

DRAFT



CNC-STEP
CNC Maschinenbau

Connection instructions for HF-Spindle Mechatron HFSAC-6508-24 (0,8KW)

For the High-Z series with Zero3 controller

Software: WinPC-NC Pro with 2 LPT-interfaces or

WinPC-NC USB

www.cnc-step.de



Status: 08.12.2015

Mechatron HFSAC-6508-24 (0,8KW)



Summary

This document provides information for initial commissioning of the HF-Spindle in question. For more details about the machine, controller, and software, please review their respective manuals.

Inhaltsverzeichnis

1	HF-Spindle Components.....	4
1.1	HF-Spindle control cabinet	4
1.1.1	Switchboard construction.....	5
1.2	HF-Spindel Mechatron HFSAC-6508-24 (0,8KW)	6
2	Commissioning.....	7
2.1	Wiring Diagram.....	7
3	Parameters / Settings in WinPC-NC.....	8
3.1	Inputs and Outputs.....	8
3.2	Loading and Saving Machine paramters.....	9
4	Customer Service.....	10

1 Components of the HF-Spindle

1.1 Electric cabinet



Fig.1: Electric cabinet

1. Power switch On / Off
2. Reset switch
3. Emergency stop button



Fig.2: Control cabinet connections

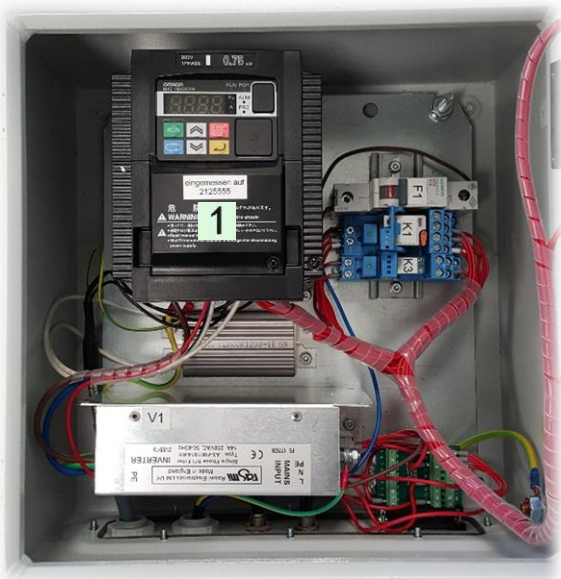
1. Power connection 220 Volt
2. HF-spindle connection
3. Input connector XLR1
4. Input connector XLR2
5. Signal input LPT2 / 0-10Vol

The two XLR connectors are for optional Accessories where an input signal must be monitored. (For instance tool length sensor, safety switch for enclosures, et cetera)

Attention:

The reset switch must be switched on every time the control is switched on, and also after using the emergency stop button.

1.1.1 Electric cabinet construction



Important components

1. Inverter
2. Displ
3. Stop / Reset button

Fig.3: HF-spindle inverter

The electric cabinet sends a signal to the PC / software. If the electric cabinet is not ready for operation, the machine will only run slowly in Setup Mode and no programs can be launched.

Attention:

In the event of inverter failure (for instance code E35.1 - no RF spindle connected, or in case of overheating), it is necessary to press the Stop / Reset button.

1.2 HF-Spindel Mechatron HFSAC-6508-24 (0,8KW)



1. Cable connector

2. Spindle holder

Fig.5: HF spindle

Technical specifications:

- 0.8 kW
- 220V - 400Hz
- Speed: 24,000 rpm
- Concentricity: <0,005mm
- Air cooled

2 Commissioning

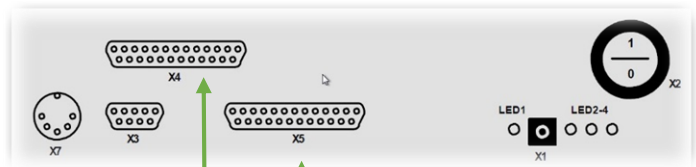
2.1 Connection diagram for the HF spindle

Fig.6: PC with WINPC-NC Profi



COM interface or via
Serial to USB adapter

Fig.7: WinPC-NC Profi with 2x LPT



Serial - D-Sub 9pin

D-Sub 25pol. (LPT1)

D-Sub 25pol. (LPT2)

X1 voltage
X2 - On / Off
X3 - PC
X4 - LPT1 machine
X5 - LPT2 additional
Inputs and outputs



Fig.8: HF spindle



Fig.9: Zero-3

Cooling (option)

Power supply cooling

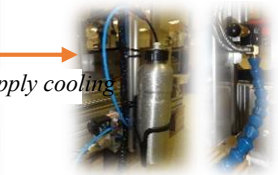


Fig.11: Compressor

220 Volt



Fig.10: Control of the HF spindle

All connecting cables must be properly secured.

