

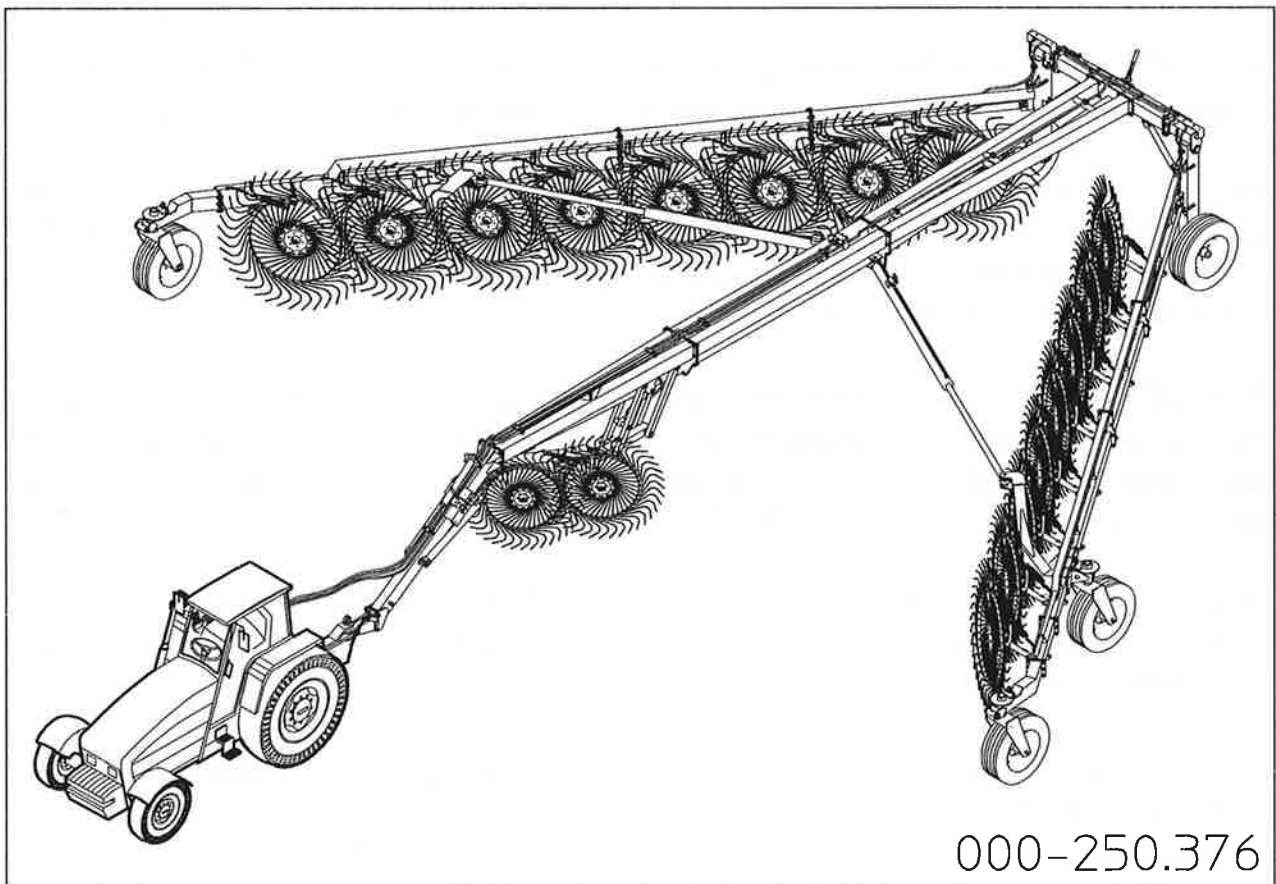


AGRICULTURAL MACHINERY

sitrex®
Spa

ASSEMBLY, USE AND SPARE PARTS LIST CENTER RAKE WHEEL KIT MKE

PART NO 250.440



000-250.376

12-2014

Assembly Instructions

Examples of general measurements for identifying assembly accessories according to type.

To make it easier to identify the assembly accessories (nuts, bolts, washers, pins, etc.) on the basis of the general dimensions and the type, we provide a diagram that shows you the accessory parts to which the measurements refer as given in the various steps of assembly.

The drawings are schematic and do not always faithfully reproduce the accessories, but they will be of help in identifying them correctly.

Note: the accurate measurements are those given in mm; those given in inches are rounded off, and for threads the size in inches is given only as an aid, as it does not accurately describe the thread.

You can see the following examples:

Box "A": shows springs that will be identified by the wire diameter, the outside diameter and the length, thus in this case $\emptyset 3\text{-}\emptyset 18 \times 110$ ($\emptyset 0.12\text{'-}\emptyset 0.71\text{'}$ x 4.33")

Box "B": shows handles, spring pins, split pins, etc. that will be identified by the diameter of the shank and the length, thus in this case $\emptyset 8 \times 50$ ($\emptyset 0.12\text{'}$ x 1.97")

Box "C": shows shims, bushings, spacers and washers in general that will be identified by the inside diameter, the outside diameter and the length and/or the thickness (for washers), thus in this case $\emptyset 18\text{-}\emptyset 35 \times 30$ ($\emptyset 0.71\text{'-}\emptyset 1.38\text{'}$ x 1.18") or for washers $\emptyset 18\text{-}\emptyset 35 \times 3$ ($\emptyset 0.71\text{'-}\emptyset 1.38\text{'}$ x 0.12").

Box "D": shows retaining rings for internal housings/bores that will be identified by the diameter of the bore preceded by an I, thus in this case I35-1.38", and for external shafts that will be identified by the diameter of the pin preceded by an E, thus in this case E35-1.38".

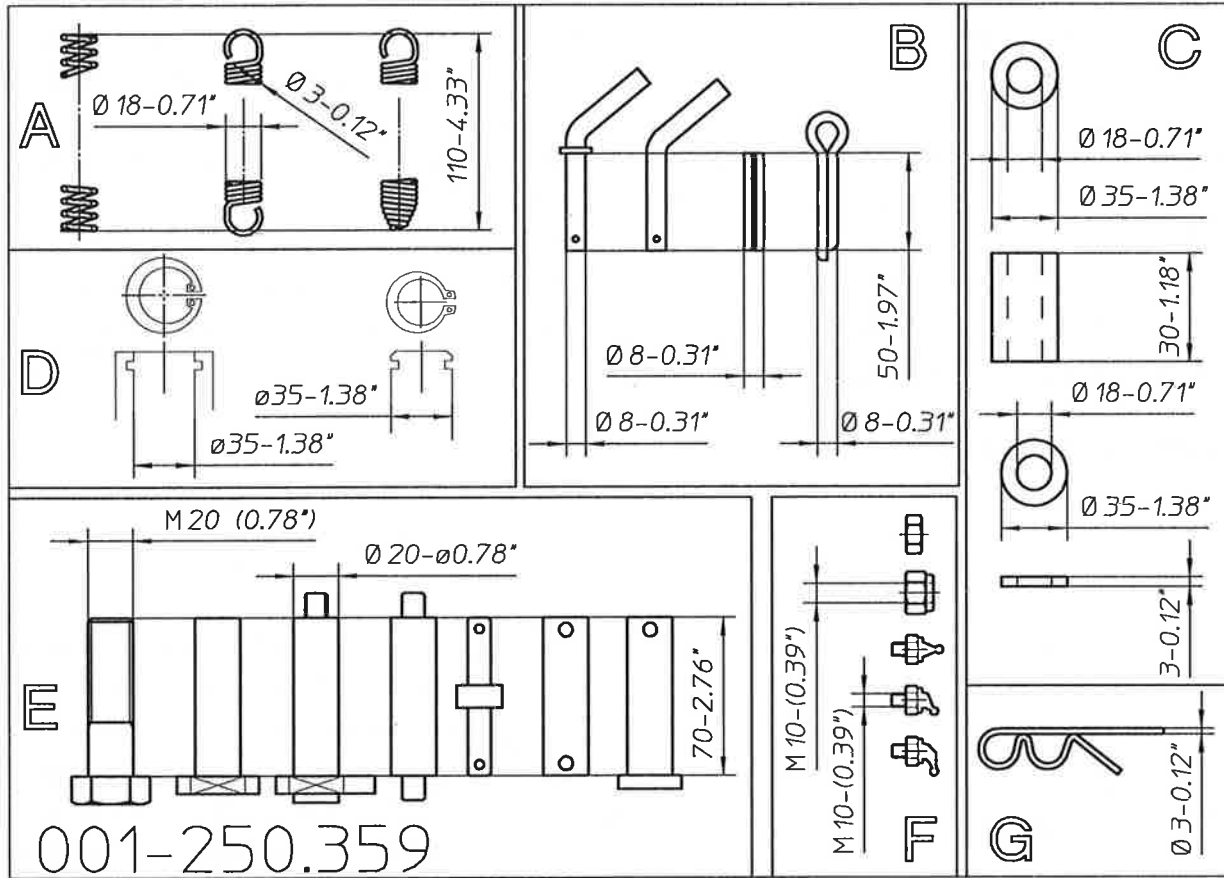
Box "E": shows pins, bolts, etc. that will be identified by the outside diameter (thread diameter for bolts) and the length, thus in this case $\emptyset 20 \times 70$ ($\emptyset 0.78\text{'}$ x 2.76") or for bolts M20 x 70 (0.78" x 2.76").

