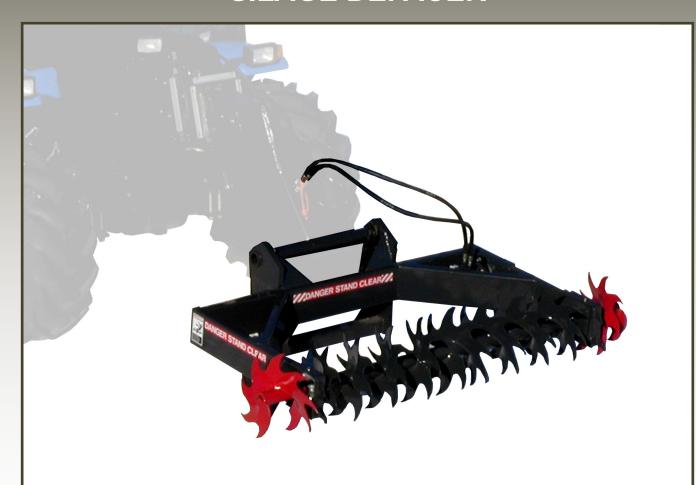


OPERATOR'S AND PARTS MANUAL

SILAGE DEFACER



SERIAL NUMBER:

MODEL NUMBER:

Manual Number: 76807 Part Number: 76807 Rev 2: January 26, 2010

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FOREWORD

Although Bradco has various silage defacers available, we are continually designing new sizes and mountings. If your combination is not listed, please contact the factory. We have extensive mounting information available to generate the product you need.

Below is a listing of the silage defacers that are currently available. See the "Parts" section of this manual for the assemblies "Shown".

DESCRIPTION & MOUNT		ASSEMBLY#		
BOBCAT				
Silage Defacer for Telehandler - Bobcat	(Shown)	12894		
CATERPILLAR				
Silage Defacer for Telehandler, Tractor Loader, or Wheel Loader - CAT IT/TH	(Shown)	12425		
Silage Defacer for Wheel Loader - CAT IT/TH Only 6 Foot Extension	(Shown)	12805		
JCB				
Silage Defacer for Telehandler & Tractor Loader - JCB Q-Fit	(Shown)	12364		
JOHN DEERE				
Silage Defacer for Wheel Loader - John Deere 444H With JRB Coupler	Shown)	12745		
Silage Defacer for Wheel Loader - John Deere 244J Only 4 Foot Extension	(Shown)	12871		
MANITOU				
Silage Defacer for Telehandler - Manitou	(Shown)	12686		
NEW HOLLAND				
Silage Defacer for Telehandler & Tractor Loader - New Holland Q-Fit	(Shown)	12364		

PREFACE

GENERAL COMMENTS

Congratulations on the purchase of your new attachment! This product was carefully designed and manufactured to give you many 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 maintenance procedures and safety precautions in this manual and on any safety decals located on the product and on any equipment on which the attachment is mounted.

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents.

WARNING! Never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual.

Always choose hard, level ground to park the vehicle on and set the brake so the unit cannot roll.

Unless noted otherwise, right and left sides are determined from the operator's control position when facing 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 attachment as may be necessary without notification.

BEFORE OPERATION

The primary responsibility for safety with this equipment falls to 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 or 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.

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

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.

Record the model and serial number of your unit on the cover of this manual. The parts department needs this information to insure that you receive the correct parts.

SOUND AND VIBRATION

Sound pressure levels and vibration data for this attachment are influenced by many different parameters: some items are listed below (not inclusive):

- prime mover type, age, condition, with or without cab enclosure and configuration
- operator training, behavior, stress level
- job site organization, working material condition, environment

Based on the uncertainty of the prime mover, operator, and job site, it is not possible to get precise machine and operator sound pressure levels or vibration levels for this attachment.

NOTE: A list of all Paladin Patents can be found at http://www.paladinattachments.com/patents.asp.

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SAFETY STATEMENTS



THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MAN-UAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

A DANGER

THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

A

WARNING

THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

A

CAUTION

THIS SIGNAL WORD IS USED WHERE MINOR INJURY COULD RESULT IF

THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

NOTICE

NOTICE INDICATES A PROPERTY DAMAGE MESSAGE.

GENERAL SAFETY PRECAUTIONS

WARNING!

READ MANUAL PRIOR TO INSTALLATION



Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators 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. FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVER'S MANUAL(S).



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 hard to read.

GENERAL SAFETY PRECAUTIONS

WARNING!

PROTECT AGAINST FLYING DEBRIS



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.

WARNING!

LOWER OR SUPPORT RAISED EQUIPMENT



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.

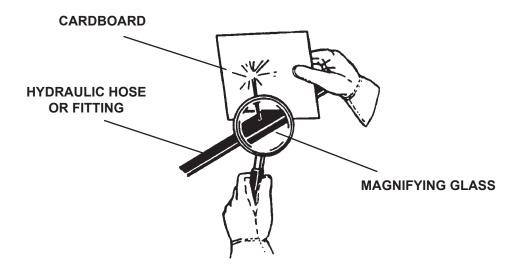
WARNING!

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 him or her 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 ILLUS-TRATION.



GENERAL SAFETY PRECAUTIONS

WARNING!

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.

WARNING!

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.

EQUIPMENT SAFETY PRECAUTIONS

WARNING!

KNOW WHERE 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.



OPERATING THE SILAGE DEFACER

- Clear the work area of all bystanders before operation!
- Operate only from the operator's station with seatbelt properly attached.
- Do not exceed the lifting capacity of your prime mover and attachment. Always observe lift capacity limits listed in machine specifications or on load charts furnished with the prime mover.
- Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.
- Never use the attachment for a work platform or personnel carrier.
- 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.
- Always check locking pins before operating any attachment.
- Before exiting the prime mover, lower the attachment to the ground, apply the brakes, turn off the prime mover's engine, and remove the key.



TRANSPORTING THE SILAGE DEFACER

- Travel only with the attachment in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground, and on slopes.
- Allow for the added length of the silage defacer when transporting, so as not to catch the unit on obstables.
- 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., as a cave-in could result.
- Do not smoke when refueling the prime mover. Allow room in the gas tank for expansion. Wipe up any spilled fuel, and secure cap tightly, when done.



MAINTAINING THE SILAGE DEFACER

- Before performing maintenance, lower the attachment to the ground, apply the brakes, turn off the engine, and remove the key.
- Never perform any work on the equipment unless you are authorized and qualified to do so. Always read the operator's and service manual(s) before any repair is made. After completing maintenance or repair, check for correct functioning of the attachment. If not functioning properly, always attach a "DO NOT OPERATE" tag to the machine until all problems are corrected.
- Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from the manufacturer.
- Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.
- Never work under a raised attachment.

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INSTALLATION AND OPERATION

ATTACHING AND DETACHING SILAGE DEFACER

Please see your vehicle operator's manual for instructions on attaching and detaching your equipment.

WARNING!



To prevent serious personal injury or death, only attach equipment that is designed for your prime mover.

Specified lift capacities must not be exceeded, otherwise machine stability will not be sufficient. Always observe lift capacity limits listed in machine specifications.

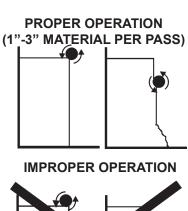
OPERATING SILAGE DEFACER

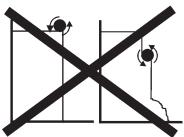
• Read all Safety Precautions before operating your new attachment.

The silage defacer was designed to loosen haylage and silage from a tightly compacted bunker. It maintains a smooth, compacted bunker-face for reduced spoil, and the open design allows the operator to see the bunker face and the surrounding work area.

