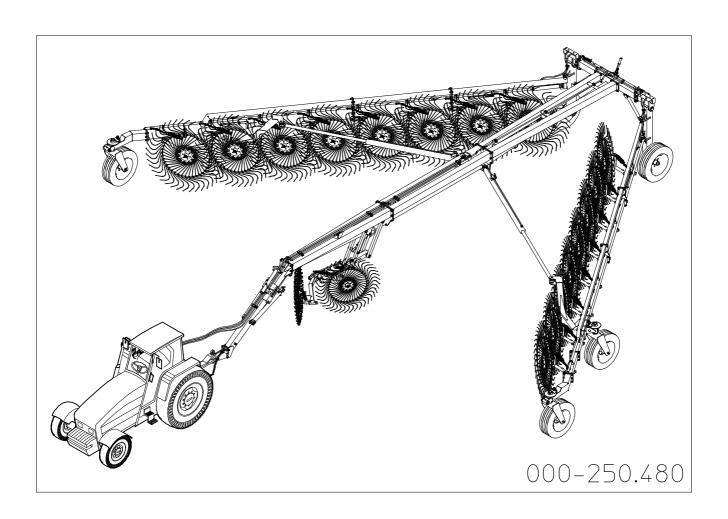


ASSEMBLY, USE AND SPARE PARTS LIST CENTER RAKE WHEELS RH-LH KIT MKE

PART NO 250.462/b



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 are will be identified by the wire diameter, the outside diameter and the length, thus in this case Ø3-Ø18x110 (Ø0.12"-Ø0.71"x4.33")

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 Ø8 x 50 (Ø0.12" 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 $\emptyset18-\emptyset35 \times 30$ ($\emptyset0.71$ "- $\emptyset1.38$ " x 1.18") or for washers $\emptyset18-\emptyset35 \times 3$ ($\emptyset0.71$ "- $\emptyset1.38$ " 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".

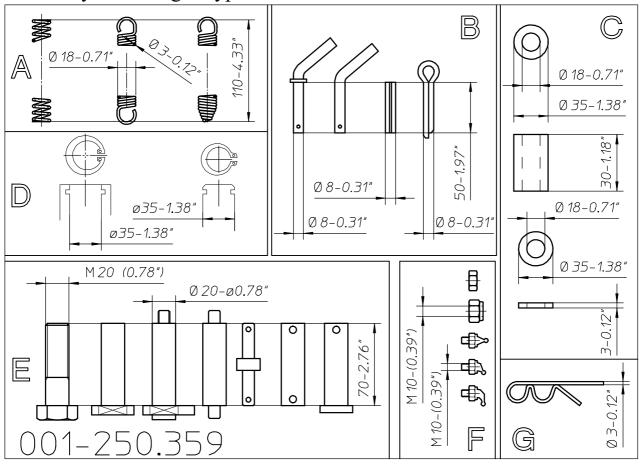
Box "E": shows pins, bolts, etc. that will be identified by the outside diameter (thread diameter for bolts) and the length, thus in this case $\emptyset 20 \times 70 \ (\emptyset 0.78" \times 2.76")$ or for bolts M20 x 70 (0.78" x 2.76").

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 $\emptyset 3$ ($\emptyset 0.12$ ").

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	
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	CL.8 W/CL8.8 BOLT	
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)	

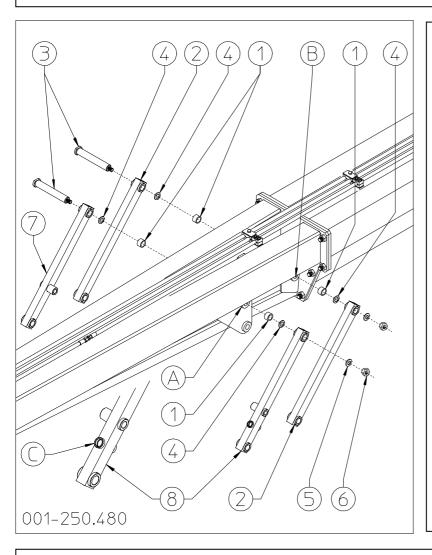
NOTE: Torque values shown with * are inch pounds.

