

BH-16

SHOTBLASTING HEAD

Owners Manual



BH-16 Serial # _____

Engine Serial # _____

Version 11/2015
Part # B-1651

🌐 bwmanufacturing.com

📞 (616) 447-9076

📍 3696 Northridge DR
NW Suite 20 Walker,
MI 49544

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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") is available at www.bwmanufacturing.com/warrantybreakdown 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.

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		O			B W Mfg., Inc.
Engine				O	John Deere
Clutch			O		Twin Disc
Compressor			O		John Deere
Hydraulics			O		B W Mfg., Inc.
Dust Filters	O				B W Mfg., Inc.
BH-16 Blast head			O		B W Mfg., Inc.
Blast paddles	O				B W Mfg., Inc.
SC-16 Scarifier		O			B W Mfg., Inc.
Scarifier cage	O				B W Mfg., Inc.
Main Shaft	O				B W Mfg., Inc.
DG-50 Grinding		O			
Diamond Mount	O				
Diamond Cutters	O				

WARRANTED BY:	Company to Contact
John Deere	Superior Diesel
	1-800-521-0956
Twin Disc	Palmer Johnson Distributor's
	1-800-641-4334
	Warehouse
	630-250-0370
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

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BLAST HEAD INSTALLATION

To Interchange Sprockets

Remove all six bolts (E).

Reinstall the three longer bolts into the threaded holes of the sprocket (F).

Tighten bolts in small increments in a circular pattern until sprocket is released from the bushing. Then remove bolts from sprocket. Slide new sprocket on bushing. Install the three longer bolts through the sprocket into the bushing.

Tighten bolts in small increments in a circular pattern. Tighten each bolt, **NOT** exceeding 35 foot pounds of torque. Reinstall three shorter bolts in threaded holes in sprocket and tighten.

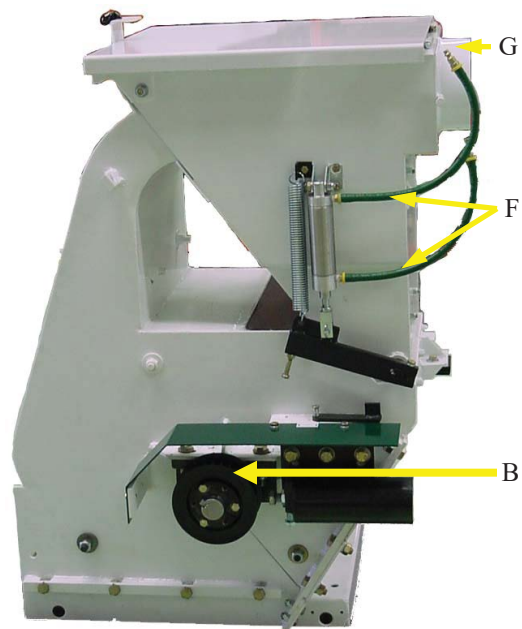
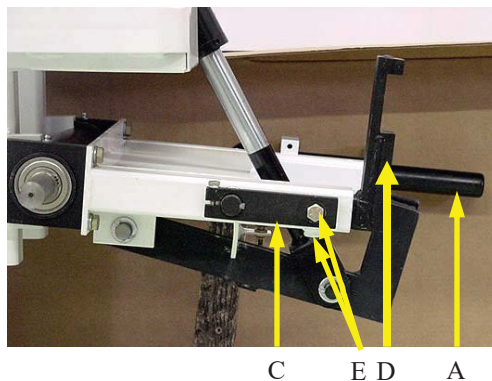
NOTE

Small sprocket C-1714-A is used for SC-16 and DG-50 and large sprocket C-1715-A is used for BH-16 and BH-18.



Blast Head Installation & Removal

Slide blast head backwards toward machine, sliding onto lift support shaft (A) install drive belt over sprocket (B) rotate belt tension adjuster (C) and adjust head stop (D) then install head stop bolts (E). Connect



