

sondor



Kinoton



vp 12 / 38 ec

High-Speed Projector Kinoton FP 30 EC and FP 38 EC

The projector FP 30 EC is equipped for 35 mm films and the projector FP 38 EC for 35 mm and 16 mm films. It is excellently suitable for all kinds of studio application.

General description

Robust, deforming-free 19" rack with adjustable pedestal $\pm 5^\circ$. The mounting panels are manufactured of anodised duralumin and have a width of 8 mm.

Situated on the top panel there are the film tensioning motor with magnetic brake, commutable in the winding direction, exchangeable spooling discs for 35 mm or 16 mm with swing-out retaining arm for the film roll and a push-button for releasing of the magnetic brake for removing the film during threading. The magnetic brake will be energized automatically after 5 seconds in order to hold the film roll. When the push-button "forward running" is pressed, a film loop between film roll and feed sprocket will be automatically eliminated without damage to the film.

The operating panel, situated under it, contains an electronic counter with the following switchable displays: frames/sec., frame number, film length in meters, film length in feet, SMPTE time code. Further there are the illuminated operation push-buttons with the functions, described below.

The next panel carries the film run mechanism, consisting of feed sprocket with pad shoe, take-up sprocket with pad shoe, 2 non-contact film break switches between the film rolls and the film run mechanism, the motor-driven 2-blade shutter with an aperture of 60° , a magnetically controlled heat-resistant dowsing, which closes automatically at a speed of less than 1 frame/sec., a light reduction filter, which swings in automatically at speeds of less than 10 frames/sec., a film gate assembly with curved film gate, a sprocket shaft with a double bearing with step by step motor and extremely light, high-precision sprocket with 32 teeth for 35 mm and 16 teeth for 16 mm. The adjustable pressure skate, which can be opened in parallel to the film gate for film threading, encloses the sprocket by 90° so that at least 8 teeth are engaged at 35 mm and 4 teeth at 16 mm, which facilitates the passage of bad splices, protects the film and allows a perfect reverse running. The pressure skate is slightly lifted for protecting the film at a speed of more than 40 frames/sec. at 35 mm and more than 25 frames/sec. at 16 mm in forward and reverse running. The optical sound device has a high-precision rotating sound drum with laterally adjustable film guide. Solar cell, Dolby solar cell on request, preadjusted, easily exchangeable exciter lamp and transport roller. This roller as well as the feed and take-up sprockets are connected with silent running timing belts and are driven by a separate motor.

The aperture plates can be exchanged also during the film running and are self-locking. The exchangeable lens holder for lenses of 70.6 mm ϕ is self-locking after the focus has been adjusted. The focus can be adjusted at the lens holder or alternatively remote-controlled by means of an additional motor. The framing is made electronically at the operating or remote control panel. For obtaining an optimal illumination and a perfect focus, we recommend the use of high-quality 35 mm lenses also for 16 mm, which are available in the focal distances as from 22 mm up to 160 mm, or a high-quality vario lens $f=20$ mm - 60 mm. The 16 mm sound head for optical and magnetic sound has also a sound drum with flywheel, which can be easily inserted and fixed on the projector.

Below the panel with the film run mechanism there is the panel with the lower reel drive analogous to the upper unit. The reel drives are controlled electronically and have an adjustable automatic film tension control keeping the film tension constant from the interior diameter of the roll up to the exterior diameter of the roll, if bobbies with a diameter of 75 mm or more are used. The film tension at 35 mm is about 300 g and at 16 mm about 200 g.

The projector housing is provided with removable cover plates, the rear side has a door so that all components in the projector are easily accessible. At the upper cover plate of the projector there are 2 low-noise ventilation systems for cooling at excessive room temperature.

At the rear side of the projector under the lamphouse is the connection terminal box, at the front side a plug panel for the inputs and outputs of sound and synchronous cables.

The projector can be equipped with a xenon lamphouse attachment for horizontal xenon lamps from 700 Watts up to 1600 Watts or with a lamphouse bracket and a lamphouse for xenon lamps as from 2000 Watts up to 7000 Watts.

Audio Equipment

The sound unit is mounted in a 19" plug-in module in the upper part of the projector. It consists of:

- | | | |
|---|--|-----------------|
| 1 | master board | PEC-80-20 |
| 1 | power supply unit with exciter lamp power supply | GPL 3-EP 40 |
| | The exciter lamp voltage 6.5 V/1.48 A is adjustable and stabilized. In order to avoid interferences when starting the projector, the lamp current is regulated slowly up to its nominal value. | |
| 1 | sound switch-over unit | PEC-80-13 |
| 1 | preamplifier optical sound 35 mm alternatively | KIN pre 1 opt. |
| 1 | preamplifier optical sound 16 mm | KIN pre 1 opt. |
| 1 | preamplifier magnetic sound | KIN pre 2 magn. |

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Electronic Equipment

The electronics are mounted in 19" modules, incorporated in the projector, characterized by the latest microprocessor technology with coupled computer systems, which are mounted in plug-in p.c. boards with control displays in Europa format.

Upper p.c. board carrier from left to right:

- | | |
|---|-------------|
| 1. master function
supplies sync signals for external devices | PEC-80-11 |
| 2. slave function
computes externally arriving sync signals for
the projector in the slave mode
allows take operation
incorporates the zero locator | |
| 3. shutter control
controls the shutter motor in a constant speed
48 rpm and 50 rpm and determines the film
stepping sequence during the dark sector
of the shutter | PEC-80-05 |
| 4. picture stability indicator
allows the control of the picture steadiness and
their re-adjustment | PEC-80-18 |
| 5. regulating unit for stepping motor | PEC-80-07 |
| 6. regulating unit for film transport motor | PEC-80-07 |
| 7. reference value for film transport | PEC-80-07 |
| 8. main computer | PEC-80-01 ✓ |
| 9. control p.c. board
for the control of dowsers, heat filter and
exciter lamp as well as skate lifting | PEC-80-06 |

Medium p.c. board carrier from left to right:

- | | |
|--|-----------|
| 1. regulating unit for motor film transport | TFM 60 |
| 2. power supply 12 Volts | GPL 80 |
| 3. power supply control voltages film reel units | GPL 40 |
| 4. power stage lower film reel drive | PEC-80-30 |
| 5. regulating unit lower film reel drive | PEC-80-21 |
| 6. power stage upper film reel drive | PEC-80-30 |
| 7. regulating unit upper film reel drive | PEC-80-21 |

Lower p.c. board carrier from left to right:

- | | |
|---------------------------------------|-----------|
| 1. power supply for stepping motor | BPS 10 |
| 2. regulating unit for stepping motor | BTS 10 |
| 3. power supply for projector | PEC-80-53 |

The stepping motor is equipped with a shaft encoder and a resolver. The motor for the film transport has also a shaft encoder and a tachogenerator. Another encoder is mounted on the plate with the film run mechanism and serves for turning of the film run mechanism, e.g. for examination when threading the film.

In front of the lens a light sensor can be inserted in the respective bushing and this sensor transmits the value of the dark sector of the shutter. It can be displayed together with the shift period by means of an oscillograph. The dark sector of the shutter can be optimally adjusted by means of the shutter adjusting ring to the shift period including readjustment time.

The skate pressure is adjusted as light as possible by the rotary knob, situated at the front side of the projector. (Higher pressure = rotation anticlockwise). The pressure is effected by a spring, the skate lifting at a higher speed by a solenoid.

The framing, + a half frame, is made electronically.

For threading of the film, please observe the following threading diagram.

Plug board

at the front side of the projector

1. socket ext. panel
leads to interface V 24
2. socket remote
serves for the connection of a remote control panel in the same version as the operating panel incorporated in the projector. The distance may be up to 30 m and only 4 wires are required.
3. Comopt - 16
output optical sound 16 mm, 1.55 V, 6 dB linear
4. Commag 16
output magnetic sound 16 mm, 1.55 V, 6 dB linear
5. Comopt 35
output optical sound 35 mm, 1.55 V, 6 dB linear
6. Sync In 1
input from external synchronization signal
7. Sync In 2
input from a second external synchronization signal
8. Sync Out 1
output for a synchronization signal
9. Sync Out 2
output for a second synchronization signal
10. socket 3
output for a stereo solar cell
for direct connection to the processor
11. socket C/O
connection for change-over for a second projector

Please see following connection diagram.

Operating panels

in the projector and as remote control. The panels are identical and contain:

1. the operating keys with master board
2. commutator 35 mm/16 mm and framing with master board
3. counter with computer p.c. board NEC-14 T
4. computer p.c. board keyboard PEC 8033

The keyboard allows the input of following functions:

forward	forward running with selected 24 or 25 fps
reverse	reverse running with selected 24 or 25 fps
step fwd	single frame forward
step rev	single frame reverse
fast fwd	forward running 40 frames/sec.
fast rev	reverse running 40 frames/sec.
stop	interruption of the running functions up to the standstill
shuttle	continuous film running
rotary knob	adjustment of the speed forward or reverse
24 fps	projection speed
25 fps	projection speed
dowser	dowser open - closed
xenon on/off	xenon lamp on - off (via 122 rectifier off)
sound on/off	with or without sound from the projector
loop	operation with film loop without reel drive
zero	projector runs automatically to counter zero mark
C/O	change-over with second projector
sync lock	projector runs to the actual synchronization point
lock	projector runs to the synchronization point in slave mode
reset counter	counter is set to zero
sync source 1	synchronization signal on plug 1
sync source 2	synchronization signal on plug 2
shift +	position shifting in slave operation (offset)
shift reset	shifting is set to zero
shift -	position shifting in slave operation (offset)
shift enter	execution of the position shifting (frames)
take begin	input of a take begin
take end	input of a take end
take repeat	repetition of a take
counter scroll	switch-over of the counter display
control local/remote	switching-over from the operating panel in the projector to the remote control unit (remote)

Connection terminal strip

at the rear side of the projector under the lamphouse. It is recommended to use different phases for the projector and the xenon lamphouse.

The upper connections, marked yellow-green, are ground.

left		right	
{ 1	60 phase projector	1	power supply projector
{ 2	20 zero	2	" " "
{ 3	60 phase lamphouse	3	lamphouse
{ 4	20 zero	4	"
5	122	5	"
6	122A	6	"
7	10 to amplifier	7	"
8	11 " "	8	"
9	coil relay for rectifier	9	from power supply
10	<i>not used</i> " " <i>by speaker</i>	10	" " "
0		0	0
0	0	0	0
0	0	0	0
0	0	0	0
	lamphouse + direct current xenon + rectifier		
	" - " "		

The terminals in the xenon lamphouse:

0		
0		
0		
0	11	disconnection loudspeakers during ignition
0	10	" " " "
0	122	switching on and off rectifiers for automatic ignition
0	122A	" " " " " " " "
0	60	phase
0	20	zero
0	40	ground
+		direct current xenon lamp
-		direct current xenon lamp

The phase 60, zero 20 and ground 40 of the lamphouse are connected to the terminals of the projector left 3 and 4 and to yellow-green. In the same way 122 on terminal 5 left 122, 122A to terminal 6, 11 to terminal 7 and 10 to terminal 8.

The connection 122 goes to the connection point of the rectifier (contactor coil) and comes back as 122A. With this circuit the rectifier will be switched on when pressing the button "on", and the xenon lamp will be ignited automatically via the automatic ignition unit with the produced direct current. When pressing the same button "off", the rectifier will be switched off and the lamp goes out. It may happen that the ignition noise will be audible in spite of perfect connection, due to an insufficient earthing. Only in this case one of the two loudspeakers at the output of the power amplifier should be led via 11 and 12 so that this will be interrupted automatically during the ignition period.

Connection remote control panel

At the projector there is the socket "remote".
At the pertinent plug are connected:

2	RxD	interface V 24	incoming
3	TxD	" "	outgoing
5	DGND	ground	
11	+ 12	Volts	

At the remote control panel on the orange plug on the computer p.c. board the following connections are made:

3	RxD	interface V 24	incoming
2	TxD	" "	outgoing
1	DGND	ground	
4	+ 12	Volts	

When switching on the electrical connection to the projector (mains switch) it may be preselected if the operation shall be made automatically from the projector or from the remote control panel.

Over the orange plug on the computer p.c. board there are 8 DIP switches in a blue case.

If the switch 3 is in the upward position "on", the operation of the projector can be made immediately from the projector when the mains has been switched on. If the switch is in the downward position "off", the operation is first made from the remote control panel.

Then it may be selected at the operating panel, without pressing the DIP switch, from where the operation shall be made. If the projector shall be remote-controlled, the button on the projectors has to be pressed to "remote" and the button at the remote control panel to "local".

The switch DIP 1 in position "off" means normal operating functions, in position "on" the keyboard is in test mode.

The switch DIP 2 in position "off" means normal operating functions, in position "on" the zero position between forward and reverse running can be ascertained by the rotary knob SHUTTLE and the rotary knob can be adjusted to a zero mark (12 o'clock) by rotation.

Fuses

All fuses are installed in the power supply of the projector, which is accessible with all fuses after opening of the projector door.

mains fuse 60	primary	phase	6.3 A	
" "	20	zero	6.3 A	
mains fuse secondary	24 V	25	A	
fuse	"	110 V		all fuses slow blow
for fans		1	A	
fuse for stepping motor		2.5	A	

Switches and regulators

outside of the control p.c. board and the remote control p.c. board:

1. mains switch with control lamp
at film side of the projector at the bottom
2. at mains unit GPL 3-EP 40
regulator for exciter lamp voltage
3. at preamplifiers PRE 1 and PRE 2
volume control and treble control
4. at regulating unit for stepping motor BTS 10
regulator for speed
5. at regulating unit for stepping motor PEC-80-07
adjusting regulator
6. at regulating unit for motor film transport TFM 60
speed governor
7. at encoder for stepping motor PEC-80-08
regulation for duration framing
8. at regulating units for film reel drive PEC-80-21
regulator for tacho, speed, current
9. at power stage film reel drive PEC-80-30
regulator for stop point when threading the film

Control lamps

The projector contains a number of control lamps which indicate functioning or malfunctions in the system:

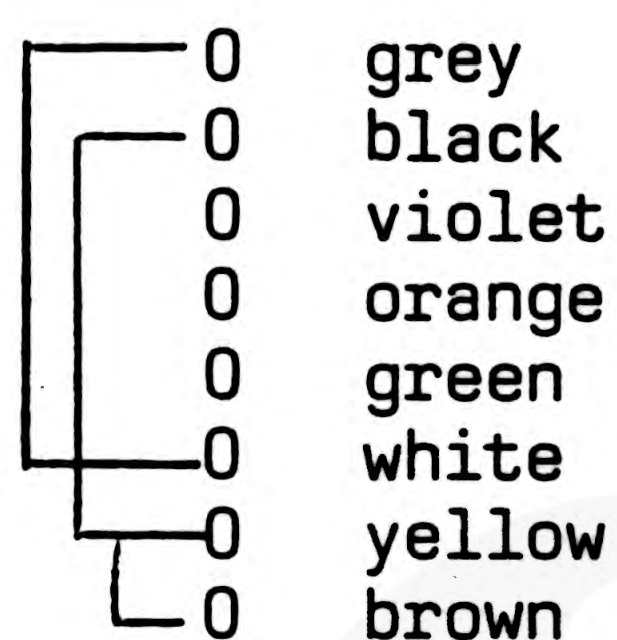
1. control lamp on the mains switch indicates, if mains voltage is applied
2. control lamp on mains unit with exciter lamp power supply GPL 3-EP 40
3. control lamp on preamplifiers PRE 1 and PRE 2
4. control lamp on mains unit GPL 3-EP 40 is illuminated, if exciter lamp burns
5. control lamp on computer operating panel PEC-80-33 lamp blinks, if operations ok
6. red control lamps at the film break switches show if the function is ok when film is threaded
7. on the mains units GPL 40, BPS 10 and PEC-80-53 the lamps show green, if function is ok
8. on main computer PEC-80-01 a green lamp blinks, if function is ok
9. on the coupling p.c. boards PEC-80-11 and PEC-80-10 a green lamp blinks, if function is ok
10. on the p.c. board for the shutter control PEC-80-05 a green lamp shows the shutter signal. The red lamp has to go out after about 10 sec. operating time.
11. at the power stages for film roll PEC-80-30 a red control lamp is installed for each of the 8 power diodes. If one of these lamps is illuminated, this will mean that the diode is defective.

Adaption of the projector to the different mains voltages

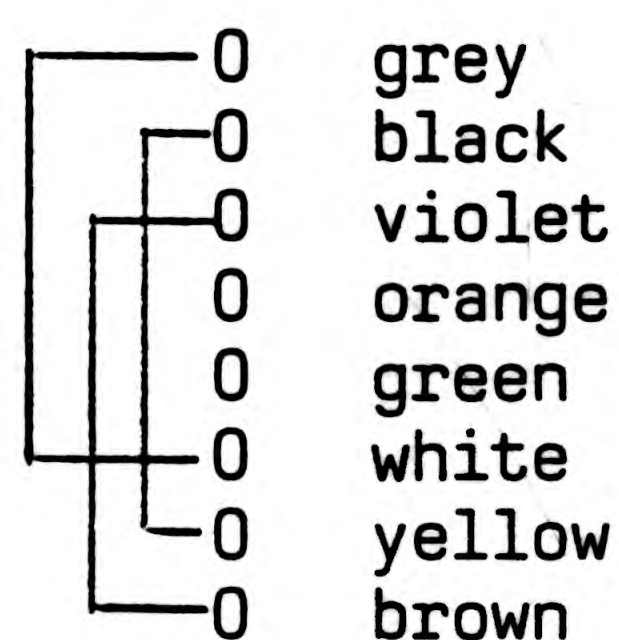
The adaption is made at the voltage transformer of the power supply, which is accessible by loosening of the lower cover plate at the film side of the projector.

The required connections for the different voltages are as follows:

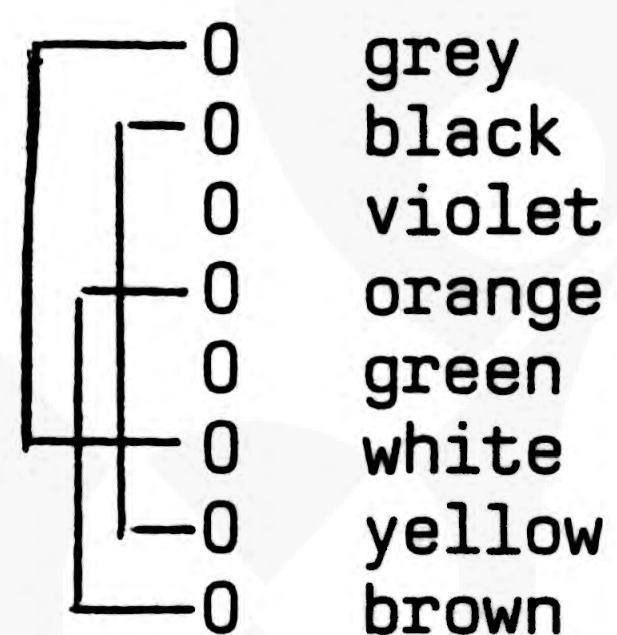
for 110 V



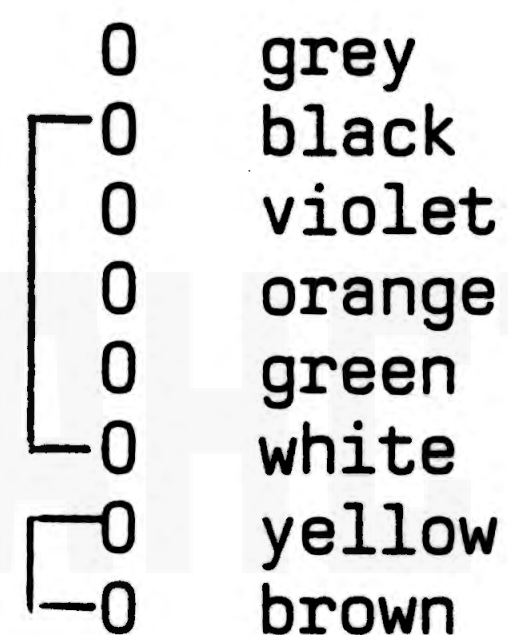
for 120 V



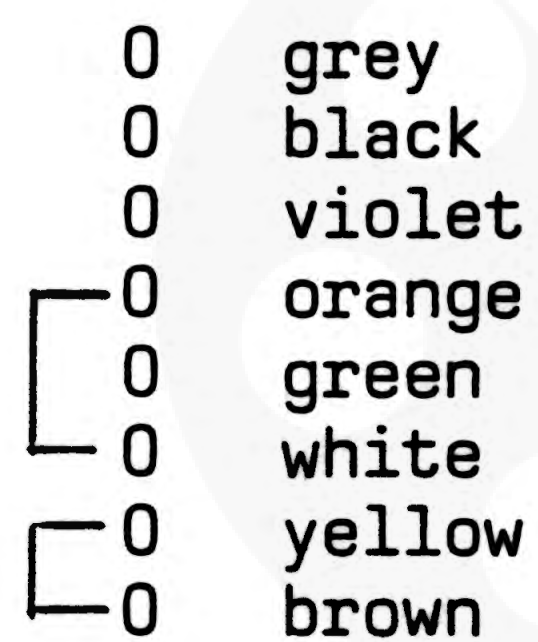
for 130 V



for 220 V



for 240 V



Each projector FP 30 EC for 35 mm films can be upgraded lateron to a projector FP 38 EC for 35 mm and 16 mm films.

