

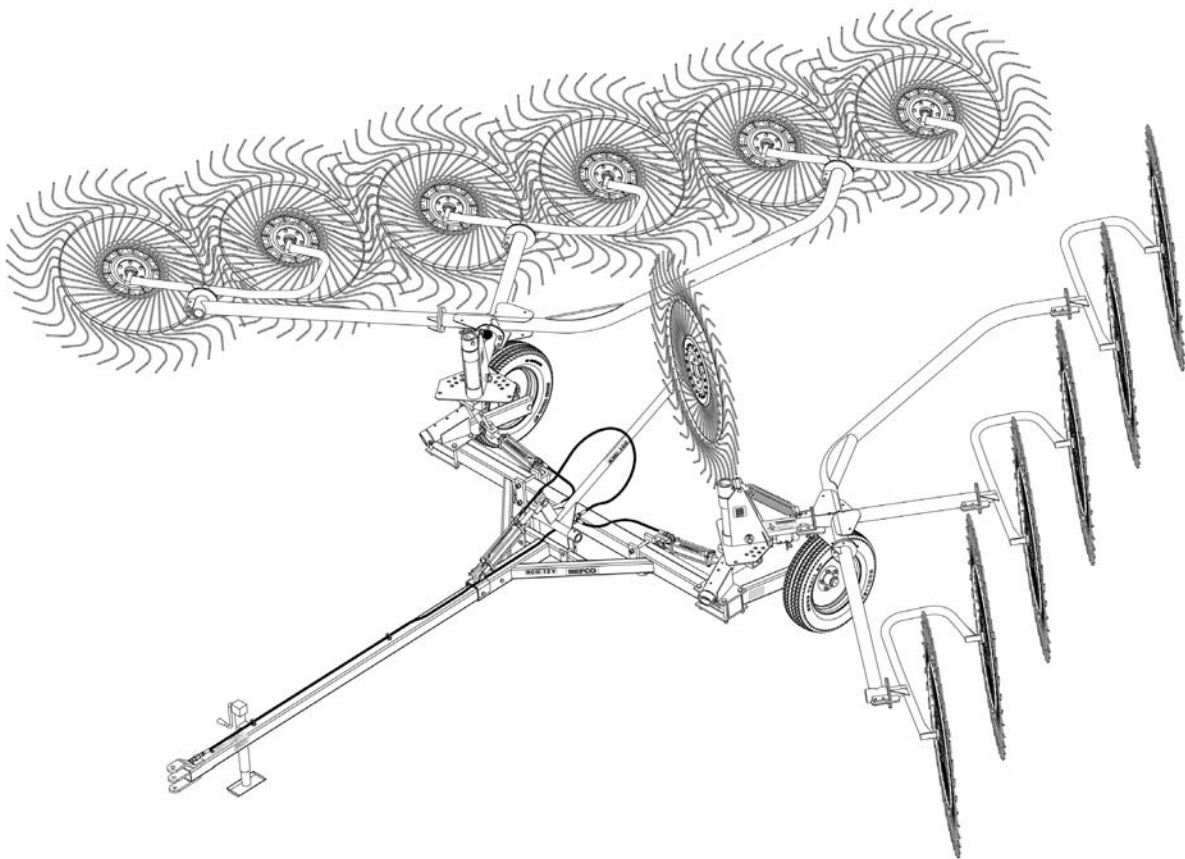
# **BEFCO**<sup>®</sup>

## **Operator's Manual**

# **HAY EQUIPMENT**

### **"V" Rakes**

**RC0-08V, RC0-10V, RC0-12V, RS2-08V, RS2-10V**



The operator's manual is a technical service guide and must always accompany the machine.

**Manual 960-171B**

**September 2010**

# SAFETY

Take note! This safety alert symbol found throughout this manual is used to call your attention to instructions involving your personal safety and the safety of others. Failure to follow these instructions can result in injury or death.



*This symbol means:  
ATTENTION!  
BECOME ALERT!  
YOUR SAFETY IS INVOLVED!*

## Signal Words

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The appropriate signal words for each have been selected using the following guidelines:



**DANGER:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



**WARNING:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

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# 1 - GENERAL INFORMATION

Thank you and congratulations for having chosen our implement. Your new hay rake is a technologically advanced machine constructed of high quality, sturdy components that will fulfill your working expectations. Read this manual carefully. It will instruct you on how to operate and service your implement safely and correctly. Failure to do so could result in personal injury and/or in equipment damage.

## 1.01 - General



**CAUTION:** Some hardware used on the implement may be metric. Use only metric tools on metric hardware. Other tools that do not fit properly can slip and cause injury.



**CAUTION:** Right hand and left hand sides of the implement are determined by facing in the direction the implement will travel when going forward (see fig. 9).

Carefully read the Warranty section<sup>1</sup>, detailing coverage and limitations of this warranty. **Warranty** is provided for customers who operate and maintain their equipment as described in this manual. Warranty registration is accomplished by the dealer by completing and forwarding the **Warranty Registration** form to the Company, along with a copy of the dealer's invoice. It is in your best interest to insure that this has been done.

Warranty does not cover the following:

1. Cleaning, transporting, mailing and service call charges.
2. Normal wear items such as rake teeth, etc.
3. Depreciation or damage caused by normal wear, accidents, improper maintenance, improper protection or improper use.
4. The use of non-original spare parts and accessories.

Your Authorized Company Dealer has genuine parts in stock. Only these approved replacement parts should be used.

This limited warranty covers defective material and workmanship. The cost of normal maintenance or repairs for accidents or improper use and related labor will be borne by the owner.

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<sup>1</sup> See Chapter 8 - Warranty.

## 1.02 - Model and Serial Number ID

Attached to the frame is an ID plate showing the model and the serial number. Record your implement model and serial number in the space provided below. Your dealer needs this information to give you prompt, efficient service when you order parts.

<b>BEFCO</b>	1781 S. Wesleyan Blvd. – P.O. Box 6036 Rocky Mount, N.C. 27802 – U.S.A. Tel: 1.252.977.9920 Fax: 1.252.977.9718
<b>MODEL:</b>	
<b>SERIAL:</b>	
<b>VERSION:</b>	

## 1.03 - Assembly Instructions RC0 Pull-Type “V” Rake



**CAUTION:** Stand clear of bands when cutting as they could be under sufficient tension to cause them to fly loose. Take care in removing bands and wire. They often have extremely sharp edges and cut very easily.



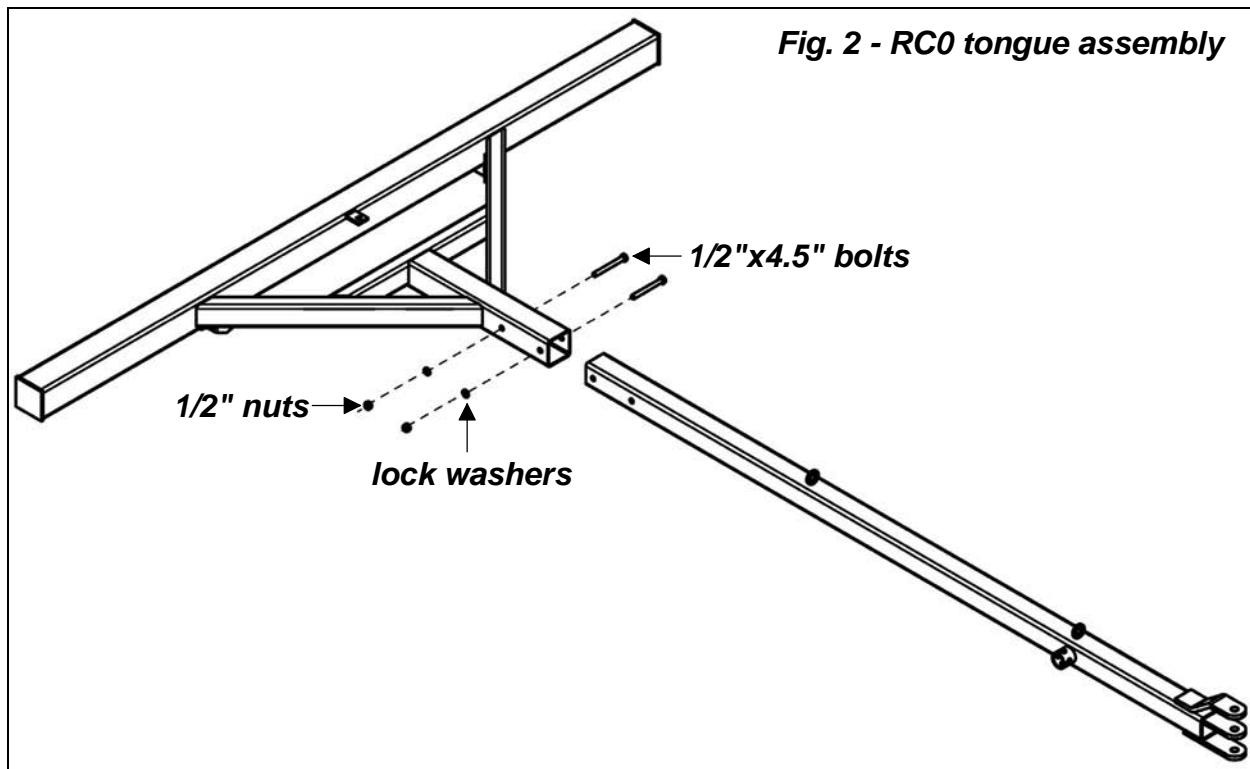
**CAUTION:** Improper setup of hydraulic cylinders can result in implement failure.

All hardware needed for assembly will be found in the crate and the hardware bag of the machine. Assembly will be easier if all parts are loosely assembled before tightening the hardware.

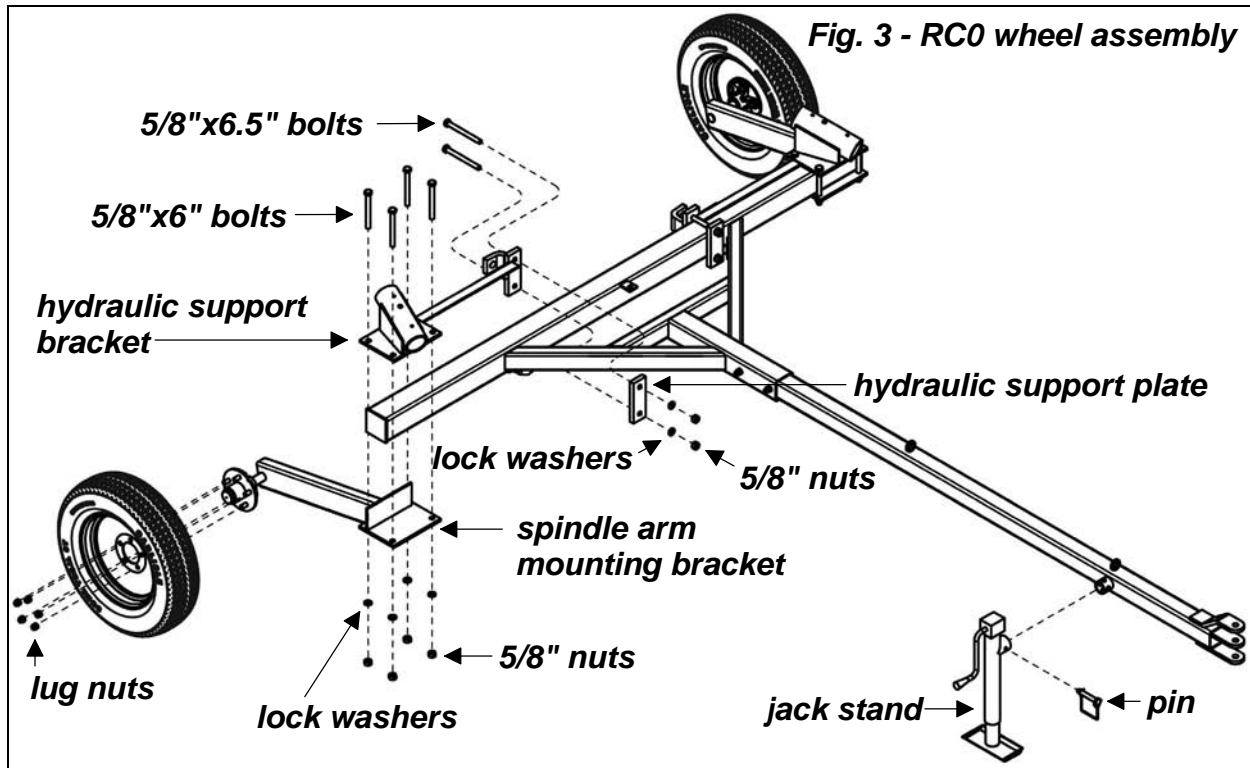
<b>Each RC0 pull-type "V" rake is shipped as a kit that consists of the following:</b>			
<b>Description</b>	<b>RC0-08V Qty.</b>	<b>RC0-10V Qty.</b>	<b>RC0-12V Qty.</b>
RC0 main frame	1	1	1
RC0 tongue	1	1	1
Jack stand with pin	1	1	1
Left spindle arm	1	1	1
Right spindle arm	1	1	1
Left hydraulic support bracket	1	1	1
Right hydraulic support bracket	1	1	1
Backing plate, hydraulic support	2	2	2
Wheels 175/80D13	2	2	2
Support arm, 4 wheel	2	-	-
Support arm, 5 wheel	-	2	-
Support arm front section, 6 wheel	-	-	2
Support arm rear section, 6 wheel	-	-	2
Arm with hub right, 2 wheel	2	2	3
Arm with hub left, 2 wheel	2	2	3
Arm with hub, 1 wheel	-	2	-
Support, frame holder hitch left	1	1	1
Support, frame holder hitch right	1	1	1
Frame holder hitch	2	2	2
Hydraulic cylinder	2	2	2
Pin, hydraulic cylinder 1.00"x3.40"	4	4	4
26" hydraulic hose	2	2	2
160" hydraulic hose	1	1	1
Hydraulic fitting 90° elbow	2	2	2
Hydraulic "Tee" connector	1	1	1
Hydraulic adaptor w/restrictor	1	1	1
Collar 1.5", holder hitch support	2	2	2
Collar 2.5", holder hitch support	2	2	2
Rake wheel left	4	5	6
Rake wheel right	4	5	6
<b>Hardware bag contains:</b>			
Pin transport 1/2"x4.44" Z	2	2	2
Nut lug 1/2"-20 (for rim)	10	10	10
Bolt HH 1/2"-13x4.00" G5 Z P	4	4	4
Bolt HH 1/2"-13x4.50" G5 Z P	2	2	2
Nut HH 1/2"-13 G2 Z	6	6	6
Washer lock 1/2" Z	6	6	6
Bolt HH 5/8"-11x6.00" G5 Z P	8	8	8
Bolt HH 5/8"-11x6.50" G5 Z P	4	4	4
Nut HH 5/8"-11 G2 Z	12	12	12
Washer lock 5/8" Z	12	12	12
Nut HH 3/8"-16 G2 Z	1	1	1
Washer lock 3/8" Z	1	1	1
Washer flat 3/8" USS Z	1	1	1
Locking pin Ø16x178 Z	2	2	2
Locking pin Ø12x56 Z	6	6	8
Hairpin cotter Ø3	6	6	8
Hairpin cotter Ø4	2	2	2
Hairpin cotter Ø5	2	2	2
Bolt HH M14-2.00x100 C8.8 Z P	-	2	-
Nut HH M14-2.00 C6 Z TK	-	2	-
Washer lock Ø14 Z	-	2	-
Bolt HH M10-1.50x40 C8.8 Z F	-	-	6
Nut HH M10-1.50 C6 Z TK	-	-	6
Washer lock Ø10 Z	-	-	6
Washer flat Ø10 Z	-	-	6
Bolt HH M10-1.50x25 C8.8 Z F	48	60	72
Nut HH M10-1.50 C6 Z MD	48	60	72
Washer external lock Ø10 Z	48	60	72

**To assemble models RC0 pull-type hay rake carts do the following:**

1. Assemble the tongue on the main frame securing it with the supplied  $\frac{1}{2}$ "x4.5" bolts, lock washers and  $\frac{1}{2}$ " nuts (see fig. 2).

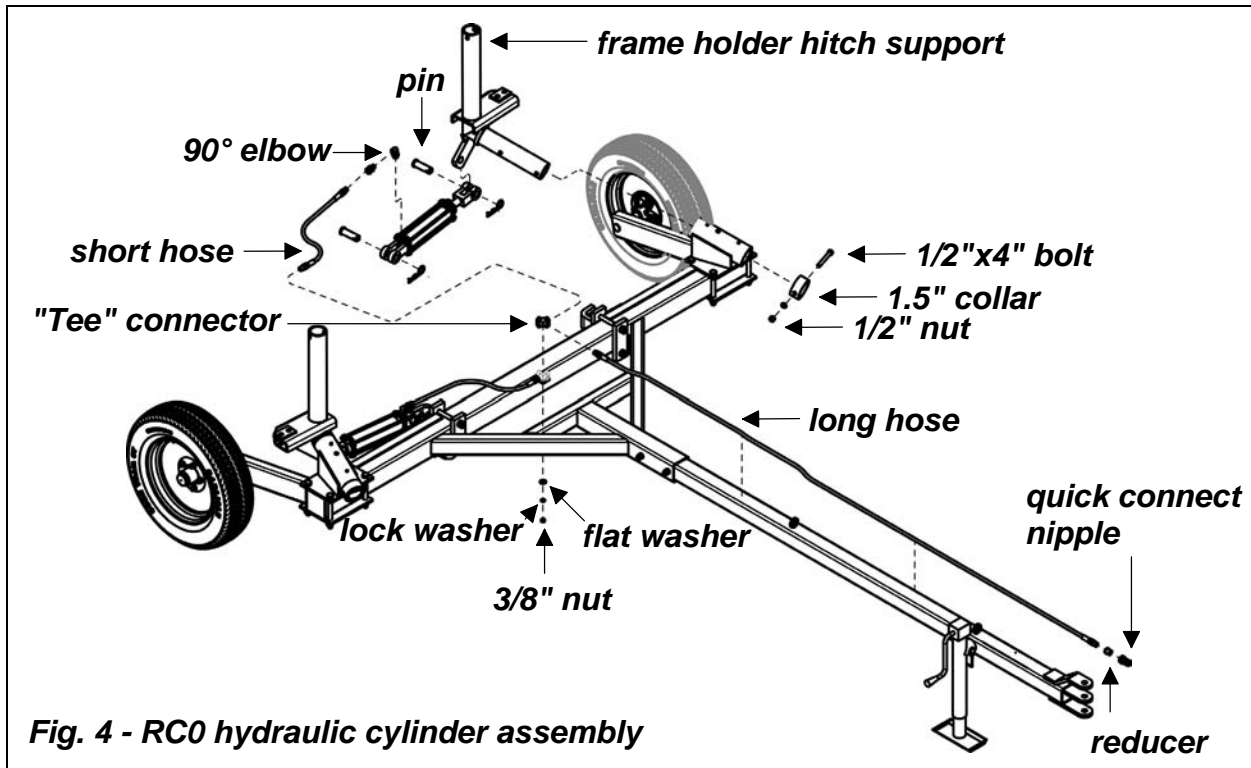


2. Place spindle arm mounting brackets with hubs facing out and back under the main frame (see fig. 3).
3. Place the hydraulic support brackets over the main frame and line them up with the spindle arm mounting brackets. Secure in place with the supplied  $\frac{5}{8}$ "x6" bolts, lock washers and  $\frac{5}{8}$ " nuts (see fig. 3).
4. Assemble the inside end of the hydraulic support brackets to the hydraulic support plates. Secure in place with the supplied  $\frac{5}{8}$ "x6.5" bolts, lock washers and  $\frac{5}{8}$ " nuts (see fig. 3).
5. Install wheels on wheel hubs and secure them in place with lug nuts (see fig. 3). Torque lug nuts to 85 ft-lb.
6. Install jack stand on tongue and secure it with the pin (see fig. 3).
7. Grease and insert the short 11.5" tube end of the frame holder hitch support through the hydraulic support bracket. The long tube end should stick straight up in the air with the protruding flat bar end angling down towards the center of the cart (see fig. 4).
8. Assemble the 1.5" collar over the short tube and bolt it in place with the supplied  $\frac{1}{2}$ "x4" bolt, lock washer and  $\frac{1}{2}$ " nut (see fig. 4).



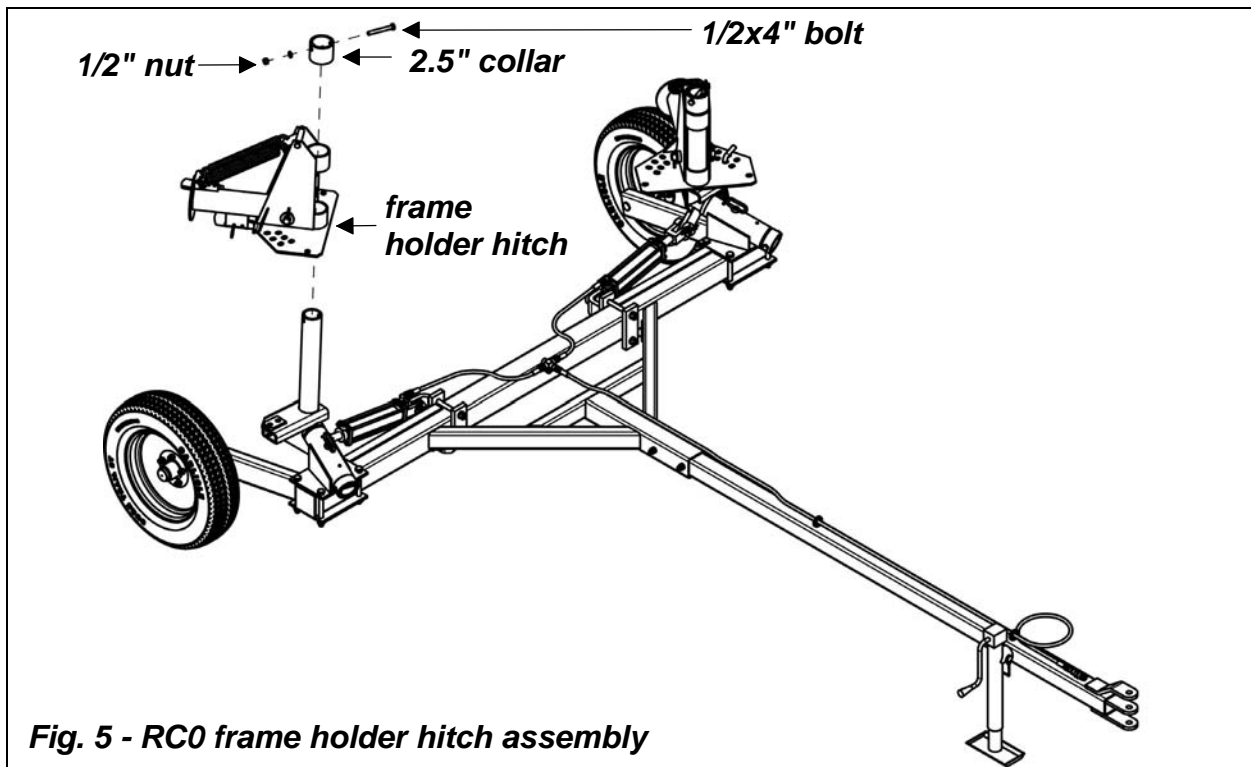
9. Attach the hydraulic cylinders with the barrel side to the hydraulic support and on the cylinder rod side to the frame holder hitch support. Secure in place with the pins and clips provided (**see fig. 4**).  
 Note: For rakes to fold and have the transport holes line up properly, the hydraulic cylinder yoke may need some adjusting. A good starting point is for the yoke to be four full threads from the bottom of the cylinder rod.
10. Assemble the two short 26" hydraulic hoses to the sides and the long hose to the bottom of the "Tee" connector. Use hydraulic approved joint compound on all hydraulic fittings.
11. Bolt the "Tee" connector to the main frame using the flat washer, the lock washer and the 3/8" nut.
12. Connect 90° elbow to barrel side end of hydraulic cylinders.
13. Connect adaptors to 90° elbow.
14. Connect short 26" hoses to adaptors.
15. Run the long 160" hose through the welded rings along the length of the tongue.
16. Assemble the reducer into the quick connect nipple then connect it to the tractor end of the long hydraulic hose.
17. Slide a rake frame holder hitch into each frame holder hitch support on the rake cart and install the 2.5" collar on the support tube. Lock in place using the supplied 1/2"x4" bolts, lock washers and 1/2" nuts (**see fig. 5**).





