Hodge Clemco Ltd

Pressure Hand Blast Cabinet

Compact System

Owner's Manual

Date of Issue: 20.02.18 . TS.OM 313E

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Machinery Directive

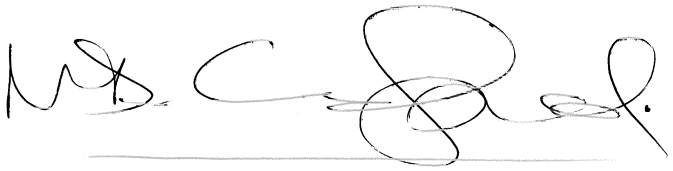
(2006/42/EC)

EC Declaration of Conformity

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

Engineering Manager

Managing director



MAINTENANCE INSPECTION CONTRACT

In response to numerous requests we are now able to offer a Maintenance Inspection Contract for your Clemco Equipment.
These requests have been made by customers who appreciate the benefits of regular inspection/servicing on a planned basis. The remedial work that 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

INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS FOR PRESSURE AND SUCTION HAND BLAST CABINETS

WARNING: THE MAXIMUM RECOMMENDED WORKING PRESSURE OF THIS EQUIPMENT IS 110 P.S.I. UNDER NO CIRCUMSTANCES SHOULD IT BE CONNECTED TO AN AIR SUPPLY OF HIGHER PRESSURE. ALL INSTALLATION WORK MUST ONLY BE CARRIED OUT BY SUITABLY TRAINED AND AUTHORISED, COMPETENT PERSONS.

***WARNING: STATIC ELECTRICITY CAN BE GENERATED BY THE OPERATION OF THIS EQUIPMENT THEREFORE THE UNIT MUST BE SUITABLY EARTHED AND ONLY MANUFACTURER'S RECOMMENDED STATIC CONDUCTIVE HOSES MUST BE USED*.**

1.0. INSTALLATION

1.1. Allowing room for easy maintenance access, position the equipment on a level floor in the desired working position (see appropriate layout diagram) and connect static conductive earth cable to suitable earthing point on the cabinet and good earthing point of the building structure.

1.2. Slide fully OPEN the damper gates on the free standing cyclone inlet (if supplied) and tighten the lock nuts.

1.3. Mount the dust collector control box in a suitable position. (If supplied separately)

1.4. All electric installation should be carried out by a competent person in accordance with the appropriate regulations (i.e I.E.E. 16th edition)See accompanying wiring diagram

1.5. Turn ON the electricity supply to the cabinet, then switch ON isolator and check that the lights work, then switch OFF the lights and the cabinet isolator and also the supply to the cabinet.

1.6. Check that the dust collector inlet damper is fully open and start the fan. Switch OFF and check for correct rotation of the motor.

1.7. Isolate electric supply

1.8. Position the blast cleaning machine to the rear of the cabinet with the exhaust outlet coupling on the remote control valve and the machine blast hose coupling pointing generally towards the rear of the cabinet.

1.9. Connect the exhaust hose assembly to the remote control valve exhaust outlet and the exhaust inlet coupling on the storage hopper ensuring that all coupling gaskets are in good condition and in place and the integral wire retaining clips or split pins are correctly located in marrying couplings.

1.10. Check that the reclaim/regrader is correctly fitted on to the blast machine ensuring that the gasket is in good condition and in place and with the hose inlet pointing generally towards the cabinet.

1.11. Secure to ensure that a good seal is formed by the gasket and the blast machine rim.

1.12. Check all cabinet door seals are in good condition and in position.

For ventilation and recovery hose connections refer to appropriate layout drawing.

1.13. Check that the dust collector ventilation damper is secured in the fully open position and connect the length of vacuum hose to the dust collector inlet and the cabinet outlet and secure both ends with hose clips.

1.14. Similarly connect and secure the abrasive recovery hose between the cabinet, regrader and the dust collector.

1.15. Check that the coupling gaskets in the quick coupling at the base of the blast cleaning machine and in the blast hose coupling are in position and connect the two couplings firmly together.

1.16. Secure all couplings with split pins (or the integral wire mechanisms) through the holes provided.

1.17. Fit the nozzle into the nozzle holder after checking that the nozzle gasket is in position. Hand tighten the nozzle down until it is seated firmly on the gasket within the holder.

1.18. Securely connect the blow off gun assembly hose to the fitting on the inside of the work chamber.

1.19. Ensure that the rubber gloves /sleeves on the cabinet are secured in position.

1.20. Check that the safety viewing window is securely in position and in good condition.

WARNING: IT IS DANGEROUS TO OPERATE THIS EQUIPMENT IF THE WINDOW IS DAMAGED OR NOT SECURELY FASTENED DOWN TO FORM A PERFECT SEAL

1.21. Place the foot valve on the floor under the front of the cabinet in a convenient position for the cabinet operator.

