METAL-FACH

REPAIR & MAINTENANCE MANUAL

TOOL CARRIER

U910

FEBRUARY 2018

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1. Tool-Carrier Identification

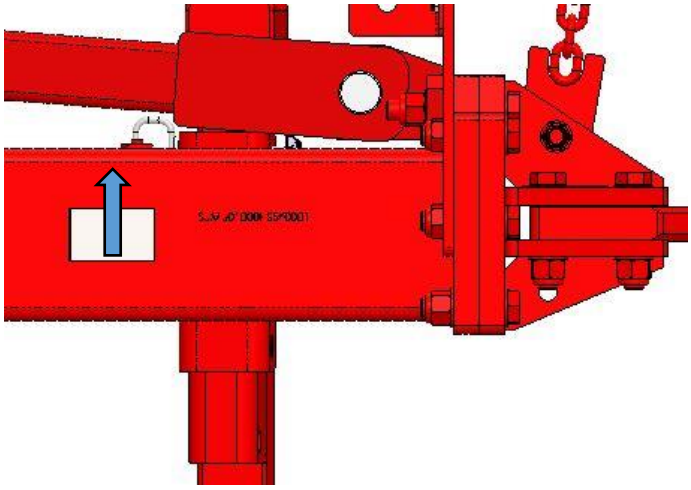

Figure 1 Location of the rating plate

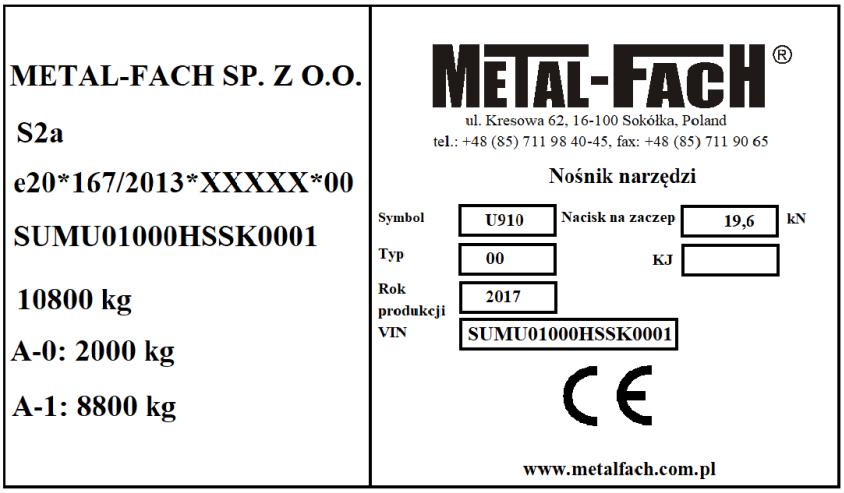

Figure 2 Rating plate

The identification data is located on the rating plate attached to the main frame, right-hand side.

Please write down the type and serial number of your unit. Submit this number each time you contact the dealer.

2. Storage

Store the machine in the extended position. During stoppages, store the unit at sites without the access of unauthorised persons or animals.

Before a long-term storage, clean the unit and remove faults found. Protect it from the adverse weather conditions. Store the unit in the extended setting on level compact ground.

The guarantee does not cover damage resulting from the incorrect storage of the machine.

3. Servicing activities

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ATTENTION!
The inspection activities apply to the tool carrier and machines connected to the carrier. Use the spare parts recommended by the manufacturer only.

OSTRZEŻENIE

WARNING!
Carry out the servicing activities, when the machine is in the unfolded position. Carrying out the servicing activities in the transport position can lead to uncontrolled unfolding of the unit, an,d consequently, to bodily injury or death.

3.1. Servicing activities during start-up

The servicing activities during the start-up are described in the table below.

