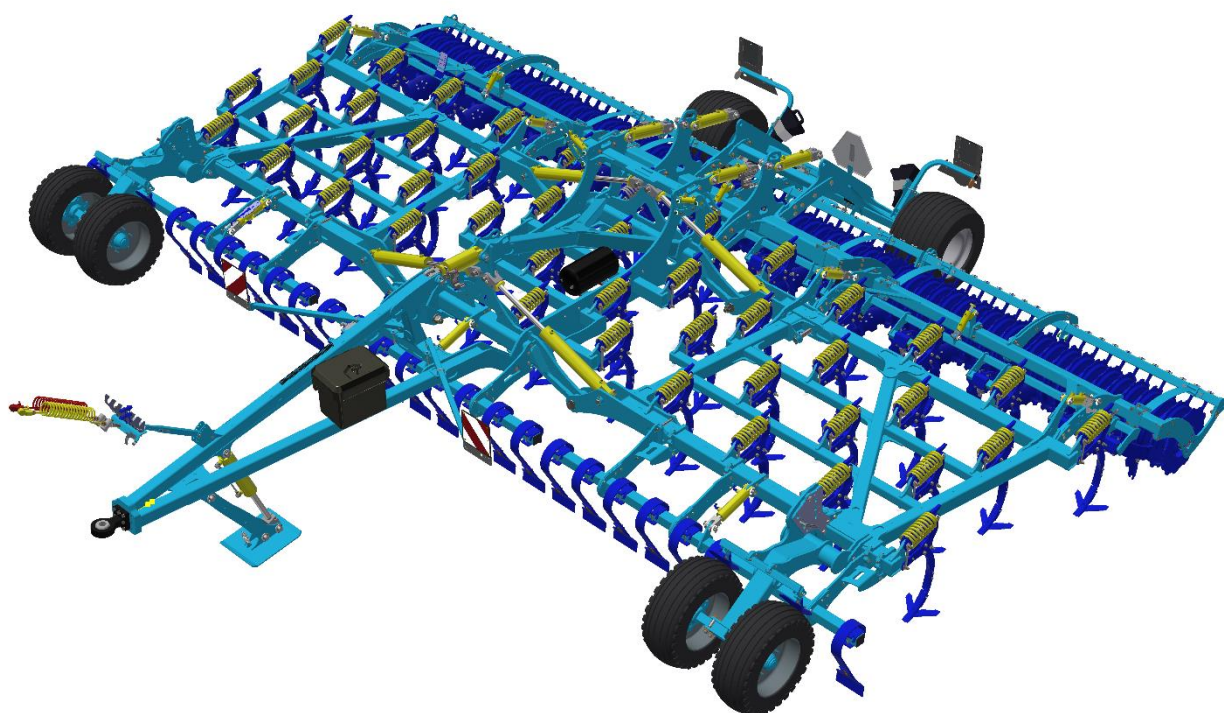


# **OPERATING MANUAL**

# **FANTOM CLASSIC**

# **FX 650 PS | FX 850 PS**



**Edition: 3 | effective from: 1. 9. 2022**

Dear customer,

Semi-carried cultivators **FANTOM** are quality products of Farmet a.s. Ceska Skalice.

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

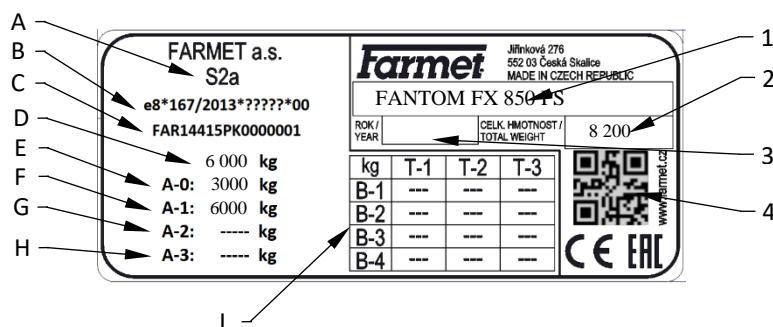
The serial number of the machine is punched on the production label and written in the operating manual (see Table 1). This machine serial number must be stated whenever ordering spare parts for possible repairs. The production label is located on the middle frame near the tow bar.

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

**Possibilities of Use of the Cultivator**

The **FANTOM** cultivator is designed for cultivation of all types of soils up to a processing depth of 150mm.

Production label of the machine:



A	Vehicle category according to R167/2013
B	Approval number
C	Seventeen-digit serial number (VIN)
D	Technically permissible maximum laden mass of the vehicle
E	Maximum vertical load on the coupling point
F	Maximum load – axle 1
G	
H	
J	Technically permissible towable mass for each chassis/braking configuration for R or S category vehicle
1	Commercial name, general description and purpose
2	Total weight
3	Year of production
4	QR code, designation of the machine

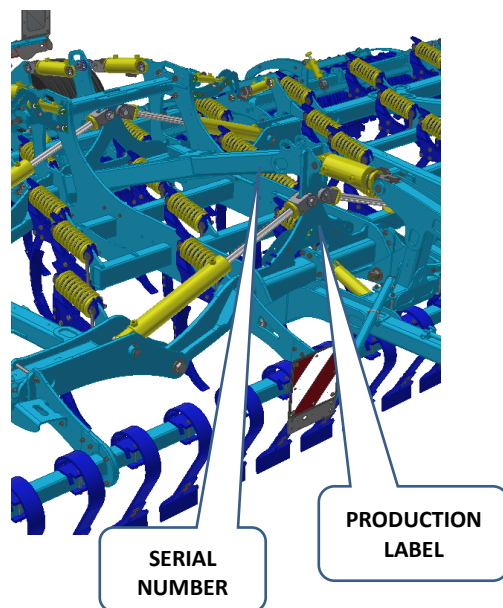


Table 1 – Your Machine Characteristics

<b>MACHINE TYPE</b>	
<b>MACHINE SERIAL NUMBER</b>	
<b>SPECIAL DESIGN OR ACCESSORIES</b>	
	.....
	.....
	.....
	.....

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## MACHINE LIMIT PARAMETERS

- <sup>(x)</sup> The machine is designed for soil cultivation up to a depth of 15 cm when agricultural soil cultivation. Another type of use exceeding the determined purpose is forbidden.
- <sup>(x)</sup> The machine is only operated by one person - the tractor operator.
- <sup>(x)</sup> Machine operator must not use the machine in a different way, especially:
  - <sup>(x)</sup> Transport of persons and animals on the machine structure,
  - <sup>(x)</sup> Transport of burdens on the machine structure,
  - <sup>(x)</sup> Aggregation of the machine with another towing equipment than stated in Chapter „3.1“.

## TECHNICAL PARAMETERS

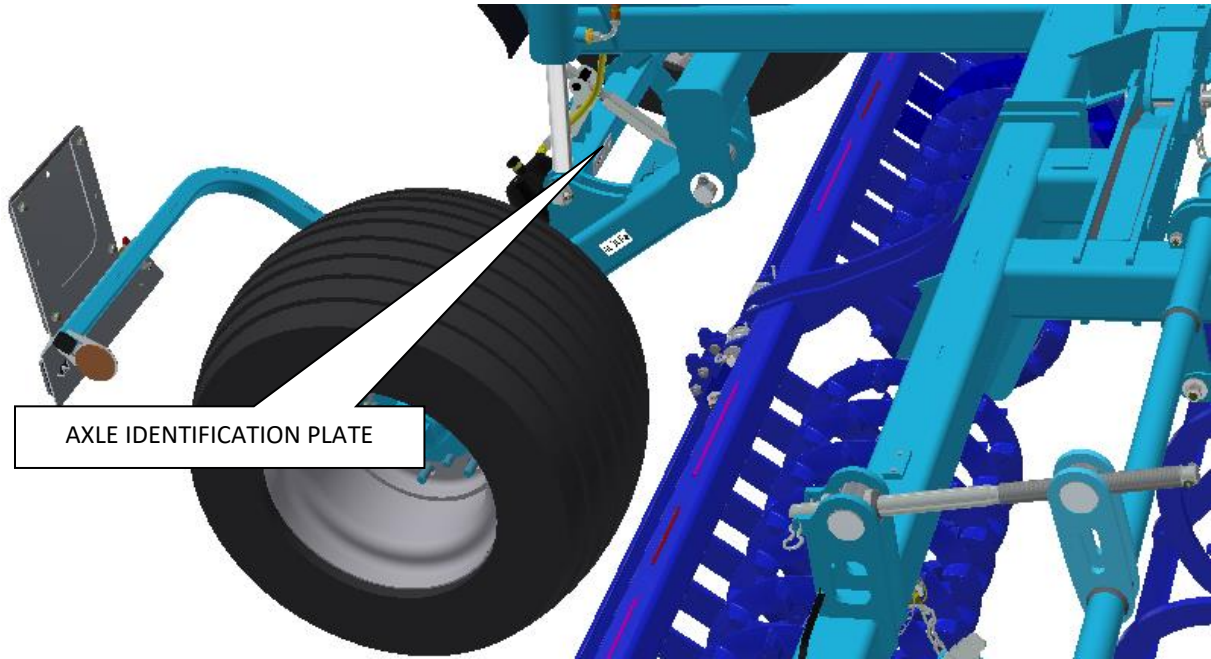
Table 2 – Technical Parameter

PARAMETERS	FANTOM CLASSIC FX 650 PS	FANTOM CLASSIC FX 850 PS
Working width (mm)	6300	8,550
Transport width (mm)	3000	3,000
Transport height (mm)	3650	4,000
Machine total length (mm)	8000	8,700
Distance from the towing lug to the roller (mm)	6400	6,900
Working depth (mm)	3 – 150	5 – 150
Number of shares	33	45
Working performance (ha/h)	4,4 – 7,2	6.8 – 10.2
Towing means (kW)	200 - 260*	245 – 370*
Working speed (kph)	8 – 12	8 – 12
Maximum transport speed (kph)	30	30
Working depth (mm)	6	6
Tyre dimensions - transport   Tyre pressure (kPa)	19,0/45-17 14PR   400 kPa	19.0/45-17 14PR   400 kPa
Machine weight (kg)	7200**	9000**

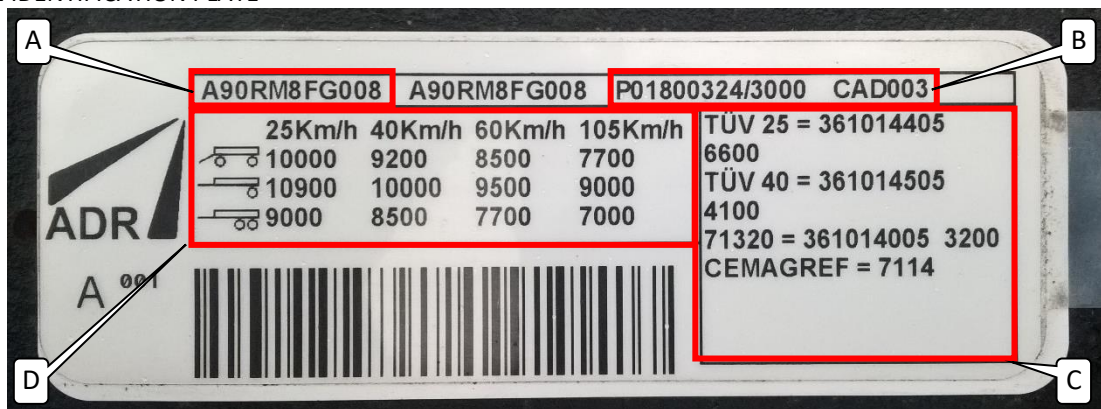
\* Recommended towing means, the real towing force may significantly vary according to the processing depth, soil conditions, land slope, working body wear and adjustment.

\*\* Machine weight according to the equipment.

AXLE IDENTIFICATION



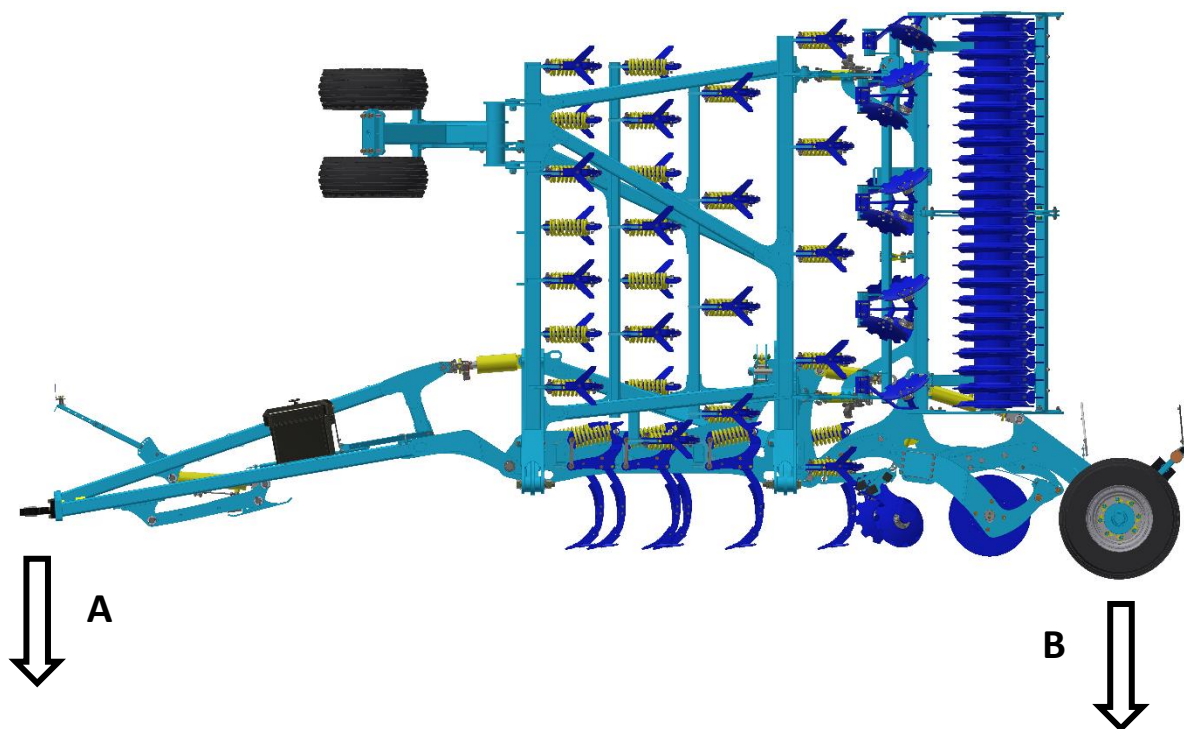
AXLE IDENTIFICATION PLATE



The axle identification plate can be read as follows:




ITEM	MARKING
A	Axle identification code
B	Order identification code
C	Approval report identification code
D	Maximum axle capacity data referred to the application and speed

## MACHINE WEIGHT DISTRIBUTION DURING TRANSPORT



PARAMETERS	FANTOM CLASSIC FX 650 PS	FANTOM CLASSIC FX 850 PS
A → Weight at the drawbar (kg)	2500	3000
B → Weight at the axle (kg)	4700	6100

## 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.

## A. GENERAL INSTRUCTIONS FOR USE

**A.1** <sup>(x)</sup> 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.

**A.2** <sup>(xx)</sup> 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!

**A.3** <sup>(7)</sup> Machine operation may be performed by a person authorised by the operator under these conditions:


- <sup>(8)</sup> It must own a valid driver's licence of the corresponding category,
- <sup>(9)</sup> It must be demonstrably familiarised with the safety regulations for work with the machine and must practically master the machine operation,
- <sup>(10)</sup> The machine may not be operated by juveniles,
- <sup>(11)</sup> It must know the meaning of the safety signs located on the machine. Their respecting is important for safe and reliable machine operation.

**A.4** <sup>(12)</sup> Maintenance and servicing repairs on the machine may only be performed by a person:


- <sup>(13)</sup> Authorised by the operator,
- <sup>(14)</sup> Educated in the machinery field with knowledge of repairs of similar machines,
- <sup>(15)</sup> Demonstrably familiarised with safety regulations for work with the machine,
- <sup>(16)</sup> During a repair of a machine connected to a tractor, it must own a driver's licence of the corresponding category.


**A.5** <sup>(17)</sup> Machine operator must secure the safety of other persons when working with the machine or transporting the machine.

**A.6** <sup>(18)</sup> During machine work in the field or during transport, the operator must control the machine from the tractor's cabin.


 **A.7** <sup>(19)</sup> The operator may enter the machine structure only with the machine at rest and blocked against movement, namely only for these reasons:

- <sup>(20)</sup> Adjustment of the machine working parts,
- <sup>(21)</sup> Repair and maintenance of the machine,
- <sup>(28)</sup> Adjustment of the working parts of the machine after unfolding the side frames.


 **A.8** When climbing on the machine, do not step on the axle tyres, rollers or other revolving parts. Those may turn and you can cause very serious injuries by the subsequent fall.

 **A.9** <sup>(22)</sup> 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.

**A.10** <sup>(23)</sup> The operator must have the Operating Manual with the work safety requirements available at any time when working with the machine.

