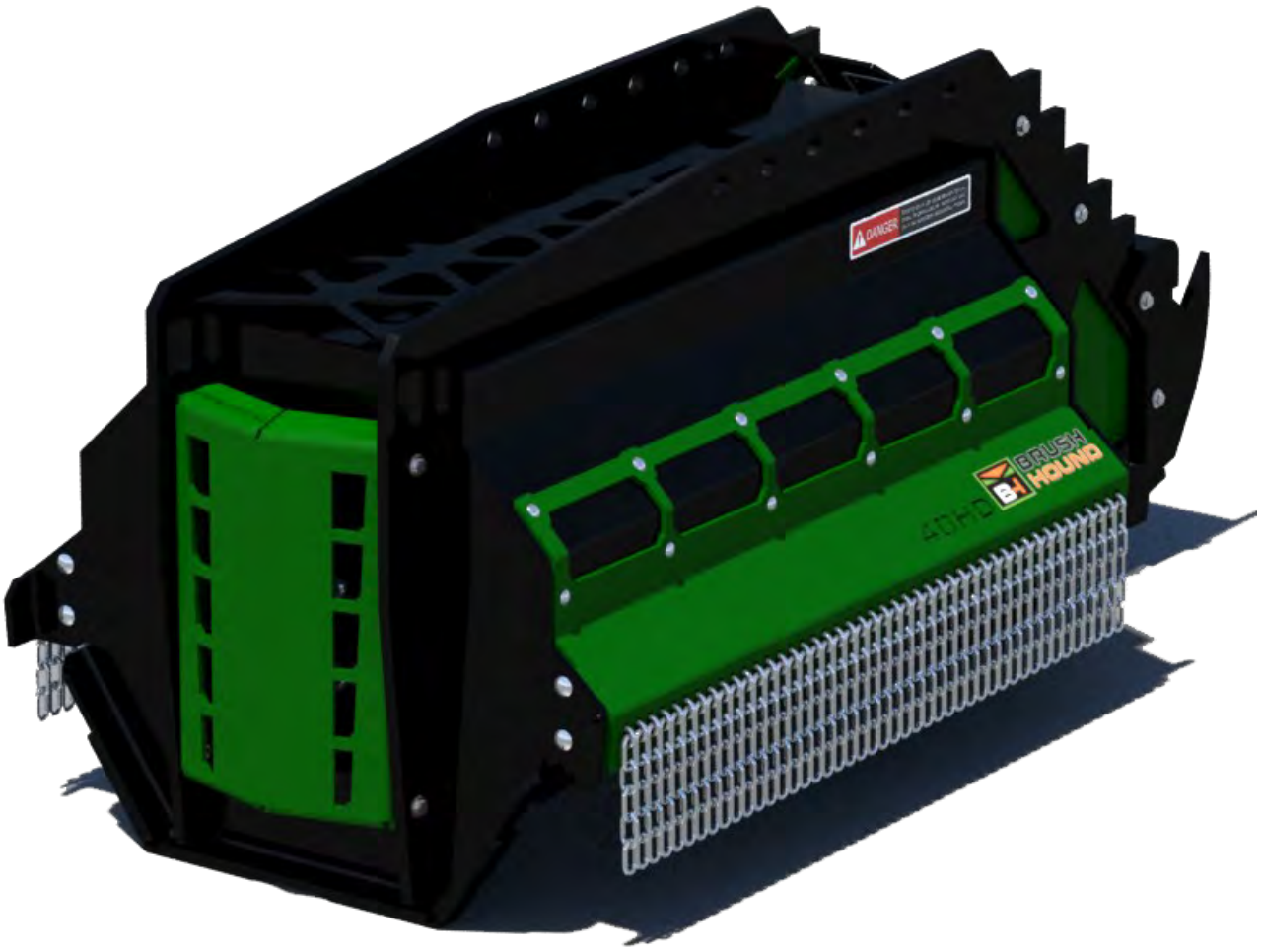
BRUSHHOUND EX OWNER'S MANUAL

EX Series *by*

BRUSH HOUND



VALLEY TOOL MANUFACTURING COMPANY

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

www.Valleytoolmfg.com

Delivery Report Form

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

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 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.

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_____

Sales Rep. Signature_____ Date_____

Fax this completed form to 209-882-9001.

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Thank You

Dear Customer,

Thank you for purchasing a *RockHound Attachments BrushHound**. 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. *RockHound 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 *RockHound Attachments* when designing this shredder. Shielding, simple adjustments and other safety features were built into this shredder 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

RockHound 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 agricul-

ROCK HOUND Attachments

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**Patents Pending*

Important to Purchaser

Customer Ownership Registration

Prior to acceptance of the equipment, thoroughly check off the pre-delivery check list with your sales representative. Be sure you fully understand the operation, adjustment and safety rules as outlined in the Owner's Manual.

DELIVERY CHECKLIST

-Check to make sure attachment is completely lubricated.

-Owner is shown all grease fittings and proper daily maintenance routine.

-Owner is shown correct operation procedures including the correct height of the attachment.

-All bolts checked for tightness.

-Front demolition door option was explained.
-All knives and blade bolts are in place.
-All shields in place.

-Procedures for attaching RockHound Attachment demonstrated to end user.

-Starting procedures explained to end user.

