



METAL-FACH



SEED-DRILL-DISC CULTIVATOR

U741 & U741/1

INSTRUCTIONS MANUAL

TRANSLATION OF THE ORIGINAL INSTRUCTIONS MANUAL

REV. II

MAY 2019



EC DECLARATION OF CONFORMITY

The undersigned,	Jacek Kucharewicz, President of the Board	
hereby declares with full responsibility that the complete machine:		
SEED-DRILL-DISC CULTIVATOR		
1.1.	Brand (trade name of the manufacturer)	Metal-Fach
1.2.	Type	U741
1.2.1.	Variant	U741/...
1.2.2.	Version	N/A
1.2.3.	Trade name(s) (if any)	N/A
1.3.	Category, Subcategory and Vehicle Speed Indicator	
1.4.	Company name and manufacturer address	Metal-Fach sp. z o.o. ul. Kresowa 62 16-100 Sokółka, Poland
1.4.2.	Name and address of the authorised representative of the manufacturer (if applicable)	N/A
1.5.1.	Location of the rating plate of the manufacturer	Main frame
1.5.2.	Method used to fix the rating plate of the manufacturer	Bonded
1.6.1.	Location of the vehicle identification number on the chassis	Main frame
2.	Machine identification number	
<p>complies with all the relevant regulations of Directive 2006/42/EC and Regulation of the Minister of the Economy dated 21 October 2008 on principal requirements for machines (Journal of laws of 2008, No. 199, item 1228, as amended)</p> <p>The following harmonised standards were applied to assess the compliance. <u>PN-EN ISO 4254-11: 2012, PN-EN ISO 4254 -1: 2016, PN-EN ISO 12100: 2012,</u> <u>PN-EN ISO 13857: 2010</u></p> <p>and standards PN-ISO 3600:1998, PN-ISO 11684:1998 and Regulation of the Minister of Infrastructure dated 31 December 2002 on technical conditions of vehicles and the range of their necessary equipment (Journal of Laws of 2003, No. 32, item 262, as amended).</p> <p>Safety Testing Report No. LBC/34/15</p> <p>This EC Declaration of Conformity shall become null and void if the machine is modified or reconstructed without the Manufacturer's consent.</p>		

Sokółka
(Location)

05/08/2015
(Date)

Jacek Kucharewicz
(Signature)

President of the Board
(Position)

Machine data

Type of machine Seed-Drill-Disc Cultivator
Type designation U741 & U740/1*
Serial Number⁽¹⁾ _____

Machine manufacturer METAL-FACH Sp. z o.o.
16-100 Sokółka
ul. Kresowa 62
Tel.: (0-85) 711 98 40
Fax: (0-85) 711 90 65

Seller _____

Address _____

Phone/Fax _____

Delivery date _____

Owner or user Name _____

Address _____

Phone/Fax _____

Delete as appropriate

⁽¹⁾ The data is located on the machine rating plate located on the front part of the machine main frame

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INTRODUCTION

The information included in the Instructions Manual is valid as of the date of issue. The manufacturer reserves the right to make design changes in machines and due to this fact some values or illustrations might not correspond to the actual state of the machine supplied to the user. The Manufacturer reserves their right to make design changes without any modifications to this Instructions Manual. The Instructions Manual is part of the basic equipment of the machine. The user is obliged to read the contents of this Instructions Manual before commencing operations, and to follow the guidance included in it. It will ensure a safe and trouble-free machine operation.

The machine has been built in compliance with the standards in force and the current legal provisions. The Instructions Manual describes the basic safety and operation principles of the Metal-Fach U741 Seed-Drill-Disc Cultivator.

The substantive obligations of the manufacturer are presented in the guarantee card, which includes the complete and currently-in-force regulations on the guarantee coverage.

If the information included in the Instructions Manual proves to be incomprehensible, you should address the seller from whom the machine was purchased, or the manufacturer directly, for assistance.

The spare-parts catalogue functions as a separate list, and is attached in the form of a CD at the time of the machine's purchase, and also is available on the Manufacturer's website: www.metalfach.com.pl

This Instructions Manual, according to the Act of 4 February 1994 on copyrights and related Laws Journal of Laws of 2018, item 1191 is protected by copyright. It is prohibited to copy and distribute the contents and Figures without the consent of the proprietor of the copyright.

The warranty card, together with the warranty terms, is attached to this Instructions Manual as a separate document.

Manufacturer's address:

Metal-Fach sp. z o.o.
ul. Kresowa 62
16-100 Sokółka

Contact number:

Tel.: (0-85) 711 98 40
Fax: (0-85) 711 90 65

The symbols used in the Instructions Manual:



CAUTION

The symbol pointing to especially important information and recommendations. Non-compliance with the described recommendations risks serious damage to the machine due to its incorrect operation.



WARNING

This symbol indicates the possibility of the occurrence of a hazard, which, if not avoided can result in death or serious injury. This symbol indicates a lower level of risk of injury than the symbol including the word "DANGER".



This symbol indicates useful information.



This symbol indicates maintenance activities which should be performed periodically.

1. General description

1.1 Introduction

The machine may be operated only by persons who have read this Instructions Manual, and know the design and functioning of the Seed-Drill-Disc Cultivator, and the functioning of the tractor to work with.

To operate the machine safely, adhere to and follow all the instructions set out in this Instructions Manual. Adhering to the guidelines of the Instructions Manual ensures the User works safely and the machine service life is longer.

THE INSTRUCTIONS MANUAL IS PROVIDED AS THE BASIC EQUIPMENT OF THE MACHINE

1.2 Machine identification

Identify the Seed-Drill-Disc Cultivator on the basis of the rating plate permanently fixed to the machine's main frame. The data included on the rating plate of the U741 Seed-Drill-Disc Cultivator are shown in the Figure below.



Figure 1. Rating plate



WARNING

Entering public roads without a rating plate or with an illegible rating plate is prohibited.



CAUTION

CAUTION!

Any doubts concerning the machine's intended use should be resolved by contacting its manufacturer. Selecting the right device and knowing its intended use make its operation safer.

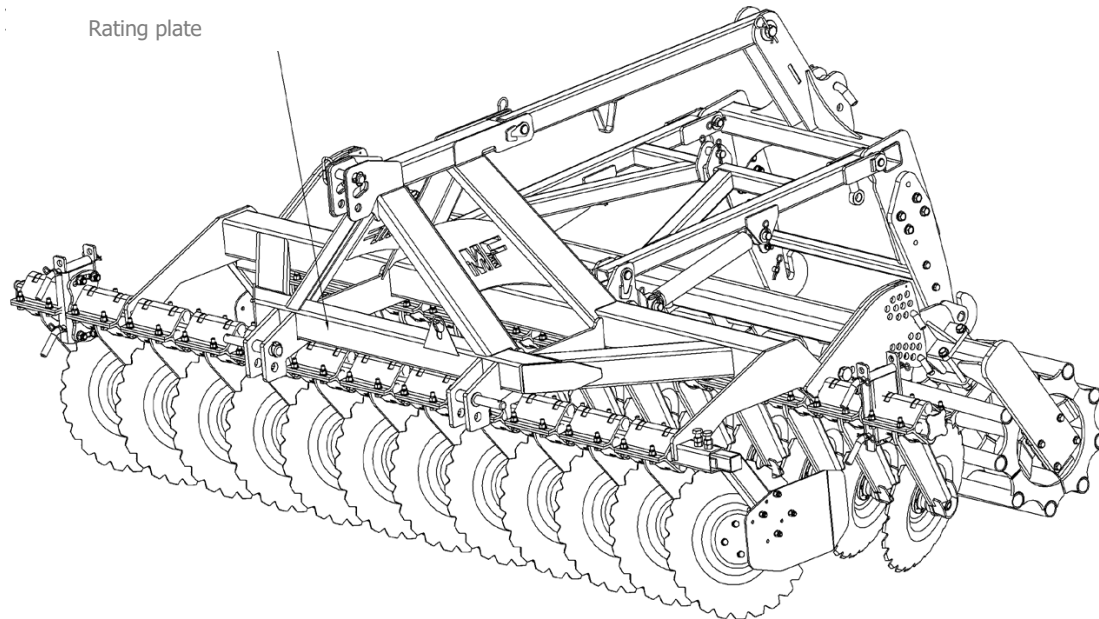


Figure 2. Location of the nameplate on the machine

In the event of the selling on of the machine to another user it is obligatory to provide the Instructions Manual. It is recommended for the Cultivator supplier to keep a record of the Instructions Manual receipt confirmation by the purchaser, submitted with the machine to the new user.



