



**METAL-FACH**



**REPAIR & MAINTENANCE MANUAL  
PRE-SOWING SPRING-TYPE CULTIVATOR**

**U457**

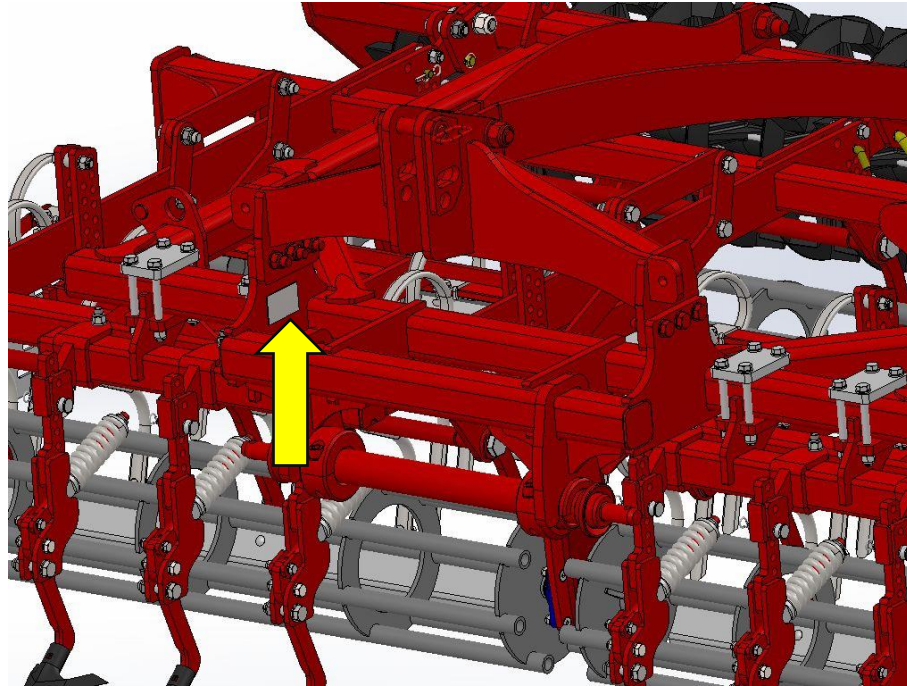
**FEBRUARY 2018**

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## 1. Pre-sowing spring type cultivator Identification

You will find the identification data of the cultivator on a plate located on the left-hand side wall of the frame, next to the bottom rods of the hitch system, which is illustrated in the illustration below.



**Figure 1** Location of the nameplate on the machine

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<b>Kultywator sprężynowy przedsiewny 4m</b>			
Symbol	<input type="text" value="U457"/>	Typ	<input type="text" value="U457-00"/> <b>CE</b>
Rok prod.	<input type="text" value="20"/>	Masa*	<input type="text" value="2000"/> kg
Nr fabr.	<input type="text"/>	KJ	<input type="text"/>
<small>*Masa własna maszyny</small>			
<a href="http://www.metalfach.com.pl">www.metalfach.com.pl</a>			

**Figure 2** Rating plate

## 2. Dismantling and Disposal

This pre-sowing spring-type cultivator is made of materials which do not pose risks to the environment. After the period of use has terminated, and further operation is not justified, the cultivator 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 send them to the petrol stations which collect it.

## 3. Machine use and maintenance

### 3.1. Cultivator preparation

Check the technical condition of the cultivator, and particularly its working components, to prepare the machine for operation.

Additionally, perform the following

- Check the condition of the bolted joints,
- Check the cultivator for completeness,
- Turn the discs and rollers manually to check whether the rotation is free and unhindered,
- Lubricate the appropriate components as per the instructions given in item 3.3.

### 3.2. Coupling the cultivator to the tractor

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

When connecting the cultivator with the tractor, perform the following steps.

