

FX46 Defender
Forestry Mulcher
Owners Manual



FX46 DEFENDOR OWNER'S MANUAL



VALLEY TOOL
MANUFACTURING COMPANY

PO Box 220 | 2507 Tully Road | Hughson, CA 95326 | 800-426-5615
www.valleytoolmfg.com



Table Of Contents

Introduction

Thank You	1
Warranty	2

Safety

Operational Safety	3-4
Maintenance Safety	4

Basic Operation

Transport / Storage	5
Attaching to Power Unit / Removal from Power Unit	5-6
Starting / Shut Down / Running	7-8
General Guidelines	9

Adjustments & Maintenance

Lubrication	10
Wearable Components	11
Knife Maintenance	11-12
Cleaning Attachment	12
Optional Mounts	12
Hydraulic Maintenance	13

Parts Book

Top Level Assembly	15
Top Level Assembly	16
Asy Drive Spindle Bearing Direct Drive	17
Asy FX46 Idle Bearing + Hardware	18
Cutter Drum	19
Motor Assembly	20
Decals	21

Thank You

Dear Customer,

We appreciate your purchase of a BrushHound attachment. The purpose of this manual is to familiarize you with the operation, adjustment, and maintenance of your new attachment. It was meticulously designed and constructed in accordance with the highest industry standards to provide you with years of dependable service. Before endeavoring to operate the machine, you must read this manual thoroughly and comprehend its operation. BrushHound reserves the right to make modifications to design and specifications, as well as additions and enhancements to its product, without incurring any obligation to retrofit previously manufactured items. If you ever require additional information, please contact your authorized dealer or customer service.



PO Box 220 | 2507 Tully Road | Hughson, CA 95326

1-800-426-5615

www.valleytoolmfg.com

BrushHound designed this attachment with operator safety as one of its primary considerations. This attachment was designed with shielding, simple adjustments, and other safety features whenever practicable. Ensure that you and your employees read and comprehend this manual. Only responsible individuals who have been trained to operate in a secure manner and who have read and comprehend this manual should operate any machinery.

Before accepting the equipment, verify the pre-delivery checklist thoroughly with the sales representative. See pg.5

Ensure that you have a comprehensive understanding of the operation, adjustment, and safety principles outlines in this manual.

BrushHound Attachments is solely owned by Valley Tool and Manufacturing.

Visit: www.valleytoolmfg.com

Product Registration



Valley Tool & Mfg. warrants each product to be free of manufacturing defects for a period of twelve months (ninety days for rental units) from the date of delivery to the original user/owner, subject to the limitations stated in this policy.

This warranty does not apply to defects caused in whole or in part by unreasonable use while the product is in the user's possession, 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 specifications; improper or insufficient lubrication; improper storage. This warranty also does not guarantee that the efficacy of every product will meet the purchaser's expectations.

Valley Tool & Mfg. shall not be liable for consequential damages of any kind, including, but not limited to, consequential labor costs or transportation charges associated with the replacement or repair of defective parts; lost time or expenses incurred as a result of said defects. Valley Tool & Mfg.'s total liability is limited to the purchase price of the product.

Valley Tool & Mfg. provides no warranty for trade accessories or any component or accessory of the product that was not manufactured by Valley Tool & Mfg., including any purchased components. These are subject to the respective manufacturer's warranties. If the product or any part of the product is modified or repaired in any manner not expressly authorized by Valley Tool & Mfg., or if closed components are disassembled prior to return, the warranty will be void. Closed components include gearboxes, hydraulic pumps, motors, cylinders, and actuators, among others.

Our obligation under the warranty is expressly limited, at our option, to the replacement or repair at Valley Tool & Mfg., of Hughson, California, or at a service facility specified by us, of the defective part or parts as determined by inspection.

We are not liable for unauthorized replacements or repairs. Warranty pre-approval is required. Authorized supplies will be sent to the dealer at no cost via UPS Ground. The duration of any implied or statutory warranties, such as warranties of merchantability or fitness for a particular purpose, is expressly limited to the duration of this written warranty. No one is authorized to make any other express or implied warranties on our behalf. This warranty cannot be extended, expanded, or altered unless authorized in writing by Valley Tool & Mfg. No warranty will be processed without a timely, signed "Product Registration"

The attachment owner is responsible for the travel time of mechanics and conveyance of the product to the authorized service dealer for warranty work.

The most reasonable and dealer-friendly return policy on the market is provided by Valley Tool & Mfg. The return policies for each of our brands are listed below. We accept returns within 30 days of the date of original shipment. Prior to return shipment, all returns must be approved by Valley Tool & Mfg, and a return authorization number must be issued. Returns must be in "like-new" condition and accompanied by all original factory packaging, including instruction manuals. If an item is received that is not in "like-new" condition or in its original packaging, additional fees will apply. After our staff has completed a thorough inspection of a return, refunds will be issued less shipping fees and any other potential damage fees. Please allow up to 30 business days for the processing of your account refund credit.

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

Safety

Safety messages are provided in this manual to describe possible risk during operation, maintenance and transportation. These messages are intended to convey known hazards but cannot be construed to describe all possible risks.

Signal words in Safety Messages:

DANGER

Danger: Indicates immediate risk of serious injury or death.

WARNING

Warning: Indicates possibility of serious injury or death.

CAUTION

Caution: Indicates possibility of minor injury.

NOTICE

Notice: Indicates possibility of property damage, possible machine failure but no immediate risk to personal injury.

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

Operational Safety

Before operating this machinery read the owner's manual thoroughly. Properly train all Operators. 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. 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. Never allow children or other people to ride on this machine.

DANGER

Keep bystanders and children of the clear work area during operation as debris can be discharged and cause serious injury or death. Maintain a minimum distance of 300 ft.

DANGER



300 FT
↔



DANGER

Risk of death or injury if moving parts are touched, or are brought into contact with any person. Keep away from all moving parts. Keep guards in place while operating.

Operate only with clear visibility, never in dusty, foggy conditions or at night. Risk of collision or contact with personnel. Crushing, piercing or cutting hazard.



WARNING

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. Do not use any body part to check for leaks. High pressure oil can cause severe injury or death.

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 hydraulic hoses unless the pressure has adequately dissipated.

Risk of serious injury or death due to thrown debris or broken knives. Do not operate closer than 300 ft to people, unprotected roadways or public areas without properly securing or warning protecting against accidental ingress. Risk of fire due to knife contact with stones, concrete, steel or other hard objects. Sparks can ignite dry grass, wood chips or other flammable material. Do not operate in dry grass, severe fire risk areas or in an area actively burning or recently burned. Consult local requirements around operation during Fire Weather Watch or Red Flag Warning conditions.

CAUTION

Rotating parts, Hydraulic hoses, motors and valves generate heat when operating. Do not touch when hot. Allow to cool before maintaining.

Risk of crushing, pinching or cutting due to motion of machine while maintaining. Ensure all energy is dissipated from hydraulic lines before maintaining. Secure power unit and attachment against motion with wheel chocks, or appropriately sized stands as required.

