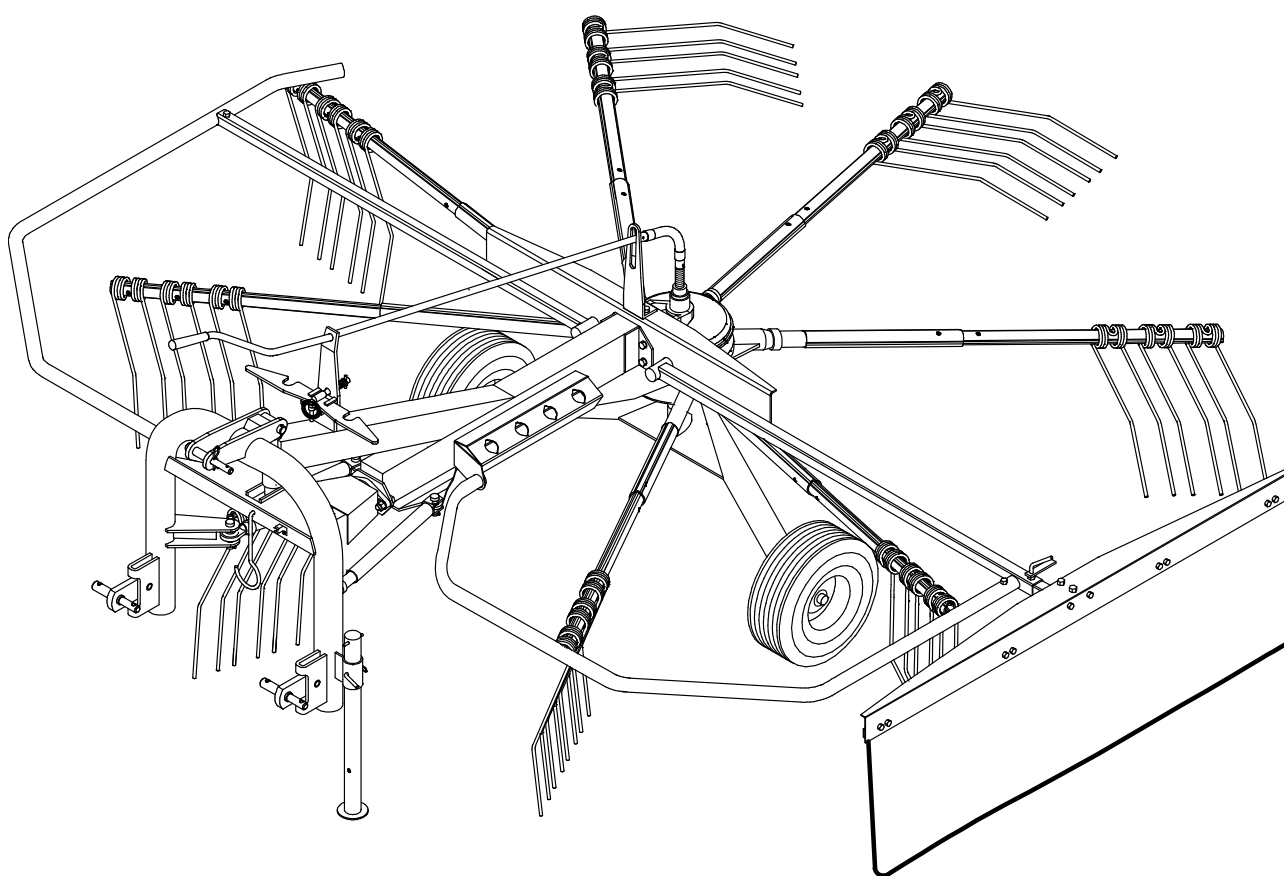


AGRICULTURAL MACHINERY

**sitrex**®  
Spa

## ***USE AND MAINTENANCE SPARE PARTS LIST***



# **SR 320/8**

**2003**

# **WARRANTY**

SITREX s.r.l. warrants new SITREX machinery at the time of delivery to the original purchaser to be free from defects in material and workmanship if properly set up and operated in accordance with this Operator's Manual.

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 by inspection authorized by SITREX during the warranty period.

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

In case the customer is not in a position 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 will only supply the part(s) required for the repair and/or replacement.

The warranty is null and void when it is evident that the machine has been improperly used or however repaired without authorization.

SITREX undertakes no responsibility for any obligation or agreement reached by any SITREX employers, agents or dealers, which are not in compliance with the above warranty . The manufacturer cannot be held responsible for the consequent damages. This warranty substitutes any other warranty , express or implied , and any other manufacturer's obligation.

## **CHAPTER**

### **1) INTRODUCTION**

### **2) 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**

### **6) GENERAL INSTRUCTIONS FOR FIELD USE**

### **7) TRANSPORT BY ROAD**

### **8) MAINTENANCE**

## 1) INTRODUCTION

The user of the Windrower (later referred to as the "machine") is responsible for his own safety as well as that of the people in proximity of it.

It is therefore crucial that the user has detailed information on the use and maintenance of the machine and on how to connect it correctly to a tractor.

This machine can operate only through a Cardan shaft attached to the power takeoff of an agricultural tractor equipped with a lifting unit and 3-point universal linkage. This manual is intended both for the operator and those responsible for maintenance. Essential instructions and procedures to follow during use and maintenance of the machine are conveyed through drawings and text.

The user is responsible for ensuring that the machine is connected to the tractor and is operated in compliance with current legal provisions.

The machine must only be operated and maintained by persons who have read this manual. The manual should always be kept to hand. It is particularly important to read CHAPTER 3 on general safety instructions.

These instructions must always be heeded.

If you are in any doubt, contact the Assistance Center or your nearest dealer.

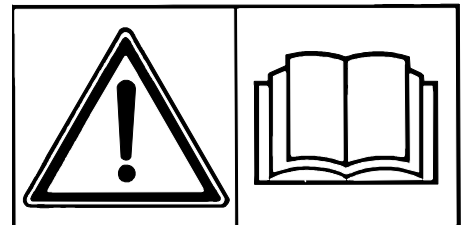
## 2) GUIDE TO THE SIGNS AND SYMBOLS USED THIS MANUAL AND THEIR LOCATION ON THE MACHINE

### IMPORTANT

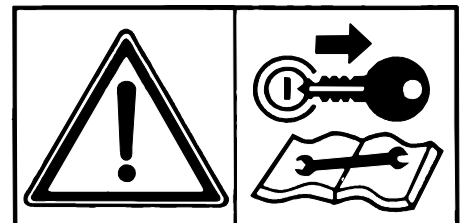
These signs and symbols give information to the operator on how to make the best use of the machine so as to prolong life, avoid damage, optimise work and, above all, to avoid injury to the operator and anyone within range of the machine.

### WARNING SIGNS

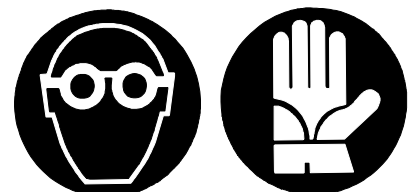
1) Before beginning operations, read the instruction manual carefully.



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



### MANUAL SIGNS.

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



5) 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.

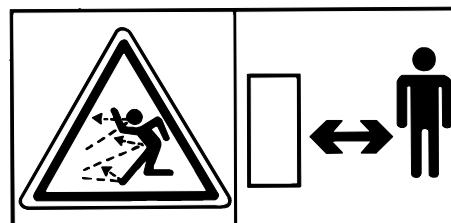


6) Indicates a potentially dangerous situation which, if not avoided, can provoke less severe or minor injuries.



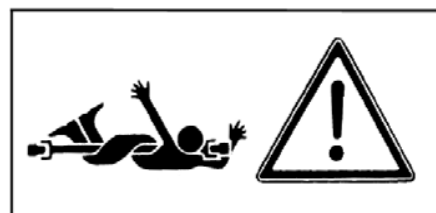
## DANGER SIGNS

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

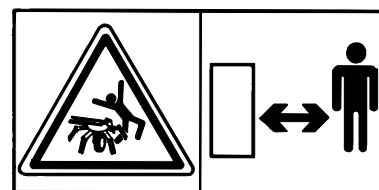


8) Indicates that it is dangerous to touch the cardan (P.T.O.) shaft.

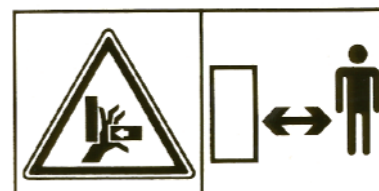
For all the other information regarding the cardan shaft, see the use and maintenance booklet specifically for the cardan shaft which, together with this manual, makes up the documentation on safety, use and maintenance of the machine.



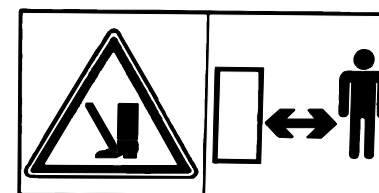
9) Indicates that anyone coming within range of the moving tine arms will be seriously injured. Keep a safe distance from the machine.



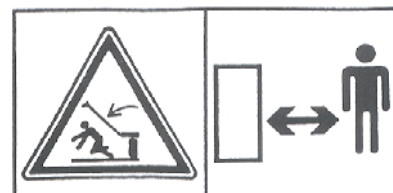
10) Indicates that there is a risk of crushing your hands. Keep your distance.



11) Indicates that there is a risk of crushing your feet. Keep your distance.



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

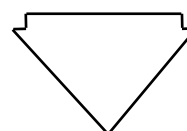
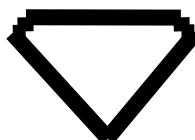


## INDICATION SIGNS

13) Indicates a greasing point .

GRAISSE

NIVEAU D'HUILLE



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



14

Shows suitable tools for maintenance and cleaning (grease pump, brush).



**NOTE:** All the signs and symbols so far shown appear in the manual. Some of these are also on the machine: for their location, the diagram on page 10.

# GENERAL SUMMARY OF SAFETY AND ACCIDENT PREVENTION INSTRUCTIONS

Read all the instructions carefully before using the machine. When in doubt seek advice from the manufacturing company.

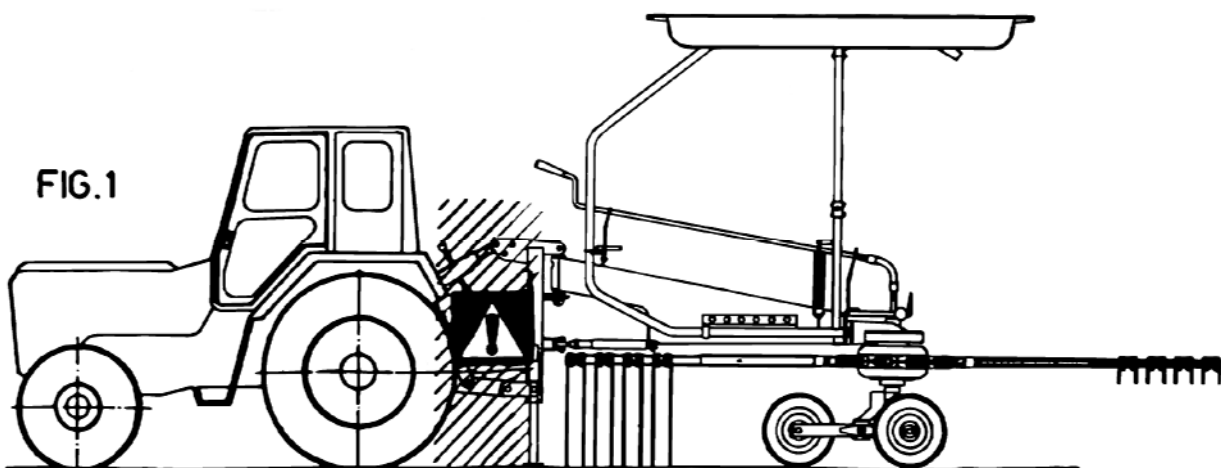
The manufacturing company declines all responsibility for non-compliance with the following safety and accident prevention instructions.

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 immobilised 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 are too young or do not have a suitable driving licence if travelling on the highway.
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 tractor axles and so it is essential to ensure that the tractor-machine combination is stable in all anticipated working condition. 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 (P.T.O.) shaft complete with the required overload protection and guard secured with the appropriate small chains. Be aware of the rotational direction of the Cardan (P.T.O.) 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.
12. Before starting work, familiarise 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.

