



OPERATOR'S AND PARTS MANUAL

SG15 STUMP GRINDER



PALADIN
LIGHT CONSTRUCTION GROUP

 **BRADCO**

 **FFC**

 **HARLEY**

 **MCMILLEN**

 **SWEEPSTER**

The Power of Combined Excellence



SERIAL NUMBER: _____

MODEL NUMBER: _____

Manual Number: OM683
Part Number: 75583
Rev.

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TO THE OWNER

GENERAL COMMENTS

Congratulations on the purchase of your new BRADCO product! This product was carefully designed and manufactured to give you years of dependable service. Only minor maintenance (such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all safety precautions and maintenance procedures, as described in this manual.

ABOUT THIS MANUAL

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents. **Remember, never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual. (See Sections B and G respectively.)**

Unless noted otherwise, right and left sides are determined from the position of the operator when behind the product facing forward.

SAFETY ALERT SYMBOL



This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

SERVICE

When servicing your product, remember to use only manufacturer replacement parts. Substitute parts may not meet the standards required for safe, dependable operation.

To facilitate parts ordering, record the model and serial number of your unit in the space provided on this page. This information may be obtained from the identification plate located on the product.

MODEL _____
SERIAL NUMBER _____
DATE PURCHASED _____

The parts department needs this information to insure that you receive the correct parts for your specific model.

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SAFETY PRECAUTIONS

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



THIS SYMBOL MEANS:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

SIGNAL WORDS: Note the use of signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, **typically for machine components which, for functional purposes, cannot be guarded.**

WARNING: Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury, and **includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.**

CAUTION: Indicates a potentially hazardous situation, which if not avoided, **may result in minor or moderate injury. It may also be used to alert against unsafe practices.**

SAFETY PRECAUTIONS

BRADCO STUMP GRINDER

GENERAL INFORMATION

This section is composed of various warnings and safety tips. **Read and learn all the information in this section before you attempt to use your BRADCO STUMP GRINDER.** Also read your vehicle owner's manual before using your equipment. This knowledge will help you operate your unit safely. **Do not take this information lightly, it is presented for your benefit and for the benefit of others working around you.**

The "Safety Alert Symbol", as previously described, will be used throughout this manual. It will appear with the word **DANGER**, **WARNING**, or **CAUTION** above it, and a safety message pertaining to the specific topic being covered. Take the time to read these messages as you come across them.

TO THE OPERATOR

The primary responsibility for safety with the equipment falls to the operator. Make sure that the equipment is operated only by responsible & competent individuals with the proper instruction. It is the skill, care, common sense, and good judgement of the operator that will determine how efficiently and safely the job is performed. Know your equipment before you start. Know its capabilities, dimensions, and how to operate all the controls. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order.

BEFORE YOU START

1. **Read the entire loader and Stump Grinder manual.** This knowledge is necessary for safe operation.
2. **Always wear safety goggles and hearing protection** during operation, and make sure **ALL** safety shields are properly installed.
3. **Follow all safety decals.** Keep them clean and replace them if they become worn, damaged, or illegible.
4. **Do not paint over,** remove, or deface any safety signs or warning decals on your equipment.
5. **Know your equipment inside and out.** Know how to operate all controls, and know emergency shut down procedures.
6. **Keep all stepping surfaces, pedals, and controls free from dirt, grease and oil.** Keep equipment clean to help avoid injury from a fall when getting on or off equipment.
7. **Never operate the unit near bystanders, traffic, pets, livestock, or buildings.** Be sure others know when and where you will be working. Never direct discharge towards people, animals, or property. Never allow anyone to approach the stump grinder when in operation.

SAFETY PRECAUTIONS

BRADCO STUMP GRINDER

8. **Never take passengers on your equipment.** There is no safe place for a passenger.
9. **Turn off engine, remove the key, and disconnect hydraulic couplers before performing maintenance.** If unit 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.
10. **Never leave the unit unattended when in a raised position.** Always make sure the attachment is on the ground, and keys removed, before leaving the unit unattended.
11. **Test all controls before you begin.**
12. **Do not smoke when refueling.** Allow room in the gas tank for expansion. Wipe up any spilt fuel. Secure cap tightly when done.

WORKING WITH THE STUMP GRINDER

1. **Never operate the unit without first reading and understanding the operator's manual.**
2. **Operate the unit only in daylight or sufficient artificial light.**
3. **Do not carry load with arms in the raised position.** Always carry loads as close as possible to the ground.
4. **Check your work area and know where all utility lines are.** Avoid hitting underground electrical wires, cables, pipes, fence posts, gas lines, uneven sidewalk edges, large rocks, etc.
5. **Never operate equipment while under the influence** of alcohol, prescription drugs, nonprescription drugs, or illegal drugs which could inhibit physical and/or mental capacity.
6. **Do not exceed rated operating capacity as machine may become unstable, which may result in loss of control.**
7. **Do not operate the unit without covers installed.**
8. **Keep hands, feet, hair and clothing away from equipment with engine running. Stay clear of all moving parts.**
9. **Do not raise the attachment when the grinding wheel is rotating.**
10. **Be sure cutting wheel is completely stopped before servicing or making any adjustments.**
11. **Adjust grinder angle using the handle only. Do not grab the wheel guard when adjusting angle.**

SAFETY PRECAUTIONS

BRADCO STUMP GRINDER

12. **ALWAYS LOWER THE LOADER ARMS TO THE GROUND, SHUT OFF THE ENGINE, AND REMOVE THE KEY BEFORE GETTING OFF THE UNIT.**

TRANSPORTING THE STUMP GRINDER

1. **Follow all federal, state, and local regulations when transporting the unit on public roads.**
2. **Use extra care when loading or unloading the machine onto a truck or trailer. Disconnect hydraulic couplers during transportation.**

MAINTENANCE

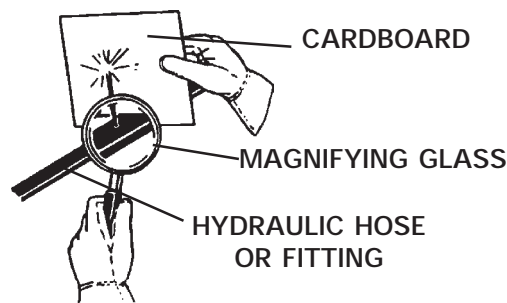
1. **Never work on equipment while it is running. Always lower the loader arms to the ground,** shut off the engine, remove the key, and disconnect hydraulic couplers before performing maintenance on the unit.
2. **Never make hydraulic repairs while the system is under pressure.** Injury or death could result.
3. **Observe proper maintenance schedules** and repairs to keep the unit in safe working order.
4. **Always wear safety goggles or glasses when working on equipment.**
5. **Use only manufacturer recommended replacement parts.** Other parts may be substandard in fit and quality.

WARNING! Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks.



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 him to research it immediately to determine proper treatment.



INTERNATIONAL SYMBOLS

As a guide to the operation of your equipment, various international symbols have been utilized on the instruments and controls. The symbols are shown below with an indication of their meaning.

	Engine speed		Alternator charge
	Hours recorded		Power take-off (on)
	Engine water temperature		Power take-off (off)
	Lights		"Tortoise," slow or minimum setting
	Horn		"Hare," fast or maximum setting
	Engine oil pressure		Caution
	Hazard warning		Control lever operating direction
	Axle connect		Rock shaft (raised)
	Axle disconnect		Rock shaft (lowered)
	Continuously variable		Remote cylinder (extended)
	Increase		Remote cylinder (retracted)
	Decrease		Remote cylinder (FLOAT)
	Diesel fuel		Differential lock
	Creeper range		Read operators manual
	High range		Neutral
	Low range		Forward
			Reverse

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PREOPERATION

STUMP GRINDER

GENERAL INFORMATION

The BRADCO Stump Grinder was designed to be easy to use and maintain. It is operated by the skid-steer auxiliary hydraulics, and mounts to the toolbar / quick attach mechanism for easy mounting.

Unless noted otherwise, right and left are determined from the position of the operator facing forward.

Remember to read the "Safety Precautions" and "Operating Instructions" sections of this manual BEFORE you attempt to install or use the attachment.

NOTE: The illustrations and data used in this manual were current (according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the stump grinders as may be necessary without notification.

