

# OWNER'S MANUAL

## RCV-125 REMOTE CONTROL SYSTEM

### IMPORTANT WARNING FOR SAFER BLAST CLEANING

1. Use protective equipment: Abrasive-resistant clothing, safety shoes, leather gloves, ear protection, CE-approved air-fed helmet. Air for helmet must be supplied by a breathing air compressor or through a helmet air filter.
2. Check for possible silicosis hazards. Avoid dust.
3. Do not blast with damaged or worn equipment.
4. Point nozzle only at area being cleaned.
5. Use only proper dry and well-screened abrasives specifically intended for blasting.
6. Keep unprotected workers out of the blast area.
7. Before blasting:
  - Check fittings and hose for wear.
  - Safety-wire couplings together.
  - Check helmet filters and air supply.
  - Check pop-up valve for alignment.
  - Test remote controls.
  - Make sure blast machine is adequately grounded.
8. Do not weld on blast machine, this voids approval.
9. Do not substitute Airblast parts or modified equipment in any way.



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# RCV-125 REMOTE CONTROL SYSTEM

**1.0 INTRODUCTION:** this manual covers the operation and maintenance of the RCV-125 remote control system for single chamber blast machines.

## 1.1 Product description

The RCV-125 remote control system is designed to operate on all single chamber blast machines with 1/4" machine piping. The RCV-125 control valve consists of two valves incorporated in one housing. The lower valve switches the main air supply to the machine. The upper valve switches the blow-off connection of the blast machine (see drawing).

The lower chamber (1) is in direct connection with the compressor through the inlet port (3) and the moisture separator. This implies that the red part of the twin-line control hose (connected to port 8) is continuously pressurized during operation. The blue part of the twin-line control hose is connected to chamber (4) via the 1/4" port (9).

## 1.2 The blasting (on) action

Activating the deadman handle causes a closed circuit in the twin-line control hose. The pressurized chamber (4) causes the upper and lower valve (13 and 14) to move away from each other (shown in the drawing).

In this position the supply air passes the lower valve (14) to flow to the blast machine and nozzle. The upper valve (13) closes the blow-off connection (6) through the diaphragm (12).

## 1.3 The shut down (off) action

When the deadman handle is released, the red pressurized hose is connected to the atmosphere through a restriction in the connection to the deadman handle. At the same time the blue hose is unrestrictedly connected to the atmosphere via the deadman handle. In this situation the upper valve is forced down by the blow-off pressure so that the pressure inside the blast machine can escape through port (6) into the bleed-off manifold chamber and then via the silencer to the atmosphere (7).

The supply airflow (from port 3 to port 2) causes the lower valve to move upwards and close tightly against the valve housing.

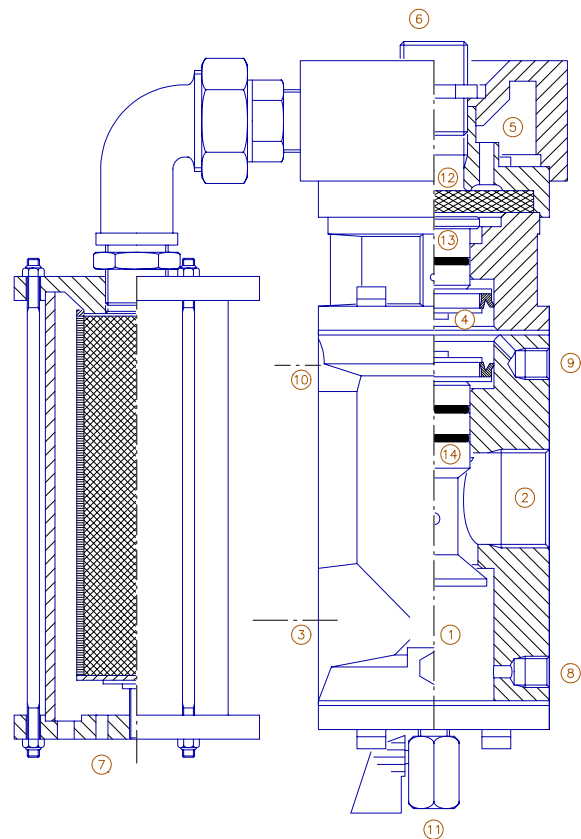
**IMPORTANT:** Always check before and after each day of operation possible water contents inside the valve by opening the drain petcock (11). If too much water is present, check water separator. The safety petcock (10) shuts down the blasting operation when opened. This valve should be open during break-time.