Remove key from power unit and read manual before maintaining. Risk of accidental motion if key is engaged on power unit. Knives wear parts and damaged components can have sharp edges that cause cuts or lacerations. Wear protective gear and handle these parts with care.

CAUTION



Keep Guards In Place

DC-296

Basic Operation

Pre-Delivery Checklist

- Check all nuts and bolts for correct torque.
- Check for shipping damage. If damaged, do not use the attachment until parts have been replaced or repaired.
- Check that all hydraulic hoses and fittings are tight.
- Check that all warning signs (decals) and safety treads are on the attachment and in their correct location. Replace any damaged signs or safety treads.

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

Transport

1. 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.

2. Transporting Attachment and Power Unit

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

Storage

1. Storage Between Jobs

- Clean the attachment thoroughly (See "Cleaning The Attachment" section for specific cleaning instructions).
- Lubricate the Attachment as recommended (See "Lubrication" section for lubrication details).

- Check wear parts and replace as necessary so you will be ready to operate when needed.
- Store in clean, dry place.

2. Storage On Power Unit

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

- Find a suitable, flat location to leave the Power Unit and Attachment.
- 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 to avoid tipping when disconnected.
- Turn off Power Unit and remove ignition key. Wait for drum to completely stop rotating before leaving unattended.

NOTICE

When you ordered this BrushHound attachment, it was custom matched to a specific power unit based on the details provided. Although BrushHound attachments can fit various backhoes and excavators, this attachment is specifically designed for the power unit specified during purchase and may not work with others. The mounting and hydraulic motor of this Attachment were chosen to match with the Power Unit's boom and hydraulic system. Only connect this attachment to power units with the same specifications as the one provided. If connection to a different power unit is required, contact a BrushHound dealer. Operating with the incorrect mount, motor, or pressure could damage the attachment.

The individual handling this BrushHound attachment should have experience with safely attaching and detaching standard buckets from backhoes and excavators. Always perform the attachment on flat ground, free from pinch points and blades to avoid injury, and make sure hoses are clear of the mounting plate during process.

Basic Operation

Attaching to Power Unit

- Secure the correct mount for the Power Unit to the BrushHound product using the four 1in bolts provided.
- Position the Power Unit's arm and fasten the mount just like a bucket.
- Link the Attachment's hydraulic lines to the auxiliary circuit of the Power Unit. If the Power Unit lacks this circuit, pull the thumb all the way back and utilize the thumb hydraulic circuit. For specifics on hose connections to the Power Unit, refer to the "Hydraulic Plumbing" section.
- Ensure all connections are tight and quick couplers are fully engaged.

Required: Pressure, Return, Case Drain.

- Set the Power Unit to the "Hydraulic Breaker Mode" (one-way flow).

NOTICE

Operation without case drain will result in motor failure.



Case Drain

Pressure

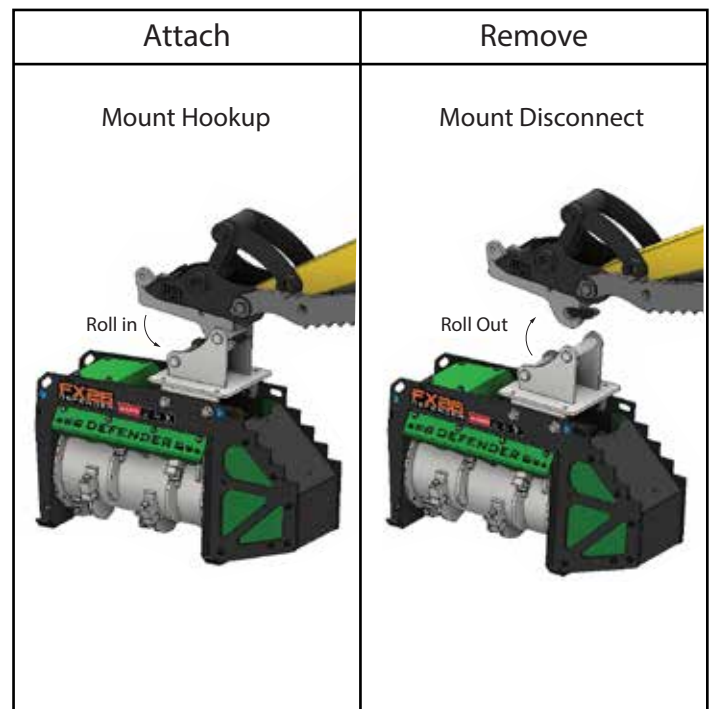
Return

Removal from Power Unit

- Choose a stable, level area to place the Attachment, ensuring it remains upright.
- Turn off the auxiliary hydraulic circuit and gently lower the Attachment until it touches the ground. Both front and back skid shoes should be in contact with the ground.
- Allow the drum to come to a complete stop and wait for the hydraulic system to depressurize before getting close to the attachment.
- Release the locking mechanisms on the mount of the Power Unit.
- Elevate the boom to separate it from the Attachment.

⚠ WARNING

Risk of crushing injury. Secure against movement.



Basic Operation

CAUTION

The operator using this BrushHound attachment should have proper training and wear appropriate safety gear. Before starting the power unit, ensure the attachment is correctly assembled and installed, including mount and hydraulic connections, and that all safety devices on both the power unit and attachment are functioning properly. Keep the work area clear of bystanders and children.

CAUTION

Avoid touching hot or sharp areas with bare skin, as they can cause injury. Never check for hydraulic leaks with hands, as the fluid pressure can pierce the skin, necessitating immediate medical attention. Use a piece of cardboard or paper to check any suspected leak.

NOTICE

FX Series attachments are crafted to handle a variety of vegetation, from grass and dense brush to medium-sized trees. To achieve optimal results, assess the state of the land and vegetation to be cut. When using this tool, always introduce larger branches or dense brush into the attachment's side where the blades strike downwards (the inlet side).



Starting Procedure

- Check that the attachment is in the down position and that the blades are not in contact with the ground. Start engine and set throttle to idle. Never engage above idle speed.
- Ensure Power Unit is set to the “Hydraulic Breaker Mode” (one-way flow). With the engine at low RPM engage the auxiliary hydraulic flow.
- 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.
- Attachment is ready for operation.

Shut Down Procedure

- Once the Work is finished, disengage the auxiliary hydraulics and prepare the attachment for storage or transport (refer to the “Storage and Transport” section for proper storage instructions). Turn off the power unit, set the parking brake, and wait for the attachment to stop rotating. Allow the hydraulic circuits to release pressure back to the reservoir, as they can remain pressurized even when turned off. Only approach or let others approach the attachment when it's safe to do so.
- Inspect the hydraulic motor, motor protection valve, and other areas visually for signs of excessive heat, debris, build-up, or leaks.

