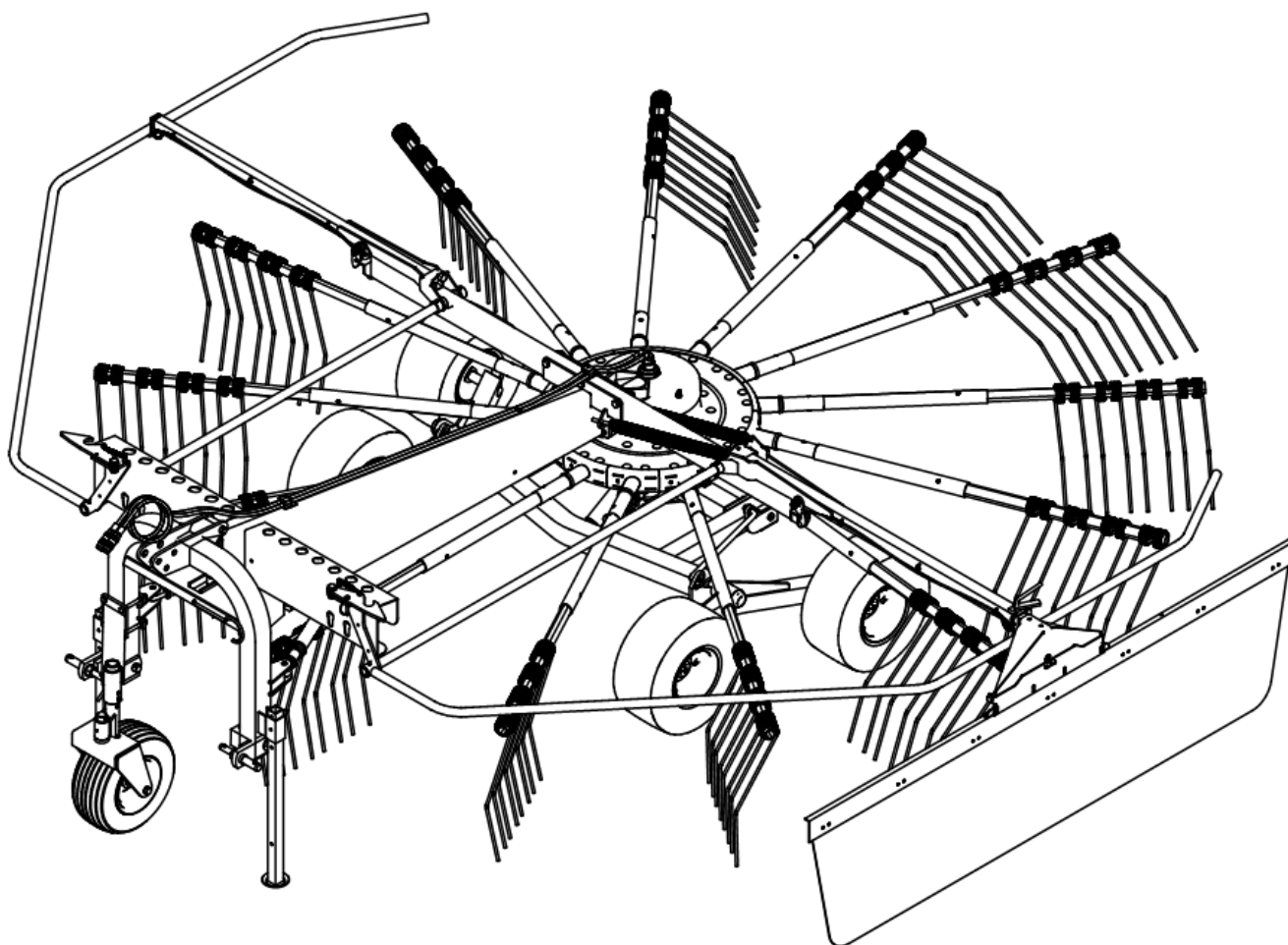




AGRICULTURAL MACHINERY

sitrex®
Spa

USE AND MAINTENANCE SPARE PARTS LIST



SR 500/13

2012

Warranty

SITREX s.p.a. warrants new SITREX machinery to be free from defects in material and workmanship at the time of delivery to the original purchaser if correctly set up and operated according to this Operator's Handbook.

SITREX undertakes to repair or replace free of charge any defective part which should be returned by the purchaser (freight prepaid) and found to be defective on inspection authorised by SITREX during the warranty period.

This warranty shall be valid for 12 (twelve) months from the delivery of the goods to the original purchaser.

If the customer is unable to return the defective part to the manufacturer, the manufacturer cannot be held responsible for any cost due for repair or replacement of any part of the machine. He shall only supply the part(s) required for such repair and/or replacement.

The warranty shall be considered null and void when it is evident that the machine has been improperly used or at least repaired without authorisation.

SITREX shall not be held responsible for any obligation or agreement reached by any SITREX employers, agents or dealers who do not comply with the above warranty. The manufacturer cannot be held responsible for the subsequent damages. This warranty replaces any other warranty, either explicit or implied, as well as any other obligation of the manufacturer.

CHAPTER

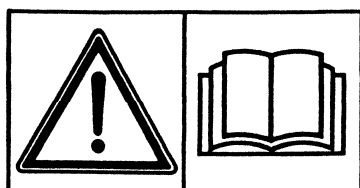
- 1) GUIDE TO THE SIGNS
- 2) General summary of safety and accident-prevention instructions
- 3) PRODUCT IDENTIFICATION
- 4) DELIVERY AND ASSEMBLY
- 5) ADJUSTMENT, PREPARATION AND USE INTRODUCTION
- 6) TRANSPORT BY ROAD
- 7) MAINTENANCE
- 8) SPARE PARTS LIST

1) GUIDE TO THE SIGNS AND SYMBOLS USED THIS MANUAL AND THEIR LOCATION ON THE MACHINE

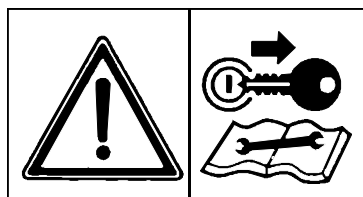
IMPORTANT

These signs and symbols give information to the operator on how to make the best use of the machine so as to prolong life, avoid damage, optimise work and, above all, to avoid injury to the operator and anyone within range of the machine.

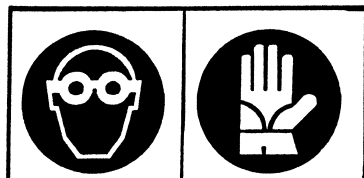
WARNING SIGNS



1) Before beginning operations, read the instruction manual carefully.

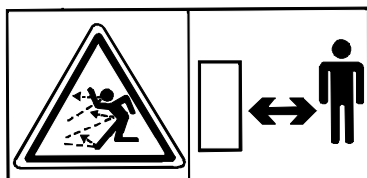


2) Before doing any maintenance or repair work, stop the machine at a suitable spot. Turn off the tractor motor, apply the brake, remove the key from the ignition and consult this manual.

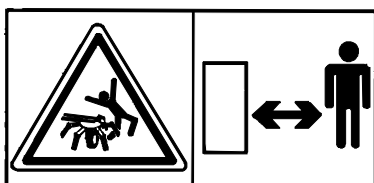


3) This is a warning to use proper accident protection when carrying out maintenance and repairs

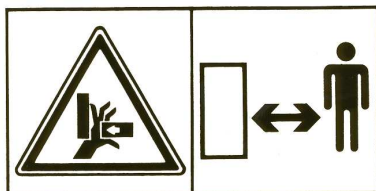
DANGER SIGNS



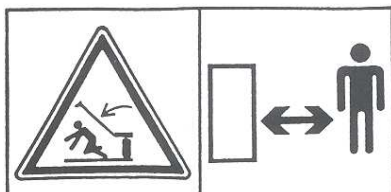
4) Risk of possible ejection of blunt objects. Keep a safe distance from the machine



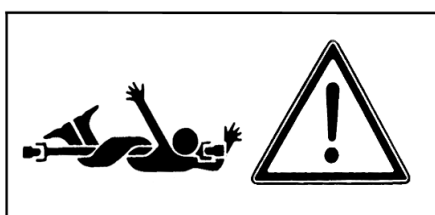
5) Indicates that anyone coming within range of the moving tine arms will be seriously injured. Keep a safe distance from the machine.



6) Indicates that there is a risk of crushing your hands. Keep your distance.



7) Indicates danger caused by accidental fall of suspended arms. Keep safe distance.



8) Indicates that it is dangerous to touch the cardan (P.T.O.) shaft. For all the other information regarding the cardan shaft, see the use and maintenance booklet specifically for the cardan shaft which, together with this manual, makes up the documentation on safety, use and maintenance of the machine.

INDICATION SIGNS

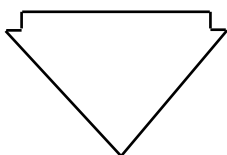


9) Indicates a greasing point .



10) Shows the direction of rotation of the power takeoff and the maximum number revolutions.

OIL LEVEL



11 Indicate a oil point.

MANUAL SIGNS.

DANGER



Indicates an impending dangerous situation which, if not avoided, will cause death or severe personal injury.

ATTENTION



Indicates a potentially dangerous situation which, if not avoided, could cause death or severe personal injury, including dangers which are present when protection is removed.

CAUTION



indicates a potentially dangerous situation which, if not avoided, can provoke less severe or minor injuries.

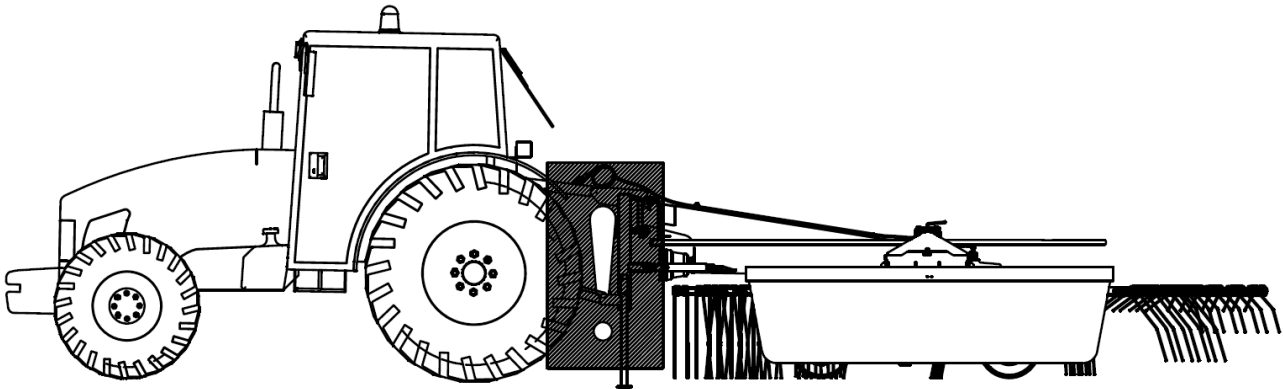
2) GENERAL SUMMARY OF SAFETY AND ACCIDENT-PREVENTION INSTRUCTIONS

Read all the directions carefully before using the machine. When in doubt, seek advice from the manufacturers.

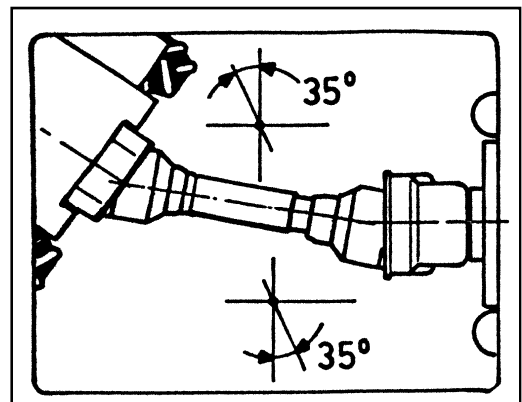
The manufacturing company declines all responsibility for non-compliance with the following safety and accident-prevention instructions.

- 1- Pay attention to the danger signs and symbols in this manual and on the machine.
- 2- Do not touch moving parts.
- 3- All work on the machine (including adjustments) must always be carried out with the tractor immobilized and the engine switched off.
- 4- On no account may persons or animals be carried on the machine.
- 5- Driving the tractor with the machine connected is absolutely forbidden to persons lacking suitable experience, or who are in poor health, or who do not have a suitable driving license.
- 6- All accident-prevention measures recommended in this manual should be scrupulously observed.
- 7- Connecting the machine to the tractor creates a different weight distribution on the axles and so it is essential to ensure that the tractor-machine combination is stable in all anticipated working conditions. It is therefore necessary to have exact instructions from the tractor manufacturers. If such instructions are not available, suitable tests should be conducted in safe conditions in order to assess stability.
- 8- Once the machine is connected, it can only be controlled through a Cardan shaft complete with the required overload protection and guard secured with the appropriate small chains. Be aware of the rotational direction of the Cardan shaft.
- 9- Before operating the tractor and machine, check that all transport and operational safety devices are complete and working.
- 10- When driving on public roads, you should comply with the Highway Code regulations for the country concerned.
- 11- Do not exceed the tractor axle maximum weight and the total mobile weight. Heed transport regulations.
- 12- Before starting work, familiarize yourself with the control devices and how they work.
- 13- Wear suitable clothes. Do not wear clothing which is loose or which could become entangled in rotating or moving parts.
- 14- Connect the machine to a suitably powerful tractor by using an appropriate lifting unit and in accordance with instructions.
- 15- Take maximum care when connecting and disconnecting the machine to and from the tractor.
- 16- The machine and any road transport attachments must bear the appropriate signs and symbols and have suitable protection.
- 17- Never leave the driving seat when the tractor is running.
- 18- It is extremely important to appreciate that road holding, steering and braking may be significantly affected with the machine attached.
- 19- When turning corners with the machine attached, be aware of the fact that the centrifugal force will alter due to the change in the center of gravity.
- 20- Before engaging the power takeoff check the preset revolution speed. Do not change speed from 540 rpm to 1000 rpm.
- 21- Under no circumstances should anybody stand near the machine or any moving parts. It is the duty of the operator to ensure that this requirement is respected.
- 22- Before leaving the tractor, lower the machine with the lifting unit, stop the engine, apply the parking brake and remove the ignition key from the instrument panel.

- 23- Under no circumstances should anybody go between the tractor and the machine (Fig. 1) when the engine is running and the Cardan shaft is engaged, especially without first having applied the parking brake and placed chocks against the wheels.



- 24- Before connecting or disconnecting the machine to or from the 3-point linkage, put the lifting unit lever into the locked position.
- 25- The connection pins on the machine must match the connection sockets on the lifting unit.
- 26- During transport, secure the lateral lifting arms with the appropriate chains and tighteners.
- 27- When the machine is raised during road transport, put the tractor's hydraulic lifter lever into the locked position.
- 28- Only use the Cardan shaft provided by the manufacturer and, in case of replacement, substitute it with one having the same characteristics.
- 29- Regularly check all protection on the Cardan shaft. This should always be in excellent condition and securely fixed.
- 30- It is important to ensure that the protection on the Cardan shaft is complete.
- 31- Connection and disconnection of the Cardan shaft must be carried out with the engine switched off.
- 32- Pay particular attention to the correct connection and safety of the Cardan shaft and the power takeoffs on the machine and the tractor.
- 33- Prevent the cardan shaft protection from rotating using the chains supplied.
- 34- Before engaging the power takeoff, make sure that there are no people or animals in the vicinity and that the selected engine speed corresponds to that permitted. Never go above the maximum permitted.
- 35- Do not engage the power takeoff when the engine is not running.
- 36- Always disengage the power takeoff when the Cardan shaft is at too wide an angle (it should never be more than 35° Fig. 3.2) and when it is not in use.
- 37- Only clean and grease the Cardan shaft when the power takeoff is disengaged, the engine is off, the parking brake is applied and the ignition key is removed.
- 38- On disconnecting the Cardan shaft, replace the protective hood on the power takeoff shaft.
- 39- Prolonged use of the machine can cause the drive boxes to become hot. To avoid any risk of getting burnt, avoid touching these areas both during use and some time afterwards.
- 40- Periodically check screws and nuts for tightness and grip. Tighten if necessary.
- 41- When carrying out maintenance work or replacing the blades, raise the machine and rest on adequate supports.
- 42- Use the quantities of grease and oil advised.



- 43- Spare parts must meet the requirements as defined by the manufacturer. Use only original spare parts.
- 44- Safety decals must always be clearly visible. They must be kept clean and replaced if they become too illegible (they can be ordered from the agent if necessary).
- 45- The instruction booklet must be available for the lifetime of the machine.

