Hodge Clemco Ltd

The 1448NC Softstrip Portable Multi-media Blast Cleaning Machine

Operating and Maintenance Instructions

Owner's Manual

Date of Issue: 06.06.01 TS.OM 448

Hodge Clemco Ltd
Orgreave Drive
Sheffield
S13 9NR
Tel: 0114 254 8811
Email sales@hodgeclemco.co.uk
www.hodgeclemco.co.uk

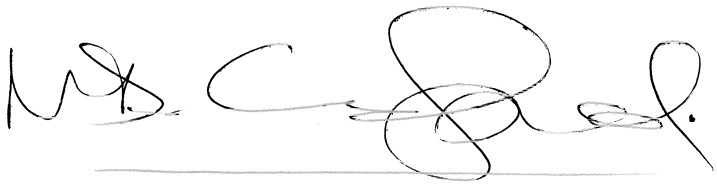
Machinery Directive
(89/392/EEC amended by 91/368/EEC, 93/44/EEC and 93/68/EEC)

EC Declaration of Conformity

We HODGE CLEMCO LTD declare that the supplied equipment when installed and used in accordance with the owners manual provided, conforms with the essential health and safety requirements of the above Directive(s)

Industrial Product Manager

Director

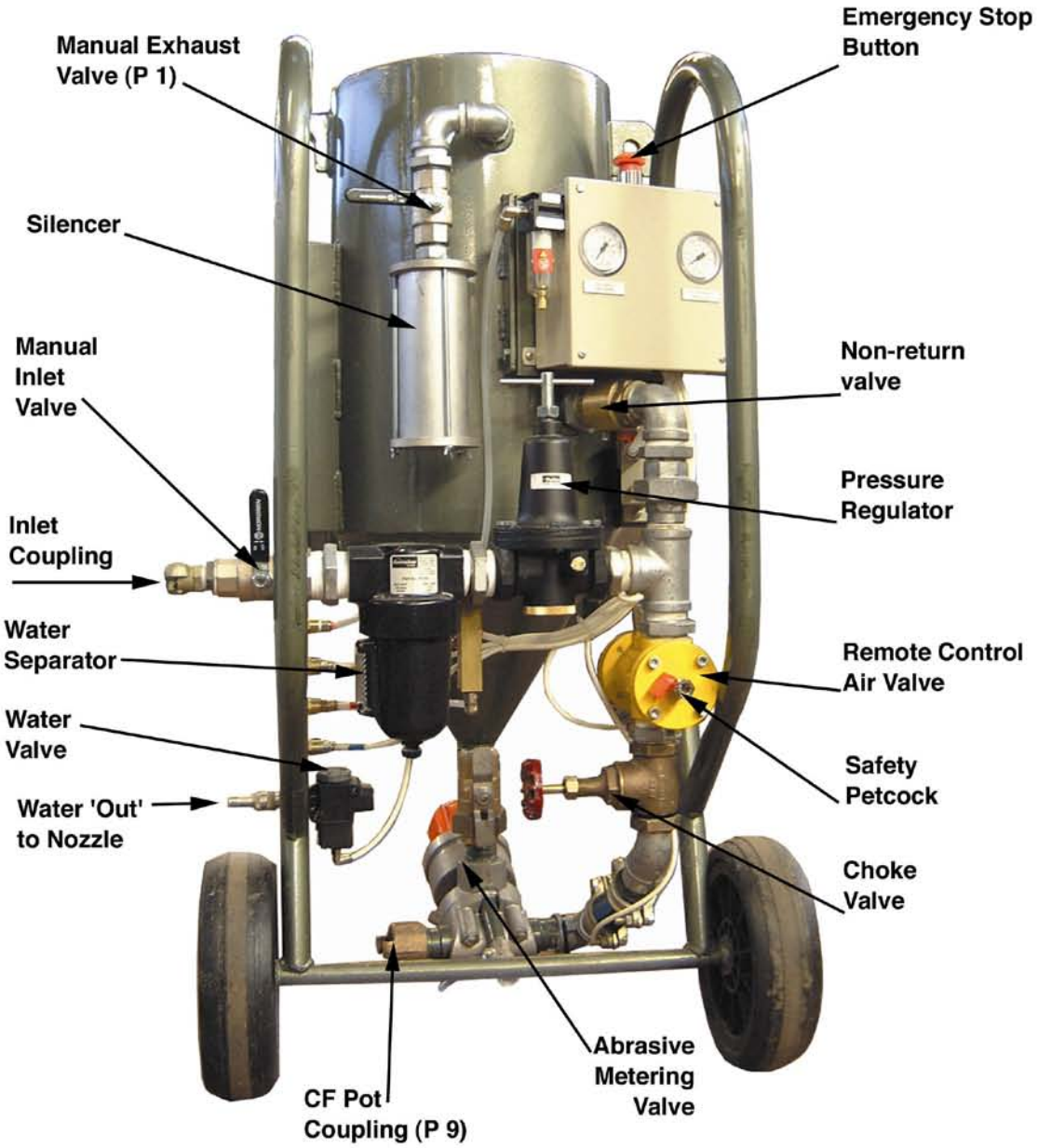


MAINTENANCE INSPECTION CONTRACT

In response to numerous requests we are now able to offer a Maintenance Inspection Contract for your Clemco Equipment.
These request have been made by customers who appreciate the benefits of regular inspection/servicing on a planned basis. The remedial work which follows a breakdown or worse, the need for early equipment replacement due to accelerated wear may easily exceed the cost of a Maintenance Inspection Contract. If you would like further details please contact our Customer Services Department on 0114 2548811
A request for more information does not represent any form of commitment on your behalf, so can you afford to say ‘NO’ at this stage?
We look forward to hearing from you soon.

Contents

1.0 General View of Machine



Operating and Maintenance Instructions

Warning: The maximum safe working pressure of this machine is 110 psi and must not be exceeded.

2.0 Setting Up Instructions

Warning: Never attempt to wheel the machine over rough/uneven ground. For hoisting, the lifting lugs provided on the blast machine must be used. Do not connect slings to other parts of the machine always disconnect ancillary hoses etc from the machine and ensure the machine is empty of abrasive prior to it being moved

2.1 Locate the blast machine in a stable position on firm level ground.

