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MODEL

HB-31/88

HORIZONTAL

BENDING PRESS

SERIAL # HB10013-CURRENT

VERSION 1 - NOVEMBER 2026

SCOTCHMAN IND. - 180 E US HWY 14 - PO BOX 850 - PHILIP, SD 57567 Call: 1-605-859-2542

Index

Index 2
Introduction 4
1. Guidelines concerning a safe use 5
1.1 Personal protection equipment 6
1.2 Informational symbols and warning signs 7
2. Machine characteristics 10
2.1 Machine identification 10
2.2 Example Overall dimensions 11
2.3 Description of the design and purpose of the machine 11
2.4 Specification of the machine's main elements 13
2.5 Main technical specifications 14
2.6 Guard positions 14
3. Storage and transport 15
3.1 Transport 15
3.2 Long standstills 16
4. Preparing the machine for work 17
4.1 Preparing the workplace 17
4.2 Machine's workspace 18
4.3 Environmental conditions 19
4.4 Before starting the machine 19
5. Operating flow and pressure adjustment valves (depending on the model you have) 20
6. Control – operating the control panel and working with the machine 22
6.1 First start-up (including calibration) 25
6.2 Setting the piston stroke, saving steps and programs 27
6.3 Working in manual mode 29
6.4 Working in automatic mode 30
6.5 Additional functions 31
6.6 When power needs to be restored after an outage 32
7. Tools – applications and replacement 35
7.1 Tool replacement 36
7.2 Optional motorized back gauge 38
8. Technical information of hydraulic unit 45
8.1 Hydraulic unit's technical specifications 45
8.2 Description of the operation of the unit with manual valves and list of primary components 46

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8.3. Description of the operation of the unit with proportional valves and list of primary components 47
9. Maintenance and service 48
9.1 Changing the oil and filter of the hydraulic system 49
9.2 Hydraulic oil for the Profi Press 51
10. Press errors and failures (troubleshooting) 52
11. Residual risk 54
12. Optional stamps / punches / dies 55
13. Die selection table 61
14. Warranty card 63
14.1 Warranty terms for Profi Press PPHB-models 64
15. Declaration of conformity for the Profi Press PPHB-models 65
16. Parts lists of Profi Press PPHB-models 66
17. Hydraulic schematics 72
18. Parts list of hydraulic unit 74
19. Parts list of hydraulic actuator 79
20. Electrical diagram of the press with manual valves 82
21. Electrical diagram of the press with proportional valves 84
22. Electrical diagram of the optional motorized back gauge 87

Introduction

This instruction manual is an inseparable part of the machine it describes, which cannot be used without the manual. Any modifications of this manual are prohibited without the manufacturer's prior consent.

The operator of the PPHB-model and the person performing maintenance and repair must read this instruction manual. Before starting the machine, read this instruction manual carefully and become familiar with how to operate the machine, its design and principle of operation. Only a legal adult, with the proper qualifications and training adequate to the operation of such machinery, may operate the hydraulic press. Following the recommendations and guidelines in the instruction manual ensures easy maintenance and safety for the personnel operating the machine.

RHTC reserves the right to make modifications and changes without giving prior notice and accepts the obligation to update this manual according to the policy of continuous product improvement and modernization that we have adopted.



Hazard warning symbol

If you see this symbol: take caution against the hazard, read the relevant information carefully and inform other operators.

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1. Guidelines concerning a safe use



It is strictly prohibited to start the machine when safety guards are not in place or protective devices are inactive or have been modified

1. This instruction manual must be read carefully before commencing any work.
2. The machine must be used solely for the purposes for which it was manufactured and designed.
3. Only a legal adult can operate the PPHB-model hydraulic press.
4. Unauthorized persons, particularly children, are prohibited near the machine while it is in operation.
5. It is prohibited to use a machine that bears signs of mechanical damage, electrical damage, or when damage to the hydraulic system is presumed.
6. Check for foreign objects that could cause dangerous incidents in the direct vicinity of the machine's tools, worktable, and in the machine's surroundings each time before beginning work.
7. Before using the machine, inspect its technical condition, the fastenings of individual mechanisms, the power cord, socket and plug, and the power switch as well as the condition of hydraulic conduits.
8. Engagement of the machine's drive may only take place after you have made sure that the power cord is connected to the power grid according to relevant requirements.
9. It is prohibited to connect power cords bypassing the socket - plug system.
10. In the case of a break in electrical supply, shut the machine down immediately.
11. If sparking is observed in the electrical installation, shut the hydraulic press down immediately. The machine may only be restarted after the failure is resolved.
12. In the case of fire in the electrical installation, powder extinguishers are to be used. Do not use any other types of extinguishers or water.
13. It is prohibited to leave the machine unattended while it is running.
14. It is prohibited to move the hydraulic press during work.
15. It is prohibited to dismount the guards of the machine and any tool guards that may be present during work.
16. It is prohibited to perform work on the hydraulic press when punches, dies (or other working tools) are in direct proximity to hands or other tools.
17. Persons who are in an intoxicated state, under the influence of drugs, or have a health condition disqualifying them from the operation of such machinery,

unauthorized persons and bystanders, particularly children, are prohibited from operating this machine.

18. It is prohibited to wear jewelry (watches, rings), loose clothing, i.e. scarves, ties, unzipped jackets, that can be caught or pulled in by the moving elements of the machine.
19. Always use personal protection equipment meeting the requirements of directive 89/686/EEC in order to eliminate the risk of injury due to scraping, cutting, crushing, etc. hazards.
20. All oil leaks must strictly be removed from and around the machine before starting up the machine.
21. It is prohibited to accumulate cloths soaked in oil or grease. They pose a fire hazard when in the machine's vicinity. Such cloths must be stored in a closed container far away from the machine.
22. It is prohibited to operate the machine when the hydraulic unit's cover is not tightly fastened.
23. It is prohibited to clean the machine using compressed air.
24. Use of hearing protection, i.e. earmuffs or earplugs, is mandatory for operating personnel, because the continuous noise level dB(A) near the machine under operating conditions is approx. 87 dB(A).



The machine's manufacturer is not liable for cases where the above instructions are not followed.

Failure to comply with the guidelines given above poses the risk of an accident and disability !

1.1 Personal protection equipment

It is prescribed for the machine's operators and maintenance personnel to use the following personal protection equipment (PPE), compliant with directive EU/2016/425:

1. Gloves: cut- and tear-resistant during work and maintenance on the machine.
2. Protective goggles: Use particularly during cleaning of the machine with compressed air and during maintenance work on the hydraulic unit.
3. Footwear: With steel toes and anti-skid soles.
4. Protective earplugs or earmuffs: protecting against noise generated by the machine.

1.2 Informational symbols and warning signs

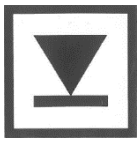
Table 1 presents the positioning of pictograms on the machine, their explanations and positions.

	**The condition and readability of pictograms is to be checked regularly. In the event of damage, pictograms must strictly be replaced.**

Table 1. *List of pictograms and their locations*

Item no.	Warning sign or informational symbol	Meaning	Position on machine
1		Read the instruction manual	Guard of hydraulic actuator
2		The machine may only be operated by an authorized person	Guard of hydraulic actuator
3		Use hand protection	Guard of hydraulic actuator
4		Do not repair the machine while it is running	Guard of hydraulic actuator

Item no.	Warning sign or informational symbol	Meaning	Position on machine
5		Risk of hand crushing by moving parts	Guard of hydraulic actuator
6		Mandatory use of hearing protection	Guard of hydraulic actuator
7		Prescription to use foot protection	Guard of hydraulic actuator
8		Mandatory use of eye protection	Guard of hydraulic actuator
9		Direction of rotations to the left	Rotor housing of hydraulic unit engine
10		Use guards	Guard of hydraulic actuator
11		Do not open or dismount guards while the machine is in operation	Guard of hydraulic actuator
12		Hazardous substance	Hydraulic unit housing
13		Substance hazardous to the environment	Hydraulic unit housing

Item no.	Warning sign or informational symbol	Meaning	Position on machine
14		24V voltage	Foot pedal switch
15		High voltage warnings	Electrical cabinet housing
16		Direction of forklift access	Base of hydraulic press, near transport channels
17		Foot pedal switch marking	Foot pedal switch housing

2. Machine characteristics

This section describes the main characteristics of the machine, i.e. technical specifications, overall dimensions.

2.1 Machine identification

The machine's type and model are given in table 2. The machine's identification data is found on the rating plate on the press's housing (fig. 1).

Table 2. *Machine identification table*

Brand	Profi Press
Machine model	Profi Press PPHB-model with NC-control

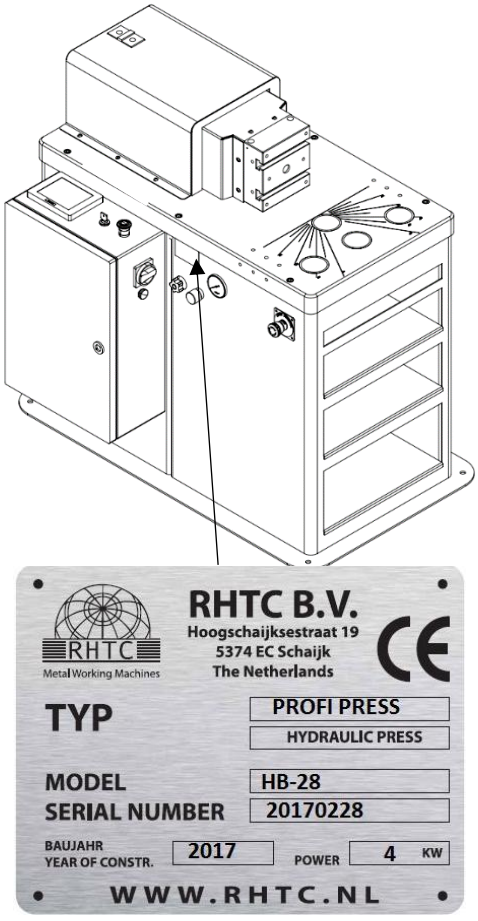


Fig. 1. Location of type-plate on the machine

2.2 Example Overall dimensions

Figure 2 presents the overall dimensions of the PROFI PRESS PPHB-28.

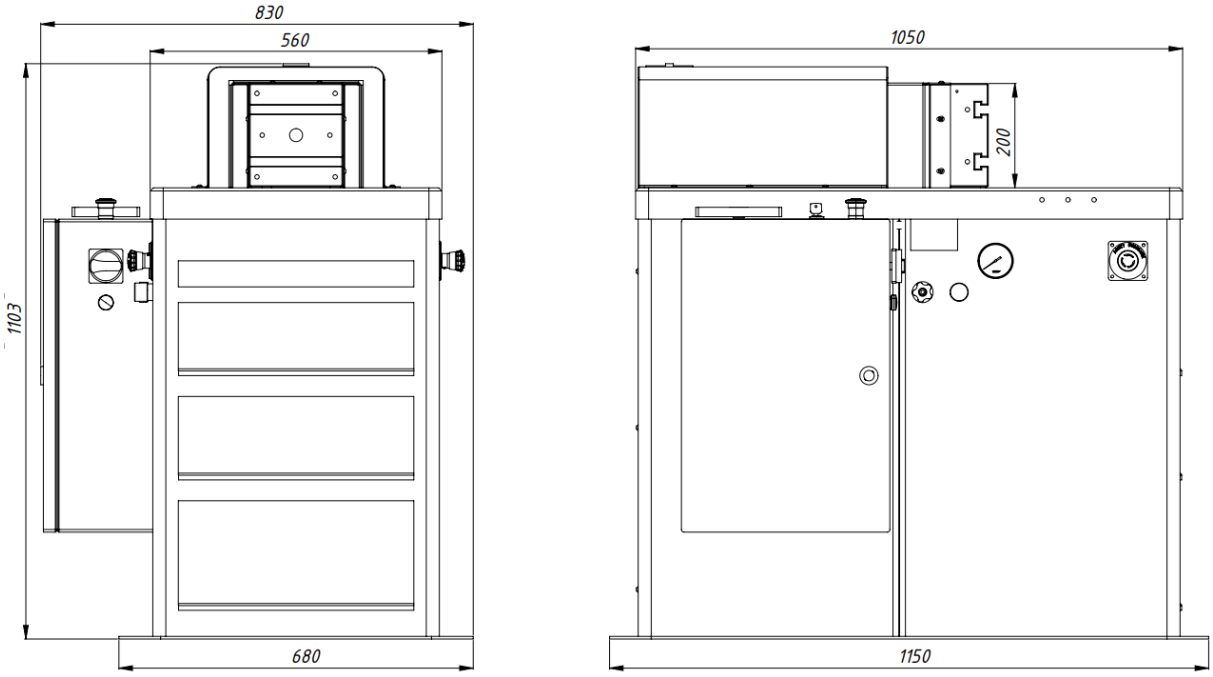


Fig. 2. Overall dimensions of PPHB-28

2.3 Description of the design and purpose of the machine

The horizontal hydraulic press is a universal machine that has multiple applications related to cold metalworking, explained by means of figure 3. The machine's applications vary depending on the accessories installed on the worktable (1), on the tool mount (2) and in punch and pin holes (3). The machine has been designed to perform bending, profiling, flattening, bending, punching, hole punching, and straightening operations on metal elements. Thanks to a wide array of tools for the press, the machine can find applications in many industries that use cold metalworking. An angular graduation has been provided on the worktable for easier bend measurement (4).

Tools (i.e. block punches) mounted on the tool mount and tools installed in punch and pin holes perform the work of the horizontal press. Tools can be stored in the drawers found on the front of the machine (5). The tool mount moves thanks to its connection with the hydraulic actuator (which performs reciprocating motion), which is the main working element of the machine and is found under a guard (6).

The hydraulic actuator is powered by a hydraulic unit situated under the worktable behind the hydraulic unit guard (7). The operator can adjust the pressure of the actuator and the speed of the piston's extension, depending on the type of model / press, by means of the pressure regulating valve (8) and the flow regulating valve (9) or by means of the control panel (11).The hydraulic actuator's current working pressure can be read from the pressure gauge situated next to adjustment valves (10).

Control of the actuator's operation and reading of its position as well as saving of work programs is carried out using an intuitive control panel (11) integrated with the machine's electrical cabinet (12), from which a power cable is connected to the power grid.

The machine is equipped with foot pedal switches enabling a convenient operation. Foot pedals are equipped with an emergency switch. Sudden and strong pressure onto the foot pedal switch will retract the actuator to its initial position. It has the same effect as pressing the emergency button.

The operator's work has been made safe through the installation of 3 emergency switches on the machine (13) In the event of a failure, after the problem has been solved, work cannot begin without prior deactivation of the "RESET" button. For safety reasons - after every incident and restarting of work, the machine returns to its zero position.

Transporting the machine is possible via the transport channels prepared for this purpose (14).

2.4 Specification of the machine's main elements

Figure 3 presents the main elements of the PPHB-model.

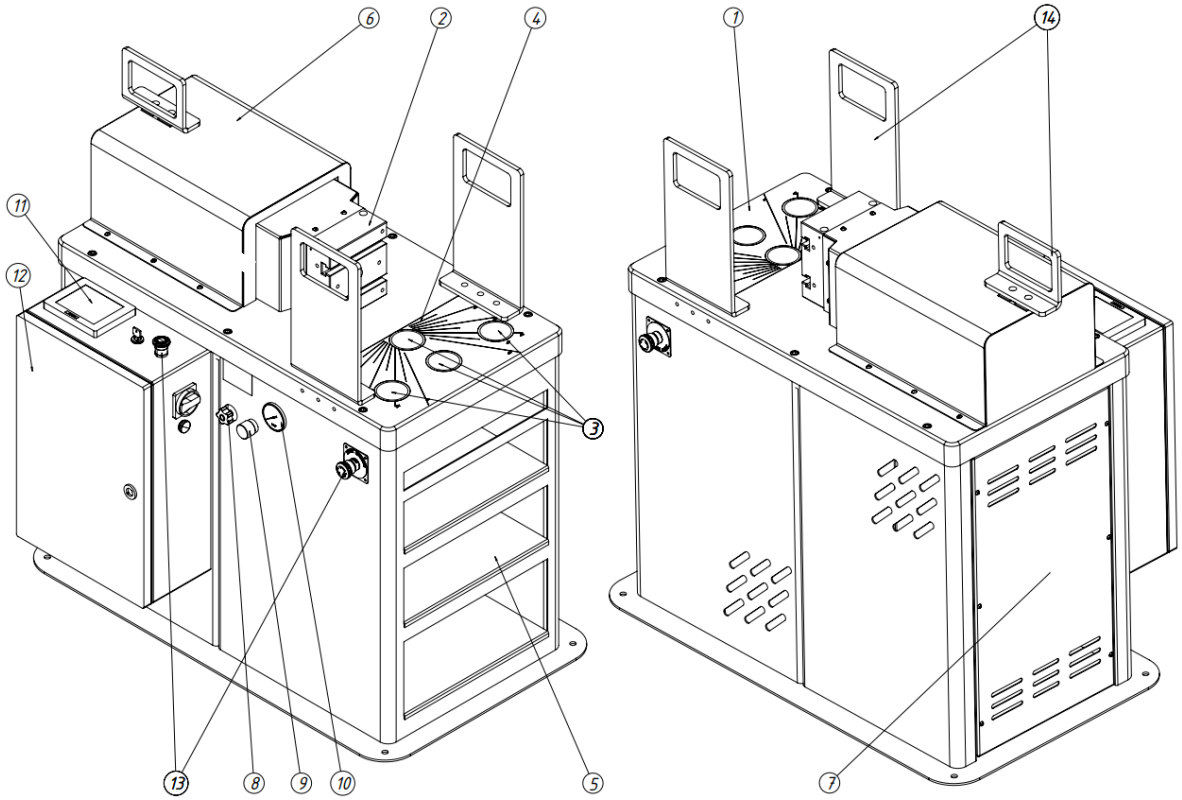


Fig. 3. Main elements of PPHB-model: *1 – worktable; 2 – tool mount; 3 – punch and pin holes; 4 – angular graduation; 5 – drawers; 6 – guard of hydraulic actuator; 7 – hydraulic unit guard; 8 – pressure adjustment valve (depending on model); 9 – flow adjustment valve (depending on model); 10 – pressure gauge; 11 – control panel; 12 – electrical cabinet; 13 – emergency switch; 14 – transport channels*



The machine is equipped with 4 safety buttons:
1. 1 buttons on the control panel
2. 2 buttons near the work table (on both sides)
+ a safety button in the foot switch, which is activated once one is pressing too hard.

The design of the press PROFI PRESS HB-28 is safe for the operator due to the limitation of the maximum speed of extension of the piston to 10 mm / s. The machine is also equipped with 4 safety buttons accessed from anywhere around the machine.

2.5 Main technical specifications

Table 3 presents the machine's main technical specifications.

Table 3. *Technical specifications*

	PPHB-28NC	PPHB-50NC	PPHB-80NC
Pressing force [tons]	28	50	80
Motor Power [kW]	4	5.5	7.5
Min. Working Speed [mm/sec]	1	2	2
Max. Working Speed [mm/sec]	9.1	9.6	9.2
Return Speed [mm/sec]	22.3	41	25.6
Max. pressure [bar]	250	250	250
Piston Stroke [mm]	192	267	300
Weight [kg]	800	1300	1900

2.6 Guard positions

Figure 4 presents the guards of the hydraulic horizontal press that are required for a safe operation.

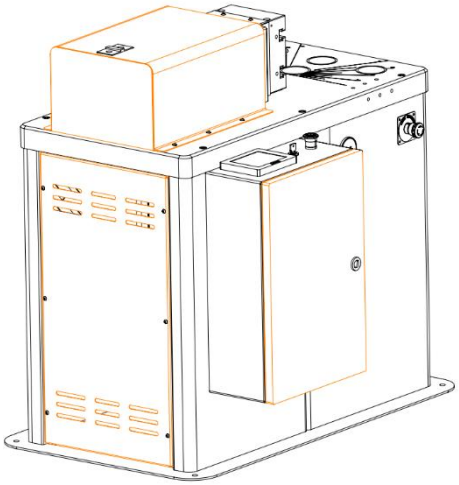


Fig. 4. Guards are marked in orange

	**Working with the PROFI PRESS PPHB-model without mounted and fastened guards IS PROHIBITED.** **Guards may only be dismounted or opened in the case of a failure or maintenance work, when the machine is shut down and disconnected from the power grid.**

3. Storage and transport

This section describes storage and transport of the horizontal press.

	**Treat the area around the machine as a hazardous zone during transport.** **The personnel responsible for loading/unloading must have licenses permitting performance of operations of this type.** **The manufacturer is in no way liable for damage to the machine outside the factory**

3.1 Transport

The PPHB-model can be transported in standing position by any means of transportation under the condition that OHS and road traffic regulations are followed. During transport, the machine needs to be secured against movement or damage e.g. by means of fastening belts.

During transport by forklift, make sure that the forklift's load capacity is at least 30% above the machine's weight.

