

Installation Manual

Touch Probe Sensor

MV-Series

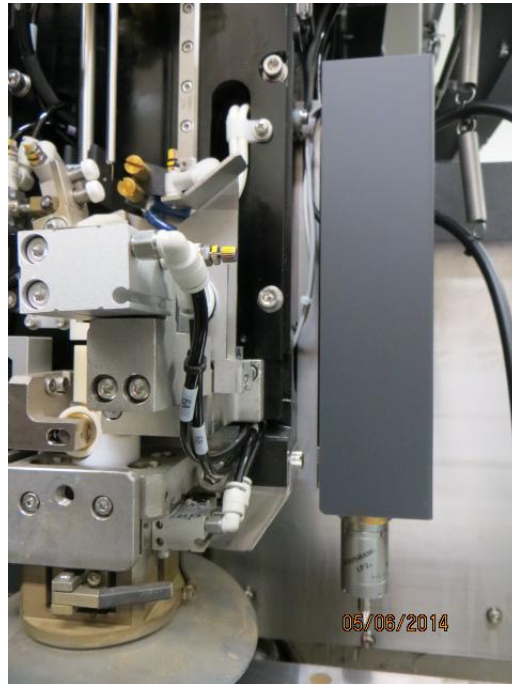
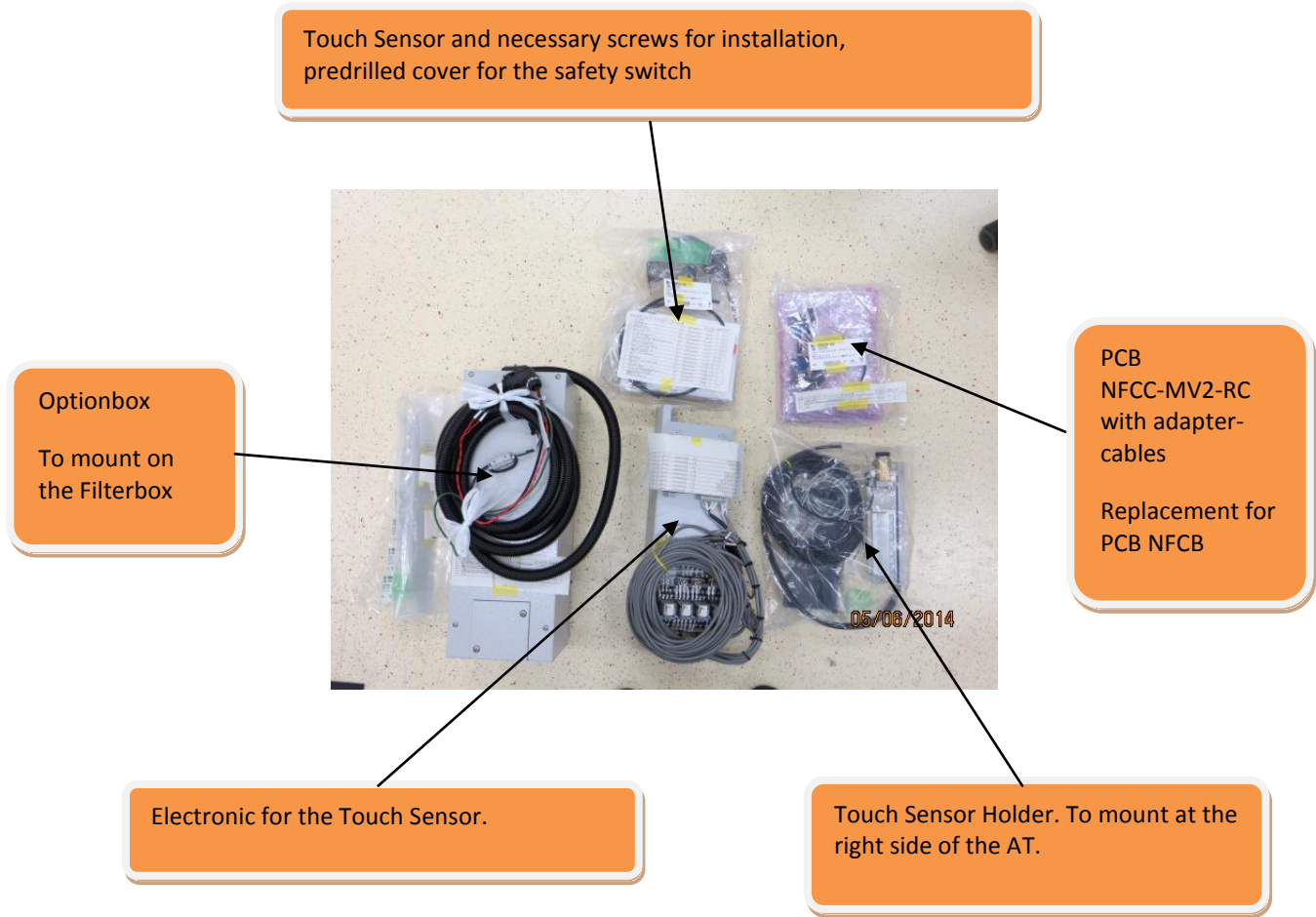