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 ø30-34x20 (1.18"-1.34"x0.79")

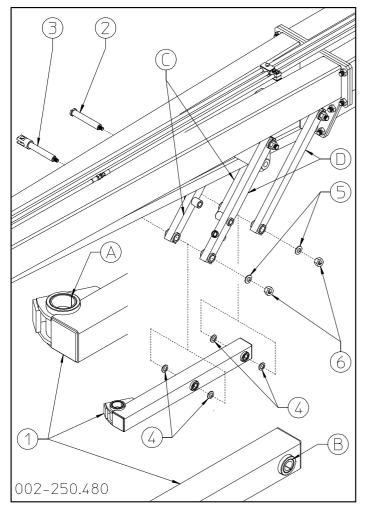
Item 3: 2 pins ø30 x222 (1.18"x8.74")

Item 4: 4 shims ø30.5-40x1 (ø1.2"-1.57" x 0.04")

1) DANGER

Item 5: 2 washers Ø17-40x4 (Ø0.67"-1.57"x0.16")

Item 5: 2 nuts M16 (0.63")



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:

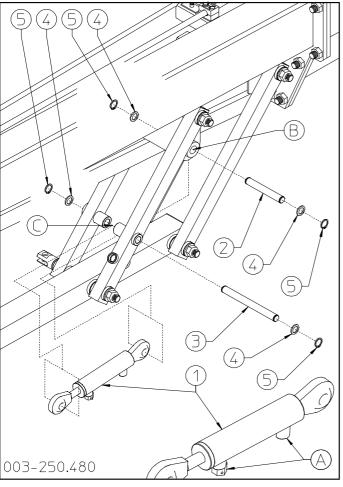
Item 2: 1 pin ø30 x222 (1.18"x8.74")

Item 3: 1 pin ø30 x222 with fork (1.18"x8.74")

Item 4: 4 shims ø30.5-40x1 (ø1.2"-1.57" x 0.04")

Item 5: 2 washers Ø17-40x4 (Ø0.67"-1.57"x0.16")

Item 6: 2 nuts M16 (0.63")



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:

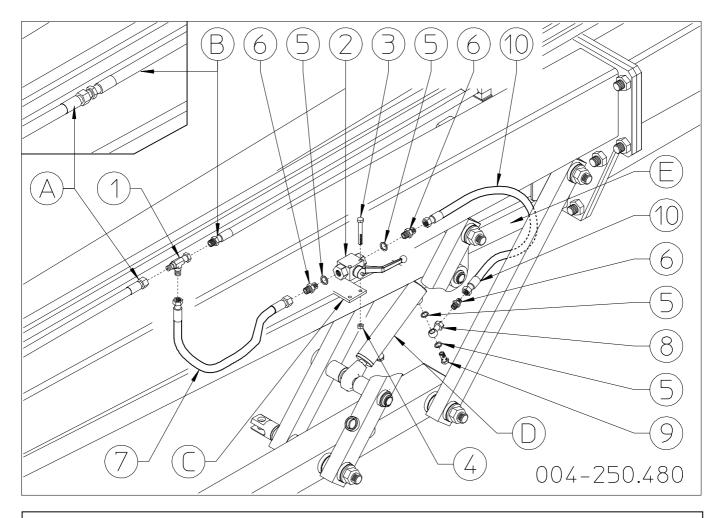
Item 2: 1 pin ø22x102 (ø0.87" x 4.02")

Item 3: 1 pin ø22x232 (ø0.87" x 9.13")

Item 4: 4 shims ø22.5-32x0.5 (ø0.88"-1.26"x0.02")

1.26~X0.02~)

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



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:

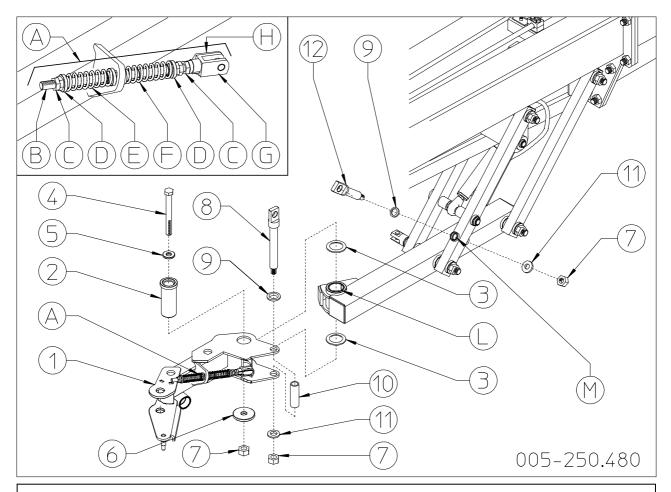
```
Item 1: 1 T coupling M-F-M <sup>3</sup>/<sub>4</sub>" JIC - Item 2: 1 valve 3/8"
```