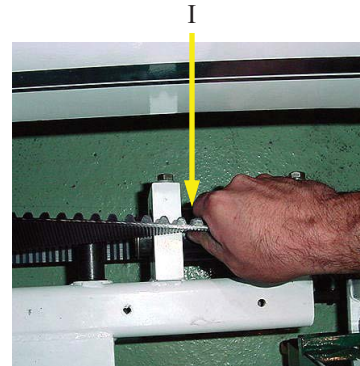
BH-16 BLAST HEAD INSTALLATION

Belt Tension

Belt should be able to be twisted to a 90 degree angle

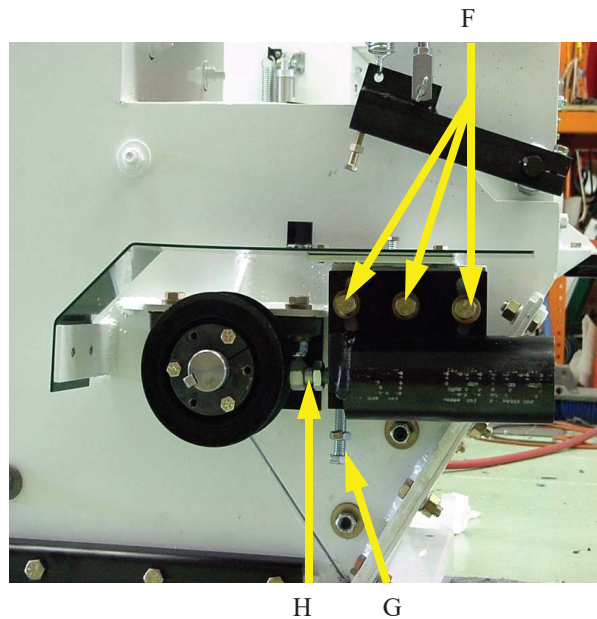
*****CAUTION*****

DO NOT over tighten drive belt, doing so may cause

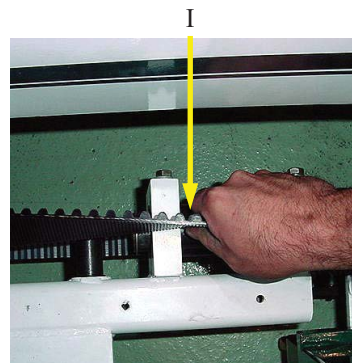


Blast Head Adjustment

Install blast head on machine with the belt on loose. Sitting on level ground, loosen bolts (F) then jam bolt (G). Once bolts are loose mount will self align, at this point retighten mounting bolts (F) and jam bolt (G). With belt tension arm in the forward tension position adjust bolt (H) to set proper belt tension. Belt should be able to be twisted to a 90 degree angle (I)



(***DO NOT*** over tighten drive belt, doing so may



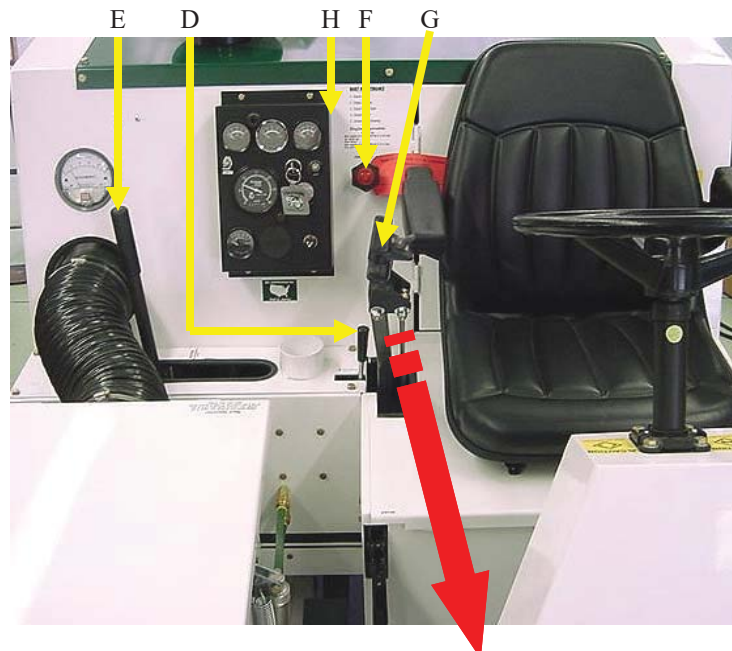
BH-16

BLAST HEAD OPERATION

Blast Head Operation

Once machine is running, engage blower (D) and clutch (E), increase engine rpm with throttle (F) to wide open throttle. Use the control handle (G) to raise and lower the head, turn the shot on and off, and after the electronic brake (H) is turn OFF the machine will move forward and backward. Place machine in forward motion then turn shot on, and at the end of each pass turn shot off while in forward motion.

ALWAYS raise blast head when turning.



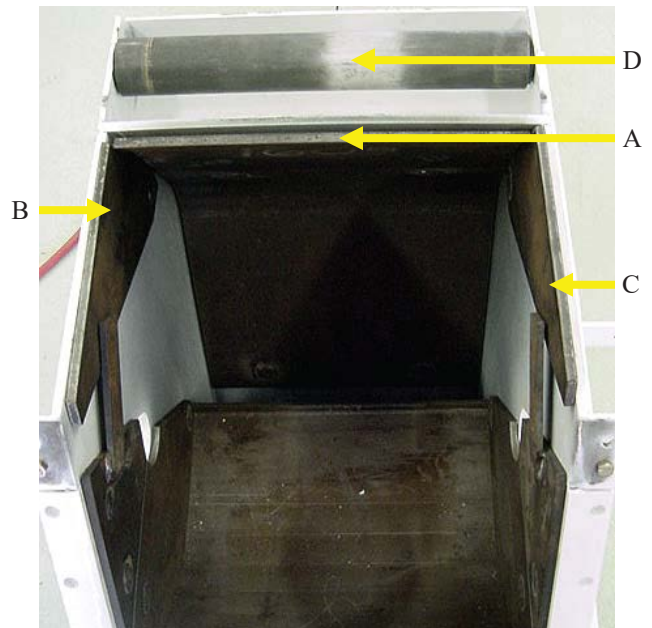
BH-16 BLAST HEAD SERVICE

Blasthead Inspection

All liners and liner bolts should be inspected each time a new set of blades are installed.

