

MIKE 3 Service



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Please read this note !



Attention: High Voltage !



Warning: Please read carefully this safety instruction !

1. Software

1.1 Update



We urgently recommend the free update to the current software version as preparation for all of the following work. The manuals will also be updated.

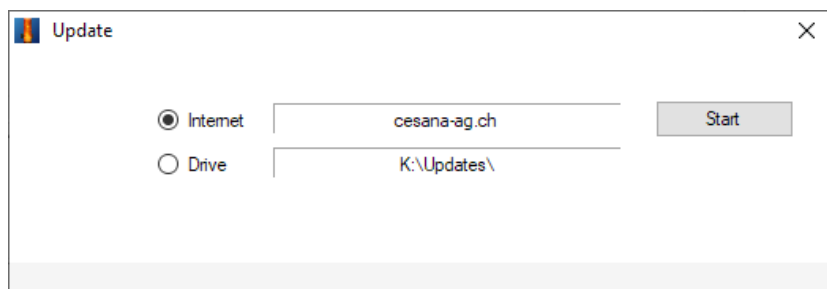
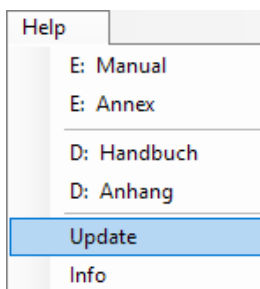
1.1.1 Software older than MIKE 3.5

Brief instructions for updating to version 3.5:

1. Open the MIKE website at www.cesana-ag.ch
2. Click on the link [MIKE3.5 Software for Windows 7...10](#).
3. Run the [MIKE35_setup.msi](#) file.
4. Define your username e.g. JS.
5. Enter your full name (signature) e.g. John Smith.
6. Enter your previously defined username in the next screen.
7. Define your own password and remember it, then [Login](#)
8. Repeat the password and again [Login](#)
9. Press the button [Settings](#) in the next screen.
10. Interface: 1. Apparatus is ... connected
11. Interface: 2. Port on computer ... Select the COM port.
12. User: Complete the entries.
13. Start the MIKE program - [Start](#)
14. Tool / Check: Interface (if not OK check the COM port)

1.1.2 Software MIKE 3.5

- a) Your PC is connected to the internet. You can run the [Internet](#) update directly.
- b) Your PC is **not** connected to the Internet and you are a participant in the CaRo calibration round-robin test. Insert the supplied USB stick and enter the directory [USB drive: \ Update](#) under [Drive](#) and start the update.



- c) Your PC1 is **not** connected to the Internet
Install a new MIKE program on a PC2 connected to the Internet and then copy all of the following files from PC2 to the corresponding directory on PC1:
MIKE.exe, Update.dat, Update_c.exe, *.pdf, *.rtf

2. Hardware

2.1 Open MIKE



For all work on the equipment
pull out the power plug.

Remove the rear wall.

The rear wall is connected to the
apparatus by a ground connection.
Unplug this.



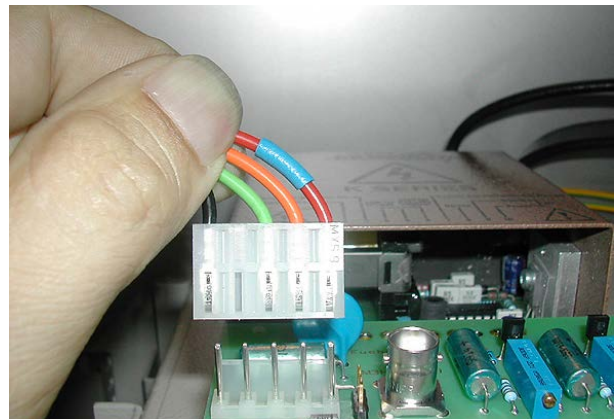
2.2 Open the high voltage unit



Contamination in the high voltage unit leads to corona discharges and leakage currents and thus to a loss of charge. Therefore it is essential to avoid dust. Thoroughly clean (degrease) hands and all tools.

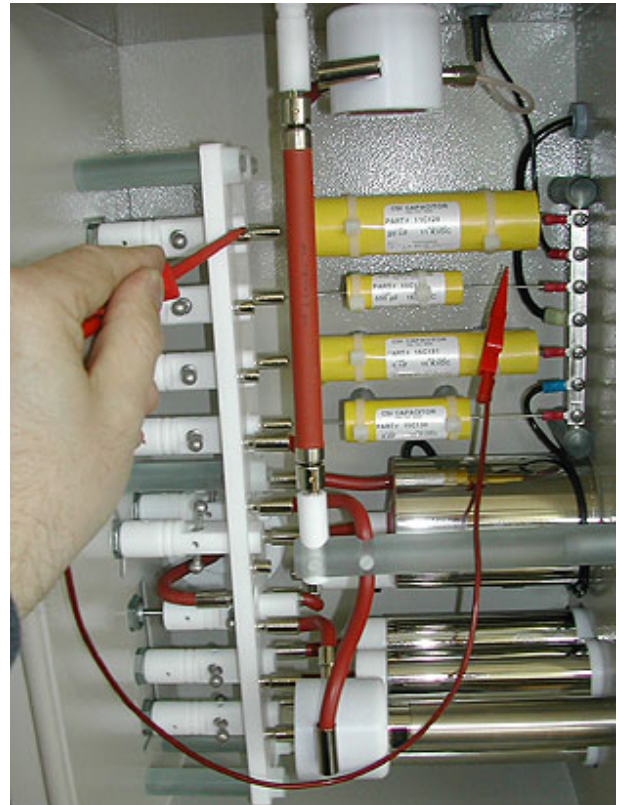


1. Pull out the power cord.
2. **Important:** Disconnect the power supply of the high-voltage generator.
3. Remove the Plexiglas cover of the high voltage unit.

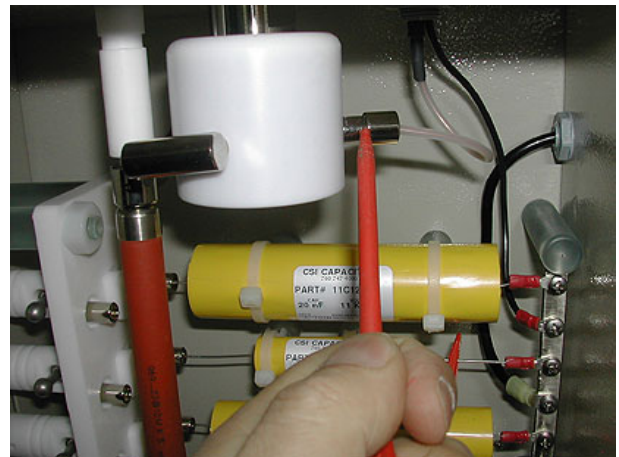




4. The capacitors can still have dangerous charges. Therefore discharge them as shown.



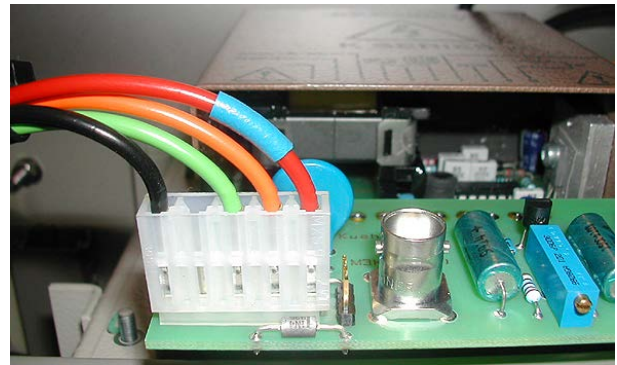
5. The high voltage generator can also have dangerous charges. Therefore discharge it as shown.



2.3 Close the high voltage unit



1. Power cord must be disconnected!
2. Reconnect the power supply of the high voltage generator.



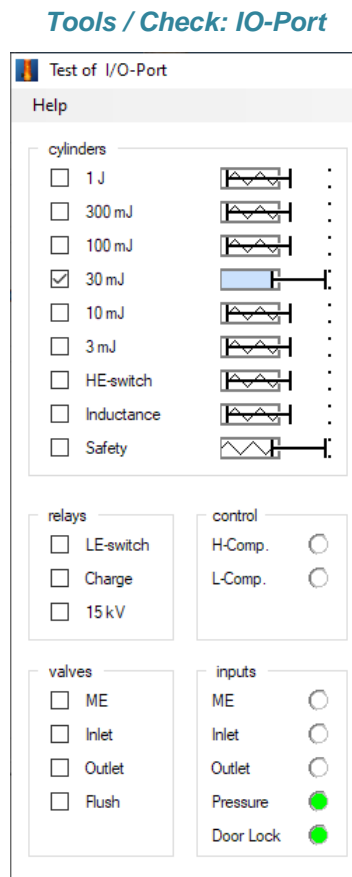
2.4 Close the MIKE

1. Mount the rear wall and side walls.
Do not forget to plug in the ground connections beforehand.
2. Reconnect the power cord.



2.5 Function test of the cylinders

1. See: [2.1 Open MIKE](#)
2. Reconnect the power cord, switch on the MIKE and start the software.
3. Visually check the function of the cylinders for the high voltage switches.

