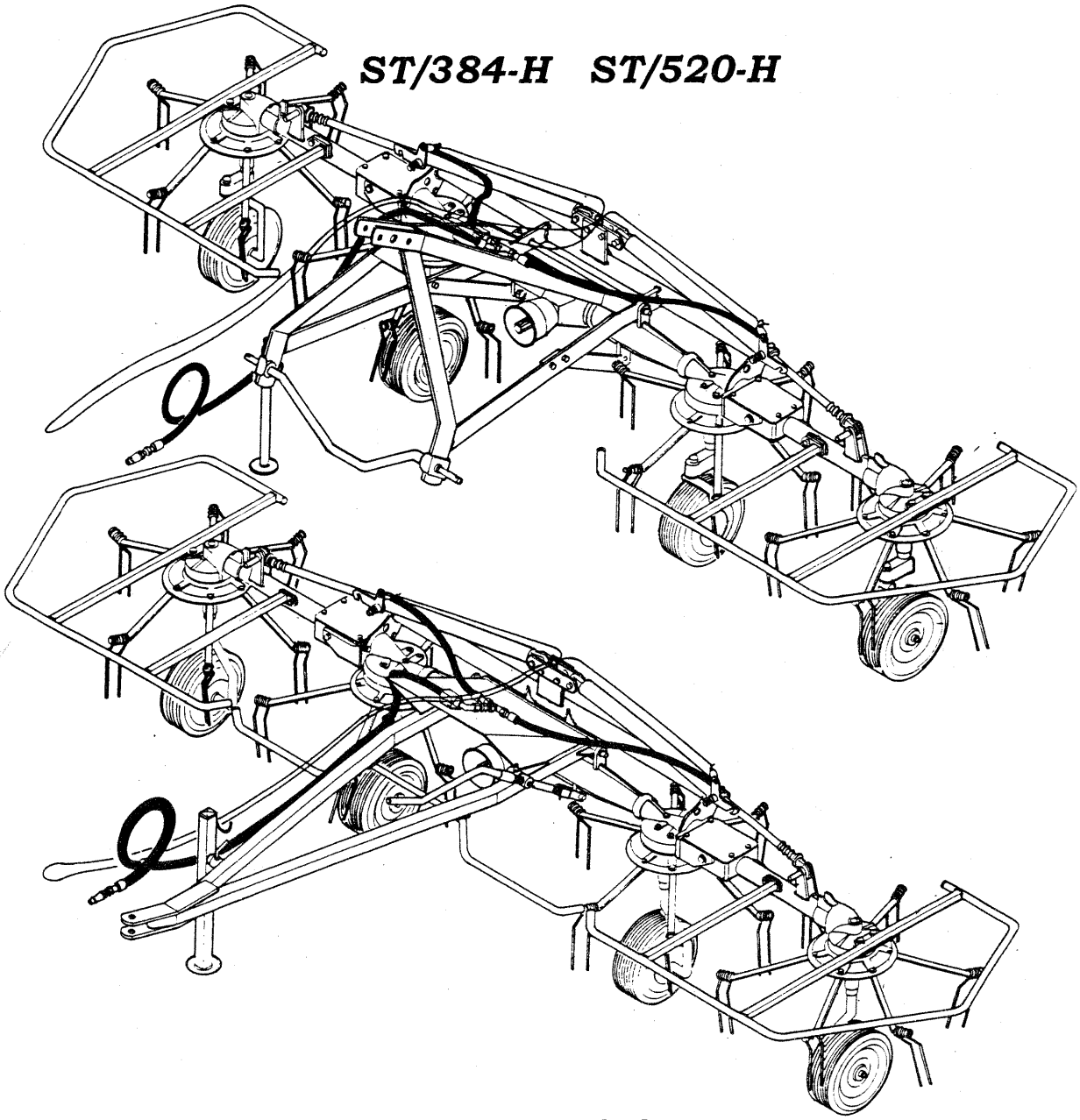
AGRICULTURAL MACHINERY

sitrex®

s.r.l.

ASSEMBLY, USE AND MAINTENANCE
SPARE PARTS LIST

ST/384-H ST/520-H



ROTARY TEDDER

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 undertackes no responsability for any obligation or agreement reached by any SITREX employers,agents or dealers, which are not in compliance whit the above warranty . The manifacturer cannot be held responsible for the consequent damages. This warranty substitutes any other warranthy , espress or implied , and any other manifacturer's obligation.

GUIDE TOTHE SIGNS AND SYMBOLS USED THIS MANUAL AND THEIR LOCATION ON THE MACHINE

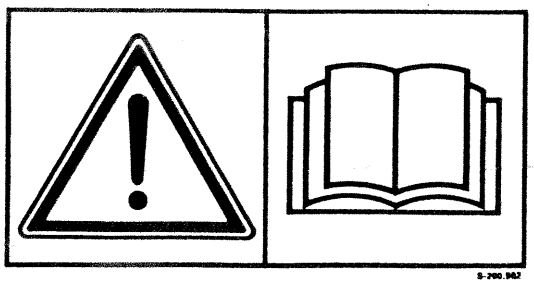
IMPORTANT

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

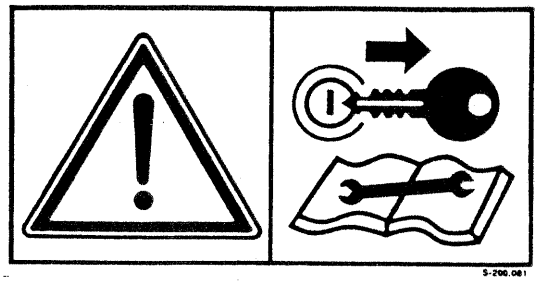
1

Before beginning operations, read the instruction manual carefully.



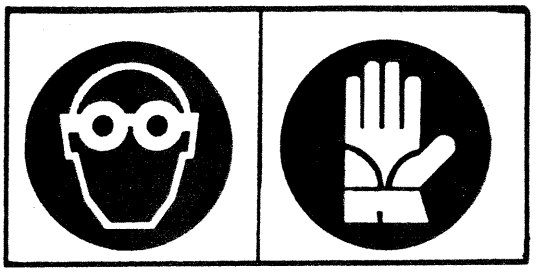
2

Before undertaking any maintenance, stop the machine and support it on the ground. Then consult the instruction manual.



3

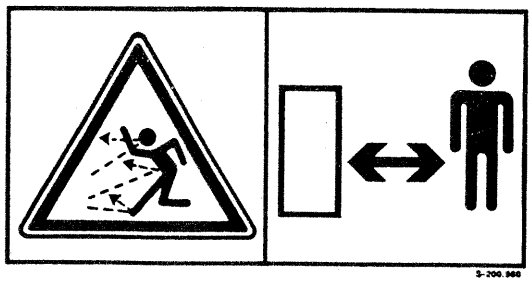
This is a warning to use proper accident protection when carrying out maintenance and repairs



DANGER SIGNS

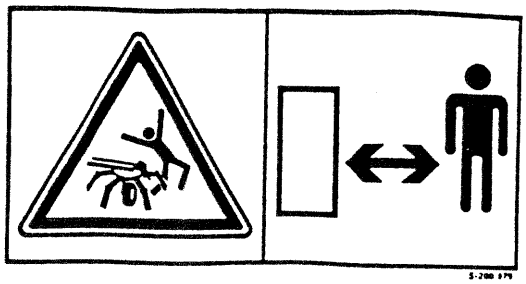
4

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



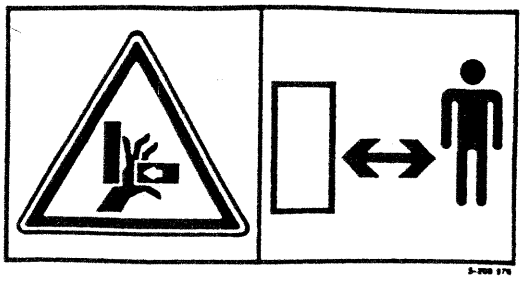
5

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



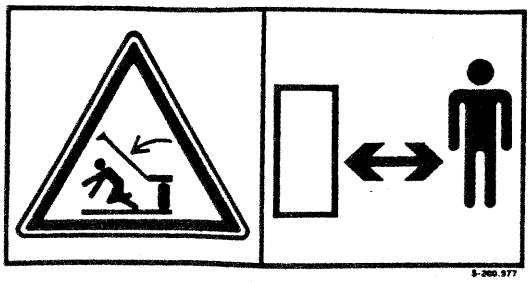
6

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.



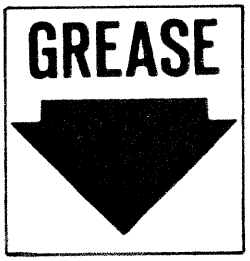
8

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

For all the other infomation regarding the Cardan (P.T.O.) shaft, see the use-and-maintenance booklet specifically for the Cardan (P.T.O.) shaft which, together with this manual, makes up the documentation on safety, use and maintenance of the machine.

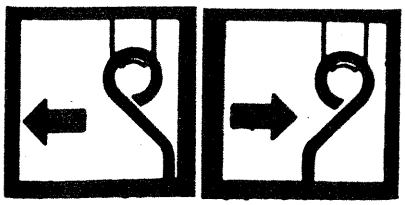
INDICATION SIGNS

9 Indicates a greasing point.



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

11 Indicates position of the tines on the rotors and their direction of rotation.



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.

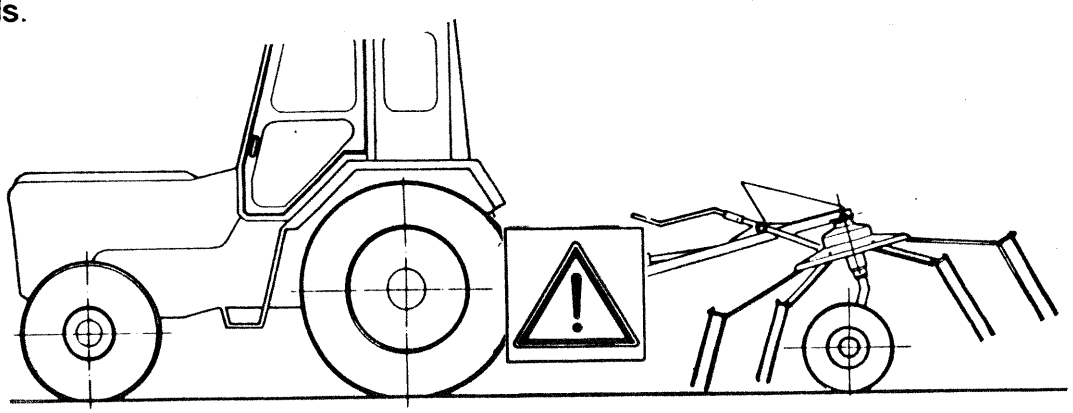
28. Only use the Cardan (P.T.O.) shaft provided by the manufacturer and, in case of replacement, substitute it with one having the same characteristics.

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.



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.

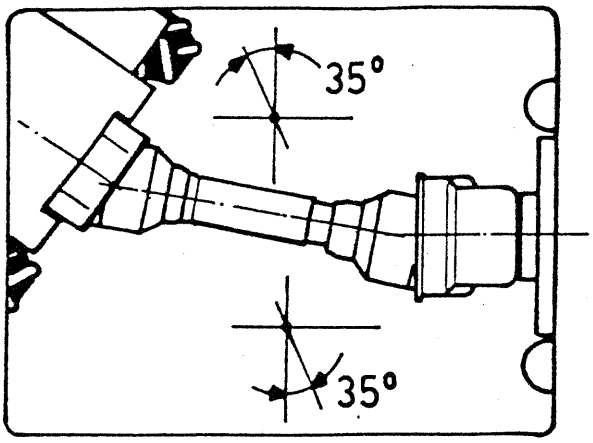


FIG.2

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

MAIN COMPONENTS

1) 3-Point Hitch (carry-type machines)
2) Drawbar (pull-type machines)
3) Drawbar parking stand
4) Machine body
5) Lateral arms)
6) Protective guards
7) Tine bar assembly
8) Wheel assembly
9) Hydraulic kit
10) Cardan shaft

TECHNICAL DATA

SPECIFICATIONS	ST/384-H	ST/520-H
Number of impeller	4	4
Arm for impeller	4	6
Working width mm/feet	3820/12'6"	5200/17'1"
Power required HP/KW	15/11	22/16
Weight KG/LBS	295/650	410/900
Transport width mm/feet	2900/9'5"	3050/10'
Operating speed Kmh/MPH	16/10	16/10
Tire size	15x6.00-6	15x6.00-6

All data are indicative. The company reserves the right to change them without advance notice.

AGRICULTURAL MACHINERY

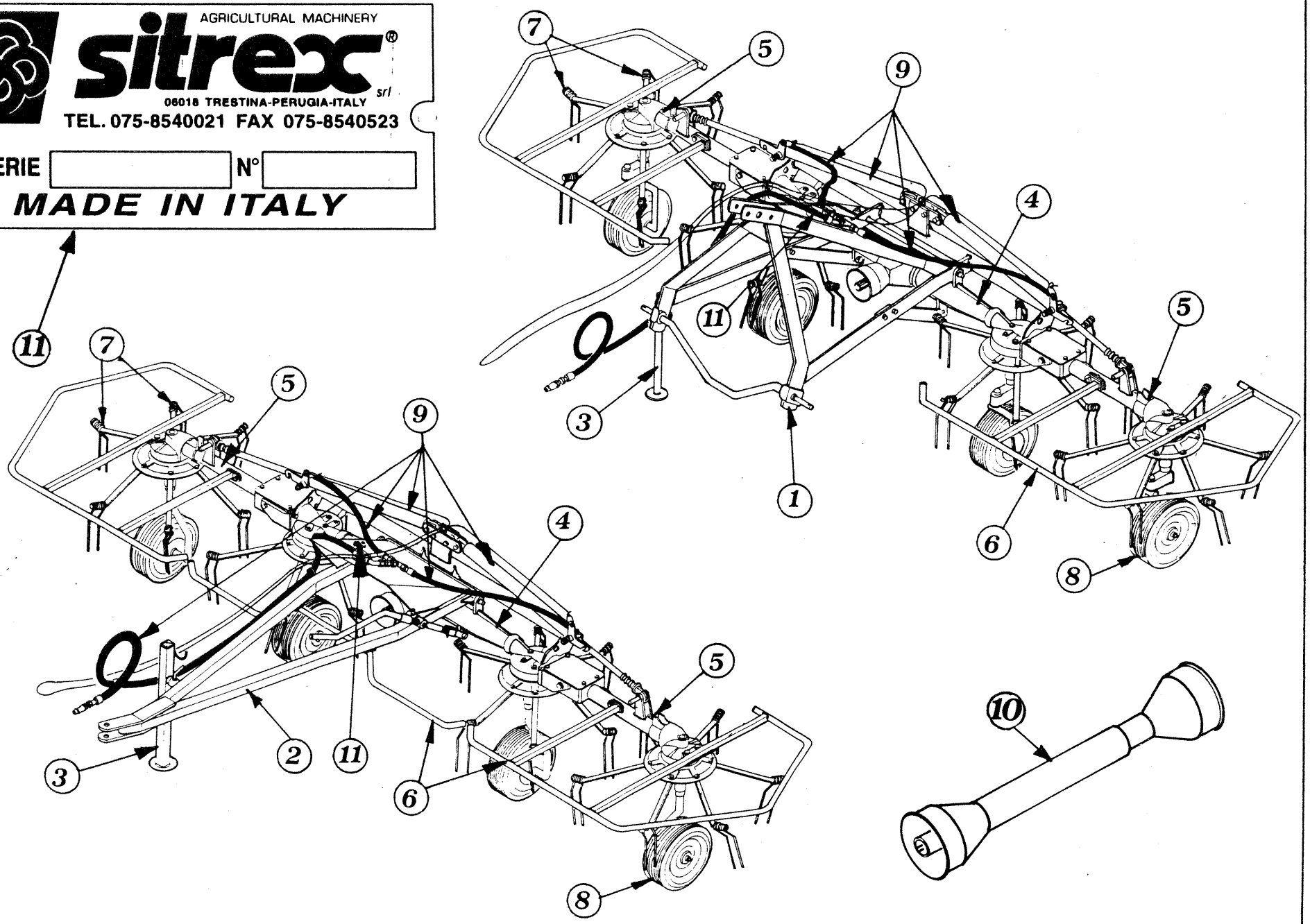
sitrex srl

06018 TRESTINA-PERUGIA-ITALY

TEL. 075-8540021 FAX 075-8540523

SERIE ____ N° ____

MADE IN ITALY



DELIVERY AND ASSEMBLING

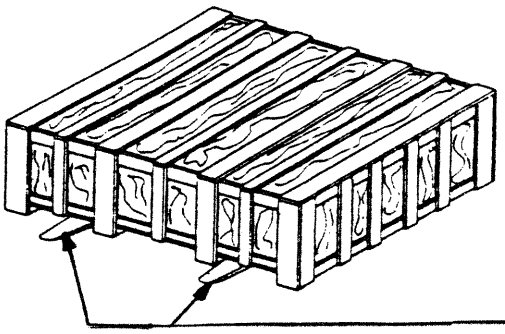
Checking the machine on delivery

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 occured,contact the dealer concerned.
How the machine is lifted will depend on the model and the type of packing.
Details are given below
The packing can vary from country depending on transport requrements.