On purchase, check the compliance of the serial number located on the nameplate of the machine with the number written in the Instructions Manual and Guarantee Certificate.

1.3 Intended use of the machine

The Seed-Drill-Disc Cultivator is a versatile machine for cultivating the surface soil layer within the depth range of 5-15 cm. Its intended use is post-harvest tillage, pre-sowing after-harvest soil cultivation, and after no-tillage cultivation, when vegetation residues are not covered, but mixed with the upper (surface) soil layer (so-called mulching). In combination with the seed drill, it is used for simultaneous soil tillage and seeding. The machine can be used on all soil types, including stony conditions, thanks to the overload protection of the discs (independent disc suspension). It ensures that the soil is loosened and mixed well, and also loaded and compacted, when working with the roller. Because of high resistance to clogging, the Cultivator is excellent for the cultivation of high stubble after harvesting cereals and corn, and for the cultivation of aftercrops for green manure.

1.4 Cultivator design

The Seed-Drill-Disc Cultivator consists of the main frame made in sections, a frame with working parts mounted, disc coulters with maintenance-free hubs, a rear pressing roller and a hydraulic lifting device for the seed drill.

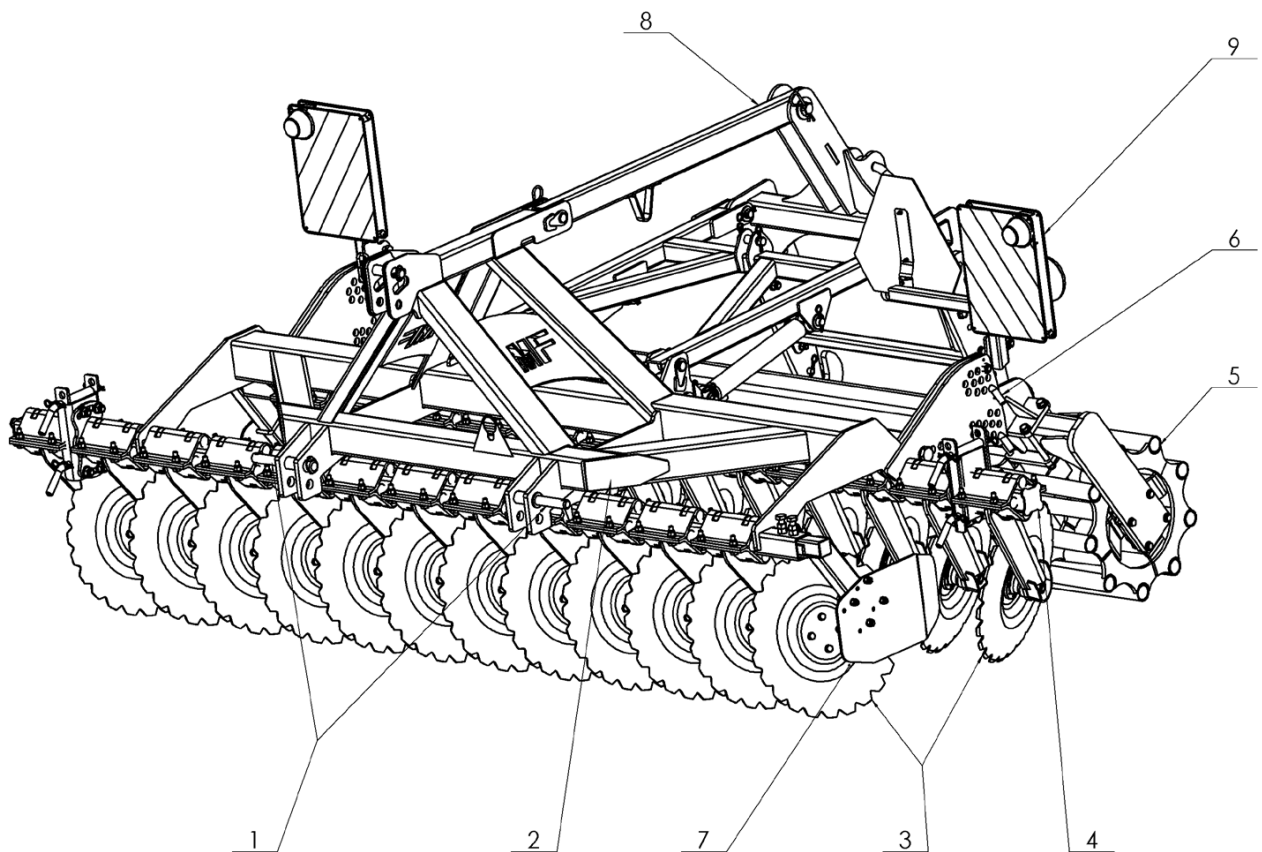
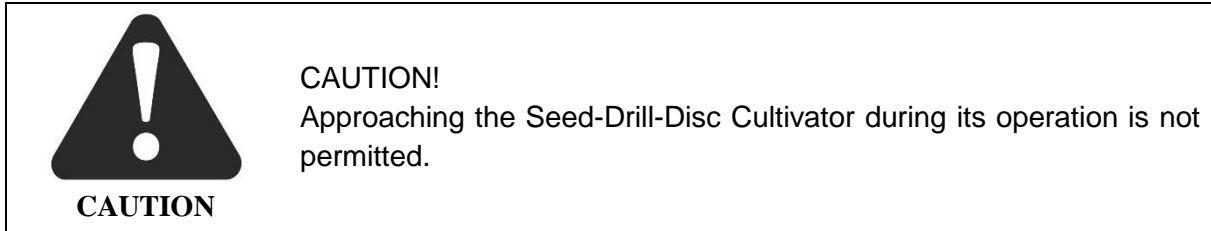


Figure 3. Machine design 1 - lower link pins, 2 - frame, 3 - front/rear disc coulters, 4 - foldable end disc bracket, 5 - tubular/packer pressing roller, 6 - pin/mechanical depth adjustment, 7 - side screens, 8 - hydraulic power pack, 9 - lighting (optional)

1.5 Cultivator technical specifications

Table 1. Cultivator technical specifications

No.	Contents			
GENERAL DATA				
1.	Type	Seed-Drill-Disc Cultivator		
2.	Manufacturer	METAL-FACH Sp. z o.o. 16-100 Sokółka, ul. Kresowa 62		
3.	Type (Model)	U741	U741/1	
4.	Location of the rating plate	Main frame		
5.	Number-Stamp Location	On and under the rating plate		
6.	Working width [m]	3.0	4.0	
7.	Number of discs [pcs.]	24/2 rows	32/2 rows	
8.	Roller type	TUBULAR, Ø500		
		PACKER, Ø500		
9.	Diameter of main/edge discs [mm]	Ø510/Ø460		
10.	Working depth range [cm]	5 - 15		
11.	Scale between discs [mm]	250		
12.	Power demand [HP]	80-110	110-150	
13.	Operation [no. of persons]	1 operator		
14.	Effective capacity [ha/h]	3.0 - 5.0	4.5 - 6.5	
15.	Overall dimensions			
	Transporting position [w/ raised hydraulic power pack]	Width [mm]	3000	4530
		Height [mm]	2420	2420
		Length [mm]	1860	1860
	Working position	Width [mm]	3530	4080
		Height [mm]	1390	1390
Length [mm]		2340	2340	
16.	Cultivator Weight w/o roller or hydraulic power pack [kg]	830	1200	
17.	Weight with packer and hydraulic power pack [kg]	1465	2055	
18.	Weight with tubular roller and hydraulic power pack [kg]	1305	1855	
19.	Roller weight		3.0m	4.0m
		PACKER	460	680
		TUBULAR	300	480
20.	Hydro-pack weight [kg]	175		
21.	Hitch category	2 or 3		

