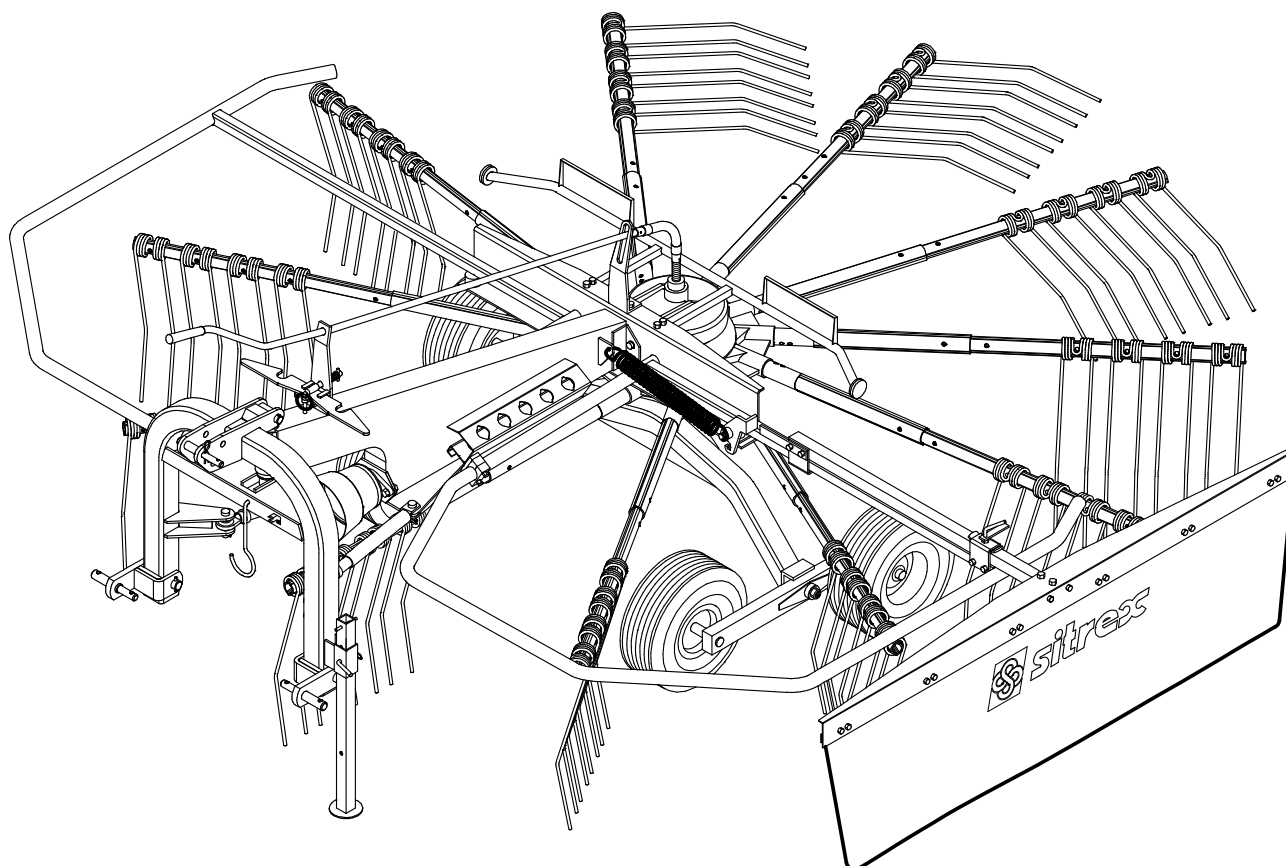




AGRICULTURAL MACHINERY

**sitrex**®  
Spa

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



# SR 420/11

2010\_amm.rinf

# 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

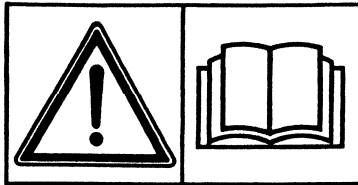
- 1) **GUIDE TO THE SIGNS**
- 2) **General summary of safety and accident-prevention instructions**
- 3) **PRODUCT IDENTIFICATION**
- 4) **DELIVERY AND ASSEMBLY**
- 5) **ADJUSTMENT, PREPARATION AND USE INTRODUCTION**
- 6) **TRANSPORT BY ROAD**
- 7) **MAINTENANCE**
- 8) **SPARE PARTS LIST**

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

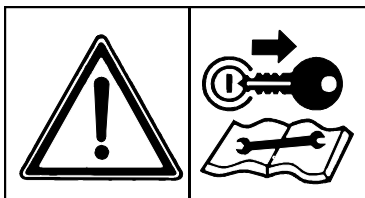
## IMPORTANT

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.

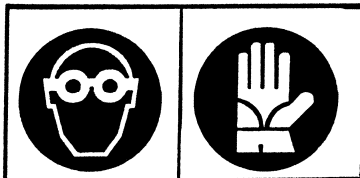
## WARNING SIGNS



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

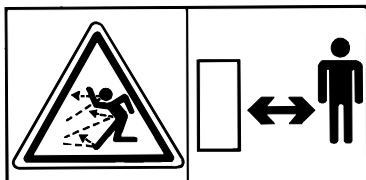


2) Before doing any maintenance or repair work, stop the machine at a suitable spot. Turn off the tractor motor, apply the brake, remove the key from the ignition and consult this manual.

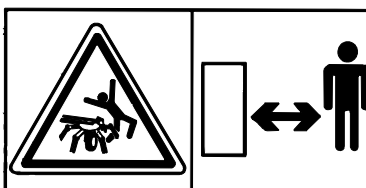


3) This is a warning to use proper accident protection when carrying out maintenance and repairs

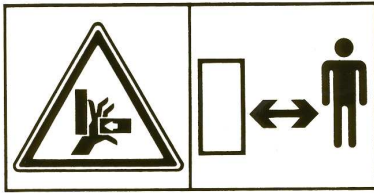
## DANGER SIGNS



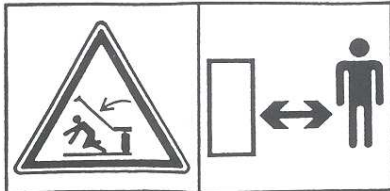
4) Risk of possible ejection of blunt objects. Keep a safe distance from the machine



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

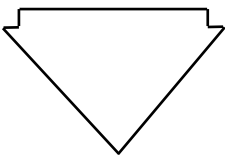


9) Indicates a greasing point .



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.

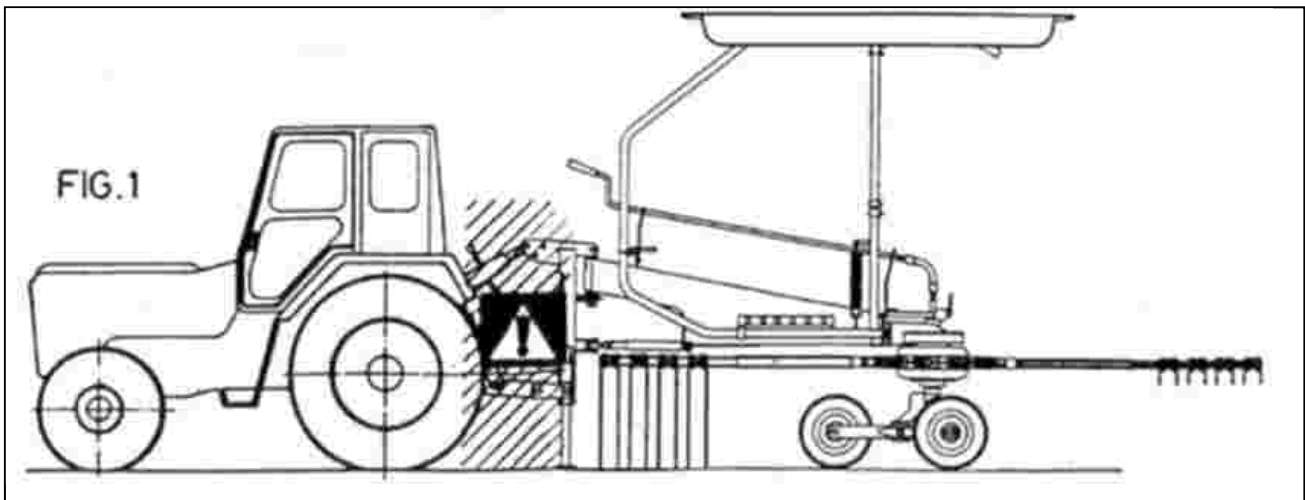
### **3) General Summary Of Safety And Accident-Prevention Instructions**

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

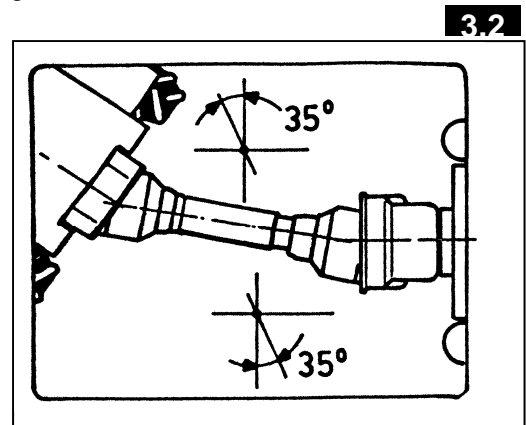
The manufacturing company declines all responsibility for non-compliance with the following safety and accident-prevention instructions.

- 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.

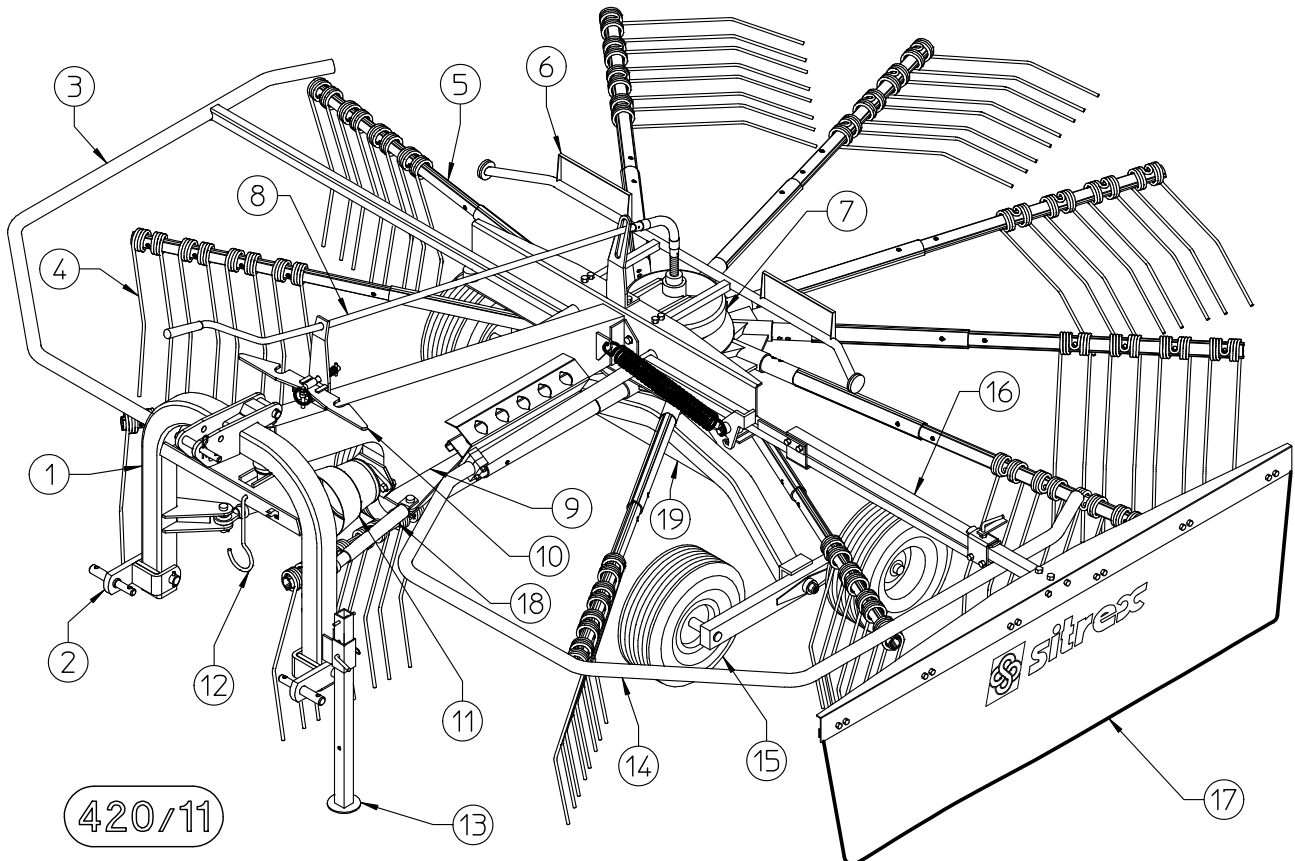


- 24- Before connecting or disconnecting the machine to or from the 3-point linkage, put the lifting unit lever into the locked position.
- 25- The connection pins on the machine must match the connection sockets on the lifting unit.
- 26- During transport, secure the lateral lifting arms with the appropriate 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.