## 1.4 System reliability

In this system all moving and vital parts are separated from the air coming out of the blast machine during blow-off. The diaphragm prevents any damage to the valves parts if grit particles should occur in the blow-off airflow. Valve maintenance is easy to perform and does not require special tools.

## 1.5 OSHA requirements

This remote control system complies with OSHA regulations, which require a deadman control switch system on the blast system.



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## 2.0 INSTALLATION PROCEDURES

### 2.1 System installation

In your system (from 60 up to 300 L capacity blast machine) all parts are included to set-up your remote controlled single chamber blasting operation. Apart from this literature it also includes the blast machine operations manual.

**WARNING: Do not turn on the nipples too tight, especially to the control valve. This might damage some components and cause leakage.**

To complete the installation, follow the instructions below:

- a. Make sure that the connections are air tight.
- b. Make sure that the colored or letter marked connections on the control valve and deadman handle are properly connected. Cross-linkage result in a not operational system.
- c. Tie the deadman handle properly down to the blast hose just behind the nozzle holder.
- d. It is recommended to tie the twin-line control hose to the blast hose at approx. Every 1.5 mtrs.
- e. Connect the blast hose to the machine and nozzle.
- f. Connect the helmet air filter to the air supply from the machine piping and to the blast helmet.

### 2.2 Field installation

Follow the instruction provided below to convert your manual blast machine to a remote controlled blast system:

- a. Remove the entire blow-off assembly from the blast machine.
- b. Remove the main air supply to the machine from the inlet elbow.
- c. Follow the instruction in paragraph 2.1.

**IMPORTANT: Always use a moisture separator in combination with the remote control system to protect the control valve from excessive wear. It also optimizes the blasting operation.**

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## 3.0 BLASTING OPERATION

### 3.1 Start up

Make sure to have full understanding of the blast machine manual before operating the remote control system.

- a. Check all connections from the compressor up to the nozzle and see to it that they are properly fixed (a loose-coming compressor air hose can cause serious damage).
- b. Make sure that the blast machine is filled with abrasive.
- c. Make sure to have taken the proper safety precautions for yourself and your environment:
  - proper clothing
  - clean air supply to the helmet
- d. Always check whether the lever of the deadman handle is in safe position with the lock upright.
- e. Close both petcocks on the control valve.
- g. Check for leakage. Air should escape from the hole underneath the lever of the deadman handle only and nowhere else. The system is now ready to be pressurized.

### 3.2 Blasting operations

- a. Flip over the safety guard of the deadman handle and activate the lever (commences blasting).
- b. To stop blasting, release the lever (the safety guard automatically flips back).

**IMPORTANT: Always open the safety petcock on the control valve (opposite blue twin-line connection) during break time.**

**WARNING: The lever of the deadman handle must never be fixed in blast position. This can result in serious injury.**

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## 4.0 MAINTENANCE

### 4.1 Valve disassembly (see page 4 and 5)

- a. Disconnect the control valve from the blast machine.
- b. Remove the nipple on the top of the control valve (pos. 17).
- c. Take off the bleed-off manifold with the silencer assembly. The silencer can be disassembled according to the breakdown drawing.  
Be careful with the silencer cartridge support adjustment during re-assembly.
- d. Remove the screws (pos. 18) to take away the top cover (pos. 4), the blow-off diaphragm (pos. 9), the bleed-off cylinder

## RCV-125 REMOTE CONTROL SYSTEM

- housing (pos. 2) and the bottom plate (pos. 8). Be careful with the packings (pos. 12).
- e. To remove bleed-off cylinder and piston (pos. 6 and 7), hold the piston sturdily with a proper tool (be careful not to damage the aluminum) and unscrew the screw (pos.16). O-rings and seals can now be inspected.
  - f. To remove the inlet valve and piston for inspection (pos. 5 and 7), hold the inlet valve by means of a steel pin of 5 mm through the 1¼" machine connection side of the control valve. This pin fits into the hole in the center of the inlet valve. Release the screws (pos. 16) and take away the piston and inlet valve.

### 4.2 Valve assembly

Re-assemble the control valve by reversing the steps of 4.1.

#### WARNING

**NEVER RE-ASSEMBLE WORN PARTS.  
THEY CAN DAMAGE THE CONTROL  
VALVE UNNECESSARILY.**

It is recommended to change the (\*)-marked parts in the parts list in time to prevent excessive wear and damage to the control valve.

### Maintenance program

DAILY:

1. Check the control valve for water contents. If water is present, check the condition of the water separator.

2. Check the rubber insert of the deadman handle on its proper condition. If it looks bad or damaged, replace it.
3. Check all hoses and fittings on condition and proper fixation.

