ERSKINE®
ATTACHMENTS LLC

Heavy Duty Rock Saw
18HDRS & 24HDRS

For

Skid Steer Loaders

Operator's Manual
Maintenance and Parts Information

⚠ Read this manual before use.

⚠ WARNING Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead based paints,**
- **Crystalline silica from bricks and cement and other masonry products, and**
- **Arsenic and chromium from chemically treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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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 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.*

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.

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.

SAFETY

Improper operation can cause serious injury or death.

Pre-operation

- This attachment is designed for trenching through cement, asphalt, and rocky soil conditions. **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. Always call before you dig (1-888-258-0808). When you call, you will be directed to a location in your state/city for information about buried lines (electric, telephone, cable TV, water, sewer, gas, etc.).

Operation

- Milling concrete and asphalt can release dust containing silica. According to OSHA, exposure to silica can result in respiratory diseases (affecting your ability to breath), including silicosis, lung cancer, and kidney disease. Refer to OSHA for more information about controlling exposure to silica. Occupational use of this attachment may be subject to OSHA regulations specific to respirable silica.
- To protect the operator from hearing loss, ear protection is required unless the loader is equipped with a noise reduction cab that meets OSHA 1910.95 standard.

Operation (continued)

- Keep people away from loader, attachment and discharge when in use. This attachment sends objects flying and has rotating parts.
- **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.
- **NEVER** place head, hands, feet, or objects in the discharge area or clear debris while engine is running.

Avoid High Pressure Fluids Hazard

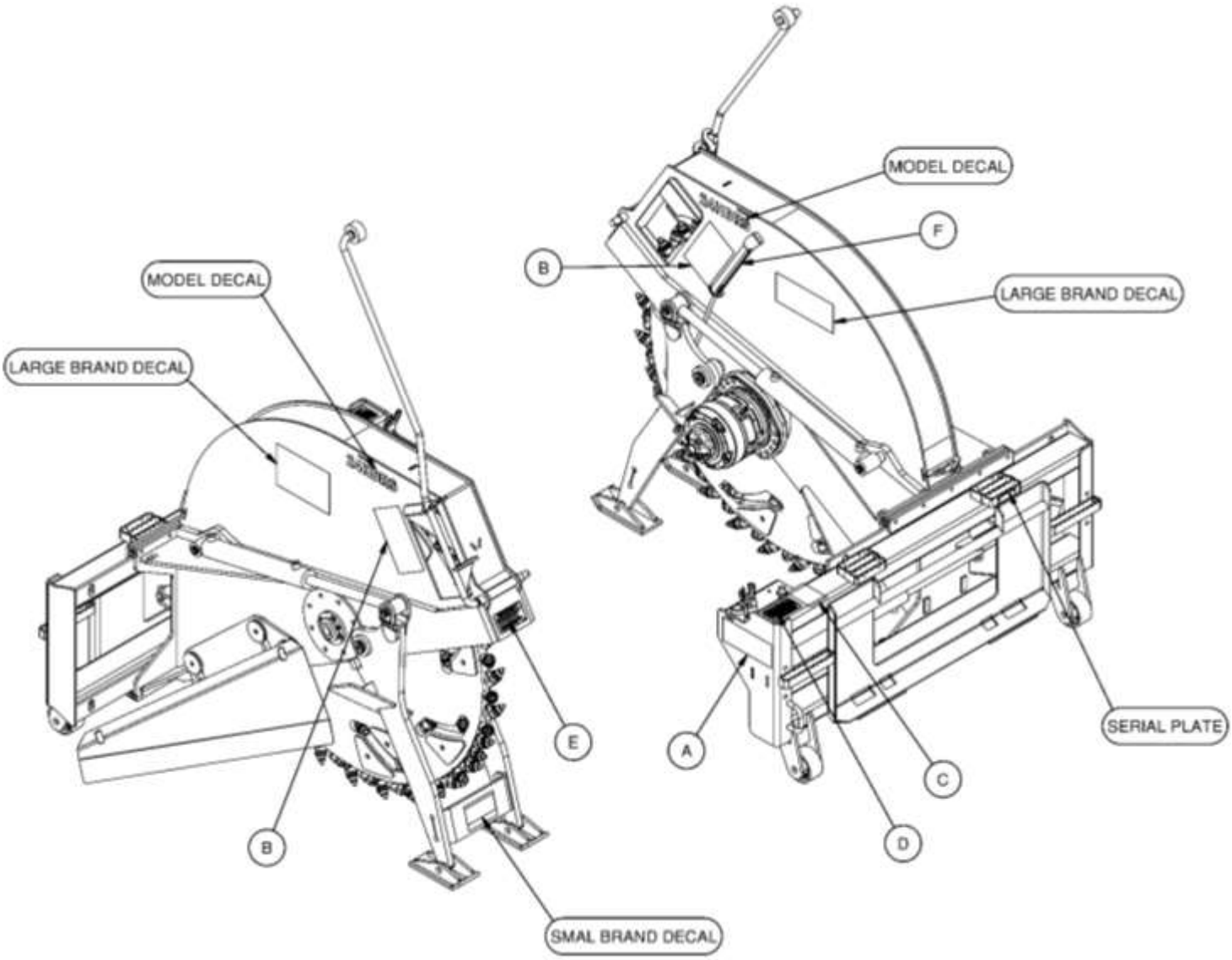
- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving the pressure before disconnecting hydraulic lines.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks. Wear protective gloves and safety glasses or goggles when 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

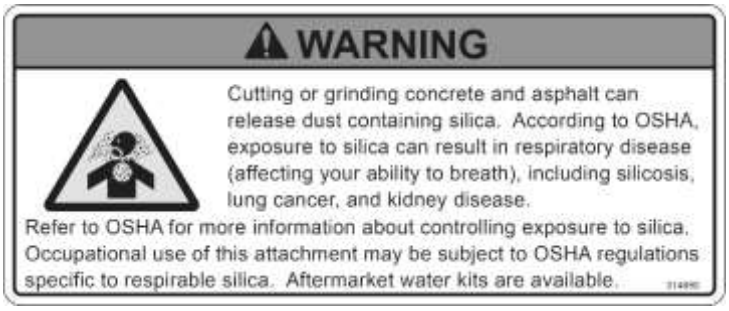
Serial Number Location:
It is important to refer to the serial number of your attachment when making repairs or ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use different procedures in doing a specific operation. Serial number plate is located on the upper right side step.



Part Number: Model Decal
319455 – 18HDRS
319456 – 24HDRS
Location: Each side of rotor w/a
Quantity: 2

SERIAL NUMBER AND SAFETY DECAL LOCATIONS

A



Part Number: 314890
Location: on RH side of mount frame
Quantity: 1

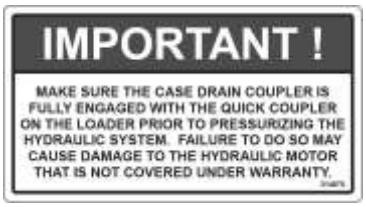
B

Part Number: 319438
Location: On each side of rotor shield
Quantity: (1) in PMI & (1) in Rotor decal package

C

Part Number: 200001
Location: Top of mount over valve
Quantity: 1

D



Part Number: 314875
Location: Top of mount over valve
Quantity: 1

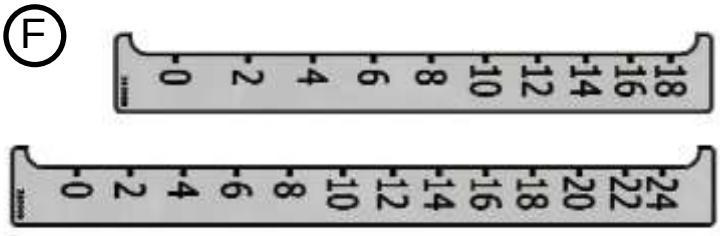
E

Part Number: 319439
Location: On RH of rotor Shield
Quantity: 1

Large Brand Decal
Location: Each side of rotor w/a
Quantity: 2

Small Brand Decal
Location: On Support Leg Brace
Quantity: 1

F



Part Number: 318968 (18") 318969 (24")
Location: On depth tube
Quantity: 1

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.

MOUNTING INSTRUCTIONS

After uncrating the attachment, use the following procedure to mount the Heavy Duty Rock Saw to the loader.

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.

Mounting Plate Connections

Coupler Locking Mechanism

Mounting Plate Step Treads

1. Use the step, treads, and grab handles to get on and off the loader and rock saw.
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 attachment's mounting bracket.
5. If equipped, engage the coupler locking mechanism that attaches the attachment to the loader.
6. Stop the engine and engage the park brake.
7. Secure the coupler locking mechanism that attaches the attachment to the loader.

MOUNTING INSTRUCTIONS

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

   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.

   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.

   NOTE: See the Loader's Operation and Maintenance Manual.

   NOTE: Attachment is shipped with 12FJX (1-1/16" Female JIC Swivel) fittings on the ends of the lead hoses and a 6FJX (9/16" Female JIC Swivel) fitting on the end of the case drain hose.

9. Connect the wire harness to the loader's wire harness receptacle. (Disregard if a pistol grip controller is supplied with the attachment.)

   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 loader.

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

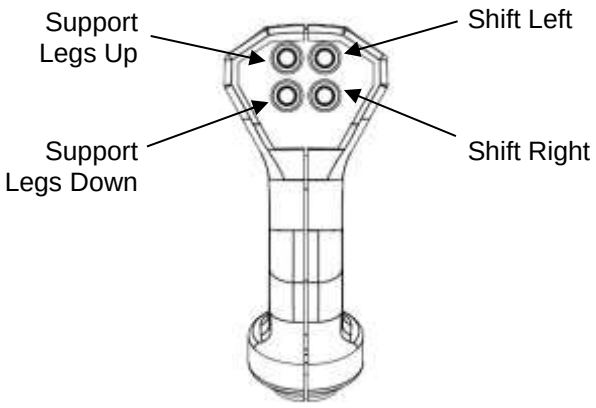
   NOTE: Make sure the pressurized hose from the skid steer is routed to the "P" port of the valve block. If not the attachment will not operate properly.

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

Hydraulic Connections

14 Pin Wire Harness Connection

Rock Saw Ready for Operation



Pistol Grip Harness Control

Depth of Cut Indicator

Rock Saw Precut Setup

NOTE: Make sure to understand how the controls of the skid steer will interact with the functions of the rock saw attachment prior to operating. (If pistol grip harness applies, see image to the left for proper operation.)

1. In the operator's seat of the loader, seat belt fastened and seat bar lowered (if so equipped), start the engine.

2. Roll the skid steer arms fully back and raise the cutter head 6 to 8 inches off the ground.

3. At low engine idle speed, activate the high flow auxiliary hydraulic system, and engage the oil flow in the reverse direction.

   NOTE: The rock saw cutter head is designed not to rotate when the oil flow is activated in the reverse direction, although a small amount of rotation may be seen with some loaders.

4. Increase the loader engine speed to medium idle.

5. Move the cutter head left or right using the appropriate electric controls until it is in the desired position. (Use the guide roller for positioning if needed.)

