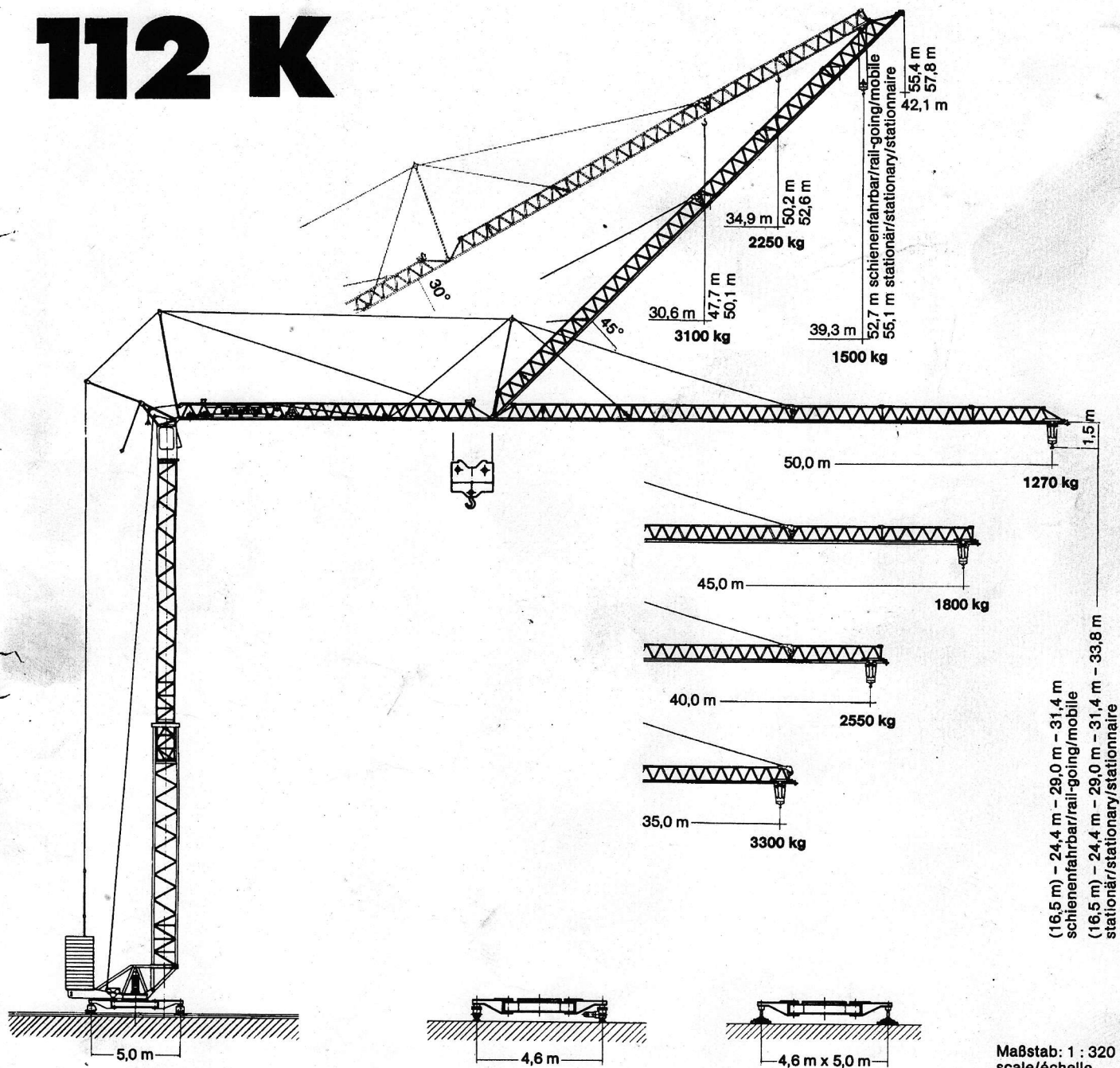
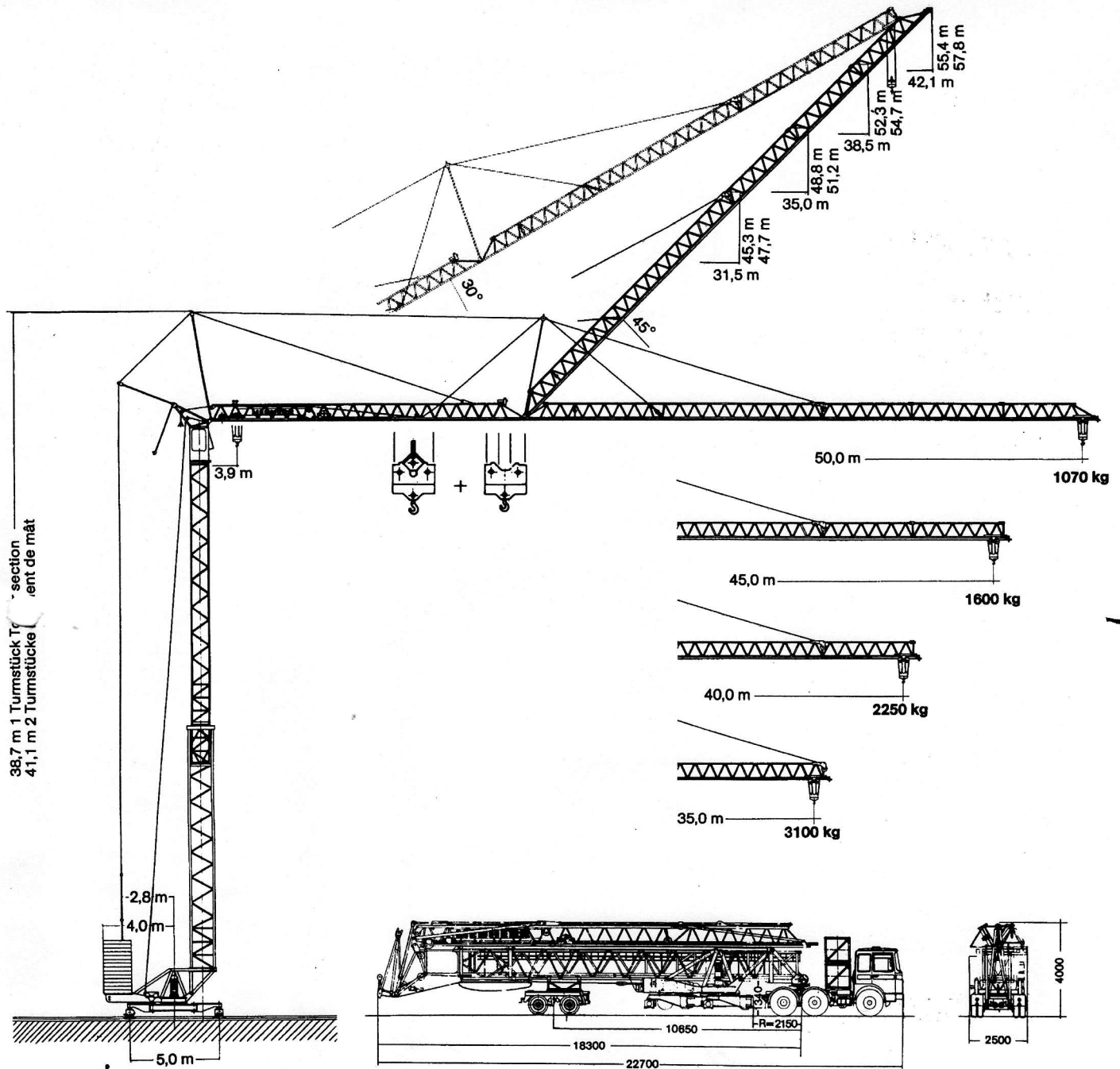


Tower Crane
Grue à tour

Turmdrehkran 112 K



LIEBHERR



Transportgewicht ca. 31500 kg
Transport weight approx.
Poids de transport env.

Gewicht Weight Poids

Max. Eckkraft in Betrieb Max. corner pressure in operation Réaction maxi. par angle en service	425 kN*
Max. Eckkraft außer Betrieb Max. corner pressure out of operation Réaction maxi. par angle hors service	310 kN*

Gegengewicht ca. Counter weight approx. Contrepoids env.	44000 kg
Konstruktionsgewicht (max. Ausladung + Hakenhöhe) ca. Dead weight (max. radius + hook height) approx. Poids de la construction (max. portée + hauteur sous crochet) env.	28300 kg

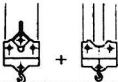
* Umrechnung der Einheiten für Kräfte 1 kp $\approx$ 10 N; 10 kN $\approx$ 1 Mp./Conversion of the units for forces./Conversion des unités des forces.

