

EMCO PC Turn 50 Lathe CNC Retrofit



Rev. 1.0

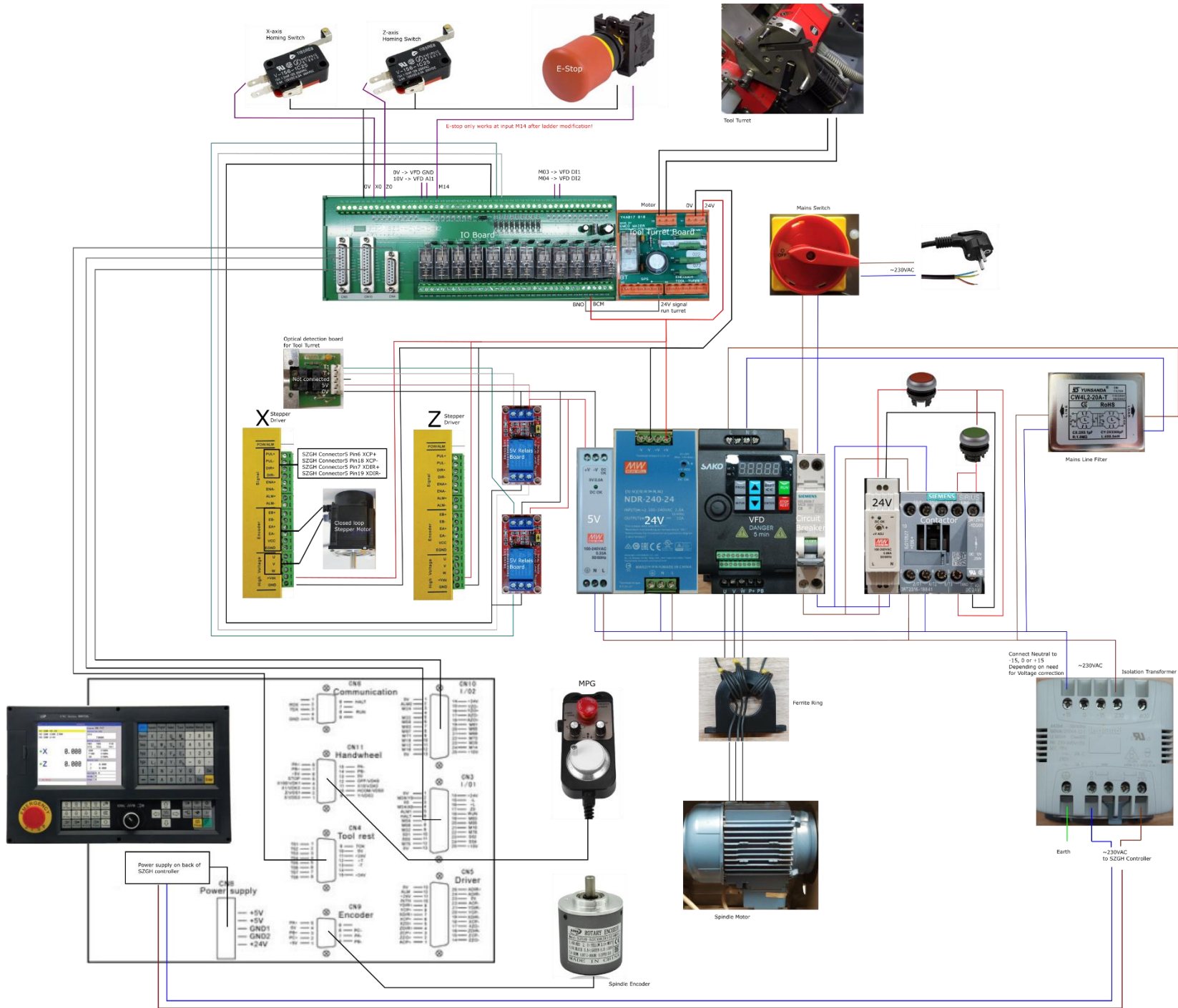
Robin, 14-05-2022

UptimeFab.com

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1. Electrical Diagram



2. Parts List (BOM)

Parts List (BOM) for EMCO PC Turn 50 Retrofit

Description	Brand, type	Type/part number	Supplier	Qty	Price (Euro)	Subtotal	Link
SZGH CNC controller	SZGH	SZGH-990TDb	Aliexpress.com (Shenzhen Guanhong Automation Store)	1	€ 344,16	€ 344,16	https://www.aliexpress.com/item/32232109730.html?spm=a2g0s.9042311.0.0.18564c4dGFAZiV
SZGH Rotary Encoder	SZGH	SZGH-52C08JR1024M05L	Aliexpress.com (Shenzhen Guanhong Automation Store)	1	€ 56,00	€ 56,00	https://www.aliexpress.com/item/32832333887.html?spm=a2g0s.9042311.0.0.18564c4dGFAZiV
IO relay board with new 12 relays for CNC lathe or milling controller	SZGH	SZGH-CNC-10-12	Aliexpress.com (Shenzhen Guanhong Automation Store)	1	€ 48,00	€ 48,00	https://www.aliexpress.com/item/4000680445333.html?spm=a2g0s.9042311.0.0.18564c4dGFAZiV
SGHZ controller and accesoiries	N/A	N/A	Shipping	1	€ 235,00	€ 235,00	Indication, might differ per country
SGHZ controller and accesoiries	N/A	N/A	Customs fee	1	€ 130,00	€ 130,00	Indication, might differ per country
SZGH 4 axis Pendant (MPG)	SZGH	CHP004S100L002	Aliexpress.com	1	€ 96,80	€ 96,80	https://www.aliexpress.com/item/32704534034.html?spm=2114.12010612.8148356.1.59c3427bQQpG5S

