

FHX Series *by*

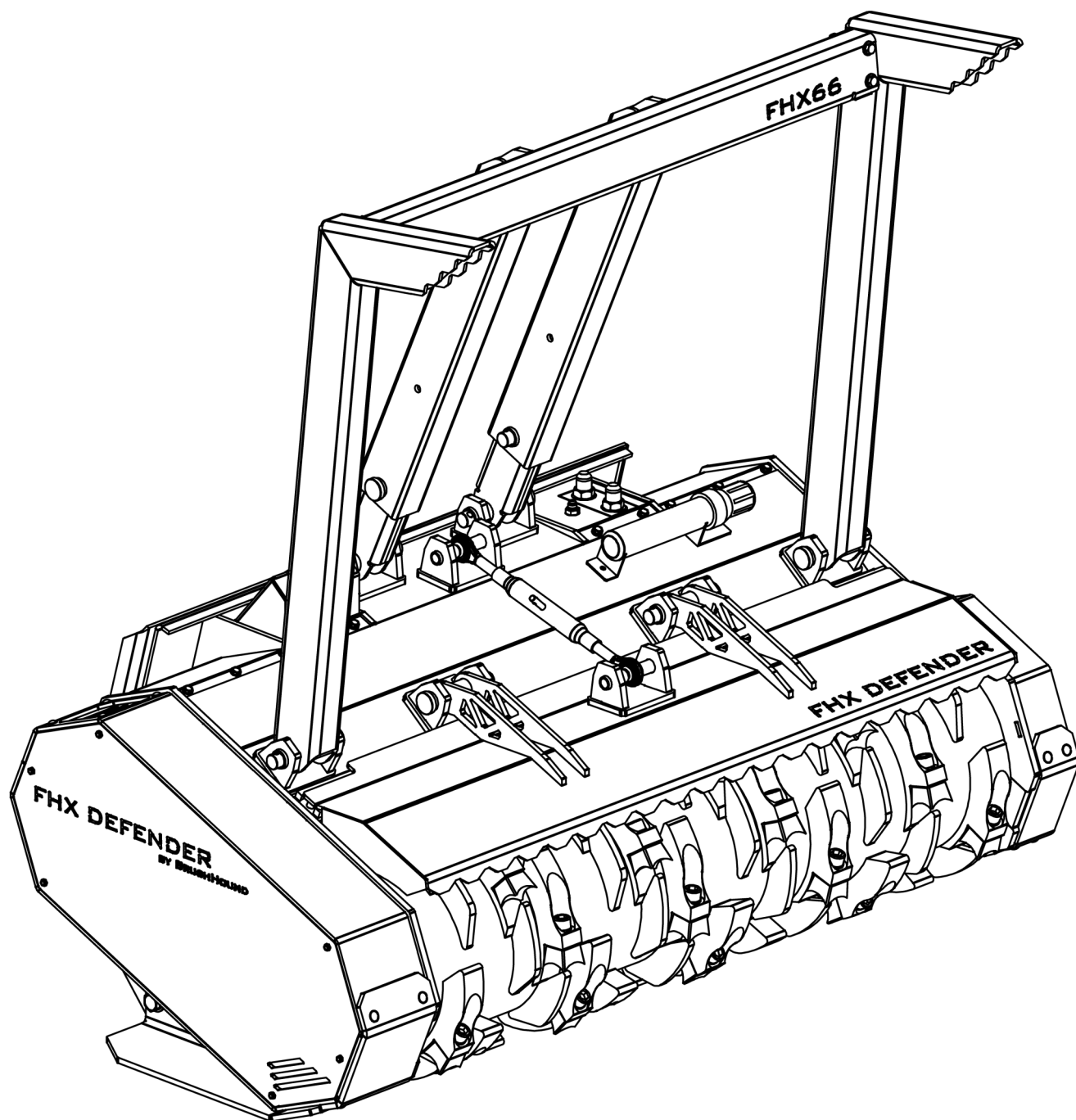
Version 2.0

Release Date: Dec 2017

(From serial number BH17FHX66D-194 and after)



BRUSH HOUND



Power unit must be equipped with 1/2" LEXAN® glass (or equal) and falling object protection.



VALLEY TOOL
MANUFACTURING COMPANY

PO Box 220 | 2507 Tully Road | Hughson, CA 95326 USA | 800 426-5615

www.Valleytoolmfg.com

Table of Contents

Introduction

Thank You	1
Warranty Registration / Delivery Report	2
Limited 12 Month Warranty	4

Safety

Operational Safety	5
Maintenance Safety	6

Basic Operation

Transport	7
Storage	7
Attaching to Power Unit	8
Removal	8
Starting Procedure	9
Shut Down Procedure	9
Running Your Attachment	11

Adjustments & Maintenance

Lubrication	13
Wearable Component Maintenance	13-14
Knife Replacement	15
Bumper Adjustment	16
Cleaning Your Attachment	17
Hydraulic Maintenance	18

Parts Catalog

Bumper Assembly	20
General Parts	21-22
Cutter Drum Assembly	23

Additional

Torque Specifications	25
Frequently Asked Questions	26
Notes	27

Introduction

Thank You

Dear Customer,

Thank you for purchasing a *BrushHound* attachment. This manual has been prepared to acquaint you with the operation, adjustment and maintenance of your new brush shredder. It was carefully designed and manufactured under the highest industrial standards to give you years of dependable service. Read this manual carefully and fully understand the operation of the machine before attempting to operate it. Each section has been clearly identified so you can find the information you need. *BrushHound Attachments* reserves the right to make changes in design and specifications, and/or to make additions to or improvements in its product without imposing any obligation upon itself to install them on its products previously manufactured. If at any time you require additional information, consult your authorized dealer or the customer service department.

ATTENTION

The safety of the operator was one of the primary concerns of *BrushHound Attachments* when designing this shredder. Shielding, simple adjustments and other safety features were built into this mulcher whenever possible. You can make your home, orchard or farm a safer place by observing the precautions noted in this manual. Be sure you and the people working for you read and understand them. All machinery should be operated only by responsible persons who have been trained to operate them in a safe manner and have read and understand the operating precautions and instructions fully.



BrushHound Attachments is solely owned by Valley Tool and Manufacturing.

Have a farm or orchard? Own a tractor with PTO capabilities? Visit our full line of agricultural flail mowers at www.vrisimo.com.



Attachments

PO Box 220 | 2507 Tully Road | Hughson, CA 95326 USA | 800 426-5615

www.Valleytoolmfg.com

Warranty Registration / Delivery Report

Prior to acceptance of the equipment, thoroughly check and mark off the items outlined in the delivery checklist below with your sales representative. Make sure you fully understand the operation, adjustment and safety rules as outlined in the operator's manual. The sales representative is responsible for going over this form with the owner and operator of this attachment.

This form also serves as your warranty registration.

Fax completed form to 209-882-9001 or scan and email to sales@valleytoolmfg.com.

Customer Information

Last Name	Street Address		
City	State	Zip	

Attachment Information

Model	Serial Number
-------	---------------

Dealer Information

Company Name	Sales Rep. Name		
Company Street Address	City	State	Zip

- ☐ Check to make sure user's power unit is equipped with 1/2" LEXAN® glass (or equal) and falling object protection.
- ☐ Check to make sure attachment is completely lubricated.
- ☐ Buyer is shown all grease fittings and proper daily maintenance routine.
- ☐ Buyer is shown correct operation procedures including correct height of attachment.
- ☐ All bolts checked for tightness.
- ☐ All knives and blade bolts are in place.
- ☐ All shields in place.
- ☐ Procedures for attaching shredder demonstrated to buyer.
- ☐ Ensure pressure settings on power unit are correctly set.
- ☐ Starting procedures explained to buyer.
- ☐ Operation guidelines as outlined in owner's manual explained to buyer.
- ☐ Adjustment of cutting height explained to buyer.
- ☐ Replacement of knives explained to buyer.
- ☐ Hydraulic breaker mode function and case drain application explained THOROUGHLY.
- ☐ All safety precautions thoroughly read and understood.

The signatures below indicate that both the sales representative and the end user have gone over the above checklist and all topics have been covered thoroughly.

Buyer Signature _____ Date _____

Dealer Signature _____ Date _____

Introduction

Limited 12 Month Warranty

For a period of 12 months from date of delivery of product to the original user/owner, Valley Tool & Mfg. warrants each product to be free from manufacturing defects, subject to the limitations contained in this policy.

This warranty does not apply to defect caused, in whole or in part, by unreasonable use while in the possession of the user, including, but not limited to: failure to properly set up product; failure to provide reasonable and necessary maintenance; normal wear; routine tune ups or adjustments; improper handling or accidents; operation at speed or load conditions contrary to published specification; improper or insufficient lubrication; improper storage. This warranty is also not a guarantee that the performance of each product will meet the expectations of the purchaser.

Valley Tool & Mfg. shall not be liable for consequential damages of any kind, including, but not limited to: consequential labor costs or transportation charges in connection with the replacement or repair of defective parts; lost time or expense which may have accrued because of said defects. In no event shall Valley Tool & Mfg. total liability hereunder exceed the product purchase price.

