



## INSTRUCTION MANUAL

ARG 260 CF-NC automat • ARG 300 CF-NC automat  
ARG 300 DCT CF-NC automat • ARG 330 CF-NC automat  
ARG 330 DC CF-NC automat • ARG 520 DC CF-NC automat

### 1. PART



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**Dear customer,**

thank you for purchasing our product. We wish you a lot of success with it in your business. Please pay close attention to the following instructions in order to ensure faultless operation of the machine.

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## 0. General

This instruction manual provides the user with assistance and information about the PILOUS metal-cutting band saw and the possibilities of use corresponding to its purpose. The instruction manual contains important instructions on a safe, adequate and economically efficient operation. Observing the operating instructions will prevent risks; the repair and outage time costs will be reduced and the machine reliability and life increased. The instruction manual contains instructions based on the valid national safety regulations and environmental standards. The instruction manual must be always available at the machine site. The instruction manual must be read and used by the staff entrusted with the machine installation, transport and storage, use / operation, maintenance and disposal. In addition to the instruction manual and binding safety regulations in force in the user's country and at the service site, it is also necessary to observe the approved rules for safe and professional work.

### Letter of Guarantee - Service

The Letter of Guarantee is a separate annex to the instruction manual.

**Guarantee Period** - see Letter of Guarantee

### Conditions for Maintenance of Claims under Guarantee

- Transport and storage of the machine in accordance with the instruction manual
- Use and operation of the machine in accordance with the instruction manual
- Connection of the machine to the power supply in accordance with the instruction manual

### The guarantee does not apply to:

- Violent and mechanical damage of the machine caused by interference of the user or other persons.
- Inevitable events (natural disaster).
- Damage to the machine during transport.
- Storage or installation of the machine in humid, chemical or any other inappropriate environment.
- Wear parts (see the Letter of Guarantee).

**Potential claims concerning guarantee and after-guarantee repairs should be made by phone, post or e-mail to the address: see the Letter of Guarantee.**

### Instruction for the User:

The Seller is obliged to hand over to the User the Letter of Guarantee immediately with the purchase of the product. The Letter of Guarantee must be properly and legibly filled out and confirmed by the Seller's stamp, signature and date of purchase. The Seller is obliged to inform the Buyer about the use and handling of the product.

### Data Necessary for Claiming Guarantee (After-Guarantee) Repair

- Machine type
- Letter of Guarantee Number (identical with the serial number of the machine)
- Date of issue of the Letter of Guarantee

## 0.1. Safety Provisions

The machine design complies with the technical status and the approved safety and technical rules. In spite of this, the user's or the third persons' health can be endangered and/or the machine or other tangible goods may be unfavorably influenced during the operation of the machine. In order to prevent such hazards, it is absolutely necessary to observe the safety instructions in this instruction manual. These safety instructions must be read and understood by relevant personnel before the machine commencing. Failure to observe these instructions may lead to serious health and property damage! The safety instructions in this instruction manual are marked with safety symbols / danger spot signs.



**Warning: Dangerous spot -  
Use the highest caution!**



**Caution: Dangerous voltage!**



**Use protective goggles!**



**Health hazard by flying particles!**



**Use hearing protection!**



**Danger of injury by compression!**



**Use boots or work shoes with a steel toe.  
And with anti-slide soles.**



**Danger of injury by cutting!**



**Use protective gloves!**



**Before using the bandsaw, read this instruction manual carefully and make sure you understand its content!**

## 0.2. Scope of Use / Use According to Designation

The machine is intended solely for cutting (primarily metal) workpieces. Any other use is considered as inadequate to the purpose. The manufacturer is not responsible for damages arising from such use, the risk is borne by the user alone. The use complying with the purpose includes also observing the operating instructions and the check and maintenance conditions.

**Examples of materials that can be cut:** structural steel • cementing steel • nitriding steel • free-cutting steel • heat-treated steel • roller bearing steel • spring steel • tool steel • high-speed steel • cast steel • cast iron • copper • brass • aluminium • plastics.

Consider the recommendations for use as prescriptive values. In case of special cases, consult the manufacturer.

## 0.3. Requirements on operators

**The machine may only be operated by persons that have been appropriately trained and instructed in safety at work!**

The machine may only be operated if it is in perfect condition with respect to technical safety. The user is obliged to check the machine for visually detectable damages and faults at least once per shift. Immediately report to your manager any damages and faults on protective devices and changes in the operation of the machine that threaten safety. No safety devices may be removed, moved, put out of operation or changed during the machine operation. Otherwise any warranty claims shall be null and void! If any safety device has to be removed during operation or maintenance, secure the POWER SWITCH in the „OFF" position by a padlock or disconnect the machine from the mains and secure it against restart.

- Before operating the machine, remove loose parts of clothes, cover long hair.
- Make sure that all other persons stand or move at least 2 meters from the saw blade, protect them from flying chips and prevent harm to them in case the saw blade breaks.
- All persons helping you at the site must be acquainted with all the safety rules.
- The safety rules must be provided on a visible place at the site.
- Keep hands at a safe distance from the saw blade; never adjust the device when the motor is running. Switch off the motor and secure it against restart before you start handling the saw blade



**Only persons with adequate electrician qualifications are allowed to open protective covers of the electrical equipment and to work on it.**

## 0.4. Machine Requirements - Safety Devices

### DANGER OF INJURY!



**No cover on the saw blade in the cutting area! High risk of injury in the operating area of the arm!  
Before you open protective devices, wait until the saw blade and the grinding wheel stop.  
Never use the sharpener when you are tired, exhausted, under the influence of medicaments, drugs or alcohol!**

Horizontal metal band saw is a cutting machine equipped for saw blade cutting. In order to complete the manufacturing process the grinding wheel must reach the saw blade in the machining area. You can install the protective covers against contact with the saw blade only outside the machining area.

## 0.5. Protective covers

The saw blade and its wheels are protected against contact outside the machining area. You can remove protective covers only if the POWER SWITCH is turned off and secured against restart or if the machine is disconnected from the mains and the saw blade is still. Before leaving the band saw, all covers must be closed. The protective cover of the arm and the wheels with the saw blade are secured by an end switch. If the covers are not completely closed, none of the machine's drives will start.

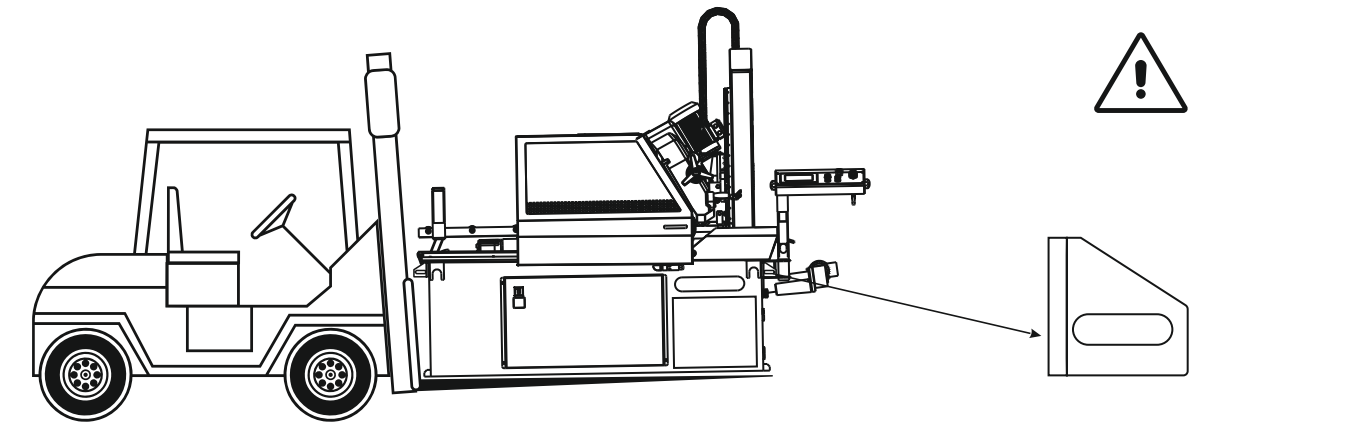
To stop the machine in case of emergency, press **TOTAL STOP** button. You can put the machine back to operation only after you manually unlock the switch (by turning it clockwise) and press the SAFETY button (see Section 4.1.). Fixed and movable bars of guide heads are fitted with solid protective covers that protect the area outside the machining area.



**Manual cleaning and removal of waste when the machine is working or running down is prohibited. A first-aid kit must be available at the workplace. You have to wear suitable work clothes, shoes and adequate protective equipment (eye protection, hearing protection, gloves, steel-toed work shoes) at work. Observe valid health rules concerning the air quality at the workplace.**

## 1. Transport and Storage

When transporting the machine, use tensioning straps to prevent movement. Thread the straps through the yellow consoles located in the corners of the machine (see picture). It is recommended to transport and lift the machine only with a forklift. Forks of the forklift have to be inserted under the machine base, perpendicular to the secured arm from material feed direction, or from the side. When handling the machine with a forklift, always make sure that the machine is balanced on the forks.



### 1.1. Surface Protection

Machine parts are protected against corrosion by powder coating or a primer and two-component polyurethane varnish. Sliding surfaces are coated with anti-corrosive oil. Surfaces of other parts and components of the machine are treated by galvanization or blackening.

### 1.2. Packing

The machine is supported on wooden beams, which provide a space of approximately 100mm from the ground for the purpose of the transport and loading with a forklift. The machine is packed in a stretching foil that protects it against weather influence during transport.

#### Standard accessories:

- 1 pc. metal saw blade, bimetal M42 (mounted),
- 1 pc. band saw instruction manual,

### 1.3. Disassembly/Repacking

Disconnect the machine from the mains • empty and clean the metal chip tank and the coolant tank • clean the machine • apply anticorrosive oil on the sliding surfaces • before the transport, unscrew the filling cap from the hydraulic unit and replace it with a transport cap, see section 4.10. • fix the arm for transport • lift the machine and place it on beams • observe the distance of approximately 100 mm from the ground for the transport with the forklift • make sure that all protective covers of the machine are in place and fastened • add the machine accessories



**Caution: used coolants belong to the category of special waste!  
Only a person with adequate electrician qualifications can disconnect the machine from the mains!**

### 1.4. Disposal



























When the machine has been definitely put out of operation, it should be disposed of in accordance with the provisions valid in the respective country. We recommend that you contact a specialist waste disposal service.

## 2. Technical Data

**Machine noise** - measured in conformity with ČSN EN ISO 3746:2011

The acoustic pressure level at the workplace: 76 dB (A), acoustic power level: 91 dB (A).

The measured values exceed the value specified in the Government Regulation No. 176/2008, section 1.7.4.2, article u) and therefore ear protectors must be used during the machine operation. The measurement was carried out while the machine was in a steady state and the saw blade speed was 80m/min. During the operational state with a technical load, the most frequently used technological process was measured. Noise levels measured on the machines may vary depending on the type of cut material, saw blade speed and other factors.

