



Mini Grapple Rake

For

Mini Skid Steer Loaders

And

Mini Track Loaders

Operator's Manual

Maintenance

Parts Information



Read this Manual Before Use

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REFERENCE INFORMATION

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

Serial Number.....

YOUR ATTACHMENTS DEALER

ADDRESS:

PHONE:

CONTACT:

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

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 attachment is designed for raking, piling, and demolition cleanup of brush, rocks, and other debris, and for grappling and transporting objects on loaders with a Rated Operating Capacity (ROC) of 1000 pounds or less only. **NEVER** use this machine for any other purpose.
- Read the operators 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.
- 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.
- Keep people away from loader and attachment when in use. This attachment lifts objects and has moving parts. **NEVER** lift load directly over people – load could fall.
- Always stay in the operator position when using the attachment.

Operation

- To avoid electric shock or electrocution, **NEVER** operate the attachment near overhead power lines.
- **NEVER** operate near embankments or terrain that is so steep that rollover could occur.
- Before leaving the operators position, make sure the attachment is in the closed position, disengage hydraulic drive, lower the attachment to rest flat on the ground, stop engine, set park brake, relieve hydraulic pressure to the attachment, and wait for all motion to stop.
- **NEVER** place hands near moving parts or clear debris while engine is running.
- **NEVER** lift people.

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.

