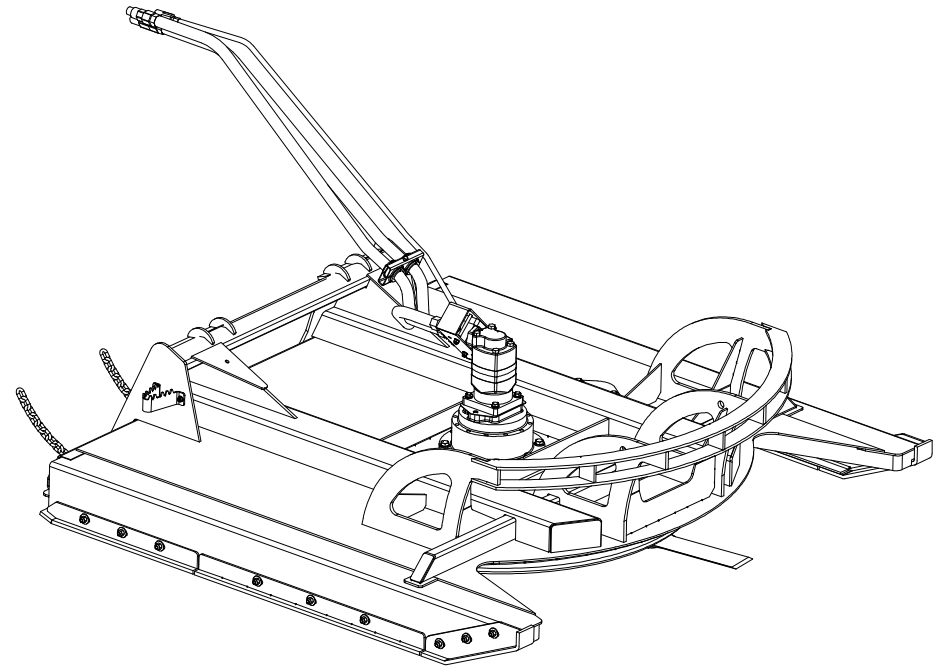


Industrial Rotary Cutter



Model Number IRC.

Serial Number _____.

Maximum Flow Rate GPM.

Phone: 320-393-7080

1/6/11
Revised 6/25/13

IRC

Features of Virnig Mfg. Inc. Industrial Rotary Cutter includes:

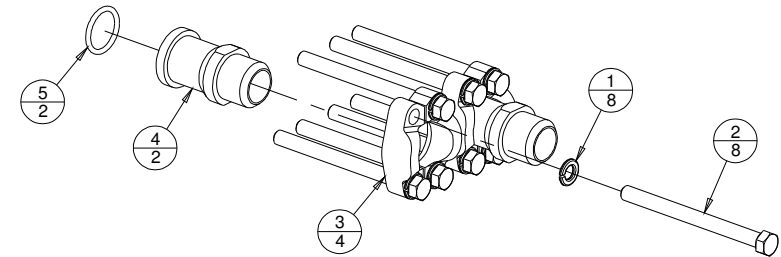
- 6" diameter maximum cutting capacity.
- Three hydraulic motor options with flow rates covering 20-42 gpm.
- Standard dual hydraulic pressure relief valves with dynamic braking.
- Standard flow maximum operating pressure of 3500 psi.
- High flow maximum operating pressure of 4000 psi.
- 5/8" x 5" double sided blades.
- Large 4 blade heavy duty circular flywheel for smoother operation.
- Standard replaceable skid shoes.
- Recommended for skid loaders with a lift capacity over 2200 lb.