-Operation guidelines as outlined in Owner's Manual explained to end user.

-Replacement of attachment knives explained to end user.

-ALL safety precautions thoroughly read and understood.

Warranty

RockHound Attachments guarantees the BrushHound Brush Shredder to be free from defect in material and workmanship for a period of One Year dating from delivery to the original owner. The obligation under this warranty, statutory or otherwise, is limited to the replacement and/or repair, at your authorized RockHound dealer, of such part or parts that shall appear to us, upon inspection, to have been defective in material or workmanship and not altered in any way by the customer or other parties.

This warranty shall not apply to vendor warranted items such as bearings, belts and gearboxes or other parts not manufactured by RockHound Attachments. Such being subject to the warranty of their respective manufacturers.

No expressed, implied, or statutory Warranty other than herein set forth is made or authorized to be made by us. RockHound Attachments shall not be liable for consequential damages of any kind, including but not

1) Safety

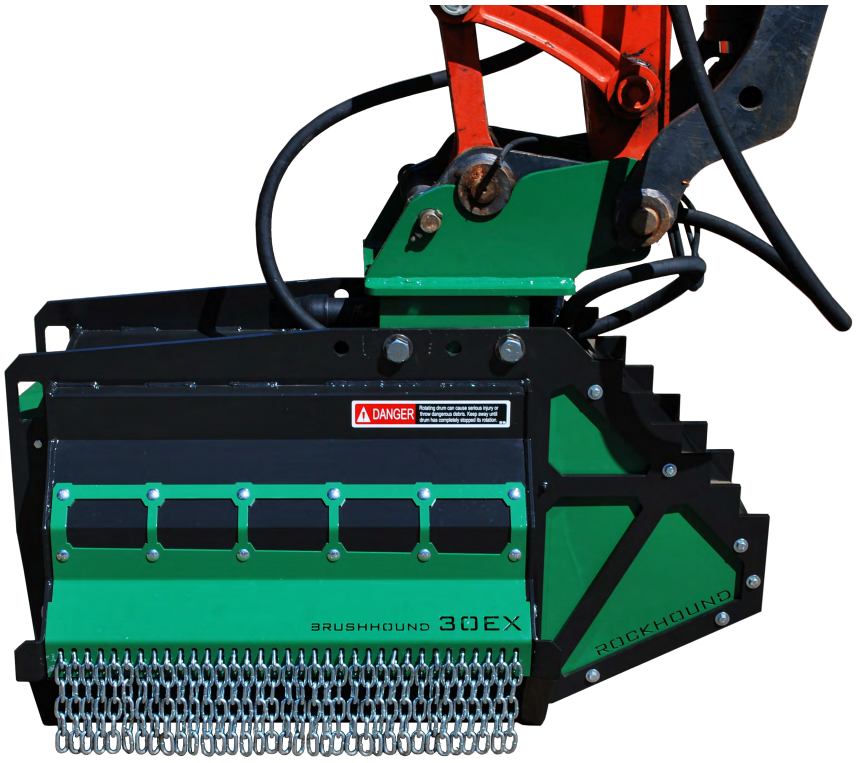
Failure to heed any of these warnings may result in personal injury or death.

I) Operational Safety

- **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.
- 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 300 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.

II) 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 RockHound dealer for replacements.
- Maintain all safety decals and make sure they are visible to the operator. If decals are worn, contact your nearest RockHound 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 are 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 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.



2) Basic Operation

I) Attaching to the 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 backhoes and excavators, your Attachment is specifically configured for your Power Unit and can not necessarily be placed on another Power Unit as is. Specifically, the mount and hydraulic motor were selected to mate to your Power Unit's arm and optimize performance based on your hydraulic system, respectively. 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.*

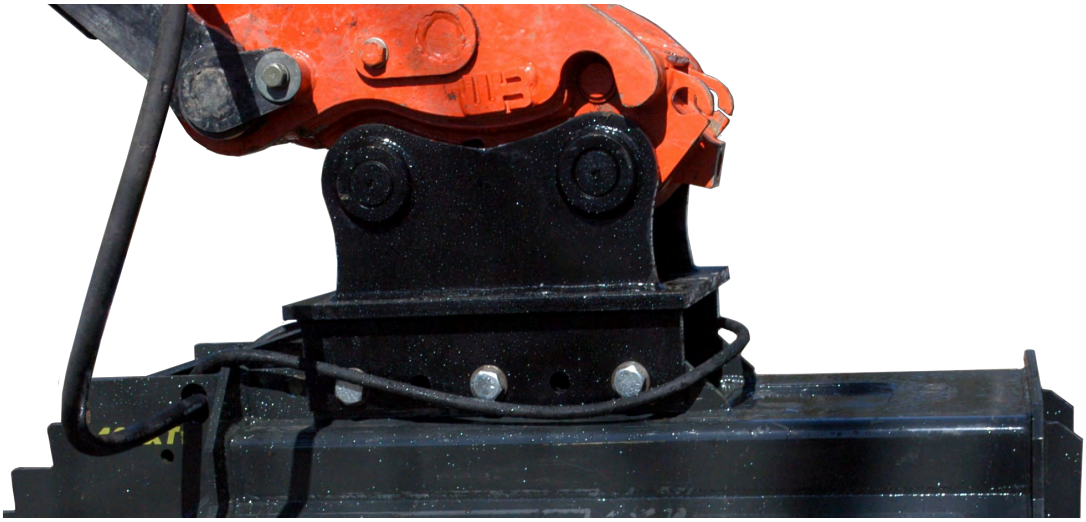
The person that is attaching your BrushHound product should be familiar with the attachment and removal of regular buckets from a backhoe or excavator and be able to do so safely. Attachment should be performed on flat ground away from obstructions. During attachment, keep hands out of pinch points and away from the blades to avoid injury:

1) Ensure that the appropriate mount for the Power Unit is attached to the BrushHound product using the 4 provided 1" bolts (See the "Optional Mounts" section for details on switching mounts).
2) Lower the Power Unit's arm into position and attach the mount in the same way you would attach the bucket.
3) Connect Attachment's hydraulic lines to your Power Unit's auxiliary hydraulic circuit. If your Power Unit does not have an auxiliary circuit, fully retract the thumb and use your thumb's hydraulic circuit (See the "Hydraulic Plumbing" section for details on the appropriate connection of hoses to the Power Unit). Ensure that all fittings are connected tightly and that quick couplers have fully engaged.
4) Make sure that your Power Unit is set to "Hydraulic Breaker Mode" (one way flow). If your Power Unit does not have a hydraulic breaker mode or one way flow, you may need to install a case drain line.

II) 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.



Some examples of Model Specific Mounts

III) Shut Down Procedure

5) 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.

6) 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.

2) Basic Operation

IV) Running Your Attachment

The EX Series attachment is designed to cut all types of vegetation, such as grass, heavy brush and medium sized trees. The condition of your terrain and the material to be cut should be evaluated for the best results. It is important to remember that brush cutting covers a wide range of conditions and is probably the most dangerous type of mowing because of the hidden objects.

a) House Rotation Shredding

Thinner brush like material on relatively flat terrain can be cut by rotating the house control from side to side and keeping the cutter head just above ground level. With your Power Unit in a stationary position, rotate the housing to sweep the attachment along the ground held at the desired cut height. When the area is cleared, move the power unit forward, leaving adequate space between the edge of vegetation and the housing for good visibility, and resume cutting. Keep in mind that heavy brush may require multiple passes or slower movement speed, if you are experiencing decreased RPMs while cutting try slowing your sweep rate or increasing your cut height.

b) Top Down Shredding

Thicker brush and trees can be shredded from the top down. Starting from a stationary position, raise the boom and curl the head so that it is mostly perpendicular with the tree, but not enough that the knives become visible. If the tree is taller then the boom can reach and relatively thin at the maximum height, the EX Series has been designed to be able to cut into the tree from the side to assist with clipping the tree top off. With the tree top knocked off, work your way down to the ground, sweeping side to side if necessary, grinding the stump to ground level and shredding any debris that fell off the tree during the process, eliminating any clean up by hand crews.

Note: *Shredding heavy brush and trees requires the full output of the horsepower your Power Unit has available. Make sure your Power Unit's pressure relief settings are set to the specified PSI on the manufacturer's spec sheet to maximize horsepower available to the Attachment. Also, if the drive circuit is engaged on your Power Unit, a significant portion of the horsepower available is directed towards movement which is why it is not recommended to drive the Power Unit and shred simultaneously. All heavy shredding with the EX Series should be performed while stationary.*

House Rotation Shredding

Top Down Shredding

2) Basic Operation

V) Basic Guidelines for Running Your Attachment

- 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 1700-2000 RPM.
- 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.
- 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.
- Never allow bystanders to be near mowing or brush cutting or to climb on the machine.
- 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.
- When cutting large diameter material, lay the tree down and plane the tree from side to side. This will proved a better, finer mulch and is quicker and easier than trying to grind a tree of +6" diameter from the top down.
- 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. Watch the BrushHound video CD to observe the proper cutting technique for your conditions.
- Check your discharge path. Most mowers and brush cutters will have some combination of material discharge system. Always make sure you know your discharge direction and discharge guards are properly secured and in good working order. Never start the attachment if the safety guards are not securely fastened to the attachment.
- 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.

VI) Transport, Removal & Storage

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.

c) 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 boom to remove it from the Attachment.

d) 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.

e) 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.

3) Adjustments & Maintenance

I) Service Safety

- Wear gloves and eye protection and exercise care when handling blades as they are 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 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.

II) Lubrication

The EX Series has 2 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 (see "BrushHound Recommended Greases" section in the appendix). Over-greasing seals and bearings can cause damage, if grease purges from the bearing's seals too much grease has been applied. If the purged grease is black and smells burnt, it may be a sign of chronic over-greasing.

a) Idle Bearing

The idle bearing is located under the Idle Side Bearing Cover and has a grease fitting located on the bearing's mounting flange. The idle bearing comes pre-packed with high quality grease and its lubrication schedule is dependent on running conditions. Under normal operation, 2-3 pumps of grease should be applied after every 40 hours of operation (or 1-2 months when usage is sporadic). If operating conditions are abnormally wet, 2-3 pumps of grease should be applied daily.