1.22. Connect all control air hoses to their respective couplings on the remote control valve, the foot valve, the solenoids, blow off gun connections and regulator, as shown in the pneumatic diagram.

1.23. Connect suitable lengths of air hose of minimum bore 1" i d to the compressed air supply valve.

1.24. With the supply valve still in the CLOSED position connect the free end of the air hoses to the air inlet coupling on the blast cleaning machine and dust collector if required.

WARNING: IT IS ESSENTIAL THAT ALL THE AIR HOSE COUPLINGS ARE SECURE AND THAT ANY SEALING GASKETS REQUIRED ARE IN GOOD CONDITION AND IN POSITION. ESCAPING AIR AT THESE CONNECTIONS WILL REDUCE EFFICIENCY AND CAN BE DANGEROUS.

1.25. Ensure the inspection door to the dust collector, the dust drawer at the base of the dust compartment, the reclaim door, are securely closed and that the seals are in good condition and in place.

1.26. Turn ON the electricity supply to the cabinet, and switch ON the cabinet isolator and then the lights.

1.27. Turn ON the electricity supply to the dust collector control box (if separate from the cabinet) and start the fan.

1.28. CLOSE the abrasive metering valve at the base of the blast cleaning machine.

1.29. OPEN the choke valve by positioning the handle in line with the valve body.

1.30. Turn the handle of the petcock (RM-9) on the remote control valve (1028 & 1446 machine only)to OFF by positioning the handle in line with petcock body.

1.31. Turn ON the air to the blast machine and dust collector where required at the compressed air supply valve.

1.32. Adjust the drain cock on the moisture separator(s) to give a constant bleed-off of air/water vapour.

1.33. Ensure the cabinet doors, sieve and regrader access are securely CLOSED.

1.34. Adjust the air regulator on the blast machine/cabinet until the required blasting pressure is obtained on the pressure gauge.

1.35. Turn handle of the petcock (RM-9) on the remote control valve to the ON position i.e. handle at right angles to the petcock body.

WARNING: IT IS DANGEROUS TO OPERATE THE CABINET WITHOUT CORRECT PROTECTION FOR HANDS AND ARMS. AT ALL TIMES THESE GLOVES MUST BE MAINTAINED IN GOOD CONDITION.

1.36. Place hands into the armhole gloves and take secure hold of the nozzle holder and point the nozzle to the rear of the blasting compartment.

1.37. Depress the foot pedal, the blast cleaning machine will pressurise and air will then pass through the nozzle.

1.38. Release foot pedal and the blast cleaning machine will depressurise.

1.39. Turn the handle of the petcock (RM-9) into the OFF position i.e. handle in line with then petcock body.

1.40 With the dust collector switched on load the selected abrasive media through the cabinet worktable. (approximate capacities 5 ltr mini pot, 15 ltr 1028 machine, 40 ltr 1446 machine) Allow up to 10 mins (depending on equipment supplied) for media to be recovered

1.41. Stop the dust collector.

1.42. Turn OFF electrics at cabinet isolator box and dust collector control box.

1.43. Switch OFF both electrical supplies.

1.44. Turn OFF air supply at compressed air supply valve.

1.45. Check dust compartment drawer for presence of useable abrasive. If any visible, empty contents, replace receptacle/s and make appropriate adjustments as detailed in 4.0

WARNING: NEVER INSPECT THE DUST HOPPER, DUST FILTER ,OR RECLAIM WHILST SMOKING OR ALLOW ANY NAKED LIGHTS IN THEIR PROXIMITY.
ALL DUSTS ARE COMBUSTIBLE AND CAN BE DANGEROUS TO HEALTH. RESPIRABLE PROTECTION SHOULD BE USED.

1.46. Check cabinet hopper sieve for oversized debris, remove, empty, and securely replace to ensure a good seal.

2.0. OPERATING INSTRUCTIONS

2.1. Turn ON electrical supplies at supply isolator boxes to cabinet and dust collector.

2.2. Switch ON cabinet isolator, switch ON light unit and check that the interior light has illuminated.

2.3.Start the dust collector

2.4. Turn ON the air to the blast machine and dust collector where required at the compressed air supply valve.

2.5. Turn the handle of the petcock (RM-9) on the remote control valve (1028 & 1446 machine only) to the ON position at right angles to the petcock body.