 **A.11** <sup>(24)</sup> 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 EQUIPMENT

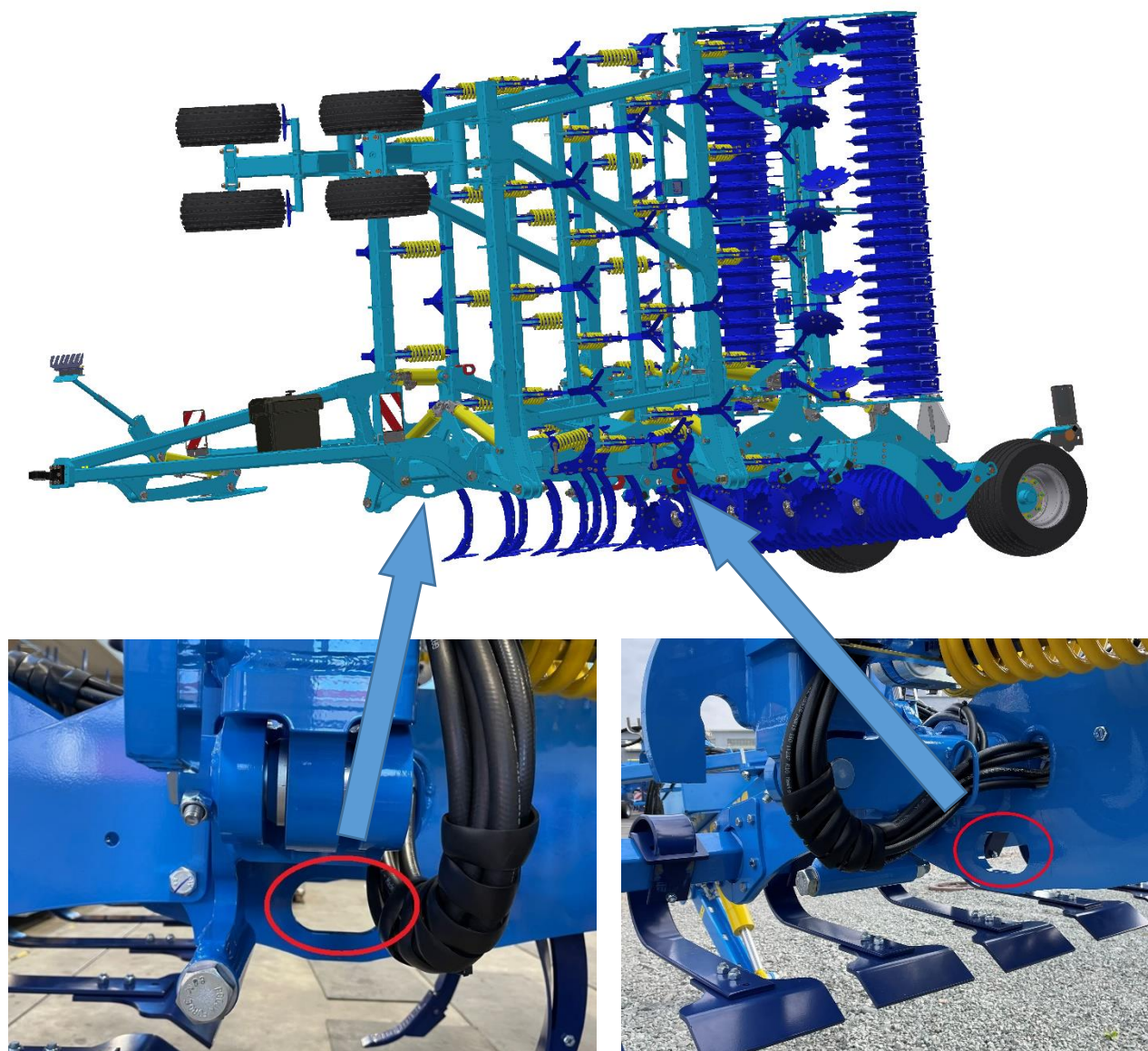
 For operation and maintenance use:

- Tight clothe
- Protective gloves and goggles for protection against dust and sharp parts of the machine





## B. MACHINE TRANSPORT USING TRANSPORT MEANS

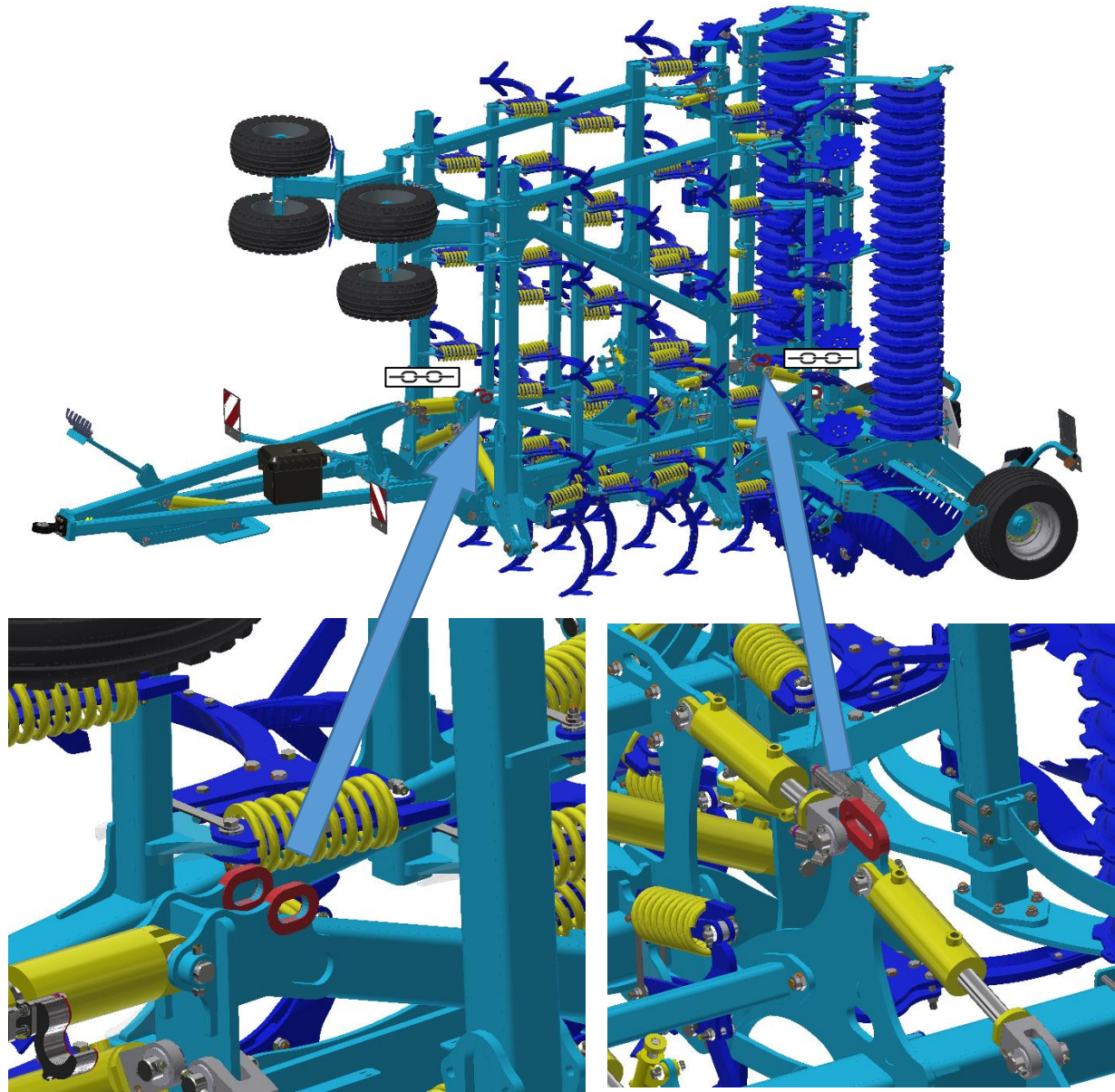
- B.1 <sup>(1)</sup> The transport means designed for machine transport must have the load capacity minimally identical with the weight of the transported machine. The total weight of the machine is stated on the production label.
- B.2 <sup>(2)</sup> The dimensions of the transported machine including the transport means must comply with the valid regulations for road traffic (decrees, laws).
-  B.3 <sup>(3)</sup> The transported machine must be always fastened to the transport means so that its spontaneous loosening could not happen.
- B.4 <sup>(4)</sup> The carrier is responsible for damage caused by the loosening of incorrectly or insufficiently fastened machine to the transport means.





### C. MACHINE HANDLING USING LIFTING EQUIPMENT

- C.1 <sup>(1)</sup> 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.
-  C.2 <sup>(2)</sup> Machine fastening for handling may only be performed in places designed for that and marked with self-adhesive labels showing the "chain" symbol. 
- C.3 <sup>(3)</sup> After fastening (suspending) at designated points, it is forbidden to move in the space of possible reach of the handled machine.



## D. WORK SAFETY LABELS


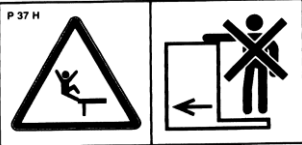



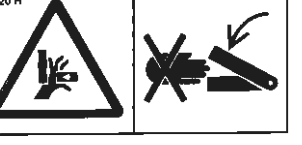


Warning safety labels serve for operator protection.

General:

- A) Strictly observe the warning safety labels.
- B) All safety instructions also apply to other users.
- C) 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 (Tab. 3) and in the figure (Fig. 1).

Table 3 – Self-adhesive warning safety labels located on the cultivator

WARNING SAFETY LABEL	LABEL TEXT	MACHINE POSITION
	<p>Before handling the machine, carefully read the operating manual. Observe the instructions and safety regulations for machine operation during use.</p>	<b>P 1 H</b>
	<p>Travelling and transport on the machine structure is strictly forbidden.</p>	<b>P 37 H</b>
	<p>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>	<b>P 2 H</b>
	<p>When folding and unfolding the side frames, stay outside their reach.</p>	<b>P 50 H</b>
	<p>Stay outside the reach of the tractor - agricultural machine set, if the tractor engine is in operation.</p>	<b>P 6 H</b>
	<p>When folding the side frames, do not reach into the space of the machine folding joints. There is a danger of cutting when setting the depth of the machine.</p>	<b>P 20 H</b>
	<p>Before commencing the machine transport, secure the axle with spherical valves against unexpected drop.</p>	<b>P 13 H</b>
	<p>When working and transporting the machine, maintain safe distance from the electric appliances.</p>	<b>P 39 H</b>

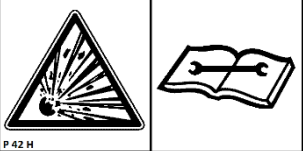
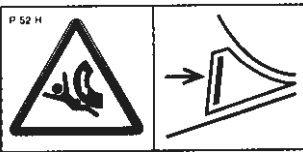
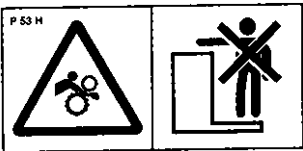
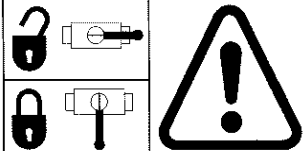
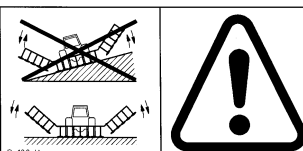
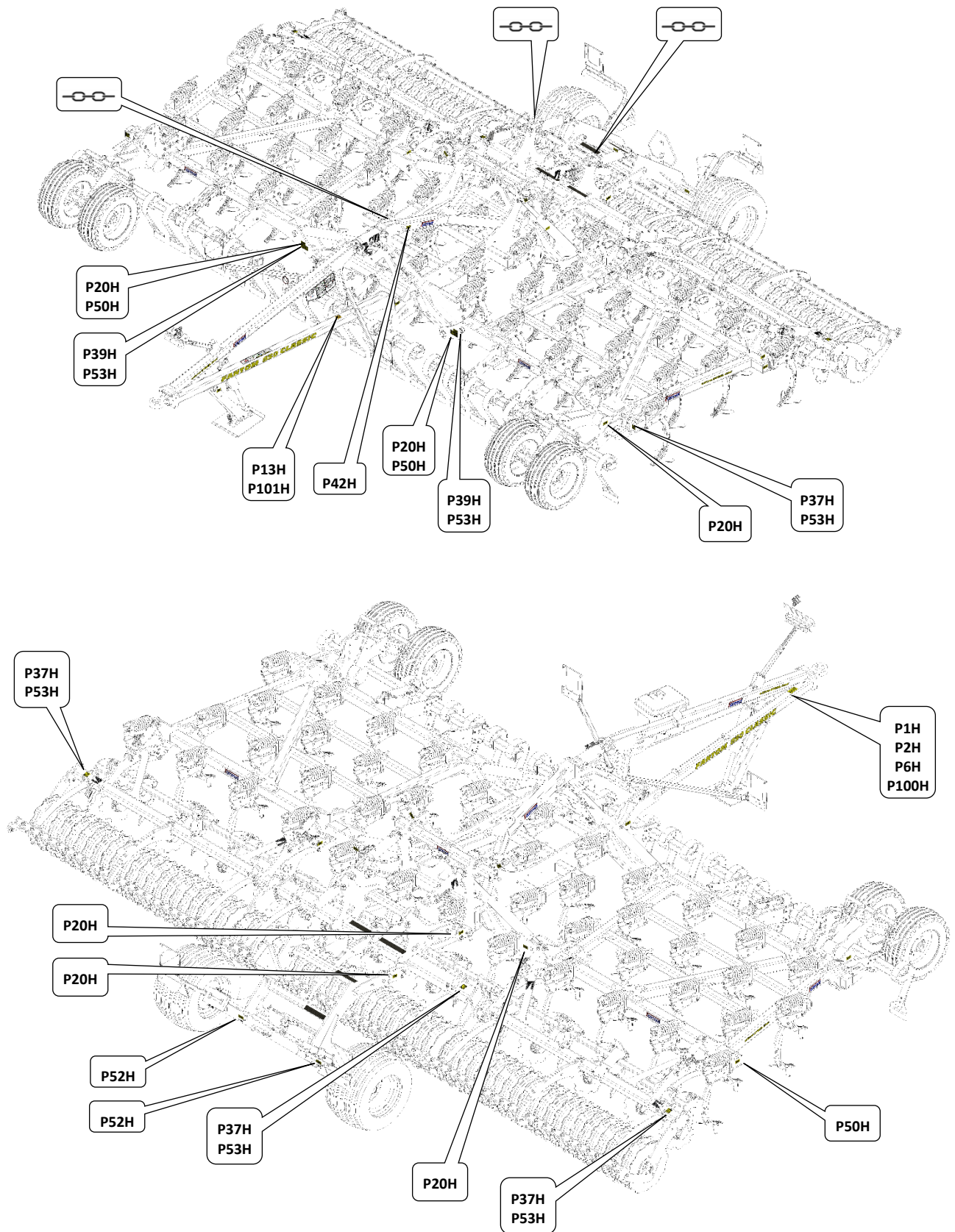
 <p>P 42 H</p>	<p>The pressure vessel is under gas and oil pressure. Execute disassembly and repairs only according to the instructions in the manual.</p>	<p><b>P 42 H</b></p>
 <p>P 52 H</p>	<p>Secure the machine against unwanted movement by positioning on its working bodies.</p>	<p><b>P 52 H</b></p>
 <p>P 53 H</p>	<p>Stay outside the reach of the tractor - agricultural machine set, if the tractor engine is in operation.</p>	<p><b>P 53 H</b></p>
 <p>P 101 H</p>	<p>The shown positions of the lever and the function of the hydraulic spherical valve located on the piston rod.</p>	<p><b>P 101 H</b></p>
 <p>P 100 H</p>	<p>Before commencing the machine transport, secure the axle with spherical valves against unexpected drop.</p>	<p><b>P 100 H</b></p>

Fig. 1 – Location of safety labels on the machine

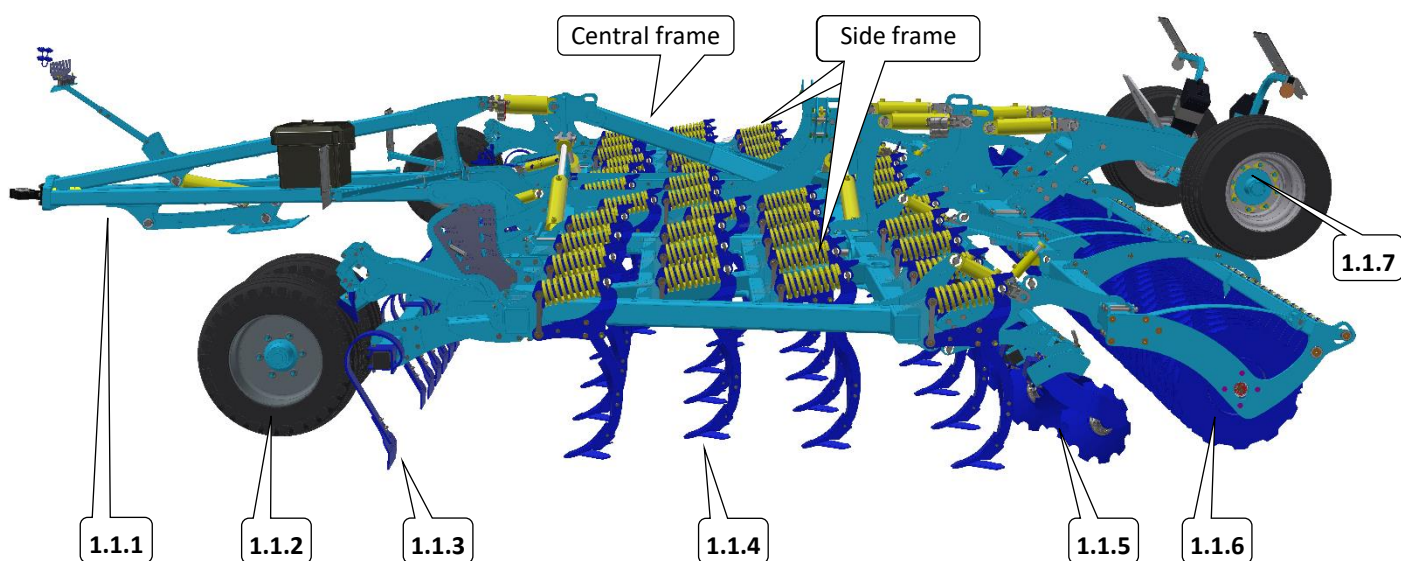


## 1. DESCRIPTION

The **FANTOM FX 650-850 PS** machine is constructed as semi-carried. The basic version consists of a tractive pole with a TPS suspension bar with  $\varnothing 36$  mm or  $\varnothing 60$  mm pivots for the TPS 3 and KIROVEC category, or a loop for bottom hitch ( $\varnothing 51$  mm,  $\varnothing 71$  mm or K80 hitch), a central frame with the transportation axle and four side frames. There are four rows of working shares located on the central and side frames and tracing wheels on the side frames. Furthermore, there are rollers in the rear of the machine that compact the loosened soil. In front of the first row, it is possible to mount front tools upon request, i.e. a crossboard, a cutting roller, or coulters. Behind the rear roller in the middle part, the machine axle is located.

