



INSTALLATION INSTRUCTIONS

SILAGE DEFACER

**FOR
SKID STEER LOADERS**

Instructions Number: 76218

**IMPORTANT: READ THIS MANUAL CAREFULLY. IT CONTAINS INFORMATION
ABOUT YOUR SAFETY AND THE SAFETY OF OTHERS.**

SAFETY STATEMENTS



THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL 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.



DANGER

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



WARNING

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



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.

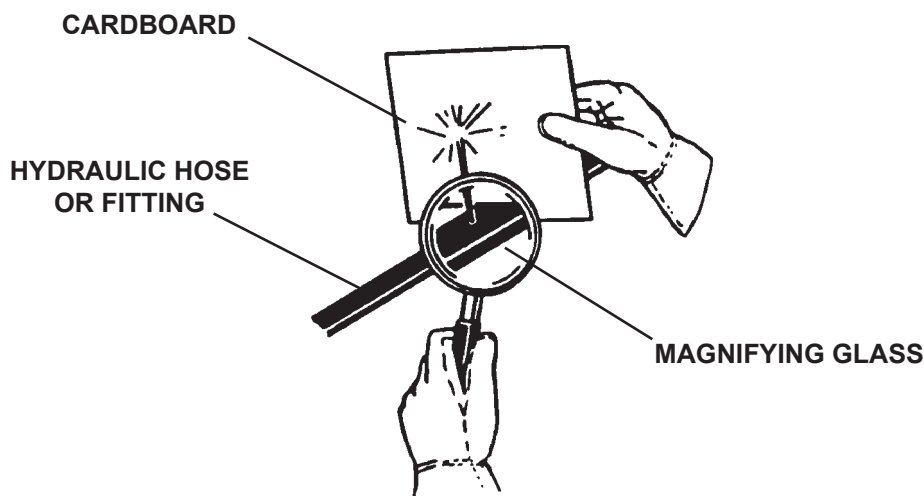
WARNING!



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 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.**



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

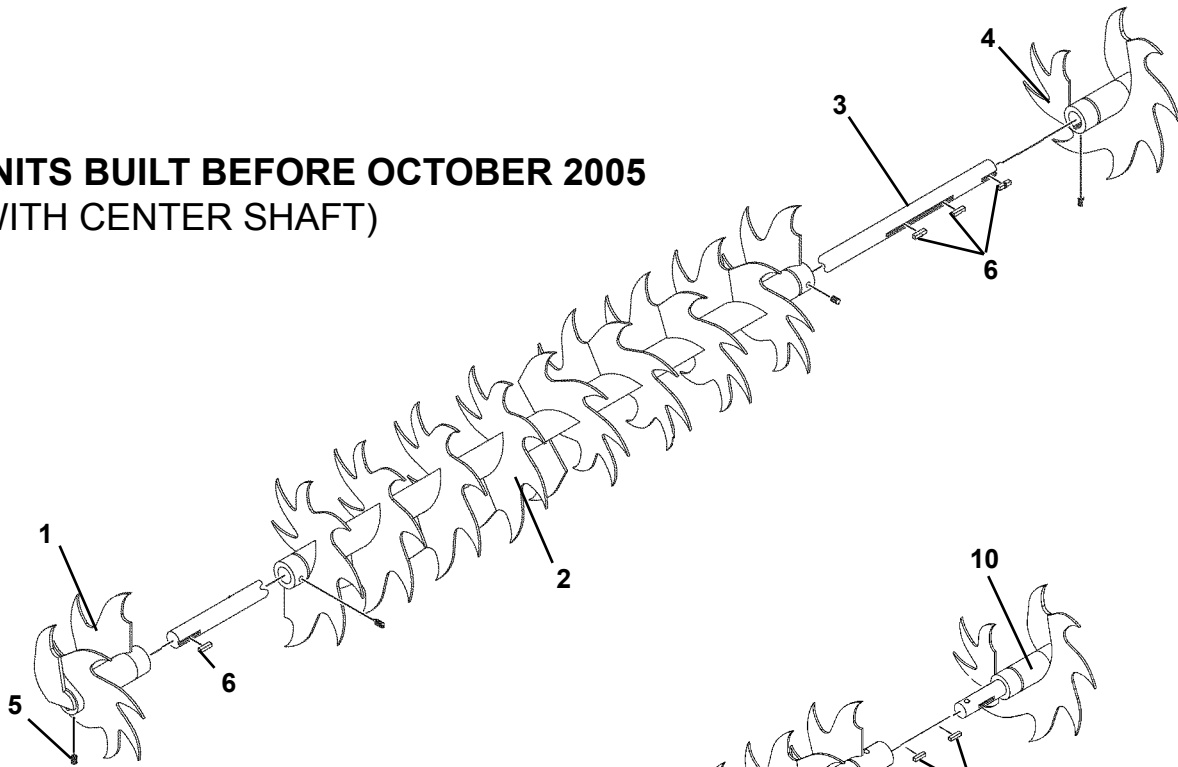
Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- 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.