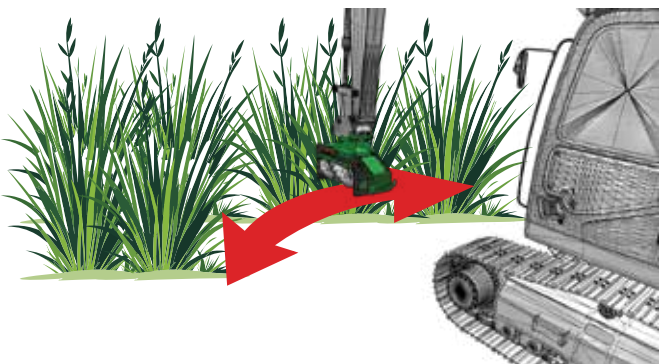
Running The Attachment

1. House Rotation Shredding Technique

This technique is for working with lighter brush on mostly level terrain.

- Move the house control from side to side, keeping the cutter head just above the ground.
- With the Power Unit stationary, rotate the housing to let the attachment glide over the ground, maintaining the chosen cutting height.
- After clearing a section, advance the Power Unit forward.
- Make sure to leave sufficient gap between the edge of the vegetation and the housing for clear visibility.
- Resume the cutting process.

For denser brush, make multiple passes or move at a slower pace, especially if performance seems to decrease.

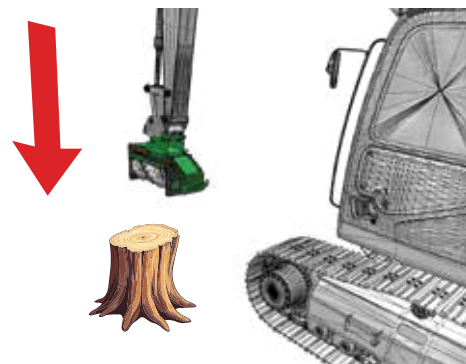


House Rotation Shredding

2. Top Down Shredding Technique

This method is ideal for thicker brush and trees.

- Begin from a stationary position.
- Elevate the boom and angle the head so its almost perpendicular to the tree. Ensure the knives aren't visible to avoid ejecting material at the cab/operator.
- If the tree's height exceeds the boom's reach and is relatively thin at its tallest point, the FX Series is designed to cut into the tree from the inlet side. This helps in trimming the tree top.
- Once the tree top is removed, start working downwards.
- Use a side-to-side sweeping motion if needed, grinding the stump until it's level with the ground. Avoid contact with ground.
- Shred any debris that might have fallen from the tree during the process. This eliminates the need for manual cleanup by crews.



Top Down Tree Shredding

Basic Operation

DANGER

Knife failure can injure or kill.

CAUTION

Never permit bystanders to be close to the mowing or brush cutting operations, nor allow them to climb on the machine.

NOTICE

Avoid using this attachment as bucket for digging up roots or spreading piles of dirt. Such misuse can cause damage that is not covered by the warranty, and repairs may be costly.

Basic Guidelines

This attachment operates most efficiently when the knives are sharp and rotating at full RPM. The recommended shaft speed for this unit can typically range between 1700-2200 RPM.

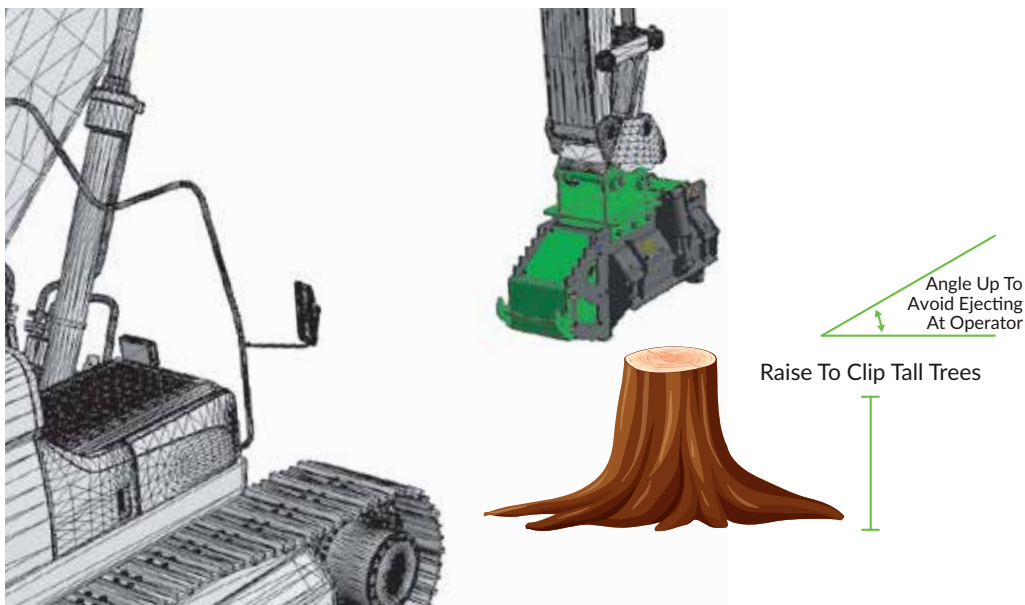
Before starting a job, inspect the work area and remove any hidden hazards, such as large rocks, utility lines, fencing, and concealed debris like broken glass or bottles. Projected debris may pose risks to operators, pedestrians, livestock, or cause property damage, so it is crucial to ensure the area is clear prior to commencing work.

During the work area inspection, watch for bees, fire ants, poison ivy, or poison oak. Additionally, be mindful of unsuitable working conditions, like overly saturated grounds that can create slippery conditions. Identifying potential hazards in the area will not only improve productivity but also enhance safety.

Overloading or “lugging down” the cutter can significantly reduce its cutting capacity and cause an increase in hydraulic oil temperature. Pay attention to the cutter drum speed, and lift it out of the cut until maximum speed is regained before resuming the operation.

Do not operate the attachment unless the safety guards are securely fastened in place.

Abuse may be indicated by drum damage or premature knife failure. To prevent abuse, always reduce the cutting load before the cutter drum speed drops significantly.



Adjustments & Maintenance

NOTICE

Before proceeding with any adjustments or maintenance, review all safety information provided in the safety section of the manual to ensure proper procedures are followed.

Lubrication

The FX Series included two lubrication points, identified by a blue sticker (DC-234) grease fittings. Use only BrushHound-approved grease or a compatible grease with similar specifications and EP additives. BrushHound recommends Mobilith SHC Grease for all FX grease points. Over-greasing escapes from the bearings' seals, this suggests excessive greasing. Expelled black greas with a burnt smell could indicate a history of over-greasing.

Procedure	10HR Daily	50HR Weekly	300 Hours
Knives	Inspect		Rotate/Replace
Bearings	Inspect	Grease	
Hoses	Inspect		
Guards	Inspect		Check Bolt Torque

1. Idle Bearing

The idle bearing can be found beneath the Idle Side Bearing Cover, equipped with a grease fitting on the mounting flange. It's factory filled with premium grease. Apply 1 pump of grease every 50 hours.

If bearing are frequently exposed to wet conditions, more frequent greasing may be necessary. Do not use Molybdenum grease.

2. House Drive Bearings

The motor spindle has a set of 2 angular contact bearings in a housing on the drive shaft with a grease fitting located on the hydraulic bulkhead cover. The housing comes pre-packed with high quality grease and requires relatively infrequent greasing. Only 1 pump of grease should be necessary every 50 hours 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



Adjustments & Maintenance

Wearable Component Maintenance



CAUTION

Operating without guards in place can expose moving parts or allow debris to be thrown without proper containment. Risk of injury to operator, bystander.

