SPONGE-JET
170-CG Feed Unit
USER MANUAL
INTRODUCTION

This manual represents the following models and their approximate working capacity:

**Model:** 170-CG  **Working Capacity:** 170 liters
**Model:** 170A-CG  **Working Capacity:** 170 liters

English Language is Original Instructions.
Translated from Original Instructions.

**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 BASIC COMPONENTS

1. Hopper
2. Pressure Vessel
3. Combo Valve
4. Twinline Quick Connect Fittings
5. Blast Hose Connection
6. Relief Valve Port
7. Air Motor
8. Gasket
9. Handhole Cover
10. Crab Assembly
11 Main Air Ball Valve
12 Supply Line Connection
13 Line Pressure Gauge
14 Choke Valve
15 Media Feed Gauge
16 Emergency Stop Button
17 Media Feed Adjustment
18 Manual Rotation Knob
19 Auger Chain Guard
20 Clean Out Trap
21 Pop-up
22 Actuator Control Line
23 Media Actuator
24 Actuator Tree and Chain
25 Blast Hose
26 Nozzle Holder
27 Nozzle
28 Twinline
29 Twinline Connection
30 Deadman Handle
SAFE CHECKLIST

Survey environment for hazards; read manual and instructions before operating and follow ALL safety practices in accordance with ALL applicable local regulations.

ENSURE CAPACITY OF THE CUSTOMER-INSTALLED OVER-PRESSURE RELIEF VALVE EQUALS OR EXCEEDS CAPACITY OF THE COMPRESSED AIR SUPPLY.

Location and usage of the Emergency Stop Button should be understood before operation. Pushing in the Emergency Stop Button stops operation; Pulling it out allows for operation. DO NOT pull Emergency Stop Button and press Deadman until ALL operators are fully prepared to blast and nozzle(s) are under operator control.

This Unit is a pressurized system. Only trained operators should adjust, maintain and repair it. Visit www.spongejet.com for information on training.

Inbound pressure should never exceed the listed Maximum Working Pressure on the data plate. To prevent electrostatic buildup and possible electric discharge, the unit and work piece must be properly grounded/bonded.

WARNING
Secure ALL safety restraints. Whip-check, safety pins, wire, grounding straps and hose couplings must be properly secured before operating. Failure to do so may result in serious injury or death.

WARNING
Eye, hearing and respiratory personal protective equipment required for operators and others in close proximity to blasting. Failure to do so may result in serious injury.

WARNING
Sudden media discharge and loud noise. Keep hands and face free from area. ALWAYS use proper respiratory, hearing and eye protection equipment.

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.
**WARNING**
ONLY use Sponge-Jet approved positive-feed deadman control handles. DO NOT reverse twinlines. Failure to comply will override safety controls, cause unintentional start-up and unreliable shutdown—which may lead to serious injury or death.

Inspect ALL equipment prior to each shift.

*Never* operate the unit with any worn or malfunctioning components.

*Never* weld or make modifications to the pressure vessel as this will void certifications.

*All pneumatic lines* should be inspected for holes, wear and proper fit.

Safety pins (wire) and whip-checks should be fitted at all Air Supply Hose and Blast Hose couplings to prevent accidental disconnection.

**WARNING**
Hand-hole MUST be securely fastened. Improper seal may result in serious injury.

Do not operate without the **Auger Chain Guard** in place.

**WARNING**
Do not operate with guards removed. Moving parts may cut, pinch, or crush. Keep clear of moving parts.

**WARNING**
Pressurized system. Release air pressure before servicing. Failure to comply may result in serious injury.

**WARNING**
Secure ALL safety restraints. Whip-check, safety pins, wire, grounding straps and hose couplings must be properly secured before operating. Failure to do so may result in serious injury or death.

Keep hands clear from Pop-up when Deadman is first being pressed.

**WARNING**
Pinch point. Moving unit may cut, pinch or cause dismemberment, keep clear of moving parts.
3.0 REQUIREMENTS

3.1 Air Supply/Compressor

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

Inbound pressure is typically 8.6bar (125psi) or 10bar (145psi) depending on the vessel rating*.

*Vessel rating is located on the unit’s data-plate.

NOTE: High-humidity environments require additional moisture separators.

(METRIC) M3/MIN REQUIREMENTS

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(IMPERIAL) CFM REQUIREMENTS

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### 3.2 Air Supply Requirements

This Unit uses a 50mm (2in) standard pipe typically fitted with a 50mm (2in) universal 4-lug coupling.

Larger hoses decrease pressure loss.