b) Housed Drive Bearings

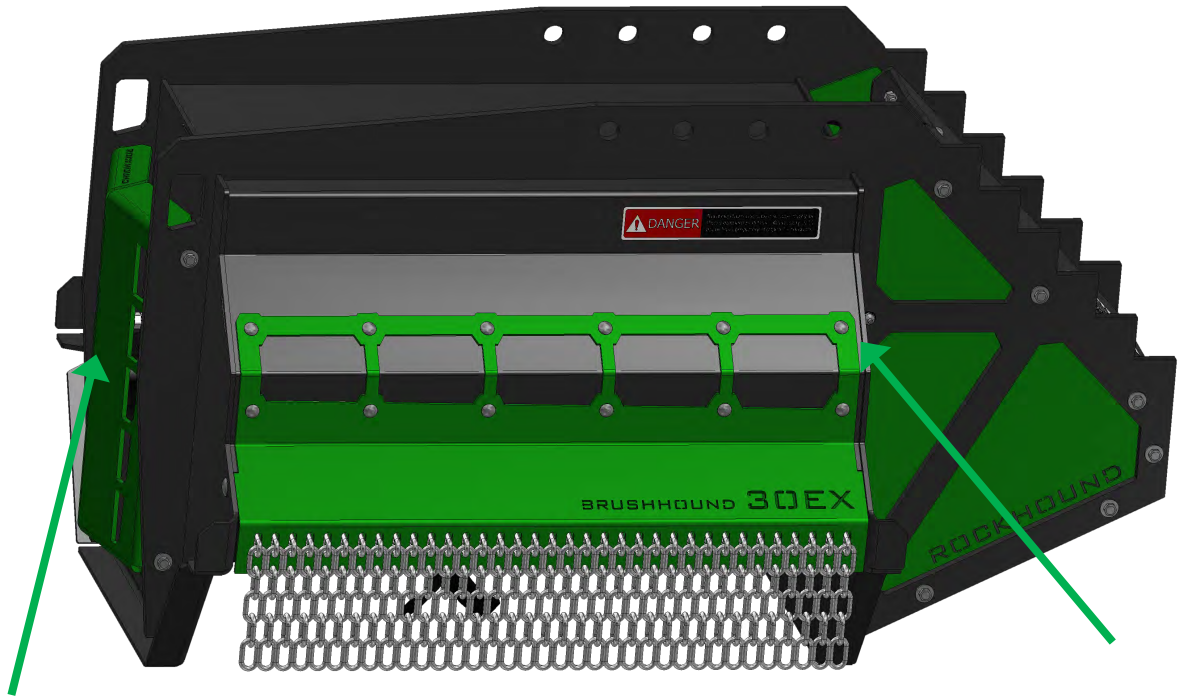
The motor side has a set of 2 angular contact bearings in a housing on the drive shaft with a grease fitting located on the left motor cover. The housing comes pre-packed with high quality grease and requires relatively infrequent greasing. Only 2-3 pumps of grease should be necessary every 3 months during normal operation. If the motor is removed or the bearings changed, the housing should be repacked as follows:

- 50% fill inside bearing
- 100% fill in housing

III) Wearable Component Maintenance

a) Rubber Isolation Disk

Located between the drive side end plate and the bearing housing is a reinforced rubber isolation disk that isolates the vibration of the drum and motor from the rest of the machine. The disk itself has a lifetime of over 1000 hours, but should be inspected regularly for excessive wear. If the disk appears worn thin or torn it should be replaced. It should also be replaced whenever the cutter drum is removed.



Grease Fitting Locations

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. The hoses passing through the left motor guard should also be inspected for wear caused by rubbing against the bulkhead.

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.

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.

3) Adjustments & Maintenance

IV) Knife Maintenance

Since the EX Series is designed to finely mulch wood with relatively low horsepower, 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, or replaced depending on the circumstances .

a) Sharpening

When sharpening tools are available, the knives can be sharpened using a grinder. Simply run the grinder in plane with the flat cutting surface of the knife.

a) Replacing

The final option is replacement, simply unbolt the triple knife configuration from the hanging ear on the cutter drum and replace it with a new set. Retighten with the same hardware previously used, unless the hardware is damaged or not in good working condition.

