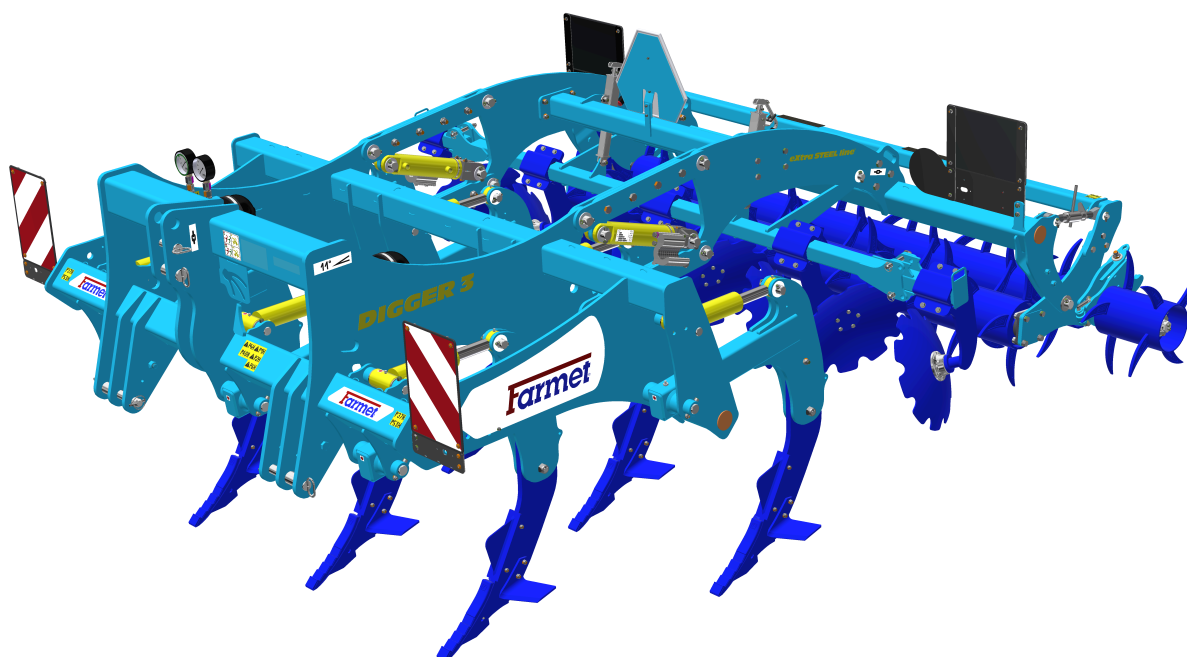


OPERATING MANUAL

DIGGER

HS/BS

3 N | 4 N



Edition: **1**

Effective from: **01.06.2025**

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PREFACE

Dear customer,

The agricultural machine you have purchased is a high-quality product of Farmet a.s. Česká Skalice.

You can fully utilise the advantages of your machine after thoroughly studying the operating manual.

The serial number of the machine is punched on the production label and written in the operating manual (Your Machine Characteristics). This machine serial number must be stated whenever ordering spare parts for possible repairs. The production label is located on the frame.

Use only spare parts for these machines according to the **Spare parts catalogue** officially issued by the manufacturer, Farmet a.s. Česká Skalice.

POSSIBILITIES OF USE OF THE CULTIVATOR

The chisel plough **DIGGER** is designed and intended for in-depth soil loosening up to the depth of 500 mm (see also Chapter – Purpose of in-depth Soil Loosening).

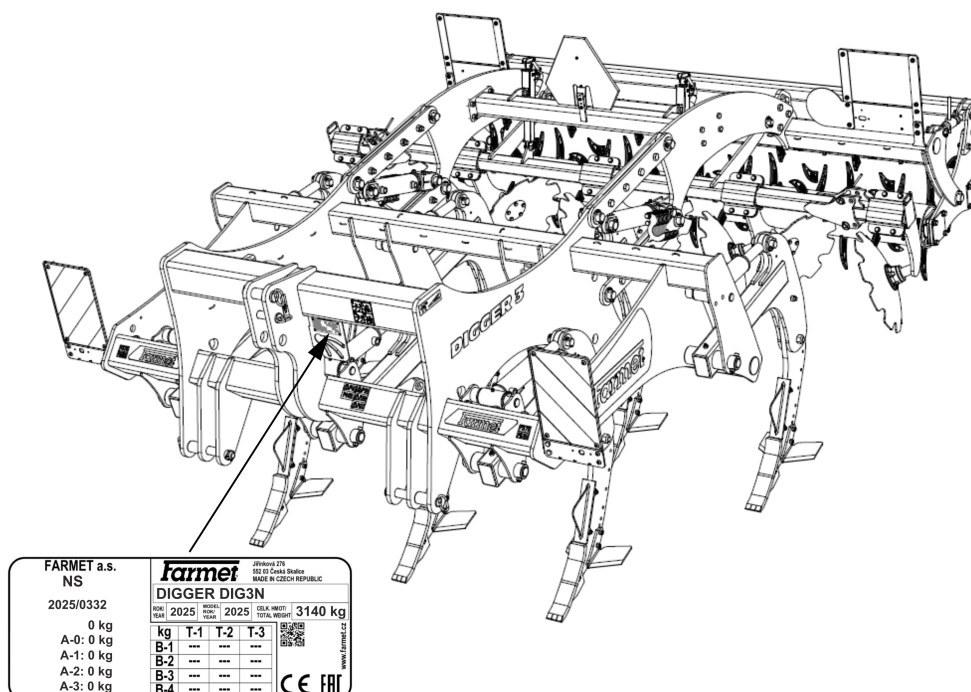
!!! ATTENTION: During deep cultivation, there is a risk of damaging underground communication and power lines. Prior to using the deep cultivator, it is necessary to seek the opinion of the operating manager of such equipment (telephone, gas, power lines, etc.).

YOUR MACHINE CHARACTERISTICS:

MACHINE TYPE :

MACHINE SERIAL NUMBER :

SPECIAL DESIGN OR ACCESSORIES :



IMPORTANT

READ CAREFULLY BEFORE USE

KEEP FOR FUTURE REFERENCE

Contents

PREFACE	3
1 MACHINE LIMIT PARAMETERS	7
1.1 Technical parameters	8
1.2 Safety statement	8
2 GENERAL INSTRUCTIONS FOR USE	9
3 MACHINE TRANSPORT USING TRANSPORT MEANS	11
4 MACHINE HANDLING USING LIFTING EQUIPMENT	12
5 WORK SAFETY LABELS	13
6 DESCRIPTION	16
6.1 Working parts of the machine	16
6.2 Hydraulics	17
6.3 The purpose of deep soil cultivation	19
7 MACHINE ASSEMBLY AT THE CUSTOMER	20
8 COMMISSIONING	21
8.1 Agregation to a tractor	22
8.2 Hydraulics connection	24
8.3 Hydraulic machine protection function (HS)	25
8.4 Mechanical machine protection (BS)	26
9 MACHINE TRANSPORT ON ROADS	27
10 MACHINE ADJUSTMENT	29
10.1 Adjusting the working depth of the machine	30
10.2 Work with one row of ploughshares	32
10.3 Setting the leveling discs	33
10.4 Hydraulic control of levelling discs	35
10.5 DSR roller angle adjustment	36
10.6 SDR roller and cleaner adjustment	36
10.7 Setting the wings	37
11 OPTIONAL EQUIPMENT	38
11.1 Side Deflectors	38
11.2 Tracing wheels (GW)	40
11.3 Additional side rollers (AR)	41
11.4 Non-Mixing Tines (NO MIX)	42
11.5 Mixing Tines	43
12 FERT KITS – OTHER OPTIONS	45
13 MACHINE MAINTENANCE AND REPAIRS	46
13.1 Replacement of the working roller bearings	47
13.1.1 Using the tool for bearing disassembly and assembly	48
13.1.2 Using spacers	52
14 MACHINE STORAGE	53
15 MACHINE LUBRICATION SCHEDULE	54
16 ENVIROMENTAL PROTECTION	55
17 MACHINE DISPOSAL AFTER SERVICE LIFE EXPIRY	56
18 SERVICING AND WARRANTY CONDITIONS	57

18.1 Servicing	57
18.2 Warranty	57

1 MACHINE LIMIT PARAMETERS

- The machine is designed for soil cultivation up to a depth of 50 cm (19.7 in) when agricultural soil cultivation. Another type of use exceeding the determined purpose is forbidden.
- The machine is only operated by one person – the tractor driver.
- Machine operator must not use the machine in a different way, especially:
 - Transport of persons and animals on the machine structure,
 - Transport of burdens on the machine structure,
 - Aggregation of the machine with another towing equipment than stated in Chapter 8.1.

1.1 Technical parameters

PARAMETERS	DIGGER 3 N	DIGGER 4 N
Working width	2,90 m (9,51 ft)	3,90 m (12,79 ft)
Transport width	2,99 m (9,81 ft)	3,99 m (13,09 ft)
Transport height	1,79 m (5,87 ft)	
Machine total length	4 m (13,12 ft)	
Working depth	25 – 50 cm (9,84 – 19,69 in)	
Number of shares (chisel)	7	9
Working performance	2,4 – 3,6 ha/h (5,93 – 8,90 ac/h)	3,1 – 4,7 ha/h (7,66 – 11,61 ac/h)
Towing means	180 – 270 kW (240 – 360 HP)*	240 – 360 kW (330 – 450 HP)*
Working speed	8 – 12 kph (5 – 7,5 mph)	
Maximum transport speed	25 kph (15,54 mph)	
Maximum slope grade	11(°)	
Machine weight **	2 800 kg (6 173 lb)	3 700 kg (8 157 lb)

* Recommended towing means, the real towing force may significantly vary according to the processing depth, soil conditions, land slope, working body wear and adjustment.

** Minimum weight. The weight of the machine varies depending on the selected equipment.

1.2 Safety statement



This warning sign warns about an immediate dangerous situation ending with death or severe injury.






This warning sign warns about a dangerous situation ending with death or severe injury.



This warning sign warns about a situation that may end with a smaller or slight injury. It also warns about dangerous actions related to the activity that could lead to an injury.

2 GENERAL INSTRUCTIONS FOR USE

- The machine is made in accordance with the latest equipment state and approved safety regulations. However, dangers of user or third person injury or machine damage or creation of other material damage may arise during use.
- Use the machine only in a technically sound condition, in accordance with its purpose, aware of possible dangers, and while adhering to the safety instructions of this operating manual!
The Manufacturer is not liable for damages caused by the use of the machine that is in contradiction with the limit parameters of the machine and with the instructions for the use of the machine. The User bears the risk.
Immediately remove especially the failures that may negatively affect safety!
- Machine operation may be performed by a person authorised by the operator under these conditions:
 - It must own a valid driver's licence of the corresponding category,
 - It must be demonstrably familiarised with the safety regulations for work with the machine and must practically master the machine operation,
 - The machine may not be operated by juveniles,
 - It must know the meaning of the safety signs located on the machine. Their respecting is important for safe and reliable machine operation.
- Maintenance and servicing repairs on the machine may only be performed by a person :
 - Authorised by the operator,
 - Educated in the machinery field with knowledge of repairs of similar machines,
 - Demonstrably familiarised with safety regulations for work with the machine,
 - During a repair of a machine connected to a tractor, it must own a driver's licence of the corresponding category.
- Machine operator must secure the safety of other persons when working with the machine or transporting the machine.
- During machine work in the field or during transport, the operator must control the machine from the tractor's cabin.
-  The operator may enter the machine structure only with the machine at rest and blocked against movement, namely only for these reasons:
 - Adjustment of the machine working parts,
 - Repair and maintenance of the machine,
-  When stepping on the machine, do not step on roller tyres or other rotary parts. Those may turn and you can cause very serious injuries by the subsequent fall.
-  Any changes or modifications of machine may be performed only with written consent of the manufacturer.
For possible damage arisen due to ignoring this instruction, the producer bears no responsibility.
The machine must be maintained equipped with prescribed accessories and equipment including safety marking.
All warning and safety signs must be legible and in their places. In case of damage or loss, these signs must be immediately renewed.
- The operator must have the Operating Manual with the work safety requirements available at any time when working with the machine.

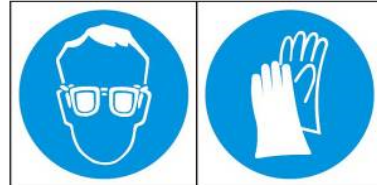


- The operator must not consume alcohol, medicines, narcotic and hallucinogenic substances that decrease his attention and coordination capabilities while using the machine.
If the operator must use medicines prescribed by a physician or uses freely sold medicines, he must be informed by a physician, whether he is capable of responsible and safe operation of the machine under these circumstances.


Protective tools :

For operation and maintenance use:

- tight clothes
- protective gloves and goggles against dust and sharp parts of the machine



3 MACHINE TRANSPORT USING TRANSPORT MEANS

- The transport means designed for machine transport must have the load capacity minimally identical with the weight of the transported machine. The total weight of the machine is stated on the production label.
- The dimensions of the transported machine including the transport means must comply with the valid regulations for road traffic (decrees, laws).
-  • The transported machine must be always fastened to the transport means so that its spontaneous loosening could not happen.
- The carrier is responsible for damage caused by the loosening of incorrectly or insufficiently fastened machine to the transport means.

4 MACHINE HANDLING USING LIFTING EQUIPMENT



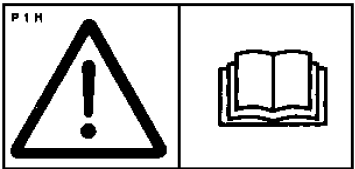

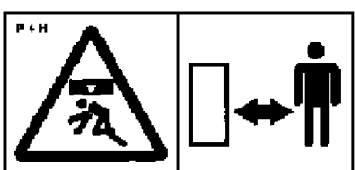
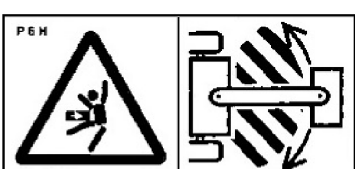

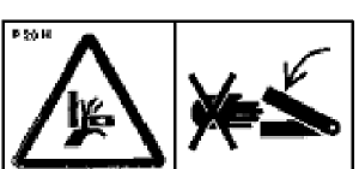
- The lifting equipment and tying means designed for handling of the machine must have their load capacity at least identical with the weight of the handled machine.
- Machine fastening for handling may only be performed in places designed for that and marked with self-adhesive labels showing the "chain" symbol. —○—○—
- After fastening (suspending) at designated points, it is forbidden to move in the space of possible reach of the handled machine.

5 WORK SAFETY LABELS

Warning safety labels serve for operator protection.

General:

- Strictly observe the warning safety labels.
- All safety instructions also apply to other users.
- Upon damage or destruction of the aforementioned "SAFETY LABEL" located on the machine, THE OPERATOR IS OBLIGED TO REPLACE IT WITH A NEW ONE!
- The position, appearance, and precise meaning of work safety labels on the machine is determined in the following tables and in the figure (Fig. 1).

