



# **PRODUCT OPERATING MANUAL**

**PANBLAST™**

***AIR WATER INDUCTION BLAST NOZZLE***

***Manual Number: ZVP-PC-0090-00***

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## 1.0 GENERAL INFORMATION

### 1.1 Panblast Notice to Purchasers and Users

1.1.1 All products and equipment designed and manufactured by Panblast are intended for use by experienced users of abrasive blasting equipment and its associated operations and abrasive blasting media.

1.1.2 It is the responsibility of the user to:

- Determine if the equipment and abrasive media is suitable for the users' intended use and application.
- Familiarize themselves with any appropriate laws, regulations and safe work practices, which may apply within the users' working environment.
- Provide appropriate operator training and a safe working environment including operator protective equipment (PPE) such as, but not limited to, blasting suit, safety footwear, protective eyewear and hearing protection.

1.1.3 Panblast Standard Terms and Conditions of Sale apply. Contact your local PanBlast office or distributor should you require any further information or assistance.

1.2 **⚠ ! WARNING ! - READ THIS SECTION CAREFULLY BEFORE USING THIS EQUIPMENT/APPARATUS.**

1.2.1 Heavy metal paint, asbestos and other toxic material dusts will cause serious lung disease or death without the use of properly designed and approved air supplied (SAR) respiratory equipment by blast operators and all personnel within the work site area.

1.2.2 The compressor must have adequate output and the plumbing between the compressor and the point of attaching the air supply hose must have sufficient capacity to supply the volume of air at the pressure required.

### 1.3 Standard Safety Precautions

1.3.1 Approved safety eyewear, hearing and footwear protection should be worn at all times by the operator and anyone else in the immediate area that may be exposed to any hazards generated by the abrasive blasting process.

1.3.2 Suitably approved respiratory protection should also be worn when handling abrasive media, abrasive refuse dust and when carrying out any service/maintenance work where any dust may be present.

1.3.3 Any work performed on electrical wiring or components must only be carried out by suitably qualified and registered electrical trades' personnel.

1.3.4 Under no circumstances should any safety interlocks / lockouts or features be altered or disabled in any way.

1.3.5 All equipment must be isolated from the compressed air supply and electrical power source prior to any service or maintenance work being carried out.

1.3.6 All care must be taken by the operator(s) when lifting or moving equipment or components in

order to prevent injury. Pressure blast pots must always be emptied of abrasive media before any attempt is made to move them.

1.3.7 Any modification of the equipment or use of non-genuine PanBlast™ replacement parts will void warranty.

1.3.8 Always check the Material Safety Data Sheet (MSDS) on the abrasive media being used to ensure that it is free of harmful substances, in particular, free silica, cyanide, arsenic or lead.

1.3.9 Test the surface to be blasted for harmful substances, taking the appropriate measures and precautions to ensure the safety of the operator(s) and all personnel.

1.3.10 The operator should carry out a daily inspection before start up of all wearing and safety items to ensure that they are in correct operating order. In particular check all blast hose couplings and nozzle holders, ensuring that all couplings have engaged correctly and the safety locking pins are fitted and in good condition. Always install safety whip check cables at every connection. Ensure that the blast nozzle has been securely screwed into the nozzle holder and the nozzle holder has been secured to the blast hose correctly and that all screws are engaged.

## 2.0 INTRODUCTION

2.1 These instructions cover the operation of the PanBlast™ AIN Water Induction Blast Nozzle range.

2.2 The PanBlast™ AIN Water Induction Blast Nozzle range features the ability to slurry wet blast via both adjustable water feed and adjustable venturi air injector ports for optimum air/water in the blast nozzle discharge and water suction capacity.

2.3 The AIN Water Induction Blast Nozzle series can be utilized in place of any commercial / conventional blasting nozzle with no modifications or upgrading required of your standard pressure blasting equipment.

