swiss lifting solutions

TRANSLATION
OF THE ORIGINAL INSTRUCTION MANUAL

Electric tug SA*KB*

Spare parts
Ersatzteile
Pièces de rechange
Onderdelen
Reservedele
Varaosat
Pezzi di ricambio
Reservdelen
Peças
Reservdelar
Piezas de recambio

Circuit diagrams
Stromlaufpläne
Schéma de connexions
Stroomschema
Kredslobsdiagrammer
Kytkentäkaavio
Aansluitschema
Schema elettrico
Koplingskjema
Esquema electrico
Elschema
Esquema eléctrico

SA*KB*

CE

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Spare parts / Ordering of spare parts

The correct order numbers for the original spare parts are to be taken from the spare parts list. Please ensure that you have the following data on your electric tug to hand. Thereby a quick and correct supply of the parts required will be effected.

Electric tug type : .....

Manufacture number : .....

Year of manufacture : .....

Original spare parts for the electric tug can be acquired from the following addresses:

1. Manufacturer

GIS AG
Swiss Lifting Solutions
Luzernerstrasse 50
CH-6247 Schötz

2. Agent

.....

.....

.....

.....

0 General directions

0.1 General safety directions

0.1.1 Safety and hazard precautions

The following symbols and terms are used in this instruction manual for safety and hazard instructions:

DANGER !
The non-compliance either in part or full of work and operational directions marked with this symbol can result in serious personal injury or even death.
Danger notices must be **strictly** complied with.

CAUTION !
The non-compliance either in part or full of work and operational directions marked with this symbol can result in major machinery, property or material damage.
Cautionary notices must be **strictly** adhered to.

NOTE
Effective and simple operation is the result of following the directions denoted under this symbol.
"Note" directions make light work.

For general directions and safety specifications: see chapter 0 of the instruction manual for electric chain hoist GCH (9401.9000.1).
The technical datas can be found in the GIS*KB* documentation.

1 General functional description

The electric tug (SA) is delivered with or without control system.

1.1 Control system (figure 1-1 / 1)

The electric tug (SA) is controlled in series with a frequency converter (FU). The fixed frequencies set at the factory enable a step less changeover between a fine motion drive and fast drive.

1.2 Control elements

The control switch for the SA (electric tug) has 4 or 6 buttons. The control cable is conducted into the control box.

1.3 Motor / Brake / Gear (figure 1-1 / 2)

The electric tug (SA) is equipped with a cylindrical asynchronous motor and generally with a direct-current brake. The winding is of insulation class F.
The transmission is assured by a two-stage spur gearing which is continuously lubricated.

1.4 Friction wheel drive with trolley (figure 1-1 / 3)

The vulcolan-coated friction wheel is pressed outside to the lateral side of the lower profile part. The pressing power can be regulated by two tension screws. The trolley within the profile section is equipped with four plastic rollers.

2 Start-up

DANGER !
Mechanical adjustments may only be performed by authorized specialists.

CAUTION !
The operating staff must carefully read the instruction manual of the SA before its initial operation and carry out all checks. Separate operating instructions are available for operating the frequency converter. A summarised set of instructions is included with each device. Only when a safe operation has been established may the device be put into operation.
Unauthorized persons may not operate the device or perform any work with the help of the same.

2.1 Transport and assembly

For the transport and assembly of the electric tug (SA), the safety direction for handling with loads are to be followed (see chapter 0). The SA must be assembled by qualified staff, always bearing in mind the accident prevention directions in chapter 0. Before assembly the SA must be stored in an enclosed room or covered area. Should the SA be destined for operation outdoors, then it is re-commended that a protection roof is erected to shield it from the influences of the weather.
Wherever possible, the SA should be transported in its original packaging. It is recommended that the assembly and connection of it is effected on-site by our qualified customer service personnel.

2.2 Connection

2.2.1 Power connection for operating voltage

DANGER !
Electrotechnical adjustments may only be performed by authorized specialists.

CAUTION !
Before connection of the SA, check to ensure that the voltage defined on the load plate is the same as that which is available. Remove the electrical cover plate and connect the power cable in the side tappings (M25).
The SA must be connected according to the supplied circuit diagrams.
The connection cable for a second non-controlled electric tug must be of shielded type and 4 x 1 mm^2.

2.2.2 Earth connections

DANGER !
The protective conductor is not to carry any power.
The use of a shielded cable requires the shielding to be earthed.

NOTE
The earth conductor is wired up to the earth connection terminal as green/yellow wire. Earth conductor of the power supply to the terminal (PE) is connected with yellow/green wire.