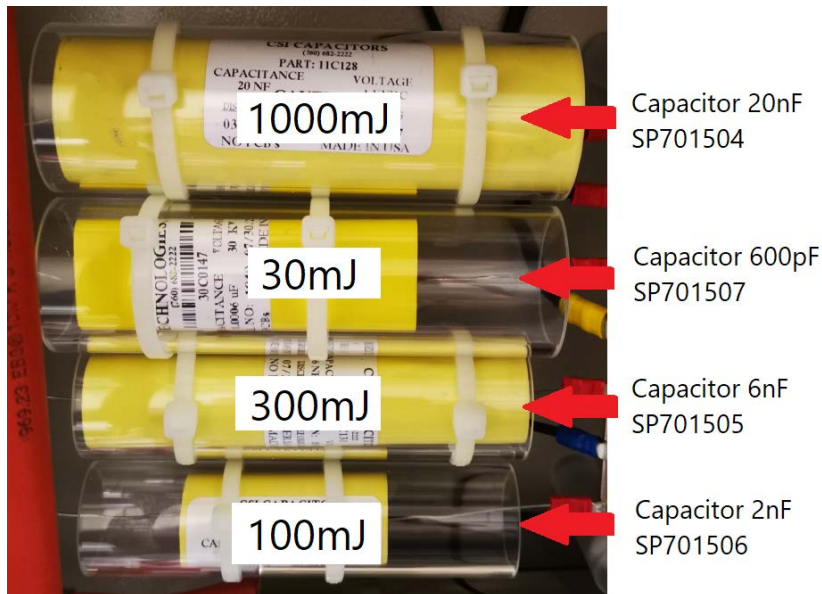


- a) Switch on the cylinders individually and observe:
- b) Feedback on the screen? If not: is the LED on the reed switch lit?
- c) Mechanical position of the high voltage switches? Will the contact be closed?

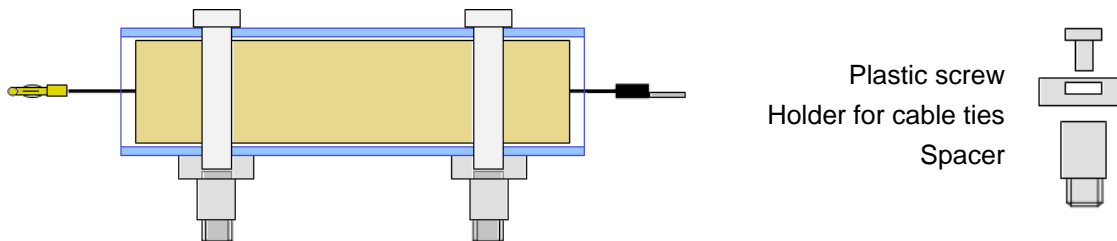
4. See: [2.4 Close the MIKE](#)

2.6 Replace capacitor

1. See: [2.1 Open MIKE](#)
2. See: [2.2 Open the high voltage unit](#)
3. Replace defective capacitor:



- a) Cut the cable ties of the defective capacitor.
- b) Remove the screw on the right side of the capacitor.
- c) Pull the capacitor to the right and thus detach it from the plug connection.
- d) Slide Plexiglas tube over the new condenser.
- e) Insert the new capacitor on the left.
- f) Screw on the new capacitor on the right side.
- g) Fasten the Plexiglas tube with cable ties..



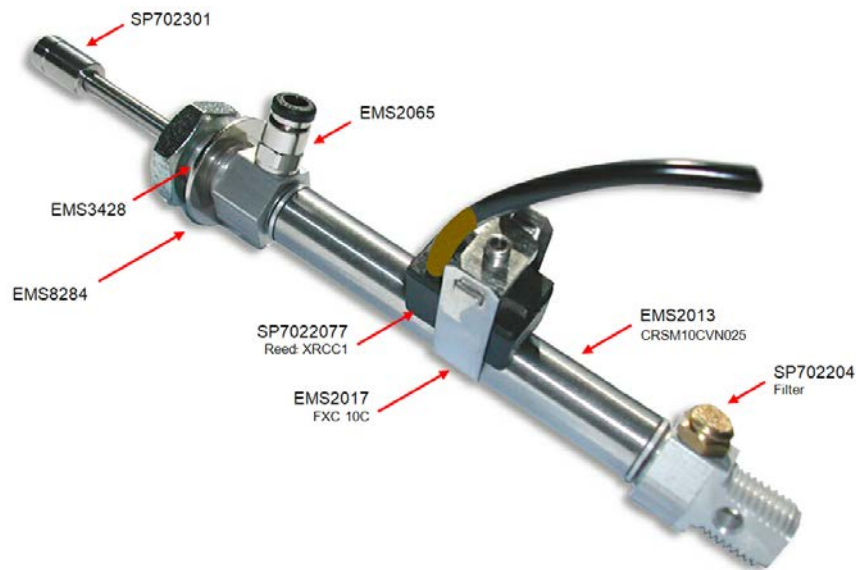
4. See: [2.3 Close the high voltage unit](#)
5. See: [2.4 Close the MIKE](#)



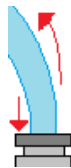
On older MIKEs, the capacitors are installed without a Plexiglas tube.

If the cable ties are tightened too much when replacing capacitors, this can damage the insulation layers inside the capacitors. This is prevented with the Plexiglas tube as mechanical protection. It is therefore essential to use the Plexiglas tube supplied.

2.7 Replace cylinder



1. See: [2.1 Open MIKE](#)
2. See: [2.2 Open the high voltage unit](#)
3. Remove the compressed air tube from the cylinder by pressing the ring and pulling on the tube.



4. Screw off the position sensor.



5. Loosen the screw in the contact holder.



6. Push the contact holder to the right.

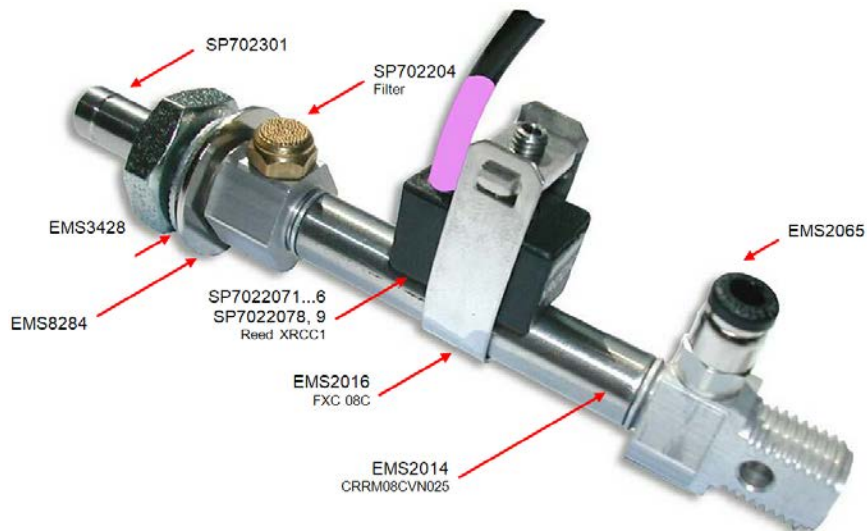


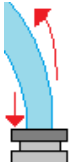
7. Loosen the cylinder with a 19 mm wrench and counter with a 14 mm wrench on the left-hand side.



8. Install new cylinder:
Sequence 7...3
(Please use new lock washer)
9. See: [2.3 Close the high voltage unit](#)
10. See: [2.9 Replace position sensor](#)
11. See: [2.10 Adjust position sensor](#)
12. See: [2.4 Close the MIKE](#)

2.8 Replace 'safety' cylinder



1. See: [2.1 Open MIKE](#)
2. See: [2.2 Open the high voltage unit](#)
3. Remove the compressed air tube from the cylinder by pressing the ring and pulling on the tube.
 
4. Screw off the position sensor.
5. Loosen the cylinder with a 19 mm wrench and counter with a 14 mm wrench on the left-hand side.



6. Loosen the screw in the contact holder.



7. Remove the defective cylinder.

8. Install new cylinder:
Sequence 6...3
(Please use new lock washer)



9. See: [2.3 Close the high voltage unit](#)
10. See: [2.9 Replace position sensor](#)
11. See: [2.10 Adjust position sensor](#)
12. See: [2.4 Close the MIKE](#)

