



# **Mini Angle Broom**

For

**Mini Skid Steer Loaders**

And

**Mini Track Loaders**

**Operator's Manual**

**Set-Up Assembly**

**Maintenance**

**Parts Information**



**Read this Manual Before Use**

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## REFERENCE INFORMATION

Write the serial number for your attachment in the spaces below. Always refer to this serial number when calling for service or parts.

Serial Number.....

## YOUR ATTACHMENT DEALER

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ADDRESS:

---

PHONE:

---

CONTACT:

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**NOTE:** *Erskine Attachments LLC reserves the right to make improvements in design or changes in specifications at any time without notice and without incurring any obligations to install them on units previously sold.*

# SAFETY

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**DO NOT** use or perform maintenance on this machine until this manual has been read and understood. In addition, read the Operation and Maintenance Manual(s) pertaining to the attachment and the attachment carrier (“Loader”).

The user is responsible for inspecting the machine daily, and for having parts repaired or replaced when continued use of the machine would cause damage, excessive wear to other parts or make the machine unsafe for continued operation.

If an operating procedure, tool device, maintenance or work method not specifically recommended is used, you must satisfy yourself that it is safe for you and others. You must also ensure that the attachment will not be damaged or made unsafe by the procedures you choose.

Erskine Attachments LLC cannot anticipate every possible circumstance that might involve potential hazard. The safety messages found in this manual and on the machine are therefore not all inclusive.

Throughout this manual, reference may be made to the left hand (LH) and right hand (RH) side. These terms are used as viewed from the operator’s seat facing front.

The signal words **CAUTION**, **WARNING**, or **DANGER** are used to indicate hazards.

**⚠ CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

**⚠ WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**⚠ DANGER** Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

The word **IMPORTANT** is used in the text when immediate damage will occur due to improper technique or operation.

The word **NOTE** is used to convey information that is out of context with the manual text; special information such as specifications, techniques, reference information, and other information of a supplementary nature.

## Improper operation can cause serious injury or death.

### Pre-operation

- This machine is designed for sweeping dirt, small debris, and snow off of hard surfaces only. This machine is designed to be used on loaders with a Rated Operating Capacity (ROC) of 1000 pounds or less only. **NEVER** use this machine for any other purpose.
- Read the operator's manual for the "Skid Steer Loader." **NEVER** allow untrained people to operate.
- Operating instructions must be given to everyone before operating this attachment and at least once a year thereafter in accordance with OSHA regulations.
- **NEVER** exceed the maximum recommended input power or speed specifications for the attachment. Over-powering or over-speeding the attachment may cause personal injury and/or machine damage.
- Keep all shields, guards, and covers in place.
- Do not modify equipment or add attachments that are not approved by Erskine Attachments LLC.
- Use adequate safety warning lights and devices as required by local regulations. Obey all local laws and regulations regarding machine operation on public property.

### Operation

- Always wear eye protection that meets ANSI z87.1 or use with an enclosure that provides similar protection.
- Depending on how this attachment is used, dust can be created. Prolonged exposure to dust can cause chronic and acute health problems. A NIOSH-approved respirator may be required.
- Hydraulic connections may be hot after use. Use gloves if connecting or disconnecting after use.
- Check and be sure all operating controls are in neutral before starting the engine.

### Operation (continued)

- Always stay in the operator position when using the attachment.
- Keep people away from loader, attachment, and discharge when in use. This attachment sends objects flying and has rotating parts. **NEVER** direct discharge toward people – rocks and debris can be thrown.
- **NEVER** operate near embankments or terrain that is so steep that rollover could occur.
- Before leaving the operator position, disengage the hydraulic drive, lower the attachment to rest flat on the ground, stop engine, set park brake, and wait for all motion to stop.
- **NEVER** place hands in discharge area or clear debris while engine is running.

### Avoid High Pressure Fluids Hazard

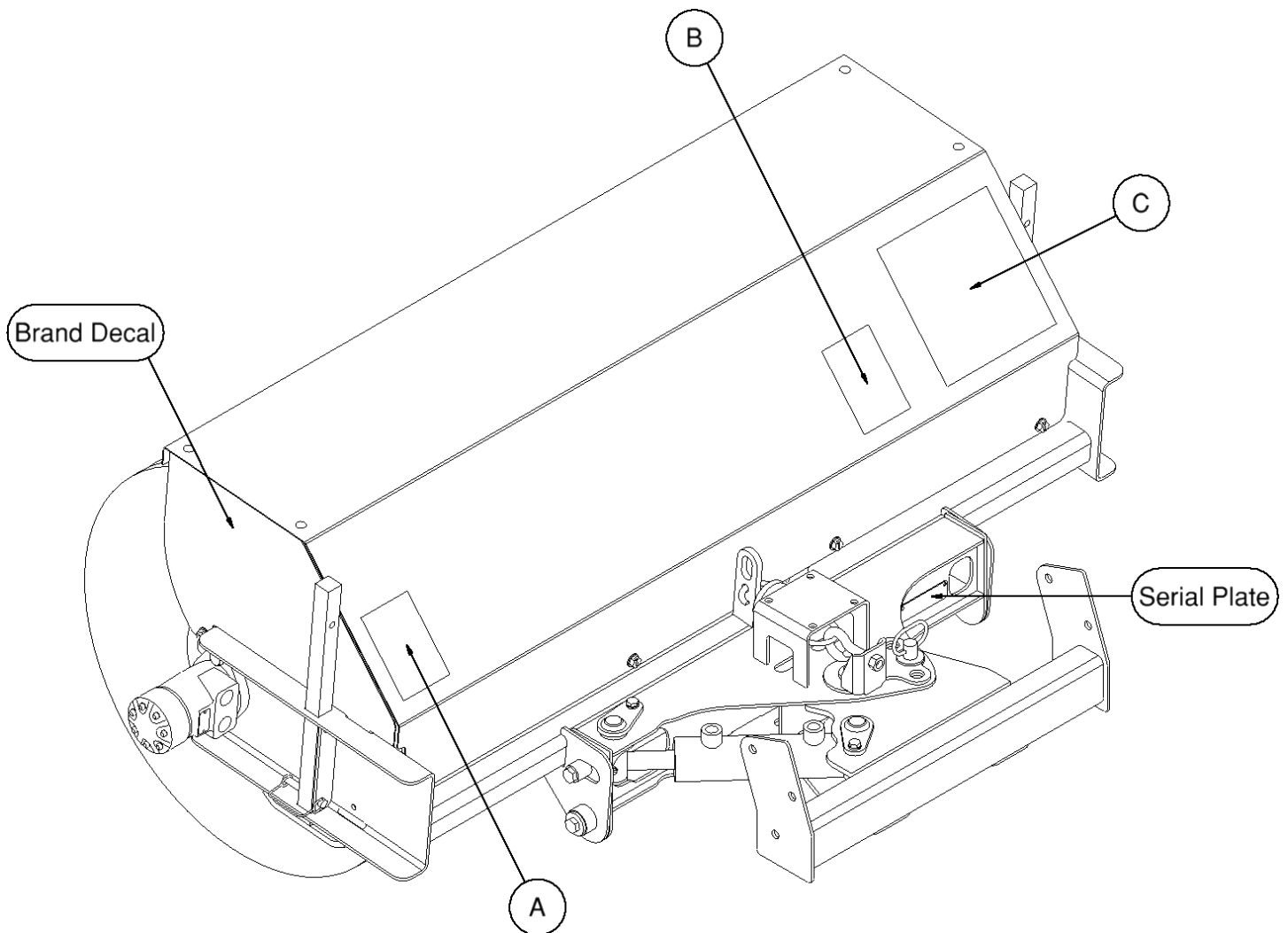


- Escaping fluid under pressure can penetrate the skin causing serious injury.
  - Avoid the hazard by relieving the pressure before disconnecting hydraulic lines.
  - Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks. Wear protective gloves and safety glasses or goggles when servicing or performing maintenance on hydraulic systems.
  - If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.
- ### Maintenance
- **NEVER** make adjustments, lubricate, clean, or perform any service on the machine while it is in operation.
  - Make sure the attachment is serviced on a daily basis. Improper maintenance can cause serious injury or death in addition to damage to the attachment and/or your equipment.

# SERIAL NUMBER AND SAFETY DECAL LOCATIONS

## Serial Number Location:

It is important to refer to the serial number of the attachment when making repairs or ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use different procedures in doing a specific operation.