UNPACKING THE MACHINE

DANGER !!!

Lift the machine using a forklift truck,crane or other suitable equipment of sufficient capacity after first checking the weight of the configurations in the table given below. Check the stability and positioning of the load on the forklift truck forks or crane hook. Keep the load as low as possible during movement for maximum stability and to ensure that the operator has maximum visibility.
If a forklift truck is used,ensure that the forks are positioned as wide apart as possible.



FORKLIFT LIFTING POINTS

MACHINE	KG WEIGHT	LBS
ST/384-H	345	760
ST/520-H	450	990

Notes:

1) Machines are delivered in packaging suitable for shipping and handling. Nonetheless, it is recommended that care be used when handling.
2) For storage, it is possible to stack 2 - 3 crates on top of each other, making sure that they are stacked in perfect alignment.
3) For any further transport, make sure that the crates are secured firmly to the transport vehicle.
4) The packaging consists mainly of wood and nylon wrapping. These materials should be disposed of properly according to the laws in force in the country where the machine is delivered.

ASSEMBLY

DANGER !!!

Assembly is highly dangerous and must be carried out instrict accordance with the following instructions. We reccomend that assembly be performed by qualified personnel. We also reccomend 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 OF WHEEL SUPPORTS

PULL-TYPE MACHINES

1) To facilitate the assembly of the wheel supports,we advise that you turn the machine body upside-down.If you choose to use a different assembly method,bear in mind that once pins 5 and bushings 6(pre-assembled by us in the shop to guarantee correct assenbly and safe handling of the machine) are removed,the rotor assemblies 1-2-3-4 are free to move from their mounting,causing problems both for correct assembly and for the safety of the operators.**USE MAXIMUM CAUTION.**
2) Remove pins 5 and bushings 6(keep in mind the warnings in step 1).
3) To avoid errors in assembly,we have numbered both the wheel supports 1-2-3-4 and the rotor assemblies 1-2-3-4 with sthickers.Therefore,one need simply combine the wheel support marked "1",with the relative rotor marked "1",and so on.
4) Before moving on to the fastening of wheel supports 1-2-3-4 to the respective rotors,make sure that the position of holes A-B-C-D of the rotor disks are positioned as shown in Fig.B.
5) Now fasten wheel supports 1-2-3-4 using spring pins 5-7.

ST/384-ST/520 PULL TYPE

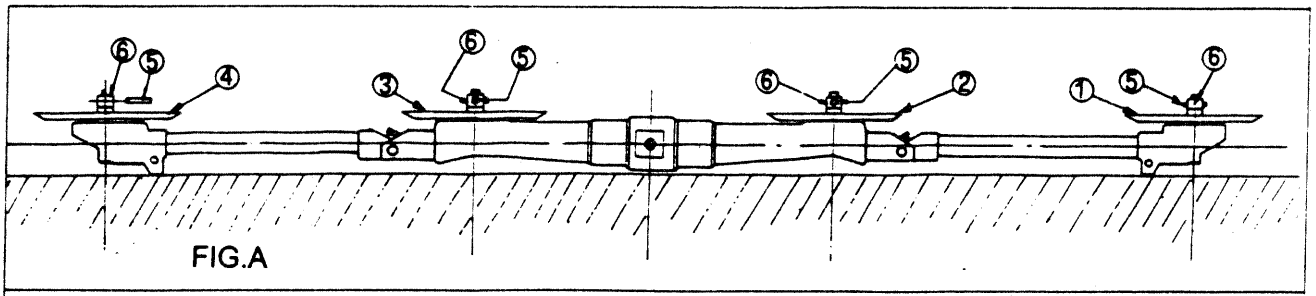


FIG.A

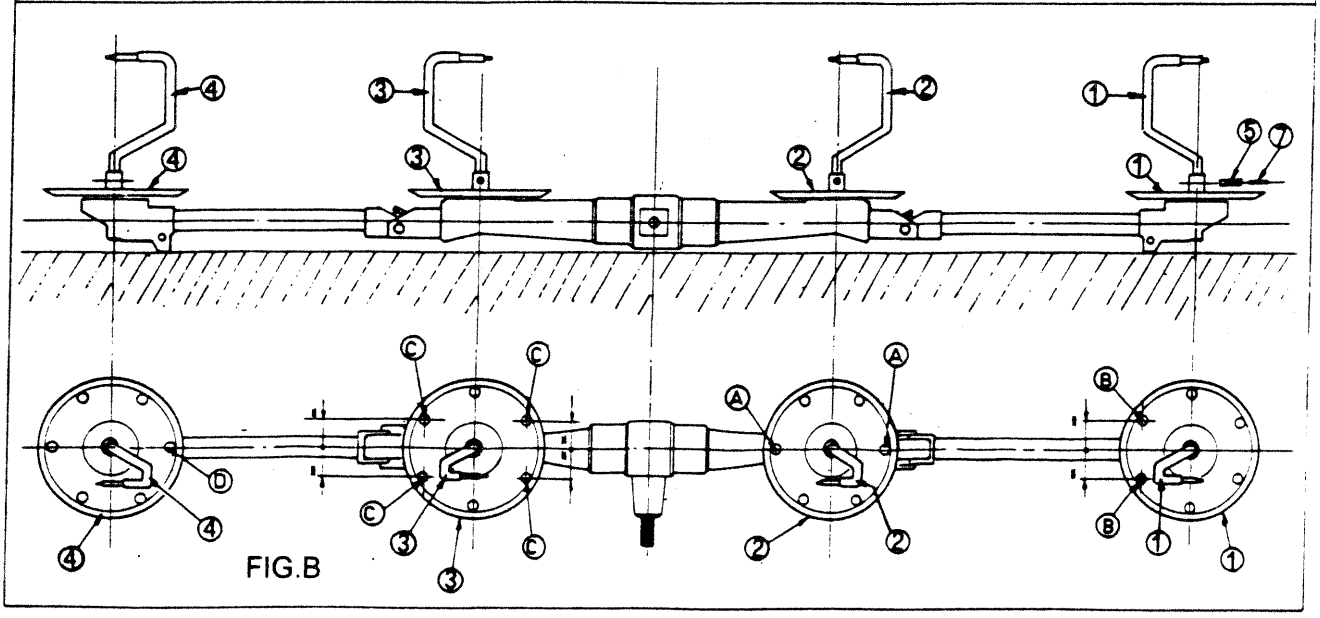


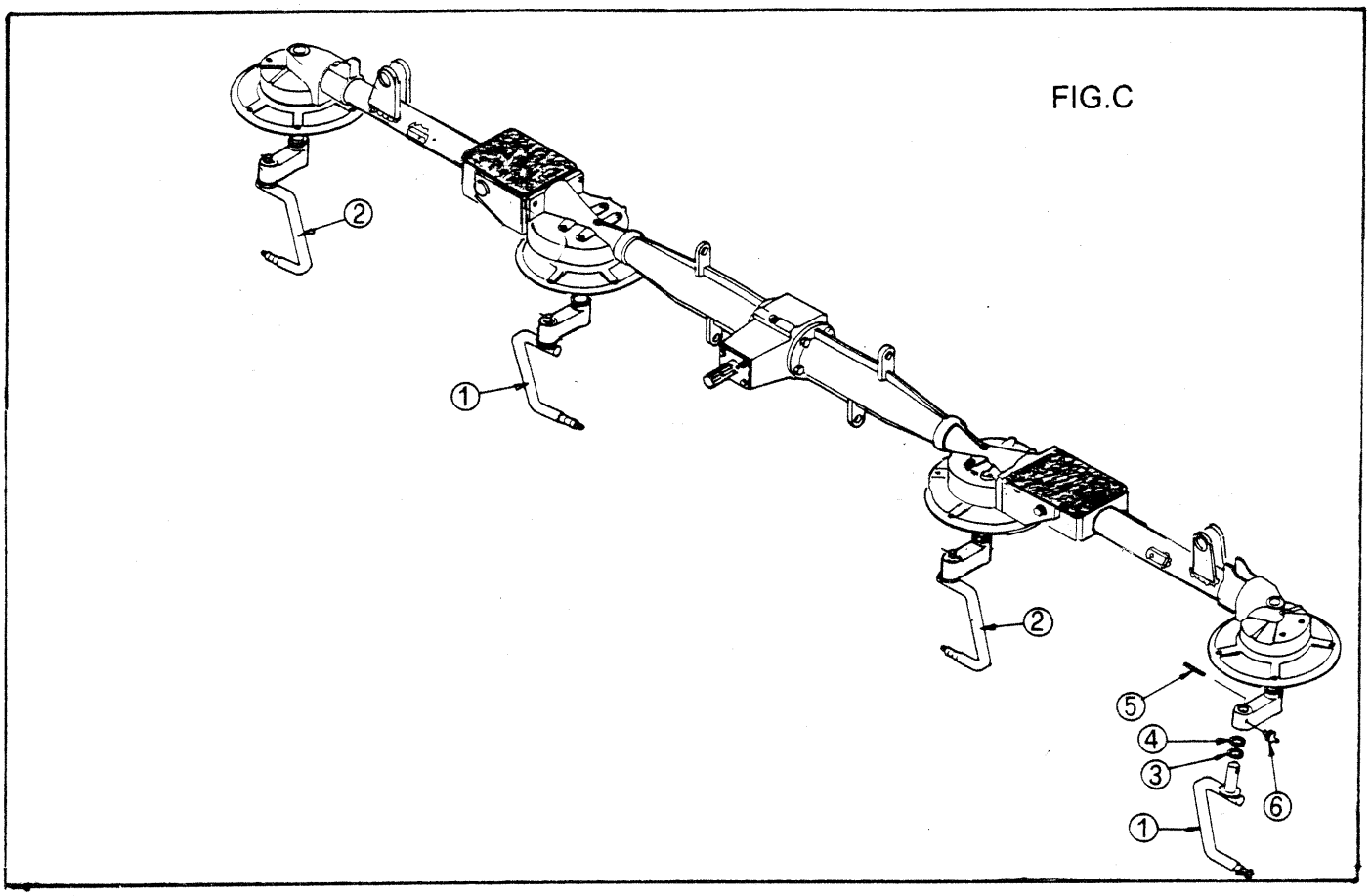
FIG.B

3-POINT HITCH-TYPE MACHINES

1) To attach the wheel supports for this type of machine it is not necessary to turn it upside-down. However, it is best to raise it with a suitable hoist.

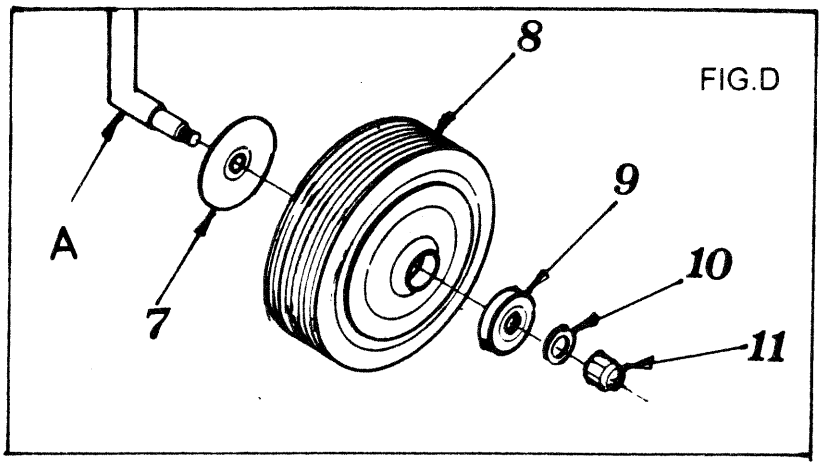
2) After having lifted the machine, attach wheel supports 1 - 2 to the respective rotors (see Fig. C), placing spacers 3 - 4 in between, and fasten all with pin 5.

3) Attach grease nipples 6 to the proper holes as shown in Fig. C.



ASSEMBLY OF WHEELS ON 3-POINT HITCH-TYPE AND PULL-TYPE MACHINES (see Fig. D)

Attach the large hay guard disk 7 to wheel support A,followed by wheel 8,small disk 9 and washer 10, and fasten all with nut 11.



ASSEMBLY OF PULL-TYPE MACHINES

1) Attach casing 1 to the central housing using nuts 2.

2) Attach drawbar 3 to machine body A and fasten with rod 4 and split pins 5.

3) Screw fork 6 to the crank assembly 7.

4) Attach the crank assembly 7 to drawbar 3 and fasten with split pin 8. Screw grease nipples 9 into the crank attachment on drawbar 3 and into fork 6. NOTE: the crank assembly should be attached to the outside of drawbar 3 for the ST 520 and on the inside of drawbar 3 for ST 384 / 2G / 2GL.

5) Hook fork 6 onto the tab on assembly A and fasten with pin 10 and split pins 11.

6) Place cap 12 on drawbar parking stand 13.

7) Attach drawbar parking stand 13 to the drawbar 3 using pin 14 and clip 15.

8) Stabilize the machine by turning crank assembly 7.

9) Attach covers 16 using washers 17 and screws 18.

10) Attach tine bars 19 - 20 to the rotors. See pg.20/21. NOTE: The tine bars 19 - 20 must be attached before the guard rails 21 - 24 - 25.

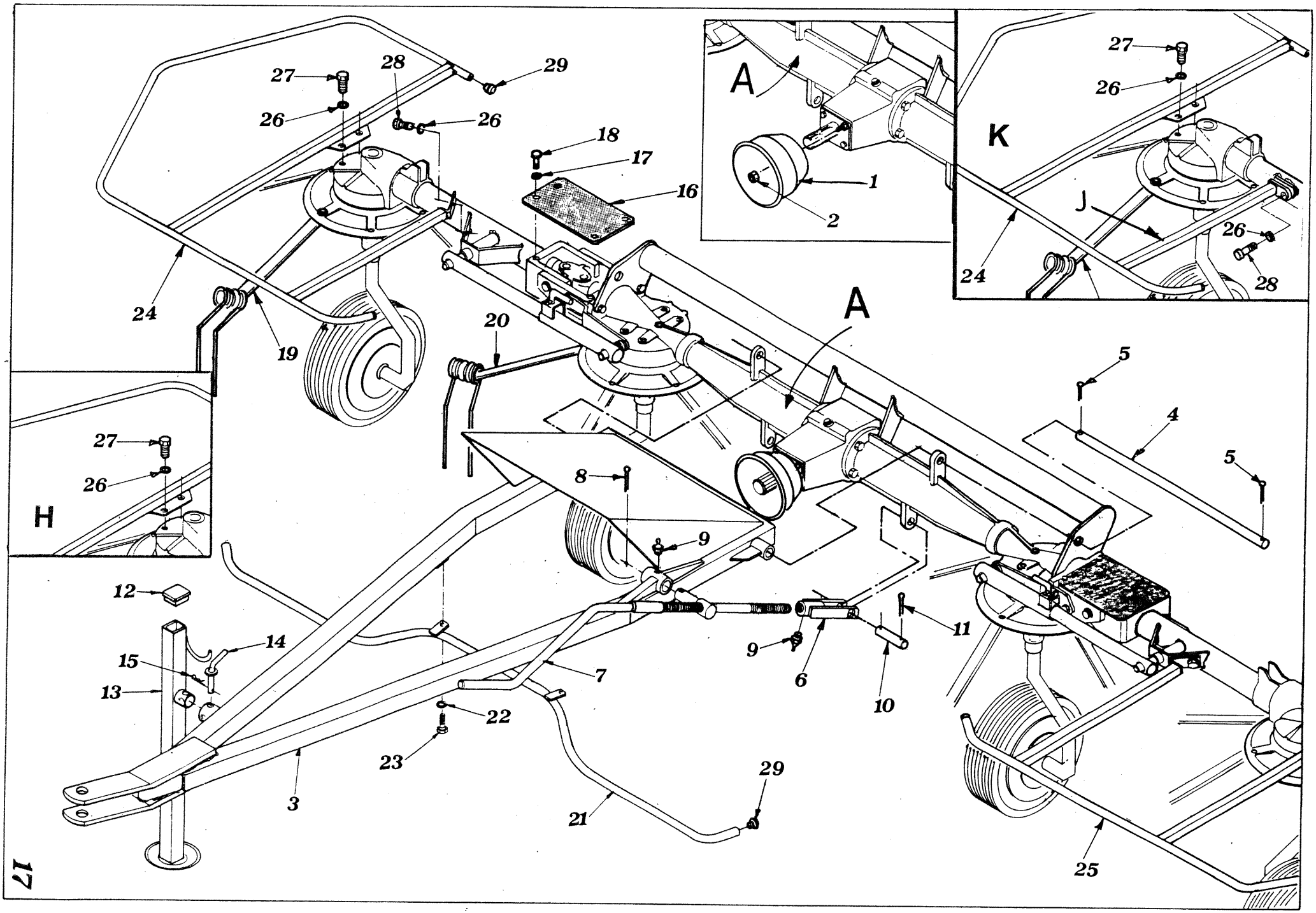
11) Attach the central guard rail 21 to drawbar 3 using washers 22 and screws 23.