**NOTE: UNDER OSHA 1915:34(c)(1)(iv) DEAD MAN CONTROL. A DEADMAN CONTROL DEVICE SHALL BE PROVIDED AT THE NOZZLE END OF THE BLAST HOSE EITHER TO PROVIDE DIRECT CUTOFF OR TO SIGNAL THE POT TENDER BY MEANS OF A VISUAL AND AUDIBLE SIGNAL TO CUT OFF THE FLOW, IN THE EVENT THE BLASTER LOSES CONTROL OF THE HOSE. THE POT TENDER SHALL BE AVAILABLE AT ALL TIMES TO RESPOND IMMEDIATELY TO THE SIGNAL**

**⚠ ! WARNING ! THE SYSTEM MUST BE IN SHUT DOWN MODE AND THE COMPRESSED AIR DISCONNECTED BEFORE PERFORMING ANY INSTALLATION WORK. FAILURE TO DO SO MAY RESULT IN PREMATURE ACTIVATION OF THE SYSTEM THAT MAY CAUSE SERIOUS INJURY OR DEATH.**

### 3.0 OPERATING INSTRUCTIONS

**⚠ ! WARNING ! - READ THIS SECTION CAREFULLY BEFORE USING THIS EQUIPMENT/ APPARATUS.**

- 3.1 The PanBlast™ AIN Water Induction Blast Nozzle range can either be supplied with water from town water (tap supply), a pump or from a water storage tank. It is recommended to select a water storage tank when a rust or corrosion inhibitor is required.
- 3.2 The quantity of water being induced in to the air blast stream can be adjusted to suit varying application requirements and to suit the AIN blast nozzle being used.
- 3.3 To prepare the AIN Water Induction Blast Nozzle for operation, ensure that the blast nozzle holder has been correctly fitted to the blast hose and that the correct nozzle holder fixing screws have been utilized as per 1.16 of this manual.
- 3.4 The AIN Water Induction Blast Nozzles are designed with a 50mm (2") male contractor type attachment thread. Ensure that the nozzle holder being utilized also has the equivalent 50mm (2") female type contractor thread.
- 3.5 PanBlast recommends the use of the NNH nylon nozzle holder series. The PanBlast™ NNH nylon nozzle holder series will not cause "galling" or jamming of the blast nozzle sometimes associated with the use of aluminium nozzle holders.
- 3.6 To attach the AIN Water Induction Blast Nozzle to the nozzle holder, ensure the NW32 nozzle washer is in place within the nozzle holder then turn the blast nozzle in a clockwise direction until firmly tight and seated against the nozzle washer.
- 3.7 Connect a 10mm (3/8") I.D. water supply hose from the water source / supply to the hose barb on the brass petcock which is located at the end of the AIN hose assembly. Ensure that the water supply hose is securely clamped to the hose barb and that the water supply hose is neatly attached to the blast hose ensuring a safe working environment.
- 3.8 The AIN Water Induction Blast Nozzles are manufactured with six (6) air induction ports, which are located in the exit casing body. Three (3) of these air induction ports are factory supplied plugged.
- 3.9 The air induction ports allow air to enter the water/air mixing chamber of the blast nozzle, the more air induction ports that are open / unplugged will provide a leaner mixture of water to air. A reduction or closing / plugging more air induction ports will create a greater water to air mixture ratio.
- 3.10 It is recommended that the AIN Water Induction Blast Nozzle be used with the isolation petcock set at 50% open when drawing water from a storage tank. The petcock can be further adjusted and fine-tuned for varying application requirements.
- 3.11 If the AIN Water Induction Blast Nozzle is being supplied water from a pressurized system such

as town supply tap water or pump, it is recommended to operate the nozzle with four (4) to six (6) air induction ports open or unplugged. The supply petcock can be set between 50% to 100% open and fine-tuned as required.

### 4.0 MAINTENANCE

**⚠ ! WARNING ! THE SYSTEM MUST BE IN SHUT DOWN MODE AND THE COMPRESSED AIR DISCONNECTED BEFORE PERFORMING ANY MAINTENANCE WORK. FAILURE TO DO SO MAY RESULT IN PREMATURE ACTIVATION OF THE SYSTEM THAT MAY CAUSE SERIOUS INJURY OR DEATH.**

- 4.1 Periodically inspect the internal tungsten carbide blast nozzle liner for wear. It is recommended that the blast nozzle be replaced once the internal orifice has worn more than 3mm (1/16") from its original size as supplied.
- 4.2 Inspect the air induction ports to ensure the air induction plugs are fitted where required and that the open air induction ports are not obstructed or blocked.
- 4.3 Check the AIN hose assembly for splits or wear, replace if any signs of wear are present.
- 4.4 Review the petcock to ensure that the on/off lever handle is always free in its action.
- 4.5 Always ensure that the NW32 nozzle washer is in place and correctly seated within the NNH nozzle holder. Using the AIN Water Induction Blast Nozzle without a nozzle washer in place will damage the blast nozzle.