## PRODUCT IDENTIFICATION



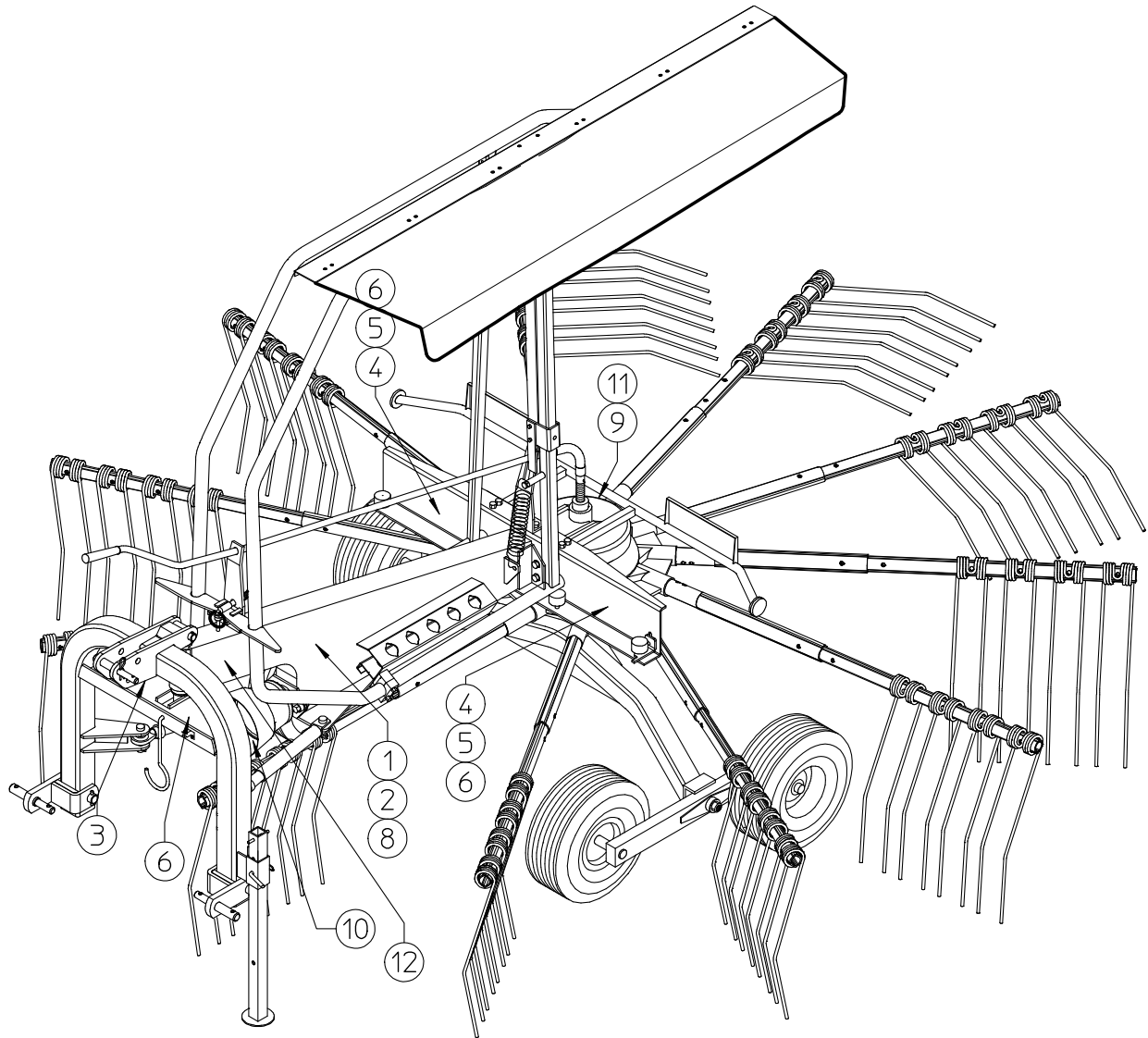
### MAIN PARTS

- 1) THREE- POINT LINKAGE
- 2) LOWER LINK
- 3) R.H. GUARD
- 4) TINE
- 5) TINE ARM
- 6) LIGHTING BRACKET
- 7) GEARBOX
- 8) CRANK
- 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

<b style="font-size: 1.2em;">sitrex</b> <small>AGRICULTURAL MACHINERY s.r.l.</small>	
Zona Industriale, Via L. Paciolì, 22 - TRESTINA ( PERUGIA ) - ITALY - Tel. (075) 8540021 r.a. Telex 662047 SITREX I - Telefax (075) 8540523	
ANNEE DE CONSTRUCTION / BAUJAHR CONSTRUCTION YEAR / ANNO DI COSTRUZIONE	<input style="width: 90%;" type="text"/>
NR. DE SERIE / KENNR / SERIAL NR. / MATRICOLA	<input style="width: 90%;" type="text"/>
	TYPE / TYP / TIPO <input style="width: 80%;" type="text"/> Kg. <input style="width: 40%;" type="text"/>

RPM TRACTOR	RPM ROTORS	POWER REQUIRED	WHEEL TYPE	OPERATING WIDTH	TRANSPORT WIDTH	WEIGHT
MAX 540	66	HP 50	16X6.50 6PLY	4,2Mt	2100	KG 620
		KW 37		165"	83"	LBS 1364



**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



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## CHAPTER 5

### 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 !!!**

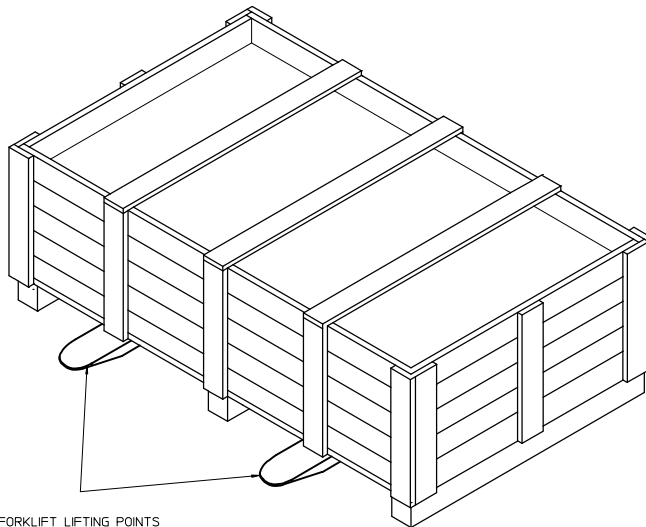


Lift the machine using a forklift truck, crane or other suitable equipment of sufficient capacity after first checking the weight of the configurations in the table given below.

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.



	<b>WEIGT PACKING</b>	<b>WEIGHT</b>
<b>KG</b>	<b>700</b>	
<b>LBS</b>	<b>1542</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 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 (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).

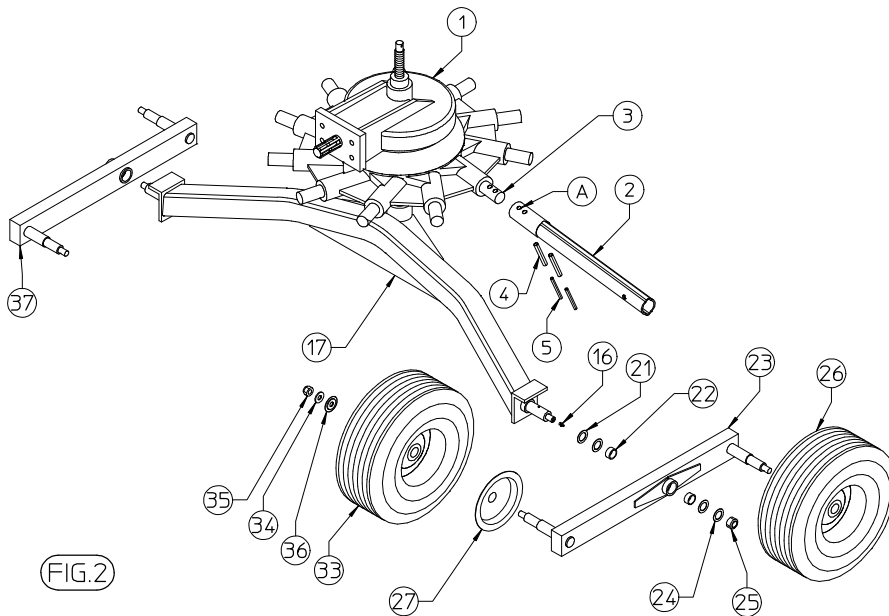


FIG. 2

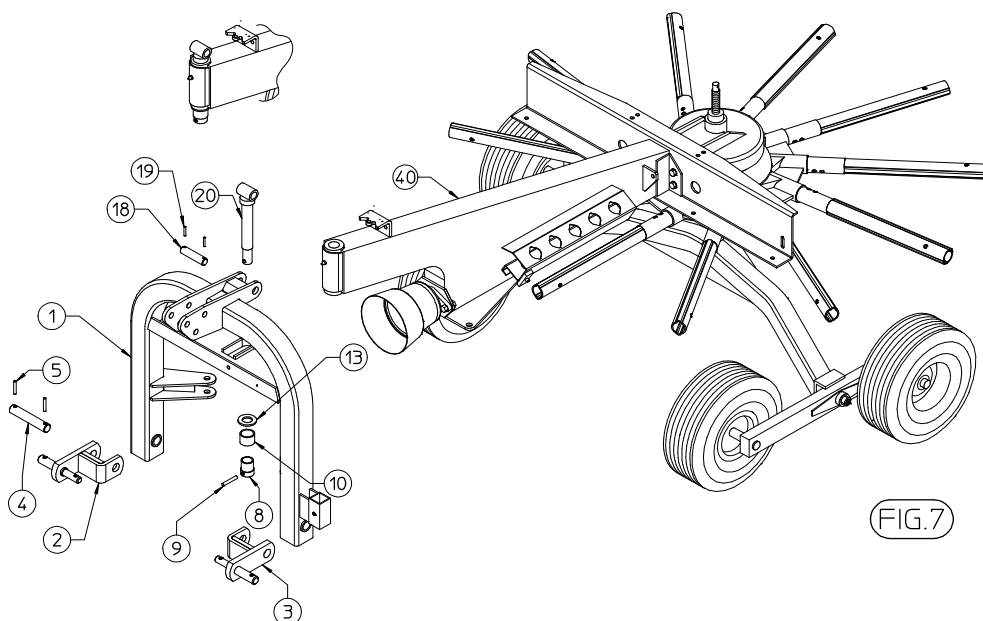


FIG. 7

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.