2.2.3 Setting the travel speed

The SA is equipped with a frequency converter as standard.
Fixed frequencies are set at the factory for fine motion drive 6 m/min (15 Hz) and fast drive 35 m/min (87 Hz). The acceleration and deceleration time is two seconds.
These values may only be adjusted in accordance with the operating instructions and must be made by authorized personnel.

2.2.4 Assembly within the profile

The hexagon nuts M10 must be loosened so that the SA can be introduced in the profile section. After that introduction the two hexagon nuts are equally prestressed. The disk springs should not be stressed totally.

CAUTION !
The profile must be free from oil and grease.

The connector clamp assures the adequate coupling of the SA with the trolley (figure 2-1) or with the rolling apparatus (figure 2-2).

2.3 Further checks following assembly and installation

2.3.1 Check the fuses

Check the fuses in the tool box.

DANGER !
The value of the fitted fuses must be dimensioned according to the motor power of all the devices of the crane system.

2.3.2 Electrical connection check

- Check electrical power supply run is safely seated and secure in its path

CAUTION !
- Avoid clamping, knotting and crushing of cable
- Check cable clamps and securing material are securely seated
- With external traction relief check the security of the traction relief cable for the control switch

CAUTION !
The traction relief cable must be so secured that the power cable for the control switch is not put under stress.

3 Maintenance

3.1 General regulations for service- and maintenance work

Operating failures on the SA impairing the safe operation of the device are to be cleared immediately.
The SA may only be serviced by trained and authorized specialists.

NOTE
We recommend to have maintenance work performed by our customer service.

CAUTION !
If the operator performs maintenance work on an SA on his own account, the type of maintenance performed must be entered into the inspection pass together with the date of performance.

Alterations to, as well as changes of and supplements to the SA which may impair the safety must be authorized by manufacturer in advance. Alterations to the SA not authorized by the manufacturer lead to an exclusion of the manufacturer's liability in case of damage.
Material warranty claims will only be recognized if solely genuine spare parts by the manufacturer have been employed.
We explicitly wish to point out that original parts and accessories not supplied on our behalf cannot be inspected or released by us.

General:
Service and maintenance are preventive measures designed to enhance the full functionality of the SA. Non-compliance with the service and maintenance routines can result in reduction of the useful function of and/or damage to the equipment.
Service and maintenance work are to be effected periodically in accordance with the instruction manual.

During service and maintenance work the general accident prevention directions, the special safety directions (chapter 0) as well as the notes on hazard protection (chapter 0) are to be followed.

DANGER !
Service and maintenance work is only to be effected on the unloaded SA. The main switch must be off.

The maintenance work encompass sight checks and cleaning routines.

The service work includes additional functional checks.

During the functional checks, all securing elements and cable clamps must be checked for secure seating.
Cables must be inspected for dirt, discoloration and arc spots.

CAUTION !
Used operating fuels (oil, lubricants ...) are to be safely collected and disposed of in an environmentally friendly manner.

The service and maintenance intervals are to be adapted to the working conditions. They are to be reduced when the working stress of the SA is on average large and when unfavourable conditions surface frequently during operation (dust, heat, humidity, steam, etc.).

3.2 Service and maintenance

The following sight checks are to be made daily:
- Wear of friction wheel; if the friction wheel slips, it requires more prestress
- Sealing of gear; no oil or grease should penetrate
- Current supply cable; no chaff marks or damages are allowed
- Discharging device of cable; the cable should not be put under stress

The friction wheel must be replaced as soon as the holding device grazes the profile.
Replacement of friction wheel:
a) Cut-off current
b) Remove SA from profile
c) Detach friction wheel according to figure 3-1

CAUTION !
The SA must periodically be maintained.

Adequate maintenance requires the SA to be removed from the profile. The following maintenance works are to be made:
- Check on wear and quiet running of the friction wheels
- Replace any worn-out friction wheel
- Check sealing of the gear
- Replace any damaged cables or cable glands

The maintenance work must be followed by a functional check with nominal load.

3.3 Ordering of spare parts

Notes on how to order spare parts can be found on page 2.