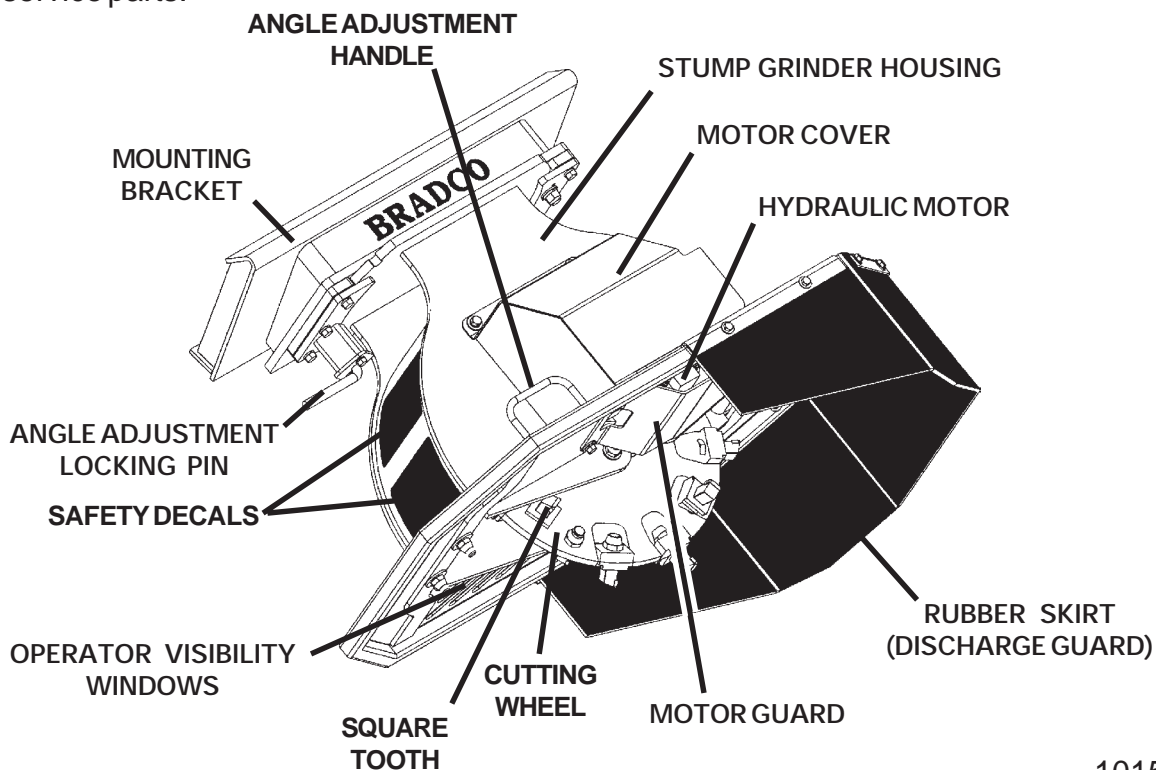
BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure that the equipment is operated only by trained individuals that have read and understand this manual.

If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer.

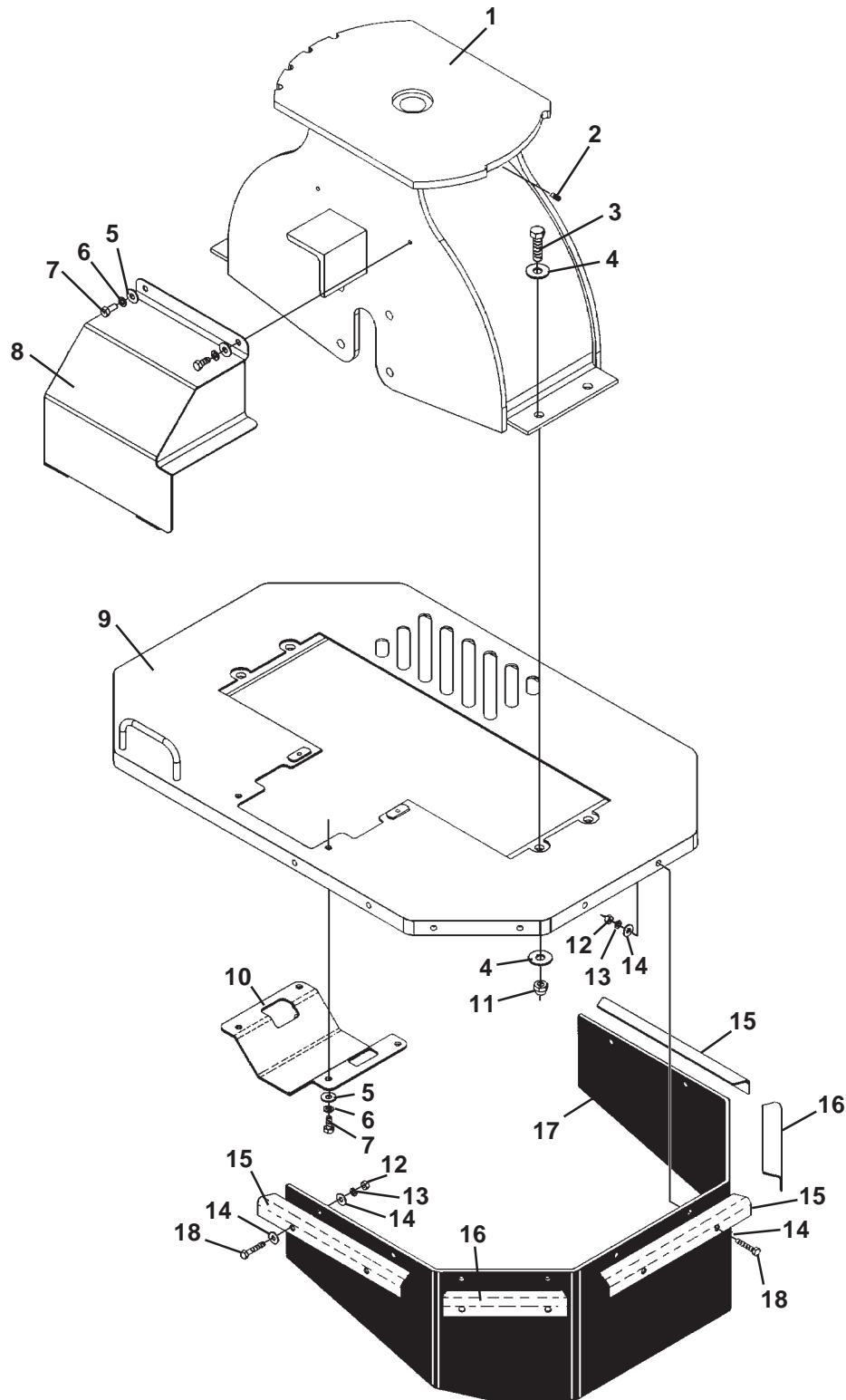
NOMENCLATURE

Throughout this manual, reference is made to various stump grinder components. Study the following diagram to acquaint yourself with the various names of these components. This knowledge will be helpful when reading through this manual or when ordering service parts.