The press has to be loaded by means of a forklift, with special caution and care that the machine will not be damaged in the process. The procedure of preparing the press for transport is to follow these steps:

- Shut down the machine and disconnect it from the power source.
- Wind up the machine's power cable and fasten it temporarily to the machine's body.
- Wind up the foot pedal switch's power cable and fasten it together with the foot pedal itself to the machine's body.
- Lift the machine using a forklift and transport it to the desired location. Figure 5 presents fork channels (designed for the purpose of transport).

Forklift access from the appropriate direction of the machine (fig. 5) is a critical aspect of transport. Otherwise, there is a risk of damaging the machine's electrical cabinet. The manufacturer is not liable for damage to the machine caused by failure to comply with machine transport guidelines.

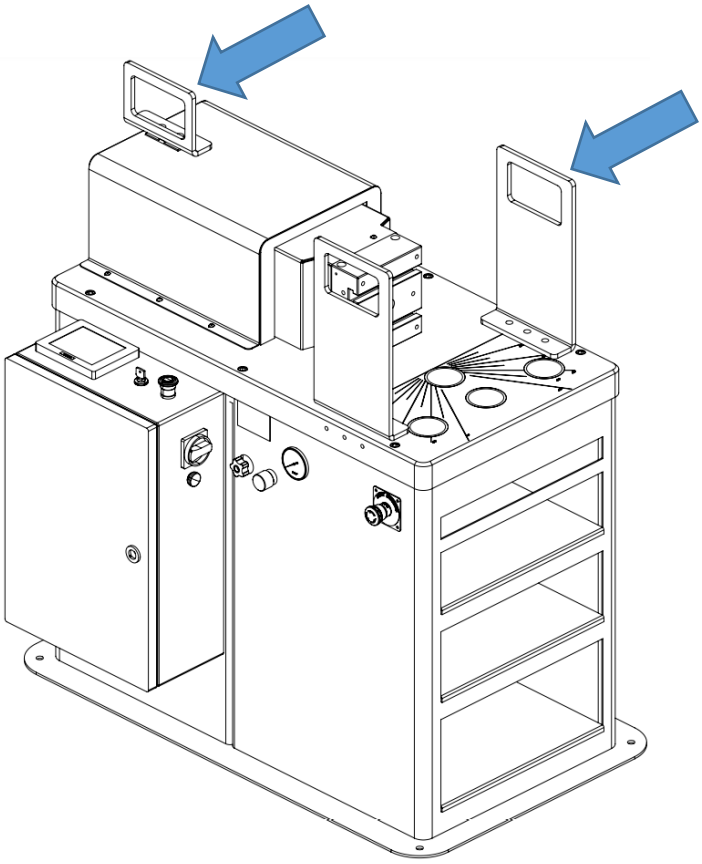


Fig. 5. View of fork channels and direction for forklift access

3.2 Long standstills

In the case of a long break in operation, the machine has to be stored in a dry room on a levelled surface. The power cable needs to be disconnected from the power socket, wounded up and securely stored together with the machine. Check the protective paint coat, clean damaged spots and coat them with a new layer.

Check the condition of the hydraulic system. In the case of damage or worn out elements of the system – replace them with new ones.

4. Preparing the machine for work

This section contains information required for a proper connection of the hydraulic press to the power grid and for preparing it for safe work.



It is prohibited to:

- **modify the machine's parts or design**
- **install additional equipment without the manufacturer's prior, written consent**
- **use the machine in a way that is not compliant with its purpose**
- **start the machine in case of any failures (contact the manufacturer's service to remove the problem)**

4.1 Preparing the workplace

The hydraulic press needs to be installed on a level and hardened surface in order to ensure its stability. To improve the machine's stability, it can be anchored (by means of threaded joints) to the floor through the holes found in the machine's base (fig. 6).

The electrical installation / power supply must be connected by means of a 5 x 2.5 mm^2 Cu-cable, with a voltage of 3 x 400 V, protected by fuses with a delayed characteristic (type C-fuses) and a load capacity of 20A. The electrical installation needs to be equipped with a residual current device. A 16A / 5-pin power socket is required to connect the machine to the power grid. Before connecting the machine to the grid, a qualified electrician needs to control the installation.

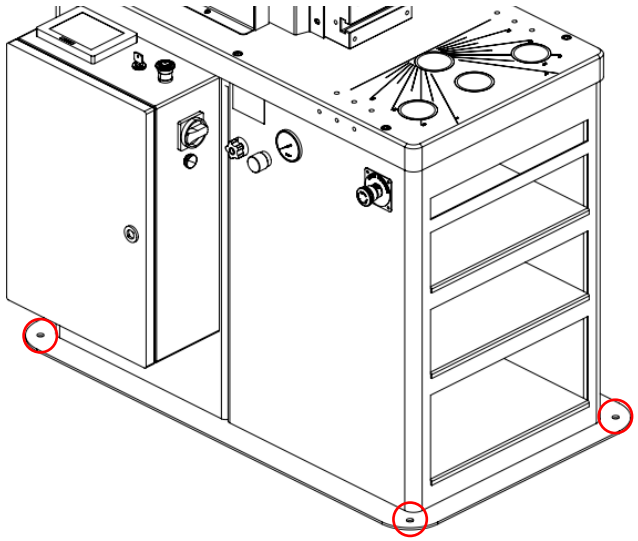


Fig. 6. Machine anchoring holes





- **Checking the ratings of fuses, voltage and frequency for compliance with domestic requirements is mandatory.**
- **It is prohibited to connect other machines to the press's electrical circuit.**
- **It is prohibited to connect the press to an electrical circuit with a different frequency rating than the machine itself, as this may cause damage to the machine's electrical subassemblies.**
- **It is permissible to incline the machine by up to 7° at the workplace – a greater inclination poses a risk of improper operation or an oil leak from the hydraulic unit.**
- **The manufacturer is not in any way liable for damage inflicted during the performance and later exploitation of electrical connections in a manner that is not compliant with applicable regulations!**

4.2 Machine's workspace

The hydraulic press needs to be placed on a flat, level surface. The user is to ensure easy access to the hydraulic press from the side of the worktop as well as to the location for collecting and storing worked material (fig. 7). The room in which the hydraulic press is operated must be equipped with enough light and ventilation providing the appropriate amount of fresh air.

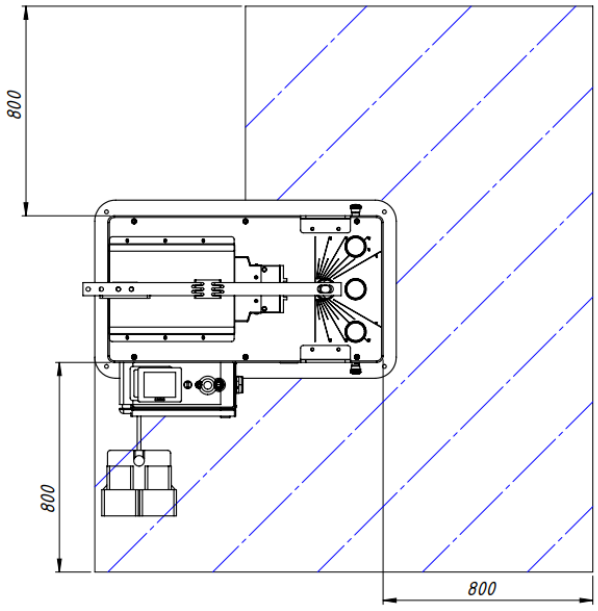


Fig. 7. Workspace of the PPHB- machine (hatched area); dimensions in [mm]

4.3 Environmental conditions

In order to ensure a proper operation of the machine, the following environmental conditions are required:

- Ambient temperature within the range of 10°C - 30°C.
- Air humidity between 30 – 80%.

It is required for the machine's work area to be properly lit:

- In such a manner that enables reading of pictograms located on the machine.
- In such a manner as to ensure transparency and safety for the operator as well as for maintenance and repair personnel.

4.4 Before starting the machine

The machine has to be started up and maintained according to the manufacturer's guidelines given in this manual. The machine's operating parameters are presented in section 2.5.

Before starting the machine:

1. Check the oil level of the machine and fill up the tank with more oil (HL-46)
2. Check whether all hazards have been eliminated from the machine's work area.
3. Check if unauthorized persons are present near the machine.
4. Check whether the pictograms on the machine are damaged and whether they are readable.
5. Check if all guards of the machine are installed and check their condition.
6. Check if all tools are properly installed on the machine.
7. Check the condition of threaded joints, tighten any loose bolts.
8. Due to the significant electrical current that is consumed by the motor at start-up, it is recommended that the number of start-ups per hour does not exceed 60 times, with intervals of at least one minute. More frequent starting of the motor is harmful to the motor and may cause the automatic disconnector (thermal trigger) to activate. When the automatic disconnector is activated, the motor can be restarted after 15 minutes.



If the machine shows signs of improper operation at start-up (not according to the instruction manual), contact the manufacturer's service

5. Operating flow and pressure adjustment valves (depending on the model you have)

Depending on model, the PROFI PRESS PPHB-model can be equipped with 2 valves serving for adjustment of the hydraulic system, which are accessible to the operator next to the electrical cabinet.



Fig. 8. Master switch in position "0" & flow- and pressure adjustment valves

- Flow adjustment valve:

The operator can change the feed rate of the hydraulic actuator by means of the flow adjustment valve (fig. 9). By turning the valve clockwise, the tool mount's feed rate is reduced, and it is increased by turning the valve counterclockwise. The hydraulic actuator's (and the tool mount's) work speed range is described in table 3.



Fig. 9. Flow adjustment valve

- Pressure adjustment valve (tool mount pressing force):

The operator can change the pressing force of the tool mount for a specific operation by turning the pressure adjustment valve (fig. 10). If the valve is turned clockwise – pressure will increase. Pressure is reduced by turning it counterclockwise. The hydraulic press operates at a maximum pressure of 200 bar, at which the pressing force generated by the hydraulic actuator is approximately 30 tons. The operator can observe pressure changes in the actuator during the machine's operation, while simultaneously having full control over the machine's pressing force, on the pressure gauge (fig. 11).



Fig. 10. Hydraulic actuator's pressure adjustment valve



Fig. 11. Pressure gauge indicating the current pressure



It is prohibited to change the hydraulic actuator's working pressure over the course of a work cycle.

Working pressure can only be changed when the machine is in manual work mode.

6. Control – operating the control panel and working with the machine

	**The machine operator is obliged to read the manual and to respect its principles at work: this is a basic condition that preserves the safety of the operator and the personnel in the operation area of the machine.** **In addition, skillful operation of the machine extends the life of hydraulic and control components.**

The control of the machine is performed by the control panel (fig. 12).

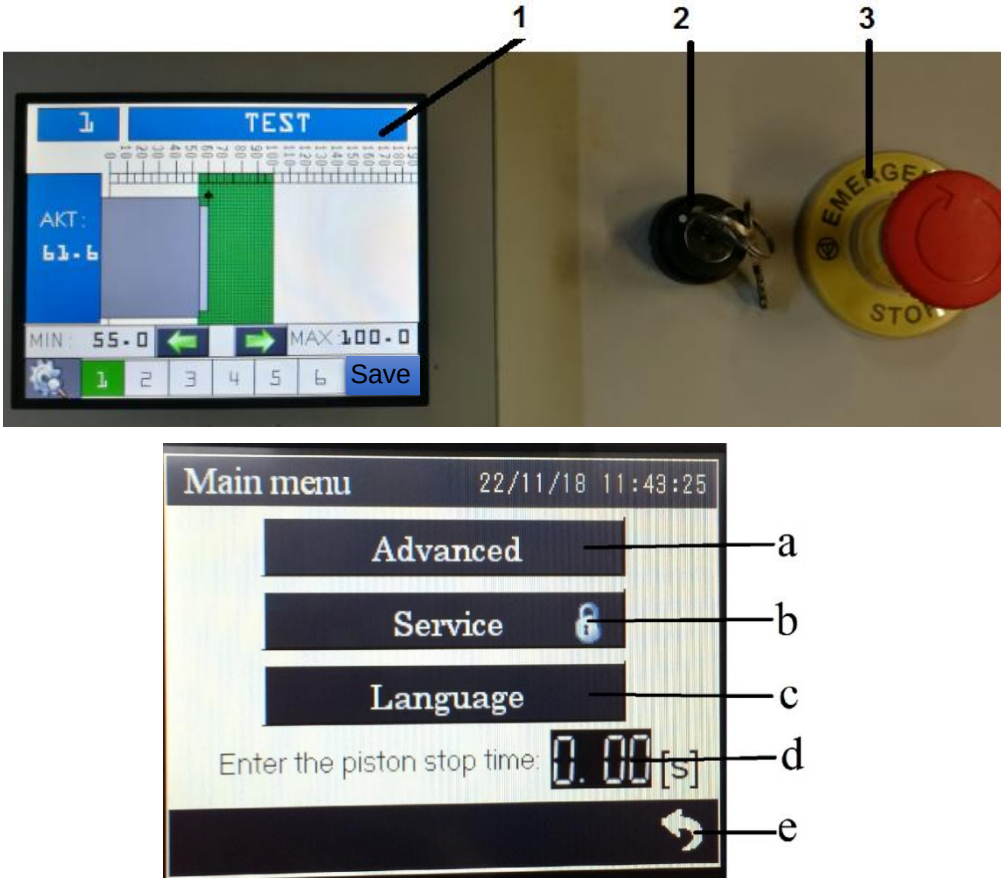


Fig. 12. Control panel, displaying the main menu: ***1*** *–touch control panel;* ***2****- work mode switch (left position – manual mode, middle position – 0, right position – automatic mode);* ***3*** *– emergency button*

Description of main menu: a *– advanced settings;* ***b*** *– service;* ***c*** *– language selection;* ***d*** *– setting the permanence time at end position of the piston;* ***e*** *– return to work menu*

Options in the main menu:

- **Advanced (fig. 12 - point A**) – access to the work statistics of the machine (fig. 12.1).
- **Service (fig. 12 - point B)** – machine settings available to qualified personnel servicing the machine.
- **Language (fig. 12 - point C)** – allows for selecting the language of the program (fig. 12.2).
- **Piston stop time (fig. 12 - point D)** – after clicking the stop time / permanence time value, a submenu will appear for the input of a new stop time value. This value defines the period of time during which the piston remains in its end working position over the course of the automatic cycle.
- **Return to work menu (fig. 12 - point E)** - returning to the display of the working parameters of the machine.

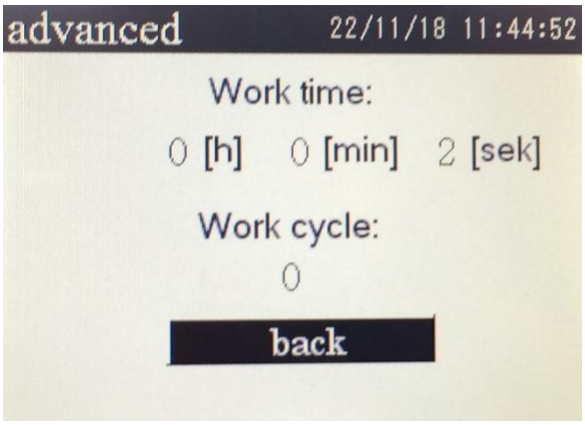


Fig. 12.1. Advanced menu – work statistics of the machine

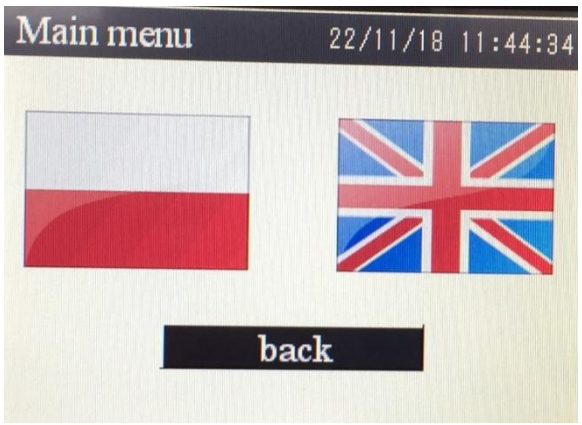


Fig. 12.2. Language selection by clicking one of the flags

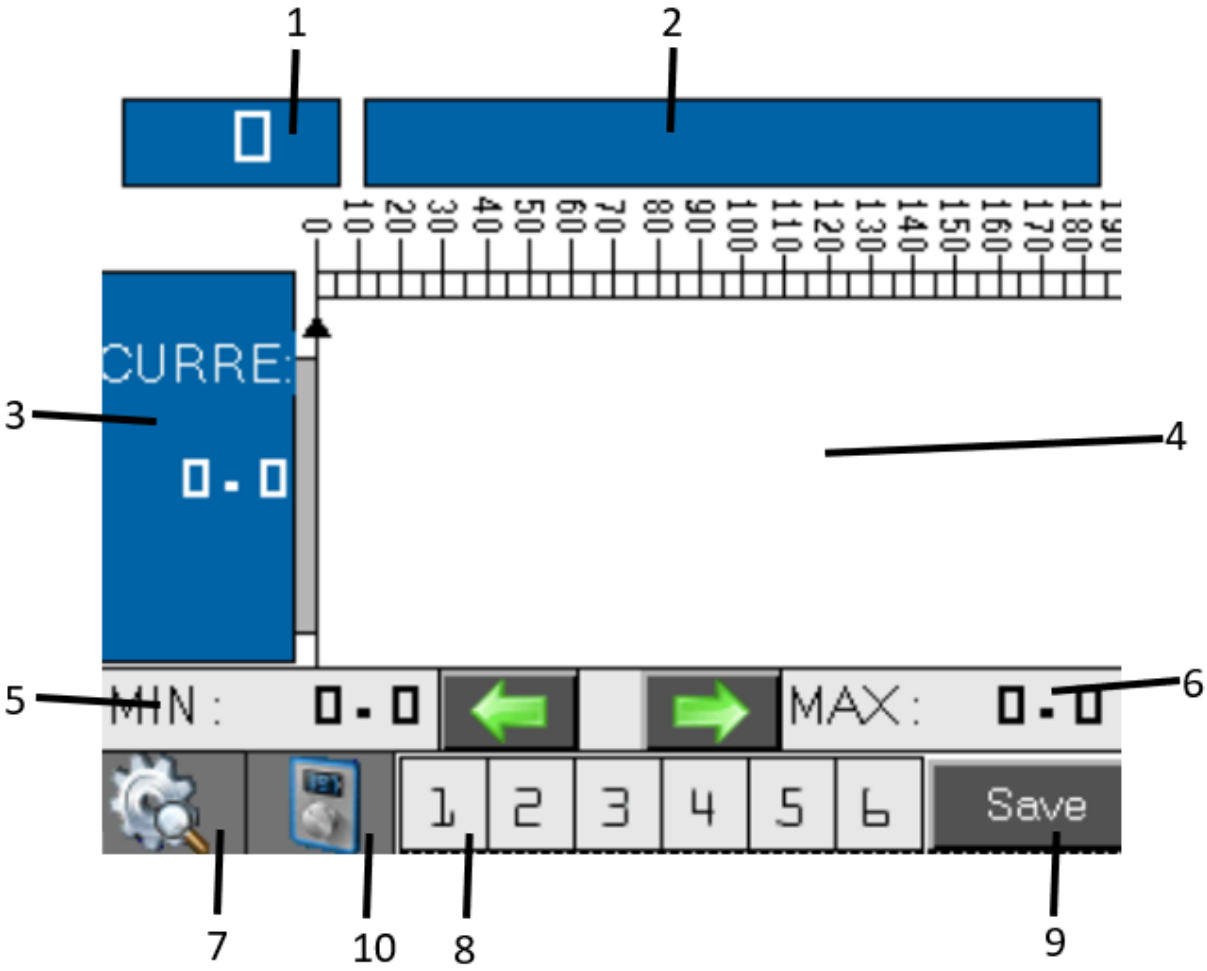


Fig. 12.3. Work menu: ***1*** *– program number on list of the 100 programs in total;* ***2*** *– name of the program (also the button for navigation to the list of programs);* ***3*** *– current value of piston position;* ***4*** *– graphical range of piston work range with current position of actuator;* ***5*** *– initial / start piston position;* ***6 –*** *final / end piston position;* ***7*** *– return to main menu,* ***8*** *– work step currently being performed (6 steps per program);* ***9*** *– save the work stage of the machine in this current step number;* ***10 –****goes to the menu for setting the pressure and the piston extension speed (this button is available only in presses with proportional valves – so the models without the knobs for the pressure and flow valve adjustments)*

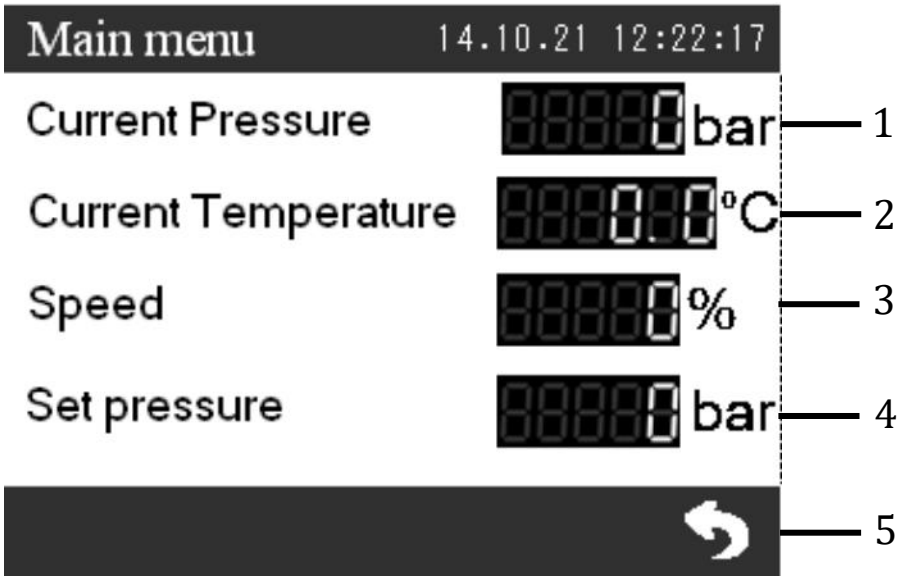


Fig. 12.4. Menu for setting pressure and stroke speed rate:

1 *– current pressure,* ***2*** *– oil temperature;* ***3*** *– the piston's extension speed, expressed in % of the maximum extension;* ***4*** *– set pressure;* ***5*** *– back to the work menu.*

The **foot pedal switch** serves for controlling the piston movement and consists of 2 pedals:

- Left foot pedal (P_L) - piston movement in the direction of the initial piston position
- Right foot pedal (P_R) - piston movement in the direction of max. extension / final piston position

6.1 First start-up (including calibration)

Calibration of the hydraulic actuator needs to be performed after **every** start-up of the machine so that the machine can read its position correctly. The start-up and calibration procedure is as follows:

1. Connect the power cord.
2. Deactivate all stop buttons (unlock all emergency push buttons).
3. Switch the master switch from position "0" to position "1" (clockwise rotation) (fig. 8).
4. Wait until the digital controller is ready – the Profi Press logo will be displayed on the screen.
5. Touch the display – the main menu will appear (fig. 12). Turn the key (fig. 12 – point 2) to position 0.