## SERIAL NUMBER AND SAFETY DECAL LOCATIONS



**Part number: 200001**

**Location:** On back of hood, LH side

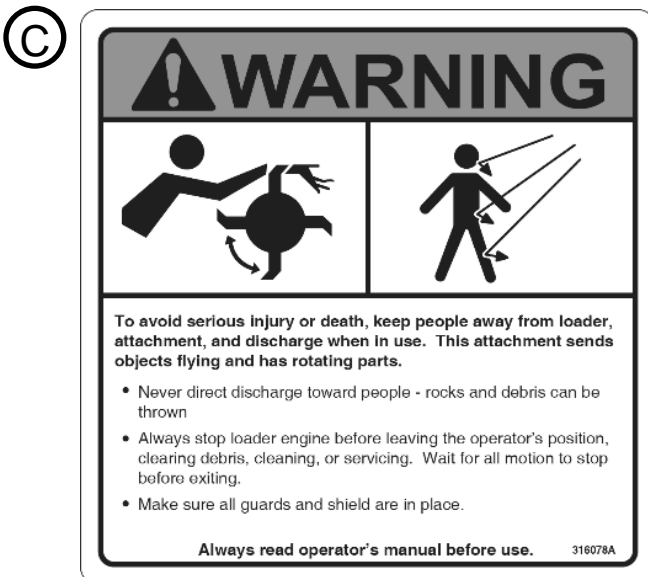
**Quantity: 1**



**Part number: 203234**

**Location:** On back of hood, RH side

**Quantity: 1**



**Part number: 316078**

**Location:** On back of hood, RH side

**Quantity: 1**

### Mini Brand Decal

**Location:** On both sides of hood

**Quantity: 2**

### Safety Decals Locations:

The locations of the safety decals are shown. If these decals are missing, damaged, or painted over they must be replaced. Call Erskine Attachments LLC (218-435-4045) for replacement decals.

# USER'S MOUNTING INSTRUCTIONS

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After the initial set-up assembly is completed, use the following procedure to mount the attachment to the loader.

**⚠ WARNING** Coupler wedges or pins must extend through holes in attachment. Levers must be fully down and locked. Failure to secure wedges or pins can allow the attachment to come off and cause injury or death.

**IMPORTANT:** This attachment is not designed to be used on loaders with a Rated Operating Capacity (ROC) of more than 1000 pounds.

## Instructions for mounting to a ride-on mini skid steer:

1. Use the step, safety treads, and grab handles to get on and off the loader and attachment.
2. Sitting in the operator's seat, lower the seat bar, fasten the seat belt, make sure all controls are in neutral, and start the engine.
3. Drive the loader to the rear of the attachment. Put the loader quick attach coupler into the attachment mounting bracket.
4. Tilt the loader coupler back a small amount until it is fully engaged with the attachment mounting bracket.
5. Stop the engine and engage the park brake.
6. Exit the loader and secure the coupler locking mechanism that locks the attachment to the loader.

## Instructions for mounting to a walk-behind mini skid steer:

1. Standing at the operator's station, make sure all controls are in neutral, and start the engine.
2. Drive the loader to the rear of the attachment. Put the loader quick attach coupler into the attachment mounting bracket.
3. Tilt the loader coupler back a small amount until it is fully engaged with the attachment mounting bracket.
4. Stop the engine and engage the park brake.
5. Walk to the front of the loader and secure the coupler locking mechanism that locks the attachment to the loader.

# USER'S MOUNTING INSTRUCTIONS

## Connecting Hydraulics:

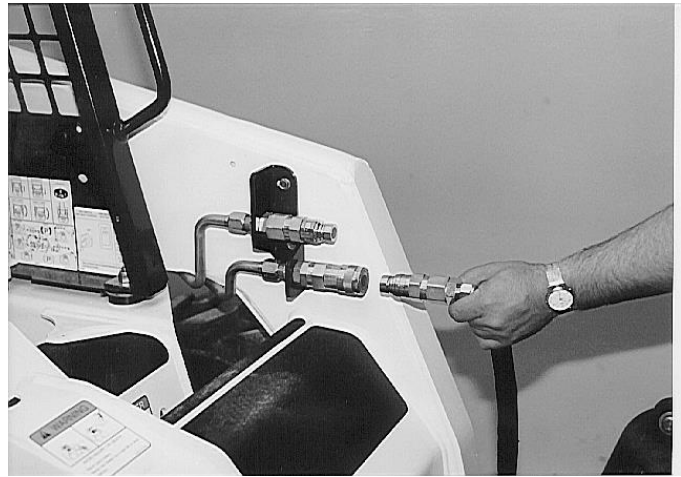
1. Connect the hydraulic quick couplers from the attachment to the loader.

**IMPORTANT:** Wipe the ends of the hydraulic quick couplers (both lead and loader) with a rag to remove any possible contamination. Contamination can cause hydraulic components to fail and is not covered under warranty.

**IMPORTANT:** Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and brand. Do not force the quick couplers together.

**NOTE:** See the loader's operator's manual for auxiliary hydraulic specifications and connection instructions.

**NOTE:** Attachment is shipped with 8FJX (3/4" Female JIC Swivel) fittings on the ends of the lead hoses.



2. If equipped with the hydraulic angle option, connect the attachment wire harness to the loader wire harness receptacle.
3. Make sure the hoses are properly routed to fit your specific loader. If the hoses are not routed correctly, hoses may get pinched or rub on tires. Be sure to check the hose routing through the full range of intended motion of the attachment before operating it.

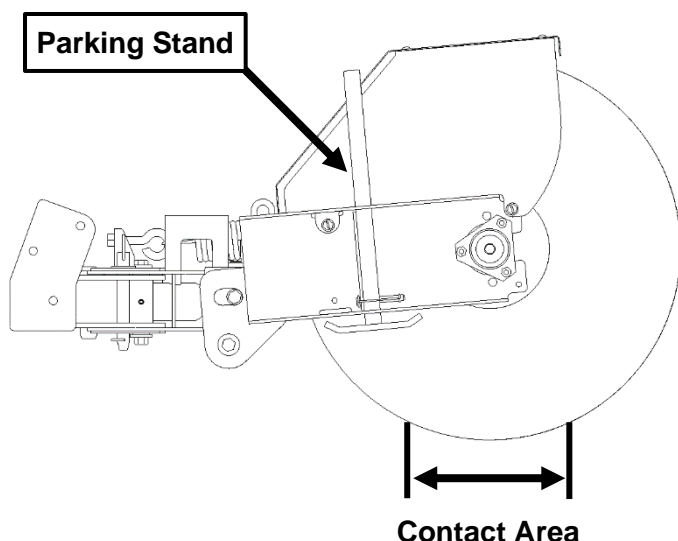
More than one routing may be acceptable depending on the loader. Pick the routing that best suits your specific loader.

**IMPORTANT:** Proper hose routing is the responsibility of the owner and/or operator. Pinched or stretched hoses are not covered under warranty.

Mounting is now complete and the attachment is ready for operation. Use the above instructions in the reverse order to dismount the attachment from the loader.



# OPERATING INSTRUCTIONS



**IMPORTANT:** Before operation, make sure the parking stands have been secured in the raised operating position. Failure to do so will result in damage to the attachment.

1. With the operator in the seat of the loader, the seat belt fastened, and the seat bar lowered (if so equipped), start the engine.
2. With the loader lift arms fully lowered, tilt the attachment forward so that the bristles contact the ground.
3. Activate the auxiliary hydraulics in continuous flow mode to start the angle broom bristles turning, and drive the loader forward to sweep.

**NOTE:** Broom rotation should always be such that material is swept away from the operator.

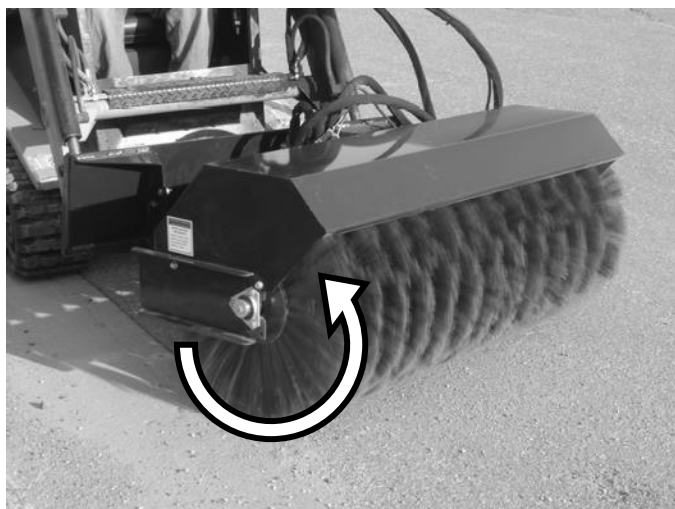
4. The spring suspension will keep the down pressure on the broom consistent, which allows the broom to float. If more or less down pressure is required, pressure can be adjusted by tilting the attachment forward or back.

