

VAIL[®]

PRODUCTS



XDR-6050-D1-x

OWNER'S MANUAL

MADE IN THE U.S.A.

REV. 11-9-2022

TABLE OF CONTENTS

Introduction	4
Safety	5
Decals	12
Pre-Operation	14
Installation Instructions.....	15
Operating Instructions.....	16
Lubrication	20
Maintenance	21
Troubleshooting.....	24
Bolt Torque Specifications	25
Specifications.....	26
Warranty	27
Parts	28

Thank you for purchasing Vail Products®! Our attachments have been specifically designed to meet the standards and requirements our customers demand. They have been field tested under the most severe conditions to provide consistent and reliable service with minimum downtime.

General Information

Only minor maintenance (e.g., cleaning and lubricating) is required to keep your Vail Products® unit in top operating condition. Be sure to observe all maintenance procedures and safety precautions in this manual. Additionally, please familiarize yourself with the safety decals located on the product and on any equipment on which the attachment is mounted.

Before Operation

The primary responsibility for safety with the equipment falls on the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual for function you do not understand, contact your local authorized dealer or the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operators.

Vail Products provides this publication “as is” without warranty of any kind, either expressed or implied. While every precaution has been taken in the preparation of this manual, Vail Products® assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. Vail Products reserves the right to revise and improve its products as it sees fit. This publication describes the state of this product at the time of its publication, and may not reflect the product in the future.

Service Information

Use only Vail Products® replacement parts. Substitute parts may not meet the required specifications. Record the model and serial numbers of your unit in this manual. The parts department needs this information to ensure that you receive the correct parts.



SAFETY ALERT SYMBOL

This message alert symbol identifies important safety messages on the machine and in the owner's manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

In the owner's manual and on decals used on the machine the words DANGER, WARNING, CAUTION, IMPORTANT, and NOTE are used to indicate the following:

DANGER: This word warns of immediate hazards which, if not avoided, will result in severe personal injury or death. The color associated with Danger is RED.

WARNING: This word refers to a potentially hazardous situation which, if not avoided, could result in severe personal injury or death. The color associated with Warning is ORANGE.

CAUTION: This word refers to a potentially hazardous or unsafe situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

IMPORTANT: Highlights information that must be heeded.

NOTE: A reminder of other related information that needs to be considered.

Be certain all machine operators are aware of the dangers indicated by safety decals applied to the machine, and be certain they follow all safety decal instructions. Contact Vail Products® for safety decal replacement.

Vail Products® cannot anticipate every possible circumstance that may involve a potential hazard. The warnings in this owner's manual are not all inclusive.

Owner's Responsibility

Due to the potential danger of flying debris, it is the owner's responsibility and is "**ABSOLUTELY MANDATORY** that an **IMPACT-RESISTANT, SHATTERPROOF 1/2" THICK POLYCARBONATE FRONT CAB DOOR**" be installed on the machine to protect the operator.

It is **ABSOLUTELY MANDATORY** that all personnel read and follow all safety precautions before operating the machine and attachment.

Make sure that all personnel have read this owner's manual, and thoroughly understand safe and correct installation, operation, and maintenance procedures.

Operate and maintain this machine in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and/or laws; and in compliance with on-product labeling and this owner's manual instructions.

Make sure that all personnel know how to stop the machine and attachment by disengaging all controls.

Make sure the attachment is installed on the machine correctly before being placed in service. At regular intervals thereafter, the attachment should be serviced in accordance with procedures outlined in this owner's manual.

Read Manual Prior to Installation



**IMPROPER INSTALLATION, OPERATION, OR MAINTENANCE OF THIS EQUIPMENT
COULD RESULT IN SERIOUS INJURY OR DEATH**

Operator and maintenance personnel should read this manual, as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance.

Read and Understand All Safety Statements

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.

Know Your Equipment

Know your equipment's capabilities, dimensions and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to ensure it is tight. Make certain that all locking pins, latches and connection devices are properly installed and secured. Remove and replace any damaged, fatigued or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean and replace them if they become worn or illegible.

Safety Precautions

The mulcher should never be operated with the back of the unit higher than the top of the cab and should always be tipped back when raised higher than the bottom of the door.

The mulcher is capable of producing large amounts of flying debris in all directions. Flying debris is a hazard. Clear area of bystanders and livestock before operating.

Do not place hands or feet under deck while in operation or with the engine running.

Before leaving the operator's seat disengage auxiliary hydraulics, lower the lift arms against the frame and place the unit on skids, stop the engine, and engage parking brake. Remove key.

Always wear proper safety glasses, goggles or a face shield when driving pins in or out, or when any operation causes dust, flying debris or any other hazardous material.

Safety Precautions (Continued)

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

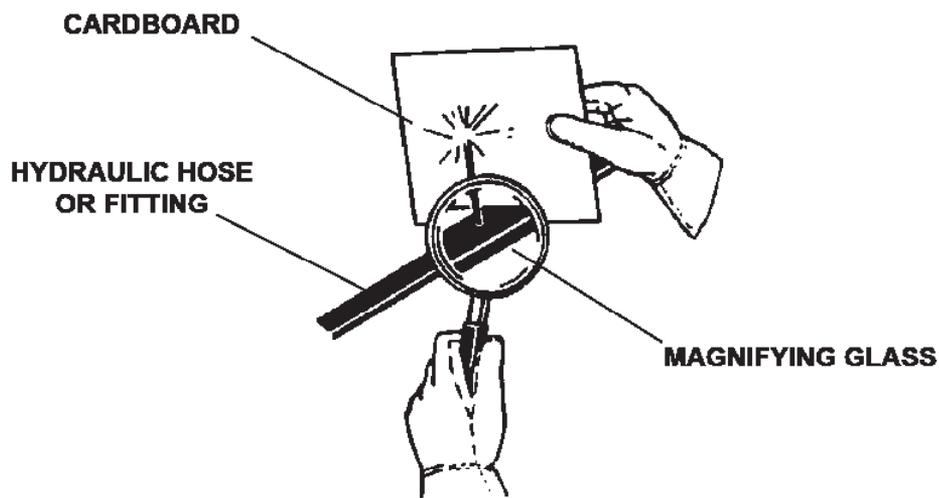
Please contact your local authorized dealer if you do not understand any section of this manual or the function of this product.

Use Care with Hydraulic Fluid Pressure

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime mover's operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask them to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing and use a piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS!**

See illustration below



Do Not Modify Machine or Attachments

Modifications may weaken the integrity of the attachment and may impair the function, safety, life and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection Structure) or FOPS (Falling Object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

Safely Maintain and Repair Equipment

- Do not wear loose clothing or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tools for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.

Safely Operate Equipment

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- Keep all step plates, grab bars, pedals and controls free of dirt, grease, debris and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running, or with this attachment in a raised position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.
- Let others know when and where you will be working. Make sure no one is behind the equipment or for several hundred feet in any direction around the equipment when in operation.
- Do not raise the attachment when the drum is rotating.

Safely Operate Equipment (Continued)

- Do not exceed rated operating capacity of the prime mover.
- Be sure all covers are properly installed before operating unit.
- Do not lift loads in excess of the capacity of the prime mover. Lifting capacity decreases as the load is moved further away from the unit.
- Never try to board or exit equipment while it is running.
- Test all controls before you begin operation.
- When operating on slopes, drive up and down, not across. Avoid steep hillside operation, which could cause the prime mover to overturn.
- Reduce speed when driving over rough terrain, on a slope, or turning to avoid overturning the vehicle.
- An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment.
- Never leave the attachment unattended when in the raised position. Always make sure both skids are on the ground, parking brake is engaged, engine is turned off and the keys are removed before exiting the prime mover.

Know Where The Utilities Are

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines, gas, water and sewer, as well as any other hazard you may encounter.



EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATOR DISEASE.

It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

Remove Paint Before Welding or Heating

Hazardous fumes and dust can be generated when paint is heated by welding, soldering or using a torch. Do all work outside or in a well-ventilated area and dispose of paint and solvent properly. When sanding or grinding paint, avoid breathing the dust. Wear an approved respirator.

If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Transporting the Attachment

- Travel only with the attachment in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground and on slopes.
- When transporting on a trailer: Secure attachment using tie down accessories that are capable of maintaining attachment stability.
- Use extra care when loading or unloading the attachment onto a truck or trailer. Disconnect hydraulic couplers during transporting when installed on prime mover.
- When driving on public roads use safety lights, reflectors, Slow Moving Vehicle signs etc., to prevent accidents. Check local government regulations that may affect you.
- Do not drive close to ditches, excavations, etc., cave in could result.
- Do not smoke when refueling the prime mover. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.

Maintaining the Attachment

- Before performing maintenance, disengage auxiliary hydraulics, lower the attachment to the ground, turn off the engine, remove the key and apply the brakes. Be sure all rotation has stopped before making any adjustments or repairs.
- Never perform any work on the attachment unless you are authorized and qualified to do so. Always read the operator manual's before any repair is made. After completing maintenance or repair, check for correct functioning of the attachment.
- If not functioning properly, always tag "DO NOT OPERATE" until all problems are corrected.
- If attachment must be left raised for maintenance or any other reason, block the unit securely to prevent accidental release of the lifting mechanism. Serious damage or personal injury could result.
- Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from Vail Products®.
- Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.



