PRODUCT OPERATING MANUAL

PANBLAST™

CORSA II TUNGSTEN

Manual Number: ZVP-PC-0086-00

SECTION

1.0 GENERAL INFORMATION

1.1 Panblast notice to purchasers and users

1.1.1 All products and equipment designed and manufactured by Pan Abrasives 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 working practices which may apply within the users working environment.
- Provide appropriate operator training and a safe working environment including operator protective equipment such as, but not limited to, safety footwear, protective eyewear and hearing protection.

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

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

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

1.1.5 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.

1.2 Standard safety precautions

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

1.2.2 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.

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

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

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

1.2.6 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.

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

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

1.2.9 Test the surface to be blasted for harmful substances, taking the appropriate measures to ensure the safety of all personnel.

1.2.10 The operator should carry out a daily inspection before 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 couplings have engaged correctly and the safety pins are fitted and in good order, always install safety cables at every connection. Ensure that the nozzle has been securely screwed into the holder and the holder has been secured to the hose correctly and all screws are engaged.

2.0 INTRODUCTION

2.1 **Scope.** These instructions cover the installation, operation and maintenance of the PanBlast™ Corsa II Abrasive Control Valve in BSP format.

2.2 **Application.** The PanBlast™ Corsa II Abrasive Control Valve is designed to meter any commerically available abrasive from delicate plastic media through to aggressive metallic abrasives such as steel grit.

3.0 INSTALLATION

⚠ **! WARNING ! - THE COMPRESSED AIR SOURCE MUST BE ISOLATED BEFORE PERFORMING ANY INSTALLATION WORK. FAILING TO DO SO MAY CAUSE SERIOUS INJURY OR DEATH.**

3.1 Depressurize and disconnect the air supply from the Blast Pot and drain the abrasive media from the vessel ensuring all threads are clean of abrasive.

3.2 Disconnect the lower pusher line hose at the existing valve, remove the existing abrasive valve and pipe fittings, inspect the condition of the rubber hose pusher line, replace if necessary.

3.3 Screw the Corsa II Valve onto the existing nipple, ensure that the threads are free of abrasive and debris, use thread sealant to ensure that an air tight joint is achieved.

3.4 Ensure that the valve aligns itself with the opening in the front support leg if applicable.

3.5 Fit the pusher line hose barb fitting to the socket on the supply air end of the pipe nipple, note that the Corsa II Valve is a bi-directional flow valve, use thread sealant to ensure an air tight joint.

3.6 Push the pusher line hose onto the hose barb fitting and tighten the two bolt hose clamps on to the hose.

3.7 Fit the threaded Hose Coupling to the discharge end of the pipe nipple, use thread sealant to ensure an air tight joint.

3.8 Refit the blast hose ensuring the safety locking pins are fitted and safety whip check cables are in place.

4.0 PREPARATION FOR OPERATION

⚠ ! WARNING ! - DO NOT OPERATE VALVE BELOW 90 PSI OR 6.21 BAR CONTROL PRESSURE.

4.1 Screw the Control Knob all the way in, noting the position of the Control Knob; now wind the control knob out 4 turns. This provides an initial start position.

4.2 Now run a test blast to check if the valve opening is correct, the flow from the Blast Nozzle should slightly discolor a light or contrasting background.

4.3 If no discoloration is evident and there is a high pitched sound from the Blast Nozzle, then the adjustment is lean and the abrasive flow needs to be increased by further opening the valve, this should be done in 1/4 turn increments until the correct abrasive media flow is achieved.

4.4 If the abrasive feed to the Blast Nozzle is erratic and surging, then the feed is too rich and the abrasive flow needs to be decreased, again in 1/4 turn increments until the correct flow is achieved.

5.0 MAINTENANCE

⚠ ! WARNING ! - THE COMPRESSED AIR SOURCE MUST BE ISOLATED BEFORE PERFORMING ANY MAINTENANCE WORK. FAILING TO DO SO MAY CAUSE SERIOUS INJURY OR DEATH.

5.1 Disassembly instructions

5.1.1 Secure the valve assembly in a suitably sized bench vice, clamping the valve on the lower base.

5.1.2 Turn the abrasive Control Knob (Item 23) in the counter clockwise direction until there is sufficient space between the bottom edge of the knob and the top face of the Top Cover (Item 1) to fit a large spanner/wrench on the hexagon section of the Top Cover.

5.1.3 Fit the spanner/wrench to the hexagon section of the Top Cover (Item 1), and carefully unscrew the valve top, by turning the spanner in the counterclockwise direction. Remove the knob/top assembly from the valve body once fully unscrewed.

