CLEMCO

INTERNAL PIPE CLEANING TOOL

TYPE JHB-1 JUNIOR HOLLOBLAST WITH REDUCER AND CENTERING CARRIAGE

OWNER'S MANUAL

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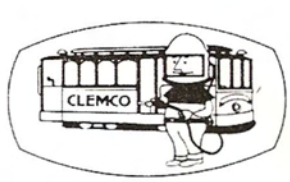

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TYPE JHB-1 JUNIOR HOLLOBLAST WITH REDUCER AND CENTERING CARRIAGE

FIG. 1

JHB-1 JUNIOR HOLLOBLAST TOOL WITH REDUCER

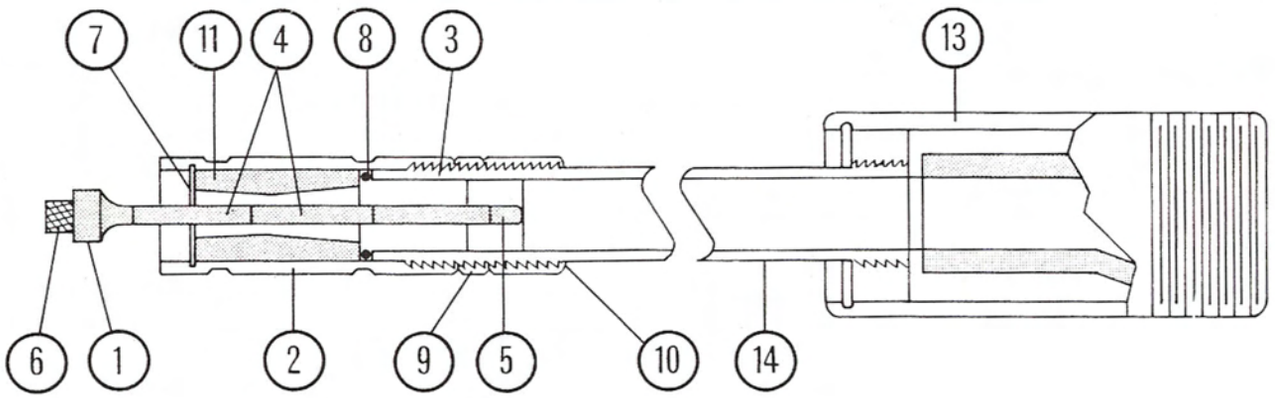
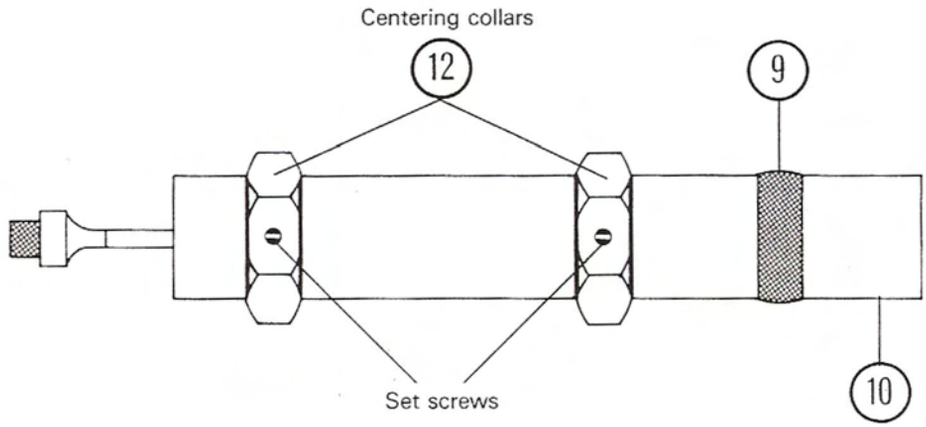