### 1.1. WORK PARTS OF THE MACHINE

Fig. 2 – Work Parts of the Machine



- 1.1.1 Tractive pole with a folding leg
- 1.1.2 Supporting wheel
- 1.1.3 Front tools
- 1.1.4 Four rows of shares

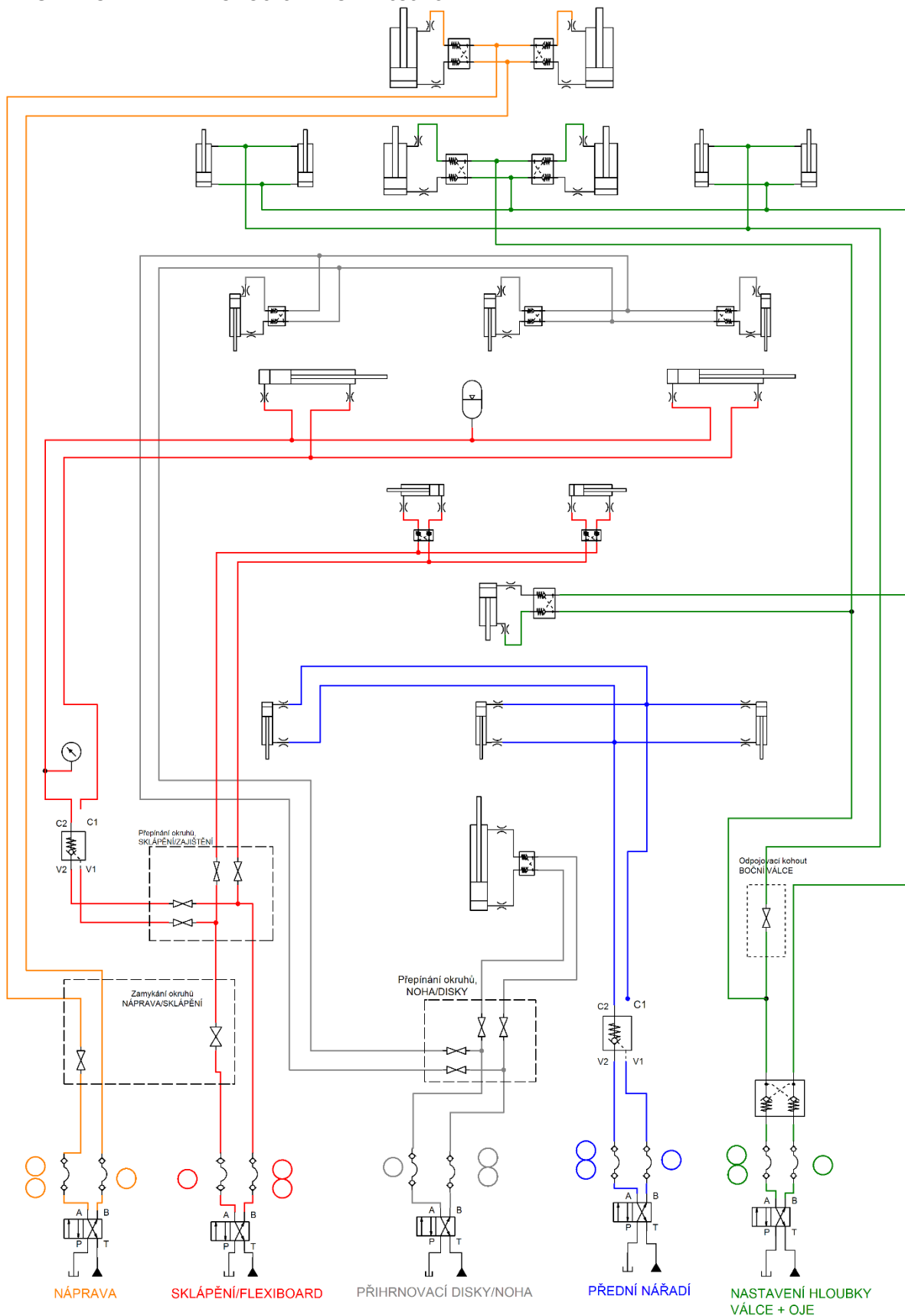
- 1.1.5 Rear levelling discs or levellers
- 1.1.6 Roller
- 1.1.7 Transportation axle

### 1.2. HYDRAULICS



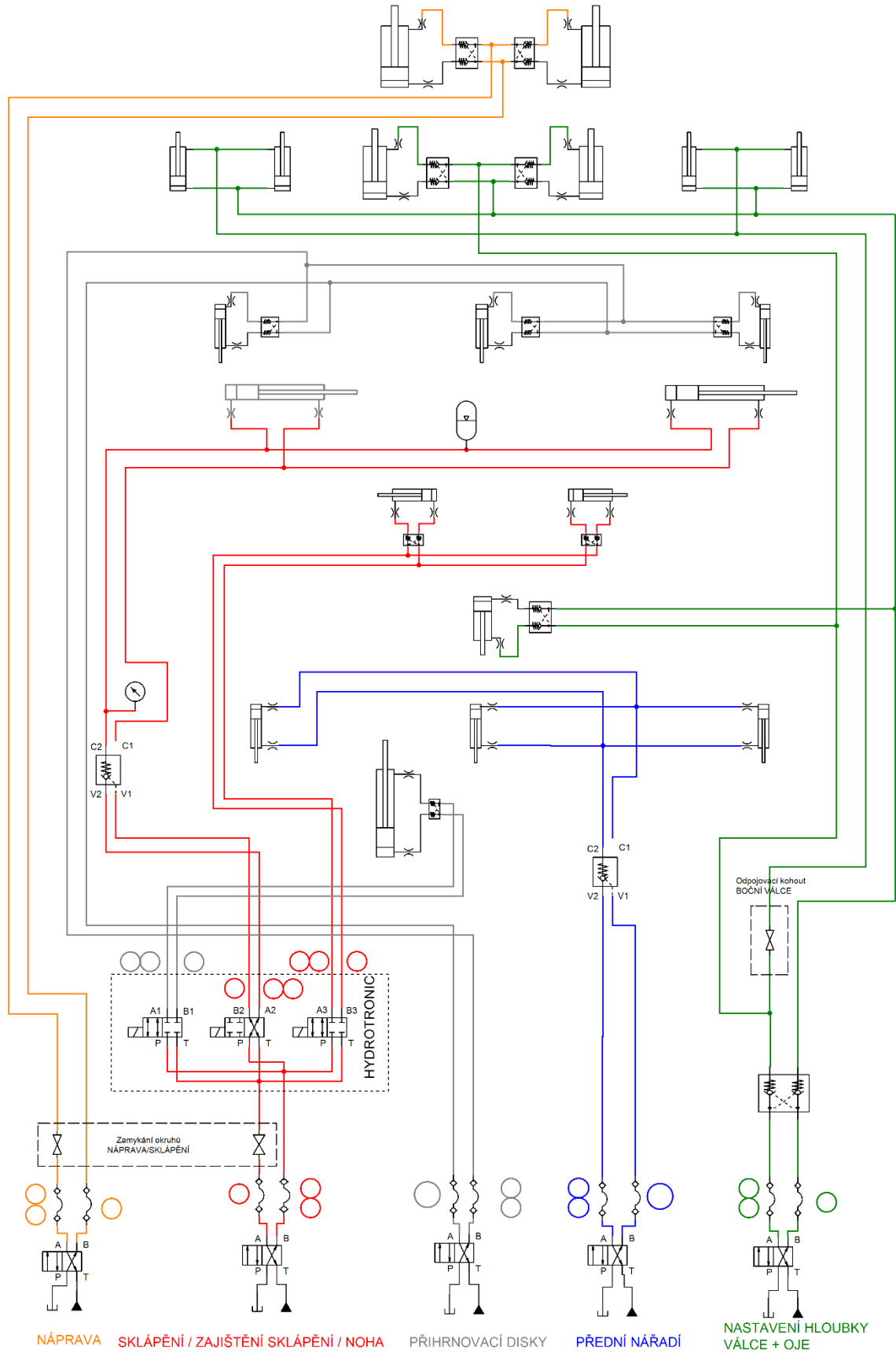
Parts of the hydraulic system of the machine, which are under pressure, are forbidden to disassemble. Hydraulic oil that penetrates the skin under high pressure causes severe injuries. In case of injury, seek a physician immediately.

DIAGRAM OF THE HYDRAULIC SYSTEM OF FX 650 PS:



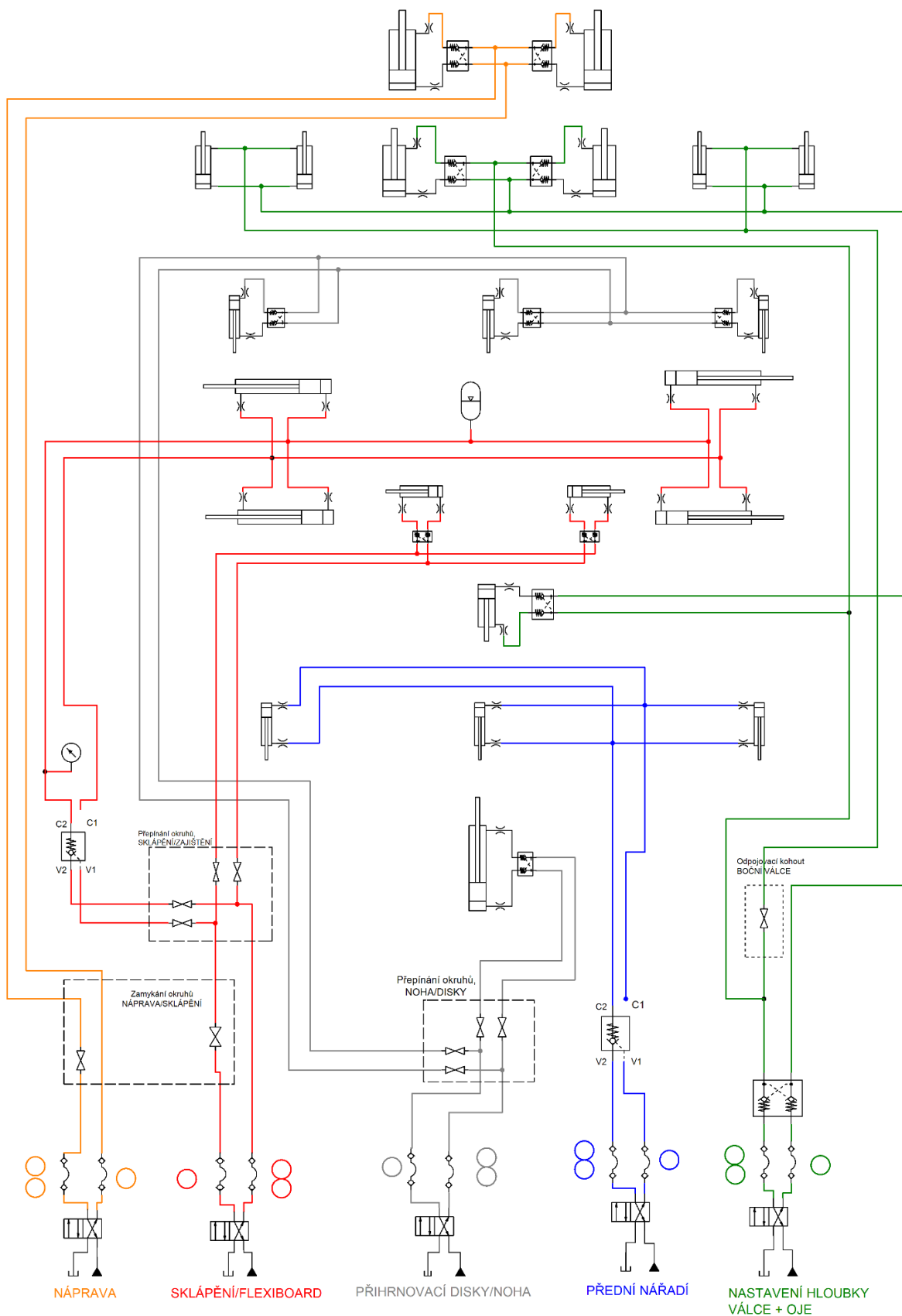
Yellow circuit - axle  
 Red circuit - folding/FLEXIBOARD  
 White circuit - levelling disks/leg  
 Blue circuit - front tools  
 Green circuit - setting the roller depth + drawbar

**DIAGRAM OF THE HYDRAULIC SYSTEM OF FX 650 PS (HYDROTRONIC):**



- Yellow circuit - axle
- Red circuit - folding/securing folding/leg
- White circuit - levelling disks
- Blue circuit - front tools
- Green circuit - setting the roller depth + drawbar

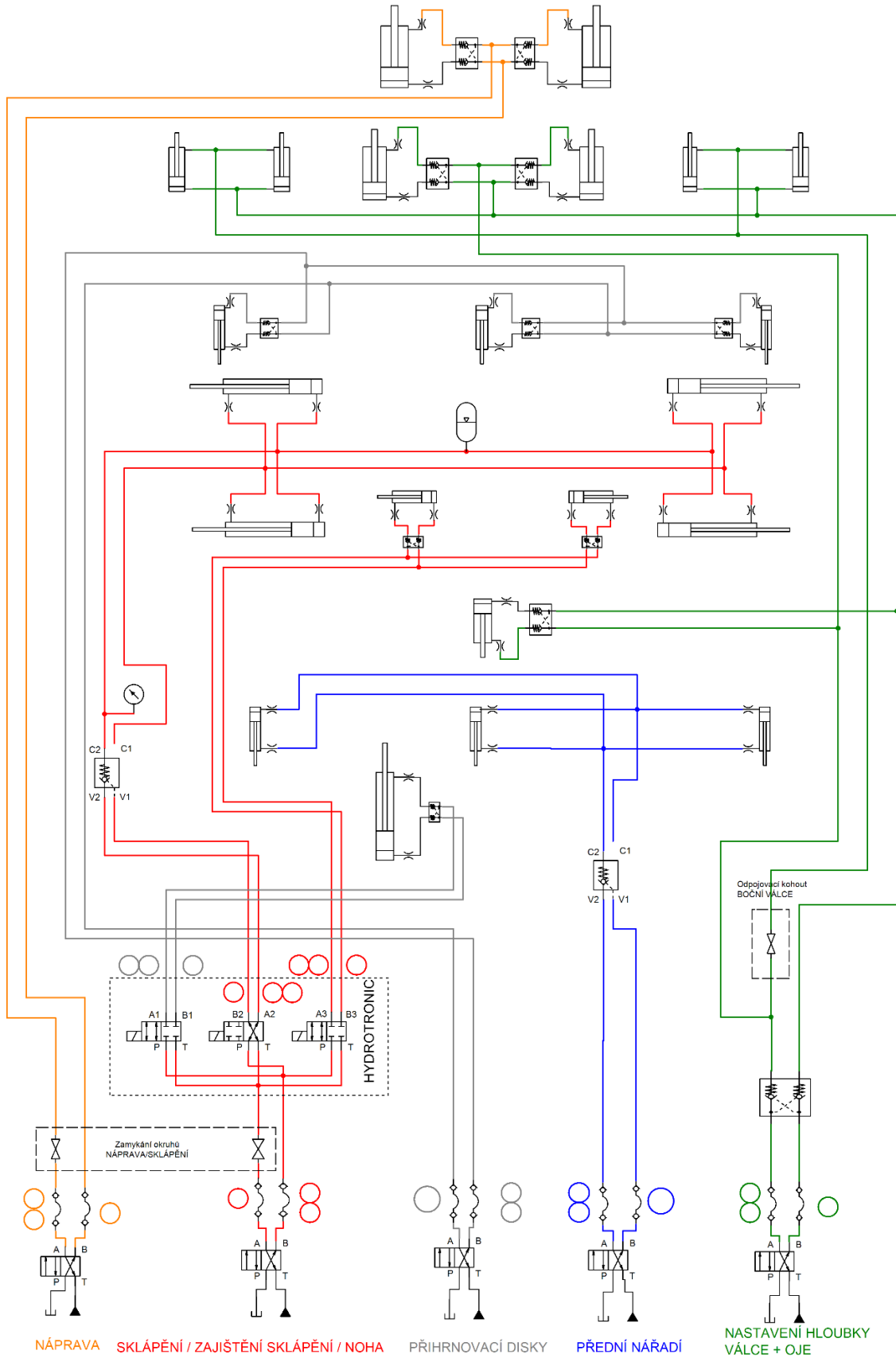
DIAGRAM OF THE HYDRAULIC SYSTEM OF FX 850 PS:



Yellow circuit - axle  
 Red circuit - folding/FLEXIBOARD  
 White circuit - levelling disks/leg  
 Blue circuit - front tools  
 Green circuit - setting the roller depth + drawbar