Initial Use

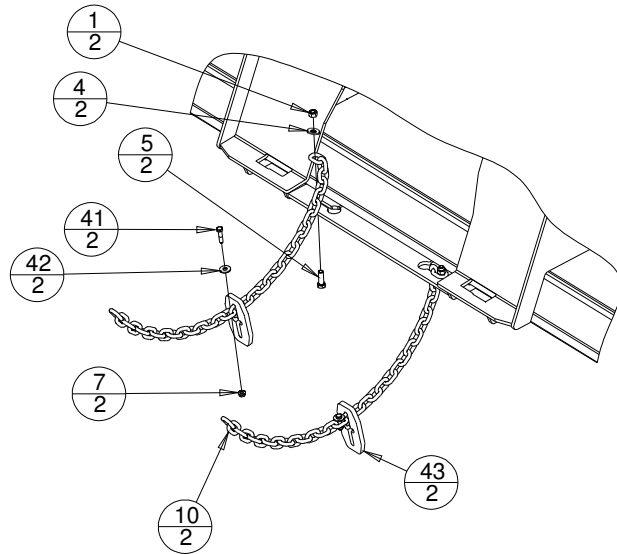
- Read and understand all warning information in this manual before operating this attachment.
- Check that quick-tach on frame fits onto skid loader properly. Pins must engage through 3/8" plates at bottom of quick-tach.
- Slowly roll back attachment. Make sure there is no interference between attachment and skid loader.
- Make sure hoses do not pinch during roll back.
- Attach Lift Limit Chains. (See details in "Operation" section of this manual.)
- Flow rate **cannot** exceed maximum flow rate noted on the label on the surface of the cutter's deck.
- Start the Industrial Rotary 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.
- Maximum attachment operating pressure is 3500 psi for standard flow and 4000 psi for high flow. Pressures in excess of maximums may generate additional heat and shorten component life.
- Use of supplied case drain line is highly recommended on the High Flow models. The use of the case drain line will greatly increase motor life.

Hydraulic Mounting Kit

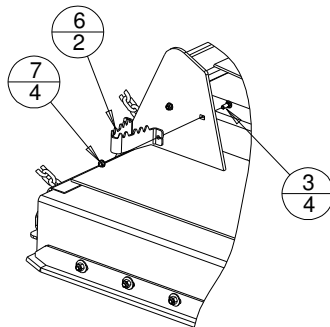
ITEM	PART NO.	QTY	DESCRIPTION
1	1075PP	8	3/8" LOCK WASHER
2	7971PP	8	3/8" NC x 4 1/2" Lg HHCS, Grade 8
3	7972PP	4	Hydraulic Flange, High Flow, #12
4	7973PP	2	Adapter, High Flow
	9184PP		Flange Adapter, #12 JIC Male
5	7974PP	2	O-Ring, High Flow Adapter



Lift Limit Chain Assembly



Step Assembly



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 Industrial Rotary Cutter unless you have been properly trained.
- Loader should be equipped with a shatterproof door for safe operation of the Industrial Rotary Cutter.
- Make sure all safety labels are in place. Refer to this manual for locations.
- Lift Limit Chains must be installed for safe operation of the Industrial Rotary 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 Industrial Rotary 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.

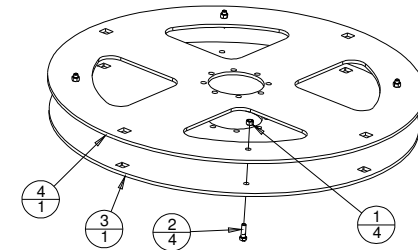


Operation (cont.)

