



**SPARTAN
EQUIPMENT®**

Mini Multipurpose Grapple

For

Mini Skid Steer Loaders

**Operator's Manual
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 _____

ADDRESS:

PHONE:

CONTACT:

NOTE: Spartan Equipment 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 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.

Spartan Equipment 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.

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

- The multipurpose grapple is designed to grab, sort, and transport materials such as logs, brush, rocks, and demolition debris. **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 Spartan Equipment.
- 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

- 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.
- 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.
- Keep people away from loader, attachment, and material being handled when in use. This attachment can have a large swing radius, be aware of your surroundings.

Operation (continued)

- **NEVER** operate near embankments or terrain that is so steep that rollover could occur.
- Always stay in the operator position when using the attachment.
- Before leaving the operators position, disengage hydraulic drive, lower the attachment to rest flat on the ground, stop engine, set park brake, and wait for all motion to stop.

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

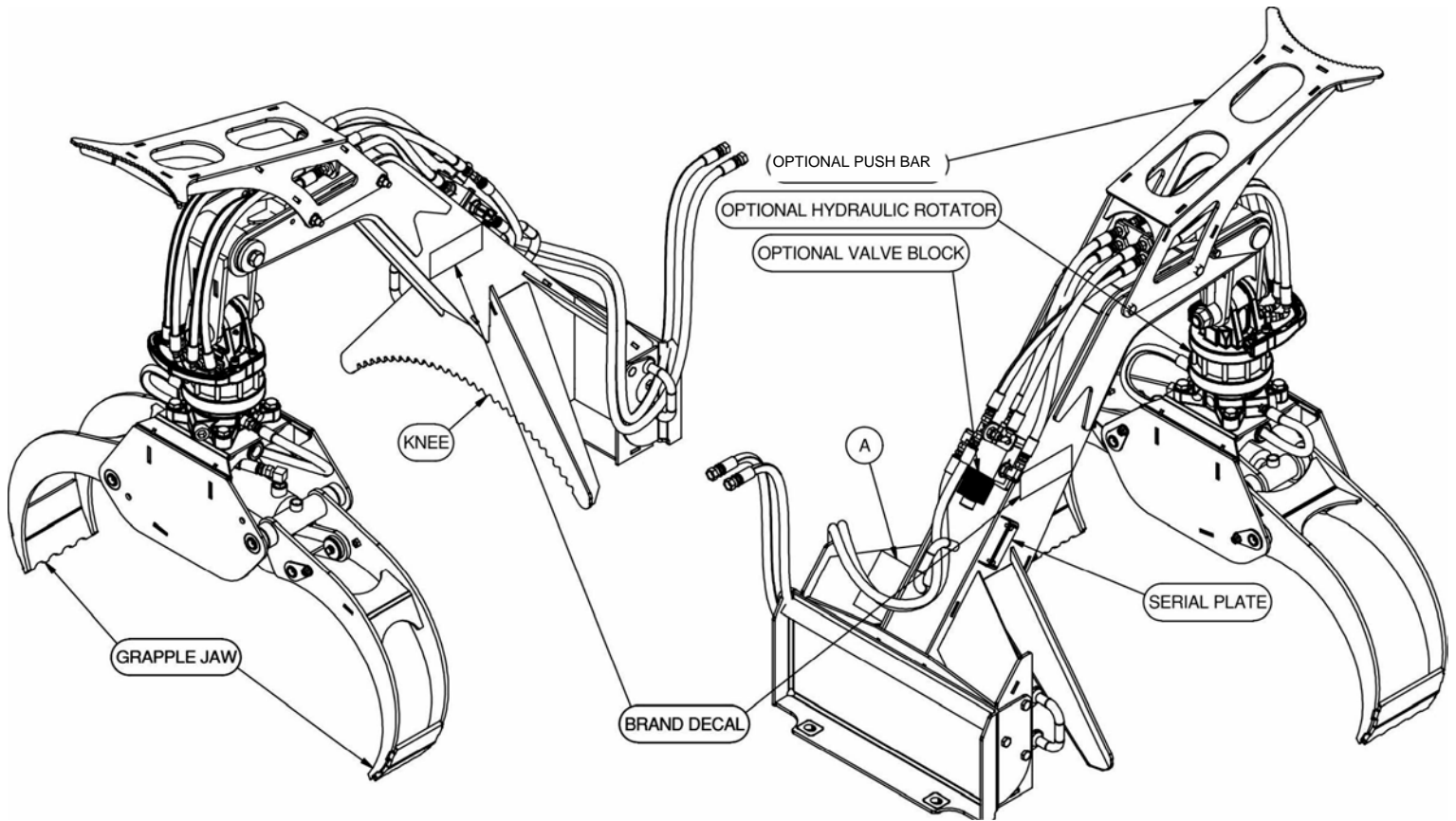
- **NEVER** make adjustments, lubricate, clean, or perform any service on the machine while it is in operation.
- Make sure the attachment is serviced on a daily basis. Improper maintenance can cause serious injury or death in addition to damage to the attachment and/or your equipment.

SERIAL NUMBER AND SAFETY DECAL LOCATIONS

1.

Serial Number Location: On the right side of boom above knee gusset.

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.



A



Part Number: 200001

Location: On left boom gusset

Quantity: 1

MOUNTING INSTRUCTIONS

After uncrating the attachment, use the following procedure to mount the attachment to the loader.

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

2. 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 seat bar and fasten the seat belt.
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 backward a small amount until it is fully engaged in the multipurpose grapple mounting bracket.
5. If you have manual levers, stop the engine and engage the park brake. If not, proceed to step 6.
6. Secure the coupler locking mechanism that attaches the attachment to the loader.
7. 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: Attachment is shipped with 8FJX (3/4" Female JIC swivel) fittings on the ends of the lead hoses.

8. 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 or tracks. Be sure to check the hose routing through the full range of intended motion of the attachment before operating it.

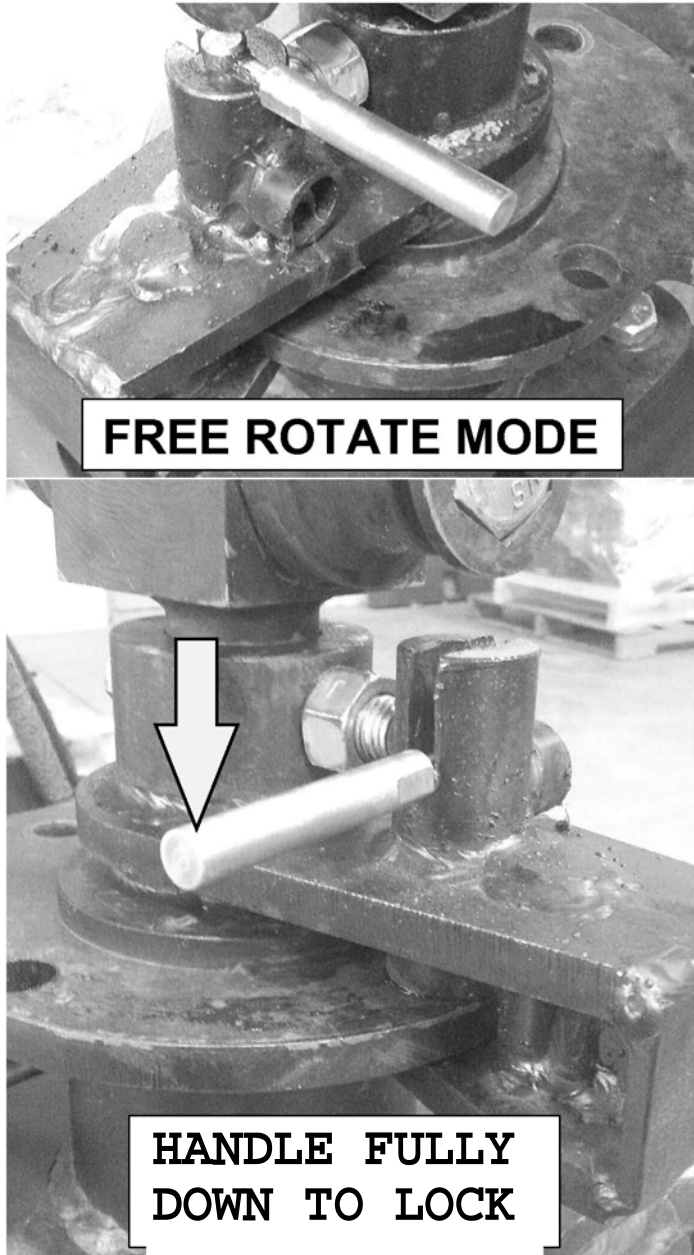
More than one routing may be acceptable depending on the loader. Pick the routing that best suits your loader.