**IMPORTANT:** Excessive down pressure will cause premature bristle wear or breakage.

**NOTE:** The down pressure on the broom determines the broom contact area on the surface, or the length of bristle contact with the surface. Use the correct down pressure for the situation.

For dirt and debris removal, a 2.0 to 4.0 inch contact area is recommended. This allows the bristle tips to dig, break up, and throw material.

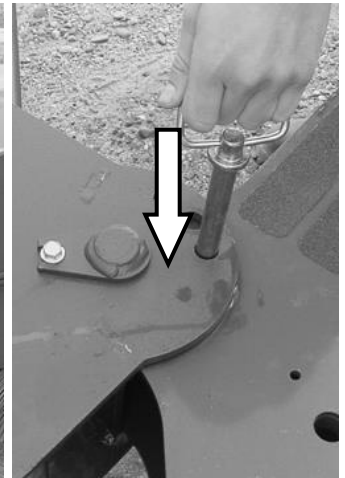
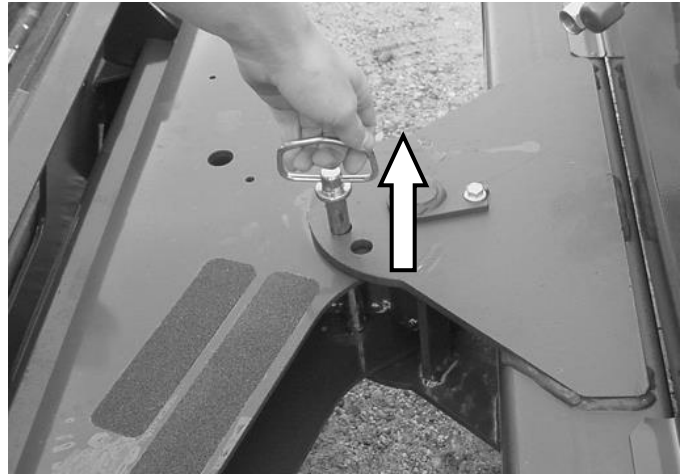
For snow removal, a 4.0 to 6.0 inch contact area is recommended.



# OPERATING INSTRUCTIONS

## Manual Angle Adjustment

1. Lift the attachment slightly off of the ground.
2. Stop the loader, disengage hydraulic drive, shut off the engine, and engage the park brake.
3. Remove the clip pin and the hitch pin from the pivot frame.
4. Push on one end of the attachment to swing the broom head to the desired angle.
5. Reinstall the hitch pin and clip pin to lock the broom at the desired angle.



## Hydraulic Angle Adjustment

1. With the operator in the seat of the loader, the seat belt fastened, and the seat bar lowered (if so equipped), start the engine.
2. Engage the auxiliary hydraulics in continuous flow mode to start the bristle rotation.
3. Use the toggle switch controller or the loader's attachment control system (if equipped) to activate the valve on the attachment and angle the broom to the left or right as desired.

**NOTE:** See loader's operator's manual for instructions on operating the attachment control system.

## ROUTINE MAINTENANCE

**⚠ WARNING** Lower the attachment to rest flat on the ground, disengage the hydraulic drive, shut down the engine, set the park brake, and wait for all motion to stop before leaving the operator's seat to perform service of any kind.

It is the operator's responsibility to make daily inspections of the loader and attachment for damage, loose bolts, fluid leaks, or anything else that could cause a potential service or safety problem. Preventive maintenance is the easiest and least expensive type of maintenance.

**IMPORTANT:** Bolts can loosen after initial usage. After the first hour of operation check all bolts.

## LUBRICATION

### Lubrication Legend



Multipurpose spray lube



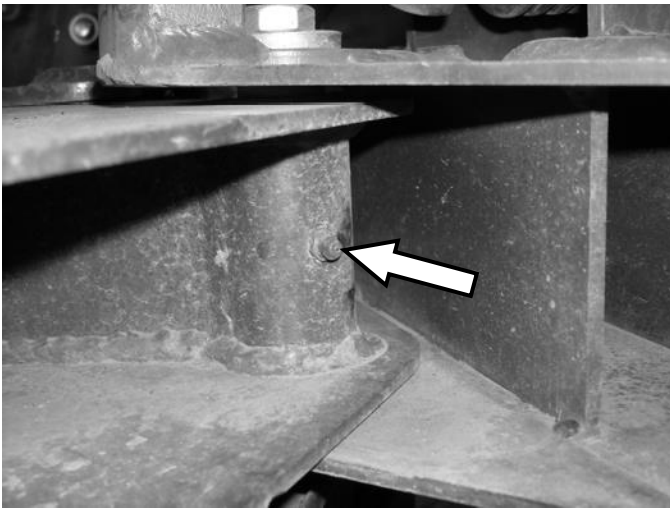
No. 2 Lithium base gun grease



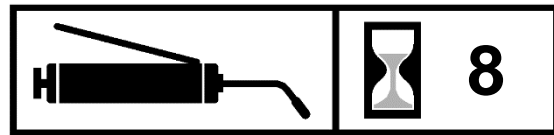
Clean engine oil



Intervals at which lubrication is required



Use No. 2 lithium base gun grease when lubricating all attachment grease fittings.



Grease the angle pivot bushing every **8 hours** of operation.



Grease both angle cylinder zerks (if equipped) every **8 hours** of operation.

**NOTE:** It may be necessary to angle the attachment to the right to allow easier access to both angle cylinder zerks.

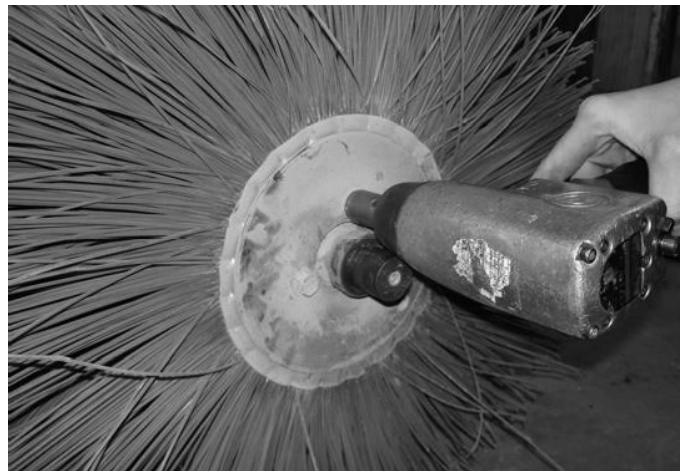
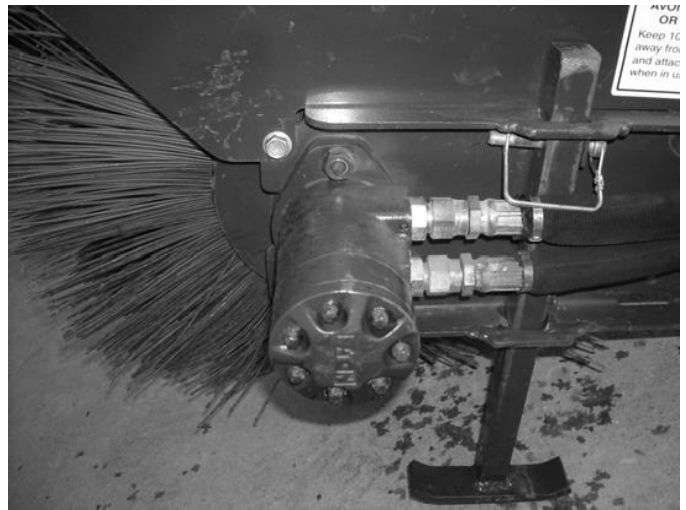
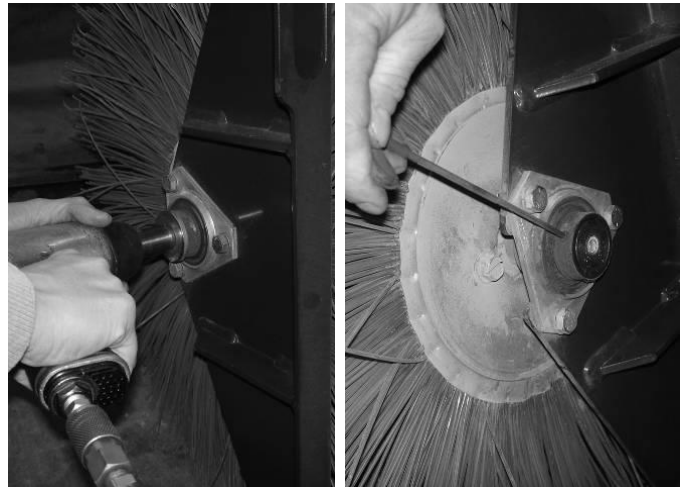
## ROUTINE MAINTENANCE

