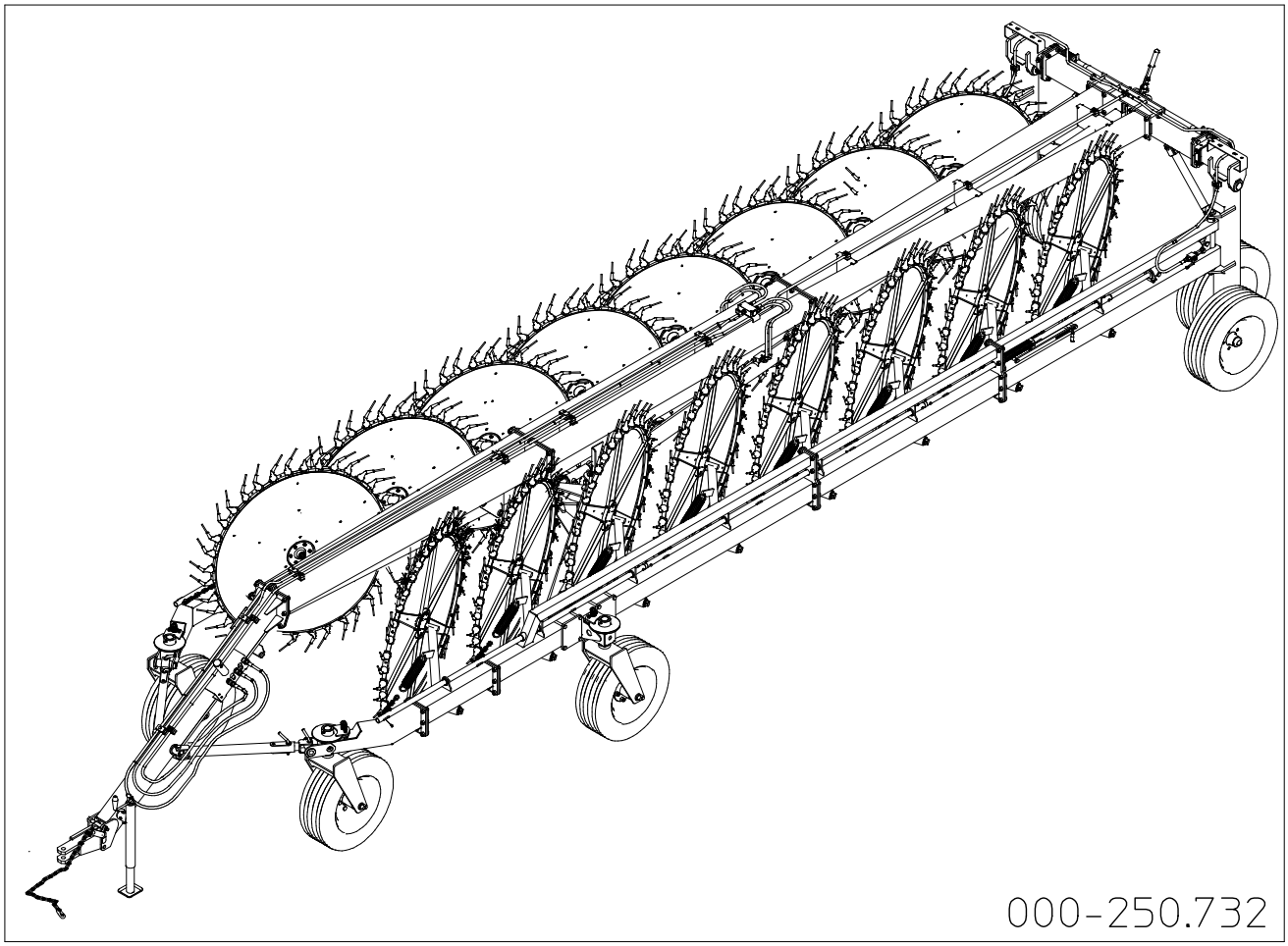
AGRICULTURAL MACHINERY

sitrex® Spa

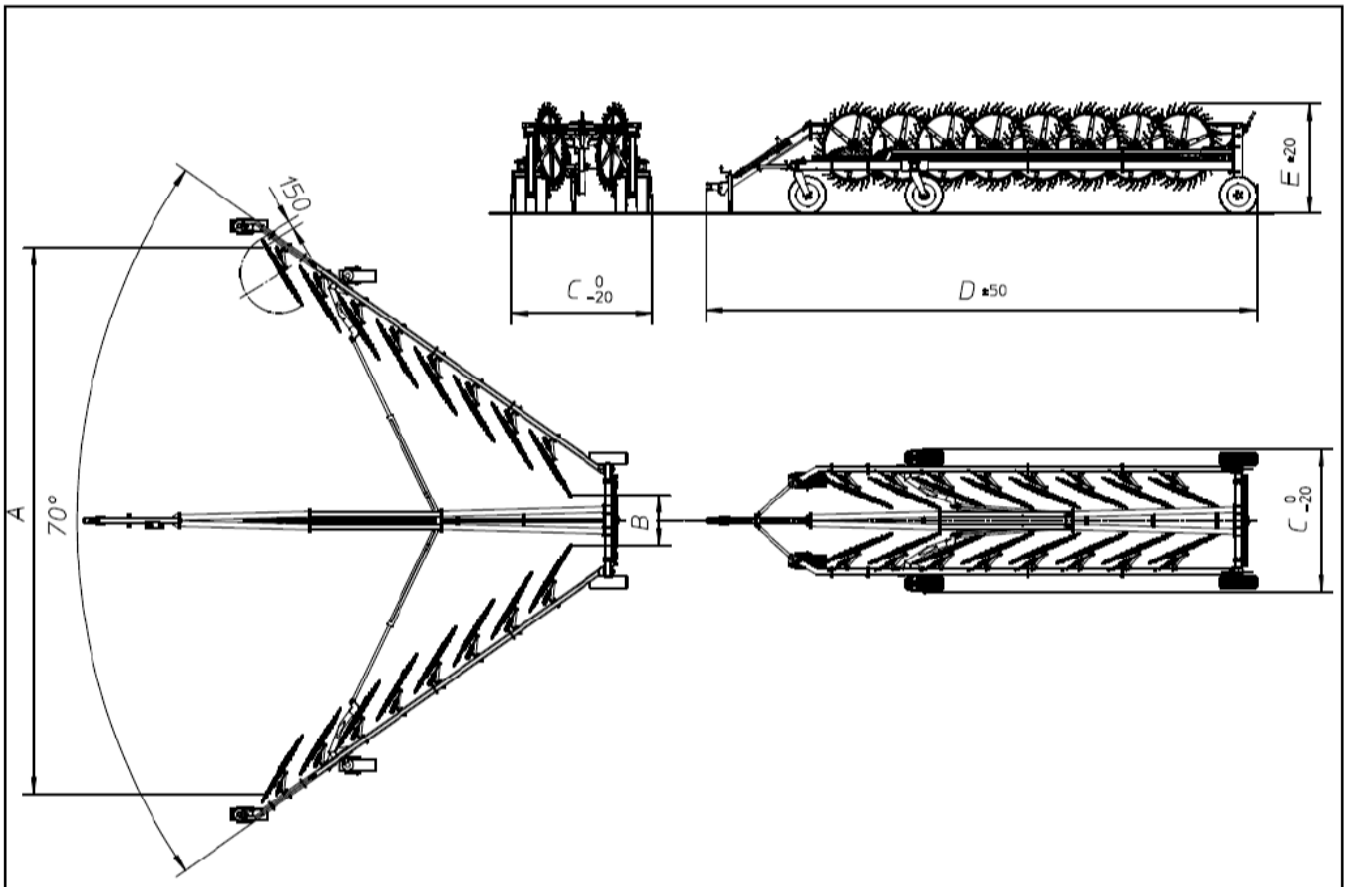
PREPARATION, ADJUSTMENT, USE AND MAINTENANCE