MAKING HYDRAULIC REPAIRS WHILE THE SYSTEM IS UNDER PRESSURE COULD RESULT IN SERIOUS PERSONAL INJURY OR DEATH

- Never work under raised attachment.

End of Life Disposal

At the completion of the useful life of the unit, drain all fluids and dismantle by separating the different materials (rubber, steel, plastic, etc.). Follow all federal, state and local regulations for recycling and disposal of the fluid and components.



SERIAL PLATE



VAIL PRODUCTS® LOGO



VAIL PRODUCTS® CIRCLE LOGO



WARNING: HIGH PRESSURE FLUID



DANGER: DO NOT OPERATE



DANGER: STAY CLEAR



DANGER: DO NOT EXIT

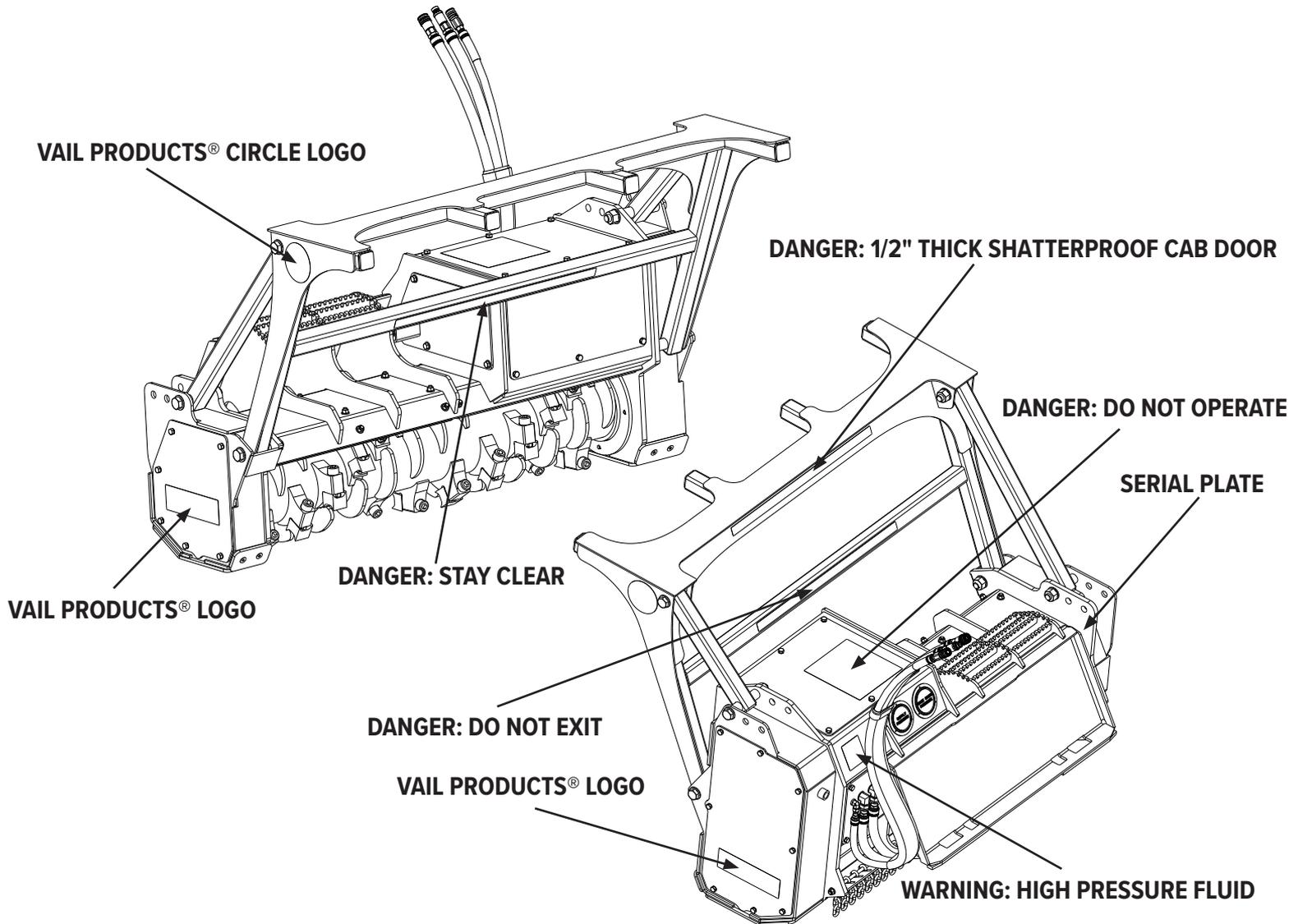


DANGER: 1/2" THICK SHATTERPROOF CAB DOOR

Decal Placement

The diagram on this page shows the location of all the decals used on the attachment. Use this information to order replacements for lost or damaged decals.

Be sure to read all decals before operating the attachment. They contain information you need to know for both safety and unit longevity.



NOTE: Keep all safety decals clean and legible. Replace all missing, illegible, or damaged safety decals. When replacing parts with safety decals attached, the safety decals must also be replaced.

Replacing Safety Decals

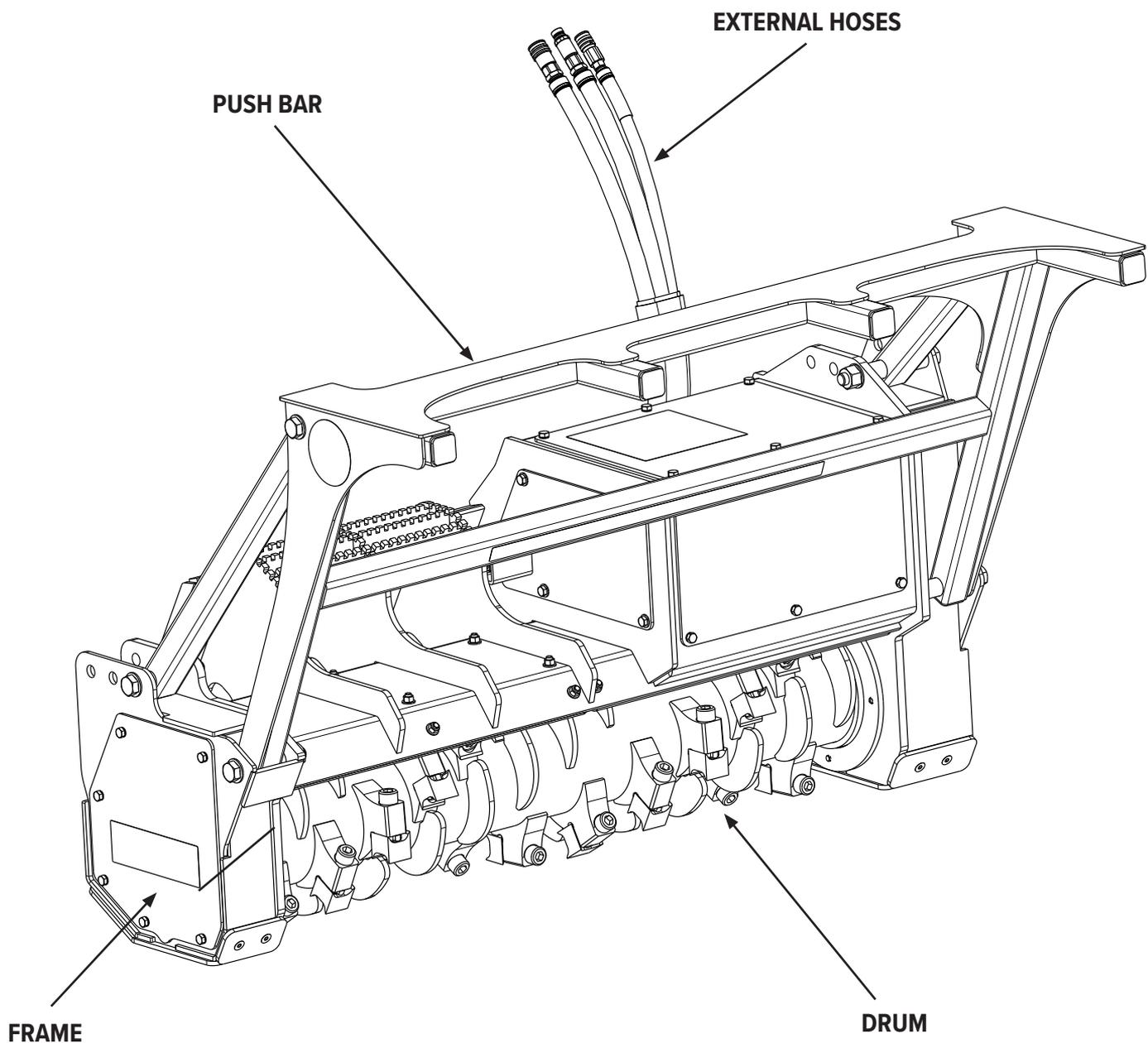
Clean the area of application with nonflammable solvent, then wash the same area with soap and water. Allow the surface to fully dry. Remove the backing from the safety decal, exposing the adhesive surface. Apply the safety decal to the position shown in the diagram above and smooth out any bubbles.