112 K

Ausladung und Tragfähigkeit

Radius and capacity / Portée et charge

Auslegerlänge Length of jib Longueur de flèche m	Max. Tragfähigkeit Max. capacity Charge max.		Ausladung und Tragfähigkeit Radius and capacity Portée et charge m																				
			21,0	22,0	24,0	26,0	28,0	30,0	31,0	32,0	33,0	35,0	36,0	37,0	38,0	40,0	41,0	42,0	43,0	45,0	46,0	48,0	50,0
50,0	3,9-20,1 4000		3800	3590	3220	2920	2670	2450	2350	2260	2170	2020	1950	1880	1820	1700	1650	1600	1550	1460	1420	1340	1270
45,0	3,9-23,5 4000		4000	4000	3890	3530	3230	2970	2850	2750	2640	2450	2380	2300	2220	2090	2020	1960	1910	1800			
40,0	3,9-27,5 4000		4000	4000	4000	4000	3910	3600	3460	3330	3210	3000	2900	2800	2710	2550							
35,0	3,9-29,7 4000		4000	4000	4000	4000	4000	3960	3810	3670	3540	3300											

Auslegerlänge Length of jib Longueur de flèche m	Max. Tragfähigkeit Max. capacity Charge max.		Ausladung und Tragfähigkeit Radius and capacity Portée et charge m/kg																				
			21,0	22,0	24,0	26,0	28,0	30,0	31,0	32,0	33,0	35,0	36,0	37,0	38,0	40,0	41,0	42,0	43,0	45,0	46,0	48,0	50,0
50,0	3,9-18,9 4000	-11,6 8000	3660	3440	3070	2760	2500	2270	2170	2080	2000	1800	1760	1700	1630	1510	1460	1410	1360	1270	1220	1140	1070
45,0	3,9-21,9 4000	-13,2 8000	4430	4170	3730	3360	3060	2790	2670	2560	2460	2250	2190	2110	2030	1890	1830	1770	1710	1600			
40,0	3,9-25,8 4000	-14,8 8000	5150	4860	4350	3930	3580	3280	3140	3020	2900	2690	2590	2500	2410	2250							
35,0	3,9-28,7 4000	-16,4 8000	5870	5550	4980	4510	4110	3770	3620	3470	3340	3100											

Auslegerlänge Length of jib Longueur de flèche m	Max. Tragfähigkeit Max. capacity Charge max.		Ausladung und Tragfähigkeit Radius and capacity Portée et charge m/kg																		Auslegersteilstellung 30° Elevated jib 30° Flèche inclinée 30°		
			22,0	23,0	24,0	25,0	26,0	27,0	28,0	29,0	30,0	30,6	31,0	32,0	33,0	34,0	34,9	35,0	36,0	37,0	38,0	39,0	39,3
39,3	3,7-18,2 4000		3150	2980	2830	2690	2560	2440	2330	2230	2130	2080	2040	1960	1890	1810	1750	1750	1680	1620	1570	1520	1500
34,9	3,7-21,9 4000		3980	3770	3580	3410	3250	3100	2960	2840	2720	2640	2610	2510	2420	2330	2250						
30,6	3,7-24,8 4000		4000	4000	4000	3960	3780	3610	3460	3310	3180	3100											

Geschwindigkeiten Speeds / Vitesses

	U/min 0 - 0,8 sl./min tr./min	4,0 kW
	10,0 / 33,0 / 67,0 m/min	5,0 kW
	25,0 m/min	2 x 2,0 kW
	0 - 45° ca. 2 min.	6,0 kW

Leitungsquerschnitt bei 380 V

Cross section of cable

Section de câble à

Betriebsspannung 380 V

Operating voltage

Tension de service

Technische Kenngröße nach BGL 81

Technical nominal size according to the construction machinery list (BGL)

Grandeur caractéristique suivant le barème d'emploi des appareils (BGL)

bis 96 m

up to

jusqu'à

Frequenz 50 Hz

Frequency

Fréquence

4 x 25 mm²

Hubwerk Hoist unit Mécanisme de levage	Stufe Step Cran	kg	m/min
24,0 kW 	1	4000	6,5
	2	4000	30,0
	3	2000	60,0
	1	4000 8000	6,5 3,25
	2	4000 8000	30,0 15,0
	3	2000 4000	60,0 30,0

Gesamtmotorenleistung 45,2 kW (incl. Verschiebeantrieb 2,2 kW)

Total motor output (displacing drive)

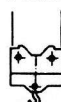
Puissance totale des moteurs (entraînement de déplacement)

Gesamtanschlußwert (bei Gleichzeitigkeitsfaktor von 0,8)

Total power requirement (with a simultaneity factor of 0,8)

Puissance totale requise (avec un facteur de simultanéité de 0,8)

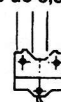
52,0 kVA



2108-0100



+



2108-0090

Technische Daten - Technical data Caractéristiques techniques

Aufstellvorgang

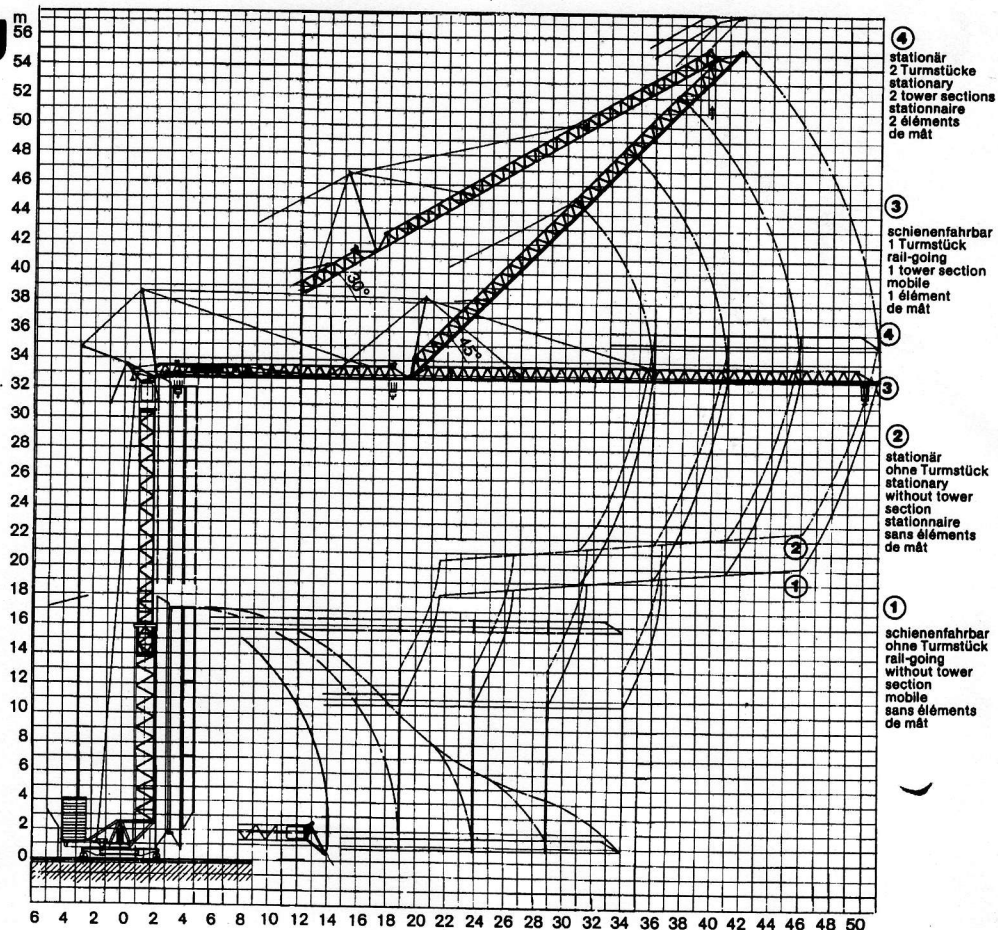
Erection procedure

Déroulement de montage

Ballastierausladung 5,4 m

Ballasting radius 5,4 m

Portée pour dispositif de lestage 5,4 m



Kolli-Liste

Packing list

Liste de colisage

Pos. Item	Anzahl Quantity	Benennung Description		Länge m Length m	Breite m Width m	Höhe m Height m	Einzelgew. kg Unit weight kg	Gesamtgew. kg Total weight kg
1	2	Turmstück (mit Turmauflage) Tower section with tower support Élément de mât avec support de mât		2,52	1,11	1,11	780	1560
2	1	Ausleger-Verlängerung 35,0 m – 40,0 m Jib extension Rallonge de la flèche		5,24	1,02	0,99		350
3	1	Ausleger-Verlängerung 40,0 m – 45,0 m Jib extension Rallonge de la flèche		5,16	1,02	0,92		220
4	1	Ausleger-Verlängerung 45,0 m – 50,0 m Jib extension Rallonge de la flèche		4,73	1,02	0,89		170
5	1	Transportachse Tra 200 GZ 3 Road transport axle Essieux de transport		3,10	2,50	1,10		2500
6	1	Kiste mit Seilen und Kleinteilen Case with ropes and small parts Caisse avec câbles et pièces détachées		1,00	0,80	1,00		450

Datenblatt Nr. 120 P – 2582 – FEM (Section 1) – Gruppe 3 – 9.88

Data sheet

Feuille de caractéristiques

Konstruktionsänderungen vorbehalten!

Subject to alterations!