Box "F": shows nuts and grease nipples that will be identified by the thread diameter, thus in this case M10 (0.39").

Box "G": shows R-clips that will be identified by the diameter of the shank, thus in this case $\emptyset 3$ ($\emptyset 0.12\text{'}$).

Assembly Instructions

Examples of general measurements for identifying accessories for assembly according to type.



For tightening torques, see the table below (the class of the material is normally stamped on the head of the bolts).

MINIMUM HARDWARE TIGHTENING TORQUES

IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

METRIC NON-FLANGED HARDWARE AND LOCKNUTS

NOMINAL SIZE	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCKNUT CL.8 W/CL.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	
M4	1.7 (15)*	2.2 (19)*	2.6 (23)*	3.4 (30)*	3.7 (33)*	4.8 (42)*	2.3 (20)*
M6	5.8 (51)*	7.6 (67)*	8.9 (79)*	12 (102)*	13 (115)*	17 (150)*	7.8 (69)*
M8	14 (124)*	18 (159)*	22 (195)*	28 (248)*	31 (274)*	40 (354)*	19 (169)*
M10	28 (21)	36 (27)	43 (32)	56 (41)	61 (45)	79 (58)	38 (28)
M12	49 (36)	63 (46)	75 (55)	97 (72)	107 (79)	138 (102)	66 (49)
M16	121 (89)	158 (117)	186 (137)	240 (177)	266 (196)	344 (254)	164 (121)
M20	237 (175)	307 (226)	375 (277)	485 (358)	519 (383)	671 (495)	330 (243)
M24	411 (303)	531 (392)	648 (478)	839 (619)	897 (662)	1160 (855)	572 (422)

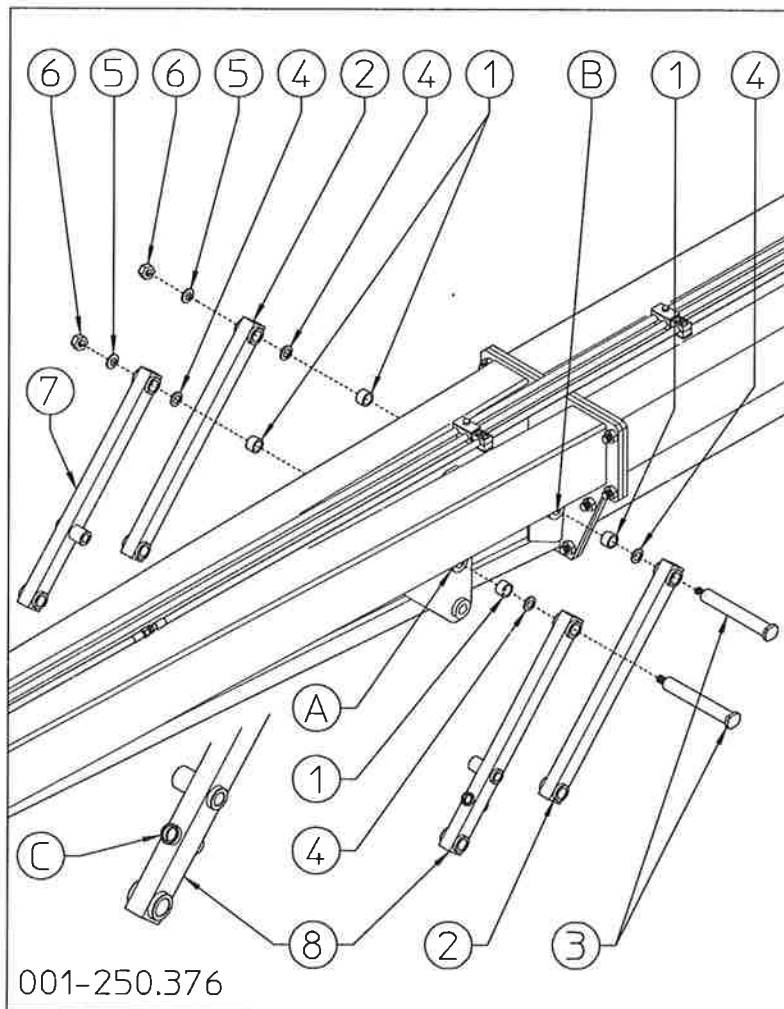
NOTE: Torque values shown with * are inch pounds.

ASSEMBLY

The procedure for the assembly of the center rake wheel kit is the same whether it is done at the same time as the assembly of the machine or if it is done on a machine that is already working. Assembly must be done in a suitable area by qualified personnel equipped with the proper clothing, protective equipment and tools necessary for the job. Only authorized persons should be in the assembly area. All the instructions and recommendations found in the assembly, use and maintenance manual for the machine are valid also for this assembly. The manual must be consulted every time you work on or with the machine.

NOTE: What we are about to describe is an approximate assembly procedure. Each person, based on their experience and on the tools they have to work with, may vary the assembly steps to suit their needs. **Always use great caution because the assembly steps are dangerous.**

Assembly sequence



1) DANGER

NB: clean the holes A-B

First of all insert the bushings 1 into seats A-B of the drawbar. Next attach supports 2 to seat B on the drawbar using pin 3, shims 4, washer 5 and nut 6. Attach supports 7 (RH) and 8 (LH with seat C) to seat A on the drawbar using pin 3, shims 4, washer 5 and nut 6. At this stage do not fully tighten nuts 6.

In this step, you will use:

Item 1: 4 bushings $\varnothing 30-34 \times 20$ (1.18"-1.34" x 0.79")

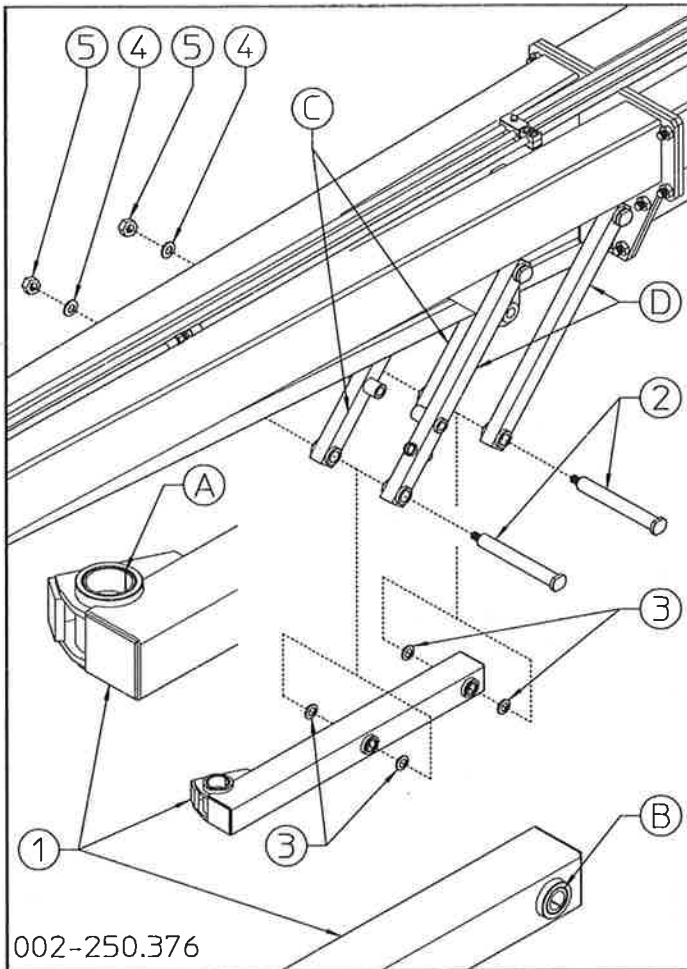
Item 3: 2 pins $\varnothing 30 \times 222$ (1.18" x 8.74")

Item 4: 4 shims $\varnothing 30.5-40 \times 1$ ($\varnothing 1.2"-1.57"$ x 0.04")

1) DANGER

Item 5: 2 washers $\varnothing 17-40 \times 4$ ($\varnothing 0.67"-1.57"$ x 0.16")

Item 5: 2 nuts M16 (0.63")



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2) DANGER

First of all check to make sure the manufacturer has applied the bushings A (two) and bushings B (two + two) to the seats on support 1. Next attach support 1 to the seats on RH supports C and LH supports D using pins 2, shims 3, washers 4 and nuts 5. At this point the nuts 5 (including nuts 6 in the preceding step) can be fully tightened.

