Abrasive Pneumatic Vacuum Recovery System (Model IND200PA)

Owner's Manual

Date of Issue 11/11/2022 TSOM 255E

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CE MACHINERY DIRECTIVE
(2006/42/EC)

CE 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 machinery directive

UKCA LEGISLATION
(SUPPLY OF MACHINERY (SAFETY) REGULATIONS 2008 S.I. 2008:1597)

UKCA 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 UKCA legislation.

STEVEN STAPLES
Engineering Manager

NEIL SCRAGG
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 detail 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.

TABLE OF CONTENTS

1.0 GENERAL DESCRIPTION

This system is designed to recover spent recyclable abrasive from a blasting area into the silo for subsequent return to the connected blast machine. After depositing the abrasive into the silo/blast machine the vacuum flow containing air and dust continues to the vacuum unit, where the dust particles are removed by a high-performance polyester filter cartridge prior to air exhausting to the atmosphere.

Optional extras which can be supplied with this equipment includes:

a) Larger floor hopper.
b) Heavy duty floor gratings.
c) Level sensor in storage silo - Standard on ERL version.
d) Magnetic particle screen.
e) Intermediate cyclone.
f) Wall bush to facilitate alternative recovery by hose from work area direct to silo.
g) EDB 90 Eductoblast head and regrader.
h) EDBH 75 and EDBH 60 Eductoblast heads.

2.0 INSTALLATION INSTRUCTIONS

***WARNING:** All installation work must be carried out by suitable competent persons.*

***WARNING:** Static Electricity can be generated during recovery operations; therefore the suction unit and silo must be suitably earthed, and only static conductive suction hoses must be used with this equipment.*

***WARNING:** Under no circumstances must this unit be connected to an air supply of greater pressure than 7 Bar.*

***WARNING:** It is essential that all hose couplings are secure and that any sealing gaskets are in good condition and in position. Escaping air at connections will reduce efficiency and can be dangerous.*

Note: These instructions should be used in conjunction with those appropriate to the blast machine and safety protection equipment etc.

2.1 Position the vacuum unit and cyclone (if supplied) and connect the vacuum hose to their respective spigots between silo(cyclone) and vacuum unit. Secure it by the hose clamps supplied. **Note: The length of hose can be reduced if required.**

2.2 Ensure the vacuum unit dust drawer is in place and securely close the unit door.

Note: THIS UNIT MUST BE EARTHED.

2.3 Securely connect a minimum 1" airline (25mm I.D.) to the suction unit ensuring that the airline is first purged of moisture. **Note: an air volume of 90 cfm (2.55m^3/min) of clean dry compressed air.**

2.4 Open the air shut off valve slowly to create the vacuum recovery.

2.5 Increase the pressure regulator to provide sufficient vacuum to recover the abrasive. **Note: Elevated pressures may result in abrasive being carried over into the vacuum unit.**

2.6 **Note: The cartridge is cleaned by the reverse air pulse cleaning mechanism every 30 seconds.**

2.7 To stop the vacuum recovery, turn off the air shut off valve and switch off the electric supply isolator.

2.8 **A)** Check the filter cartridge dust drawer for abrasive deposits. If there are any Present close the access door and reduce the air pressure regulator.

B) Check all seals on the unit to ensure they are in good working order.

2.9 The system is now ready for operation.

3.0 OPERATING INSTRUCTIONS

***WARNING:* Under no circumstances must this unit be connected to an air supply of greater pressure than 7 Bar.**

3.1. Open the air shut off valve on the vacuum unit slowly to create the desired vacuum recovery.

3.2. Adjust the pressure regulator until the correct setting is achieved. **Note: Minimum 5 bar (70 psi). Open the drain valve to produce a slight bleed of air.**

3.3. Open the small bypass valve to the inline filter which supplies the internal air receiver and subsequent reverse pulse cartridge cleaning.

ESTIMATED ABRASIVE CAPACITY	
BLAST MACHINE	**CAPACITY (LITRES)**
1440	40
2040	90
2452	150
SILO	200
FLOOR HOPPER	80

AVERAGE WEIGHT OF ABRASIVE PER LITRE	
ABRASIVE	**KG PER LITRE**
ALUMINIUM OXIDE	1.85
GLASS BEAD	1.65
EXPENDABLE	2.00
AEROLYTE	0.80

3.4 Ensure that the reverse pulse cleaning system is operating correctly. The normal setting is one pulse every 30 seconds.