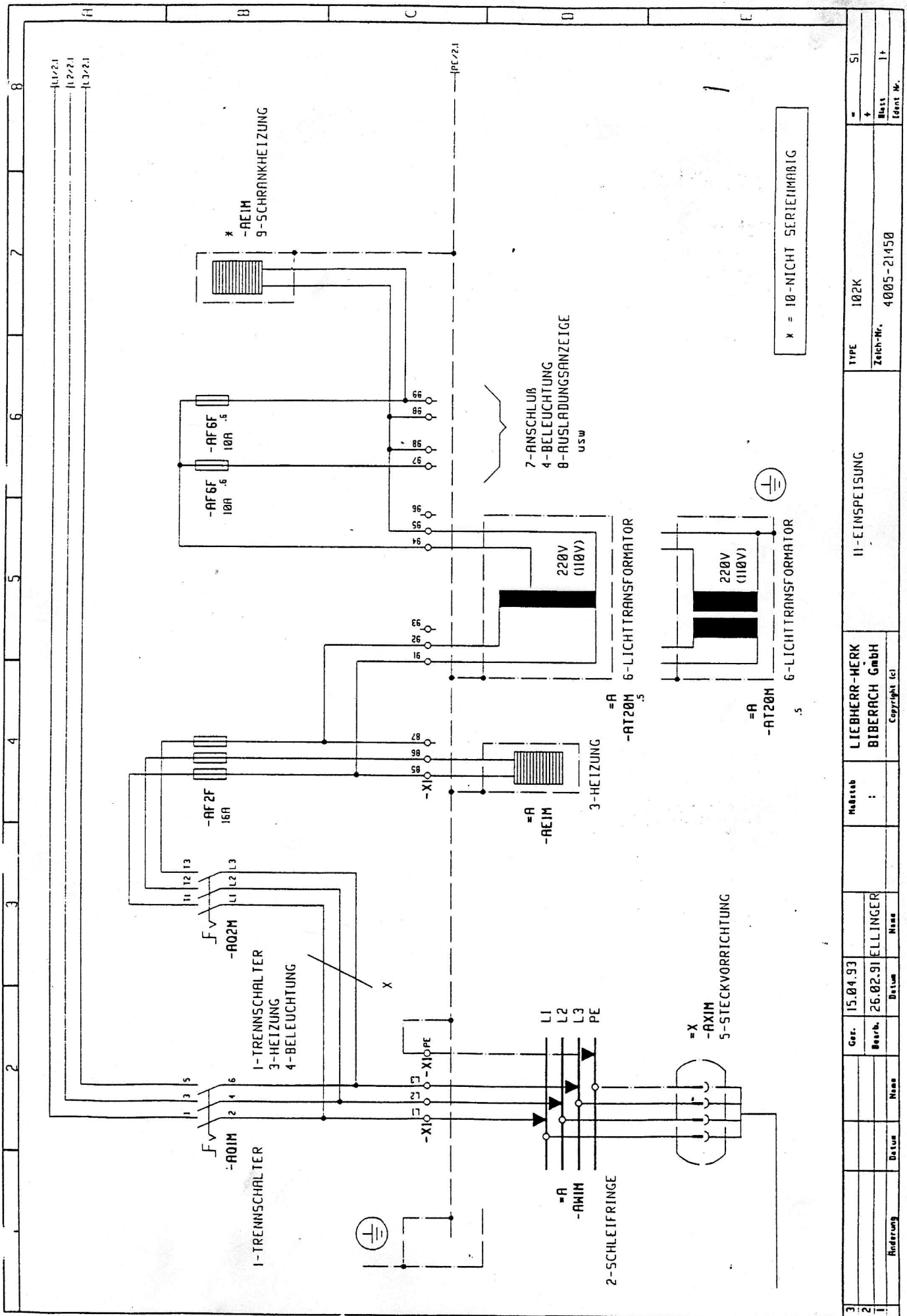
Sous réserves de modifications!

