



Machine Model	<b>AL Series collectors</b>	Owners Manual
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This manual is for the old style of collector with the DC motor



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## 1. SAFETY NOTES!

- The **AL COLLECTOR** must be installed on even surface to avoid wobbling or movement!
- Before connecting with other machine parts you must consult **ARTOS!**
- For maintenance work, always switch the **AL COLLECTOR** power off and additionally separate it from the main supply!
- For maintenance work always separate the **AL COLLECTOR** from the compressed-air supply!
- Protect the appliance from moisture and do not install it in humid rooms!
- During operation it is forbidden to grasp into the danger area which is anywhere under the safety hood of the **AL COLLECTOR** with your hands or any device!

## 2. MODEL AND SPECIFICATIONS

Typ	Lenght	Wight	Input hight max.	Weight
<b>AL 1500</b>	2000 mm	1600 mm	1110 mm	160 kg
<b>AL 2000</b>	2500 mm	1600 mm	1110 mm	190 kg
<b>AL 3000</b>	3500 mm	1600 mm	1110 mm	260 kg
<b>AL 4000</b>	4500 mm	1600 mm	1110 mm	330 kg
<b>AL 5000</b>	5500 mm	1600 mm	1110 mm	380 kg
<b>AL 6000</b>	6500 mm	1600 mm	1110 mm	400 kg
<b>AL 8000</b>	8500 mm	1600 mm	1110 mm	520 kg
<b>AL 9000</b>	9500 mm	1600 mm	1110 mm	570 kg
<b>AL 10000</b>	10500 mm	1600 mm	1110 mm	600 kg

## 3. DELIVERY

Check the **AL COLLECTOR** immediately upon unpacking for shipping damages such as deformation and/or loose parts. In case of damages immediately contact ARTOS.

**Important! Refer to ARTOS in case of any damage.**

**Do this even if the packaging is not damaged!**

### 3.1. CONTENT

**AL COLLECTOR**  
Operating Manual

## 4. INSTALLATION

The **AL COLLECTOR** must be installed stable on an even surface. Make sure that all four corners rest firmly on the ground and that it does not wobble. The **AL COLLECTOR** is placed as close to the preceding processing machine as possible. When installing the

unit, be sure to align the feed nozzle of the AL COLLECTOR correctly to the output side of the processing machine. Adjustments can be made with four height-adjustable supports.

## 4.1. CONNECTION

### 4.1.1. SUPPLY POWER

The **AL COLLECTOR** must be connected to a properly installed standard power socket (110/60Hz.) using the mounted standard power plug.

### 4.1.2. COMPRESSED AIR CONNECTION

Compressed air must be connected to the pressure reducing valve using a quick coupling and the operating pressure must be adjusted to max. 3 bar. Ensure only dry compressed air is used. Nevertheless, in case water accumulates in the inspection glass of the pressure reducing valve, be sure to separate the AL COLLECTOR from the air supply before draining the water.

## 5. FIRST OPERATION

When power and air pressure supply have been provided, the **AL COLLECTOR** can be switched on at the main switch (Q1.01).

After switching on the **AL COLLECTOR**, the following conditions must be met (with safety hood closed):

Red light (push button normal OFF) is on.

If this point is not met, please proceed as described in Chapter 13.0 - Trouble Shooting and Remedy

## 6. INSTRUCTIONS FOR USE AND PROCESSING

The **AL COLLECTOR** is an electropneumatically operated filing system and can be connected to almost any automatic cutting or stripping machine.

A transition conveyor belt transports the product in a stop/run process through a delivery tunnel onto the tray. The proximity limit switch (B#3.11) on the feed end controls the entire filling process. The **AL COLLECTOR** has been factory adjusted and tested in a test run. The stop and filling times are adjusted to maximum values and must be readjusted to the customer's requirements (see chapter 9.0).

### 6.1. OPERATION

The operator is obliged to read and observe the operating manual with all corresponding data sheets. Moreover, the operator should be thoroughly instructed by a technically qualified person.