**DIAGRAM OF THE HYDRAULIC SYSTEM OF FX 850 PS (HYDROTRONIC):**



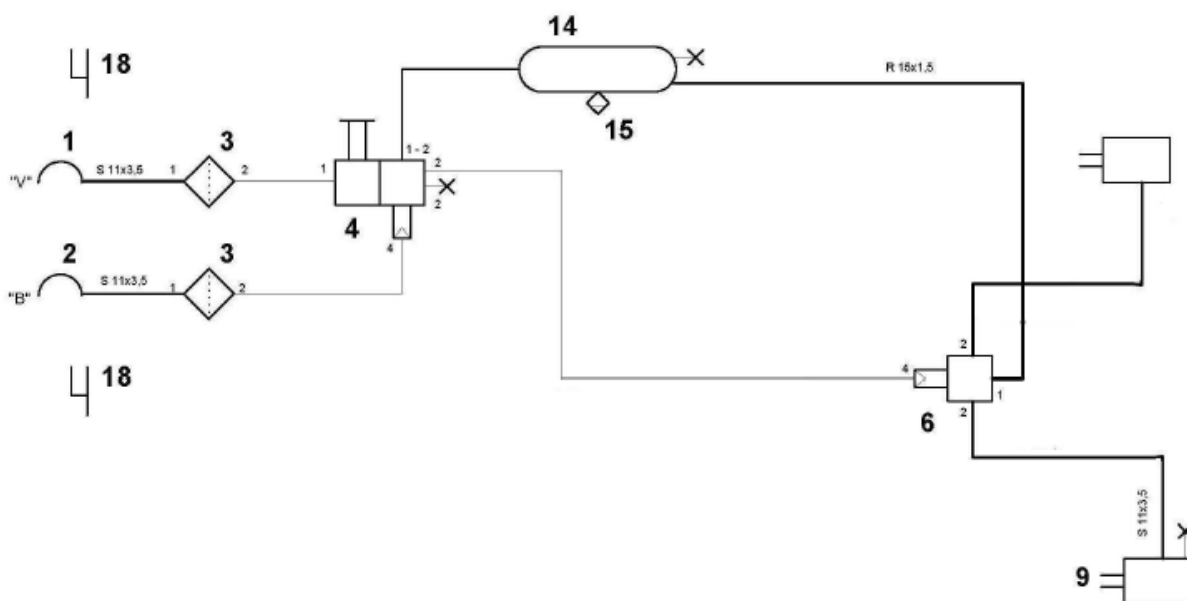
- Yellow circuit - axle
- Red circuit - folding/securing folding/leg
- White circuit - levelling disks
- Blue circuit - front tools
- Green circuit - setting the roller depth + drawbar

## 1.3. BRAKE SYSTEM

### 1.3.1. PNEUMATIC BRAKES

- To operate the machine on roads, it must be equipped with a single-circuit two-hose brake system.
- When the machine is equipped with brakes, they must be connected to the tractor when driving.

#### BRAKE DISTRIBUTION DIAGRAM



#### Component description:

- |   |                |    |                 |
|---|----------------|----|-----------------|
| 1 | Red coupler    | 9  | Brake cylinders |
| 2 | Yellow coupler | 14 | Air tank        |
| 3 | Air filter     | 15 | Drain valve     |
| 4 | Brake valve    | 18 | Coupler holders |
| 6 | Relay valve    |    |                 |

#### Automatic brake

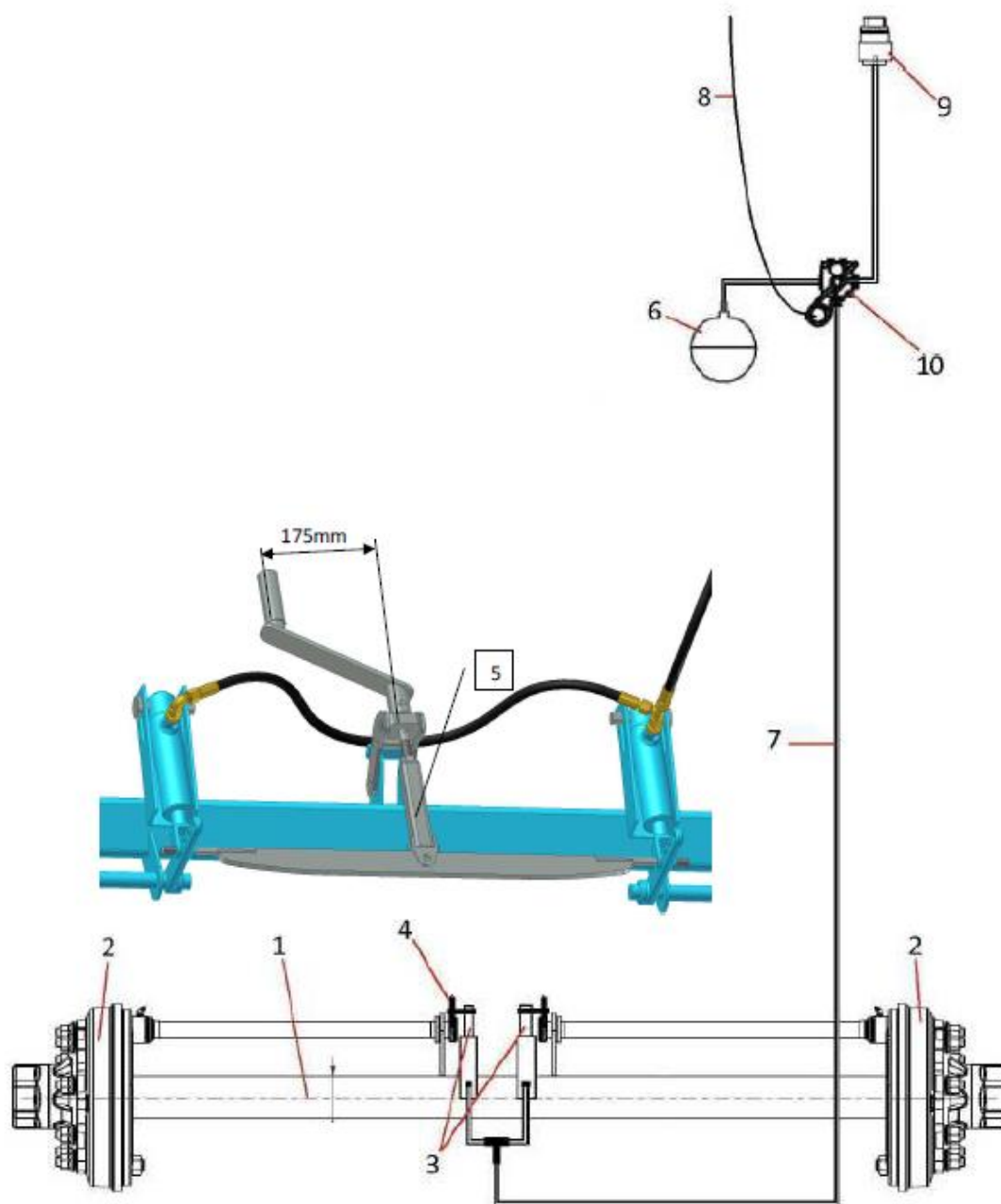
- When the red coupler is disconnected from the tractor while the system is pressurised, the machine will be stopped automatically
- The brake can be released manually by pressing the black button on the brake valve (pos. 4)

**Attention! The brake will be released when all the air escapes! The parking brake must be used.**

#### Parking brake

- The parking brake is mechanical, controlled with a handle on the axle
- Always release the brake to the limit position (a full brake key step must be possible)

### 1.3.2. HYDRAULIC BRAKES



#### List of braking system parts

- 1 – Axle designation ADR A70NA8FG033
- 2 - ADR drum brake reference FG 306E 300x60
- 3 – Brake cylinders ADR  $\text{Æ}$  25/43 mm, lever length = 100 mm
- 4 – Length of the handbrake bar = 100 mm
- 5 – Handbrake lever, Farmet type, handbrake lever arm L = 175mm
- 6 - OLEAR membrane pressure accumulator, capacity 0.5l, ref: OLM/ELM 0.5-210/00
- 7 – Hydraulic hose 1SN DN 8 ref: DIN EN 853; EN 853
- 8 – Rope connected to the pulling vehicle
- 9 – Hydraulic connecting valve Dn10 ref: VF 0/1815 F
- 10 – Emergency valve SAFIM ref: 203121

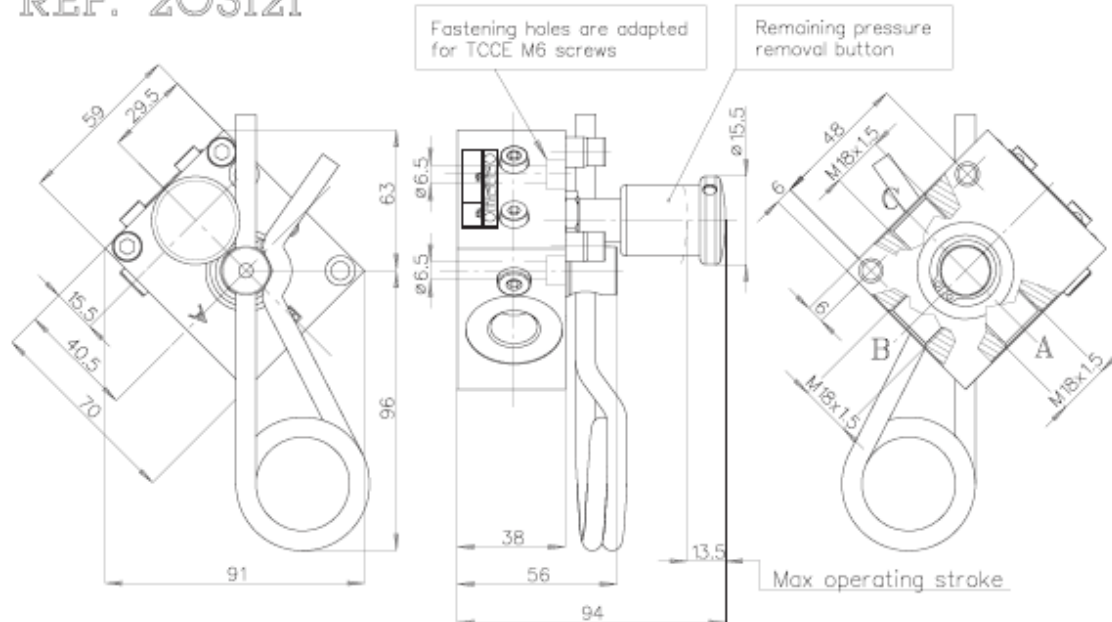


## EMERGENCY VALVE FOR AGRICULTURAL TRAILERS

10.02.03

Last revision  
06.05

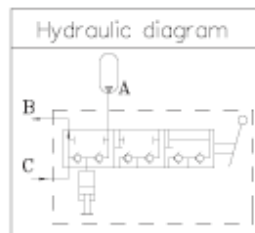
### EMERGENCY VALVE WITH REMAINING PRESSURE RESETTING BUTTON REF. 203121



SPARE PARTS: Seal kit code SG14522

A	Emergency accumulator
B	Trailer brakes
C	Tractor hydraulic control system

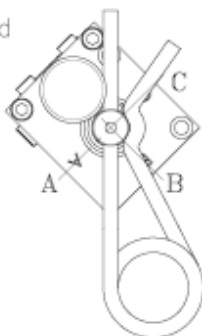
When trailer is connected, it is necessary to push the brake for at least 5 seconds when the engine is started. By doing so, the operator can be certain that emergency accumulator has been recharged completely.



### ASSEMBLY AND OPERATING POSITIONS

#### Emergency brake released

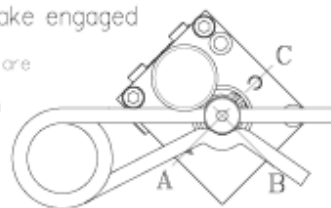
The trailer brakes are connected to the tractor hydraulic control system.



B is connected to C


#### Emergency brake engaged

The trailer brakes are connected to the accumulator which activates the emergency brake.




B is connected to A

## 2. 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 „C“.

## 3. 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 **A-D**. 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 Tab. 2 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.



### **DECREASE OF SOIL PRESSURE TO A VALUE LOWER THAN 200 kPa**

- To decrease the specific pressure on soil (below 200 kPa) at the turns on the headland, raise the machine on the pole by using the hydraulic tractor shoulders and rear rollers. Turn around when the machine is unfolded and resting on rollers.

### 3.1 AGGREGATION TO A TRACTOR



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

- 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.

Tab. 4 – The table of requirements for the towing means for work with the machine:

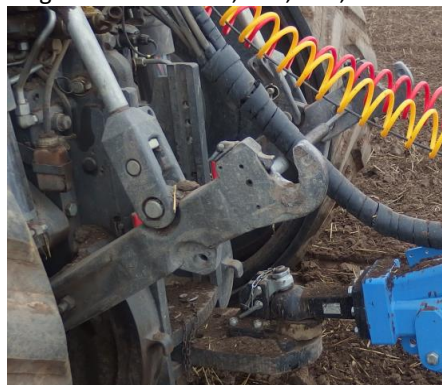
Requirement for the tractor engine power for cultivator <b>FX 650 PS</b>		<b>200 - 260 kW</b>
Requirement for the tractor engine power for cultivator <b>FX 850 PS</b>		<b>245 - 370 kW</b>
Requirement for tractor aggregation	Spacing of the lower suspension joints (measured at the joint axes)	<b>1010±1,5 mm, (possible to set also 910±1,5 mm)</b>
	∅ of the hole of the lower suspension joints for the machine suspension pivots	<b>∅37,5 mm</b>
	Bottom fixed hitch height	<b>500 – 600 mm (19.7 - 23.6 in)</b>
	Bottom fixed hitch aggregation mechanism	<b>Pin ∅50 mm (1.96 in)</b>
		<b>Pin ∅70 mm (2.75 in)</b>
	<b>Ball K80</b>	
Requirement for the tractor's hydraulic system	Frame folding circuit	<b>Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12.5</b>
	Axle lifting circuit	<b>Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12.5</b>
	Rollers lifting circuit	<b>Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12.5</b>
	Front tool control circuit	<b>Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12.5</b>
	Levelling disc circuit	<b>Circuit pressure 200 bar, 2 pcs of quick-coupler sockets ISO 12.5</b>

- Aggregate the machine with the tractor using type and dimensionally consistent components corresponding to the output requirements. For example, do not aggregate a machine with ∅50mm pulling loop to ∅40mm pin!
- Connect the machine using the TPS suspension bar to the lower arms of the rear TPS of the tractor, secure the TPS arms using pins against disconnecting.
- The design allows selecting from several versions of aggregation to the tractor.

Aggregation to the rear TBZ hitch



Aggregation to the agro tow bar = K80, C40, C50, C70



### 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+)

## 3.2 HYDRAULICS CONNECTION

- Connect the hydraulics only when the hydraulic circuits of the machine and the tractor (aggregate) are in a pressure-less condition.
- 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. Perform the connection of the machine couplers to the tractor's hydraulic circuits so that the folding of the side frames – **RED DUSTERS** – was on one control circuit, machine lifting on cylinders – **GREEN DUSTERS** – on the second control circuit, and machine lifting on the axle – **YELLOW DUSTERS** – on the third control circuit, control of the levelling discs and the storage feet – **WHITE DUSTERS** – on the fourth control circuit, and front tools – **BLUE DUSTERS** – on the fifth control circuit.



**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.**

Fig. 3 – Hydraulic Circuits

	<p><b>RED DUSTERS</b> – electrohydraulic distributor, i.e., the support leg, control of side frame folding and securing (after control valve switching)</p> <ul style="list-style-type: none"> <li>➤ <b>1 TAPE:</b> <ul style="list-style-type: none"> <li>- support leg hydr. cylinder ejection, drawbar lifting</li> <li>- folding the side frames into the transport position</li> <li>- securing the frames against unfolding</li> </ul> </li> <li>➤ <b>2 TAPES:</b> <ul style="list-style-type: none"> <li>- support leg hydr. cylinder insertion, drawbar lowering</li> <li>- unfolding the side frames into the working position</li> <li>- side frame release</li> </ul> </li> </ul>
	<p><b>YELLOW DUSTERS</b> – axle control</p> <ul style="list-style-type: none"> <li>➤ <b>1 TAPE:</b> <ul style="list-style-type: none"> <li>- axle hydr. cylinder ejection, machine lifting into the transport position</li> </ul> </li> <li>➤ <b>2 TAPES:</b> <ul style="list-style-type: none"> <li>- axle hydr. cylinder insertion, machine lowering to the ground, axle into the working position</li> </ul> </li> </ul>
	<p><b>GREEN DUSTERS</b> – roller and tow bar control, headland turning</p> <ul style="list-style-type: none"> <li>➤ <b>1 TAPE:</b> <ul style="list-style-type: none"> <li>- hydr. cylinder ejection, machine shallowing</li> </ul> </li> <li>➤ <b>2 TAPES:</b> <ul style="list-style-type: none"> <li>- hydr. cylinder insertion, machine deepening</li> </ul> </li> </ul>
	<p><b>WHITE DUSTERS</b> – control of the levelling discs</p> <ul style="list-style-type: none"> <li>➤ <b>1 TAPE:</b> <ul style="list-style-type: none"> <li>- Covering disc hydr. cylinder insertion, disc shallowing</li> </ul> </li> <li>➤ <b>2 TAPES:</b> <ul style="list-style-type: none"> <li>- Covering disc hydr. cylinder ejection, disc deepening</li> </ul> </li> </ul>
	<p><b>BLUE DUSTERS</b> – front tools control</p> <ul style="list-style-type: none"> <li>➤ <b>1 TAPE:</b> <ul style="list-style-type: none"> <li>- hydr. cylinder insertion, front tools deepening</li> </ul> </li> <li>➤ <b>2 TAPES:</b> <ul style="list-style-type: none"> <li>- hydr. cylinder ejection, front tools shallowing</li> </ul> </li> </ul>



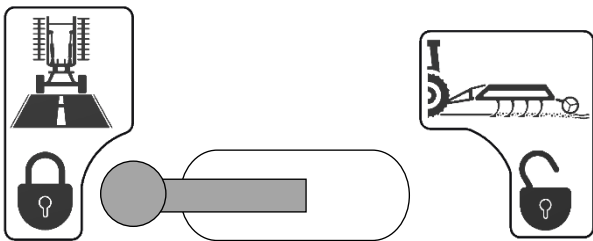
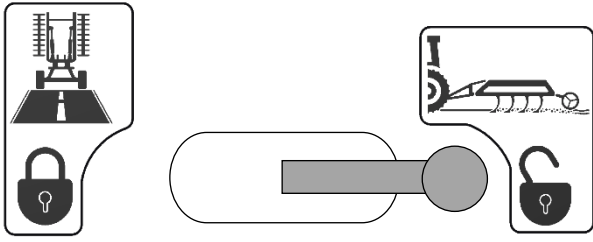
### 3.3 HYDRAULICS CONTROL PANEL

- On the tow bar, there is a control panel with to 2 levers (according to machine equipment, the number of levers may vary).
- By moving the levers, spherical valves in hydraulic circuits are switched or closed.
- The lever positions according to the pictograms drawn determine the specific settings of the hydraulic circuits for the required machine function.
- For better orientation, individual levers are also framed with colour according to the hydr. circuits controlled by the lever in question.
- **With open closing valves, it is necessary to pay increased attention, unexpected machine movement may occur.**



When the machine rides on roads, it is necessary to have the machine locking lever for transport in the LEFT position, i.e. locked.

