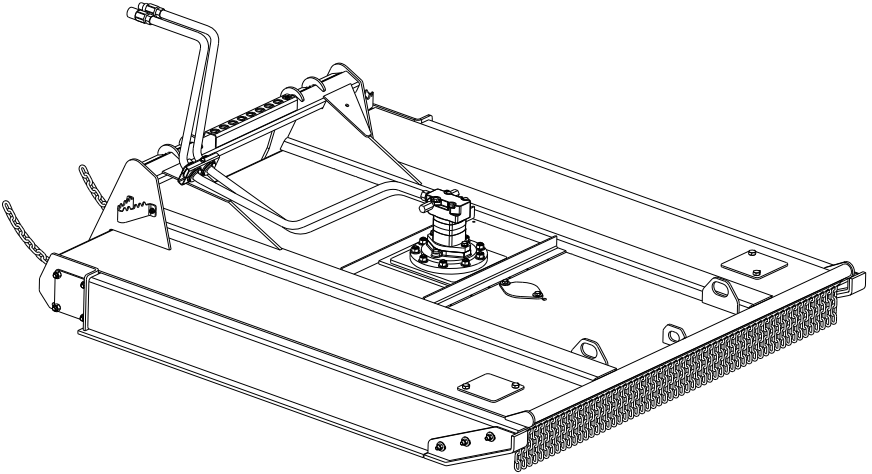


Rotary Brush Cutter



Model Number _____ RBV _____.

Serial Number _____.

Serial Number 104050 -119699
Manufacture Date Ending 01/09/17

Maximum Flow Rate _____ GPM _____.

Phone: 320-393-7080

10/5/10
Revised 1/13/15

RBV

Features of Virnig Mfg. Inc. Rotary Brush Cutter include:

- 4" diameter maximum cutting capacity.
- Two hydraulic motor options with flow rates covering 14-25 gpm.
- Standard dual hydraulic pressure relief valves with dynamic braking.
- 3500 psi maximum operating pressure.
- 1100 psi maximum back pressure.
- 1/2" x 4" single side, updraft blades.
- Standard large 3 blade circular flywheel for smoother operation.
- Standard replaceable front skid shoes.
- Standard spindle guard protects spindle output shaft seal.
- Recommended for skid loaders with a lift capacity over 1500 lb.

Initial Use

- Read and understand all warning information in this manual before operating this attachment.
- Check that quick-tach on frame fits onto skid loader properly. Pins must engage through 3/8" plates at bottom of quick-tach.
- Slowly roll back attachment. Make sure there is no interference between attachment and skid loader.
- Make sure hoses do not pinch during roll back.
- Attach Lift Limit Chains. (See details in "Operation" section of this manual.)
- Do not connect this attachment to high flow couplers, flow rate **cannot** exceed maximum flow rate noted on the label on the surface of the cutters deck.
- Start Rotary Brush Cutter at an idle, bring up to engine operating rpm, stop cutter (see "Operation" section of this manual) and check for oil leaks per instructions in "Maintenance" section of this manual.
- Never exceed the maximum attachment operating pressure of 3500 psi.

Operation

- Always follow safety and operating information in this manual.
- Always follow all safety and operating instructions of skid loader.
- Never remove material deflectors or warning labels.
- Never operate Rotary Brush Cutter unless you have been properly trained.
- Loader should be equipped with a shatterproof door for safe operation of Rotary Brush Cutter.
- Make sure all safety labels are in place, look in this manual for locations.
- Lift Limit Chains must be installed for safe operation of Rotary Brush Cutter. Both chains need to be attached to the loader. For loaders with one front tie down, run both chains to the one tie down. If the loader has two front tie downs, run one chain to each. (See picture below.) Chain length should be adjusted so the rear of the deck (near the loader) should not be allowed to raise higher than 12" above the ground. Both chains need to be adjusted to the same length to prevent unnecessary twisting of loader arms. The Rotary Brush Cutter should NEVER be operated with the deck at or above the lower level of the loader cab glass. Doing so creates a great risk of damage to the loader as well as injury or death of the operator.