**Fig. 4 - RC0 hydraulic cylinder assembly**

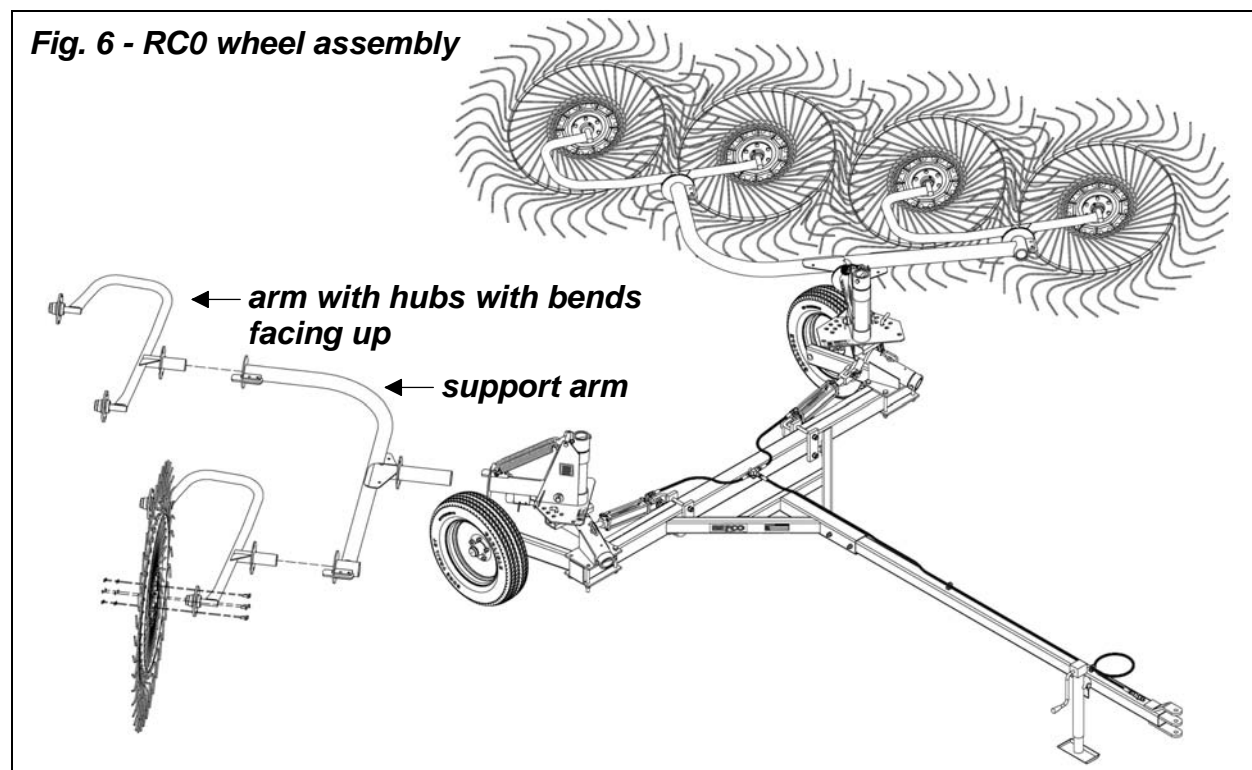
18. Lock the frame holder hitch to the base by inserting the Ø16x178 locking pin through the hole used for transport (see #7, fig. 13) on the frame holder hitch and secure it using the Ø4 hairpin cotter.



**Fig. 5 - RC0 frame holder hitch assembly**

19. Slide the support arm of the rake into the large hole in the pivot housing until the flanges on both pieces are bumped up to one another (**see fig. 6**). Secure the support arm with the locking lever then secure the lever with the  $\text{\O}12 \times 56$  locking pin and the  $\text{\O}3$  hairpin cotter.
20. Slide each arm with hubs in the holes at each end of the support arm until the flanges on both pieces are bumped up to one another. Secure the arm with the locking lever then secure the lever with the  $\text{\O}12 \times 56$  locking pin and the  $\text{\O}3$  hairpin cotter. On hay rake cart model RC0-10V only, assemble the single wheel arm with hub in the center hole of the support arm and secure it using the M14x100 bolt, the lock washer and the M14 nut.

Note: When installing the arms with hubs, always make sure to assemble them to the support arm with the bend facing upwards. This will allow for better clearance from the ground and therefore more hay to be raked.



21. Assemble the wheels making sure the inner wheel is facing away from the tractor (**see fig. 8**).
22. Secure each wheel by inserting the supplied M10x25 bolts on the hub side and the  $\text{\O}10$  external lock washers and M10 nuts on the inner wheel side.
23. Tighten all hardware securely<sup>2</sup>.

<sup>2</sup> Refer to Table 2 - Torque Specifications, page 35.

## 1.04 - Assembly Instructions RS2 Three-Point "V" Rake



**CAUTION:** Stand clear of bands when cutting as they could be under sufficient tension to cause them to fly loose. Take care in removing bands and wire. They often have extremely sharp edges and cut very easily.

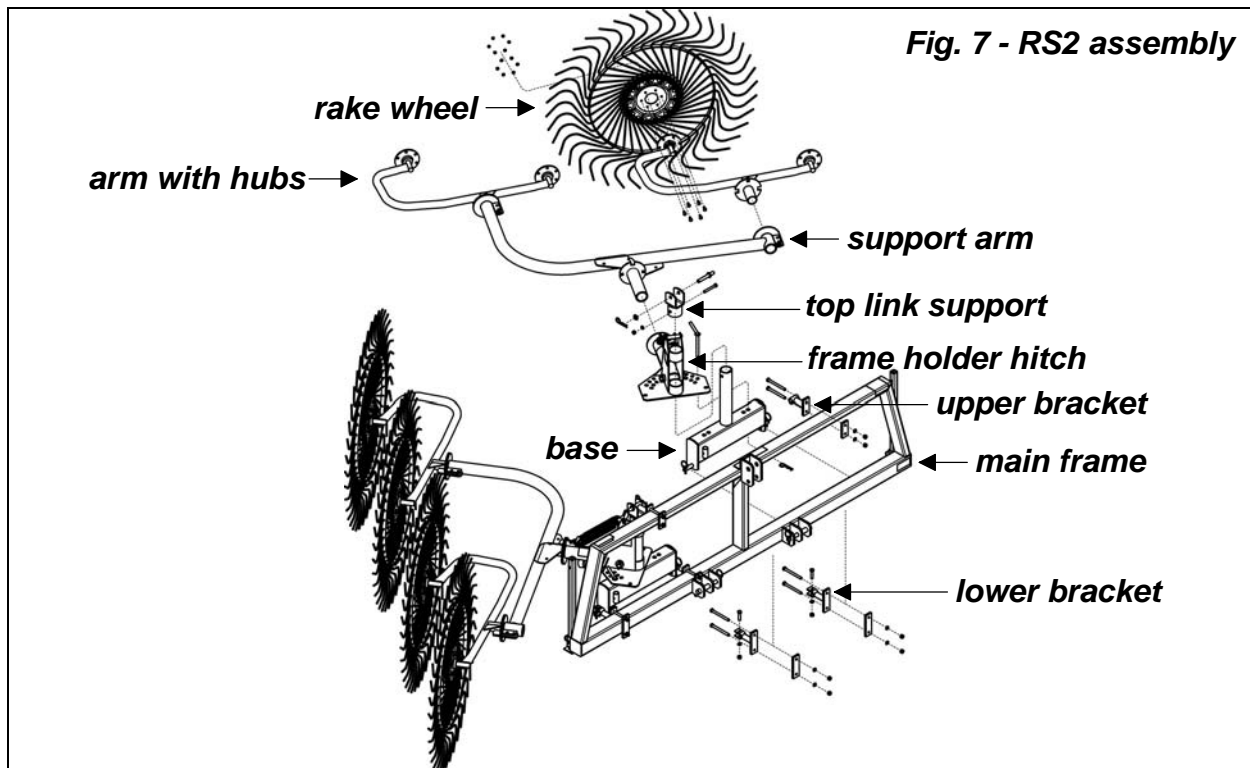
All hardware needed for assembly will be found in the crate and the hardware bag of the machine. Assembly will be easier if all parts are loosely assembled before tightening the hardware.

<b>Each RS2 three point "V" rake is shipped as a kit that consists of the following:</b>		
<b>Description</b>	<b>RS2-08V Qty.</b>	<b>RS2-10V Qty.</b>
RS2 main frame	1	1
Support stand	2	2
Base, three point hitch	2	2
Top link support	2	2
Lower bracket	4	4
Lower bracket plate	4	4
Upper bracket	2	2
Upper bracket plate	2	2
Support arm, 4 wheel	2	-
Support arm, 5 wheel	-	2
Arm with hub right, 2 wheel	2	2
Arm with hub left, 2 wheel	2	2
Arm with hub, 1 wheel	-	2
Frame holder hitch	2	2
Rake wheel, left	4	5
Rake wheel, right	4	5
<b>Hardware bag contains:</b>		
Top hitch pin Ø18x140	2	2
Washer flat Ø18 Z	2	2
Hitch pin cat. 1-2	2	2
Lynch pin Ø11x45	6	6
Wire lock pin 3/8"x2.50"	2	2
Locking pin Ø16x178 Z	2	2
Locking pin Ø12x56 Z	6	6
Hairpin cotter Ø3	6	6
Hairpin cotter Ø4	4	4
Hairpin cotter Ø5	2	2
Bolt HH M14-2.00x150 C8.8 Z P	12	12
Bolt HH M14-2.00x100 C8.8 Z P	2	4
Bolt HH M14-2.00x60 C8.8 Z P	4	4
Nut HH M14-2.00 C6 Z TK	18	20
Washer lock Ø14 Z	18	20
Bolt HH M10-1.50x25 C8.8 Z F	48	60
Nut HH M10-1.50 C6 Z MD	48	60
Washer external lock Ø10 Z	48	60

**To assemble models RS2 three point cat. 1 hay rakes do the following:**

1. To facilitate assembly, use a hoist to attach the main frame three point hitch of the rake cart to the three point hitch of the tractor. Secure the top link with the supplied top hitch pin and Ø4 hairpin cotter and the bottom hitches with the supplied hitch pins and lynch pins.

2. Assemble the two sets of upper brackets and upper bracket plates on the upper beam of the main frame (one set on each side) with the upper bracket facing away from the tractor. Attach the brackets together using the M14x100 bolts, the lock washers and M14 nuts (**see fig. 7**).
3. Assemble the four sets of lower brackets and lower bracket plates on the lower beam of the main frame (two sets on each side) with the lower bracket facing away from the tractor. Attach the brackets together using the M14x100 bolts, the lock washers and M14 nuts (**see fig. 7**).
4. Slide the frame holder hitch on to the base.
5. Install the top link support over the frame holder hitch and secure it using the M14x100 bolt, the Ø14 lock washer and M14 nut to tighten it.

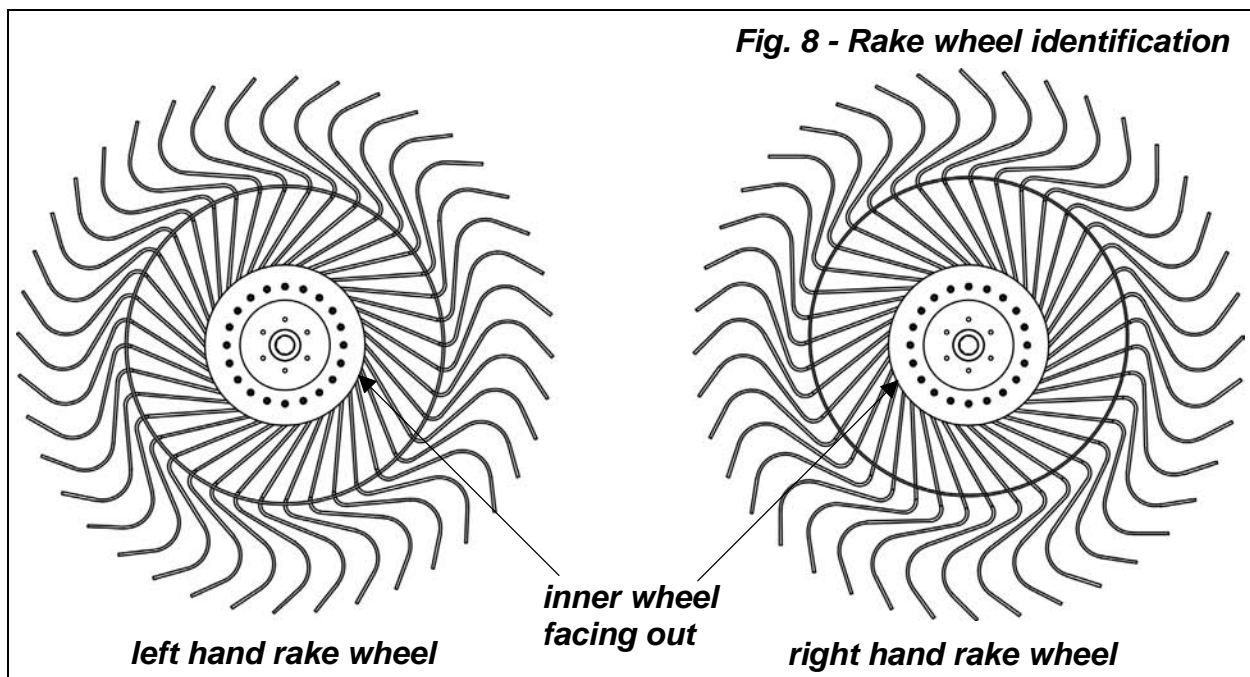


6. Lock the frame holder hitch to the base by inserting the Ø16x178 locking pin through the hole on the frame holder hitch (**see #7, fig. 13**) and secure it using the Ø4 hairpin cotter.
7. To facilitate further assembly, use a hoist to attach the frame holder hitch assembly of the hay rake to the upper and lower bracket plates of the main frame of the rake cart. Secure the top links with the supplied top hitch pin and Ø4 hairpin cotter and the bottom hitches with the M14x60 bolts and M14 nuts.
8. Slide the left and right support arms of the rake into the large holes in the pivot housings until the flanges on both pieces are bumped up to one another. Secure the support arms with the locking lever then secure the lever with the Ø12x56 locking pin and the Ø3 hairpin cotter.

9. Slide each arm with hubs in the holes at each end of the support arm until the flanges on both pieces are bumped up to one another. Secure the arm with the locking lever then secure the lever with the Ø12x56 locking pin and the Ø3 hairpin cotter. On hay rake model RS2-10V only, assemble the single arm with hub in the center hole of the support arm and secure it using the M14x100 bolt, the lock washer and the M14 nut.

Note: When installing the arms with hubs, always make sure to assemble them to the support arm with the bend facing upwards. This will allow for better clearance from the ground and therefore more hay to be raked.

10. Assemble the rake wheels making sure the inner wheel is facing away from the tractor. Make sure to assemble the left wheels on the left side of the rake cart and the right wheels on the right side of the rake cart (**see fig. 8**).
11. Secure each wheel by inserting the supplied M10x25 bolts on the hub side and the Ø10 external lock washers and M10 nuts on the inner wheel side.
12. Assemble the support stands on the main frame of the RS2 three-point "V" rake and secure them with the wire lock pins.
13. Tighten all hardware securely<sup>3</sup>.



To identify right hand and left hand rake wheels, set the rake wheels up against a wall with the tine clips facing the wall and the inner wheel facing away from the wall. On a right hand wheel the rake teeth touching the ground will bend towards the right. On a left hand rake the rake teeth touching the ground will bend towards the left (**see fig. 8**).

<sup>3</sup> Refer to Table 2 - Torque Specifications, page 35.

## 2 - SAFETY PRECAUTIONS

Safety is the primary concern in the design and manufacture of our products. Unfortunately our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment. It is the operator's responsibility to read and understand all safety and operating instructions in the manual and to follow these.

Allow only properly trained personnel to operate the implement. Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your tractor, before assembly or operation, to acquaint yourself with the machines. It is the owner's responsibility, if this machine is used by any person other than yourself, is loaned or rented, to make certain that the operator, prior to operating, reads and understands the operator's manuals and is instructed in safe and proper use.

### 2.01 - Preparation



1. Before operating equipment read and understand the operator's manual and the safety signs (**see fig. 9**).
2. Thoroughly inspect the implement before initial operation to assure that all packaging materials, i.e., wires, bands, and tape have been removed.
3. Personal protection equipment including hard hat, safety glasses, hearing protection, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining and/or repairing the implement.
4. Operate the implement only with a tractor equipped with an approved Roll-Over-Protective-System (ROPS). Always wear your seat belt. Serious injury or even death could result from falling off the tractor.
5. Clear area to be worked of stones, branches or other debris that might be thrown, causing injury or damage.
6. Before beginning operation, contact local utility companies to make certain there are no bundled gas lines, electrical cables, etc., in the work area.
7. Operate only in daylight or good artificial light.
8. Ensure implement is properly mounted, adjusted and in good operating condition.
9. Ensure that all safety decals are properly installed and in good condition.

## 2.02 - Starting and Stopping



1. Be sure that no one is near the machine prior to engaging or while the machine is working.
2. Be sure the tractor is in "Neutral" before starting engine.
3. Equipment operating power is ground driven. Know how to stop the tractor quickly in case of an emergency.
4. After striking an obstacle, shut the tractor off, remove key and thoroughly inspect for damage before restarting.

## 2.03 - Messages and Signs



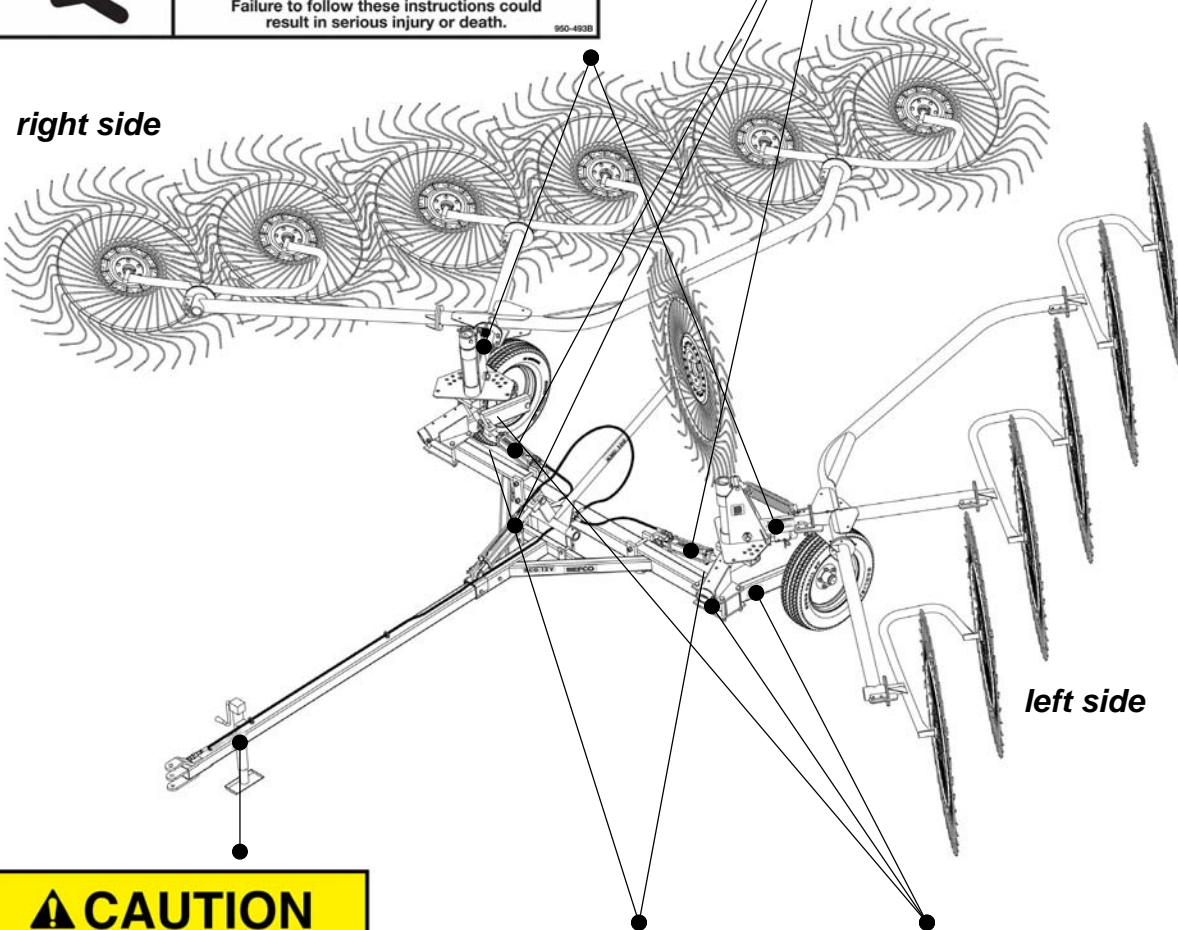
1. Read and adhere to all safety and operating decals on this machine (**see fig. 9**).
2. Before dismounting tractor: Allow moving parts to stop, stop engine, set brake and remove the key of unattended equipment.
3. Keep safety decals in place and in good condition.
4. Do not use with bystanders in area.
5. Allow no riders on tractor or implement.
6. Allow moving parts to stop before repair.
7. Securely support implement before working underneath.

Additional warning and operating decals are available at no extra charge. Please specify model and serial number when ordering.

**Fig. 9 - Safety decals - implement; replace immediately if damaged.**

	⚠ WARNING
	High-pressure hydraulic oil leaks can penetrate skin resulting in serious injury, gangrene or death. <ul style="list-style-type: none"> <li>• Check for leaks with cardboard; never use hand.</li> <li>• Before loosening fittings: lower load, release pressure, and be sure oil is cool.</li> <li>• Consult physician immediately if skin penetration occurs.</li> </ul>

	⚠ WARNING
	Crushing hazard <ul style="list-style-type: none"> <li>• Keep away. Do not go underneath.</li> <li>• When raised, ensure that transport safety locks are fully engaged.</li> </ul> Failure to follow these instructions could result in serious injury or death.