Printed in Fed. Rep. of Germany

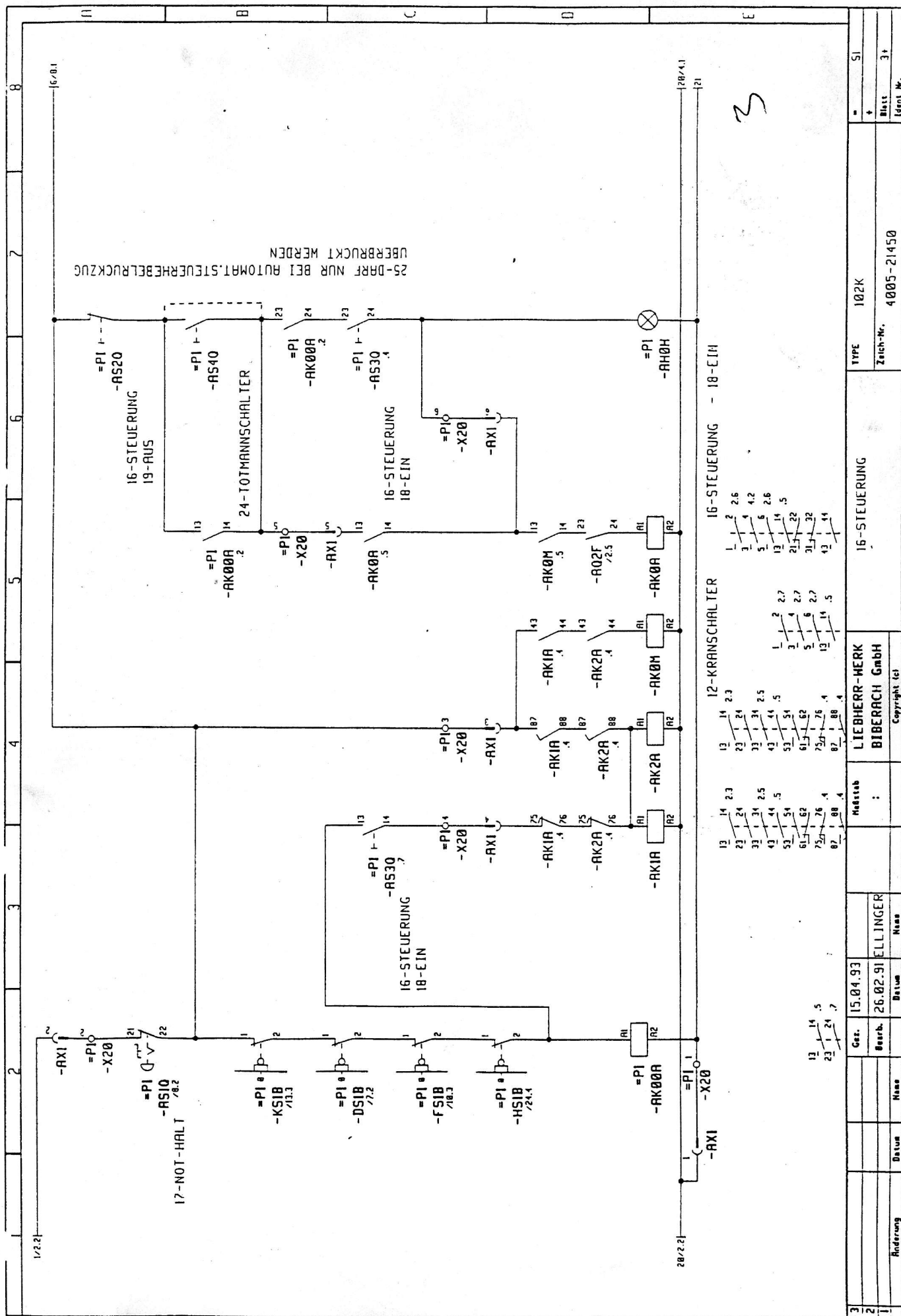
Nehmen Sie Kontakt auf mit
Contact

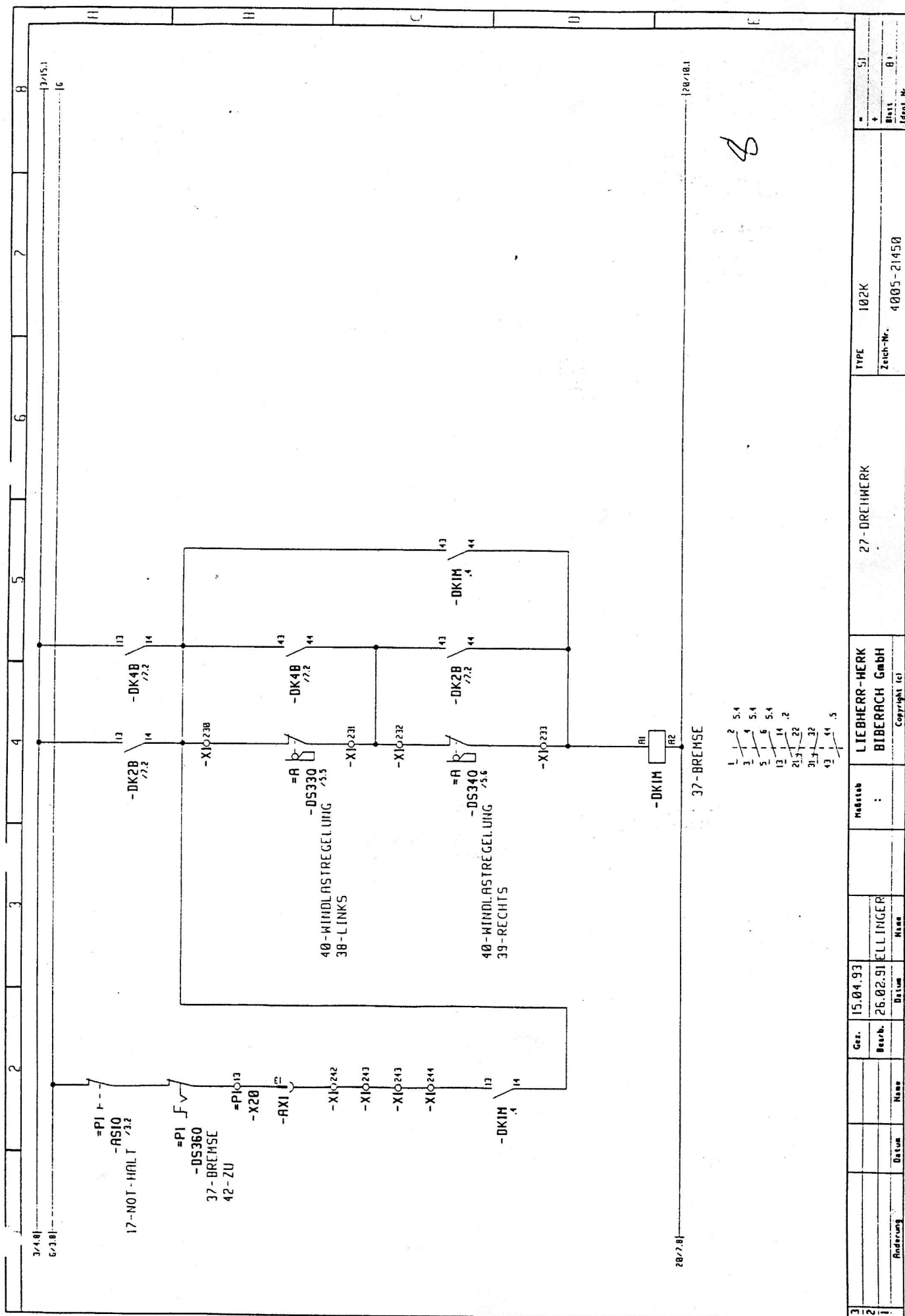
Mettez-vous en rapport avec

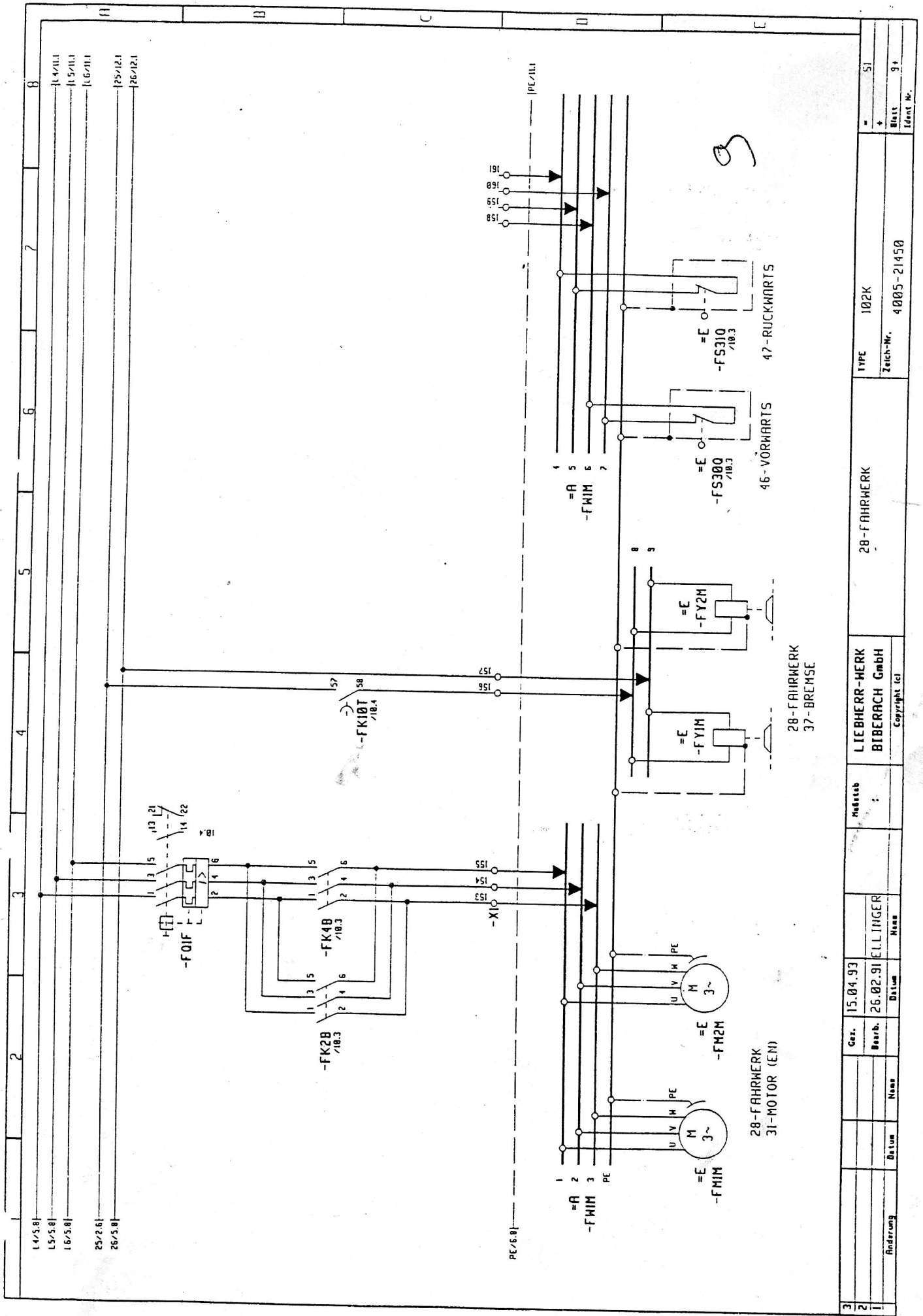
LIEBHERR-WERK BIBERACH GMBH, Postfach 1663, D-7950 Biberach an der Riss 1,
Telefon (0 73 51) 41-0, Telex 71802, Telefax (0 73 51) 412 25



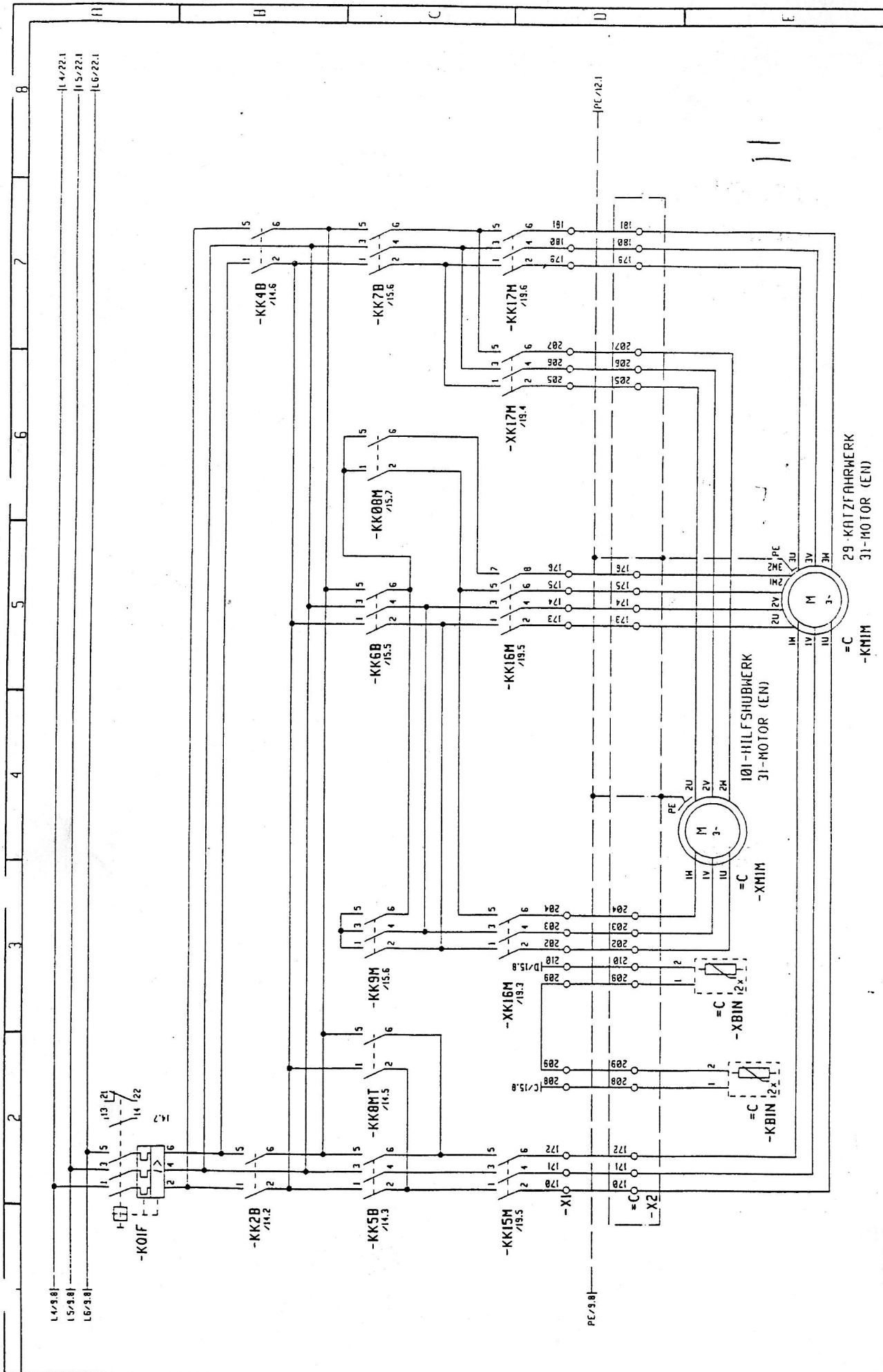
3	Ger.	15.04.93	Maßstab	LIEBHERR-WERK BIBERACH GmbH	11-Einspeisung	TYPE	102K	SI
2	Bearb.	26.02.91				Zeich.-Nr.	4005-21450	
1						Blatt	1+	
						Ident. Nr.		