Figure 1-1

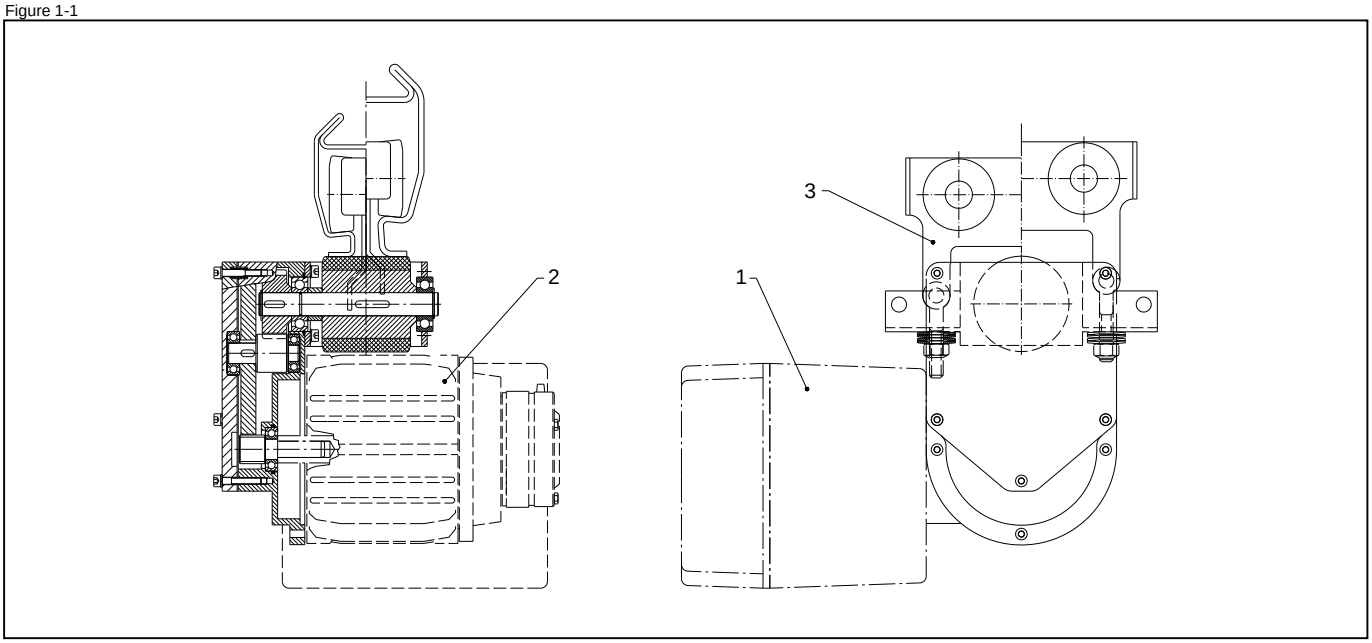


Figure 2-1