The safety hood of the **AL COLLECTOR** is equipped with a safety switch. The AL COLLECTOR can only be operated with closed safety hood. At the output side the safety hood and the delivery tunnel are sufficiently opened to provide a trouble free output even for material of excessive length.

After installation in accordance to regulations, connection to the mains supply and compressed-air supply as well as linkage to the other machines, the **AL COLLECTOR** is ready to operate.

1. Switch on the **AL COLLECTOR** at the main switch Q 1.01.
2. Unlock the emergency-stop switch S 2.41.
3. Press start button S 3.32.
4. Adjust the speed to the preceding processing machine with the potentiometer R 2.21 (the belt speed of the **AL COLLECTOR** should be a little higher than the feed speed of the wire processing machine).

As soon as the material is traced by the proximity limit switch B3.11, the filing mode is activated. The material is cut and the end is drawn through underneath the proximity limit switch. Now, the stopper cylinder clamps the material and the belt stops. The delivery tunnel advances, and the material drops into the filing tray while the delivery tunnel returns to its initial position. The **AL COLLECTOR** is ready to process the next work piece.

## 7. ADJUSTMENTS

### **WARNING: DISCONNECT ELECTRICAL POWER BEFORE ACCESSING THE ELECTRICAL PANEL**

#### 7.1. WIRE DROP POSITION

The timing of the stopper cylinder is adjusted at the time lag relay K4.41 and the time for stopping in front position at the time lag relay K 4.71. The time adjusted with K 4.71 only refers to the material. The material drops from the tunnel slower when it is light or has a sticky sheathing.

#### 7.2. INSTRUCTIONS FOR ADJUSTING THE PROXIMITY LIMIT SWITCH END OF WIRE SENSING

Switch on the **AL COLLECTOR**, open the safety hood and turn the adjusting screw in the proximity limit switch counterclockwise until the LED switches on. Now, turn it slowly clockwise until the LED switches off and a quarter revolution further clockwise. Then, feed the material through the nozzle until it reaches underneath the proximity limit switch. The LED of the switch must switch on and remain on even when the material is moved up and down in the nozzle (not back and forth).

## 8. MAINTENANCE

The **AL COLLECTOR** has been designed to make continuous maintenance unnecessary. Only ensure cleanliness and exact operation.

Following parts must be cleaned regularly:

Conveyor belt

Feed nozzle

Proximity switch tracing material

**Note !- Do not aggressive sharp solvents for cleaning**

**Safety Note!- Check and clean the AL COLLECTOR only, when it is  
Disconnected from power and compressed air supplies**

## 8.1. TROUBLE SHOOTING AND REMEDY

8.1.1. AFTER SWITCHING ON THE MAIN SWITCH, THE RED LIGHT IS NOT ON!

Line-fusing (on-site) is defective.

Fuse F 1.01 is released.

Fuse f 1.21 is released.

Fuse F 1.22 is defective.

Safety hood is not closed.

Emergency-stop is not unlocked

Light bulb H 3.51 in push-button normal OFF (S 3.31) is defective.

8.1.2. **AL COLLECTOR CANNOT BE STARTED!**

Safety hood is not closed correctly.

Limit switch of safety hood is defective.

Faulty control card A 2.11.

Please observe the operating instructions of the manufacturer.

8.1.3. **SPEED OF AL COLLECTOR CANNOT BE ADJUSTED!**

Potentiometer R 2.21 is defective.

Control Card A 2.21 is defective.

8.1.4. **AL COLLECTOR FILES TOO SLOWLY!**

Time at time lag relay is adjusted too long.

8.1.5. **MATERIAL GETS JAMMED BETWEEN DELIVERY TUNNEL AND CONVEYOR BELT!**

Time at time lag relay K 4.71 is adjusted too short.

8.1.6. **AL COLLECTOR DOES NOT FILE AND MATERIAL FALLS OFF THE END**

Sensitivity of proximity limit switch B 3.11 is adjusted too high. (see chapter 9.1)

Proximity limit switch B 3.11 is defective.  
Relay K 3.11 is defective.

