New Automation Technology
Beckhoff Automation

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XTS Training

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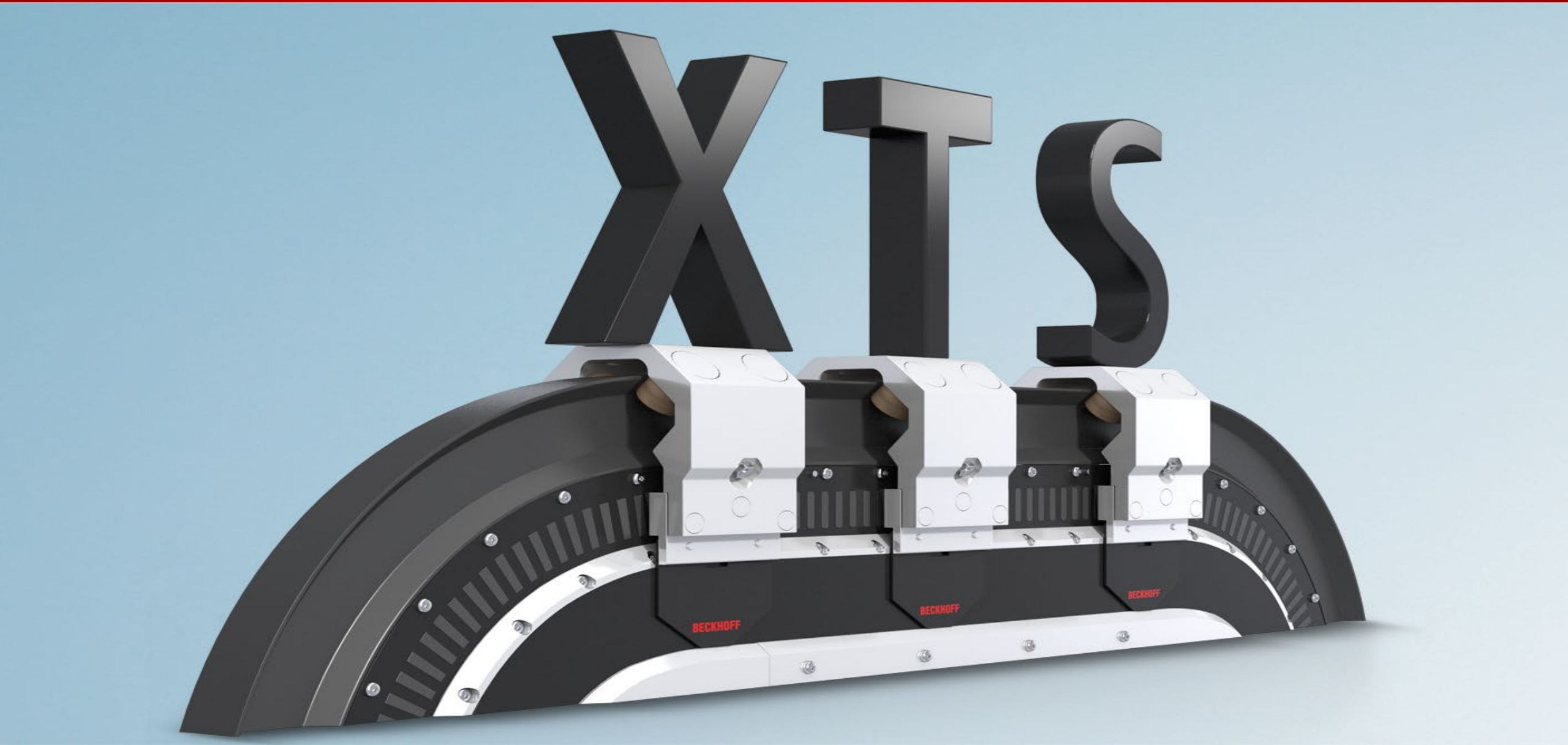

Agenda | XTS- Assembly

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1. **XTS-StarterKit**
2. Preparation and Assembly
3. First Test
4. Rail mounting
5. Rerailing of Mover

XTS StarterKit

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XTS StarterKit

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- **AT2000-0500**
  starter kit small, 500 mm straight length

- **AT2000-1000**
  starter kit medium, 1000 mm straight length

- **AT2000-1500**
  starter kit large, 1500 mm straight length

Agenda | XTS- Assembly

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Prepare the XTS Modules

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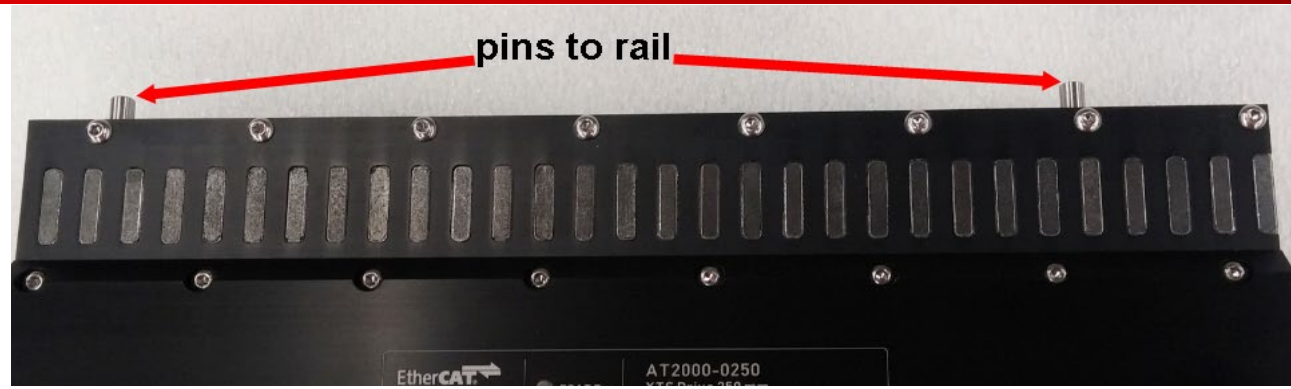
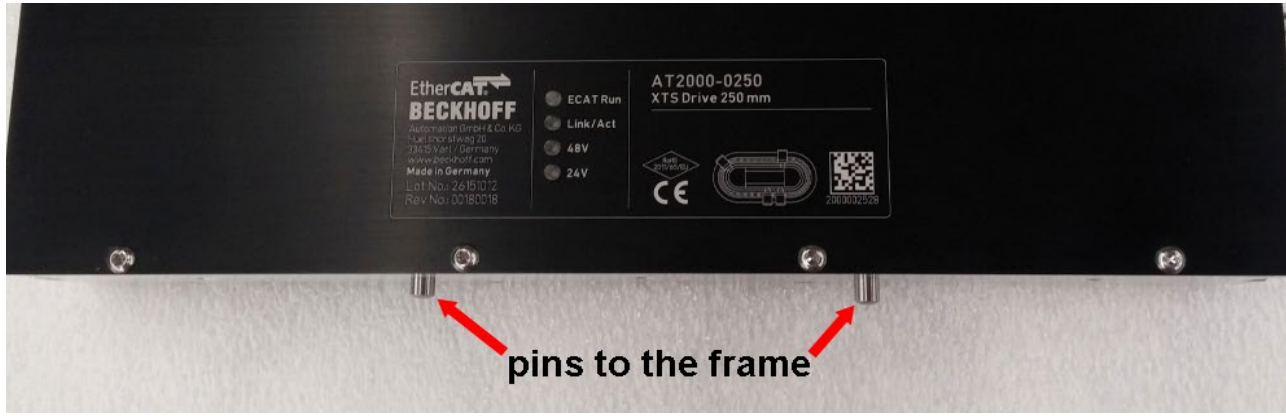
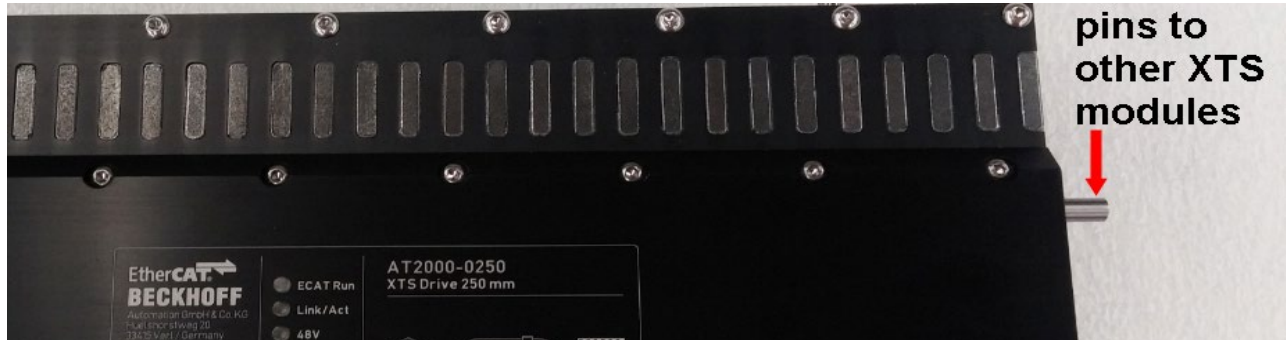
- Insert all pins on the bottom side of the frame
- Insert the pins to the rail
- Insert the pins to the neighbor modules