Valley Tool & Mfg. makes no warranty with respect to trade accessories or any components or accessory of the product which was not manufactured by Valley Tool & Mfg., including any purchased components of any kind. These are subject to the warranties of their respective manufacturers. The warranty will be considered void if the product or any part of the product is modified or repaired in any way not expressly authorized by Valley Tool & Mfg., or if closed components are disassembled prior to return. Closed components include, but are not limited to: gearboxes, hydraulic pumps, motors, cylinders, and actuators.

Our obligation under the warranty is expressly limited, at our option, to the replacement or repair at Valley Tool & Mfg., of Hughson CA, or at a service facility designated by us, or such part or parts as inspection shall disclose to have been defective. We are not responsible for unauthorized repairs or replacements. Warranty must be pre approved. Authorized parts will be sent to dealer 2nd day UPS at no charge. Any implied or statutory warranties, including any warranty merchantability or fitness for a particular purpose, are expressly limited to the duration of this written warranty. We make no other express or implied warranty, nor is anyone authorized to make any on our behalf. This warranty cannot be extended, broadened, or changed except in writing by an authorized officer of Valley Tool & Mfg. No warranty will be processed without the timely registration of the signed "Delivery Report".

Travel time of mechanics and transportation of the product to the authorized service dealer for warranty work are the responsibility of the attachment owner.

Valley Tool & Mfg. offers the most reasonable and dealer - friendly return policy in the market. Below we have included the return policies for each of our brands. We will accept returns within 30 days of original receipt. All returns must be approved by Valley Tool & Mfg and a return authorization number must be issued prior to return shipment. Returns must be received in "like-new" condition and with all of the original factory packaging including manuals. Additional charges will apply if an item is received that is not in "like-new" condition or that is not in original factory packaging. After a return has been fully inspected by our staff, refunds will issued less shipping charges and any other possible damage fees. Please allow up to 30 business days for your account refund credit to be processed.

Please direct all return-related questions to sales@valleytoolmfg.com.

Safety

Operational Safety

Failure to heed any of these warnings may result in personal injury or death.

- **Before operating this machinery read the owner's manual thoroughly.**
- Do NOT operate this machine without proper training. It is the Owner's responsibility to ensure all Operators are properly trained in the appropriate language.
- **Power unit must be equipped with 1/2" LEXAN® glass (or equal) and falling object protection.**
- Use OSHA approved eye, ear and head protection to protect the Operator from flying debris and noise.
- Avoid wearing loose clothing as it can inadvertently be drawn into moving parts.
- Never use drugs or alcohol before or during operation of this machine.
- Only operate this machine when it is in good working order on an appropriate power unit that is in good working order, and with all guards and safety devices in place and functioning.
- Be aware of the machine's weight and its effect on the stability of the power unit.
- Always inspect area to be worked to ensure that the jobsite is free from obstacles and debris that could injure the operator or damage the machine.
- Avoid running the machine along the ground in rocky areas as this could create dangerous discharge.
- Keep bystanders and children clear of the work area during operation as debris can be discharged in a dangerous manner. The minimum safe distance from discharge is 100 ft.
- Under no circumstances should the blades of this machine come into contact with the ground or should the machine be curled in such a way that the blades become visible to the operator.
- Avoid operation that would allow hydraulic lines to be pinched or severed. In the event of a hydraulic leak, hydraulic fluid may have sufficient force to penetrate skin which requires immediate medical attention.
- Be aware of the risks of equipment and grass fires. To mitigate those risks:
 - Do not smoke or have an open flame in the work area.
 - Do not operate in areas that have been freshly burned or are still burning.
 - Do not allow clippings/debris to collect near hydraulic components or bearings.
 - Avoid areas with high fire risk: dry grass, brush or trees.
- Operation of this machine should be stopped immediately if the Operator's vision becomes obscured by the discharge of debris and dust. Also avoid operating this machine in unusually foggy or dusty conditions or at night.
- Keep away from the machine until all the energy has dissipated. This includes the complete stopping of the drum's rotation as well as the dissipation of pressure in the hydraulic lines.
- In the event that a failure does occur during operation or if the machine begins to produce excessive noise or vibration, shut the machine down immediately and repair before any continued use.
- Never leave the machine unattended unless it is in the storage or transport position.
- **In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern and prudence and requires suitable training of personnel involved in the operation, transport, maintenance and storage of equipment.**

Maintenance Safety

- **Before performing maintenance on this machine read the owner's manual thoroughly.**
- Maintenance should only be performed by properly trained individuals. It is the Owner's responsibility to ensure all individuals involved in maintaining the machine are properly trained in the appropriate language.
- Be sure to inspect all safety devices before each use. If safety devices are worn in such a way that they can no longer properly perform their guarding function contact your nearest BrushHound dealer for replacements.
- Maintain all safety decals and make sure they are visible to the operator. If decals are worn, contact your nearest BrushHound dealer for replacements.
- Replace cracked or broken blades with new ones. Do not attempt to weld damaged blades. This can cause damage that could result in the blade being thrown from the shredder.
- Wear gloves and eye protection and exercise care when handling blades as they can be extremely sharp. Also be alert to worn or damaged surfaces that could have sharp edges.
- Disengage hydraulics, shut off engine and allow all movement to stop before leaving the operator's position to adjust, lubricate, clean or unclog the machine. Do not try to uncouple the hydraulic hoses unless the pressure has adequately dissipated.
- Before working on or underneath the machine, place blocks on both sides (front and back) of the power unit's tires or treads and under each end of the attachment to prevent accidental lowering of the machine. Also, remove the ignition key from the power unit and allow all movement to stop before beginning work.

Basic Operation

ATTENTION

Review all safety information outlined in safety section of manual before proceeding with any operation of attachment.

Transport

a) Transporting on Power Unit

If the attachment is being transported on the Power Unit, disengage the auxiliary hydraulic circuit and position the attachment at a reasonable driving height and position to maximize Power Unit's balance. Wait for the drum to stop rotating before transport.

b) Transporting Attachment and Power Unit

If the Power Unit is being transported with the Attachment (e.g. transporting on a trailer between jobsites), follow the Power Unit manufacturer's recommendations for transport and be sure to comply with all local regulations.

Storage

a) Storage

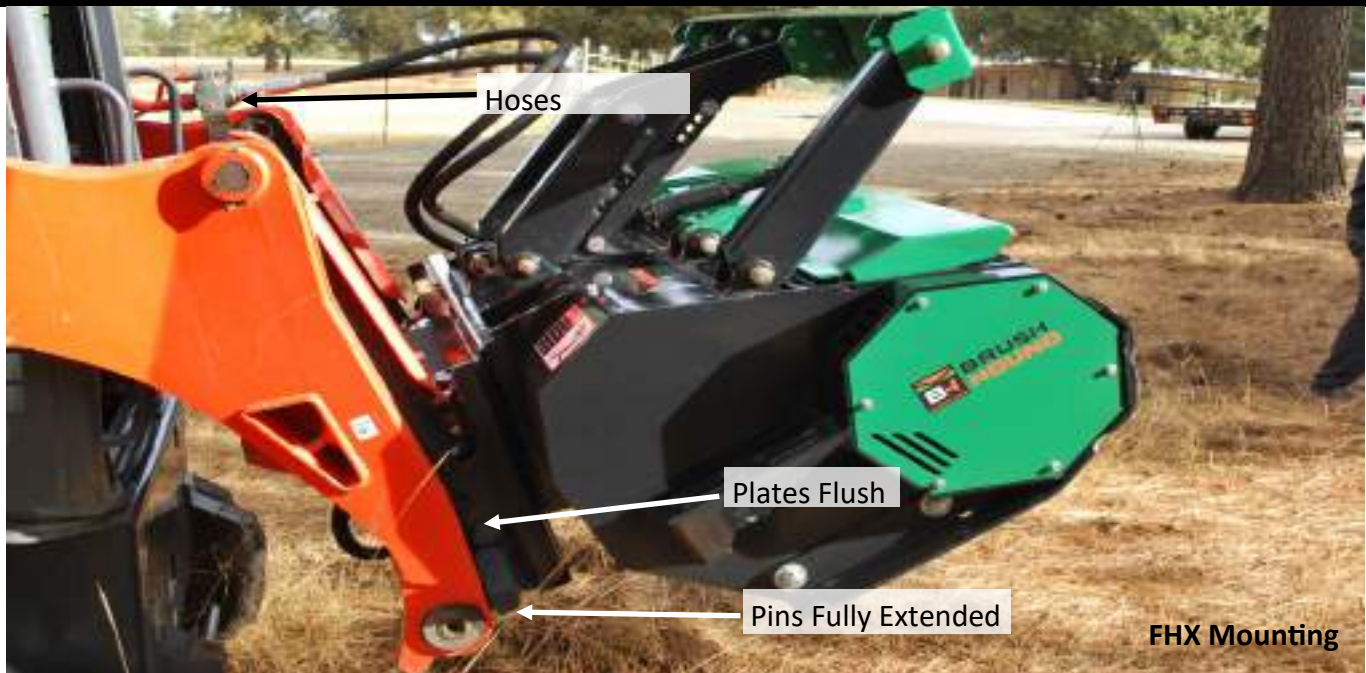
When storing the attachment in between jobs:

- 1) Clean the attachment thoroughly (see "Cleaning Your Attachment" section for specific cleaning instructions).
- 2) Lubricate the attachment as recommended (see "Lubrication" section for lubrication details).
- 3) Check wearable parts and replace as necessary so you will be ready to operate when necessary.
- 4) Store in a clean, dry place.

b) Storage on Power Unit

When leaving the Attachment unattended while still attached to the Power Unit:

- 1) Find a suitable, flat location to leave the Power Unit and Attachment.
- 2) Disengage auxiliary hydraulic circuit and lower the Attachment all the way to the ground. Both the front and rear of the Attachment should be resting on the ground and positioned in such a way that the balance of the resting Power Unit is considered
- 3) Turn off Power Unit and remove ignition key. Wait for drum to completely stop its rotation before leaving unattended.