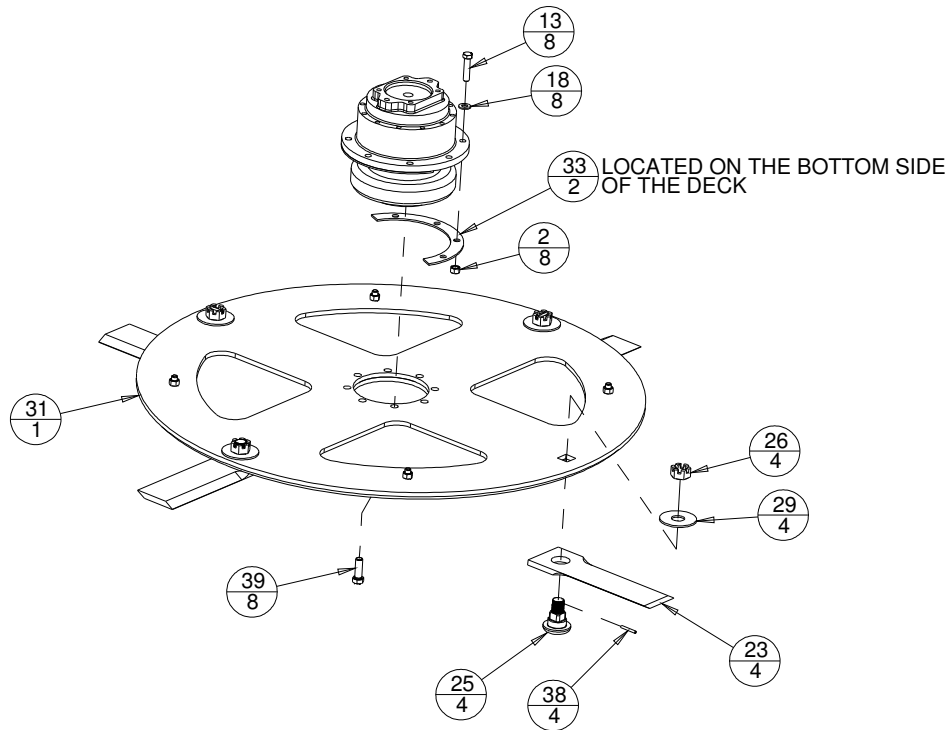
- Keep bystanders back 200 feet at all times. Do not operate near buildings, traffic, pets or livestock.
- Never allow riders on the Industrial Rotary Cutter, even when blades are not rotating.
- Check that all bolts are tight and that no parts are damaged. Make sure blades swing freely. Check blades 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 6" diameter. Use extreme caution when cutting large trees to avoid them falling onto loader/operator.
- 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 Industrial Rotary Cutter can rotate in either direction, the operator must determine which direction the cutter is spinning. When looking top down on the deck, the Industrial Rotary Cutter should spin in a counter clockwise direction. If, during the initial use, the Industrial Rotary 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.

Blade Carrier Assembly

ITEM	PART NO.	QTY	DESCRIPTION
1	1011PP	4	3/4"-10 TOP LOCK NUT
2	1071PP	4	3/4"-10 X 2 1/4" LG HHCS
3	8943VP	1	60" IRC FLYWHEEL SMALL
	8641VP		72" IRC FLYWHEEL SMALL
	8674VP		78" IRC FLYWHEEL SMALL
4	8944VP	1	60" IRC FLYWHEEL LARGE
	8642VP		72" IRC FLYWHEEL LARGE
	8675VP		78" IRC FLYWHEEL LARGE



Drive and Blade Assembly



BLADE KIT INCLUDES QUANTITY 4 EACH OF ITEMS 23, 25, 26 AND 38. (SEE TABLE 1)

Note: Apply Loctite to Item #39 prior to assembly.

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 6" 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. Refer to this manual for locations.
- Check lubricant level in Industrial Rotary Cutter bearing housing by removing one of the two plugs on the top of the bearing housing. The oil level should be 2 1/2"-3" below the bottom of the plug hole threads. If the oil level is lower than recommended, fill to approximately 2 1/2"-3" below the bottom of the plug hole threads. Reinstall plug.
- Check for loose, worn, or missing parts, repair or replace as needed.