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

NOTE: See the loader's operator's manual for further instructions.

Mounting is now complete and you are ready to use the attachment. Use reverse order of above instructions to dismount the attachment from the loader.

OPERATING INSTRUCTIONS



Manual Rotator (IF EQUIPPED)

Free Rotate Function

1. The rotator is in free rotate mode when the lock pin is secured in upright position as shown. This will prevent damage caused by the excessive torque incurred while turning.
2. The grapple should be able to rotate 180 degrees in the free rotate mode. Use logs or the ground to knock around the grapple to the desired angle.

IMPORTANT: When skidding (pulling longer trees or limbs where one end will be dragging on the ground), it is necessary to have the rotator in the free rotate mode. Machine damage can occur if skidding in lock mode.

Lock Function

1. To lock the rotator, rotate grapple to one of three lock position.
2. Lift up on the handle until it clears the detent slot, then rotate the handle 180 degrees to the deeper locking slot.
3. The spring loaded pin must be fully engaged with the handle all the way to the bottom of the slot. The grapple may need to be rotated a few degrees to the right or left to align the pin and allow full engagement.

Hydraulic Rotator Option (IF EQUIPPED)

1. A hydraulic rotator on your Multipurpose Grapple is an option that can greatly improve ease of use and operator efficiency.
2. The primary function on your hydraulic system should be activating the jaws on the grapple, with the secondary function being rotation. If this is not the case, the plumbing in the hydraulic circuit may be incorrect.
3. The electric solenoid valve that diverts oil to the rotor needs to be activated, the activation button will need to be held while running the auxiliary hydraulics. Depending on the brand of loader and functions available you may need a pistol grip wire harness installed on your machine for this secondary operation.

OPERATING INSTRUCTIONS

Using the Mini Multipurpose Grapple

Brush

1. Brush can be transported and stacked or loaded into a chipper. Use extra caution when working around a chipper.
2. Drive up to desired branches, open grapple and lower over larger portion of branch.
3. It may be desirable to group a few branches together either by hand or with the grapple before transporting them. This can reduce the number of trips taken and improve efficiency.
4. Be aware of your surroundings when transporting any materials.

Logs

1. Logs can be sorted, stacked, and transported with the Multipurpose Grapple.
2. The knee on the main frame is designed to help support the rear end of the log to keep it more stable during handling.
3. Be aware of swing radius when turning.
4. Stay at least 50 feet away from power lines.

Rocks

1. The multipurpose grapple can be used for moving rocks for landscaping purposes.
2. Drive up to desired rock, open grapple and lower onto the rock so that it is centered and slowly close the jaws around the rock. Lift the grapple a few inches off the ground and carefully transport to desired position.
3. Rocks that are too small will slip between the plates of the jaws. Rocks that are too large will either slip out of the grapple or overload your machine. Never exceed the rated operating capacity for your loader.

IMPORTANT: The Mini Multipurpose Grapple is designed for machines with a rated operating capacity (ROC) of 1,500 lbs or less. Operating the Mini Multipurpose Grapple with a machine that has a higher than recommended ROC could result in damage to the attachment and is not covered under warranty.

ROUTINE MAINTENANCE

⚠ WARNING Lower the attachment to rest on the ground, shut down the engine, relieve the hydraulic pressure to the attachment, wait for all motion to stop, and set parking brake before leaving the operator's station 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.

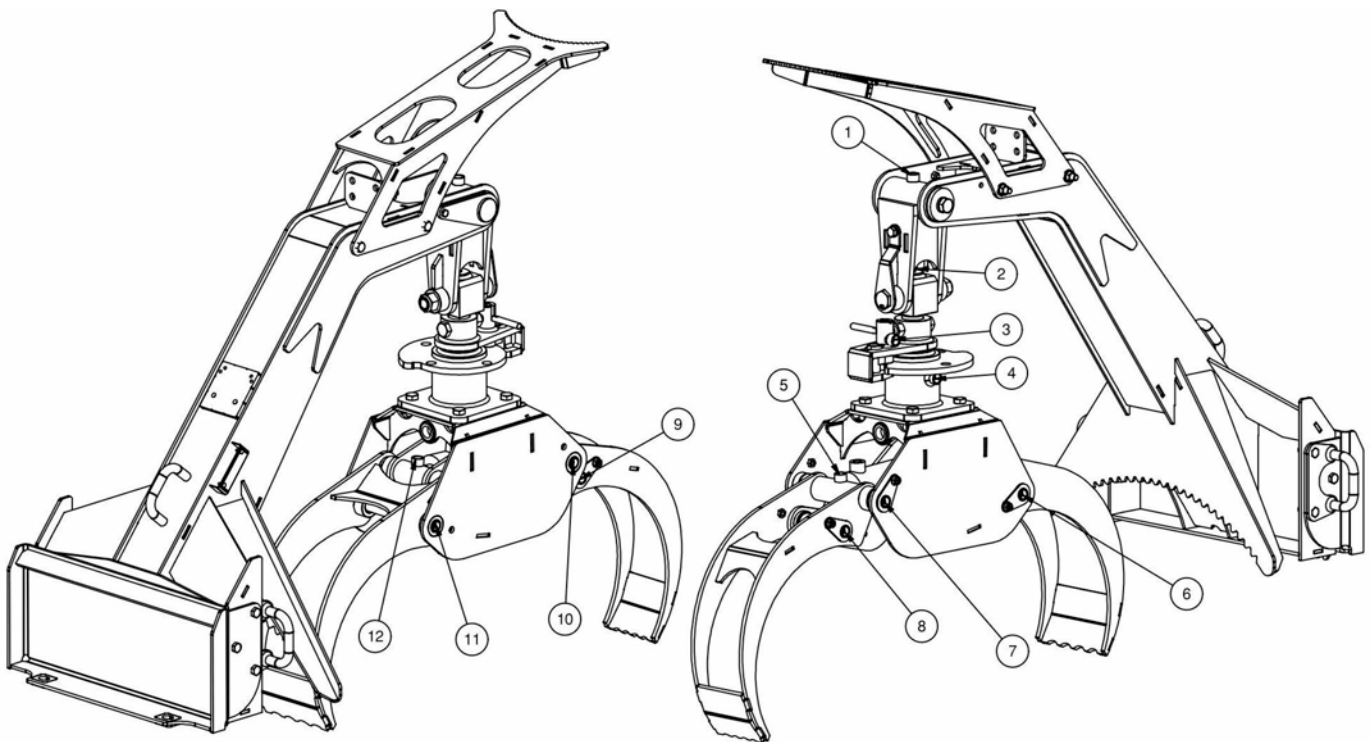
IMPORTANT: Bolts and set screws can loosen after initial usage. After first hour of operation check all bolts and set screws. This must also be done daily before operation. If nuts or bolts are missing or damaged, replace immediately.

DAILY INSPECTION



Follow the multipurpose grapple service schedule for routine maintenance. Check the following items every **10 hours** of operation:

1. Check entire attachment for weld cracks or excessive damage. Replace if necessary.
2. Check all hardware. Retighten if necessary.
3. Check for damaged or missing decals. Replace if damaged or missing.
4. Check for damaged or leaking hydraulic hoses or fittings. Replace or tighten.
5. Grease machine every day of use.
 - a. See diagram below for grease zerk location.
 - b. If a grease fitting does not take grease replace or clean it.
 - c. Hydraulic rotate option does not have zerks at location 3 and 4.



