# PRODUCT OPERATING MANUAL

## PANBLAST™

*AER85 CLOSED CIRCUIT BLASTER*

*Manual Number: ZVP-PC-0194-00*

SECTION

## 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, safety footwear, protective eyewear and hearing protection.

**1.1.3** Panblast Standard Terms and Conditions of Sale apply. Contact your local Panblast office 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 respiratory equipment (SAR) 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 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. 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 and/or components 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 to ensure the safety of the operator and others.

**1.3.10** The operator should carry out a daily inspection of all related components prior to start up of all wearing and safety items to ensure they are in correct operating order. In particular check all hose couplings and nozzle holders, ensuring that all hose couplings are fitted correctly and the safety locking pins are engaged and in good order. Always install safety whip check cables at every hose 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 all screws are engaged.

**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.**

## 2.0 ASSEMBLY INSTRUCTIONS

**The AER85 Closed Circuit Blaster is a portable blast and vacuum recovery unit which requires minimal space for operation.**

**2.1** The AER85 Closed Circuit Blaster is designed to be used on surfaces which are flat, level, and with a stable operating platform for the system.

**2.2** Connect the machine to a compressed air supply capable of continuously providing 1.4m³/min. (48 cfm) of free air at the pressure of 6.3 – 7.0 kg/cm² (90 – 100 PSI). To obtain satisfactory results, the compressed air supply must be clean and dry and it is advisable that for this purpose a compressor with an after-cooler and moisture separator be utilized.

The air supply line to the AER85 must not be less than 19 mm (3/4") bore for lengths of up to 12 meters (40 ft.) or 25 mm (1") bore for lengths of up to 35 meters (115ft.). The compressed air line should be connected to the unit's main inlet ball valve

Before operating the machine, the compressed air supply should be cleared of residual moisture as close as possible to the machine inlet, by blowing out the line.

**2.3** Connect the reclaimer inlet to the recovery head outlet using the supplied (38mm) 1 ½" I/D recovery hose and hose clamps (Figure 1 item No.6).

**2.4** Connect the supplied abrasive media delivery hose between the feed tee and the suction blast gun hose adaptor (Figure 1 item No.5).

**2.5** Connect the supplied (12mm) 1/2" nominal bore air line hose between the pressure regulator outlet and the suction blast gun hose barb with the hose clamps supplied (Figure 1 item No.4).

## 3.0 OPERATING INSTRUCTIONS

**3.1** To charge the machine with abrasive media ensure that the air activation trigger located on the suction blast gun (Schrader valve) is in the "OFF" closed position. Open the main air inlet ball valve, which will start the air ejector vacuum suction process.

To load the abrasives in to the AER85 empty the abrasives in a tray or clean area for the vacuum loading process. Move the gun vacuum recovery head carefully over the pile of abrasive, the abrasive will be picked up and conveyed into the abrasive storage hopper and ready for use.

**3.2** To operate the machine ensure the Schrader air valve located on the blast gun is not depressed in the activated position before turning on the main compressed air inlet ball valve. When ready to blast, hold the gun with the brush lightly on the work surface, and depress the Schrader air valve. When moving the blast gun and vacuum recovery head assembly do not "scrub" the work surface but use light, steady movements.

**⚠ ! WARNING! - NEVER LIFT THE GUN OFF THE WORK SURFACE WHILST BLASTING. THE COMPRESSED AIR FLOW AND BLASTING FUNCTION MUST BE COMPLETELY ISOLATED BEFORE REMOVING THE GUN FROM THE SURFACE.**

**3.3** To stop the machine, firstly release the Schrader air valve to stop the blasting, after which the main compressed air inlet ball valve may be turned off.

**3.4** The suction blast gun assembly can be detached from the recovery head assembly after loosening the two hexagon head screws on the recovery head.

**Understanding the operation of the generator reclaimer**

**3.5** The generator reclaimer comprises of the following:

**3.5.1** The abrasive storage hopper with feed tee and oversize debris screen

The storage hopper contains abrasive and has attached to it a feed orifice, which passes through the feed tee. The feed orifice and feed tee meter the abrasive flow to the blast gun nozzle via the abrasive media delivery hose. The rear of the feed tee is connected to a bleed valve and a hose to the abrasive storage hopper. This prevents blockage of the abrasive supply hose whilst the machine is blasting. The bleed valve controls the airflow drawn from the abrasives hopper to mix with the abrasives. If set correctly, the abrasives should flow smoothly from the blast nozzle.