#### 8.1.7. AL COLLECTOR FILES AT DIFFERENT POINTS IN TRAY!

Time at time lag relay K 4.41 is adjusted too long.  
Solenoid valve Y 5.81 is defective.  
Compressed air is missing.

## 9. SPARE PARTS DRAWING – MECHANICAL













### 9.1. SPARE PARTS LIST

Drawing No.	Designation
AL01	Spring
AL02	Spring-loaded pin
AL03	Washer
AL04	Clamping block
AL05	Feed nozzle
AL06-1500	Conveyor belt
AL06-2000	Conveyor belt
AL06-3000	Conveyor belt
AL06-5000	Conveyor belt
AL06-6000	Conveyor belt
AL06-10000	Conveyor belt
AL07	Ejector
AL08	Swiveling lever
AL09-1500	Feed tunnel
AL09-2000	Feed tunnel
AL09-3000	Feed tunnel
AL09-5000	Feed tunnel
AL09-6000	Feed tunnel
AL09-10000	Feed tunnel
AL10	Slide rail
AL11	Bearing bushing
AL12	Flange bushing
AL13	Screw
AL14	Contact roller
AL15	Cylindrical bearing
AL16	Bolt, Shoulder
AL17	Drive belt pulley
AL18	Retaining ring
AL19	Retaining ring
AL20	Belt
AL21	Deep groove ball bearing
AL22	Adjusting plate
AL23	Machine top
AL24	Drive belt pulley
AL25	Washer
AL26	Shear key
AL27	Drive box
AL28	Motor
AL29	Stop cylinder
AL30	Cylinder delivery tunnel
AL31	Support bracket for cylinder
AL32	Bracket for support bracket
AL33	Bracket for stop cylinder
AL34	Block tunnel support
AL35	Plate for belt guide
AL36	Support for tunnel guide

AL37	Bracket for tunnel guide support
AL38	Screw
AL39	Tunnel guide support
AL40	Deep groove ball bearing
AL41	Spacer rings
AL42	Roller support AL 6000
AL43	Guide roller for belt
AL44	Deep groove ball bearing
AL45	Retaining ring
AL46	Bolt
AL47	Spacer ring

## 10. WIRING DIAGRAM WITH SPARE PARTS LIST - ELECTRICAL

### 10.1. SPARE PARTS LIST - ELECTRICAL

Type	Article	Type Designation	Manufacturer		Part No.
A2.11	Controller for 250 Watt Main Drive (from AL1500 to AL6000)	806071E	Rossmannith	S	AL-ELEC-1
A2.11	Controller for 370 and 550W Main Drive (from AL8000 to AL150000)	806171E	Rossmannith	S	AL-ELEC-1A
B 3.21	Proximity switch	KB5200	IFM	AL	AL-ELEC-2
B 3.21	Proximity switch (AL4000+AL8000)	KB5204	IFM	AL	AL-ELEC-55
F 1.21	Safety cutout (by Europa-Version)	23637 / 10A / 2pol.	Merlin Gerin	S	AL-ELEC-4
F 1.11	Safety cutout (by USA-Version)	23638 / 16A / 2pol.	Merlin Gerin	S	AL-ELEC-3
F 1.31	Safety cutout	24626 / 2A / 1pol	Merlin Gerin	S	
F 1.32	Strip terminal	282-122	Wago	S	