Floater Plates

The Front Floater Plate (A) and Side Floater Plates (B & C) should always be left loose to allow for movement.

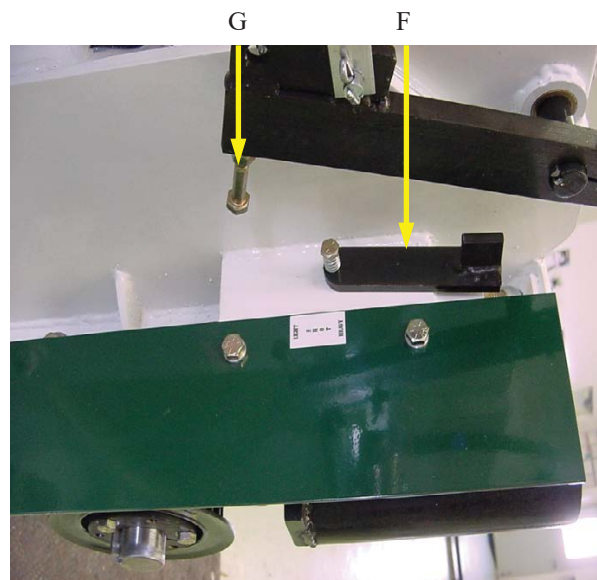


Adjusting shot load.

Clean shot hopper and install new shot.
Set blast head on a hardened steel plate.

Put shot load lever on heavy (F).

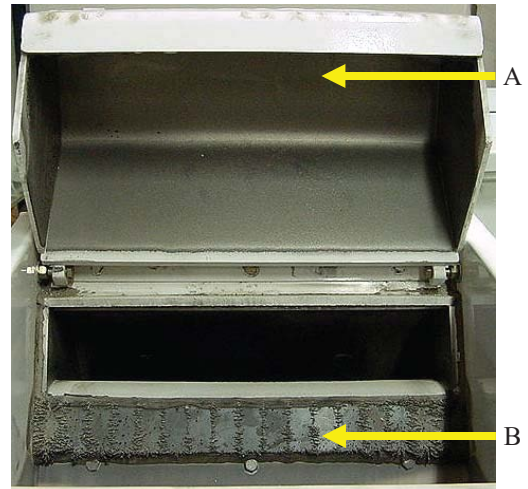
Run the machine at full speed. Engage shot, engine rpm's should not drop any further than 85 rpm. If adjustment is needed, adjust the shot stop bolt (G).



BH-16 BLAST HEAD SERVICE

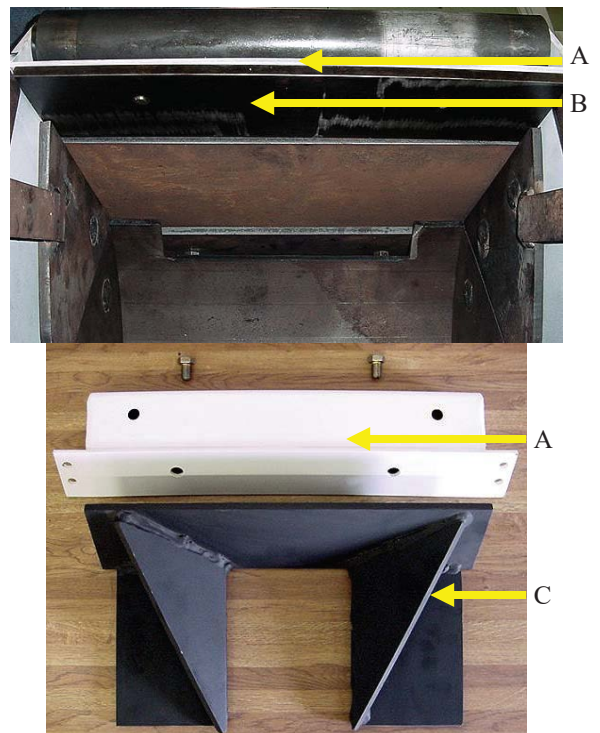
Shot Stop Assembly & Magnets

The magnets in the Shot Stop Assembly (A) and the housing (B) should be cleaned of heavy debris daily.



To Install Line Stripe Adapter.

Remove Rear Roller Cover (A) and Lower Rear Liner (B) from Blast-head and replace Lower Rear Liner with the Line Stripe Adapter (C) and reinstall Rear Roller Cover.



BH-16 BLAST HEAD SERVICE

Blast Drum Blade Wear & Replacement

Depending on wear, the blades need to be replaced every 30 to 60 hours.

Blade wear consists of the front side edge of the blade rolling over no more than a 1/2" (A) vs. a new blade (B).