Table 1. Servicing activities during the start-up

Inspected assembly	Activity
Wheels and tyres	Tighten the wheel nuts according to the tightening-torque table. Check tyre pressures.
Thread connections	Tighten the bolts and nuts according to the tightening-torque table.
Transport-protection components	Check the condition of the locks and pins securing the machine against uncontrolled unfolding.
Brake system	Check the proper operation of the braking system.
Hydraulic system	Check the proper operation of the hydraulic system. If you find any leaks in the connections, tighten the nuts of hydraulic hoses.

3.2. Servicing activities during daily operations

The servicing activities during daily operation are described in the table below.

Table 2. Servicing activities during daily operation

Inspected assembly	Activity
Wheels and tyres	If any wheel nuts are loose, tighten them according to the manual. Check the condition of tyres for damage. Check tyre pressures. The correct tyre pressure is marked in the pictogram on the carrier frame and on the tyre's side wall.
Thread connections	Check the condition of the bolted joints and if any play is found, tighten according to the table of bolt tightening torques.

Brake system	Check the condition of the brake hoses and couplers. If they are damaged, replace with new ones.
Hydraulic system	Check the condition of the hydraulic hoses and connections for damage and leaks. If they are damaged, replace with new ones.
Transport-protection components	Check the condition of the locks and pins securing the machine against uncontrolled unfolding.
Work Tools	Check the condition and completeness of the working tools. Replace worn or damaged working components with new ones.
Bearing units	Check the condition of bearing-unit housings and replace as required.

3.3. Weekly servicing activities

Table 3. Service activities

Inspected assembly	Activity
Wheel nuts	Tighten the wheel nuts according to the bolt-tightening torque table.
Thread connections	Tighten the bolts and nuts according to the bolt-tightening torque table.
Brake system	Check the condition of the lines, working and control components of the brake system (pneumatic or hydraulic brake). Use the drainage valve to drain water from the compressed-air tank (pneumatic system). Check the condition of the rigging screw and parking-brake cable.
Bearing units	Check and lubricate all bearing units, cylinders, and upper connecting rods. The tool carrier pivot points do not require lubrication).
Coupling	Check the condition of the coupling. If it is damaged, replace with a new one.

3.4. Lubrication

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Carry out lubrication according with recommended lubrication frequency, depending on the point of lubrication.

Durability and good working order of the unit depends primarily on systematic lubrication.

Use mineral greases for lubrication. Before applying the grease, clean the lubrication points. Carry out the lubrication as per Figs. 3, 4, 5.

Use ŁT-4S-3 grease.