   IMPORTANT: Rock saw cutter head must be raised above the ground while operating the side shift feature or damage to the attachment may occur.

   NOTE: Set the cutter head as close to the centerline of the loader as possible, but also consider the position of the spoil deflector. It is best to position the spoil deflector so that the discharged spoil is pushed clear of the path of the loader's tires or tracks.

6. Raise the front skid shoes using the appropriate electric controls until the depth of cut indicator seen to the left reads the desired depth.

   NOTE: The depth should be read at the top edge of the white indicator. (Depth of cut ranges from 0 to 18 inches on the 18HDRS and 0 to 24 inches on the 24HDRS.)

7. Disengage the auxiliary hydraulic oil flow and reduce the engine speed to low idle.

OPERATING INSTRUCTIONS

Operation

⚠ WARNING To avoid injury or death from tipover, never use attachment on an incline.

⚠ WARNING To avoid injury or death, carry attachment as low as possible.

NOTE: If using the guide roller be sure to place it onto the ground prior to climbing in the skid steer.

1. In the operator's seat of the loader, seat belt fastened, and the seat bar lowered (if so equipped), start the engine.

2. Roll the skid steer arms fully back and raise the cutter head 6 to 8 inches off the ground.

3. At low engine idle speed, activate the high flow auxiliary hydraulic system, and engage the oil flow in the forward direction to start the cutter head rotation.

   IMPORTATANT: To prevent hydraulic system damage when operating in temperatures below 40°F, allow attachment to run with engine at idle for at least 10 minutes to warm oil before slowly increasing to operating speed.

   NOTE: Certain loaders may not operate in high flow mode without a special wire harnesses. Others require the control switches to be operated in a specific way. It may also be necessary to switch the hose couplers around to match your loader. (See the loader's operation and maintenance manual.)
4. Increase the loader engine speed to high idle.

5. With the loader boom lowered completely and the rollers firmly on the ground, slowly rotate the loader coupler forward until the cutter head penetrates the surface.

6. Continue rotating the loader coupler forward until the Rock saw rollers and skid shoes are firmly on the ground. (The front of the loader should be elevated 2 to 4 inches during the plunge cut.)

7. Once the desired depth has been reached, start to move forward with the loader, increasing the speed until an optimal cut speed is reached.

Rock Saw Guide Roller

Proper Cut Positioning

NOTE: For optimal performance, keep the rear rollers and front skid shoes on the ground at all times with the front tires of the skid loader elevated 2 to 4 inches. Transferring the loader weight to the attachment will result in a faster, smoother, and more efficient cut. (Track loaders tend to perform better with the entire length of track on the ground.)

NOTE: If the cutter head rotation stalls; stop or reverse the direction of the loader and allow the cutter head to return to full operating speed before continuing.

⚠ CAUTION Picks may be hot after operation. To avoid burns, allow the picks to cool before inspecting.

WARNING: Lower the rock saw to rest on the skid shoes and rollers, shut down the engine, relieve the hydraulic pressure to the attachment, wait for all motion to stop, and set park brake 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 the 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.

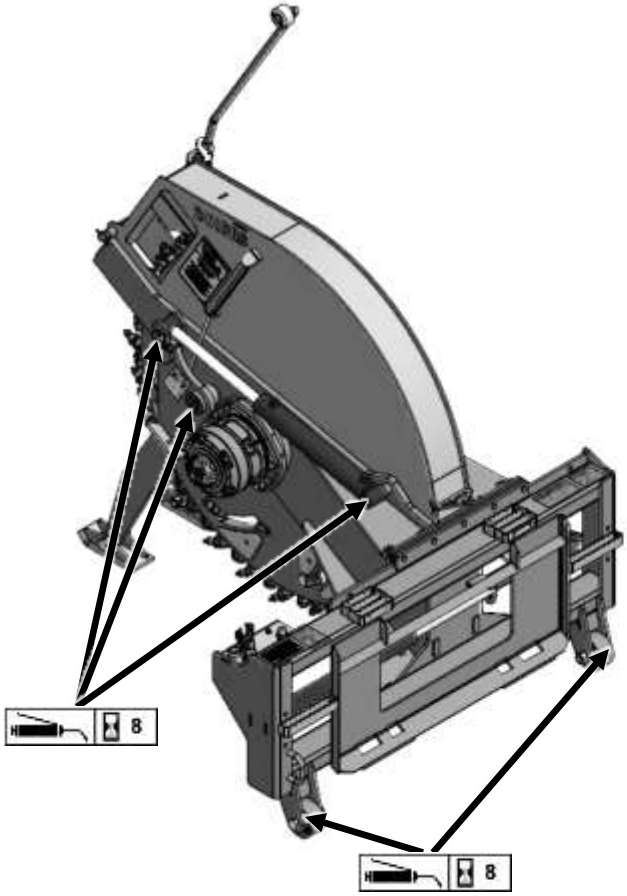
INSPECTION & SERVICE SCHEDULE

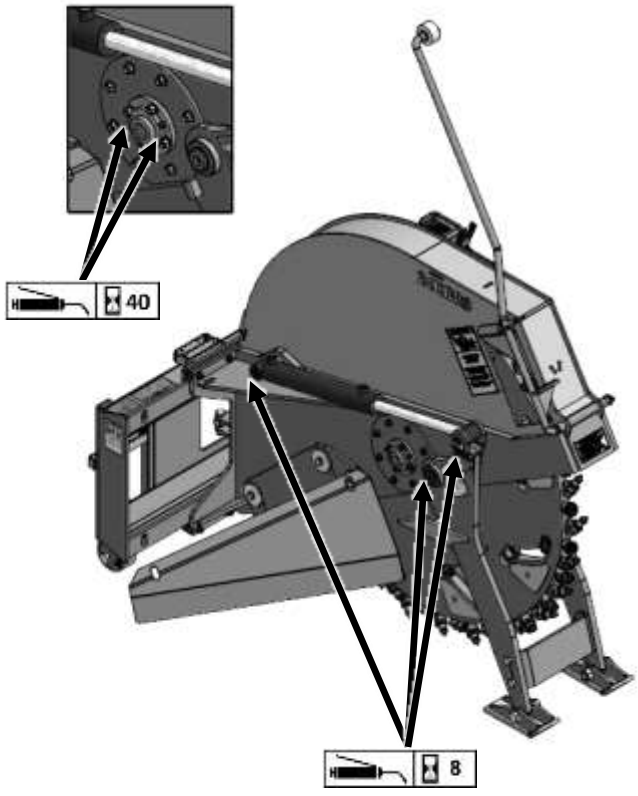
Follow the attachments service schedule and check the following items every **1 hour** of operation:

1. Check picks for excessive wear and replace if necessary. *(For details see page 12)*
2. Be sure the picks are free to rotate in the holders.
3. Check pick holders for cracks or excessive damage and replace if necessary.

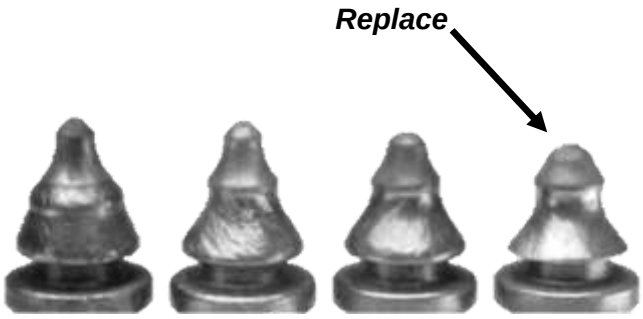
Follow the attachments service schedule and check the following items every **8 hours** of operation:

4. Check entire attachment for weld cracks or excessive damage and repair if necessary.
5. Check all hardware and retighten if loose or replace if damaged.
6. Check for damaged or missing safety decals and replace if illegible or missing.
7. Check for damaged or leaking hydraulic hoses or fittings and repair if necessary.
8. Apply 2 pumps of grease to the sealed bearing zerks every 40 hours.
9. Apply grease to all other zerks with a multipurpose grease every 8 hours.





ROUTINE MAINTENANCE



Pick Wear Progression

Pick Inspection, Setup, Removal, & Installation

Inspection:

The factory installed carbide picks are specifically designed to be a wear product. The life expectancy of the picks will depend greatly on the hardness, the abrasiveness, and the thickness of the material being cut. It is also very critical that the picks rotate freely in the holders to maintain even and consistent wear throughout the life of the picks. A normal pick wear progression is depicted to the left. The pick seen furthest to the right is an example of one that should be replaced, with the carbide almost gone and the body is nearly worn to the base.

IMPORTANT: Continued use of the picks beyond this point will have adverse effects, such as poor productivity, possible cutter head failure, and other costly repairs.

NOTE: Examples of abnormal pick wear causes and solutions are on page 31.

Setup:

⚠ WARNING Moving parts may cause injury or death. Always uncouple the loader from the rock saw prior to performing any maintenance.

Cutter Head off the Ground

1. Find a hard flat level surface to place the rock saw while servicing it.
2. Be sure to place the rock saw so that the skid shoe legs and rear rollers are placed firmly onto the ground.
3. Make sure the cutter head is supported up off the ground by the rock saw in such a way that it will be allowed to rotate freely by hand. (See image to the left)
4. Once the rock saw is in position, disconnect the loader form the rock saw and begin the pick replacement process.

⚠ WARNING Always wear eye protection that meets ANSI Z87.1 when removing and installing picks.

Removal:

IMPORTANT: The use of an improper tool to remove or install the picks may cause damage to the picks or pick holders. Always use the pick installation/removal tool provided with the rock saw.

1. Place the jaw of the installation/removal tool in the puller groove, or between the base of the pick and the hardened washer.
2. Use a hammer to hit the striking surface on the installation/removal tool as seen in the image to the right.
3. It may take multiple hits to remove the pick completely.
4. Repositioning the cutter head can be done by hand while removing the remaining picks.

Old Pick Removal

NOTE: Inspect the pick holders for cracks or areas that are worn thin while removing the old picks.

IMPORTANT: Continued use of the rock saw with damaged holders may have adverse effects, such as accelerated pick failure and possible cutter head damage.

Installation:

1. Place puller groove of the pick into the jaw of the pick installation/removal tool.
2. Hold the shank end of the pick over the bore of the pick holder as shown.
3. Use a hammer to hit the striking surface on the installation/removal tool.
4. It may take multiple hits to install the pick completely.

   NOTE: The pick and the hardened washer should spin freely by hand. If not, the pick is not seated completely and may require another hit with the installation/removal tool.

5. Reposition the cutter head by hand and install the remaining picks.

New Pick Installation

GEARBOX MAINTENANCE

The first gearbox oil change must be done between the first 15 – 20 hours of use. Subsequent gearbox oil changes should occur between 800 – 1000 hours of use or annually whichever comes first.

IMPORTANT: Fluids such as engine oil, gear lube, and hydraulic fluid must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks be cleaned in a specific manner. Check local, state, and federal regulations for the correct disposal.