⚠ CAUTION
To avoid serious injury: <ul style="list-style-type: none"> <li>• Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)</li> <li>• Never allow riders.</li> <li>• Keep bystanders away from equipment during operation.</li> <li>• Operate from tractor seat only.</li> <li>• Keep all shields in place and in good condition.</li> <li>• Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.</li> <li>• Never allow children or untrained persons to operate equipment.</li> <li>• If equipped, parking stands must be functional, kept in good repair, and stored on the unit. Park and store on a hard, level surface.</li> </ul>



Red reflective decal



Yellow reflective decal



## 3 - OPERATION

You have purchased a ground driven hay rake which will provide you with high quality raking results with overall very low costs of ownership and maintenance.

As the tractor moves forward, the wheels on BEFCO's hay rakes gently turn the hay towards the back of the unit leaving all the hay raked in fluffy windrows suitable to form a compact and even bale. Tines are made of flexible steel for a more gentle and clean contact with the forage. The greasable wheel hubs on BEFCO's rakes are made of cast steel and contain tapered roller bearings that ensure the maximum possible lifetime of the wheel hub. Bearings are protected by dust caps.

With working widths ranging from 18' to 25' and working speeds of up to 14 mph there is no doubt that BEFCO offers the ideal rake for all your raking needs.

### 3.01 - Operational Safety



**CAUTION:** Our ground driven hay rakes are designed considering safety as the most important aspect and are the safest available in today's market. Unfortunately, human carelessness can override the safety features built into our machines. Injury prevention and work safety, aside from the features on our hay rakes, are very much due to the responsible use of the equipment. It must always be operated prudently following with great care, the safety instructions laid out in this manual.



1. The use of this equipment is subject to certain hazards which cannot be prevented by mechanical means or product design. All operators of this equipment must read and understand this entire manual, paying particular attention to safety and operating instructions, prior to using.
2. Do not operate the tractor and implement when you are tired, sick or when using medication.
3. Keep all helpers and bystanders at least 100 feet from the implement. Only properly trained people should operate this machine.
4. Accidents are most likely to occur with machines that are loaned or rented to someone who has not read the operator's manual and is not familiar with the implement.
5. Always stop the tractor, set brake, shut off the tractor engine, remove the ignition key and lower implement to the ground before dismounting tractor. Never leave equipment unattended with the tractor running.
6. Never place hands or feet under implement with tractor engine running or before you are sure all motion has stopped. Stay clear of all moving parts.

7. Do not reach or place yourself under equipment until it is blocked securely.
8. Do not allow riders on the implement or tractor at any time. There is no safe place for riders.
9. Before backing up, look behind carefully.
10. Never operate tractor and implement under trees with low hanging limbs. Operators can be knocked off the tractor and then run over by the implement.
11. The parts of this machine have been designed and tested for rugged use. However, they could fail upon impact with heavy, solid objects such as steel guard rails and concrete abutments. Such impact could cause the broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the machine to contact such obstacles.
12. Frequently check rake teeth. They should be free of nicks and cracks and securely fastened.
13. Stop implement immediately upon striking an obstruction. Turn engine off, remove key, inspect and repair any damage before resuming operation.
14. Stay alert for holes, rocks and roots in the terrain and other hidden hazards. Keep away from drop-offs.
15. Use extreme care and maintain minimum ground speed when transporting on hillside, over rough ground and when operating close to ditches or fences. Be careful when turning sharp corners.
16. Before beginning operation, contact local utility companies to make certain there are no bundled gas lines, electrical cables, etc., in the work area.
17. Reduce speed on slopes and sharp turns to minimize tipping or loss of control. Be careful when changing directions on slopes. Do not start or stop suddenly on slopes. Avoid operation on steep slopes.
18. When using a unit, a minimum 20% of tractor and equipment weight must be on tractor front wheels. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a front end loader, front wheel weights, ballast in tires or front tractor weights. When attaining a minimum 20% of tractor and equipment weight on the front wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not guess or estimate!
19. Inspect the entire machine periodically<sup>4</sup>. Look for loose fasteners, worn or broken parts, and leaky or loose fittings.
20. Pass diagonally through sharp dips and avoid sharp drops to prevent "hanging up" tractor and implement.
21. Avoid sudden starts and stops while traveling up or downhill.
22. Always operate down slopes; never across the face. Avoid operation on steep slopes. Slow down on sharp turns and slopes to prevent tipping and/or loss of control.
23. A safety chain will help control drawn equipment should it accidentally separate from the tractor drawbar. Do not use safety chain for towing.
24. Comply with all federal, state and local laws during transport on roads.
25. Before parking the machine, lower the support stand and secure it with the lock pins.

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<sup>4</sup> See Chapter 4 - Maintenance.

## 3.02 - Setup

**Notice to dealer:** Pre-delivery setup and service including lubrication is the responsibility of the authorized dealer. It is up to him to assure that the machine is in perfect condition and ready to be used. It is his responsibility to ensure that the customer is aware of all safety aspects and operational procedures for the implement. He must also fill out the Pre-Delivery Checklist<sup>5</sup> prior to delivering the implement.

## 3.03 - Pre-Operational Check

**IMPORTANT:** Check each of the following, carefully, prior to engaging the equipment:

1. No wrappings or foreign objects are around the implement.
2. The teeth are properly installed and the bolts properly torqued<sup>6</sup>.
3. All hardware is tight.
4. No people or animals are in the work area.

## 3.04 - Attaching to the Tractor

Models RC0-08V, RC0-10V, RC0-12V, RS2-08V and RS2-10V may be used on tractors ranging from 30 to 80 HP.



**DANGER:** Never allow anyone to stand between the hay rake and tractor during hookup operations.



**DANGER:** Failure to ensure a secure coupling of the implement to the tractor can cause injury and damage to the implement or tractor. If necessary, wheel weights, front tractor weights and/or tire ballast should be used to improve stability. Be sure that the tractor tire pressure is correct. It is important to strictly follow the safety guidelines and instructions laid out in the tractor's operator's manual.



**WARNING:** High pressure hydraulic oil leaks can penetrate skin resulting in injury, gangrene or death. Be sure to relieve any hydraulic oil pressure before disconnecting any lines or pipes between rake and tractor hydraulic system. Check for oil leaks using a cardboard, never use hands.

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<sup>5</sup> See Chapter 7 - Pre-Delivery Checklist.

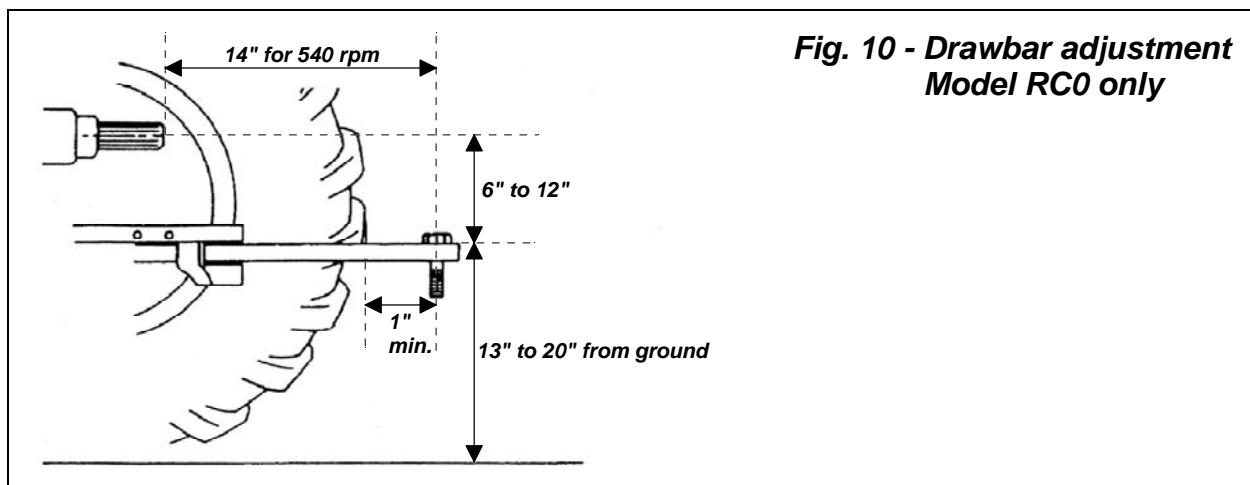
<sup>6</sup> Refer to Table 2 - Torque Specifications, page 35.



**CAUTION:** Never attempt to attach the hay rake to the tractor or make any adjustments to it without first turning the tractor off.

**To attach hay rake carts models RC0-08V, RC0-10V and RC0-12V to the tractor do the following:**

1. Position the tractor drawbar (**see fig. 10**). Remove the hitch pin. Back up the tractor to the rake. Align hitch pin holes in tractor drawbar and rake. **Turn off tractor engine.** Install hitch pin and fasten it with a hairpin cotter.
2. Raise the jack stand until the weight of the rake is on the tractor drawbar. Turn the jack stand 90° and secure it with a pin.
3. Place tractor SCV lever in float position. Connect the hydraulic hose to the tractor remote port. Push tractor SCV lever in neutral position. Engage the tractor hydraulics to raise rake arms.



Always make sure to adjust the tractor drawbar as specified to ASAE standards to prevent failures (**see fig. 10**).

The drawbar should be centered under the PTO shaft and secured so it cannot swing in either direction.



**CAUTION:** Failure to conform to ASAE standards for drawbar PTO setup dimensions can result in driveline damage and implement failure.



**CAUTION:** A safety chain will help control drawn equipment should it accidentally separate from the tractor drawbar. A runaway machine could cause severe injury or death. Leave only enough slack in the chain to permit turning. Do not use safety chain for towing.

**To attach the hay rake models RS2-08V and RS2-10V to the tractor do the following:**

1. Back up the tractor to the hay rake until the draft links align with the lower hitch pins.
2. Stop engine, engage parking brakes and remove key before dismounting tractor.
3. Secure the draft links to the hitch pins and secure them in place with hairpin cotters.
4. Raise support stands all the way up and secure with wire lock pins.
5. Attach top link to the top hitch of the hay rake using a top link pin.
6. Adjust the tractor sway chains/bars to center the hay rake behind the tractor and control the side sway.
7. Ensure rake is level by adjusting draft links and top link.
8. Slowly operate tractor controls up and down to ensure that the drawbar, tires and other equipment on the tractor does not touch the rake frame and wheels. If necessary adjust or remove tractor drawbar to eliminate interference with rake. Ensure rake is at least 6" from tractor tires throughout the complete range of three point movement.

### 3.05 - Startup



**DANGER: Never allow anyone around the implement when it is in operation.**



**CAUTION: For emergency reasons, learn how to stop the tractor and implement quickly.**

Before starting to work, never forget that the **operator is responsible** for the following:

1. Safe and correct driving of the tractor and implement.
2. To learn precise safe operating procedures for both the tractor and the implement.
3. To ensure all maintenance and lubrication has been performed on the implement.
4. To have read and understood all safety aspects for the implement in the operator's manual.
5. To have read and understood all safety decals on the implement.
6. To have contacted the local utility companies to make certain there are no bundled gas lines, electrical cables, etc., in the work area.
7. Checking the overall condition of the machine.
8. Checking to see if front weights need to be added to the tractor in order to maintain balance.
9. Checking the tractor tires for the proper pressure in accordance with the tractor operator's manual.
10. Making sure the proper attire is worn. Avoiding loose fitting clothing which can become entangled. Wearing sturdy, tough-soled work shoes and protective equipment for eyes, hands, ears and head. Never operate tractor or implements in bare feet, sandals or sneakers.

11. Checking area for stones, branches and other debris that might be thrown.
12. Ensuring proper lighting is available, sunlight or good artificial lighting.

### 3.06 - Working Speed

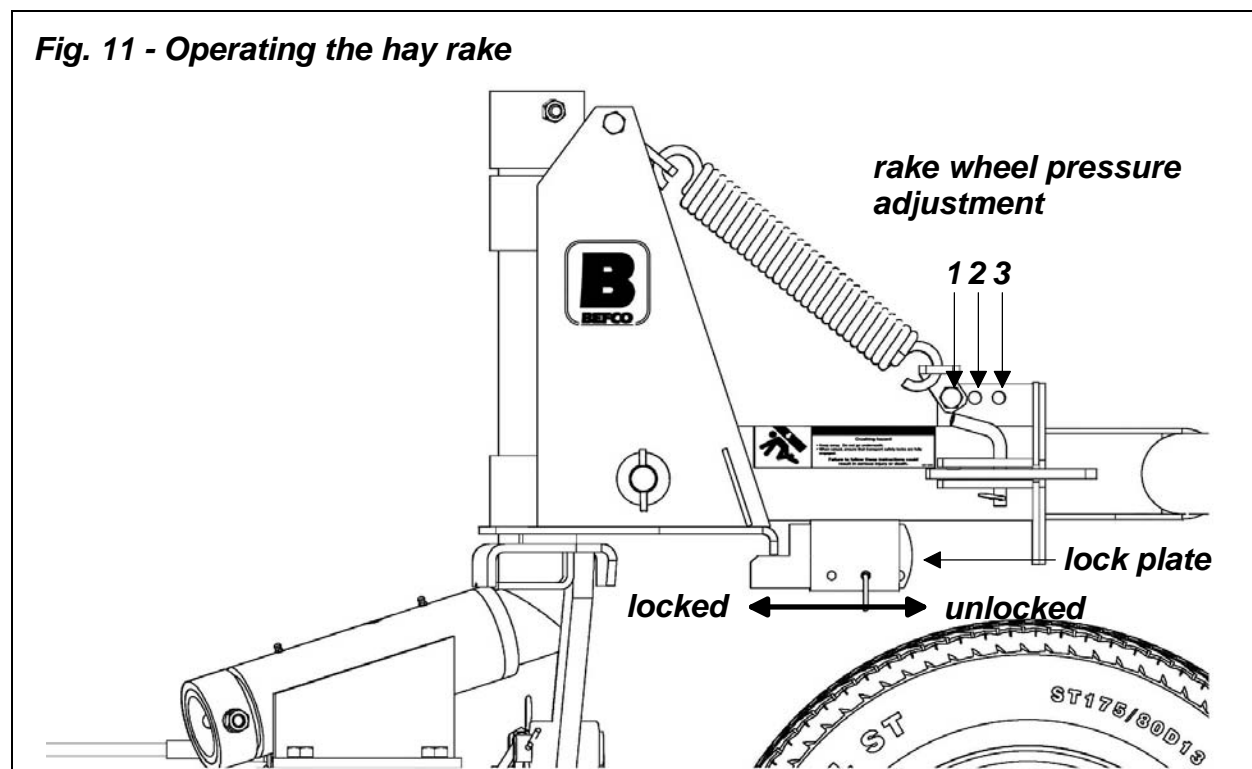
Ground speed is determined by the soil condition and tractor power. Simple experimentation will determine the best speed for the desired results, usually 8 to 14 mph.

### 3.07 - Operating Techniques

Rakes can be set to windrow widths from 1' to 11', however, normal windrows range from 3' to 5' in width. Adjusting the windrow width properly will allow for more uniform hay bales. Ideally the width of the windrow should be approximately the same as the width of the bale chamber of the baler being used.

When working, rake wheels should slightly touch the ground. This gives the individual wheels and teeth maximum flexibility to insure clean raking on any terrain. The correct pressure will always depend on field conditions, quantity and type of forage being windrowed. For heavy crops, more down pressure may be needed. Too much pressure may cause dirt and debris to be rolled into the windrow. The ideal setting allows rake to float smoothly across ground contour while moving crop cleanly into a row.

If the crop was mowed with a sickle bar mower, operate the rake in the same direction the crop was mowed, while if the crop was mowed with a rotary mower, best results are normally obtained by operating the rake in the opposite direction the crop was mowed.

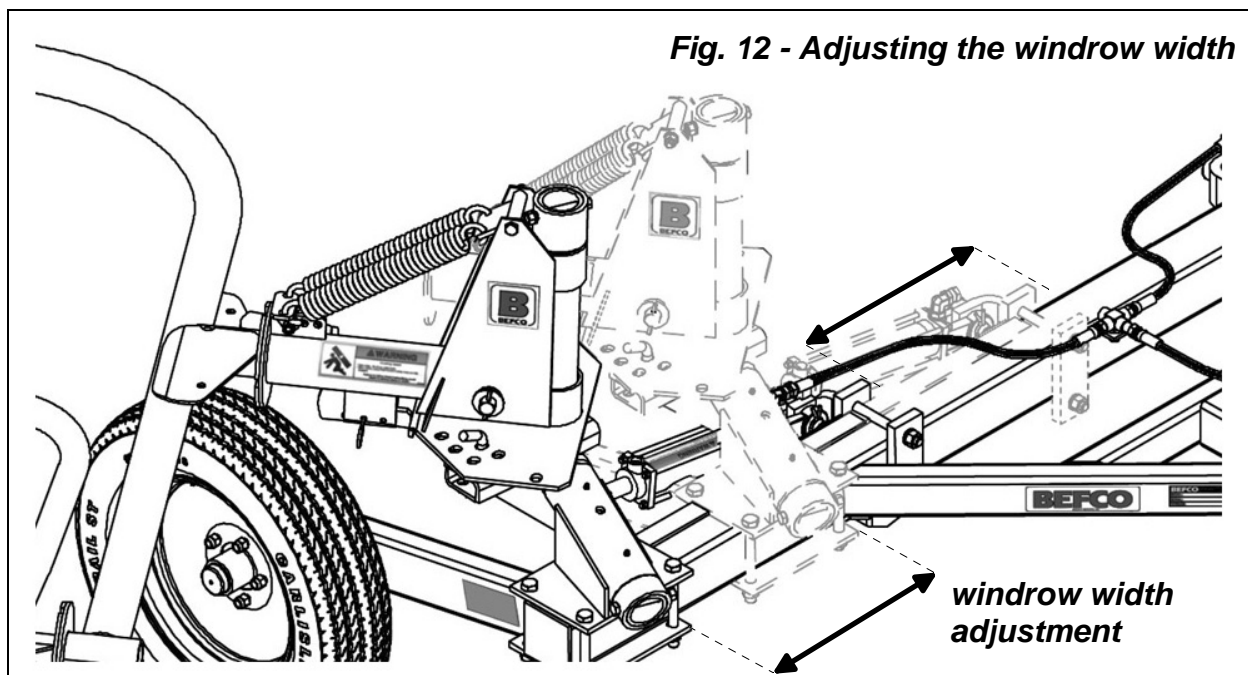


**To set ground pressure do the following:**

1. Lower rake so that wheels are slightly touching the ground.
2. Slide the lock plate (**see fig. 11**) in the unlocked position and secure it with the  $\varnothing 5$  hairpin cotter. This will allow the rake to float evenly across the surface even when raking over uneven terrain and prolong the life of the rake's teeth.
3. Assemble the spring clip in the desired position. The pressure that the rake wheel applies on the ground can be adjusted by bolting the lower spring clip to one of the other two holes available on the pivot housing tube (**see fig. 11**). Moving the lower spring clip to one of the holes further away from the springs will cause the spring tension to increase and therefore decrease the amount of pressure that the rake wheels will apply on the ground. As a general rule, in standard working conditions use the first hole for RC0-08V, RS2-08V rakes (**see #1, fig. 11**) and the second hole for RC0-10V, RC0-12V and RS2-10V rakes (**see #2, fig. 11**). Setting the rake with the least amount of pressure will help to keep the finger wheels cleaner and therefore keep dirt off the forage.

**IMPORTANT:** Always remember to engage the lock plate and reposition the locking pin in the transport position hole before transporting the hay rake (**see fig. 11**).

The windrow width is the width measured between the back rake wheels (**see #1, fig. 14**). Adjusting the windrow width will also affect the working width of the rake (**see #2, fig. 14**). There are two ways to adjust the windrowing width on the hay rake carts. The main adjustment is done through the hydraulic support brackets bolted on the main frame (**see fig. 12**). Bolting the brackets further apart from the center of the frame will widen the windrow width, while assembling them closer to the center of the frame will narrow the windrow width.

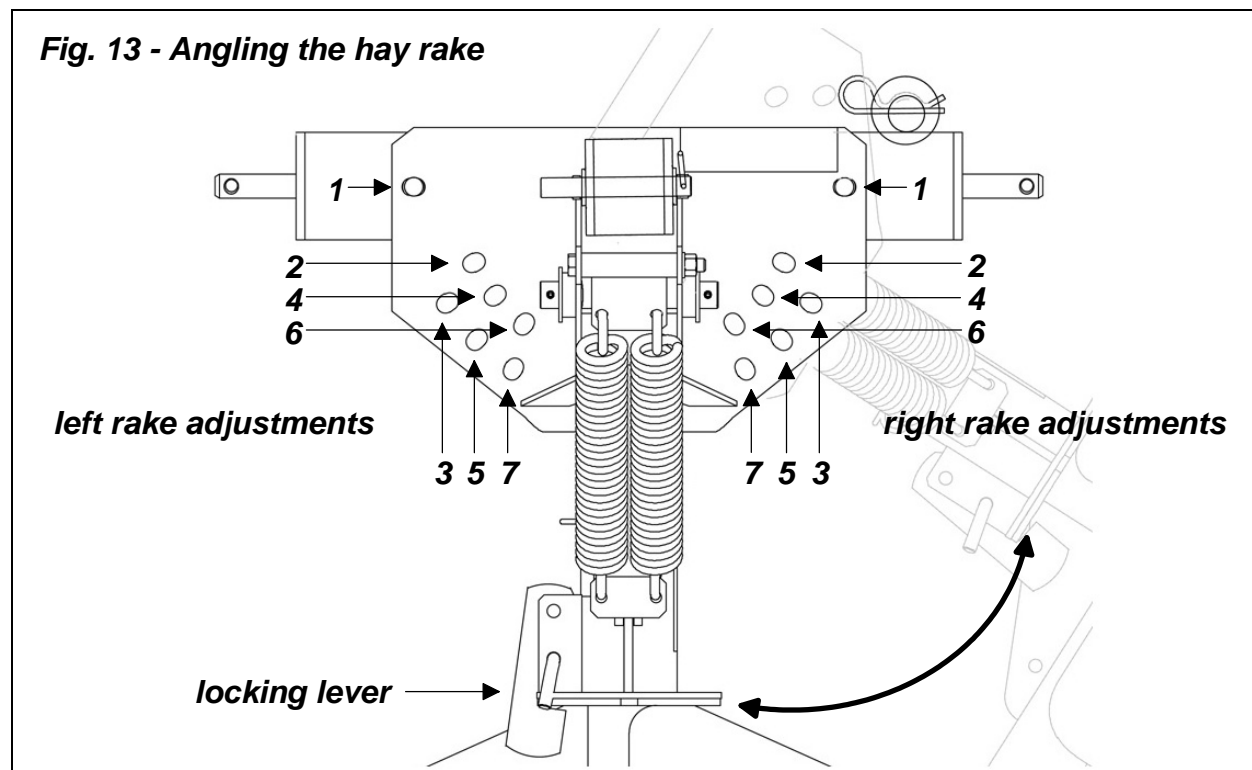


Once brackets are adjusted to desired width, finer adjustments of the windrowing width will be made through the holes on the frame holder hitch (**see fig. 13**).

BEFCO's hay rakes offer six different angling positions that allow the operator to fine tune the unit to obtain the best raking results (**see fig. 13**).