  - ➢ **4x** **D5x10 A2 DIN 7**
  - ➢ **1x** **D5x30 A2 DIN 7**







Prepare the XTS Modules

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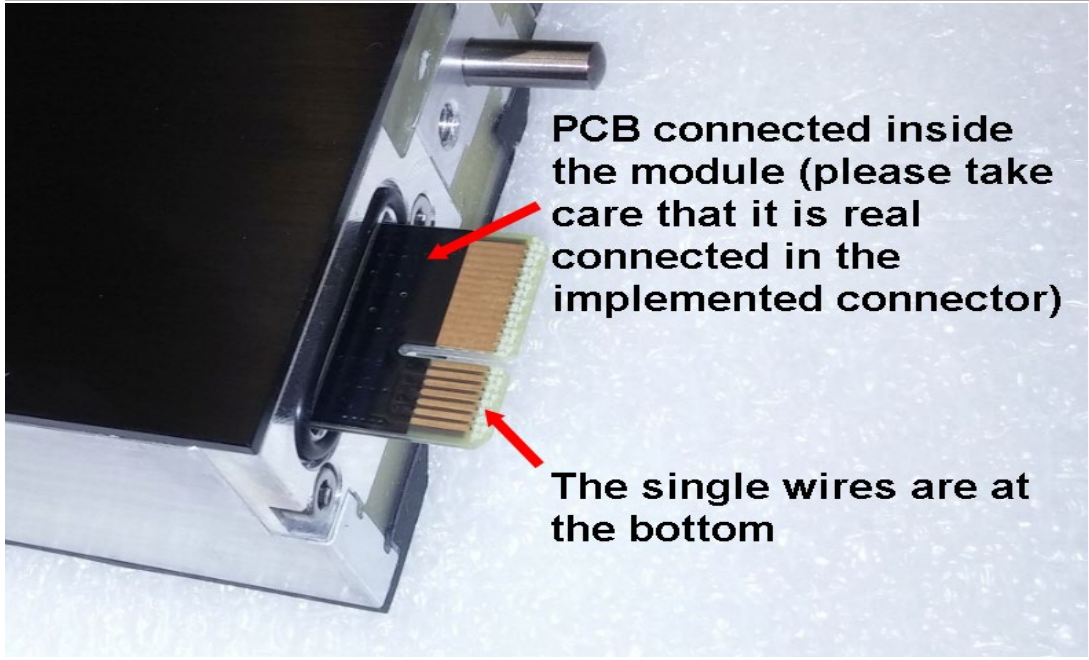
- Insert O-ring (as sealing) on the side of the module
- Insert the connection PCB



Prepare the XTS Modules

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Module frame mounting

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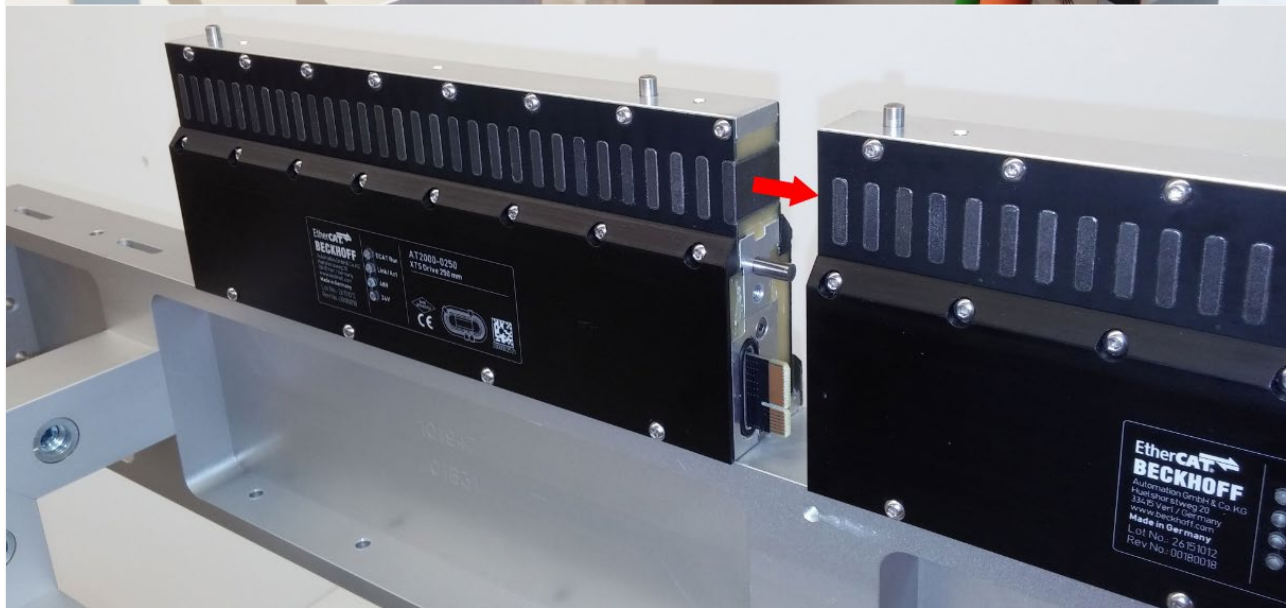
- Beginning with the straight infeed module
- Following with all other straights from both sides of the frame
- The electrical connection is done by sliding the connection PCB in the neighbouring module



Module frame mounting

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- Fix the modules with
  - **Screw M5x20 Cyl. A2 DIN 912**
  - **Washer M5 A2 DIN 9021**