FIG. 2

JUNIOR HOLLOBLAST TOOL WITH CENTERING COLLARS



REPLACEMENT PARTS

Item	Part No.	Description
1	JHB-10	Deflection tip
2	JHB-11	Body
3	JHB-12	Stem support assembly
4	JHB-13	Stem sleeve
5	JHB-14	Throat rod and tip assembly
6	JHB-15	Throat rod nut
7	JHB-16	Retaining ring
8	JHB-17	Nozzle gasket
9	JHB-18	Knurled lock nut
10	JHB-19	⅜" Coupling
11	JHB-20	9/32" Tungsten carbide lined nozzle
12	JHB-21	Centering collar set
13	JHB-22	Reducer
14	—	Pipe lance (customer supplied)

1.0 INTRODUCTION

The Junior Holloblast pipe cleaning tool is designed to blast clean internal surfaces of pipes ranging from ¾" (19 mm) to 2" (50 mm) i.d. using the appropriate centering carriage.

This blast cleaning attachment is used in conjunction with an abrasive blast cleaning machine and blast hose, and incorporates a deflection tip which directs the air/abrasive mixture at the internal surface of the pipe resulting in a 360° blast pattern.

To facilitate the cleaning of pipes by the Junior Holloblast it is necessary to utilise a pipe lance (see Fig. 1). The pipe lance is a length of ⅜" i.d. screwed pipe and is usually as long as the pipe to be cleaned.

2.0 SETTING UP INSTRUCTIONS

N.B. These instructions are to be used in conjunction with those issued with the abrasive blast cleaning machine and are based on the assumption that a RMS-100 remote control system is being used. The maximum recommended working pressure of this machine and the Holloblast tool is 110 p.s.i. Under no circumstances must it be connected to an air supply of greater pressure.

2.1 Start the compressor and run for a period of 5 to 10 minutes to allow it to reach operating temperature.

2.2 Connect a suitable length of air hose to the compressor air outlet.

2.3 Carefully turn ON the air to "blow out" any dirt or moisture from the air hose.

2.4 Turn OFF the air supply.

2.5 Connect the air hose to the blast machine air inlet.

N.B. It is essential that the air hose couplings are secure and that any sealing gaskets required are in position. Escaping air can be a danger and will reduce the efficiency of the operation.

2.6 CLOSE the abrasive metering valve of the blast machine.

2.7 OPEN the choke valve (P-21) by positioning the handle in line with the vertical pipework. This valve should remain open for all normal conditions.

2.8 OPEN petcock (RM-9) on the RMS-100 recova valve.

2.9 Connect the twin recova air hoses (Hose-7D) to their respective couplings on the RMS-100 valve and deadman handle (RM-21) i.e. hose marked yellow connects to RM-23(Y) on RMS-100 and RM-23(Y) on deadman handle. Hose marked red connects to RM-23(R) on RMS-100 and RM-23(R) on deadman handle.

N.B. It is important to follow the above colour coding when connecting Recova hoses.

2.10 Check that the coupling gasket (CG-1) in the CF coupling (P-9) at the base of the machine is in position and in good condition.

2.11 Connect the requisite number of lengths of blast hose to the machine ensuring that all coupling gaskets are in position and in good condition. (Blast hose with a quick release coupling at one end and a CHE-TC-2 nozzle holder at the other is required).

2.12 Secure all couplings with split pins through the matching holes provided.

2.13 The deadman handle (RM-21) and its hoses are to be kept separate from the blast hose to enable operation of the blast machine and Junior Holloblast tool by remote control, whilst the latter is operating inside the pipe.

2.14 Screw the reducer (JHB-22) into the nozzle holder (CHE-TC-2).

2.15 Screw one end of the pipe lance into the reducer (JHB-22).

N.B. It is important that the pipe lance is cut square and burrs removed before fitting.

2.16 Connect the other end to the stem support assembly (JHB-12) using the coupling (JHB-19) and knurled lock ring (JHB-18) provided.

N.B. Never connect the stem support assembly directly to the reducer.