Operation (cont.)

- Keep bystanders back 200 feet at all times. Do not operate near buildings, traffic, pets or livestock.
- Never allow riders on Rotary Brush Cutter, even when blades are not rotating.
- Check that all bolts are tight and that no parts are damaged. Make sure blades swing freely. Check blades for cracks or damage, replace as needed. Blades should always be replaced in sets. Never try to straighten or weld on blades.
- Never cut material larger than 4" diameter.
- Before cutting an area, thoroughly check for obstructions such as pipes, fence posts, wire/cable, rocks, etc. Remove obstructions if possible, flag any obstructions too large to move.
- Engage hydraulics at an idle, then bring loader to desired engine operating rpm. The Rotary Brush Cutter should be stopped before slowing engine rpm. It is equipped with dynamic braking and an anti-cavitation valve. Throttling down the loader before disengaging the hydraulics has a greater potential to damage the cutters hydraulic system than disengaging the hydraulics at operating rpm.
- If blade rotation does not match your preferred detent position, the couplers can be switched on the hoses.
- Use extreme care when cutting close to fences, ditches, large obstacles, and on hillsides.
- Do not operate on or drive across steep slopes.
- Stop and inspect entire unit for damage after striking any foreign objects. Replace or repair any damaged components before continuing.
- Before dismounting, lower lift arms to stops, place cutter flat on the ground, disengage hydraulics, stop engine, engage parking brake and make sure all rotation has stopped.
- Always relieve pressure before disconnecting hydraulic hoses.
- Clean any debris from attachment. Pay special attention to any debris in quick-tach area.
- Since the Rotary Brush Cutter can rotate in either direction, the operator must determine which direction the cutter is spinning. When looking top down on the deck, the Rotary Brush Cutter should spin in a counter clockwise direction. If, during the initial use, the Rotary Brush Cutter does not seem to have power, cuts poorly or easily stalls, the cutter is probably rotating in the incorrect direction. Change the direction of the cutter by reversing the direction of flow after bringing the unit to a complete stop.

Cutting Recommendations

- Continuous rotation of the blades is required to prevent overheating. If the cutter stalls, disengage hydraulics and remove cutter from material before restarting.
- Engage hydraulics at an idle. When blades are rotating smoothly, bring loader to engine operating rpm. Do not engage cutter into material to be cut until blades are running smoothly at engine operating rpm.
- If blades are slowing or loader engine rpm's are decreasing, decrease travel speed into material to be cut or take less than full width cuts to maintain blade speed.
- For tall grass and heavy vegetation, raise the back of the cutter 2" - 3" off of the ground to better allow material to exit the cutter. Place the front skid shoes 1" - 2" off of the ground and drive into material. Never drive with the front of the cutter raised to a height where your view is obstructed. Never raise the unit to a height to expose yourself or others to the rotating blades. If you can see the blades, the unit is raised too high.
- When cutting large brush/small trees up to 4" diameter, keep the back of the cutter at or near ground level and roll the front of the cutter so it is 12" - 24" above the ground. Drive slowly into the material. The tilt cylinders of the loader can be used to bend over small trees. As the tree bends over, the blades will cut it off. The tree can be mulched by rotating the front of the cutter upward and driving over it moving forward. The tree can be further mulched by rolling the front of the cutter downward near ground level and backing up. Repeat as needed. The back of the cutter should be at or near ground level.