The following parts are required for this purpose:

conversion kit FP 30 EC/FP 38 EC

- 1 sprocket 35/16 mm
- 1 feed sprocket 35/16 mm
- 1 pad shoe for above
- 1 take-up sprocket 35/16 mm
- 1 pad shoe for above
- 1 film gate assembly 16 mm
- 1 pressure skate 16 mm
- 1 exchangeable lens holder 70.6 mm ϕ
- 1 aperture plate 16 mm
- 1 upper film disc 16 mm
- 1 lower film disc 16 mm

- 1 planoconvex lens
- 1 swing-in lens holder for xenon lamphouse attachment

- 1 optical/magnetic sound head device

- 1 preamplifier optical sound 16 mm
- 1 preamplifier magnetic sound 16 mm

Technical Data:

connection to 110/120/220/240 Volts, 50/60 Hz
current consumption without light source 500 Watts

projection of 35 mm and 16 mm films
in forward and reverse running as well as video scanning
flickerless from 1-40 frames/sec.

film running speed without projection
at 35 mm film max. 300 frames/sec.
at 16 mm film max. 400 frames/sec.

picture steadiness
at 35 mm vertical 0.12 % horizontal 0.15 %
at 16 mm vertical 0.20 %, horizontal 0.20 %
in accordance with SMPTE Recommendation RP 105-1981
for review and premier showing rooms

light efficiency
measured in front of the lens with running shutter
with xenon lamp horizontal 1600 W, 68 A
35 mm film 5400 lumen, loss of light at the edges 15 %
16 mm film 3000 lumen, loss of light at the edges 15 %

xenon lamps as from 700 Watts up to 7000 Watts can be used.

shutter
2-blade shutter, aperture 60°, speed at all projection speeds 48 or 50 dark
sectors per second

intermittent step < 12 msec.

run-up time
0 - 25 frames/sec. 1 sec.
0 - 400 frames/sec. 10 sec.
sound 4 sec.
rewinding 600 m 35 mm 100 sec.
rewinding 600 m 16 mm 200 sec.

wow and flutter weighted 0.15
wow and flutter unweighted 0.4

framing
electronically $\pm$ 0.5 frames

change from intermittent step to continuous running
continuously without stop

max. film length
at 16 and 35 mm 600 m

Synchronization signals

in master operation outgoing

2 x 50 Hz biphasе

100 Hz biphasе

75 pulses/frame with clock and direction

in slave operation incoming

2 x 50 Hz biphasе

100 Hz biphasе

75 pulses/sec. with clock and direction

Other signals available on request.



Plug connection junction panel FP 38 EC

ext. panel	1	free
	2	RxD
	3	TxD
	4	free
	5..8	DGND
	9	free
	10	free
remote	11..15	+12 V
	1	free
	2	CTS
	3	TxD
	4	free
	5	DGND
	6	free
Comopt 16	7	RTS
	8	RxD
	9	free
Commag 16	1	screen
	2	opt 16 out
	3	opt 16 out
Comopt 35	1	mag 16 out
	2	screen
	3	mag 16 out
	Mono	
	1	screen
Dolby	2	opt 35 out
	3	opt 35 out
	4	not occupied
	5	not occupied
Sync In 1	1	screen
	2	right - out
	3	right + out
	4	left - out
	5	left + out
Sync In 2	1	sync in CH1A+
	2	sync in CH1B+
	3	sync in screen
	4	sync in CH1-
	5	sync in CH1-
Sync In 2	1	sync in CH2A+
	2	sync in CH2B+
	3	sync in screen
	4	sync in CH2-
	5	sync in CH2-

Sync Out 1

1
2
3
4
5

sync out CH1A+
sync out screen
sync out CH1-
sync out CH1B+
sync out CH1-

Sync Out 2

1
2
3
4
5

sync out CH2A+
sync out screen
sync out CH2-
sync out CH2B+
sync out CH2-

Sync Out 3

1
2
3
4
5

sync out CH3A+
sync out screen
sync out CH3-
sync out CH3B+
sync out CH3-

C/O

1
2
3
4
5
6

start
in
out
RES 1
RES 2
GND change-over

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Adjustment of the synchronous coupling signals
Projector in slave mode.

On the p.c. board PEC-80-10 there are 2 DIP switches, marked with DIP 1 and DIP 2. On these switches the incoming signals via the input sockets Sync In 1 and Sync In 2 are being selected. The running direction can be changed by means of the switches D1-D3.

Example: signal 50 Hz biphas at 25 frames/sec. forward
 incoming via plug Sync 2

switch V2 on, switch T2 off, switch B2 on, switch D2 off

The switches have following functions:

ON			ON		
OFF			OFF		
V1 V2 V3 T1 T2 T3 S1 S $\emptyset$			D1 D2 D3 B1 B2 B3 S3 S2		
DIP 1			DIP 2		
OFF			ON		
V1	channel 1	100 Hz	channel 2	50 Hz	
V2	channel 2	100 Hz	channel 2	50 Hz	
V3	channel 3	100 Hz	channel 3	50 Hz	
T1	channel 1	25 fps	channel 1	24 fps	
T2	channel 2	25 fps	channel 2	24 fps	
T3	channel 3	25 fps	channel 3	24 fps	
D1	channel 1	forward	channel 1	reverse	
D2	channel 2	forward	channel 2	reverse	
D3	channel 3	forward	channel 3	reverse	
B1	channel 1	1875 Hz	channel 1	biphase	
B2	channel 2	1875 Hz	channel 2	biphase	
B3	channel 3	1875 Hz	channel 3	biphase	
S1 S $\emptyset$	ON	ON	channel selected via V 24		
	ON	OFF	channel 1		
	OFF	ON	channel 2		
	OFF	OFF	channel 3		
S2	250 Hz, if selected V1/V2/V3 100 Hz and via B1/B2/B3 biphase		50/100 Hz via V1/V2/V3		
S3	not occupied				

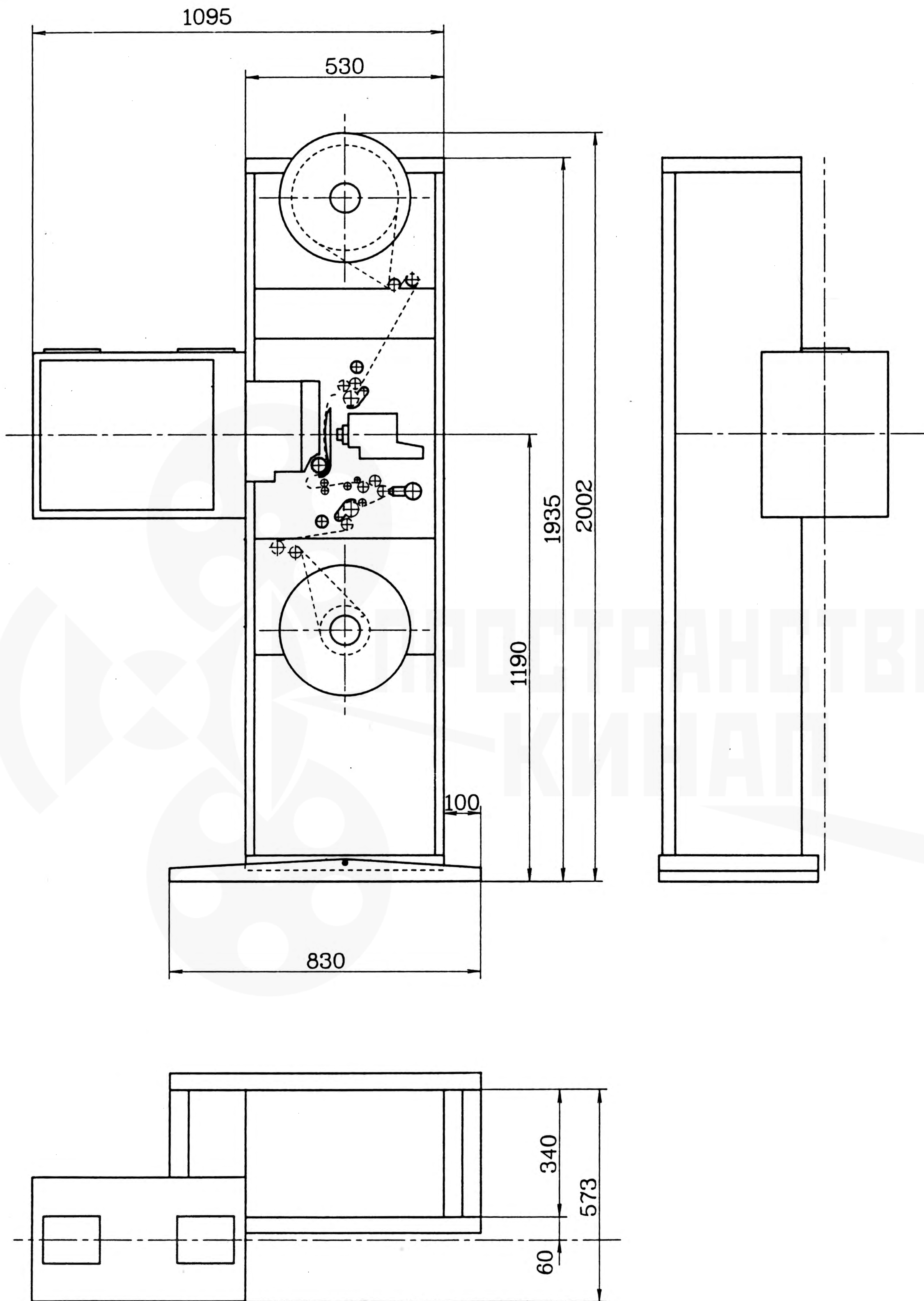
Adjustment of the synchronous coupling signals
projector in master mode.

On the p.c. board PEC-80-11 there is a DIP switch. On this switch the outgoing signals from the sockets Sync Out 1 and Sync out 2 are selected.

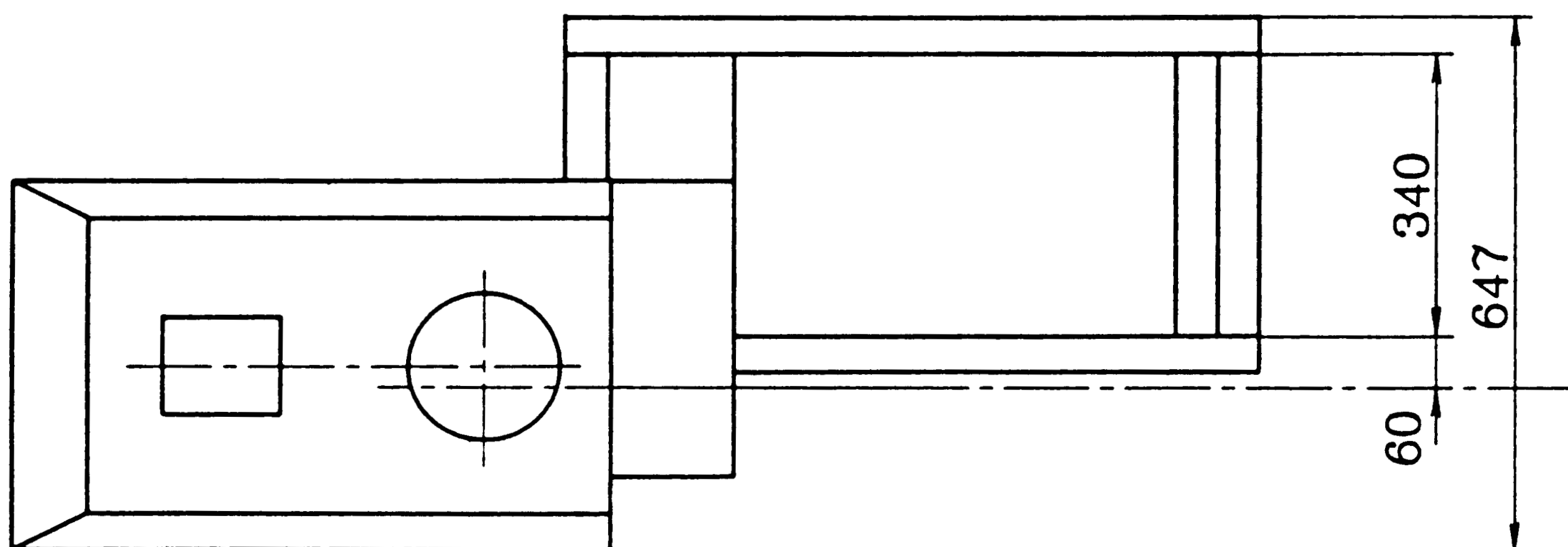
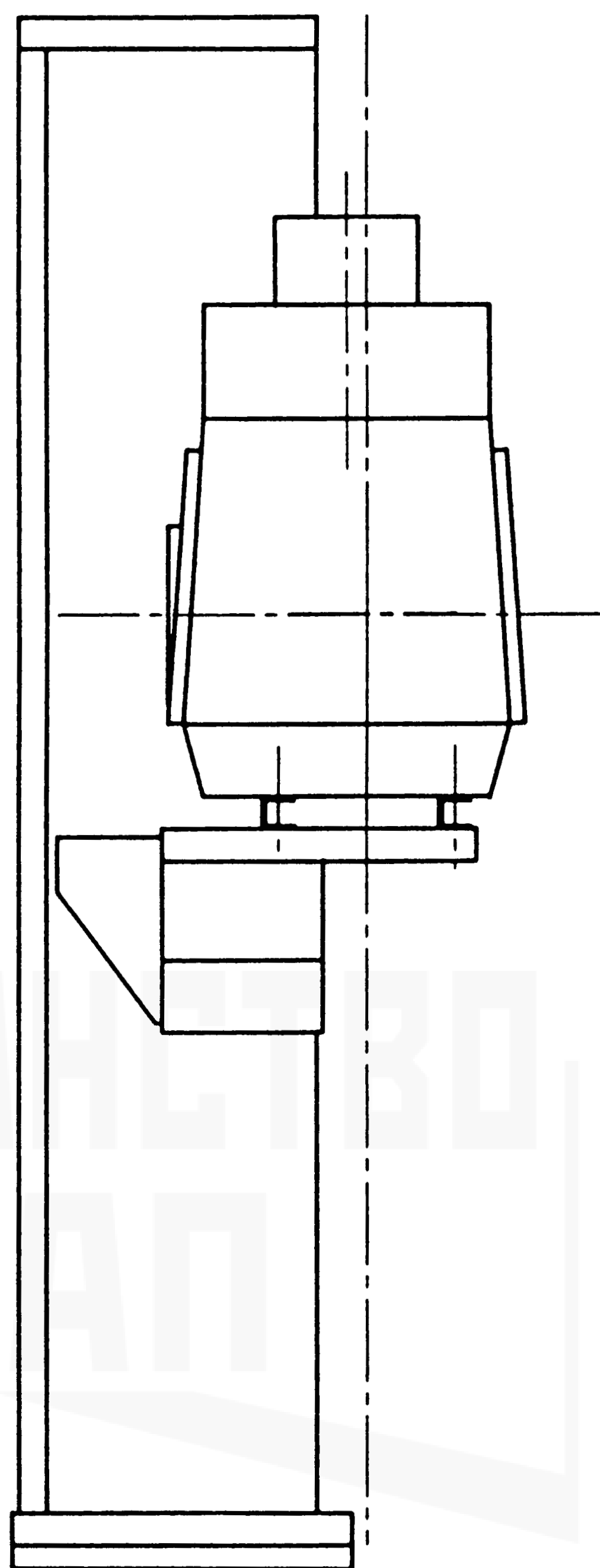
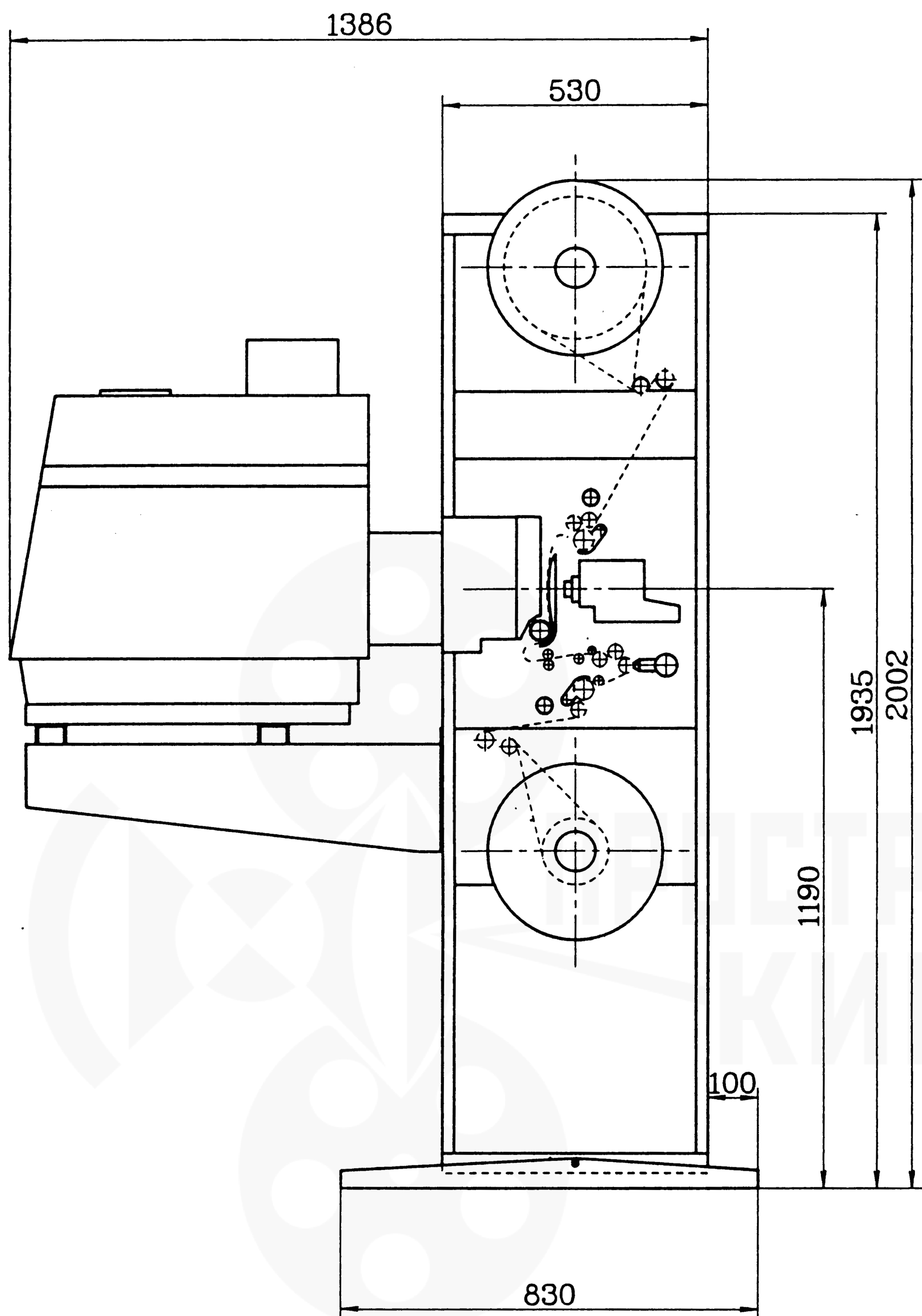
The switches have the following functions:

	off	on
S1	50 Hz	100 Hz
S2	forward	reverse
S3	channel 2 1875 Hz	channel 2 biphase
S4	channel 1 1875 Hz	channel 1 biphase
S5	24 frames/sec.	25 frames/sec.