Isolation Transformer 230V-230V, 160VA	Legrand Single Phase - Veiligheidstransformator 044264		Elektrototaalmarkt.nl	1	€ 86,82	€ 86,82	https://www.elektrototaalmarkt.nl/legrand-single-phase-veiligheidstransformator-4171408
nema 23 closed loop stepper kit Nema23 1Nm	3 phase closed loop stepper motor Lichuan LC57H355 3 phase closed loop stepper motor driver Lichuan LCDH357H		Aliexpress.com	2	€ 48,34	€ 96,68	https://www.aliexpress.com/item/4000057310983.html?spm=a2g0s.9042311.0.0.18564c4dGFAZiV
Zero Phase Reactor (Ferrite Ring)	Delta	RF220X00A	Damencnc.com				https://www.damencnc.com/nl/delta-zero-phase-reactor-rf220x00a/a3183?c=61
VFD	SAKO (FTVOGUE)	SKI780-0D75G-1	Amazon.nl	1	€ 92,99	€ 92,99	https://www.amazon.nl/omvormer-frequentieomvormer-transformator-snelheidsregelaar-frequentie/dp/B08252ZRB3/ref=sr_1_1?__mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=2A3OBG8SKRW5E&dchild=1&keywords=vfd+0.75&qid=1620299873&sprefix=vfd%2Caps%2C179&sr=8-1
EMI filter	?	CW4L2-20A-T	Amazon.nl	1	€ 16,29	€ 16,29	https://www.amazon.nl/s?__mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&i=aps&k=EMI%20filter&ref=nb_sb_noss_2&url=search-alias%3Daps
E-stop	EATON	M22-PV/K01	elektrototaalmarkt.nl	1	€ 29,61	€ 29,61	https://www.elektrototaalmarkt.nl/eaton-moeller-m22pv-noodstop-4165539
E-stop text shield (NL-Noodstop)	EATON	M22-XZK-NL99	elektrototaalmarkt.nl	1	€ 3,59	€ 3,59	https://www.elektrototaalmarkt.nl/eaton-moeller-rmq-titan-tekstschild-4169206