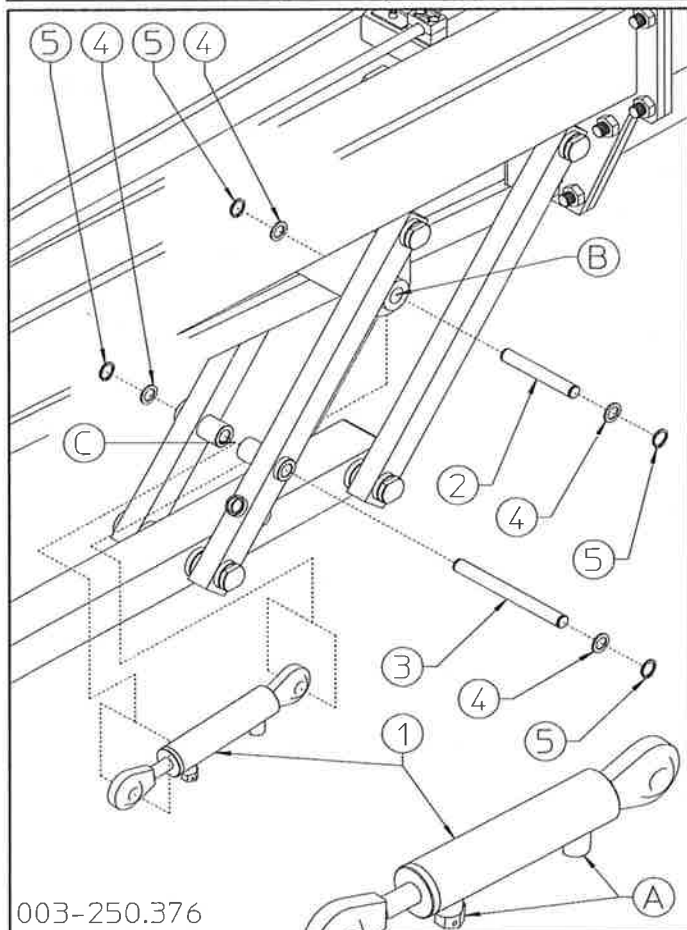
In this step, you will use:

Item 2: 2 pins $\varnothing 30 \times 222$ (1.18" x 8.74")

Item 3: 4 shims $\varnothing 30.5-40 \times 1$ ($\varnothing 1.2''-1.57'' \times 0.04''$)

Item 4: 2 washers $\varnothing 17-40 \times 4$ ($\varnothing 0.67''-1.57'' \times 0.16''$)

Item 5: 2 nuts M16 (0.63")



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3) DANGER

Cylinder 1 is mounted with the oil ports A facing downward. Check to make sure that the manufacturer has applied the vent plug on oil port A on the shaft side. Attach the rear end of cylinder 1 to seat B on the drawbar using pin 2, shims 4 and retaining rings (Seeger) 5. Attach the shaft side of cylinder 1 to seat C on the supports, using pin 3, shims 4 and retaining rings (Seeger) 5.

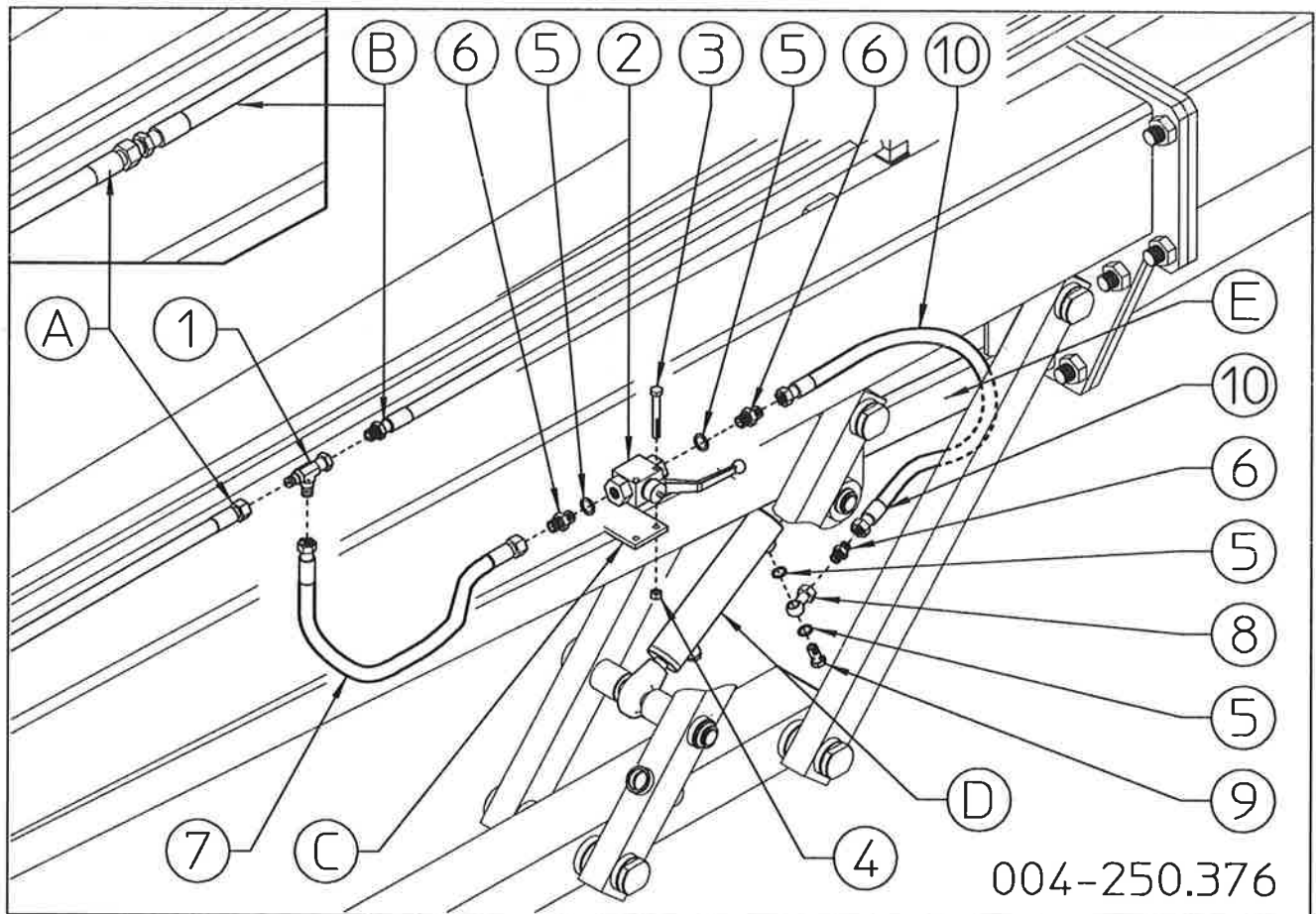
In this step, you will use:

Item 2: 1 pin $\varnothing 22 \times 102$ ($\varnothing 0.87'' \times 4.02''$)

Item 3: 1 pin $\varnothing 22 \times 232$ ($\varnothing 0.87'' \times 9.13''$)

Item 4: 4 shims $\varnothing 22.5-32 \times 0.5$ ($\varnothing 0.88''-1.26'' \times 0.02''$)

Item 5: 4 retaining rings (Seeger) E22 (0.87")