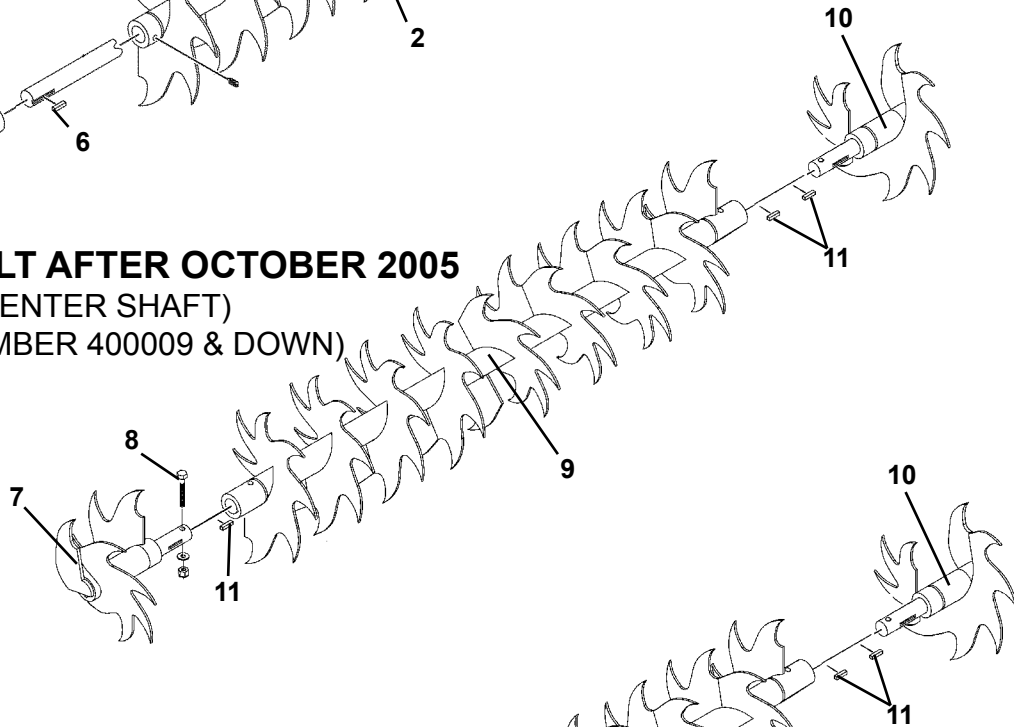
SILAGE DEFACER

IDENTIFICATION

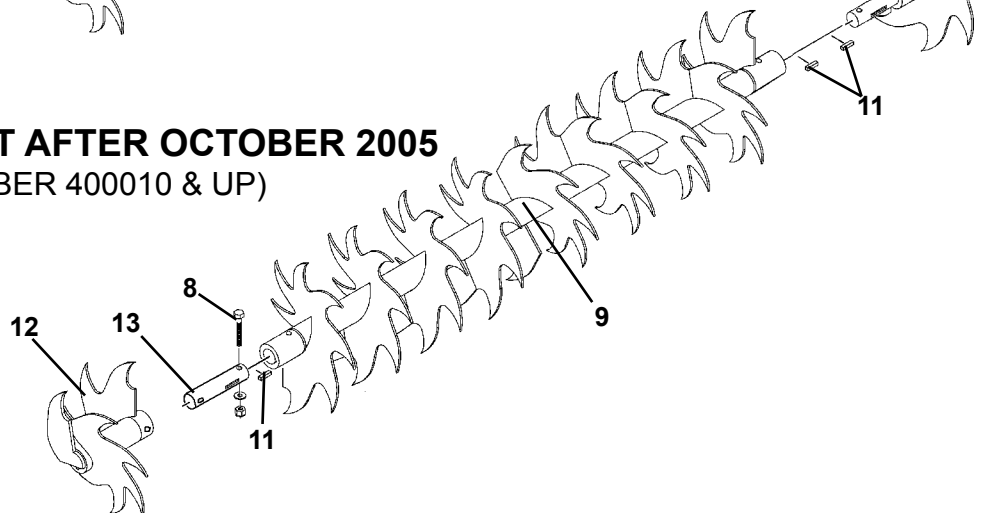
UNITS BUILT BEFORE OCTOBER 2005 (WITH CENTER SHAFT)



