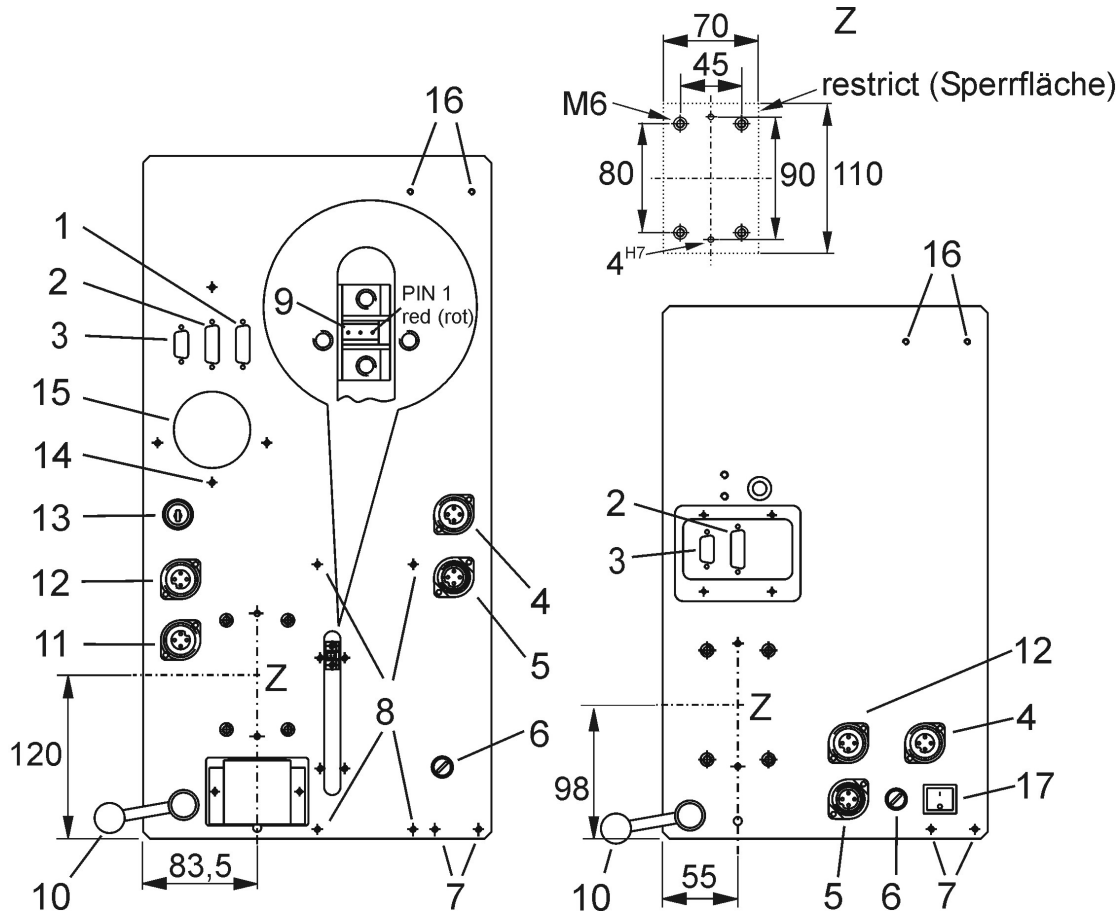


## Connection - Overview

### microtap & megatap / labtap



Rear side of machine head megatap II

- 1 Connection: ZAP
- 2 Receptacle: user interface (SPS-I/O)
- 3 Receptacle: V24 (RS 232D) serial interface
- 4 Receptacle: lubrication unit  
SPE / SME
- 5 Receptacle: Main connection  
(230VAC/50Hz)
- 6 Fuse: megatap II 16A / T  
microtap II 3,15A / TT
- 7 Connection lubrication unit
- 8 Connection spindle feed system ZAP

Rear side of machine head microtap II

- 9 Receptacle: pressure sensor for  
PIN1 = red
- 10 Setting lever for retracting force  
(counter balance)
- 11 Receptacle: Operating lever
- 12 Receptacle: Foot switch for ZAP
- 13 Key switch (option)
- 14 Cable strap mounting screw
- 15 Air intake hole for cooling fan
- 16 Connection ASL
- 17 Main switch

## I/O Schaltschema

Paralell interface I/O

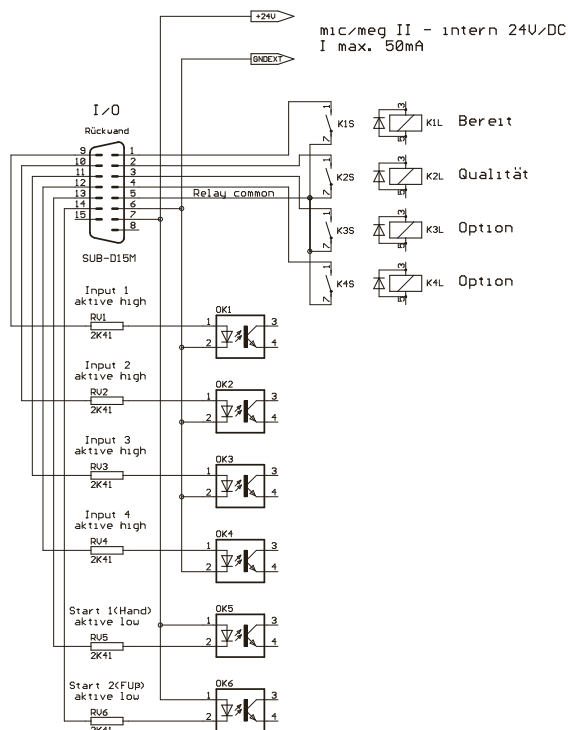
SUB-D 15-pins connector

Galvanical isolated inputs/exits active with reference to external GND

Current max. 0,1 A / 48 V

PIN	Connection	
1	Relay 1, contact a	contact closed (machine ready)
9	externer Eingang 1	Option
2	Relay 2, contact a	contact closed, (quality OK)
10	external input 2	Option
3	Relay 3, contact a	contact open
11	external input 3	Option
4	Relay 4, contact a	contact open
12	external input 4	Option
5	Common reference for relays 1; 2; 3; 4 (all contact B)	
13	Input Start 1	
6	Ground external	
14	Input Start 2	
7	+ 24 V, auxiliary supply max. 0,05 A	