2.2 Ensure that the machine is adequately earthed by connecting a suitably earthed earthing strap to the strap locating bolt on the machine leg

2.3 CLOSE the manual air inlet valve situated just before the water separator.

2.4 CLOSE the abrasive metering valve

2.5 OPEN the choke valve by turning the hand-wheel anti-clockwise to its stop.

2.6 OPEN the safety petcock on the remote control valve by positioning the handle in line with the petcock body

2.7 Securely connect the remote control air hoses to their respective couplings on the hose entry plate on the machine leg. Yellow control hose connects to the bulkhead connector fed by yellow, red to red, and blue to blue. The other ends of the control hoses are connected to the deadman's handle, yellow to the connector marked 'Y' or '2', red to the connector marked 'R' or '1'. The blue hose connects to the coupler on the RCAMV 6 slide valve at the side of the deadman's handle.

WARNING: It is important that the control hoses are connected correctly and securely

2.8 Check that the sealing ring in the filling orifice of the machine is in good condition and securely and correctly positioned.

2.9 Check that the pop-up valve is in position and in good condition

2.10 Check that the inspection door assembly is securely bolted in correct position and that the gasket is in good condition and in place

WARNING: If the inspection door assembly is not securely located correctly in position to ensure a good seal it can be dangerous

2.11 Check that the coupling gasket in the CF quick coupling at the base of the blast machine is in good condition and correctly seated in the coupling

2.12 Check the blast hose to be used is in good condition along its entire length.

2.13 Ensure that the blast hose ends are cut square and are located fully into the coupling and nozzle holder and up to the retaining shoulders within and that all the required hose retaining screws are in good condition and firmly secured in position. For additional fitting instructions see manual TS.OM 82

Warning: Internal hose couplings or nozzles designed to locate inside the blast hose must not be used as they can be dangerous