MKE-PRO/1428-1631

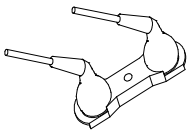
05-2015

SPECIFICATIONS



MKE-PRO/1428-1631

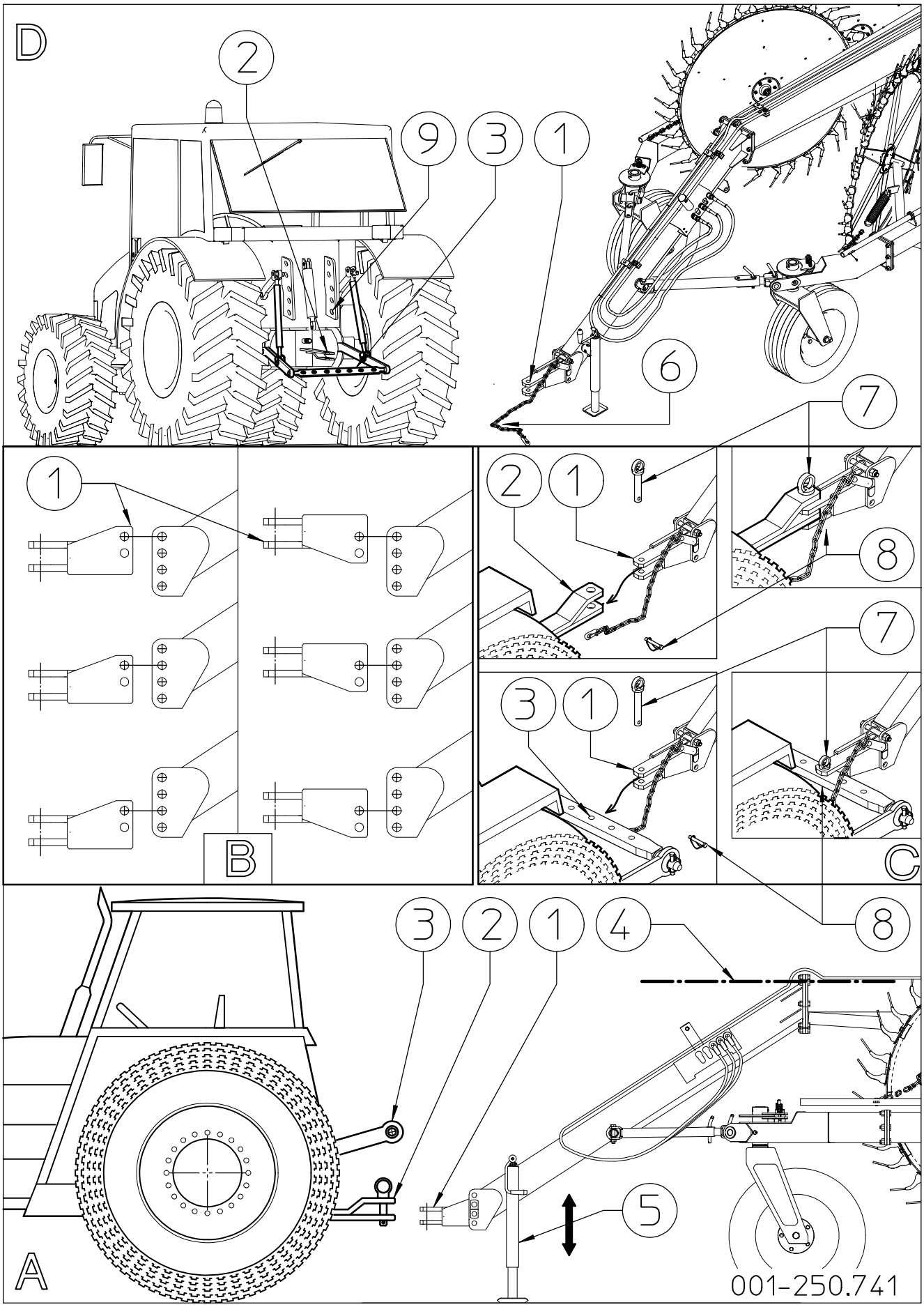
002-250.745

SPECIFICATIONS	MKE-PRO/1428	MKE-PRO/1631
Number of Finger Wheels	14	16
Finger Wheels diameter	1525 mm - 60"	1525 mm - 60"
Finger Wheel Tine Diameter	7 mm - 0,0275"	7 mm - 0,0275"
Double teeth per Wheel 	18 (36)	18 (36)
Maximum Working Width - A	8,7 m - 28' 6"	9,4 m - 31'
Windrow Width (min-max) - B	0,9/1,8 m - 3'/6"	0,9/1,8 m - 3'/6"
Overall Transport Width - C	2,55 m - 8' 4"	2,55 m - 8' 4"
Overall Length - Transport - D	9,955 m - 32' 8"	9,955 m - 32' 8"
Transport Height - E	1,95 m - 6,39'	1,95 m - 6,39'
Minumum Tractor Horsepower Required *	55 HP - 40 KW	55 HP - 40 KW
Operating speed	15 km - 9 mph	15 km - 9 mph
Finger Wheel Hub Bearing Type	Tapered roller - greaseable	Tapered roller - greaseable
Transport Wheel size	205/75-R15	205/75-R15
Weight	2500 kg - 5510 lbs	2700 kg - 5950 lbs
* Depending on crop conditions, the field conditions and weight of the tractor		