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"

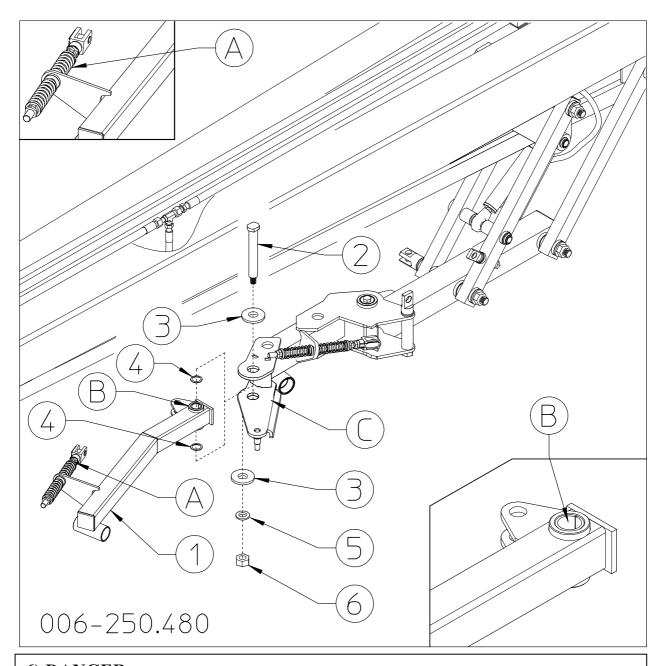
Item 9: 1 screw-type coupling 3/8" - Item 10: 1 hose 3/8" L.1000mm (39.4")



Check to make sure that the manufacturer has installed one shock absorber A on the rake wheel 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 ø5-ø0.197" on the external side), one spring F (wire ø4.5-ø0.177" 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 ø 50 (1.97")
- Item 3: 2 shims ø50-70x1 (ø1.97"-2.76"x0.04")
- Item 4: 1 bolt M16x150 (0.63"x5.9")
- Item 5: 1 washer ø17-40x7 (ø0.67"-1.57"x0.28")
- Item 6: 1 washer ø17-65x8 (ø0.67"-2.56"x0.31")
- Item 7: 3 nuts M16 (0.63")
- Item 8: 1 pin ø25x117 (ø0.98"x4.61")
- Item 9: 2 shims ø25.5-35x1 (ø1"-1.38"x0.16")
- Item 10: 1 spacer ø25.5-35x100 (ø1"-1.38"x3.94")
- Item 11: 2 washers Ø17-40x4 (Ø0.67"-1.57"x0.16")
- Item 12: 1 pin ø25x81 (ø0.98"x3.19")



Check to make sure that the manufacturer has installed one shock absorber A on the rake wheel section 1. For the characteristics of the shock absorber A see previous point.

Check that the manufacturer has installed on the seats B two bushings.

Connect section 1 to seat C on the rear support using pin 2, shims 3-4, washers 5 and nut 6. Check that section 1 turns freely.

In this step, you will use:

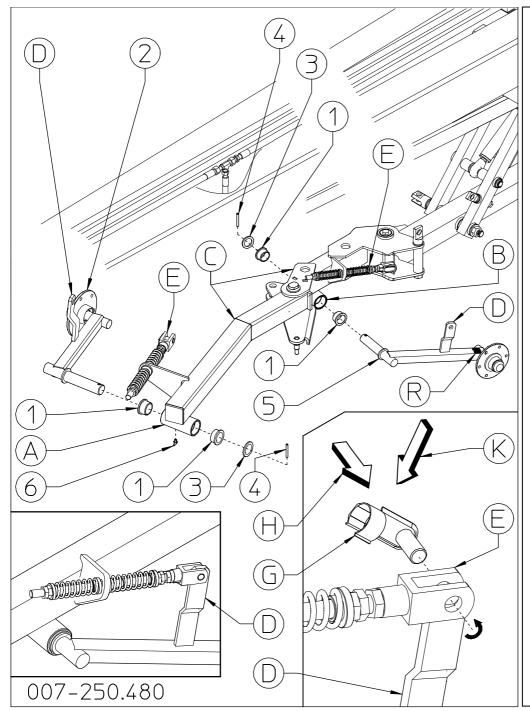
Item 2: 1pin ø30x107 (1.18"x4.21")

Item 3: 2 shims ø30.5-50x6 (ø1.2"-1.97"x0.24")

Item 4: 2 shims ø30.5-40x1 (ø1.2"-1.57"x0.04")

Item 5: 1 washer ø17-40x4 (ø0.67"-1.57"x0.16")

Item 6: 1 nut M16 (0.63")



Insert bushings 1 into seats A-B in sections C. Insert front arm 2 (un marked) 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.