Attaching to Power Unit

Note: When you ordered your BrushHound product, details about your Power Unit were provided to custom match your Attachment to your Power Unit. While BrushHound products can be attached to a variety of different skid steers and track loaders, your Attachment is specifically configured for your Power Unit and can not necessarily be placed on another Power Unit as is. Specifically, the hydraulic motor and pulleys were selected to optimize performance based on your hydraulic system. Your Attachment should only be connected to Power Units that share the same specifications as the information on the Power Unit you provided. To connect your Attachment to another Power Unit, contact your nearest BrushHound Dealer.

The person that is attaching your BrushHound product should be familiar with the attachment and removal of regular buckets from a skid steer or track loader and be able to do so safely. Attachment should be performed on flat ground away from obstructions. During attachment, keep hands out of pinch points and away from the blades to avoid injury and ensure hoses are clear of mounting plate:

- 1) Line the mount on the Power Unit up with the Universal Skid Steer Mount on the Attachment.

- 2) Lower the mount on the Power Unit and tilt forward so it can scoop up under the top lip of the Attachment's mounting plate.
- 3) Slowly move Power Unit forward until it taps against the mounting plates, lift up slightly to lock into the lip.
- 4) Check bottom portion of mount to ensure flush mounting between Power Unit and Attachment. Once flush, lower the locking mechanism on the Power Unit making sure it has fully engaged.
- 5) Connect hydraulic hoses to Power Unit.

Removal

To remove the Attachment from the Power Unit:

- 1) Find a suitable, flat location to leave the Attachment where it will not fall over.
- 2) Make sure the auxiliary hydraulic circuit is off and lower the Attachment all the way to the ground. Both the front and rear of the Attachment should be resting on the ground.
- 3) Wait for drum to stop rotating and hydraulic system to depressurize before approaching Attachment.
- 4) Unlock the locking devices on the Power Unit's mount.
- 5) Lift arm to remove it from the Attachment.

Basic Operation

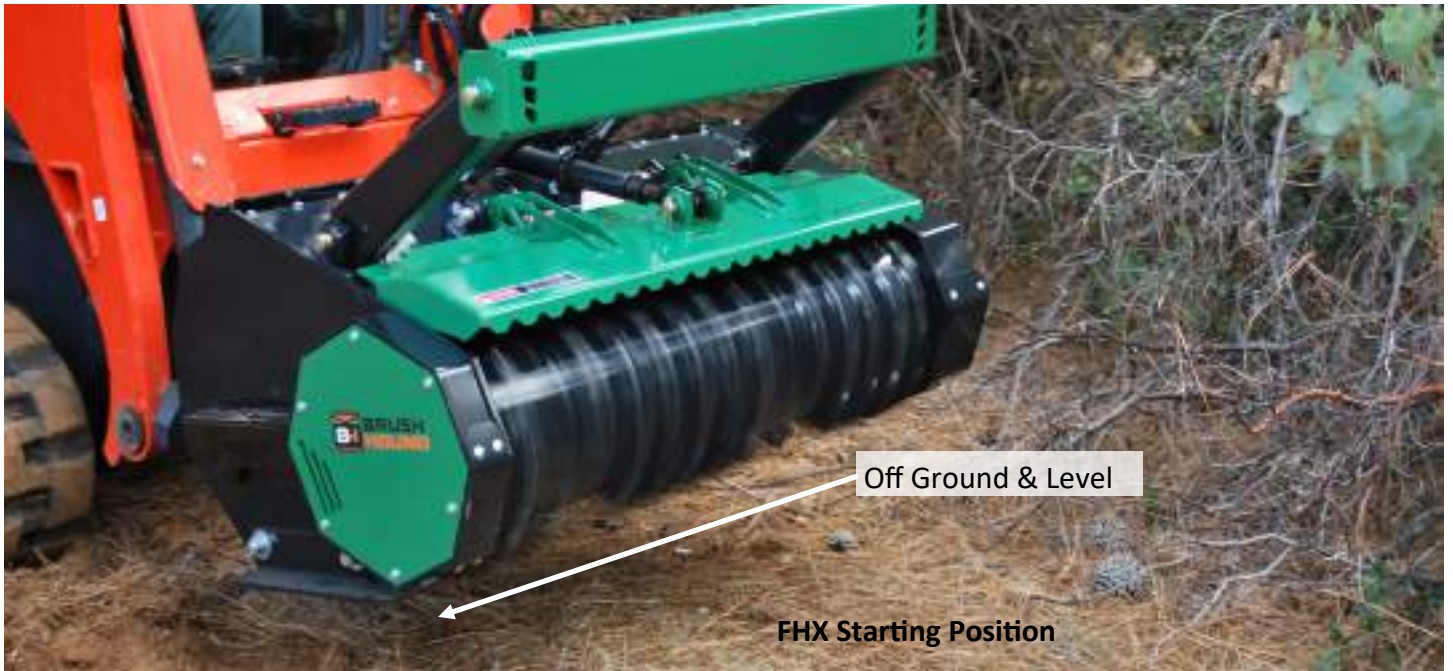
Starting Procedure

The Operator should be properly trained on the use of your BrushHound Attachment and wearing the appropriate safety gear. Do not start the Power Unit until the Attachment has been checked for proper assembly and installation. This includes the appropriate connection of the mount and hydraulic connections as well as the proper functioning of all safety devices on both the Power Unit and the Attachment. Clear the work area of all bystanders and children:

- 1) Check that the attachment is in the down position and that the blades are not in contact with ground. Start engine and set throttle to idle. Never engage the auxiliary hydraulic flow with the motor above idle speed.
- 2) With the motor at low RPM engage the auxiliary hydraulic flow.
- 3) Slowly bring the throttle up to maximum flow. If the Attachment produces excessive noise or vibration, disengage the auxiliary hydraulics and shut down the Power Unit immediately. Determine the cause of the problem and correct it before continuing with its operation.
- 4) Attachment is ready for operation.

Shut Down Procedure

- 1) When work is completed, disengage auxiliary hydraulics and position it for storage or transport (See the “Storage and Transport” section for details on proper storage). Shut off Power Unit and set parking brake. Wait for the Attachment to stop rotating and allow hydraulic circuits to bleed back to reservoir, as they can still be pressurized even when turned off, before approaching or allowing others to approach the Attachment.
- 2) Visually inspect hydraulic motor, motor protection valve and other areas for signs of excessive heat, debris accumulation or leaks. Do not touch these areas with bare skin as they can be very hot. Hydraulic leaks should never be checked for with hands as the fluid may have adequate force to puncture the skin which would require immediate medical attention and can lead to gangrene within hours. Instead, if you believe there is a hydraulic leak, check with a piece of cardboard or paper.



Basic Operation

Running Your Attachment

- 1) Level sides of the Attachment with the ground, making sure skid shoes are just above ground level. Skid shoes are designed to collide with uneven surfaces, not run along the ground.
- 2) Ground speed should range anywhere from 0-5 miles per hour. However, the operator should drive at a speed they are comfortable with given terrain and brush density.
- 3) Small trees can be driven into and knocked over with the push bar, allowing the Attachment to continue running along the ground. For larger trees, raise the Attachment into the air, making sure it is oriented such that the blades are not visible. Then clip off the upper part of the tree and slowly lower the attachment, mulching the remaining tree to the ground.

Note: Be reasonable in which trees you attempt to mulch, excessively large and tall trees could fall on or knock over your Power Unit.

Basic Guidelines

- 1) Your Attachment is most efficient when the knives are sharp and turning at full RPM. Your specific recommended shaft speed is listed on the unit's Serial Number plate, but it should range from 1700-2200 RPM.
- 2) Before beginning your job, walk the work area and clear all the hidden hazards such as large rocks, utility lines, fencing and hidden debris like broken glass, bottles and miscellaneous materials. Projected debris can cause injuries to operators, pedestrians, livestock or damage property.
- 3) While inspecting the work area, be on the lookout for bees, fire ants, poison ivy or poison oak. Also be aware of improper working conditions such as overly saturated grounds which can cause slippery conditions. Taking note of all potential area hazards will increase your productivity as well as your safety.
- 4) Never allow bystanders to be near mowing or

brush cutting or to climb on the machine.

- 5) Loading or "lugging down" the cutter excessively will significantly reduce its cutting capacity and result in increased hydraulic oil temperature. Stay aware of the cutter drum speed and lift out of the cut until maximum speed is regained before resuming.
- 6) Do not use this attachment as a bucket to dig up roots and spread piles of dirt. **This type of damage will not be covered by your warranty and repairs will be expensive.** The weldment's design is strong enough to last for decades if cared for properly.
- 7) Never start the attachment if the safety guards are not securely fastened to the attachment.
- 8) Abuse can be indicated by drum damage or premature knife failure. To prevent abuse, always reduce cutting load before significant cutter drum speed is lost.