2.6. Adjust the air regulator on the blast machine/cabinet to the specified pressure laid down in the works schedule.

2.7. Slightly OPEN the abrasive metering valve at the base of the blast cleaning machine. (Further fine adjustment may subsequently be necessary to obtain the most efficient mixture of minimum abrasive/maximum air flow).

2.8. Position workpiece within the cabinet work chamber.

2.9. Ensure that all access doors to cabinet work chamber doors, and reclaim are securely closed, and the exhaust hose assembly is securely connected (see 1.9).

WARNING: IT IS DANGEROUS TO OPERATE THE BLAST MACHINE WITHOUT THE EXHAUST HOSE ASSEMBLY SECURELY CONNECTED AND WITHOUT GOOD COUPLING GASKETS FITTED.

2.10. Place the hands in the armhole gloves and take secure hold of the nozzle holder and point the nozzle at the specified angle and distance to the workpiece within the blasting compartment.

WARNING: IT IS DANGEROUS TO OPERATE THE CABINET WITHOUT CORRECT PROTECTION FOR HANDS AND ARMS. AT ALL TIMES THESE GAUNTLETS MUST BE MAINTAINED IN GOOD CONDITION.

2.11. Depress the foot pedal. The blast cleaning machine will pressurise and air and abrasive will pass through the nozzle. (Fine adjustment of air pressure and media flow may be necessary to achieve desired surface finish).

NOTE: The blast cleaning machine can also be depressurised by turning the handle of the petcock (RM-9) to the OFF position, i.e. handle in line with the valve body. (1028 & 1446 machine only)

WARNING: EVEN THOUGH THE CABINET IS FITTED WITH DOOR LIMIT SWITCHES TO PREVENT BLASTING WHEN A WORK CHAMBER DOOR IS OPEN, NEVER ATTEMPT TO OPEN THE DOOR OF THE CABINET WITHOUT FIRST DEPRESSURISING THE BLAST CLEANING MACHINE BY EITHER OF THE ABOVE METHODS.

2.12. To stop blasting release the foot pedal. The blast cleaning machine will automatically refill with recovered abrasive.

3.0. SHUT DOWN SEQUENCE

3.1. Release the foot pedal.

3.2. Turn petcock handle (RM-9) to OFF position, (1028 & 1446 m/c only) i.e. handle in line with petcock body.

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

3.4. Allow a few minutes for the spent abrasive to be recovered from the blasting compartment to the reclaim/blast machine then isolate the electric supply and turn off the air to the dust collector where required

3.5. Allow sufficient time for dust to settle within the dust drawer.

3.6. Remove, empty and replace the dust drawer.

WARNING: NEVER INSPECT THE DUST COLLECTOR DRAWER, DUST FILTER, CYCLONE, OR RECLAIM WHILST SMOKING OR ALLOW ANY NAKED LIGHTS IN THEIR PROXIMITY. ALL DUSTS ARE COMBUSTIBLE AND CAN BE HAZARDOUS TO HEALTH. RESPIRABLE PROTECTION SHOULD BE USED

3.7. Remove, empty & replace the cabinet hopper sieve.

NB Depending on the articles being blasted it may be necessary to repeat operations 3.4 to 3.7 more than once a day.

4.0. CONTROL OF ABRASIVE SEPARATION

As the initial charge of abrasive progressively breaks down into a working mix, further adjustments may be necessary to avoid loss of good abrasive. It is recommended that close monitoring of discharges be carried out at regular intervals during the first 40 hours of use.

4.1. Models fitted with regrader unit

It is advisable when introducing a new grade or type of media into the blast system to check the deposits in the dust collector drawer and make the necessary adjustments accordingly.

4.1.1. Re-usable particles in dust collector:-

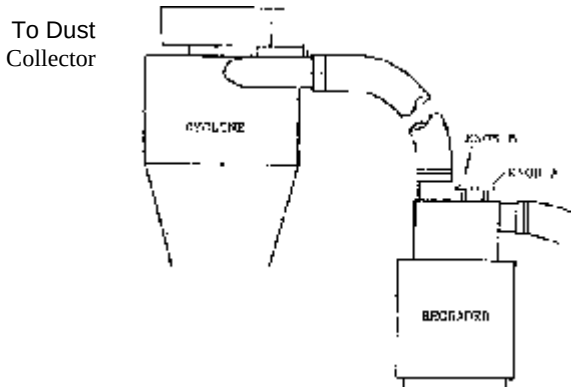
4.1.1.1. At the regrader, unscrew knob 'A' one full turn, then carefully screw knob 'B' is not over tightened as this will damage the deflector plate.

