# AROSTOP

## Positioning system Arostop 30/65 S/A

User manual/Parts list
Version 2023-06

# Inhoud

# Introduction

Thank you for choosing an Arostop system. We are happy to have you in our long list of satisfied customers.

## 1.1 CE-Marking

This machine is designed and build with the requirement of the machinery directive 2006/42/CE.

## 1.2 Warranty

No part of this machine, or parts thereof, and data from this publication may be reproduced in any form without the written permission of the manufacturer.

| NOTE | **All non-regulatory improvements to treatment, inadequate care, application and/or maintenance, interventions or conversions to the machine will void the warranty.** |
|---|---|

## 1.3 Disclaimers

Arostop is not liable for accidents and unsafe situations or damage resulting from:

- Ignoring warnings or operation rules as displayed on the machine or in this manual;
- Use of the machine for other applications or different conditions than those specified in this manual;
- Changes to the machine.
  This includes applying non-original replacement parts and changing the operating program;
- Inadequate maintenance.

| ⚠️ | **If these conditions are not adhered to, the manufacturer is not liable for the consequence upon failure to the machine, such as damage to the products, business interruption, loss of production, etc.** |
|---|---|

## 1.4 Standard machine and accessories

The following supplied parts are standard with the machine:

1. This user manual;
2. Certificate of conformity for CE marking

## 1.5 Not belonging to the machine

| NOTE | • **The connections to existing, not by Arostop supplied machine parts;**<br>• **The connections to the electric supply;**<br>• **The connections to the compressed air system.** |
|---|---|

## 1.6 Using the manual

It is required that the operator has read and understood this manual before starting operating of the machine or carrying out maintenance.

This manual is part of the delivery scope and should stay with the machine at all times.

Pay attention to any text indicated in **bold** with the indication '**NOTE**' or with a warning sign.

Any work not specified in this user manual has to be carried out by the manufacturer of the machine.

# 2. Safety

| ⚠ | **Read this chapter carefully, as it lists important information concerning safety.** **This machine is designed so it can be used and maintained safely. This applies to application, conditions and requirements as described in this manual. Reading this manual and following the instructions given is mandatory for anyone working with the machine.** |
|---|---|

| NOTE | **In addition to this manual, observe applicable laws and safety regulations, as well as rules for the protection of the environment and for the prevention of accidents.** |
|---|---|

The simple maintenance can be carried out by the operator.

| NOTE | **Activities not described in this manual may only be carried out by expert personnel.** |
|---|---|

Keys or special tools that are included in order to limit access to certain areas or features must be kept separate from the machine. Only people with the required knowledge or instructions may be allowed to use this special equipment.

## 2.1 Rules for general safety



1. The operators of this machine must be qualified and well trained in the operation of the machine.
2. The operators must be aware of the capacities of the machine and the proper use of guards and protections provided with the machine.
3. Use of protective clothing is mandatory.
   Do not wear loose fitting clothing. Safety shoes, protective gloves and protective goggles are required.
4. Make sure unauthorized individuals, like children and animals, do not have access to the machine.
5. Never place any body parts in or under any of the machine's moving parts.
6. Do not remove or disable safety devices.
7. Never leave the machine running unattended.
8. Ensure adequate lighting.
9. The operator must check the machine for notable changes to the machine, either in sound or appearance, at least once every shift. Any changes should immediately be reported to the responsible supervisor.
10. Use water mixed cool lubricating substances.
11. Keep general statutory regulations for accident prevention in mind.
12. Keep the area around the machine free of any material that would impede the operator's access to the machine.
13. Always keep the manual with the machine.
14. Avoid any work on the machine that may endanger your own or your colleague's safety.
15. All of the guards, adjustable restrictors and awareness barriers must be installed on the machine and kept in good working condition. Replace worn or damaged parts immediately with authorized parts.

16. Strictly comply with all warning labels and decals on the machine. Never remove any of the labels. Replace worn or damaged labels immediately.
17. Always disconnect and shut off the power supply when performing maintenance work on the machine.
18. Never modify this machine in any way without the written permission of the manufacturer.
19. Create a program of routine inspection and maintenance for this machine. Make sure all repairs and adjustments are made in accordance with the manufacturer's instructions.

## 2.2 Prohibited use

| ⚠️ | **The machine cannot be used for the following applications:** |
|---|---|

- Applications requiring direct contact with food;
- Transporting of animals or persons;
- Products processes other than described, see machine specification.

| ⚠️ | **The following provide an unnecessary risk and are therefore prohibited:** |
|---|---|

- Sitting, standing or being on the machine in any way;
- Placing objects on the machinery during production.

## 2.3 Personal protective equipment

| ⚠️ | **Personal protective equipment, such as gloves, safety glasses and safety shoes are mandatory while operating the machine. Protections required for working with the products apply without prejudice.** |
|---|---|

## 2.4 Preventive safety

The system is equipped with the following safety features:

- Emergency button
- The complete machine is protected with shields in dangerous zones, without obstruction for functionality.

## 2.5 Emergency

An emergency switch has been fitted to stop the system as quickly as possible in an emergency. This is attached to the front of the control box, it is clearly recognizable by its red colour.

The machine stops immediately when the switch is pressed. The switch remains mechanically blocked and the machine cannot restart.

| ⚠️ | **The machine does not stop and finishes its working cycle!** |
|---|---|

In the event of a personal accident, assistance can now be provided immediately. Other urgent actions must also be taken immediately.

The emergency switch can be released after the danger has been eliminated. The system will not start yet, but can now be started normally.

The emergency stop can also be used in the event of a sudden threat of danger, such as incorrect operation or crushing of products. Action is less urgent to remedy this situation, it must be switched off **before intervention in the system**.

Recommendations:

- Let new operators practice several times with the emergency stop
- Do not use the emergency stop for the normal turn off the system
- Regularly Test the functioning of the emergency button
- Reset an emergency switch not until known why and by whom

## 2.6 Warnings on the machine

There are no warnings on the machine.

| NOTE | **Risks are described in Chapter 5.** |
|------|---------------------------------------|

## 2.7 Protection of the environment

| NOTE | **There are no specific risks relating to the environment with regards to use, maintenance and removal of this machine.** **Dispose of all items related to the machine in accordance with local laws and regulations.** |
|------|---------------------------------------|

# 3. General

## 3.1 About the machine

The length measuring system (S/A) is a system to position material on the right length. It consist of an angle steel equipped with rack-and-pinion gear, linear guide and a stopper or clamp. The total length of the system is on customer specification. The system is controlled by an AROSTOP controller.



| 1 | Stopper | 4 | Linear guide |
|---|---|---|---|
| 2 | Steel angle | 5 | Controller |
| 3 | Rack | | |

The systems are constructed and equipped with rack-and-pinion gear and guide, around it there is a measuring unit mounted which is powered by a motor. This complete unit will be mounted on a conveyor.

The measuring system can be connected in 2 ways:

**1. Stopper (S)**

The S is mounted on a roller conveyor. This roller conveyor is located behind a working machine (e.g. sawing machine, drilling machine, punching machine). The material to be machined is placed on the infeed roller conveyor. The material must then come into contact with the stop of the S. The S ensures that the material is positioned at the correct length.

This system is used with a working machine for longitudinal positioning of sheet, flat, profile steel at metalworking companies.

The S searches for its coordinates fully automatically (program). The product that you want to be machined must lie at the correct length against the stop of the S.

After the product lies against the stop, so in the correct position, it can be machined by a machine tool.

**2. Infeed (automatic machining of various lengths).**

The A is mounted on a roller conveyor and electrically connected to the machine tool. The roller conveyor with measuring system stands for a working machine (e.g. sawing machine, punch, drilling machine). The material to be processed is placed in the clamp of the stop.

The A supplies the machine tool with an automatically entered program to create a cycle. The material is positioned and the machine completes its cycle (sawing, drilling, punching, cutting, etc.), then the material is repositioned and the machine again completes its cycle, etc.

## 3.2 Installation

The system must be mounted on a stable roller conveyor (reinforce any existing roller conveyor).

**Always anchor the machine to the foundation!**

Make sure that the control box remains accessible for service operations, and that there is approximately 1 meter free space at the front and rear to work.

| ⚠ | **Installation should always be carried out by qualified professionals.** |
|---|---|

### 3.2.1 Mechanical

1. Mount the angle steel profile on the roller conveyor, ensure that the mounting surface is clean.
2. Level the stopper arm on 5 mm horizontally above the conveyor.
3. Adjust the stopper arm/conveyor at 90º square to the working machine.
4. Fix the control box to the floor, or machine.
5. Ensure that the cable chain is well in the cable tray.
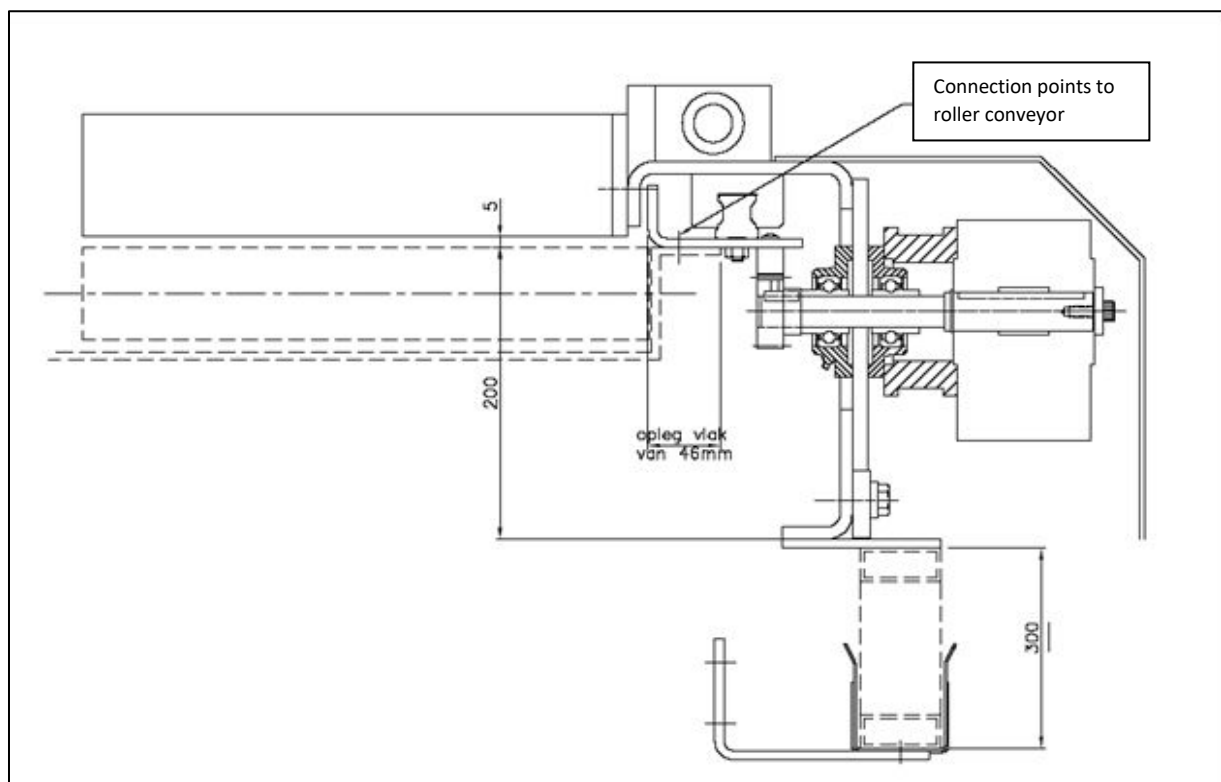
### 3.2.2 Electric

The locally applicable regulations must be observed. The machine is supplied without a power cable. Usually a connection with cord and socket is required.

| NOTE | **Lay the cord in such a way that damage is prevented. Mount additional shielding if necessary.** |
|------|---|

The power cable must be protected against the expected mechanical load. The required pre-fuse is specified in the specifications (16 A).

•        Connect the supplied cable with plug to the positioning unit.

### 3.3 First use

| ⚠️ | **The machine must be thoroughly checked before first use, after repairs or long-term storage.** |
|------|---|

**Check the following:**
1. If all moving parts can move;
2. Visual check for damaged parts, in particular external electrical wiring;
3. All mechanical controls function correctly;
4. All electrical controls functions correctly (main switch, on/off, emergency stop);
5. Parameters are in order.

| NOTE | **The change of improper operation is greater than normal during business counting. Take additional safety precautions if necessary.** |
|------|---|

# 4. Operation

## 4.1 System construction

The Machine is structured as follows:

A steel angle profile is attached to the roller conveyor, which profile is equipped with a rack and lineair guide. Together they serve to drive and guide the positioning unit.

The measuring unit is fitted around this construction, which is fitted with a servo motor with a gear wheel that drives the positioning unit.

The measuring unit is equipped with a stop.