22.	Seed drill	Type	Row seed drill	
		Seed drill width	3.0 m	4.0 m
		Total weight of seed drill	1,200kg	

1.6 Cultivator Dimensions

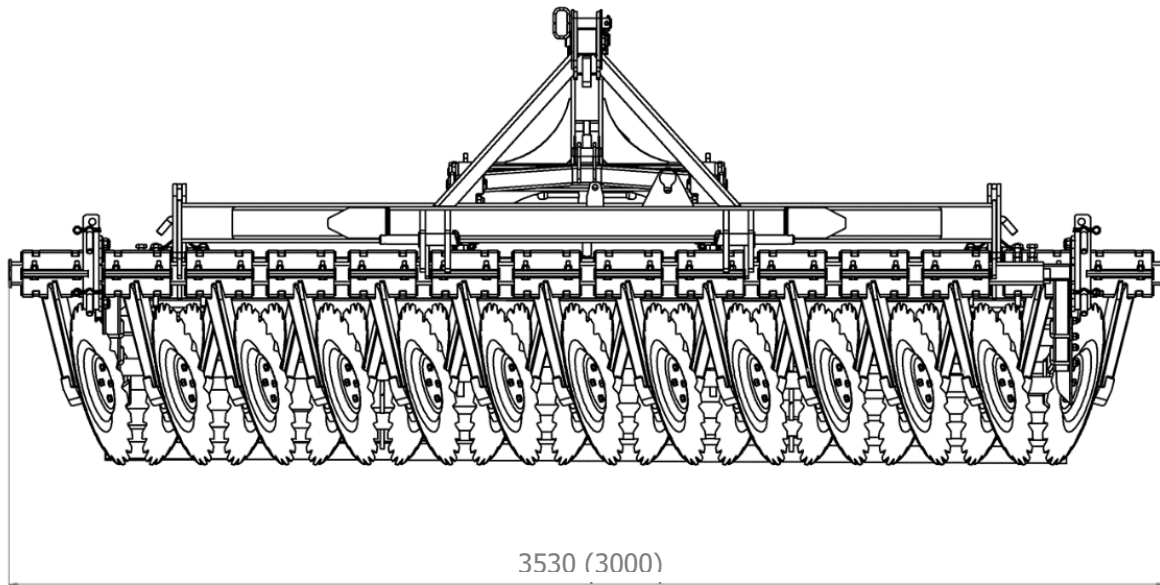


Figure 4. Rear view of the Cultivator (3.0 m)

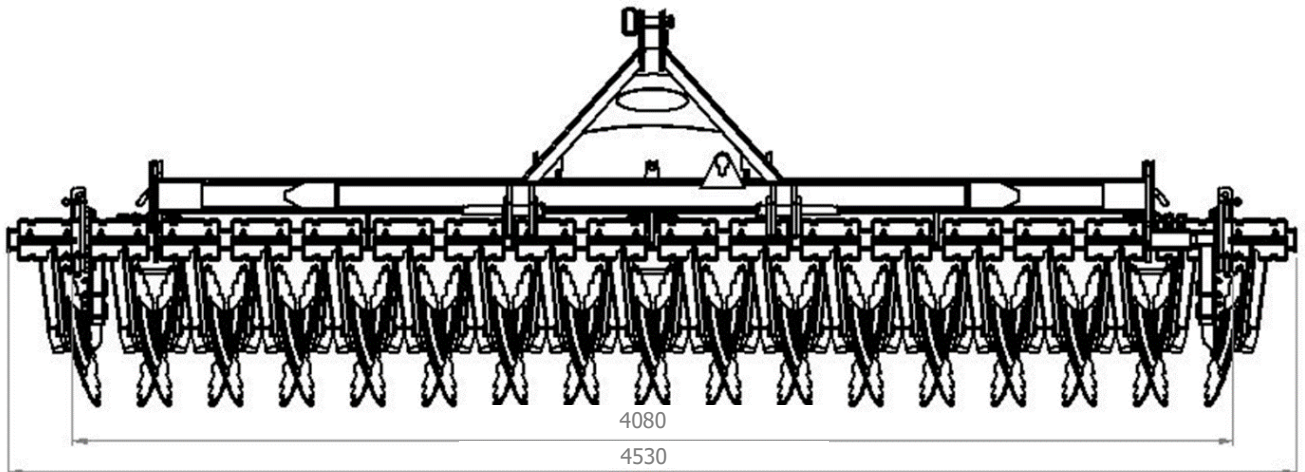


Figure 5. Rear view of the Cultivator (4.0 m)

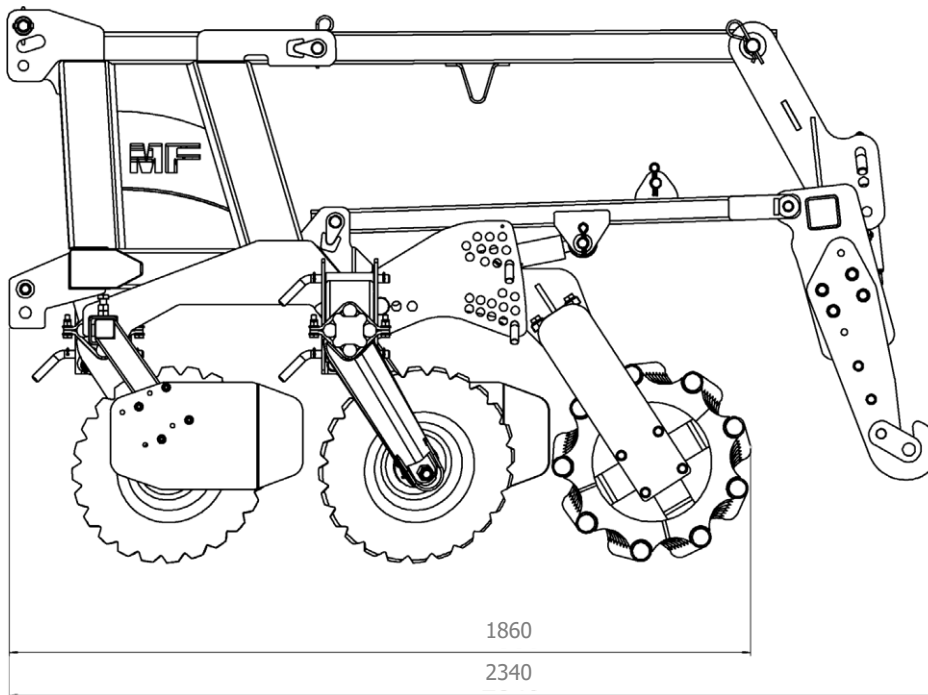


Figure 6. Side view of the Cultivator (3.0 m)