12) Attach the lateral guard rails 24 - 25 (R - L) using washers 26 and screws 27 - 28.

13) Apply caps 29 to guard rails 21 - 24 - 25.

Note: Detail H illustrates the assembly of brace J of guard rails 24 - 25 for the ST 384 spring and hydraulic lift version and for the ST 520 hydraulic lift version.

Detail K illustrates the assembly of guard rails 24 - 25 for the 2G and 2GL: in this case, the guard rails do not have brace J, thus they are attached only to the rotors with washers 26 and screws 27.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ASSEMBLY OF 3-POINT HITCH-TYPE MACHINES

1) Attach casing 1 to the central housing A and fasten using nuts 2.

2) Attach the 3-point hitch to the machine body to and fasten it using with rod 4 and split pins 5, attachment arms 6-7, screws 8-9-10, washers 11 and nuts 12-13. (Screws 10 and washers 11 are already attached to the machine body, so it is necessary to remove them previously and them and then screw them back into place.)

3) Place cap 14 on parking stand 15.

4) Attach parking stand 15 to the mount on the 3-point hitch and fasten using pin 16 and clips 17-18.

5) Attach covers 19 to the machine body assembly and fasten with washers 20 and screws 21.

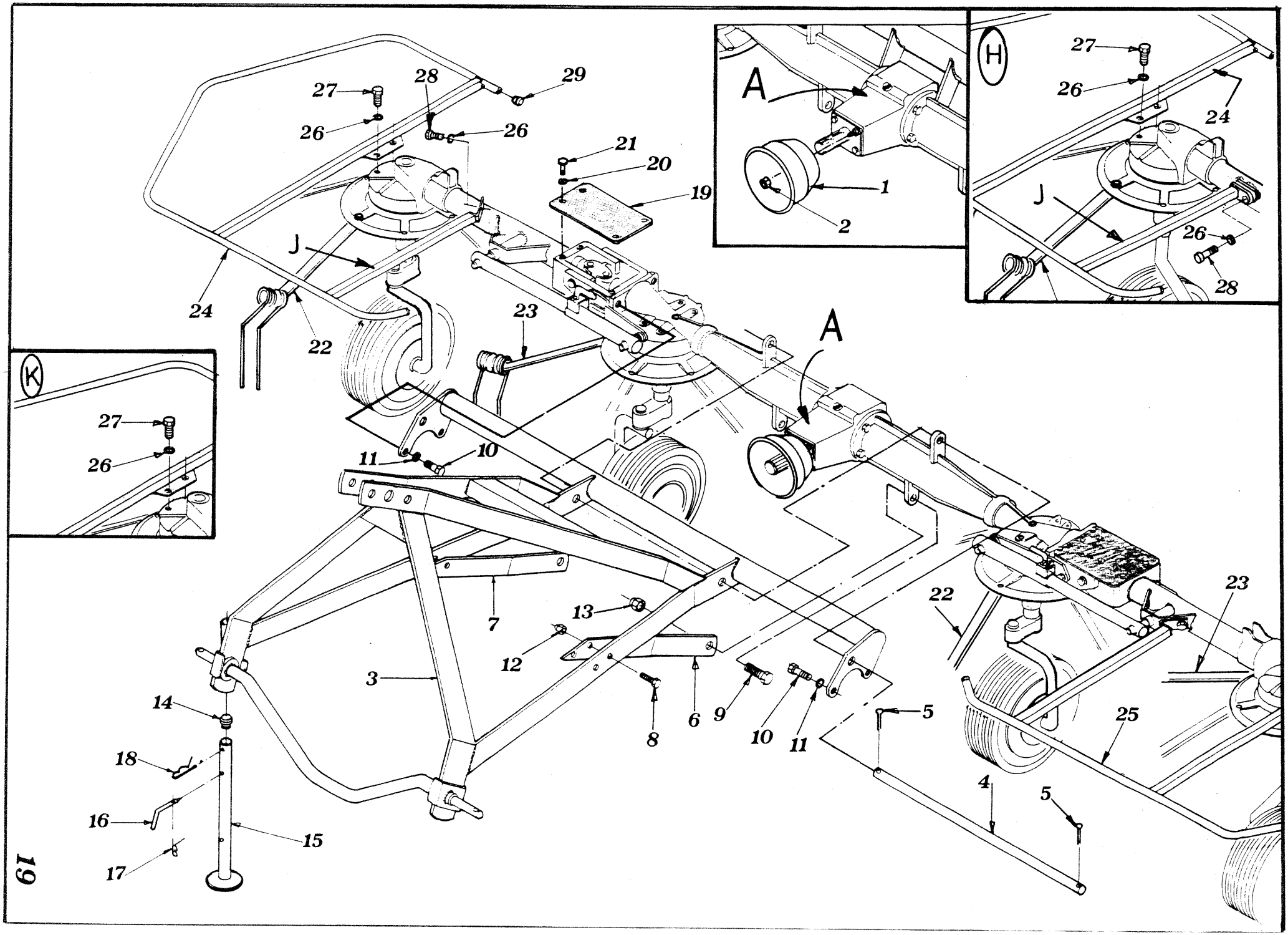
6) Attach tine bars 22 - 23 to the rotors. See pg.20/21.NOTE: The tine bars 22 - 23 must be attached before proceeding with the attaching of guard rails 24 - 25.

7) Attach the lateral guard rails 24 - 25 (R - L) using washers 26 and screws 27 - 28.

8) Apply caps 29 to guard rails 24 - 25.

Note: Detail H illustrates the assembly of brace J of guard rails 24 - 25 for the ST 384 spring and hydraulic lift version and for the ST 520 hydraulic lift version.

Detail K illustrates the assembly of guard rails 24 - 25 for the 2G and 2GL: in this case, the guard rails do not have brace J, thus they are attached only to the rotors with washers 26 and screws 27.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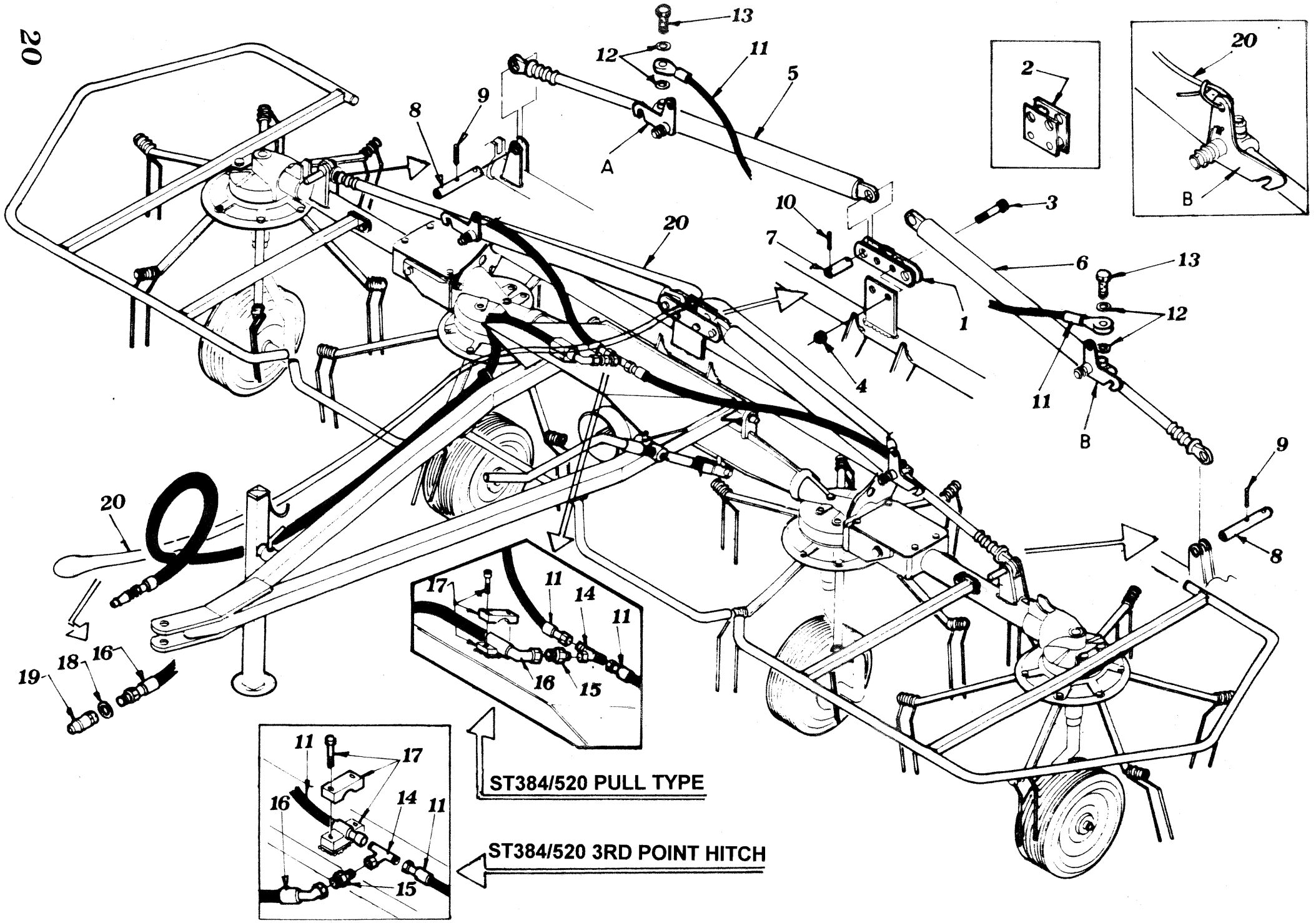
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ST384/520 PULL TYPE
ST384/520 3RD POINT HITCH

ASSEMBLAGE OF HYDRAULIC KIT

-Fit support 1 (ST/520)or 2 (ST/384) to the correct mounting and secure it with screws 3 and nuts 4.

-Fit cylinders 5-6 to the correct mountings and secure them with the short pins 7 and pins 10 at the bottom of the cylinder and with the long pins 8 and pins 9 at the top of the cylinder.

-Apply pipes 11 to cylinders 5-6 using washers 12 and nipples 13.

-Connect pipes 11 using pipe-fitting 14.

-Connect nipple 15 to pipe-fitting 14.

-Connect pipe 16 to nipple 15.

-ST 384/520 Towed: Secure pipe 16 with collar 17.

-ST 384/520 Supported: Secure pipe 11 with collar 17.

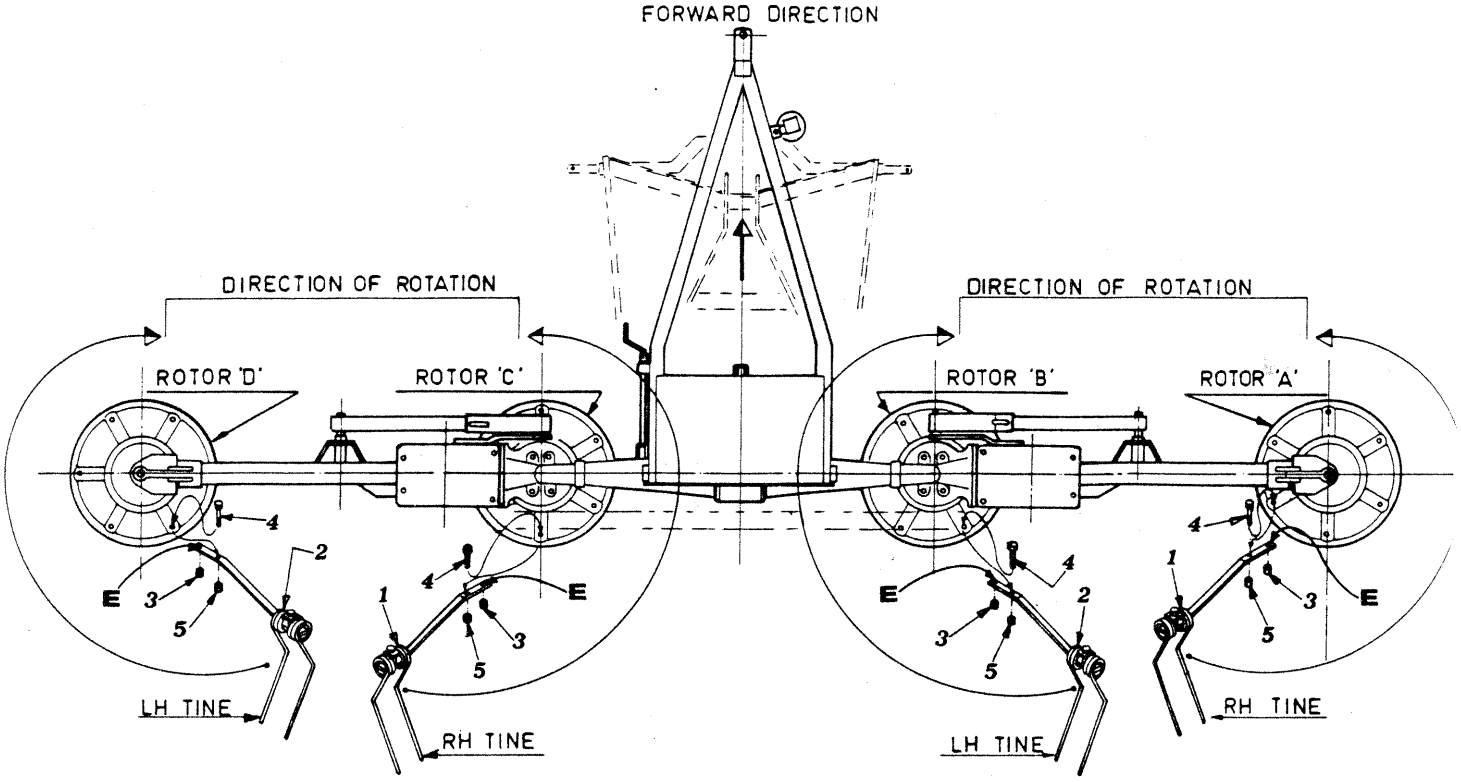
-Apply washer 18 and quick release 19 to pipe 16.

-Connect cord 20 to both ends of levers A-B of the cylinders 5-6.

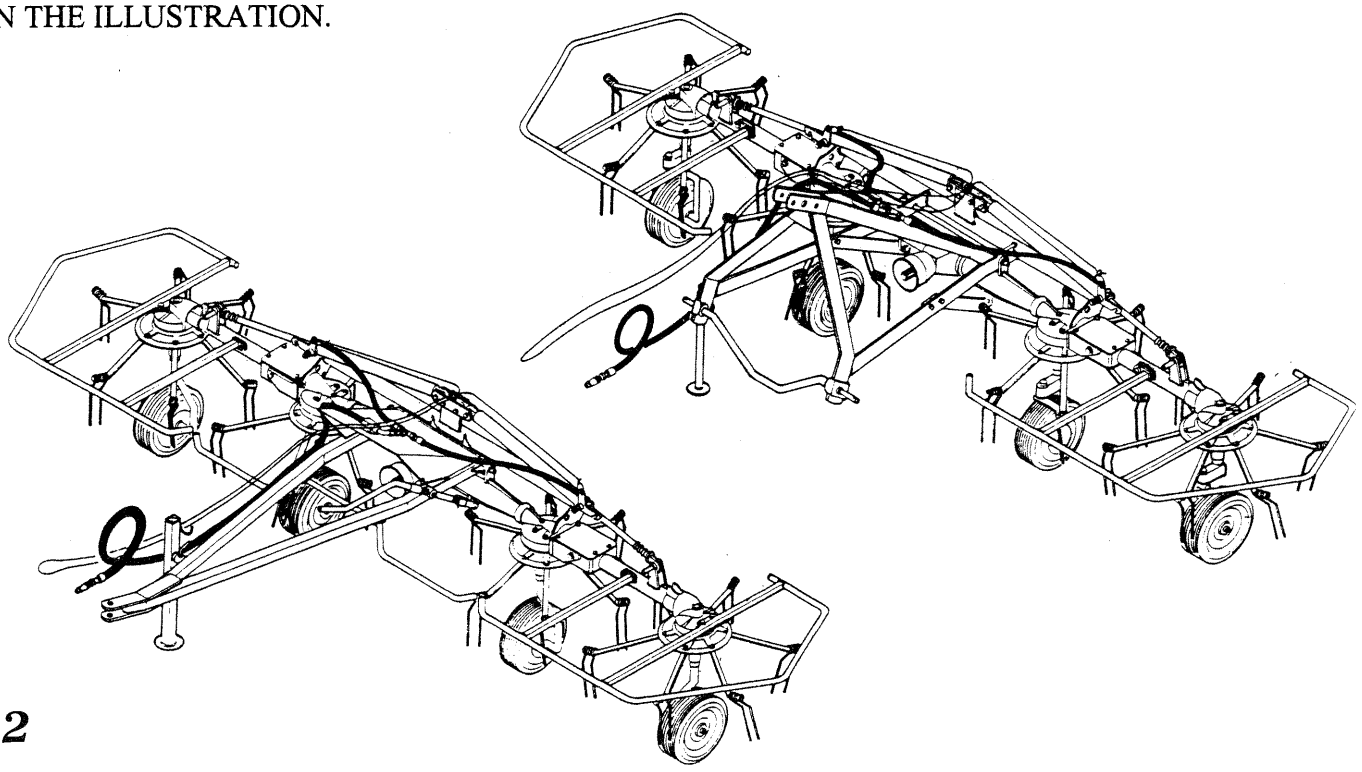
NB. Assembly on a towed machine is represented,however,it is also valid for supported machines.