The control box with control panel and the emergency stop to operate the entire system is located on a support at the machine tool.
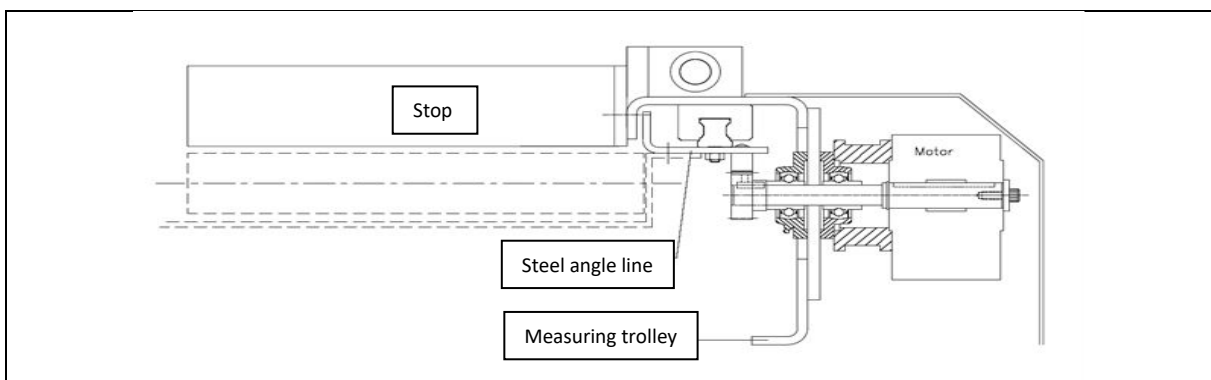


## 4.2 Workplace

The work space should be at least one meter in width along the entire front and rear of the machine, where all required actions can be carried out.

## 4.3 Controls

The following controls are available to operate the system:

1. An emergency button
2. A display with operating buttons

## 4.4 Working with the system

| ⚠️ WARNING | **The S is fully automatic (positioning the correct machining length), the machine tool must be operated manually after the material has touched the stop. Continuous operator supervision is required during the process.** |
|---|---|

| ⚠️ WARNING | **Before starting the machine, read the following chapters:**<br>• **Chapter 1 – Foreword**<br>• **Chapter 2 – Safety**<br>• **Chapter 4 – Operation**<br>• **Chapter 5 – Dangers** |
|---|---|

## 4.5 Operators

The machine can be operated by any adult person who has read this manual. Special training is not required.

## 4.6 Operating instructions

| NOTE | **Depending on your license, specific parts may not apply to your situation. This is clearly stated in the text and in "Appendix A - License overview" you will find an overview of all licenses and their associated functionalities.** |
|---|---|

## 4.6.1 Control panel
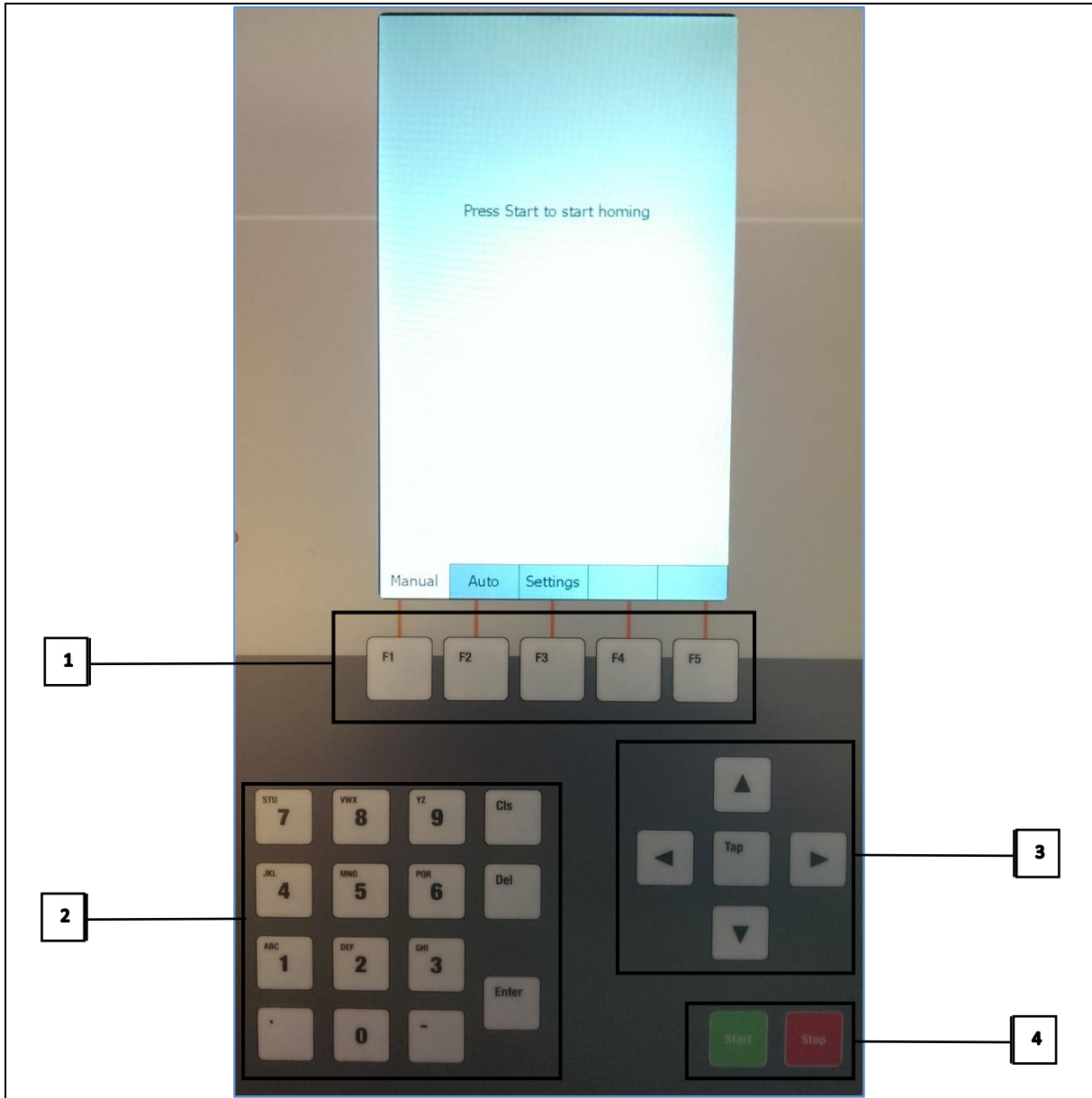


| 1 | Menu navigation (function keys) | 3 | Text box navigation |
|---|---|---|---|
| 2 | Input | 4 | Start / Stop |

### 4.6.1.1 Navigation

| Keys | Description / function |
|---|---|
| **Menu navigation** | |
| Function keys (F1 … F5) | For operating the menu. This menu is always displayed at the bottom of the screen. |
| **Text box navigation** | |
| Arrows | Navigation in tables/scrolling through the program steps / jog the axis. |
| Tap | Navigation to a new field. |
| **Input** | |
| Alpha numerical keys | Press several times to enter letters. |
| - | For negative numbers. |
| . | For decimal numbers. |
| Cls | Clear, empty text box. |
| Del | Delete one character in the text box. |
| Enter | Confirm selection / make setting adjustable / save setting / change setting from True to False of vice versa / reset counter. |
| **Start / Stop** | |
| Start | Move to the set position / run current program. |
| Stop | 1$^{st}$ key press: Stops moving to the set position; the program is now paused. Resume the program by pressing Start, or stop the program by pressing Stop again (2$^{nd}$ key press). |

### 4.6.1.2 Emergency stop



This button is used in case of an emergency. Pressing the button will shut down the system. To continue after an emergency-stop, you will have to restart the system from the beginning. To reset the emergency-stop, turn the red knob clock-wise until it springs back.

## 4.6.2 Initialization

Before the system can be used, the machine must be initialized. You can do this by pressing Start when the following message is displayed: "Press Start to start homing", see images below.
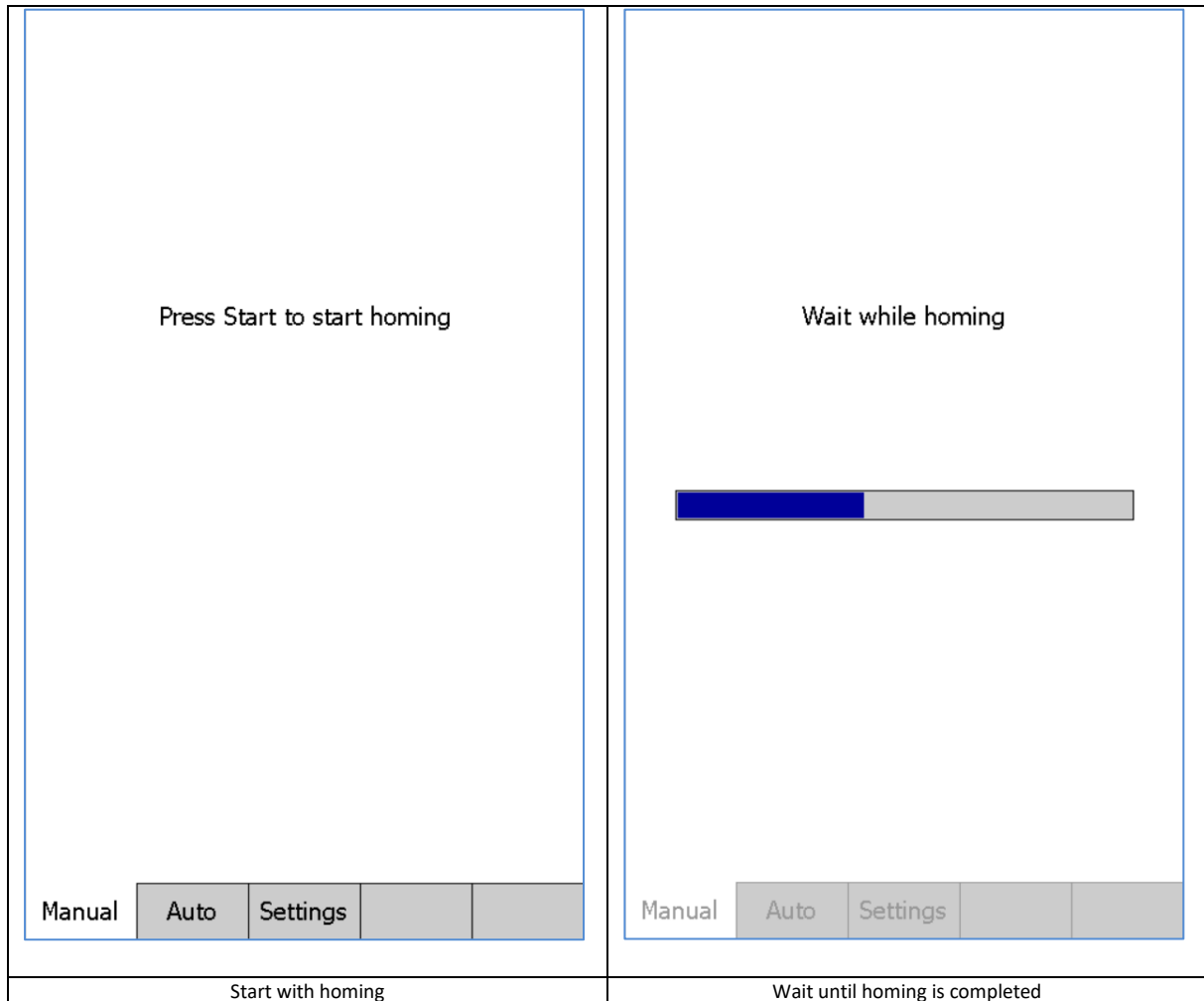
| | |
|---|---|
| Press Start to start homing<br><br>Manual \| Auto \| Settings | Wait while homing<br><br>Manual \| Auto \| Settings |
| Start with homing | Wait until homing is completed |

| NOTE | **This action is necessary every time after starting the control, this in order to guarantee the positions, and thus correct operation of the control.** |
|---|---|

### 4.6.3 Manual cycle

Press the function key F1 for Manual to get into the manual cycle. Here, depending on your license, you can manually control the X, Y and Z-axes.



| Manual (XYZ-license) | Manual (X-license) |
|---|---|

With the X licenses, you have the option to choose between incremental and absolute modes. The counter shows how often the tool has been used. This does not include the first "clean cut" action if the Count First Action setting is FALSE (default value).

#### 4.6.3.1 Positioning

The current position is displayed next to each axis indication. Next to "Target", you can enter the desired target location for the relevant axis. You do this by using the numeric keys. With the Tap key you can navigate to another text box. The drilling program (Z-axis) can be selected using the arrow keys or the numeric 1 key. See chapter Drilling program for creating or modifying a drilling program.

**Start**

When you have entered the desired X and Y positions, you can move the system here by selecting either the X or Y-axis text box and then pressing Start.

| NOTE | If the Z-axis is not already at its home position, it will move to its home position before the X and Y-axes will move to their target position. |
|---|---|

When you have selected the desired drilling program (Z-axis), you can start it immediately by pressing Start.

| NOTE | The Z-axis program box should be selected when you press start. |
|------|----------------------------------------------------------------|

**Pause and stop**

Pressing Stop once before the target position is reached or the drilling program is completed causes everything to be paused.

After this, 2 options are possible:

1. Restart the program by pressing  Start.
2. Stop the program by pressing a 2$^{nd}$ time  Stop.

*4.6.3.2 Jog*

Jogging is possible with the left ◄ and right ► arrow keys, and is done with the axis currently selected. You can select another axis with the Tap button.

| NOTE | Jogging is only possible with the X and Y-axes and if no program is running or paused. |
|------|----------------------------------------------------------------------------------------|

## 4.6.4 Automatic cycle

Press the function key "F2 Auto" to create, edit, or run automatic programs (not for the XS-license). Firstly, you must select the location from which you wish to work (not for the XS-, X- and XY-license):

- Flash            (internal memory)
- USB              (storage medium connected via the USB port)
- Network          (network storage, parameters are adjustable in the settings)

Press "Enter" to confirm your selection.

| NOTE | Return to the parent folder by navigating to "\ .." with the arrow keys, then pressing Enter. |
|------|-----------------------------------------------------------------------------------------------|

*4.6.4.1 Programming and adjusting*

Creating or modifying a program is done in the same menu. Only the previous selection is different. Choose 1 of the 2 options below and follow the further steps.