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1.1 List of Materials



1.2 List of necessary tools

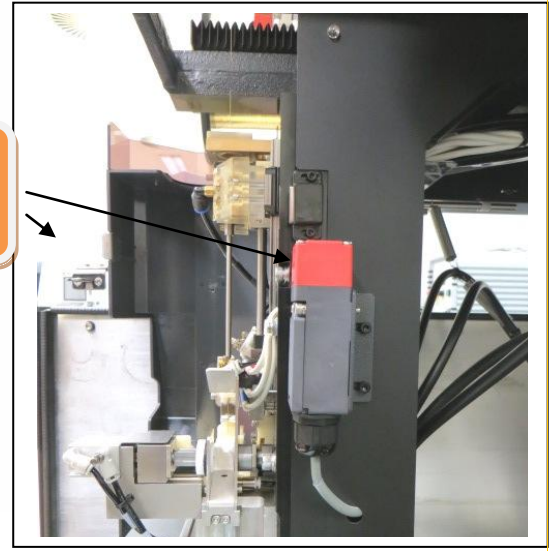
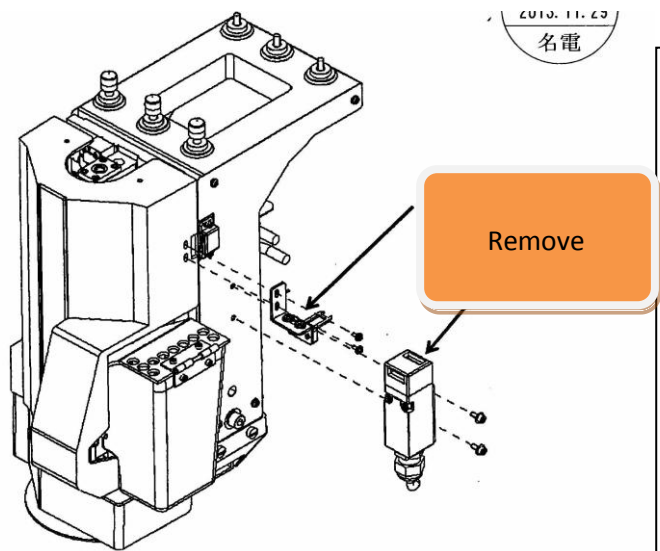
Tools	
Drilling machine	Akkuschrauber
Driller	3.3mm; 4.2mm; 5mm
Tap-drill	M4; M5; M6

2.1 Mounting of the Touch Sensor

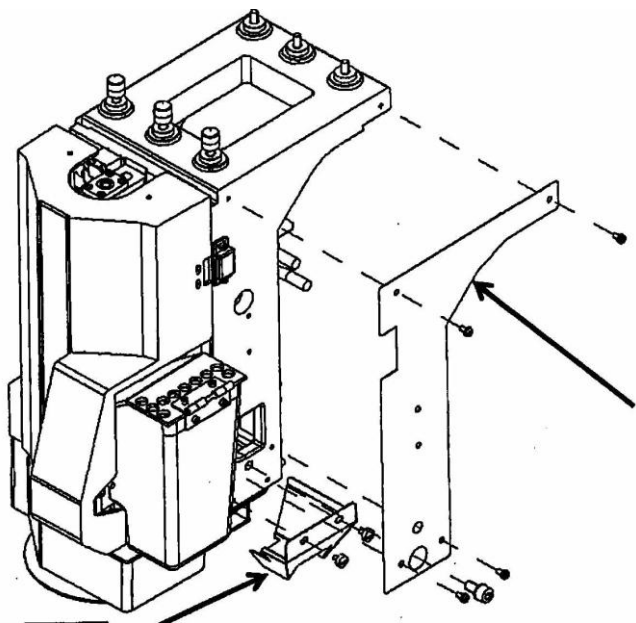


2.1.1 Unmounting the Safety Switch and the Cover

=> You must place the safety switch at a different point. Please remove the safety switch first.