Maintenance

*Before each use and after every 10 hours of operation

- Make sure all safety labels are in place, look in this manual for locations.
- Check lubricant level in Rotary Brush Cutter bearing housing by removing one of the two plugs on the top of the bearing housing. Lubricant level should be $\frac{3}{4}$ " – 1" below the top of the plug hole opening. Add lubricant as needed. Reinstall plug.
- If the Rotary Brush Cutter is equipped with the optional rear roller, grease the 2 roller mount bearings at rear of cutter.
- If the Rotary Brush Cutter is equipped with the optional front casters, grease the 4 fittings (2 located in the vertical spindles and 2 in the wheel pins).
- Check for loose, worn, or missing parts, repair or replace as needed.
- Check that all bolts are tight and that no parts are damaged. Pay special attention to the 8 bolts (Item #25) that hold the Blade Carrier Assembly (Item #34) to the Bearing Adapter (Item #33). If any of the 8 bolts are loose, remove, apply Loctite and re-install and torque to proper value. See "Bolt Torque" section in this manual for proper torque values.
- Make sure blades swing freely. Check blades for cracks or damage, replace as needed. Blades should always be replaced in sets. Never try to straighten or weld blades. Do not heat or pound on blades. Blades should be replaced if excessively nicked or worn. Bent blades need to be replaced immediately. Blade bolts and nuts MUST be replaced with the blades. Blades can be sharpened. Blades should be sharpened at the same time and same amount to maintain balance of the cutter. For best blade wear, do not sharpen blades to an edge, leave the blades $\frac{1}{32}$ " - $\frac{1}{16}$ " blunt.
- Remove any foreign debris such as string, wire, branches, etc. that may have wrapped around the flywheel or rear roller, if equipped.
- Inspect motor and bearing housing adapter, valve, hydraulic fittings, and hoses for leaks and damage. Replace as needed. Make sure skid loader is shut off and hydraulic pressure is relieved before checking for leaks. Never use hands to check for high pressure hydraulic leaks.
- The pressure relief valves require no maintenance. The valves are pre-set and require no adjustment. Changing settings may cause damage to the motor or change the rate the blades slow to a stop. Please call Virnig Mfg. Inc. with any questions or problems regarding the pressure relief valves.

Maintenance (cont.)

- If the Rotary Brush Cutter is still under warranty, contact your dealer before attempting any repairs. **Bearing housing adapters and motors that have been disassembled without prior approval will not be covered under warranty.** Motors and bearing housing adapters need to be intact for Virnig Mfg. Inc. to get any warranty reimbursement from the component manufacturer. If the component manufacturer declines warranty due to tampering or misuse, Virnig Mfg. Inc. reserves the right to void warranty as well.
- Contact your dealer for any required replacement parts.

*Every 50 hours of operation

- Thoroughly clean (power washing is recommended) both the topside and underside of the brush cutter deck. This will help identify any areas that may be damaged, broken or worn. Repair as necessary.

Blade Replacement Procedure

- Make sure hydraulics are disconnected from machine and deck is properly supported as you will need access to the bottom of the deck. The Rotary Brush Cutter is very heavy and steps need to be taken to make sure the deck is stable and secure before making any repairs.
- Loosen 1/2" bolts (Item #7) securing blade bolt access cover (Item #20), and swing cover out of the way. Spin flywheel until blade bolt appears in access hole.
- Loosen and remove the 1" nut (Item #17) retaining the blade. The square neck on the bolt (Item #12) will prevent the bolt from spinning. When the nut is removed, the blade (Item #21) should drop freely from the flywheel.
- Reinstall new blade and hardware (this step may require additional help) and torque to the specified torque (see "Bolt Torque" section). **(Note: There is a special washer (Item #37) that needs to be installed between the flywheel and nut.)**
- Repeat above steps for the remaining blades.
- Reinstall blade bolt access cover and tighten retaining hardware.