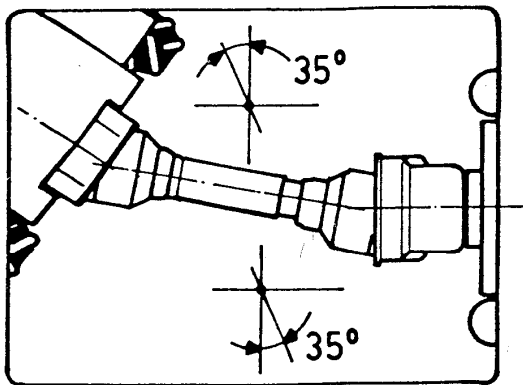


16. The machine and any road transport attachments must bear the appropriate signs and symbols and have suitable protection.
17. Never leave the driving seat when the tractor is running.
18. It is extremely important to appreciate that road-holding, steering and braking may be significantly affected 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 centre of gravity.
20. Before engaging the power takeoff, check the pre-set revolution speed, **MAXIMUM 540rpm.** Do not use 1000rpm drive.
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 (P.T.O.) 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, stop machine sway, secure the lower lift arms with the stabilisers or check chains.
27. When the machine is raised during road transport, put the tractor's hydraulic lift control lever into the locked position.
28. Only use the Cardan (P.T.O.) shaft provided by the manufacturer and, in case of replacement, substitute it with one having the same characteristics.
29. Regularly check all protection guards on the Cardan (P.T.O.) shaft. These should always be in excellent condition and securely fixed.
30. It is important to ensure that the protection on the Cardan (P.T.O.) shaft is complete.
31. Connection and disconnection of the Cardan (P.T.O.) shaft must be carried out with the engine stopped and switched off.
32. Pay particular attention to the correct connection and safety of the Cardan (P.T.O.) shaft and the power takeoffs on the machine and the tractor.

FIG.1



33. Prevent the Cardan (P.T.O.) 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 the Cardan (P.T.O.) speed permitted. 540rpm **MAXIMUM**.
35. Do not engage the power take-off when the engine is not running.
36. Always disengage the power take-off when the Cardan (P.T.O.) shaft is at too wide an angle (it should never be more than 35° - Fig.2) and when it is not in use.

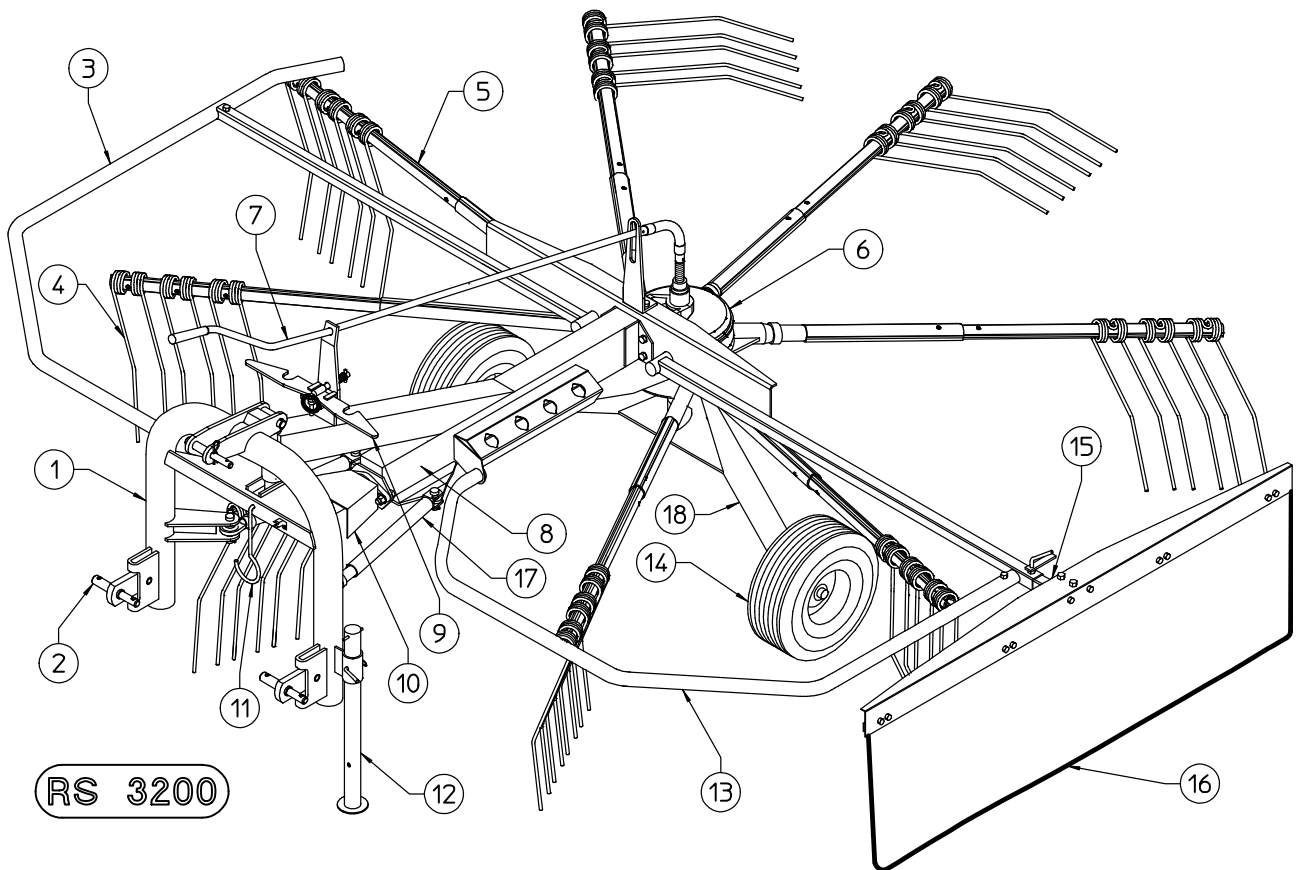


**FIG.2**

37. Only clean and grease the Cardan (P.T.O.) shaft when the power takeoff is disengaged, the engine is off, the parking brake is applied and the ignition key is removed.
38. When the Cardan (P.T.O.) shaft is not in use, rest it on the support provided.
39. On disconnecting the Cardan (P.T.O.) shaft, replace the protective cover on the power input (gearbox) shaft.
40. Prolonged use of the machine can cause the drive boxes (Fig.4) to become hot. To avoid any risk of getting burnt, avoid touching these areas both during use and some time afterwards.
41. Periodically check screws and nuts for tightness and grip. Tighten as necessary.
42. When the machine is raised for maintenance work and tine replacement, put suitable supports under the machine as a safety precaution.
43. Ensure that the recommended grease is used.
44. Spare parts must meet the requirements as defined by the manufacturer. Use only original spare parts.
45. 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 dealer if necessary).
46. The instruction booklet must be available to all users for the lifetime of the machine.



## PRODUCT IDENTIFICATION



**RS 3200**

### MAIN PARTS

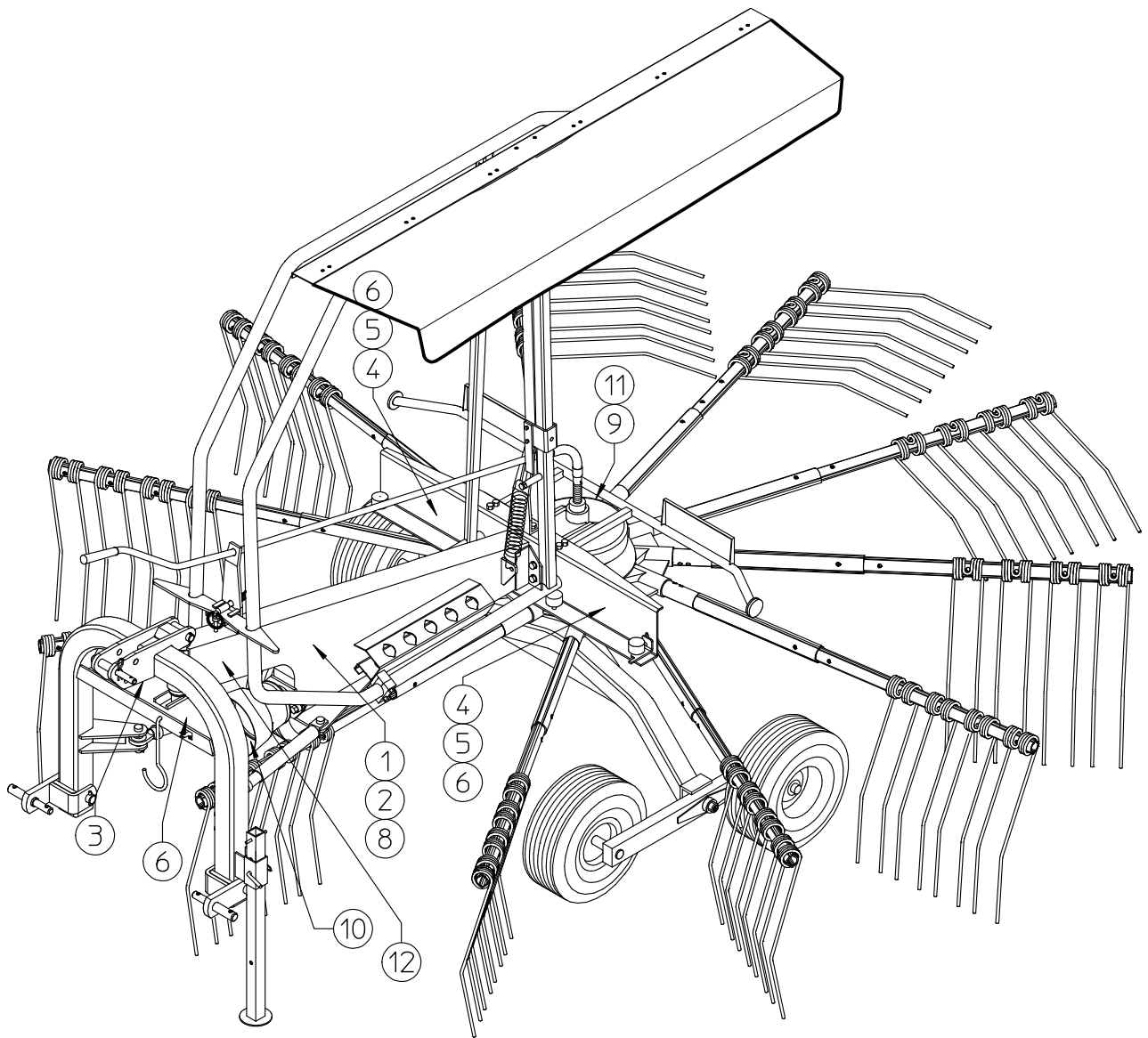
- 1) THREE- POINT LINKAGE
- 2) LOWER LINK
- 3) R.H. GUARD
- 4) TINE
- 5) TINE ARM
- 6) GEARBOX
- 7) CRANK
- 8) DRAWBAR
- 9) RATCHET
- 10) CARDAN SHAFT PROTECTION
- 11) CARDAN SUPPORT
- 12) PARKING STAND
- 13) L.H. GUARD
- 14) WHEEL UNIT
- 15) TELESCOPING TUBE
- 16) SWATHING DEFLECTOR
- 17) ANTI-SNAKING KIT
- 18) TRAVERSE

IDENTIFICATION PLATE

PLAQUE D'IDENTIFICATION



RS 3200						
RPM TRACTOR	RPM ROTOR	POWER REQUIRED	WHEEL TYPE	OPERATING WIDTH	TRANSPORT WIDTH	WEIGHT
MAX 540	75	HP 25	16X6.50 6PLY	3,2Mt	1600	KG 350
		KW 19		126"	63"	LBS 780



### 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 |        |

## CHAPTER 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 !!!**

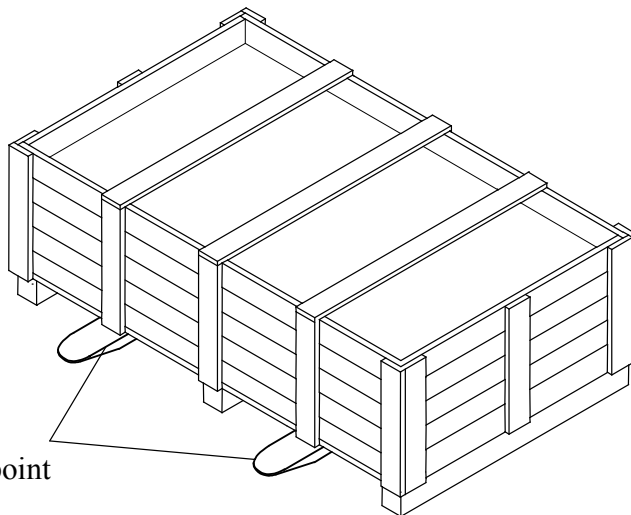


Lift the machine using a forklift truck, crane or other suitable equipment of sufficient capacity after first checking the weight of the configurations in the table given below.

