

AGRICULTURAL MACHINERY

**sitrex**®  
s.r.l.

***OPERATOR'S AND  
SERVICE PARTS MANUAL***

**COLUMBIA**

**TR 6/8 TR 7/9**

**HAY RAKE, PULL TYPE**

## **PULL-TYPE RAKES: TR/6-8/7-9**

### **INTRODUCTION**

This manual includes full instructions for a correct use and maintenance of the machinery, and the recommended spare parts list.

In order to prevent any possible damage of the machine and/or the operator(s) you are kindly requested to go through this manual for a proper knowledge of the assembly of the implements, their use on the field, and their maintenance. If any doubt, please contact your local dealer or distributor.

Should the machine be re-sold, you are kindly requested to supply this manual along with the machine to the new purchaser.

### **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 repaired or however repaired without authorization.

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

## CAUTION FOR USE

It could be dangerous for people who are not familiar with this type of machine to use the rake, particularly when kids are there during the assembly or operation on field. We therefore recommend the use of the rake only to those people who are very familiar with the machine and the safety precautions.

## ASSEMBLY SOLUTIONS

TR pull-type rake consists of a main frame and frame extensions for rakes from 6 to 9 finger wheels.

Here are the advantages:

- 1) Having a TR/6 rake you can convert it into a TR/8 rake by attaching a 2-wheel frame extension.
- 2) Having a TR/7 rake you can convert it into a TR/9 rake by attaching a 2-wheel frame extension.

## SPECIFICATIONS

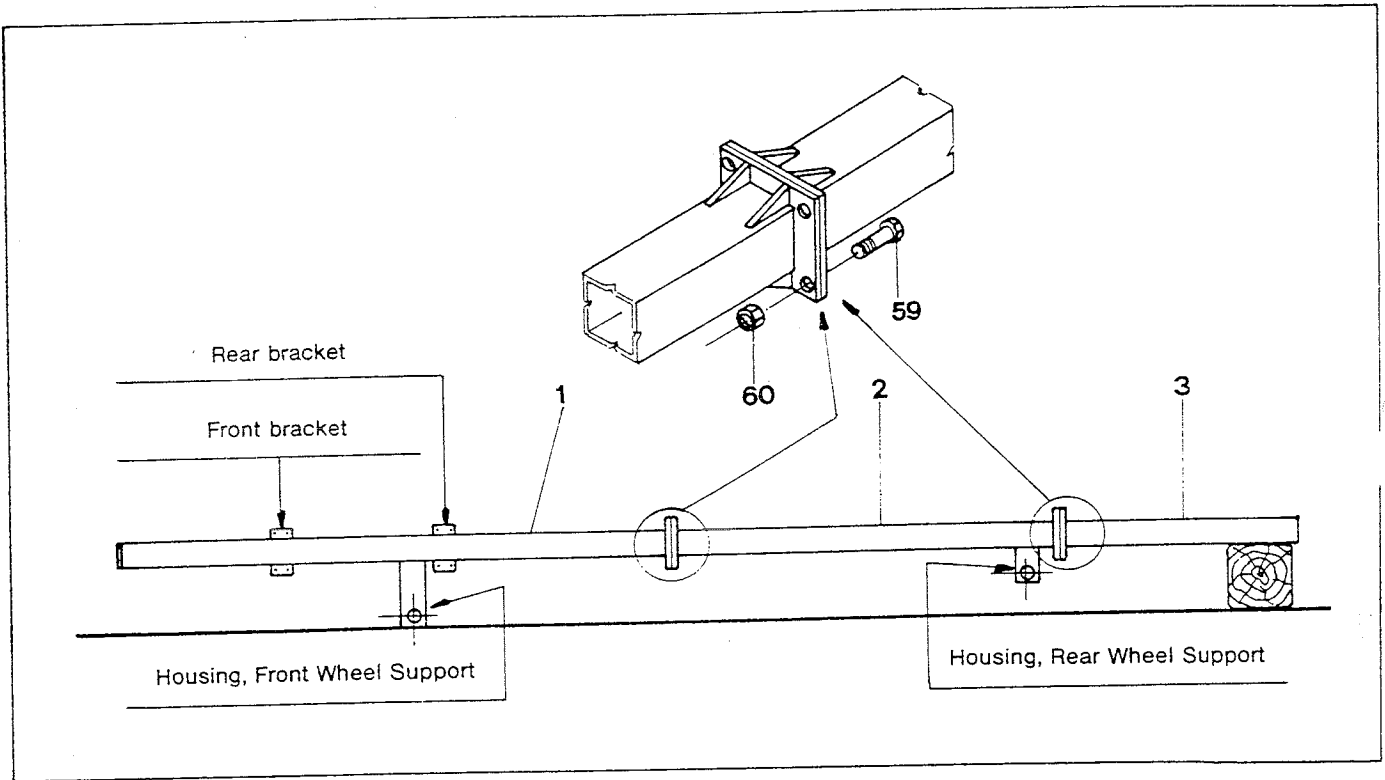
MODELS	TR/6	TR/8	TR/7	TR/9
Weight	535 Kg./1180 lbs.	605 Kg./1335 lbs.	565 Kg./1245 lbs.	640 Kg./1410 lbs.
Number of wheels	6	8	7	9
Number of tines on each wheel	40	40	40	40
Wheel Diam.	1,4 m. / 55"	1,4 m. / 55"	1,4 m. / 55"	1,4 m. / 55"
Raking working width	4 m. / 13' 2"	5 m. / 16' 5"	4,5 m. / 14' 9"	5,5 m. / 18'
Transport width	2,4 m. / 8'	3,2 m. / 10' 6"	3 m. / 10'	3,7 m. / 12' 1"
Working speed	22 Km/h/14 mph	22 Km/h/14 mph	22 Km/h/14 mph	22 Km/h/14 mph
HP required min.	30 HP / 22 Kw	30 HP / 22 Kw	30 HP / 22 Kw	30 HP / 22 KW
Tyre size	6.00x16	6.00x16	6.00x16	6.000x16

## TR/6-8/7-9 RAKE ASSEMBLY INSTRUCTIONS

To save room in the container we supply the rakes partly knocked down. Please find below assembly instructions. For part numbers please refer to the enclosed parts breakdown.

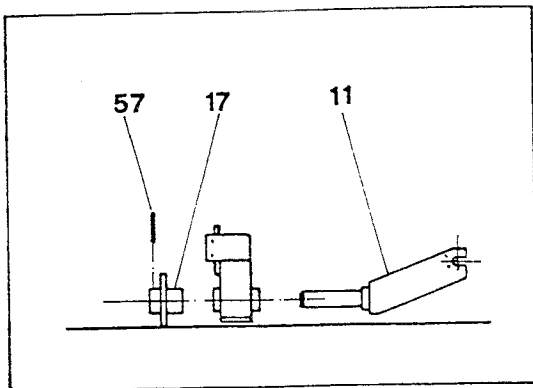
### ASSEMBLING

- a) Build the frame as required and put the frame end on a balk as shown in picture 1.

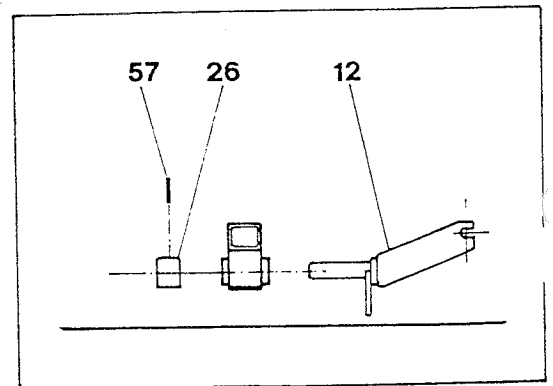


Pict. 1

- b) Fit the wheel supports (11-12) into their housings (pict. 1). Lock support (11) with bush (17) and pin (48) (pict. 2). Lock support (12) with bush (26) and pin (48) (pict. 3).