Blade Carrier Removal and Installation

- Make sure hydraulics are disconnected from machine and deck is properly supported as you will need access to the bottom of the deck. The Rotary Brush Cutter is very heavy and steps need to be taken to make sure the deck is stable and secure before making any repairs. The blade carrier weighs approximately 200 lb. and care needs to be taken when handling.
- From the underside of the deck, remove 6 of the 8 - 5/8" bolts (Item #25) that hold the blade carrier (Item #34) to the bearing adapter (Item #33); the 2 bolts left should be opposite each other. **Do not** remove all 8 bolts at this time.
- Support the blade carrier using blocking and remove the last 2 bolts that hold the blade carrier to the bearing adapter. Blade carrier should fall free of the bearing adapter. The use of a floor jack is recommended to finish removal of the blade carrier.
- To reinstall, the blade carrier should be positioned under the bearing adapter so the bolt holes are aligned. Using a jack, lift the blade carrier until it comes in contact with the bearing adapter. Block up blade carrier and remove jack. Install at least 2 bolts opposite each other to hold the flywheel in position. Remove blocking and install the remaining 6 bolts. Tighten and torque (see "Bolt Torque" section). It is recommend to use Locktite on the 8 bolts (Item #25) that hold the blade carrier to the bearing adapter.

Bolt Torque

1/2" Bolts	Front skid shoes: Motor to bearing adapter: 70-75 ft.-lb.
5/8" Bolts	Hold flywheel together: Hold bearing adapter to deck: Hold optional front casters to deck: Hold optional rear roller to deck: 145 - 155 ft.-lb.
5/8" Bolts, Grade 8	Hold flywheel to bearing adapter: 160 – 170 ft.-lb.
1" Blade Bolt Nut	Holds blades to flywheel: 425-450 ft.-lb.

Warning Labels on Rotary Brush Cutter Attachment



This label is located on top and sides of deck.

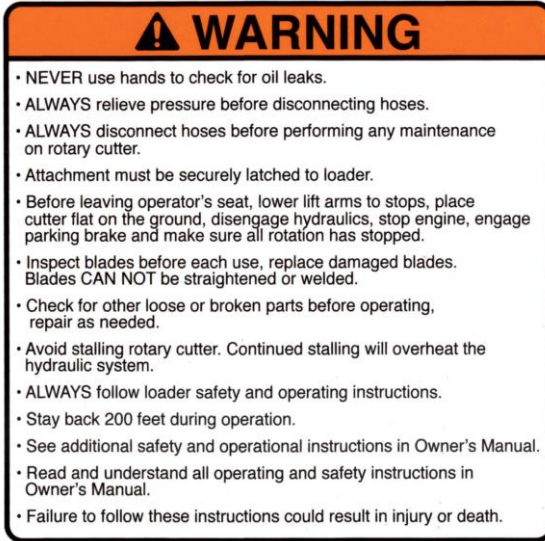
This label has several important instructions for safe operation regarding flying object hazards and cutting hazards.



This label is located on top and sides of deck.

All bystanders must stay clear during operation.

Warning Labels on Rotary Brush Cutter Attachment (cont.)



This label is located on the frame near the quick-tach.

This label has several important instructions that must be followed for safe operation of this attachment.



This label is located on the frame near the quick-tach.

Lift Limit Chains must be properly installed for safe operation of this attachment. (See additional information in this manual.)

Warning Labels on Rotary Brush Cutter Attachment (cont.)

18 GPM MAX

25 GPM MAX

or

This label is located on the top of the deck facing the operator.
This label indicates the maximum flow rate for this attachment.

Blade Tip Speeds

Blade tip speeds at specified flow rates in gallons per minute (gpm).
Blade tip speeds listed in feet per minute.

Standard Flow Models		
MODEL	14 gpm Minimum	18 gpm Maximum
RBV60-18	10,367	13,329
RBV66-18	11,404	14,662
RBV72-18	12,440	15,995
RBV78-18	13,477	17,328
MODEL	18 gpm Minimum	25 gpm Maximum
RBV60-25	10,534	14,631
RBV66-25	11,588	16,094
RBV72-25	12,641	17,557
RBV78-25	13,695	19,020