		ARG 260 CF-NC	ARG 300 CF-NC	ARG 300 DCT CF-NC	ARG 330 CF-NC	ARG 330 DC CF-NC	ARG 520 DC CF-NC
MAIN MOTOR		400 V, 50 Hz 2,2 kW	400 V, 50 Hz 2,2 kW	400 V, 50 Hz 2,2 kW	400 V, 50 Hz 3 kW	400 V, 50 Hz 3 kW	400 V, 50 Hz 4 kW
SERVOMOTOR		400 V, 50 Hz 1,265 kW	400 V, 50 Hz 1,265 kW	400 V, 50 Hz 1,265 kW	400 V, 50 Hz 2,065 kW	400 V, 50 Hz 2,065 kW	400 V, 50 Hz 2,065 kW
PUMP MOTOR		400 V, 50 Hz 120 W	400 V, 50 Hz 120 W	400 V, 50 Hz 120 W	400 V, 50 Hz 120 W	400 V, 50 Hz 120 W	400 V, 50 Hz 120 W
BRUSH MOTOR					400 V, 50 Hz 90 W	400 V, 50 Hz 90 W	400 V, 50 Hz 90 W
HYDRAULIC UNIT MOTOR		400 V, 50 Hz 550 W	400 V, 50 Hz 550 W	400 V, 50 Hz 550 W	400 V, 50 Hz 550 W	400 V, 50 Hz 550 W	400 V, 50 Hz 550 W
SAW BLADE SPEED		15 - 90 m/min	15 - 90 m/min	15 - 90 m/min	15 - 90 m/min	15 - 90 m/min	15 - 90 m/min
CUTTING ANGLE RANGES	[mm]	 90°  45°	 90°  45°	 90°  45°	 90°  45°	 90°	 90°
	∅	260	300	300	330	330	520
	a	245	285	290	320	310	500
	a x b	245x250	205x290	360x295	360x250	360x310	700x480
ARM SWING		2880x27x0,9	3150x27x0,9	3150x27x0,9	3870x34x1,1	3870x34x1,1	5770x41x1,3
SAW BLADE SIZE		300 mm	355 mm	355 mm	420 mm	420 mm	540 mm
SAW BLADE WHEELS DIAMETER							
SAW BLADE TILT		3°	3°	3°	3°	3°	3°
VICE OPERATING HEIGHT		830 mm	850 mm	850 mm	850 mm	850 mm	920 mm
OIL IN THE HYDRAULICS		Hydraulic oil approx 26 l	Hydraulic oil approx 26 l	Hydraulic oil approx 26 l	Hydraulic oil approx 26 l	Hydraulic oil approx 26 l	Hydraulic oil approx 26 l
COOLANT TANK		approximately 35 litres	approximately 35 litres	approximately 35 litres	approximately 35 litres	approximately 35 litres	approximately 35 litres
MACHINE SIZE		2100x1800x1450	2100x1800x1600	2100x1700x1600	2100x2500x1600	2560x2220x2080	3100x2530x1020
MACHINE WEIGHT		740 kg	1020 kg	1270 kg	1350 kg	1450 kg	1720 kg

### 3. Installation

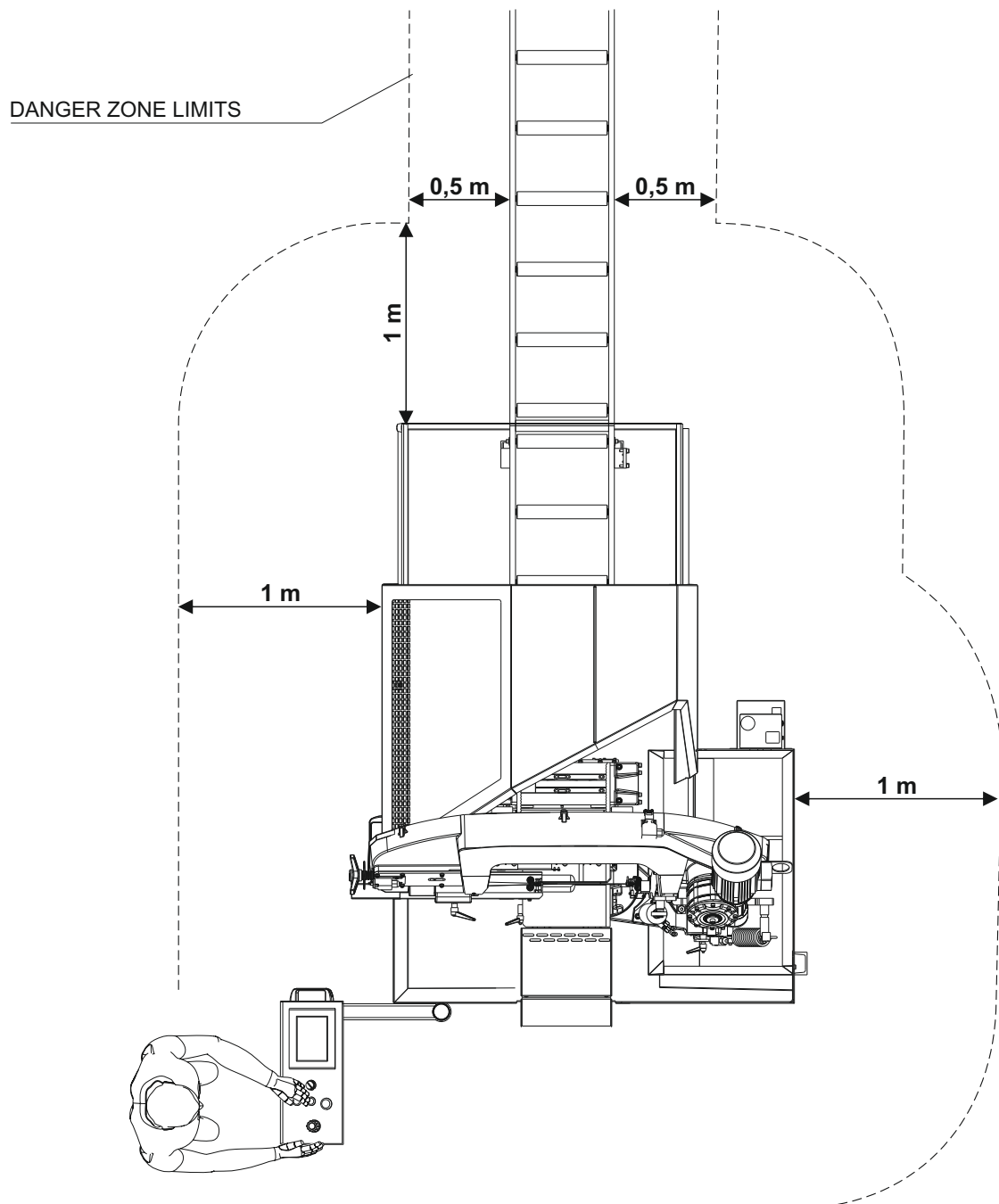
#### 3.1. Space Requirements

You can install the machine on any suitable and even floor (concrete) in a factory hall. Observe the allowed floor load. The machine should be aligned using the underlay sheets under the base anchors (not included in the shipment).

While preparing the cutting, the operating staff is allowed to move around the machine only when the machine is not running. When the machine is running, the operator has to stay only at the control panel so that he/she is able to switch off the machine any time. The operator must also ensure that no other persons are present in or near the working area of the machine. No unauthorised personnel may enter the danger zone. To prevent injury, the danger zone must also be level and free from any foreign objects and obstacles.

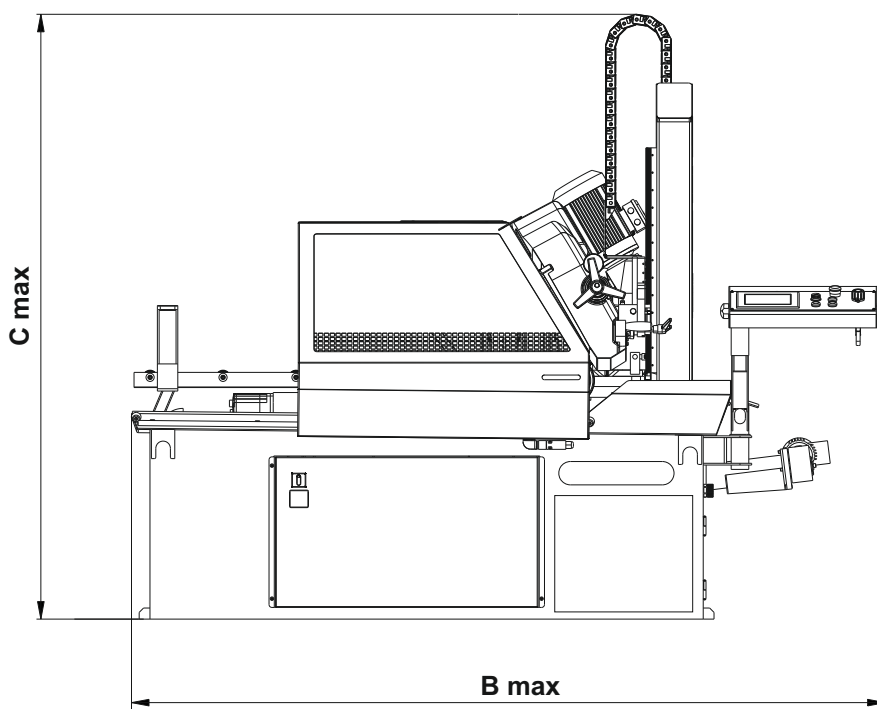
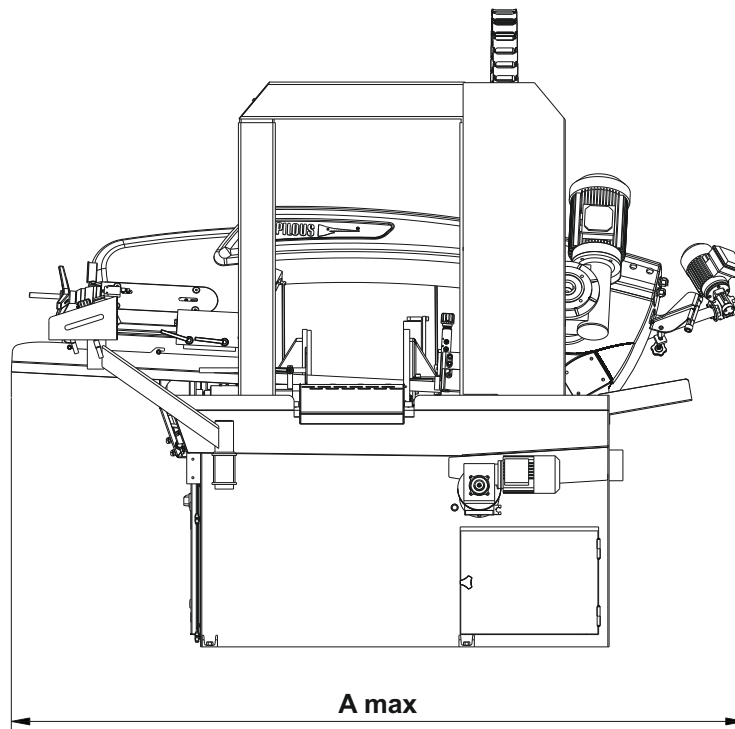
#### Recommendations/requirements:

- Allow for sufficient space for the feeding and removal of the workpiece and the machine maintenance - the operator's working area should be delineated at 1 m minimum around the machine and 0.5 m around the roller conveyors.
- In order to ensure safe handling of workpieces and protection of the space behind the cut from falling cut-off pieces, one or more roller conveyors must be installed, possibly a container for falling cut-off workpieces.
- Install a lift mechanism for heavy workpieces.
- Ensure proper lighting at the workplace.





**Machine dimensions**



	<b>A max</b>	<b>B max</b>	<b>C max</b>
<b>ARG 260 CF-NC</b>	1330 mm	2970 mm	1710 mm
<b>ARG 300 CF-NC</b>	1790 mm	2970 mm	1850 mm
<b>ARG 300 DCT CF-NC</b>	2215 mm	2970 mm	1800 mm
<b>ARG 330 CF-NC</b>	2370 mm	2970 mm	1874 mm
<b>ARG 330 DC CF-NC</b>	2280 mm	2970 mm	2140 mm
<b>ARG 520 DC CF-NC</b>	2980 mm	2660 mm	2480 mm

### 3.2. Removal of Temporary Transport Beams and Fixation of the Machine

Use a pallet truck/a crane to lift the machine and place it directly on the desired location in the workplace. Unscrew the bolts that hold the machine in place and remove the transport beams. Lift the machine with a crane, remove the beams and lower the machine onto the floor. Level the machine by laying metal sheets under its legs, possibly anchor to the floor. Remove the anticorrosion film and dust from sliding surfaces and apply oil. Ensure connection to the mains (see section 3.4.). Pour the coolant (maximum 30 litres) into the tank; the fluid will gradually flow into the container in the base. The hydraulic unit is fitted with two filling holes that are covered by red transport caps during the transport (see section 6.5.). The cap that is more accessible to the operator has to be removed and replaced by a filling cap, otherwise a risk of making the entire system inoperable arises, along with the risk of pump damage.