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

PREPARATION, ADJUSTMENT AND USE

a) ATTACHING THE MACHINE TO THE TRACTOR

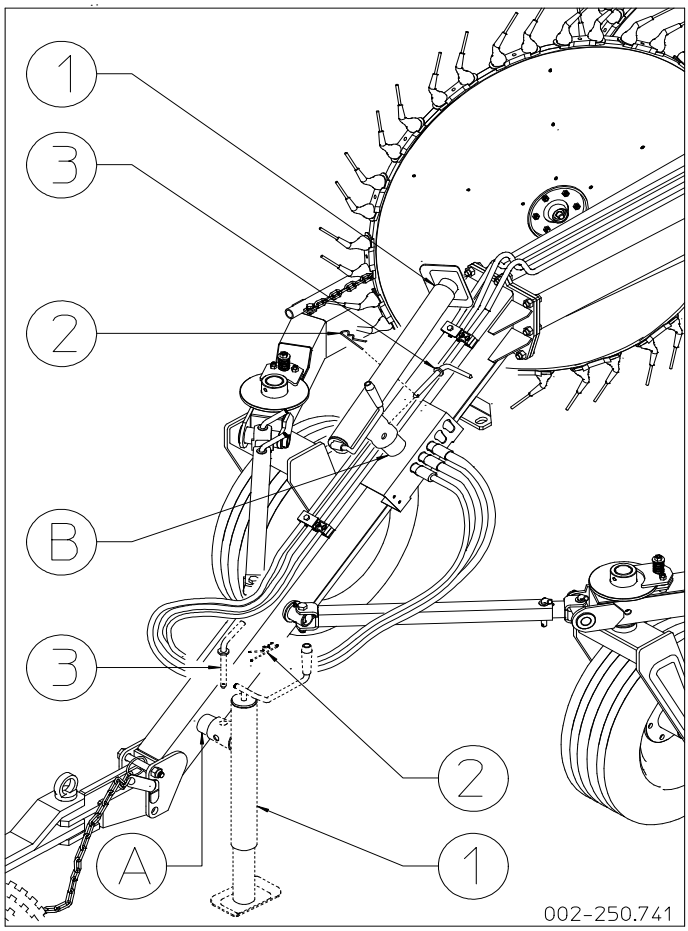


a) ATTACHING THE MACHINE TO THE TRACTOR

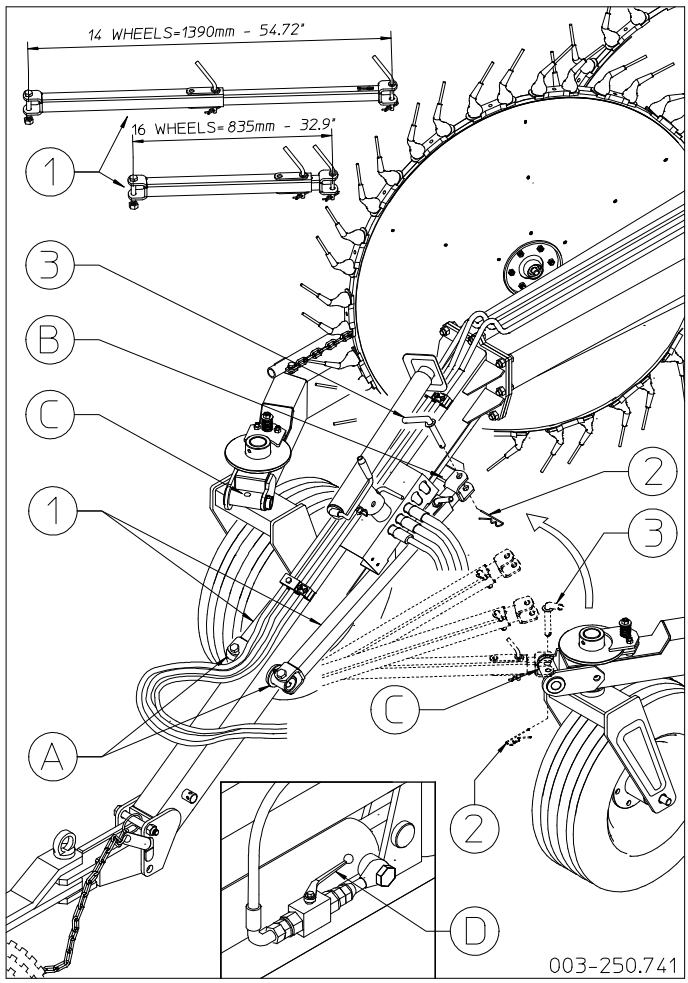
The attachment of the machine to the tractor is simple but dangerous. Carry out the operation being extremely careful and strictly following these instructions. Make sure that there are no persons or objects within the operating range of the machine and tractor. Check that all the signs and symbols are on the machine and are legible. Check that the tractor is in good condition and is suitable for pulling and working with this machine. Always consult the tractor operator's manual.
The attachment to the tractor consists of joining the machine's hitch 1 to that of the tractor 2 or to the bar 3 attached to the tractor lifting arms.
The attachment to the tractor is correct when drawbar 4 remains approximately horizontal (parallel to the ground). This condition is reached by adjusting the stand 5 (see Box A).
At this point, if hitch 1 is not at the same height as the tractor hitch 2, it can be moved up or down as shown in Box B. Note: to move the hitch 1, see the assembly manual; in addition, if you move hitch 1 upwards and use the hole of the safety chain 6 (see Box D), move the chain to the bottom hole.
If instead you attach the machine to the bar 3, the correct coupling height is achieved by raising or lowering the lifting arms.
At this point, whether hitch 1 is attached to tractor hitch 2 or to the bar 3, you must fasten it using a pin 7 of adequate size and capacity for the weight of the machine and with a pin 8 (see Box C).
Now hook the safety chain to a suitable connection 9 on the tractor (see Box D).

NB: in this case, since the machine was assembled just before transporting it and subsequently before working, you will have to do the functional tests (see paragraph "b"), but this procedure should be carried out every time you have to attach the machine to the tractor.

b) PREPARING THE MACHINE FOR FUNCTIONAL TESTS.



At this point remove the stand 1 from seat A (parking position) and bring it to seat B (transport and working position). To do this you must remove clip 2 and pin 3, move the stand 1 to position B and fasten it with pin 3 and clip 2.
NB: In this case, as the machine has just been assembled, the description given here is intended for the functional tests before transporting it and subsequently before working, but this procedure should be carried out every time you have to attach the machine to the tractor.



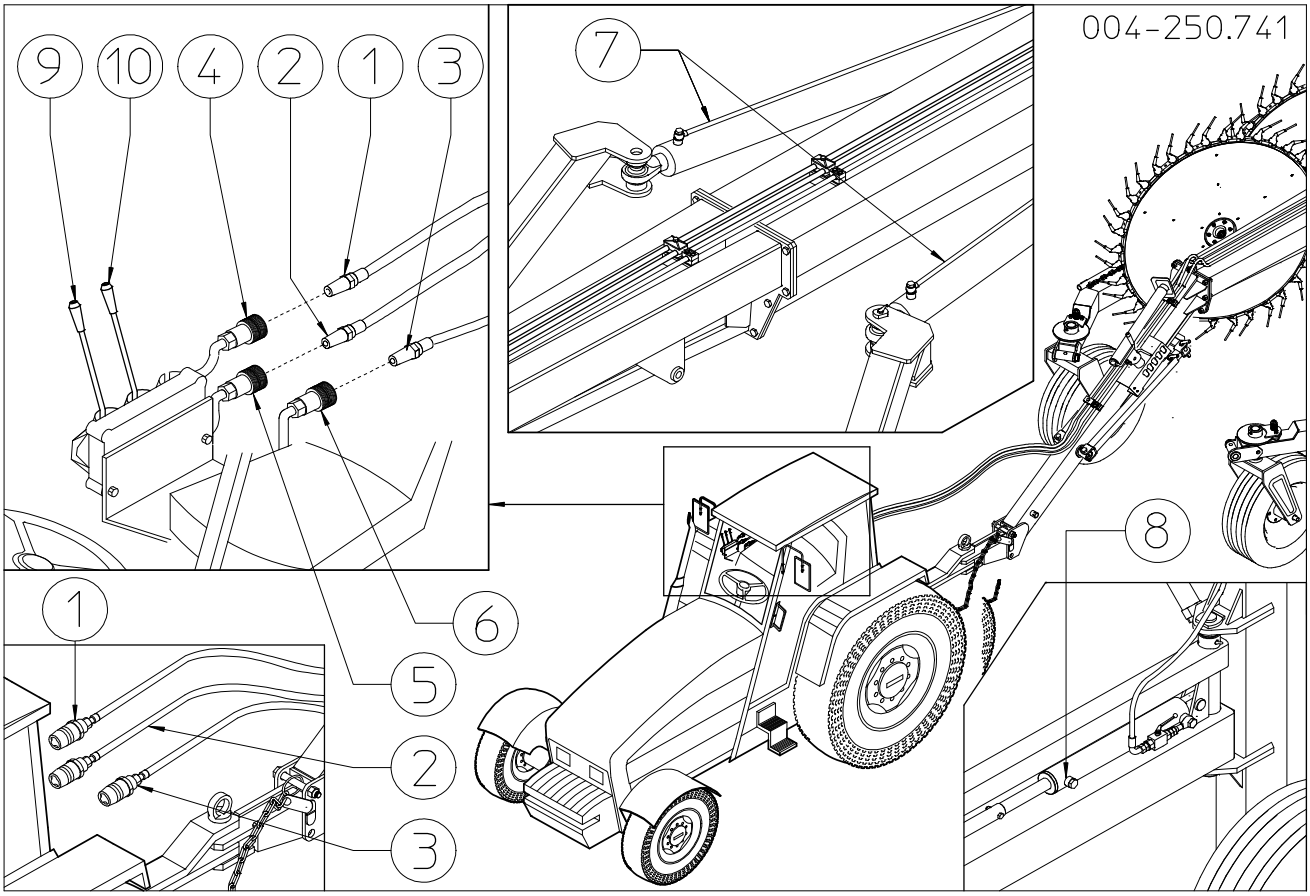
At this point the safety arms 1 must be rotated from the transport position A-C to the working position A-B. To do so, remove the clip 2 and the pin 3 from position C, rotate the arm 1 until reaching position B and fasten it with the pin 3 and the clip 2.
If it is a 14 rake wheel machine, arm 1 must be shortened from length 1390mm-54.72" to 835mm-32.9".
During the working phase, the valve D applied to the finger wheels lifting cylinders must be open.