NOTICE

Operating with missing knives causes harmful vibrations, resulting in shift, bearing or frame damage.

1. Hydraulic Hoses

Regularly inspecting the hydraulic hoses inside the motor guards is crucial. Though they are positioned to minimize wear from contact with metal surfaces, heavy vibration may cause them to shift. Check for signs of excessive wear during routine maintenance to ensure optimal functioning.

2. Bearings

Bearing failure can result in excessive vibration, noise or even the complete seizing of the cutter drum. Signs of impending bearing failure may be subtle and hard to identify without the right diagnostic tools. As a preventative measure, it is recommended to replace bearings every 1500-2000 hours of operation, depending on the environment and equipment usage.

3. Safety Guards

Safety guards are crucial for protecting the operator, bystanders, and surrounding property. They must never be removed during operation. Make sure each safety guard is in good condition and able to perform its protective function. Replace any worn or rust-damaged guards to ensure safety. To prolong the guards' lifespan clean them regularly and maintain their paint, which helps shield them from elements.

4. Safety Decals

Safety decals are vital for informing the operator and bystanders about potential hazards associated with the machine. Always ensure that these decals are easily visible and unobstructed. If they become faded or worn, replace them to maintain clear communication of safety warnings.

Knife Maintenance

The FX series is engineered for forestry mulching, making it crucial to maintain sharp knives for optimal cutting efficiency. The standard cutting tool is equipped with a hardened steel knife, featuring multiple cutting surfaces for sharpening, rotation, or replacement when needed (some models offer an upgraded carbide blade that can be rotated or replaced). Ensuring the knives are sharp and well maintained guarantees top performance for your forestry mulching projects.

1. Rotating

The standard knife provided features 4 cutting surfaces, permitting up to 3 rotations in the field where replacement parts or sharpening equipment may be unavailable.

To rotate the knife:

- Loosen the retention bolt.
- First rotation 180°, second rotation 90°, and third rotation at 180°. (See diagram)
- Re-tighten to 35 ft-lbs with a grade 8 bolt.

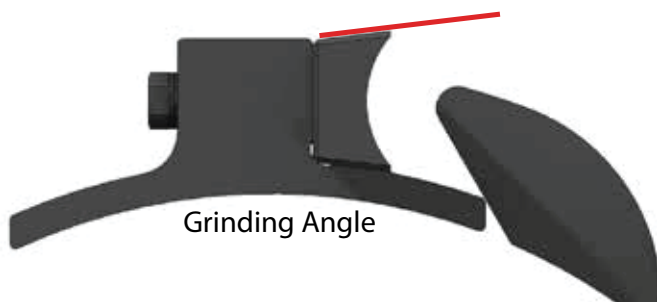


Adjustments & Maintenance

Take note that the limiter on the knife holder prevents the sharp corner from being centered; this is intentional, as the U-shaped surface is the cutting portion, not the corner.

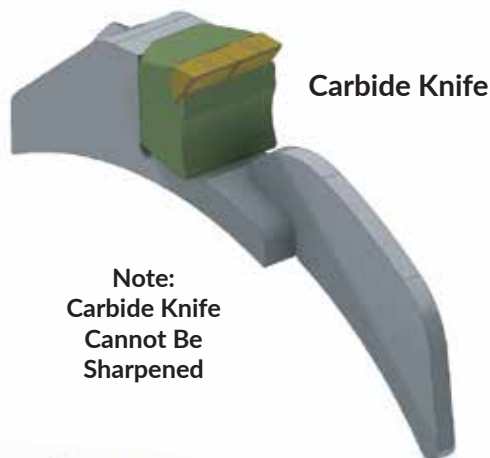
2. Sharpening

To sharpen the knives in the holder, use a grinder. Align the grinder with the flat V-shaped side and surface the outer edge of the knife. (See diagram).



3. Replacing

The last option is replacement. Remove the knife by unbolting it and replace it with a new one, tightening to 35 ft-lbs using a grade 8 bolt. Use ant-seize on bolt and mating surface of knife.



Cleaning The Attachment

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

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

Optional Mounts

This Attachment is equipped with a mount tailored for the Power Unit. However, if you wish to use the Attachment on multiple Power Units, you can buy additional mounts. To attach a mount, align its holes with those on the attachment, then use the 6 supplied 1" bolts, securing them with the included nuts and washers. Before switching Power Units, consult your nearest BrushHound Dealer to ensure compatibility.

Adjustments & Maintenance

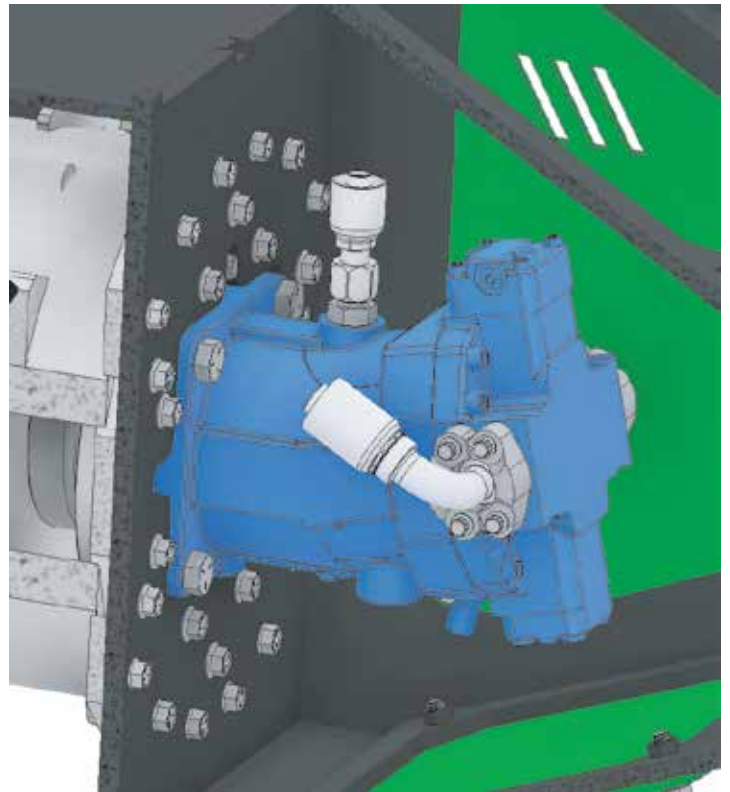
Hydraulic Maintenance

CAUTION

Before performing any maintenance on the hydraulics of this Attachment, ensure that circuit is depressurized. If there is a suspected leak, use a piece of cardboard for inspection. DO NOT use hands to feel for leaks.

The hydraulic circuit should be connected as follows:

- **Pressure In** - This attaches to the 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.
- **Check Valve** - Protects the motor from cavitation that would damage the motor's internal seals by allowing spindown.
- **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 to the relief port of the MPV.
- **Return Line** - The return line should connect the out port side motor port to the relief port of the MPV.
- **Pressure Out (return line out)** - Connect to the return side of the Power Unit's hydraulic circuit.