#### Machine locking lever for transport

	<p><b>Left lever position</b></p> <p>The machine is brought into the transport condition. The axle (yellow) and folding (red) circuits are locked.</p>
	<p><b>Right lever position</b></p> <p>The machine is brought into the working condition. The axle (yellow) and folding (red) circuits are open and allow for free piston rod movement.</p> <p><b>Attention! Unexpected machine movement may occur upon switching.</b></p>

### Side roller closing valve lever (green circuit)

	<p><b>Lever to the left</b></p> <p>The circuit of the side rollers is closed. The circuit of the central roller is open. It is possible to change the height of the machine (the height on roads must be below 4 metres, i.e., the machine is resting on a transport liner)</p> <p>Used for transport.</p>
	<p><b>Lever to the right</b></p> <p>The green circuit is open.</p> <p>It is used for work and when folding into the transport position.</p> <p><b>Attention! The machine may suddenly move while rearranging the lever.</b></p>

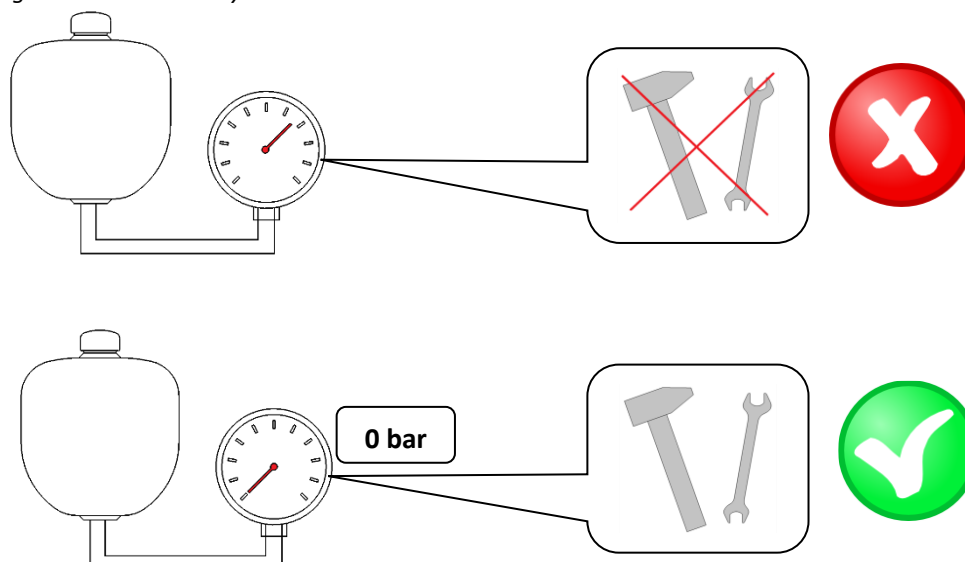
#### PRESSURE VESSEL



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.

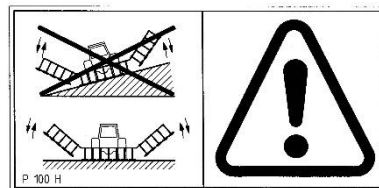
Fig. 4 – Work on the hydraulic circuit



### 3.4 FOLDING AND UNFOLDING OF THE MACHINE



- The hydraulics for the folding and unfolding must be connected to the double-action control unit.
- The operator must ensure that during folding and unfolding of the side frames, no person or animal is within their reach (i.e. at the place of their impact) or vicinity.
- Perform folding and unfolding on flat and solid surfaces or laterally to the slope with the fully open control unit.
- Execute the folding or unfolding only with a machine that is raised on the axle with the side rollers in the recessed position, i.e. their piston-rams should be drawn in.
- Remove stuck soil from folding points, soil may impair function and cause damage to the mechanics.
- During folding or unfolding, check the side frames and have them continuously fold into the end position to the stoppers.



**CAUTION!!!** The machine must be lifted on the axle when the machine is folded and unfolded. Otherwise, the rollers may get damaged.

Fig. 5 – Machine position for folding

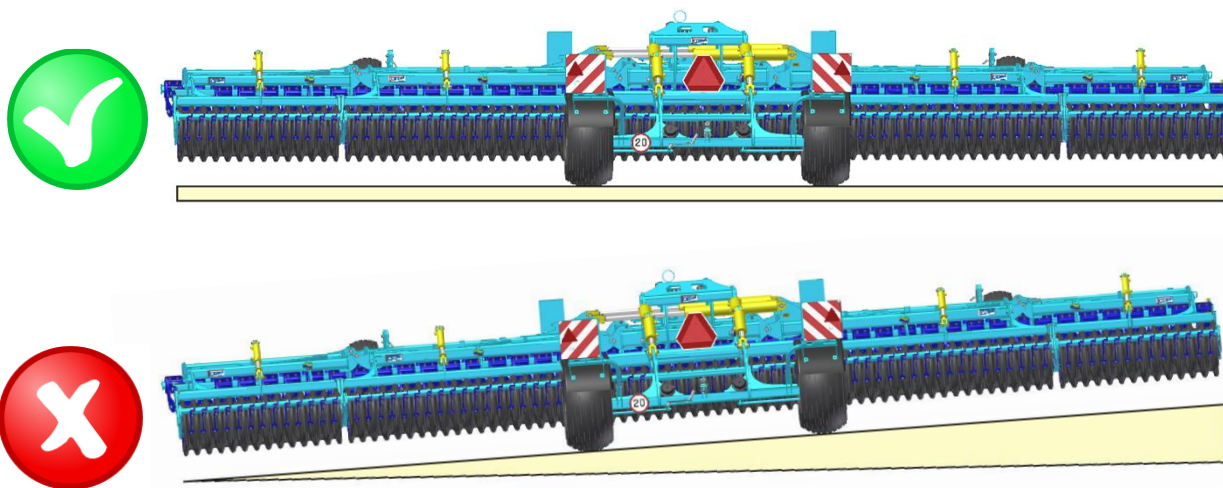
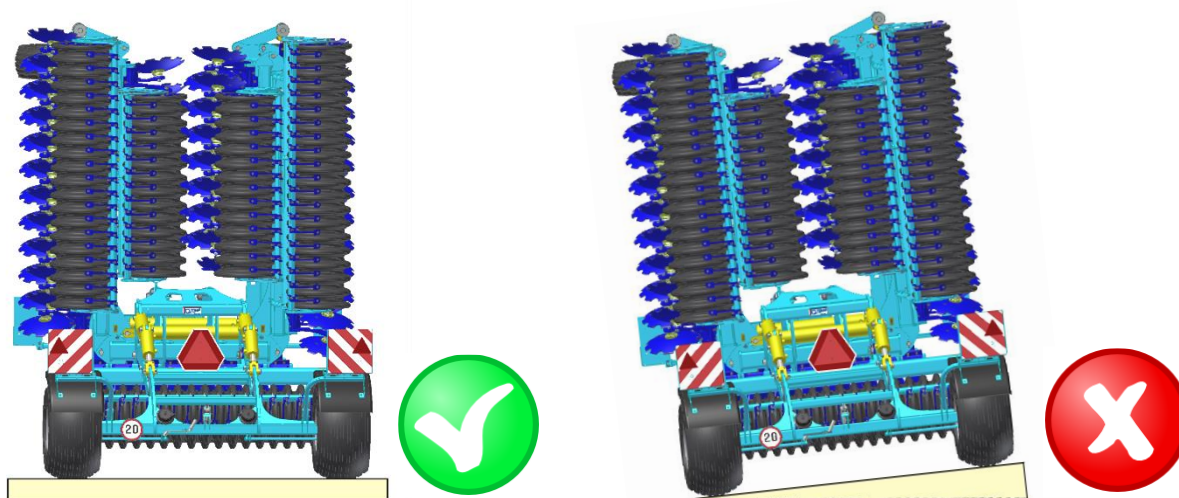


Fig. 6 – Machine position for unfolding



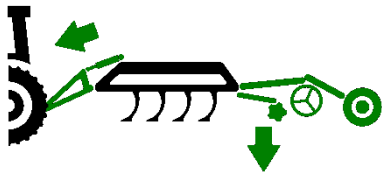
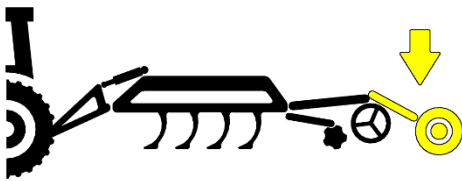
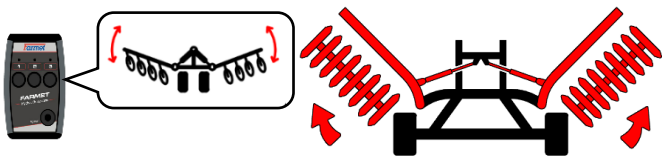
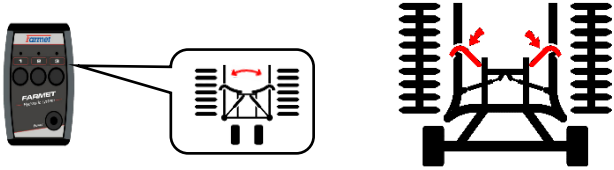
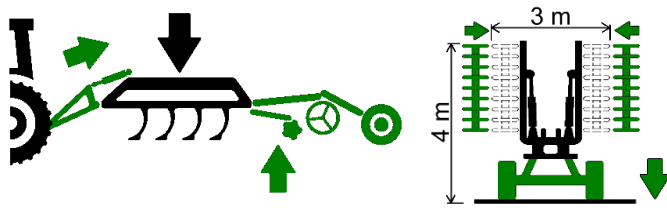
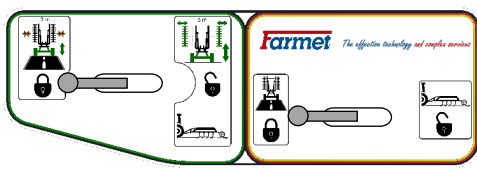
### 3.4.1 MACHINE UNFOLDING PROCEDURE

Tab. 5 – Work position of the machine

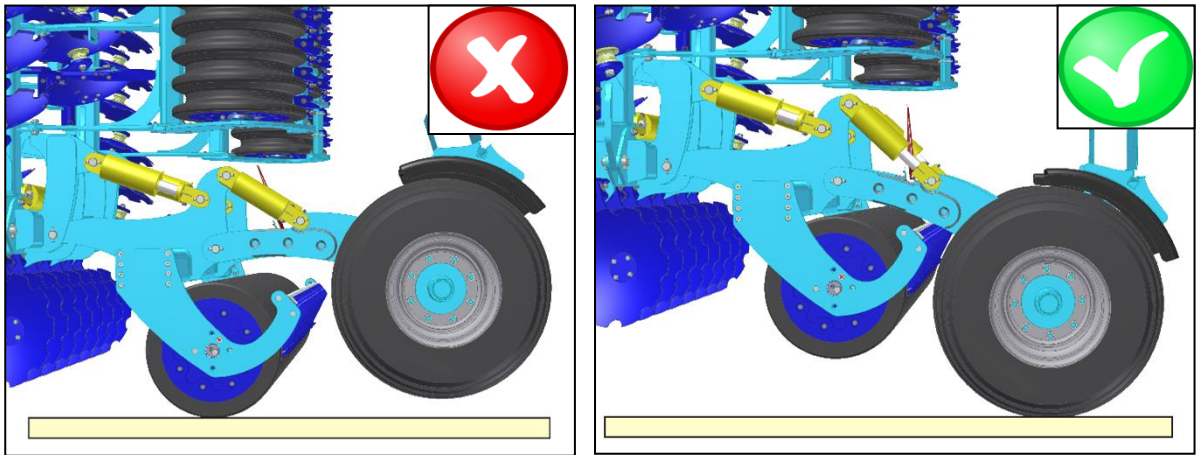
Machine Unfolding Procedure – Work Position		
<p><i>Initial condition: The machine is lifted on the axle (height up to 4 m), the side frames are secured with hooks, the spherical valves closed for transport, the switching valve is set to securing hooks.</i></p>		
1		<p>Rearrange (open) both levers to the right (closed for transport, side rollers closed) <b>The machine may move suddenly while the valves are being rearranged.</b></p>
		<p>Lift the machine up to the maximum height using the green circuit.</p>
		<p>Using the red circuit, release the securing hooks of the side frames.</p>
2		<p>Unfold the side frames with the red circuit. On the manometer, set the side frame downforce to 100 bar.</p>
		<p>Lift the axle with the yellow circuit up to the working position.</p>
	<p>Place the corresponding number of washers on the piston rods of the rollers and the tow bar, check the copying wheel depth setting pin position, and eject the end covering discs.</p> <p>The machine is ready for work. Headland turning is performed using the green circuit.</p>	
<p><b>SETTING THE DOWN PRESSURE OF SIDE FRAMES</b></p> <ul style="list-style-type: none"> <li>When the machine has been unfolded, the down pressure of the side frames must be adjusted to ensure optimal terrain tracing.</li> <li>Set the value of <b>100 bar</b> on the pressure gauge using the circuit for unfolding.</li> </ul>		

### 3.4.2 MACHINE FOLDING PROCEDURE

Tab. 6 – Transport position of the machine


Machine Folding Procedure – Transport Position		
Initial condition: The machine is unfolded and maximally lifted during the headland turn. All closing valves open, the red circuit switched to frame folding		
1	Install all the liners on the piston-rods of the central rollers (TRANSPORT)	
		Lift the machine up to the maximum height using the green circuit.
		Eject the axle piston rods (yellow circuit) into the end position, lift the machine up to the maximum height.
		Fold the machine with the red circuit.
		Secure the side frames with the red circuit.
		With the green circuit, lower the machine to the washers and insert the piston rods of the side rollers to the end position, i.e., maximum insertion. Transport height below 4 m and width below 3 m.
2		Rearrange (close) both levers to the left (closed for transport, side rollers closed).

 **Warning!!!** The machine must only be transported by the axle, not rollers.



### 3.4.3 SIDE FRAME FOLDING ADJUSTMENT

#### 3.4.3.1 FX650PS – 2 PISTON RODS

 The machine is folded by two piston rods that are not anchored to the central frame. The side frame plane against the centre is secured by end stops that must be set correctly. The correctly set end stops hold the plane of the machine while not being exposed to excessive load.