NB: In this case, as the machine has just been assembled, the description given here is intended for the functional tests before transporting it and subsequently before working, but this procedure should be carried out every time you are about to work or to do functional tests after a period of inactivity.

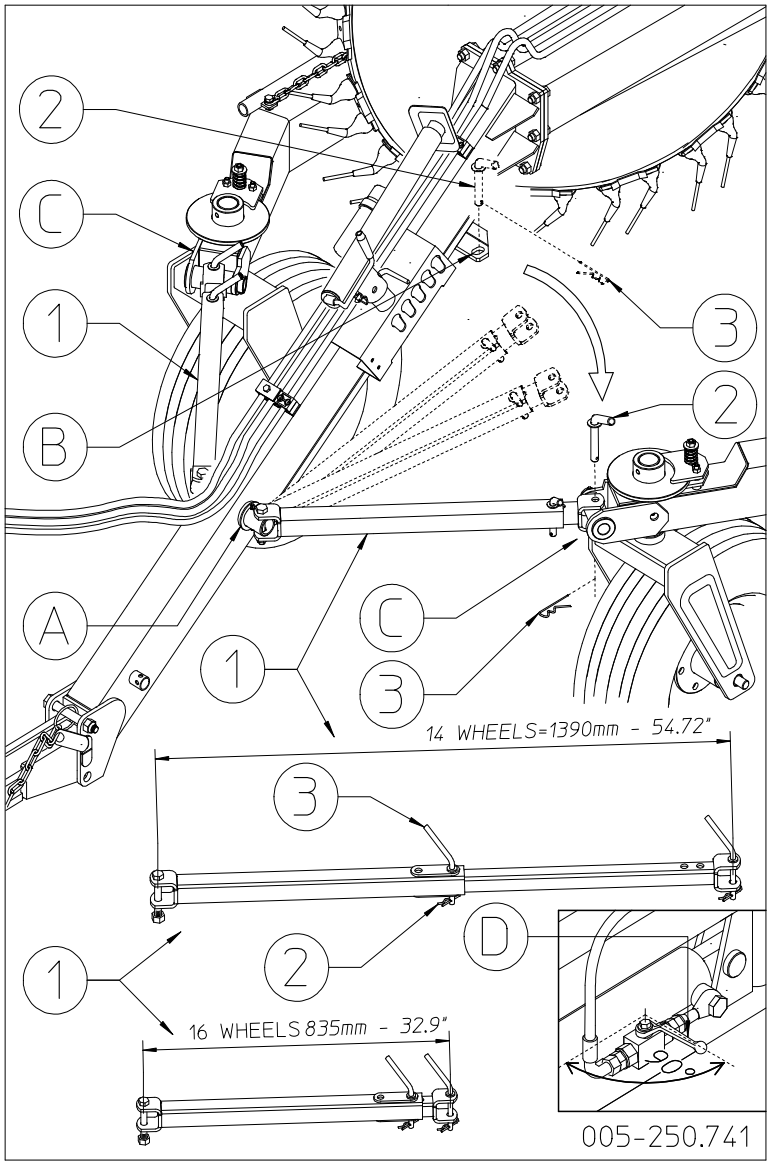
b) PREPARING THE MACHINE FOR FUNCTIONAL TESTS.

Now connect the ends of hoses 1-2-3 to the tractor hydraulic couplings 4-5-6. By moving lever 9, hoses 1-2 connected to hydraulic couplings 4-5 control cylinders 7 for opening/closing the machine (double acting). By moving lever 10, hose 3 connected to coupling 6 controls the rake wheel lifting cylinders 8 (single acting). The pipe 3 connected to the attack 6 by actuating lever 10 goes to command the lifting cylinders 8 (single acting).
Note: The drawings of the hydraulic connections and levers 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. At this point the machine is ready for its first starting, which must be done following the procedures described herein. **Before sending oil to the cylinders 7 always make sure that the machine safety arms are in the working position A-B (see above), because operating lever 9 which activates cylinders 7 with the safety arms in the transport position A-C would result in severe damage to the machine.**

Make sure that there are no persons within the operating range of the machine, then move lever 9 to send oil to cylinders 7, which will start to extend, opening the wings of the machine. Once they are completely opened, reverse the flow of the oil and have them return to the starting point. Do at least eight to ten complete opening and closing cycles to expel the air from the cylinders and from the hydraulic circuit. Close the cycle by making cylinders 7 close again completely. Keep in mind that these cylinders contain about 16 liters/4.2 gallons of oil. Now move lever 10 to send oil to cylinders 8, which will start to extend, raising the rake wheels about 450mm – 18" from the ground. Cylinders 8 are the single-acting type, therefore their return to the initial position takes place (in the standard machine) due to the effect of the weight of the rake wheels and the pull of the springs connected to them. As these are small cylinders, four to five complete cycles are enough to expel the air. Close the cycle by making cylinders 8 extend fully so that the rake wheels are lifted off the ground. Now the machine is ready to be prepared for transport. Before beginning the transport see the following point "c".



c) PREPARING THE MACHINE FOR TRANSPORT.



Before starting to transport the machine a series of checks and tasks must be done to protect the safety of those who use the machine and of the persons and objects that are on the road being traveled on, as well as to protect the machine itself from damage.
At this point the safety arms 1 must be rotated from the working position A-B to the transport position A-C. To do so, remove the clip 2 and the pin 3 from position B, rotate the arm 1 until reaching position C and fasten it with the pin 3 and the clip 2.
If it is a 14 rake wheel machine, arm 1 must be extended from length 835mm-32.9" to 1390mm-54.72".
Before transporting the machine, after having lifted the finger wheels, close the valve D applied to the cylinders.

Note: once the safety arms 1 are in place, do not for any reason move lever 9, which activates cylinders 7 (southeast point "b"), because this would cause serious damage to the machine.

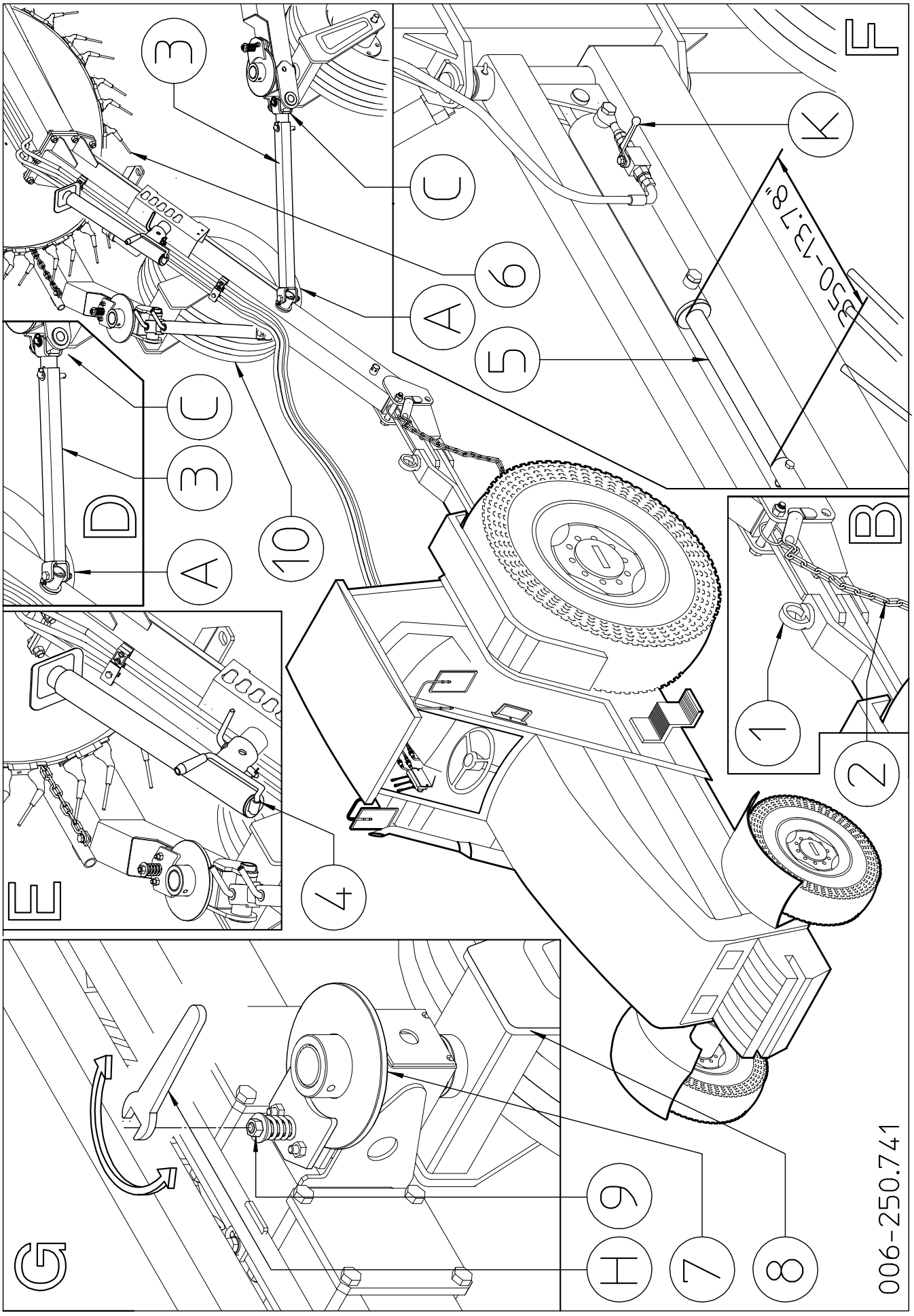
That described above applies every time the machine is prepared for transport.