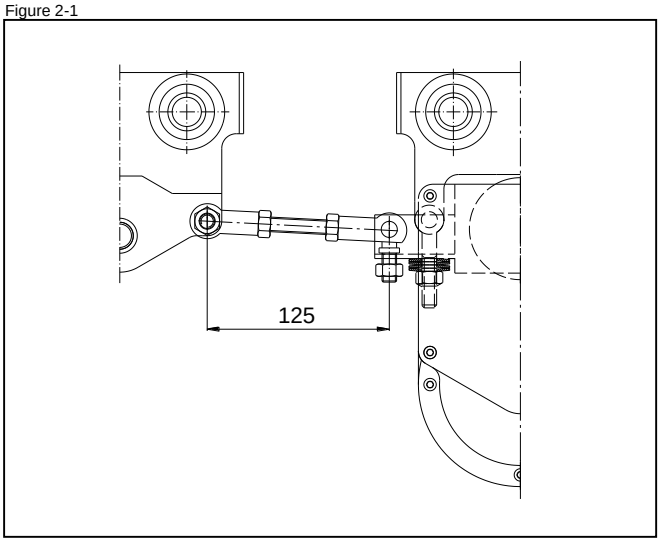


Figure 2-2

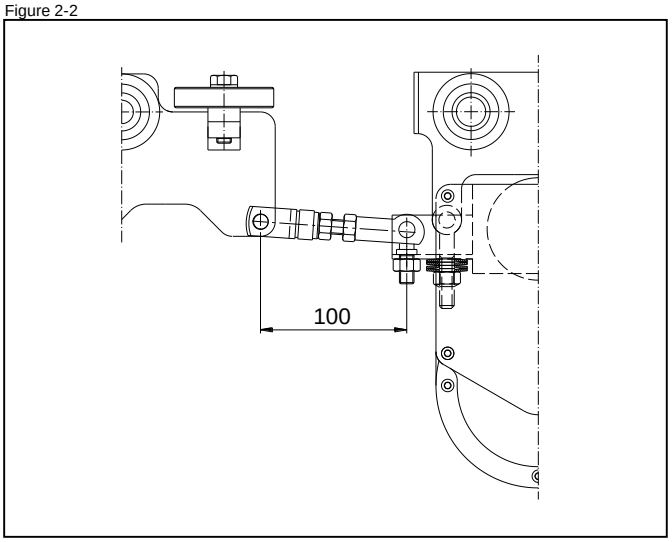