**When handling coolants, risks linked to hazardous substances cannot be avoided. Observe the national norms and recommendations/manufacturer's or your company's operating instructions related to safe handling of coolants.**

### 3.3. Machine installation



**Protect the machine against humidity, rain and dust!**

The machine may be operated in the ambient temperature between +5° and +40°C. The average air temperature must not exceed +35°C within 24 hours. In temperatures below +5°C the conventional coolants should be replaced by coolants designed for respective temperatures. In addition to that, replace the oil in the hydraulic unit for a less viscous one.

### 3.4. Connection to the Mains



**Such operations must be carried out only by persons with electrician qualifications!**

Make sure that the grid voltage, the voltage protection and the connection voltage comply with the power requirements specified in the point 2. Technical parameters. Only current protection of S characteristics can be installed (for a frequency converter). When connecting the machine to the mains (3 NPe 50 Hz, 400 V, TN-S), **mind the colour coding of wires carefully: L1 brown, L2 black, L3 grey, N blue, PE yellow-brown. Improper connection of the neutral or PE wires may lead to damage of the electrical equipment or to an electric shock!** Connect the power cable to a protected 16 A socket, in case of direct connection to the mains it is necessary to fit the supply with a lockable Power switch. If the motor rotates in an incorrect direction, swap the conductors **L1** brown and **L2** black on the junction box.



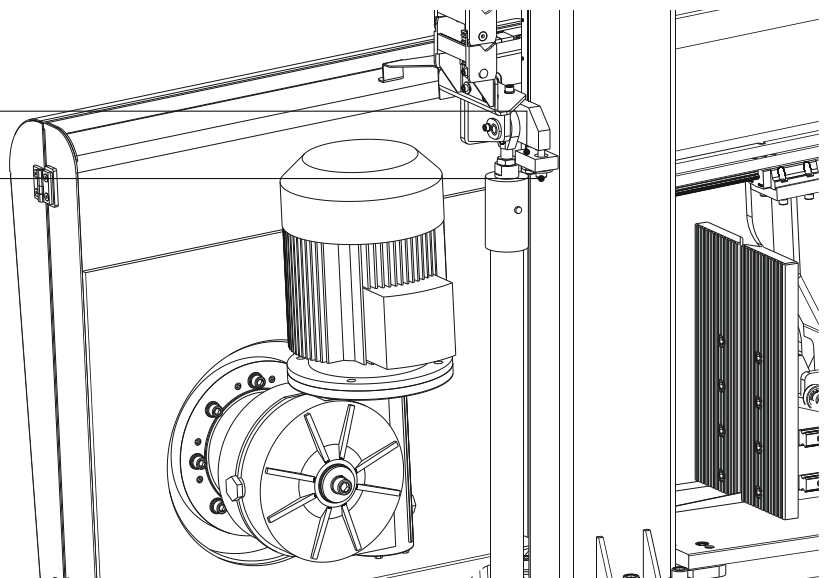
**Failure to observe the aforementioned may lead to incorrect rotation of the bandsaw and the coolant pump.  
Danger: Damage to the machine!**

### 3.5. Releasing the ARG 520 DC CF-NC

The arm is fastened to both columns for transport. Release the arm by removing the M10x60 Allen bolts on both columns. **Note: During operation, ensure a clearance of approximately 5 mm between the M16x45 setting screws and the saw arm in the lower position with the moving guide fully open. Set during machine assembly.**

FOOT SCREW M16x45

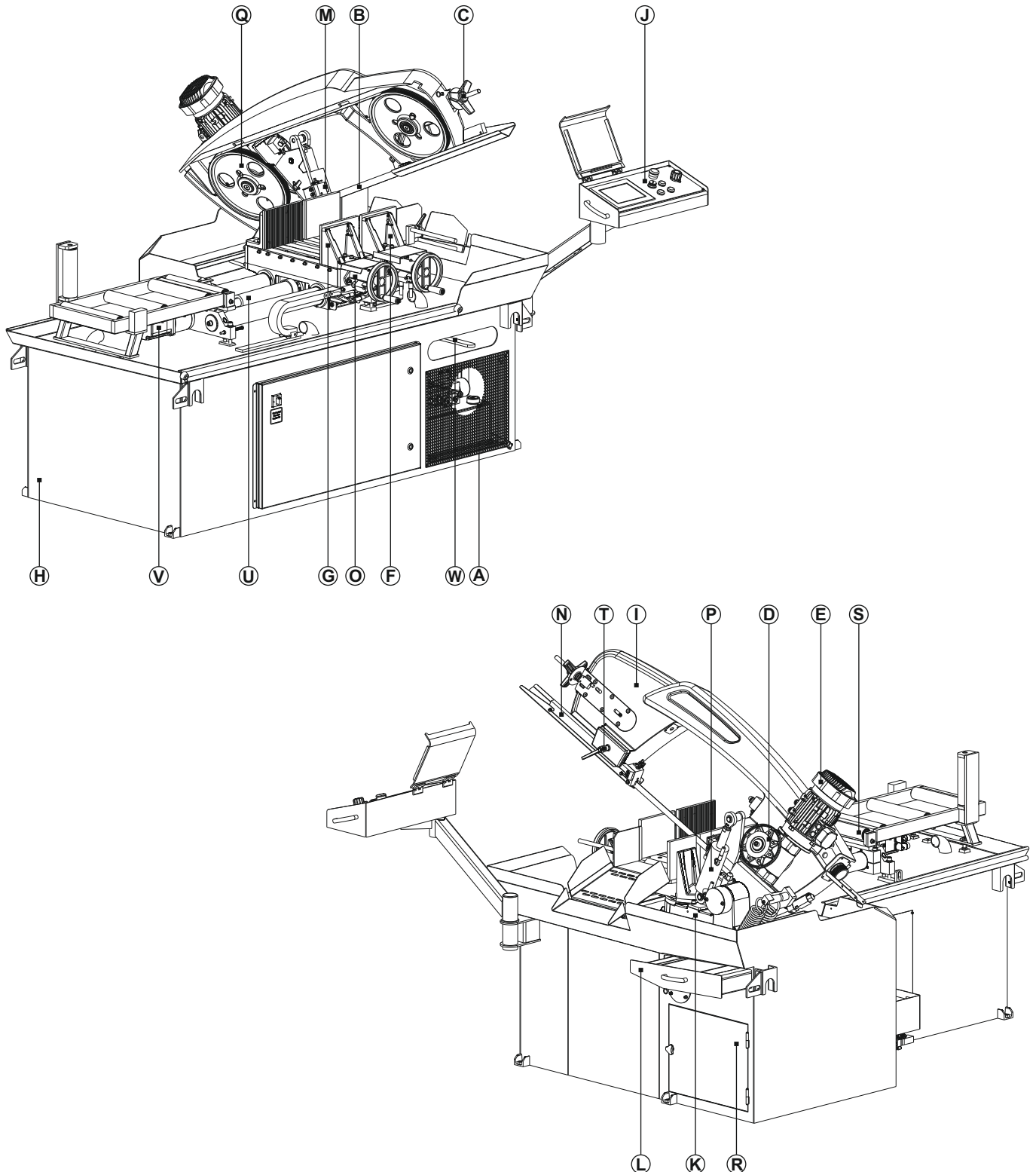
ALLEN BOLT M10x60



## 4. Machine Description

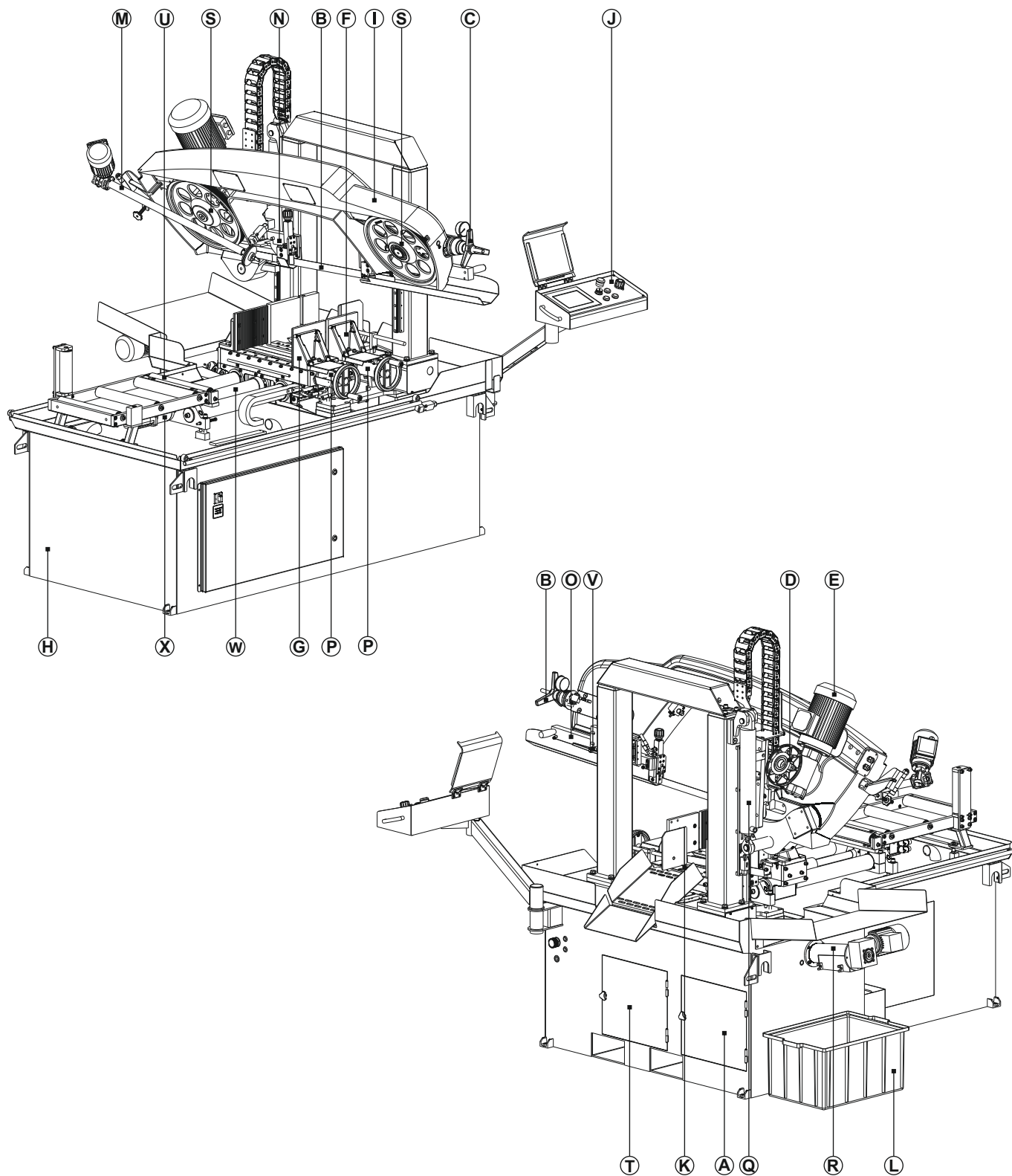
ARG 260 CF-NC automat, ARG 300 CF-NC automat, ARG 330 CF-NC automat