4.1.1.2. After the next blasting and recovery operation has been completed, check the dust collector drawer contents and repeat operation 4.1.1.1. until only unwanted fines are collected.

4.1.2. Unwanted fines returned to the nozzle:-

4.1.2.1. Unscrew knob 'B' one full turn then carefully screw knob 'A' until resistance is detected. DO NOT overtighten as this will cause damage to the deflector plate.

4.1.2.2. Repeat operation 4.1.2.1. after each subsequent recovery operation, until required level of fines removal is achieved.



IMPORTANT NOTICE: THE INLET DAMPERS ON THE DUST COLLECTOR SHOULD BE IN THE FULLY OPEN POSITION FOR MOST COMMON ABRASIVE TYPES AND GRADES. THESE DAMPERS ENABLE MORE FINITE SEPARATION TO BE ACHIEVED WHEN FINE GRADES OF LIGHTER MATERIAL IS BEING RECYCLED.

4.2 Models with dust collectors only

4.2.1 Good abrasive in dust collector drawer: - Slightly close dust collector damper

4.2.2 Dusty conditions within the blast cabinet:- slightly open dust collector damper
N.B. Should excessive build up of dust be found on the collector filter element also check function of cleaning mechanism

5.0. MAINTENANCE

All blast cleaning equipment is self destructive when in operation, therefore it is essential to carry out a regular preventative maintenance programme. As a guide this programme is divided into daily, weekly and monthly schedules, and will assist in maintaining equipment efficiency and compliance with legislation for local exhaust ventilation plant

WARNING: ENSURE THAT THE ELECTRICITY SUPPLIES ARE SWITCHED OFF AT THE ISOLATOR SUPPLY ALSO THAT THE COMPRESSED AIR IS TURNED OFF AT THE COMPRESSED AIR SUPPLY VALVE AND THE AIR LINES ARE DEPRESSURISED, BEFORE ANY MAINTENANCE IS CARRIED OUT.

Maintenance work must only be carried out by suitably trained, competent, authorised persons.

DAILY

5.1. Check all hoses, couplings and gaskets for evidence of wear and replace if necessary.

5.2. Check that all couplings are correctly coupled. Blast hose couplings must be secured with split pins through the holes provided.

5.3. Check the condition of the nozzle holder gasket and replace if necessary.

5.4. Check that the blast hose runs in loose curves. Tight curves and kinks in the blast hose cause turbulence and accelerated wear.

5.5. Remove empty and replace the dust collector dust drawer.

WARNING: NEVER INSPECT THE DUST COLLECTOR DRAWER, DUST FILTER OR RECLAIM WHILST SMOKING OR ALLOW ANY NAKED LIGHTS IN THEIR PROXIMITY. DUST CONCENTRATIONS CAN BE COMBUSTIBLE AND HAZARDOUS TO HEALTH. RESPIRATORY PROTECTION SHOULD BE USED.

WEEKLY 5.1. to 5.5. Plus:-

5.6 Inspect the rubber deflector pad within the regrader (when fitted)

5.7. Check the condition of the water separator. Remove and clean the filter bowl and element if necessary.

5.8. Check the condition of the exhaust cover on the remote control valve.
If there is evidence of wear, replace the part.

5.9. Visually check the pop-up valve. Replace this if there is evidence of wear.

5.10. Visually check the rubber pop-up valve sealing ring. Replace with a new one if there is sign of wear.

5.11. Check the condition of the viewing windows and fit a new safety window if worn or damaged.

5.12. Check the condition of the filter bags/cartridge and fit new ones if there is evidence of wear.

5.13. Check armhole gloves for wear and replace with new ones where necessary.

5.14. Check cabinet hopper sieve for oversize debris, remove, empty & securely replace.

5.15. Check the nozzle, nozzle holder and gasket for wear and replace if worn.

5.16. Check condition of door seals on cabinet and dust collector and replace if necessary.

MONTHLY (160 hours)

NOTE: To carry out the following maintenance it will be necessary to first purge the blast machine of abrasive into a suitable container. This can be achieved by first reducing the air pressure at the regulator and slightly closing the choke valve on the blast machine. The abrasive can then be purged into a suitable container positioned within the cabinet. Alternatively, the reclaim can be removed from the blast machine and positioned on a suitable container into which the abrasive can then be recovered from the cabinet hopper by the ventilation flow. It is important that the container is stable and forms a good vacuum seal with the under side flange of the reclaim.

5.1. to 5.16. Plus:-

5.17. Remove inspection plate on blast cleaning machine and inspect internal pipe work and pop-up valve for wear or damage. Fit new parts where required.