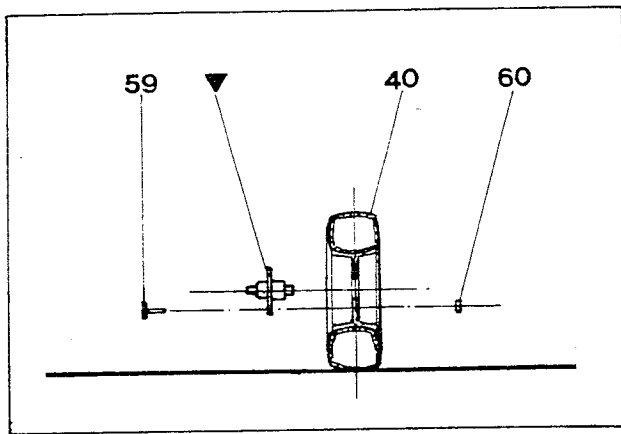


Pict. 2

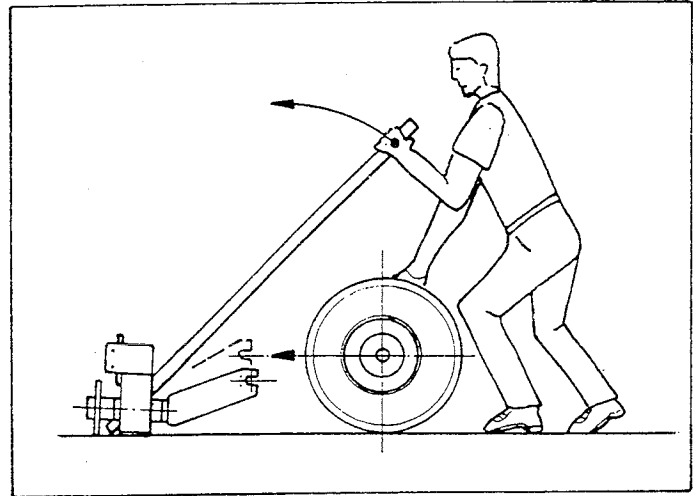


Pict. 3

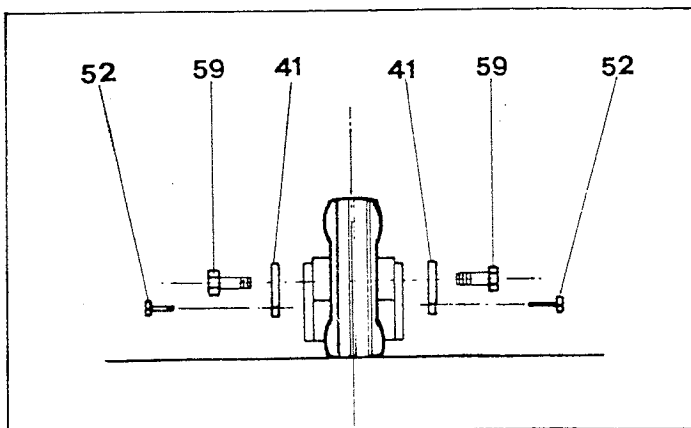
- c) Attach the wheels (40) to the relevant hub assy using bolts (59-60) (pict. 4). With a lever push the wheels inside the fork of supports (11-12) (pict. 5). Lock with plates (41) and screw (59-52) (pict. 6). Picture 7 shows the wheel after assembly.



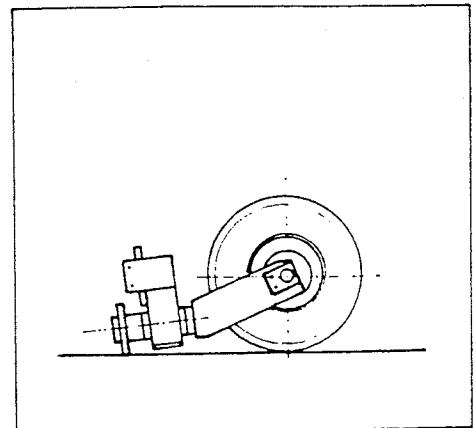
Pict. 4



Pict. 5

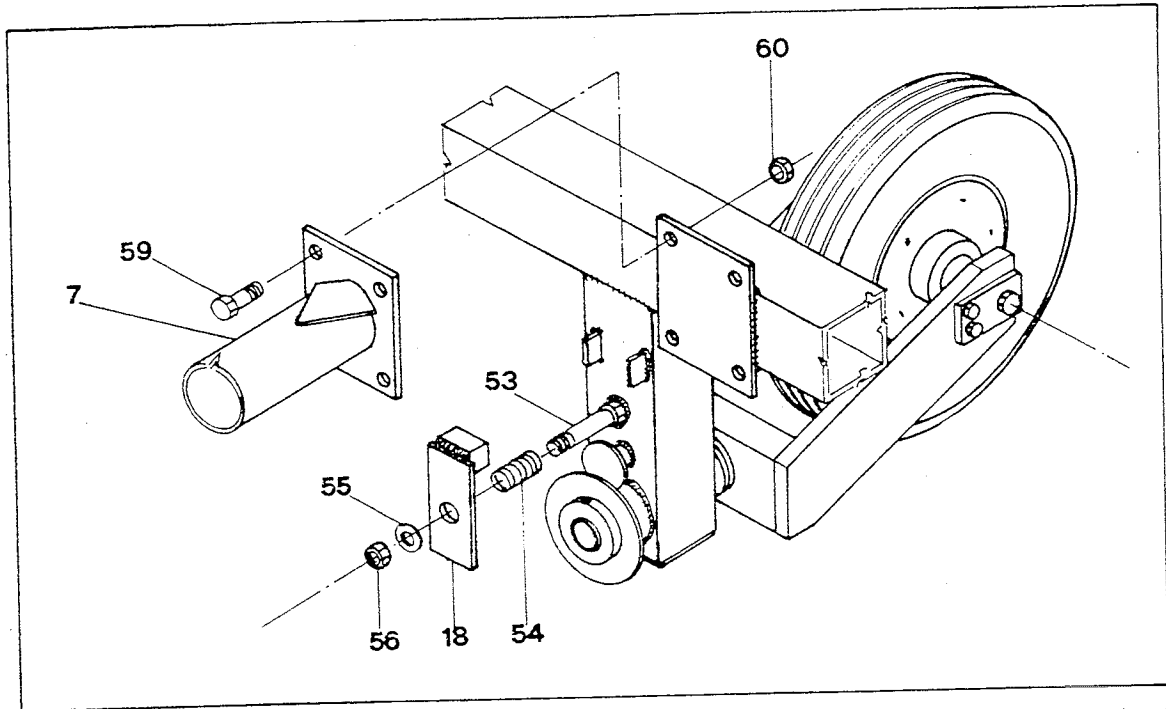


Pict. 6



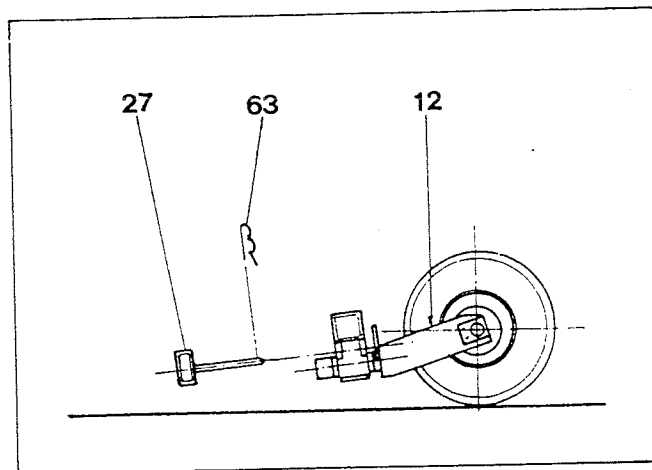
Pict. 7

- d) Fit spring 54 and brake 18 into screw (53) welded on main frame (pict. 8). Next, after mounting washer (55), lock the support with nut (56) in order to have the wheel positioned as shown in pict. 7.



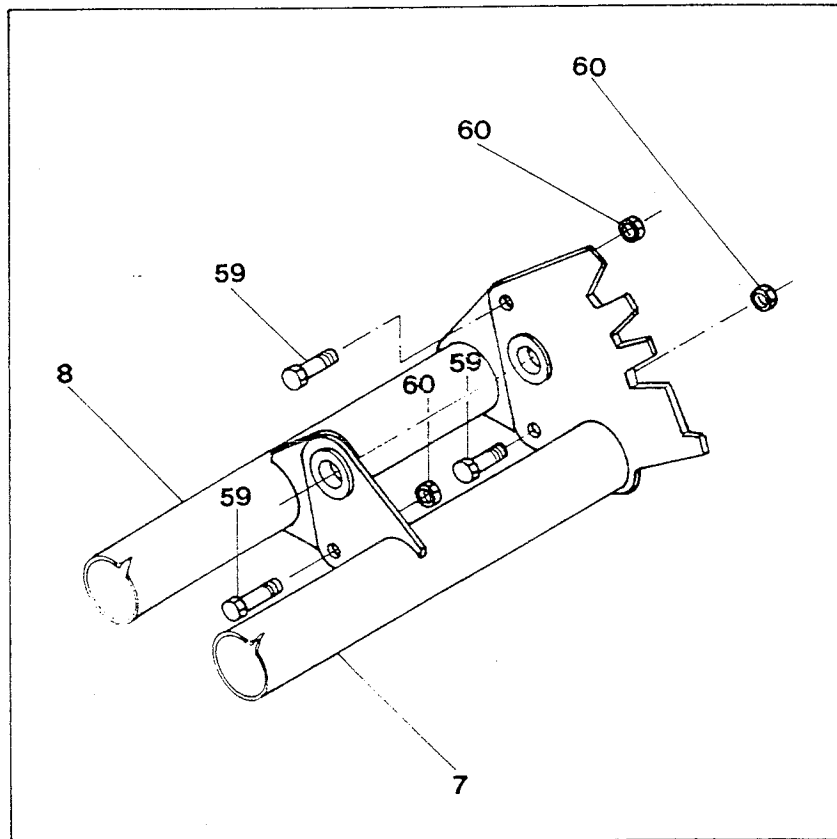
Pict. 8

- e) Lock the rear wheel support with pin (27) (pict. 9).

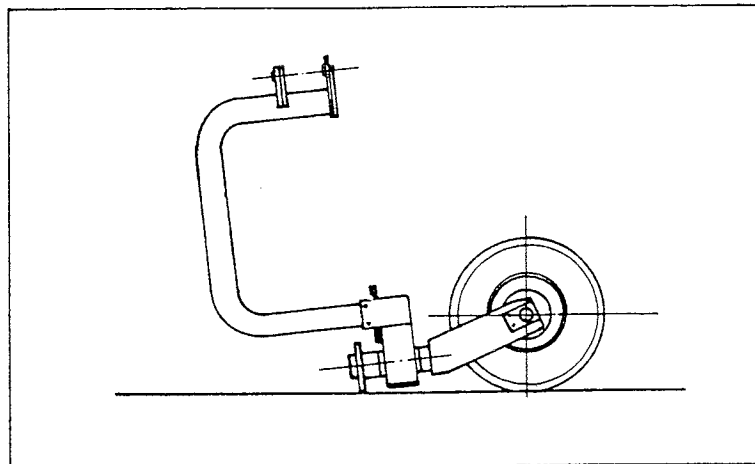


Pict. 9

- f) Attach the drawbar support (7) to the front plate of the main frame (pict. 1) and lock it with bolts (59-60) (pict. 8). In the same manner lock the drawbar support (8) to the rear plate of the main frame (pict. 1). Please note that after assembling, the scalloped side of support 7 should be on the plain side of support 8 (pict. 10).  
Join supports (7-8) with bolts (59-60) (pict. 8). Picture 11 shows the machine at this stage of assembly.