E-stop text shield (English-Emergency Stop)	EATON	M22-XZK-GB99	elektrototaalmarkt.nl	1	€ 3,59	€ 3,59	https://www.elektrototaalmarkt.nl/eat-on-moeller-rmq-titan-tekstschild-4169209
Key switch (optional)	EATON	M22-WRS	elektrototaalmarkt.nl	1	€ 44,07	€ 44,07	https://www.elektrototaalmarkt.nl/eat-on-moeller-rmq-titan-sleutelschakelaar-4169131
M22 Mounting Adapter for front panel	EATON	M22-A	elektrototaalmarkt.nl	1	€ 2,01	€ 2,01	https://www.elektrototaalmarkt.nl/eat-on-moeller-rmq-titan-bevestigingsadapter-4169006
Text shield carrier (optional)	EATON	M22S-ST-X	elektrototaalmarkt.nl	1	€ 0,62	€ 0,62	https://www.elektrototaalmarkt.nl/eat-on-moeller-rmq-titan-tekstschilddrager-4169220
Feed-through terminal block Grey 2,5mm ²	Phoenix Contact	PT 2 5 PHO PT (3209510)	Elektramat.nl	10	€ 0,81	€ 8,10	https://www.elektramat.nl/phoenix-contact-pt-2-5-pho-pt-veerdruk-aansluitklem/
Feed-through terminal block Blue 2,5mm ²	Phoenix Contact	PT 2 5 BU PHO PT (3209523)	Elektramat.nl	10	€ 0,81	€ 8,10	https://www.elektramat.nl/phoenix-contact-pt-2-5-bu-pho-pt-veerdruk-aansluitklem/
Terminal block end plate Grey	Phoenix Contact	D-ST2 5 PHO (3030417)	Elektramat.nl	1	€ 0,40	€ 0,40	https://www.elektramat.nl/phoenix-contact-d-st2-5-pho-eindplaat-2-5-grys/
Plug in bridge	Phoenix Contact	PHO FBS 2-3 5 (3213027)	Elektramat.nl	1	€ 0,69	€ 0,69	https://www.elektramat.nl/phoenix-contact-doorverbindingsbrug-3-polig-pho-fbs-2-3-5-3213027/

Feed-Through Terminal Block 1,5mm ² (used only for low voltage small diameter signal wires. If you only buy one type go for the larger 2,5mm ²)	Phoenix Contact	PT 1,5/S (3208100)	Elektramat.nl	20	€ 0,60	€ 12,00	https://www.elektramat.nl/phoenix-contact-pt-1-5-s-verbingsrijgklem-3208100/
3 wire splicing connectors box of 50pcs	Wago	221-413	Elektramat.nl	1	€ 14,50	€ 14,50	https://www.elektramat.nl/wago-verbindingklem-3-voudig-4mm-per-50-stuks-221-413/
5 wire splicing connectors box of 25pcs	Wago	221-415	Elektramat.nl	1	€ 11,50	€ 11,50	https://www.elektramat.nl/wago-verbindingklem-5-voudig-4mm-per-25-stuks-221-415/
DIN-rail, set of 3 pcs	SJUNJIE	B08FFM7498	Amazon.nl	1	€ 8,99	€ 8,99	https://www.amazon.nl/SJUNJIE-Montage-Slotted-Terminal-Schakelaar/dp/B08FFM7498/ref=sr_1_1?mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=2IEFG57KS9QZM&keywords=SJUNJIE+3Pcs+DIN&qid=1649352796&sprefix=sjunjie+3pcs+din%2Caps%2C58&sr=8-1

Power supply 24V for stepper drives (DIN rail mounted)	Mean Well	NDR-240-24	Amazon.nl	1	€ 54,90	€ 54,90	https://www.amazon.nl/DIN-rail-voeding-NDR-240-24-SNT-0-10/dp/B08CS5QS7B/ref=sr_1_1?_mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&dchild=1&keywords=MeanWell+NDR-240-24&qid=1621976920&sr=8-1
Plastic Cabinet	BOXEXPERT	500x350x190mm	Amazon.nl	1	€ 52,10	€ 52,10	https://www.amazon.nl/BOXEXPERT-kunststof-schakelkast-transparant-500x350x190mm/dp/B07C834R88/ref=sr_1_1?_mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&dchild=1&keywords=boxexpert+500x350&qid=1621977032&sr=8-1
Aluminium 2mm sheet back plate	N/A	680x380mm	https://www.aluminiumopmaat.nl/	1	€ 13,01	€ 13,01	https://www.aluminiumopmaat.nl/
Aluminium 2mm sheet bottom plate	N/A	680x440mm	https://www.aluminiumopmaat.nl/	1	€ 11,58	€ 11,58	https://www.aluminiumopmaat.nl/
Rubber Feet 38x25mm (set of 4 pcs)	Adam Hall Hardware	4911 M4 AH	Amazon.nl	1	€ 5,75	€ 5,75	https://www.amazon.nl/Adam-Hall-Hardware-4911-M4/dp/B00SJFDYL0/ref=sr_1_1?_mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crid=SHMW87Q3DM4I&keywords=4911+M4+AH&qid=1649354754&sprefix=4911+m4+ah%2Caps%2C76&sr=8-1
Siemens Installatieautomat C karakteristiek 8a 2P 1	Siemens	5SL6008-7	Elektrobode.nl	1	€ 17,51	€ 17,51	https://www.elektrobode.nl/products/siemens-installatieautomat-c-karakteristiek-8a-2p-incl-nul-1te-5sl6008-7-5sl60087