There are guides on the end of each arm to limit the depth of each cut. The guides can be easily adjusted by loosening the bolts and sliding the guide in or out until the desired cutting depth is reached.

- 1. Clear the area of all bystanders, and engage the defacer only from the operator's station.
- Position the defacer at the top of the bunker and engage the auxiliary hydraulics. When the defacer has reached full speed, slowly lower into the silage at the desired cutting depth. Do not deface more than 1"-3" of material on each pass, depending on the material.
- 3. Keep defacer level while it is lowering, to help maintain an even cut.
- 4. Repeat steps #1 through #3 until the desired amount of silage has been obtained.





Silage Defacer Operating Tips

- 1. For best results do not force the defacer down through the material, but allow gravity and the removal of material to determine the downward speed.
- 2. To prevent attachment and property damage, avoid direct contact of tines with bunker walls and floor.
- 3. Due to silage piling up on the ground, to obtain a clean cut of the entire bunker face, you may wish to first cut the bottom 4 feet, and then reposition the defacer at the top, and finish the downward cut.
- 4. A 2" depth of cut is recommended to avoid stalling, and to obtain a clean face.

DANGER!

ROTATING HAZARD! To prevent serious injury or death:



- Clear area of all bystanders.
- Operate the attachment only when properly seated at the operator's station. Before exiting the prime mover, lower the defacer to the ground, turn off the prime mover's engine, remove the key and apply the brakes.
- Do not leave operator's station until all movement has stopped.

INSTALLATION AND OPERATION TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Excessive noise.	1. Bearings worn and "squeaking".	Check and replace, as necessary.
	2. Cutters bent.	Repair or replace.
		_
Decreased performance.	1. Chain loose.	See "Troubleshooting Loose Chain".
	2. Cutters damaged.	Check blades and repair or replace, as necessary. See "Operating Silage Defacer" in the "Installation and Operation" section of this manual.
Cutters not turning.	1. Chain broken.	Repair or replace.
	2. Drive motor failure.	Repair or replace.
	3. Drive motor key broken.	Replace key.
	4. Sprocket damaged.	Replace sprocket.
Loose Chain.	Cam lock not tight.	Re-tension chain, and tighten mounting bolts on cam lock.
	2. Sprocket, bearing, or chain worn.	Check, and replace any worn parts.
Excessive oil temperature.	1. Hydraulic oil level too low.	Refer to skid-steer's owners manual.
	2. Obstruction in hydraulic lines.	Remove obstruction and replace, if necessary.
	3. Couplers not engaged correctly.	Engage couplers.
	Hydraulic system overloaded, and system relief open.	Reduce load.

MAINTENANCE & SERVICE

GENERAL INFORMATION

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

WARNING!



DO NOT OPERATE THE SILAGE DEFACER DURING ANY MAINTENANCE, OR WHILE THE TOP CHAIN COVER IS REMOVED.

DAILY

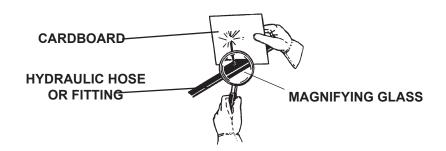
- Check all bolts and nuts for tightness.
- Replace any missing bolts or nuts with approved replacement parts.
- Check hydraulic system for hydraulic oil leaks. See procedure below.
- Visually inspect the machine for worn parts or cracked welds, and repair, as necessary.



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 or her 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 & SERVICE

MONTHLY OR EVERY 40 HOURS OF OPERATION

- Check all bearings for tightness. Tighten or replace, as needed.
- Clean equipment of dirt, oil, grease, etc. This will assist you in making a visual inspection, and help avoid overlooking worn or damaged components.
- Adjust the shoe weldments on the silage defacer so material is removed, but the shoe is never less than 1/2" shorter than the blades.
- Adjust and lubricate the drive chain. (See "Chain Adjustment" below.) To lubricate the drive chain:
 Remove the top chain cover and spray a chain lubricant along the top of the upper and lower portion
 of the drive chain.

CHAIN ADJUSTMENT

We recommend adjusting the chain on all of the silage defacers after the initial 4 hours, and then monthly thereafter.

To Adjust the Chain: Remove the top chain cover and loosen the two bolts on the motor mounting plate, and the one bolt on the cam lock. Insert a 1/2" ratchet into the cam lock, and rotate until the chain is tight. A properly adjusted chain will have a minimal amount of chain deflection. Over-tensioning will cause premature wear.

NOTE: If all of the cam lock adjustment is used and the chain and sprocket are still serviceable, you can remove a "half link" from the chain at the master link location.

LUBRICATION

The only other lubrication your attachment needs is the greasing of the flangette and bearing set. A grease fitting has been installed to facilitate this task. We recommended that all grease fittings be lubricated after the intitial 8 hours of operation, and then after every 40 hours of use thereafter.

DECAL IDENTIFICATION AND REPLACEMENT

Decal placement and identification for all of the attachments can be found on the parts diagrams and lists located at the back of this manual. The decals are identified by their part numbers with reductions of the actual decals located on the page. Use this information to order replacements for missing, illegible or damaged deals. When replacing parts with safety signs attached, the safety sign must also be replaced. All Safety Decals are free of charge. Contact your dealer for replacements.

REPLACING SAFETY SIGNS:

- 1. Clean the area of application with nonflammable solvent.
- 2. Wash the same area with soap and water, and then allow the surface to fully dry.
- 3. Remove the backing from the safety sign, exposing the adhesive surface.
- 4. Apply the safety sign to the location shown in the parts diagram, and smooth out bubbles.

Helpful Hints:

- 1. Decals adhere to a warm surface better than a cold surface.
- 2. Applying heat (from a hair dryer) will greatly improve your ability to remove a damaged decal before preparing the surface for installation of a new one.

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BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLES

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

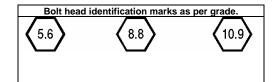
NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

		SAE	GRAD	E 5 TO	RQUE	SA	E GRAD	DE 8 TOR	QUE	
Во	It Size	Pound	ls Feet	Newtor	n-Meters	Pound	ds Feet	Newto	n-Meters	Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF	GRADE 2
1/4	6.35	8	9	11	12	10	13	14	18	OKADE I
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	GRADE 5
9/16	14.29	94	112	127	152	136	163	184	221	• SINADES
5/8	15.88	128	153	174	207	187	224	254	304	
3/4	19.05	230	275	312	373	323	395	438	536	」トリマートリ
7/8	22.23	340	408	461	553	510	612	691	830	
1	25.40	493	592	668	803	765	918	1037	1245	GRADE 8
1-1/8	25.58	680	748	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	」と、メビンと、メ
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	

METRIC BOLT TORQUE SPECIFICATIONS

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



Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
	5.6		3.6-5.8	4.9-7.9		-	-
M6	8.8	1.0	5.84	7.9-12.7	-	-	-
	10.9		7.2-10	9.8-13.6		-	-
	5.6		7.2-14	9.8-19		12-17	16.3-23
М8	8.8	1.25	17-22	23-29.8	1.0	19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
	5.6		20-25	27.1-33.9		20-29	27.1-39.3
M10	8.8	1.5	34-40	46.1-54.2	1.25	35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
	5.6		28-34	37.9-46.1		31-41	42-55.6
M12	8.8	1.75	51-59	69.1-79.9	1.25	56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
	5.6		49-56	66.4-75.9		52-64	70.5-86.7
M14	8.8	2.0	81-93	109.8-126	1.5	90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
	5.6		67-77	90.8-104.3		69-83	93.5-112.5
M16	8.8	2.0	116-130	157.2-176.2	1.5	120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
	5.6		88-100	119.2-136		100-117	136-158.5
M18	8.8	2.0	150-168	203.3-227.6	1.5	177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
	5.6		108-130	146.3-176.2		132-150	178.9-203.3
M20	8.8	2.5	186-205	252-277.8	1.5	206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

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STORAGE

GENERAL INFORMATION

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 equipment is needed. We therefore strongly recommend that you take the extra time to follow these procedures whenever your attachment will not be used for an extended period of time.