### Replacing Brush Sections

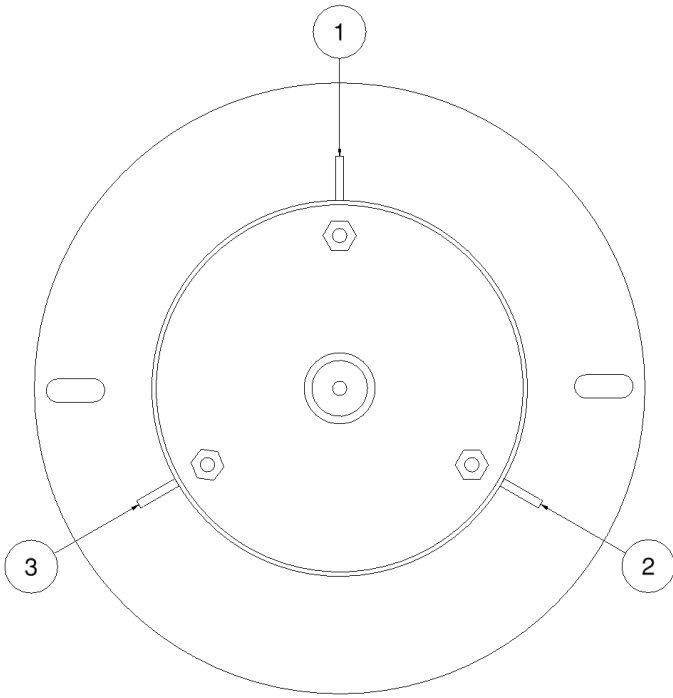
1. Use the snapper pins to lock both parking stands in the parking position.
2. Lower the attachment to rest on the parking stands.
3. Remove the bearing retaining bolt from the end of the shaft.
4. Remove the bearing by loosening the set screws and removing the three bearing mounting bolts and nuts. Retain for later assembly.
5. Remove the two motor mount bolts and nuts. Retain for later assembly.
6. Carefully remove the broom arbor assembly.

**NOTE:** The hex drive block is bolted to the motor and will disconnect from the broom arbor once the arbor is removed.

7. Remove the three bolts securing the brush retaining plate to the arbor tube. Remove the brush retainer.
8. Remove the old brush sections by sliding them off of the arbor.



## ROUTINE MAINTENANCE



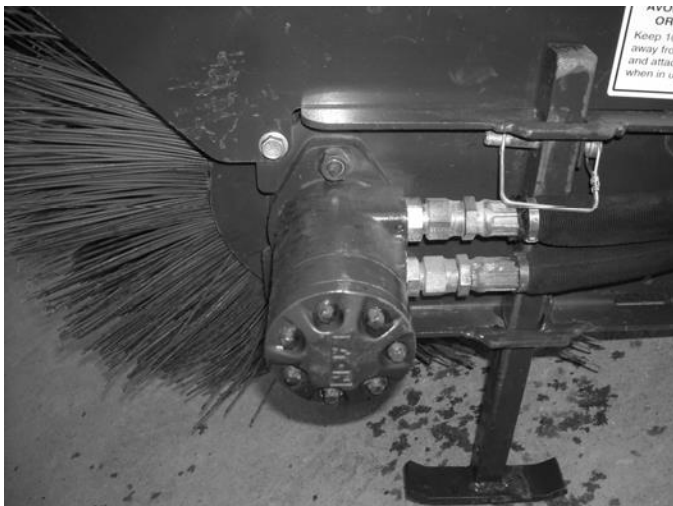
9. Number the ribs on the arbor as 1, 2, and 3.
  10. Slide the first “wavy” brush section on so that the pins are around rib 1.
  11. Slide the second “wavy” brush section on so that the pins are around rib 2.
- NOTE:** Every other brush section will need to be flipped so that the high spots of the bristle “waves” on the neighboring sections hit each other.
12. Slide the third “wavy” brush section on so that the pins are around rib 3.
  13. Continue this pattern until all brush sections are installed.

**NOTE:** The brush stack does not need to be flush with the end of the arbor. It may be higher or lower depending on how each brush section is formed. If the stack is high, compress it when reinstalling the brush retainer. If the stack is low, it will spread out when the arbor is laid down.

14. Reinstall the brush retaining plate and three bolts.
15. Slide the motor assembly into the end of the arbor, aligning the hex drive with the hole in the end of the arbor.



16. Slide the brush head assembly back into the frame.
17. Reinstall the three bearing mounting bolts and nuts.
18. Reinstall the bearing retaining bolt and tighten the bearing set screws.
19. Reinstall the two motor mounting bolts and nuts.
20. Tighten all hardware to the proper torque(s). Refer to “Bolt Torque Information” on page 15 of this manual.



## SET-UP ASSEMBLY

### Toggle Switch Harness Installation

Mounting the toggle switch control harness will vary from loader to loader. Use the following instructions as a general guide. It may be necessary to drill holes to mount pieces of this harness. Mounting hardware is not included.

1. Mount the wire harness receptacle to the loader arm near the hydraulic quick couplers.
2. Route the wire harness back along the loader arms and fasten with cable ties.
3. Open the rear door to access the battery compartment. Pull the excess wire harness into the engine compartment.
4. Connect the red fused wire to the positive (+) battery terminal, or to a suitable accessory wire with a minimum rating of 5 amps.
5. Connect the black wire to the negative (-) battery terminal, or to a frame ground.
6. Connect the toggle switch harness connector to the main wire harness connector.
7. Mount the toggle switch in a convenient location near the operator's station.

**IMPORTANT:** Secure the wire harness in place with plastic cable ties, making sure it is clear of extra hot areas or any moving parts of the engine or loader. Pinched, stretched, or melted wire harnesses are not covered under warranty.

8. Close the rear door.

**IMPORTANT:** Be sure the wire harness is properly positioned to prevent pinching when closing the door.





# BOLT TORQUE INFORMATION

## Torque-Tension Relationships for SAE J429 Grade Bolts

Nominal Thread Size	SAE J429 Grade 2			SAE J429 Grade 5			SAE J429 Grade 8		
	Clamp Load (lbs)	Tightening Torque		Clamp Load (lbs)	Tightening Torque		Clamp Load (lbs)	Tightening Torque	
		K = .15	K = .20		K = .15	K = .20		K = .15	K = .20
Unified Coarse Thread Series									
1/4-20	1,300	49 in-lbs	65 in-lbs	2,000	75 in-lbs	100 in-lbs	2,850	107 in-lbs	143 in-lbs
5/16-18	2,150	101	134	3,350	157	210	4700	220	305
3/8-16	3,200	15 ft-lbs	20 ft-lbs	4,950	23 ft-lbs	31 ft-lbs	6,950	32.5 ft-lbs	44 ft-lbs
7/16-14	4,400	24	30	6,800	37	50	9,600	53	70
1/2-13	5,850	36.5	49	9,050	57	75	12,800	80	107
9/16-12	7,500	53	70	11,600	82	109	16,400	115	154
5/8-11	9,300	73	97	14,500	113	151	20,300	159	211
3/4-10	13,800	129	173	21,300	200	266	30,100	282	376
7/8-9	11,425	125	166	29,435	321	430	41,550	454	606
1-8	15,000	187.5	250	38,600	482.5	640	54,540	680	900
Unified Fine Thread Series									
1/4-28	1,500	55 in-lbs	75 in-lbs	2,300	85 in-lbs	115 in-lbs	3,250	120 in-lbs	163 in-lbs
5/16-24	2,400	112	150	3,700	173	230	5,200	245	325
3/8-24	3,600	17 ft-lbs	22.5 ft-lbs	5,600	26 ft-lbs	35 ft-lbs	7,900	37 ft-lbs	50 ft-lbs
7/16-20	4,900	27	36	7,550	42	55	10,700	59	78
1/2-20	6,600	41	55	10,200	64	85	14,400	90	120
9/16-18	8,400	59	79	13,000	92	122	18,300	129	172
5/8-18	10,600	83	110	16,300	128	170	23,000	180	240
3/4-16	15,400	144	193	23,800	223	298	33,600	315	420
7/8-14	12,610	138	184	32,480	355	473	45,855	500	668
1-12	16,410	205	273	42,270	528	704	59,670	745	995

Clamp load estimated as 75% of proof load for specified bolts.