Required parts and tools:

1. Wheel Chocks
2. 6” x 12” Piece of Plywood
3. 1 Ton Hoist (Minimum)
4. Hammer
5. $^{3}/_{16}$” Drift Punch
6. $^{5}/_{32}$” Allen Wrench
7. 8mm ($^{5}/_{16}$”) Allen Wrench
8. ¾” Wrench or Socket
9. $^{15}/_{16}$” Wrench or Socket
10. $^{3}/_{4}$” Drive 30mm ($1^{3}/_{16}$”) Socket
11. ¾” Drive Breaker Bar
12. ¾” Drive Torque Wrench (600 ft-lbf. minimum)
13. (2) $^{5}/_{8}$”-11UNC x 6” Hex Bolts
14. 21 oz. 80/90 Gear Lube or Equivalent
15. Approved Oil Drain Pan
16. Emery Cloth
17. Anti-Seize Lubricant
18. High Strength Thread Locker (Red)

Lock Collar Loosen Direction

Rock Saw Gearbox Oil Replacement

1. Find a hard flat level surface to place the rock saw while servicing it.

2. While connected to the loader raise the skid shoe legs completely up.

   IMPORTANT: Use the 6” x 12” piece of plywood or some other durable sheet material to rest the cutter head on so that the picks and the ground are protected from damaging one another.

3. Place the rock saw so that the rear rollers are placed firmly onto the ground and chocked so that the saw will not unintentionally roll out of position.

4. Rotate the saw forward with the loader gently until the cutter head is resting on the sheet material specified earlier.

5. Once the rock saw is in position, disconnect the loader form the rock saw and begin the gearbox oil replacement process.

6. On the right hand side of the saw, loosen the two set screws on the bearing lock collar with the $^{5}/_{32}$” Allen wrench.

7. Once loose, use the $^{3}/_{16}$” drift punch to knock the lock collar loose in a counterclockwise direction as shown in image to the left.

8. After removing the lock collar use the emery cloth to smooth out the areas on the shaft that were marred up by the set screws.

9. With the ¾” wrench or socket remove the eight ½” hex flange nuts.

10. Slide the bearing mount plate off of the shaft and the eight ½” bolts.

Rock Saw Gearbox Oil Replacement (continued)

11. Attach the chain hook of the 1 ton hoist to the front lift point and lift slightly so the cutter head rotates freely.

12. Insert the 30mm ($1\frac{3}{16}$") socket through the circular cutout and over the 20mm lug nut.

13. Lower the hoist so that the cutter head is firmly on the ground.

14. Attach the breaker bar to the socket and loosen the M20 hex flange nut to the point that it can be turned by hand. (Be sure to leave it on the stud while the others are loosened.)

15. Lift the saw slightly so that the cutter head can be rotated by hand and rotate until the next M20 hex flange nut aligns with the circular cutout.

16. Lower the hoist so that the cutter head is firmly on the ground.

17. Loosen the M20 hex flange nut and repeat the process until all eight lug nuts are loose.

18. Lift the saw slightly so the cutter head can be rotated freely.

⚠ WARNING Cutter head is extremely heavy and could cause injury or death if not secured properly while removing, reinstalling or transporting.

19. Remove all eight M20 hex flange nuts from the wheel studs.

20. Lower the saw so the weight of the cutter head is completely supported by the ground and move around to the left hand side of the saw.

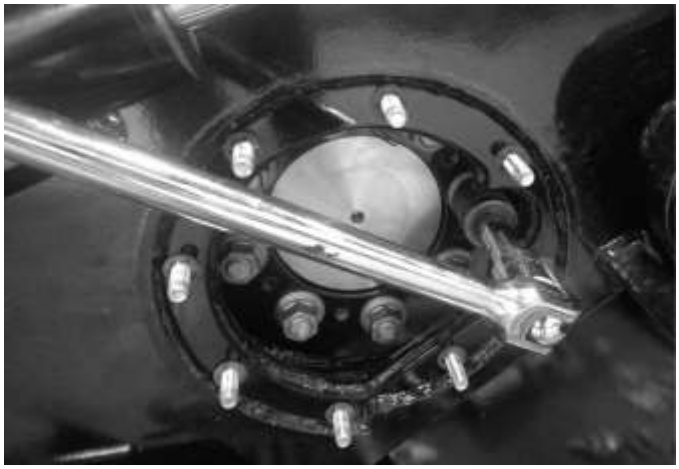
21. Remove the uppermost $\frac{5}{8}$" x 1¼" GR8 motor mount bolt on each side of the motor.

22. Install the two $\frac{5}{8}$"-11 UNC x 6" hex bolts into the two vacant motor mount bolt holes.

23. Remove the remaining eight $\frac{5}{8}$" x 1¼" GR8 motor mount bolts.

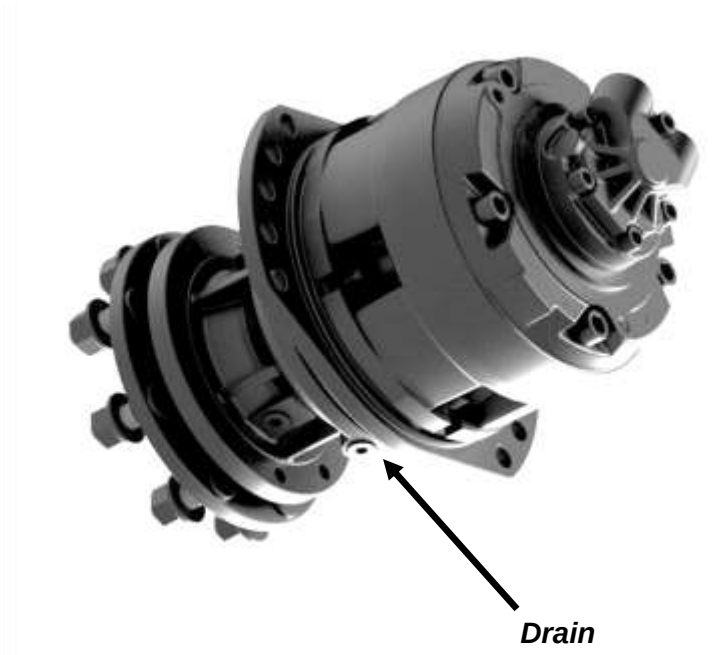
24. Now the motor can be pulled out away from the cutter head and saw while supported by the two $\frac{5}{8}$" X 6" bolts.

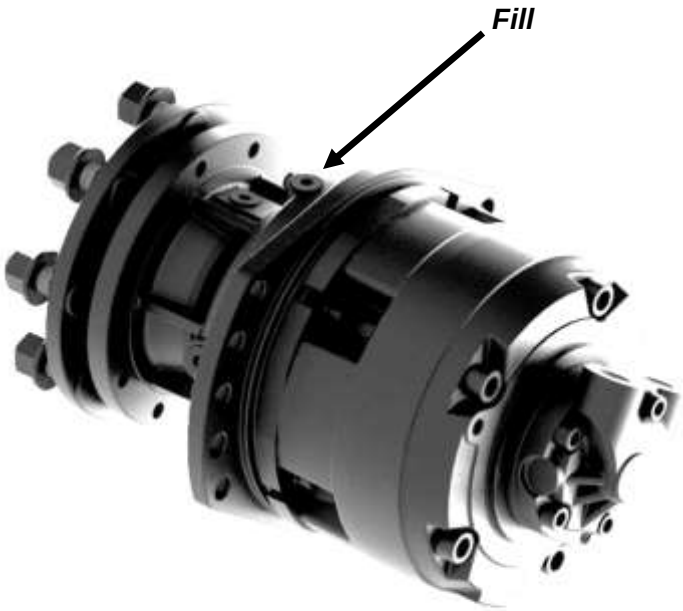
Chain Lift Hook



Breaker Bar Cutout

$\frac{5}{8}$"-11 X 6" Bolt Connection





Rock Saw Gearbox Oil Replacement (continued)

25. Use an approved oil drain pan and place it below the gearbox.
26. Remove the drain plug located on the bottom of the gearbox with the 8mm ($^5/_{16}$") Allen wrench.
27. Remove the drain plug located on the top of the gearbox with the 8mm ($^5/_{16}$") Allen wrench.
28. Allow the oil to drain completely from the gearbox.
29. Reinstall the drain plug into the port on the bottom side of the gearbox.

    IMPORTANT: Make sure the metal washer seal gets reinstalled between the drain plug and the gearbox.
30. Add 21 ounces of 80/90 gear lube or equivalent to the top port on the gearbox.
31. Reinstall the drain plug into the port on the bottom side of the gearbox.
32. Next slide the motor up to the saw, being sure to align the studs with the cutter head mount holes.
33. Once aligned install at least one of the $^5/_8$" x 1¼" GR8 motor mount bolts to hold the motor in position.
34. Apply the high strength thread locker (Red) to the remaining nine $^5/_8$" x 1¼" GR8 bolts.
35. Install the $^5/_8$" x 1¼" GR8 bolts into the seven vacant motor mount bolt holes.
36. Remove the one $^5/_8$" x 1¼" GR8 bolt without thread locker and the two $^5/_8$" X 6" bolts.
37. Apply thread locker to the $^5/_8$" x 1¼" GR8 bolt that was just removed.
38. Install the three $^5/_8$" x 1¼" GR8 bolts into the final three vacant motor mount bolt holes.
39. Torque all ten $^5/_8$" x 1¼" GR8 bolts to 159 ft-lbf.

Rock Saw Gearbox Oil Replacement (continued)

40. Move around to the right hand side of the saw.

41. Push the cutter head back onto the motor flange and lift the saw slightly so the cutter head is supported by the wheel studs.

42. Reinstall the eight M20 hex flange nuts making sure the cutter head is seated completely over the pilot on the motor spindle mount flange.

43. Rotate the cutter head so that one of the M20 hex flange nut aligns with the circular cutout.

44. Lower the hoist so that the cutter head is firmly on the ground.

45. Use the 30mm ($1^{3}/_{16}$") socket and a ¾" drive torque wrench to torque the M20 hex flange nut down to 570 ft-lbf.

46. Lift the saw slightly so that the cutter head can be rotated by hand and rotate until the next M20 hex flange nut aligns with the circular cutout.

47. Lower the hoist so that the cutter head is firmly on the ground.

48. Torque the M20 hex flange nut down to 570 ft-lbf and repeat the process until all eight lug nuts are loose.

49. Next apply anti-seize lubricant to the stub shaft.

50. Slide the bearing mount plate back onto the stub shaft and the over the eight ½" bolts.

51. It may be necessary to lift the saw and rotate the cutter head by hand to align the ½" bolts with the bearing mount plate.