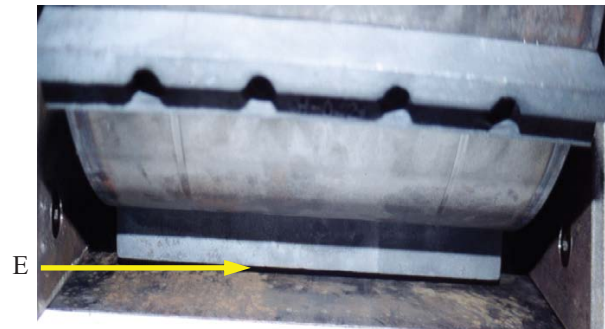
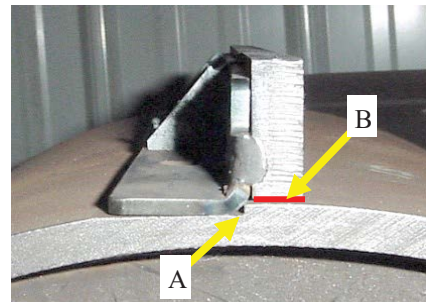
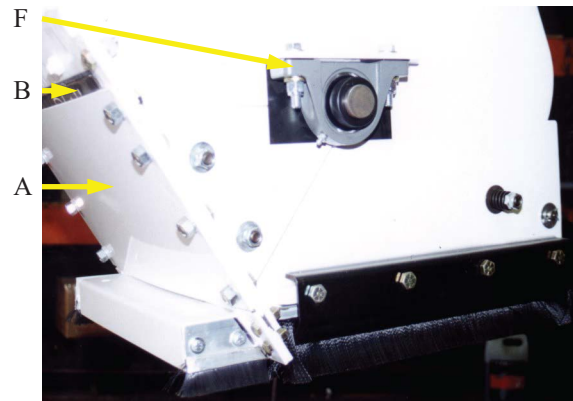


To flip Rear Liner and install blades.

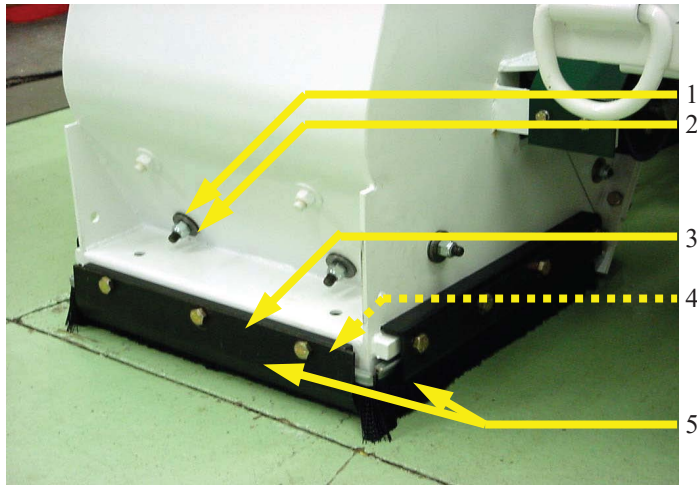
This can be done with the blast head connected to the machine or disconnected and flipped forward for ease of repair.

Remove rear cover plate (A) and remove rear liner (B). Remove old blades and clean surface of drum. (*blades are balanced and must be replaced as a set*). To ensure proper blade installation, place blade material (C) on step (D) machined in to drum. Tighten the center bolts then the outer two bolts to 65 foot pounds of torque. Now reinstall rear liner (B) and rear cover plate (A). Check clearance between blades and rear liner (E). There must be a minimum of 3/16" clearance. Check every blade for clearance using a 3/16" thick flat washer or a piece of flat stock for a gauge. The gauge must move freely through every blade. To set clearance, adjust bearings (F) and grease every 10 hours of service.

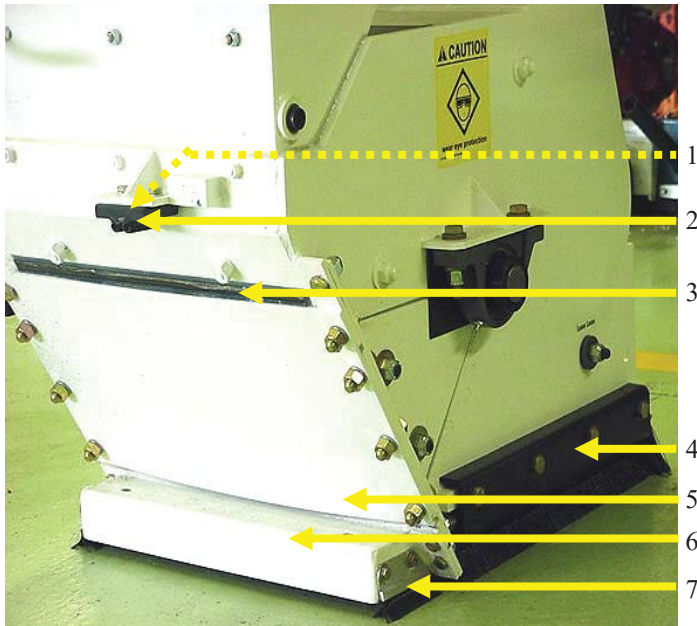
Floater plates, rollers and additional liners should be inspected at this time and replaced as needed. Upper liner and side liners should be replaced every 500 hours as needed.