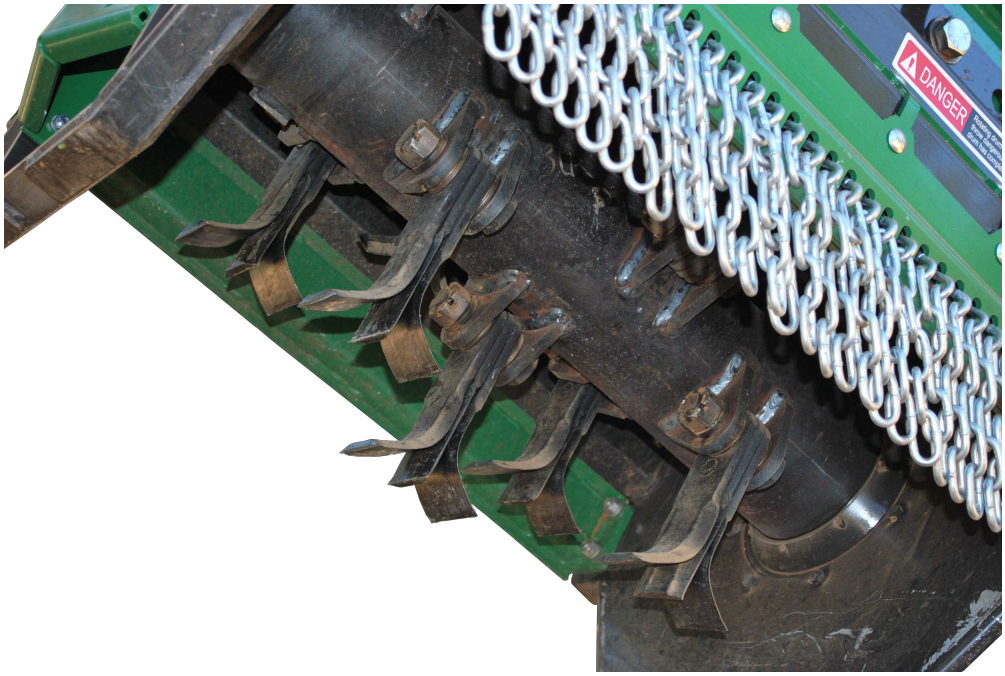
V) Cleaning Your Attachment

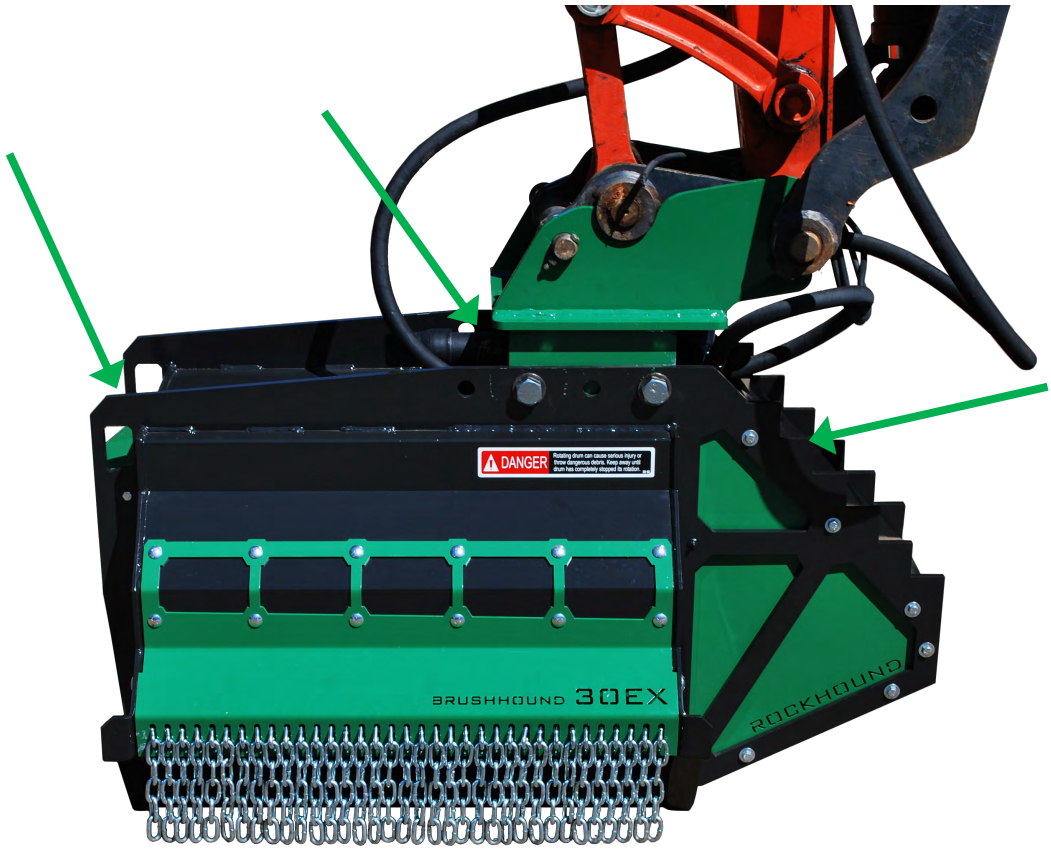
Cleaning your Attachment regularly will help prolong the life of both the paint and the safety decals as well as minimize the risk of unintentional fire.

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.

VI) Optional Mounts

Your Attachment comes with a mount custom made to fit your Power Unit, but additional mounts may be purchased to put your Attachment on more than one Power Unit. Mounts are connected to the Attachment by 4 provided 1” bolts, simply line up the holes on the mount with the corresponding holes on the Attachment, insert the bolts and secure with the provided nuts and washers. Check with your local Brush hound Dealer before changing Power Units to verify compatibility.





Cleaning Locations: Debris can collect on bearings, in the motor area, on top or on the rear deflection guard. Use a power washer to keep these areas clean.