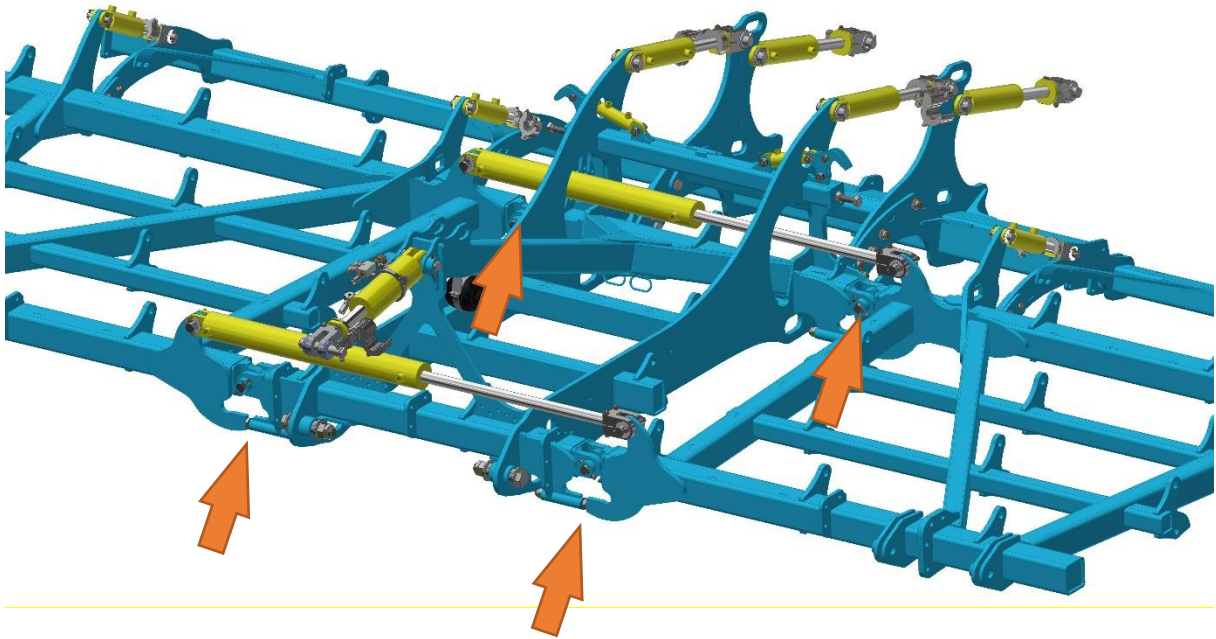
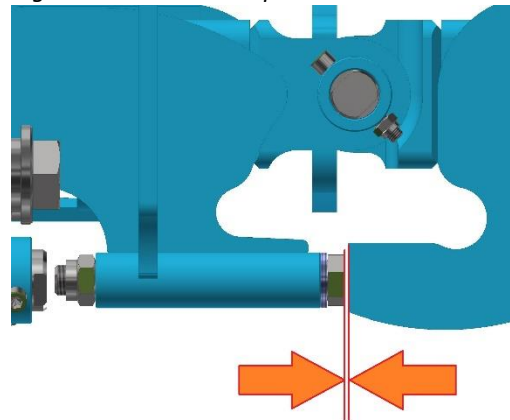


Fig. 7 – Bottom end stops that maintain machine plane



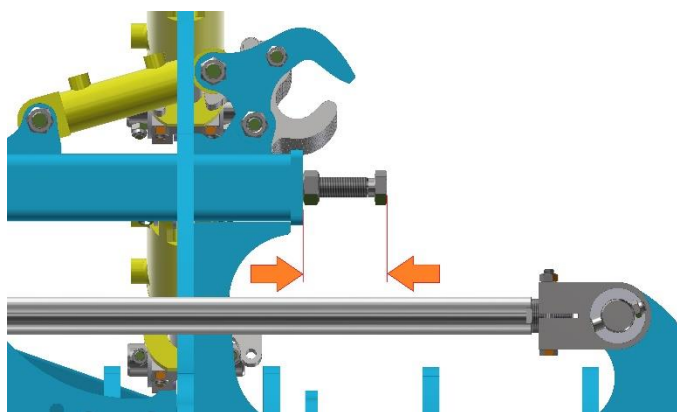
Fig. 8 – Bottom end stop allowance 1–3 mm





- The end stops below the folding joints must never touch the right and left side frame at the same time. Only the right or the left wing of the side frame can be touching. These are end stop positions that ensure the side frame is in the same plane as the central frame.
- Prior to setting the end stops, the machine plane must be set using the eye on the folding piston rods. The side frames are slightly sagging when the machine is lifted on the axle.
- The allowance between the end stop and the side frame must be 1–3 mm on each side. The measurement is taken with the machine folded and with fully drawn-out piston rods on the central frame. See Fig. 8.
- The end stops are set when the machine is folded, with the washers to set the allowance added gradually, see Fig. 7.
- The last thing to be set is the top end stops of folding, located below the piston rods that secure the frames during transport. The initial position is 10 cm from the head of the screw to the central frame plate.
- When folded, there must be no allowance between the top end stops and the side frame. The frames must always be tight to ensure the proper function of the side frame protection during transport. See Fig. 9.

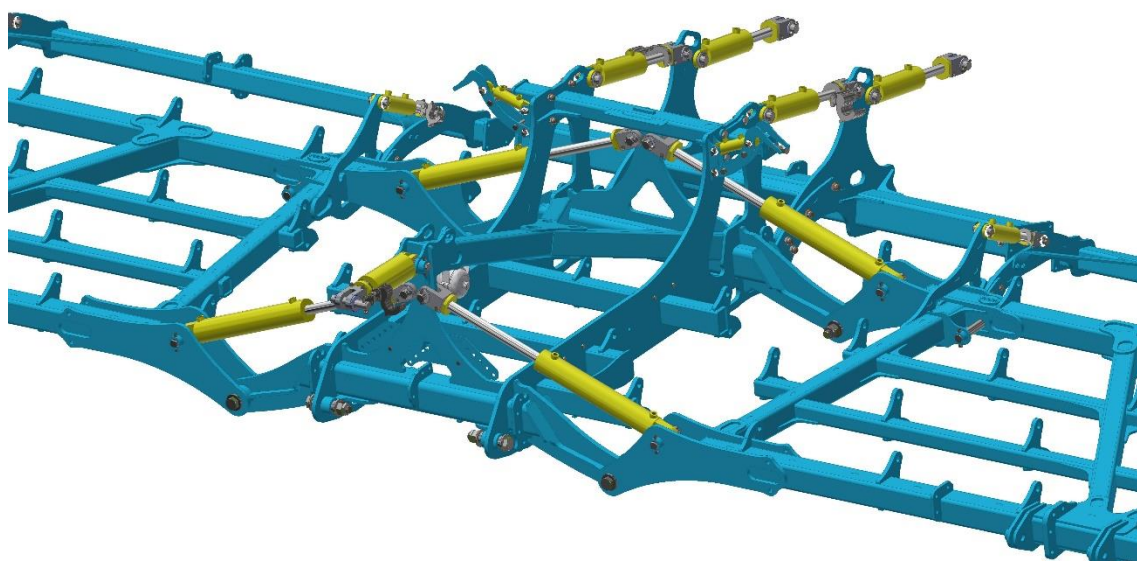
Fig. 9 – Top end stops of folded side frames for the transport position – FX650PS (initial position at 10 cm)



### 3.4.3.2 FX850PS – 4 PISTON RODS



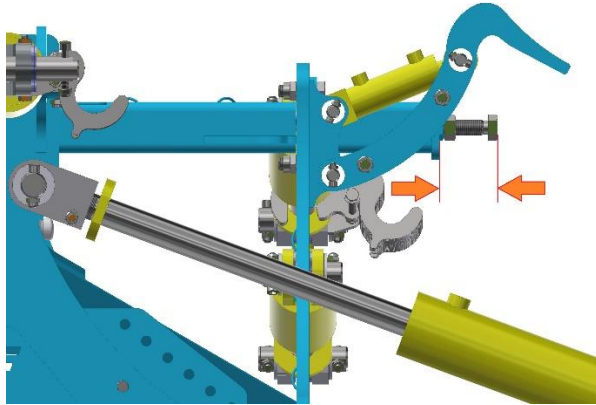
The machine is folded by four piston rods anchored to the central frame. The machine does not need bottom end stops because each side frame has its own folding piston rods. The machine plane is set using the piston rod eye.





- The last thing to be set is the top end stops of folding, located below the piston rods that secure the frames during transport. The initial position is 9.1 cm from the head of the screw to the central frame plate.
- When folded, there must be no allowance between the top end stops and the side frame. The frames must always be tight to ensure the proper function of the side frame protection during transport. See Fig. 10.

Fig. 10 – Top end stops of folded side frames for the transport position – FX850PS (initial position at 9.1 cm)



## 4. MACHINE TRANSPORT ON ROADS

### Transport position of FANTOM FX 650-850 PS



- Connect the machine by suspending on the tractor using the two-point suspension equipment.
- Bring the machine into the transport position (according to Tab. 6).
- 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.
- The maximum transport speed during travelling on roads is **30 kph**.



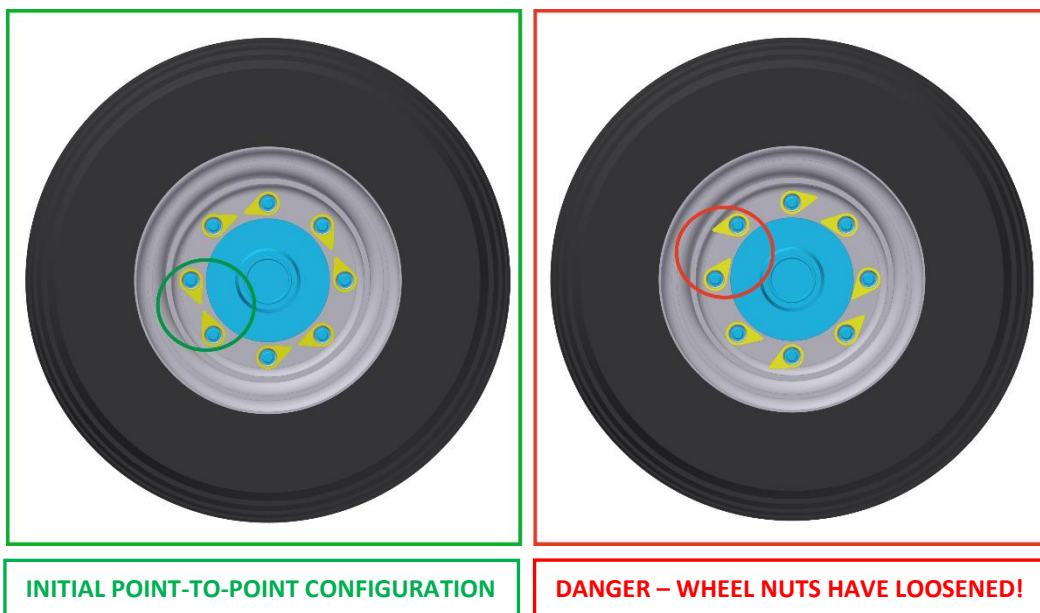
### Ban of transport with decreased visibility!

- 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 fold the side frames for transport and secure them against unwanted unfolding by disconnecting the hydraulic circuit of the machine and the tractor.
- 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.



### Checking the nuts on the transport axle

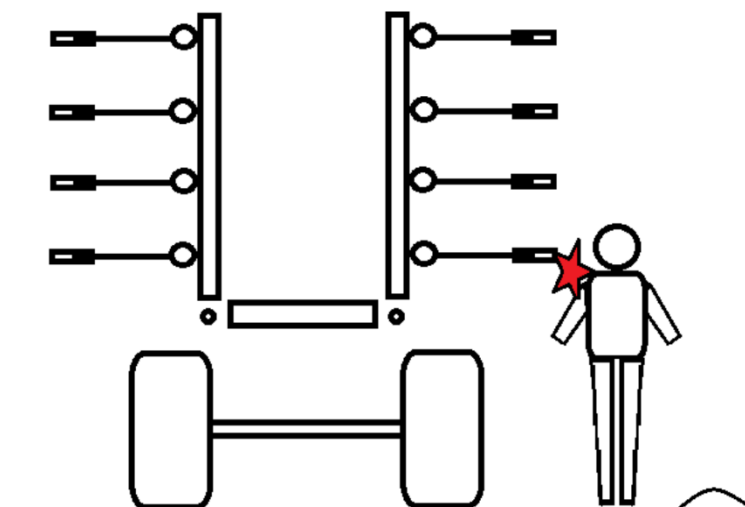
- Use the plastic arrow “Check Point” to check for loose nuts. It promptly shows the condition of the nuts, whether they are loose or not.
- Always check the Check Points before driving.
- When the arrows are not facing one another, the nuts have to be tightened to the required torque and the Check Point arrows have to point against one another as shown in the green picture.
- The torque of the wheel nuts is prescribed in the maintenance plan.



### 4.1 SHARP MACHINE PROJECTION

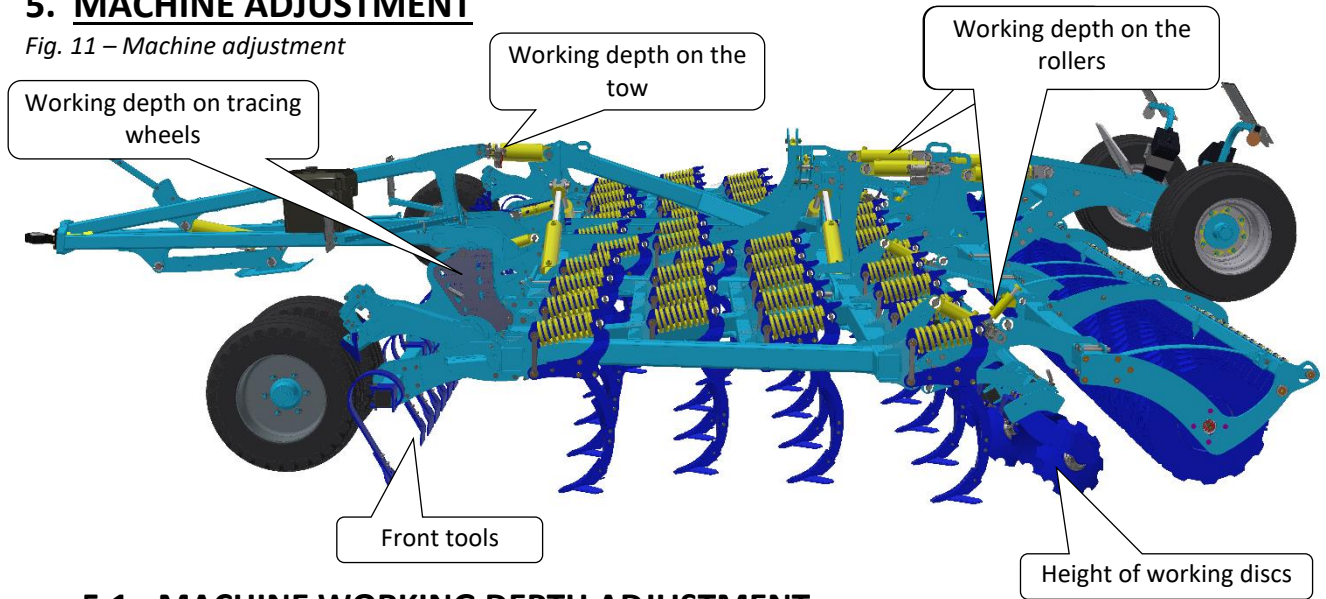


- The machine contains sharp structural projections
- **It is prohibited to operate and transport the machine on roads when visibility is reduced!!** - Persons or objects, or other road traffic participants could get caught.
- **The machine operator must be extra cautious when driving on roads and consider the width of the machine and safe distance from persons, vehicles and objects, or other road traffic participants!!**



## 5. MACHINE ADJUSTMENT

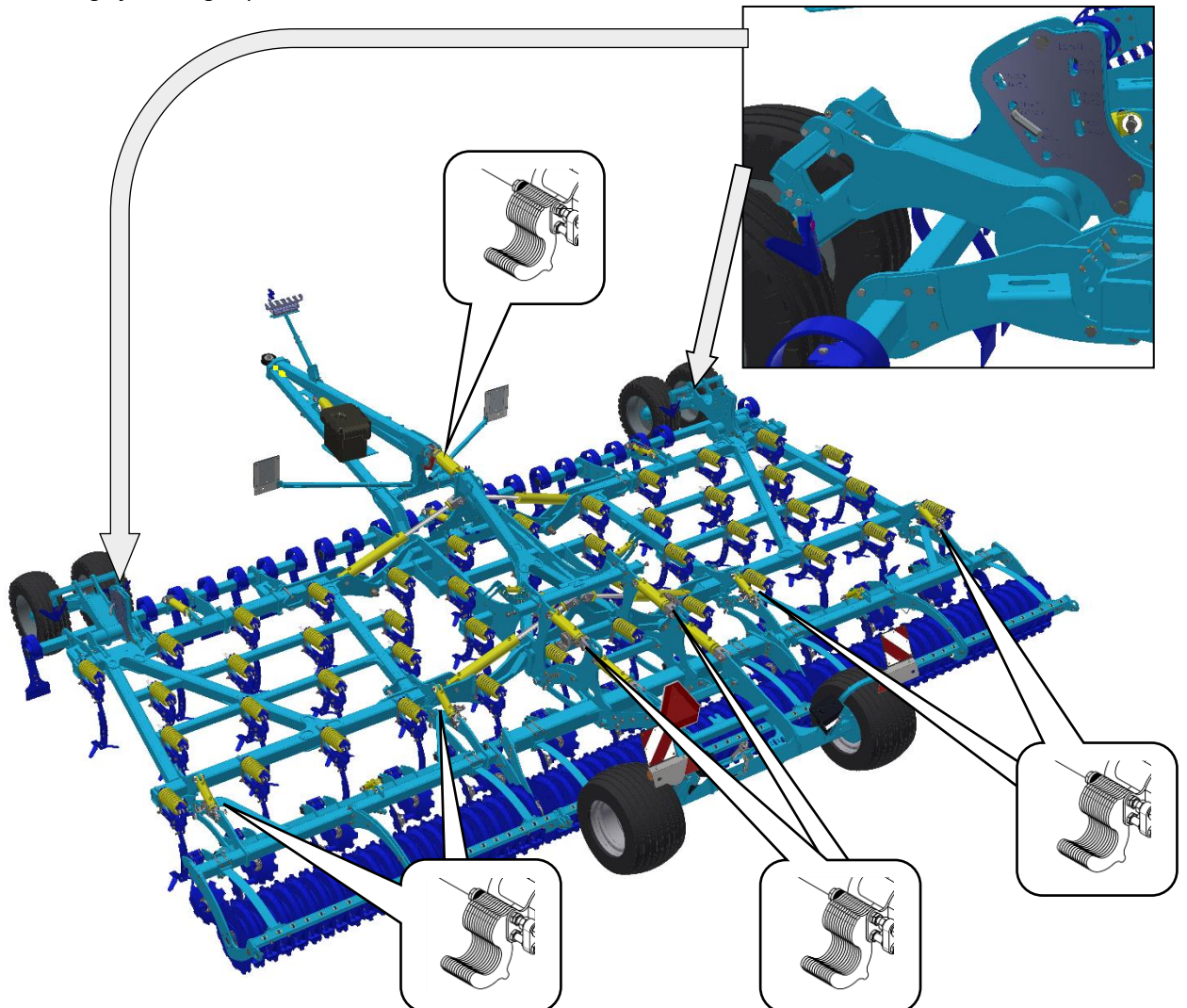
Fig. 11 – Machine adjustment



### 5.1 MACHINE WORKING DEPTH ADJUSTMENT

- Setting the depth of soil processing is executed when the machine is lifted on the rollers by adding or removing distance washers on the piston rods of the rollers.
- When changing the depth of soil processing, the pins of the tracing wheels also have to be adjusted in the relevant positions.