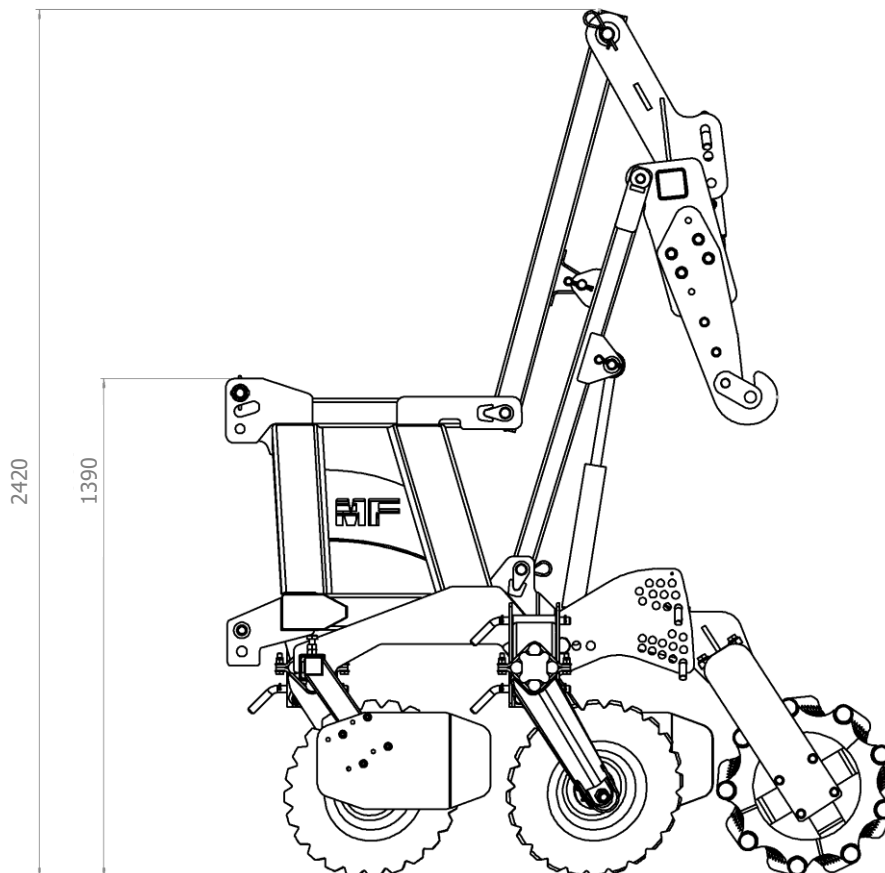






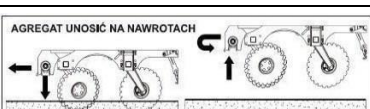





Figure 7. Side view of the Cultivator with the hydraulic power pack raised


1.7 Hazard warning symbols

Table 2. Hazard warning symbols

No.	Safety sign (mark)	Meaning of the sign (mark) or content of the inscription
1.		Read the Instructions Manual.
2.		Switch off the engine and remove the ignition key before any servicing or maintenance procedures.
3.		Keep a safe distance from the machine. Danger of crushing by the machine.
4.		Do not reach into the crushing area if the parts can move.
5.		Keep a safe distance from the machine. Danger of crushing toes or feet. Force applied from the top.
6.		Lifting points for loading on a means of transport.
7.		Lift the machine on headlands.
8.		Cultivator operating depth.
9.		Lubrication point.
10.		Ensure the disc hubs are tightened.
11.	CAUTION! Secure the hydraulic power pack with a pin in the transporting position	Hydraulic power-pack transport protection.

12.	<p>CAUTION!!! The maximum weight of the seed drill with filled hopper must not exceed 1,200kg</p>	Total weight of seed drill
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1.8 Arrangement of pictograms on the machine

 CAUTION	<p>CAUTION! The user of the Cultivator must maintain the legibility of all warning inscriptions and signs attached to the machine over the whole period of operation. If they are damaged or destroyed, replace them with new ones.</p>
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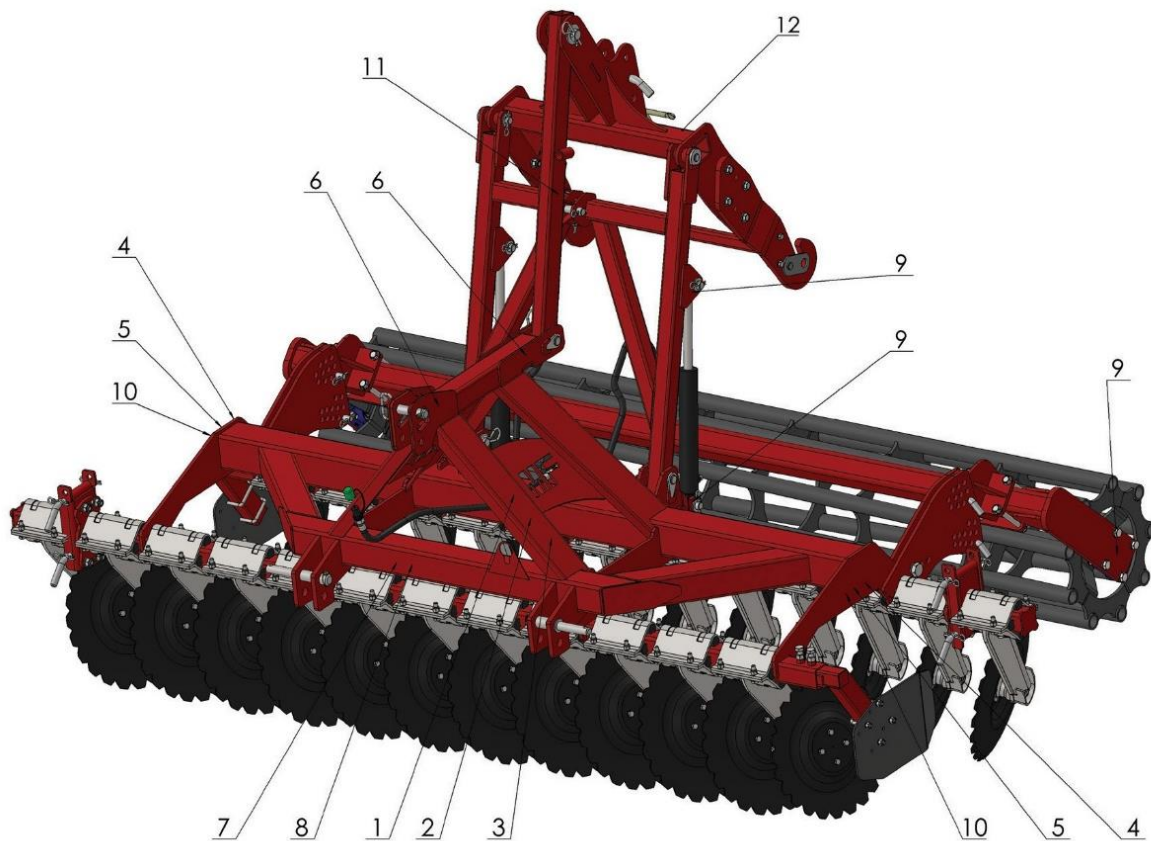



Figure 8. The arrangement of pictograms on the Seed-Drill-Disc Cultivator

 CAUTION	<p>CAUTION! You may purchase the pictograms from the manufacturer or your local "Metal-Fach" representative.</p>
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1.9 General safety principles

The safety principles provided below refer to the Cultivator. Notwithstanding, adhere to the general safety and accident prevention rules, as well as the road-traffic rules.

When operating the combination (Seed-Drill-Disc Cultivator + tractor), follow all possible precautions, and particularly the guidelines listed below.

1. Each time before you start the operation, ensure that the machine and tractor condition guarantees traffic and operation safety
2. To retain manoeuvrability, couple the machine with those tractors only which are fitted with a set of front-axle weight ballasts. The front-axle load of the tractor with the suspended Cultivator must be at least 20% of the tractor weight itself; see Section 2.3
3. Use the acceptable axle loads and transporting dimensions
4. When coupling the Cultivator with a tractor, lifting and lowering the machine onto the tractor hydraulic lifting device, folding the machine to the transporting position and extending to the working position, and on headlands, ensure there are no bystanders, particularly children, in the vicinity
5. Never stand between the tractor and the machine, when the tractor engine is working
6. Noise – equivalent A-weighted emission sound pressure level (LpA) is not above 70 dB
7. When connecting lines to the hydraulic system of the tractor, ensure the hydraulic system is not under pressure, and check the position of the control lever of the tractor's hydraulic system
8. Start the devices controlled by the hydraulic system only when there are no persons within the range of their operation
9. Inspect the hydraulic lines and tubes periodically, and replace with new ones, if required
10. The hydraulic lines must be replaced every 6 years
11. The actions of lifting, lowering, folding and extending, and starting the machine must be done slowly and without any sudden jerks
12. Never reverse the tractor or turn on a headland when the machine is lowered in the working position
13. When turning on a headland, consider far-projecting components, do not apply independent brakes of the tractor
14. Check the tyre pressures of the tractor
15. Standing on the machine or loading it with additional weights is forbidden during transporting and operation
16. Perform all repairs, lubrication, or possible cleaning of the working components during operations only when you have switched off the engine and lowered the machine
17. Detach the machine from the tractor after you have set the working components on a level, compact, surface, and switched off the engine
18. Store the Cultivator with all its working units propped up
19. During stoppages, keep the Cultivator on sites without access by unauthorised persons or animals
20. During operations, wear the appropriate work clothing, and footwear with non-slip soles
21. Traffic Laws and the manufacturer's recommendations must be observed while transporting on roads; see Section 8.2
22. Prior to entry onto public roads, carry out a visual inspection of the machine being carried
23. Operating the Cultivator under the influence of alcohol is prohibited

24. It is not allowed to leave the farming equipment on slopes or other inclines without securing the vehicle against accidental rolling away.
25. Using the machine by minors, especially children, is forbidden
26. Operating the Cultivator under the influence of drugs or narcotics is prohibited
27. If injury or wounds ensue, take first aid measures, in the case of a serious injury, seek medical advice from your doctor
28. In the event of a collision or road accident, call the appropriate emergency services and comply with the provisions of the Highway Code.

