BLASTONE

INSTALLATION, OPERATION & MAINTENANCE MANUAL

Nozzle and Silencer

SNAKE BITE XO

POWERFUL. *STRIKING*. QUIET.

MANUAL CONTENTS

⚠ WARNING ⚠

Do not attempt to operate this equipment without first reading and understanding the manual enclosed with this device. Suitability for use of this device lies solely with user.

Fill in your model and serial number in the blank spaces below. These can be used for reference whenever service or maintenance is required.

Unit Serial Number

_____

Date Of Issue

_____

SAFETY WARNINGS

The primary responsibility for safety with this equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. The operator of this equipment should assess the risks associated with using this equipment and implement appropriate risk control measures. If there is any portion of this manual or function you do not understand, contact BlastOne International to obtain further assistance. Keep this manual available for reference.

⚠ WARNING ⚠

Safety alert symbol.

This symbol means: ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

This is the "safety alert symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

SIGNAL WORDS: Note the use of signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices and indicate potential failure or damage to equipment.

CAUTION: Indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ DANGER ⚠

Abrasive blasting exposes operators and bystanders to hazards that can cause injury or death. The operator of the SnakeBite XQ Nozzle and Silencer must:

- always comply with local laws, regulatory requirements and codes of practice when using the SnakeBite XQ Nozzle or Silencer.
- follow all blast system manufacturer operational procedures relating to blasting.
- carry out a risk assessment specific to the use of the nozzle and silencer and implement identified risk control measures.

SAFETY WARNINGS

⚠ WARNING ⚠

Operators must read and understand fully this operating manual prior to using the SnakeBite XQ Nozzle and Silencer.

Operator Competence: Operators must be trained and competent to undertake abrasive blasting prior to using the SnakeBite XQ Nozzle and Silencer.

Personal Protective Equipment (PPE): Operators and bystanders are required to wear appropriate PPE when blasting operations are in progress.

⚠ CAUTION ⚠

Operator Complacency: the noise and thrust generated by the SnakeBite XQ Nozzle and Silencer when operated with the silencer is significantly lower than other typical blasting nozzles. Operators and bystanders should be aware of these features and not stop observing the required safe operation requirements when this occurs.

DESCRIPTION

The SnakeBite XQ Nozzle and Silencer represents a step change in abrasive blasting nozzle design and functionality. The unique internal nozzle geometry of the SnakeBite XQ Nozzle produces a more stable blast stream than conventional nozzles. This results in less blast stream turbulence, improved stability, higher abrasive particle velocity for an increased distance after the nozzle exit and delivers increased abrasive particle energy at the work surface.

The Silencer has been specifically designed to respond to the characteristics of the blast stream produced by the SnakeBite XQ Nozzle and is tuned to remove the typical high pitch screech of the blast stream and reduce the sound emitted by the blasting process.

The Silencer design incorporates a nozzle thrust reduction feature that reduces the force produced by the nozzle in the opposite direction to the blast stream.

FEATURES

- Groundbreaking Nozzle internal geometry that delivers up to 25% increase in surface cleaning rates and operator productivity without increased abrasive usage rates.
- Industry leading nozzle silencer delivering up to 16dB noise reduction across a wide range of operating pressures.
- Nozzle thrust reduction of up to 40%, when operated with the silencer fitted, results in a significant reduction in operator fatigue over the shift.
- Silicon Nitride ceramic liner offering excellent wear characteristics and life.
- Robust anodised aluminium nozzle jacket, including a nozzle exit bump guard,

protects the nozzle and liner from the harsh blasting environment and improved operator safety.

- Slimline ergonomic nozzle jacket design providing improved grip and reduced operator hand fatigue.
- Standard contractor nozzle inlet thread.

⚠ WARNING ⚠

Installation - Always isolate the system pressure prior to installing and removing the nozzle or silencer and conducting maintenance. If the Nozzle or Silencer is damaged, cease using the damaged product.

Installing the Nozzle

1. The SnakeBite XQ Nozzle is available in a range of standard nozzle sizes and includes a standard contractor inlet thread.
2. Inspect the condition of the nozzle liner and jacket prior to installing it into the nozzle holder. Make sure the nozzle liner is not damaged or cracked or has pieces missing. Check the nozzle is not excessively worn by using a nozzle wear gauge – the nozzle is excessively worn if the throat diameter has worn to the diameter of the next larger size nozzle. Inspect the nozzle jacket for damage. If the nozzle liner is damaged or excessively worn do not continue to use the nozzle.
3. Ensure the system pressure is isolated before installing the nozzle into the nozzle holder.
4. Clean the threads on the nozzle and the nozzle holder and make sure they are free of any grit or debris.