! Do not tighten the screws to allow for adjustment of the modules

Prepare the XTS Modules

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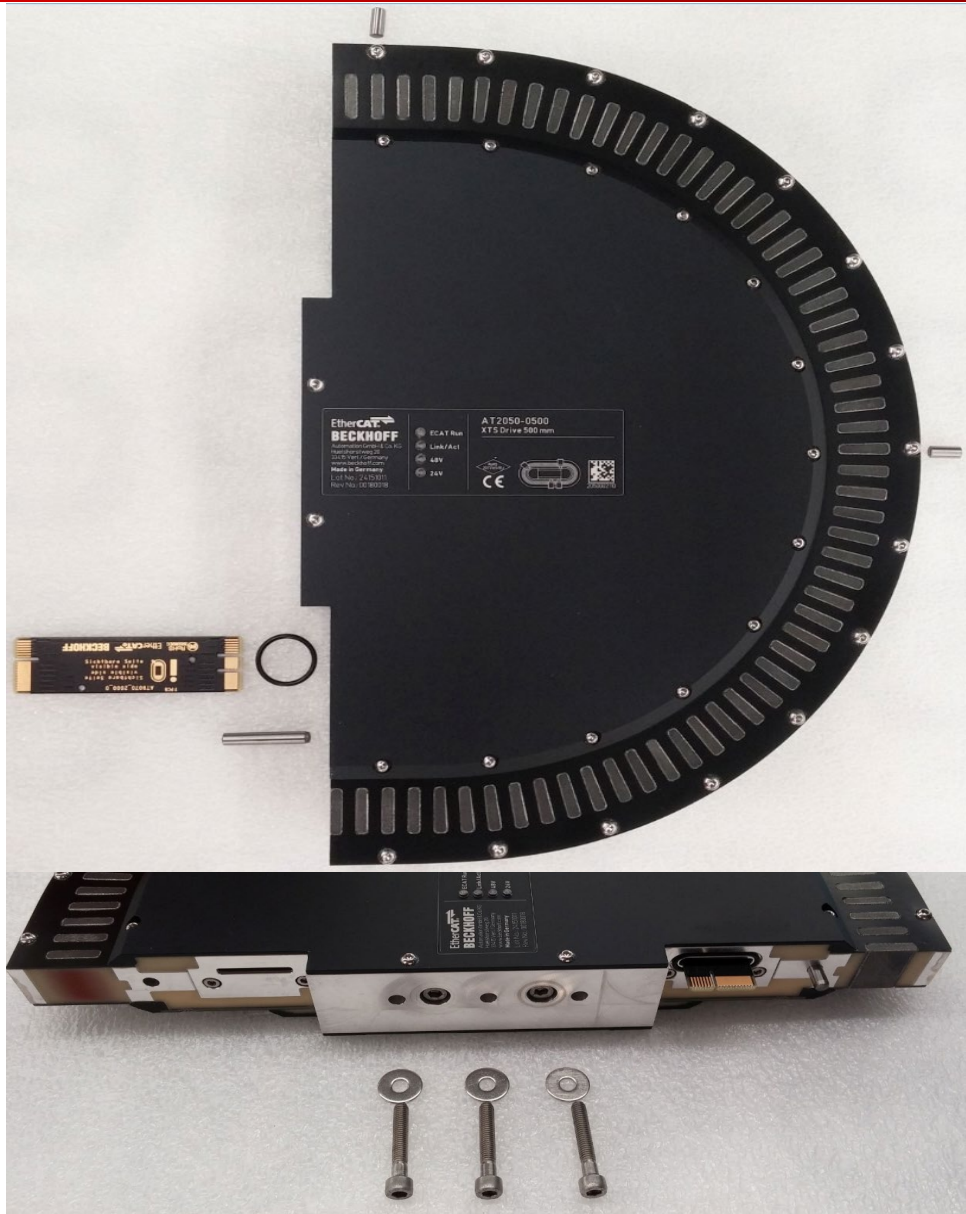
- Mount the curve modules last
- The curves will meet the straights as you tighten the screws to the frame

  - **1 x Pin D5x30 A2 DIN 7**
  - **3 (2)x Pin D5x10 A2 DIN 7**
  - **(1) x Pin D5x8 A2 DIN 7 → lower HW28**

  - **1 x O-ring (as sealing)**
  - **1 x Connection PCB**
  - **Screw M5x30 Cyl. A2 DIN 912 &**
  - **Washer M5 A2 DIN 9021**



Module frame mounting

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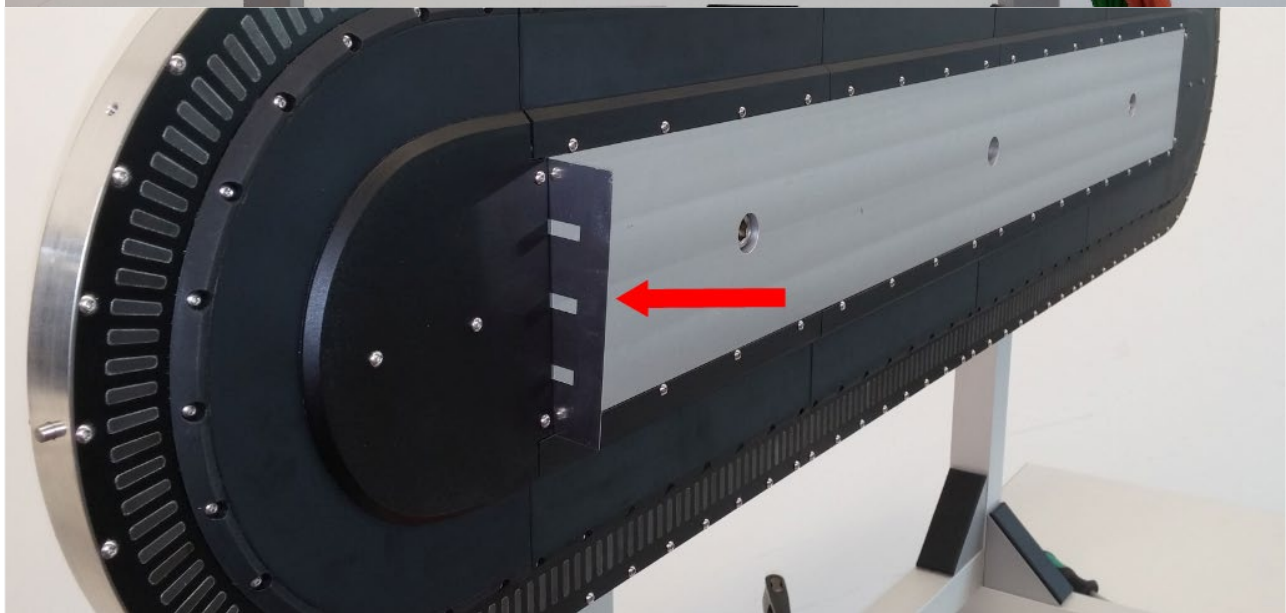
- insert 1mm aluminum sheet at one side
  - Only before HW..

HW03 at 0.5m
HW02 at 1.0m
HW02 at 1.5m



Module frame mounting

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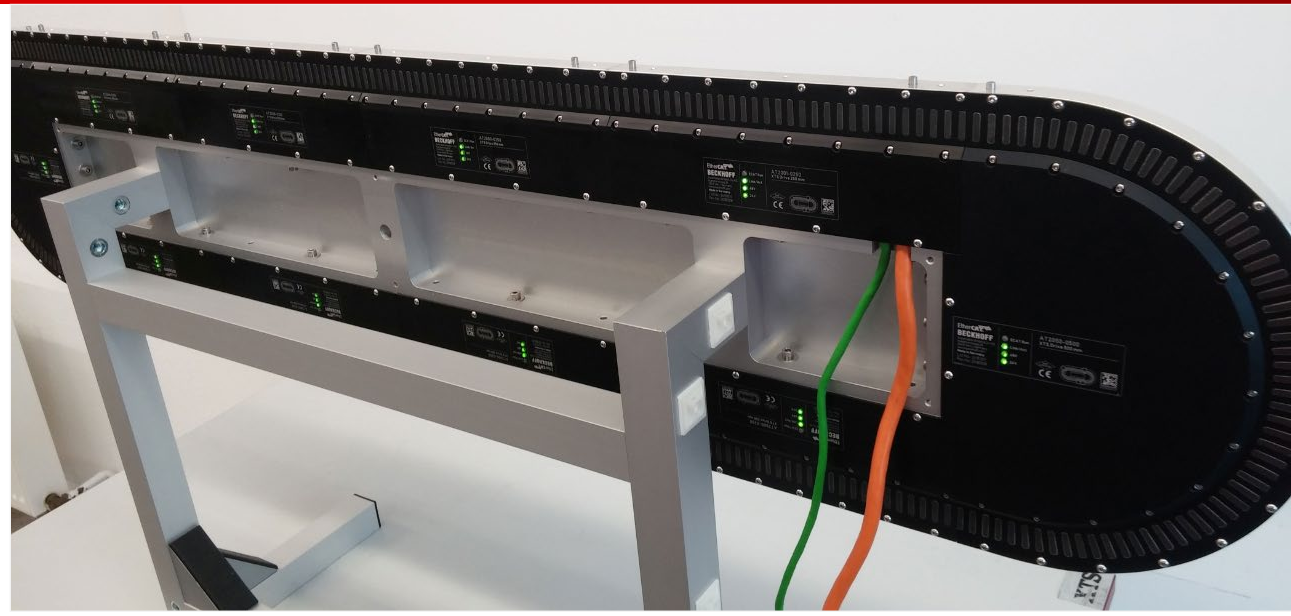
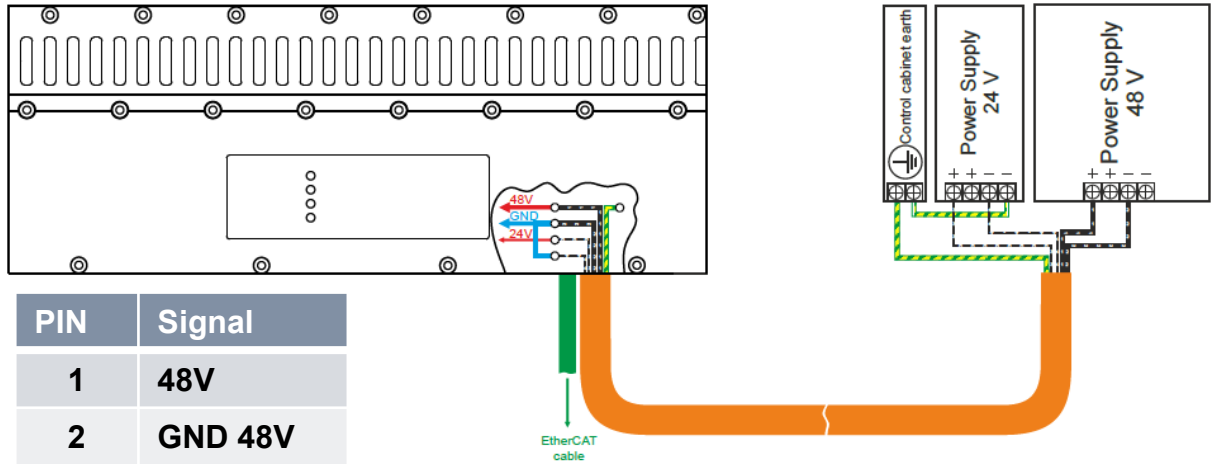
- Pin out of the infeed module as labelled on the name plate and cable