— **Example of instructions for stability of tractor-rake combination**

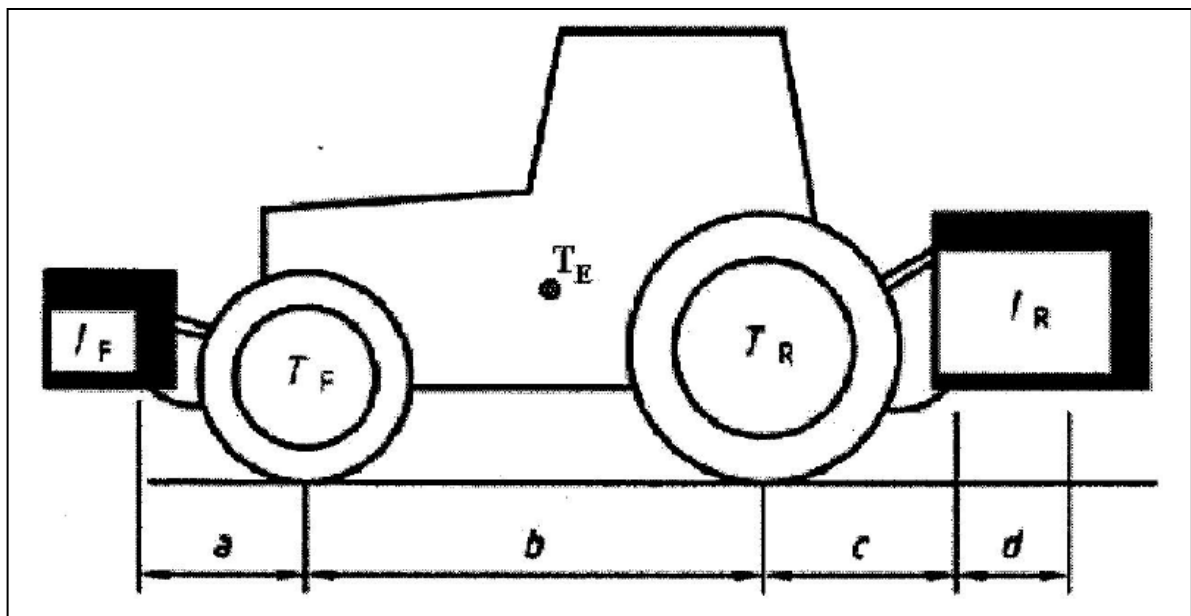
Below is an example of formula to verify the stability of tractor-drawn rake rules. The text that follows is one suggestion from ISO / WD 4254 to provide adequate information and comprehensive.

The following text is a suggestion to the manufacturer to enable him to provide adequate and complete information.

The example refers to any machine mounted on a tractor.

In order to ensure global stability, the following expression can be applied to calculate the minimum ballast in the front ($I_{F \min}$), which allows for a weight on the front 20% of the weight of the tractor :

$$I_{F, \min} = \frac{(I_r \bullet (c + d)) - (T_F \bullet b) + (0,2 \bullet T_E \bullet b)}{a + b}$$

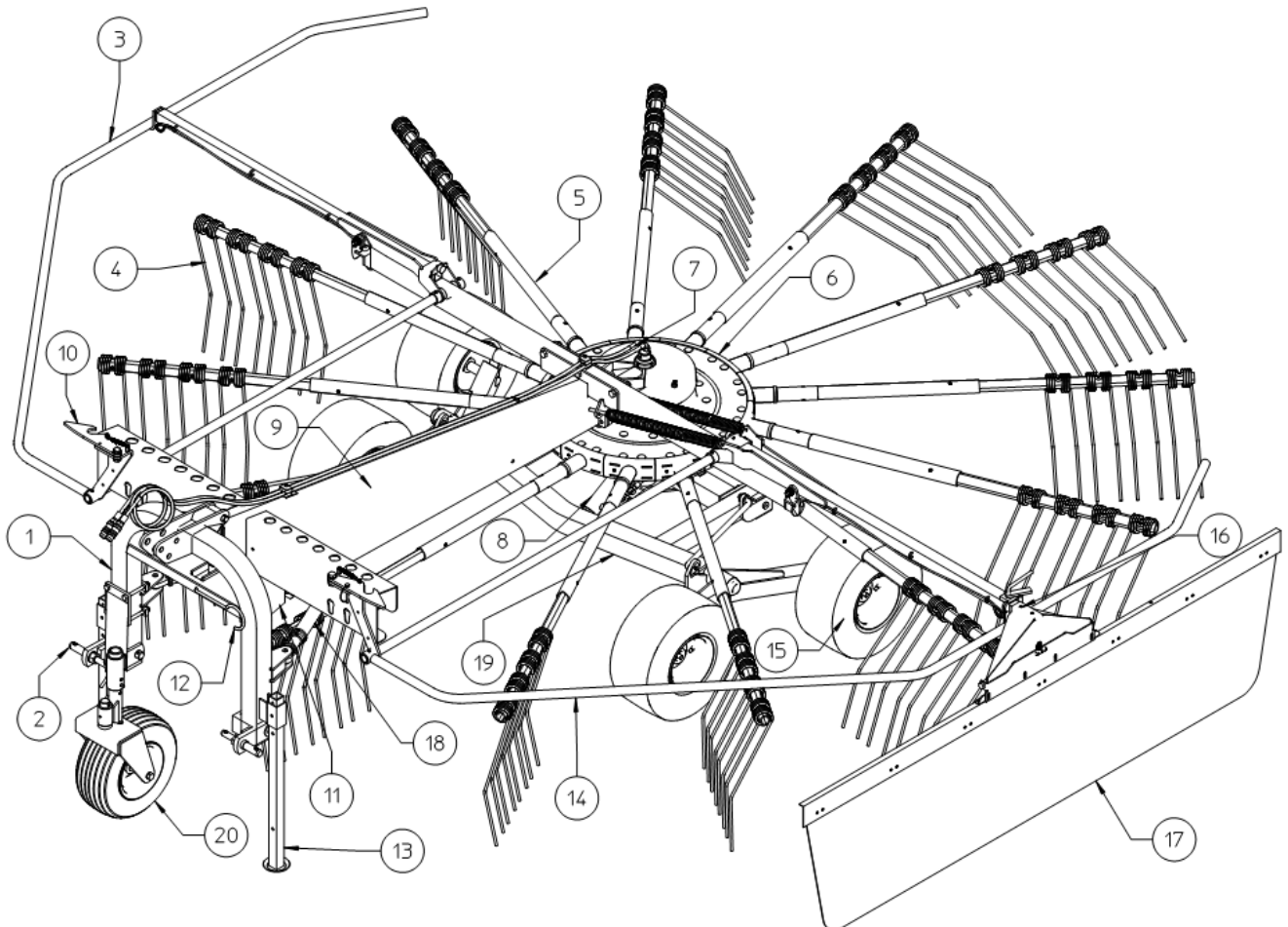


T_E [kg]	Unladen weight of tractor	(1)
T_F [kg]	Front axle load of unladen tractor	(1)
T_R [kg]	Rear axle load of unladen tractor	(1)
I_R [kg]	Combined weight of rear mounted implement/rear ballast	(2)
I_F [kg]	Combined weight of front mounted implement/front ballast	(2)
a [m]	Distance from centre of gravity for combined front mounted implement/front ballast to front axle centre	(2)
b [m]	Tractor wheelbase	(1)
c [m]	Distance from rear axle centre to centre of lower link balls	(1)
d [m]	Distance from centre of lower link balls to centre of gravity for combined rear mounted implement/rear ballast	(1)

FOR SR 500/13 d= 2200 mm

- (1) see instruction handbook of the tractor
 (2) see instruction handbook of the implement
 Alternatively, values can be measured

3) PRODUCT IDENTIFICATION



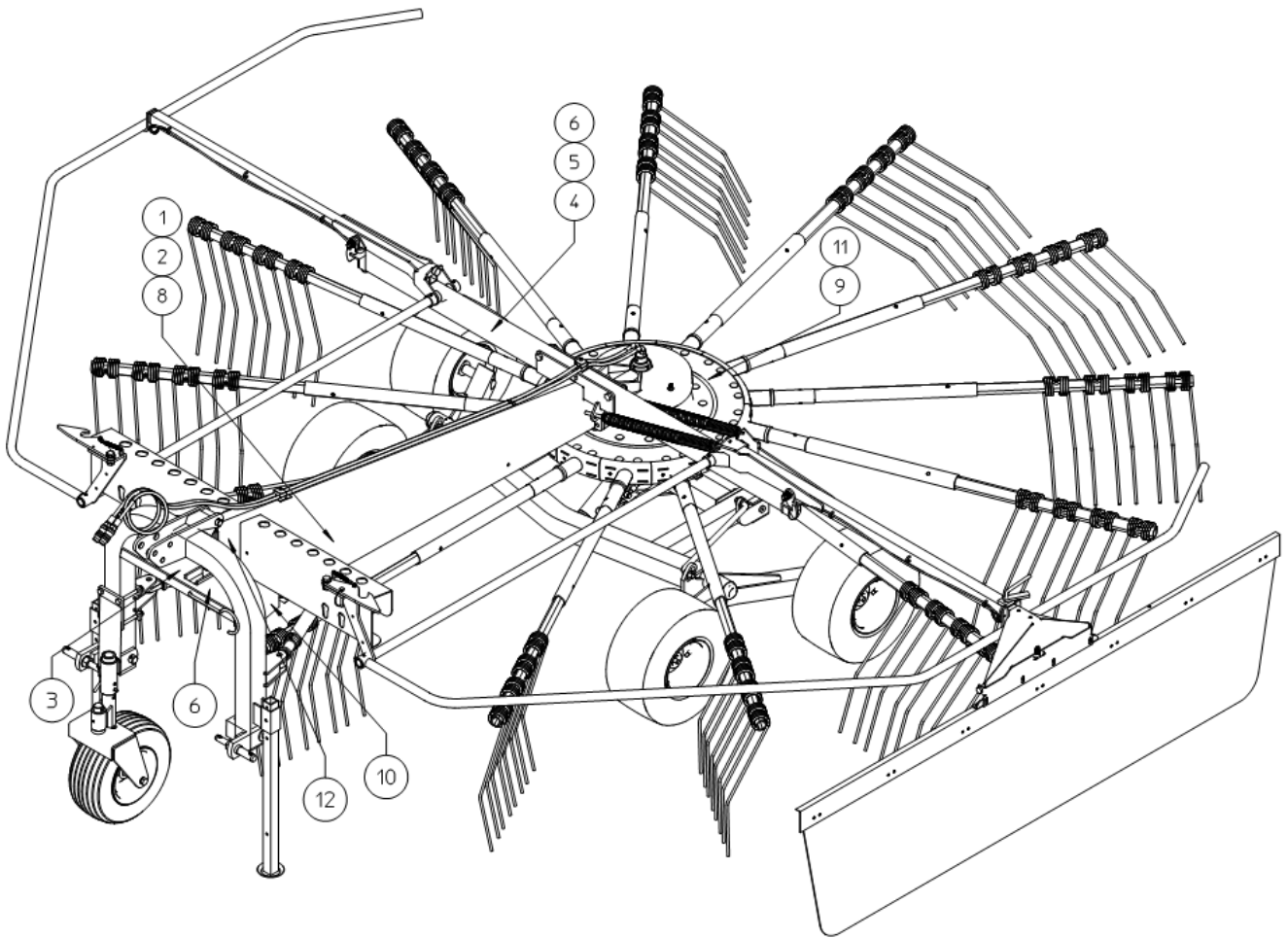
MAIN PARTS

- 1) THREE- POINT LINKAGE
 2) LOWER LINK
 3) R.H. GUARD
 4) TINE
 5) TINE ARM
 6) GEARBOX
 7) HYDRAULIC KIT
 8) CYLINDER
 9) DRAWBAR
 10) RATCHET
 11) CARDAN SHAFT PROTECTION
 12) CARDAN SUPPORT

- 13) PARKING STAND
 14) L.H. GUARD
 15) WHEEL UNIT
 16) TELESCOPING TUBE
 17) SWATHING DEFLECTOR
 18) ANTI-SNAKING KIT
 19) TRAVERSE
 20) Adjustable nose wheel (Optional)

RPM TRACTOR	RPM ROTORS	POWER REQUIRED	WHEEL TYPE	OPERATING WIDTH	TRANSPORT WIDTH	WEIGHT
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MAX 540	66	HP 70	18X8.50 6PLY	5 Mt	2,6 Mt	KG 865
		KW 52		197"	103"	LBS 1910



LOCATION OF SIGNS AND SYMBOLS ON THE MACHINE

- 1) SEE DRAWING 1 P.4
- 2) SEE DRAWING 2 P.4
- 3) SEE DRAWING 3 P.4
- 4) SEE DRAWING 4 P.5
- 5) SEE DRAWING 5 P.5
- 6) SEE DRAWING 6 P.5
- 7) SEE DRAWING 7 P.5
- 8) SEE DRAWING 8 P.5
- 9) SEE DRAWING 9 P.6
- 10) SEE DRAWING 10 P.6
- 11) SEE DRAWING 11 P.6
- 12) IDENTIFICATION PLATE

4) DELIVERY AND ASSEMBLY

Checking the machine on delivery

All parts are carefully checked before dispatch or delivery.

On receiving the machine, ensure that it has not been damaged during transport.

If damage has occurred, contact the dealer concerned.

Details of packing are given below.

UNPACKING THE MACHINE



DANGER !!!

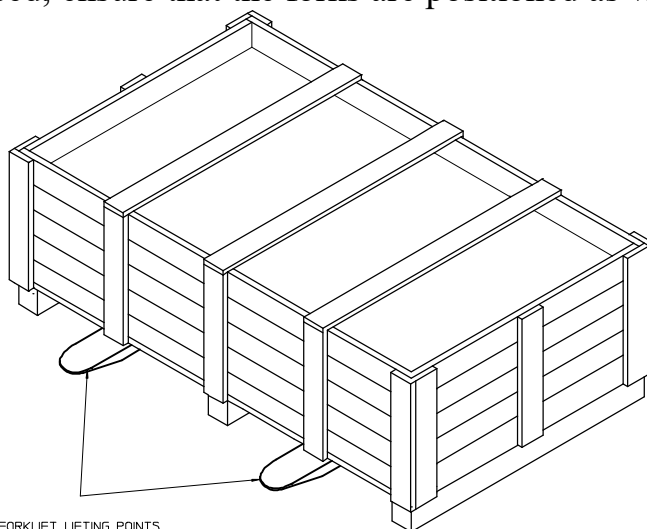


Lift the machine using a forklift truck, crane or other suitable equipment of sufficient capacity after first checking the weight of the configurations in the table given below.

Check the stability and positioning of the load on the forklift truck forks or crane hook.

Keep the load as low as possible during movement for maximum stability and to ensure that the operator has maximum visibility.

If a forklift truck is used, ensure that the forks are positioned as wide apart as possible.



FORKLIFT LIFTING POINTS

	WEIGHT PACKING	WEIGHT
KG	950	
LBS	2100	

NOTE: 1) The packing consists mainly of wood which should be disposed of according to the laws in force in the country where the machine is used. The plastic film should also be disposed of according to the laws in force in the country where the machine is used.

2) When storing, it is permissible to stack 2-3 crates on top of each other. Make sure that they are perfectly aligned vertically.

3) In the event of further transport, ensure that the machine is on the transporting vehicle.

ASSEMBLY

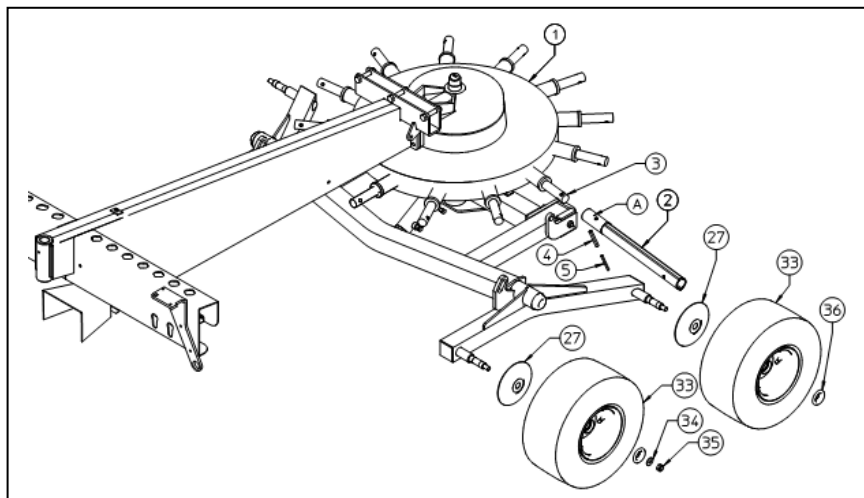


DANGER !!!



Assembly is highly dangerous and must be carried out in strict accordance with the following instructions. We recommend that assembly be performed by qualified personnel. We also recommend that assembly be carried out in a flat, open area with no people (particularly children) nearby who could be severely injured if they were to touch or move any parts of the machine.