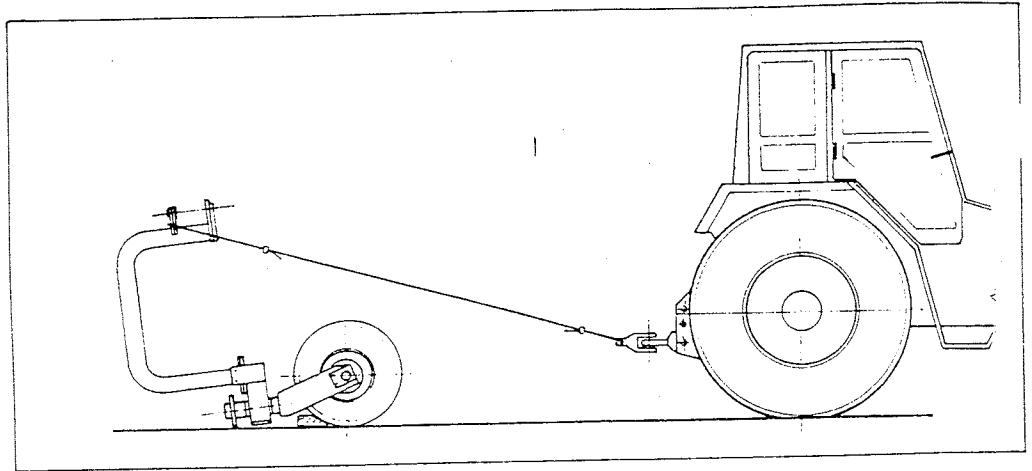


Pict. 10

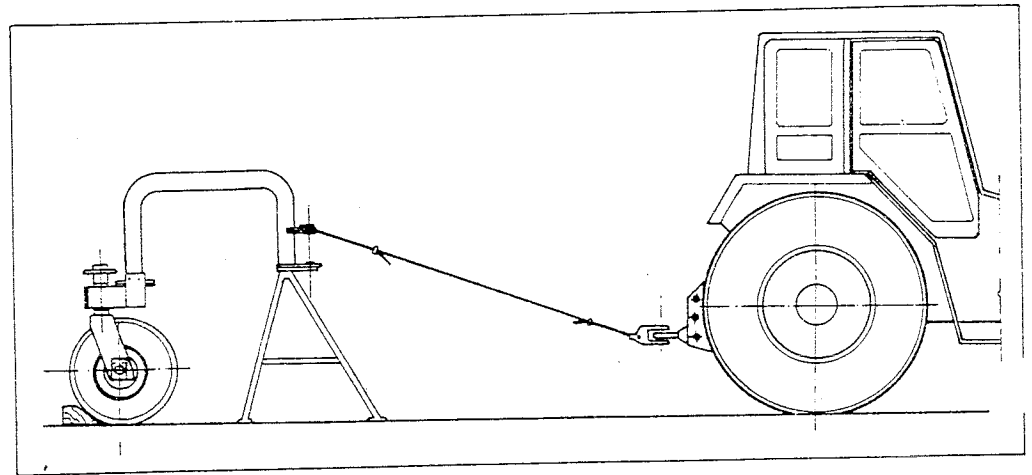


Pict. 11

g) Wedge the wheels.  
 Connect the scalloped side of drawbar's support (7) to the tractor (pict. 12). Pull the rake to the position shown in pict. 13. Use a stand to prevent the rake from falling to the ground (pict 13).

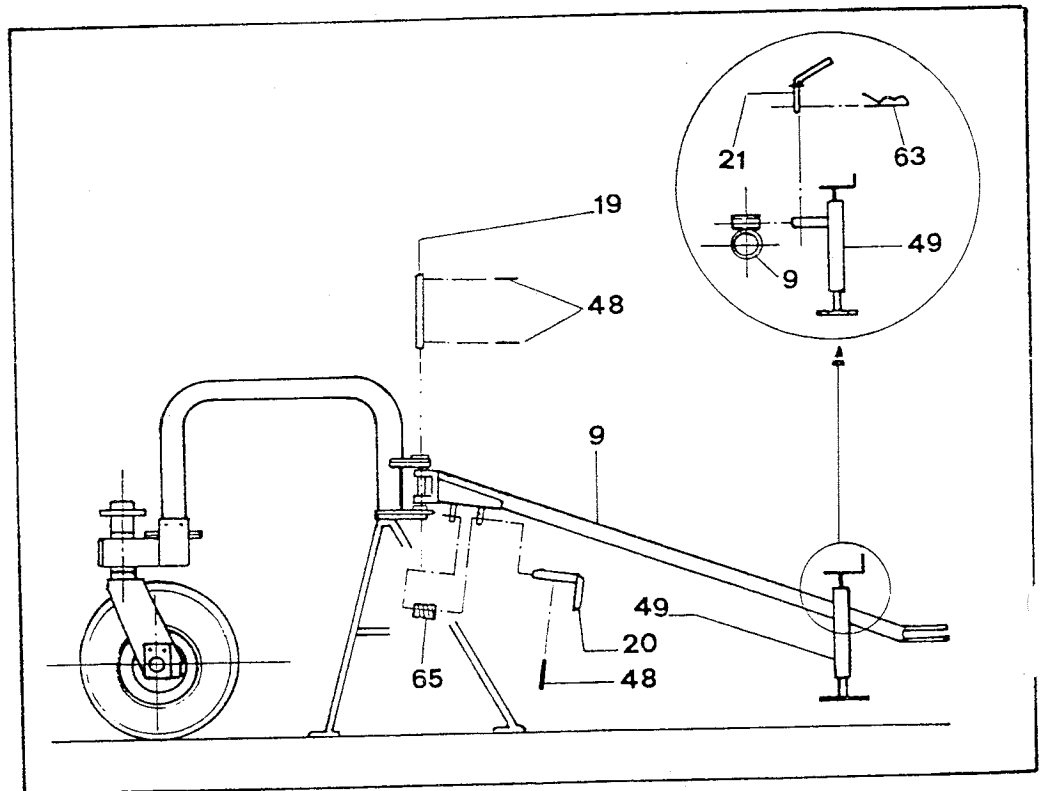


Pict. 12



Pict. 13

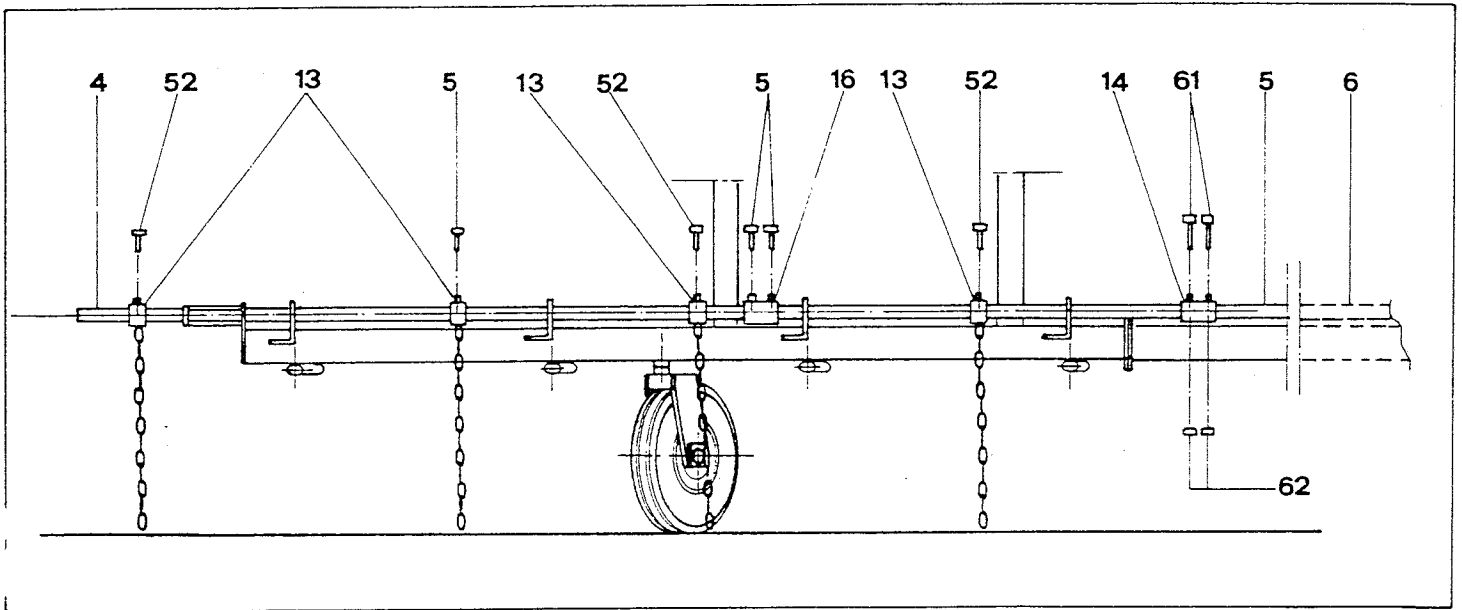
h) Attach drawbar (9) to supports (7-8) with pin (19) and pins (48) (pict. 14). Attach the parking stand (49) and lock with pin (21) and split pin (63) (pict. 14). Fit pin (20) and spring (65), then lock with pin (48)