Torque values for 1/4 and 5/16 inch series are in inch-pounds. All other torque values are in foot-pounds.

Torque values calculated from formula  $T = KDF$

where:  $K=0.15$  for "lubricated" conditions

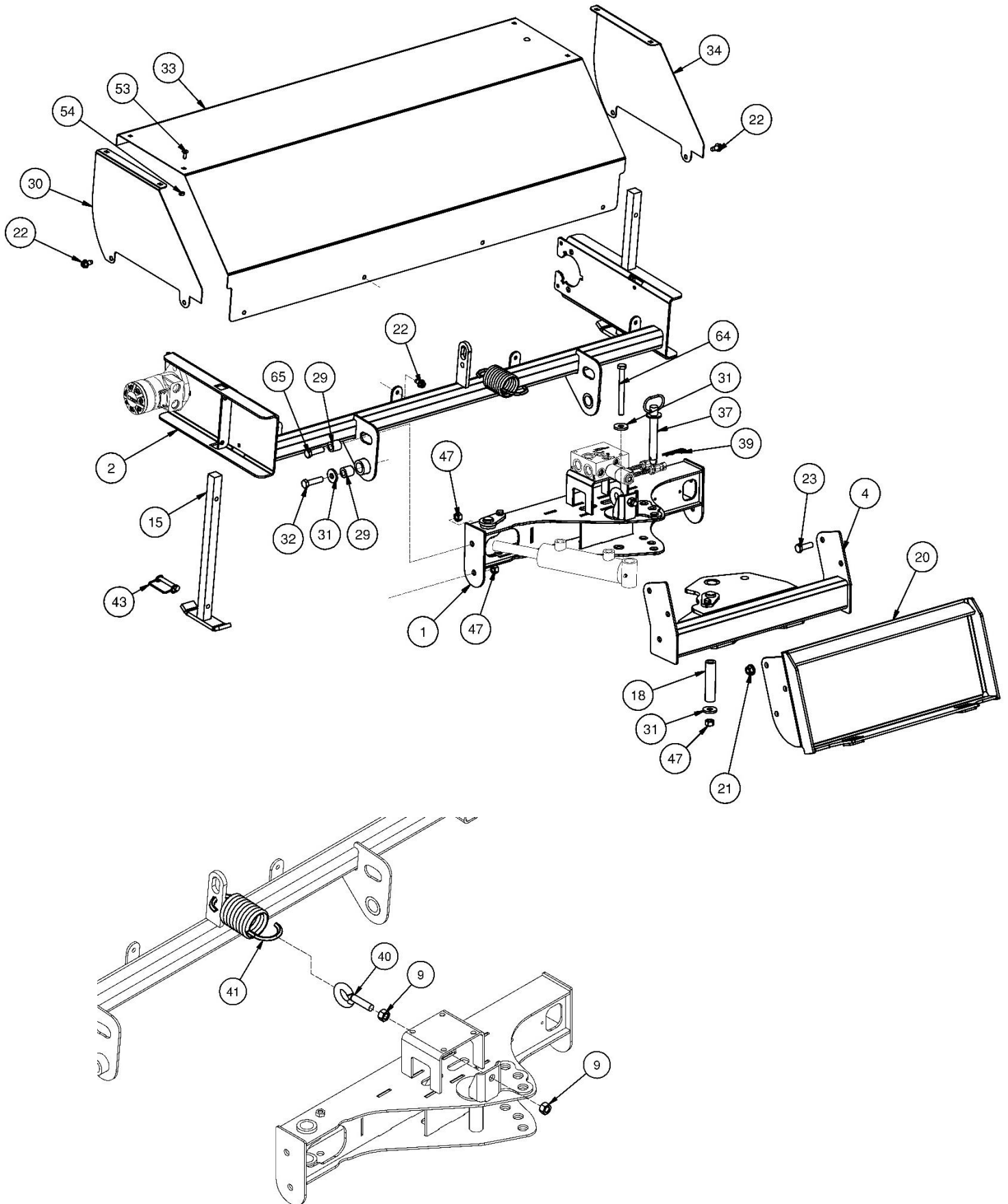
$K=0.20$  for "dry" conditions

## PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	400301	SWIVEL MOUNT W/A	
2	1	400302	FRAME MAIN AB 48 W/A	<b>48"</b>
	1	400308	FRAME MAIN AB 60 W/A	<b>60"</b>
4	1	400103	MOUNT W/A	
9	2	36310	NUT FULL HEX	1/2 - UNC - GR 5
15	2	316061	JACKSTAND	
18	1	400143	BUSHING SWIVEL	
20	1	400000	MOUNT FRAME TORO MINI W/A	OPTIONAL MOUNT PACKAGE
	1	400001	MOUNT FRAME ASV MINI W/A	OPTIONAL MOUNT PACKAGE
	1	400002	MOUNT FRAME BC MINI W/A	OPTIONAL MOUNT PACKAGE
	1	300283	MOUNT FRAME UNIV MINI W/A	OPTIONAL MOUNT PACKAGE
	1	330622	MOUNT FRAME AVANT MINI W/A	AVANT MNT MINI PKG 330753
21	6	0167011	NUT FLG TOP LOCK 1/2 NC GR 8 YZ	OPTIONAL MOUNT PACKAGE
22	8	32467	BOLT FLG THRD RLNG	3/8 X 3/4 - UNC - GR 5
23	6	15209	BOLT HEX - 1/2 X 1-1/2 - UNC - GR 8	OPTIONAL MOUNT PACKAGE
29	4	400325	BUSHING BROOM STOP	
30	1	400336	PLATE SIDE SHIELD LH PAINTED	(400314 UNPAINTED)
31	4	313321	WASHER .53ID X 1.375OD X .199	
32	2	13211	BOLT HEX	1/2 X 2 - UNC - GR 5
33	1	400334	HOOD AB 48 PAINTED	<b>48"</b> (400313 UNPAINTED)
	1	400364	HOOD AB 60 PAINTED	<b>60"</b> (400363 UNPAINTED)
34	1	400335	PLATE SIDE SHIELD RH PAINTED	(400315 UNPAINTED)
37	1	300284	PIN HITCH 3/4 X 5	<b>MANUAL ANGLING OPT</b>
39	1	200064	PIN CLIP #11 1/8 X 2 5/8	<b>MANUAL ANGLING OPT</b>
40	1	42260	BOLT EYE 1/2 X 2	
41	1	400319	SPRING 2.47 OD X 6 EXTENSION	
43	2	300581	PIN SNAPPER 5/16" X 3"	
47	5	37214	NUT HEX	1/2 - UNC - GR 5 - REV LOCK
53	4	21801	BOLT CARRIAGE	1/4 X 0.75 - UNC - GR 5
54	4	37210	NUT HEX	1/4 - UNC - GR 5 - REV LOCK
64	1	13223	BOLT HEX	1/2 X 5 - UNC - GR 5
65	2	13210	BOLT HEX	1/2 X 1-3/4 - UNC - GR 5