3.5 Regrader Adjustment (When fitted):

On these versions abrasive separation is controlled by adjustment of the knobs A & B on the regrader unit. The cyclone bin serves to collect any unwanted fines separated off at the regrader. It is advisable when introducing a new grade or type of media into the blast system to check the deposits in the bin and adjust the regrader accordingly.

3.6.1 Re-usable particles in cyclone bin:

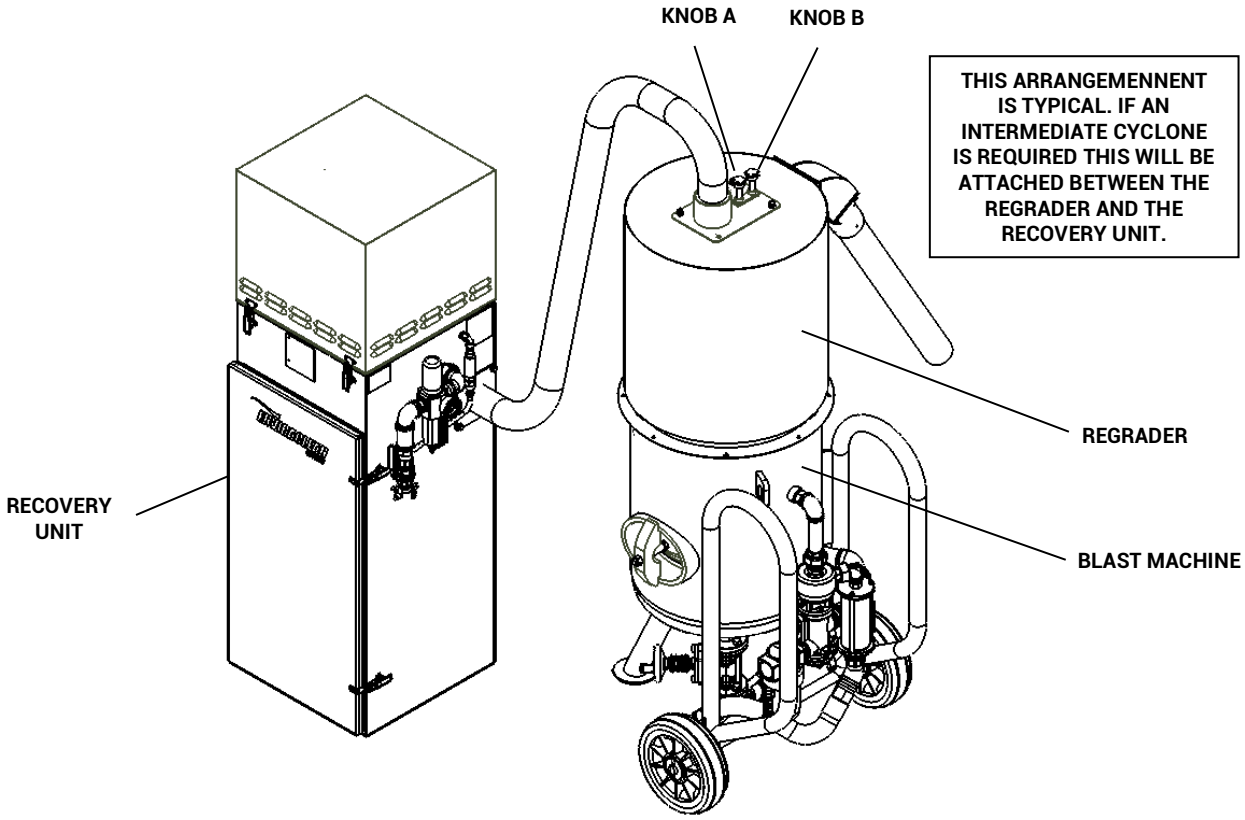
3.6.2 At the regrader, unscrew knob 'A' anti clockwise one full turn then carefully screw knob 'B' clockwise until resistance is met. Do not over tighten as this will damage the deflector plate.

3.6.2 After the next blasting and recovery operation has been completed check the cyclone bin contents and repeat operation 3.7.2 until only unwanted fines are collected.

3.6.3 Unwanted fines returned to vacuum unit:

3.6.4 At the regrader, unscrew knob 'A' anti clockwise one full turn then carefully screw knob 'B' clockwise until resistance is met. Do not over tighten as this will damage the deflector plate.