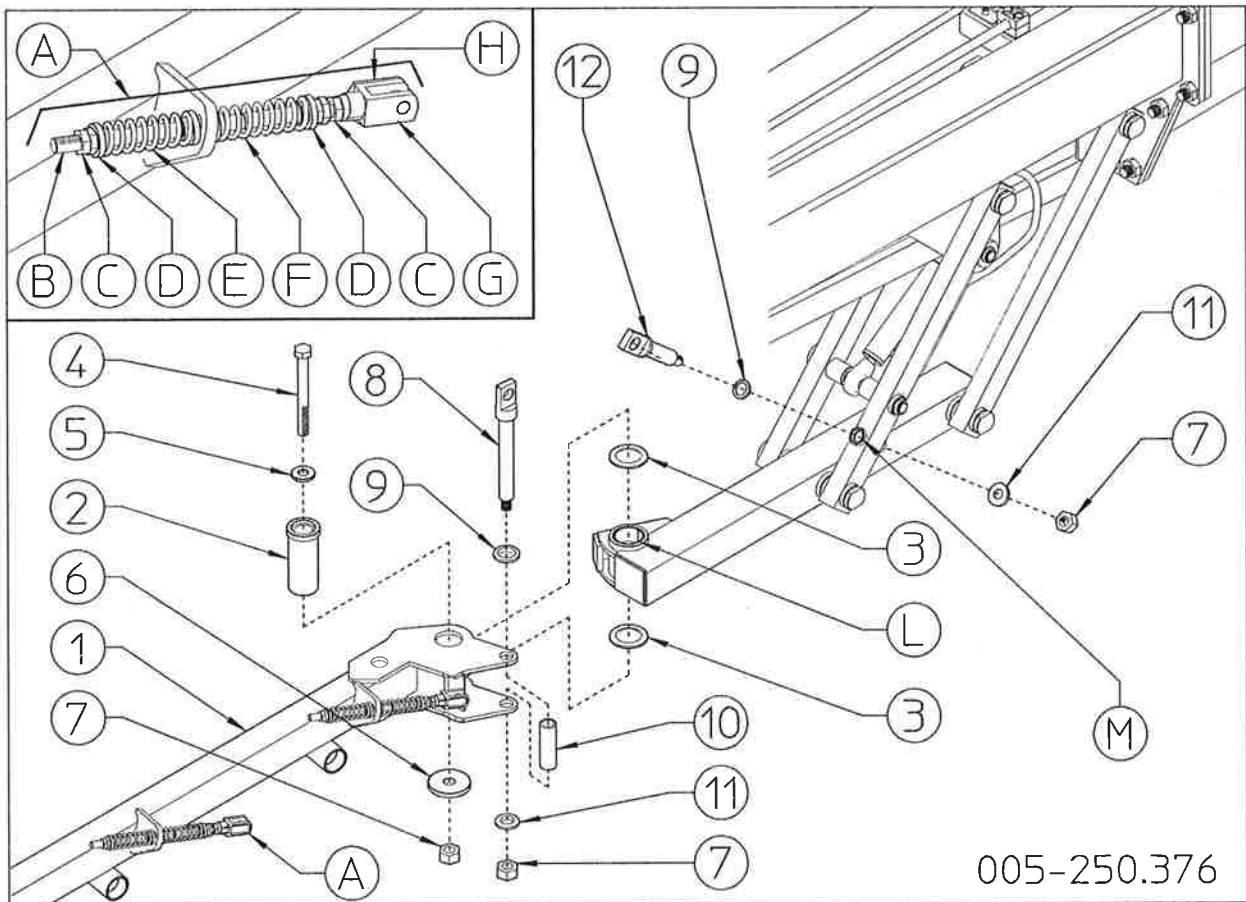
4) DANGER

Disconnect the hoses A-B running along the drawbar and insert coupling 1 without fully tightening it. Fasten valve 2 to bracket C on the drawbar using bolts 3 and nuts 4. Attach the washers 5 and nipples 6 to both sides of valve 2. Connect one end of hose 7 to coupling 1 and the other to nipple 6 without fully tightening it. Connect the banjo coupling 8 to the seat on cylinder D using washers 5 and screw-type coupling 9. Apply nipple 6 to coupling 8. Connect one end of hose 10 to nipple 6 on the cylinder, then have it pass alongside pipe E and in between the two pipes of the drawbar frame, until the other end reaches nipple 6 on valve 2, screwing it onto the nipple 6.

Note: Before fully fastening all the hoses, make sure that the line of the hose from one end to the other is not twisted and/or does not have sharp bends or kinks that cause it to be crushed or to have an unpleasant appearance.

In this step, you will use:

- | | | |
|-------------------------------------|---|---------------------------------------|
| Item 1: 1 T coupling M-F-M 3/4" JIC | - | Item 2: 1 valve 3/8" |
| Item 3: 2 bolts M5x45 (0.2"x1.77") | - | Item 4: 2 nuts M5 (0.2") |
| Item 5: 4 washers 3/8" | - | Item 6: 3 nipples 3/8" - 3/4" JIC |
| Item 7: hose 3/8" L.550mm (21.65") | - | Item 8: 1 banjo coupling 3/8" |
| Item 9: 1 screw-type coupling 3/8" | - | Item 10: 1 hose 3/8" L.1000mm (39.4") |

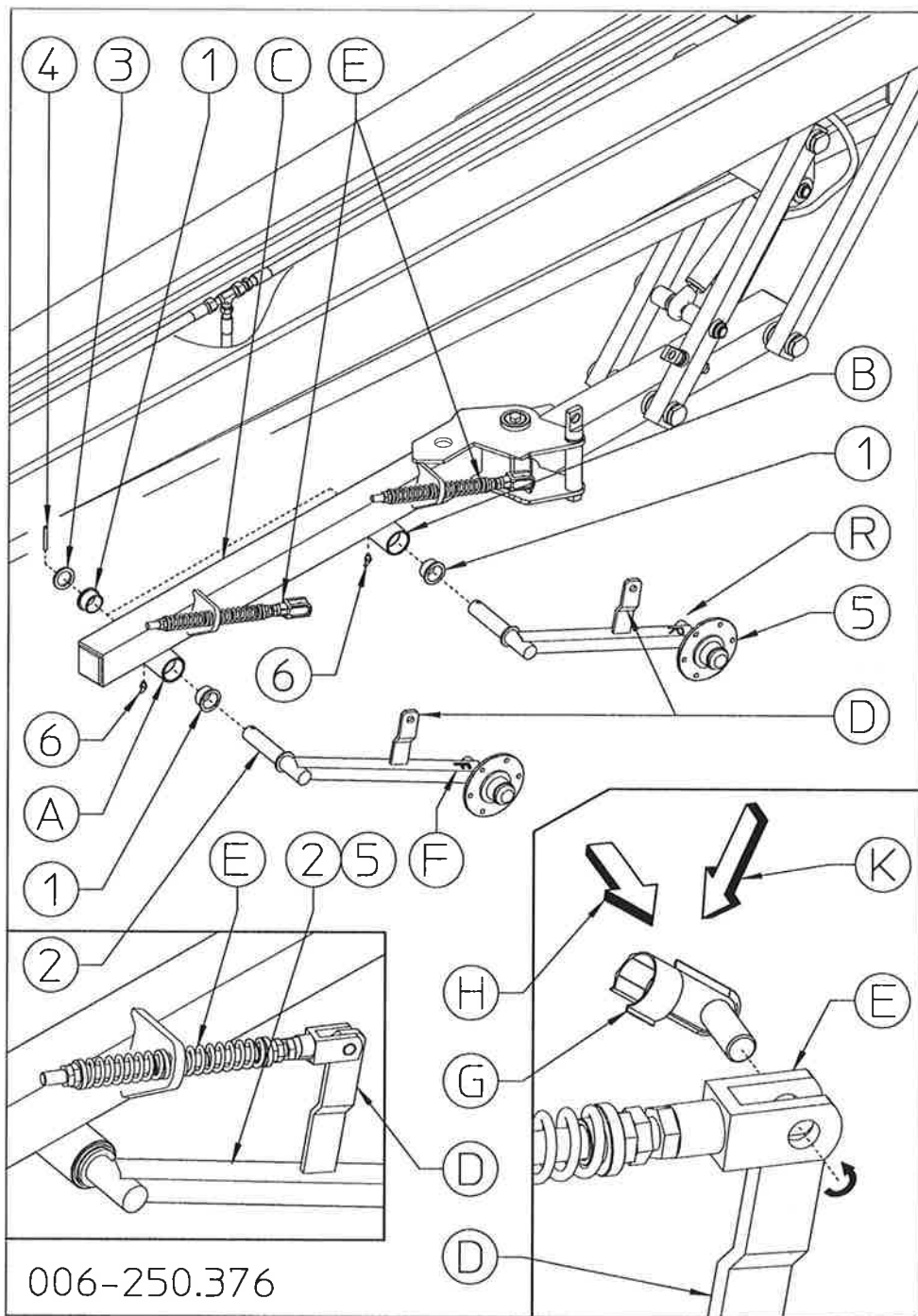


5) DANGER

Check to make sure that the manufacturer has installed two shock absorbers A on the rake wheel holder section 1. Check that each shock absorber A is made up of a shaft B, five nuts C (two on the external side and three on the fork side), four bushes D (one at each end and two in the middle), one spring E (wire $\varnothing 5\text{-}\varnothing 0.197\text{'}$ on the external side), one spring F (wire $\varnothing 4.5\text{-}\varnothing 0.177\text{'}$ on the fork side), one fork G and one clip H. Connect section 1 to seat L on the support using pin 2, shims 3, bolt 4, washers 5-6 and nut 7. Check that section 1 turns freely. Assemble to the seat in section 1 the pin 8, shim 9, spacer 10, washer 11 and nut 7. Make sure that pin 8 rotates freely. Assemble to seat M on the support the pin 12, shim 9, washer 11 and nut 7. Make sure that pin 12 rotates freely.