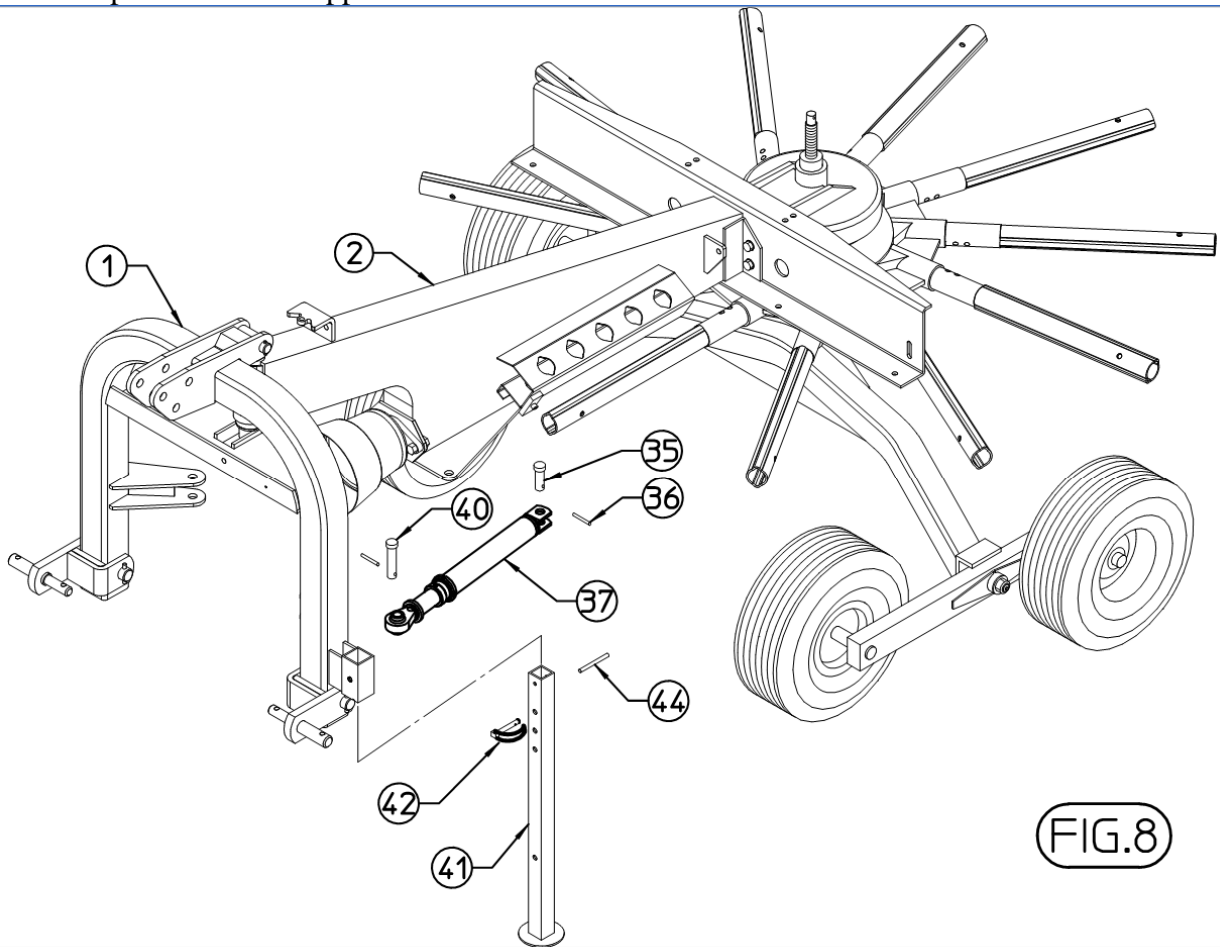


FIG.8

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

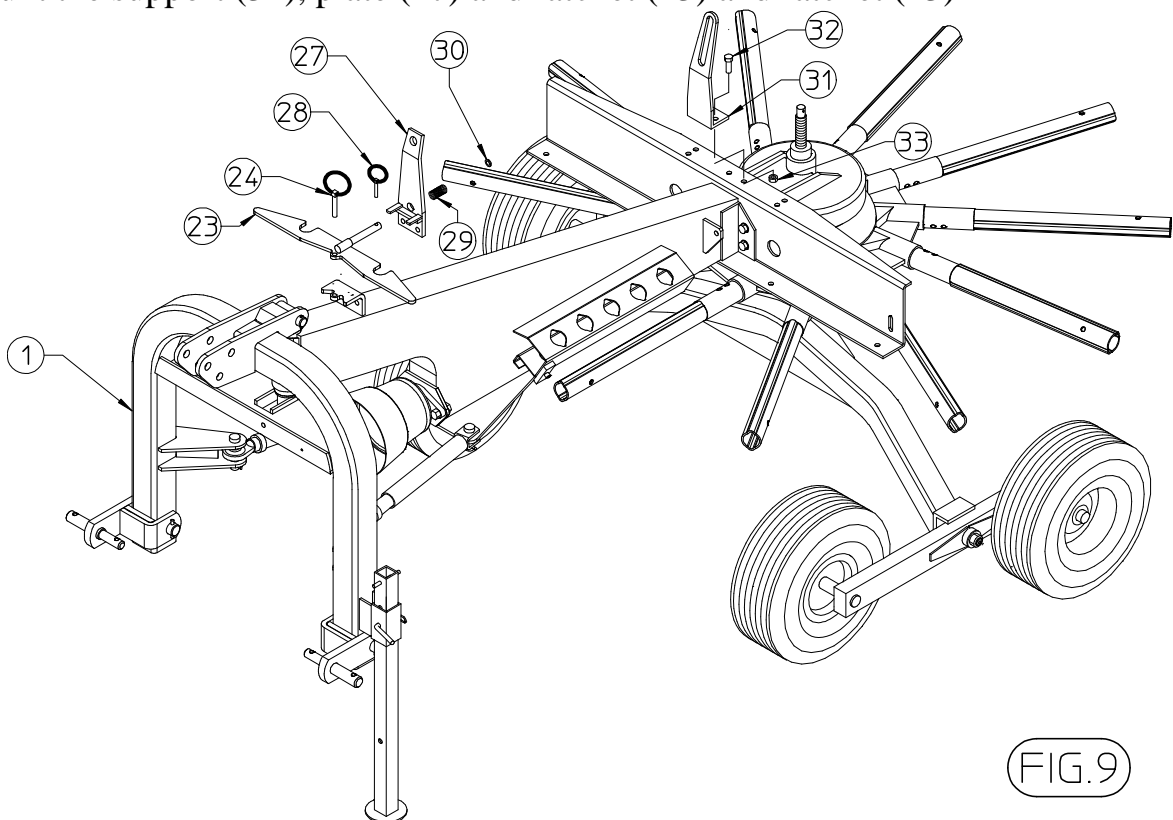


FIG.9

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Insert the crank (25) on the supports, 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.

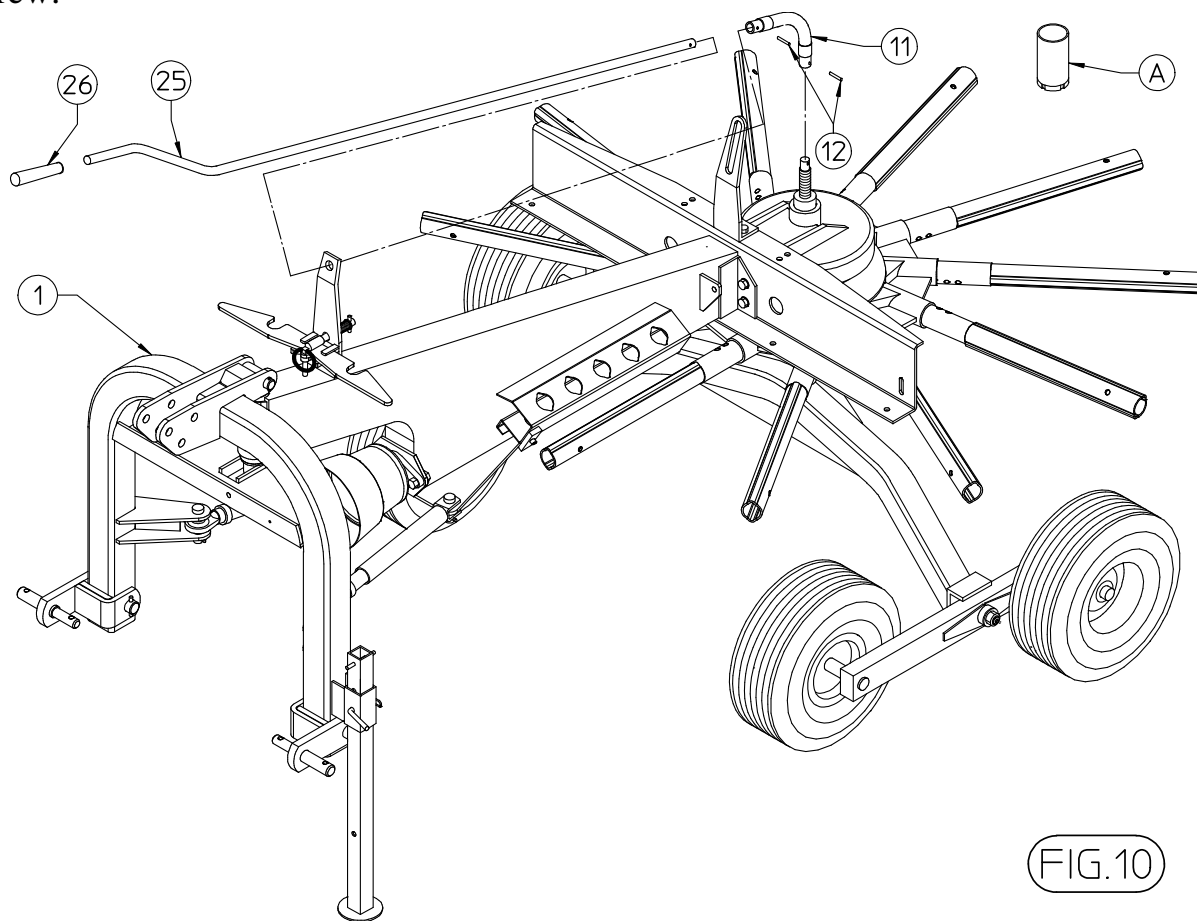


FIG.10

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.

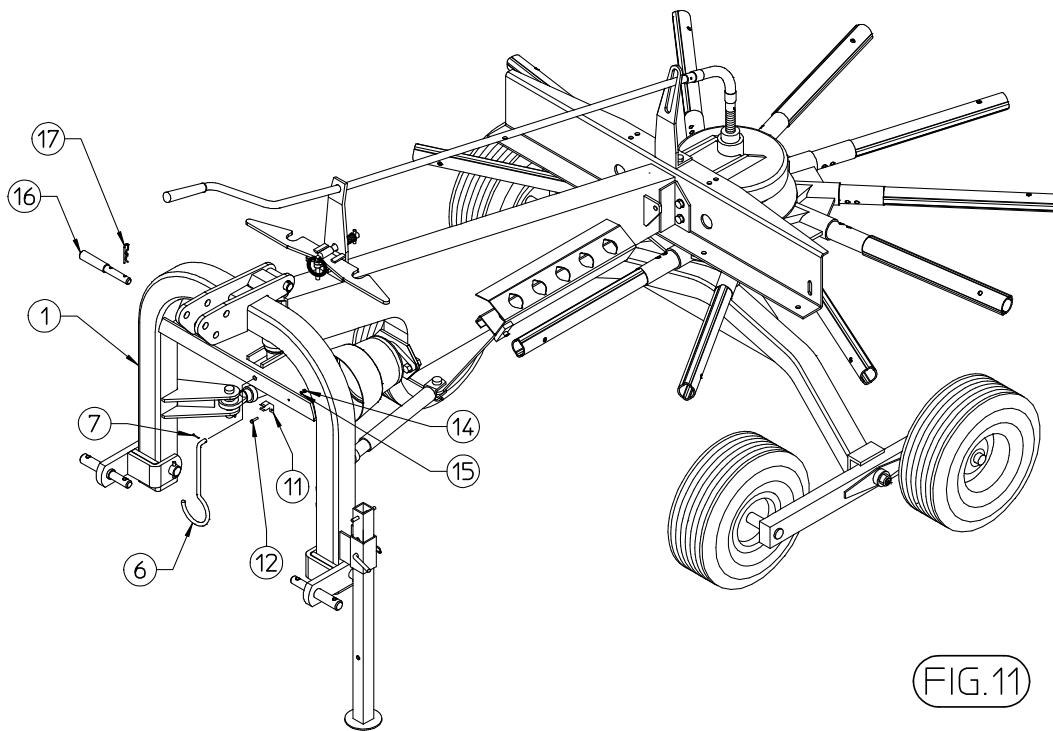


FIG.11

Mount rubber buffers 4 with nuts 5 on the drawbar and mount lower buffer 9 on the outer left-hand side with clamp 10 fastened by screw 42 in between.

Mount the right-hand protection frame 2 by inserting into the special hole (A) on the drawbar and use pin 3 to fasten it. Fasten the frame at the front with clamp 34-35-36. Mount clamp 37 fastened with bracket 38 and screws 39 and nut 40 on to the tube in position (B). The clamp must be positioned so that the lower frame 2 rests on the bottom of drawbar 1 so that it does not come into contact with the rotating arms; by raising frame 2 clamp 37 takes up position between the two arms to stop rotation when used on the road.