- Create a new program: Navigate to "< Add new >" and then press "Enter".
- Adjust an existing program: Select the desired program and press "Enter". Press then the function key for Edit.

**Filename and product size**

In the left text box above the table you need to name the program. With the "Tap" key you can navigate to a new field.

In the 2 fields to the right of the file name you can enter the product's X and Y length respectively (only available in plus licenses), as indicated below.
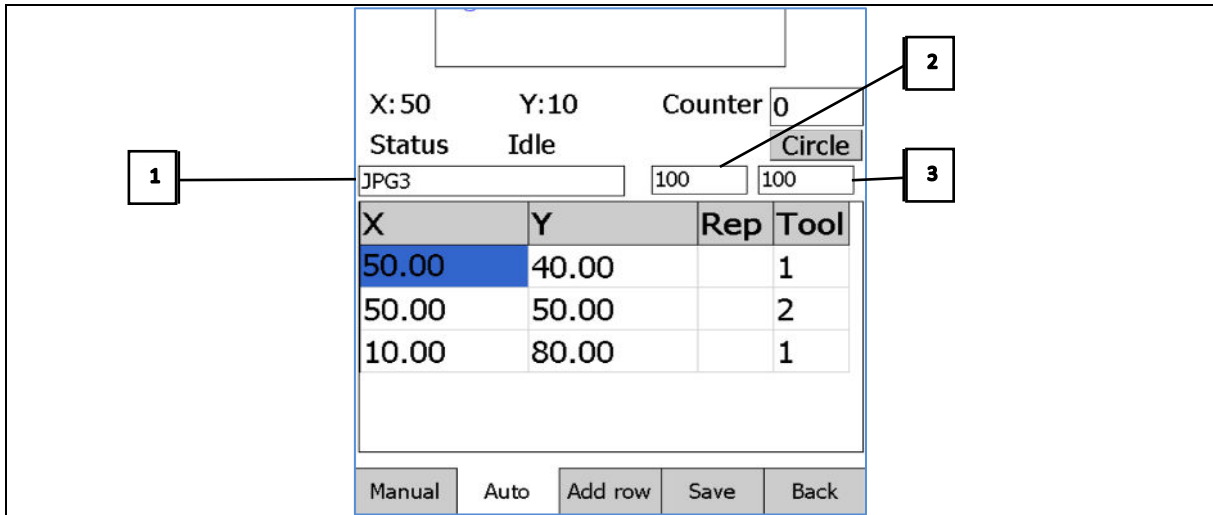
| 1 | File name | 3 | Y-length of the product |
|---|---|---|---|
| 2 | X-length of the product | | |

**Add coordinates**

In the table you can enter all X and Y coordinates as well as the desired tools for your program. For the tool, use the desired tool number (1-5) or the number of the desired drilling program (11-19). In the table adding or removing a row is possible with the function key for "Add row" and the "Del"-key at the numerical part respectively.

If you have to enter a whole series of coordinates that are on one line, then you only need to enter the first location. This first location must then be followed by a line where the Rep (Repeat) column has the value 1 or higher. Now in the X and Y column are an "@" before the numbers. This means that the X and Y values in those specific fields are not taken as absolute, but relative to the location in the parent row. Below is an example:
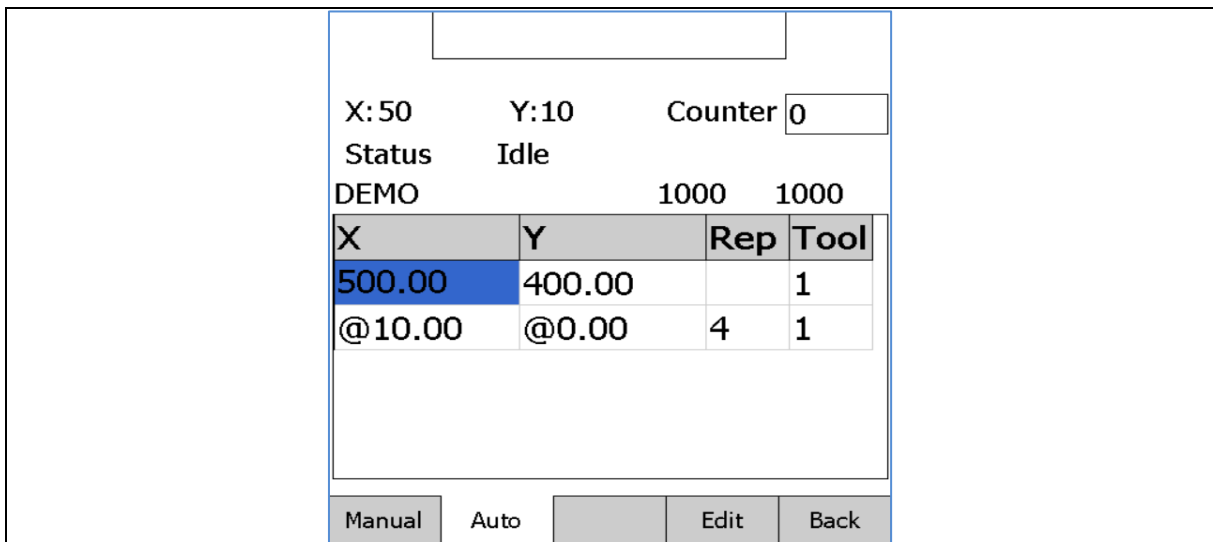
**Sample program with incremental steps**

In this example, the first location is at (500, 400). The next line says that an X interval of 10 and a Y interval of 0.4 will be performed. This results in 5 locations with the following coordinates: (500, 400), (510, 400), (520, 400), (530, 400), (540, 400).

| NOTE | **It is possible to make incremental values both positive and negative. Negative values are added to the current position. Positive values are subtracted from this.** |
|------|------|

**Circle**

It is also possible to add the contour of a circle as coordinates. You do this by navigating to "Circle" using the "Tap" button. Pressing "Enter" then opens a menu where 5 parameters can be set. After setting, press the "Save" function key to apply a circle with the set parameters, or the "Cancel" function key for not doing this.

**Counter**

A counter that shows how many times the program has already been run. The counter can be reset by selecting the text box and pressing "Enter".

**Save**

When you are finished with your program, press the "Save" function key to save the program or the "Back" function key not to save the program and go back in the menu.

*4.6.4.2 Execute program*

Select the desired program from the program list and press "Enter". This opens the program.

| NOTE | **Before starting, first check the "AutoRestartProgram" setting. If set to TRUE, the program will automatically start over from the beginning.** |
|------|------|

Press "Start" to start the program. When the program is running, press "Stop" once to pause the program.

After this there are 2 options:

- Restart the program by pressing "Start".
- Stop the program by pressing "Stop" again.

**File managing**

You can copy, paste, cut or delete a selected file by pressing the "File" function key, selecting the desired action, and then pressing "Enter".

- = Copy
- = Paste
- = Cut
- = Delete

| NOTE | **To close the menu prematurely, press the function key for "File" again.** |
|------|------|

When copying and pasting, navigate to the destination location and press the "File" function key again, select "Paste" and press "Enter". Your file has now been copied / moved to the target location.

### 4.6.4.3 File type

Created automatic programs are of the type .csv. Externally created files must be of the following types to be read:

- .csv    (internal format as shown below)
- .dstv    (only plus-license)

The format in the .csv file should be as follows:

| Example | Explanation |
|---|---|
| L,W=100,400<br>20,,1,80<br>50,,1,90<br>50,,1,150<br>@0,6,1,@20 | 100 is the X-length and 400 is the Y-length of the product<br><br>X-coordinate, Repeat value, Tool number, Y-coordinate |

## 4.6.5 Setting

Press the function key "F3" to go to settings.

| NOTE | Is the "Settings" option not visible in the menu? Go back in the menu to make it visible. |
|---|---|

### 4.6.5.1 Overview list

Below is a list of the settings with a short description.

| Parameter | Description |
|---|---|
| **Global Settings** | |
| **AutoRestartProgram** | After the program, start automatically from the beginning. |
| **CountFirstAction** | When set to **TRUE**, the counter is also counted for the first time. |
| **ProgNameStr** | Program names with this text in the name are indicated in the list with the colour when setting ProgNameClr. |
| **ProgNameClr** | See above. |
| *ManagerPassword** | *Password for access to more settings (only for the machine owner).* |
| *FactoryPassword*** | *Password for access to even more settings (only for the manufacturer).* |
| *UserPassword** | *Password to be able to change programs.* |
| **Machine Settings** | |
| **SawKerf** | Saw blade / band thickness. This is taken into account when sawing incrementally. |
| **RetractEnabled** | Retraction function to temporarily remove tension on the product. |
| *RetractDelay** | *Delay before retraction, after clamping the product.* |
| *RetractTime** | *After this time, the pusher system automatically returns to the previous position.* |
| *RetractOffset** | *The distance the pusher moves back [mm].* |
| *ToolOffset** | *Offset added to the position when executing the corresponding tool (Tool 1 belongs to ToolOffset1 etc.).* |
| *DrivesComport*** | *Communication port for communication with the servo drives and I / O board.* |

| Axis Settings | |
|---|---|
| *VelocityJog\*\** | *Speed while jogging [mm / sec].* |
| *JogOffset\*\** | *The distance that is added when the jog buttons (arrow buttons) are released [mm]. This is to adjust the behaviour of the system when jogging.* |
| *VelocityNormal\*\** | *Speed before the distance setting below (Accdecdistance) has passed [mm / sec].* |
| *VelocitySlow\*\** | *Speed after the distance setting below (Accdecdistance) has passed [mm / sec].* |
| *Accdecdistance\*\** | *Distance to the target position at which speed changes from Velocity Normal to Velocity Slow [mm].* |
| *VelocityHoming\*\** | *Speed while homing [mm/sec].* |
| *VelocityHomingSlow\*\** | *Return speed after sensor detection* |
| *MinLimit\*\** | *Minimum position [mm].* |
| *MaxLimit\*\** | *Maximum position [mm].* |
| *AccelerationDeceleration\*\** | *The time for acceleration and deceleration [ms].* |
| *ReferencePosition\*\** | *Position awarded when homing [mm].* |
| *RefDriveDirectionPositive\*\** | *Direction to the reference position.* |
| *MotorInvered\*\** | *Invert motor direction of rotation.* |
| *SimulationMode\*\** | *Simulation of drive/motor.* |
| *InvertManualJogButtons\*\** | *Invert the Jog-keys: left <-> right .* |
| *IncrementsPerUnit\*\** | *The number of increments per unit [increments / unit]. Unit is the distance unit you use in the above settings, eg [mm].* |
| *DriveName\*\** | *Name of the specific servo drive.* |
| *ModbusAddress\*\** | *Modbus address for communication with the specific servo drive.* |
| *Backlash\** | *Reposition so that any backlash is out of the system.* |
| **Offset** | Distance added to the set target position. |
| **Path Settings** | |
| **NetworkEnable** | Enable network function |
| **NetworkPath** | Network path |
| **NetworkUser** | User name |
| **NetworkPassword** | Password |

Settings marked with * and ** are advanced settings that only become available after you have logged in with the manager (machine owner) or factory password respectively. Please contact your supplier for this.

To change a selected setting, in case of TRUE / FALSE and ProgNameClr setting, press "Enter". In all other cases, simply enter your desired value using the numeric keys, and then press Enter to save the new value.

| NOTE | **You will be automatically logged out when you leave the settings.** |
|---|---|

### 4.6.5.2 Drilling program

When in the settings, press the "Drill" function key to create or adjust a drilling program (Z-axis). For example, to make the process as efficient as possible, you can set it to move shortly above the product with a quick adjustment, and then adjust this speed for the drilling itself.

**Program selection**

At the top, select the drilling program (11-19) you wish to modify.

**Z-axis position**

You can also set the speed of the drill (Rpm) and the feed (Feed) at the top. Below that you set a target position for the Z-axis, after which you have to press Start to move to this position. You can also jog using the left ◄ and right ► arrow key when you have selected the Z-axis text field. The current position is visible below the text field of the Z-axis.



Top section of the drill program screen
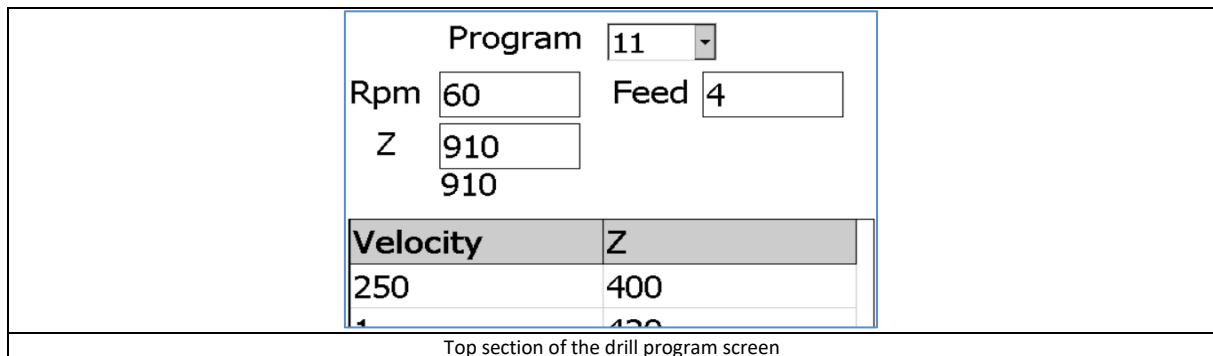
**Add to program**

You can add the current position to your program by pressing the function key for "Add".