PREPARATION FOR STORAGE

- 1. Clean the attachment thoroughly, removing all mud, dirt, and grease.
- 2. 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.
- 3. Tighten all loose nuts, capscrews, and hydraulic connections.
- 4. Lubricate all grease fittings.
- 5. Connect the hydraulic couplers together, or install covers, to protect the hydraulic system from contaminates.
- 6. Touch up all unpainted and exposed areas with paint, to prevent rust.
- 7. Replace decals, if damaged or in unreadable condition.
- 8. Store the attachment in a dry and protected place, with a cover, if possible. Leaving the attachment outside will materially shorten its life.

REMOVING FROM STORAGE

- 1. Remove all protective coverings.
- 2. Check hydraulic hoses for deterioration, and replace if necessary.

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. <u>Excluded Products</u>. The following products are <u>excluded</u> 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. <u>Warranty Period</u>. The Limited Warranty is provided only to those defects that occur during the Warranty Period, which is the period that begins on the <u>first to occur</u> 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 "<u>Commencement Date</u>") and ends on the date that is twelve (12) months after the Commencement Date.
- 3. <u>Terms and Conditions of Limited Warranty</u>. 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) <u>Timely Repair and Notice</u>. 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) <u>Return of Defective Part or Product</u>. 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.

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PARTS

The following section contains detailed diagrams and parts lists which include your attachment. Please use these diagrams and parts lists to locate replacement parts, prior to contacting the parts department.

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

To facilitate parts ordering, have the model and serial number of your product ready, to ensure that you receive the correct parts for your specific attachment.

The model and serial number for your attachment should be recorded in the space provided on the cover of this manual. This information may be obtained from the serial number identification plate located on your attachment. **See the parts diagram for your attachment for the location.**

NOTE: Most daily and emergency orders received by 2:00 P.M. will be shipped the same day received, with "Emergency-Machine-Down" orders receiving first priority.



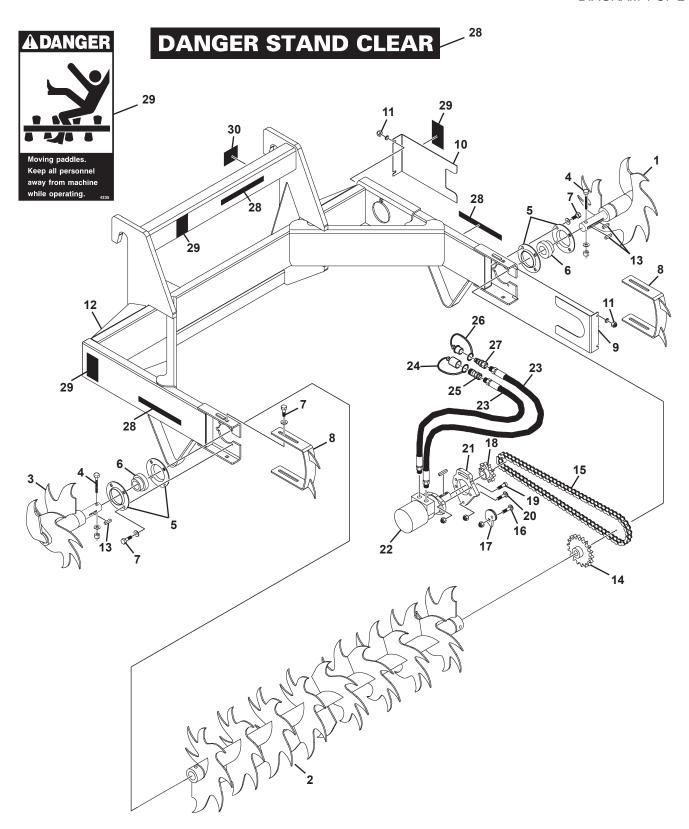
PARTS DEPARTMENT

(734) 996-9116 (800) 456-7100

We Encourage Fax Orders (734) 996-9014

ASSEMBLY #12364

DIAGRAM 1 OF 2



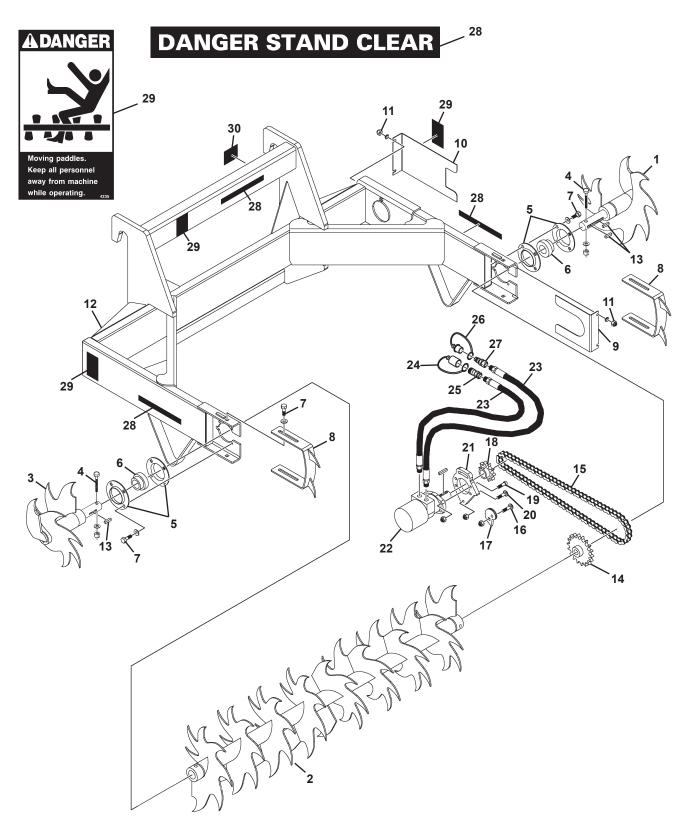
ASSEMBLY #12364

LIST 1 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
1	1	105447	Blade, Left End
2	1	105448	Blade, Center
3	1	105449	Blade, Right End
4	2	1051	.38" UNC x 3.00" Hex Capscrew
	2	1525	.38" Flat Washer
	2	1837	.38" UNC Deformed Lock Nut
5	2	89129	Flangette Set
	-	6616	Replacement Grease Fitting
6	2	89127	Ball Bearing With Collar
	-	1624	Replacement Set Screw
7	12	1088	.50" UNC x 1.00 Hex Capscrew
	12	1646	.50" Hard Flat Washer
8	2	33427	Shoe (Depth Guide)
9	1	15751	Bottom Chain Cover
10	1	32849	Top Chain Cover
11	4	1837	.38" UNC Deformed Lock Nut
	4	1514	.38" Flat Washer
12	1	15249	Silage Defacer Frame
13	3	105482	Square Key, .38" x 1.75"
14	1	32905	Sprocket, 18 Tooth, No. 80
15	1	32906	Drive Chain, No. 80, 73 Pitches
	-	53298	Replacement Master Link
16	1	1872	.50" UNC X 1.50" Carriage Bolt
	1	1790	.50" UNC Serrated Flange Lock Nut
17	1	32848	Cam Lock
18	1	33249	Sprocket, 10 Tooth, No. 80
19	4	22336	.50" UNC x 1.50" Socket Head Capscrew, Grade 8
	4	1228	.50" UNC Hex Nut
20	2 2	1872	.50" UNC X 1.50" Carriage Bolt
	2	1790	.50" UNC Serrated Flange Lock Nut