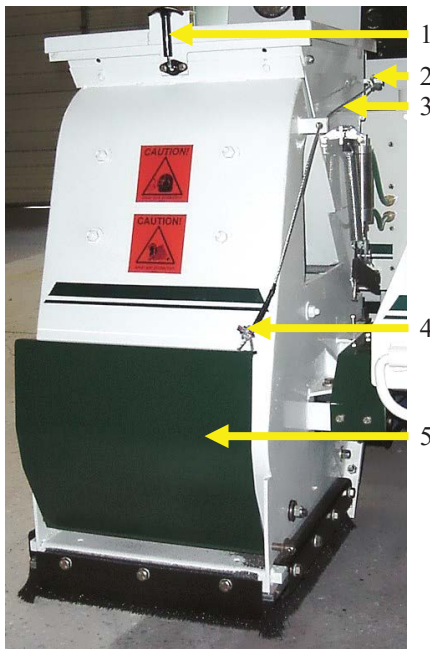
BH-16 BLAST HEAD PARTS



1. B-1620 Disc Spring Washer
2. B-1640-A Rubber Floater Bushing (*not shown*)
3. H-037-AS Front Seal Plate
4. H-039 Front Seal Spacer (*not shown*)
5. B-1626-AS Brush Seal Set (3 each per set)

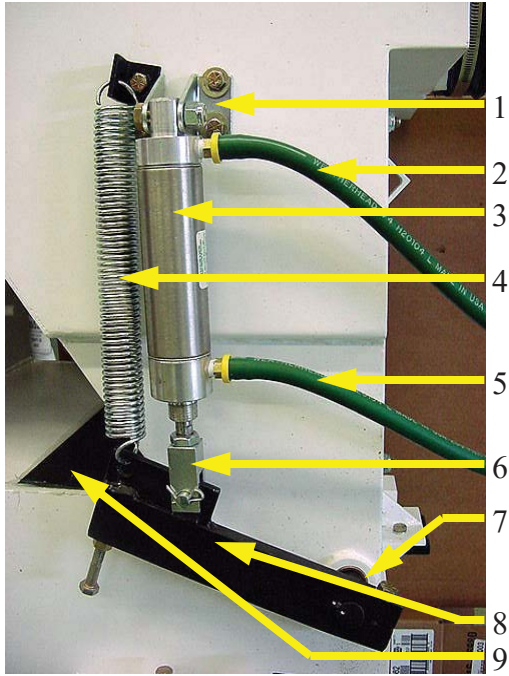


1. S-1636 Lift Grip Shim (*not shown*)
2. S-1619-AS Lift Support Grip
3. S-1611 Rear Liner
4. H-034-A Side Seal Plate
5. H-024-A Back Cover Plate
6. H-021-A Rear Roller Cover
7. S-1629-AS Rear Brush Set (2 each.)

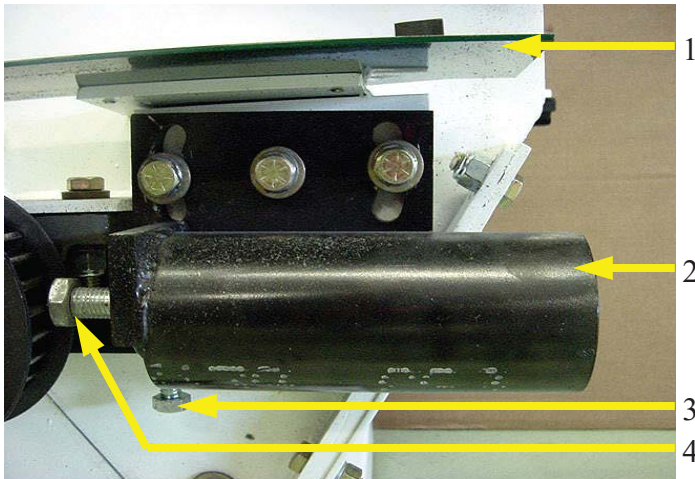


1. V-1037 Draw Latch
2. B-1648 Cable Loop
3. H-073 Cable
4. B-1647 Wire Rope Clamp
5. H-004-AS Guide Plate Assembly

BH-16 BLAST HEAD PARTS

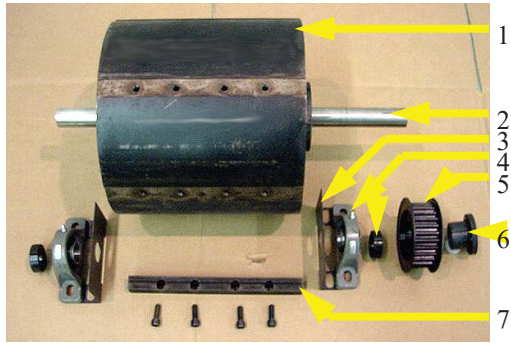


1. B-1615 Air Cylinder Mount Bracket
2. B-1613 Top Air Line (17")
3. B-1614 Air Cylinder
4. B-1625 Gate Spring
5. B-1612 Bottom Air Line (16")
6. B-1616 Air Cylinder Rod Clevis Kit
7. C-1681 Shot Gate Bushing
8. H-012-AS Shot Gate Adjuster Assembly
9. H-005-A Shot Throat Cover

