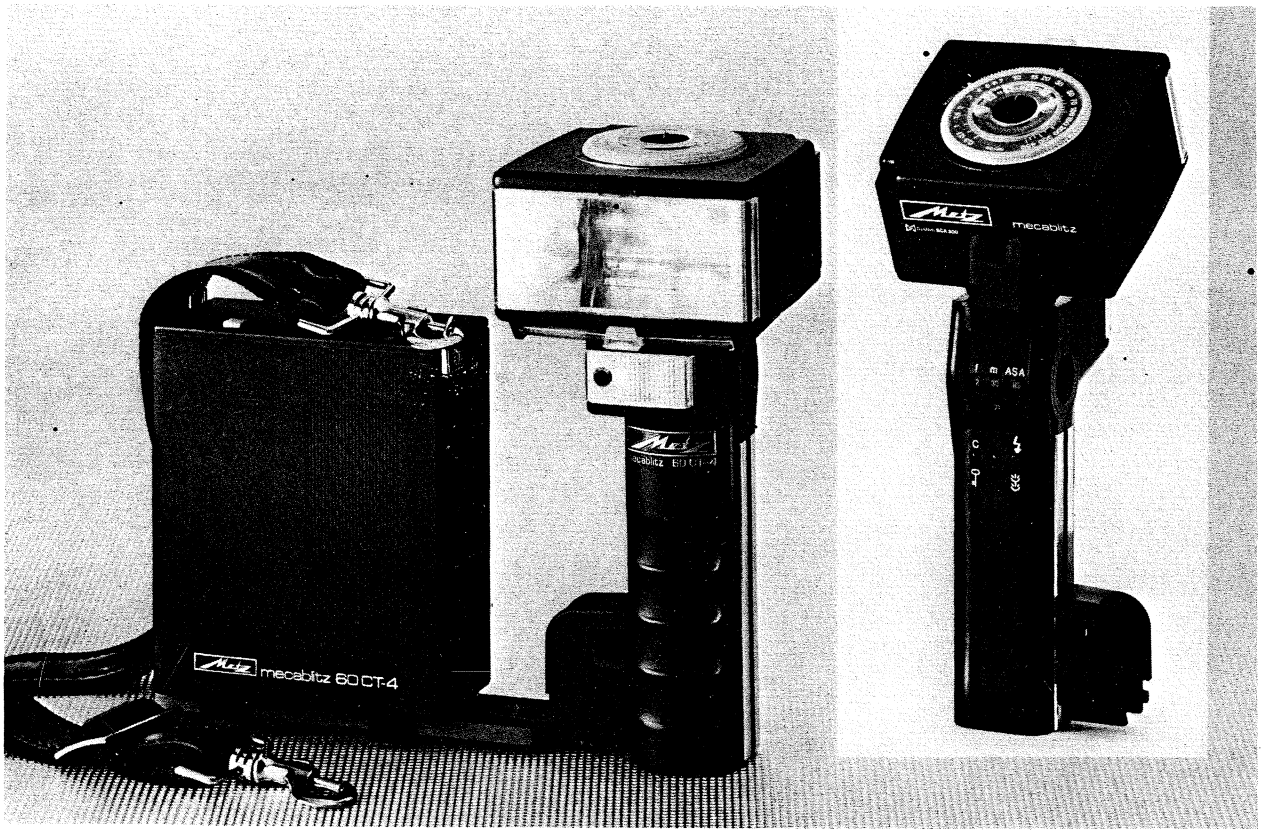
MECABLITZ

Technology and Service

MECABLITZ 60 CT 4

Year of manufacture: 1986 and up



TV · VIDEO · AUDIO · MECABLITZ

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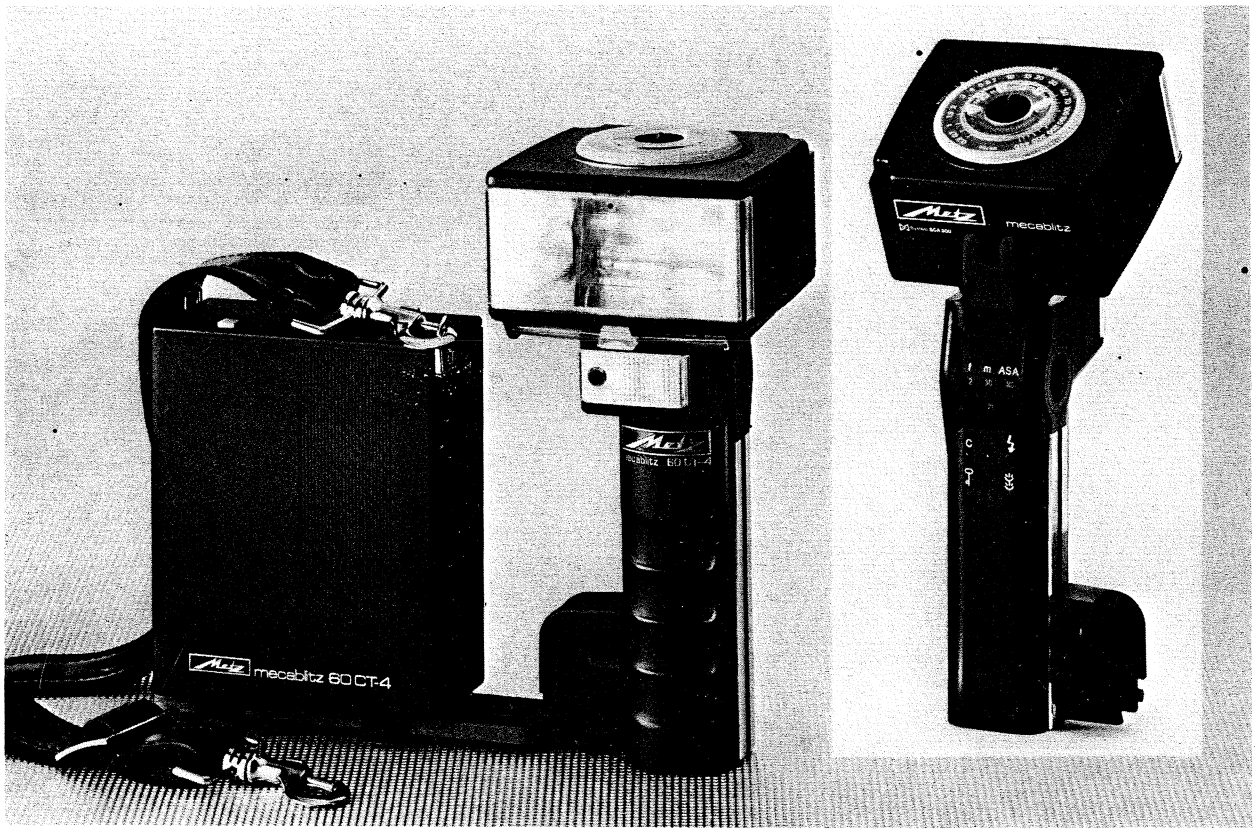

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Contents

1. GENERAL DESCRIPTION OF THE MECABLITZ 60 CT 4

The Mecablitz 60 CT 4 is a two-part flash unit for professional and advanced amateur photographers.

2. THE GENERATOR

contains a replaceable, rechargeable battery (two battery types are available), a battery charger, and a DC converter with flash capacitor.

If a dryfit battery is used, the charger reduces the charging current when charging is finished and indicates the level of charge by means of an LED. Another LED indicates (for all battery types) that the battery is being charged.

A blocking oscillator is used as DC converter to charge the flash capacitor to 360 V from the 6 V battery supply. The oscillator frequency is about 20 kHz to avoid undesired noise from the oscillator. When the flash capacitor reaches the desired voltage, a control circuit switches off the oscillator. Due to unavoidable losses, the capacitor discharges slowly, even if no flash is triggered. When the flash capacitor voltage drops below a specific value, the oscillator switches on again to recharge the capacitor to its normal voltage.

The flash unit can also be operated from the mains by means of the mains unit N 23 (in preparation). This unit supplies both the 360 V for the flash capacitor and the 6 V operating voltage for the flash unit's electronic system. To prevent the oscillator from running when the mains unit N 23 is used, the generator's circuit has been modified so that switch S 001 has an additional contact which disconnects the 6 V line during AC power usage.

3. THYRISTOR IGNITION CIRCUIT OF THE MECABLITZ 60 CT 4

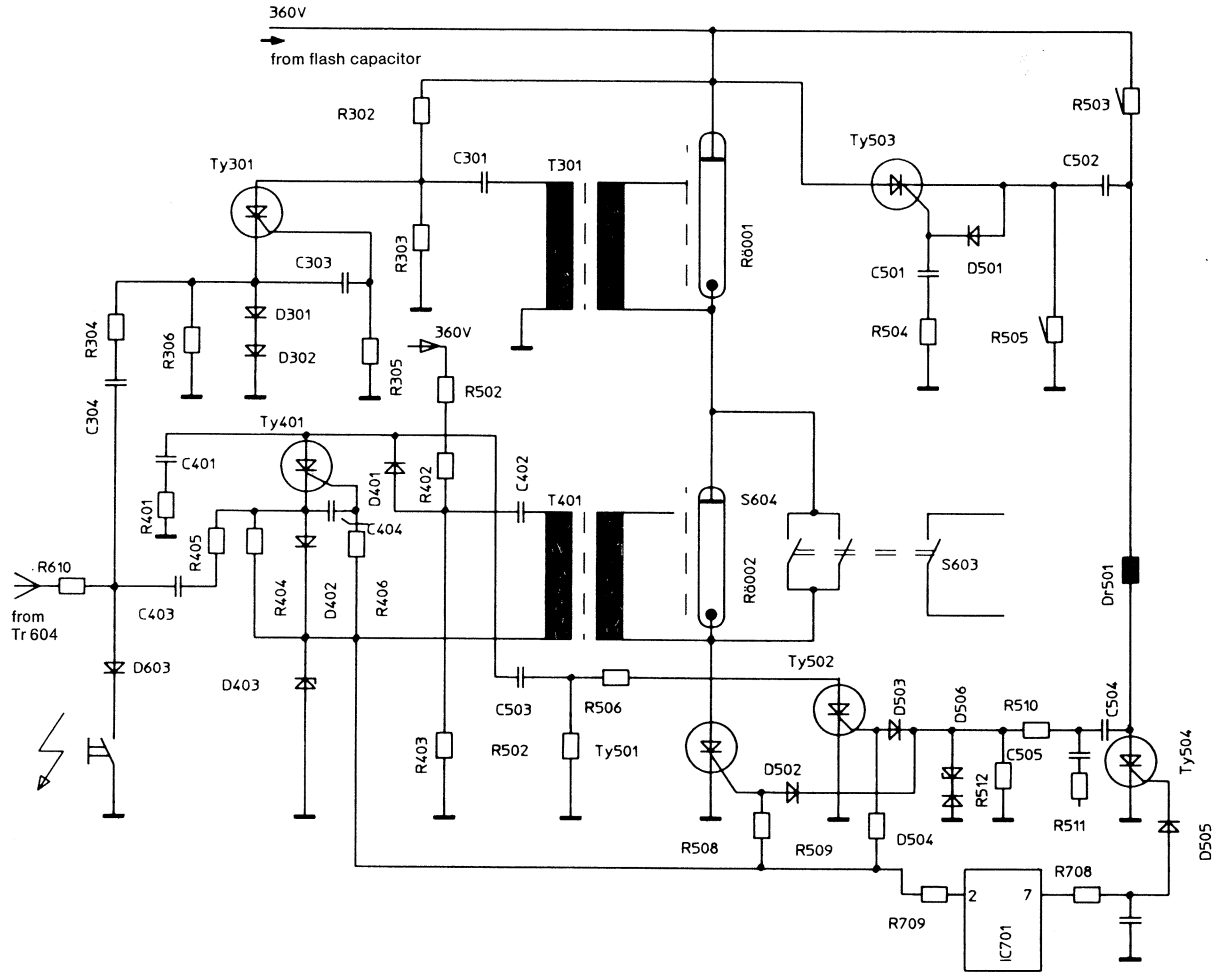
3.1. Main reflector ignition circuit

The ignition capacitor C 301 is charged to approx. 200 V via the voltage dividers R 302 and R 303. If a flash is triggered by connecting the cathode of D 603 to ground, a negative pulse passes from C 304 via R 304 to the cathode of thyristor Ty 301 and ignites it. This connects C 301 to ground. C 301 now discharges via thyristor Ty 301, the diodes D 301 and D 302, and the primary side of transformer T 301. An ignition pulse is induced on the secondary side of the transformer and causes the flash tube Rö 001 to light.