- Connect EtherCAT to the IPC or CU2508





PIN	Signal
1	48V
2	GND 48V
3	24V
4	GND 24V

Agenda | XTS- Assembly

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HardWare Scan | Opening a TC3 solution

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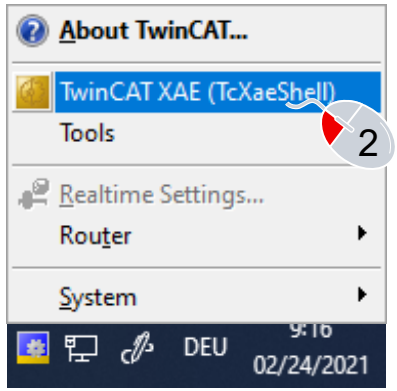
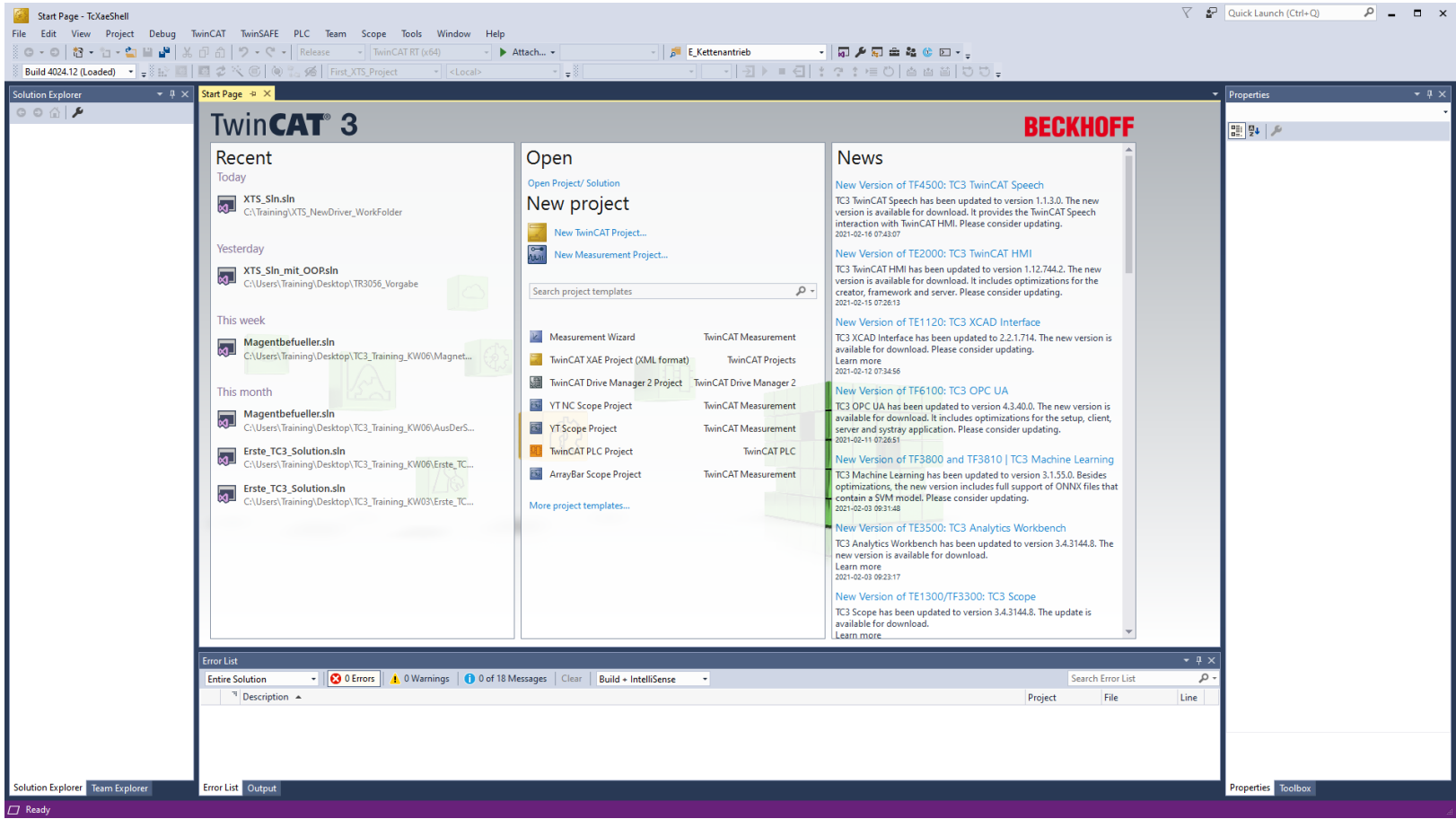
- TwinCAT 3 Engineering (XAE) is started via the TwinCAT icon.