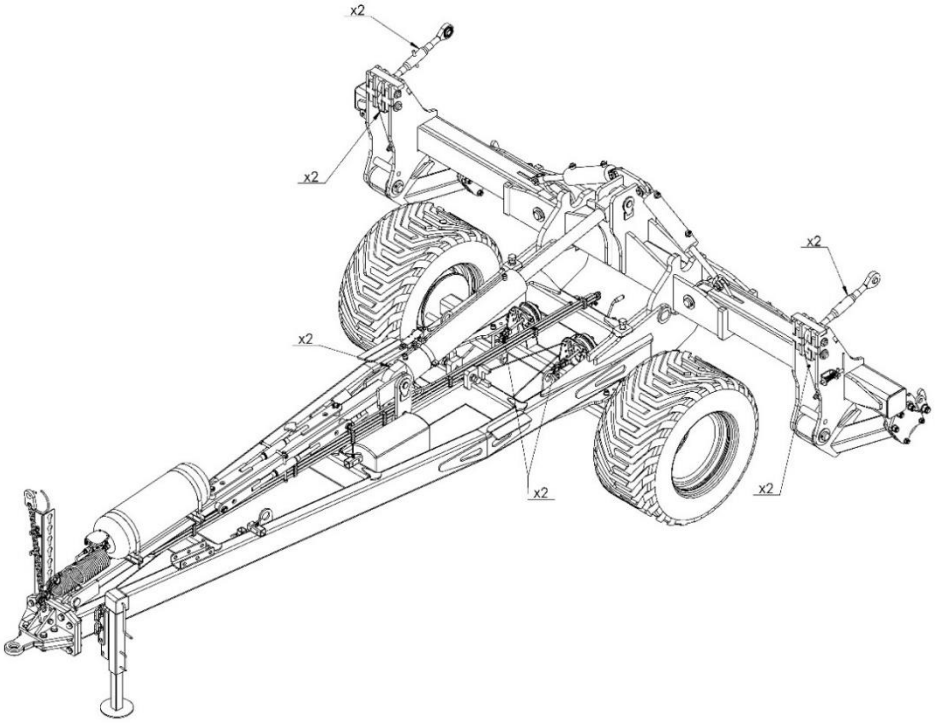

Figure 3 Lubrication points of the tool carrier

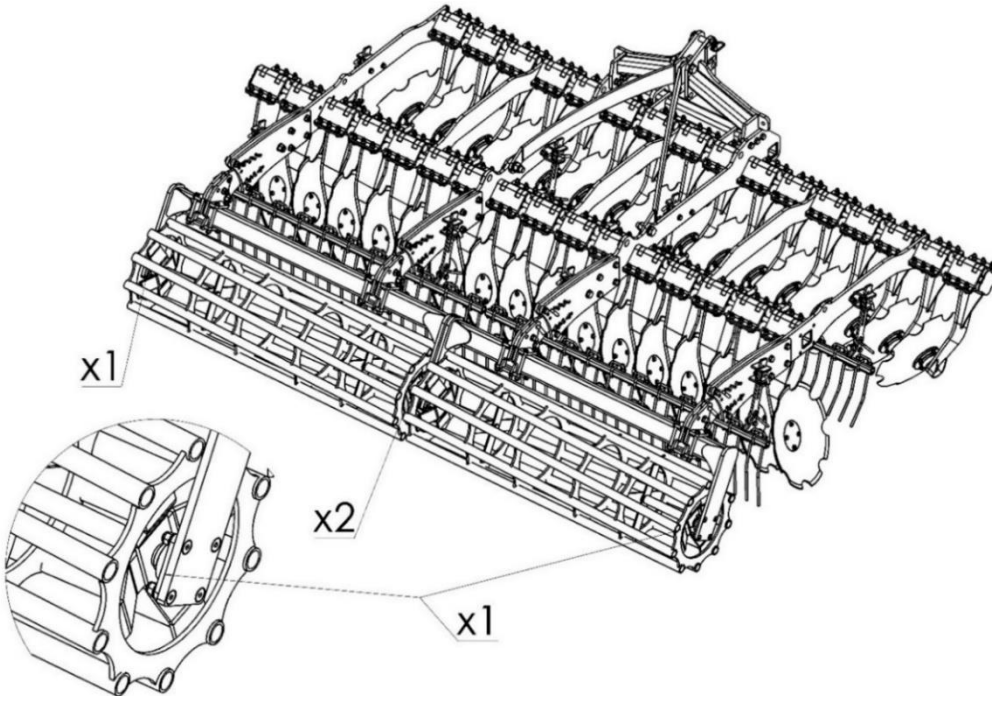

Table 4. **Figure 4** Lubrication points of the disc unit

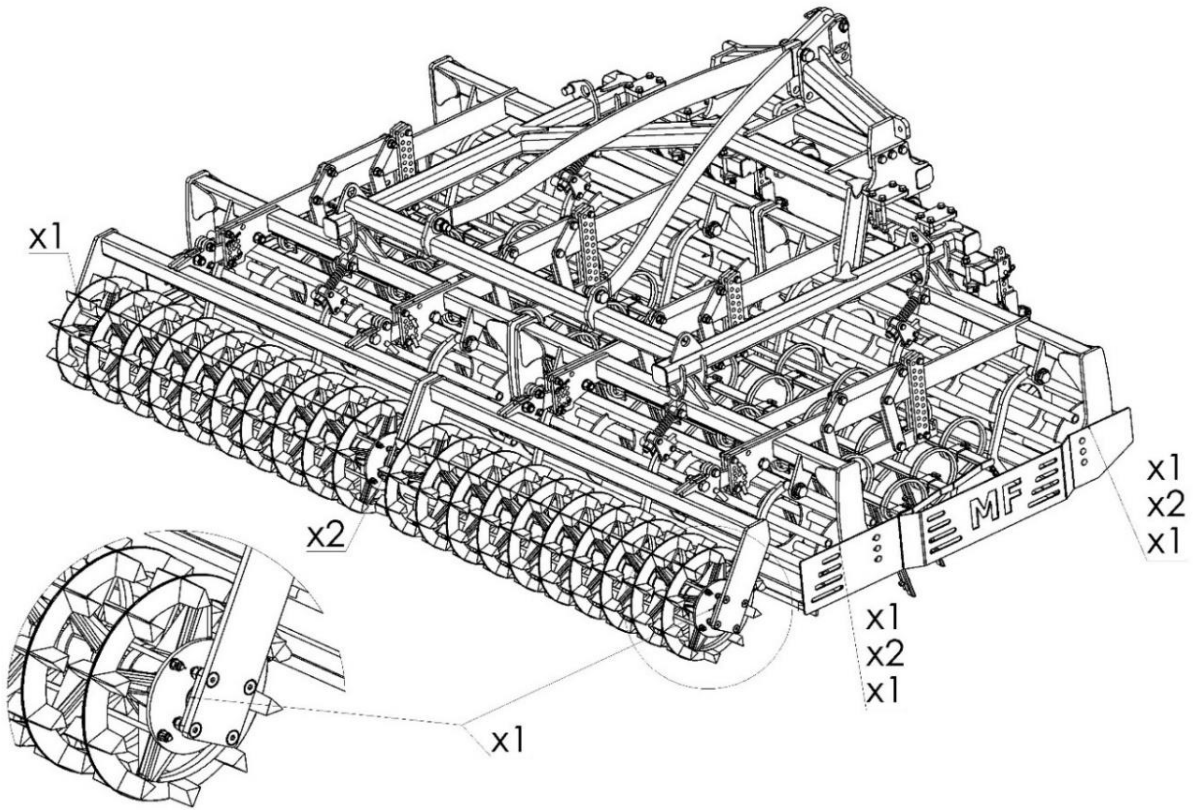

Figure 5 Lubrication points of the tine unit

3.5. Brake-system adjustment

Adjust the brakes when

- due to the wearing out of the brake shoes, excessive play forms between the brake lining and the drum, and the brake performance is reduced
- the wheel-brakes action is not simultaneous and not equal.

You can adjust the play using the pusher rod of the brake cylinder or by means of the adjustment screw on the brake lever. Carry out the adjustment for both wheels.

If the adjustment of the friction components is carried out correctly, the wheel should rotate freely, without stoppage or evident resistance resulting from friction of the brake shoes against the drum. Slight friction of the shoes against the drum in a new machine, or after brake replacement, is a typical occurrence.

After you have made the adjustment, check and adjust the parking brake as required. Adjust the parking brake by adjusting the length of the cord connecting the expander cam-roller lever with the activating device. The required sum of the braking forces must be achieved at the maximum force on the manual crank of the device of 40 daN (with the preserved right angle formed by the cord and expander-cam roller lever).

3.6 Wheel dismounting and mounting

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ATTENTION!
Carry out the dismounting and mounting on solid and level surface. Lifting the machine on inclined terrain can cause the tipping over of the unit. Never place items between the lift and the jacking point in the machine. Never climb on the machine if it is on the lift!

Before you start lifting the machine, disable the engine of the tractor and apply the parking brake of the tractor and the tool carrier. Prop the wheels on the ground with chocks. Place the hydraulic lift at the places for lifting the machine, which are shown in Fig. 6. Loosen the wheel nuts counter-clockwise by half a turn. Lift the machine so that the wheel has no contact with the ground. Unscrew the nuts and dismount the wheel. When mounting the wheel, ensure that you embed the rim onto the axle drum correctly. Tighten the wheel nuts with a torque wrench to the torque of 380 Nm. Lower the machine to the ground and check the tightening of the wheels again. After you have been driving for a few kilometres, check the wheel nuts for tightening, and if loose nuts are found, re-tighten.