If the abrasive is pulsing or surging from the blast nozzle, then the air/abrasive mix is too rich, and the air bleed valve needs to be opened further.

If the abrasive continues to pulse/surge, even with the air bleed valve fully open, then it is necessary to loosen the two lock nuts, which attach the feed tee to the hopper, and slowly slide the feed tee forward slightly to reduce the office opening in the bottom of the abrasive hopper. This adjustment should be carried out in small increments until the abrasive media begins to flow smoothly.

**3.5.2** The abrasive reclaimer unit

The abrasive reclaimer unit recovers the abrasives and debris from the work surface. The recovery vacuum is produced by a compressed air operated air ejector, which is pre-set and therefore requires no adjustment. Compressed air flows through the 1/8" bore air nozzle immediately when the main air inlet valve is turned on, the compressed air exhausts vertically downwards through the exhaust tube and silencer to atmosphere.

The used abrasive and debris enter the abrasive reclaimer via the reclaimer inlet. The abrasive and large debris are centrifugally segregated from the dust and the finely broken down abrasive and will fall on to the separator screen. The large debris is retained while the re-usable abrasive is allowed to pass through to the abrasive storage hopper.

The air, together with dust and finely broken down abrasive is carried from the abrasive reclaimer into the filter housing above. Here the contaminated air passes through the filter unit where it is thoroughly cleaned and exhausted to atmosphere – through the air ejector and silencer.

Large debris can be removed from the separator screen by opening the maintenance door.

**3.5.3** The moisture separator and pressure regulator

Compressed air enters the machine through the main inlet ball valve and moisture separator, which removes suspended water droplets. The airline divides after the moisture separator, one to supply the air ejector and the other line passing to the pressure regulator to the blast gun nozzle for the abrasive blasting operation. Thus, the air ejector is put into operation whenever the main air inlet ball valve is turned on.

The operator can adjust the blasting pressure by turning the pressure regulator knob.

A supply of clean dry air is essential for fully efficient operation of the machine.

**Understanding the operation of the blast gun**

**3.6** The blast gun consists of:-

**3.6.1** The gun body which, together with an air jet (Section 6.3.1 item no. 9), a blast nozzle (Section 6.3.1 item no. 10) and hose adaptor.