2.14 Check that the appropriate hose coupling gasket is in good condition and correctly seated in the coupling and securely connect this coupling to the CF coupling at the base of the blast machine. Ensure that the couplings are securely locked and that each latching wire is located through the appropriate hole in the marrying coupling. If no integral means of wire latching is provided, use split pins through the corresponding holes to ensure no accidental parting of the coupling can occur

2.15 Lay out the blast hose from the machine to the work surface area ensuring that no tight curves or kinks occur and ensure that the hose is protected from possible damage by passing traffic

2.16 Lay out the remote control air hoses along the length of the blast hose and secure the deadman handle to blast hose adjacent to the rear of the nozzle holder ensuring that the rubber insert is in position and that the blade opens freely by the action of the spring and closes freely

****

Machines fitted with optional water pump for wet blasting

2.17 Connect a suitable length of water hose from mains or tank to the pump inlet

2.18 Connect a suitable length of ¼" i.d. water hose from the pump to the water valve

2.19 Connect a suitable length of ¼" i.d. water hose from the water valve to the tap behind the WIN nozzle

2.20 Connect a 1/4" i.d. air supply hose to the air inlet of the water pump

****

2.21 Secure the remote control air hoses and water hose (where fitted) to the blast hose at short, regular intervals using hose ties. Take care not to compress the hoses by over tightening

2.22 Select a suitable nozzle and check that it is in good condition and undamaged and that there is no internal blockage. Insert a new nozzle gasket into the seat of the holder until it is fully hand tight down onto the gasket. **N.B. Where the machine is to be used for wet blasting a WIN nozzle should be used.**

2.23 Ensure that the deadman blade is left in the open position by the spring action

2.24 Check that the safety sieve is securely fastened in position on top of the blast machine

2.25 Refer to the compressor manufacturer's operating instructions and start the compressor

2.26 Ensure that the compressed air outlet valve is CLOSED and connect a suitable length of approved compressed air supply hose to the air outlet valve, first ensuring that the required couplings and gaskets are in good condition and in position

2.27 Ensure that the connection is tightly secured

Warning: Escaping air is dangerous. It is essential that all air hose connections are secure and that any sealing gaskets required are in good condition and in position

2.28 Take secure hold of the free end of the air supply hose, direct it into a safe area and CAREFULLY SLIGHTLY OPEN the outlet valve to expel any dirt and/or moisture from the hose

2.29 Turn OFF the compressor outlet valve

2.30 Connect the coupling at the free end of the compressed air supply hose to the blast machine air inlet fitting ensuring that any gaskets required are in good condition, positioned correctly and that the connection is tightly secured**.**
Use safety hose restraints wherever possible

2.31 Refer to the air fed helmet manufacturer's Owners Manual and connect the helmet, breathing air supply hose and breathing air filter as instructed in the Manual. (NB: Should the manual instruct that a 1/4" supply of compressed air be required for the helmet/filter system there is a connection available on the hose entry plate on the blast machine leg, namely the clear hose fitted with a tap).

2.32 Close the tap on the base plate of the remote control valve

2.33 Refer to the water separator manual and check that it is correctly assembled and that the bowl is securely located in position

3.0 Operating Instructions

Warnings:
1 The operation of this equipment can generate noise levels which can be damaging to the ears. It is essential that the operator, pot tender and all other personnel in the vicinity be made aware of this and that suitable ear defenders are worn

2 Abrasive ricochet and dust levels generated from the blast cleaning operation can be dangerous and all personnel within the area must wear adequate protection

Signs warning of these dangers must be positioned around the perimeter of the blasting operation and measures must be taken to ensure that no one enters the area of the blasting operation without permission and without adequate safety protection equipment. Should anyone enter the area, the pot tender must immediately close down the blasting operation by depressing the emergency stop button and/or the blaster must release the lever of the deadman handle

Note: In the interests of safety and efficiency it is necessary that the blaster and pot tender operate some form of signalling or communication system. Under operating conditions where the blaster is not in constant view of the pot tender it is strongly recommended that a helmet communication system be used.