STUMP GRINDER ASSEMBLY

STUMP GRINDER ASSEMBLY #101867



STUMP GRINDER ASSEMBLY

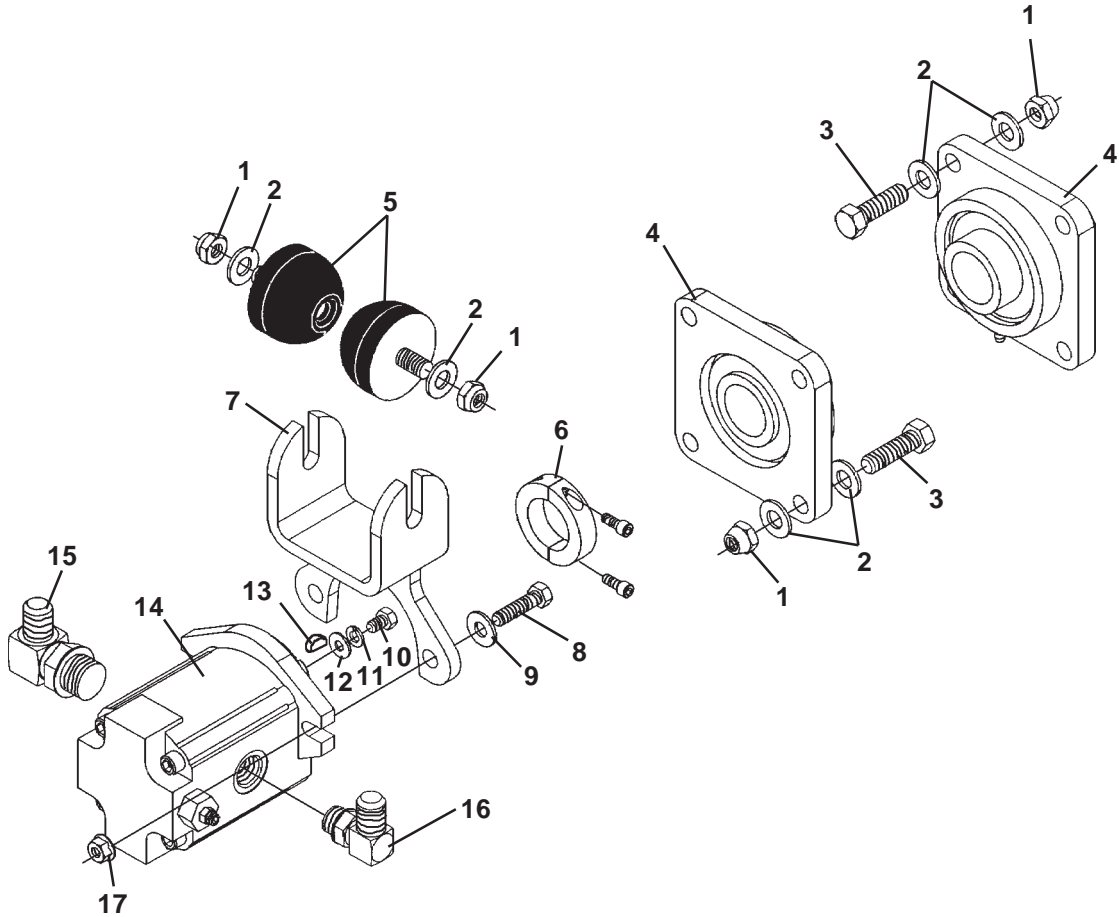
STUMP GRINDER ASSEMBLY #101867

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	101887	Stump Grinder Housing
2	1	6616	Grease Fitting
3	4	1091	.50" UNC X 1.75" Hex Capscrew
4	8	1516	.50" Flat Washer
5	6	1513	.31" Flat Washer
6	6	1502	.31" Lock Washer
7	6	1021	.31" UNC X .75" Hex Capscrew
8	1	101908	Motor Cover
9	1	101878	Wheel Guard
10	1	102988	Motor Guard
11	4	1841	.50" UNC Deformed Lock Nut
12	10	1224	.25" UNC Hex Nut
13	10	1501	.25" Lock Washer
14	20	1512	.25" Flat Washer
15	3	101890	Rubber Skirt Mounting Angle - Long
16	2	102443	Rubber Skirt Mounting Angle - Short
17	1	101907	Rubber Skirt
18	10	1005	.25" UNC X 1.50" Hex Capscrew

STUMP GRINDER DRIVE ASSEMBLIES

8-11 GPM DRIVE ASSEMBLY #102124

10-14 GPM DRIVE ASSEMBLY #102125



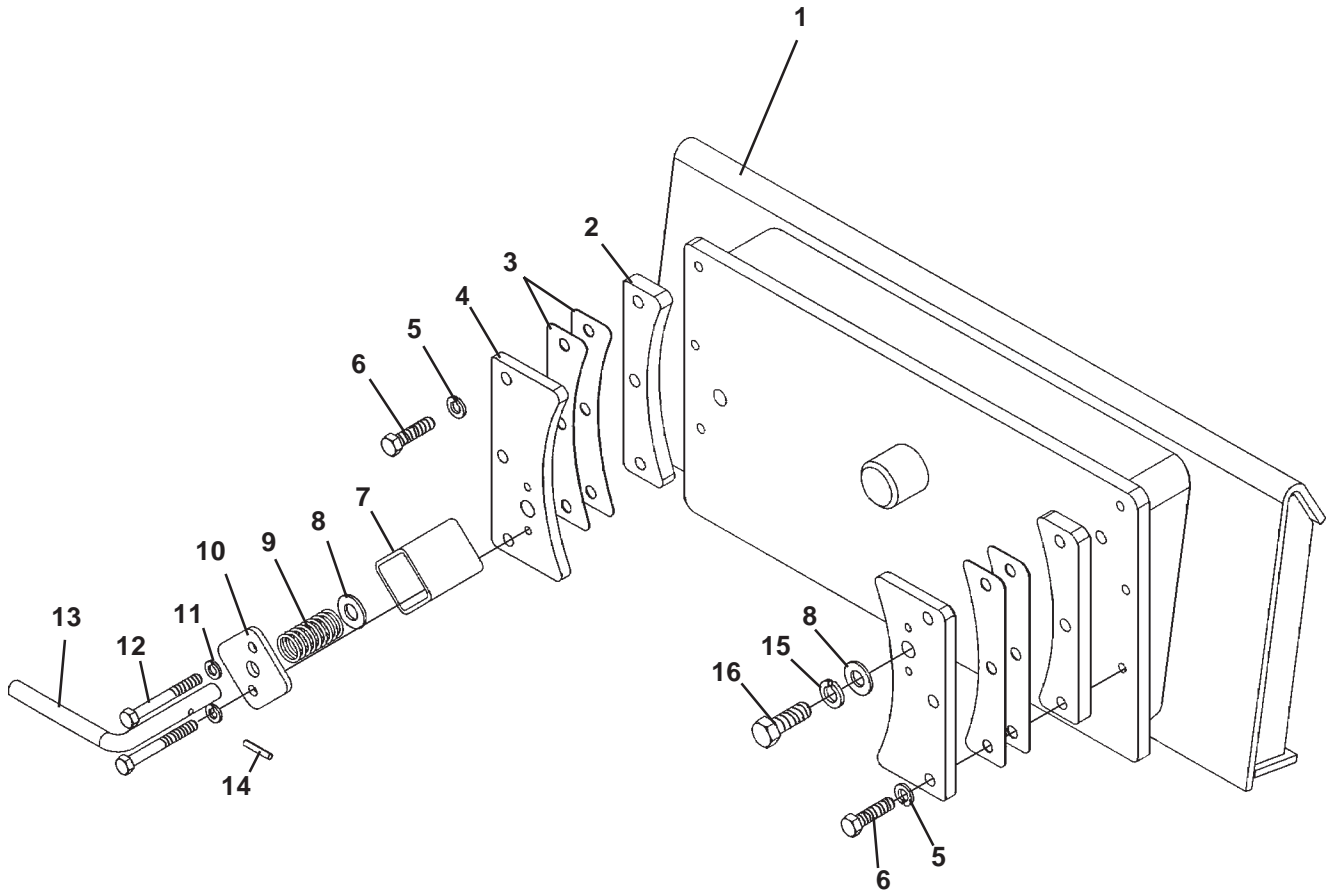
STUMP GRINDER DRIVE ASSEMBLIES

8-11 GPM DRIVE ASSEMBLY #102124
10-14 GPM DRIVE ASSEMBLY #102125

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	10	1841	.50" UNC Deformed Lock Nut
2	18	1516	.50" Flat Washer
3	8	1091	.50" UNC X 1.75" Hex Capscrew
4	2	2000085	Flange Bearing
	1	9371	Replacement Grease Fitting
5	2	6886	Bumper
6	1	104130	Collar
	-	10131	Replacement Capscrew
7	1	100860	Motor Mount
8	2	1045	.38" UNC X 1.50" Hex Capscrew
9	2	1514	.38" Flat Washer
10	1	1020	.31" UNC X .50" Hex Capscrew
11	1	1502	.31" Lock Washer
12	1	1512	.25" Flat Washer
13	1	104830	Key
14	1	102056	Hydraulic Motor 8-11 GPM (Assembly #102124)
	1	102057	Hydraulic Motor 10-14 GPM (Assembly #102125)
	**	19814	Replacement Motor Seal Kit
15	1	3316	90° Elbow 12MBo-8MJ
16	1	3283	90° Elbow 10MBo-8MJ
17	2	2005510	.38" UNC Serrated Flange Lock Nut