MONTHLY (OR AFTER EACH CYCLE OF 160 WORKING HOURS):

1. Check the condition of the silencer and its piping.
2. Check all air connections for leaks.
3. Disassemble the control valve by following the steps of 4.1 and check all moving parts. If they look worn, replace to prevent unnecessary damage. Assemble the valve and grease the moving parts with general purpose lubrication oil.

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### 5.0 TROUBLE SHOOTING

The following checklist can be used to trace a problem in case the remote control system does not function properly:

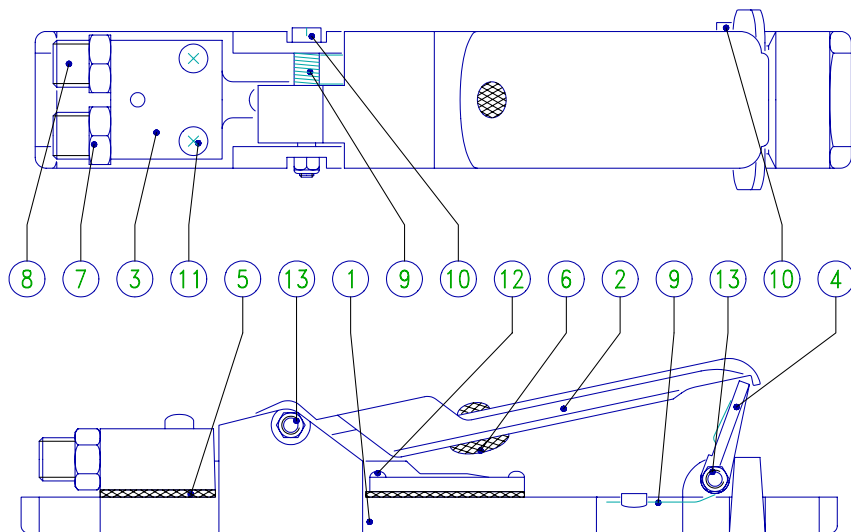
1. Review instructions in this manual.
2. Inspect all air hoses and connections for air-leaks.
3. Be sure that the safety and drain petcocks are closed.
4. Check the deadman handle for air-leaks:
  - in released position air should only be escaping from the bodyhole.
  - in the pressed position no air at all may escape from the handle.

PROBLEM	CAUSE	REMEDY
No air escapes from the bodyhole in the deadman handle.	Twin-hose clogged and/or squeezed.	Remove the twin-line and check for blockage.
The system will not start.	Safety petcock still open.  Insufficient air supply to the blast machine.	Close safety petcock  disassemble control valve, all parts should move freely.
After starting, the system will not stop.	Clogged deadman handle channels.  Hose connections switched.  Defect control valve.	Remove handle and clean it.  Check connections and modify if switched.  Disassemble valve and check proper operation.