The corresponding velocity will alternate in the table at maximum speed, followed by a calculated speed based on the set speed and power supply. See an example below.
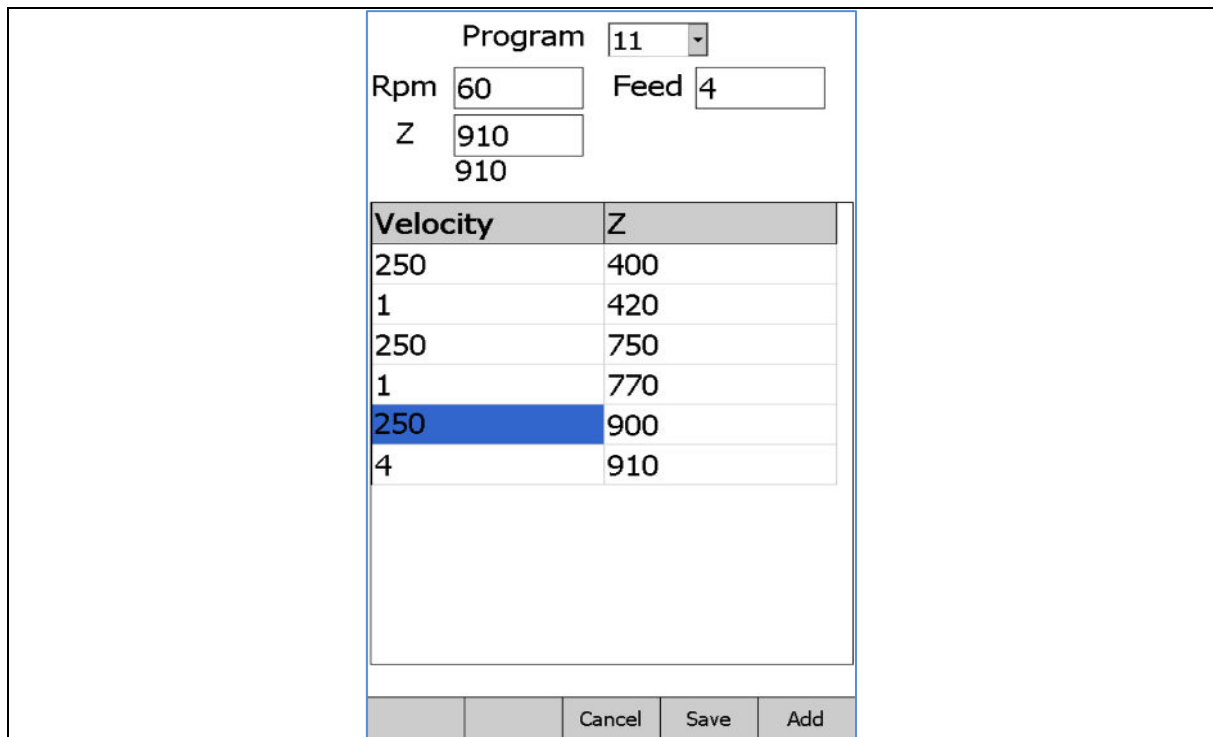


**Save**

When you have finished your drilling program, press the "Save" function key to save the program or the "Cancel" function key to not save the program.

### 4.6.5.3 New license

For a new license, contact your supplier and provide your Device number. You can see this number by pressing the function key for "New Lic." when you are in the settings.

Enter the number you receive in this same window to activate your new license.

| NOTE | Your old license is no longer active when a new license is activated. |
|------|-----------------------------------------------------------------------|

## 4.7 Adjustment of work

| ⚠️ WARNING | • **Always take safety provisions and the general safety rules** <br> • **The machine may be dangerous if operated by incompetent staff** <br> • **Always wear personal safety equipment** <br> • **Keep hands and other body parts out of the machine during normal use!** |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

1. Switch off the system;
2. Turn the main switch from position 1 into position 0;
3. Turn the power off;
4. Adjustment of the pinion gear in the rack happens through the bolts (A). Tighten the bolts securely.
5. The gear in the rack is adjusted by means of the nuts (B). Tighten the nuts afterwards.
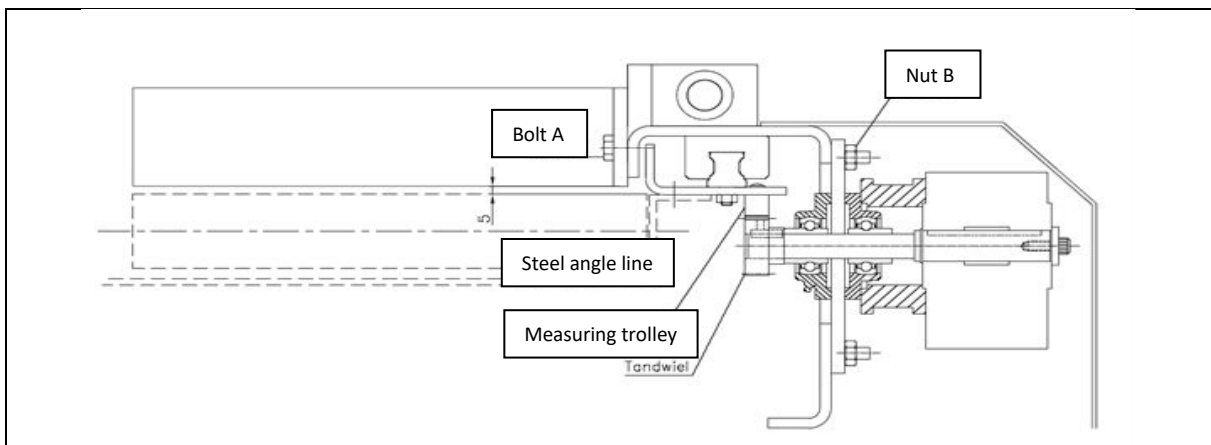
# 5. Risks

| ⚠️ | **Read this chapter carefully!** |
|---|---|

- Never place hands on the steel angle line or stop during positioning.
- Never put hands between the stopper and the material.
- Never place hands between a flipover stop and a roller conveyor.
- Do not wear loose clothing, it may become trapped in the system.
- Never place any part of your body into or under any of the machine's moving parts.
- Never reach into the system while operating or in the "On"-position.
- Always keep your hand away from the product and system when working on the product or when moving the stop.
- Persons other than the operator must stay away from the machine during operation.
- Avoid machine work that may endanger your own or your colleague's safety.

# 6. Other

## 6.1 Transport

The M must be disconnected from the control box during transport.

The whole system is transported together with the measuring stop and control unit in a wooden box.


Lifting of a complete system, incl. roller conveyor

## 6.2 Storage

Store the machine is a dry room. After prolonged storage, the machine must be checked by an onsite technician.

| NOTE | **If the machine is brought from a cold environment into a warm environment, temporary condensation can occur, on the outside of the machine but also on internal electrical parts. This can damage the machine and is dangerous for the operator.** |
|---|---|

## 6.3 Repair and maintenance

**During repair and maintenance work, the electrical supply must be switched off by means of the key switch.**

It is not allowed to test run the machine with safety devices turned off or the guards removed.

| NOTE | See Chapter 9 for the electric schedules. |
|------|-------------------------------------------|

## 6.4 Maintenance requirements

The system must be in such a condition that no dangers can be caused by overdue maintenance.

| Daily | • Ensure the system is free from dust, product residues, etc. Clean if necessary. |
|-------|-----------------------------------------------------------------------------------|
|  | • Clean the linear guide and remove dust and dirt. |
|  | • Verify that the system's sizing is correct |
|  | • Check is the work area is clean and tidy. |
| Monthly | • Check all mounting points |
|  | • Lubricate all nipples with grease |
| Half yearly | • Check all electrical connections. |
|  | • Check motor fastening. |

## 6.5 Cleaning

| ⚠️ | **Always turn off the machine while cleaning!** <br> Observe the following safety rules: <br> • Never clean the machine with spray water. <br> • Never use compressed air. <br> **Cleaning personnel must be given proper instructions to safely clean the machine.** |
|----|------|

## 6.6 Repairs

| NOTE | **Repairs must only be carried out by mechanics who have the correct data. Contact the manufacturer or importer is necessary.** |
|------|------|

## 6.7 Replacing parts

All parts to be replaced shall meet at least the specifications of the original parts.
All parts can be ordered from the manufacturer.
The machine consists of standard components (commercially available) and specific parts (produced exclusively for this machine).
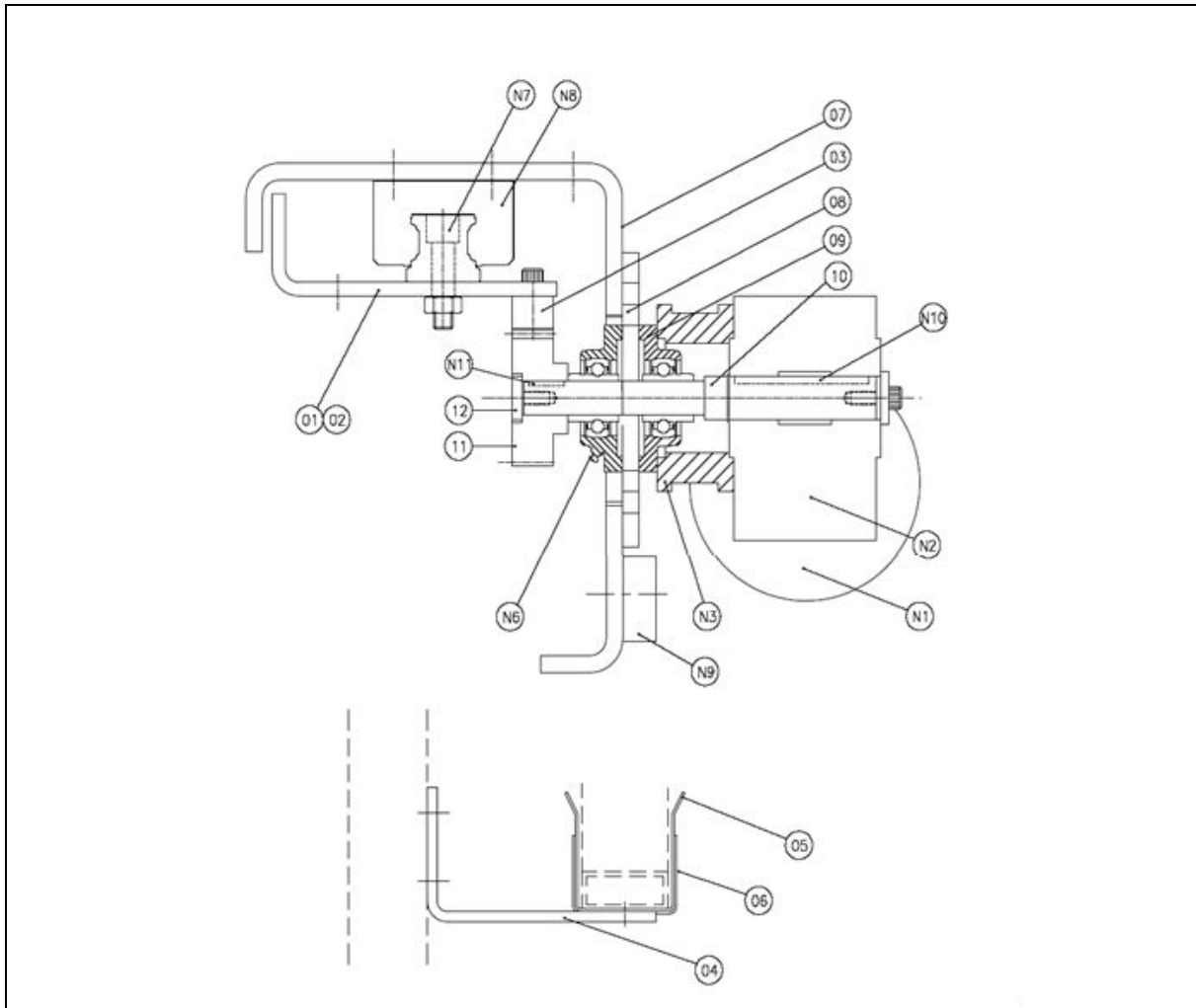
**Standard components:**
- If possible, use original manufacturer.
- If there are doubts about the specifications, refer to the manufacturer.

**Specific components:**
- Only spare parts supplied by the manufacturer may be applied.

| ⚠️ | **Not following these rules may affect the safety and warranty of the machine!** |
|----|------|

## 6.8 Parts list



| 01/02 | Angle steel | N1 | Motor |
|-------|-------------|-----|-------|
| 03 | Rack | N2 | Reductor |
| 04 | Bracket | N3 | Flange |
| 05 | Guide | N6 | Bearing |
| 06 | Connector | N7 | Rail |
| 07 | C-wagon | N8 | Trolley |
| 08 | Motor plate | N9 | Nut |
| 09 | Bearing | N10 | Key |
| 10 | Shaft | N11 | Key |
| 11 | Gear | | |
| 12 | Ring | | |

## 6.8 Decommission

When the machine is decommissioned, the waste management rules in force at the place and time of decommissioning must be observed. Only known materials are incorporated in the machine.