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 $T = KDF$

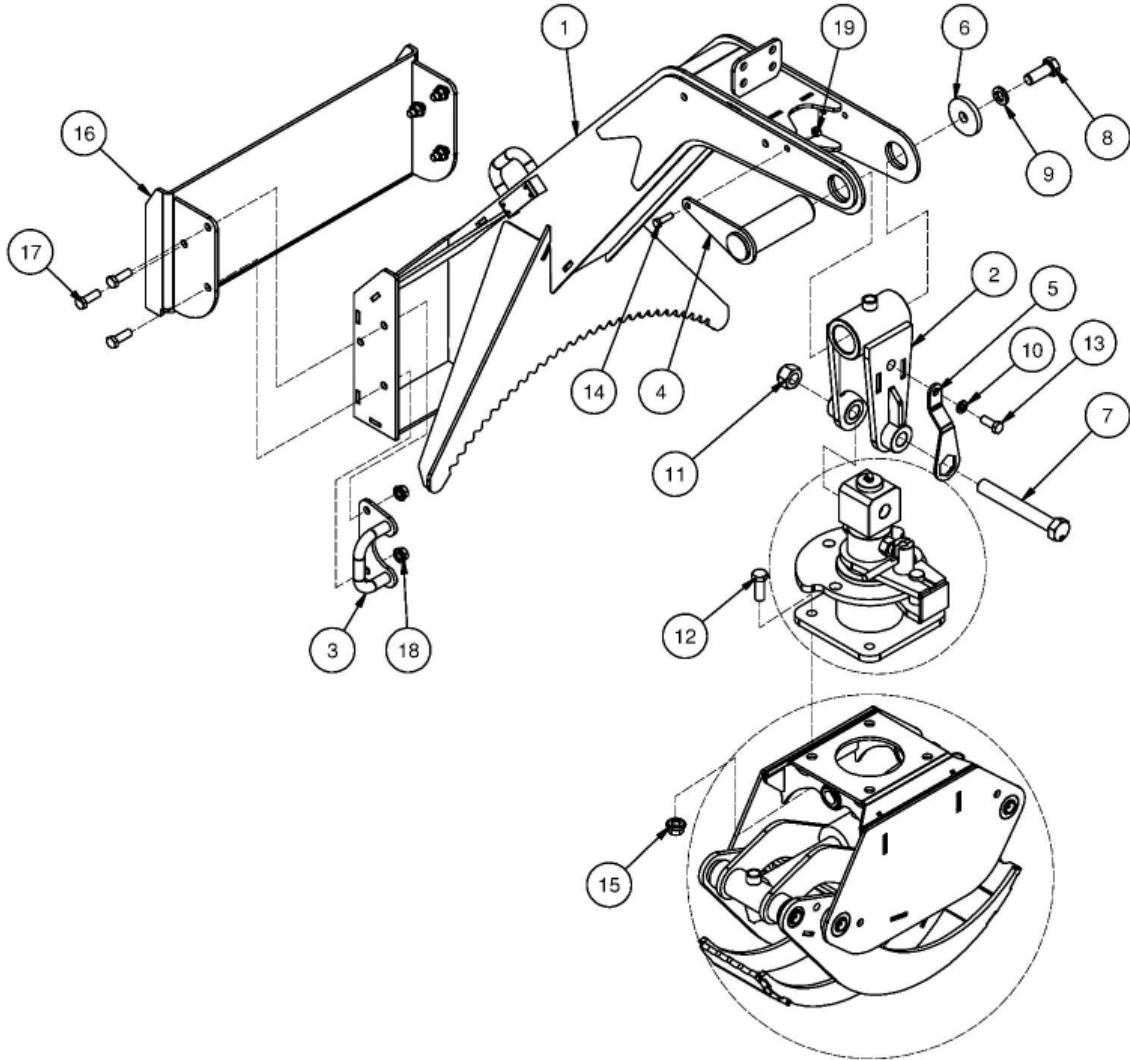
where: K=0.15 for "lubricated" conditions

K=0.20 for "dry" conditions

PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	400900	FRAME MULTIPURPOSE GRAPPLE MINI W/A	
2	1	400901	LINK TWO AXIS PIVOT 1 X 2 X 4.9 W/A	
3	2	400989	O-RING BOLT ON W/A	
4	1	400919	PIN2X6W/AZ	
5	1	319944	BRKT HEX BOLT RETAINER Z	
6	1	319966	WASHER PLATE .76 X 2.75 X .375 Z	
7	1	11114508	BOLT HEX METRIC	M24-3MM X 180 CLASS 10.9 YZ
8	1	13361	BOLT HEX	3/4X2NCGR5
9	1	33632	WASHER LOCK	3/4"
10	1	33626	WASHER LOCK	1/2"
11	1	40193	NUT LOCK NYLON METRIC	M24-3MM CLASS 8 Z
12	4	15310	BOLT HEX	5/8 X 1-3/4 NC GR 8
13	1	13207	BOLT HEX	1/2 X 1-1/4 NC GR 5
14	1	13107	BOLT HEX	3/8 X 1-1/4 NC GR 5
15	4	0167012	NUT TOP LOCK FLANGED	5/8 NC GR 8
16	1	400000	MOUNT FRAME TORO MINI W/A	PKG MNT TORO MINI
	1	400001	MOUNT FRAME ASV MINI W/A	PKG MNT ASV MINI
	1	400002	MOUNT FRAME BC MINI W/A	PKG MNT BOBCAT MINI
	1	300283	MOUNT FRAME UNIV MINI W/A	PKG MNT UNIV MINI
17	6	15209	BOLT HEX	1/2 X 1-1/2 NC GR 8
18	6	0167011	NUT TOP LOCK FLANGED	1/2 NC GR 8
19	1	37212	NUT REV LOCK	3/8 NC

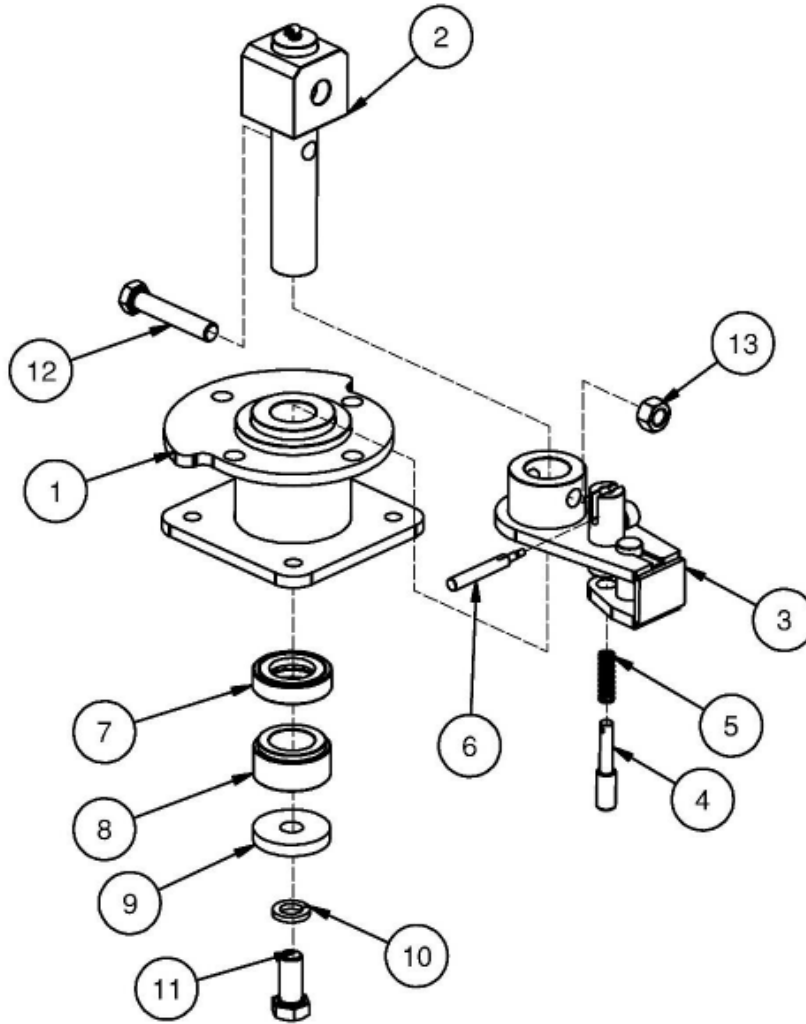
PARTS INFORMATION



5.