Your attachment is operated by the prime mover's auxiliary hydraulics and mounts to the toolbar/quick attach mechanism for easy operator hook-up.

Your skid steer loader must have an auxiliary hydraulic system and a shatterproof door or front shield to operate the mulcher.

Nomenclature

The purpose of this diagram is to acquaint you with the various names of the mulcher components. This knowledge will be helpful when reading through this manual or when ordering service parts.



The following instructions will help you to mount your drum mulcher onto your skid steer loader. The attachment uses the quick-attach system for ease of installation. Therefore, if you know how to attach your loader bucket, attaching the cutter should prove no problem.

Remember to read all safety warnings, decals and operating instructions before operating the attachment. If there is any portion of this manual that you do not understand, contact your dealer.

Attaching to Prime Mover



BEFORE ATTACHING THE MULCHER TO YOUR LOADER, MAKE SURE A SHATTER PROOF DOOR (OR FRONT SHIELD) HAS BEEN INSTALLED ONTO THE FRONT OF YOUR LOADER

1. Remove any attachments from the front of the loader.
2. Following all standard safety practices and the instructions for installing an attachment in your skid steer operator's manual, install the attachment onto your skid steer loader.

NOTE: It is important to make sure the locking mechanism on your quick attach is engaged, therefore locking the attachment onto the skid steer.

3. Lower the unit to the ground and remove the key.
4. After making sure that there is not any foreign matter on the hydraulic coupler, connect the coupler to the auxiliary hydraulic system of your skid steer/compact track loader.

Tuning the Drum Mulcher

NOTE: Please contact your local dealer for an instructional tuning video

Detaching from Prime Mover

1. On firm, level ground, lower the attachment so both skids are on the ground, parking brake is engaged, engine is turned off, and the keys are removed.
2. Follow your prime mover operator's manual to relieve pressure in the hydraulic lines.
3. Disconnect couplers and either connect them together or install dust caps and plugs to prevent contaminants from entering the hydraulic system. Store hoses on attachment, off the ground.
4. Follow you prime mover operator's manual for detaching (removing) an attachment.

Intended Use

The attachment is designed for mulching brush and small trees. Contact your Vail Products® sales representative for an operational video link to learn what operational techniques are suggested. Use in any other way is considered contrary to its intended use.

General Information

The mulcher attaches to the toolbar/quick-attach mechanism of your skid steer loader. Due to this arrangement, thorough knowledge of the skid-steer controls are necessary for machine operation. Read and understand your skid steer operator's manual for information regarding skid steer operation before attempting to use the mulcher. Follow all installation instructions for the proper installation of the unit onto your skid steer before attempting to operate your mulcher.

Operating Tips

1. Keep your machine clean. Blow out the engine compartment and belly pan daily, sometimes more often depending on how and what you're mulching.
2. Never exit the cab until the drum has completely stopped spinning. The drum is equipped with a brake system that should stop the drum in 10-15 seconds.
3. Stop mulching immediately if anything gets wrapped or stuck in the mulching head.
4. Walk and check work area before the start of every job.
5. Check teeth for possible damage or loosening.
6. Inspect liner plates periodically and tighten mounting bolts as necessary.
7. Inspect hydraulic hoses for damage.
8. Keep the drum bearings properly greased.
9. Be aware of surroundings and direction head is pointed while mulching.
10. Be aware of people around and have a safe communication plan.

Contact your Vail Products® sales representative for an operational video link for additional operating tips.

General Information

Never drive your prime mover with the front of the drum mulcher tilted to the point your view is obstructed. Always make sure you can see what you are mulching.

Check the work area. Never operate the mulcher in populated areas where thrown objects could injure persons or damage property.

Never raise the unit and expose yourself or anyone else to the rotating drum. Maximum ground clearance at any time is the top of the cab and only for selected vertical tree removal.

Activate the auxiliary hydraulics with the engine at idle. Increase engine speed.

Be sure the mulcher is operating smoothly and at full speed, and then start forward travel.

Slow the engine speed before de-activating the auxiliary hydraulics



IT IS THE OPERATOR'S RESPONSIBILITY TO BE CERTAIN THE AREA IS SAFE AND CLEAR OF PEOPLE, ANIMALS, AND PERSONAL PROPERTY AS TREES CAN FALL IN ANY DIRECTION

Avoid Stalling Mulcher

Continuous rotation is required to prevent overheating of the hydraulic system. Overheating of the hydraulic system is caused if hydraulic oil is repeatedly forced over the relief valve setting on either the prime mover or attachment (whichever is less).

To Restart Rotation

Remove mulcher from debris. Engage auxiliary hydraulics to start drum rotation. Be sure the attachment is operating smoothly and at full speed, and then start forward travel.

Troubleshooting Operating Conditions

Below are listed a few operating conditions that may cause repeated stalling of your attachment, and suggestions on how to correct them.

BRUSH TOO THICK OR HEAVY: If cutting heavy or thick brush, you may need a slow travel speed or make smaller passes (less than full cut), to prevent overloading. If the mulcher seems unable to handle the volume of material, slow down the travel speed until the unit reaches full speed before proceeding.

SCALPING THE GROUND OR BOTTOMING OUT: Be aware of changes in the terrain. Stay alert for drop-off's and holes. Check the terrain and the drum position before restarting and continuing cutting.

STRIKING FOREIGN OBJECTS: Stay alert for rocks, fencing, abandoned wells, septic tanks or other foreign objects. If the attachment comes into contact with a foreign object, stop the unit, shut off the engine and disconnect the hydraulic couplers from the prime mover. Inspect the unit and repair any damage before restarting and continuing operating. (Never try to weld or straighten damaged teeth.) Inspect the work area for any other items, and if they are too large to be removed from the area, they should be flagged clearly.

NOTE: When teeth are damaged or missing, this will cause excessive vibration and the teeth must be replaced before proceeding (see "Maintenance")

Storage

The following storage procedure will help you to keep your attachment in top condition. It will also help you get off to a good start the next time your attachment is needed. We therefore strongly recommend that you take the extra time to follow these procedures whenever your unit will not be used for an extended period of time.

- Clean the unit thoroughly removing all mud, dirt, and grease.
- Sharpen or replace teeth.
- Inspect for visible signs of wear, breakage, or damage. Order any parts required, and make the necessary repairs to avoid delays when starting next season.

NOTE: Purchase only approved replacement parts.

- Tighten all loose nuts, bolts, and hydraulic connections.
- Grease the drum bearing housings.
- Seal hydraulic system from contaminants and secure all hydraulic hoses off the ground to help prevent damage.
- Replace decals if damaged or in unreadable condition.
- Store the unit in a dry and protected place. Leaving the unit outside will shorten its life.
- Touch up all unpainted and exposed areas with paint to prevent rust.

Removing From Storage

- Remove all protective coverings.
- Check hydraulic hoses for deterioration and replace if necessary.
- Check all nuts and bolts for proper torque, especially those securing the motor, belt, bearing housings, and teeth.

Transporting

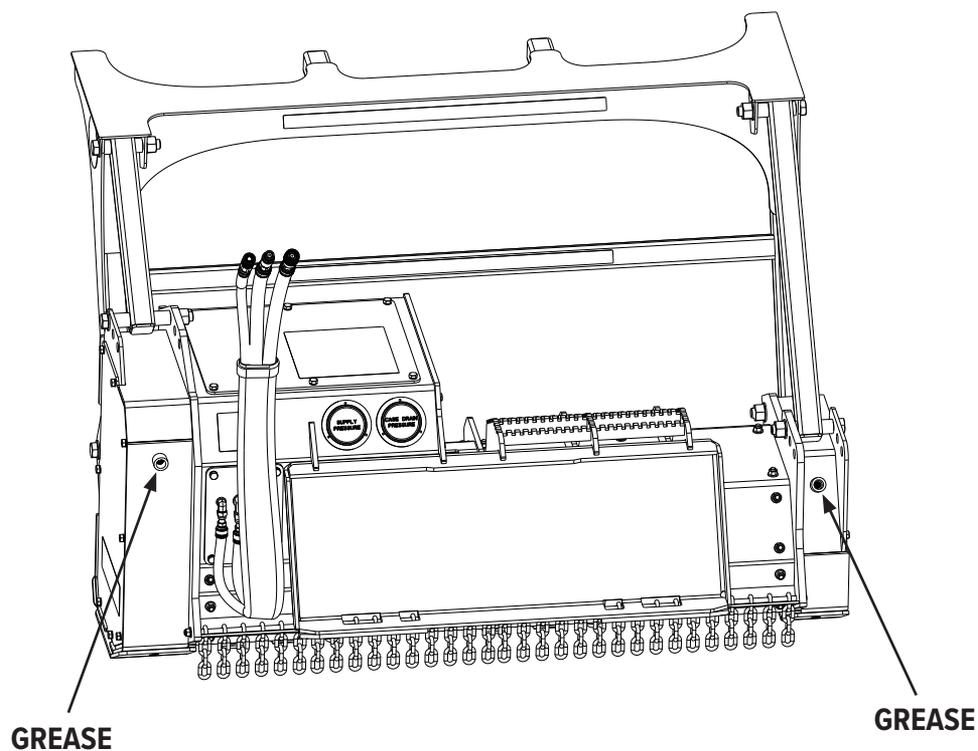
Follow all local government regulations that may apply along with recommended tie down points and any equipment safety precautions at the front of this handbook when transporting your attachment.