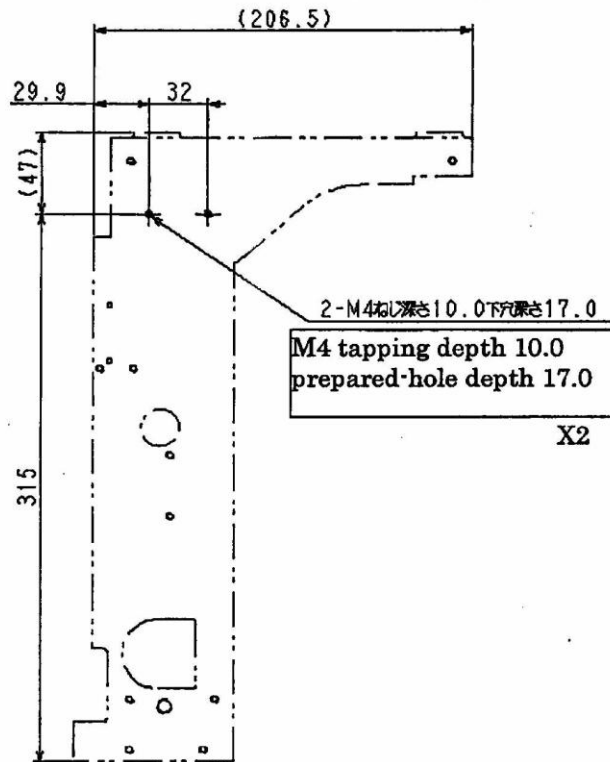


=> Remove the cover at the right side of the AT

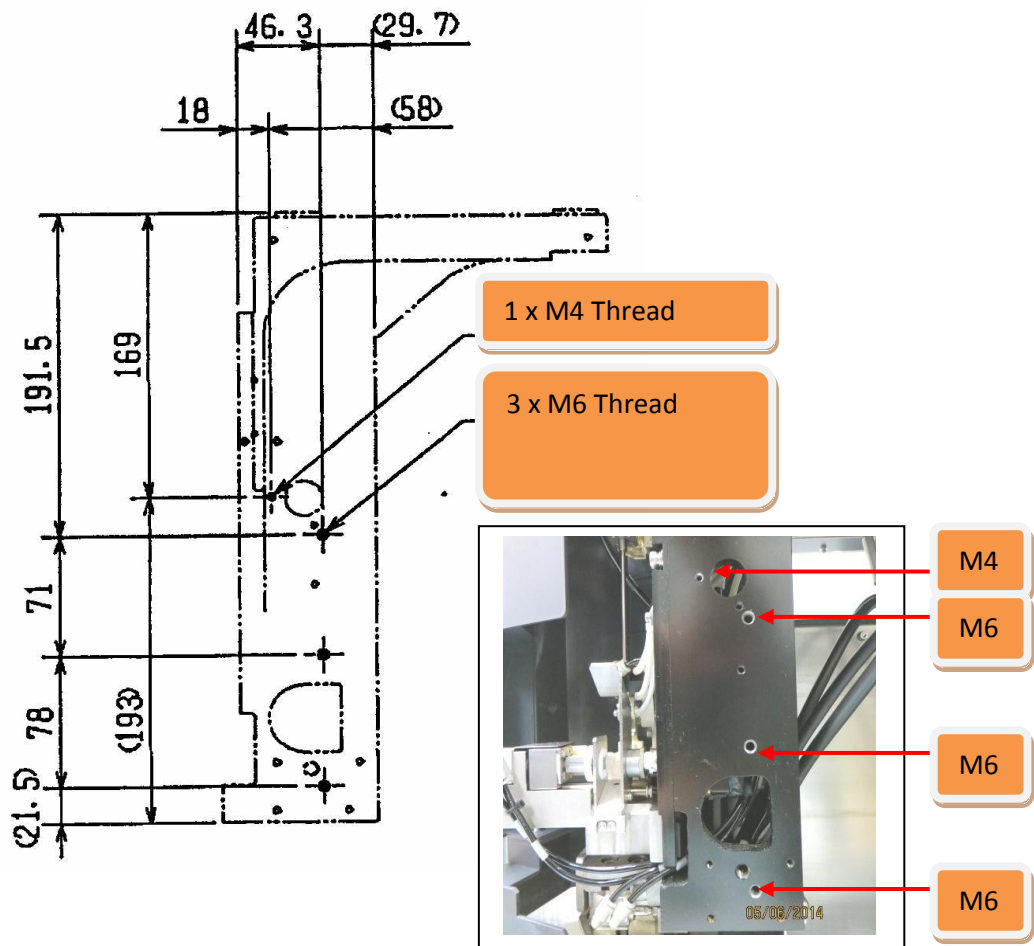


2.1.2 Drilling of the mounting holes

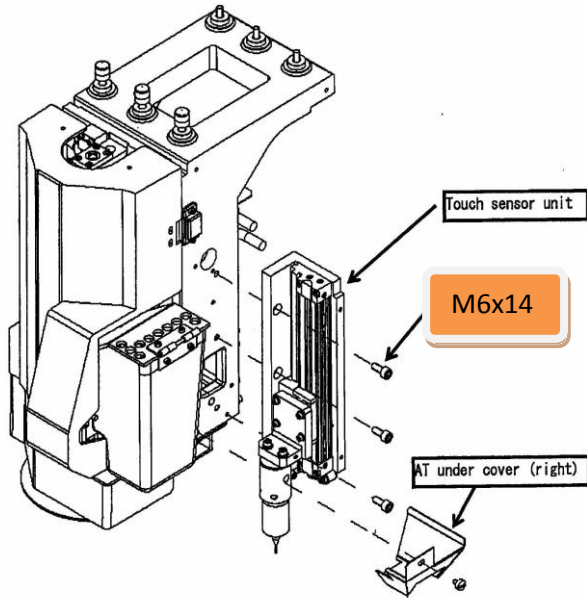
⇒ Drilling of the two M4 Threads for the Safety Switch



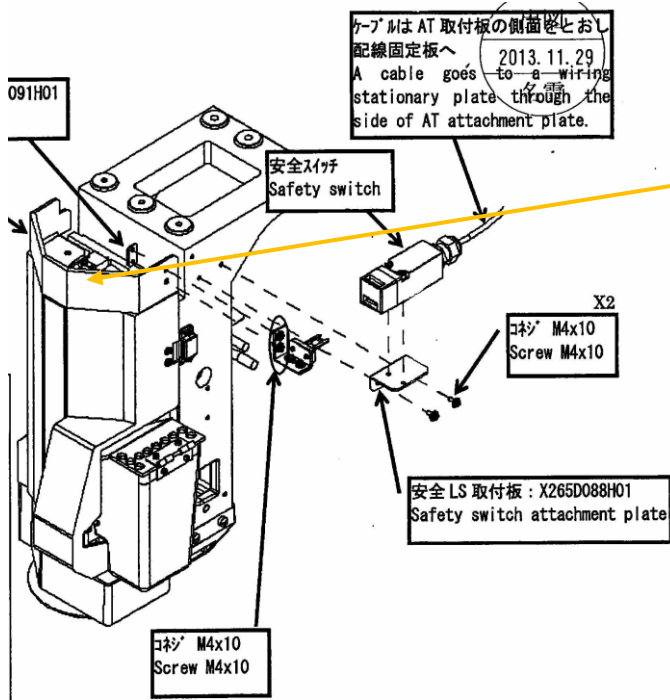
⇒ Drilling of the three M6 Threads for the Touch Sensor Holder and one M4 Thread for a cable tie