See drawing on next page

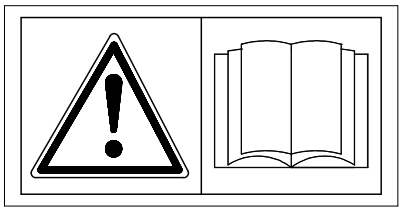
Note: That described applies every time the machine is prepared for transport.

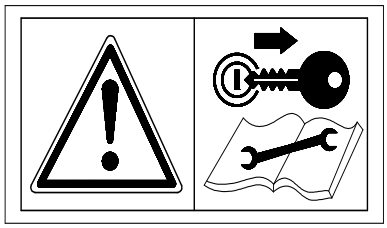
Check that the machine hitch 1 and the safety chain 2 are securely attached to those of the tractor according to that described in point "a" (see Box B). Check that the safety arms 3 are properly installed in their seats A-C (see Box D). Check that the stand 4 is in the transport position (see Box E). Check that the cylinders 5 are extended (350mm-13.78") so that the rake wheels 6 are raised about 450mm – 18" above the ground (see Box F). Before transporting the machine, after having lifted the finger wheels, close the valve K applied to the cylinders(see Box F). Check that brake unit 7 lets the wheels 8 turn freely but not uncontrollably. If the wheels 8 do not turn freely, loosen nut 9 as much as needed using wrench H; if instead they turn too freely, then tighten nut 9. Check that the tires 10 are at the pressure indicated. If everything is ready, you may begin to transport the machine, keeping in mind that which follows. The tractor must have specifications suitable for the transporting of this machine, the driver must be fully qualified in every way to drive the tractor, and if public roads are used, the driver must follow strictly observe all local traffic rules and regulations.

c) PREPARING THE MACHINE FOR TRANSPORT.



USE IN THE FIELD



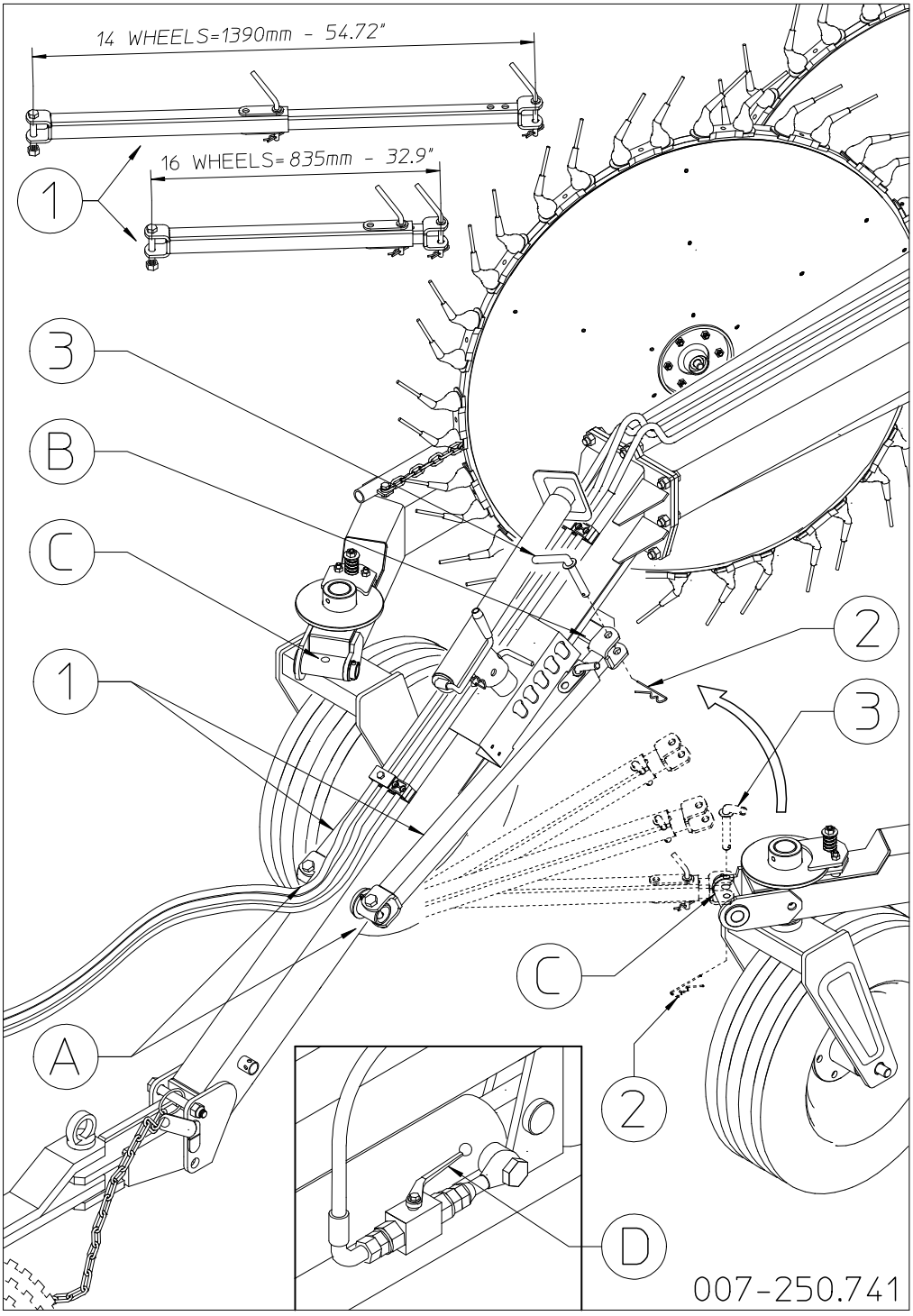


a) GENERAL INSTRUCTIONS FOR USE IN THE FIELD

Before starting work, familiarize yourself with the controls and safety devices of the machine and the tractor. Take into consideration the type of terrain (flat, rolling, hilly, etc.) and its state (dry, wet, etc.).
Do not start working if any part or device on the machine and/or tractor is not in good condition or even if you suspect that it is not.
Do not allow yourself to be distracted while working.
If you must work on inclined terrains, always work from the bottom to the top and vice versa. If the shape of the field forces you to work across the incline, strictly follow the instructions supplied in the tractor user's manual regarding the maximum incline on the two sides on which it is possible to work.
Always reduce the speed when working on terrains that are inclined, rough, wet, grassy, rocky, etc.
If for any reason you must stop, choose a suitable position and carry out all the necessary safety procedures.
When climbing in or out of the tractor do not use levers and/or controls as handholds, because even with the engine shut off this could cause unexpected movements in the tractor and/or machine, a serious hazard to both the driver and to those who are nearby.