beveiligd incl nul 1te 5SL6008-7							
Siemens 3RT2 Contactor 24VDC AC-3 9A 4KW	Siemens	3RT2016-1BB41	Elektrobode.nl	1	€ 26,56	€ 26,56	https://www.elektrobode.nl/products/siemens-contactor-ac34kw-1m-dc24v-3rt2016-1bb41
Siemens 3RT2916- 1DG00 Diode	Siemens	3RT2916-1DG00	Elektrobode.nl	1	€ 6,08	€ 6,08	https://www.elektrobode.nl/products/siemens-ontstooriode-dc12-250v-s00-3rt2916-1dg00
Siemens Limit Switch Roller Lever (Used as a door Switch)	Siemens	3SE52320HE10	Elektrobode.nl	1	€ 24,64	€ 24,64	https://www.elektrobode.nl/products/siemens-eindsch-1m-1v-rol-3se52320he10
Optocoupler board 2 channel	Unknown	D120	Benselectronics.nl	1	€ 2,99	€ 2,99	https://www.benselectronics.nl/2-kanaals-optocoupler-board.html
Brass MXL 20 teeth Timing Pulley Bore 8mm(D Shape) for belt width 15mm	Unknown	Unknown	Aliexpress.com (AliExpress 3D-beltpulley Store)	1	€ 8,70	€ 8,70	https://www.aliexpress.com/item/32830633598.html?spm=a2g0s.9042311.0.0.7c5f4c4drWVOb8
Custom MXL belt	Powge B63 MXL 12.7mm (=0.5 inch)	Custom order for this specific width USD24,19 total for 10 belts	AliExpress POWGE Official Store	1	€ 20,49	€ 20,49	https://nl.aliexpress.com/item/738657464.html?spm=a2g0o.store_pc_groupL.ist.8148356.15.33f64c94qPhrSA

Step down DC-DC converter 3,2 - 40 V DC naar 1,25 - 35 V DC 2 A	Unknown	DAR00071	123-3d.nl	2	€ 5,50	€ 11,00	https://www.123-3d.nl/123-3D-Step-down-DC-DC-converter-3-2-40-V-DC-naar-1-25-35-V-DC-2-A-i3869-t13192.html
Noctua Case Fan 60x60x25, 12V	Noctua	NF-A6x25 FLX	123-3d.nl	2	€ 14,50	€ 29,00	https://www.123-3d.nl/Noctua-NF-A6x25-12-V-60x60x25-mm-3-pin-axiaal-FLX-ventilator-19162-i6882-t15055.html
Ferrules (small sizes assortment)	TRU Components	T1903C023	Conrad.nl	1	€ 6,97	€ 6,97	https://www.conrad.nl/nl/p/tru-components-t1903c023-adereindhuls-assortiment-0-14-mm-0-25-mm-0-34-mm-0-50-mm-deels-ge-soleerd-grijs-lichtbl-2102503.html
1 Channel relais board 5V	Unknown	H53	Ben's Electronis	1	€ 3,49	€ 3,49	https://www.benselectronics.nl/1-kanaals-relais-board-hoog-laag.html
GT2 timing belt assortment set (not used)	BHGT / nychuangtuo		Amazon.nl	1	€ 10,03	€ 10,03	
Ball Bearing 6006-2Z	SKF	6006-2Z	Techniekwebshop.nl	2	€ 6,38	€ 12,76	
GT2 80teeth pulley 6mm belt 8mm bore	Powge	80T-2GT (6mm belt, 8mm bore)	Aliexpress	2	€ 10,89	€ 21,78	https://www.aliexpress.com/item/32782605159.html?spm=a2g0o.cart.0.0.59Od3c00HUY7cG&mp=1
GT2 belt 400mm 200 teeth, set of 5 pcs	Powge	400-2GT	Aliexpress	1	€ 11,56	€ 11,56	https://nl.aliexpress.com/item/1858498241.html?spm=a2g0o.store_pc_groupList.8148356.19.bf2723eaoNYAKf