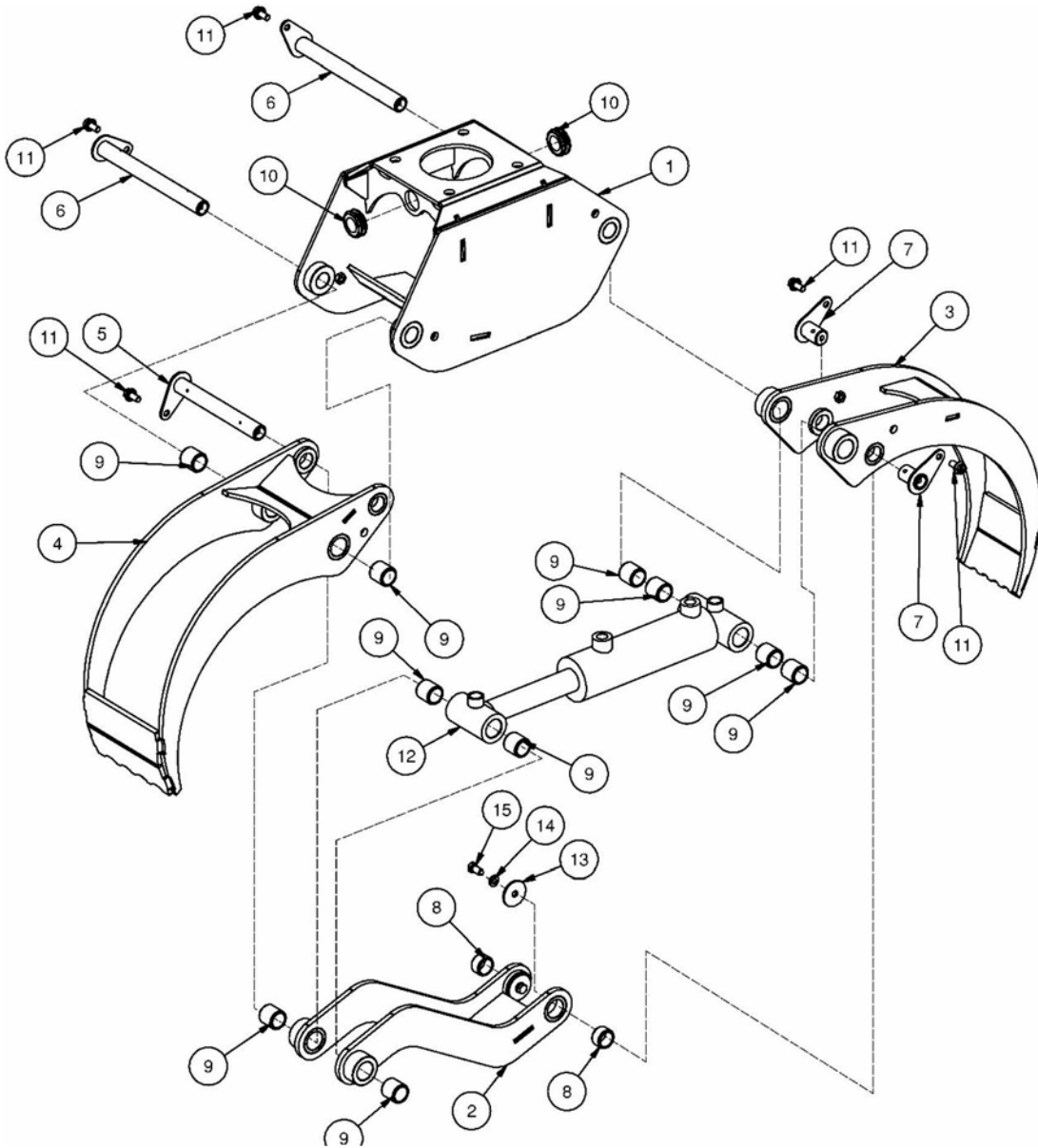
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	400907	ROTATOR MANUAL BODY W/A	
2	1	400909	ROTATOR MANUAL HANGER GRS W/A Z	
3	1	400908	ROTATOR MANUAL LOCK W/A	
4	1	340955	PIN SHAFT .75 X 3.68 W/H Z	
5	1	340907	SPRING COMPRESSION .6 X 2	
6	1	340956	HANDLE SHAFT .5 X 3.98 Z	
7	1	400911	BRG THRUST 3 X 1.75 X .81	
8	1	400977	BUSH 3 X 1.77 X 1.5 Z	
9	1	400979	WASHER .885 X 3 X.5 Z	
10	1	33899	WASHER LOCK	7/8"GR8
11	1	15411	BOLT HEX	7/8X2NCGR8
12	1	13369	BOLT HEX	3/4X4NCGR5
13	1	37217	NUT REV LOCK	3/4 NC



