



Supplementary instructions for the electrical assembly kit

For the CL Line CNC portal milling machine kit,
for motors with integrated output stages

Introduction

These additional instructions contain supplementary information on the "Assembly instructions for the milling kit" in order to prepare the CNC portal milling machine for electrical assembly. The electrical assembly kit supplied is intended exclusively for assembly on the CL Line CNC portal milling machines.



Caution!

Only carry out the work if you are familiar with the necessary actions and suitable tools are available. Sorotec GmbH assumes no liability for damage to property or personal injury occurring during assembly or operation of the CNC portal milling machine!

Scope of delivery

Illustration	Description	Number
	71 Drag chain 18 x 37 mm Length 1000 mm each	3
	72 Connecting kit drag chain	2
	Cable duct profile 40 x 40 x 180 mm	1
	Cover profile	1
	Cable gland	1
	Counter nut for cable gland	1

Illustration	Description	Number
	Switch housing reference switch (two parts)	3
	Flat headed screw M4 x 10 M M5 x 8 L Allen	6 2
	Countersunk screw DIN 7991 M4 x 6 P1 M4 x 10 P2 M4 x 16 P3 Allen	2 3 2
	Hammer nut Slot 8, M4 F Bridge 1,7 mm	1
	Nut DIN 934 M4 K	2
	Washer DIN 125 Ø M4 Y1	2

Component assembly

The following illustrations show the component assembly for cable routing on the left side of the machine and feed from the rear. This is only to be understood as an assembly suggestion; With the components of the electrical assembly kit, for example, a mirror-inverted structure or the cable feed from the front can be implemented. The following must be taken into account when planning:

- Local conditions for machine installation against a wall or in a corner
- Accessibility to the components for subsequent maintenance or repair work
- Components used such as stepper motors and their connection options
- Cable routing and accessibility to the control cabinet

Drag chain X axis

i Note:

Foot holder with holder for drag chain holder **37**, drag chain holder X **38**, bracket for drag chain X **39**, cylinder head screws M5 x 16 **C2** and M5 x 20 **C4** so as washer **Y2** are part of the CNC portal milling machine kit. The drag chains supplied, each 1 m long, can be shortened or lengthened as required.

- Screw the foot holder with drag chain holder **37** to the front or rear end plate with cylinder screws **C4**.
- Use countersunk screws **P2** to screw the drag chain holder X **37** to the foot holder with the mount for the drag chain holder **37**.
- An M5 thread is prepared in the gantry frame to screw on the bracket for drag chain X **39**.

Screw the mounting bracket to the gantry frame with a cylinder screw **C2** and washer **Y2**.

- Equip the ends of the drag chain **71** with the connection kit **T2**.
- Screw the drag chain to the drag chain holder X with countersunk screws **P1**.

Tools needed

The following tools and aids must or should be available during assembly:

- Common hand tools, such as Allen keys, screwdrivers, plastic hammers, etc.
- Scribing tool and center punches
- Drills 3.3 mm, 4.2 mm, 5 mm, 8 mm, 12.5 and 20 mm¹⁾
- Taps M4, M5 and M6

¹⁾ 20 mm preferably as a cone or step drill

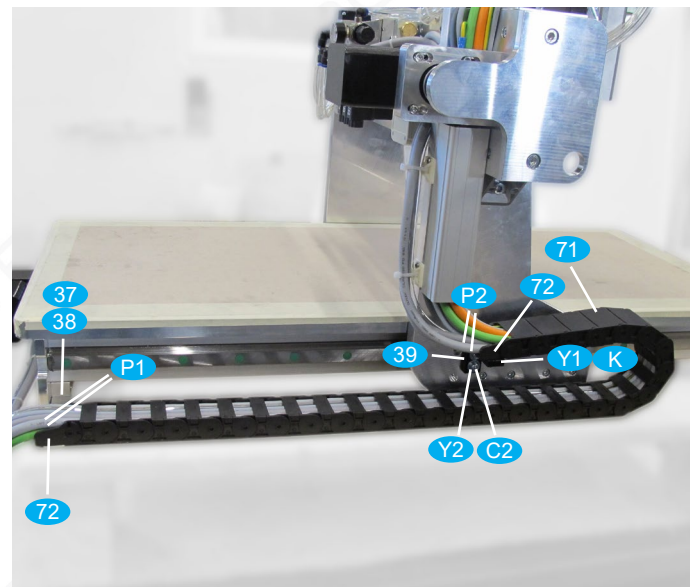


Fig. 1: Cable routing through the X axis drag chain.

Drag chain Y axis

1. Equip the ends of the drag chain **71** with the connection kit **72** and screw it to the motor flange Z **20** (countersunk screws M4 x 10 **P2**).
2. Screw the drag chain to the bottom aluminum profile of the portal (countersunk screws M4 x 16 **P3**, hammer nut M4 **F**).