A hydraulic unit	I arm	Q running wheels
B saw blade	J control panel	R coolant tank with a pump
C saw blade tensioning	K table	S auxiliary roller
D gearbox	L chip tray	T clamping lever
E motor	M fixed bar	of the movable bar
F fixed vice	N movable bar	U ball screw
G movable vice	O hydraulic cylinder of the vice	V actuator
H base	P hydraulic cylinder of the uplift	W table locking lever

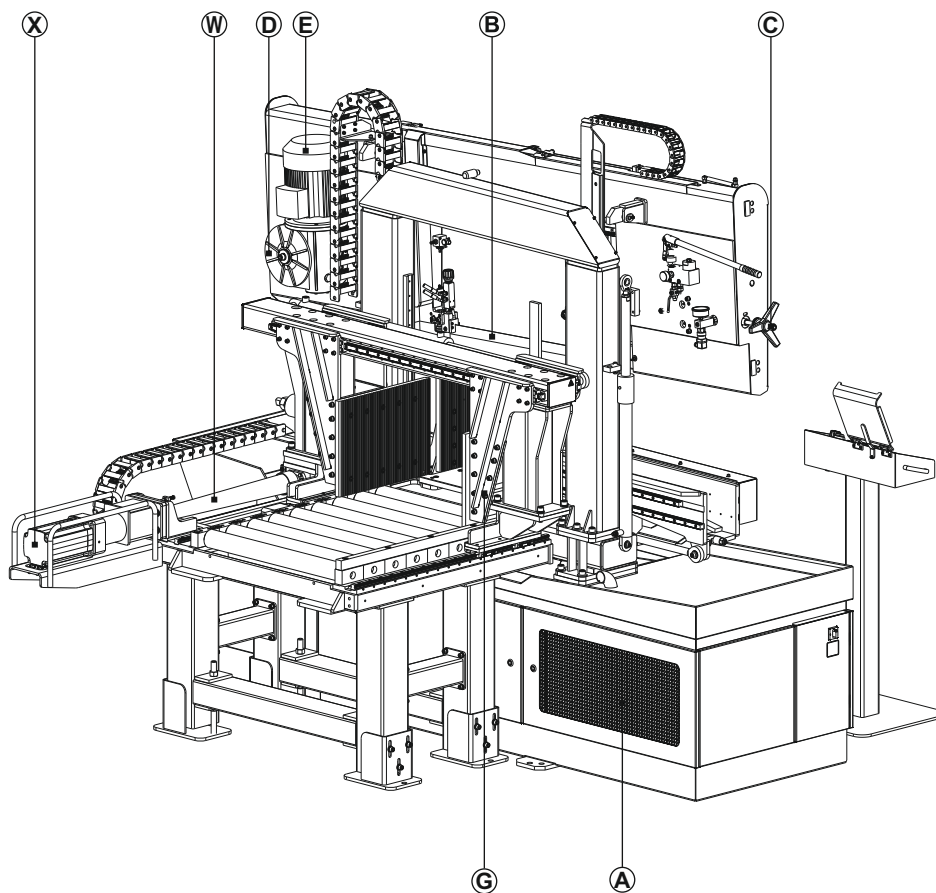
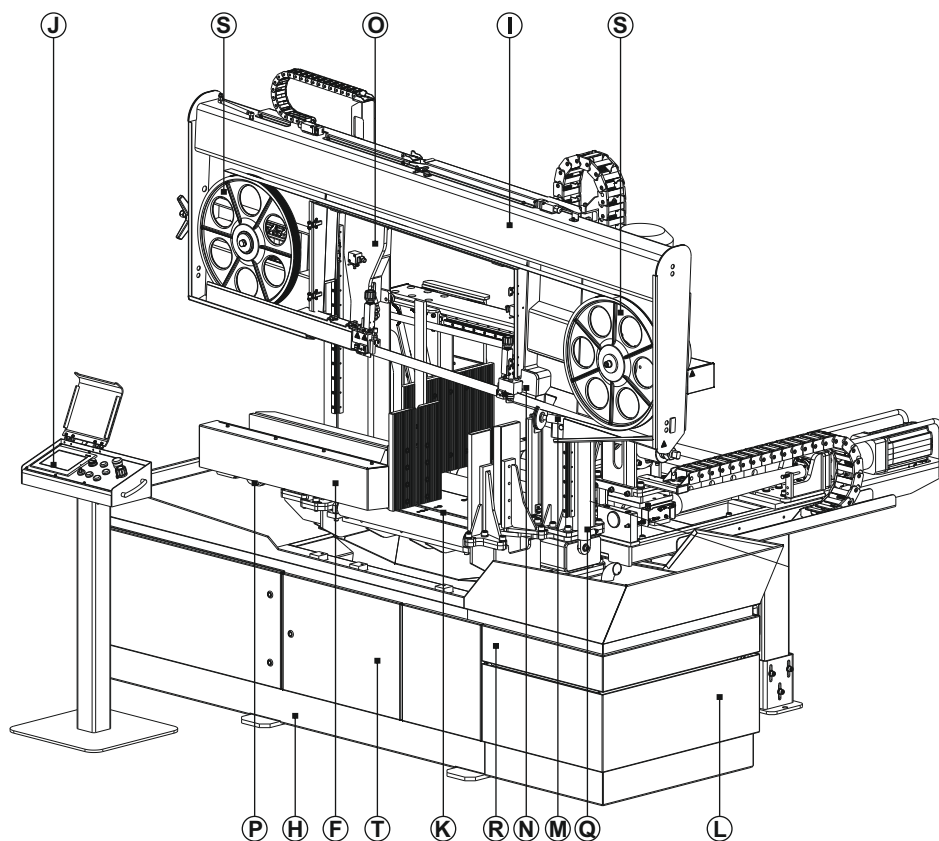


ARG 300 DCT CF-NC automat, ARG 330 DC CF-NC automat

- |                               |   |  |
|-------------------------------|---|--|
| <b>A</b> hydraulic unit       | <b>J</b> control panel                  | <b>S</b> running wheels                    |
| <b>B</b> saw blade            | <b>K</b> table                          | <b>T</b> coolant tank with a pump          |
| <b>C</b> saw blade tensioning | <b>L</b> chip hopper/chip bin           | <b>U</b> auxiliary roller                  |
| <b>D</b> gearbox              | <b>M</b> cleaning brush                 | <b>V</b> clamping lever of the movable bar |
| <b>E</b> motor                | <b>N</b> fixed bar                      | <b>W</b> ball screw                        |
| <b>F</b> fixed vice           | <b>O</b> movable bar                    | <b>X</b> actuator                          |
| <b>G</b> movable vice         | <b>P</b> hydraulic cylinder of the vice |  |
| <b>H</b> base                 | <b>Q</b> hydraulic stroke cylinder      |  |
| <b>I</b> arm                  | <b>R</b> screw chips conveyor           |  |



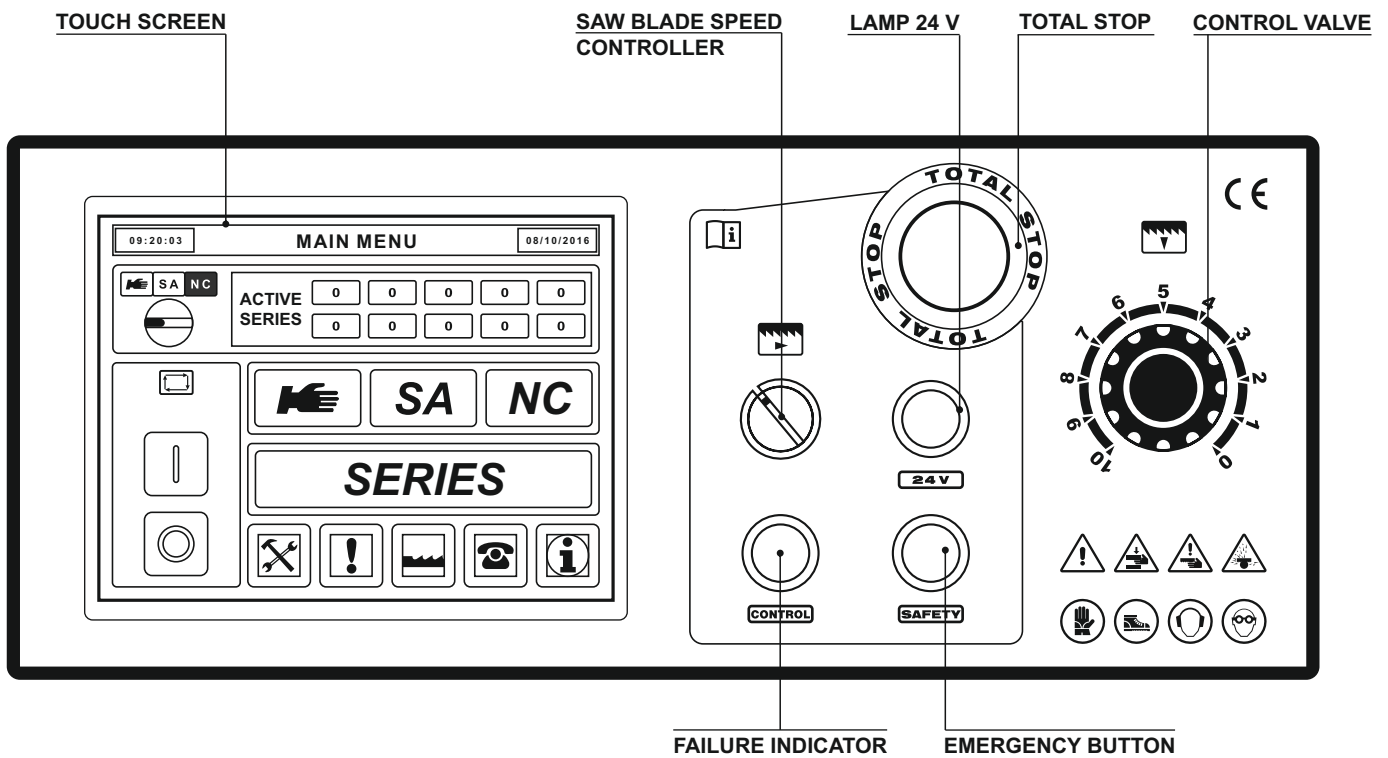
ARG 520 DC CF-NC automat



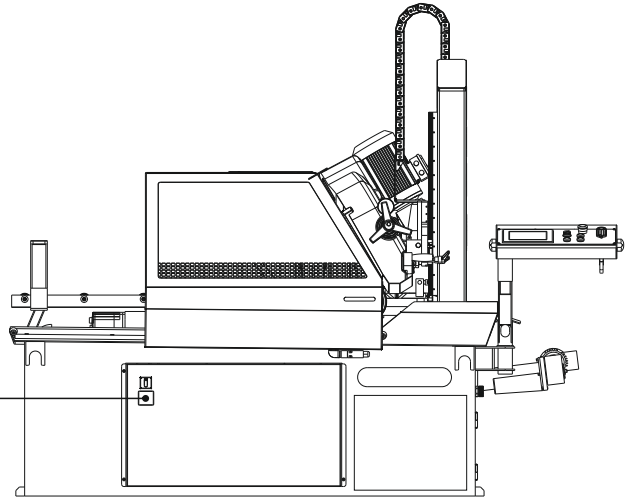
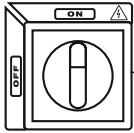
Horizontal metal-cutting band saws allow for cutting of a wide range of different materials. Machines ARG 260 CF-NC, ARG 300 CF-NC and ARG 330 CF-NC are articulated/swing NC automatic machines in which the arm moves along a curve while descending. By contrast, the ARG 300 DCT CF-NC, ARG 330 DC CF-NC and ARG 520 DC CF-NC are 2-column NC automatic machines, in which is the saw blade arm fitted on linear guidings and moves along a line. This ensures maximum rigidity of the entire system, ideal course of the descent and thus also the accuracy and speed of the cut.