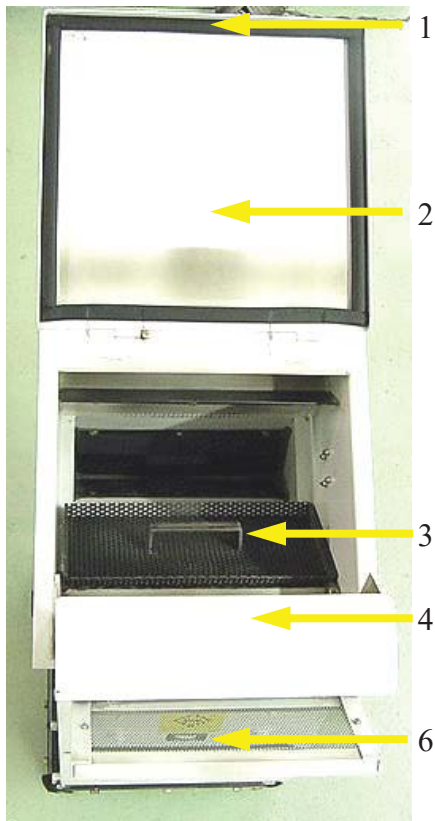


1. H-006-AS Belt Guard
2. H-059-A Adjuster Mount Assembly
3. 1/2-13X3-1/2FT Jam Bolt
4. H-043 Tension Bolt

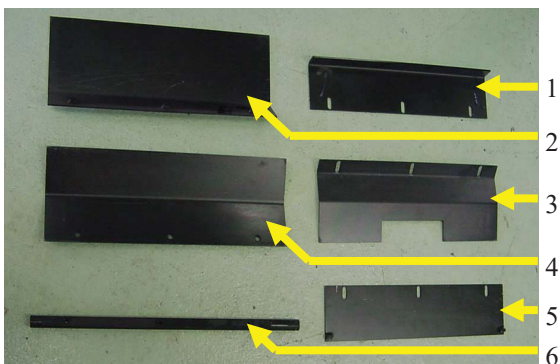
BH-16 BLAST HEAD PARTS



1. H-046-AS Blast Drum Assembly (Includes Main Shaft)
2. H-044 Blast Drum Main Shaft
3. H-056-A Bearing Shield
4. B-1627 Bearing & Collar
5. C-1714-A Sprocket (Small)
6. H-066 Bushing (superseded by B-1634)
7. H-042-MS Blast Drum Blade (sold in set of 6 each.)

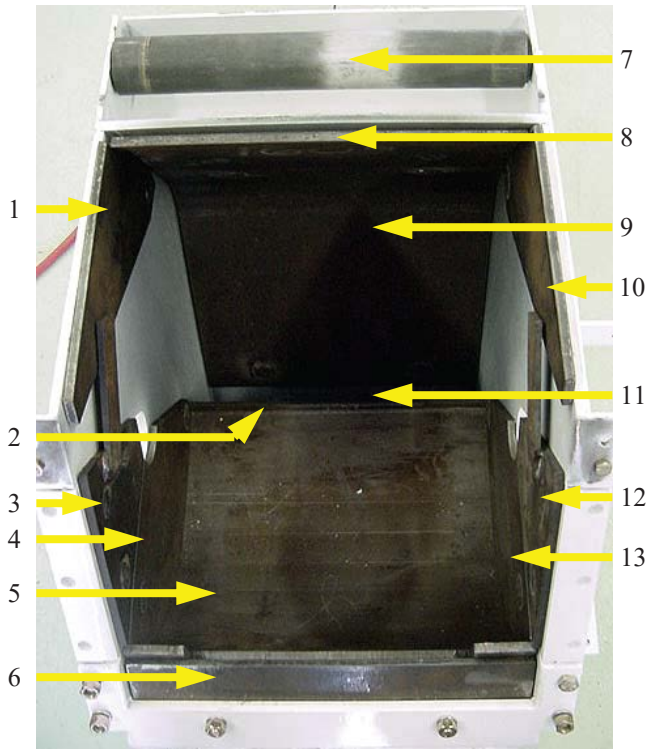


1. V-1023 Lid Seal (sold by the foot)
2. H-035-AS Lid Assembly
3. H-055-A Lower Shot Screen Assembly
4. S-1603-AS Shot Stop Assembly
5. B-1617 Upper Shot Screen