VALLEY TOOL

MANUFACTURING COMPANY

Order Parts Online
shop.valleytoolmfg.com

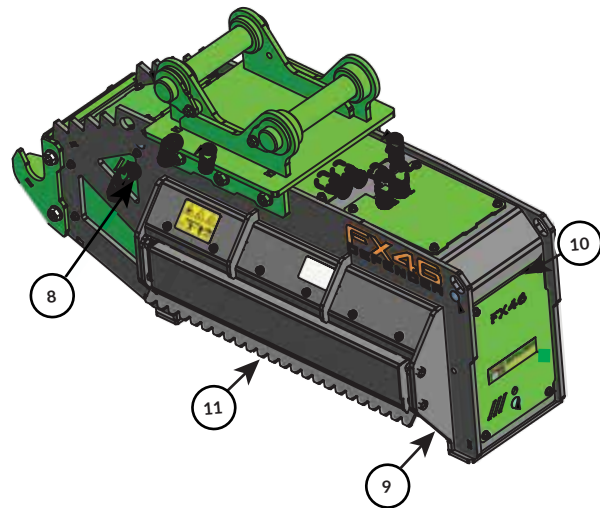
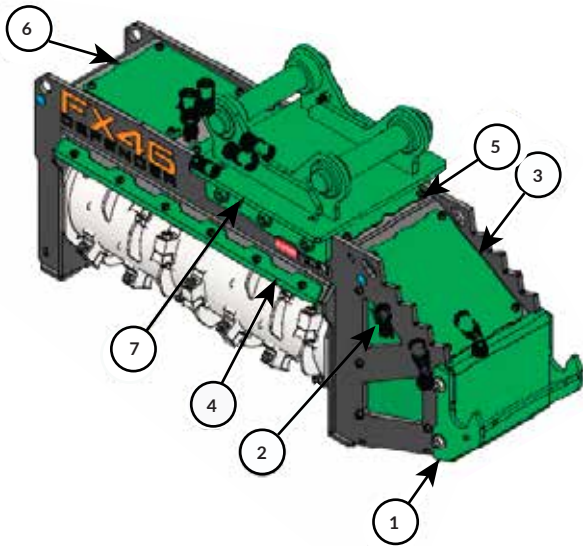
- Shop OEM Parts
- Fast Shipping
- Easy Checkout

QUESTIONS: Parts@Valleytoolmfg.com



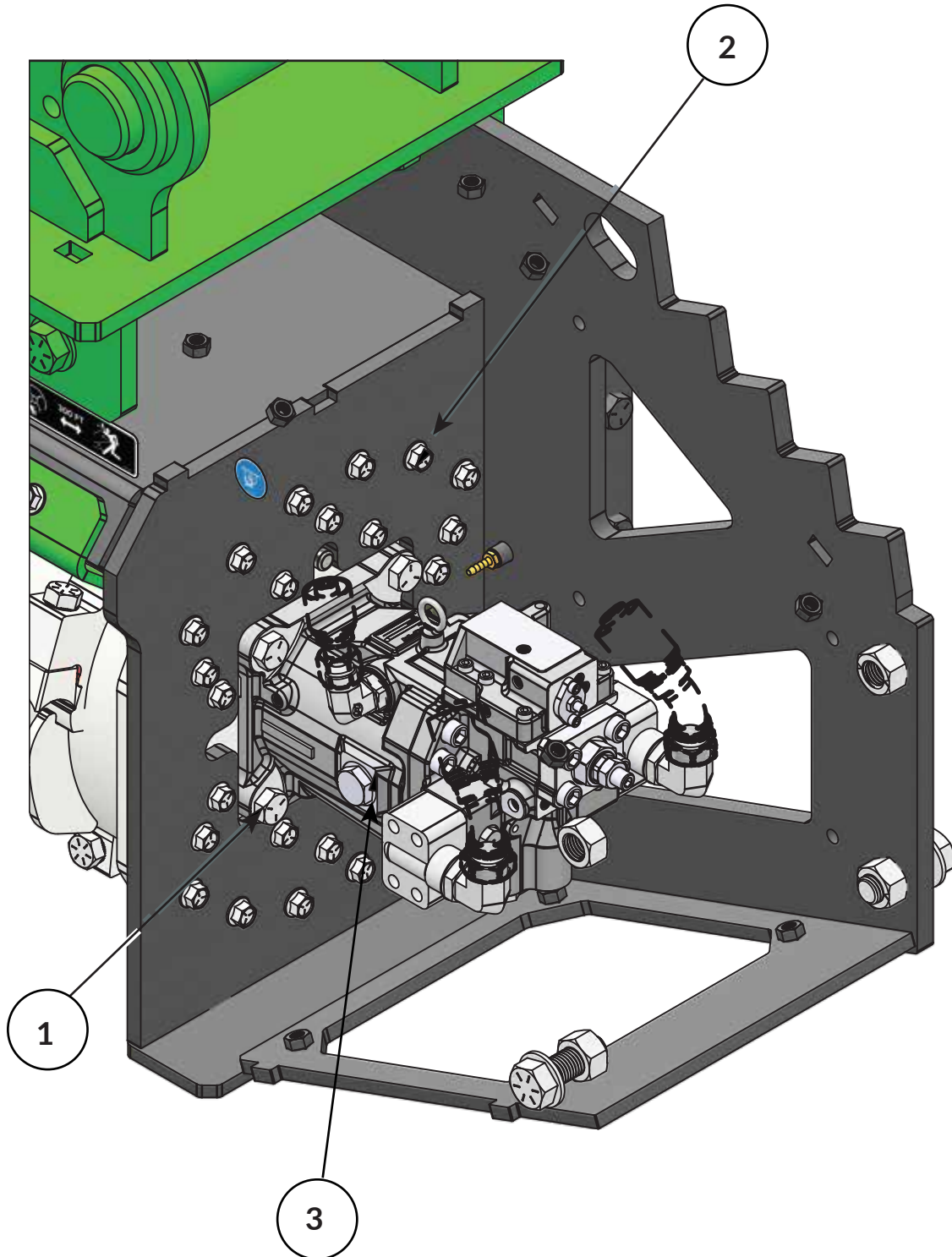
TOP LEVEL ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER	QTY
1	THUMB CLAW ASY FX	07080	1
2	GUARD HYD MOTOR COVER ASY LEFT	07121	As Req.
3	ASY UPPER THUMB COVER ASY LEFT	07144	1
4	GUARD INLET RECUTTER W/HARDWARE FX46	07176	3
5	ASY HOSE INLET COVER FX46	07397	1
6	ASY UPPER FRONT COVER GUARD W/BOLTS FX46	07388	4
7	MOUNT TYP-CAL TO FJT POWER UNIT	BHMNT HD	4
8	GUARD HYD MOTOR ASY LEFT	07123	2
9	FX46-WELDMENT DRIVE DIRECT DRIVE	07160	2
10	ASY NOSE GUARD FX46	07174	2
11	ASY EJECTOR DOOR FX46	07406	2