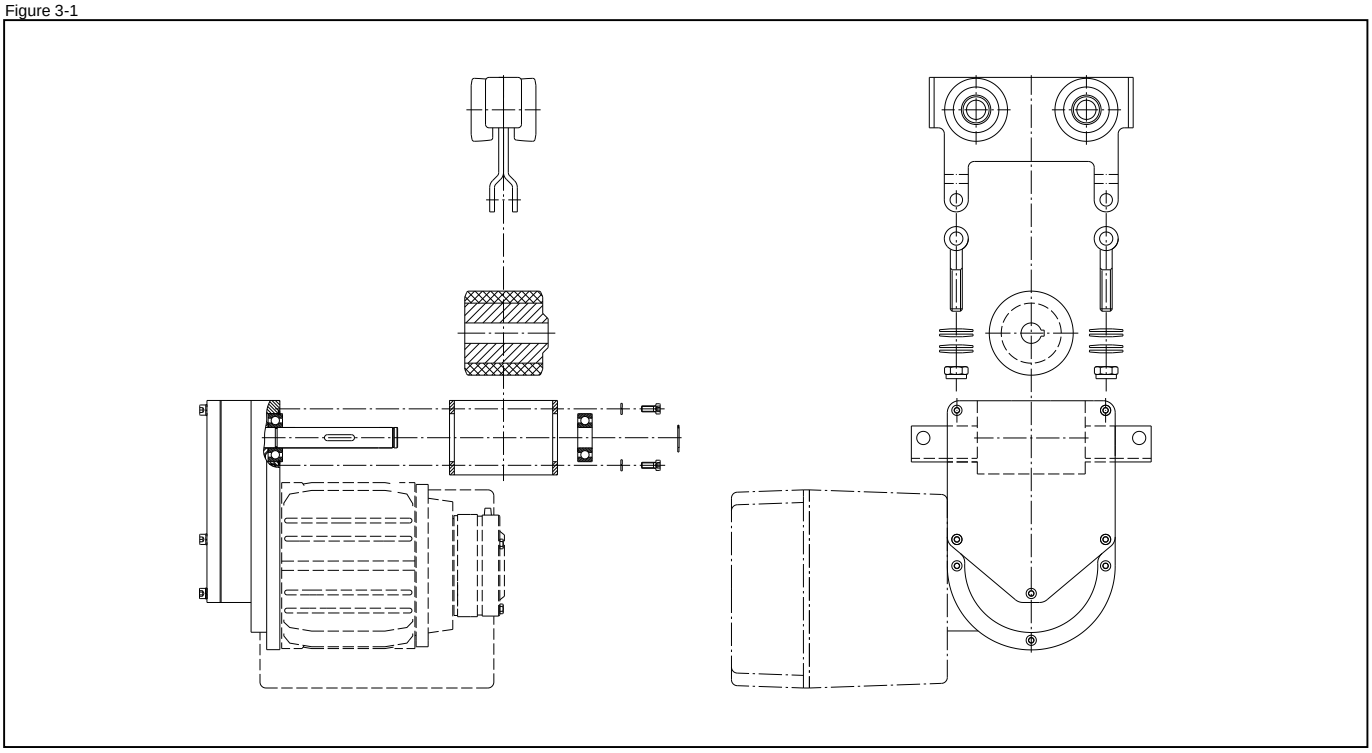
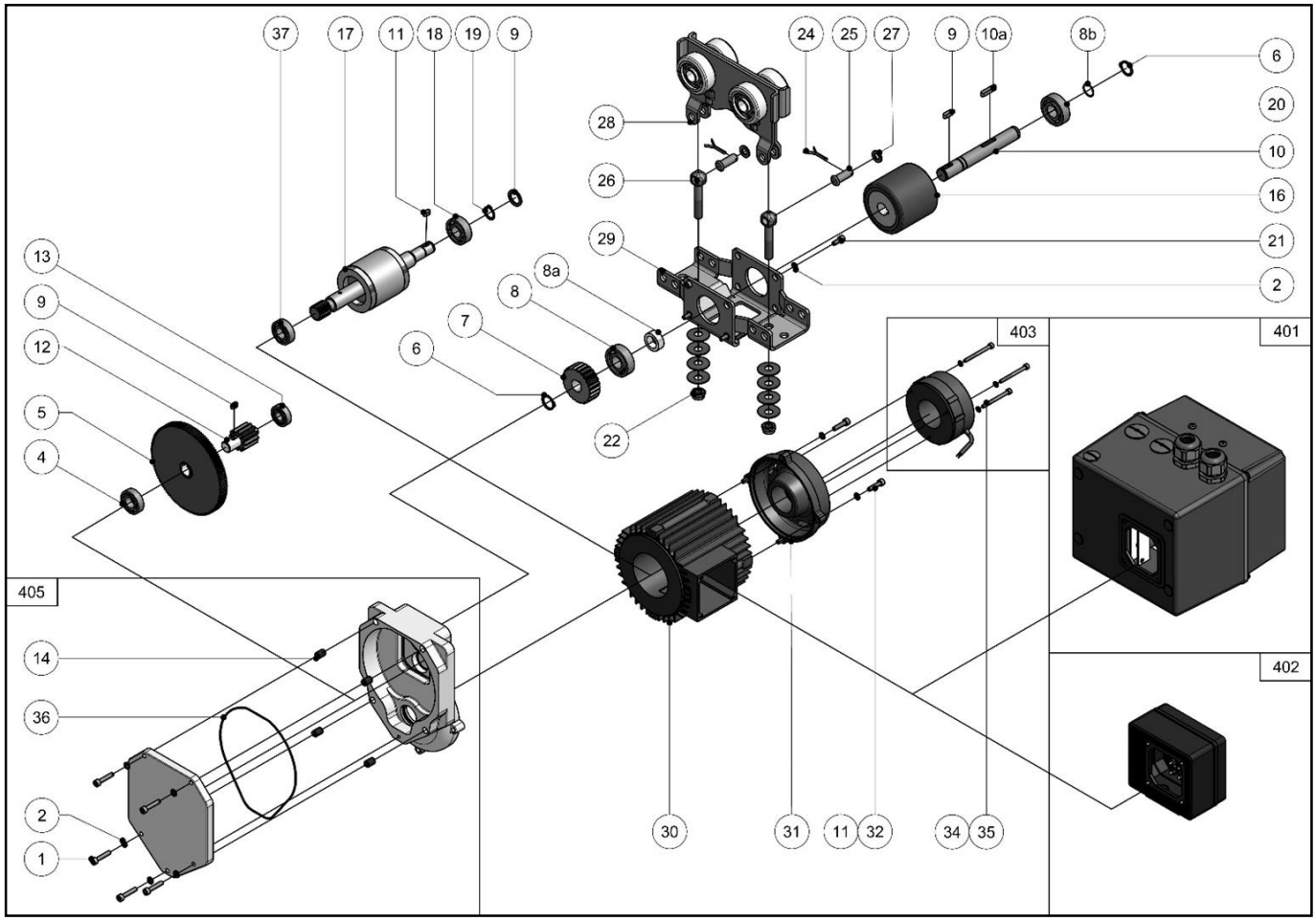


