CLOSED CIRCUIT BLAST TOOL O. M. 11423

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WARNING

Do not proceed with these instructions until you have READ the orange cover of this MANUAL and YOU UNDERSTAND its contents. *
These WARNINGS are included for the health and safety of the operator and those in the immediate vicinity.

*If you are using a Clemco Distributor Maintenance and Part Guide, refer to the orange warnings insert preceding the Index before continuing with the enclosed instructions.

Electronic files include a Preface containing the same important information as the orange cover.

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A WARNING

- Read and follow ALL instructions before using this equipment.
- Failure to comply with ALL instructions can result in serious injury or death.
- In the event that the user, or any assistants of the user of this equipment cannot read or cannot completely understand the warnings and information contained in these instructions, the employer of the user and his assistants must thoroughly educate and train them on the proper operation and safety procedures of this equipment.

NOTICE TO PURCHASERS AND USERS OF OUR PRODUCTS AND THIS INFORMATIONAL MATERIAL

The products described in this material, and the information relating to those products, is intended for knowledgeable, experienced users of abrasive blasting equipment.

No representation is intended or made as to the suitability of the products described herein for any particular purpose or application. No representations are intended or made as to the efficiency, production rate, or the useful life of the products described herein. Any estimate regarding production rates or production finishes are the responsibility of the user and must be derived solely from the user's experience and expertise, and must not be based on information in this material.

The products described in this material may be combined by the user in a variety of ways for purposes determined solely by the user. No representations are intended or made as to the suitability or engineering balance of the combination of products determined by the user in his selection, nor as to the compliance with regulations or standard practice of such combinations of components or products.

Abrasive Blast Equipment is only a component of the range of equipment used in an abrasive blasting job. Other products may include an air compressor, abrasive, scaffolding, hydraulic work platforms or booms, paint spray equipment, dehumidification equipment, air filters and receivers, lights, ventilation equipment, parts handling equipment, specialized respirators, or equipment that while offered by Clemco may have been supplied by others. Each manufacturer and supplier of the other products used in the abrasive blasting job must be contacted for information, training, instruction and warnings with regard to the proper and safe use of their equipment in the particular application for which the equipment is being used. The information provided by Clemco is intended to provide instruction only on Clemco products. All operators must be trained in the proper, safe, use of this equipment. It is the responsibility of the users to familiarize themselves with, and comply with, all appropriate laws, regulations, and safe practices that apply to the use of these products. Consult with your employer about training programs and materials that are available.

Our company is proud to provide a variety of products to the abrasive blasting industry, and we have confidence that the professionals in our industry will utilize their knowledge and expertise in the safe efficient use of these products.

GENERAL INSTRUCTIONS

Described herein are some, BUT NOT ALL, of the major requirements for safe and productive use of blast machines, remote control systems, operator respirator assemblies, and related accessories. Completely read ALL instruction manuals prior to using equipment.

The user's work environment may include certain HAZARDS related to the abrasive blasting operation. Proper protection for the blaster, as well as anyone else that may be EXPOSED to the hazards generated by the blasting process, is the responsibility of the user and/or the employer. Operators MUST consult with their employer about what hazards may be present in the work environment including, but not limited to, exposure to dust that may contain TOXIC MATERIALS due to the presence of silica, cyanide, arsenic or other toxins in the abrasive, or materials present in the surface to be blasted such as lead or heavy metals in coatings. The environment may also include fumes that may be present from adjacent coatings application, contaminated water, engine exhaust, chemicals, and asbestos. The work area may include PHYSICAL HAZARDS such as an uneven work surface. poor visibility, excess noise, and electrical hazards. The operator MUST consult with his employer on the identification of potential hazards, and the appropriate measures that MUST be taken to protect the blaster and others that might be exposed to these hazards.

ALL machines, components and accessories MUST be installed, tested, operated and maintained only by trained, knowledgeable, experienced users.