52. Install all eight ½" hex flange nuts and torque to 75 ft-lbf.

53. Install the locking collar over the stub shaft and onto the bearing.

Torque to 570 ft-lbf

Lock Collar Tighten Direction

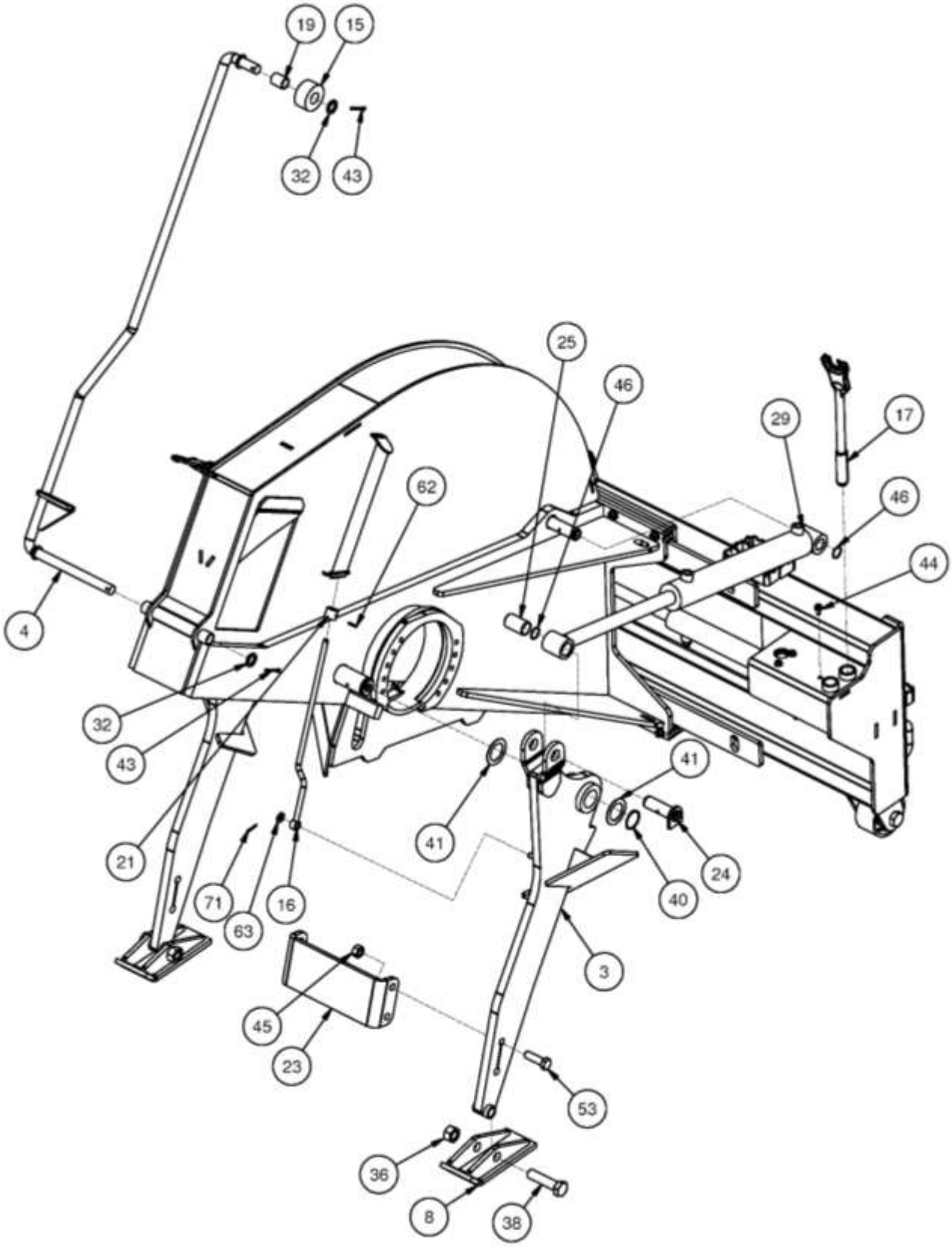
54. Rotate the locking collar clockwise until it snugs up.