In this step, you will use:

Item 2: 1 pin $\varnothing 50$ (1.97")	-	Item 3: 2 shims $\varnothing 50\text{-}70 \times 1$ ($\varnothing 1.97\text{'}$ - 2.76' $\times 0.04\text{'}$)
Item 5: 1 washer $\varnothing 17\text{-}40 \times 7$ ($\varnothing 0.67\text{'}$ - 1.57' $\times 0.28\text{'}$)	-	Item 6: 1 washer $\varnothing 17\text{-}65 \times 8$ ($\varnothing 0.67\text{'}$ - 2.56' $\times 0.31\text{'}$)
Item 8: 1 pin $\varnothing 25 \times 117$ ($\varnothing 0.98\text{'}$ $\times 4.61\text{'}$)	-	Item 9: 2 shims $\varnothing 25.5\text{-}35 \times 1$ ($\varnothing 1\text{'}$ - 1.38' $\times 0.16\text{'}$)
Item 10: 1 spacer $\varnothing 25.5\text{-}35 \times 100$ ($\varnothing 1\text{'}$ - 1.38' $\times 3.94\text{'}$)	-	Item 11: 2 washers $\varnothing 17\text{-}40 \times 4$ ($\varnothing 0.67\text{'}$ - 1.57' $\times 0.16\text{'}$)
Item 12: 1 pin $\varnothing 25 \times 81$ ($\varnothing 0.98\text{'}$ $\times 3.19\text{'}$)	-	



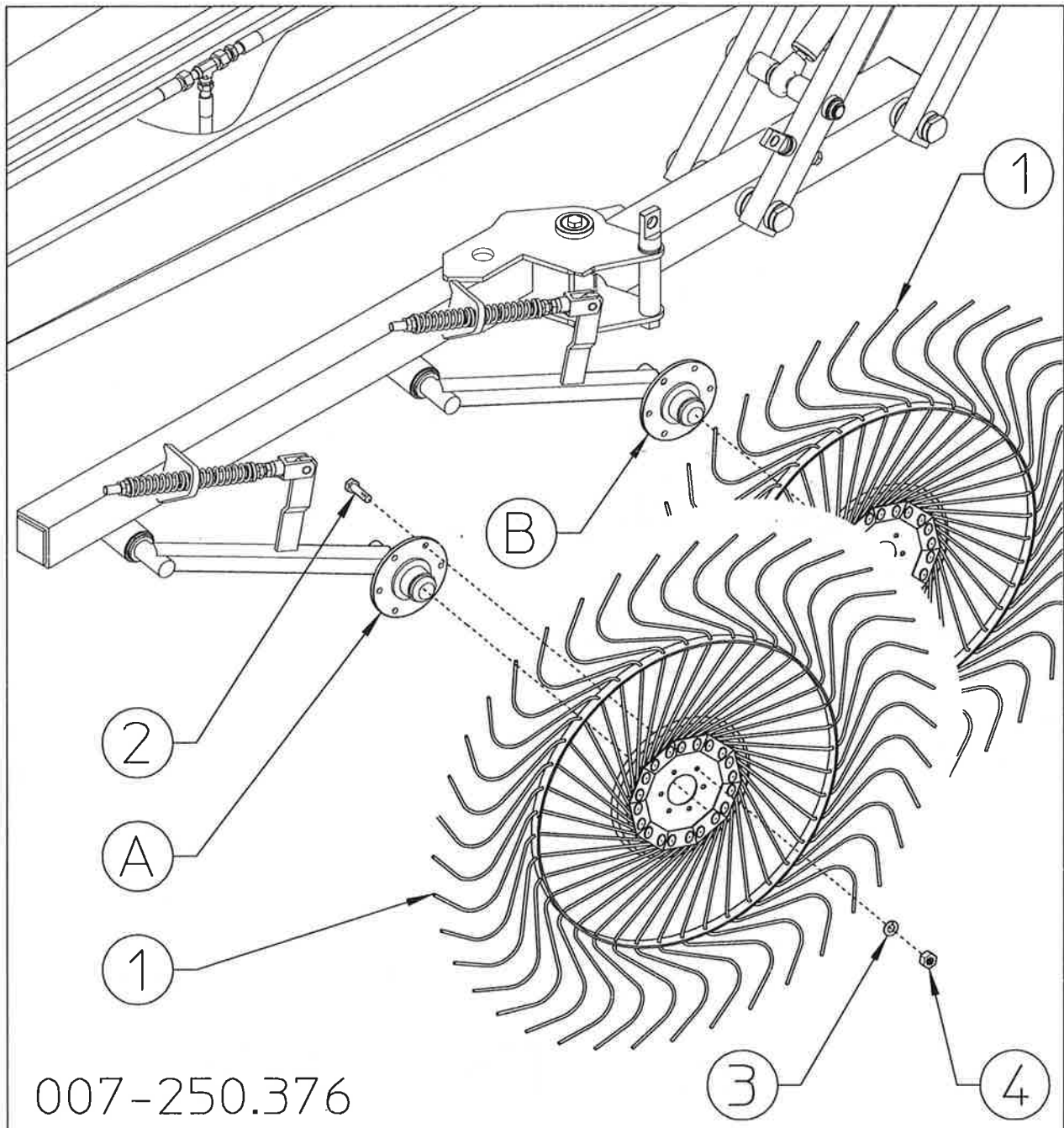
6) DANGER

Insert bushings 1 into seats A-B in section C. Insert front arm 2 (marked F) in seat A in section C and fasten with washer 3 and spring pin 4. Insert rear arm 5 (marked R) in seat B in section C and fasten with washer 3 and spring pin 4. Fit the grease nipples 6 to the proper seats A-B. Now connect the two shock absorber units E to levers D on arms 2-5. To do this you must first remove the clip G, then bring the fork of the shock absorber unit E to lever D and then fasten all with clip G, pushing it in the directions H-K.

6) DANGER

In this step, you will use:

- Item 1: 4 nylon bushings $\varnothing 35-42 \times 26$ ($\varnothing 1.38''-1.65 \times 1''$)
- Item 3: 2 washers $\varnothing 35-50 \times 5$ ($\varnothing 1.38''-1.97'' \times 0.2''$)
- Item 4: 2 spring pins $\varnothing 8 \times 50$ ($\varnothing 31'' \times 1.97''$)
- Item 6: 2 grease nipples M6x45° ($0.24'' \times 45^\circ$)



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7) DANGER

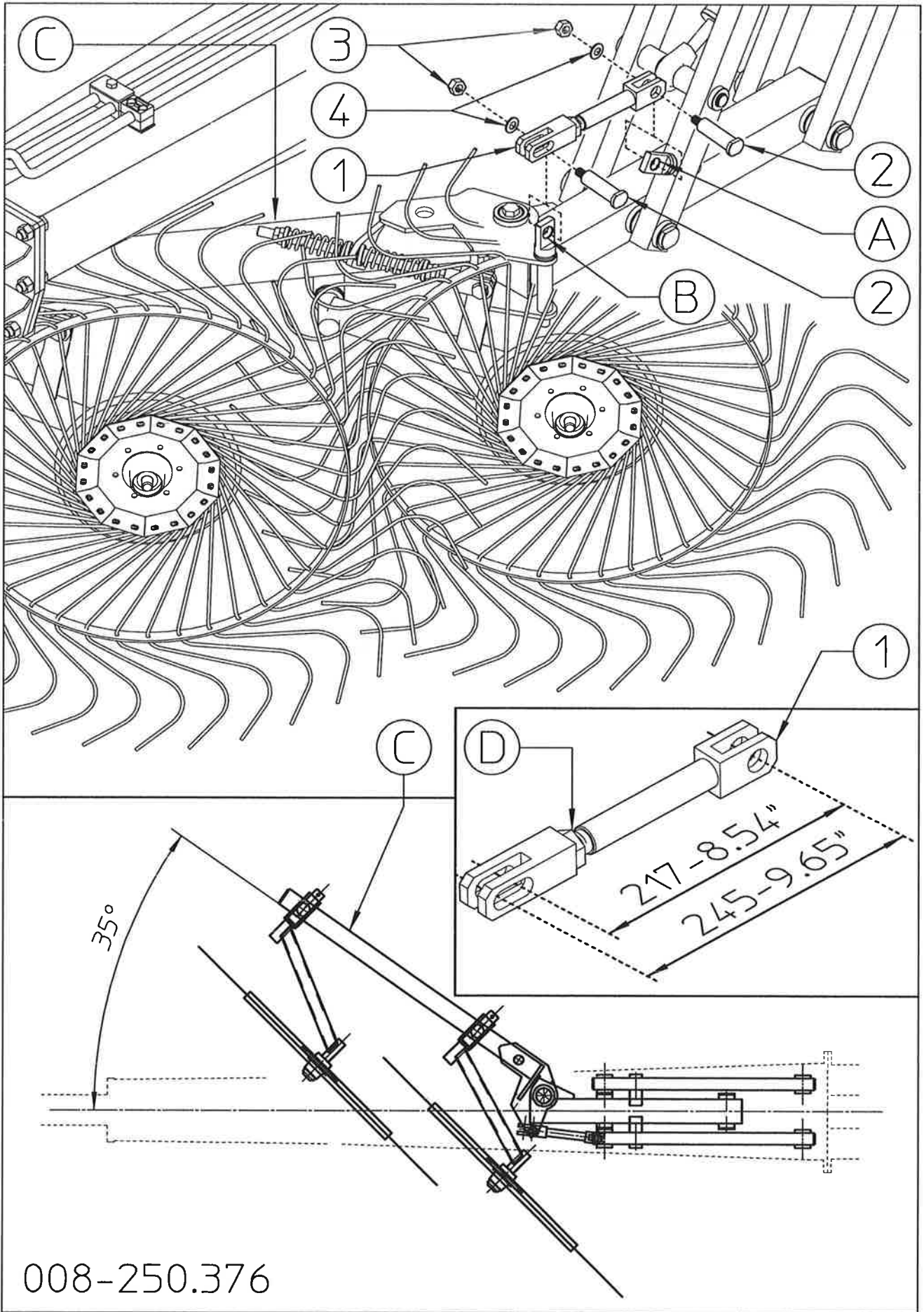
Note: The rake wheels are both RH. Attach the rake wheels 1 to hubs A-B on the arms using bolts 2, washers 3 and nuts 4.

