

BH-12

SHOTBLASTING HEAD

Owners Manual



BH-12 Serial # _____

Engine Serial # _____

Version 03/2024
Part #E-1229

🌐 bwmanufacturing.com

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MI 49544

INDEX

| | |
|-------------------------------------|--------------|
| INTRODUCTION..... | PAGE 3 |
| TERMS & CONDITIONS OF SALE..... | PAGE 4 - 5 |
| HAZ-MAT SAFTEY WARNING..... | PAGE 6 |
| WARRANTY BREAKDOWN..... | PAGE 7 |
| BLAST HEAD INSTALL & OPERATION..... | PAGE 8 |
| BLAST HEAD SERVICE..... | PAGE 9 - 11 |
| BLAST HEAD PARTS..... | PAGE 12 - 16 |

INTRODUCTION

FORWARD

WARNING READ THIS MANUAL CAREFULLY PRIOR TO OPERATING THE EQUIPMENT IN ORDER TO UNDERSTAND HOW TO OPERATE AND SERVICE THE EQUIPMENT CORRECTLY. FAILURE TO PROPERLY REVIEW THIS MANUAL COULD RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.

This manual should be considered a permanent part of the equipment and should remain with the equipment at all times. Please note the following:

Measurements in this manual are given in metric and standard U.S. measurement equivalents.

Use only correct replacement parts and fasteners. Fasteners may require specific tools.

Right and left hand sides are determined by facing forward while sitting in the seat behind the steering wheel.

THIRD-PARTY MANUFACTURER INFORMATION

This equipment contains an engine manufactured by a third-party manufacturer. This engine may be covered by the manufacturer's standard factory warranty and the manufacturer may require that all repairs and/or service be completed pursuant to its warranty terms and conditions. Please refer to the product manual and Warranty Breakdown for additional information on this warranty and any registration requirements.

TERMS AND CONDITIONS OF SALE

1. **Parties.** "Seller" means **BW Manufacturing, Inc.** "Buyer" means any entity or individual purchasing goods from Seller.
2. **Terms and Conditions of Sale.** These Terms and Conditions of Sale define the relationship of Buyer and Seller and apply to all sales of equipment (including, but not limited to Shotblasters, Scarifiers, Diamond Grinders/Polishers, Concrete Dust Collection Systems, and Trailers), components incorporated into equipment, parts, supplies, materials or other personal property (individually and collectively, "Equipment") by Seller to Buyer. Buyer acknowledges and agrees that these Terms and Conditions of Sale are incorporated in, and are a part of, any contract of sale and each quotation, purchase order, invoice, and any other document relating to the sale of Equipment by Seller to Buyer (these documents are collectively referred to as the "Agreement").
3. **Quotation Expiration.** Written quotations signed by Seller are valid for a period of 30 days unless otherwise noted by Seller.
4. **Pricing.** Prices for Equipment and other related information shown in any Seller product publication, including but not limited to catalogs, brochures, and websites, are subject to change without notice. Prices do not include related freight charges, use tax, sales tax, excise tax, value-added tax, or similar taxes, or charges of any nature whatsoever imposed by any governmental authority unless otherwise expressly noted by Seller.
5. **Taxes.** Prices quoted do not include (and Buyer shall pay) all taxes and fees of any kind that may be levied or imposed on either party by federal, state, municipal, or other governmental authorities in connection with the sale or delivery of the Equipment by Seller.
6. **Terms of Payment.** Unless Buyer has obtained credit approval from Seller, payment is due and payable to Seller in cash on completion of Seller's delivery obligation (COD). For Buyers with credit approval, any amounts due by Buyer to Seller that are unpaid on or after 30 days of Seller's invoice will bear interest at the simple interest rate of 2 percent (2%) per month or the maximum rate permitted by law, whichever is less. The accrual or payment of any interest as provided above will not constitute a waiver by Seller of any rights and remedies in connection with a default by Buyer. Buyer will pay all court costs, attorney fees, and other costs incurred by Seller in collecting past-due amounts, including interest. If shipment or delivery of Equipment is delayed by or at the request of Buyer, payment will remain due in full on the original delivery date for Buyers without credit approval or 30 days from the date of Seller's invoice for Buyers with credit approval. In either such event, Seller may impose, and Buyer shall pay, storage charges and other incidental expenses incurred by Seller as a result of the delay in addition to any interest on late payments as described above.
7. **Security Interest.** As security for payment of all amounts due to Seller, Buyer grants to Seller a security interest in all Equipment sold by Seller to Buyer, and Seller will have all rights of a secured party under the Uniform Commercial Code with respect to the Equipment. Buyer appoints Seller as its attorney-in-fact with authority, at Seller's option, to take actions as Seller deems reasonable in the circumstance to perfect the above security interest in any one or more jurisdictions, and Buyer shall pay all applicable filing fees.
8. **Limited Express Warranty.** For a period of ninety (90) days from the completion of Seller's delivery obligation under this Agreement, Seller warrants that a limited selection of components manufactured by Seller and incorporated into the Equipment will be free of defects in material and workmanship. A complete list of components covered under this warranty ("Warranty Breakdown") and is incorporated in its entirety into this Agreement. In the event Buyer has a claim related to the components covered under this warranty, Buyer shall be bound by the then-current Warranty Breakdown. Buyer's sole remedy for breach of this warranty is limited to repair and replacement, within the warranty period, of defective components manufactured by Seller and covered under this warranty pursuant to the Warranty Breakdown. Buyer is responsible for all shipping costs arising out of any warranty service provided by Seller. SELLER EXPRESSLY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WITH REGARDS TO THE EQUIPMENT AND/OR COMPONENTS MANUFACTURED BY SELLER AND INCORPORATED INTO THE EQUIPMENT, WHICH ARE NOT INCLUDED IN THE ABOVE REFERENCED WARRANTY, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BUYER ASSUMES FULL RESPONSIBILITY THAT THE EQUIPMENT PURCHASED UNDER THE AGREEMENT MEETS THE SPECIFICATIONS AND/OR INTENDED USE OF BUYER, AND SELLER MAKES NO REPRESENTATION WITH RESPECT THERETO.
9. **Disclaimer of Third-Party Component Warranties.** THE SOLE REMEDY AVAILABLE TO BUYER WITH RESPECT TO DEFECTS IN THE COMPONENTS MANUFACTURED BY THIRD PARTIES WILL BE AGAINST THE THIRD PARTY MANUFACTURER UNDER ANY APPLICABLE MANUFACTURER'S WARRANTY TO THE EXTENT AVAILABLE TO BUYER. WITH REGARDS TO COMPONENTS MANUFACTURED BY THIRD PARTIES AND INCORPORATED INTO THE EQUIPMENT, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, RELATING TO THE COMPONENTS, WHETHER BASED ON BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