55. Use the $^{3}/_{16}$" drift punch to knock the lock collar in a clockwise direction until it is tight.

56. Finally tighten the two set screws on the lock collar with the $^{5}/_{32}$" Allen wrench.

PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
3	1	318925	ARM DEPTH R-SAW HD LH 18 W/A	
		318927	ARM DEPTH R-SAW HD LH 24 W/A	
4	1	318911	ARM GUIDE ROD R-SAW HD W/A	
8	2	319311	SKID SHOE ROCK SAW W/A	
15	1	319328	BUSH 3 X 1.27 X 1.5 Z	
16	1	318988	PUSH ROD DEPTH GAUGE 18 W/A Z	
	1	318980	PUSH ROD DEPTH GAUGE 24 Z W/A	
17	1	320795	TOOL BIT PULLER	
19	1	319373	BUSHING OILITE 1 X 1.25 X 1.5	
21	1	318979	BUSH 1.25 X .63 X 1 PLASTIC	
23	1	318991	BRKT BRACE ARMS R-SAW 18 PNT	
	1	318961	BRKT BRACE ARMS R-SAW PNTD	
24	2	318912	PIN 1.25 X 3.813 SNP RNG W/A	
25	2	317896	BUSH SPRING 1.50 X 1.25 X 2.50	
29	2	318873	CYLINDER 2.5 X 16 B-B	**REPLACED 317854**
	2	317854	CYLINDER 2.5 X 16 B-B	**REPLACED BY 318873**
32	2	33446	WASHER MB 1 10GA NARROW	
36	4	37219	NUT REV LOCK	1 NC
38	2	13470	BOLT HEX	1 X 4-1/4 NC GR 5
40	2	313333	RING SNAP EXT 2 X .063	
41	4	33495	WASHER MB 2 14GA NARROW	
43	2	65127	PIN COTTER 3/16 X 2	
44	3	19929	BOLT FLNG	3/8 X 3/4 NC FLG GR 5
45	6	37217	NUT REV LOCK	3/4 NC
46	4	28280	RING SNAP EXT 1.25 X .050	
53	4	13363	BOLT HEX	3/4 X 2-1/2 NC GR 5
62	1	64134	PIN ROLL 3/16 X 1-1/8	
63	1	33086	WASHER FLAT	1/2 X 1.06 OD
71	1	65076	PIN COTTER 1/8 X 1	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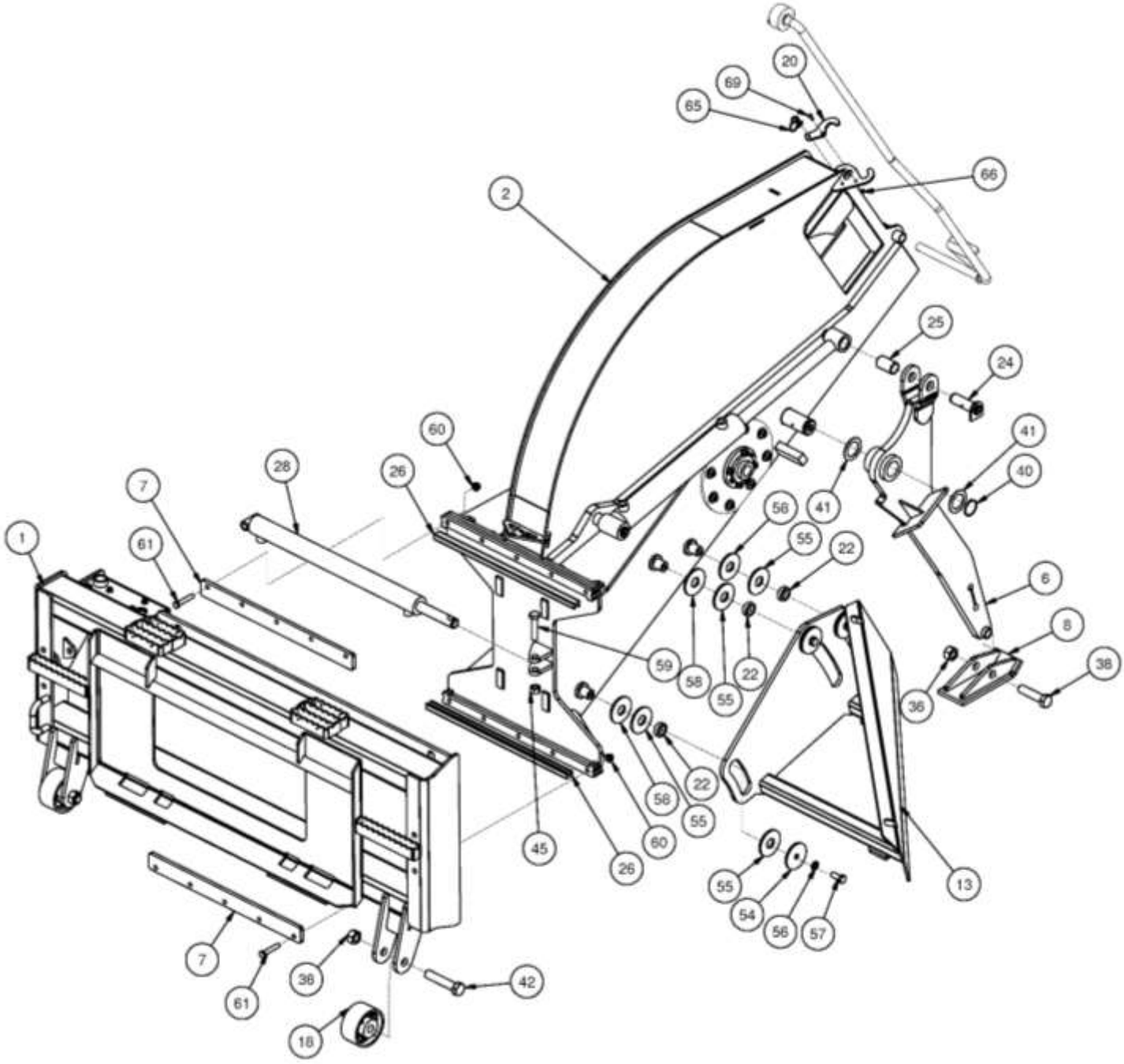
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	319550	MOUNT FRAME ROCK SAW HD W/A	
2	1	318922	FRAME SHIELD R-SAW HD 18 W/A	
	1	318923	FRAME SHIELD R-SAW HD 24 W/A	
6	1	318924	ARM DEPTH R-SAW HD RH 18 W/A	
	1	318926	ARM DEPTH R-SAW HD RH 24 W/A	
7	2	318957	BACKING PLATE 26 R-SAW PNTD	
8	2	319311	SKID SHOE ROCK SAW W/A	
13	1	318914	BLADE R-SAW SPOIL 18 W/A	
	1	318919	BLADE R-SAW SPOIL 24 W/A	
18	2	319327	ROLLER CAST 5 X 1 X 2.75	
20	1	318985	PLATE HOOK LATCH GUIDE Z	
22	3	315118	BUSHING 1.75 x 1.25 x .50	
24	2	318912	PIN 1.25 X 3.813 SNP RNG W/A	
25	2	317896	BUSH SPRING 1.50 X 1.25 X 2.50	
26	2	314808	CHANNEL PLASTIC 24	
28	1	317274	CYLINDER 2 X 24	
36	4	37219	NUT REV LOCK	1 NC
38	2	13469	BOLT HEX	1 X 4 NC GR 5
40	2	313333	RING SNAP EXT 2 X .063	
41	4	33495	WASHER MB 2 14GA NARROW	
42	2	13473	BOLT HEX	1 X 5 NC GR 5
45	6	37217	NUT REV LOCK	3/4 NC
54	3	316654	WASHER 3.5 X .63 X .25 Z	
55	6	316657	WASHER NYLON 3.5 X 1.3 X .25	
56	3	33630	WASHER LOCK	5/8"
57	3	13309	BOLT HEX	5/8 X 1-1/2 NC GR 5
58	3	316655	WASHER 3.5 X 1.28 X .25 Z	
59	1	13366	BOLT HEX	3/4 X 3-1/4 NC GR 5
60	8	167011	NUT FLG TOP-LOCK	1/2 NC GR8
61	10	15214	BOLT HEX	1/2 X 2-3/4 NC GR 8
65	1	300285	PIN SNAPPER 1/4 X 1.38	
66	1	37210	NUT REV LOCK	1/4 NC
69	1	13003	BOLT HEX	1/4 X 3/4 NC GR 5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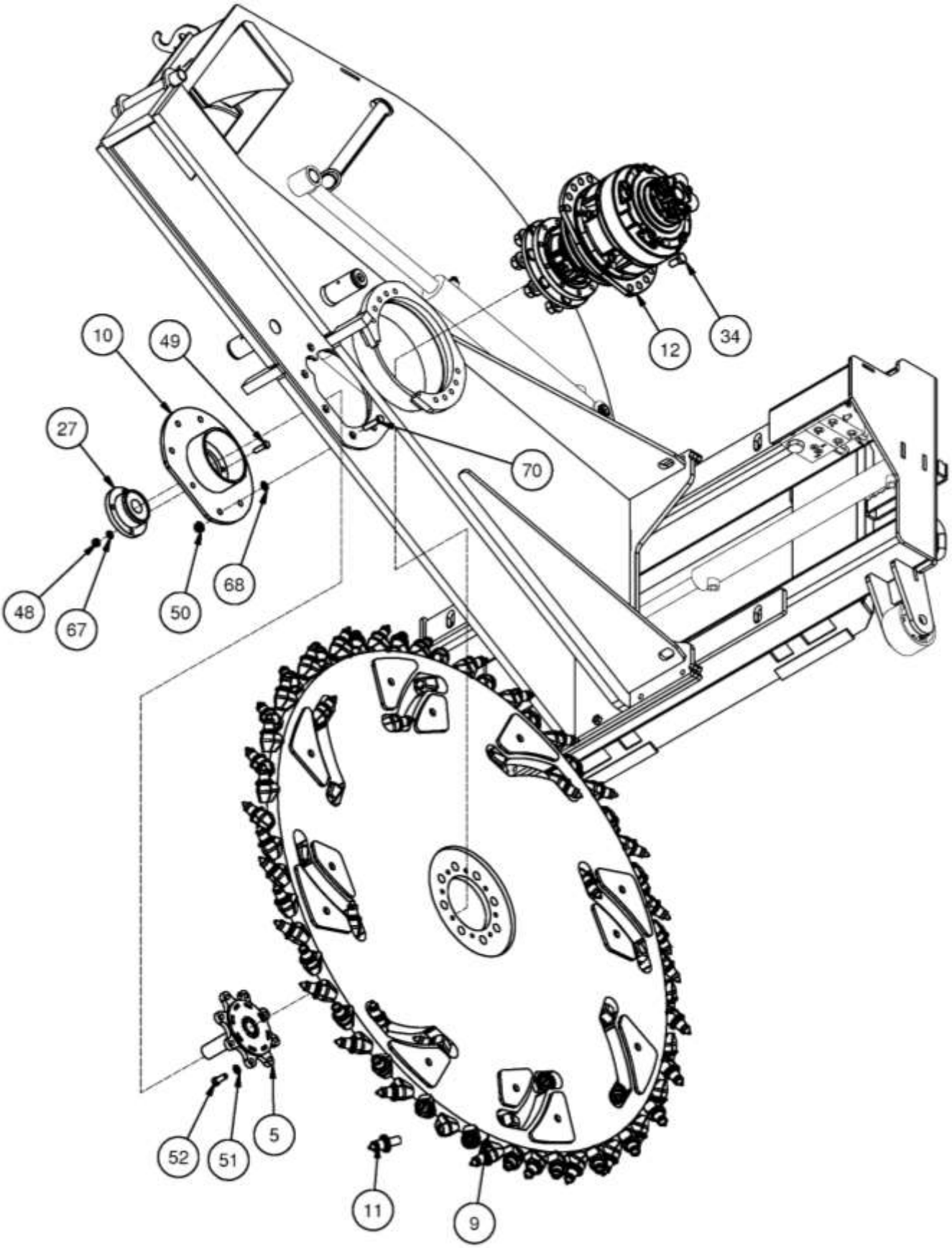
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
5	1	318915	SPINDLE FLANGED W/A	**Superseded by 319554**
	1	319554	SPINDLE FLANGED 2.0 W/A Z	**Serial No. 1123444 & Up**
9	1	319498	ROTOR BLADE WHEEL 2.75 X 48 W/A	
	1	319499	ROTOR BLADE WHEEL 2.5 X 60 W/A	
10	1	318921	MOUNT BEARING R-SAW HD W/A	**Superseded by 319556**
	1	319556	MOUNT BEARING 2.0 R-SAW HD W/A	**Serial No. 1123444 & Up**
11	54	314830	TOOTH BULLET CP/RS CONCRETE	**18HDRS REPLACEMENT PKG 318693**
	72	314830	TOOTH BULLET CP/RS CONCRETE	**24HDRS REPLACEMENT PKG 318694**
12	1	318970	MOTOR ASSM	
27	1	313568	BRG 1-7/16 SPHERICAL W/FLANGE	**Superseded by 319559**
	1	319559	BRG 2 SPHERICAL W/FLANGE	**Serial No. 1123444 & Up**
34	10	15307	BOLT HEX	5/8 X 1-1/4 NC GR 8 YZ
48	4	36108	NUT FULL HEX	7/16 NC
49	4	13159	BOLT HEX	7/16 X 1-1/2 NC GR 5
50	8	37345	NUT FLG SERRATED	1/2 NC GR 5
51	8	33626	WASHER LOCK	1/2"
52	8	13207	BOLT HEX	1/2 X 1-1/4 NC GR 5
67	4	33624	WASHER LOCK	7/16"
68	8	330774	NUT PUSH-ON 1/2"	
70	8	13211	BOLT HEX	1/2 X 2 NC GR 5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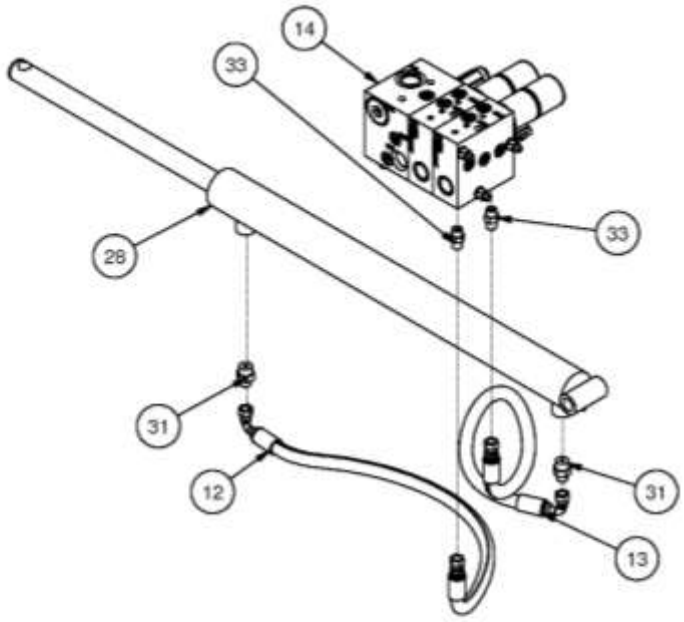
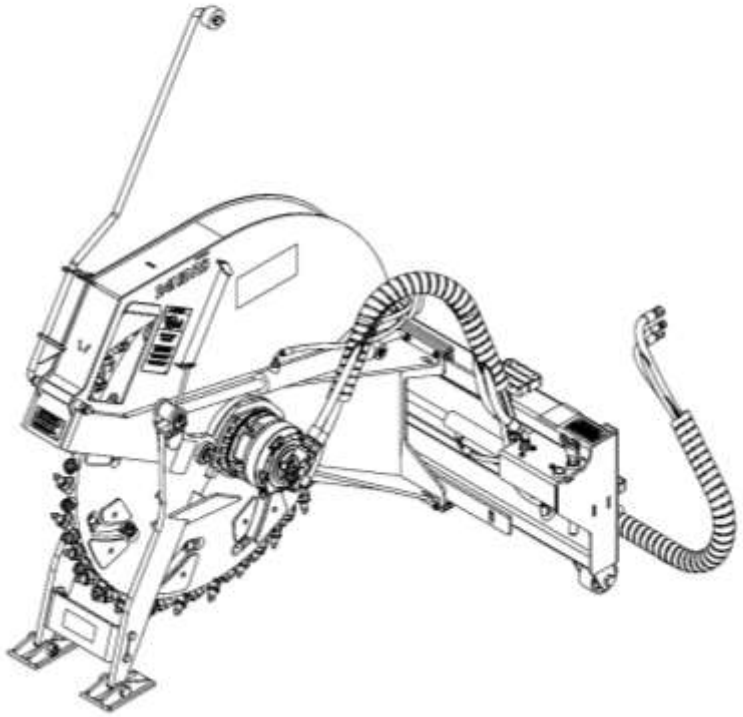
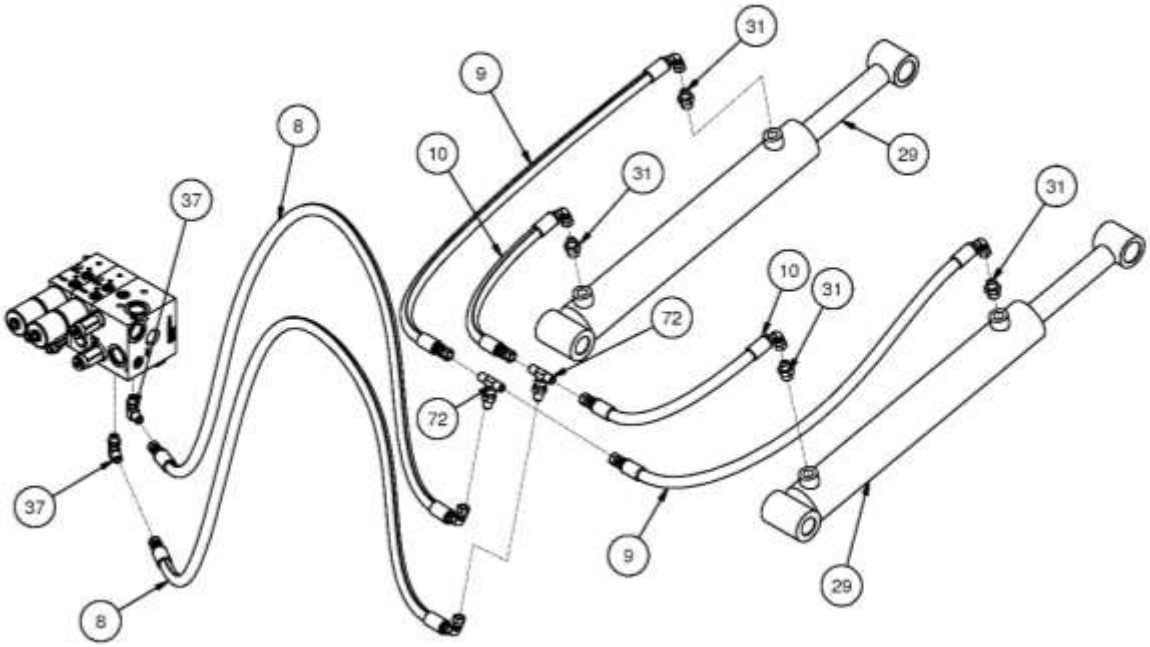
PARTS INFORMATION