Mount the left-hand frame 12 on hole (A) and use clamp kit 34-35-36 to fasten it.

Mount safety hook 13 on to the pin welded on to the frame and mount spring 11 to help suspension between the pin and the plate welded on the drawbar (see following diagram).

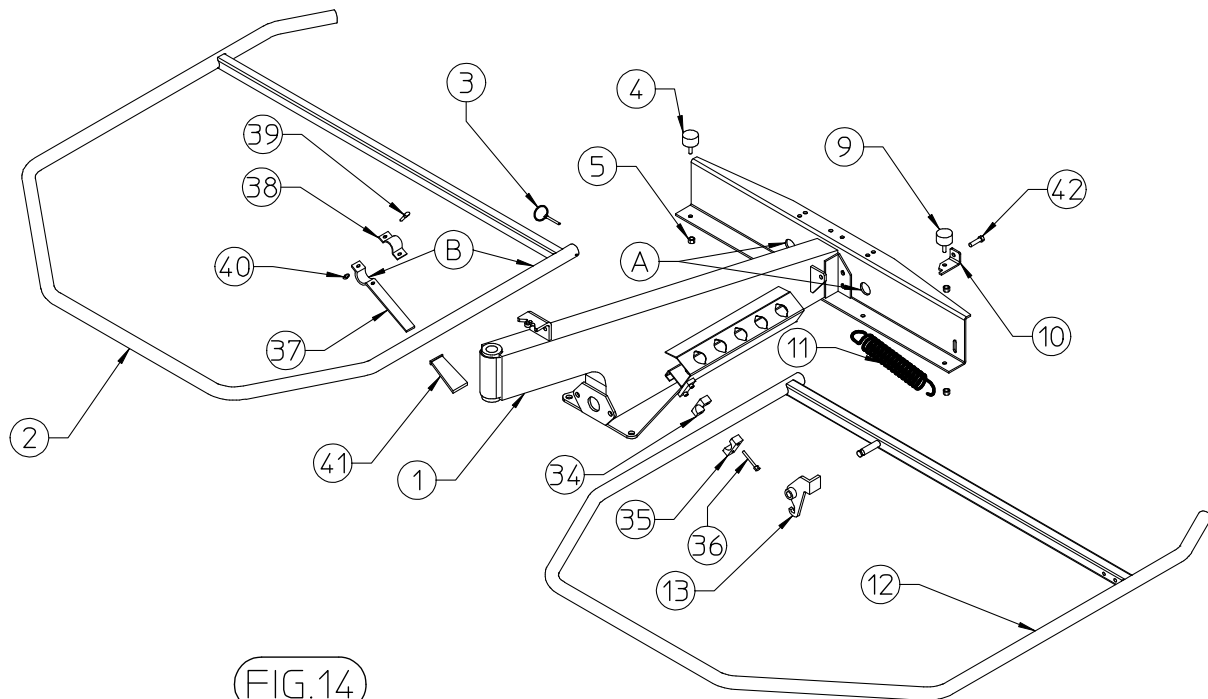


FIG.14

Use brackets 22 and screws 18 and 15 to mount plate carrier extension 19 on to the left-hand protection frame. Also mount plate 14 on the outside of the internal bracket, whereas plate 24 must be mounted on the inside of the external bracket. In order to fasten the extension tighten screw 20 and lock 21. Use screws 8 to mount signal frame 6 on to the drawbar.

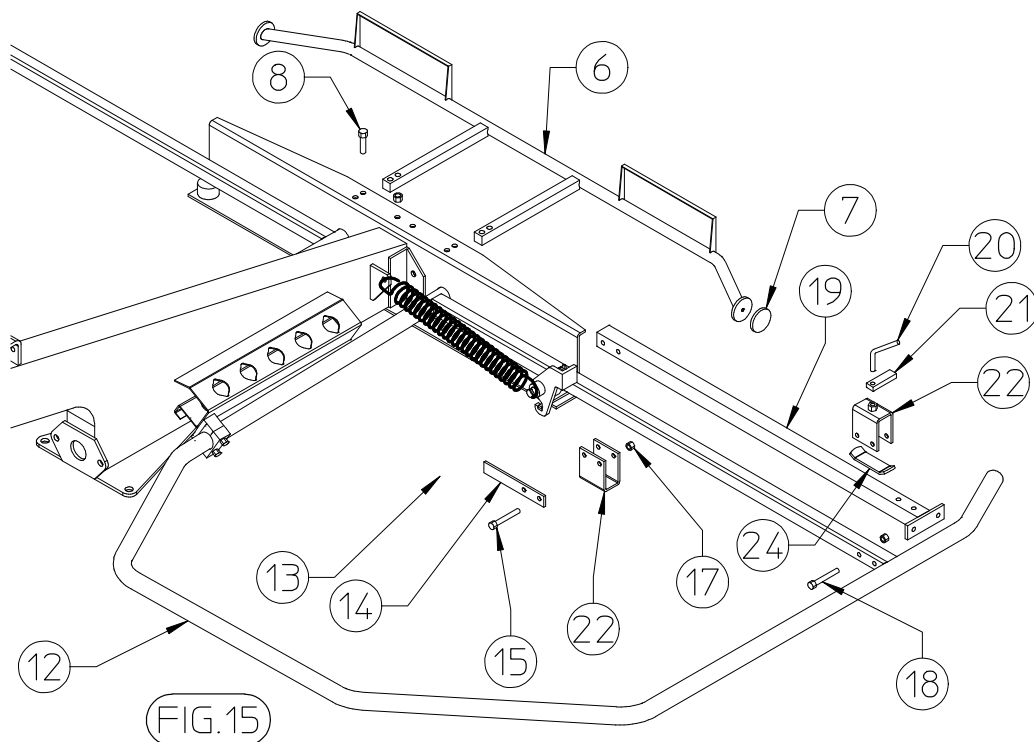
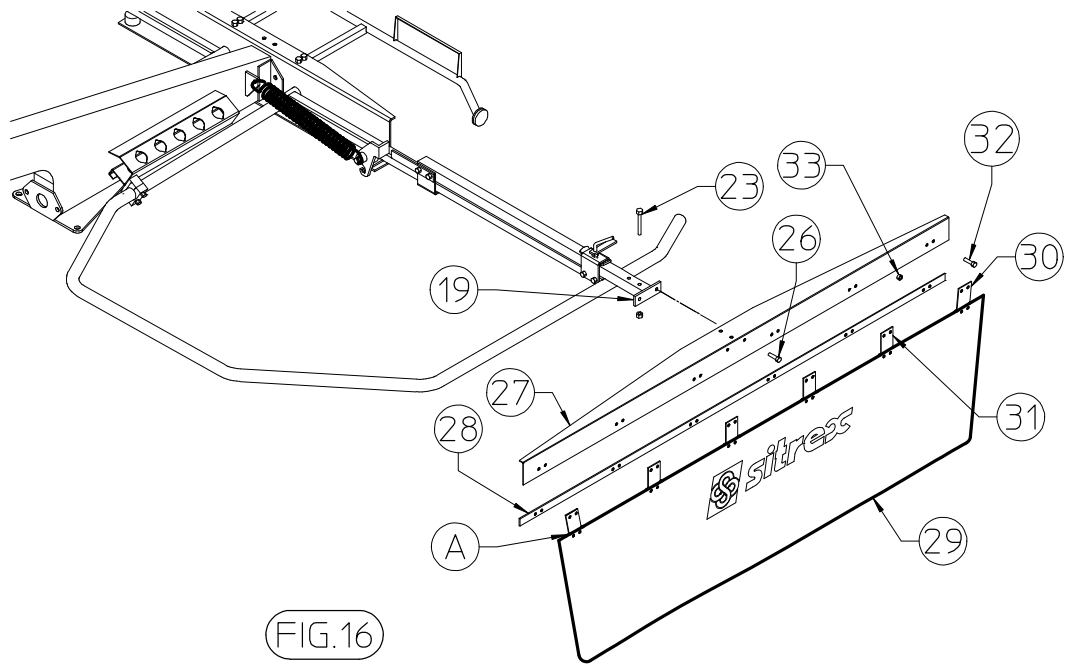


FIG.15

In order to mount identity-plate 29 insert the slanting metal tabs 30 into the external slots and the straight tabs into the central slots, and then rest the identity-plate 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.



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

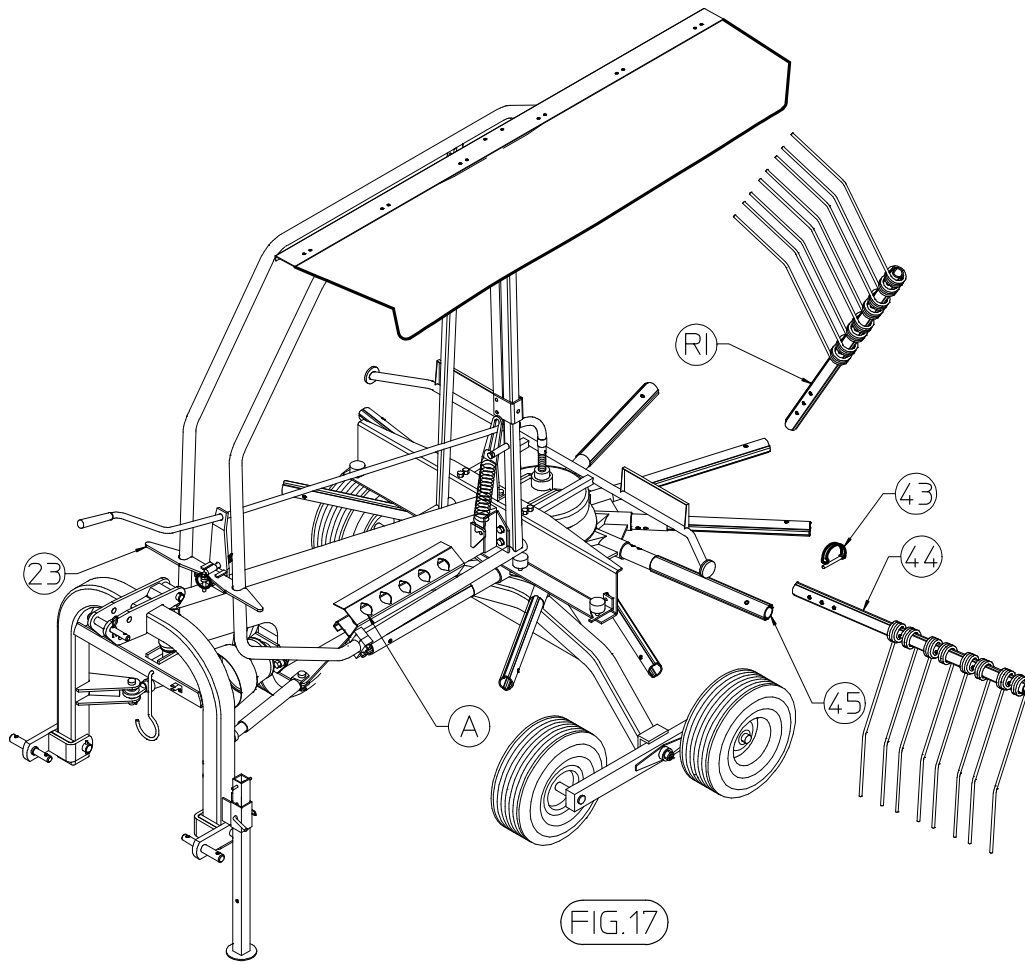


FIG.17



# ADJUSTMENT, PREPARATION AND USE

## INTRODUCTION



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.