3.6.5 Repeat operation 3.8.1 after each subsequent recovery operation until required level of fines removal is achieved.



IMPORTANT NOTICE: THE INLET DAMPERS ON THE CYCLONE 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

4.0 MAINTENANCE

***WARNING:** Ensure that the compressed air supply is switched off at the ball valve before any maintenance is carried out. Maintenance should only be carried out by trained and competent persons.*

***WARNING:** Never inspect the dust compartment on the inside of the silo whilst smoking or allow any naked lights in their proximity. Dust concentrations can be combustible, explosive and hazardous to health, respiratory protection should be used.*

***WARNING:** Never loosen or remove seals when abrasive is in the silo.*

4.1 Daily Programme

4.1.1 Empty the dust compartment in the vacuum unit. Emptying may be necessary more often than once a day depending on the volume of dust generated in the blasting operation.

4.1.2 With the silo empty remove and clean both abrasive outlet sieves on the silo and ensure they are correctly repositioned, and the access doors are securely closed.

4.2 Weekly Programme
4.1.1 to 4.1.2 plus:

4.3 Check that all hose connections and couplings are secure, and any gaskets required are in good condition and in place.

4.4 Check seal or hoses between blast machines and silo outlets.

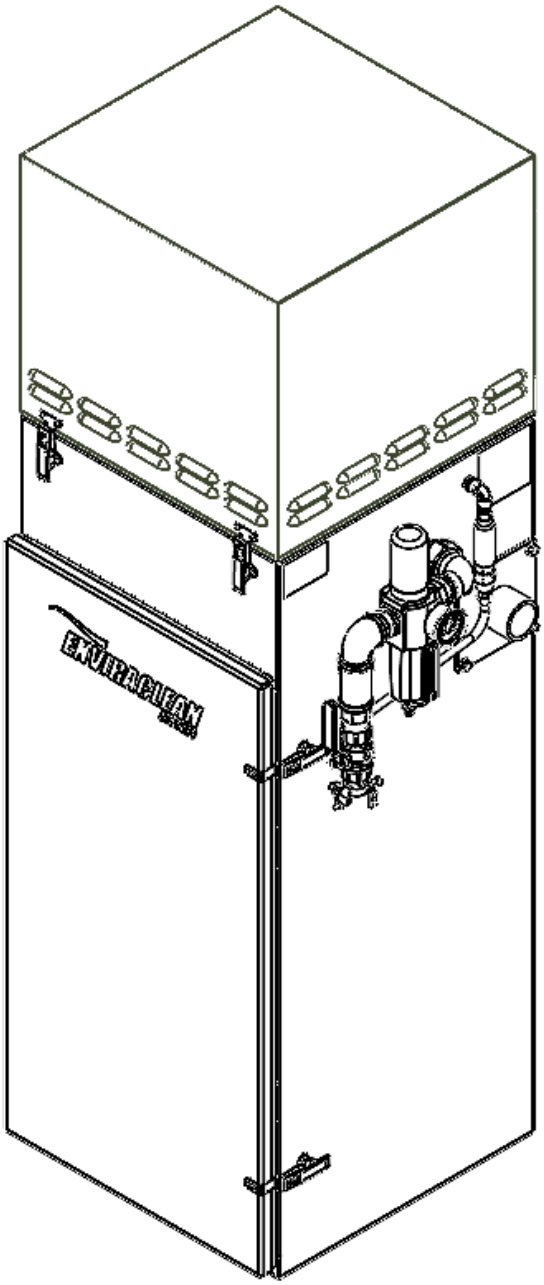
4.5 Check the filter cartridge in the vacuum unit. If dust layers are attached to the cartridge they should be cleaned off with a soft brush **Note: If these dust layers are difficult to remove from the filter cartridge, it can be the result of using a wet compressed air supply or because the dust generated in the blasting operation is excessively high.**

The filter cartridge should be removed and cleaned using a covered water supply. Ensure the cartridge is completely dry before reinstalling. If dust is emitted from the vacuum exhaust outlet the filter cartridge must be replaced with a new one immediately.

4.6 Check the security and condition of the compressed air supply hoses/fittings and pressure regulator. Also, the function of the reverse pulse valve and the in-line air filter.