6. In the main menu, select the arrow for returning to the work menu of the machine (fig. 12 - point E) and turn the key to the left (manual working position) – the calibration message will be displayed (fig. 12.5).

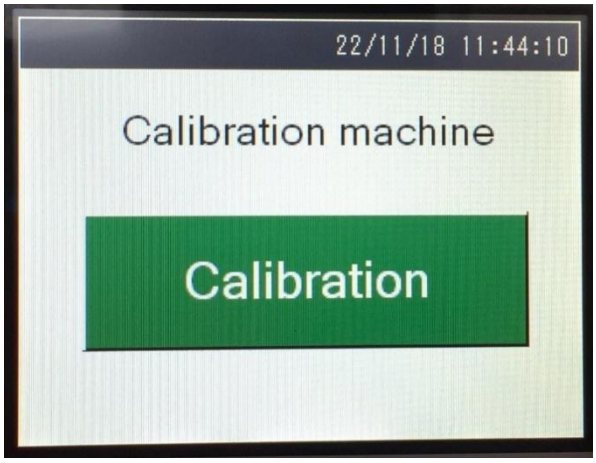


Fig. 12.5. Machine calibration message

7. Press the calibration button, set an initial position and a final position for the piston stroke (for example 20 mm & 50 mm), press and hold down the right foot pedal switch until it reaches its final position (until it stops). Then retract it back to its initial position in the same way, press and hold down the left foot pedal switch.
8. The machine is ready for work in the desired mode selected by the operator.

6.2 Setting the piston stroke, saving steps and programs

In order to set the working range of the piston stroke, select the work mode switch to ‘manual’ position and then perform the following steps on the touch screen.

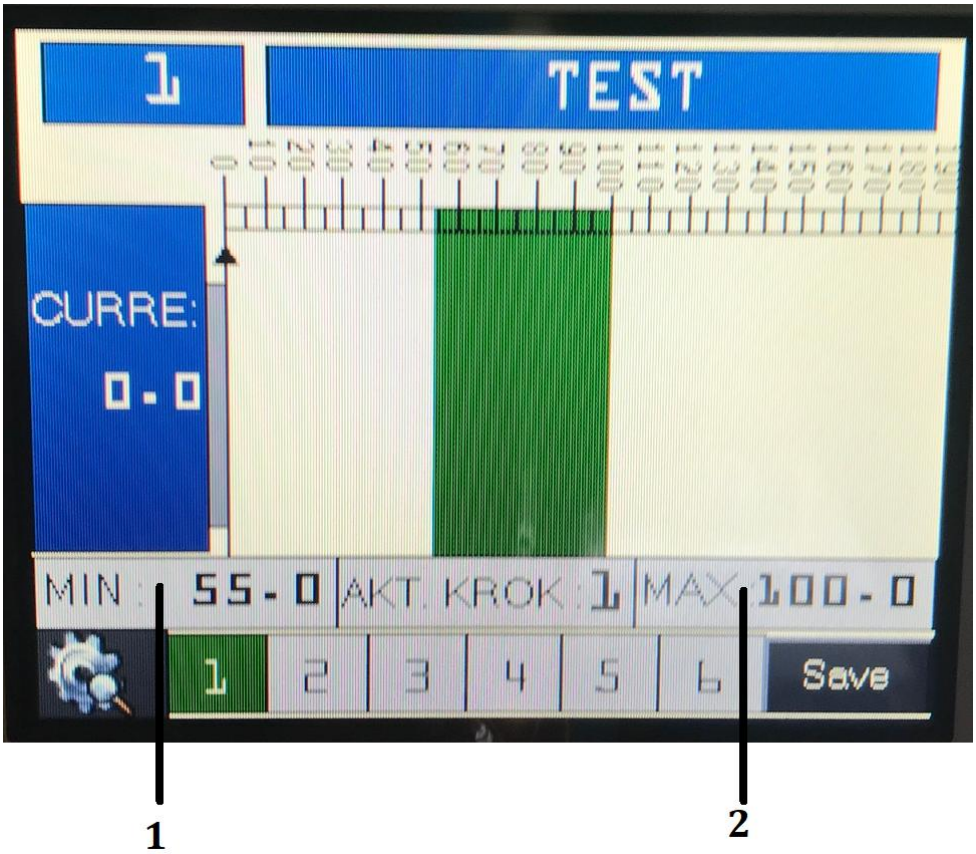


Fig. 12.6. Touch screen with initial and final position of piston stroke

1. Set the initial position by touching the min. button (nr. 1 in fig. 12.6) to 10 mm value and set the final position by touching the max. button (nr. 2 in fig. 12.6) to 180 mm value.

	**By setting the 180 mm value, the operator is responsible for any objects found in the working area. In the example given above, the 10 mm - 180 mm dimension serves only for determining the desired piston extension for each bending.**

2. Place the material / part that needs to be (e.g.) bent on the worktable between the die and the punch.

3. Start the machine by pressing the right foot pedal switch; the piston will start moving into the direction of the set final position. The speed of the piston can be adjusted by using the flow adjustment valve, depending on model (fig. 9).
4. When you can see that the part is being bent and the machine arrives at the desired final position (for example at 115 mm), stop pressing the right foot pedal switch and set the final target position of the piston by using the green right arrow button .
5. Using the left foot pedal switch, the return movement of the piston will start. Return the piston to a convenient position that will make it possible to place the next part for the bending task. When the desired initial position is reached, stop pressing the left foot pedal switch and set the initial target position of the piston by using the green left arrow button .



The hydraulic press can be programmed to perform up to 6 work steps in sequence - one after the other - in 1 single program. To program these steps, repeat the activities described above for each step.

The machine carries out steps sequentially in AUTO mode, e.g. steps 1-3-4.

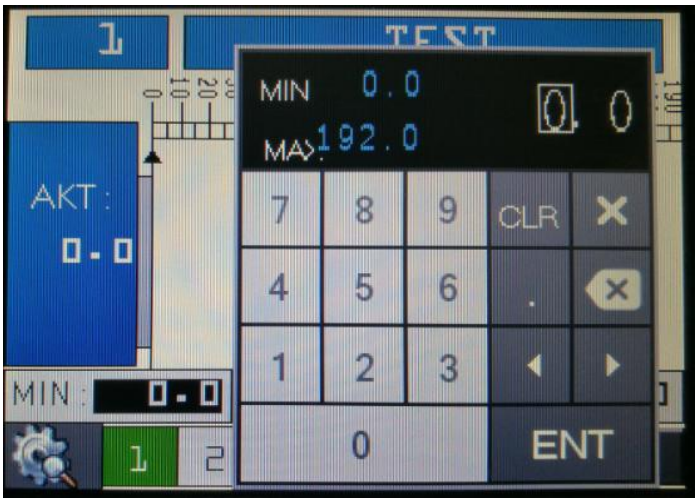


Fig. 12.7. Submenu for the input of the piston stroke value (in the case of this figure, for the initial position of the stroke). The min. / max. value in the submenu defines the range within the selected value needs to be set. Confirm the value by pressing “ENT”. To clear your selection, use the “CLR” function or the cross in the white arrow.

The PPHB-model has enough memory to save up to 100 programs, where each program can have a maximum of 6 steps. To define the work steps in a different program than the program used until now:

1. Select the number or title of the current program in the machine's work menu (fig. 12.3, point 1 / 2). A menu (fig. 12.8) for the selection of other programs will be displayed (unnamed programs have the name "Recipe (...)").



Fig. 12.8 Program selection menu

2. Select a program, e.g. Recipe 3 – the selected program will be highlighted.
3. Change the name of the program by pressing the "change name" button displayed on the menu. A submenu for the input of a program name will appear.
4. After changing the name, press "select". The work menu will be opened with the number and title of the program displayed.
5. Define the 1 to 6 steps of the program according to the information explained above.

6.3 Working in manual mode

After performing calibration and setting the working range of the piston stroke, the machine can be controlled manually. For this purpose:

1. Change the position of the work mode switch (fig. 12 - point 2) to "manual" – turn the key to the left, then navigate to the work menu of the machine.
2. Select the desired program and desired step with the working range set by the operator.
3. Press and hold down one of the foot pedals in order to move the hydraulic actuator – the left pedal corresponds to the movement towards the initial

position and the right pedal corresponds to the movement into the direction of the final position. The piston's working range is highlighted in green on the display.

4. If the working range is unsatisfactory – change the initial and final values of the piston stroke (section 6.2 of the instruction manual).

6.4 Working in automatic mode

	**Working in this mode can be started after setting the initial and final positions of the piston in manual mode.** **Make sure that it is safe for the operator to work with the machine within this range of piston motion taking the instrumentation / tools currently mounted on the machine into account.**

To start an automatic work cycle:

1. Change the position of the work mode switch (fig. 12 – point 2) to "auto" by turning the key to the right.
2. Select the desired program with configured work steps.
3. Select the numbers of the program steps that you want to be performed in sequence. Selected steps will be highlighted in green. The machine will perform the steps of the program sequentially, for example, 2-5-6. The step of the program that is currently performing will flash on the display.
4. Press and hold down the right foot pedal switch until the machine completes a full work cycle.

	**In automatic mode, the machine operates cyclically for the selected steps with its initial and final positions of the piston. When all the steps of one program / work cycle are performed, the piston goes into standby.** **To perform the next cycle, the foot pedal must be released and pressed down again .** **In automatic mode, it is not possible to change the piston initial and final positions, this needs to be done in manual mode.**

6.5 Additional functions

Safety buttons – 4 emergency buttons are installed: 1 on the body of the machine, 1 on the electrical cabinet, 1 on the control panel and 1 is the so-called ‘double bottom’ of the foot pedal. Pressing any of these buttons initiates an interruption of the highest priority.

Regardless of the selected operating mode, after pushing an emergency button, the piston returns to the reference / initial position and the hydraulic unit is shut down. After this, the reset button will appear on the display (fig. 12.9).

Back to normal operation requires the following steps:

1. Make sure it is safe to start up the machine again.
2. Unlock the emergency push button.
3. Switch the key-selector to the 0-position.
4. Press the reset-button.
5. Switch the key-selector to the required work mode.
6. It is possible that the calibration message will appear. If so, perform calibration again according to the explanation in this instruction manual.
7. The machine is ready for further work.



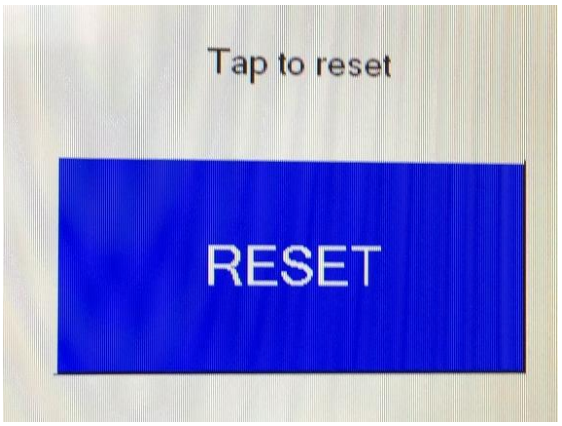


Fig. 12.9 Emergency button message – unlock the engaged emergency button
Reset message – select the reset button to continue

6.6 When power needs to be restored after an outage

After the machine's power supply is restored following an outage, turn the key to position “0” (regardless of the work mode), then set the desired work mode again. The next step is to calibrate the machine, after which the machine will be ready for working again.



The hydraulic press is powered from a tri-phase 3x230/400V AC 50Hz network. It is important to connect the machine to the power source properly. In the case of problems with starting the machine, conduct diagnostics according to the list below:

1. **Check fuse inserts IC 60NC2A (switch in the upper position)**
2. **Check the correctness of power supply – Fig. 13 A, B, C:**
   - **Green lamp is lit up – correct power supply (Fig.13 A)**
   - **Red lamp is lit up – incorrect phase sequence (Fig.13 B)**

a. **In the case where the red lamp is lit up (Fig. 13 B), disconnect the machine's power cord from the grid, unfasten the power cord’s plug and switch any two phase wires (Fig. 13 C, items L1, L2, L3)**

b. **In the case where the lamp is not lit up – entrust a check of the condition of phases in the plug or of the network to trained personnel and restore the missing phase.**

3. **Check the output voltage of power feeders; correct value: 24VDC.**



Fig. 13 A



Fig. 13 B



Fig. 13 C

Fig. 13.

A) *Phase failure sensor* ***CKF 316****- lamp is lit up in green – correct connection of phases*

B) *Phase failure sensor* ***CKF 316-*** *lamp is lit up in red – incorrect connection of phases;*

C) Arrangement of wires in 400V 5P plug: *L1, L2, L3 – phase wires 1, 2, 3; N – neutral wire; PE – (protective) earth wire*

	**Changing phases in the machine's electrical cabinet or in the electric motor of the hydraulic unit is prohibited, as this may lead to damage of the machine's electrical system! A phase change can be performed only by unfastening the machine's plug and switching the sequence of connecting phase wires L1, L2, L3 (fig. 13 C)**

7. Tools – applications and replacement

This section describes the functions of the standard tools that will be delivered with the PROFI PRESS PPHB-NC.

This press can also be supplied with customized matrixes, stamps and other tools. Ask your local supplier about the many different possibilities.



It is prohibited to interfere in the design of original work tools manufactured by the machine's manufacturer that are installed in the press. The manufacturer reserves the right to reject claims concerning the machine or tools in the case of interference in the designs of original tools or use of tools from other manufacturers.

Tooling for bending flat bars and rods for PPHB-28NC

Tool set for bending flat bars and rods with a maximum width of 200 mm. *It consists of a block with V-dies in sizes 16, 22, 35 and 50 mm (M4/85) and a stamp / punch (MT-80 with radius 0.8)* The diameter of the stamps makes it possible to bend a closed section with interior wall width of at least 75 mm. The block with V-dies is installed to the hydraulic actuator and the following bendings can be performed with this tool-set:

- V 16: Sheets 1-3 [mm] in thickness
- V 22: Sheets 2-4 [mm] in thickness
- V 35: Sheets 3-6 [mm] in thickness
- V 50: Sheets 4-8 [mm] in thickness

Tooling for bending/straightening pipes and flat bars

This tool-set consists of the block with V-dies (as explained above for example) installed on the tool mount and 2 resistance pins. It is possible to bend / straighten by means of the reciprocating movement of the block in the direction of the workpiece resting against the two resistance pins. The set consists of:

- The matrix / punch mounted on the tool mount
- 2 resistance pins

Manual back gauge and stamp holder for bending large pipes and profiles

These tools are used (together with the tooling described above) to straighten and bend large pipes and profiles. The back gauge and stamp holder can be mounted on the machine.

7.1 Tool replacement

Tool replacement for the PROFI PRESS PPHB-model is very simple and intuitive. Tools are divided into:

1. Those mounted on the tool mount

Tools on the tool mount are mounted via screw connections. The matrix is installed on a socket and fastened from the sides by bolts screwed into the holes "a". The socket is screwed directly onto the tool mount by bolts screwed in the holes "b". To change the matrix, operator needs to unscrew bolts "a" and exchange the matrix and screwing the bolts "a" back again.

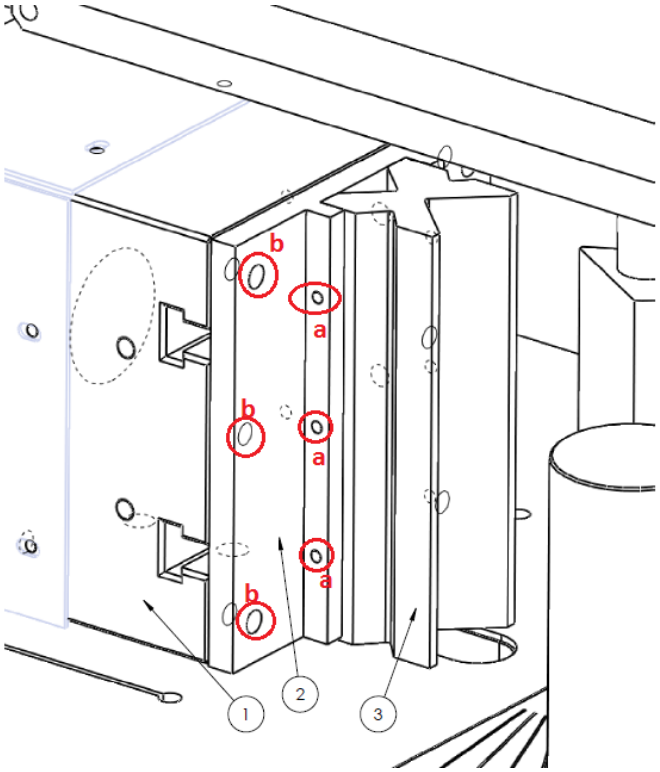


Fig. 14. Tools mounted on the tool mount: *1 – tool mount; 2 – socket of matrix / prism / block; 3 – matrix / prism / block;*

a – threaded joint of socket and the matrix / prism / block; b – threaded joint of tool mount with the socket

2. Those mounted in tool holes

Replacement of the aforementioned tools is very simple. Tools 1-3 in figure 15 are replaced by sliding the pin in or out of the hole. Tools 1 - 3 have special shaped parts that must be inserted into holes according to fig. **16**. The stamp / punch has an additional threaded part (16-1a), onto which a nut needs be fastened tightly in order to "pull" the stamp / punch to the base. The positions of the stamp / punch, resistance pins and counter-pin are presented in figure **15**.

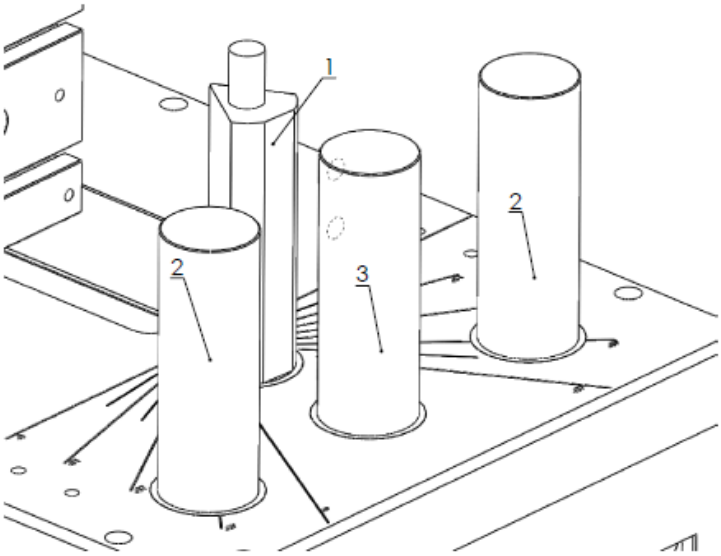


Fig. 15. *1 – stamp / punch; 2 – resistance pins; 3 – counter-pin*

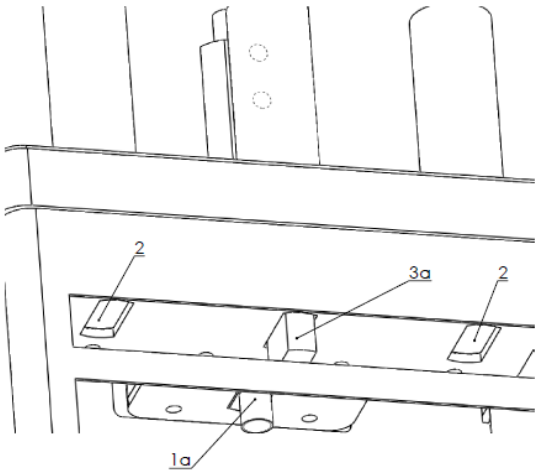


Fig. 16. *1a – threaded part of the stamp; 2 – resistance pins; 3a – shaped part of counter-pin*

7.2 Optional motorized back gauge

The PPHB-NC can be equipped with a motorized back gauge, in this chapter you will find the instructions about this optional accessory.