5.1.4 Fully unscrew the Control Knob (Item 23) from the Top Cover (Item 1), and remove the Anti Vibration Washer (Item 2) from the Cylinder Body.

5.1.5 Remove the Spring (Item 4) and the Stop Ring (Item 3) from the piston chamber.

5.1.6 Remove the Valve Assembly from the vice, and invert the assembly so that the Base (Item 18) is facing upwards.

⚠ ! WARNING ! - DO NOT OVER TIGHTEN THE VICE CLAMPS ON THE CYLINDER BODY, AS THIS MAY CAUSE DISTORTION OF THE CYLINDER BODY, AND/OR DAMAGE TO THE THREADED SECTION OF THE VALVE BODY.

5.1.7 Using a suitably sized spanner, unscrew the four (4) Hex Head Bolts (Item 20) and remove the Base (Item 18) with Pipe Nipple (Item 24/25) assembly. Remove the Pipe Nipple (Item 24/25) from the Base (Item 18).

5.1.8 Withdraw the Seat Holder (Item 16) c/w Urethane Seat (Item 15) and O Ring (Item 17) from the Cylinder Body.

5.1.9 Withdraw the Tungsten Carbide Sleeve (Item 14) from the Cylinder Body.

5.1.10 Carefully push the Tungsten Plunger (Item 9) through the Cylinder Body until the Piston (Item 8) is exposed from the Cylinder Body. Withdraw the Piston and Plunger assembly from the Cylinder Body.

5.1.11 Remove the Plunger Seals (Item 11) and the Bush (Item 13) from the plunger bore of the Cylinder Body.

5.1.12 Fit a suitable sized spanner to the Plunger Cover (Item 6) and another spanner to the flat section on the Tungsten Plunger (Item 9), and unscrew the Plunger Cover (Item 6), then remove the Plunger from the Piston (Item 8).

5.1.13 Using a small screw driver (or similar), carefully remove the Piston Seal (Item 5) from the Piston, taking care not to damage the edges of the Piston and Piston groove.

5.2 Inspection instructions

While the Valve is fully disassembled, clean all parts and inspect for signs of wear and/or damage, paying particular attention to the following:

5.2.1 **Cylinder (Item 10)** – Check that the piston bore of the Cylinder is not scored, and that there are no other signs of the Piston coming in direct contact with the cylinder bore. Also inspect the abrasive feed opening of the valve body, and check that the bore and threaded section are not excessively worn or damaged.

If necessary, replace the Cylinder using Stock Code BAC-VA-PB-0100.

5.2.2 **Tungsten Carbide Sleeve (Item 14)** – Check the Tungsten Sleeve for wear in the area of the feed opening.

If necessary, replace the Tungsten Sleeve using Stock Code YAC-VA-PB-0102 or Kit BAC-VA-PB-0113.

5.2.3 **Piston (Item 8)** – Check that the Piston edges are not scored or damaged, and that there are no other obvious signs of undue wear or damage

If necessary, replace the Piston using Stock Code YAC-VA-PB-0098.

5.2.4 **Tungsten Plunger (Item 9)** - Check that the plunger is not worn on the outside diameter, and that the edges of the leading face are not worn or damaged.

If necessary, replace the Tungsten Plunger using Stock Code BAC-VA-PB-0099.

5.2.5 **Urethane Seat (Item 15)** – Check the Urethane Seat for wear in the bore in the form of a groove.

If necessary, replace with the Urethane Seat using Stock Code YAC-VA-PB-0103 or Kit BAC-VA-PB-0138.

5.2.6 **Seat Holder (Item 16)** – Check the Seat Holder for wear of the holder internal diameter.

If necessary, replace the Seat Holder using Stock Code YAC-VA-PB-0213 or Kit BAC-VA-PB-0138.

5.2.7 **Pipe Nipple (Item 24/25)** - Inspect the Pipe Nipple bore for wear, in particular the section of the bore directly below the abrasive feed opening.

If necessary, replace the Pipe Nipple using Stock Code BAC-VA-PB-0090 for 1-1/4" X 1-1/4" Nipple or Stock Code BAC-VA-PB-0091 for 1-1/2" x 1-1/2" Nipple.

5.3 Valve re-assembly instructions

NOTE: IT IS RECOMMENDED THAT REPAIR KITS BAC-VA-PB-0113 (CORSA II TUNGSTEN SEAL KIT) AND BAC-VA-PB-0139 (CORSA II PISTON KIT) ALWAYS BE FITTED ONCE THE VALVE HAS BEEN FULLY DISASSEMBLED. ENSURE THAT ALL PARTS ARE CLEAN AND DRY, AND THAT NO FOREIGN ITEMS OR CONTAMINATION ENTER THE VALVE DURING THE ASSEMBLY PROCESS.