3.2. Fill-in reflector ignition circuit

The ignition capacitor C 402 is charged to approx. 140 V via R 402 and R 403. When a flash is triggered by connecting one side of C 403 to ground via D 603, a negative pulse is sent to the cathode of the thyristor Ty 401 and ignites it. The capacitor C 402 now discharges via D 401, Ty 401, D 402 and the primary side of the transformer T 401. The pulse induced

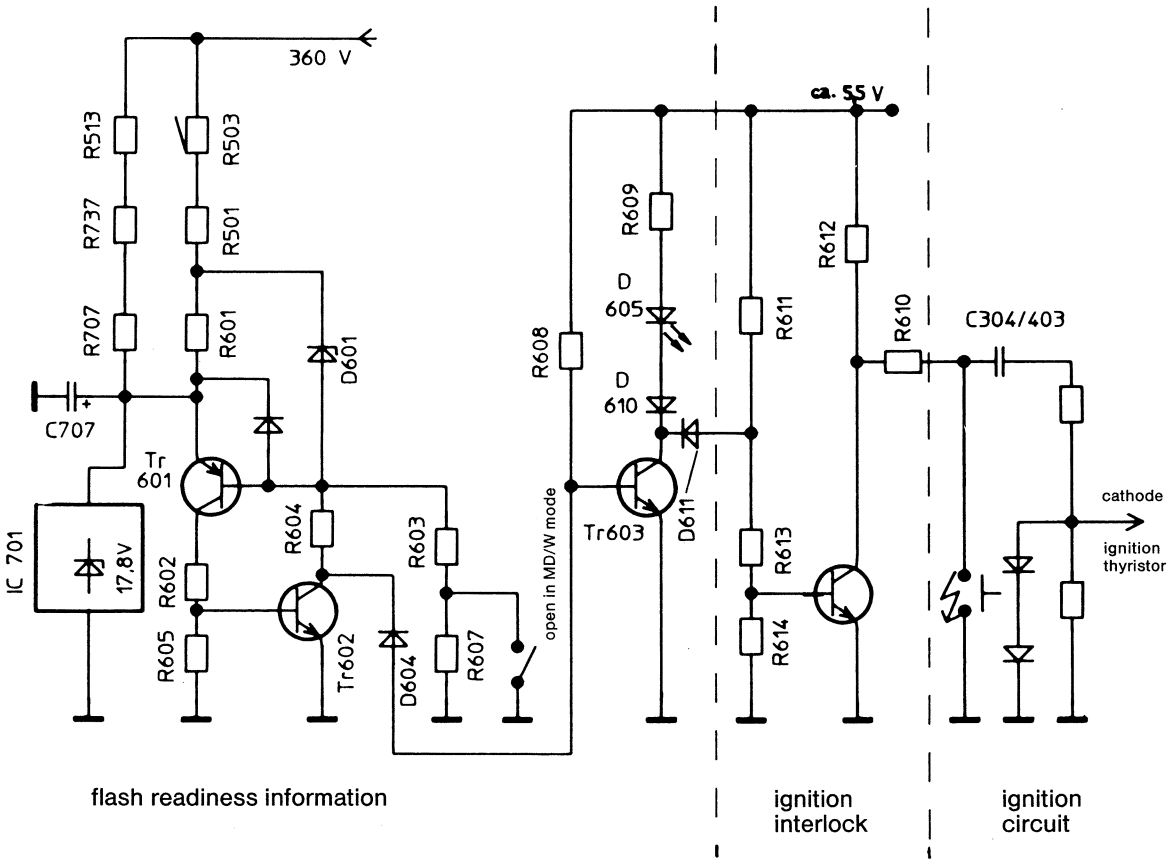
on the secondary side of the transformer ignites the flash tube Rö 002. As soon as Ty 401 starts conducting, C 401 also discharges via thyristor Ty 401, D 402, D 403 and R 401. D 403 limits this pulse voltage to approx. 5.6 V. This voltage ignites the series thyristors Ty 501, Ty 502 via resistors R 508, R 509, and also acts as starting voltage for the automatic IC 701.



3.3. Quenching circuit

The quenching capacitor C 502 is charged positively via R 503, while C 504 is charged positively via R 503 and Dr 501. The quenching pulse from pin 7 of IC 701 passes via R 708 and D 505 to the gate of the quenching thyristor Ty 504, and ignites it. As soon as Ty 504 ignites, which connects one side of C 502 to ground, Ty 503 is ignited by the negative voltage from C 502 at its cathode. The entire flash tube current thus flows momentarily via Ty 503, C 502, Dr 501, and Ty 504. The current through the series thyristors drops below the holding value and the thyristors cut off. C 502 is charged with opposite polarity. At the same time, a negative pulse from C 504 passes via R 510 and the diodes D 502, D 503 to the gates of thyristors Ty 501 and Ty 502, ensuring that they are cut off.

3.4. Flash readiness information and ignition interlock



The transistors Tr 601 and Tr 602 function as a threshold switch with hysteresis and variable threshold values.

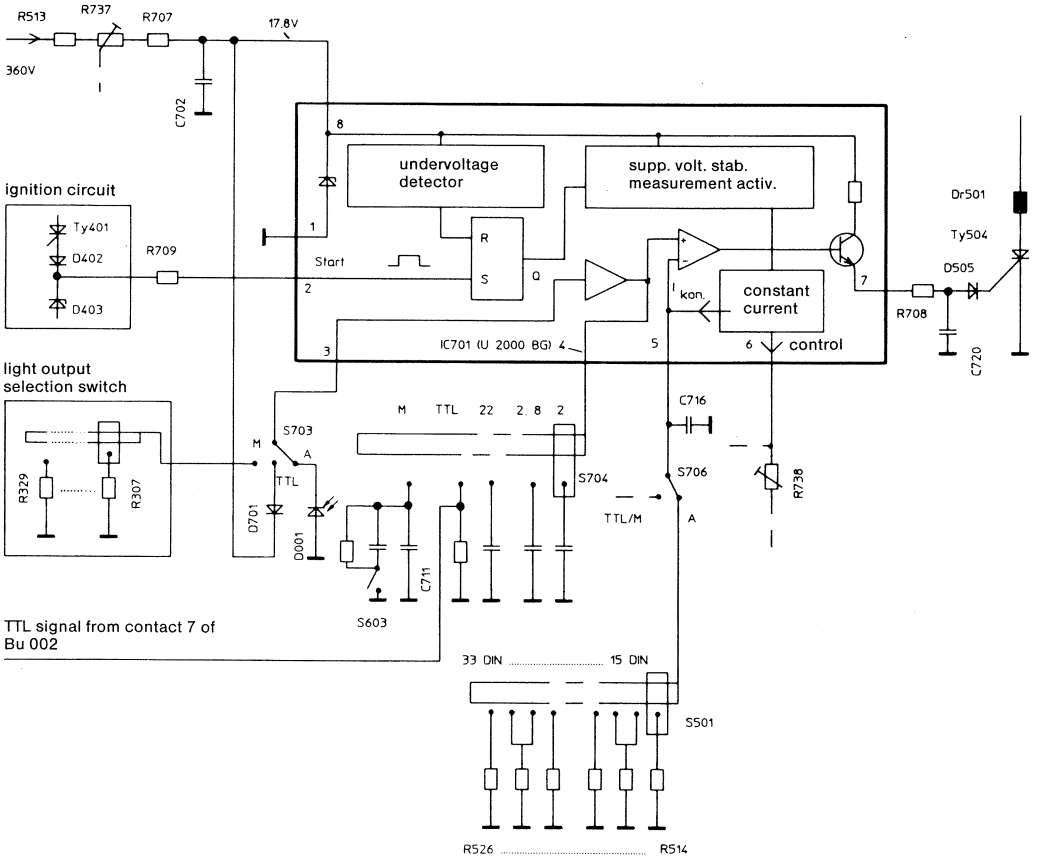
A stabilized voltage of 17.8 V is connected to the emitter of Tr 601. The base voltage for transistor Tr 601 is derived from the flash capacitor voltage via the voltage divider R 503, R 501, D 601, R 604, R 603, R 607. If the flash capacitor voltage rises to such a value (292 V in MD/W mode; 312 V in M/A/TTL mode) that the voltage at the cathode of D 601 exceeds approx. 47.3 V, the base voltage of transistor Tr 601 rises to approx. 17.3 V. The control voltage for Tr 601 (U_{BE}) is now too low and Tr 601 cuts off.

At the same time, the base current for the transistor Tr 602 is switched off and Tr 602 also cuts off. If the flash capacitor voltage drops again (277 V in MD/W mode; 297 V in M/A/TTL mode), Tr 601 and Tr 602 become conductive and D 604 is connected to ground, causing Tr 603 to cut off and switch off the flash ready LED D 605. The hysteresis between the on and off points of the flash readiness indicator is approx. 15 V and is determined by R 604 and Tr 602. As long as Tr 602 is cut off, the base of Tr 603 is connected via R 608 to +6 V,

which means that Tr 603 conducts and the flash ready LED D 605 glows. This causes the diode D 611 to become conductive, too. Transistor Tr 604 is cut off, and the ignition pulse capacitors C 304/C 403 charge to approx. 5.5 V via R 610,, R 612. If M/A or TTL mode is selected, R 607 is short-circuited, changing the ratio of the voltage divider for the base of Tr 601 and changing the threshold values for the flash readiness indicator.

3.5. Automatic IC 701

With its external components, IC 701 forms an automatic circuit. A voltage derived from the flash capacitor voltage via the divider circuit R 513, R 737 and R 707 is stabilized at 17.8 V at pin 8 of IC 701. This is also used as the supply voltage for the IC. The automatic measuring circuit is activated by a start pulse at pin 2 of IC 701. This start pulse passes from Z-diode D 403 via R 709 to IC 701, pin 2 when thyristor Ty 401 is ignited. When the measuring circuit is activated, an internal constant current source whose current is adjusted with the reference current from pin 6 of the IC starts to operate. This constant current flows from pin 5 through S 501 to the resistors R 514....R 526, whose total resistance depends on the selected film speed, and generates a constant voltage drop across these resistors. This voltage drop is the threshold voltage for the comparator within the IC. In the automatic mode, the photodiode D 001, whose resistance varies with the amount of incident light, is connected to pin 3 of the IC.



The current flowing through this photodiode is connected within the IC via a measuring amplifier and pin 4 to the integration capacitors, which are now charged via pin 4 of the IC 701 and S 704. As soon as the voltage across the integration capacitors exceeds the threshold at pin 5, a short positive pulse is generated at pin 7 of IC 701 and is connected via R 708, D 505 to the gate of thyristor Ty 504. This ignites and initiates the quenching operation (see "Quenching circuit"). In manual mode, a fixed resistor with a value corresponding to the preselected partial light output is connected to pin 3. The charging current for the integration capacitor connected in manual mode is thus independent of the amount of light reflected onto D 001 and is determined only by the value of the resistor connected to pin 3. The integration capacitor for manual mode or for partial light output (C 711) is, after a certain time, charged to the point where the threshold value at pin 5 is exceeded, and the flash unit is switched off.

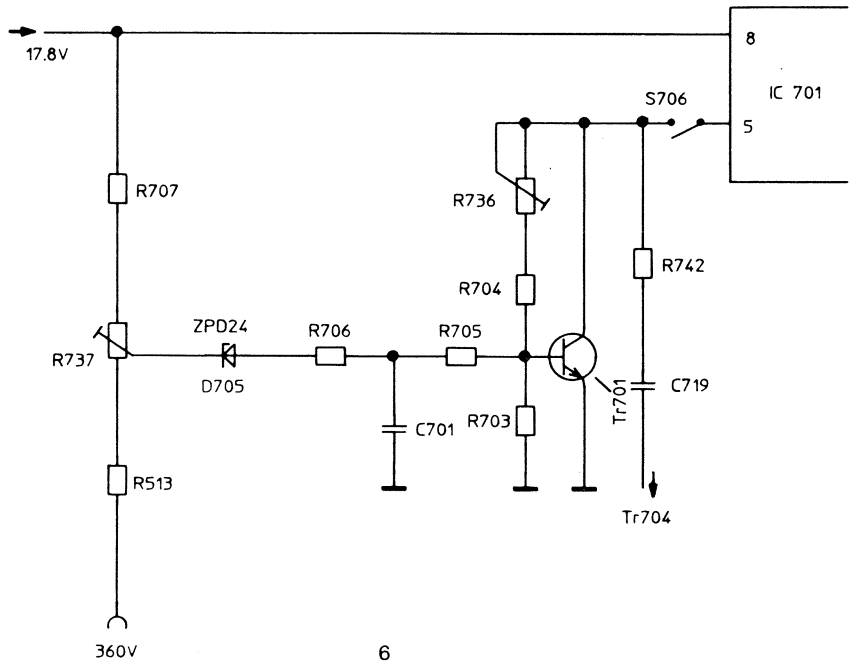
In TTL mode, pin 3 is cut off by diode D 701 (whose cathode lies at 17.8 V). The flash is now quenched by the TTL pulse from contact 7 of the SCA socket (BU 002). This pulse passes via contact 4 to pin 4 of IC 701, exceeds the threshold value, and activates the quenching thyristor Ty 504.