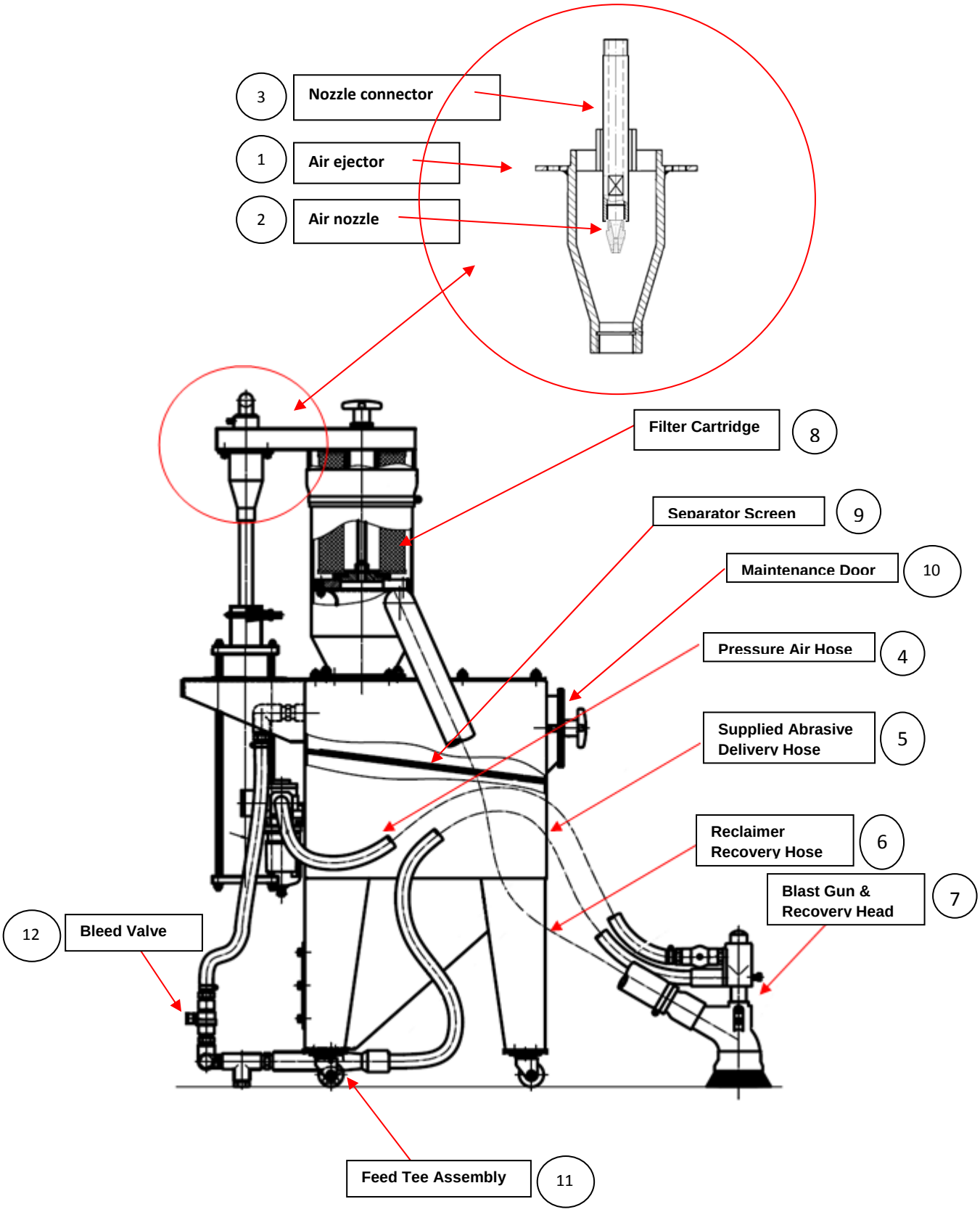
**3.6.2** The brush, serves to retain the abrasive and debris during blasting.

**3.6.3** The inner cone which creates a wall between the abrasive flow leaving the nozzle and the recovery air flow conveying the debris and abrasive after use, from the work surface.

During operation, air passes through the air jet and is directed through the blast nozzle. This induces air to flow into the hose adaptor from the feed tee conveying the correct quantity of abrasive media, which is then accelerated along the blast nozzle and directed on to the work surface, via the inner cone, at high velocity. The suction blast gun assembly is preset for maximum performance, thus requiring no adjustment.

**3.6.4** A flat brush, which is suitable for smooth or slightly irregular surfaces, is normally supplied with the recovery head assembly. For the particular treatment of internal corners or angle sections an angle brush can be supplied.

Figure 1


3
Nozzle connector
1
Air ejector
2
Air nozzle
Filter Cartridge
8
Separator Screen
9
Maintenance Door
10
Pressure Air Hose
4
Supplied Abrasive
Delivery Hose
5
Reclaimer
Recovery Hose
6
Blast Gun &
Recovery Head
7
12
Bleed Valve
Feed Tee Assembly
11

## 4.0 MAINTENANCE

**4.1** All piping, fittings and hoses must be checked daily for tightness and leakage.

**4.2** All equipment and components must be thoroughly checked for wear.

**4.3** All worn or suspect parts must be replaced

**4.4** All blast operators must be properly trained to operate equipment.

**4.5** Before blasting, always use the following checklist:

**4.5.1** Over a period of time, depending on the air-drying capacity of the compressed air supply, water may build up in the air pressure regulator/filter assembly. This water should be drained from the regulator on a daily basis, or more often if required, by opening the drain valve in the bottom of the regulator filter bowl. Close the drain valve after draining is complete.