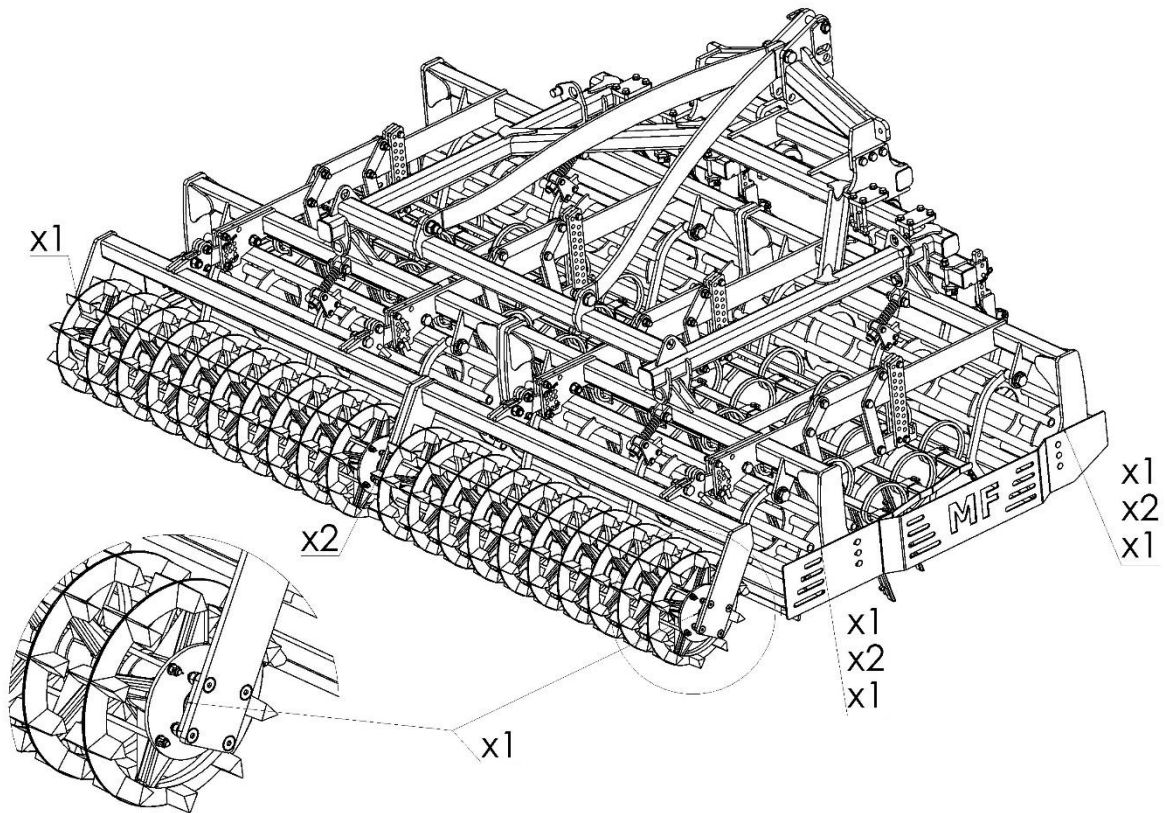
- Reverse the tractor to a distance which facilitates connecting the cultivator hitch to the tractor lower rods
- Connect the upper 3-point tie-rod to the unit and remove its play,
- Lift the unit and secure the lower rods of the tractor.

### 3.3. Lubrication

The durability and good working order of the unit depend primarily on systematic lubrication. Use mineral greases for lubrication. Before applying the grease, clean the lubrication points. Carry out the lubrication as per Fig. 3