DO NOT modify or substitute any Clemco parts with other types or brands of equipment. Unauthorized modification and parts substitution on supplied air respirators is a violation of OSHA regulations and voids the NIOSH approval.

OPERATIONAL INSTRUCTIONS

OPERATOR SAFETY EQUIPMENT

WARNING

- Blast operators and others working in the vicinity of abrasive blasting must always wear properlymaintained, NIOSH-approved, respiratory protection appropriate for the job site hazards.
- DO NOT USE abrasives containing more than one percent crystalline (free) silica. Ref. NIOSH Alert #92-102
- Inhalation of toxic dust (crystalline silica, asbestos, lead paint and other toxins) can lead to serious or fatal disease (silicosis, asbestosis, lead or other poisoning).
- ALWAYS wear NIOSH-approved supplied-air respirators as required by OSHA, in the presence of any dust including, but not limited to, handling or loading abrasive; blasting or working in the vicinity of blast jobs; and cleanup of expended abrasive. Prior to removing respirator, an air monitoring

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instrument should be used to determine when surrounding atmosphere is clear of dust and safe to breathe.

- NIOSH-approved, supplied-air respirators are to be worn ONLY in atmospheres:
 - NOT IMMEDIATELY dangerous to life or health and,
 - from which a user can escape WITHOUT using the respirator.
- Clemco supplied-air respirators **DO NOT REMOVE OR PROTECT AGAINST CARBON MONOXIDE (CO) OR ANY OTHER TOXIC GAS.** Carbon monoxide and toxic gas removal and/or monitoring device must be used in conjunction with respirator to insure safe breathing air.
- Air supplied to respirator MUST BE AT LEAST GRADE D QUALITY as described in Compressed Gas Association Commodity Specification G-7.1, and as specified by OSHA Regulation 1910.139 (d).
- ALWAYS locate compressors to prevent contaminated air (such as CO from engine exhaust) from entering the air intake system. A suitable in-line air purifying sorbent bed and filter or CO Monitor should be installed to assure breathing air quality.
- ALWAYS use a NIOSH-approved breathing air hose to connect an appropriate air filter to the respirator. Use of a nonapproved air hose can subject the operator to illness caused by the release of chemical agents used in the manufacture of non-approved breathing air hose.
- ALWAYS check to make sure air filter and respirator system hoses are NOT CONNECTED to in-plant lines that contain nitrogen, acetylene or any other non-breathable gas. NEVER use oxygen with air line respirators. NEVER modify air line connections to accommodate air filter/respirator breathing hose WITHOUT FIRST testing content of the air line. FAILURE TO TEST THE AIR LINE MAY RESULT IN DEATH TO THE RESPIRATOR USER.
- Respirator lenses are designed to protect against rebounding abrasive. They do not protect against flying objects, glare, liquids, radiation or high speed heavy materials. Substitute lenses from sources other than the original respirator manufacturer will void NIOSH-approval of this respirator.

BLAST MACHINES AND REMOTE CONTROLS

WARNING

- ALWAYS equip abrasive blast machines with remote controls.
- Abrasive blast machine operators must wear NIOSHapproved supplied-air respirators (ref: OSHA regulations 1910.94, 1910.132, 1910.139 and 1910.244).
- NEVER modify OR substitute remote control parts. Parts from different manufacturers are NOT compatible with Clemco

equipment. If controls are altered, involuntary activation, which may cause serious injury, can occur.

- Inspect the air control orifice DAILY for cleanliness.
 NEVER use welding hose in place of twinline control hose. The internal diameter and rubber composition are UNSAFE for remote control use.
- UNLESS OTHERWISE SPECIFIED, maximum working pressure of blast machines and related components MUST NOT exceed National Board approved 125 psig (8.5 BAR).
- NEVER weld on blast machine. Welding may affect dimensional integrity of steel wall and WILL VOID National Board approval.
- Point nozzle ONLY at structure being blasted. High velocity abrasive particles WILL inflict serious injury. Keep unprotected workers OUT of blast area.
- NEVER attempt to manually move blast machine when it contains abrasive. EMPTY machines, up to 6 cu. ft.(270kg) capacity, are designed to be moved:
- on flat, smooth surfaces by AT LEAST two people;
- with the Clemco "Mule"; or
- with other specially designed machine moving devices.
- Larger empty blast machines or ANY blast machine containing abrasive MUST be transported by mechanical lifting equipment.