**4.5.2** Abrasives delivery hose must be run as straight as possible from the machine to the work area with no sharp bends. Check daily for internal wear and external damage.

**4.5.3** On a monthly basis, remove the blast nozzle from the suction gun, and inspect both the blast nozzle and air tip for wear. If the air tip is worn sufficiently to have either worn through completely, or caused damage to the air tip opening, then the air tip should be replaced.

**4.5.4** Use abrasive that is properly sized and free of harmful substances such as free silica, cyanide, arsenic or lead. Check for presence of toxic or harmful substances.

**4.5.5** Test the surface to be blasted for toxic substances. Take appropriate protective measures pertaining to substances found on the surface to be blasted for both operator(s) and bystanders.

**4.6** Ensure the pressure regulator is in good condition and that the pressure can be set accordingly.

## 5.0 TROUBLE SHOOTING GUIDE

| Item | Problem | Possible Cause | Corrective Action |
|---|---|---|---|
| 1 | **Erratic or no feed of abrasive** | Main air valve closed. | Open valve. |
| | | Blast nozzle clogged. | Unscrew and remove debris. |
| | | Abrasive Schrader valve closed. | Open valve. |
| | | Air pressure low. | Check compressor and adjust air regulator as necessary. |
| | | Badly worn feed shaft or feed orifice | Replace shaft and orifice |
| | | Worn or collapsed abrasives delivery hose | Replace hose |
| | | Feed orifice choked | Clear orifice by pushing a wire through the orifice |
| 2 | **Abrasive becomes wet or oily rapidly** | Separator Screen blockage | Clear the Debris |
| | | Water or oil entering through air supply. | Drain Moisture separator. |
| 3 | **Abrasive delivery supply hose wears rapidly** | Hose kinked or bent. | Straighten as much as possible. |
| | | Blast nozzle worn 1.0mm oversize. | Replace. |

## 6.0 ASSEMBLIES, PARTS LISTING & EXPLODED VIEW

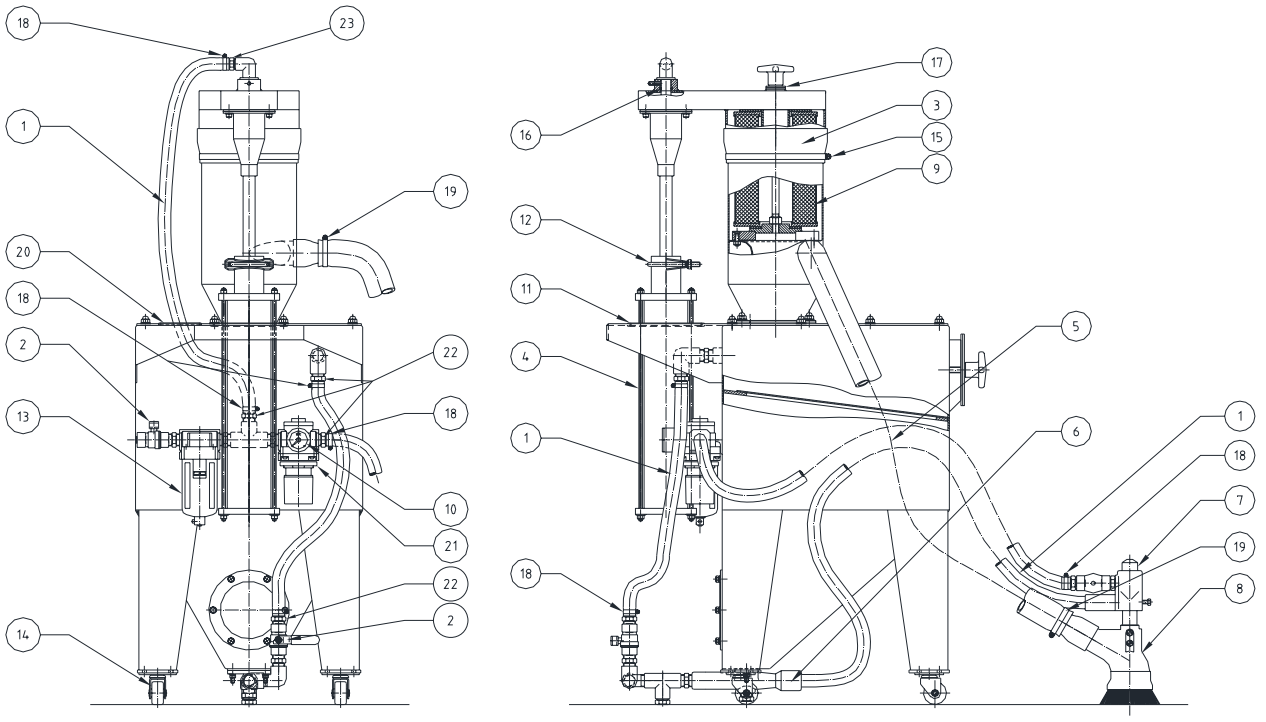
### 6.1 PanBlast™ AER85 Closed Circuit Blaster Assembly