Figure 3-1

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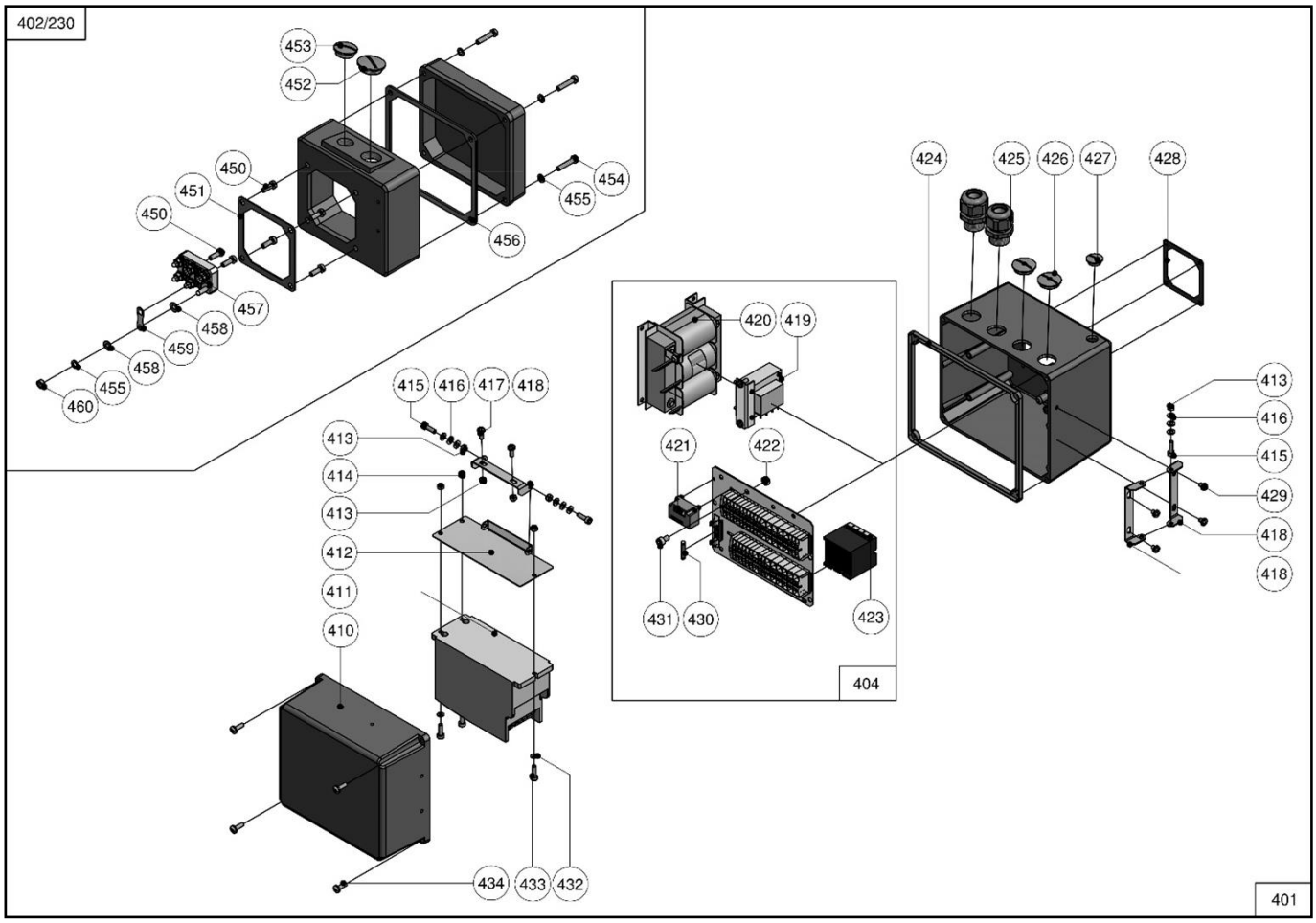
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401

		SA*KB*
1	M5 x 25 VZ	9030.0265
2	M5 VZ	9031.3902
4	6002, ø15/32 x 9	0038.1033
5	z=122 / m=1	9310.5010.4
6	AS 17	0031.1011
7	z=24 / m=2	9310.5007.4
8	6203 LLU NR, ø17/40 x 12	9038.0010
8a	ø24/3.5 x 10.5	9310.5037.4
8b	ø15.5 x 1.3	9035.0023
9	5 x 5 x 15	9036.0001
10	ø17 x 132	9310.5009.4
10a	5 x 5 x 25	0036.0013
11	5 x 5 x 10	0036.0010
12	z=12 / m=2	9310.5008.4
13	6001, ø12/28 x 8	0038.1032
14	8 x 12	9031.6214
16	ø70 x 69.5	9310.5006.4
17	ø61.4 x 206	9247.2013.3
18	6202-2Z, ø15/35 x 11	0038.1124
19	15 x 1	0031.1009
20	6203-2Z, ø17/40 x 12	0038.1125
21	M5 x 12 VZ	9030.0003
22	M10 VZ	9031.1200
23	28 x 10.2 x 1.5	9034.2004
24	2.5 x 28	9031.6000
25	10 x 28 x 24	9031.6709
26	M10 x 60 VZ	9030.8033
27	10.5/21 x 2	0031.0578
28	170 x 112 x 55, GIS*KB* I	9310.5002.3
	170 x 117 x 58, GIS*KB* II	9310.5040.3
	190 x 141 x 82.4, GIS*KB* III + IV	9307.1110.3
29	200 x 90 x 61	9310.5005.3
30	220/380/420V, 1t D=62, L=50	9245.1100.4
31	ø111 x 32.5	9247.2006.3
32	M5 x 20 VZ	9030.0263
33	16/22 x 2	9031.3205
34	M4 VZ	9031.3901
35	M4 x 45 VZ	0030.9287
36	ø1.5 x 140	9035.0030
37	6002 2DVH, ø15/32 x 9	0038.1075