10. **No Consequential Damages.** IN NO EVENT WILL SELLER BE LIABLE OR RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, OR PUNITIVE DAMAGES, OR FOR EXPENSE OCCASIONED BY THE USE OF DEFECTIVE EQUIPMENT.

11. **Delivery.** Any delivery dates or other schedule of performance by Seller are approximations, and the sole obligation of Seller with respect to the schedule of delivery or performance will be to use commercially reasonable efforts to deliver the Equipment, or otherwise to perform, consistent with the reasonable demands of its business. In any event, Seller will have no liability to Buyer or any other person for delays in performance due to strikes or labor disputes of any type; accidents, fire, floods, acts of God, or actions by governmental authorities; acts, omissions, or delays of Buyer or any other third party; shortages of labor; or without limitation of the above, for any causes reasonably beyond the control of Seller.

12. **Title and Risk of Loss.** Title to and risk of loss to the Equipment will pass to Buyer on delivery by Seller F.O.B. Seller's place of business, located at 3706 Mill Creek Dr. NE, Comstock Park, Michigan, 49321.

13. **Inspection and Acceptance.** Buyer will have two (2) days from the date of delivery to inspect the Equipment for defects and nonconformance and to notify Seller, in writing, of any defects, nonconformance, or rejection of the Equipment. After this period, Buyer will be deemed to have irrevocably accepted the Equipment. After acceptance, Buyer will have no right to reject the Equipment for any reason or to revoke acceptance. Seller is not responsible for damage to the Equipment arising out of the shipment of the Equipment to Buyer. Claims for damage due to shipping must be made by Buyer to the freight carrier.

14. **Return of Equipment.** All returns will be pursuant to Seller's instructions. Buyer must contact Seller for a Return Material Authorization (RMA) before returning any Equipment. All returns must reference the RMA number along with the original invoice number and the reason for return.

15. **Cancellation or Termination.** In the event of cancellation of the Agreement by Buyer, or in the event of default under the Agreement by Buyer that is not cured within 30 days after notice by Seller, Buyer will pay to Seller on demand all direct and indirect costs (including, without limitation, all applicable restocking or cancellation charges, including reimbursement for direct costs assessed by the manufacturer) incurred directly or indirectly by Seller in connection with the Agreement, all as reasonably determined by Seller, plus any lost profit. In no event, however, will any amount payable by Buyer under the Agreement exceed the total price payable by Buyer for the Equipment.

16. **Modifications and Waiver—Entire Agreement.** The Agreement contains the entire agreement between Seller and Buyer and can be modified or rescinded only by a writing signed by both parties. If any term of the Agreement is held invalid or unenforceable, all other terms of the Agreement shall remain in effect. Any document submitted by Buyer to Seller confirming its intention to purchase Equipment described in the Agreement will be deemed to constitute a confirmation and acceptance of the Agreement, even if the document states terms in addition to or different from those in the Agreement. All agreements between Seller and Buyer will be solely under the terms and conditions of the Agreement and Seller objects to any and all additional or different terms contained in any document submitted to Seller by Buyer. Any execution by Seller of any other document submitted by Buyer in connection with the purchase of Equipment does not constitute acceptance of or agreement to any terms and conditions in addition to or different from those contained in the Agreement, but will constitute only acknowledgment of receipt of the document. In addition, Buyer's acceptance of these terms shall be conclusively presumed by Buyer's (i) acceptance of delivery of or (ii) payment for Equipment covered under the Agreement.

17. **Compliance with Laws.** Buyer will be responsible for compliance with any and all federal, state, or local laws or regulations respecting safety or respecting use of the Equipment and shall indemnify and hold Seller harmless from and against any and all claims of violations of laws or regulations or other claims of personal injury or property damage directly or indirectly related to the installation, maintenance, or operation of the Equipment.

18. **Export Control.** Equipment supplied by Seller may be subject to various export laws and regulations. It is the responsibility of the exporter and Buyer to comply with all laws and regulations. If any required export authorization is denied, Seller will be relieved of any further obligation related to the sale and delivery of the Equipment.