| Stock Code | Description | Weight |
|---|---|---|
| BEC-RV-PB-0016 | AER85 Closed Circuit Blaster | 60kg (132.28lbs) |

### 6.1.1 PanBlast™ AER85 Closed Circuit Blaster Parts Listing

| Item | Stock Code | Description | Qty |
|---|---|---|---|
| 1 | BAC-HB-PB-0021 | Abrasive Hose | 9.5M |
| 2 | BAC-PF-PB-0001 | 13mm (1/2") Ball Valve | 2 |
| 3 | YAC-RV-PB-0098 | Sealing Band | 1 |
| 4 | BAC-RV-PB-0113 | Exhaust Muffler | 1 |
| 5 | YAC-RV-0189-00 | Lined Recovery Hose | 1 |
| 6 | BAC-CA-PB-0220 | Feed Tee Assembly | 1 |
| 7 | BAC-BG-PB-0009 | 9mm Suction Blast Gun Special | 1 |
| 8 | BAC-RV-PB-0017 | AER 85 Recovery Head Assy W/Flat Brush | 1 |
| 9 | BAC-DF-PB-0008 | Filter Cartridge - Size 5 | 1 |
| 10 | BAC-PF-PB-0031 | 6mm (1/4") Pressure Gauge - Rear Entry | 1 |
| 11 | YAC-CA-0474-00 | Rubber Seal | 0.42M |
| 12 | YAC-FN-PB-0246 | Pipe Clamp (Super) | 1 |
| 13 | BAC-AF-PB-0069 | 13mm(1/2") Port Moisture Separator | 1 |
| 14 | BAC-RV-PB-0104 | PU Wheel | 4 |
| 15 | YAC-FN-PB-0049 | Hose Clamp | 1 |
| 16 | YAC-BS-PB-0031 | O-Ring | 1 |
| 17 | BAC-DC-PB-0001 | Filter Cartridge Washer | 1 |
| 18 | YAC-FN-PB-0050 | Hose Clamp | 6 |
| 19 | YAC-FN-PB-0071 | Hose Clamp | 2 |
| 20 | BAC-CA-PB-0135 | Rubber Sealing Grommet | 1 |
| 21 | YAC-AF-PB-0019 | 1/2" Regulator | 1 |
| 22 | YAC-PF-PB-0018 | Hose Barb | 4 |
| 23 | YAC-PF-PB-0024 | Hose Barb | 1 |