Shredding Brush



Clipping Tree Tops

Adjustments & Maintenance

ATTENTION

Review all safety information outlined in safety section of manual before proceeding with any adjustments or maintenance.

Lubrication

The FHX Series has 3 lubrication points, identifiable by the presence of a grease fitting. Use only BrushHound approved grease or a compatible grease with similar specifications and EP additives. For all 3 of the FHX's grease points BrushHound recommends using Mobilith SHC 100 Grease. Over-greasing seals and bearings can cause damage, if grease purges from the bearings' seals too much grease has been applied. If the purged grease is black and smells burnt, this may be a sign of chronic over-greasing.

a)Cutter Drum Bearings

On each end of the cutter drum, behind the bolt on covers are the cutter drum bearings. These are double row spherical bearings with high speed Teflon seals, each comes with a grease fitting and prepacked with high quality grease from the factory. Greasing intervals are dependent on conditions, but for standard use the main bearings require 10 pumps of grease from a manual grease gun every 60-80 hours of operation. Abnormally wet conditions, where bearings are continuously moist, may require more greasing.

b) Overhung Load Adapter

In the motor compartment, mounting the motor to the side wall is the overhung load adapter. It has a grease line that runs to the top of the FHX and comes prepacked with high quality grease from the factory as well. The grease interval for the overhung load adapter is 10 pumps every 300 hours, or every fourth cutter drum bearing greasing.

Wearable Component Maintenance

a) Rubber Drive Belt

The drive belt is located behind the pulley housing cover on the drive side of the attachment. The belt itself has a lifetime of over 1000 hours, but should be inspected regularly for excessive wear. If the belt appears worn thin or torn it should be replaced. It should also be replaced whenever the cutter drum is removed.

- **Drive Belt Tension** - Drive belt tension can be achieved by first removing the drive side pulley cover and the motor guard cover. With the covers removed you will gain access to the overhung load adapter mounting plate. The over hung load adapter mounting plate has bolts that when tightened pull the entire assembly toward the mounting plate, putting tension on the drive belt.

b) Hydraulic Hoses

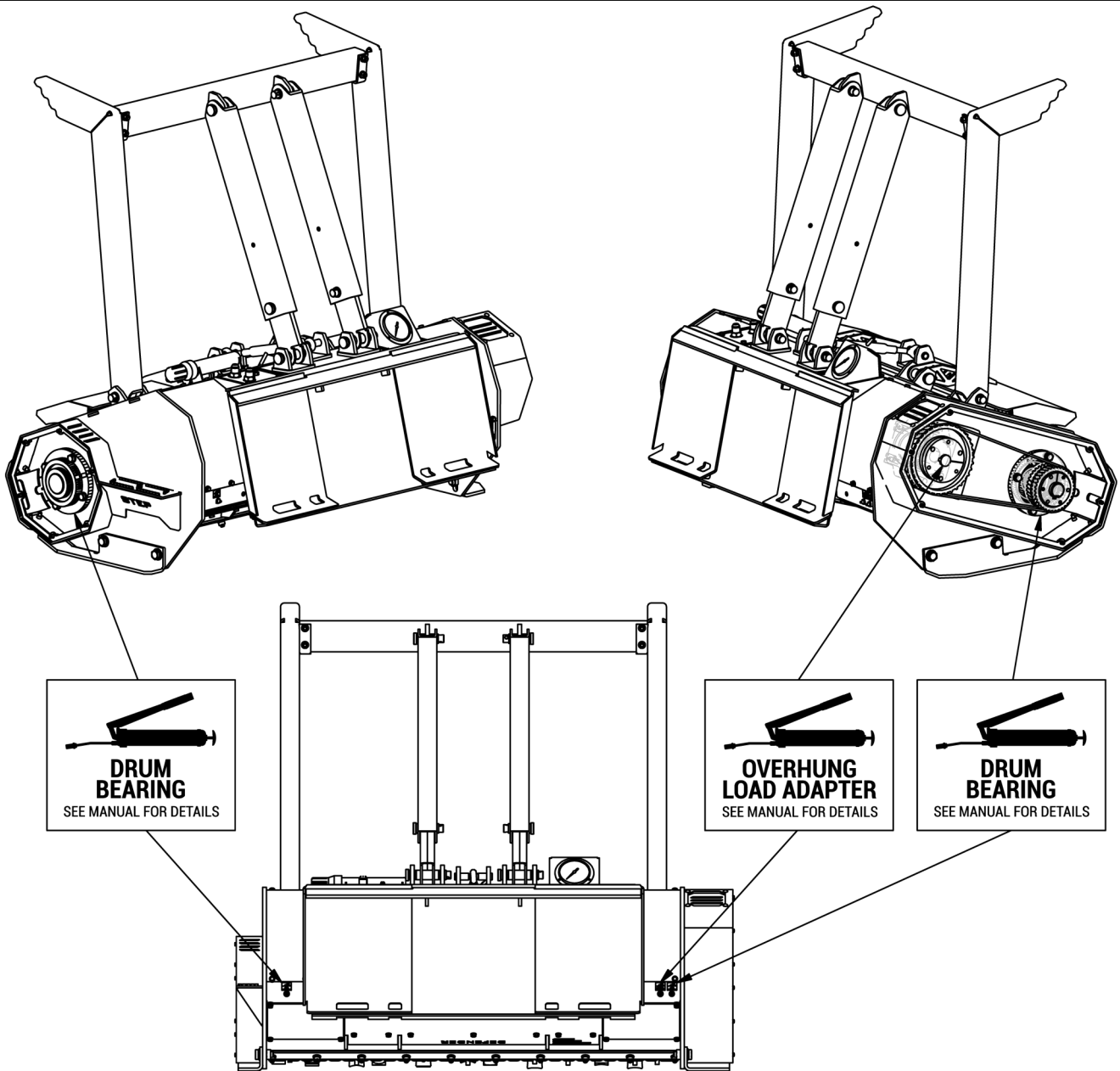
The hydraulic hoses located within the motor guards have been placed to minimize their wear caused by rubbing against metal surfaces. However, due to heavy vibration their positions can shift so regular inspection for excessive wear should be performed.

c) Bearings

Bearing failure can be indicated by excessive vibration or noise or the complete seizing of the cutter drum altogether. Imminent bearing failure signs can be more subtle and go unnoticed without appropriate diagnostic equipment. As a precaution, bearings should be replaced every 1500-2000 hours of operation depending on the environment and usage conditions.

d) Safety Guards

Safety guards are in place for the protection of the Operator, bystanders and nearby property and should never be removed for operation. Therefore, it is important that each safety guard



is capable of performing its guarding function. Any worn guards or guards with rust penetrating deep enough to compromise their strength should be replaced. To prolong the guards life, regularly clean the guards and keep them painted as this provides protection from the elements.

- **Cutter Drum Door** - Cutter drum door can be raised or lowered by using the adjustable top link Ratchet. At no point should the Attachment be run without

the

e) Safety Decals

Safety decals are not cosmetic, they are in place to warn the Operator and bystanders of the dangers inherent of this machine. Safety decals should always be clearly legible, even from a distance, and should never be covered for any reason. Faded or worn decals should be replaced.

Adjustments & Maintenance

Knife Maintenance

Since the FHX Series is designed for Forestry Mulching, it is critical that the knives are present and that they be kept sharp to keep cutting efficiency at a maximum. The standard cutting tool is a hardened steel knife with multiple cutting surfaces, allowing it to be either sharpened, rotated, or replaced depending on the circumstances (on certain models an upgraded multi-surface carbide blade is offered that can be rotated or replaced).

1)Rotating

The standard knife offered has 4 cutting surfaces, allowing for up to 3 rotations in the field where replacements or sharpening equipment may not be available. To rotate the knife, loosen the retention bolt and; First rotation 180°, Second

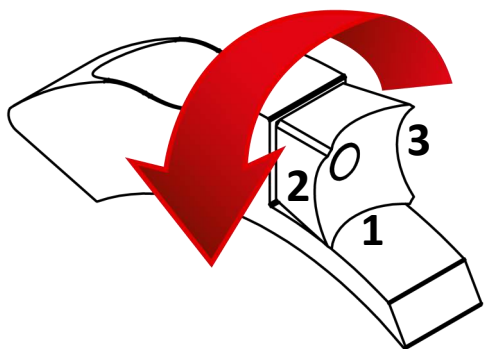
Rotation 90°, and third rotation at 180°. Retighten to 2000 ft-lbs with a grade 8 bolt. You will notice that the limiter on the knife holder does not allow the sharp corner to be centered, this is intentional as it is the U-shaped surface that is the cutting portion not the edge.

2)Sharpening

When sharpening tools are available, the knives can be sharpened in the holder using a grinder. Simply run the grinder in plane with the flat V-shaped side, surfacing the outer edge of the knife.

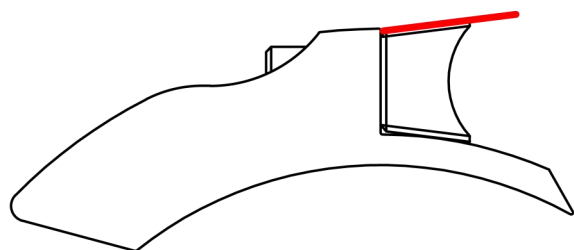
3)Replacing

The final option is replacement, simply unbolt the knife and replace it with a new one, retightening to 2000 ft-lbs with a grade 8 bolt.