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<tr>
<th>Nozzle</th>
<th>Orifice</th>
<th>Recommended Air Line I.D.</th>
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<td>9.5mm (3/8in)</td>
<td>50mm (2in)</td>
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<tr>
<td>#7</td>
<td>11mm (7/16in)</td>
<td>50mm (2in)</td>
</tr>
<tr>
<td>#8</td>
<td>12.5mm (1/2in)</td>
<td>76mm (3in)</td>
</tr>
<tr>
<td>#10</td>
<td>16mm (5/8in)</td>
<td>76mm (3in)</td>
</tr>
<tr>
<td>#12</td>
<td>19mm (3/4in)</td>
<td>76mm (3in)</td>
</tr>
</tbody>
</table>
3.3 Blast Hoses

Extensions up to 30m (100ft) should have minimum 38mm (1.5in) I.D.

Extensions over 30m (100ft) should have minimum 50mm (2.0in) I.D. Blast Hose Extension. Larger hoses decrease pressure loss.

3.4 Ambient Temperature

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

**NOTE:** Ice build-up from moisture may require thawing prior to operation.

3.5 Containment

Sponge-Jet Sponge Media™ must be contained to be efficiently recycled. Use plastic sheeting or mesh. Projects involving hazardous materials, high wind load or other challenging conditions may require more complex containment and negative air dust collection.

**NOTE:** Pre-cleaning the blast area can minimize dust and debris which can also cause equipment malfunctions.

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

**WARNING**

Eye, hearing and respiratory personal protective equipment required for operators and others in close proximity to blasting. Failure to do so may result in serious injury.
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 the Emergency Stop Button is pressed.

**All pneumatic lines** should be inspected for holes, wear and proper fit.

Safety pins (wire) and whip-checks should be fitted at all Air Supply Hose and **Blast Hose** couplings to prevent accidental disconnection.

---

**WARNING**  
Hand-hole MUST be securely fastened. Improper seal may result in serious injury.

Do not operate without the **Auger Chain Guard** in place.

---

**WARNING**  
Do not operate with guards removed. Moving parts may cut, pinch, or crush. Keep clear of moving parts.

---

**WARNING**  
Pressurized system. Release air pressure before servicing. Failure to comply may result in serious injury.

---

**WARNING**  
Secure ALL safety restraints. Whip-check, safety pins, wire, grounding straps and hose couplings must be properly secured before operating. Failure to do so may result in serious injury or death.

---

Keep hands clear from Pop-up when Deadman is first being pressed.

---

**WARNING**  
Pinch point. Moving unit may cut, pinch or cause dismemberment, keep clear of moving parts.

---

**WARNING**  
Eye, hearing and respiratory personal protective equipment required for operators and others in close proximity to blasting. Failure to do so may result in serious injury.
4.1 Operation of Unit

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

**WARNING**
Secure ALL safety restraints. Whip-check, safety wire, grounding straps and hose couplings must be properly secured before operating. Failure to do so may result in serious injury or death.

Connect compressor to **Supply Line Connection** and secure safety pins and whip-check.

Attach **Handhole Cover** with gasket.

Connect **Blast Hose** and secure with twisted wire.
Confirm **Choke Valve** is open.

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

Fill Feed Unit through **Hopper**.

**WARNING**
Pinch point. Moving part may cut, pinch or cause dismemberment, keep clear of moving pop-up.

**WARNING**
Eye, hearing and respiratory personal protective equipment required for operators and others in close proximity to blasting. Failure to do so may result in serious injury.
Check **Main Air Ball Valve** is in closed position then charge supply line.

Open **Main Air Ball Valve**.

Pull the **Emergency Stop Button** to the open position.

To begin blasting, unlock **Deadman Handle** by pressing down safety flap.
Press **Deadman Handle** down and wait 5 to 10 seconds for Sponge Media to flow.

Adjust **Media Feed Pressure** to desired levels.

**Typical Media Feed Pressures**

<table>
<thead>
<tr>
<th>Nozzle Size</th>
<th>Sponge Media Recycles</th>
<th>Working Mix</th>
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</thead>
<tbody>
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<td></td>
<td>1-3</td>
<td>4-6</td>
</tr>
<tr>
<td></td>
<td>bar psi</td>
<td>bar psi</td>
</tr>
<tr>
<td>#7 10mm (7/16in)</td>
<td>2.0 30</td>
<td>1.5 20</td>
</tr>
<tr>
<td>#8 12mm (1/2in)</td>
<td>2.8 40</td>
<td>2.0 30</td>
</tr>
<tr>
<td>#10 15mm (5/8in)</td>
<td>3.4 50</td>
<td>2.8 40</td>
</tr>
<tr>
<td>#12 18mm (3/4in)</td>
<td>4.1 60</td>
<td>3.4 50</td>
</tr>
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</table>

Confirm **Manual Rotation Knob** is rotating. Prepare surface to desired condition.
4.2 (Non-Maintenance) Shutdown of Unit

For normal shutdown during operation...