2.9 Replace position sensor

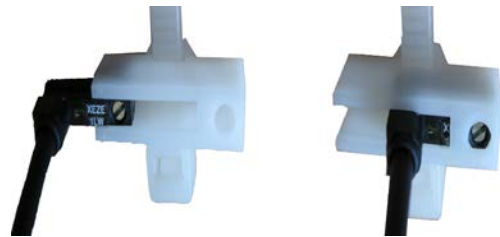
before 2009: SP702200



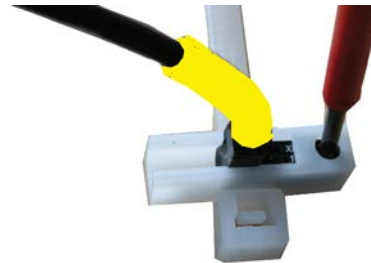
after 2009: SP702207N



1. Slide the sensor into the plastic holder.



2. Use a screwdriver to unlock the sensor.
Unscrew three turns.



3. Mark the cable with colored grommets.

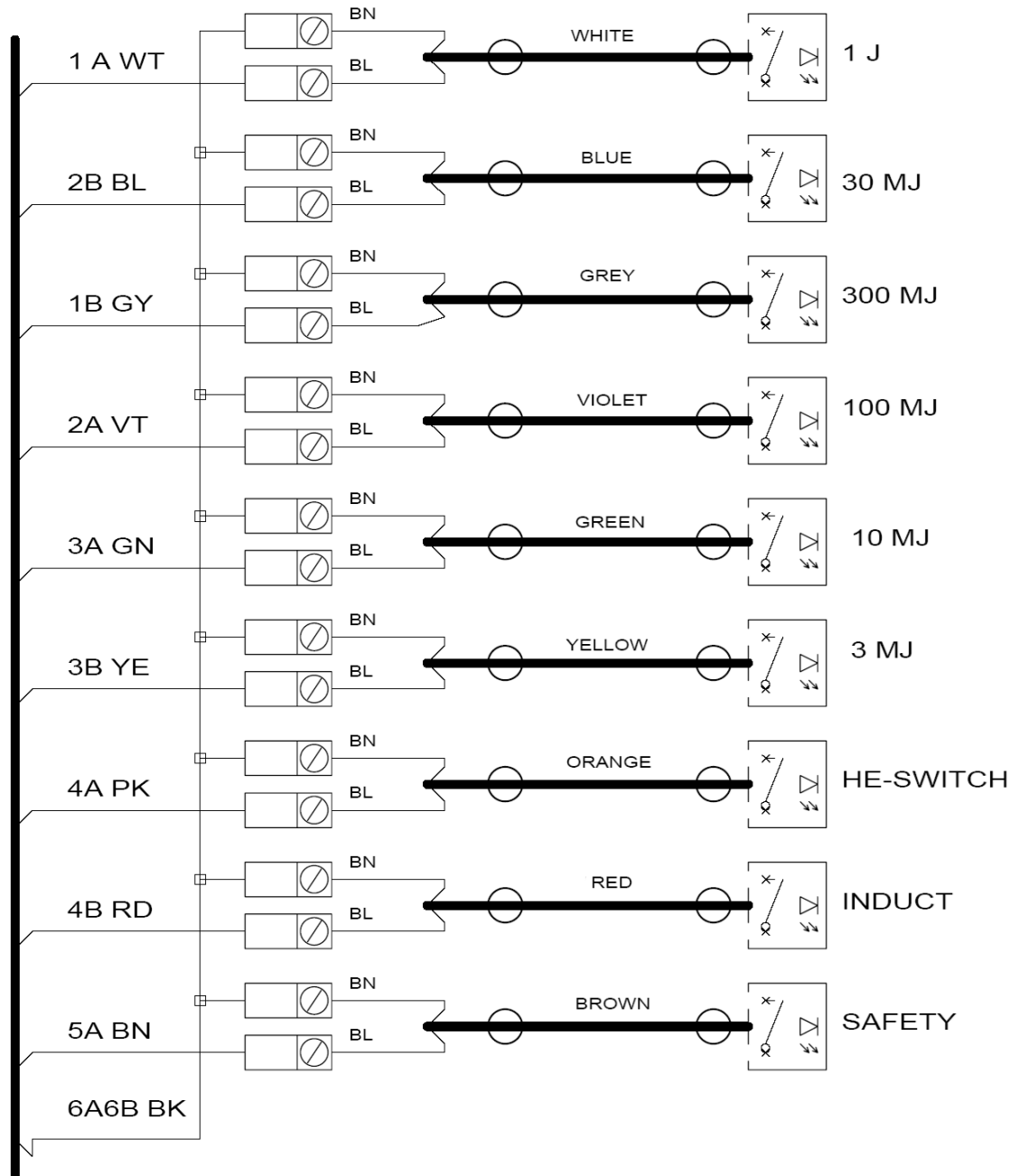
1J / white
30mJ / blue
300mJ / grey
100mJ / violet
10mJ / green
3mJ / yellow
HE-SW / orange
Inductance / red
Safety / brown



4. Slide the position sensor over the cylinder and tighten with the cable tie.



5. Connect position sensor

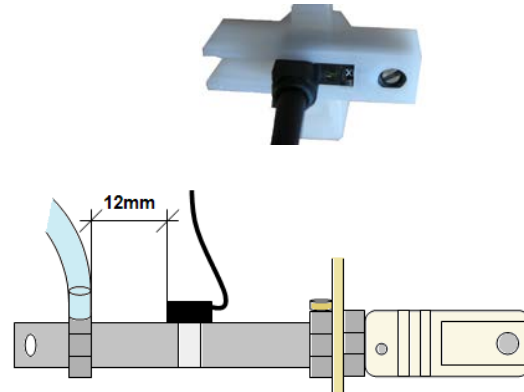
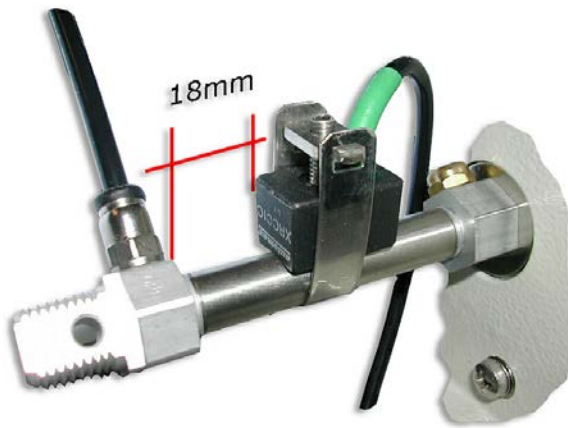


2.10 Adjust position sensor

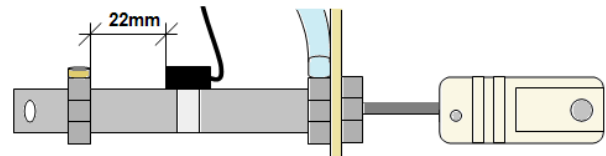
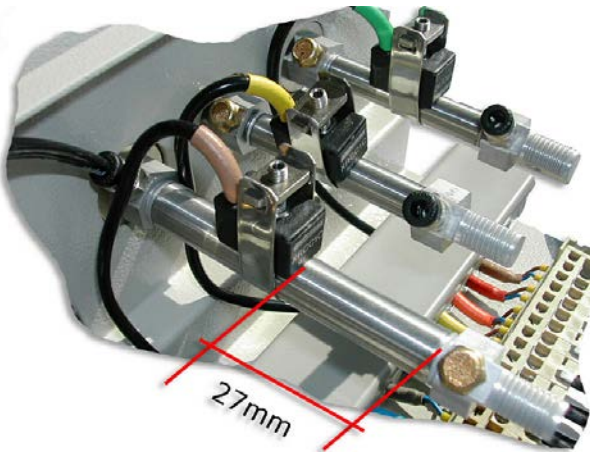
Position sensor before 2009

Position sensor after 2009

Cylinder „3mJ ... 1J, HE-SW“

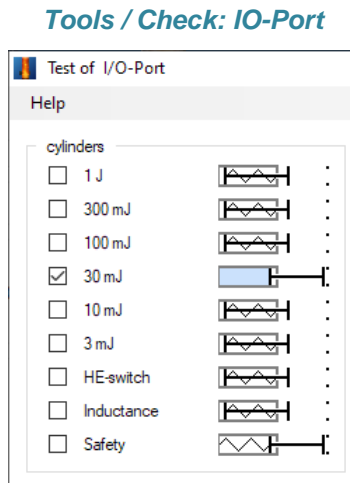


"Safety" cylinder



The distances shown are only guidelines!
The position of the sensor may have to be corrected.

1. Reconnect the power cord, switch on the MIKE and start the software.

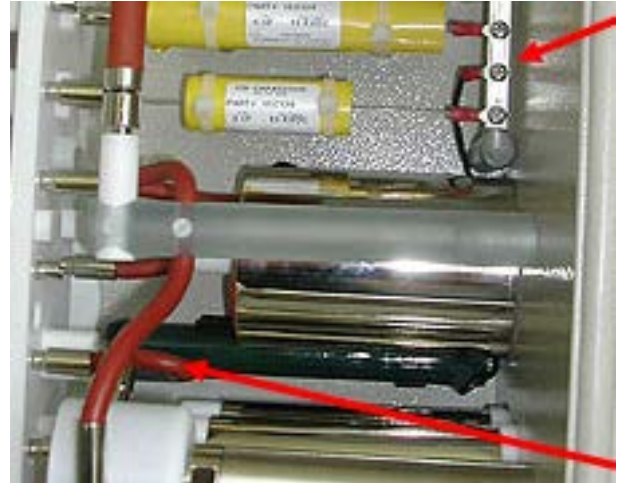


2. Activate the cylinder to be adjusted and observe the LED on the sensor.
3. Move the sensor and look for the left LED-off/on position. Mark this on the cylinder.
4. Move the sensor and find the right LED-off/on position. Mark this on the cylinder as well.
5. Move the sensor to the center of the two markings and fix it with the screw on the cylinder..
6. Check the position by activating and deactivating the cylinder several times.
7. Secure the sensor and screw with nail polish.



2.11 Replace discharge resistor

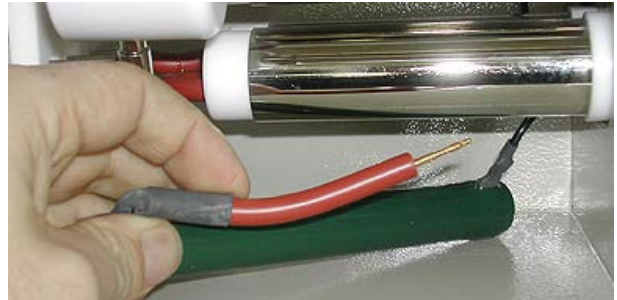
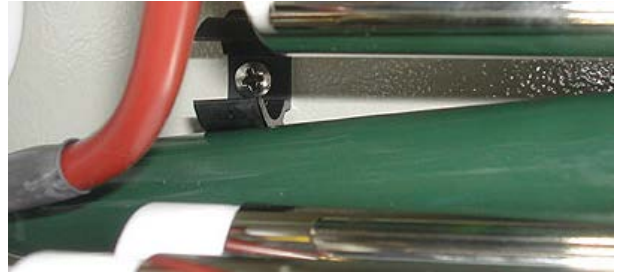
1. See: [2.1 Open MIKE](#)
2. See: [2.2 Open the high voltage unit](#)
3. Unscrew or unplug the two connecting wires of the old resistor.