### 6.1.2 PanBlast™ AER85 Closed Circuit Blaster Exploded View



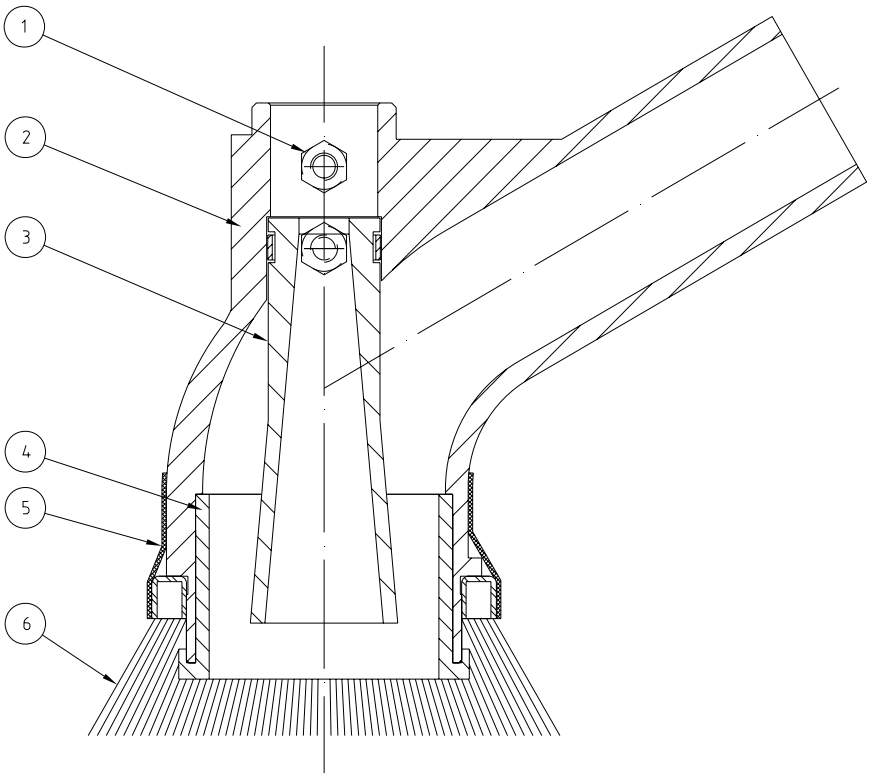
### 6.2 PanBlast™ AER85 Recovery Head Assembly

| Stock Code | Description | Weight |
|---|---|---|
| BAC-RV-PB-0017 | AER 85 Recovery Head Assy W/Flat Brush | 0.6kg (1.32lbs) |

### 6.2.1 PanBlast™ AER 85 Recovery Head Parts Listing

| Item | Stock Code | Description | Qty |
|---|---|---|---|
| 1 | YAC-FN-PB-0040 | Screw | 2 |
| 2 | BAC-BG-PB-0065 | AER85 Body | 1 |
| 3 | BAC-BG-PB-0071 | AER85 Inner Cone Assembly | 1 |
| 4 | BAC-BG-PB-0066 | AER85 Flat Insert | 1 |
| 5 | BAC-BG-0068-01 | AER85 Retainer Brush | 1 |
| 6 | BAC-BG-PB-0067 | AER85 Flat Brush | 1 |

### 6.2.2 PanBlast™ AER 85 Recovery Head Exploded View



### 6.3 PanBlast™ Suction Blast Gun Assembly

| Stock Code | Description | Weight |
|---|---|---|
| BAC-BG-PB-0009 | 9mm Suction Blast Gun Special | 0.9kg (1.98lbs) |

### 6.3.1 PanBlast™ Suction Blast Gun Parts Listing

| Item | Stock Code | Description | Qty |
|---|---|---|---|
| 1 | BAC-BG-PB-0016 | GF Suction Blast Gun Body | 1 |
| 2 | BAC-BG-PB-0019 | GF Air Jet Holder | 1 |
| 3 | YAC-FN-PB-0040 | Screw | 1 |
| 4 | YAC-FN-PB-0007 | Flat Washer | 2 |
| 5 | YAC-BG-PB-0020 | Gun Nozzle Holder | 1 |
| 6 | YAC-BS-PB-0008 | O-Ring | 2 |
| 7 | BAC-BG-PB-0017 | GF Hose Adapter | 1 |
| 8 | YAC-FN-PB-0132 | Screw | 2 |
| 9 | BAC-BG-PB-0012 | 3.2mm (1/8") Air Jet | 1 |
| 10 | BAC-NZ-PB-0180 | Blast Nozzle 3/8" Tungsten - Custom | 1 |
| 11 | YAC-PF-PB-0108 | Reducing Nipple | 1 |
| 12 | YAC-PF-PB-0109 | Schrader Valve | 1 |
| 13 | YAC-PF-PB-0024 | Hose Barb | 1 |

### 6.3.2 PanBlast™ Suction Blast Gun Exploded View