Fig. 17. PPHB-28NC with motorized back gauge

Stroke of the back gauge: 700 [mm]

Linear speed 0.04 [m/s] (66 N) + 0.5 [m/s] (465 N)

7.2.1 Technical description

The ABG-700 bumper is a machine that enables movement on one axis. The carriage of the linear module moves on linear guides, which require periodic lubrication. The drive element is a servostep motor with a mechanical transmission and HTD-8M toothed belt.

The bumper is controlled by the master control system of the hydraulic press. Electrical connection; Modbus TCP/IP communication and integration with the press safety circuit ensure reliability and safety of operation.

An operator's screen, which enables autonomous operation, is available as additional equipment. It is also a diagnostic tool. When integrated with the hydraulic press, the bumper does not require connection to the screen.

The bumper's electrical connection to the press is disconnectable. The RJ45 plug serves for connecting the encoder of the bumper's motor. A HAN 10P link is responsible for connecting power supply to the motor and induction sensors.

7.2.2 Connection

Connector A - with prepared power cord and safety circuit. To be connected to the PPHB28 press. In the case of autonomous operation of the bumper, connect the wires according to the following numbering:

power supply:	safety circuit (NC potential-free contact):
1. L	4.+24vdc
2. L	5.+24vdc
3. PE	

Connector B – Ethernet cable with RJ45 terminals – is used for communication with an external machine. It is not used in the case of autonomous machine operation.

Connector C – power cable and communication cable with the diagnostic (operator) screen. It is not used when connected to an external machine. The screen is used to control the bumper in the case of autonomous operation and to diagnose the internal states of the device.

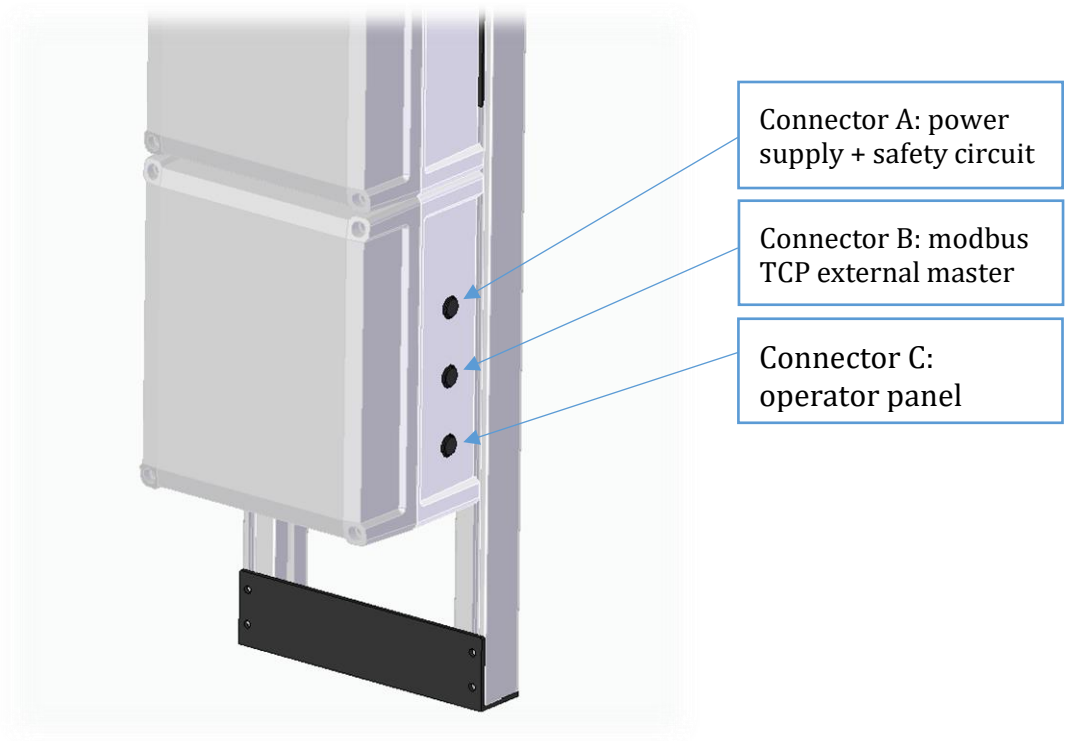


Fig. 18. Connecting the bumper

7.2.3 First start-up

Working with an external machine:

By default, the bumper is prepared to work with an external machine (External Master mode). No initial device configuration is required. All procedures are run by an external machine that communicates using the Modbus TCP protocol.

Autonomous work:

It is possible with the use of the operator panel, on which the appropriate operating mode should be selected. MANUAL or PUSH BUTTON. The next stage is homing the bumper (HOMING button), after which it is possible to set the parameters of the bumper runs.

Access to changing the operating mode is protected with a password: 77.

7.2.4 Settings

Working with an external machine

Before starting work, the bumper must be calibrated, which is carried out simultaneously with calibration of the hydraulic press. The emergency stop of the machine releases the drive, which in turn forces recalibration of the system prior to the start of work.

Starting work (the sequence of actions after prior calibration of the press and bumper)

Manual mode:

1. Determining the minimum and maximum working distance of the piston of a horizontal press (A,B)
2. Select a recipe number (C)
3. Move the piston to the target position (D)
4. Set the bumper to the target position (E)
5. Value recording (F)

Repeat the steps for other recipes (if required).

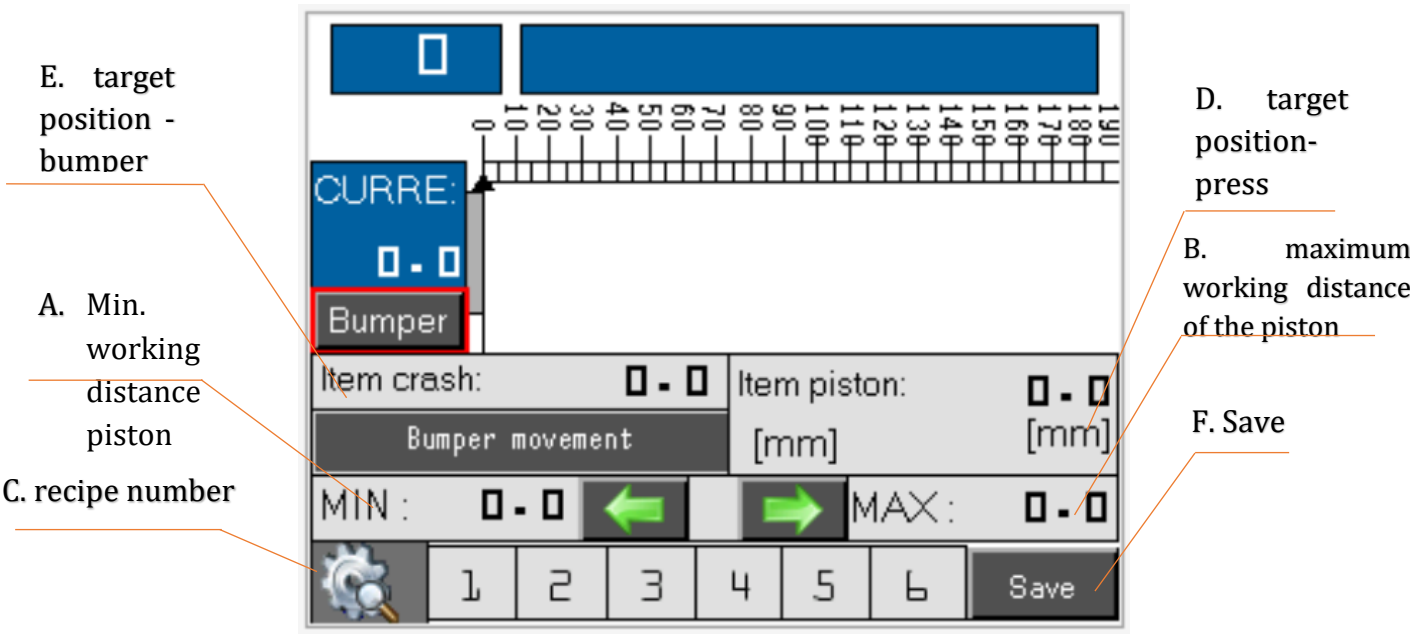


Fig. 19. The main screen of the PPHB28 horizontal bumper control application

The BUMPER icon opens the bumper settings window.

A. Departure position – the displacement distance that the bumper moves to after the initial gripping of the detail – before the actual bending
B. Speed – speed specified in %, linear relationship 100% ~ 0.5m/s, 10% ~ 0.05m/s
C. Homing bumper – execution of the homing bumper procedure
D. Bumper movement – icon informing about the current operating mode (bumper in motion or in position)
E. Bumper Alarm Reset – resets the bumper error
F. Bumper Servo ON – switching on the torque on the bumper drive shaft

Procedure for resetting the alarm.

1. Bumper Servo ON
2. Bumper Alarm Reset
3. Bumper Alarm Reset
4. Bumper Servo ON

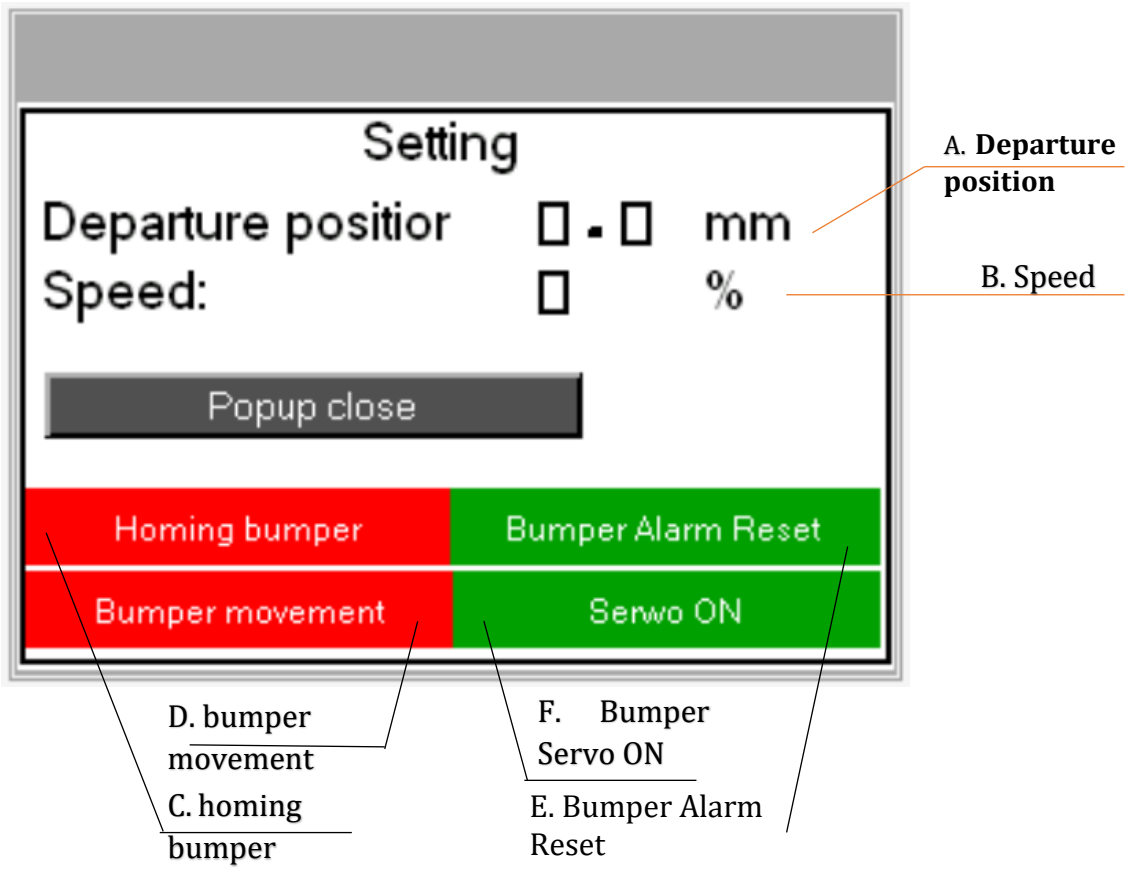


Fig. 20. Bumper settings screen

Autonomous work

Autonomous operation is possible with the use of an operator panel that is connected to the bumper's electrical box. One must select the operating mode and homing the bumper should be performed.

The start screen displays the available operating modes, the settings and homing icon. In addition, the travel distances from the homing point are shown.

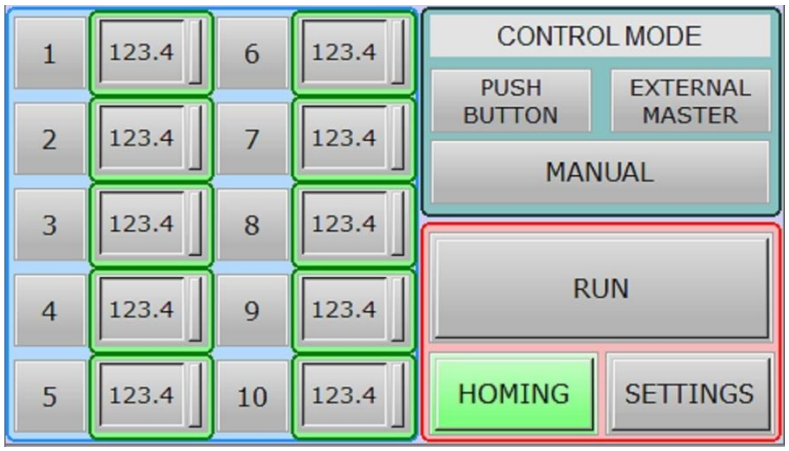


Fig. 21 Start screen

The MANUAL mode offers you to drive to a certain distance using the RUN button.

The PUSH BUTTON mode allows runs in a sequence of up to 10 movements. You must select a move number to make it run in sequence.

The operator screen also contains settings and diagnostic data for Modbus TCP communication

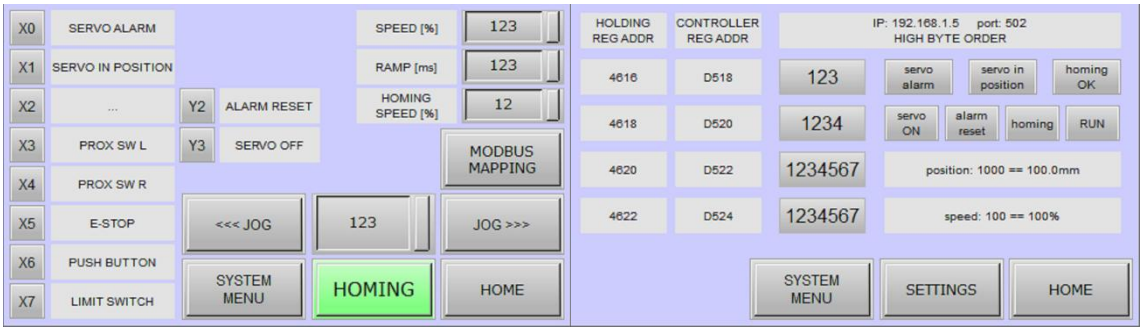


Fig. 22. Operator screen

7.2.5. List of electrical devices

List of electrical devices			
Symbol	Manufacturer's code	Manufacturer	Function
F1	A9F03316	Schneider	overcurrent protect.
U1	MDR-40-24	Mean-well	power supply
U2	70vdc 500W power supply	Eldar	power supply
K1+K3	RSR30-D24-D1-02-040-1 + PI6W-1P	Relpol	semiconductor relay
X1	DVP-12SA2	Delta	PLC
X2	Ezi-servo 86XL-A	Fastech	servo driver

8. Technical information of hydraulic unit

The content of this instruction manual contains the technical characteristics, design and basic rules of operation and maintenance of the hydraulic unit within a scope allowing for safe and failure-free operation of the hydraulic unit. The unit is intended for working with the PROFI PRESS PPHB-model hydraulic press.



The manufacturer is not liable for the operation and functioning of the hydraulic unit in other hydraulic systems than those specified in this manual

The manufacturer is not liable for the operation and functioning of the hydraulic unit with damaged subassemblies, or after detection of design modifications in the hydraulic system

8.1 Hydraulic unit's technical specifications

Table 4 contains basic information concerning the hydraulic unit of the PPHB-28NC.

Table 4. *Technical information concerning hydraulic unit AG-01*

ITEM	UNIT	VALUE
Motor power	kW	4
Motor supply voltage	V	230/400
Maximum oil pressure	MPa	250
Nominal pump output	l/min	8
Tank capacity	l	30
Oil type	-	L-HL 46
Overall dimensions	height x width x length	600 x 353 x 450
Weight of unit without oil	kg	30

8.2 Description of the operation of the unit with manual valves and list of primary components

The hydraulic unit is visible after its guard is opened. The hydraulic unit's main elements are identified in figure 23. The unit's operation is described by means of this figure: in a work cycle, the pump (inside the unit's tank), powered by electrical motor (1), pumps hydraulic oil from the tank (2) by means of the electrical distributor (4) through the overflow valve (3). Next, oil flows through flow adjustment valve (5) and pressure adjustment valve (6). The pressure adjustment valve has an outlet for pressure measurement in the pressure gauge (7). From the pressure adjustment valve, oil flows into the hydraulic actuator, causing the piston to approach. Oil returning from the actuator is pumped through oil filter (8) by means of the electrical distributor. Oil in the system is replenished through the filling inlet (9). Oil level is checked using the overflow cap (10), and oil can be drained by unscrewing the drain plug (11).

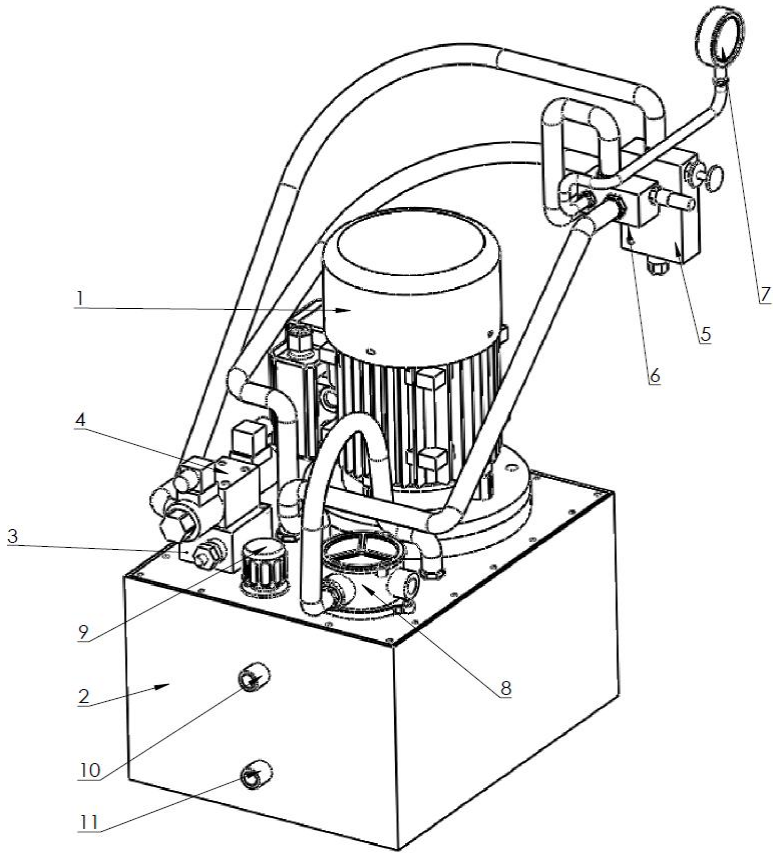


Fig. 23. Main elements of the hydraulic unit: *1 – motor with pump (pump in tank); 2 – hydraulic oil tank; 3 – overflow valve; 4 – electrical distributor; 5 – flow adjustment valve; 6 – pressure adjustment valve; 7 – pressure gauge; 8 – return oil filter; 9 – filling inlet; 10 – overflow cap; 11 – oil drain plug*

8.3. Description of the operation of the unit with proportional valves and list of primary components

The hydraulic unit is visible after its guard is opened. The hydraulic unit's main elements have been given in figure 24. The unit's operation is described by means of this figure: in the actuator's work cycle, the pump (inside the unit's tank), powered by the electric motor (2), pumps hydraulic oil from the tank (1) through filter (4) and through the proportional flow and pressure regulation valve (6). From the proportional pressure adjustment valve, the oil flows to the hydraulic actuator, resulting in extension of the piston. The oil returns back to the tank when retracting.