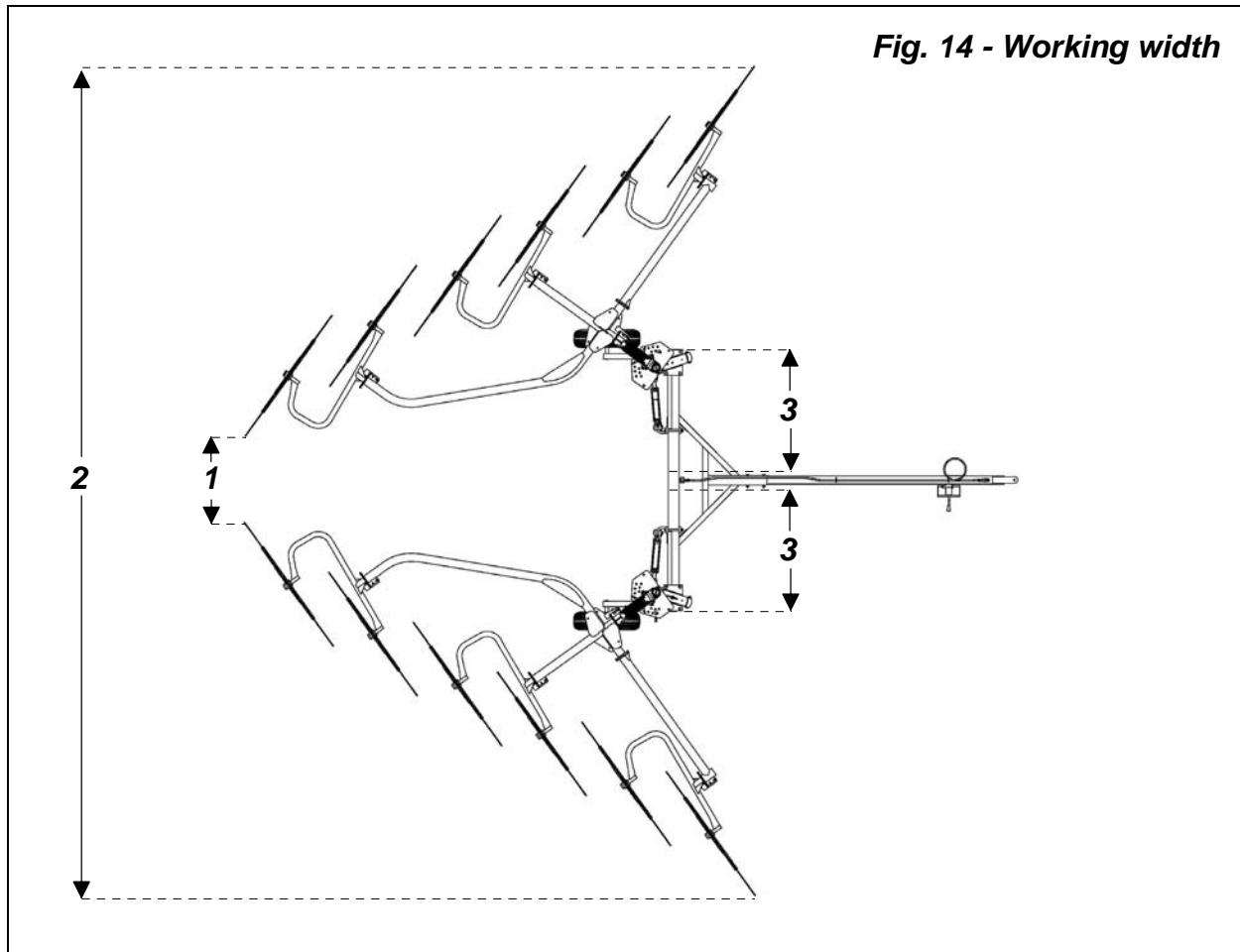
The holes on the right of the frame holder hitch are the ones used on the right hand rake while the holes on the left of the frame holder hitch are the ones used on the left hand rake. Under normal working conditions a hole position between 4 and 6 should work best (**see fig. 13**). Remove the locking pin from the transport position hole on the frame holder hitch and select one of the six raking angle adjustments available (**see fig. 13**). Once the desired raking angle is selected insert the locking pin through the hole and secure it with the  $\text{\O}4$  hairpin cotter. Adjusting the rake angle will adjust the windrowing width. Lower the rake to the ground so that the rake wheels are carrying the weight at the back of the unit. Select the desired working speed and begin raking.

Note: Positions 2 and 3 (**see fig. 13**) are not used on carted rakes since these will cause rear rake wheels to overlap.



**IMPORTANT:** Always make sure the locking lever is engaged and secured with the locking pin in the working position before operating the hay rake (**see fig. 13**).





**TABLE 1 - WINDROW WIDTHS**

Minimum and maximum working width adjustments			
Model	Windrow width (1)	Working width (2)	Adjustable width (3)
<b>RC0-08V</b>			
Minimum adjustable width	1'	17'2"	30" (15" per side)
Maximum adjustable width	10'8"	21'10"	30" (15" per side)
<b>RC0-10V</b>			
Minimum adjustable width	1'	18'6"	30" (15" per side)
Maximum adjustable width	10'7"	23'6"	30" (15" per side)
<b>RC0-12V</b>			
Minimum adjustable width	2'9"	20'3"	30" (15" per side)
Maximum adjustable width	11'1"	25'6"	30" (15" per side)
<b>RS2-08V</b>			
Minimum adjustable width	2'	17'6"	21" (10.5" per side)
Maximum adjustable width	9'9"	19'10"	21" (10.5" per side)
<b>RS2-10V</b>			
Minimum adjustable width	2'	20'3"	21" (10.5" per side)
Maximum adjustable width	11'8"	23'3"	21" (10.5" per side)

Note: Working and windrowing widths are approximate.

### Raking (all models)

In the raking position, the rake wheels overlap front to back moving the crop to the center (**see fig. 15**). Proper raking is obtained by positioning the bends, on both the support arms and the arms with hubs, towards the back of the unit.



### Spreading (models RC0-08V, RC0-12V, RS2-08V only)

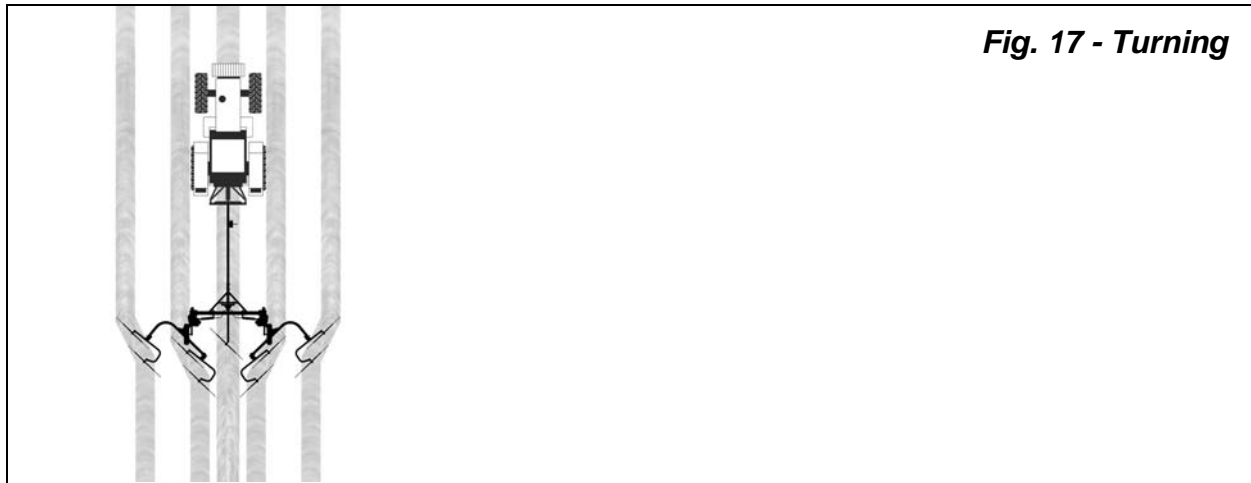
Hay rakes can be used to spread hay that has already been windrowed. This is normally done to help wet hay dry faster. If the machine is assembled in the spreading position, all rake wheels will be aligned causing them to spread the hay across the width of the machine. Proper spreading is obtained by positioning the bend on the support arms towards the back of the unit and the bends on the arms with hubs towards the tractor (**see fig. 16**).



### Turning (models RC0-08V, RC0-12V, RS2-08V only)

In the turning position, each pair of rake wheels overlap front to back turning the forage crop and allowing it to dry faster. In the turning position, the finger wheels are set to work in pairs turning two windrows in each pass. Proper turning is obtained by

positioning the bend on the support arms towards the tractor and bends on the arms with hubs towards the back of the unit (see fig. 17).

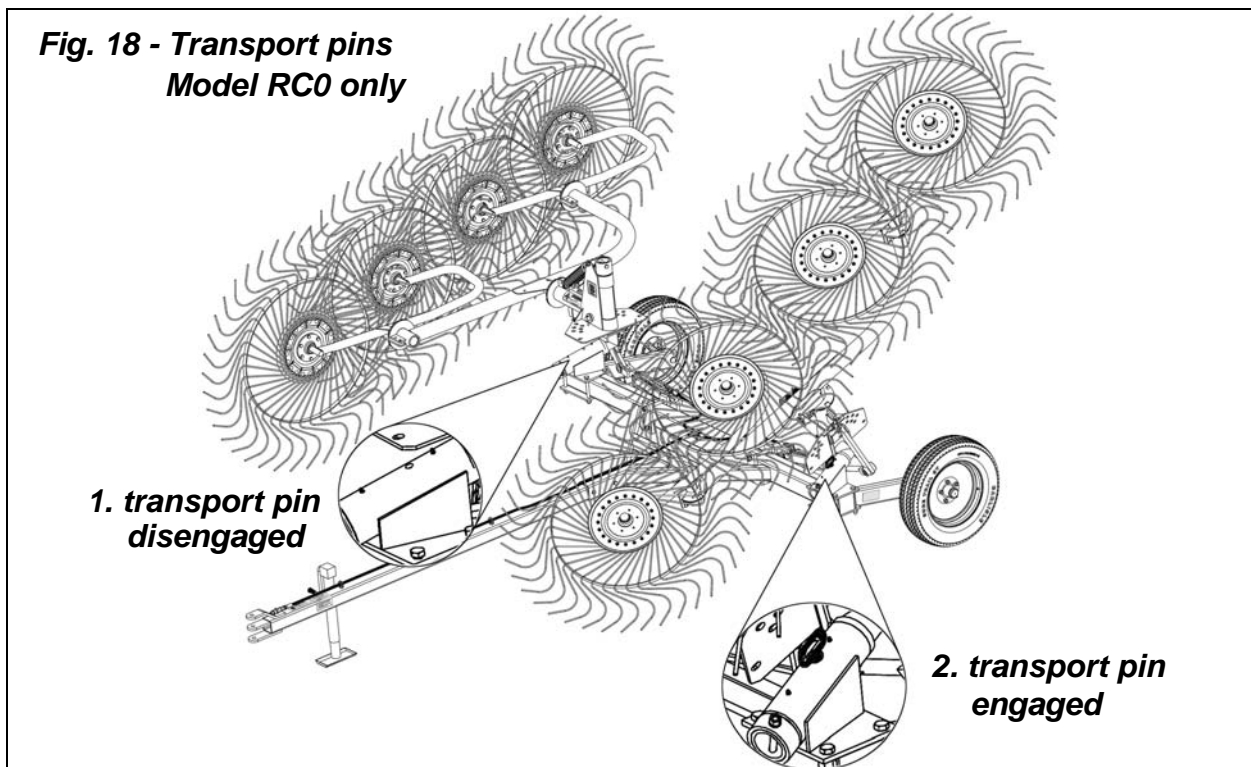


**Fig. 17 - Turning**

### 3.08 - Raking a Single Windrow

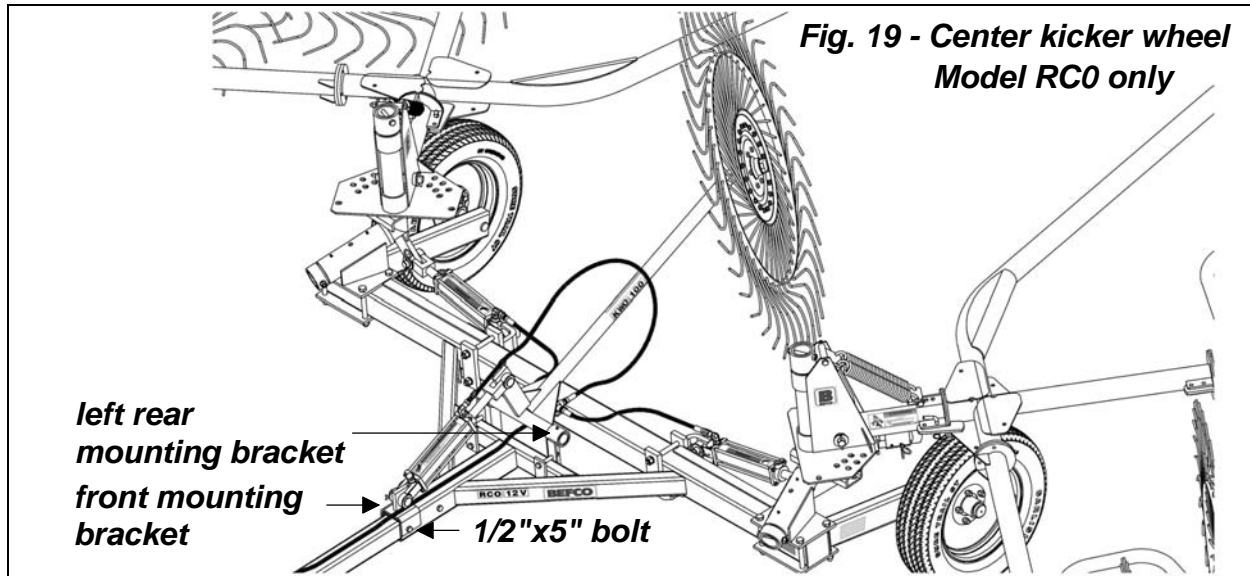
BEFCO hay rake carts can be operated using only the left or right hay rake at one time. With the rake cart in the transport position:

1. Remove the transport pin only on the side of the rake that will be used for raking (see #1, fig. 18). Leave the transport pin on the other side in place (see #2, fig. 18).
2. Push tractor SCV lever to lower desired rake wheels and begin raking.



### 3.09 - Optional Center Kicker Wheel

The optional center kicker wheel available for RC0 model hay rakes, will turn and fluff up the forage in the center of the unit allowing it to dry faster.



#### To assemble the kicker wheel do the following:

1. Remove the front  $\frac{1}{2}$ "x4.5" bolt from the main frame (**see fig. 19**). Position the front mounting bracket over the hole on the main frame. Note: The hole on the front mounting bracket is offset and needs to be assembled with the hole close to the front of the tongue.
2. Secure the front mounting bracket to the frame using the supplied  $\frac{1}{2}$ "x5" bolt.
3. Position the rear mounting brackets on either side of the wheel arm with the welded plates facing towards the inside of the tube. Make sure to assemble the left bracket to the left and the right bracket to the right of the wheel arm (**see fig. 19**).
4. Use the supplied  $\frac{1}{2}$ "x3.5" bolts and backing plates to secure the rear mounting brackets in the center of the main frame of the rake.
5. Assemble the base end of the hydraulic cylinder to the front mounting bracket and the cylinder rod to the kicker wheel arm using the supplied pins and secure them with a cotter pin on each side.
6. Replace the hydraulic "Tee" fitting on the rake with the cross fitting supplied with the kicker wheel and reassemble all the hoses in the same position they were in before.
7. Connect the supplied 35" hydraulic hose to the rear port of the cross fitting. Assemble the 90° elbow to the port on the hydraulic cylinder closer to the cylinder rod and assemble the opposite end of the 35" hose to the 90° elbow.
8. Assemble the rake wheel to the hub on the kicker wheel arm with the inner wheel facing the back of the machine and secure it in place using the supplied M10x25 bolts, Ø10 external lock washers and the M10 nuts (**see fig. 8**).
9. Tighten all hardware securely<sup>7</sup>.

<sup>7</sup> Refer to Table 2 - Torque Specifications, page 35.



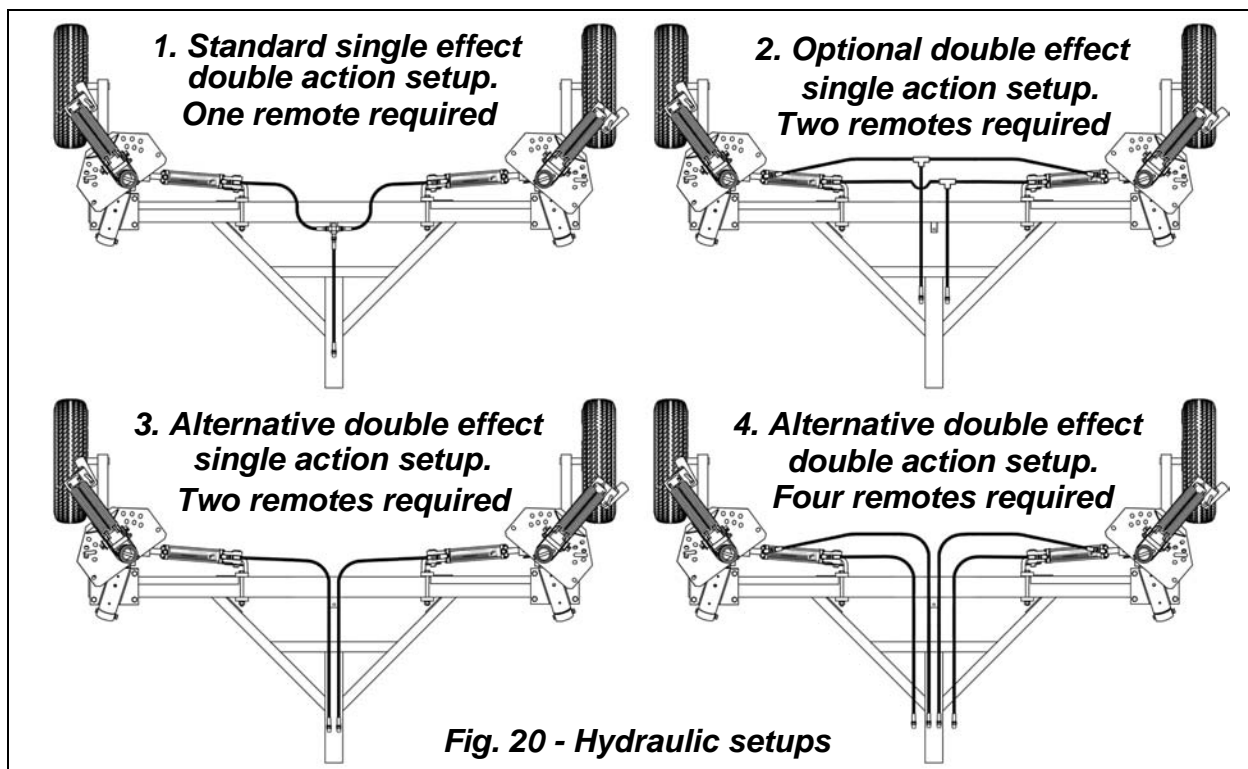
**WARNING:** High pressure hydraulic oil leaks can penetrate skin resulting in injury, gangrene or death. Be sure to relieve any hydraulic oil pressure before disconnecting any lines or pipes between rake and tractor hydraulic system. Check for oil leaks using a cardboard, never use hands.

### 3.10 - Optional Double Action Rake Cart Kit

The optional double action rake cart kit will enable the operator to apply additional pressure on the rake wheels (see #2, fig. 20). Alternative setups may also be used (see #3 & 4, fig. 20).

**To assemble the double action rake cart kit do the following:**

1. Install 90° fitting to cylinder rod end of the hydraulic cylinders. Restrictors are inside the 90° fittings.
2. Install the two short 39" hydraulic hoses to each of the 90° fittings using hose ends that do not swivel.
3. Install swivel ends of the two short hydraulic hoses to the sides of the "Tee" fitting.
4. Install the long hydraulic hose to the front of "Tee" fitting.
5. Install the quick coupler and reducer on the long 160" hose.
6. Secure the "Tee" fitting and hydraulic hoses with plastic tie straps.
7. Tighten all hardware securely<sup>8</sup>.



<sup>8</sup> Refer to Table 2 - Torque Specifications, page 35.



**WARNING:** High pressure hydraulic oil leaks can penetrate skin resulting in injury, gangrene or death. Be sure to relieve any hydraulic oil pressure before disconnecting any lines or pipes between rake and tractor hydraulic system. Check for oil leaks using a cardboard, never use hands.

### 3.11 - Uneven Terrain



**DANGER:** Be careful of rollover when operating tractor and implement over uneven ground.

The following precautions should always be observed when working on uneven terrain:

1. In extremely uneven terrain rear wheel weights, front tractor weights, and/or tire ballast should be used to improve stability.
2. Observe the type of terrain and develop a safe working pattern.
3. Operate the implement up and down steep slopes, not across slopes, to prevent the tractor from tipping. Avoid sudden stops and starts, and slow down before changing directions on a slope.
4. Pass diagonally through sharp dips and avoid sharp drops to prevent hanging up the tractor and implement.
5. Slow down on sharp turns and slopes to prevent tipping or loss of control.
6. Watch for holes, roots or other hidden objects. Do not use near the edge of a gully, ditch or stream bank.

### 3.12 - Removing Hay Rake from the Tractor



**CAUTION:** Set parking brake. Stop engine and remove key from ignition. Disconnect three point linkage or pull type drawbar and carefully drive tractor away from rake.

1. Park hay rake on level and solid ground.
2. Make sure all parts have come to a complete stop.
3. Set parking brake and place transmission in "Park".
4. Stop engine and remove key from ignition.
5. If rake wheels are raised, engage frame lock plates and secure them with the pins.
6. On hay rake model RC0, insert transport pins through the holes in the hydraulic support brackets. Disconnect the hydraulic hose to the tractor remote port and place tractor SCV lever in neutral position. Place jack stand in storage position and secure

it with a pin. Remove the hitch pin and safety chain then carefully drive tractor away from rake.

7. On hay rake model RS2, place support stands in storage position and secure them with wire lock pins. Disconnect three point linkage and carefully drive tractor away from rake.

### 3.13 - Transport



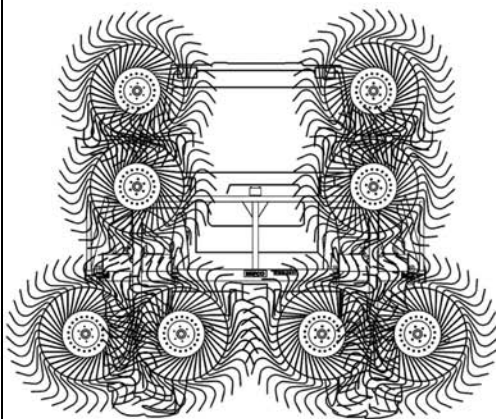
**CAUTION:** Comply with state and local laws governing safety and movement of farm machinery on public roads. When driving the tractor and equipment on the road under 20 mph, at night or during the day, use flashing amber warning lights and a Slow Moving Vehicle (SMV) identification emblem. Do not exceed 20 mph. Reduce speed on rough roads and surfaces. Always install transport locks before transporting the hay rake. Drive tractor and rake safely. Do not drink and drive.



