

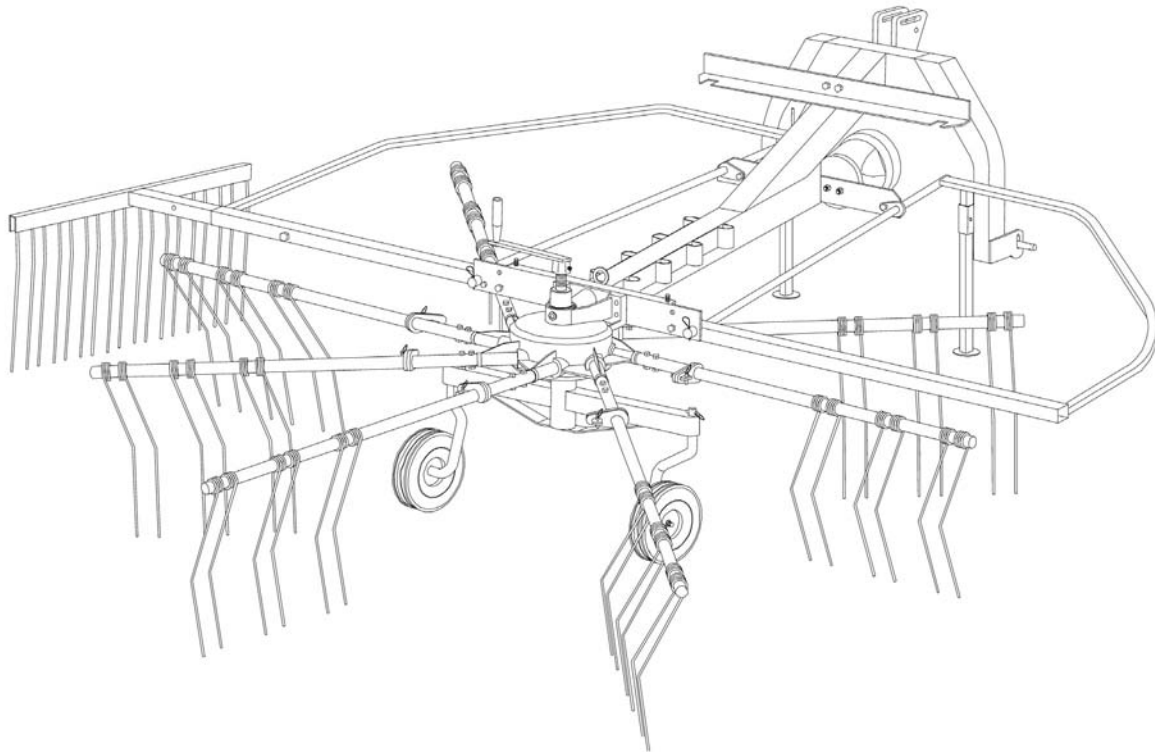
BEFCO®

Operator's Manual

HAY EQUIPMENT

Windrower Rakes

DR0-308, DRP-308



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

Manual 960-176B

August 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 windrower 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 windrower rake safely and correctly. Failure to do so could result in personal injury and/or in equipment damage.

1.01 - General

The implement described in this manual is to be used with tractors with PTO at 540 rpm and clockwise rotation.



CAUTION: Always ensure that the coupling of the implement with the tractor is done at the same PTO speed and direction of rotation. Do not operate this implement at a PTO speed or direction of rotation other than that shown on the implement. Serious damage can occur to the machine and/or the operator.



CAUTION: Unless otherwise specified, all hardware is 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. 2).

Carefully read the Warranty section¹, 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 belts, tines, tires, bearings, drivelines, shear pins, slip clutches, etc.
3. Depreciation or damage caused by normal wear, accidents, improper maintenance, improper protection or improper use.

¹ See Chapter 8 - Warranty.

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.

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.

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| BEFCO | 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 |
| MODEL: | <input type="text"/> |
| SERIAL: | <input type="text"/> |
| VERSION: | <input type="text"/> |

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 windrower rake. 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 windrower rake 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. 2**).
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, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining and/or repairing the implement.
4. Operate the windrower rake 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 of stones, branches or other debris that might be thrown, causing injury or damage.
6. Operate only in daylight or good artificial light.
7. Ensure rake is properly mounted, adjusted and in good operating condition.
8. Ensure that all safety shielding and safety signs 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. Windrower rake operating power is supplied from tractor PTO. Refer to your tractor manual for PTO engagement and disengagement instructions. Never operate PTO over 540 rpm. Know how to stop the tractor and windrower rake quickly in case of an emergency.
4. When engaging PTO, the engine rpm should always be low. Once engaged and ready to start, raise PTO speed and maintain throughout operation.
5. Check the tractor master shield over the PTO stub shaft. Make sure it is in good condition and fastened securely to the tractor. Purchase a new shield if old shield is damaged or missing.
6. After striking an obstacle, disengage the PTO, shut the tractor down and thoroughly inspect for damage before restarting.
7. Never engage the PTO until the rake is in the down position and resting on the ground. Never raise the rake until tines have come to a complete stop.
8. To park the vehicle safely, stop vehicle on a level surface (not on a slope), disengage PTO, engage the parking brake, stop the engine, remove the key, and wait for engine and all moving parts to stop before leaving the operator's seat.
9. Stay clear of rotating drivelines. Entanglement in rotating driveline can cause serious injury or death. Wear close fitting clothing. Stop the engine and be sure PTO driveline is stopped before getting near it.

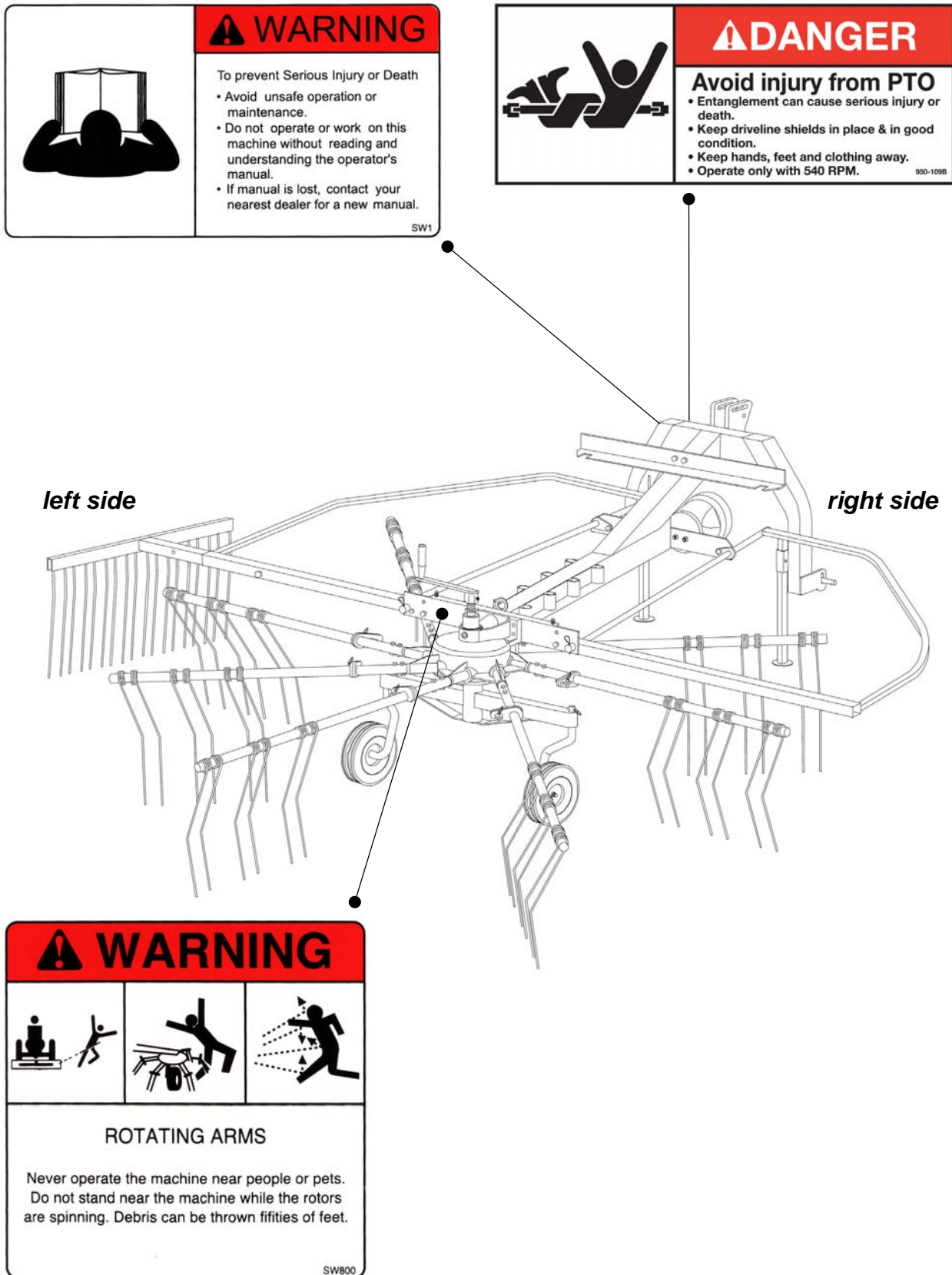
2.03 - Messages and Signs



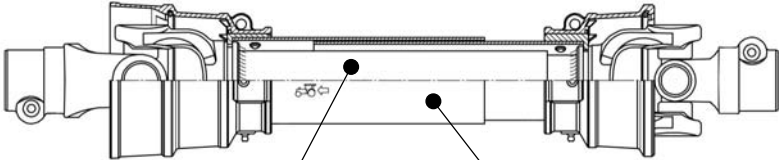
1. Read and adhere to all safety and operating decals on this machine (**see fig. 2**).
2. Before dismounting tractor: Allow moving parts to stop, stop engine, set brake and remove the key of unattended equipment.
3. Keep away from rotating tines and driveline.
4. Keep guards and shields in place and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

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

Fig. 2 - Safety decals - implement; replace immediately if damaged.



Safety decals - driveline; replace immediately if damaged.



placed on outer tube



placed on outer shield

3 - OPERATION

BEFCO's windrower rakes are designed to form hay, straw and other forage crops neatly into windrows. As the machine is driven forward the forage is deposited to the left of the unit. The rake is perfect for both freshly cut or dried forage and the windrows stay clean from dirt and perfectly uniform making the baling process much easier. The width of the windrows can be adjusted by setting the rake arm further or closer to the tine arms. Our windrower rakes are available in three point hitch and pull type configurations. Both units have a working width of 10'. All BEFCO windrower rakes are 540 rpm PTO driven and are ideal for tractors ranging from 20 to 50 HP.

3.01 - Operational Safety



CAUTION: Our windrower 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 windrower 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 windrower rake when you are tired, sick or when using medication.
3. Keep all helpers and bystanders at least 50 feet from a windrower rake. Only properly trained people should operate this machine.
4. The majority of accidents involve entanglements on the driveline, injury of bystanders by objects thrown by the rotating tines and operators being knocked off the tractor by low hanging limbs and then being run over by the windrower rake. 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 a windrower rake.
5. Always stop the tractor, set brake, shut off the tractor engine, remove the ignition key, lower implement to the ground and allow windrower rake tines to come to a complete stop before dismounting tractor. Never leave equipment unattended with the tractor running.

6. Never place hands or feet near windrower rake with tractor engine running or before you are sure all motion has stopped. Stay clear of all moving parts.
7. Do not allow riders on the windrower rake or tractor at any time. There is no safe place for riders.
8. Do not operate unless all personnel, livestock and pets are at least 50 feet away to prevent injury by thrown objects.
9. Install and secure all guards and shields before starting or operating.
10. Keep hands, feet, hair and clothing away from moving parts.
11. These windrower rakes are designed for use only on tractors with 540 rpm power take off.
12. Never operate tractor and windrower rake under trees with low hanging limbs. Operators can be knocked off the tractor and then run over by the rotating tines.
13. The rotating 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 windrower rake tines to contact such obstacles.
14. Frequently check windrower rake tines. They should be securely fastened.
15. Stop windrower rake immediately upon striking an obstruction. Turn engine off, remove key, inspect and repair any damage before resuming operation.
16. Stay alert for holes, rocks and roots in the terrain and other hidden hazards. Keep away from drop-offs.
17. 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.
18. 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.
19. 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!
20. Inspect the entire machine periodically². Look for loose fasteners, worn or broken parts, and leaky or loose fittings.
21. Use only the driveline supplied with the windrower rake. Do not use it if it is missing any shield or safety protection.
22. Pass diagonally through sharp dips and avoid sharp drops to prevent "hanging up" tractor and windrower rake.
23. Avoid sudden starts and stops while traveling up or downhill.
24. Always work 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.