3) Adjustments & Maintenance

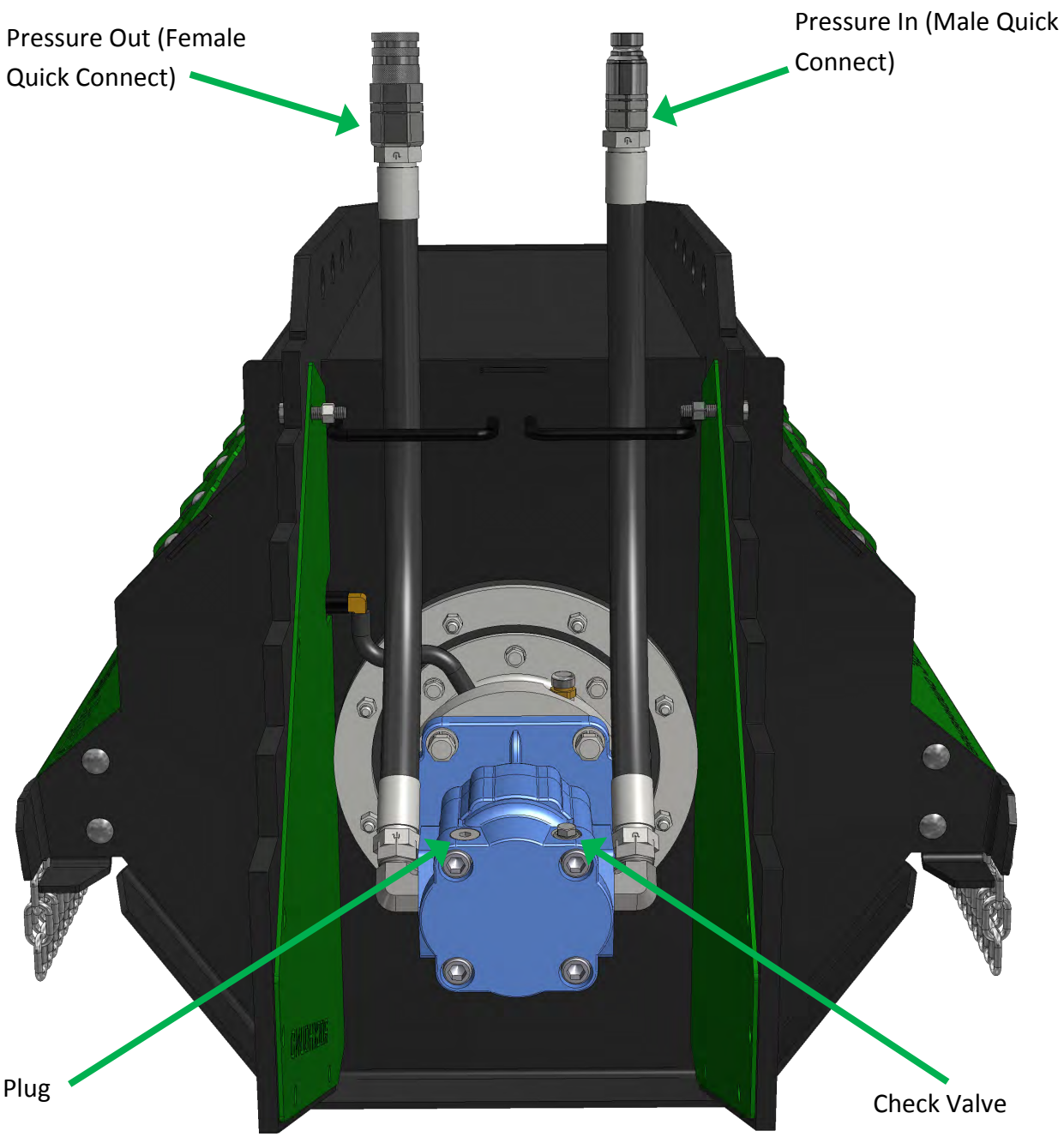
VII) Hydraulic Plumbing Diagram

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:

a) Pressure In (shown as male quick connect) - 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 however, the top hose remains the pressure in line.

b) Pressure Out (shown as female quick connect) - Connect to the return side of your Power Unit's hydraulic circuit.

c) To Reverse cutting direction, You would need to switch the Male/ Female hose location or the Male/ Female quick couple location. In addition the check valve location will need to be switched as well.



On quick couplers, the male end is usually the pressure in. Quick couplers may need to be exchanged on hose ends depending on the power unit. If oil is flowing and there is no movement, this may be due to coupler orientation.

4 FAQs

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?