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Projektor FP 38 EC mit Anbaulampenhaus



Projektor FP 38 EC mit 4000 W Lampenhaus

Es müssen alle Schritte der Reihe nach ausgeführt werden.
Wenn in einem Schritt ein Fehler festgestellt wird, darf der nächste Schritt erst ausgeführt werden, wenn der Fehler behoben ist.

Test der Spannungsversorgung:

Es müssen alle Steckkarten aus den 19"-Racks entfernt werden. Die Tastatur PEC 80-33 und die Formatwahl PEC 80-34 müssen abgesteckt werden. Nach Ankleben der Spannungsversorgung (Klemmen SL1,2 im Anschlußkasten) wird der Netzschalter eingeschaltet. Messen von ca. 28V (28V .. 33V) Gleichspannung an folgenden Klemmen:

OV: KL5 1 .. 19

ca. 28V: KL5 20 .. 23

OV: Power-Bus PEC 80-45 ST1 Pin 3/4

ca. 28V: Power-Bus PEC 80-45 ST1 Pin 1/2

OV: Frikt-Bus PEC 80-25 ST8 Pin 3/4

ca. 28V: Frikt-Bus PEC 80-25 ST8 Pin 1/2

OV: Logik-Bus PEC 80-15 ST29 Pin 1/2

ca. 28V: Logik-Bus PEC 80-15 ST29 Pin 5/6

OV: Ton-Bus PEC 80-20 ST1 Pin 1

ca. 28V: Ton-Bus PEC 80-20 ST1 Pin 2

Messen von 150 .. 190 V Wechselspannung zwischen folgenden Klemmen:

KL5 5 / KL5 6

ASR-Bus PEC 80-35 ST4 Pin 1 / Pin 2

Netzschalter wieder ausschalten. Es muß nun ca 2 Minuten gewartet werden, um die Siebkondensatoren zu entladen. Anschließend werden folgende Karten in ihre Steckplätze gesteckt:

Frikt-Bus PEC 80-25: GPL3-ED40-5/15/15

Power-Bus PEC 80-45: GPL1-ED80-12

TFM 060-01

ASR-Bus PEC 80-35: BPS 10

Ton-Bus PEC 80-20: GPL3-ED40-6.5/15/15

Nach Einschalten des Netzschalters müssen folgende Anzeigen erscheinen:

GPL3-ED40-5/15/15: 2 grüne LEDs

GPL1-ED80-12 : 1 gelbe LED

TFM 060-01 : 1 grüne LED

BPS 10 : 1 grüne LED "MAIN SUPPLY"

GPL3-ED40-6.5/15/15: 1 grüne LED, die 2. LED muß aus sein (!)

Es werden nun verschiedene Gleichspannungen gemessen:

OV: Power-Bus PEC 80-45 ST2 Pin 1/2

12V: Power-Bus PEC 80-45 ST2 Pin 3/4

OV: Logik-Bus PEC 80-15 ST29 Pin 1/2

12V: Logik-Bus PEC 80-15 ST29 Pin 3/4

OV: Tastatur ST3 Pin 1

12V: Tastatur ST3 Pin 4

OV: Formatwahl ST1 Pin 1
12V: Formatwahl ST1 Pin 6

Nach Ausschalten des Gerätes wird die Tastatur PEC 80-33 mit ST3 und ST4 sowie die Formatwahl PEC 80-34 mit ST1 angesteckt. Die Tastatur muß sich mit Laufflicht und Textmeldung "PLEASE WAIT" melden. Auf der Formatwahl muß die Lampe "35mm" aufleuchten.

Nach Ausschalten des Gerätes wird der Hauptrechner PEC 80-01 auf seinen Steckplatz gesteckt. Nach Wiedereinschalten muß nach ca. 10sec die Lauf-LED auf dem Hauptrechner zu blinken beginnen. Jetzt müssen auf dem Bedienteil Bedienungen möglich sein (z.B. 24/25 oder FWD/STOP etc.). Ebenso muß die 16/35mm-Umschaltung auf der Formatwahl funktionieren (aber nur nach Aus- und Wiedereinschalten). Als nächstes wird das Power-Interface PEC 80-06 eingesteckt. Es darf auf dem Power-Interface keine rote LED aufleuchten.

Nach Einstecken des Blendenreglers PEC 80-05 muß sich die Umlaufblende drehen. Es muß nach ein paar Sekunden die Einregelung auf konstante Geschwindigkeit zu hören sein.

Nach Ausschalten des Gerätes wird der Sollwertgeber PEC 80-08 auf seinen Steckplatz gesteckt. Nach Wiedereinschalten muß nach ca. 10sec die rote Reset-LED auf dem Sollwertgeber erlöschen.

Reglereinstellung TFM 060-01:

Anmerkung: TFM 060-01 besitzt 4 Potentiometer. Sie werden mit P1 beginnend gezählt ab der roten LED.

Der Motor muß stehen bleiben oder sich ganz langsam drehen. Mit P4 wird eine eventuelle Drehung beseitigt.

P3 (Strombegrenzung) wird im Uhrzeigersinn bis Anschlag gedreht.

Es wird nun an den Steckplatz des Phasenreglers PEC 80-07 V/N der Rechteckgeber PEC 80-16 gesteckt. Der Rechteckgeber wird mit dem DIP-Schalter auf V/N eingestellt. Mit P1 auf TFM 060-01 wird die Tachospannung des Vor-/Nachlaufmotors (gemessen an der Klemme KL2 Pin 3(+) und 4(-)) auf 3.5 Volt eingestellt (Messung mit Oszilloskop!). Mit P2 wird die Anregelzeit des Tachoimpulses möglichst kurz, aber schwingungsfrei eingestellt (auf Geräuscharmheit optimieren).

Anschließend wird der Phasenregler PEC 80-07 V/N an seinen Platz gebracht. Die beiden Potis auf dem Phasenregler sind in Mittelstellung zu bringen. Nun muß der Vor-/Nachlaufantrieb in allen Laufzuständen richtig laufen. Bitte alle Lauffunktionen überprüfen, insbesondere SHUTTLE auf Maximalgeschwindigkeit. Bitte auch auf den richtigen Drehsinn des Antriebs achten! Es müssen jetzt auch der Dowser, der Hitzefilter, die Pilotlampe und die Tonabhebung 35mm richtig arbeiten. Das Handrad muß ebenfalls funktionieren.

Reglereinstellung BTS 10:

Nach Ausschalten wird der Einschub BFS 10 an seinen Platz gebracht. Nach dem Einschalten muß der Schaltrollenantrieb stehen bleiben oder sich ganz langsam drehen. Mit P4 (VELOCITY OFFSET) wird eine eventuelle Drehung beseitigt. P1 (INPUT 1), P3 (TACHO GAIN), P6 (PEAK CURRENT) und P11 (CURRENT LIMIT) werden im Uhrzeigersinn bis Anschlag gedreht. Es wird nun an den Steckplatz des Phasenreglers PEC 80-07 BLM der Rechteckgeber PEC 80-16 gesteckt. Der Rechteckgeber wird mit dem DIP-Schalter auf BLM eingestellt. Ein Speicher-Oszilloskop wird an die Meßpunkte TP8 (GND) und TP7 (ACTUAL SPEED) angeklemmt. Mit P5 (VELOCITY LOOP GAIN) wird nun die Sprungantwort des Rechteckgebers auf 1 Volt Amplitude und ein einzelnes Überschießen optimiert. Nach dieser Einstellung ist der Drehzahlregler eingestellt.

Anschließend wird der Phasenregler PEC 80-07 BLM an seinen Platz gebracht. Die beiden Potis auf dem Phasenregler sind in Mittelstellung zu bringen.

...
...
...

Prüfung der Verkopplung Master PEC 80-11:

Alle Kurzschlußbrücken auf der Karte müssen vorhanden sein (6 Stück).

Die DIP-Schalter auf der Karte werden wie folgt eingestellt:

S1	OFF
S2	OFF
S3	ON
S4	ON
S5	ON

Die beiden Potentiometer werden auf Mittelstellung gebracht. Der Projektor wird nun auf 25 Bilder/sec vorwärts gebracht. Es muß am Anschlußfeld an den Buchsen 'SYNC OUT 1' und 'SYNC OUT 2' zwischen Pin 1 (+), Pin 4 (+) und 3 (-) ein 50 Hz Biphase-Signal erscheinen. Wenn auf der Karte DIP-Schalter S2 auf ON gebracht wird, muß die Drehrichtung an beiden Kanälen wechseln. Wird S1 auf ON geschaltet, erscheinen 100 Hz. Werden S3 respektive S4 auf OFF geschaltet, dann erscheinen 1875 Hz auf dem einen Pin und die Laufrichtung auf dem anderen Pin. Bitte alle DIP-Schalter wieder auf den ursprünglichen Einstellstand bringen (s.o.). Abschließend werden alle Kurzschlußbrücken entfernt.

Prüfung der Verkopplung Slave PEC 80-11:

Die DIP-Schalter auf der Karte werden wie folgt eingestellt:

S0	ON
S1	ON
S2	ON
S3	ON
T1, T2, T3	OFF
V1, V2, V3	ON
D1, D2, D3	OFF
B1, B2, B3	ON

Nach Einschalten des Projektors muß nach ca 10sec. die Lauflampe der Karte blinken. Je nach Auswahl der Sync-Source am Bedienfeld muß die entsprechende LED auf der Karte aufleuchten. Am Bedienfeld wird nun eine andere Sync-Source gewählt; es muß auch die LED auf der Karte wechseln. Als nächstes wird der Projektor gestartet (FWD) und einige Sekunden laufengelassen. Es wird nun ZERO gedrückt. Im Frame-Display (über COUNTER SCROLL angewählt) muß die Maschine auf Frames = 0 zurücklaufen.

Inbetriebnahme der Friktionen:

...
...
...
...

Platinenaufstellung für den Projektor FP38EC

PEC8001	PEC-80-01/01	Hauptrechner Teil A
PEC8002	PEC-80-02/01	Hauptrechner Teil B
PEC8003	PEC-80-	
PEC8004	PEC-80-	
PEC8005	PEC-80-05/01	Blendenregler
PEC8006	PEC-80-06/01	Powerinterface
PEC8007	PEC-80-07/01	Phasenregler BLM
PEC8007	PEC-80-07/01	Phasenregler VOR/NACH
PEC8008	PEC-80-08/02	Sollwertgeber
PEC8009	PEC-80-	
PEC8010	PEC-80-10/01	Verkoppelung - Slave
PEC8011	PEC-80-11/00	Verkoppelung - Master
PEC8012	PEC-80-12/00	50Hz-Netz zu 50Hz-CMOS
PEC8013	PEC-80-13/00	Ton-Logik
PEC8014	PEC-80-14/00	C/O
PEC8015	PEC-80-15/01	Backplan-Logik-BUS
PEC8016	PEC-80-16/00	Service-Rechteckgeber
PEC8017	PEC-80-17/00	Service-Meßcomputer
PEC8018	PEC-80-18/00	Bildstandsmeßgerät
PEC8019	PEC-80-	
PEC8020	PEC-80-20/00	Backplan-Ton-BUS
PEC8021	PEC-80-21/03	Friktions-Steuerung
PEC8022	PEC-80-	
PEC8023	PEC-80-	
PEC8024	PEC-80-	
PEC8025	PEC-80-25/01	Backplan-Friktions-BUS
PEC8026	PEC-80-	
PEC8027	PEC-80-	
PEC8028	PEC-80-	
PEC8029	PEC-80-	
PEC8030	PEC-80-30/01	Friktions-Endstufe
PEC8031	PEC-80-	
PEC8032	PEC-80-32/01	Tastatur
PEC8033	PEC-80-33/01	Tastatur-Rechner
PEC8034	PEC-80-34/01	Formatwähler/Bildstrich
PEC8035	PEC-80-35/00	Backplan-ASR-Baldor
PEC8036	PEC-80-	
PEC8037	PEC-80-	
PEC8038	PEC-80-	
PEC8038	PEC-80-	
PEC8039	PEC-80-	
PEC8040	PEC-80-	
PEC8041	PEC-80-	
PEC8042	PEC-80-	
PEC8043	PEC-80-	
PEC8045	PEC-80-45-01	Backplan-Powerbus
PEC8046	PEC-80-	
PEC8047	PEC-80-	
PEC8048	PEC-80-	
PEC8049	PEC-80-	

PEC8050	PEC-80-50/00	Kabelbaum
PEC8051	PEC-80-51/00	Einschub-Power
PEC8052	PEC-80-52/00	Einschub-Netzteil
PEC8053	PEC-80-53/00	Netzmodul
PEC8054	PEC-80-54/00	Schaltereinheit mit ESB
PEC8055	PEC-80-55/00	Versorgungsleiste
PEC8056	PEC-80-56/00	Einschub-Logik
PEC8057	PEC-80-57/00	Einschub-Ton
PEC8058	PEC-80-	
PEC8059	PEC-80-	
PEC8060	PEC-80-	
PEC8061	PEC-80-	
PEC8062	PEC-80-	
PEC8063	PEC-80-	
PEC8064	PEC-80-	
PEC8065	PEC-80-	
PEC8066	PEC-80-	
PEC8067	PEC-80-	
PEC8068	PEC-80-	
PEC8069	PEC-80-	
PEC8070	PEC-80-	

ПРОСТРАНСТВО
КИНАП

Stecker (ST) Klemme (KL)	Signalname	Kabel/Litze Baugruppe	Kabel/Litze Kabelbaum
KL1:	1	Handrad GND	ws+ws
	2	Handrad +5V	bn(0.5 ²)+bl
	3	Handrad Ua2	gr
	4	Handrad Ua1	bn
	5	Handrad Schirm	Schirm
	6	Filmriß oben +12V	bn
	7	Filmriß oben Ua	ws
	8	Filmriß oben GND	bl
	9	Filmriß unten +12V	bn
	10	Filmriß unten Ua	ws
	11	Filmriß unten GND	bl
	12	Pilotlampe	ws
	13	Pilotlampe	ws
	14	Blende L2	sw
	15	Blende L1	bn
	16	Blende +12V	sw+rt
	17	Blende GND	sw+Schirm
	18	Blende Sensor	or
	19	frei	
	20	DGND	sw 1.5
	21	DGND	
	22	DGND	
	23	DGND	sw 2.5
	24	DGND	sw 1.5
	25	Ton 16 Kupplungsmagnet -	sw 1.5
	26	Ton 16 Kupplungsmagnet +	gr 1.5
	27	Temp.-Sensor +	or 0.5
	28	Temp.-Sensor -	bl 0.5
	29	Dowser +	bl gr 1.5
	30	Dowser -	bl sw 1.5
	31	Hitzefilter +	bl gn 1.5
	32	Hitzefilter -	bl sw 1.5
KL2:	1	Vor/Nach-Motor	rt 1.5
	2	Vor/Nach-Motor	sw 1.5
	3	Tacho	bl ws
	4	Tacho	ws rt
	5	Motor-Encoder GND	ws+ws sw+bn
	6	Motor-Encoder +5V	bn(0.5mm ²)+bl sw+rt
	7	Motor-Encoder Ua2	gr sw
	8	Motor-Encoder Ua1	bn or
	9	Motor-Encoder Schirm	Schirm Schirm
		ROD420C	ROD420D
	10	Verkoppl.-Encoder GND	ws+ws sw+bn
	11	Verkoppl.-Encoder +5V	bn(0.5 ²)+bl bl+bngn sw+rt
	12	Verkoppl.-Encoder Ua2	gr gr sw
	13	Verkoppl.-Encoder Ua1	bn bn or
	14	Verkoppl.-Encoder Schirm	Schirm Schirm -
KL3:	1	BSM Gehäuse	gegn sw 1.5
	2	BSM Phase U	sw 1 bl 1.5
	3	BSM Phase V	sw 2 rt 1.5
	4	BSM Phase W	sw 3 ge 1.5
	5	frei	
	6	Temp.-Schalter	gn gn 0.5
	7	Temp.-Schalter	ge gr 0.5
	8	Resolver REF+	rt Paar 1 rt
	9	Resolver REF-	sw Paar 1 sw
	10	Resolver COS+	or Paar 2 or

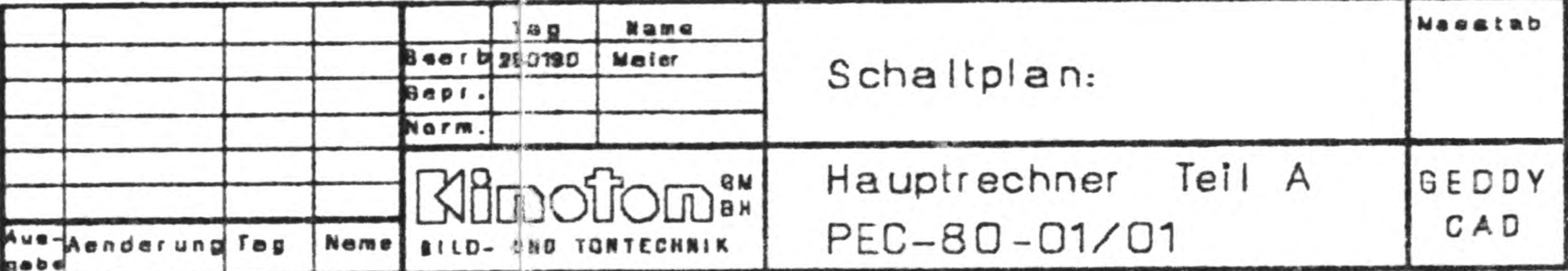
Stecker (ST) Klemme (KL)	Signalname	Kabel/Litze Baugruppe	Kabel/Litze Kabelbaum
	11 Resolver COS-	sw Paar 2	sw
	12 Resolver SIN+	sw Paar 3	sw
	13 Resolver SIN-	bn Paar 3	bn
	14 Resolver Schirm	Schirm	Schirm
	15 Encoder GND	ws+ws	sw+bn
	16 Encoder +5V	bn(0.5mm ²)+bl	sw+rt
	17 Encoder Ua2	gr	sw
	18 Encoder Ua1	bn	or
	19 Encoder Schirm	Schirm	-
KL4:	1 Magnet Tonabhebung +	ws	gn 1.5
	2 Magnet Tonabhebung -	ws	sw 1.5
	3 Magnet Kufenabhebung -		
	4 Magnet Kufenabhebung +		gr 1.5
	5 Tonlampe 35mm	bl	rt 1.5
	6 Tonlampe 35mm	bl	sw 1.5
	7 Solarzelle + 35mm	rt	bn
	8 Solarzelle - 35mm	sw	ws
	9 Dolbyzelle + links		rt
	10 Dolbyzelle - links		ws
	11 Dolbyzelle + rechts		rt
	12 Dolbyzelle - rechts		ws
BU1:	1 Lichtsensor +		vio 0.5
	2 Lichtsensor -		sw 0.5
KL5:	SL1 Netz Input		
	SL2		gegn 1.5
	SL3		gegn 1.5
	SL4		gegn 1.5
	SL5		gegn 1.5
	SL6		gegn 1.5
	SL7		gegn 1.5
	SL8		gegn 1.5
	SL9		gegn 1.5
	SL10		gegn 1.5
	SL13	gegn	
	SL14	gegn	
	R Netz Input	sw	
	Mp Netz Input	bl	
	1 110V N1 Lüfter Gestell		sw1
	2 110V N1 Lüfter BLM	ge	sw1
	3 110V N2 Lüfter Gestell	ws	sw2
	4 110V N2 Lüfter BLM		sw2
	5 160V N1 BPS10	bn	bl 1.5
	6 160V N2 BPS10	sw	bl 1.5
	7 DGND (Sternpunkt)	sw	sw 2.5
	8 DGND		sw 2.5
	9 DGND		sw 2.5
	10 DGND		sw 0.5
	11 DGND		sw 2.5
	12 DGND		sw 2.5
	13 DGND		sw 1.5
	14 DGND		sw 2.5
	15 DGND		sw 1.5
	16 DGND		sw 1.5
	17 DGND		sw 2.5
	18 DGND		sw 2.5
	19 DGND		
	20 +23V	rt	rt 2.5