AIR HOSE, BLAST HOSE, COUPLINGS, AND NOZZLE HOLDERS

- Air hose, air hose fittings and connectors at compressors and blast machines MUST be FOUR times the size of the nozzle orifice. Air hose lengths MUST be kept as short as possible AND in a straight line. Inspect DAILY and repair leakage IMMEDIATELY.
- Blast hose inside diameter MUST be THREE to FOUR times the size of the nozzle orifice. AVOID sharp bends that wear out hose rapidly. Use SHORTEST hose lengths possible to reduce pressure loss. Check blast hose DAILY for soft spots. Repair or replace IMMEDIATELY.
- ALWAYS cut loose hose ends square when installing hose couplings and nozzle holders to allow uniform fit of hose to coupling shoulder. NEVER install couplings or nozzle holders that DO NOT provide a TIGHT fit on hose. ALWAYS use manufacturers recommended coupling screws.
- Replace coupling gaskets FREQUENTLY to prevent leakage. Abrasive leakage can result in dangerous coupling failure. ALL gaskets MUST be checked SEVERAL times during a working day for wear, distortion and softness.
- Install safety pins at EVERY coupling connection to prevent accidental disengagement during hose movement.
- ALWAYS attach safety cables at ALL air hose AND blast hose coupling connections. Cables relieve tension on hose and control whipping action in the event of a coupling blow-out.

MAINTENANCE

- ALWAYS shut off compressor and depressurize blast machine BEFORE doing ANY maintenance.
- Always check and clean ALL filters, screens and alarm systems when doing any maintenance.
- ALWAYS cage springs BEFORE disassembling valves IF spring-loaded abrasive control valves are used.
- ALWAYS completely follow owner's manual instructions and maintain equipment at RECOMMENDED intervals.

ADDITIONAL ASSISTANCE

- Training and Educational Programs.
 Clemco Industries Corp. offers a booklet, Blast-Off 2, developed to educate personnel on abrasive blast equipment function and surface preparation techniques. Readers will learn safe and productive use of machines, components and various accessories, including selection of abrasive materials for specific surface profiles and degrees of cleanliness.
- The Society for Protective Coatings (SSPC) offers a video training series on protective coatings including one entitled "Surface Preparation." For loan or purchase information, contact SSPC at the address shown below.

TECHNICAL DATA AND RESEARCH COMMITTEES

 The following associations offer information, materials and videos relating to abrasive blasting and safe operating practices.

The Society for Protective Coatings (SSPC)

40 24th Street, Pittsburgh PA 15222-4643
Phone: (412) 281-2331 • FAX (412) 281-9992
Email: research@sspc.org • Website: www.sspc.org

National Association of Corrosion Engineers (NACE)

1440 South Creek Drive, Houston TX 77084
Phone: (281) 228-6200 • FAX (281) 228-6300
Email: msd@mail.nace.org • Website: www.nace.org

American Society for Testing and Materials (ASTM)

100 Barr Harbor Dr., West Conshohocken, PA 19428 Phone (610) 832-9500 • FAX (610) 832-9555 Email: service@astm.org • Website: www.astm.org

NOTICE

This equipment is not intended to be used in an area that might be considered a hazardous location as described in the National Electric Code NFPA 70 1996, article 500.