3 Input and output signals

The WinPC-NC software has already been set up for you. A copy of the parameter file is also saved on the USB stick. Thus, factory default can be restored at any time.

For more information, refer to the WinPC-NC manual.

3.1 Input and output signals

Overview of the inputs and outputs for operating the RF spindle.

The following inputs and outputs are required for the two LPT interfaces:

In	I235 reference switch X	LPT1 PIN 13 inv
In	I236 reference switch Y	LPT1 PIN 12 inv
In	I237 reference switch	LPT1 PIN 10 inv
In	I247 Emergency stop	LPT1 PIN 11 inv
In	Optional - for instance reference switch 4th axis	LPT1 PIN 15 inv ¹
In	Optional - for instance a safety enclosure	LPT2 PIN 10 inv ²
In	I222 hood - cabinet ready signal HF spindle	LPT2 PIN 12
In	I221 tool length sensor	LPT2 PIN 15 inv ³
Out	Q242 spindle - spindle on / off	LPT1 PIN 1
Out	Q243 cooling - cooling on / off	LPT1 PIN 14
Out	Q218 speed / PWM - PWM signal (speed control)	LPT1 PIN 17
Out	Q219 Toogle / Ready - toggle signal	LPT1 PIN 16

A detailed description can be found in the WinPCNC manual.

¹ connection via XLR jack of the machine or directly on the Zero-3 Control (C) - (4th axis / tangential cutter)

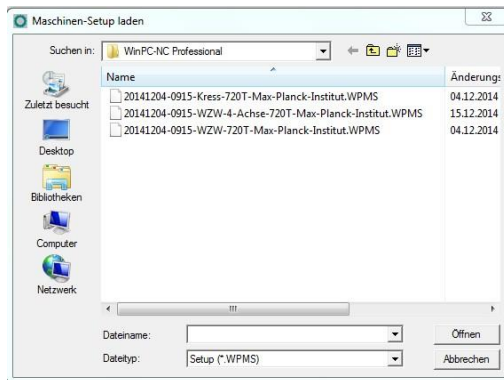
² XLR1 connection via socket of the RF spindle control (see Section 1.1)

³ XLR2 connection via socket of the RF spindle control (see Section 1.1)

3.2 Loading and storing machine parameters

The backup file can be loaded from the PC or USB stick at any time.

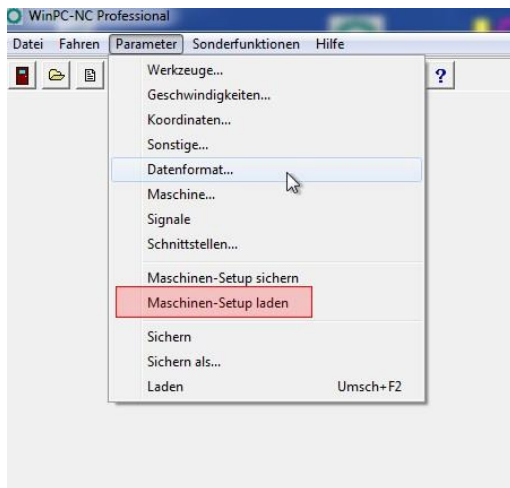
Depending on the application, there may be several parameter files included.



Examples::

1. Operation with Kress milling motor
2. Operation with interchangeable spindle and 4th axis
3. Operation with spindle without 4th axis

To load these settings, please proceed as follows:



Select and load the desired file under "Load Parameters / Machine Setup"

At this point it is also possible to change / update your settings.

If changes are made, it is a good idea to save under a new file name in order to keep the original parameters intact.

4 Customer Service

For technical information, our customer service is available:

Adresse	CNC-STEP e.K. Siemensstraße 13-15 D-47608 Geldern	
Telefon	+49 (0)2831/91021-50	(Mo. - Fr. 07.00 - 15.00 Uhr)
Mobil	+49 (0)2831/91021-20 Nur in dringenden Fällen	(Mo. - Do. 15.30 - 18.00 Uhr)
Telefax	+49 (0)2831/91021-99	
E-Mail	support@cnc-step.de	
Internet	www.cnc-step.de	

If you have any questions, please contact our customer service by email or telephone. We will be happy to help you.

www.cnc-step.de