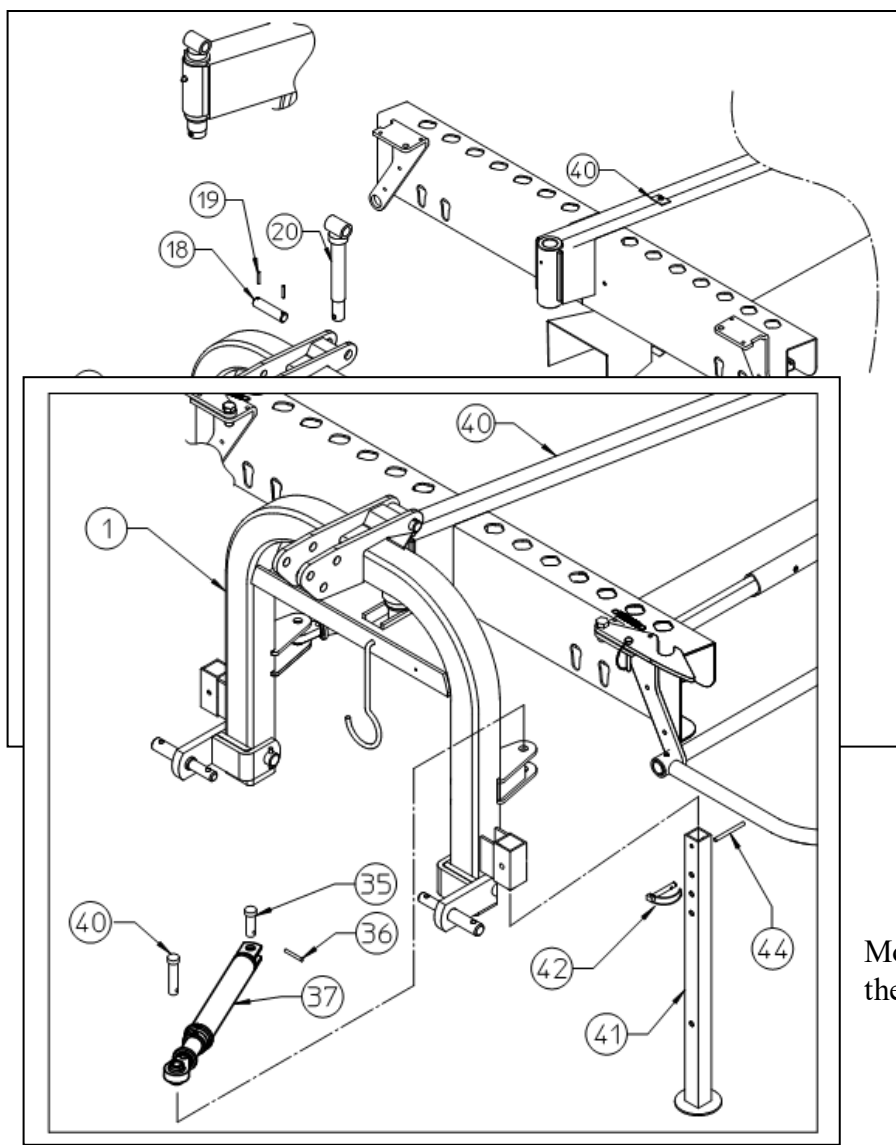
Assembly sequence:



ATTENTION

Attach the arms (2) to the housing (1), placing them over the pins (3). Fasten the arms by inserting spring pins (4) into holes (A), and then insert the inside spring pins (5).

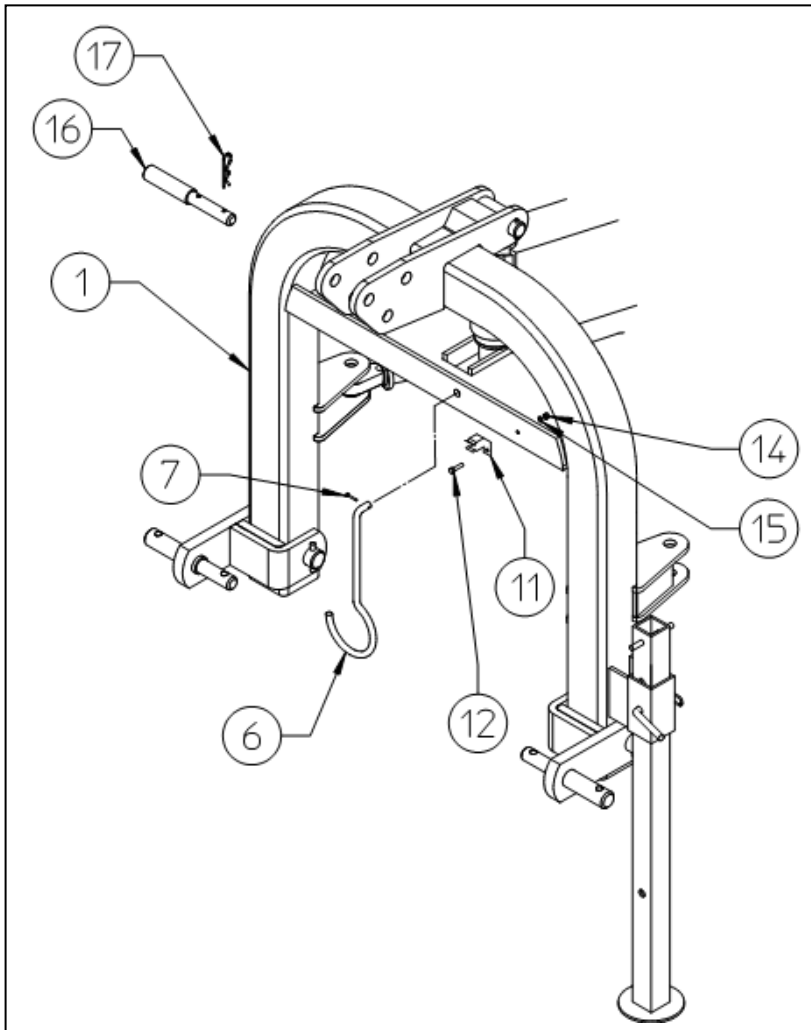
Attach grease nipples to the axle (17). Mount wheels (26) on the tandem pins, first placing the large guard (27) and then the small guard (36), the washer (34) and tighten with the nut (35).



Attach the pin (20) to the drawbar (40) and fasten on the lower part with the washer (13) the wear preventing bushing (10) and the bushing (8) with the spring pin (9). Insert the 3rd point arch (1) bended in order to overlap the slot and the bushing (10) then place the arch in order to insert the pin (18) and the spring pins (19). Mount the linkage brackets (2) and (3) by inserting pins (4) and spring pins (5).

Mount the parking stand (41) to the mount on the 3point hitch (1),

and fasten with pin (44) and clip (42). The machine can now be placed on the ground. Rotating 3rd point hitch (1) as regards to the drawbar, attach the shock absorber (37) to the proper hitches by inserting pins (35) and (40). Repeat the same operation on the opposite side of the machine.



Put the cardan shaft support (6) in the hole indicated and secure it using the flexible pin (7). Insert the clip (11) in the hole as shown and fasten it using the screw (12), the washer (15) and nut (14). Fit pin (16) into proper seat and lock with split pin (17).

HYDRAULIC SYSTEM ASSEMBLY

Assemble the oleo-dynamic system as shown. When using for the first time, make sure there are no oil leaks. If there should be any, tighten the pipe fittings

Insert tube (6) to gearbox and attach the hose collar (31)-(29)-(30) to the lugs on axle. Mounting bush (32) to tube.

Attach the reducer nipple (10) at cylinder (16).

Connect the fitting pipe (9) nipple (10)

Connect the fitting pipe (9) with fitting (7) on tube (6)

Connect the fitting pipe (8) with fitting screw on cylinders (20) and with fitting (7) to tube (6)

Connect eye-ring end of pipes (8) to the other side cylinders (16)

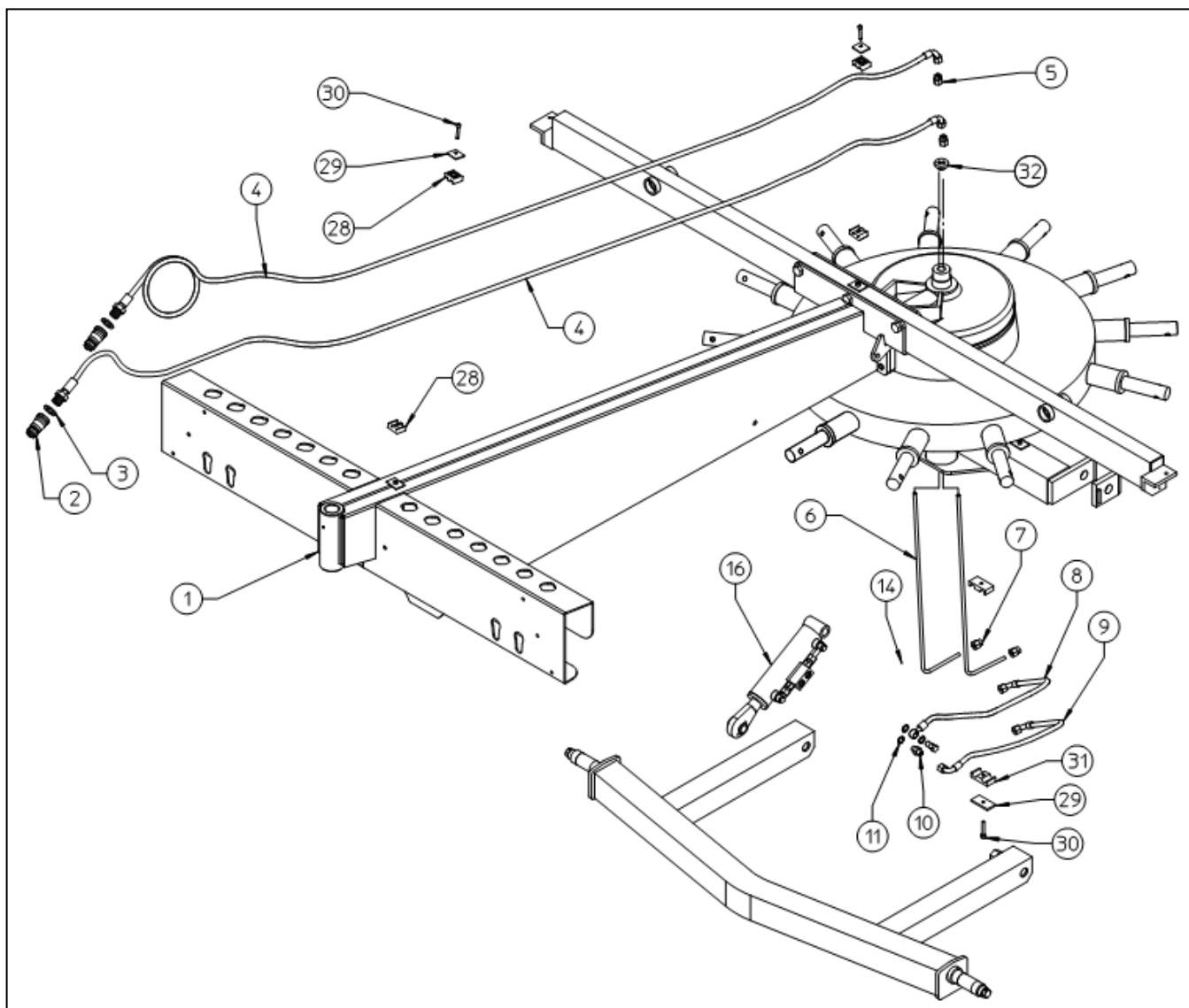
Connect the fitting (5) to tube (6), tube (6) its insert on the gearbox

Connect the rotating female ends of pipes (4) to fitting (5)

Place washers (3) and connect the quick-release coupling (2) to the straight male ends of pipes (4)

Check to make sure that all connections are correctly fastened.

Attach the hose collar (28)-(29)-(30) to the lugs on drawbar, fastening on correctly position (see shown)



Danger: the hydraulic cylinders are empty to start with, and the first time they are filled very dangerous uncontrolled movements can take place. It is recommended that the cylinders be filled with oil before connecting them to the machine, and the arms should be raised and lowered with the controls a few times in order to eliminate air from the circuit. These operations must be done in complete safety conditions, with the machine attached to the tractor and the operator sitting in the tractor driver's seat working the hydraulic controls, making sure that nothing and nobody is within the range of movement of the machine rake arms.

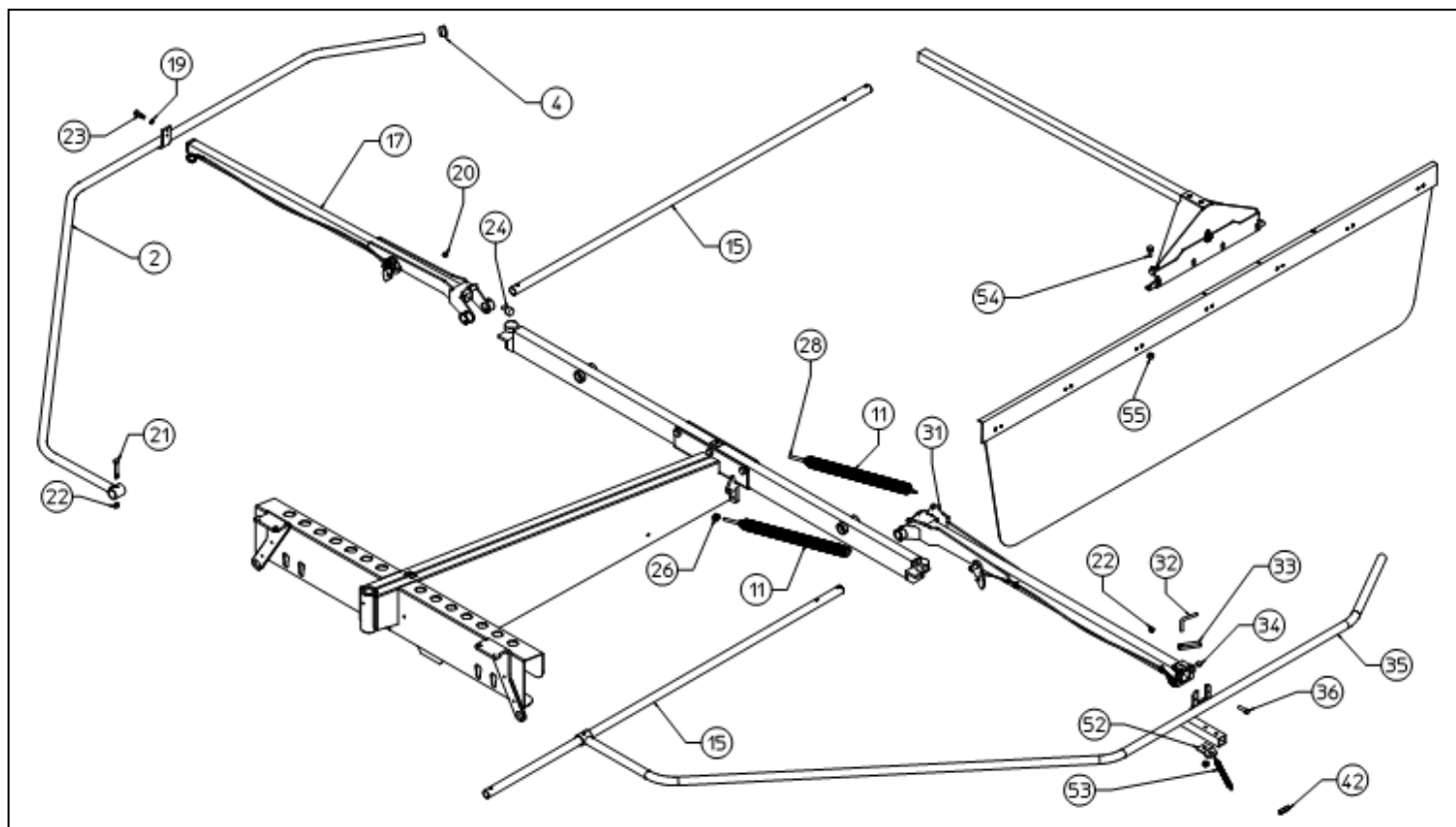
Mount the right-hand protection frame (2) with tube (15) and arm (17) by inserting into the hole on the drawbar and use screw (21) to fasten it.

Mount the left-hand frame (35).

Mount spring 11 to help suspension between the hole and the plate welded on the drawbar (see following diagram).

In order to fasten the extension tighten screw 32 and lock 33.