WARRANTY

The following is in lieu of all warranties express, implied or statutory and in no event shall seller or its agents, successors, nominees or assignees, or either, be liable for special or consequential damage arising out of a breach of warranty. This warranty does not apply to any damage or defect resulting from negligent or improper assembly or use of any item by the buyer or its agent or from alteration or attempted repair by any person other than an authorized agent of seller. All used, repaired, modified or altered items are purchased "as is" and with all faults. In no event shall seller be liable for consequential or incidental damages. The sole and exclusive remedy of buyer for breach of warranty by seller shall be repair or replacement of defective parts or, at seller's option, refund of the purchase price, as set forth below:

- 1.Seller makes no warranty with respect to products used other than in accordance hereunder.
- 2.On products seller manufactures, seller warrants that all products are to be free from defects in workmanship and materials for a period of one year from date of shipment to buyer, but no warranty is made that the products are fit for a particular purpose.
- 3.On products which seller buys and resells pursuant to this order, seller warrants that the products shall carry the then standard warranties of the manufacturers thereof, a copy of which shall be made available to customer upon request.
 4.The use of any sample or model in connection with this order
- is for illustrative purposes only and is not to be construed as a warranty that the product will conform to the sample or model.

 5. Seller makes no warranty that the products are delivered free of the rightful claim of any third party by way of patent infringement or the like.
- 6. This warranty is conditioned upon seller's receipt within ten (10) days after a buyer's discovery of a defect, of a written notice stating in what specific material respects the product failed to meet this warranty. If such notice is timely given, seller will, at its option, either modify the product or part to correct the defect, replace the product or part with complying products or parts, or refund the amount paid for the defective product, any one of which will constitute the sole liability of seller and a full settlement of all claims. No allowance will be made for alterations or repairs made by other than those authorized by seller without the prior written consent of seller. Buyer shall afford seller prompt and reasonable opportunity to inspect the products for which any claim is made as above stated.

Except as expressly set forth above, all warranties, express, implied or statutory, including implied warranty of merchantability, are hereby disclaimed.