ASSEMBLY #12364

DIAGRAM 2 OF 2



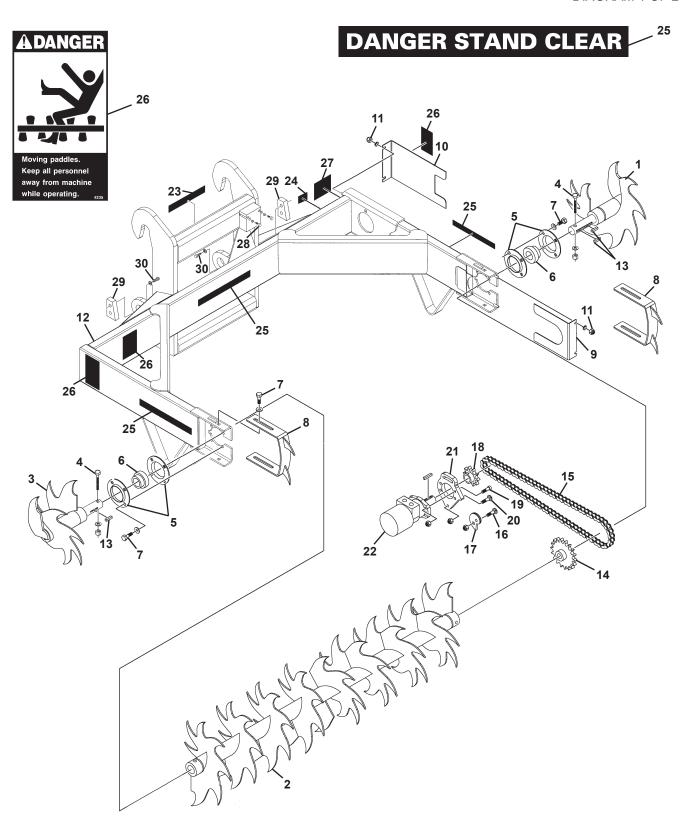
ASSEMBLY #12364

LIST 2 OF 2

<u>ITEM</u>	QTY.	PART NO.	<u>DESCRIPTION</u>
21	1	32847	Motor Mounting Plate
22	1	33200	Motor
	-	5662	Replacement Key
23	2	37975	Hose .62" x 60" 8MBo-10MBo
24	1	32548	Female Coupler Cover
25	1	84928	Female Quick Coupler
26	1	32549	Male Coupler Cover
27	1	84923	Male Quick Coupler
28	3	4105	Danger Stand Clear Decal
29	3	4235	Moving Paddles Danger Decal
30	1		Serial Number Identification Tag Location

ASSEMBLY #12425

DIAGRAM 1 OF 2



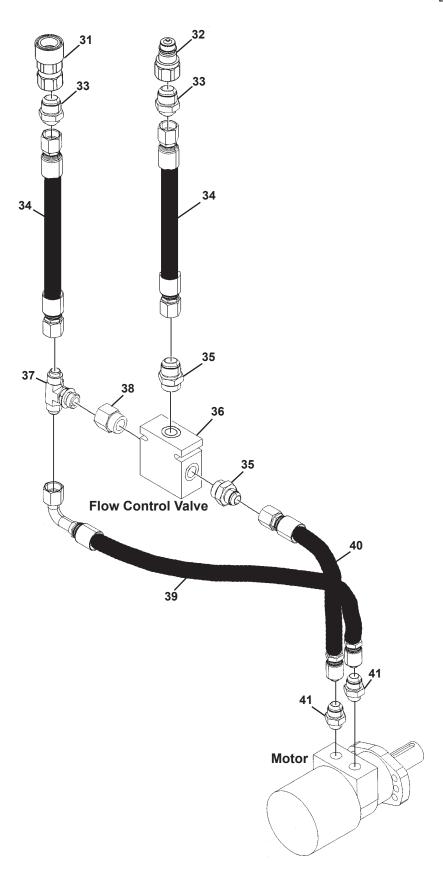
ASSEMBLY #12425

LIST 1 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
1 2 3 4	1 1 2 2 2	105447 105448 105449 1051 1525	Blade, Left End Blade, Center Blade, Right End .38" UNC x 3.00" Hex Capscrew .38" Flat Washer .38" UNC Deformed Lock Nut
5	2 -	1837 89129 6616	Flangette Set Replacement Grease Fitting
6 7	2 - 12	89127 1624 1088	Ball Bearing With Collar Replacement Set Screw .50" UNC x 1.00 Hex Capscrew
8	12 2	1646 33427	.50" Hard Flat Washer Shoe (Depth Guide)
9 10	1 1	15751 32849	Bottom Chain Cover Top Chain Cover
11	4 4	1837 1514	.38" UNC Deformed Lock Nut .38" Flat Washer
12 13	1 3	16794 105482	Silage Defacer Frame Square Key, .38" x 1.75"
14 15	1 1	32905	Sprocket, 18 Tooth, No. 80
15	-	32906 53298	Drive Chain, No. 80, 73 Pitches Replacement Master Link
16	1 1	1872 1790	.50" UNC X 1.50" Carriage Bolt .50" UNC Serrated Flange Lock Nut
17	1	32848	Cam Lock
18 19	1 4	33249 22336	Sprocket, 10 Tooth, No. 80 .50" UNC x 1.50" Socket Head Capscrew, Grade 8
10	4	1228	.50" UNC Hex Nut
20	2 2	1872	.50" UNC X 1.50" Carriage Bolt
		1790	.50" UNC Serrated Flange Lock Nut
21 22	1 1	32847 33200	Motor Mounting Plate Motor
	-	5662	Replacement Key
23	1	Varies	Logo
24 25	1 3	4338 4105	Made in USA Decal Danger Stand Clear Decal
26	3	4235	Moving Paddles Danger Decal
27	1 2	1029	Serial Number Identification Tag Location
28	2	1028 1502	.31" UNC x 2.50" Hex Capscrew .31" Lock Washer
	2	1513	.31" Flat Washer
29 20	2	14228	Stop Block 75" LING x 2.25" Hox Capperov. Crode 8
30	4 4	10012 1507	.75" UNC x 2.25" Hex Capscrew, Grade 8 .75" Lock Washer
			M-1947 1-2