Rotary Brush Cutter (RBV) Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	1003PP	8	1/2"-13 REVERSE LOCK NUT
2	1008PP	24	5/8"-11 TOP LOCK NUT
3	1083PP	2	3/8" USS FLAT WASHER
4	1089PP	4	3/8"-16 X 1" LG CARRIAGE BOLT
5	5148PP	10	1/2" USS FLAT WASHER
6	8866PP	2	1/2" -13 X 1 3/4" LG HHCS GR8
7	5226PP	10	1/2"-13 X 1 1/2" LG HHCS
8	9469VP	2	PALLET FORK STEP
9	6140PP	7	3/8"-16 TOP LOCK FLANGE NUT
10	6734PP	1	COUPLER FEMALE 12FB
11	6735PP	1	COUPLER MALE 12FB
12	7249PP	3	BRUSH CUTTER BLADE BOLT
13	7273VW	1	FRONT SKID WELDMENT LH
14	7276VW	1	FRONT SKID WELDMENT RH
A 15	7327PP	--	5/16" X 5 LINK CHAIN GRADE 30
16	7328PP	2	3/8" X 42" LG CHAIN GRADE 80
17	7330PP	3	1"-14 TOP LOCK
18	7335PP	2	3/8"-16 X 1 1/2" LG HHCS
A 19	-----	1	CHAIN GUARD SUPPORT ROD
20	7337VP	1	BLADE BOLT ACCESS COVER
A 21	-----	3	BRUSH CUTTER BLADE
22	7440VP	2	BRUSH CUTTER ROLLER CAP PLATE
23	7479VP	2	LIFT LIMIT RETAINER PLATE
24	7486PP	9	5/8"-11 X 3" LG HHCS
25	9051PP	8	5/8"-10 X 2" LG HHCS GR8
26	7726PP	1	3/4" HOSE CLAMP ASSY STANDARD
27	10256PP	1	3/8"-16 X 4 " LG HHCS
28	7730PP	2	HYD HOSE 3/4" X 120" LG 10MB TO 12MB
29	7778PP	12	5/8"-11 X 1 1/2" LG HHCS
30	7780PP	1	GASKET STANDARD FLOW MOTORS
A 31	-----	1	HYDRAULIC MOTOR STANDARD FLOW
32	7957PP	9	5/8" SAE FLAT WASHER
33	9034PP	1	BEARING ADAPTER RBV STD FLOW
A 34	-----	1	BLADE CARRIER ASSEMBLY
35	8699VP	2	BRUSH CUTTER CASTER COVER
A 36	-----	1	RBV DECK WELDMENT
37	9340PP	3	1" DIAMETER NORD-LOCK WASHER
38	8712PP	2	1/2" LOCK WASHER HIGH ALLOY
39	-----	--	80-90W GEAR OIL (AS REQUIRED)
40	9837VW	1	BRUSH CUTTER SPINDLE GUARD WDT
41	7790PP	3	5/8"-11 X 2" LG CB

A - See Table 1.

Rotary Brush Cutter (RBV) Parts List (cont.)

Table 1

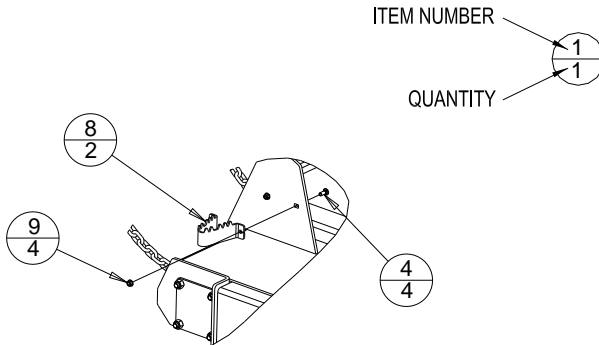
MODEL		RBV60	RBV66	RBV72	RBV78
RBV DECK WELDMENT		8703VW	8706VW	8701VW	8709VW
BLADE CARRIER ASSEMBLY		8715VA	8568VA	8568VA	8568VA
NO. OF CHAINS		48	51	57	60
CHAIN GUARD SUPPORT ROD		7435VP	7385VP	7336VP	7419VP
BRUSH CUTTER BLADE		7340PP	7340PP	7341PP	7342PP
B BLADE REPLACEMENT KIT		CBK60	CBK66	CBK72	CBK78
C OPTIONAL REAR ROLLER KIT		BCR60	BCR66	BCR72	BCR78
D OPTIONAL CASTERS		BCC			
HYDRAULIC MOTOR	15-18 gpm	7782PP			
STANDARD FLOW	18-25 gpm	7783PP			