UNITS BUILT AFTER OCTOBER 2005 (WITHOUT CENTER SHAFT) (SERIAL NUMBER 400009 & DOWN)



UNITS BUILT AFTER OCTOBER 2005 (SERIAL NUMBER 400010 & UP)



SILAGE DEFACER

IDENTIFICATION

UNITS BUILT BEFORE OCTOBER 2005

(WITH CENTER SHAFT)

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	15457	Right Cutter
2	1	15459	Center Cutter
3	1	15463	Center Shaft
4	1	15458	Left Cutter
5	6	1572	Set Screw
6	3	32903	Key

UNITS BUILT AFTER OCTOBER 2005

(WITHOUT CENTER SHAFT) (SERIAL NUMBER 400009 & DOWN)

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
7	1	105449	Right Cutter
8	2	1051	.38" UNC X 3.00" Hex Capscrew
	2	1525	.38" Flat Washer
	2	1837	.38" UNC Deformed Lock Nut
9	1	105448	Center Cutter
10	1	105447	Left Cutter
11	3	105482	Key

UNITS BUILT AFTER OCTOBER 2005

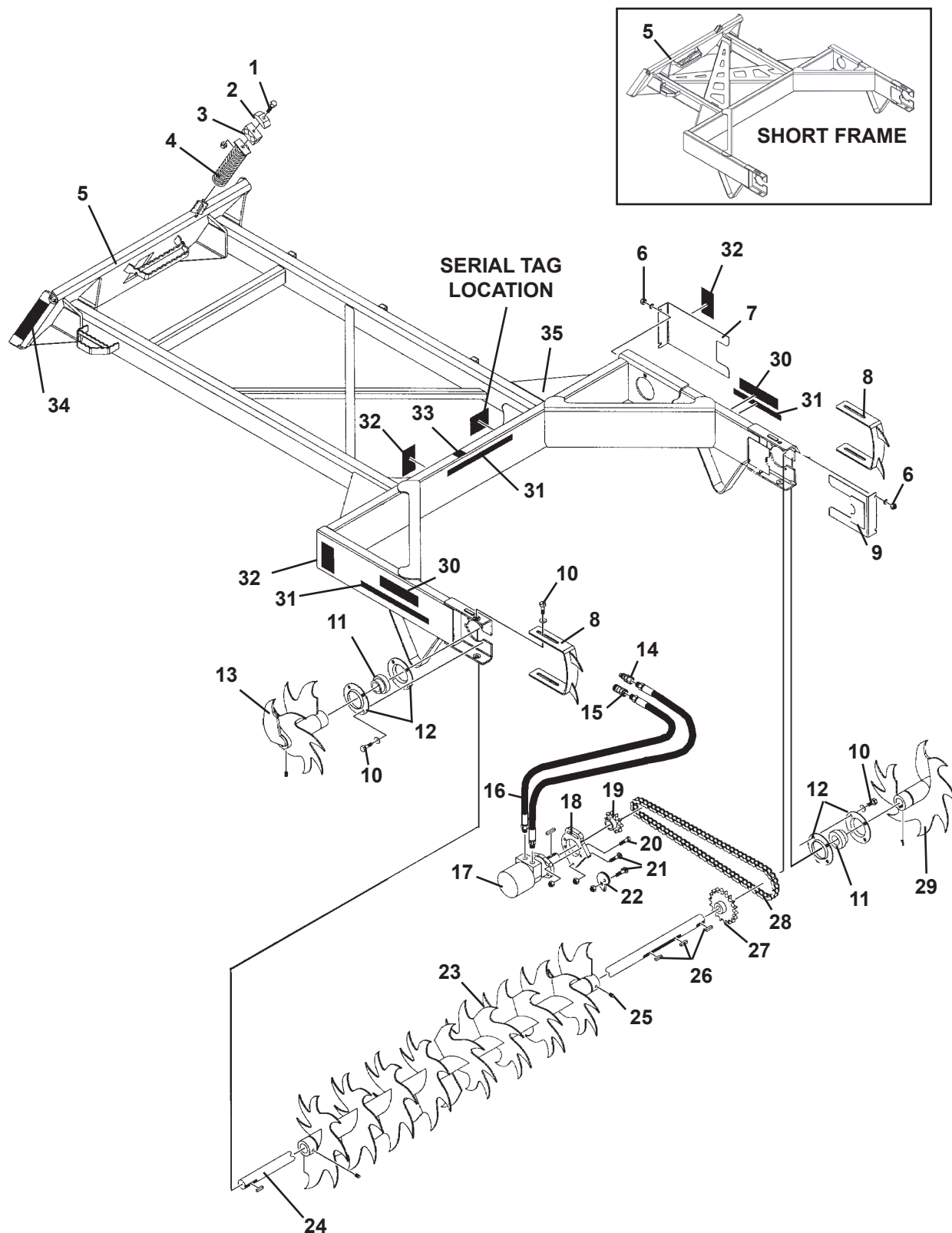
(WITHOUT CENTER SHAFT) (SERIAL NUMBER 400010 & UP)