² See Chapter 4 - Maintenance.

3.02 - Set Up

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 windrower rake. He must also fill out the Pre-Delivery Checklist³ prior to delivering the rake.

3.03 - Assembly Instructions

Note: All hardware needed for assembly will be found in the hardware bag or on the machine. Assembly will be easier if all parts are loosely assembled before tightening the hardware.

| Each unit is shipped in a crate as a kit that consists of the following: | | |
|--------------------------------------------------------------------------|--------------------|--------------------|
| Description | Model DR0-308 Qty. | Model DRP-308 Qty. |
| Main frame with gearbox and wheel spindles | 1 | 1 |
| Pull type drawbar assembly | - | 1 |
| Tine arm with attached tines | 8 | 8 |
| Rake arm | 1 | 1 |
| Tine arm bushing (others already assembled) | 1 | 1 |
| Wheel Ø15x600-6 | 2 | - |
| Wheel Ø16x650-8 | - | 2 |
| Driveline B1x730 LW1 | 1 | - |
| Driveline B2x1300 LW2 | - | 1 |
| Safety guard | 2 | 2 |
| Support stand | 2 | 1 |
| Guard retainer | Already assembled | 1 |
| Hardware bag contains the following: | | |
| Outer wheel cover | 2 | 2 |
| Inner wheel cover | 2 | 2 |
| Nut ES M16 | 2 | 2 |
| Cotter pin | 2 | 2 |
| Lynch pin | 8 | 8 |
| Lock pin | 1 | 1 |

Lift the machine approximately 6" from the ground to assemble the wheels. Place the inner cover, the wheel, the outer cover in the wheel spindle and tighten using the M16 elastic stop nuts (see fig. 3).

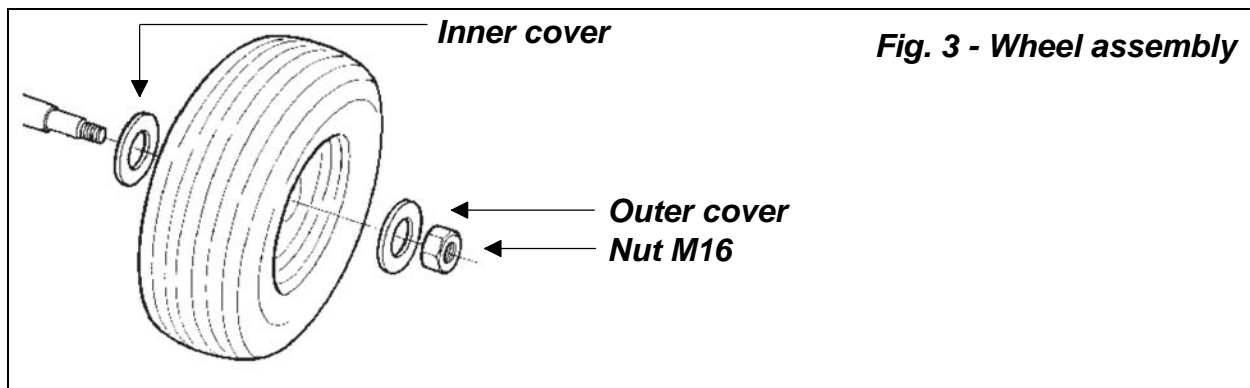


Fig. 3 - Wheel assembly

³ See Chapter 7 - Pre-Delivery Checklist.

On windrower rake model DRP-308, install the pull type tongue on the main frame using the supplied M14x100 bolts and M14 elastic stop nuts. Screw the threaded buckle into the threaded swivel and turn until stand is perpendicular to the ground.

Install support stands (one on DRP-308, two on DR0-308) and secure them with lock pins (see fig. 4).

Install left and right safety guards. Secure guards in the front using the provided elastic stop nuts and in the back by inserting cotter pins through the holes in the stub tubes.

Slide rake arm into left safety guard and secure it with the lynch pin.

Raise left and right safety guards to their upright position until they lock on the guard retainer.

Install the tine arm bushing on the gearbox using the supplied roll pins.

Install the eight tine arms into the tine arm bushings on the gearbox and secure them with lynch pins (see fig. 4).

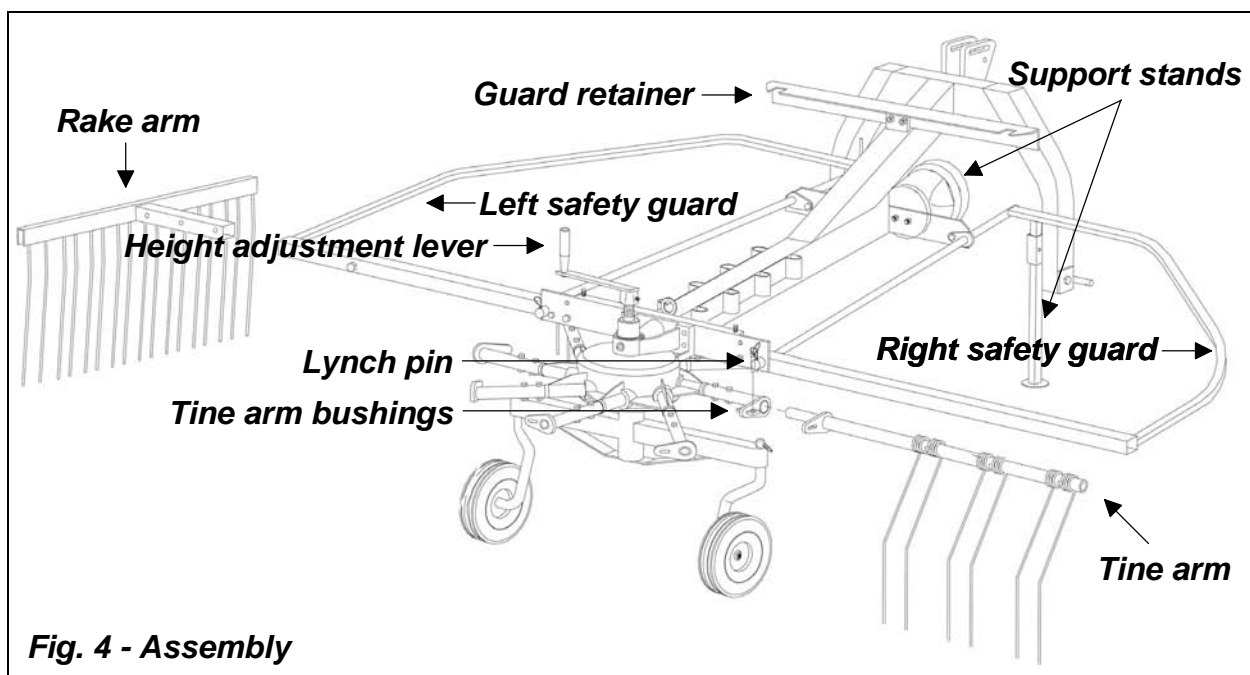


Fig. 4 - Assembly

3.04 - Pre-Operational Check

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

1. All grease fittings have been greased.
2. The oil in the gearbox.
3. The driveline cross and bearings have been greased.
4. No wrappings or foreign objects are around the tines or gearbox.
5. The tines are properly installed, the tine bolts properly torqued⁴.
6. All hardware is tight.
7. The tractor, to ensure correct direction of PTO and rpm speed.
8. All safety shields and guards are in place and tightly attached.
9. No people or animals are in the work area.

⁴ See Table 1, page 26.



DANGER: Stay clear of rotating driveline. Entanglement in rotating driveline can cause serious injury. Disengage PTO, engage parking brake or place transmission in “Park”, shut off the tractor and remove the key before working around hitch, attaching or detaching driveline, making adjustments, servicing or cleaning the machine.

3.05 - Attaching to the Tractor

Only use this model implement with tractors in the correct power range⁵. **Never use this windrower rake with tractors over 50 HP.**



CAUTION: Check the tractor PTO rpm to ensure it is set at 540 and turns clockwise.



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



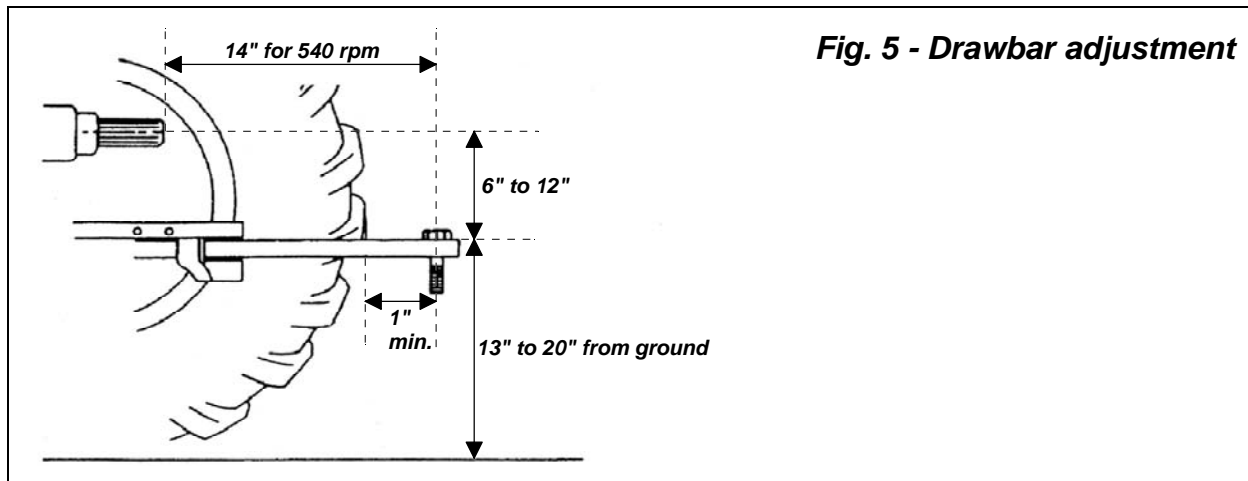
DANGER: Failure to ensure a secure coupling of the implement to the tractor can cause injury and damage to the implement or tractor. If necessary, wheel weights, front tractor weights and/or tire ballast should be used to improve stability. Be sure that the tractor tire pressure is correct. It is important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

To attach the windrower rake to the tractor do the following:

1. On windrower rake model DR0-308, back the tractor up to the rake in order to attach the tractor hitch arms to the hitch pins on the rake. **Turn off the tractor engine.** Secure them in place with the lynch pins. Adjust the tractor sway blocks or chains to remove all side movement. Attach the top link.
2. On windrower rake model DRP-308, position the tractor drawbar (**see fig. 5**). Remove the hitch pin. Back up the tractor to the rake. Align hitch pin holes in tractor drawbar and windrower rake. **Turn off the tractor engine.** Install hitch pin and fasten it with a lynch pin.
3. Install the shielded driveline to the tractor by first lining up the splines and depressing the snap pin. Push the yoke onto the PTO shaft as far as it will go. Release the pin and pull back slowly until the pin clicks in place. Repeat this operation on the implement end. Be sure to install the overrunning clutch side of the PTO shaft on the implement.

⁵ See Table 2, page 26.

4. Attach the driveline chains to the tractor and to the windrower rake to keep the driveline protection from turning. The chains should not be too tight.
5. Ensure the driveline has at least 2" from bottoming out in its shortest working position and has the minimum 6" overlap in its longest working position. Refer to **Section 4.09⁶** of this manual, if it is determined that the driveline is too long and needs to be shortened. Contact your local dealer if it is determined that the driveline is too short for your tractor.
6. Raise all support stands and secure them with lock pins.



On pull type windrower model DRP-308 always make sure to adjust the tractor drawbar as specified to ASAE standards to prevent failures (**see fig. 5**). An improperly set hitch could subject the driveline's universal joints to undue stress.

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.

3.06 - Start Up



DANGER: The windrower rake must always be lowered to the ground before starting tractor engine or engaging PTO lever.

Lower windrower rake to the ground. Lock the tractor rock shaft control lever in this position. With the engine idling, slowly engage the PTO drive. Move the throttle lever

⁶ See Section 4.03 - Driveline, for instructions on how to determine correct driveline length and procedures for shortening the driveline.

until the PTO speed indicated on the rake is obtained. PTO speed may vary from 400 rpm to 540 rpm. Never exceed 540 rpm.

Shift the transmission to a slow speed gear and start forward, increase the ground speed by shifting upward until the desired speed is obtained.



CAUTION: Do not operate this windrower rake at a PTO speed or direction of rotation other than that shown on the windrower rake. Serious damage can occur to the machine and/or the operator.