ASSEMBLY #12425

DIAGRAM 2 OF 2



M-1948 4-3-08 76807

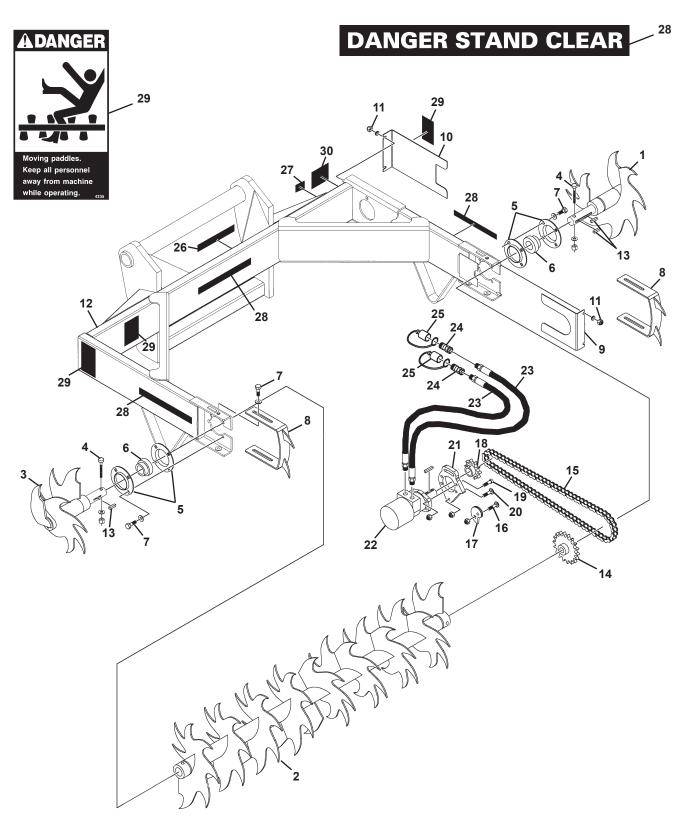
ASSEMBLY #12425

LIST 2 OF 2

<u>ITEM</u>	QTY.	PART NO.	<u>DESCRIPTION</u>
31 32 33 34 35	1 1 2 2 2	22518 22519 3419 37513 3409	Female Quick Coupler Male Quick Coupler Straight Connector, 12MBo-12MJ Hose .75" x 60" 12FJX-12FJX Straight Connector, 16MBo-12MJ
36 37 38 39 40	1 1 1 1	25314 30350 30292 37658 22571	Flow Control Valve Tee Straight Connector, 16MBo-12FBo Hose .75" x 42" 12FJX-12FJX90° Hose .75" x 34" 12FJX-12FJX
41	2	3286	Straight Connector, 10MBo-12MJ

ASSEMBLY #12686

DIAGRAM 1 OF 2



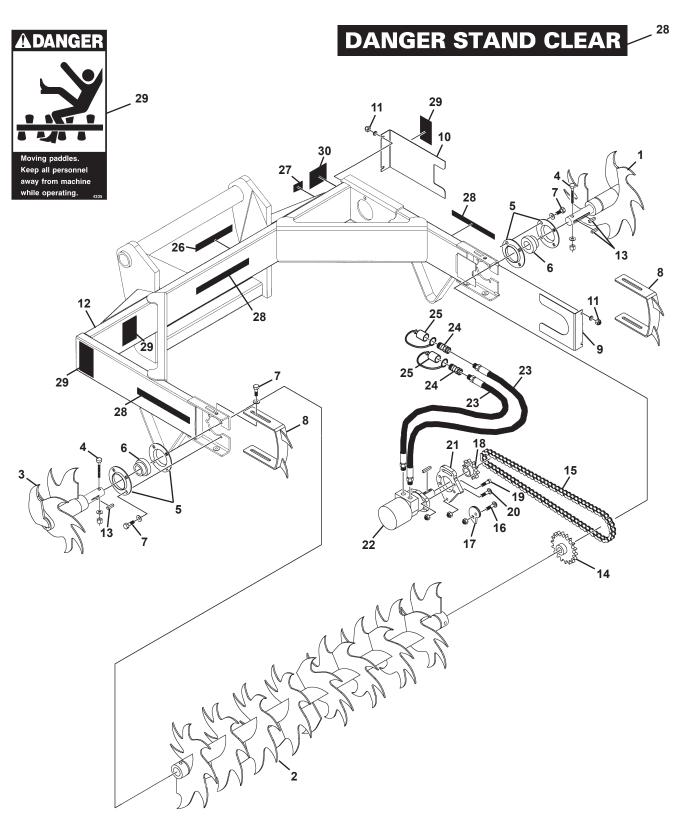
ASSEMBLY #12686

LIST 1 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
1	1	105447	Blade, Left End
2	1	105448	Blade, Center
3	1	105449	Blade, Right End
4	2	1051	.38" UNC x 3.00" Hex Capscrew
	2	1525	.38" Flat Washer
	2	1837	.38" UNC Deformed Lock Nut
5	2	89129	Flangette Set
	-	6616	Replacement Grease Fitting
6	2	89127	Ball Bearing With Collar
	-	1624	Replacement Set Screw
7	12	1088	.50" UNC x 1.00 Hex Capscrew
	12	1646	.50" Hard Flat Washer
8	2	33427	Shoe (Depth Guide)
9	1	15751	Bottom Chain Cover
10	1	32849	Top Chain Cover
11	4	1837	.38" UNC Deformed Lock Nut
	4	1514	.38" Flat Washer
12	1	100341	Silage Defacer Frame
13	3	105482	Square Key, .38" x 1.75"
14	1	32905	Sprocket, 18 Tooth, No. 80
15	1	32906	Drive Chain, No. 80, 73 Pitches
	-	53298	Replacement Master Link
16	1	1872	.50" UNC X 1.50" Carriage Bolt
	1	1790	.50" UNC Serrated Flange Lock Nut
17	1	32848	Cam Lock
18	1	33249	Sprocket, 10 Tooth, No. 80
19	4	22336	.50" UNC x 1.50" Socket Head Capscrew, Grade 8
	4	1228	.50" UNC Hex Nut
20	2	1872	.50" UNC X 1.50" Carriage Bolt
	2	1790	.50" UNC Serrated Flange Lock Nut

ASSEMBLY #12686

DIAGRAM 2 OF 2

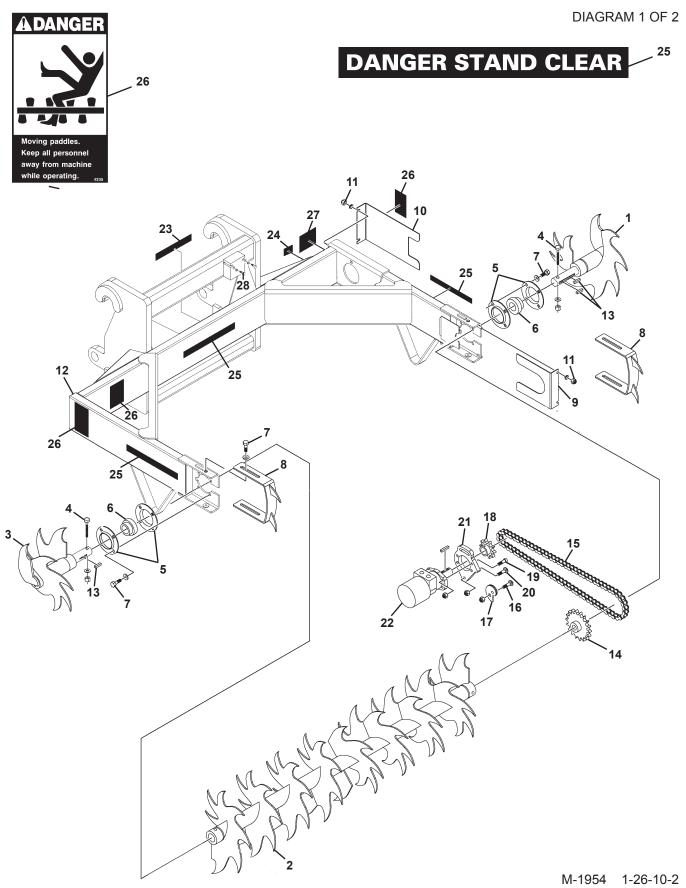


ASSEMBLY #12686

LIST 2 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
21	1	32847	Motor Mounting Plate
22	1	33200	Motor
	-	5662	Replacement Key
23	2	38187	Hose .62" x 80" 8MBo-10MBo
24	2	84928	Female Quick Coupler
25	2	32548	Female Coupler Cover
26	1	Varies	Logo
27	1	4338	Made in USA Decal
28	3	4105	Danger Stand Clear Decal
29	3	4235	Moving Paddles Danger Decal
30	1		Serial Number Identification Tag Location