Pict. 14

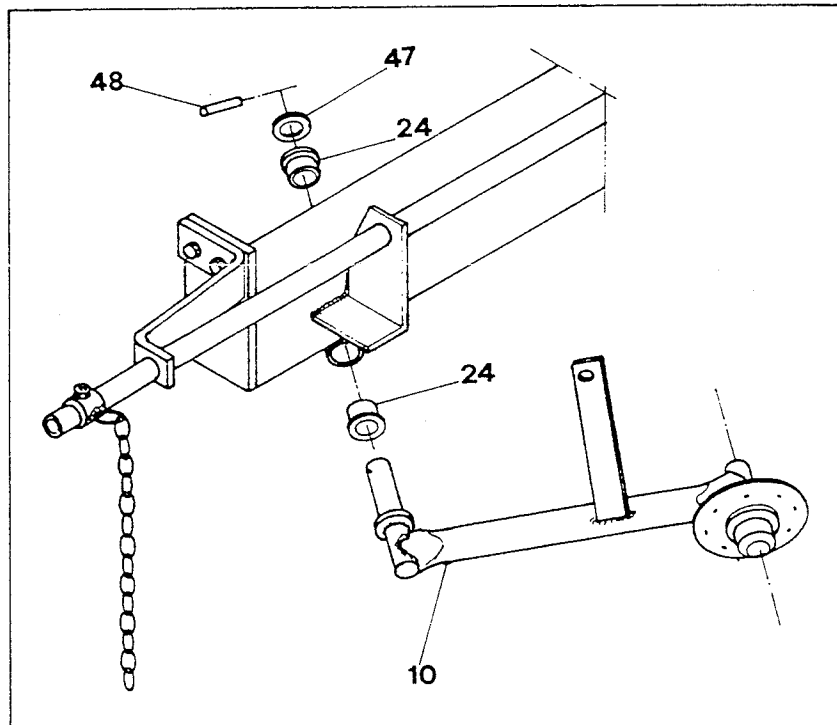


- i) Lock bracket (15) to the main frame (see parts breakdown) with bolts (50-51)
- j) Attach the lifting pipes of the wheel arms (4-5 on TR/6-7 4-5-6 on TR/8-9) and fit the chain bushes (13) on them (pict. 15). On pipe (4) also fit the cylinder bush (16) after the 3rd chain bush (pict. 15). Lock chain bushes (13) and cylinder bush (16) with screws (52) (pict. 15). Join pipes 4-5-6 using bush (14) and screws (61-62) (pict. 15).



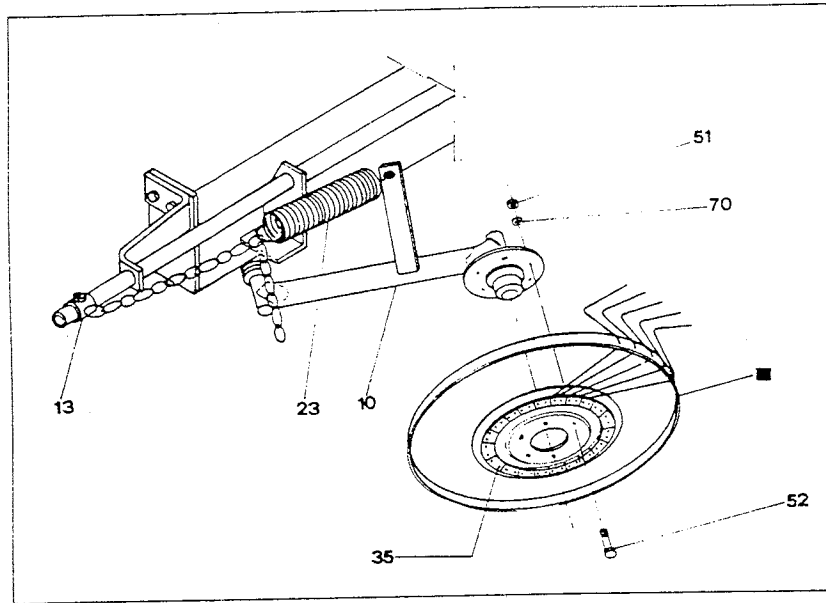
Pict. 15

- k) Fit bushes (24). Attach wheel arms (10) and lock them first with washer (47) and then with pin (48) (pict. 16).



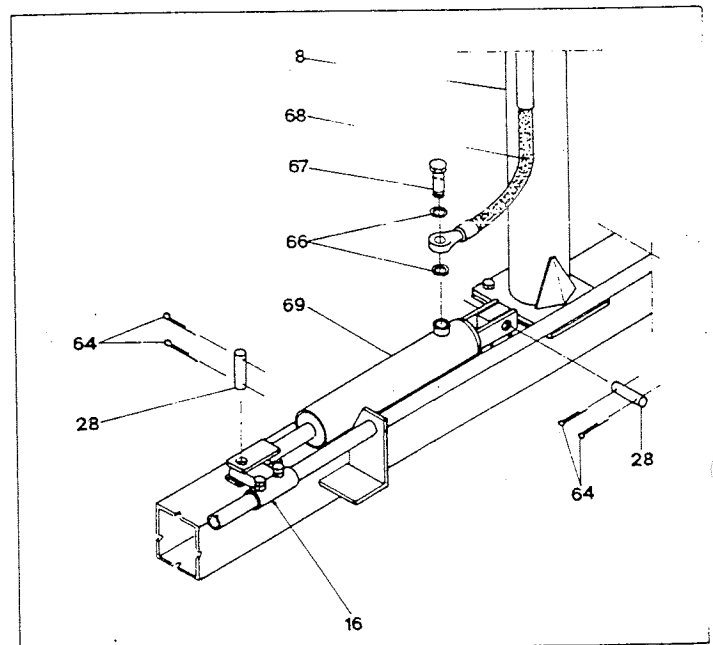
Pict. 16

- l) Connect one end of spring (23) with the chain of bush (13) and the other end with the lever welded on arm (10) (pict. 17). Next, attach the finger wheel assy and lock it to the arm hub flange with screws (52-70-51) (pict. 17). The finger wheel should be attached with the side bearing the tine clamps (35) turned to the opposite side of the hub flange (pict. 17).



Pict. 17

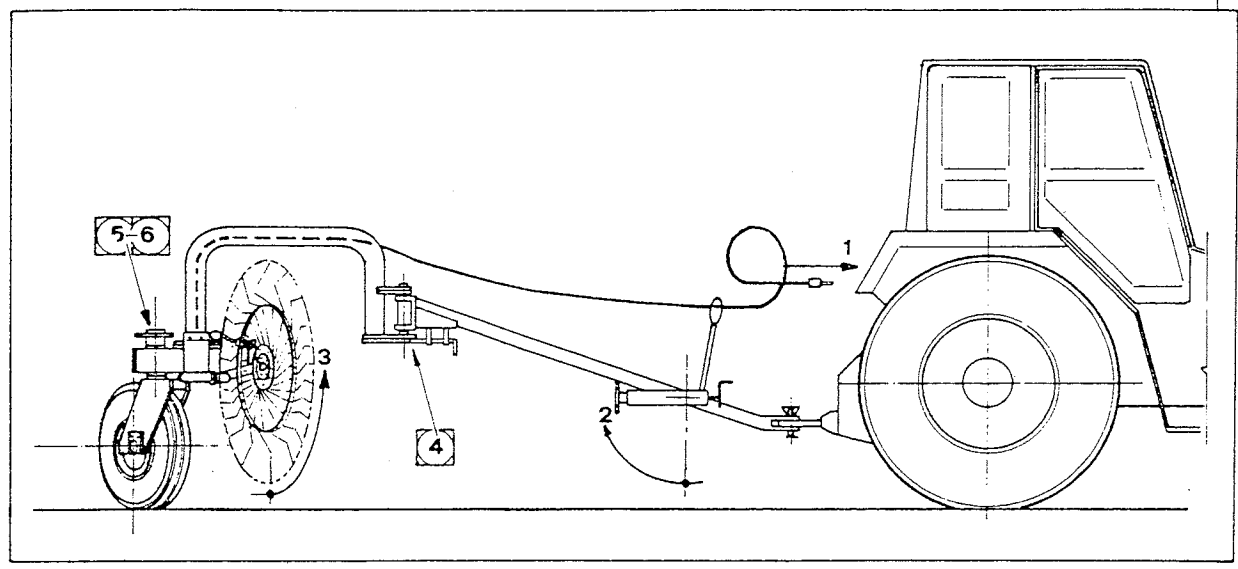
- m) Attach cylinder (69) to the hitch welded on the main frame (1) and on the mobile hitch (16) with pins (28) and the split pins (64). Slide hose (68) into two pipes welded on support (8) and connect it with cylinder (69) by fittings (66-67) (pict. 18). Also insert hose (68) into the eyelet of support (22) connected with drawbar (9) by screws (51-52) (See parts breakdown). Now the machine is fully assembled.