# 7. Options

There are two variants of the system described in this chapter.

| NOTE | The information in this manual applies to both types. |
|------|-------------------------------------------------------|

The positioning unit is available in 2 versions:

1. Positioning system Type 30 (AS 30M/A) positioning/pushing profiles up to 300mm.
2. Positioning system Type 65 (AS 65M/A) positioning/pushing profiles up to 500mm

The measuring stop is available in different version:

- Fixed stop
- Manual flipover stop
- Electric flipover stop
- Electric flipover stop with sensor
- Material vice

## 7.1 Positioning units

### 7.1.1 AS 30 and 65

Both systems are constructed from an angle steel profile with rack and lineair guide surrounded by a steel C-construction that is driven by a motor with gear.

The operation, construction and control of both systems are identical.

The Length measuring system Type 30 (AS 30) is suitable for positioning profiles up to 300mm and the Type 65 (AS 65) for profiles up to 500mm.

|  | AS 30 | AS 65 |
|--|-------|-------|
| Dimensions C-Construction (mm): | 420x250x145 | 700x300x230 |
| Weight C-Construction: | ca. 40 kg | ca. 60 kg |
| Weight angle steel, guide, rack: | ca. 14 kg/m | ca. 22 kg/m |



| AS 30 | AS 65 |
|-------|-------|
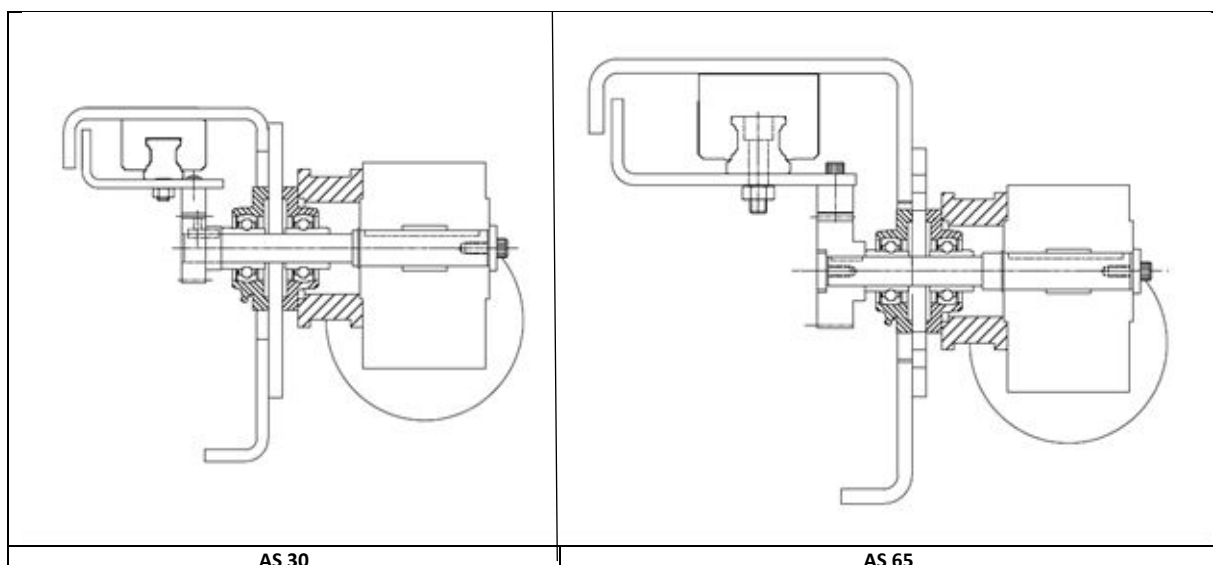
## 7.2 Stopper

### 7.2.1 Fixed stopper

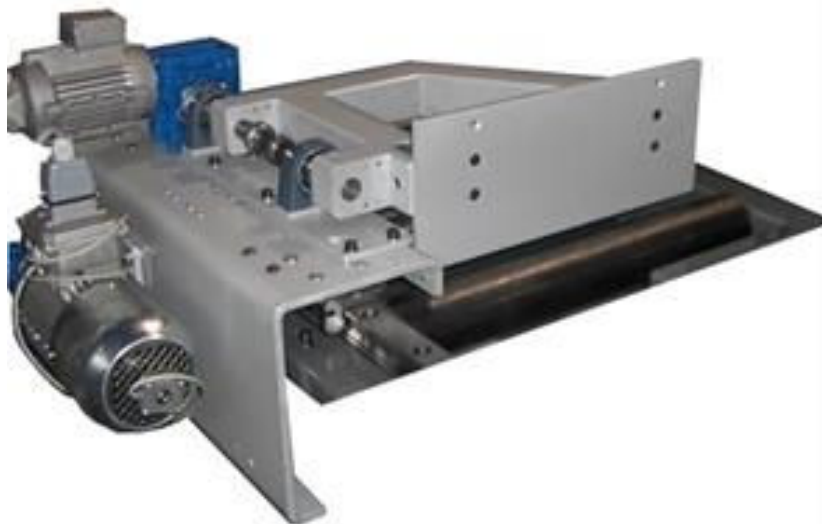The stopper is fixed bolted to the measuring system.



Fixed stopper

### 7.2.2 Manual flipover stop

The stopper is easy lifted by hand for a free passage of the product on the discharge roller conveyor.

### 7.2.3 Electric flipover stop

This version is exactly the same as the manual folding version, however, the stop is folded up by means of an electric motor.



Electric flipover

### 7.2.4 Electric flipover with sensor

This version is exactly the same as the electric folding version, only this type is equipped with a so-called "creep" function and can only be used if a manually operated powered roller conveyor is used.

The creep function works as follows: the product to be processed is fed in at a high speed. When the product comes plus-minus 400mm before the stop, it approaches an optical sensor, which causes the roller conveyor to switch from high speed to a slow speed so that the product gently operates the spring-loaded stop valve. When the product is positioned, the stop valve is vertical and operates a proximity switch. The roller conveyor is switched off. Product is now ready to be processed.

### 7.2.5 Vice system

This type of stop is attached to a positioning unit and always stands for a machine tool. The product to be processed is gripped by the clamping unit and then positioned. The clamping and unloading of the product is done manually.



Vice AS 30 and 65

# 8. Identification on the machine

The following identification marker is placed on the machine:
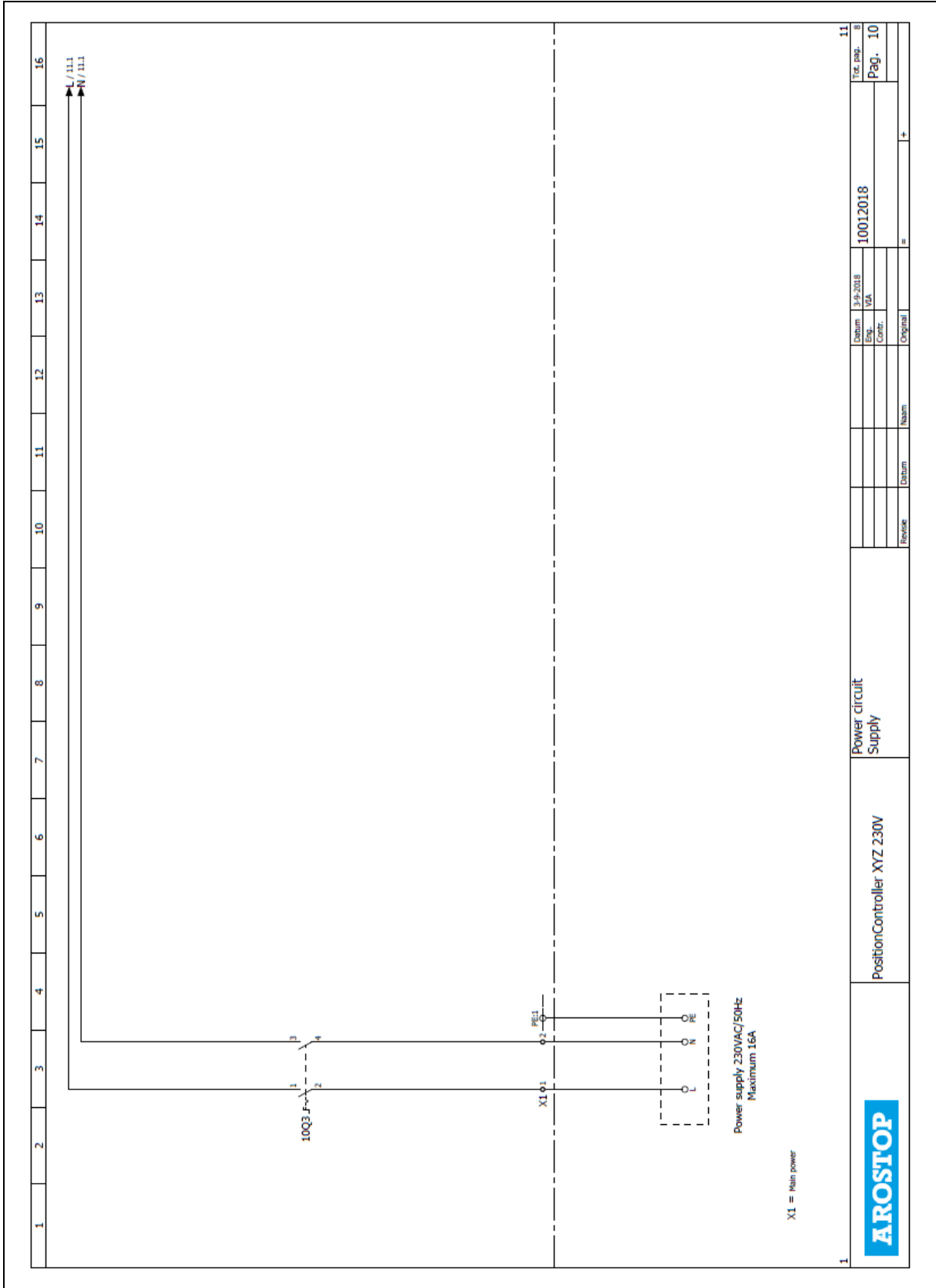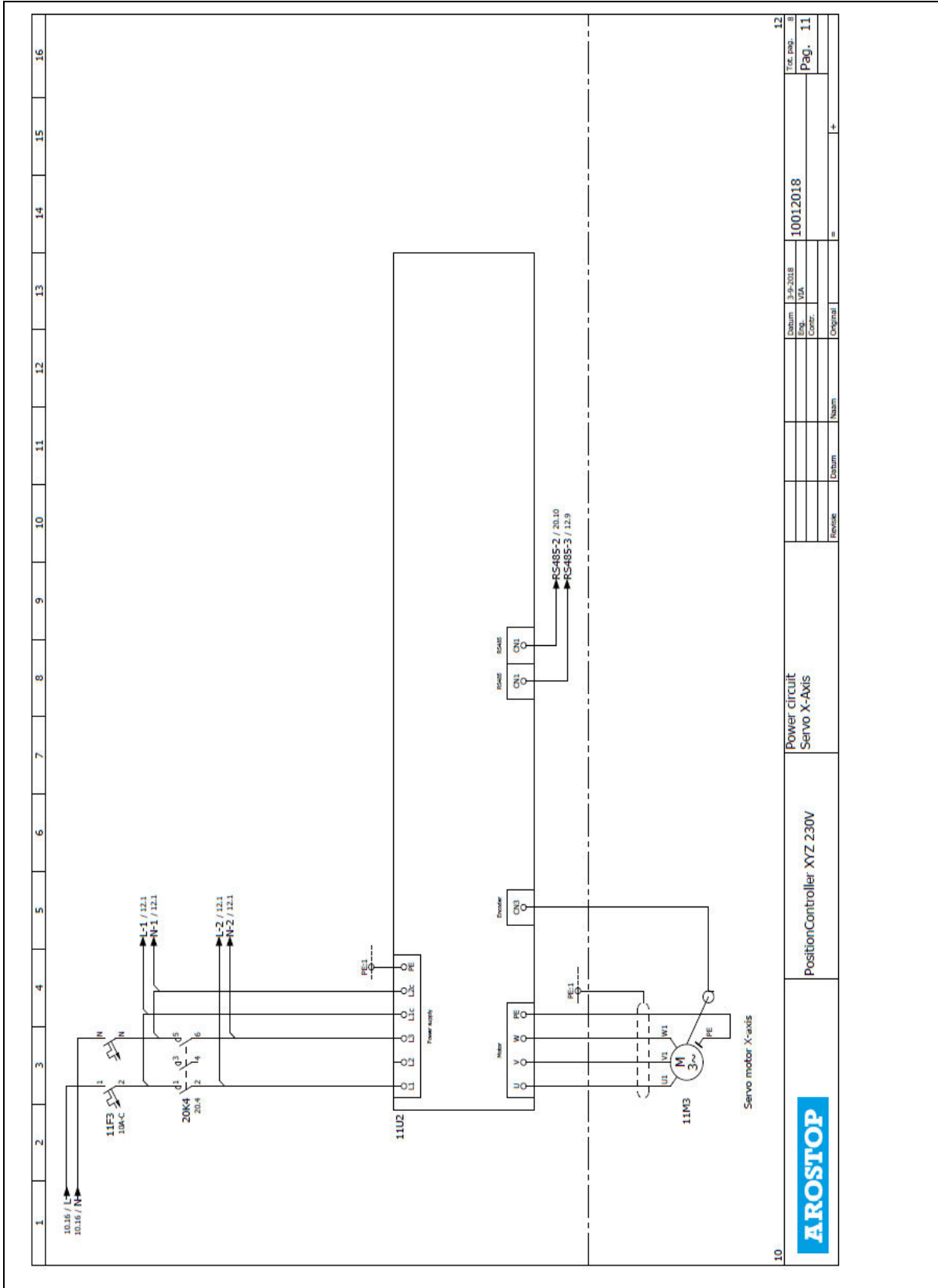
- Manufacturer data with CE-marking and type