USE IN THE FIELD

b) OPERATIONS TO BE DONE BEFORE STARTING TO WORK.



First of all, rotate the safety arms 1 from the transport position A-C to the working position A-B.

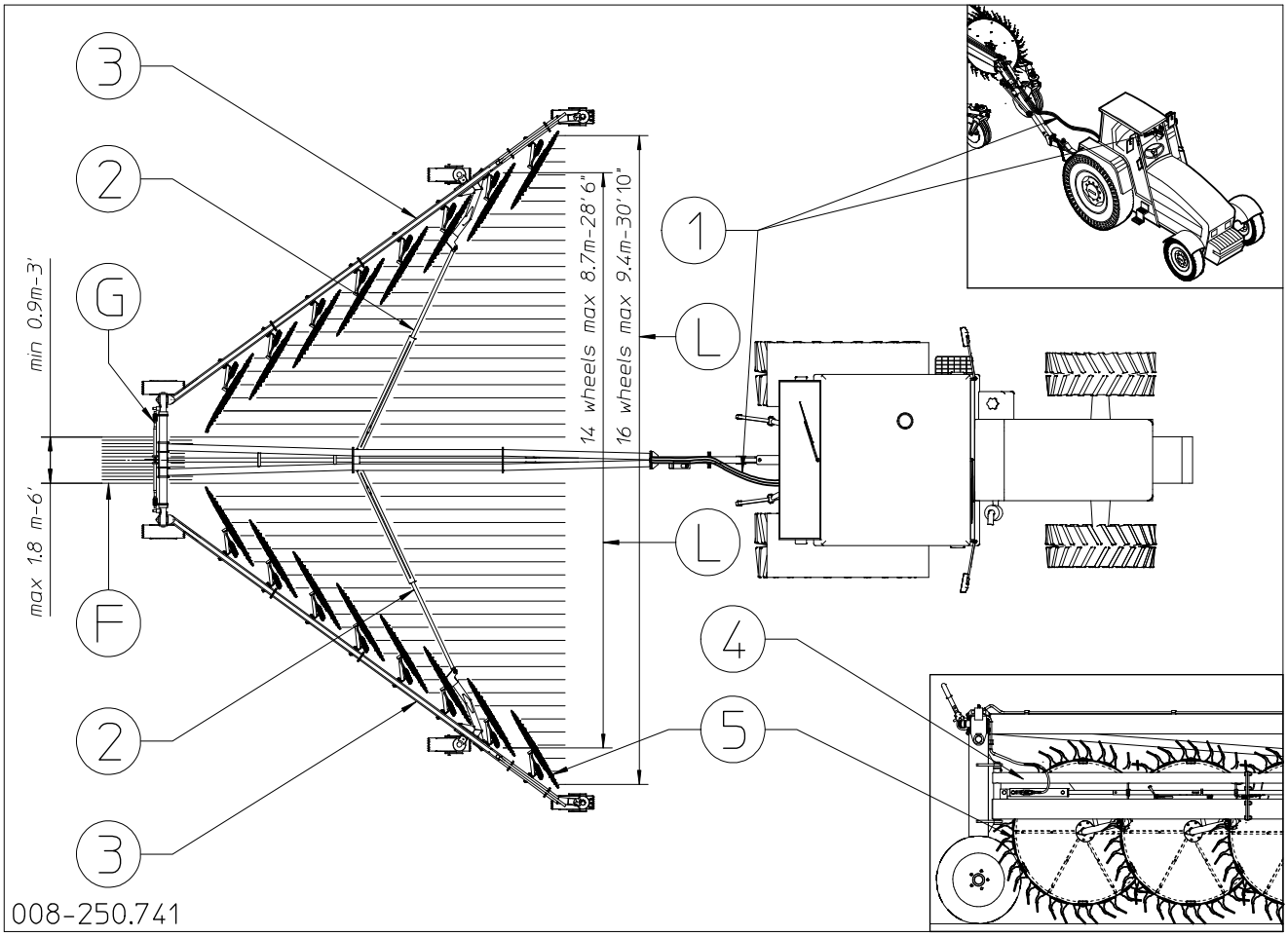
During the working phase, the valve D applied to the finger wheels lifting cylinders must be open.

Warning: if arms 1 are not removed and the cylinders for opening the machine are activated, serious damage will be caused to the structure of the machine.

To do this, you must remove the clip 2 and pin 3 from position C, rotate the arm 1 until reaching position B, and fasten it with pin 3 and clip 2.

If it is a 14 rake wheel machine, arm 1 must be shortened from length 1390mm-54.72" to 835mm-32.9".

USE IN THE FIELD
c) HOW TO WORK



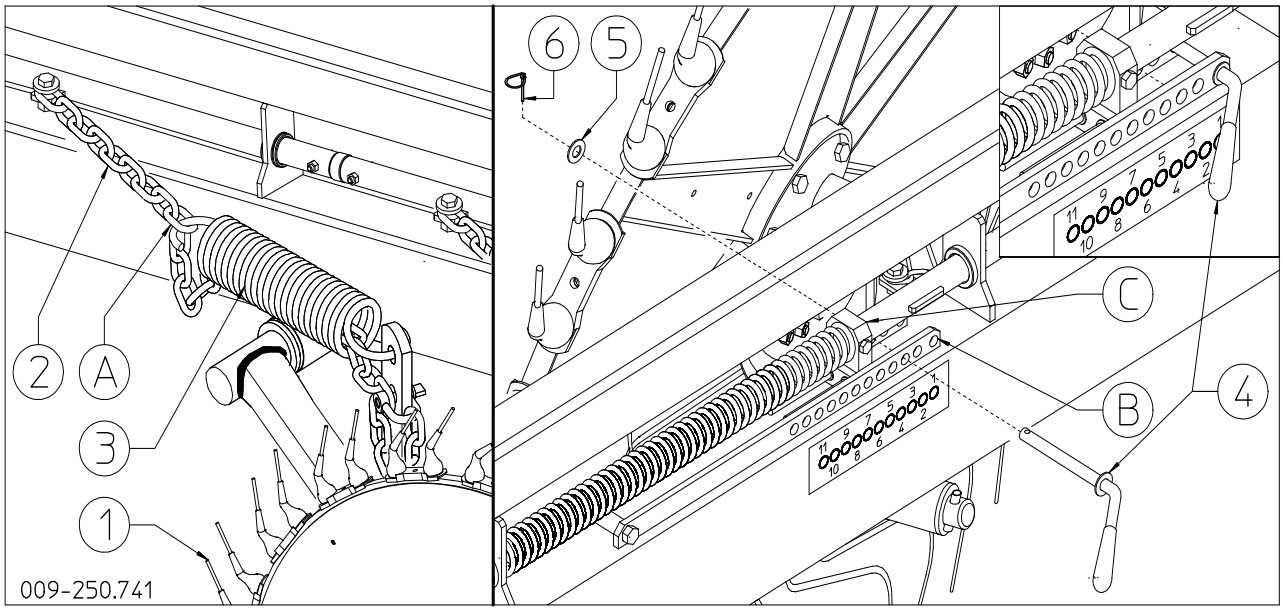
Send oil from the tractor hydraulic system 1 (see point "b") to cylinders 2 so as to bring sections 3 into the working position. Cylinders 2 can be extended up to the end-stop. In this case you have the maximum working width and with normal hay and terrain conditions you can work safely. If there is wet hay or green grass it may be helpful to close cylinders 2 a bit so that sections 3 close and form a narrower working angle that allows the rake wheels 5 to rotate better, resulting in a better raking of the product. Then use the tractor hydraulic system 1 again to release oil from cylinders 4 to bring the rake wheels 5 into contact with the ground, i.e. in the working position. For good raking of the forage the teeth of the rake wheels 5 should brush lightly against the ground. If the rake wheels are too heavy, i.e. they dig into the earth, or too light, i.e. they leave hay behind, they need to be lightened or made heavier, by regulating the adjustment mechanisms on the machine described in the following pages. Likewise, if the windrow F is too big or too small regulate the adjustment mechanisms on the frame G described in the following pages.