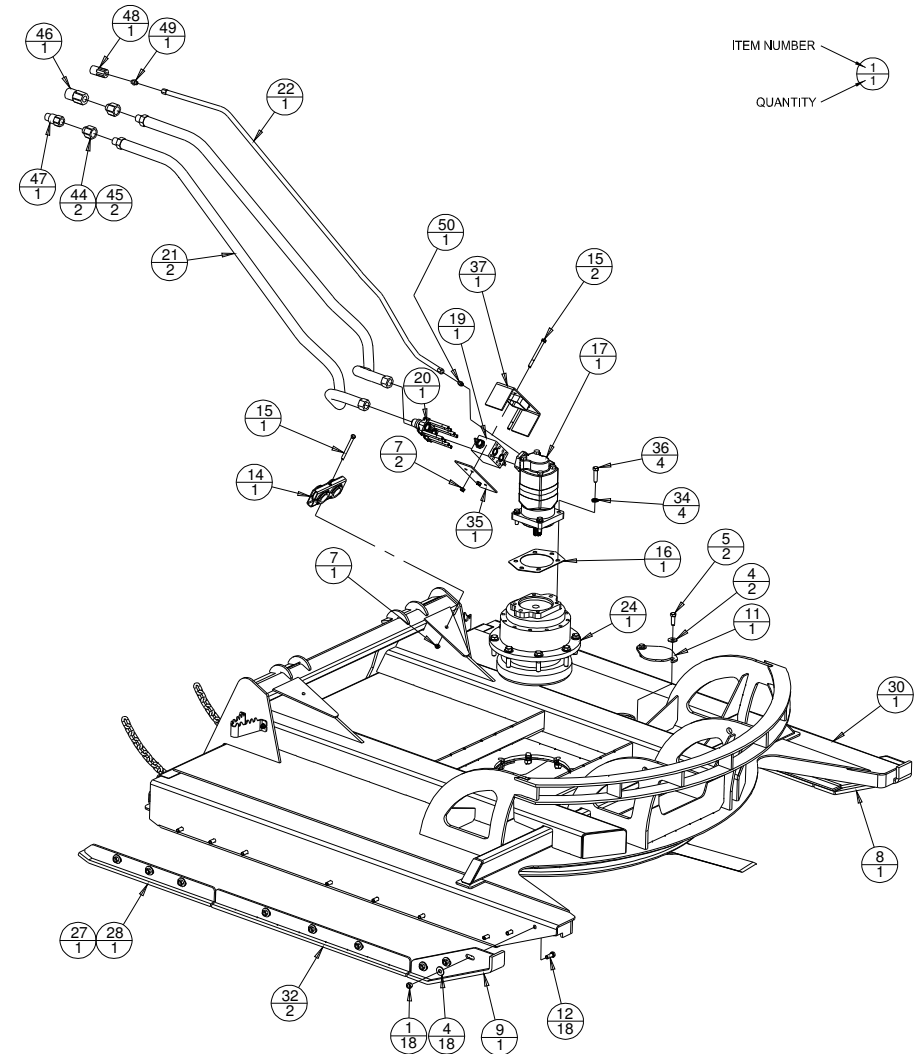
Maintenance (cont.)

- Check that all bolts are tight and that no parts are damaged. Pay special attention to the 8 bolts (Item #39) that hold the Blade Carrier Assembly (Item #31) to the Bearing Adapter (Item #24). 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, nuts and coil roll pins 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 1/32" - 1/16" blunt.
- Remove any foreign debris such as string, wire, branches, etc. that may have wrapped around the flywheel.
- 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.
- If the Industrial Rotary 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.

Hydraulic Component Assembly



Note: Apply liquid gasket to Item #36 prior to assembly.

Industrial Rotary Cutter (IRC) Parts List (cont.)

Table 1

MODEL	IRC60	IRC72	IRC78
IRC DECK WELDMENT	8927VW	8614VW	8658VW
CENTER WEAR EDGE WELDMENT	8938VW	8620VW	8669VW
BLADE CARRIER ASSEMBLY	8928VA	8616VA	8659VA
INDUSTRIAL ROTARY CUTTER BLADE	8947PP	8613PP	8613PP
IRC BLADE REPLACEMENT KIT	IBK60	IBK72	IBK78
1/2" USS FLAT WASHER	22	24	24
1/2"-13 X 1 1/2" LG HHCS	4	6	6
BLADE BOLT ACCESS COVER	1	2	2
HYDRAULIC MOTOR	STANDARD FLOW	20-25 gpm	7784PP
	HIGH FLOW	20-27 gpm	7784PP
		27-32 gpm	9183PP
		32-42 gpm	7785PP
HYDRAULIC MOUNTING KIT	FOR 3/4" HOSE	9163VA	
	FOR 1" HOSE	7970VA	
HYDRAULIC HOSE	3/4" HOSE	9447PP	
	1" HOSE	7985PP	
HYDRAULIC HOSE CLAMP ASSEMBLY	FOR 3/4" HOSE	7726PP	
	FOR 1" HOSE	7976PP	

Note: Blade kit contains 4 each of blade, bolt, nut and roll pin.