2. Machine drive

2.1 Coupling the machine with the drive

Couple the Seed-Drill-Disc Cultivator with farm tractors with a power of not less than 80 hp, and equipped with a three-point hitch system.

Attach the machine to the tractor by performing the following steps.

- Reverse the tractor to a distance which allows the connecting of the Cultivator hitch with the tractor's lower links
- Connect the upper 3-point link to the machine, remove its play and level the machine
- Connect the power supply and check that it is working properly (buy lighting as an option)
- Connect the hydraulic lines and check that there are no leaks
- Raise the machine and ensure the front-axle load of the tractor is greater than 20% of the tractor's weight. The tractor must be fully manoeuvrable. See Section 2.3
- Adjust the machine during the first pass



CAUTION

CAUTION!

Exercise particular caution when coupling the machine with the tractor. When coupling, standing between the machine and the tractor is forbidden.

2.2 Uncoupling the machine from the drive

To detach the Seed-Drill-Disc Cultivator from the tractor, follow the procedure below.

1. Make sure that no bystanders, especially children, are standing within the machine to tractor linkage area and its immediate vicinity
2. Place the machine in its storage place on level and solid ground
3. Disconnect the electrical supply system (if any)
4. Disconnect hydraulic hoses
5. Uncouple the upper link of the 3-point system and tractor's lower link.

2.3 The stability of the tractor/Seed-Drill-Disc Cultivator combination

The front of the towing vehicle must be loaded with the correct weight to ensure correct steering and braking actions. The front axle load of the tractor, with the suspended machine, must be at least 20% of the tractor's weight itself; see Fig. 9.

Remember that the road surface and the tractor-mounted machine affect the quality of the ride. How you drive must be adjusted to terrain conditions and soil type.

Remember about the wide projection and buoyancy weight of the machine when driving in curves with a hitched or semi-suspended machine.

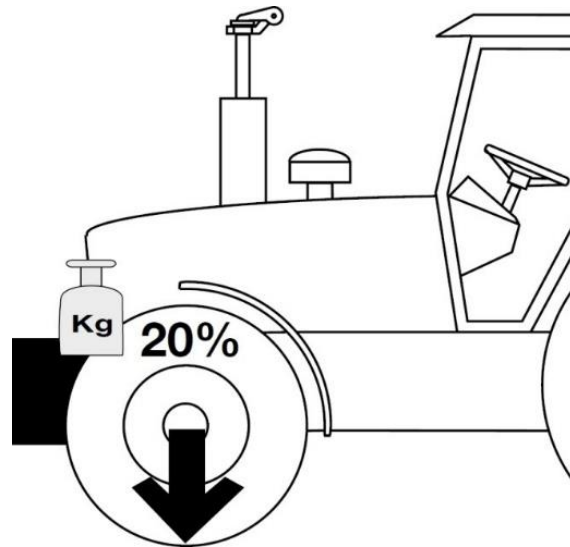


Figure 9. Minimum front-axle load of the tractor

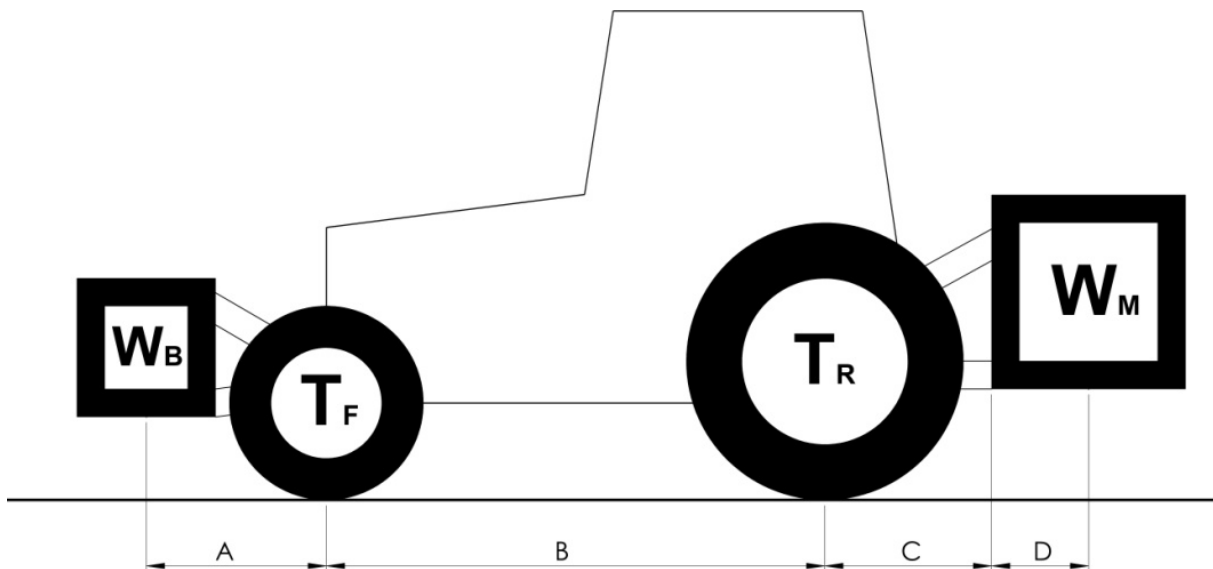


Figure 10. Determining the static stability

You need the following data for the calculation.

$$W_B = (W_M * (C + D) - T_F * B + 0,2 * T_C * B) / (A + B)$$

A [m] - the distance between the centre of gravity of the front weight ballast/front-mounted machine and the front-axle centre

B [m] - the distance between the tractor's wheels

C [m] - the distance between the centre of the rear axle and the centre of the lower link ball

D [m] - the distance between the centre of the lower link ball and the centre of gravity of the rear-mounted machine

T_c [kg] - tractor kerb weight

T_F [kg] - front-axle load of the unladen tractor

T_R [kg] - rear-axle load of the unladen tractor

W_M [kg] - total weight of the rear-mounted machine

W_B [kg] - total weight of the front ballast/front-mounted machine

3. Start-up



CAUTION

CAUTION!

Prior to starting up the Seed-Drill-Disc Cultivator, read this Instructions Manual carefully, paying close attention to the sections concerning the safety of the operator and bystanders.



In the event of any doubts regarding safety, contact the dealer/manufacturer.

4. Routine adjustment parts

The working depth of the disc coulters can be adjusted with the three-point hitch system of the tractor and the mechanical adjustment of the rollers. Use the pins, fit them in the appropriate holes of the roller's mounting plate, and secure with locking pins to adjust the rollers (see Fig. 11).