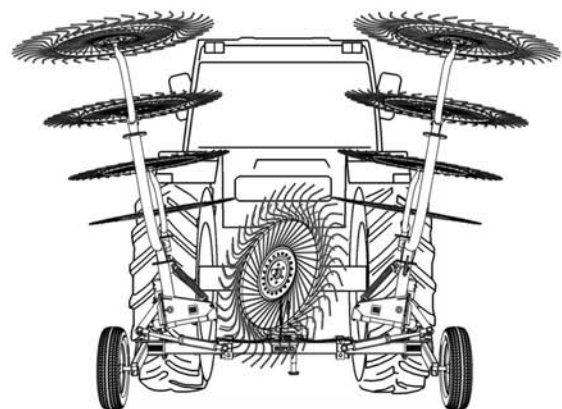
**CAUTION:** Do not tow tractor and implement behind other vehicles. Use a properly equipped trailer with heavy tie-downs for towing operations.

1. Always select a safe ground speed that is appropriate for the terrain. Never travel faster than 20 mph.
2. Beware of traffic on public roads. Install a SMV (Slow Moving Vehicle) sign when traveling on roads or streets. Comply with all federal, state and local laws.
3. Reduce ground speed when turning and take care that the implement does not strike obstacles such as trees, fences or buildings.

**Fig. 21 - Transporting the rake carts**



**1. RS2 three point "V" rakes**



**2. RC0 pull-type "V" rakes**

**To transport pull-type “V” rakes models RC0-08V, RC0-10V and RC0-12V do the following:**

1. Use the hydraulic remote to raise rake wheels so that they are barely off the ground.
2. Engage frame lock plates on rake wheels and secure them with pins.
3. Remove the Ø16x178 locking pins from the selected work position and place them in position #7 (**see #7, fig. 13**). Secure pins with Ø4 hairpin cotters.
4. Use the hydraulic remote to raise the rake in transport position.
5. Insert transport pins through the holes in the hydraulic support brackets.
6. When transporting rake on public roads, make sure safety chain and SMV sign are installed. Leave only enough slack in the chain to permit turning. Do not use safety chain for towing.
7. Place jack stand in transport position and secure it with pin.



**CAUTION: A safety chain (not supplied with unit) will help control drawn equipment should it accidentally separate from the tractor drawbar. A runaway machine could cause severe injury or death. Leave only enough slack in the chain to permit turning. Do not use safety chain for towing.**

**To transport three-point “V” rakes models RS2-08V and RS2-10V do the following:**

1. Raise the three point hitch to raise rake wheels so that they are off the ground.
2. Engage frame lock plates on rake wheels and secure them with pins.
3. Proceed with the instructions below for one side of the rake before starting on the other side. Remove the Ø16x178 locking pin from the selected work position and place it in position #1 (**see #1, fig. 13**). Secure pin with hairpin cotter.
4. Disengage the locking levers and manually turn the support arms 90° so that they sit vertical over the three point hitch. Re-engage the locking levers and secure them with the locking pins and the Ø3 hairpin cotters.
5. If necessary, tighten the turnbuckle on the three point hitch in order to angle the rakes forward and increase the rake wheels clearance from the ground.
6. Turn the arm with hubs furthest to the back by 90° so that it sits horizontal to the three point hitch when the support arms are in the transport position (**see #1, fig. 21**).
7. Repeat instructions 3 through 7 for the other side of the rake.
8. Place support stands in transport position.



**CAUTION: To avoid bodily injury or death, make sure bystanders are clear of machine when raising or lowering rake wheels. Always install transport pins to prevent rake arms from falling during transport.**



## 4 - MAINTENANCE



**DANGER: Stop engine, lock parking brake and remove key before performing any service or maintenance.**

**Never rely on the tractor lift system. Install blocks or stands under the implement to prevent it from falling.**

**Always use personal protection devices, such as glasses or gloves when performing maintenance.**

**Keep fingers out of slots to prevent injury.**

### 4.01 - Maintenance Safety



1. Good maintenance is your responsibility.
2. Keep service area clean and dry. Be sure electrical outlets and tools are properly grounded. Use adequate light for the job at hand.
3. Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
4. Make no repair or adjustments with the tractor engine running. Before working on the machine, shut off the engine, set the brakes, and remove the ignition key.
5. Be certain all moving parts have come to a complete stop before attempting to perform maintenance.
6. Never work under equipment unless it is blocked securely.
7. Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.
8. Frequently check teeth. They should be free of nicks and cracks and securely fastened.
9. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
10. After servicing, be sure all tools, parts and service equipment are removed.
11. Never replace hex bolts with less than grade five bolts (or class eight for metric bolts) unless otherwise specified, i.e. shear bolts<sup>9</sup>.
12. Where replacement parts are necessary for periodic maintenance and servicing, genuine replacement parts must be used to restore your equipment to original specifications. The Company will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

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<sup>9</sup> Refer to Table 2 - Torque Specifications, page 35.

13. Unauthorized modifications to the machine may impair the function and/or safety of the machine and reduce its life. If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.

## 4.02 - Service

### Before each use:

1. Check machine condition, particularly the rake wheels. Check for any loose teeth, bolts or missing hardware.
2. Replace any damaged or worn tooth.
3. Check tire pressure. If necessary inflate tires to tire manufacturer's recommended pressure.

### Hourly or whenever an obstacle is hit:

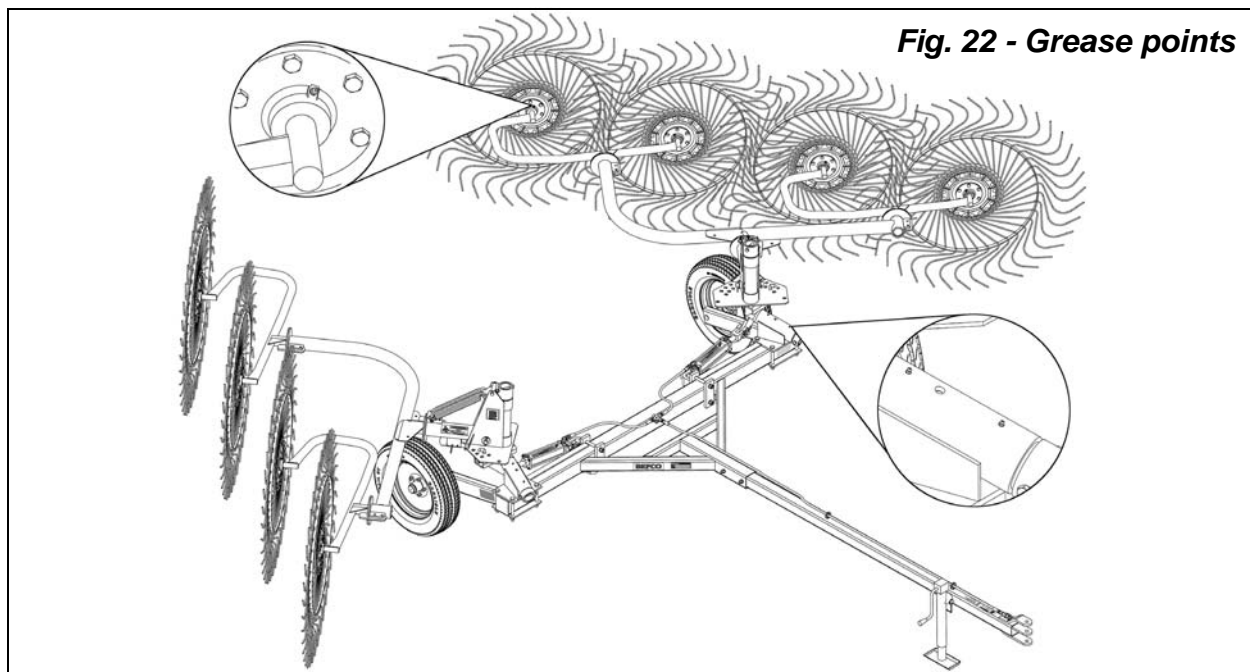
1. Check machine condition, particularly the rake wheel teeth.
2. Replace any damaged or worn tooth.
3. Remove any wrapping (stalks, weeds, trash, etc.) from implement.

### Every 8 hours:

1. Grease fittings on wheel hubs (**see fig. 22**).
2. Grease the two fittings located on each side of the hydraulic support (**see fig. 22**).







### Every 25 hours:

1. Check lug nuts on wheels. If necessary, torque bolts to 85 ft-lb.
2. Check hardware tightness; vibration can loosen bolts<sup>10</sup>.



<sup>10</sup> Refer to Table 2 - Torque Specifications, page 35.

**TABLE 2 - TORQUE SPECIFICATIONS**

Metric (ISO) treaded bolts head marking							Inch (SAE) treaded bolts head marking								
	Class 5.8		Class 8.8		Class 10.9			Grade 2		Grade 5		Grade 8			
Bolt size mm	Thread mm	N.m	ft-lb	N.m	ft-lb	N.m	ft-lb	Bolt size inch	Thread inch tpi	N.m	ft-lb	N.m	ft-lb	N.m	ft-lb
M5	0.8	4	3	6	4	9	7	1/4"	20	7	5	11	8	16	12
M6	1	6	4	10	7	15	11	1/4"	28	8	6	13	10	19	14
M8	1.25	16	12	25	18	36	27	5/16"	18	15	11	24	17	33	25
M8	1	17	13	26	19	38	28	5/16"	24	17	13	26	19	37	27
M10	1.5	31	23	48	35	71	52	3/8"	16	27	20	42	31	59	44
M10	1.25	33	24	51	38	75	55	3/8"	24	31	23	47	35	67	49
M10	1	35	26	53	39	78	58	7/16"	14	43	32	67	49	95	70
M12	1.75	54	40	84	62	123	91	7/16"	20	48	36	75	55	106	78
M12	1.5	56	41	87	64	128	94	1/2"	13	66	48	102	75	144	106
M12	1.25	59	44	90	66	133	98	1/2"	20	75	55	115	85	163	120
M14	2	84	62	133	98	195	144	9/16"	12	95	70	147	109	208	154
M14	1.5	94	69	142	105	209	154	9/16"	18	106	79	164	121	232	171
M16	2	131	97	206	152	302	223	5/8"	11	132	97	203	150	287	212
M16	1.5	141	104	218	161	320	236	5/8"	18	149	110	230	170	325	240
M18	2.5	181	133	295	218	421	310	3/4"	10	233	172	361	266	509	376
M18	2	196	145	311	229	443	327	3/4"	16	261	192	403	297	569	420
M18	1.5	203	150	327	241	465	343	7/8"	9	226	167	582	430	822	606
M20	2.5	256	189	415	306	592	437	7/8"	14	249	184	642	473	906	668
M20	1.5	288	212	454	335	646	476	1"	8	339	250	873	644	1232	909
M22	2.5	344	254	567	418	807	595	1"	12	371	273	955	704	1348	995
M22	1.5	381	281	613	452	873	644	1-1/8"	7	480	354	1077	794	1746	1288
M24	3	444	327	714	526	1017	750	1-1/8"	12	539	397	1208	891	1958	1445
M24	2	488	360	769	567	1095	808	1-1/4"	7	677	500	1519	1120	2463	1817
M27	3	656	484	1050	774	1496	1103	1-1/4"	12	750	553	1682	1241	2728	2012
M27	2	719	530	1119	825	1594	1176	1-3/8"	6	888	655	1992	1469	3230	2382
M30	3.5	906	668	1420	1047	2033	1499	1-3/8"	12	1011	746	2268	1673	3677	2712
M30	2	1000	738	1600	1180	2250	1659	1-1/2"	6	1179	869	2643	1949	4286	3161
M36	4	1534	1131	2482	1830	3535	2607	1-1/2"	12	1326	978	2974	2194	4823	3557

When using lock washers with nuts, increase torque values by 5%.

**TABLE 3 - "V" HAY RAKES - TECHNICAL FEATURES**

<b>"V" Hay Rakes for tractors up to 80 HP, pull-type and 3 point hitch cat. 1 models</b>										
Model	HP	Number of wheels	Wheel diameter	Teeth per wheel	Teeth diameter	Working width	Transport width	Transport height	Working speed	Weight lb.
RC0-08V	30-80	8	56"	40	9/32"	18'2"	12'1"	8'10"	14 mph	1436
RC0-10V	30-80	10	56"	40	9/32"	22'	12'6"	10'	14 mph	1650
RC0-12V	30-80	12	56"	40	9/32"	25'	12'11"	12'1"	14 mph	1864
RS2-08V	30-80	8	56"	40	9/32"	18'2"	14'3"	11'9"	14 mph	1026
RS2-10V	30-80	10	56"	40	9/32"	22'	14'3"	14'6"	14 mph	1240

## 5 - REPAIR PROCEDURES



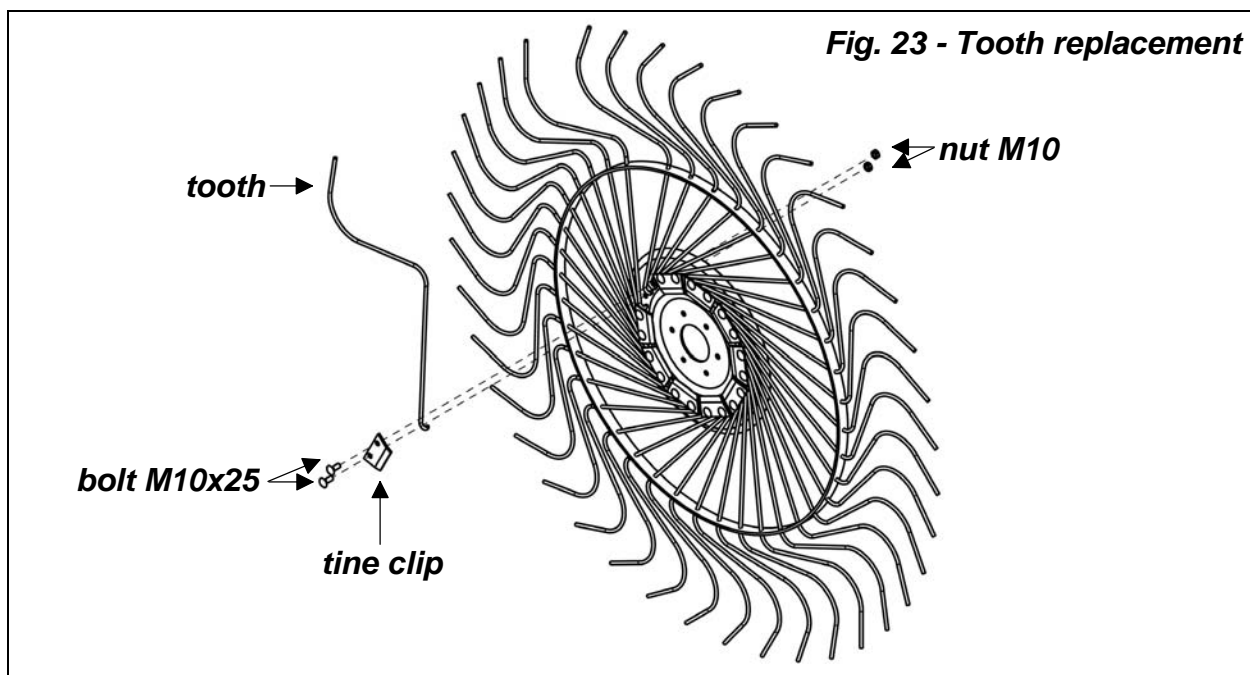
**CAUTION:** All repair procedures must be done by authorized dealerships. It is not recommended that untrained individuals perform any repair work. The following operations are detailed for qualified personnel only. Never work under the implement without properly blocking the unit.

### 5.01 - Rake Teeth Replacement

Teeth replacement is part of the regular maintenance that the operator will have to perform when using a hay rake. Rake teeth should be replaced when they are damaged, have lost their original shape or when they are worn to a point that forage is not being raked properly anymore.

To replace individual teeth do the following (see fig. 23):

1. Loosen the M10 nuts and remove the two M10x25 carriage bolts on the tine clip securing the damaged or worn tooth.
2. Slide the damaged tooth out of the wheel rake outer wheel frame and replace it with a new tooth.
3. Reassemble the tine clip using the M10x25 carriage bolts and secure it with the M10 nuts.

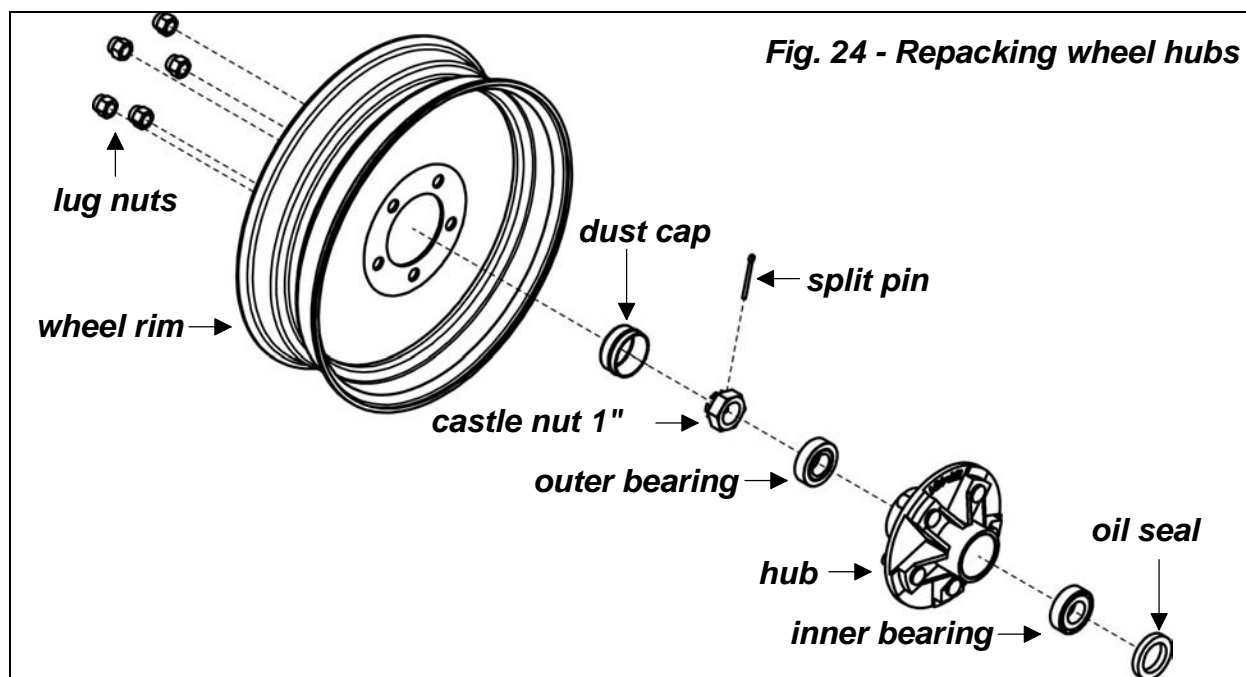


### 5.02 - Repacking Transport Wheel Hubs

Before storing the machine at the end of a work season, make sure to repack grease inside the wheel hubs. This will allow for bearings to remain properly greased while in storage and prevent rusting and premature failures.

To repack grease in transport wheel hubs do the following (see fig. 24):

1. Disassemble wheel and hub and remove inner bearing.
2. Remove and inspect the seal. Replace any bearing or seal that appears to be damaged.
3. Clean all parts in solvent and allow them to dry, then pack wheel bearings with SAE multipurpose grease. Reassemble wheel bearings and wheel hubs on machine.
4. Install seal and inner bearing into hub and mount on spindle.
5. Install outer bearing and castle nut. Tighten the castle nut until the wheel drags a little when turned. Back off nut ¼ of a turn or until first slot on nut lines up with hole in spindle then install split pin.
6. Install dust cap and wheel. Torque lug nuts to 85 ft-lb.



### 5.03 - Suggested Spare Parts

It is suggested that the following spare parts be kept on hand for the implement at all times to prevent a minor problem from delaying work.

Description	Quantity
Teeth	20
Carriage bolts & nuts	10

## 5.04 - Storage

After seasonal use it is important to perform the following for prolonged storage:

1. Wash the implement carefully.
2. Inspect the implement and replace worn or damaged parts.
3. Tighten all hardware<sup>11</sup>.
4. Grease all areas indicated under Maintenance<sup>12</sup>.
5. Apply a layer of grease to exposed part of hydraulic cylinder rods to prevent rusting.
6. Apply a thin layer of grease to rake teeth to prevent them from rusting.
7. Repack all grease in transport wheel hubs<sup>13</sup>.
8. Check hydraulic hoses for deterioration and replace them if necessary.
9. Paint exposed metal to inhibit rusting.
10. Replace any damaged or missing decals.
11. On RS2 models, lower the support stands and secure them with the wire lock pins before lowering the unit to the ground.
12. Cover the implement from the elements in order to have it in perfect condition for the start of the next season.



**WARNING:** Be sure to store the implement on a hard level surface and away from people especially children.

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<sup>11</sup> Refer to Table 2 - Torque Specifications, page 35.

<sup>12</sup> See Chapter 4 - Maintenance.

<sup>13</sup> See Section 5.02 - Repacking Transport Wheel Hubs.

## 6 - TROUBLESHOOTING



**WARNING:** Be sure tractor engine is off, parking brake is locked, and key is removed before making any adjustments.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Hydraulic system not working.	Hydraulic oil level too low in tractor. Quick coupler not connected. Remote outlet valve not activated.	Check tractors operator manual for correct level and refill if necessary. Connect quick coupler to tractor's remote. Open remote hydraulic outlet valve.
Wheel does not unload hay.	New teeth. Wet hay. Mud on teeth ends.	Run rake wheels on gravel road for a short distance. Allow hay to dry. Adjust rake so teeth do not run so heavy on the ground.
Rake is missing hay.	Rake wheels too high. Rake wheel turning too straight. Raking wheel not pitched back.  Teeth missing or heavily worn. Rake wheels bounce excessively. Excessive ground pressure.	Adjust rake wheels lower to ground. Adjust angle of rake ( <b>see fig. 13</b> ). Increase pitch by lengthening top link (models RS2 only). Replace teeth so all are same length. Lower three point hitch (models RS2 only). Ensure tractor SCV lever is in float position while working (models RS2 only). Bolt lower spring clip to hole further away from springs to reduce ground pressure ( <b>see fig. 11</b> ).
Hay bunching.	Incorrect ground speed. Wheels are stalling. Very light, fluffy hay, hay getting caught in wheel supports.	Adjust ground speed. Level tongue (models RC0 only). Run at an angle to the hay or early in the morning when hay is damp.
Individual wheel is not turning.	Insufficient lubrication. Bearing failure. Excessive ground pressure.	Grease rake wheel. Replace bearing. Ensure tractor SCV lever is in float position while working (models RS2 only). Bolt lower spring clip to hole further away from springs to reduce ground pressure ( <b>see fig. 11</b> ).
Teeth breaking.	Excessive ground speed. Excessive ground pressure. Backing up with teeth on the ground. Too much machine weight on teeth. Teeth have become corroded.	Reduce ground speed. Reduce ground pressure. Raise rake before backing up. Raise three point hitch. Protect teeth from weather or treat with rust retardant.
Teeth bending.	Backing up with teeth on the ground. Too much machine weight on teeth. Excessive speed on rough terrain.	Raise rake before backing up. Raise three point hitch. Reduce speed.
Rake outer wheel breaking.	Excessive ground speed. Excessive ground pressure.	Reduce ground speed. Ensure tractor SCV lever is in float position while working (models RS2 only). Bolt lower spring clip to hole further away from springs to reduce ground pressure ( <b>see fig. 11</b> ).