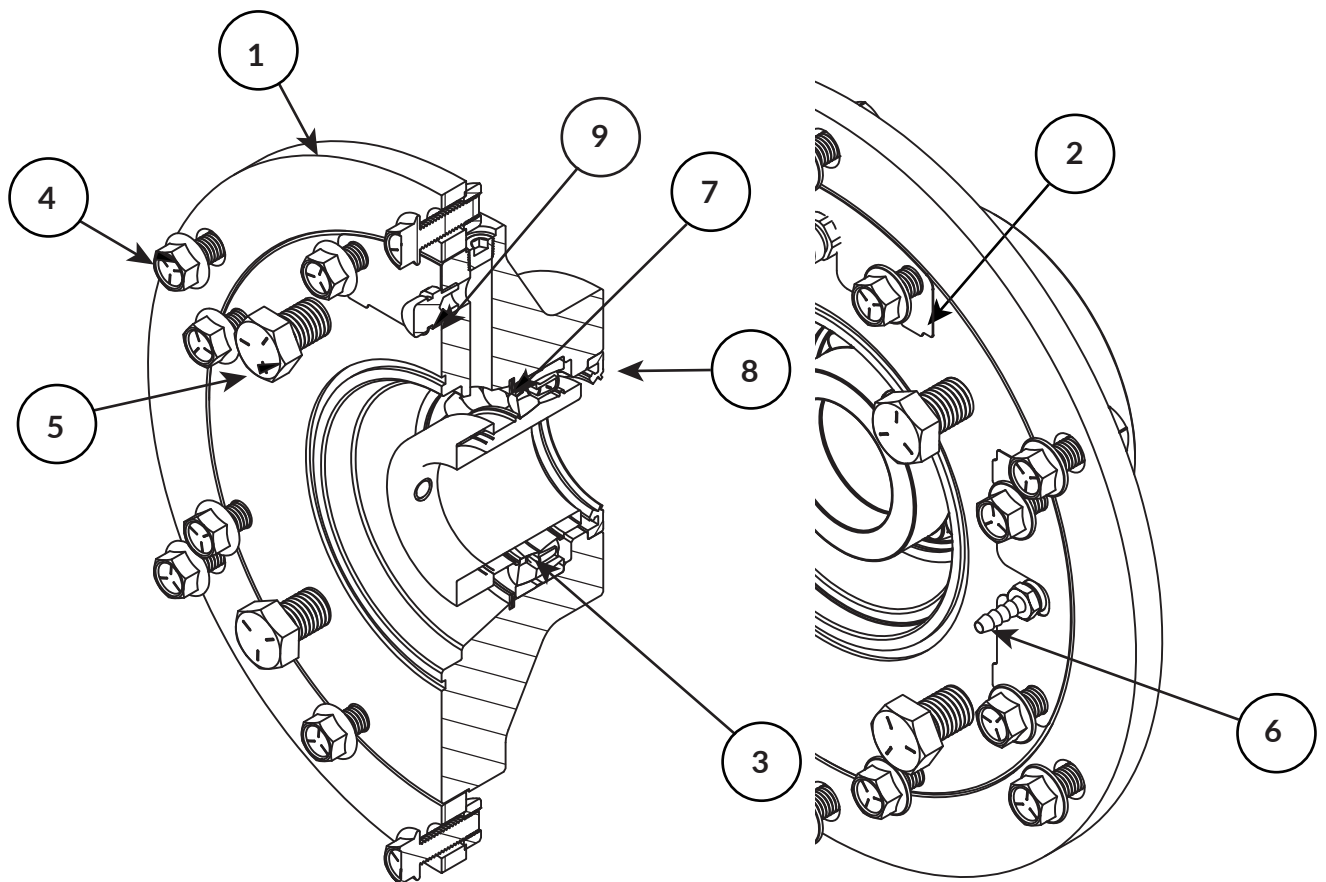
TOP LEVEL ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER	QTY
1	ASY DRIVE SPINDLE BEARING DIRECT DRIVE	06837	1
2	ASY WORE GUARD W/HARDWARE	07328	2
3	ASY M7V112MTR W/FTGS	10475	1



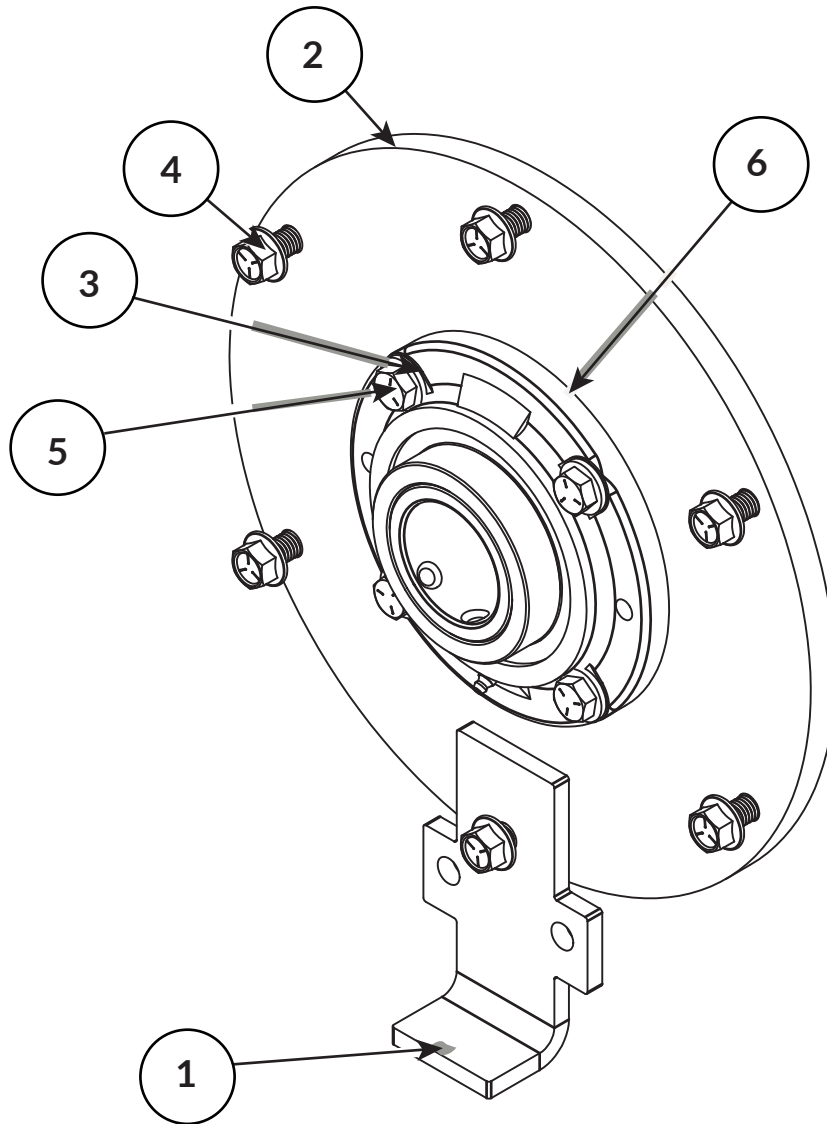
ASY DRIVE SPINDLE BEARING DIRECT DRIVE

ITEM	DESCRIPTION	PART NUMBER	QTY
1	THUMB CLAW ASY FX	07059	1
2	GUARD HYD MOTOR COVER ASY LEFT	07812	As Req.
3	ASY UPPER THUMB COVER ASY LEFT	CD-3100	1
4	GUARD INLET RECUTTER W/HARDWARE FX46	90129A128	14
5	ASY HOSE INLET COVER FX46	92865A845	4
6	ASY UPPER FRONT COVER GUARD W/BOLTS FX46	HY-2430	1
7	MOUNT TYP-CAL TO FJT POWER UNIT	91985A416	1
8	SEAL SKF 70X100X10 HMSA10V	7010010	1
9	BREATHER - SPINDLE HOUSING	BP-2730	1