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.

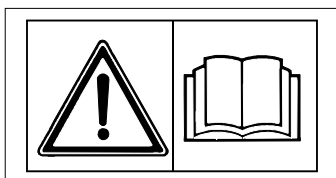


Forklift lift point

	<b>WEIGHT</b>
<b>KG</b>	<b>430</b>
<b>LBS</b>	<b>955</b>

#### **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 cortically.
- 3) In the event of further transport, ensure that the machine when 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 qualified personnel perform assembly. We also recommend that assembly be carried out in a flat, solid surface, 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. Assemblers must provide suitable lifting mechanisms and supports for stabilizing the partially assembled units, so as to prevent them from falling and causing damage or injury. The steps for assembly are illustrated in following. Depending on the experience of the assemblers and the tools available, it is not necessary that the instructions be followed in the exact order given here, but the safety precautions described above must always be followed carefully and scrupulously.

### Assembly sequence:

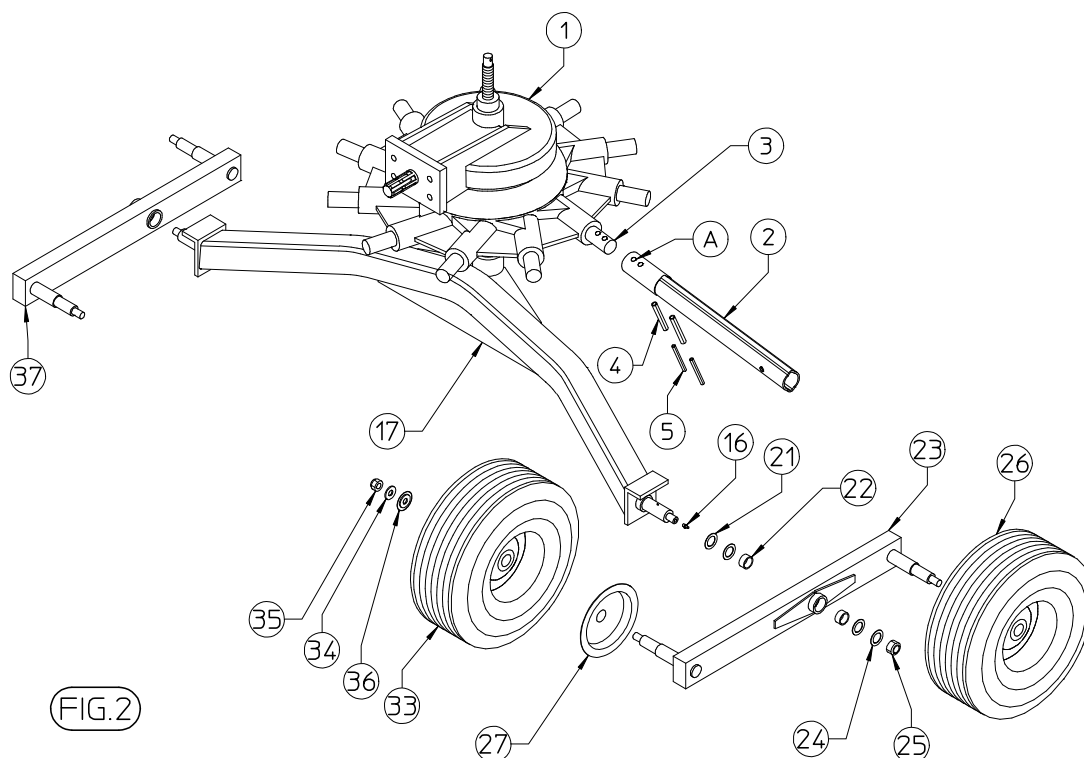
The following pictures , used to describe the rotary rake's assembly, refer to model 420/11. On the 320/8 model there are small differences in the shape of components.

The person in charge of assembling the rotary rake should verify in the parts book the small differences existing compared to the bigger version. The difference in the building's shape does not change the function nor the performances.

### ATTENTION

For the model 320/8 standard, fit the wheel 26 directly to the outer pins of axle 17. For the model 320/8 with tandem wheels , fit the lock pins as per spare-parts' drawing 920.138. For machines with tandem wheels keep in mind to grease the pin regularly 210.967/a.

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 (16) to the axle (17). Next check to see that the wear bushings are in place on the wheel tandems (23), and mount the tandems on the axles, inserting spacers (21), in order to limit play (the longer part of the wheel tandem should face the tractor), and fasten with the washer (24) and nut (25). 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).

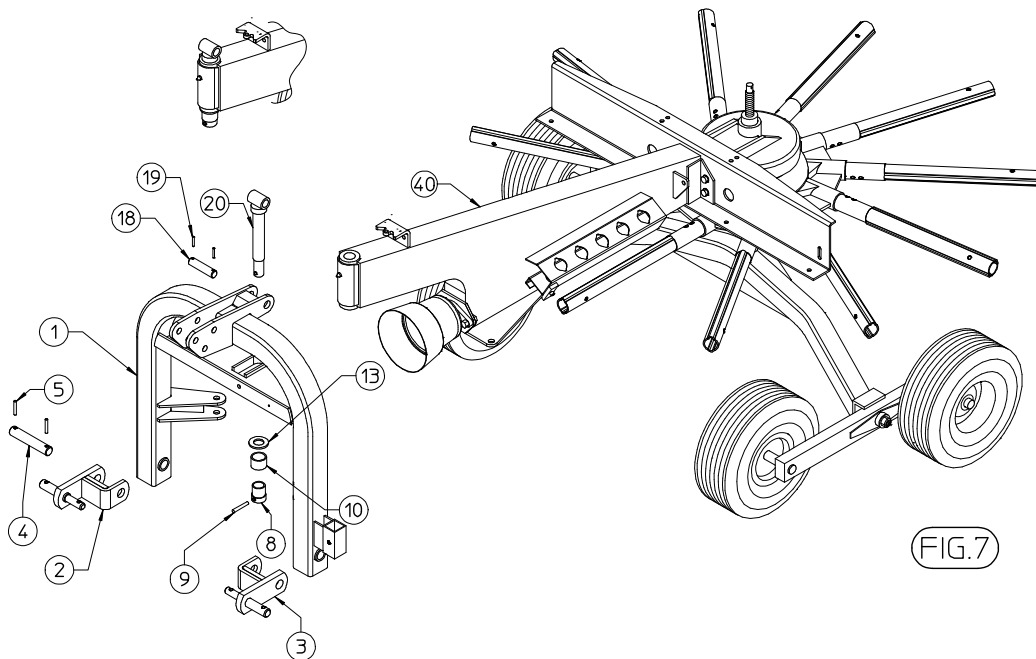


FIG.7

Mount the parking stand (41) to the mounted 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, then insert the spring (38) into the outer shock absorber (37) and into the inner one (39). Attach the shock absorber to the proper hitches by inserting pins (35) and (40). Repeat the same operation on the opposite side of the machine.

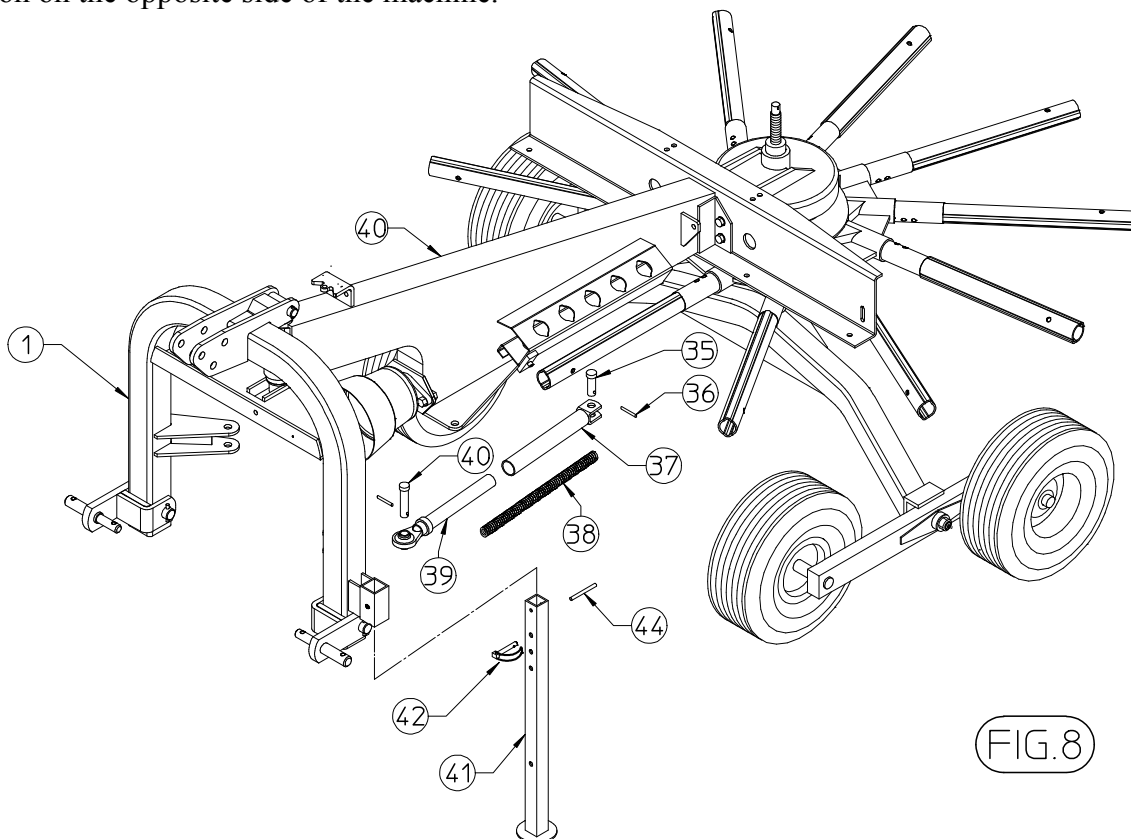


FIG.8

Mount the support (31), plate (27) and ratchet (23).

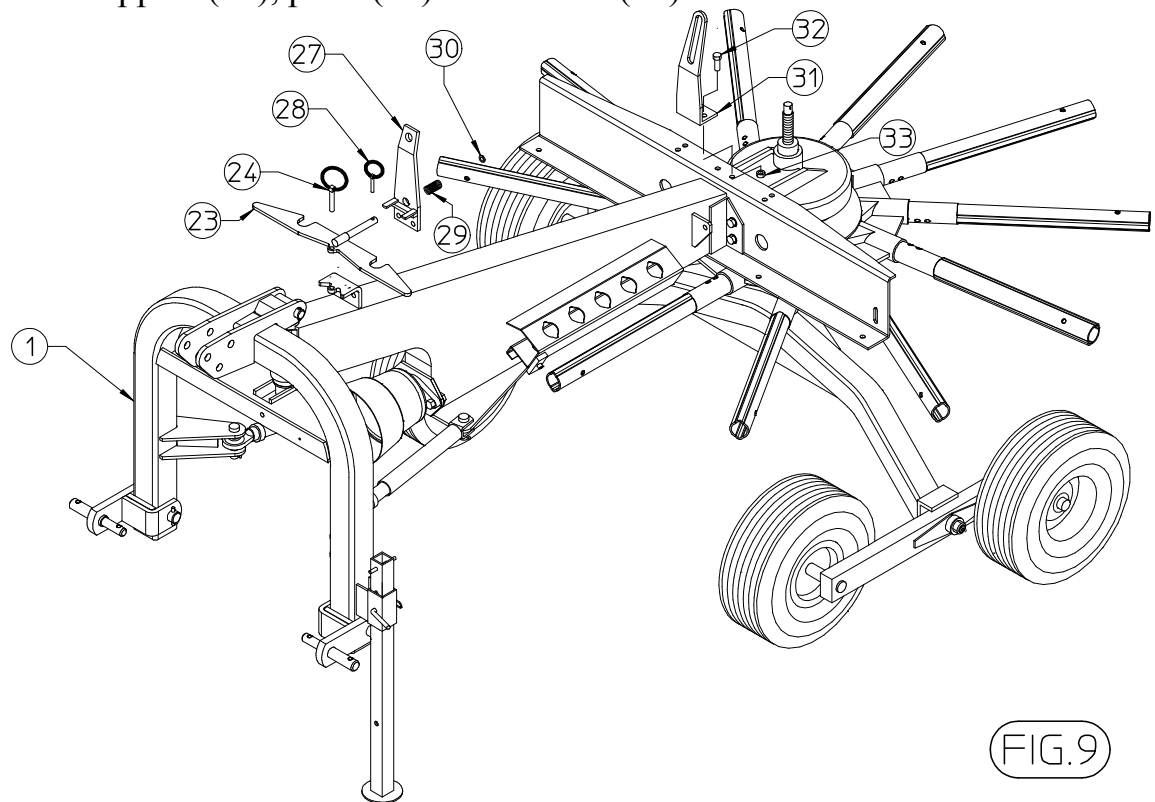


FIG.9

Insert the crank (25) on the supports, and then attach the flexible joint (11) connecting it also to the adjusting screw by the spring pins (12). Take off the guard (A) from the screw.