3.1 Ensure that the emergency stop button is off by turning the knurled ring anti-clockwise

3.2 Close the manual exhaust valve P1 so that the handle is at 90^{o} to the valve body.

3.3 Turn ON the compressed air supply to the blast machine at the compressed air supply outlet valve.

3.4 OPEN the manual air inlet valve on the blast machine. The pop-up valve will seal against the sealing ring and the blast machine will pressurise.

3.5 Adjust the drain cock on the moisture separator to give a constant slight bleed of air-water vapour

3.6 Adjust the blasting pressure by turning the ‘T’ bar on the regulator until the required pressure is shown on the gauge marked ‘Operating Pressure’.

3.7 Refer to the helmet manufacturer's instructions and turn ON the breathing air supply to the helmet

Warning: It is essential that all connections on the helmet air hoses are secure and under no circumstances must the helmet be used until the air supply has been turned on and found to be entering the helmet in required volume and quality.

3.8 Ensure that the breathing air supply hose is adequately protected to prevent it becoming accidentally trapped, nipped or broken

3.9 Position danger warning signs around the area of the operation and the outside the perimeter of excessive noise levels and abrasive ricochet/dust fall out.

3.10 The blasting operator must now don protective clothing, sturdy gauntlets, ear defenders and air fed helmet

3.11 Ensure that all personnel within the vicinity are adequately protected

3.12 CLOSE the safety petcock on the remote control air valve by turning the handle at 90^{o} to the petcock valve body

3.13 The operator must first check that no one has entered the marked area of the operation and then firmly take a secure hold of the nozzle holder and blast hose, at all times directing the nozzle at the work surface

3.14 Pull back the sleeve on the RCAMV 6 slide valve.

3.15 CLOSE the deadman handle and compressed air will pass through the nozzle. The vibrator on the vessel will also be activated and the water supply valve (where fitted) will be opened.

3.16 RELEASE the deadman handle and the compressed air will cease to pass through the nozzle and the vibrator will stop.

3.17 Turn off the manual air inlet valve on the machine

3.18 Open the manual exhaust valve P1 to de-pressurise the blast machine

Warning:- A back thrust is created by the action of the compressed air passing through the nozzle therefore the operator must ensure he has adopted a safe stance and position and must maintain a firm hold of the nozzle holder/blast hose

TO FILL THE BLAST MACHINE WITH ABRASIVE READY FOR THE BLASTING OPERATION:-

3.19 Depress the emergency stop button to put the machine in safe mode for filling

3.20 Check that the knob of the media metering valve is turned fully clockwise.

3.21 Ensure that the safety sieve is securely in position

3.22 Load the selected media into the machine through the sieve. This will flow into the machine through the filling orifice in the centre of the concave dish

DO NOT OVERFILL THE VESSEL BEYOND THE POP UP VALVE

3.23 Fit the pot cover to the top of the safety sieve

3.24 Release the emergency stop button by turning the knurled ring anti-clockwise

N.B. In an emergency depressing the emergency stop will cut off the blast stream but will <u>not</u> depressurise the blast machine

3.25 Close the manual exhaust valve P1 so that the handle is at 90^{o} to the valve body.

3.26 Open the manual air inlet valve on the machine. The pop-up valve will seal against the sealing ring and the machine will pressurise

3.27 The operator should then ensure that no one is in the vicinity of the work area (see 2.6 above) and take secure hold of the nozzle holder and blast hose and direct the nozzle at the work surface

3.28 Ensuring that the sleeve on the RCAMV 6 slide valve is pulled back, close the deadman handle and air will pass through the nozzle and the grit valve is ready for adjustment

3.29 The pot tender should gradually open the media metering valve to introduce media into the air stream. Adjust the valve to maintain the minimum amount of media into the air stream`

3.30 To 'blow down' the work surface with compressed air only, keep the deadman handle closed and move the sleeve valve to the forward position

****

Machines fitted with water pump for wet blasting

3.31 Open the tap on the water hose connected to the WIN nozzle and adjust the flow accordingly

3.32 To 'wash down' the surface with water and compressed air only, keep the deadman handle closed and move the sleeve valve to the forward position