Pict. 18

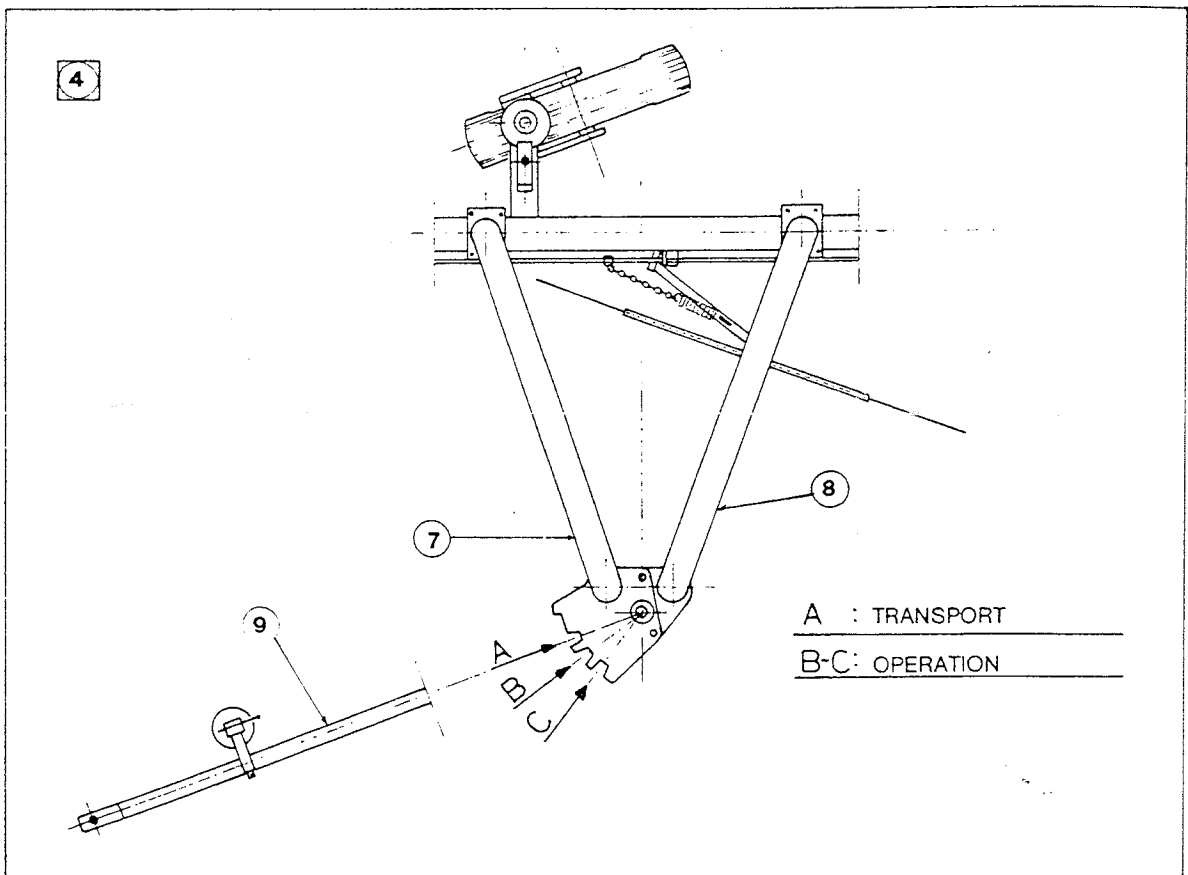
# TRANSPORT

For transport follow instructions below (pict. 19):



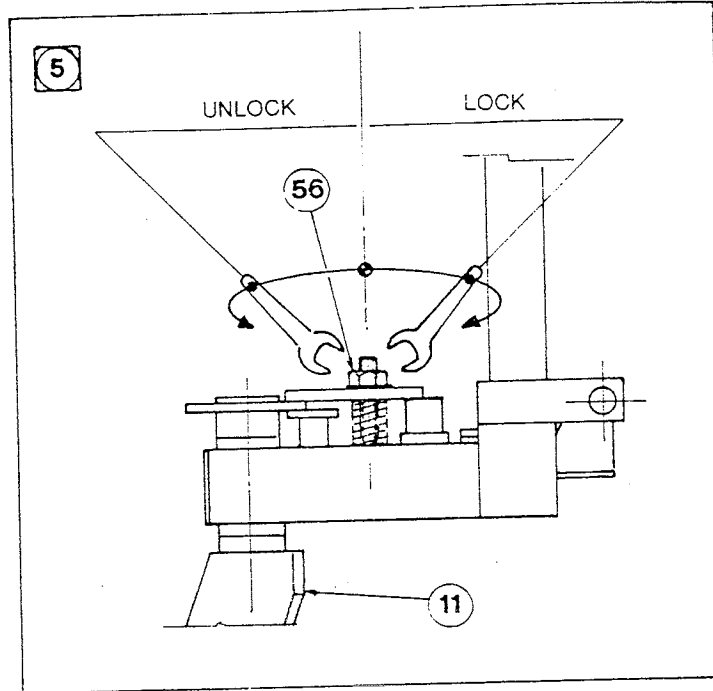
Pict. 19

- 1) Connect hose with tractor's distributor.
- 2) Fold up the parking stand.
- 3) lift the wheels by operating the tractor's distributor.
- 4) Fit the drawbar, with the supplied pin, into slot A (for transport). (pict. 20)



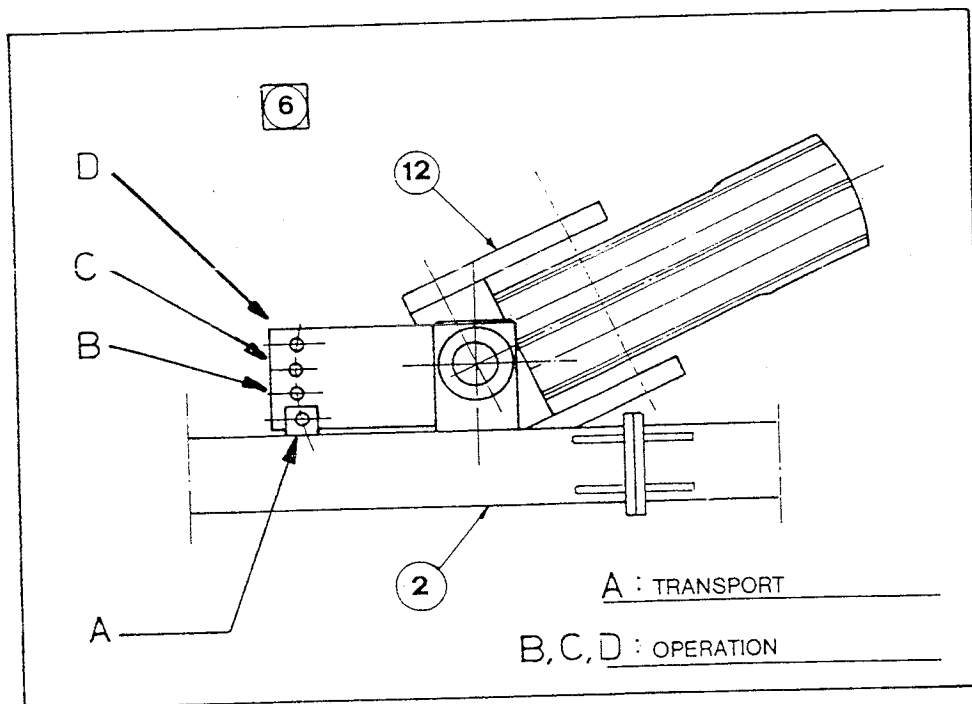
Pict. 20

- 5) With nut (56) reduce rotation of support (11) around its axis, in order to prevent a zig zag motion, which is typical of the machines with pivoting wheels (pict. 21).



Pict. 21

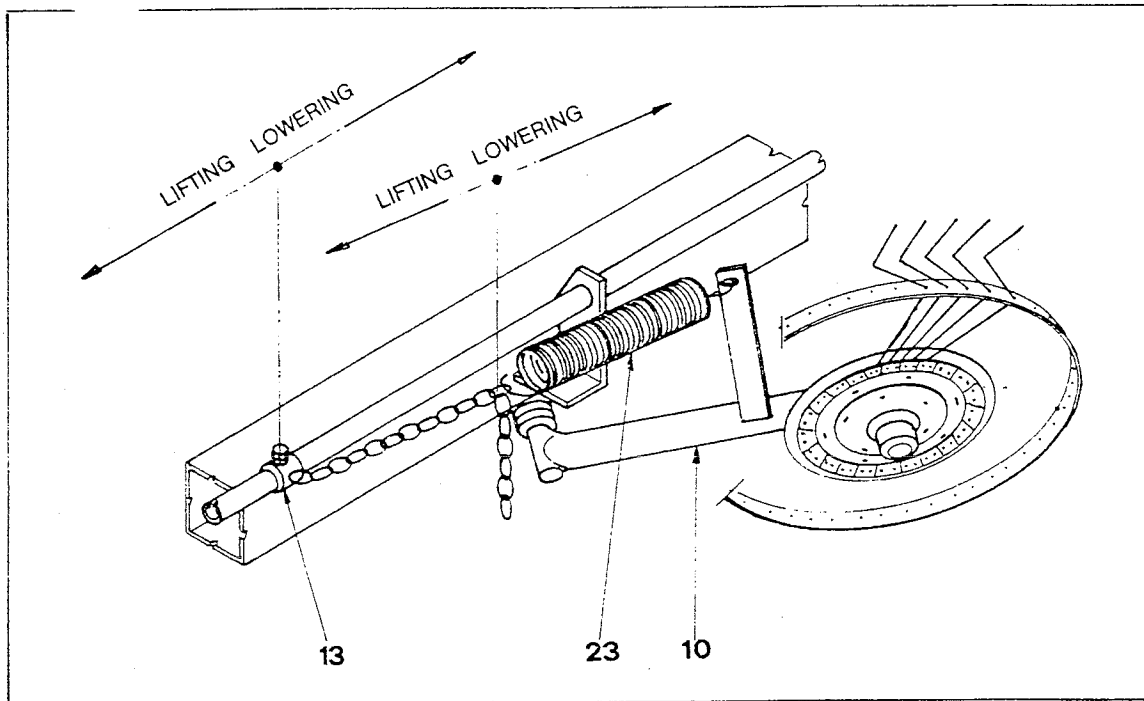
- 6) Lock support (12) into hole A (for transport) using the supplied pin (pict. 22).