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 Industrial Rotary Cutter is very heavy and steps need to be taken to make sure the deck is stable and secure before making any repairs.
- The following procedure will work for either installing a new blade kit or flipping the existing blade kit. When flipping the blades, save all hardware as it will need to be reused.
- Loosen 1/2" bolts (Item #5) securing blade bolt access cover (Item #11), and swing cover out of the way.
- Rotate the flywheel so that a blade is located at the front of the deck. With a punch, remove the 1/4" coil roll pin (Item #38) from the blade bolt (Item #25). Repeat for the remaining 3 blades.
- Rotate the flywheel so that a blade nut is located below the access hole. Loosen the 1 1/4" nut (Item #26) retaining the blade. The square neck on the bolt (Item #25) will prevent the bolt from spinning. After the nut is loose, repeat for the other 3 blades. Rotate the flywheel so that a blade is located at the front of the cutter and finish removal of the blade.
- Reinstall new blade (or flip existing), making sure the 3/16" thick washer (Item #29) is installed on the top side of the flywheel and secure with 1 1/4" nut. The remaining 3 blades can be removed and reinstalled in a similar manner.
- Torque the 1 1/4" nut to specified torque (see "Bolt Torque" section) through the access hole. Tighten beyond the specified torque value so that the hole in the bolt lines up with a notch in the nut. Repeat for all remaining blades.
- Accessing the blades from the front of the cutter, reinstall the coil roll pins for each of the 4 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 Industrial Rotary 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 between 400 and 600lb., depending on model width and care needs to be taken when handling.
- From the underside of the deck, remove 6 of the 8 – 3/4" bolts (Item #39) that hold the blade carrier (Item #31) to the bearing adapter (Item #24); the 2 remaining bolts left should be opposite each other. **Do not** remove all 8 bolts at this time.

Blade Carrier Removal and Installation (cont.)

- 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.
- 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; it would be best to install 2 bolts opposite each other. Remove blocking and install the remaining 6 bolts. Tighten and torque (see "Bolt Torque" section). It is recommend to use Loctite on the 8 bolts (Item #39) that hold the blade carrier to the bearing adapter.

Bolt Torque

- 1/2" Bolts Skid shoes:
 Motor to bearing adapter: 70-75 ft.-lb.
- 5/8" Bolts Hold flywheel together:
 Hold bearing adapter to deck: 145 - 155 ft.-lb.
- 3/4" Bolts, Grade 8 Hold flywheel to bearing adapter: 275 - 300 ft.-lb.
- 1 1/4" Blade Bolt Nut Holds blades to flywheel: 425-450 ft.-lb.

Industrial Rotary Cutter (IRC) Parts List (cont.)

ITEM	PART NO.	QTY	DESCRIPTION
38	9085PP	4	1/4 X 2" LG COIL ROLL PIN
39	9166PP	8	3/4"-10 X 2 1/4" LG HHCS GR8
40	-----	-	80W-90 GEAR OIL (AS REQUIRED, NOT SHOWN)
41	7335PP	2	3/8"-16 X 1 1/2" LG HHCS
42	1083PP	2	3/8" USS FLAT WASHER
43	7479VP	2	LIFT LIMIT RETAINER PLATE
B,E	44	2	ADAPTER 12MB TO 16FB
C,E	45	2	ADAPTER 16MB TO 12FB
D	46	1	6734PP COUPLER FEMALE 12FB
	7978PP COUPLER FEMALE 12FB 5/8" BODY		
	7980PP COUPLER FEMALE 16FB 3/4" BODY		
D	47	1	6735PP COUPLER MALE 12FB
	7979PP COUPLER MALE 12FB 5/8" BODY		
	7981PP COUPLER MALE 16FB 3/4" BODY		
D	48	1	7982PP COUPLER FEMALE CASE DRAIN 3/8"
			7983PP COUPLER MALE CASE DRAIN 3/8"
			9448PP MALE COUPLER CASE DRAIN 1/4"
			9449PP FEMALE COUPLER CASE DRAIN 1/4"
D	49	1	7796PP ADAPTER 6MJ TO 6MB
			1145PP ADAPTER 6MJ TO 8MB
	50	1	7984PP ADAPTER 6MJ TO 4MB

A - See Table 1.