3.33 To dry the surface with compressed air only, turn off the tap behind the WIN nozzle.

****

3.34 To stop the blasting operation the blaster should release the lever of the deadman handle or the pot tender can depress the emergency stop button **N.B. This stops the blast stream but the machine remains pressurised. If the machine needs re-filling, it must be de-pressurised by closing the air inlet valve and opening the manual exhaust valve.**

WARNING : The pot tender must keep clear of the exhaust silencer at all times as the sudden release of pressurisation can be dangerous

N.B. If the blast machine is not to be used for a period of time(meal break, shut down etc) it is advisable that it is empty of media - this will assist in preventing unnecessary blockages due to condensation

N.B To purge the blast machine of any residual quantity of media in the vessel, the choke valve can be slightly closed to introduce a more rapid feed into the airstream. The rate of media discharge can be increased, if necessary by also adjusting the abrasive metering valve to allow more feed

Warning: These adjustments can create a severe pulsing at the nozzle. It is essential that the blaster maintains a very secure hold of the nozzle holder during this operation. Never close the choke valve completely or open the abrasive metering valve fully during this discharge operation

4.0 Shut Down Procedure

Warning:- Never attempt to wheel the machine over rough/uneven ground. For hoisting, lifting lugs provided on the blast machine must be used. Do not connect slings to other parts of the machine. Always disconnect ancillary hoses etc from the machine and ensure the machine is empty of abrasive prior to it being moved

4.1 Depress the emergency stop button

4.2 Close the manual air inlet valve on the machine

4.3 Open the manual exhaust valve to de-pressurise the vessel

4.4 Ensure that the operator has first removed their air fed helmet, then turn OFF compressed air at the compressed air supply outlet valve

4.5 Ensure that all airlines are purged of pressure prior to disconnection of hoses

5.0 Maintenance

All blast cleaning equipment is subject to abrasive wear therefore for safety and efficiency it is ESSENTIAL to operate a preventative maintenance programme. The degree of wear is variable and is dependant upon many factors:-type and grade of abrasive, blasting pressure, nozzle size, operator expertise etc and these factors should be taken into consideration when planning regular maintenance schedules. The following checklists are a basic guide to assist in planning maintenance

Warning:- Ensure that the compressed air supply to the machine is turned off and all airlines are purged of pressure and disconnected from the blast machine before any maintenance work is carried out. Precautions should be taken to prevent accidental turning on of the compressor air supply

NB: Maintenance should only be carried out by trained competent persons

5.1 Maintenance Check List - Setting Up and after 4 hours use

5.1.1 Check condition of all air hoses, connections and gaskets for signs of wear and replace as necessary

5.1.2 Check condition of seal ring (P-5) Replace if there is sign of wear

5.1.3 Check condition of the safety sieve and replace if worn or damaged

5.1.4 Check condition of the pop-up valve and replace if there is any sign of wear

5.1.5 Check condition of the exhaust silencer and exhaust pipework and replace if necessary

5.1.6 Check condition of silencer core and replace if worn or blocked

5.1.7 Check condition of water separator. See separate manual TS OM 356.

5.1.8 Check blast hose for signs of wear or damage and replace with new if required

5.1.9 Check the blast hose couplings and gaskets for signs of wear and replace if necessary. Ensure that all retaining screws are in good condition and securely in place

5.1.10 Check that all blast hose connections are securely fastened and that the latching wires are located correctly into the holes of the marrying coupling or that split pins are in position through the marrying holes

5.1.11 Check the condition of the nozzle holder for wear and replace with new one if necessary

5.1.12 Check that the nozzle holder gasket is in good condition and ensure that it is in position. Replace with new one if it is showing sign of wear

5.1.13 Check the nozzle for blockages, wear or damage. Replace if the internal diameter is 1.5mm(1/16") larger that its original size

5.1.14 Ensure nozzle is securely located into the nozzle holder onto the gasket (see 1.17)

5.1.15 Check the deadman handle to ensure free spring lever action on handle and check that the rubber insert is in place

5.1.16 Check media metering valve and fittings for sign of wear/leaks and replace as necessary

5.1.17 Check that the inspection door assembly is correctly and securely fitted, the gasket is in position and that no leaks occur