As the cutting tool, a welded saw blade is used, which is tensioned mechanically via a blade wheel. The saw blade is driven by an impeller, which is driven by a single-speed motor via a worm-gear unit (conical face gearbox in the version of ARG 520 DC CF-NC with optional accessories). In the machining zone, the saw blade guided through the saw blade guide heads. Outside the machining zone the saw blade is protected by moving and fixed guards. The machine is equipped with a frequency converter that allows a smooth regulation of the saw blade speed in the range of 15-90 m/min. Material clamping and the arm feed into the cut and back are controlled hydraulically. The servo motor and the ball screw ensure high speed and maximum accuracy of material feeding. Maximum length of a single feed is 500 mm, in ARG 520 DC CF-NC 600 mm. The control unit allows for programming of up to 60 programmes for quick setting of the feed length and number of pieces. Each program can be made active (the cut is performed) or passive (the cut is not performed). Also, each programme can be annotated, e.g. by the drawing number. After programming and pressing the only switch in the automatic mode, the whole cutting cycle is performed - moving of the material to the pre-set length by the movable vice, workpiece clamping by the fixed vice, starting of the saw blade, the cut, stopping of the saw blade, lifting of the arm to the upper position (adjustable) and opening of the fixed vice. The machine continues cutting according to number of set pieces, and in case there are also other set programs, the machine will proceed with cutting of the other series. All functions can be controlled separately. The machine can be controlled in fully automatic, semi-automatic or manual mode. The vice pressure control is included in the basic version of the machine. NC machines are equipped with a removable container for the sawdust. In machines ARG 260 CF-NC, ARG 300 CF-NC, ARG 300 DCT CF-NC and ARG 330 CF-NC, it is possible to cut at an angle in the range of 90° - 45°. Swinging of the arm is performed manually.

#### 4.1. Control panel



## POWER SWITCH



### POWER SWITCH



**ON** ON

**OFF** OFF



Before you start the saw blade motor, always make sure that the saw blade is not in contact with the workpiece at the point of cutting.

### TOTAL STOP

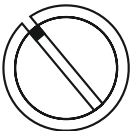


Use for emergency stop of the saw blade motor, coolant pump and hydraulic unit motor (i.e. the whole machine). You can put the machine back to operation only after you manually unlock the switch by pulling or twisting!

### SAW BLADE SPEED CONTROLLER



You can change the cutting speed using a saw blade speed controller (using a frequency converter) on the control panel.



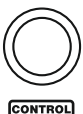
The display continuously shows the selected value within the range 15-90 m/min.

### LAMP 24 V



Indicator lamp indicates that the CONTROL PANEL is under power supply of 24 V.

### FAILURE INDICATOR



Indicator lamp indicates that the machine has generated an error.

### EMERGENCY BUTTON



The button actuates a safety relay. When you activate the safety relay, the machine will become operational and MAIN MENU will appear on the panel.

### 4.1.1. Home screen / Main menu

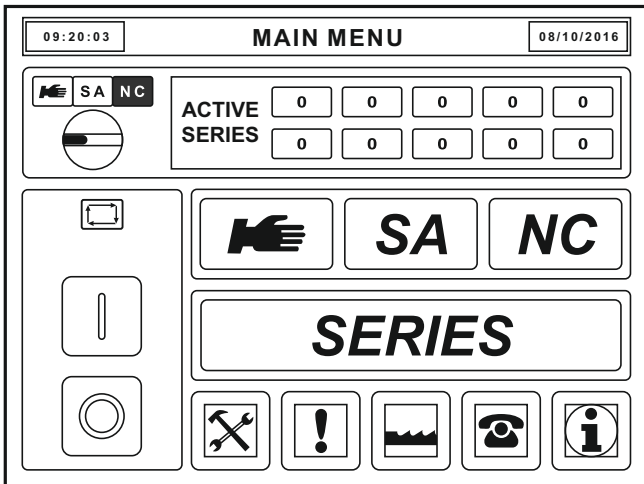
#### TOUCH SCREEN



Close the arm cover, unlock TOTAL STOP and press the yellow illuminated button SAFETY. Upon starting the machine with the Power switch and loading the system, a yellow screen will appear. That means the safety relay is not activated. Activate the safety relay by pressing the yellow backlit button. When you activate the safety relay, the machine will become operational and MAIN MENU will appear on the panel.

The yellow screen also appears during the operation of the saw, anytime the machine is stopped using the safety relay - by opening the arm cover or pressing TOTAL STOP. After the elimination of the cause the machine will become operational upon pressing the yellow backlit button.

#### MAIN MENU



On the Main Menu screen you can access all machine functions regarding operation, settings or service. Control the screen by putting your finger on the area of a particular button.

Upright font - information box (not affected by touch)

Italic (symbol) font - buttons (touch to initiate the function, or jump to a different screen)

Note: Some information boxes or buttons are present on multiple screens. Each of them is described only once in the instruction manual, because they possess the same function on all screens.

After you press the TIME box, a screen with data about the operating status of the machine appears (applies to all screens in all modes). In the mode **Performing series** or **Series interrupted**, the machine switches to SYSTEM 1 and SYSTEM 2 screen, on which you find all information about the PLC status, inputs, outputs and information about the status of the frequency converter and the actuator.

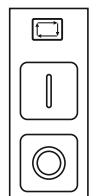
After pressing the DATE field in the AUTOMATIC MODE, SEMI-AUTOMATIC MODE or MANUAL MODE, the machine switches to the FAILURES screen. Should this field be flashing, there is an active failure that has not yet been deleted.

#### MAIN MENU - DESIGNATION OF THE SCREEN NAME

09:20:03      TIME / OPERATIONAL STATE OF THE MACHINE

08/10/2016      DATE / FAILURES

ACTIVE SERIES      ACTIVE SERIES in AUTOMATIC MODE



HYDRAULIC UNIT

START/STOP



MACHINE SETTINGS



MANUAL MODE



FAILURES SCREEN



SEMI AUTOMATIC MODE



SAW BLADES



AUTOMATIC MODE



SERVICE CONTACT



SERIES SETTINGS



INFO BUTTON

By pressing any screen name (in this case the screen MAIN MENU) you can adjust the illumination of the machine.



## 4.1.2. Automatic mode

### AUTOMATIC MODE

**NC MODE** 08/10/2016

SERIES	LENGTH	PIECES	FEED	SERIES	LENGTH	PIECES	FEED
1	357	10	→	9	339	87	→
2	159	15	→	12	982	65	→
5	358	75	→	14	244	27	→
7	586	33	→	15	250	13	→
8	255	45	→	16	365	65	→

Buttons: SA, NC, Pencil icon, START, SERIES, KERF, PRIMARY POSITION, L, R, Home, Info.

The entire working cycle consists of:

- clamping of the movable vice setting of the material for a particular cutting length clamping of the fixed vice starting of the saw blade
- switching on of the saw blade arm descent into the cut - performing the cut ascending of the saw blade arm to the upper position stopping of the saw blade releasing of the fixed vice.

**Active features of the mode**

- Hydraulics on
- Saw blade upwards
- Saw blade downwards
- Saw blade on

**Overview of the active series**

SERIES	LENGTH	PIECES	FEED	SERIES	LENGTH	PIECES	FEED
1	357	10	→	9	339	87	→
2	159	15	→	12	982	65	→
5	358	75	→	14	244	27	→
7	586	33	→	15	250	13	→
8	255	45	→	16	365	65	→

**Hydraulic unit Start/Stop Press the hydraulic unit START/STOP icon to start or stop the hydraulic unit.**

**Starting the automatic cycle**

After pressing the START button, the CORRECTION screen appears on the display. If you do not wish to specify the material length correction press the Continue button. If the series are set, the machine begins to execute the serial cutting. Otherwise the button SERIES will start to flash which signalizes that the system is waiting for the setting of the series.

**CORRECTION**

1.12 (mm)

**Continue**

If you wish to perform a correction of the material length, press the button showing correction. A screen with keys for entering the correction will appear on the display (see the following table).

1

Min.1 Max.2

Esc	7	8	9	←
◀	4	5	6	▶
+/-	1	2	3	Clr
	0	■	Enter	

Esc Close the window

← Correct the set value

Enter Confirm the set value

**SERIES**

After pressing the button SERIES, a screen for viewing and setting of the cut series will appear on the display.

**KERF**

Downcutting is used for cutting off the end of the newly inserted material. Insert the material so that the cut is under the saw blade (the material will not move during downcutting). After pressing the downcutting button, both vices will clamp, the cut will be performed, the arm will ascend to the upper position and the left vice will be released. The right vice will still hold the material prepared for serial cutting. It is not necessary to perform the downcutting when it is not needed.

**PRIMARY POSITION**

For example, when switching from the MANUAL MODE to the AUTOMATIC MODE, the machine does not automatically switch to the starting position. Therefore is it necessary, after checking the position of the material etc., to press the PRIMARY POSITION button - the hydraulic unit will switch on, the arm will ascend to the upper position, the vices will release and the left vice will move to position 0 mm.

**Informational status icons of the vices**

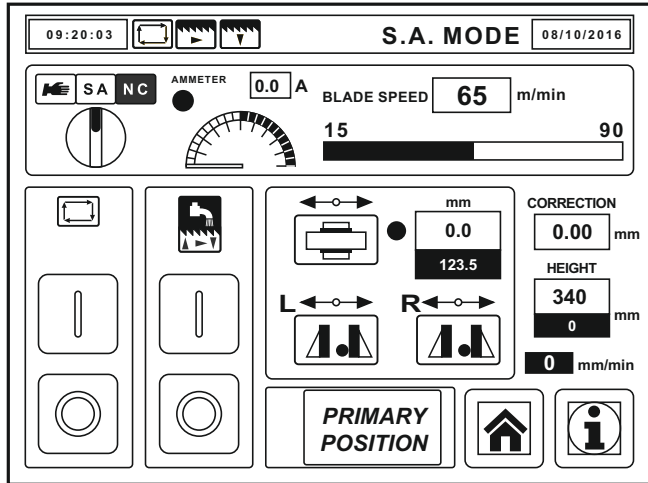
Vice open Vice closed

**HOME button**

Back to Main Menu.