5.3.1 Insert the Tungsten Plunger (Item 9) into the bore within the centre of the Piston (Item 8), and then fit the two (2) Nylon Washers (Item 7) to the threaded section of the Plunger. Now screw the Plunger Cover (Item 6) onto the end of the plunger, and then firmly tighten the Plunger Cover using suitably sized spanners on both the Plunger Cover and the flat section of the Plunger.

5.3.2 Carefully fit the Piston Seal (Item 5) to the Piston, ensuring that the lip of the seal is facing downwards towards the Plunger.

5.3.3 Carefully fit the Piston Seal (Item 5) to the Piston, ensuring that the lip of the seal is facing downwards towards the Plunger.

5.3.4 Place the Cylinder Body (Item 10) on a flat, stable surface, with the cylinder bore of the valve body facing upwards.

5.3.5 Carefully insert the Plunger and Piston assembly into the bore of the Cylinder Body and take particular care that the Piston Seal is not pinched or damaged as it is pushed into the cylinder bore. Fully push the Piston into the cylinder bore.

5.3.6 Turn the Cylinder Body over, and place it on a flat surface with the base facing upwards.

5.3.7 Very carefully, insert two (2) of the Plunger Seals (Item 11) over the end of the Plunger, ensuring that both are fitted with the O Ring (Item 12) within the seal groove, and that the seals are fitted with the groove/O ring facing inwards towards the Piston.

⚠! WARNING ! - DO NOT FIT THE PLUNGER SEALS AND O RINGS AS LOOSE, SEPARATE ITEMS, AS THIS WILL CAUSE AIR LEAKAGE DOWN PAST THE PLUNGER.

5.3.8 Now fit the Bush (Item 13) over the end of the Plunger, and push it into the bore of the valve body.

5.3.9 Carefully fit the remaining two (2) Plunger Seals (Item 11) over the end of the Plunger, in this instance ensuring that the grooved section of the seals are facing outwards towards the bottom of the valve.

NOTE: THESE TWO (2) SEALS DO NOT REQUIRE THE O RINGS (ITEM 12).

5.3.10 Fully insert the Tungsten Carbide Sleeve (Item 14) into the Cylinder Body, making sure that the notch in the sleeve is positioned over the locating pin in the recess in the valve body.

5.3.11 Insert the Seat Holder (Item 16) fitted with the Urethane Seat (Item 15) and O-Ring (Item 17), ensure the beveled internal face of the seat is facing toward the Plunger when fitted to the Seat Holder.

5.3.12 Insert the Pipe Nipple (Item 24/25) into the Base (Item 18), and carefully locate the Pipe Nipple centrally within the Base, with the abrasive feed hole in the Pipe Nipple positioned centrally within the abrasive feed hole in the valve base.

5.3.13 Now carefully turn over the Pipe Nipple/base assembly, and place it over the Seat Holder (Item 16) protruding from the valve body. Make sure that the Pipe Nipple is positioned at right angles to the valve body abrasive feed opening. It may be necessary to carefully move the Pipe Nipple and Base around slightly to ensure that the Base and Pipe Nipple are located correctly over the Cylinder Body.

5.3.14 Fit the four (4) Hex Head Bolts and Flat Washers (Items 20 and 19) and tighten using a suitably sized spanner.

5.3.15 Now turn the valve assembly over, and hold it in a vice, clamping the vice jaws onto the base of the valve assembly.

5.3.16 Screw the Control Knob (Item 23) into the Top Cover (Item 1), and fit the Anti Vibration Washer (Item 2) over the Control Knob threaded end within the Valve Top.

5.3.17 Place both the Spring (Item 4) and the Stop Ring (Item 3) on the top of the Piston within the cylinder bore, positioning the Spring centrally over the Plunger Cover, and the Stop Ring flat within the cylinder bore.

5.3.18 Place the Top Cover/Control Knob assembly onto the valve body and hand tighten the valve top by rotating it in a clockwise direction.

5.3.19 Using a suitably sized spanner/wrench, fully tighten the valve top onto the valve body, to a minimum torque setting of 60Nm. (45lbs/ft)

⚠ ! WARNING ! - NEVER OPERATE THE CORSA II VALVE UNLESS THE VALVE TOP HAS BEEN TIGHTENED TO THE MINIMUM TORQUE SETTING SPECIFIED ABOVE. WHEN PRESSURISED, THE VALVE TOP MAY BE FORCED FROM THE VALVE BODY, WHICH MAY CAUSE SERIOUS INJURY.