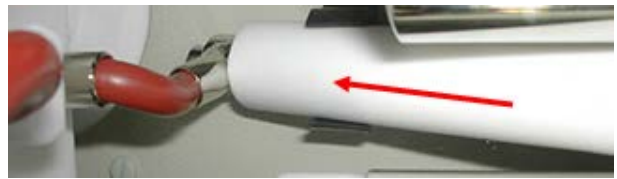
4. Remove the old resistor:
Lift out of the two holders.



5. Slide it under the condenser unit and remove it.



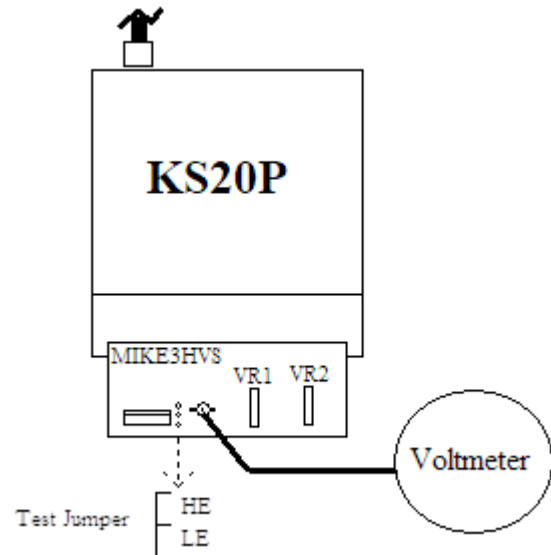
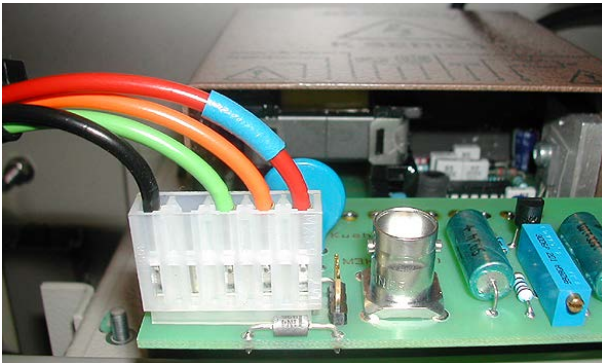
6. Install and connect the new resistor SP701301 according to the following pictures.



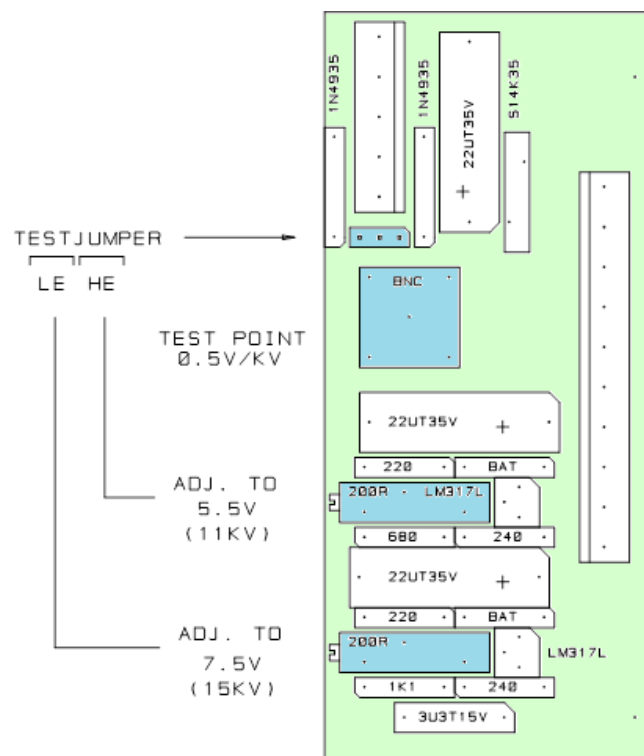
7. See: [2.3 Close the high voltage unit](#)
8. See: [2.4 Close the MIKE](#)

2.12 Adjust high voltage

1. See: [2.1 Open MIKE](#)
2. Connect a voltmeter on M3HVS



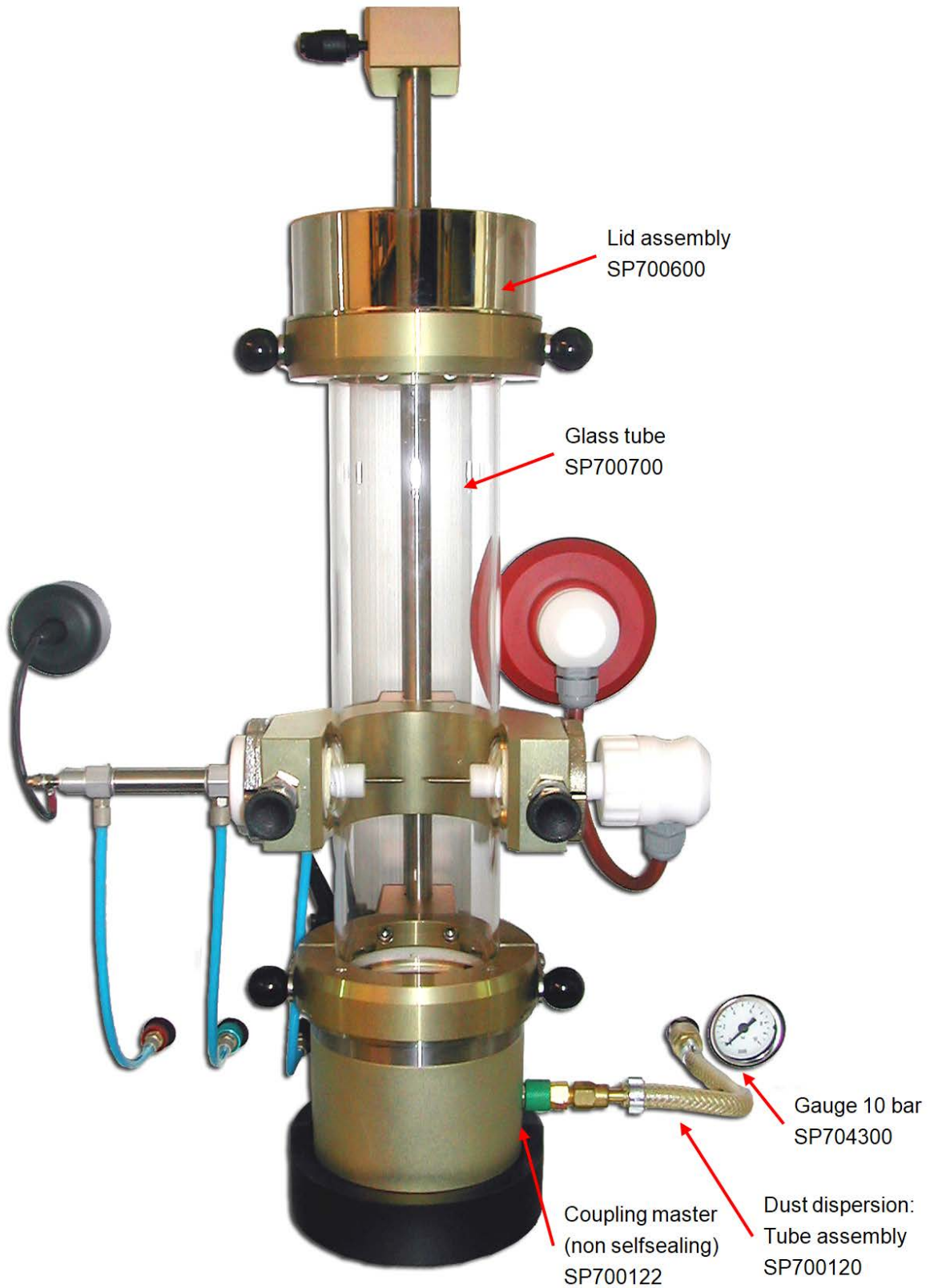
3. Set a test jumper, switch MIKE on and adjust according to the following drawing:

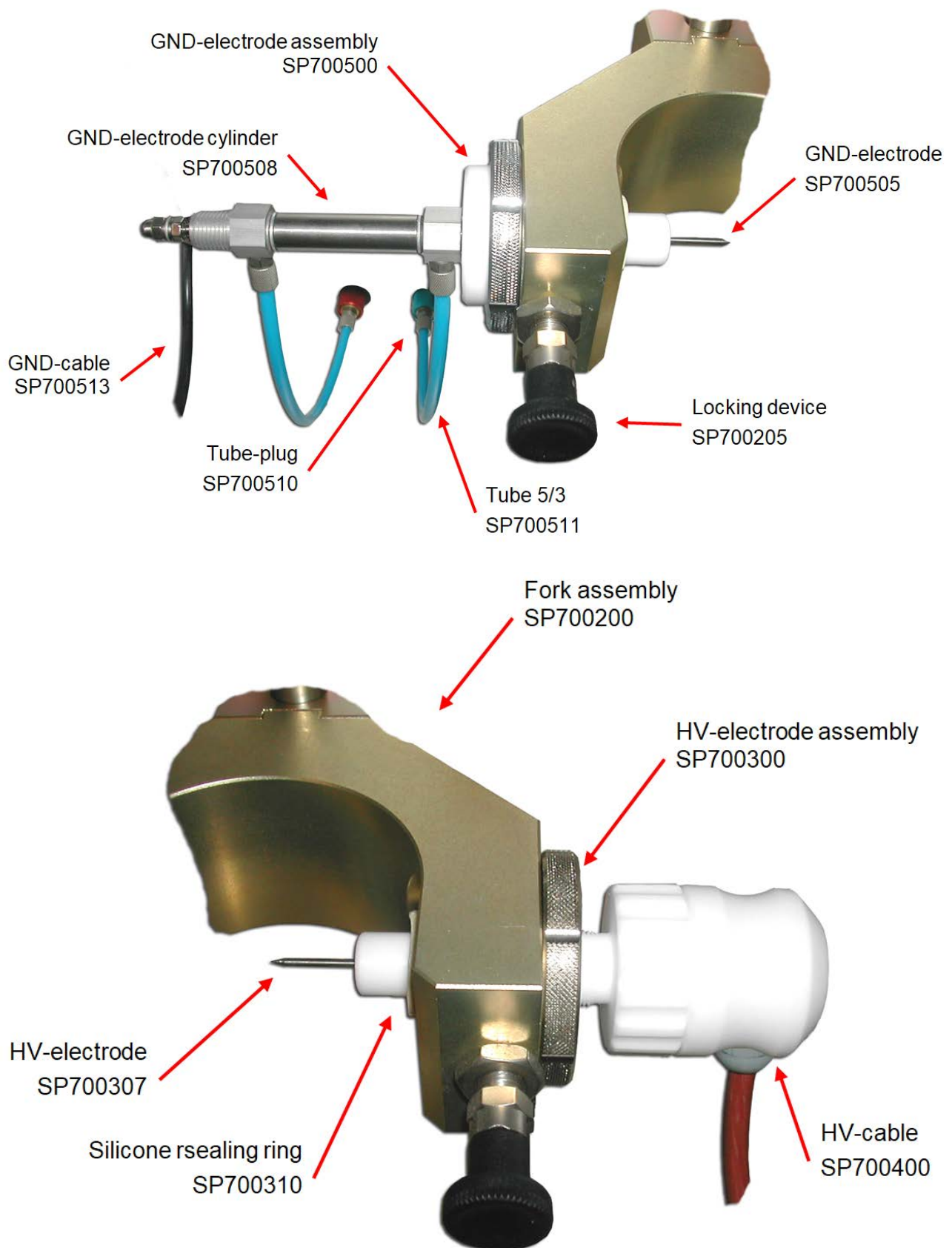


4. Remove the test jumper
5. See: [2.4 Close the MIKE](#)

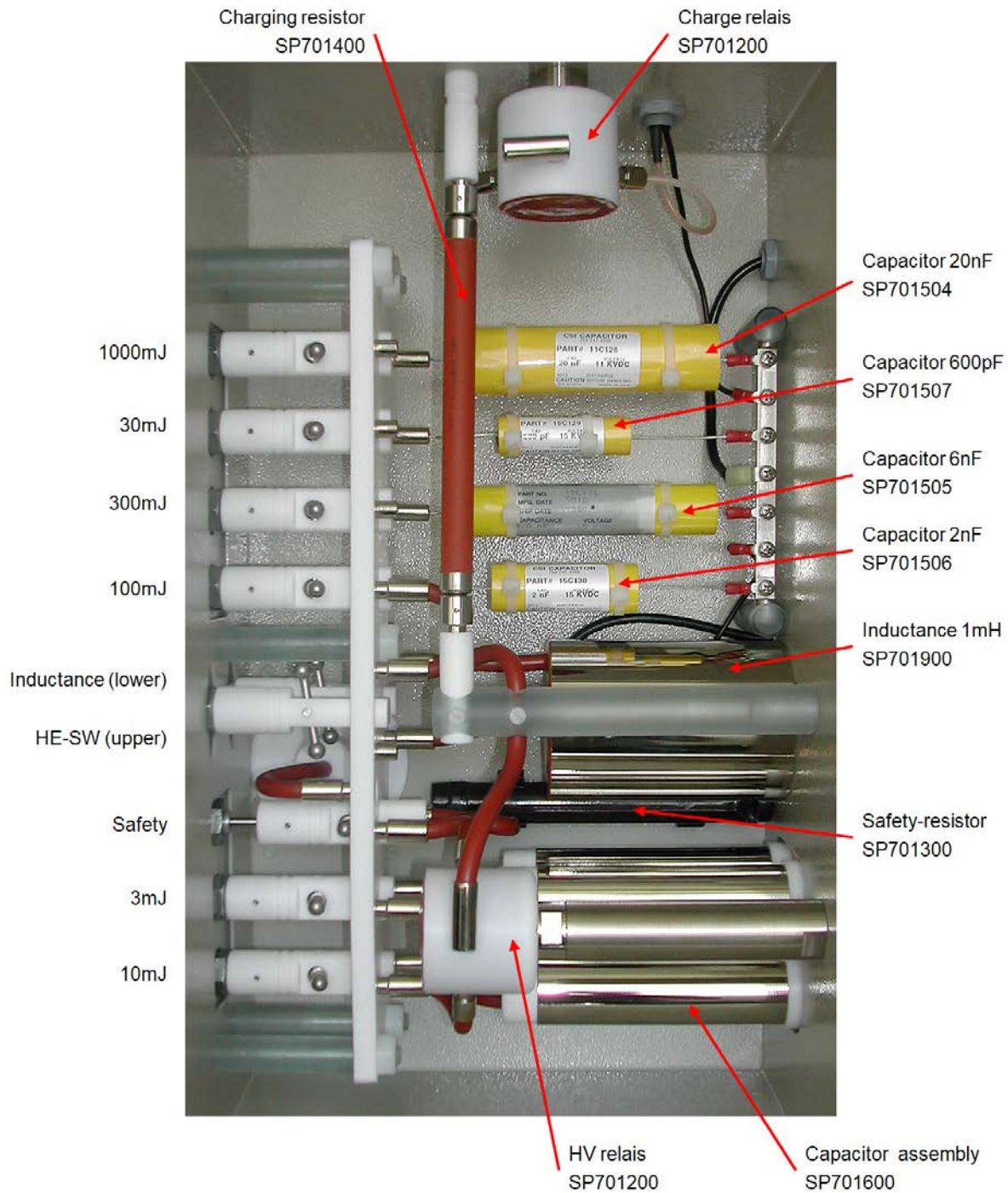
3. Spare parts

3.1 Front view

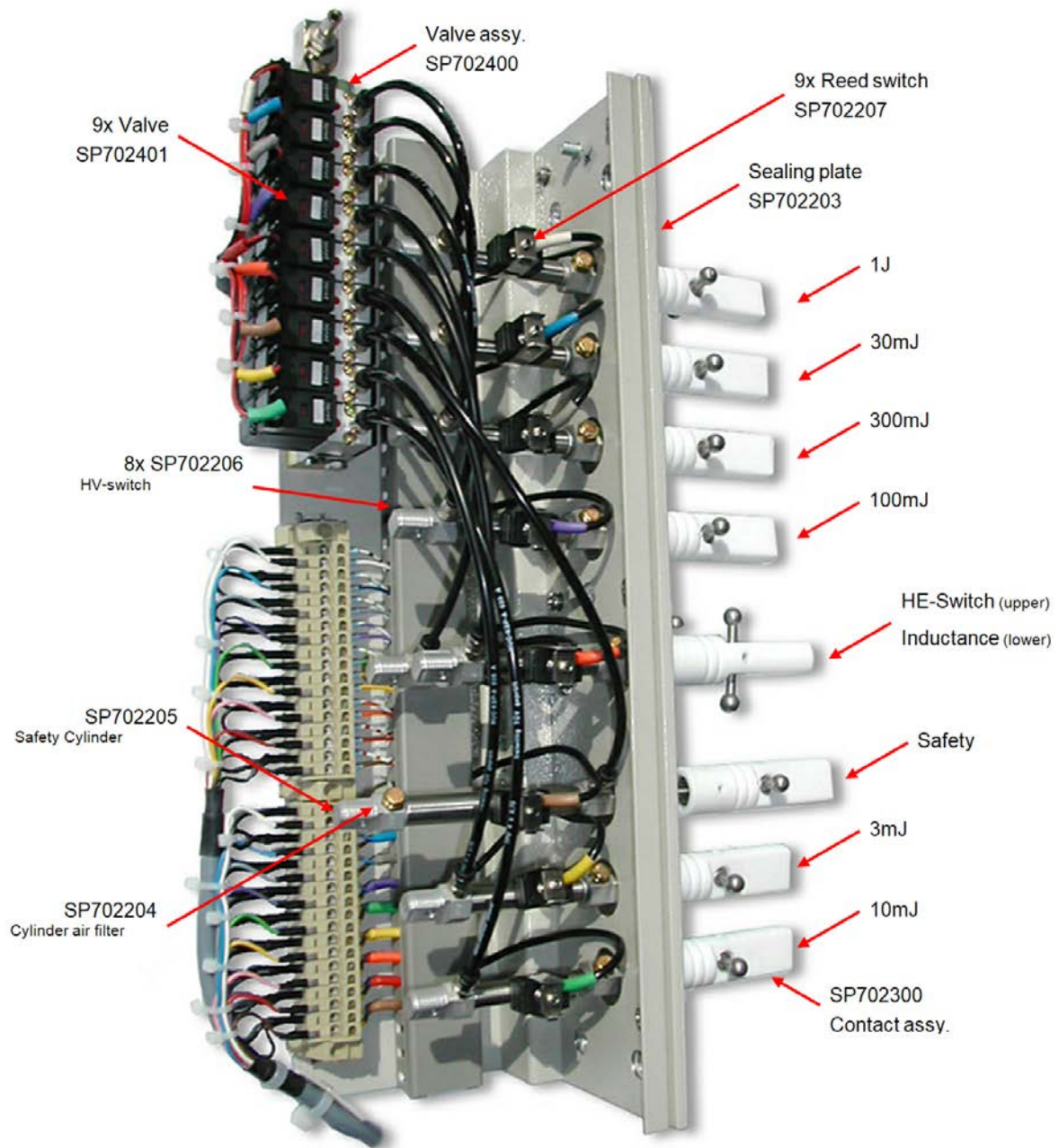




3.2 High voltage unit



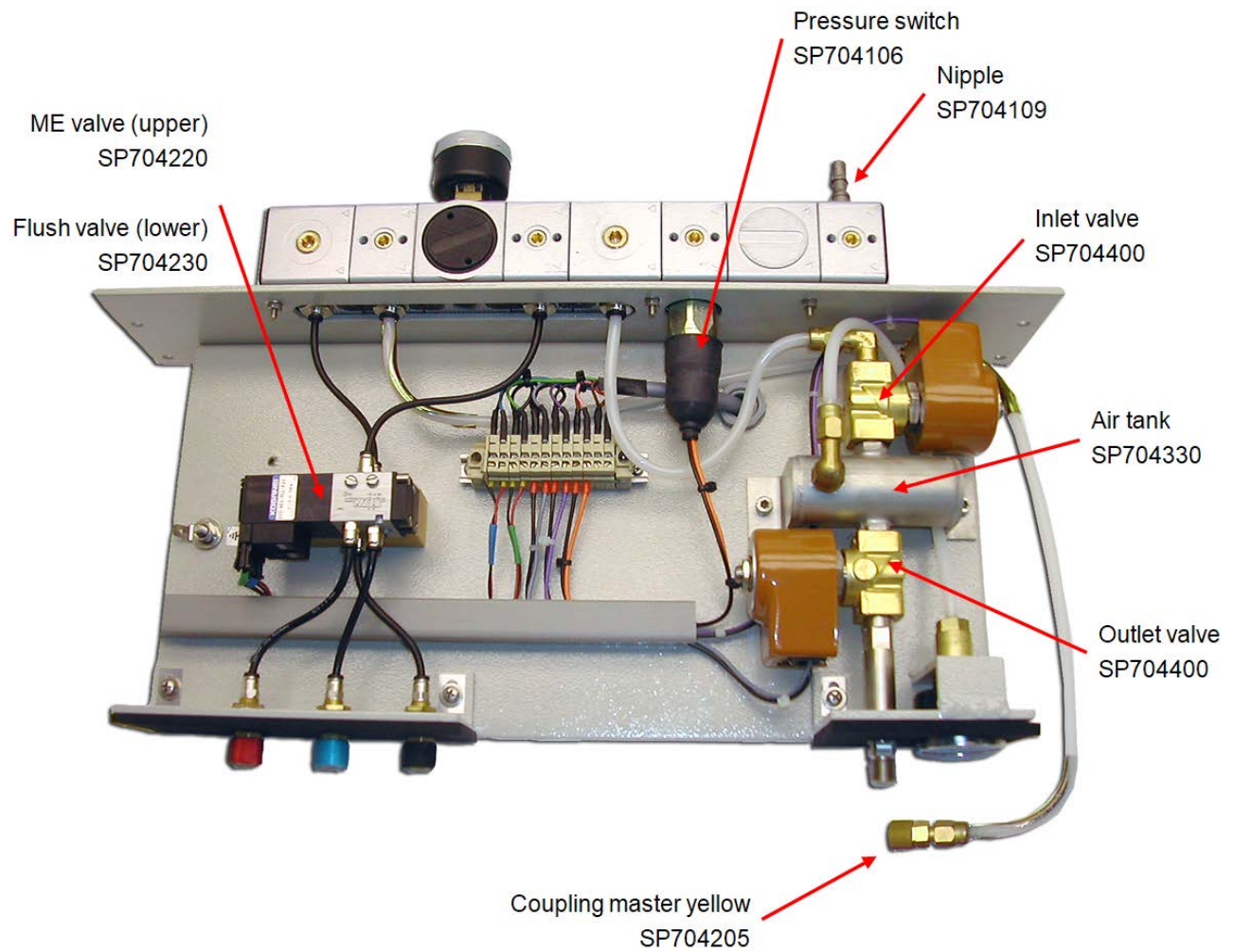
3.3 Cylinder unit

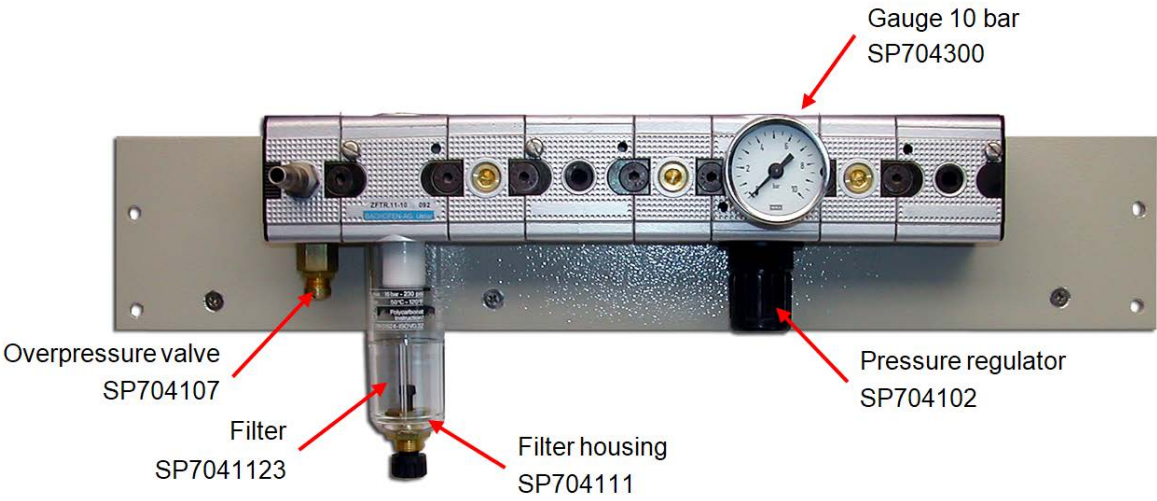


3.4 Valve assembly



3.5 Pneumatic unit





3.6 List of spare parts

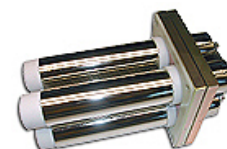
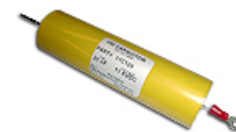
SP700010	Safety door lock (switch)	
SP700100	Dust dispersion: base assembly	
SP700107	Alu-holder, bottom, front	
SP700109	Alu-holder, bottom, rear	
SP700120	Dust dispersion: tube assembly	
SP700122	Coupling master (non self-sealing) light green	
SP700200	Fork assembly	
SP700205	Fork: locking device	
SP700208	Throttle-valve assy.	

SP700300	HV-electrode assembly
SP700307	HV-electrode
SP700310	HV/GND-electrode: silicone sealing ring
SP700311	HV guide bush assy.
SP700313	Screwing insulator HS electrode holder
SP700400	HV-cable assembly
SP700500	GND-electrode assembly
SP700505	GND-electrode
SP700508	GND-electrode: cylinder
SP700509	GND-electrode: tube union 50.007

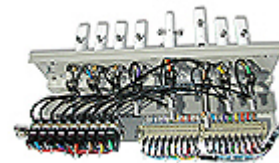
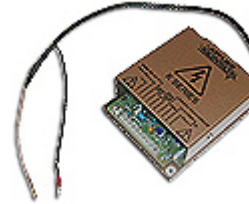


SP700510	GND-electrode: tube-plug 50.065	
SP700511	GND-electrode: tube 5/3	
SP700513	GND-cable assembly (ME)	
SP700516	Isolator B	
SP700520	GND-electrode holder assy.	
SP700600	Lid assembly	