5. The nozzle is installed onto the blast hose by screwing the bell shaped inlet end of the of the nozzle into the nozzle holder. Make sure the nozzle washer is located as shown below.
6. Continue to screw the nozzle into the nozzle holder until the nozzle reaches the end of the nozzle holder thread, then tighten the nozzle until it is hand tight. Do not over-tighten the nozzle in the nozzle holder or use any tools to tighten the nozzle.
7. If the nozzle is to be used without the silencer, the bump guard must be installed and securely fitted to the outlet end of the nozzle. Hand tighten the bump guard in the same way the nozzle is hand tightened.

   Note: *The bump guard thread is different to the nozzle inlet thread to ensure the nozzle cannot be installed backwards.*
8. When the nozzle is installed into the nozzle holder as per the instructions above, check to make sure the connection is tight and there is no movement between the nozzle holder and the nozzle. Check that the nozzle holder is firmly secured to the blast hose.
9. The nozzle is removed in the reverse order to the above sequence.

   Note: *Ensure the system pressure is isolated prior to removing the nozzle.*

Installing the Silencer

1. Inspect the condition of the silencer liner and jacket prior to installing it onto the nozzle. Make sure the silencer liner is not damaged or cracked or has pieces missing. Inspect the silencer liner wall thickness at the exit of the silencer – typically the silencing effect will reduce if the silencer is excessively worn. The silencer is excessively worn if the exit diameter has worn per the following table:

NOZZLE SIZE	EXCESSIVELY WORN DIAMETER
No. 6	27 mm (1.06 in)
No. 7	30 mm (1.18 in)
No. 8	34 mm (1.34 in)

   Inspect the silencer jacket for damage. If the silencer is damaged or excessively worn do not continue to use the silencer.

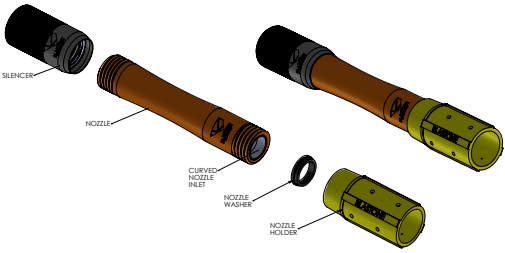
2. Ensure the system pressure is isolated before installing the silencer onto the nozzle.
3. The nozzle has been designed to be used with or without the silencer. If required, remove the bump guard, and clean the threads on the nozzle exit and the silencer and make sure they are free of any grit or debris.
4. The silencer is installed onto the nozzle by screwing it onto the outlet end of the nozzle as shown below.

   Note: *there is no silencer washer.*

5. Continue to screw the silencer onto the nozzle until the nozzle reaches the end of the silencer thread, then tighten the nozzle until it is hand tight. Do not over-tighten the nozzle in the nozzle holder or use any tools to tighten the nozzle.

6. When the silencer is installed onto the nozzle as per the instructions above, check to make sure the connection is tight and there is no movement between the silencer and the nozzle. Check that the nozzle is firmly fitted into the nozzle holder.
7. The silencer is removed in the reverse order to the above sequence.

   Note: *Ensure the system pressure is isolated prior to removing the silencer.*



NOZZLE AND SILENCER INSTALLATION ARRANGEMENT

⚠ DANGER ⚠

Never point the nozzle in the direction of personnel when the system is pressurised or during blasting operations.

⚠ CAUTION ⚠

Nozzle Serviceability: Always inspect the nozzle and silencer for excessive wear or damage prior to operating the nozzle or silencer.

Fatigue: Regular operator breaks are recommended to reduce operator fatigue**.**

⚠ WARNING ⚠

Operators must read and understand fully this operating manual prior to using the SnakeBite XQ Nozzle and Silencer.

Operator Competence: Operators must be trained and competent to undertake abrasive blasting prior to using the SnakeBite XQ Nozzle and Silencer.

Blasting operations generate noise levels that can permanently damage hearing: operators and nearby personnel are to ensure appropriate personal protective equipment, including hearing protection is worn during blasting operations.

Nozzle and Silencer Care: Take care to place down the SnakeBite XQ nozzle and silencer rather than dropping from height and to avoid impact with hard surfaces as this may damage the nozzle and silencer. Operators are required to inspect the nozzle and silencer for damage or excessive wear before installing onto the blast hose and before use.

Nozzle control: The Blasting Process generates thrust through the nozzle in the opposite direction to the blast stream. Operators must maintain a secure grip of the nozzle on start-up and during blasting to ensure the control of the nozzle is maintained and the operator hand doesn't slip off the front of the nozzle.

Remote Shut off: Always use a remote shut off Deadman system when using the SnakeBite XQ Nozzle and Silencer.

The SnakeBite XQ Nozzle and Silencer are designed to operate effectively across a wide range of operating pressures, typically between 80-110psi, with the optimal and recommended operating pressure being 100psi. Operating the nozzle and silencer at pressures other than the recommended pressure will reduce cleaning efficiency and silencing effect.