Oil in the system is replenished through the opening of inlet cap (7). Oil level is checked by means of level indicator plug, and oil can be drained by unscrewing drain plug.

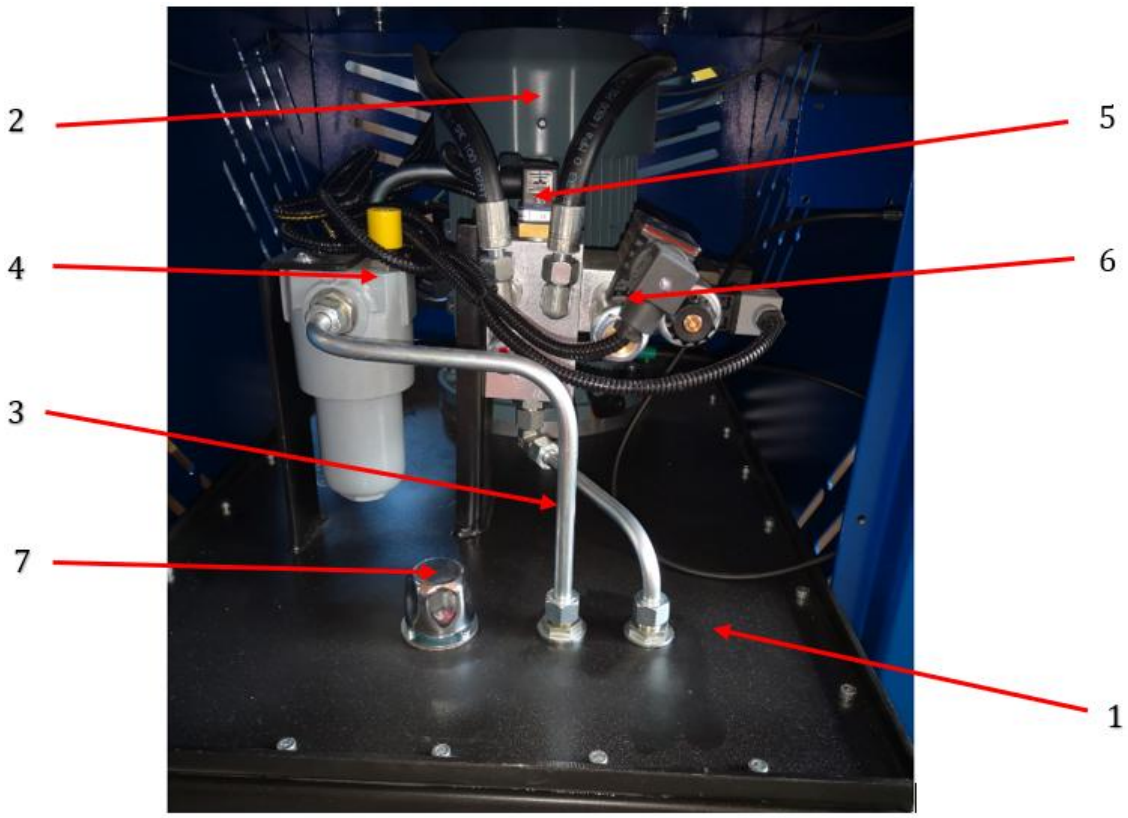


Fig. 24. Main elements of the hydraulic unit: *1 – hydraulic oil tank; 2 – motor with pump (pump in tank); 3 – feed from pump; 4 – oil filter; 5 – oil temperature sensor; 6 – proportional flow and pressure regulation valve; 7 – inlet cap*

9. Maintenance and service

Efficient and long-term operation of the hydraulic press is largely dependent on proper operation, as well as proper maintenance and repair. The frequency of technical inspections and maintenance operations suggested in this instruction manual is for informational purposes only, and should not be considered as a minimum maintenance requirement.

After every use:

- Clean the machine:
  - clean the area in the vicinity of the tooling from scrap material.
  - check, and if necessary, tighten loose threaded joints and replace damaged joints with new ones.
  - repair or replace damaged or worn parts.
  - check the oil level in the hydraulic unit.
- Maintain the hydraulic system.
- Secure the worktop on the table (unpainted area) after every workday.

Periodical inspections (every 3 months):

- Inspect the motor and electrical apparatus; this inspection needs to be conducted by an electrician and is based on removing dust, dirt and checking terminals, motor terminals, control circuits, grounding and insulation, as well as the condition of plugs, the socket and cables.
- Check the level of hydraulic oil in the unit; this inspection should be conducted by a qualified person and involves using the overflow cap. If oil does not leak through the indicator after the bolt is unfastened, oil should be added until it starts to leak out, and then the bolt has to be fastened again. Oil can be added by the filling inlet cap.



Any service work needs to be performed by qualified personnel and maintenance / repair of the press may only be performed when the machine is shut down (switching off the master power switch and an emergency button pressed).

9.1 Changing the oil and filter of the hydraulic system

Change the oil and the filter of the hydraulic system after every 1900 to 2000 hours of operation.

Oil change:

Access to the caps required for changing oil is presented in figure 25.

Change oil as follows:

1. Set the actuator to the "0" position (piston retracted).
2. Remove the protection guard of the hydraulic unit.
3. Unscrew the inlet cap (9).
4. Place a vessel under the drain plug (11).
5. Unscrew the drain plug – oil will start to drain out.
6. After oil is drained, fasten the drain plug back into place.
7. Unscrew the overflow cap (10).
8. Add oil until oil starts to leak out of the drain plug hole, then fasten the drain plug and the inlet cap back into place.

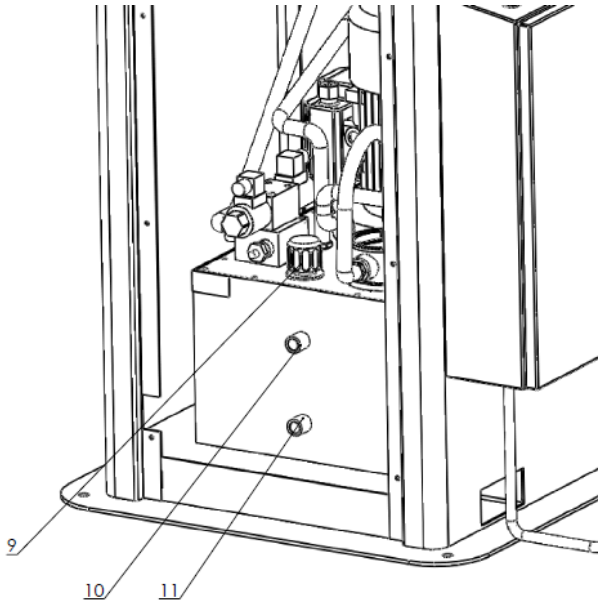


Fig. 25. Access to the hydraulic unit's caps after unfastening the guard:
9 – inlet cap; 10 – overflow cap; 11 – oil drain plug

Oil filter replacement in unit with manual valves

The oil filter elements required for replacement of the oil filter are presented in figure 26 below.

The replacement process is as follows:

1. Remove the hydraulic unit's guard.
2. Unfasten 3 bolts from the oil filter's housing (8a).
3. Remove the filter cover (8b).
4. Remove the old filter and insert a new one, making sure that it is positioned in the same direction.
5. Assemble the filter in the reverse sequence of its disassembly.

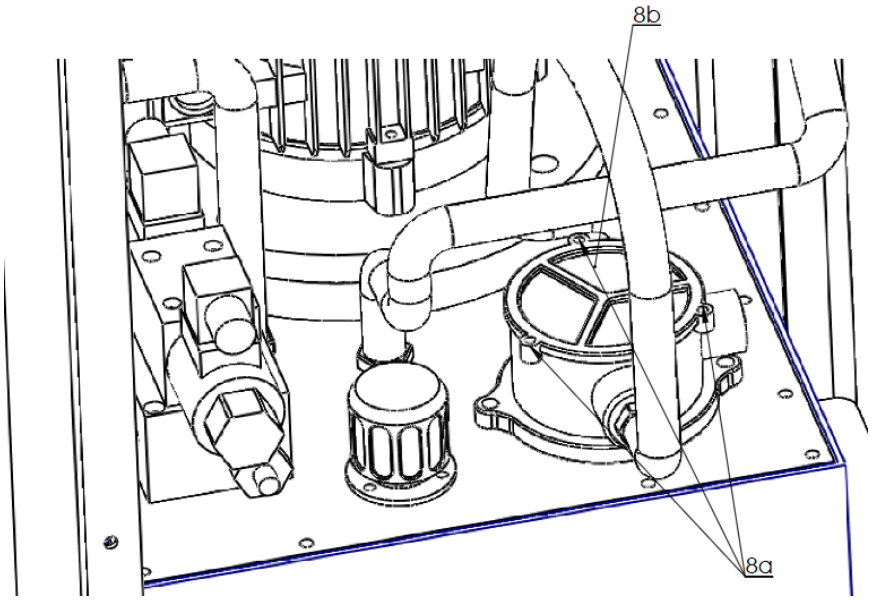


Fig. 26. Oil filter elements:
8a – filter cover bolts, 8b – filter cover

Oil filter replacement in unit with proportional valves

The replacement process is as follows:

1. Remove the hydraulic unit's guard.
2. Dismount the oil filter.
3. Unfasten the base of the filter
4. Remove the old filter and insert a new one, making sure that it is positioned in the same direction.
5. Assemble the filter in the reverse sequence of its disassembly.



Fig. 27. Oil filter components



In all maintenance work:

- **Maintain caution and avoid oil pollution.**
- **During work near the hydraulic circuit, maintain special caution when replacing conduits, valves or elements of the hydraulic actuator. Contamination is the main cause of improper operation of the hydraulic system.**
- **After every disassembly of hydraulic conduits, seals must be replaced with new ones.**
- **All disassembled or replaced components of the hydraulic system are to be placed on a clean, dry surface. Hydraulic pipes are to be dried out and cleaned.**
- **Securing attachments of the hydraulic system may only be disassembled during assembly and connection.**
- **It is prohibited to use thread glues on threaded connections of the hydraulic system.**

9.2 Hydraulic oil for the Profi Press

The manufacturer recommends the following oil:

Quality: quality class according to ISO 11158 – HL

Viscosity: ISO VG 46

The manufacturer is not liable for the quality and purity of applied oil, which may have a negative impact on the system's operation.

10. Press errors and failures (troubleshooting)

Table 5 presents a list of problems that may occur during operation of the machine, as well as corrective measures that should solve most problems.

Table 5. *Errors and failures that may occur as well as suggested solutions*

Problem	Cause	Solution
Signal lights on buttons do not light up	Insufficient power	Verify if sufficient power is available
	Fuse is burned out	Replace the fuse
	No electrical power	Make sure the machine is connected to the central power supply
Problem	**Cause**	**Solution**
Electrical motor failure	Insufficient power	Verify input power
	Emergency switch is activated	Turn the emergency switch and reset the machine
	Motor contactor failure	Contact technical support
Problem	**Cause**	**Solution**
Significant vibrations of the machine during operation	Improper placement of press on the floor	Check whether the machine is placed on a levelled and hard surface
	Guards not tightly fastened on the machine	Check the threaded connections of guards in the machine. If the problem persists – check all threaded joints in the machine
Problem	**Cause**	**Solution**
Improper operation of hydraulic unit	Oil level is too low	Check oil level and add hydraulic oil if necessary
	Improperly positioned flow and pressure valves	Change valve settings as needed

Problem	Cause	Solution
The motor of the hydraulic unit is running but there is no pressure	Damaged conduits	Qualified personnel that has read this manual must replace damaged elements with new ones
	Relocated or damaged overflow valve	
	Damaged pump	
	Damaged pressure gauge	
	Oil level is too low	
Problem	**Cause**	**Solution**
Excessive heating of oil in the hydraulic unit	Excessive working pressure	Reduce pressure using the adjustment valve
	Oil level is too low	Check oil level and add hydraulic oil if necessary
	Clogged electrical distributor	Qualified personnel that has read this manual must clean or replace damaged elements with new ones
Problem	**Cause**	**Solution**
Noisy operation of the pump of the hydraulic unit	Damaged coupling	Qualified personnel that has read this manual must replace damaged elements with new ones
	Damaged pump	

11. Residual risk

Despite the fact that the manufacturer is liable for the design and markings of the hydraulic press in order to eliminate hazards during work, maintenance and repair, certain elements of risk cannot be avoided. Residual risk arises from incorrect or improper behavior of the horizontal hydraulic press's user.

The greatest danger is present when the following prohibited activities are performed:

- using the machine for purposes other than those designated in the instruction manual;
- independent modifications and repairs of the electrical and hydraulic installation;
- removal of the power plug from its socket before switching off the power switch;
- moving the machine while it is in operation or connected to power;
- connecting the machine to the power grid when the terminal or socket is damaged;
- inspecting technical condition or performing maintenance or repair while the machine is in operation.

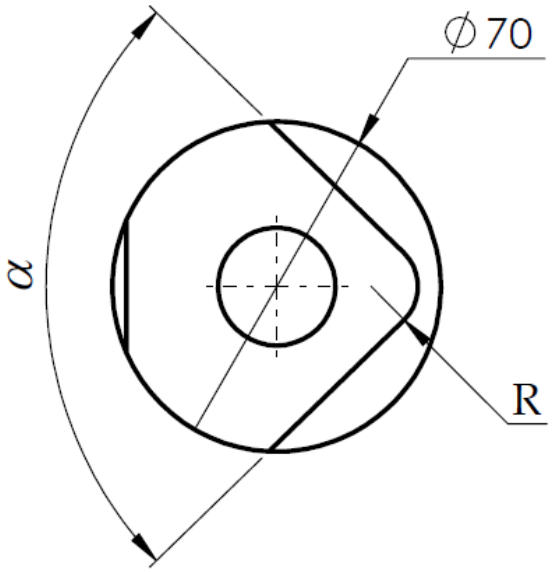
Other recommendations and guidelines for the use of the Profi Press horizontal press to keep the remaining risks as small as possible:

- Read this manual carefully.
- Do not insert any limbs into the working area of the press.
- Do not modify or repair the electrical and hydraulic installation without consulting the manufacturer and always employ qualified personnel.
- Inspect the entire electrical installation before the machine is commissioned and after every electrical repair.
- Do not allow children to come near the machine.
- Do not modify the design of the tooling.

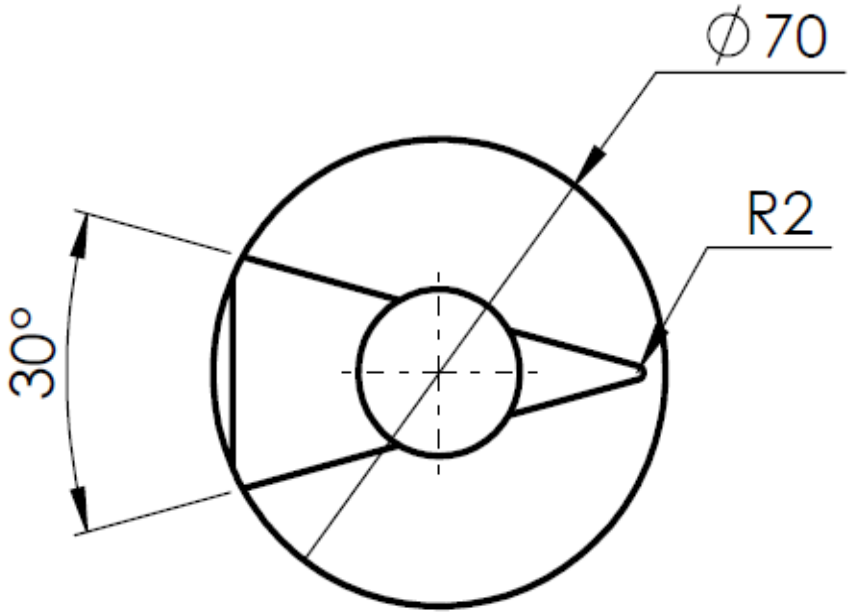


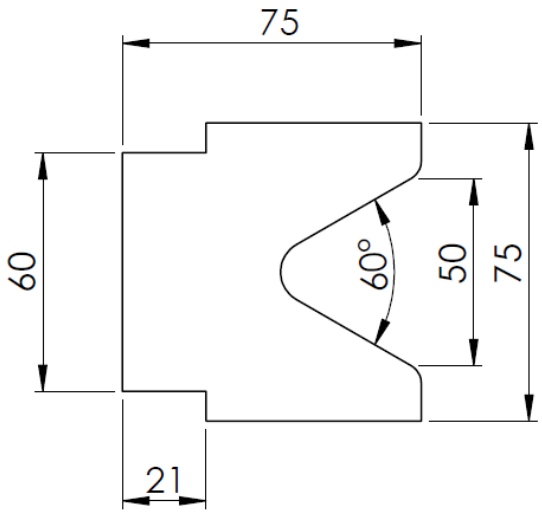
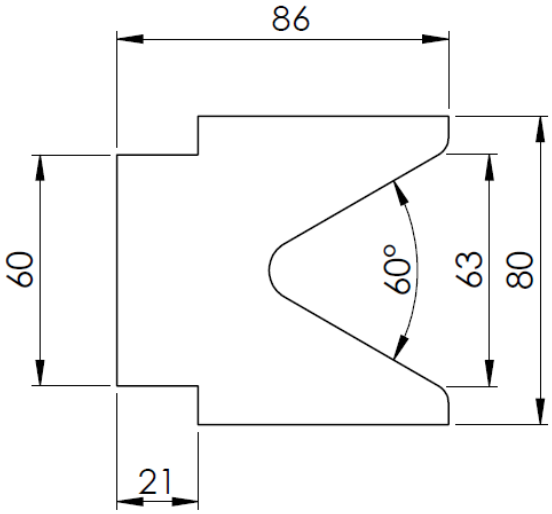
There is residual risk in the event of failure to comply with the set-out recommendations and guidelines.