Economical and efficient operation of any machine is dependent upon regular and proper lubrication of all moving parts with a quality lubricant. Neglect leads to reduced efficiency, wear, break-down, and needless replacement of parts.

Both drum bearing housings should be re-lubricated after every 20 hours of operation. Re-lubricate each bearing housing with a weight of 0.4 oz/11.3 g of NLGI No. 2 lithium complex thickened grease (fully synthetic is preferred)

Compatible brands/types that are available as NLGI No. 2 lithium complex are:

- Timken GR255
- Mobilgrease XHP Series
- Molycote G4700
- Mobilith SHC Series
- Shell Gadus S3 V460D
- Shell Gadus S3 V220C
- Chevron Ulti-Plex Synthetic Grease EP



Regular maintenance is the key to long equipment life and safe operation. Maintenance requirements have been reduced to an absolute minimum. However, it is very important that these maintenance functions be performed as described.



TO AVOID SERIOUS INJURY. LOWER THE CUTTER SO BOTH SKIDS ARE ON THE GROUND, SET THE PARKING BREAK, STOP THE SKID STEER ENGINE, AND REMOVE THE KEY BEFORE LEAVING THE OPERATOR’S SEAT. IF UNIT MUST BE LEFT RAISED FOR MAINTENANCE, BLOCK THE UNIT SECURELY TO PREVENT ACCIDENTAL RELEASE OF THE LIFTING MECHANISM. DISCONNECT THE HYRAULIC COUPLERS

PROCEDURE	DAILY	20 HOURS	MONTHLY
Check skid steer loader hydraulic system to ensure an adequate level of hydraulic oil.	•		
Check mounting hardware of teeth and tighten if necessary. See Bolt Torque Specifications.	•		
Check all other hardware and tighten, if necessary. See Bolt Torque Specifications.	•		
Check hydraulic system for hydraulic oil leaks.	•		
Check cutting edges for damage and replace or sharpen as needed.	•		
Check all safety guards and ensure that all devices are installed correctly.	•		
Check for missing or illegible Safety / Warning decals.	•		
Relubricate both drum bearing housings.		•	
Check and adjust drive belt tension.			•

Oil Cleanliness Requirements

All hydraulic fluid shall be filtered before use in product to obtain the ISO cleanliness standard of 20/18/15. Unless explicitly specified otherwise.

TO AVOID SERIOUS INJURY LOWER THE MULCHER SO BOTH RUNNERS ARE ON THE GROUND, SET THE PARKING BRAKE, STOP THE MULCHER AND SKID STEER ENGINE AND REMOVE THE KEY BEFORE LEAVING THE OPERATOR'S SEAT.



IF UNIT MUST BE LEFT RAISED FOR MAINTENANCE, BLOCK THE UNIT SECURELY TO PREVENT ACCIDENTAL RELEASE OF THE LIFTING MECHANISM. DISCONNECT THE HYDRAULIC COUPLERS.

Replacing Teeth

When replacing or sharpening the teeth, the unit does require blocking.

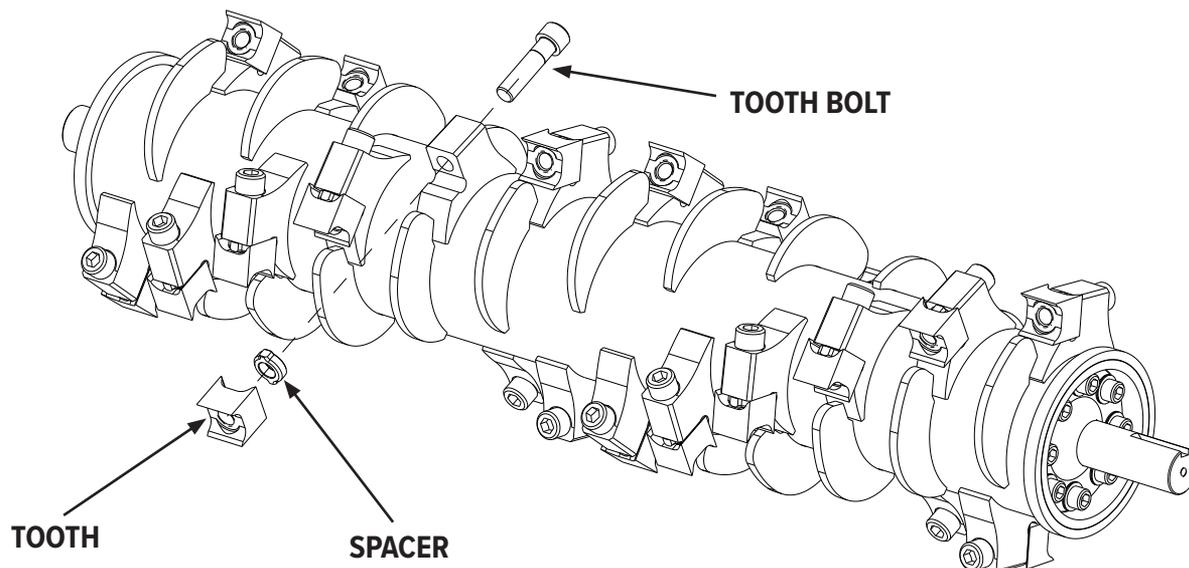
Place unit firmly on blocks and disconnect the hydraulic couplers.

The teeth should be inspected regularly (every 8 hours) to ensure they are sharp, tightened correctly, and intact. If a tooth or teeth are missing replace them immediately as this will prevent damaging vibration.

It is suggested to replace them in pairs (opposite each other 180°) to maintain balance.

1. With unit firmly on blocks and hydraulic couplers disconnected, loosen the tooth bolt.
2. Remove old tooth and replace with new tooth, checking retaining tooth bolt to ensure it is not damaged.
3. Replace tooth bolt if damaged or questionable.
4. Apply Anti-Seize to threads prior to installation.
5. Make sure tooth is seated properly (with spacer if required), with no debris under mating faces of tooth (and spacer).
6. Torque bolt to 300 ft. lbs.

NOTE: Improper balance will cause vibration and possible component failure.



Checking and Adjusting Drive Belt Tension

Proper drive belt tension is critical to maximize belt and drive component service life. If the drive belt is set too tight, premature belt and bearing (motor and drum) failure will occur.

Checking the drive belt tension requires the drum mulcher and loader to be shut off and blocked according to the maintenance general information section found in this manual.

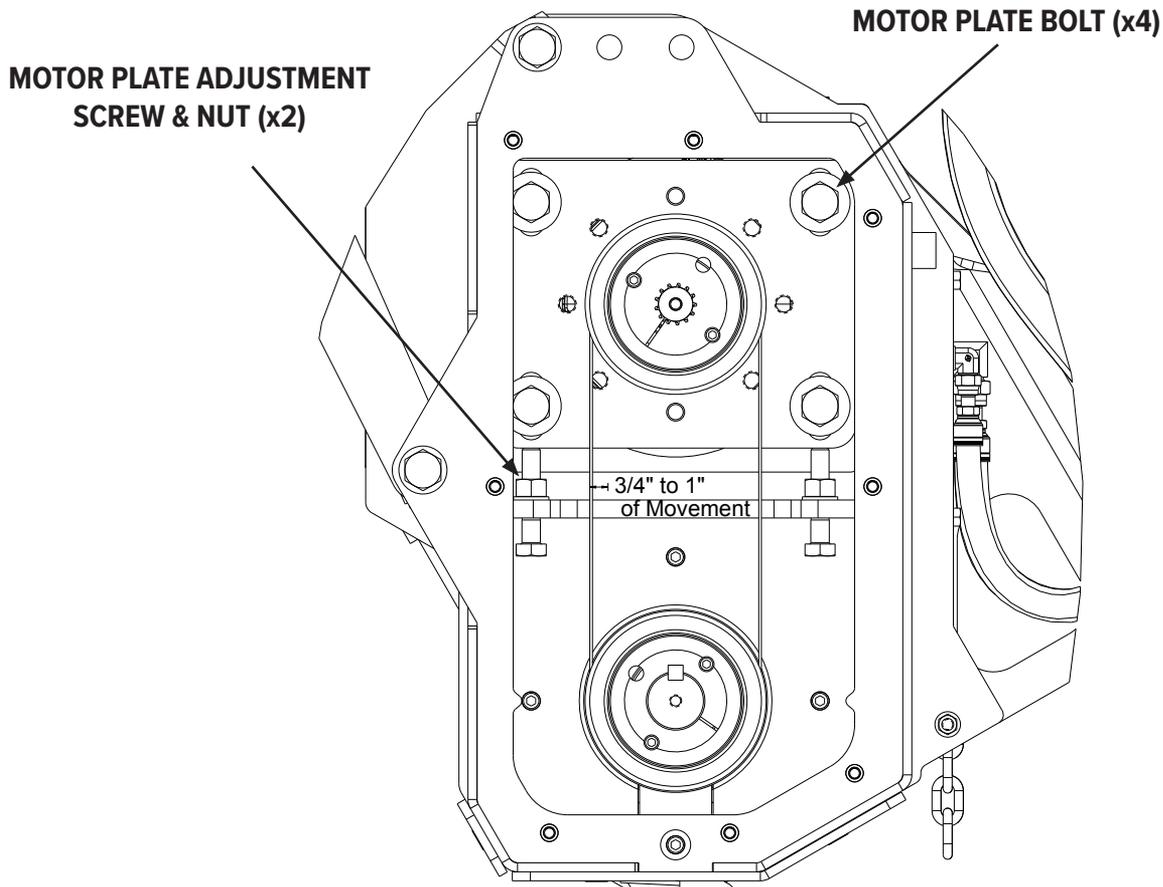
The drive belt side cover must be removed to check and adjust the belt tension.