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
8	3	1051	.38" UNC X 3.00" Hex Capscrew
	3	1525	.38" Flat Washer
	3	1837	.38" UNC Deformed Lock Nut
9	1	105448	Center Cutter
10	1	105447	Left Cutter
11	3	105482	Key
12	1	120356	Right Cutter
13	1	120354	Adapter Shaft

SILAGE DEFACER ASSEMBLY

FIXED SILAGE DEFACER ASSEMBLY #16980
FIXED SILAGE DEFACER ASSEMBLY (SHORT) #103791

FOR UNITS BUILT BEFORE OCTOBER 2005



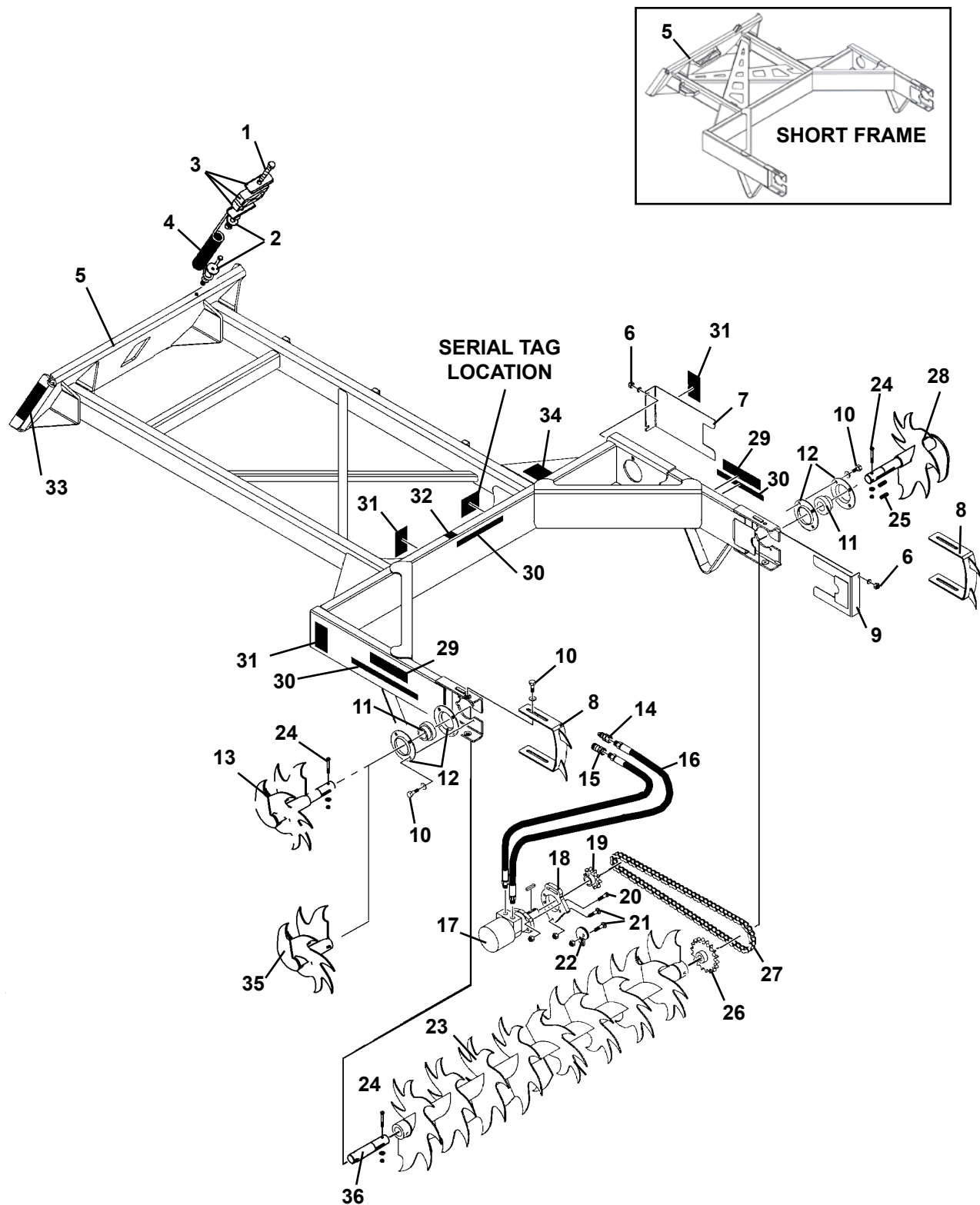
SILAGE DEFACER ASSEMBLY
FIXED SILAGE DEFACER ASSEMBLY #16980
FIXED SILAGE DEFACER ASSEMBLY (SHORT) #103791
FOR UNITS BUILT BEFORE OCTOBER 2005