5.0 TROUBLE SHOOTING GUIDE

PROBLEM	PROBABLE SOLUTION
<p><b>High dust emission when abrasive blasting.</b></p>	<p>Too many air induction ports are open, close / plug 1 or 2 air induction ports.</p>
	<p>The petcock is not in the open position or not open a sufficient amount, adjust the petcock accordingly.</p>
	<p>The blast nozzle is elevated too high above the water source, close / plug off more air induction ports to increase the water suction and open the petcock valve to its full capacity.</p>
	<p>Internal tungsten carbide liner of the blast nozzle is worn out, replace the blast nozzle.</p>
	<p>Internal locking nut and water inlet holes are blocked, dismantle the nozzle and clear all blockages.</p>
<p><b>Water is emitting from air induction ports during abrasive blasting.</b></p>	<p>There are not enough air induction ports open, open 1 to 2 more air induction ports.</p>
	<p>The petcock valve is set too far open, decrease / close the petcock valve.</p>
<p><b>High water usage.</b></p>	<p>Decrease the petcock flow setting.</p>
	<p>Open / un-plug more air induction ports.</p>

**6.0 FLOW & CONSUMPTION DATA**

**6.1 Maximum Blast Nozzle Work Height Above Tank Supply Outlet**

NOZZLE MODEL	BLAST POT PRESSURE	AIR ENTRY PORTS OPEN	MAXIMUM WORK HEIGHT
AIN-4	690 kPa (100psi)	1	3m (10ft)
AIN-5	690 kPa (100psi)	1	4m (13 ft)
AIN-6	690 kPa (100psi)	1	4.5m (15 ft)
AIN-7	690 kPa (100psi)	1	5m (16 ft)
AIN-8	690 kPa (100psi)	1	5.5 m (18ft)

**6.2 Minimum & Maximum Water Flow Ratings**

NOZZLE MODEL	BLAST POT PRESSURE	MIN WATER FLOW	MAX WATER FLOW
AIN-4	690 kPa (100psi)	1.4 litres/min	1.9 litres/min
AIN-5	690 kPa (100psi)	2.1 litres/min	2.3 litres/min
AIN-6	690 kPa (100psi)	2.1 litres/min	2.3 litres/min
AIN-7	690 kPa (100psi)	3.0 litres/min	3.3 litres/min
AIN-8	690 kPa (100psi)	3.7 litres/min	3.9 litres/min

**6.3 Blast Nozzle Specification Data**

NOZZLE MODEL	ORIFICE	LENGTH	WEIGHT
AIN-4	6.4mm (1/4")	166mm	1.50kg (3.30lbs)
AIN-5	8mm (5/16")	168mm	1.40kg (3.09lbs)
AIN-6	9.5mm (3/8")	178mm	1.42kg (3.12lbs)
AIN-7	11 mm (7/16")	210mm	1.60kg (3.50lbs)
AIN-8	12.5mm (1/2")	229mm	1.70kg (3.75lbs)

## 7.0 ASSEMBLIES, PARTS LISTING & EXPLODED VIEW

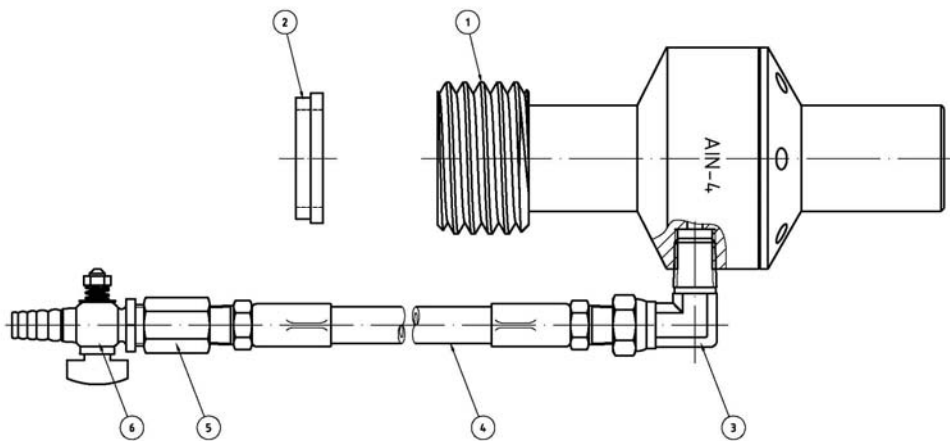
### 7.1 AIN-4 Water Induction Blast Nozzle Assembly