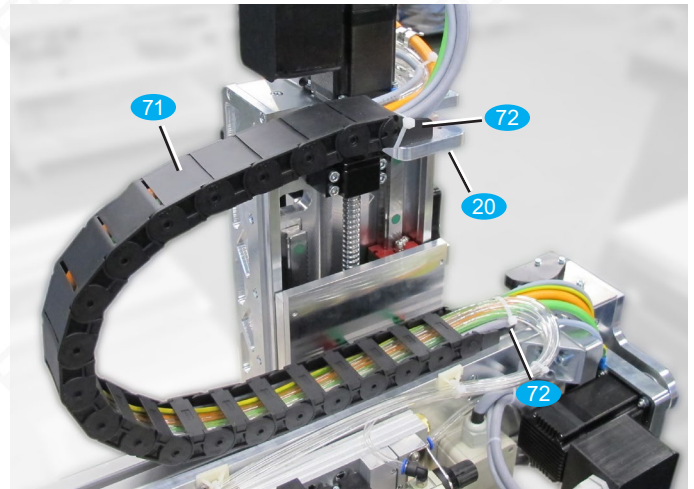


Fig. 2: Cable routing through the Y axis drag chain.

Cabel duct

Screw the cable duct **79** to the portal frame (flat head screws M5 x 8 **L**).

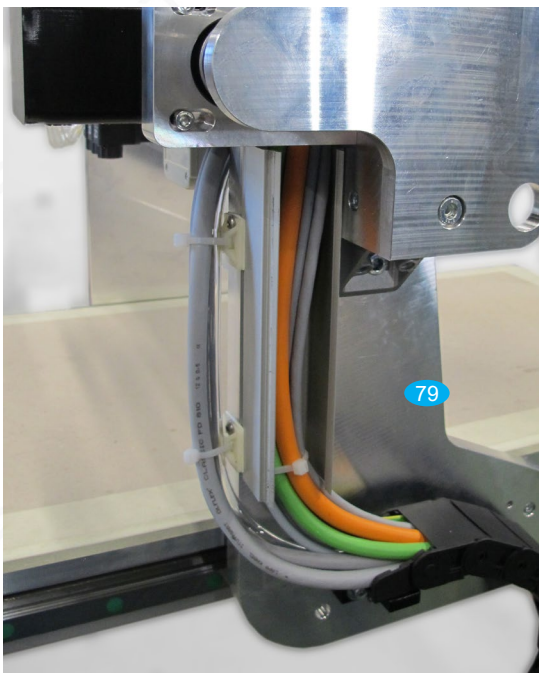


Fig. 3: Cable routing through cable duct. The cover is missing for a better overview..

Housing for reference switch

The two-part housing **80** and the reference switch **39** are assembled as a group with two cylinder head screws **A1** each. The insert foils from the CNC portal milling machine kit are no longer used for this.

The connection cables of the reference switches are fed out through the recess in the switch housing.

The assembly takes place at the installation locations that are described in the assembly instructions for the milling kit at the following points:

- X axis: Page 11
- Y axis: Page 18
- Z axis: Page 21

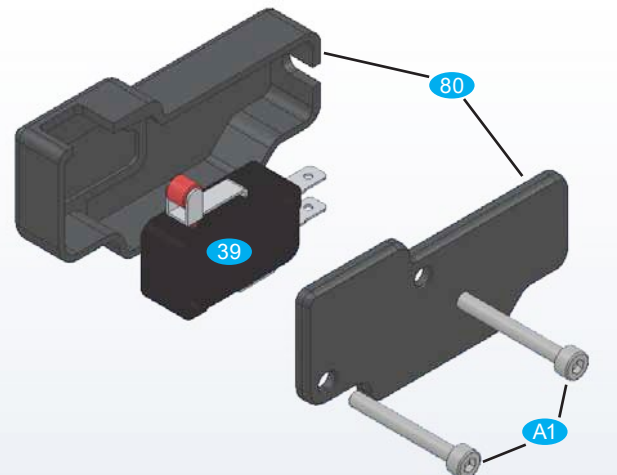


Fig. 4: Reference switch / housing assembly.

Motor connection

The electrical connection of the axis drives is described in the instructions for the controller, the associated circuit diagrams and in the motor data sheets.

The mechanical design is shown in Figures 6 and 7 as an example. We strongly recommend using the protective cap shown with cable glands to protect the connection panel from dust and chips.

The covers, which are specially made for this purpose using 3D printing, are available in the Sorotec shop (ESM.ZB.JMC.ABD.SET) and fit both the closed-loop systems from JMC and the Leadshine motors with an integrated output stage.

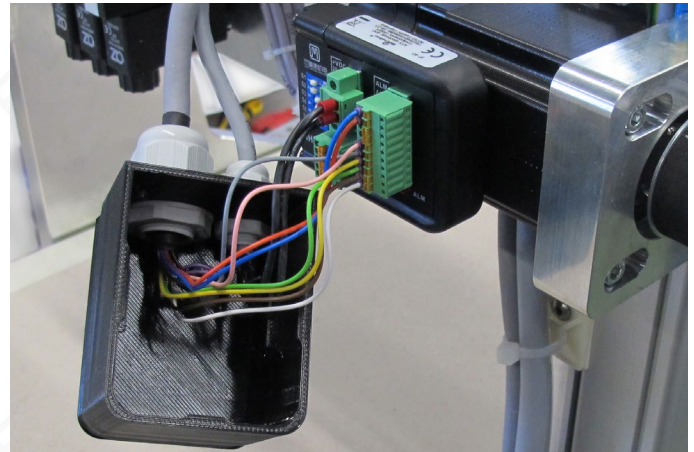


Fig. 6: Connection panel of a servo motor JMC iHSV57.



Fig. 7: The cover protects against dust and chips.