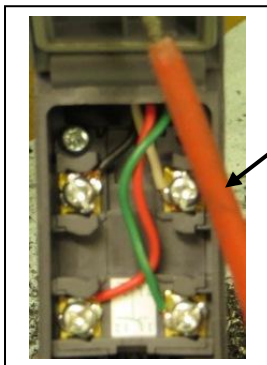
2.1.3 Screw on the Touch Sensor Holder



2.1.4 Screw on the Safety Switch

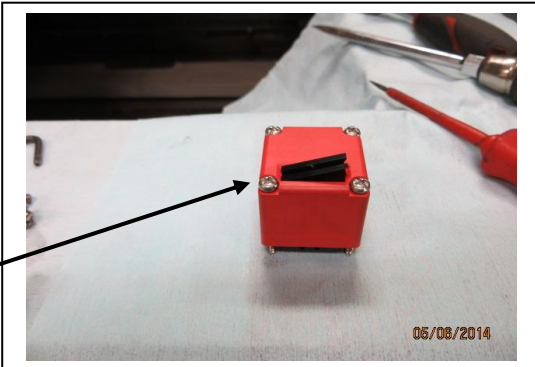


Pre drilled Cover

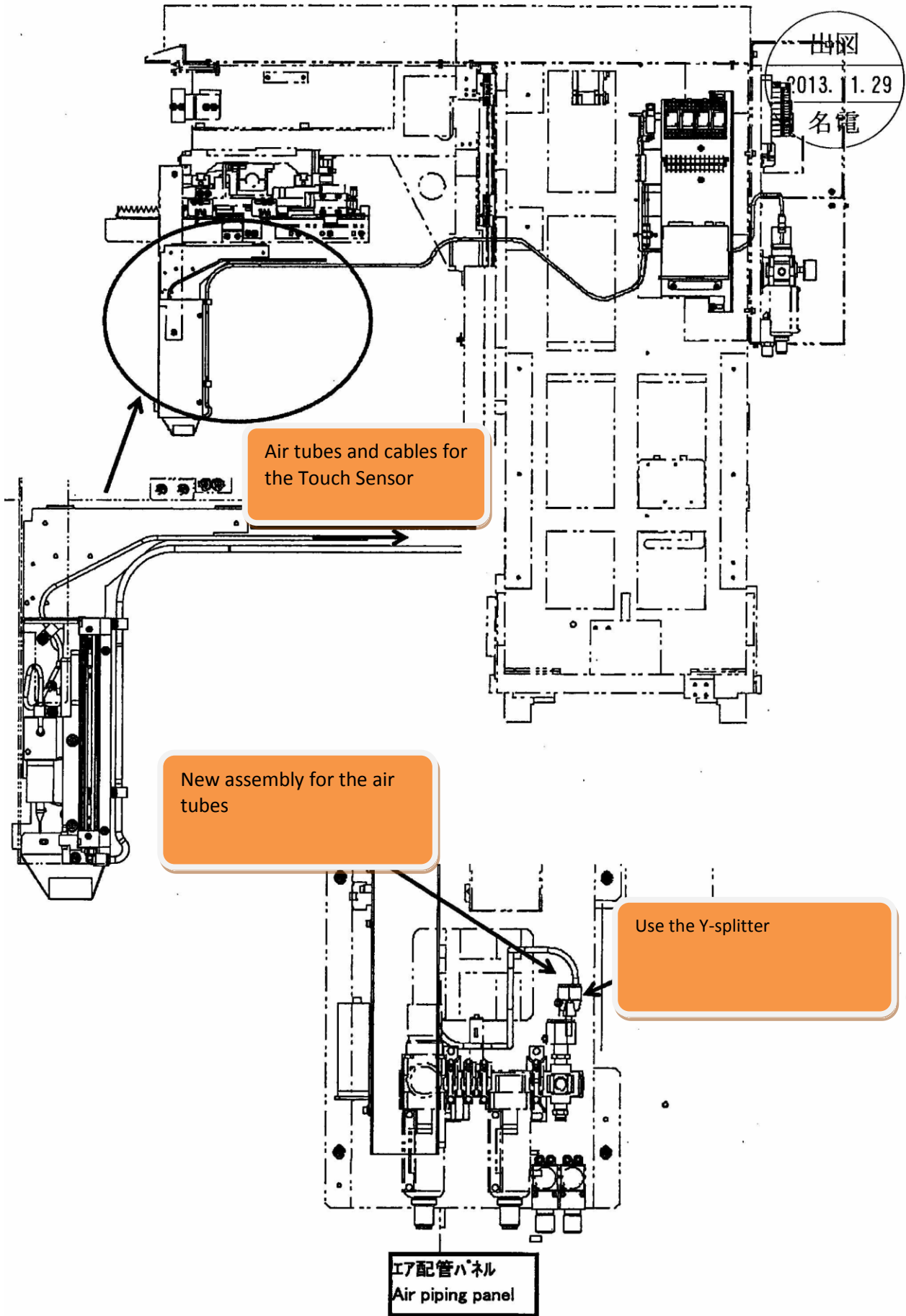


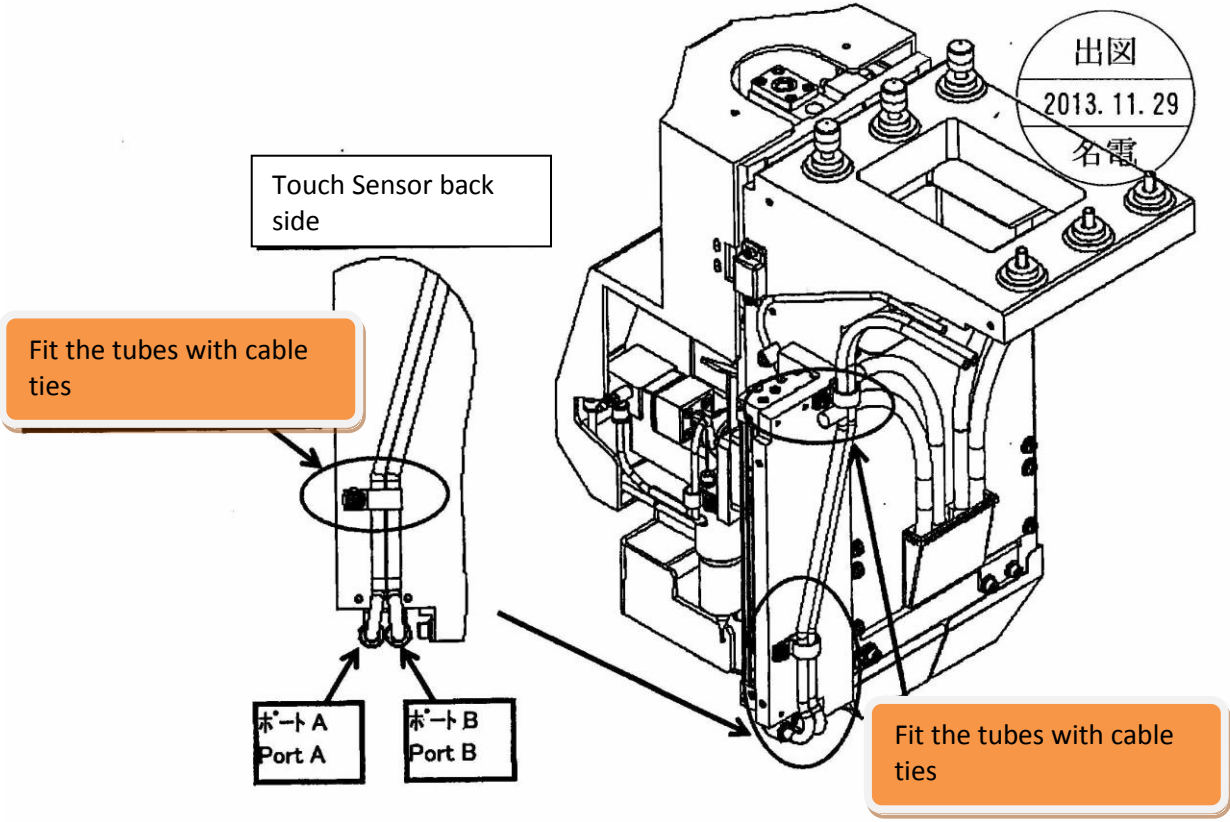
Connected cable at safety switch

Unmount the black cover

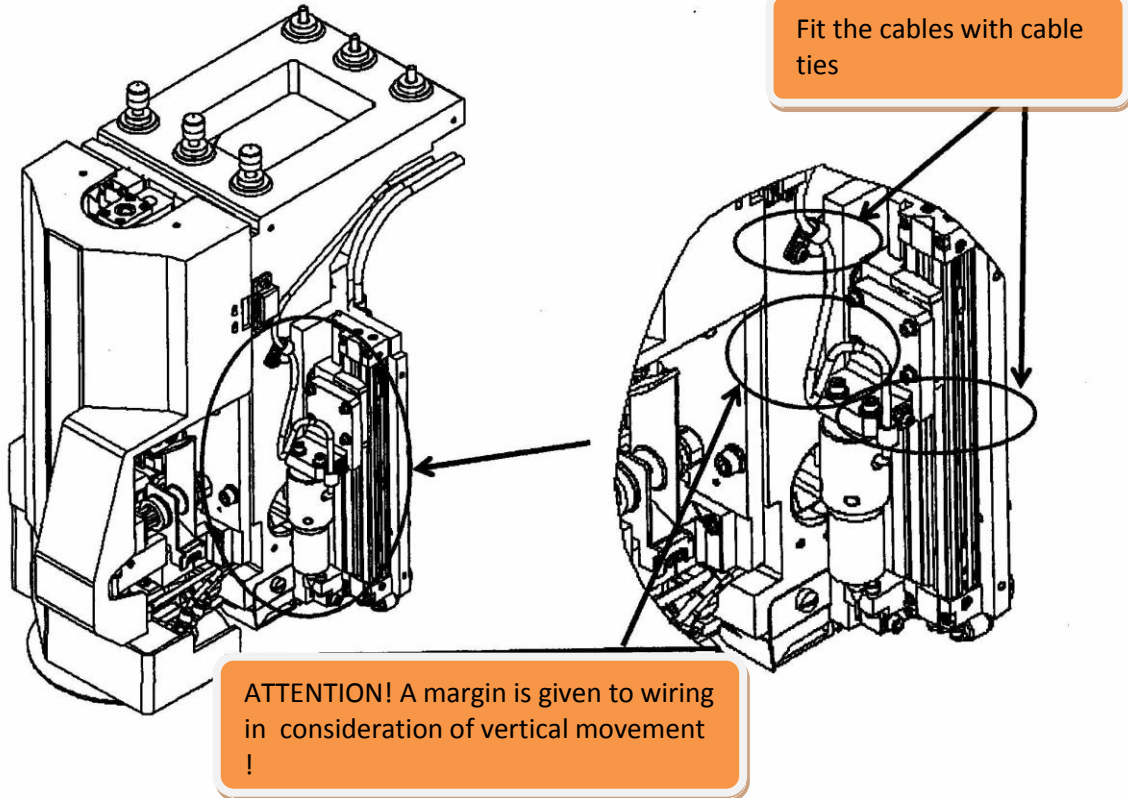


2.1.5 Fit the cables and tubes



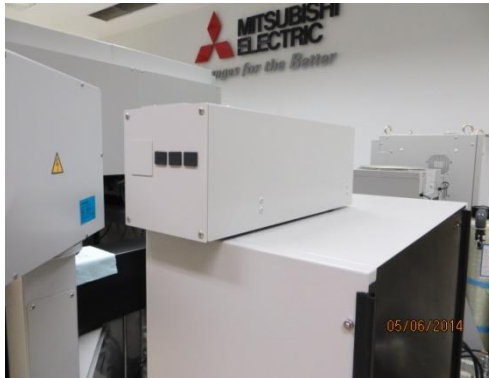


2) タッチセンサ部の配線 / Piping of Touch sensor part



2.2 Mounting of the Optionbox

Mount the Optionbox on the Filter housing. There are four mounting holes already drilled.



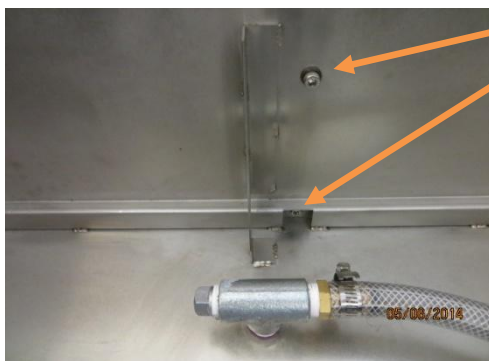
Mounted Optionbox