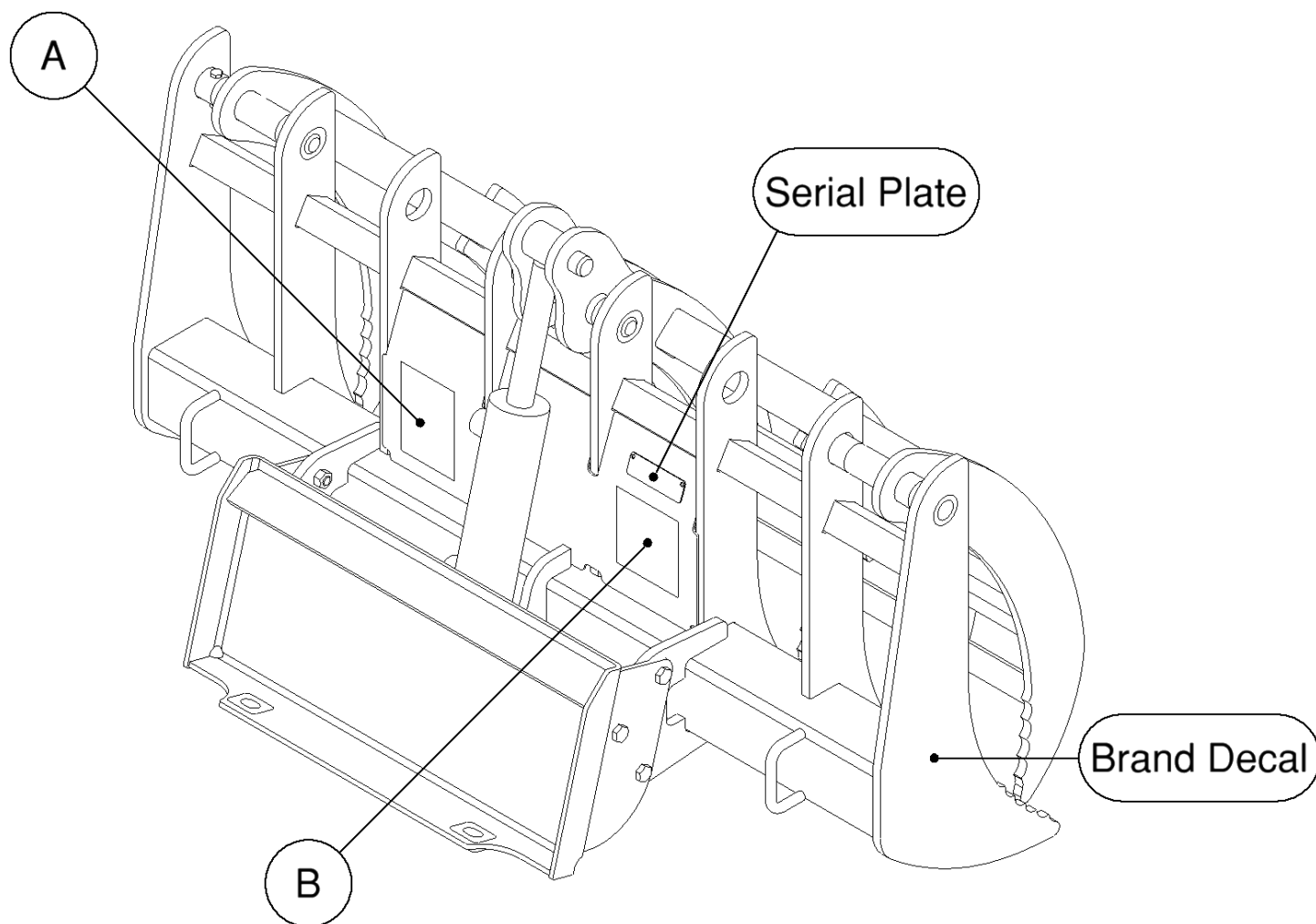
Maintenance

- **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 your 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

Safety Decal Locations:

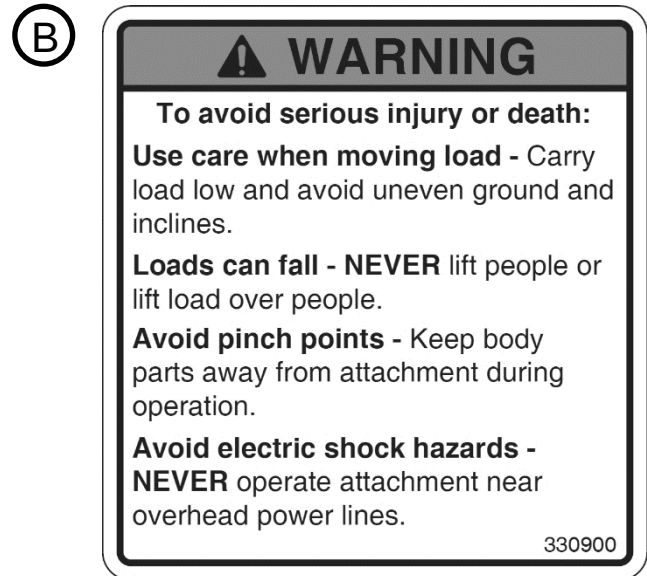
The locations of the safety decals are shown. If these decals are missing, damaged, or painted over they must be replaced. Call Erskine Attachments LLC (218-435-4045) for replacement decals.



Part Number: 200001

Location: On back left of grapple frame

Quantity: 1



Part Number: 330900

Location: On back right of grapple frame

Quantity: 1

Small Brand Decal

Location: On each endplate

Quantity: 2

MOUNTING INSTRUCTIONS

After initial set-up assembly is complete, use the following instructions to mount the attachment to the loader for user operation.

⚠ WARNING Coupler wedges or pins must extend through the holes in the attachment mounting plate. Levers must be fully down and locked. Failure to secure wedges or pins can allow 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.

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.

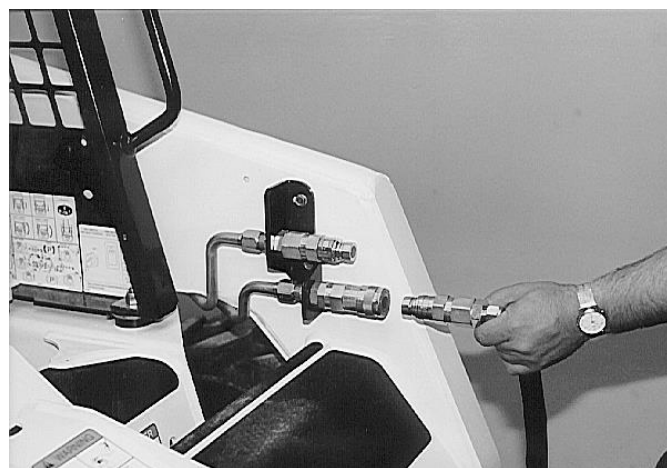
NOTE: Attachment is shipped with 8FJX (3/4" Female JIC Swivel) fittings on the ends of the lead hoses.

2. 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



⚠ CAUTION Always close the grapple securely before setting the attachment down on the ground. To avoid serious injury or death from crushing, **NEVER** put any body part near the grapple while open.

IMPORTANT: This attachment is not designed to be used on loaders with a Rated Operating Capacity (ROC) of more than 1,000 lbs.

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. Raise the attachment slightly off of the ground.
3. Activate the auxiliary hydraulic system to open and close the grapple in order to pick up and move debris/objects.