**** Field replacement of the internal motor seals voids warranty.**

MOUNTING KIT ASSEMBLY



MOUNTING KIT ASSEMBLY

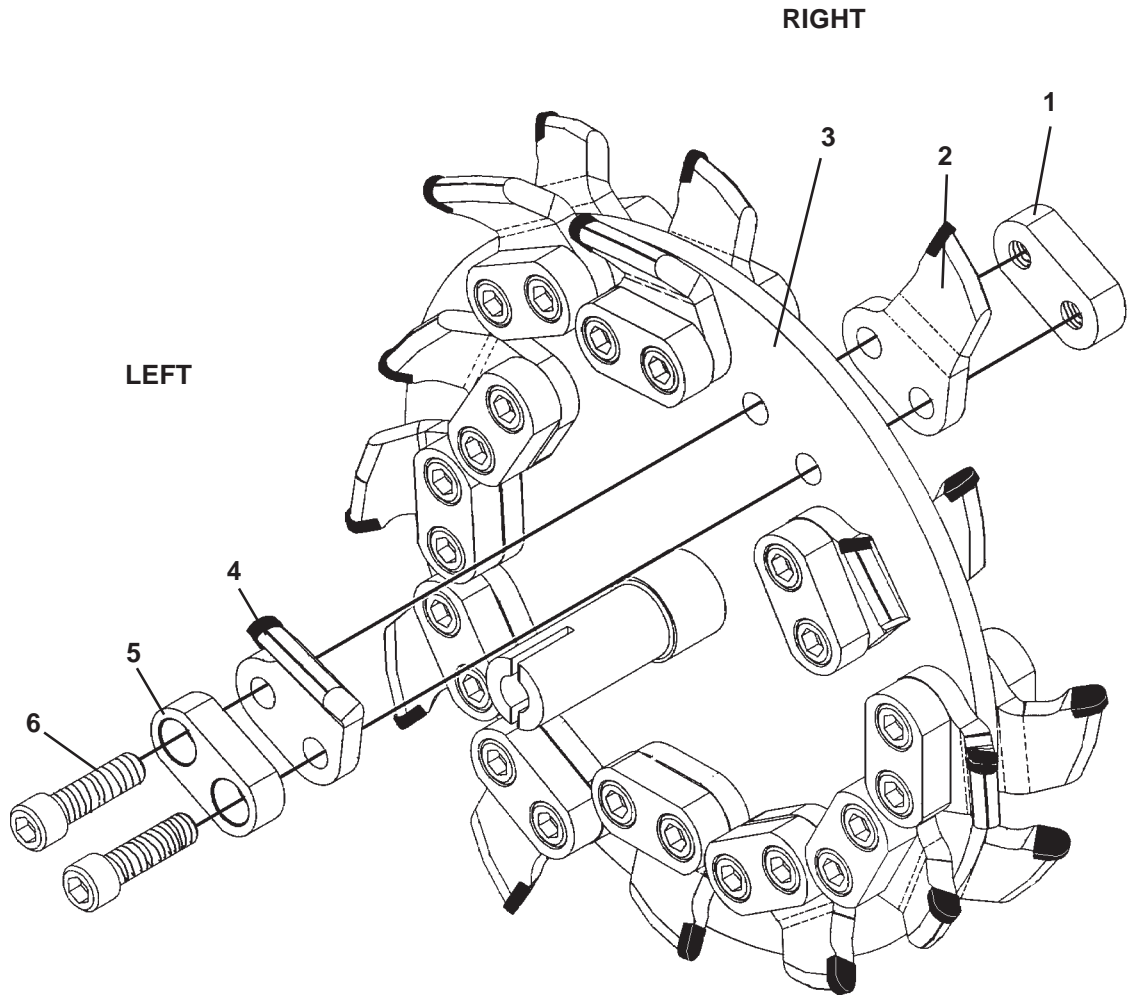
UNIVERSAL MOUNTING KIT ASSEMBLY #101868

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	**	Mounting Bracket (Universal Mounting Bracket Shown - #101881)
2	2	102445	Guide Spacer
3	4	102446	Guide Shim
4	2	102444	Guide Plate
5	6	1503	.38" Lock Washer
6	6	1045	.38" UNC X 1.50 Hex Capscrew
7	1	101904	Lock Pin Tube
8	2	1516	.50" Flat Washer
9	1	89871	Compression Spring
10	1	101905	Lock Pin Cap
11	2	1502	.31" Lock Washer
12	2	1029	.31" UNC X 2.75" Hex Capscrew
13	1	101906	Lock Pin
14	1	1777	Roll Pin
15	1	1505	.50" Lock Washer
16	1	1090	.50" UNC X 1.50" Hex Capscrew

** The Mounting Bracket is specific to your loader application. Contact Factory or your local BRADCO dealer to order this item.

BOLT-ON TOOTH WHEEL ASSEMBLY

WHEEL ASSEMBLY #101876



NOTE: ORIENT LEFT AND RIGHT TEETH CUTTING EDGES RELATIVE TO AXLE AS SHOWN.

BOLT-ON TOOTH WHEEL ASSEMBLY

WHEEL ASSEMBLY #101876

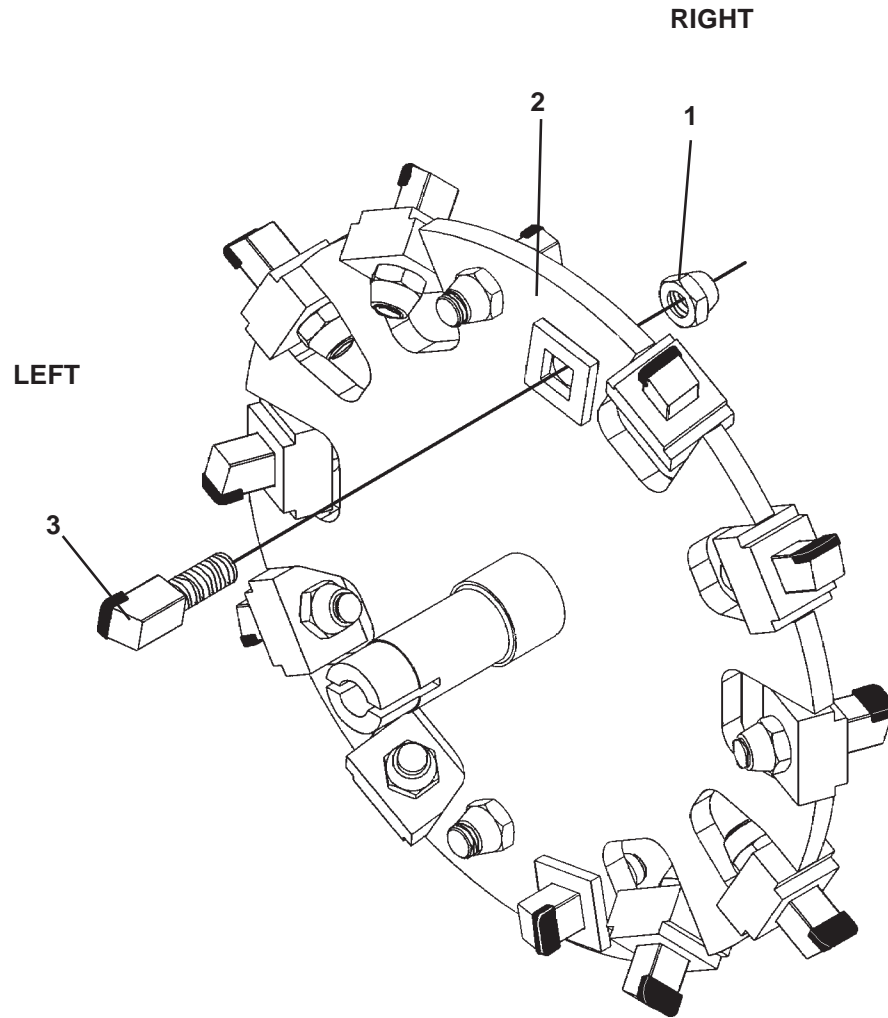
<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	12	19959	Tooth Mount - Threaded
2	12	19957	Right Tooth
3	1	101879	Wheel
4	12	19956	Left Tooth
5	12	19960	Tooth Mount - Counterbored
6	24	10110	.62" UNC X 2.25" Sockethead Capscrew