12. Optional stamps / punches / dies

Stamp / Punch	Symbol	α	R
	MT-30	30°	0.8; 2; 5; 10; 12; 20;
	MT-40	40°	
	MT-60	60°	
	MT-88	88°	

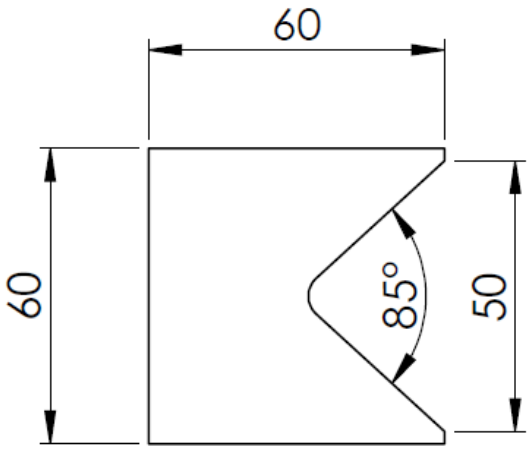
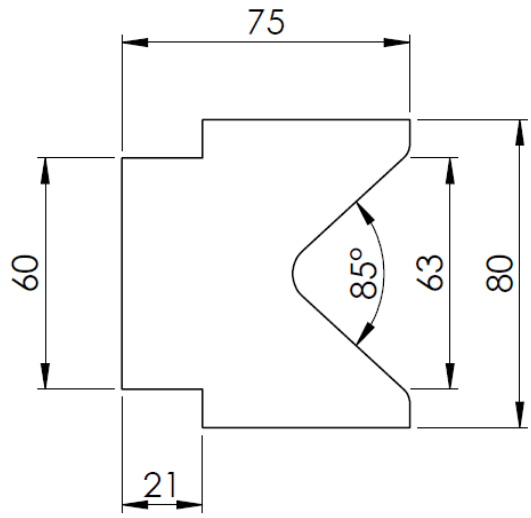
Example: MT-30, R2



Dies	Symbol	α	V [mm]
	M 3360/50	60°	50
	M 3360/63	60°	63

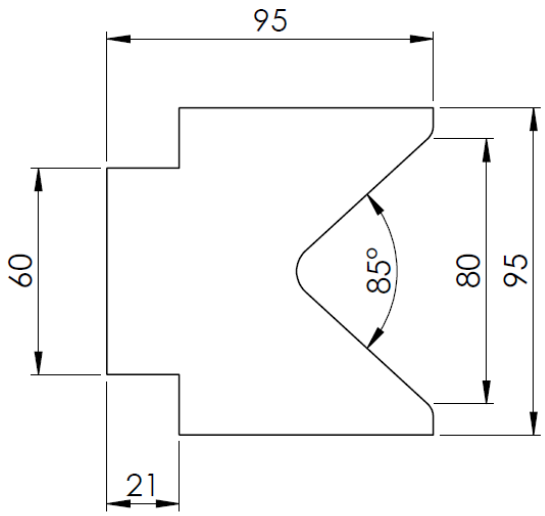
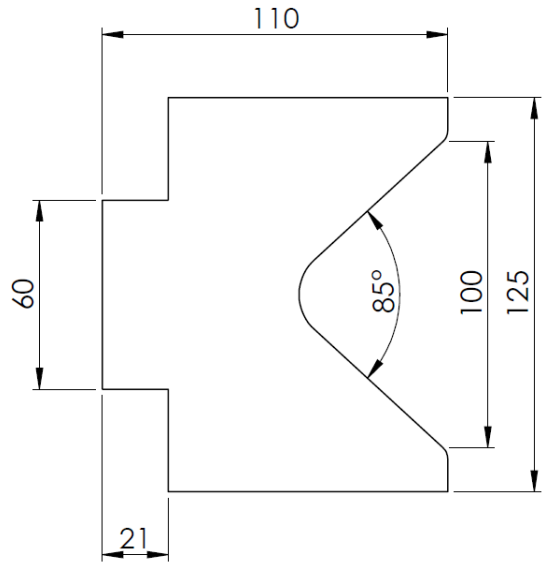
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	M 3385/50	85°	50
	M 3385/63	85°	63

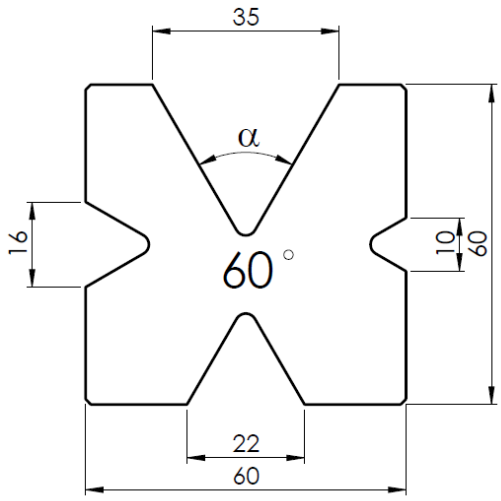
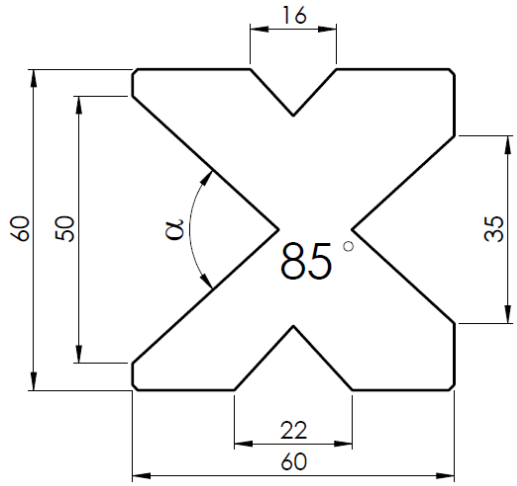
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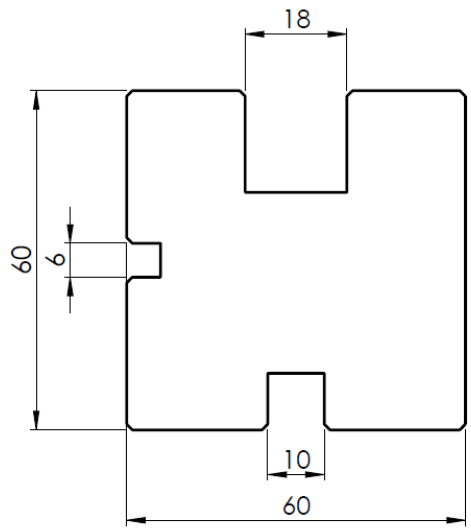
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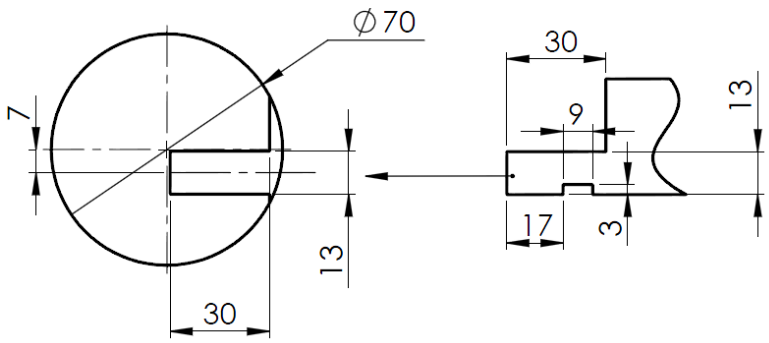
	M 3385/80	85°	80
	M 3385/100	85°	100

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	M 4/60°	60°	10; 16; 22; 35
	M 4/85°	85°	16; 22; 35; 50

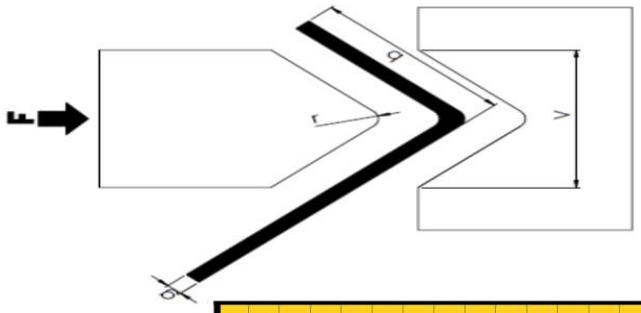
	MR	-	6; 10; 18;

Punch adapter	Symbol
	MH

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13. Die selection table



F[t] - siła na 1m *(force per 1m)*

r - promień stempla *(the radius of the stamp)*

b - miniamalna długość zaginanenego ramienia *(minimum bending lenght)*

V - szerokość matrycy *(widght of the matrix)*

TABELA DOBORU MATRYC

Force selection table

Parametry gięcia swobodnego blach o wytrzymałości RM=430-500MPa (43-50 kg/mm)

Free bending parameters steel with strenght RM=430-500 MPa (43-50kg/mm)

g	V	4	6	7	8	10	12	14	16	18	20	25	32	40	50	63	80	100	125	160	200
	b	2,8	4	5	5,5	7	8,5	10	11	13,5	14	17,5	22	28	35	45	55	71	89	113	140
	r	0,7	1	1,1	1,3	1,6	2	2,3	2,6	3	3,3	4	5	6,5	8	10	13	16	20	26	33
0,5			3																		
0,6			4	3	2																
0,8			7	7	5	4															
1			11	10	8	7	6														
1,2					12	10	8	7	6												
1,5							15	13	11	10	8										
2							22	19	17	15	13	11									
2,5									26	25	22	18	14								
3										34	30	24	19	15							
3,5												33	26	20	16	13					
4												43	34	27	21	17					
4,5													44	34	27	21					
5													52	42	33	26	21				
6														60	48	38	30	24			
7															62	52	41	33	26		
8															85	72	67	54	43		
10																	85	67	53	42	
12																	120	96	78	60	55
16																			136	107	86

Example: To bend a sheet with a thickness of 10 mm, consult the die selection table. According to the sheet thickness in column "g", find the force required to bend such a sheet with a length of 1 m. The PPHB- 28 machine has a clamping block with a height of 200 mm, so a tool with a height of 200 mm can also be mounted. The PPHB-80 machine has a clamping block with 300 mm height. Divide the force selected from the table by 5, and determine whether the result is less than the press's force. A force of 85 T is obtained in the given example.

Formula

85 T / 5= 17 T - force required to bend 10 mm sheet, sheet height 200 mm
17 T < 28 T - the machine is able to bend the desired sheet.
In this case, the die required for bending is the "80" die.
The radius of the punch must also be selected, defined by the "r" parameter in the table, and in this case, it is equal to 13.

14. Warranty card

Warrant card for PPHB- hydraulic press

Date of delivery	
Guarantee period	
Serial number	

Factory seal…….

REPAIR RECORDS

Scope of repair	Service employee's signature and stamp	Employer's signature	Date of repair order	Date of repair completion

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14.1 Warranty terms for Profi Press PPHB-models

1. The manufacturer guarantees proper operation of the machine according to the technical and functional conditions described in the instruction manual.
2. This warranty is granted for a period of 24 months from the date of receipt of the machine for any manufacturing or installation fault. This guarantee does not cover consumables that must be replaced regularly over the course of the machine's operation.
3. The manufacturer accepts the obligation to replace any parts that are demonstrated to have a factory defect that makes further operation impossible, at no additional charge. However, our service technicians will make the final decision, whether it's a warranty case or not.
4. Acknowledged warranty repairs shall be performed free of charge. The time until repair should not exceed 10 workdays, unless repair requires spare parts to be obtained from another supplier. The warranty period is extended by the time until repair.
5. This warranty is for faulty parts only, other charges (journeys, labours, transports, penalizations, etc.) are for the user, unless agreed and put in writing otherwise.
6. The warranty does not cover direct and indirect damage caused by improper operation and maintenance of the machine, in a manner that is not compliant with the instruction manual.
7. The warranty does not cover mechanical damage occurring due to the fault of the operator/user of the machine.
8. The warranty does not cover damage occurring due to improper transport.
9. The costs of machine service arising from improper operation and maintenance are covered by the buyer.
10. The following results in loss of the warranty:
    - Failure to adhere to deadlines and absence of documentation confirming performance of maintenance and service work.
    - Improper connection of the machine to the electrical grid.
    - Use of non-original spare parts, components or non-original software.
    - Any interference in the machine's design by persons other than the manufacturer's service personnel.
    - Failure to adhere to operating guidelines provided by our service and contained in the instruction manual.
    - Use of the machine not according to its purpose.
    - Improper installation at the workstation.
    - Electrical shocks or machine damage due to improper connection of the machine to the electrical grid or connection with parameters not compliant with the machine's rated parameters.

10. The warranty covers damage arising from production or material defects, under the condition that:
    - the accessories recommended by the manufacturer were used.
    - the machine was not disassembled nor modified.
    - the machine was used according to the instruction manual.
    - inspections and repairs were performed only by an authorized service.

15. Declaration of conformity for the Profi Press PPHB-models

According to Machinery Directive 2006/42/EC Annex II 1.A

We RHTC BV
Hoogschaijksestraat 19
5374 EC, Schaijk, The Netherlands

hereby declare that the following **PROFI PRESS** models:

PPHB-28NC / PPHB-50NC / PPHB-80NC

to which this declaration relates complies with the requirements:

- European Union Directive 2006/42/EC of 17 May 2006.
- Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

The following standards were applied for conformity assessment:
EN ISO 12100:2012
EN 60204-1:2018-12
EN ISO 16092-3

We declare that the equipment named above has been designed to comply with all applicable Essential Requirements of the Directives.

This EC declaration of conformity becomes void if any changes are made to the machine without the manufacturer's consent.

Person responsible for documentation: *Stefan Sakowicz (technical director)*

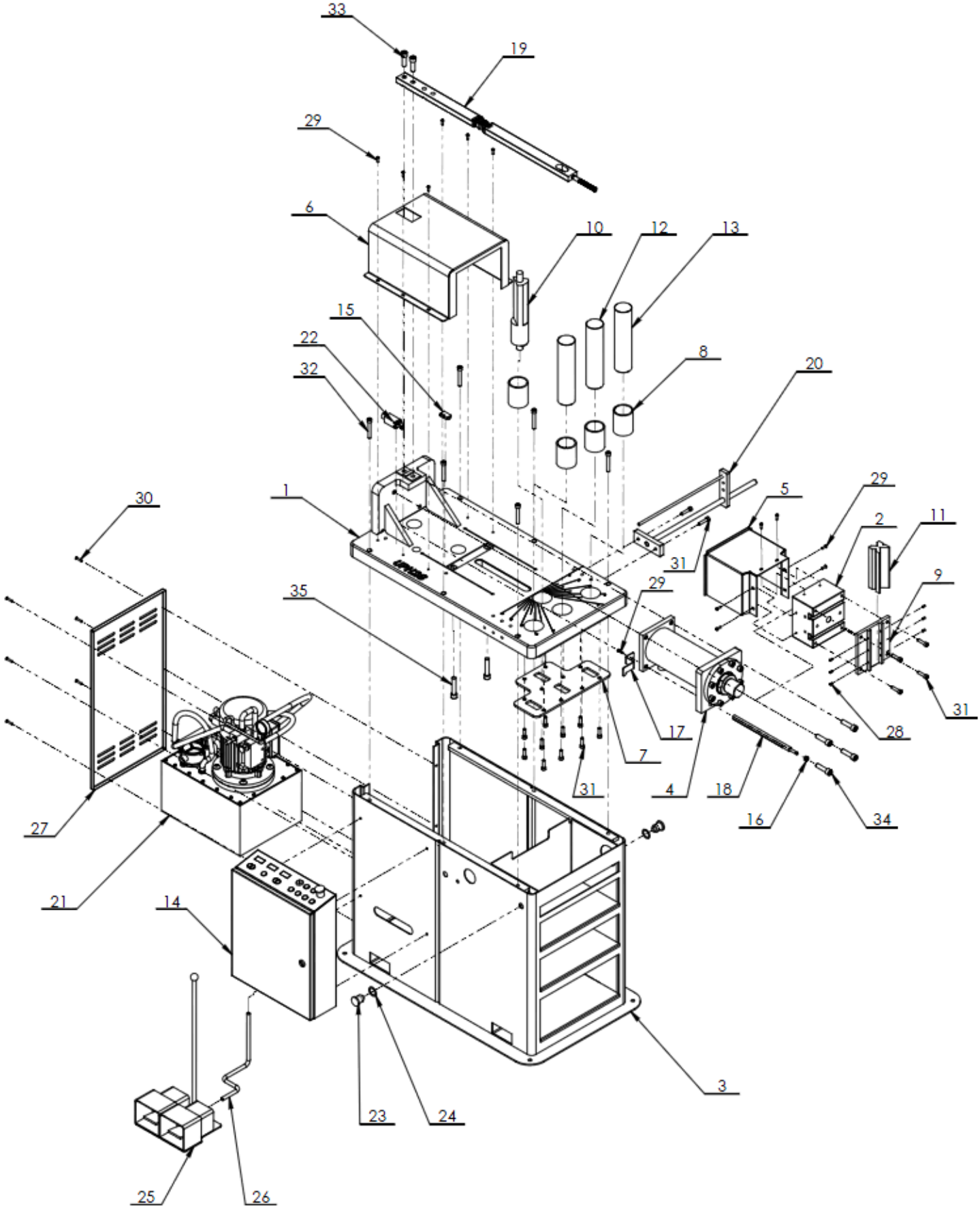


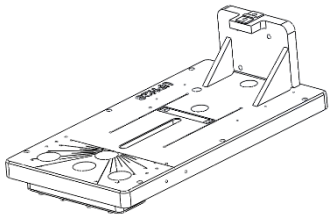
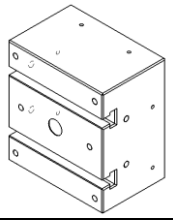
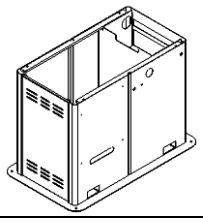
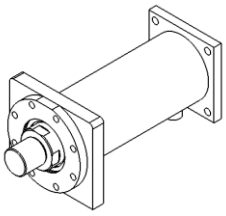
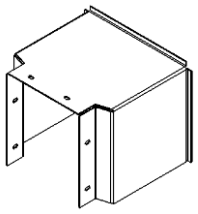
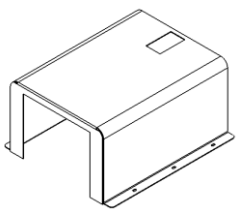
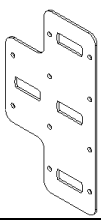
Mr Sakowicz has appointed R. Huberts of RHTC B.V. (Hoogschaijksestraat 19, 5374 EC Schaijk, The Netherlands) authorized to manage the technical file of these hydraulic workshop presses.

Signed:
Name R. Huberts, Director RHTC B.V.
Place & Date: Schaijk, 02-1-2025



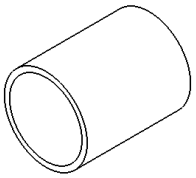
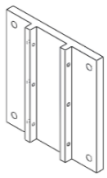
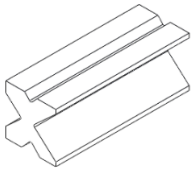
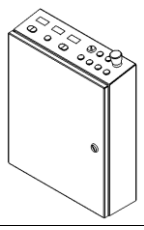
16. Parts lists of Profi Press PPHB-models



Part name	Cat. num.	Quantity	Drawing
Main plate	1	1	
Pressure block	2	1	
Base / frame	3	1	
Hydraulic actuator	4	1	
Front cover	5	1	
Rear cover	6	1	
Stamp / punch / pin locker	7	1	

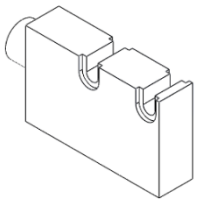
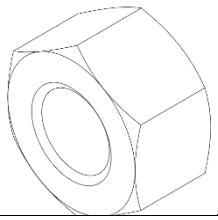
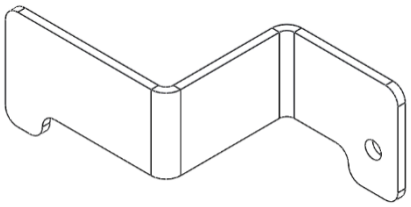
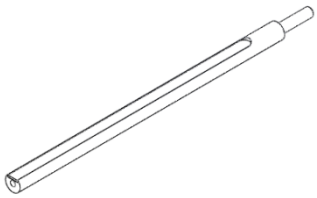
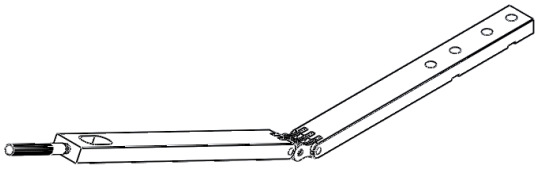
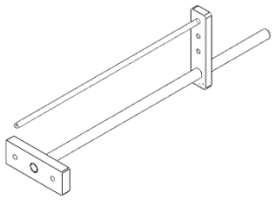
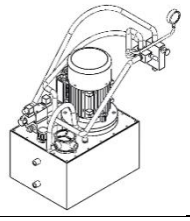
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Reduction sleeve	8	4	
Matrix socket	9	1	
Stamp / Punch	10	1	
Matrix	11	1	
Support pin	12	1	
Resistance pin	13	2	
Control panel	14	1	

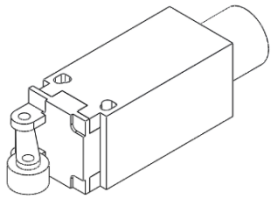
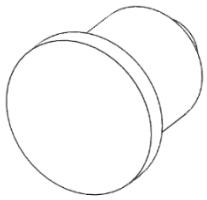
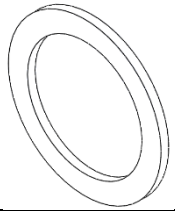
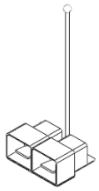
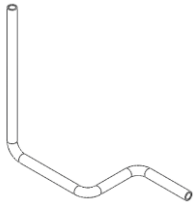
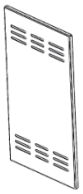
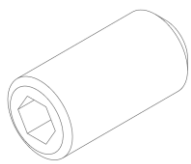
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Piston position sensor	15	1	
Nut M10	16	1	
Marginal plate	17	1	
Control Rod	18	1	
Stamp handle	19	1	
Backgauge	20	1	
Hydraulic power unit	21	1	

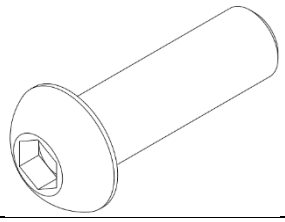
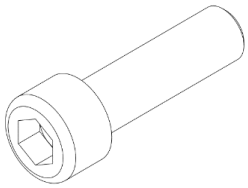
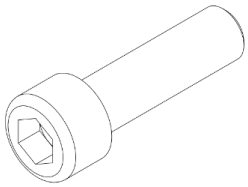
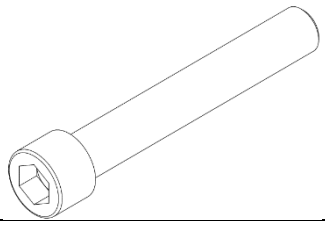
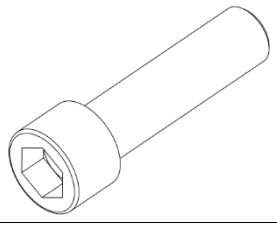
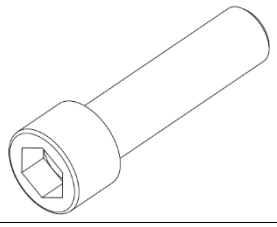
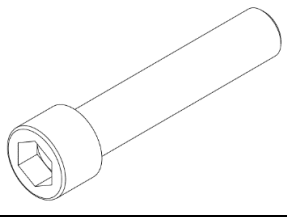
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Limit switch	22	1	
Safety button	23	2	
Security button pad	24	2	
Foot pedal	25	1	
Electric cable	26	1	
Cover of the hydraulic unit	27	1	
Grub screw without a head with a blunt end M6x12	28	6	