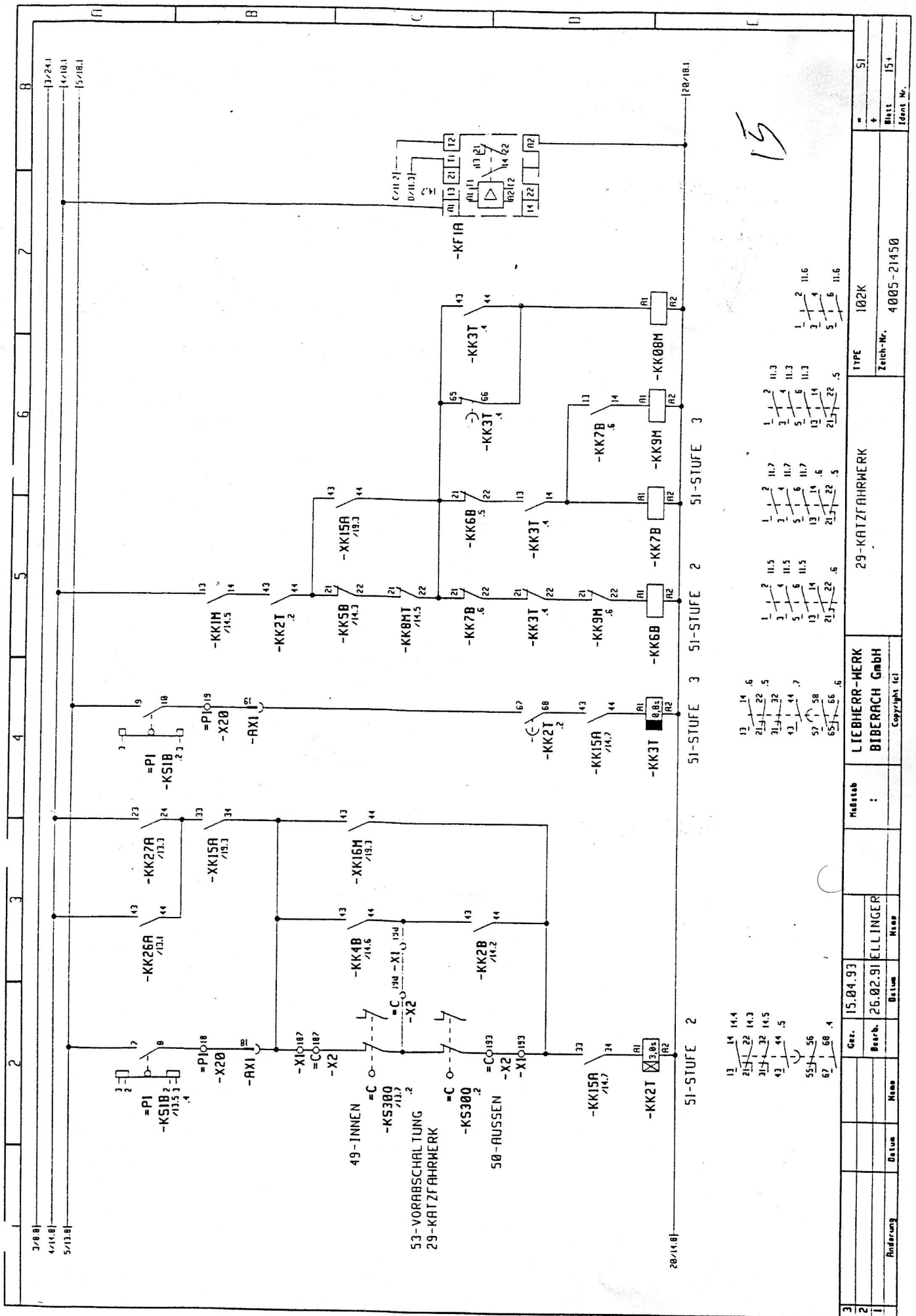
[illegible]



Änderung		Datum		Name		Gez.		15.04.93		26.02.91		ELLINGER		Maßstab		28-FAHRWERK		TYPE 102K		= SI +			
																		Zeich.-Nr. 4005-21450		Blatt 9 + Ident. Nr.			
														LIEBHERR-WERK BITTERACH GmbH				Copyright (c)					
														Datum		Name							



3	Änderung	Datum	Name	Ges.	15.04.93	Modell	LIEBHERR-MERK	TYPE	102K	Blatt	51
2				Bezb.	26.02.91		BIBERACH GmbH	Zeich.-Nr.	4005-21450		
1				Datum			Copyright (c)			Ident. Nr.	11+

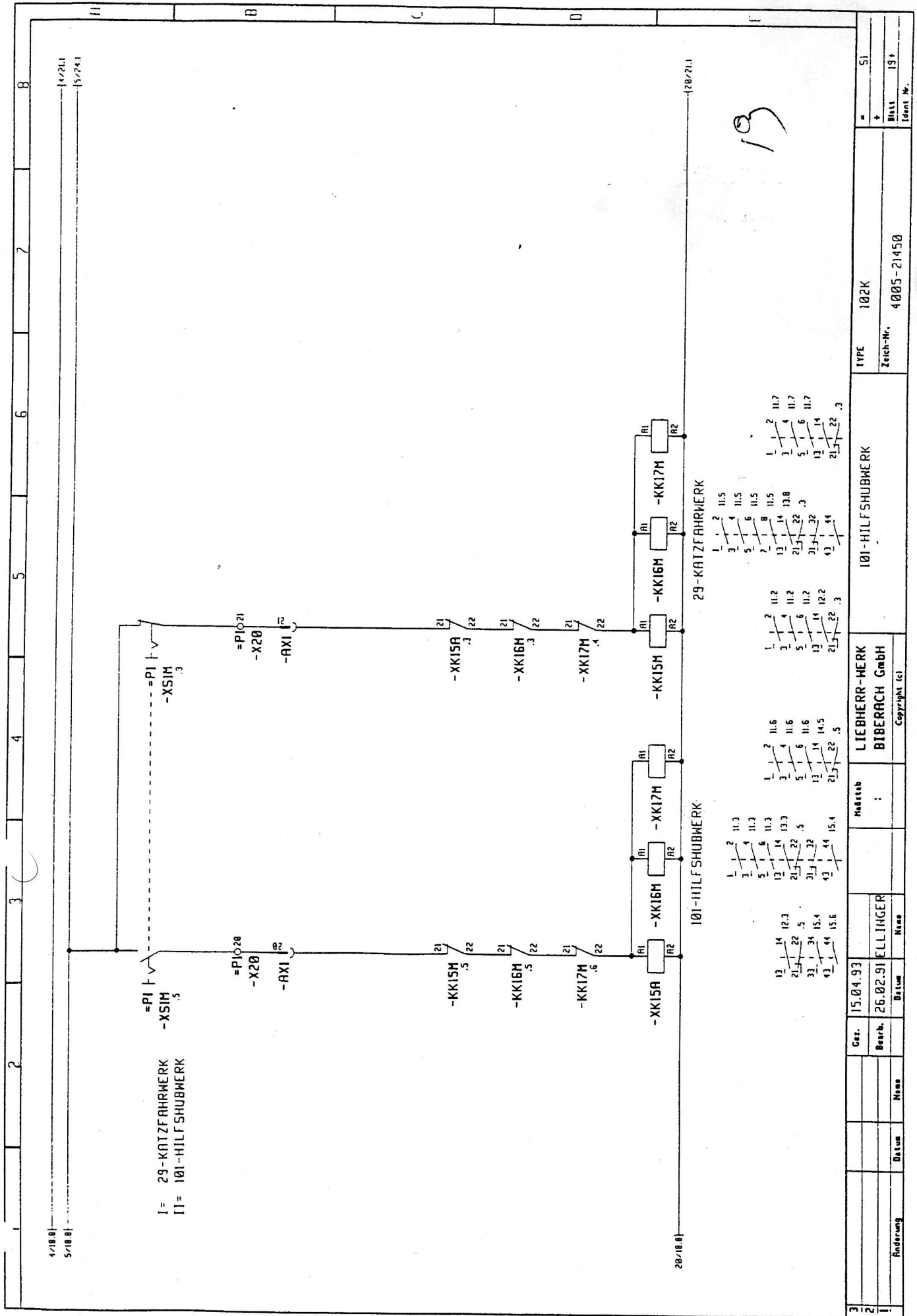


[illegible]