Release Deadman Handle.

OR

Push in Emergency Stop Button.

4.3 (Maintenance/Long-Term) Shutdown of Unit

For shutdowns to conduct inspection, maintenance or for extended non-use...

Release Deadman Handle, then push in Emergency Stop Button.

Shut off inbound supply of air from its source.

Shut off Main Air Ball Valve.

Open Main Air Ball Valve.
Point **Blast Nozzle** at working substrate (away from people); press safety flap and then press **Deadman Handle** down.

Keep **Deadman Handle** pressed down until all remaining air is vented.

---

**WARNING**

Pressurized system. Release air pressure before servicing. Failure to comply may result in serious injury.

---

Once all **Control Panel** gauges read “0”, confirm that the supply line to the Unit is depressurized.

**IMPORTANT:** if **Control Panel** gauges read anything other than “0” repeat Section 4.4 until all **Control Panel** gauges read “0”psi.

---

Close **Main Air Ball Valve**.
Routine maintenance is required to provide long and reliable equipment life. This Unit must be shut down and fully depressurized prior to any maintenance.

**WARNING**
Pressurized system. Release air pressure before servicing. Failure to comply may result in serious injury.

### 5.1 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 hose. Ensure all couplings are properly equipped with coupling gaskets, wire and whip-checks.

### 5.2 Performed monthly (or as needed)

Remove **Auger Chain Guard** and inspect **Auger Drive Chain**.

Apply lightweight lubricating oil as necessary.

Replace **Auger Chain Guard**.
6.0 TROUBLESHOOTING

Unit does not operate when Deadman Handle is depressed

Check **Main Air Ball Valve** is open.

Check **Emergency Stop** Button is pulled out.

Check all **Twinline Quick Connect Fittings** are connected and secure.

Check for damage to **Twinline**.

Check **Line Pressure** is above 1 bar (15 psi) when **Deadman** is pressed down.
Air will not stop exiting nozzle when Deadman Handle is released

Push Emergency Stop Button (in).

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.
Auger will not begin rotating

Check **Emergency Stop** Button is pulled out.

Confirm **Media Feed Pressure**
Gauge reads consistently with **Typical Media Feed Pressure**
chart at right.

<table>
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<tr>
<th>Nozzle Size</th>
<th>Sponge Media Recycles</th>
<th>Working Mix</th>
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</thead>
<tbody>
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<td></td>
<td>1-3</td>
<td>4-6</td>
</tr>
<tr>
<td></td>
<td>bar psi</td>
<td>bar psi</td>
</tr>
<tr>
<td>#7 10mm (7/16in)</td>
<td>2.0 30</td>
<td>1.5 20</td>
</tr>
<tr>
<td>#8 12mm (1/2in)</td>
<td>2.8 40</td>
<td>2.0 30</td>
</tr>
<tr>
<td>#10 15mm (5/8in)</td>
<td>3.4 50</td>
<td>2.8 40</td>
</tr>
<tr>
<td>#12 18mm (3/4in)</td>
<td>4.1 60</td>
<td>3.4 50</td>
</tr>
</tbody>
</table>

Turn **Manual Rotation Knob**
Regulator Handle clockwise to start the rotation.

If excessive force is required, clear obstruction (see next section).
Auger stops rotating during normal operation

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

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

3. Press **Emergency Stop** Button (in).

Remove **Clean Out Trap**.

Rotate **Manual Rotation Knob** clockwise and counter-clockwise until obstruction falls out.

**Auger** should move smoothly.

Replace **Clean Out Trap**.

If obstruction cannot be cleared:

Remove **Auger Chain Guard**. Remove four outside screws, pull **Auger** from unit and remove obstruction.

Reassemble **Auger**: replace four outside screws, and test for smooth rotation. Re-install **Auger Chain Guard**.
Air flow through nozzle suddenly stops

1. Do not restart. Press Emergency Stop Button (in) immediately.

2. Depressurize unit and close Main Air Ball Valve.

3. Remove Blast Nozzle from Blast Hose; inspect for and remove obstructions.

4. Disconnect all Blast Hose connections; inspect for and remove obstructions.

Too much Sponge Media exits Nozzle or is pulsing

1. Check Choke Valve is in open position; or parallel to pipe.

2. Check Media Feed Pressure Gauge is below 3.4bar (50psi). Resume Blasting.

15psi+ 1.25bar+

1 2
Blast Pressure increases and decreases continuously or Unit exhausts intermittently while blasting

1. Check for damage to Twinline and for air leaks at all fittings and connections.

Repair, replace or tighten as necessary.