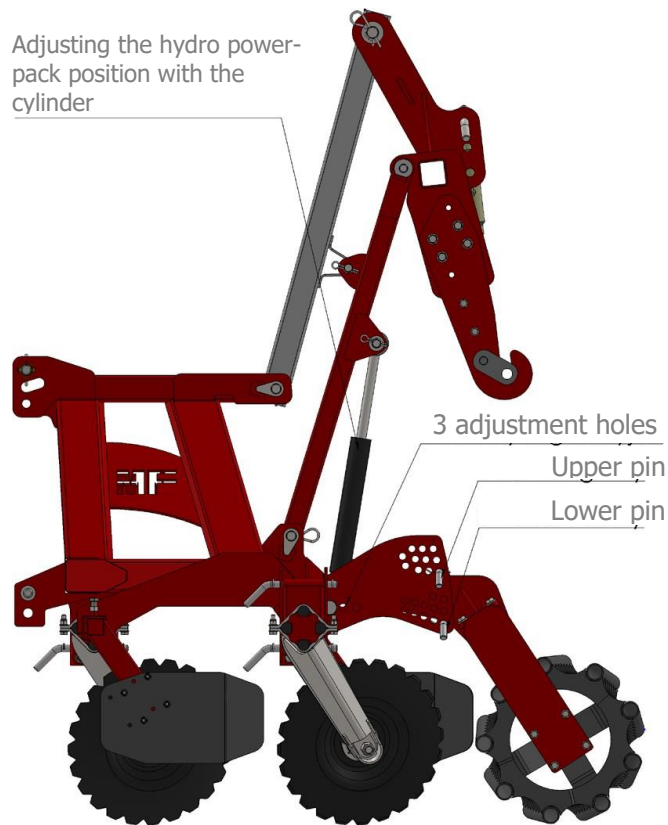


Figure 11. Machine adjustment

To set the maximum working depth, insert the pin into the upper hole in the roller's mounting plate. To set the correct position of the lower pin, lift the roller and insert the pin into the right hole. Adjustments can be made after stopping at the edge of the field next to a slope. Lower the machine roller on the slope, which will make the roller rise and allow the inserting of the pin into the correct lower hole. Lock the pins with spring pins.

The locking pins must be in the corresponding holes on both sides of the machine. Remember to stop the tractor's engine and follow all the safety rules to make the adjustment. Use special care when working with components which can crush feet or hands.

5. Machine operation

Before you start field works with the machine

- Check the condition of the bolted joints – if any play is found, tighten bolts and nuts
- Check the folding and unfolding actions of the hydraulic power pack (if the machine works with a hydraulic power pack)
- Check the condition of the hydraulic hoses, and replace as required
- Remove the warning marking
- Set the machine's working depth
- Lower the tractor's lifting device to the desired working depth.

If during operations the machine gets clogged with an excessive amount of vegetative residue, lift it for a moment on the tractor hydraulic lift, and clean it.

The machine must be adjusted during the first pass.

The machine frame is correctly levelled when it is parallel to the field's surface.



CAUTION

CAUTION!

- Avoid sudden jerks during the machine's operation.
- Turn gently on headlands and make sure you lift the machine to the transporting position.
- Do not reverse or u-turn with the machine in the working position, as it can lead to damage to the machine.



CAUTION

CAUTION!

After you have worked with the machine for the first 40 hrs, check the disc hub tightening. If there is a clearance, tighten the M22 nut to 300 Nm with a torque wrench. Check the disc-hub tightening before the spring and autumn seasons. Tighten the other bolts according to Table No. 3.

Table 3. Tightening torque values for metric bolts

Bolt-tightening torques - metrical bolts in Nm							
Size Ø 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	1090	500
24	3.00	383	474	744	1080	1240	
24	2.00	420	519	814	1160	1360	
24	1.50						550
27	3.00	568	703	100	1570	1840	
27	2.00	615	760	1200	1700	1990	
30	3.50	772	995	1500	2130	2500	
30	2.00	850	1060	1670	2370	2380	

5.1 Uncoupling the machine from the drive

To prepare the machine for operation after storage, follow the procedure below.

- Check the condition of the bolted joints
- Check the condition of the working components
- Check the condition of the brake system
- Check the coating condition
- Check the condition of the coupling pins
- Lubricate according to Section 6.1.

5.2 Machine operations fitted with the hydraulic power pack in combination with the seed drill

Couple the machine fitted with a hydraulic power pack with the seed drill by means of a three-point hitch system. The hydraulic power pack is shifted from the transporting to the working position with the cylinder. Use the upper link of the three-point linkage to set the correct working position of the seed drill. The adjustment must be made during the first ride. Secure the machine in the transporting position as shown in Fig. 12.



Figure 12. The method for securing the machine in the transporting position



CAUTION

CAUTION!

The maximum weight of the seed drill with filled hopper must not exceed 1,200kg!!!

5.3 The hydraulic system of the machine

- The hydraulic system is under high pressure when the machine is in operation.
- Check the hydraulic hoses before each use; replace every 6 years.
- Use oil recommended by the manufacturer. Mixing different class oils is not permitted.
- When connecting the hydraulic system, ensure the tractor's hydraulic system is depressurised. Keep the hydraulic quick couplings clean.
- If the hydraulic system is damaged, hydraulic oil can leak. Have the system repaired by appropriately trained personnel.
- Dispose of used hydraulic oil at the appropriate collection facility.
- The purity class of oil in the tractor's hydraulic system must be compliant with Condition 20/18/15 of ISO 4406-1996.



CAUTION

CAUTION!

In the event of injuries sustained from a strong hydraulic oil jet, consult a physician immediately. In the event of contact with eyes, rinse with plenty of water and seek medical advice from an ophthalmologist. Wear suitable protective clothing during work.

5.4 Machine post-use procedure

Place the machine on a flat, level and paved surface. Disconnect the power supply (optional lighting) and the hydraulic lines. Uncouple the upper link of the 3-point system and tractor's lower links. Before storing the machine for a long period of time, it is absolutely necessary that you clean it, remedy any faults found and check the condition of the coating. If necessary, re-coat the machine with the paint repair kit provided by the manufacturer. Protect it from adverse weather conditions.

6. Scheduled Inspections

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

Additionally, follow the procedure below.

- Check the condition of the bolted joints – if any play is found, tighten the nuts and bolts
- Turn the discs and rollers manually to check whether the rotation is free and unhindered
- Lubricate components, if needed, and according to instructions given in Section 6.1



CAUTION

CAUTION!

Secure the raised parts of the machine with the pins before carrying out any maintenance work.

6.1 Lubrication and storage

Before any long-term storage, clean the machine and remove faults found. Protect it from adverse weather conditions. Store the machine in the extended setting on level, compact ground. Prevent any access by animals and children. The durability and good working order of the machine depends primarily on systematic lubrication.

Use mineral greases for lubrication. Before applying the grease, clean the lubrication points. Carry out the lubrication as shown in Fig. 13. Use the ŁT-4S-3 grease.



It is absolutely necessary that you lubricate the working parts of the U741 Seed-Drill-Disc Cultivator before the spring and winter seasons.