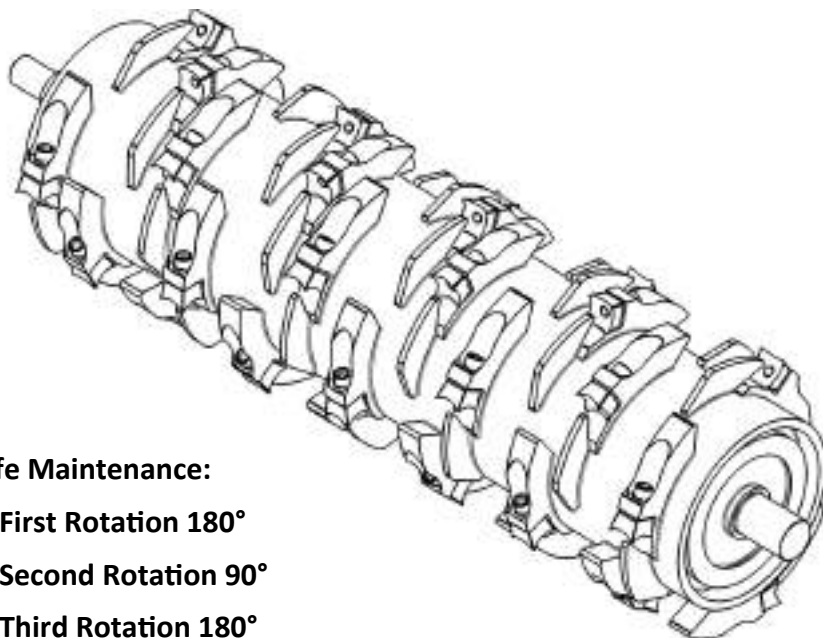
Knife Maintenance:

- First Rotation 180°
- Second Rotation 90°
- Third Rotation 180°



Knife Maintenance:

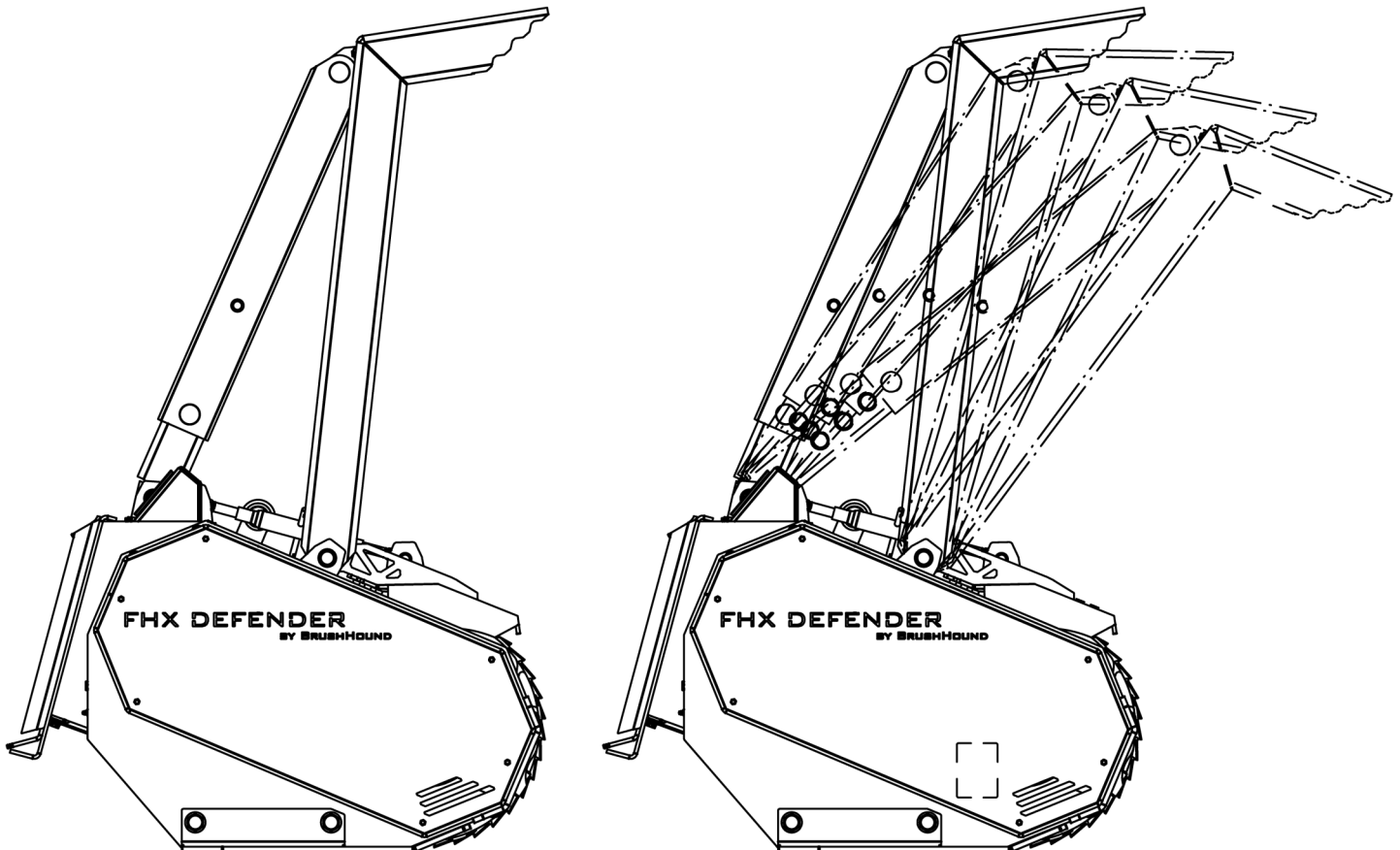
- Grind flat in-plane



Bumper Adjustment

To adjust bumper there will need to be more than one person. At least one person to hold the weight of bumper while one person handles the adjustment of the adjustment pins. (DO NOT ADJUST WITHOUT RETAINING BOLTS IN PLACE) The process is as follows:

- 1) Have at least one person hold weight of bumper.
- 2) Remove adjustment pins.
- 3) Position as desired (4 optional positions)
- 4) Once in desired position insert adjustment pins.



Adjustments & Maintenance

Cleaning Your Attachment

Cleaning your Attachment regularly will help prolong the life of both the paint and the safety decals as well as minimize the risk of unintentional fire.

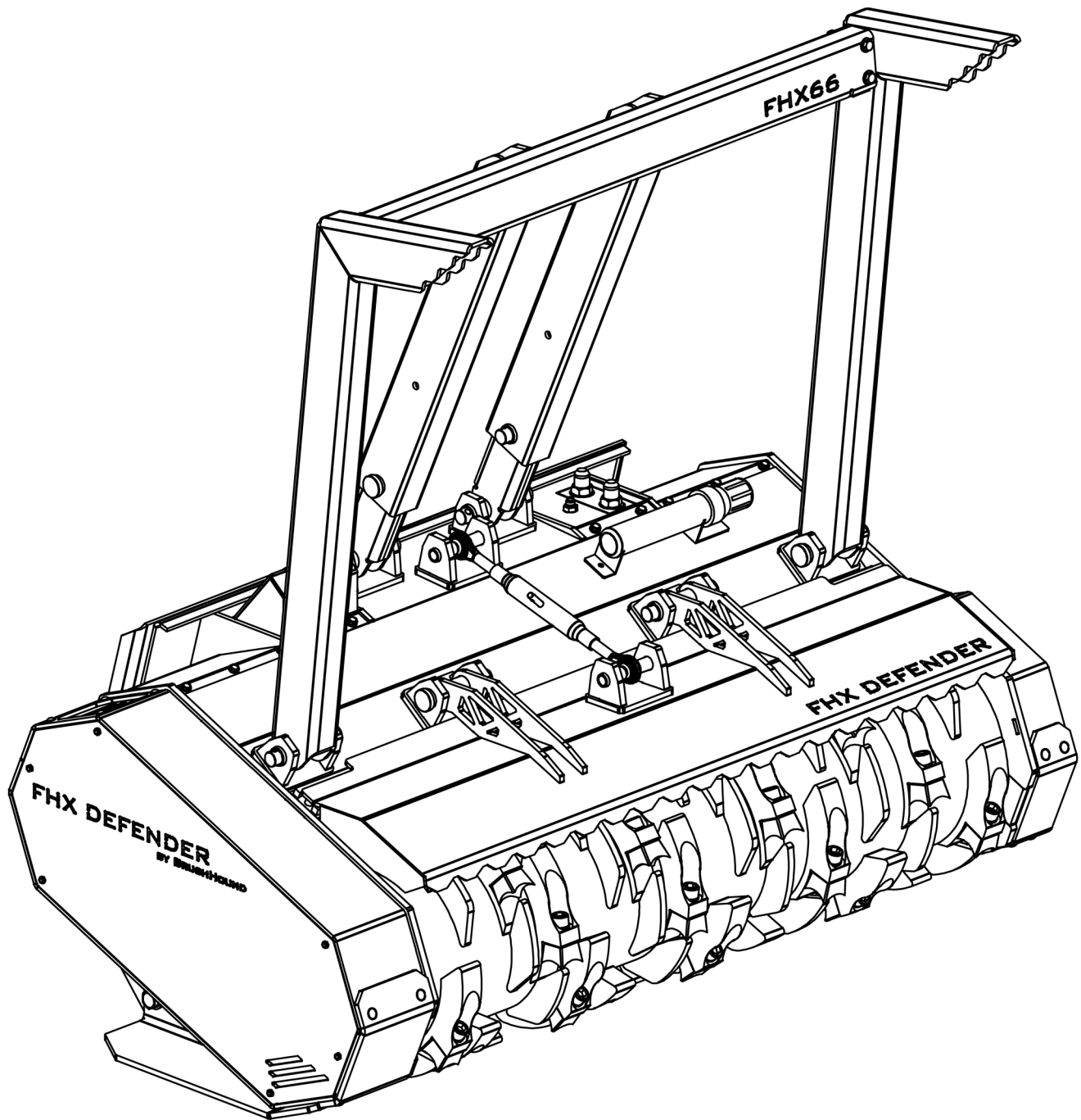
- 1) Check for excessive grease in the bearing areas, cleaning off any excess found.
- 2) Clear debris from the hydraulic hose area, bearing area or any other area that may experience excessive heat.
- 3) Clean the inside and top of the Attachment with a pressure washer, removing any accumulated mud, grass or other debris. Keep in mind that mud build up on the cutter drum can cause imbalance.
- 4) Touch up paint where needed as this will help prevent your Attachment from rusting.