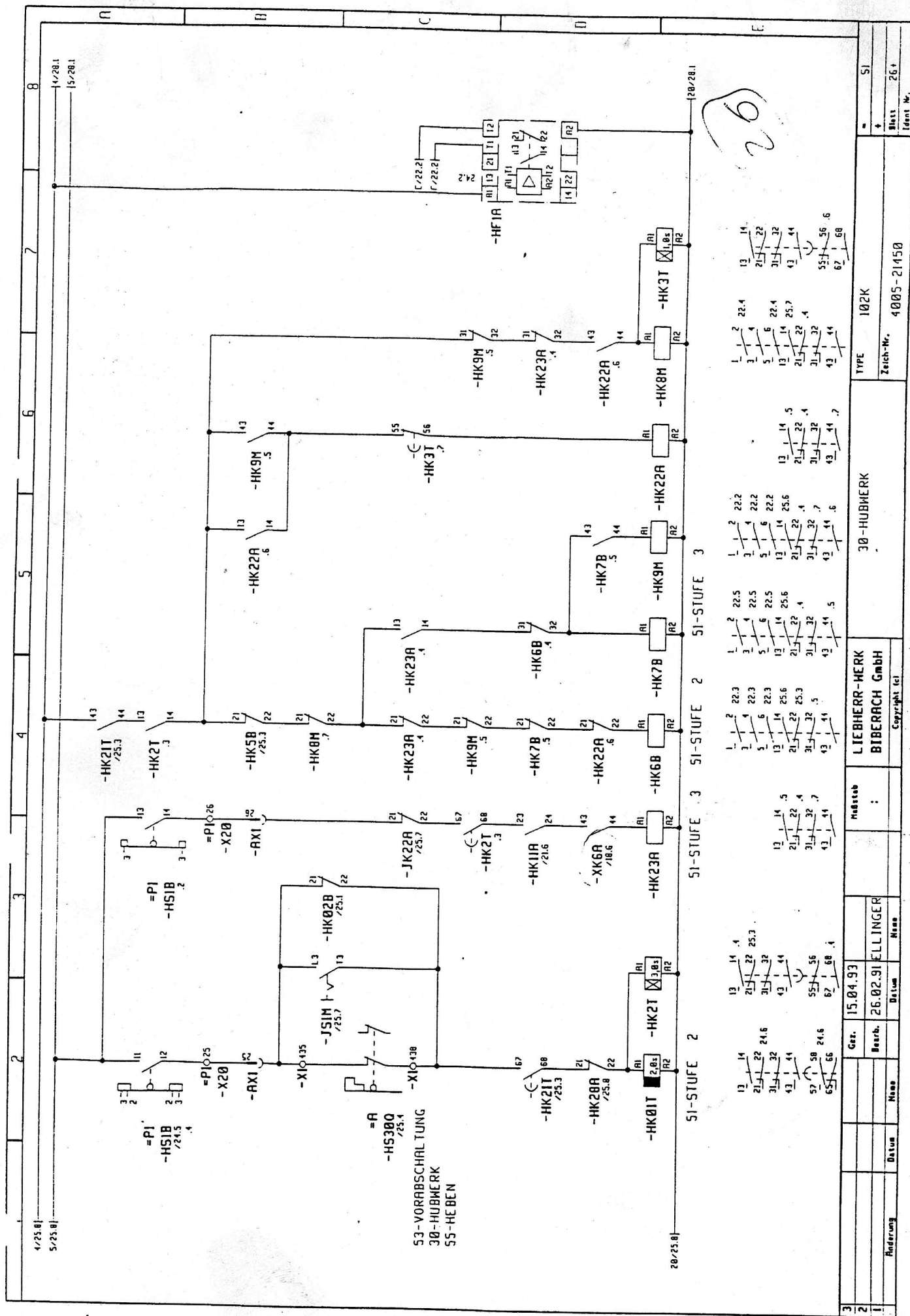


1-82-361

7

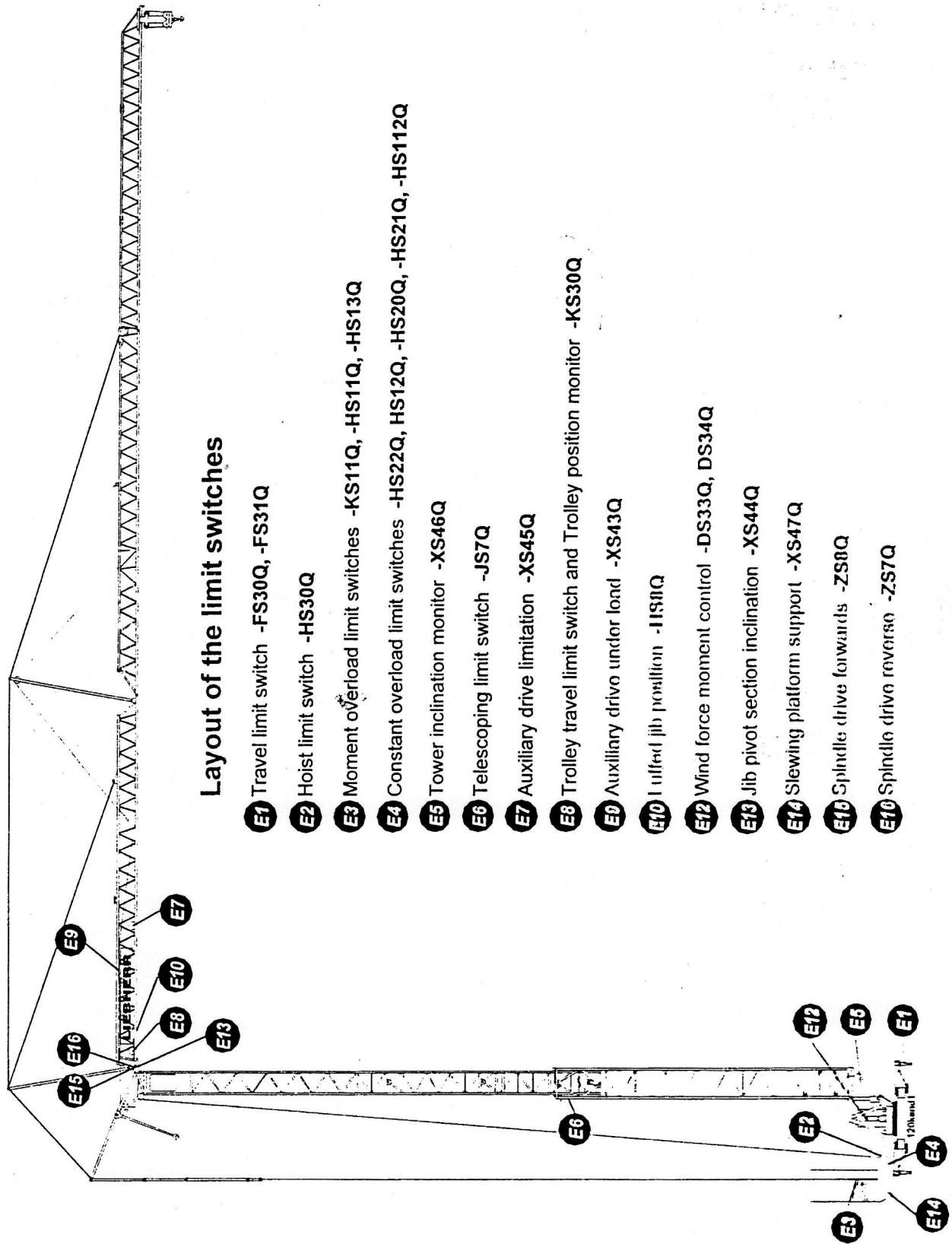


3	Ger.	15.04.93	Beerb.	26.02.91	ELLINGER	Adresse	LIEBHERR-HERK BIBERACH GmbH	101-HILFSHUBWERK	TYPE	102K	Zeich.-Nr.	4005-21450	Blatt	19	Ident. Nr.
2															
1	Änderung	Datum	Platz	Datum	Beerb.	Ellinger	Adresse	LIEBHERR-HERK BIBERACH GmbH	101-HILFSHUBWERK	TYPE	102K	Zeich.-Nr.	4005-21450	Blatt	19



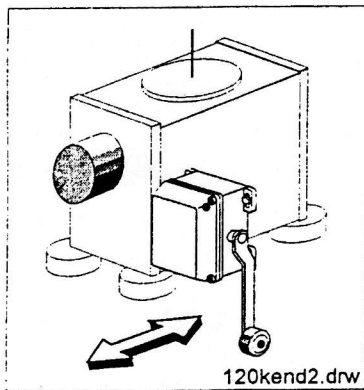
3			Ger.	15.04.93		Maßstab : Copyright (c)	LIEBHERR-MERK BIBERACH GmbH	30-HUBMERK	TYPE 102K	= SI
2			Bearb.	26.02.91	ELLINGER					
1										
Änderung			Datum	Neue	Datum	Neue			Zeich.-Nr.	Blatt
									4005-21450	26+
										Ident. Nr.

Layout of the limit switches



Setting the limit switches

E1 Travel limit switch -FS 30 Q: Type T2A 067-01/01Y T04Y, ident. no. 6060 387 01 -FS 31 Q:



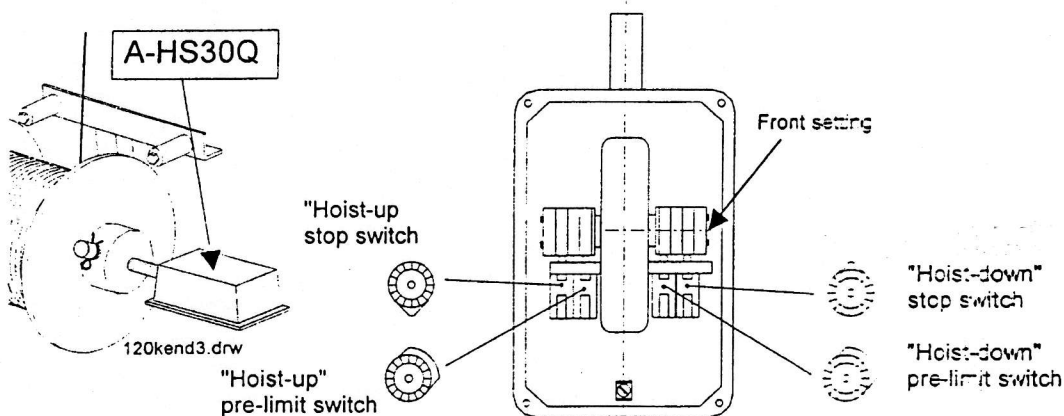
Contact
"forward"

Contact
"backward"

Operated by the
ramp beside the
rail track.

See Preparing the rail track.
page 1-6

E2 Hoist limit switch A-HS 30 Q: Type G 150T02/02Y, ident. no. 6060 253 01



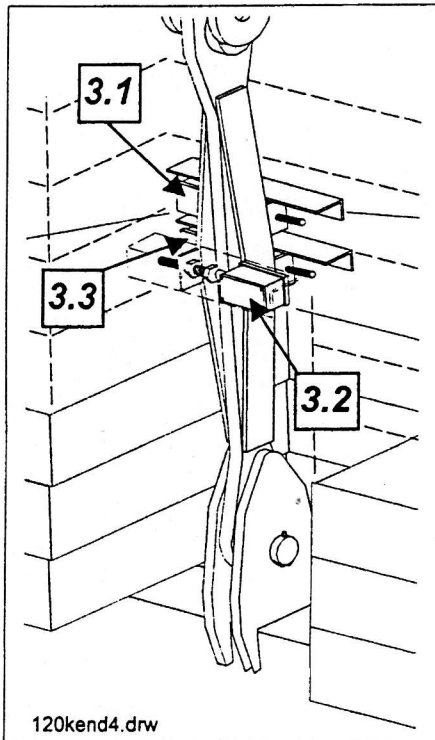
- | | | |
|-----------|-------------------------------|--|
| - HS30Q-1 | "Hoist-up" stop switch | Set the control cam for the "hoist-up" stop switch so that the hook block comes to a standstill at approx. 1.0 m below the underside of the trolley. |
| - HS30Q-3 | "Hoist-up" pre-limit switch | The hoisting movement is slowed down to hoisting speed step 1 at approx. 0.5 m before the stoppage of the hook block. |
| - HS30Q-5 | "Hoist-down" stop switch | Set the control cam for the "hoist-down" stop switch so that 3 turns of the hoist rope remain on the hoist drum. |
| - HS30Q-7 | "Hoist-down" pre-limit switch | The hoisting movement is slowed down to hoisting speed step 1 at approx. 0.5 m before the stoppage of the hook block. |



In case of two-/four-fall operation, carry out the setting in the four-fall mode.
In the erection mode, all stop switches and pre-limit switches are bridged.