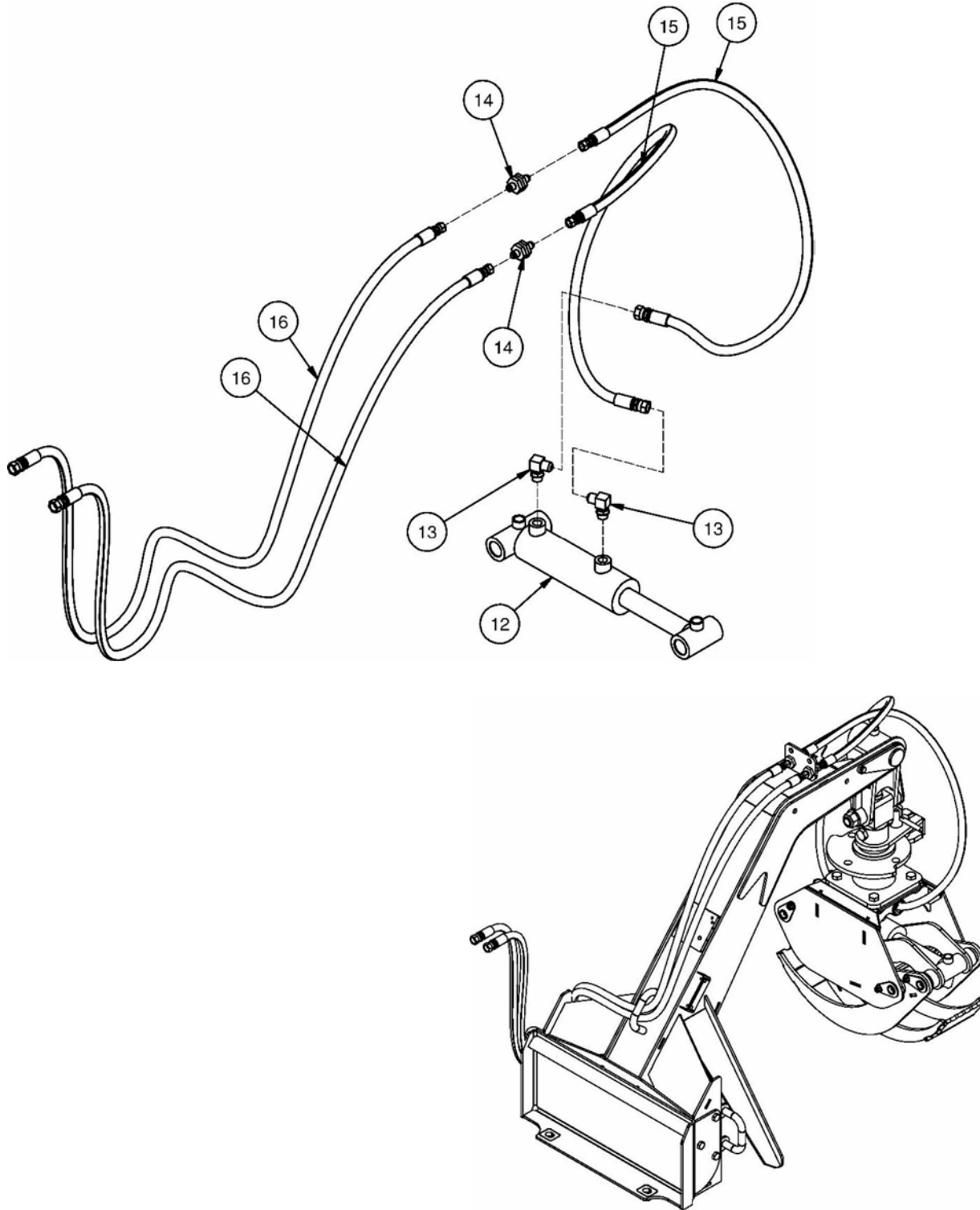
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	400903	BODY GRAPPLE 38 W/A	
2	1	400902	LINK JAW 38 W/A	
3	1	400905	GRAPPLE 38 JAW INSIDE W/A (YELLOW)	
4	1	400904	GRAPPLE 38 JAW OUTSIDE W/A (YELLOW)	
5	1	400915	PIN 1 X 8.13 GRS W/A Z	
6	2	400913	PIN 1 X 10.13 GRS W/A Z	
7	2	400917	PIN 1 X 1.5 GRS Z W/A	
8	2	421401	BUSH SPRING 1.25 X 1 X .75	
9	10	318748	BUSH SPRING 1.25 X 1 X 1.25	
10	2	400927	GROMMET 1.38 X 1 X .25	
11	5	19929	BOLT FLANGED	3/8 X 3/4 NC GR 5
12	1	400920	CYLINDER 2.5 X 6.25 B-B	
13	2	202830	WASHER PLATE .41 X 1.75 X .13 Z	
14	2	103880	WASHER LOCK	3/8"
15	2	13103	BOLT HEX	3/8 X 3/4 NC GR 5



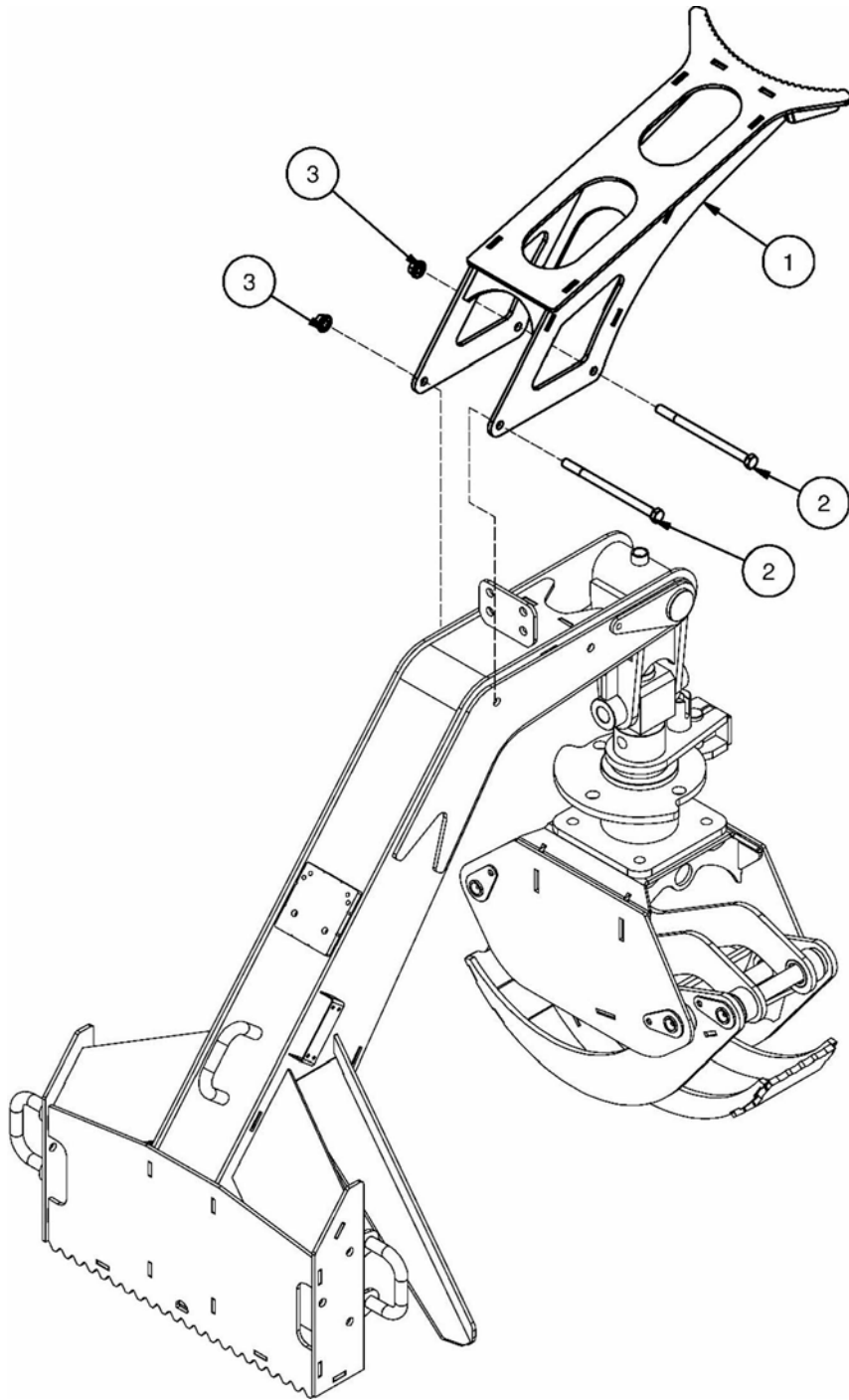
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
12	1	400920	CYLINDER 2.5 X 6.25 B-B	
13	2	202037	ADPT ELB 8MB-8MJ-90	
14	2	317934	ADPT STR 6MJ-6MJ-BULKHEAD	BULKHEAD POSITIONS 2 & 3
15	2	340975	HOSE 3/8 X 60 6FJX-8FJX	BULKHEAD TO CYL
16	2	340974	HOSE 3/8 X 108 6FJX-8FJX	BULKHEAD - LEAD
17	1	340992	WRAP SPIRAL 1.25 X 78 (YEL)	NOT SHOWN
18	2	340993	WRAP SPIRAL .6 X 57 (YEL)	NOT SHOWN