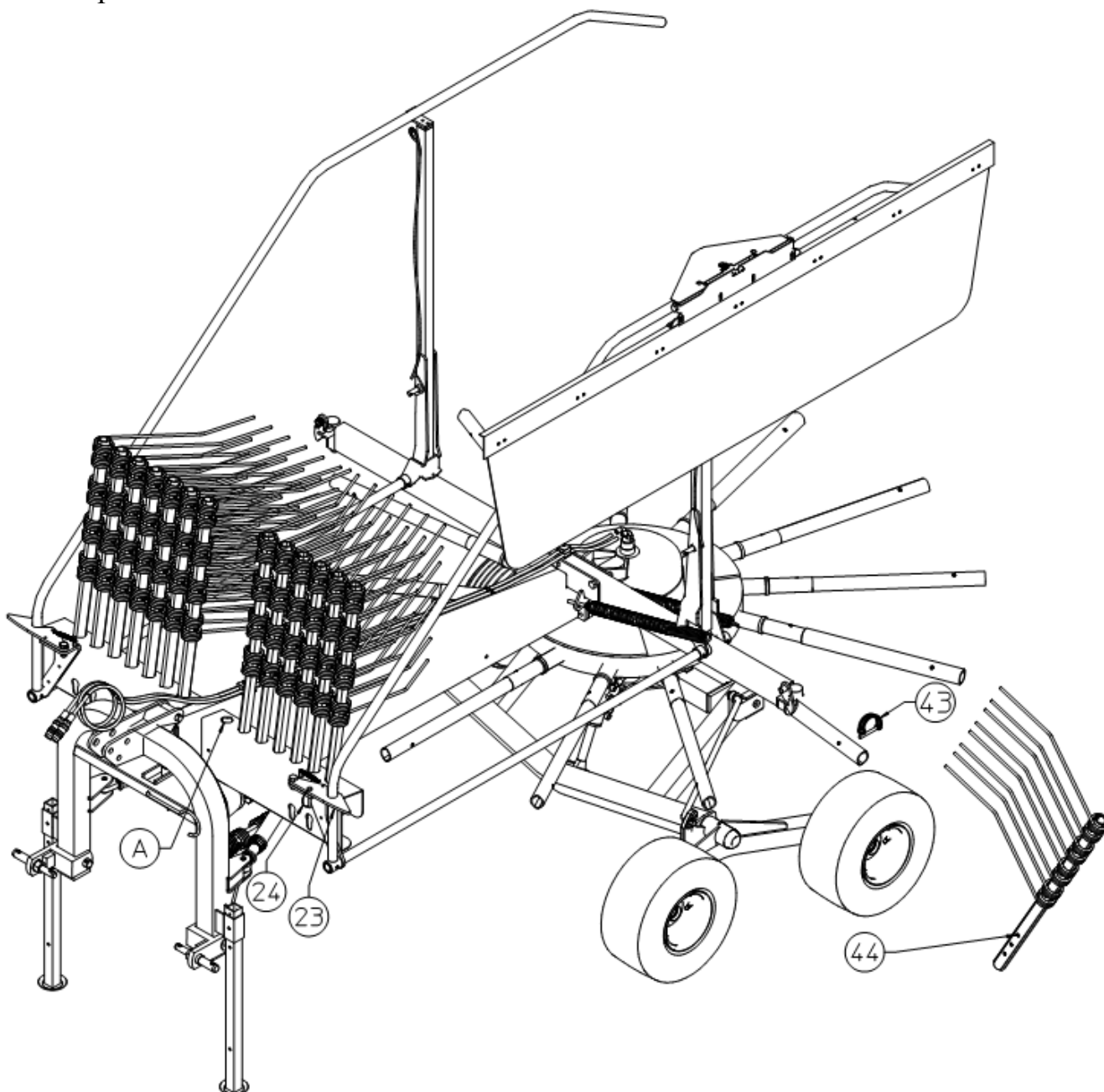
Now use screws 54 and 55 to mount this group on plate carrier extension.



Before assembling the rake arms, raise the protection frames and use hook 23 to hold them up.

If the machine has to be set up for work, mount detachable arms 44 on to the fixed arms 45 and fasten them with pin 43; the three holes on the detachable arms are to adjust swath width. The maximum working width is obtained by assembling the arm on the innermost hole.

If the machine has to be prepared for transport or for storage, mount the detachable arms in position in holes on the frame.



ADJUSTMENT, PREPARATION AND USE

INTRODUCTION



DANGER !!!



Connection to the tractor is highly dangerous. Take great care and carry out the entire operation in strict compliance with the following instruction.

Nobody should go near the area between the tractor and the machine.

Check that all warning and danger signs are in place and legible.

Check that the tractor is in good running order. Check the engine oil, gearbox oil, brake fluid and cooling water levels as well as the tyre pressures.

Refer to the tractor operator's manual.

CONNECTION TO THE TRACTOR

The forage rake is equipped with 1st and 2nd grade coupling pins so that it can be attached to any kind of tractor.

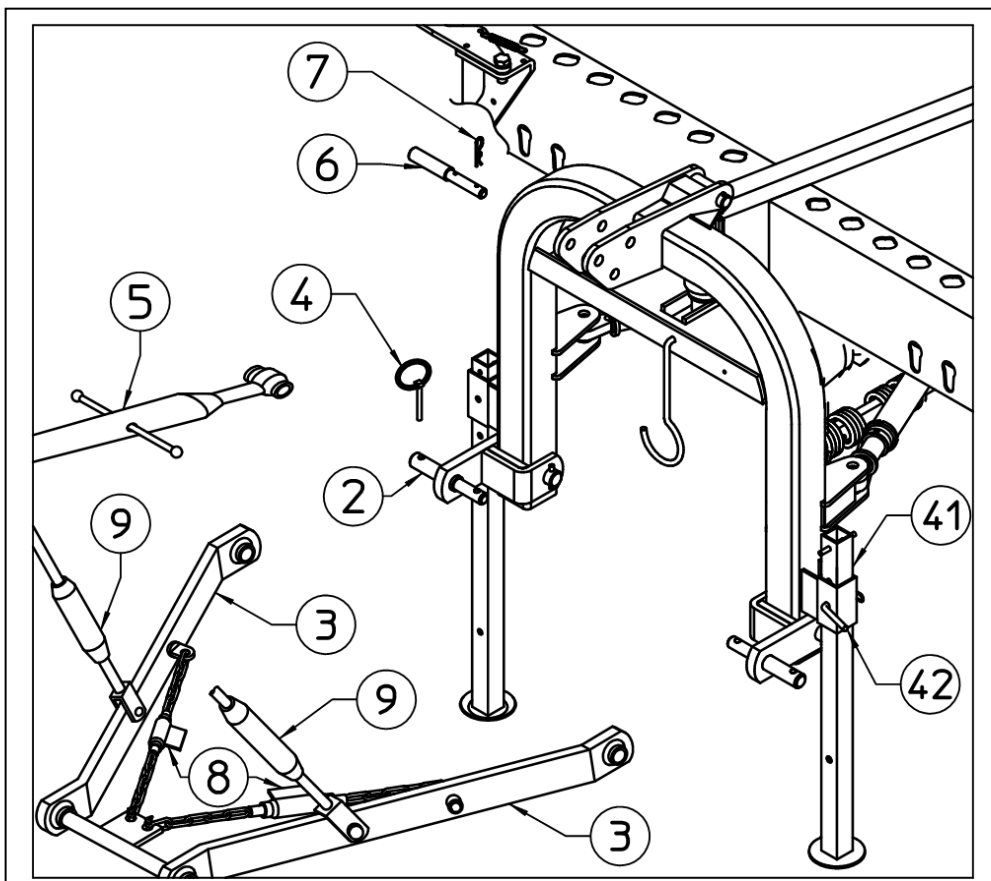
When assembling the forage rake, make sure that no-one is standing between the machine and the tractor.

Mount the lower tractor arms 3 to the machine coupling pins 2 and fasten them with release pins 4. Mount the third point tie rod 5 with pin 6 and pin 7.

Remove pin 42 and raise rest foot 41 and fasten it up.

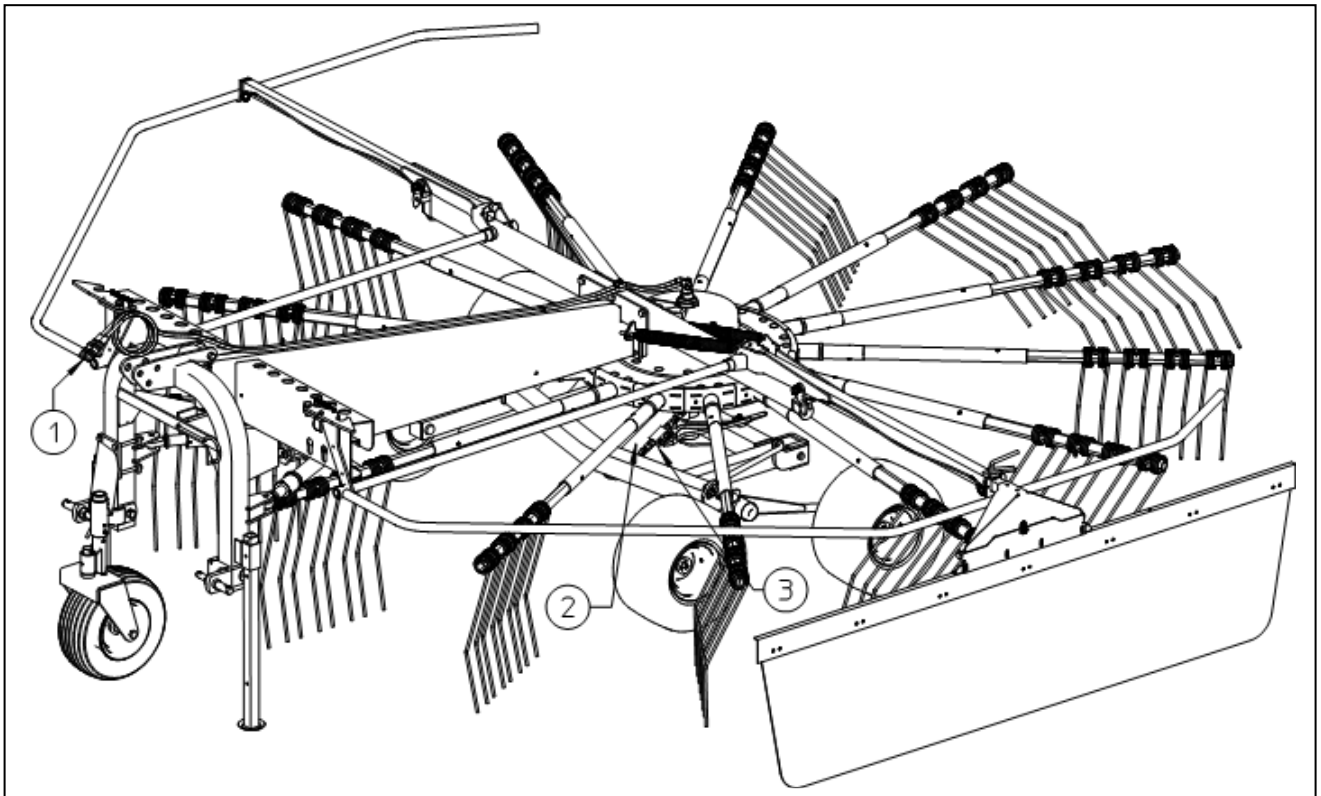
Before using the rear hydraulic system to raise the machine, make sure that the tractor cab is closed. Raised side protections could hit something and cause damage.

The hydraulic system should be raised by adjusting the distribution valve, so that the forage rake frame is lowered gently to the ground.



Once the machine has been connected with coupling pins, attach the hydraulic hoses (1) to the fast joints of the tractor. The adjustment of tooth distance from the ground in the raking machine 500/13 is controlled hydraulically by a cylinder (2) complete with stop valve (3).

When the tractor is connected for the first time, set the hydraulic system so that the cylinder and axle can run full stroke. Some air may be trapped inside the cylinder which is expelled after a few idle strokes. As long as air is inside the circuit, the cylinder cannot work properly.



ASSEMBLY OF THE CARDAN SHAFT

CONNECTING THE CARDAN SHAFT



DANGER !!!



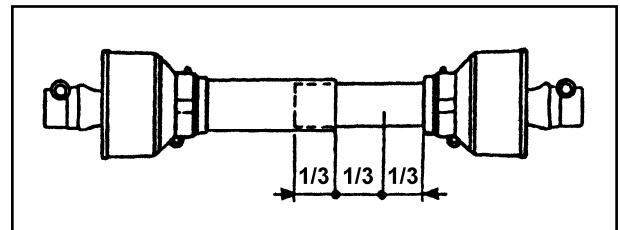
More detailed information may be found in the Cardan shaft manual which, together with this manual, is an essential part of the accident-prevention documentation.

It is your responsibility to read and comply with this documentation. If information given in this manual should conflict with that given in the Cardan shaft manual, you should follow the instructions given by the Cardan shaft manufacturer.

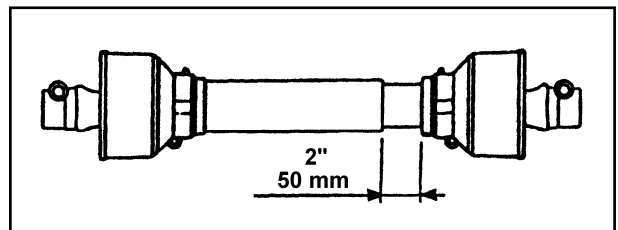
Fit the Cardan shaft and check that the shaft is connected correctly both at the tractor end and at the machine end. For more details, see the descriptions on the following pages.

If a safety system is provided, this should be fitted to the machine end, not to the tractor end.

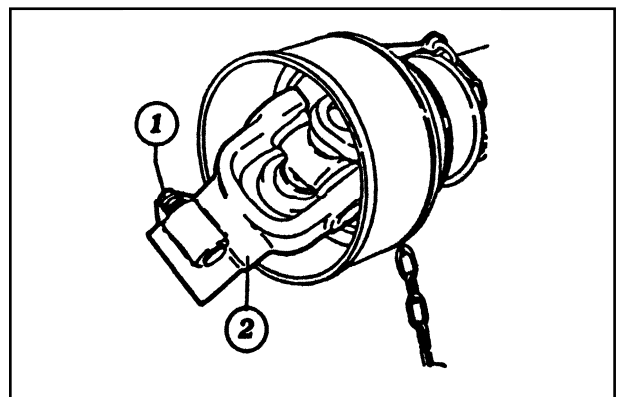
During both transport and use, avoid conditions where the Cardan transmission shaft is extended to the maximum. In all working conditions, the telescopic tubes must overlap by at least 1/3 of their length).



Conversely, when the Cardan shaft is contracted to the maximum, there should still be a gap of approximately 50 mm (2") .



Take particular care when connecting the two Cardan shaft end forks and make sure that they are fully secured. This is achieved by inserting the safety pins and bolts (1) in the special slots (2) on the power takeoff shafts on both the tractor and machine ends. A loose shaft could come apart and cause considerable mechanical damage and serious injury to persons.



DISASSEMBLY OF THE TRACTOR

In order to park the rake, make sure that the ground beneath it is flat and is able to bear the weight of the machine.

When the rake is raised and lowered, no-one should be standing between the tractor and the machine or near the machine.

Extract the rest foot and fasten it with pins 42 and 43.

Slowly lower the rake and make sure it is resting firmly on the ground with the third point released.

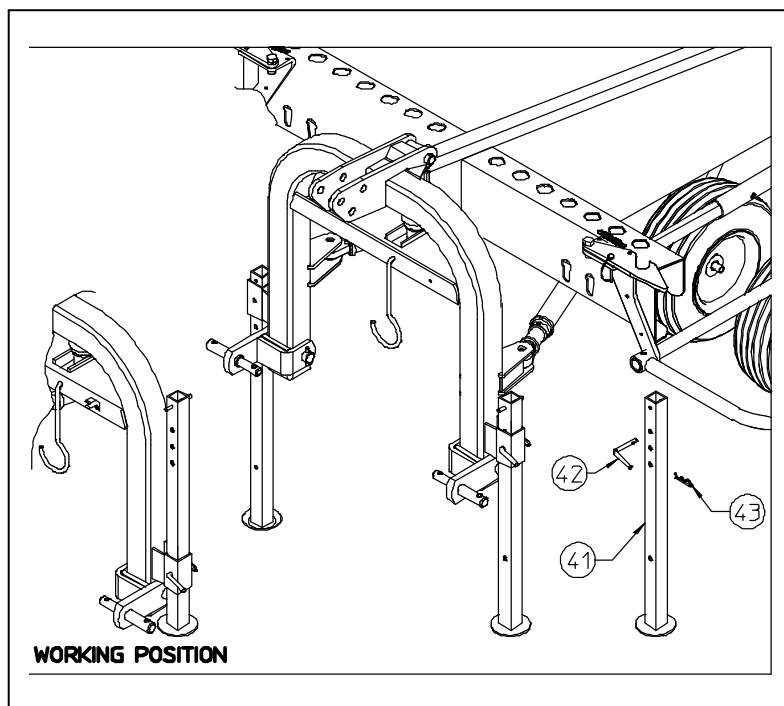
Switch off the tractor and put on the brake before getting off the tractor.

Disconnect the cardan shaft and rest it on its special support.

Disconnect the third point tie rod.

Disconnect the lower arms.

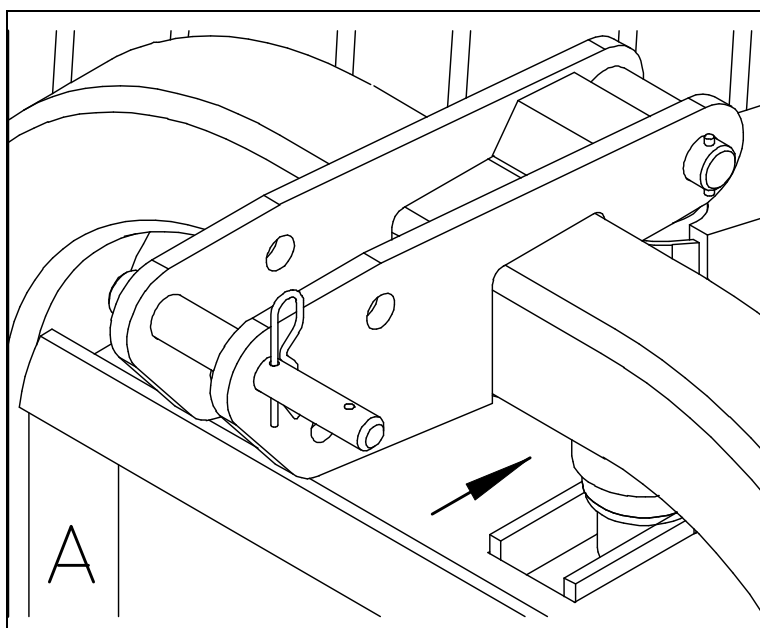
Before detaching the machine from the tractor, remove the fast joints and put them in the special openings in the side cases of the drawbar.