DIAGRAM OF TINE ASSEMBLY FOR THE ST/384-520

This description is valid for all versions of the ST/384-520 models.
1) You will find tine bars 1 (R) and 2 (L) in four bundles (2R-2L) of six pieces each for the ST/520,and two bundles (1R-1L) of eight pieces each for the ST/384.
2) Tine bars 1(R) are attached to rotors A-C . Tine bars 2(L) are attached to rotors B-D.
3) Attach tine bars 1-2 (R-L) to the rispective rotors,placing holes E of tine bars 1-2 over the screws already in place on the lower central part of rotors A-B-C-D and fasten with nuts 3.
4) Iinsert screw 4 in the holes indicated on rotors A-B-C-D and in tine bars 1-2(R-L)and fasten with nuts 5.



ASSEMBLY IS NOW COMPLETED,AND THE MACHINES SHOULD APPEAR AS SHOWN IN THE ILLUSTRATION.



ADJUSTMENT , PREPARATION AND USE

MAINTENANCE

INTRODUCTION

DANGER !!!

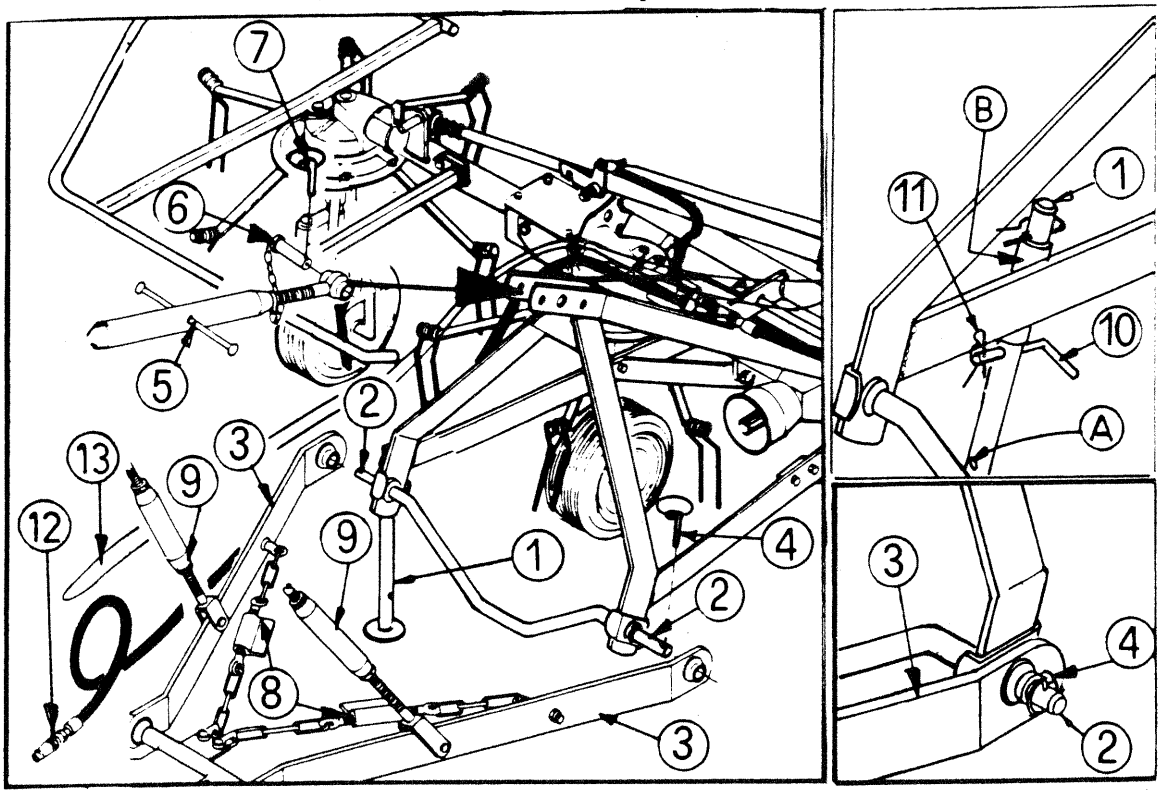
Connection to the tractor is highly dangerous. Take great care and carry out the entire operation in strict compliance with the following instructions.
Nobody should go near the area between the tractor and the machine.
Check that all warning and danger signs are in place and legible.
Check that the 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.

TRACTOR'S CONNECTION OFF 3RD POINT HITCH MACHINES

Reverse the tractor towards the machine lining up the tractor lifter arms (3) with the lateral connecting pins (2).
Switch off the tractor engine and apply the parking brake.
Remove the ignition key from the instrument panel.
Fit the sockets at the ends of the lifting arms (3) over the pins (2) on the machine's 3-point linkage.
Secure them with split pins(4).

Fit the upper tie rod (5) into the bracket as shown and secure it with the pin (6) and split pin (7). Adjust the tie rod until the rotors of the machine are parallel with the ground.
To avoid excessive transversal play, adjust the tighteners (8) on the arms.
Approximately 50 mm (2 inches) of play is recommended on each side.
Level the machine horizontally by adjusting the tractor lifter arms (9).

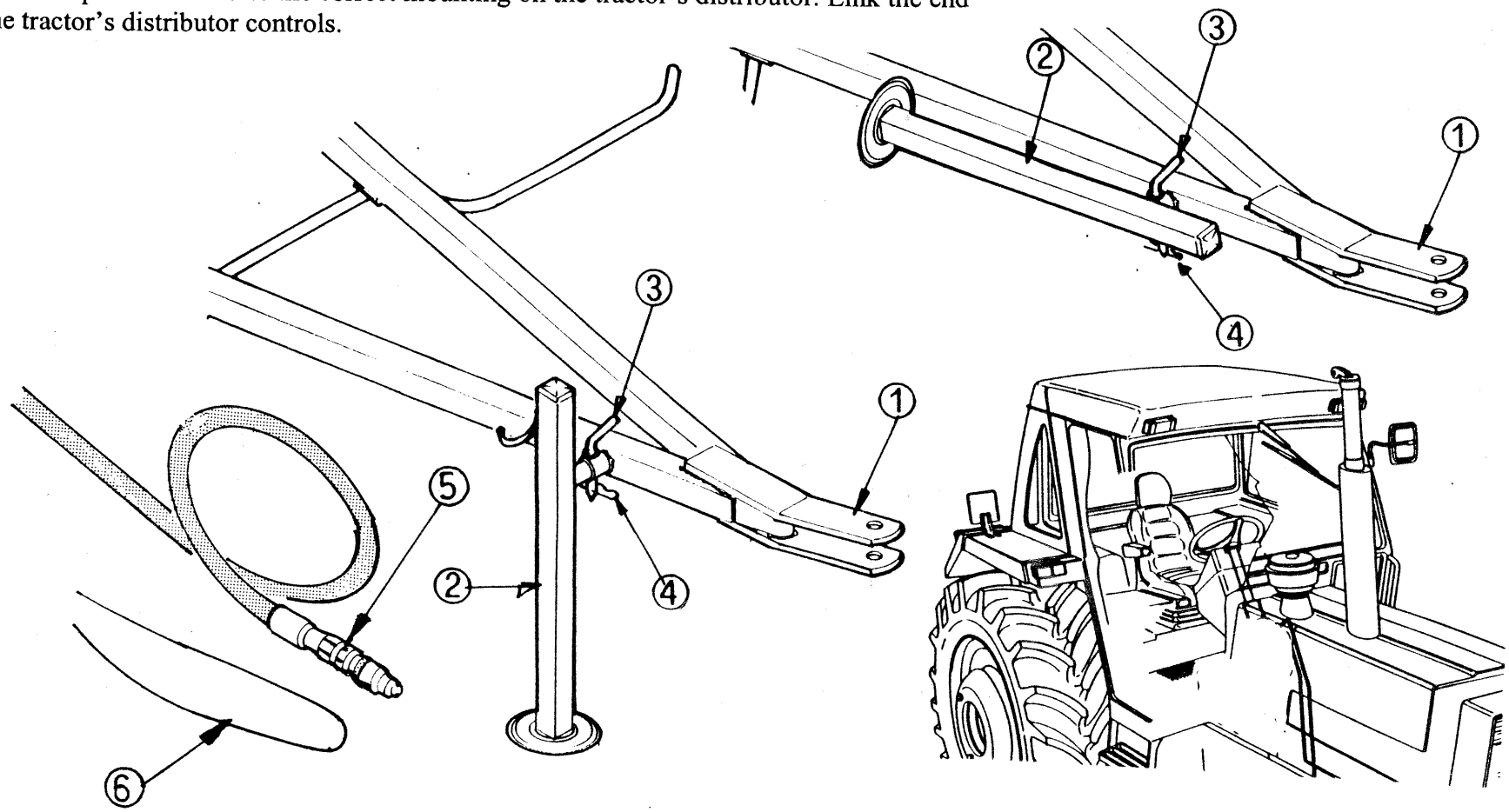
Apply the pipe with quick release 12 to the correct mounting on the tractor's distributor. Link the end of cord 13 to the tractor's distributor controls.
Once the machine is attached to the tractor, put parking stand 1 in the transport position. To do this, remove clip 11 and extract pin 10. Next, raise parking stand 1 until hole A is above bushing B. Insert pin 10 in hole A of the parking stand and fasten with clip 11.



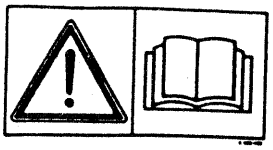
ATTACHMENT OF PULL-TYPE MACHINES TO THE TRACTOR

The attachment of pull-type machines to the tractor is very simple, as it is only necessary to couple the drawbar hitch 1 to the tractor hitch using a pin of appropriate size, strength and shape. Always use extreme care when reversing the tractor towards the machine.
Once the machine is hitched to the tractor, the drawbar parking stand must be raised from the parking position.
To do this, remove clip 4 and pin 3, and rotate the parking stand so that it is parallel with the drawbar frame. Fasten into the new position using pin 3 and clip 4.

Apply the pipe with quick release 5 to the correct mounting on the tractor's distributor. Link the end of cord 6 to the tractor's distributor controls.



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.

DANGER!!!

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 (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.

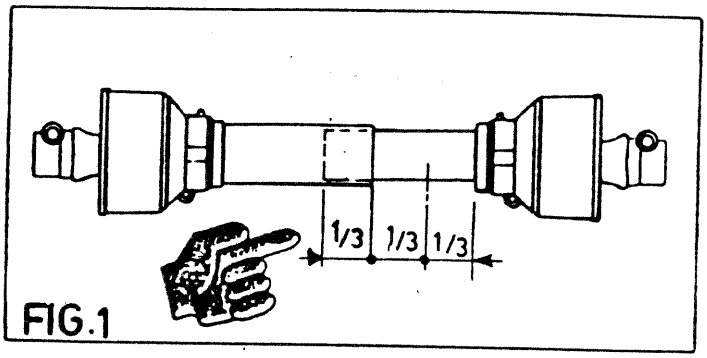


FIG.1

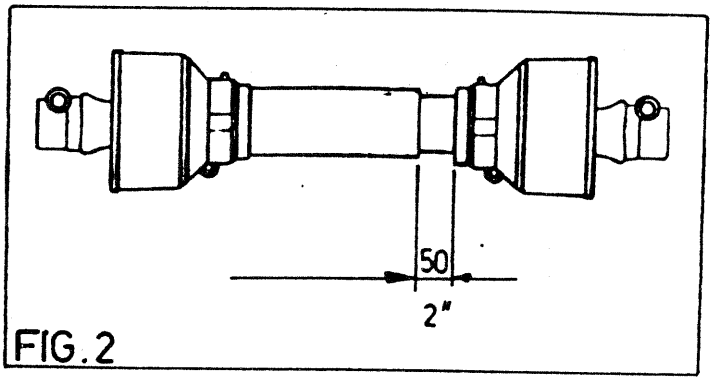


FIG.2

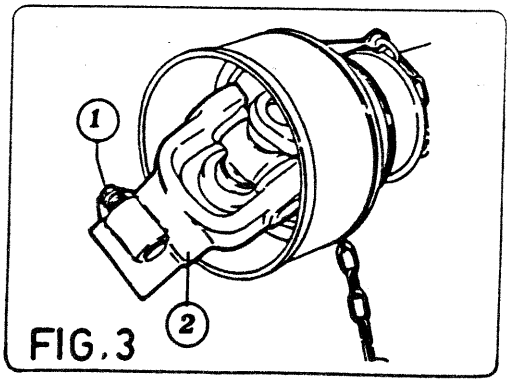
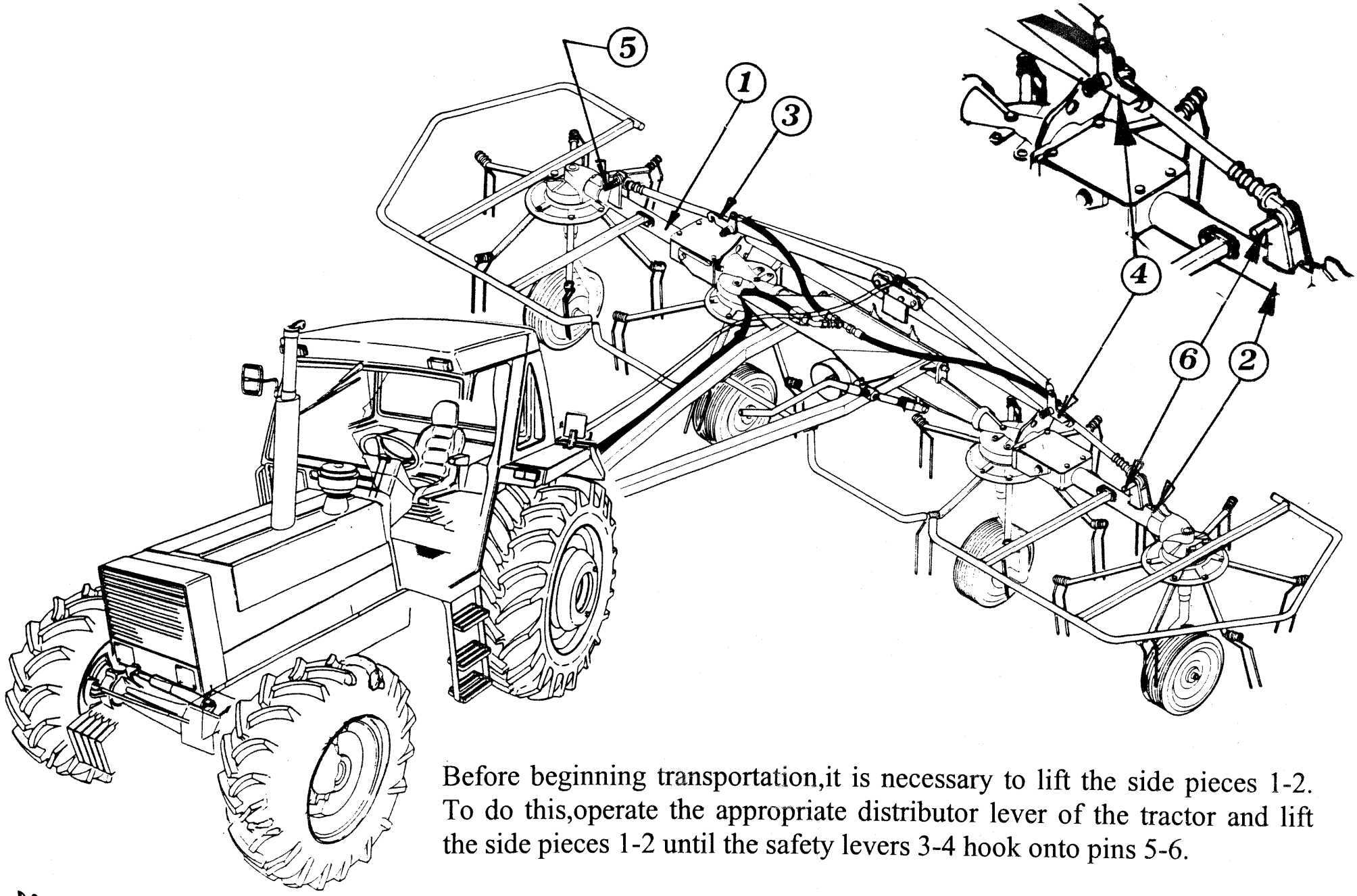