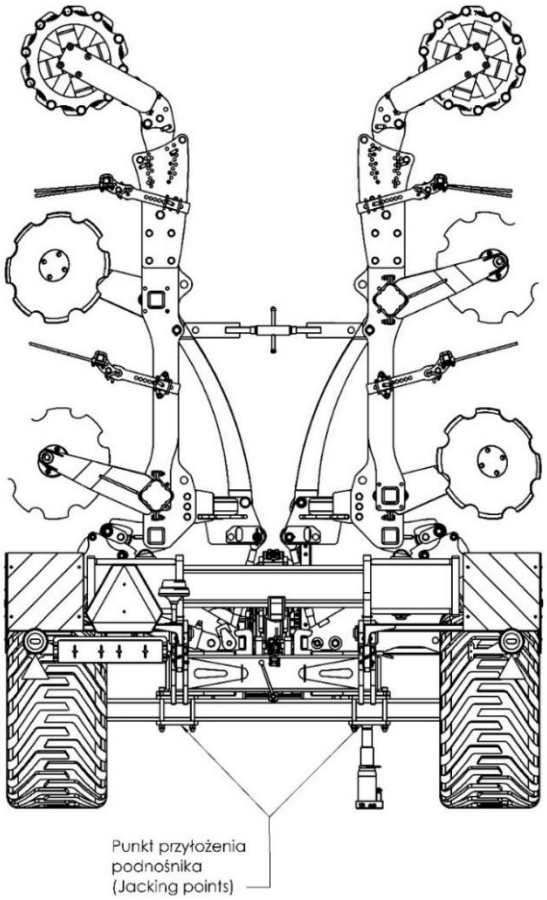

Figure 6 Jacking point

4. Adjustment

4.1. Adjusting the working depth and position settings of the scrapers

Setting the working depth of the scrapers should be done by means of the cotter pins fixed into the appropriate holes of the plough frogs, secured with the locking pins. The angle, however, can be adjusted with the lower pins of the scraper fixing.