ADJUSTMENT OF THE FORAGE RAKE

The machine has to be adjusted when it is attached to the tractor.

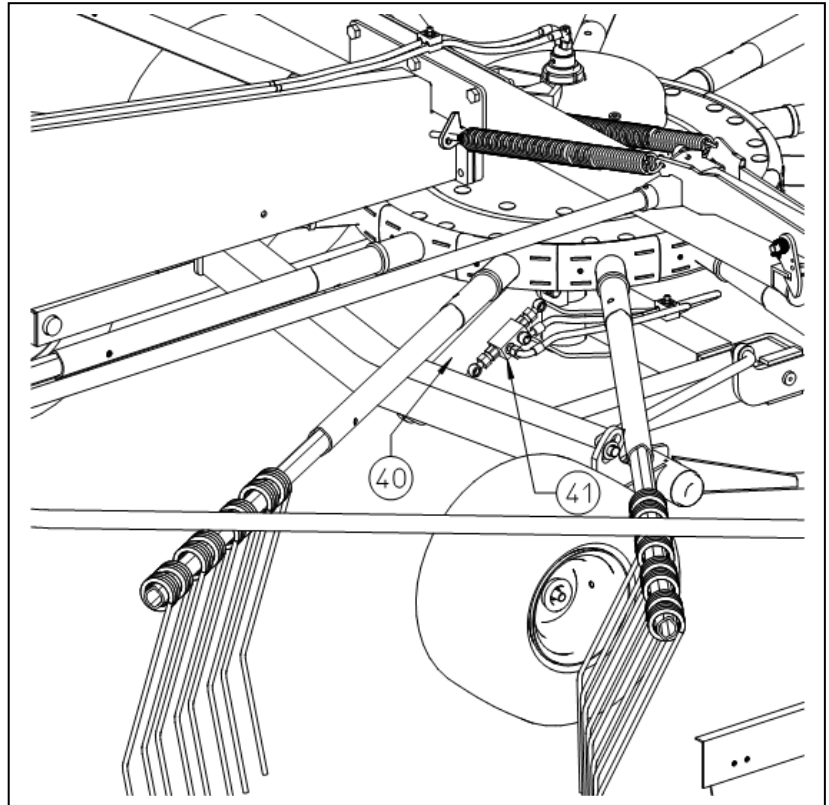
In order to adjust the rake, slowly lower the rake so that the arms sway and the roller under the drawbar rests in the rack (see diagram A). Adjust the third point tie rod so that the rotor is lying horizontally or is tilting slightly forwards and the tines are slightly touching the ground.



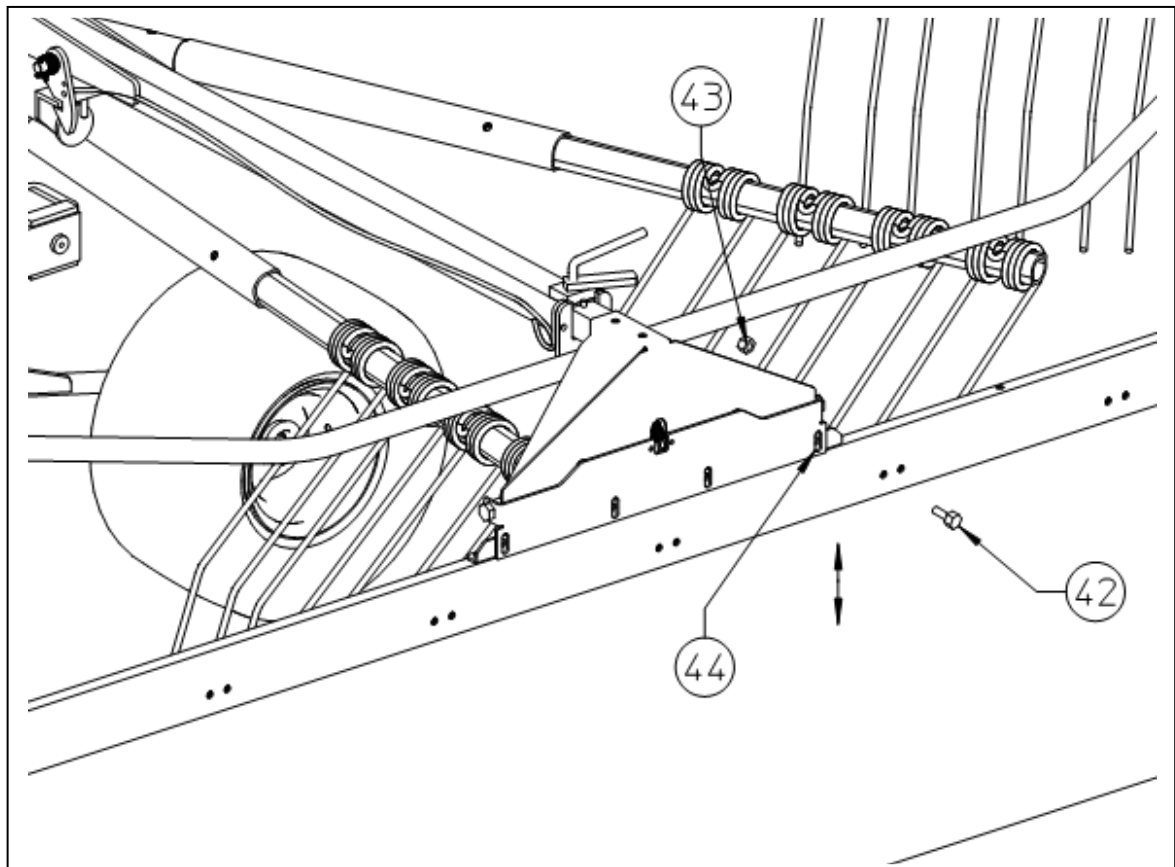
Adjustment of work depth

Act on the hydraulic system to adjust tooth distance from the ground, then block it in the desired position using the block valve (41) of the cylinder (40).

If adjustment is too high, the forage will not be completely picked up and if it is too low, the forage risks becoming dirty, the grass will be damaged and the double elastic tines will be worn down.



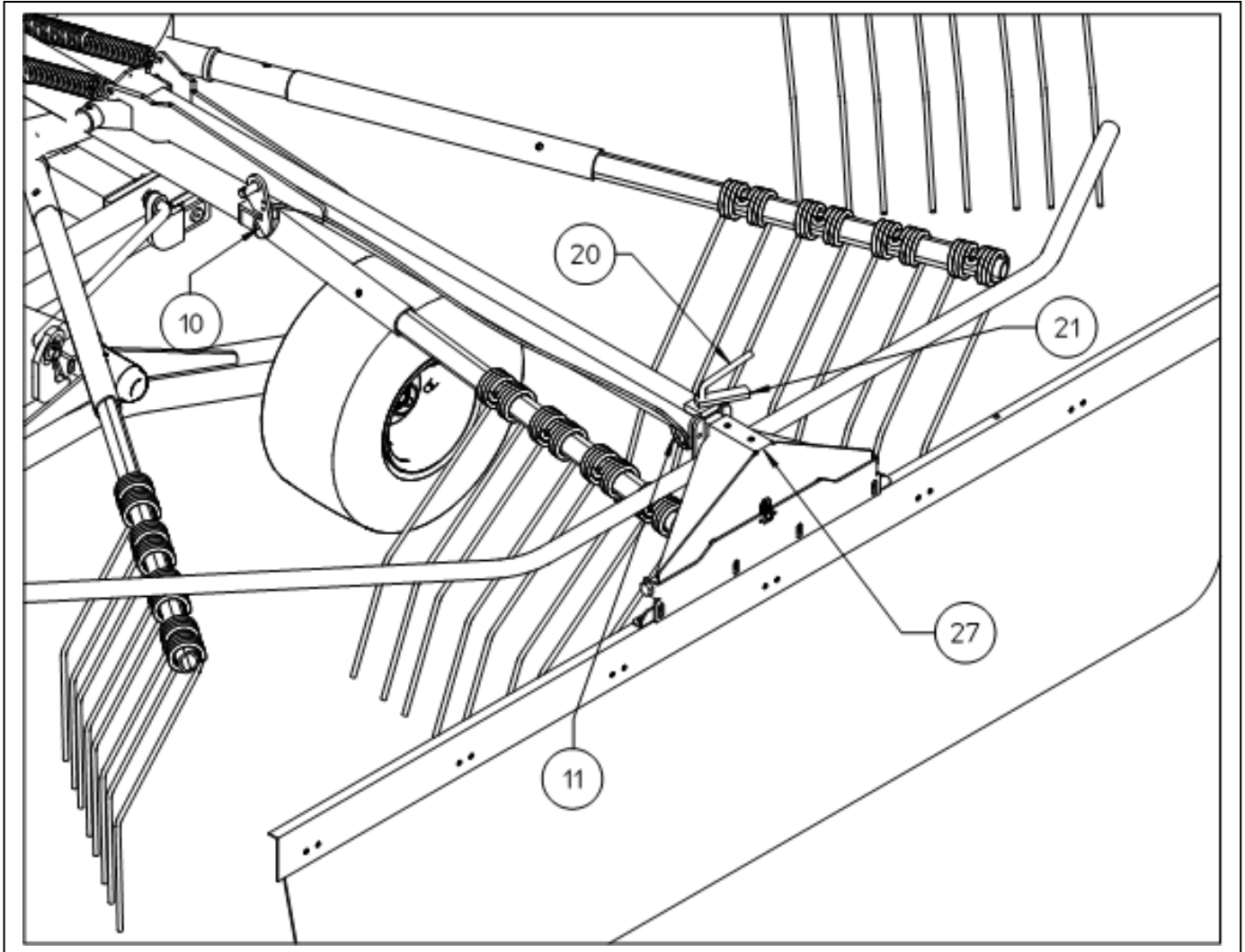
After having adjusted the work height of the tine, use screws (42) and nuts (43) under hole (A) to set the distance of the plate from the ground.



The distance between the swath-shaper plate and the rotor determines the size of the swath and on this depends the amount of forage. Adjustment is continuous and a large amount of forage means making a larger adjustment.

In order to carry out adjustment, loosen lock 21 and screw 20 and then move plate carrier 27 to the required position and tighten first screw 20 and then lock 21.

In the work position check that safety hook 13 fits into lock 10 in order to fasten the swath-shaper plate into position.



Adjustment of gear speed and revs to work the machine

The gear speed and machine revs depend on;

- the amount of forage
- the type of ground
- the degree of dryness

The forage rake was designed for a maximum number of revs for the power take-off of 540 g/min. We advise working with a rev number of 350-450 g/min.

The forage rake must never be used with a power take-off of 1000 g/min..

Gear speed should be limited so that the rake works cleanly and the swath is well formed.

TRANSPORT

If the machine is used on the road, make sure it complies with traffic regulations in your country; use regulation lights and comply with the safety regulations.

Preparation for transport

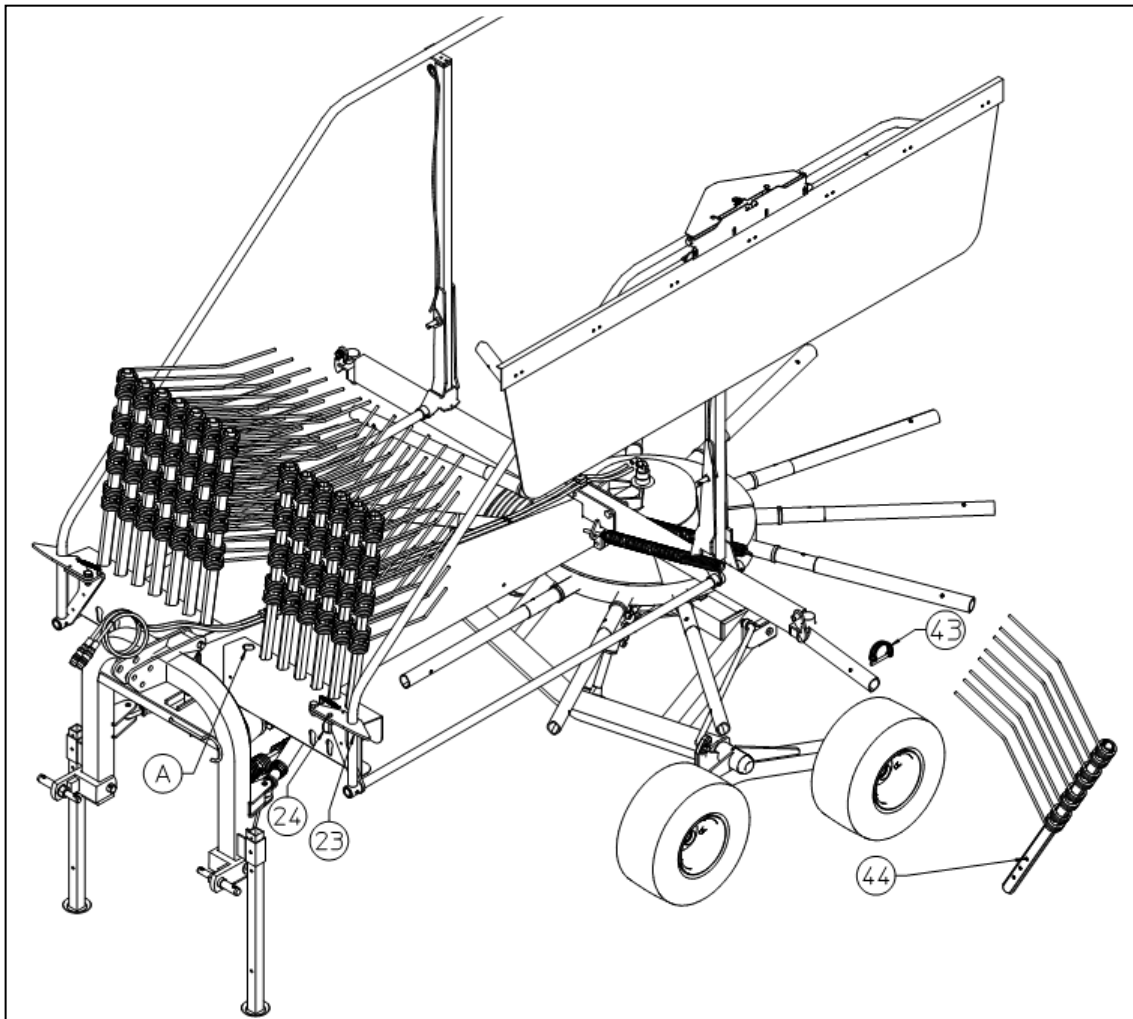
In setting up the machine for road transport, it is important to lift the protections and remove the arms, placing them in the respective openings. Before lifting the protections, bring the rake sheet back inside to reduce the lifting effort. There are two springs on the LH protection containing the raking sheet, which may be helpful during the lifting operation.

To lift the protections, steer the back hooks using the ropes and push them manually upwards until they engage the front hooks. Having lifted the protections, fasten the front hooks (23) with safety pins (24). **Attention:** pitching during transport may cause the hooks to open and protections to fall down, resulting in potential severe damage to objects and people.

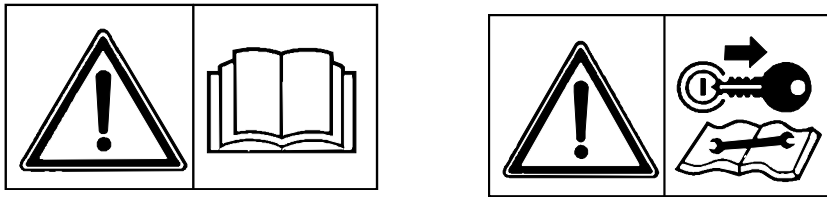
Remove tine carrier arms 44 from their slots and take out lock clamps 43, insert the arms into the special slots on side frame 1; the arms should be inserted with the tines facing into the machine. Clamps 43 should be placed into the holes on the rotor arms.

In order to be transported, the machine must be lifted while checking the tractor for stability. If the loading capacity of the tractor is insufficient to lift the machine, handle the machine by fully lifting the rotor together with the axle cylinder, while keeping the wheels in contact with the ground. Attention: the machine may be transported with the wheels in contact with the ground only for a short distance and at low speed. The four wheels of the raking machine reduce the driving capability and road handling of the tractor. The four wheels of the raking machine are designed to run on a grassy soil at low speed; their use for road transport will greatly reduce their useful life.

Before raising the machine make sure that the rear cab window on the tractor is closed. The protection frames on the rake could cause damage.



MAINTENANCE DIRECTIONS



All cleaning, lubrication and maintenance operation must be carried out with the machine disconnected from the tractor.