**Use LT-4S-3 grease once per season.**





**Figure 3** The roller-bearing assemblies – 12 points of lubrication

### 3.4. Storage

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

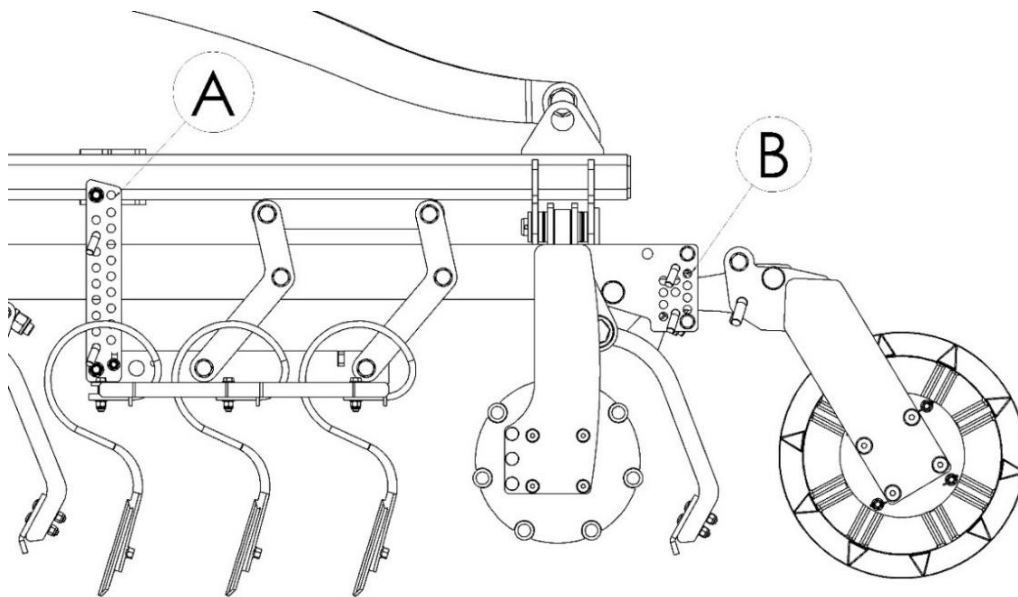
## 4. Cultivator adjustment

### 4.1. Working-depth adjustment

The working depth of the cultivator can be adjusted mechanically by adjusting the spring tines and re-compacting the cross-kill roller. The mechanical adjustment is made by change to the pin positions.

### 4.2. Working-depth adjustment

Setting the depth of the working components should be done by means of cotter pins fixed in the appropriate holes of the plough frogs, secured with locking pins (Fig. 4).



**Figure 4** Cultivator working-depth adjustment

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

To increase/decrease the working depth, lift the cultivator over the surface and remove the lower pins which lock the change to the working-section positions in the sheets for depth adjustment (see Fig. 4 - A). Then, lower the cultivator to the ground, which will make the working sections rise and allow the pin to enter the relevant upper hole; after that, lift the cultivator and insert the 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. 4 - 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 appropriate lower hole.

Secure the pins with the 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 the feet or hands.

### 4.3. Cultivator operation

Before you start operating the cultivator

- check the condition of the bolted joints – if any play is found, tighten bolts and nuts,
- remove the warning marking,
- set the cultivator working depth,
- lower the tractor lift and leave it in the floating position.

If during operation the cultivator becomes clogged with an excessive amount of vegetative residue, lift it briefly on the tractor's hydraulic lift and clean it.

The cultivator must be adjusted during the first passage. The cultivator frame is correctly levelled when it is parallel to the field surface.



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#### ATTENTION!

Avoid sudden jerks during the cultivator operation.

Turn gently at headlands and make sure you lift the cultivator to the transport position.

Do not reverse or u-turn with the cultivator in the working position, as it can lead to damage the cultivator.



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#### ATTENTION!

After you have worked with the cultivator for the first 40 hours, check the bolt connections. If any play is found, tighten the bolts according to the table No. 1.

**Table 1.** Metrical bolt-tightening torques

<b>Bolt-tightening torques - metrical bolts in Nm</b>							
<b>Size Ø mm</b>	<b>Pitch mm</b>	<b>Bolt version - strength classes</b>					<b>Wheel nuts, wheel bolts</b>
		<b>4.8</b>	<b>5.8</b>	<b>8.8</b>	<b>10.9</b>	<b>12.9</b>	
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	









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