Fig. 12 – Setting of working depth



- On all piston rods, the same washer combination must always be set according to the tables at the setting point!!!
- Specified working depths at individual positions are only for information. They may vary according to particular soil conditions. Required number of distance washers may be added/removed as needed.

### 5.1.1 AJUSTMENT OF DEPTH ON ROLLERS

- When working, the number of washers must be the same on all rollers.
- The setting must also match the setting on the tow bar.
- During road transport (height below 4 metres), all washers must be used (applies mostly to FX850PS)
  - FX850PS – the machine must be transported on the clips!
  - FX650PS – transport on the clips is not necessarily required. With piston rods drawn out, the machine fits into 4 metres.
- There are no transport washers on side frame piston rods.
- Depth setting is also similar on the tow bar piston rod.
- On the tow bar piston rod, every fifth washer is thicker for easier distinction.

Washer Count	Setting [cm / in]
3	3 / 1.2
4	4 / 1.6
5	5 / 2.0
6	6 / 2.4
7	7 / 2.8
8	8 / 3.1
9	9 / 3.5
10	10 / 3.9
11	11 / 4.3
12	12 / 4.7
13	13 / 5.1
14	14 / 5.5
15	15 / 5.9

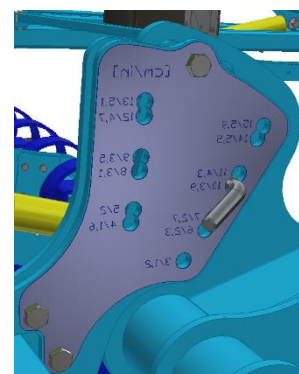
### 5.1.2 HITCH HEIGHT RELATED SETTINGS

- The number of washers on the tow bar piston rod must be adjusted according to the height (*h*) of the tractor hitch above the ground.
- The number of washers must be increased by the number stated in the following table.
- The number of washers can be adjusted for achieving frame parallelism with the ground.

h [cm/in]	Adjustment
60 / 23.6	+0
58 / 22.8	+2
56 / 22.1	+4
54 / 21.3	+6
52 / 20.5	+8
50 / 19.7	+10

### 5.1.3 DEPTH ADJUSTMENT ON THE COPYING WHEELS

- Perform the setting with the machine lifted up.
- Select the pin position corresponding to the desired working depth.
- The position must match the setting in the rest of the machine.
- The setting may vary according to specific soil conditions.



## 5.2 FRONT TOOLS DEPTH SETTING

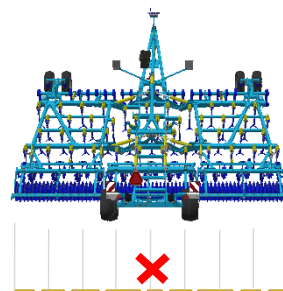
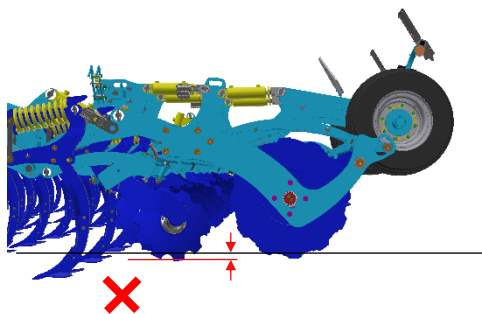
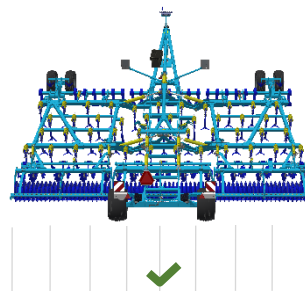
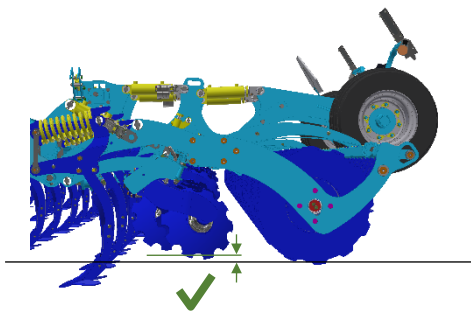
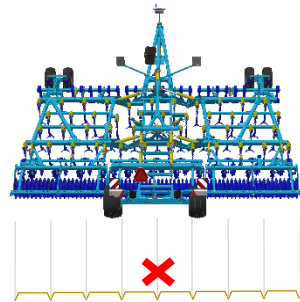
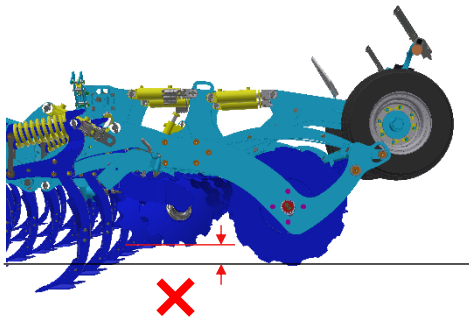
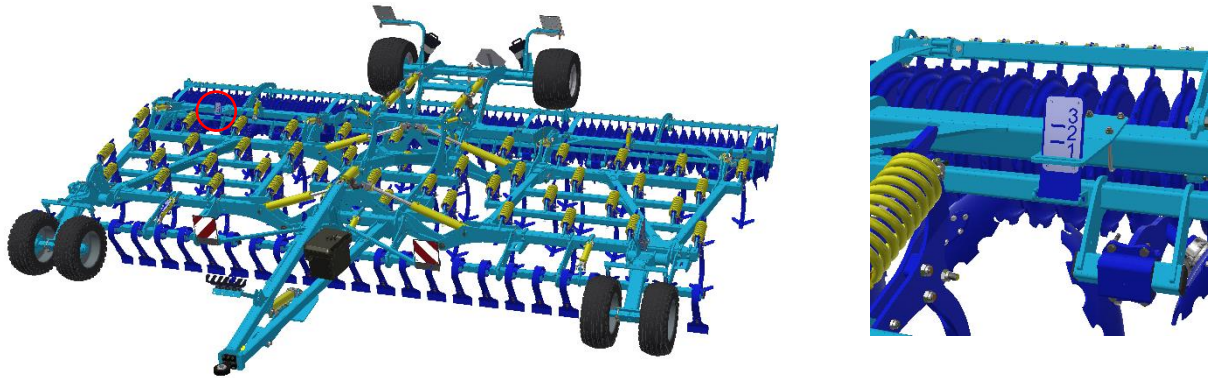
**Attention!** The front tools working depth changes with the working depth of the ploughshares.

- The setting is hydraulic from the cabin using the blue hydraulic circuit.
- The working depth can also be smoothly changed while driving.
- The current setting is visible on the indicator.
- The working depth is determined by the position of the piston rod and the height of the frame above the ground (or the ploughshare depth)
- 1 – maximum depth, work intensity, 4 – lifted, tools not working
- Too large a working depth of the front tools (machine frame low above the ground, high ploughshare depth) may cause its overload.



### 5.3 LEVELLING DISC ADJUSTMENT

- Set the working depth of the directing discs using the hydraulic circuit (**WHITE**). Be careful when setting.
- Correctly set discs ensure perfect levelling and covering with fine soil across the entire working width.
- With low disc deepening, grooves are left behind the rear ploughshares, with high deepening, traces of accumulated soil are formed behind the machine.
- Check the correct setting of the disc during work – the setting may vary according to soil conditions and disc wear.
- The height setting of the levelling discs may be checked on the indicator shown in the picture ( 1 – minimum depth, 3 – maximum depth).



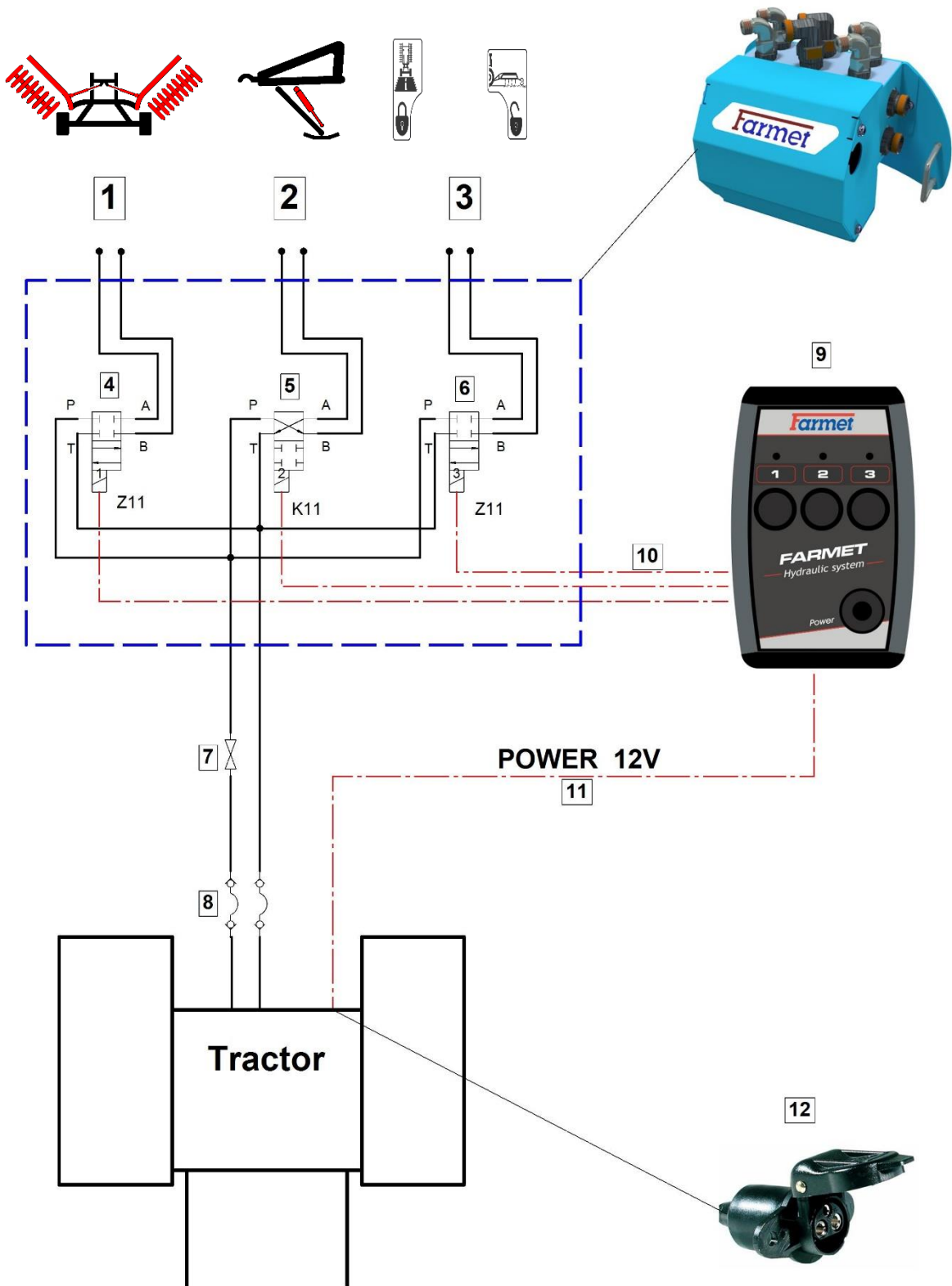
## 6. FARMET HYDRAULIC SYSTEM (ON REQUEST)

### 6.1 SYSTEM DESCRIPTION

The **FARMET HYDRAULIC SYSTEM** is an electric-hydraulic distributor that increases the number of hydraulic circuits of the tractor. It is additional equipment used mostly in places where the aggregated machine requires a higher number of hydraulic circuits that the tractor does not have available. The system can divide one tractor circuit up to three output circuits controlled by the operator from the tractor cabin. The system is built to allow control of one selected circuit at each moment.



## 6.2 SYSTEM CONNECTION DIAGRAM

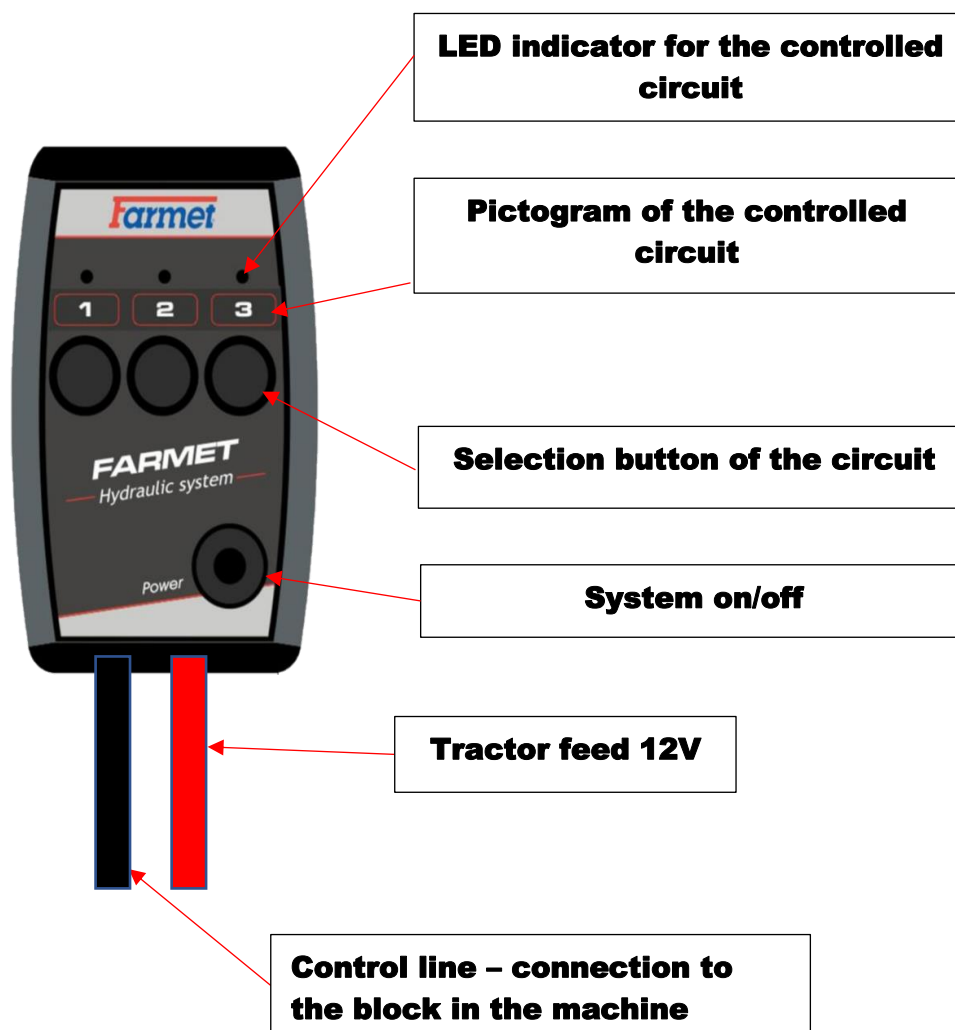


## SYSTEM COMPONENT DESIGNATION

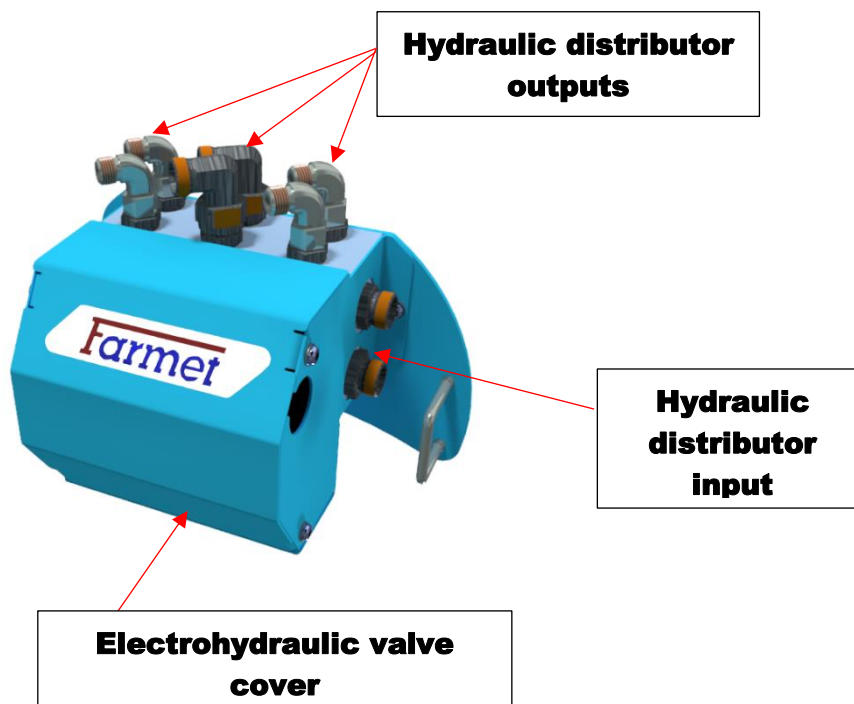
1	OUTPUT 1 – CIRCUIT 1 CONTROL
2	OUTPUT 2 – CIRCUIT 2 CONTROL
3	OUTPUT 3 – CIRCUIT 3 CONTROL
4	Electrohydraulic valve of CIRCUIT 1
5	Electrohydraulic valve of CIRCUIT 2
6	Electrohydraulic valve of CIRCUIT 3
7	Ball valve
8	Tractor couplers
9	Controller
10	Electric wiring between the hydraulic block and controller, with a connector for disconnecting
11	System supply line, equipped with a fuse
12	Tractor power socket