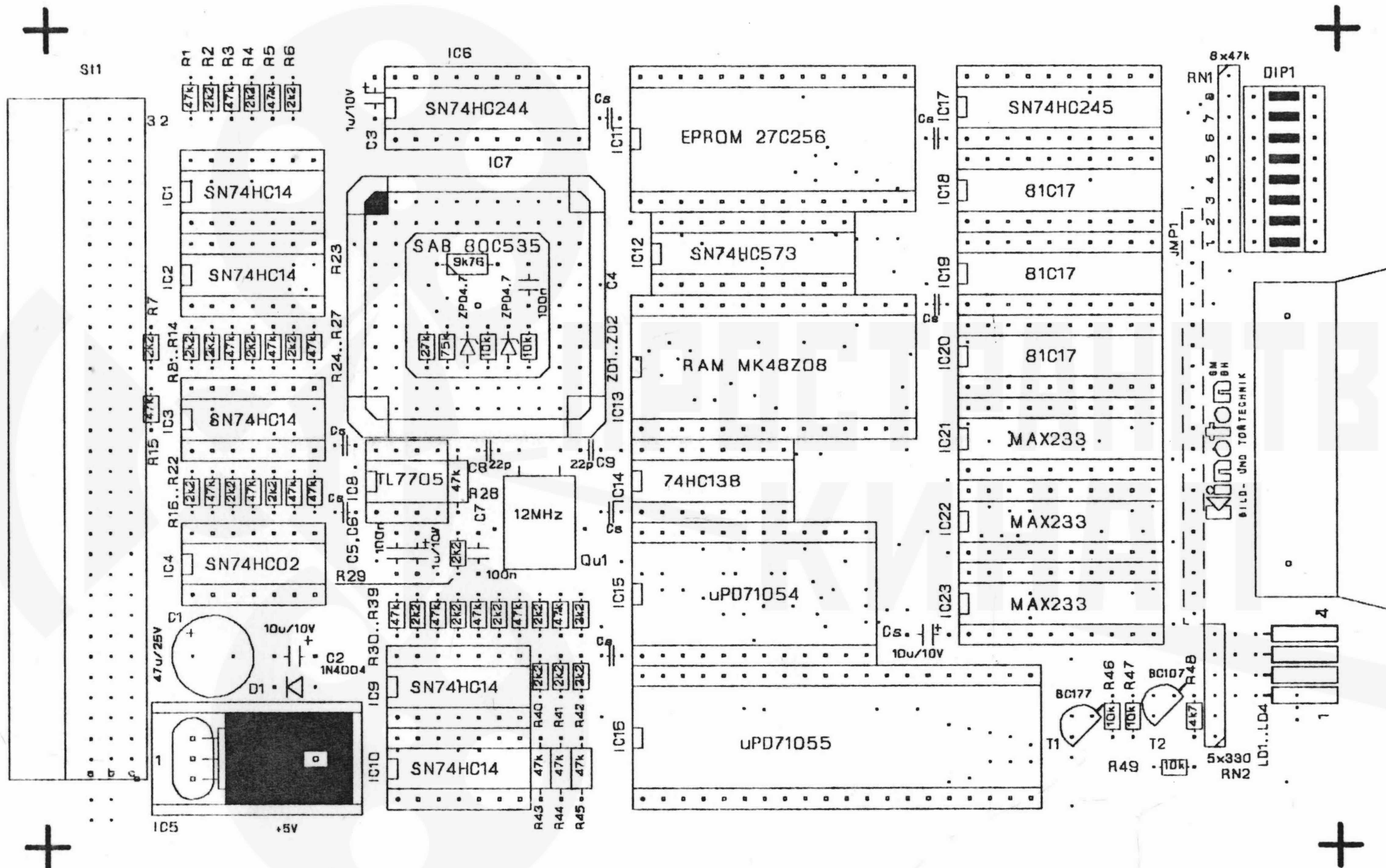
Stecker (ST) Klemme (KL)	Signalname	Kabel/Litze Baugruppe	Kabel/Litze Kabelbaum
	21 +28V		rt 2.5
	22 +28V		rt 2.5
	23 +28V		rt 2.5
	24 50Hz Netzfrequenz	ws	bl 0.5
	25 +12V	ge	ge 0.5
KL6:	SL Schutzleiter	gegn	gegn
	1 110V N1 Lüfter BLM		sw1
	2 110V N2 Lüfter BLM		sw2
KL7:	SL Schutzleiter	gegn	gegn
	1.2 110V N1 Lüfter Gestell		sw1
	3.4 110V N2 Lüfter Gestell		sw2
FO:	1 Friktion oben Motor	rt	rt 1.5
	2 Friktion oben Motor	sw	sw 1.5
	3 Tacho	bl	rt
	4 Tacho	ws	ws
	5 Bremse -	bn	bn 0.5
	6 Bremse +	bl	gn 0.5
	7 Schalter Wickelrichtung	wsgn	wsgn 0.5
	8 Taster Einlegen	wsbl	wsbl 0.5
	9 GND	sw	sw 0.5
FU:	1 Friktion unten Motor	rt	rt 1.5
	2 Friktion unten Motor	sw	sw 1.5
	3 Tacho	bl	rt
	4 Tacho	ws	ws
	5 Bremse -	bn	bn 0.5
	6 Bremse +	bl	gn 0.5
	7 Schalter Wickelrichtung	wsgn	wsgn 0.5
	8 Taster Einlegen	wsbl	wsbl 0.5
	9 GND	sw	sw 0.5
T16:	1.2 Tonlampe 16mm		bl 1.5
	3.4 Tonlampe 16mm		sw 1.5
	5.6 Tonandruck +		gn 1.5
	7.8 Tonandruck -		sw 1.5
	9 mag/opt-Umschaltung +		vio 0.5
	10 mag/opt-Umschaltung -		sw 0.5
	11 frei		
	12 mag Signal		bn
	13 mag Signal		ws
	14 opt Signal		bn
	15 opt Signal		ws
AF1:	1 16/35 out		sw v. or
	2 RxD		wsbl 0.5
	3 TxD		wsgn 0.5
	4 frei		
	5..8 DGND		sw 1.5
	9 Shift Up		sw v. bn
	10 Shift Down		bn
	11..15 +12V		ge 1.5
AF2:	1 frei		
	2 CTS		sw
	3 TxD		bn
	4 frei		
	5 DGND		sw+rt+Schirm

REMOTE
EXT PANEL

Stecker (ST) Klemme (KL)	Signalname	Kabel/Litze Baugruppe	Kabel/Litze Kabelbaum
	6 frei		
	7 RTS		or
	8 RxD		sw
	9 frei		
AF3:	1 Schirm		Schirm
	2 opt 16 out		ws
	3 opt 16 out		bn
AF4:	1 mag 16 out		ws
	2 Schirm		Schirm
	3 mag 16 out		bn
AF5:	1 Schirm		Schirm
	2 opt 35 out		ws
	3 opt 35 out		bn
	alternativ (Dolby):		
	1 Schirm		Schirm
	2 Dolbyzelle + rechts		rt
	3 Dolbyzelle - rechts		ws
	4 Dolbyzelle + links		rt
	5 Dolbyzelle - links		ws
AF6:	1 sync in CH1A+		wsrt 0.5
	2 sync in CH1B+		wsgn 0.5
	3 sync in Schirm		sw 0.5
	4,5 sync in CH1-		wssw 0.5
AF7:	1 sync in CH2A+		wsrt 0.5
	2 sync in CH2B+		wsgn 0.5
	3 sync in Schirm		sw 0.5
	4,5 sync in CH2-		wssw 0.5
AF8:	1 sync in CH3A+		wsrt 0.5
	2 sync in CH3B+		wsgn 0.5
	3 sync in Schirm		sw 0.5
	4,5 sync in CH3-		wssw 0.5
AF9:	1 sync out CH1A+		bn
	2 sync out Schirm		sw 0.5
	3 sync out CH1-		sw
	4 sync out CH1B+		or
	5 sync out CH1-		sw
AF10:	1 sync out CH2A+		bn
	2 sync out Schirm		sw 0.5
	3 sync out CH2-		sw
	4 sync out CH2B+		or
	5 sync out CH2-		sw
AF11:	1 Start		bn
	2 in		sw
	3 out		or
	4 RES 1		sw
	5 RES 2		rt
	6 GND Überblendung (potentialfrei)		sw+Schirm

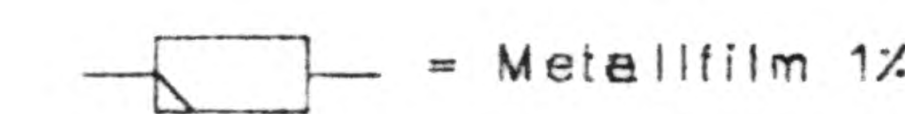
DATEINAME: KLEMMEN.TXT





 = Metallfilm 1% Cs: 100nf

Q1		1/90	Meier	Tag	Name	Bestückungsplan:	Masstab
				gepr.	180888		
				gepr.			
				Norm.			
Ausgabe	Änderung	Tag	Name	Kinoton GM SH		Hauptrechner Teil A	GEDDY CAD
				BILD- UND TONTECHNIK		PEC-80-01/01	



				Tag	Name	Schaltplan:	Masstab
				Bearb.	250190 Maier		
				Gepr.			
				Norm.			
						Hauptrechner Teil B PEC-80-02/01	GEDDY CAD
Ausgab	Änderung	Tag	Name	BILD- UND TONTECHN K			

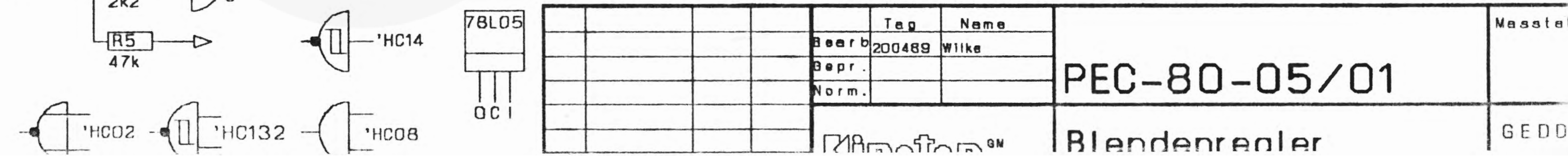
Cs: 100nF

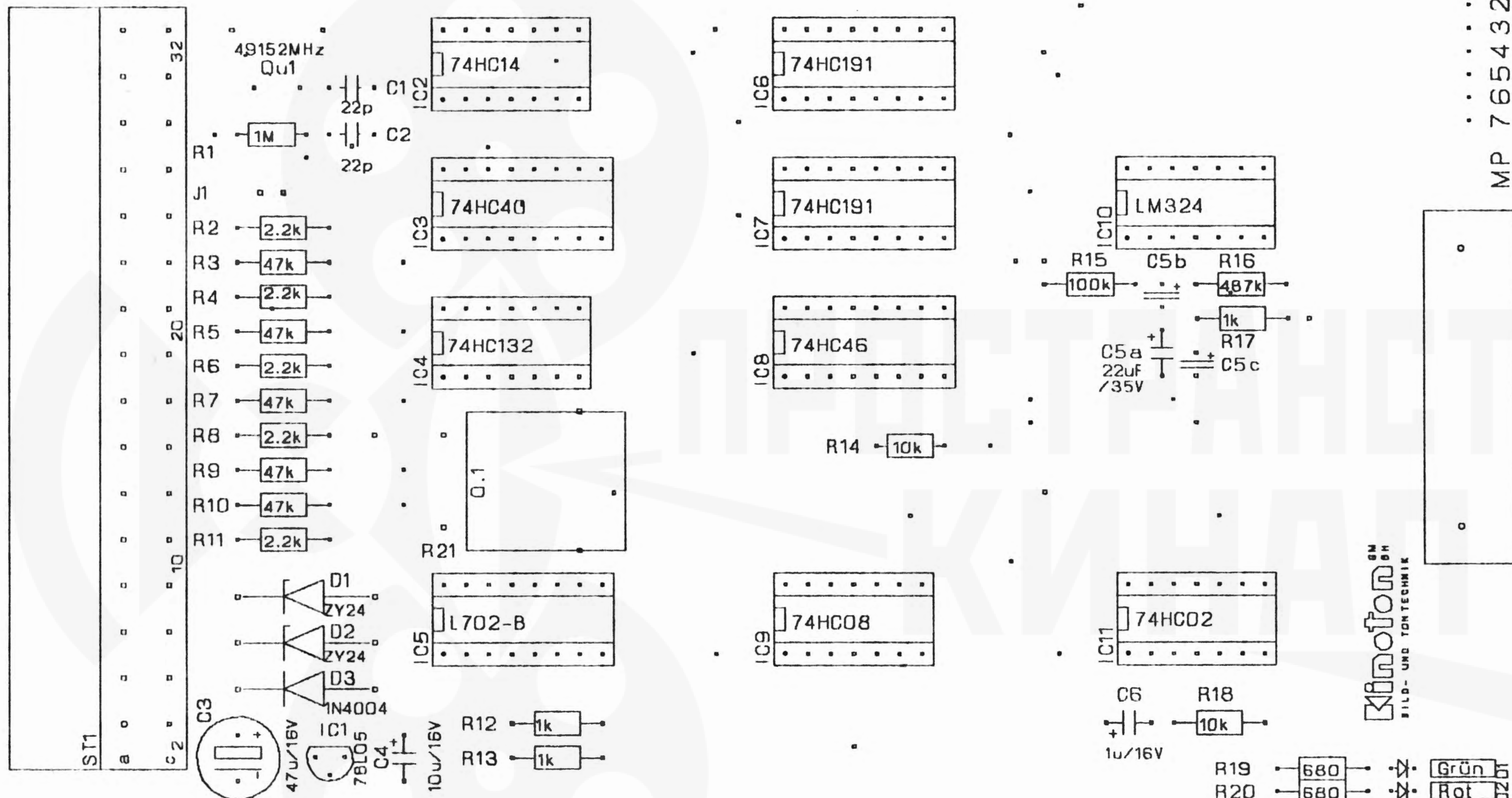
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					Beerb.	24.01.80			Maler
					Bepr.				
					Norm.				
					Klinton ^{DM} _{SH}		Hauptrechner Teil B PEG-80-02/01	BEDDY CAD	
Ausgabe	Änderung	Tag	Name	BILD- UND TONTECHNIK					

The circuit diagram shows a 4-bit parallel adder implemented using two IC9 (74LS90) and two IC5 (74LS05) components. The inputs are labeled 10 and 26, and the output is labeled MP5. The circuit includes resistors R10 (47k), R11 (2k2), R12 (1k), R13 (1k), and R19 (680). It also features a green LED (D1) and two ZY24 diodes (D2, D3). The IC9 components are configured as 4-bit counters, and the IC5 components are configured as inverters. The circuit is powered by a 5V supply (Vcc) and a ground (GND).

[illegible]

8,32

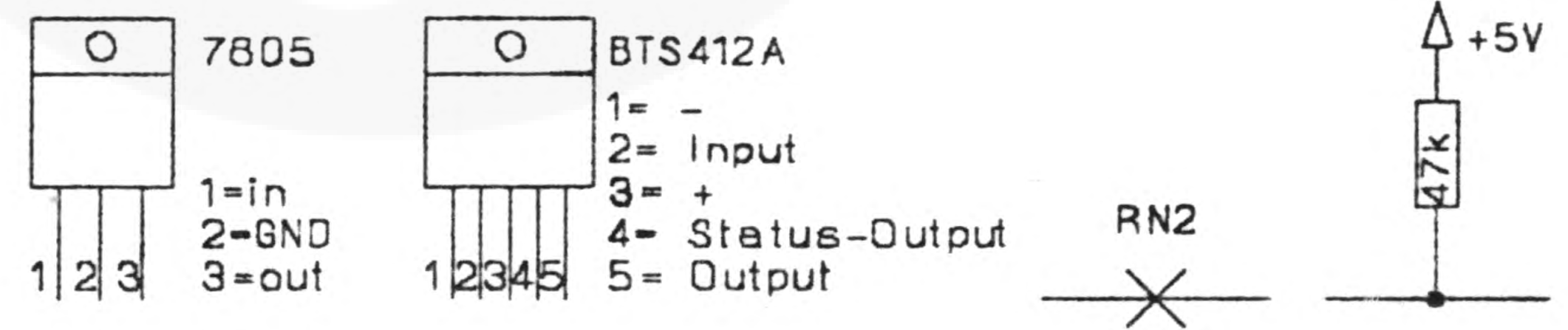
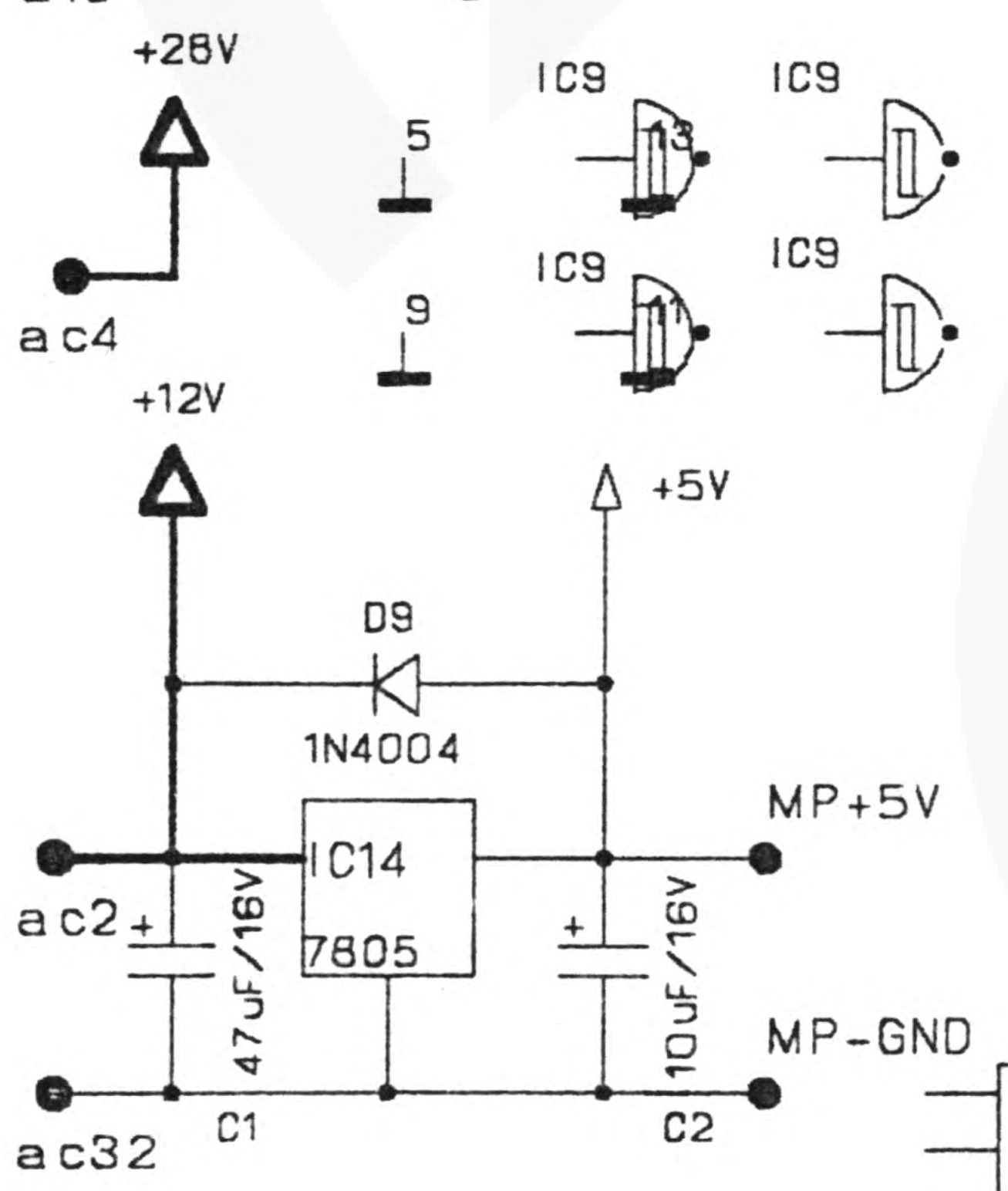
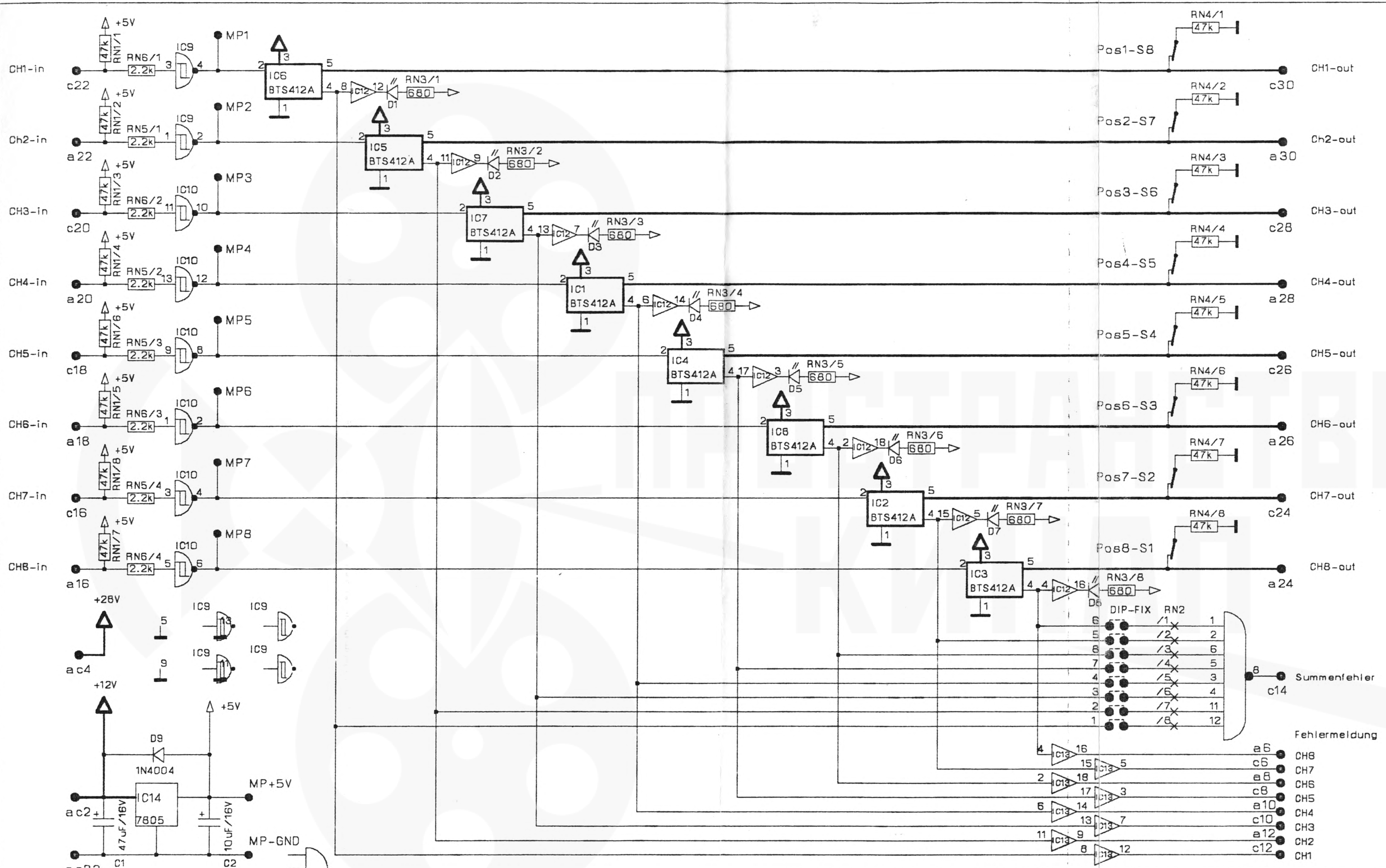