B - Blade kits contain 3 each of blade, bolt, washer, and nut.

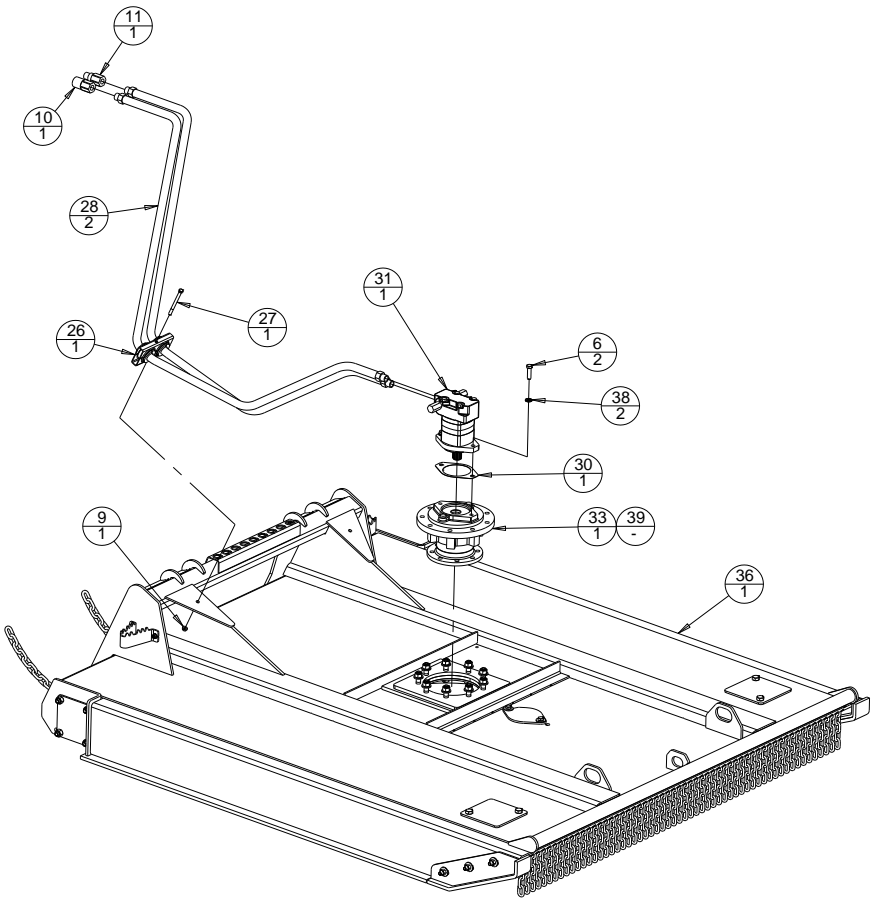
C - Optional Rear Roller Kit contains roller, 2 bearings and mounting hardware.

D - Optional Casters include all required mounting hardware, sold as a pair.