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	1096	.50" UNC X 3.00" Hex Capscrew
	1	1790	.50" UNC Serrated Flange Lock Nut
2	2	22315	Hose Clamp Plate
3	1	22316	Hose Clamp Cushion
4	1	22288	Hose Holder Spring
5	1	16979	Defacer Frame (Assembly #16980)
	1	19158	Defacer Frame (Assembly #103791)
6	4	1837	.38" UNC Deformed Lock Nut
	4	1514	.38" Flat Washer
7	1	32849	Top Chain Cover
8	2	33427	Shoe
9	1	15751	Chain Cover
10	12	1088	.50" UNC X 1.00" Hex Capscrew
	12	1646	.50" Hard Flat Washer
11	2	89127	Ball Bearing With Collar
	-	1624	Replacement Set Screw
12	2	89129	Flangette Set
	-	6616	Replacement Grease Fitting
13	1	15457	Right Cutter
14	1	24001	Male Coupler
15	1	24002	Female Coupler
16	2	38029	Hose .62" X 152" 10MBo-10MBo (Assembly #16980)
	2	38119	Hose .62" X 107" 10MBo-10MBo (Assembly #103791)
17	1	16772	Hydraulic Motor (Assembly #16980)
	1	33200	Hydraulic Motor (Assembly #103791)
18	1	32847	Motor Mounting Plate
19	1	33249	10 Tooth Sprocket
20	4	22336	.50" X 1.50" Socket Head Capscrew-GR 8
	4	1228	.50" UNC Hex Nut
21	3	1872	.50" UNC X 1.50" Carriage Bolt
	3	1790	.50" UNC Serrated Flange Lock Nut
22	1	32848	Cam Lock
23	1	15459	Center Cutter
24	1	15463	Center Shaft
25	12	1572	Set Screw
26	4	32903	Key
27	1	32905	18 Tooth Sprocket
28	1	32906	Drive Chain, No. 80, 73 Pitches
	-	53298	Replacement Link, Master, No. 80
29	1	15458	Left Cutter
30	2	40092	BRADCO Logo Decal
31	3	4105	Danger Stand Clear Decal
32	3	4235	Danger Decal, Moving Paddles
33	1	4338	Made In USA Decal
34	2	40179	BRADCO Logo Decal - Vertical
35	1	40151	Warning ! High Pressure Fluid Decal