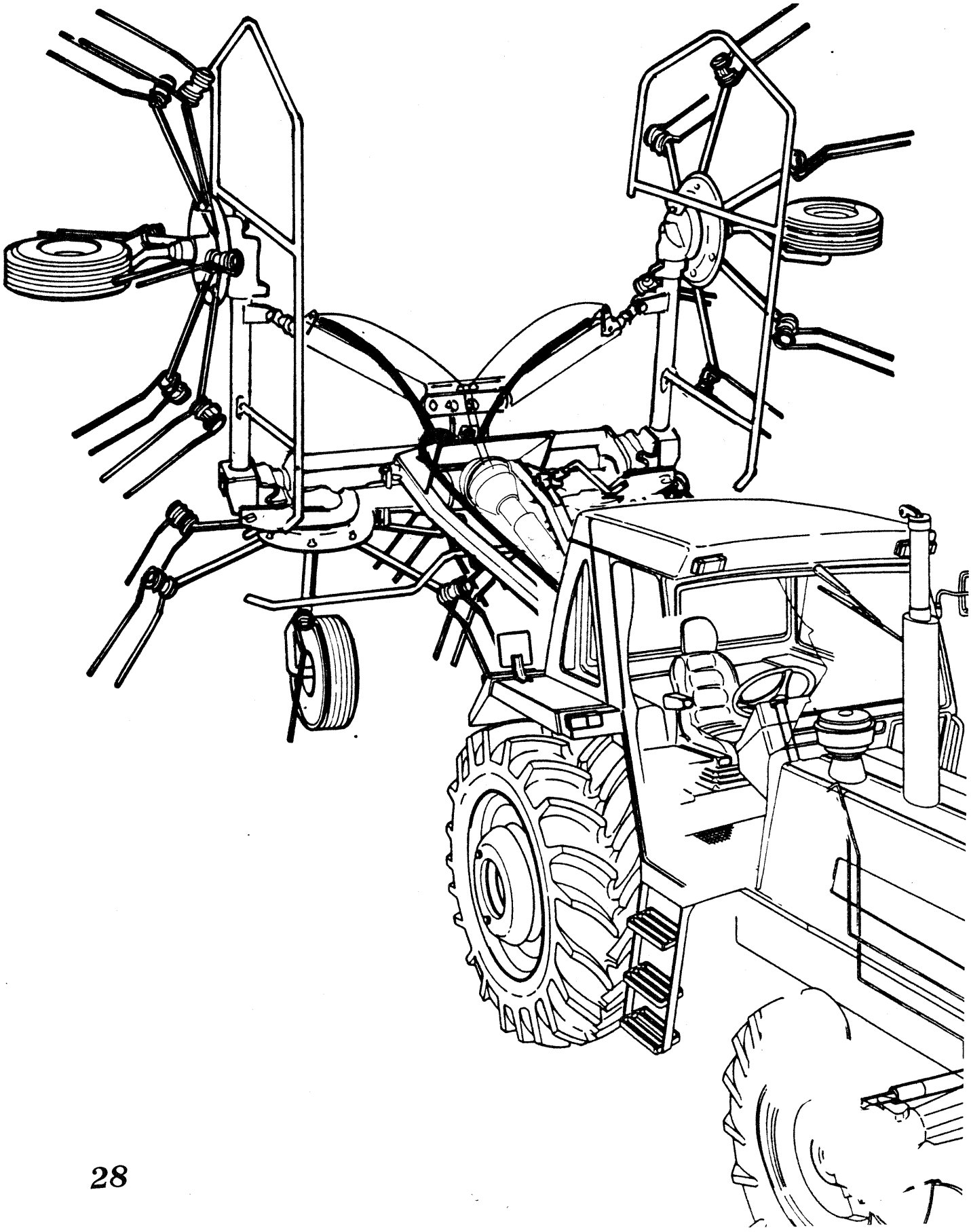
FIG.3



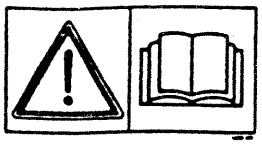
Before beginning transportation,it is necessary to lift the side pieces 1-2. To do this,operate the appropriate distributor lever of the tractor and lift the side pieces 1-2 until the safety levers 3-4 hook onto pins 5-6.

The machine ready for transport should appear as shown in the illustration.

THE 3-POINT HITCH MACHINES ALSO SHOW THIS CONFIGURATION.



TRANSPORT BY ROAD

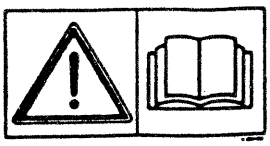


After the machine has been attached to the tractor as previously described and before transporting it to or from fields or any other workplace, the following instructions should be heeded:

ATTENTION!!!

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 immobilised.
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.



GENERAL INSTRUCTIONS FOR FIELD USE

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

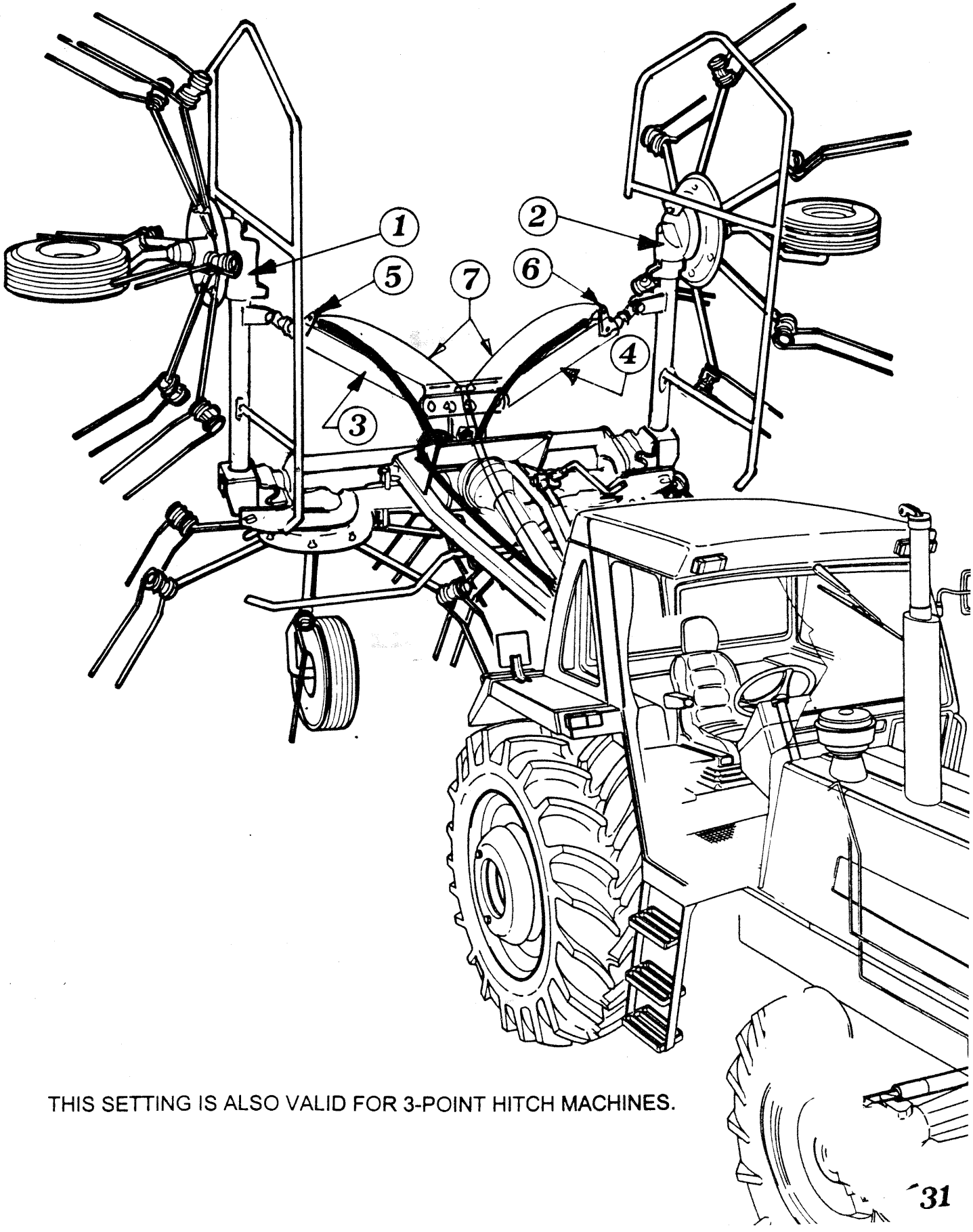
CAUTION

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 familiarise 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 manoeuvring 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.

USE IN THE FIELD

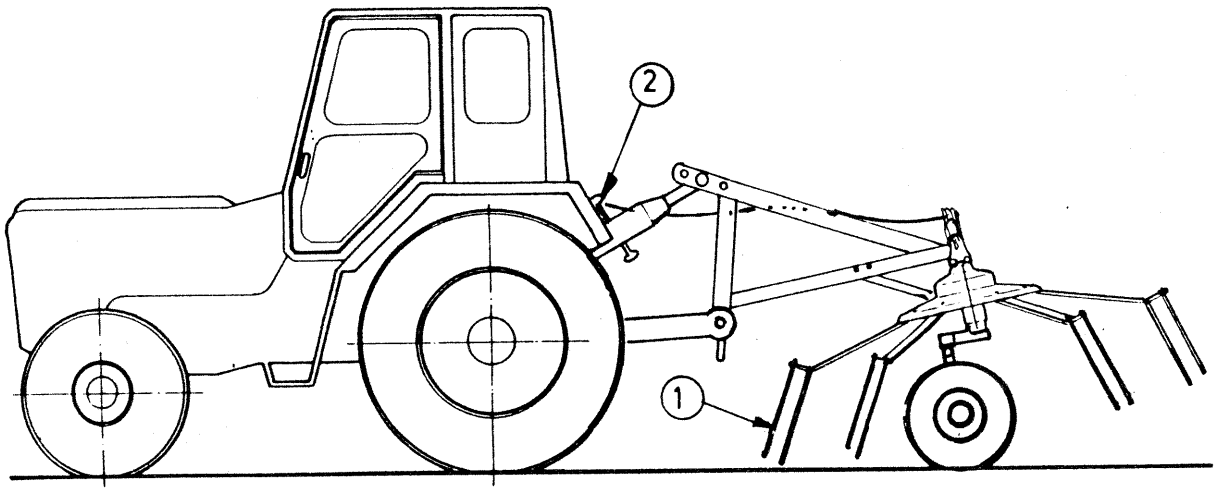
In order to lower the side pieces 1-2, operate the appropriate distributor lever of the tractor and retract cylinders 3-4 until the lock levers 5-6,released by pulling cord 7, allow side pieces 1-2 to descend.

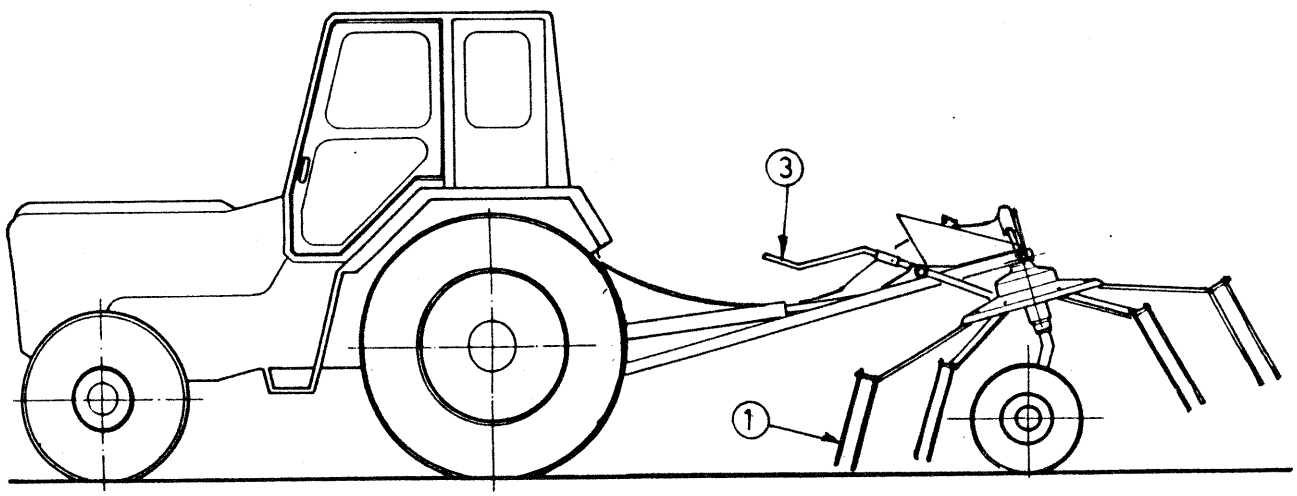


THIS SETTING IS ALSO VALID FOR 3-POINT HITCH MACHINES.

2) NOTE APPLYING TO ALL MODELS

The machine is operating properly when tines 1 at the front of the machine brush the ground. To do this, adjust top link 2 on the 3-point hitch for carry-type machines, or turn crank 3 for pull-type machines.





TEMPORARY PARKING

1) Choose a flat,hard open space away from frequented areas if possible.

2) Lower the machine until its wheels touch the ground.(3rd point hitch machine)

3)Put the hydraulic directional control lever on the tractor into the locked position.(3rd point hitch machine)

4) Switch off the engine,leaving the tractor in gear.

5) Apply the parking brake.

6) Remove the ignition key.

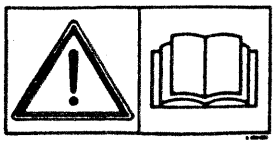
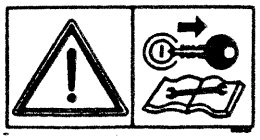
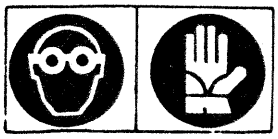
7) Put the parking stand in the parking position (ST 384/520 only).

8) Adjust the top link (3rd point hitch machines) or turn the angle adjustment crank (pull-type machines) so that the weight of the machine is on the parking stand,thus avoiding the risk of having the machine tip over backwards.

9) Disconnect the cardan shaft at the tractor end.

10) Unhitch the top link and the lifting arms (3rd point hitch machines) or the tractor-drawbar coupling pin (pull type machines).

MAINTENANCE DIRECTIONS

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.

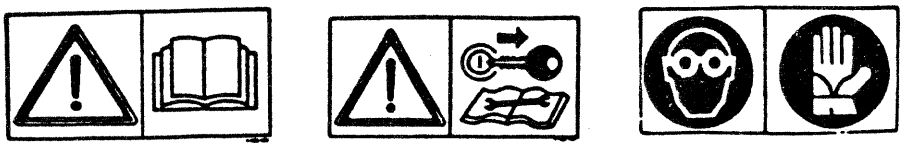
Regular, correct maintenance and proper operation are the basic prerequisites for the long-term efficiency and safe operation of the machine.

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

GENERAL INSTRUCTIONS FOR REPAIR WORK



DANGER !!!

Any repair work must be carried out with the machine at rest and disconnected from the tractor.
Do not carry out welding without authorisation and instructions from the manufacturers.
Disconnect the machine from the tractor before any welding work in order not to damage the battery. Always use a protective mask, goggles and gloves when welding, sanding or grinding or when using a hammer or drill.
Always work on the machine out of doors. If you have to operate the machine when connected to the tractor in an enclosed area (for example when testing after repair and/or maintenance), ensure that there is sufficient ventilation so as to prevent noxious exhaust gases accumulating.

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

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

LAYING UP FOR EXTENDED PERIODS

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

Clean the machine following instructions and allow it to dry.