5.3.20 The Corsa II Valve is now ready for operation.

6.0 TROUBLE SHOOTING GUIDE

6.1 No abrasive flow.

6.1.1 Damp Abrasive. Choke machine as instructed in the Blast Machine Owner's Manual.

6.1.2 Obstruction in valve. Depressurize the blast machine and remove drain plug, check for debris covering the feed opening.

6.1.3 Lack of air to the valve piston chamber. Check the air supply from the operators deadman handle back to the valve.

6.1.4 If the valve has been in irregular use, ensure that the piston is free in the piston chamber.

6.2 Irregular abrasive flow.

6.2.1 Incorrect adjustment of the valve. Check valve setting, may be too rich.

6.2.2 A high degree of fines in the abrasive mix can cause “Rat Holing” leading to erratic abrasive feed. Check the abrasive and replace if necessary.

6.2.3 Abrasive may not be free flowing. This will require adjustment of the choke valve to improve flow from the machine.

6.2.4 Check the Urethane Seat or Tungsten Sleeve is not worn out. If the seat is worn it will allow abrasive to feed into the blast hose when the valve is closed. A worn sleeve will also create a rich feed when the valve is open as the opening will be larger.

6.3 Air Leakage at the Valve.

6.3.1 Check the Pipe Nipple for wear and replace as required.

6.4 No abrasive or air from the Blast Nozzle.

6.4.1 Obstruction at the Blast Nozzle. Depressurize the blast machine and remove the Nozzle from the Nozzle Holder.

7.0 ASSEMBLIES, PARTS LISTING & EXPLODED VIEW

7.1 Corsa II Valve with Tungsten Sleeve Assemblies (Only Available in BSP format)

Stock Code	Description	Weight
BAC-VA-PB-0089	Corsa II 1-1/4" With Tungsten Sleeve	6.20 kg (13.64 lbs)
BAC-VA-PB-0114	Corsa II 1-1/2" With Tungsten Sleeve	6.40 kg (14.08 lbs)

7.1.1 Corsa II Valve with Tungsten Sleeve Parts Listing

Item	Stock Code	Description	Qty
1	BAC-VA-PB-0093	Top Cover	1
2	YAC-VA-PB-0095	Anti Vibration Washer	1
3	YAC-VA-PB-0094	Stop Ring	1
4	YAC-VA-PB-0096	Spring	1
5	YAC-VA-PB-0097	Piston Seal	1
6	YAC-VA-PB-0124	Plunger Cover	1
7	YAC-VA-PB-0137	Nylon Washer	1
8	YAC-VA-PB-0098	Piston	1
9	BAC-VA-PB-0099	Tungsten Plunger	1
10	BAC-VA-PB-0100	Cylinder	1
11	YAC-VA-PB-0052	Plunger Seal	4
12	YAC-BS-PB-0032	O-Ring	2
13	YAC-VA-PB-0125	Bush	1
14	BAC-VA-PB-0102	Tungsten Carbide Sleeve	1
15	YAC-VA-PB-0103	Urethane Seat	1
16	YAC-VA-PB-0213	Seat Holder	1
17	YAC-BS-PB-0034	O-Ring	1
18	YAC-VA-PB-0194	Base	1
19	YAC-FN-PB-0258	Flat Washer	4
20	YAC-FN-PB-0104	Hex Head Bolt	4
21	BAC-AF-PB-0163	Exhaust Filter	1
22	YAC-PF-PB-0231	Plug – Stainless Steel	1
23	BAC-VA-PB-0092	Control Knob	1
24	BAC-VA-PB-0090	Corsa 1-1/4" M x 1-1/4" M Pipe Nipple (To be used only with Corsa II 1-1/4" With Tungsten Sleeve Stock Code BAC-VA-PB-0089)	1
25	BAC-VA-PB-0091	Corsa 1-1/2" M x 1-1/2" M Pipe Nipple (To be used only with Corsa II 1-1/2" With Tungsten Sleeve Stock Code BAC-VA-PB-0114)	1
26	YAC-VA-0404-00	Spring Seat	1

7.1.2 Corsa II Valve with Tungsten Sleeve Service Kits

Stock Code	Description
BAC-VA-PB-0138	Corsa II Tungsten Seat Kit - Includes Items 15, 16 & 17
BAC-VA-PB-0113	Corsa II Tungsten Seal Kit - Includes Items 5, 11(4 Off), 12(2 Off), 13, 14, 15, 16 & 17
BAC-VA-PB-0139	Corsa II Piston Kit - Includes Items 2, 3, 4, 5, 6, 7 & 8
BAC-VA-PB-0140	Corsa II Valve Base Kit - Includes Items 18, 19(4 Off) & 20(4 Off)

7.1.3 Corsa II Valve with Tungsten Sleeve Product Exploded View