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User Guide

Elcometer RCV4000 & RCV4000+ Remote Control Valves - ASME

⚠ WARNING

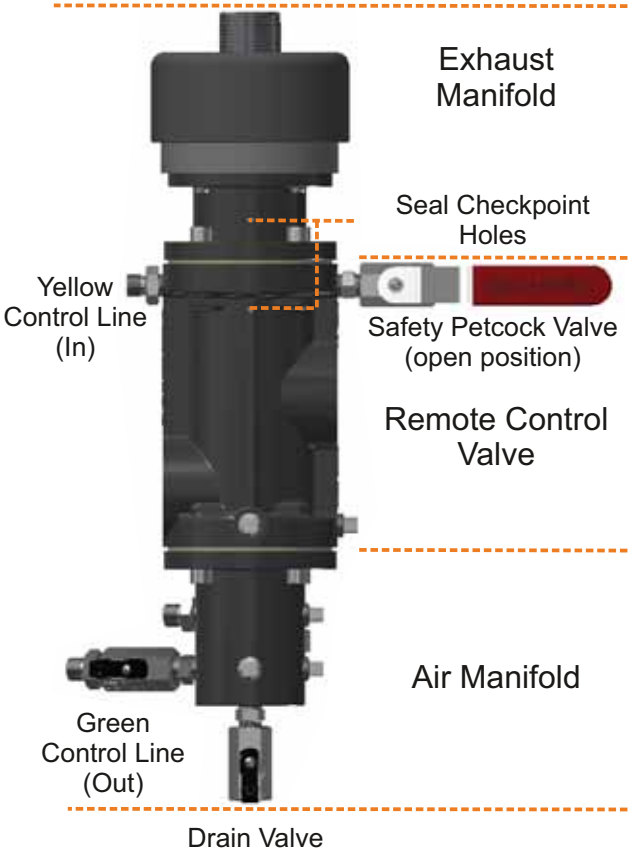
Before carrying out any replacement or maintenance of any part of the Abrasive Blast Machine (ABM) or any item within the Abrasive Blast System, please read and understand the User Guide for the Abrasive Blast Machine.

Failure to follow operating instructions could result in death, serious injury or damage to equipment.

1 PRODUCT OVERVIEW

The Elcometer RCV4000 & RCV4000+ Remote Control Valves are designed to be used in a dry abrasive blast machine and consist of:

- **RCV Exhaust Manifold:** This allows air to exhaust from the abrasive blast machine through the silencer.
- **Remote Control Valve:** This, when used in conjunction with a deadman's handle, pressurises and de-pressurises the abrasive blast machine. The red safety petcock valve on the remote control valve can be used to de-pressurise the abrasive blast machine in an emergency (isolating the deadman's handle).
- **RCV Air Manifold:** Provides the operator with a ½" outlet port to fit a pressure relief valve and five additional ¼" outlet ports for providing air to ancillary equipment such as breathe air filters and air power tools. A pressure gauge can also be attached to provide the operator with the compressed air pressure value. One additional ¼" outlet port is fitted with a moisture drain ball valve.



1 PRODUCT OVERVIEW (continued)

Compressed air is fed though the remote control valve and down the green control hose to the deadman's handle. When the deadman's handle is closed, the air returns to the remote control valve via the yellow control hose which pushes up the exhaust diaphragm (which prevents air from venting through the silencer) and pushes down the air inlet piston, allowing the compressed air to flow into the abrasive blast machine, pressurising the abrasive blast machine and allowing the blast process begin.

When the deadman's handle is released, the exhaust diaphragm drops allowing the abrasive blast machine to depressurise by venting through the silencer via the exhaust manifold.

There are two seal checkpoint holes located on the front of the RCV4000 & RCV4000+. If air is blowing out of these holes, it is likely that the seals within the RCV4000 / RCV4000+ and exhaust manifold require replacing.