Pict. 22

## FINGER WHEEL BALANCE AND HEIGHT SETTING

To balance all finger wheels evenly and for height setting slide bush (13) as shown in picture 23, and if necessary adjust the chain links of the chain welded on bush (13) by connecting them with the spring (pict. 23).



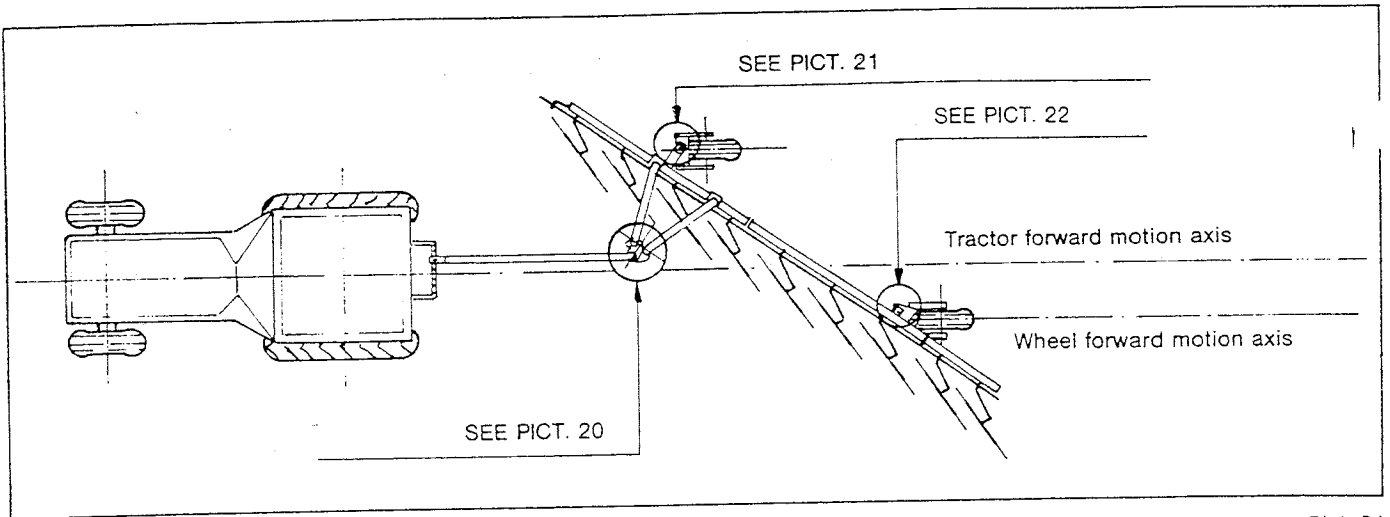
Pict. 23

## ON THE FIELD

To optimize the performance of the machine you should set it as follows, but only when tractor, soil and hay are in the best conditions.

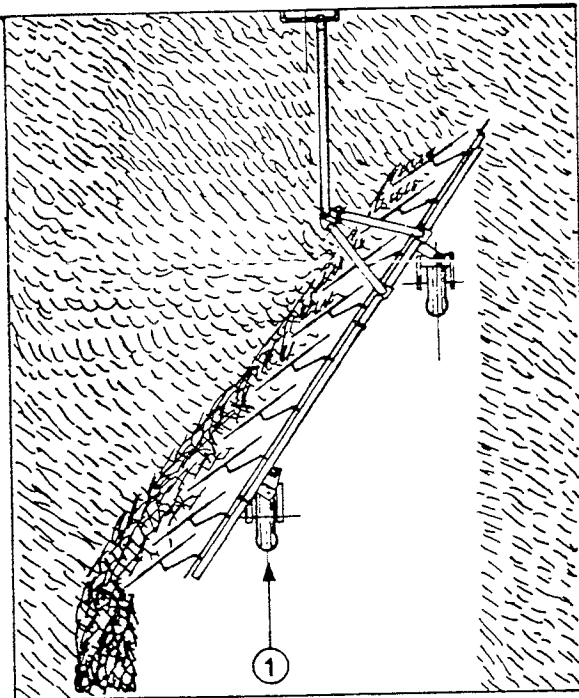
- 1) Fit drawbar (9) into slot B (for operation) (pict. 20)
- 2) Lock rear wheel support (12) into hole B or C using the supplied pin (pict. 22).

Select the hole which allows to position the wheel forward motion axis parallel to the tractor forward motion axis (pict. 24). The front wheel will automatically position because pivoting.

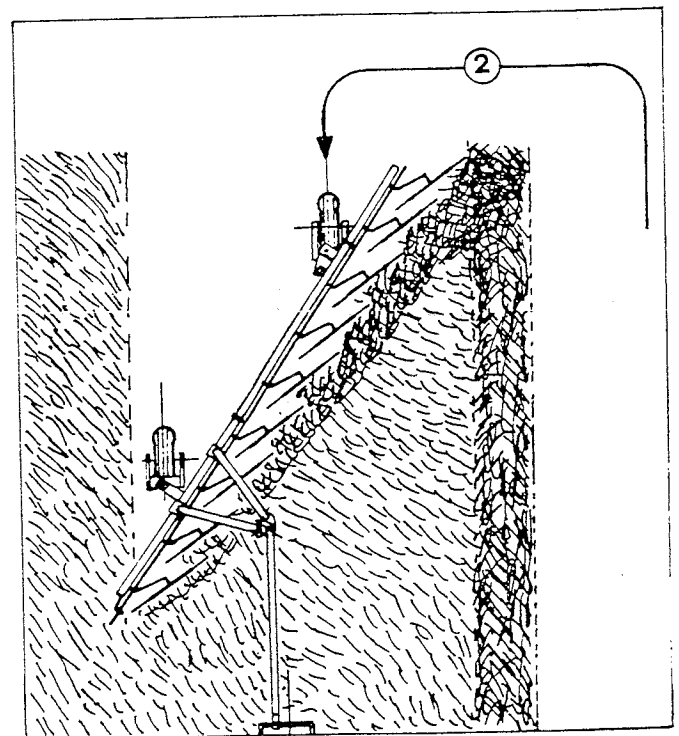


Pict. 24

- 3) Start working from point 1 (pict. 25)
- 4) Turn at the end of the field and join the two swaths (point 2 pict. 26).

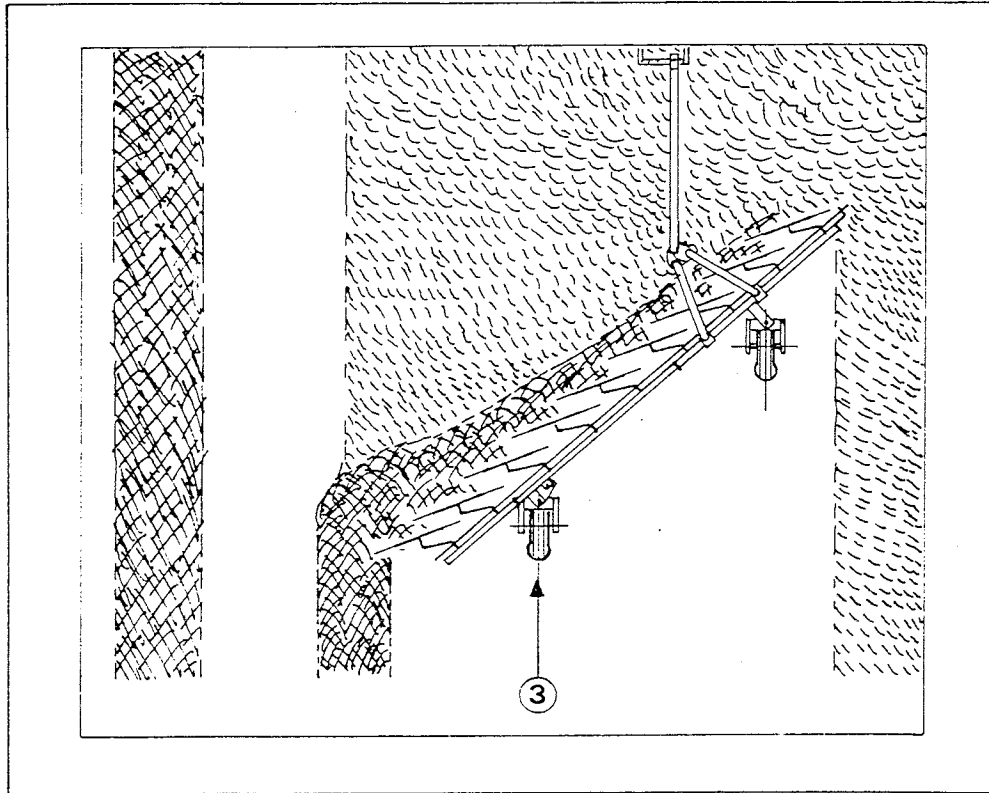


Pict. 25



Pict. 26

- 5) Fit the drawbar (9) into operation slot C (pict. 20).
- 6) Lock rear wheel support (12) into hole C or D using the supplied pin (pict. 22). Select the hole which allows to position the wheel forward motion axis parallel to the tractor forward motion axis (pict. 24). The front wheel will automatically position because pivoting.
- 7) Start again as shown at point 3 picture 27.