ASSEMBLY #12745



76807

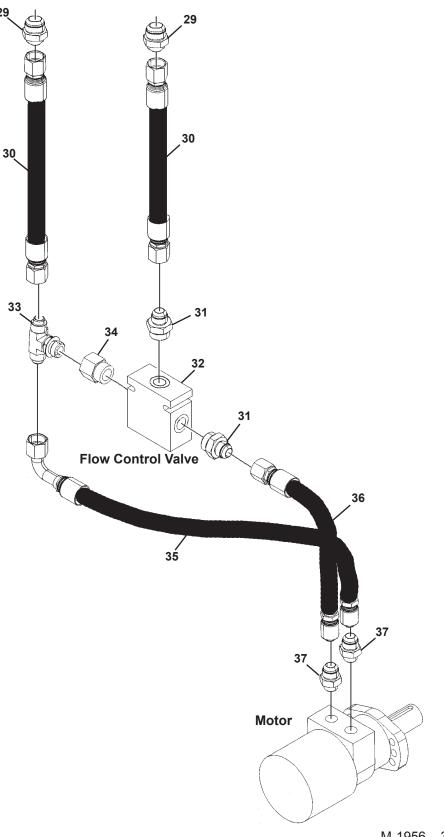
ASSEMBLY #12745

LIST 1 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
1 2 3 4	1 1 2 2 2 2 2	105447 105448 105449 1051 1525 1837 89129 6616	Blade, Left End Blade, Center Blade, Right End .38" UNC x 3.00" Hex Capscrew .38" Flat Washer .38" UNC Deformed Lock Nut Flangette Set Replacement Grease Fitting
6 7 8 9 10	2 - 12 12 2 1	89127 1624 1088 1646 33427 15751 32849	Ball Bearing With Collar Replacement Set Screw .50" UNC x 1.00 Hex Capscrew .50" Hard Flat Washer Shoe (Depth Guide) Bottom Chain Cover Top Chain Cover
11 12 13 14 15	4 4 1 3 1 1	1837 1514 102902 105482 32905 32906 53298	.38" UNC Deformed Lock Nut .38" Flat Washer Silage Defacer Frame Square Key, .38" x 1.75" Sprocket, 18 Tooth, No. 80 Drive Chain, No. 80, 73 Pitches Replacement Master Link
16 17 18 19 20	1 1 1 4 4 2 2	1872 1790 32848 33249 22336 1228 1872 1790	.50" UNC X 1.50" Carriage Bolt .50" UNC Serrated Flange Lock Nut Cam Lock Sprocket, 10 Tooth, No. 80 .50" UNC x 1.50" Socket Head Capscrew, Grade 8 .50" UNC Hex Nut .50" UNC X 1.50" Carriage Bolt .50" UNC Serrated Flange Lock Nut
21 22 23 24 25	1 1 - 1 1 3	32847 33200 5662 Varies 4338 4105	Motor Mounting Plate Motor Replacement Key Logo Made in USA Decal Danger Stand Clear Decal
26 27 28	3 1 2 2 2	4235 1028 1502 1513	Moving Paddles Danger Decal Serial Number Identification Tag Location .31" UNC x 2.50" Hex Capscrew .31" Lock Washer .31" Flat Washer

ASSEMBLY #12745

DIAGRAM 2 OF 2



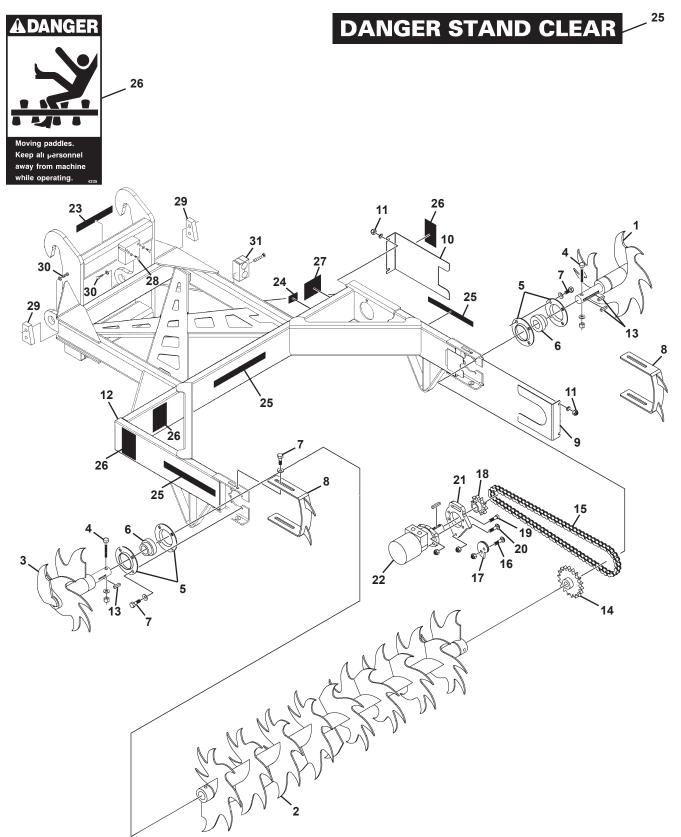
ASSEMBLY #12745

LIST 2 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
29	2	3419	Straight Connector, 12MBo-12MJ
30	2	37513	Hose .75" x 60" 12FJX-12FJX
31 32 33 34 35	2 1 1 1	3409 25314 30350 30292 37658	Straight Connector, 16MBo-12MJ Flow Control Valve Tee Straight Connector, 16MBo-12FBo Hose .75" x 42" 12FJX-12FJX90°
36	1	22571	Hose .75" x 34" 12FJX-12FJX
37	2	3286	Straight Connector, 10MBo-12MJ