2 DISCONNECTING & RECONNECTING THE RCV

Before carrying out any replacement or maintenance of any part of the Abrasive Blast Machine (ABM) or any item within the Abrasive Blast System, please read and understand the User Guide for the Abrasive Blast Machine.

Depressurise the ABM, bleed all the air supply lines to the ABM and disconnect the ABM from the compressor.

Failure to do so could cause serious injury or death.

Please refer to the Elcometer ABM Drawings in Section 10 of the latest issue of the Elcometer Abrasive Blast Machine User Guide.

1 To disconnect the remote control valve from the abrasive blast machine, first disconnect the yellow (top) and green (bottom) remote control hose from the remote control valve and any other air supplies from the remote control valve & air manifold.

2 Undo the union joint located near the exhaust port and the union joint – connected to the RCV exit port located on the side of the remote control valve and remove the remote control valve, complete with accessories, from the abrasive blast machine.

2 DISCONNECTING & RECONNECTING THE RCV (continued)

3 Remove the moisture separator, undo the union joint and set down on a clean surface.

4 Remove the silencer by undoing the union elbow joint.

3 DISASSEMBLING & RE-ASSEMBLING THE RCV

Please refer to the drawings in Section 5 on page en-5.

1 To remove the exhaust manifold from the RCV, remove all four box screws using a special cut down 6mm allen box key (part number MT30072), remove and / or replace the gasket and set both down on a clean surface.
Note: There are 3 seals / o-rings in the RCV that will need to be replaced or greased from time to time; the piston lip seal (item 13) located on the piston, and two o-rings (item 18) located on the inlet valve shaft (item 19).

2 To remove the piston (item 12), fit the allen box key into the box screw positioned in the centre of the piston and, whilst looking through the RCV's exit port, slowly rotate the piston until you see a hole in the inlet valve shaft (item 19). Take a rod (or cross headed screwdriver) and pass it through the exit port and into the hole on the piston shaft. You can now undo the box screw located at the top of the piston head. Please note that the piston box screw is held in place with thread lock to prevent it from loosening during operation and will be tight. Taking note of the orientation of the piston (hole recess on top), carefully prise out the piston using a flat head screwdriver taking care not to damage the piston lip seal (item 13). Replace and / or grease the piston lip seal as required.

3 To remove the inlet valve shaft, first remove the RCV Air Manifold (or base plate on the RCV4000) by removing all 4 box screws (item 4) using the 6mm allen box key. Remove and / or replace the gasket and set both down on a clean surface.

4 The inlet valve shaft can now be pushed down from the top (once the rod or cross headed screwdriver has been removed). Replace and / or grease the two o-rings (item 18).

5 Reassemble using Steps 4 to 1 above, applying grease to the following items: Item 18: Valve Shaft o-rings, Item 19: Valve Shaft and Item 12: Piston.

4 DISASSEMBLING & RE-ASSEMBLING THE RCV EXHAUST MANIFOLD

There is one piston lip seal (item 13) in the RCV Exhaust Manifold that will need to be replaced or greased from time to time.

There is also a Rubber Valve Seat Diaphragm (item 6) which will also need inspecting from time to time. This Diaphragm is designed to protect the pistons from damage caused by any abrasive media within the exhaust during depressurisation of the abrasive blast machine.