When making and adjustments or for any other operations choose a suitable place to stop the machine and take all the necessary precautions.

Note: the windrow F and working L dimensions are only approximate, as they depend considerably on the quantity and quality of forage and its state (wet, dry, green grass, large grass, etc.) as well as on the soil and terrain where you are working. Furthermore, the widening of the frame G automatically reduces the working width.

USE IN THE FIELD

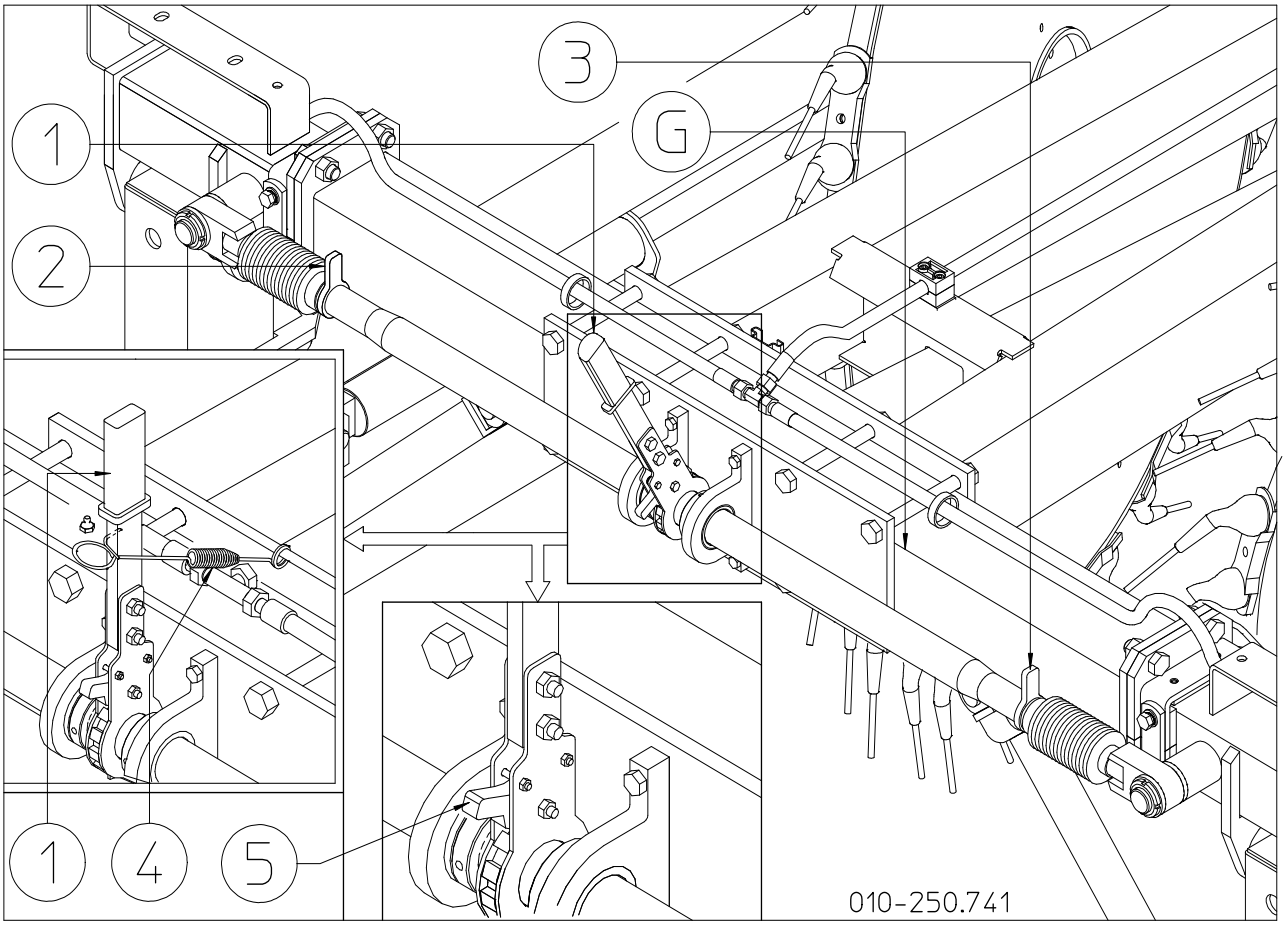
d) HOW TO MAKE ADJUSTMENTS.



If you find that the rake wheels 1 are heavy, i.e. they dig into the earth too much, you can move link A of chain 2 connected to spring 3 to the link before it, thus with chain 2 shorter it puts spring 3 under greater tension, lightening the rake wheel 1. If you find that the rake wheels 1 are light, i.e. they leave hay behind, move link A to the next one, thus chain 2 is longer and spring 3 is under less tension, making the rake wheel 1 heavier. The manufacturer inserts the rake wheel lowering retainer pin 4 in hole B. In this position the pin 4 does not limit the stroke of the cylinder and thus the rake wheels always lower to the maximum degree allowed by the adjustment of the chain 2. At this point if you want to lighten the pressure of the rake wheels on the ground without adjusting the length of the chains 2, simply insert the pin 4 in one of the eleven holes available. To do this first you have to push the cylinder forward so that the retainer C goes ahead of the eleven holes, then remove the clip 6 and washer 5 blocking the pin 4 in the rest hole B, insert it into the chosen hole among the eleven available and secure it again with the washer 5 and the clip 6. Going from one hole to the other decreases (or increases) the cylinder stroke by 15mm-0.59”. At this point, whenever you lower the rake wheels 1 they will always be positioned at the same height.

USE IN THE FIELD

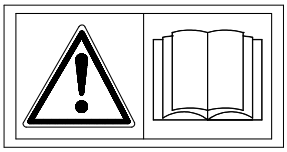
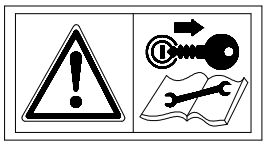
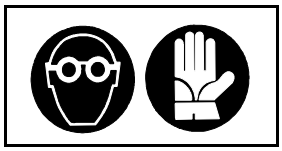
d) HOW TO MAKE ADJUSTMENTS.



If the windrow F (see point "c") does not satisfy your needs, adjustments can be made with lever 1 on the rear frame G. The rear frame G is assembled completely closed, and it can be widened by a total of approximately 400mm-16". With frame G completely closed you can obtain a windrow F of about 0.9m - 3', and with frame G completely open you can obtain a windrow of about 1.8m – 6' (see point "c"). **Note: the size of the windrows F are only approximate, as it depends considerably on the quantity and the quality of the forage and its state (wet, dry, green grass, large grass, etc.) as well as on the soil and terrain where you are working. Furthermore, the widening of frame G automatically reduces the working width.** To widen (or shorten) frame G first loosen the retainers 2-3, put the selector 5 into the desired position (open or closed), remove the spring lock 4 and use lever 1 to widen (or shorten) frame G. Once the right working width is obtained, tighten retainers 2-3 and lock lever 1 with the spring lock 4.

Note: contact the dealer and/or manufacturer if you have any doubts about understanding the instructions and adjustments. Damage resulting from any unforeseen actions will not be covered by the warranty.