In an emergency with the machine still connected to the tractor, switch off the engine, apply the parking brake, disengage the power takeoff and remove the ignition key from the instrument panel.

Regular, correct maintenance and proper operation are the basic prerequisites for the long-term efficiency and safe operation the machine.

Pay special attention to all instructions given on signs located on the machine.

All maintenance should be carried out in an area having the proper equipment readily available and in good condition.

This area must always be kept clean and dry and must have enough surrounding space to facilitate operations.

Any work must be carried out by trained personnel. Contact the dealer nearest to you.

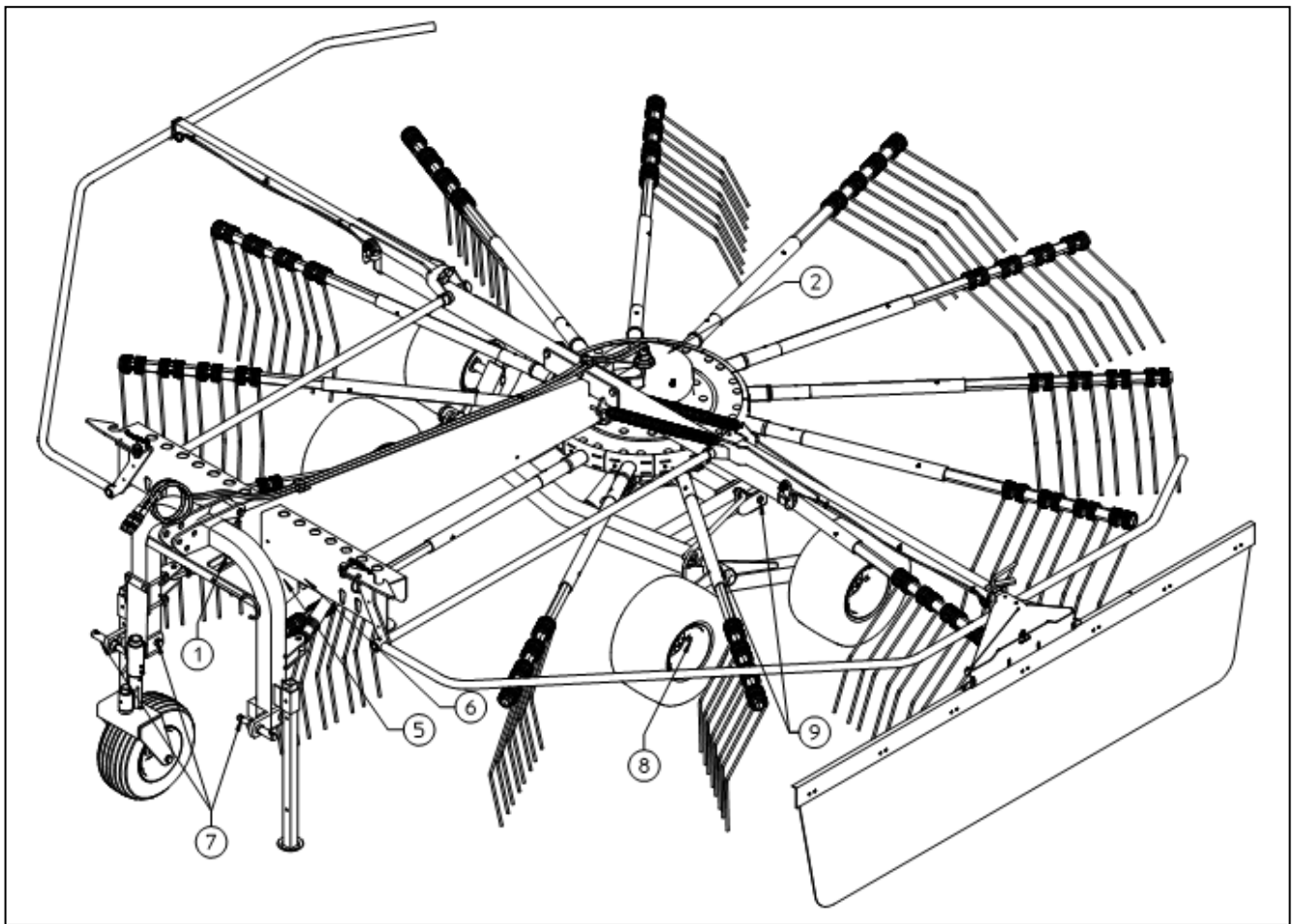
Respect the warnings and procedures for maintenance and technical assistance given in this manual.

Do not use petrol, solvents or other flammable liquids as detergents.

Use commercial non-flammable and non-toxic solvents, authorised by competent bodies.

Do not use compressed air or water at high pressure to clean the machine. If this is unavoidable, then wear goggles with side protection and limit the pressure as much as possible. When the work is finished, and with the machine disconnected from the tractor, inspect and check the machine completely.

MAINTENANCE POINTS



Number	Q.ty	Description	Operation	Every hours	Product to be used	Notes
1	2	3-point linkage pivot	Greasing	8	Grease	
2	1	Gearbox	Greasing	8	Grease	
5	1	Power takeoff shaft	Cleaning Greasing	A	Additives Grease	
6	1	Bearing	Greasing	20	Grease	
7	4	Arm linkage pins	Cleaning Greasing	B	Additives Grease	
8	4	Tyres	Check pressure	B	Compressor	Max 45 psi
9	2	Axle tandem	Greasing	20	Grease	
10	1	Bush	Greasing	20	Grease	
	2	Cardan shaft	Greasing	8	Grease	

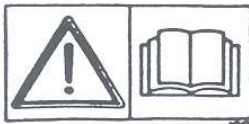
General checking of bolts, security pins and split pins to be carried out initially after the first 8 hours of use. Subsequently every 50 hours and whenever the machine is laid up for extended periods.

A = Each time the Cardan shaft is disconnected and Whenever the machine is stopped, we recommended that you clean the power takeoff shaft and replace the protective cover.

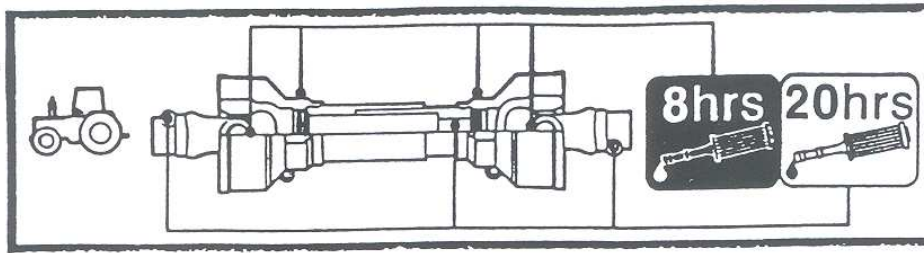
B = Each time the machine is connected to the tractor.

Additives of a type permitted by anti-pollution regulations.

CARDAN SHAFT MAINTENANCE



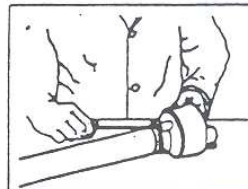
More detailed information may be found in the Cardan shaft manual which, together with this manual, forms an essential part of the accident-prevention documentation. It is your responsibility to read and comply with this documentation. If information given in this manual conflicts with that given in the Cardan shaft manual, you should follow the instructions given by the Cardan shaft manufacturer.



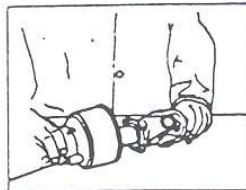
MAINTENANCE OF SLIDING PARTS

DISMANTLING

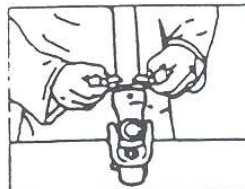
1) Turn the two eccentric pins on the ferrule until the protective cone comes free.



2) Withdraw the shaft protective guard.

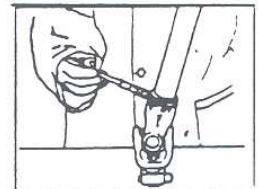


3) Check the condition of the ferrule and all protective parts.

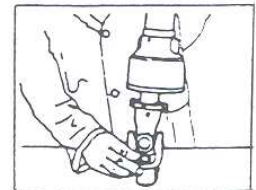


ASSEMBLY

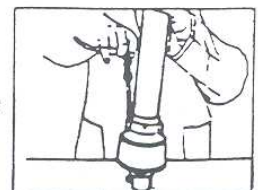
4) Lubricate supporting ferrule seating.



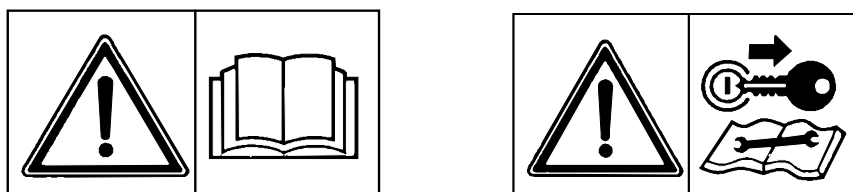
5) Refit the supporting ferrule.



6) Reattach the protective guard to the cardan shaft by turning the eccentric pins on the supporting ferrule.



GENERAL INSTRUCTIONS FOR REPAIR WORK



Any repair work must be carried out with the machine at rest and disconnected from the tractor.

Do not carry out welding without authorisation and instructions from the manufacturers.

Disconnect the machine from the tractor before any welding work in order not to damage the battery. Always use a protective mask, goggles and gloves when welding, sanding or grinding or when using a hammer or drill.

Always work on the machine out of doors. If you have to operate the machine when connected to the tractor in an enclosed area (for example when testing after repair and/or maintenance) ensure that there is sufficient ventilation so as to prevent noxious exhaust gases accumulating.

In order to acquire the necessary control and to operate in safety, practise various manoeuvres by simulating those required in the workplace with the help of an experienced person.

If you activate the machine while it is raised from the ground, make sure there is nobody standing nearby or in a dangerous position.

LAYNING UP FOR EXTENDED PERIODS

At the end of the season, or when an extended period of inactivity is envisaged, it is advisable to:

Clean the machine following instructions and allow it to dry.

Check it carefully and replace any damaged or worn parts.

Thoroughly tighten all screws and bolts.

Grease the machine thoroughly and then cover it completely and lay it up in a dry place.

It is to the user's advantage to carry out these operations carefully. In this way, he will have a machine in perfect condition when work is restarted.

On recommencing work, repeat all the proper checks so as to be certain of working in conditions of maximum safety.

Model	500/13
Technical characteristics	
1st and 2nd grade three point hitch	standard
Tandem axle	2
Number of arms	13
Number of double tines per arm	4
Work width	5,00 m/ 16,4'
Rotor diameter	4,00 m/ 13,1'
Height during transport position	2,75 m/ 9'
Height during work position	1,53 m / 5'
Length	4,50 m / 14,8'
Width in transport position	2,50 m / 8,2'
Maximum width in work position	5 m / 16,4'
Necessary power	52kW / 70HP
Number of revs during work	350-450 R.P.M.
Equivalent constant noise level	inferiore 70 dB
Surface performance	5,5-6,5 ca./h
Tyres	18 x 8.50-6
Tyre pressure	42-45 psi

NOISE AND VIBRATION

Noise affecting the tractor driver (from the machine only) is less than 80dB.
Vibration from the machine affecting the upper body and limbs of the driver is insignificant and is lower than the values given in Point 3.6.3 of Enclosure 1 of the Machine Directives (89/392/EEC, 91/386/EEC)

THE FOLLOWING SHOULD BE NOTED IF THE MACHINE IS SCRAPPED

The machine consists mainly of ferrous material, which must be disposed of according to the regulations in force in the country concerned.

There is also a small amount of plastic, which must be disposed of according to the regulations in force in the country concerned.

There is very small amount of residual grease, which must be disposed of according to the regulations in force in the country concerned.

SPARE PARTS LIST

FOR CORRECT SPARE PARTS ORDER IT IS NECESSARY TO SPECIFY:

TABLE NUMBER, ITEM, PART NO, DESCRIPTION AND QUANTITY OF PARTS REQUIRED.

ITEMS DESCRIBED AS RH AND LH ARE MEANT FACING REAR OF MACHINE.