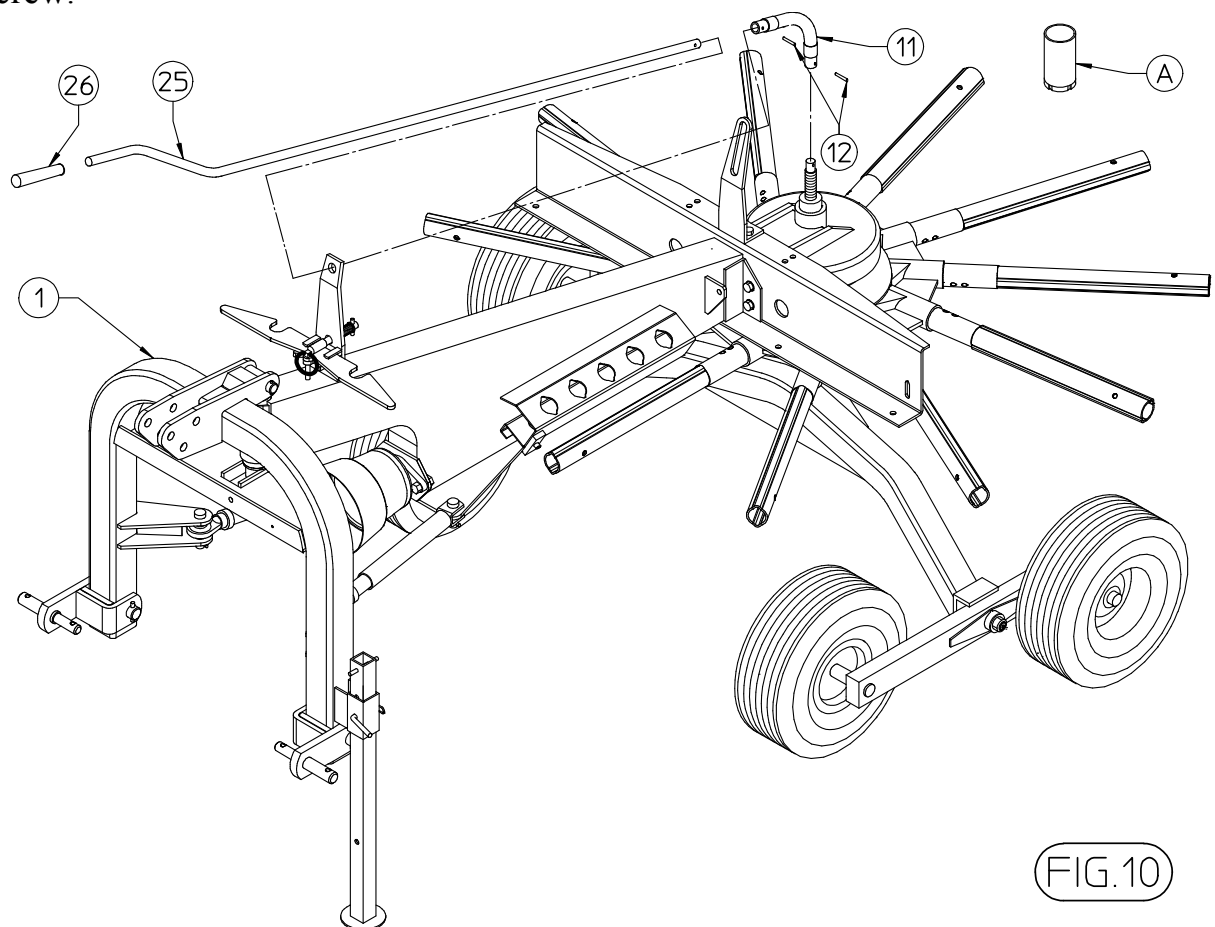


FIG.10

Mount the right-hand protection frame 2-3 by inserting into the special hole (A) on the drawbar and use screw 8 and pin 14 to fasten it.

Repeat the procedure on the left-hand protection of the machine. Assemble support 6 and 9 using screw 17. Use pin 11 to fasten the protection. Mount pin 20 and plate nut 21.

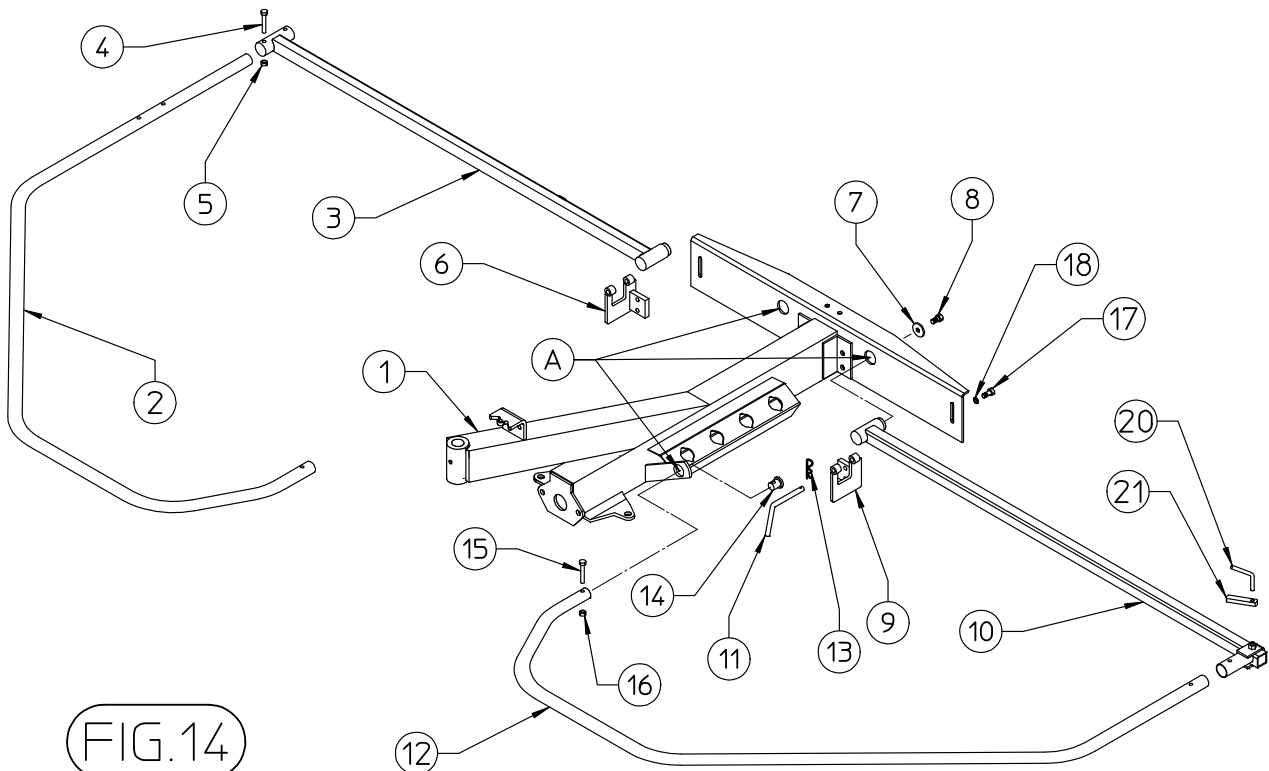


FIG.14

In order to mount swathing deflector 29 insert the slanting metal tabs 31 into the slots and then rest the swathing deflector on the inside of side frame 27 and place plate 28 on the outside; use screws 32 and nuts 33 to fasten everything into place.