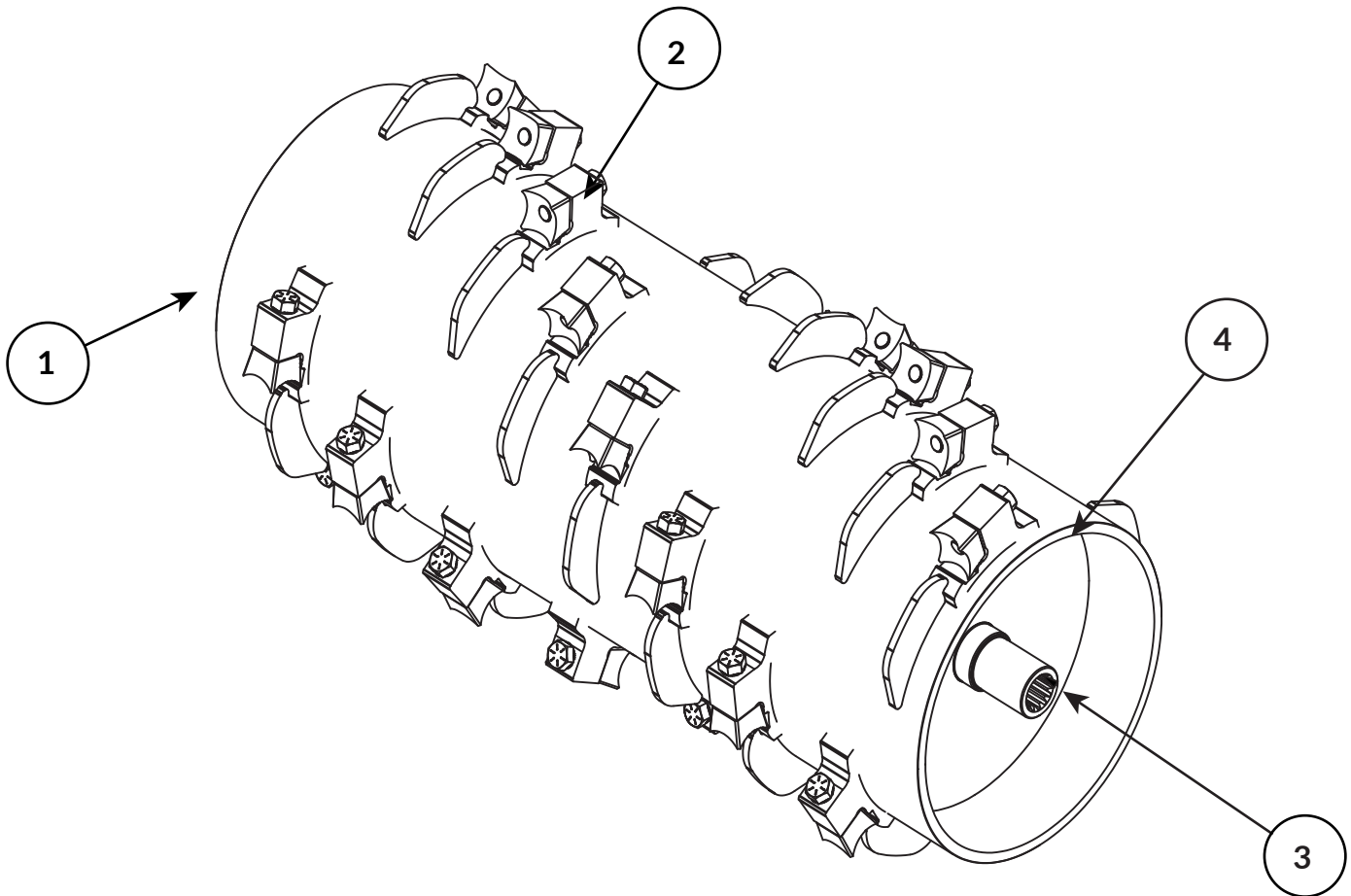
ASY FX46 IDLE BRG + HDWE

ITEM	DESCRIPTION	PART NUMBER	QTY
1	PLT GAP FILLER IDLE	10479	1
2	WIRE GUARD HOUSED BEARING MTG	10477	1
3	WASHER 1/2 SAE ZINC GR5	90126A033	4
4	FHCS 1/2-13 X 1.25 GR5 CLZN	90129A127	6
5	HHCS 1/2-13 1.5 GR5 CLZN	92865A716	4
6	BEARING 2 7/16 SPHR CARTRIDGE	CD-1826	1