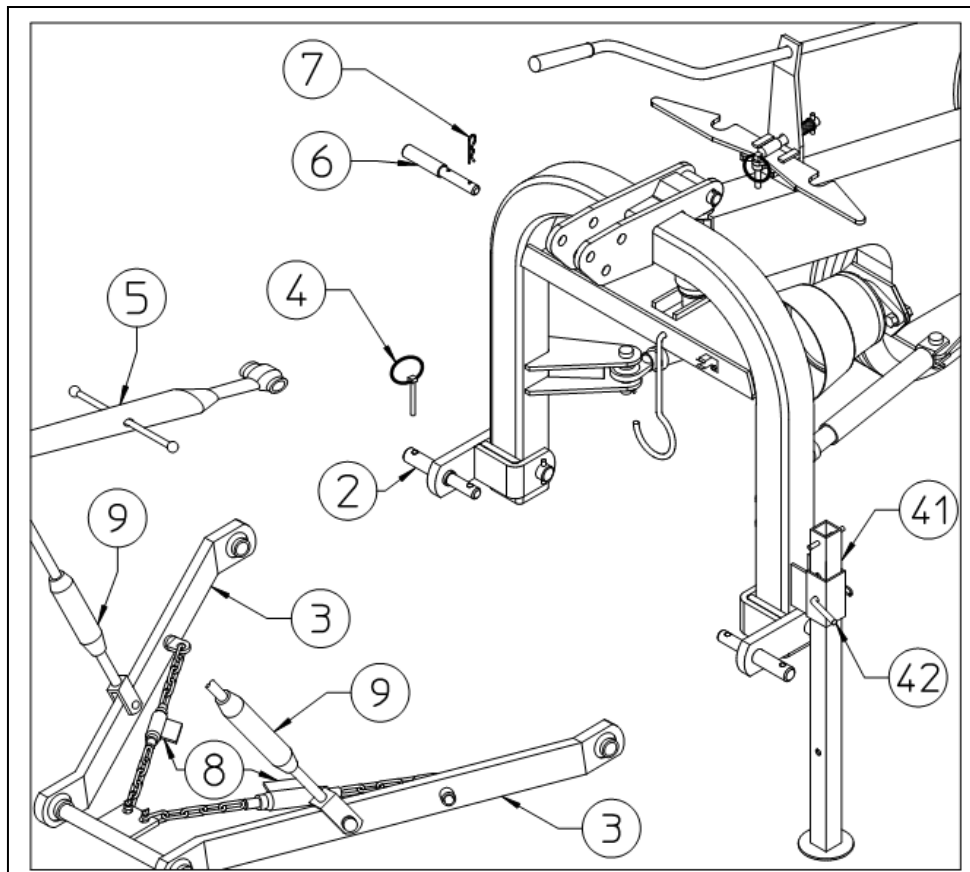
When assembling the forage rake, make sure that no-one is standing between the machine and the tractor.

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.



---

## CONNECTING THE CARDAN SHAFT



DANGER !!!



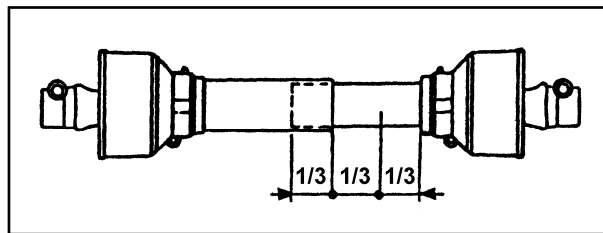
More detailed information may be found in the cardan shaft manual which, together with this manual, is an essential part of the accident-prevention documentation.

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.

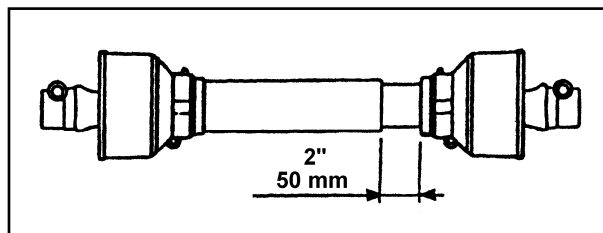
Fit the cardan shaft and check that the shaft is connected correctly both at the tractor end and at the machine end. For more details, see the descriptions on the following pages.

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 ).

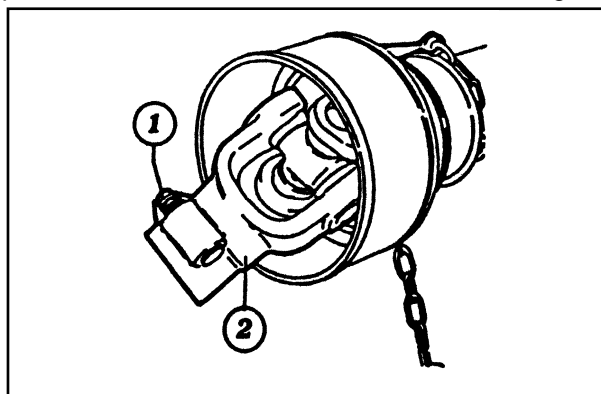


Conversely, when the cardan shaft is contracted to the maximum, there should still be a gap of approximately 50 mm (2").



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.

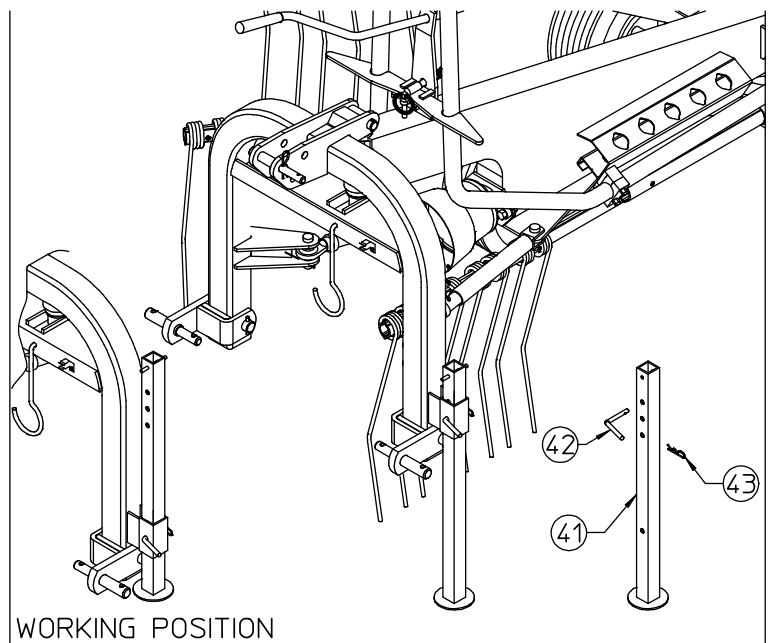
Slowly lower the rake and make sure it is resting firmly on the ground with the third point released.

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.

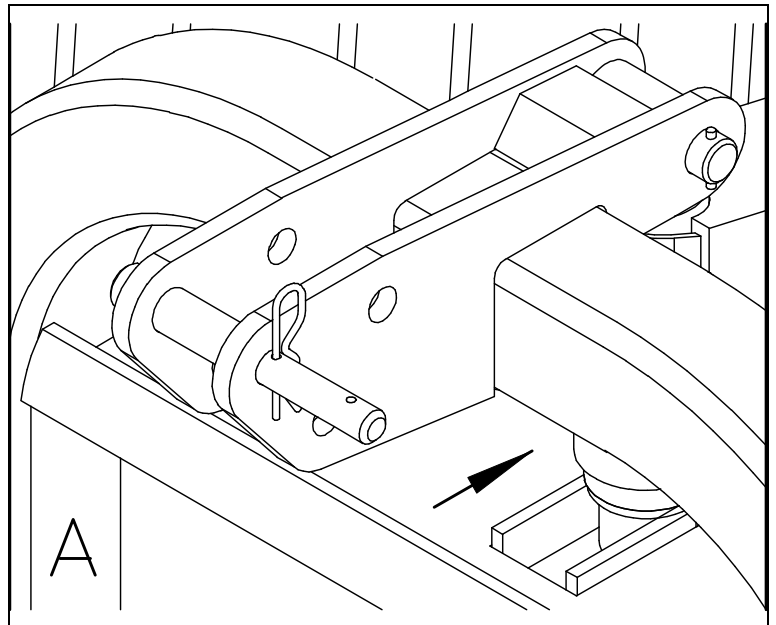
Disconnect the lower arms.



## ADJUSTMENT OF THE FORAGE RAKE

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

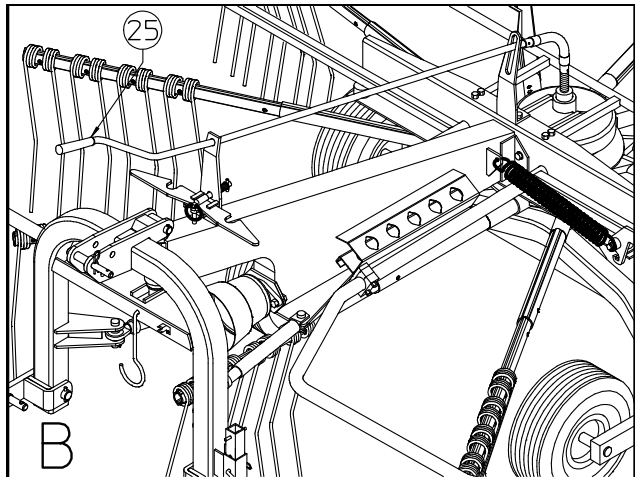
In order to adjust the rake, slowly lower the rake so that the arms sway and the roller under the drawbar rests in the rack (see diagram A). Adjust the third point tie rod so that the rotor is lying horizontally or is tilting slightly forwards and the tines are slightly touching the ground.



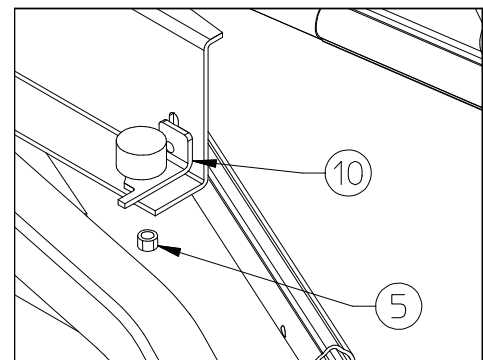
### Adjustment of work depth

The work height is adjusted by crank 25 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, use nuts 5 under clamp 10 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

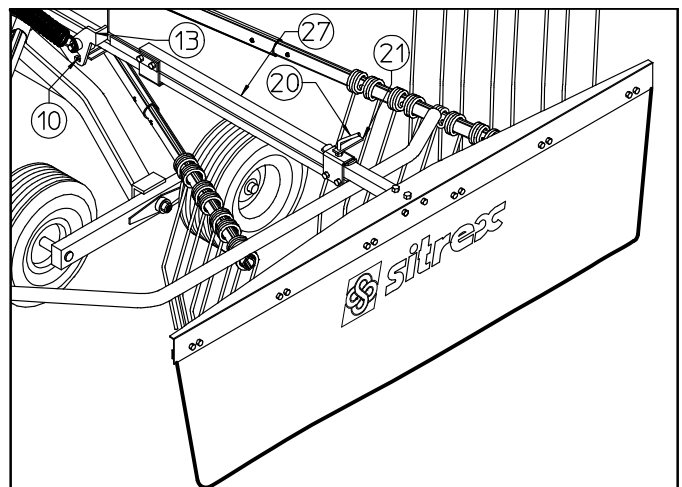
The gear speed and machine revs depend on;

- 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.



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## 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.