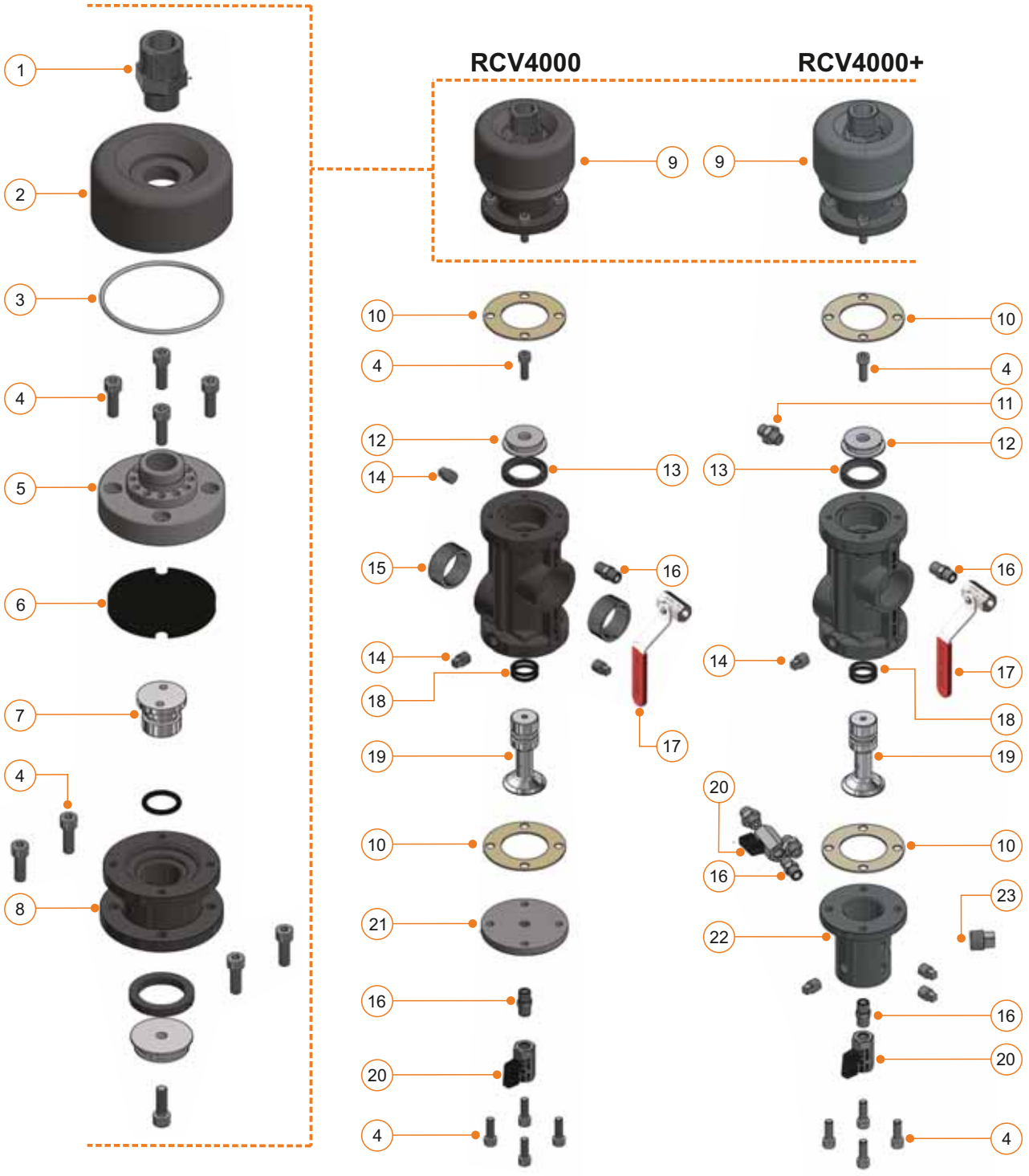
Please refer to the drawings in Section 5 on page en-5.

1 Disconnect the RCV4000 or RCV4000+ from the abrasive blast machine as described in Section 2.
2 To remove the exhaust manifold from the RCV, remove all four box screws using a special cut down 6mm allen box key (part number MT30072), remove and / or replace the gasket and set it, and the RCV, down on a clean surface.
3 With the Exhaust Manifold resting on a clean desk, unscrew and remove the manifold adaptor (item 1) and lift off the manifold cover (item 2). Replace the exhaust manifold sealing ring (item 3) as required.
4 Using the allen box key, remove the 4 box screws (item 4) and lift off the top cover (item 5).
5 Lift off and inspect the Rubber Valve Seat Diaphragm (item 6), and replace if required.
6 Insert the pegs of the Exhaust Manifold Piston Tool (part number MT30072) into the two holes on the base of the manifold cylinder (item 8) and then remove the box screw (item 4) located at the top of the piston head. Taking note of the orientation of the piston (hole recess on top), carefully prise out the piston using a flat head screwdriver taking care not to damage the piston lip seal (item 13). Replace and / or grease the piston lip seal as required.
7 Reassemble using Steps 3 to 6 above, applying grease to Item 13: Piston Lip Seal, Item 3: Exhaust Manifold Sealing Ring, Item 8: Manifold Cylinder and Item 12: Piston