### 4.1.3. Semi-automatic mode

#### SEMI-AUTOMATIC MODE



The entire working cycle consists of:

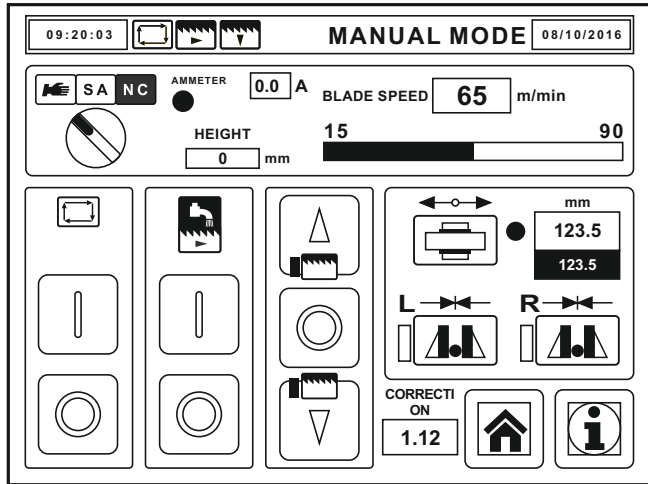
- clamping of the fixed vice (also manually by pressing the Vice button)
- starting of the saw blade
- switching on of the saw blade arm descent into the cut
- performing the cut
- ascending of the saw blade arm to the upper position
- stopping of the saw blade
- fixed vice opening

<b>AMMETER</b> 0.0 A <b>Ammeter</b> - measures the saw blade motor load. The diode indicates overload of the main motor.
<b>BLADE SPEED</b> 65 m/min 15 90 Saw blade speed 15-90 m/min
<b>Start/Stop of a semi-automatic cycle</b>  
<b>Moving of the movable vice</b> mm 0.0 123.5
<p>The editing fields are displayed in light gray with red bordering. After you enter the value (ranging from 0 to 500 mm, including the kerf and the correction) and pressing the red Vice icons, the movable vice starts moving to the desired position, the green diode is flashing and the lower black display shows the current position of the vice. After the transfer is complete, the green diode remains on permanently.</p> <p>You cannot move the vice when both vices are clamped! If you initiate any function that is logically preceded by a different function (that has not been activated yet), the button of the preceding function will start flashing to indicate error.</p>











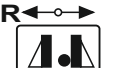


<b>Vice open</b> <b>Vice closed</b>
<p>If the vice is open, press the START button of the WORKING CYCLE in the SEMI-AUTOMATIC MODE to perform the cycle. After finishing, the vice remains open.</p> <p>If the vice is closed, press the START button of the WORKING CYCLE in the SEMI-AUTOMATIC MODE to perform the cycle. After finishing, the vice remains closed.</p>
<b>PRIMARY POSITION</b>
<p>For example, when switching from the AUTOMATIC MODE to the SEMI-AUTOMATIC MODE, the machine does not automatically switch to the starting position. Therefore is it necessary, after checking the position of the material etc., to press the PRIMARY POSITION button - the hydraulic unit will switch on, the arm will ascend to the upper (adjustable) position, the vices will release and the left vice will move to position 0 mm (inactive in this mode). When switching to the primary position, the PRIMARY POSITION button is flashing. After switching, the green diode lights up.</p>
<b>CORRECTION</b> 0.00 mm <b>Correction of the material feed length</b>
<b>HEIGHT</b> 340 mm <b>Setting Band Saw Arm Ascent Height</b> 0 mm
<p>The editing field is displayed in light gray with red bordering. After you enter the value and press the ENTER key, the arm will ascend to the upper position and the lower black box will show the current position of the arm.</p>
<b>0 mm/min</b> <b>Speed of the arm descent to the cut</b>

### 4.1.4. Manual mode

#### MANUAL MODE

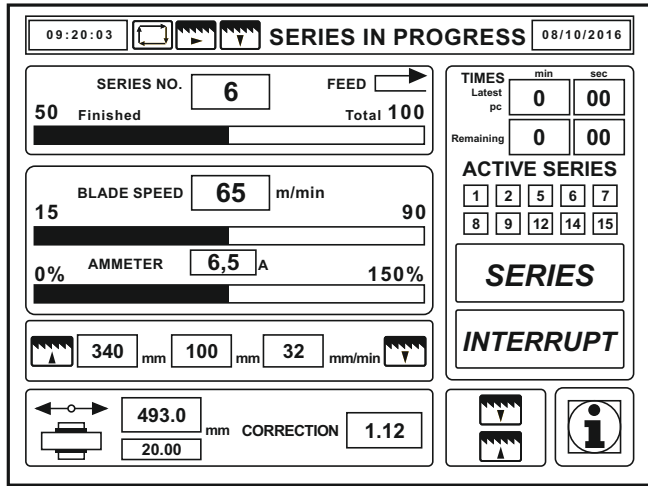


After switching on the hydraulic power unit, the START button lights up green. This indicates the machine is on. Blue boxes next to icons indicate reaching the particular extreme position (uplift/descent of the arm or switching the vice pressure switch). If you initiate any function that is logically preceded by a different function (that has not been activated yet), the button of the preceding function will start flashing to indicate error.

  	<p><b>START/STOP of the saw blade motor</b></p>
  	<p><b>START/STOP uplift or descent of the arm</b></p> <ul style="list-style-type: none"> <li> Saw blade upwards</li> <li> STOP</li> <li> Saw blade downwards</li> </ul>
 <b>L</b>  <b>R</b> <b>Vice open</b>  <b>Vice closed</b> 	<p>By pressing the Vice icon, the status of the vices can be changed to open/closed.</p>

### 4.1.5. Series

#### PERFORMING SERIES



Work screen in the NC mode clearly displays the status of the performing series. Active buttons are only **SERIES**, **INTERRUPT** and **CORRECTION**.

SERIES NO. **6** FEED

50 Finished Total 100

Displays the details of the series:  
 Number of the series  
 Total - the number of programmed units (100)  
 Completed - the number of already cut pieces (50)  
 Feed - feed type return / gradual

---

340 mm 100 mm 32 mm/min

Displays the details of the arm motion:  
**340** mm The adjusted height of the arm uplift  
**100** mm Current position of the arm  
**32** mm/min Speed of the arm descent

---

**493.0** mm CORRECTION **1.12**  
**20.00**

Displays the details of a moving vice motion:  
**493.0** mm The adjusted length of the cut material  
**20.00** mm Current position of the movable vice  
 CORRECTION **1.12** Correction can be set also during the performance of the cut.

---

TIMES Latest pc **0** **00** Remaining **0** **00** Displays information about the work time.

**ACTIVE SERIES**  
 Display active series.

#### SERIES

After pressing the button SERIES, a screen for viewing and setting of the cut series will appear on the display. During the execution of the series, it is possible to set up the following series without interrupting the cycle. If the editing of the next series takes too long and the machine completes the previous series in the meantime, cutting of the next series will not start until the editing is not completed.

#### INTERRUPT

After pressing the INTERRUPT button, the currently executed the cut will be completed and the next one interrupted (for example, due correction), the switching to the Series screen is aborted.



Informs about the motion direction of the arm

## SERIES INTERRUPTED

09:20:03 **SERIES INTERRUPTED** 08/10/2016

SERIES NO. **6** FEED **50** Finished Total **100**

BLADE SPEED **65** m/min

15 90

0% AMMETER **6,5** A 150%

**340** mm **0** mm **0** mm / min

**493.0** mm CORRECTION **1.12**

20.00

TIMES Latest PC **0** **00**

Remaining **0** **00**

**ACTIVE SERIES**

1	2	5	6	7
8	9	12	14	15

**SERIES**

**CONTINUE**

After interrupting the series, you can measure the last cut piece. If its length differs from the required one, you can set the correction. This correction will be counted immediately after restoring the series by pressing the CONTINUE button.



### End of the interrupted series

Upon pressing the button, the series performance will be ended and you will be directed back to the default screen of the automatic mode.



### Continue with the interrupted series

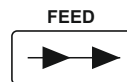
By pressing the button, the cutting cycle is restored - return to the screen PERFORMING SERIES.

## SERIES X/12

09:20:03 **SERIES 1/12** 08/10/2016

SERIES	LENGTH	PIECES	HEIGHT	FEED	ACT.
<b>1</b> AaBbCcDdE	<b>357</b>	<b>10</b>	<b>225</b>		
<b>2</b> AaBbCcDdE	<b>159</b>	<b>15</b>	<b>65</b>		
<b>3</b> AaBbCcDdE	<b>456</b>	<b>65</b>	<b>225</b>		
<b>4</b> AaBbCcDdE	<b>268</b>	<b>98</b>	<b>85</b>		
<b>5</b> AaBbCcDdE	<b>358</b>	<b>75</b>	<b>285</b>		

**LIST**



**Gradual feed** - the default position of the movable vice is 500 mm. Using this value, the vice will clamp the material and will keep holding it while feeding the material by the set value. After finishing the cut, the vice will feed the material by the set value. If it is no longer possible to feed the material towards 0 mm, the vice move again to 500 mm. If the material is shorter, the optical sensor stops the running gear and vice clamps the material behind the past about 50 mm and then feeds this residue. The material is permanently clamped by the two vices. Suitable for cutting of short or heavy items.



**Active/inactive series** - The active series is symbolized by a green tick mark. Always after the start of series editing, the series turns of (red cross). After finishing the editing, it is necessary to turn it on again. It is possible to have programmed a greater amount of series and only switch them on and off as needed.



By pressing the icon, the screen SERIES LIST will appear on the display.



**Leaving through the series**  
(12 screens)



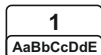
### ARM UPLIFT HEIGHT H SETTING

Press the icon in order to display a table for optimal setting of the height of the cut log. This button represents a part of the system in the following machines: ARG 260 CF-NC, ARG 300 CF-NC, ARG 330 CF-NC.



Pressing this icon takes you back to the default screen.

### SERIES



By pressing the icon, the screen Notes on the series will appear on the display.

### LENGTH

**357**

Adjust the length of the workpiece from 1 mm to 9999 mm, with the accuracy of 0.1 mm.

### PIECES

**10**

Set the number of pieces to cut in one series

### HEIGHT

**225**

Setting Band Saw Arm Ascent Height  
Do not fill in value which is lesser than 40 mm.

### FEED



**FEED Return feed** - the default position of the movable vice is 0 mm. From this value, the vice will move to the distance set for the particular series. The material gets clamped and the vice returns to the zero position. The cut will be performed. During the cut, the material is clamped only by the fixed vice. The movable vice travels during the cut for a next feed. Suitable for cutting long, light pieces.


## NOTES ON THE SERIES

09:20:03	NOTES ON THE SERIES: 1	08/10/2016
Drawing number:	F-32-002	ESC
Band type:	M51 8/12	
Blade speed:	47 m/min	
Arm descent speed:	30 mm/min	
Notes:		

The screen appears when you press the buttons on the screen SERIES X/12. Here you can add more detailed information about each series.

## SERIES LIST 1/2


09:20:03	SERIES LIST 1/2		08/10/2016						
SERIES	LENGTH	PIECES	FEED	ACT.	SERIES	LENGTH	PIECES	FEED	ACT.
1	357	10	→→	●	16	365	65	→→	●
2	159	15	→→	●	17	528	88	→→	●
3	456	65	→→	●	18	633	95	→→	●
4	268	98	→→	●	19	458	65	→→	●
5	358	75	→→	●	20	753	46	→→	●
6	493	65	→→	●	21	951	28	→→	●
7	586	33	→→	●	22	88	46	→→	●
8	255	45	→→	●	23	195	79	→→	●
9	339	87	→→	●	24	875	31	→→	●
10	658	12	→→	●	25	655	68	→→	●
11	476	28	→→	●	26	12	94	→→	●
12	982	65	→→	●	27	35	73	→→	●
13	665	33	→→	●	28	65	66	→→	●
14	244	27	→→	●	29	88	50	→→	●
15	250	13	→→	●	30	792	74	→→	●

ESC    

The screen appears when you press the button LIST on the screen SERIES X/12. Clearly displays the complete status and a list of all series.