⚠ WARNING If the grappled object appears or becomes unstable or unbalanced, lower the attachment to the ground and repeat the grappling process until the object being lifted remains stable the entire time it is being lifted and moved.

⚠ WARNING To avoid injury or death, do not allow any person to be directly under grapple or load at any time.

⚠ WARNING Carry load as low as possible to avoid serious injury or death from tipover or falling load.

IMPORTANT: Do not exceed rated operating flow and pressure for the attachment. This can cause serious damage to the attachment and will void all warranties.



4. To back rake, fully open the grapple, tilt the loader coupler forward until the grapple teeth contact the ground, lower the boom to apply down pressure, and slowly drive backward to rake material.

ROUTINE MAINTENANCE

⚠ WARNING Lower the attachment to rest on the ground, shut down the engine, set the park brake, relieve the hydraulic pressure to the attachment, 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 attachment and loader 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 and set screws can loosen after initial usage. After first hour of operation check all bolts and set screws.

Lubrication Legend



Multipurpose
spray lube



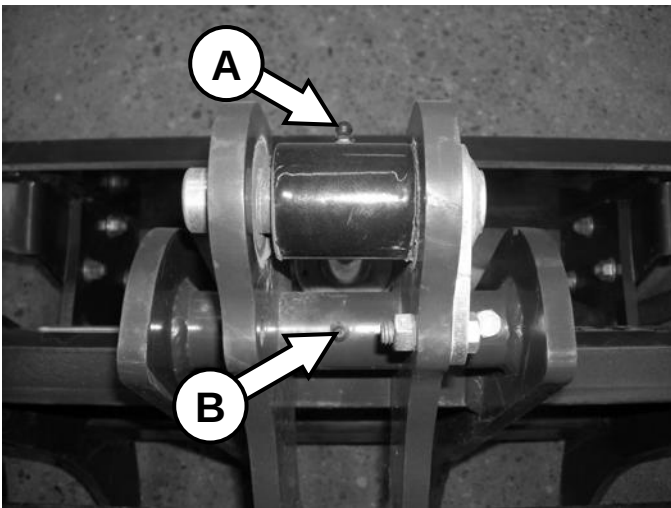
No. 2 Lithium
base gun grease



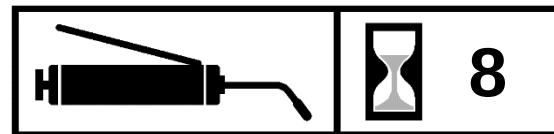
Multipurpose
oil lube



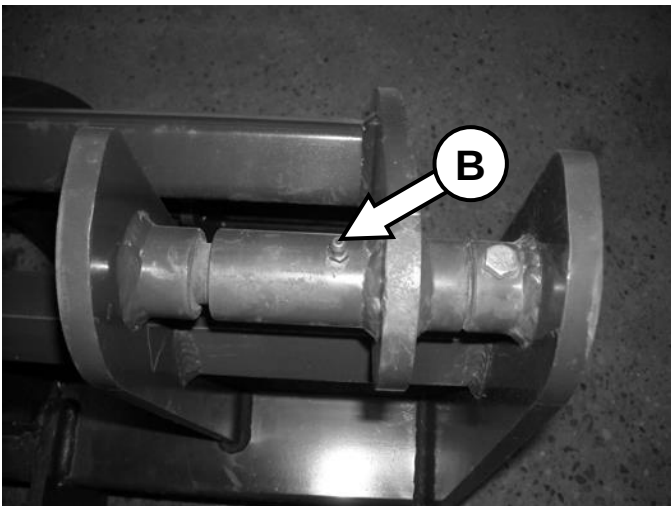
Intervals at which
lubrication is required



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



Grease the cylinder zerks [A] at each end of the cylinder every **8 hours** of operation.



Grease the left, center, and right pivot pins [B] every **8 hours** of operation.

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	4,700	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.