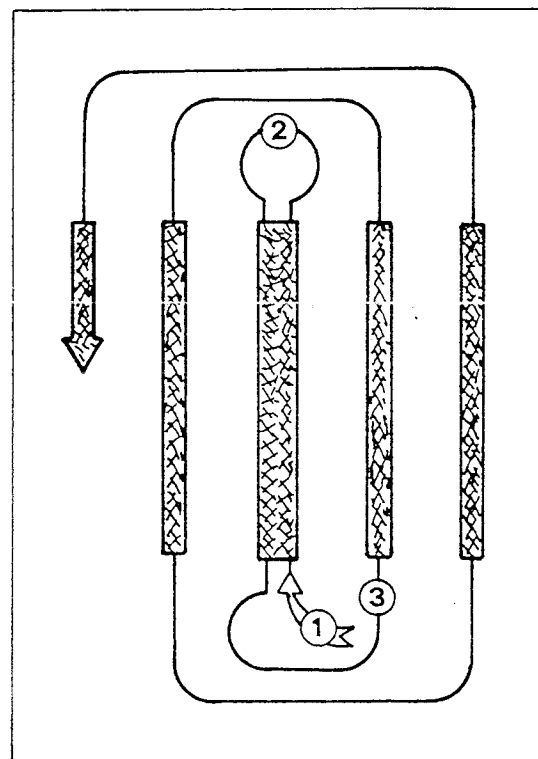


Pict. 27

Picture 28 shows operations as per items 1-2-3 (pict. 25-26-27) and following.

**IMPORTANT:**

Set the finger wheels as described under «Finger Wheel Balance and Height Setting» if necessary.



Pict. 28

## FEATURES

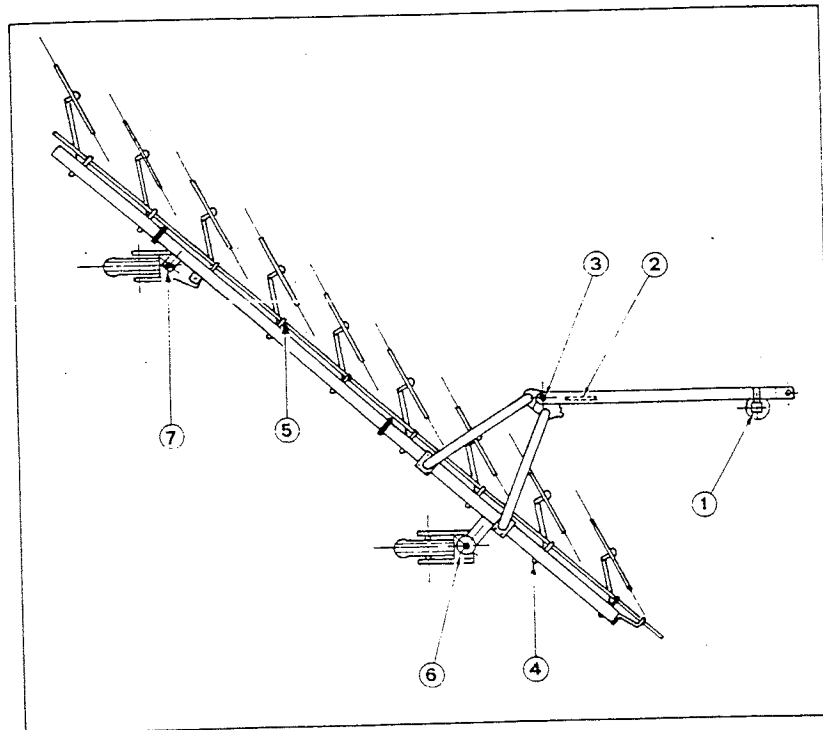
Sitrex TR hayrakes are basically made of a primary structure of tubular steel, which makes the implement particularly sturdy and flexible. Tines are also very flexible and many are the possible adjustments of the rake. For all this the implement can work fast and successfully even on slopes, on stony and rough soils. The finger wheel hubs are made of pressed steel and are equipped with 1st quality taper roller bearings, pre-lubricated, and protected with a dust cover, so that the wheels can properly turn.

## MAINTENANCE

For this type of machine the maintenance has been reduced to a minimum and no special tools are therefore required.

Picture 29 shows the points requiring maintenance. For maintenance please follow instructions below:

- 1) Grease the parking stand every 20 hours.
- 2) With a spatula grease the pin, the springs and the slots of the drawbar's rotating device, every 20 hours.
- 3) Lubricate the drawbar's pivot pin every 20 hours.
- 4) Lubricate the wheel arm's pivot points every 20 hours.
- 5) Lubricate the lifting pipes near the brackets every 20 hours.
- 6) Grease the pivot point of front wheel's support every 20 hours.
- 7) Grease the pivot point of rear wheel's support every 20 hours.



Pict. 29



## IMPORTANT

Every Sitrex rake is provided with identification label, as follows:



# sitrex<sup>®</sup>

06018 TRESTINA - PERUGIA - ITALY

TYPE  SERIAL N°

PATENTED

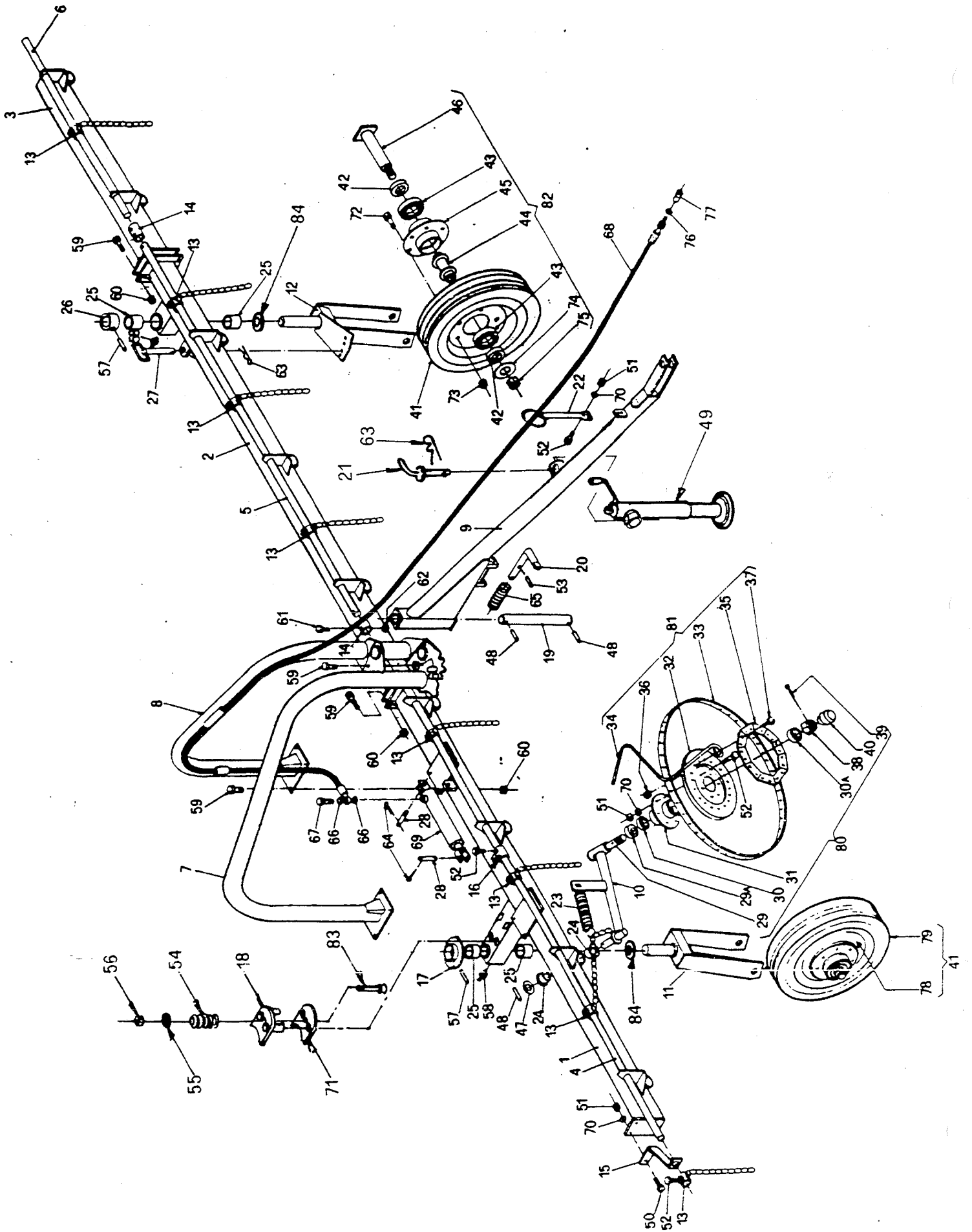
We recommend the use of SITREX original spare parts only, to get your implement working well for a long time. By ordering spare parts please always refer to the parts breakdown provided with this manual.