3.6. Quenching threshold in M/TTL mode

3.6.1. Function of transistor Tr 701

On principle, Tr 701 acts as a variable Z-diode, thus keeping the amount of light emitted constant for the preselected partial light output, even if the flash capacitor voltage varies.

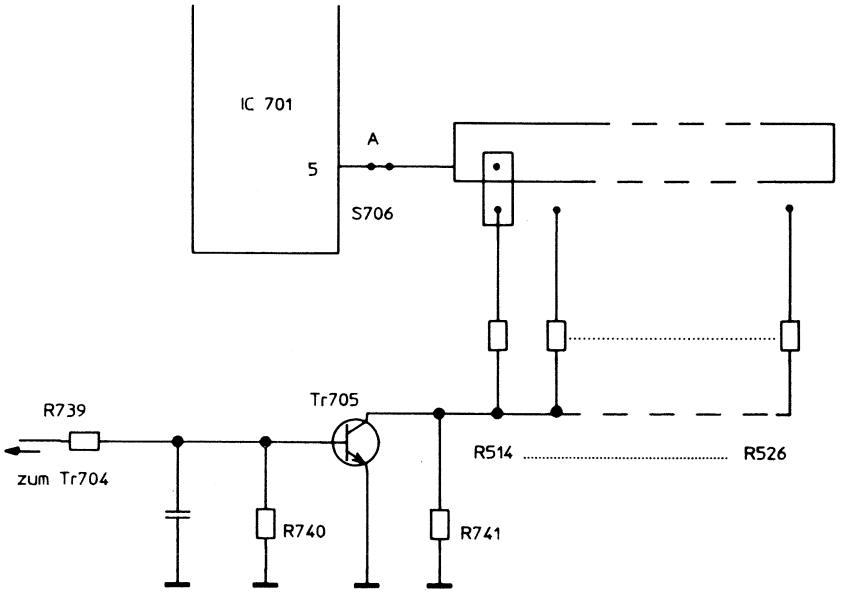
If several flashes are triggered sequentially in partial light output mode, the flash capacitor voltage will gradually drop. This reduced voltage naturally causes a reduced flash tube current and a lower light output. In order to keep the



light output constant, regardless of the flash capacitor voltage, the comparator threshold in IC 701 is varied by Tr 701 as a function of the flash capacitor voltage. The voltage at the wiper of potentiometer R 737 - which is proportional to the flash capacitor voltage - determines the magnitude of the control current for Tr 701, which flows through Z-diode D 705, R 706, and R 705. If the flash capacitor voltage drops, the control current for Tr 701 also drops, the internal resistance of Tr 701 rises, and the constant current from pin 5 of IC 701 causes a higher threshold voltage at pin 5 and thus in the internal comparator circuit. Due to this, light is emitted for a longer period, and the total amount of light (energy) remains correct, although the flash capacitor voltage is lower.

3.7. Function of transistor Tr 705

Tr 705 prevents incorrect triggering of the automatic circuit. If a flash is triggered, Tr 704 starts conducting after a few µs, and there is a voltage of approx. 17 V at its collector. This voltage, via the voltage divider R 739, R 740 causes Tr 705 to conduct, which connects resistor R 514...R 526 via R 711 to ground. As long as Tr 705 is cut off, these resistors are connected to ground via the high-value resistor R 741: the comparator threshold voltage is increased, thus preventing incorrect triggering due to interfering voltage peaks.

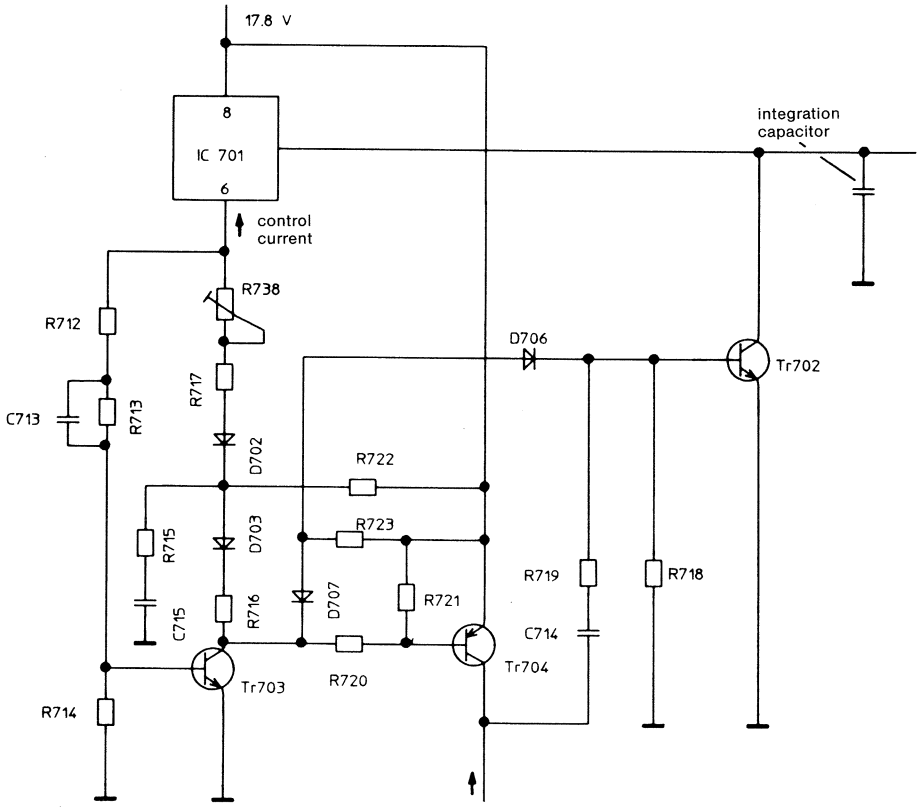


3.8 Compensation in the close-up range

Due to the switching times of the various components (thyristors, transistors, etc.), there is a slight delay before the light output is interrupted. The resulting extra amount of light would, in the case of close-ups (with low light quantities required) result in noticeable over-exposure. In order to avoid this, the Mecablitz 60 CT 4 has a close-up compensation circuit to shorten the flash durations if low quantities of light are required. The reference voltage at pin 5 of the automatic IC 701 is reduced by a certain amount for approximately 1 ms after the flash is triggered. This is achieved by slightly reducing the constant current flowing out of pin 5 of the IC 701 for the duration of the compensation for close-ups.

As already mentioned in the description of the IC 701, the constant current flowing out of pin 5 depends on the control current flowing out of pin 6.

When the flash is triggered, the IC 701 is activated by the start pulse at pin 2. Transistor Tr 703 conducts due to the voltage at pin 6, via R 712 and R 713/C 713. Prior to the triggering of the flash, C 715 was charged to approx. 17.8 V via R 722 and R 715. The control current coming from pin 6 is determined primarily by the resistors R 738 (adjustment), R 717 and the voltage across these resistors.

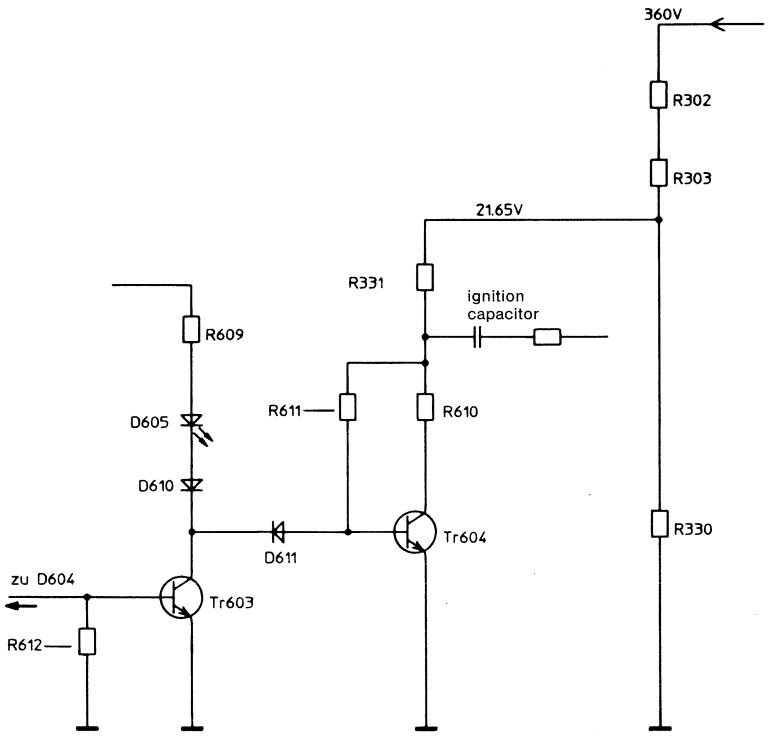


When the flash is triggered, C 715 still has approx. 17.8 V and the voltage across R 738 and R 717 is already low -> control current lower --> constant current lower --> reference voltage at pin 5 lower --> quenching earlier --> compensation of the excess light quantity. After approximately 1 ms, C 715 has almost completely discharged via R 715, D 703, R 716, and Tr 703. The voltage across R 738 and R 717 thus returns to its normal value --> control current normal --> constant current normal --> reference voltage normal --> quenching normal.

The slightly earlier quenching of the flash compensates for the excess light output resulting from the switching times of the components so that correct exposure is re-established.

3.9. New ignition circuit

From serial number 25 800 onward, the ignition circuit of the Mecablitz 60 CT 4 was modified. This modification results in an increase of the sync voltage from approx. 5.5 V to 9.5 V. As soon as flash readiness is established and Tr 604 is blocked, the ignition capacitors C 304 and C 403 are charged via R 331.



3.10. Tone selection electronics

For audible signalling, four types of tones can be selected on the bottom of the reflector.

a) Flash ready signal (continuous tone, approx. 2 s)
b) Flash ready and auto check signal (continuous tone plus intermittent tone)
c) Auto check signal (intermittent tone)
d) Tone off

Functional description

Transistor Tr 901 acts as a series switching transistor for the supply voltage to the tone selection circuit PCB. In the switch position "Tone off", transistor Tr 901 is blocked via S 901 and the complete tone selection circuit is thus switched off. If switch S 901 is open, the supply voltage for the tone selection circuit is connected via Tr 901. Transistor Tr 902, operated with a voltage negative feedback, acts like a Zener diode. The voltage negative feedback via R 902 ensures that the collector voltage of Tr 902 is kept constant at approximately 3 V...3.5 V.

Audible flash ready signal

As long as flash readiness is provided, pin 32 of the tone selection PCB is connected to chassis via Tr 603 on the switch PCB, which is conducting. Tr 903 is made conductive via D 901 and R 906 and a voltage of approximately 3 V is available as a supply voltage at its collector. Via R 907, the inverting input (pin 6) of the operational amplifier IC 901 is supplied with approx. 2.3 V. The voltage via the voltage divider R 916/R 917 at the non-inverting input (pin 5) of IC 901 is approximately 1.7 V, and the output (pin 1) of IC 901 is connected to approx. 0 V. Due to the positive voltage at its inverting input, the output (pin 7) of IC 902 is switched to chassis. Tr 905 now also conducts due to the voltage from voltage divider R 922/R 923. The buzzer SM 4 is connected to chassis via the conducting output of IC 901 and thus sounds. The duration of the sound is determined by the low phase of the output (pin 1) of IC 901. The non-inverting input of IC 901 (pin 3) is connected to approx. 0.75 V via R 913/R 914. As long as Tr 903 conducts, a charging current flows through D 902/R 911 and R 912 to the capacitor C 903. The voltage drop across R 912, and thus the voltage at the inverting input (pin 2) decreases as capacitor C 903 becomes charged. For about 1.5 seconds, the voltage at pin 2 of IC 901 is greater than the voltage at pin 3. As soon as the voltage at pin 2 of IC 901 drops below 0.75 V, due to the reduced charging current for C 903, the output of IC 901 is switched off and the buzzer signal is interrupted.

If a flash is now fired, i.e. thyristor Ty 301 conducts, there is a short voltage drop of about 1.4 V across the diodes D 301 and D 302. This voltage passes via pin 15 of the tone selection PCB and R 910 to the base of Tr 904, which then conducts and discharges capacitor C 903 through its collector-emitter circuit and D 904. If the flash is still ready, C 903 starts to charge again and the buzzer sounds again for about 1.5 seconds.