SP700603	Alu-holder, top, rear	
SP700604	Alu-holder, top, front	
SP700608	Cover	

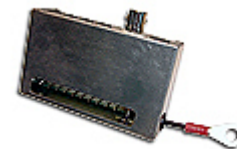
SP700610	Hinge-bow
SP700700	Glass tube
SP700800	Teflon ring
SP701002	Sealing rubber profile (HV-unit)
SP701200	Charge / LE-SW Relay assy.
SP701300	Safety-resistor 15K
SP701400	Charging resistor 10M
SP701504	Capacitor 20nF
SP701505	Capacitor 6nF
SP701506	Capacitor 2nF
SP701507	Capacitor 600pF
SP701600	Capacitor assembly 20/20/50/50pF
SP701800	GND-connector assy.



SP701900	Inductance assembly 1mH
SP702100	HV-Supply KS20P
SP702200	Valve / cylinder unit assembly
SP702204	Cylinder air filter
SP702205	Cylinder CRSM10CVN025 (safety)
SP702206	Cylinder CRRM08CVN025 (all others)
SP702207	Cylinder: reed-switch XRCC1
SP702300	Cylinder: contact assembly
SP702301	Cylinder: Tapped bushing



SP702304	Cylinder: contact
SP702400	Cylinder: valve assembly
SP702401	Cylinder: valve 030E1-PL-L
SP702407	Cylinder: tube 4/2.5
SP703000	PCB M3CTC, charge transfer comparators
SP703100	PCB M3CTR, charge transfer relays
SP703200	PCB M3HVS, HV-Switch
SP704102	Pressure regulator
SP704106	Pressure switch



SP704107	Overpressure valve
SP704109	Compressed air: nipple
SP704110	Compressed air: coupler
SP704111	Air filter housing
SP704112	Air filter
SP704220	ME valve
SP704230	Flush valve
SP704203 SP704204 SP704206	Coupling master (self-sealing) red Coupling master (self-sealing) blue Coupling master (self-sealing) black
SP704300	Gauge 10 bar
SP704400	Valve E121K03