5.18. Check the condition of the inspection plate gasket and replace if worn.

5.19. Remove any foreign objects and oversized particles from within the blast machine.

6.0. COMPRESSED AIR SUPPLY

The volume of air required will depend upon the size of the nozzle being used and the operational nozzle blasting pressure.

AIR FLOW IN CUBIC FEET PER MINUTE

NOZZLE	NOZZLE PRESSURE P.S.I							
ORIFICE	30	40	50	60	70	80	90	100
1/8”	3	10	11.3	13.2	15.1	17	18	20.25
3/16”	18	22	26	30	33	38	41	45
1/4”	34	41	47	54	61	68	74	81
5/16”	53	65	77	89	101	113	126	137
3/8”	76	91	108	126	143	161	173	196

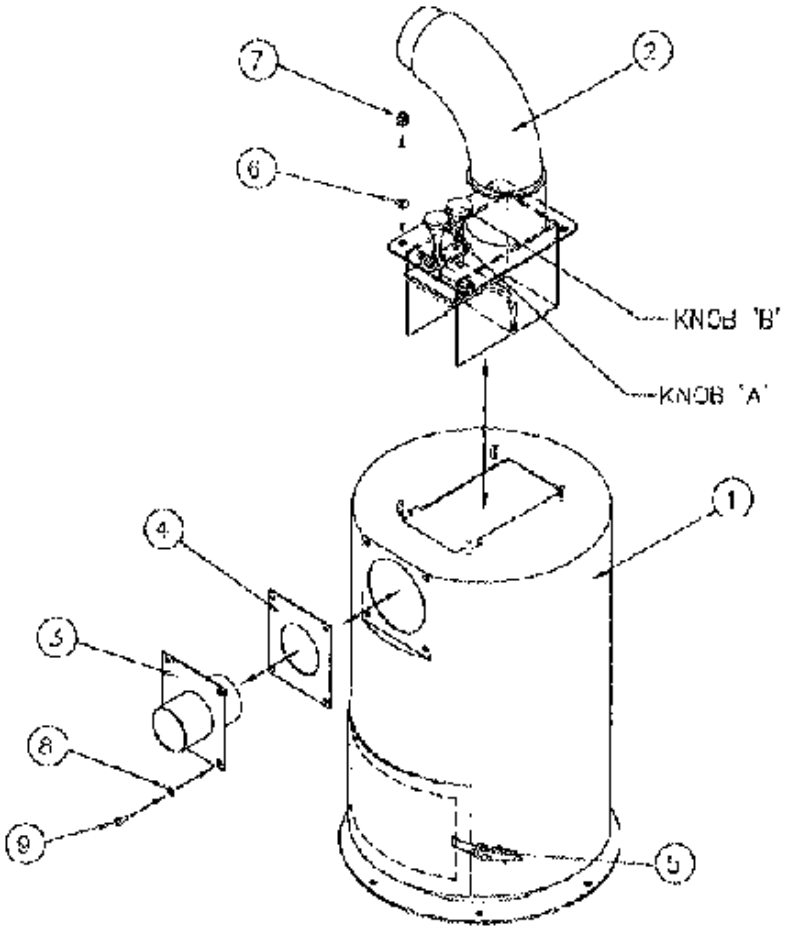
7.0. PROBLEM SOLVING

WARNING: BEFORE REPAIR WORK IS CARRIED OUT, ENSURE THAT THE ELECTRICITY SUPPLY TO THE EQUIPMENT IS DISCONNECTED AT THE ISOLATOR BOX, THE COMPRESSED AIR SUPPLY IS TURNED OFF AND THE AIR LINES AND EQUIPMENT ARE PURGED OF PRESSURE. DISCONNECT THE AIR SUPPLY LINE TO PREVENT ACCIDENTAL SUPPLY TO THE EQUIPMENT.

SYMPTOM	PROBABLE FAULT	ACTION REQUIRED
7.1 No air or abrasive passes through the nozzle when foot pedal is depressed	Compressor not turned on	Turn on compressed air supply
	Water separator blockage	Check and clean
	Nozzle blockage	Remove blockage
	Remote control valve not working	With RM-9 petcock and foot valve in ON position check for air leaks on the remote control valve and all control hoses and connections
	Pressure regulator setting too low	Adjust regulator to operating pressure
	Door/s not closed	Check doors and interlock system
7.2 Air but no abrasive passes through nozzle	Abrasive metering valve closed	Open valve
	Damp abrasive or large particle restricting flow in bse of blast machine	Quickly close and open the choke valve whilst blast in progress
	No abrasive in blast machine	Check sieve in cabinet hopper
		Check for blockages in cabinet hopper
		Top up abrasive charge to appropriate quantity
7.3 Intermittent flow of abrasive	Abrasive metering valve not adjusted correctly	Open valve
7.4 Abrasive surges/pulses through nozzle	Abrasive metering valve opened too fully	Check setting