19. **Governing Law and Venue.** This Agreement will be governed by and construed in accordance with the laws of the State of Michigan. Buyer submits to personal jurisdiction in Michigan. Seller and Buyer agree that any action arising out of the sale of goods or services in accordance with this document will be brought, heard, and decided in a court located in Kent County, Michigan and that this venue is convenient. .

20. **Authority.** Each signatory represents that it has all requisite authority to execute the Agreement on behalf of its principal and that the Agreement is fully enforceable against the principal in accordance with its terms.

B W MANUFACTURING, INC.

GENERAL SAFETY & HAZARDOUS MATERIALS WARNING

WARNING SURFACE PREPARATION EQUIPMENT CAN BE DANGEROUS IF NOT OPERATED PROPERLY. THE OPERATOR IS RESPONSIBLE FOR THE SAFE OPERATION OF THIS EQUIPMENT. The operator must carefully read and follow any warnings or safety instructions provided with the equipment prior to operating the equipment. Do not remove any safety devices or warnings on the equipment.

WARNING FLOOR AND/OR DECK SURFACES MAY BE COATED WITH OR CONTAMINATED BY HAZARDOUS MATERIALS. Typical examples of hazardous materials include (i) tile mastic (likely to contain *asbestos*); (ii) stained areas near electrical equipment (potentially containing *PCBS*); (iii) paint (potentially containing *lead*); (iv) stained floor areas in chemical or other industrial facilities (potentially containing toxic *pesticides, cleaning fluids, solvents, or other harmful chemicals*).

WARNING Preparation equipment is used to remove surface material from a variety of surfaces. The surface preparation process often generates large amounts of dust and other small particles, which are released into the air. WHEN A SURFACE CONTAINS HAZARDOUS MATERIALS, EXPOSURE TO THE DUST GENERATED BY THE PREPARATION EQUIPMENT MAY POSE A HEALTH RISK. INSPECT ALL SURFACES FOR POSSIBLE CONTAMINATES PRIOR TO USING PREPARATION EQUIPMENT AND CONSULT HAZARDOUS MATERIAL EXPERTS AND GOVERNMENT AUTHORITIES BEFORE OPERATING PREPARATION EQUIPMENT ON SURFACES SUSPECTED OF CONTAINING HAZARDOUS MATERIALS.

WARNING BW MANUFACTURING, INC. IN NO WAY REPRESENTS THAT ITS PREPARATION EQUIPMENT IS SUITABLE OR APPROVED FOR REMOVING HAZARDOUS MATERIALS FROM CONTAMINATED SURFACES. DO NOT ATTEMPT TO USE ANY PREPARATION EQUIPMENT MANUFACTURED BY BW MANUFACTURING, INC. ON ANY CONTAMINATED SURFACE. It is the responsibility of the preparation equipment operator and/or the contractor using the preparation equipment to inspect the proposed worksite for contaminants and obtain approval from contamination experts and/or government authorities before using BW Manufacturing, Inc. preparation equipment. It is also the responsibility of any contractor using preparation equipment to inform its employees or subcontractors of all potential health risks associated with operating preparation equipment and to ensure its employees or subcontractors are protected from exposure to harmful materials.

BW MANUFACTURING, INC. IS NOT RESPONSIBLE FOR ANY INJURY, ILLNESS, DEATH, OR PROPERTY DAMAGE THAT MAY RESULT FROM IMPROPER USE OF ITS PREPARATION EQUIPMENT OR OTHER PRODUCTS

WARRANTY BREAKDOWN

| Item | NONE | 90 DAYS | 1YEAR / 500 HR | 2 YEARS / 2000HR | WARRANTED BY: |
|-----------------------------------|------|---------|----------------|------------------|-------------------|
| Chassis | | ○ | | | B W Mfg., Inc. |
| Engine | | | | ○ | Briggs & Stratton |
| Clutch | | | ○ | | B W Mfg., Inc. |
| Compressor | | | ○ | | B W Mfg., Inc. |
| Hydraulics | | | ○ | | B W Mfg., Inc. |
| Dust Filters | ○ | | | | B W Mfg., Inc. |
| Blast Head | | ○ | | | B W Mfg., Inc. |
| Blast Wheel | ○ | | | | B W Mfg., Inc. |
| Scarifier Head | | ○ | | | B W Mfg., Inc. |
| Scarifier Cage | ○ | | | | B W Mfg., Inc. |
| Scarifier Main Shaft | ○ | | | | B W Mfg., Inc. |
| Diamond Grinder/ Polisher Head | | ○ | | | B W Mfg., Inc. |
| Diamond Mount | ○ | | | | B W Mfg., Inc. |
| Diamond Cutters | ○ | | | | B W Mfg., Inc. |