Now use screws 23 and 26 to mount this group on plate carrier extension 19

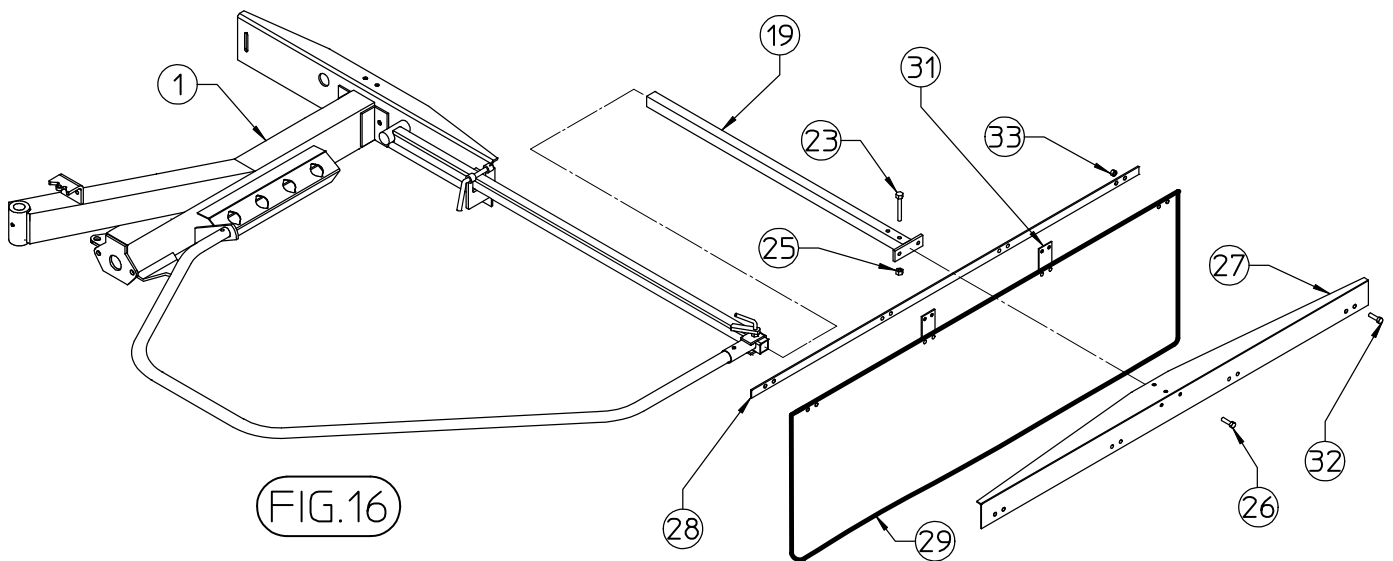


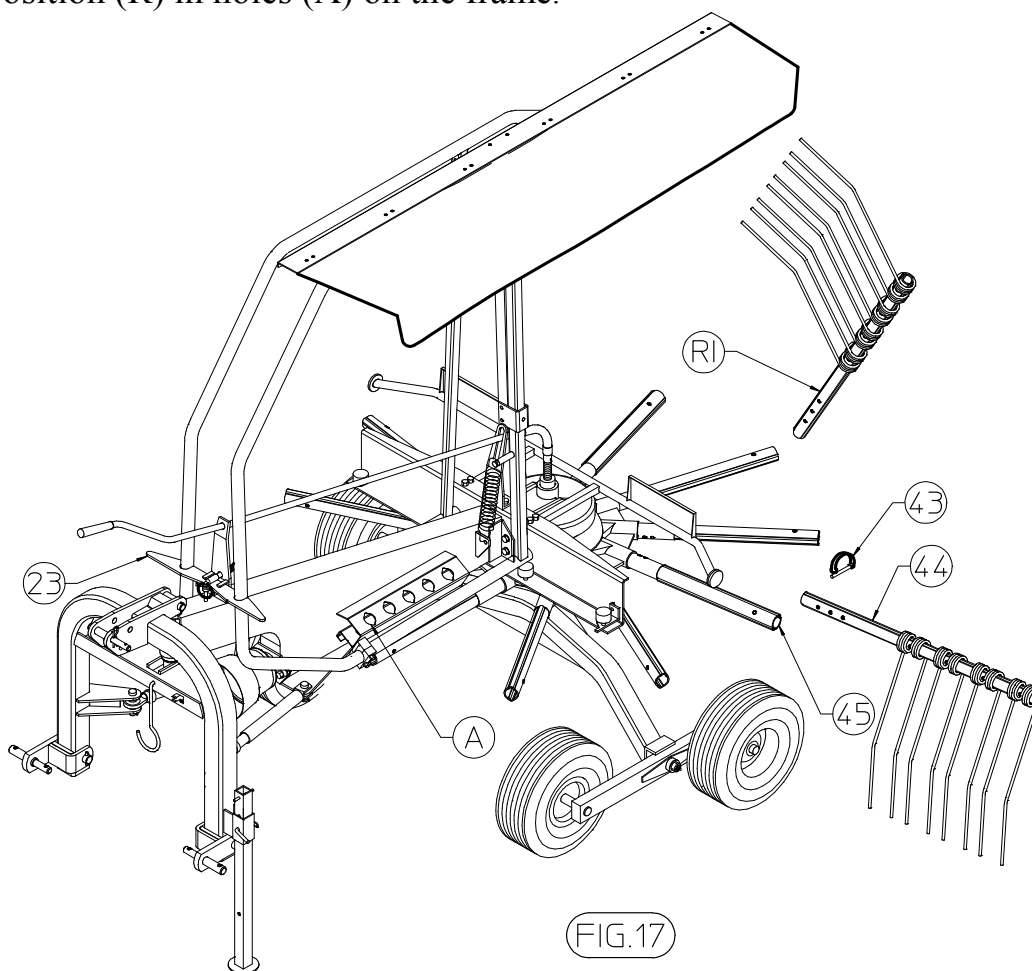
FIG.16



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 two 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 (R) in holes (A) on the frame.



## 5) 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 tire 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.

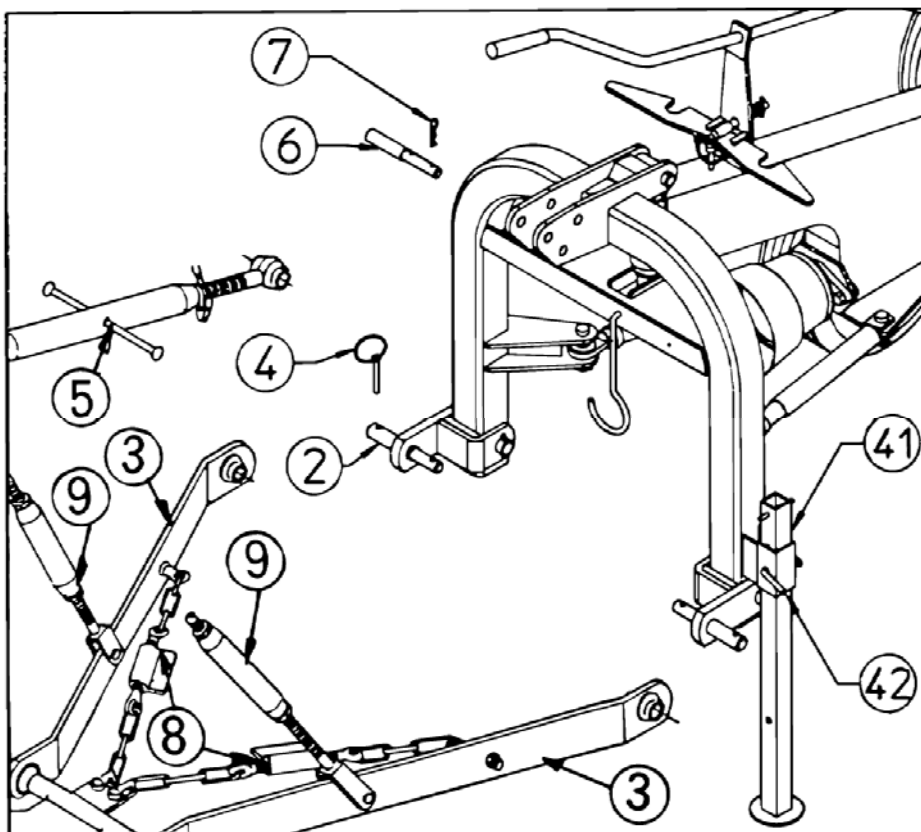
When assembling the forage rake, make sure that no one is standing between the machine and the tractor.

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.



## 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.

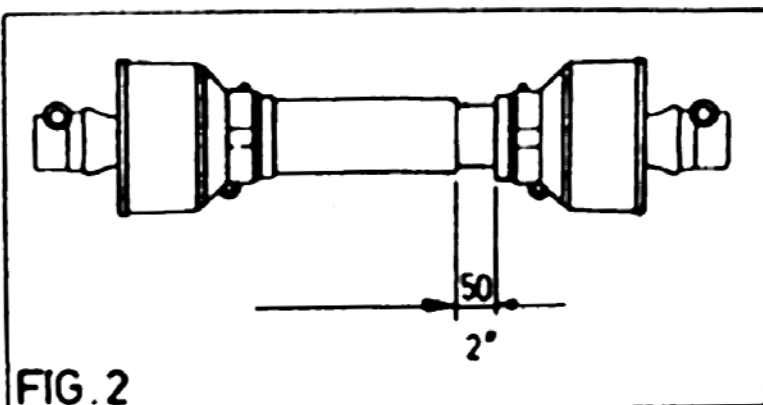
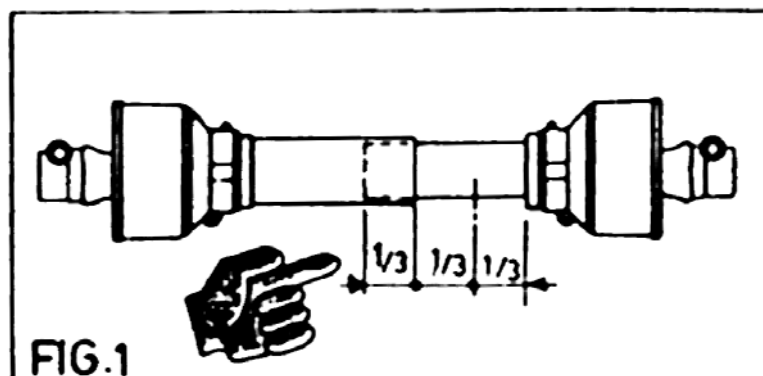
It is your responsibility to read and comply with this documentation. If information given in this manual should conflict with that given in the Cardan shaft manual, you should follow the instructions given by the Cardan shaft manufacturer.

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.

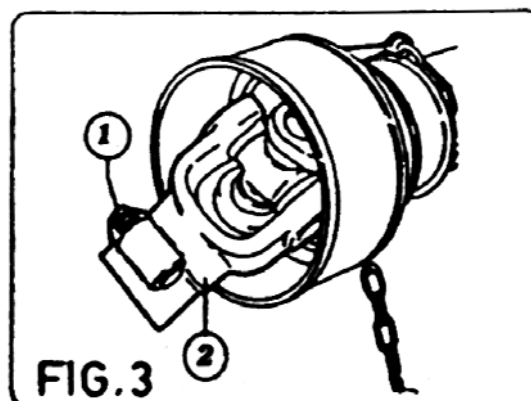
During both transport and use, avoid conditions where the Cardan transmission shaft is extended to the maximum. In all working conditions, the telescopic tubes must overlap by at least  $\frac{1}{3}$  of their length (fig. 1).

Conversely, when the Cardan shaft is contracted to the maximum, there should still be a gap of approximately 50 mm (2") (fig. 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) (Fig.3) 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.

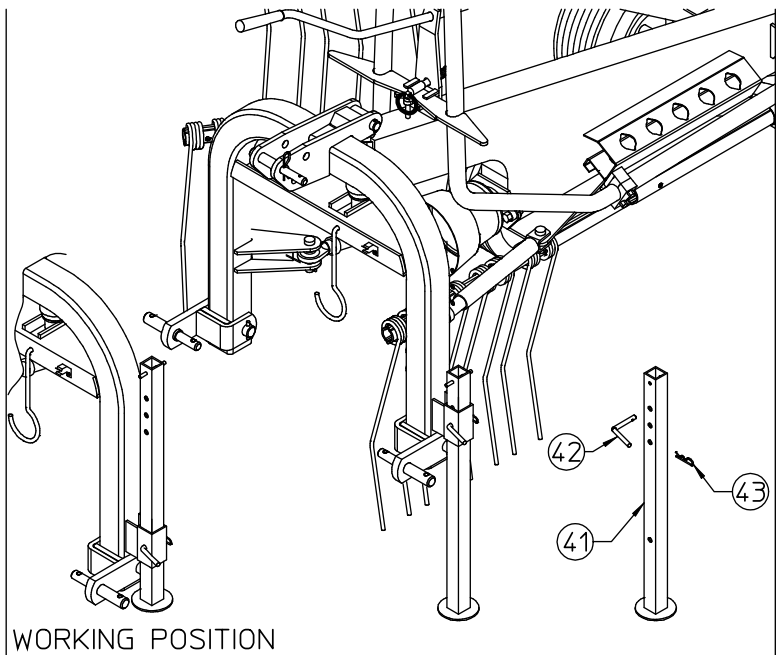
Slowly lower the rake and make sure it is resting firmly on the ground with the third point released.

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.

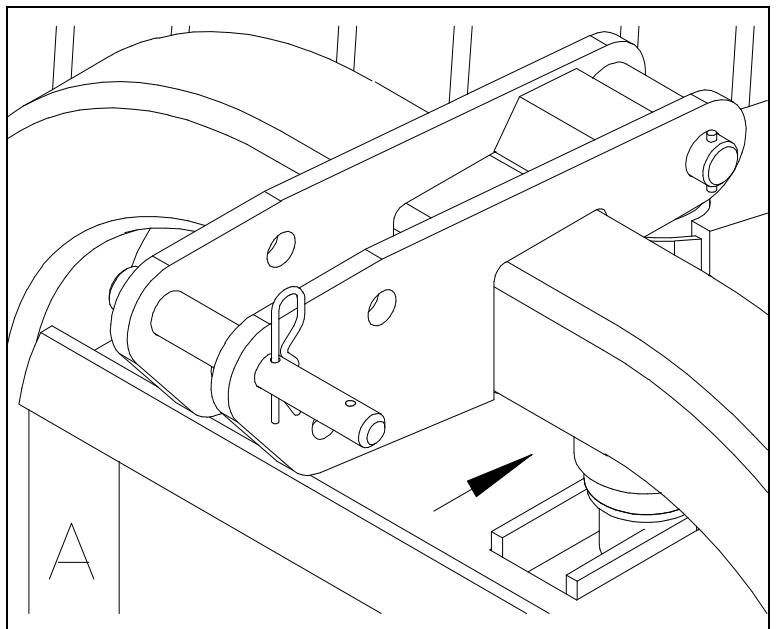
Disconnect the lower arms.



## ADJUSTMENT OF THE FORAGE RAKE

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

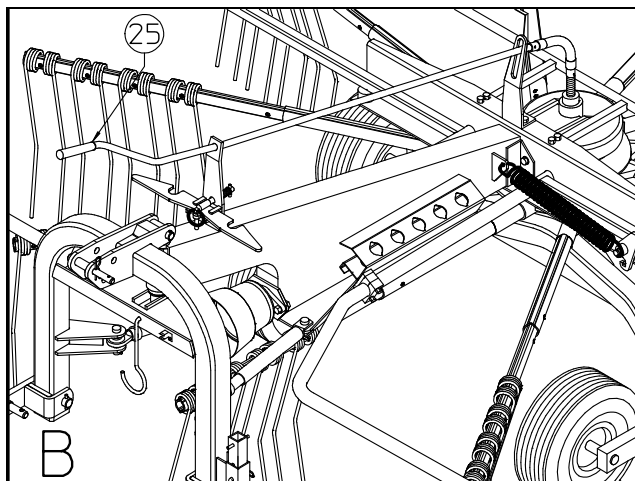
In order to adjust the rake, slowly lower the rake so that the arms sway and the roller under the drawbar rests in the rack (see diagram A). Adjust the third point tie rod so that the rotor is lying horizontally or is tilting slightly forwards and the tines are slightly touching the ground.