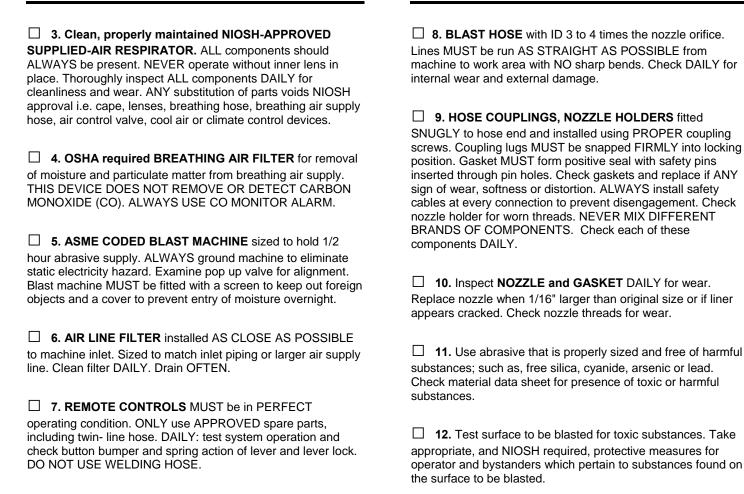
DAILY SET-UP CHECK LIST

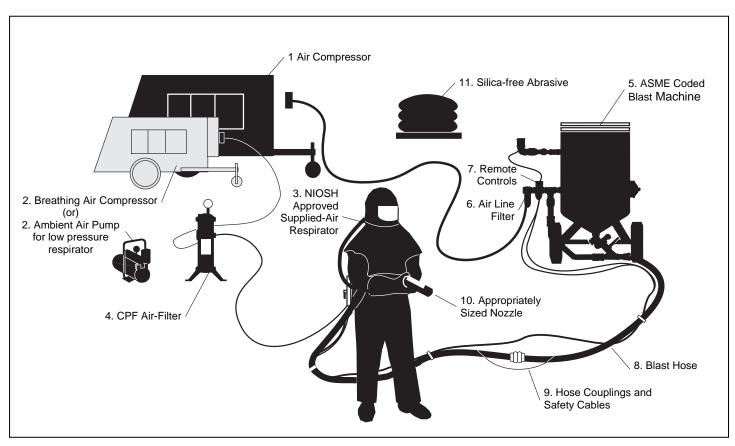
A WARNING

- ALL piping, fittings and hoses MUST be checked DAILY for tightness and leakage.
- ALL equipment and components MUST be thoroughly checked for wear.
- ALL worn or suspicious parts MUST be replaced.
- ALL blast operators MUST be properly trained to operate equipment.
- ALL blast operators MUST be properly outfitted with abrasive resistant clothing, safety shoes, leather gloves and ear protection.
- BEFORE blasting ALWAYS use the following check list.

	1. PROPERLY MAINTAINED AIR COMPRESSOR sized
to p	rovide sufficient volume (cfm) for nozzle and other tools
PLL	IS a 50% reserve to allow for nozzle wear. Use large
com	pressor outlet and large air hose (4 times the nozzle orifice
size). FOLLOW MANUFACTURERS MAINTENANCE
INS	TRUCTIONS.

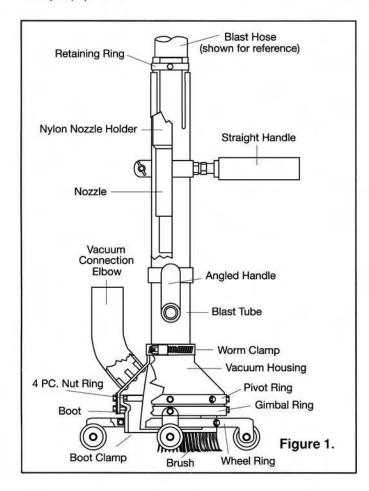
2. BREATHING AIR COMPRESSOR (oil-less air pump) capable of providing Grade D Quality air located in a dust free, contaminant free area. If oil-lubricated air compressor is used to supply respirator, it should have high temperature monitor and CO monitor or both. If CO monitor is not used, air MUST be tested FREQUENTLY to ensure proper air quality.





1.0 INTRODUCTION

1.1 Scope of Manual: This manual covers the set up, operation, maintenance, troubleshooting and replacement parts for the basic closed circuit blast tool. The basic CCB tool is shown in Figure 1. See appropriate manuals for operation of equipment used in conjunction with the closed circuit blast tool. This would include the blast machine, remote controls, vacuum recovery equipment and operator safety equipment.



1.2 Description: The Clemco Closed Circuit Blast Tool (CCB) is a hand held accessory that attaches to the end of the blast hose at the nozzle and to a vacuum recovery system. As the air and abrasive blast mixture is propelled out the nozzle, it enters the CCB. After striking the surface being cleaned, spent abrasive, dust and debris are contained by the brushes and immediately vacuumed away. This helps to eliminate the dust and clean up that is associated with open blasting.

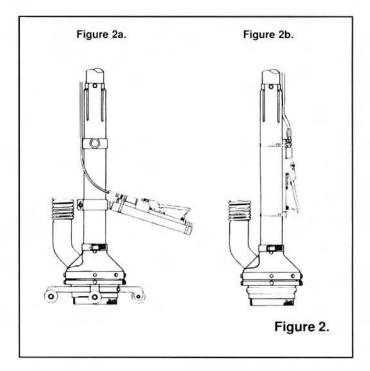
IMPORTANT WARNING

ACCIDENTAL OR IMPROPER USE OF THE CLOSED CIRCUIT BLAST TOOL MAY ALLOW THE ESCAPE OF HARMFUL ABRASIVE AND COATINGS DUST. THEREFORE, A NIOSH APPROVED AIR RESPIRATOR MUST BE WORN WHILE OPERATING THIS EQUIPMENT.