ASSEMBLY #12805

DIAGRAM 1 OF 2



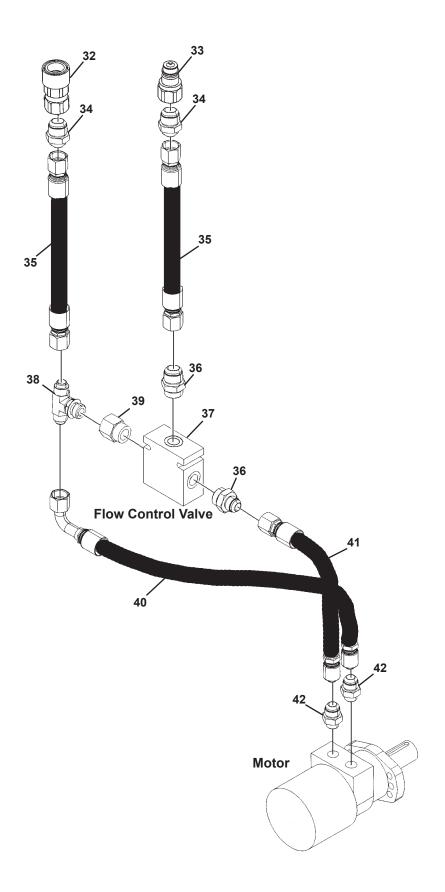
ASSEMBLY #12805

LIST 1 OF 2

<u>ITEM</u>	QTY.	PART NO.	<u>DESCRIPTION</u>	_	
1 2 3	1 1 1	105447 105448 105449	Blade, Left End Blade, Center Blade, Right End		
4	2 2 2	1051 1525 1837	.38" UNC x 3.00" Hex Capscrew .38" Flat Washer .38" UNC Deformed Lock Nut		
5	2	89129 6616	Flangette Set Replacement Grease Fitting		
6 7	2 - 12	89127 1624 1088	Ball Bearing With Collar Replacement Set Screw .50" UNC x 1.00 Hex Capscrew		
·	12	1646	.50" Hard Flat Washer		
8	2	33427	Shoe (Depth Guide)		
9	1 1	15751	Bottom Chain Cover		
10		32849	Top Chain Cover		
11	4 4	1837 1514	.38" UNC Deformed Lock Nut .38" Flat Washer		
12	1	104775	Silage Defacer Frame		
13	3	105482	Square Key, .38" x 1.75"		
14	1	32905	Sprocket, 18 Tooth, No. 80		
15	1	32906	Drive Chain, No. 80, 73 Pitches		
	-	53298	Replacement Master Link		
16	1	1872	.50" UNC X 1.50" Carriage Bolt		
17	1 1	1790 32848	.50" UNC Serrated Flange Lock Nut Cam Lock		
18	1	33249	Sprocket, 10 Tooth, No. 80		
19	4	22336	.50" UNC x 1.50" Socket Head Capscrew, Grade	8	
	4	1228	.50" UNC Hex Nut		
20	2	1872	.50" UNC X 1.50" Carriage Bolt		
	2	1790	.50" UNC Serrated Flange Lock Nut		
21	1	32847	Motor Mounting Plate		
22	1 -	33200 5662	Motor Replacement Key		
23	1	Varies	Logo		
24	1	4338	Made in USA Decal		
25	3	4105	Danger Stand Clear Decal		
26	3	4235	Moving Paddles Danger Decal		
27 28	1	1028	Serial Number Identification Tag Location		
20	2 2	1502	.31" UNC x 2.50" Hex Capscrew .31" Lock Washer		
	2	1513	.31" Flat Washer		
29	2	14228	Stop Block		
30	4	10012	.75" UNC x 2.25" Hex Capscrew, Grade 8		
	4	1507	.75" Lock Washer		
31	1	17143	Double Hose Clamp M-	-1951	1-26-10-2
76807					35

ASSEMBLY #12805

DIAGRAM 2 OF 2



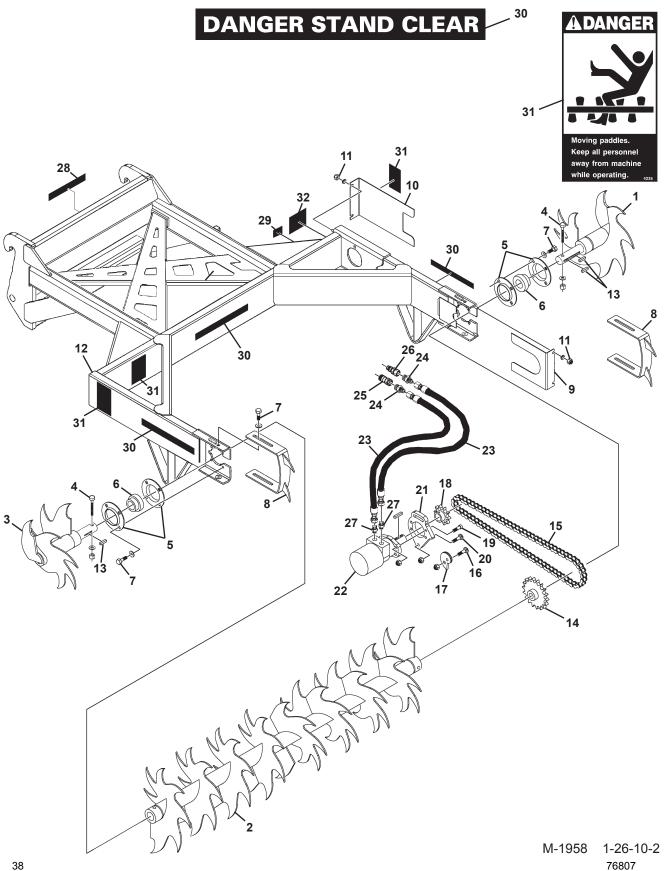
ASSEMBLY #12805

LIST 2 OF 2

<u>ITEM</u>	QTY.	PART NO.	<u>DESCRIPTION</u>
32 33	1 1	22518 22519	Female Quick Coupler Male Quick Coupler
34	2	3419	Straight Connector, 12MBo-12MJ
35	2	37513	Hose .75" x 60" 12FJX-12FJX
36	2	3409	Straight Connector, 16MBo-12MJ
37	1	25314	Flow Control Valve
38	1	30350	Tee
39	1	30292	Straight Connector, 16MBo-12FBo
40	1	38000	Hose .75" x 82" 12FJX-12FJX90°
41	1	37912	Hose .75" x 74" 12FJX-12FJX
42	2	3286	Straight Connector, 10MBo-12MJ

ASSEMBLY #12871

DIAGRAM 1 OF 2



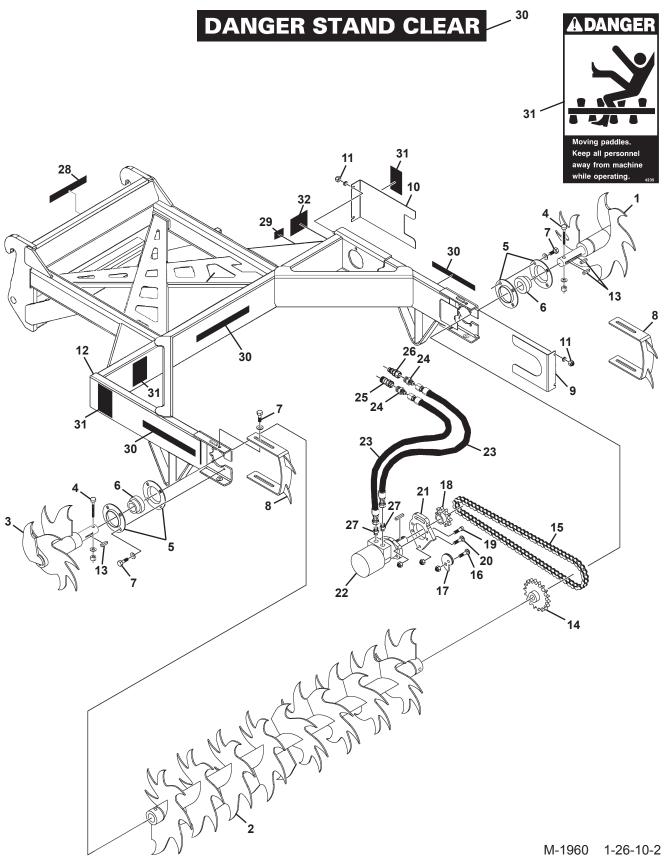
ASSEMBLY #12871

LIST 1 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
1	1	105447	Blade, Left End
2	1	105448	Blade, Center
3	1	105449	Blade, Right End
4	2	1051	.38" UNC x 3.00" Hex Capscrew
	2	1525	.38" Flat Washer
	2	1837	.38" UNC Deformed Lock Nut
5	2	89129	Flangette Set
	-	6616	Replacement Grease Fitting
6	2	89127	Ball Bearing With Collar
	-	1624	Replacement Set Screw
7	12	1088	.50" UNC x 1.00 Hex Capscrew
	12	1646	.50" Hard Flat Washer
8	2	33427	Shoe (Depth Guide)
9	1	15751	Bottom Chain Cover
10	1	32849	Top Chain Cover
11	4	1837	.38" UNC Deformed Lock Nut
	4	1514	.38" Flat Washer
12	1	106133	Silage Defacer Frame
13	3	105482	Square Key, .38" x 1.75"
14	1	32905	Sprocket, 18 Tooth, No. 80
15	1	32906	Drive Chain, No. 80, 73 Pitches
	-	53298	Replacement Master Link
16	1	1872	.50" UNC X 1.50" Carriage Bolt
	1	1790	.50" UNC Serrated Flange Lock Nut
17	1	32848	Cam Lock
18	1	33249	Sprocket, 10 Tooth, No. 80
19	4	22336	.50" UNC x 1.50" Socket Head Capscrew, Grade 8
	4	1228	.50" UNC Hex Nut
20	2	1872	.50" UNC X 1.50" Carriage Bolt
	2	1790	.50" UNC Serrated Flange Lock Nut