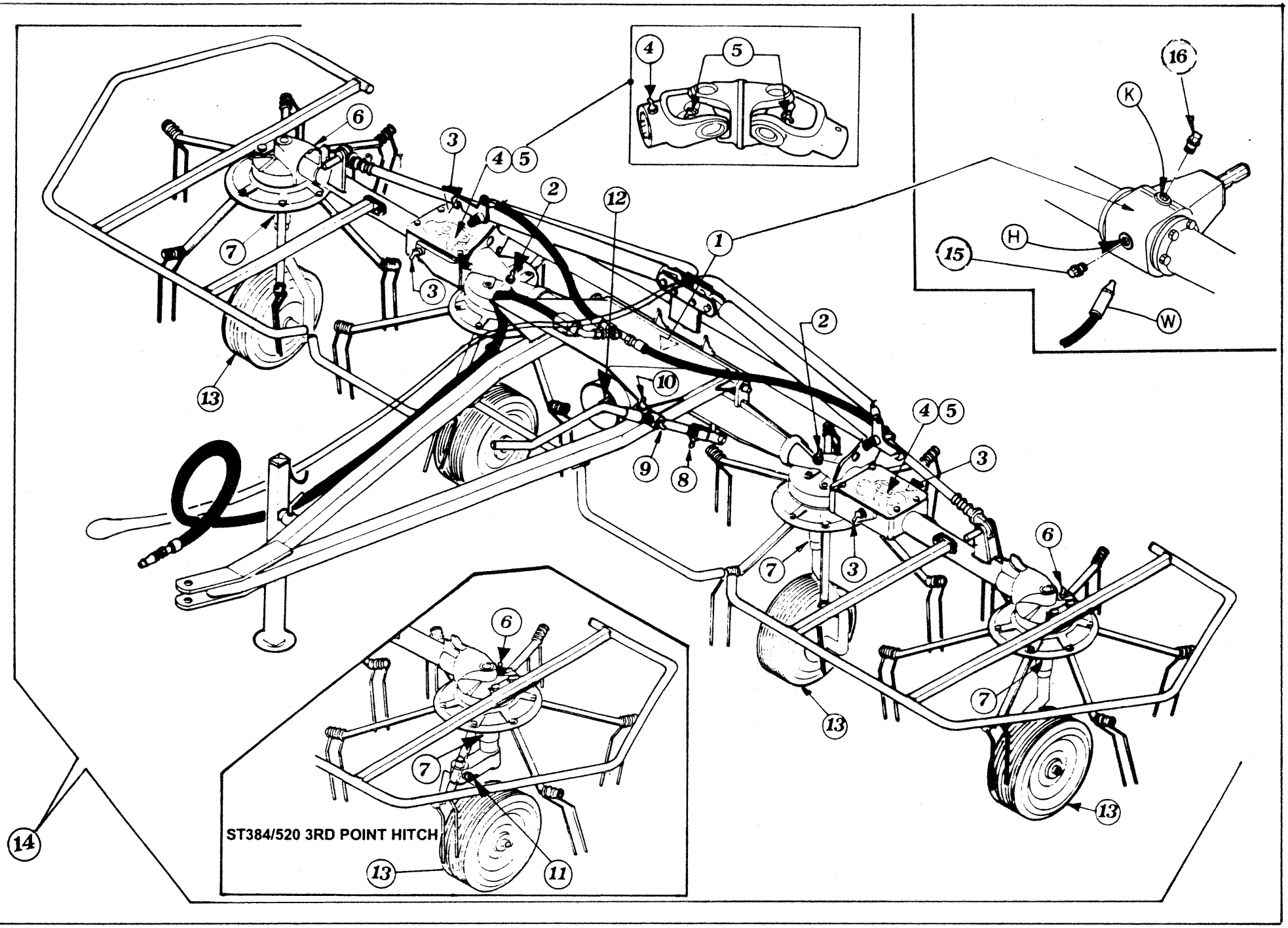
Check it carefully and replace any damaged or worn parts.

Thoroughly tighten all screws and bolts.

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

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

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


ST384/520 3RD POINT HITCH

MAINTENANCE POINTS

ITEM	QTY	DESCRIPTION	OPERATION	EVERY __ HOURS	NOTES
1	1	CENTRAL HOUSING	lubricate	100	see note A
2	2	CENTRAL ROTORS	" "	50	ST 384/520
3	4	SWIVEL HINGE PINS	" "	50	ST 384/520
4	2	KEYED COUPLING FORK	" "	8	ST 384/520
5	4	UNIVERSAL JOINT	" "	8	ST 384/520
6	2	LATERAL ROTORS	" "	50	—
7	4/2	ROTOR HUBS	" "	30	—
8	1	ADJUSTMENT FORK	" "	30	ST 384/520 pull type
9	1	STRUT PIN	" "	30	pull-type machines
10	1	STRUT BUSHING	" "	30	ST 384/520 pull type
11	4	WHEEL SUPPORT HUBS	" "	30	3-point hitch machines
12	1	P.T.O.	clean/lubricate	see note B	with brushes, etc.
13	4	WHEELS	check pressure	see note C	inflate to 45 psi
14	—	General checking of bolts,security pins and split pins to be carried out initially after the first 8 hours of use.Subseqsequently every 50 hours and whenever the machine is laid up for extended periods.			

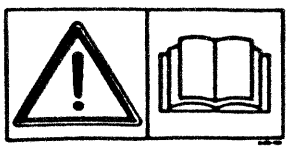
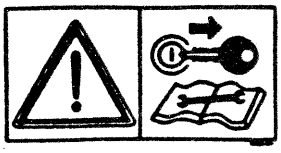
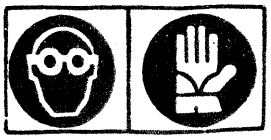
NOTE A:
COMPLETE LUBRICATION OF THE CENTRAL HOUSING 1

a) The complete lubrication of housing 1 is done the first time at the Sitrex plant, after which it must be topped up periodically, as according to the lubrication points table. A complete change or fill is necessary only for the replacement and/or repairing of the entire housing or internal parts. In this case, it is necessary to: remove caps 12 - 13 and inject the grease, using grease pump W, into hole H until the grease comes out of hole K. Then screw caps 12 - 13 back into place on housing 1.

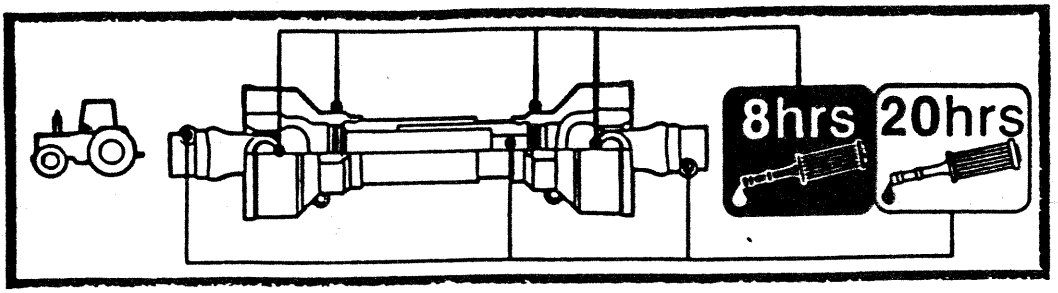
b) Periodic checking and topping up of housing 1

Every 100 hours of working time, check and top up central housing 1.
It is a good practice, however, to check the condition and quantity of grease after all long periods of inactivity, especially when starting to work again after the winter break
To top up the grease in central housing 1, it is necessary to: remove cap 13 and inject the proper amount of grease into hole K using grease pump W. Then screw cap 13 back into place on housing 1.

CARDAN SHAFT MAINTENANCE

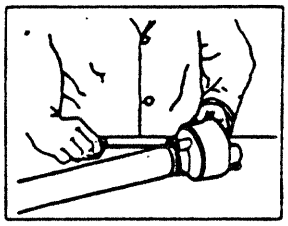
More detailed information may be found in the Cardan shaft manual which, together with this manual, forms an essential part of the accident-prevention documentation. It is your responsibility to read and comply with this documentation. If information given in this manual conflicts with that given in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



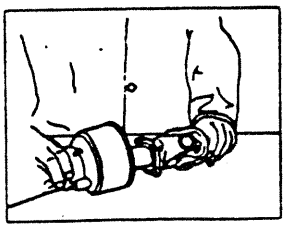
MAINTENANCE OF SLIDING PARTS

DISMANTLING

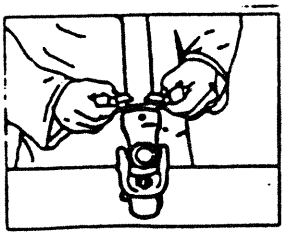
1) Turn the two eccentric pins on the ferrule until the protective cone comes free.



2) Withdraw the shaft protective guard.

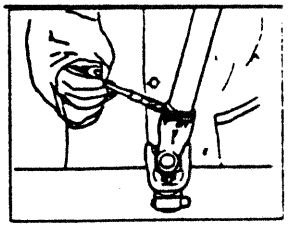


3) Check the condition of the ferrule and all protective parts.

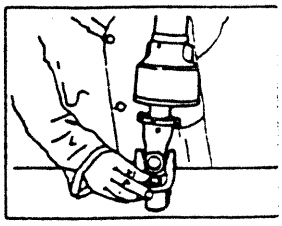


ASSEMBLY

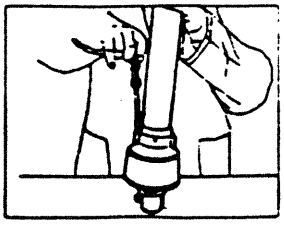
4) Lubricate supporting ferrule seating.



5) Refit the supporting ferrule.



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



SPARE PARTS LIST

FOR CORRECT SPARE PARTS ORDER IT IS NECESSARY TO SPECIFY: TABLE NOMBER,REFERENCE,PART NOMBER,DESCRIPTION AND QUANTITY OF PARTS REQUIRED.

ITEMS DESCRIBED AS R.H. AND L.H. ARE MEANT FACING REAR OF MACHINE.

TABLE NO. 920.078

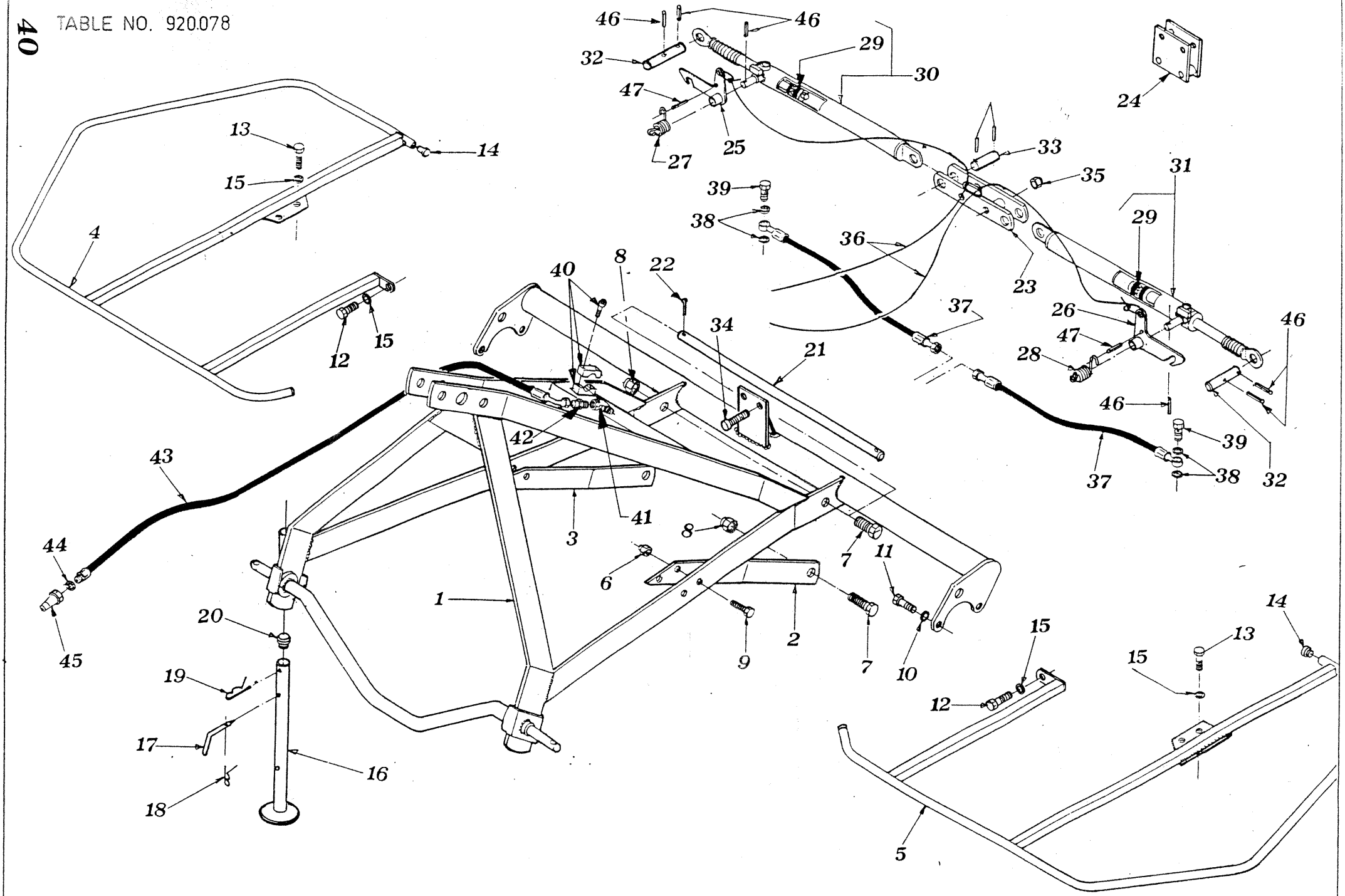


TABLE NO. 920.078					
ST/ 384 ST 520 - 3RD POINT HITCH -HYDRO					
ITEM	ST384 Q.ty	ST520 Q.ty	PART NO	DESCRIPTION	NOTE
1	1	-	210.041	3RD POINT HITCH	ST/384
1	-	1	210.040	3RD POINT HITCH	ST/520
2	1	-	200.425	LH TIE ROD	ST/384
2	-	1	200.426	LH TIE ROD	ST/520
3	1	-	200.428	RH TIE ROD	ST/384
3	-	1	200.429	RH TIE ROD	ST/520
4	1	-	210.078	RH LATERAL GUARD	ST/384
4	-	1	210.074	RH LATERAL GUARD	ST/520
5	1	-	210.079	LH LATERAL GUARD	ST/384
5	-	1	210.075	LH LATERAL GUARD	ST/520
6	4	4	600.077	NUT	
7	2	2	600.578	SCREW	
8	2	2	600.240	NUT	
9	4	4	600.443	SCREW	
10	4	4	600.633	WASHER	
11	4	4	600.442	SCREW	
12	2	2	600.770	SCREW	
13	4	4	600.441	SCREW	
14	4	4	600.854	PLUG	
15	6	6	600.634	WASHER	
16	1	-	210.026	STAND	ST/384
16	-	1	210.064	STAND	ST/520
17	1	1	200.328	PIN	
18	1	1	600.019	PIN	
19	1	1	600.020	PIN	
20	1	1	200.309	PLUG	
21	1	-	200.430	PIN	ST/384
21	-	1	200.431	PIN	ST/520
22	2	2	600.112	SPLIT PIN	
23	-	1	200.859	HITCH	ST/520
24	1	-	210.010	HITCH	ST/384
25	1	1	210.098	RH COUPLER	
26	1	1	210.099	LH COUPLER	
27	1	1	210.093	RH SPRING	
28	1	1	210.094	LH SPRING	
29*	2	2	600.895	SET OF GASKET	
30	1	1	210.091	RH CYLINDER	
31	1	1	210.092	LH CYLINDER	
32	2	2	210.103	PIN	
33	2	2	200.860	PIN	
34	2	2	600.826	SCREW	
35	2	2	600.077	NUT	
36	1	1	210.009	ROPE	
37*	2	2	600.821	HOSE	
38*	4	4	600.819	COPPER WASHER	
39*	2	2	600.820	SCREW	
40*	1	1	600.822	PIPE STOP,COMPLETE	
41*	1	1	600.880	UNION TEE	
42*	1	1	600.883	NIPPLES	
43*	1	1	600.882	HOSE	
44*	1	1	600.269	COPPER WASHER	
45*	1	1	600.273	QUICK COUPLING	
46	10	10	600.538	PIN	
47	2	2	600.773	PIN	
*	1	1	210.018	HYDRAULIC COMPLETE KIT	