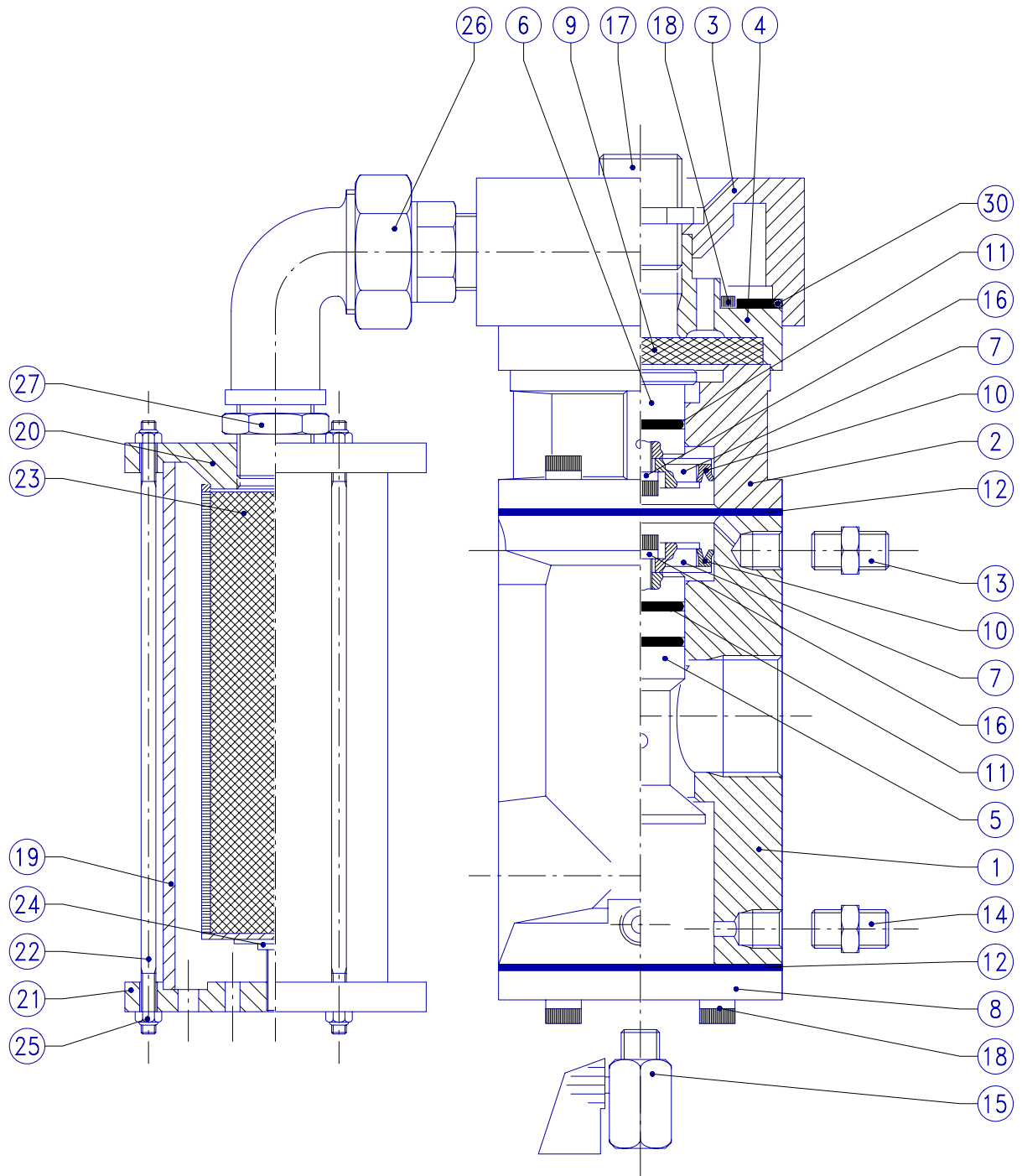
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## 6.0 SPARE PARTS

ART.NR.	MODEL	DESCRIPTION	
12030	DMH-125	Deadman handle – complete for twin-line remote control operation	
01)	12031	Handle body	(1)
02)	12032	Lever	(1)
03)	12033	Pneumatic manifold	(1)
04)	12034	Lever safety lock	(1)
05)	12035	Gasket	(1)
06)	12036	Rubber insert	(1)
07)	12038	Reduction nipple 1/4" x 1/8" (restricted)	(1)
08)	12037	Reduction nipple 1/4" x 1/8"	(1)
09)	12039	Spring	(2)
10)	12040	Screw 5 x 40	(2)
11)	12041	Screw 4 x 25	(2)
12)	12042	Screw 4 x 10	(4)
13)	12043	Lock nut	(2)



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### 7.0 SPARE PARTS

ART.NR.	MODEL	DESCRIPTION	
01)	12060	Valve housing	(1)
02)	12061	Bleed-off cylinder housing	(1)
03)	12062	Bleed-off manifold	(1)
04)	12063	Top cover	(1)
05)	12064	Inlet valve	(1)
06)	12065	Bleed-off cylinder	(1)
07)	12066	Piston	(2)
08)	12067	Bottom plate	(1)
09)	12068	* Diaphragm	(1)
10)	12069	* Piston seal	(2)
11)	12070	* O-ring	(3)
12)	12071	* Packing	(2)
13)	11780	Brass hex nipple ¼"	(1)
14)	11780	Brass hex nipple ¼"	(1)
15)	11520	Ball valve ¼"	(2)
16)	12072	Piston screw 8 x 15	(2)
17)	22254	Hex nipple ¾"	(1)
18)	12074	Screw 8 x 25	(12)
19)	12076	Silencer housing	(1)
20)	12077	Silencer top cover	(1)
21)	12078	Silencer bottom plate	(1)
22)	12079	Silencer housing pin 5 x 215	(3)
23)	12080	Silencer cartridge	(1)
24)	12081	Silencer cartridge support	(1)
25)	12086	Nut	(6)
26)	12084	Union elbow	(1)
27)	22254	Hex nipple ¾"	(1)
28)	12087	P-29 Check valve (not shown)	(1)
29)	12075	Plug ¼" (not shown)	(1)
30)	12096	* O-ring	(1)

**All (\*)-marked items are included in Remote Control Repair kit (art.nr 12050) in quantities shown ( ).**

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