ASSEMBLY #12871

DIAGRAM 2 OF 2



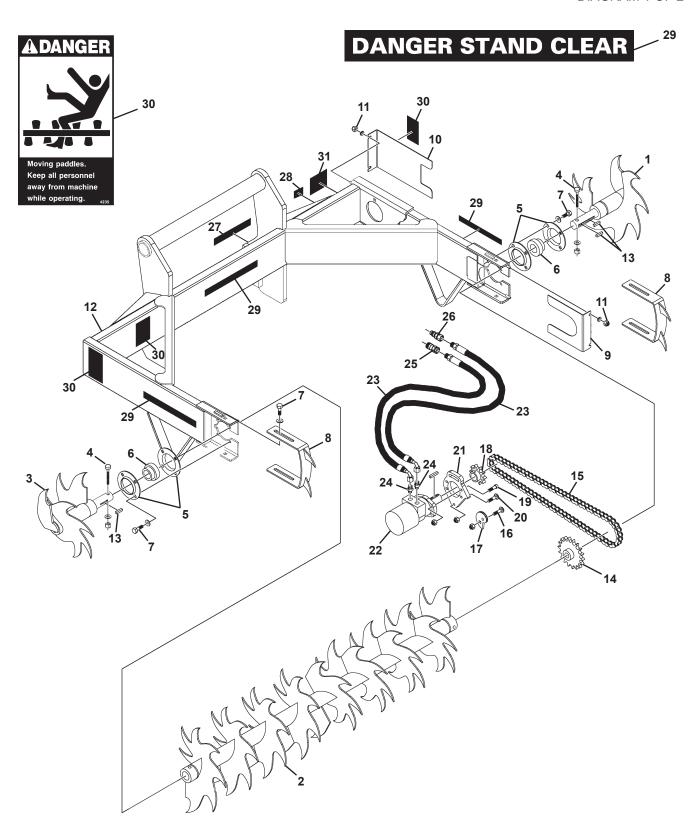
ASSEMBLY #12871

LIST 2 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
21	1	32847	Motor Mounting Plate
22	1	33200	Motor
	-	5662	Replacement Key
23	2	38235	Hose .62" x 72" 12FJX-12FJX
24	2	3419	Straight Connector, 12MBo-12MJ
25	1	22518	Female Quick Coupler
26	1	22519	Male Quick Coupler
27	2	3286	Straight Connector, 10MBo-12MJ
28	1	Varies	Logo
29	1	4338	Made in USA Decal
30	3	4105	Danger Stand Clear Decal
31	3	4235	Moving Paddles Danger Decal
32	1		Serial Number Identification Tag Location

ASSEMBLY #12894

DIAGRAM 1 OF 2



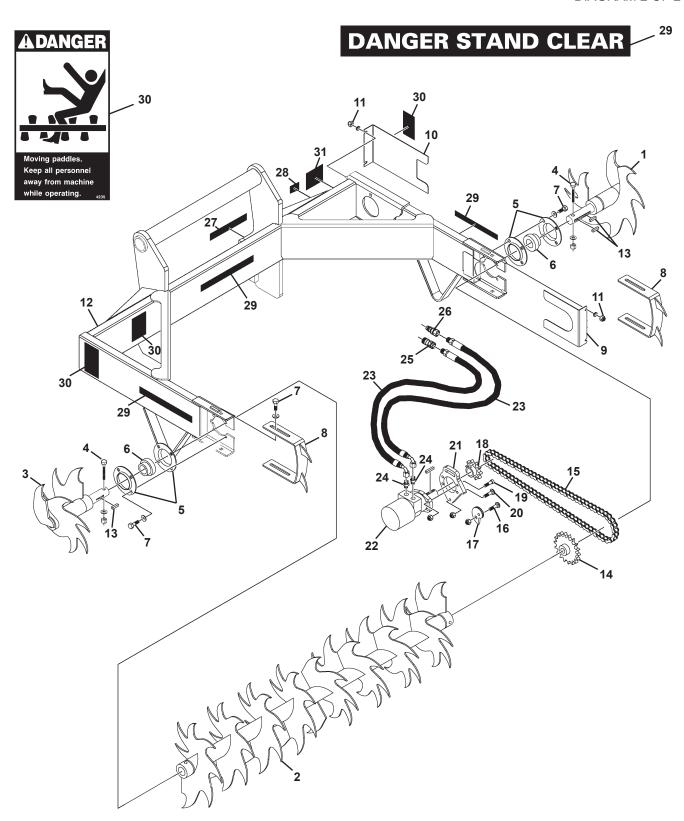
ASSEMBLY #12894

LIST 1 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
1	1	105447	Blade, Left End
2	1	105448	Blade, Center
3	1	105449	Blade, Right End
4	2	1051	.38" UNC x 3.00" Hex Capscrew
	2	1525	.38" Flat Washer
	2	1837	.38" UNC Deformed Lock Nut
5	2	89129	Flangette Set
	-	6616	Replacement Grease Fitting
6	2	89127	Ball Bearing With Collar
	-	1624	Replacement Set Screw
7	12	1088	.50" UNC x 1.00 Hex Capscrew
	12	1646	.50" Hard Flat Washer
8	2	33427	Shoe (Depth Guide)
9	1	15751	Bottom Chain Cover
10	1	32849	Top Chain Cover
11	4	1837	.38" UNC Deformed Lock Nut
	4	1514	.38" Flat Washer
12	1	15728	Silage Defacer Frame
13	3	105482	Square Key, .38" x 1.75"
14	1	32905	Sprocket, 18 Tooth, No. 80
15	1	32906	Drive Chain, No. 80, 73 Pitches
	-	53298	Replacement Master Link
16	1	1872	.50" UNC X 1.50" Carriage Bolt
	1	1790	.50" UNC Serrated Flange Lock Nut
17	1	32848	Cam Lock
18	1	33249	Sprocket, 10 Tooth, No. 80
19	4	22336	.50" UNC x 1.50" Socket Head Capscrew, Grade 8
	4	1228	.50" UNC Hex Nut
20	2	1872	.50" UNC X 1.50" Carriage Bolt
	2	1790	.50" UNC Serrated Flange Lock Nut

ASSEMBLY #12894

DIAGRAM 2 OF 2



ASSEMBLY #12894

LIST 2 OF 2

<u>ITEM</u>	QTY.	PART NO.	DESCRIPTION
21	1	32847	Motor Mounting Plate
22	1	33200	Motor
	-	5662	Replacement Key
23	2	38026	Hose .62" x 90" 10FJX90°-12MBo
24	2	3431	Straight Connector, 10MBo-10MJ
25	1	22518	Female Quick Coupler
26	1	22519	Male Quick Coupler
27	1	Varies	Logo
28	1	4338	Made in USA Decal
29	3	4105	Danger Stand Clear Decal
30	3	4235	Moving Paddles Danger Decal
31	1		Serial Number Identification Tag Location



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