TABLE NO. 920.018

ST 384-H / ST 520-H

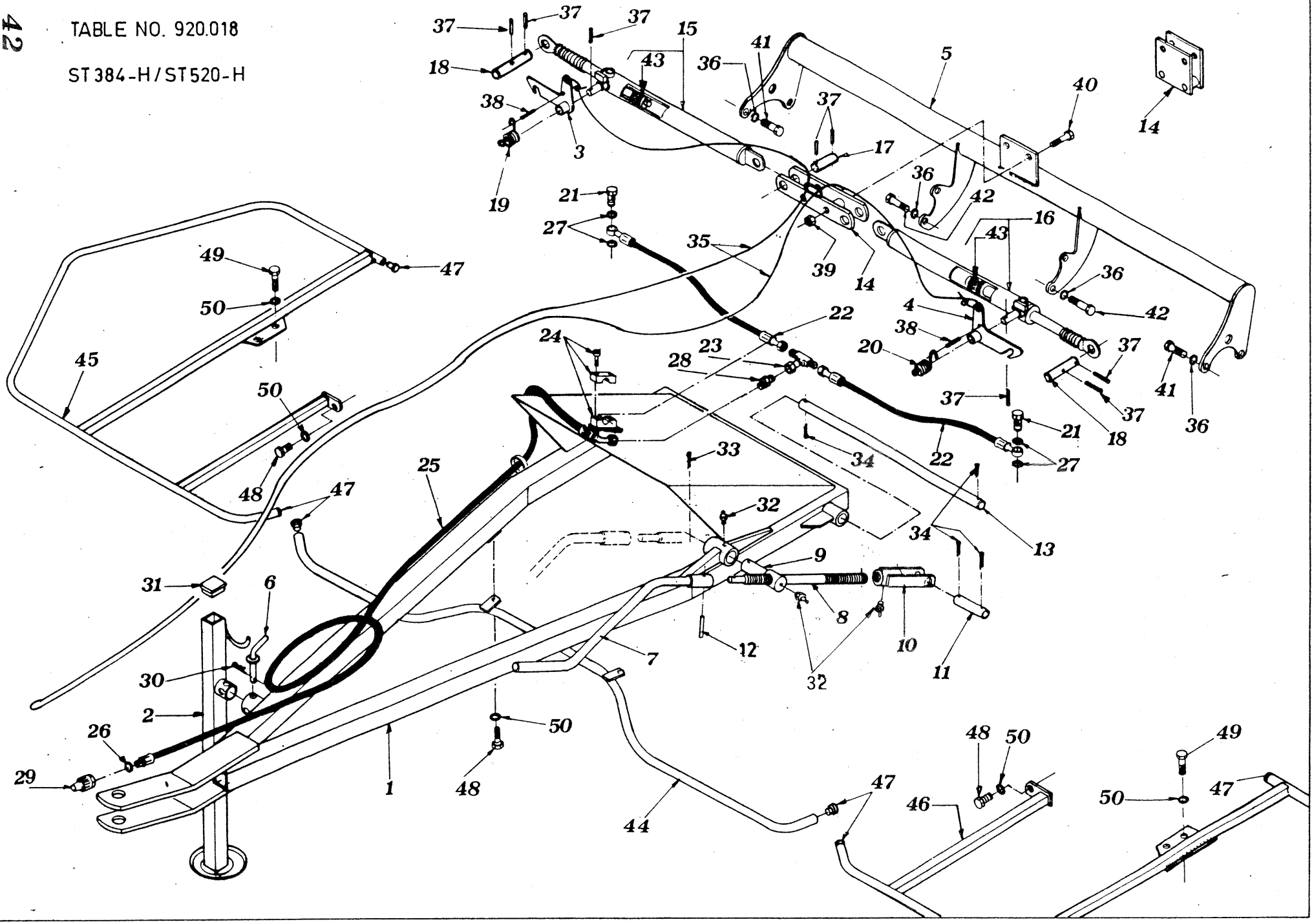


TABLE NO. 920.018					
ST/ 384 ST 520 - PULL TYPE					
ITEM	ST384 Q.ty	ST520 Q.ty	PART NO	DESCRIPTION	NOTE
1	1	-	210.034	DRAWBAR	ST/384
1	1	1	210.033	DRAWBAR	ST/520
2	1	1	200.946	STAND	
3	1	1	210.098	RH COUPLER	
4	1	1	210.099	LH COUPLER	
5	1	-	210.283	RENFORCEMENT,REAR	ST/384
5	-	1	210.305	RENFORCEMENT,REAR	ST/520
6	1	1	200.959	PIN	
7	1	1	200.438	HANDLE	
8	1	1	200.766	TIEROD	
9	1	1	200.768	PIN	
10	1	1	200.769	FORK	
11	1	1	200.442	PIN	
12	1	1	600.580	PIN	
13	1	-	210.319	PIN	ST/384
13	-	1	200.445	PIN	ST/520
14	1	-	210.010	HITCH	ST/384
14	-	1	200.859	HITCH	ST/520
15	1	1	210.091	RH CYLINDER	
16	1	1	210.092	LH CYLINDER	
17	2	2	200.860	PIN	
18	2	2	210.103	PIN	
19	1	1	210.093	RH SPRING	
20	1	1	210.094	LH SPRING	
21*	2	2	600.820	SCREW	
22*	2	2	600.821	PIPE	
23*	1	1	600.880	UNION TEE	
24*	1	1	600.822	PIPE STOP,COMPLETE	
25*	1	1	600.894	PIPE	
26*	1	1	600.269	COPPER WASHER	
27*	4	4	600.819	COPPER WASHER	
28*	1	1	600.883	NIPPLES	
29*	1	1	600.273	QUICK COUPLING	
30	1	1	600.019	PIN	
31	1	1	600.817	PLUG	
32	3	3	600.124	GREASE NIPPLE	
33	1	1	600.548	SPLIT PIN	
34	4	4	600.112	SPLIT PIN	
35	1	1	210.009	ROPE	
36	8	8	600.633	WASHER	
37	10	10	600.538	PIN	
38	2	2	600.773	PIN	
39	2	2	600.077	NUT	
40	2	2	600.826	SCREW	
41	6	6	600.442	SCREW	
42	4	4	600.153	SCREW	
43	1	1	600.895	SET OF GASKET	
44	1	-	200.960	GUARD	ST/384
44	-	1	200.958	GUARD	ST/520
45	1	-	210.078	RH LATERAL GUARD	ST/384
45	-	1	210.074	RH LATERAL GUARD	ST/520
46	1	-	210.079	LH LATERAL GUARD	ST/384
46	-	1	210.075	LH L,ATERAL GUARD	ST/520
47	6	6	600.854	PLUG	
48	4	4	600.770	SCREW	
49	4	4	600.441	SCREW	
50	8	8	600.634	WASHER	
*	1	1	210.090	HYDRAULIC COMPLETE KIT	

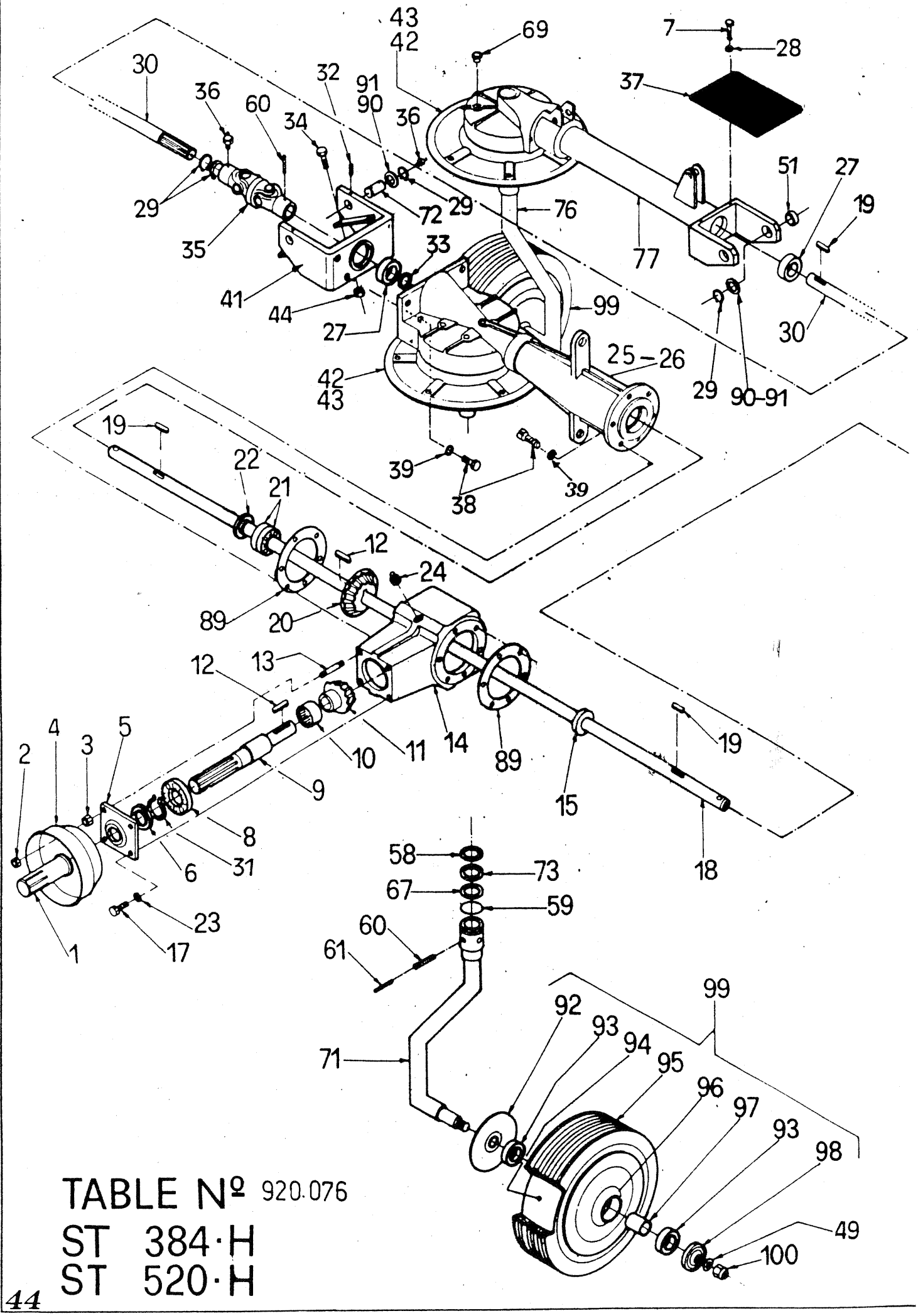


TABLE Nº 920.076
ST 384·H
ST 520·H

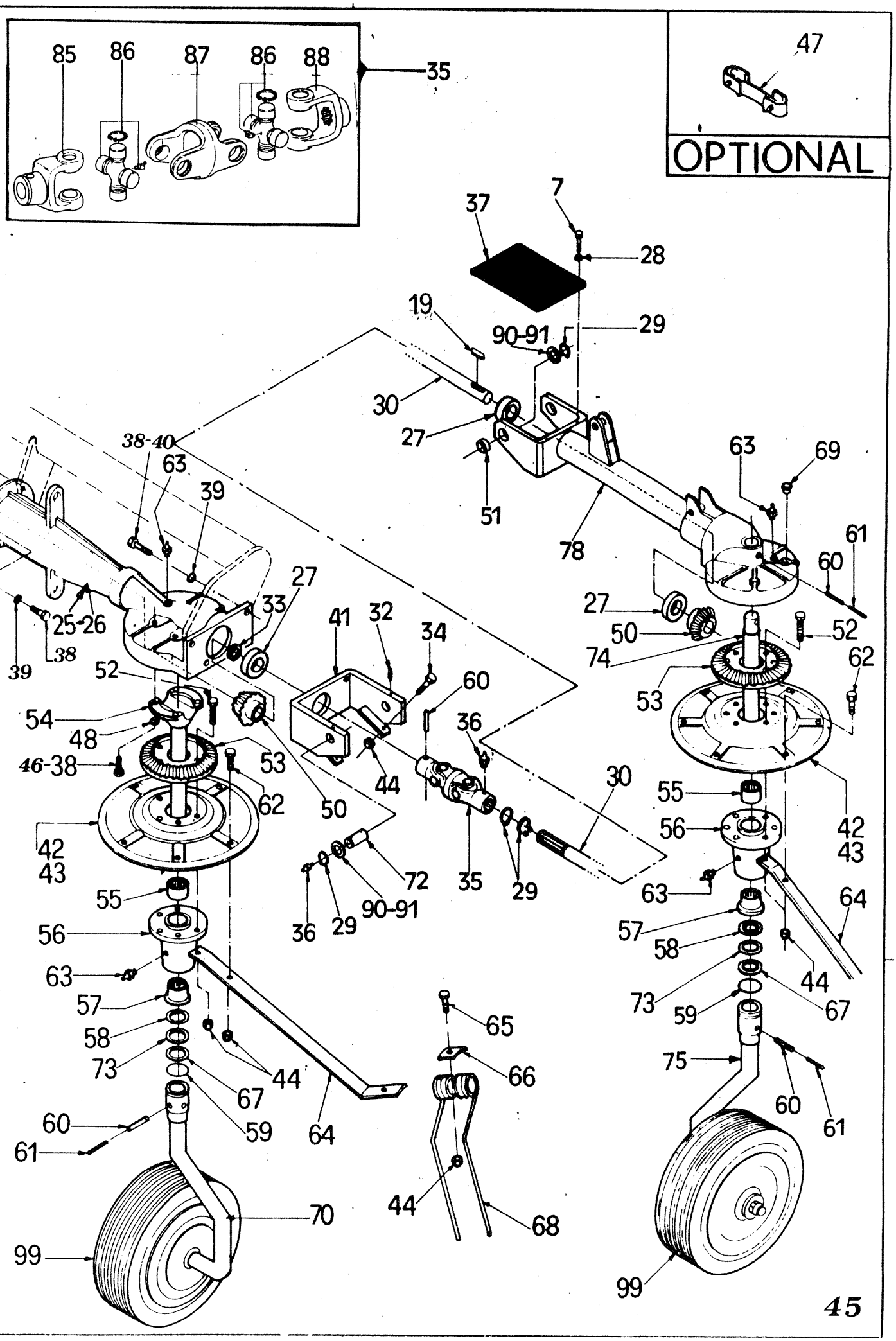

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TABLE NO.920.076					
ST384/ST520 HYDRO					
ITEM	ST384 Q.ty	ST520 Q.ty	PART NO	DESCRIPTION	NOTE
1	1	1	600.172	SHAFT GUARD	
2	2	2	600.037	NUT	
3	1	2	600.552	NUT	
4	2	1	600.681	HOOD	
5	1	1	200.395	GEARBOX CAP	
6	1	1	600.555	OIL RETAINER	
7	8	8	600.061	SCREW	
8	1	1	600.327	BEARING	
9	1	1	200.396	SHAFT	
10	1	1	600.557	BEARING	
11	1	1	200.397	SHAFT	
12	2	2	600.556	TAP	
13	2	2	600.558	BOLT	
14	1	1	200.390	GEARBOX	
15	1	1	600.561	OIL RETAINER	
17	2	2	600.222	SCREW	
18	1	-	200.949	DRIVE SHAFT	
18	-	1	200.853	DRIVE SHAFT	
19	4	4	600.559	TAP	
20	1	1	200.400	CROWN	
21	1	2	600.579	BEARING	
22	1	1	600.582	OIL RETAINER	
23	2	2	600.228	SPRING WASHER	
24	2	2	600.560	CAP	
25	-	2	210.056	ROTOR AXLE	
26	2	-	200.452	ROTOR AXLE	
27	6	6	600.609	BEARING	
28	8	8	600.115	WASHER	
29	12	12	600.611	SNAP RING	
30	2	-	200.950/A	LATERAL SHAFT	
30	-	2	200.852/A	LATERAL SHAFT	
31	1	1	600.333	SNAP RING	
32	4	4	600.809	SCREW	
33	2	2	200.851	SHIM	
34	4	4	600.153	SCREW	
35	2	2	200.857	JOINT	
36	6	6	600.124	GREASE NIPPLE	
37	2	2	200.862	GUARD	
38	20	24	600.615	SCREW	
39	20	20	600.633	WASHER	
40	4	4	600.442	SCREW	
41	2	2	200.921	HINGE	
42	-	4	200.408	TINE DISC	
43	4	-	200.466	TINE DISC	
44	52	76	600.077	NUT	
46	4	-	600.004	SCREW	