In this step, you will use:

Item 2: 12 bolts M10x25 (0.39"x1.97")

Item 3: 12 split washers $\varnothing 10.5-17 \times 2.5$ ($\varnothing 0.41''-0.67'' \times 0.1''$)

Item 4: 12 nuts M10 (0.39")



8) DANGER

At this point tie rod 1 must be connected to pin A on the supports and to pin B on the rake wheel section C. First of all rake wheel section C on the right side of the machine must be pushed manually until it reaches the stop point. Now check that the tie rod 1 has been assembled to the correct measurement of 217mm-8.54" for linking pins A-B. Before proceeding with the installation, check that the distance between pins A-B is also 217mm-8.54". The installation is correct when the tie rod 1 links pins A-B in a barely forced manner, thus not allowing rake wheel section C to move back. If you have problems installing tie rod 1, you can make small adjustments to the fork with the slot and to nut D on the same. Note: The adjustments made must be very slight. If considerable adjustment (more than 2-3mm / 0.08"-0.11") is necessary to connect tie rod 1, it means that some component has not been correctly assembled or is defective. Bear in mind that tie rod 1 also serves to bring section C from its current working position to the transport position, therefore making considerable adjustment to the tie rod could cause the section to have the wrong transport position.

Now if all is correct, proceed with the attaching of tie rod 1.

Connect the welded fork side of tie rod 1 to pin A using pin 2, washer 3 and nut 4. Connect the fork with the slot on tie rod 1 to pin B on section C using pin 2, washer 3 and nut 4.

In this step, you will use:

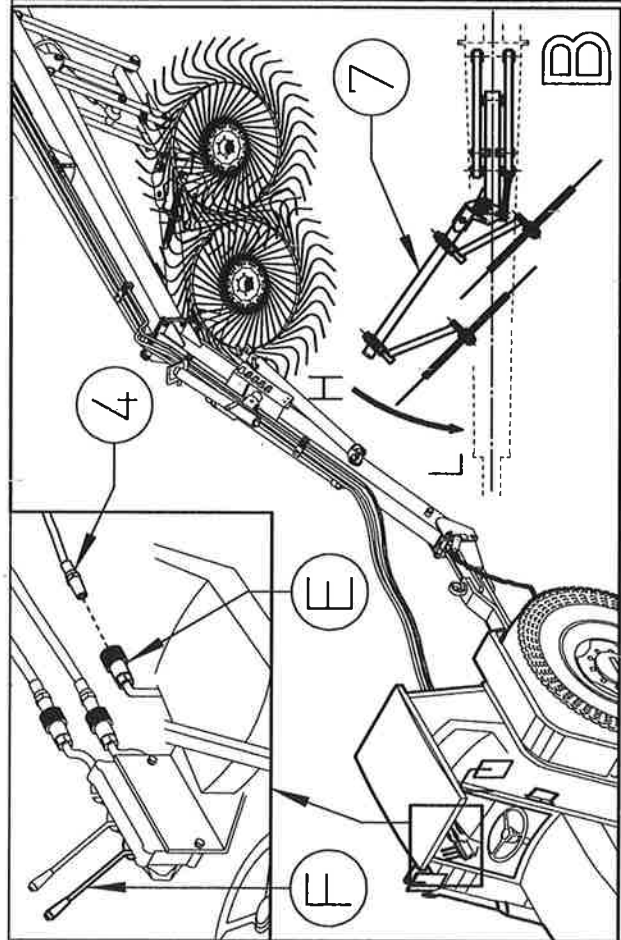
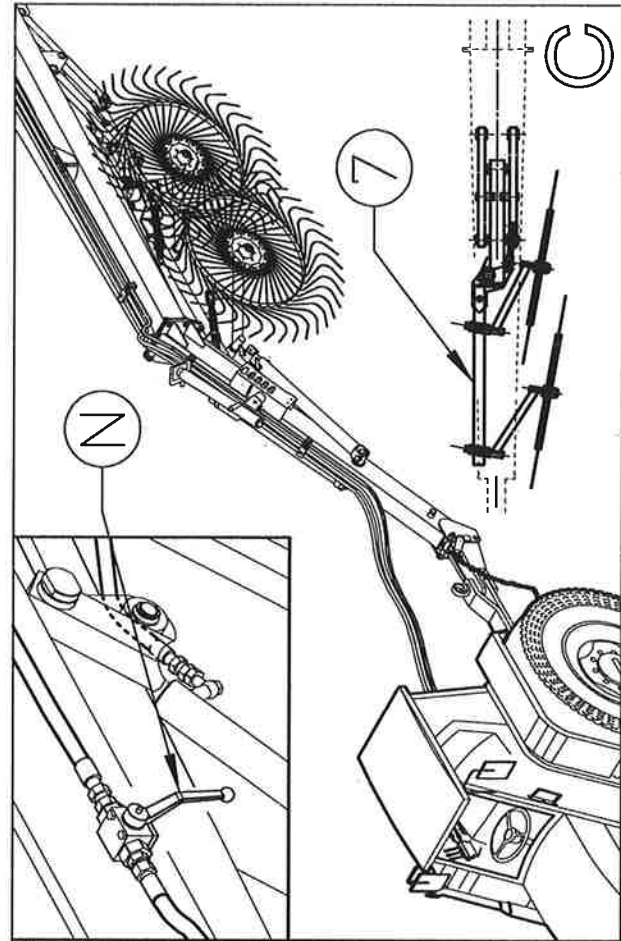
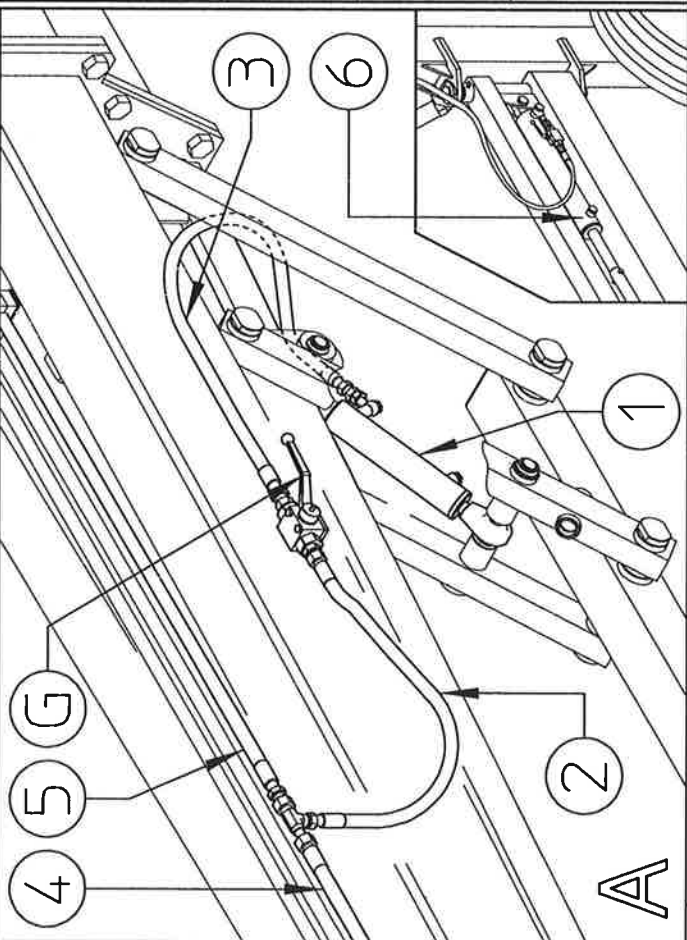
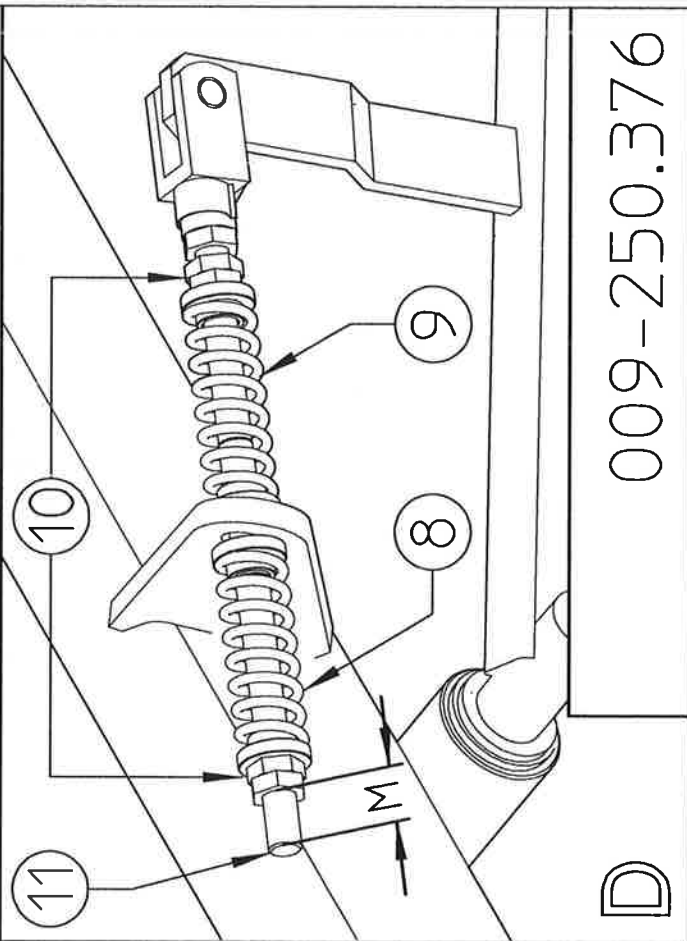
Item 2: 2 pins $\varnothing 20 \times 35$ ($\varnothing 0.79'' \times 1.38''$)