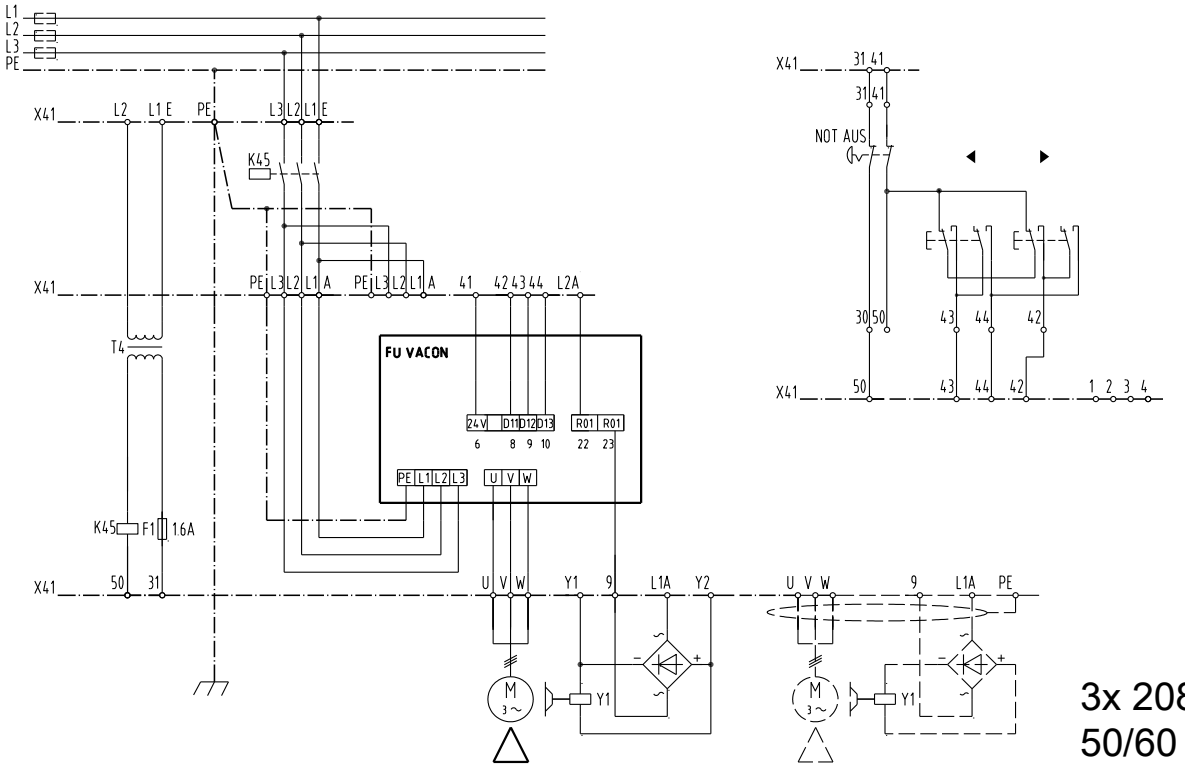
		SA*KB*
401	3x208-240/42V 50/60Hz	9310.5056.2
	3x400-480/42V 50/60Hz	9310.5055.2
	3x500-575/42V 50/60Hz	9310.5057.2
402	112 x 98 x 63	9243.2736.4
403	208-240V 50/60Hz	9050.4029
	400-480V 50/60Hz	9050.4022
	500-575V 50/60Hz	9050.4022
404	208-240/42V 50/60Hz	9310.5048.2
	400-480/42V 50/60Hz	9310.5047.2
	500-575/42V 50/60Hz	9310.5049.2
405	204.5 x 140 x 60	9310.5064.4
410	195 x 165 x 80	9310.5044.3
411	420 x 157 x 65.5	9056.5004
412	157 x 74 x 1	9310.5046.4
413	M5 Nylon	9031.1275
414	M4 Nylon	9031.1280
415	M5 x 12	9030.0003
416	ø5.3/10 x 1 Polyamid	9031.3703
417	M5 x 12	0030.3468
418	84 x 14.5 x 1	9310.5023.4
419	208-240/42V 50/60Hz	9056.4500.4
	400-480/42V 50/60Hz	9056.4501.4
	500-575/42V 50/60Hz	9056.4503.4
420	500-575V 50/60Hz	9056.4910
421	208-240V 50/60Hz	9245.4016.4
	400-480V 50/60Hz	9245.4015.4
	500-575V 50/60Hz	9245.4015.4
422	M6	0031.0037
423	42V 50/60Hz	9056.0038
424	197 x 167 x 6	9310.5050.3
425	M25 x 1.5	9055.3103
426	M25 x 1.5	9055.3513
427	M16 x 1.5	9055.3511
428	70 x 70 x 1	9243.2599.4
429	M5 x 6	9030.3262
430	ø5 x 25	9052.0010
431	M6 x 10	9030.0273
432	ø4.3/9 x 0.8	0031.0575
433	M4 x 16	9030.0253
434	M5 x 15 VZ	9030.8034
450	M4 x 12 VZ	0030.3451
451	70 x 70 x 1	9243.2599.4
452	M20 x 1.5	9055.3512
453	M16 x 1.5	9055.3511
454	M4 x 20 VZ	9030.3256
455	M4 VZ	9031.3901
456	112 x 98 x 2	9038.4004
457	40 x 25 x 21	9058.0006
458	M4 MS	0031.0615
459	Type 56	9058.0007
460	M4 MS	0031.0095