## TROUBLES

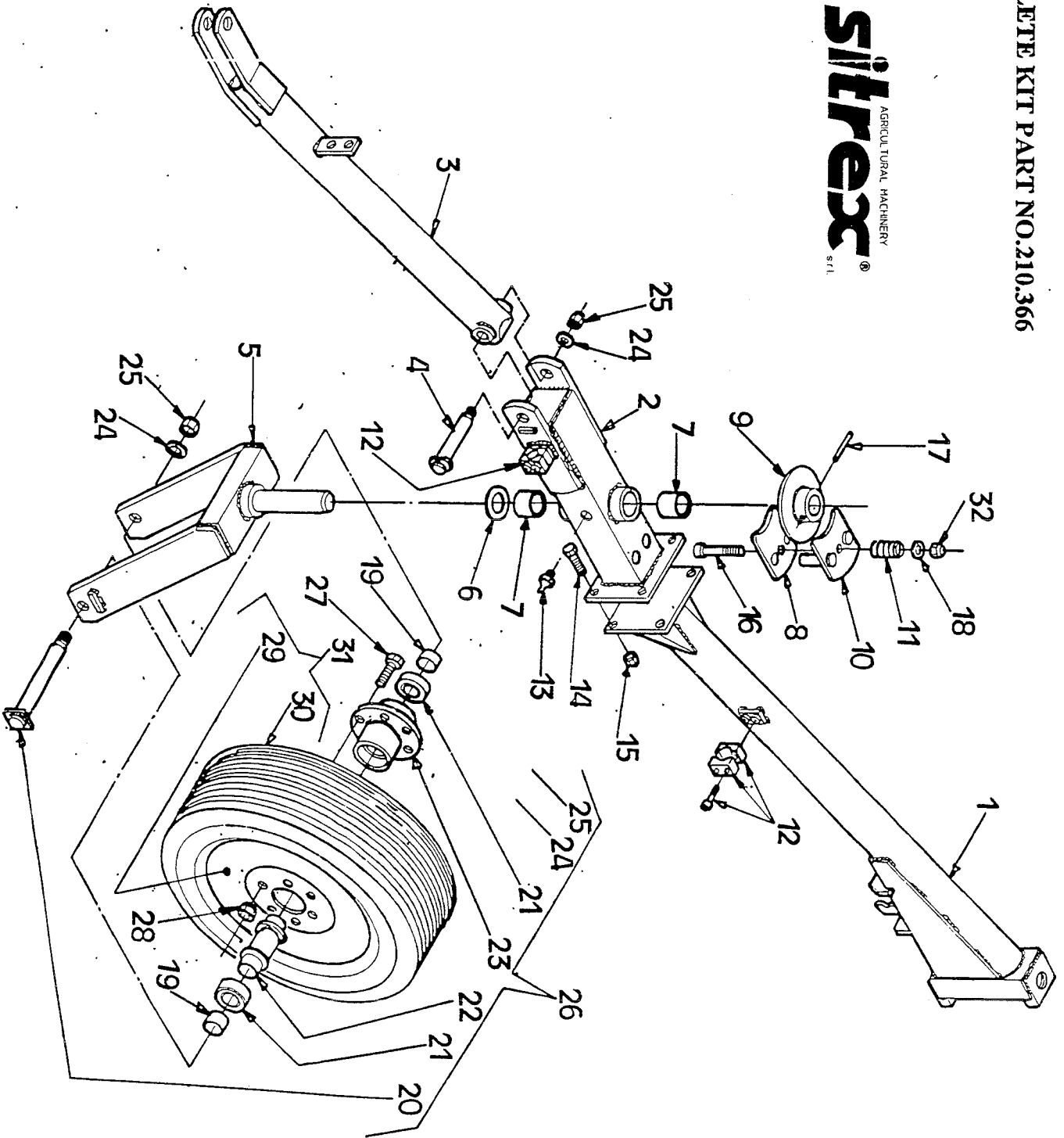
## CAUSES

## REMEDIES

1) Wheel does not unload hay.	1) New tine, too much paint on it. 2) Mud on tine point due to moist soil.	1) Have the wheels be turning on gravelly soil until the tine is clean again. 2) The wheels are too close to the ground.
2) Tine failure	1) Going backwards with wheels not lifted. 2) Too much pressure on the wheels. 3) Tine rusted.	1) Lift the wheels before going backwards. 2) Lightly lift the rake. 3) Protect it by oiling.
3) The rake does not collect the hay.	1) Tine worn out.	1) We recommend to replace all tines for a uniform height.
4) Too much floating of wheels.	1) Wheels too far from ground.	1) Lightly lower the rake.
5) Bent tine.	1) Going backwards with the wheels not lifted. 2) Too much speed on rough soil. 3) Going across deep and narrow ditches or prominences. 4) Too much weight on the wheels.	1) Lift the wheels when going backwards. 2) Reduce speed. 3) Reduce speed. 4) Lightly lift the rake.



COMPLETE KIT PART NO.210.366



ITEM	PART NO	TR6	TR7	TR8	TR9	DESCRIPTION
		QTY	QTY	QTY	QTY	
1	200.001	1	1	1	1	MAIN FRAME
2	200.002	1	-	1	-	FRAME EXTENSION
2	200.042	-	1	-	1	FRAME EXTENSION
3	200.038	-	-	1	1	FRAME EXTENSION
4	200.039	1	2	1	2	MAIN PIPE
5	200.040	-	-	1	-	PIPE
6	200.041	-	-	1	1	PIPE EXTENSION
7	200.003	1	1	1	1	SUPPORT
8	200.004	1	1	1	1	SUPPORT
9	210.555B	1	1	1	1	DRAWBAR
10	200.008	6	7	8	9	ARMS
11	210.168	1	1	1	1	FRONT WHEEL SUPPORT
12	210.281	1	1	1	1	REAR WHEEL SUPPORT
13	200.023	6	7	8	9	CHAIN BUSH
14	200.022	1	1	2	2	BUSH
15	200.013	1	1	1	1	BRACKET
16	200.036	1	1	1	1	BRACKET
17	200.025	1	1	1	1	BUSH
18	200.810	1	1	1	1	BRAKE
19	200.031	1	1	1	1	PIN
20	200.033	1	1	1	1	PIN
21	200.222	1	1	1	1	PIN
22	200.016	1	1	1	1	HOSE SUPPORT
23	200.046	6	7	8	9	SPRING
24	200.029	12	14	16	18	BUSH
25	200.199	4	4	4	4	PVC BUSH
26	200.024	1	1	1	1	BUSH
27	200.034a	1	1	1	1	PIN
28	200.032	2	2	2	2	PIN
29	205.277	6	7	8	9	PIN
29a	800.011	6	7	8	9	DUST COVER
30	600.012	6	7	8	9	BEARING
30a	600.014	6	7	8	9	BEARING
31	600.013	6	7	8	9	HUB
32	200.010	6	7	8	9	FLANGE
33	200.009	6	7	8	9	RIM
34	200.017/1	240	280	320	360	TIRE
35	200.012	60	70	80	90	TIRE CLAMP
36	600.029	120	140	160	180	NUT
37	600.005	120	140	160	180	SCREW
38	600.015	6	7	8	9	SELF-LOCK NUT
39	600.301	6	7	8	9	SPLIT PIN

TR

40	600.016	6	7	8	9	CAP
41	610.270	2	2	2	2	WHEEL ASSY
42	210.170	4	4	4	4	SPACER
43	600.609	4	4	4	4	BEARING
44	200.140	2	2	2	2	SPACER
45	200.139	2	2	2	2	HUB
46	210.184	2	2	2	2	PIN
47	200.028	6	7	8	9	WASHER
48	600.027	8	9	10	11	PIN
49	200.203	1	1	1	1	PARKING STAND
50	600.028	2	2	2	2	SCREW
51	600.010	40	46	52	58	NUT
52	600.006	44	52	58	64	SCREW
53	600.487	1	1	1	1	SPRING PIN
54	200.044	1	1	1	1	SPRING
55	600.092	1	1	1	1	WASHER
56	600.077	1	1	1	1	NUT
57	600.033	2	2	2	2	PIN
58	600.034	2	2	2	2	GREASE NIPPLE
59	610.167	15	15	19	19	SCREW
60	600.080	15	15	19	19	NUT
61	600.036	2	2	4	4	SCREW
62	600.076	2	2	4	4	NUT
63	600.019	2	2	2	2	PIN
64	600.038	4	4	4	4	SPLIT PIN
65	200.045	1	1	1	1	SPRING
66	600.039	2	2	2	2	COPPER WASHER
67	600.040	1	1	1	1	FITTING
68	600.041	1	1	1	1	HOSE
69	200.136	1	1	1	1	CYLINDER
70	600.024	40	46	52	58	SPRING WASHER
71	205.684	1	1	1	1	COUNTER-PLATE
72	600.144	10	10	10	10	SCREW
73	600.289	10	10	10	10	NUT
74	200.185	2	2	2	2	WASHER
75	600.079	2	2	2	2	NUT
76	600.269	1	1	1	1	COPPER WASHER
77	600.273	1	1	1	1	RAPID COUPLING
78	610.290	2	2	2	2	RIM
79	610.291	2	2	2	2	TIRE
80	205.041	6	7	8	9	HUB ASSY
81	210.180	6	7	8	9	FINGER WHEEL ASSY
82	210.169	2	2	2	2	HUB ASSY
83	600.152	1	1	1	1	SCREW
84	210.179	2	2	2	2	WASHER

ITEM	Q.ty	PART NO	DESCRIPTION
1	1	210.259	DRAWBAR
2	1	210.260	SUPPORT
3	1	210.261	FRONT DRAWBAR
4	1	210.262	PIN
5	1	210.168	WHEEL SUPPORT
6	1	210.179	WASHER
7	2	200.199	BUSH
8	1	205.684	BRAKE COUNTER PLATE
9	1	200.025	BUSH
10	1	200.810	BRAKE
11	1	200.044	SPRING
12	2	600.822	HOSE COLLAR
13	1	600.034	GREASE NIPPLE
14	4	600.035	SCREW
15	4	600.080	NUT
16	1	600.152	SCREW
17	1	600.033	PIN
18	1	600.092	WASHER
19	2	210.170	SPACER
20	1	210.184	PIN
21	2	600.609	BEARING
22	1	200.140	SPACER
23	1	200.139	HUB
24	2	200.165	WASHER
25	2	600.079	NUT
26	1	210.169	HUB ASSY
27	5	600.144	SCREW
28	5	600.289	NUT
29	1	610.117	RIM
30	1	610.116	TIRE
31	1	610.115	WHEEL ASSY
32	1	600.077	SCREW



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