5.2 Maintenance Check List - After Every 40 Hours maximum use 5.1.1 to 5.1.17 plus

5.2.1 Remove inspection door assembly and check condition of component parts for wear. Replace worn items

5.2.2 Clean out the machine, remove any foreign objects and oversized particles, check the interior for deterioration

5.2.3 Remove the pop-up valve and the vertical section of the interior pipework and check for signs of wear. Replace with new parts if necessary and reassemble

5.2.4 Remove the sealing ring (P-5) from its seat and check the seat for wear and/or build up of contamination. Clean out if contaminated. If corrosive wear to the seat is evident contact the manufacturer immediately

5.2.5 Check the condition of the sealing ring for wear, replace with new one if necessary and refit into the sealing ring seat

5.2.6 Refit the inspection door assembly correctly and securely to ensure a good seal, first ensuring that the gasket is in good condition

5.2.7 Check the abrasive metering valve and adjacent fittings for wear and replace with new parts if worn

5.2.8 Check the CF coupling and adjacent fittings for wear and replace with new if required

5.3 Maintenance Check List - After Every 160 Hours Use 5.1.1 to 5.2.8 plus

5.3.1 Check all fitting and thread for wear or damage and replace where necessary with new parts

5.3.2 Thoroughly check the vessel internally and externally for corrosion, damage and abrasive wear. Should there be any such evidence the vessel must be repaired/re-pressure tested as necessary by an authorised pressure vessel repairer/test house or the manufacturer

6.0 Problem Solving

Symptom	Probable Fault	Action Required
6.1 No air or abrasive passes through the nozzle	Compressor not turned on	Turn on compressor
	Rubber Insert on deadman handle	Check insert & replace if necessary
	Pressure Regulator	Check setting
	Water Separator blocked	Check and clean - See Owners Manual

	Remote Control Valve not working	With safety petcock and deadman handle closed, check remote control valve and along Remote control hoses for air leaks and loose connections

6.2 Air but no abrasive passes through the nozzle	Abrasive metering valve closed Damp abrasive or large object restricting flow at base of cone Sleeve valve (when fitted)	Open valve counter-clockwise Quickly close and open the choke valve Remove inspection door assembly and clean out - see 4.2.2 Push forward to close
6.3 intermittent flow of abrasive	Abrasive metering valve not adjusted correctly Blockage as 6.2	Check setting Operate choke valve and clean out as 6.2
6.4 Abrasive surges from the nozzle	Abrasive metering valve opened too fully Choke valve not fully open	Check setting Check and open

6.5 Pop-up valve will not remain seated against sealing ring	Insufficient volume or pressure of air	Check air supply from compressor with hypodermic needle gauge. Close choke valve , if pop-up valve then seals insufficient air supply is available Check condition of water separator-see Owners Manual Check action of Remote Control Valve
6.6 Pop-up valve will not drop after depressurisation	Worn pop-up valve and/or sealing ring Abrasive trapped in vertical pipe work	Remove and replace both valve and sealing ring Remove inspection door assembly and pop-up valve then clean out
6.7 Machine will not depressurise	Blockage in deadman handle and/or Remote control hoses Faulty Remote Control Valve	Remove and clean out Remove and repair

7.0 Maintenance/Service Record

Date	Details	Signature

8.0 Recommended Spares

Machine

Part No	Description	Rec Qty
P 5	Sealing Ring	1
PNC 22	Pop up valve assembly	1
RM 28RK	Repair kit for remote air valve	1
P 9	Pot coupling	1
CG 1	Coupling gasket for above	10
P 8A	Forged steel nipple	1
RMS 120	Silencer core for exhaust	1
P 23XD	Main drain kit for water separator	1
P23XC	Sight glass kit for water separator	1

Hoses and couplings

CQP 2	Hose coupling for $1^1/_4$" i.d. blast hose	10
NHP 2	Nozzle holder for $1^1/_4$" i.d. blast hose	10
NG 32	Gasket for above	10
XX HOSE 4	$1^1/_4$" i.d. blast hose	/m
RM 21A	Deadman handle	1
RM 22	Rubber inserts for above	10
RCAMV 11	Slide valve for deadman handle	1