TwinCAT 3 icon



HardWare Scan | Creating a new project

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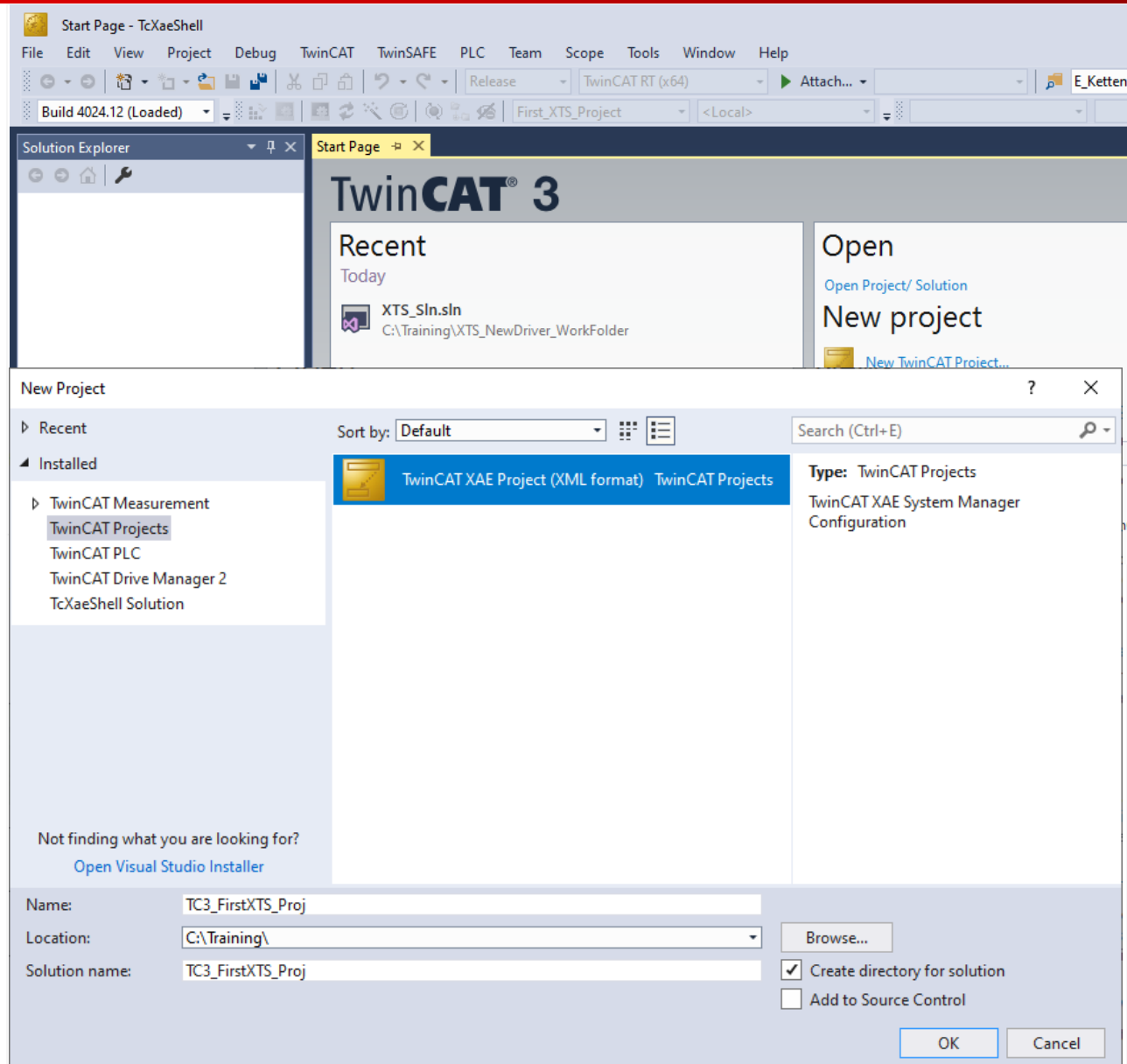
- Create a new project via the start page or the New Project icon.
- Select a project name and storage location and confirm with OK.



HardWare Scan | change to target system

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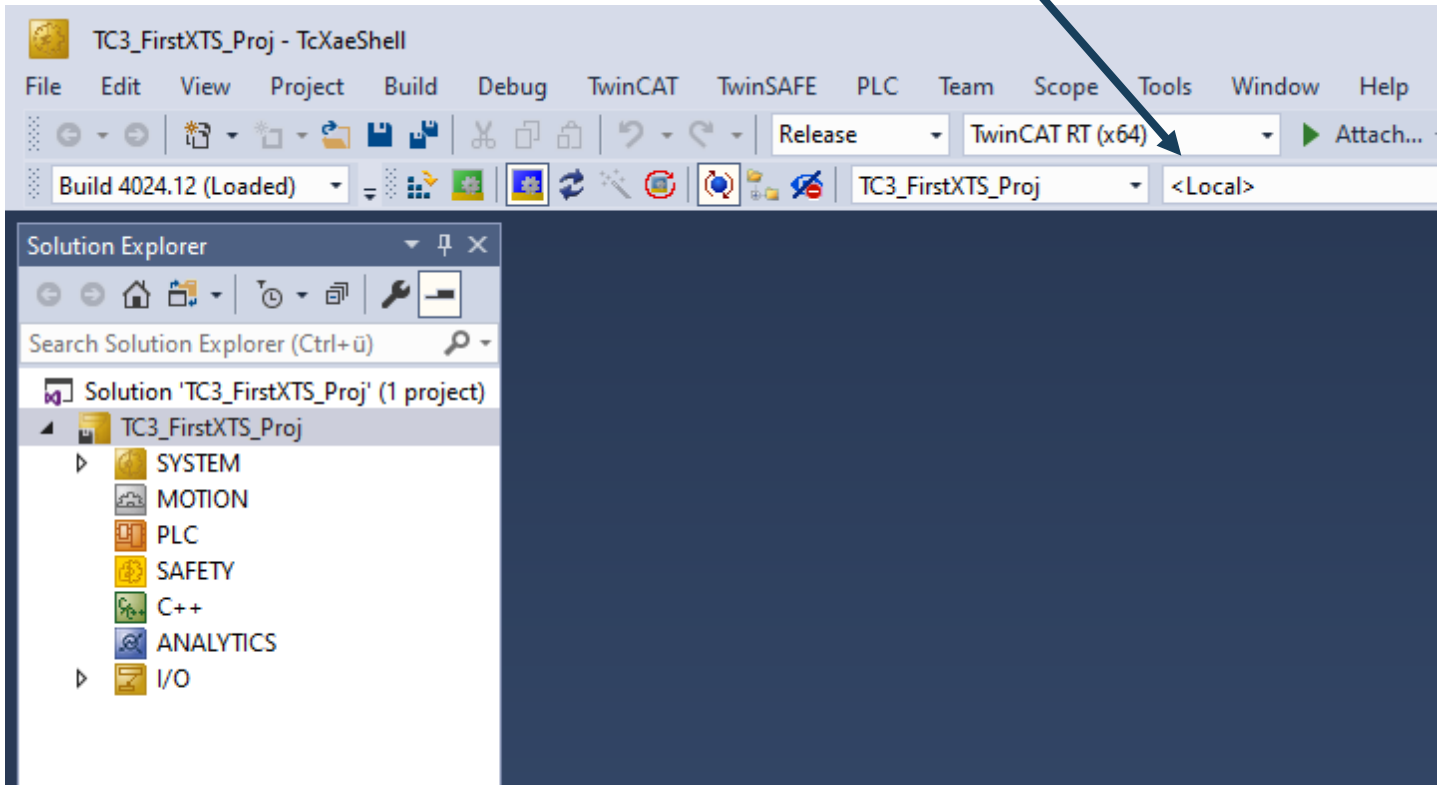
- When a new project is created,
- the local target system “<Local>” is automatically selected.

- Change to your XTS target system

The target system selection box shows the active target system.