The belt tension is checked by simply pressing inward on the outer flat surface of the belt in between the pulleys. A properly tensioned belt will have 3/4" - 1" of movement from its normal position of a straight line in between the outside diameter of the pulleys.

If the belt requires adjustment to achieve the desired 3/4"-1" of movement, loosen the four motor plate bolts just enough for the motor plate to be able to slide up or down.

Then loosen the motor plate adjustment screw nuts and evenly turn both adjustment screws to tighten or loosen the belt tension as required.

Once the proper tension has been set, tighten both motor plate adjustment screw nuts and the four motor plate bolts. Reinstall the drive belt side cover.



PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
EXCESSIVE VIBRATION	Tooth or teeth missing.	Replace teeth.
	Foreign material in the carrier assembly.	Remove any foreign material from the drum assembly.
MULCHER STALLS TOO EASILY OR LOSS OF POWER	Power and return hoses reversed.	Check flow direction and switch hydraulic couplers.
	Motor not properly tuned to loader	Tune motor to Vail Products® recommended settings
	Bearing failure. (To diagnose bearing failure; rotate the drum slowly and listen for bearing noise. Bearing failure will reduce power available to function correctly.)	Replace drum bearing housing(s).
	Foreign material in the drum assembly.	Remove any foreign material from the drum assembly.
	Imbalance of drum assembly.	Check excessive vibration section for possible causes and remedies.
	Control valve cartridge or o-ring failure.	Replace as required.
	Loader coupler/manifold failure.	Replace o-ring(s), couplers, and/or manifold block on loader.
CASE DRAIN RELIEF VALVE IS RELEASING FLUID	Case drain restriction or loader couplers/manifold failure.	Remove debris in case drain line.
		Replace o-ring(s), couplers, and/or manifold block on loader.
		Change filter(s) in loader hydraulic case drain circuit

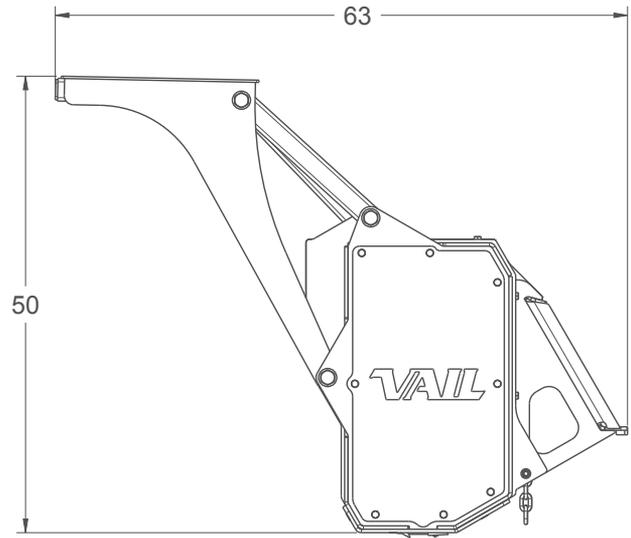
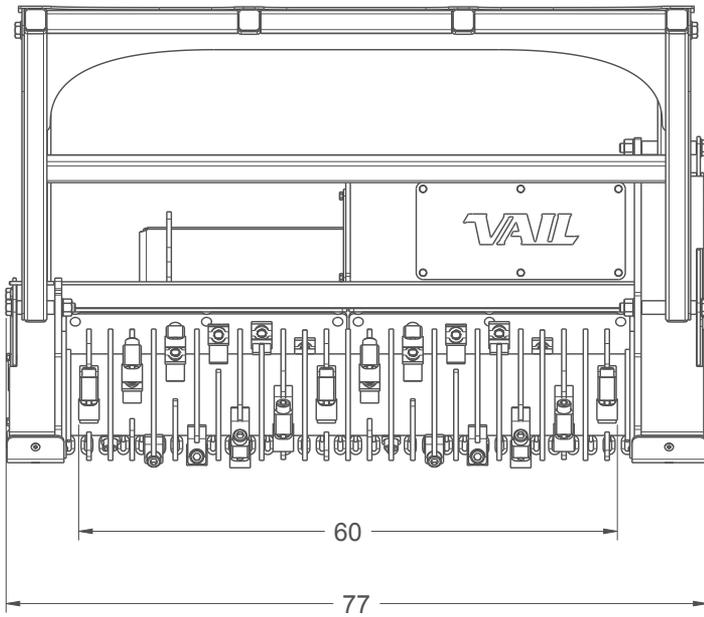
Use the following charts when determining bolt torque specifications when special torques are not given.

Always use grade 5 or better when replacing bolts.

SAE Bolt Torque Specifications

NOTE: The following torque values are for use with extreme pressure lubricants, plating, or hard washer applications. Increase torque 15% when using hardware that is un-plated and either dry or lubricated with engine oil.

BOLT SIZE		SAE GRADE 5 TORQUE				SAE GRADE 8 TORQUE				Bolt head identification marks as per grade. NOTE: Manufacturing marks will vary.
		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF	
1/4	6.35	8	9	11	12	10	13	14	18	<p>GRADE 2</p>  <p>GRADE 5</p>  <p>GRADE 8</p> 
5/16	7.94	14	17	19	23	20	25	27	34	
3/8	9.53	30	36	41	49	38	46	52	62	
7/16	11.11	46	54	62	73	60	71	81	96	
1/2	12.70	68	82	92	111	94	112	127	152	
9/16	14.29	94	112	127	152	136	163	184	221	
5/8	15.88	128	153	174	207	187	224	254	304	
3/4	19.05	230	275	312	373	323	395	438	536	
7/8	22.23	340	408	461	553	510	612	691	830	
1	25.40	493	592	668	803	765	918	1037	1245	
1-1/8	25.58	680	478	922	1014	1088	1224	1475	1660	
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305	
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135	
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	



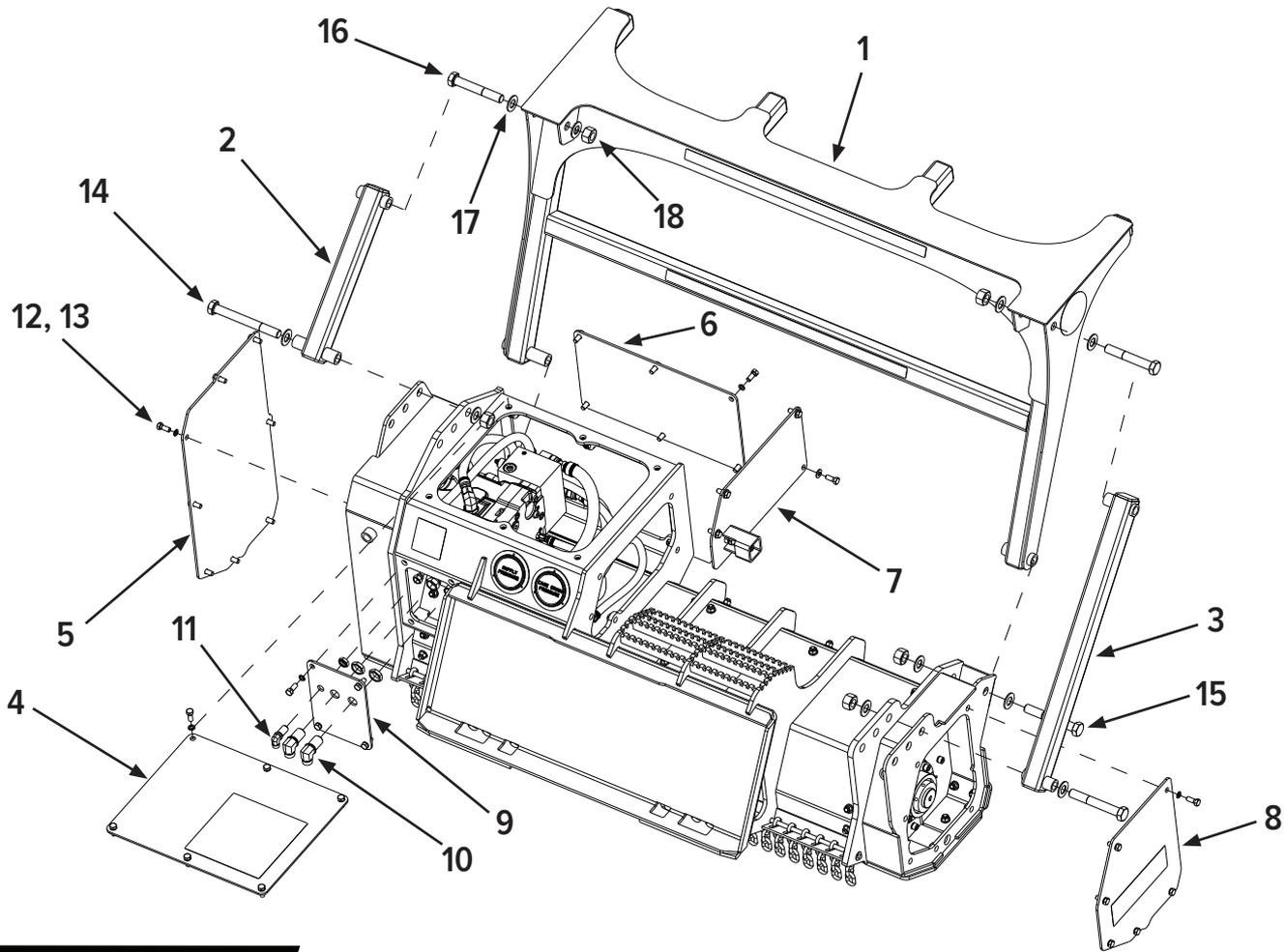
WIDTH	DRUM WIDTH	HEIGHT	DEPTH	GPM	WEIGHT
77"	60"	50"	63"	35 - 50+	2800 lbs

SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE AND WITHOUT LIABILITY THEREFOR.

U.S. and International Warranty

Vail Products equipment are warranted against any defect in material and workmanship for a period of twelve (12) months [six (6) months for international] for hydraulics and thirty-six (36) months [twelve (12) months for international] for structural components from date of shipment when properly installed, maintained, and operated within the limits of normal usage. This warranty does not extend to products subject to misuse, neglect, vandalism, accidents, or alterations to the original design. Liability, if any, is limited to replacement parts or material found to be defective that will be furnished free of charge and shipped by transportation of our choice, F.O.B., our shop. No allowance or claim of any nature will be paid resulting from alterations or repairs of the product, including labor, and in no event shall seller be liable for any special, contingent, or consequential damages. In all cases, full opportunity is to be given for investigation by seller's representative, before warranty is authorized. No goods shall be returned except by written permission of seller, and returns under any other conditions will not be accepted. VAIL PRODUCTS will not be responsible for any import taxes or duties imposed by other governments or governmental agencies. SAID WARRANTY IN RESPECT OF REPLACEMENT OF DEFECTIVE PARTS AND ANY SUCH ADDITIONAL WARRANTY OR REPRESENTATION EXPRESSLY MADE A PART HEREOF ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY FOR FITNESS OF PURPOSE. Where you are a distributor, financing company, or similar entity acting for or on behalf of the initial user of the equipment, the warranty is transferable to initial user only. In all other cases the warranty is limited to you and is not transferable. For products not supplied by the seller's licensed manufacturer, it extends to the buyer the warranties of the manufacturer only.

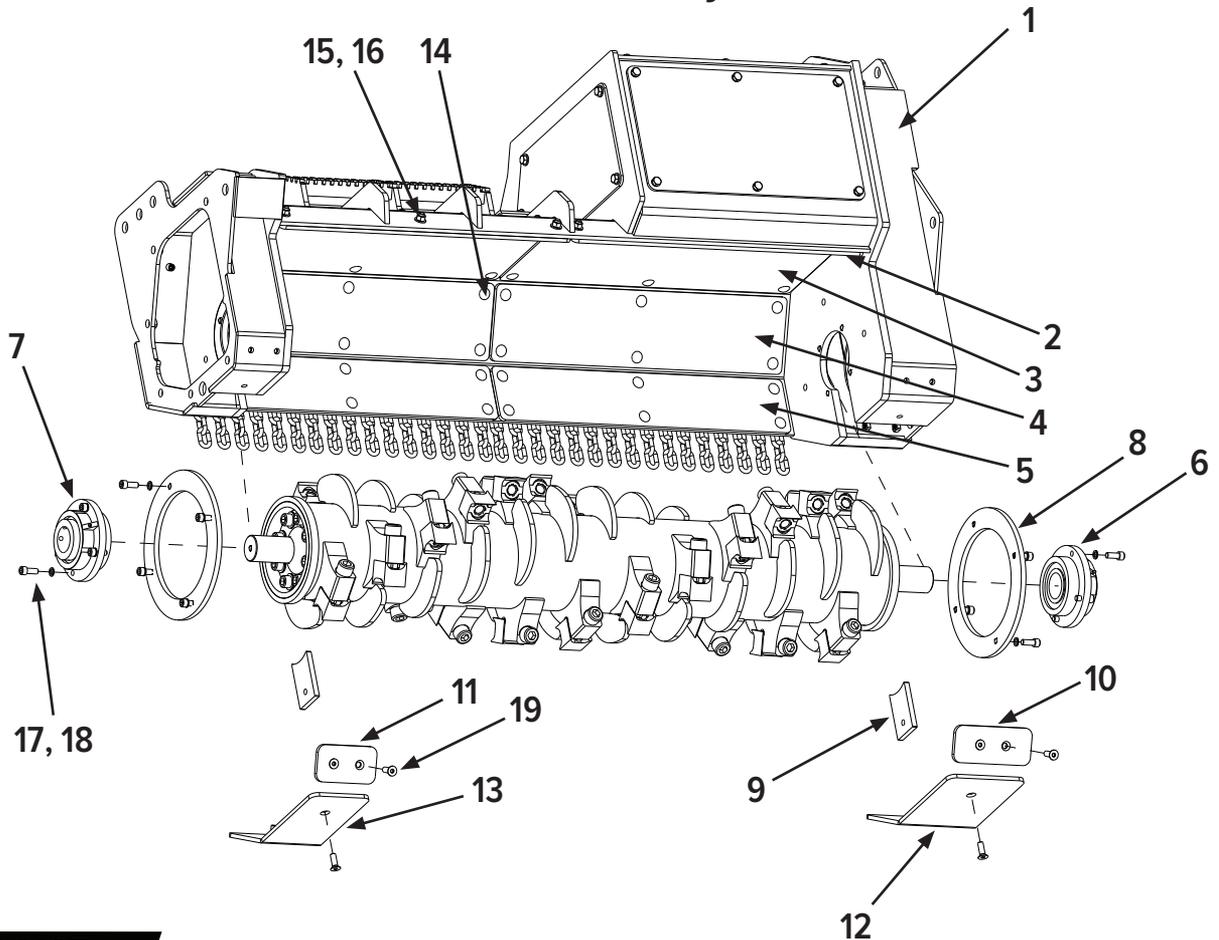
Push Bar and Covers



PARTS LIST

ITEM	PART	DESCRIPTION	QTY
1	57101509	Push Bar Assembly, 60"	1
2	57101513	Short Brace Assembly, Push Bar	1
3	57101517	Long Brace Assembly, Push Bar	1
4	57101497	Cover Plate, Top	1
5	57101485	Cover Plate, Belt Drive Side	1
6	57101493	Cover Plate, Front	1
7	57101537	Cover Plate, Case Drain Relief	1
8	57101489	Cover Plate, Non-Belt Side	1
9	57101501	Cover Plate, Rear	1
10	57101389	-12 MORFS x -12 MORFS, Bulkhead 90° Elbow with Locknut	2
11	57101391	-08 MORFS x -08 MORFS, Bulkhead 90° Elbow with Locknut	2
12	57101591	1/2" NC x 1-1/4" Hex Cap Screw Gr. 5	35
13	79513320	1/2" SAE Flat Washer	35
14	79510886	1" NC x 9" Hex Cap Screw Gr. 8	2
15	79510884	1" NC x 7" Hex Cap Screw Gr. 8	2
16	79510882	1" NC x 6-1/2" Hex Cap Screw Gr. 8	2
17	79513600	1" SAE Flat Washer	12
18	79512065	1" NC Toplock Nut Gr. C	6