GENERAL INSTRUCTIONS FOR REPAIR WORK

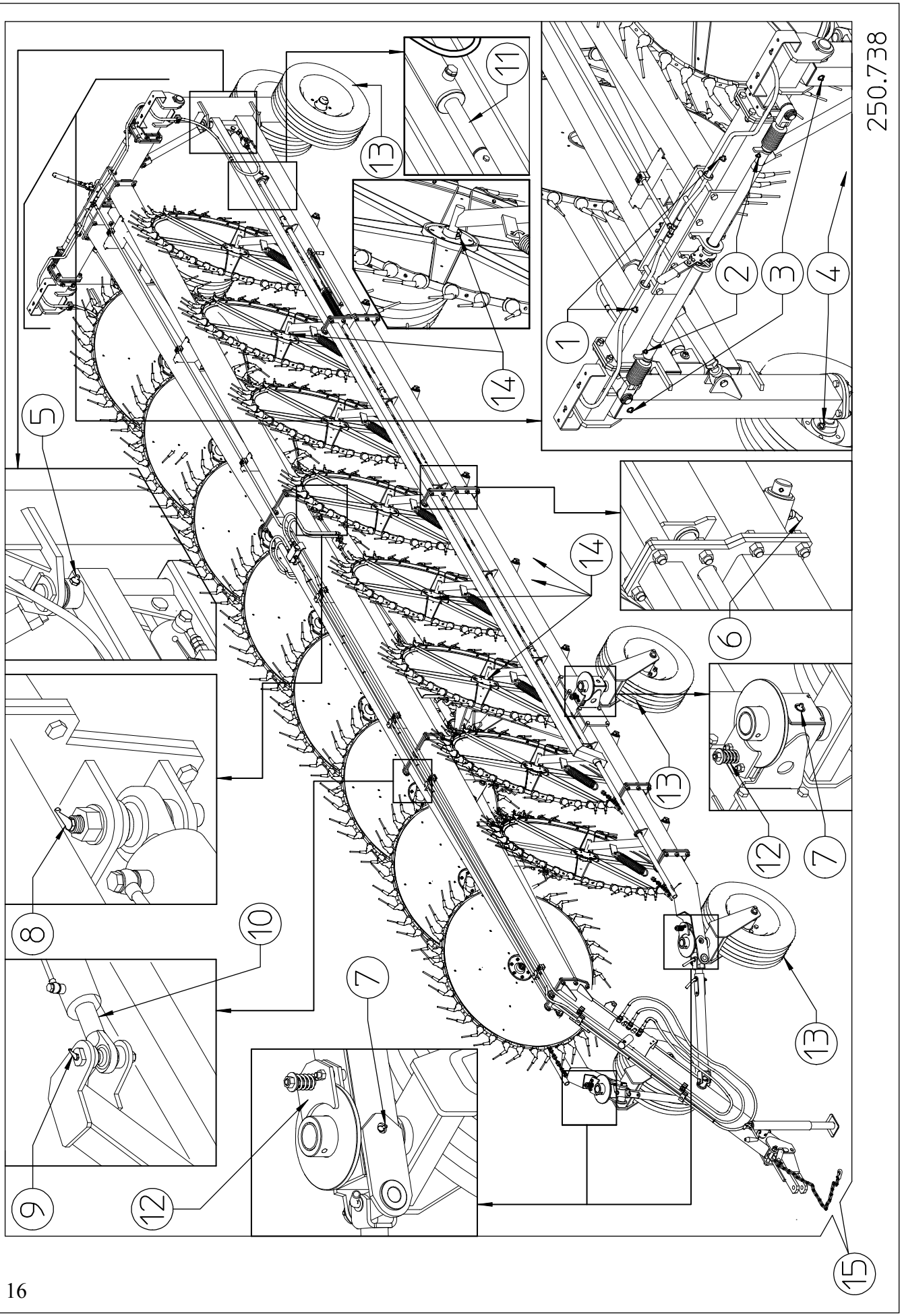
All repair work must be done by qualified personnel with the machine stationary and detached from the tractor.
Do not do any welding or other important jobs without the authorization of and/or instructions from the dealer and/or the manufacturer.
When welding, always disconnect the machine from the tractor to avoid damage to the tractor. Always wear a protective mask, safety goggles, gloves and suitable clothing when welding, sanding, grinding, using various tools or doing any type of repair work. When welding in closed environments make sure that the area is sufficiently ventilated to prevent the accumulating of noxious gases. If the machine must be hoisted for repairs, use lifting equipment that is suitable for the job.
Never allow unauthorized persons to be in the repair area.

LAYING UP FOR LONG PERIODS

At the end of the season when the machine is laid up until the next season, or when it will not be used for a fairly long period of time, it is recommended that the following be done:
- thoroughly clean and dry the machine;
- check it carefully and replace any damaged or worn parts;
- check and thoroughly tighten all screws and bolts where necessary;
- lubricate and/or spread grease on the exposed parts of the cylinder shafts and the adjustment screws and lubricate the areas provided for in the maintenance schedule, then store the machine if possible in a dry, sheltered place.

It is essential when restarting work to carry out an overall inspection of the machine (especially if it has been stored in a not entirely suitable area) because time and atmospheric agents cause the lubricants to deteriorate.
It is to the user’s advantage to follow these instructions, as it allows them to prolong the life of the machine and to be certain that it will be working efficiently when work is restarted.

MAINTENANCE POINTS AND INSTRUCTIONS



MAINTENANCE POINTS AND INSTRUCTIONS

Pos.	Qty.	Description	Operation	Every x hours
1	2	Rear crosspiece	Lubricate	50 (A)
2	2	Opening tie rod	Lubricate	50 (A)
3	2	Vertical support	Lubricate	25
4	2	Rear wheel hub	Lubricate	16
5	2	Section joint pin	Lubricate	50 (A)
6	14-16	Rake wheel arm joint	Lubricate	25
7	4	Pirouetting wheel support	Lubricate	25
8	2	Rear cylinder pin	Lubricate	25
9	2	Front cylinder pin	Lubricate	25
10	2	Opening cylinder shaft	Clean-brush grease	B
11	2	Rake wheel lifting cylinder shaft	Clean-brush grease	B
12	4	Pirouetting wheel brake	Check effectiveness	C
13	6	Tires	Check pressure	D
14	14-16	Rake wheel hub	Lubricate	25
15	*	Do the first general check after 8 working hours. Check carefully the stability of the coupling of nuts and bolts, pins, clips, tire pressure, etc. After this do a check every 50 working hours.		

Grease type: NLGI 1

A: Normally it is sufficient to lubricate every 50 hours, but to make the machine operate more smoothly it is a good practice to grease the crosspiece, the tie rod and the crank every time the machine is used after a long period of inactivity.

B: Exposure to atmospheric agents subjects these parts to rusting, therefore each time the machine is inactive for long periods (especially during the winter) brush the cylinder shafts with grease. When possible keep the cylinders closed so that a minimum amount of shaft is outside the cylinder barrel.

C: The wheels must pirouette freely, but without becoming uncontrollable. Check the wear of the disks each season. (To adjust the brake, see machine use.)

D: Check the tire pressure each time the machine is used, especially after long periods of inactivity. Bring the tires to the right pressure if necessary, according to the indication on the tires.

NOISE AND VIBRATIONS

The machine does not have any drive components, so the only noises it makes are that of the teeth dragging on the ground and those caused by machine vibrations, therefore the noise of the tractor always covers that of the machine.

INFORMATION ON SCRAPPING THE MACHINE

The machine consists mainly of ferrous material, which must be disposed of according to the regulations in force in the country concerned.

The plastic and/or rubber parts must be disposed of according to the regulations in force in the country concerned.

There is also a small amount of residual grease and oil, which must be disposed of according to the regulations in force in the country concerned.

Do not release or otherwise dispose of any residues into the surrounding environment.

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