## ARM LIFTING HEIGHT SETTING H

09:20:03	ARM LIFTING HEIGHT SETTING H		08/10/2016				
D	H	D	H	D	H	D	H
70	65	140	123	210	176	280	225
75	69	145	127	215	179	285	228
80	74	150	131	220	183	290	232
85	78	155	135	225	186	295	235
90	82	160	138	230	190	300	238
95	86	165	142	235	194	305	242
100	91	170	146	240	197	310	245
105	95	175	150	245	201	315	249
110	99	180	154	250	204	320	252
115	103	185	157	255	208	325	255
120	107	190	161	260	211	330	258
125	111	195	165	265	215		
130	115	200	168	270	218		
135	119	205	172	275	221		

 ESC

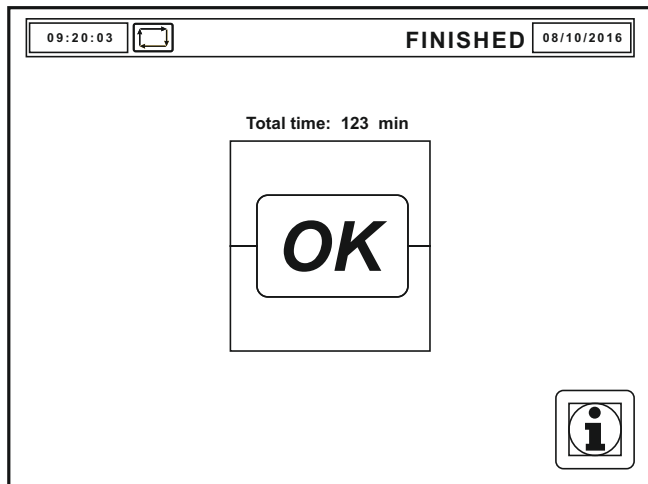
## ARM UPLIFT HEIGHT H SETTING

The screen appears when you press the button SETTING OF THE UPLIFT HEIGHT H on the screen SERIES X/12. Set or currently displayed arm height (H) is measured at the fixed jaw. When cutting a log, it is possible to set a lower arm uplift according to the table and thus the arm does not need to ascend unnecessarily high.

This screen represents a part of the system in the following machines: ARG 260 CF-NC, ARG 300 CF-NC, ARG 330 CF-NC. Do not fill in value which is lesser than 40 mm.

**Example:** pipe/log in diameter 320 mm. According to the table, set the height of the arm uplift only to 252 mm. You save the cutting time significantly.

## FINISHED



After completing all of the series (or after terminating the currently performed series using the Stop button), the screen displays FINISHED. After pressing OK, the system goes back to the default screen of the automatic mode. The machine does not switch to the primary position because of the possibility of continuing with other series without downcutting of the material.

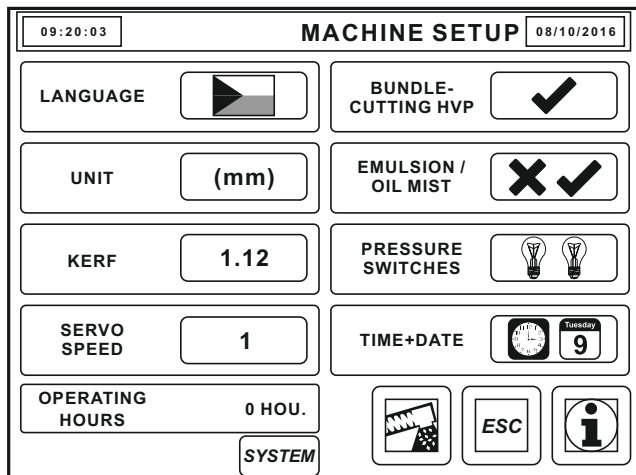
If you need to exchange the material, press the button PRIMARY POSITION. After the machine switches to the primary position, the vices will be released.

After a long time of inactivity on this screen, the machine will go to sleep - the hydraulic unit automatically shuts down. You can activate it again by pressing the OK button.

Note: After successful completion of the series, the series switches itself off. In the case of a request to cut the same series, it is necessary to turn it back on.

### 4.1.6. Side menu

#### MACHINE SETUP



**LANGUAGE** – switch to the screen, selection of several languages.

**UNIT** - possibility of setting the unit length in mm or in inches

**KERF** - setting of the kerf, i.e. the value, which the saw blade cuts through the material. The system includes this value in the feed as well. The correct setting is important particularly in the case of multiple feeds

**SERVO SPEED** - possibility to set the feed speed **1** - 3,0 m/min, **2** - 2,5 m/min, **3** - 1,6 m/min

**BUNDLE-CUTTING HVP** - if the upper thrust is installed (accessory), its function must be enabled (green tick)

**EMULSION/OIL MIST** - you can switch between cooling by coolant (red cross) or oil mist (accessories) (green tick)

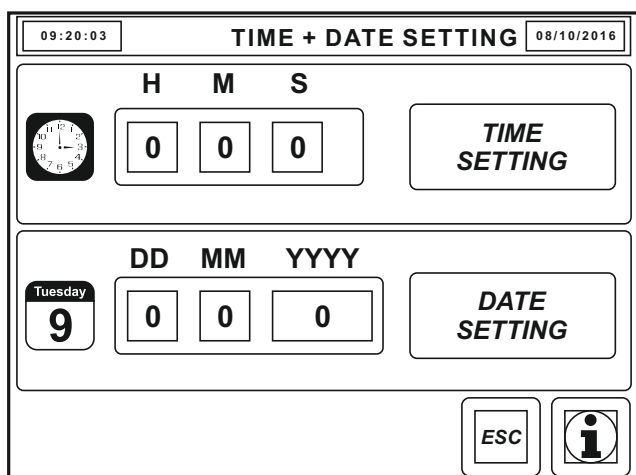
**PRESSURE SWITCHES** - switch to the screen with vice pressure switch settings

**TIME + DATE** - switch to the screen with system date and time settings

**SYSTEM** - switch to the system settings screen with converters, servo motors, PLC settings. The screen is locked - only the manufacturer or the distributor can edit the data.

**WORM CHIPS TRANSPORTER** - switch to a service screen for maintenance and cleaning of the machine

#### TIME + DATE SETTING

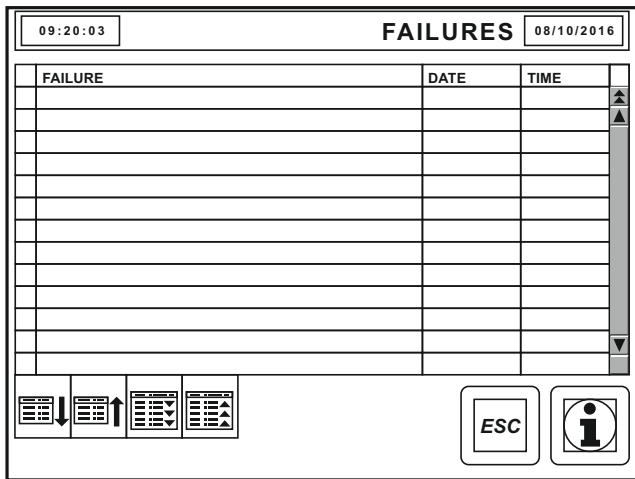


The screen TIME+DATE SETTINGS get activated after pressing the button TIME+DATE on the MACHINE SETUP screen.

Input the current time in dark grey boxes in the red-outlined box. After you input the time, press the **TIME SETTING** button to enter the set time into the system.

Input the current date in dark grey boxes in the red-outlined box. After the input, you have to press the **DATE SETTING** button to enter the specified date into the system.

**FAILURES**



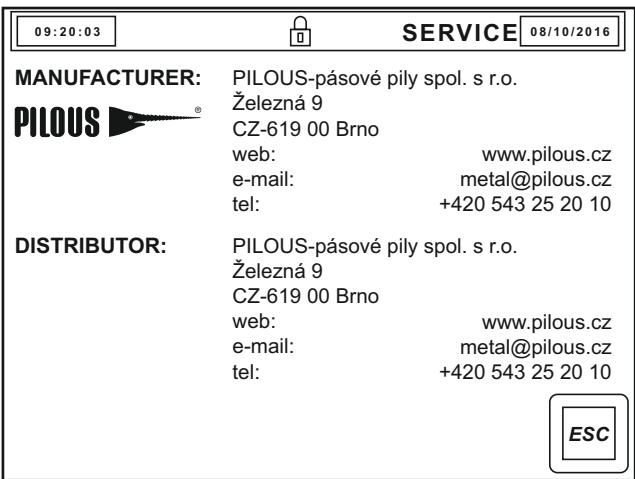
The screen FAILURES gets activated after pressing the button FAILURES SCREEN in the MAIN MENU, or upon pressing the button DATE. The latest failure always appears on top and is not deleted. In the case of a new failure the previous failure will move to a line below. The system stores 200 failures. You can browse through the list using buttons.

Failures appear in color:  
 red - current unsolved failure  
 green - resolved failure stored in the system

Move to the next/previous line

Jump to the last/first item in the list

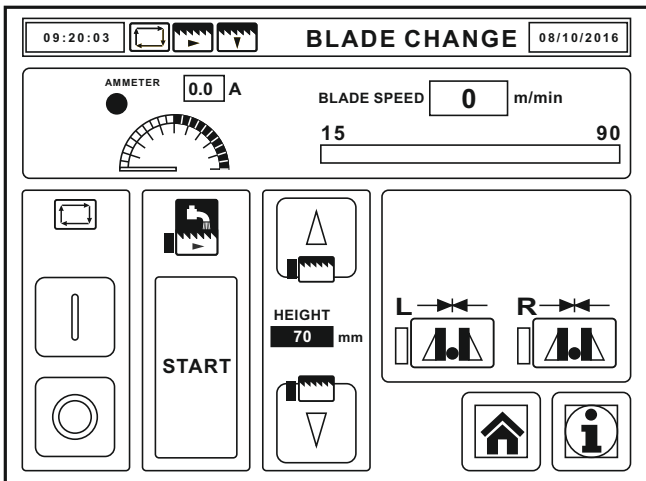
**SERVICE**



The screen SERVICE is activated by pressing the button SERVICE CONTACT in the MAIN MENU. The display that informs the user about the machine manufacturer and distributor - contacts regarding the service in emergency.

The screen is locked - only the manufacturer or the distributor can edit the data.

**BLADE CHANGE**



**FAILURE**

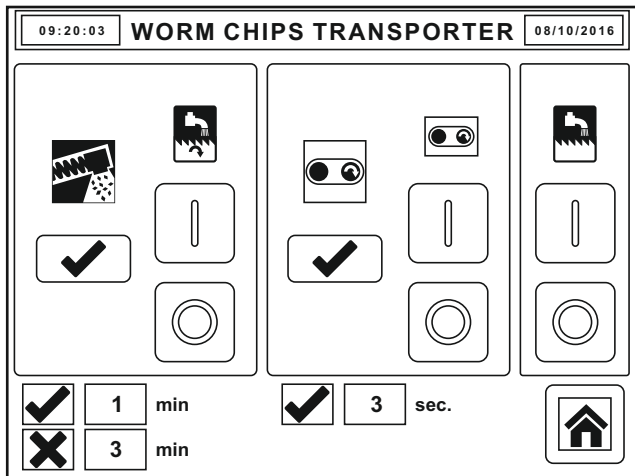
**Blade-tension sensor**

%IX0.0                       BP2

The screen BLADE CHANGE activates upon pressing the FAILURE - Blade-tension sensor. The failure occurs in the event of saw blade breakage or loosening of the saw blade tensioning star nut.



## WORM CHIPS TRANSPORTER



Screen WORM CHIPS TRANSPORTER becomes activated after pressing the WORM CHIPS TRANSPORTER button on the MACHINE SETUP screen.



START/STOP coolant pump - for machine cleaning



START/STOP chips transporter - for machine cleaning



If the chips transporter is connected, tick as active



1 min

Here you can set the time interval of chips transporter operation and the time interval of its inactivity while the saw blade is on.