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

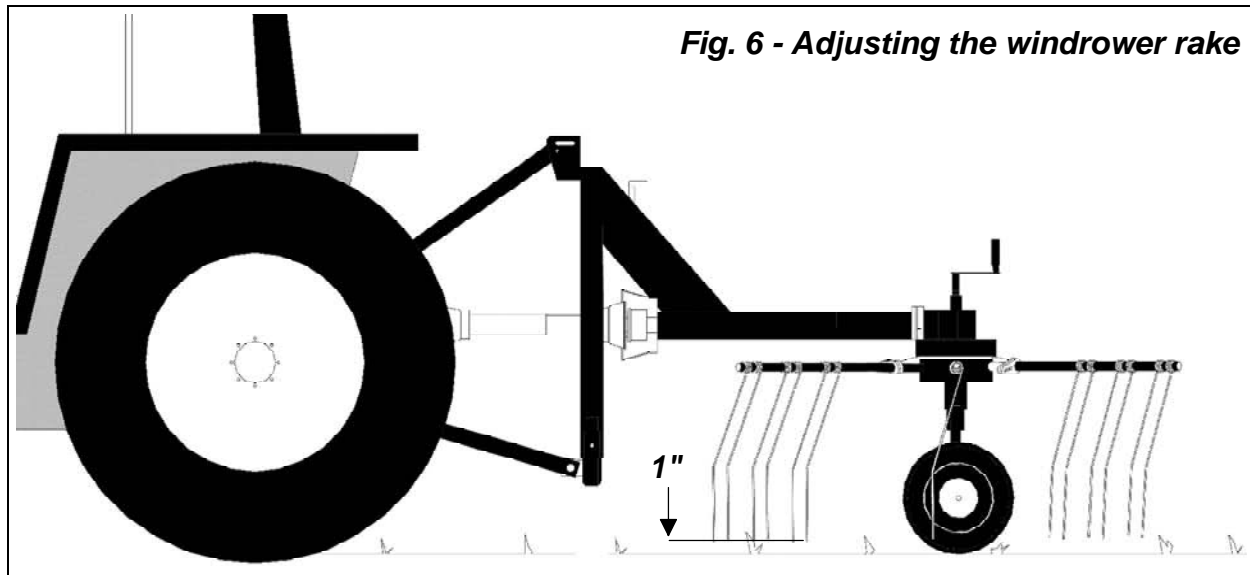
1. Safe and correct driving of the tractor and windrower rake.
2. To learn precise safe operating procedures for both the tractor and the windrower rake.
3. To ensure all maintenance and lubrication has been performed on the windrower rake.
4. To have read and understood all safety aspects for the windrower rake in the operator's manual.
5. To have read and understood all safety decals on the windrower rake.
6. Checking the condition of the tines. Worn or damaged tines should be changed before starting.
7. Checking that there is no wire, weed, grass or other material wrapped around rotors or tines.
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's operator's manual.
- 10. Checking that the PTO shield and all other shielding are on the machine and securely in place.**
11. 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 implement in bare feet, sandals or sneakers.
12. Checking area for stones, branches and other debris that might be thrown.
13. Ensuring proper lighting is available, sunlight or good artificial lighting.

3.07 - Working Speed

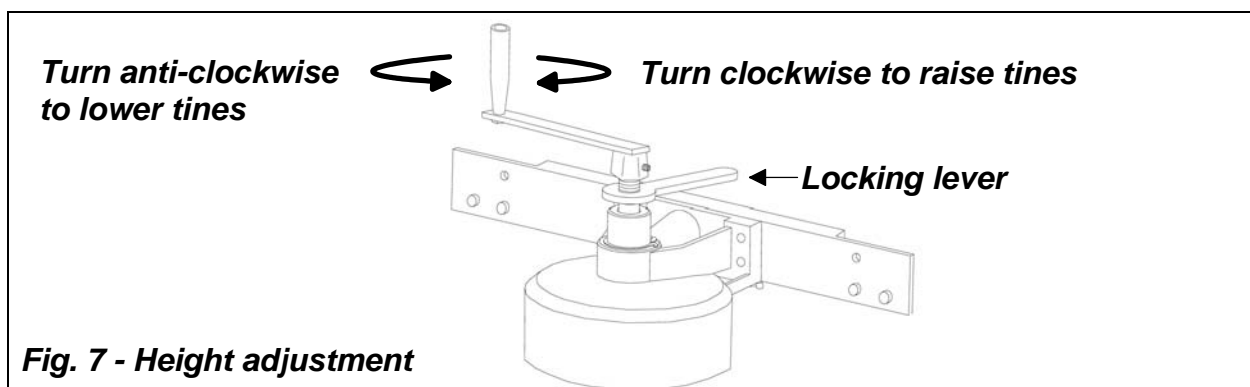
The working speed depends on ground conditions, type of forage crop, crop density and humidity. Only a test run will enable you to gauge the optimal working speed for your conditions. Under most conditions a 5 to 7 mph ground speed is best. A slower speed may be necessary on hills or rough terrain.

3.08 - Operating Techniques

Windrower rakes perform best when the clearance between the ground and the bottom of the tines is set to approximately 1" (see fig. 6). The conditions of the field will ultimately determine how low you can set the tines to the ground. To achieve the best results it is important to set the tines as high as possible in order to limit as much as possible contact of the tines with the ground. This not only prolongs the tines life but will also keep dust and dirt off the hay.



Adjust the working height of the tines by turning the height adjustment lever on top of the gearbox. Turning lever clockwise will raise the tines, while turning the lever counterclockwise will lower the tines closer to the ground (see fig. 7).

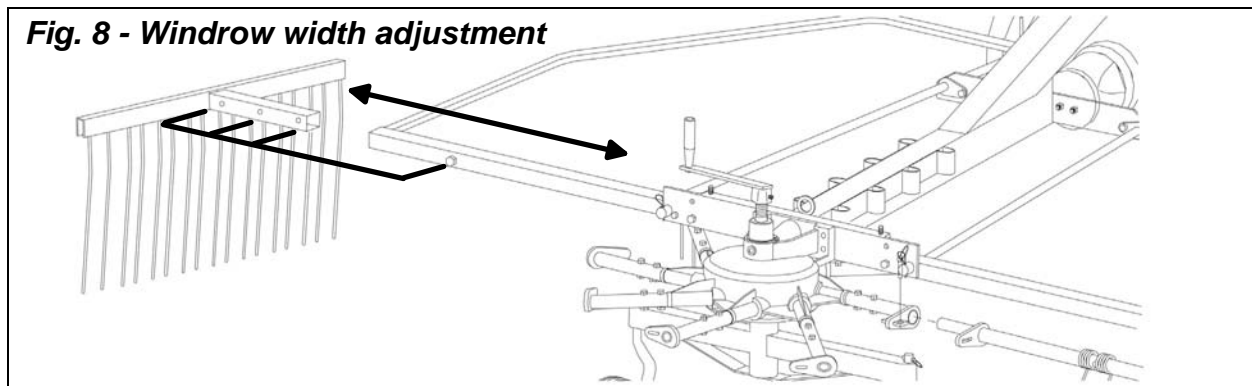


After setting the tines to the desired height, make sure to level the machine front to back by either adjusting the top link on three point rakes model DR0-308 or adjusting the turnbuckle of pull type rakes model DRP-308. This will allow the unit to work correctly.

On windrower model DR0-308 the tilt of the unit is adjusted through the top link of the tractor. Tightening the top link will adjust the pitch forward while loosening the top link will tilt the unit backwards.

On windrower rake model DRP-308, the tilt of the unit is adjusted by turning the lever on the threaded buckle in the front part of the unit. Turning lever clockwise will raise the tines, while turning the lever counterclockwise will lower the tines closer to the ground.

Adjust the width of the windrow by lengthening or shortening the distance between the rake arm and the tine arms. The rake arm is provided with three holes to adjust the distance. The further the rake arm is from the tine arms the wider the windrow will be (see fig. 8).



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



DANGER: Never operate the windrower rake without first ensuring that all protective devices are properly installed.

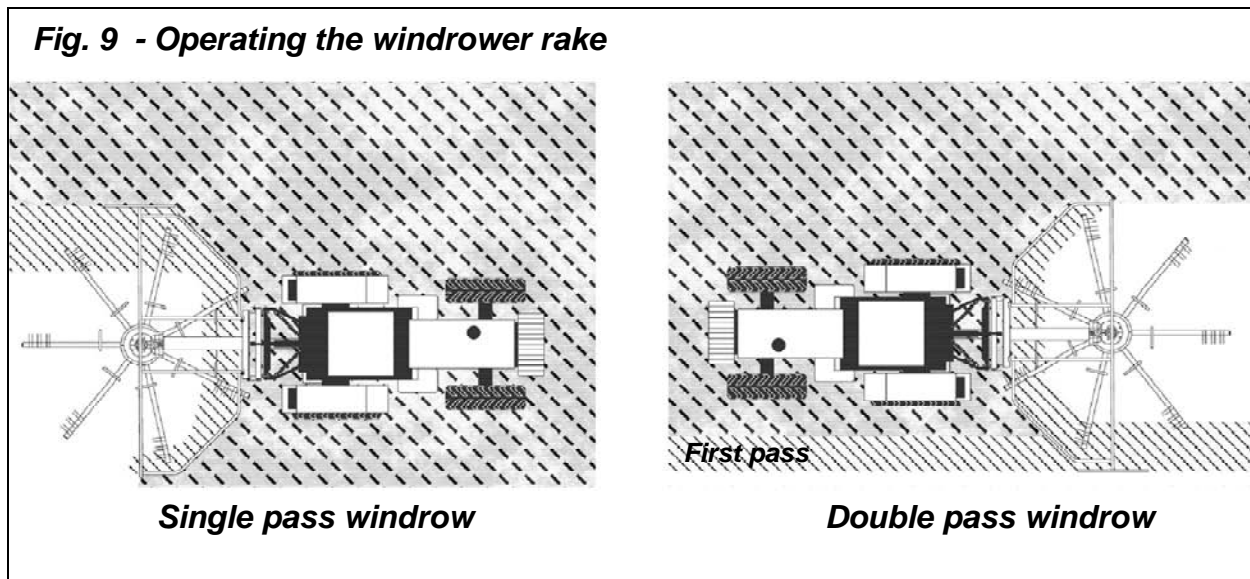


WARNING: Windrower tines can throw objects which could result in personal injury or property damage. Pick up all rocks and other debris before operating unit. Enter new areas carefully.



CAUTION: For emergency reasons learn how to stop the tractor and windrower rake quickly. On the windrowers always disengage the PTO, lock parking brake, stop engine and allow the windrower rake tines to come to a complete stop before dismounting the tractor.

Different working patterns may be adopted depending on the density of the forage crop. If the forage crop is thick it is probably better to make a single pass windrow (see fig. 9). A single pass windrow will rake one row every 10'. If on the other hand there is little forage crop to be raked, it may be better to make a first pass with the rake and then a second pass on the opposite side of the row that was formed after the first pass (see fig. 9). A double pass windrow will leave one windrow every 20'.



3.09 - Uneven Terrain



DANGER: Be careful of rollover when operating tractor and windrower rake 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. Whenever traction or stability is doubtful, first test drive over the terrain with the PTO disengaged.
4. Operate the implement up and down steep slopes, not across slopes, to prevent the tractor from tipping. Avoid sudden stops and starts.
5. Pass diagonally through sharp dips and avoid sharp drops to prevent hanging up the tractor and implement.
6. Slow down on sharp turns and slopes to prevent tipping or loss of control.
7. Watch for holes, roots or other hidden objects. Do not use near the edge of a gully, ditch or stream bank.

3.10 - Removing Windrower Rake from Tractor



CAUTION: Disengage tractor PTO. Set parking brake. Stop engine and remove key from ignition. Disconnect windrower rake driveline from tractor PTO shaft. Collapse driveline and store in appropriate place. Disconnect three point linkage or pull type drawbar and carefully drive tractor away from windrower rake.

1. Park windrower rake on level and solid ground.
2. Disengage the tractor's PTO and 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. Place support stands in position and secure them with lock pins.
6. Disconnect windrower rake driveline from tractor PTO shaft.
7. On windrower rake model DR0-308, disconnect three point linkage and carefully drive tractor away from rake.
8. On windrower rake model DRP-308, remove the hitch pin and carefully drive tractor away from rake.

3.11 - Transporting



CAUTION: Make sure PTO is disengaged and windrower rake tines have stopped turning before transporting windrower rake. Do not tow tractor and windrower rake behind other vehicles. Use a properly equipped trailer with heavy tie-downs for towing operations.