WARNING SAFETY LABEL	LABEL TEXT	MACHINE POSITION
	Before handling the machine, carefully read the operating manual. Observe the instructions and safety regulations for machine operation during use.	P 1 H
	When connecting or disconnecting, do not step between the tractor and the machine, also do not enter this space, if the tractor and the machine are not at rest and the engine is not turned off.	P 2 H
	Stay out of reach of the drawn-up machine.	P 4 H
	Stay outside the reach of the tractor - agricultural machine set, if the tractor engine is in operation.	P 6 H
	For transport, as well as for work, the side foldable discs must be secured with a pin.	P 13 H
	When handling the side discs, do not touch the area of the folding joint.	P 20 H









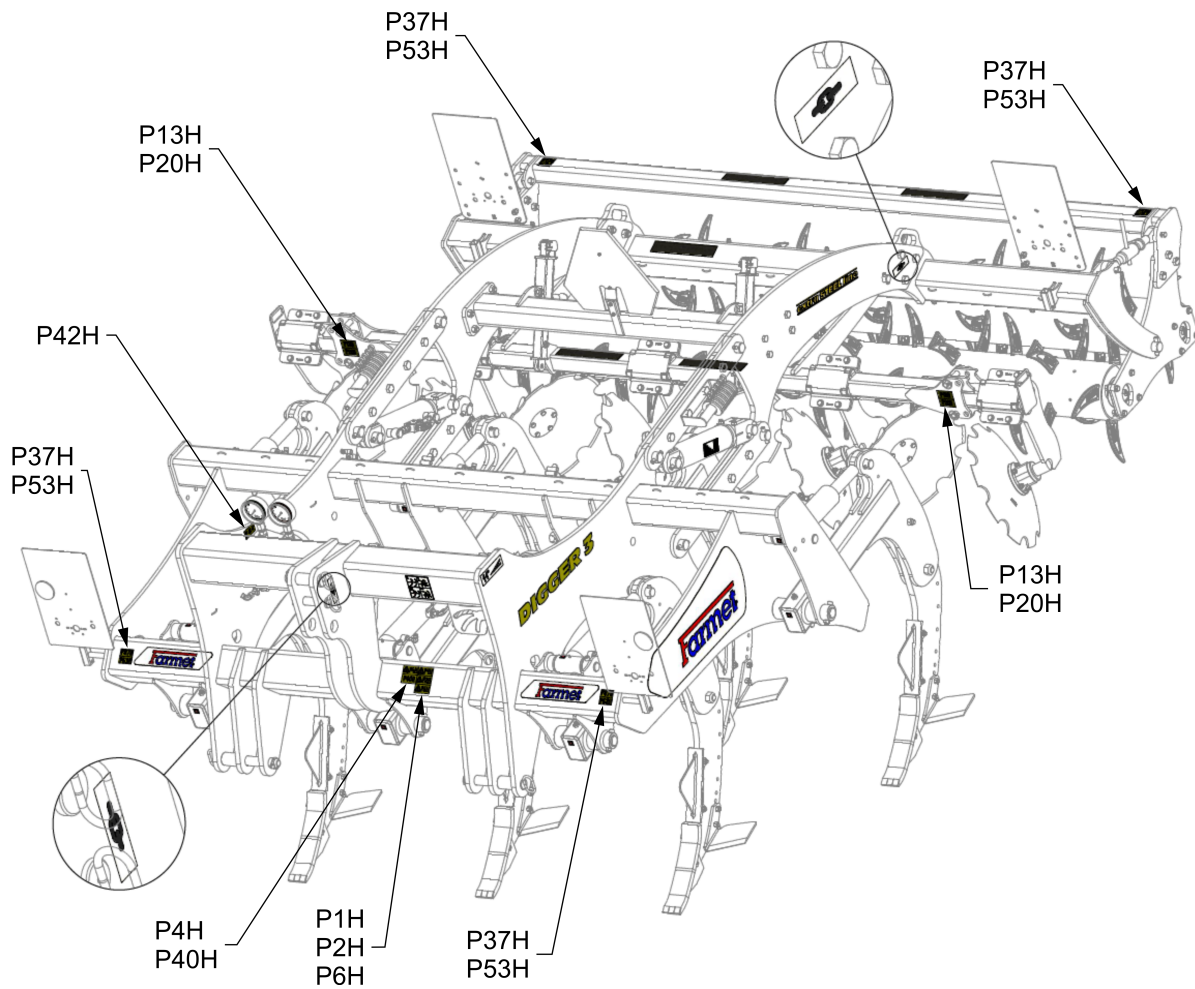
<div> <div>P 37 H</div>   </div>	<p>Travelling and transport on the machine structure is strictly forbidden.</p>	<p>P 37 H</p>
<div> <div>P 40 H</div>   </div>	<p>It is forbidden to dismantle or remove any hydraulic part when under pressure.</p>	<p>P 40 H</p>
<div> <div>P 42 H</div>   </div>	<p>The pressure container is under the pressure of gas and oil. For disassembly and repair, follow the instructions from the manual only.</p>	<p>P 42 H</p>
<div> <div>P 53 H</div>   </div>	<p>Do not approach the rotary parts of the machine, if these are not at rest, i.e. they do not turn.</p>	<p>P 53 H</p>

Fig. 1 - Location of safety labels on the machine

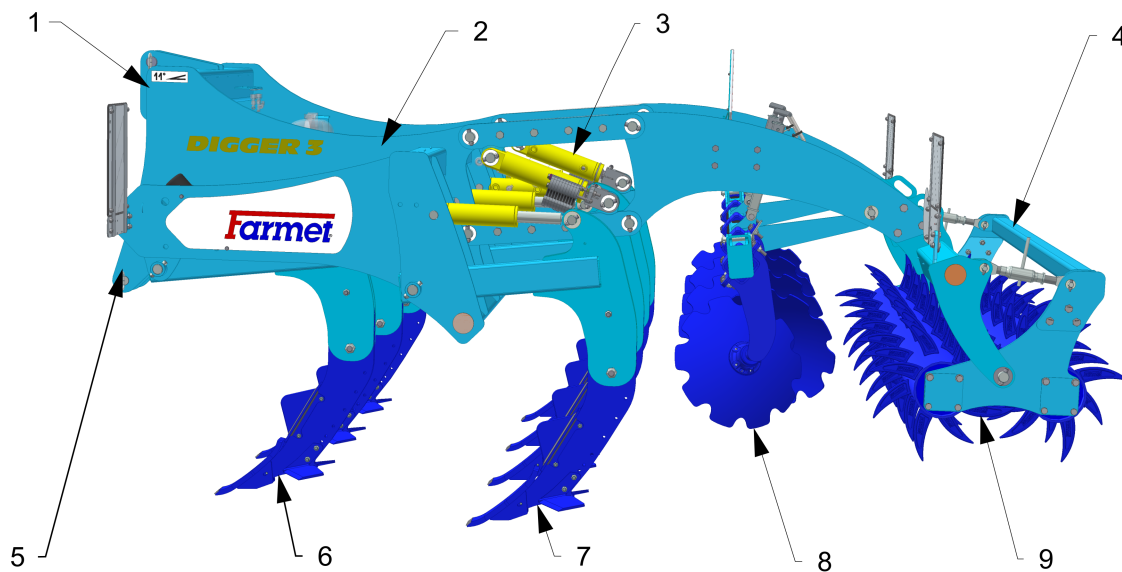


6 DESCRIPTION

The **DIGGER 3 N, 4 N** machines are structurally designed as a mounted machines.

The chisel plough is fitted with a three-point suspension TPS 3 and 4. The machine consists of the main frame which is fitted with two rows of shanks with ploughshares which are protected by automatic hydraulic protection and a shear bolt against overload. Behind the rear row of ploughshares, there is the parallel push linkage with which it is possible to adjust the height of the beam with packing discs and the rear roller.

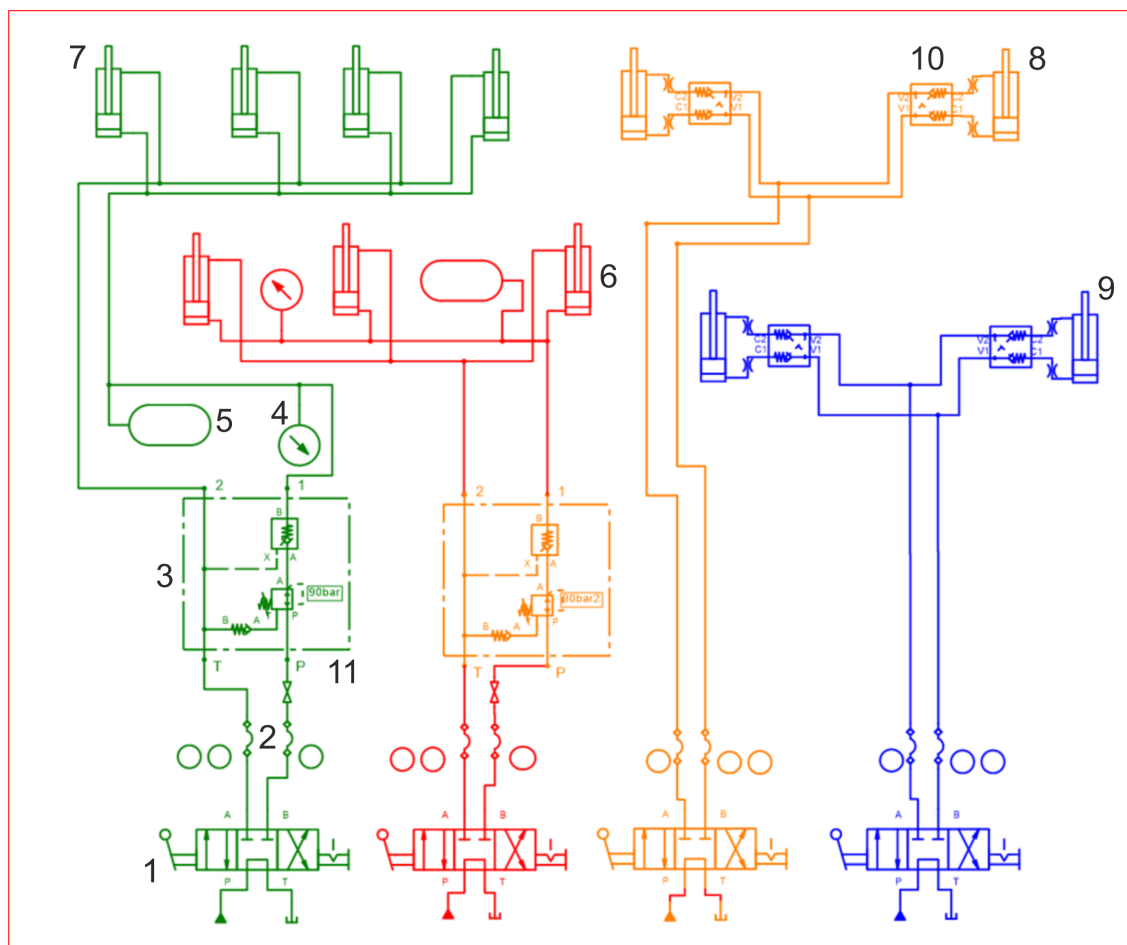
6.1 Working parts of the machine



1. Three-point suspension
2. Supporting frame
3. Setting of the position of the roller and discs
4. Rear frame rollers
5. TPS towing suspension
6. Front share row
7. Rear share row
8. Packing discs
9. Crumbling roller

6.2 Hydraulics

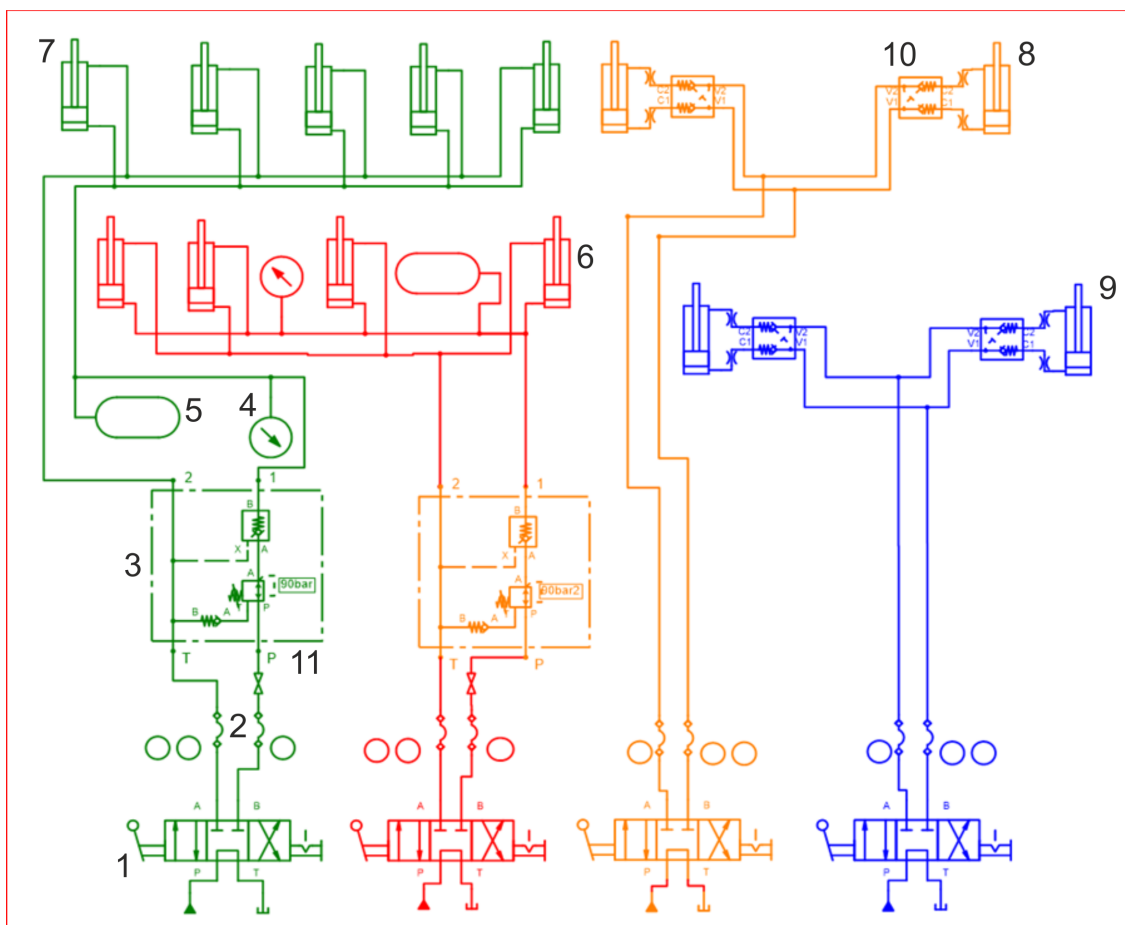
Fig. 2 - Hydraulic diagram of the DIGGER 3 N machine



- 1 – Control distributor (tractor)
- 2 – Hydraulic coupling
- 3 – One-way hydraulic shut-off valve
- 4 – Manometer
- 5 – Pressure accumulator

- 6 – Hydraulic roller (protection of the first row of ploughshares)
- 7 – Hydraulic roller (protection of the second row of ploughshares)
- 8 – Hydraulic roller (rear roller)
- 9 – Hydraulic cylinder for covering discs
- 10 – Shut-off valve
- 11 – Shut-off tap

Fig. 3 - Hydraulic diagram of the DIGGER 4 N machine



- 1 – Control distributor (tractor)
- 2 – Hydraulic coupling
- 3 – One-way hydraulic shut-off valve
- 4 – Manometer
- 5 – Pressure accumulator

- 6 – Hydraulic roller (protection of the first row of ploughshares)
- 7 – Hydraulic roller (protection of the second row of ploughshares)
- 8 – Hydraulic roller (rear roller)
- 9 – Hydraulic cylinder for covering discs
- 10 – Shut-off valve
- 11 – Shut-off tap



Parts of the hydraulic system of the machine, which are under pressure, are forbidden to disassemble. Hydraulic oil that penetrates the skin under high pressure causes severe injuries. In case of injury, seek a physician immediately.

6.3 The purpose of deep soil cultivation

In-depth soil loosening is a soil-improving intervention that mechanically scarifies compacted layer of soil. Depth looseners can also be used in soil-protection cultivating systems where the soil is in-depth loosened with a minimum surface failure. This can be effectively used with deep soils in more arid areas where there is a danger of wind erosion.


In-depth loosening can also be used for other purposes such as increasing water-accumulation capacity of soil and/or draining surface water into deeper parts of the soil profile.

Loosening the compacted layers under topsoil enables crop roots to penetrate deeper, which results in higher crop yield.

Conditions for effective in-depth soil loosening

The basic condition for effective in-depth loosening (around 0,5 m) is the appropriate soil moisture in the depth of loosening. The soil should be crumbly and always under the limit of plasticity and it must not show plastic deformations when being loosened. Loosening soil with excessive moisture can be counterproductive. If the soil to be loosened is extremely dry, the working resistance acting on the Loosener is enormous. To decide on the soil conditions it is advisable to use a probing rod. When applying pressure on a soil sample, the soil should fall to smaller lumps.

7 MACHINE ASSEMBLY AT THE CUSTOMER

- The operator must perform the assembly according to the instructions of the producer, best in cooperation with the expert servicing technician determined by the producer.
-  • The operator must secure a functional test of all assembled parts after the completion of the machine assembly.
- The operator must secure that the handling of the machine using lifting equipment during its assembly is in accordance with chapter „4“.

8 COMMISSIONING



- Before taking over the machine, test and check, whether damage occurred during transport and whether all parts contained in the bill of delivery were supplied.
- Before commissioning the machine, carefully read this operating manual, especially Chapters 1–5. Before the first use of the machine, familiarise yourselves with its controls and overall function.
- During work with the machine, observe not only the instructions of this operating manual but also generally valid regulations of work safety, health protection, fire and transport safety, and environmental protection.
- The operator must check the machine before every use (commissioning) from the standpoint of completeness, work safety, work hygiene, fire safety, transport safety, and environmental protection. A machine showing signs of damage must not be commissioned.
- Aggregation of the machine with the tractor is to be performed on a flat and hardened surface.
- When working on slopes, observe the lowest slope grade of the set **TRACTOR - MACHINE**.
- Before starting the tractor motor, check whether no person or animal is in the working space of the set and push the warning sound signal.
- The operator is responsible for the safety and all damage caused by the operation of the tractor and the connected machine.
- The operator is obliged to adhere to the technical and safety regulations of the machine determined by the producer when working.
- The operator is obliged to retract the working bodies of the machine from the ground when turning at the headland.
- The operator is obliged to observe the prescribed working depths and speeds stated in the manual in Chap.1 when working with the machine.
- The operator is obliged to lower the machine to the ground and secure the set against movement before leaving the tractor cabin.
- Lower the machine with caution so that the chisels and shares are not damaged by sharp lowering to the ground. Position the machine on a flat ground so that the weight of the machine is evenly transferred to all shares.