Setting the limit switches

E3 Moment overload limit switches: Setting instructions from page 3-? onward



3.1 Moment overload limit switch, Stop of the trolley movement A-KS11Q

Type TS 336-11Z, ident. no. 6060 449 01

Activated before reaching the load diagram (after-running of the trolley must be taken into account)

- The "trolley-out" movement is stopped if **4.1** is activated.
- The hoisting speed steps 2, 3 and 4 (frequency converter) are switched off if **4.1** is not activated.
- The "yellow" signal lamp lights up.

3.2 Moment overload limit switch, A-HS11Q

Type TS 336-11Z, ident. no. 6060 449 01

Activated when exceeding the load diagram

- The "hoist-up" and "trolley-out" movements are stopped if **4.1** is activated.
The signal horn 1 sounds.
- The "trolley-out" movement is stopped if -KS30Q-6 is not activated.
- The hoisting speed steps 2,3 and 4 (frequency converter) are switched off if -KS30Q-6 is activated

3.3 Moment overload limit switch,

increased load at the jib tip A-HS13Q

Type TK 336-11Z, ident. no. 6060 883 01

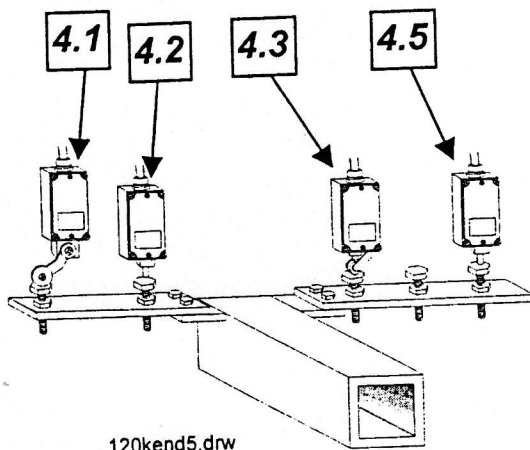
Activated when exceeding the load diagram

- The "hoist-up" and "trolley-out" movements are stopped.
- The signal horn 1 sounds.

- a) 2-fall: Only if a too high value for the increased load at the jib tip is adjusted.
- b) 4-fall: As long as **4.1** is not activated.

Setting the limit switches

E4 Constant overload limit switches: Setting instructions from Seite 3-? onward



4.1 Constant load at the jib tip Speed 1 (see table) A-HS22Q Type T4V1H-33611Z, ident. no. 6060 432 01

Activated with a load of ? kg (see table)

- The "hoist-up" and "trolley-out" movements are stopped if 3.2 is activated.
- The "trolley-out" movement is stopped if 3.1 is activated.

Constant load at the jib tip according to the jib length:		
Jib:	Set the limit switch at:	Permissible load:
35,0 m	34 m	3200 kg
40,0 m	39 m	2400 kg
45,0 m	44 m	1750 kg
50,0 m	49 m	1250 kg

4.2 Constant overload Speed 1 (4000 kg) A-HS12Q Type TS 336-11Y, ident. no. 6060 449 01

Activated with a load of
2-fall: 4000 kg
4-fall: 8000 kg

- The "hoist-up" and "trolley-out" movements are stopped.
- The signal horn 1 sounds.

4.3 Squirrel-cage hoist motor: Constant overload Speed 3 (3200 kg) A-HS20Q Type TS 336-11Z, ident. no. 6060 883 01

Activated with a load of
2-fall: 3200 kg
4-fall: 6400 kg

- The hoisting speed step 3 is switched off.

4.5 Constant overload Pre-warning A-HS112Q Type TS 336-11Y, ident. no. 6060 449 01

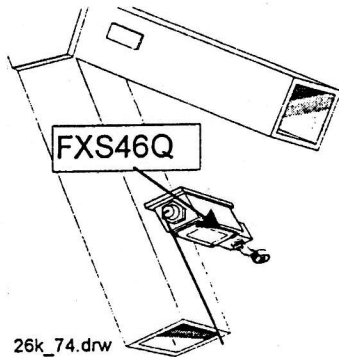
Activated with
2-fall: 3600 kg
4-fall: 7200 kg.

- The "yellow" signal lamp lights up.

Setting the limit switches

E5 Tower inclination monitor F-XS 46 Q:

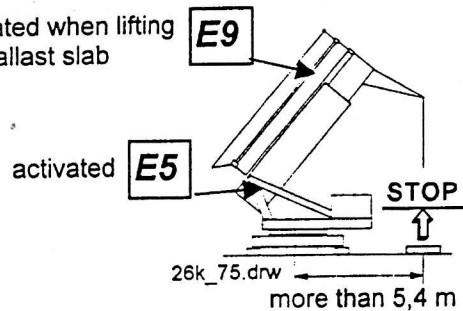
Type T4V1H 336-02Z, ident. no. 6060 436 01



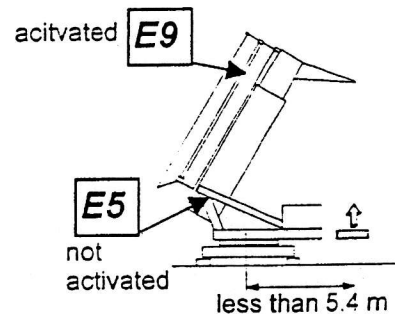
Activated when the distance between the ballasting block (auxiliary drive) and the crane's slewing axis exceeds 5.4 m.

- The movement "lifting" of the auxiliary drive is stopped if the limit switch **E9** "Auxiliary drive under load" is activated at the same time.
- The movements "lifting" and "lowering" of the erection drum are stopped if the limit switch **E9** "Auxiliary drive under load" is activated at the same time.
- The hoisting speed steps 3 and 4 are prevented.

activated when lifting
the ballast slab



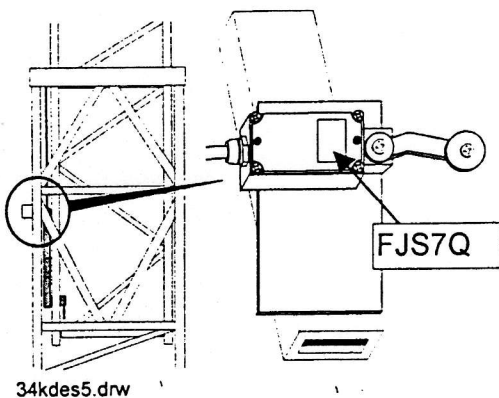
The movements "lifting" and "lowering" of the erection drum and the movement "lifting" of the auxiliary drive are stopped.



Ballasting is possible !

E6 Telescoping limit switch F-JS 7 Q:

Type T4V1H 336-11Z, ident. no. 6060 432 01

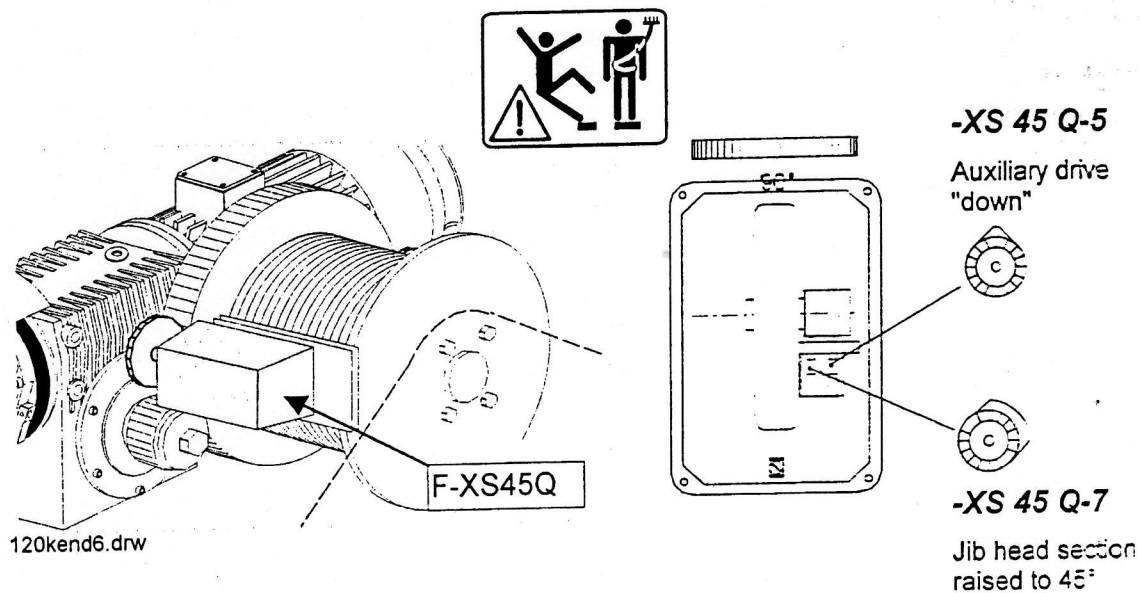


The movement "lifting" of the erection drum is stopped.

The limit switch prevents the inner tower from being extended too far.

Setting the limit switches

E7 Auxiliary drive limitation: Type G 150-220 T02Y, ident. no. 6060 864 01



Auxiliary drive "down"

Contact is activated when the ballasting block is "down" (with at least 3 rope turns on the auxiliary drive drum for security). The movement "lowering" of the auxiliary drive is stopped ("Trolley-out" movement is also prevented).