Use four M6-Screws to mount the Optionbox



Mounting holes left

Please don't forget the sealing washers!



Mounting holes right



Assembly of cable

Tie the cables along the water tubes

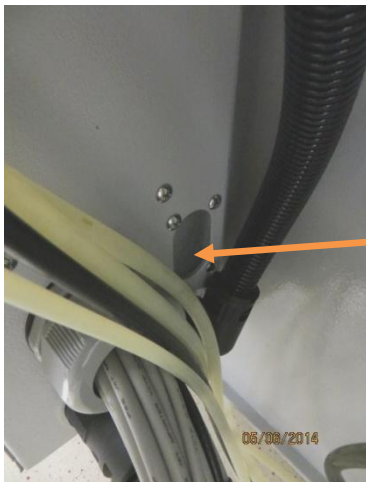
2.2.1 Connecting the Optionbox

Connect the cables of the Optionbox at the Electrical Box at the back side of the watertank



Unlock the 9 Screws of the cover

Electrical Box from the water tank



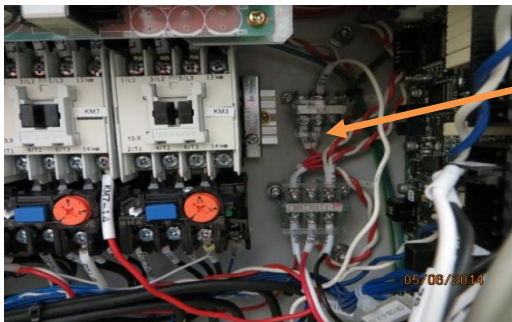
At the right side of the Electrical Box there is the cable entry for the Optionbox

Cable entry



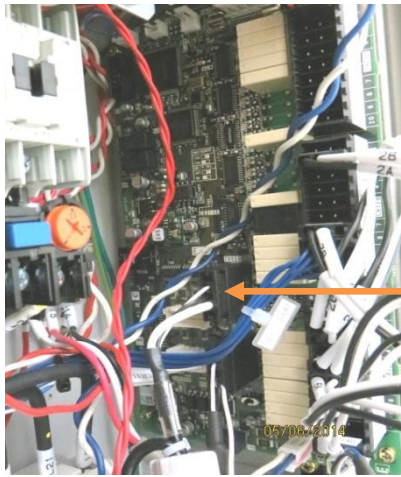
Unlock four M4 Screws to take out the plate.