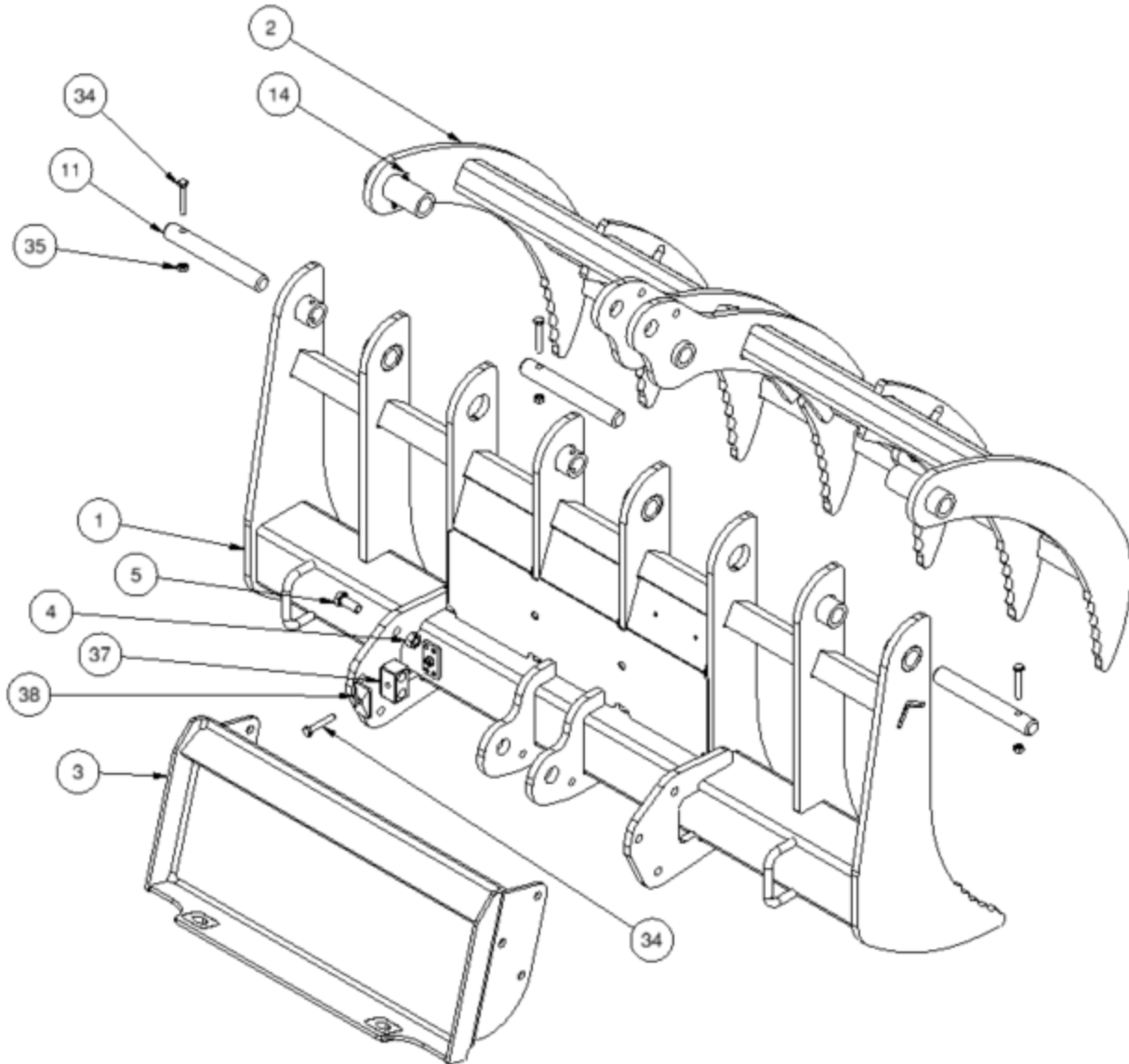
Torque values calculated from formula $T = KDF$