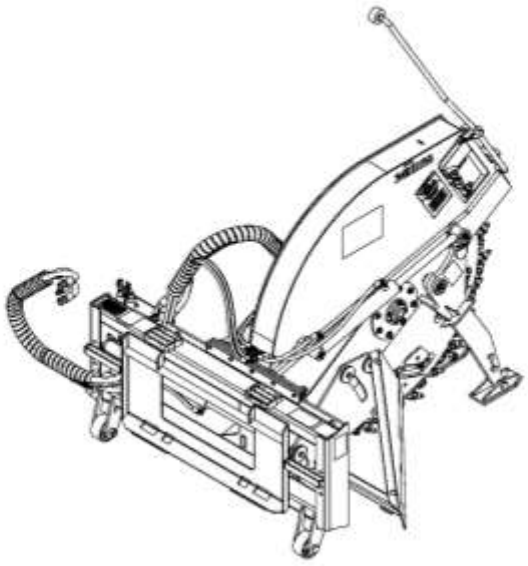
ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		318986	KIT HOSE ROCK SAW HD 18	
		318987	KIT HOSE ROCK SAW HD 24	
12	1	312138	HOSE 3/8 X 38 6FJX-6FJX90	PORT B TO CYL ROD
13	1	319384	HOSE 3/8 X 20 6FJX-6FJX90	PORT A TO CYL BASE
14	1	319475	VALVE ASSM ROCK SAW 2 FUNC-2	
28	1	317274	CYLINDER 2 X 24	
31	6	201925	ADPT STR 8MB-6MJ	
33	2	311673	ADPT STR 6MB-6MJ	
74	2	330783	WRAP SPIRAL 2.606 X 42 (YEL)	NOT SHOWN





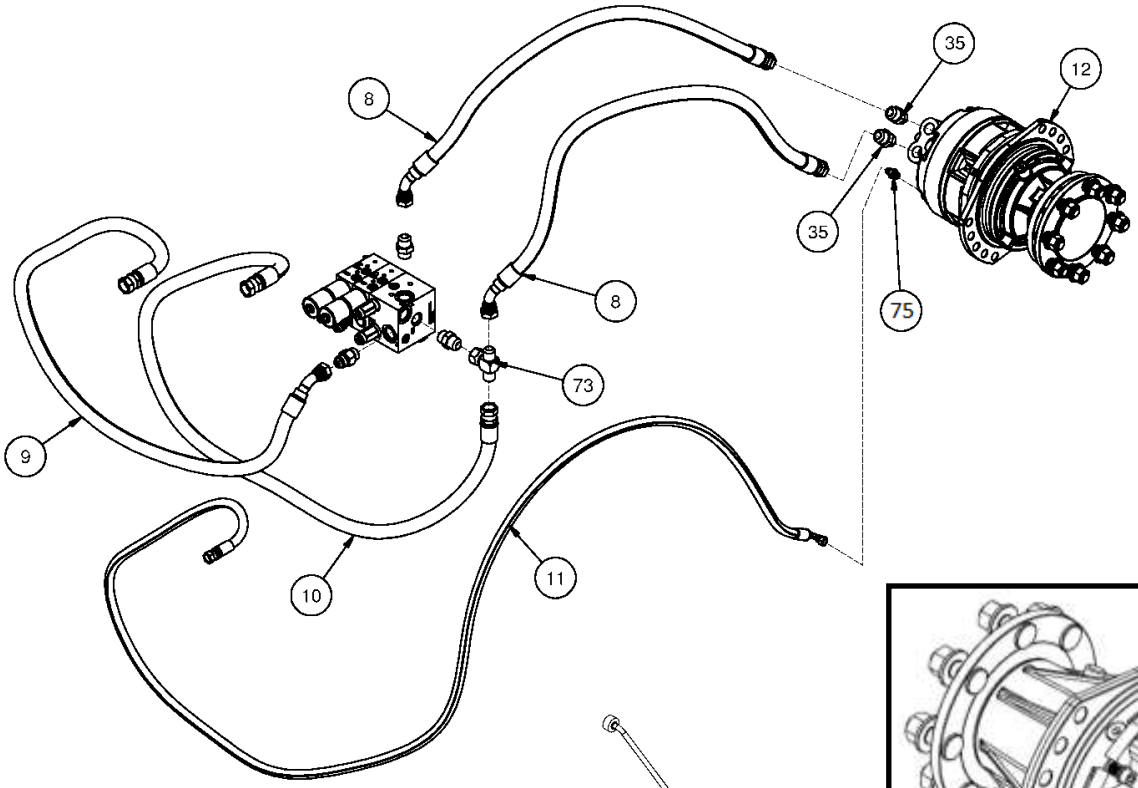
ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		318986	KIT HOSE ROCK SAW HD 18	
		318987	KIT HOSE ROCK SAW HD 24	
8	2	313489	HOSE 3/8 X 54 6FJX-6FJX90	BASE TO B, RODS TO A
9	2	312136	HOSE 3/8 X 32 6FJX-6FJX90	CYL ROD TO TEE **(18 ONLY)**
	2	312138	HOSE 3/8 X 38 6FJX-6FJX90	CYL ROD TO TEE **(24 ONLY)**
10	2	203707	HOSE 3/8 X 13.75 6FJX-6FJX90	CYL BASE TO TEE **(18 ONLY)**
	2	319384	HOSE 3/8 X 20 6FJX-6FJX90	CYL BASE TO TEE **(24 ONLY)**
29	2	318873	CYLINDER 2.5 X 16 B-B	**REPLACED 317854**
	2	317854	CYLINDER 2.5 X 16 B-B	**REPLACED BY 318873**
31	6	201925	ADPT STR 8MB-6MJ	
37	2	201539	ADPT ELB 6MB-6MJ-90	
72	2	330611	ADPT TEE 6MJ-6MJ-6MJ BH DROP	
74	2	330783	WRAP SPIRAL 2.606 X 42 (YEL)	NOT SHOWN

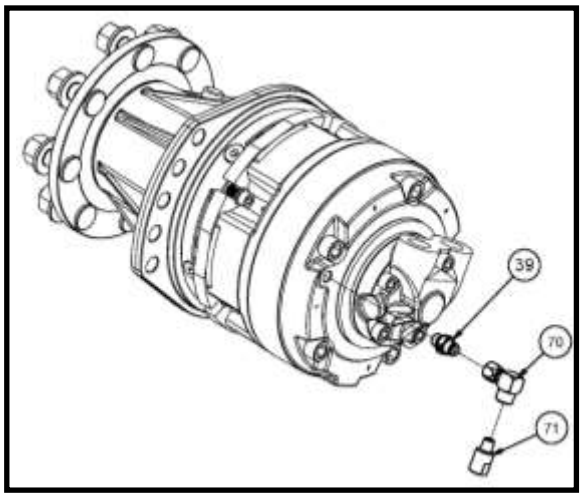


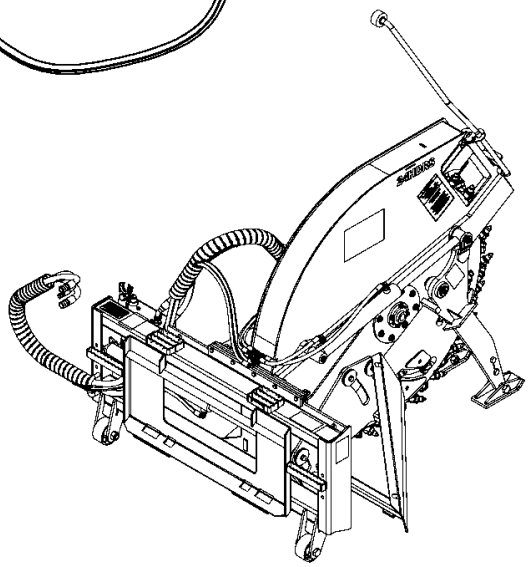


PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		318986	KIT HOSE ROCK SAW HD 18	
		318987	KIT HOSE ROCK SAW HD 24	
8	2	319364	HOSE 3/4 X 54 12FJX-12FJX45	MOTOR TO VALVE
9	1	319457	HOSE 3/4 X 66 12FJX-12FJX45	LEAD RETURN (PORT T)
10	1	319312	HOSE 3/4 X 72 12FJX-12FJX	LEAD PRESSURE (TO TEE)
11	1	330897	HOSE 1/2 X 130 8FJX-8FJX90	**CD (REPLACED 319325)**
	1	319325	HOSE 3/8 X 130 6FJX-6FJX90	**CD (REPLACED BY 330897)**
12	1	318970	MOTOR ASSM	
35	2	103431	ADPT STR 12MB-12MJ	
39	1	319476	ADPT STR 4MBSPP-6MJ	CASE DRAIN
70	1	330813	ADPT ELB 4FP-6FJX90	**MOTOR**
71	1	331384	ADPT STR 4MP RELIEF 225PSI	**MOTOR (NOT PART OF HOSE KIT)**
73	1	330782	ADPT TEE 12MJ-12MJ-12FJX	
74	2	330783	WRAP SPIRAL 2.606 X 42 (YEL)	NOT SHOWN
75	1	330849	ADPT STR 4MBSPP-8MJ	**CASE DRAIN TO MOTOR**