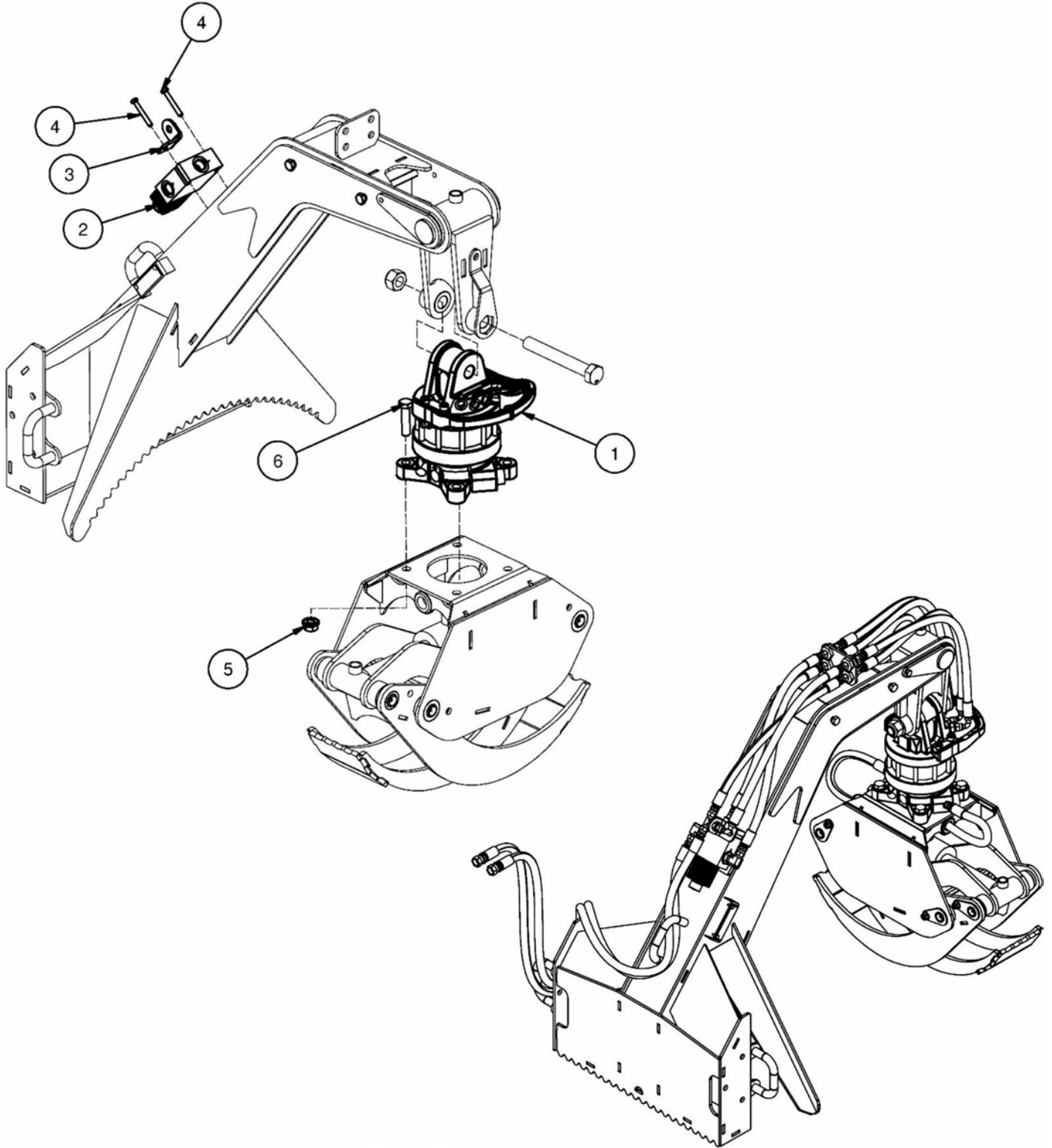
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		400996	PKG OPT PUSHBAR ASSM	
1	1	400980	PUSHBAR MINI W/A	
2	2	15228	BOLT HEX	1/2 X 7-1/2 NC GR 8
3	2	0167011	NUT TOP LOCK FLNG	1/2 NC GR G (GR8)



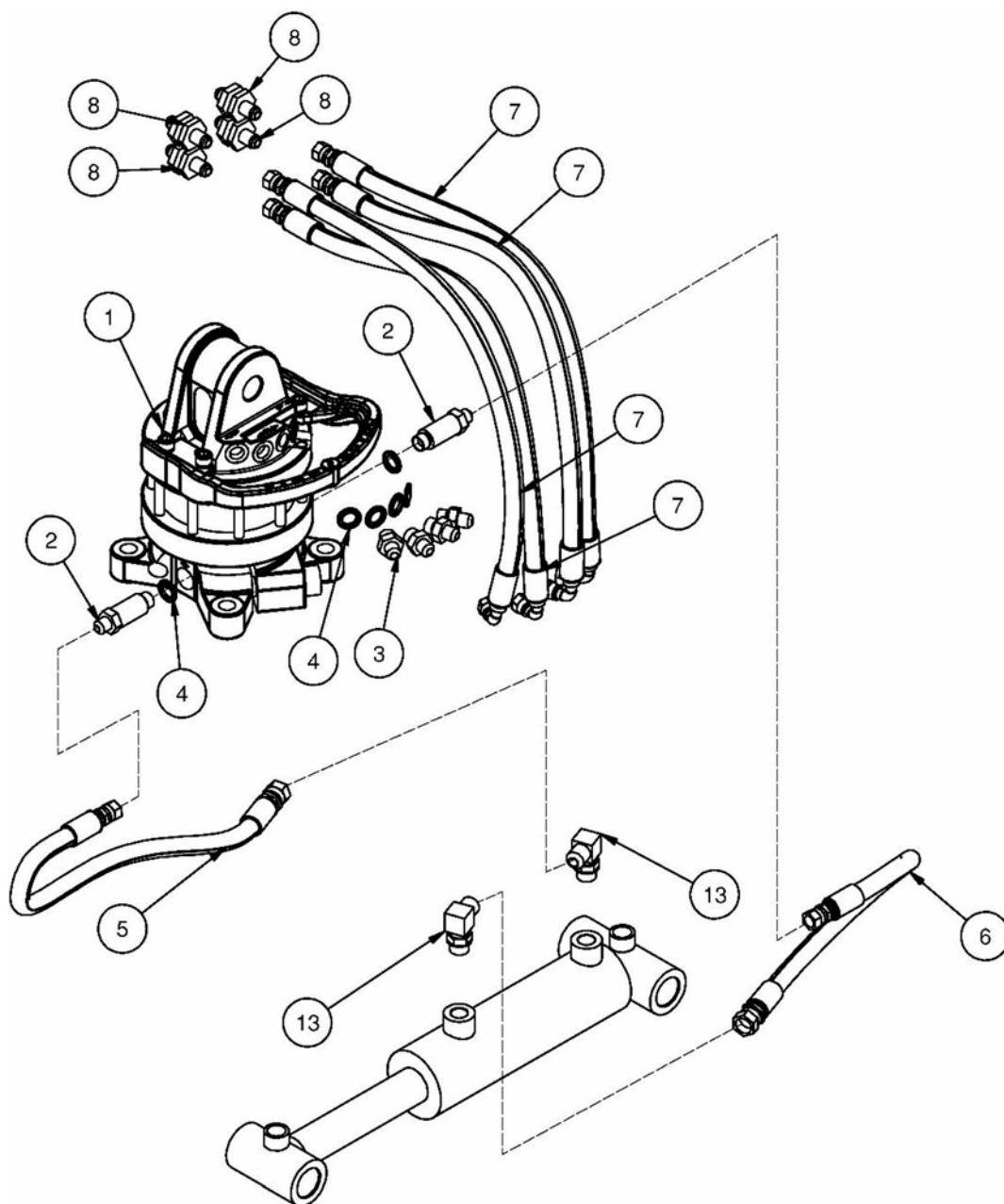
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		400998	PKG OPT ROTATOR HYDRAULIC MINI	
1	1	319905	ROTATOR FIN CR400 A68	
2	1	400923	VALVE ASSM MP GRAPPLE	
3	1	400987	BRKT BULKHEAD BOLT ON ZINC	
4	2	13062	BOLT HEX	5/16 X 2-1/4 NC GR 5
5	4	0167012	NUT TOP LOCK FLNG	5/8 NC GR G (GR8)
6	4	15313	BOLT HEX	5/8 X 2-1/2 NC GR 8 YZ