2.17 Make sure that the pipe lance butts against the stem support assembly (JHB-12) and bottoms against the tungsten carbide liner of the reducer. This will improve the Junior Hollowblast's performance and increase the life of its parts.

3.0 CENTERING CARRIAGE FITTING INSTRUCTIONS

The centering carriage of the Junior Holloblast tool comprises of four pairs of collars.

Selection of the correct sized pair of collars is determined by the internal diameter of the pipe to be blast cleaned.

TABLE 1A

Collar Size	Pipe Size (i.d.)
5/16" (24 mm)	1" (25 mm)
1⅛" (28 mm)	1¼" (31 mm)
1⅜" (34 mm)	1½" (38 mm)
1¾" (44 mm)	2" (50 mm)

3.1 Select the appropriate pair of centering collars.

3.2 Mount them onto the Junior Holloblast, one to the front end and one to the rear (see figure 2), secure them by tightening the set screw in the collar.

4.0 OPERATING INSTRUCTIONS

Checking the blast machine and Junior Holloblast tool using air only.

4.1 Turn ON the air at the compressor.

4.2 Fully OPEN the abrasive metering valve on the blast machine.

4.3 At this point the operator should put on protective clothing and air fed helmet (see instructions issued with same). The helmet air supply can now be adjusted at the control valve on his belt.

4.4 With the deadman handle (RM-21) in the OPEN positon CLOSE petcock (RM-9) on the RMS-100 Recova valve.

4.5 Adjust the draincock on the water separator (P-23M) to give constant bleed off of air-water vapour.

4.6 The operator must then take a secure hold of the Junior Holloblast tool.

4.7 Pressurise the system by closing the deadman handle. The pop-up valve (P-2) will then close against the sealing ring (P-5) of the machine and air will pass through the Junior Holloblast tool.

4.8 Allow air to pass through the Junior Holloblast for a short period to purge the system of moisture from condensation which may have accumulated during storage.

4.9 Depressurise the system by

(a) Releasing the deadman handle or

(b) Opening the petcock (RM-9) on the RMS-100 valve.

N.B. Operation (b) will depressurise the machine in an emergency even if the deadman handle is closed.

4.10 CLOSE the abrasive metering valve.

OPERATING THE BLAST MACHINE AND JUNIOR HOLLOBLAST TOOL

4.11 OPEN petcock (RM-9).

4.12 Load the selected abrasive into the blast machine, this will flow in through the filler hole in the centre of the concave head.

4.13 Insert the Junior Holloblast tool complete with appropriate centering carriage into the pipe to be blasted ensuring that the deflection tip does not touch the pipe.

4.14 Push the Junior Holloblast down to the far end of the pipe using the pipe lance and hold firmly.

4.15 CLOSE petcock (RM-9).

4.16 CLOSE the deadman handle (RM-21). The system will then pressurise and air will pass through the Junior Holloblast.

4.17 The pot tender should gradually OPEN the abrasive metering valve to introduce abrasive into the air stream. Adjust the valve to maintain the minimum amount of abrasive into the air stream. Too much abrasive will seriously affect the efficiency of the Junior Hollowblast tool resulting in accelerated wear.

4.18 Withdraw the Junior Holloblast through the pipe at a rate to give the desired finish to the internal surface of the pipe.

4.19 When the pipe has been cleaned turn OFF the flow of abrasive by adjustment of the abrasive metering valve.

4.20 MAINTAIN THE FLOW OF AIR to purge the system of abrasive (and to avoid the occurrence of blockages).

4.21 TO CLOSE DOWN the system or for refilling the machine, depressurise by either

(a) Releasing the deadman handle (RM-21)

(b) Opening the petcock (RM-9) on the RMS-100.

N.B. The RM-9 petcock must always be open before refilling the machine to avoid accidental pressurisation. Unlike conventional blasting the junior Holloblast tool ejects abrasive from the side radially therefore avoid being at the side of the Junior Holloblast when it is working and do not allow the deflection tip to contact the surface being cleaned.