7) DANGER

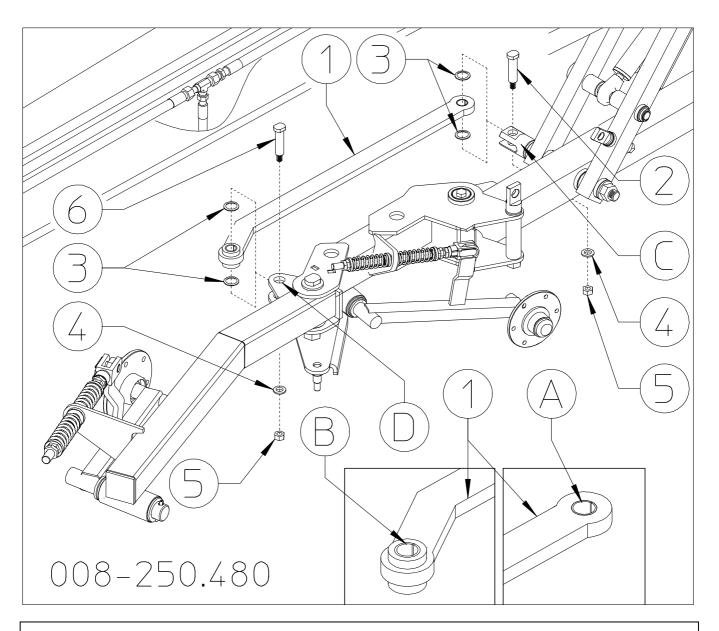
In this step, you will use:

Item 1: 4 nylon bushings ø35-42x26 (ø1.38"-1.65x1")

Item 3: 2 washers ø35-50x5 (ø1.38"-1.97"x0.2")

Item 4: 2 spring pins Ø8x50 (Ø31"x1.97")

Item 6: 2 grease nipples M6x45° (0.24"x45°)



First of all check to make sure the manufacturer has applied the bushing A and bushing B to the seats on tie rod 1. Next attach tie rod 1 to the seat C using pin 2, shims 3, washers 4 and nuts 5. Attach tie rod 1 to the seat D using pin 6, shims 3, washers 4 and nuts 5.

In this step, you will use:

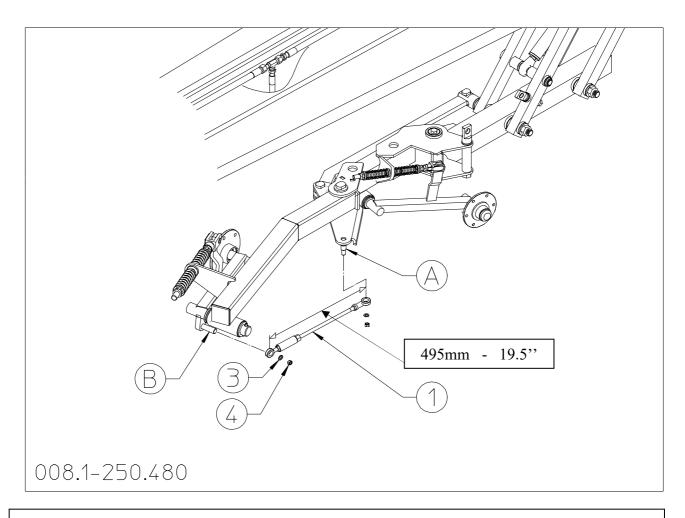
Item 2: 1 pin ø20x35 (ø0.79" x 1.38")

Item 3: 4 shims ø20.2-26x0.5 (ø0.8"-1"x0.02")

Item 4: 2 washers ø12-36x2.5 (ø0.48"-1.42"x0.1")

Item 5: 2 nuts M12 (0.47")

Item 6: 1 pin ø20x48 (ø0.79" x 1.89")