SILAGE DEFACER ASSEMBLY

FIXED SILAGE DEFACER ASSEMBLY #16980
FIXED SILAGE DEFACER ASSEMBLY (SHORT) #103791

FOR UNITS BUILT AFTER OCTOBER 2005



SILAGE DEFACER ASSEMBLY
FIXED SILAGE DEFACER ASSEMBLY #16980
FIXED SILAGE DEFACER ASSEMBLY (SHORT) #103791

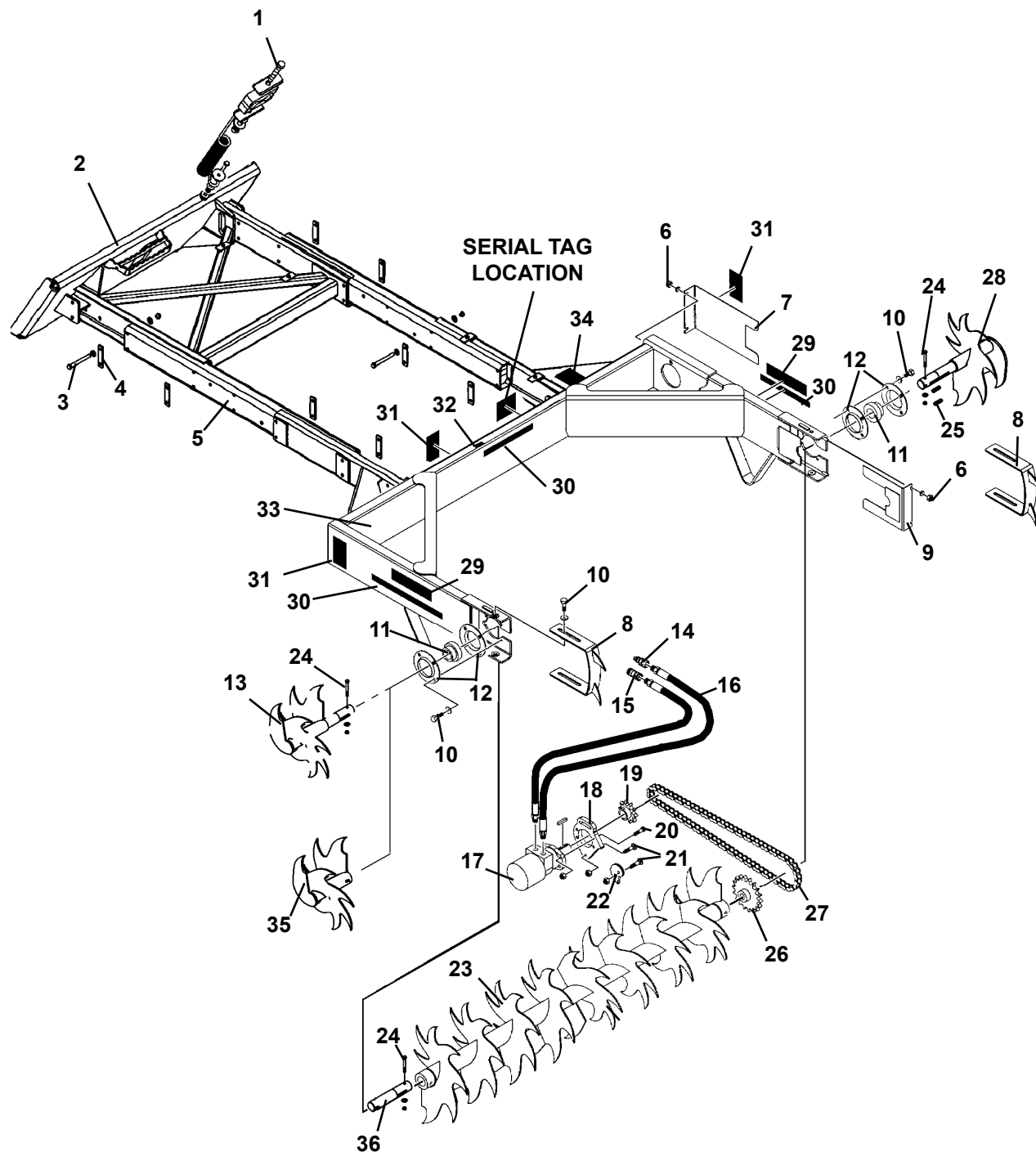
FOR UNITS BUILT AFTER OCTOBER 2005

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	1031	.31" UNC X 3.25" Hex Capscrew
	1	1753	.31" UNC NyLock Nut
2	2	105840	Fender Washer
3	2	22315	Hose Clamp Plate
	1	22316	Hose Clamp Cushion
4	1	RHW8618	Hose Holder Spring
5	1	16979	Defacer Frame (Assembly #16980)
	1	16158	Defacer Frame (Assembly #103791)
6	4	1837	.38" UNC Deformed Lock Nut
	4	1525	.38" Flat Washer
7	1	32849	Top Chain Cover
8	2	33427	Shoe
9	1	15751	Chain Cover
10	12	1088	.50" UNC X 1.00" Hex Capscrew
	12	1646	.50" Hard Flat Washer
11	2	89127	Ball Bearing With Collar
	-	1624	Replacement Set Screw
12	2	89129	Flangette Set
	-	6616	Replacement Grease Fitting
13	1	105449	Right Cutter - SERIAL NUMBER 400009 & DOWN
14	1	24001	Male Coupler
15	1	24002	Female Coupler
16	2	38029	Hose .62" X 152" 10MBo-10MBo (Assembly #16980)
	2	38119	Hose .62" X 107" 10MBo-10MBo (Assembly #103791)
17	1	16772	Hydraulic Motor (Assembly #16980)
	1	33200	Hydraulic Motor (Assembly #103791)
18	1	32847	Motor Mounting Plate
19	1	33249	10 Tooth Sprocket
20	4	22336	.50" X 1.50" Socket Head Capscrew-GR 8
	4	1228	.50" UNC Hex Nut
21	3	1872	.50" UNC X 1.50" Carriage Bolt
	3	1790	.50" UNC Serrated Flange Lock Nut
22	1	32848	Cam Lock
23	1	105448	Center Cutter
24	3	1051	.38" UNC X 3.00" Hex Capscrew
	3	1525	.38" Flat Washer
	3	1837	.38" UNC Deformed Lock Nut
25	3	105482	Key
26	1	32905	18 Tooth Sprocket
27	1	32906	Drive Chain, No. 80, 73 Pitches
	-	53298	Replacement Link, Master, No. 80
28	1	105447	Left Cutter
29	2	40092	BRADCO Logo Decal
30	3	4105	Danger Stand Clear Decal
31	3	4235	Danger Decal, Moving Paddles
32	1	4338	Made In USA Decal
33	2	40179	BRADCO Logo Decal - Vertical
34	1	40151	Warning ! High Pressure Fluid Decal
35	1	120356	Right Cutter - SERIAL NUMBER 400010 & UP
36	1	120354	Adapter Shaft - SERIAL NUMBER 400010 & UP