8.1 Agregation to a tractor

- The machine can be connected only to a tractor, whose curb weight is identical or higher than the overall weight of the connected machine.
- The machine operator must observe all generally valid regulations of work safety, health protection, fire safety, and environmental protection.
- The operator may connect the machine exclusively to a tractor that is equipped with a rear three-point suspension and a functional undamaged hydraulic system.
- The table of requirements for the towing means for work with the machine:

Requirement for the tractor engine power for chisel plough DIGGER 3 N			180 – 270 kW (240 – 360 HP)*
Requirement for the tractor engine power for chisel plough DIGGER 4 N			240 – 360 kW (330 – 450 HP)*
Requirement for the tractor's TPS	Spacing of the lower suspension joints (measured at the joint axes)	TBZ3	1040 ± 1,5 mm (40,94 ±0,06 in)
		TBZ 4	1250 ± 1,5 mm (49,21 ±0,06 in)
		TBZ 4 US	1040 ± 1,5 mm (40,94 ±0,06 in)
	ø of the hole of the lower suspension joints for the machine suspension pivots	TBZ3	37,4 – 37,75 mm (1,47 – 1,49 in)
		TBZ 4	51 – 51,5 mm (2,01 – 2,03 in)
		TBZ 4 US	
	ø of the hole of the upper suspension joint for the machine suspension pivot	TBZ3	32,0 – 32,25 mm (1,26 – 1,27 in)
		TBZ 4	45,2– 45,5 mm (1,78 – 1,79 in)
		TBZ 4 US	
Requirement for the tractor's hydraulic system	protection circuit of the first row of ploughshares		Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12,5
	protection circuit of the second row of ploughshares		Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12,5
	roller lifting circuit		Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12,5
	** control circuit for levelling discs		Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12,5

* Recommended towing means, the real towing force may significantly vary according to the processing depth, soil conditions, land slope, working body wear and adjustment

** Optional equipment

- The machine is attached to a three-point suspension TPS as per Tabl.
- The machine aggregated with the tractor changes the distribution of the weight to the individual axles of the tractor. The weight of the front axle is reduced and therefore the controllability gets worse. It also affects braking properties.



When connecting, no persons may stay in the space between the tractor and the machine.

HYDRAULIC OIL SPECIFICATIONS

The hydraulic circuit of the machine is filled with oil at the factory:

Performance level: API GL 5; SAE 10W-30; SAE 80

Manufacturer's specification:

ALLISON C4; CATERPILLAR TO-4; VOLVO VCE WB 101; 97303 JONH DEERE 20C/20D ZF TE-ML 03E/05F/06E/06F/06K/17E/21F

PARKER DENISON HF-0/HF-1/HF-2 New HOLLAND NH 420A/410B MASSEY FERGUSON M1135/M1141/M1143/ M1145

KUBOTA UDT Fluid CASE IH MS-1204/MS-1206/ MS-1207/MS-1209 FORD M2C134D M2C86B/C CNH MAT 3525/ MAT3526

SPERRY VICKERS/EATON M2950S,I-280-S SAUER SUNDSTRAND(DANFOSS) Hydro Static Trans fluid; CASE CNH MAT 3540(CVT), Claas(CVT), AGCO CVT; ML200, Valtra G2-10(XT-60+)

8.2 Hydraulics connection

- The hydraulic system is under high pressure. Regularly check for leaks and immediately remove obvious damage of all lines, hoses, and pipe unions.
- When seeking and removing leaks, use only the suitable tools.
- For connecting the hydraulic system of the machine to the tractor, use the plug (on the machine) and the socket (on the tractor) of the quick-couplers of the same type.
- When connecting the rapid couplings of the machine with the tractor hydraulic circuits, make sure that the protections of the front row of ploughshares **RED DUST CAPS** are on one control circuit, the protections of the second row of ploughshares **GREEN DUST CAPS** are on the second control circuit and the roller lifting **YELLOW DUST CAPS** are on the third control circuit.
- If the machine is not equipped with hydraulically protected ploughshares, only connect the **YELLOW DUST CAPS**.

RED DUST CAPS – protection of the first row of ploughshares

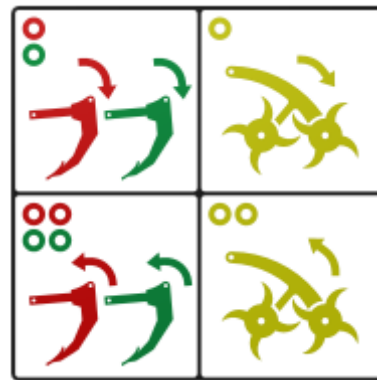
- 1 TAPE – pressure branch – ploughshare protection
- 2 TAPES – reverse branch – ploughshare shallowing

GREEN DUST CAPS – protection of the second row of ploughshares

- 1 TAPE – pressure branch – ploughshare protection
- 2 TAPES – reverse branch – ploughshare shallowing

YELLOW DUST CAPS – control of the roller

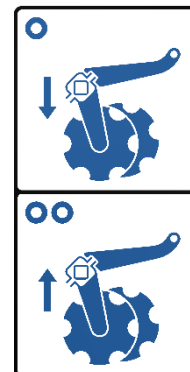
- 1 TAPE – drawing out roller piston-rods⇒shallowing the machine
- 2 TAPES – drawing in roller piston-rods⇒recess of the machine



- If your machine is delivered with optional equipment, i.e. the hydraulically controlled levelling discs, connect the quick-couplings of the **BLUE DUST CAPS** circuit to the fourth tractor control circuit.

BLUE DUST CAPS – levelling discs control

- 1 TAPE – pressure branch – lowering discs
- 2 TAPES – return branch – lifting discs



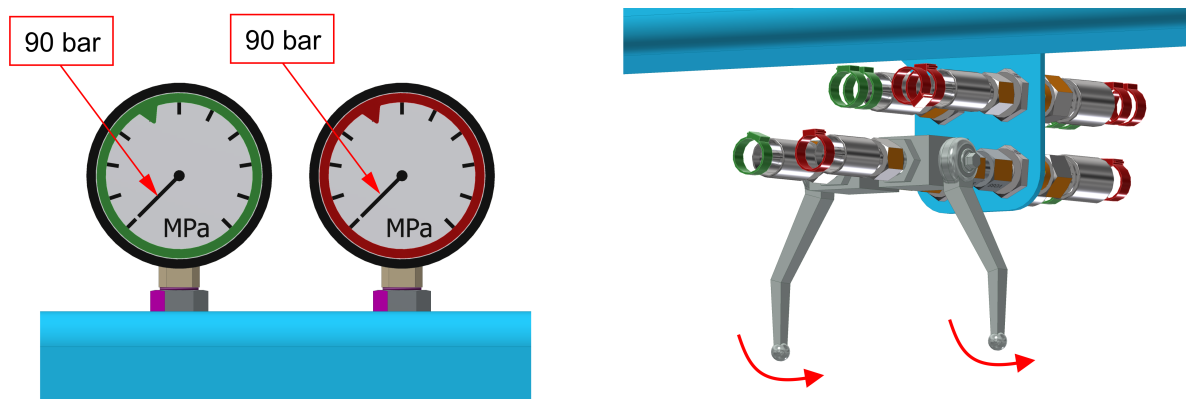
In order to prevent accidental or foreign person (children, passengers) caused movement of the hydraulics, the control switchboards on the tractor must be secured or blocked in the transport position.

8.3 Hydraulic machine protection function (HS)

- Hydraulic protection of the front and rear row of ploughshares is implemented by means of pressure accumulators.
- To ensure proper operation, the **ploughshare protection circuits** must be pressurized to **90 bar** and these circuits must then remain in the **floating position**.
- The hydraulic protection circuits of the machine are also equipped with 2 ball valves, one for each row of ploughshares.
- The ball valves are used for easier disconnection of the hydraulic quick-couplings from the tractor distributor by allowing depressurizing of the supply hydraulic hoses of the machine ploughshare protection circuit, while maintaining pressure in the ploughshare protection circuit that has to be maintained to safely shut the machine down.

The procedure for setting the hydraulic protection

- Check that the hydraulic hoses are connected properly according to the preceding chapter.
- Check that both ball valves of the ploughshare protection circuit are open; if not, open them.
- Pressurize the **protection circuit of the first row of ploughshares to 90 bar** – using the hose marked with one red tape, monitor the pressure on the manometer with the red marking.
- On the tractor distributor, set the **red circuit to the floating position**.
- Pressurize the **protection circuit of the second row of ploughshares to 90 bar** – using the hose marked with one green tape, monitor the pressure on the manometer with the green marking.
- On the tractor distributor, set the **green circuit to the floating position**.
- When this has been set, the protection is ready for work.



1 – open valves

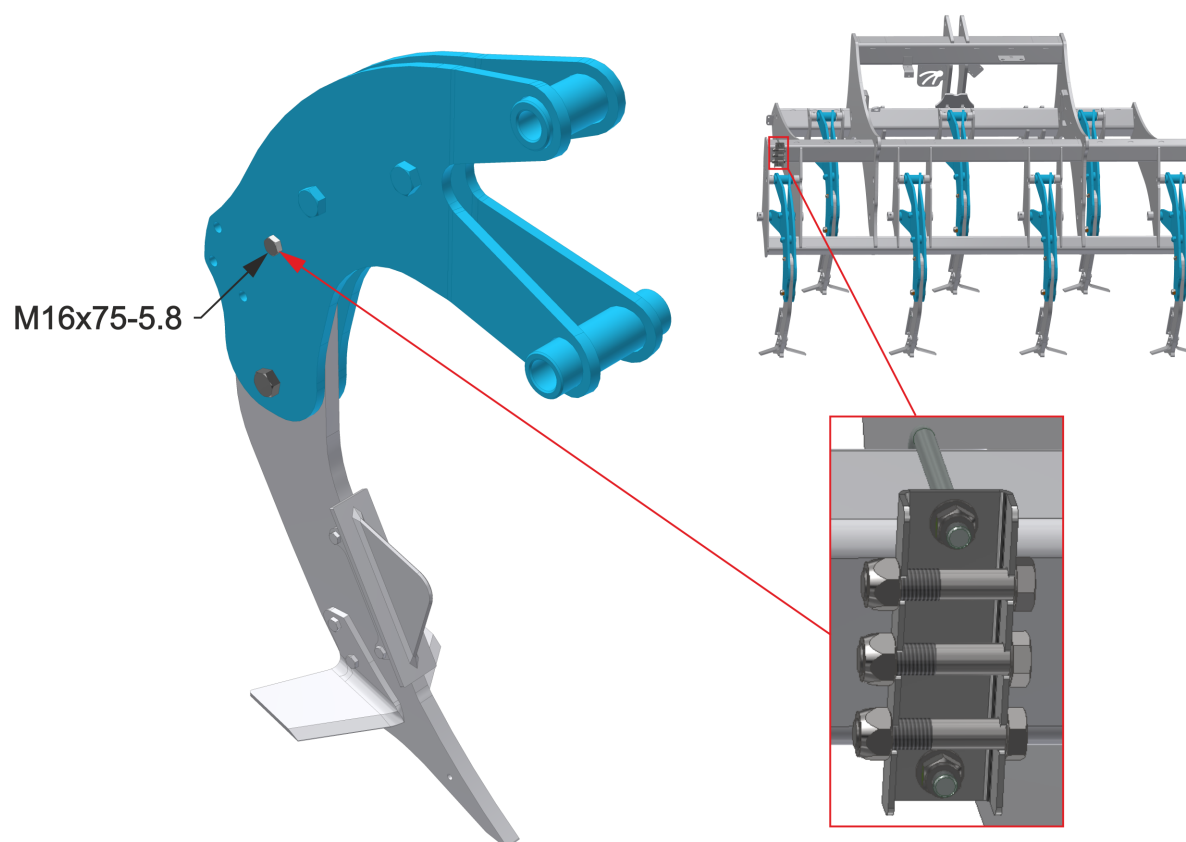
PRESSURE VESSEL

Never open or adjust (welding, drilling etc.) the pressure vessel (pressure accumulator). The pressure vessel is still under gas pressure even after it has been emptied.

Empty the pressure vessel in case of any work on the hydraulics of the machine. The manometer must not show any pressure, or the pressure on the manometer must decrease to 0 bars. Only then it is permitted to work on the hydraulic circuit.

8.4 Mechanical machine protection (BS)

- If the shear bolt is damaged, use the spare bolt located on the machine, see the picture below.



9 MACHINE TRANSPORT ON ROADS

Transport Position of DIGGER 3 N and DIGGER 4 N

- ❗
 - Hitch the machine to the tractor using the three-point suspension device and lift the machine by means of the lower tractor arms.
 - For road transport, the edge discs must be folded and secured with pins as per Fig. 4.
 - If the machine is equipped with additional rollers (AR), they must be folded down and secured with pins for transport on public roads, see Fig. 4.
 - If the machine is equipped with side deflectors (SD), they must be secured in the raised position for transport on public roads and folded down and secured with pins, see Fig. 4.
 - The machine must be equipped with removable shields with marking of contours, functional lighting, and the board of the rear marking for slow vehicles (according to ECE No. 69).
 - The lighting must be activated during travelling on roads.
 - The tractor must be equipped with a special light device of an orange colour, which must be activated during travelling on roads.
 - Secure the lower shoulders of the tractor TPS from side swing.
 - The lower arms of the tractor rear three-point suspension must be secured in the upper position, and the operating lever of the lower arms of the tractor three-point suspension must be protected against undesirable activation of the arms.
 - The maximum transport speed during travelling on roads is **25 kph (15,5 mph)**.

⚠ **Ban of transport with decreased visibility!**

Fig. 4 - transport position of the machine

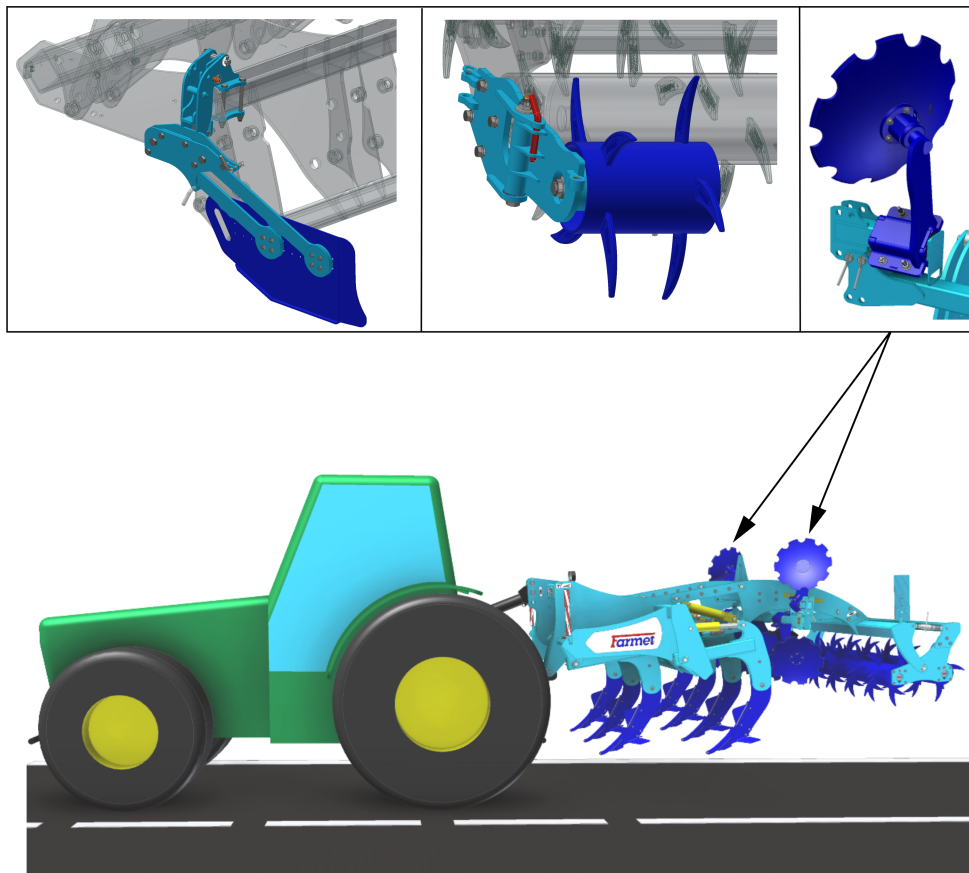
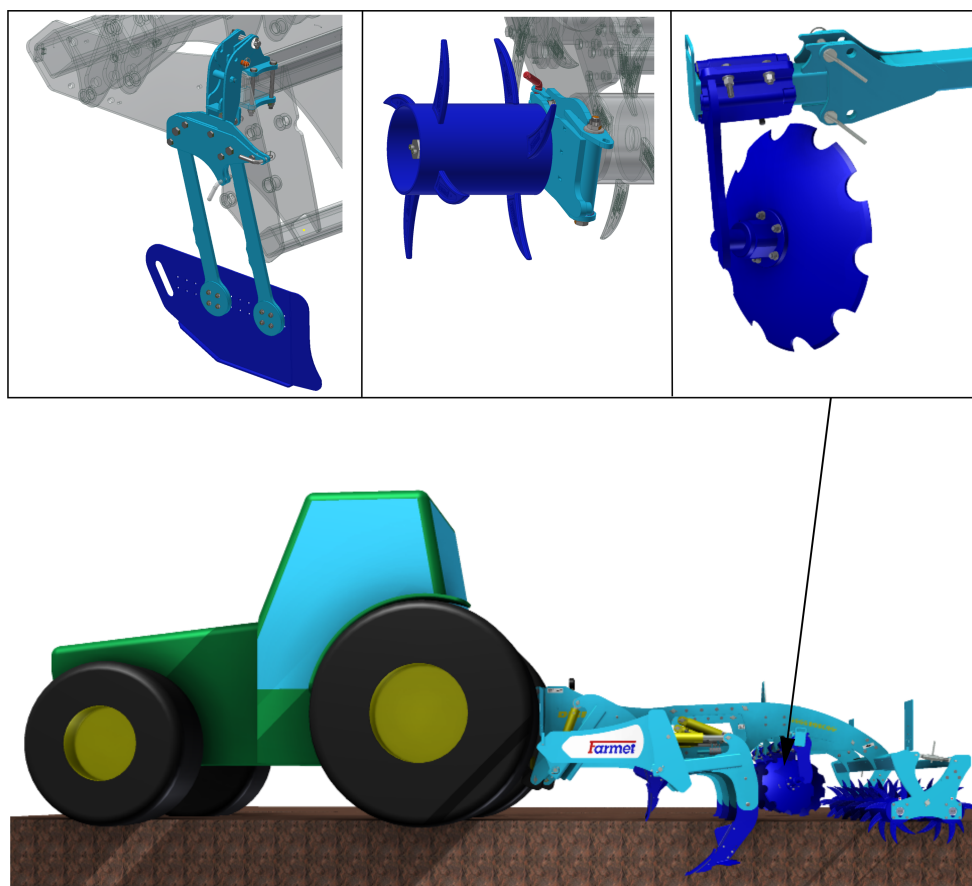