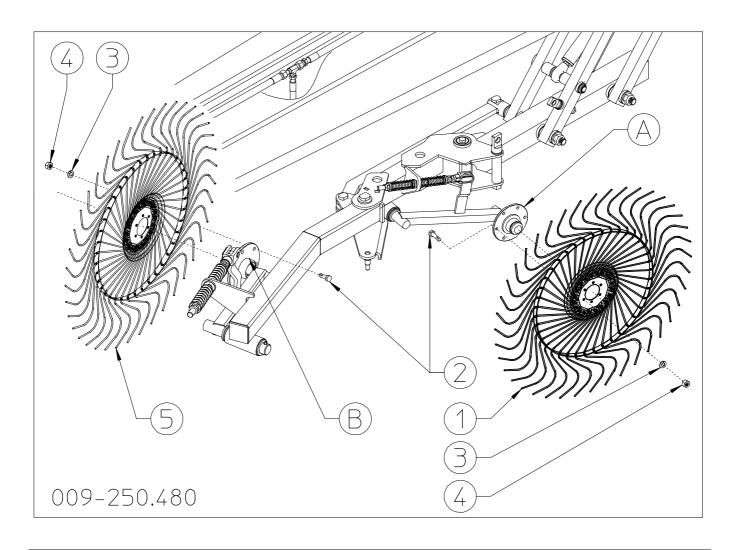
8.1) DANGER

Attach the tierod 1 to pin A on the support using washer 3 and nut 4. Attach the tierod 1 to pin B on the wheel arm using washer 3 and nut 4.

In this step, you will use:

Item 3: 2 washers ø12 (ø0.5")

Item 4: 2 nuts M12 (0.5")



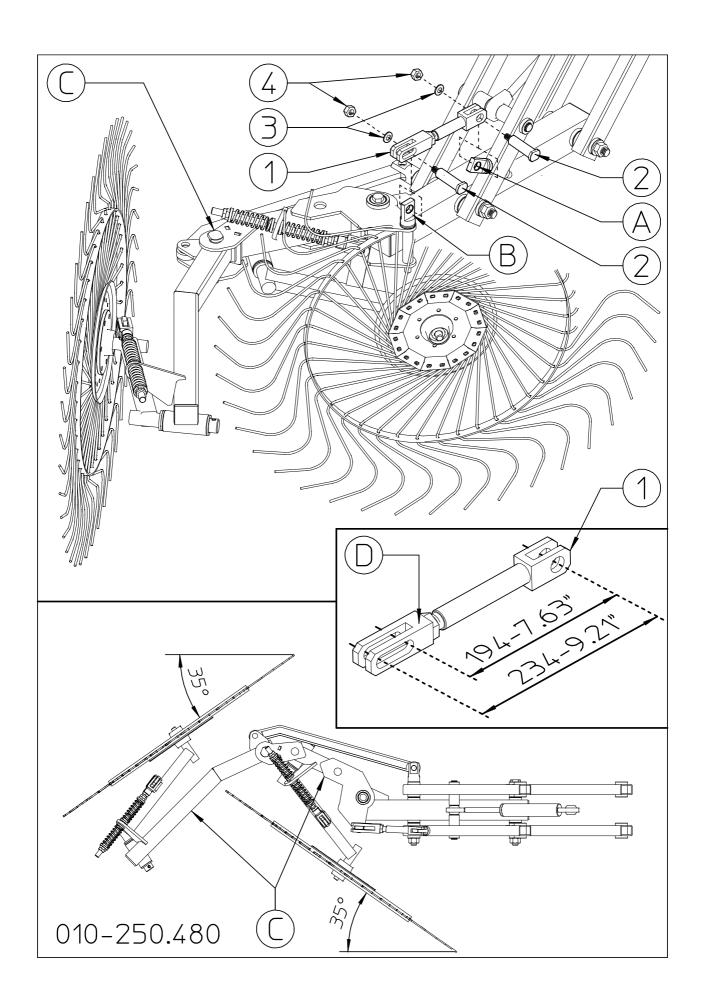
Attach the RH rake wheels 1 to hub A on the arm using bolts 2, washers 3 and nuts 4. Attach the LH rake wheels 5 to hub B on the arm using bolts 2, washers 3 and nuts 4.

In this step, you will use:

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

Item 3: 12 split washers ø10.5-17x2.5 (ø0.41"-0.67"x0.1")

Item 4: 12 nuts M10 (0.39")



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 194mm-7.63" for linking pins A-B. Before proceeding with the installation, check that the distance between pins A-B is also 194mm-7.63". 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.