B - Used with 12FB Threaded Couplers and 1" hose.

C - Used with 16FB Threaded Couplers and 3/4" hose.

D - Brush Cutter supplied with one of each.

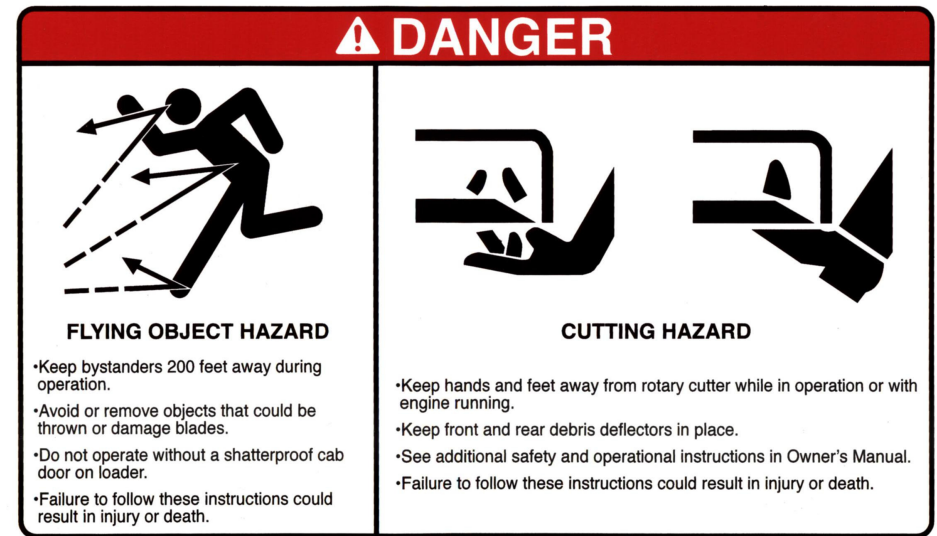
E - May not be required depending on hose/coupler combination.

Note: Case drain only used on high flow cutters.

Industrial Rotary Cutter (IRC) Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	1003PP	20	1/2"-13 REVERSE LOCK NUT
2	1008PP	8	5/8"-11 TOP LOCK NUT
3	1089PP	4	3/8"-16 X 1" LG CARRIAGE BOLT
A 4	5148PP	--	1/2" USS FLAT WASHER
A 5	5226PP	--	1/2"-13 X 1 1/2" LG HHCS
6	9469VP	2	PALLET FORK STEP
7	6140PP	9	3/8"-16 TOP LOCK FLANGE NUT
8	7273VW	1	FRONT SKID WELDMENT LH
9	7276VW	1	FRONT SKID WELDMENT RH
10	7328PP	2	3/8" X 42" LG CHAIN GRADE 80
A 11	7337VP	--	BLADE BOLT ACCESS COVER
12	7487PP	18	1/2"-13 X 1 1/4" LG HHCS
13	7718PP	8	5/8"-11 X 2 3/4" LG HHCS
A 14	-----	1	HOSE CLAMP ASSEMBLY
15	7729PP	3	3/8"-16 X 4 1/2" LG HHCS
16	7781PP	1	GASKET HIGH FLOW MOTORS
A 17	-----	1	HYDRAULIC MOTOR
18	7957PP	8	5/8" SAE FLAT WASHER
19	7969PP	1	MANIFOLD CROSS PORT RELIEF
A 20	-----	1	HYDRAULIC MOUNTING KIT
A 21	-----	2	HYDRAULIC HOSE, 4000 PSI
22	7986PP	1	HYD HOSE 3/8" X 120" LG 6FJX TO 6FJX
A 23	-----	4	INDUSTRIAL ROTARY CUTTER BLADE
24	8617PP	1	BEARING ADAPTER IRC
25	8618PP	4	IRC BLADE BOLT 1 1/4"
26	8619PP	4	1 1/4" CASTLE NUT
27	8622VW	1	IRC REAR WEAR EDGE WELDMENT LH
28	8623VW	1	IRC REAR WEAR EDGE WELDMENT RH
29	8643VP	4	IRC FLYWHEEL SPACER
A 30	-----	1	IRC DECK WELDMENT
A 31	-----	1	IRC BLADE CARRIER ASSEMBLY
A 32	-----	2	CENTER WEAR EDGE
33	8683VP	2	BEARING ADAPTER RETAINER PLATE
34	8712PP	4	1/2" LOCK WASHER HIGH ALLOY
35	8864VP	1	HF RBV VALVE BLOCK COVER LOWER
36	8866PP	4	1/2" -13 X 1 3/4" LG HHCS GR8
37	8868VW	1	HF VALVE BLOCK COVER WELDMENT