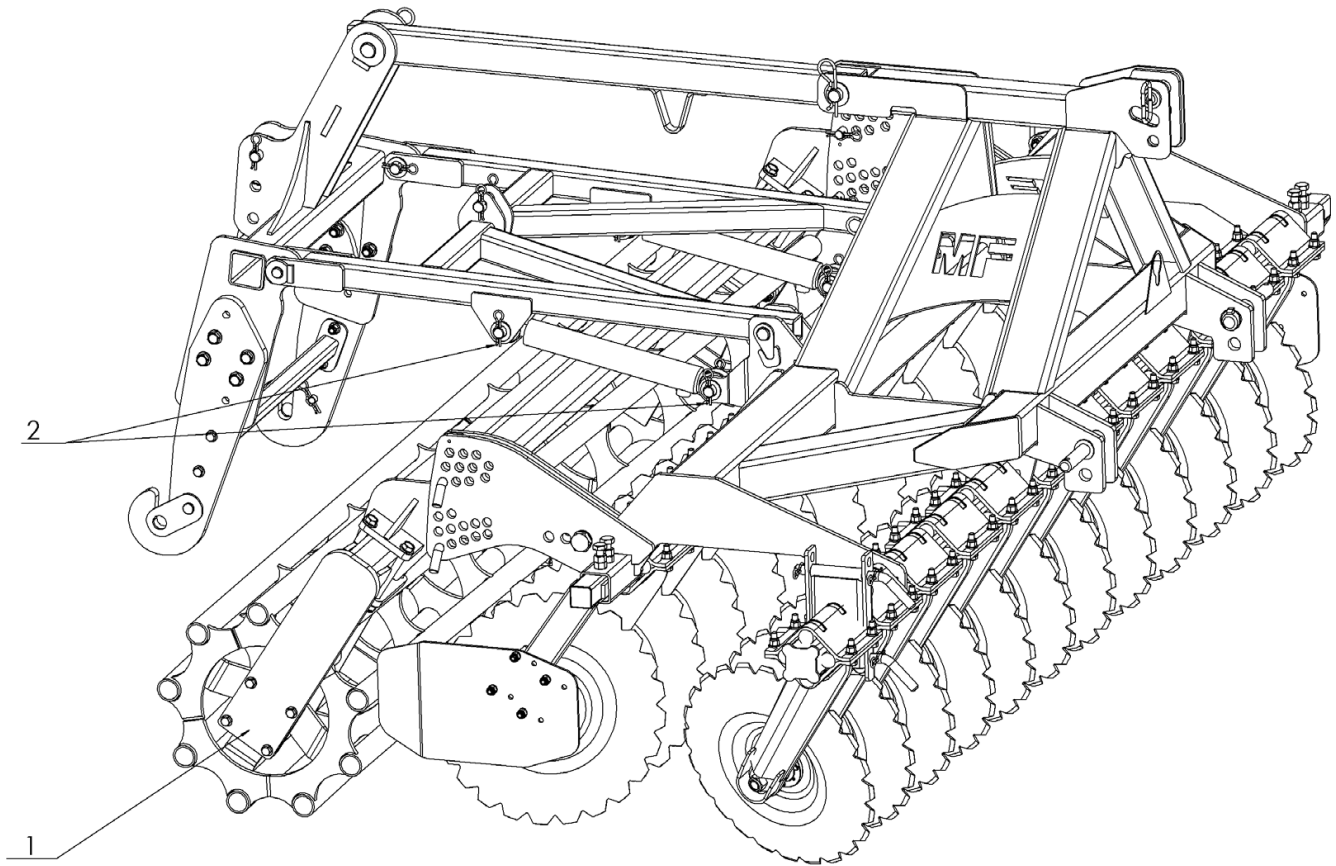


Figure 13. Lubricating points; 1 - roller bearing unit (2 points), 2 - hydraulic cylinders (only in the hydraulic power pack version) (4 points)

7. Authorised service

7.1 Guarantee service

The manufacturer provides a guarantee for the machine on the terms and conditions as stipulated in the Guarantee Certificate. In the warranty period, the repairs are performed by the authorised service centres of the dealers or the manufacturer.

7.2 Routine service

After the warranty period, periodic inspections, adjustments and repairs of the machine are carried out by authorised dealer service centres.

7.3 Ordering spare parts

Order spare parts only from authorised dealer centres or from the manufacturer by submitting the name and surname or company name, and address of the ordering party. When ordering, please also include the name, symbol, serial number, year of manufacture, part name, part number, drawing or standard number in the catalogue and the number of ordered pieces. Then, payment terms will be decided on.

8. Machine transporting

8.1 Product shipment

The machine is delivered for use partly disassembled. The extent of disassembly depends on the means of transport used.

The components which are disassembled for shipment include

- Rear roller
- Hydraulic lifting device for seed drill
Assembly procedure
Hydraulic lifting device for seed drill
- Fit the bottom frame of the hydraulic power pack in the appropriate mounting points on the frame of the machine, insert the pins and lock them with clip pins
- Fit the hydraulic cylinders, insert the pins and secure with clip pins, and screw the hydraulic hoses to the frame of the machine
- Install the upper hydraulic power pack arm and secure it with a pin and a clip pin
- Install the frame of the seed drill three-point system, insert the pins and secure with clip pins
- Tubular roller
- Loosen the 8 mounting screws of the roller
- Place the roller in the roller mounting bracket
- Fit the roller's mounting plate and fix the assembly with the screws in place



The Seed-Drill-Disc Cultivator may be shipped by rail or road transport with the appropriate payload capacity.



CAUTION

CAUTION!

Secure the raised parts of the machine with the pins before carrying out any maintenance work.



CAUTION

CAUTION!

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

8.2 Driving on public roads

The machine is designed for road traffic as a machine mounted on a 3-point hitch.

Pursuant to the road-traffic-safety provisions in the Regulation of the Minister of Infrastructure of 22 August 2013 (Journal of Laws, item 951), the combination composed of a farm tractor and a farm machine coupled with it must comply with the same technical requirements as those to be met by the tractor.



WARNING

Being a vehicle part which extends beyond the rear outline of the tractor and thus impairing the view of the tractor's rear lights, the combination (tractor + machine) is a risk for other vehicles running on the road.



It is forbidden to drive the combination (tractor + machine) on public roads without suitable conspicuity markings, and if the transporting width is over 3 m.

When driving the tractor with the machine on public roads, adhere to all the provisions of the Road Code in force for this type of vehicle, and particularly

- Set the hydraulic power pack of the machine in the transporting position and lock it with the pins to prevent its unfolding during the run
- While transporting on public roads, the Seed-Drill-Disc Cultivators coupled to agricultural tractors require
 - marking with white-and-red-striped warning marker plates
 - fitted with lighting
 - marking a machine extending beyond the sides of the tractor (white front position lamps)
 - the same rear lamps as for the tractor (integrated lights and red reflective lights)
 - marking with a triangular board indicating slow moving vehicles
- adhering to speed limits while transporting, which are:
 - on smooth surface roads (asphalt), up to 20 km/h
 - on farm or stone-paved roads, up to 6-10 km/h
 - on potholed roads, up to 5 km/h

You must adjust the speed to the quality and conditions of the road.

Exercise special care during driving past, overtaking, and on bends. The accepted machine width to enter and use the public road is 3.0 m.

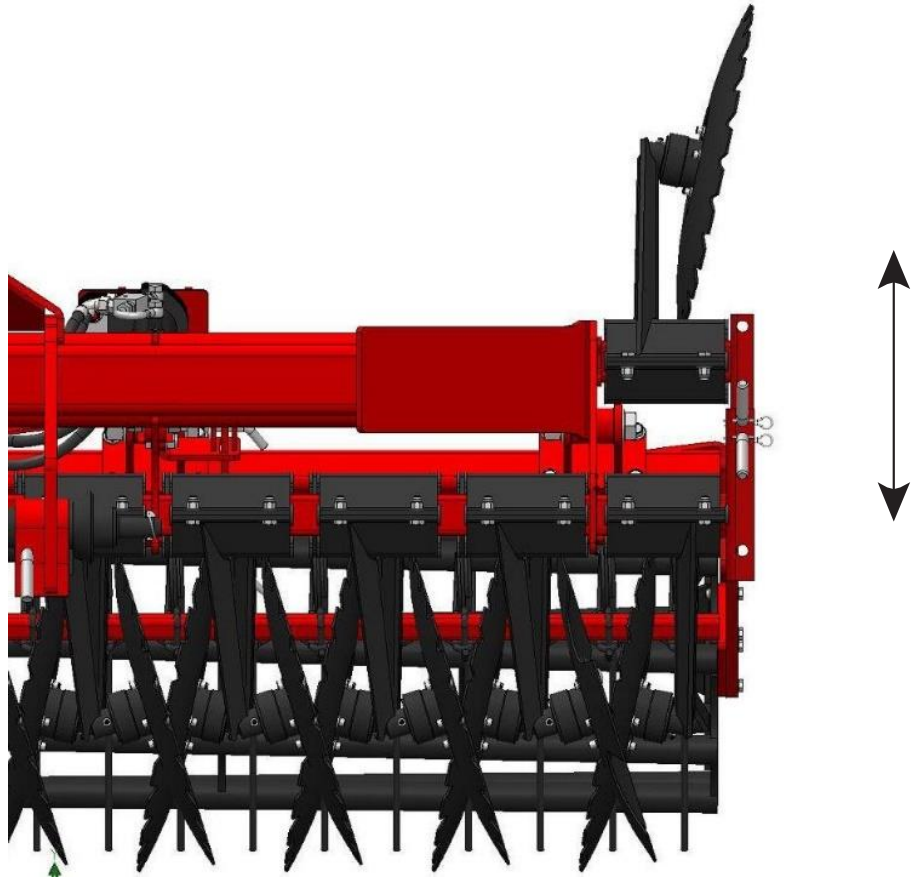


Figure 14. The transporting position



Figure 15. The working position

8.3 Lighting signalling system (option)

Prior to entry onto the public roads, you should fit the machine frame with a white-and-red-striped warning board, which is fitted with marker lamps, and a bracket for a board indicating slow-moving vehicles (see Fig. 16 for the method of fixing). The power supply cable must be connected to the tractor's electrical system and the bracket must be fitted with a triangular marking plate. The warning board with the conspicuity markings is an additional equipment of the machine and is delivered on request (charged extra).