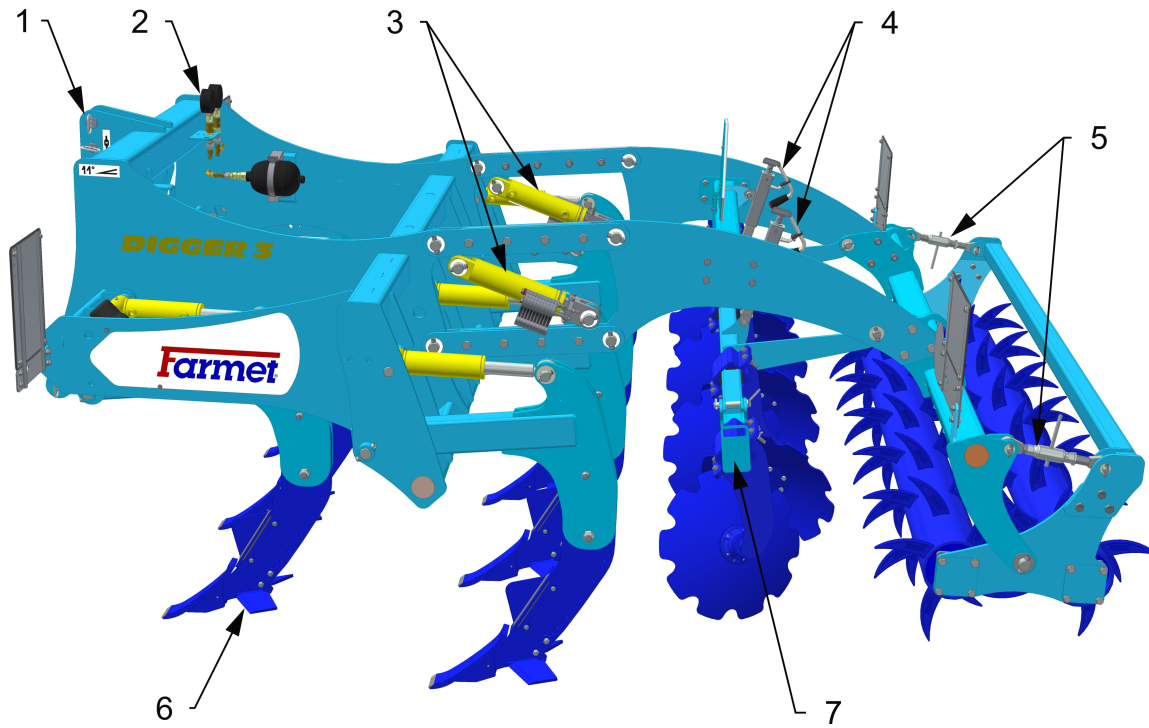
Fig. 5 - working position of the machine



- The operator is obliged to pay increased attention during transport on roads, due to the transport dimensions of the machine.
- The operator must observe the valid regulations for transport on roads (laws, decrees) after connecting the machine to the tractor, for reason of a change of the axle load. The driving properties of the set also change depending on the terrain nature, adapt the manner of driving to these conditions.
- Only machines with a valid technical certificate issued in accordance with the valid regulation on the approval of technical qualification and operation on public communications as amended may be transported on public communications. Machines without a valid technical certificate may only be transported on public communications when carried by a towed trailer or other approved means of transport in accordance with the valid regulation.
- The operator is obliged to secure sufficient outlook during reversing from his position of the tractor driver. In case of insufficient outlook, the operator is obliged to call a competent and informed person.
- The operator must secure the arms of the rear TPS of the tractor in the transport position during road transport, i.e. prevent unexpected arm drop using the hydraulic arm control lever. At the same time, the arms of the rear TPS of the tractor must be secured against side swinging.
- During machine transport on roads, the operator must observe the valid laws and decrees that deal with this topic and which specify the relationships of the tractor axle load depending on transport speed.
- Clean the entire machine from any accumulated soil before the transportation on the road.

10 MACHINE ADJUSTMENT

- The working parts of the machine can be adjusted by the operator only when the machine is idle, i.e. not working and secured against movement.



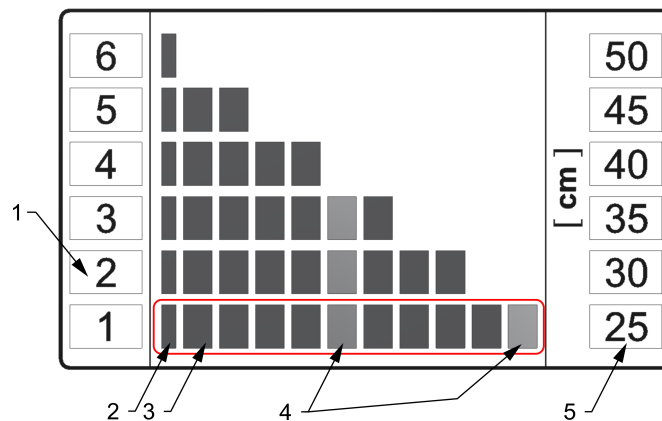
- 1 – TPS – setting of the longitudinal level
- 2 – Manometers – ploughshare protection pressure
- 3 – Piston rod – setting of the working depth and disc position
- 4 – Handles – setting of the disc position
- 5 – Nut – setting of the roller inclination
- 6 – Height-adjustable wings
- 7 – Edge discs – width-adjustable

k,

10.1 Adjusting the working depth of the machine

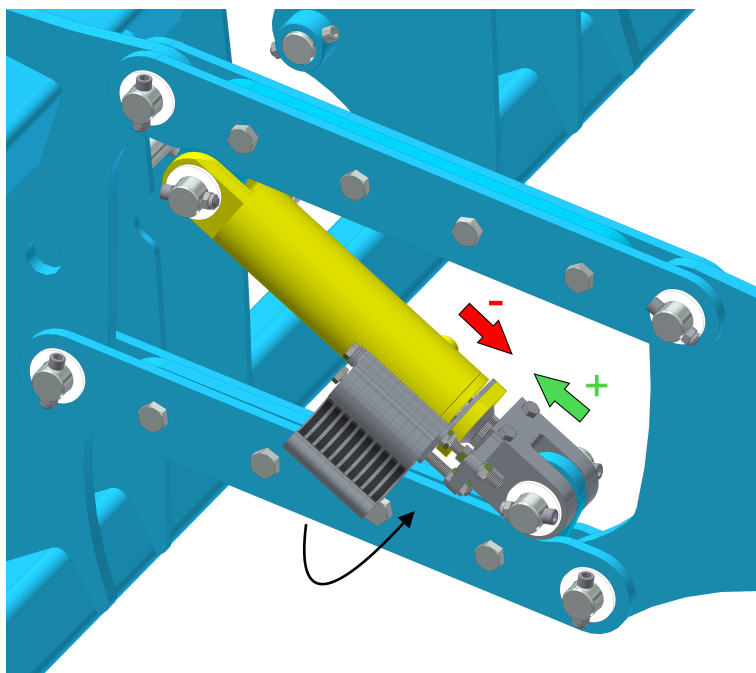
- The working depth is set by means of washers on the piston rods of the rear roller.
- 12 mm thick washers are used for setting the depth, where one washer changes the depth by 25 mm.
- For the required embedding of the machine, the individual combinations of the spacer washers are provided in Fig. 5.
- The working depths mentioned below are only approximate and can differ depending on the given soil conditions.

Fig. 6 - washer combinations for the setting of the required depth

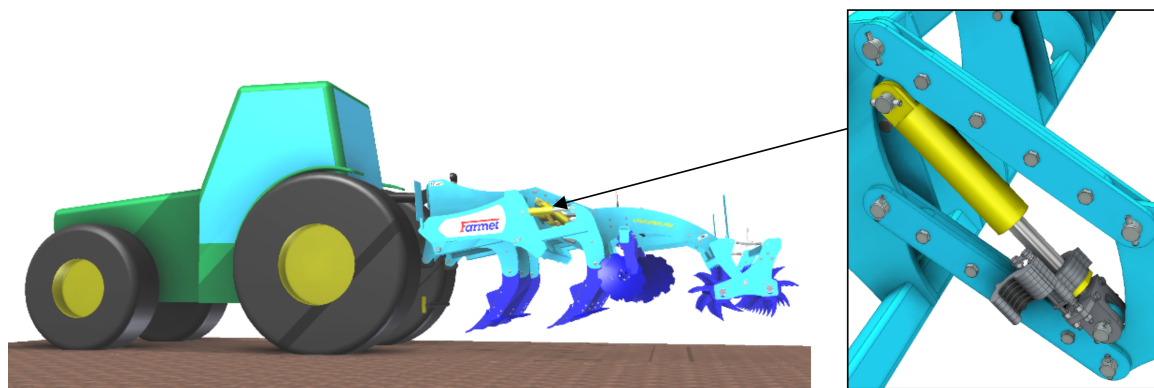


- 1 – Position number
 2 – Fixed washer
 3 – Number of washers placed on the roller piston rod for the required processing depth of the machine
 4 – Separating washer
 5 – Processing depth (cm)

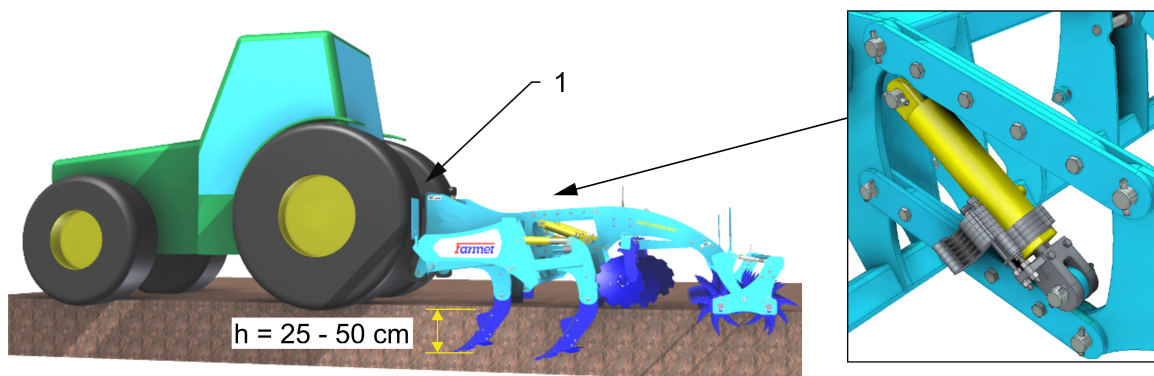
When changing the depth setting, always add washers from bottom to top and remove them from top to bottom.



1. Lift the machine in the tractor hitch and lower the rollers by means of the piston rods to the maximum lower position (piston rods out). Place the appropriate number of spacer washers on the piston rods of the rollers.



Placement of the spacer washers on the roller piston rods


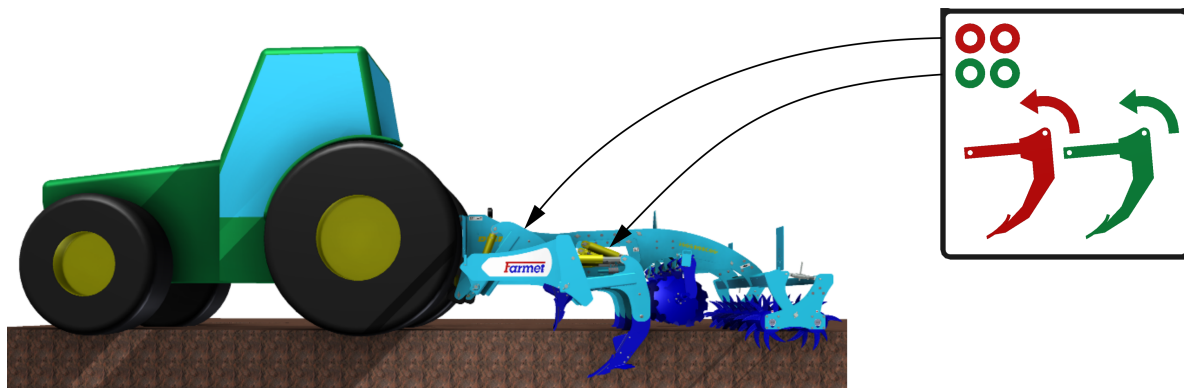
2. Slide the roller piston rods to the maximum upper position (piston rods in) so that the spacer washers placed on these piston rods are firmly clamped. You can embed the machine gradually (while driving) to the soil, until it leans against the rear roller. By the position of the tractor lower arms and adjustment of the tractor third point rod, set the longitudinal level of the machine, thus ensuring the same processing depth of the first and second row of ploughshares.

Machine embedding and adjustment of the longitudinal level of the machine


1 – TPS third point– setting of the longitudinal level

10.2 Work with one row of ploughshares

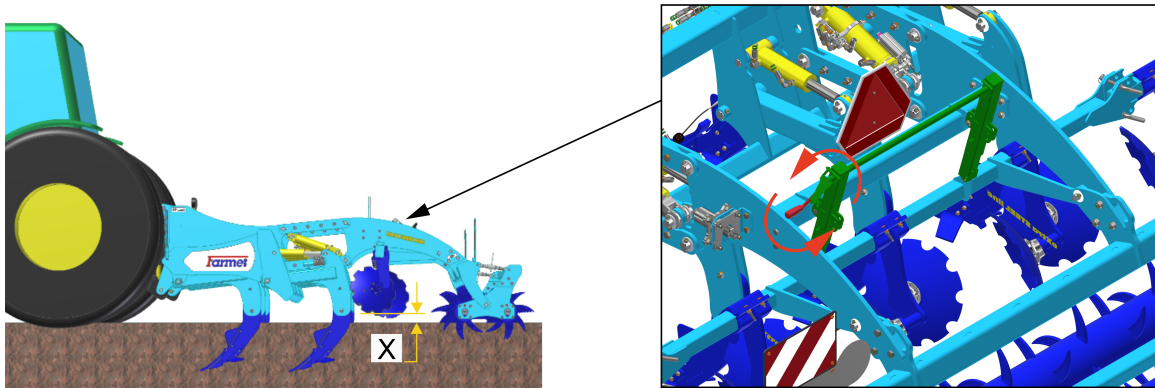
- In case that the tractor output is insufficient due to more compacted local soil, or due to considerable slippage of the tractor wheels, resulting in inefficient transmission of power to the washer, it is possible to work with one row of DIGGER ploughshares only.
- When working with one row of ploughshares, it is recommended that you lift the first row and work with the rear row only, in order to maintain the working width of the machine.
- Both rows of ploughshares have their own separate hydraulic protection circuits
- The first row of ploughshares can be lifted using the red hose marked with 
- The second row of ploughshares can be lifted using the green hose marked with 



10.3 Setting the leveling discs

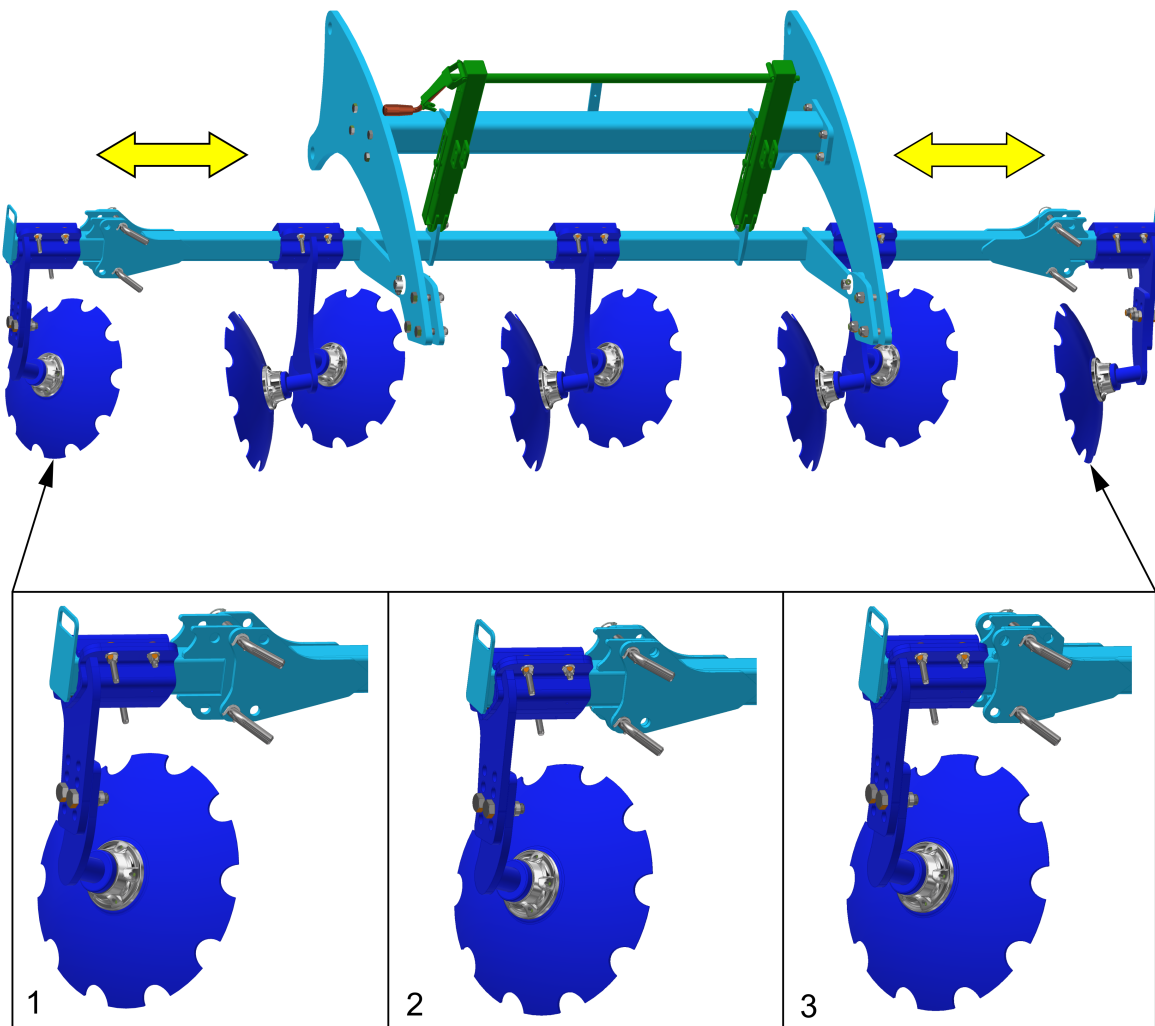
- Behind the second row of ploughshares, there are the directing discs which, if properly adjusted, increase the quality of the output behind the machine - above all, they eliminate land unevenness along the entire working width.
- Levelling discs are not designed for cultivating compacted soil, but rather for directing the processed soil and covering it with finer soil along the entire working width of the machine.
- The working height of the levelling discs is adjusted by two handles as per Fig. 7.
- Due to the fact that the disc beam is connected with the roller frame, when changing the machine working depth, the working height of the discs is changed as well, which means that the setting by means of handles is used for fine adjustment of the disc position.