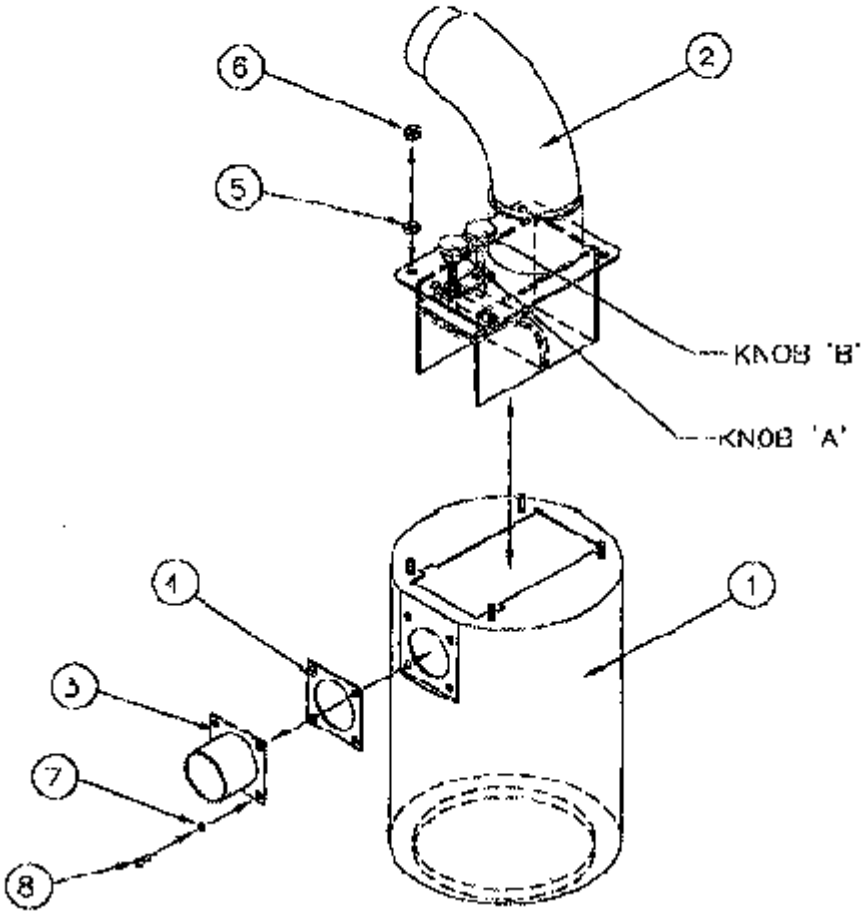
7.5 Pop-up valve not sealing	Insufficient pressure or volume of air	Check compressed air supply. See air consumption chart 6.0 Check regulator reading Check water separator
7.6 Pop-up valve will not drop after depressurisation	Worn pop-up valve and /or sealing ring	Remove and refit new part
7.7 Machine will not depressurise	Blockage in foot pedal Faulty remote control valve	Remove and clean out Remove and repair
7.8 Dusty abrasive being returned to blast machine	Dust collector not on Air Flow restricted by clogged filter Material Regrader adjustment	Switch on Check operation of filter cleaning system Readjust (See 4.1)
7.9 Particles of usable abrasive deposited in the dust collector drawer or cyclone bin (if incorporated)	Excessive total charge of abrasive Regrader adjustment Damper too open	Remove excess of abrasive Readjust (see 4.1) Slightly close damper

ASSEMBLY DETAILS FOR CAB RG14S
(REGRADER FOR USE WITH 1446 BLAST MACHINES)