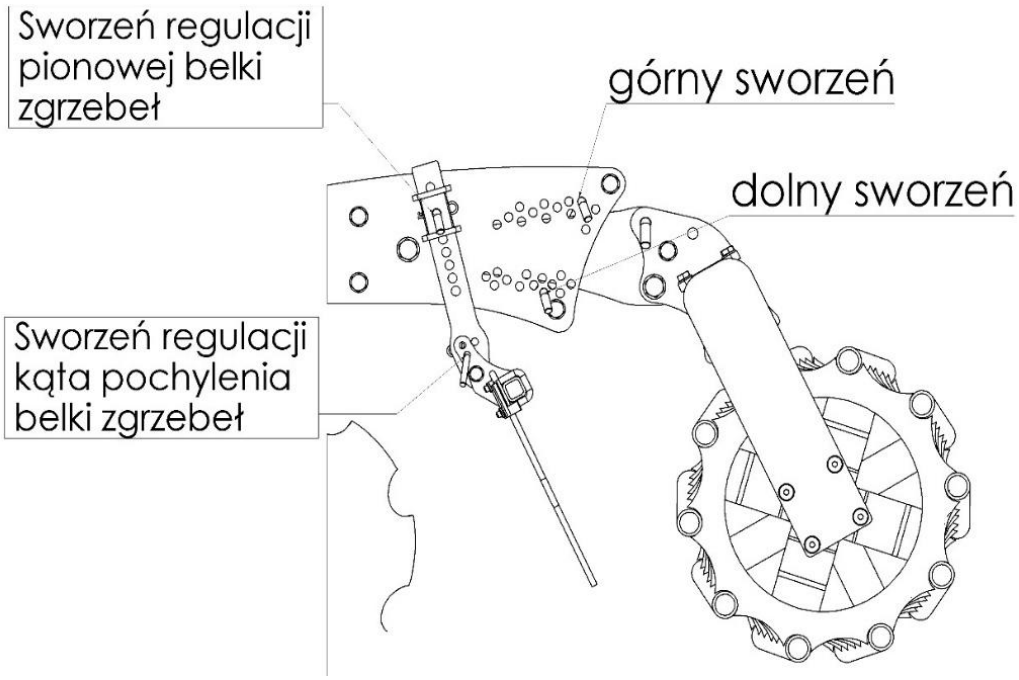

Figure 7 Working-depth adjustment

The working depth of the disc blades can be adjusted with the three-point-hitch system of the tractor and mechanical adjustment of the rollers. The roller adjustment should be performed with the use of the cotter pins fixed in the appropriate holes in the roller-fixing sheet, secured with the locking pins.

To set the maximum working depth, insert the pin into the upper hole in the sheets in the roller fixing. To set the proper position of the lower pin, lift the roller and insert the pin into the correct hole. The adjustment can be made after stopping at the edge of the space next to the elevated ground. Lower the unit roller onto the elevated ground, which will make the roller rise and allow the pin to be inserted into the appropriate lower hole. Secure the pins with the spring pins (the locking pins must be in the same holes on both sides of the unit).

Make the adjustment after you have stopped the tractor's engine, and follow all the safety rules. Use special care when working with components which can crush your feet or hands.

4.2. Re-compaction roller-working depth and clamp adjustment

Setting the depth of the working components should be done by means of the cotter pins fixed into the correct holes in the plough frogs, secured with the locking pins.

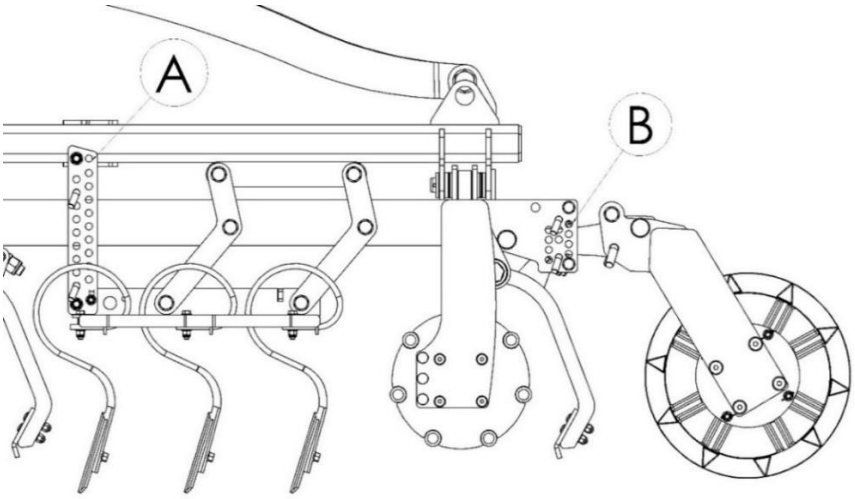

Figure 8 Cultivator working depth adjustment

The working depth of the cultivator springs can be adjusted with the three-point hitch system of the tool carrier and mechanical adjustment of the working sections.

To increase/decrease the working depth, lift the cultivator over the surface and remove lower pins which lock the change in the working-section positions in the sheets for depth adjustment (see Fig. 8 - A). Then, lower the cultivator to the ground, which will make the working sections rise and allow the pin to engage in the correct upper hole; after that, lift the cultivator and insert a lower pin in the appropriate adjustment hole to lock the working section position.

The roller adjustment should be performed with the use of the cotter pins fixed in the correct holes in the roller-fixing sheet, secured with locking pins (see Fig. 8 - B). The adjustment can be made after stopping at the edge of the field next to elevated ground. Lower the cultivator roller onto the elevated ground, which will make the roller rise and allow the pin to be inserted into the correct lower hole.