REPLACEMENT TOOTH KIT #102198

12	19956	Left Tooth
12	19957	Right Tooth

SQUARE TOOTH WHEEL ASSEMBLY

WHEEL ASSEMBLY #101877



SQUARE TOOTH WHEEL ASSEMBLY

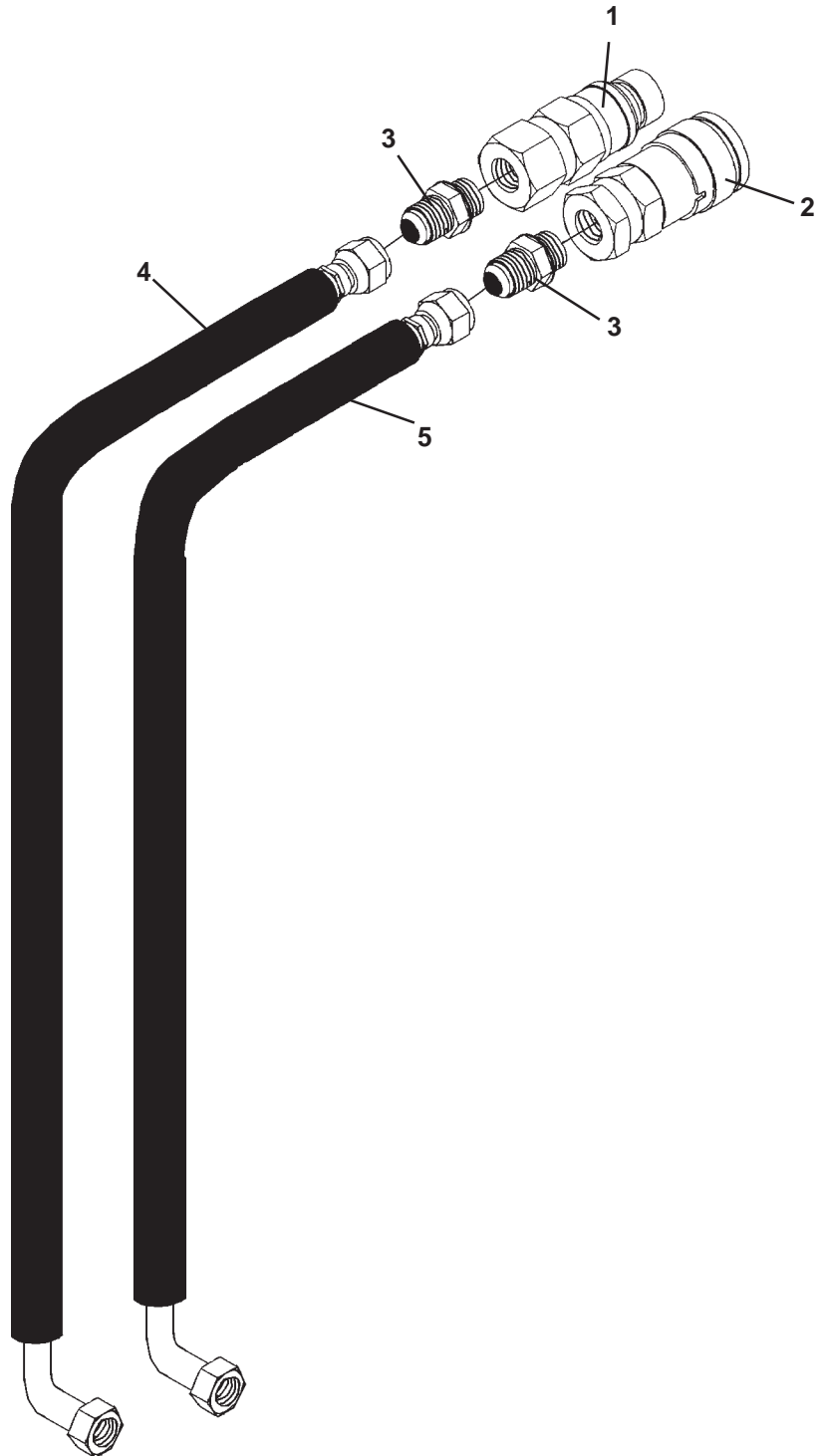
WHEEL ASSEMBLY #101877

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	14	1810	.62" UNC Deformed Lock Nut
2	1	101880	Wheel
3	14	19917	Square Tooth - Threaded

REPLACEMENT TOOTH KIT #102199

14	19917	Square Tooth - Threaded
14	1810	.62" UNC Deformed Lock Nut

HYDRAULIC ASSEMBLIES



HYDRAULIC ASSEMBLIES

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	19628	Male Coupler - .50" 8FBo Flat Face
	1	17139	Male Coupler - .50" 8FBo Poppet
2	1	14175	Female Coupler - .50" 8FBo Flat Face
	1	17140	Female Coupler - .50" 8FBo Poppet
3	2	3103	Straight Connector 8MBo-8MJ
4	1	38273	Hose Assembly .50" x 68" 8FJX - 8FJX 90°
5	1	38294	Hose Assembly .50" x 64" 8FJX - 8FJX 90°

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INSTALLATION INSTRUCTIONS

GENERAL INFORMATION

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

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

IMPORTANT! OPERATING THE STUMP GRINDER WITH THE INCORRECT MOTOR FOR YOUR SKID-STEER WILL GREATLY REDUCE THE EFFICIENCY OF THE UNIT. MATCH THE HYDRAULIC FLOW (GPM) OF THE SKID-STEER WITH THE HYDRAULIC FLOW (GPM) OF THE MOTOR IN THE STUMP GRINDER DRIVE ASSEMBLY.

INSTALLATION INSTRUCTIONS

1. Remove any shipping banding from around the stump grinder and skid.
2. Remove any attachment from the front of the loader.
3. Following all standard safety practices and the instructions for installing an attachment on your skid-steer operator's manual, install the stump grinder onto your skid-steer.

NOTE: IT IS IMPORTANT TO MAKE SURE THE LOCKING MECHANISM ON YOUR QUICK ATTACH IS ENGAGED, THEREFORE LOCKING THE ATTACHMENT ONTO THE SKID-STEER.

4. Lower the unit to the ground and remove the key.
5. Relieve any pressure from the auxiliary hydraulic system and after making sure that there is not any foreign matter on the hydraulic couplers, connect the couplers to the auxiliary hydraulic system of your skid-steer loader.

DISCONNECT INSTRUCTIONS

1. With the stump grinder extended out, lower the unit onto its side. NOTE: Since the teeth will be exposed to bystanders, it is recommended to place the unit towards the wall or in such a location to avoid inadvertant contact with with the cutting wheel.
2. Following Safety Shut Down Procedures; stop the engine and set the parking brake, relieve any pressure in the hydraulic lines.
3. Disconnect the power and return hoses from the auxiliary hydraulics.
4. Following all standard safety practices and the instructions for disconnecting an attachment in your skid-steer operator's manual, disconnect the stump grinder from your skid-steer.
5. Connect the hydraulic couplers on the attachment together to prevent contaminants from entering the hydraulic system.

OPERATING INSTRUCTIONS

STUMP GRINDER

GENERAL INFORMATION

The BRADCO stump grinder is perfect for removing small stumps and bushes. The easy maneuverability of the skid-steer allows access to areas often inaccessible, and it is easily moved from site to site. The compact design offers excellent visibility, and can be used in tight spaces around buildings and homes.

The quick attach mounting plate allows for easy hook-up and disconnect. Due to this arrangement, thorough knowledge of the skid-steer controls is necessary for machine operation. Read your skid-steer operator's manual for information regarding skid-steer operation before attempting to use the stump grinder.

Follow all installation instructions (Section F) for the proper installation of the unit onto your skid-steer before operating.

STUMP GRINDING OPERATION

WARNING! CHECK THE WORK AREA AND KNOW WHERE ALL UTILITY LINES ARE BEFORE OPERATING THE STUMP GRINDER.



1. Set the speed selector on the skid-steer to slow, if so equipped. Start the engine and position the grinder on the nearest side of the stump and to the left.
2. Lower the unit so you are grinding at a depth of 1/4" to 2".

NOTE: The cutting depth of each pass will be determined by the type of tree. Certain varieties of trees will allow for a deeper cut than trees containing a lot of sap.

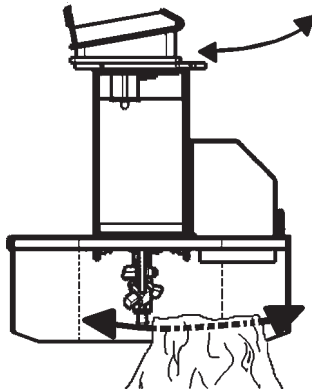
NOTE: It is recommended that the cutting wheel be perpendicular to the stump or as close to perpendicular as possible for the best performance of the unit.

3. Activate the auxiliary hydraulics to the stump grinder and increase the engine to full RPM. **NOTE: It is recommended to always use full throttle (maximum engine speed) when cutting with the stump grinder.**
4. There are two methods of grinding, depending on the stump size and operator preference. The skid-steer can be driven back and forth across the stump, or the operator can swing the grinder using the skid-steer controls. See Figure #1. **NOTE: If you take too deep of a cut, the grinder will stall. Raise slightly and try again.** Continue grinding until you have ground down a few inches.

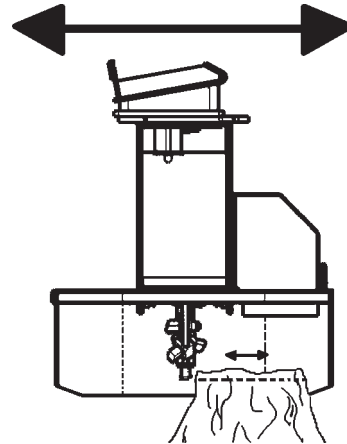
OPERATING INSTRUCTIONS

STUMP GRINDER

FIGURE #1



GRINDING BY OPERATING THE SKID-STEER CONTROLS (BUCKET CYLINDER).



GRINDING BY DRIVING THE SKID-STEER BACK AND FORTH.

5. Raise the loader arms to the original height, and move the grinder to the right. Repeat steps #2 through #4 until you reach the right side of the stump.
6. Return the grinder to the left of the stump, lower and repeat steps #2 through #5 until you have ground the stump into the ground.
7. Stop the grinder by de-activating the auxiliary hydraulics.

NOTE: It is recommended that the grinder be angled when grinding roots, and that you grind along the length of the root by moving the skid-steer over the root.

NOTE: Some operators prefer to operate the grinder at an angle for either spoil placement or to increase productivity in tight spaces.

MAINTENANCE & SERVICE

GENERAL INFORMATION

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

DAILY

- Check all bolts and nuts for tightness.
- Check mounting hardware on teeth and torque to min. 150 - max 180 ft. lbs.
- Check teeth for damage, and replace as needed.
- Check all safety guards and covers to make sure they are installed correctly.
- Check for missing or illegible Safety Decals.
- Replace any missing bolts or nuts with approved replacement parts.
- Check hydraulic system for hydraulic oil leaks. See procedure below.
- Visually inspect the machine for worn parts or cracked welds, and repair as necessary.

EVERY 40 HOURS

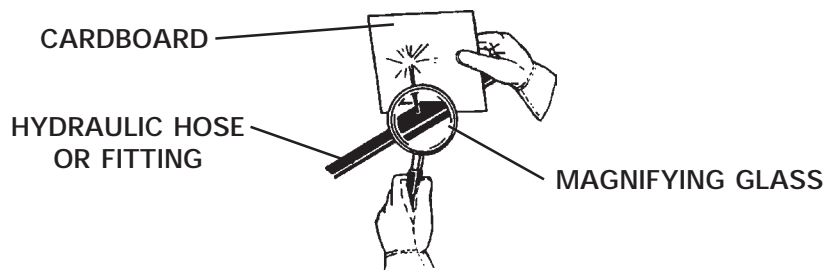
- Lubricate all grease fittings. (One on each flange bearing and one on center pivot.)