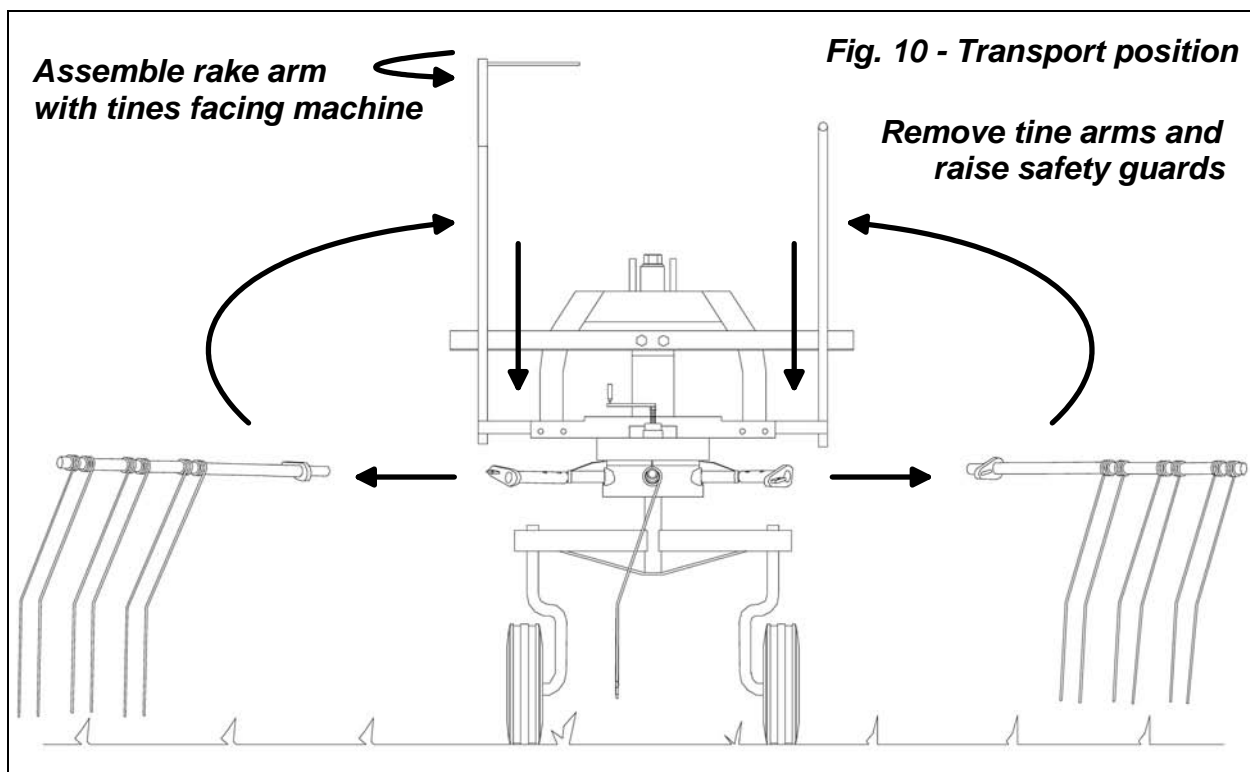


CAUTION: A safety chain will help control drawn equipment should it accidentally separate from the tractor drawbar. A runaway machine could cause severe injury or death. Leave only enough slack in chain to permit turning. Do not use safety chain for towing.

Before transporting:

1. Always select a safe ground speed that is appropriate for the terrain.
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.
4. Always disengage PTO before raising the implement to transport position.

5. When raising the implement be sure the PTO driveline does not hit either the windrower rake or the tractor.
6. Remove the tine arms from tine arm bushings on the gearbox. Place tine arms in provided slots on frame (**see fig. 10**).
7. Remove the rake arm and reassemble with the tines facing up.
8. Raise left and right safety guards to their upright position until they lock on the guard retainer.
9. On three point windrower rake model DR0-308 should not be lifted over 14"-16" from the ground during transport.
10. On pull type windrower rake model DRP-308, install a safety chain between tractor and implement before pulling the windrower rake down the road. A safety chain will help control drawn equipment should it accidentally separate from the tractor drawbar. Leave only enough slack in chain to permit turning.



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, disengage the PTO, shut off the engine, set the brakes, and remove the ignition key.
5. Be certain all moving parts on attachment 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. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
9. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.
10. After servicing, be sure all tools, parts and service equipment are removed.
11. Never replace hex bolts with less than grade five bolts unless otherwise specified, i.e. shear bolts⁷.
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.

⁷ Refer to Table 1 - Torque Specifications, page 26.

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

The accompanying illustrations show lubrication points. The chart gives the frequency of lubrication in hours, based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

Use a good quality SAE multipurpose type grease for all locations shown. Be sure to clean fittings thoroughly before using grease gun.

Use 90 wt. or 140 wt. gear oil in gearbox.

Important: Check hardware tightness on the tines after the first two, five and ten hours of operation. As these components set in with use, the attaching bolts may loosen.

Hourly or whenever an obstacle is hit:

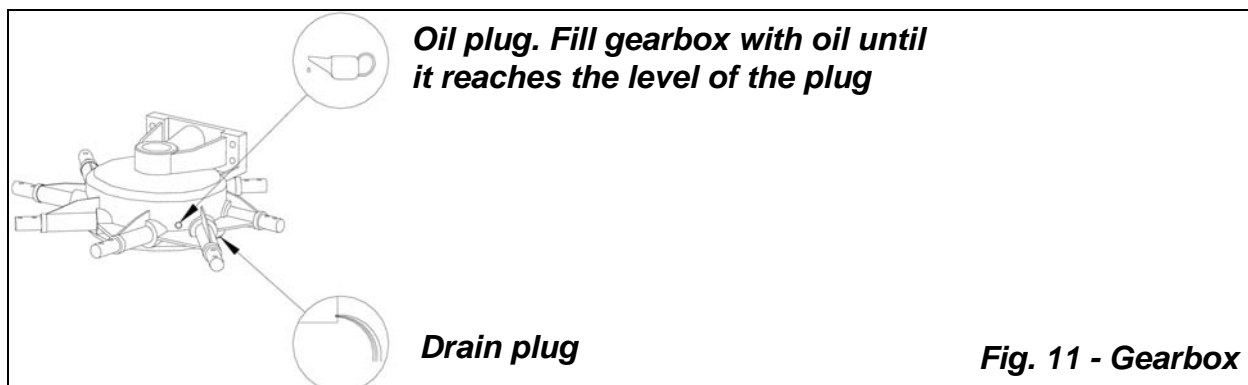
Check the conditions of the tines, joints, rotors and gearboxes.

Every 8 hours:

1. **Lubricate driveline:** Apply two or three shots of grease to the driveline cross and bearings and the telescoping shafts. See the driveline manufacturer operator's manual for further information on the driveline.
2. **Check hardware tightness;** windrower rake vibration can loosen bolts⁸.
3. Lubricate threaded rod on height adjustment lever.
4. **Check gearbox oil level (see fig. 11):** It should be just below the oil plug on the side of the gearbox. If needed add either SAE 90 wt. or SAE 140 wt. gear oil.

Every 25 hours:

1. Lubricate wheel spindles.
2. Lubricate grease fittings in the height adjustment lever, the upper gearbox cover and the wheel axle.
3. Lubricate joints in tine arms.
4. Check tire pressure. If necessary inflate tires to 25 PSI.



⁸ See Table 1, page 26.

4.03 - Driveline



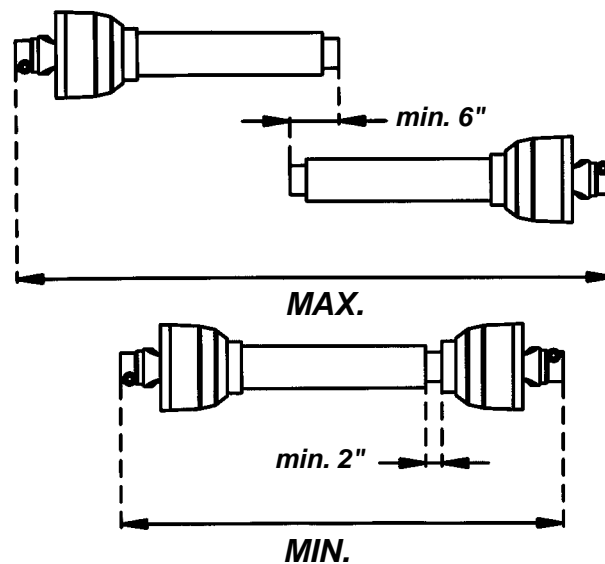
DANGER: Only use the original driveline supplied with this windrower rake and always with the safety shielding.

Carefully read and file away the driveline operator's manual supplied by the manufacturer. The following does not substitute the information found in the driveline manual.

IMPORTANT: Always check driveline length during initial setup and when connecting to a different tractor.

In the collapsed position the driveline should be approximately 2" from bottoming out to prevent possible damage to the tractor or implement. When the driveline is in the maximum extended position, the ideal minimum overlap of the two halves should be approximately 6" (see fig. 12).

Fig. 12



If determined that the driveline is too long, follow these procedures to adjust the length:

1. Separate the two driveline halves. Connect one half to the tractor PTO and the other half to the rake.
2. **On windrower rake DR0-308**, raise and lower the rake with the 3 point hitch to find the position where the driveline is shortest. Hold the half shafts side by side and mark the desired length on the outer female tube guard leaving a 1½" gap between the end of the guard tube and bell guard.
3. Cut off both guard tubes the same amount as marked in step 2.
4. Shorten both drive tubes the same amount as guard tubes.
5. De-burr and clean filings from drive tubes and apply grease to outside of inner telescoping tube.

6. Reassemble the driveline halves and connect to tractor and rake. On DR0-308, raise and lower rake again to be sure driveline does not bottom out in its shortest position and has a minimum overlap of 6" in the longest position.
7. Install both driveline safety chains. One should be hooked in a hole on the outer driveline yoke shield and to the tractor to restrict outer shield rotation. The second one should be hooked in a hole on the inner driveline yoke shield and to the implement to restrict inner shield rotation.

If determined that the driveline is too short for your tractor, contact your Authorized Company Dealer.









CAUTION: Always work with the driveline as straight as possible. This will prolong its life and that of its components. It is advised not to work at an angle greater than 15 degrees.

4.04 - Ratchet Torque Limiter

The windrower is supplied with a PTO driveline that comes equipped with a ratchet torque limiter. The PTO yoke end is attached to the tractor's PTO, while the end with the ratchet torque limiter is attached to the windrower.

The purpose of the limiter is to elastically transmit the desired torque to the unit, absorbing any overloads by temporarily slipping. When the torque limiter slips, disengage the PTO in order to prevent excessive wear.

TABLE 1 - TORQUE SPECIFICATIONS

| Metric (ISO) treaded bolts head marking |  Class 5.8 |  Class 8.8 |  Class 10.9 | Inch (SAE) treaded bolts head marking |  Grade 2 |  Grade 5 |  Grade 8 | Bolt size | | Thread | | N.m | | ft-lb | |
|--------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------|----|--------|----------|------|------|-------|------|
| | | | | | | | | mm | mm | inch | inch tpi | | | | |
| 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 2 - WINDROWER RAKES - TECHNICAL FEATURES

| Series DR0 & DRP, for tractors up to 50 HP, PTO 540 rpm | | | | | | | |
|---------------------------------------------------------|-------|-------------|---------------|------------|----------------|----------------------|---------------------------------------|
| Model | HP | Hitch type | Working width | Weight lb. | # of Tine Arms | # of Tines per Rotor | Driveline w/overrunning clutch 1 3/8" |
| DR0-308 | 20-50 | Three point | 10' | 650 | 8 | 3 | ASAE 1 st cat |
| DRP-308 | 20-50 | Pull type | 10' | 669 | 8 | 3 | ASAE 2 nd cat |

5 - REPAIR PROCEDURES

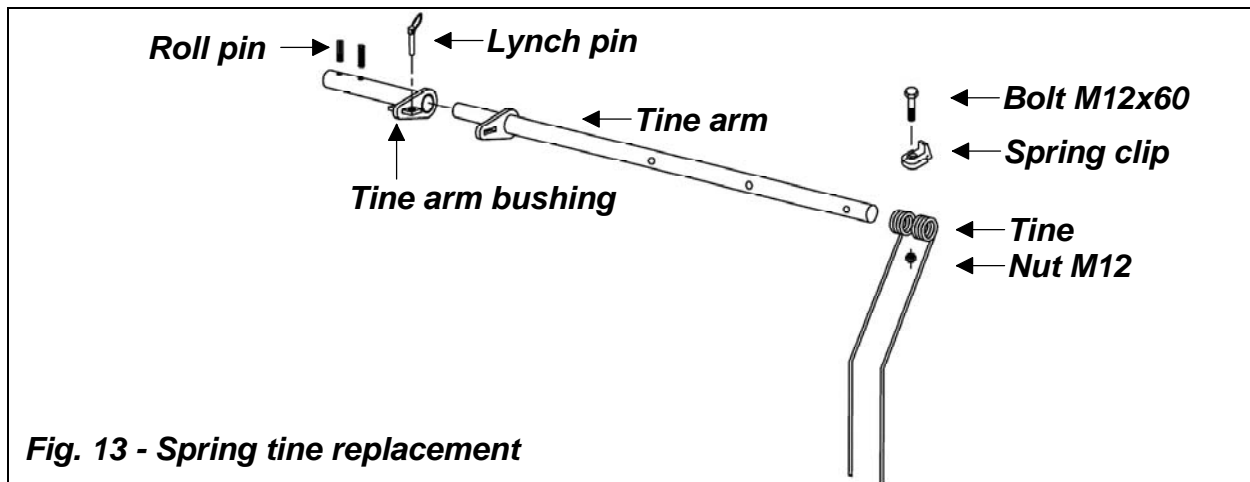


CAUTION: All repair procedures must be done by authorized dealerships. It is not recommended that untrained individuals perform any repair work. The following operations are detailed for qualified personnel only.