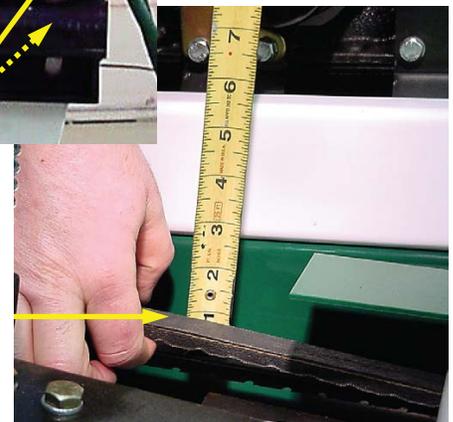
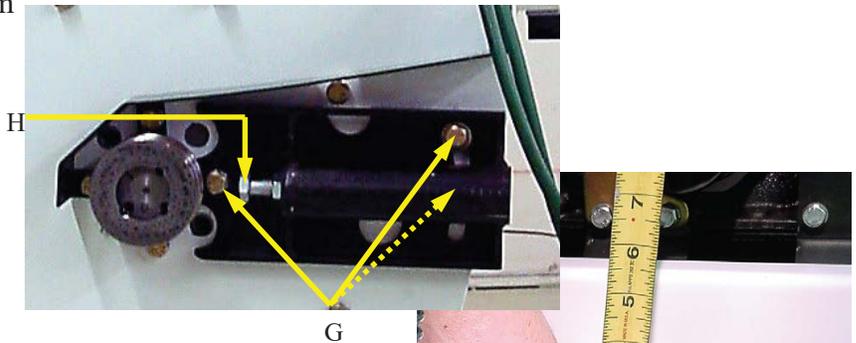
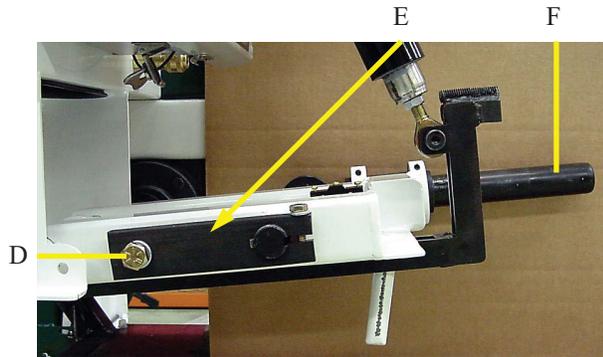
| | |
|----------------------------------|---------------------------------------|
| WARRANTED BY: | Company to Contact |
| Kubota Engine America Co. | Engine Power Inc. |
| | 1-800-832-7670 |
| | www.enginepower.com |
| | |
| B W Mfg., Inc. | B W Manufacturing, Inc. |
| | Voice: 616-447-9076 |
| | Fax: 616-447-9078 |
| | E-mail: sales@bwmanufacturing.com |
| | |
| | |
| | Warranty does not include travel time |

BH-12

BLAST HEAD INSTALLATION & OPERATION

Blast Head Adjustment

Install blast head on machine with the belt on loose. Sitting on level ground, loosen bolts (G). Once bolts are loose mount will self align on lift support shaft (F), at this point retighten mounting bolts (G). With belt tension arm (E) in the tension position, adjust bolt (H) to set proper belt tension. Belts should be able to be pulled no more than 1" in the upwards direction (I).

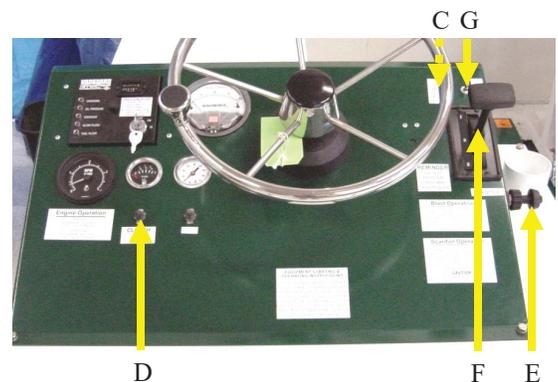
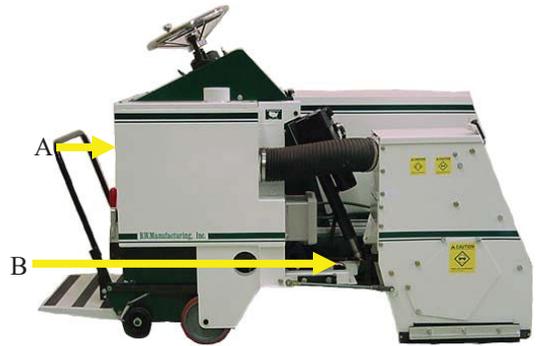


*****CAUTION*****

DO NOT over tighten drive belts, doing so may cause damage to machine and related parts.

Blasting Operation

Fill shot hopper to line, step onto machine pushing the tray handle forward (A). Lower blast head down beyond safety shot switch (B) using the head raise/lower switch (C), engage clutch (D) (at idle only) and bring engine up to full throttle (E). Start forward motion using directional control lever (F), and switch on shot (G). At end of each pass, switch shot off while in forward motion. **Always** raise blast head when turning.



BH-12 BLAST HEAD SERVICE

All Liners and Liner Bolts

Should be inspected each time a new blast wheel is installed.

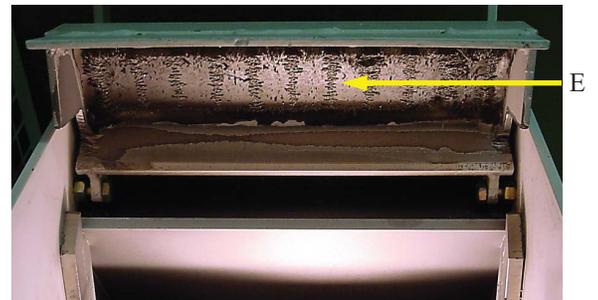
Front (A) and Rear Rollers (B)

Should be inspected at this time.



Shot Magnets (C&E)

Should be cleaned of heavy debris daily.



Blast Wheel Wear & Replacement

Depending on wear, the blast wheel will need to be replaced every 40 to 60 hours.