2.0 SET UP

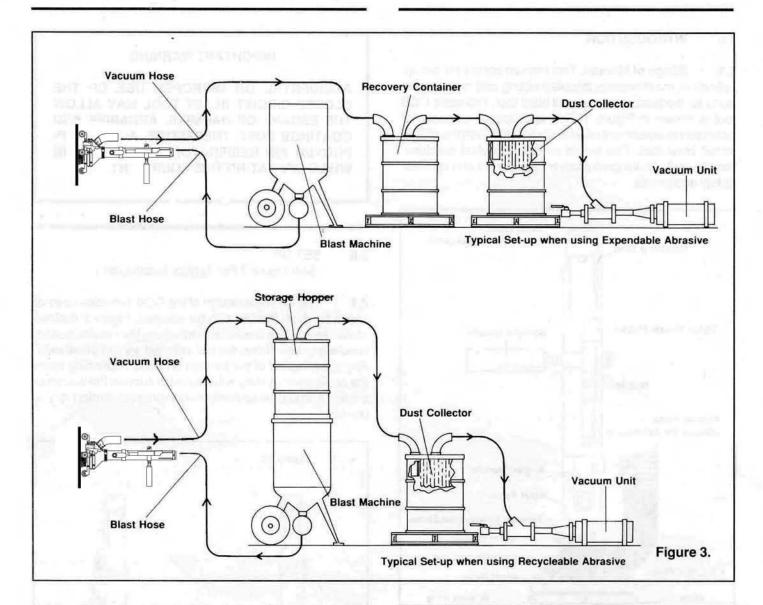
(See Figure 3 For Typical Installation.)

2.1 The versatile design of the CCB provides several styles to which the tool can be adapted. Figure 2 (below) shows alternative methods of attaching the remote control handle and also shows the tool with and without the wheels. Any combination of the twocan be used depending upon the application. A sling is furnished to support the weight of the tool and should be positioned to provide comfort for the operator.



2.2 Attach Blast Hose

2.2.1 A nylon nozzle holder compatible with 1-7/8" O.D. blast hose is provided. Using the screws supplied, attach the nylon nozzle holder to the blast hose. Be sure hose end is square cut and fully seated into the nozzle holder.



- **2.2.2** Screw the supplied nozzle into the nozzle holder and be certain nozzle gasket is in place.
- 2.2.3 Remove the two-piece retaining ring and insert the nozzle into the end of the CCB blast tube, line up the ribs on the holder with the slits in the tube and insert until the holder is fully seated in the tube.
- 2.2.4 Secure the CCB to the blast hose using the twopiece retaining ring. Place them over the hose directly behind the nozzle holder, line up the screw holes with the tube, and install the cap screws.

2.3 Attach Control Handle

NOTE: THE METHOD DESCRIBED IS FOR ATTACHING A CLEMCO REMOTE CONTROL HANDLE WHEN USING CLEMCO REMOTE CONTROLS. OTHER HANDLES FOR OTHER CONTROLS CAN BE SIMILARLY ATTACHED.

IMPORTANT WARNING

DO NOT USE CLEMCO REMOTE CONTROL HANDLES WITH ANY SYSTEM OTHER THAN CLEMCO REMOTE SYSTEMS. SAFE OPERATION WITH OTHER SYSTEMS CAN NOT BE GUARENTEED.

2.3.1 Attach the control handle in a convenient position on the CCB.

NOTE: A LENGTH OF FOAM MATERIAL SUCH AS WEATHER STRIP WILL HELP HOLD THE HANDLE IN PLACE IF MOUNTED ON THE BODY OF THE TOOL (SEE FIGURE 2a). SECURE HANDLE WITH NYLON WIRE TIES.