Secure the pins with spring pins (the locking pins must be in the same holes on both sides of the cultivator). Make the adjustment after you have stopped the tractor engine and follow all the safety rules. Use special care when working with components which can crush feet or hands.

5. Dismantling and Disposal

The tool carrier is composed of materials which do not pose risks to the environment. After the period of use has terminated and further operations are not justified, the carrier must be disassembled.

Due to the large number of parts, during the disassembly you must use lifting devices, like an overhead crane or fork lift.

Send the metal parts to a scrap-metal yard, and dispose of the rubber parts or send them to sites which are licensed to store such waste. Gather all the used fluid from the hydraulic system in the leak-tight containers and carry out the disposal.

6. Attaching the loader to the tractor

To ensure correct and safe coupling of the unit to the tractor, it should stand on a solid and level surface.

When you connect the tool carrier to the tractor, follow the steps indicated in the table below.

Table 4. Connecting the carrier to a tractor

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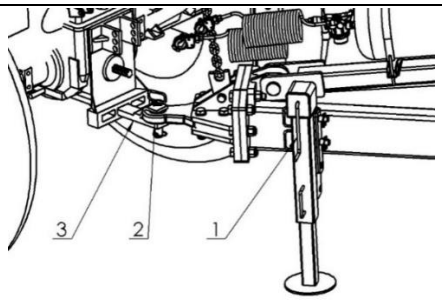
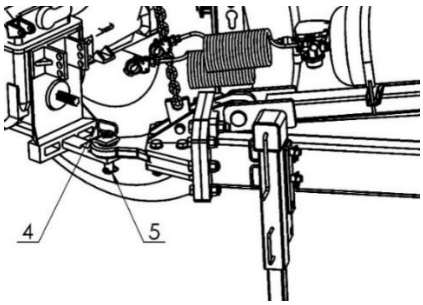
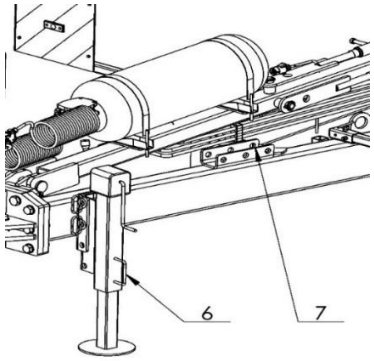
<td> 

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- Use the crank (1) of the support foot to set the correct height of the lifting eye (2), which facilitates problem-free coupling with the tractor hitch (3)
- Reverse the tractor to a distance which facilitates connecting the unit hitch with the lower pulling coupling (3)
- If necessary, install a spacer over the lifting eye of the machine (2), and allow sufficient freedom of movement
- Connect the tractor with the machine by means of the connecting pin (4). Secure the connecting pin (4) with the locking pin (5)
- Connect the safety chain
- Lean the hitch eye on the tractor coupling to lower the carrier
- Dismount the support foot (6), insert it in the transport holder (7) and secure with the connecting pins and locking pins.

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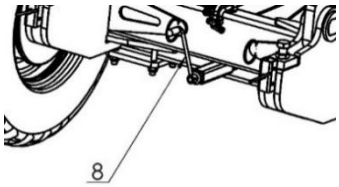

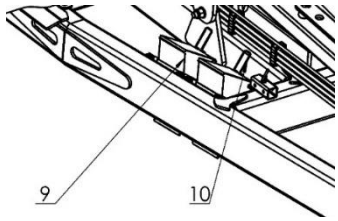

- Connect the lighting cables.
- Connect the hydraulic system.
- Connect the brake system.
- Release the parking brake of the carrier (8), remove the securing chocks (9) and insert them in the appropriate holders (10).

7. Tyres

The tool carrier comes with tyres with a size of 550/45-R22.5 and rims with a size of 16.00 x 22.5.