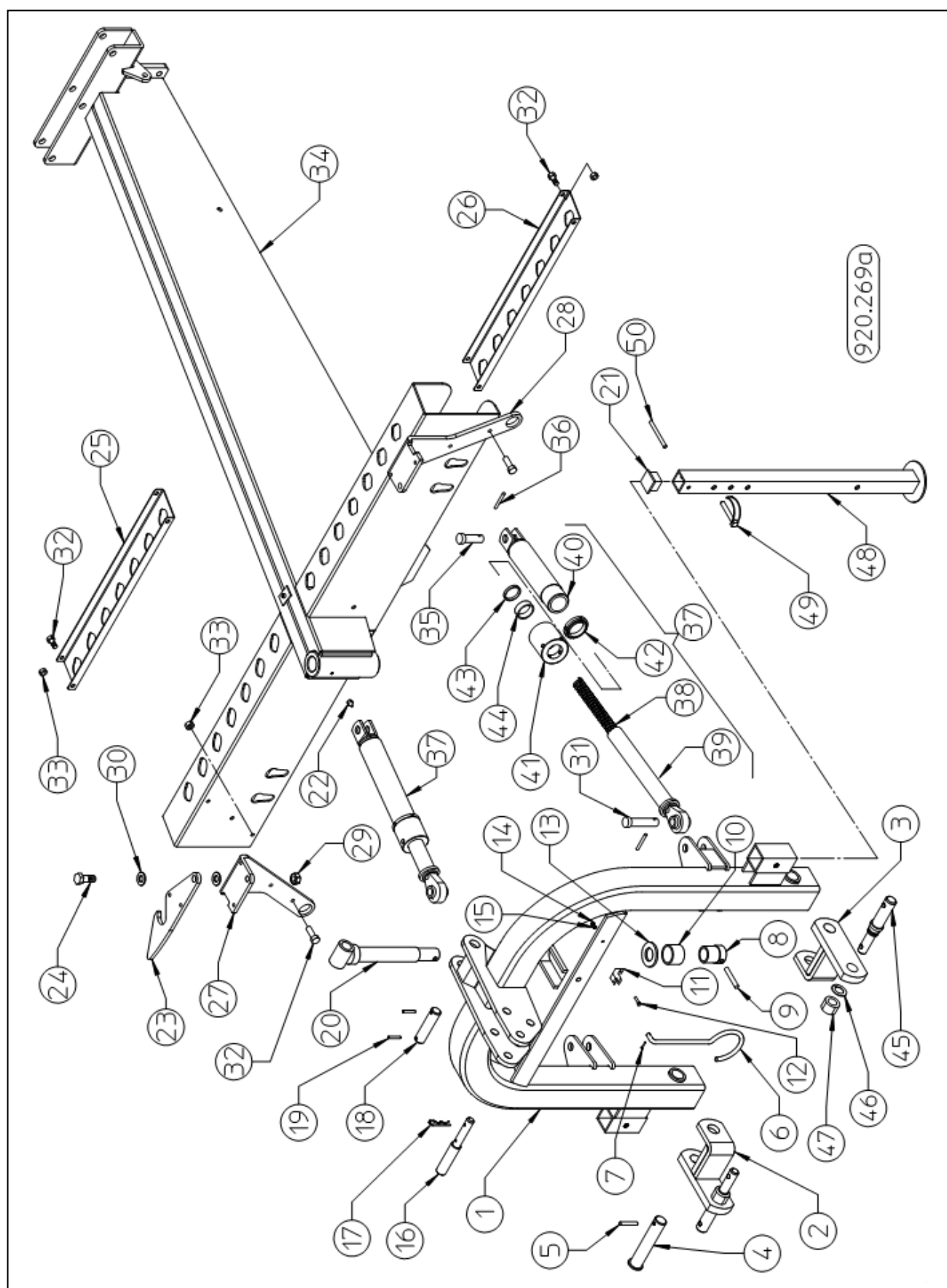
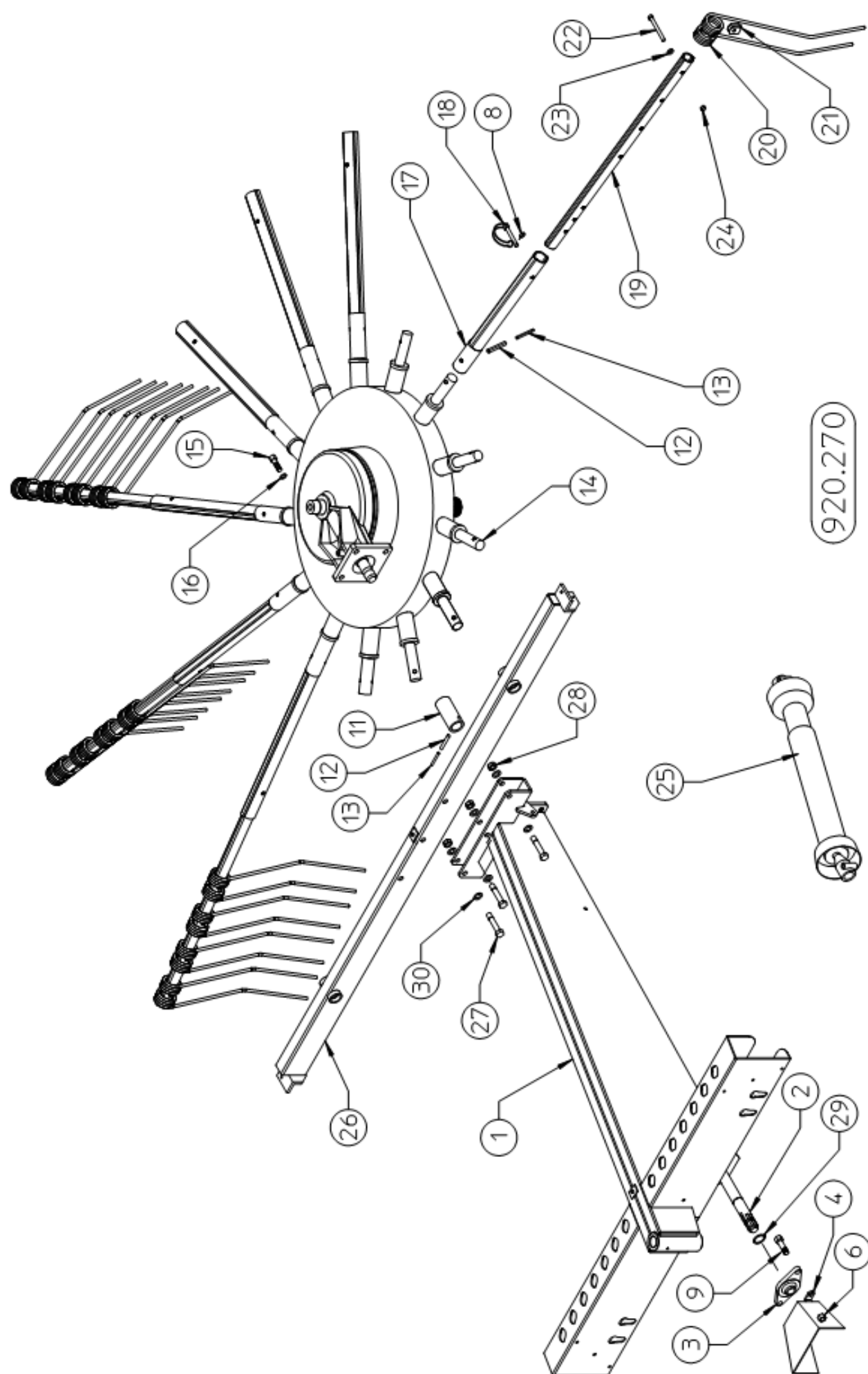
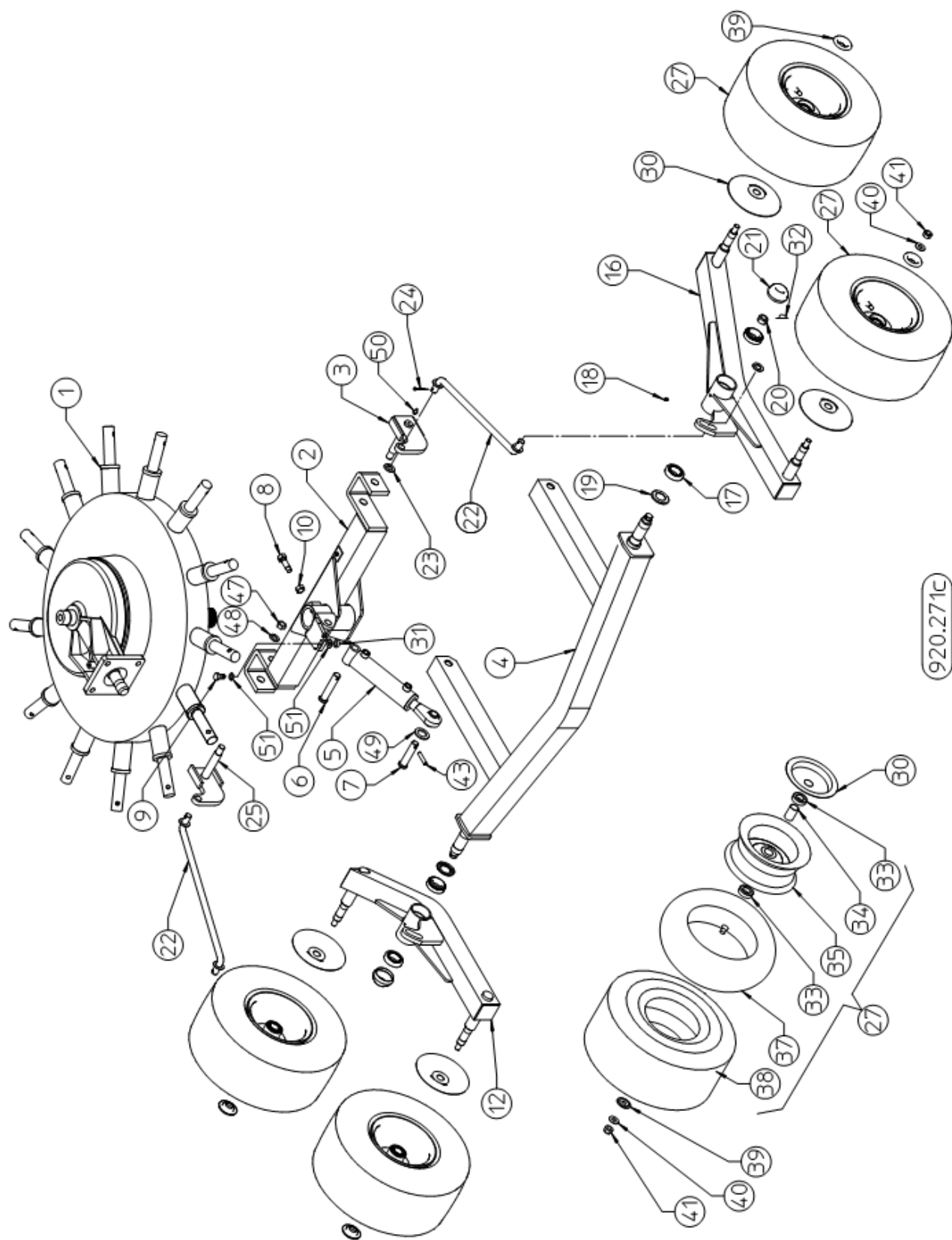


TABLE NO. 920.269				
500/13				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	230.461	3PT HITCH	
2	1	220.684	R.H. LOWER LINK	
3	1	220.683	L.H. LOWER LINK	
4	2	210.483/a	PIN	
5	2	600.027	SPRING PIN d.8x50	
6	1	200.991	CARDAN SUPPORT	
7	1	600.841	SPRING PIN	
8	1	210.529	BUSH	
9	1	600.584	SPRING PIN	
10	1	210.492	BUSH	
11	1	200.992	CLIP	
12	1	600.833	SCREW	
13	1	210.530	WASHER	
14	1	600.836	NUT	
15	1	600.839	WASHER	
16	1	200.343	PIN	
17	1	600.308	SPLIT PIN	
18	1	210.560	PIN	
19	2	600.538	SPRING PIN	
20	1	210.489	PIN	
21	2	600.817	PLUG	
22	1	600.124	GREASE NIPPLE	
23	2	230.433	RATCHET	
24	2	600.035	SCREW M16x40	
25	1	230.490	SUPPORT	
26	1	230.491	SUPPORT	
27	1	230.435	SUPPORT	
28	1	230.434	SUPPORT	
29	2	600.080	NUT M16	
30	4	600.031	WASHER D.17	
31	2	210.487	PIN	
32	12	600.702	SCREW M8X25	
33	4	600.076	NUT M8	
34	1	230.432	DRAWBAR	
35	2	210.488	PIN	
36	4	600.773	SPRING PIN D.6x30	
37	2	230.880	STABILIZING	
38	*1	210.432	SPRING	
39	*1	230.477	ROD	
40	*1	230.879	TUBE	
41	*1	230.882	NUT TUBE	
42	*1	630.826	NUT M55x2	
43	*1	230.883	BUSH	
44	*1	230.881	BUSH RUBBER	
45	2	210.813	PIN	
46	2	600.246	WASHER D.25	
47	2	600.244	NUT M24X2	
48	2	210.482	JACK STAND	
49	2	600.842	PIN	
50	2	600.027	SPRING PIN D.8x50	



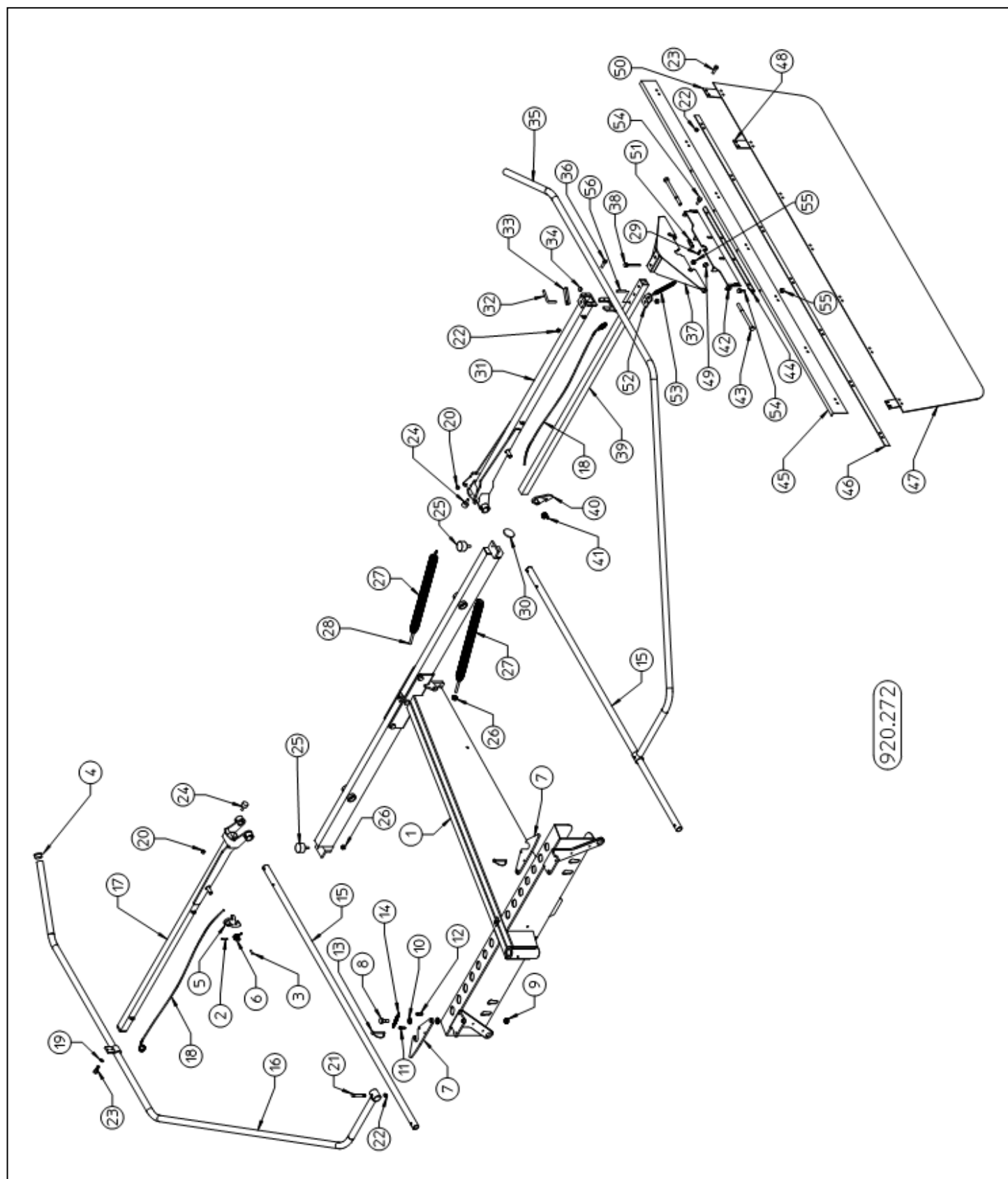
920.270

TABLE NO. 920.270				
500/13				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	230.432	DRAWBAR	
2	1	210.525	SHAFT	
3	1	610.285	BEARING UCFL 207	
4	1	210.817	HOOD	
5				
6	2	600.080	NUT M16	
7				
8	13	620.169	PIN	
9	2	610.167	SCREW M16X45	
10				
11	1	210.528	BUSH	
12	14	610.417	SPRING PIN D.12X50	
13	14	610.419	SPRING PIN D.7X50	
14	1	630.433	GEARBOX	
15	4	610.167	SCREW M16X45	
16	4	600.180	WASHER R.E. D,17	
17	13	230.456	PROFILE TUBE	
18	13	220.737	PIN D10/70	
19	13	230.877	TINE ARM	
20	52	210.495	TINE	
21	52	200.349/a	TINE LOCK, FLEXIBLE	
22	52	600.210	SCREW M12X70	
23	52	500.012	WASHER D.12	
24	52	600.077	NUT M12	
25	1	630.497	CARDAN SHAFT	
26	1	230.618	TRAVERSE	
27	3	610.872	SCREW M16 x 90	
28	3	600.080	NUT M16	
29	1	600.333	SNAP RING E35	
30	6	600.031	WASHER D.17	



920.271c

TABLE NO. 920.271/c				
500/13				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	630.433	GEARBOX	
2	1	230.436	TRAVERSE	
3	1	230.842	PIN	
4	1	230.437/a	WHEEL AXLE	
5	1	230.440	CYLINDER	
6	1	230.468	PIN	
7	1	230.467	PIN	
8	1	230.654	SCREW M 16x45 (tornita)	
9	1	600.641	SCREW M 10 x 35	
10	1	600.082	NUT M16	
11				
12	1	230.834	R.H. TANDEM ARM	
13				
14				
15				
16	1	230.835	L.H. TANDEM ARM	
17	4	610.935	BEARING 32007	
18	2	600.124	GREASE NIPPLE M6	
19	2	610.960	DUST	
20	2	600.288	NUT M27x1,5	
21	2	600.290	DUST COVER	
22	2	230.860	TIEROD	
23	4	600.632	WASHER R.P. 21	
24	4	600.538	SPRING PIN D.6X35	
25	1	230.840	PIN	
26				
27	4	630.813	TYRE ASSY	
28				
29				
30	4	210.596	DUST COVER, INNER	
31	1	600.029	NUT M10	
32	2	600.291	PIN	
33		600.602	BEARING	
34		630.822	SPACER	
35		630.823	RIM	
36				
37		630.824	TUBE	
38		630.825	TYRE	
39	4	200.416	DUST COVER, OUTER	
40	2	600.031	WASHER D.17	
41	2	600.629	NUT M16	
42				
43	2	600.027	SPRING PIN D.8 x50	
44				
45				
46				
47	2	600.717	NUT M20 DIN 980	
48	2	600.632	WASHER Ø 21/37 x3 DIN 125 A	
49	2	600.042	WASHER D.23	
50	4	600.034	GREASE NIPPLE M8	
51	2	620.250	WASHER D. 11/30 X 2,5	



920.272

TABLE NO. 920.272				
500/13				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	230.432	DRAWBAR	
2	2	600.538	SPRING PIN D.6x35	
3	2	600.773	SPRING PIN D.6x30	
4	2	200.309	PLUG D.33	
5	1	230.624	HOOK	
6	1	210.093	SPRING	
7	2	230.433	RATCHET	
8	2	600.035	SCREW M16x40	
9	2	600.080	NUT M16	
10	4	600.031	WASHER D.17	
11	2	100.671	PIN	
12	2	100.672	PIN	
13	2	610.186	PIN	
14	2	220.123	SPRING	
15	2	230.473	TUBE	
16	1	230.474	R.H. GUARD	
17	1	230.494	R.H.SUPPORT	
18	1	100.717	ROPE	
19	2	600.229	WASHER D.9	
20	2	600.553	NUT M8	
21	6	630.005	SCREW M8x55	
22	24	600.076	NUT M8	
23	16	600.223	SCREW M8x20	
24	2	630.534	RUBBER PAD D.30/15 M8	
25	2	630.496	RUBBER PAD D.50/30 M10	
26	6	600.628	NUT M10	
27	2	230.625	SPRING	
28	2	230.629	SCREW	
29	2	620.278	SCREW M6 x 16	
30	2	610.289	REFLECTOR	
31	1	230.444	L.H. SUPPORT	
32	1	210.502	PIN	
33	1	210.552	NUT	
34	1		INSERT	
35	1	230.495	L.H. GUARD	
36	2	600.702	SCREW M8x25	
37	1	230.446	SUPPORT	
38	2	600.528	SCREW M10 x 65	
39	1	230.500	TELESCOPING TUBE	
40	1	230.614	HOOK	
41	1	210.094	SPRING	
42	1	230.509	SUPPORT	
43	2	630.526	SCREW M 14 x 180	
44	1	230.510	SUPPORT	
45	1	220.908	SWATHING SUPPORT	
46	1	220.909	CLAMPING STRAP	
47	1	220.910	SWATHING DEFLECTOR	
48	5	220.947	CLAMPING STRAP	
49	2	600.075	NUT M14	
50	2	220.948	CLAMPING STRAP	
51	1	230.512	PIN	
52	1	230.511	WASHER PLATE	
53	1	200.278	SPRING	
54	7	600.006	SCREW M10x25	
55	9	600.029	NUT M10	
56	1	600.027	SPRING PIN D.8X50	