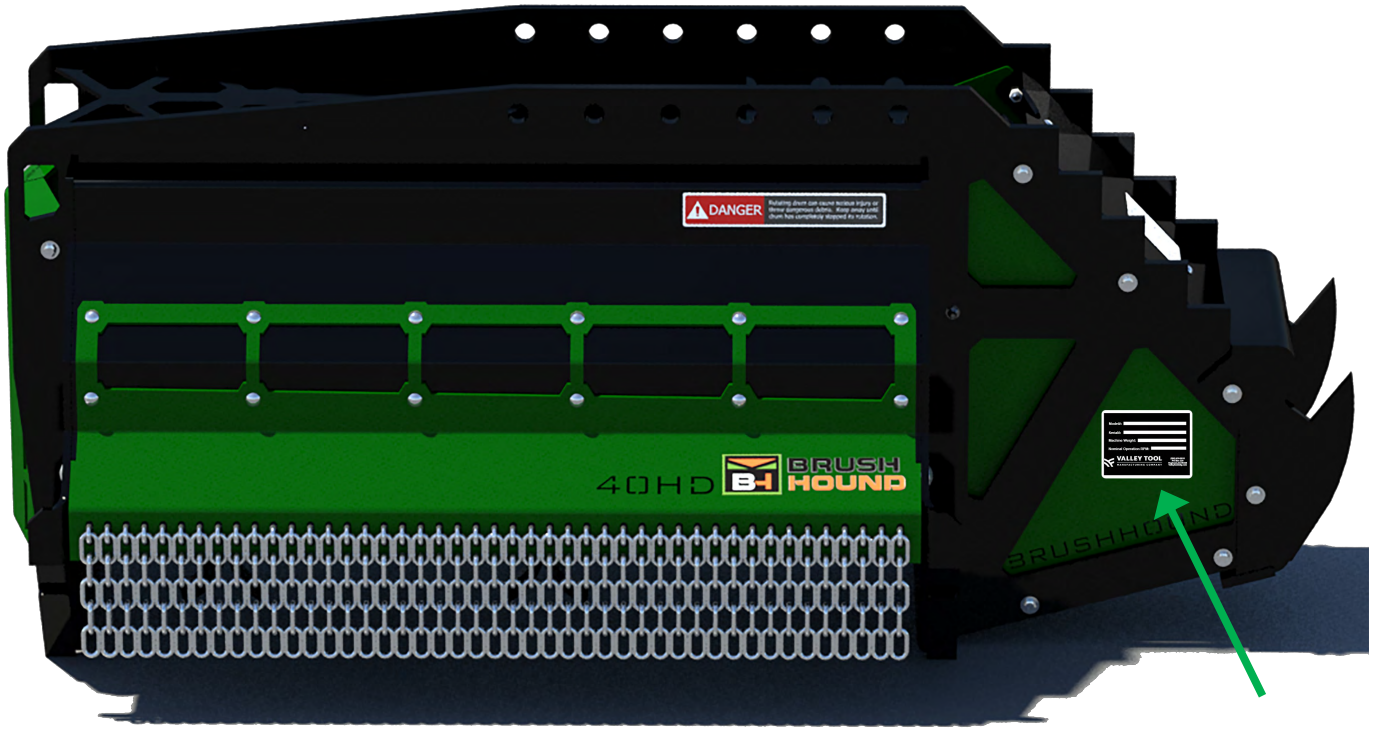
A. Allow drum RPM to fully recover before continuing with operation. The drum acts as a reservoir for energy and the faster it spins the more energy it stores. Let the drum speed up for another 2 to 3 seconds after it seems ready to use before resuming operation.

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. How can I prevent my hydraulic hoses from coming off during operation?

A. Be careful! Make sure the hoses are pressed all the way into their corresponding fittings on the power unit. Turn the female coupler collar past bump to cock. Give them a slight tug to make sure they are se-