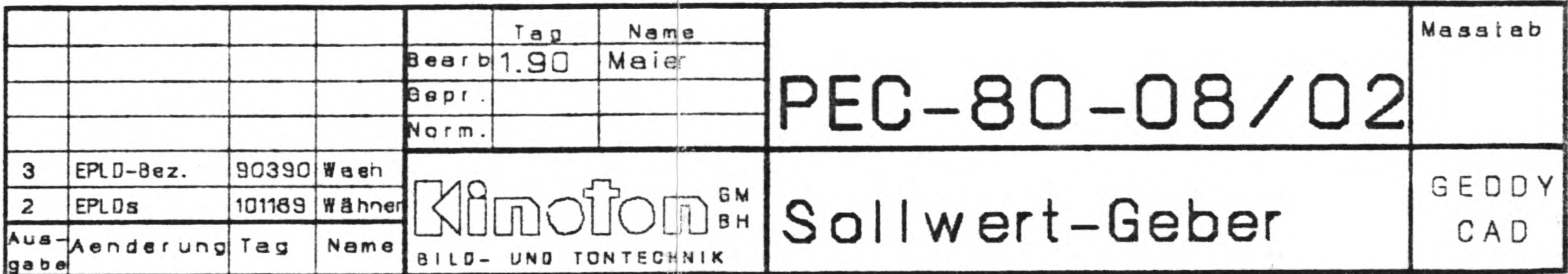
MP 7654321

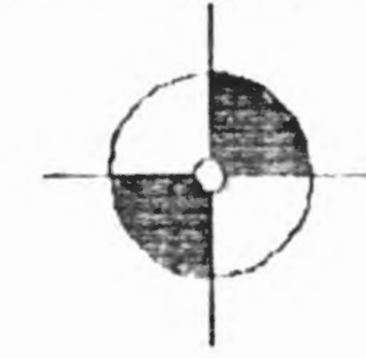
Kinoton
BILD- UND TONTECHNIK

		6.89	Wtike		Tag	Name	PEC-81-05/01	Masstab
				Gepr.	5.89	Wtike		
				Gepr.				
				Norm.				
				Kinoton GM BH			Blendenregler	GEDDY CAD
Ausgabe	Änderung	Tag	Name	BILD- UND TONTECHNIK				



Ausgabe		Änderung	Tag	Name	Tag	Name	Masstab	
Begr.			2.90	Wilke			PEC-80-06/01	
Norm.							Interface	
Kineton							GEDDY CAD	
BILD- UND TONTECHNIK								



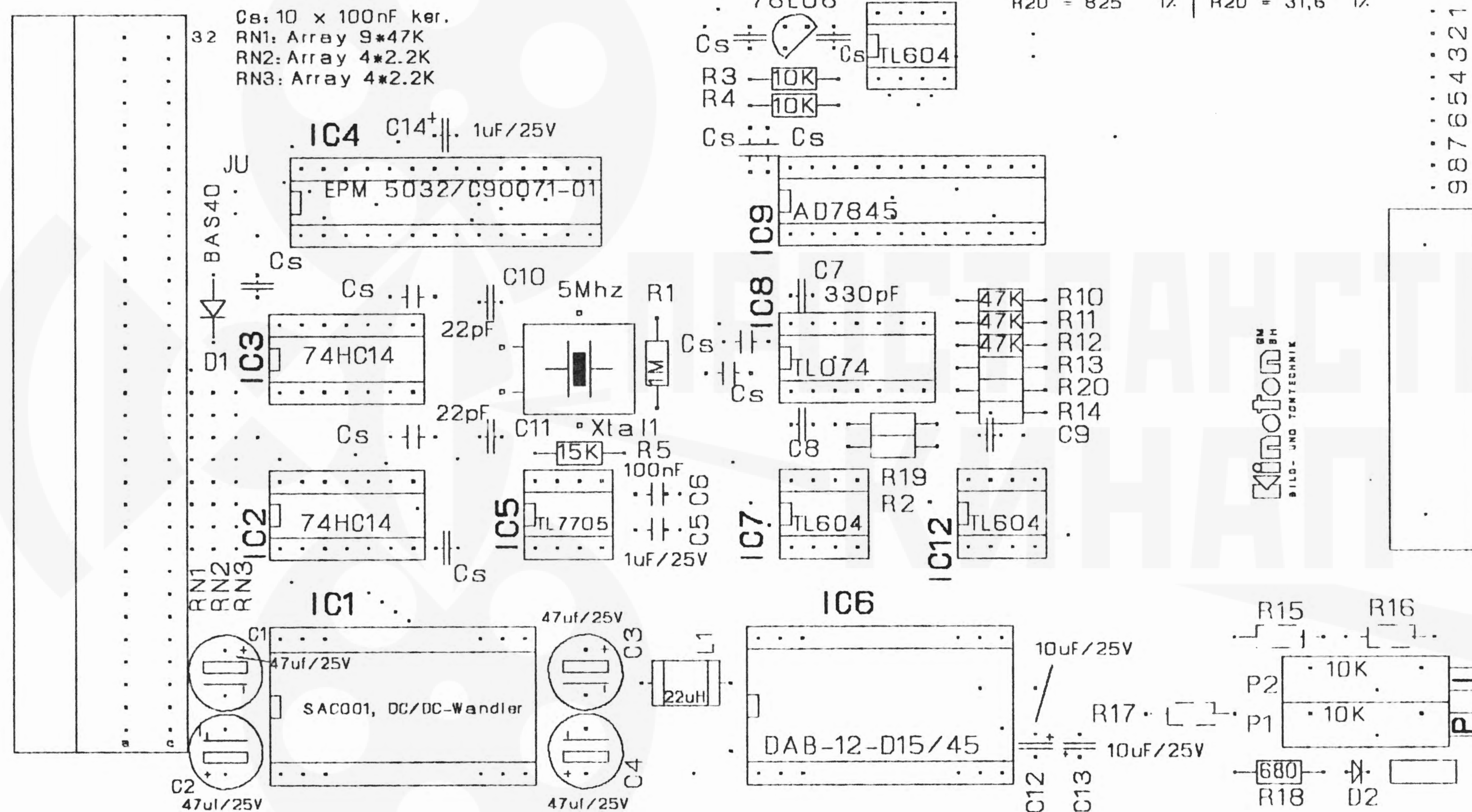


BLM

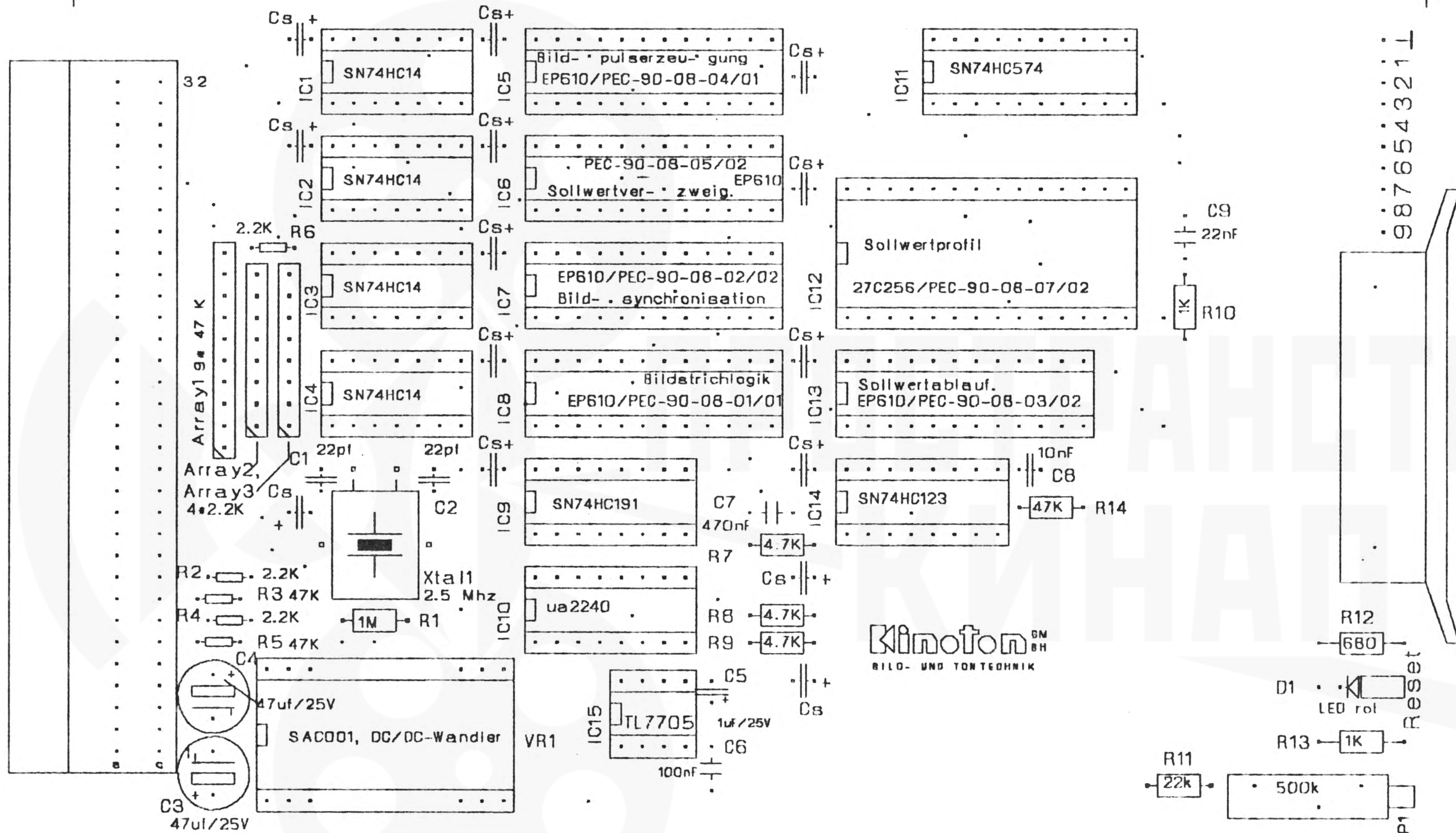
Vor/Nach

C8 = 22nF
C9 = 33nF
R2 = 3,32k 1%
R13 = 21,42k 1%
R14 = 322 1%
R19 = 68,1k 1%
R20 = 825 1%

C8 = 100nF
C9 = 47nF
R2 = 10k 1%
R13 = 21,42k 1%
R14 = 322 1%
R19 = 225k 1%
R20 = 31,6 1%