Fig. 7 - setting of the disc height



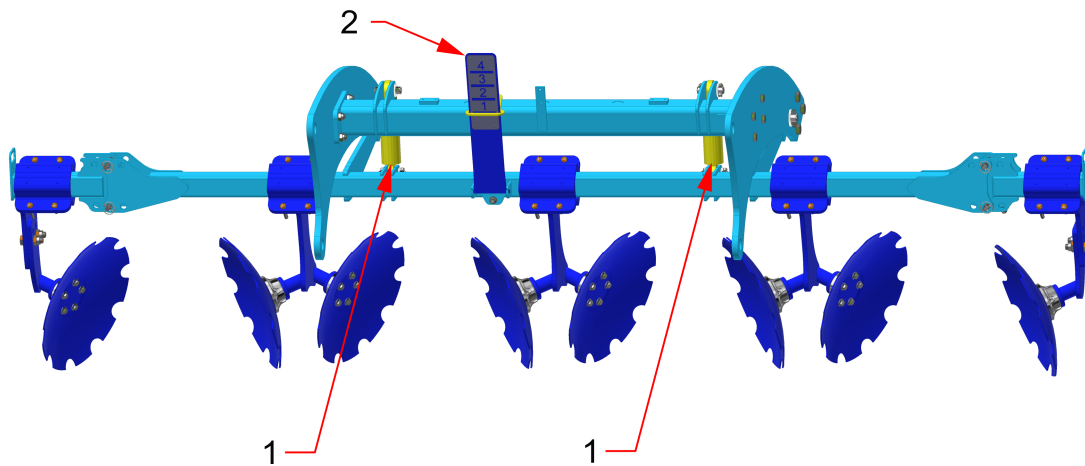
- With edge discs, it is possible to set three width positions for work as per Fig. 8 and thus achieve optimal directing of the soil towards the rear roller in various soil conditions.
- For transport, the edge discs must be folded as per chapter 9.

Fig. 8 - setting options for edge levelling discs for work



10.4 Hydraulic control of levelling discs

- The DIGGER machine may be equipped with hydraulically controlled levelling discs at the customer's request. The system lifts and lowers disks using a hydraulic circuit marked with blue dustlers instead of the standardly delivered mechanical jacks.
- For better view of the disc position, the control is equipped with gauges displaying the 1 – 10 position scale.

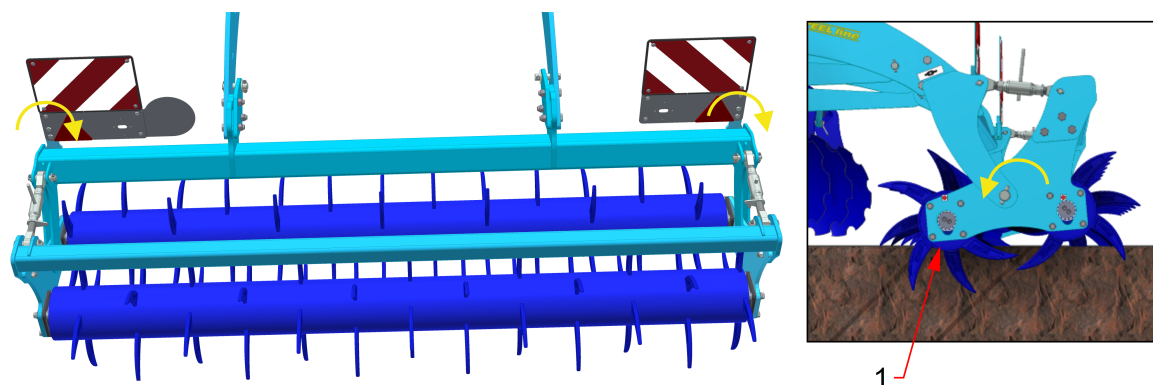


- 1 – Piston rods
2 – Gauges
A – View from tractor

10.5 DSR roller angle adjustment

- For optimal clod crushing in the processed soil and more efficient self-cleaning of the roller, it is, under certain conditions, necessary to incline the roller, in a majority of cases it is appropriate to increase the down pressure on the front roller.
- Inclination can be changed by means of adjustment screws as per Fig. 10.

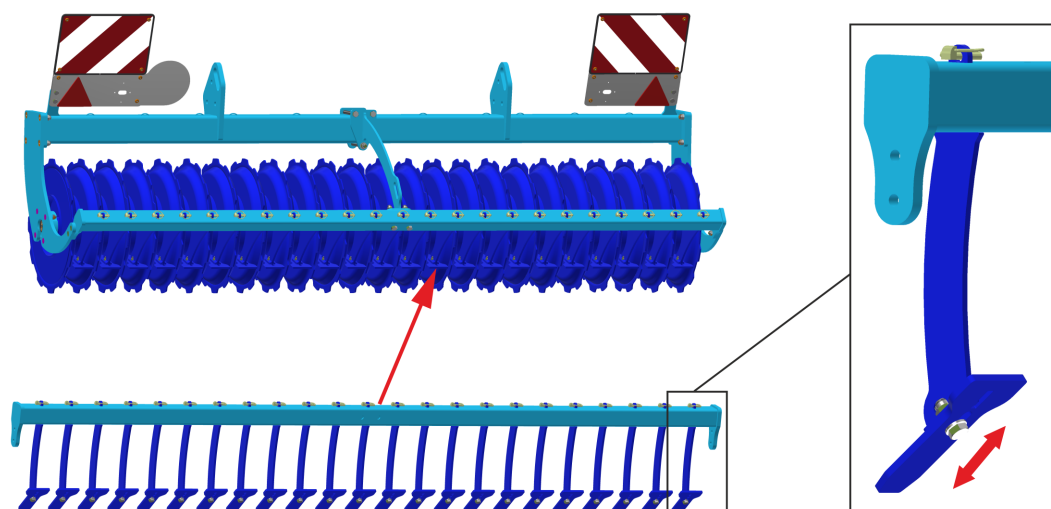
Fig. 9 - roller inclination change



1 – Increased down pressure

10.6 SDR roller and cleaner adjustment

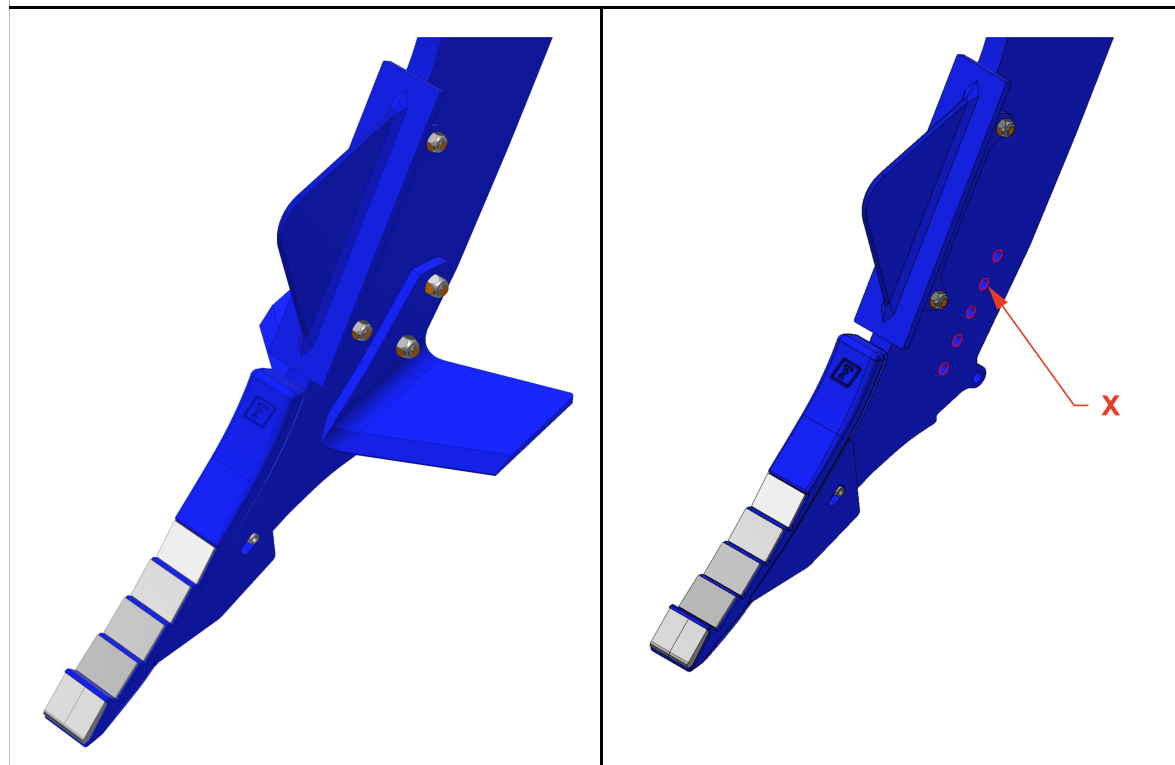
- The individual SDR cylinder scrapers can be adjusted separately. By loosening the screw, the scraper can be set to the correct position and then the screw is tightened. The scraper must lightly touch the cylinder.



10.7 Setting the wings

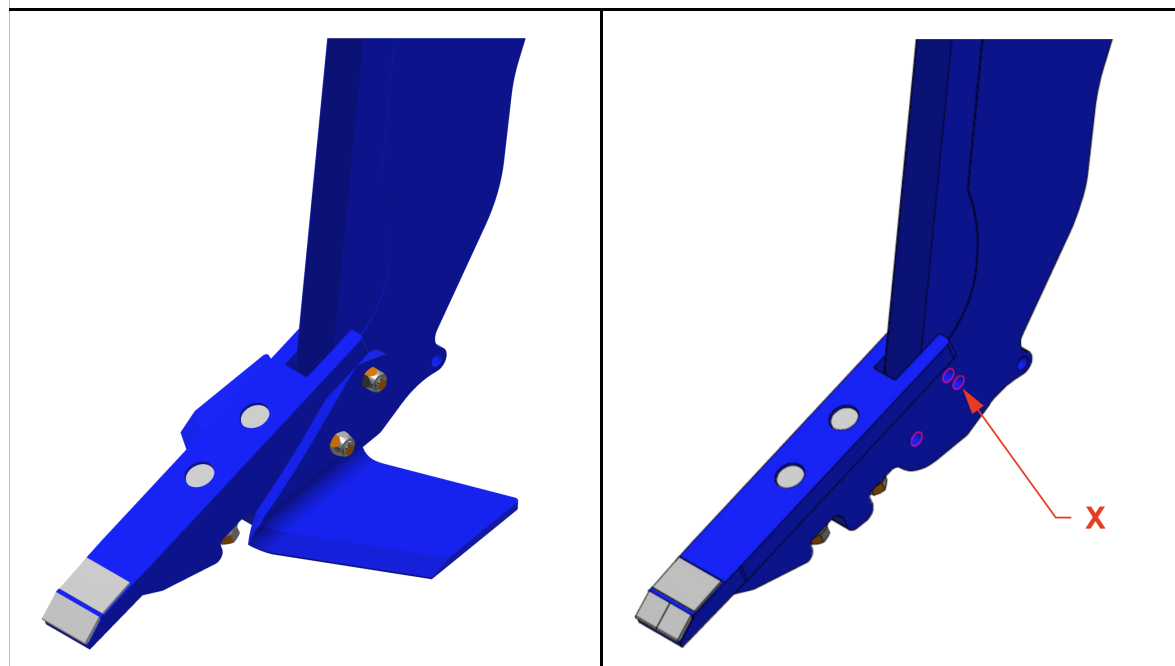
MIX TINES

- The machine allows you to adjust the height of the wings according to soil cultivation requirements.
- Select the desired height by appropriately positioning the wing bolts.



NO MIX TINES

- The machine allows you to adjust the tilt of the wings according to soil cultivation requirements.
- Select the desired tilt by appropriately positioning the wing bolts.



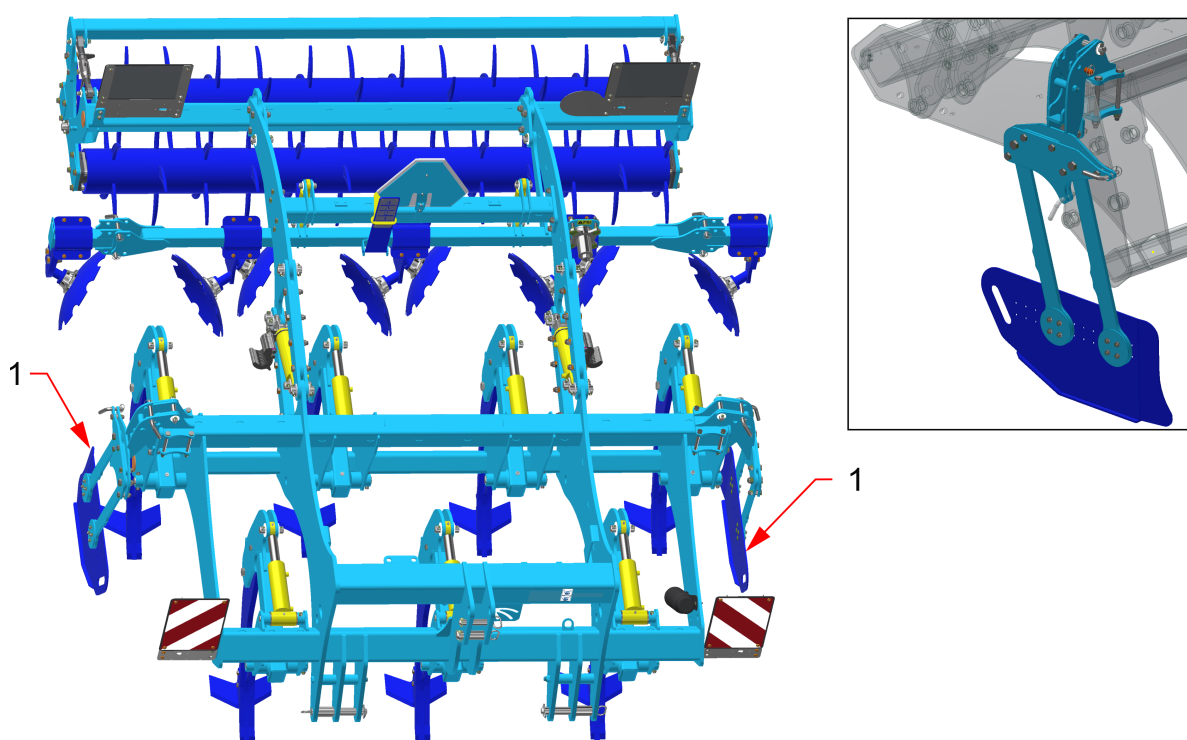
X – bolt position

11 OPTIONAL EQUIPMENT

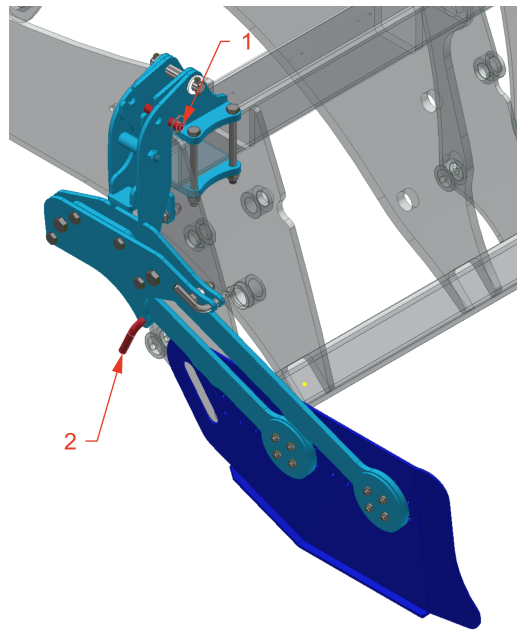
11.1 Side Deflectors

- When operating the machine, ridges may form on some soil types along the sides. In such cases, the DIGGER machine can be equipped with optional side deflectors.
- The purpose of the side deflectors is to direct the flow of processed soil toward the outer levelling discs.
- The deflectors automatically adjust to the cultivation depth, so no height adjustment is needed.
- In the direction of travel, the deflectors can be set to five working positions. For width adjustment, they can be set to a floating position without a pin, which is suitable for a large amount of plant residue. Alternatively, you can secure the deflectors with a pin, preventing them from swinging outward.
- For transport on public roads, the side deflectors must be folded into the transport position and secured with pins to prevent them from unfolding.