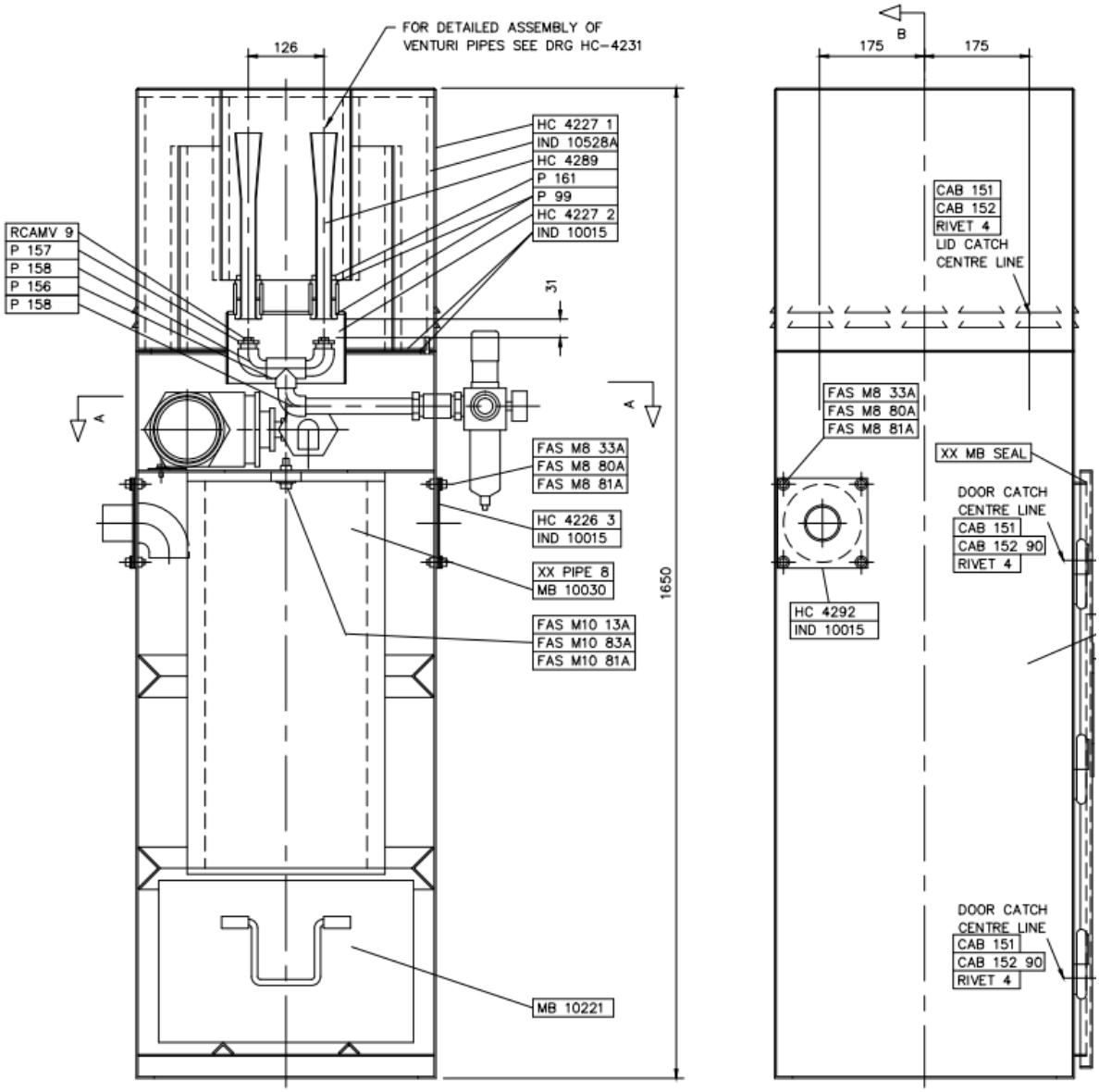
SPARE PARTS LIST

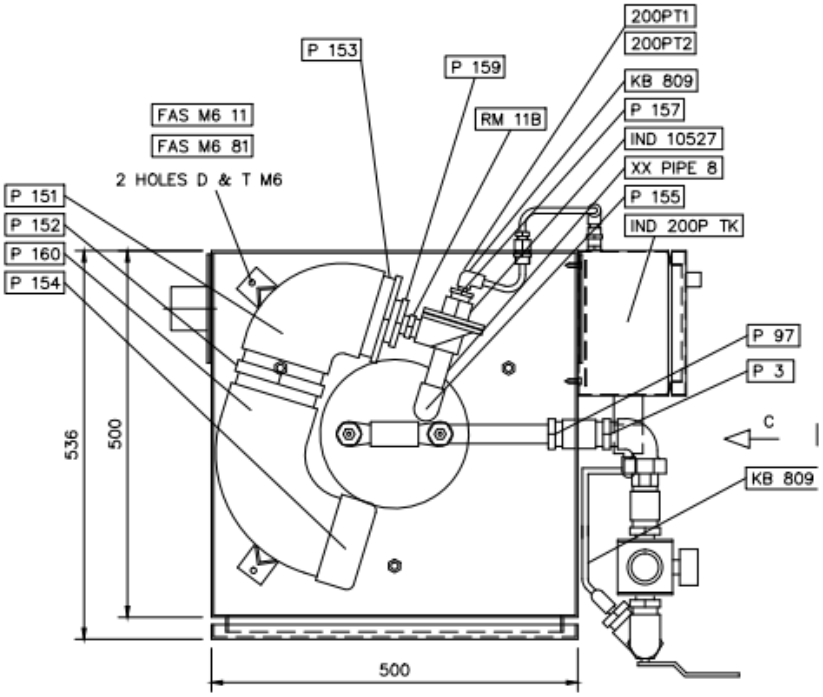
PROD. CODE	DESCRIPTION	QTY
BW 10	COUPLING 1" MALE	1
CAB 151	CATCH – TOGGLE LARGE	6
CAB 152	CATCH PLATE – LARGE	4
CAB 152 90	CATCH PLATE – 90 DEGREE LARGE	2
KB 11	GAUGE–AIR PRESSURE	1
FAS M10 13A	SETSCREW HEX HEAD x 40L (PLT)	3
FAS M10 81A	WASHER – SPRING (PLATED)	3
FAS M10 83A	M10 MUDWING WASHER(ZN PLT)	3
FAS M6 11	SETSCREW HEX HEAD x 16 LG	2
FAS M6 80	WASHER	2
FAS M8 33A	CAP HEAD SOCKET SCREW	8
FAS M8 80A	WASHER – PLATED	8
FAS M8 81A	WASHER – SPRING (PLATED)	8
HC 4226	RECOVERY SYS. – DUST COLL. BOX	1
HC 4226 3	BLANKING PLATE	1
HC 4227 1	RECOVERY SYS. – OUTER CASING	1
HC 4227 2	RECOVERY SYS. – VENTURI MOUNTG	1
HC 4289	VENTURI PIPE ONLY	2
HC 4292	SPIGOT – 60mm FLANGED & BAFFLE	1