3 min



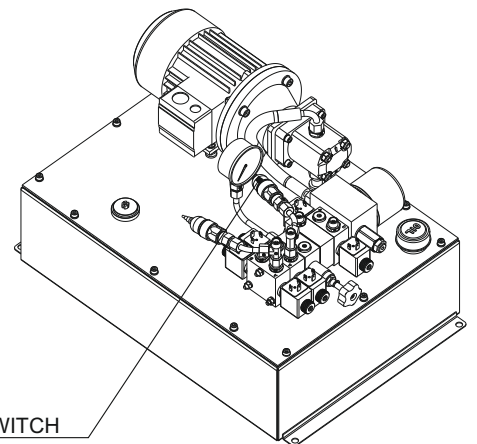
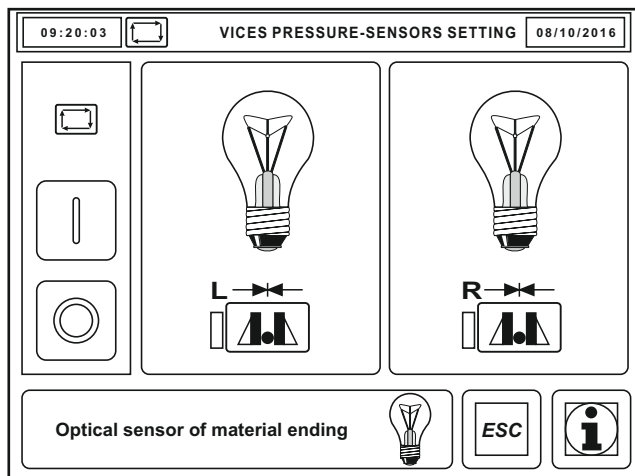
If the conveyor for cut pieces is connected, tick as active



3 sec.

There is a possibility to set the time interval in which the conveyor for the cut pieces should be in operation (after cutting the material).

## VICES PRESSURE-SENSORS SETTING



The screen will appear in the event of manual input on the settings screen or if the PLC signal fades during the vice clamping. The machine immediately interrupts its operation and switches off the hydraulic unit, otherwise it may result in a hydraulic system leakage. Upon pressing the failures screen, a screen with settings appears, on which you can check the operation of pressure sensors.

You can check the function of pressure switches after you start the hydraulic unit. When the vice is closed, the lamp must light up. If the vice is closed and the lamp is off, you have to adjust the pressure switch (or identify another fault in the circuit). After releasing the vice, the lamp must go off. Press the vice icon to change the state of the vice – OPEN/CLOSED To exit the screen, first turn off the hydraulic unit and then press the ESC button.

### Pressure switch settings

Insert the workpiece in the vice, switch on the hydraulic unit and clamp the right vice. Light-bulb symbol on the PLC must light up. If it does not light up or if it is flashing, you have to adjust the TS 2 pressure switch (TS 1 for the left vice).

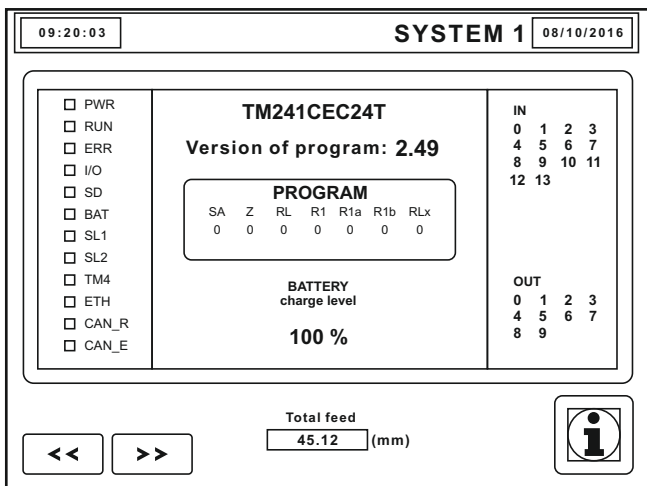
Turn the adjusting screw on the pressure switch (remove the black rubber cap, the screw is between two Faston connectors) to the right. **Such operations may be carried out only by persons with electrician qualifications! Danger of short circuit of 24V contacts!** Release the right vice. If the lamp is on while the vice is unclamped, turn the adjusting screw to the left.

Correct settings: Clamped vice - the lamp is ON

Unclamped vice - the lamp is OFF

Clamping or detachment of the left vice must not affect the signalization of clamping of the right vice. After deleting the error, you can continue with the interrupted cycle. Similarly, we set the left vice with pressure switch TS 1.

## SYSTEM 1



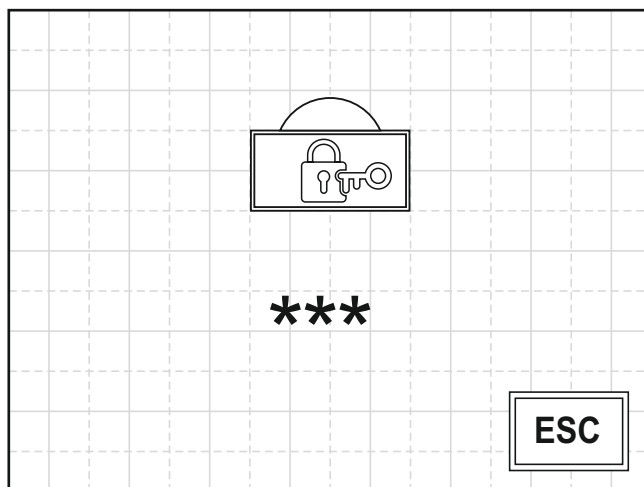
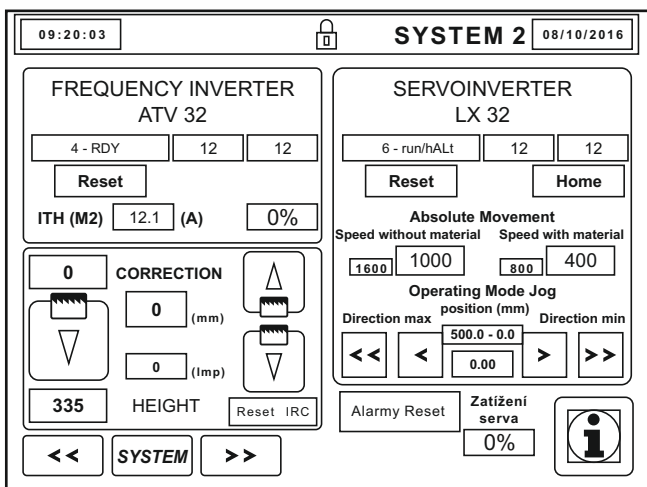
### Inputs:

- 0 - IRC A
- 1 - IRC B
- 2 - Receiver of the optical gate for the detection of the end of the material
- 3 - Limit switch - fixed vice runs idle BP7
- 4 - limit switch - the movable vice runs idle BP3
- 5 - Limit switch - lower position of the arm BP6
- 6 - Pressure switch of the fixed vice TS2
- 7 - Pressures switch of the movable vice TS1
- 8 - Motor starter of the hydraulic motor FQ1
- 9 - Motor starter of the cooling pump FQ3
- 10 - Safety relay is in a fault condition
- 11 - Motor starter of the chip conveyor motor FQ5
- 12 - Limit switch of the track cover BP4
- 13 - Limit switch - blade tensioning BP2

### Outputs:

- 0 - Arm up
- 1 - Arm down
- 2 - Clamping of the left vice
- 3 - Clamping of the right vice
- 4 - Motor of the hydraulic unit
- 5 - Cooling pump
- 6 - Oil mist lubrication
- 7 - Failure indicator
- 8 - Motor of the chip conveyor
- 9 - Illumination

## SYSTEM 2

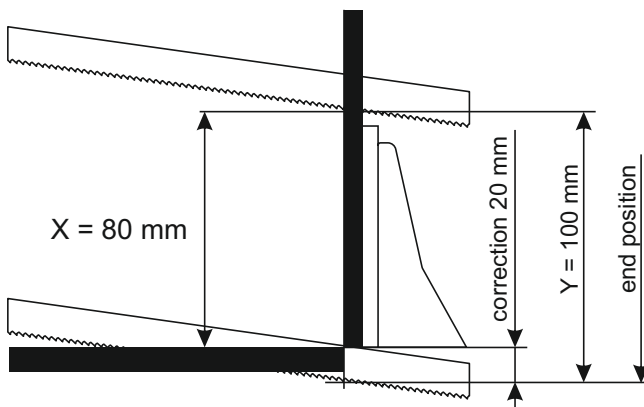


### Settings (calibration) of the arm uplift height measurement

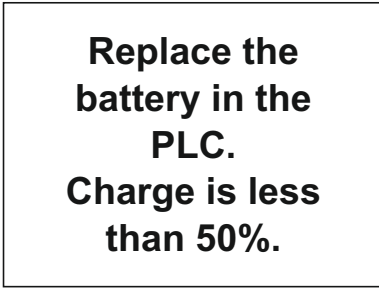
(only in ARG 300 DCT CF-NC automat, ARG 330 DC CF-NC automat, ARG 520 DC CF-NC automat)

In order to ensure efficient cutting, the arm uplift should be set just above the cut material (arm uplift height settings). If the current position of the arm does not correspond to a check measurement by a gauge (tape measure), carry out the calibration of arm uplift position measurement.

- 1 - Input 0 in the correction.
  - 2 - Press the green SAW BLADE DOWNWARDS button - the arm will descend into the end position, its position will reset and the arm will travel to 100mm value.
  - 3 - Measure the height (x) at the fixed jaw, to which the saw blade travelled, enter the difference into the correction and repeat from the step 2.
- E.g. if you measure  $X = 80\text{mm}$ ,  $100 - 80 = 20$ , set a 20 mm correction. Measure the arm uplift height  $X$  again and if needed, carry out another correction.



## INFORMATIONAL POP-UP WINDOWS



Informational pop-up windows have a blue color and appear in the middle of the work screen. They inform the users about the status changes or about non-failure conditions.

### List of information windows:

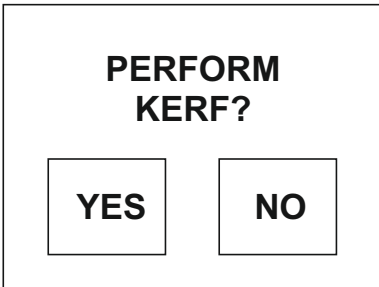
**The number of series is greater than 10** - indicates that the number of active series exceeded the amount that can be displayed on the screens of the Main menu, NC mode, Performing series and Series interrupted.

**Insert the material** - informs you that the material has not been inserted.

**Material will be shortly used up. Prepare new** - informs that the material will soon have been cut. In order to continue the series, it is necessary to prepare new material.

**Performing downcutting** - informs that the machine performs downcutting of the ends of the inserted material. **Replace battery in the PLC. Charge is less than 50%** - indicates that the backup battery is at the end of service life and should be replaced with a new one. Designation of the battery by Schneider Electric: TSXPLP 01.

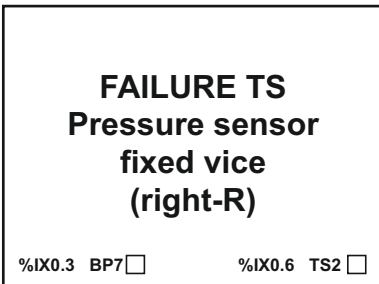
## OPERATIONAL POP-UP WINDOWS



Operational pop-up windows have a grey color and appear in the middle of the work screen. They appeal to the user for deciding on the continuation of the process. After taking the decision, the window will disappear.

If the material is used up, the operator is informed via this window. After pressing the OK button, the fixed vice is released. The system switches to the default screen of the NC mode. Now there is the option to switch the machine to manual mode and cut the rest of the material manually, or insert new material and start the cycle. Cycle will resume where it ended. Before continuing the cycle, you can choose downcutting and align new material.

## FAILURE POP-UP WINDOWS



Failure pop-up windows have a black color and appear in the middle of the work screen. They inform the user about malfunction. The failure is immediately recorded in the error status on the Failures screen. Execute the cancellation of the pop-up window after solving the failure, by clicking in the area of the pop-up window.

Under the main announcement, status of sensors for easy detection of failures may appear:

BP - Limit switch

TS - Pressure switch

Blue square signalizes that the device is switched on.

More about failure reporting in chapter Failures.