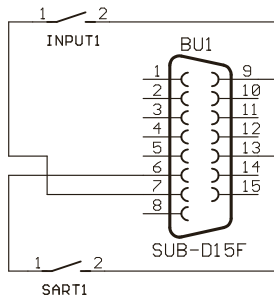
## I/O wiring diagram



## I/O Samples / Serial interface

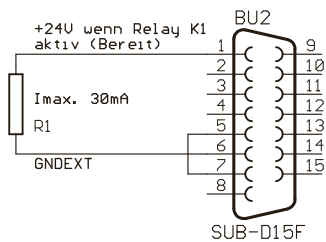
Sample 1: Input signal (p.e. work piece recognition) and external start command

It is only possible to read input 1 ... 4 with Software-Option

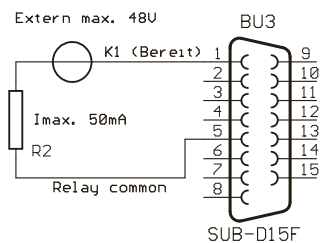


Start 2 same function in ZAP-Mode the pneumatic valve for the pneumatic Z-Axis spindle feed is actual

Sample 2 Exit relay contact by internal power source



Sample 3 Exit relay contact by external power resource



Serial interface (RS232 / V24)

Connection RS232, SUB-D, 9-pin female (9600 baud, 8 Bit, no parity, 1 stop-bit)

PIN	Connection
2	232 TX
3	232 RX
5	232 GND

## Serial interface / RS232 (V24)

### Link between PC and thread tapping machine

The communications link between a PC and the thread tapping machine is realised via serial interface RS 232 and is based on ASCII code., 9600 baud, 8 data bits, 1 stop bit, no parity bit

### Set of parameters

The set of parameter values is transferred as a block ASCII code

Each parameter has a single character code followed by the symbol "=" selected parameter value

The end of each parameter datum is coded by the characters "<CR>" (carriage return)

The whole block has to be finished with >.. No parity sum created

EXAMPLE: T=105<CR> (^= depth = 1,5 mm)

The set of parameters includes the following parameters:

Parameter	Code	Range of values
Depth	'T'	0.0 - 80.0 mm ( ^= 0 – 800)
Spindle speed	'N'	300 - 3000 min-1
Fracture torque	'B'	30 - 5000 Ncm
Chip clearance	'E'	0 – 5
Thread	'G'	0 = rechts; 1 = links
Reverse mode	'R'	0 = 100% 1 = 200 % 2 = 50 %
Start-mode	'A'	0 = manuell 1 = autostart 2 = autostart + Sz
Sz	'S'	0.0 - 70.0 mm ( ^= 0 – 700)
Delta Sz	'D'	0.0 - 10.0 mm ( ^= 0 – 100)
Fz	'F'	0 - 10.0 N ( ^= 0 - 100)

### Feedback messages of the thread tapping machine

Upon completion of an operation cycle, the machine responds in the following manner:

- 'Y' cycle ready, no error
- 'X' error

In the event of an error, code "Q?" can be used to request an indication as to the nature of the error.

How to request for specific values

The request is done by sending the code for a specific value followed by "?" and "CR LF".

Example: Q?<CR>

The thread tapping machine responds then with the same code and its current value.

Example: Q=2<CR>

The following values are monitored exactly

Value	Code	Value range
Mz	'M'	30 – 5000
Quality	'Q'	see under “Quality”
Depth	'T'	0.0 - 80.0 ( ^= 0 – 800)
Reverse mode	'R'	0 – 2
Sz	'S'	0.0 - 70.0 ( ^= 0 – 700)
Mz (tapping torque)	'C'	0 – 5000

After response “Y” the tapping torque “Mz” is monitored (machine ready, no error)

## Quality monitoring

The quality status can be requested with “Q?”

Usually, a quality status is requested following an “X” (error) response

The numeric code provides the following information:

- 0 = OK
- 1 = command tapping depth not reached
- 2 = tapping start fault
- 3 = (not used)
- 4 = process interruption by operator
- 5 = error in reverse mode
- 6 = Error Sz
- 7 = EMERGENCY STOP active

In special applications, further information can be retrieved

Quality status	Additional requests	Code used
- 1	tapping depth reached	t?
- 5	no. of reversing attempts	r?
- 6	Sz	s?

## Remote control mode

The thread tapping machine can be remote controlled.

For this mode, the option ZAP (pneum. spindle feed system) has to be installed. Also, the operation via the machine control panel is then disabled

Remote control ON: H=1

Remote control OFF: H=0

In the mode Bei »Remote control ON« the spindle (motor) moves automatically

## Customer specific automatisat--and control software

Upon request we are able to produce customer specific automatisat and control software for max. four inputs and 2 exits (relay contact) und ein Leistungsausgang (p.e. valve spool) to control tasks with and without PLC