IND 10015	DUST SEAL 3MM X 25MM X 25M	1
IND 10528A	ACCOUSTIC FOAM – 12mm THICK	2
LABEL 48	LABEL – EAR PROTECTION WARNING	1
MB 10030	MUNKEBO–FILTER CARTRIDGE TYPE	1
MB 10221	MUNKEBO–DUST DRAWER	1
P 1	VALVE 1" BALL VALVE	1
P 156	TEE – 3/4" FEM – M.I.	1
P 157	BUSH – 3/4" x 1/4" – M.I.	1
P 158	ELBOW – 3/4" M&F – M.I.	3
P 161	BACKNUT – 3/4" – M.I.	2
P 190X	PRESSURE REGULATOR/FILTER 3/4"	1
P 196	UNION ELBOW – 1" M & F – M.I.	1
P 26	ELBOW 1" M/I M & F	1
P 122	NIPPLE 1" x 3/4" M/I	3
P 58	TEE 1" M/I	1
P 97	BUSH 1" X 3/4" M/I	1
P 99	BUSH 1.1/4" X 3/4" M/I	4
RCAMV 9	ADAPTOR 1/4" X 1/8" BR	1
RIVET 4	3.2MM X 12.7MM LG POP RIVET	1
XX MB SEAL	SEAL FOR ACCESS DOORS	1
XX PIPE 8	PIPE – 3/4" NB MED WALL M.S.	1
200PT1	PNEUMATIC TIMER RESET MODULE	1
200PT2	PNEUMATIC TIMER 8–120 SEC	1