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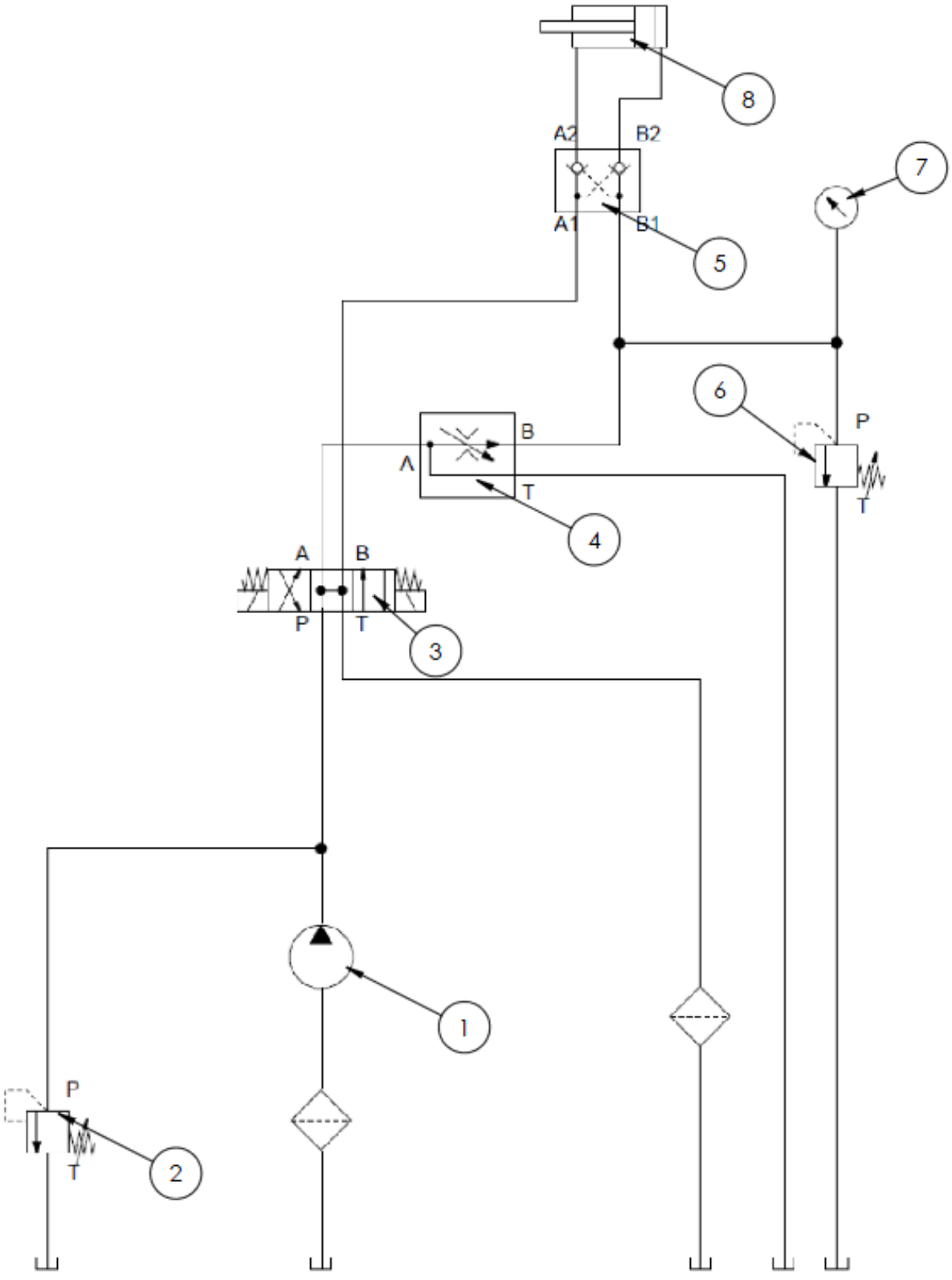
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Screw round head hexagon socket M6x20	29	13	
Screw round head hexagon socket M6x30	30	6	
Cylinder-head screw with hexagon socket M10x40	31	16	
Cylinder-head screw with hexagon socket M12x80	32	6	
Cylinder-head screw with hexagon socket M16x50	33	2	
Cylinder-head screw with hexagon socket M16x60	34	4	
Cylinder-head screw with hexagon socket M16x80	35	2	

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17. Hydraulic schematics



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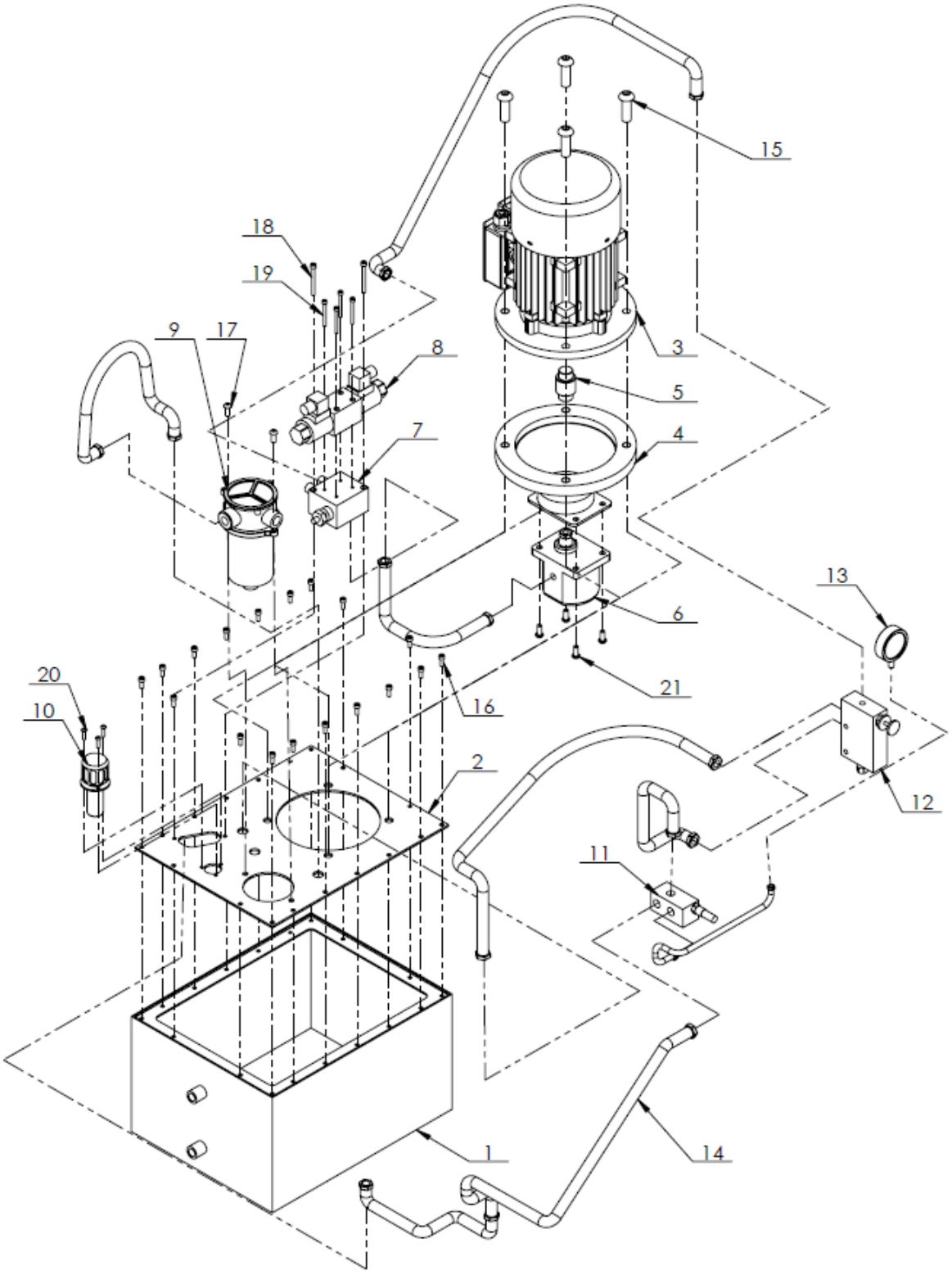
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1	Pump OT 200 P 06
2	Subbase EA06-33-38-1-4 H 80
3	Electrical distributor 4DWG 6 G 60/DC24 N Z5L
4	Flow regulator RFC- VU 1/2”
5	Return valve VP-NOV-6-D
6	Pressure regulator VMP 1/2’’
7	Manometer M63T-1.6 Gl 1/4’’
8	Hydraulic cylinder

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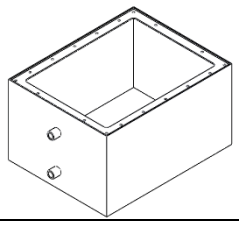
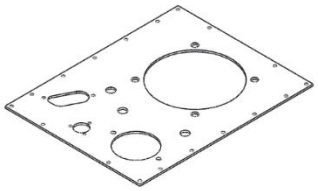
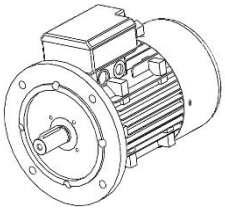
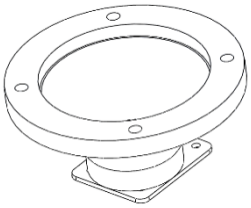
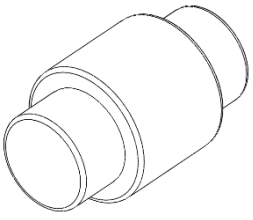
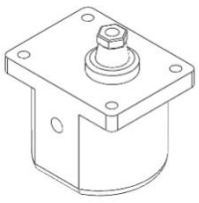
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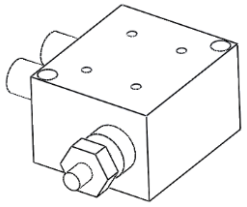
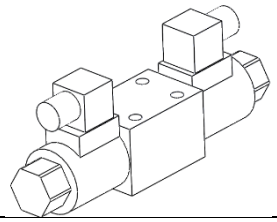
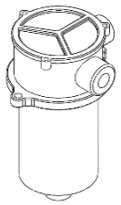
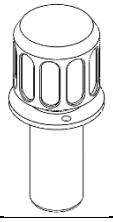
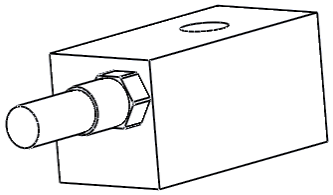
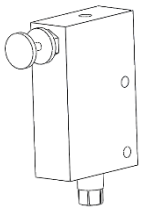
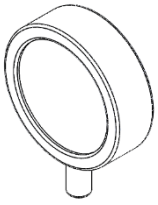
18. Parts list of hydraulic unit



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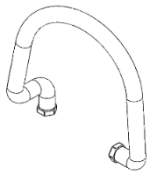
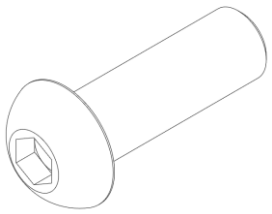
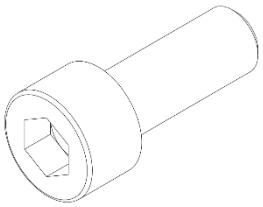
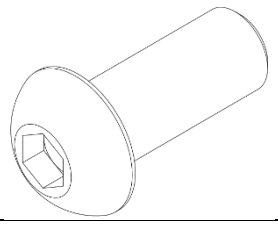
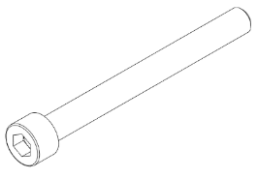
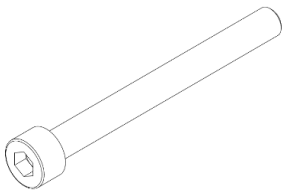
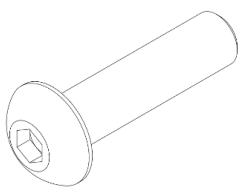
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Part name	Cat.num.	Quantity	Drawing
Main Tank	1	1	
Cover tank	2	1	
Electric Engine	3	1	
Coupling LS253-250	4	1	
Claw clutch ND 14	5	1	
Pump	6	1	

Sub-base EA06-33-38-1-4 H 80-350bar	7	1	
Electrical distributor 4DWG 6 G 60/DC24 N Z5L	8	1	
Return filter RFM 020 CD1 BB4 01S	9	1	
Filter TM 150 G65	10	1	
Pressure regulator VMP 1/2'' (V0700)	11	1	
Flow regulator VPR3 1/2'' (V1060)	12	1	
Manometer M63T-1.6 Gl 1/4''	13	1	

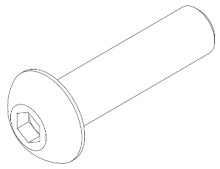
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Hydraulic hose	14	7	
Screw round head hexagon socket M14x50	15	4	
Cylinder-head screw with hexagon socket M6x16	16	18	
Screw round head hexagon socket M8x20	17	2	
Cylinder-head screw with hexagon socket M6x60	18	2	
Cylinder-head screw with hexagon socket M5x50	19	2	
Screw round head hexagon socket M5x20	20	3	

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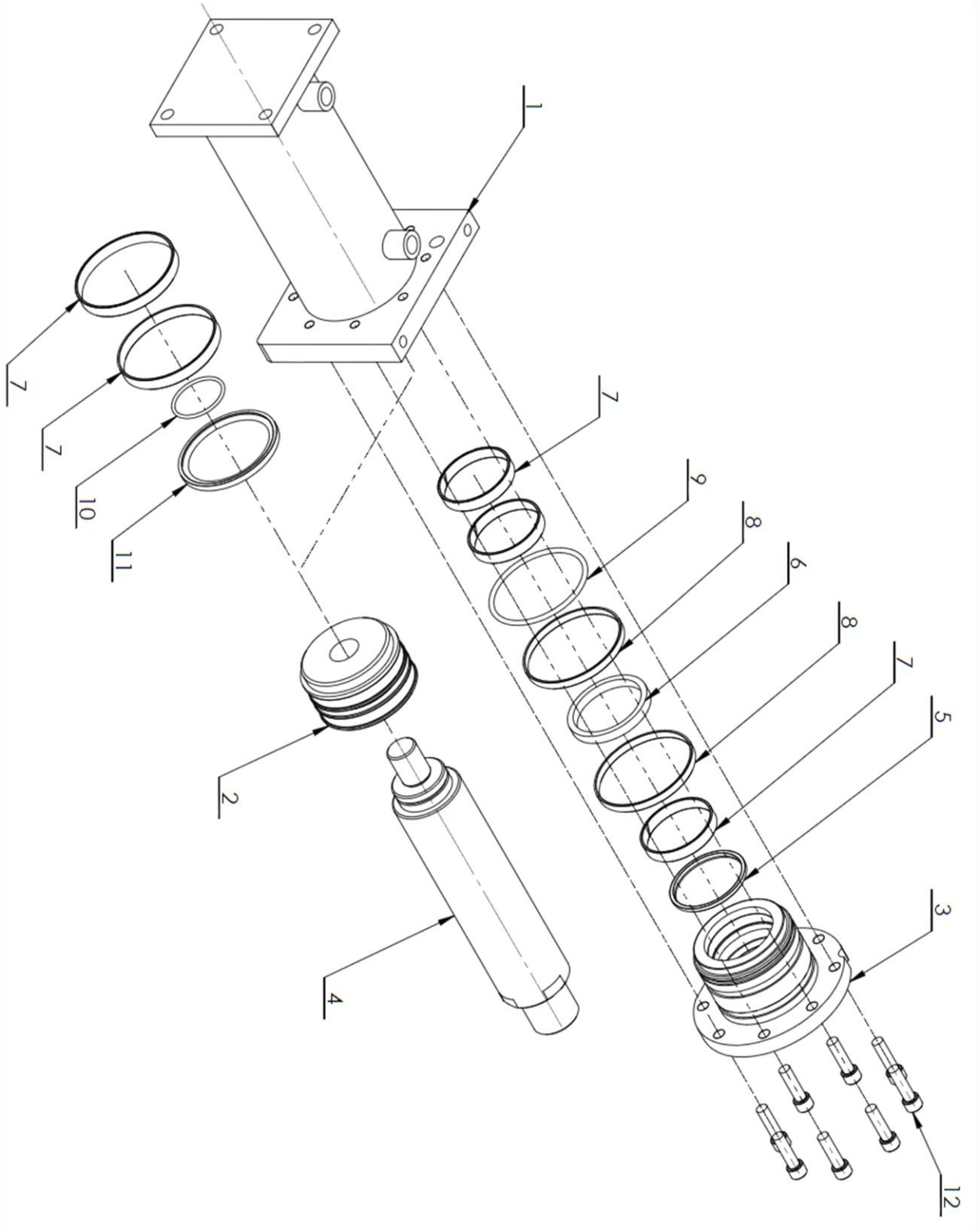
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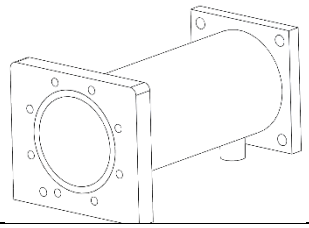
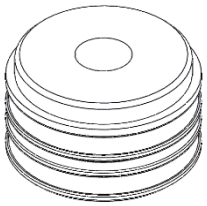
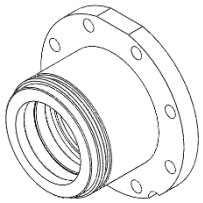
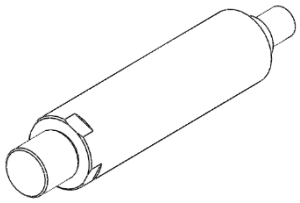
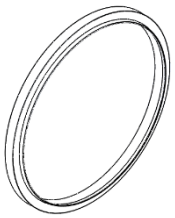
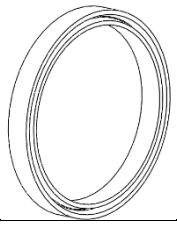
Screw round head hexagon socket M8x20	21	4	

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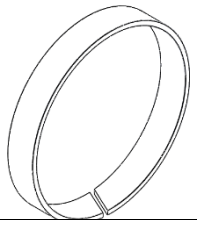
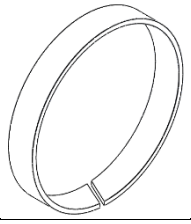
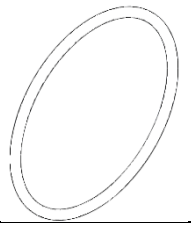
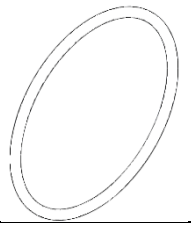
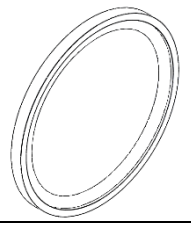
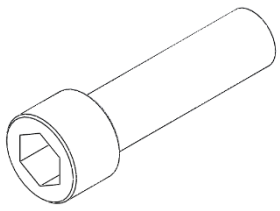
19. Parts list of hydraulic actuator



Part name	Cat. num.	Quantity	Drawing
Cylinder	1	1	
Piston	2	1	
Gland	3	1	
Piston Rod	4	1	
Seal scraper GHP	5	1	
Seal gland TTI	6	1	