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## 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

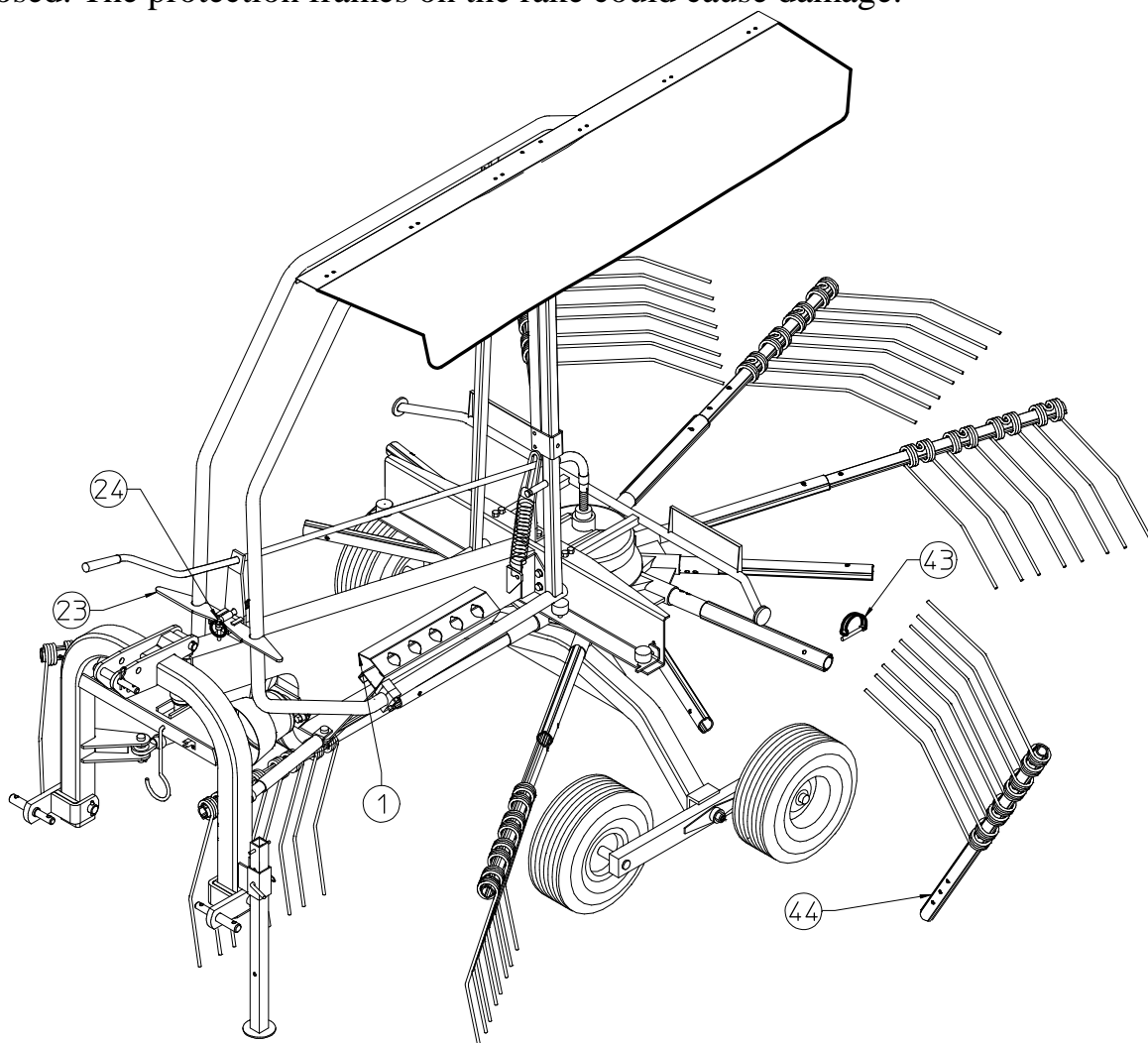
Loosen the swath-shaper plate carrier and reinsert it until the safety hook is released, then tighten the lock screw once again.

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.

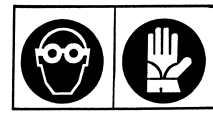
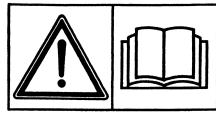
If the machine does not have to travel far, there is no need to remove all the tine carrier arms. The 3-4 central front and rear arms can be left in position, because when the protection frames are raised, lock 37 (see Fig.14 pg.13) takes up position between the two tine carriers and limits the possibility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



 DANGER !!! 

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.

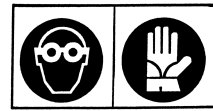
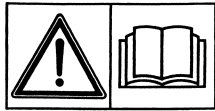
Do not use petrol, solvents or other flammable liquids as detergents.

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



 DANGER !!! 

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:

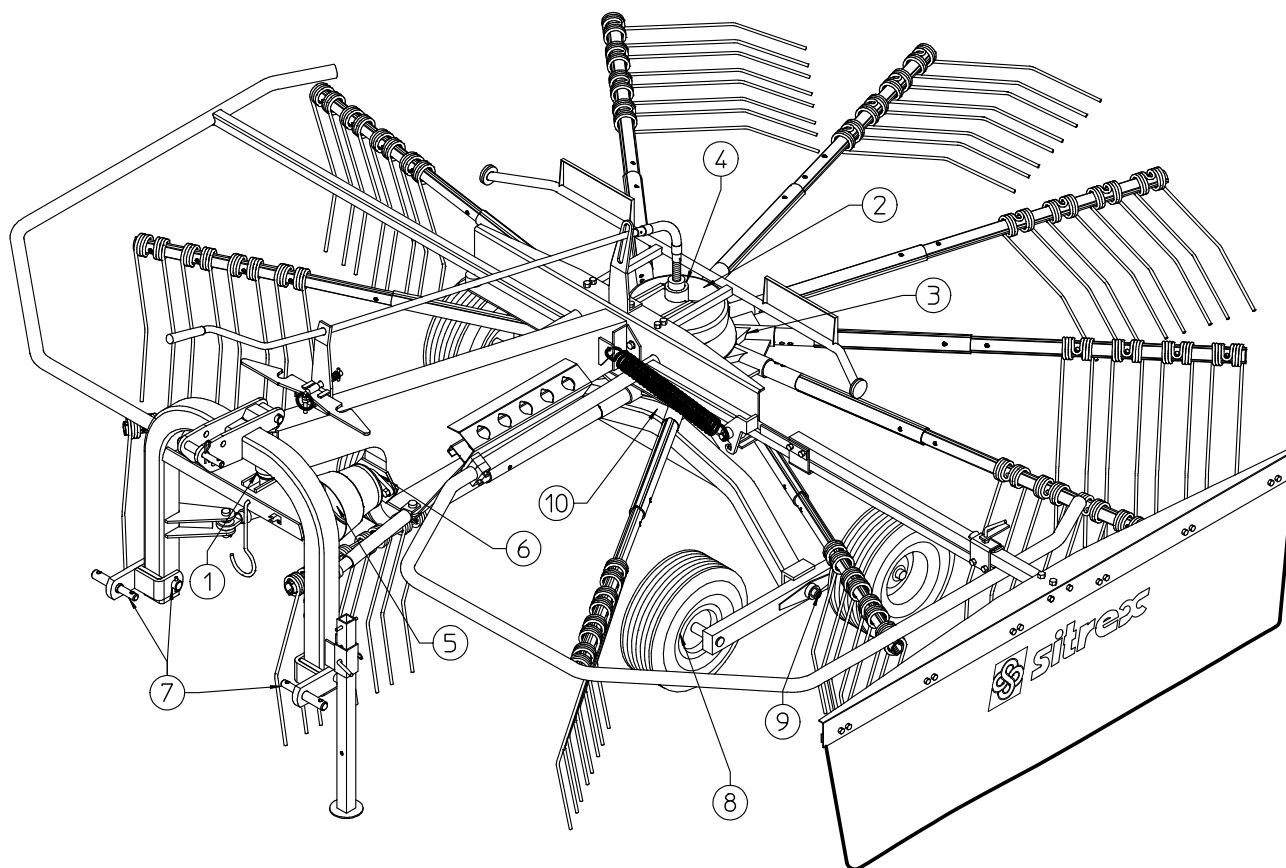
- a) Clean the machine following instructions and allow it to dry.
- b) Check it carefully and replace any damaged or worn parts.
- c) Thoroughly tighten all screws and bolts.
- d) Grease the machine thoroughly and then cover it completely and lay it up in a dry place.

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	35 psi
9	2	Axle tandem	Greasing	20	Grease	
10	1	Bush	Greasing	20	Grease	
	2	Cardan shaft	Greasing	8	Grease	

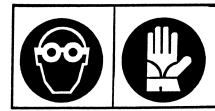
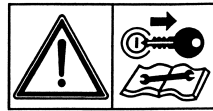
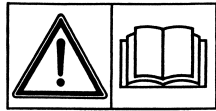
General checking of bolts, security pins and split pins to be carried out initially after the first 8 hours of use. Subsequently every 50 hours and whenever the machine is laid up for extended periods.

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.

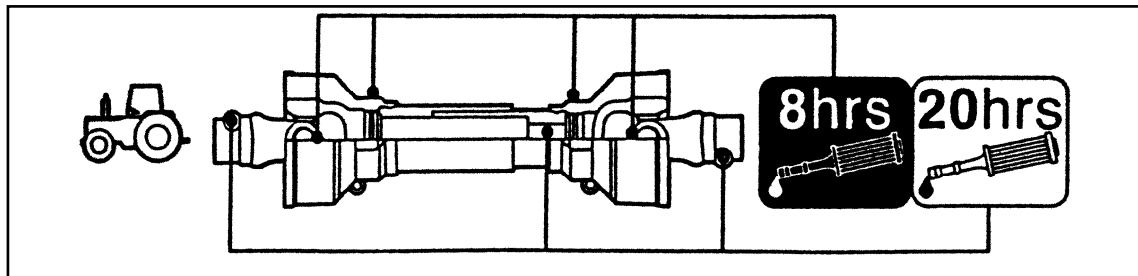
# Additives of a type permitted by anti-pollution regulations.

## 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.

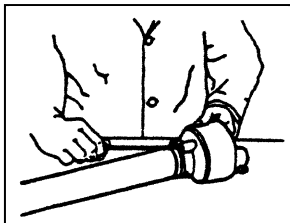
If information given in this manual conflicts with that given in the Cardan shaft manual, you should follow the instructions given by the Cardan shaft manufacturer.



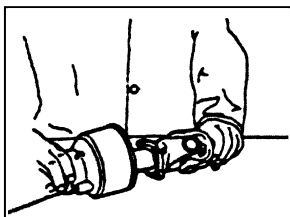
### MAINTENANCE OF SLIDING PARTS

#### DISMANTLING

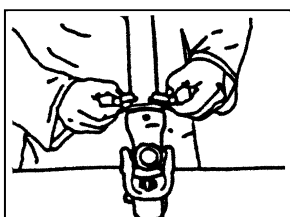
Turn the two eccentric pins on the ferrule until the protective cone comes free.



Withdraw the shaft protective guard.

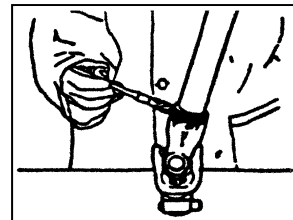


Check the condition of the ferrule and all protective parts.

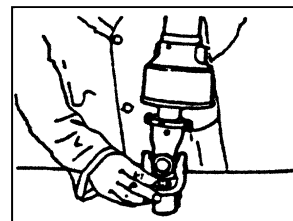


#### ASSEMBLY

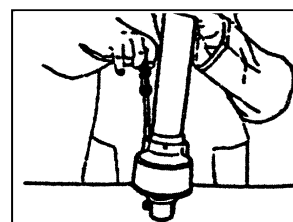
Lubricate the supporting ferrule seating.



Refit the supporting ferrule.



Reattach the protective guard to the Cardan shaft by turning the eccentric pins on the supporting ferrule.



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## NOISE AND VIBRATION

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

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.

Model	420/11
Technical characteristics	
1st and 2nd grade three point hitch	standard
Tandem axle	2
Number of arms	11
Number of double tines per arm	4
Work width	4,20 / 13'-9"
Rotor diameter	3,40 / 11'-2"
Height during transport position	2,40 / 7'-10"
Height during work position	1,53mm / 5'
Length	3,80mm / 12'-5"
Width in transport position	2,00mm / 6'-7"
Maximum width in work position	4,30mm / 14'
Necessary power	37kW / 50HP
Number of revs during work	350-450 R.P.M.
Equivalent constant noise level	inferiore 70 dB
Surface performance	5-5,5 ca./h
Tyres	16 x 6.50-8
Tyre pressure	35 psi

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## **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.