2.3.2 A 36" Jength of twinline hose and two hose unions are provided to connect the control hose to the control handle.

NOTE: REUSABLE HOSE FITTINGS ARE USED ON ALL TWINLINE CONTROL HOSES, SHOULD SHORTER HOSES BE DESIRED, LENGTHS MAY BE CUT TO FIT USING THE EXISTING FITTINGS. HOSE SHOULD BE SQUARE CUT AND FULLY SEATED IN THE FITTING. CHECK THAT BLOCKAGE HAS NOT OCCURRED IN AIR PASSAGE OF RECOUPLED ENDS.

2.4 Position Blasting Components

2.4.1 Position the blast machine, recovery container and vacuum producer in a convenient location as close to the work area as practical, keeping all hoses as straight as possible.

2.5 Connect Vacuum Hoses

2.5.1 Attach a 2" pick-up hose to vacuum connection elbow.

NOTE: SYSTEMS WITH 3" PICK-UP HOSE REQUIRE A 2" X 10' LEAD PICK-UP HOSE AND A 3" TO 2" HOSE TRANSITION. SEE OPTIONAL ACCESSORIES, SECTION 6.0.

2.5.2 Attach other end of pick-up hose to the vacuum source.

NOTE: THE VACUUM SYSTEM MUST HAVE THE CAPA-BILITY OF PRODUCING A MINIMUM OF 120 CFM AT 6" Hg. SMALLER UNITS MAY NOT PROVIDE ADEQUATE CONTAINMENT OF ABRASIVE AND/OR DUST OR MAY NOT CONVEY SPENT ABRASIVE.

2.6 Secure Pick-up Hose to Blast Hose

2.6.1 Attach the first 10' to 12' of the pick-up hose to the blast hose, wrapping duct tape around both every 3-4 feet.

3.0 OPERATION

NOTE: REFER TO APPROPRIATE MANUALS FOR START-UP PROCEDURES OF ALL AUXILIARY EQUIPMENT.

3.1 Start Up

- **3.1.1** Start compressor; bring it up to operating conditions.
- 3.1.2 Fill blast machine with abrasive.

- **3.1.3** Put on all protective clothing including a NIOSH approved air respirator.
- 3.1.4 Start vacuum recovery unit.
- **3.1.5** While holding the CCB head against the surface to be blasted, depress the control handle, blasting will begin.

3.2 Operating Techniques

- **3.2.1** To achieve full abrasive and dust recovery the brush must be in contact with the surface at all times.
- 3.2.2 When using the tool without the wheels, extra care must be taken to insure the brush is flat against the surface. Keep the tool perpendicular to the surface. Do not apply excessive pressure that would cause the brush to bend into the blast stream.
- **3.2.3** Excessive air pressure or volume will cause abrasive escape at the brush. Certain applications may require lower pressure or a smaller orifice nozzle.
- **3.2.4** Make straight, even passes over the surface being cleaned. The blast pattern should barely overlap the pattern from the previous pass.
- **3.2.5** When non-recyclable abrasives are used, empty the abrasive recovery container each time the blast machine is empty of abrasive.

3.3 Shut Down

IMPORTANT WARNING

TO INSURE FULL ABRASIVE RECOVERY, THE BRUSH MUST ALWAYS BE IN CONTACT WITH THE SURFACE. DO NOTALLOW THE BRUSH TO BREAK CONTACT WITH THE SURFACE UNTIL THE CONTROLL HANDLE HAS BEEN RELEASED AND THE BLAST OPERATION HAS COMPLETELY CEASED.

- **3.3.1** Stop the blasting process, refer to your blast machine remote control manual.
- 3.3.2 Shut down the vacuum recovery unit.
- 3.3.3 Shut down all auxiliary equipment.
- **3.3.4** Empty abrasive recovery container and dust collector.

4.0 MAINTENANCE

4.1 Brush Replacement

- 4.1.1 Brushes are high wear items and should be checked every hour and replaced as necessary. Other surfaces coming in contact with the blast stream should be inspected periodically. Keep spares on hand to avoid unscheduled down time.
- **4.1.2** The brush is retained by a channel in the boot. Pull the old brush out, insert new brush and be certain the brush band fits firmly into the boot channel.