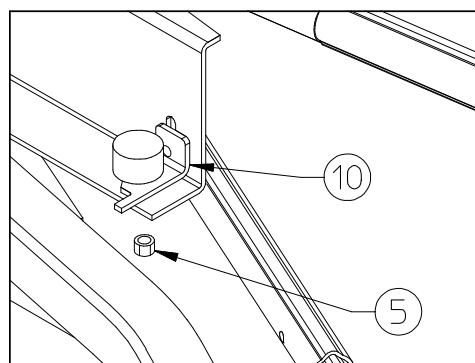
### Adjustment of work depth

Crank 25 adjust the work height and adjustment depends on machine speed as well as the quality of the product.

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, adjustment height swathing deflector from the ground using support 210.962 and 210.963. (see spare parts list TABLE 920.139)



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.

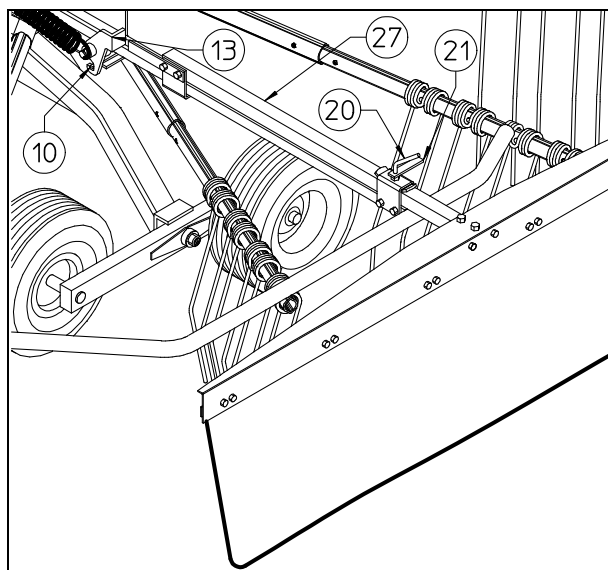
Adjustment of gear speed and revs to work the machine

The gear speed and machine revs depend on:

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

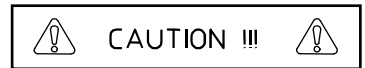
The forage rake was designed for a maximum number of revs for the power take-off of 540 g/min. We advise working with a rev number of 350-450 g/min.

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.

## 6) GENERAL INSTRUCTIONS FOR FIELD USE



Before starting work, familiarize yourself with the following general instructions:

Before using the machine ensure that all safety precautions are taken.

Check that all safety protection and guards are in place and working.

Inspect the work site in order to familiarize yourself with the terrain.

Do not start the tractor before being properly seated in the driving position.

Do not start the machine if it is damaged (or even if you only suspect it is damaged) and inform your nearest dealer of the problem and ask for assistance.

Do not allow yourself to become distracted when working: give your full attention to the job in hand.

Maintain constant control over the tractor and ensure that you know how to stop quickly and switch off the engine.

Caution when working on inclines. It is better to work from the bottom to the top of an incline (or from the top to the bottom), rather than across an incline where there is a risk of overturning. Check and heed the instructions supplied by the tractor manufacturer, especially those concerning the maximum incline on which it is possible to work.

It is advisable to reduce speed when working and maneuvering on inclines and only to change speed and direction gradually. Do not make sudden stops or starts.

Do not work on wet or slippery grass or terrain, or anywhere where grip is poor. If this is unavoidable, work at a slow speed so as to ensure operator safety.

Always switch off the tractor engine, apply the parking brake and remove the ignition key whenever you have to attend to the machine to make adjustments or to remove grass and other objects which might be entangled in the machine.

Before leaving the tractor, disengage the power takeoff, lower the machine until its wheels are on the ground and put the hydraulic directional control lever into the locked position.

Never go near the rotors until they have completely stopped moving.

Never attempt to make adjustments to the machine while it is running. Always stop the machine before carrying out any such work. Do not oil the machine when it is running or is connected to the power takeoff.

Do not use the control levers as handholds since they can move and do not give a secure grip. Furthermore, any involuntary movement of a control lever can cause unintentional movement of the tractor or machine

## 7) TRANSPORT BY ROAD

After the machine has been attached to the tractor as previously described and before transporting it to or from fields or any other workplace, the following instructions should be heeded:



Before setting off with the machine attached to the tractor, check the local road transport regulations. During transport keep the machine fully raised with the power takeoff disengaged and the lifting unit immobilized.

Check that all guards, safety protection and locking split pins are in place, functioning and correctly fitted.

Ensure that nobody leans against, or climbs on to, the machine during transport. The machine is an agricultural machine ***NOT designed for transporting persons or goods***. Consult the tractor maintenance and-use manual where necessary. Maintain constant control over the vehicle and ensure that you know how to stop the tractor quickly and switch off the engine.

When on a public road, observe all Highway Code regulations. Drive near the edge of the road and try not to obstruct traffic.

Do not park the tractor and/or the machine where it might obstruct, or be a danger to, any public right of way. Avoid going onto a public road if the tractor or machine is very dirty - you could leave a trail of soil, grass and other matter which could dirty the road and obstruct normal traffic.

## 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

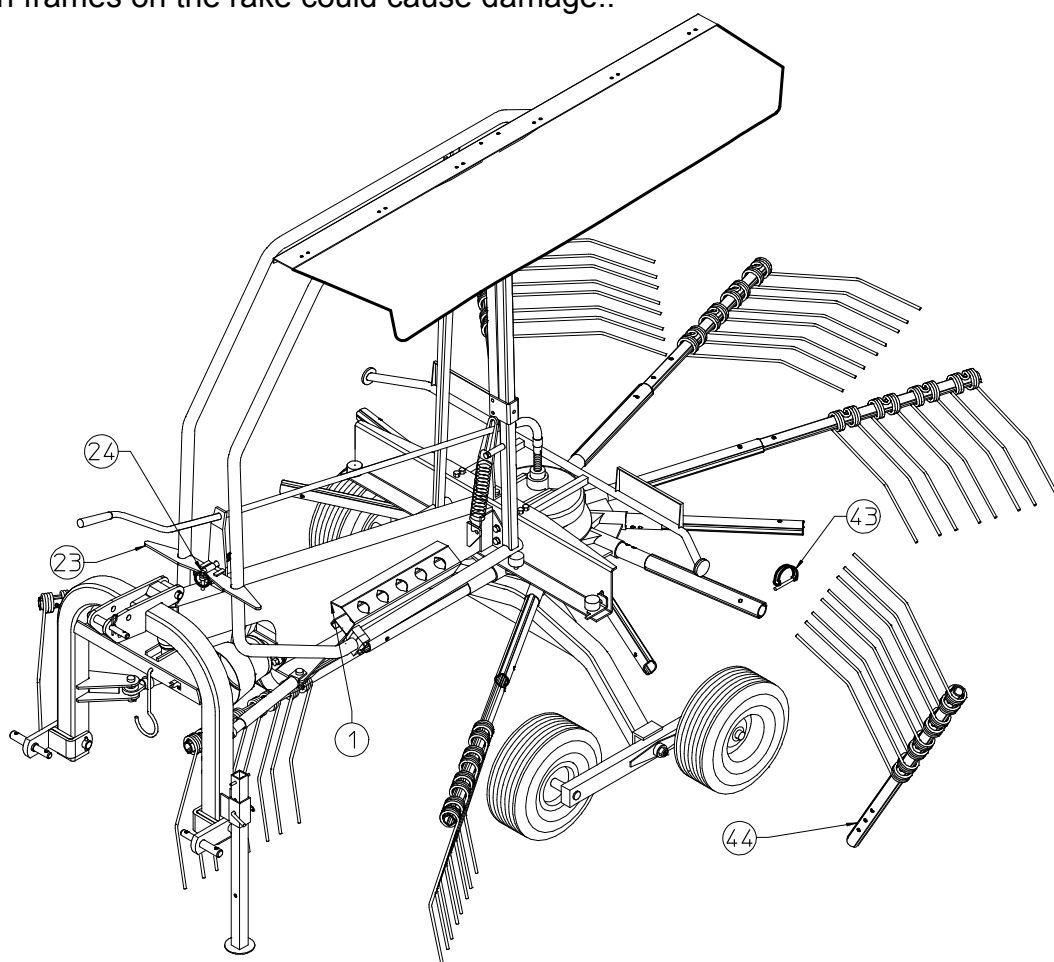
Loosen the swath-shaper plate carrier and reinsert it until the safety hook is released, then tighten the lock screw once again.

Turn the protection frames facing upwards one at a time and use hook 23 to fasten them, insert safety clamp 24 into the special slot (see diagram).

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.

If the machine does not have to travel far, there is no need to remove all the tine carrier arms. The 3-4 central front and rear arms can be left in position, because when the protection frames are raised, lock 37 (see Fig.14 pg.13) takes up position between the two tine carriers and limits the possibility of rotation. However, the rear arms must be removed if the machine is taken on the road.

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..





## 8) MAINTENANCE DIRECTIONS



All cleaning, lubrication and maintenance operations 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 of 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, authorized 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.

## REPAIR INSTRUCTIONS

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

Do not carry out welding without authorization 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.

## LAYING UP FOR EXTENDED PERIODS

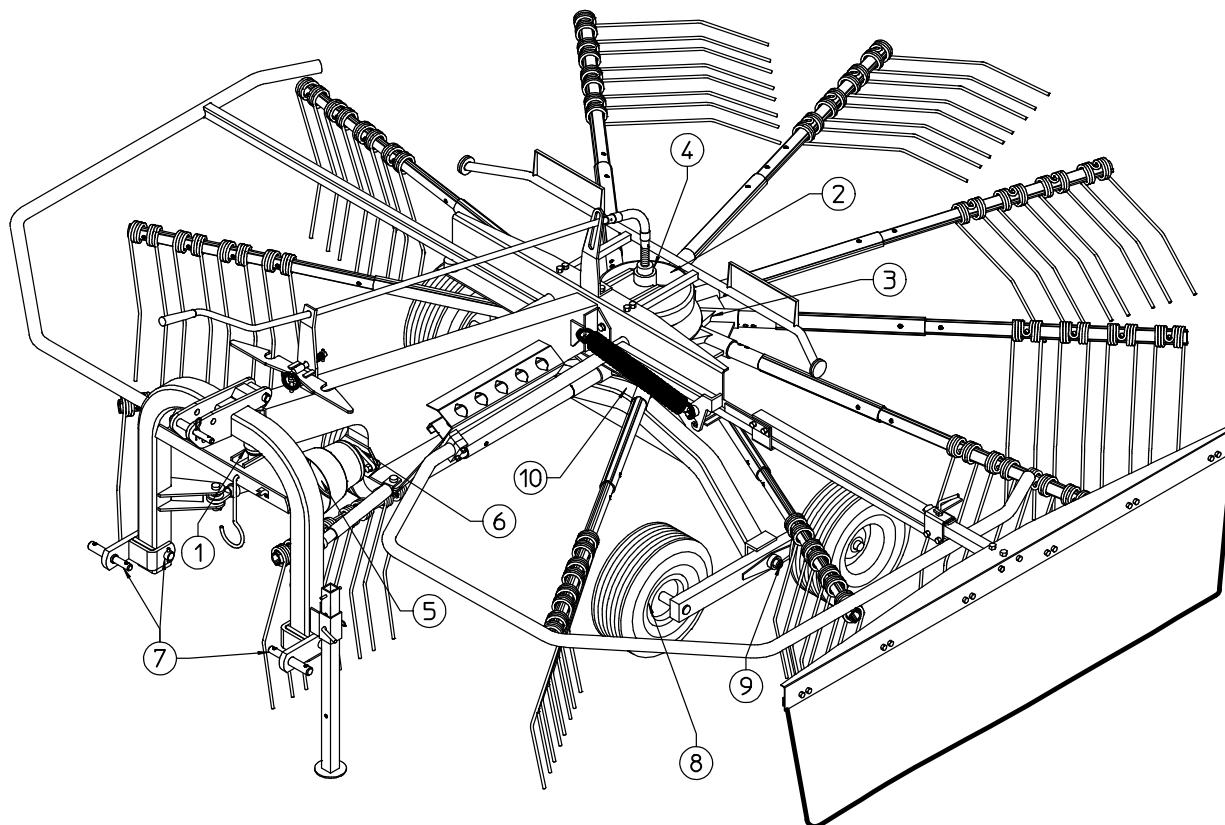
At the end of the season, or when an extended period of inactivity is envisaged, it is advisable to:

- a) Clean the machine following instructions and allow it to dry.
- b) Check it carefully and replace any damaged or worn parts.
- c) Thoroughly tighten all screws and bolts.
- d) 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.