Hydraulic Maintenance

Before performing any maintenance on the hydraulics of the Attachment, ensure that circuit is depressurized. If you believe that there is a hydraulic leak, do not search for a leak with your hands, rather use cardboard or a piece of paper to search for the leak. The hydraulic circuit should be connected as follows:

- 1) Pressure In - This attaches to your Power Unit's high pressure line. On some units it may be necessary to switch the male and female quick connectors depending on the Power Unit's configuration.
- 2) Motor Protection Valve (MPV) - The MPV protects the motor from pressure surges that would damage the motor's internal seals by means of a pressure relief valve.
- 3) Supply Line - As the drum is only capable of cutting when spinning in one direction, the supply line should always run from the pressure port of the MPV to the in port side of the motor.
- 4) Return Line - The return line should connect the out port side motor port to the relief port of the MPV.
- 5) Pressure Out (return line out) - Connect to the return side of your Power Unit's hydraulic circuit.

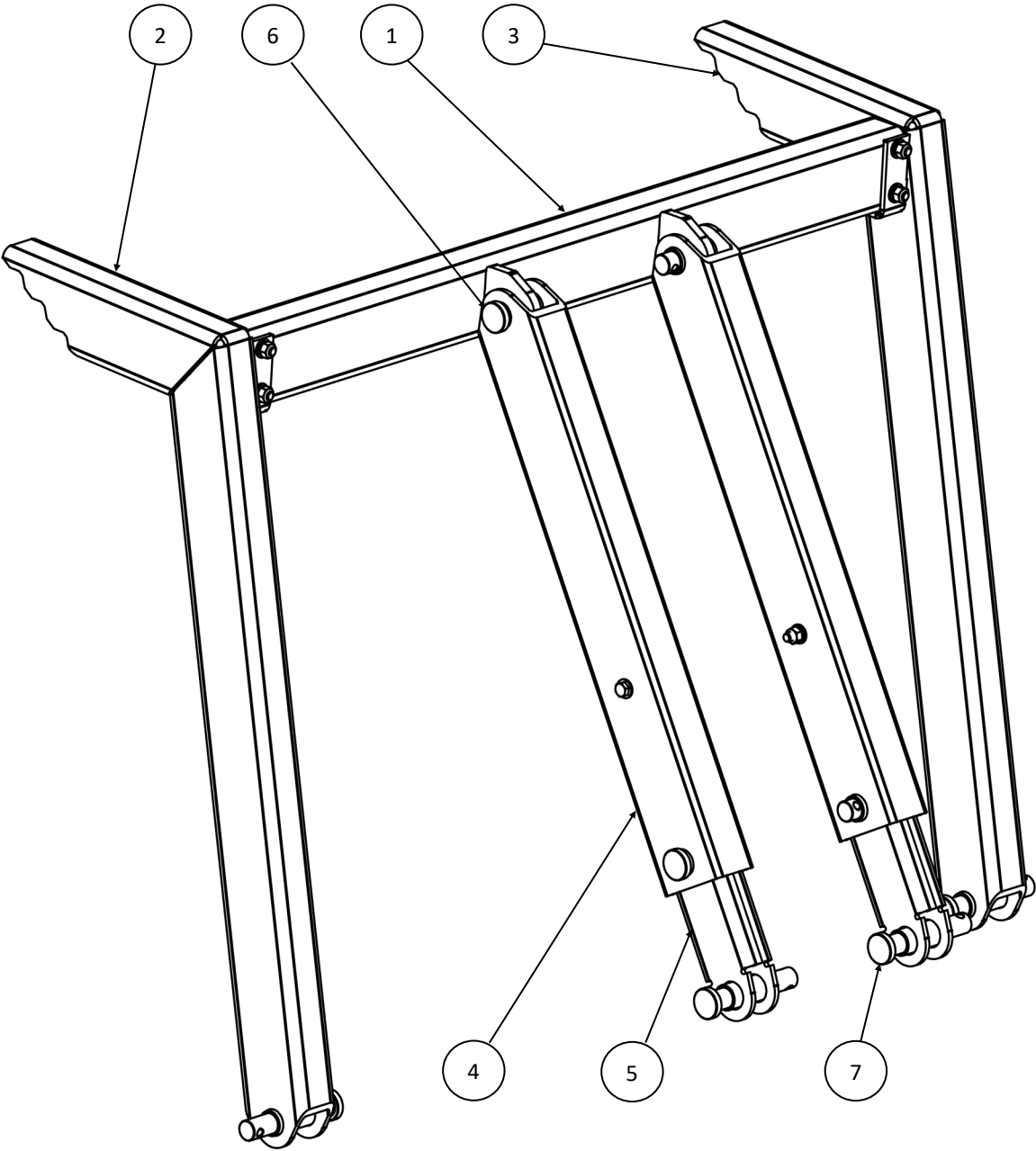
Parts Catalog



FHX Series Forestry Mulcher Attachment

Bumper Assembly

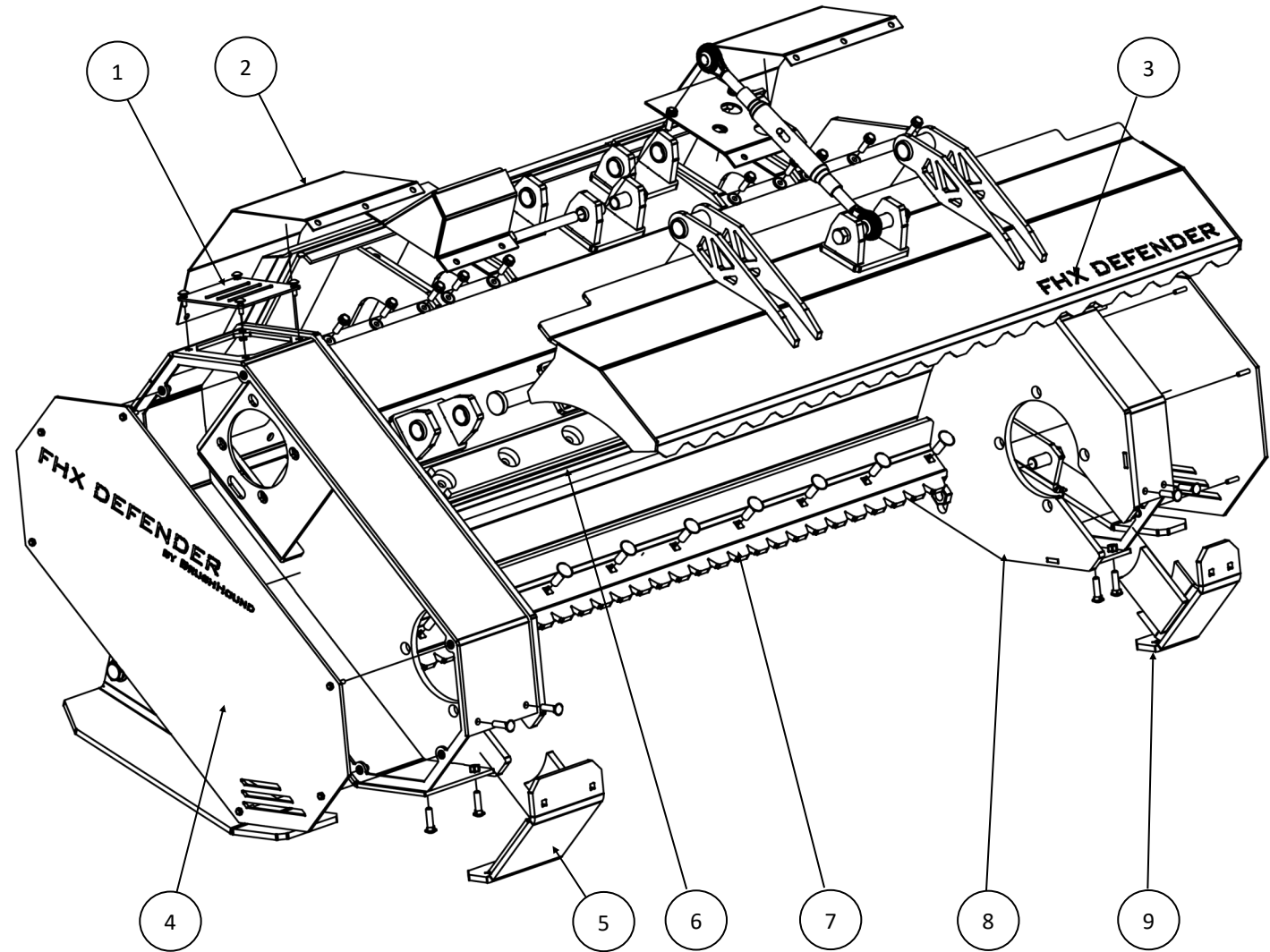
#	Description	Qty	P/N
1	Bumper	1	04182
2	Bumper Font Arm LH	1	04195
3	Bumper Font Arm RH	1	04192
4	Bumper Adjustment Upper Arm	2	04180
5	Bumper Adjustment Lower Arm	2	04178
6	1" X 3" Pin	4	N/A
7	1" X 5" Pin	4	N/A