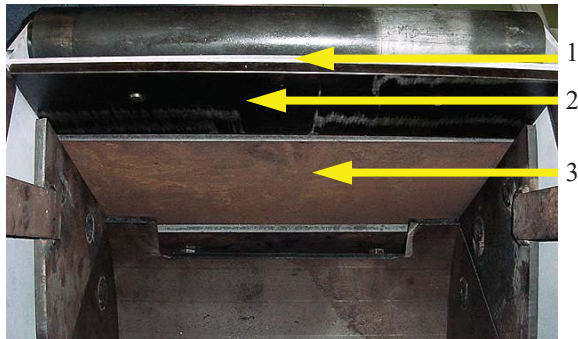
1. H-030-A Shot Gate
2. H-005-A Shot Throat Cover
3. H-031-A Shot Feed Plate
4. H-003-A Shot Deflector
5. H-029-AS Shot Gate Stop
6. H-032 Shot Gate Shaft

BH-16 BLAST HEAD PARTS



1. S-1614-R Right Side Floater Plate
2. S-1625-AS Rear Tunnel Liner*
3. S-1613-R Lower Right Side Liner
4. S-1615-R Right Side Liner
5. S-1606 Upper Feed Liner
6. S-1608 Upper Rear Liner Stop
7. H-011-A Roller Assembly w/ Bolts
8. S-1609-AS Front Floater Plate
9. S-1632-AS Front Liner*
10. S-1614-L Left Side Floater Plate
11. S-1634-AS Front Top Liner*
12. S-1613-L Left Side Lower Liner
13. S-1615-L Left Side Liner

* Please note the edges of the following liners may need to be ground to insure proper fit.



1. H-021-A Rear Roller Cover Assembly
2. H-041 Lower Rear Liner
3. S-1611 Rear Liner

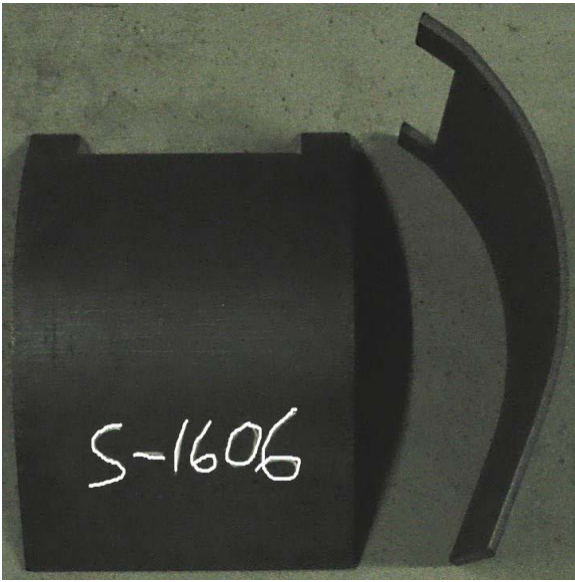


1. H-011 Outer Roller
2. S-010-16 Roller Main Shaft
3. B-1629 Bearing
4. B-1624 Roller Snap Ring
5. J-26 Roller Seal
6. 1/2-13X1 FHCSC Roller Bolt

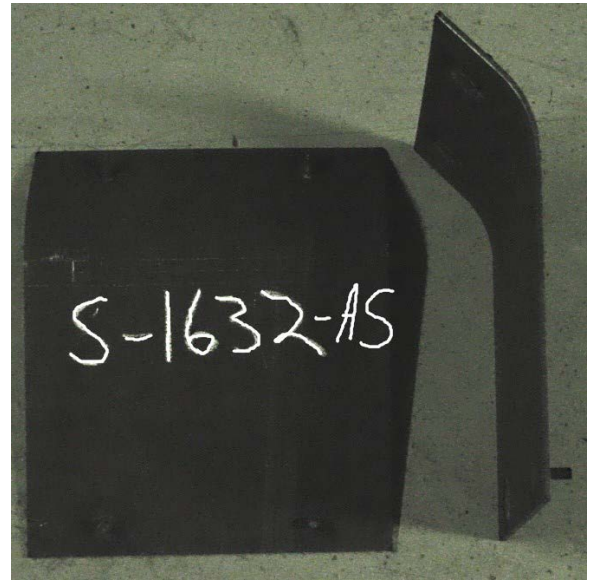
Unit can be purchased as an assembly using part number H-011-A