## 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	
3	1	Gearbox	Oil level	50	Oil SAE90EP	
4	1	Screw	Greasing	20	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	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.

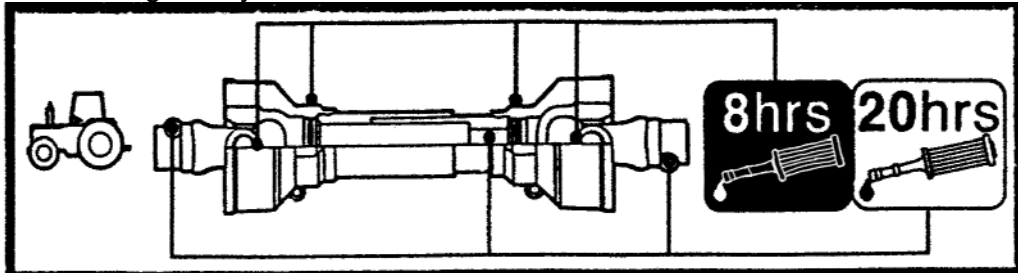
B = Each time the machine is connected to the tractor.

\* 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.

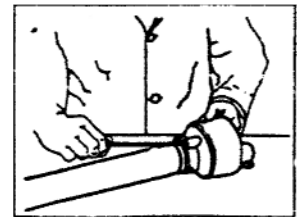
If information given in this manual conflicts with that given in the Cardan shaft manual, you should follow the instructions given by the Cardan shaft manufacturer.



## MAINTENANCE OF SLIDING PARTS

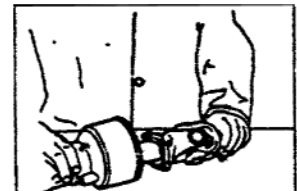
1

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



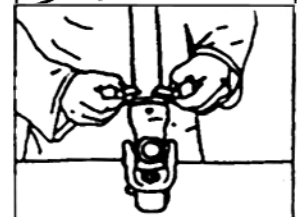
2

Withdraw the shaft protective guard



3

Cheek the condition of the ferrule and all protective parts.



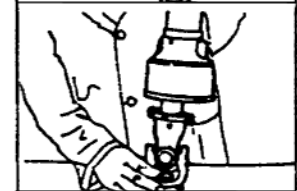
4

Lubricate the 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.



## 9) NOISE AND VIBRATION

Noise affecting the tractor driver (from the machine only) is less than 70 dB.

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).

## 10) SCRAPPING THE MACHINE

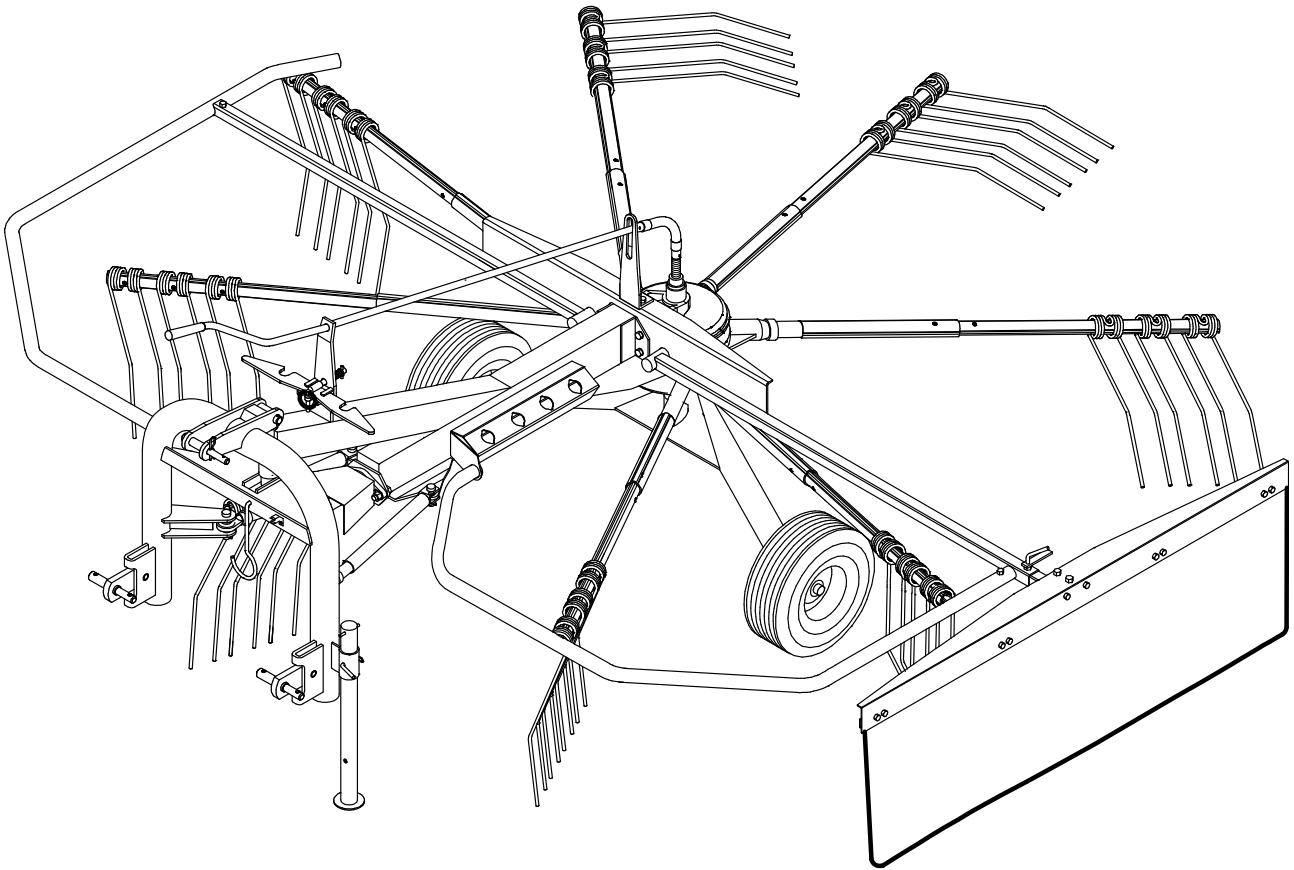
The machine consists mainly of ferrous material which must be disposed of according to the regulations in force in the country concerned.

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

Caractéristique	Model	320/8
1st and 2nd grade three point hitch		Standard
Axle tandem		optional
Number of arms		8
Number of double tines per arm		3
Working width		3,20 / 10'-6"
Rotor diameter		2,70 / 8'-10"
Height during transport position		2,10 / 6'-11"
Transport width		1,50 / 5'
Length		3,00 / 9'-10"
Power required		19kW / 25HP
Number of revs during working		350-450 R.P.M.
Equivalent constant noise level		inferieur 70 dB
Tyres		16 x 6.50-8
Tyre pressure		42-45 psi

# SPARE PARTS LIST



## 320/8



TABLE NO. 920.136				
320/8				
ITEM	Q.ty	PART / NO	DESCRIPTION	NOTE
1	1	210.943	3PT HITCH	
6	1	200.991	CARDAN SUPPORT	
7	1	600.841	SPRING PIN	
8	1	210.945	BUSH	
9	1	600.540	SPRING PIN	
11	1	200.992	CLIP	
12	1	600.833	SCREW	
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	600.539	SPRING PIN	
20	1	210.944	PIN	
21	1	200.510	PLUG	
22	1	600.124	GREASE NIPPLE	
23	1	210.703	RATCHET	
24	1	600.017	PIN	
25	1	210.704	CRANK	
26	1	610.284	HANDLE	
27	1	210.505	SUPPORT	
28	1	600.723	PIN	
29	1	210.558	SPRING	
30	1	600.031	WASHER	
31	1	210.506	SUPPORT	
32	4	600.616	SCREW	
33	4	600.077	NUT	
34	1	210.946	DRAWBAR	
35	2	210.488	PIN	
36	4	600.538	SPRING PIN	
37	2	210.485/a	STABILIZING	
38	2	210.486	SPRING	
39	2	210.484	STABILIZING	
40	2	210.487	PIN	
41	1	210.991	JAK STAND	
42	1	200.328	PIN	
43	1	600.019	SPLIT PIN	
44	1	600.020	SPLIT PIN	



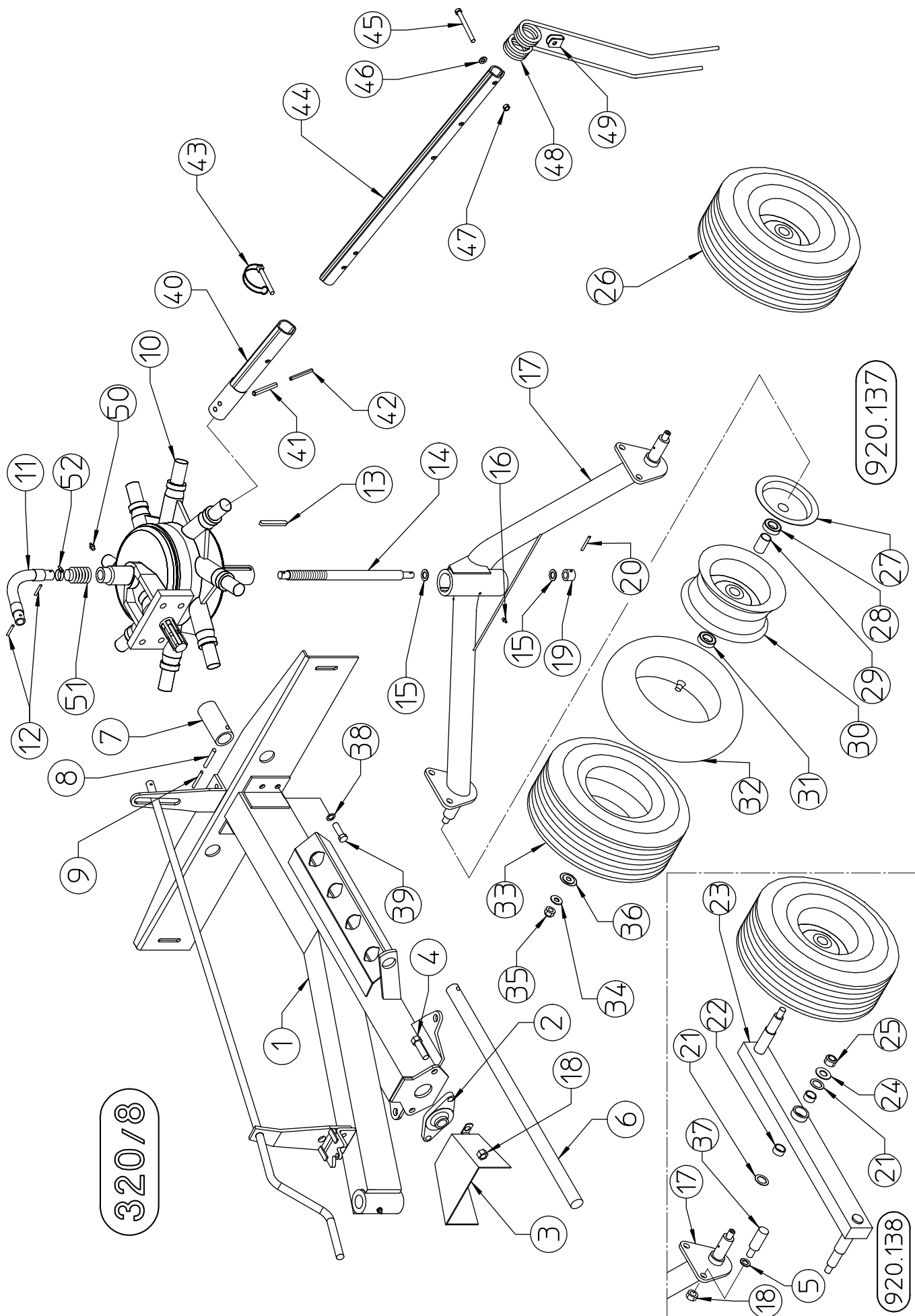


TABLE NO. 920.137 (920.138)				
320/8				
ITEM	Q.ty	PART / NO	DESCRIPTION	NOTE
1	1*	210.946	DRAWBAR	
2	1	610.694	BEARING	
3	1	210.968	HOOD	
4	2	610.167	SCREW	
5	4	600.188	WASHER	OPTIONAL
6	1	210.948	SHAFT	
7	1	210.949	BUSH	
8	2	610.417	SPRING PIN	
9	1	610.419	SPRING PIN	
10	1	610.666	GEARBOX	
11	1	210.499/a	HOSE	
12	2	610.502	SPRING PIN	
13	2	610.418	LATCH	
14	1	210.706a	SCREW PIN	
15	2	210.658	SHIM	
16	1	600.124	GREASE NIPPLE	
17	1	210.950	TRAVERSE	
18	2	600.075	NUT	
19	1	210.659	BUSH	
20	1	600.108	SPRING PIN	
21	4	200.668	SHIM	OPTIONAL
22	4	610.488	BUSH	OPTIONAL
23	2	210.951	TANDEM ARM	OPTIONAL
24	2	210.986	WASHER	OPTIONAL
25	2*	600.629	NUT	OPTIONAL
26	2/4	610.272	TYRE ASSY	
27	2	210.596	DUST COVER, INNER	
28	2	600.602	BEARING	
29	2	200.415	SPACER	
30	2	610.273	RIM	
31	2	600.602	BEARING	
32	2	610.274	TUBE	
33	2	610.275	TYRE	
34	2	600.031	WASHER	
35	2	600.629	NUT	
36	2	200.416	DUST COVER, OUTER	
37	1	210.967a	PIN	OPTIONAL
38	4	600.086	WASHER	
39	4	600.310	SCREW	
40	8	210.952	PROFILE TUBE	
41	16	610.417	SPRING PIN	
42	16	610.419	SPRING PIN	
43	8	600.842	PIN	
44	8	210.954	TINE ARM	
45	24	600.210	SCREW	
46	24	500.012	WASHER	
47	24	600.077	NUT	
48	24	210.495	TINE	
49	24	200.349/a	TINE LOCK, FLEXIBLE	
50	1	600.709	GREASE NIPPLE	
51	1	610.286	PROTECTION	
52	1	610.507	CLAMPS	