HardWare Scan | Scan HW-devices

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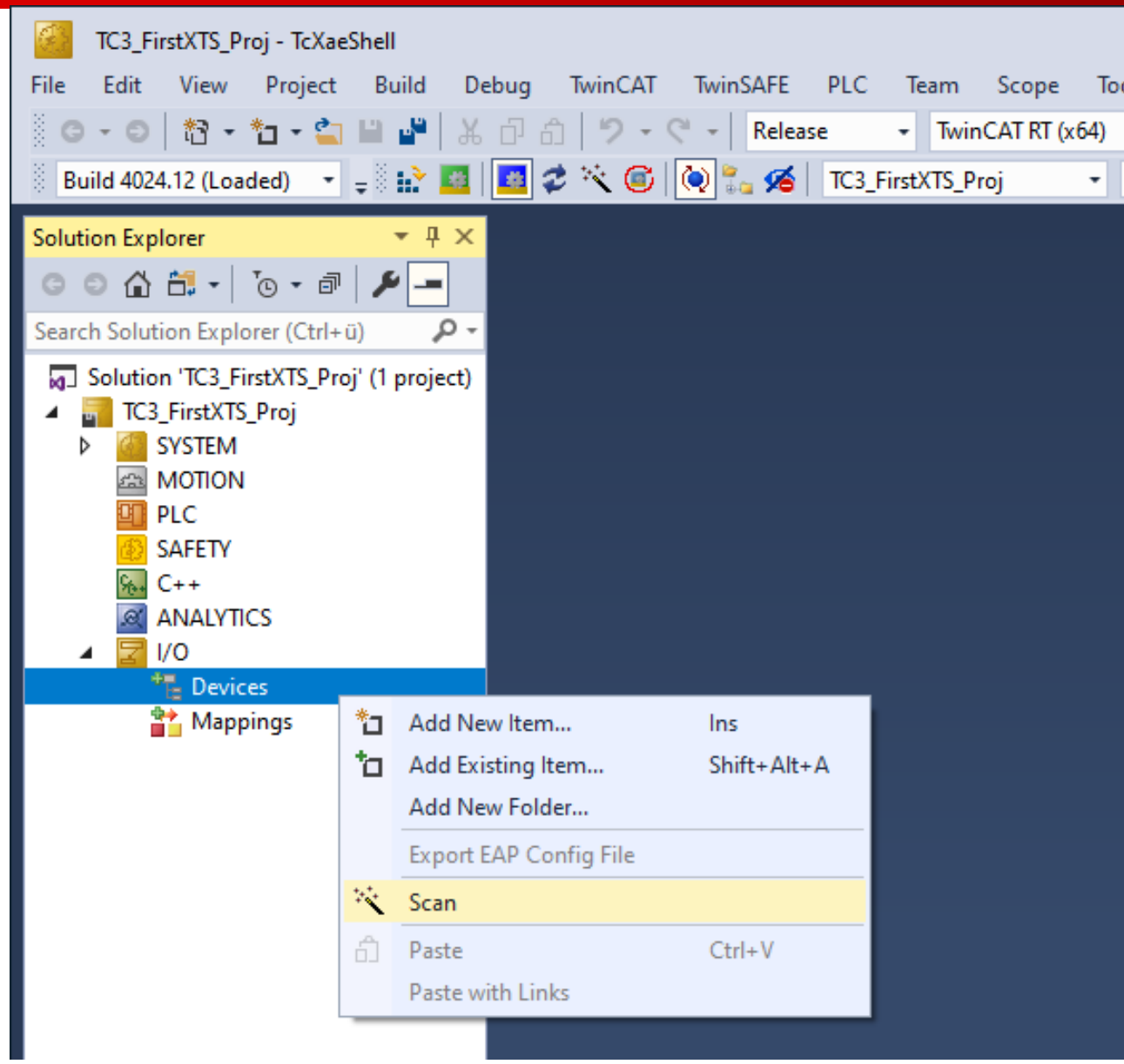
- The devices connected to the target system can be scanned.
  i.e. the fieldbus connections or the devicespecific modules such as the Novram in the IPC

- In the Solution Explorer, right-click on “Devices” under I/O and select

  Scan

A device scan is only possible from a target system that is in Config mode.



HardWare Scan | found HW-devices

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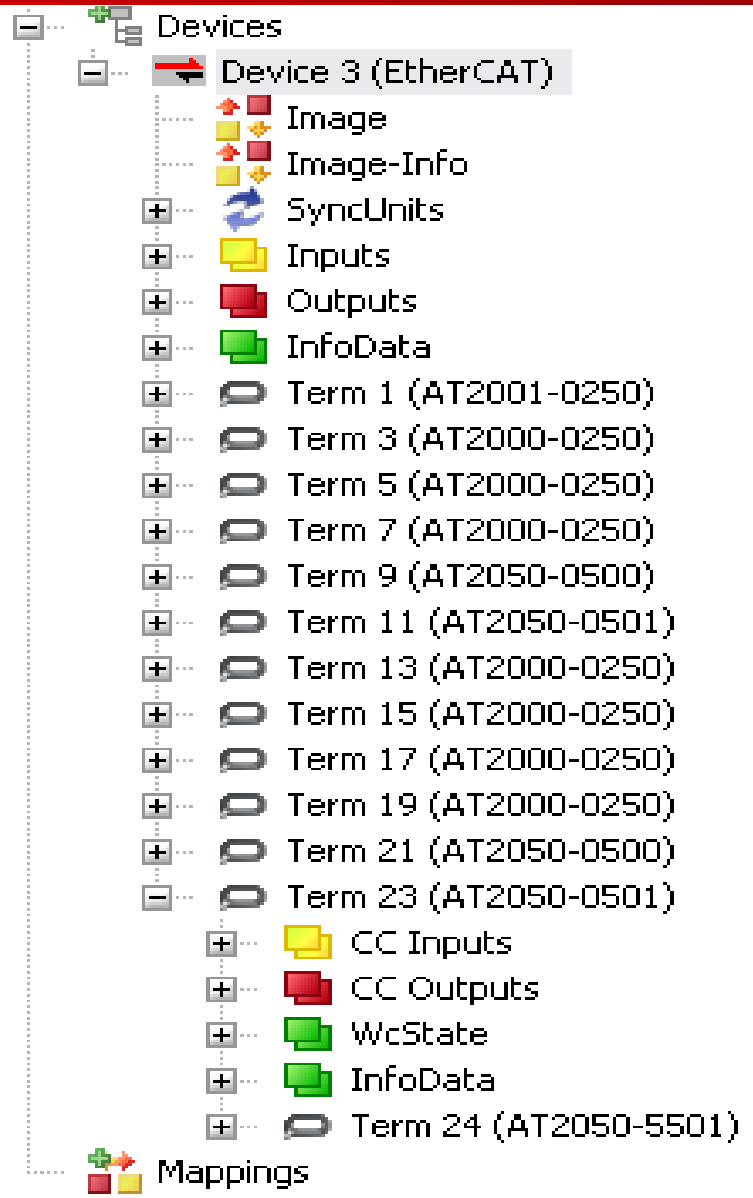
- Once the scan has been completed all the hardware should have been found

- The first module is the straight section infeed module.
  - AT2001-0250

- Each module includes
  - a motor module
    (AT200X-0250 or AT2050-0500)

  - and a sensor lines
    (AT200X-5250 or AT2050-5501



Agenda | XTS- Assembly

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1. XTS-StarterKit
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5. Rerailing of Mover

Rail module mounting

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- Screw the rail onto the system, beginning with the straight and finish with the two curves

  - **Screw M4x40 Cyl. A2 DIN 912**

! Do not tighten the screws to allow for adjustment of the rail

Rail module mounting

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- **Important:**
  If the transition between straight and curve does not fit well it may push out the pin between straight and curve rail.

- **Important:**
  If the pins between curve rail and curve motor module will not fit you may leave them out

! Do not tighten the screws to allow for adjustment of the rail

Rail module mounting

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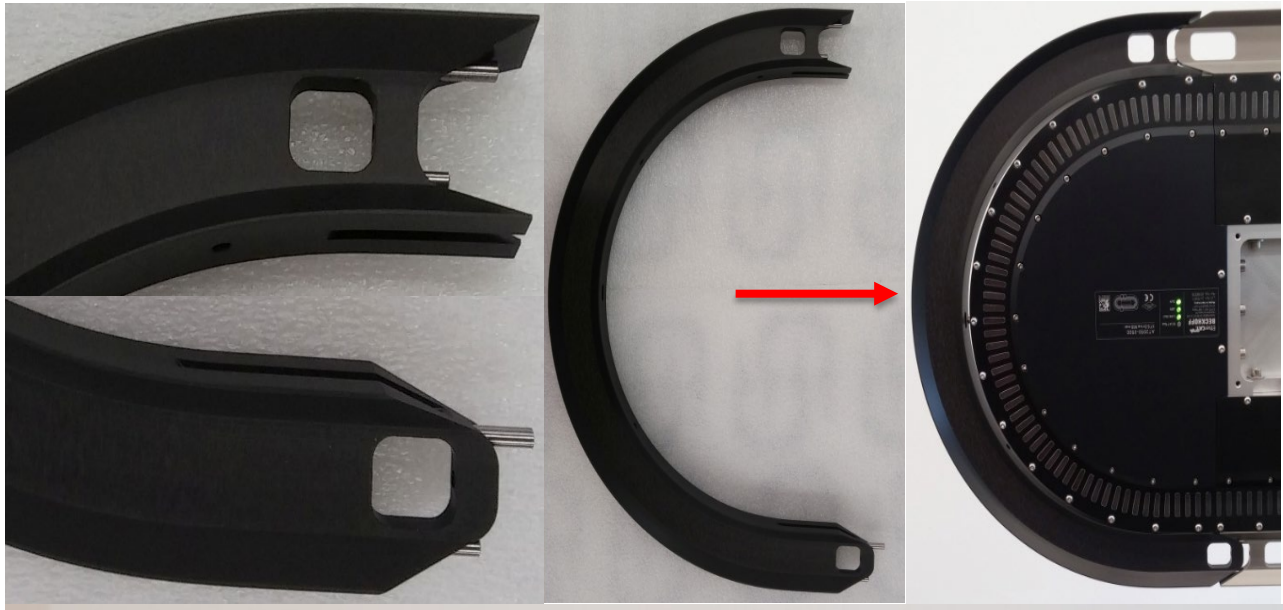
- Construction after mounting the straight rails