It is recommended the blast system used is a BlastOne Schmidt Pressure hold system fitted with a 2" bull hose coupled to an adequately sized compressor for the nozzle size used – see BlastOne catalogue for compressor sizing.

The SnakeBite XQ has been designed to optimise abrasive blasting using GMA Australian Garnet. Use with alternative abrasive types may result in reduced performance outcomes compared to using GMA Australian Garnet.

Preparing to use the nozzle and silencer

1. Setup Blast system in accordance with manufacturers instructions and connect nozzle and silencer as per instruction above.
2. Clear the work area of any debris and trip hazards and observe all safety requirements.
3. Pressurise the system and set the nozzle outlet pressure to 100psi.

Operator standoff

1. The improved blast stream stability generated by the SnakeBite XQ Nozzle will allow an increased standoff distance and faster cleaning rates - around 500-600mm (20-24 in) for typical situations.

2. The optimum nozzle standoff distance will depend on the type of coating to be removed and is influenced by factors such as coating type and thickness, abrasive type being used, worksite access and required surface profile.
3. When safe to do so, start blasting at a stand-off distance of 500-600mm (20-24 in). Adjust the standoff distance to find the optimum stand off for the job at hand.

Abrasive Flow Rate

Optimum abrasive flow rate varies depending on nozzle size, air flow and abrasive type. The table below sets out the recommended typical abrasive flow rate range when using Australian GMA Garnet.

ABRASIVE FLOW RATE AT 100 PSI
Abrasive Type: GMA Garnet Premium Blast

Nozzle Throat Size	Kgs/Hr (Lbs/Hr)	Abrasive valve turns
6 (3/8")	180-250 (400-550)	4-5
7 (7/16")	250-320 (550-700)	4
8 (1/2")	300-380 (660-840)	3.5-4

⚠ WARNING ⚠

Maintenance: Any maintenance on the Nozzle and Silencer must only be conducted by trained and qualified personnel.

Ensure the system pressure is isolated before undertaking maintenance on the nozzle or silencer.

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.

Other than cleaning, there are no operator maintainable components on the SnakeBite XQ Nozzle and Silencer.

Regularly measure the wear at the nozzle throat by using a nozzle wear gauge.

If the Nozzle or Silencer are damaged or excessively worn do not continue to use the product.

The Nozzle and Silencer should be cleaned regularly ensuring there is no build-up of dust or grit on the threads or around the machined fins on the silencer.

The SnakeBite XQ Nozzle and Silencer are available in industry standard nozzle sizes:

SNAKEBITE XQ PART NO.				
Throat Size	**Nozzle**	**Silencer**	**Bump Guard**	**Nozzle & Silencer Assembly**
6 (3/8")	BNSB6C	BNSBXQ6S	BNSBBG	BNSBXQ6
7 (7/16")	BNSB7C	BNSBXQ7S	BNSBBG	BNSBXQ7
8 (1/2")	BNSB8C	BNSBXQ8S	BNSBBG	BNSBXQ8

TROUBLESHOOTING

	POSSIBLE CAUSE	POSSIBLE SOLUTION
Low cleaning rate.	Low operating pressure	Adjust nozzle outlet pressure to 100psi.
	In appropriate abrasive flow rate	Adjust abrasive flow rate to the recommended flow rate for the nozzle size and abrasive type combination.
	Damaged or worn nozzle liner	Replace the damaged or worn component.
Ineffective silencing	Low operating pressure	Adjust nozzle outlet pressure to 100psi.
	Worn or damaged silencer liner.	Replace the damaged or worn silencer.

BLASTONE

AUSTRALIA

57 Alexandra Place Murarrie,
Queensland 4172 Australia

Toll Free 1800 190 190
Email sales.au@blastone.com
www.BlastOne.com.au

AUSTRALIAN OFFICES
Brisbane | Mackay | Sydney | Newcastle | Melbourne | Adelaide | Darwin | Perth | Port Hedland

NEW ZEALAND

15 Fremlin Place, Avondale,
Auckland 1026 New Zealand

Toll Free 0800 190 190
Email sales.nz@blastone.com
www.BlastOne.co.nz

NEW ZEALAND OFFICES
Christchurch | Auckland

NORTH AMERICA

4510 Bridgeway Avenue,
Columbus Ohio 43219 USA

Toll Free 800 999 1881
Email sales@blastone.com
www.BlastOne.com

NORTH AMERICAN OFFICES
Chicago | Columbus | Minneapolis | Los Angeles

MALAYSIA

B-05-07 Neo Damansara, Jalan PJU 8/1,
Bandar Damansara Perdana, 47820 Petaling Jaya, Selangor, Malaysia

Tel 03 7725 0371
Email sales.my@blastone.com
www.BlastOne.my

 B3962