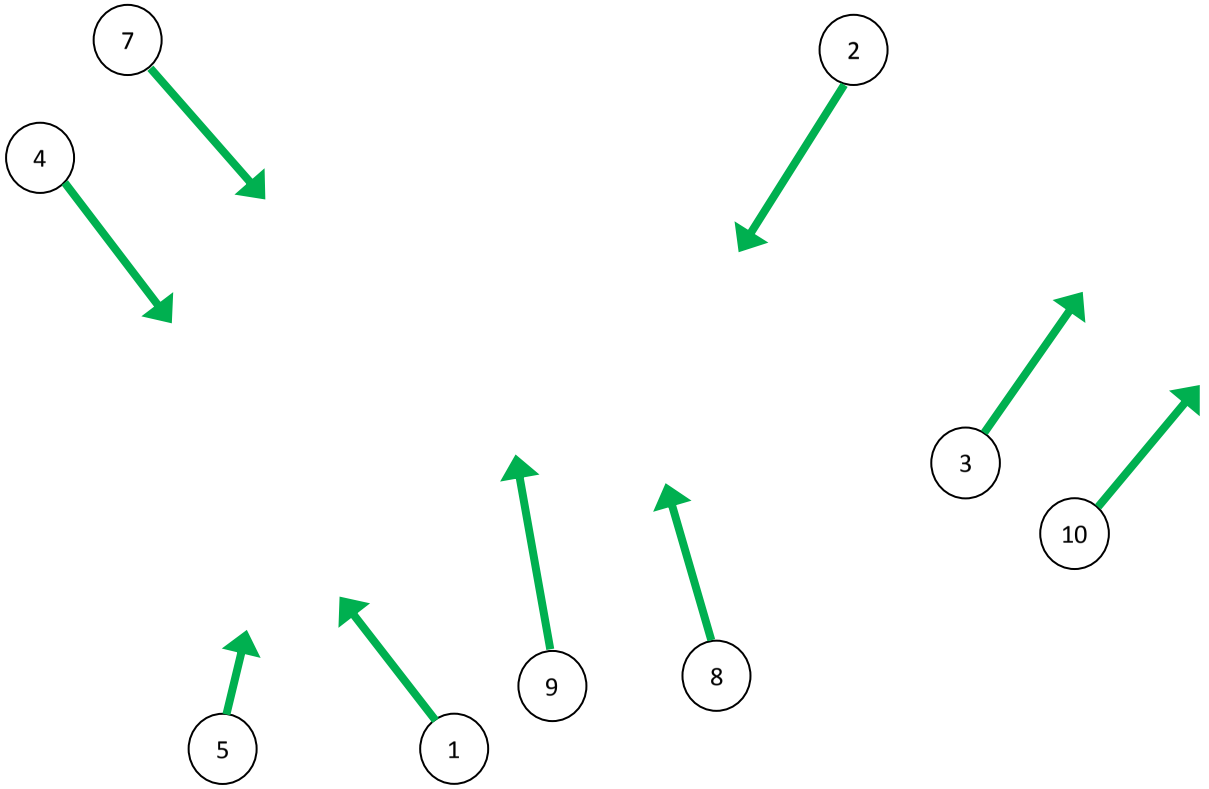


Serial Number Plate

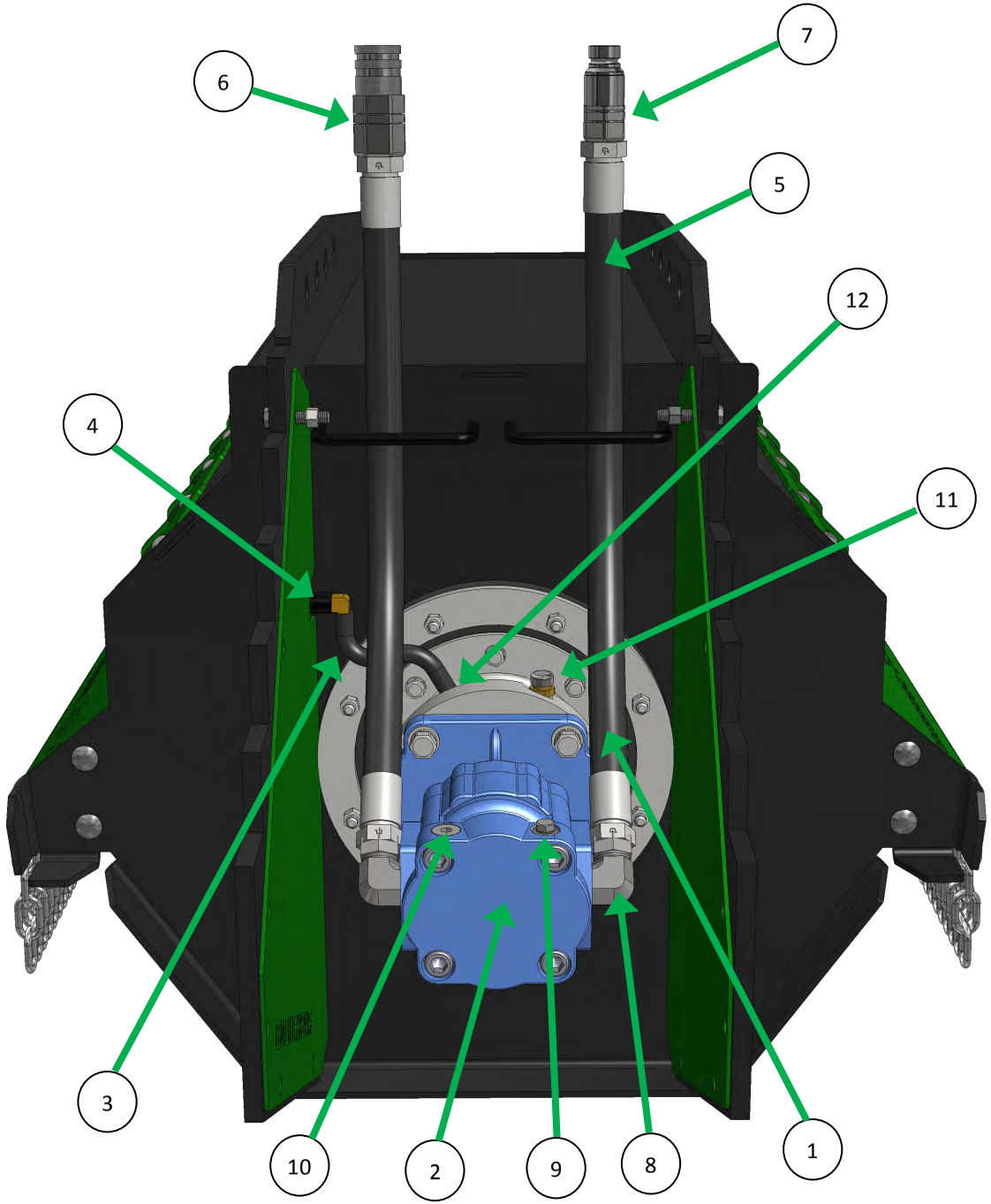
EX Series - Brush Shredder

Parts Catalog

General Parts



Hydraulic Assembly



#	Description	Qty	P/N
1	3/4” Hydraulic Hose - 30”	2	HY-2560
2	Hydraulic Motor	1	
3	1/4” Hose	/ft.	HY-2420
4	Hose Barb 90	2	HY-2425
5	3/4” Hydraulic Hose - 100”	2	HY-2550
6	3/4” Female Flatface Coupler	1	HY-2530
7	3/4” Male Flatface Coupler	1	HY-2530
8	1” x 3/4” 90° Adapter	2	HY-2545
9	Check Valve	1	
10	Plug		
11	Breather	1	BP-2730
12	Hose Barb Straight	1	HY-2430
13		1	

EX Series *by* BRUSH HOUND

BRUSHHOUND DEFENDER OWNER'S MANUAL

VALLEY TOOL MANUFACTURING COMPANY

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