Item 3: 2 washers $\varnothing 13$ ($\varnothing 1/2''$)

Item 4: 2 nuts M12 (0.47")

At this point the assembly is completed and you can proceed with putting the kit into operation (see next step)

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9) DANGER

All the instructions and recommendations found in the assembly, use and maintenance manual for the machine are valid also for the functional tests. The manual must be consulted every time you work on or with the machine.

General information

This kit is actuated by cylinder 1 (single acting), which receives oil from hoses 2-3 placed between hoses 4-5, which in turn are fed by the tractor's hydraulic circuit and go to actuate the rake wheel lifting cylinders 6 (see Box A). To activate cylinder 1, (and consequently also cylinders 6) hose 4 must be connected to the tractor hydraulic valve connection E (see Box B). Note: The drawings of the hydraulic connection E and the lever F are intended to give only a general idea of their shape and position. Each tractor has its own specific shape and location of these devices.

Putting into operation

Check that the valve is in the open position G (see Box A). Moving lever F oil is sent through the hoses to cylinder 1, which begins to extend and consequently the rake wheel section 7 begins to rotate from position H toward position L and to lift upward (see Box B) until reaching the transport position, in which the rake wheel section 7 is parallel to the drawbar and the rake wheels are well off the ground (about 350/400mm-14/16") depending on how springs 8-9 are adjusted (see Boxes C-D). The air is expelled almost immediately from the power circuit because cylinder 1 is small.

Adjustments

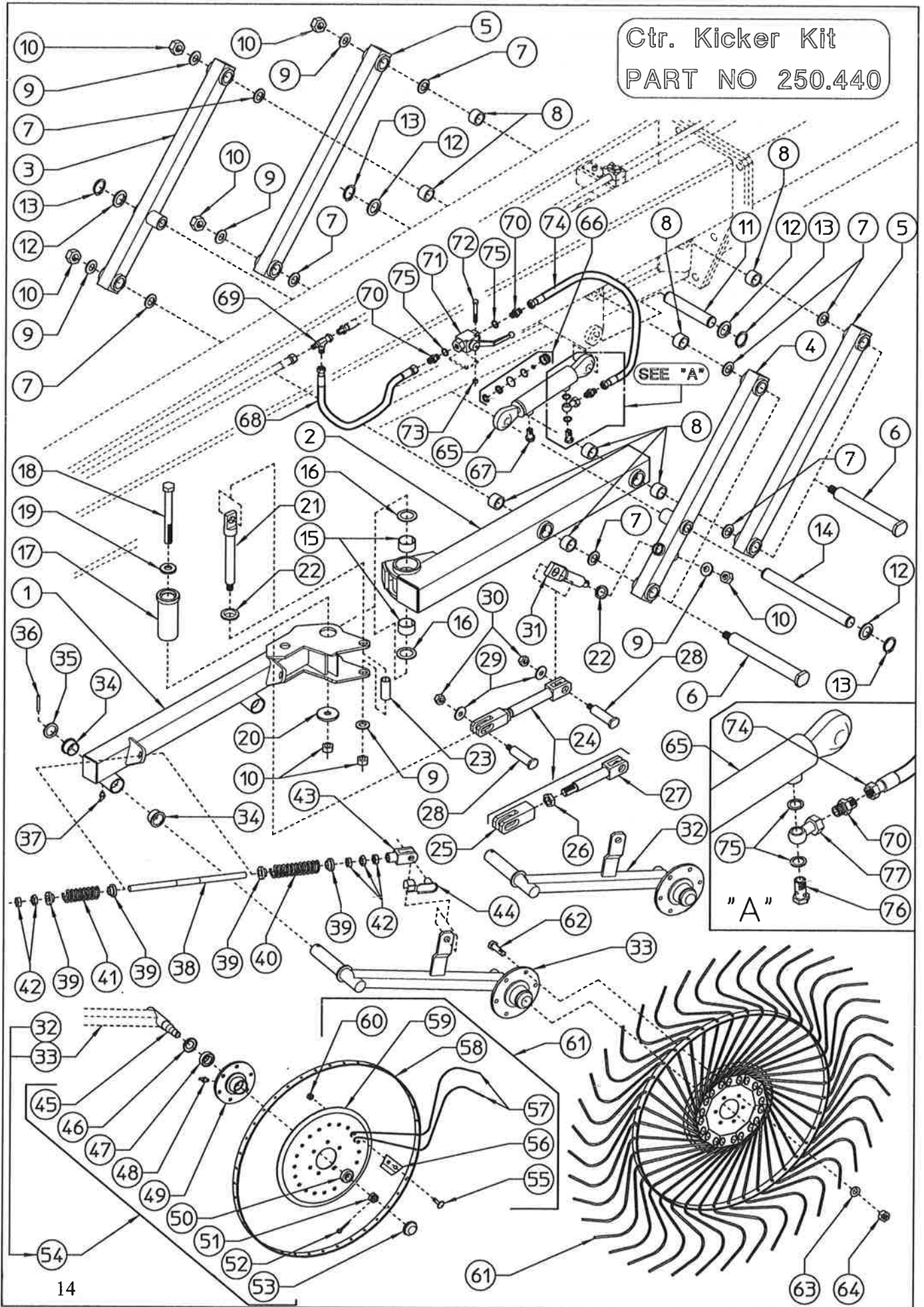
Springs 8-9 as adjusted by the manufacturer ensure a standard pressure on the ground suitable for most raking needs. You can make small adjustments to increase or decrease the pressure of the rake wheels on the ground by compressing or decompressing the springs 8-9. The more springs 8-9 (see Box D) are compressed (i.e. shortened by tightening the nuts 10 on the shaft 11), the more the rake wheels will exert pressure on the ground and, vice versa, the more springs 8-9 are decompressed (i.e. extended by loosening the nuts 10 on the shaft 11), the less they will exert pressure on the ground. In addition, the entire setup of the springs 8-9 and the related accessories can be moved along shaft 11.

With the adjustment of springs 8-9 being the same, the smaller measurement M is, the heavier the rake wheels will be on the ground while working and the closer to the ground they will be during transport. Conversely, the larger measurement M is, the lighter the stars will be on the ground while working and the farther away from the ground they will be during transport. Note: Since the hydraulic kit is powered by the same hoses that provide power to the rake wheel cylinders, it will move whenever you operate lever F; therefore, before moving lever F, widen the lateral sections of the machine, otherwise the kit rake wheels will get caught in those of the lateral sections. Conversely, operate lever F and raise the kit rake wheels before closing the side sections. If you do not intend to work with the kit, once the central rake wheels are raised, put the valve in the closed position N (see Box C).