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

$K=0.20$ for "dry" conditions

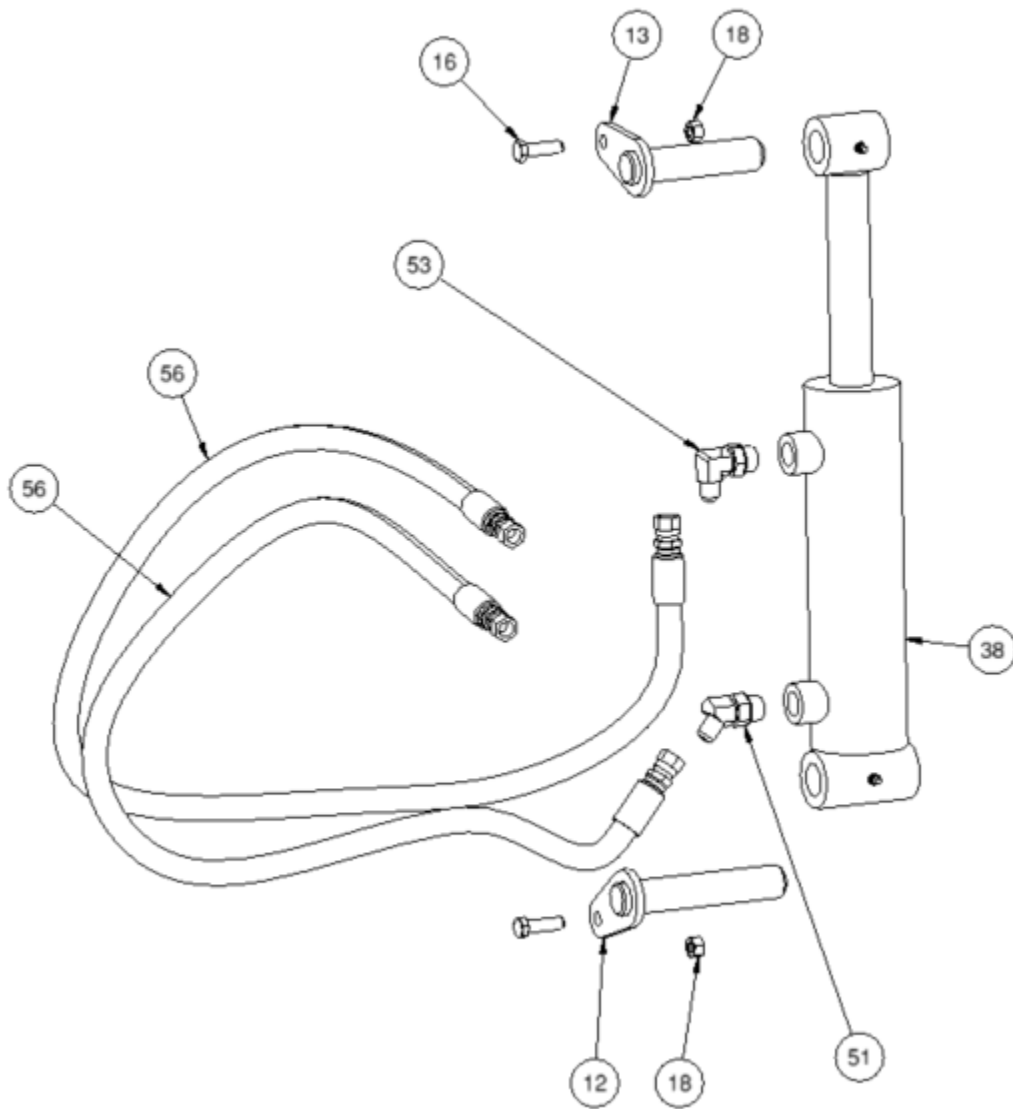
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	400003	GRAPPLE BOTTOM 48 W/A	
2	1	400004	GRAPPLE TOP 48 W/A	
3	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 ADPT MNT PKG 330753
4	6	0167011	NUT FLG TOP LOCK 1/2 NC GR 8 YZ	OPTIONAL MOUNT PACKAGE
5	6	15209	BOLT HEX - 1/2 X 1-1/2 - UNC - GR 8	OPTIONAL MOUNT PACKAGE
11	3	400044	PIN 1 X 7.5 W/ HOLE	
14	3	60105	ZERK GREASE 1/4-28 UNF STR	
34	3	202031	BOLT HEX	5/16 X 1-1/2 - UNC - GR 5
35	3	37211	NUT HEX	5/16 - UNC - GR 5 - REV LOCK
37	1	316055	CLAM TUBELINES 5/8 AB	
38	1	316094	CLAMP TUBELINE TOP PLATE 5/8	
39	1	13061	BOLT 5/16X2 NC GR 5	