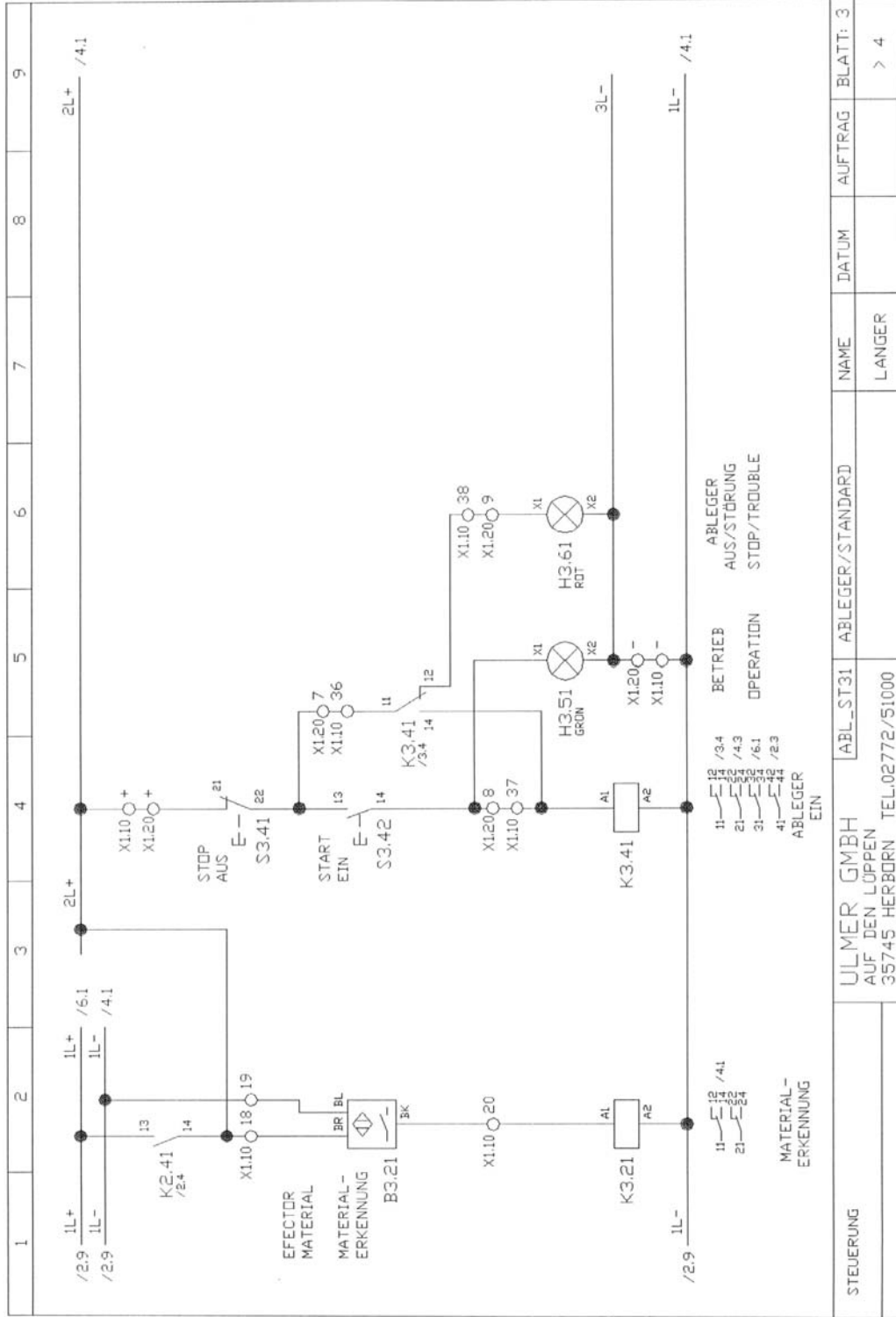
F 1.32	Fuse 5x20	1A		S	
G 1.31	Power supply (AL1500 to AL10000)	NTG 24-1.0	Konzept	S	AL-ELEC-8
G 1.31	Power supply (AL12000 to AL15000)	NSP 2402	Konzept	S	
H 3.51	Light bulb	BA9 , 30VDC	Telemecanique	P	AL-ELEC-9
H 3.61	Light bulb	BA9 , 30VDC	Telemecanique	P	AL-ELEC-10
K 2.41	Power contactor	DIL EM10-G	Moeller	S	AL-ELEC-11
K 3.21	Relay	M8/21-21/11061925	BTR	S	AL-ELEC-13
K 3.41	Relay	55.34.9.024.0090.E	Finder	S	
K 3.41	Relay base	94.84.1	Finder	S	
K 4.11	Relay	55.34.9.024.0090.E	Finder	S	AL-ELEC-15
K 4.11	Relay base	94.84.1	Finder	S	AL-ELEC-16
K 4.31	Relay	55.34.9.024.0090.E	Finder	S	AL-ELEC-15
K 4.31	Relay base	94.84.1	Finder	S	AL-ELEC-16
K 4.41	Time relay	87.11.0.240	Finder	S	AL-ELEC-21
K 4.51	Relay	55.34.9.024.0090.E	Finder	S	AL-ELEC-16
K 4.51	Relay base	94.84.1	Finder	S	AL-ELEC-15