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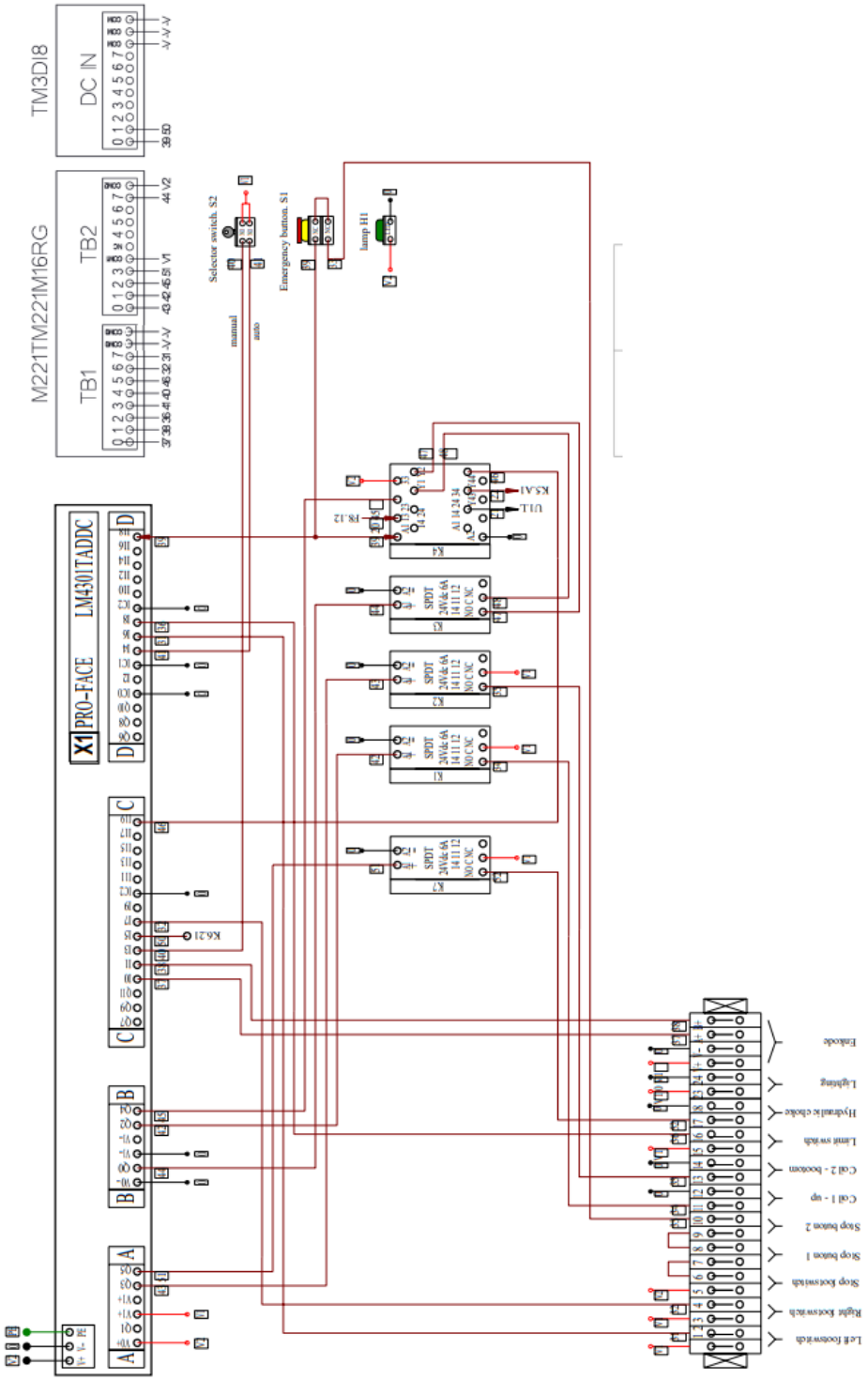
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Leading tape AGE 15mm	7	5	
Leading tape AGE 10mm	8	2	
O-ring Ø6/Ø130	9	1	
O-ring Ø4/Ø70	10	1	
Seal GER type Ø130	11	1	
Cylinder-head screw with hexagon socket M14x50	12	6	

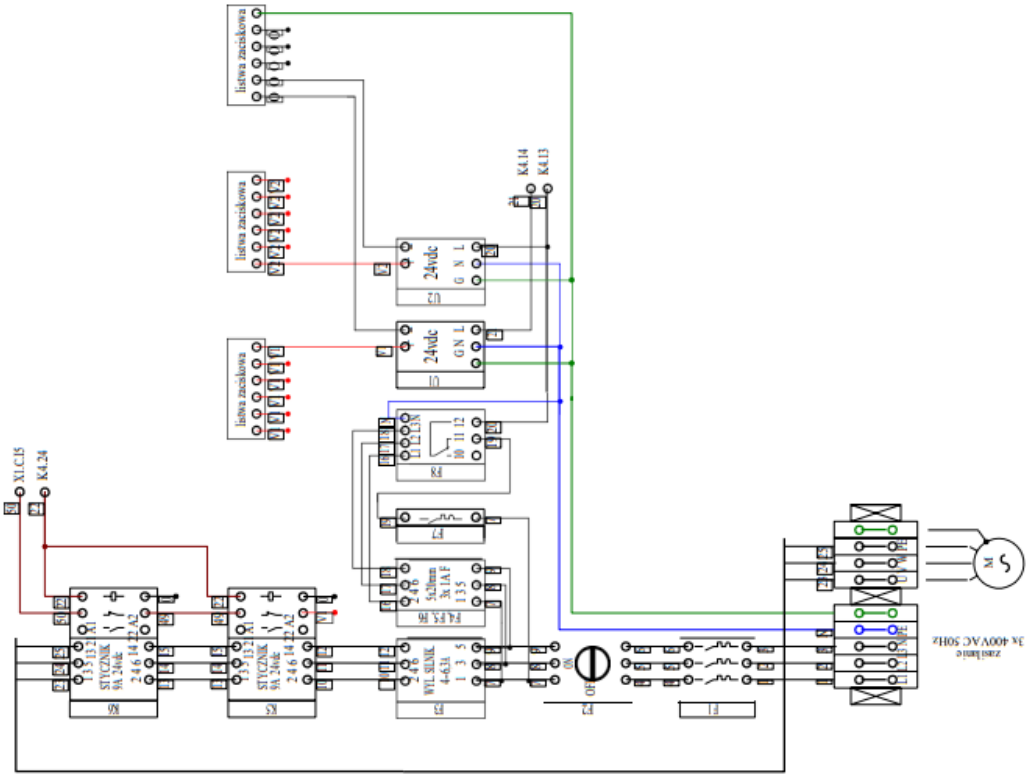
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20. Electrical diagram of the press with manual valves



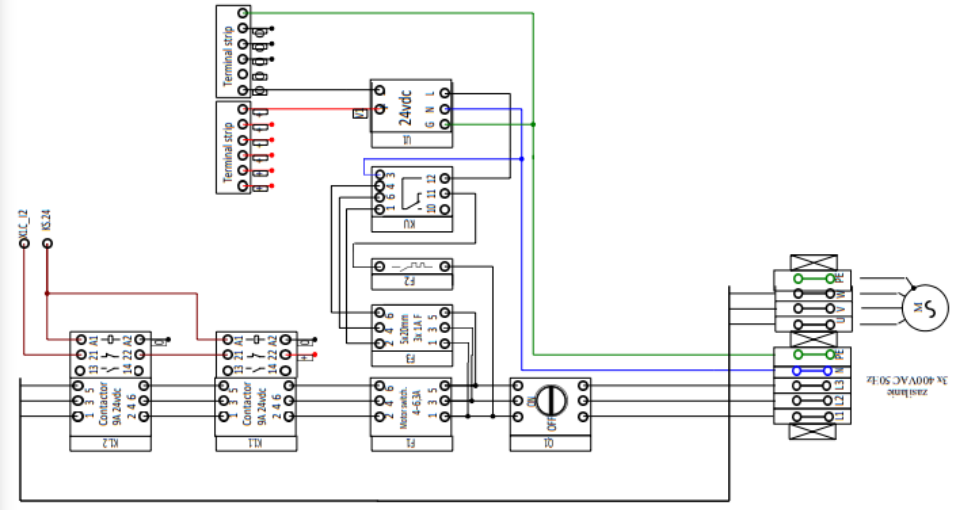
Part list				
	symbol	Producent code	producent	Function
	F1	A9F03316	schneider	Overcurrent protection
	F2	GA016C	lovato	Disconnector
	F3	GZ1E14	schneider	Motor switch
	F4	003901360	eti	Fuse conecctor5x20mm
	F5	003901360	eti	Fuse connector 5x20mm
	F6	003901360	eti	Fuse connector 5x20mm
	F7	A9F03106	schneider	Overcurrent protection
	F8	CKF-316	F&F	Sequence and phase loss sensor
	U1	MDR-100-24	mean-well	Power supply 24vdc
	U2	MDR-40-24	mean-well	Power supply 24vdc
	X1	LM4301TADDC	pro-face	Controler PLC
	S1	XB5AS8442	schneider	Emergency button
	S2	ZB5AG3 + 2x ZBE101	schneider	Selector switch
	H1	ZB5AV033 + ZBVB3	schneider	Signal light
	K1	RM842012351024	relpol	Relay
	K2	RM842012351024	relpol	Relay
	K3	RM842012351024	relpol	Relay
	K4	XPS-AC	schneider	Safety relay
	K5	LC1D12	schneider	Contactor
	K6	LC1D12	schneider	Contactor
	K7	RM842012351024	relpol	Relay

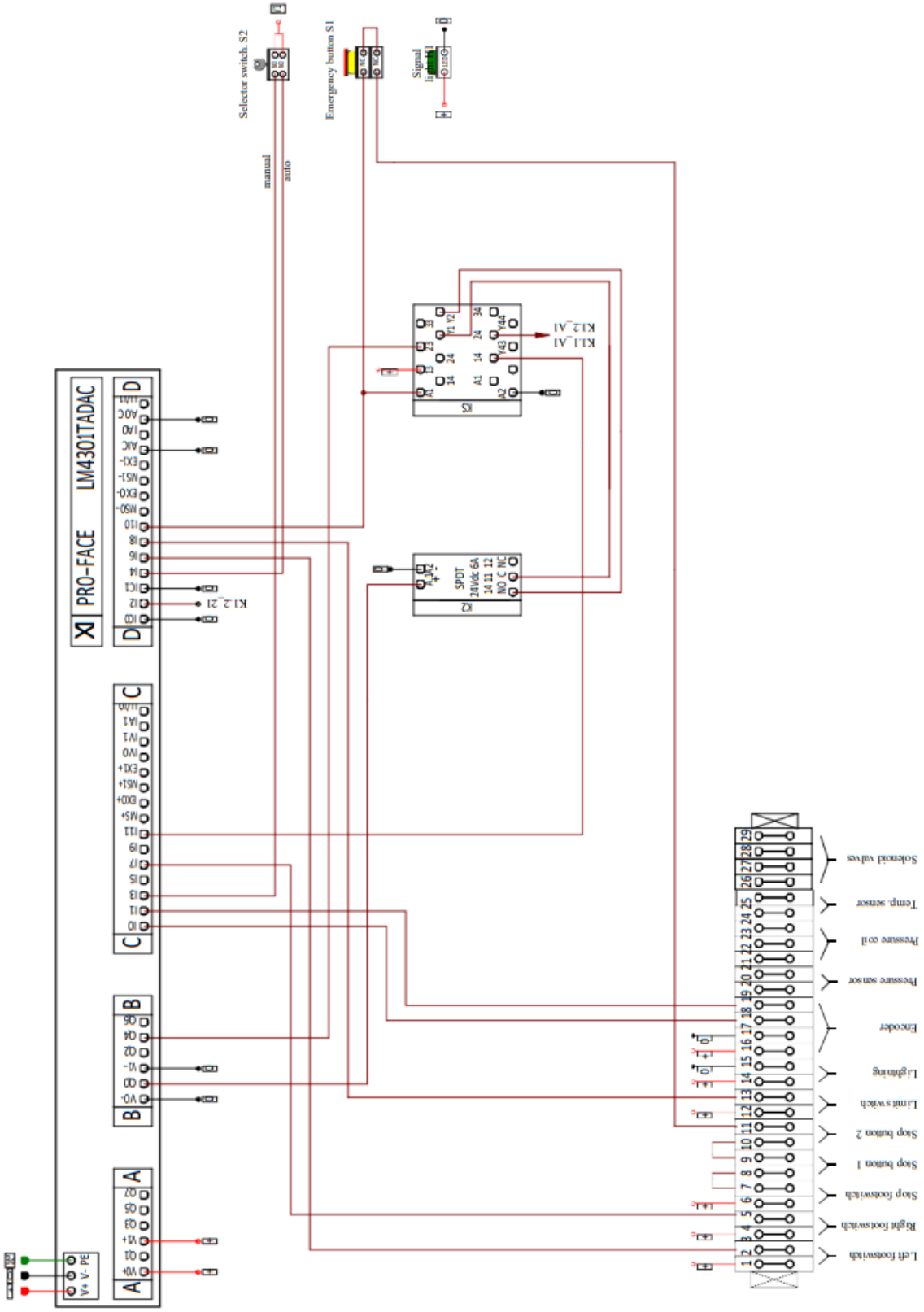


21. Electrical diagram of the press with proportional valves

Part list

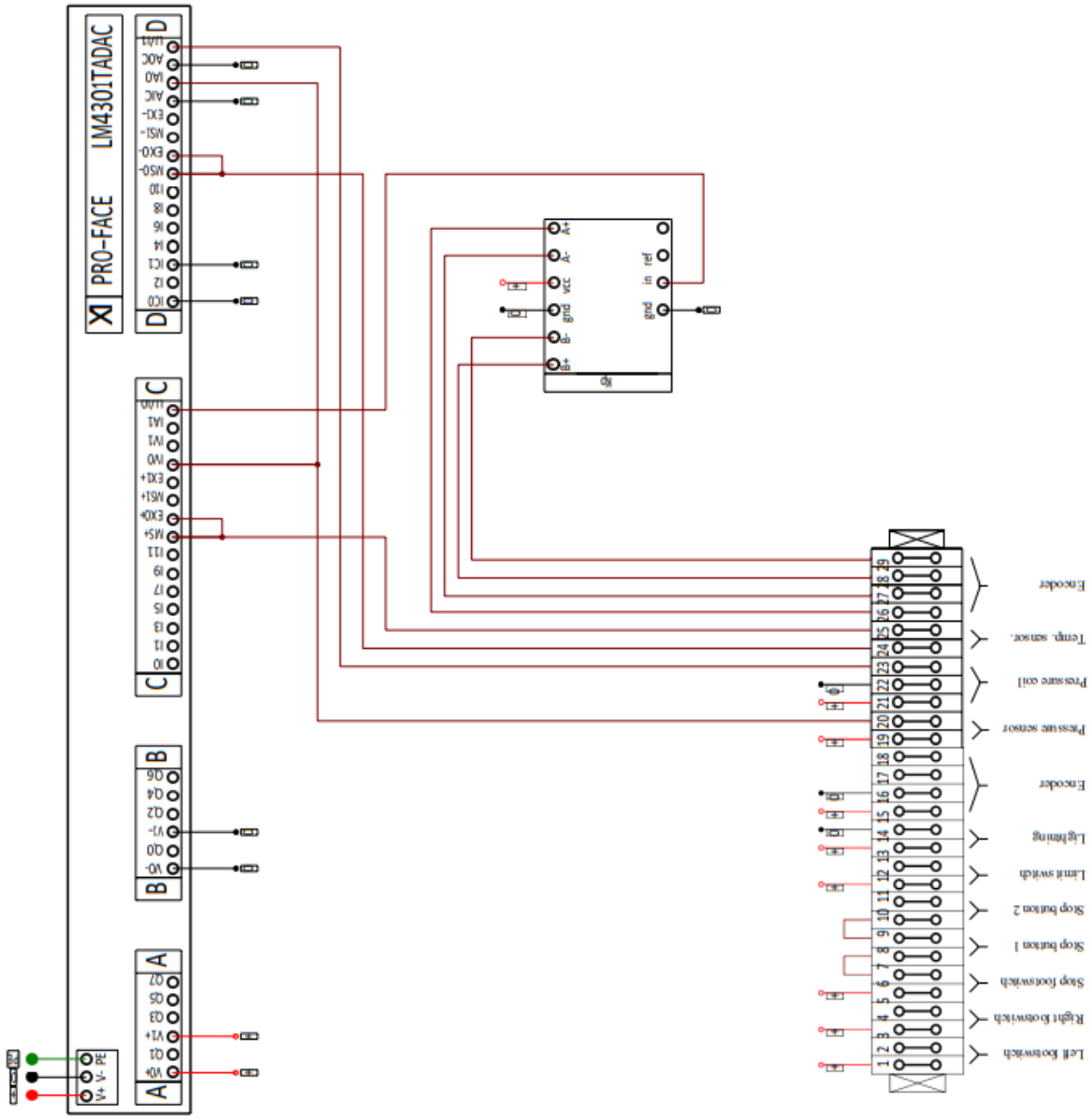
Symbol	Producent code	Producent	Function
Q1	GA016C + GAX61	lovato	Main disconnector
F1	GZ1E14	schneider	Motor switch
F2	A9F03106	schneider	Overcurrent protection 1f B6
F3	003901360	eti	Fuse connector 5x20mm
KS	XPS-AC5121	schneider	Safety relay
KU	CKF-316	f&f	Sequence and phase loss sensor
K1.1	LC1D12BD	schneider	Pump contactor
K1.2	LC1D12BD	schneider	Pump contactor
K2	RM842012351024	mean-well	Interface relay
Kp	LE PD X		Proportional controler
X1	LM4301TADDC	pro-face	ControlerPLC
U1	EDR-120-24	schneider	Impulse power supply
S1	XB5AS8442 + 2x ZBE102	schneider	Emergency button
S2	ZB5AG3 + 2x ZBE101	schneider	Selector switch
H1	ZB5AV033 + ZBVB3	relpol	Signal light





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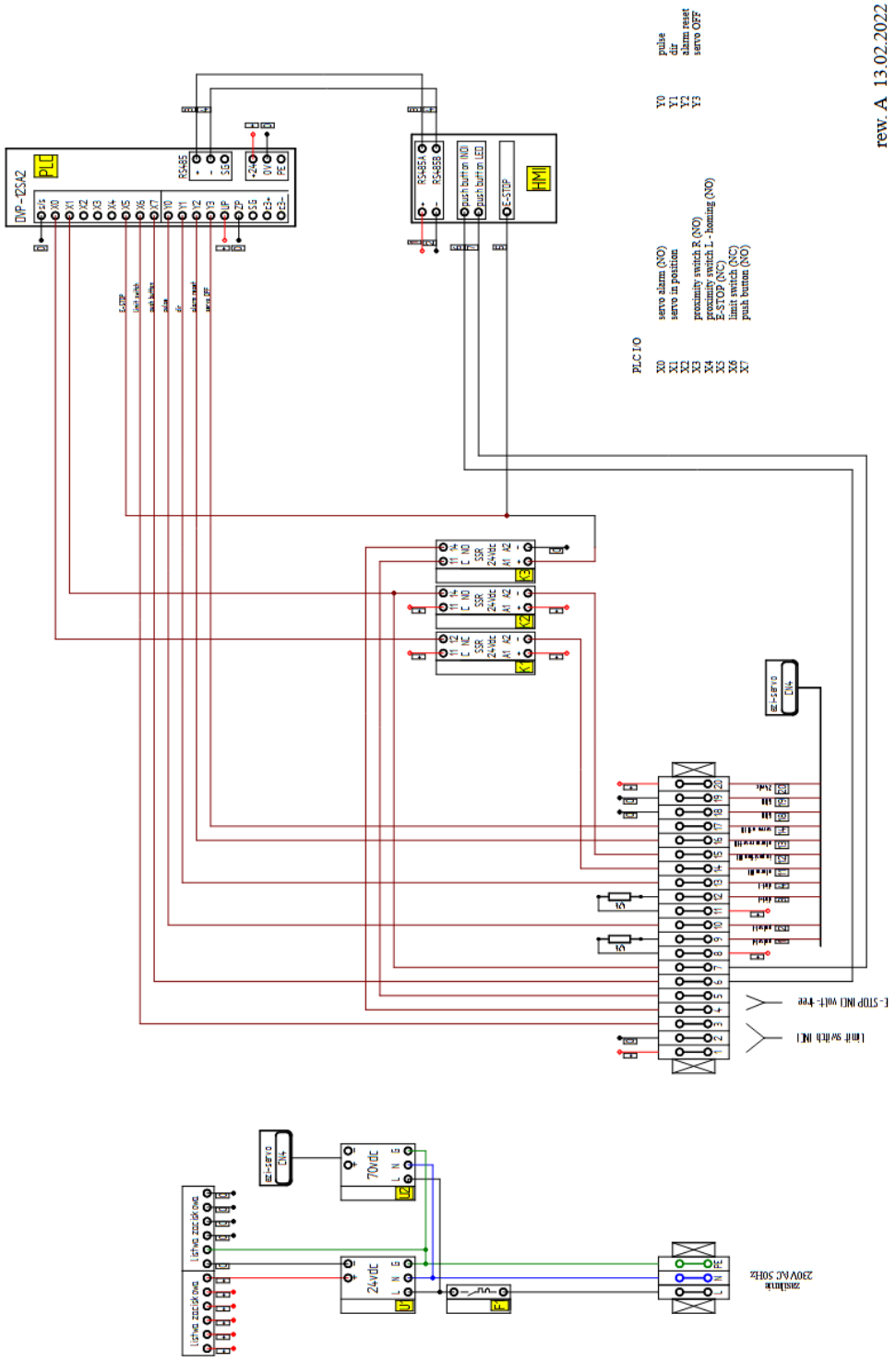
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22. Electrical diagram of the optional motorized back gauge



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