Transport

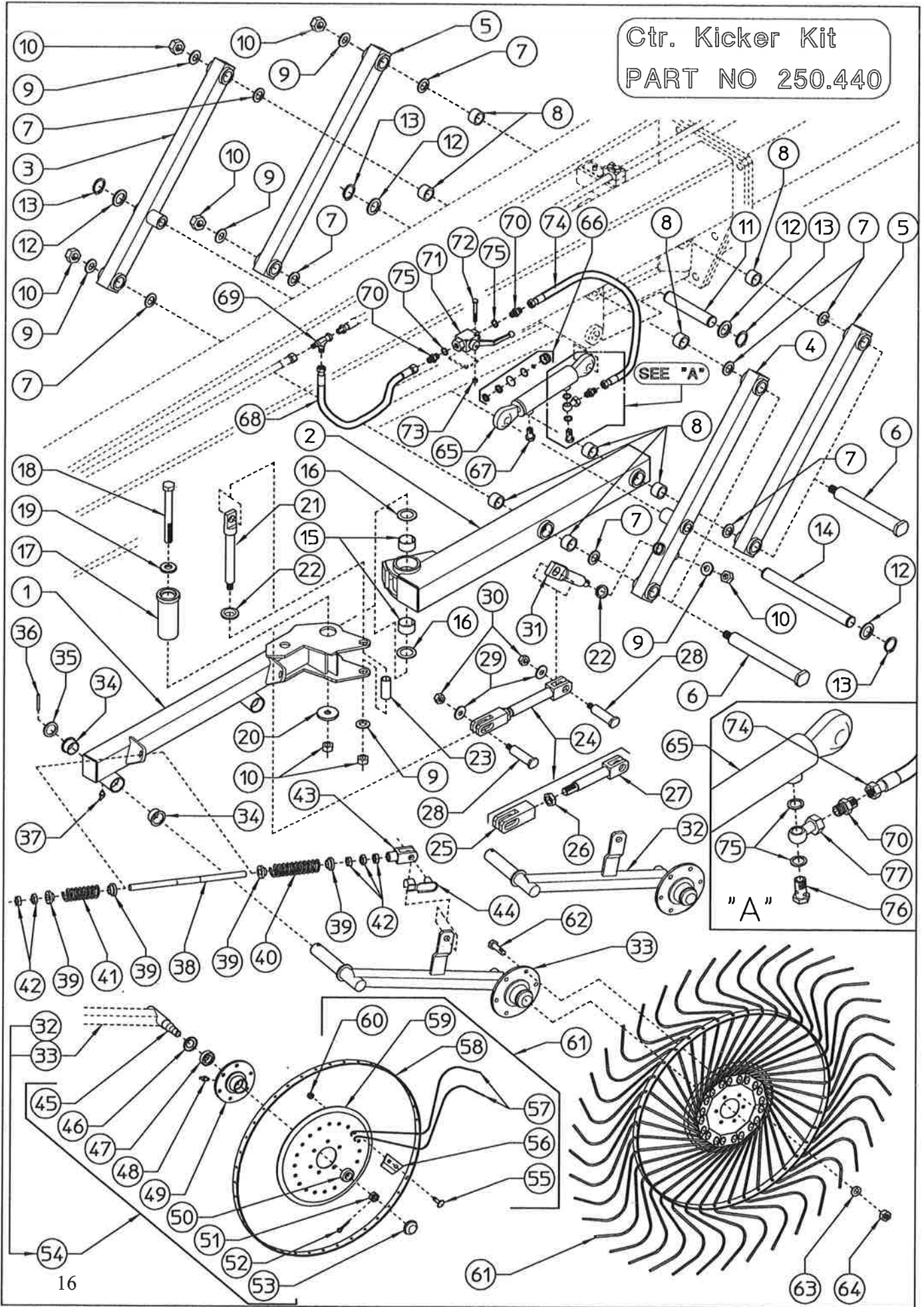
All the information given in the assembly, use and maintenance manual for the machine are valid also for transport operations. As specifically regards the kit, once the rake wheels are raised, remember to put the valve in the closed position N (see Box C).

Ctr. Kicker Kit
PART NO 250.440



CENTER KICKER KIT WITH RAKING WHEELS 44" - PART NO 250.440				
ITEM	Q.ty	SITREX PART NO	DESCRIPTION	NOTE
1	1	250.330	SECTION (2 WHEELS)	
2	1	250.331	SECTION SUPPORT	
3	1	250.332	RH LATERAL SUPPORT	
4	1	250.333	LH LATERAL SUPPORT	
5	2	250.334	LATERAL SUPPORT	
6	4	250.335	PIN ø30	
7	8	200.273	SHIM ø30,3-39,8x1	
8	8	640.043	BUSHING ø30-34x20	
9	6	210.986	WASHER ø17-40x4	
10	7	600.080	NUT M16 DIN 980	
11	1	250.336	PIN ø22	
12	4	200.669	SHIM ø22,2-32x0,5	
13	4	640.044	SNAP RING E 22 DIN 471	
14	1	250.337	PIN ø22	
15	2	640.045	BUSHING ø50-55x30	
16	2	630.977	SHIM ø50,2-70x1	
17	1	250.338	PIN ø50	
18	1	600.219	SCREW M16x150 DIN 931	
19	1	250.339	SHIM ø17/40x7	
20	1	250.340	SHIM ø17/65x8	
21	1	250.341	PIN ø25	
22	2	200.664	SHIM ø25,2-35x1	
23	1	250.350	SPACER ø25,5/35x100	
24	1	250.349	TIE ROD, ASSY	
25	1	250.343	FORK M20	
26	1	620.206	NUT M20 DIN 936	
27	1	250.344	TIE ROD M20	
28	2	250.345	PIN ø20	
29	2	600.092	WASHER ø12-36x2,5	
30	2	600.077	NUT M12 DIN 980	
31	1	250.342	PIN ø25	
32	1	250.346	REAR ARM	
33	1	250.347	FRONT ARM	
34	4	200.029	BUSHING	
35	2	200.028	WASHER ø35-50x5	
36	2	600.027	SPLIT PIN ø8x50 DIN 1481	

Ctr. Kicker Kit
PART NO 250.440



CENTER KICKER KIT WITH RAKING WHEELS 44" - PART NO 250.440				
ITEM	Q.ty	PART NO	DESCRIPTION	NOTE
37	2	600.968	GREASE NIPPLE M6x45°	
38	2	250.348	TIE ROD M16	
39	8	230.483	BUSH	
40	2	250.324	SPRING ø4,5	
41	2	230.482	SPRING ø5	
42	10	600.082	NUT M16 DIN 936	
43	2	630.375	FORK M16	
44	2	630.586	PIN	
45	2	205.277	PIN	
46	2	600.011	DUST COVER	
47	2	600.012	BEARING 30205	
48	2	600.034	GREASE NIPPLE M8	
49	2	600.013	HUB	
50	2	600.014	BEARING 30204	
51	2	600.015	SLOTTED NUT M18x1,5	
52	2	600.301	SPLIT PIN ø3x30 DIN 94	
53	2	600.016	CAP	
54	2	205.041	HUB ASSY	
55	40	600.005	SCREW M10x25 DIN 603	
56	20	200.012	TINE LOCK	
57	80	230.349	TINE ø7	
58	2	230.352	RIM	
59	2	200.010	FLANGE	
60	40	600.029	NUT M10 DIN 980	
61	2	250.452	RH FINGER WHEELS ø44"	
62	12	600.006	SCREW M10x25 DIN 933 8.8	
63	12	600.024	SPRING WASHER ø10,5 DIN 127B	
64	12	600.010	NUT M10 DIN 934	
65	1	250.325	CYLINDER ø40-20	
66	1	640.046	SET OF GASKET ø40-20	
67	1	620.012	PLUG 3/8"	
68	1	640.052	HOSE 3/8" F 3/4" JIC - F 3/4" JIC	
69	1	640.047	"T" FITTING 3/4" JIC MALE-MALE-FEMALE	
70	3	640.035	NIPPLE 3/8" GAS - 3/4" JIC	
71	1	620.314	VALVE 3/8"	
72	2	620.366	SCREW M5x45 DIN 931	
73	2	620.367	NUT M5 DIN 980	
74	1	640.053	HOSE 3/8" F 3/4" JIC - F 3/4" JIC	
75	4	620.452	WASHER ø3/8" BONDED	
76	1	600.040	SCREW 3/8"	
77	1	630.315	FITTING BANJO 3/8"	



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