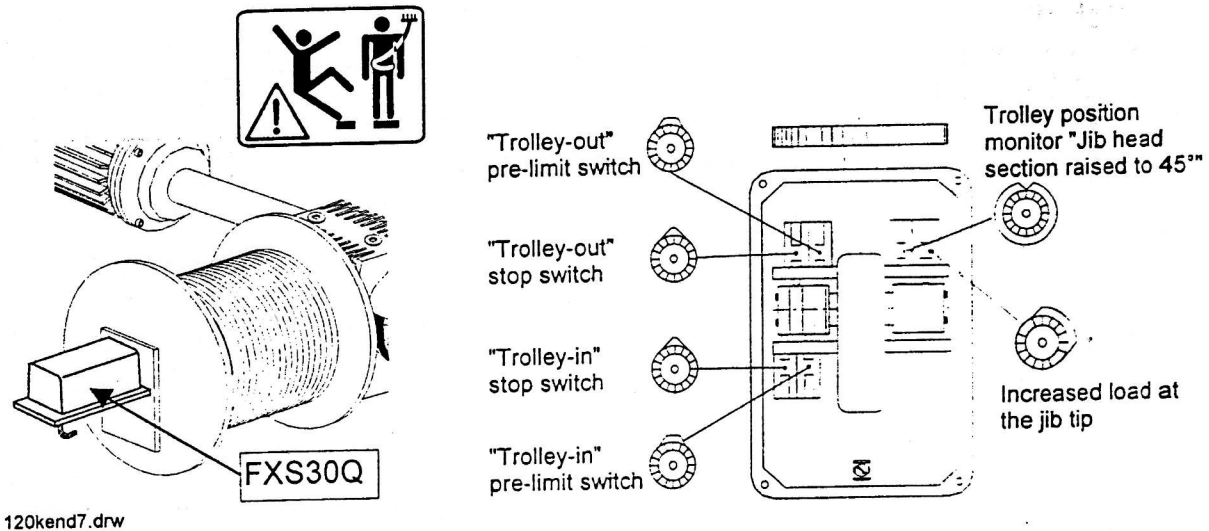
Jib head section raised to 45°

Contact is activated when the jib head section is raised to an angle 45° up to 90° in relation to the jib pivot section.

- The movement "lifting" of the auxiliary drive is stopped if the limit switch **E13 -XS44Q** "Jib section I in working position" is activated at the same time.
- The movement "lifting" of the erection drum is stopped if the limit switch **E13 -XS44Q** "Jib section I in working position" is activated at the same time.

Setting the limit switches

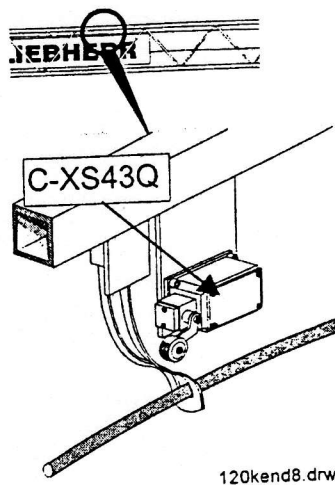
E8 Trolley travel limit switch C-KS 30 Q: Type G 50-50 T02/04, ident. no. 6060 652 01



- | | |
|---|--|
| -KS30Q-3 "Trolley-in" pre-limit switch | Set the control cam for the "trolley-in" pre-limit switch so that the trolley speed is reduced to step 1 at approx. 1 - 1.5 m before the end stops. |
| -KS30Q-1 "Trolley-in" stop switch | Set the control cam for the "trolley-in" stop switch so that the trolley comes to a standstill at approx. 10 cm before the end stops. |
| -KS30Q-4 "Trolley-out" pre-limit switch | Set the control cam for the "trolley-out" pre-limit switch so that the trolley speed is reduced to step 1 at approx. 1 - 1.5 m before the end stops. |
| -KS30Q-2 "Trolley-out" stop switch | Set the control cam for the "trolley-out" stop switch so that the trolley comes to a standstill at approx. 10 cm before the end stops. |
| -KS30Q-8 Trolley position monitor | <p>The trolley is parked at the articulation point.</p> <p>Exception: 50.0 m jib, crane erection with 1 and 2 tower sections:
Trolley at minimum radius.</p> <p>The movement "lifting" of the auxiliary drive is only possible if the limit switch contact "Trolley position monitor" is not activated (approx. 15° zone on the control cam). This contact is bridged in the erection mode.</p> |
| -KS30Q-6 Increased load at the jib tip | - The hoisting speed steps 2, 3 and 4 (frequency converter) are switched off if 3.2 is activated and 4.1 is not activated. |

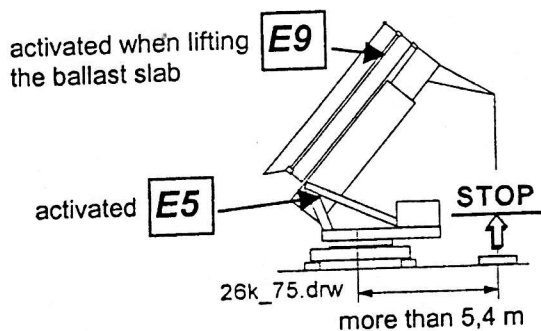
Setting the limit switches

E9 Auxiliary drive under load **C-XS 43 Q:** Type TL441 11Y, ident. no. 6060 585 01

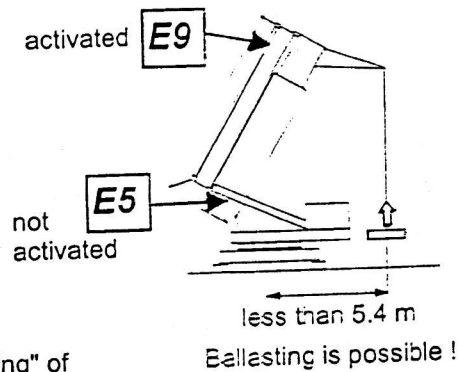


Activated if the jib erection rope (auxiliary drive rope) is taut.

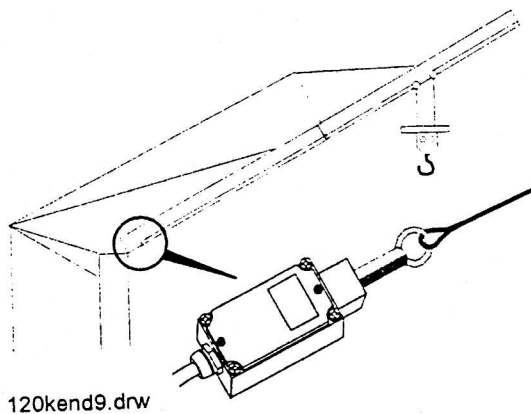
- The movement "lifting" of the auxiliary drive is stopped if the limit switch **E5** (tower inclination more than 5.4 m) is activated at the same time (erection mode).
- The movements "lifting" and "lowering" of the erection drum are stopped if the limit switch **E5** (tower inclination more than 5.4 m) is activated at the same time (erection mode).
- The trolley travel gear is locked (not in the erection mode).
- The slewing gear is stopped (step 3 and 4).
- The movement "reverse" of the spindle drive is prevented if the limit switch is activated.



The movements "lifting" and "lowering" of the erection drum and the movement "lifting" of the auxiliary drive are stopped.



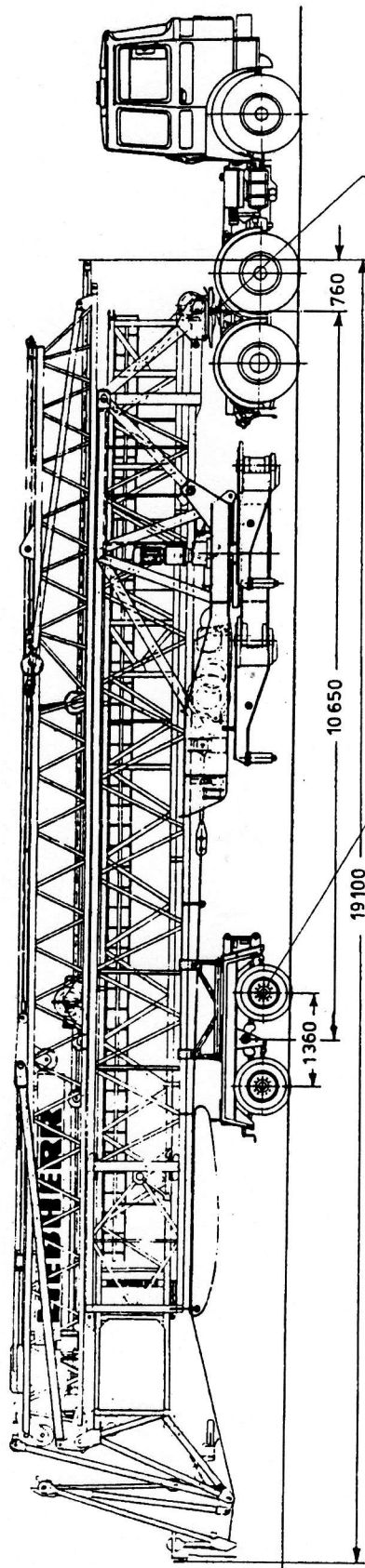
E10 Luffed jib position **C-HS 8 Q:** Type TQ441 20Y, ident. no. 6060 454 01



Activated when the hook block lifts the switching weight which is installed for the luffed jib position.

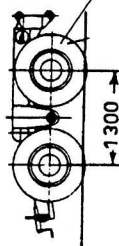
The "hoist-up" and "trolley-in" movements are stopped.

CONFIGURATION



"A" →

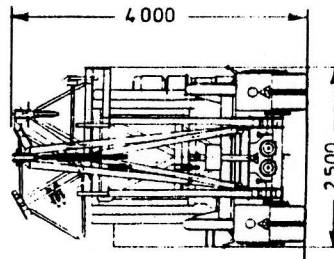
→ "B"



High-speed axle up to 80 km/h
Tra 202 GZ 1
Tra 202 GZ 2

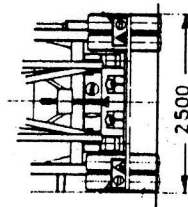
Trailer coupling
A 090.000-972.000

View "A"



Axle up to 25 km/h
Tra 200 GZ 1
Tra 200 GZ 3

View "B"



IMPORTANT: On the rail-going crane version, the travel gears and cable drum must be dismantled for transport!