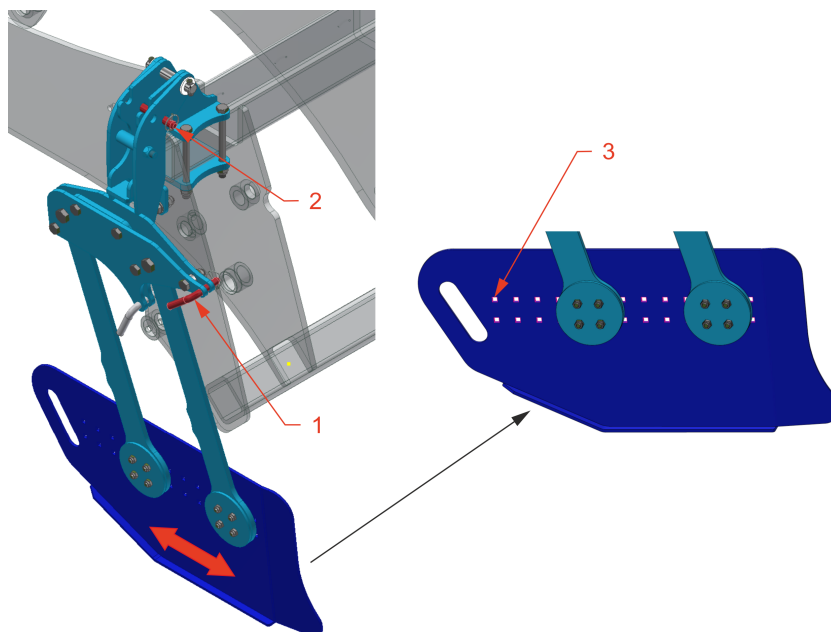
Side deflector placement



1 – side deflectors

Transport position of side deflectors


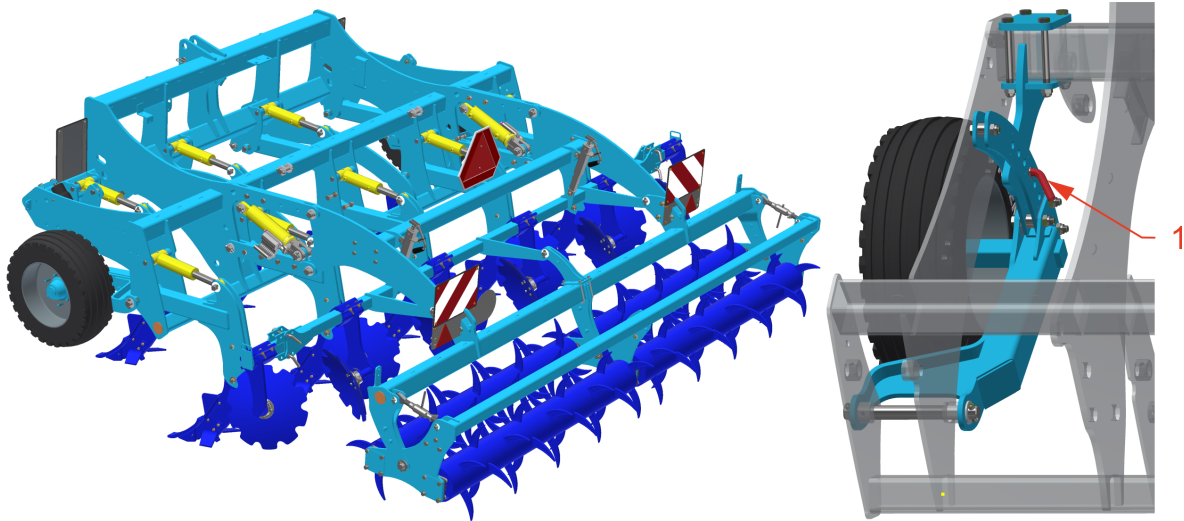
- 1 – Securing the transport position with a pin
- 2 – Securing in the raised position

Working positions of side deflectors


- 1 – Removing the pin for lifting the deflector
- 2 – Removing the transport pin
- 3 – Deflector adjustment

11.2 Tracing wheels (GW)

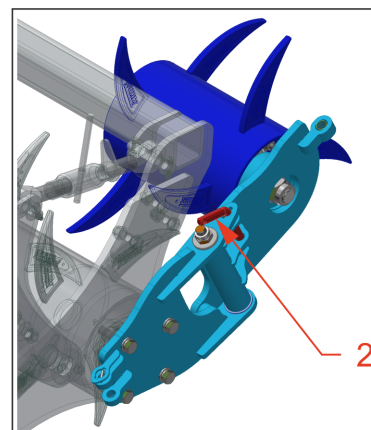
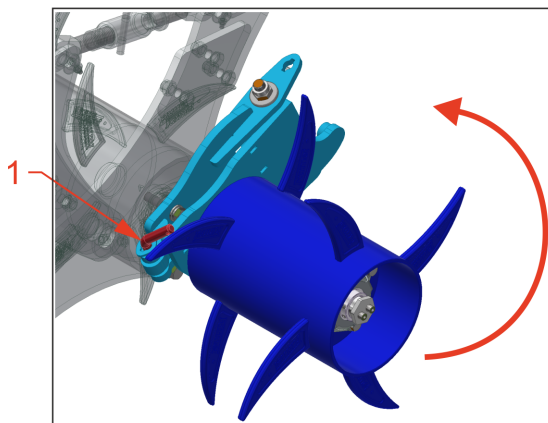
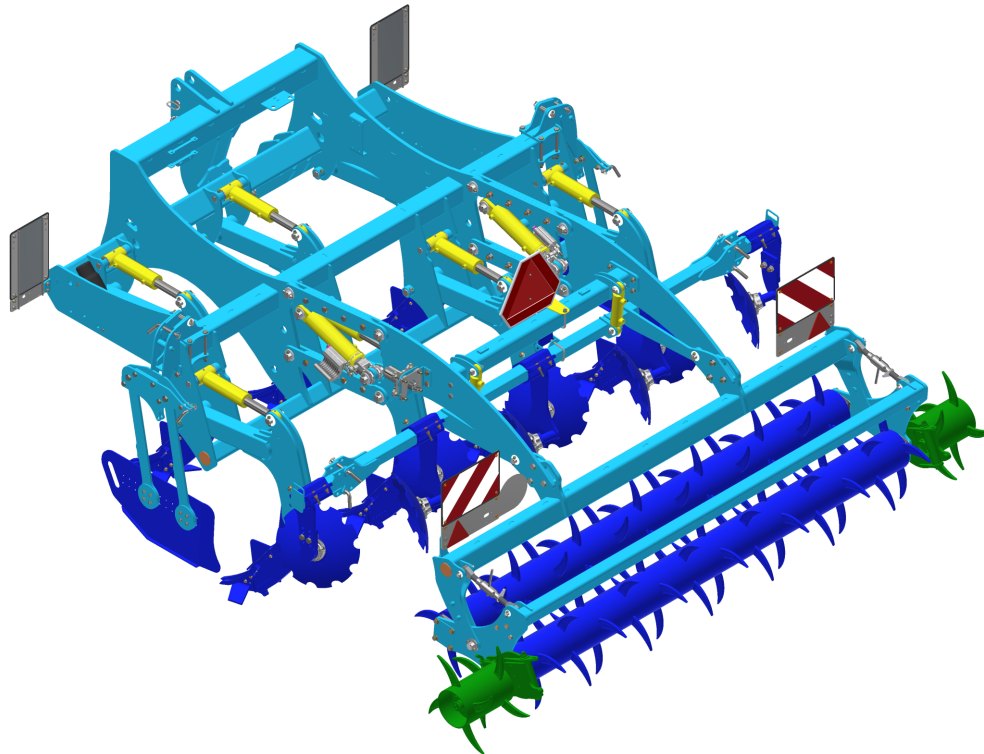
- When working with the machine, it may sink into some types of soil. In such cases, the DIGGER machine can be equipped with optional tracing wheels.
- The purpose of the tracing wheels is to stabilize the loosening depth.
- You can adjust the height of the tracing wheels using a securing pin.
- Select the desired height based on the plate marked with the depth.
- Secure it with the pin.



1 – Adjusting the pin for the copying wheel position

11.3 Additional side rollers (AR)

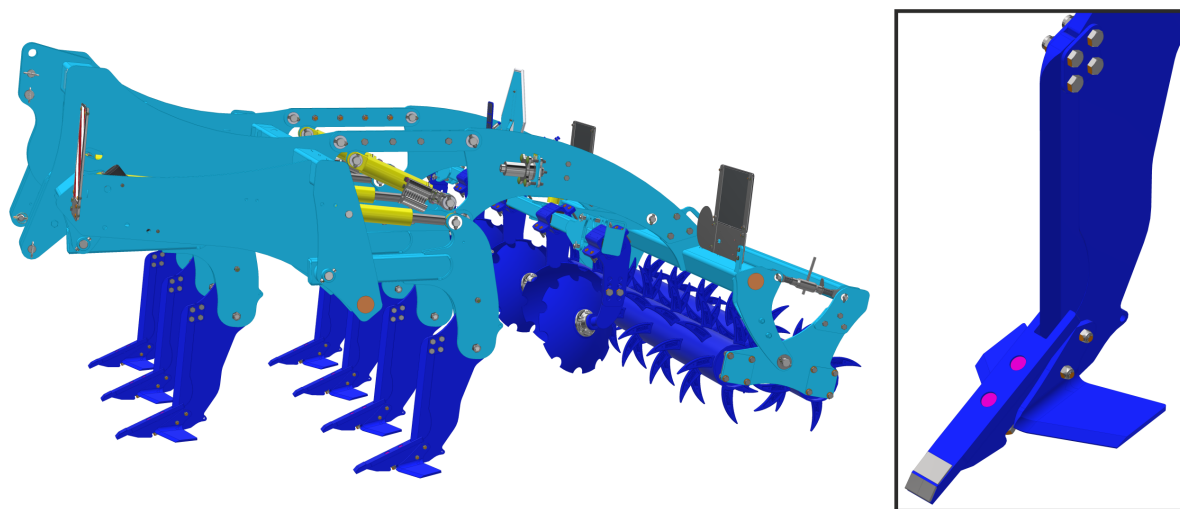
- To smooth out the connections between passes, the DIGGER machine can be equipped with optional additional side rollers.
- The additional side rollers are secured with a pin to prevent movement.
- To place them in the transport position, remove the securing pin.
- Position them as shown in the figure, and re-secure with the pin.

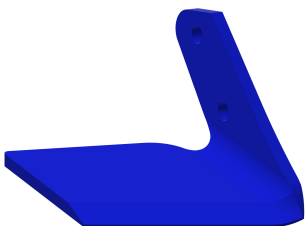
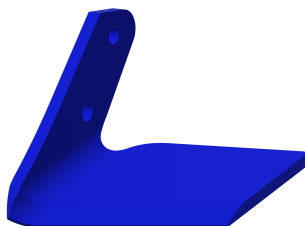
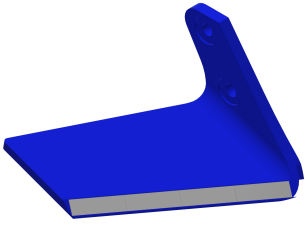
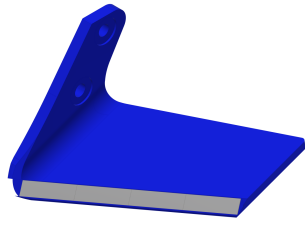




- 1 – Pin in the working position
2 – Pin in the transport position

11.4 Non-Mixing Tines (NO MIX)

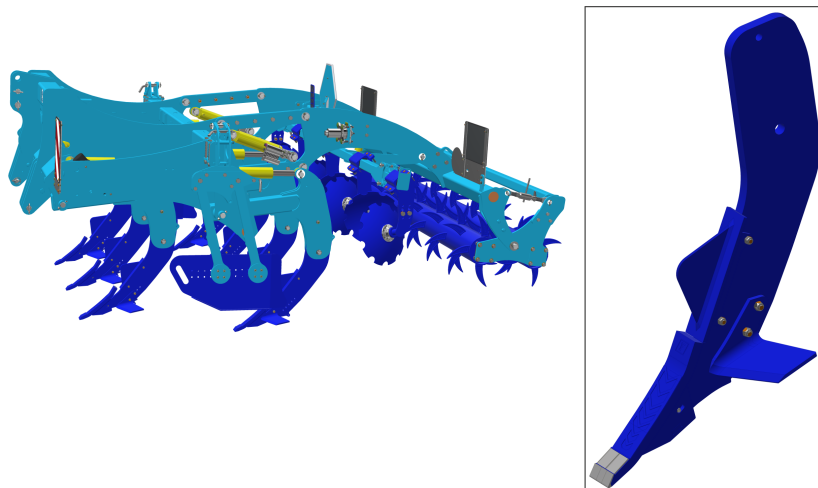
- The machine can be fitted with non-mixing tines, which are suitable for undercutting the bottom soil layer without mixing it with the top layer.
- The position of the wings changes the angle of entry into the soil.

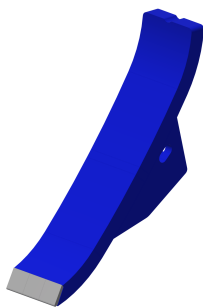



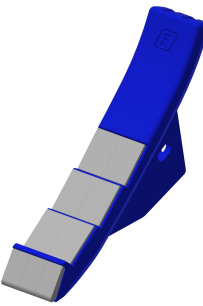
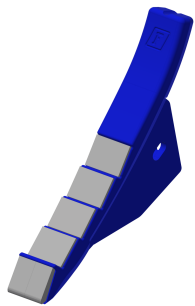


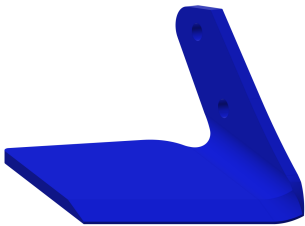
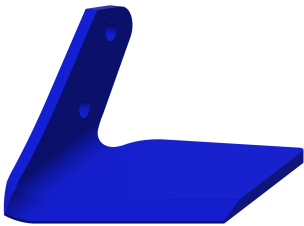
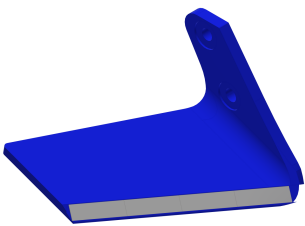
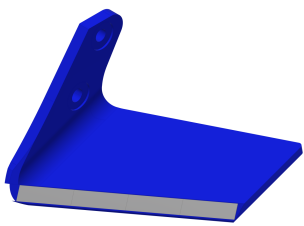
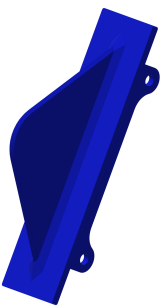
 <p>RIGHT WING 135 P</p>	 <p>LEFT WING 135 L</p>
 <p>RIGHT WING CARBIDE</p>	 <p>LEFT WING CARBIDE</p>
 <p>NO MIX SOIL – CUTTING KNIFE</p>	 <p>NO MIX CHISEL N55S</p>

11.5 Mixing Tines

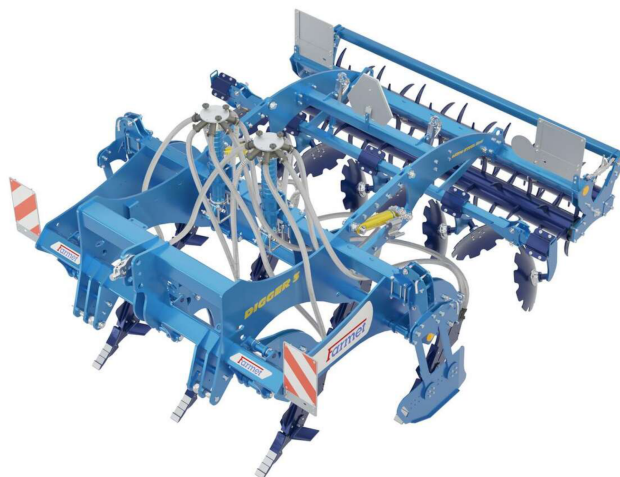
- The machine can be fitted with mixing tines, which provide deep zonal loosening to improve water infiltration.
- The height of the wings can be adjusted to several positions, allowing for optimal incorporation of plant residue for various cultivation depths.