5.01 - Spring Tine Replacement

Periodically check the conditions of the tines (see fig. 13). To replace worn or broken tines do the following:

1. Remove the M12 elastic stop nut holding the tine and tine arm together.
2. Remove the M12x60 bolt, tine and spring clip.
3. Replace tine and reassemble in reverse order.



5.02 - Suggested Spare Parts

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

| Description | Quantity |
|----------------|----------|
| Tines | 1 set |
| Rake arm tines | 1 set |
| Tine arms | 2 |

5.03 - Storage

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

1. Wash the windrower rake carefully.
2. Inspect the windrower rake and replace worn or damaged parts.
3. Tighten all hardware.
4. Grease all areas indicated under Maintenance⁹.
5. Cover the windrower rake from the elements in order to have it in perfect condition for the start of the next season.
6. Do not permit children to play on or around the stored unit.
7. Do not park or store equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
8. Make sure all parked machines are on a hard, level surface, and engage all safety devices.



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

⁹ See Chapter 4 - Maintenance.

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 |
|-------------------------------------------|------------------------------------|--------------------------------------------|
| Forage crop not being windrowed properly. | Dense or humid working conditions. | Select slower working speed. |
| | Incorrect working pattern. | Adjust working pattern ¹⁰ . |
| | Worn or broken tines. | Replace tines ¹¹ . |
| Forage crop gets dirty. | Windrower rake tines set too low. | Set tines so they sit 1" above the ground. |

¹⁰ See Section 3.08 - Operating Techniques.

¹¹ See Section 5.01 - Spring Tine Replacement.

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.

- Gearbox oil level.
- Guards and shield properly fastened.
- Lubrication of grease fittings.
- All hardware properly tightened.
- All decals properly located and readable (**see fig. 2**).
- Tires are properly inflated.
- 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"/> Oil in gearbox.</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, has 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:

Fold here

*Place stamp
here*

BEFCO, Inc.