M6 Lever	Unknown	02823	HBM	1	€ 1,99	€ 1,99	https://www.hbm-machines.com/nl/p/hbm-metalen-snelversteller-met-inwendig-draad
Parting Blade 8mm holder, 8mm blade		6S06.3.21	Hogetex	1	€ 14,40	€ 14,40	https://www.hogetex.com/afsteekhouder-met-hss-afsteekblad-met-spaanbreker
Parting Blade 8mm holder, 10mm blade	Unknown	6S06.3.22	Hogetex	1	€ 16,20	€ 16,20	https://www.hogetex.com/afsteekhouder-met-hss-afsteekblad-met-spaanbreker
HSS parting blade 8mm	Unknown	6S06.3.31	Hogetex	1	€ 5,60	€ 5,60	https://www.hogetex.com/afsteekhouder-met-hss-afsteekblad-met-spaanbreker
HSS parting blade 10mm	Unknown	6S06.3.32	Hogetex	1	€ 7,00	€ 7,00	https://www.hogetex.com/afsteekhouder-met-hss-afsteekblad-met-spaanbreker

Tooling and accessories

7pcs set Carbide inserts with tool holders 10mm shank (12mm also fits)	Unknown	Unknown	Aliexpress	1	€ 33,87	€ 33,87	https://nl.aliexpress.com/item/4000317910586.html?spm=a2g0o.productlist.0.0.27655e80pJ00LJ&algo_pvid=d34118df-b156-4cb6-970d-2b613f18285a&algo_exp_id=d34118df-b156-4cb6-970d-2b613f18285a-1&pdp_ext_f=%7B%22sku_id%22%3A%2212000015570520904%22%7D&pdp_pi=-1%3B33.87%3B-1%3B0.46%40salePrice%3BUSD%3Bsearch-mainSearch
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Carbide insert for Aluminium	Unknown	DCGT070204-AK	Amazon.nl	1	€ 22,09	€ 22,09	https://www.amazon.nl/Carbide-Inserts-Draaibank-Freesmachine-DCGT070204-AK/dp/B08DFR5153/ref=sr_1_1_sspa?__mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=3N0HR9T5H6O96&keywords=DCGT070204-AK&qid=1649350635&sprefix=dcgt070204-ak%2Caps%2C61&sr=8-1-spons&psc=1&smid=A2BHI72PCORNE7&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUExR1dLWFgwU1hDNUINJmVuY3J5cHRIZElkPUewOTc4MjA1MllySTJENFpXWUJVMYzIbmNyeXB0ZWRBZEIkPUewNDg2MjA4MzE5Rk9VQzRNSzI1MyZ3aWRnZXROYW1lPXNwX2F0ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNRpXRydWU=
PCD 55 degree insert	Unknown	DCGT070204 PCD	Amazon.nl	1	€ 16,69	€ 16,69	https://www.amazon.nl/LANTRO-JS-CNC-draaibank-Draaigereedschap-precisiebewerking/dp/B094XTHRRG/ref=sr_1_1_sspa?__mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=3HHGJHW9GQ1J9&keywords=LANTRO+JS+-+DCGT070204&qid=1649350929&sprefix=lantro+js+-+dcgt070204%2Caps%2C65&sr=8-1-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUeyMTE1SVQxU0NOTOs3JmVuY3J5cHRIZElkPUewMTQxNjEzMjRPVtGzRTNRSERaUSZlbnNyeXB0ZWRBZEIkPUewMzc4MDC0M0VHQ1IMQtdE=