Blast wheel wear consists of the leading end of the paddles rolling over to the trailing end of the paddles (A) vs. new paddles (B).

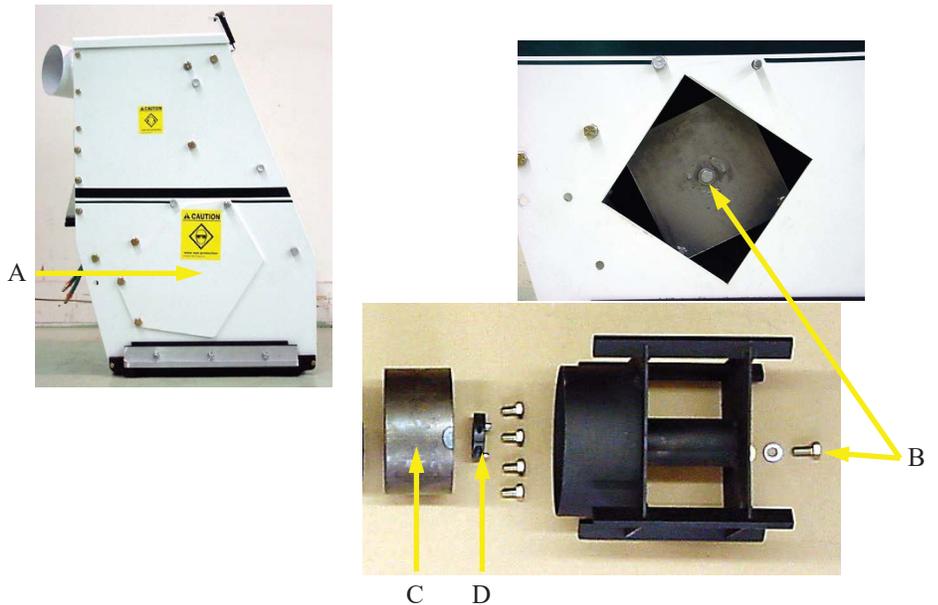


BH-12 BLAST HEAD SERVICE

Removal of Blast Wheel

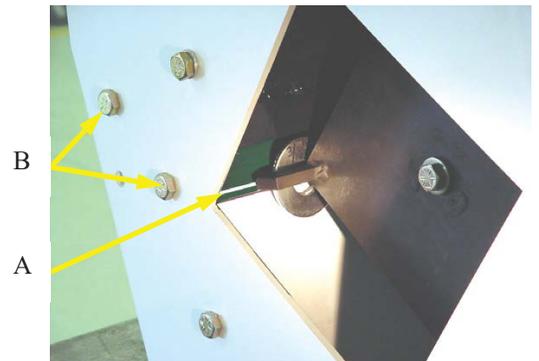
Remove side access panel (A) exposing the Blast Wheel. Remove bolt (B) from end of Blast Wheel Main Shaft. Now the Blast Wheel can be removed from the Blast Head through the access hole. At this time inspect Bearing Shield (C) and all liners for wear before reinstallation of Blast Wheel.

To reinstall simply reverse the process and make sure that the Blast Wheel seats properly with the Blast Wheel Shaft Collar pins (D).



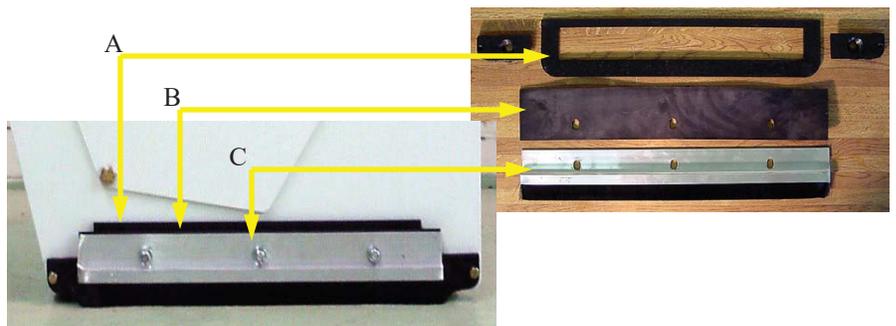
Upper Rear Liner Adjustment

When installing a new Blast Wheel the Upper Rear Liner should be adjusted so that there is a 3/16" gap between the edge of a Blast Wheel Blade and the edge of the Upper Rear Liner (A). To adjust, loosen bolts (B) and slide liner either in or out to ensure a proper gap. If liner shows excessive wear, liner may be flipped end for end.



Side Seals, Floater Plates & Side Brushes

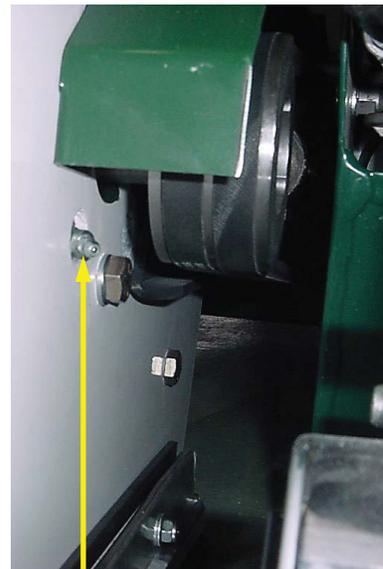
When replacing the Blast Wheel take the time to inspect Side Seals (A), Floater Plates (B), and Side Brushes (C), they should be adjusted to make contact with the floor and be replaced as needed.