Step Assembly

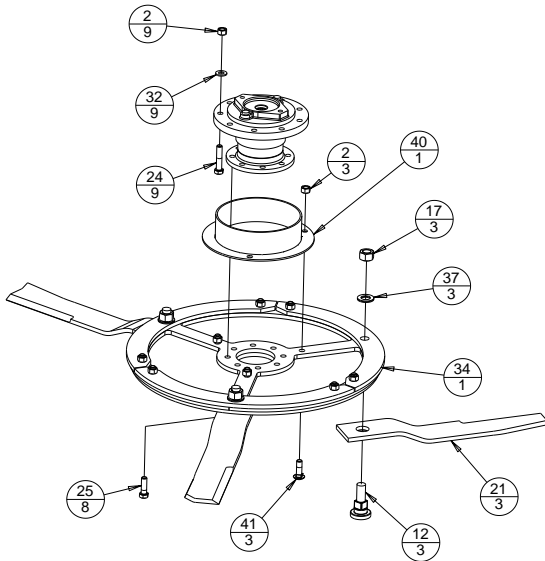


Hydraulic Component Assembly



Note: Apply liquid gasket to Item #6 prior to assembly.

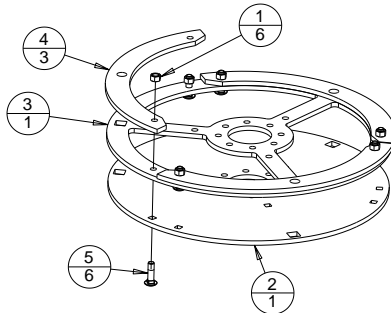
Drive and Blade Assembly



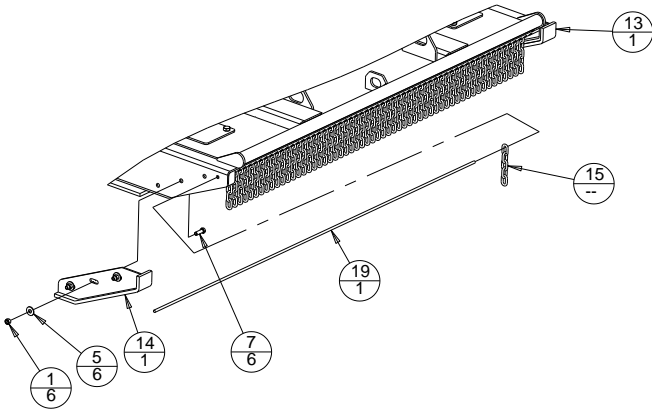
Note: Apply Locktite to Item #25 prior to assembly.

Blade Carrier Assembly

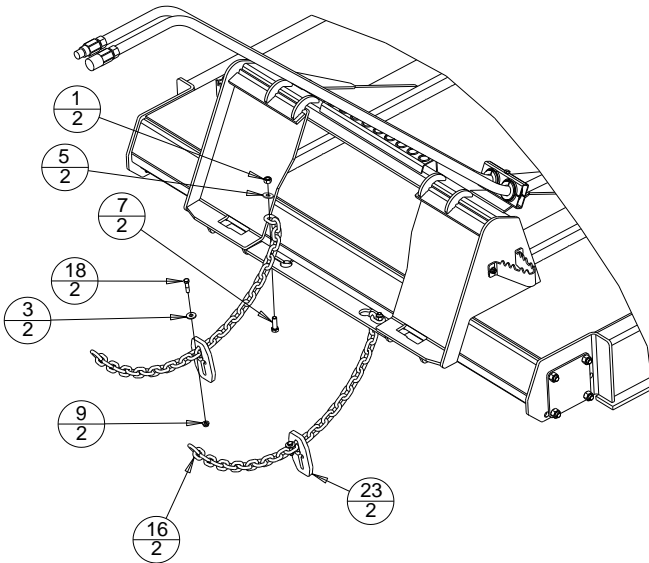
ITEM	PART NO.	QTY	DESCRIPTION
1	1008PP	6	5/8"-11 TOP LOCK NUT
2	8569VP	1	LOWER BLADE CARRIER PLATE
	8716VP		60" LOWER BLADE CARRIER PLATE
3	8570VP	1	MIDDLE BLADE CARRIER PLATE
	8717VP		60" MIDDLE BLADE CARRIER PLATE
4	7285VP	3	UPPER BLADE CARRIER PLATE
	7439VP		60" UPPER BLADE CARRIER PLATE
5	7334PP	6	5/8"-11 X 2 1/4" LG CB