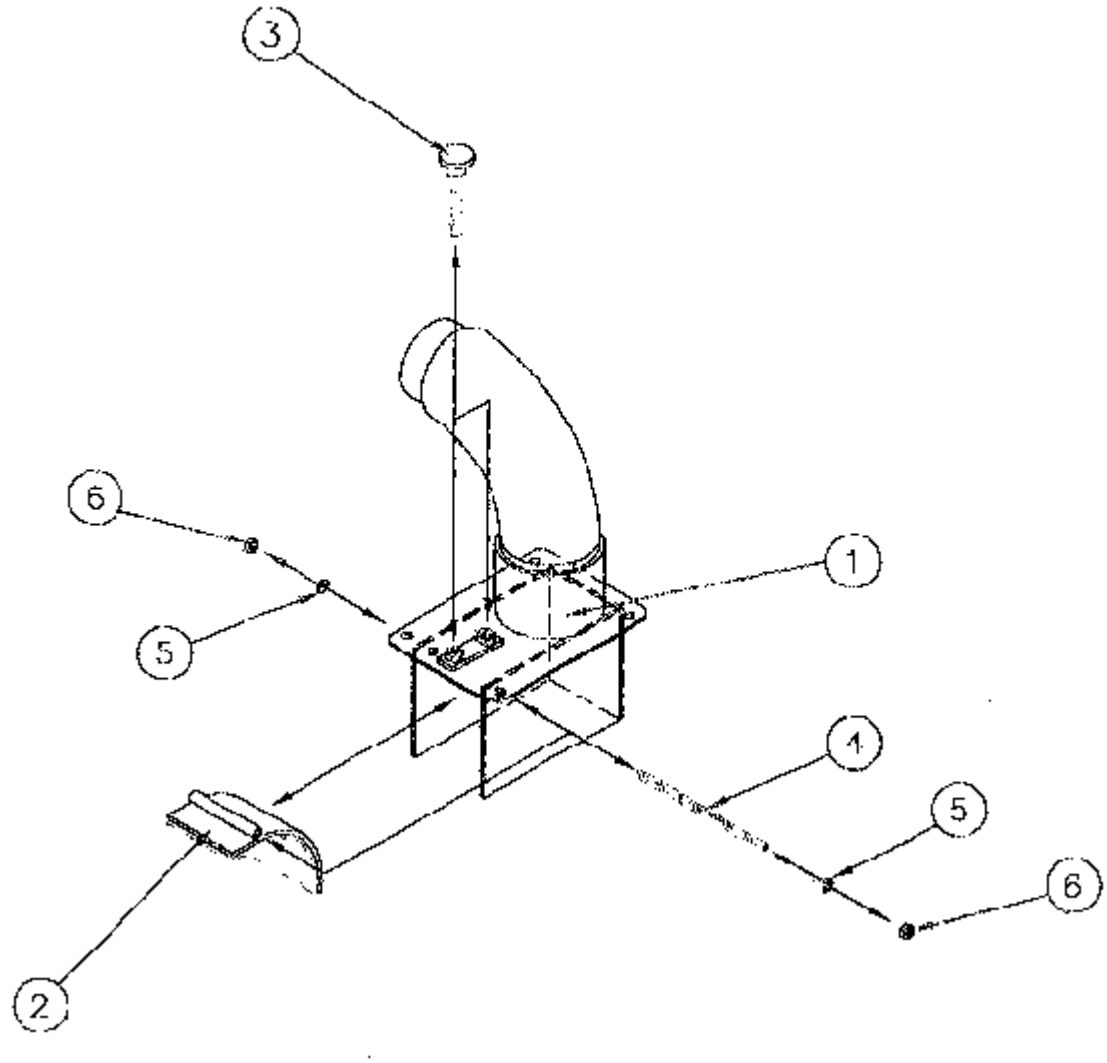
Item	Product Code	Description	Qty
1	CAB CB14C	REGRADER COLL.BIN(14")	1
2	CAB RG4OUT	REGRADER TOP 4" OUTLET	1
3	JC 6670 2	INLET SPIGOT	1
4	HC 6670 3	GASKET	1
5	CAB 02 521	CATCH PLATE	1
"	CAB 02 521	CATCH -TOGGLE SPRING LOADED	1
6	FAS M8 80A	WASHER – B.Z.P.	4
7	FAS M8 91	M8 'NYLOC' NUT	4
8	FAS M6 80A	WASHER – B.Z.P	4
9	FAS M6 60B	SCREW – PAN HEAD X 16LG	4

ASSEMBLY DETAILS FOR CAB RG10S
(REGRADER FOR USE WITH 1028 BLAST MACHINES)



Item	Product Code	Description	Qty
1	CAB CB14C	REGRADER COLL.BIN(14")	1
2	CAB RG4OUT	REGRADER TOP 4" OUTLET	1
3	HC 6670 2	INLET SPIGOT	1
4	HC 6670 3	GASKET	1
5	FAS M8 80A	WASHER – B.Z.P.	4
6	FAS M8 91	M8 'NYLOC' NUT	4
7	FAS M6 80A	WASHER – B.Z.P	4
8	FAS M6 60B	SCREW – PAN HEAD X 16LG	4