 <p>CHISEL CARBIDE 75S</p>	 <p>CHISEL CARBIDE 55S</p>
 <p>CHISEL MULTICARBIDE KOMBI 70K</p>	 <p>CHISEL MULTICARBIDE KOMBI 55K</p>
 <p>CHISEL MULTICARBIDE ULTRA 75U</p>	 <p>CHISEL MULTICARBIDE ULTRA 50U</p>

 <p>RIGHT WING 135 P</p>	 <p>LEFT WING 135 L</p>
 <p>RIGHT WING CARBIDE</p>	 <p>LEFT WING CARBIDE</p>
 <p>MOULDBOARD</p>	

12 FERT KITS – OTHER OPTIONS



DIGGER FERT N



DIGGER FERT N COMPACT



DIGGER N + FALCON HW

13 MACHINE MAINTENANCE AND REPAIRS



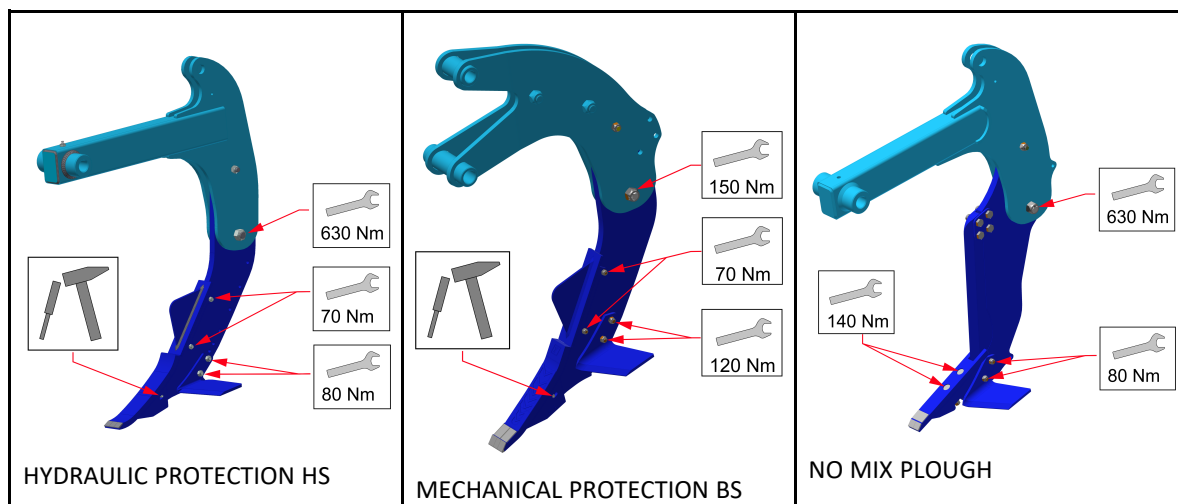
Observe the safety instructions for treatment and maintenance.

- If it is necessary to weld during the repair and have the machine connected to the tractor, it must have disconnected supply cables from the alternator and the accumulator.
- Check the tightening of all screw and other assembly connections at the machine before every use of the machine, furthermore continuously as needed.
- Continuously check the wear of the working bodies of the machine, possibly replace these worn working bodies with new ones.
- Adjustment, cleaning, and lubrication of the machine may only be performed with the machine at rest (i.e. the machine is standing and not working).
- When working on a lifted machine, use suitable support equipment supported at marked points or at points suitable for that.
- During adjustment, cleaning, maintenance, and repair of the machine, you must secure those parts of the machine that could endanger the operator by falling or another movement.
- For catching the machine during handling using lifting equipment, use only the places marked with self-adhesive labels with the chain sign. —
- Upon a failure or damage of the machine, immediately turn off the tractor's engine and secure against restarting, secure the machine against movement — only then you can remove the failure.
- During repairs of the machine, use exclusively the genuine spare parts, suitable tools and protective equipment.
- Keep the machine clean.
- Tightening torques for wearing parts of the ploughshare are shown in Fig. 11.



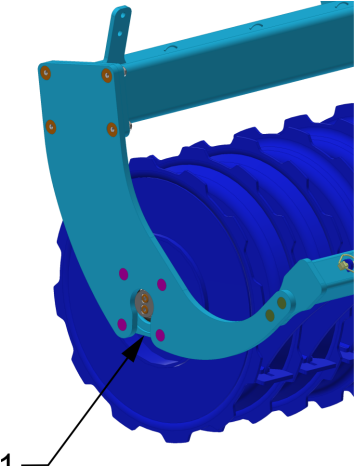
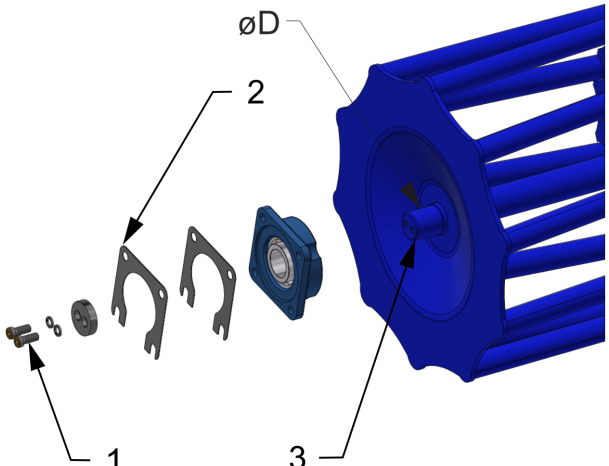
Do not clean hydraulic cylinders and bearings with a high-pressure cleaner or direct water stream. The seals and bearings are not watertight at high pressure.

Fig. 10 - replacement of wearing parts of the ploughshare



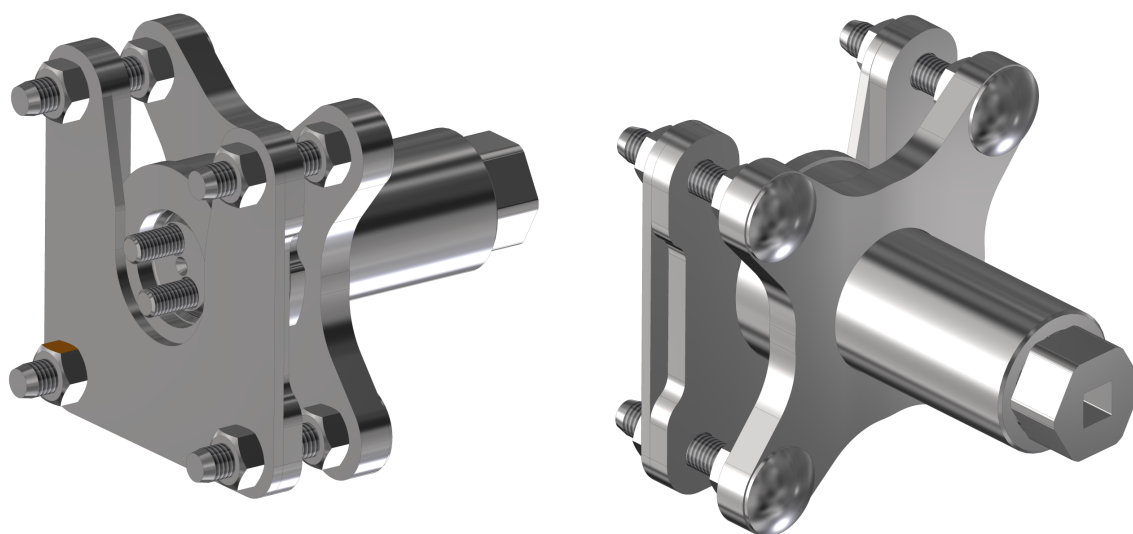
13.1 Replacement of the working roller bearings

- Always follow the safety regulations and directives when replacing the bearings of rollers.
- The machine must be aggregated with the tractor according to Chapter "8.1" when replacing the bearings. The tractor engine must be switched off for the replacement of bearings and the operator, or repairman, must prevent any access to unauthorised persons to the tractor
- Only replace the roller bearings on a solid and flat ground and when the machine is in standstill.

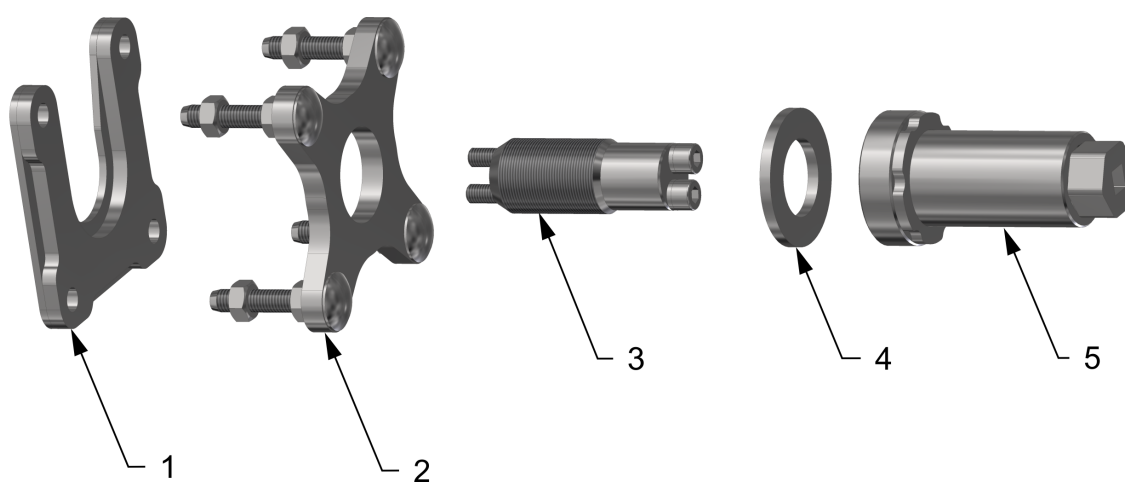
	
1 – Roller bearing	1 – Bolt 2 – Spacers 3 – Pin cylinder $\varnothing D$ – 40 mm – Bolt M10 (50 Nm) / M8 (20 Nm) $\varnothing D$ – 45 mm – Bolt M12 (86 Nm) / M10 (20 Nm) $\varnothing D$ – 50 mm – Bolt M12 (86 Nm) / M10 (20 Nm) $\varnothing D$ – 60 mm – Bolt M12 (86 Nm) / M10 (20 Nm)

13.1.1 Using the tool for bearing disassembly and assembly

- The location of the equipment on the machine can be found in the spare parts catalogue.



Tool parts

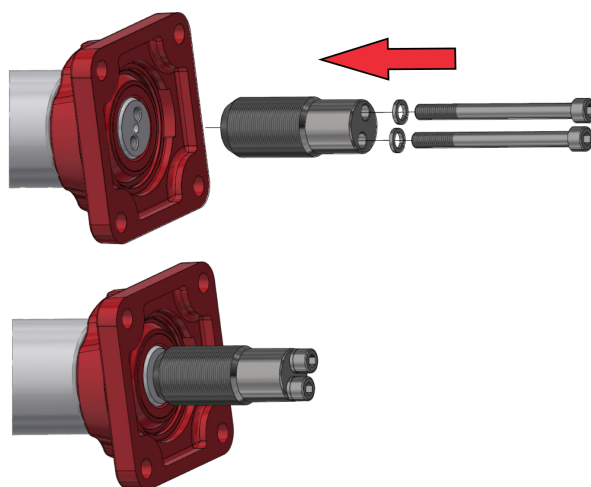


- 1 – Part for disassembling the bearing ring
- 2 – Part for disassembling the bearing or bearing ring
- 3 – Tool pin + bolts
- 4 – Liner
- 5 – Tool body

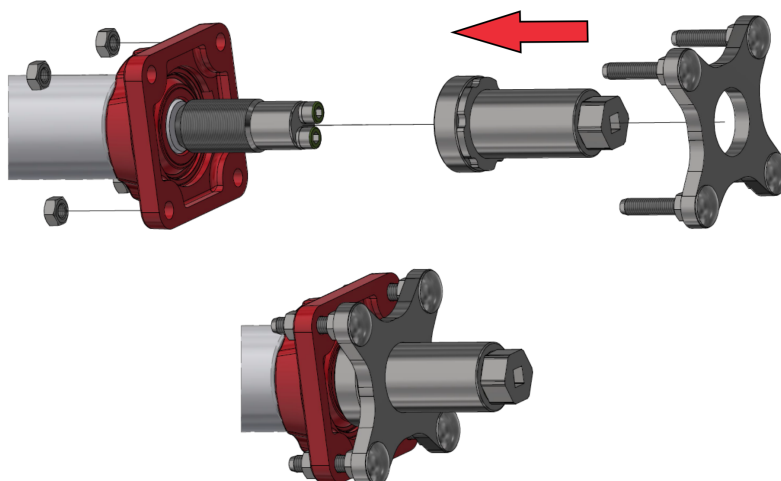
13.1.1.1 Complete bearing disassembly

- Procedure:

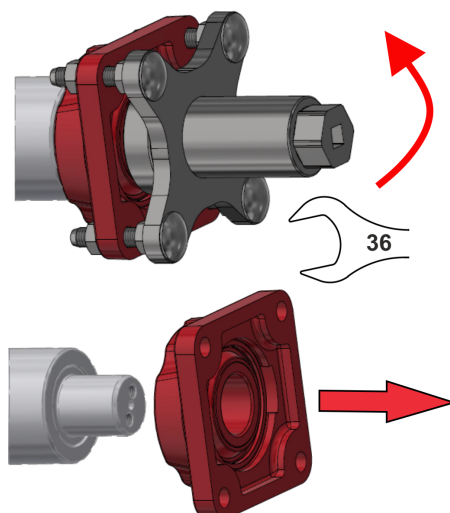
1. Mount and screw the tool pin onto the cylinder pin



2. Screw the tool body in, insert the part for bearing disassembly and mount onto the bearing using the nuts



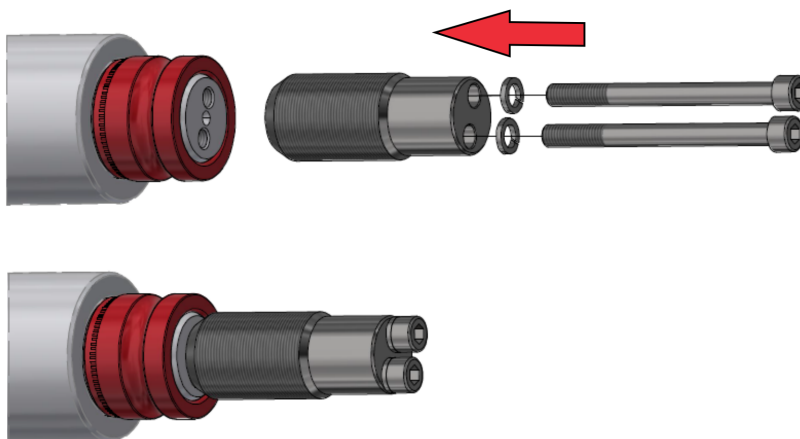
3. Disassemble the bearing by screwing the tool body using spanner size 36



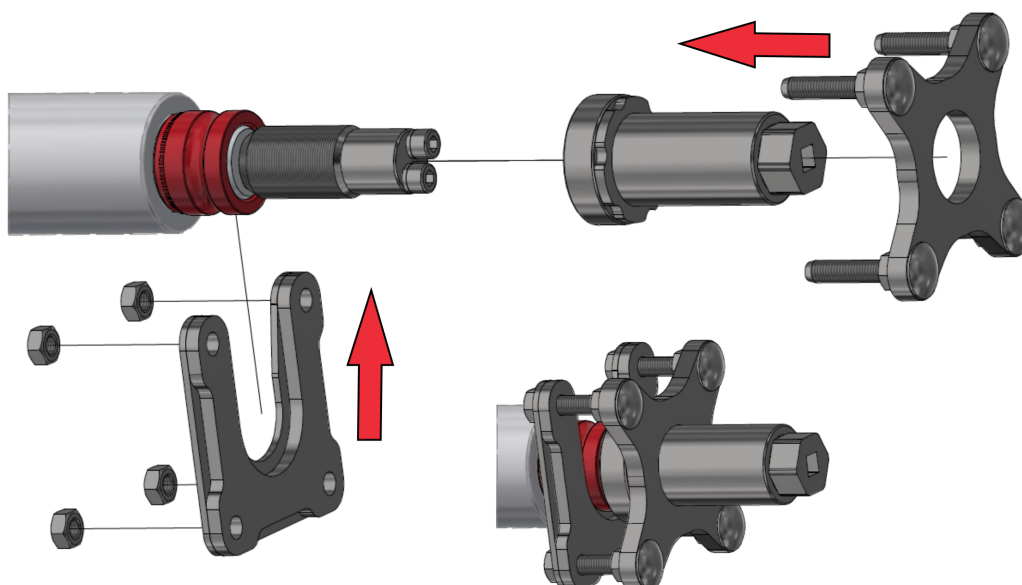
13.1.1.2 Disassembly of the ring

- Procedure:

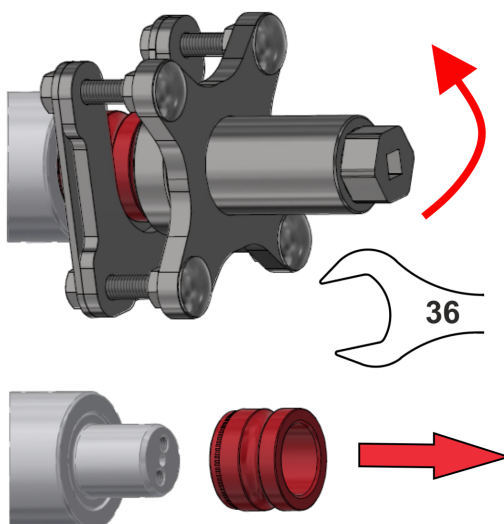
1. Mount and screw the tool pin onto the cylinder pin



2. Screw the tool body, mount the part for disassembling the bearing, mount the part for disassembling the ring and attach it using the nuts



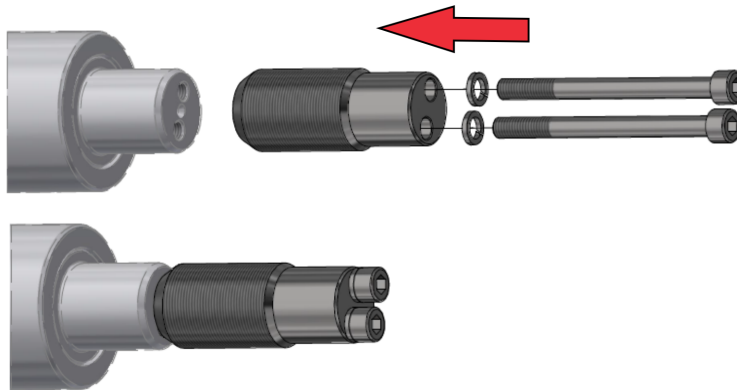
3. Disassemble the ring by screwing the tool body using spanner size 36



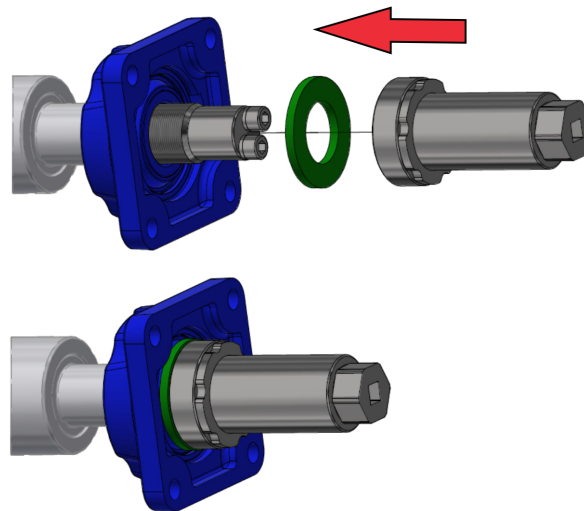
13.1.1.3 Assembling bearings onto pins

- Procedure:

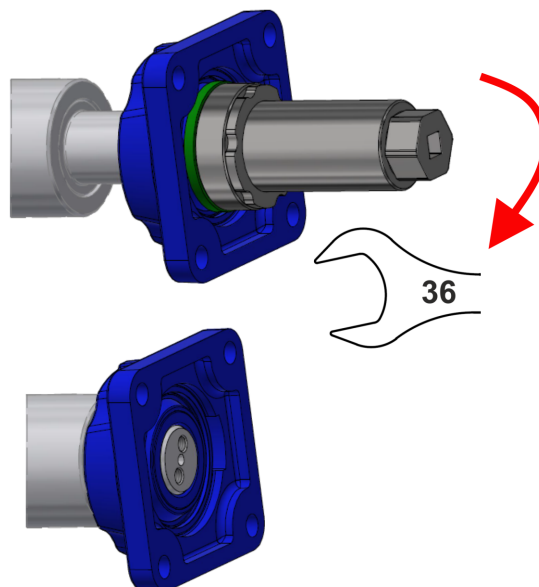
1. Mount and screw the tool pin onto the cylinder pin



2. Mount the bearing + liner and screw the tool body in



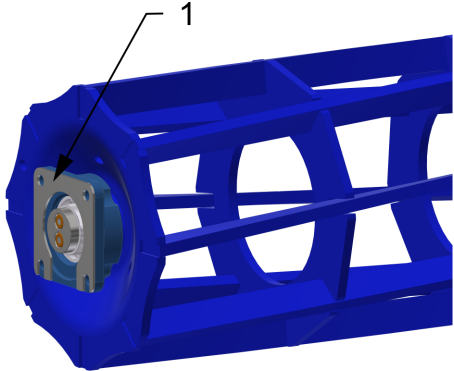
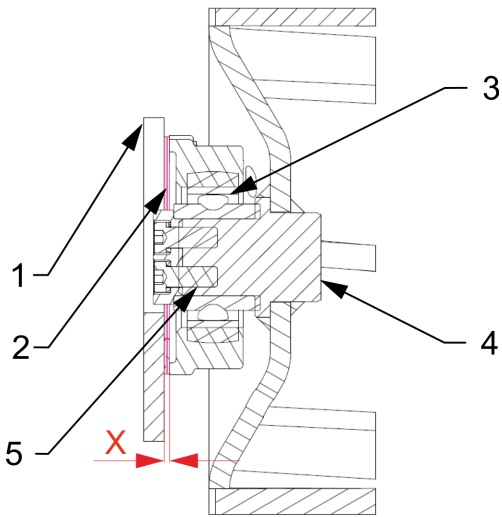
3. Assemble the bearing by screwing the tool body using spanner size 36



13.1.2 Using spacers

The spacers are used for defining production tolerances. Therefore, they do not have to be always used.

- Mount the house bearings to the rollers
- Insert the roller with the bearings between the frame side plates and assess whether you need to use the SPACERS

	
1 – Spacers	1 – Side plates 2 – Spacers 3 – House bearing 4 – Pin cylinder 5 – Bolt Parameter "X" = is there a gap? YES = Use spacers NO = Do not use spacers

14 MACHINE STORAGE

Long-term machine shutdown:

- Store the machine on a flat and solid surface with sufficient load capacity.
- Clean the machine before storing and conserve so that it is not damaged in any way during storage. Pay special attention to all marked lubrication points and properly lubricate them according to the lubrication plan.

Machine Shutdown Procedure


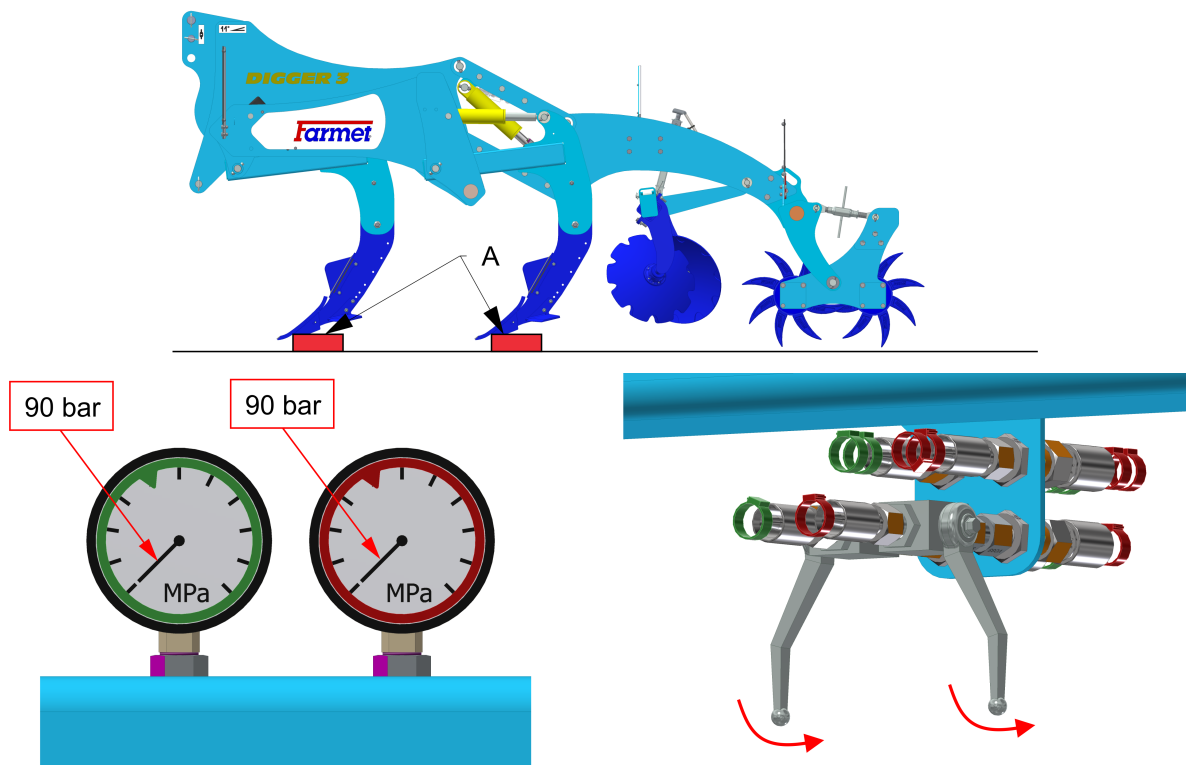
1. Eject the roller piston rods to the maximum position, hose marked with .
2. Check that the pressure shown on the pressure gauge of the ploughshare protection circuit is 90 bar; if so, close both ball valves, see Fig. 12.
3. Depressurize the supply hoses for the hydraulic circuits of the machine.
4. Check that the pressure in the ploughshare protection circuit shown on the pressure gauges of the machine has not decreased.
5. Disconnect the hydraulic hoses of the machine from the tractor distributor.
6. Place the machine on a flat and firm ground so that it is resting on the rear roller and share beams. Use a suitable support for the share beams (such as scantlings) so that the points of the chisels are above the ground, see Fig. 10. If you do not have a suitable support, disassemble the chisels.

Fig. 11 - machine put out of operation correctly

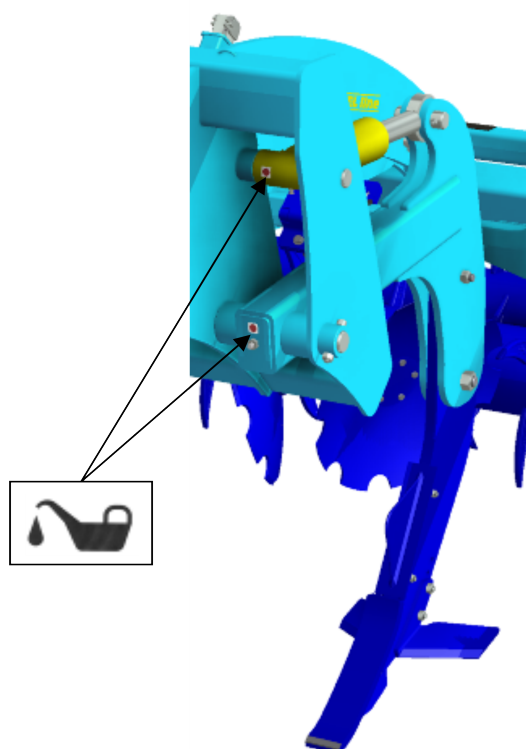


A - The rests

15 MACHINE LUBRICATION SCHEDULE

- During machine maintenance and its lubrication, it is necessary to observe the safety regulations.

LUBRICATION POINT	INTERVAL	LUBRICANT
Mounting of the ploughshare and piston rod protection (only for hydraulically protected ploughshares)	Always after the end of the season and before storing the machine.	Plastic grease KP2P-20 Likx dle DIN 51 502



Lubricant handling:

- Protect yourselves against direct contact with oils by using gloves or protective creams.
- Thoroughly wash oil spots on the skin using warm water and soap.
- Do not clean the skin with petrol, engine diesel fuel or other solvents.
- Oil is poisonous. If you swallowed the oil, immediately seek a physician.
- Protect the lubricants against children.

16 ENVIROMENTAL PROTECTION

- Handle oils and greases according to valid waste laws and regulations.

17 MACHINE DISPOSAL AFTER SERVICE LIFE EXPIRY

- The operator must secure during machine disposal that steel parts and parts, in which hydraulic oil or lubricating grease moves are differentiated.
- Steel parts must be cut by the operator while observing safety regulations and handed over to the secondary raw material collection point. He must proceed with other parts according to valid laws about waste.

18 SERVICING AND WARRANTY CONDITIONS

18.1 Servicing

Servicing is secured by the dealer after consulting with the manufacturer, possibly directly by the manufacturer. Spare parts then using the sales network by individual sellers in the entire country. Use only the spare parts according to the spare parts catalogue officially issued by the manufacturer.

18.2 Warranty



- 1.** The manufacturer provides a basic warranty for the product for a period of 12 months. In the case of immediate registration of the sale to the end customer, including their valid contact details, the end customer receives an extended warranty of 36 months. The warranty is provided from the date the product is handed over to the end user (buyer). The registration must be completed by the seller (sales representative) on the My Farmet online portal. Upon correct registration, the end user will gain access to the My Farmet portal and all the benefits of the extended warranty.
- 2.** The warranty covers hidden defects that manifest during the warranty period under proper use of the machine and in compliance with the conditions specified in the Operating Manual.
- 3.** The warranty does not cover consumable spare parts, i.e., normal mechanical wear and tear of replaceable working parts (shares, discs, harrow tines, roller bearings, etc.).
- 4.** The warranty is tied to the machine and does not terminate with a change of ownership. The extended warranty is conditional upon registering the new owner's contact details in the My Farmet portal.
- 5.** The warranty is limited to disassembly and assembly, replacement, or repair of the defective part. The decision on whether the defective part will be replaced or repaired lies with the manufacturer, Farmet.
- 6.** During the warranty period, repairs or other interventions on the machine may only be carried out by an authorized service technician of the manufacturer. Otherwise, the warranty will not be recognized. This provision does not apply to the replacement of consumable spare parts (see point 3).
- 7.** The warranty is conditional upon the use of original spare parts supplied by the manufacturer.

2013/004/03

☒ **ES PROHLÁŠENÍ O SHODĚ**
☐ **CE CERTIFICATE OF CONFORMITY**
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☐ **СЕРТИФИКАТ СООТВЕТСТВИЯ ЕС**
☐ **DEKLARACJA ZGODNOŚCI WE**

1. ☒ My ☐ We ☐ Wir ☐ Nous ☐ Мы ☐ My:

Farmet a.s.

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 Czech Republic
 DIČ: CZ46504931
 Phone: +420 491 450 111

☒ Vydáváme na vlastní zodpovědnost toto prohlášení. ☐ Hereby issue, on our responsibility, this Certificate. ☐ Geben in alleiniger Verantwortung folgende Erklärung ab. ☐ Publiions sous notre propre responsabilité la déclaration suivante. ☐ Под свою ответственность выдаем настоящий сертификат. ☐ Wydajemy na własną odpowiedzialność niniejszą Deklarację Zgodności.

2. ☒ Strojní zařízení: - název : **Hlubkový kypřič**
☐ Machine: - name : **Depth cultivator**
☐ Fabrikat: - Bezeichnung : **Tiefenlockerer**
☐ Machinerie: - dénomination : **Cultivateur de profondeur**
☐ Сельскохозяйственная машина: - наименование : **Глубинный культиватор**
☐ Urządzenie maszynowe: - nazwa : **Głębowc**
- typ, type : **DIGGER**
 - model, modèle : **DIGGER 3 N | 4 N**
 - ☒ výrobní číslo :
 - ☐ serial number
 - ☐ Fabriknummer
 - ☐ n° de production
 - ☐ заводской номер
 - ☐ numer produkcyjny

3. ☒ Příslušná nařízení vlády: č.176/2008 Sb. (směrnice 2006/42/ES). ☐ Applicable Governmental Decrees and Orders: No.176/2008 Sb. (Directive 2006/42/CE). ☐ Einschlägige Regierungsverordnungen (NV): Nr.176/2008 Slg. (Richtlinie 2006/42/EG). ☐ Décrets respectifs du gouvernement: n°.176/2008 du Code (directive 2006/42/CE). ☐ Соответствующие постановления правительства: № 176/2008 Сб. (инструкция 2006/42/ЕС). ☐ Odpowiednie rozporządzenia rządowe: nr 176/2008 Dz.U. (Dyrektywa 2006/42/WE).

4. ☒ Normy s nimiž byla posouzena shoda: ☐ Standards used for consideration of conformity: ☐ Das Produkt wurde gefertigt in Übereinstimmung mit folgenden Normen: ☐ Normes avec lesquelles la conformité a été évaluée: ☐ Нормы, на основании которых производилась сертификация: ☐ Normy, według których została przeprowadzona ocena: ČSN EN ISO 12100, ČSN EN ISO 4254-1.

☒ Schválil ☐ Approve by
☐ Bewilligen ☐ Approuvé
☐ Утвердил ☐ Uchwalit

date: 02.01.2024

Ing. Petr Lukášek
 Technical director



V České Skalici

date: 02.01.2024

Ing. Tomáš Smola
 Director of the Agricultural Technology Division