K 4.71	Time relay	87.11.0.240	Finder	S	AL-ELEC-21
K 6.21	Relay	M8/21-21/11061925	BTR	S	AL-ELEC-13
M 2.11	Main drive		Groschop	AL	AL-ELEC-26
M 2.11	Gear		Groschop	AL	AL-ELEC-27
Q 1.11	Main switch	CG6 A291-600 FS2	Kraus&Naimer	P	AL-ELEC-28
R 2.21	Potentiometer	10k Ohm	Rossmannith	P	AL-ELEC-29
R 2.21	Pot-drive	D1R1S	Telemecanique	P	AL-ELEC-30
S 1.71	Limit switch	AZ 16-02zv	Schmersal	AL	AL-ELEC-32
S 2.41	E-Stop switch	D1C1R	Telemecanique	P	AL-ELEC-33
S 2.41	Switch attachment	DA02	Telemecanique	P	AL-ELEC-34
S 2.41	Contrast plate	Z09	Telemecanique	P	AL-ELEC-35
S 3.41	Luminous switch	D1Y1R	Telemecanique	P	AL-ELEC-36
S 3.41	Luminous switch attachment	DFSN11	Telemecanique	P	AL-ELEC-37
S 3.42	Luminous switch	D1Y1G	Telemecanique	P	AL-ELEC-39
S 3.42	Luminous switch attachment	DFSN11	Telemecanique	P	AL-ELEC—37
T 1.11	Transformer (only by USA-Version)	115 – 230V	SBA	S	