WARNING! Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.



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 him to research it immediately to determine proper treatment.



IMPORTANT: When replacing parts, use only factory approved replacement parts. Manufacturer will not claim responsibility for use of unapproved parts or accessories, and/or other damages as a result of their use.

MAINTENANCE

STUMP GRINDERS

WARNING! Avoid serious injury. Lower the stump grinder to the ground, set the parking brake, 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 hydraulic couplers.



REPLACING TEETH

When replacing the teeth the unit must be placed on its side or blocked securely off the ground to allow the wheel to rotate.

The teeth should be inspected regularly (every 8 hours) for tightness and to ensure they are not worn or that the carbide tip is not missing or chipped. Tighten and replace as necessary.

Replacing Square Teeth:

1. With unit securely blocked off the ground and hydraulic couplers disconnected, remove lock nuts on teeth being replaced.
2. Position new teeth and replace existing lock nut with new one provided.
3. Torque to specification. (See Section "O".)

Replacing Bolt-On Teeth:

1. With unit securely blocked off the ground and hydraulic couplers disconnected, remove the two sockethead capscrews securing the tooth to the wheel.
2. Position the new tooth on one side while retaining the existing tooth on the other side and secure in place with the existing sockethead capscrews.

NOTE: Be sure to maintain the existing tooth pattern when replacing any bolt-on teeth.

3. Torque to specification. (See Section "O".)

REPLACING HYDRAULIC MOTOR

When replacing the hydraulic motor the unit should be either securely blocked off the ground or attached to a hoist with the hydraulic couplers disconnected.

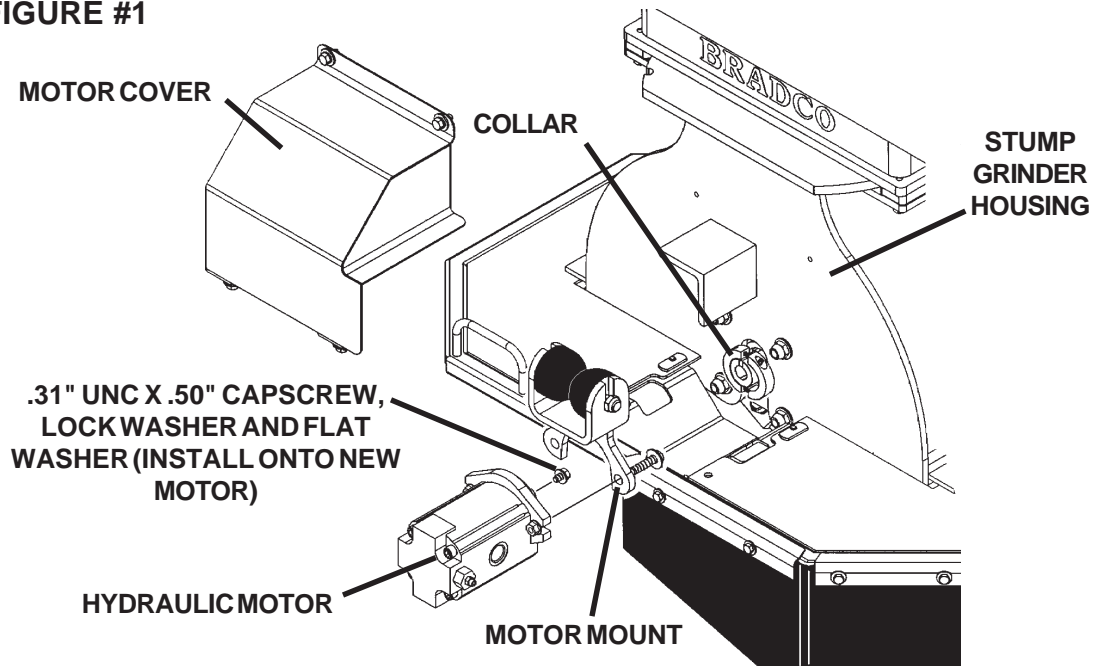
NOTE: Field replacement of the internal motor seals voids warranty.

1. With unit securely positioned and the motor cover removed, disconnect the hydraulic couplers and then tag and disconnect the hydraulic fittings and hoses from the hydraulic motor. Note the hose routing for re-installation.
2. Loosen the two sockethead capscrews on the collar. See Figure #1

MAINTENANCE

STUMP GRINDERS

FIGURE #1



3. Slide the motor, with motor mounting still attached, out of the wheel shaft. Remove the two .38" cap screws holding the motor to the motor mount and remove the motor. See Figure #1
4. Remove the .31" capcrew, lock washer and flat washer from the motor shaft and install onto the new motor.
5. Reinstall the motor mount onto the new motor using the existing hardware. Slide the motor with the mounting plate into the cutting wheel shaft while positioning the rubber bumpers and retighten the sockethead cap screws on the collar.
6. Torque all hardware to specification. See Section O
7. Re-connect the hydraulic hoses and fittings to the new motor.
8. Check for leaks and tighten as required.
9. Install motor cover using the existing hardware.

WARNING! Avoid serious injury. Lower the stump grinder to the ground, set the parking brake, 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 hydraulic couplers.



REPLACING FLANGE BEARINGS AND/OR CUTTING WHEEL

When replacing the coupler the unit should be either securely blocked up off the ground or attached to a hoist with the hydraulic couplers disconnected.

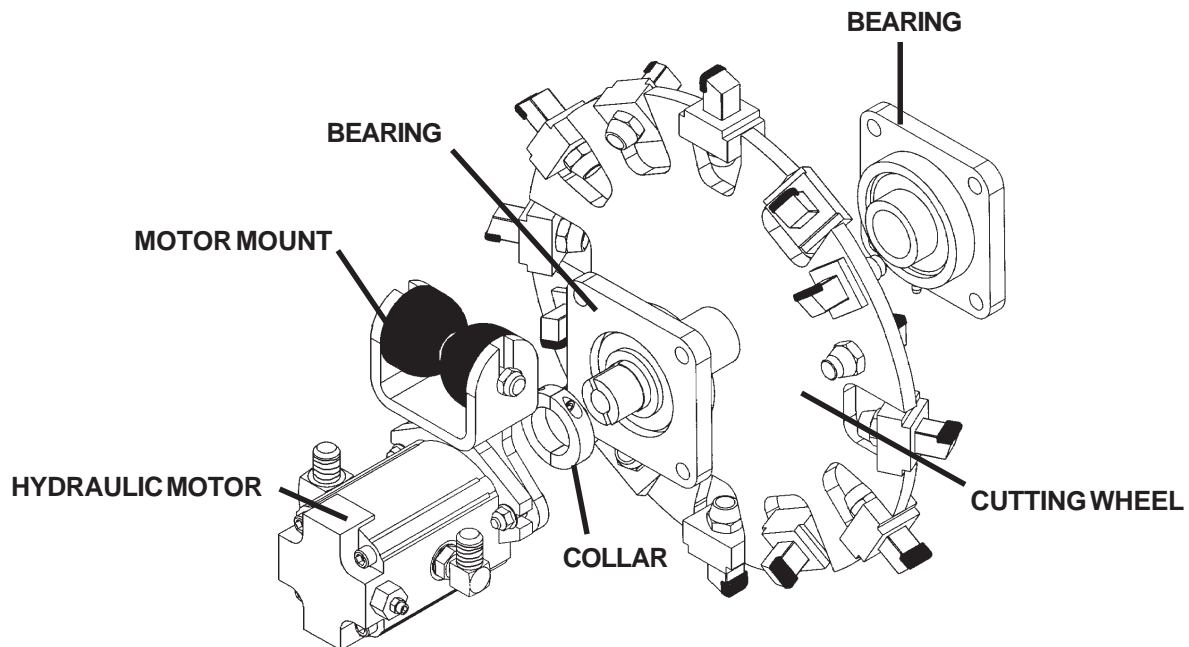
MAINTENANCE

STUMP GRINDERS

1. With unit securely positioned and hydraulic couplers disconnected, remove the motor cover and the motor guard.
2. Remove the four capscrews, flat washers and lock nuts securing each bearing to the stump grinder housing. The cutting wheel and drive assembly should slide down out of the housing. See Figure #2

FIGURE #2

CUTTING WHEEL AND DRIVE ASSEMBLY



3. Remove the hydraulic motor from the cutting wheel shaft to gain access to the left bearing. (See Replacing Hydraulic Motor instructions.)
4. If replacing the bearings only; remove the set screw securing the bearings to the cutting wheel and replace the old bearings with the new ones.
5. If replacing the cutting wheel only; remove the bearings from the existing cutting wheel and reinstall onto the new cutting wheel.
6. Reinstall the hydraulic motor with the motor mount onto the cutting wheel shaft. Tighten capscrews on the collar.
7. Slide the cutting wheel and drive assembly back into place in the stump grinder housing. Reinstall existing capscrews, flat washers and lock nuts securing the bearings to the housing.
8. Reinstall the motor cover and motor guard.
9. Torque to specification. See Section O

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STORAGE & TRANSPORTING

STUMP GRINDER

GENERAL INFORMATION

The following storage procedure will help you to keep your stump grinder in top condition. It will also help you get off to a good start the next time your stump grinder 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.