  - **Pin D4x16 A2 DIN 7**



Rail module mounting

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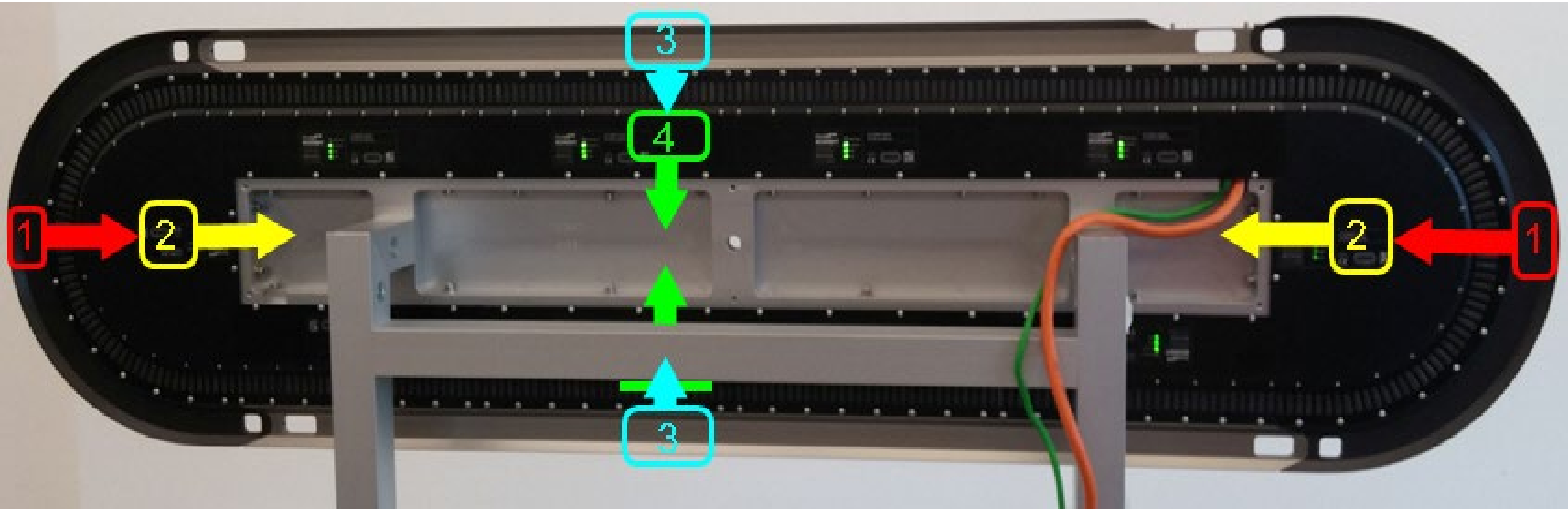
Now tighten the screws to the specified torque in this sequence:

▼ **1st -** two curved rails with	**2x 4**	**Screw M4x40**	**4Nm**
▼ **2nd -** two curved motor modules with	**2x 3**	**Screw M5x30**	**6Nm**
▼ **3rd -** the straight rails with	**22x**	**Screw M4x40**	**4Nm**
▼ **4th -** the straight modules with	**24x**	**Screw M5x20**	**6Nm**



Agenda | XTS- Assembly

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5. **Rerailing of Mover**

Mover and Rail

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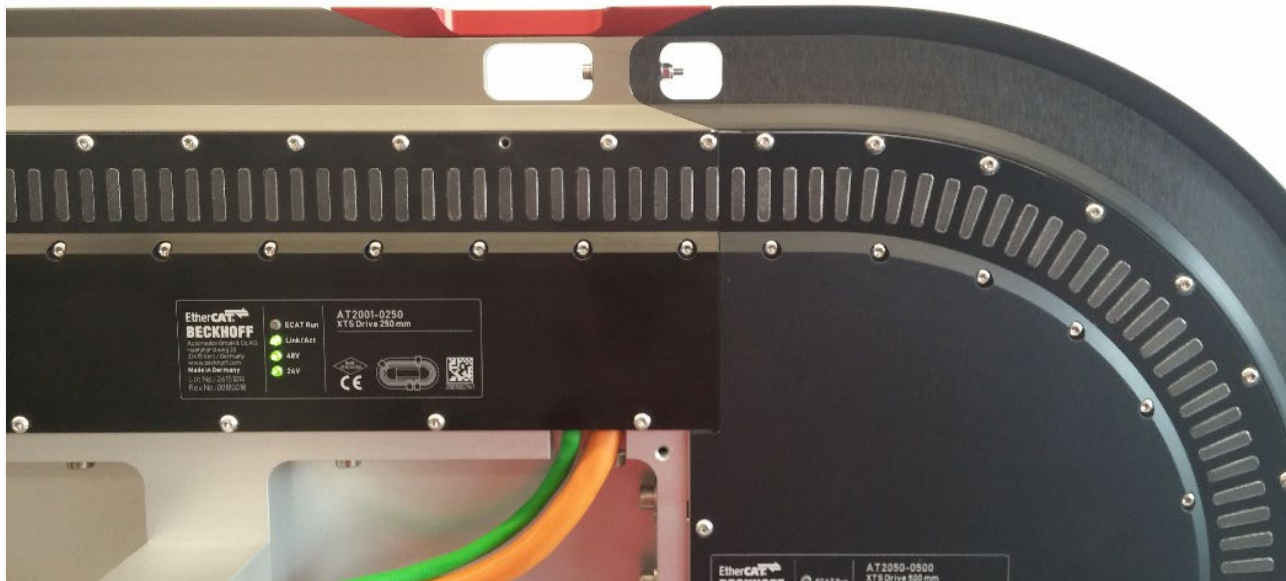
- Construction after mounting the curved rails