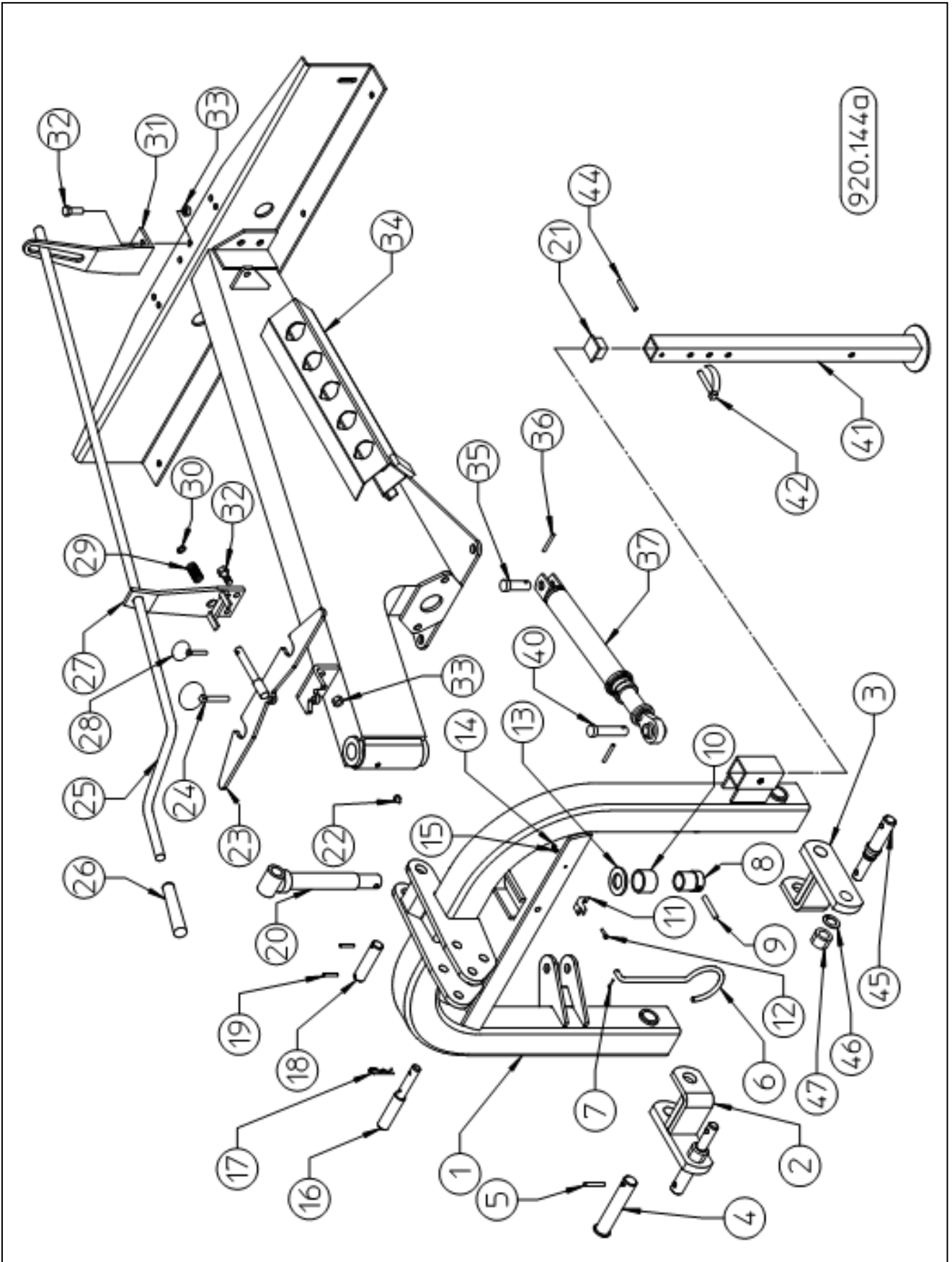


TABLE NO. 920.144/a

420/11

ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	220.338	3PT HITCH	
2	1	210.814	R.H. LOWER LINK	
3	1	210.815	L.H. LOWER LINK	
4	2	210.483/a	PIN	
5	2	600.027	SPRING PIN	
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	1	600.817	PLUG	
22	1	600.124	GREASE NIPPLE	
23	1	210.504/a	RATCHET	
24	1	600.017	PIN	
25	1	210.503	CRANK	
26	1	610.284	HANDLE	
27	1	210.505	CONNECTING PLATE FOR HANDLE	
28	1	600.723	PIN	
29	1	210.558	SPRING	
30	1	600.031	WASHER	
31	1	210.506	SUPPORT	
32	4	600.004	SCREW	
33	4	600.077	NUT	
34	1	220.011	DRAWBAR	
35	2	210.488	PIN	
36	4	600.773	SPRING PIN	
37	2	230.475	STABILIZING	
38				
39				
40	2	210.487	PIN	
41	1	220.495	JACK STAND	
42	1	600.842	PIN	
44	1	600.027	SPRING PIN	
45	2	210.813	SPRING PIN	
46	2	600.246	WASHER	
47	2	600.244	NUT	

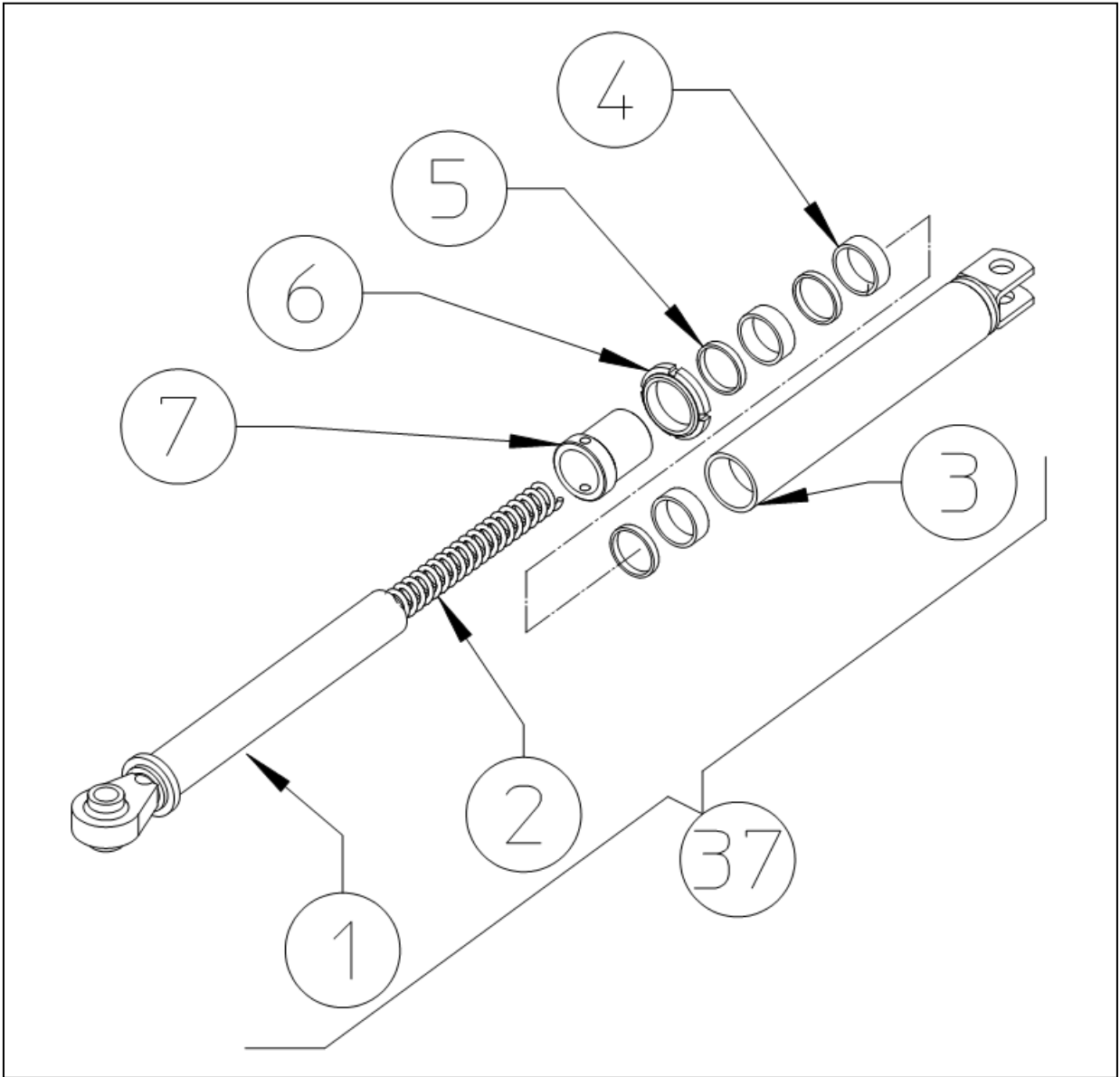
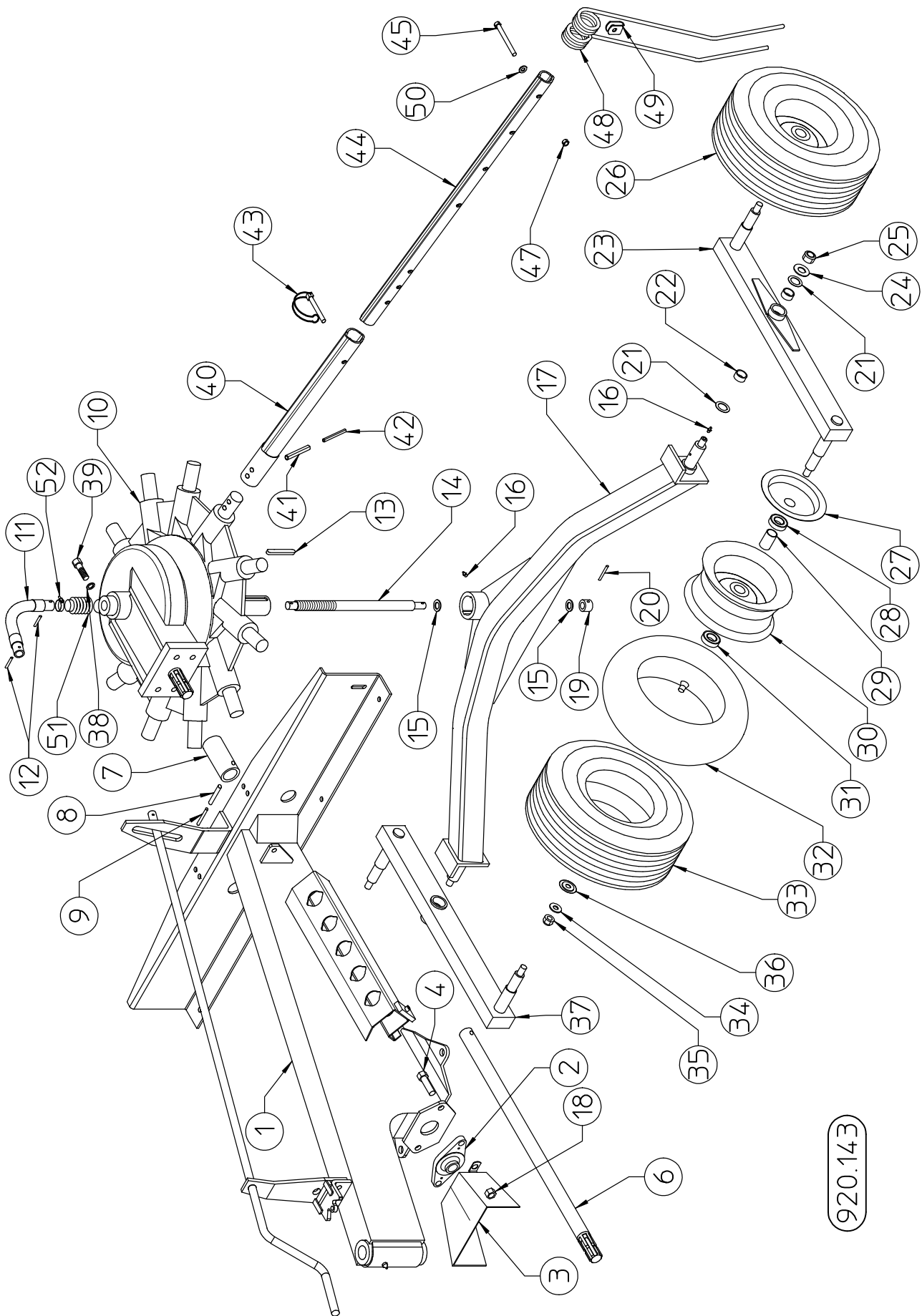


TABLE NO. 230.475				
420/11 - 530/13				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1	230.477	ROD	
2	1	210.432	SPRING	
3	1	230.476	TUBE	
4	3	230.479	BUSH RUBBER	
5	3	230.480	BUSH	
6	1	630.535	NUT	
7	1	230.478	NUT TUBE	
37	1	230.475	STABILIZING	