TABLE NO.920.076					
ST384/ST520 HYDRO					
ITEM	ST384 Q.ty	ST520 Q.ty	PART NO	DESCRIPTION	NOTE
47	16	24	200.640	TINE LOCK	OPTIONAL
48	8	8	600.049	WASHER	
49	4	4	600.080	NUT	
50	4	4	200.464	PINION	
51	4	4	600.808	BUSHING	
52	16	24	600.564	SCREW	
53	4	-	200.627	CROWN	
53	-	4	200.470	CROWN	
54	2	2	200.471	PIN	
55	4	4	600.563	BEARING	
56	4	-	200.472/A	HUB	
56	-	4	200.410/A	HUB	
57	4	4	600.567	BEARING	
58	4	4	200.411	SHIM	
59	4	4	600.568	GASKET	
60	8	8	600.541	SPRING PIN	
61	6	6	600.562	SPRING PIN	
62	16	24	600.616	SCREW	
63	8	8	600.247	GREASE NIPPLE	
64	16	-	200.473	TINE ARM	
64	-	24	200.403	TINE ARM	
65	16	24	600.688	SCREW	
66	16	24	200.402	PLATE	
67	4	4	200.490	SHIM	
68	16	24	200.401	TINE	
69	4	4	600.896	PLUG	
70	1	1	200.952	L.H. CENTER SUPPORT	
71	1	1	200.951	R.H. CENTER SUPPORT	
72	4	4	200.850	PIN	
73	4	4	200.475	SHIM	
74	2	2	200.407	PIN	
75	1	1	210.085	L.H. LATERAL SUPPORT	
76	2	2	210.084	R.H. LATERAL SUPPORT	
77	1	-	210.006	R.H. SIDE AXLE	
77	-	1	200.922	R.H. SIDE AXLE	
78	1	-	210.007	L.H. SIDE AXLE	
78	-	1	200.928	L.H. SIDE AXLE	
85	2	2	600.813	FORK	
86	4	4	600.814	CROSS, COMPLETE	
87	2	2	600.815	CENTER JOINT	
88	2	2	600.816	SPLINED FORK	
89	2	2	200.405	GASKET	
90	4	4	200.272	SHIM	
91	4	4	200.273	SHIM	
92	4	4	200.414	DUST COVER, INNER	
93	8	8	600.602	BEARING	
94	4	4	600.569	TUBE	
95	4	4	600.570	TIRE	
96	4	4	600.571	RIM	
97	4	4	200.415	SPACER	
98	4	4	200.416	DUST COVER, OUTER	
99	4	4	600.572	TIRE ASSY	
100	4	4	600.080	NUT	

TABLE NO. 920.015/A

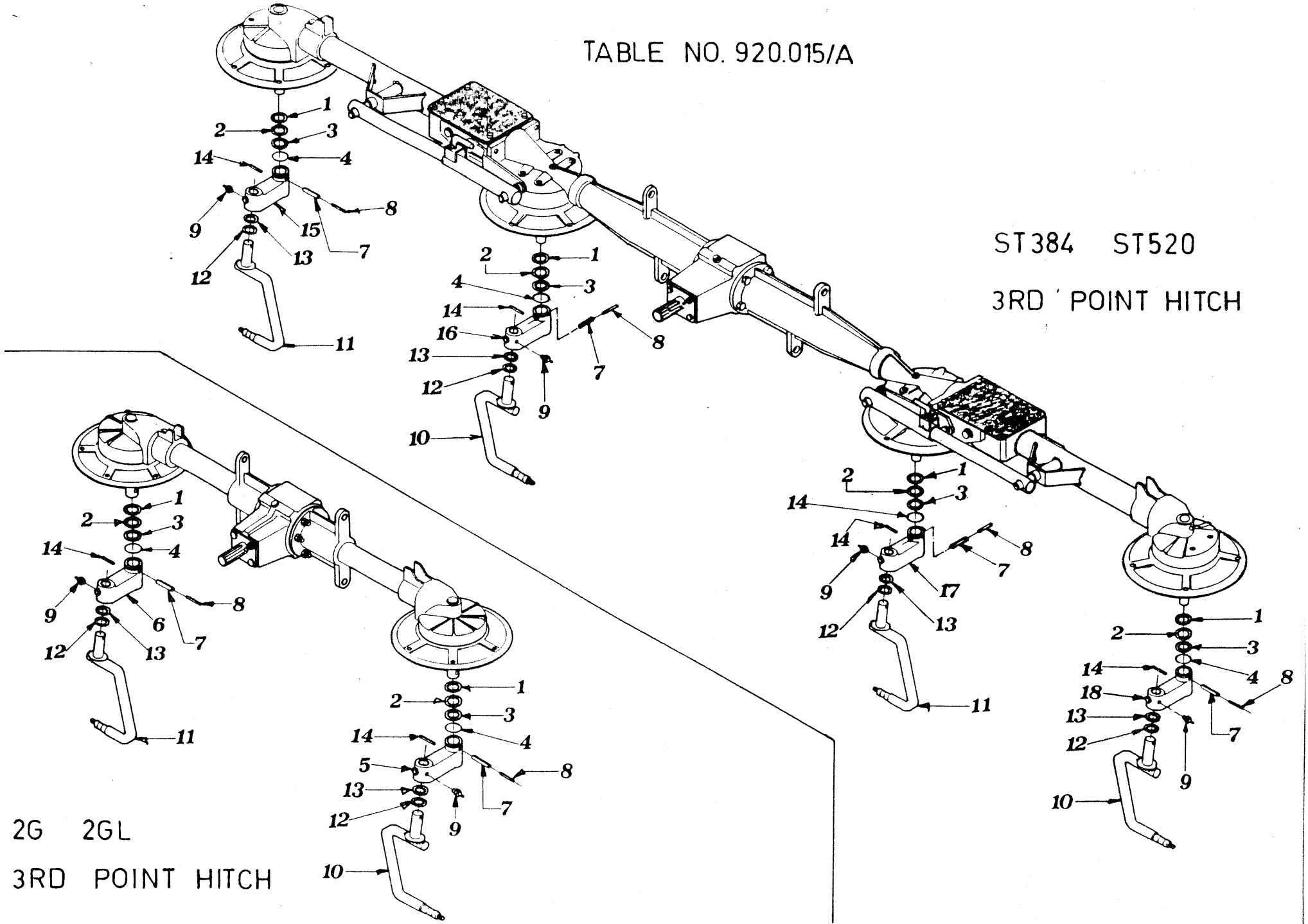
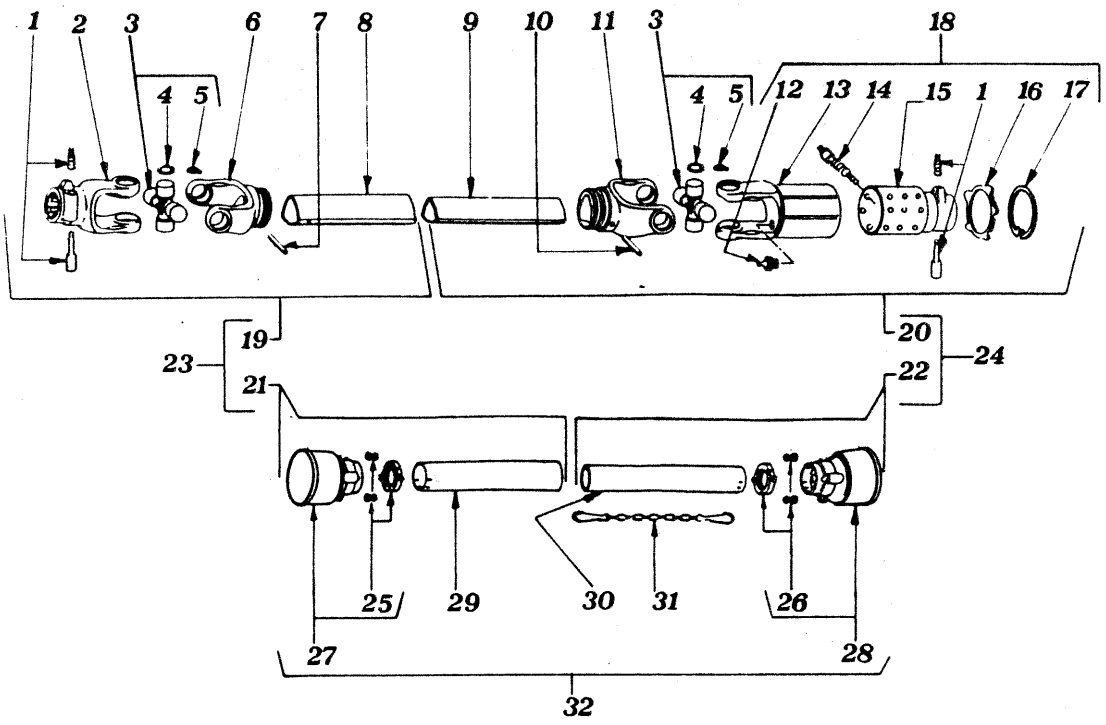


TABLE NO.920.015/A					
2/G 2/GL ST/384 ST/520 3RD POINT HITCH(WHEEL BRACKET)					
ITEM	2G/2GL Q.ty	ST384-520 Q.ty	PART NO	DESCRIPTION	NOTE
1	2	4	200.411	SHIM	
2	2	4	200.475	SHIM	
2	2	4	200.419	SHIM	
3	2	4	200.490	SHIM	
4	2	4	600.568	GASKET	
5	1	-	200.468	SUPPORT,L.H.	2G-2GL
6	1	-	200.467	SUPPORT,R.H.	2G-2GL
7	2	4	600.541	SPRING PIN	
8	2	4	600.562	SPRING PIN	
9	2	4	600.124	GREASE NIPPLE	
10	1	-	200.635	L.H. TIRE BRACKET	2G-2GL
10	-	2	210.071	L.H. TIRE BRACKET	ST/384-520
11	1	-	200.634	R.H. TIRE BRACKET	2G-2GL
11	-	2	210.070	R.H. TIRE BRACKET	ST/384-520
12	2	4	200.273	SHIM	
13	2	4	200.272	SHIM	
14	2	4	600.539	SPRING PIN	
15	-	1	200.417/1	R.H. LATERAL SUPPORT	ST/384-520
16	-	1	200.417	R.H. CENTER SUPPORT	ST/384-520
17	-	1	200.418	L.H. CENTER SUPPORT	ST/384-520
18	-	1	200.418/1	L.H. LATERAL SUPPORT	ST/384-520

CARDAN SHAFT B3 090E + LW3
PART NO.610.097
ST 384/520 3RD POINT HITCH

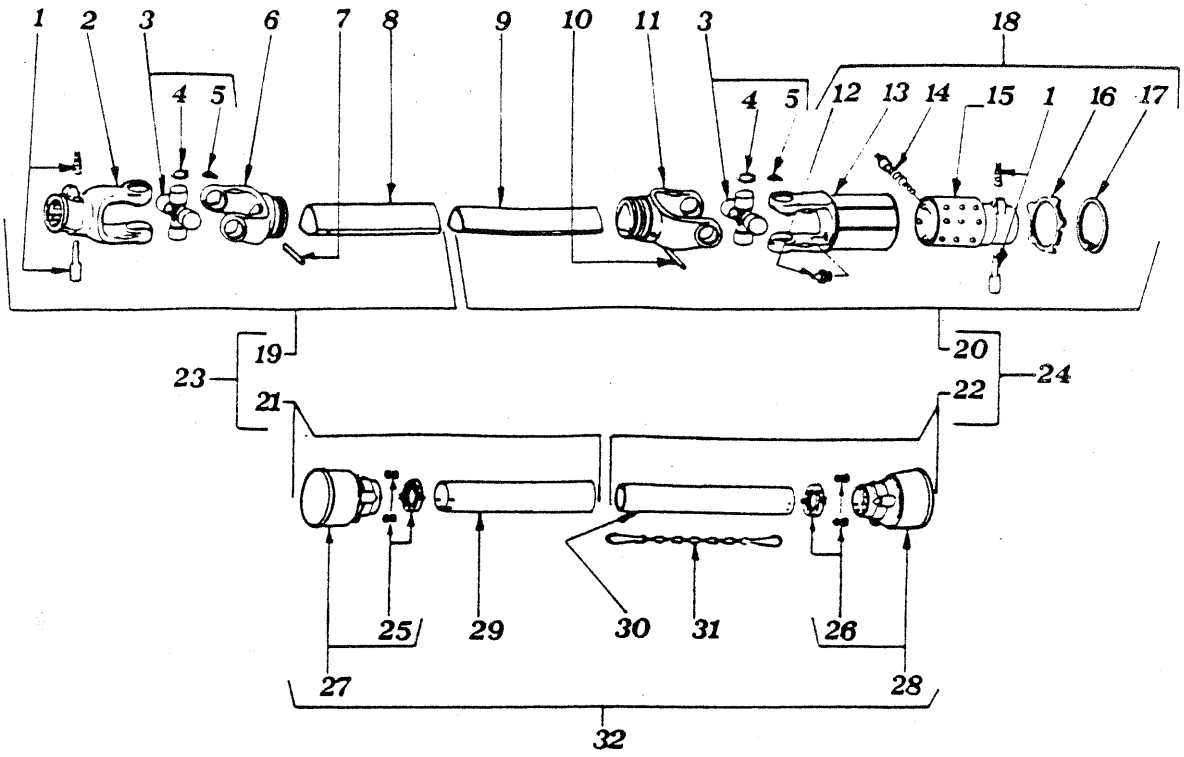


CARDAN SHAFT 610.097				
ITEM	PART NO	Q.ty	DESCRIPTION	
1	610.057	2	COMPLETE PUSH BUTTON	
2	610.071	1	YOKE	
3	610.070	2	CROSS JOURNAL ASS.	
4	610.205	8	CIRCLIP	
5	610.206	2	GREASE NIPPLE	
6	610.207	1	OUTER TUBE YOKE	
7	610.208	1	FLEXIBLE PIN	
8	610.209	1	CM. CARDAN TUBE	
9	610.210	1	CM. CARDAN TUBE	
10	610.211	1	FLEXIBLE PIN	
11	610.212	1	INNER TUBE YOKE	
12	610.216	1	GREASE NIPPLE	
13	610.217	1	OUTER CASING WITH YOKE	
14	610.218	24	RATCHET TOOTH	
15	610.219	1	HUB	
16	610.220	1	REATING WASHER	
17	610.221	1	CIRCLIP	
18	610.213	1	TORQUE LW3	
19	610.341	1	HALF SHAFT (WITHOUT GUARD)	
20	610.342	1	HALF SHAFT (WITHOUT GUARD)	
21	610.082	1	HALF SAFETY GUARD	
22	610.083	1	HALF SAFETY GUARD	
23	610.426	1	HALF SHAFT (WITH GUARD)	
24	610.427	1	HALF SHAFT (WITH GUARD)	
25	610.078	1	O. BEARING	
26	610.079	1	I. BEARING	
27	610.080	1	O. BASIC CONE	
28	610.081	1	I. BASIC CONE	
29	610.338	1	CM. SAFETY TUBE	
30	610.339	1	CM. SAFETY TUBE	
31	610.068	1	CHAINE	
32	610.086	1	SAFETY GUARD	

CARDAN SHAFT B3 130E + LW3

PART NO. 610.096

ST/384-ST/520 PULL TYPE



CARDAN SHAFT 610.096				
ITEM	PART NO	Q.ty	DESCRIPTION	
1	610.057	2	COMPLETE PUSH BUTTON	
2	610.071	1	YOKE	
3	610.070	2	CROSS JOURNAL ASS.	
4	610.205	8	CIRCLIP	
5	610.206	2	GREASE NIPPLE	
6	610.207	1	OUTER TUBE YOKE	
7	610.208	1	FLEXIBLE PIN	
8	610.209	1	CM. CARDAN TUBE	
9	610.210	1	CM. CARDAN TUBE	
10	610.211	1	FLEXIBLE PIN	
11	610.212	1	INNER TUBE YOKE	
12	610.216	1	GREASE NIPPLE	
13	610.217	1	OUTER CASING WITH YOKE	
14	610.218	24	RATCHET TOOTH	
15	610.219	1	HUB	
16	610.220	1	REATING WASHER	
17	610.221	1	CIRCLIP	
18	610.213	1	TORQUE LW3	
19	610.222	1	HALF SHAFT (WITHOUT GUARD)	
20	610.223	1	HALF SHAFT (WITHOUT GUARD)	
21	610.226	1	HALF SAFETY GUARD	
22	610.227	1	HALF SAFETY GUARD	
23	610.224	1	HALF SHAFT (WITH GUARD)	
24	610.225	1	HALF SHAFT (WITH GUARD)	
25	610.078	1	O. BEARING	
26	610.079	1	I. BEARING	
27	610.080	1	O. BASIC CONE	
28	610.081	1	I. BASIC CONE	
29	610.214	1	CM. SAFETY TUBE	
30	610.215	1	CM. SAFETY TUBE	
31	610.068	1	CHAINE	
32	610.228	1	SAFETY GUARD	

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