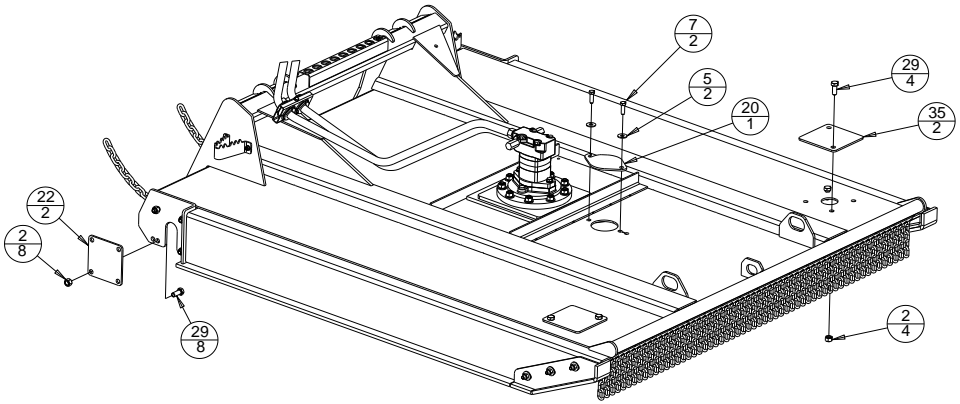
Skid Shoe and Chain Assembly



Lift Limit Chain Assembly

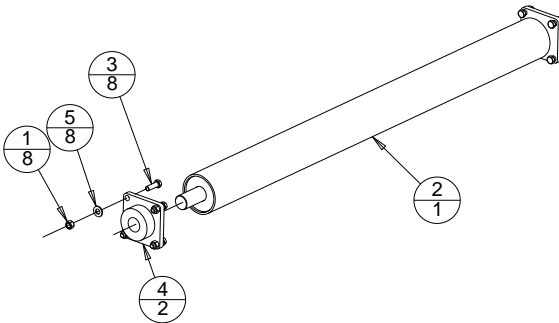


Access Cover Assembly



Optional Roller Assembly

ITEM	PART NO.	QTY	DESCRIPTION
1	1008PP	8	5/8"-11 TOP LOCK NUT
2	7431WW	1	60" BRUSH CUTTER ROLLER WDT
	7381WW		66" BRUSH CUTTER ROLLER WDT
	7277WW		72" BRUSH CUTTER ROLLER WDT
	7415WW		78" BRUSH CUTTER ROLLER WDT
3	7719PP	8	5/8"-11 X 2" LG HHCS
4	7773PP	2	2" BEARING W/4 HOLE FLANGE
5	7957PP	8	5/8" SAE FLAT WASHER



Optional Front Caster Assembly

ITEM	PART NO.	QTY	DESCRIPTION
1	1008PP	8	5/8"-11 TOP LOCK NUT
2	6863PP	2	7/16" X 1-3/4" LG LYNCH PIN
3	7719PP	8	5/8"-11 X 2" LG HHCS
4	1094PP	8	1 1/4" X 10GA MACH BUSHING
5	1095PP	4	1 1/4" EXTERNAL SNAP RING
6	1111PP	8	1 1/4" DIA X 1 9/16" LG BUSH
7	1034PP	4	1/4"-28 STRAIGHT GREASE ZERK
8	2137VP	2	CYLINDER PIN
9	8725VP	2	CASTER WHEEL COLLAR PLATE
10	8724VW	2	CASTER WHEEL LOWER MOUNT WDT
11	8720VW	2	CASTER WHEEL SWIVEL WELDMENT
12	8727VW	2	CASTER WHEEL WELDMENT

Quantities listed above are for a pair (Quantity 2) of casters.