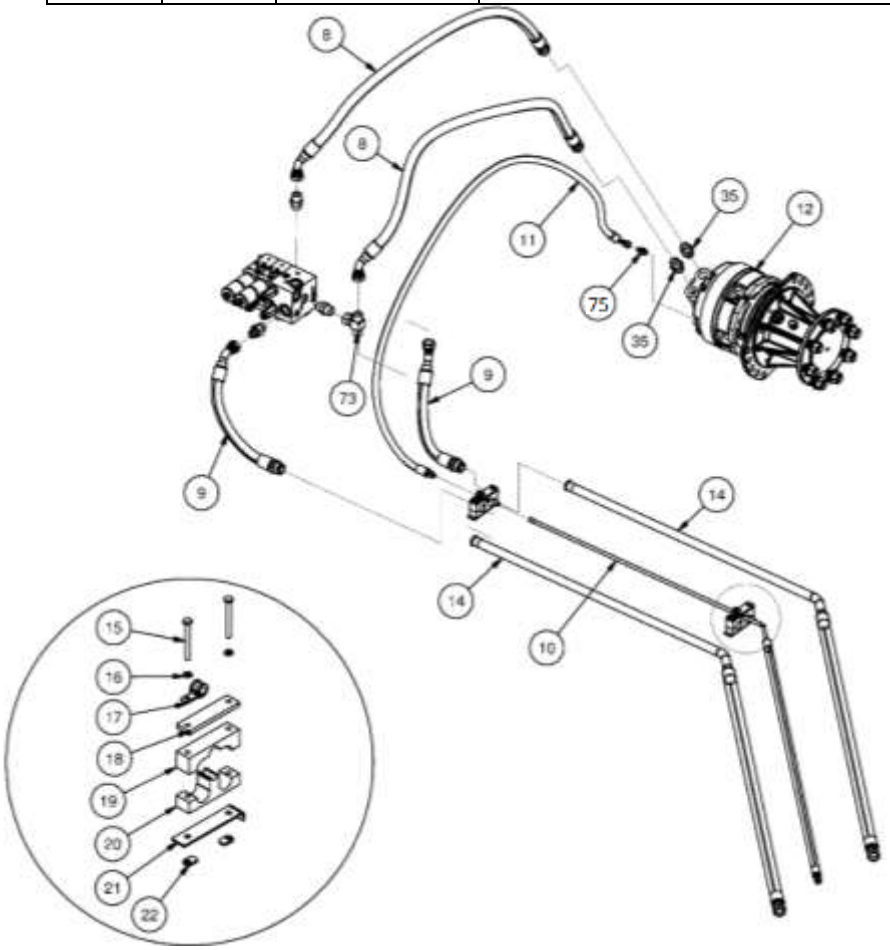


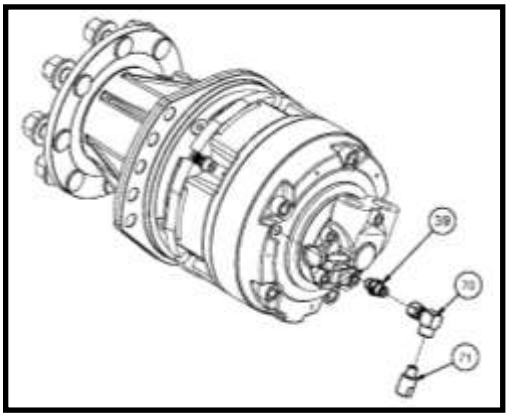




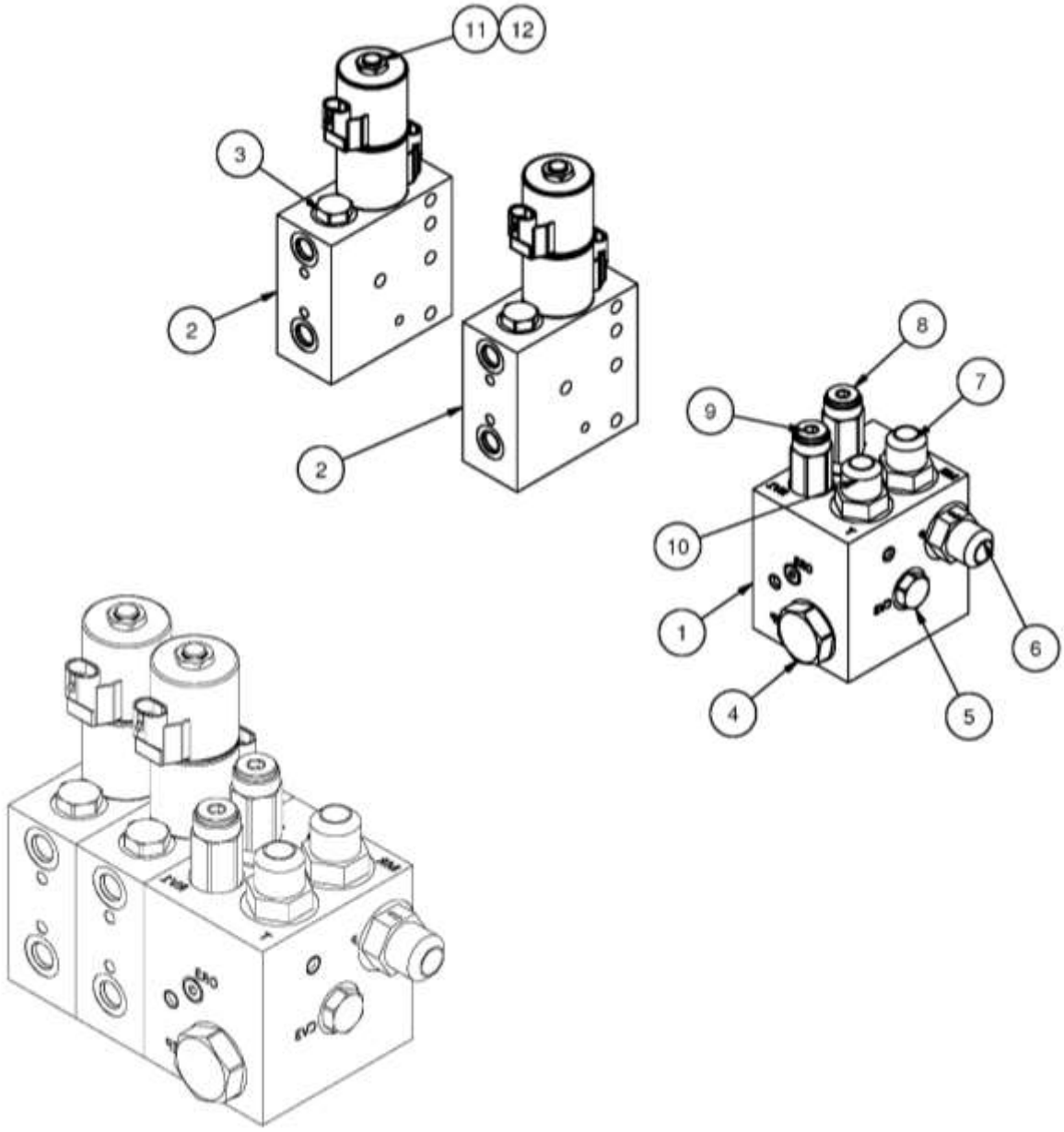
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		318695	**KIT HOSE ROCK SAW HD VOLVO 18**	
		318696	**KIT HOSE ROCK SAW HD VOLVO 24**	
8	2	319364	HOSE 3/4 X 54 12FJX-12FJX45	MOTOR TO VALVE
9	2	318698	HOSE 3/4 X 20 16MJ-12FJX – 45	TUBELINE TO VALVE
10	1	318692	HOSE 1/2 X 52 8FJX-TUBELINE-8FJX	**CD LINE (REPLACED 318699)**
	1	318699	HOSE 3/8 X 52 6FJX-TUBELINE-6FJX	**CD LINE (REPLACED BY 318692)**
11	1	330895	HOSE 1/2 X 80 8FJX-8FJX-90	**CD (REPLACED 318697)**
	1	318697	HOSE 3/8 X 80 6FJX-6FJX-90	**CD (REPLACED BY 330895)**
12	1	318970	MOTOR ASSM	
14	2	319354	HOSE 3/4 X 52 12FJX-TUBELINE-16FJX	LEAD LINES
15	4	13013	BOLT HEX	1/4 X 2-1/2 NC GR 5
16	4	33618	WASHER LOCK	1/4”
17	4	330617	CLAMP HOSE 1/2 (R CLAMP)	
18	2	318690	PLATE CLAMP TUBELINES RSHD Z	
19	2	318692	CLAMP TUBELINE 1” TOP	
20	2	318691	CLAMP TUBELINE 1” BOTTOM	
21	2	318689	BRKT MOUNT TUBELINE CLAMP	
22	4	38144	NUT PILOT WELD 1/4-20 OFFSET	
35	2	103431	ADPT STR 12MB-12MJ	
39	1	319476	ADPT STR 4MBSPP-6MJ	CASE DRAIN
70	1	330813	ADPT ELB 4FP-6FJX90	**MOTOR**
71	1	330859	ADPT STR 4MP-4FP CHECK	**MOTOR (NOT PART OF HOSE KIT)**
73	1	330782	ADPT TEE 12MJ-12MJ-12FJX	
74	2	330783	WRAP SPIRAL 2.606 X 42 (YEL)	NOT SHOWN
75	1	330849	ADPT STR 4MBSPP-8MJ	**CASE DRAIN TO MOTOR**



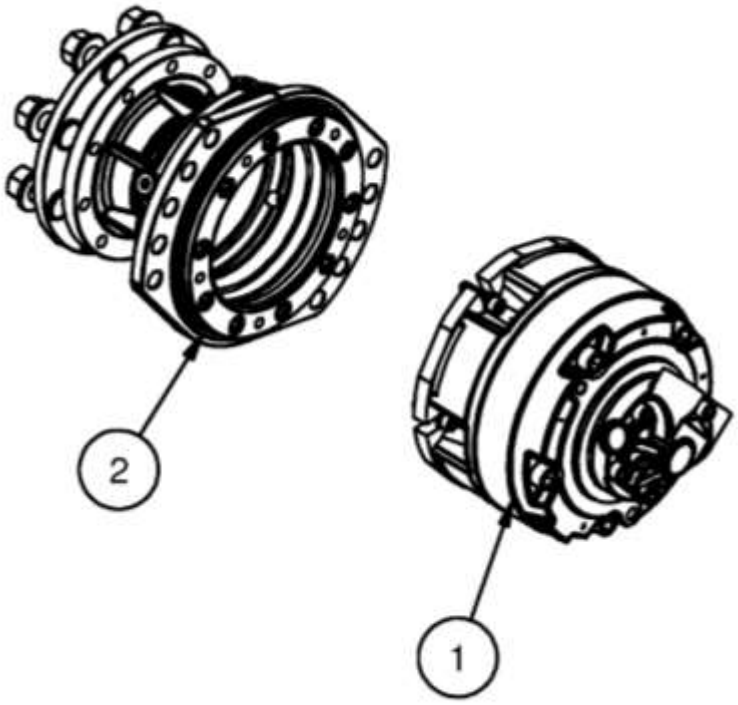


ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		319473	VALVE ASSM ROCK SAW CYL SECTION	
1	1	319470	VALVE ASSM ROCK SAW INLET	
2	2	319471	VALVE ASSM ROCK SAW CYL SECTION	
3	1	300982	VALVE CHECK 100PSI	
4	1	300986	LOGIC ELEMENT PILOTED 70PSI	
5	2	300987	VALVE CHECK 4PSI	
6	1	313141	ADPT STR 12MB-12MJ CHECK	
7	1	103431	ADPT STR 12MB-12MJ	
8	1	300985	VALVE RELIEF	
9	1	300984	VALVE RELIEF 2000PSI	
10	1	300983	ADPT STR 12MB-12MJ-.10 ORIFICE	
11	1	300955	WASHER E-COIL SPACER SP10	
12	2	314899	COIL VALVE 12V ECOIL CP	