Acoustic auto check information without audible flash ready signal

If the emitted quantity of light was sufficient for correct exposure in the auto mode, i.e. the auto check LED has lit, the voltage of about 5 V at the collector of transistor Tr 606 passes via pin 30 of the tone selection PCB and R 907/R 911 to the capacitor C 903. C 903 is thus charged and a short voltag drop occurs across R 912. This causes the output (pin 1) of IC 901 to switch for a short time and the buzzer sounds if pin 7 of IC 902 is also connected to chassis. The non-inverting input (pin 5) of IC 902 is connected via voltage divider R 916/R 917, diode D 905 and the active output (pin 1) of IC 901 to a positive voltage. Capacitor C 904 at the inverting input (pin 6) of IC 902 is initially discharged. If the flash is not ready, or if the audible flash ready signal is switched off, no positive voltage passes through D 907 to pin 6 of IC 902.

C 904 is now charged via R 920 and R 919. As soon as the voltage across C 904, which is also the voltage at the inverting input of IC 902, becomes more positive than the voltage at the inverting input (pin 5), IC 902 switches on, Tr 905 conducts, and the buzzer AG 901 sounds. When the output (pin 7) of IC 902 is active, resistor R 918 is connected, via diode D 906, parallel to the voltage divider R 916/R 917 R at the inverting input (pin 5), and the positive bias voltage at pin 5 is thus reduced. At the same time, C 904 is discharged via R 920, diode D 906 and the active output of IC 902. As soon as the voltage at pin 6 of IC 902 drops below the voltage at pin 5, the output (pin 7) of IC 902 switches off, the buzzer signal is interrupted and C 904 starts to charge again. The intermittent buzzer signal ends when the output (pin 1) of IC 901 cuts off. This is the case when, approximately 2.5 secconds after firing of the flash and after the auto check LED starts to light, the charging current for C 903 and thus the voltage drop across R 912 has dropped to such a level that the positive voltage at pin 3 is greater than the voltage at pin 2, which cuts off the output (pin 1) of IC 901.

Simultaneous acoustic signalling of flash readiness and auto check

If, immediately after or during firing of the flash, flash readiness is re-established, Tr 903 conducts and a positive voltage passes through D 907 to C 904, discharging the capacitor instantaneously. The inverting input (pin 6) of IC 902 is now more positive than the non-inverting input (pin 5). The output (pin 7) of IC 902 becomes active and the buzzer sounds. For this, naturally, the output (pin 1) of IC 901 must be active. This is achieved, as soon as flash readiness is established and Tr 903 conducts, by a positive pulse through C 902 and R 909 to the base of Tr 904, which conducts momentarily. C 903 is now discharged through diode D 904 and Tr 904. As soon as C 902 has charged, Tr 904 cuts off and charging of C 903 via R 911 and D 902 starts again. The voltage drop across R 912 caused by the charging current for C 903 switches on the output (pin 1) of IC 901.

3.11. SCA-adaptation

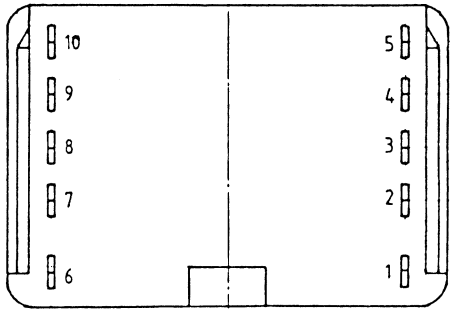
The Mecablitz 60 CT 4 is adapted to the dedicated system SCA 300. If the appropriate adapter is connected, the features provided by the camera will be supported by the flashgun. The adapter either converts the camera's signals into the size and shape required by the flashgun, or vice versa.

Standardization of the SCA system guarantees a rapid and reliable change and fast connection of the SCA adapter.

Allocation of SCA interface signals to contacts of SCA 300 adapters

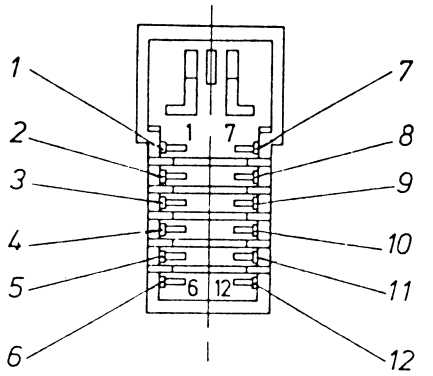
Function	Contact No. of SCA adapter	Contact No. of SCA socket
Chassis	1	1
Reserve	2	6
TTL auxiliary contact	3	3*
Auto check	4	4
Battery voltage	5	5
Canon aperture control	6	2
TTL connection	7	7
Flash readiness signal	8	8
Auxiliary voltage	9	9
Ignition connection	10	10
Foreign signal	-	11*
Foreign signal	-	12*

SCA 300 adapter



View onto contacts

SCA 300 socket



View on to soldered side

* Connections not required for Mecablitz 60 CT 4

4. ADJUSTMENT INSTRUCTIONS FOR MECABLITZ 60 CT 4

4.1. Mecablitz 60 CT 4 generator

Capacitor voltage
Charging of the capacitor must switch off at 355 V...365 V and switch on again at 340 V...355 V. This can be adjusted with the potentiometer R 119 (100 kohms).

Converter current consumption
In order to avoid overloading the converter in this mode, the measuring time should be kept as short as possible.

Connect a load resistor of 3.9 kohms/25 W to pins 1 and 3 of sockets Bu 002 and Bu 003. The voltage across the electrolytic capacitor drops to approx. 350 V and the charging circuit does not switch off. Connect a low resistance DC ammeter in the battery lead, taking care that the total resistance of the meter and its leads does not exceed 0.02 ohms. Adjust potentiometer R 111 (1.5 kohms) for a current of 8.3 A...8.7 A.

Charge regulation for dryfit battery

a) Set the strap S 002 to position "dry". Measurement must be carried out with a battery charger 729 (connected to a stabilized 220 V supply) connected. Remove the battery and connect a 10,000 µF electrolytic capacitor with a 6.8 kohm ± 10 % resistor in parallel in its place. The voltage across this RC combination must lie within the tolerance range 6.9 V ± 0.1V. The green LED D 001 must light and the red LED D 002 must remain off.

b) In order to determine the full charging current, connect a 13.5 ohm ± 2 % resistor in parallel to the above RC combination. The charging current must now be 460 mA...500 mA, corresponding to a voltage across the RC combination of 6.2 V...6.75 V. Both LEDs must not light.

4.2. Mecablitz 60 CT 4 flashgun

Setting and checking the light intensity control circuit

Note: The given values only apply to measurements made with the light output measuring instrument No. 4. The values set in brackets ( ) refer to the light output instrument No. 5.

The light intensity is set with the potentiometer R 738 (250 kohms) at f5.6. The f-numbers on the light output measuring instruments No. 4 and No. 5 refer to DIN 21/ASA 100 film.

Setting the required amount of light in the auto mode

Auto working aperture	f5.6 (DIN 21/ASA 100)
Measuring distance	3 m
Amount of light	45 ± 1 scale div. (58 ±1 scale div.)

Checking the linearity of the control circuit

Auto working aperture f5.6 (DIN 21/ASA 100)

At least two measurements should be made in the range of 1m...6m. The maximum deviation from the required amount of light must not exceed -9 (-11)/+10 (+14) scale divisions.

Checking the other seven auto working apertures

Auto aperture	f2 (DIN 21)	3m	34...57 (44...73) scale div.
"	f2.8	3m	34...57 (44...73) scale div.
"	f4	3m	34...57.(44...73) scale div.
"	f8	3m	34...57 (44...73) scale div.
"	f11	3m	34...57 (44...73) scale div.
"	f16	3m	34...57 (44...73) scale div.
"	f22	2m	34...57 (44...73) scale div.

Setting the light output

Current flowing through R 705

The current flowing through the resistor R 705 (270 kohms) must be set to 10 uA ±0.5 uA with the potentiometer R 737 (100 kohms) (with digital voltmeter Ri = 10 mohms). A voltage drop of 2.7 V ±0.13 V must then be present at R 705.

Power ratio setting

The settings for power ratio control must be made with the help of a reference sample.

Set the reference sample 60 CT4 to M 1/16.
Set the light output measuring instrument to f5.6 (DIN 21) and adjust the measuring distance until the instrument indicates 50 scale divisions.
Then set the flash unit to be calibrated to M 1/16 and, with the help of R 736 (500 kohms) and at the previously determined measuring distance, adjust it until 50 scale divisions are displayed on the light output measuring instrument, too.

Checking the power ratios

Choose the measuring distance as determined.

Power ratio	Aperture	Display
M 1	f22	35...71
M 1/2	f16	40...63
M 1/4	f11	40...63
M 1/8	f8	40...63
M 1/32	f4	40...63
M 1/64	f2.8	40...63
M 1/128	f2	40...71
M 1/256	f2	20...35

5. TECHNICAL DATA

Guide numbers

	DIN 18 ASA 50	DIN 21 ASA 100	DIN 27 ASA 400
for m	42	60	120
for ft	139	197	393

Guide numbers for power ratios

	DIN 21 ASA 100		DIN 27 ASA 400	
	m	ft	m	ft
M 1/2	42	139	85	278
M 1/4	30	99	60	197
M 1/8	21	70	42	139
M 1/16	15	49	30	99
M 1/32 (W)	10	35	21	70
M 1/64 (MD)	7	25	15	49
M 1/128	5	17	10	35
M 1/256	4	12	7	25

Flash durations 1/200* to 1/20000 second

for partial output	M	1/200 s
	M 1/2	1/300 s
	M 1/4	1/800 s
	M 1/8	1/1500 s
	M 1/16	1/2500 s
	W (M 1/32)	1/4000 s
	MD (M 1/64)	1/5500 s
	M 1/128	1/7000 s
	M 1/256	1/8500 s

Auto working apertures

for DIN 21/ASA 100	2 - 2.8 - 4 - 5.6 - 8 - 11 - 16 - 22
for DIN 30/ASA 800	2.8 - 4 - 5.6 - 8 - 11 - 16 - 22
for DIN 33/ASA 1600	4 - 5.6 - 8 - 11 - 16 - 22

Coverage angle of sensor	approx. 25°
Swivel/tilt reflector	pivots through 360° horizontally, 90° vertically (6 settings)
Illumination, approx.	48° vertically, 65° horizontally
Illumination with wide-angle diffuser, approx.	65° vertically, 65° horizontally
Illumination with fill-in reflector, approx.	45° vertically, 65° horizontally
Distribution of light with switched-on fill-in reflector	quadrolight reflector 90% fill-in reflector 10%
Recycling time	approx. 5* - 0.25 sec.
Number of flashes (approx.)	with dryfit battery 160*- 4500 with NiCd pack 80* -2000 with mains unit: unlimited
Power sources	6V dryfit battery, 3.8 Ah 100 20 40 (60-38) 6V NiCd pack, 1.8 Ah 402.28 (60-39)
Weight	
Flashgun	approx. 650 g
Power pack with dryfit battery	approx.1850 g
Dimensions of power pack (generator section)	approx. 126 x 165 x 58 mm
Dimensions of flashgun	approx. 254 x 111 x 102 mm
Standard accessories	Sync cord 45-47 Bracket 32-36 Charger 402.12 or 721...729 NiCd pack Connecting cable 60-58 Carrying strap 60-31 Fill-in flash reduction filter 45-44

* in manual mode

6. SERVICING INSTRUCTIONS

6.1. General instructions for repair

Only use factory-tested replacement parts, since special test conditions must be followed for a whole array of these parts. This specifically applies to parts marked with a triangle in the circuit diagram or spare parts list. Use of parts which do not qualify for acceptance according to these special requirements may jeopardize electrical safety or result in malfunction.

The polarity of capacitors, flash tubes, glow lamps and all semiconductors must be observed strictly. When installing the flash tube please note that the conducting ignition ribbon must point forward. The (invisible) ignition ribbon is to be found beneath the cabling of the ignition connection.

If transistors T 001, T 002, T003, and/or T 004 have to be replaced, ensure that sufficient heat conduction paste is used. This paste can be obtained from the Metz Service Department in the factory.

The contacts of the batteries and the contacts in the battery compartment of the generator must be coated with vaseline. Use the technical vaseline "Rhenol" made by Vaselinefabrik Rhenania. This is also available from the Metz Service Department.

This vaseline must be diluted with pure white spirit to the consistency of medium to thin engine oil (HD 20 to 30), permitting it to be applied easily with a paintbrush. Apply a thin film to all contacts projecting from the mounting plate into the battery compartment, including the lower surfaces of the galvanized mountings of the contacts, around the contact pieces, and the lower turns of the contact pressure spring where these are accessible.