X 1.10	Terminal strip switch cabinet		Wago	S	AL-ELEC-42
X 1.20	Terminal strip control desk		Wago	S	AL-ELEC-42
X 1	Mounted housing	09200030320	Harting	S	AL-ELEC-44
X 1	Insert socket	09210073131	Harting	S	AL-ELEC-45
Y 1.71	Solenoid valve		Festo	AL	AL-ELEC-46
Y 2.71	Coupling and braking mechanism	Combibox 07.10.470	KEB	AL	AL-ELEC-47
Y6.31 – Y6.81	Solenoid valve	MFH-5-1/8-B	Festo	AL	AL-ELEC-46

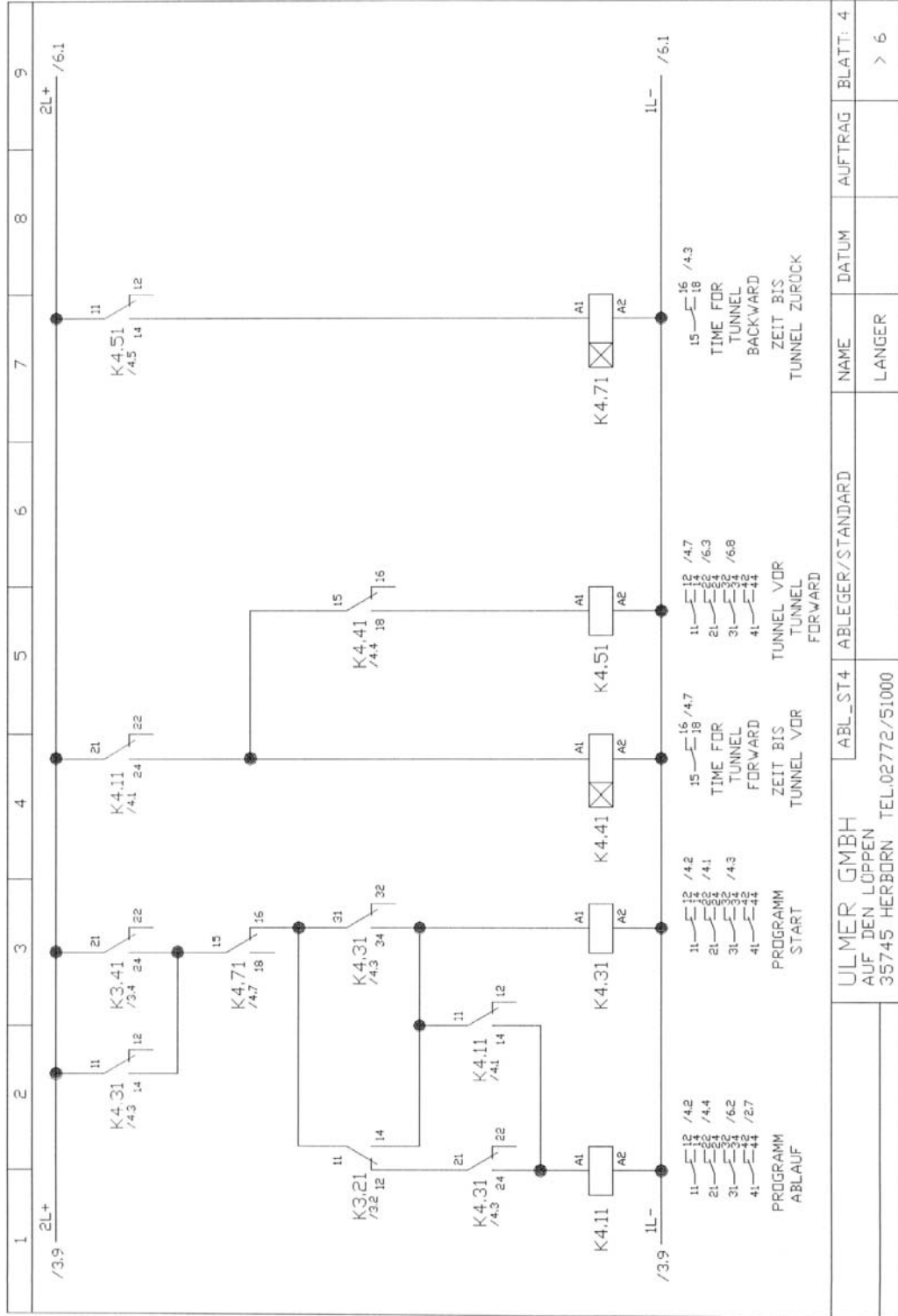




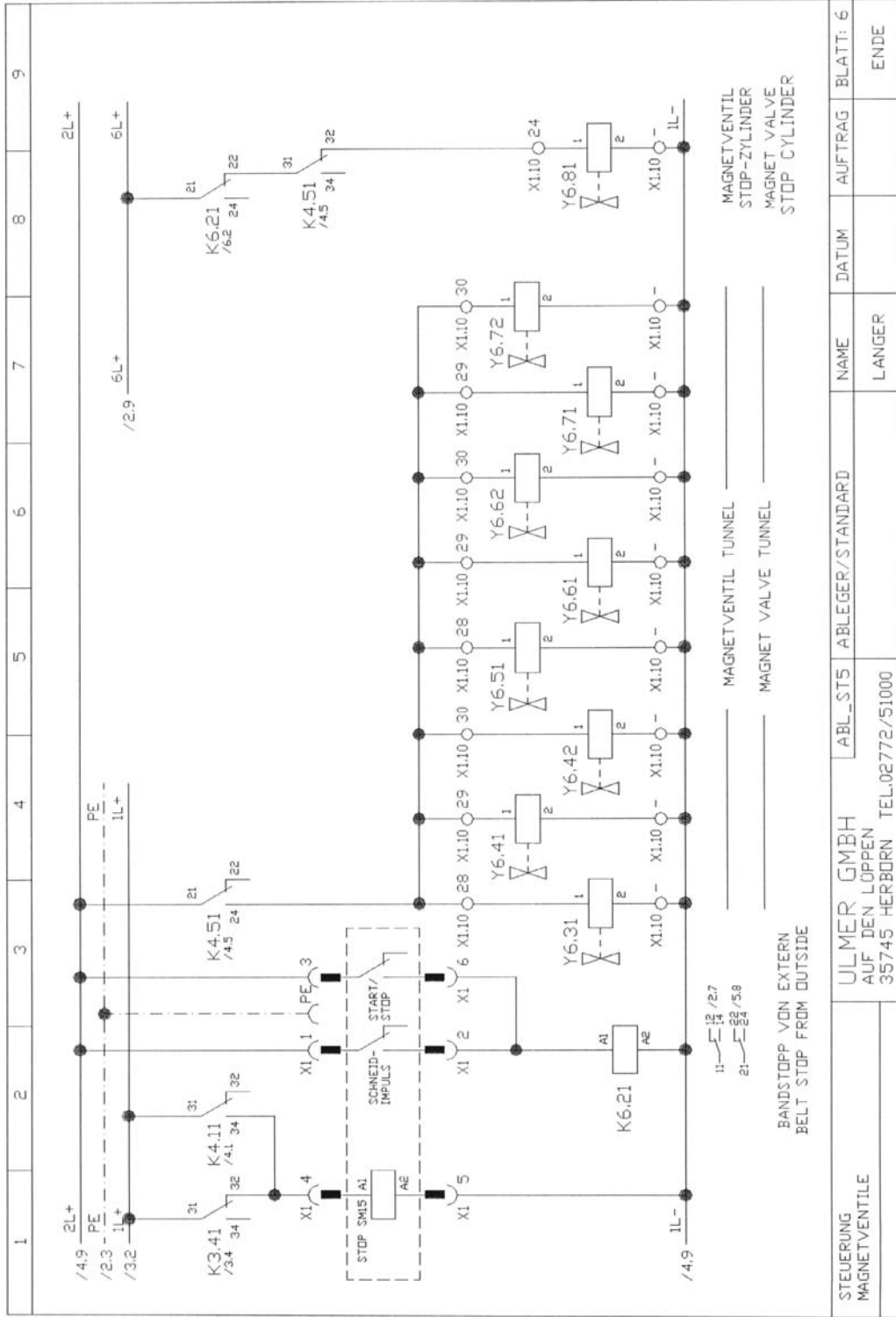




STEUERUNG	ULMER GMBH AUF DEN LÜPPEN 35745 HERBORN TEL.02772/51000	ABL_ST31	ABLEGER/STANDARD	NAME	DATUM	AUFTRAG	BLATT: 3
				LANGER			> 4



NAME	DATUM	AUFTRAG	BLATT: 4
LANGER			> 6
ULMER GMBH AUF DEN LÖPPEM 35745 HERBORN TEL.02772/51000		ABL-ST4 ABLEGER/STANDARD	NAME DATUM AUFTRAG BLATT: 4



BANDSTOPP VON EXTERN  
BELT STOP FROM OUTSIDE

11-12/27  
21-22/58

MAGNETVENTIL TUNNEL  
MAGNET VALVE TUNNEL

MAGNETVENTIL  
STDP-ZYLINDER  
MAGNET VALVE  
STOP CYLINDER

STEUERUNG MAGNETVENTILE	ULMER GMBH AUF DEN LÖPPEN 35745 HERBORN TEL.02772/51000	ABL_STS	ABLEGER/STANDARD	NAME LANGER	DATUM	AUFTRAG	BLATT: 6 ENDE
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