## 7 - PRE-DELIVERY CHECKLIST

**To the dealer: Inspect the machine thoroughly after assembly to assure it is functioning properly before delivering it to the customer. The following checklist is a reminder of points to cover. Check off each item as it is found satisfactory or after proper adjustment is made.**

- Guards and shield properly fastened.
- Lubrication of grease fittings.
- All hardware properly tightened.
- All decals properly located and readable (**see fig. 9**).
- Tines properly installed, bolts and nuts tightened.
- Overall condition (touch up scratches, clean and polish).
- Test run, check for excessive vibration or overheating of bearings.
- Operator's Manual.

**Review the Operator's Manual with the customer. Explain the following:**

- Warranty.
- Safe operation and service.
- Correct machine installation and operation.
- Daily and periodic lubrication, maintenance and inspections.
- Troubleshooting.
- Operational procedures and storage.
- Parts and service.
- Fill out the Pre-Delivery Checklist and Warranty Registration form.
- Give customer the Operator's Manual and encourage the customer to read the manual carefully.

**IMPORTANT: Warranty is not valid unless Pre-Delivery Checklist and Warranty Registration form in Operator's Manual is completed in detail and mailed to the Company.**

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Delivery Date: \_\_\_\_\_

Dealer's Signature: \_\_\_\_\_



## 8 - WARRANTY

BEFCO's responsibility will be limited to substitution of the acknowledged defective merchandise to the same place of delivery as the previous one was supplied.

### 1. LIMITED WARRANTY

BEFCO, Inc. herein referred to as the Company, warrants its machines and related accessories, hereafter referred to as the Machine, to be free from defects in material and workmanship, for a period of twelve (12) months from the date of invoice to the first registered owner; this limited warranty does not apply to common wear items and excludes belts, shear pins, oil, grease, tires, tubes, hydraulic hoses, knives and PTO shafts.

Labor will be reimbursed at \$40.00 per hour based on BEFCO's time schedule.

Cost of transport to the servicing dealer is the responsibility of the customer.

Warranty coverage shall not be transferable from the first owner to any subsequent owner.

### 2. DISCLAIMER OF ALL OTHER WARRANTIES AND REMEDIES

Neither the Company nor any company affiliated with the Company makes any warranties, representations or promises, expressed or implied, as to the quality, performance or application of its products other than those set forth herein and does not make any implied warranty of merchantability or fitness.

The only remedies the purchaser has in connection with the breach, or performance of any warranty on the Company's Machine are those set forth herein. In no event will the dealer, the Company, or any company affiliated with the Company, be liable for:

- a. Injuries or damages of any kind or nature, direct, consequential or contingent to person or property.
- b. Any expenses incurred by the owner to repair, replace or rework any allegedly defective item.
- c. Any loss, cost, forfeiture or damages (including loss of profits; loss of crops; loss because of delay in field operations; any expenses or loss incurred for labor, supplies, substitute machine rental; liabilities of the owner to its customers or third persons; and all other consequential damages, losses, liabilities or damages for any other reasons) whether direct or indirect, and whether or not resulting from or contributed to by the default or negligence of the Company, its agents, employees and subcontractors which might be claimed as a result of the use or failure of the equipment delivered.

The Company's liability based on this limited warranty or any other applicable laws shall be limited to replacement or refund of the purchase price of the product.

The limited warranty extended herein gives you specific rights and you may also have other rights which vary from state to state. Neither the dealer nor the Company personnel has the authority to make any representation or to modify the terms and limitations of this warranty in any way.

**Other than the limited warranty extended hereby there is no other expressed warranty in connection with the design, safety or use of any of the Company's products except as to title. All implied warranties are expressly disclaimed pursuant to the terms of this warranty.**

### **3. CUSTOM WORK**

If the Machine is used for commercial purposes such as custom work, the period warranted for the Machine is limited to six (6) months from the date of delivery to the first registered owner and does not cover any labor charges incurred.

### **4. RENTAL**

If the Machine is used for rental purposes the period warranted for the Machine is limited to thirty (30) days from the date of delivery to the first registered owner and does not cover any labor charges incurred.

### **5. REGISTRATION**

In order to qualify for coverage on this limited warranty, the product and name of the original purchaser must be registered with the Company by a completed Machine Pre-Delivery Checklist and Warranty Registration along with a copy of the dealer's invoice to the first registered owner to the Company within fourteen (14) days after the date of delivery to the original purchaser.

### **6. WARRANTY SERVICE**

Warranty Service must be performed by a dealer authorized by BEFCO. If the warranty service requested is approved, the owner shall pay only for labor beyond the rate allowed, for overtime labor, and for any mileage charge for transporting the equipment to and from the dealer's shop. It is assumed that the dealer has the appropriate general and special tools to service the machine. Time required for replacement of knives, oil, grease and to remove excessive dirt from the Machine is not subject to reimbursement by the Company. The owner is required to clean the Machine before presenting it to the dealer for service work. The Machine must be delivered within thirty (30) days after failure date by the owner to the dealer to be eligible for warranty consideration.

### **7. UNAPPROVED SERVICE OR MODIFICATION**

All obligations of the Company under this limited warranty shall be terminated if:

- a. Proper service and operation instructions as outlined in the Operator's Manual and on the instruction sticker on the Machine, are not followed.
- b. The Machine is modified or altered in any way not approved by the Company.
- c. The Company does not receive a copy of the dealer's invoice to the first registered owner within fourteen (14) days from the date of delivery.
- d. The Company has not been paid in full, by the dealer, for the Machine.

### **8. ACCIDENTS AND NORMAL MAINTENANCE**

This limited warranty covers defective material and workmanship. It does not cover depreciation or damage caused by normal wear, accidents, improper maintenance, improper protection or improper use. The costs of normal maintenance or repairs for accidents or improper use, and related labor will be borne by the owner.

### **9. REPLACEMENT PARTS**

BEFCO, Inc. warrants replacement parts to be free from defect in material and workmanship for a period of thirty (30) days from the date of delivery to the original purchaser.

# WARRANTY REGISTRATION

**BEFCO, Inc.**  
**P.O. Box 6036**  
**Rocky Mount, NC 27802-6036**

**Tel: (252) 977.9920 - Fax: (252) 977.9718**

Dealer _____ Acct. # _____	Retail Customer _____
Street _____ Country _____	Street _____
Town _____ State _____ Zip _____	Town _____ State _____ Zip _____
Date of delivery _____ Invoice # _____	Phone _____
Model # _____ Serial # _____	
<p>Pre-Delivery Checklist:</p> <p><input type="checkbox"/> Greased fittings.</p> <p><input type="checkbox"/> Safety guards in place.</p> <p><input type="checkbox"/> All hardware tight.</p> <p><input type="checkbox"/> Bolts torqued correctly.</p> <p><input type="checkbox"/> Attached unit to tractor. Yes/No.</p> <p><input type="checkbox"/> Field adjusted. Yes/No.</p> <p><input type="checkbox"/> Test run. Dry/Infield.</p> <p><input type="checkbox"/> Safety decals.</p> <p><input type="checkbox"/> Operator's Manual.</p> <p>The machine described above, had been prepared for delivery according to the Pre-Delivery Checklist and the Customer has been instructed in its care and operation and the condition of warranty.</p>	<p>Tractor make: _____</p> <p>Model: _____; HP _____</p> <p>Type of operation: Private homeowner, Landscaping, Commercial maintenance, Golf Course, Municipality, Turf Farm, others: _____</p> <p>Approximate number of acres machine will be used on annually: _____</p> <p>I hereby acknowledge that:  I have received and accepted delivery of the machine described.  The equipment was checked thoroughly for loose or missing parts and has been adjusted in accordance with the Pre-Delivery Checklist.  I have read and understand the nature and extent of the warranty and understand clearly that there were and are no other representations of warranties either expressed or implied, made by anyone. I have been advised on proper operation, maintenance and lubrication procedure of this equipment.  I have been instructed on and do understand the application, limitation and capacities this equipment was designed and recommended for, all as described in the Operator's Manual and literature published by the Company.</p>
Inspected by: _____	
Date: _____	Date: _____
Dealer's Signature: _____	Customer's Signature: _____

**This registration along with a copy of the invoice must be sent to BEFCO, Inc. within 14 days of date of purchase.**

*Sender:*

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*Place stamp  
here*

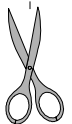
**BEFCO, Inc.**

Warranty Department

P.O. Box 6036

Rocky Mount, NC 27802-6036

*Cut along this line*



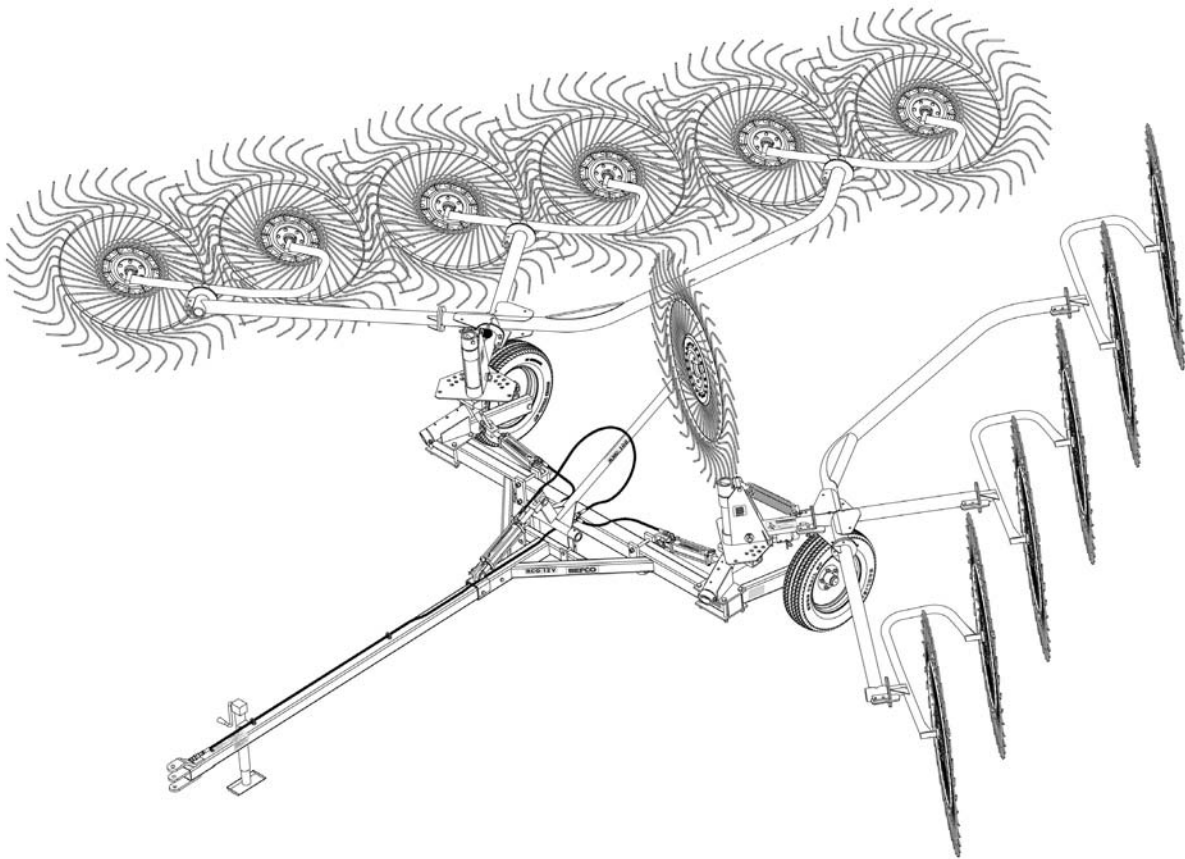
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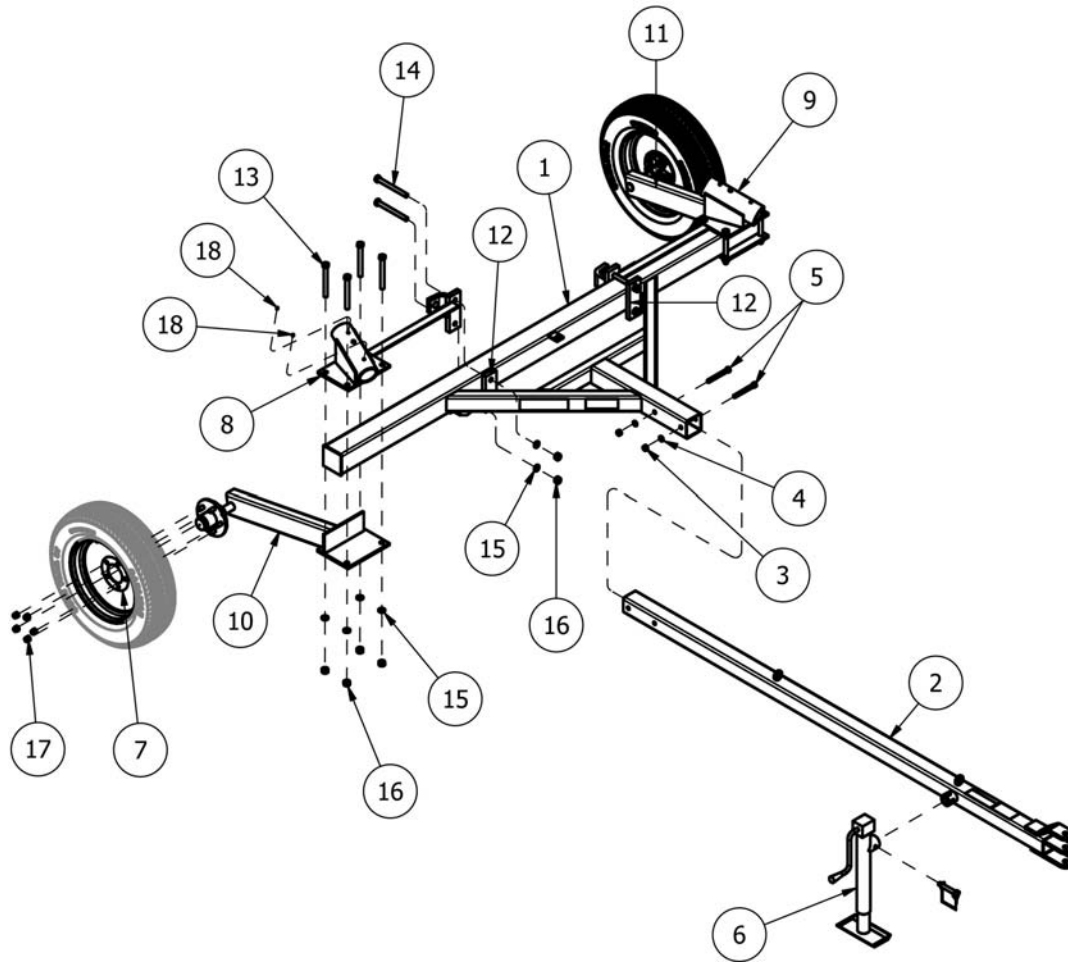
## Parts Manual

# HAY EQUIPMENT

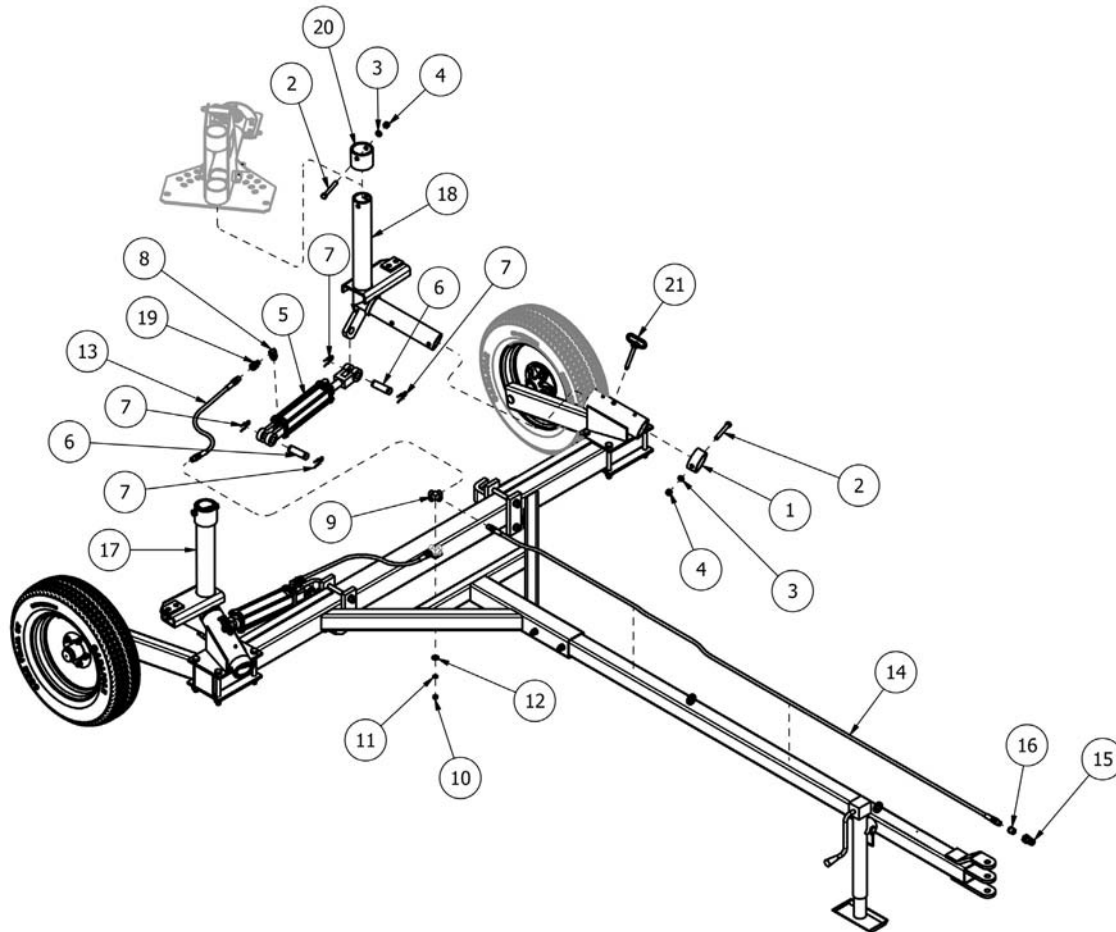
## “V” Rakes

**RC0-08V, RC0-10V, RC0-12V, RS2-08V, RS2-10V**

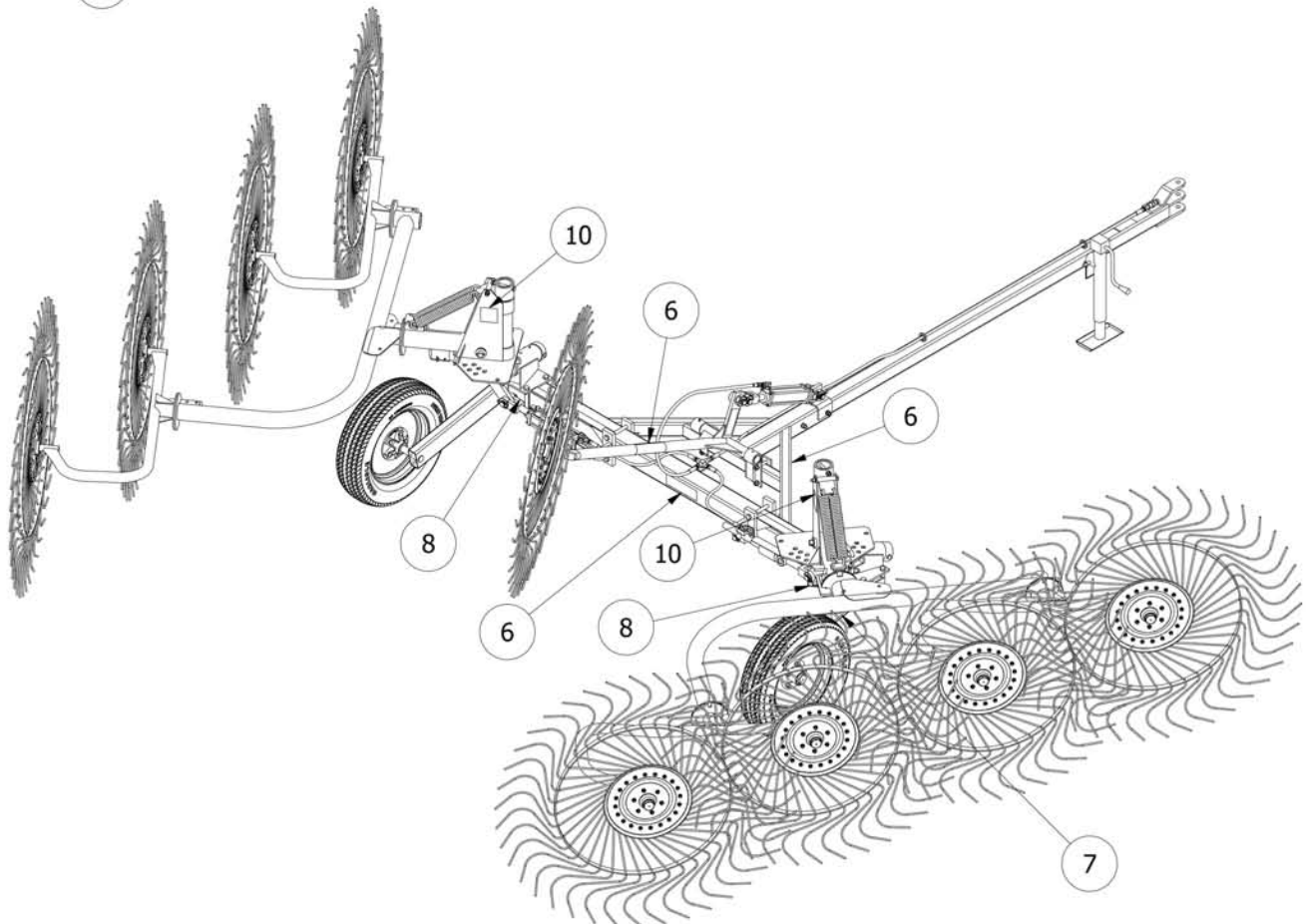
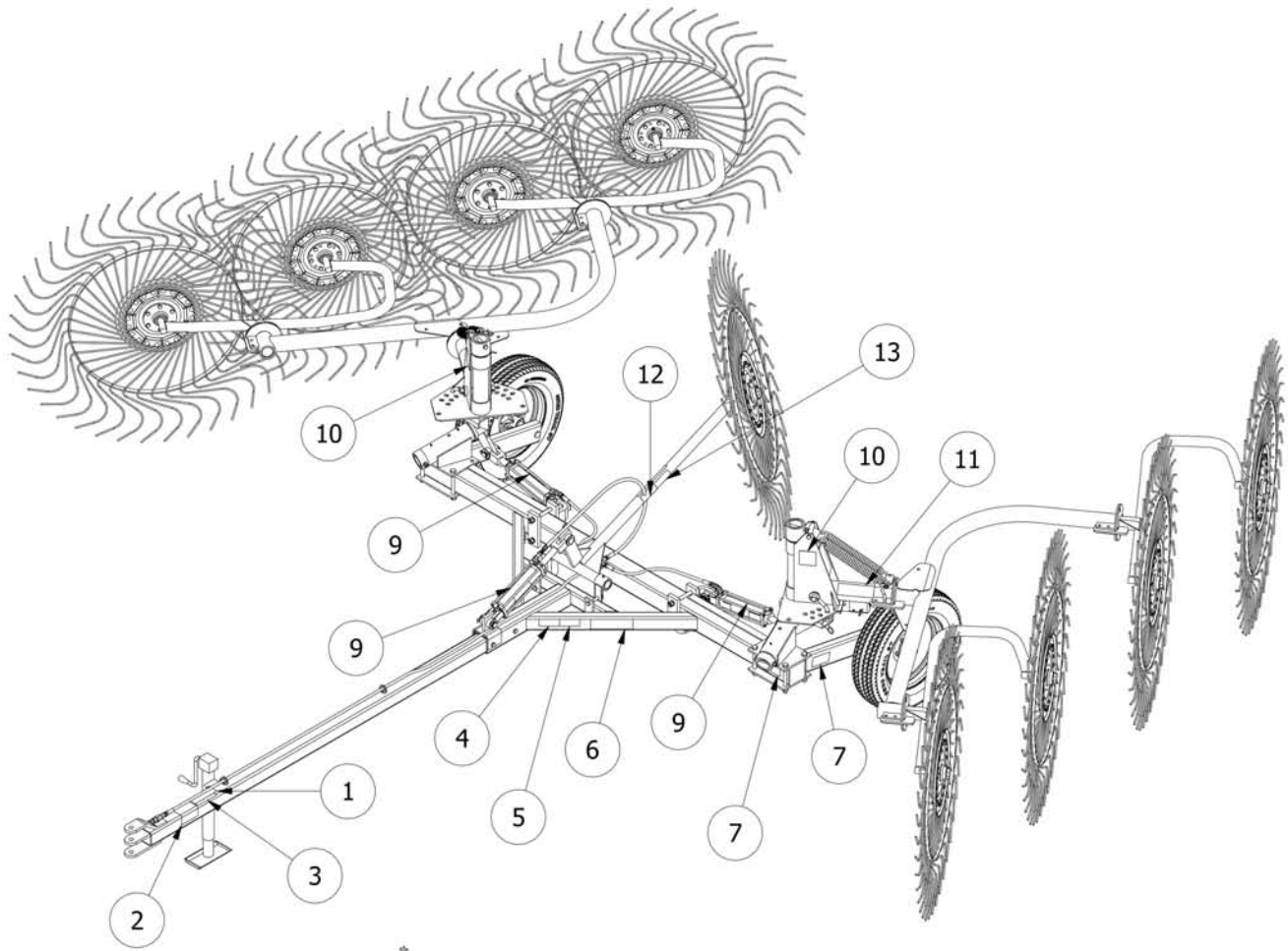