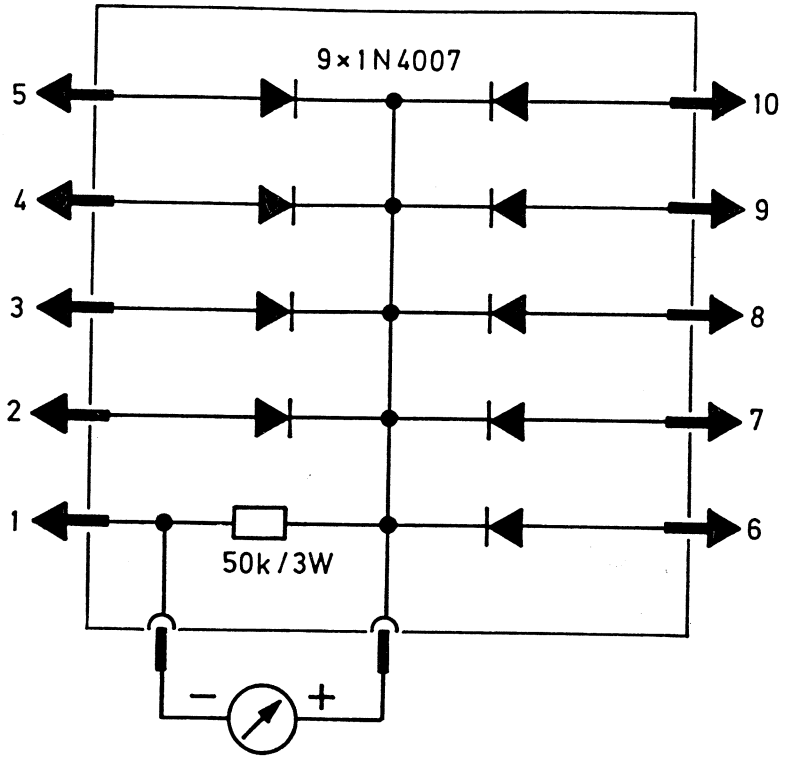
Caution: The vaseline diluted with white spirit is flammable!

When working on the open flashgun, take into account that voltages of up to 360 V may be present on the flash capacitor and in other parts of the circuit. Therefore, disconnect the connecting cable when repairing the flashgun. When repairing the generator, remove the battery and discharge the flash capacitor with a resistor of approx. 100 ohms, 10 W.

After repair, particular attention should be paid to the connection of the sync cable with regard to live voltage on contact.
Checking is performed during NiCad or dryfit battery operation, when the flash capacitor is charged to rated voltage. For this purpose, on ohmic resistance of 50 kohms and a voltmeter (Ri = 10 Mohms) are connected to both contacts. The voltage drop across the 50 kohms resistor must be smaller than 25 V in the stationary state. The small voltage pulse due to discharge of the ignition capacitor is not taken into account.

Flash units of the SCA 300 system must, after each repair, also be checked for the presence of hazardous voltages on the SCA contacts. This is best done by means of a test adapter with the following circuitry. In this manner, all contacts (decoupled via diodes) are checked simultaneously with chassis contact 1. The voltage across the 50 kohms resistor must be smaller than 25 V. the measurement is performed during battery operation, when the flash capacitor is in the fully charged state. Correct functioning of the test adapter should be checked at short regular intervals (approx. once a week).

Safety test adapter for SCA 300 system flash units



Voltmeter Ri = 10 Mohms

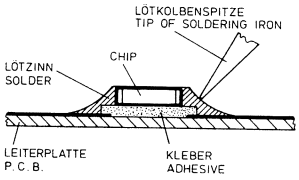
CHIP Technik

AUS- UND EINLÖTEN VON CHIP-BAUTEILEN

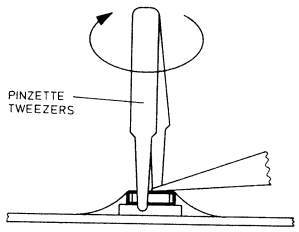
- Verwenden Sie nur einen Niedervoltlötkolben mit Temperaturregelung.
- Die Löttemperatur sollte ca. 240 °C betragen (max. 300 °C).
- Halten Sie die Lötzeit so kurz wie möglich.
- Belassen Sie CHIP- Bauteile bis zur Bearbeitung in der Originalverpackung. Damit wird die Oxidation der Stirnkontakte vermieden.
- Berühren Sie CHIP- Bauteile nicht mit der bloßen Hand.

AUSLÖTEN VON CHIP-BAUTEILEN

1. Schritt: CHIP- Lötstelle mit Sauglitze absaugen.



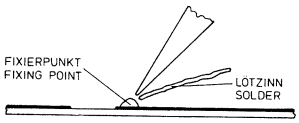
2. Schritt: CHIP- Enden, bzw. das komplette CHIP-Bauteil erwärmen. CHIP von der Klebung ohne Kraftaufwand abdrehen, damit unter dem CHIP liegende Leiterbahnen nicht abgerissen werden.



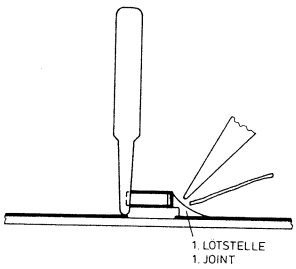
ACHTUNG! Ausgelötetes CHIP nicht wiederverwenden! Die leitende Schicht kann ausgebrochen sein.

EINLÖTEN VON CHIP-BAUTEILEN

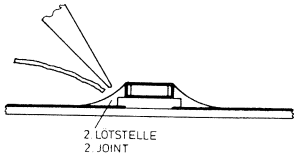
3. Schritt: Lötpunkt von Lötrückständen säubern. Lötperle anbringen.



4. Schritt: CHIP an der Lötstelle ansetzen, zentrieren und anlöten. CHIP nur am Konaktende mit der Pinzette anfassen.



5. Schritt: Freie Seite löten, und nach dem Erkalten die erste Lötstelle nochmals nachlöten.



CHIP Technology

SOLDERING AND UNSOLDERING OF CHIP COMPONENTS

- Use only low-voltage soldering irons with temperature control.
- Permissible soldering temperatures are approx. 240 °C up to max. 300 °C.
- Keep the soldering period as short as possible.
- Keep the CHIP components in their original packages until they are used to avoid oxidation of the end contacts.
- Do not touch CHIP components with bare hands.

UNSOLDERING OF CHIP COMPONENTS

1rst step: Clean the CHIP soldering point with a solder wick.

2nd step: Warm up the ends of the CHIP or the whole CHIP component and remove the CHIP from the adhesive by turning it without application of force so that the tracks beneath the CHIP do not break.

ATTENTION! Do not use unsoldered CHIPS any more because the conductive layer may be broken.

SOLDERING OF CHIP COMPONENTS

3rd step: Remove possible residues from the soldering point. Then apply a solder bead.

4th step: Put the CHIP onto the soldering point, then center and fix it. Use tweezers to hold the CHIP only at the end of the contact.

5th step: Solder the free end of the CHIP and resolder the first soldering point after it has cooled.

Notizen:
Notes:

ERSATZTEILLISTE MECABLITZ 60CT4
SPARES-LIST FOR MECABLITZ 60CT4
PIECES DE RECHANGE MECABLITZ 60CT4

Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix

Die elektrischen Bauteile, die im Schaltbild mit dem Zeichen ⚠ versehen sind, müssen besondere Anforderungen erfüllen und dürfen nur durch vom Werk geprüfte Original-Ersatzteile ersetzt werden. Alle anderen elektrischen Bauteile sind nicht einzeln lieferbar und nur in den jeweiligen Sortimenten enthalten.

The electrical components marked with the sign ⚠ in the circuit diagram have to meet especial requirements and can be replaced only by original spare parts checked by the factory. All other electrical components cannot be delivered seperately and are only contained in the corresponding assortments.

Les pièces détachées électriques qui sont equippées avec le signe ⚠ dans le schéma de connexions doivent remplir des demandes spéciales et doivent être remplacées seulement par pièces de rechange vérifiées par l'usine. Toutes les autres pièces détachées électriques ne peuvent pas être livrées séparément et sont seulement contenues dans les assortiments correspondents.

GENERATORTEIL 60CT4 /POWERPACK UNIT 60CT4 /GÉNÉRATEUR 60CT4

	1	Gewindeplatte/Screw plate/Plaque à filet	779 31 0245	S 1
	2	Chassis, gebohrt/Chassis/Châssis	786 92 0298	K 2
	3	Ein-/Ausschalter, zweipolig/Two-pole sliding switch/ Commutateur coulissant bipolaire	190 20 1090	T 2
	4	Generator-Leiterplatte, vollstg./Powerpack PC-board assembly, cpl./Plaque à circuit imprimé compl. du générateur	786 28 0327	U 3
	5	Kühlblech, genietet/Heat sink/Tôle de refroidissement	779 96 0497	T 2
⚠ T 101	6	Wandlertrafo/Converter/Transformateur	443 00 0060	H 3
	7	Trageriemenhalterung, vollstg./Carrying strap, cpl./ Support de courroie compl.	779 96 1131	R 1
R 119	8	Einstellregler 100 kOhm 1 W/Adjusting control/ Potentiomètre ajustable	241 05 0194	U 1
⚠ R 111	9	Einstellregler 1,5 kOhm/Adjusting control/Potentiomètre ajustable	241 53 0053	A 2
⚠ C 001	10	Blitzelko 3300 µF 360 V/380 V/Electrolytic flash capacitor/ Condensateur électrolytique du flash	333 39 0010	U 3
⚠ L 001	11	Drosselspule/Choke/Bobine d'arrêt	431 22 0019	U 2
	12	Gehäusebecher, vollstg./Casing, cpl./Boîtier compl.	786 96 0654	A 3
	13	Kontakthalter, vollstg./Contact holder, cpl./Plaque de contact compl.	779 96 0516	F 3
	14	NC-Akku/NC-accumulator/ Accumulateur NC	000 06 0393	HPL
	14	Dryfit-Akku/Dryfit-Accumulator/Accumulateur dryfit	100 20 4010	HPL
	15	Akkudeckel, vollstg./Accumulator cover, cpl./Couvercle d'accumulateur, compl.	779 96 1451	H 2
	16	Ladegerät/Quick charging unit/Chargeur rapide		
	17	Fußeinlage/Foot insert/Garniture de pied	779 11 0815	A 1
	18	Verbindungskabel (Leuchtenstab zum Generator)/ Connection cable (flash head to power pack)/ Câble pour la connexion torche-générateur	000 06 0584	G 3
		Verbindungskabel, lang/Connection cord, long/ Câble de liaison, long	000 06 0611	P 3
		Verbindungskabel, spiral/Connection cord, coiled/ Câble de liaison, spiralé	000 06 0592	M 3
	19	Trageriemen (breit) 60-31/Carrying strap (wide)/ Courroie (large)	000 06 0318	F 3
	20	Ladestiftteil, vollstg./Charging pin unit, cpl./ Elément de charge compl.	779 96 0470	T 2
	21	Blinkende Lumineszenzdiode kpl. mit Montagehülse und Halte-ring/Flashing light emitting diode cpl. with mounting sleeve and holding ring/Diode lumineuse clignotante compl. avec douille de montage et plaque de support	780 96 0004	K 2
		Schaltereinlage, vollstg./Switch insert/Apport de commutateur	786 96 0845	G 2
		Klemmplättchen/Clamping plate/Plaque de serrage	786 31 0168	A 1

Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix
		Stiftteil, gequetscht, vollstg./Pin unit/Elément à fiches	785 96 0252	C 2
		Zusatzkühlblechisolierung/Insulation for heat sink/ Isolation de la tôle de refroidissement	784 31 0144	U 1
		Isolierwinkel/Insulating angle piece/Angle d'isolation	779 38 0427	T 1
		Akkudeckelknopf/Accumulator cover knob/Bouton du couvercle de l'accumulateur	779 11 0866	A 1
		Sortiment Schrauben und Kleinteile (Generator)/ Assortment of screws and small parts (power pack unit)/ Assortiment de vis et pièces de montage (générateur)	786 99 0098	X 2
⚠ R 001		8,2 Ohm ±10% 1,5 W	238 20 0017	V 1
⚠ R 111	9	1,5 kOhm pos. log.	241 53 0053	A 2
⚠ R 118		1,5 MOhm ±10% 0414	211 56 0013	F 1
⚠ R 119	8	100 kOhm lin. 0,1 W	241 05 0194	U 1
⚠ C 001	10	3300 µF 360/380 V	333 39 0010	U 3
⚠ C 102		1 µF ±10% 100 V	311 06 0071	V 1
⚠ D 103		BYV 95 A/BYW 32	112 90 0090	A 2
⚠ D 104		BYV 95 A/BYW 32	112 90 0090	A 2
⚠ D 106		BYV 95 A/BYW 32	112 90 0090	A 2
⚠ D 107		BA 159	112 90 0144	F 2
⚠ D 109		SKS 1/08 Z	116 67 0087	H 2
⚠ D 110		SKS 1/08 Z	116 67 0087	H 2
⚠ D 111		B 40 C 1000 L 5 B	116 47 0084	R 2
⚠ D 001		LG 5160 EH/SEL 1310 G/SLR 56MG3/TLUG 5400	156 30 0113	V 1
⚠ D 002		LR 5160 DG/SEL 1110 R/SLR 56VR3/TLUR 5400	156 10 0360	V 1
⚠ D 003		TLBR 5410	780 96 0004	K 2
D 112		ZPD 6,2 ±1%	114 62 0051	D 2
⚠ Tr 001		BD 435	786 99 0117	R 2
⚠ Tr 002		2 SA 1328 Y	786 99 0109	T 2
⚠ Tr 003		2 SA 1328 Y	786 99 0109	T 2
⚠ Tr 004		BD 131-LV 2795	786 99 0125	R 2
⚠ T 101		Wandlertrafo/Transformer/Transformateur	443 00 0060	H 3
⚠ L 001		Drossel/Choke/Bobine d'arrêt	431 22 0019	U 2
⚠ S 001		Ein-/Ausschalter, 2pol./Two-pole sliding switch/Commutateur coulissant bipolaire	190 20 1090	T 2

LEUCHTENSTAB MECABLITZ 60CT4 /FLASH HEAD MECABLITZ 60CT4 /TORCHE FLASH MECABLITZ 60CT4

	25	Einstellrad für Grenzreichweite ofb., kpl. mit Einstellrad für Lichtleistungsstufen/ Dial for flash ranges, cpl. with dial für light output ratios/ Cadran de réglage des portées du flash, compl. avec cadran de réglage des degrés de puissance lumineuse	786 96 1452	M 2
	26	Reflektorkopf-Deckel, vollstg. (Meter-Ausf.)/ Reflector head cover, cpl. (scales in metres)/ Couvercle de tête-réflecteur, compl. échelle en mètres	787 96 0018	M 3
		Reflektorkopf-Deckel USA, vollstg./ Reflector head cover, cpl. (scale in feet)/ Couvercle de tête-reflecteur, compl., échelle en pieds	787 96 0050	M 3
	27	Lichtleistungs-Leiterplatte geprüft, vollstg./ Light output PC board, cpl./ Plaque de circuits pour puissance lumineuse, verifiée, compl.	*	
	28	Tonwahl-Leiterplatte geprüft, vollstg./ PC-board for selection of acoustic signal, cpl./ Plaque de circuits pour sélection de signal sonore, verifiée, compl.	786 28 0222	M 3
	29	Tonwahlschalter, vollstg./Selector for acoustic signal, cpl./ Sélecteur de signal sonore compl.	786 96 0966	C 2
⚠ AG 901	30	Alarmgeber SM 4 A/Alert generator/Générateur d'alarme	100 24 0012	R 2

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Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix
	31	Reflektorkopf-Gehäuse, kpl. mit Tonwahlschalter/ Reflector head casing, cpl. with selector for acoustic signal/ Boîtier de tête-réflecteur compl. avec sélecteur de signal sonore	786 96 0896	T 2
	32	Gelenkachse, vollstg./Joint axle, cpl./Axe d'articulation compl.	779 96 1228	W 1
	33	Gelenk, vollstg./Joint, cpl./Articulation compl.	786 96 1382	L 2
	34	Gelenkschraube, gestaucht/Joint screw/Vis d'articulation	786 96 1108	K 2
	35	Set-Blendenrad, vollstg. (Meter-Ausführung)/ Indicator drum, cpl. (scale in metres)/ Tambour d'affichage, compl., échelle en mètres	786 99 0012	G 3
	35	Set-Blendenrad, vollstg. (Feet-Ausführung)/ Indicator drum, cpl. (scale in feet)/ Tambour d'affichage, compl., échelle en pieds	786 99 0020	G 3
	36	Dioden-Leiterplatte, geprüft, vollstg./ Diode PC-board, cpl./ Plaque de circuits pour diodes, vérifiée, compl.	786 28 0144	U 2
	37	Kontaktträger, vollstg./Contact base, cpl./ Porte-contacts, compl.	786 96 0463	Q 2
	38	Kontakt-Leiterplatte, geprüft, vollstg./ Contact PC-board, cpl./ Plaque de circuits pour contacts, vérifiée, compl.	*	
	39	Automatik-Leiterplatte, geprüft, vollstg./ Auto mode PC board, cpl./ Plaque de circuits pour automatisme, vérifiée, compl.	*	
	40	Schalter-Leiterplatte, geprüft, vollstg./ Switch PC board, cpl./ Plaque de circuits pour interrupteur, vérifiée, compl.	*	
	41	Schaltwippe/Switching rocker/Commutateur à bascule	786 12 0098	K 1
S 603	42	Schaltknebel, vollstg./Switch clip cpl./Etrier commutateur, compl.	786 96 0517	C 2
	43	Leuchtenstabdeckel, deutsch, vollstg./ Flash grip cover, cpl. (scale in metres)/ Couvercle de torche, compl., échelle en mètres	786 96 0525	W 2
	43	Leuchtenstabdeckel, vollstg., Feet-Ausführung/ Flash grip cover, cpl. (scale in feet)/ Couvercle de torche, compl., échelle en pieds	786 96 1245	W 2
	44	Auslöseknopf, vollstg./Release button, cpl./ Bouton de déclenchement, compl.	786 96 1401	U 1
	45	Schiene/Bracket/Barrette	000 03 2365	G 3
	46	Schienenhalterung, vollstg., mit Schnellraste, vollstg./ Bracket holder, cpl./Porte-barrette, compl.	787 000151(000)	E 3
	47	Schnellraste, vollstg./Quick-fastener, cpl./ Verrouillage rapide, compl.	000 04 5386	U 2
	48	Rastschieber II/Clickstop II/Coulisseau enliquetable II	785 11 0379	P 1
	49	Halteplatte/Holding plate/Plaque d'appui	785 32 0089	F 2
	50	Synchronkabel/Sync. cord/Câble de synchronisation	000 04 5472	T 2
		Synchronkabel, lang/Sync. cord, long/ Câble de synchronisation, long	000 04 5480	B 3
		Synchronkabel, spiral/Sync. cord, coiled/ Câble de synchronisation, spiralé	000 04 5499	A 3
	51	Z-Gewindebügel/Threaded Z-plate/	786 32 0152	T 1
	52	Reduzierscheibe für Zweitreflektor/Fill-in flash reduction filter/Filtre réducteur pour réflecteur secondaire	781 11 0011-1	F 2
	53	Typenschild für Leuchtenstabgehäuse/Type plate for flash grip casing/Plaque signalétique pour le boîtier de la torche	785 92 0200	F 2
	54	Leuchtenstabgehäuse mit Typenschild/Flash grip casing with type plate/Boîtier de torche avec plaque signalétique	786 96 0740	U 2
Bu 001	55	Stiftteil gequetscht, vollstg./Power supply socket, cpl./ Prise d'alimentation, compl.	785 96 0252	E 2
	56	Zünd-Leiterplatte geprüft, vollstg./ Ignition PC board, cpl./ Plaque de circuits pour allumage, vérifiée, compl.	786 28 0160	D 3
	57	Blitzröhre II, vollstg./Flash tube II, cpl./Tube-éclair II, compl.	786 96 1374 **	W 2

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Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix
	58	Schutzscheibe II kpl. mit Blende/ Protective pane II, cpl. with mask/ Panneau protecteur II compl., avec encadrement	786 96 1460 **	H 2
Bu 002	59	Buchsengehäuse, vollstg./SCA/sync. socket, cpl./ Prise de synchronisation/SCA, compl.	786 96 0498	X 2
	60	Rastschieber-Druckfeder/Pressure spring for click stop/ Ressort pour coulisseau enliquetable	785 35 0122	A 1
	61	Rastschieber I/Click stop I/Coulisseau enliquetable I	785 11 0145	A 1
	62	Reflektor II, vollstg. ohne Blitzröhre/ Reflector II, cpl., without flash tube/ Réflecteur II, compl., sans tube-éclair	786 96 1366	G 3
	63	Weitwinkelstreuscheibe, vollstg./Wide angle diffuser, cpl./ Diffuseur grand-angle, compl.	786 96 0958	N 2
	64	Gelenkabdeckung/Joint cover/Recouvrement d'articulation	779 11 0675	T 1
	65	Reflektor, montiert, ohne Blitzröhre/ Reflector I, cpl., without flash tube/ Reflecteur I compl. sans tube-éclair	779 96 1236	L 3
	66	Blitzröhre I, vollstg./Flash tube I, cpl./Tube-éclair I, compl.	779 96 0193 **	F 3
	67	Fotodiodenhalterung, vollstg./Photo diode holder, cpl./ Porte-photodiode, compl.	787 96 0658	S 2
	68	Schutzscheibe I, mit Reflektorblende, vollstg./ Protective pane cpl. with reflector mask/ Panneau protecteur compl. avec encadrement de réflecteur	786 96 1444 **	P 2
S 604		Schiebeumschalter 2-pol./Two-pole sliding switch/ Commutateur coulissant bipolaire	190 20 0467	H 2
		Blitzleuchte geprüft, vollstg., Ausführung Meter/ Flash grip, compl., tested (scale in metres) Torche vérifiée, compl., avec échelle en mètres	006 00 040A	V 4
		Blitzleuchte, geprüft, vollstg., Ausführung Feet/ Flash grip, compl., tested (scale in feet)/ Torche vérifiée, compl., avec échelle en pieds	006 00 0418	V 4
		Set-Schrauben und Kleinteile (Blitzleuchte)/ Assortment of screws and small parts (for flash grip)/ Assortiment de vis et pièces de montage	786 99 0039	D 3
		Satz Litzen und Drähte für Mecablitz 45 CT .., 60 CT ../ Assortment of wires and stranded wires/ Assortiment de fils et fils toronnés	785 99 0051	S 2
		Sortiment Widerstände, bestehend aus je 3 Stück/Typ/ Assortment of resistors, consisting of each 3 pieces/type/ Assortiment de résistances, se composant de chaque 3 pièces/modèle	786 99 0047	Q 3
		Sortiment Kondensatoren, bestehend aus je 3 Stück/Typ (außer Blitzelko)/ Assortment of capacitors, consisting of each 3 pieces/type (does not include flash capacitor)/ Assortiment de condensateurs, se composant de chaque 3 pièces/modèle (ne contient pas condensateur électrolytique du flash)	786 99 0055	P 3
		Sortiment SMD-Halbleiter und Kondensatoren, 10 Stück/Typ **SMD semiconductors and capacitors, assorted, 10 ea. per type** **Assortiment de semiconducteurs CMS et condensateurs 10 pièces/modèle**	787 99 0040	Q 3
		Sortiment SMD-Widerstände, bestehend aus je 10 Stück/Typ **SMD resistors, assorted, 10 ea. per type** **Assortiment de résistances CMS 10 pièces/modèle**	787 99 0059	T 3
		Auswahlliste für SMD-Widerstände List of SMD resistors Liste de résistances CMS	787 45 0080	
		Sortiment Graufilter für Fotodiodenhalterung ND filters, assorted, for photo diode holder Assortiment de filtres gris pour porte-photodiode	788 99 0044	Q 3