- When handling the tyres, ensure that the tool carrier cannot move on its own.
- Any repair work on tyres and wheels should be carried out by skilled persons who are equipped with the suitable tools.
- Check the air pressure regularly. Incorrect tyre pressures can result in faster tyre wear or tyre damage. (The correct tyre-pressure values are given on the side wall of the tyre, and also are marked with a suitable pictogram).
- Tyres must be protected from sunlight over longer machine stoppages.
- Avoid driving on sharp edges.

The tyres with which the tool carrier is fitted are shown in the table below.

Table 5. The tyre types of the tool carrier

Tyre type/size	Maximum tyre pressure
Alliance 328 Value Plus 550/45-22.5	2.5 bar
Starco SG Flotation 550/45-22.5	2.8 bar

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ATTENTION!
Driving the tool carrier is prohibited when the tyre pressures are not correct, or tyres are damaged. Driving with damaged tyres can result in accidents. The maximum tyre pressures are given on the outside of the tyres. The tyre-pressure values can differ depending on the tyres used. Exceeding the recommended tyre-pressure values can result in their damage.

UWAGA

ATTENTION!
regularly inspect the tightening of the ground wheel nuts.
Tighten the wheel nuts during weekly inspections, or after any play of the axle and rim connection is found. Wheel-tightening torque 380 Nm

8. Table of metric screw-tightening torques

Optimised tightening torque values for bolts or screws and nuts [Nm] are shown in table 6.

Table 6. Bolt tightening torques

Bolt tightening torques - metrical bolts in Nm							
Size ∅ mm	Pitch mm	Bolt version - strength classes					Wheel nuts, wheel bolts
		4.8	5.8	8.8	10.9	12.9	
3	0.50	0.9	1.1	1.8	2.6	3.0	
4	0.70	1.6	2.0	3.1	4.5	5.3	
5	0.80	3.2	4.0	6.1	8.9	10.4	
6	1.00	5.5	6.8	10.4	15.3	17.9	
7	1.00	9.3	11.5	17.2	25	30	
8	1.25	13.6	16.8	25	37	44	
8	1.00	14.5	18	27	40	47	
10	1.50	26.6	33	50	73	86	45
10	1.25	28	35	53	78	91	
12	1.75	46	56	86	127	148	
12	1.50						80
12	1.25	50	62	95	139	163	
14	2.00	73	90	137	201	235	
14	1.50	79	96	150	220	257	140
16	2.00	113	141	214	314	369	
16	1.50	121	150	229	336	393	220
18	2.50	157	194	306	435	509	
18	1.50	178	220	345	491	575	300
20	2.50	222	275	432	615	719	
20	1.50	248	307	482	687	804	400
22	2.50	305	376	502	843	987	
22	2.00						450
22	1.50	337	416	654	932	1,090	500
24	3.00	383	474	744	1,080	1,240	
24	2.00	420	519	814	1,160	1,360	
24	1.50						550
27	3.00	568	703	100	1,570	1,840	
27	2.00	615	760	1,200	1,700	1,990	
30	3.50	772	995	1,500	2,130	2,500	
30	2.00	850	1,060	1,670	2,370	2,380	

NOTES

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The pictures do not necessarily show standard accessories.

Original spare parts are available from authorised dealers, located both in Poland and abroad, and also at the Metal-Fach retail outlet.

SERVICE

ul. Kresowa 62, 16-100 Sokółka
Tel. +48 85 711 07 80; Fax +48 85 711 07 93
serwis@metalfach.com.pl

SALES

ul. Kresowa 62, 16-100 Sokółka
Tel. +48 85 711 07 88; Fax +48 85 711 07 89
handel@metalfach.com.pl

SPARE-PARTS WHOLESALE STORE

ul. Kresowa 62, 16-100 Sokółka

Wholesale

Tel. +48 85 711 07 80; Fax +48 85 711 07 93

serwis@metalfach.com.pl

Retail
Tel. +48 85 711 07 80; Fax +48 85 711 07 93
serwis@metalfach.com.pl

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