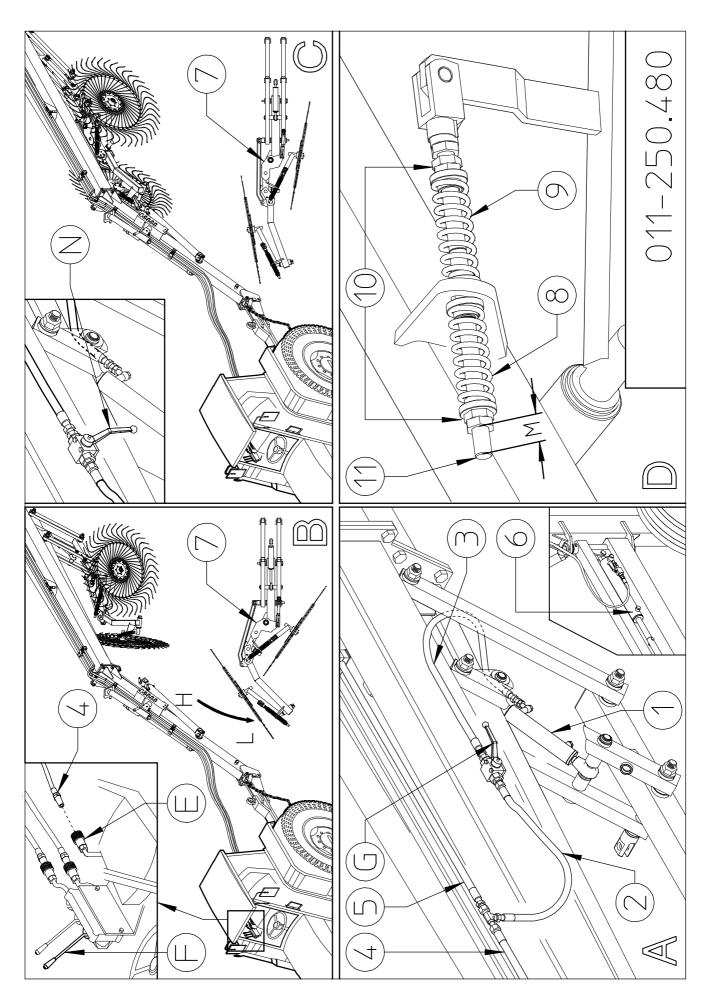
In this step, you will use:

Item 2: 2 pins ø20x35 (ø0.79" x 1.38")

Item 3: 2 washers ø13 (ø1/2")

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)



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

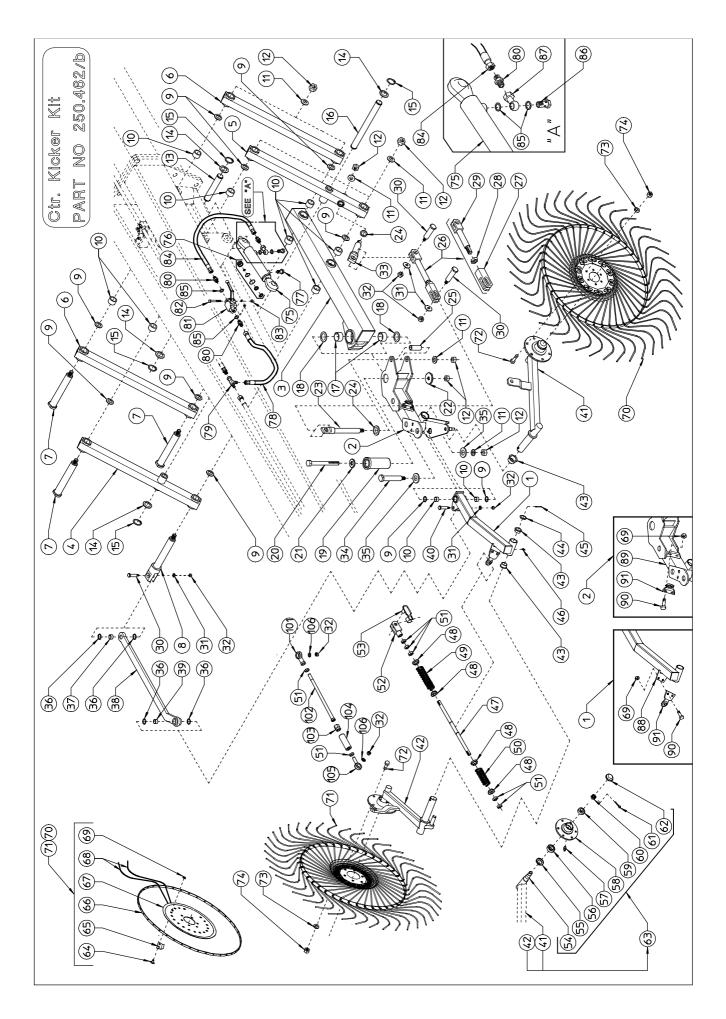
Springs 8-9 as adjusted by the manufacturer ensure a standard pressure on the ground suitable for most raking needs. You can make small adjustments to increase or decrease the pressure of the rake wheels on the ground by compressing or decompressing the springs 8-9. The more springs 8-9 (see Box D) are 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).