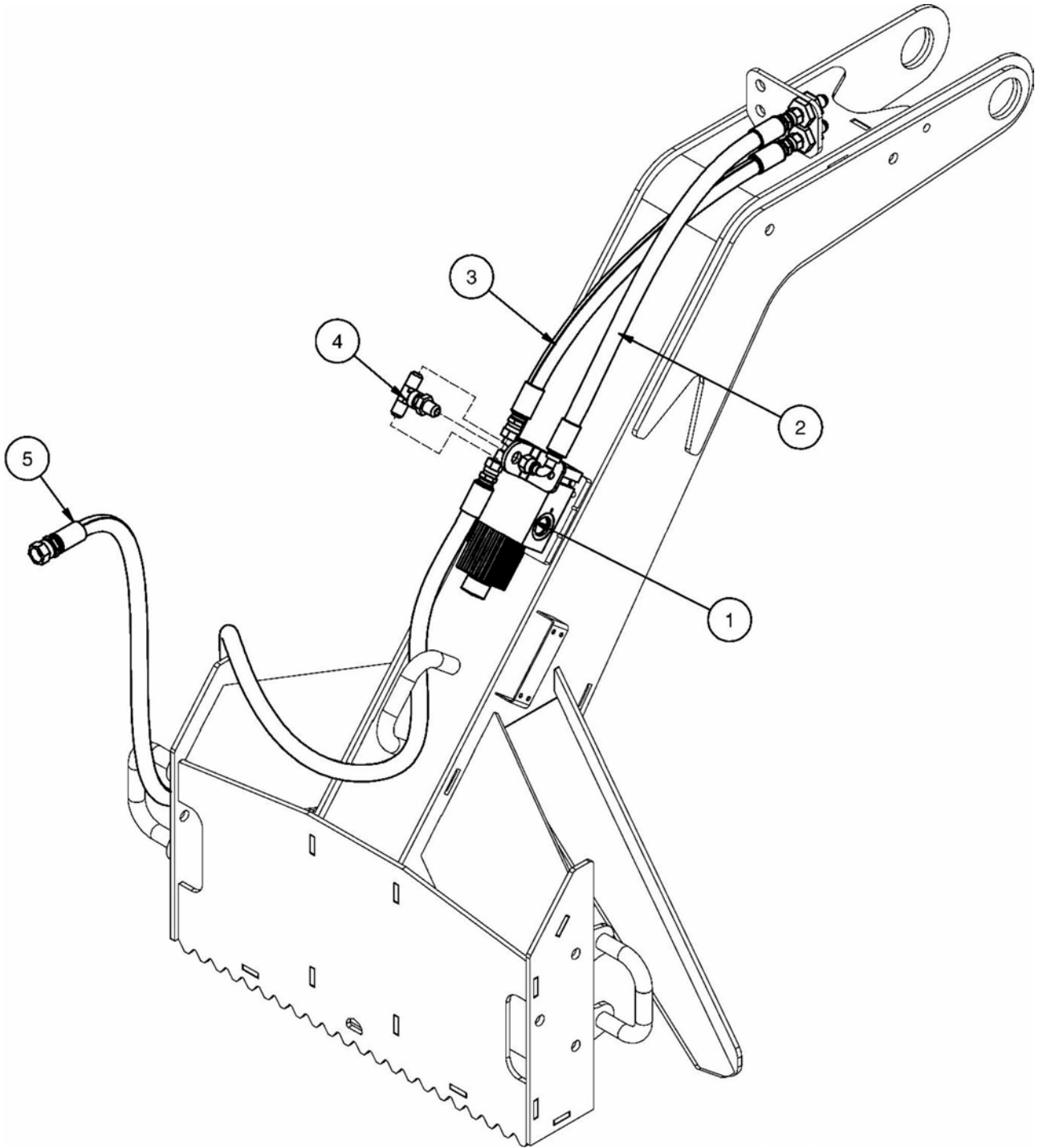
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		400998	PKG OPT ROTATOR HYDRAULIC MINI	
1	1	319905	ROTATOR FIN CR400 A68	
2	2	400928	ADPT STR 6BSPP-6MJ LONG	
3	4	319990	ADPT STR 6BSPP-6MJ	
4	1	319991	ADPT SEAL 6BSPP	COMES WITH 319990 & 400928
5	1	340977	HOSE 3/8 X 19.5 6FJX-8FJX	CYL BASE
6	1	340978	HOSE 3/8 X 13.5 6FJX-8FJX	CYL ROD
7	4	340982	HOSE 3/8 X 28 6FJX-6FJX-90	BULKHEAD TO ROTATOR
8	4	317934	ADPT STR 6MJ-6MJ-BULKHEAD	BH POSITIONS 1,2,3,4
13	2	202037	ADPT ELB 8MB-8MJ-90	CYL
14	1	340992	WRAP SPI RAL 1.25 X 78 (YEL)	NOT SHOWN
15	2	340994	WRAP SPI RAL 1.25 X 22 (YEL)	NOT SHOWN
16	1	340995	WRAP SPIRAL.6 X 16.5 (YEL)	NOT SHOWN
17	1	340996	WRAP SPIRAL.6 X 10.5 (YEL)	NOT SHOWN



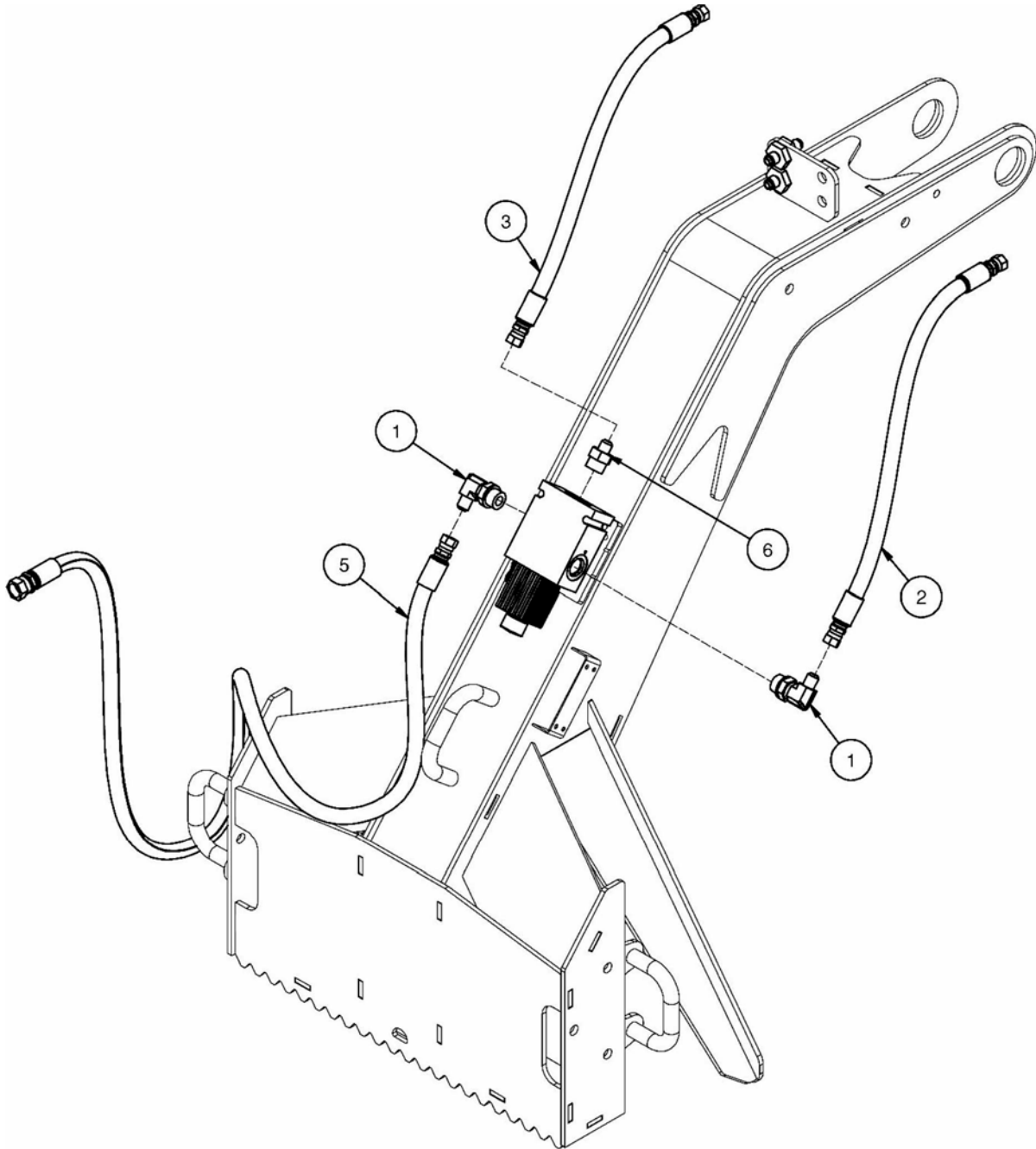
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		400998	PKG OPT ROTATOR HYDRAULIC MINI	
1	1	400923	VALVE ASSM MP GRAPPLE	
2	1	340981	HOSE 3/8 X 21.75 6FJX-6FJX-90	BULKHEAD TO TEE DROP
3	1	340979	HOSE 3/8 X 21 6FJX-6FJX	BULKHEAD TO TEE
4	1	330611	ADPT TEE 6MJ-6MJ-6MJ BH DROP	
5	1	340976	HOSE 3/8 X 85 6FJX-8FJX	LEAD HOSE TO TEE