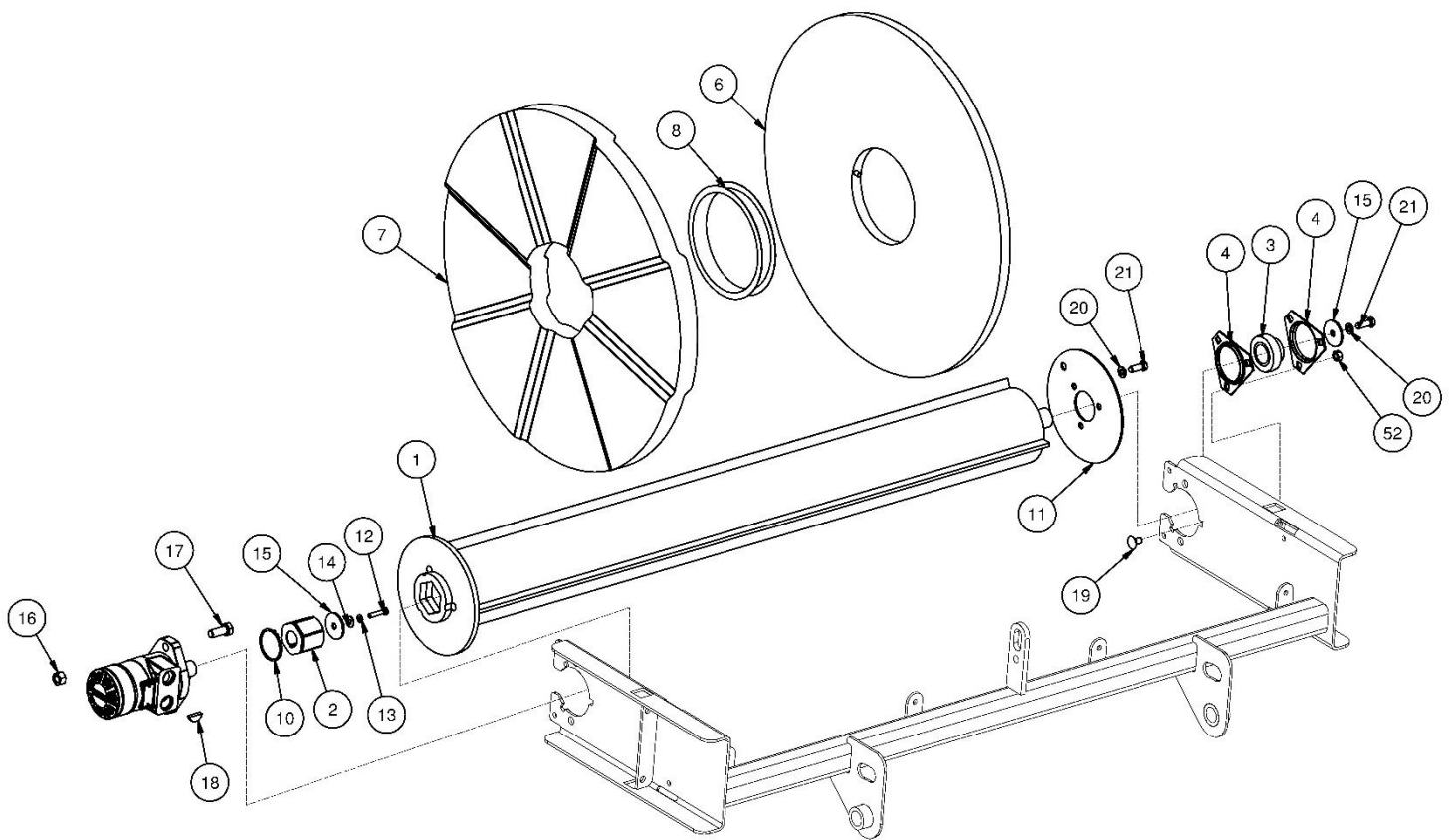
# PARTS INFORMATION



## PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	400304	ARBOR 48 W/A	48"
	1	318503	ARBOR PUB 60 W/A	60"
2	1	318459	DRIVE BLOCK HEX 1" BORE	
3	1	202159	BRG INSERT 1-1/4" SM	
4	2	203741	FLANGET 3-BOLT 1-1/8"	
5		400383	PACKAGE WAFER POLY MINI	
		400384	PACKAGE WAFER POLY/STEEL MINI	
		400392	PACKAGE WAFER STEEL MINI	
6	2	318410	WAFER STRAIGHT POLY 24" OD	OPT. POLY WAFER PKG
	2	318410	WAFER STRAIGHT POLY 24" OD	OPT. POLY/STEEL WAFER PKG
7	23	318411	WAFER CONVOLUTED POLY 24" OD	OPT. POLY WAFER PKG 48
	28	318411	WAFER CONVOLUTED POLY 24" OD	OPT. POLY WAFER PKG 60
	11	318411	WAFER CONVOLUTED POLY 24" OD	OPT. POLY/STEEL WAFER PKG 48
	14	318411	WAFER CONVOLUTED POLY 24" OD	OPT. POLY/STEEL WAFER PKG 60
	12	318487	WAFER CONVOLUTED STEEL 24" OD	OPT. POLY/STEEL WAFER PKG 48
	14	318487	WAFER CONVOLUTED STEEL 24" OD	OPT. POLY/STEEL WAFER PKG 60
	25	318487	WAFER CONVOLUTED STEEL 24" OD	OPT. STEEL WAFER PKG 48
	30	318487	WAFER CONVOLUTED STEEL 24" OD	OPT. STEEL WAFER PKG 60
8	2	318488	WAFER SPACER	INCLUDED WITH FLAT WAFER
10	1	313333	RING SNAP EXT 2 X .063	
11	1	318419	ENDPLATE ARBOR PAINTED	
12	1	13007	BOLT HEX	1/4 X 1-1/4 – UNC – GR 5
13	1	33618	WASHER LOCK	1/4 – GR 5
14	1	33004	WASHER FLAT	1/4 – GR 5
15	2	202830	WASHER LARGE HEAVY 3/8	
16	2	37214	NUT REV LOCK	1/2 NC
17	2	13207	BOLT HEX	1/2 X 1-1/4 NC GR 5
	2	22876	BOLT FLNG 12PT 1/2 x 1-1/2 NC GR 5	<b>OBSOLETE REPLACED BY 13207</b>
18	1	100540	WOODRUFF KEY 1/4 X 1	COMES WITH MOTOR
19	3	21303	BOLT CARRIAGE	3/8 X 0.75 - UNC - GR 5
20	4	103880	WASHER LOCK	0.375 - GR 5
21	4	103116	BOLT HEX	3/8 X 1 - UNC - GR 5
52	3	37212	NUT REV LOCK	3/8 NC GR 5

## MINI ANGLE BROOM PARTS INFORMATION

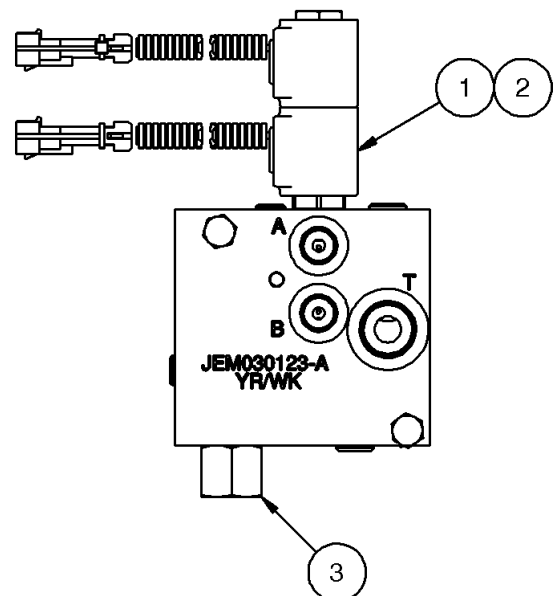
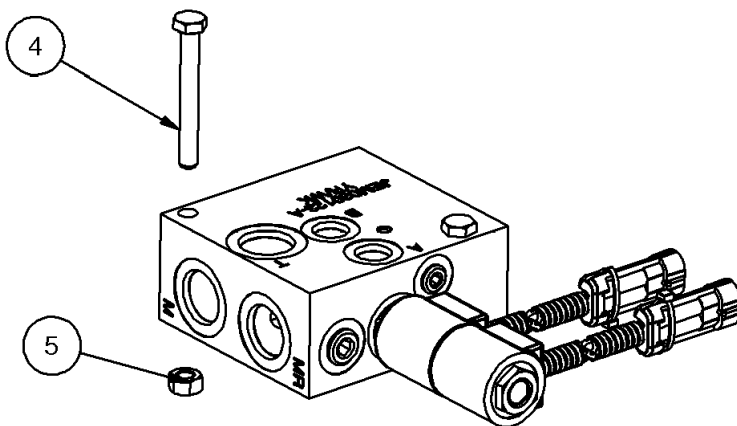


## PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	400311	MOTOR	
2	1	400074	CYLINDER 2 X 4 W/BUSHINGS	HYD ANGLING OPT ONLY
3	1	316054	VALVE	HYD ANGLING OPT ONLY
	1	316132	VALVE ASSM ANGLE BROOM REVERSIBLE	REVERSIBLE PKG ONLY
4	4	201852	ADPT STR 10MB-10MJ	HYD ANGLING OPT ONLY
5	2	201925	ADPT STR 8MB-6MJ	HYD ANGLING OPT ONLY
6	2	400041	PIN 1 X 4	HYD ANGLING OPT ONLY
7	2	103880	WASHER LOCK	HYD ANGLING OPT ONLY
8	2	13105	BOLT HEX 3/8 X 1 NC GR 5	HYD ANGLING OPT ONLY
9	1	36306	NUT HEX REG 3/8 NC GR 5	HYD ANGLING OPT ONLY
10	2	400388	HOSE 1/2 X 40.5" 10FJX-10MB (TO MOTOR)	48"
	2	400398	HOSE 1/2 X 46.5" 10MB-10FJX (TO MOTOR)	60"
11	2	400389	HOSE 1/2 X 80" 8FJX-10FJX90 (LEAD)	
12	2	200061	ADPT TEE 10MJ-10MJ-8MB	MANUAL ANGLING (STANDARD)
13	2	400387	HOSE 3/8 X 21" 6FJX-6MB (VALVE TO CYL)	HYD ANGLING OPT ONLY
14	1	200062	VALVE CHECK SAE 8 FM/FM	MANUAL ANGLING (STANDARD)
15	1	315639	CLAMP HOSE 1-1/2 (R CLAMP)	MANUAL ANGLING (STANDARD)
16	1	13105	BOLT HEX 3/8 X 1 NC GR 5	MANUAL ANGLING (STANDARD)
17	1	37212	NUT REV LOCK 3/8 NC GR A Z	MANUAL ANGLING (STANDARD)

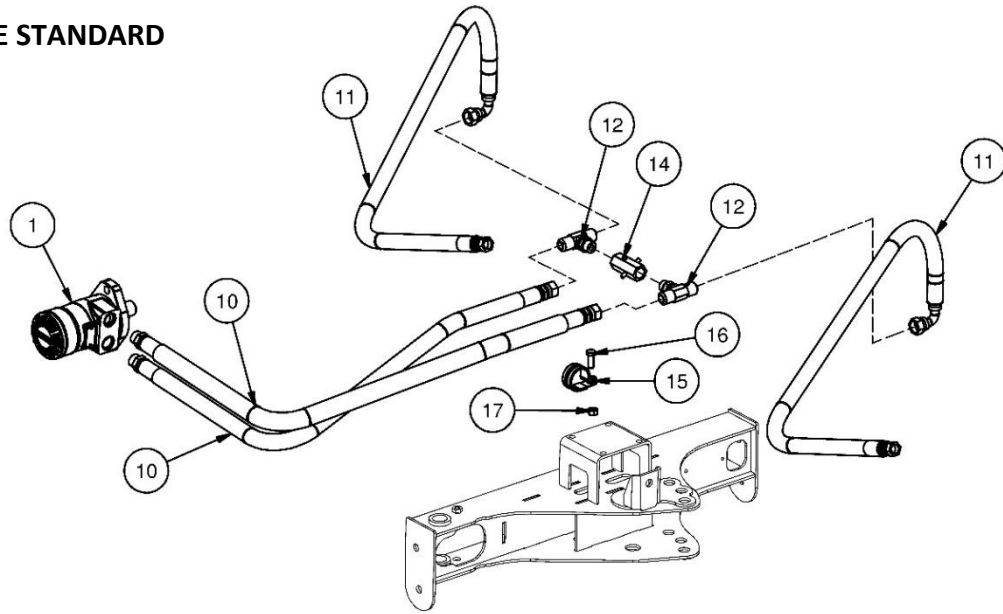
## VALVE BLOCK INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	200042	VALVE SOLENOID	
2	2	320096	COIL METRIPACK 12VDC	
3	1	316118	LOGIC ELEMENT	
4	2	13063	BOLT HEX	5/16 X 2 1/2 NC GR 5
	2	13071	BOLT HEX 5/16" X 4-1/2" NC GR 5	REVERSIBLE PKG ONLY
5	2	37211	NUT REV LOCK	5/16 NC