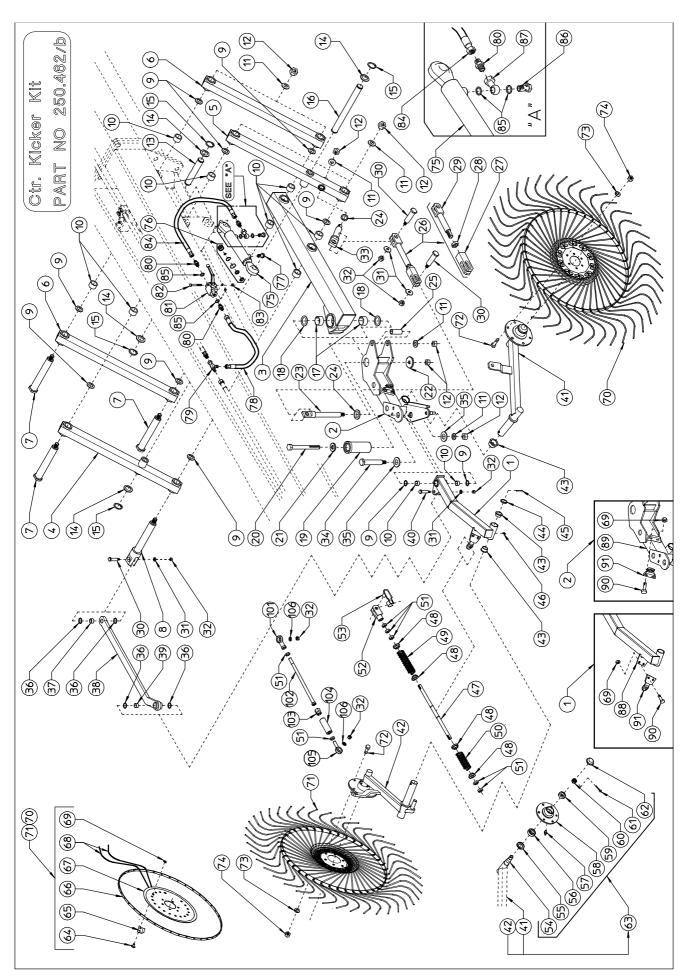
Transport

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).