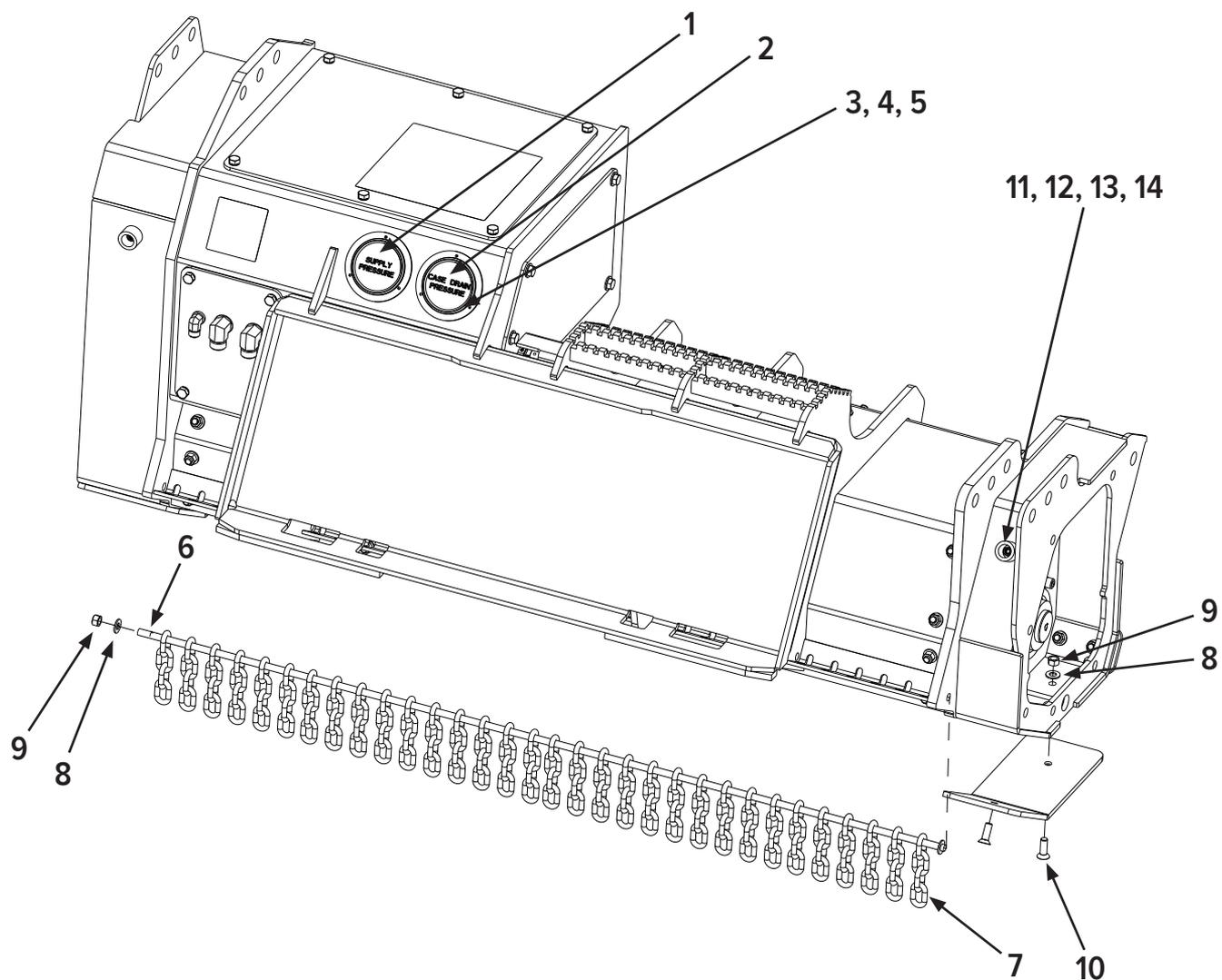
Frame Assembly



PARTS LIST

ITEM	PART	DESCRIPTION	QTY
1	57101449	Frame Assembly, 60" Drum Mulcher	1
2	57101533	Liner Plate, 60" Front Lip	2
3	57101473	Liner Plate, 60" Top	2
4	57101477	Liner Plate, 60" Middle	2
5	57101481	Liner Plate, 60" Bottom	2
6	57101429	Bearing Assembly, Belt Side	1
7	57101431	Bearing Assembly, Non-Belt Side	1
8	57101457	Guard Ring, Drum	2
9	57101461	Shaft Slot Plate	2
10	57101541	Front Runner Plate, Belt Side	1
11	57101545	Front Runner Plate, Non-Belt Side	1
12	57101465	Rear Runner Plate, Belt Side	1
13	57101469	Rear Runner Plate, Non-Belt Side	1
14	57101589	1/2" NC x 1-1/2" Carriage Bolt Gr. 5	42
15	79513320	1/2" SAE Flat Washer	42
16	56090100	1/2" NC TopLock Nut Gr. C	42
17	57101605	1/2" NC x 1-1/4" Socket Cap Screw	16
18	52093060	1/2" Nord-Lock Washer	16
19	51090101	1/2" NC x 1-1/2" Flat Socket Cap Screw	8

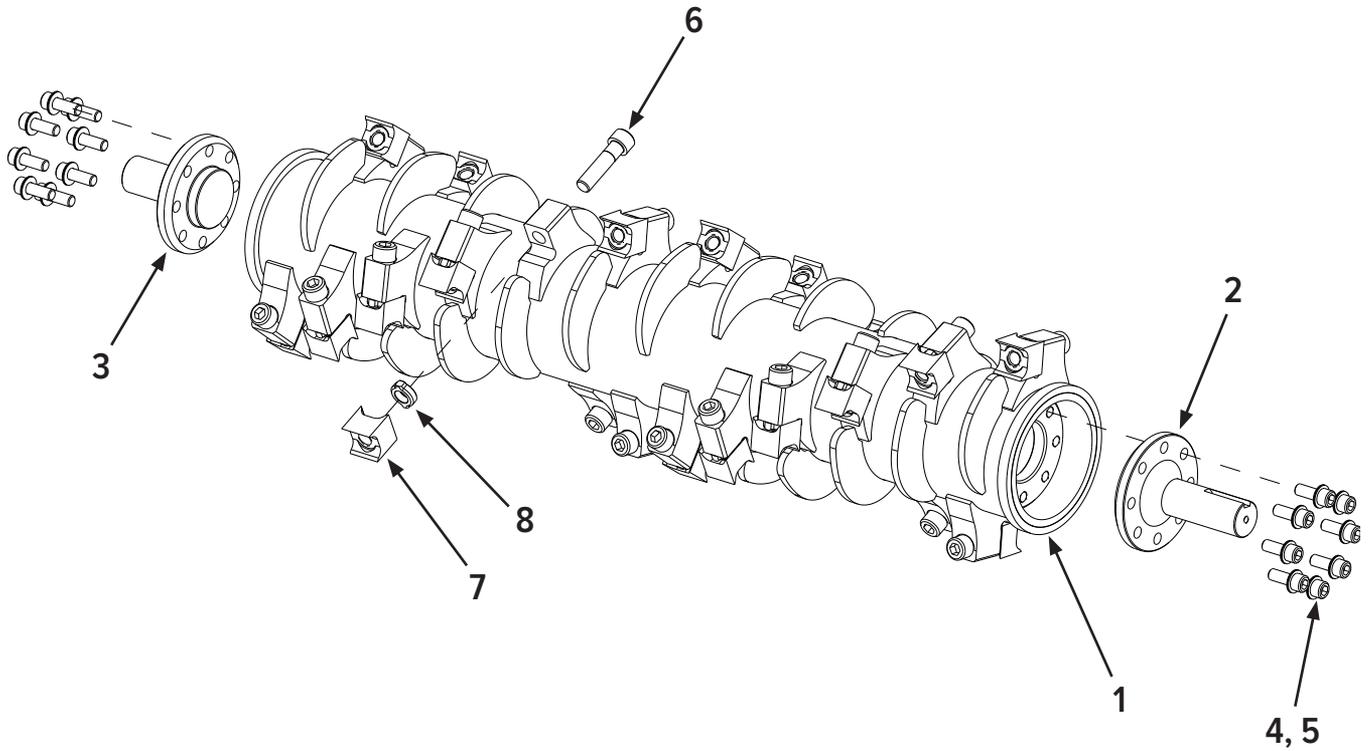
Frame Assembly



PARTS LIST

ITEM	PART	DESCRIPTION	QTY
1	57101441	Pressure Gauge, Supply	1
2	57101445	Pressure Gauge, Case Drain	1
3	57101629	#10 NC x 1" Machine Screw	6
4	57101625	#10 SAE Flat Washer	6
5	57101633	#10 NC Nylock Nut	6
6	57101505	Chain Rod Assembly, 60"	1
7	57101593	3/8 Grade 70 Chain, 4 Links	32
8	79513320	1/2" SAE Flat Washer	9
9	56090100	1/2" NC TopLock Nut Gr. C	9
10	51090101	1/2" NC x 1-1/2" Flat Socket Cap Screw	8
11	79563400	1/8" NPT Straight Grease Zerk	2
12	57101637	1/4" Push to Connect x 1/8" NPT Elbow (not shown)	4
13	57101621	1/4" Grease Tubing, 21", Belt Side (not shown)	1
14	57101617	1/4" Grease Tubing, 10", Non-Belt Side (not shown)	1