920.143



TABLE NO. 920.143				
420/11				
ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1*	220.011	DRAWBAR	
2	1	610.285	BEARING	
3	1	210.817	HOOD	
4	2	610.167	SCREW	
6	1	220.012	SHAFT	
7	1	210.528	BUSH	
8	2	610.417	SPRING PIN	
9	1	610.419	SPRING PIN	
10	1	610.487	GEARBOX	
11	1	210.499/a	HOSE	
12	2	610.502	SPRING PIN	
13	2	610.418	LATCH	
14	1	220.013	SCREW	
15	2	210.658	SHIM	
16	3	600.124	GREASE NIPPLE	
17	1	210.496	TRAVERSE	
18	2	600.080	NUT	
19	1	210.659	BUSH	
20	1	600.108	SPRING PIN	
21	6	200.273	SHIM	
22	4	600.808	BUSHING	
23	1	210.497	TANDEM ARM	
24	2	200.165	WASHER	
25	2	600.079	NUT	
26	2	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	4	600.031	WASHER	
35	2	600.629	NUT	
36	2	200.416	DUST COVER, OUTER	
37	1	210.497	TANDEM ARM	
38	4	600.086	WASHER	
39	4	600.310	SCREW	
40	11	210.494	PROFILE TUBE	
41	22	610.417	SPRING PIN	
42	22	610.419	SPRING PIN	
43	11	600.842	PIN	
44	11	210.767	TINE ARM	
45	44	600.530	SCREW	
47	44	600.077	NUT	
48	44	210.495	TINE	
49	44	200.349/a	TINE LOCK, FLEXIBLE	
50	44	500.012	WASHER	
51	1	610.286	PROTECTION	
52	1	610.507	HOSE CLAMPS	

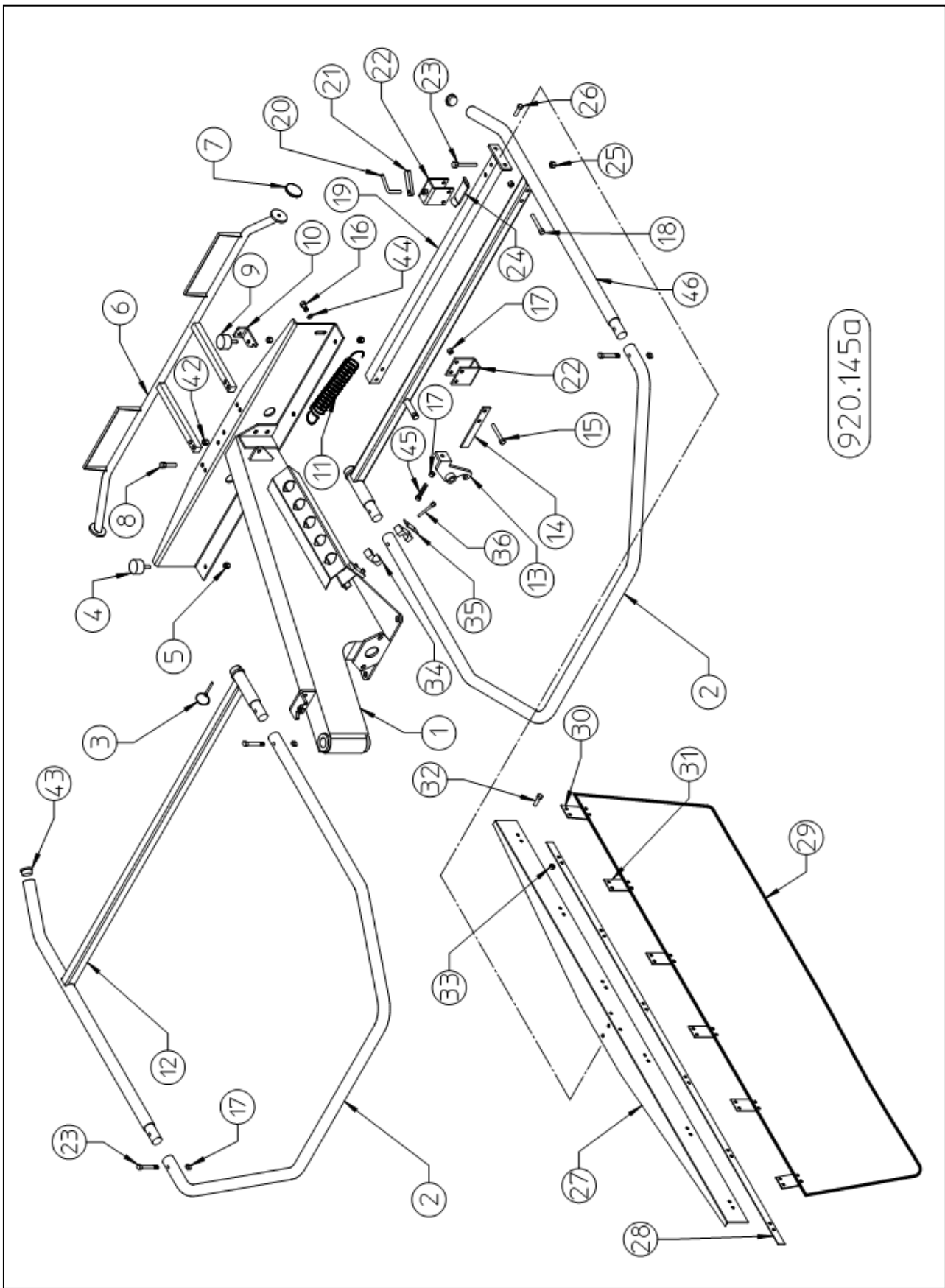
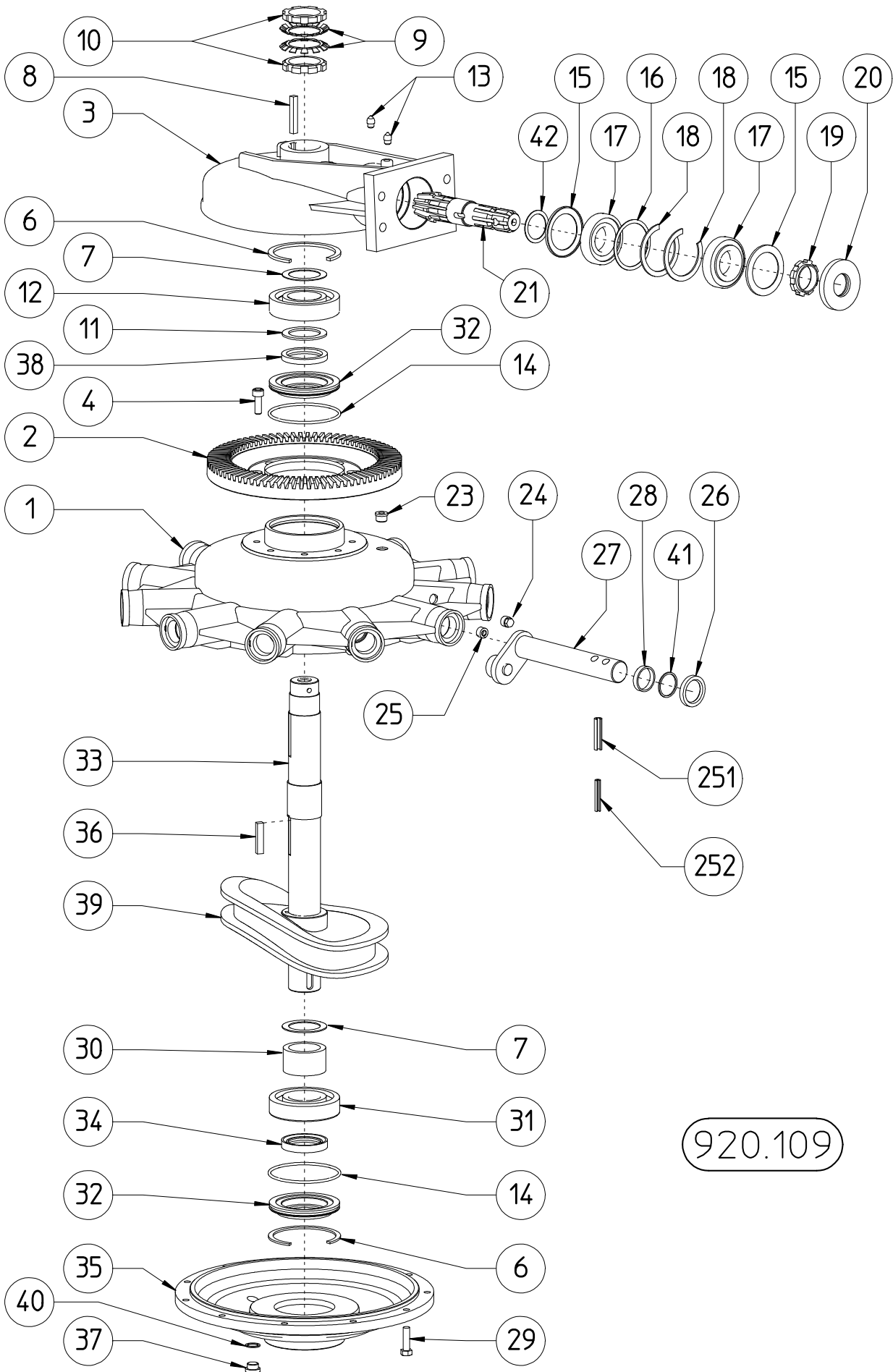


TABLE NO. 920.145

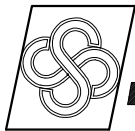
420/11

ITEM	Q.ty	PART/NO	DESCRIPTION	NOTE
1	1*	220.011	DRAWBAR	
2	1	220.623	GUARD	
3	2	610.186	PIN	
4	1	610.521	RUBBER PAD	
5	8	600.008	NUT	
6	1	210.511	LIGHTING BRACKET	
7	2	610.289	REFLECTOR	
8	4	600.154	SCREW	
9	3	610.283	RUBBER PAD	
10	1	210.615	CLAMP	
11	1	210.557	SPRING	
12	1	220.622	R.H. SUPPORT	
13	1	210.554	HOOK	
14	1	210.553	PLATE	
15	2	600.726	SCREW	
16	1	600.770	SCREW	
17	4	600.029	NUT	
18	2	610.500	SCREW	
19	1	220.624	TELESCOPING TUBE	
20	1	210.502	PIN	
21	1	210.552	NUT	
22	2	210.498	U-BRACKET	
23	2	600.437	SCREW	
24	1	210.512	PLATE	
25	2	600.029	NUT	
26	2	600.006	SCREW	
27	1	210.508	SWATHING SUPPORT	
28	1	210.509	CLAMPING STRAP	
29	1	210.510	SWATHING DEFLECTOR	
30	2	210.556	CLAMPING STRAP	
31	4	210.555	CLAMPING STRAP	
32	12	600.223	SCREW	
33	12	600.076	NUT	
34	4	610.332	HOSE COLLAR	
35	2	610.491	HOSE COLLAR	
36	4	610.333	SCREW	
37				
38				
39				
40				
41				
42	4	600.077	NUT	
43	2	610.501	PLUG	
44	1	600.089	WASHER	
45	1	610.499	SCREW	
46	1	220.621	L.H. SUPPORT	



<b>TABLE NO 920.109</b>				
<b>ITEM</b>	<b>PART NO</b>	<b>Q.ty</b>	<b>DESCRIPTION</b>	<b>NOTE</b>
1	220.732	1	GEAR BOX	
2	220.721	1	GEAR	
3	220.722	1	CAP	
4	220.723	8	SCREW	
6	620.177	2	SNAP RING	
7	220.724	3	SHIM	
8	620.178	1	LATCH	
9	620.179	2	WASHER	
10	620.180	2	NUT	
11	220.733	1	SHIM	
12	620.127	1	BEARING	
13	620.182	2	GREASE NIPPLE	
14	620.163	2	GASKET	
15	620.140	2	DUST COVER	
16	220.726	1	SHIM	
17	620.181	2	BEARING	
18	620.148	2	SNAP RING	
19	220.727	1	REGISTER NUT	
21	220.715	1	PINION	
23	620.151	1	PLUG	
24	620.183	1	PLUG	
25	620.184	1	PLUG	
26	620.162	11	DUST COVER	
27	220.720	11	ARM	
28	220.707	11	SPACER	
29	220.731	11	SCREW	
30	220.717	1	SPACER	
31	620.185	1	BEARING	
32	220.712	2	DUST COVER SUPPORT	
33	220.713	1	SHAFT	
34	620.158	1	DUST COVER	
35	220.728	1	CAP	
36	620.178	1	LATCH	
37	620.153	1	PLUG	
38	620.157	1	DUST COVER	
39	220.711	1	CAM	
40	620.175	1	WASHER	
41	220.718	11	SHIM	
42	220.729	1	SHIM	
251	620.142	22	SPRING PIN	
252	620.144	22	SPRING PIN	

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