Ref.	Part #	Description	Qty.
1	502-421B	Main frame; RC0-08V, RC0-10V, RC0-12V	1
2	502-417B	Tongue; RC0-08V, RC0-10V, RC0-12V	1
3	502-744B	Nut HH 1/2"-13 G2 Z	2
4	502-746B	Washer lock 1/2" Z	2
5	502-420B	Bolt HH 1/2"-13x4.50" G5 Z P	2
6	502-098B	Jack stand	1
7	502-426B	Rim	2
8	502-437B	Hydraulic support bracket, right	1
9	502-438B	Hydraulic support bracket, left	1
10	502-441B	Spindle arm, right	1
11	502-442B	Spindle arm, left	1
12	502-432B	Backing plate hydraulic support	2
13	502-443B	Bolt HH 5/8"-11x6.00" G5 Z P	8
14	502-857B	Bolt HH 5/8"-11x6.50" G5 Z P	4
15	502-866B	Washer lock 5/8" Z	12
16	502-865B	Nut HH 5/8"-11 G2 Z	12
17	503-956B	Nut lug 1/2"-20x60° Z	10
18	503-655B	Grease fitting 5/16" PR STR Z	4

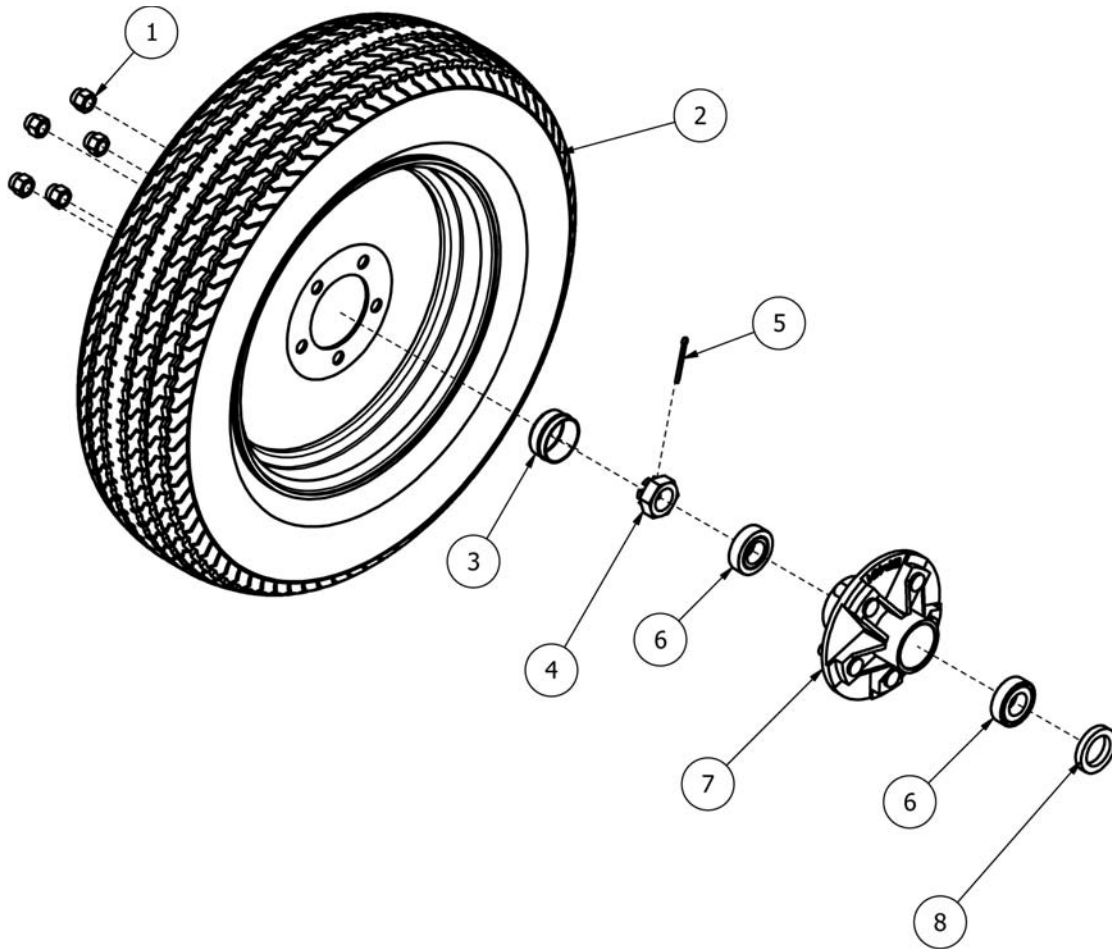


Ref.	Part #	Description	Qty.
1	502-444B	Collar 1.5", holder hitch support	2
2	190-1136	Bolt HH 1/2"-13x4.00" G5 Z P	4
3	502-419B	Washer lock 1/2" Z	4
4	502-418B	Nut HH 1/2"-13 G2 Z	4
5	503-033B	Hydraulic cylinder	2
	502-756B	Hydraulic cylinder rebuild kit (for #503-033B)	-
6	502-171B	Pin, hydraulic cylinder 1.00"x3.40"	4
7	502-172B	Clip hairpin 0.105"x2.00" Z	8
8	502-414B	Elbow 90° 3/4" ORB 3/8" FNPT	2
9	502-448B	Hydraulic tee 3/8" FNPT	1
10	006-9620	Nut HH 3/8"-16 G2 Z	1
11	006-9629	Washer lock 3/8" Z	1
12	502-817B	Washer flat 3/8" USS Z	1
13	502-446B	Hydraulic hose 26"	2
14	502-445B	Hydraulic hose 160"	1
15	502-170B	1/2" Quick connect nipple 1/2" FNPT	1
16	502-169B	Reducer 3/8" FNPT - 1/2" MNPT	1
17	502-435B	Support, frame holder hitch right	1
18	502-436B	Support, frame holder hitch left	1
19	502-164B	Adaptor 3/8" FNPT 3/8" MNPT w/restrictor 1/16"	1
20	502-427B	Collar 2.5", holder hitch support	2
21	502-430B	Pin transport 1/2"x4.44" Z	2

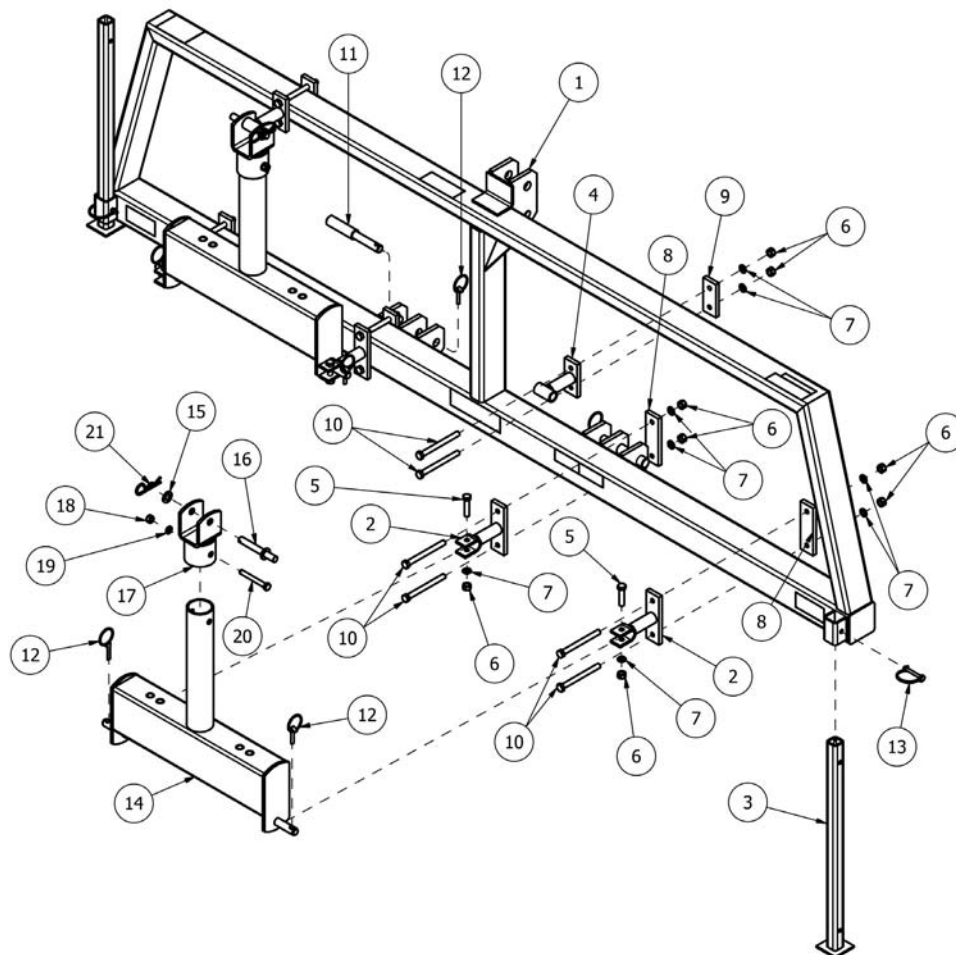




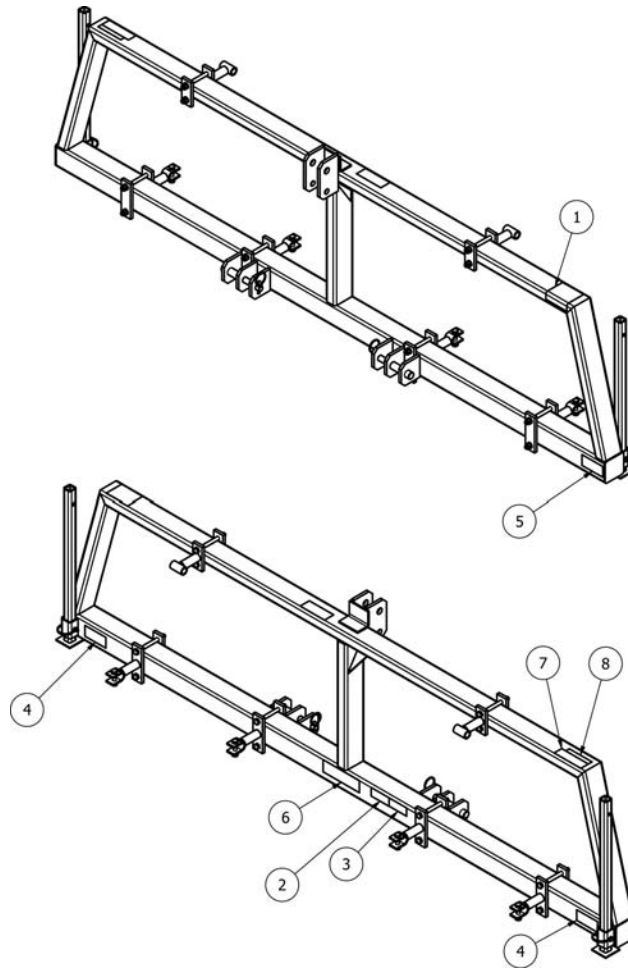
Ref.	Part #	Description	Qty.
1	950-381B	Decal "BEFCO, Inc." address	1
2	950-417B	Decal "CAUTION - To avoid serious injury"	1
3	950-358B	Decal "Made in USA"	1
4	950-382B	Decal "RC0"	1
5	950-483B	Decal "08V"	1
	950-484B	Decal "10V"	1
	950-485B	Decal "12V"	1
6	950-106B	Decal "BEFCO"	4
7	950-405B	Decal yellow reflective	3
8	950-366B	Decal red reflective	2
9	950-408B	Decal "WARNING - High pressure hydraulic oil leaks"	3
10	950-226B	Decal "B"	4
11	950-493B	Decal "WARNING - Crushing hazard"	2
12	950-384B	Decal "KW0"	1
13	950-337B	Decal "100"	1



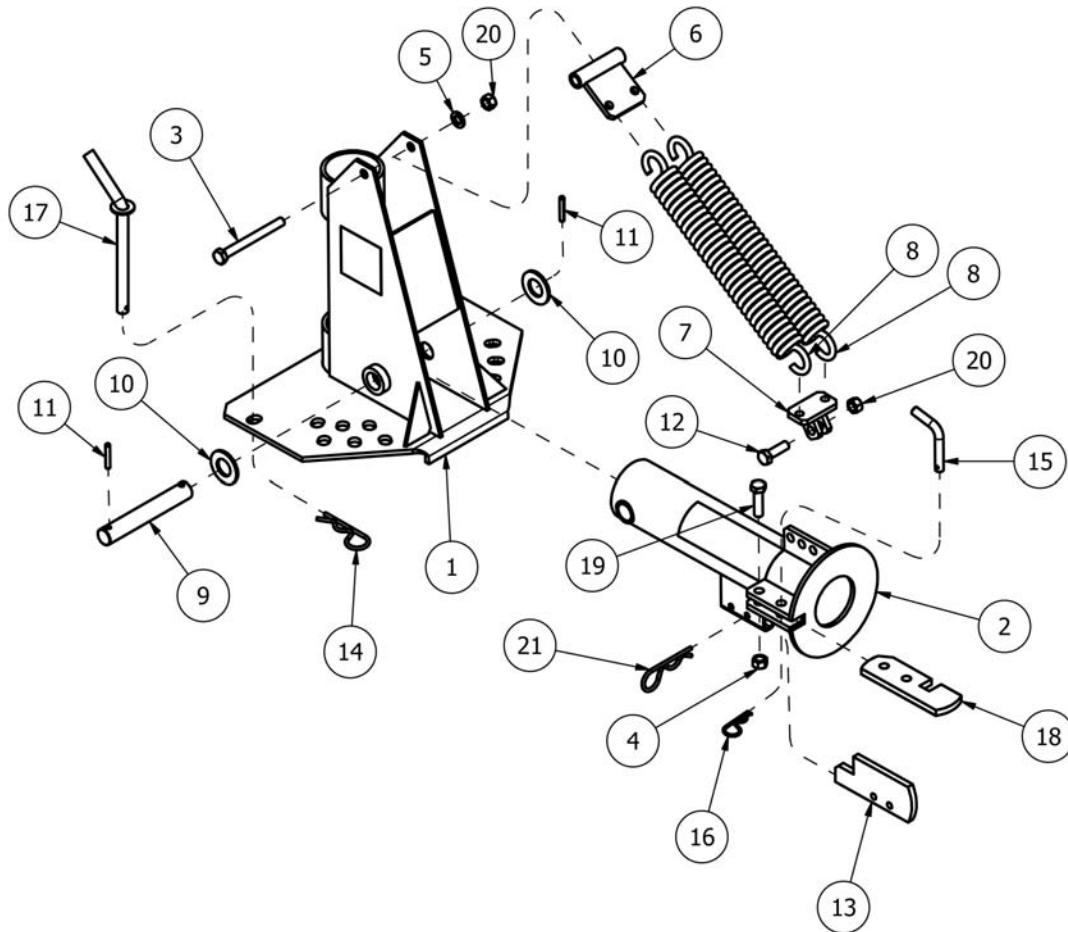
Ref.	Part #	Description	Qty.
1	503-956B	Nut lug 1/2"-20x60° Z	10
2	7900005	Tire & wheel assembly, rake cart	2
	7900004	Tire, 175/80-D13 B ply	-
	502-426B	Rim	-
3	502-101B	Dust cover	2
4	502-423B	Nut castle 1"-14 Z	2
5	503-485B	Pin cotter 5/32"x1.50" N	2
6	502-102B	Bearing L44610, L44649	4
7	502-422B	Hub	2
8	502-097B	Oil seal 12192TB	2



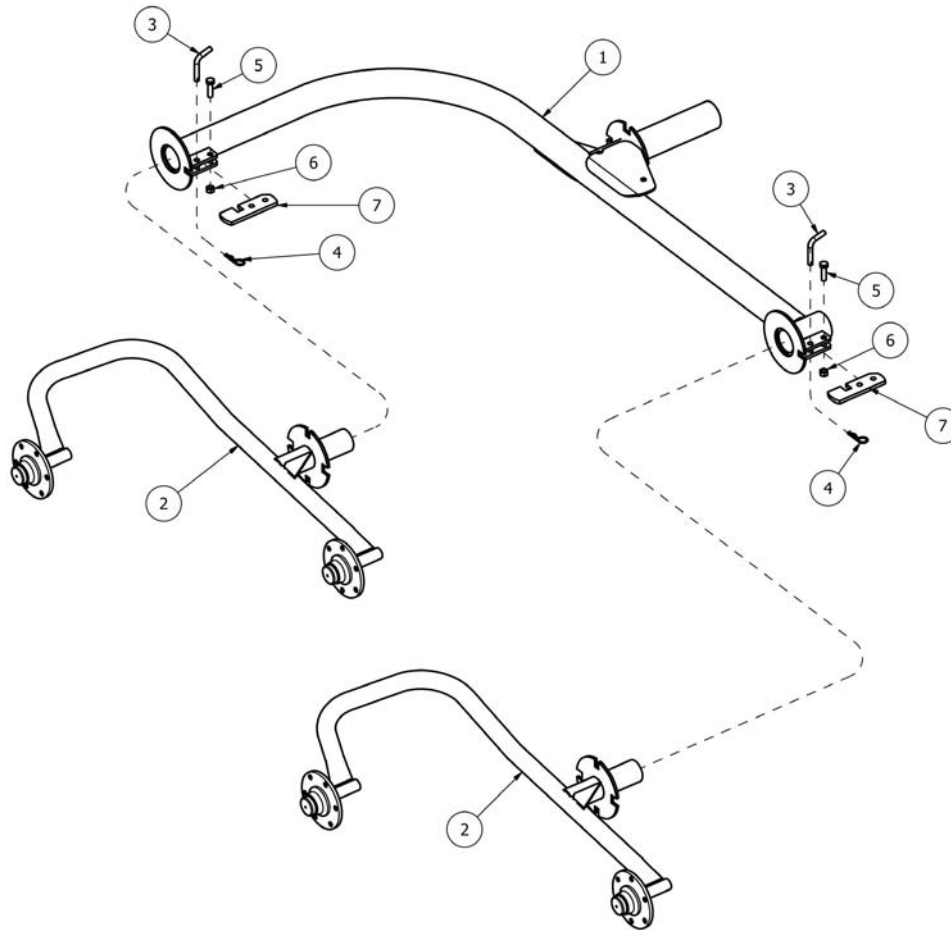
Ref.	Part #	Description	Qty.
1	502-955B	Main frame; RS2-08V, RS2-10V	1
2	502-956B	Lower bracket	4
3	502-958B	Support stand	2
4	502-961B	Upper bracket	2
5	003-0277	Bolt HH M14-2.00x60 C8.8 Z P	4
6	000-1019	Nut HH M14-2.00 C6 Z TK	16
7	000-1020	Washer lock Ø14 Z	16
8	502-957B	Lower bracket plate	4
9	502-960B	Upper bracket plate	2
10	000-6619	Bolt HH M14-2.00x150 C8.8 Z P	12
11	502-962B	Hitch pin cat.1-2	2
12	001-8266	Lynch pin Ø11x45	6
13	501-684B	Pin, wire lock 3/8"x2.50" Z	2
14	502-926B	Base, 3 point hitch RS2	2
15	005-0049	Washer, flat Ø18x34x3 Z	2
16	502-933B	Pin, top hitch Ø18x140	2
17	502-934B	Top link support	2
18	000-1019	Nut HH M14-2.00 C6 Z TK	2
19	000-1020	Washer lock Ø14 Z	2
20	003-0285	Bolt HH M14-2.00x100 C8.8 Z P	2
21	009-1507	Hairpin cotter Ø4	2