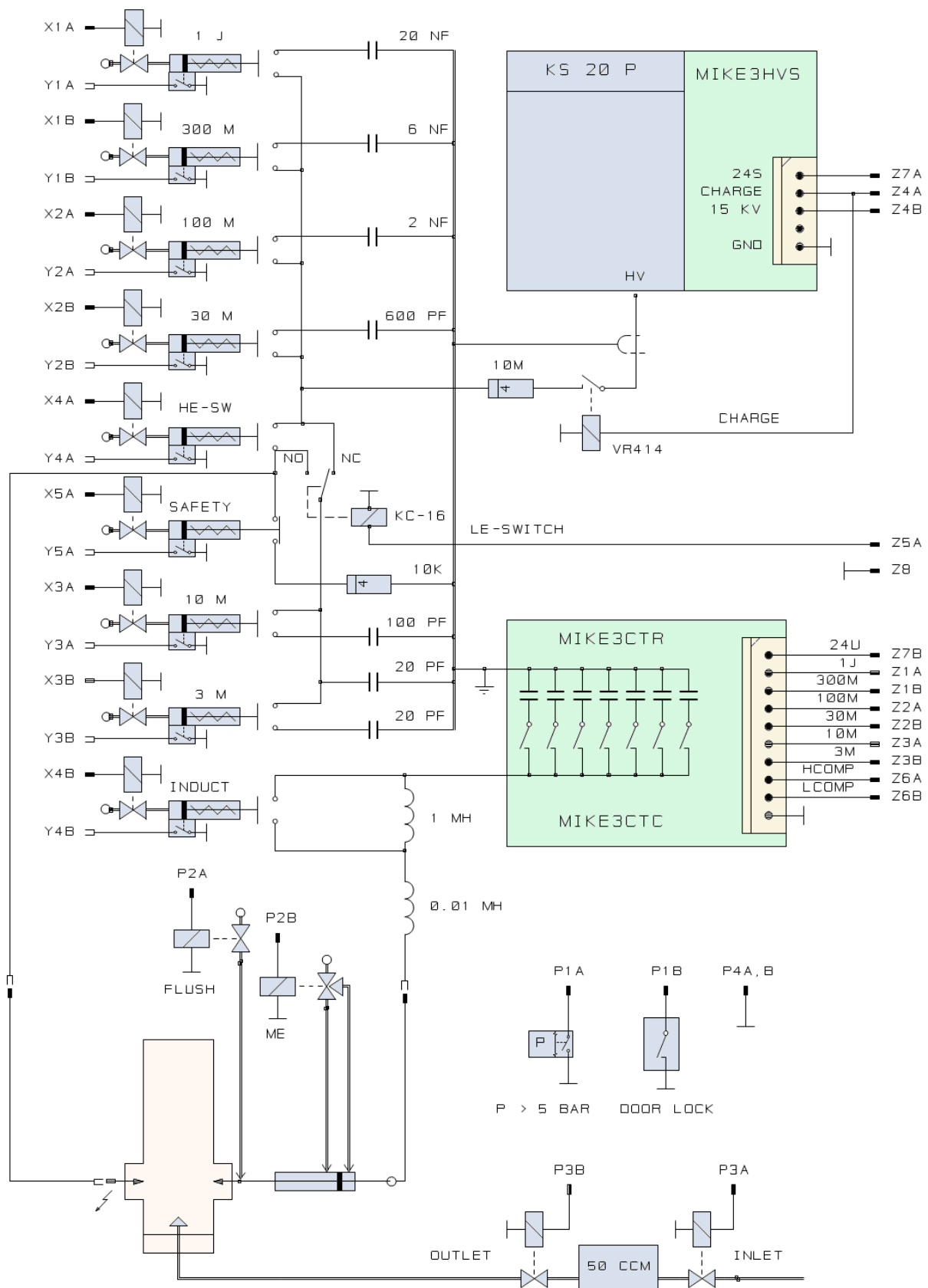


SP705100	PCB M3, Microprocessor for MIKE3
SP705200	PCB ISO232, serial interface
SP706000	Connection cable Mike/PC
SP081021	MMC81A Microprocessor for MIKE3-CAN
SP081012	CAN81 CAN-Interface
SP081014	Adapter CAN-USB opto
SP709000	Supply WRE-24SX