Warranty Department

P.O. Box 6036

Rocky Mount, NC 27802-6036

Cut along this line



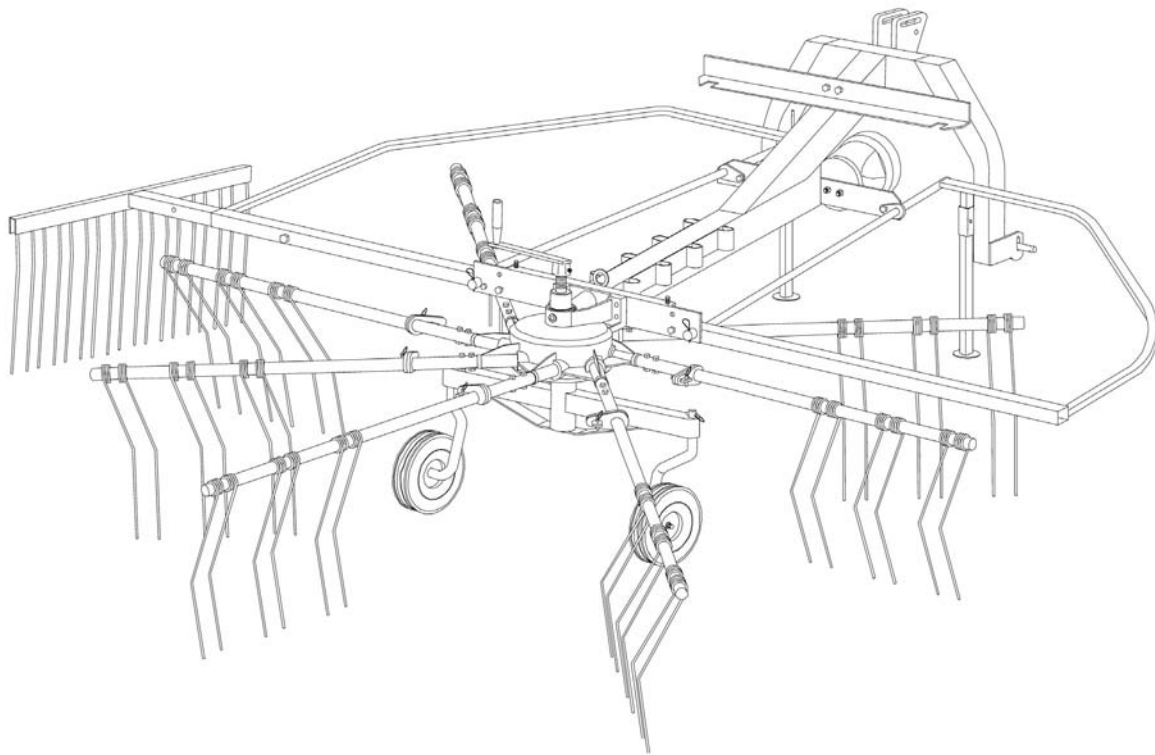
BEFCO®

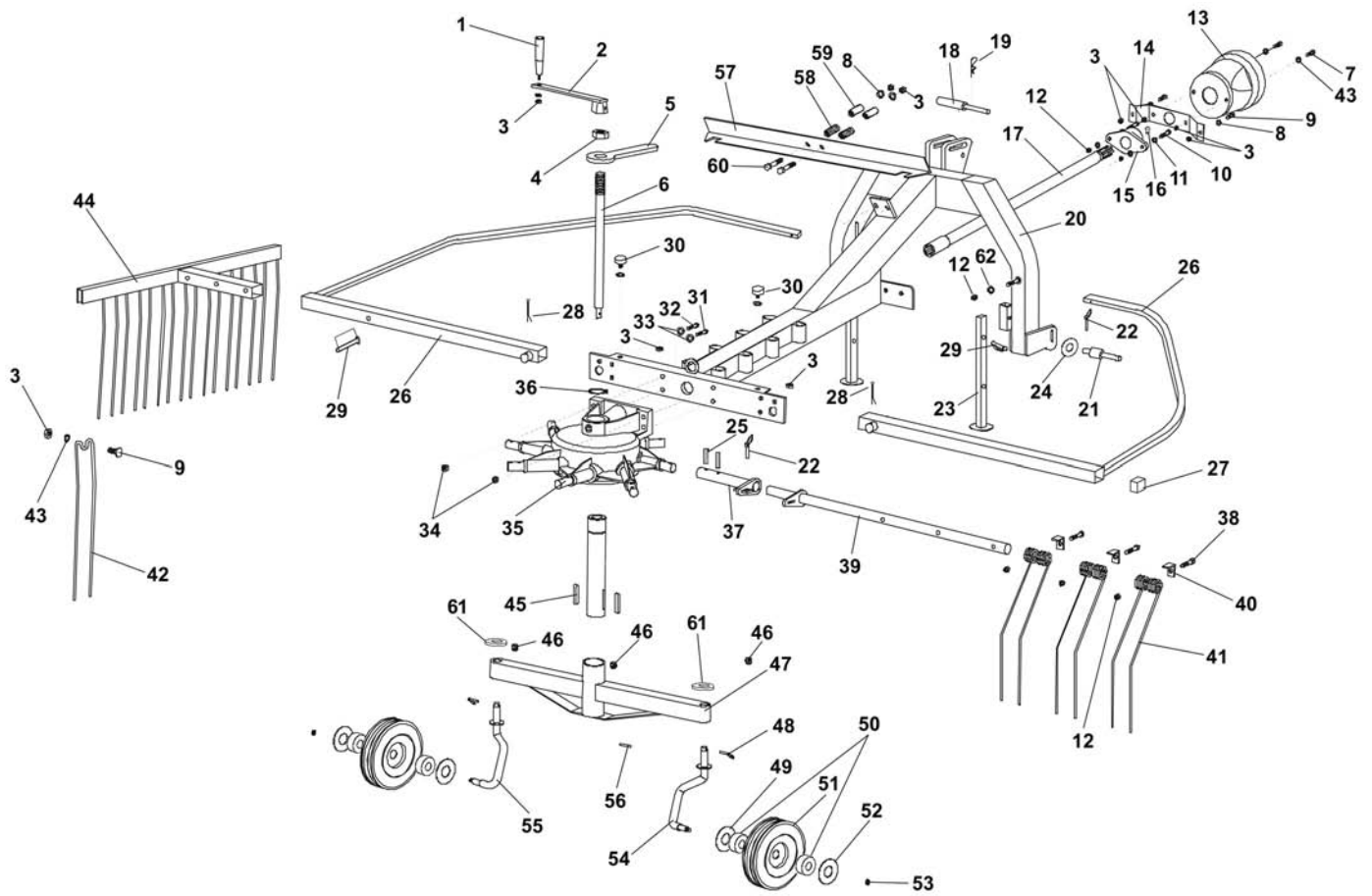
Parts Manual

HAY EQUIPMENT

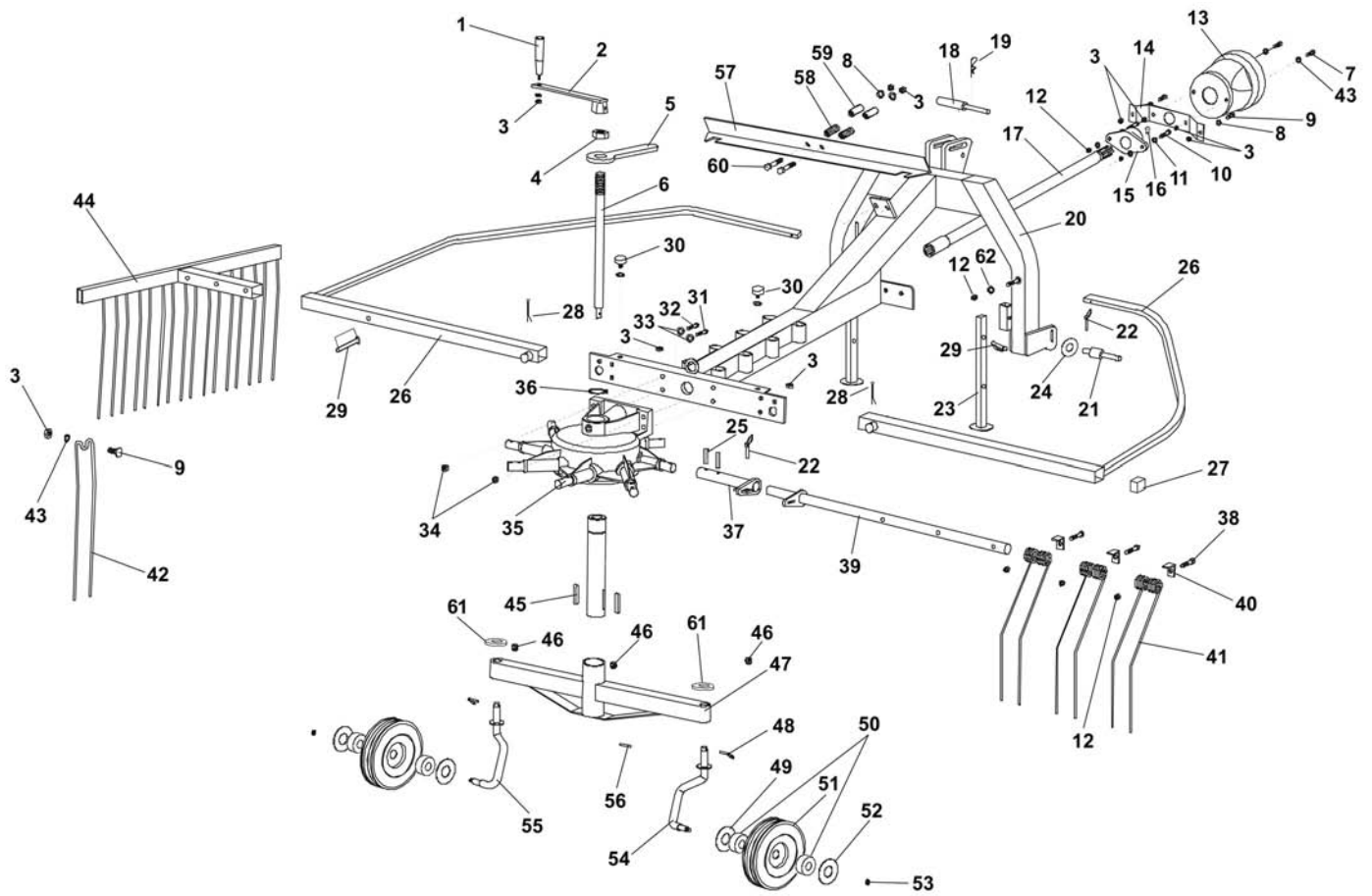
Windrower Rakes

DR0-308, DRP-308

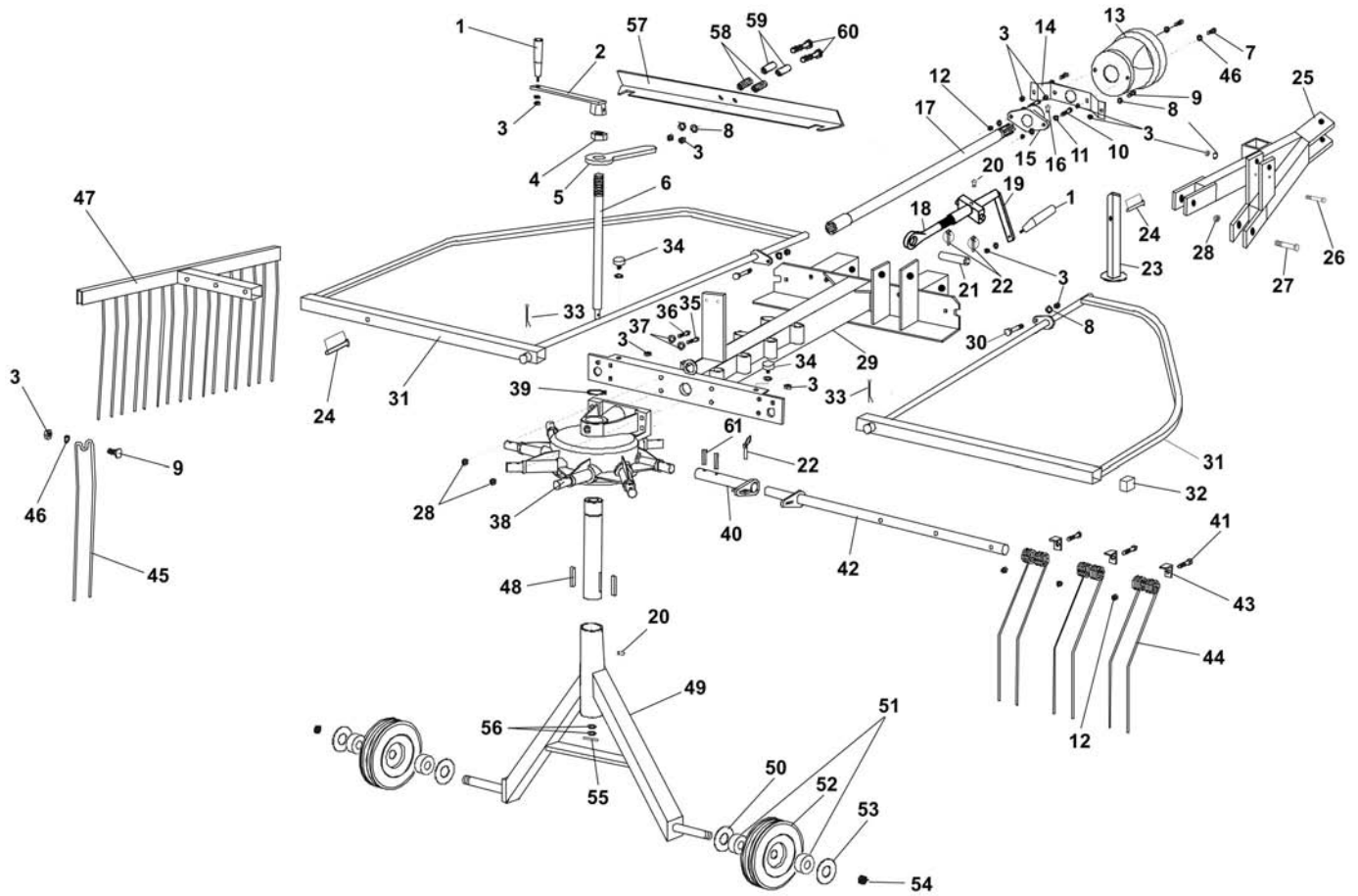




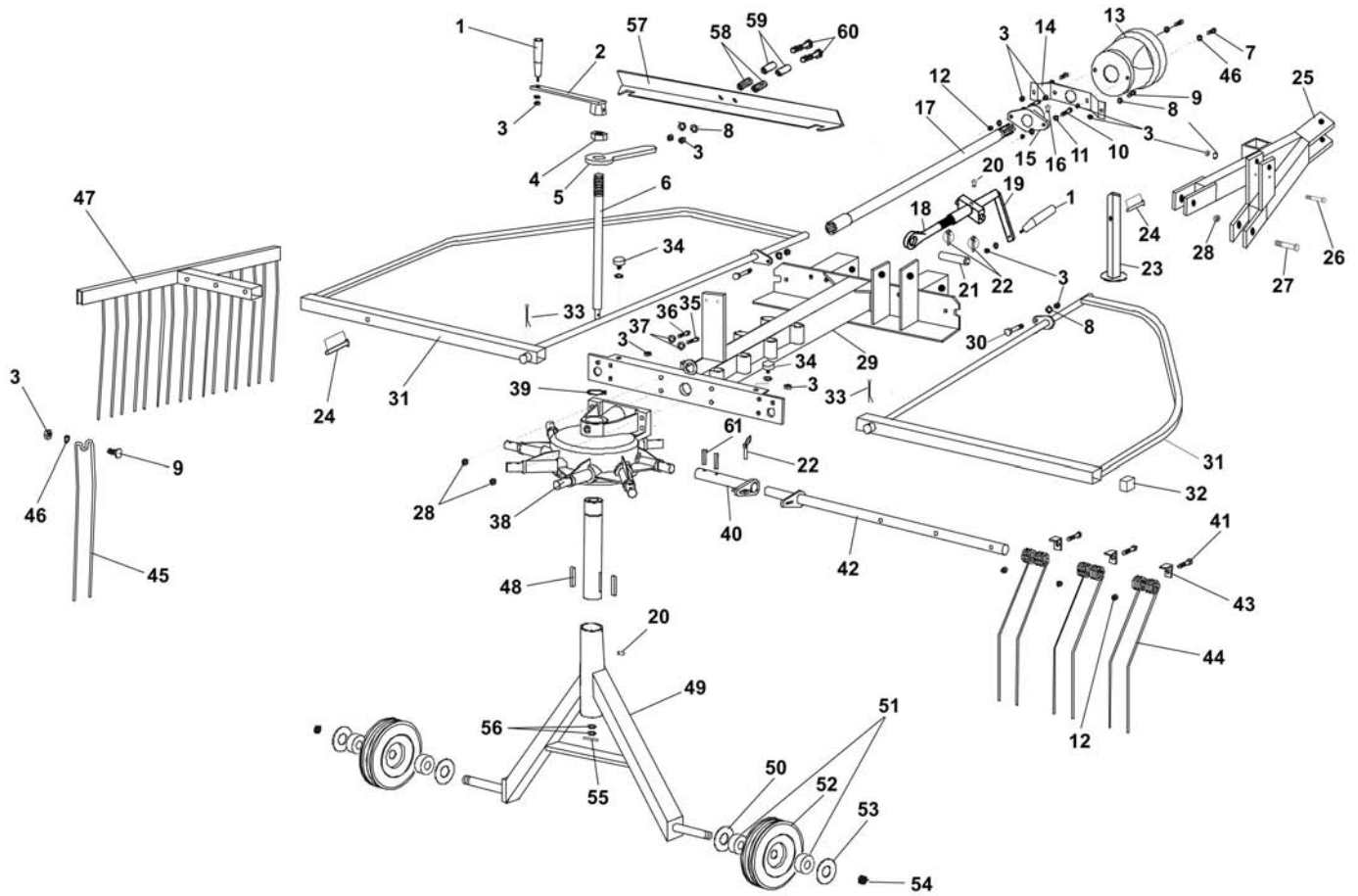
| Ref. | Part # | Description | Qty. |
|------|----------|--------------------------------|------|
| 1 | 503-399B | Handle | 1 |
| 2 | 503-396B | Handle lever | 1 |
| 3 | 001-5237 | Nut ES M10-1.50 Z TN | 22 |
| 4 | 008-5150 | Nut HH M22-1.50 C6 Z TN | 1 |
| 5 | 502-469B | Locking lever | 1 |
| 6 | 503-060B | Threaded rod 22mm. | 1 |
| 7 | 000-6349 | Bolt HH M10-1.50x20 C8.8 Z F | 2 |
| 8 | 000-2034 | Washer flat Ø10 W | 6 |
| 9 | 003-3176 | Bolt HH M10-1.50x25 C8.8 Z F | 2 |
| 10 | 002-3265 | Bolt HH M12-1.75x40 C8.8 Z F | 2 |
| 11 | 007-6106 | Washer fender Ø12 Z | 2 |
| 12 | 009-4139 | Nut ES M12-1.75 TN Z | 28 |
| 13 | 503-578B | Protection, PTO shaft | 1 |
| 14 | 503-577B | Support protection | 1 |
| 15 | 503-074B | Support UFCL 207 | 1 |
| 16 | 005-1129 | Grease fitting M06-1.00 | 1 |
| 17 | 503-086B | Central shaft | 1 |
| 18 | 6500375D | Pin Ø25x180 | 1 |
| 19 | 003-2366 | Hairpin cotter, double loop Ø4 | 1 |
| 20 | 503-576B | Frame; DR0-308 | 1 |
| 21 | 6500371D | Pin Ø28x200 | 2 |
| 22 | 503-581B | Lock pin | 10 |
| 23 | 503-076B | Support stand | 2 |
| 24 | 000-2298 | Washer flat Ø25 N | 2 |
| 25 | 005-0204 | Roll pin Ø12x50 | 16 |
| 26 | 503-580B | Safety guard | 2 |
| 27 | 005-8310 | Plastic cap 45 mm. | 1 |
| 28 | 000-5638 | Cotter pin Ø5x50 | 2 |
| 29 | 501-684B | Pin wire lock 3/8"x2.50" Z | 1 |
| 30 | 503-585B | Shock absorber | 3 |
| 31 | 007-4232 | Bolt HH M14-2.00x40 C8.8 Z F | 2 |
| 32 | 002-9317 | Bolt HH M14-2.00x50 C8.8 Z F | 2 |
| 33 | 000-6645 | Washer serrated safety Ø14 N | 4 |
| 34 | 000-7224 | Nut ES M14-2.00 Z TK | 2 |
| 35 | 503-548B | Gearbox complete, Comer | 1 |
| | 503-582B | Gearbox complete, Bertuzzo | 1 |
| 36 | 002-5115 | Snap ring, outer Ø50 | 1 |
| 37 | 503-575B | Bushing, tine arm | 8 |
| 38 | 002-1257 | Bolt HH M12-1.75x60 C8.8 Z F | 24 |
| 39 | 503-574B | Tine arm | 8 |
| 40 | 503-083B | Spring clip | 24 |
| 41 | 503-084B | Tine | 24 |
| 42 | 503-071B | Tine, rake arm | 10 |
| 43 | 003-0157 | Washer Ø10.5x30x3 | 12 |
| 44 | 503-584B | Rake arm | 1 |
| 45 | 9160035D | Key 10x8x110 | 2 |
| 46 | 306-002F | Grease fitting M08-1.25 | 3 |
| 47 | 503-082B | Axle, wheel support | 1 |
| 48 | 004-6521 | Roll pin Ø6x60 | 2 |
| 49 | 502-373B | Cover, inner | 2 |