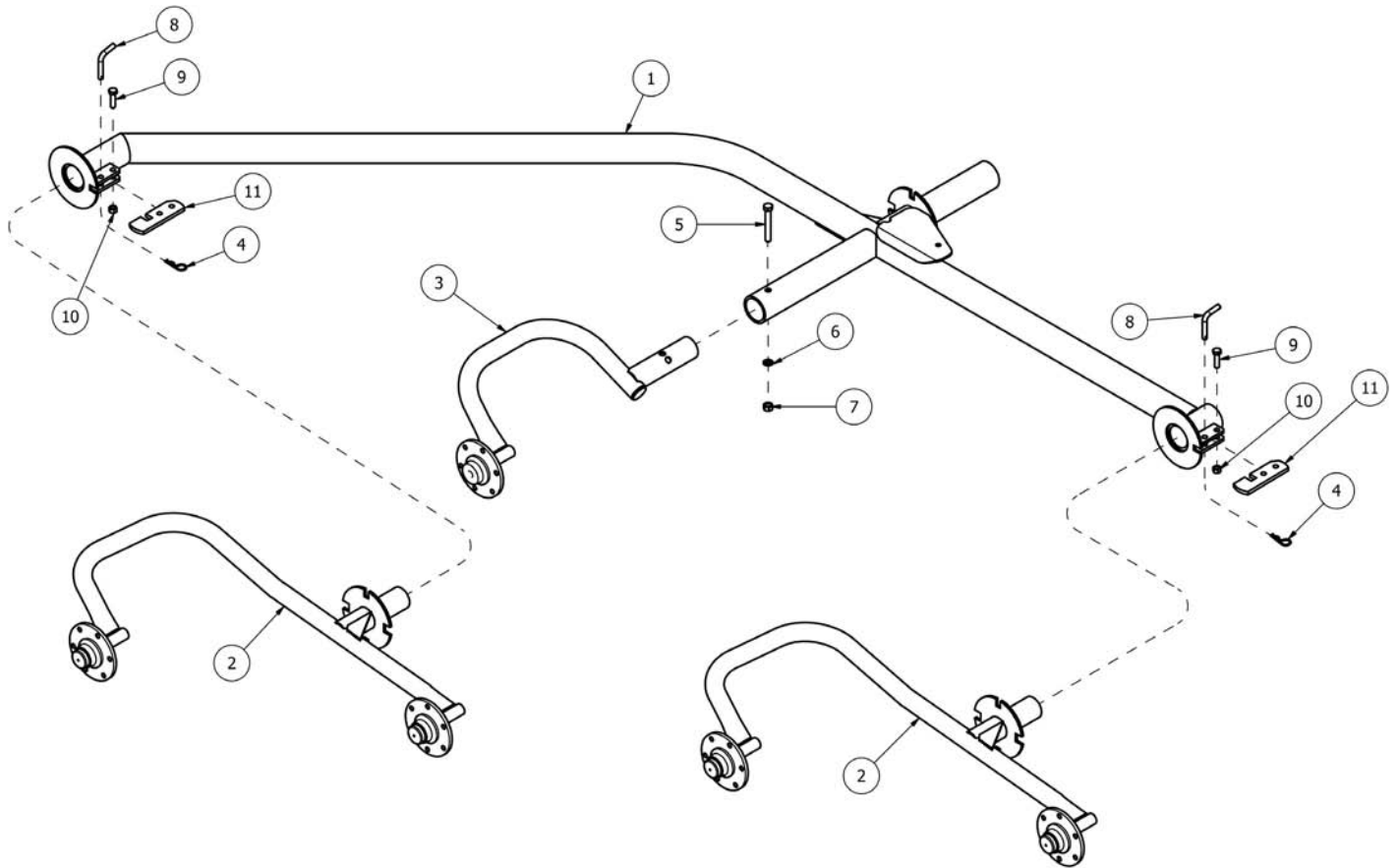
Ref.	Part #	Description	Qty.
1	950-417B	Decal "CAUTION - To avoid serious injury"	1
2	950-477B	Decal "RS2"	1
3	950-483B	Decal "08V"	1
	950-484B	Decal "10V"	1
4	950-366B	Decal yellow reflective	2
5	950-405B	Decal red reflective	1
6	950-106B	Decal "BEFCO"	1
7	950-381B	Decal "BEFCO, Inc." address	1
8	950-358B	Decal "Made in USA"	1
	950-493B	Decal "WARNING - crushing hazard", not shown	2



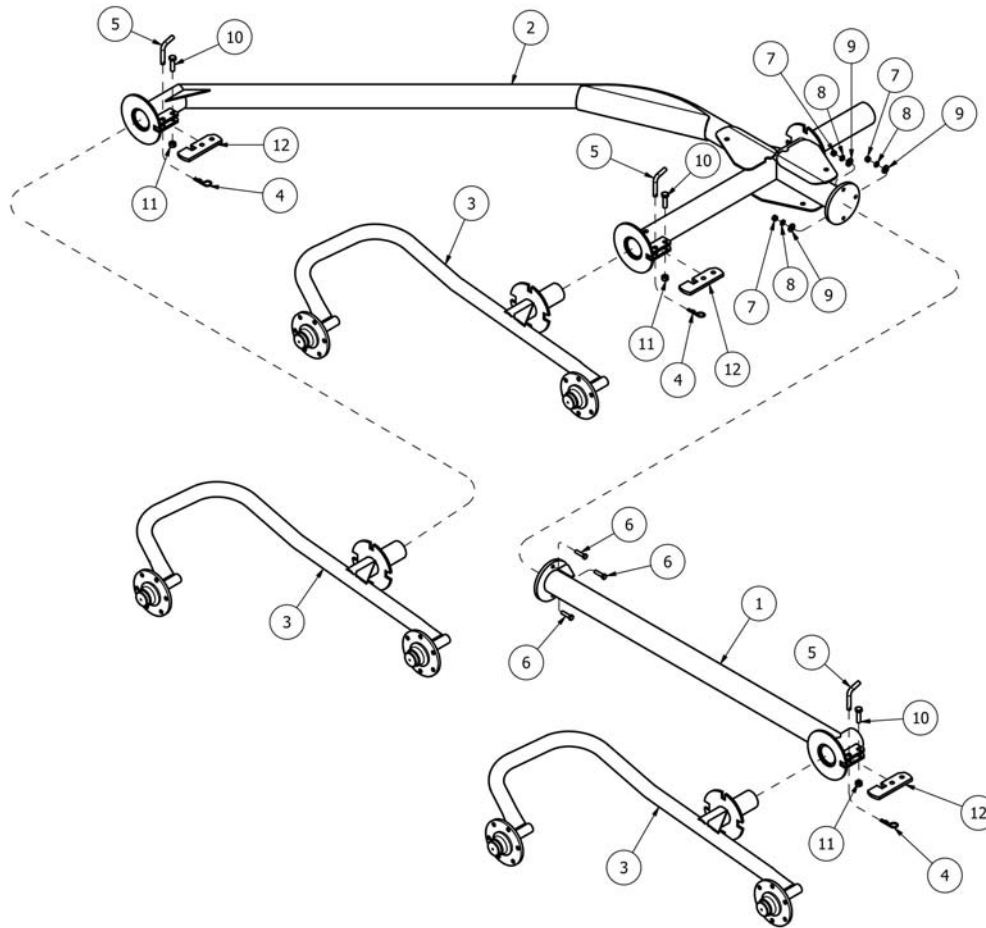
Ref.	Part #	Description	Qty.
1	502-927B	Frame holder hitch	2
2	502-940B	Pivot housing	2
3	009-1301	Bolt HH M12-1.75x120 C8.8 Z P	2
4	003-0064	Nut PT M12-1.75 C6 Z TK	2
5	000-2265	Washer, flat Ø12x24x2 Z	2
6	502-935B	Upper spring clip	2
7	502-937B	Lower spring clip	2
8	502-936B	Spring frame holder hitch	4
9	502-939B	Pin, frame holder hitch Ø25x65 Z	2
10	000-5360	Washer, flat Ø25x39x4 Z	4
11	002-7294	Roll pin Ø6x40 Z	4
12	002-3265	Bolt HH M12-1.75x40 C8.8 Z F	2
13	502-941B	Lock plate, frame holder hitch	2
14	009-1507	Hairpin cotter Ø4	2
15	502-938B	Pin, locking Ø12x56 Z	2
16	001-5240	Hairpin cotter Ø3	2
17	502-928B	Pin, locking Ø16x178 Z	2
18	503-929B	Locking lever, pivot housing	2
19	000-7716	Bolt HH M12-1.75x45 C8.8 Z F	2
20	009-4139	Nut ES M12-1.75 Z TN	4
21	004-1291	Hairpin cotter Ø5	2



Ref.	Part #	Description	Qty.
1	502-943B	Support arm, 4 wheel; RC0-08V, RS2-08V	2
2	502-947B	Arm w/hub right, 2 wheel	2
	502-948B	Arm w/hub left, 2 wheel	2
3	502-938B	Pin, locking Ø12x56 Z	4
4	001-5240	Hairpin cotter Ø3	4
5	000-7716	Bolt HH M12-1.75x45 C8.8 Z F	4
6	003-0064	Nut PT M12-1.75 C6 Z TK	4
7	503-929B	Locking lever, pivot housing	4



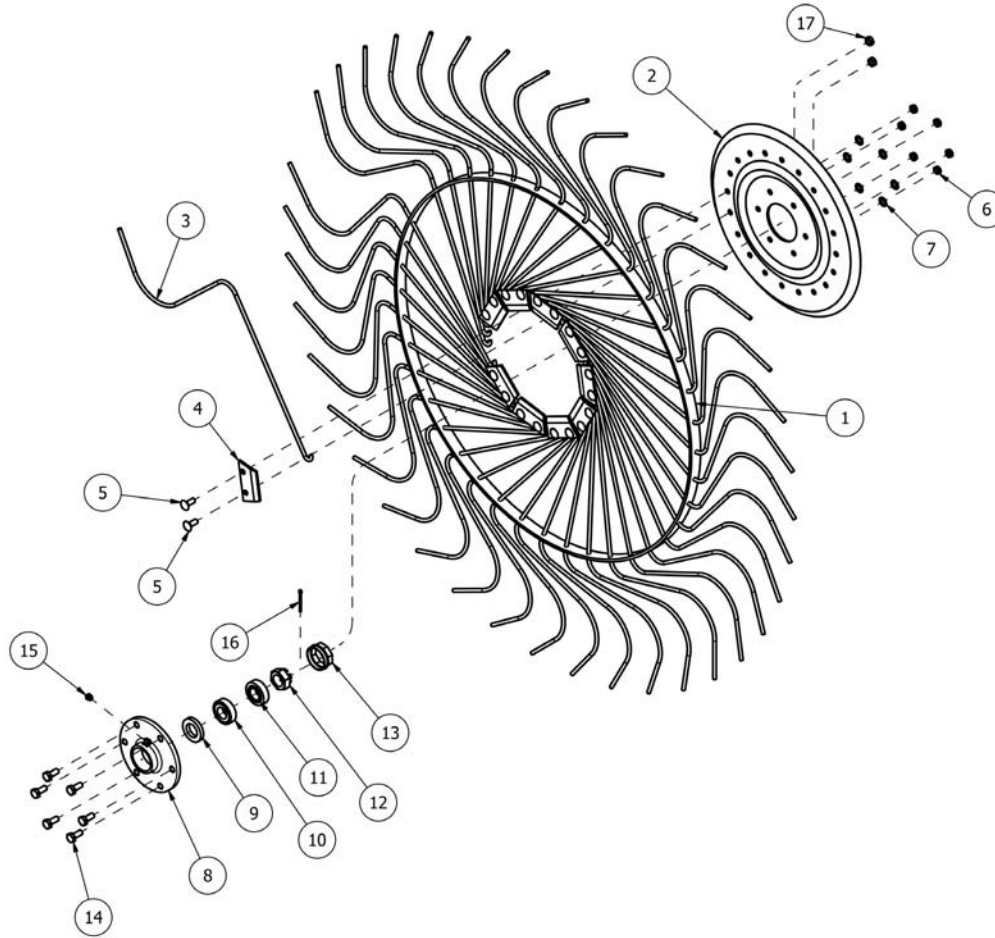
Ref.	Part #	Description	Qty.
1	502-944B	Support arm, 5 wheel; RC0-10V, RS2-10V	2
2	502-947B	Arm w/hub right, 2 wheel	2
	502-948B	Arm w/hub left, 2 wheel	2
3	502-954B	Arm w/hub, 1 wheel	2
4	001-5240	Hairpin cotter Ø3	4
5	003-0285	Bolt HH M14-2.00x100 C8.8 Z P	2
6	000-1020	Washer, lock Ø14 Z	2
7	000-1019	Nut HH M14-2.00 C6 Z TK	2
8	502-938B	Pin, locking Ø12x56 Z	4
9	000-7716	Bolt HH M12-1.75x45 C8.8 Z F	4
10	003-0064	Nut PT M12-1.75 C6 Z TK	4
11	503-929B	Locking lever, pivot housing	4



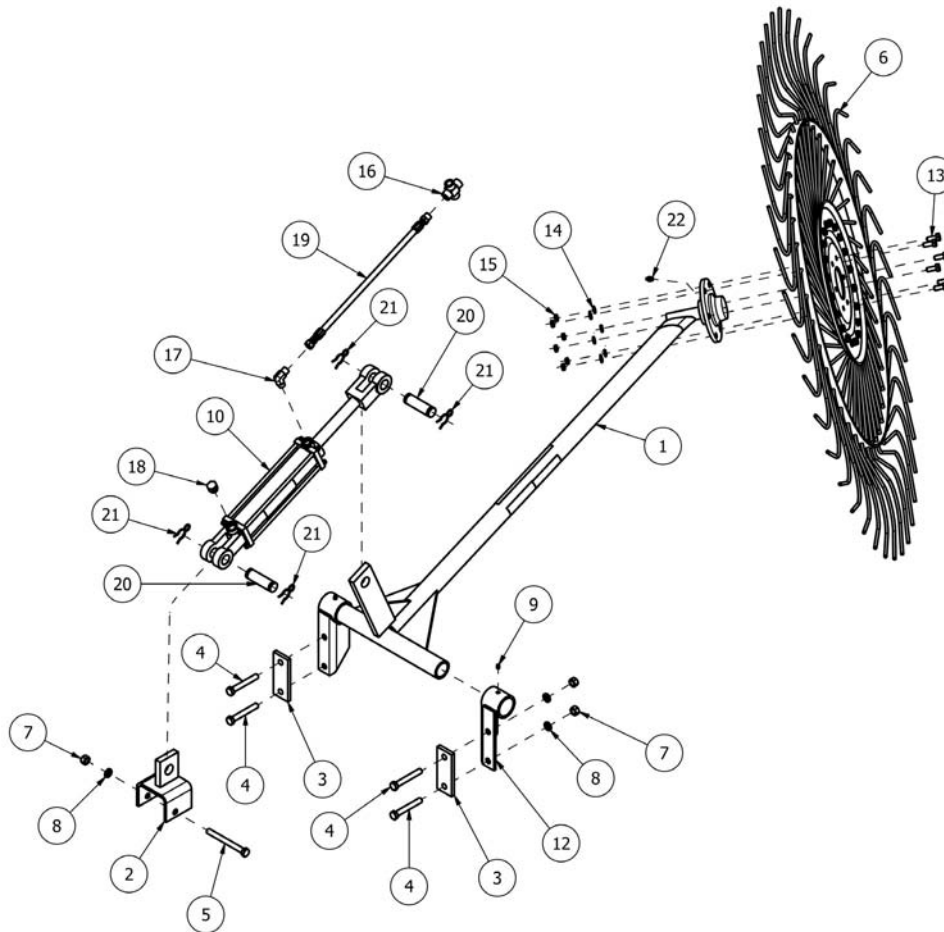
Ref.	Part #	Description	Qty.
1	18031074	Support arm, 6 wheel, front section; RC0-12V	2
	502-945B	Support arm, 6 wheel, one piece; RC0-12V <sup>14</sup>	2
2	18031075	Support arm, 6 wheel, rear section; RC0-12V	2
3	502-947B	Arm w/hub right, 2 wheel	3
	502-948B	Arm w/hub left, 2 wheel	3
4	001-5240	Hairpin cotter Ø3	6
5	502-938B	Pin, locking Ø12x56 Z	6
6	003-8614	Bolt HH M10-1.50x40 C8.8 Z F	6
7	000-1279	Nut HH M10-1.50 C6 Z TK	6
8	000-1280	Washer, lock Ø10 Z	6
9	003-0327	Washer, flat Ø10 Z	6
10	000-7716	Bolt HH M12-1.75x45 C8.8 Z F	6
11	003-0064	Nut PT M12-1.75 C6 Z TK	6
12	503-929B	Locking lever, pivot housing	6

<sup>14</sup> Part no longer available. Must order #18031074 (Qty. 1), #18031075 (Qty. 1), #003-8614 (Qty. 3), #000-1279 (Qty. 3), #000-1280 (Qty. 3) and #003-0327 (Qty. 3).

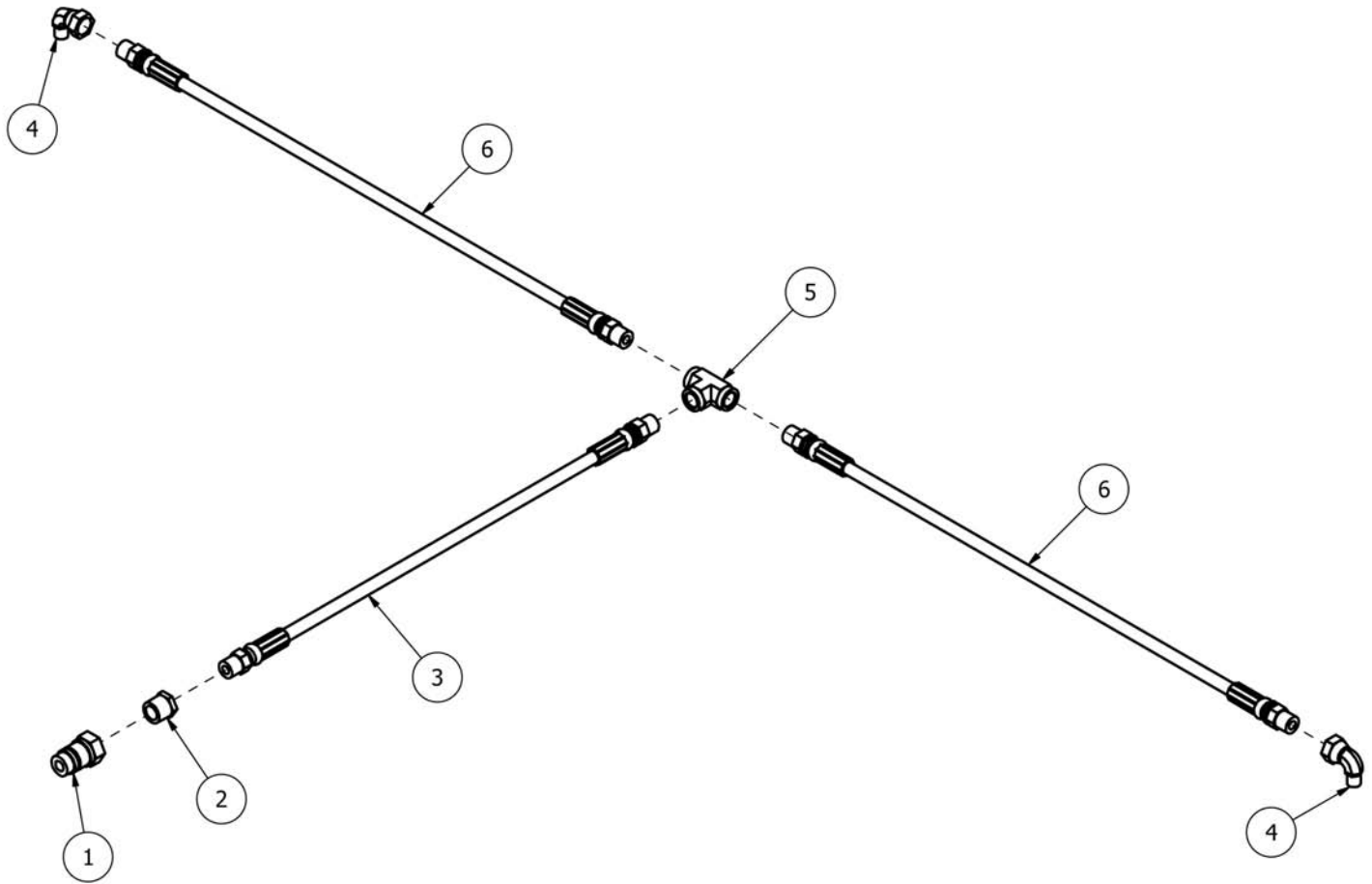




Ref.	Part #	Description	Qty.
1	502-227B	Outer wheel	1
2	502-226B	Inner wheel	1
3	502-228B	Rake tooth	40
4	502-221B	Tine clip	10
5	006-0509	Bolt CR M10-1.50x25 C8.8 Z	20
6	009-0150	Nut HH M10-1.50 C6 Z MD	6
7	003-5060	Washer ext. lock Ø10 Z	6
8	502-223B	Hub, rake wheel	1
9	502-218B	Dust seal ring	1
10	000-9771	Bearing 30205	1
11	502-224B	Bearing 30204	1
12	502-953B	Nut castle M18-1.50 N	1
13	502-225B	Dust cover	1
14	003-3176	Bolt HH M10-1.50x25 C8.8 Z F	6
15	306-002F	Grease fitting M08-1.25 STR Z	1
16	006-7217	Pin cotter Ø3x35 N	1
17	003-0156	Nut PT M10-1.50 C6 Z	20
	502-949B	Wheel complete right	-
	502-950B	Wheel complete left (not shown)	-



Ref.	Part #	Description	Qty.
1	503-593B	Kicker wheel arm	1
2	503-663B	Mounting bracket for cylinder	1
3	503-662B	Backing plate	2
4	190-1146	Bolt HH 1/2"-13x3.50" G5 Z P	4
5	503-751B	Bolt HH 1/2"-13x5.00" G5 Z P	1
6	502-950B	Wheel complete, left	1
7	502-744B	Nut HH 1/2"-13 G2 Z	5
8	502-746B	Washer lock 1/2" Z	5
9	503-655B	Grease fitting 5/16" PR STR Z	2
10	503-033B	Hydraulic cylinder	1
	502-756B	Hydraulic cylinder rebuild kit (for #503-033B)	-
11	503-605B	Right bracket, kicker wheel	1
12	503-604B	Left bracket, kicker wheel	1
13	003-3176	Bolt HH M10-1.50x25 C8.8 Z F	6
14	003-5060	Washer ext. lock Ø10 Z	6
15	009-0150	Nut HH M10-1.50 C6 Z MD	6
16	502-165B	Hydraulic cross 3/8" MNPT	1
17	503-880B	Elbow 90° 3/8" MNPT - 3/8" MNPT	1
18	503-893B	Plug breather 3/4"-16 ORB	1
19	503-229B	Hydraulic hose 35"	1
20	502-171B	Pin, hydraulic cylinder 1.00"x3.40"	2
21	502-172B	Clip hairpin 0.105"x2.00" Z	4
22	306-002F	Grease fitting M08-1.25 STR Z	1
	KWO-100	Kicker wheel, complete	-



Ref.	Part #	Description	Qty.
1	502-170B	1/2" Quick connect nipple 1/2" FNPT	1
2	502-169B	Reducer 3/8"-1/2" NPT	1
3	502-445B	Hydraulic hose 160"	1
4	140-1006	Elbow 90° 3/8"-1/16" w/restrictor	2
5	502-448B	Hydraulic tee 3/8" FNPT	1
6	502-168B	Hydraulic hose 39"	2
	RC0-000	Double action hydraulic kit, complete	-

### Use only original spare parts

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BEFCO RC0-08V, RC0-10V, RC0-12V, RS2-08V, RS2-10V (US)  
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