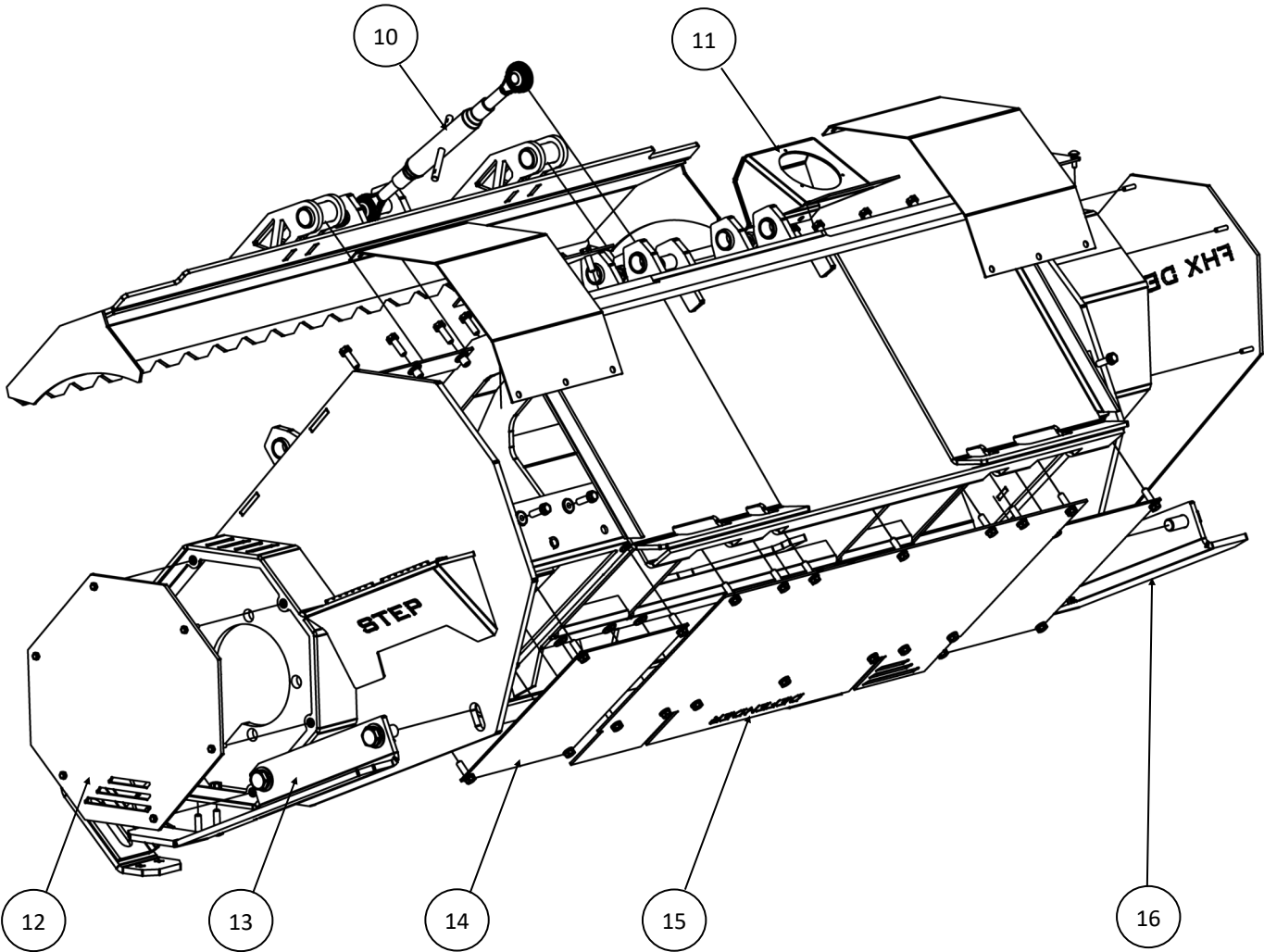
Parts Catalog

General Parts

#	Description	Qty	P/N
1	Drive Vent	1	2620-RH-3
2	Motor Access Door	2	2621-RH-3
3	Cutter Door	1	04213
4	Pulley Housing Cover RH Drive	1	04198
5	Drive Reinforced Slot Cover	1	2547-RH-4
6	Upper Recutter	1	2626-RH-3
7	Lower Recutter	1	2627-RH-3
8	Body Weldment	1	04203
9	Idle Reinforced Slot Cover	1	2546-RH-4



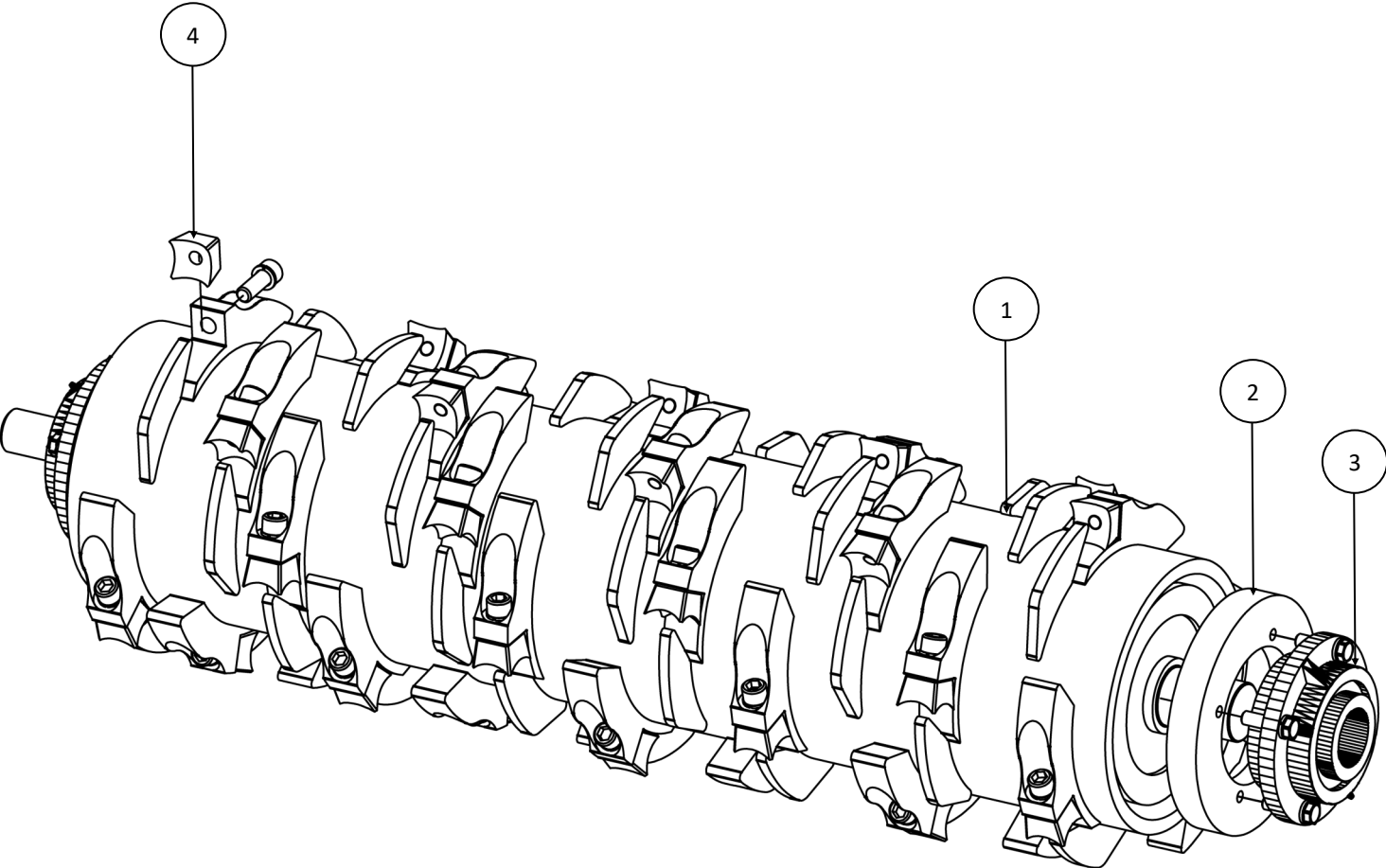
#	Description	Qty	P/N
10	Top Link	1	03470
11	Gauge Holder	1	04199
12	Access - Idle	1	2617-RH-3
13	Skid Shoe - LH Idle	1	04201
14	Motor under Cover	2	04173
15	Bottom Cover	1	2624-RH-3
16	Skid Shoe - RH Drive	4	N/A