ASSEMBLY DETAILS FOR CAB RG4OUT
(REGRADER TOP – 4" OUTLET)



ITEM	PRODUCT CODE	DESCRIPTION	QTY
1	XX CAB RG4OUT	4"REGRADER TOP FABRICATION	1
2	HC 5522 1	DEFLECTOR PLATE (LINED)	1
3	IND 10339A	HANDSCREW - M10 X 85LG	2
4	XX M8 80A	SCREW ROD – MS PLATED	0.2M
5	FAS M8 80A	WASHER – B.Z.P	2
6	FAS M8 90A	NUT – B.Z.P.	2

Typical Airborne Noise Emissions Expected

The following are readings taken from equipment operated under the conditions detailed below

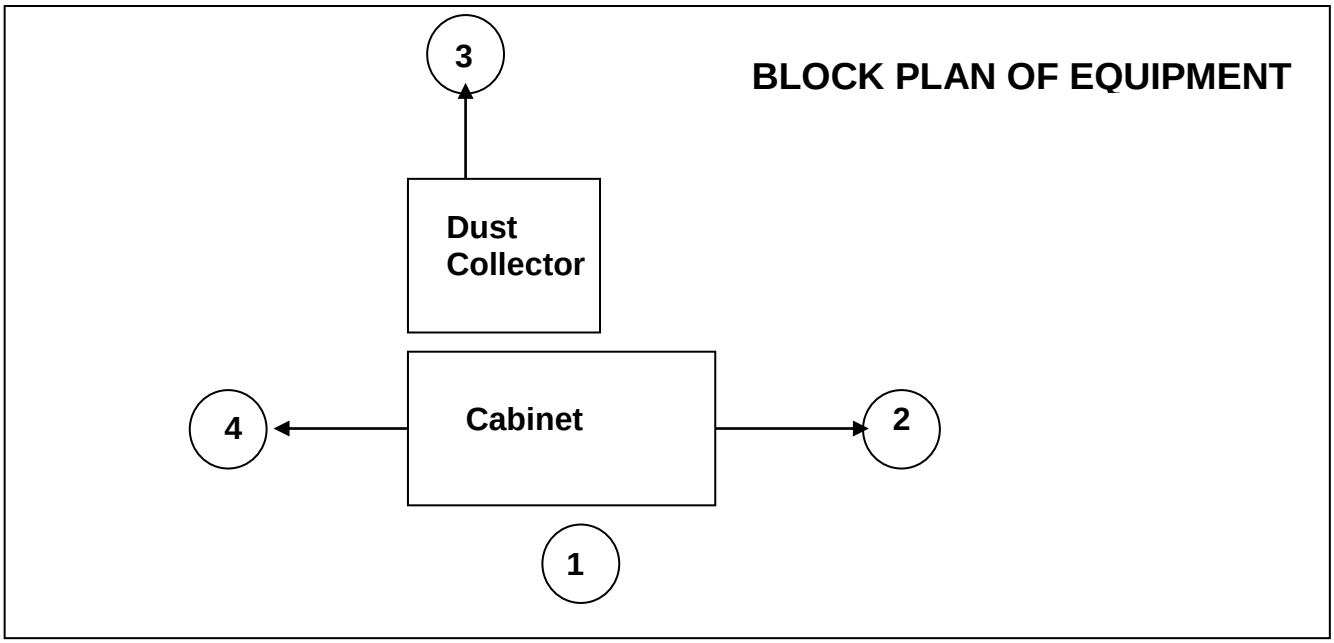
The readings recorded should be used to determine the level of ear protection required by the operator(s) and personnel at risk

Equipment Description: PRESSURE HAND BLAST CABINET

Location and Test Conditions: HODGE CLEMCO LTD INTERNAL WORKSHOP AREA

Power and Load Conditions: 90 P.S.I. 5/16" NOZZLE

WARNING: THIS EQUIPMENT MAY PRODUCE NOISE LEVELS GREATER THAN 85 dBA EAR PROTECTION SHOULD BE WORN



Position 1.6m High	Continuous		Test Duration	High Surge Reading		Back-Ground Nose	Notes
	Max DBA	Min DBA		Max DBA	Period		
1.Operators Position	91		3 mins			71	
2. 1.6m(H) x 1m (Dist)	89		3 mins			71	
3. 1.6m (H) x 1m (Dist)	87		3 mins			71	
4 1.0(H) x 1m (Dist)	88		3 mins			71	
5 Position of any High Surge				90	3 secs		Blast Machine Exhaust

Maintenance /Service Record		
Date	**Comments**	**Signed**