Cable entry



Connect cable 214 and R15 (Power Supply)

Connect Power Supply



Datacable and Termination

Connector CR-05



Ground cable

HTKA-02-DWC

Connector CR-05

Switch must be in the right hand position

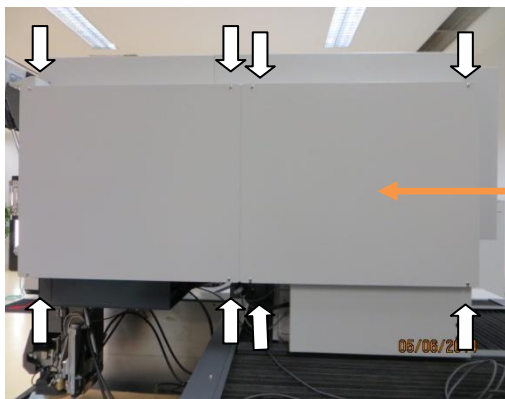
Connect the Datacable CR-05 to the upper socket.

For termination of the Databus check the small switch!

Connect the ground cable

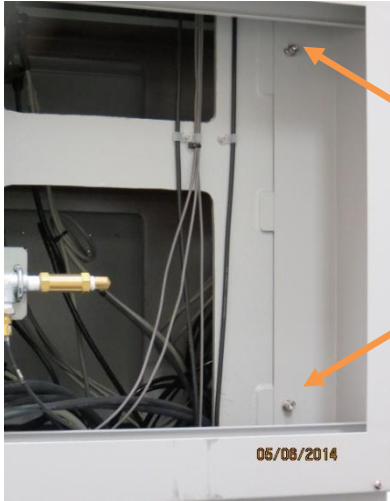
2.3 Mounting of the Touch Sensor Electronic

The electronics for the probe is summarized on a sheet metal, which is attached to the Y portal of machine.



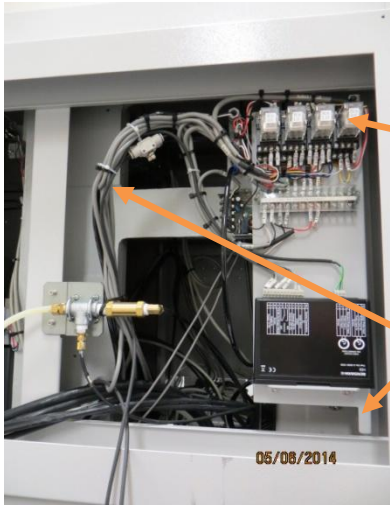
cover plate Y-Portal right rear

Unmount the covers



Mounting screws for the Electronics

Unlock the two M6 Screws to assembly the Electronics

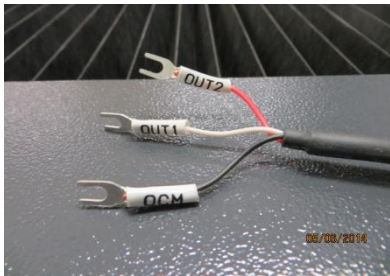


Electronics

Insert the Electronics and tighten the screws

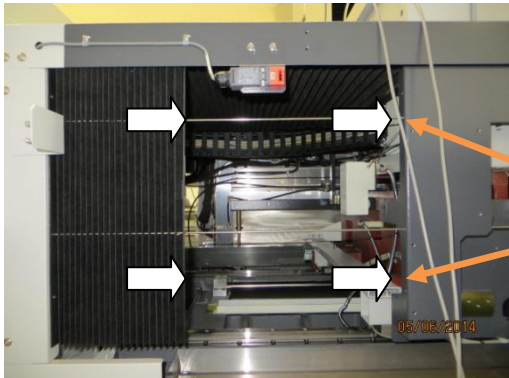
Cables from the electronics

2.3.1 Cable Electronic > Optionbox



Cable Electronic > Optionbox

Connection cable for the optionbox that is already mounted on the filter housing. These wires must be guided through the cable Guide (see following pictures) and along the water tubes on the water tank to the option box

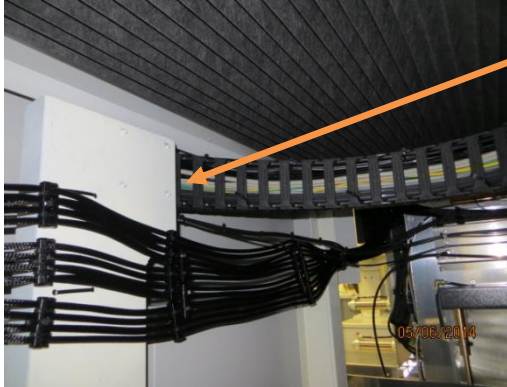


Opened bellows

Unlock two M4 screws to move the folding bellows cover

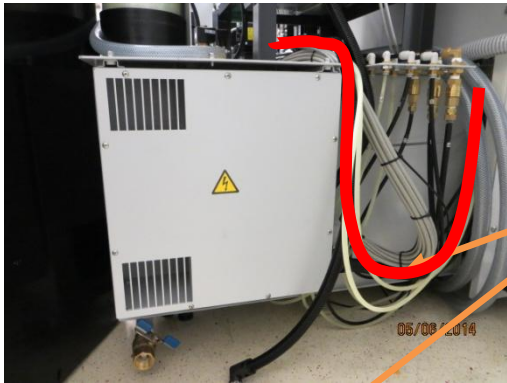


Cable Guide



Cable Guide

The cable has to be routed step by step through the cable guide until it is fed to the tank electronic box