### 6.3 COMPONENT DESCRIPTION

#### 6.3.1 CONTROLLER



### 6.3.2 HYDRAULIC BLOCK



### 6.3.3 POWER SUPPLY

- The system is powered by the tractor network
- To ensure proper function of the system, the accumulator voltage must be within 12 V – 14.4 V /10A
- The power supply is provided by a three-pole tractor socket or a lighter socket
- The power line is equipped with a small knife fuse at 5A
- Never use a fuse with a different value



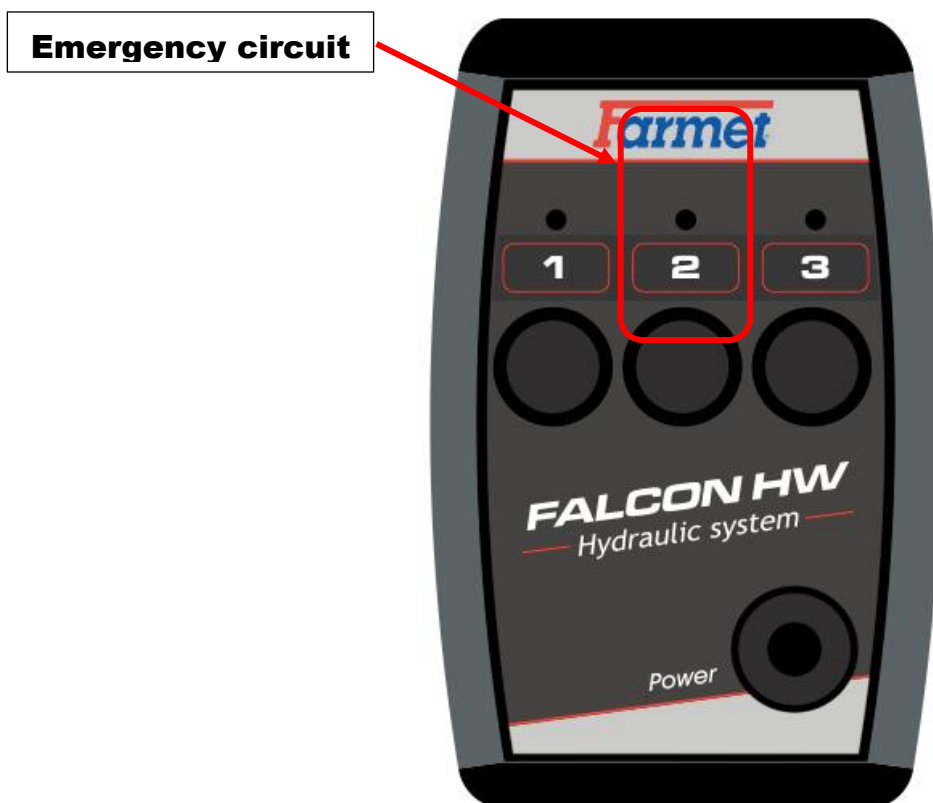


### 6.3.4 EMERGENCY

A defect in the electrical installation or power supply of the tractor is considered an emergency. When the system is completely disconnected, switched off or defective, it is always possible to control the circuit of the **support leg** (set as default, with a reversed switching function)

#### Manual emergency control


- The distributor can be controlled mechanically in emergency
- The control is performed by manually pressing the slide valve of the distributor over the spring (e.g., using a suitable rod with a diameter of about 3 mm)
- For this purpose, there are holes on the bottom of the distributor
- Example: Controlling the “frame folding” circuit
  - Close the circuit by pushing the slide valve for the “support leg” (the slide valve has an opposite function, the circuit is open without voltage)
  - Open the circuit for “frame folding” by pushing the slide valve
  - Control the selected circuit with oil pressure from the tractor



## 7. 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.
- Regularly check the prescribed pressure in the machine tyres and the condition of the tyres. Perform possible repairs of the tyres in an expert workshop.
- Keep the machine clean.



**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.**



**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.**

### **Nut tightening check**




- Wheel nuts the first time and every time after dismounting wheels – after 10 hours
- Then every 6 months
- Towing lug nut tightening – first after 10 hours and then every 6 months

### **Brake adjustment**

- The brake lever step must be adjusted before the season to ensure correct braking function
- The correct brake lever step is 25–45 mm
- When the brake is released, the lining must not rub against the brake drum (check by lifting the wheel)

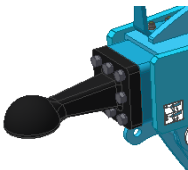
## MAINTENANCE PLAN

Perform the planned maintenance according to the instructions:

Maintenance Task	Daily (season)	Once a week	Before season	After season	Time interval
<b>Machine in general</b>					
<ul style="list-style-type: none"> <li>Visual inspection of the machine</li> <li>Checking for any undesirable sounds, vibrations and excessive wear</li> </ul>	X				
<ul style="list-style-type: none"> <li>Checking crucial nodes: pins, bearings, rollers, working parts</li> </ul>	X		X	X	
<ul style="list-style-type: none"> <li>Machine cleaning</li> <li>Storing the machine under roof, if possible</li> <li>Recording the mileage of the machine/season (ha)</li> </ul>		X		X	
<ul style="list-style-type: none"> <li>Comprehensive inspection</li> <li>Checking the frame</li> </ul>	X			X	
<div style="display: flex; align-items: center;">  <p>Do not use a high-pressure cleaner or direct stream of water to clean the hydraulic rollers, bearings, electric and electronic parts. The seals and bearings are not waterproof at high pressure.</p> </div>					
<b>Hydraulic system</b>					
Checking the function, tightness, mounting and worn spots of all hydraulic parts and hoses		X	X		
<b>Hydraulic hoses – replacement:</b> <ul style="list-style-type: none"> <li>Damaged external casing of the hose (mechanically or blistered)</li> <li>Fluid seepage (especially the end piece)</li> <li>Bumps or blisters on the hose</li> <li>Deformed or corroded end piece</li> <li>Loose end piece – the hose spins</li> </ul>	X			X	
<b>Hydraulic hoses - replacement:</b> <ul style="list-style-type: none"> <li>Expired service life of the hose</li> </ul> <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div>					6 years
<p><b>!!! PREVENTION means removing the problem according to the plan, outside the season, without stress and comfortably before a secondary problem, an accident or a health hazard arises.</b></p>					

## MAINTENANCE PLAN

Perform the planned maintenance according to the instructions:

Maintenance Task	Daily (season)	Once a week	Before season	After season	Time interval						
<b>Bolt connections</b>											
<b>Visual</b> inspection of bolt and hydraulic joints, tighten any loose joints using a corresponding torque (see the torque chart)	X			X							
<b>Towing lug</b> – check, tighten if needed <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <table border="1" style="border-collapse: collapse; margin-right: 20px;"> <tr> <td style="padding: 2px;">M16 - 10.9.</td> <td style="padding: 2px;">276 Nm</td> </tr> <tr> <td style="padding: 2px;">M20 - 10.9.</td> <td style="padding: 2px;">536 Nm</td> </tr> </table>  </div>	M16 - 10.9.	276 Nm	M20 - 10.9.	536 Nm		X	X				
M16 - 10.9.	276 Nm										
M20 - 10.9.	536 Nm										
<b>Wheels – tighten all wheel nuts.</b> <ul style="list-style-type: none"> <li><b>First time: after 10 hours of operation</b></li> <li><b>Wheel replacement: after 10 hours of operation</b></li> </ul> <table border="1" style="border-collapse: collapse; margin-top: 10px; width: 150px;"> <tr> <td style="padding: 2px;">M 18 x 1.5</td> <td style="padding: 2px;">265 Nm</td> </tr> <tr> <td style="padding: 2px;">M 20 x 1.5</td> <td style="padding: 2px;">343 Nm</td> </tr> <tr> <td style="padding: 2px;">M 22 x 1.5</td> <td style="padding: 2px;">440 Nm</td> </tr> </table>	M 18 x 1.5	265 Nm	M 20 x 1.5	343 Nm	M 22 x 1.5	440 Nm		X	X		
M 18 x 1.5	265 Nm										
M 20 x 1.5	343 Nm										
M 22 x 1.5	440 Nm										
<b>Brake system</b>											
<b>Brake line and hoses</b> – check the function, tightness, mounting and clamping, or breaking	X		X	X							
<b>Brake components</b> – check the function, tightness, mounting	X		X	X							
<b>Air nozzle</b> – drain using the draining valve		X		X							
<b>Draining valve</b> – check the function, clean and replace sealing			X	X							
<b>Pipe filter</b> – clean			X	X							
<b>Brake/parking brake</b> – check the function, escapement setting <b>25-45mm</b>	X										
<b>Brake lining</b> – check the condition of the brake lining, min. thickness of 3mm				X							
<b>Wheels/axle</b>											
<b>Checking the tyre pressure</b>											
Transport axle FX650-850PS	Mitas 19.0/45-17 144 A8 Pressure 400kPa	X			X						
	BKT 19.0/45-17 144 A8 Pressure 280 kPa										
<b>Transport axle bearings</b> – check and adjust allowance if needed (in the workshop)				X							

## MAINTENANCE PLAN

Perform the planned maintenance according to the instructions:

Maintenance Task	Daily (season)	Once a week	Before season	After season	Time interval
<b>Electric cables</b>					
Check for any damage, replace if needed		X	X		
<b>Safety measures</b>					
<b>Lighting and safety hatched boards</b> – check the condition, function and cleanliness	X		X		
<b>Hazard and safety labels</b> – check that they are installed and legible		X			
<b>Machine lubrication plan</b>					
<b>Drawbar joint / lifting loop</b> – grease	X			X	
<b>Handbrake bolt</b> – grease or suitable oil	X			X	
<b>Axle bearings</b> – grease with Lithium content – check, refill if needed				X	
<b>After season</b>					
<b>Entire machine</b>					
<ul style="list-style-type: none"> <li>• Treat and clean the machine; do not spray oil or similar agents on the plastic parts</li> <li>• Spray the piston-rods of the hydraulic cylinders with suitable anti-corrosion agents</li> <li>• Check the tightness of all bolt and plug-in connections (see the torque chart)</li> <li>• Check for any damage of the electric cables and replace if needed</li> </ul>					
<b>Brake system</b>					
<ul style="list-style-type: none"> <li>• Preserve the anti-freeze fluid for air-brake systems (about 0.1l), ethanol-free, before the last ride, use fluid recommended by the tractor manufacturer.</li> <li>• Secure the machine against movement by Scotch blocks.</li> <li>• Release the parking brake, release air from the air nozzle and close the brake lines. The service brake must be released during winter so that it does not get stuck on the brake drum</li> </ul>					
<b>Points of lubrication</b>					
Grease the points of lubrication according to the lubrication plan, use grease <b>KP2P-20 Lix</b> , under <b>DIN 51 502</b>					
<p><b>!!! PREVENTION means removing the problem according to the plan, outside the season, without stress and comfortably before a secondary problem, an accident or a health hazard arises.</b></p>					

## 8. MACHINE STORAGE

Long-term machine shutdown:

- Store the machine under a roof if possible.
- 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.
- Store the machine in the position with folded frames in the transport position. Store the machine on the axle and the storage leg, secure the machine against spontaneous movement using scotches or another suitable tool.
- When storing, lower the machine into the lower position using hydraulics.
- The machine must not lean on the discs as the working discs of the machine could be damaged.
- Secure the machine against access of unauthorised persons.

## 9. MACHINE LUBRICATION SCHEDULE

- During machine maintenance and its lubrication, it is necessary to observe the safety regulations.
- Lubricate all the points at the beginning and at the end of the season.

Tab. 8 – Locations and Intervals of the Machine Lubrication

LUBRICATION POINT		INTERVAL	LUBRICANT
Tow bar joint	Fig. 13	<ul style="list-style-type: none"> <li>• 50 hours (weekly)</li> </ul>	Plastic lubricant of class NGLI 2
Towing lug	Fig. 14		
Brake levers, brake shaft		<ul style="list-style-type: none"> <li>• 250 hours</li> </ul>	
Folding joints			

Fig. 13 - lubricator, tow bar joint

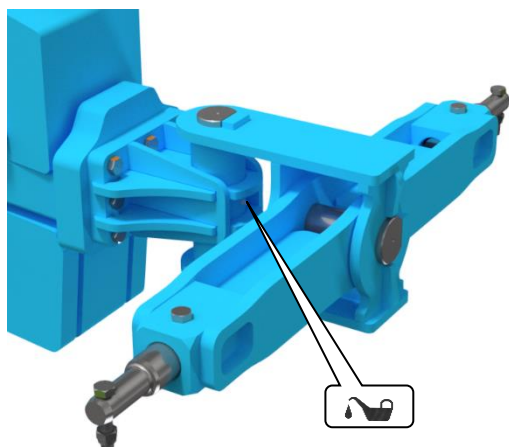
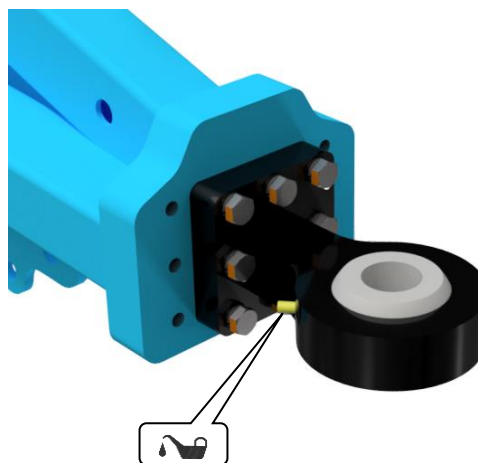


Fig. 14 – towing lug



### 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.

## **10. ENVIRONMENTAL PROTECTION**

- Regularly check the tightness of the hydraulic system.
- Preventively replace or repair hydraulic hoses, possibly further parts of the hydraulic system showing signs of damage before oil leaks occur.
- Check the condition of hydraulic hoses and perform their timely replacement. The service life of hydraulic hoses includes the time when they were stored.
- Handle oils and greases according to valid waste laws and regulations.

## **11. 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.

## **12. SERVICING AND WARRANTY CONDITIONS**

### **12.1 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.

### **12.2 WARRANTY**

- 12.2.1 The manufacturer provides a warranty of 24 months for these machine parts: main frame, axle, and machine tow bar. For other parts of the machine, the manufacturer provides a warranty of 12 months. The warranty is provided from the date of sale of the new machine to the end user (consumer).
- 12.2.2 The warranty applies to hidden defects that will show in the warranty period with proper use of the machine and while fulfilling the conditions stated in the operating manual.
- 12.2.3 The warranty does not apply to wearable spare parts, i.e. regular mechanical wear and tear of replaceable parts of the working sections (shares, edges, etc.).
- 12.2.4 The warranty does not apply to indirect consequences of possible damage, such as service life decrease etc.
- 12.2.5 The warranty is bound to the machine and is not void upon an owner change.
- 12.2.6 The warranty is limited to the disassembly and assembly, possibly replacement or repair of the defective part. The decision, whether to replace or repair the defective part, is up to the contractual workshop of Farmet.
- 12.2.7 During the warranty period, only the authorised servicing technician of the manufacturer may perform repairs or other interventions into the machine. In the opposite case, the warranty will not be acknowledged. This provision does not apply to the replacement of wearable spare parts (see point 11.2.3).
- 12.2.8 The warranty is conditioned by using the genuine spare parts of the manufacturer.

**ES PROHLÁŠENÍ O SHODĚ**  
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 **DÉCLARATION CE DE CONFORMITÉ**  
 **СЕРТИФИКАТ СООТВЕТСТВИЯ ЕС**  
 **DEKLARACJA ZGODNOŚCI WE**

1.  My  We  Wir  Nous  Мы  My: **Farmet a.s.**  
 Jiřinková 276  
 552 03 Česká Skalice  
 Czech Republic  
 DIČ: CZ46504931  
 Tel/Fax: 00420 491 450136

Vydváme 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 : **Dlátový kypřič**  
 Machine: - name : **Chisel cultivator**  
 Fabrikat: - Bezeichnung : **Meißelgrubber**  
 Machinerie: - dénomination : **Cultivateur à siceaux**  
 Сельскохозяйственная машина: - наименование : **Чизельный культиватор**  
 Urządzenie maszynowe: - nazwa : **Spulchniarka dłutowa**

- typ, type : **FANTOM**  
 - model, modèle : **FX 650 PS | FX 850 PS**  
 - PIN/VIN:

-  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/ES).  Einschlägige Regierungsverordnungen (NV): Nr.176/2008 Slg. (Richtlinie 2006/42/ES).  Décrets respectifs du gouvernement: n°.176/2008 du Code (directive 2006/42/CE).  Соответствующие постановления правительства: № 176/2008 Сб. (инструкция 2006/42/ES).  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:  Normы, на основании которых производилась сертификация:  Normy, według których została przeprowadzona ocena: ČSN EN ISO 12100, ČSN EN ISO 4254-1.

Schválil  Approve by dne: 08.09.2022  
 Bewilligen  Approuvé  
 Утвердил  Uchwalit

V České Skalici dne: 08.09.2022

**Ing. Petr Lukášek**  
 technický ředitel  
 Technical director

**Ing. Karel Žďárský**  
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