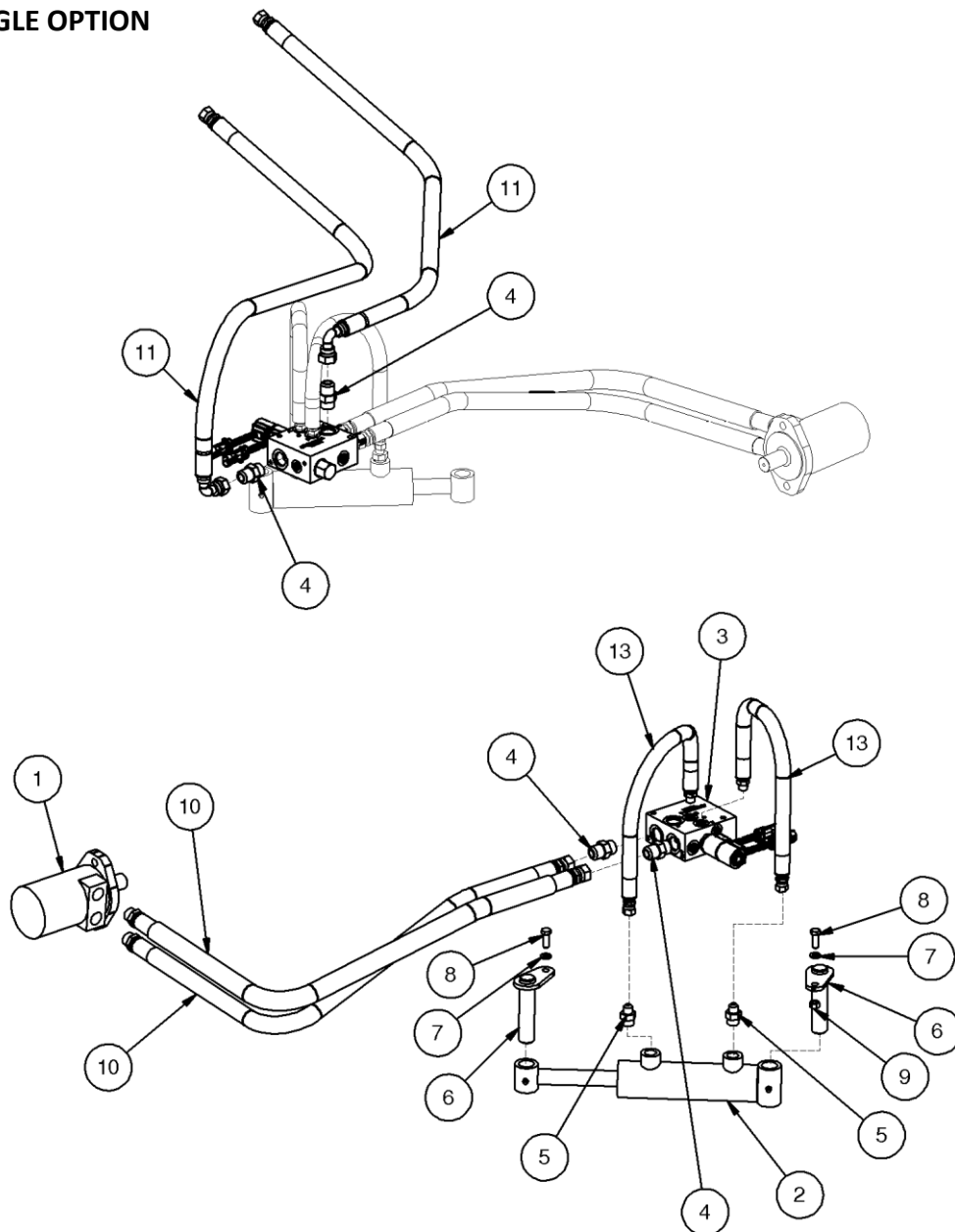


# PARTS INFORMATION

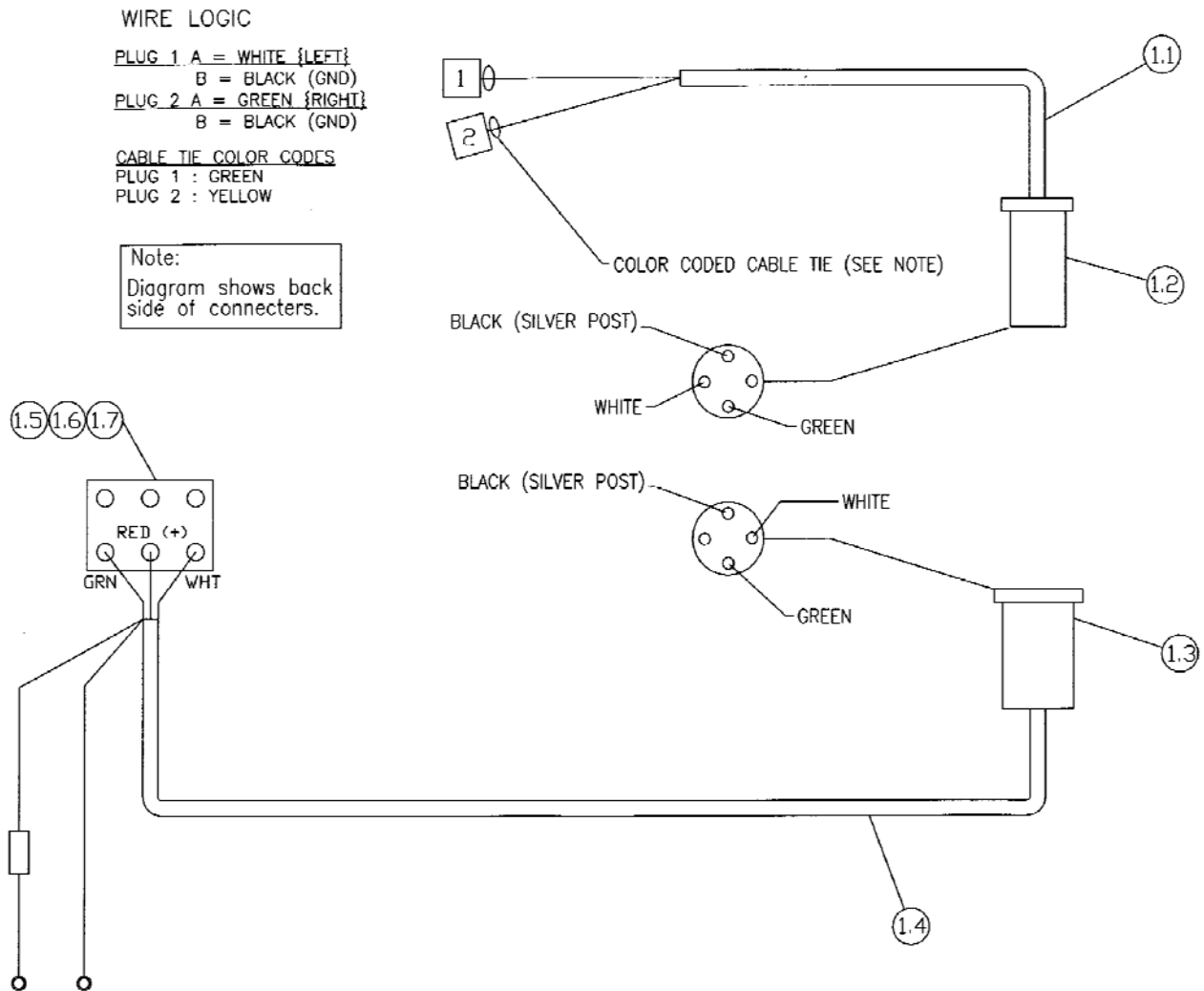
## MANUAL ANGLE STANDARD



## HYDRAULIC ANGLE OPTION



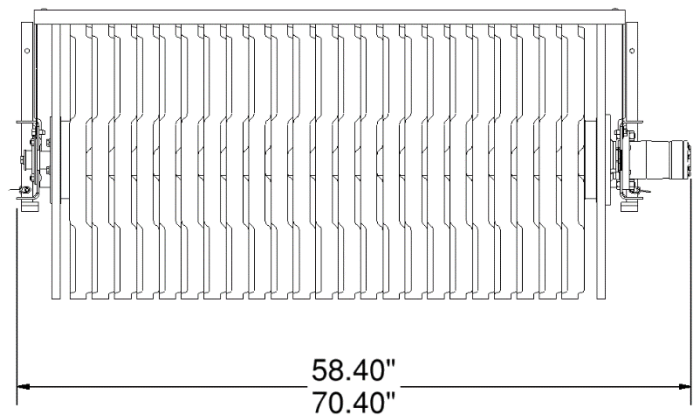
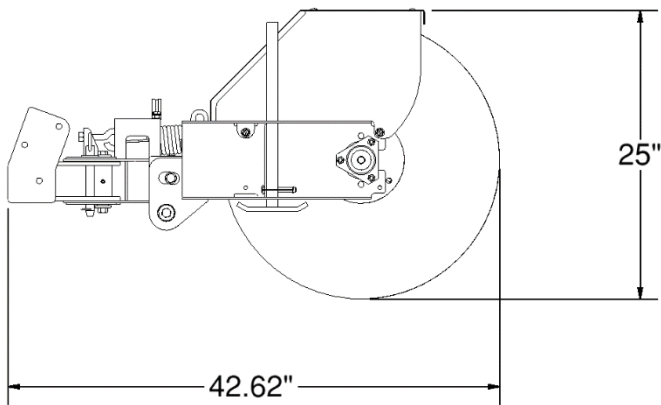
# WIRE HARNESS PARTS INFORMATION



REF.	PART NO.	DESCRIPTION	QTY
1	300248	PKG WIRE HRN GENERIC MINI	1
1.1	300244	HRN WIRE LOWER MINI	1
1.2	200083	CONN 4-WAY TRAILER MALE	1
1.3	200079	CONN 4-WAY TRAILER FEMALE	1
1.4	300243	HRN WIRE UPPER MINI	1
1.5	102913	SWITCH DPDT	1
1.6	202040	SWITCH BOX W/BACKET 1812	1
1.7	202039	SWITCH BOX COVER 1812/600FM	1
2	300247	BRKT WR HRN GEN MINI PAINTED	1

## GENERAL SPECIFICATIONS

Model	Mini Angle Broom 48	Mini Angle Broom 60
Working Width – Straight	48"	60"
Working Width – Fully Angled	43.5" @ 25°	54.4" @ 25°
Drive System	Hydraulic motor direct drive	
Flow Range	7-15 GPM	
Bristle Wafer Diameter	24"	
Bristle Section Quantity	2 straight, 23 Convoluted	2 Straight, 28 Convoluted
Operating Weight (w/out mount)	265 lbs.	290 lbs.



All dimensions are in INCHES.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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## **LIMITED WARRANTY**

Erskine Attachments LLC warrants each new machine manufactured by us to be free from defects in material and workmanship for a period of twenty-four (24) months from date of delivery to the original purchaser.

Our obligation under this warranty is to replace free of charge, at our factory or authorized dealership, any part proven defective within the stated warranty time limit.

All parts must be returned freight prepaid and adequately packaged to prevent damage in transit.

This warranty does not cover:

1. New products which have been operated in excess of rated capacities or negligence
2. Misuse, abuse, accidents or damage due to improperly routed hoses
3. Machines which have been altered, modified or repaired in any manner not authorized by our company
4. Previously owned equipment
5. Any ground engaging tools in which natural wear is involved, i.e. tooth tips, cutting teeth, etc
6. Normal maintenance
7. Fork tines
8. Hydraulic motors that have been disassembled in any manor

In no event will the Sales Representative, Dealership, Erskine Attachments LLC, or any other company affiliated with it or them be liable for incidental or consequential damages or injuries, including but not limited to the loss of profit, rental or substitute equipment or other commercial loss. Purchaser's sole and exclusive remedy being as provided here in above.

Erskine Attachments LLC must receive immediate notification of defect and no allowance will be made for repairs without our consent or approval.

This warranty is in lieu of all other warranties, express or implied by law or otherwise, and there is no warranty of merchantability or fitness purpose.

No agent, employee, or representative of Erskine Attachments LLC has any authority to bind Erskine Attachments LLC to any warranty except as specifically set forth herein. Any of these limitations excluded by local law shall be deemed deleted from this warranty; all other terms apply.

This warranty may not be enlarged or modified in any manner except in writing signed by an executive officer of Erskine Attachments LLC to improve its products whenever it is possible and practical to do so. Erskine Attachments LLC reserves the right to make changes and or add improvements at any time without incurring any obligation to make such changes or add such improvements to products previously sold.

Erskine Attachments LLC  
P.O. Box 1083 Alexandria, MN 56308  
Phone (218) 435-4045 Fax (218) 435-5293



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Erskine Attachments LLC

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