- Close the red auxiliary lock cover

  - **Pin** **D4x12 A2 DIN 7**
  - **Screw** **M4x10 Cyl. A2 DIN 91**

- **Important:**
  Don’t forget the pins for the gate

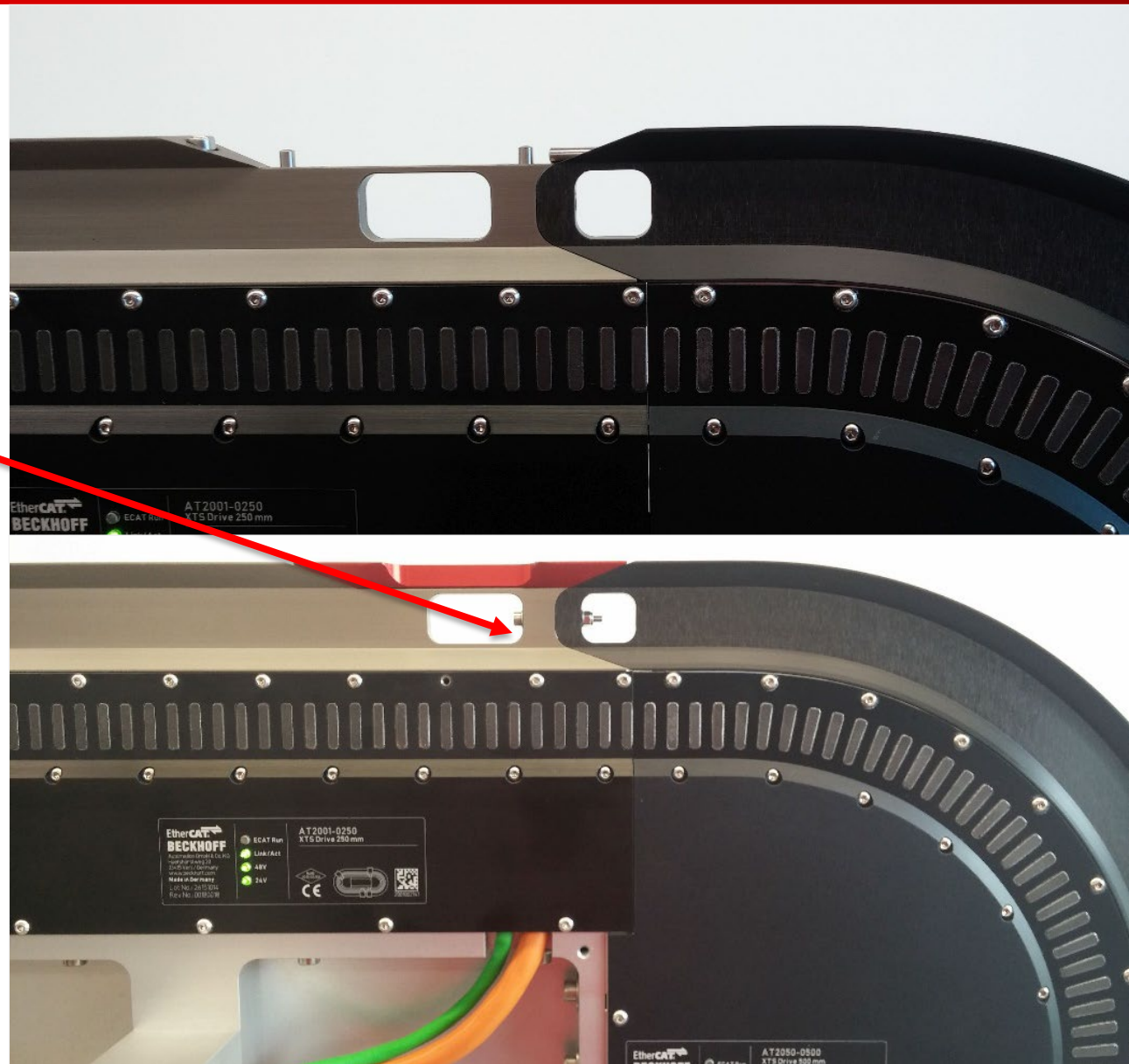


- Construction after mounting the curved rails

- Connect curved and straight rail

  - **Screw M3x30 A2 DIN 912**
  - **Washer M3x30 A2 DIN 125**
  - **Nut M3 A2 DIN 985**

- **Important:**
  Don't forget the screws for connecting



Mover and Rail

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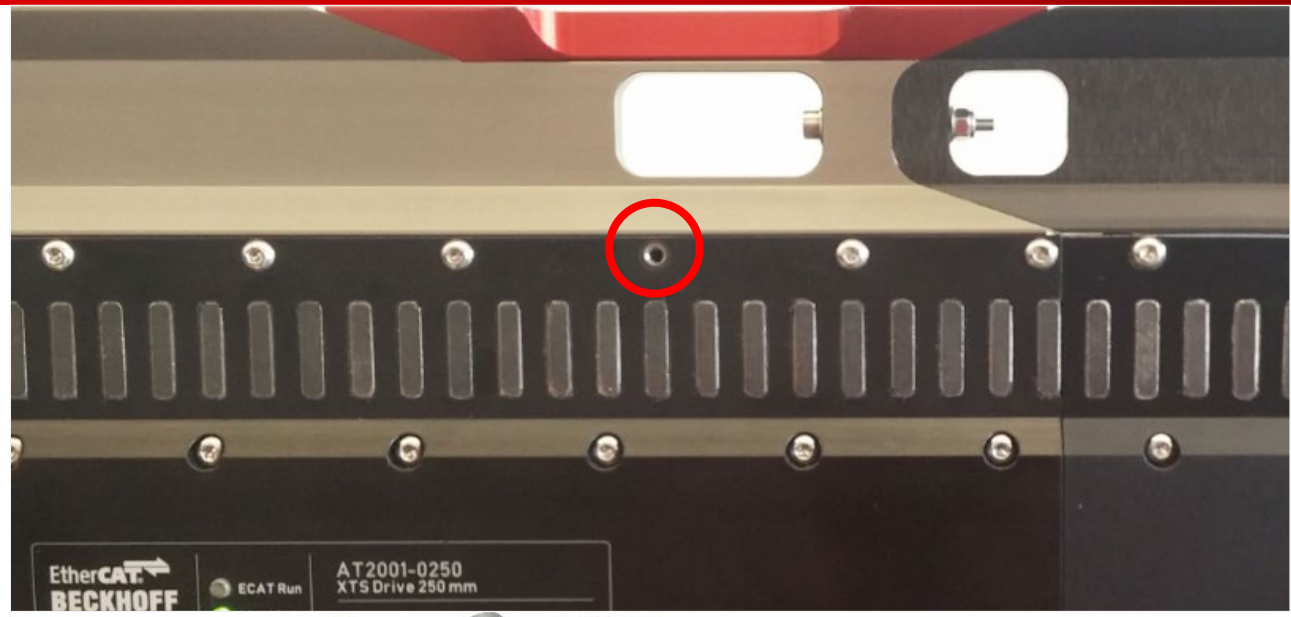
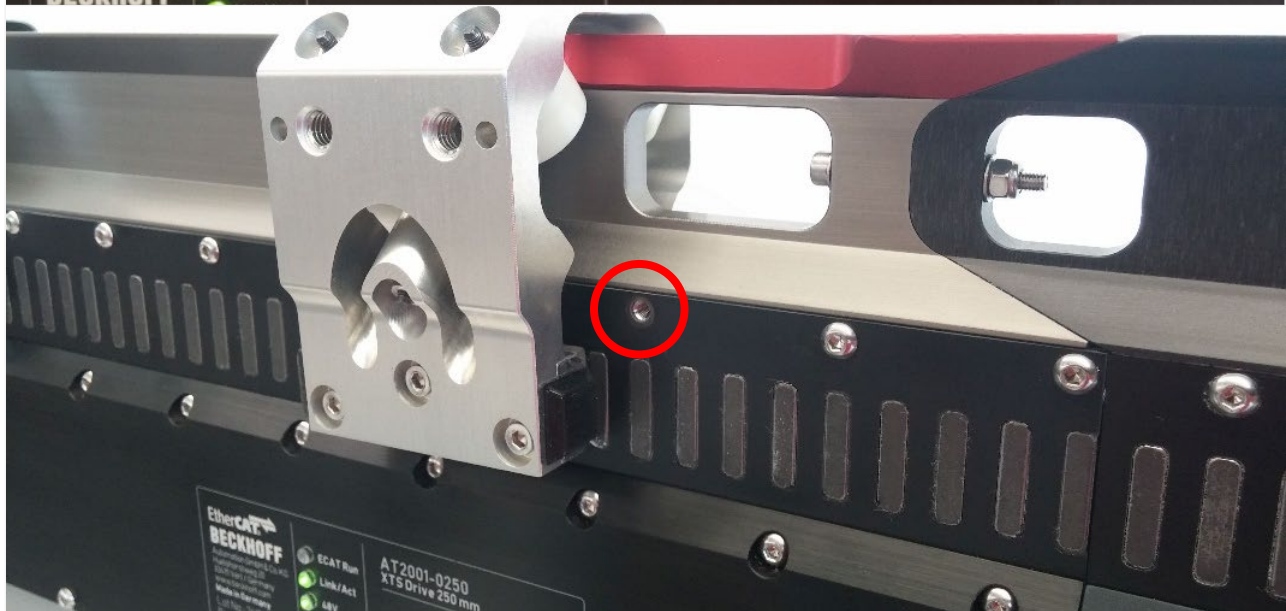
- It may be necessary to remove on motor module screw for easy insertion of the mover (lower HW22)
- Insert the Mover





➢ **Attention:**
The encoder flag should be on the same side as the XTS sensor (not the side of the name plate and LEDs)

- Remove the red auxiliary lock cover to replace the lock cover again,

  - **Pin** **D4x12 A2 DIN 7**
  - **Screw** **M4x10 Cyl. A2 DIN 91**

- **Important:**
  Don’t forget the pins for the gate

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Complex sequences – simplified solution: XTS

Training material

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