 6**		**7-12**	
#7	10mm	7/16in	2.0	30	1.5	20	0.7	10
#8	12mm	1/2in	2.8	40	2.0	30	1.5	20
#10	15mm	5/8in	3.4	50	2.8	40	2.0	30
#12	18mm	3/4in	4.1	60	3.4	50	2.8	40

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



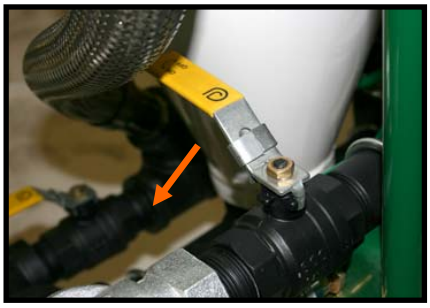


Shutdown of the Feed Unit

Normal shutdown during operation is by releasing **Deadman Handle.**

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 the 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 the supply line from the compressor is depressurized.

5.0 Maintenance

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

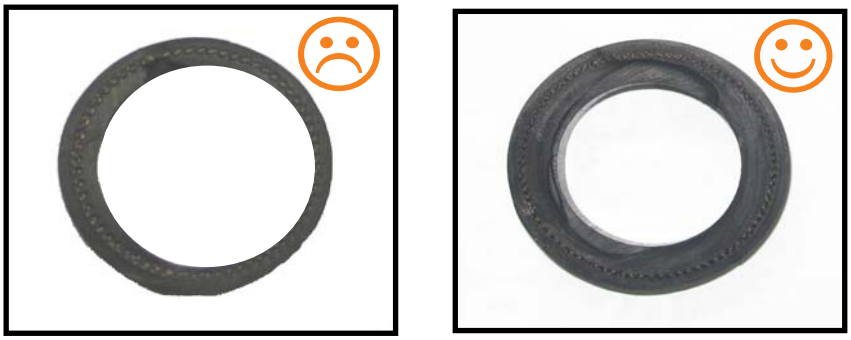
Prior to each use:

- Inspect **Blast Nozzle** for wear.

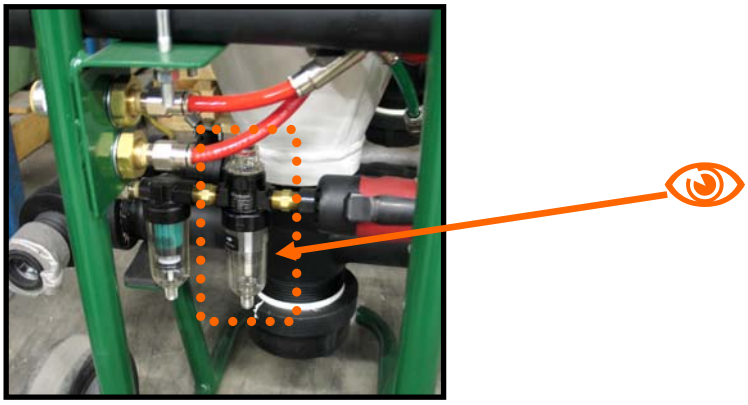
  Once nozzle throat has worn 1.5mm (1/16in) beyond its original intended diameter, it should be replaced.

- 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**.



Performed monthly (or as needed):

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

Notes:

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