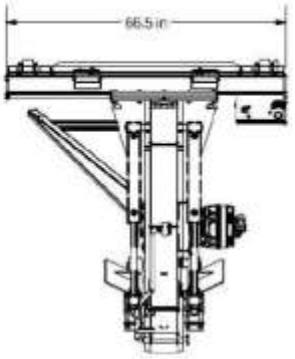


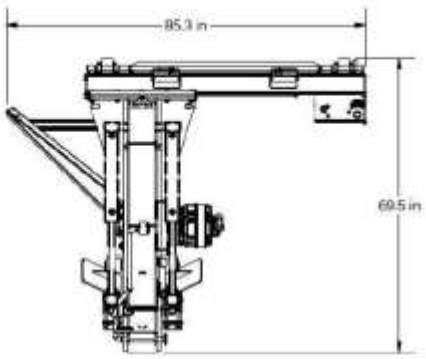
PARTS INFORMATION

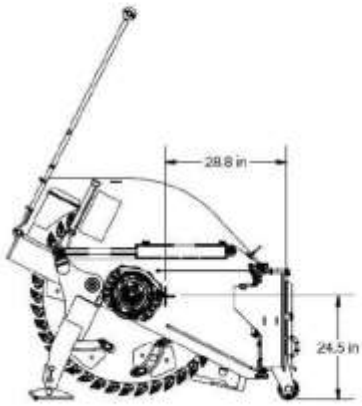
ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
		318970	MOTOR ASSM	**80/90 GEAR LUBE 21OZ**
1	1	318971	MOTOR ASSM 20.73 FS30	
2	1	318972	GEARBOX PSW67 5.05:1 FLG-MS08	



Rock Saw HD 18" Specifications	
Motor Specifications	
Radial Piston Motor	20.73 cu in
Planetary Gearbox	5.05:1 ratio
Rotational Speed @ 30 gpm	66 rpm
Torque @ 3000 psi	4165 ft-lbs
Maximum Flow Rate	60 gpm
Maximum Pressure	5000 psi
Maximum Power	80 hp
Maximum Torque	6640 ft-lb
Saw Specifications	
Cutter Head Diameter	48 in
Number of Teeth	54
Width of Cut	2 3/4" in
Depth of Cut	18 in
Operating Weight	2550 lbs







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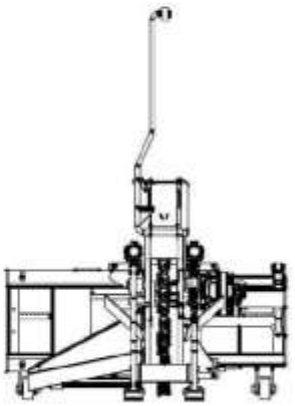

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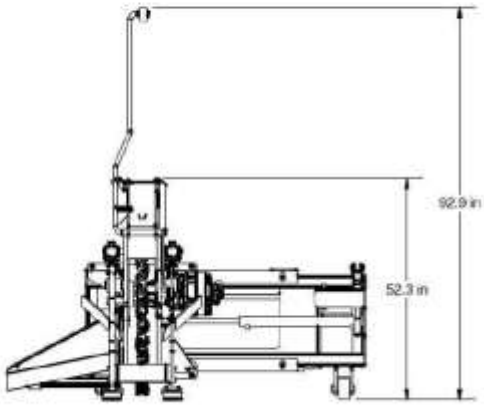

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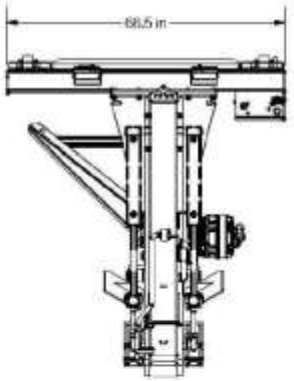
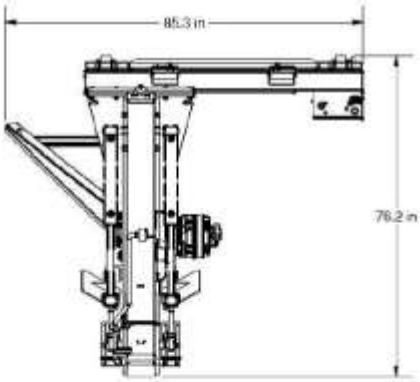
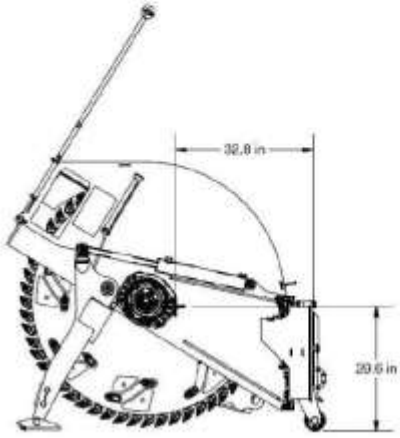
Rock Saw HD 24" Specifications	
Motor Specifications	
Radial Piston Motor	20.73 cu in
Planetary Gearbox	5.05:1 ratio
Rotational Speed @ 30 gpm	66 rpm
Torque @ 3000 psi	4165 ft-lbs
Maximum Flow Rate	60 gpm
Maximum Pressure	5000 psi
Maximum Power	80 hp
Maximum Torque	6640 ft-lb
Saw Specifications	
Cutter Head Diameter	60 in
Number of Teeth	72
Width of Cut	2 3/4" in
Depth of Cut	24 in
Operating Weight	3150 lbs







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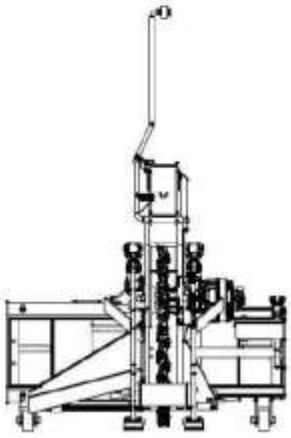

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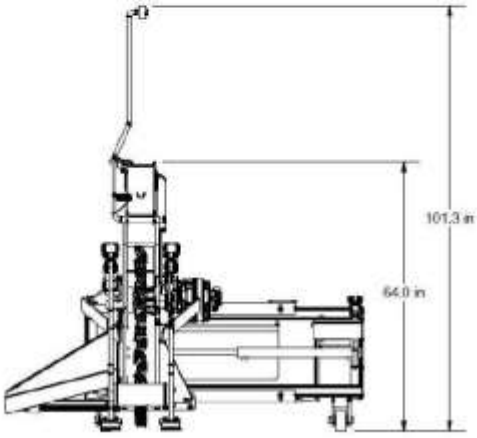

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BOLT TORQUE CHART

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 K = .15	Tightening Torque K = .20	Clamp Load (lbs)	Tightening Torque K = .15	Tightening Torque K = .20	Clamp Load (lbs)	Tightening Torque K = .15	Tightening Torque 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 ¼ 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

PROBLEMS	POSSIBLE CAUSE	POSSIBLE SOLUTION
 **Poor Rotation**	Worn pick holders. Excess material build-up on pick shank. Holder not properly aligned. Excessive machine speed.	Replace the worn holders. Clean holder & shank with solvent. Remove incorrect holder and reposition. Slow down the machine.
 **Excessive Steel Body Wear**	Caused by soft abrasive material. High rotational speed.	Consider using a larger diameter carbide tip base. Consider using a heavier body pick.
 **Extreme Carbide Tip Wear**	Hard material (aggregate) Heat build-up on the pick.	Consider using a larger carbide tip. Consider cooling picks with water.
 **Tip Fractures**	Extremely hard material (aggregate) Heat build-up on the pick. Improper pick installation. Poor rotation.	Consider using a larger carbide tip base diameter. Consider cooling picks with water. Use pick installation tool, rubber mallet, or copper hammer. See above instructions.

TROUBLESHOOTING

PROBLEMS	POSSIBLE CAUSE	POSSIBLE SOLUTION
Motor on the saw will not operate.	Auxiliary hoses not hooked up to the skid steer.	Engage Couplers
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
	Hydraulic motor damaged or seals blown.	Call service department for instructions.
	Skid steer auxiliary valve not engaged.	Engage auxiliary valve.
Cutter head rotates sluggishly.	Insufficient hydraulic flow from the skid steer.	Refer to skid steer's owner's manual.
	Damaged quick coupler.	Replace if necessary.
	Hydraulic motor damaged or seals blown.	Call service department for instructions.
	Oil filter on skid steer is dirty.	Refer to skid steer's owner's manual.
Leaking Oil.	Loose or damaged hydraulic line.	Tighten or replace.
	O-Rings on fittings damaged.	Replace if necessary.
	Hydraulic motor damaged or seals blown.	Call service department for instructions.
	Fittings loose or damaged.	Tighten or replace.
	Cylinder seals damaged.	Replace cylinder seals.
Insufficient power.	Insufficient hydraulic flow from the skid steer.	Refer to skid steer's owner's manual.
	Relief valve setting adjusted too low.	Refer to skid steer's owner's manual.
	Hydraulic motor damaged or seals blown.	Call service department for instructions.
	Oil filter on skid steer is dirty.	Refer to skid steer's owner's manual.
Cutter head rotates in the wrong direction.	Hoses from the valve to the motor incorrectly connected.	Switch hoses at the motor end.
Excessive vibration during cutting operation.	Picks are worn or broken.	Visually inspect the picks and replace as necessary.
	Picks contain flat spots or are not rotating freely.	Visually inspect the picks and replace as necessary.
	Insufficient down force due to incorrect operating procedure.	Refer to the Operating section of this manual.

PROBLEMS	POSSIBLE CAUSE	POSSIBLE SOLUTION
Excessive oil temperature.	Hydraulic oil level too low.	Refer to skid steer's owner's manual
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
	Hydraulic oil or oil filter in skid steer is dirty.	Refer to skid steer's owner's manual.
	Relief valve setting adjusted too low.	Refer to skid steer's owner's manual.
All hydraulic cylinders not functioning.	Blown fuse on skid steer.	Refer to skid steer's owner's manual.
	Damaged electrical wiring.	Test and replace if necessary.
A Hydraulic cylinder not operating.	Insufficient hydraulic flow from the skid steer.	Refer to skid steer's owner's manual.
	Solenoid valve spool bent.	Replace spool.
	Retaining nut on solenoid valve too tight.	Loosen nut.
	Cylinder rod bent.	Visually inspect the cylinder for damage.
	Cylinder seals damaged.	Replace cylinder seals.
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.
Hydraulic cylinders only operating in one direction.	Contaminants in the hydraulic system and solenoid valve.	Remove spool from solenoid valve and check for foreign material. Clean or replace.
	Damaged electrical wiring.	Remove spool from solenoid valve and check seals for damage. Replace if necessary.
	Solenoid valve spool bent.	Test and replace spool if necessary.
	Retaining nut on solenoid valve too tight.	Loosen nut.
	Air in the hydraulic cylinder.	Loosen a fitting on the cylinder and bleed the air out of the line.

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 manner

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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