Stock Code	Description	Weight
BAC-NZ-0510-00	Blast Nozzle AIN-4 Alum/Tung Induction	1.50Kg (3.30lbs)

#### 7.1.1 AIN-4 Water Induction Blast Nozzle Parts Listing

Item	Stock Code	Description	Qty
1	YAC-NZ-0532-00	Nozzle Tungsten Carbide AIN-4	1
2	BAC-NZ-PB-0031	RNW-32 Nozzle Washer	1
3	YAC-PF-PB-0235	Elbow With Nut - NPT	1
4	YAC-NZ-PB-0342	Wetblast Hose Attachment	1
5	YAC-PF-0263-00	Hex Socket	1
6	YAC-PF-0267-00	Pet Cock Without Hole	1

#### 7.1.2 AIN-4 Water Induction Blast Nozzle Exploded View



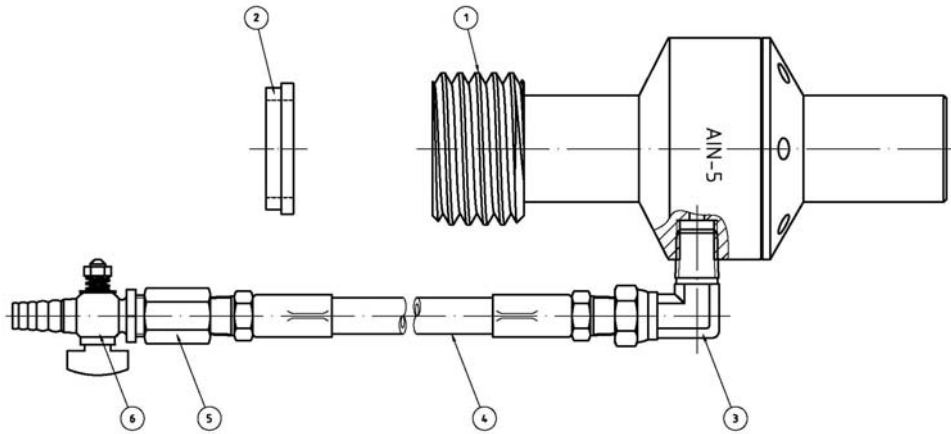
7.2 AIN-5 Water Induction Blast Nozzle Assembly

Stock Code	Description	Weight
BAC-NZ-0511-00	Blast Nozzle AIN-5 Alum/Tung Induction	1.40Kg (3.09lbs)

7.2.1 AIN-5 Water Induction Blast Nozzle Parts Listing

Item	Stock Code	Description	Qty
1	YAC-NZ-0533-00	Nozzle Tungsten Carbide AIN-5	1
2	BAC-NZ-PB-0031	RNW-32 Nozzle Washer	1
3	YAC-PF-PB-0235	Elbow With Nut - NPT	1
4	YAC-NZ-PB-0342	Wetblast Hose Attachment	1
5	YAC-PF-0263-00	Hex Socket	1
6	YAC-PF-0267-00	Pet Cock Without Hole	1

7.2.2 AIN-5 Water Induction Blast Nozzle Exploded View





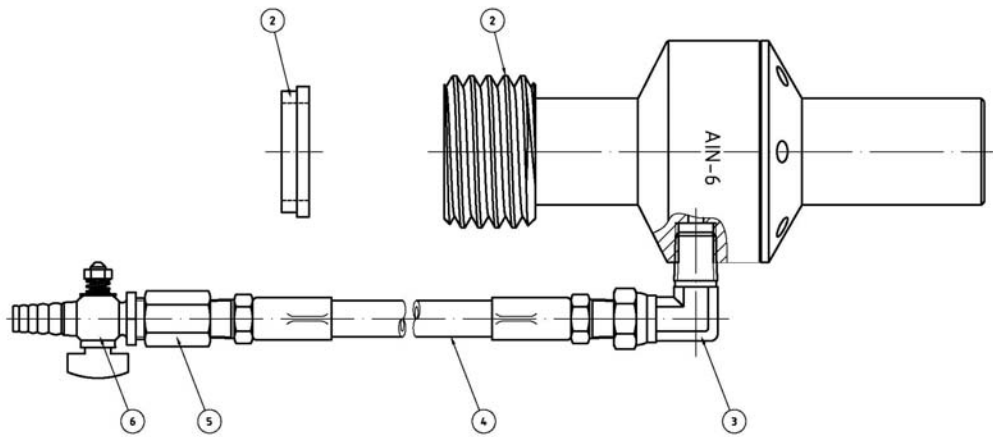
7.3 AIN-6 Water Induction Blast Nozzle Assembly