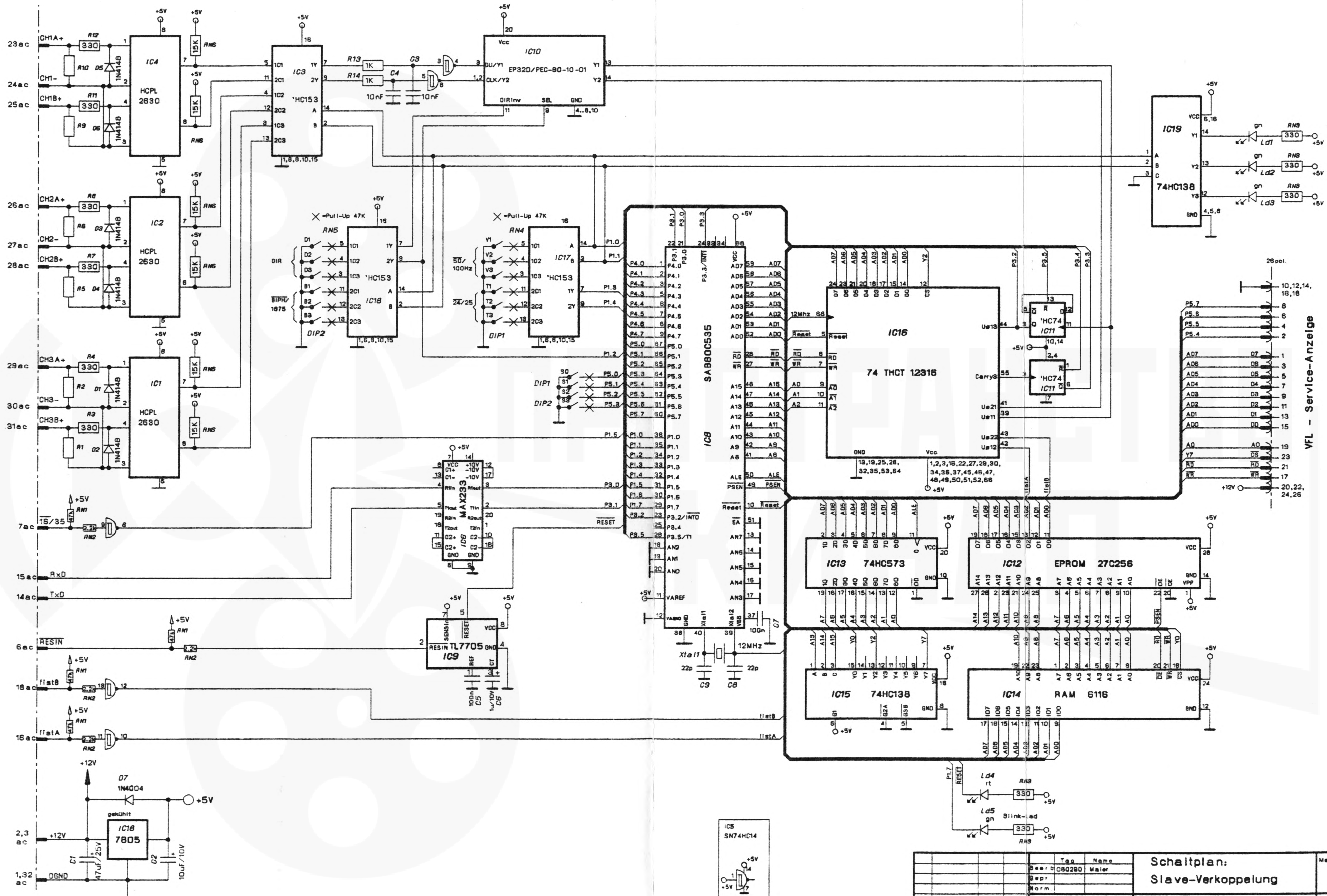


160.0

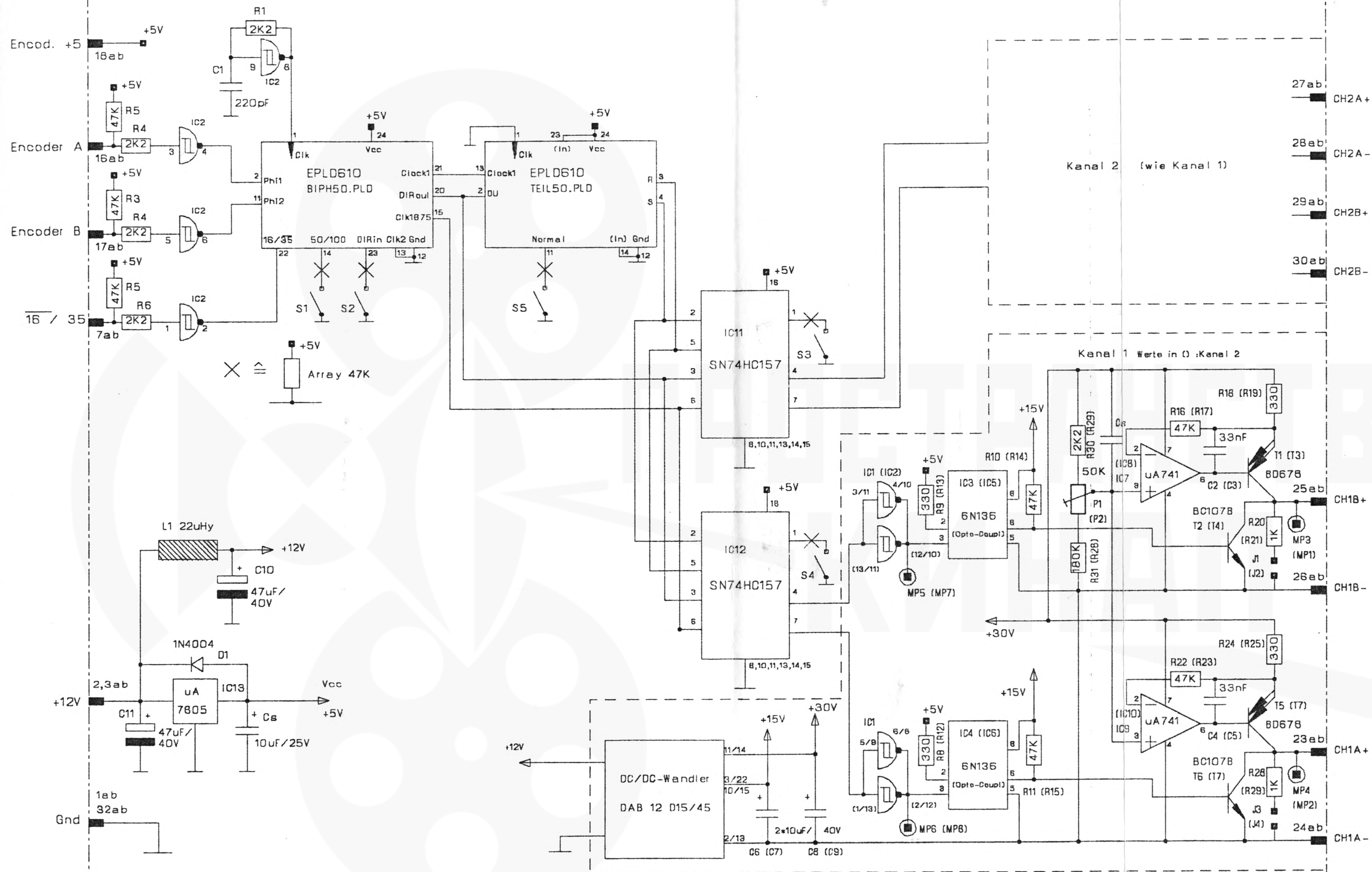


Kinoton SM
BILO- UND TONTECHNIK

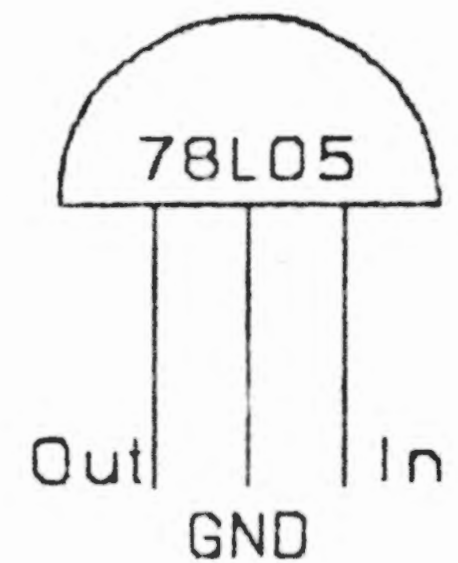
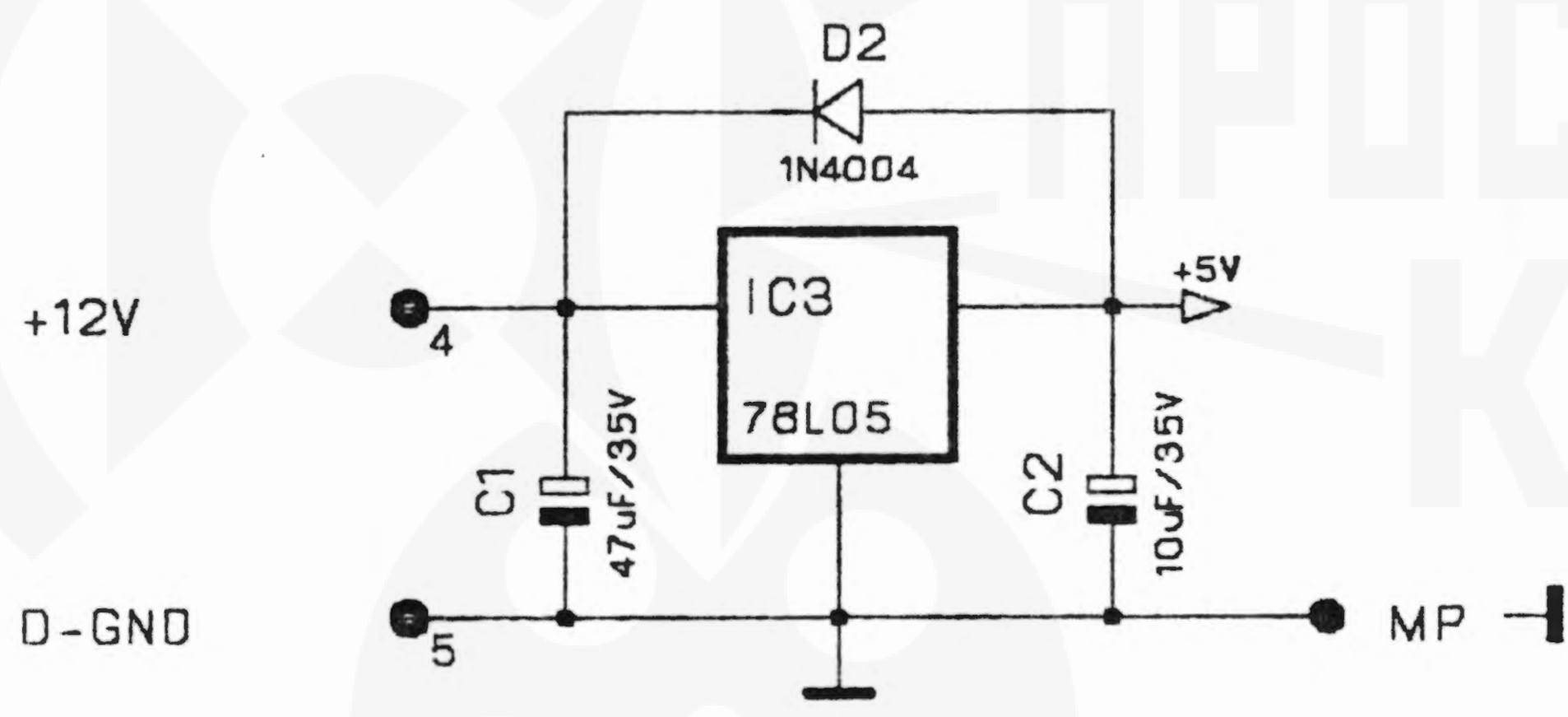
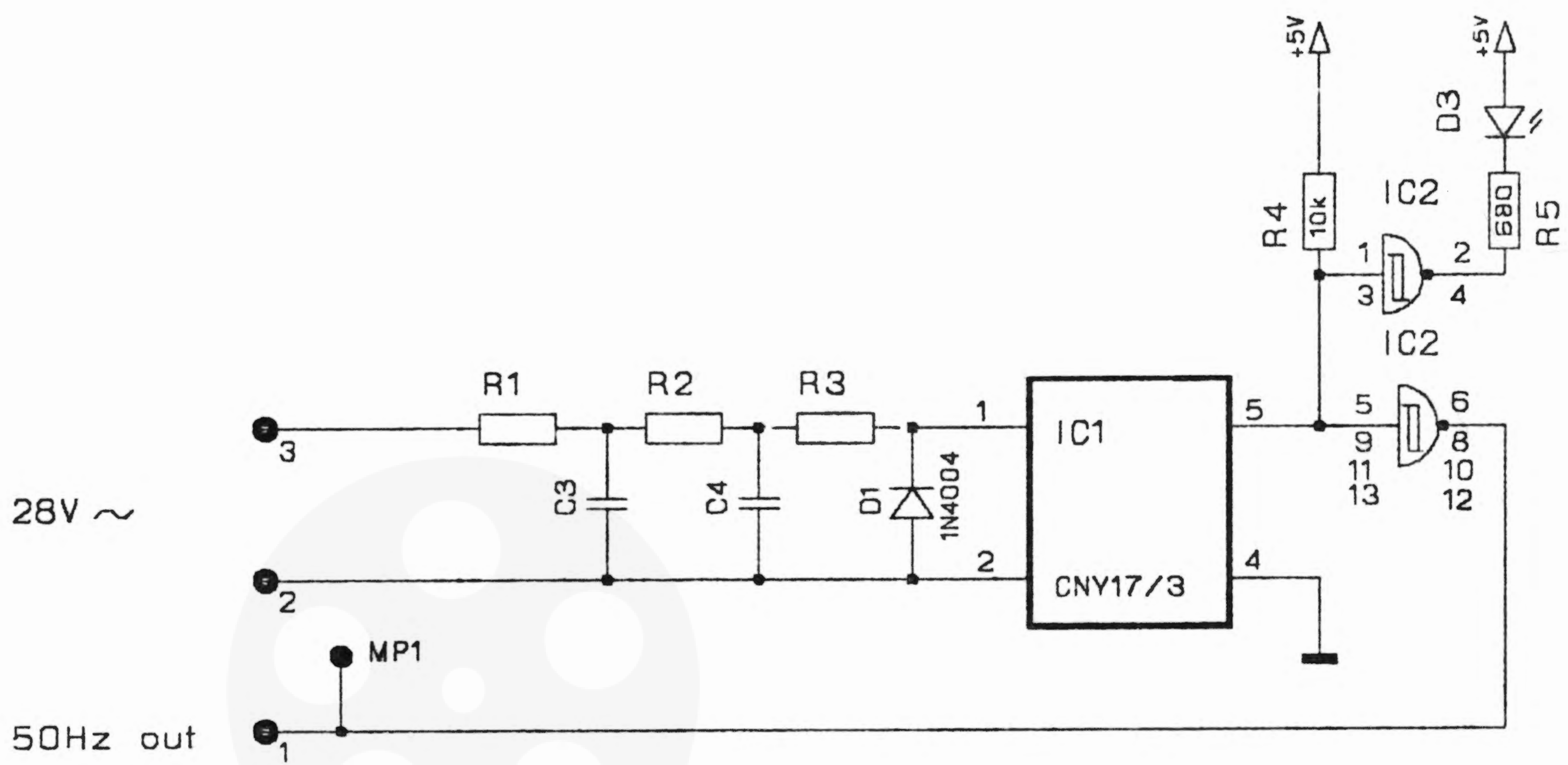
				Tag	Name		
				Gepr.	1.80	Maier	
				Gepr.			
				Norm.			
Aus- gabe	Änderung	Tag	Name				
						PEC-81-08/02	Maier
						Sollwert-Geber	GEDDY CAD



Schaltplan:		Slave-Verkoppelung	
PEC-80-10/01		GEDDY CAD	
Kineton		BILD- UND TONTECHNIK	
Tag		Name	
Bearb		Maier	
Repr		Norm	
Aenderung		Tag	
Name		Tag	

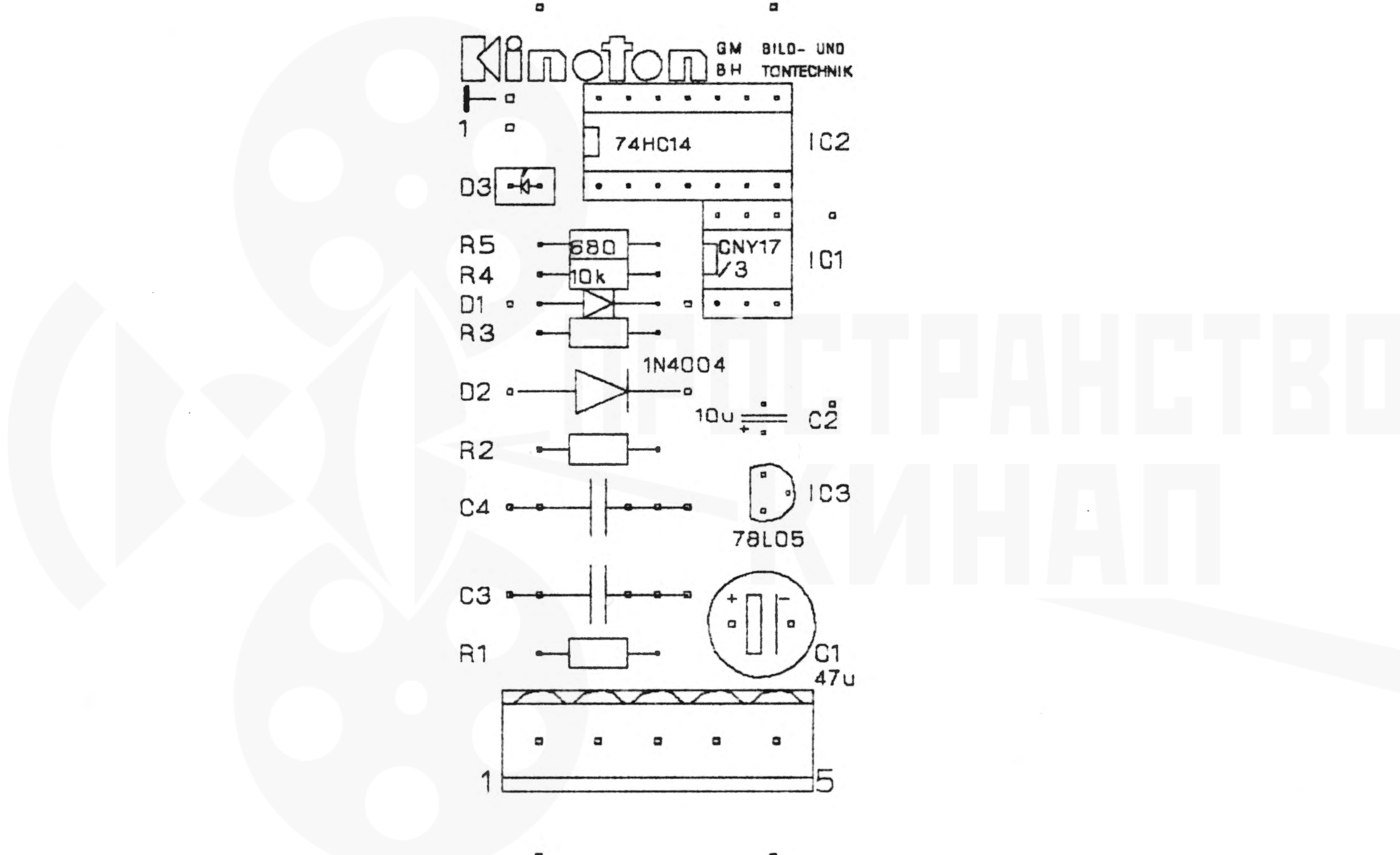


					Tag	Name	PEC-80-11/00	Masstab
					Bearb.			
					Gepr.			
					Norm.			
							Verkoppelung Master	GEDDY CAD
Aus- gabe	Änderung	Tag	Name					



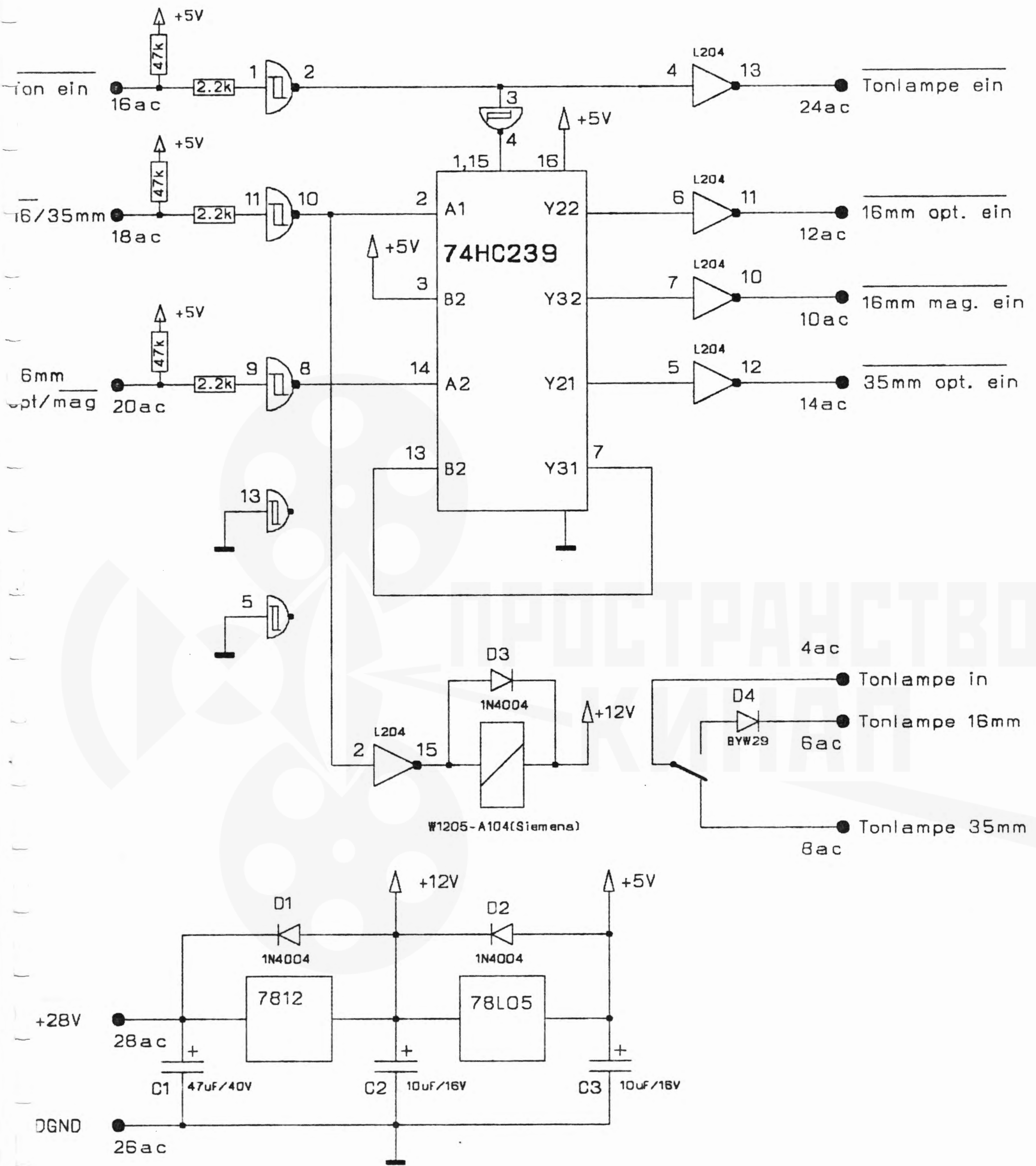
Filter nach Wunsch, sonst eine Brücke einsetzen.