PREPARATION FOR STORAGE

1. Clean the unit thoroughly, removing all mud, dirt, grease and wood chips.
2. Replace any worn or chipped teeth. Replace any teeth that are missing the carbide tip.
3. Inspect the unit 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 parts from your authorized dealer.
4. Tighten all loose nuts, capscrews, and hydraulic connections.
5. Connect the hydraulic couplers together to protect the hydraulic system from contaminants.
6. Touch up all unpainted and exposed areas with paint, to prevent rust.
7. Replace decals if damaged, or in unreadable condition.
8. Grease all grease fittings. (One on each flange bearing and one on center pivot.)
9. Store the unit in a dry and protected place. Leaving the unit outside will materially shorten its life.

REMOVING FROM STORAGE

1. Remove all protective coverings.
2. Check hydraulic hoses for deterioration, and replace if necessary.
3. Check all nuts and bolts for tightness, especially those securing the motor and teeth.

TRANSPORTING

1. Follow all federal, state and local regulations when transporting on public roads.
2. Use extra care when loading or unloading onto a trailer or truck.

CAUTION: Be sure to install an SMV (Slow Moving Vehicle) sign on loader before transporting.



When transporting on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local and government regulations. Always drive slowly over uneven terrain to avoid tipping the unit.

TROUBLESHOOTING

<u>PROBLEM</u>	<u>POSSIBLE CAUSE</u>	<u>POSSIBLE REMEDY</u>
Motor will not operate.	Auxiliary hoses not hooked up to the skid-steer.	Engage Couplers
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
	Skid-steer auxiliary valve not engaged.	Engage auxiliary valve.
Wheel rotates sluggishly.	Insufficient hydraulic flow from the skid-steer.	Refer to skid-steer's owners manual.
	Damaged quick coupler.	Replace if necessary.
	Oil filter on skid-steer is dirty.	Refer to skid-steer's owners manual.
	Internal motor leakage.	Call Bradco service department.
	Incorrect hydraulic motor.	Check motor GPM and match motor to skid-steer hydraulic flow.
Leaking Oil.	Loose or damaged hydraulic line.	Tighten or replace.
	O-Rings on fittings damaged.	Replace if necessary.
	Fittings loose or damaged.	Tighten or replace.
	Motor seals damaged.	Call Bradco Service Department.
Insufficient power.	Insufficient hydraulic flow from the skid-steer.	Refer to skid-steer's owners manual.
	Relief valve setting adjusted too low.	Refer to skid-steer's owners manual.
	Oil filter on skid-steer is dirty.	Refer to skid-steer's owners manual.
Excessive Vibration	Broken, damaged or missing teeth.	Replace as necessary.
	Bent wheel shaft.	Replace Cutting Wheel.
	Bearings loose.	Check bolts for tightness.
	Bearings damaged.	Replace if necessary.
	Collar loose or damaged.	Replace or tighten as necessary

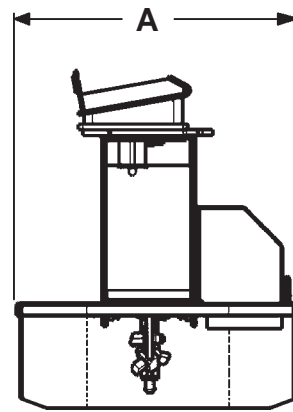
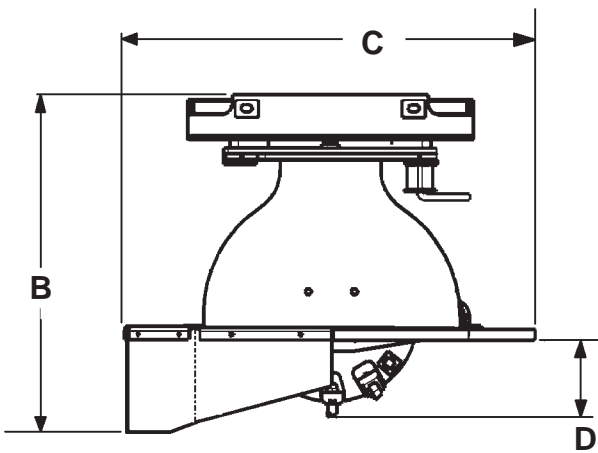
TROUBLESHOOTING

<u>PROBLEM</u>	<u>POSSIBLE CAUSE</u>	<u>POSSIBLE REMEDY</u>
Excessive oil temperature.	Hydraulic oil level too low.	Refer to skid-steer's owners manual
	Excessive stalling of cutting wheel.	Decrease cutting depth.
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
	Hydraulic oil or oil filter in skid-steer is dirty.	Refer to skid-steer's owners manual.
	Relief valve setting adjusted too low.	Refer to skid-steer's owners manual.
	Couplers not engaged.	Engage couplers.
Wheel rotates in the wrong direction.	Hoses are switched at the motor.	Switch motor hoses.

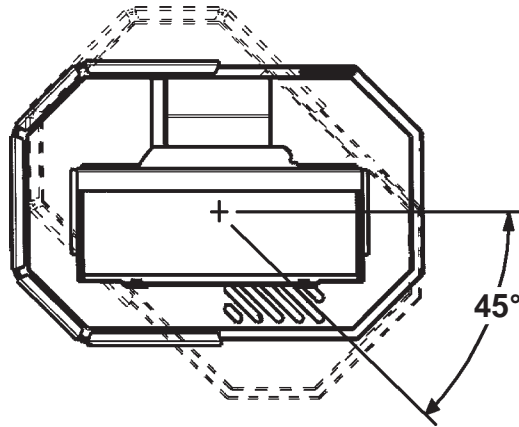
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SPECIFICATIONS

STUMP GRINDER



SPECIFICATION AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE AND WITHOUT LIABILITY THEREFORE.



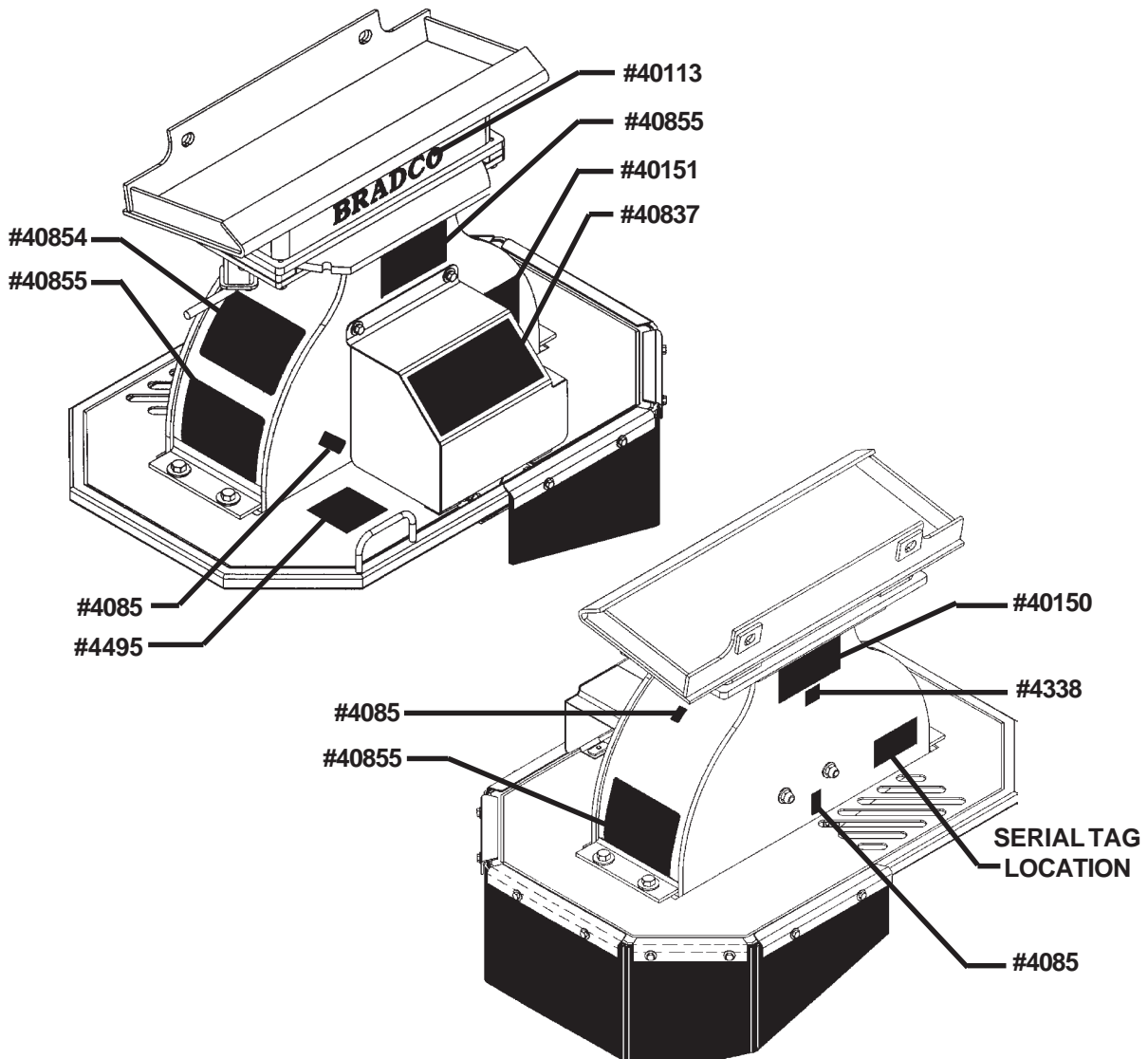
DESCRIPTION	SPECIFICATION
A. Overall Width	24.67"
B. Overall Height	29.31"
C. Overall Length	35.60"
D. Below Ground Depth	6.69"
E. Angle	45°
Number of Cutting Teeth - Bolt-On	24
Number of Cutting Teeth - Square	14
Wheel Diameter	18.00"
Hydraulic Flow Requirement	8-11 GPM or... 10-14 GPM
Weight (lbs) (With Universal Mount and Square Teeth)	#325