Stock Code	Description	Weight
BAC-NZ-0512-00	Blast Nozzle AIN-6 Alum/Tung Induction	1.42Kg (3.13lbs)

7.3.1 AIN-6 Water Induction Blast Nozzle Parts Listing

Item	Stock Code	Description	Qty
1	YAC-NZ-0534-00	Nozzle Tungsten Carbide AIN-6	1
2	BAC-NZ-PB-0031	RNW-32 Nozzle Washer	1
3	YAC-PF-PB-0235	Elbow With Nut - NPT	1
4	YAC-NZ-PB-0342	Wetblast Hose Attachment	1
5	YAC-PF-0263-00	Hex Socket	1
6	YAC-PF-0267-00	Pet Cock Without Hole	1

7.3.2 AIN-6 Water Induction Blast Nozzle Exploded View



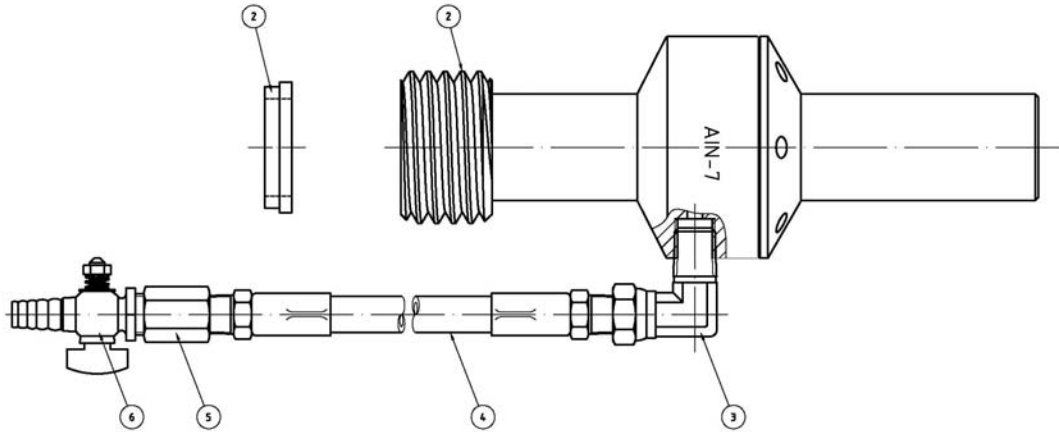
7.4 AIN-7 Water Induction Blast Nozzle Assembly

Stock Code	Description	Weight
BAC-NZ-0513-00	Blast Nozzle AIN-7 Alum/Tung Induction	1.60Kg (3.53lbs)

7.4.1 AIN-7 Water Induction Blast Nozzle Parts Listing

Item	Stock Code	Description	Qty
1	YAC-NZ-0535-00	Nozzle Tungsten Carbide AIN-7	1
2	BAC-NZ-PB-0031	RNW-32 Nozzle Washer	1
3	YAC-PF-PB-0235	Elbow With Nut - NPT	1
4	YAC-NZ-PB-0342	Wetblast Hose Attachment	1
5	YAC-PF-0263-00	Hex Socket	1
6	YAC-PF-0267-00	Pet Cock Without Hole	1

7.4.2 AIN-7 Water Induction Blast Nozzle Exploded View



7.5 AIN-8 Water Induction Blast Nozzle Assembly

Stock Code	Description	Weight
BAC-NZ-0514-00	Blast Nozzle AIN-8 Alum/Tung Induction	1.70Kg (3.75lbs)

7.5.1 AIN-8 Water Induction Blast Nozzle Parts Listing

Item	Stock Code	Description	Qty
1	YAC-NZ-0536-00	Nozzle Tungsten Carbide AIN-8	1
2	BAC-NZ-PB-0031	RNW-32 Nozzle Washer	1
3	YAC-PF-PB-0235	Elbow With Nut - NPT	1
4	YAC-NZ-PB-0342	Wetblast Hose Attachment	1
5	YAC-PF-0263-00	Hex Socket	1
6	YAC-PF-0267-00	Pet Cock Without Hole	1

7.5.2 AIN-8 Water Induction Blast Nozzle Exploded View