4.2 Blast Tube Replacement.

- **4.2.1** Remove blast hose and nozzle assembly by removing screws and retaining ring securing the CCB to the hose assembly. Pull the nozzle/hose assembly out of the tube.
- **4.2.2** Loosen handle clamp screws and slide both handles and/or control handle off the tube.
- 4.2.3 Remove the clamp holding the tube to the housing.
- **4.2.4** Slide the tube out the front of the housing.
- 4.2.5 Inspect all parts for wear and replace as required.
- **4.2.6** Re-assemble in reverse order. Slide the new tube into the housing until the flared end contacts the housing.

4.3 Replacing other components

4.3.1 All other items are easily replaceable using the cut away in Figure 4 as a guide.

5.0 TROUBLESHOOTING

- 5.1 Unable to contain abrasive at the brush
- 5.1.1 Brush worn out.
- 5.1.2 Brush not held flat on the blasting surface.
- 5.1.3 Recovery container full.
- **5.1.4** Recovery dust collector full or filter is saturated and needs cleaning or replacing.
- 5.1.5 Recovery system to small for nozzle being used.
- **5.1.6** Blasting pressure too high for recovery system.

5.1.7 Hole worn in recovery hose or recovery hose leaking.

5.2 Premature Wear On Brushes

- **5.2.1** Brush not held flat against surface; escaping abrasive will accelerate brush wear.
- **5.2.2** Blasting over irregular or rough surface.
- **5.2.3** Excessive or uneven pressure applied to brush causing it to bend into the blast stream.

6.0 OPTIONAL ACCESSORIES (Not Shown)

Description

Stock No.

7.0 REPLACEMENT PARTS

(See Figure 4.)

Item	Description Stor	
(-)	Basic CCB Tool, Complete	. 15500
1.	Vacuum Housing	. 15502
2.	Boot, Short, Straight	
3.	Nut Ring (4 Required)	. 15504
4.	Pivot Ring	
5.	Gimbal Ring	. 15506
6.	Boot Clamp Half (2 Required)	. 15507
7.	Brush, Short Straight (Standard)	. 15511
8.	1/4-20 Hex Nut	
9.	Blast Tube 23"	. 15512
10.	SMR-4, 1/4" Nozzle	
11.	Nozzle Holder	. 04127
12.	Handle Clamp	. 15513
13.	1/4-20 Shoulder Thumb Screw	. 15525
14.	1/4-20 Wing Nut	. 03113
15.	1/2-13 Hex Nut	
16.	Handle, Straight	15514
17.	Handle, Angled	
18.	Handle Grip, Rubber 5" Long	
19.	Handle Grip, Rubber 9-1/4" Long	

20.	Retaining Ring15516
21.	2-1/2" Hose Clamp 02817
22.	1/4-20 X 1/2" H H Cap Screw 0305
23.	1/4-20 X 3/4" H H Cap Screw 03052
24.	1/4-20 X 3/4" Socket Head Screw 12069
25.	1/4-20 SQ Nut 15527
26.	1/4" Internal Star Lock Washer 03118
27.	Vacuum Connection Elbow 15518
28.	10-24 X 5/8" Socket Button Cap Screw 15528
29.	1/4-20 X 1" H H Cap Screw
30.	Gasket, Vacuum Connection Elbow 11183
31.	Wheel Ring 15520
32.	Wheel, Steel 03636
33.	Wheel Bushing 03637
34.	1/4" Flat Washer 03116
(-)	3/16" X 36" Twinline Hose 02240
(-)	Twinline Hose Union 01944
(-)	Sling 11424
(-)	Boot, Long, Straight 11432
(-)	Boot, Long, Inside Corner 11433
(-)	Boot, Long, Outside Corner 11434
(-)	Brush, Inside Corner 15509
(-)	Brush Outside Corner 15510