Parts Catalog




Cutter Drum Assembly

#	Description	Qty	P/N
1	Cutter Drum Weldment	1	04174
2	Labyrinth	2	2625-RH-3
3	Cutter Drum Bearing	2	CD-3050
4	Quadco Knife	36	QT3000
	Quadco Knife Upgrade		QT4000/QT5000



Additional

Torque Specifications

Nominal Dia. (in)	Threads per inch	 SAE J429 Grade 5	 SAE J429 Grade 8			 Holo-Krome Grade 9		
		Tightening Torque			Tightening Torque			Tightening Torque
		Ecoguard	K=0.15	K=0.20	Ecoguard	K=0.15	K=0.20	Ecoguard
Unified Coarse Threase Series								
1/4	20	66 in-lbs	76 in-lbs	101 in-lbs	93 in-lbs	107 in-lbs	143 in-lbs	109 in-lbs
5/16	18	136	157	209	192	221	295	225
3/8	16	20 ft-lbs	23 ft-lbs	31 ft-lbs	28 ft-lbs	33 ft-lbs	44 ft-lbs	33 ft-lbs
7/16	14	32	37	49	45	52	70	53
1/2	13	49	57	75	69	80	106	81
9/16	12	71	82	109	100	115	154	117
5/8	11	98	113	150	138	159	212	161
3/4	10	173	200	267	245	282	376	287
7/8	9	279	322	429	394	455	606	462
1	8	418	483	644	591	681	909	692
1 1/4	7	728	840	1121	1181	1363	1817	1384
1 3/8	6	955	1102	1469	1548	1786	2382	1815
1 1/2	6	1267	1462	1950	2055	2371	3162	2409
Fine Thread Series								
1/4	28	75 in-lbs	87 in-lbs	116 in-lbs	106 in-lbs	123 in-lbs	164 in-lbs	125 in-lbs
5/16	24	150	174	231	212	245	327	249
3/8	24	23 ft-lbs	26 ft-lbs	35 ft-lbs	32 ft-lbs	37 ft-lbs	49 ft-lbs	38 ft-lbs
7/16	20	36	41	55	51	58	78	59
1/2	20	55	64	85	78	90	120	91
9/16	18	79	91	121	111	128	171	130
5/8	18	110	127	170	156	180	240	183
3/4	16	193	223	297	273	315	420	320
7/8	14	308	355	474	435	502	669	509
1	14	470	542	722	663	765	1020	777
1 1/4	12	806	930	1241	1308	1509	2012	1533
1 3/8	12	1087	1254	1672	1763	2034	2712	2066
1 1/2	12	1426	1645	2194	2312	2668	3557	2710

Frequently Asked Questions

Q.Where is the serial number for my machine?

A.The serial number for your attachment is stamped next to the mounting rail on the discharge side of the attachment.

Q.Where do I find replacement parts?

A.First check your local equipment dealer and if they do not have the parts, ask them to order from the BrushHound factory.

Q.How often should I change my knives?

A.Replacing the cutting knives is entirely up to the owner. The knives provided can be sharpened without removal from the machine and they can be rotated up to 3 times. The only time a knife should definitely be replaced is if cracks or significant breakages occur or if knife is completely worn.

Q.How do I replace my knives?

A.See the Adjustments/Maintenance section for a detailed explanation on how to replace your knives.

Q.Are there any advantages to reversing cutter drum rotation?

A.Under no circumstance should the rotation of the drum ever be reversed.

Q.Sometimes the attachment loses RPM very rapidly even though its use has not changed, why?

A.Allow drum RPM to fully recover before continuing with operation. The drum acts as a reservoir for energy and the faster it spins the more energy it stores. Let the drum speed up for another 2 to 3 seconds after it seems ready to use before resuming operation.

Q.When connecting my hydraulic hoses, is there a specific way they should be attached or can any hose go to any fitting on the operating vehicle?

A.You will notice that one hose has a female end and the other hose has a male end. The female hose attaches to the male fitting on the power unit and the male hose attaches to the female fitting on the power unit. See the Hydraulic Plumbing Diagram for more details.

Q.Do I need to fill the hydraulic motor with oil before I use the attachment?

A.No, you do not. Attachments are tested at the factory prior to shipment and come filled with high quality hydraulic fluid.

Q.When I am replacing hydraulic fluid, how much should I add?

A.Consult your power unit's maintenance manual for fluid levels and information.

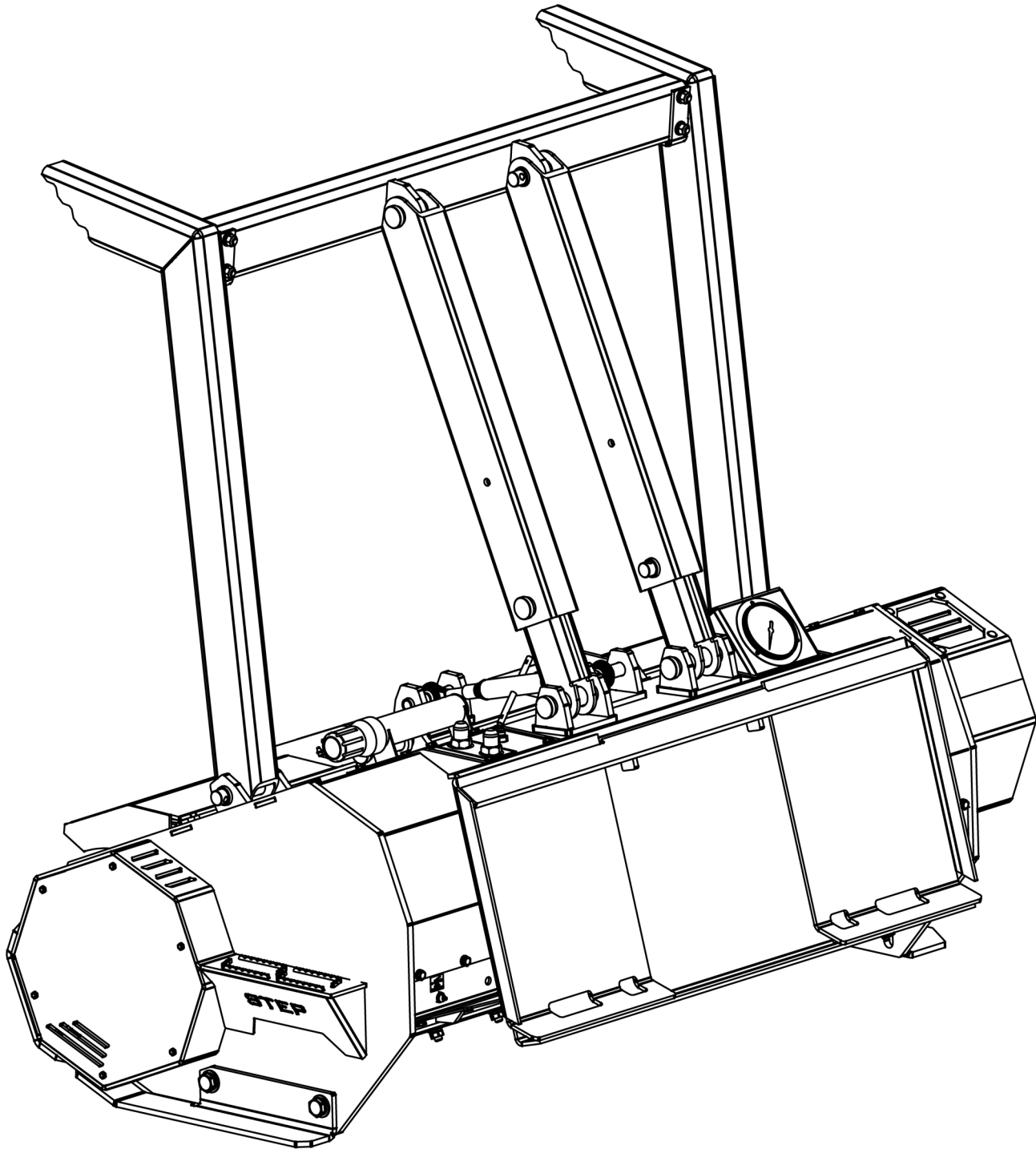
Additional

Notes

FHX Series *by*



**BRUSH
HOUND**



Power unit must be equipped with 1/2" LEXAN® glass (or equal) and falling object protection.



VALLEY TOOL
MANUFACTURING COMPANY

PO Box 220 | 2507 Tully Road | Hughson, CA 95326 USA | 800 426-5615

www.Valleytoolmfg.com

FHX DEFENDER OWNER'S MANUAL