Elektrische Fahrwerke/Electrical trolleys/Chariots électrique SAKB/EMFE

Schützensteuerung — 2 Geschwindigkeiten mit Not-Aus
Contactor control — 2 speed with emergency stop
Commande par contacteurs — 2 vitesse avec marche-arrêt

3 Ph

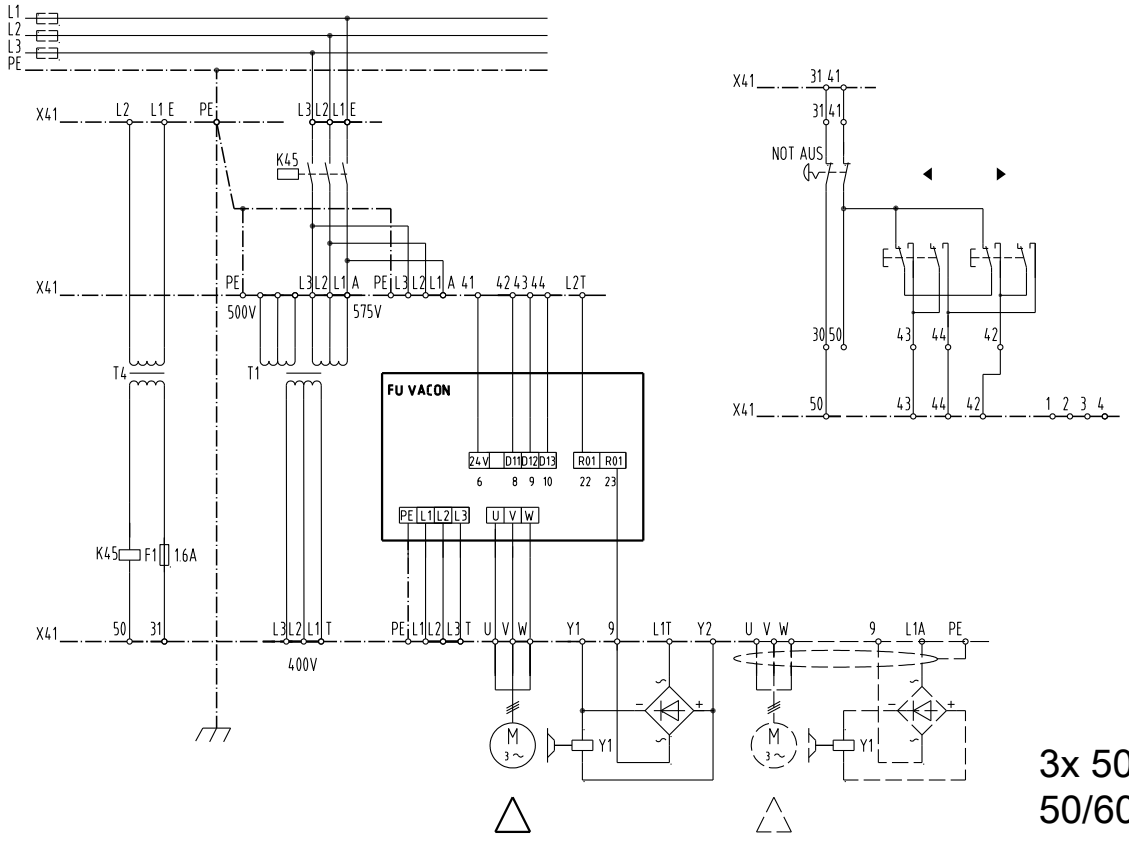
9243.9566.3



3x 208 - 480V
50/60 Hz

Code	Parameter / Para,ètre	Min	Max	Werkeinstellung / factory setting / Prérréglage
P3.4	Festdrehzahl 0 / Preset speed 0 / Vitesse constante 0	10	40	15.00
P3.5	Festdrehzahl 1 / Preset speed 1 / Vitesse constante 1	40	87	87.00
P4.2	Beschleunigungszeit / Acceleration time / Temp d`acc élération	0.2	10	2.00
P4.3	Bremszeit / Deccleration time / Temp de dec élération	0.2	10	2.00

9243.9566.4



3x 500; 575V
50/60 Hz

10.12 9310.9002.5