SPARE PARTS LIST



CE			TH RH - LH RAKING WHEELS 44" - PART NO 2	250.462/b
ITEM	Q.ty	PART NO	DESCRIPTION	NOTE
1	1	260.830	FRONT SECTION 1 WHEL WITH JOINT	
2	1	260.831	REAR SECTION 1 WHEEL WITH JOINT	
3	1	250.331	SECTION SUPPORT	
4	1	250.332	RH LATERAL SUPPORT	
5	1	250.333	LH LATERAL SUPPORT	
6	2	250.334	LATERAL SUPPORT	
7	3	250.335	PIN ø30	
8	1	260.832	PIN ø30 WITH FORK	
9	10	200.273	SHIM ø30,3-39,8x1	
10	10	640.043	BUSHING ø30-34x20	
11	7	210.986	WASHER ø17-40x4	
12	8	600.080	NUT M16 DIN 980	
13	1	250.336	PIN ø22	
14	4	200.669	SHIM ø22,2-32x0,5	
15	4	640.044	SNAP RING E 22 DIN 471	
16	1	250.337	PIN ø22	
17	2	640.045	BUSHING ø50-55x30	
18	2	630.977	SHIM ø50,2-70x1	
19	1	250.338	PIN ø50	
20	1	600.219	SCREW M16x150 DIN 931	
21	1	250.339	SHIM ø17/40x7	
22	1	250.340	SHIM ø17/65x8	
23	1	250.341	PIN ø25	
24	2	200.664	SHIM ø25,2-35x1	
25	1	250.350	SPACER ø25,5/35x100	
26	1	260.834	TIE ROD, ASSY	
27	1	260.833	FORK M20	
28	1	620.206	NUT M20 DIN 936	
29	1	250.472	TIE ROD M20	
30	3	250.345	PIN ø20	
31	4	600.092	WASHER ø12-36x2,5	
32	4	600.077	NUT M12 DIN 980	
33	1	250.342	PIN ø25	
34	1	250.477	PIN ø30	
35	2	220.208	WASHER ø30,5-50x6	
36	4	210.456	SHIM ø20,2-26x0,5	
37	1	640.094	BUSHING ø20-23x15	
38	1	260.825	TIE ROD	
39	1	640.095	BUSHING ø20-23x30	
40	1	250.479	PIN ø25	
41	1	250.346	REAR ARM	
42	1	260.828	FRONT ARM	
43	4	200.029	BUSHING	
44	2	200.029	WASHER ø35-50x5	
45	2	600.027	SPLIT PIN ø8x50 DIN 1481	
46	2	600.968	GREASE NIPPLE M6x45°	
47	2	250.348	TIE ROD M16	
48	8	230.483	BUSH	
49	2	250.324	SPRING ø4,5	
50	2	230.324	SPRING Ø4,3 SPRING Ø5	
51	10	600.082	NUT M16 DIN 936	
52	+ +	630.375	FORK M16	
53	2 2	630.586	PIN	



CENTER KICKER KIT WITH RH - LH RAKING WHEELS 44" - PART NO 250.462/b						
ITEM	Q.ty	PART NO	DESCRIPTION	NOTE		
54	2	205.277	PIN			
55	2	600.011	DUST COVER			
56	2	600.012	BEARING 30205			
57	2	600.034	GREASE NIPPLE M8			
58	2	600.013	HUB			
59	2	600.014	BEARING 30204			
60	2	600.015	SLOTTED NUT M18x1,5			
61	2	600.301	SPLIT PIN ø3x30 DIN 94			
62	2	600.016	CAP			
63	2	205.041	HUB ASSY			
64	40	600.005	SCREW M10x25 DIN 603			
65	20	200.012	TINE LOCK			
66	2	230.352	RIM			
67	2	200.010	FLANGE			
68	80	230.349	TINE ø7			
69	44	600.029	NUT M10 DIN 980			
70	1	250.452	RH FINGER WHEELS ø44"			
71	1	250.453	LH FINGER WHEELS ø44"			
72	12	600.006	SCREW M10x25 DIN 933 8.8			
73	12	600.024	SPRING WASHER ø10,5 DIN 127B			
74	12	600.010	NUT M10 DIN 934			
75	1	250.325	CYLINDER ø40-20			
76	1	640.046	SET OF GASKET ø40-20			
77	1	620.012	PLUG 3/8"			
78	1	640.052	HOSE 3/8" F 3/4" JIC - F 3/4" JIC			
79	1	640.047	"T" FITTING 3/4" JIC MALE-MALE-FEMALE			
80	3	640.035	NIPPLE 3/8" GAS - 3/4" JIC			
81	1	620.314	VALVE 3/8"			
82	2	620.366	SCREW M5x45 DIN 931			
83	2	620.367	NUT M5 DIN 980			
84	1	640.053	HOSE 3/8" F 3/4" JIC - F 3/4" JIC			
85	4	620.452	WASHER ø3/8" BONDED			
86	1	600.040	SCREW 3/8"			
87	1	630.315	FITTING BANJO 3/8"			
88	1	260.829	FRONT SECTION WITHOUT JOINT			
89	1	260.826	REAR SECTION WITHOUT JOINT			
90	4	600.641	SCREW M10x35 DIN 933			
91	2	260.572	JOINT			
101	1	640.883	JOINT FEMALE M16			
102	1	260.811	TIE ROD			
102	1	260.811	SPECIAL NUT			
103	1	260.810	BUSH BUSH			
105	1	620.259	JOINT MALE M16			
106	2	600.089	WASHER M12			