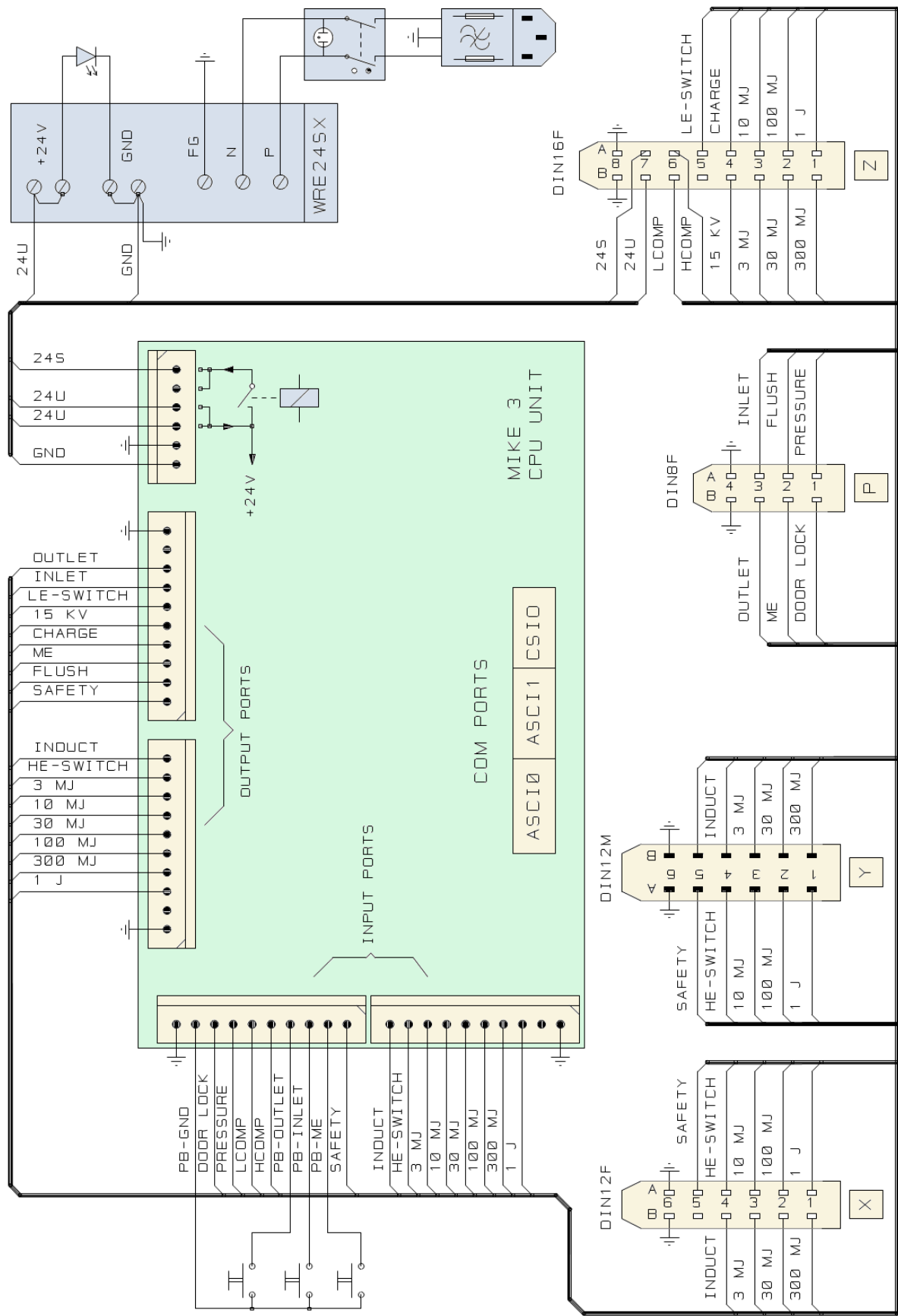


4. Diagrams

4.1 High voltage unit

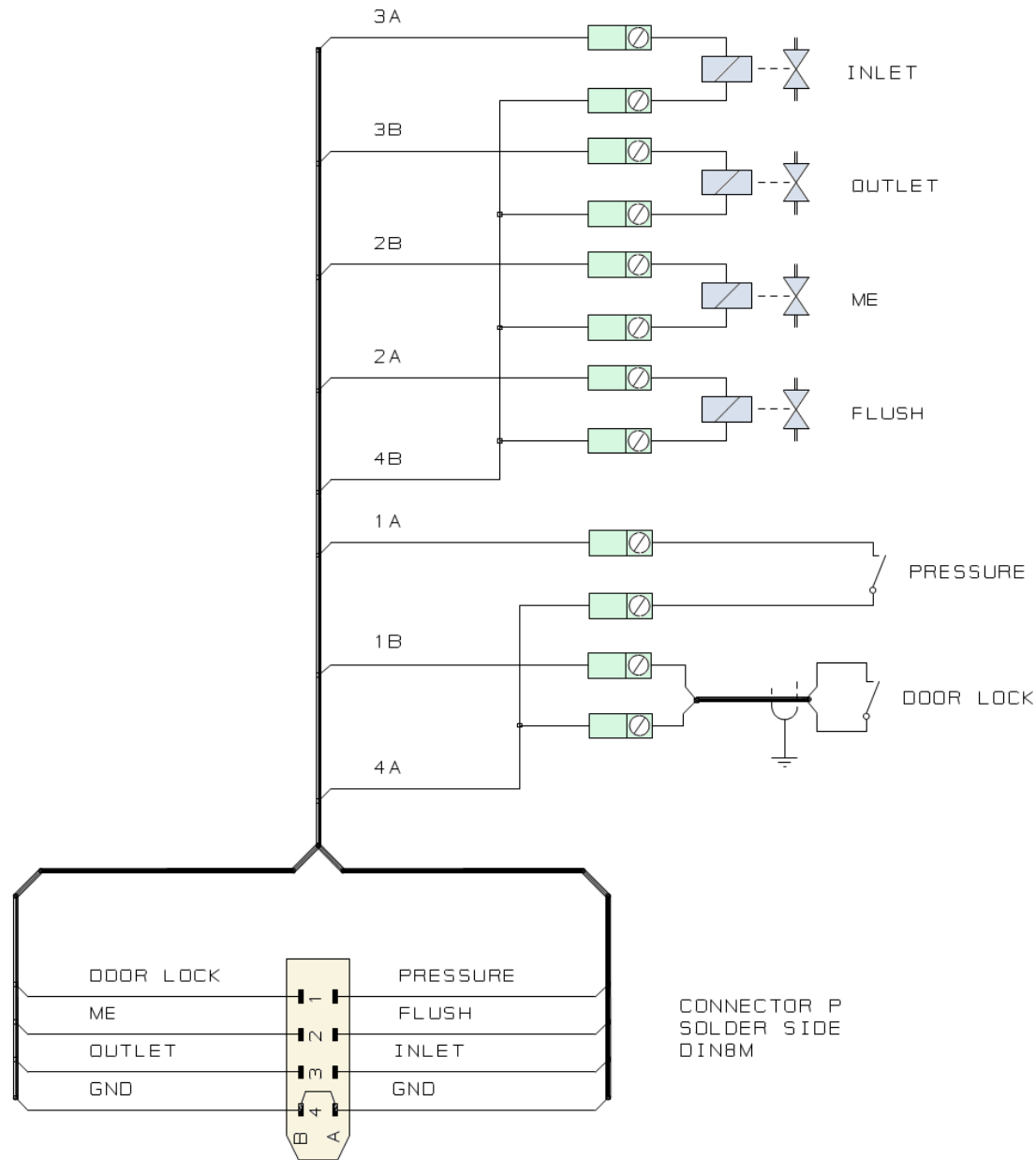


4.3 Control unit MIKE3

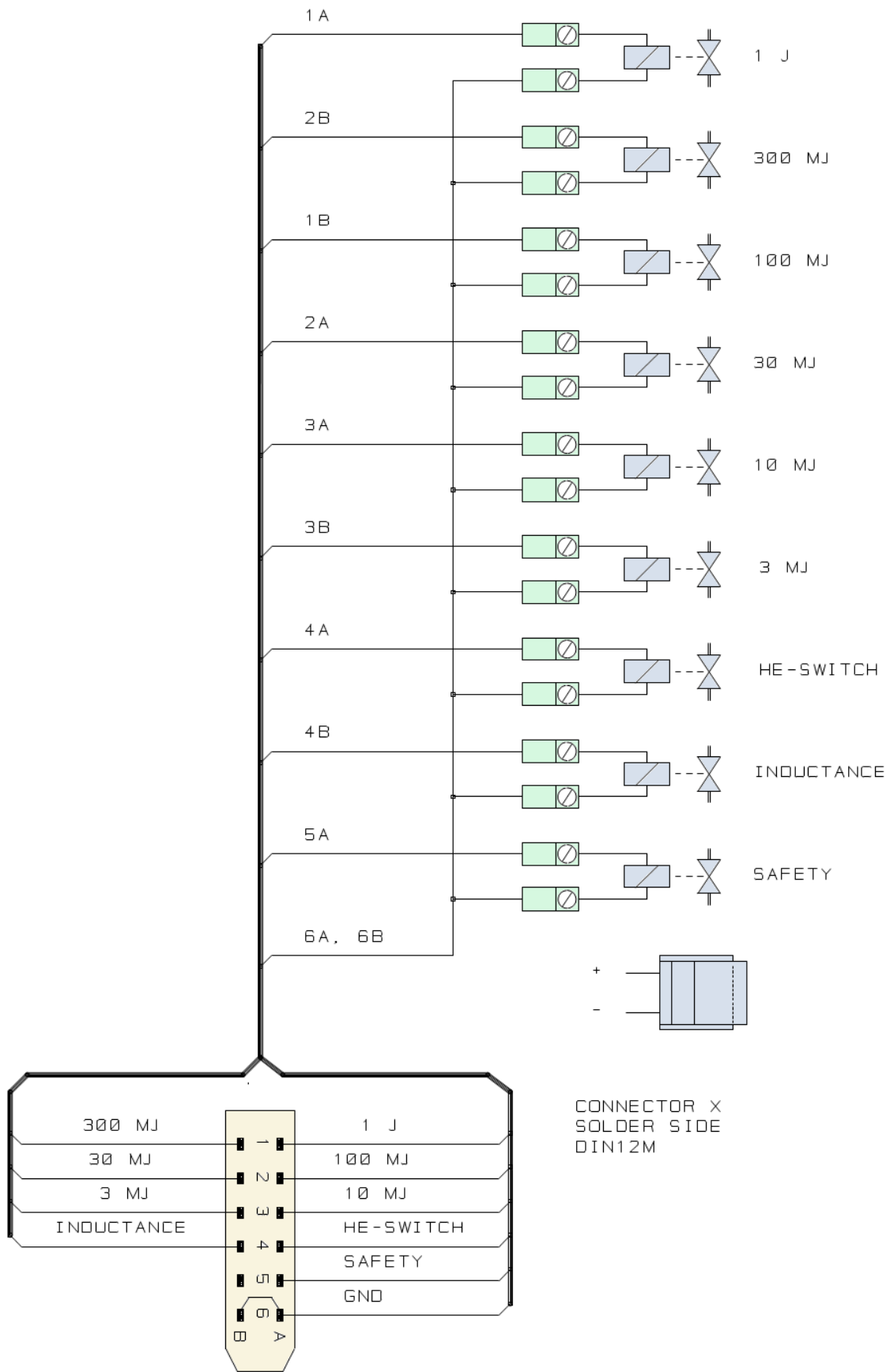


4.4 Wiring MIKE3

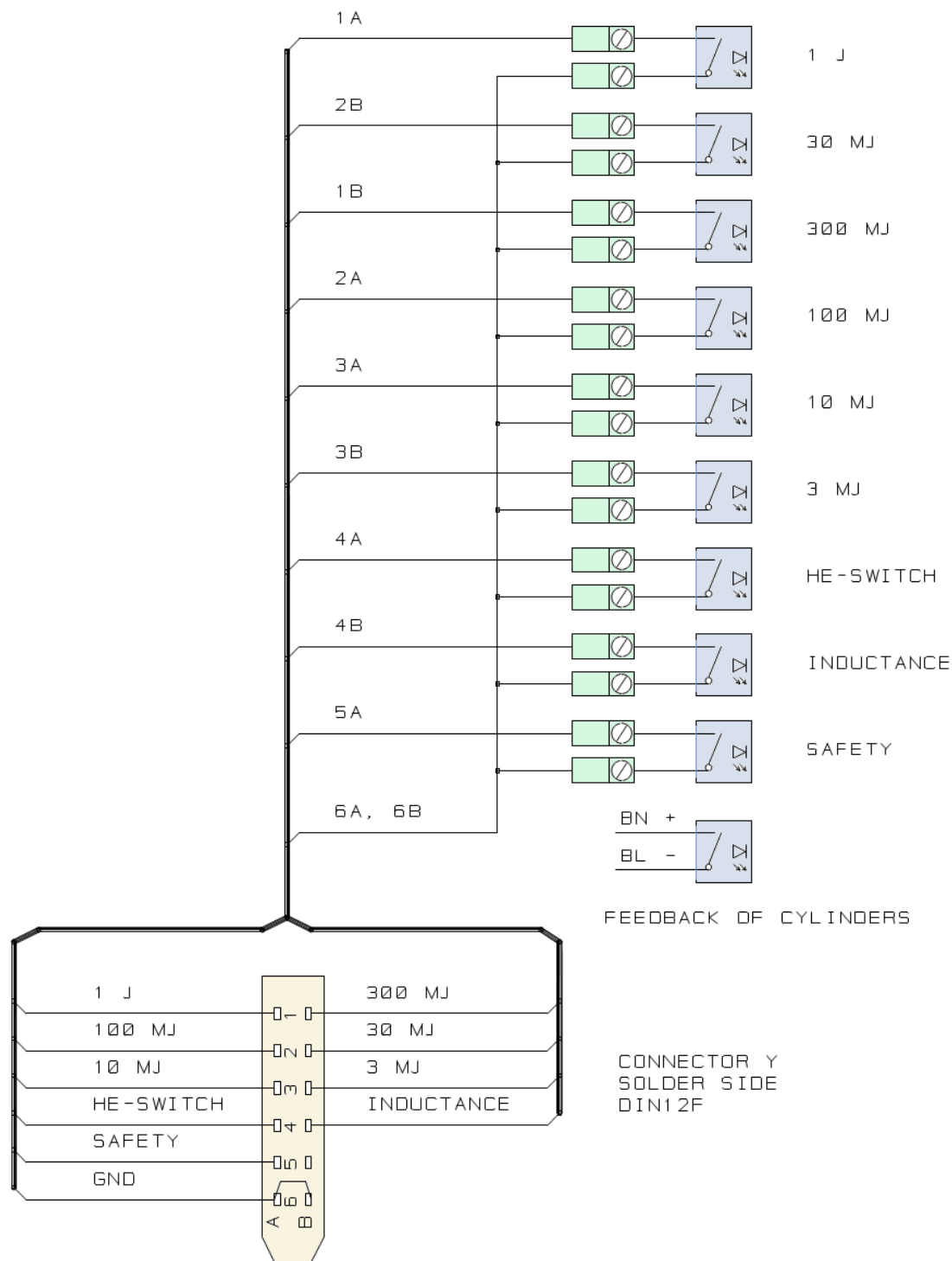
4.4.1 Connector P



4.4.2 Connector X



4.4.3 Connector Y



4.4.4 Connector Z