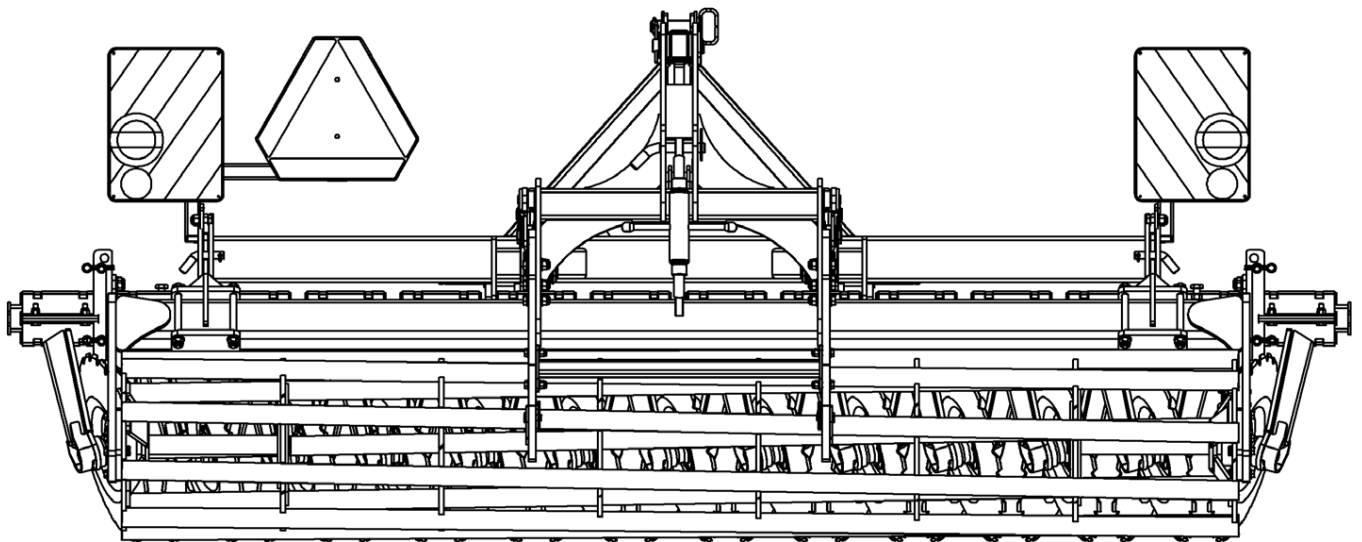


Figure 16. Fixing the lighting signalling system on the machine

9. Machine storage

Store the machine on flat, level, and paved surface.

Post-seasonally, the machine must be thoroughly cleaned, lubricated, and the protective coatings checked. If necessary, re-coat the machine with the paint repair kit provided by the manufacturer.

Check the condition of the hydraulic components and replace with new ones in the event of damage.

Check the condition and legibility of the rating plate. If it is damaged, report it at the service point.

Check the condition and legibility of the pictograms. If they are damaged, replace them with new ones.

Secure the hydraulic hose couplings with caps.



CAUTION

CAUTION!

Store the machine in an atmosphere free of aggressive agents (e.g. ammonia)

10. Typical faults and troubleshooting

Table 4. Typical faults and troubleshooting

No.	Fault description	Cause	Method of rectification
1.	Roller does not rotate or rotation is hindered	Roller contaminated with soil and plant residues	Clean the roller
		Defective roller bearing unit	Replace and grease the roller bearings
2.	Hydraulic power pack does not rise	Incorrectly connected hydraulic hoses	Ensure the hydraulic hoses are connected correctly
		Hydraulic hose damaged	Replace the hydraulic hose
		Hydraulic system blockage	Check for blockages of, and clean the system and replace the oil
		No oil in the tractor	Check the oil level of the tractor, top up if the oil level is low
3.	Disc coulters do not rotate or rotation is hindered	Disc unit contaminated with soil and plant residues	Clean the space between the disc coulters
		Defective disc coulters hub	Replace the hub
4.	Disc coulters play	Hub incorrectly tightened	Tighten the disc coulters hub to a torque of 300 Nm

11. Disassembly, disposal, and environmental protection

The Seed-Drill-Disc Cultivator is made with materials which do not pose risks to the environment. After the period of use is terminated and further operation is not justified, the Cultivator must be disassembled.

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

Sort the disassembled parts. Take the dismantled parts to the relevant recycling centres. Drain all the used oil from the hydraulic system into leak-tight containers and carry out the disposal.

Follow the procedure below to dismantle the components of the machine.

- Drain the hydraulic oil into an appropriate container and return it to a proper disposal centre
- Use suitable lifting gear to remove the seed drill lifting device and the rear packer roller
- Lift the machine and remove the disc brackets, sort the rubber parts, and dispose of them at the proper disposal centre
- Sort the steel parts of the machine and hand them over to the scrap yard.



CAUTION

CAUTION!

When dismantling the machine, wear the proper safety clothes and safety boots.



CAUTION

CAUTION!

Due to the large number of parts involved during disassembly, you must use lifting devices, like an overhead crane or fork lift. When dismantling the machine, observe the rules of health and safety at work, and wear protective clothing, protective gloves and safety footwear.

12. Residual Risk

12.1 Information about residual risk

Most frequently, residual risk stems from improper procedures followed by machine operators, or their lack of care or knowledge. The greatest hazards occur in the following cases.

- Operating the machine by underage persons or persons who do not know the Instructions Manual
- Operation of the machine by persons under the influence of alcohol or other intoxicating substances
- Using the machine for purposes other than those described in the Instructions Manual
- Standing between the tractor and the machine when the tractor engine is running
- Bystanders, children in particular, standing close to the running machine
- Cleaning the machine during operation
- Handling the moving components of the machine during operation
- Checking the technical condition of the machine

When specifying the residual risks, the machine is interpreted as a machine which was designed and made in accordance with the state of the art in the year of its manufacture, and meeting basic H&S rules.

12.2 Residual risk assessment

The occurrence of residual risk can be reduced by meeting the recommendations presented below.

- Adhere to the safety rules described in the Instructions Manual
- Read the operations manual carefully
- Reaching into dangerous and prohibited places with your hands is forbidden
- Operating the machine in the presence of bystanders, children in particular, is forbidden
- The machine may only be maintained and repaired by properly trained persons
- The unit may only be operated by persons who have been trained and have read the Instructions Manual
- Protect the machine against access by children
- The machine may be operated by non-disabled persons who are not under the influence of stimulants



CAUTION

CAUTION!

Failure to comply with the instructions and guidance provided herein can result in residual risks.

INDEX OF NAMES AND ABBREVIATIONS

BHP – OHS, occupational health and safety

dB (A) – scale A decibel, sound-pressure unit

ha/h – hectares per hour, speed unit

J – joule, unit of work, energy and heat in SI system

kg – kilogram, weight unit

HP – horse power, non-systemic power unit

km/h – kilometres per hour, linear speed unit

m – metre, length unit

mm – millimetre, an auxiliary length unit equal to 0.001m

Nm – newton metre, a unit for the moment of force in the SI system

Pictogram – an information plate

Rating plate - a manufacturer's plate unambiguously identifying the machine

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