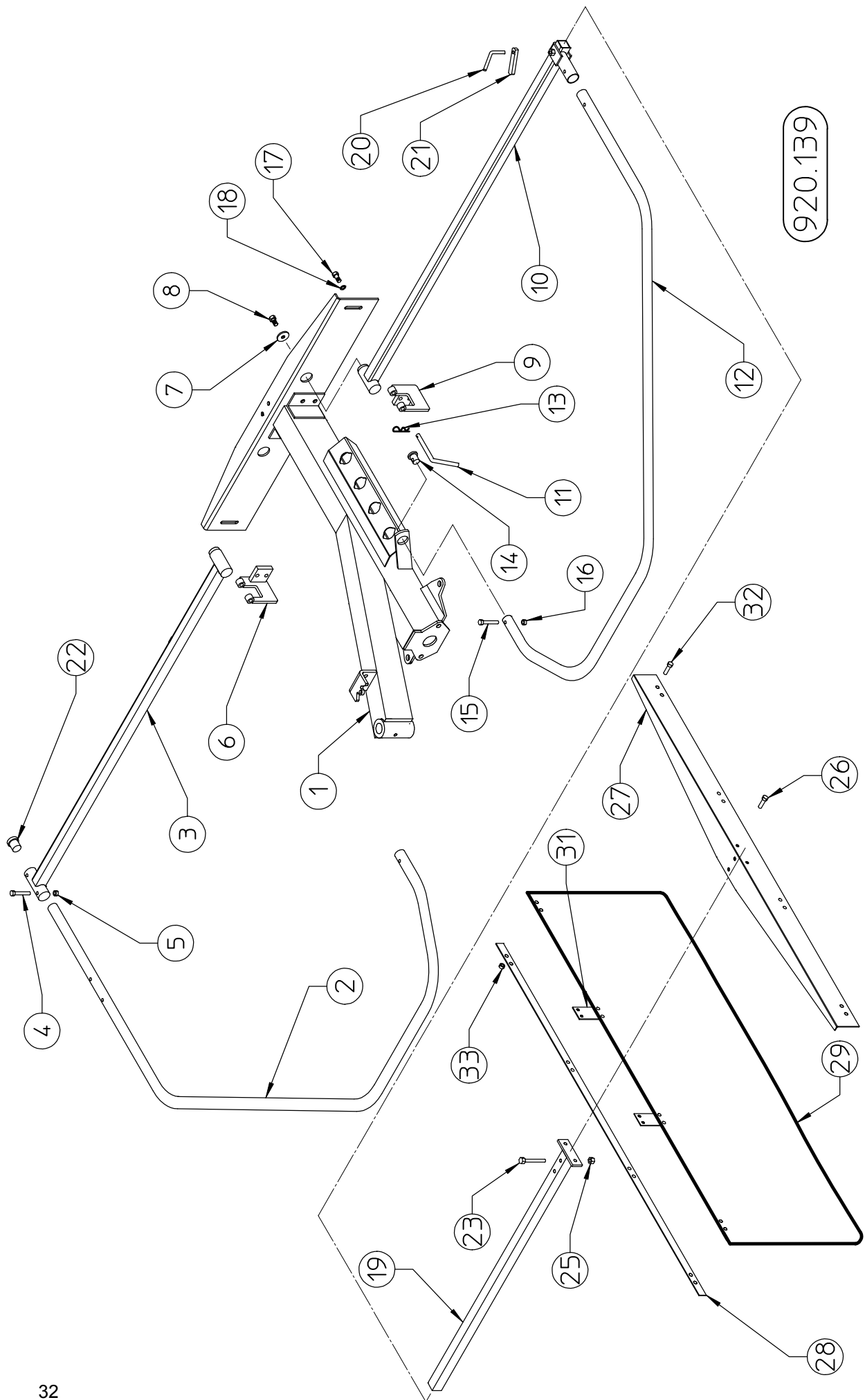
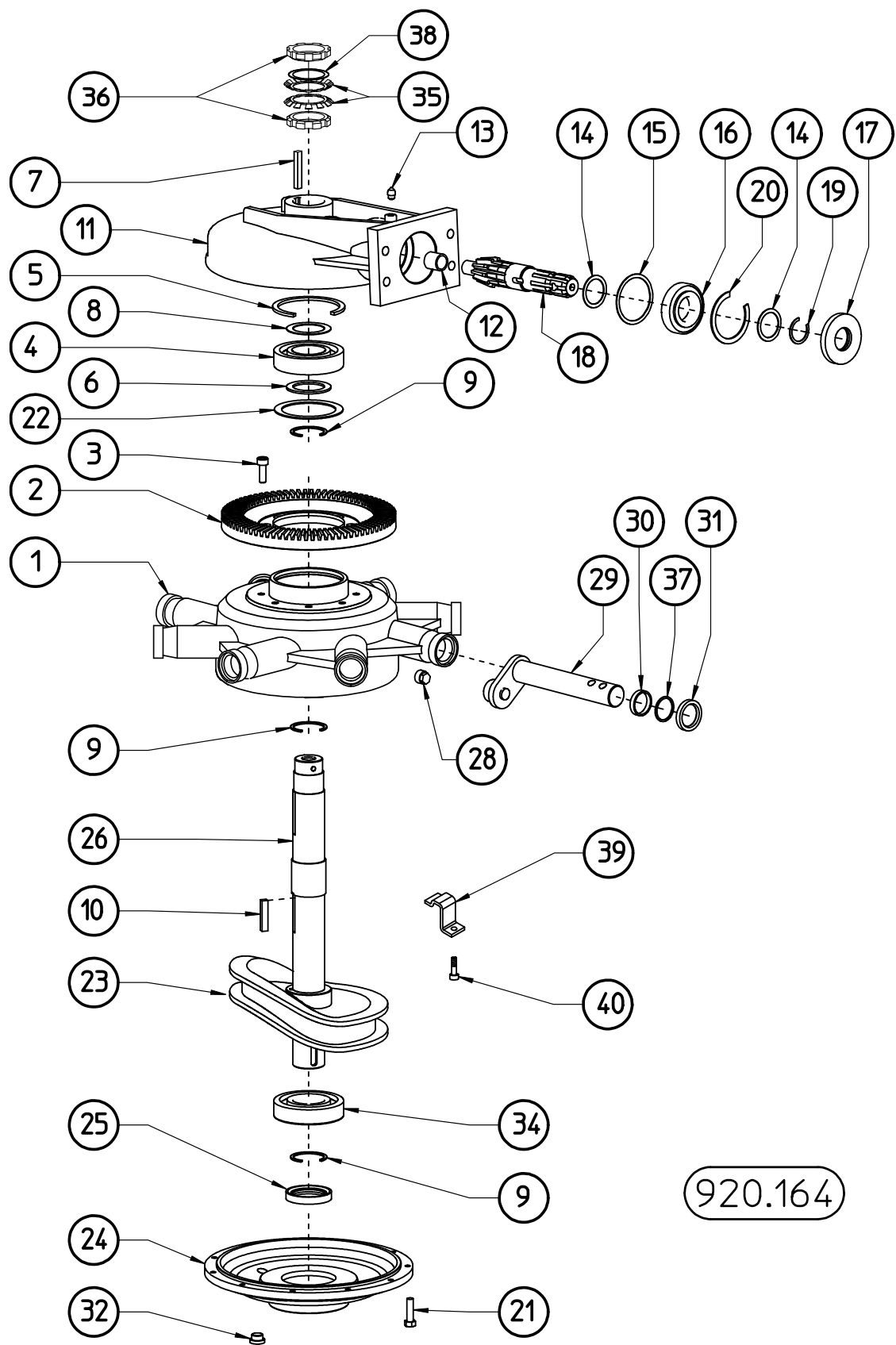
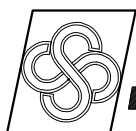


TABLE NO. 920.139				
320/8				
ITEM	Q.ty	PART / NO	DESCRIPTION	NOTE
1	1*	210.946	DRAWBAR	
2	1	210.955	R.H. GUARD	
3	1	210.957	R.H. SUPPORT	
4	3	600.036	SCREW	
5	3	600.076	NUT	
6	1	210.962	SUPPORT	
7	2	210.961	WASHER	
8	2	600.770	SCREW	
9	1	210.963	SUPPORT	
10	1	210.958	L.H. SUPPORT	
11	2	210.969	PIN	
12	1	210.956	L.H. GUARD	
13	2	600.019	SPLIT PIN	
14	2	210.960	PLUG	
15	2	600.551	SCREW	
16	2	600.076	NUT	
17	4	600.006	SCREW	
18	4	600.322	WASHER	
19	1	210.959	TELESCOPING TUBE	
20	1	210.502	PIN	
21	1	210.552	NUT PLATE	
22	1	200.309	PLUG	
23	2	600.063	SCREW	
24				
25	4	600.029	NUT	
26	2	600.006	SCREW	
27	1	210.964	SWATHING DEFLECTOR	
28	1	210.965	CLAMPING STRAP	
29	1	210.966	SWATHING DEFLECTOR	
30				
31	4	210.555	CLAMPING STRAP	
32	8	600.223	SCREW	
33	8	600.076	NUT	



920.164

TABLE NO 920.164				
ITEM	PART NO	Q.ty	DESCRIPTION	NOTE
1	220.734	1	CASING	
2	220.716	1	GEAR	
3	220.705	8	SCREW	
4	620.185	1	BEARING	
5	620.177	1	SNAP RING	
6	220.733	1	SHIM	
7	620.178	1	LATCH	
8	220.724	1	SHIM	
9	620.147	3	SNAP RING	
10	620.201	1	LATCH	
11	220.743	1	COVER	
12	620.187	1	NEEDLE BEARING	
13	620.188	1	GREASE NIPPLE	
14	100.883	2	SHIM	
15	220.735	1	SHIM	
16	620.202	1	BEARING	
17	620.160	1	OIL SEAL	
18	220.714	1	PINION	
19	620.145	1	SNAP RING	
20	620.199	1	SNAP RING	
21	220.741	6	BOLT	
22	220.742	1	SHIM	
23	220.708	1	CAMME	
24	220.736	1	COVER	
25	620.158	1	OIL SEAL	
26	220.709	1	SHAFT	
28	620.183	1	PLUG	
29	220.719	8	CONNECTING ROD	
30	220.707	8	SPACER	
31	620.162	8	OIL SEAL	
32	620.189	1	PLUG	
34	620.200	1	BEARING	
35	620.179	2	SPRING WASHER	
36	620.180	2	LOCKNUT	
37	220.718	8	SHIM	
38	220.730	1	SHIM	
39	230.932	1	SUPPORT	
40	230.933	1	SCREW	



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