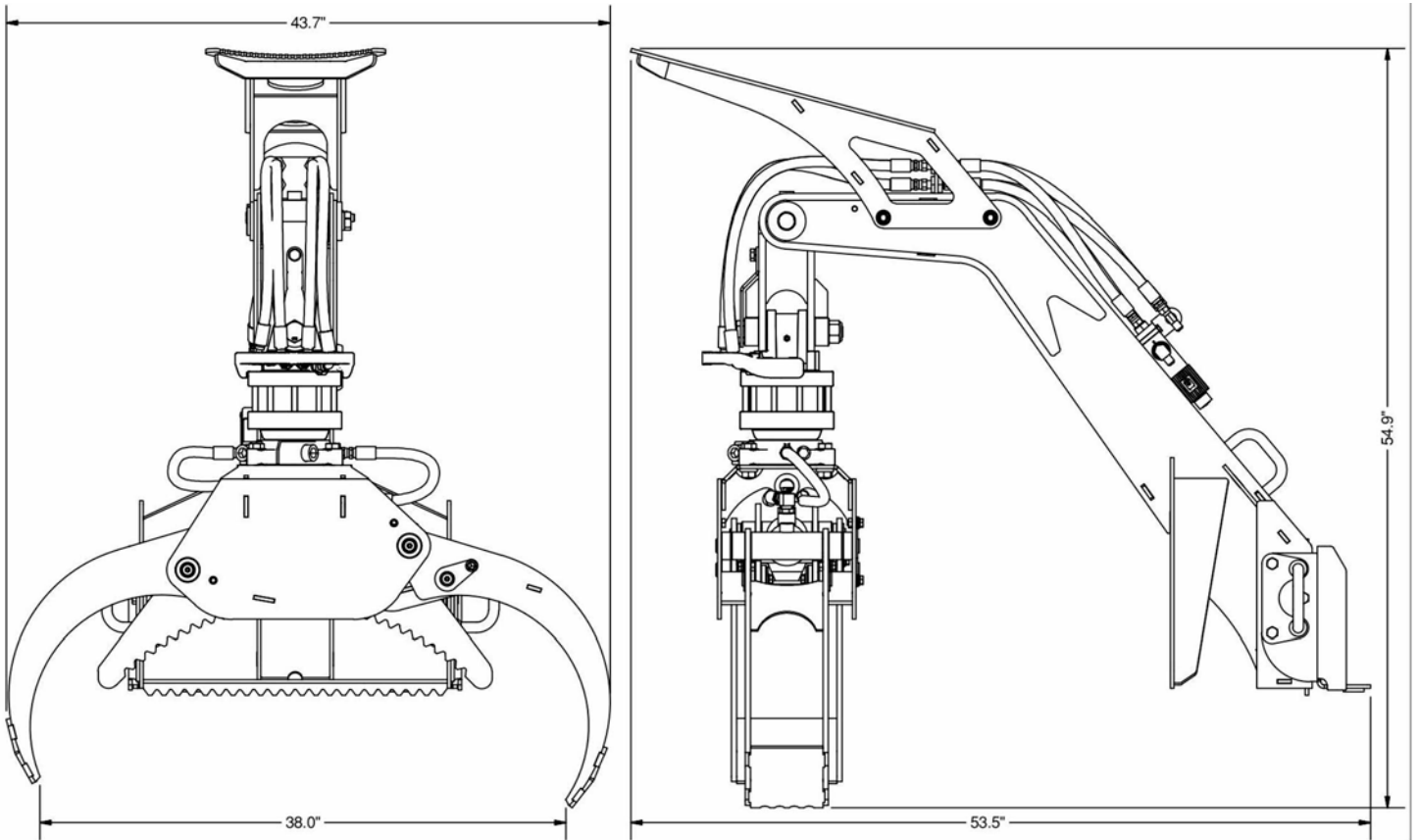
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		400998	PKG OPT ROTATOR HYDRAULIC MINI	
1	2	103330	ADPT ELB 10MB-6MJ-90	
2	1	340980	HOSE 3/8 X 23 6FJX-6FJX	BULKHEAD TO VB3
3	1	340979	HOSE 3/8 X 21 6FJX-6FJX	BULKHEAD TO VBI
5	1	340976	HOSE 3/8 X 85 6FJX-8FJX	LEAD TO VB
6	1	201522	ADPT STR 10M B-6MJ	



GENERAL SPECIFICATIONS

Model	Mini Multipurpose Grapple 38
	Mini ASV400541 (55lbs)
Mounting Plate Optional Packages (bolt on)	Mini Bobcat..400542 (49 lbs)
	Mini Toro400540 (35lbs)
	Universal.400543 (98 lbs)
Hydraulic Pump Capacity Requirements	5 to 15 GPM
System Pressure	2,000 - 3,000 psi
Maximum Jaw Opening Width	38"
Minimum Jaw Closing Diameter	3"
Rotator Capacity	9,000lbs
Boom Capacity	1,500lbs
Grapple Cylinder Bore	2.5"
Operating Weight (with Toro mounting plate)	Manual Rotation402 lbs
	Mini ASV Mount.. add 20 lbs
	Mini Bobcat Mount. add 14 lbs
	Universal Mount. add 63 lbs
	Hydraulic Rotation add 22 lbs
	Optional Pushbar PKG add 25 lbs



TROUBLESHOOTING

Problem	Possible Solution
Manual rotator does not rotate smoothly	<ul style="list-style-type: none">• Check for interference• Check if thrust bearing is properly greased• Contact your dealer
Hydraulic rotator option not turning	<ul style="list-style-type: none">• Check wiring, button needs to be held while operating auxillary hydraulic controls.• Hydraulic hoses not routed correctly• Contact Spartan Equipment
Excessive play in grapple components	<ul style="list-style-type: none">• Replace pins and/or replace insert bushings• Contact your dealer

LIMITED WARRANTY

Spartan Equipment warrants each new machine manufactured by us to be free from defects in material and workmanship for a period of twelve (12) 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 manner

In no event will the Sales Representative, Dealership, Spartan Equipment, 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.

Spartan Equipment 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 Spartan Equipment has any authority to bind Spartan Equipment 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 Spartan Equipment to improve its products whenever it is possible and practical to do so. Spartan Equipment 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.

**Spartan Equipment
Joppa, MD 21085
Phone 1-888-888-1085**



**SPARTAN
EQUIPMENT®**

PIN 400999
Spartan Equipment

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