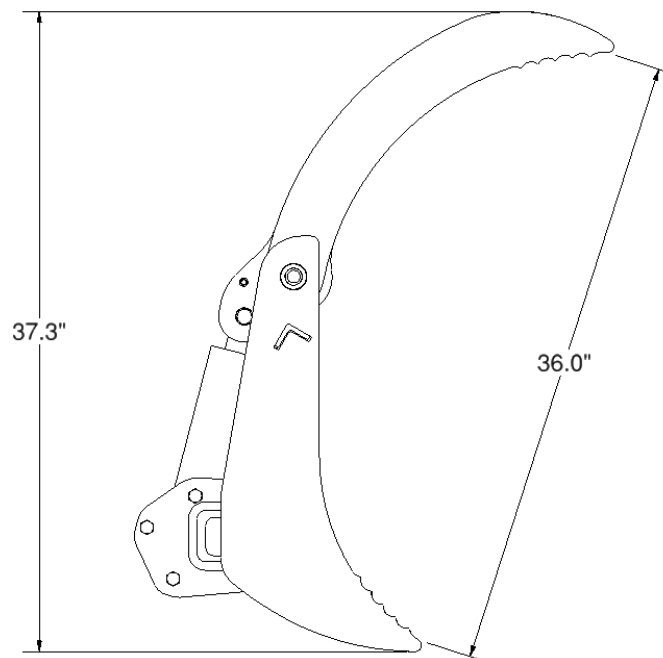
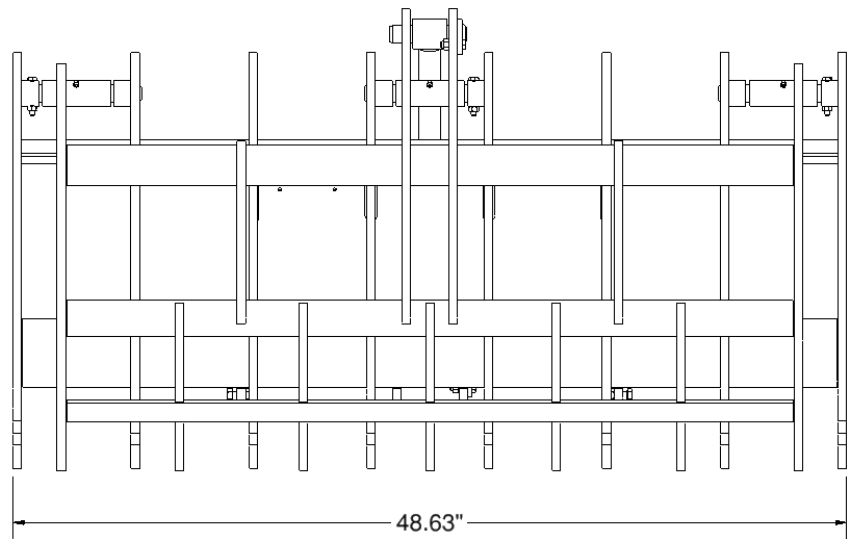
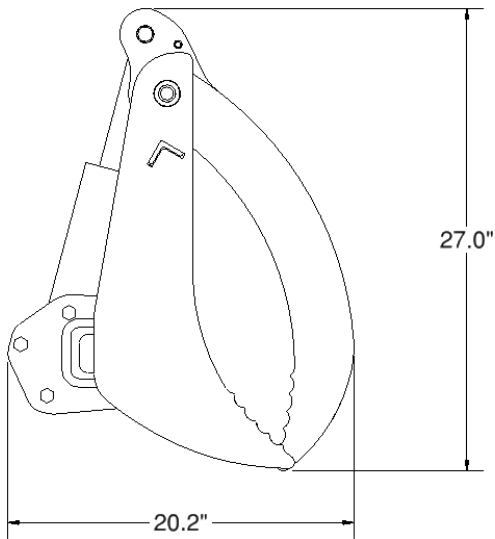
PARTS INFORMATION

ITEM	QTY	PART NUMBER	DESCRIPTION	STOCK NUMBER
12	1	316026	PIN 1 X 5 W/A	
13	1	400041	PIN 1 X 4 W/A	
16	2	13107	BOLT HEX	
18	2	37212	NUT HEX 3/8 REV LOCK	
38	1	400015	CYLINDER 2.5 X 6 W/BUSHINGS	2506-2
51	1	300274	ADPT ELB 8MB-6MJ-45	300274
53	1	320089	ADPT ELB 8MB-6MJ-90	320089
56	2	400046	3/8 X 72" 8FJX-6FJX	



GENERAL SPECIFICATIONS

Model	Mini Grapple Rake
Overall Width	48.63"
Overall Height	27"
Max Height w/ Grapple Open	37.25"
Grapple Opening	36"
Width between Teeth	6.38"
Operating Weight (w/out mount)	320 lbs.



All dimensions are in INCHES.

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.

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P/N 300433
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Date Printed: 4/5/2022

Printed in U.S.A.