							VUtaQSZ3aWRnZXROYW1IPXNwX2FOZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZONsaWNrPXRydWU=
Threading Insert	Unknown	11ER 050ISO K15	Amazon.nl	1	€ 13,05	€ 13,05	https://www.amazon.nl/draaibank-Threading-invoegen-Carbide-Aluminium/dp/B081QZ8K7V/ref=sr_1_1?mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=Z688RMF2ZYMT&keywords=11ER+050ISO+K15&qid=1649351125&srefix=11er+050iso+k15%2Caps%2C64&sr=8-1
Stub Drill set	Alpen	100906100	Amazon.nl	1	€ 25,49	€ 25,49	https://www.amazon.nl/Alpen-100906100-HSS-ECO-TM-PZ-Boren/dp/B00MDIFU0M/ref=sr_1_1?mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=10TRQXVDG8UEZ&keywords=Alpen+100906100&qid=1649351276&srefix=alpen+100906100%2Caps%2C71&sr=8-1
Center Drill set	Walfront	CMSBNAN01774	Amazon.nl	1	€ 10,69	€ 10,69	https://www.amazon.nl/Center-Boor-Stuks-Centerboren-Metaal/dp/B076XWBB1Q/ref=sr_1_1?mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=21Y6BELAX8247&keywords=CMSBNAN01774&qid=1649351431&srefix=cmsbnan01774%2Caps%2C61&sr=8-1
ER20 collet holder (for emco compact 5)	RCM-Machines.com	RCFUC5ER20	RCM-Machines.com	1	€ 55,85	€ 55,85	https://www.rcm-machines.com/en/rcm-production/chucker/spannzangenfutter-er20-fuer-emco-compact-5/rcfuc5er20

13pcs 1-13mm ER20 Spring Collet Set	HomdMarket	B07G6WMDVK	Amazon.nl	1	€ 22,96	€ 22,96	https://www.amazon.nl/1-13mm-Spring-Collet-Workholding-Graveren/dp/B07G6WMDVK/ref=sr_1_6?_mk_nl_NL=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crd=2MLO742Q3QK1P&keywords=ER20+Spring+Collet+Set&qid=1649351573&srefix=er20+spring+collet+set%2Caps%2C69&sr=8-6
Parting tool 8 mm, model1	Unknown	01969	HBM	1	€ 4,99	€ 4,99	https://www.hbm-machines.com/nl/p/hbm-afsteekhouder-met-hss-mes
Parting tool 10 mm, model1	Unknown	01970	HBM	1	€ 4,99	€ 4,99	https://www.hbm-machines.com/nl/p/hbm-afsteekhouder-met-hss-mes
Thread Gauge	Unknown	02691	HBM	1	€ 7,99	€ 7,99	https://www.hbm-machines.com/nl/p/hbm-draadmeter-metrische-withworth
Parting Tool 10 mm, model2	Unknown	2265	HBM	1	€ 9,99	€ 9,99	https://www.hbm-machines.com/nl/p/hbm-afsteekhouder-met-hss-mes-model-2

3. SZGH Controller IO

Name	IO	Description	Used in this retrofit?
No.00 Alarm	M80		
No.01 Alarm	M81		
No.02 Alarm	M82		
No.03 Alarm	M83		
No.04 Alarm	M84		
Door Is Open	M85		
No.05 Alarm	M86		
No.06 Alarm	M87		
No.07 Alarm	M88		
Non Lubricate Oil	M89		
Spindle Don't Chuck well	M90		
No.10 Alarm	M91		
+5V Undervoltage	M92		
+24V Undervoltage	M93		
No.11 Alarm	M94		
No.12 Alarm	M95		
T01	X00	Tool1 position input signal	Tool1 position input signal
T02	X01	Tool1 position input signal	Signal for eacht turret position (counting turret)
T03	X02	Tool1 position input signal	
T04	X03	Tool1 position input signal	
T05	X04	Tool1 position input signal	
T06	X05	Tool1 position input signal	
T07	X06	Tool1 position input signal	
T08	X07	Tool1 position input signal	
M34/A0	X08	Zero point of A axis	Not used
-L	X09	Negative limit	Not used
+L	X10	Positive limit	Not used
M36/Y0	X11	Zero point of Y axis	Not used
X0	X12	Zero point of X axis	Home switch X axis
Z0	X13	Zero point of Z axis	Home switch Z axis
KRUN	X14	Run	Not used
KHALT	X15	Pause	Not used
XZ0	X16		
ZZ0	X17		
KLEFT	X18		
KRIGHT	X19		
STOP	X20	E-stop	E-stop button on pendant
TOK	X21		
ALM	X22		
ALM1	X23	Alarm1 of spindle	