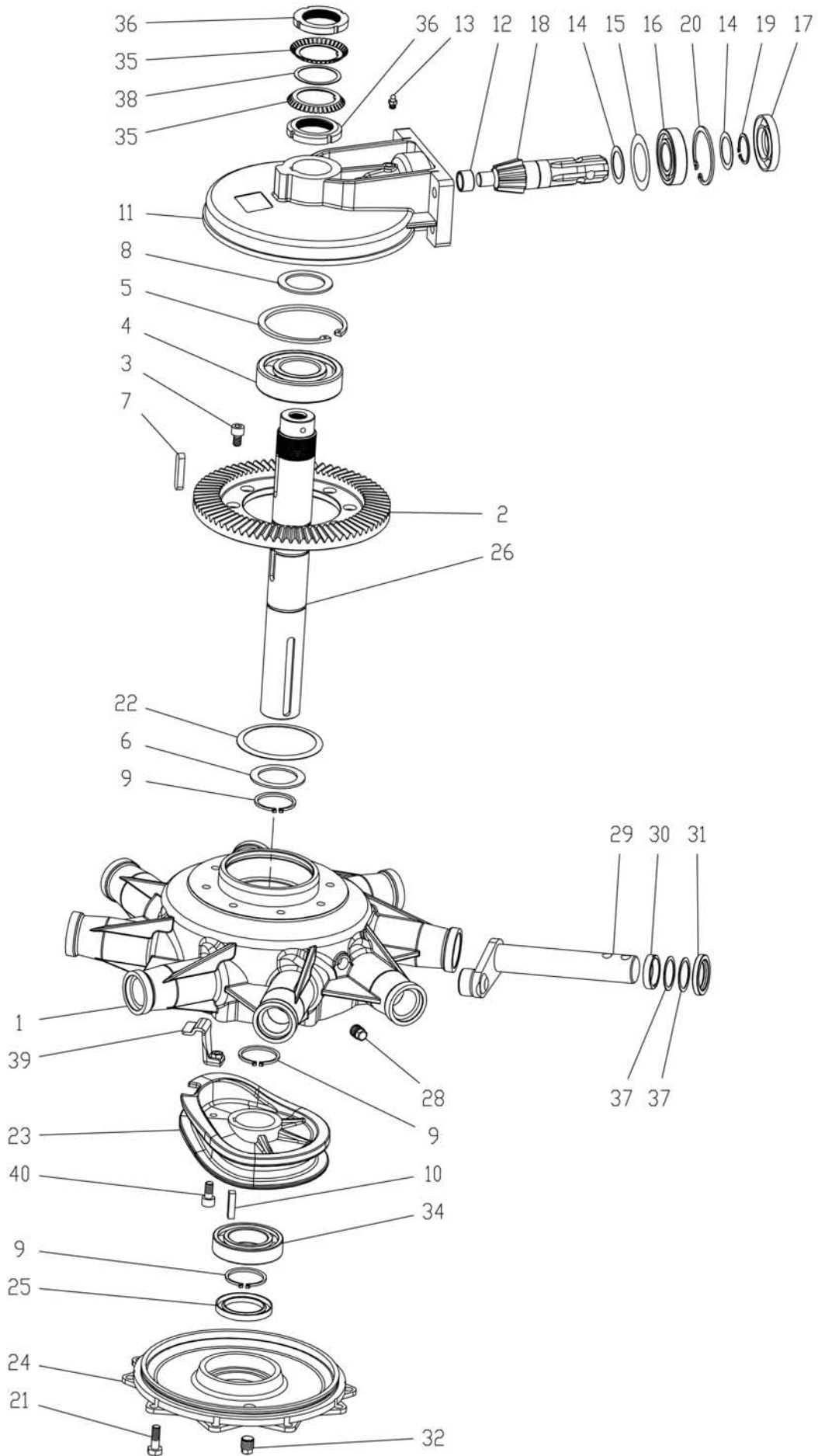
| Ref. | Part # | Description | Qty. |
|------|-----------|------------------------------|------|
| 50 | 000-6626A | Bearing 6205 ZZ | 4 |
| 51 | 502-375B | Wheel 15x600-6, complete | 2 |
| 52 | 502-374B | Cover, outer | 2 |
| 53 | 004-1165 | Nut ES M16-2.00 Z TN | 2 |
| 54 | 503-078B | Wheel yoke, right | 1 |
| 55 | 503-079B | Wheel yoke, left | 1 |
| 56 | 000-6605 | Roll pin Ø6x32 | 1 |
| 57 | 503-586B | Guard retainer | 1 |
| 58 | 503-588B | Spring | 2 |
| 59 | 503-587B | Spacer | 2 |
| 60 | 001-4477 | Bolt HH M10-1.50x60 C8.8 Z P | 2 |
| 61 | 006-6039 | Washer flat Ø31 N | 2 |
| 62 | 000-2265 | Washer flat Ø12 W | 2 |



| Ref. | Part # | Description | Qty. |
|------|----------|-------------------------------|------|
| 1 | 503-399B | Handle | 2 |
| 2 | 503-396B | Handle lever | 1 |
| 3 | 001-5237 | Nut ES M10-1.50 Z TN | 24 |
| 4 | 008-5150 | Nut HH M22-1.50 C6 Z TN | 1 |
| 5 | 502-469B | Locking lever | 1 |
| 6 | 503-060B | Threaded rod 22mm. | 1 |
| 7 | 000-6349 | Bolt HH M10-1.50x20 C8.8 Z F | 2 |
| 8 | 000-2034 | Washer flat Ø10 W | 7 |
| 9 | 003-3176 | Bolt HH M10-1.50x25 C8.8 Z F | 2 |
| 10 | 002-3265 | Bolt HH M12-1.75x40 C8.8 Z F | 2 |
| 11 | 007-6106 | Washer fender Ø12 Z | 2 |
| 12 | 009-4139 | Nut ES M12-1.75 TN Z | 26 |
| 13 | 503-578B | Protection, PTO shaft | 1 |
| 14 | 503-577B | Support protection | 1 |
| 15 | 503-074B | Support UCFL 207 | 1 |
| 16 | 005-1129 | Grease fitting M06-1.00 | 1 |
| 17 | 503-086B | Central shaft | 1 |
| 18 | 503-450B | Threaded swivel | 1 |
| 19 | 503-449B | Turnbuckle | 1 |
| 20 | 306-002F | Grease fitting M08-1.25 | 2 |
| 21 | 503-451B | Pin Ø25x90 | 1 |
| 22 | 503-581B | Lock pin | 10 |
| 23 | 503-448B | Support stand | 1 |
| 24 | 501-684B | Pin wire lock 3/8"x2.50" Z | 2 |
| 25 | 503-447B | Drawbar | 1 |
| 26 | 009-0269 | Bolt HH M10-1.50x100 C8.8 Z P | 1 |
| 27 | 003-0285 | Bolt HH M14-2.00x100 C8.8 Z P | 2 |
| 28 | 000-7224 | Nut ES M14-2.00 Z TK | 4 |
| 29 | 503-590B | Frame; DRP-308 | 1 |
| 30 | 000-1278 | Bolt HH M10-1.50x30 C8.8 Z F | 2 |
| 31 | 503-589B | Safety guard | 2 |
| 32 | 005-8310 | Plastic cap 45 mm. | 1 |
| 33 | 000-5638 | Cotter pin 5x50 | 2 |
| 34 | 503-585B | Shock absorber | 3 |
| 35 | 007-4232 | Bolt M14x40 | 2 |
| 36 | 002-9317 | Bolt M14x50 | 2 |
| 37 | 000-6645 | Washer serrated safety Ø14 N | 4 |
| 38 | 503-548B | Gearbox complete, Comer | 1 |
| | 503-582B | Gearbox complete, Bertuzzo | 1 |
| 39 | 002-5115 | Snap ring, outer Ø50 | 1 |
| 40 | 503-575B | Bushing, tine arm | 8 |
| 41 | 002-1257 | Bolt HH M12-1.75x60 C8.8 Z F | 24 |
| 42 | 503-574B | Tine arm | 8 |
| 43 | 503-083B | Spring clip | 24 |
| 44 | 503-084B | Tine | 24 |
| 45 | 503-071B | Tine, rake arm | 10 |
| 46 | 003-0157 | Washer fender Ø10 Z | 12 |
| 47 | 503-584B | Rake arm | 1 |
| 48 | 9160035D | Key 10x8x110 | 2 |
| 49 | 503-452B | Wheel support; DRP-308 | 1 |
| 50 | 502-373B | Cover, inner | 2 |

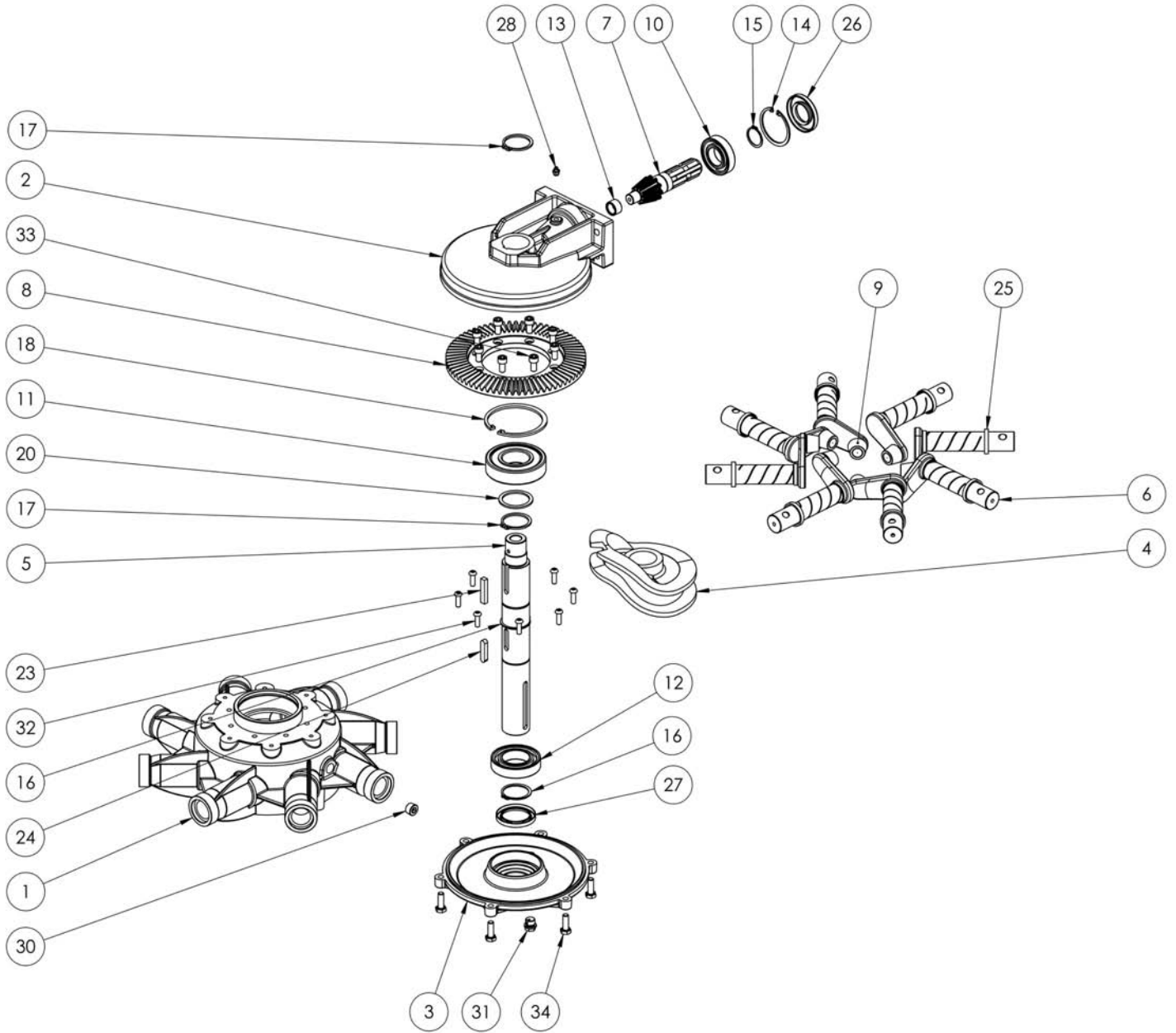


| Ref. | Part # | Description | Qty. |
|------|-----------|------------------------------|------|
| 51 | 000-6626A | Bearing 6205 ZZ | 4 |
| 52 | 8910007D | Wheel 16x650-8, complete | 2 |
| 53 | 502-374B | Cover, outer | 2 |
| 54 | 004-1165 | Nut ES M16-2.00 Z TN | 2 |
| 55 | 000-6605 | Roll pin Ø6x32 | 1 |
| 56 | 005-8503 | Shim Ø17x24x1.5 | 2 |
| 57 | 503-586B | Guard retainer | 1 |
| 58 | 503-588B | Spring | 2 |
| 59 | 503-587B | Spacer | 2 |
| 60 | 001-4477 | Bolt HH M10-1.50x60 C8.8 Z P | 2 |
| 61 | 005-0204 | Roll pin Ø12x50 | 16 |