# 9. System specification

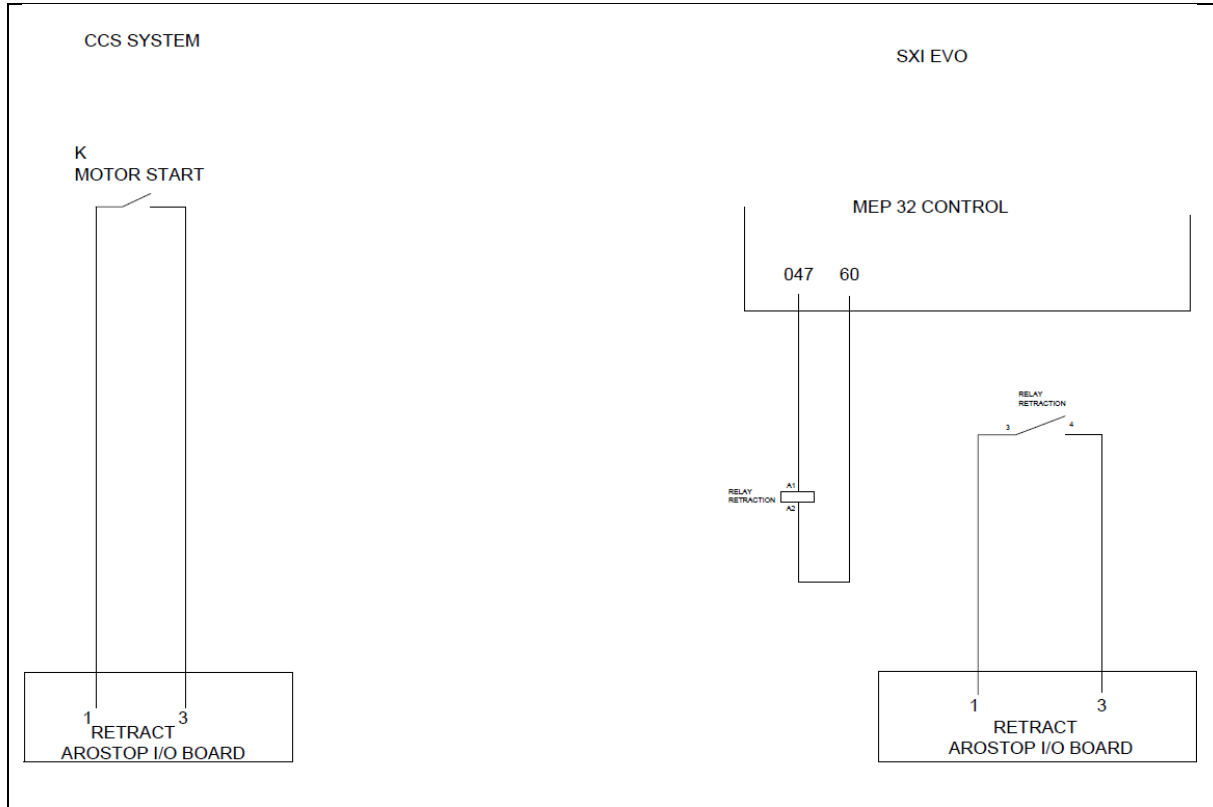| System | Arostop positioning system | |
|---|---|---|
| Type | AS 30 | AS 65 |
| Dimension C-Construction | 420x250x145 | 700x300x230 |
| Weight angle steel, rail, rack | ca. 14 kg/m | ca. 22 kg/m |
| Weight positioning unit | ca. 40 kg | ca. 60 kg |
| Noise level | < 70 dB(A) | |
| Capacity (length) | Depending on length roller conveyor | |
| Products: | plate-, flat- and profile steel | |

## 9.1 Connection requirements



Project omschrijving    PositionController XYZ 230V

Project nummer    10012018

supply voltage    230VAC ±10% - 50Hz
24 VDC

Aantal pagina's    8

Power circuit
Supply

PositionController XYZ 230V

Power supply 230VAC/50Hz
Maximum 16A

X1 = Main power

AROSTOP

| | Datum | 3-9-2018 |
|---|---|---|
| | Eng. | VJA |
| | Contr. | |

10012018

Original

| Revisie | Datum | Naam |
|---|---|---|

Tot. pag. 8

Pag. 10

Power circuit
Servo X-Axis

PositionController XYZ 230V

AROSTOP

| | | | Datum | 3-9-2018 | 10012018 |
|---|---|---|---|---|---|
| | | | Eng. | VJA | |
| | | | Contr. | | |
| Revisie | Datum | Naam | Original | | |

Tot. pag. 12
Pag. 11

Power circuit
Servo Z-Axis
Optional

PositionController XYZ 230V

Servo motor Z-axis

13M3

13U2

Power supply

Motor

Encoder

RS485

RS485-4 / 12.9

L-1 / 15.1
N-1 / 15.1

12.16 / L-1
N-1
12.16 / L-2
/ N-2

| | Datum | 3-9-2018 | 10012018 | | | | |
| Revisie | Datum | Naam | Eng. | VJA | | | |
| | | | Contr. | | | | |
| | | | Origineel | | = | | + |

Tot. pag. 8
Pag. 13

AROSTOP

Control supply
24VDC

24VDC / 20.2
0VDC / 20.2

1SG3
24VDC - 2.5A

PE:1

13.16 / L-1
13.16 / N-1

PositionController XYZ 230V

Power circuit
Control supply

| Datum | 3-9-2018 | 10012018 |
| Eng. | VIA | |
| Contr. | | |
| | Original | |

Revisie | Datum | Naam

Tot. pag. 8
Pag. 15

AROSTOP

Control circuit
I/O extender

PositionController XYZ 230V

### 9.1.1 Connection retraction on MEP machines



### 9.1.2 Electric

Required power:

| Voltage | 230 V +/- 10% |
|---|---|
| Number of conductors | 1 (1 phase, earth and zero) |
| Frequency | 50 Hz. +/- 1% incremental |
| | 50 Hz. +/- 2% short |
| Fuse | 16 A |
| Other requirements | following NEN-EN 60204-1 |

### 9.1.3 System data

| Total power | <0,35 kW |
|---|---|

### 9.1.4 Physical conditions

| Ambient operating temperature | +5 to +40 ºC |
|---|---|
| Transport temperature | +5 to +50 ºC |
| Rel. humidity | 30% to 70%, not condensing |
| Lighting | normal ambient lighting |

- This machine is not indented for use in the open air.
- The machine is not suitable for an explosive environment.
- Use the machine only for the intended purposes.

# Appendix 1 – License overview

This appendix provides an overview of the various licenses and their included functionalities.

| | XS | X | XY | XY+ | XYZ | XYZ+ |
|---|---|---|---|---|---|---|
| **number of axes** | 1 | 1 | 2 | 2 | 3 | 3 |
| **Jog function** | x | x | x | x | x | x |
| **Retract function** | x | x | x | x | x | x |
| **2$^{nd}$ zero point** | | x | x | x | x | x |
| **Piece counter** | | x | x | x | x | x |
| **Programmable** | | x | x | x | x | x |
| **In position output** | | x | x | x | x | x |
| **5 tool outputs** | | x | x | x | x | x |
| **2 system inputs** | | x | x | x | x | x |
| **USB** | | | | x | x | x |
| **Network** | | | | x | x | x |
| **DSTV readable** | | | | x | | x |
| **Text file import** | | | | x | x | x |
| **Drill function** | | | | | x | x |

# Appendix 2 – Changing the license

The instruction below explains how to remove the old license of Arostop before a new version can be installed.

This can be done with the help of the USB stick with Explorer, which you will receive from Arostop after ordering.

Before making this order we want to know the following from you:

- Device number (note this down carefully, also for your own records)
- Desired software

We will then generate the new license for you, you will receive a new license code from Arostop, as well as the USB stick with Explorer.

Then take the following steps:

1. Insert the USB stick into the screen;
2. Windows starts, open via Start → Programs → Windows Explorer;
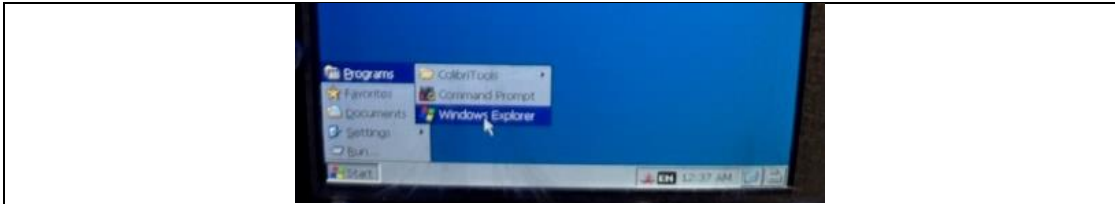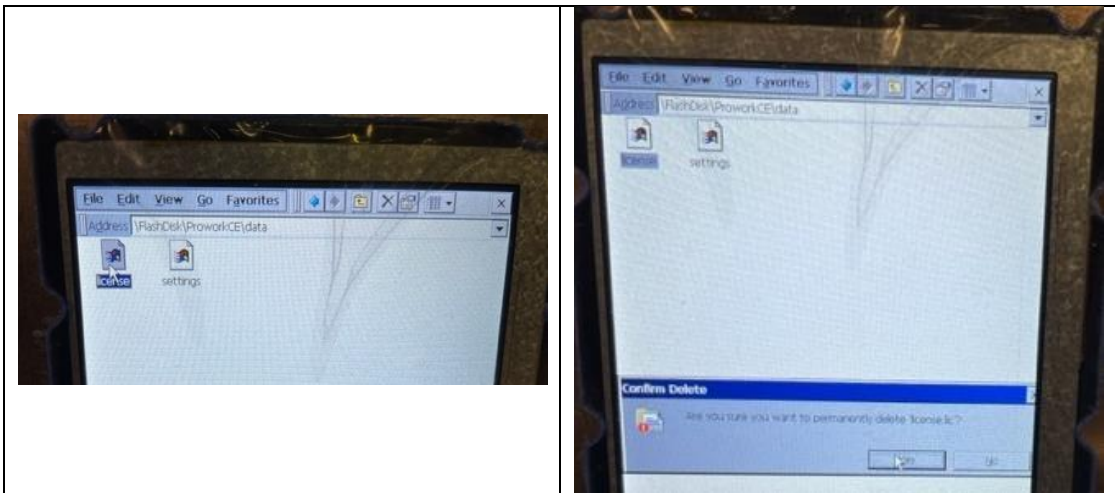


3. Open flashdisk;
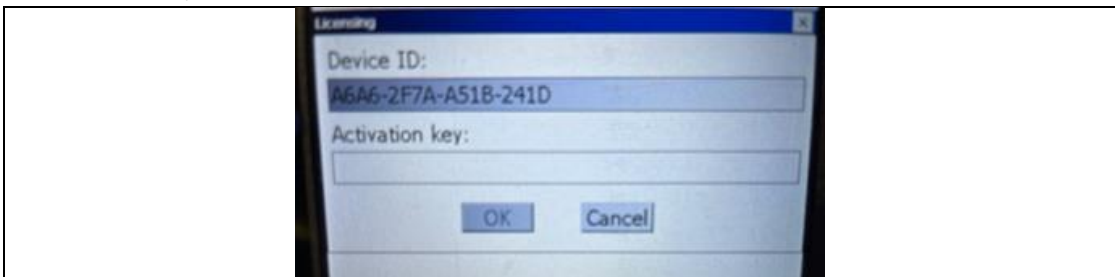


4. Open ProworkCE;

Version 2023-06
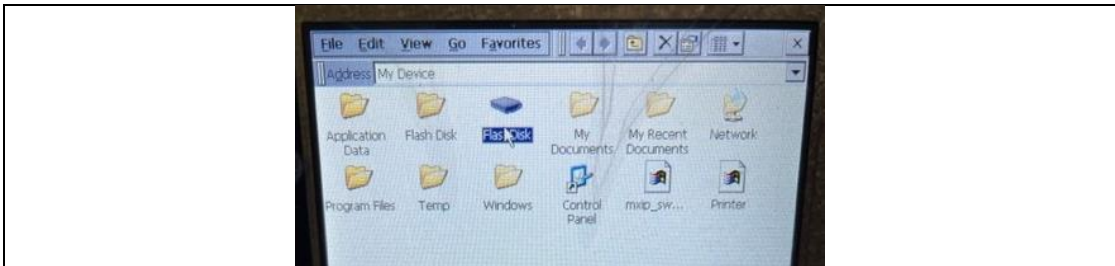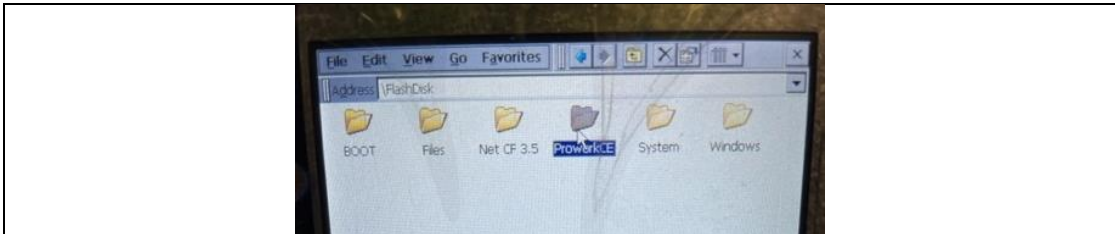
5. Open the folder marked 'Data';
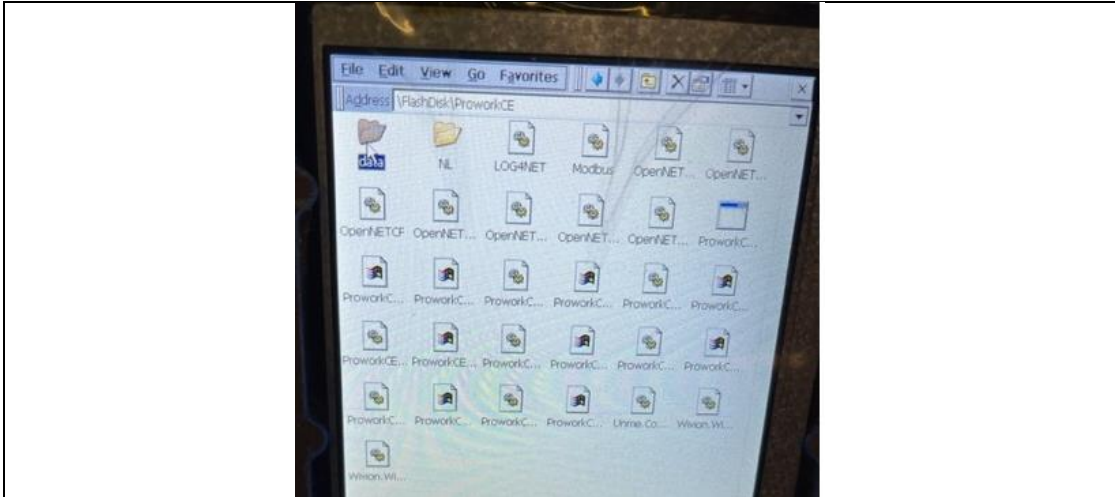