ALM2	X24	Alarm2 of machine tool	
M28	X25	User defined input2	
M24	X26	User defined input 7	
M22	X27	M01 quasi-stop input	
M18	X28	User defined input1	
M12	X29	User defined input3	
M14	X30	User defined input4	Used for external E-stop. Ladder has been modified for this to work.
M16	X31	User defined input5	
M61	Y00	User defined output 1	
M63	Y01	User defined output 2	
M65	Y02	User defined output 3	
M67	Y03	User defined output 4	
M69	Y04	User defined output 5	
M71	Y05	User defined output 6	
M73	Y06	User defined output 7	
M59	Y07	Huff (mist?) output	Not used
M32	Y08	Lubrication	Not used
M79	Y09	Tailstock	Not used
M10	Y10	Chuck	Not used
M08	Y11	Coolant	Not used
M05	Y12	Stop Spindle	
M04	Y13	Spindle Counter Clockwise	
M03	Y14	Spindle Clockwise	
M75	Y15	Spindle control mode for C-axis	Not used
LRUN	Y16		
INTH	Y17		
+T	Y18	Control rotation of turret	Rotate Turret
-T	Y19	Control rotation of turret	Not used (Turret rotates back into position automatically)
S04	Y20	Spindle fourth gear	
S03	Y21	Spindle third gear	
S02	Y22	Spindle second gear	
S01	Y23	Spindle first gear	
K01	Y24		
K02	Y25		
K03	Y26		
Y27			
Y28			
Y29			
H	Y30		
	Y31		
	X32		
	X33		
	X34		

	X35		
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	Y60		
	Y61		
	Y62		
	Y63		

4. VFD Parameters – Sako SKI780-0D75G-1

In the table below the settings are listed that I have either changed, or might be of interest. For the full parameter list and description, refer to the user manual.

Parameter code	Description	My Setting	Description
P0-01	Motor Control Mode	0: Sensorless flux vector control	Default was V/F control (2). This gave a high pith noise mainly when accelerating and decelerating. The Flux vector control is a method where amplitude frequency and phase are varied to keep the motor at the intended speed. This is an efficient method to control a motor and adapts to the motor dynamics without the need for encoder feedback.
P0-015	Carrier frequency	16 kHz	This is the switching frequency of the VFD. A higher frequency generates a cleaner waveform, reduces high pitch noise from the motor and increases efficiency. There are however also downsides: Reduces the life of the VFD, generates more heat and increases the EMI, which may affect the functioning of other components in the system. So there is a tradeoff. I am setting this as high as possible to reduce noise, but might have to lower it if I run into issues with EMI.
P0-17	Acceleration time	3sec	Default: 10
			For now I have set this to 3 seconds, will test later if this can be further decreased.
			This is applies to the maximum RPM, so it would only take half the time if you program the spindle to 50% of the maximum RPM
P0-18	Deceleration time	3sec	Default:10
			For now I have set this to 3 seconds, will test later if this can be further decreased.
			Similar to the acceleration time this also applies to decelerating from the maximum RPM to zero.
P0-19	Time Unit	sec	Default:1
P1-00	Motor Type Selection	0	Common Asynchronous Motor (default)
P1-01	Rated Motor Power	0.4kW	Rounded up from 0.37kW
P1-02	Rated Motor Voltage	230VAC	Rated motor voltage for the Delta Configuration

P1-03	Rated motor current	2.1A	Rated motor current for the Delta Configuration. Setting this should allow the VFD's electronic overload function to stop the motor and generate a fault based on a calculated overload value based on current, frequency motor characteristics and time.
P1-04	Rated motor frequency	50Hz	For now I have this at 50 Hz, which leads to a maximum of 1370 RPM. I will see how far I want to increase this later.
P1-05	Rated motor rotational speed	1370 RPM (@ 50Hz)	Initial maximum set value. After Replacing the spindle bearings, which were worn out, I will increase this max RPM
P1-10	No load current	0.63A	This is set to 30% of FLA for now: $0.3 * 2.1 = 0.63A$
P1-37	Auto Tuning	0	Left Auto tuning off for now, test auto tuning later.