SILAGE DEFACER ASSEMBLY

ADJUSTABLE SILAGE DEFACER ASSEMBLY #103289

FOR UNITS BUILT AFTER OCTOBER 2005



SILAGE DEFACER ASSEMBLY
ADJUSTABLE SILAGE DEFACER ASSEMBLY #103289
FOR UNITS BUILT AFTER OCTOBER 2005

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	103454	Spring Clamp Assembly (Includes the following items)
	(1)	1031	.31" UNC X 3.25" Hex Capscrew
	(1)	1753	.31" UNC NyLock Nut
	(2)	105840	Fender Washer
	(2)	22315	Hose Clamp Plate
	(1)	22316	Hose Clamp Cushion
	(1)	RHW8618	Hose Holder Spring
2	1	19797	Defacer Mounting
3	16	1101	.50" UNC X 4.50" Hex Capscrew
	32	1646	.50" Hard Flat Washer
	16	1841	.50" UNC Deformed Lock Nut
4	8	100812	Clamp Bars
5	2	100681	Center Mounting Tube
6	4	1837	.38" UNC Deformed Lock Nut
	4	1514	.38" Flat Washer
7	1	32849	Top Chain Cover
8	2	33427	Shoe
9	1	15751	Chain Cover
10	12	1088	.50" UNC X 1.00" Hex Capscrew
	12	1646	.50" Hard Flat Washer
11	2	89127	Ball Bearing With Collar
	-	1624	Replacement Set Screw
12	2	89129	Flangette Set
	-	6616	Replacement Grease Fitting
13	1	105449	Right Cutter - SERIAL NUMBER 40009 & DOWN
14	1	24001	Male Coupler
15	1	24002	Female Coupler
16	2	38029	Hose .62" X 152" 10MBo-10MBo
17	1	16772	Hydraulic Motor (Assembly #16980)
18	1	32847	Motor Mounting Plate
19	1	33249	10 Tooth Sprocket
20	4	22336	.50" X 1.50" Socket Head Capscrew-GR 8
	4	1228	.50" UNC Hex Nut
21	3	1872	.50" UNC X 1.50" Carriage Bolt
	3	1790	.50" UNC Serrated Flange Lock Nut
22	1	32848	Cam Lock
23	1	105448	Center Cutter
24	2	1051	.38" UNC X 3.00" Hex Capscrew
	2	1525	.38" Flat Washer
	2	1837	.38" UNC Deformed Lock Nut
25	3	105482	Key
26	1	32905	18 Tooth Sprocket
27	1	32906	Drive Chain, No. 80, 73 Pitches
	-	53298	Replacement Link, Master, No. 80
28	1	105447	Left Cutter
29	2	40092	BRADCO Logo Decal
30	3	4105	Danger Stand Clear Decal
31	3	4235	Danger Decal, Moving Paddles
32	1	4338	Made In USA Decal
33	1	19799	Defacer Frame
34	1	40151	Warning! High Pressure Fluid Decal
35	1	120356	Right Cutter - SERIAL NUMBER 400010 & UP
36	1	120354	Adapter Shaft - SERIAL NUMBER 400010 & UP

DECALS

NOTE: CONTACT PALADIN OR YOUR LOCAL DEALER FOR LOGO DECALS.