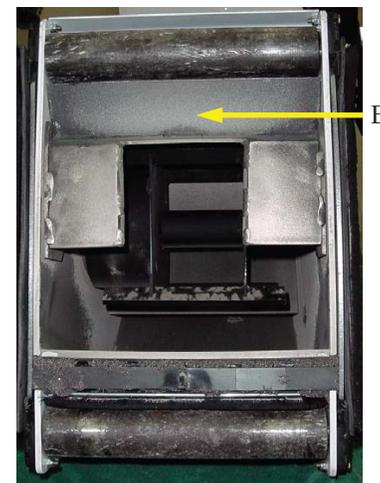
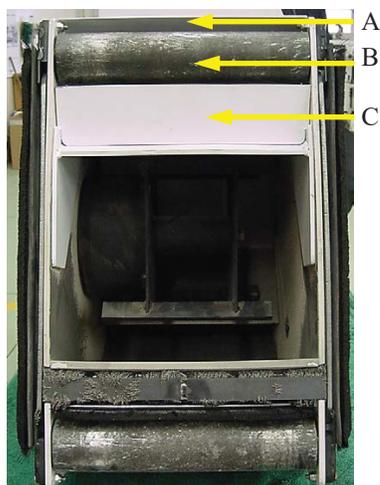
BH-12 BLAST HEAD SERVICE

Greasing the Blast Head

Blast Head Main Shaft Bearings should be greased every 8 hours of service, through the grease fitting (A) located on the left side of the Blast Head. Using only high temperature Teflon grease.



A

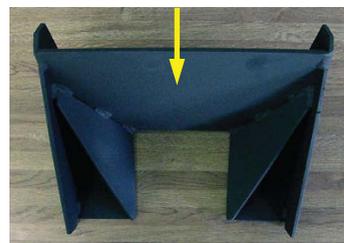


D

To install line stripe feed liner.

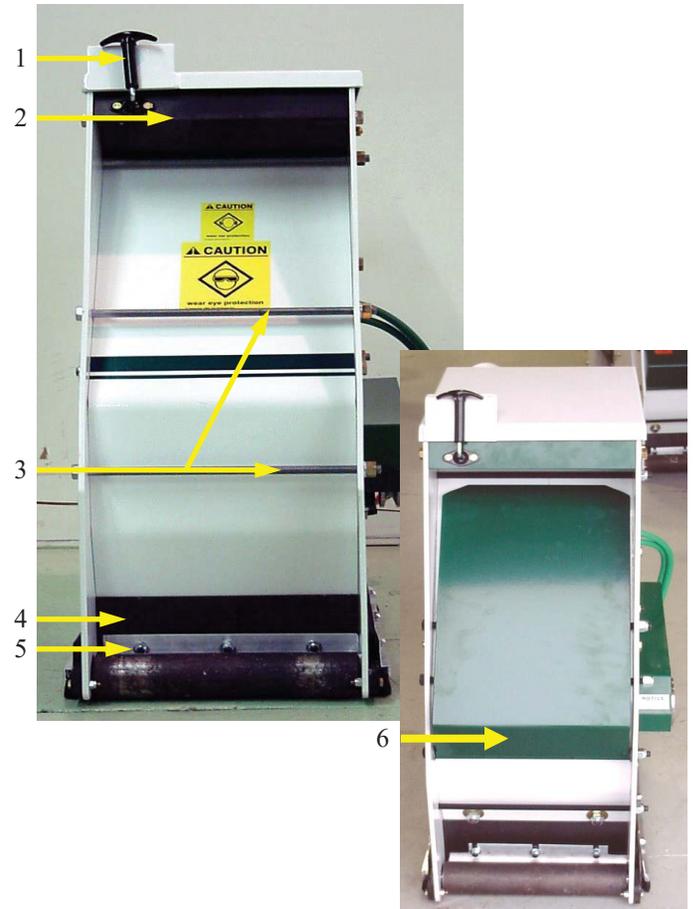
Remove Rear Roller Cover (A), Rear Roller (B) and Lower Rear Liner (C) from Blast Head and replace Lower Rear Liner with the Line Stripe Liner (D) .

The Line Strip Liner in the installed position. (E)

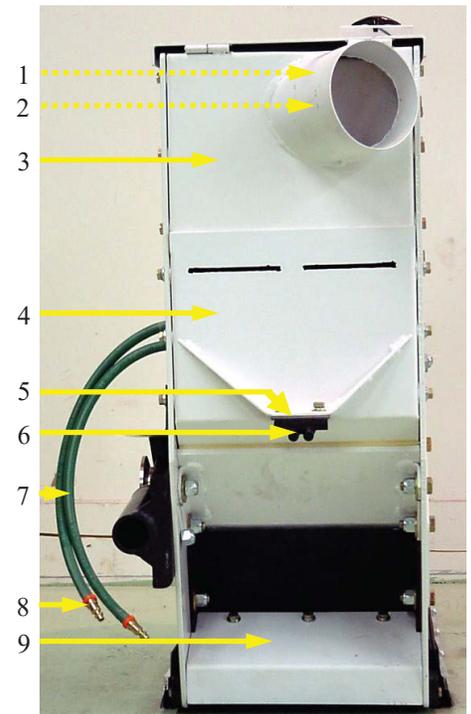


BH-12 BLAST HEAD PARTS

1. V-1037 Draw Latch
2. J-17-AS Front Hopper
3. O-66-AS Housing Bolt Assembly
4. J-10-AS Front Seal Mount
5. O-06 Front Brush
6. O-87-AS Guide Plate