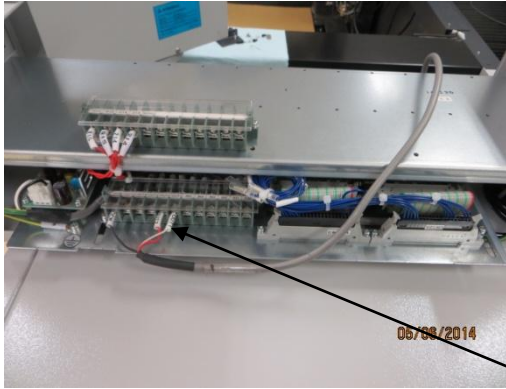


Electronic box

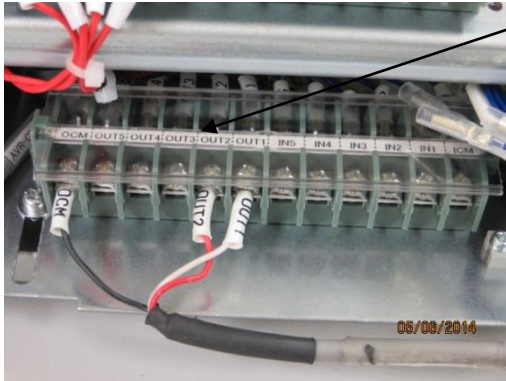
Route the cable on the tank connection box passing through the tank to the mounted option box and wire in the option box



Cable entry Optionbox



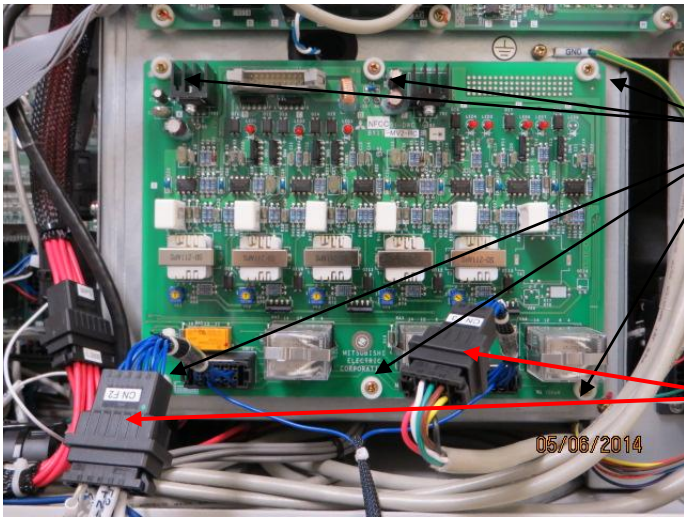
Connection of Option Box



Connection of Optionbox

Electrical connection to the option box. The sheet metal with the terminals can be pulled out for easier connection by loosening 4 screws

2.3.2 Replacement of PCB NFCC

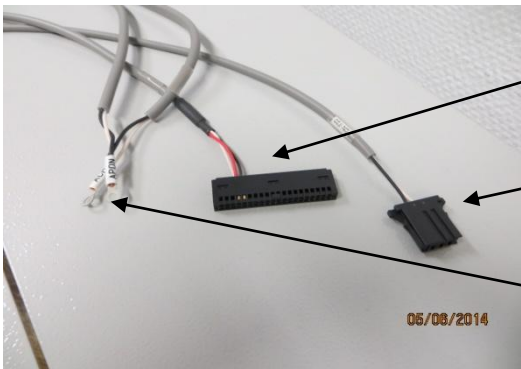


PCB NFCC

Unlock 6 screws and replace the PCB (NFCC-MV2-RC)

Use cable adapters

2.3.3 Cable Elektronik > PCB NFCC & PCB AMCA



Cables

Cable Touch Sensor Electronics >> PCB AMCA

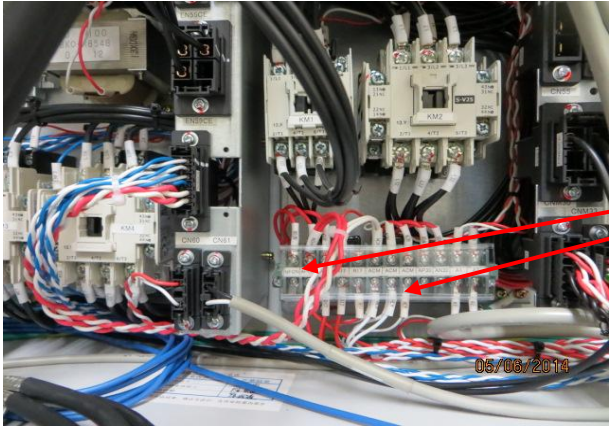
Cable Touch Sensor Electronics >> PCB NFCC

Cable Touch Sensor Electronics >> Power supply terminal in the machine control box (column) at left hand side of machine



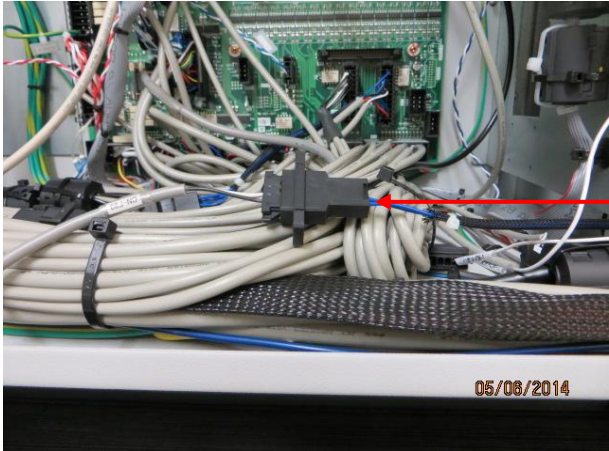
Cables

Pull the three cables of the electronics box through the machine body on the other side. Previously please dismount the cover under the machine control box!