					Tag	Name	PEC-80-12/00	Masstab
				Bearb	5.89	Wilke		
				Gepr.				
				Norm.				
				Kintoton ^{GM} _{BH}			Umsetzung 50Hz-Netz auf 50Hz CMOS-Pegel	GEDDY CAD
Aus-	Änderung	Tag	Name	BILD- UND TONTECHNIK				

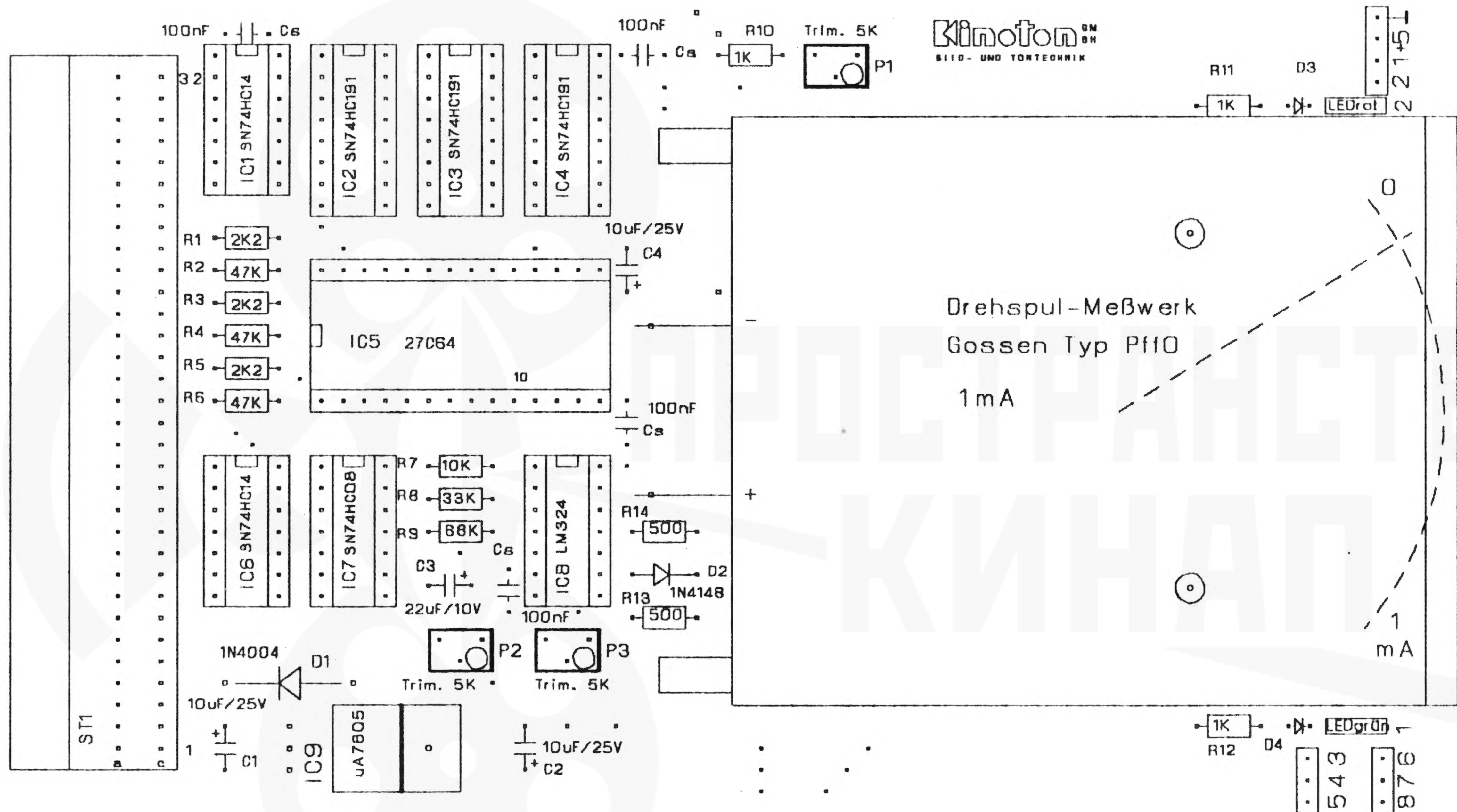


- ▣ 3.5mm Platinengröße 84x36
- ▣ 1.5mm Befestigungs-Lochabstand 20x74
- ▣ 1.0mm
- 0.8mm
- 0.8mm

				Tag	Name	PEC-81-12/00	Masstab 2:1
				Bearb.	5.89 Wilke		
				Gepr.			
				Norm.		Umsetzung 50Hz-Netz auf 50Hz CMOS-Pegel	GEDDY CAD
				Kinoton GM BH BILD- UND TONTECHNIK			
Aus- gabe	Änderung	Tag	Name				



				Tag	Name	PEC-80-13/00	Masstab
				Bearb.	8.89 Wilke		
				Gepr.			
				Norm.			
				Kintoton ^{GM} _{BH}		Ton-Logik	GEDDY CAD
				BILD- UND TONTECHNIK			
Aus- gabe	Änderung	Tag	Name				



					Tag	Name	PEC-81-18/01	Maier
					Bepr.	7.89		
					Norm.			

Zug35			Zugmoment bei 35mm-Film
1	2	3	
off	off	off	ca. 250 cN
off	off	on	ca. 300 cN
off	on	off	ca. 350 cN
off	on	on	ca. 400 cN
on	off	off	ca. 450 cN
on	off	on	ca. 500 cN
on	on	off	ca. 550 cN
on	on	on	ca. 600 cN

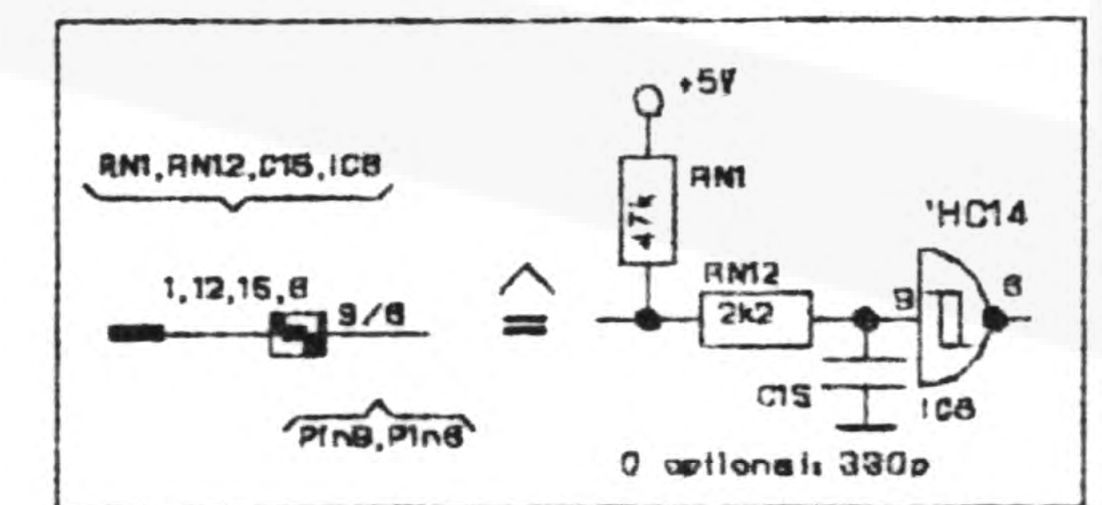
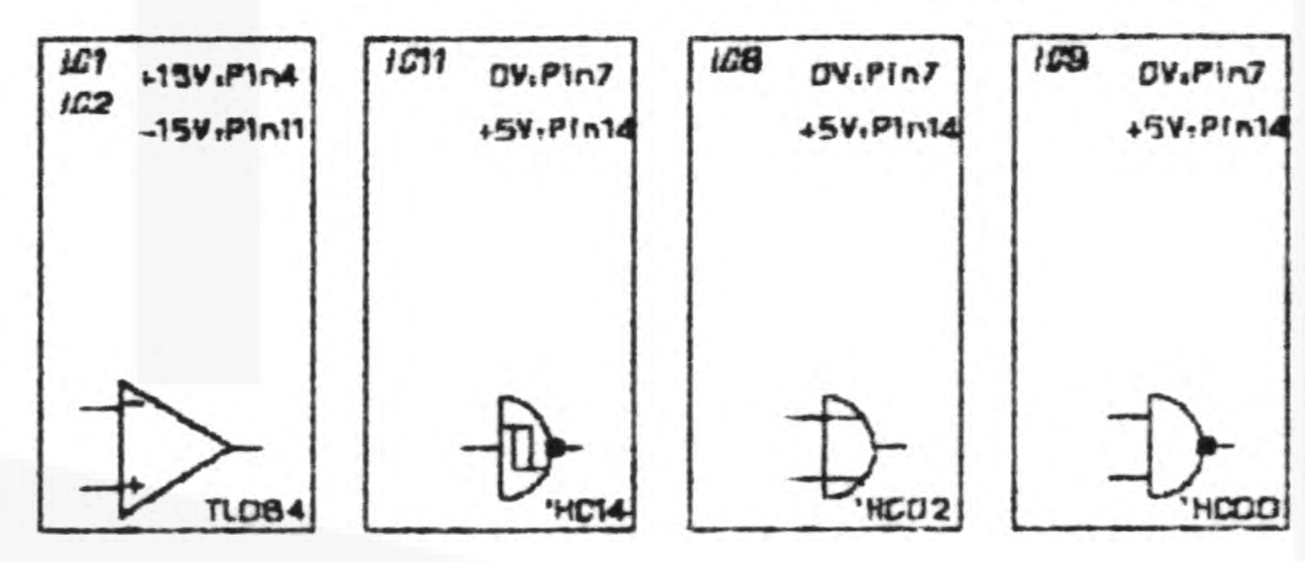
Zug16			Zugmoment bei 16mm-Film
4	5	6	
off	off	off	ca. 150 cN
off	off	on	ca. 200 cN
off	on	off	ca. 250 cN
off	on	on	ca. 300 cN
on	off	off	ca. 350 cN
on	off	on	ca. 400 cN
on	on	off	ca. 450 cN
on	on	on	ca. 500 cN

F	R
7	8
off	
on	
off	Teller links/unten
on	Teller rechts/oben

Anzeige-Modi			
1	2	3	4
x	x	x	off
on	on	on	on
off	off	off	USPEED
off	off	on	UMOTOR
off	on	off	IMOTOR
on	on	on	RADAMP
on	off	off	NZUG
on	off	on	ISOL
on	on	off	FUNCTION_MODE
on	on	on	WICKOKHILF

Metallfilm 1%

D1, D2, D3: 1N414

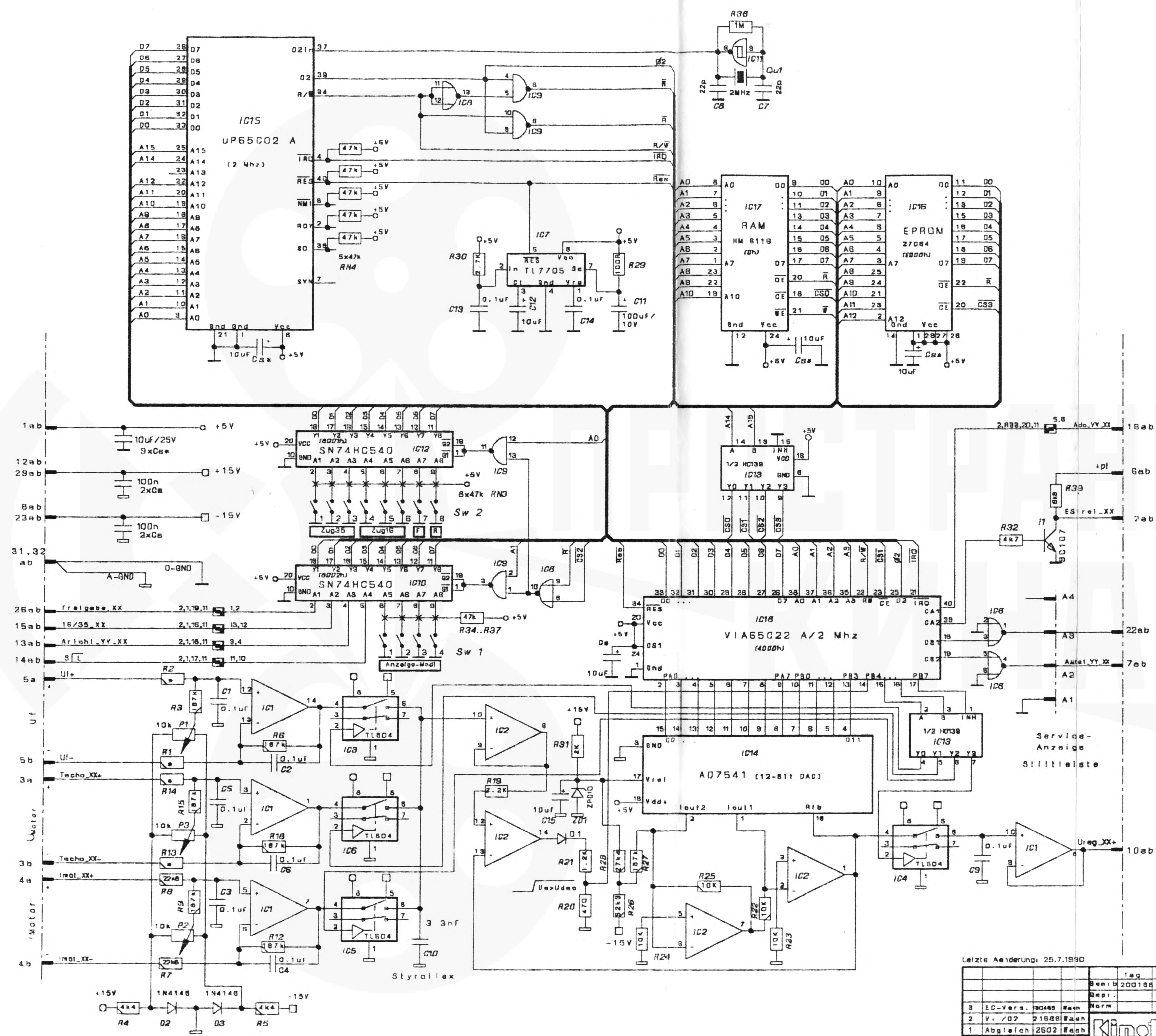


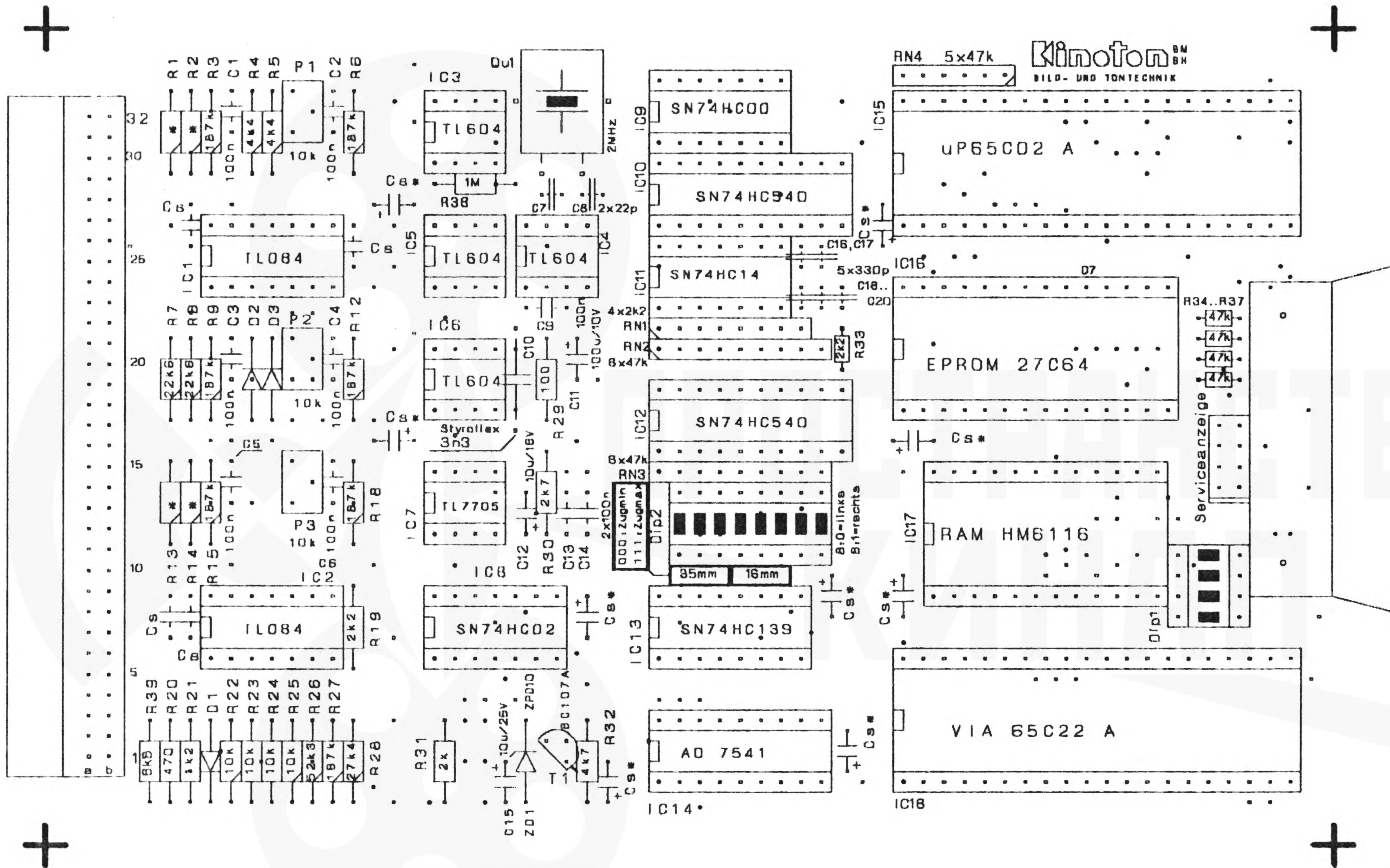
	R1/R2	R13/R14
BTS	100k	274k
PEC	100k	274k
NSA	118k	90k9

Letzte Änderung: 25.7.1990

Index: 3.1

Tag	Name	Maßstab
200188	Wahner	Schaltplan:
3	EC-Vers. 130488	Norm.
2	V. / 07 21688	Wahner
1	Abgleich 2502	Wahner
Aus: Änderung (reg. Name)		
Kineton		Aufwickelregelung
BILD- UND IONTECHNIK		BTS-80-21/03
		GEDDY CAD





*	R1/R2	R13/R14
BTS	100k	274k
PEC	100k	274k
NSA	118k	90k9

— Metallfilm 1%

Cs: 100nF

Cs*: 10uF/25V

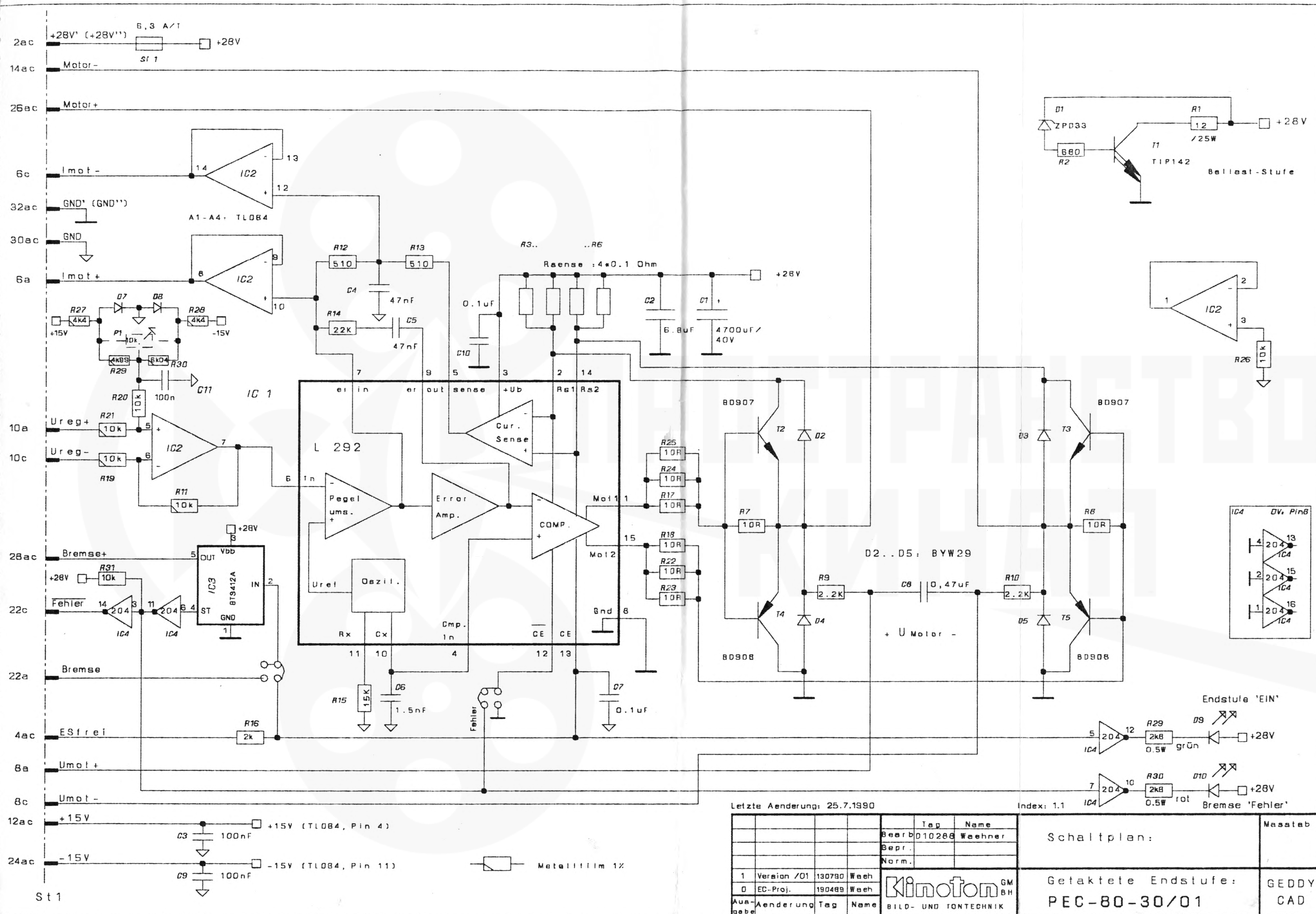
D1,D2,D3: 1N4148

Letzte Änderung: 6.8.1990

ppckynon, Jopuotke, Bepx. Lus.
Index: 8.1

Plattengrill: schwarz

Tag	Name	Bestueckungsplan:	Massstab
Bepr.	200188	Wahner	
Bepr.			
Norm.			
V: /03	40490	Wash	
V: /02	21888	Wash	
Ausgabe	Änderung	Tag	Name
Kinton BM BILD- UND TONTECHNIK			
Aufwickelregelung			BEDDY CAD
BTS-81-21/03			