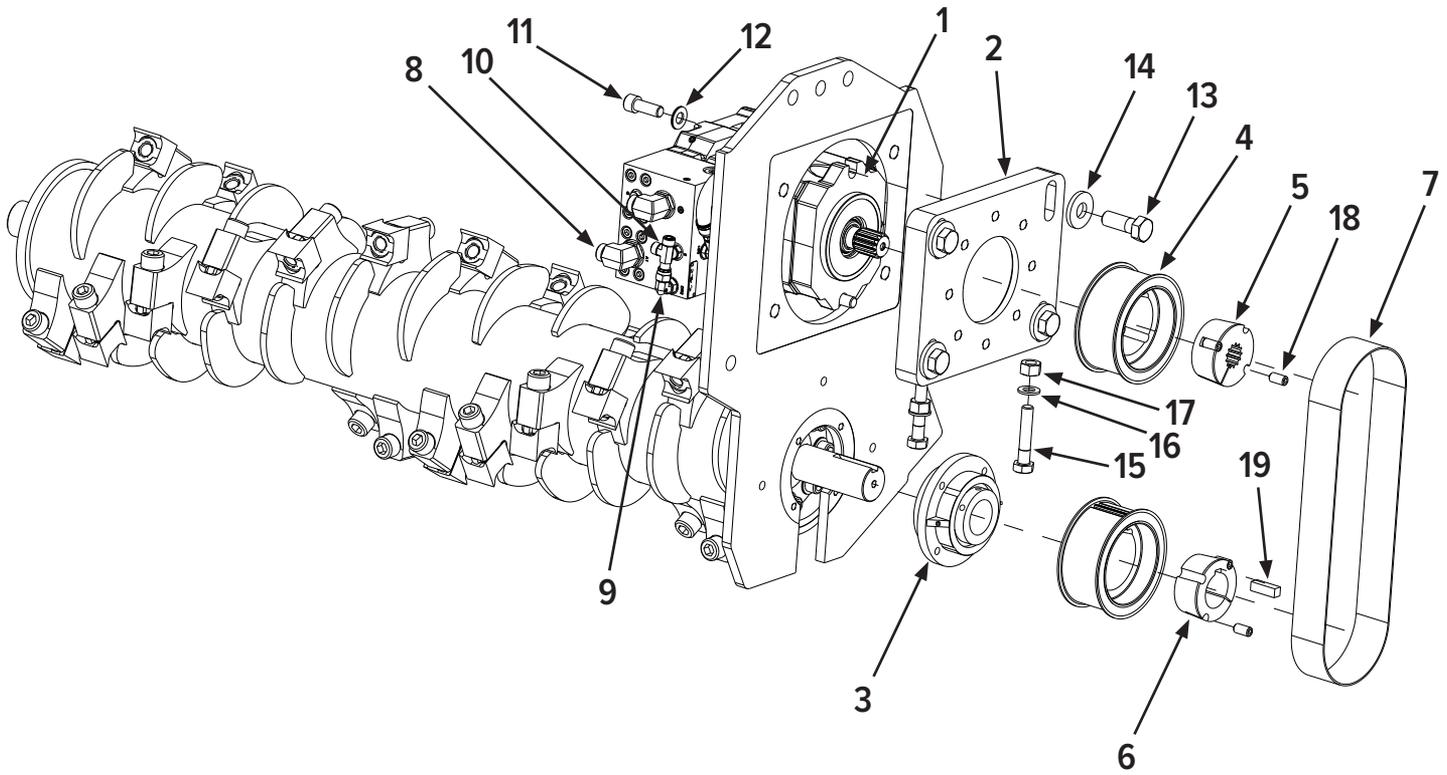
Drum Assembly



PARTS LIST

ITEM	PART	DESCRIPTION	QTY
1	57101531	Drum Weldment, 60"	1
2	57101549	Stub Shaft, Belt Side	1
3	57101553	Stub Shaft, Non-Belt Side	1
4	57101609	3/4" NC x 2" Socket Cap Screw	16
5	57997000	3/4" Nord-Lock Washer	16
6	57101601	1" - 14 x 4" Socket Cap Screw	24
6	57101597	1" - 14 x 3-1/2" Socket Cap Screw - OPTION	24
7	57101305	Steel Planer Tooth	24
7	57101315	Carbide Planer Tooth - OPTION	24
7	57101320	Carbide 2-Tip Tooth - OPTION	24
8	57101310	Steel Planer Spacer	24

Motor and Belt Drive



PARTS LIST

ITEM	PART	DESCRIPTION	QTY
1	57795020	Hydraulic Motor with Manifold Super Drive	1
2	57101521	Motor Mount Plate	1
3	57101429	Bearing Assembly, Belt Side	1
4	57101437	Drive Pulley	2
5	57101435	Taper Lock Bushing, 13T	1
6	57101433	Taper Lock Bushing, 2-7/16, 5/8" Key	1
7	57101525	Drive Belt	1
8	57795500	Hydraulic Adapter Fitting, 90° Elbow, -12 ORFS x -16 MORB	2
9	79550720	Hydraulic Adapter Fitting, 90° Elbow, -08 ORFS x -08 MORB	1
10	57101375	Hydraulic Adapter Fitting, Run Tee, -08 MORFS x -08 FORFS x -08 MORFS	1
11	57101609	3/4" NC x 2" Socket Cap Screw	2
12	57997000	3/4" Nord-Lock Washer	2
13	79510805	1" NC x 2-3/4" Hex Cap Screw Gr. 8	4
14	79513600	1" SAE Flat Washer, Thru Hard	4
15	79510642	3/4" NC x 4" Full Thread Hex Cap Screw Gr. 8	2
16	79514200	3/4" SAE Flat Washer	2
17	79512600	3/4" NC Hex Nut Gr. 8	2
18	57101641	5/8" NC x 1-1/4" Set Screw	4
19	57101645	5/8" Square x 2" Keystock	1

Hydraulic System

PARTS LIST

ITEM	PART	DESCRIPTION	QTY
1	57795020	Hydraulic Motor with Manifold Super Drive	1
2	57101441	Pressure Gauge, Supply	1
3	57101445	Pressure Gauge, Case Drain	1
4	51060912	Relief Valve, Case Drain, 90 psi	1
4	51060910	Relief Valve, Case Drain, 50 psi - OPTION	1
5	51060721	Hydraulic Adapter Fitting, Straight Bulkhead, -06 MORFS x -06 MORB	1
6	57101383	Hydraulic Adapter Fitting, Run Tee, -06 MORFS x -06 FORFS x -06 MORFS	1
7	57101379	Hydraulic Adapter Fitting, Straight, -06 MJIC x 14 Male Metric	1
8	57795500	Hydraulic Adapter Fitting, 90° Elbow, -12 ORFS x -16 MORB	2
9	79550720	Hydraulic Adapter Fitting, 90° Elbow, -08 ORFS x -08 MORB	1
10	57101375	Hydraulic Adapter Fitting, Run Tee, -08 MORFS x -08 FORFS x -08 MORFS	1
11	57101389	-12 MORFS x -12 MORFS, Bulkhead 90° Elbow with Locknut	2
12	57101391	-08 MORFS x -08 MORFS, Bulkhead 90° Elbow with Locknut	1
13	57101387	Hydraulic Adapter Fitting, Reducer, -06 MORFS x -04 FNPT	1
14	57101381	Hydraulic Adapter Fitting, Reducer, -08 MORFS x -08 FNPT	1
15	57101421	3/4" x 37" Hose Assembly	2
16	57101416	1/2" x 29-1/4" Hose Assembly	1
17	57101401	3/8" x 27" Hose Assembly	1
18	57101406	3/8" x 29-1/4" Hose Assembly	1
19	57101411	3/8" x 32-1/4" Hose Assembly	1
20	57797200	3/4" x 60-1/2" Hose Assembly, External Supply	2
20	51060831	3/4" x 72-1/2" Hose Assembly, External Supply - OPTION	2
20	51060851	3/4" x 84-1/2" Hose Assembly, External Supply - OPTION	2
21	57796200	3/8" x 60-1/2" Hose Assembly, External Case Drain	1
21	51060841	3/8" x 72-1/2" Hose Assembly, External Case Drain - OPTION	1
21	51060861	3/8" x 84-1/2" Hose Assembly, External Case Drain - OPTION	1
22	52097000	Protective Sleeve, 41"	1
23	51095200	Heat Shrink Band Clamp, 2" x 2-1/4"	1
24	59995200	Hydraulic Quick Coupler, Supply, 1/2" Body, Female	1
24	59995300	Hydraulic Quick Coupler, Supply, 5/8" Body, Female	1
24	59995400	Hydraulic Quick Coupler, Supply, 3/4" Body, Female	1
25	59995250	Hydraulic Quick Coupler, Supply, 1/2" Body, Male	1
25	59995350	Hydraulic Quick Coupler, Supply 5/8" Body, Male	1
25	59995450	Hydraulic Quick Coupler, Supply, 3/4" Body, Male	1
26	59995050	Hydraulic Quick Coupler, Case Drain, 1/4" Body, Male	1
26	59995100	Hydraulic Quick Coupler, Case Drain, 3/8" Body, Female	1
26	59995150	Hydraulic Quick Coupler, Case Drain, 3/8" Body, Male	1

Vail Products

A Division of
Hammersmith Mfg. & Sales Inc.
401 Central Ave.
Horton, KS 66439
1-844-973-7437
www.vailproducts.com

OWNER'S MANUAL

MUST STAY WITH PRODUCT