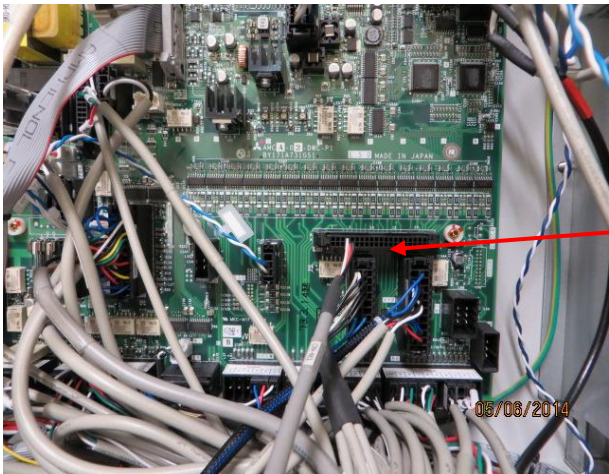
Cables

Connect Power supply cable to ACM + APON



Cables

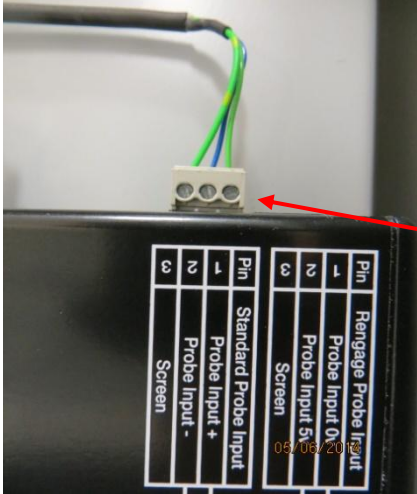
Connect the small three pin plug with the new adapter to the PCB NFCC



Cables

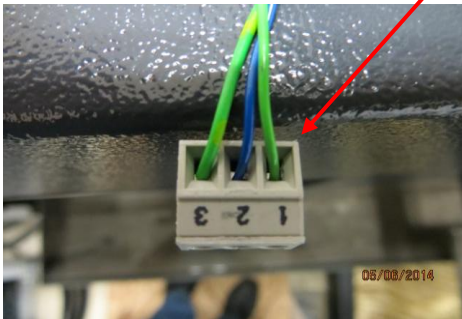
The IPC connector connect the AMCA (CN-M3)

2.3.4 Cable Electronic > Touch Sensor



Touch Sensor Electronic

The probe is connected to standard input sample. Previously the cable to the plug must be screwed



Touch Sensor Electronic

Crimp the cables from the cylinder sensors on the cable.

Upper Limit:
blue => green
brown => white

Lower Limit:
blue => red
brown => black



Sensor cables

Fixing screws of the scale

2.4 Replacement of Z-Axes-Scale

Note: The Z-Scale must be changed. If not, the Z-Axes can collide with the Touch Sensor!



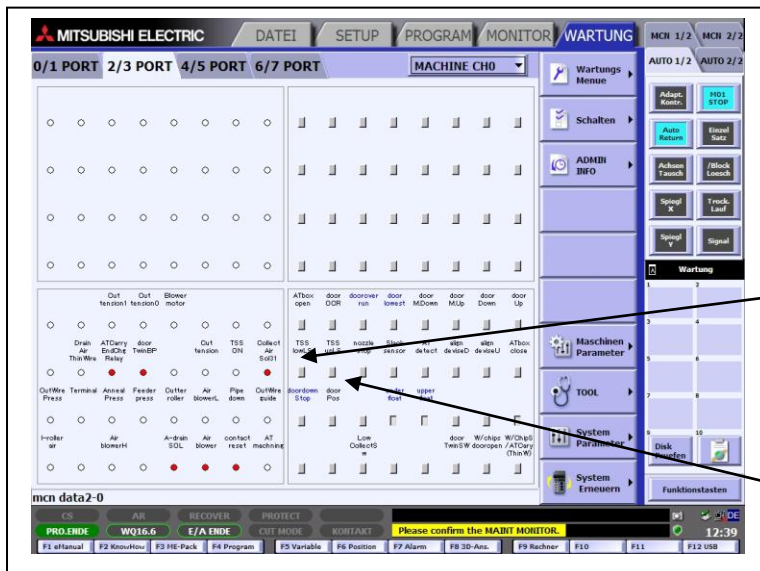
3.0 Startup procedure and test

3.1 Control of the signals in I/O Screen

=> Screw the probe into the Touch Sensor Holder
=> Switch on the machine and write a short program into the program editor:

```
%
N10
M62 // Out2 = On => Touch Probe is moving down
M60 // Out1 = On => Enables Touch Probe
M00 // Programstop
M61 // Out1 = Off => Disables Touch Probe
M63 // Out2 = Off => Touch Probe is moving up
M00
G200 A10
%
```

Start the program in automatic mode. Each time pressing the Start button the probe moves up or down. In lower position each touch of the probe sensor must trigger a contact. The position of the lifting cylinder can be controlled (if the sensors to the actuators are adjusted) on the I/O-screen (machine CH0 2/3 port):

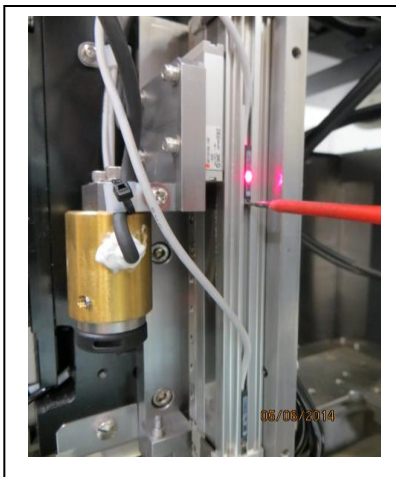


Cylinder down
,TSS low'

Cylinder up
,TSS up'

3.2 Alignment of the Aircylinder Sensors

The LED's in the sensors light up in the end positions of the lifting cylinder. If they do not shine, an adjustment must be made. For the positioning of the sensors use a small flat screwdriver.



Upper Cylinderposition: (up)
Drive Cylinder in upper position (M63)

Push upper sensor upwards until LED goes out
=> Place a Mark
Push upper sensor downwards, the LED lights up again
Push upper sensor downwards until the LED goes out
=> Place a Mark

Now tighten the cylinder sensor between the selected marks



Lower Cylinderposition: (down)
Drive Cylinder in lower position (M62)

Push lower sensor upwards until LED goes out
=> Place a Mark

Push lower sensor downwards, the LED lights up again

Push lower sensor downwards until the LED goes out
=> Place a Mark

Now tighten the cylinder sensor between the selected marks

3.3 Activation

4.1 Electrical Drawings