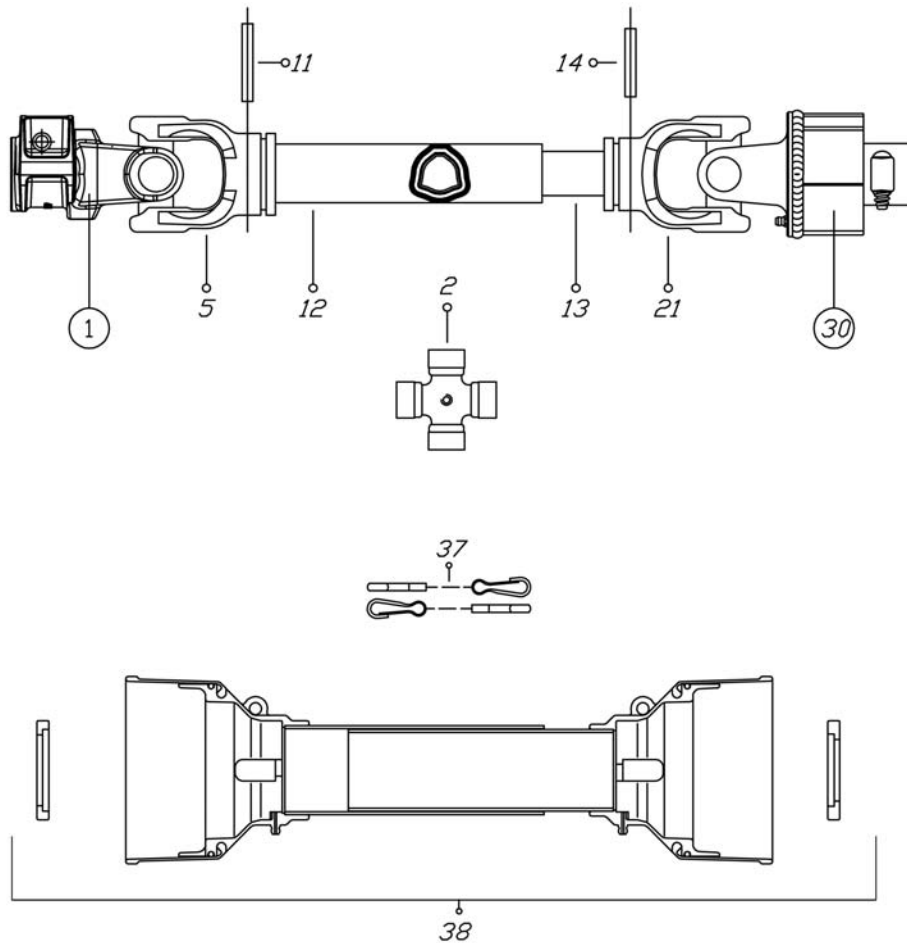
| Ref. | Part # | Description | Qty. |
|------|----------|---------------------------------|------|
| 1 | 502-482B | Housing, gearbox | 1 |
| 2 | 504-016B | Ring gear Z72 M3.55 | 1 |
| 3 | 502-484B | Bolt SC M10-1.50x18 C8.8 N F | 8 |
| 4 | 000-2072 | Bearing 6310 | 1 |
| 5 | 000-2073 | Snap ring, inner Ø110 | 1 |
| 6 | 502-486B | Spacer Ø70.3x50.3x2.5 | 1 |
| 7 | 502-487B | Key 10x8x50 | 1 |
| 8 | 502-488B | Spacer Ø50.3x70.3 | 1 |
| 9 | 503-515B | Snap ring, outer Ø50 | 3 |
| 10 | 005-7513 | Key 10x8x35 | 1 |
| 11 | 502-491B | Upper cover, gearbox housing | 1 |
| 12 | 502-492B | Needle bearing 20x26x16 | 1 |
| 13 | 503-500B | Grease fitting M10x1.50 | 1 |
| 14 | 005-7511 | Spacer washer Ø35.3x48 | 2 |
| 15 | 502-494B | Spacer, mylar Ø49x71.7x0.2 | 1 |
| 16 | 002-5332 | Bearing 6207 | 1 |
| 17 | 003-0211 | Oil seal Ø35x72x10 | 1 |
| 18 | 504-017B | Pinion gear Z10 M3.55 | 1 |
| 19 | 004-2122 | Snap ring, outer Ø35 | 1 |
| 20 | 002-5329 | Snap ring, inner Ø72 | 1 |
| 21 | 003-3176 | Bolt M10x25 | 6 |
| 22 | 502-498B | Spacer, mylar Ø71x109.7x0.2 | 1 |
| 23 | 504-018B | Cam with hole | 1 |
| 24 | 502-500B | Bottom cover, gearbox housing | 1 |
| 25 | 502-501B | Oil seal Ø50x72x8 | 1 |
| 26 | 504-019B | Center shaft | 1 |
| 28 | 502-503B | Fill plug 1/2" | 1 |
| 29 | 504-020B | Connecting rod | 8 |
| 30 | 502-505B | Spacer Ø35.3x43.5x9 | 8 |
| 31 | 501-884B | Oil seal Ø35x45x7 | 8 |
| 32 | 008-5173 | Drain plug 3/8" | 1 |
| 34 | 009-1202 | Bearing 6210 | 1 |
| 35 | 504-001B | Washer external lock Ø50 Z | 2 |
| 36 | 503-848B | Safety nut M50x1.5 | 2 |
| 37 | 504-021B | Shim Ø35.2x43.8x1 | 16 |
| 38 | 504-022B | Shim Ø50.2x57.5x0.5 | 1 |
| 39 | 504-023B | Curved plate and nut | 1 |
| 40 | 005-7487 | Bolt SC M08-1.25x22 C8.8 Z | 1 |
| | 503-548B | Gearbox, complete ¹² | - |

¹² Replaces complete gearbox #502-510B.

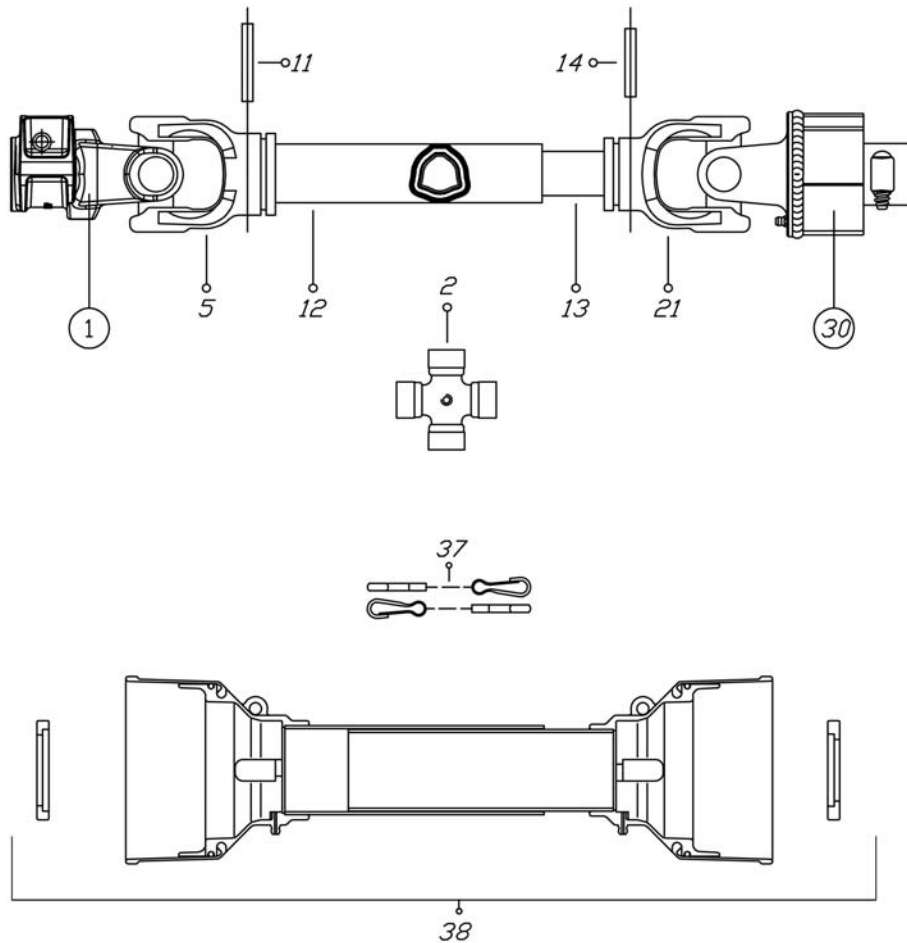


| Ref. | Part # | Description | Qty. |
|------|----------|---------------------------------|------|
| 1 | 503-491B | Housing, gearbox | 1 |
| 2 | 503-492B | Upper cover, gearbox housing | 1 |
| 3 | 503-493B | Bottom cover, gearbox housing | 1 |
| 4 | 503-494B | Cam | 1 |
| 5 | 503-495B | Center shaft | 1 |
| 6 | 503-496B | Connecting rod | 8 |
| 7 | 503-497B | Pinion gear Z10 M3.75 | 1 |
| 8 | 503-498B | Ring gear Z68 M3.75 | 1 |
| 9 | 503-499B | Roller | 8 |
| 10 | 002-5332 | Bearing 6207 | 1 |
| 11 | 503-508B | Bearing 6310 ZZ | 1 |
| 12 | 009-1202 | Bearing 6210 | 1 |
| 13 | 502-492B | Needle bearing 20x26x16 | 1 |
| 14 | 002-5329 | Snap ring, inner Ø72 | 1 |
| 15 | 004-2122 | Snap ring, outer Ø35 | 1 |
| 16 | 002-5115 | Snap ring, outer Ø50 | 2 |
| 17 | 503-515B | Snap ring, outer Ø50 | 2 |
| 18 | 000-2073 | Snap ring, inner Ø110 | 1 |
| 20 | 503-502B | Spacer washer Ø50x62x3 | 1 |
| 23 | 502-487B | Key 10x8x50 | 1 |
| 24 | 005-7488 | Key 10x8x45 | 1 |
| 25 | 501-884B | Oil seal Ø35x45x7 | 8 |
| 26 | 003-0211 | Oil seal Ø35x72x10 | 1 |
| 27 | 502-501B | Oil seal Ø50x72x8 | 1 |
| 28 | 000-1065 | Grease fitting M10-1.00 | 1 |
| 30 | 502-503B | Fill plug 1/2" | 1 |
| 31 | 008-5173 | Drain plug 3/8" | 1 |
| 32 | 003-3176 | Bolt HH M10-1.50x25 C8.8 Z F | 8 |
| 33 | 502-484B | Bolt SC M10-1.50x18 C8.8 N F | 8 |
| 34 | 000-1278 | Bolt HH M10-1.50x30 C8.8 Z F | 6 |
| | 503-582B | Gearbox, complete ¹³ | - |

¹³ Interchangeable with complete gearbox #503-548B.



| Ref. | Part # | Description | Qty. |
|------|-----------|-------------------------------------------------------------|------|
| 1 | 1021010C | Yoke B1 - 1 3/8" Z6 | 1 |
| 2 | 1001005C | Cross & bearing B1 (22x54) | 2 |
| 5 | 1701027C | Yoke, outer tube B1 | 1 |
| 11 | 000-011E | Roll pin Ø8x50 | 1 |
| 12 | 110-208E | Outer tube B1 - 33x2.6 | 1 |
| 13 | 110-108E | Inner tube B1 - 26x3.5 | 1 |
| 14 | 002-9247 | Roll pin Ø8x40 | 1 |
| 21 | 1701029C | Yoke, inner tube B1 | 1 |
| 30 | 216-011E | Ratchet torque limiter LW1x01 | 1 |
| 37 | 1006065C | Chain | 2 |
| 38 | 083B01100 | Shield, complete SS B1 1000 | - |
| | 950-463B | Decal "DANGER - Rotating driveline, keep away" outer shield | 1 |
| | 950-464B | Decal "DANGER - Guard missing, do not operate" outer tube | 1 |
| | 948-910B | Driveline w/ratchet torque limiter, complete | - |



| Ref. | Part # | Description | Qty. |
|------|-----------|-------------------------------------------------------------|------|
| 1 | 1022010C | Yoke B2 - 1 3/8" Z6 | 1 |
| 2 | 1002020C | Cross & bearing B2 (23.8x61.3) | 2 |
| 5 | 1702027C | Yoke, outer tube B2 | 1 |
| 11 | 000-012E | Roll pin Ø8x55 | 1 |
| 12 | 120-213E | Outer tube B2 - 36x3.2 | 1 |
| 13 | 120-113E | Inner tube B2 - 29x4 | 1 |
| 14 | 000-011E | Roll pin Ø8x50 | 1 |
| 21 | 1702029C | Yoke, inner tube B2 | 1 |
| 30 | 226-013E | Ratchet torque limiter LW2x02 | 1 |
| 37 | 1006065C | Chain | 2 |
| 38 | 083B02130 | Shield, complete SS B2 1300 | - |
| | 950-463B | Decal "DANGER - Rotating driveline, keep away" outer shield | 1 |
| | 950-464B | Decal "DANGER - Guard missing, do not operate" outer tube | 1 |
| | 948-909B | Driveline w/ratchet torque limiter, complete | - |

Use only original spare parts

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