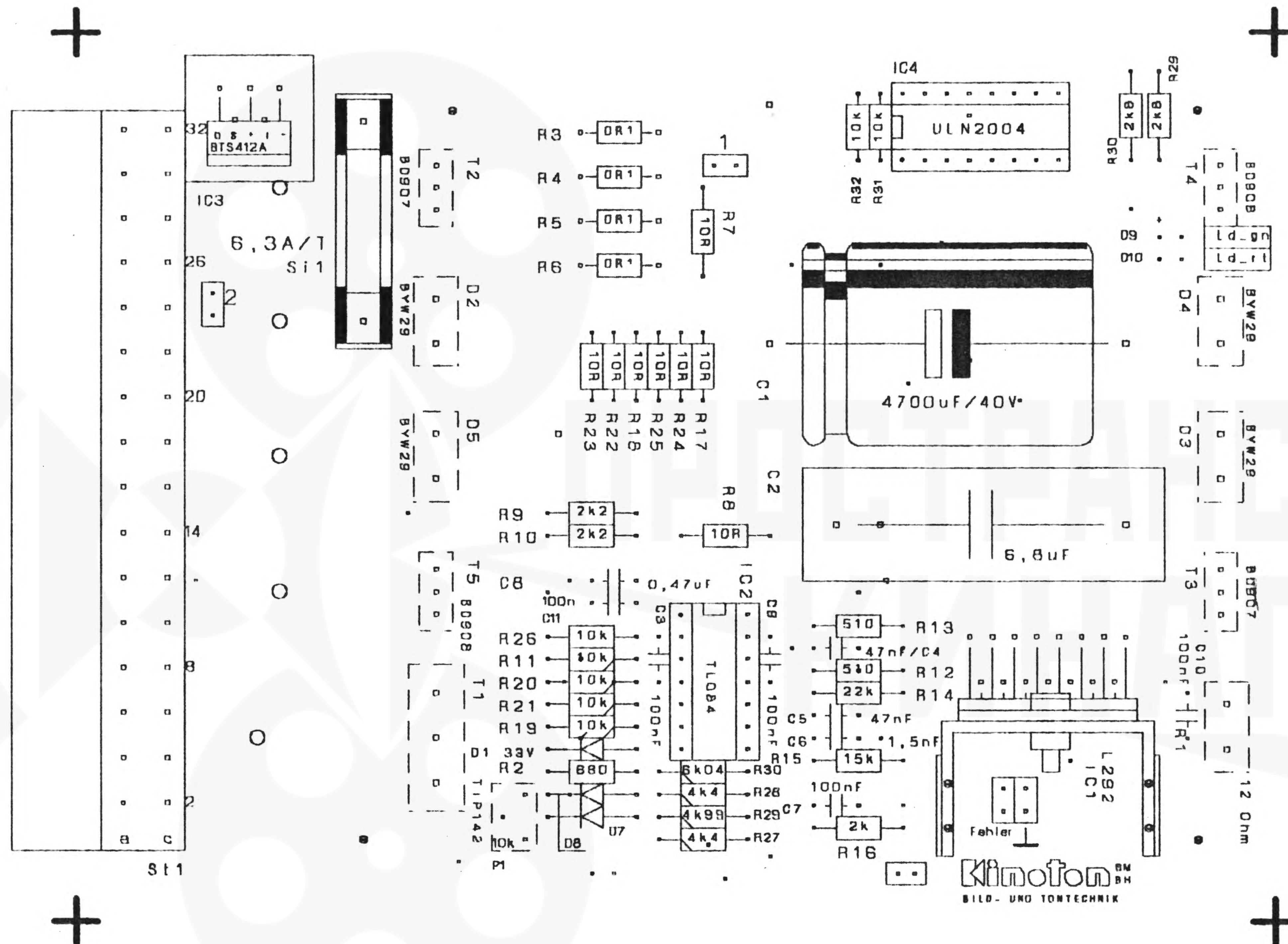
Letzte Änderung: 25.7.1990

Index: 1.1

	Tag	Name
Bearb.	010288	Wachner
Gepr.		
Norm.		
1	Version /01	130790 Wach
0	EC-Proj.	190489 Wach
Ausgabe	Änderung	Tag Name

Kinoton GM
BILD- UND TONTECHNIK

Schaltplan:	Maßstab
Getaktete Endstufe:	GEDDY
PEC-80-30/01	CAD

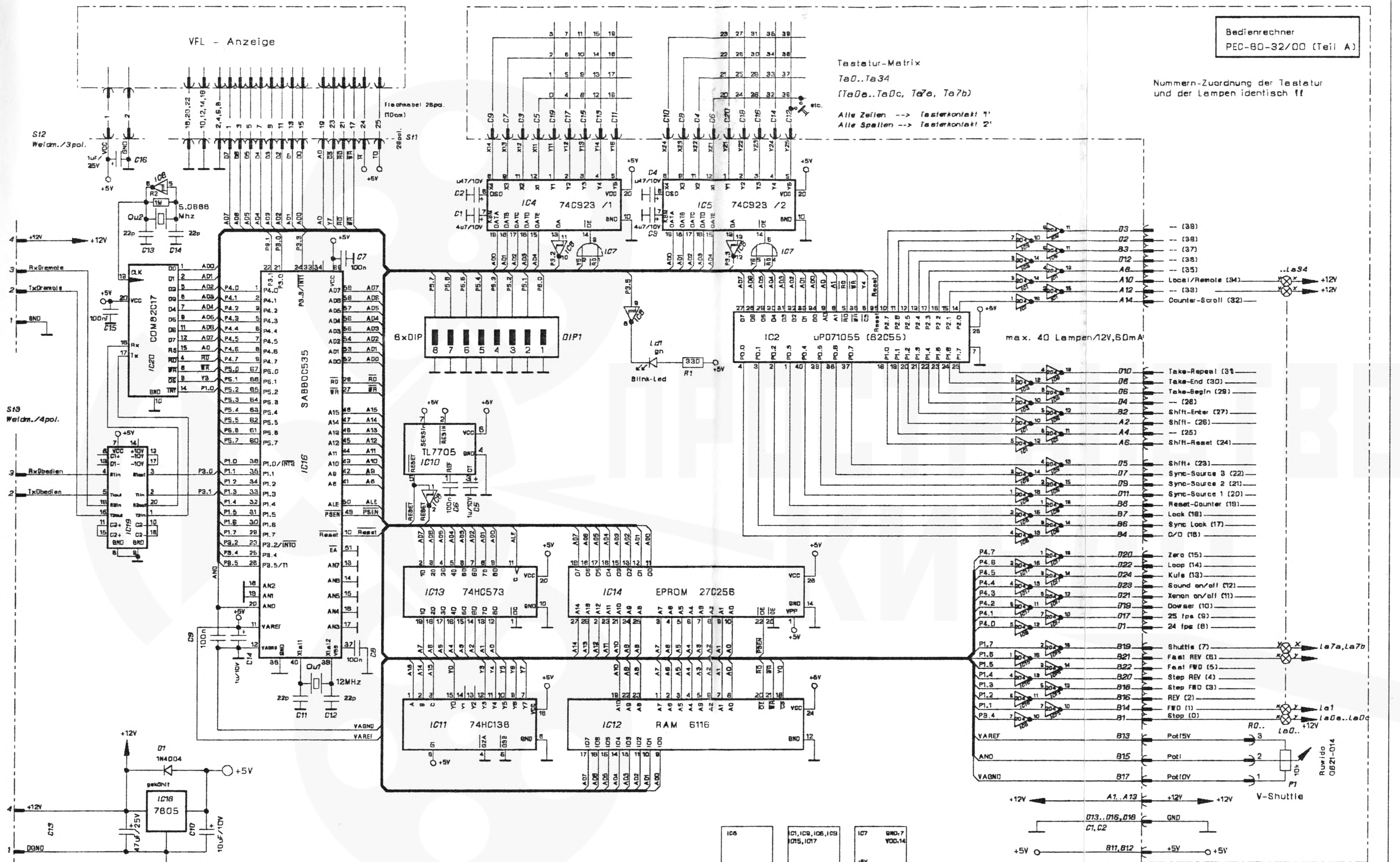


Letzte Änderung: 25.7.1990

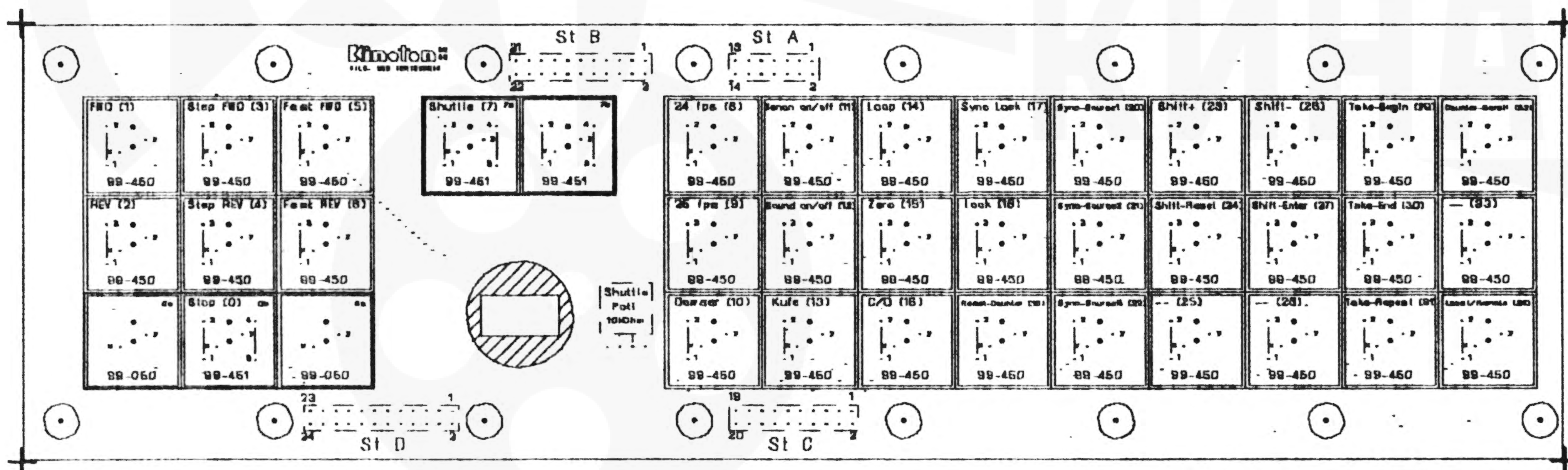
Index: 1.1

Metallfilm 1%

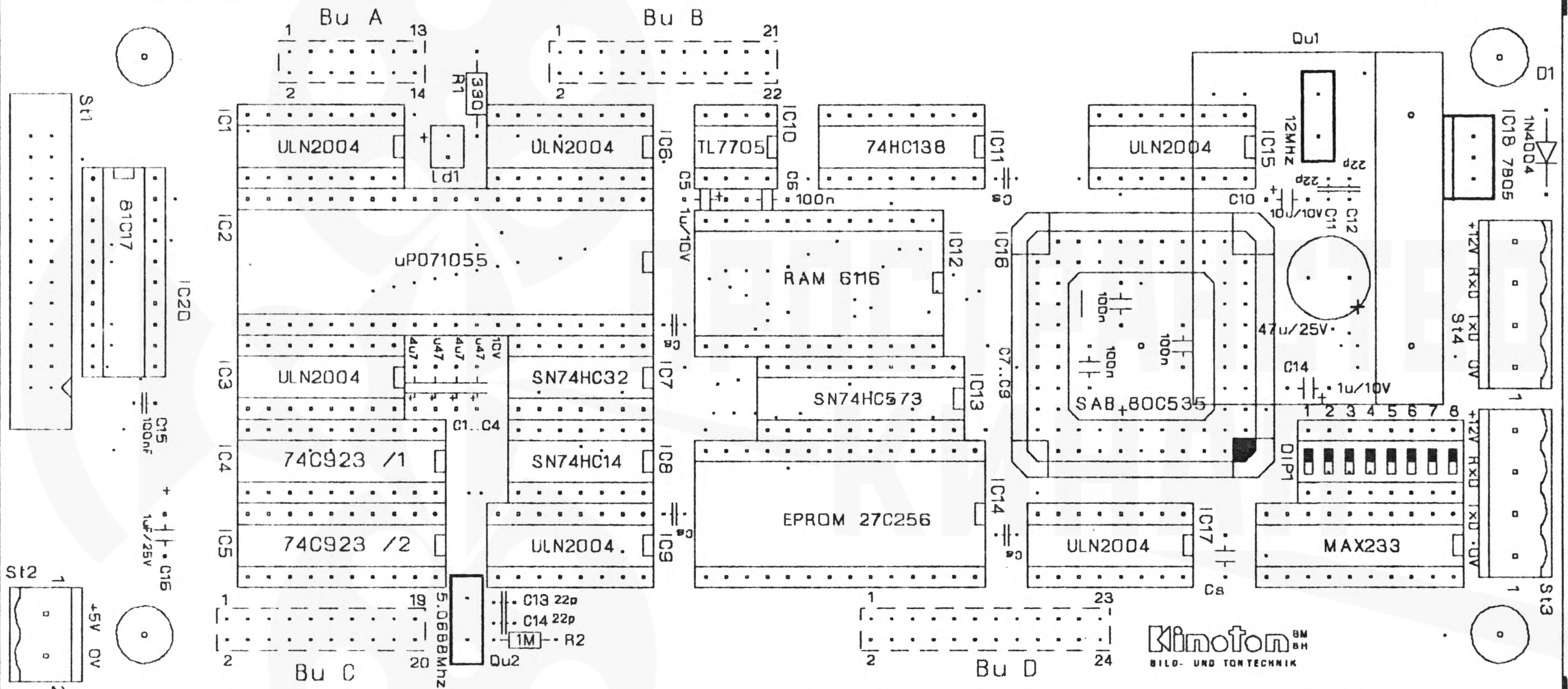
Tag	Name	Werkstoff
25.7.1990	Wehner	2.1
Repr.		
Norm.		
1	Version EC	ganzes Wehner
Ausgabe	Änderung Tag Name	BILD- UND TONTECHNIK
Bestueckungsplan:		2.1
Getaktete Endstufe:		PEC-81-30/01
REDDY CAD		



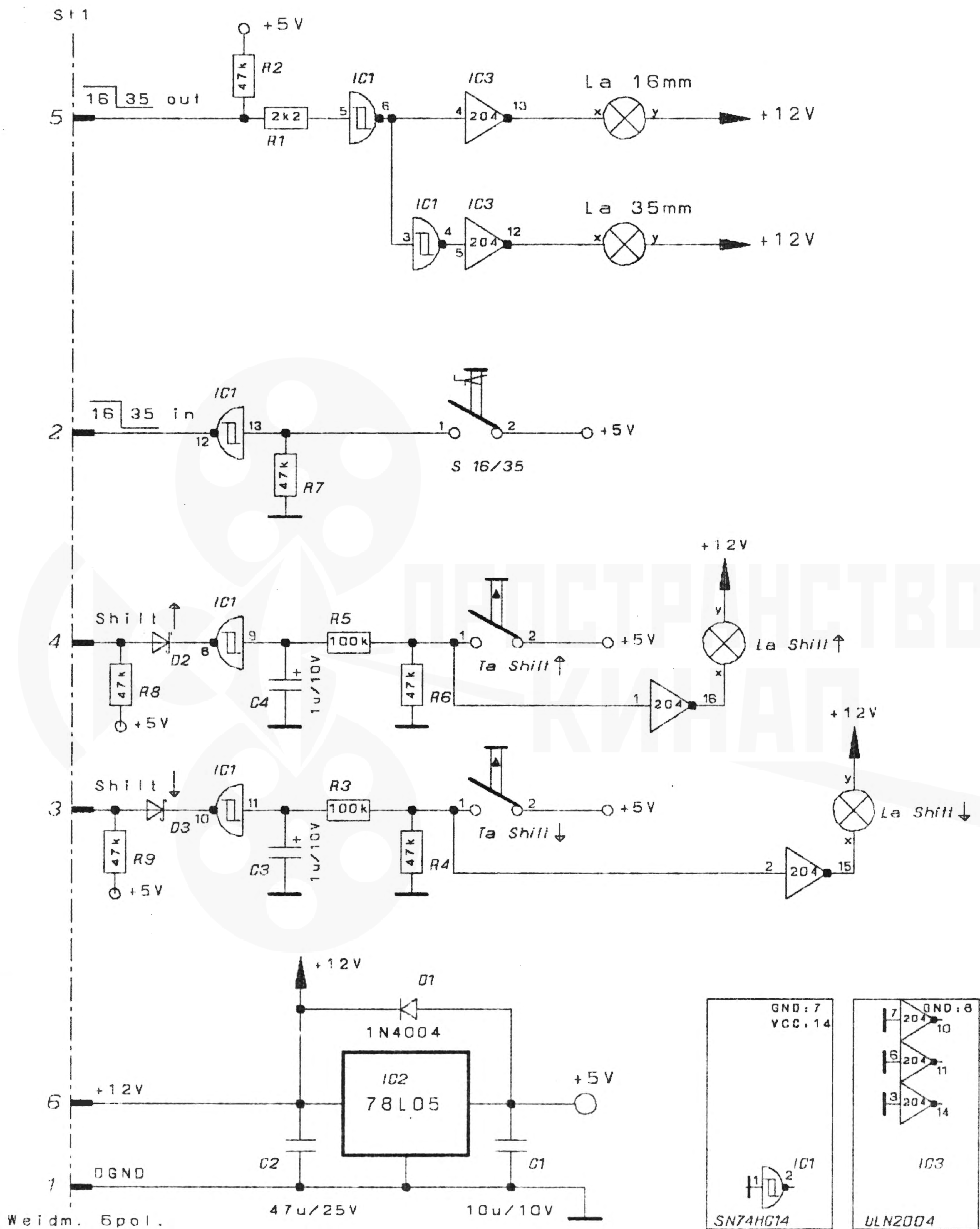
ПРОСТРАНСТВО



				Tag	Name	Bestückungsplan	Masstab
				Bezt.	030793		
				Bepr.			
				Norm.			
				Kineton ^{BM} ^{SH}		Bedienrechner (Teil A) PEC-81-32/01	GEDDY CAD
Ausgabe	Änderung	Tag	Name	BILD- UND TONTECHNIK			



					Tag	Name	Bestückungsplan:	Maastab
					Gepr. 230689	Wehner		
					Gepr. 050490	Maler		
					Norm.			
					Kinoton ^{BM} _{BH}		Tastatur / Plaine 2 PEC-81-33/01	GEDDY CAD
Ausgabe	Änderung	Tag	Name	BILD- UND TONTECHNIK				



Weidm. 6pol.

Tag	Name
Bearb. 070789	Wachner
Gepr.	
Norm.	
Kintoton GM BH	
Aue-Änderung	Tag Name

Schaltplan:
Formatwahl/Bildstrich

Maßstab

PEC-80-34/01

GEDDY
CAD

Massachusetts	
GEDDY CAD	