Note: When repositioning the exhaust manifold cover, rotate the cover so that the exhaust exit port is orientated to fit the silencer in the correct place. Leave the manifold adaptor (item 1) finger tight to allow fine adjustment when re-attaching the RCV assembly to the abrasive blast machine and, once the silencer has been positioned correctly, fully tighten the manifold adaptor (item 1).

5 DRAWINGS & PARTS LIST

Part Number	Description
RCV4000-125N	1¼" RCV4000 Pneumatic Remote Control Valve
RCV4000P-75N	¾" RCV4000+ Pneumatic Remote Control Valve for Elcometer 1020 Abrasive Blast Machines
RCV4000P-150N	1½" RCV4000+ Pneumatic Remote Control Valve for Elcometer Abrasive Blast Machines (excluding the Elcometer 1020)
RCV4000P-125N	1¼" RCV4000+ Pneumatic Remote Control Valve



5 DRAWINGS & PARTS LIST (continued)

ELCOMETER RCV4000 & RCV4000+ SPARE PARTS

Item	Part Number	Description
1	MT30022N	¾" to 1" 60º Male / Male Adaptor
2	MT30023N	Bleed-Off Manifold
5	MT30024	Top Cover
7	MT30025	Bleed-Off Valve
8	MT30026	Bleed-Off Cylinder Housing
9	MT28591N	Exhaust Manifold Assembly
11	MT30086N	¼" JIC Male / Male Adaptor
12	MT30081	Piston
14	MT28596N	¼" Square Head Plug (x2)
15	MT28594N	1½" to 1¼" Reducing Bush
16	MT30085N	¼" Male Adaptor
17	MT29656N	Petcock Valve Assembly (Red Handle)
19	MT30083N	Inlet Valve
20	MT28619N	¼" Ball Valve (Black Handle)
21	MT30084N	Base Plate
22	MT30087N	Air Manifold
23	MT30099N	½" Square Head Plug

ELCOMETER RCV4000 & RCV4000+ SERVICE KITS

Item	Part Number	Description
	MT30055	**Elcometer RCV4000 / RCV4000+ Service Kit 1 (contains the items listed below)**
3	-	O-Ring 3mm Cord x 89.6 ID
6	-	Rubber Valve Seat
10	-	Gasket (x2)
13	-	Piston Lip Seal (x2)
18	-	O-Ring 3.53mm Cord x 23.29 ID (x3)
	MT30056	**Elcometer RCV4000 / RCV4000+ Service Kit 2 contains the items listed below)**
4	-	M8 x 25 Stainless Steel Hex Socket Cap Screw (x8)
	MT30072	**Elcometer RCV4000 / RCV4000+ Service Kit 3 (contains the items listed below)**
-	-	RCV Service Tool
-	-	6mm Allen Key
	MT28605N	**Elcometer RCV4000 / RCV4000+ Service Kit 4 (contains the items listed below)**
14	-	¼" Square Head Plug (x3)
23	MT30099N	½" Square Head Plug

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For the avoidance of doubt, please refer to the original English language version of this user guide. The most recent version is available to download via the blasting section of the Elcometer website, www.elcometer.com/blasting.

Please ensure that all product packaging is disposed of in an environmentally sensitive manner. Consult your local Environmental Authority for further guidance.