6. Remove the license;



7. Restart the screen, the message 'License doesn't exist' appears, press 'OK';
8. The device ID appears, along with the line where to enter the activation code, enter the new activation code;



9. The new software is now active.
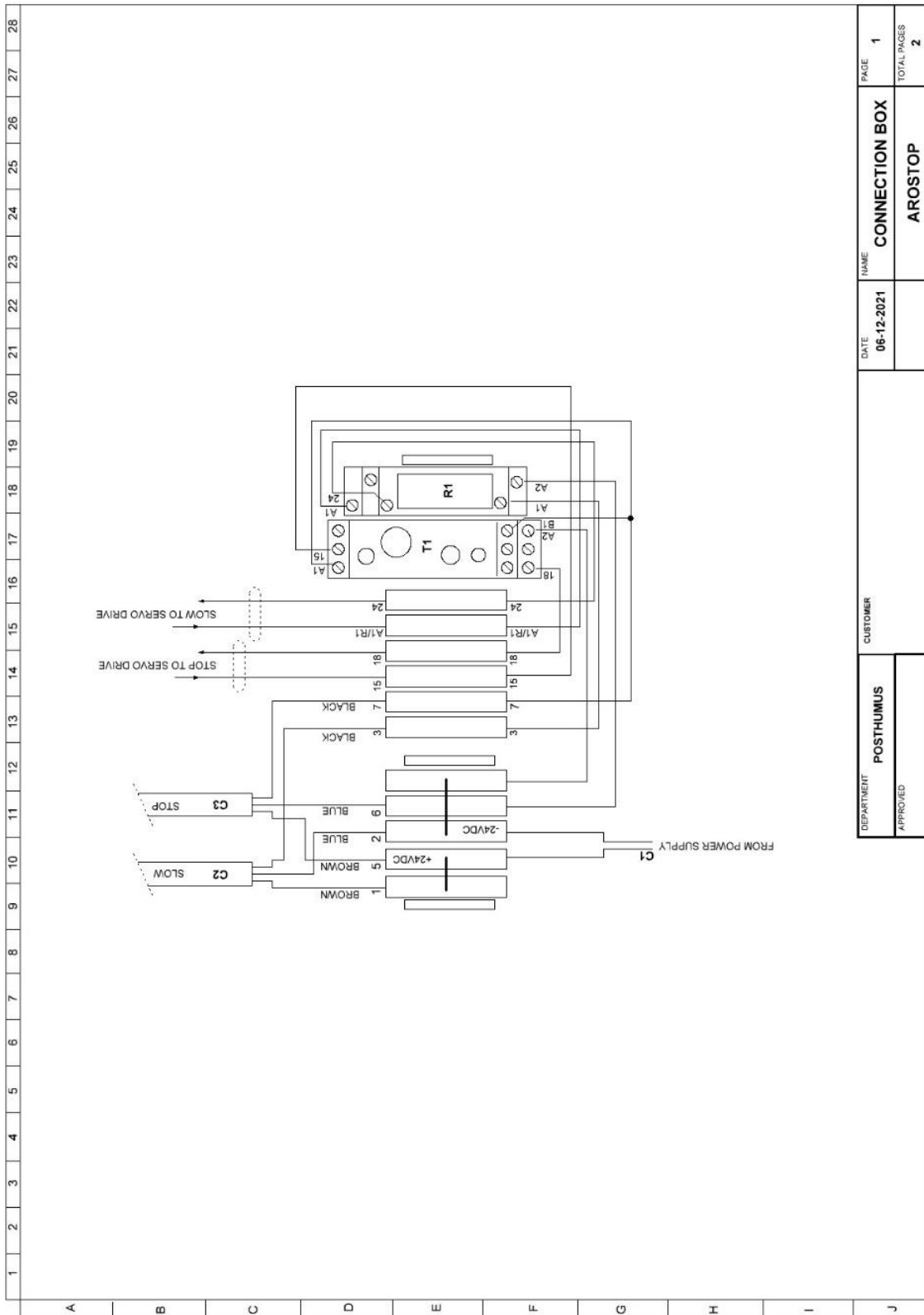
# Appendix 3 - Parameterlist 112S / 112
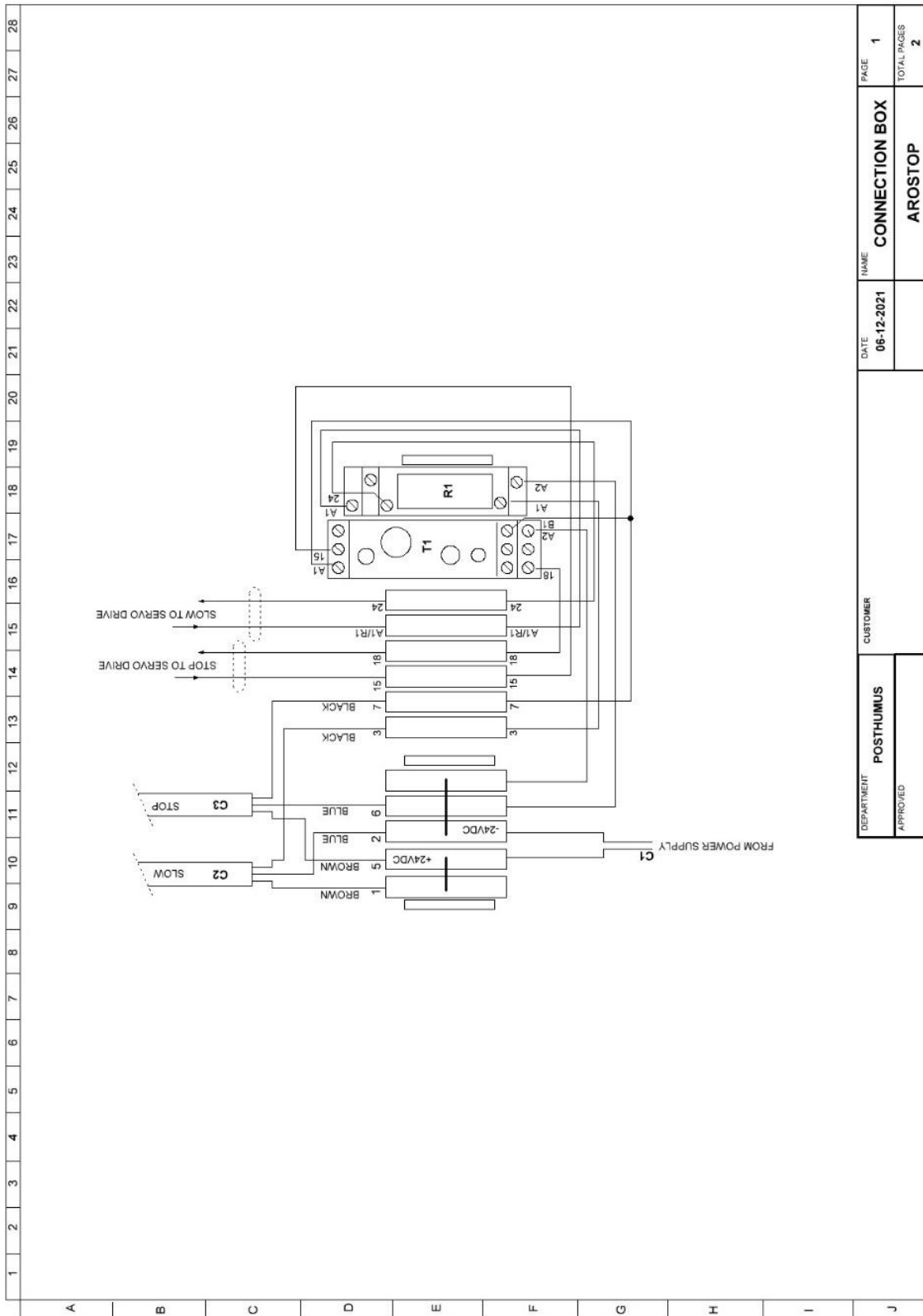
Customer       :

Date          :

Device ID.     :

| | | | |
|---|---|---|---|
| GlobalSettings | | | |
| Manager password | | | |
| FactoryPassword | | | |
| User Password | | | |
| Machinesettings | | | |
| SawKerf | | | |
| SensorOffset | | | |
| RetractEnabled | | | |
| RetractDelay | | | |
| RetractTime | | | |
| RetractOffset | | | |
| DrivesComport | | | |
| Axis Settings X | | | |
| VelocityJog | | | |
| JogOffset | | | |
| VelocityNormal | | | |
| VelocitySlow | | | |
| VelocityMarkDetect | | | |
| AccDecdistance | | | |
| VelocityHoming | | | |
| VelocityHomingSLow | | | |
| Min Limit | | | |
| Max Limit | | | |
| AccelarationDeccelaration | | | |
| ReferencePosition | | | |
| RefDriveDirectionPositive | | | |
| MotorInverted | | | |
| SimulationMode | | | |
| InvertManualJogButton | | | |
| IncrementsPerUnit | | | |
| Drivename | | | |
| ModbusAddress | | | |
| Backlah | | | |
| Offset | | | |

# Appendix 4 - Optional: Connection requirements laser package

Version 2023-06

# Appendix 5 – Optional: Saw Angle Correction

This short instruction can be used to correct changes in the saw angle for machines without a fixed zero point. This optional extra can be purchased from Arostop.

Instructions:

1. Open the Arostop software;
2. Go to 'Settings';
3. The setting 'EnableCalculateSawAngle' has been added to the software;
    a. If this setting is not available, contact us for this new software option;
4. Set the setting to 'True', the settings 'SawRotateOffset' and 'DirectionL2R' become available;
5. Enter the distance (a) from the centreline pivot point to the top of the table in 'SawRotateOffset';
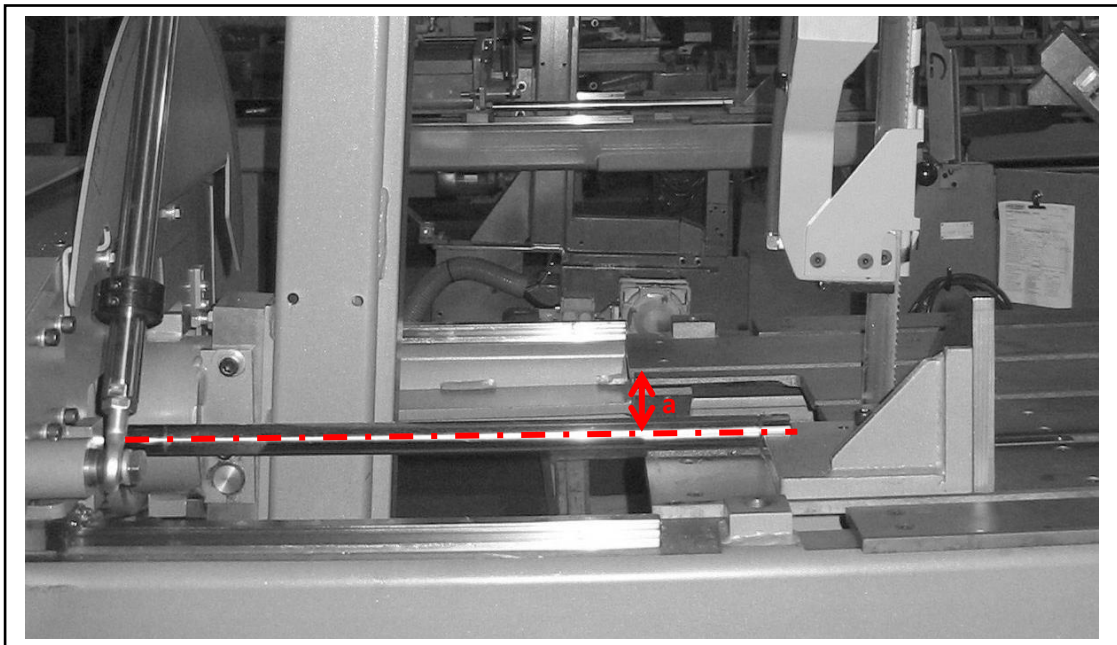


6. Next, run a test at 45ºL and 45ºR and correct the entered value if necessary.

# Appendix 6 – Changing the software

The information below explains how to change the software from the Arostop system.