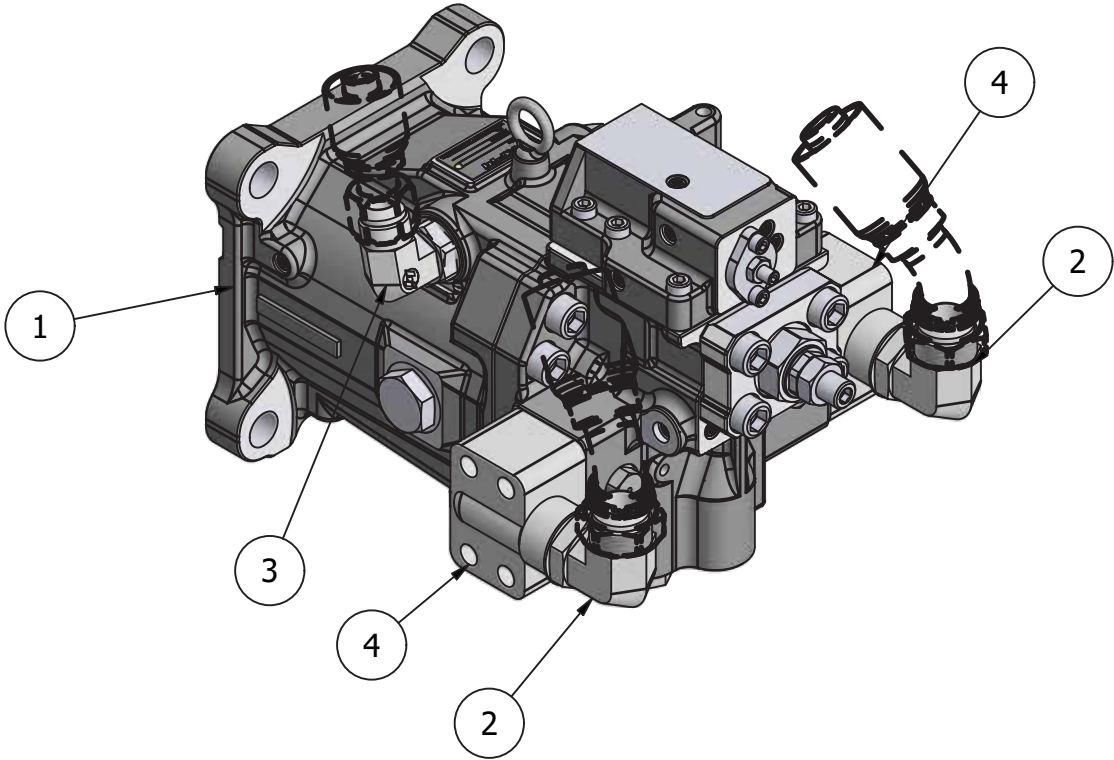
CUTTER DRUM

ITEM	DESCRIPTION	PART NUMBER	QTY
1	ASY IDLE PLUG WELDMENT FX46 SERIES (not shown)	06716	1
2	TOOL HOLDER ASY FX	06718	25
3	ASY DRIVE SPINDLE FX46 SERIES SPLINED	06832	1
4	ROTATING CUTTER DRUM	04976	1







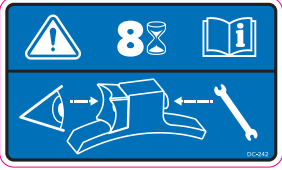




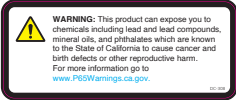

MOTOR ASSEMBLY

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Kawasaki 11cc Motor Variable	HY-40112	1
2	Fitting 90 Elbow 1" MJIC x 1" MORB	HY-2115	2
3	Fitting 90 Elbow 3/4" MORB x 3/4" M	HY-2520	1
4	Flg Adapter 90 deg 1" w/ Bolt	HY-2702	2

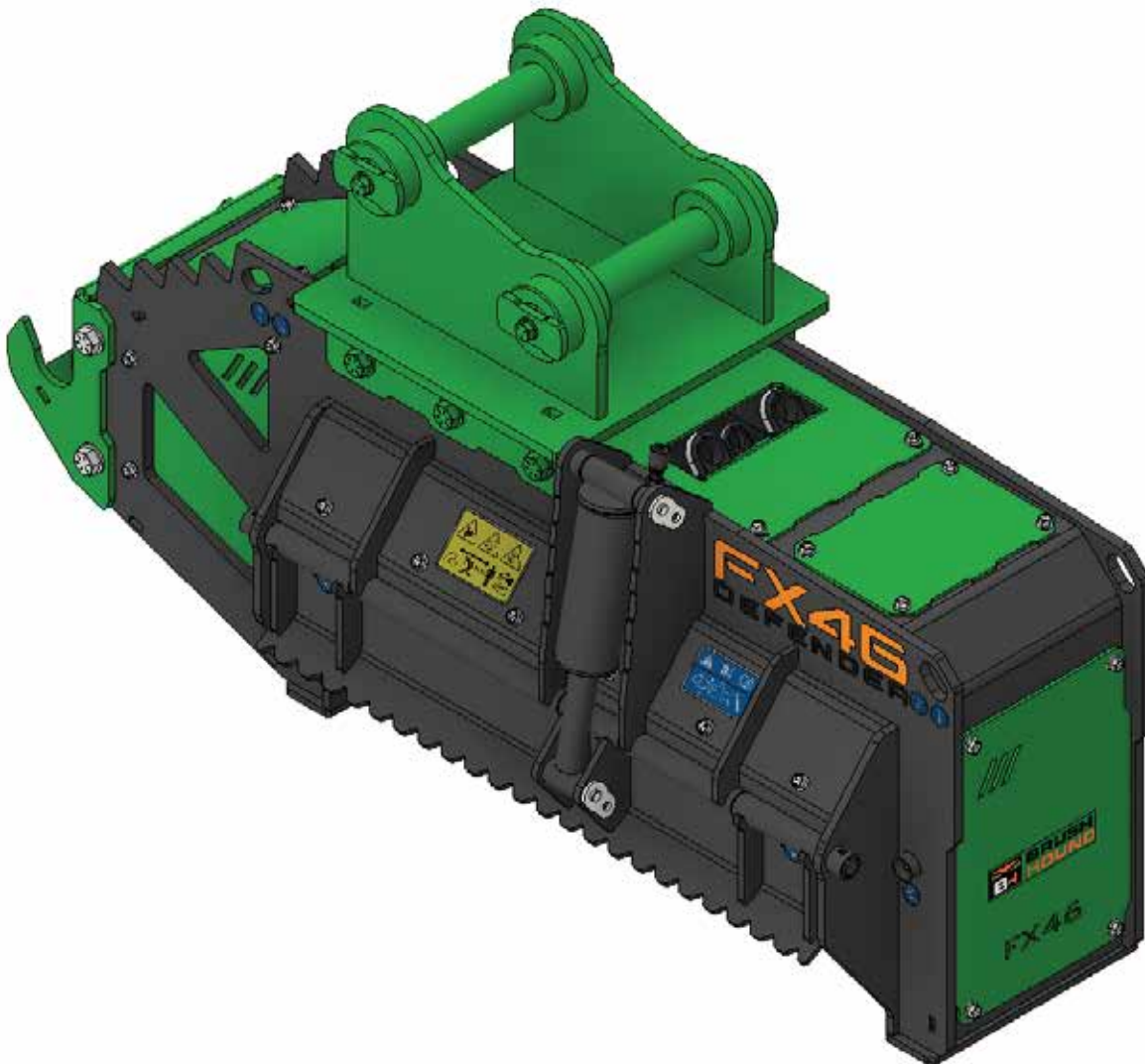


DECALS

ITEM	DESCRIPTION	PART NUMBER	QTY
1	FX46 BRANDING DECAL	DC-244	2
2	BRUSHHOUND DECAL	DC-116	2
3	READ BEFORE OPERATING	DC-220	1
4	ROTATING CUTTER DRUM	DC-222	3
5	INSPECT KNIVES TORQUE	DC-242	1
6	LIFT POINT	DC-230	4
7	TIE DOWN	DC-232	4
8	GREASE 10 HOURS	DC-236	2
9	GREASE 50 HOURS	DC-234	2
10	PROP 65 WARNING	DC-308	1
11	PRODUCT REGISTRATION QR CODE	DC-354	1

1	2	3
		
4	5	6
		
7	8	9
		
10	11	
		

FX46 Defender
Forestry Mulcher
Owners Manual
REV: 260126



FX46 DEFENDER OWNER'S MANUAL



VALLEY TOOL
MANUFACTURING COMPANY

PO Box 220 | 2507 Tully Road | Hughson, CA 95326 | 800-426-5615
www.valleytoolmfg.com