Warning Labels on Industrial Rotary Cutter Attachment

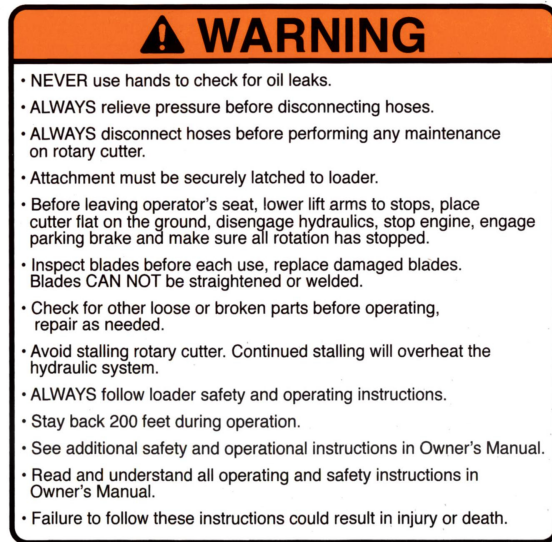


This label is located on top of deck in 3 locations. Label has several important instructions for safe operation regarding flying object hazards and cutting hazards.



This label is located on top and sides of deck. All bystanders must stay clear during operation.

Warning Labels on Industrial Rotary Cutter Attachment (cont.)

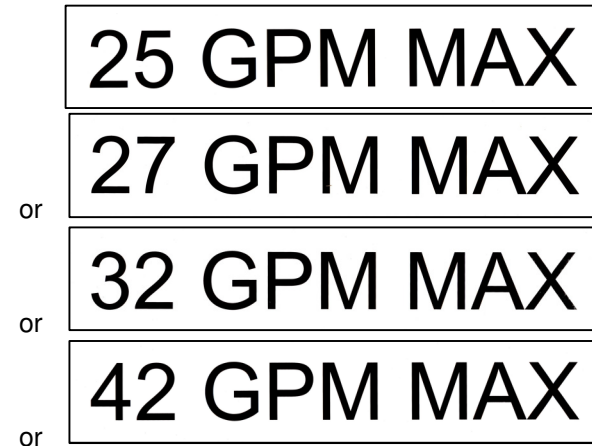


This label is located on the frame, near the quick-tach.
This label has several important instructions that must be followed for safe operation of this attachment.



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 Industrial Rotary Cutter Attachment (cont.)



This label is located on 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	20 gpm Min	25 gpm Max
IRC60-25	9,186	11,483
IRC72-25	11,023	13,779
IRC78-25	11,942	14,928
High Flow Models		
MODEL	20 gpm Min	27 gpm Max
IRC60-HF27	9,186	12,401
IRC72-HF27	11,023	14,882
IRC78-HF27	11,942	16,122

High Flow Models		
MODEL	27 gpm Min	32 gpm Max
IRC60-HF32	9,896	11,729
IRC72-HF32	11,875	14,074
IRC78-HF32	12,865	15,247
High Flow Models		
MODEL	32 gpm Min	42 gpm Max
IRC60-HF42	9,757	12,807
IRC72-HF42	11,709	15,386
IRC78-HF42	12,685	16,649