To change the software, you need an unused USB stick for the software, a hex key, and the Arostop type A or S. You will receive an email with the new software (either directly or via WeTransfer).
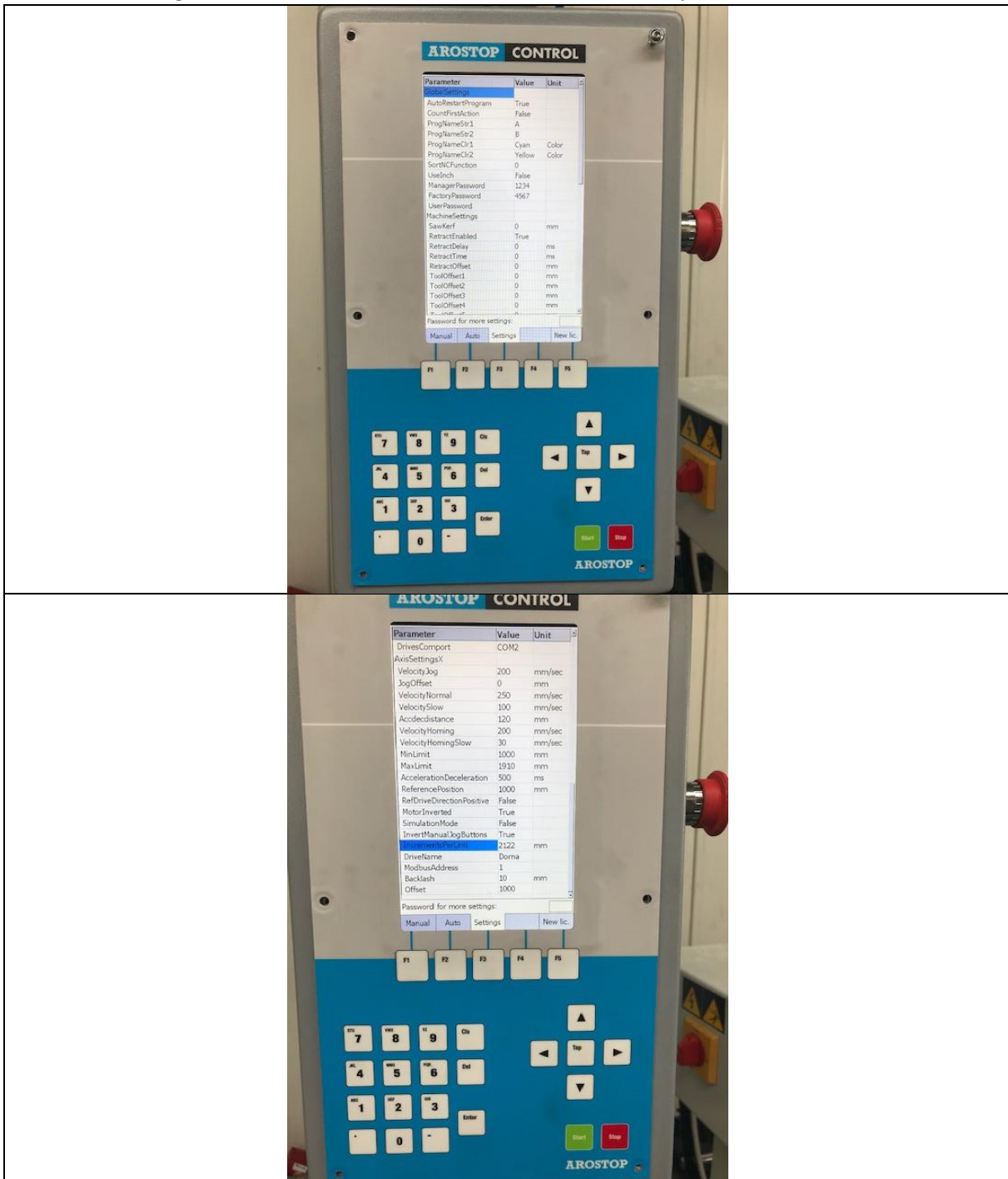
Take the following steps:

1. If the software is downloaded into a .zip file, unpack the software on the USB stick and remove the .zip file. The following folders should be visible on the USB:
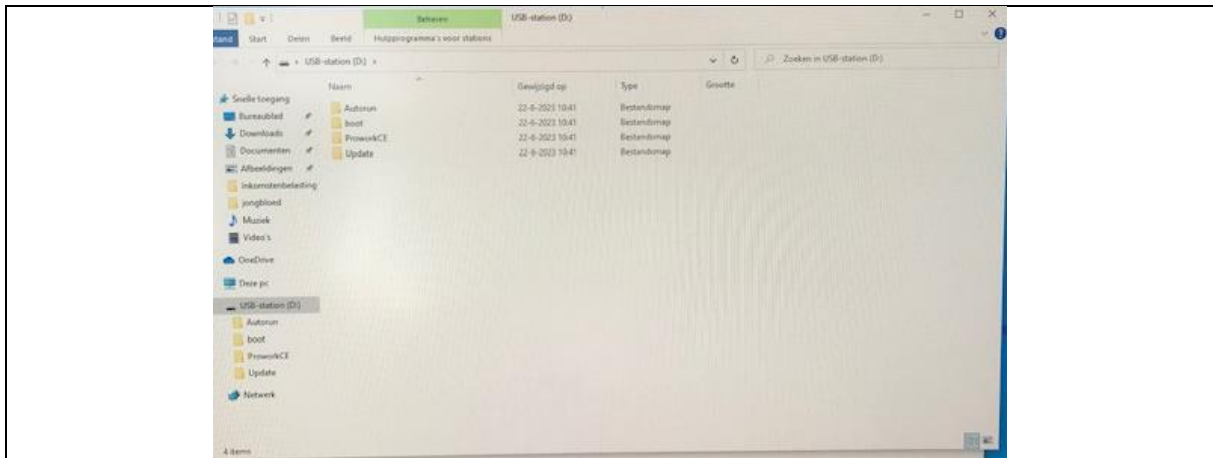


**NOTE:** Do not remove any of these folders! The software will not be able to upload to the system without them!

2. Take the USB stick out of the regular PC and take it to the Arostop system that requires the new software.

3. Start the device and enter 'Settings'. Make sure to note down all the current parameters (either take a picture or write them down) so they can easily be re-entered in case the new software overwrites the parameters!
   Don't forget to scroll down with the 'Down' arrow to see all parameters!
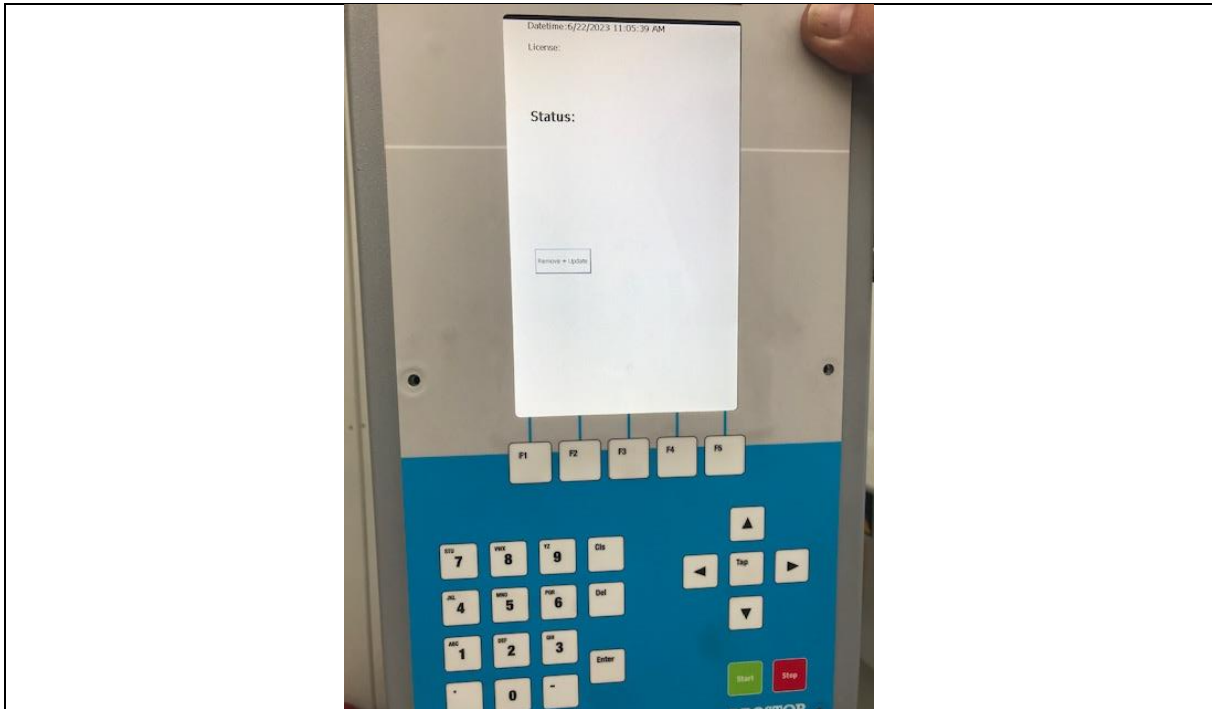
4. Turn the system off.



5. Take the display out of the support (remove the six screws with an hex key) and place the USB stick with the software in the back of the display.

6.  Turn the system back on and wait until the display displays the following:



7.  Select the button 'Remove + Update' and wait until the update is finished.
8.  Turn the system off again.
9.  Remove the USB stick.
10. Turn the system back on and check if the parameters are still correct.
    If not, enter them again from the images or notes taken before the update.
11. The new software is now active.

# Appendix 7 – Changing the settings from mm to inches

1. Turn on the system, wait until the system is fully turned on
2. Press 'Start'
3. Press 'Settings'
4. Press 'Tab'
5. Enter the password (default is 4567) and press 'Enter'
6. Scroll down to the parameter 'Use Inch'
7. Press the 'Right' arrow button
8. Press 'Enter' to change the setting to 'true'
9. Turn the system off to save the Inch setting to the device

When turning the machine back on, the system will measure in Inches.
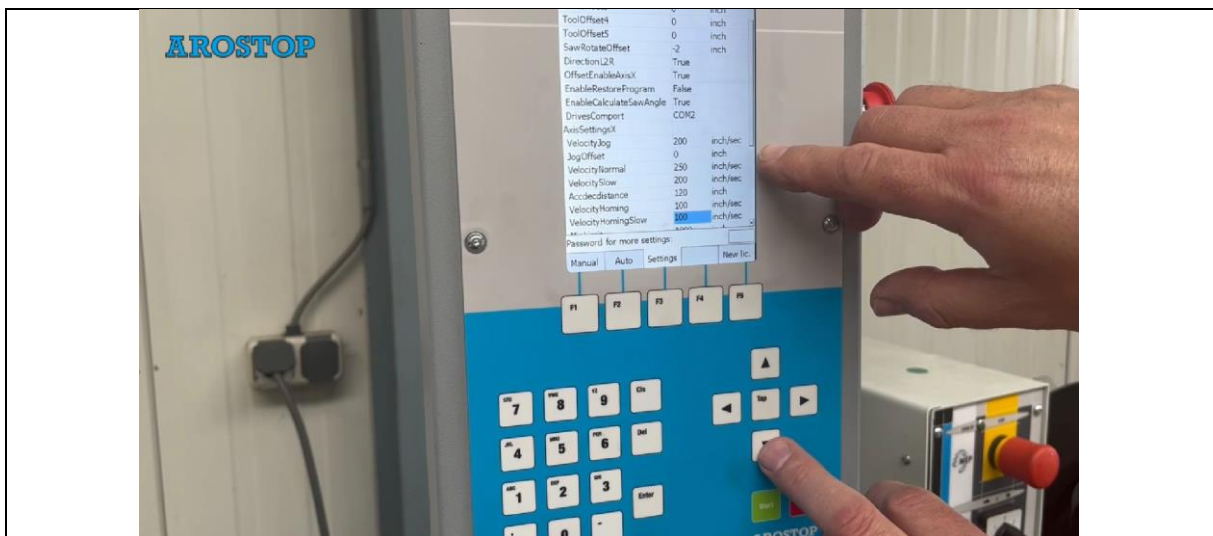


## Set up measurements in inches

Use this information in case there are earlier measurements  in mm that did not automatically change to inches after the settings change.

Follow points 1-5 to start the system and go to settings. Move down the list with the 'Down' arrow.

**NOTE**:  An Inch is 25.4 mm. Calculate the values accordingly.

Change the following parameters:

| Parmeter | Example old mm value | New Inch value |
|---|---|---|
| VelocityJog | 200 | 8 |
| VelocityNormal | 250 | 10 |
| VelocitySlow | 100 | 4 |
| VelocityHoming | 200 | 8 |
| VelocityHomingSlow | 30 | 1 |
| IncrementsPerUnit* | 2122 | 53999 |
| BackLash | 10 | 0.5 |
| **\*NOTE**: the parameter IncrementsPerUnit is the only parameter that has to be timed by 25.4. The other values have to be divided by 25.4. | | |

**NOTE**:  Always press 'Enter' after you change any parameter or setting!

After the parameters have changed, turn the system off.

Turn the system on and check if the homing works (enter Target of 1020, mode Absolute, counterstatus 0). The device should be 25.4 mm off the start.