4.22 Always empty the machine of abrasive after blasting. This will assist in obtaining a quick start when using the machine again, by preventing unnecessary blockages due to damp abrasive.

5.0 MAINTENANCE

All blast cleaning equipment is self destructive when in operation, therefore, for safety and efficiency, it is essential to operate a preventative maintenance programme.

N.B. Ensure that the air supply is turned off and the air line is purged of pressure before maintenance work is carried out. Also, care must be taken not to drop the Junior Holloblast tool or any of its parts.

CHECKLIST

N.B. For abrasive blast cleaning machine and blast hose maintenance, refer to the appropriate machine owners manual.

JUNIOR HOLLOBLAST (after each 8 working hours)

5.1 Strip and clean the Junior Holloblast tool and remove any residual particles.

5.2 Check condition of the nozzle gasket (JHB-17) and replace if worn.

5.3 Check condition of the deflection tip (JHB-10) and replace if worn.

5.4 Check condition of throat rod and tip assembly (JHB-14) and replace if worn.

5.5 Check condition of stem support assembly (JHB-12) and replace if worn.

5.6 Check condition of the Junior Holloblast nozzle (JHB-20) for excessive wear and replace if worn.

5.7 Re-assemble the Junior Holloblast tool making sure to correctly align all parts to maintain even wear.

6.0 COMPRESSED AIR SUPPLY

6.1 For cleaning the internal surfaces of steel pipes, a pressure of 100 p.s.i. at the nozzle of the Junior Holloblast tool or as near as practically possible will give the best rate of cleaning.

6.2 The volume of air required in cubic feet per minute (c.f.m.) to maintain 100 p.s.i. at the nozzle of the Junior Holloblast is 80 c.f.m.

7.0 ABRASIVES

7.1 All suitably graded and dried abrasives containing no free silica can be used with the blast cleaning machine and Junior Holloblast tool.

The following are particularly recommended

J Blast—Grade Supafine (0.5-0.2 mm)

J Blast—Grade Special (0.2-0.15 mm)

8.0 FAULT ANALYSIS

The following fault finding procedure is designed to be used in conjunction with fault analysis charts in abrasive blast cleaning machine manuals.

N.B. Ensure that the air supply at the compressor is turned off and the system is purged of pressure before repair work is carried out.

Sympton	Probable Fault	Action Required
8.1 No air or abrasive passes through Junior Holloblast tool.	Compressor not turned on!	Turn on compressor.
8.2 Air but no abrasive passes through Junior Holloblast tool.	Abrasive metering valve on blast machine closed	Open valve. See 4.17.
8.3 Intermittent flow of abrasive from Junior Holloblast tool.	Abrasive metering valve on blast machine opened too fully.	Check setting. See 4.17.
8.4 Abrasive surges from the Junior Holloblast tool.	Abrasive metering valve on blast machine opened too fully.	Check setting. See 4.17.
8.5 Uneven wear to internal parts of Junior Holloblast tool.	Stem support assembly (JHB-12) deflector tip (JHB-10) and stem sleeves (JHB-13) not properly aligned.	Re-align components as necessary. See 5.7.
	Pipe lance not butting fully against stem support assembly (JHB-12) and bottoming against tungsten carbide liner of tools reducer causing turbulence.	Tighten as necessary. See 2.17.
	Badly worn nozzle gasket (JHB-17) causing turbulence.	Replace gasket. See 5.2
8.6 Inefficient cleaning rate	Worn deflection tip (JHB-10)	Replace worn deflection tip. See 5.3.
	Insufficient air pressure.	Check compressor output.
	Throat rod and tip asembly (JHB-14) misaligned.	Re-align. See 5.4
8.7 360° blast pattern not being achieved.	Worn deflection tip (JHB-10)	Replace worn deflection tip. See 5.3

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