DANGER STAND CLEAR

PART #4105
DANGER STAND CLEAR



PART #40151
WARNING! HIGH PRESSURE FLUID



PART #4338
MADE IN U.S.A.



PART #4235
DANGER! MOVING PADDLES

INSTALLATION & OPERATION

GENERAL INFORMATION

The following instructions will help you to mount your silage defacer onto your skid-steer loader. The defacer uses the skid-steer's quick-attach system for ease of installation.

Remember to read all safety warnings, decals and operating instructions before operating the skid-steer or attachment.

MOUNTING INSTRUCTIONS

1. Remove the steel banding from around the silage defacer and the skid. Install right cutter before operation on units with SERIAL NUMBER 400010 & UP.
2. Remove any attachments from the front of the skid-steer loader.
3. Set the quick-attach locks on the skid-steer toolbar to the unlocked position. Lower the loader arms and tilt the toolbar down low enough to pass under the top lip of the mounting frame on the silage defacer.
4. Following all standard safety practices, start the skid-steer and slowly drive it in back of the silage defacer. Position the skid-steer so that the top of the toolbar is in under the lip of the hitch on the mounting frame.
5. Tilt the toolbar back to hook the defacer onto the toolbar.
6. Set the quick-attach locks to the locked position to secure the attachment onto the skid-steer. It may be necessary to raise, lower or tilt the toolbar to properly align so the locking mechanism can be activated.
7. With the auxiliary hydraulic system turned off, route the hydraulic hoses through the hose clamp(s) on the attachment frame and then up through the hose clamp mounted on the spring. Connect the couplers on the attachment to their proper auxiliary couplers on the skid-steer.

DETACHING EQUIPMENT

1. Position the quick-attach locks in the unlocked position.
2. Gently set the attachment on firm, level ground in an area that is protected from personnel inadvertently contacting the auger teeth.
3. Tilt the toolbar forward and slowly back the skid-steer until the toolbar is disengaged from the quick-attach mounting frame.
4. Following all standard safety practices, shut off the skid-steer, relieve any pressure in the auxiliary hydraulic system and disconnect the hydraulic couplers from the auxiliary hydraulics. Connect the couplers together to prevent contaminants from entering the system.
5. It is recommended that the defacer be inspected for loose bolts, nuts and hydraulic connections before and after each use.

CLEAR THE WORK AREA OF ALL BYSTANDERS BEFORE OPERATING!

OPERATING TIPS

1. The BRADCO silage defacer was designed to be operated using a downward motion. Using an upward cutting motion will affect skid-steer stability and handling resulting in a rough face and continuous machine stalling.
2. To prevent attachment and property damage avoid direct contact of auger teeth with the bunker walls and floor.
2. 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.
3. A 2" depth of cut is recommended to avoid stalling and obtain a clean face.

MAINTENANCE & SERVICE

GENERAL INFORMATION

Your attachment was designed to be virtually maintenance free. Very little effort is needed to keep it in top condition. It is however, important to follow these procedures to get full performance and longevity out of the attachment.

LUBRICATION

The only lubrication your attachment needs is the greasing of the bearings in the flange sets. A grease fitting has been installed in both of the flange sets to facilitate this task.

We recommend greasing all grease fittings after the initial 8 hours of operation and then every 40 hours of operation thereafter.

MONTHLY

Once a month your attachment should be thoroughly inspected for loose nuts, capscrews, bearings etc. Tighten as required and replace where necessary. It is important to keep all blades secure.

Clean equipment of all silage, dirt, oil, grease, etc. This will assist you in making visual inspections and help avoid overlooking worn or damaged components.

Keep all safety decals clean and legible. Replace if damaged or worn.

Inspect all hydraulic hoses for deterioration and replace if necessary.

Adjust and lubricate the drive chain. (See Chain Adjustment) 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.

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



Adjust the shoe weldments on the defacer so material is removed but the shoe is never less than 1/2" shorter than the blades.

CHAIN ADJUSTMENT

We recommend adjusting the chain on the silage defacer 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 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.**

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.

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	
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	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	
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	




GRADE 2



GRADE 5






GRADE 8



METRIC BOLT TORQUE SPECIFICATIONS

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.

Bolt head identification marks as per grade.		
		

Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

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 twenty-four (24) 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.