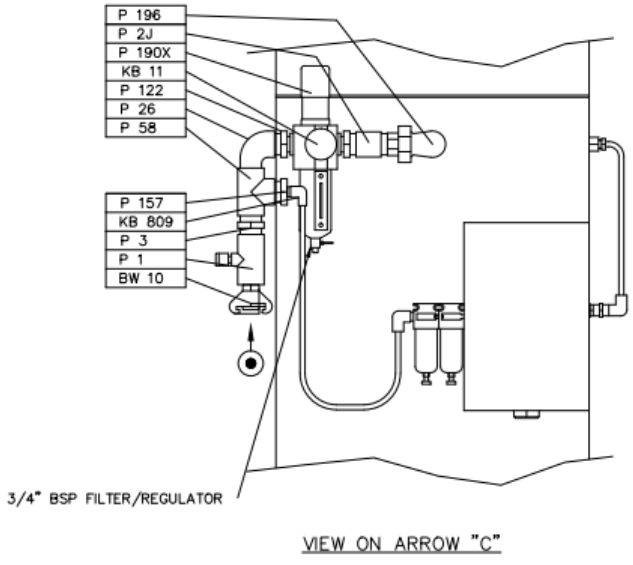


VACUUM RECOVERY UNIT

ARRANGEMENT OF RECOVERY UNIT (IND200PA)





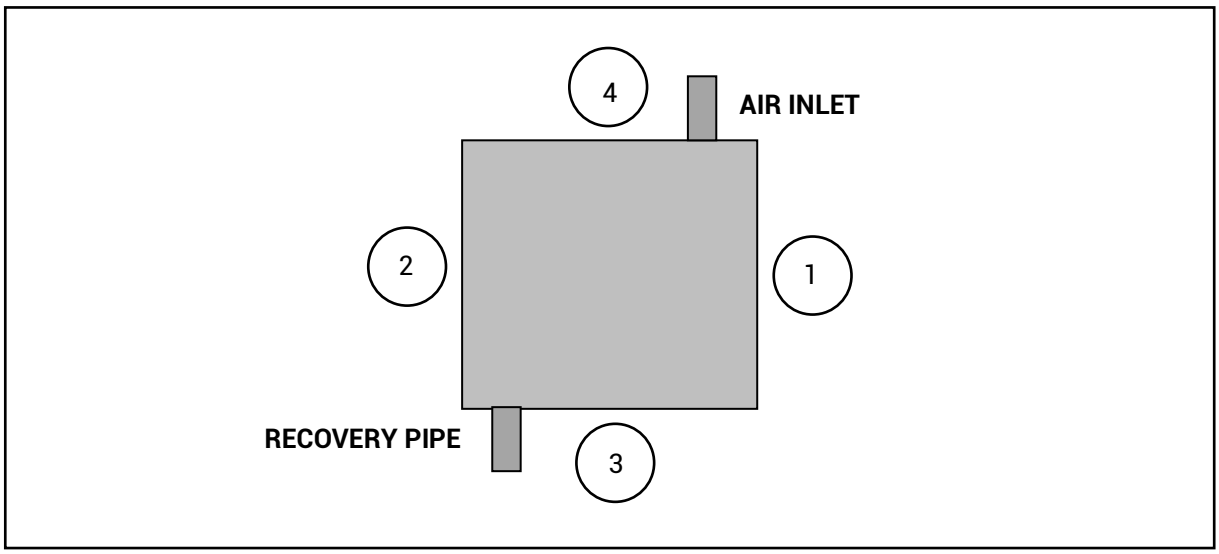


VIEW ON ARROW "C"

TYPICAL AIRBORNE NOISE EMISSIONS EXPECTED

The following are readings taken from identical 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 : **IND200PA**
- Location and Test Conditions : **Hodge Clemco Ltd Work Area**
- Power and Load Conditions : **110 PSI**



Position 1.6m high	Continuous		Test Duration	High Surge Reading		Back-ground Noise	Notes
	Max dBA	Min dBA		Max dBA	Period		
1. Operators Position	75		5 mins			65	
2. 1.6m(H) x 1m (Dist)	76		5 mins			65	
3. 1.6m(H) x 1m (Dist)	77		5 mins			65	
4. 1.6m(H) x 1m (Dist)	78		5 mins			65	
5. Position of any high surge	N/A	N/A	N/A	83	2 secs	67	N/A

MAINTENANCE / SERVICE RECORD

DATE	DETAILS	SIGNATURE