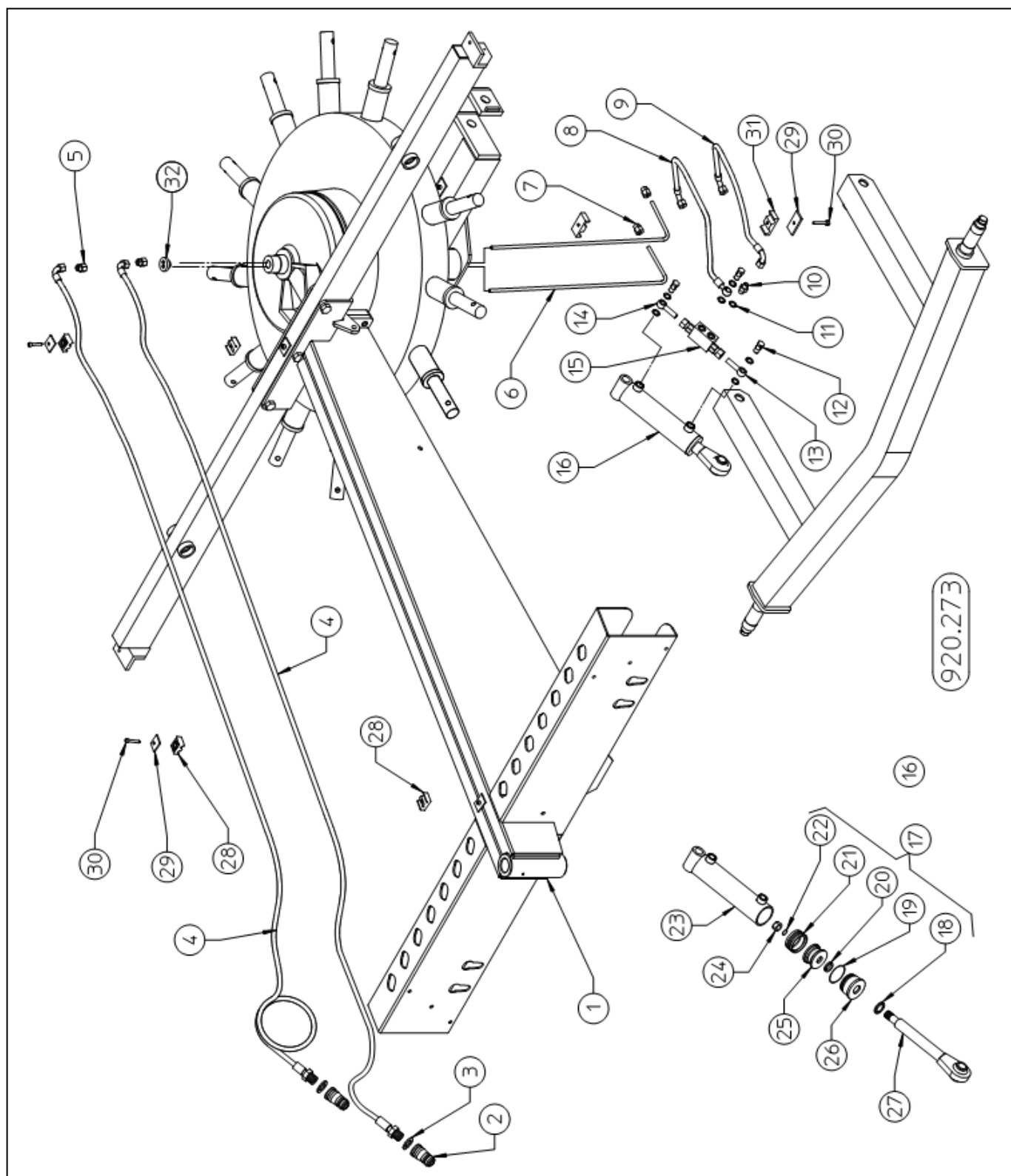


TABLE NO. 920.273				
500/13				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	230.432	DRAWBAR	
2	2	600.273	RAPID COUPLIG 1/2"	
3	2	630.048	COPPER WASHER 1/2"	
4	2	630.528	HOSE SAE100 R7 1/4" L4000 MD-F90°	
5	2	630.529	NIPPLE D.8	
6	2	630.533	TUBE	
7	2	630.529	NIPPLE D.8	
8	1	630.530	HOSE SAE100 R7 1/4" L550 F90°-OC	
9	1	630.531	HOSE SAE100 R7 1/4" L550 F90°-F90°	
10	1	630.331	NIPPLE 1/4"-1/4" WITH ORIFICE 0,6	
11	7	600.819	COPPER WASHER 1/4"	
12	3	600.820	FITTING SCREW 1/4"	
13	1	630.532	TUBE D.12 1/4"	
14	1	630.532	TUBE D.12 1/4"	
15	1	630.494	LOCK VALVE 1/4"	
16	1	230.440	CYLINDER	
17	1*	620.022	SET OF GASKET	* For one cylinder
18		600.645	GASKET	
19		610.090	GASKET	
20		610.031	GASKET	
21		600.648	GASKET	
22		600.646	GASKET	
23	1*	230.638	CYLINDER BARREL	* For one cylinder
24	1*	600.642	NUT	* For one cylinder
25	1*	200.304	PISTON	* For one cylinder
26	1*	220.524	HEAD	* For one cylinder
27	1*	230.639	ROD	* For one cylinder
28	6	630.078	DOUBLE HOSE COLLAR ø12	
29	4	610.802	COLLAR CLAMP	
30	4	610.803	SCREW M6x35 DIN 931	
31	2	610.801	DOUBLE HOSE COLLAR ø8	
32	1	230.653	BUSH	

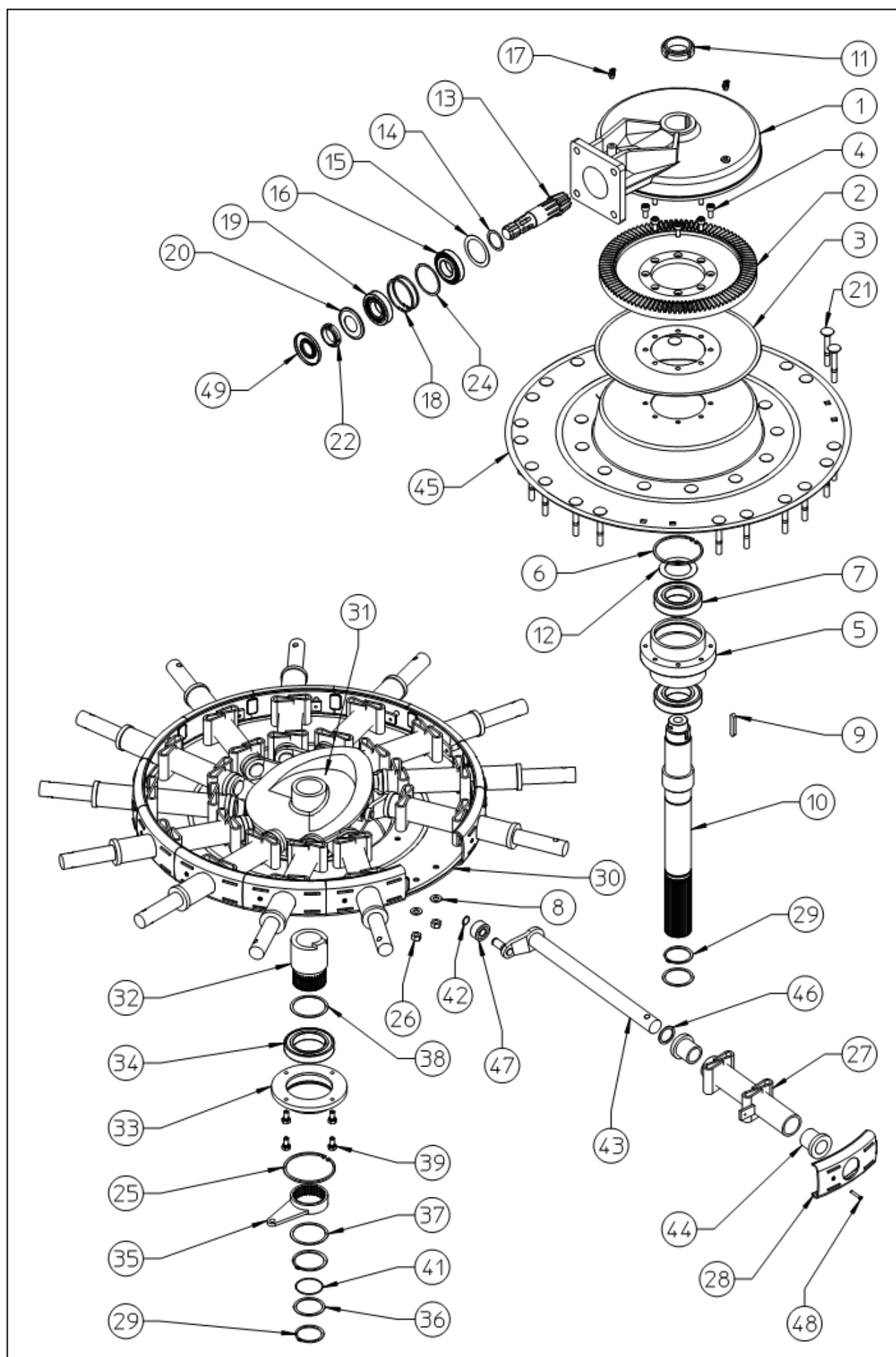
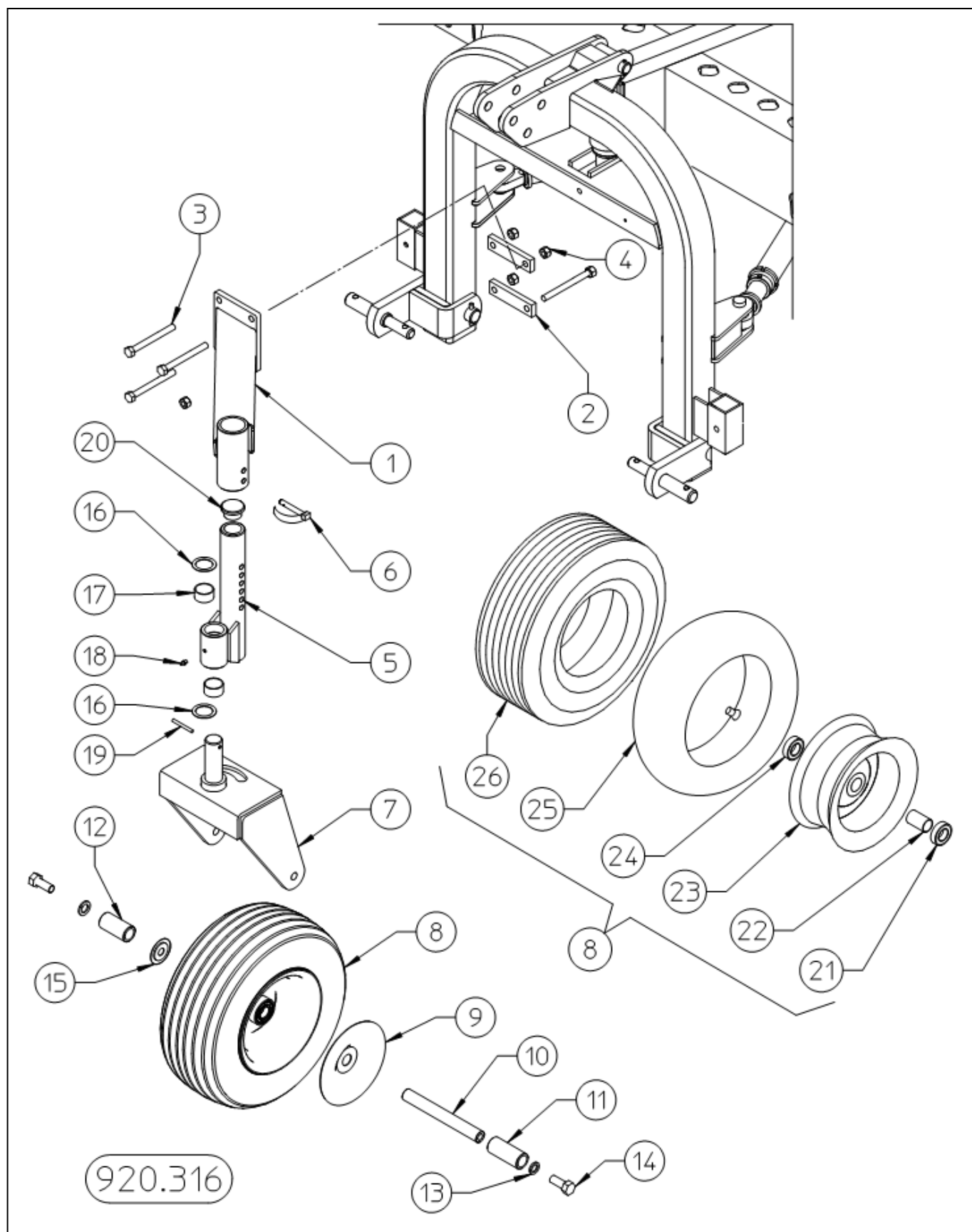
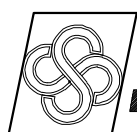


TABLE GEARBOX NO. 630.433 (9.795.006.00)				
SR 500/13				
ITEM	Q.ty	PART NO	DESCRIPTION	NOTE
1	1	230.690	COVER	
2	1	220.721	CROWN WHEEL Z97 M3.75	
3	1	230.691	COVER	
4	8	220.723	BOLT M10x22 8.8	
5	1	230.692	FLANGE	
6	1	620.177	SNAP RING 110UNI7437	
7	2	630.542	BEARING 6212 2 RS	
8	39	630.543	BLANK WASHER 13x24x2.5	
9	1	620.178	PARALLEL KEY B 10X8X50	
10	1	230.693	SHAFT	
11	1	630.544	LOCKNUT M55X2	
12	1	230.694	SHIM 60.2X87.8	
13	1	220.715	PINION SHAFT Z10 M3.75	
14	1	220.729	SHIM 40.3x1.0	
15	1	230.695	SHIM	
16	1	630.545	BEARING 30208	
17	2	620.182	GREASE NIPPLE 45G.M10X1	
18	2	620.148	SNAP RING 80 UNI7437	
19	1	630.546	BEARING 30208	
20	1	620.140	PROTECTIVE WASHER 30208 AV	
21	39	630.547	BOLT	
22	1	220.727	NUT M40X1.5	
23	0,14	630.548	GREASE	
24	1	220.726	SHIM 79.9	
25	1	630.549	SNAP RING 115UNI7437	
26	39	630.550	LOCKNUT	
27	13	230.696	CONNECTING ROD	
28	13	230.697	COVER	
29	3	630.551	SNAP RING 60 UNI7436	
30	1	230.698	COVER	
31	1	230.699	CAMME	
32	1	230.700	SPLINED SPACER	
33	1	230.701	COVER	
34	1	630.552	BEARING 6015 2RS	
35	1	230.702	LEVER	
36	2	230.040	SHIM 60.3x71.7	
37	1	630.554	SNAP RING 75 UNI7435	
38	2	230.703	SHIM 87.3	
39	4	620.244	BOLT M10x20	
40	0,1	630.556	GREASE	
41	1	630.557	O-RING OR-3231	
42	13	630.555	SNAP RING 12 UNI7435	
43	13	230.704	CONNECTING ROD	
44	26	230.705	COVER	
45	1	230.706	COVER	
46	13	230.707	SHIM 35.3x1	
47	13	630.553	BEARING 12X42X19	
48	13	630.558	BOLT 5.5X32	
49	1	630.559	DOUBLE LIP SEAL 35x80x10	



920.316 OPTIONAL				
500/13				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	230.836	SUPPORT	
2	2	230.839	PLATE	
3	4	600.225	SCREW M12x120	
4	4	600.077	NUT M12	
5	1	230.837	AXLE	
6	1	600.842	PIN	
7	1	230.838	SUPPORT	
8	1	620.737	TYRE ASSY	
9	1	210.596	DUST COVER, INNER	
10	1	230.522	SHAFT	
11	1	230.524	BUSH	
12	1	230.523	BUSH	
13	2	600.180	WASHER D.17 RE	
14	2	600.035	SCREW M16x40	
15	1	230.652	DUST COVER D.25	
16	2	200.475	SHIM D.35 H.1,5	
17	2	610.147	BUSH	
18	1	600.034	GREASE NIPPLE M8	
19	1	600.585	SPRING PIN D 6x50	
20	1	610.790	PLUG	
21		600.602	BEARING	
22		630.822	SPACER	
23		630.823	RIM	
24		600.602	BEARING	
25		630.824	TUBE	
26		630.825	TYRE	



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