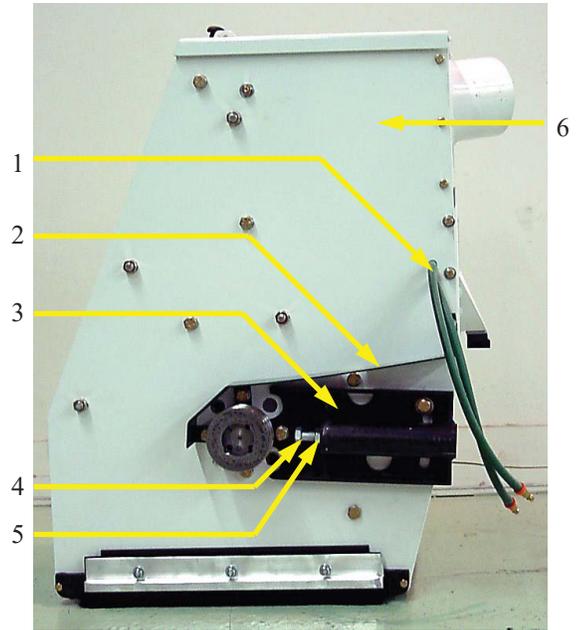


1. E-2104 Dust Hose (18 in.) (*not shown*)
2. E-2105 Dust Hose Clamp (5 in.) (*not shown*)
3. J-20-AS Rear Hopper
4. J-24-AS Rear Cover
5. O-86 Lift Grip Shim
6. S-1619-DAS Lift Grip
7. O-111 Air Line (22 in.)
8. C-1615 Air Coupling
9. J-13-AS Rear Roller Cover



BH-12 BLAST HEAD PARTS

1. O-111 Air Line
2. J-08-AS Belt Guard
3. J-05-AS Lift Mount
4. O-47-AS Tension Bolt
5. 5/8-11JN Jam Nut
6. K-07-AS Left Side Plate



1. K-08-AS Right Side Plate
2. K-04-AS Side Cover



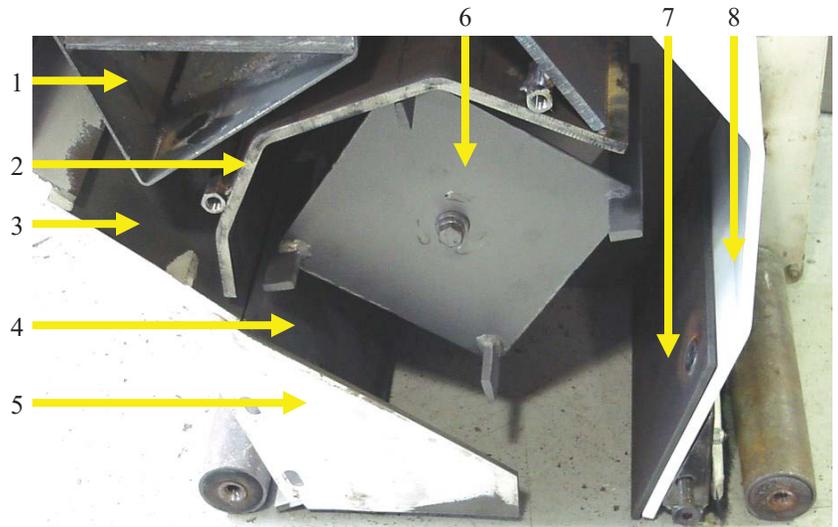
(LAS for Left Side / RAS for Right side)

1. K-02-AS Side Floater Plate
2. O-48-LAS Floater Plate Stop Left
3. O-08 Side Seal
4. O-19 Side Brush
5. O-48-RAS Floater Plate Stop Right

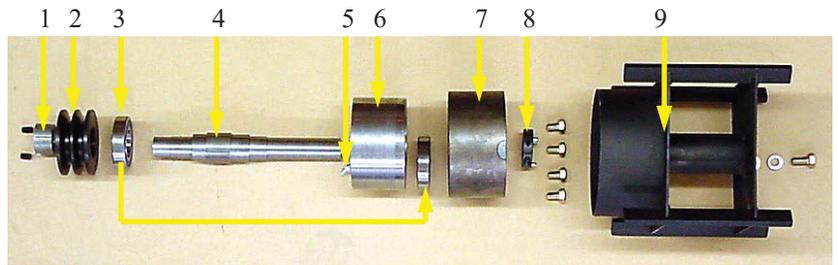


BH-12 BLAST HEAD PARTS

1. J-21-AS Hopper
2. K-09-AS Feed Liner Assembly
3. K-03-AS Upper Rear Liner
4. K-20-AS Lower Rear Liner
5. K-06-AS Lower Rear Liner Mount
6. J-03-AS Blast Wheel Assembly
7. K-19-AS Lower Front Liner
8. K-13-AS Front Liner

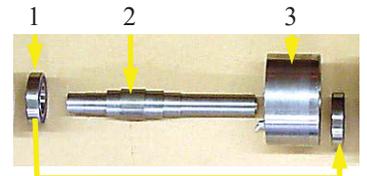


1. E-1215 Blast Wheel Drive Bushing
2. E-1216 Blast Wheel Drive Sheave
3. E-1213 Blast Wheel Main Shaft Bearing
4. O-40 Blast Wheel Main Shaft
5. E-1217 Grease Fitting (45deg)
6. O-41 Blast Wheel Bearing Hub
7. J-02-AS Bearing Shield
8. O-55-AS Blast Wheel Shaft Collar
9. J-03-AS Blast Wheel Assembly