BH-16 Blasthead Liner Identification

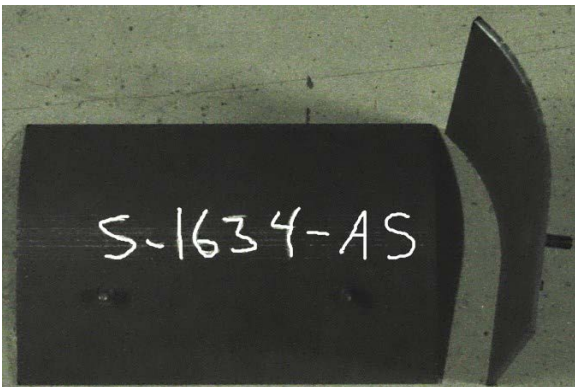
S-1606 Feed Liner



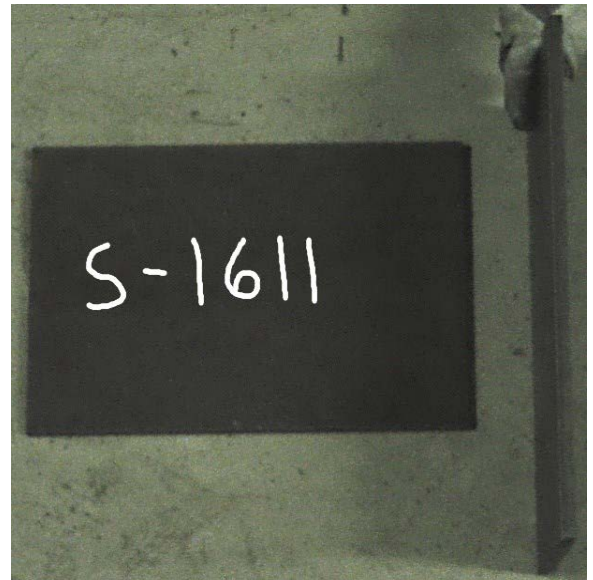
S-1632-AS Front Liner



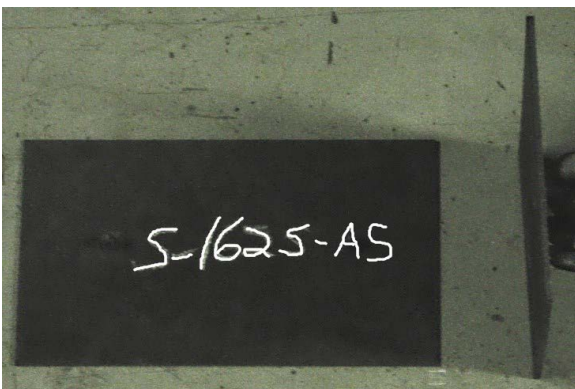
S-1634-AS Front Top Liner



S-1611 Back Liner



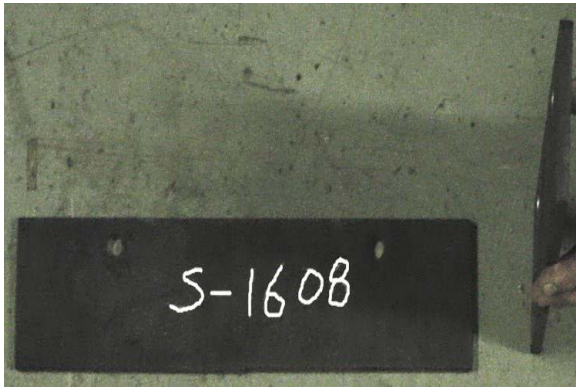
S-1625-AS Rear Tunnel Liner



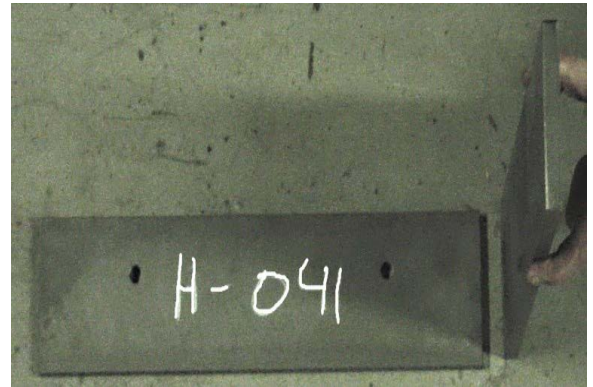
S-1609-AS Front Floater Plate



S-1608 Upper Feed Liner



H-041 Lower Rear Liner



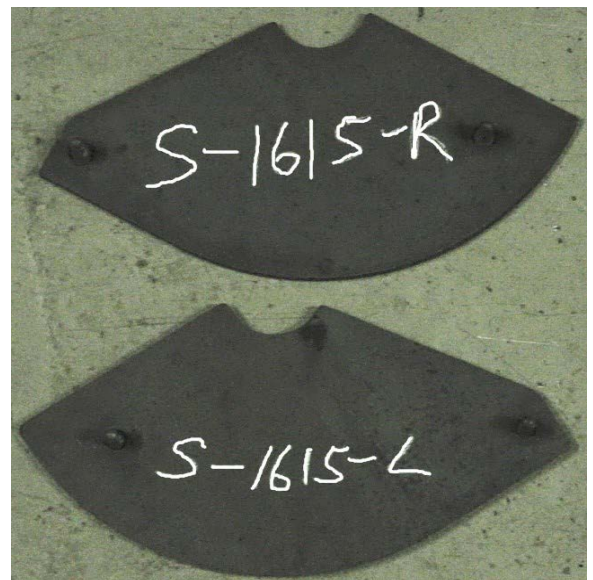
S-1613-L&R Lower Side Liner



S-1614-L&R Side Floater Plate



S-1615-L&R Side Liner



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☎ (616) 447-9076

📍 3696 Northridge DR
NW Suite 20 Walker,
MI 49544