DECALS

DECAL PLACEMENT

GENERAL INFORMATION

The diagram on this page shows the location of the decals used on the BRADCO Stump Grinder. The decals are identified by their part numbers, with reductions of the actual decals located on the following pages. Use this information to order replacements for lost or damaged decals. Be sure to read all decals before operating the stump grinder. They contain information you need to know for both safety and attachment longevity.

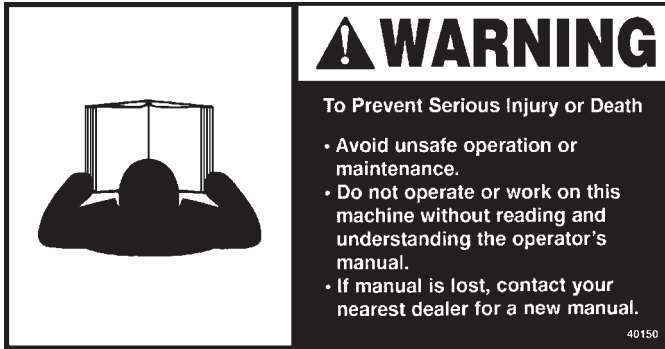


IMPORTANT: Keep all safety signs clean and legible. Replace all missing, illegible or damaged safety signs. When replacing parts with safety signs attached, the safety signs must also be replaced.

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

DECALS

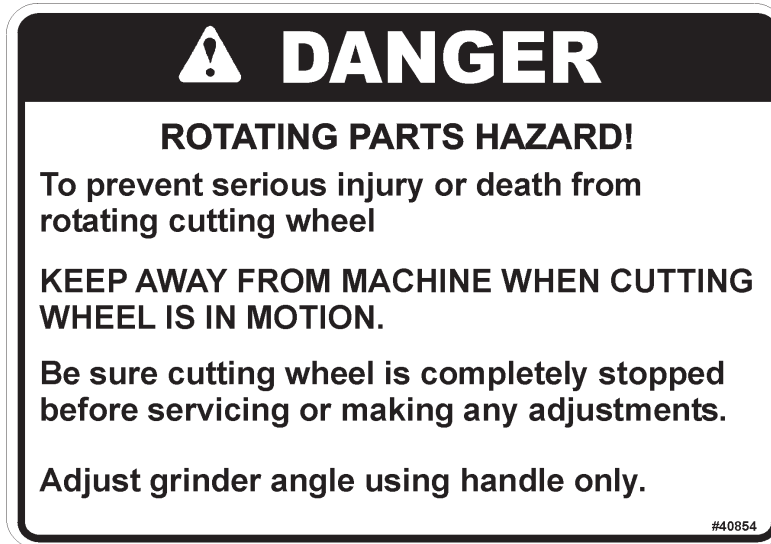
DECALS



WARNING! READ OPERATOR'S MANUAL
PART #40150



WARNING! HIGH PRESSURE FLUID
PART #40151



DANGER! ROTATING PARTS
PART #40854



DANGER! FLYING DEBRIS
PART #40855

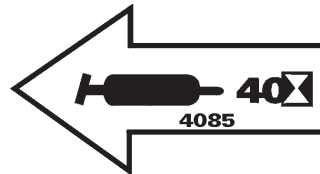
DECALS
DECALS

BRADCO®

BRADCO LOGO
PART #40113

SG15

MODEL NUMBER
PART #40837



GREASE 40 HOURS
PART #4085



WARNING! GUARD REMOVED
PART #4495



MADE IN U.S.A.
PART #4338

PREDELIVERY CHECKLIST

GENERAL INFORMATION

The following is a list of areas that should be inspected by the dealer prior to delivery of the BRADCO Stump Grinder to the customer. The customer should check the list and make sure that the dealer has completed the inspection. Completion of this checklist will help ensure that the customer receives the Stump Grinder in complete working order, ready to install.

PREDELIVERY CHECKLIST - CHECK AND ADJUST AS NECESSARY

1. _____ Visually inspect the stump grinder for bent, loose, cracked, damaged, or missing parts. Check for any other irregularities.
2. _____ Check bolts for tightness. Retighten after the first eight working hours, and after every forty working hour intervals thereafter. See "Bolt Torque", Section O.
3. _____ Check all hydraulic connections for leaks and all hoses for proper positioning to reduce chafing and binding.
4. _____ Make sure decals are not damaged or missing and are in their correct location. See "Decals" Section Q.
5. _____ Make sure the customer has the necessary couplers to attach the stump grinder to the loader auxiliary hydraulic couplers.
6. _____ Complete and return the manufacturer's "Warranty Validation Form" and sign your dealership predelivery checklist.

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Limited Warranty

Except for the Excluded Products as described below, all new products are warranted to be free from defects in material and/or workmanship during the Warranty Period, in accordance with and subject to the terms and conditions of this Limited Warranty.

1. Excluded Products. The following products are excluded from this Limited Warranty:

(a) Any cable, part that engages with the ground (i.e. sprockets), digging chain, bearing, teeth, tamping and/or demolition head, blade cutting edge, pilot bit, auger teeth and broom brush that either constitutes or is part of a product.

(b) Any product, merchandise or component that, in the opinion of Paladin Light Construction¹, has been (i) misused; (ii) modified in any unauthorized manner; (iii) altered; (iv) damaged; (v) involved in an accident; or (vi) repaired using parts not obtained through Paladin Light Construction.

2. Warranty Period. The Limited Warranty is provided only to those defects that occur during the Warranty Period, which is the period that begins on the first to occur of: (i) the date of initial purchase by an end-user, (ii) the date the product is first leased or rented, or (iii) the date that is six (6) months after the date of shipment by Paladin Light Construction as evidenced by the invoiced shipment date (the "Commencement Date") and ends on the date that is twelve (12) months after the Commencement Date.

3. Terms and Conditions of Limited Warranty. The following terms and conditions apply to the Limited Warranty hereby provided:

(a) Option to Repair or Replace. Paladin Light Construction shall have the option to repair or replace the product.

(b) Timely Repair and Notice. In order to obtain the Limited Warranty, (i) the product must be repaired within thirty (30) days from the date of failure, and (ii) a claim under the warranty must be submitted to Paladin Light Construction in writing within thirty (30) days from the date of repair.

(c) Return of Defective Part or Product. If requested by Paladin Light Construction, the alleged defective part or product shall be shipped to Paladin Light Construction at its manufacturing facility or other location specified by Paladin Light Construction, with freight PRE-PAID by the claimant, to allow Paladin Light Construction to inspect the part or product.

Claims that fail to comply with any of the above terms and conditions shall be denied.

LIMITATIONS AND EXCLUSIONS.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY BASED ON A COURSE OF DEALING OR USAGE OF TRADE.

IN NO EVENT SHALL PALADIN LIGHT CONSTRUCTION BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES.

IN NO EVENT SHALL PALADIN LIGHT CONSTRUCTION BE LIABLE FOR ANY LOSS OR CLAIM IN AN AMOUNT IN EXCESS OF THE PURCHASE PRICE, OR, AT THE OPTION OF PALADIN LIGHT CONSTRUCTION, THE REPAIR OR REPLACEMENT, OF THE PARTICULAR PRODUCT ON WHICH ANY CLAIM OF LOSS OR DAMAGE IS BASED. THIS LIMITATION OF LIABILITY APPLIES IRRESPECTIVE OF WHETHER THE CLAIM IS BASED ON BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR OTHER CAUSE AND WHETHER THE ALLEGED DEFECT IS DISCOVERABLE OR LATENT.

¹Attachment Technologies Inc., a subsidiary of Paladin Brands Holding, Inc. (PBHI) is referred to herein as Paladin Light Construction.