1. E-1213 Blast Wheel Main Shaft Bearing
2. O-40 Drum Shaft
3. O-41 Blast Wheel Bearing Hub

Unit can be purchased as an assembly using part number O-41-AS



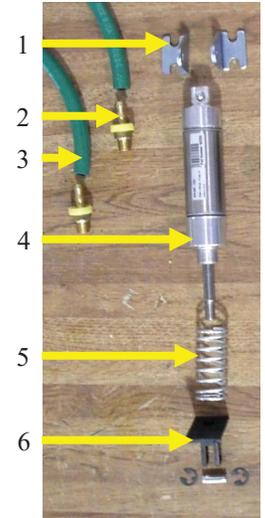
1. O-03-AS Outer Roller Assembly w/ Bolts
2. O-03 Roller Main Shaft
3. B-1629 Roller Bearing
4. B-1624 Roller Snap Ring
5. J-26 Roller Seal
6. 1/2-13X1 FHSCS Roller Bolt

Unit can be purchased as an assembly using part number O-03-AS

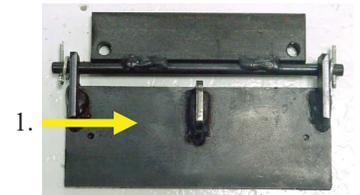


BH-12 BLAST HEAD PARTS

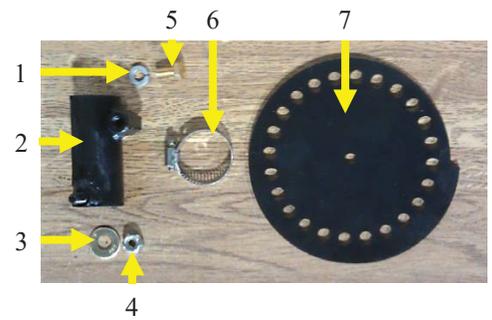
1. E-2102 Pivot Bracket
2. B-1644 Air Cylinder Fitting
3. O-111 Air Line (22in.)
4. E-1201 Air Cylinder
5. E-1210 Shot Gate Spring
6. O-116-A Stop Tab



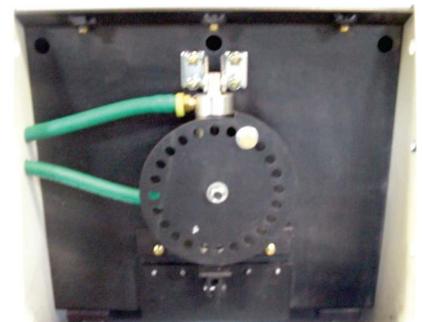
1. O-51-AS Shot Gate Assembly



1. 1/4LW Lock Washer
2. O-114-A Cam Bracket
3. 1/4USSFW Flat Washer
4. 1/4-20NLN Nylon Lock Nut
5. 1/4-20x1/2 Hex Head Bolt
6. C-1823 Hose Clamp (11/16 in)
7. O-115-A Adjuster Cam



Shot Gate Adjuster & Gate Assembly in the installed position.

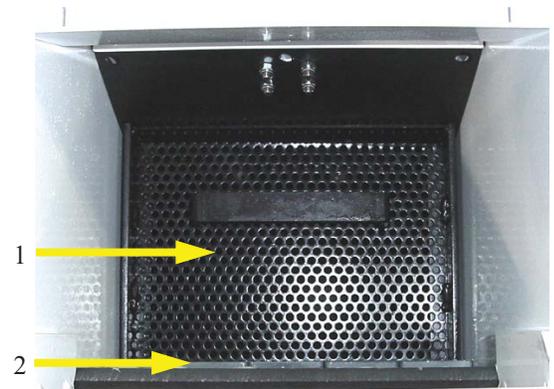


BH-12 BLAST HEAD PARTS

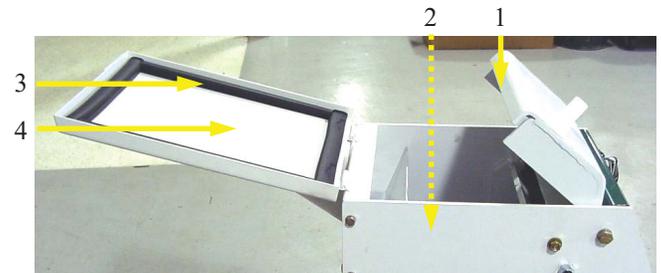
1. J-22-AS Shot Valve



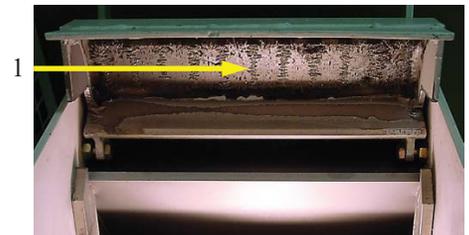
1. O-54-AS Shot Screen Assembly
2. B-1623 Magnets (*sold individually*)



1. K-14-AS Shot Stop Assembly
2. O-54-AS Shot Screen Assembly (*not shown*)
3. V-1023 Lid Seal Material (*sold by the foot*)
4. J-18-AS Blast Head Lid



1. B-1623 Magnets (*sold individually*)



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