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Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No de commande	Preis-Code Price-code Code de prix
⚠ R 301		10 Ohm 0411	231 01 0038	F 1
⚠ R 302		1 MOhm ±5% SB 0309	231 06 0066	F 1
⚠ R 401		100 Ohm 0207	231 02 0022	F 1
⚠ R 501		1,3 MOhm ±1% 0309	231 36 0014	F 1
⚠ R 502		1 MOhm ±5% 0309	231 06 0066	F 1
⚠ R 503		4,7 kOhm 4 W	224 73 9016	C 2
⚠ R 504		1 kOhm 0207	231 03 0025	F 1
⚠ R 505		2,2 kOhm 2,5 W	222 23 9017	D 2
⚠ R 506		47 Ohm 0207	234 71 0017	F 1
⚠ R 508		100 Ohm 0207	231 02 0022	F 1
⚠ R 509		100 Ohm 0207	231 02 0022	F 1
⚠ R 510		1 kOhm 0207	231 03 0025	F 1
⚠ R 511		1 kOhm 0207	231 03 0025	F 1
⚠ R 512		47 kOhm 0207	234 74 0015	F 1
⚠ R 513		1,3 MOhm ±1% 0309	231 36 0014	P 1
⚠ R 620		22 Ohm 0,25 W	232 21 0018	F 1
R 736		500 kOhm 0,15 W lin.	245 05 0043	T 1
R 737		100 kOhm ±20% 0,15 W lin.	241 05 1089	T 1
R 738		250 kOhm ±20% 0,15 W lin.	242 55 0052	T 1
R 925		10 kOhm ±20% 0,15 W	241 04 0288	V 1
⚠ C 301		0,1 µF ±10% 250 V	311 05 0114	X 1
⚠ C 302		0,1 µF ±5% 400 V	311 05 0106	A 2
⚠ C 401		0,1 µF ±10% 250 V	311 05 0114	X 1
⚠ C 402		0,1 µF ±10% 250 V	311 05 0114	X 1
⚠ C 502		6,8 µF -10 +20% 360 V	316 86 0011	U 2
⚠ C 503		0,1 µF ±10% 250 V	311 05 0114	X 1
⚠ C 504		1 µF -10 +30% 350 V	331 06 6227	V 1
⚠ C 505		33 nF ±10% 400 V	313 34 0064	S 1
C 601		100 µF 16 V	331 08 0167	V 1
⚠ C 603		0,33 µF ±10% 50 V	313 35 0016	U 1
⚠ C 701		0,22 µF ±5% 63 V	312 25 0145	T 1
⚠ C 702		3,3 µF ±10% 35 V	333 36 0055	U 1
C 709		0,12 uF ± 5% 63 V	311 25 0012	T 1
C 901		10 µF 16 V	331 07 0242	U 1
⚠ D 001		Fotodiodenhalterung, vollstg./Photo diode assembly, cpl./ Support photo diode, compl.	786 96 0638	S 2
⚠ D 403		ZPY 5,6	114 56 0080	D 2
⚠ D 506		ZPY 5,6	114 56 0080	D 2
⚠ D 604		SD 103 A/B	112 31 0028	V 1
⚠ D 605		LG 5160 EH/SEL 1310 G/TLUG 5400/SLR 56 MG 3	156 30 0113	V 1
⚠ D 606		LR 5160 F/SEL 1110 R/TLUR 5400/SLR 56 VR 3	156 10 0360	V 1
⚠ D 801		CQX 41 NB/TLHR 4401/TLHR 4200/LS 3160-HL	156 10 0395	V 1
⚠ D 802		CQX 41 NB/TLHR 4401/TLHR 4200/LS 3160-HL	156 10 0395	V 1
⚠ D 803		CQX 41 NB/TLHR 4401/TLHR 4200/LS 3160-HL	156 10 0395	V 1
⚠ D 804		CQX 41 NB/TLHR 4401/TLHR 4200/LS 3160-HL	156 10 0395	V 1
⚠ Tr 605		BC 328/40	122 32 8039	L 2
⚠ Tr 606		BC 516	122 51 6018	P 2
⚠ Ty 301		S 6370	786 04 0038	D 2
⚠ Ty 401		S 6370	786 04 0038	D 2
⚠ Ty 501		CR 3 JM-8/E 201 D	786 99 0063	W 2
⚠ Ty 502		CR 3 JM-8/E 201 D	786 99 0063	W 2
⚠ Ty 503		S 1210 MH	786 99 0071	R 2

	Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix
⚠	Ty 504		S 1210 MH	786 99 0071	R 2
⚠	IC 701		U 2000 BG	143 41 0015	S 2
⚠	IC 901		TAE 2453 A	142 00 0185	Q 2
⚠	Dr 501		Drosselspule mit Schrumpfschlauch/Choke/Bobine d'arrêt	782 96 1700	P 2
⚠	Dr 601		0,33 mH	413 35 0025	V 1
⚠	T 301		ZS 1052 MZ	442 00 0075	K 2
⚠	T 401		ZS 1052 MZ	442 00 0075	K 2
⚠	Rö 001		Blitzröhre I, vollstg./Flashtube I, cpl./Tube-flash I, compl.	779 96 0193 **	F 3
⚠	Rö 002		Blitzröhre für Zweitreflektor, vollstg./Flash tube for fill-in reflector, cpl./Tube flash pour réflecteur sécond, compl.	786 96 1374 **	W 2
	S 603		Schaltknebel, vollstg./Switch clip, cpl./Etrier commutateur, compl.	786 96 0517	C 2
	S 604		Schiebe-Umschalter zweipol./Two-pole sliding switch/ Commutateur coulissant bipolaire	190 20 0467	H 2
⚠	Si 601		Einlöt-Sicherung 500 mA, mittelträge/Solder-in fuse 500 mA semi.-time lag/Fusible à souder 500mA à action demi-retardeé	100 22 0189	W 1
⚠	AG 901		Alarmgeber SM 4 A	100 24 0012	R 2

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Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix

SCHNELLADEGERÄT/QUICK CHARGING UNIT/CHARGEUR RAPIDE MECABLITZ 60CT4

	16	Ladegerät 723, Ausführung England 120/240 V Charger 723, exp. England 120/240 V Chargeur 723, type England 120/240 V	000 00 7234 L 3
	16	Ladegerät 724, Ausführung Südafrika 220/250 V Charger 724, exp. South Africa 220/250 V Chargeur 724, type Afrique du Sud 220/250 V	000 00 7242 K 3
	16	Ladegerät 725, Ausführung Neuseeland 240 V Charger 725, exp. New Zealand 240 V Chargeur 725, type Nouvelle Zélande 240 V	000 00 7250 L 3
	16	Ladegerät 727, Ausführung Zypern 120/240 V Charger 727, exp. Cyprus 120/240 V Chargeur 727, type Cypre 120/240 V	000 00 7277 K 3
	16	Ladegerät 728, Ausführung USA 120/220 V Charger 728, exp. USA 120/220 V Chargeur 728, type Etats-Unis 120/220 V	000 00 7285 K 3
	16	Ladegerät 729, Ausführung VDE Europa 120/220 V Charger 729, exp. VDE Europe 120/220 V Chargeur 729, type VDE Europe 120/220 V	000 00 7293 K 3
	16	Ladegerät 402.12a, Ausf. Europa (NEMKO, SEMKO, FIMKO, DEMKO) Charger 402.12a, exp. Europe (NEMKO, SEMKO, FIMKO, DEMKO) Chargeur 402.12a, type Europe (NEMKO, SEMKO, FIMKO, DEMKO)	000 00 7492 N 3
	16	Ladegerät 402.12b, Ausführung CSA 120/220 V Charger 402.12b, exp. CSA 120/220 V Chargeur 402.12b, type CSA 120/220 V	000 00 7417 P 3
	16	Ladegerät 402.12c, Ausführung Australien 240 V Charger 402.12c, exp. Australia 240 V Chargeur 402.12c, type Australien 240 V	000 00 7425 P 3
	16	Ladegerät 402.12g, Ausführung Schweiz 120/220 V Charger 402.12g, exp. Switzerland 120/220 V Chargeur 402.12g, type Suisse 120/220 V	000 00 7468 N 3
		Gehäuseunterteil für Ladegerät 723 Housing lower part for charger 723 Partie inferieure du boîtier de chargeur 723	783 96 0220 Q 2
		Gehäusekappe für Ladegerät 723 Cap of cabinet for charger 723 Couvercle de chargeur 723	784 92 0282 K 2
		Gehäuseunterteil für Ladegerät 724 Housing lower part for charger 724 Partie inferieure du boîtier de chargeur 724	783 96 0239 L 2
		Gehäusekappe für Ladegerät 724 Cap of cabinet for charger 724 Couvercle de chargeur 724	784 92 0301 K 2
		Gehäuseunterteil für Ladegerät 725 Housing lower part for charger 725 Partie inferieure du boîtier de chargeur 725	783 96 0263 R 2
		Gehäusekappe für Ladegerät 725 Cap of cabinet for charger 725 Couvercle de chargeur 725	784 92 0352 K 2
		Gehäuseunterteil für Ladegerät 727 Housing lower part for charger 727 Partie inferieure du boîtier de chargeur 727	783 96 0134 L 2
		Gehäusekappe für Ladegerät 727 Cap of cabinet for charger 727 Couvercle de chargeur 727	784 92 0290 K 2
		Gehäuseunterteil für Ladegerät 728 Housing lower part for charger 728 Partie inferieure du boîtier de chargeur 728	783 96 0247 Q 2
		Gehäusekappe für Ladegerät 728 Cap of cabinet for charger 728 Couvercle de chargeur 728	785 11 0274 G 2
		Gehäuseunterteil für Ladegerät 729 Housing lower part for charger 729 Partie inferieure du boîtier de chargeur 729	783 96 0134 L 2
		Gehäusekappe für Ladegerät 729 Cap of cabinet for charger 729 Couvercle de chargeur 729	783 11 0511 G 2

Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix
		Gehäuseunterteil für Ladegerät 402.12a Housing lower part for charger 402.12a Partie inferieure du boîtier de chargeur 402.12a	779 96 1513	P 2
		Gehäusekappe für Ladegerät 402.12a Cap of cabinet for charger 402.12a Couvercle de chargeur 402.12a	783 92 0461	D 2
		Gehäuseunterteil für Ladegerät 402.12b Housing lower part for charger 402.12b Partie inferieure du boîtier de chargeur 402.12b	779 96 1521	R 2
		Gehäusekappe für Ladegerät 402.12b Cap of cabinet for charger 402.12b Couvercle de chargeur 402.12b	779 11 0936	D 2
		Gehäuseunterteil für Ladegerät 402.12c Housing lower part for charger 402.12c Partie inferieure du boîtier de chargeur 402.12c	779 96 1548	U 2
		Gehäusekappe für Ladegerät 402.12c Cap of cabinet for charger 402.12c Couvercle de chargeur 402.12c	783 92 0437	K 2
		Gehäuseunterteil für Ladegerät 402.12g Housing lower part for charger 402.12g Partie inferieure du boîtier de chargeur 402.12g	779 96 1513	P 2
		Gehäusekappe für Ladegerät 402.12g Cap of cabinet for charger 402.12g Couvercle de chargeur 402.12g	783 92 0461	D 2
		Ladegerät-Leiterplatte, vollstg. (728, 729) Charger-PCB, complete Chargeur-Plaquette à circuit imprimé, compl.	784 28 0171	E 3
		Ladegerät-Leiterplatte, vollstg. (723, 725, 727) Charger-PCB, complete Chargeur-Plaquette à circuit imprimé, compl.	784 28 0198	E 3
		Ladegerät-Leiterplatte, vollstg. (724) Charger-PCB, complete Chargeur-Plaquette à circuit imprimé, compl.	784 28 0209	E 3
		Trafobaustein für Ladegerät 402.12a (749) Transformer-kit for charger 402.12a Transformateur-kit pour chargeur 402.12a	786 28 0343	L 3
		Trafobaustein für Ladegerät 402.12b (741) Transformer-kit for charger 402.12 b Transformateur-kit pour chargeur 402.12b	786 28 0351	L 3
		Trafobaustein für Ladegerät 402.12c (742) Transformer-kit for charger 402.12c Transformateur-kit pour chargeur 402.12c	786 28 0378	L 3
		Trafobaustein für Ladegerät 402.12g (746) Transformer-kit for charger 402.12g Transformateur-kit pour chargeur 402.12g	786 28 0343	L 3
		Kontaktfeder für Ladegerät 723 Spring contact for charger 723 Ressort de contact pour chargeur 723	783 35 0012	M 1
		Kontaktfeder für Ladegerät 724, 725, 728 Spring contact for charger 724, 725, 728 Ressort de contact pour chargeur 724, 725, 728	783 35 0020	A 1
		Kontaktfeder für Ladegerät 727, 729 Spring contact for charger 727, 729 Ressort de contact pour chargeur 727, 729	783 35 0004	A 1
		Kontaktfeder für Ladegerät 402.12a (749) Spring contact for charger 402.12a (749) Ressort de contact pour chargeur 402.12a (749)	779 36 0152	M 1
		Kontaktfeder für Ladegerät 402.12b, 402.12c (741, 742) Spring contact for charger 402.12b, 402.12c (741, 742) Ressort de contact pour chargeur 402.12b, 402.12c (741, 742)	779 36 0160	K 1
		Kontaktfeder für Ladegerät 402.12g (746) Spring contact for charger 402.12g (746) Ressort de contact pour chargeur 402.12g (746)	779 36 0152	M 1
		Schaltfeder für Ladegerät 723, 724, 727, 728, 729, 402.12a, 402.12b, 402.12g Switch spring for charger 723, 724, 727, 728, 729, 402.12a, 402.12b, 402.12g, Ressort d'interrupteur 723, 724, 727, 728, 729, 402.12a, 402.12b, 402.12g	786 36 0016	A 1

Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix
		Schaltschieber, bedruckt, für Ladegerät 723, 727 Switch slide, printed, for charger 723, 727 Commutateur glissant, imprimé, pour chargeur 723, 727	783 92 0004	Q 1
		Schaltschieber, Europa, für Ladegerät 728, 729 Switch slide, Europe, for charger 728, 729 Commutateur glissant, Europe, pour chargeur 728, 729	783 11 0094	Q 1
		Schaltschieber, bedruckt, für Ladegerät 724 Switch slide, printed, for charger 724 Commutateur glissant, imprimé, pour chargeur 724	783 92 0012	Q 1
		Schaltschieber für Ladegerät 402.12a (749), 402.12b (741), 402.12g (746) Switch slide, for charger 402.12a (749), 402.12b (741), 402.12g (746) Commutateur glissant, pour chargeur 402.12a (749), 402.12b (741), 402.12g (746)	779 12 0288	S 1
		Thermosicherung TS 4, vollstg. für Ladegerät 723, 724, 725, 727, 728, 729 Thermal-fuse TS 4, cpl. for charger 723, 724, 725, 727, 728, 729 Fusible thermique, TS 4, compl. pour chargeur 723, 724, 725, 727, 728, 729	782 92 0277	V 1
		Thermosicherung TS 3, vollstg., für Ladegerät 402.12a, 402.12b, 402.12c, 402.12g Thermal fuse TS 3, cpl., for charger 402.12a, 402.12b, 402.12c, 402.12g Fusible thermique TS 3, compl., pour chargeur 402.12a, 402.12b, 402,12c, 402.12g	787 92 0017	V 1
		Ladeanschlußkabel, vollstg., MN-1539 für Ladegerät 723, 724, 725, 727, 728, 729 Charging connection cable, cpl., MN-1539 for charger 723, 724, 725, 727, 728, 729 Cable de connexion-charge, compl., MN-1539 pour chargeur 723, 724, 725, 727, 728, 729	190 30 0194	R 2
		Ladeanschlußkabel, vollstg. MN-1139 für Ladegerät 402.12a, 402.12b, 402.12c, 402.12g Charging connection cable, cpl., MN-1139 for charger 402.12a, 402.12b, 402.12c, 402.12g Cable de connexion-charge, compl., MN-1139 pour chargeur 402.12a, 402.12b, 402.12c, 402.12g	779 96 1505	T 2
		Linsensenkblechschraube mit Kreuzschlitz DIN 7983 BZ 2,9 x 22, schwarz Cross-recessed raised countersunk head screws Vis cruciforme à tête fraisée bombée	281 23 0035	U1 p. 10 St.
		Schalterrahmen für Ladegerät 402.12a, 402.12b, 402.12g Switch frame for charger 402.12a, 402.12b, 402.12g Cadre de commutateur pour chargeur 402.12a, 402.12b, 402.12g	779 12 0296	A 1
		Schalterrahmen für Ladegerät 402.12c Switch frame for charger 402.12c Cadre de commutateur pour chargeur 402.12c	779 12 0307	A 1
		Ladetrafo UEL für Ladegerät 723, 725, 727 Charging transformer for charger 723, 725, 727 Transformateur de charge pour chargeur 723, 725, 727	441 41 0260	V 2
		Ladetrafo UEL für Ladegerät 724 Charging transformer for charger 724 Transformateur de charge pour chargeur 724	441 41 0279	V 2
		Ladetrafo UEL für Ladegerät 728, 729 Charging transformer for charger 728, 729 Transformateur de charge pour chargeur 728, 729	441 41 0252	V 2
		Rapid-Ladetrafo, vollstg. für Ladegerät 402.12a, 402.12g Rapid-charging transformer, cpl., for charger 402.12a, 402.12g Transformateur de charge rapide, compl., pour chargeur 402.12a, 402.12g	441 41 0053	W 2
		Rapid-Ladetrafo, vollstg., für Ladegerät 402.12b Rapid-charging transformer, cpl., for charger 402.12b Transformateur de charge rapide, compl., pour chargeur 402.12b	441 41 0096	W 2
		Rapid-Ladetrafo, vollstg., für Ladegerät 402.12c Rapid-charging transformer, cpl., for charger 402.12c Transformateur de charge rapide, compl., pour chargeur 402.12c	441 41 0107	W 2

Schaltbild-bezeichnung Circuit designation Repère sur schéma	Position Item Position	Gegenstand Designation Désignation	Bestell-Nr. Order No. No. de commande	Preis-Code Price-code Code de prix

Änderung der Zündschaltung
Modification of the ignition circuitry
Modification du circuit d'allumage

Ab Gerätenummer 25.799 wurde die Zündschaltung modifiziert.
From serial no. 25799 onwards, the ignition circuitry was modified.
Dès le numéro de série 25799, le circuit d'allumage a été modifié.

Folgende Leiterplatten sind nicht als Ersatzteil lieferbar und müssen deshalb durch Bauteilaustausch instandgesetzt werden:
The following PC boards are not available as spare parts and must, therefore, be repaired by replacement of components:
Les cartes à circuits imprimés suivantes ne sont pas disponibles comme pièce de rechange. Au lieu de réparer il faut donc remplacer le composant:

Lichtleistungsleiterplatte/Light output circuit-plate/Plaque à circuit de la puissance lumineuse

Schalterleiterplatte/Switch circuit-plate/Plaque à circuit d'interrupteur

Kontaktleiterplatte/Contact PC board/Carte des contacts

Automatikleiterplatte/Auto system PC board/Carte de l'automatisme

Diese Leiterplatten sind in der Ersatzteilliste mit " * " gekennzeichnet.
These PC boards are marked with an " * " in the spare parts list.
Dans la liste des pièces de rechange, ces cartes sont repérées par le symbole " * ".

Bei mechanischen Defekten dieser Leiterplatten kann die Blitzleuchte komplett ausgetauscht werden.
In case of a mechanical defect of these PCBs, the complete flash unit may be exchanged.
En cas d'un défaut mécanique de ces cartes, l'unité de flash complète peut être remplacée.

Änderung der Blitzröhre und der Schutzscheibe

Achtung:
Aus fertigungstechnischen Gründen werden ab Gerätenummer 44000 Blitzröhren ohne Gelbbelag verwendet. Um den UV-Anteil auszufiltern, werden die Schutzscheiben gelb eingefärbt. Im Reparaturfall muß beachtet werden, daß Blitzröhren mit Gelbbelag nur mit weißer Schutzscheibe sowie Blitzröhren ohne Gelbbelag nur mit gelben Schutzscheiben kombiniert werden dürfen.

Die Ersatzteilnummern entnehmen Sie bitte nachstehender Tabelle:

Blitzröhre I	779 96 0193	→	788 96 0955
Schutzscheibe I	786 96 1444	→	788 99 0114 (besteht aus Schutzscheibe gelb und weiß)
Blitzröhre II (Zweitreflektor)	786 96 1374	→	788 96 0971
Schutzscheibe II (Zweitreflektor)	786 96 1460	→	788 99 0130 (besteht aus Schutzscheibe gelb und weiß und Reflektorblende)

Modification of flash tube and protective pane

Attention:
For reasons of production, flash tubes without yellow coating will be used from serial number 44000 on. Instead, the protective panes will be tinted yellow, to suppress the UV radiation. For future repairs, therefore, care should be taken that flash tubes with yellow coating are only used in combination with white protective panes, whereas flash tubes without yellow coating must be combined with yellow panes.

For the corresponding spare parts numbers, please refer to the below table:

Flash tube I	779 96 0193	→	788 96 0955
Protective pane I	786 96 1444	→	788 99 0114 (consists of a yellow and a white protective pane)
Flash tube II (secondary reflector)	786 96 1374	→	788 96 0971
Protective pane II (secondary reflector)	786 96 1460	→	788 99 0130 (consists of a yellow and a white protective pane, and a reflector mask)

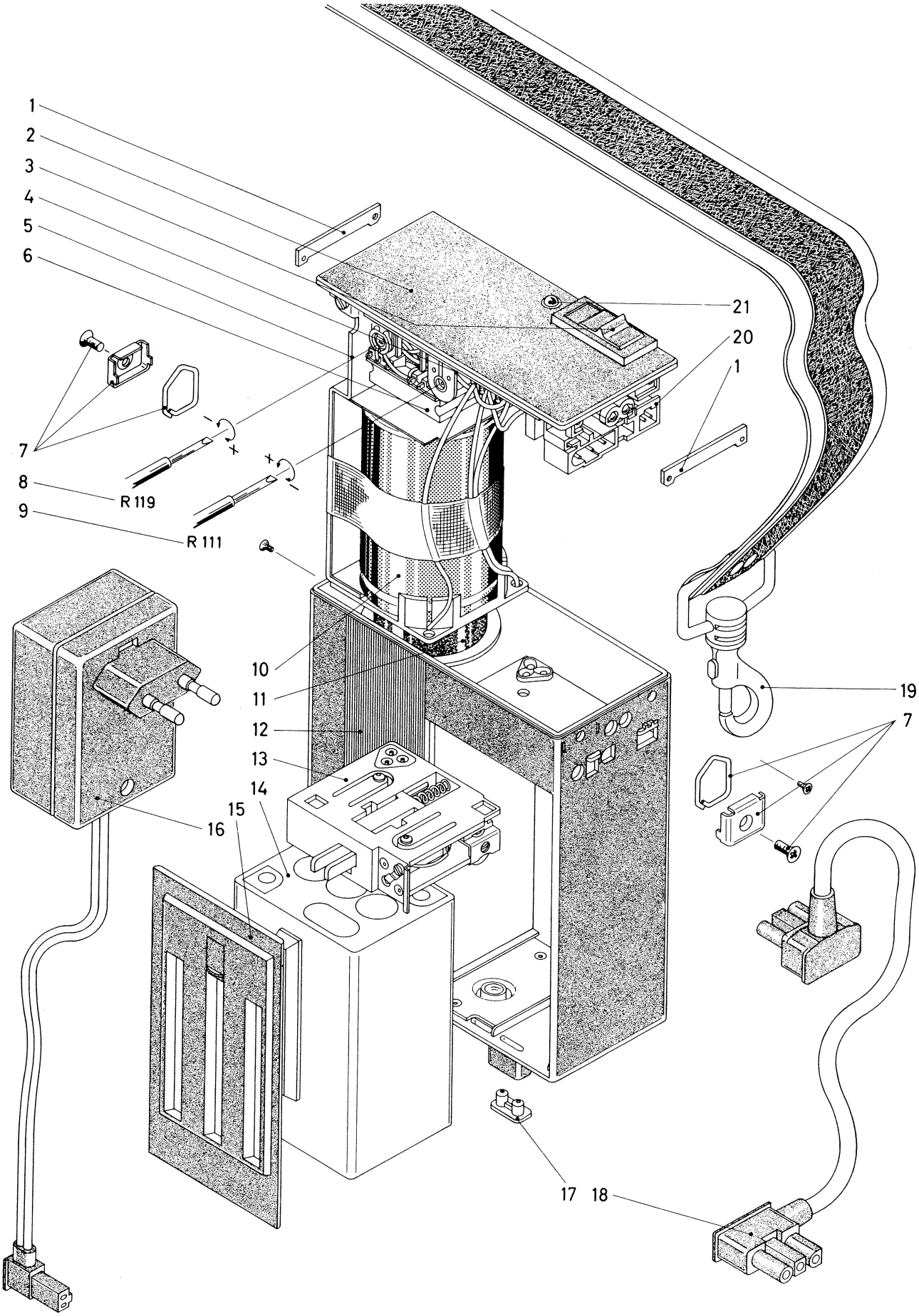
Modification du tube à éclat et de l'écran protecteur

Attention:
Pour des raisons de fabrication, les flashes à partir du n° 44000 seront pourvus de tubes à éclat sans revêtement jaune. Afin d'éliminer les rayons U.V., les écrans protecteurs seront teintés en jaune. En cas d'un réparation, il faudrail donc faire attention à ne combiner dorénavant des tubes à éclat avec revêtement jaune qu'avec des écrans protecteurs blancs et dos tubes à éclat sans revêtement jaune qu'avec des écrans protecteurs jaunes.

Veuillez relever du tableau suivant les réf. des pièces de rechange:

Tube à éclat I	779 96 0193	→	788 96 0955
Écran protecteur I	786 96 1444	→	788 99 0114 (comprenant un écran protecteur jaune et blanc)
Tube à éclat II (réflecteur secondaire)	786 96 1374	→	788 96 0971
Écran protecteur II (réflecteur secondaire)	786 96 1460	→	788 99 0130 (comprenant un écran protecteur jaune et blance et écran réflecteur)

Notizen:
Notes: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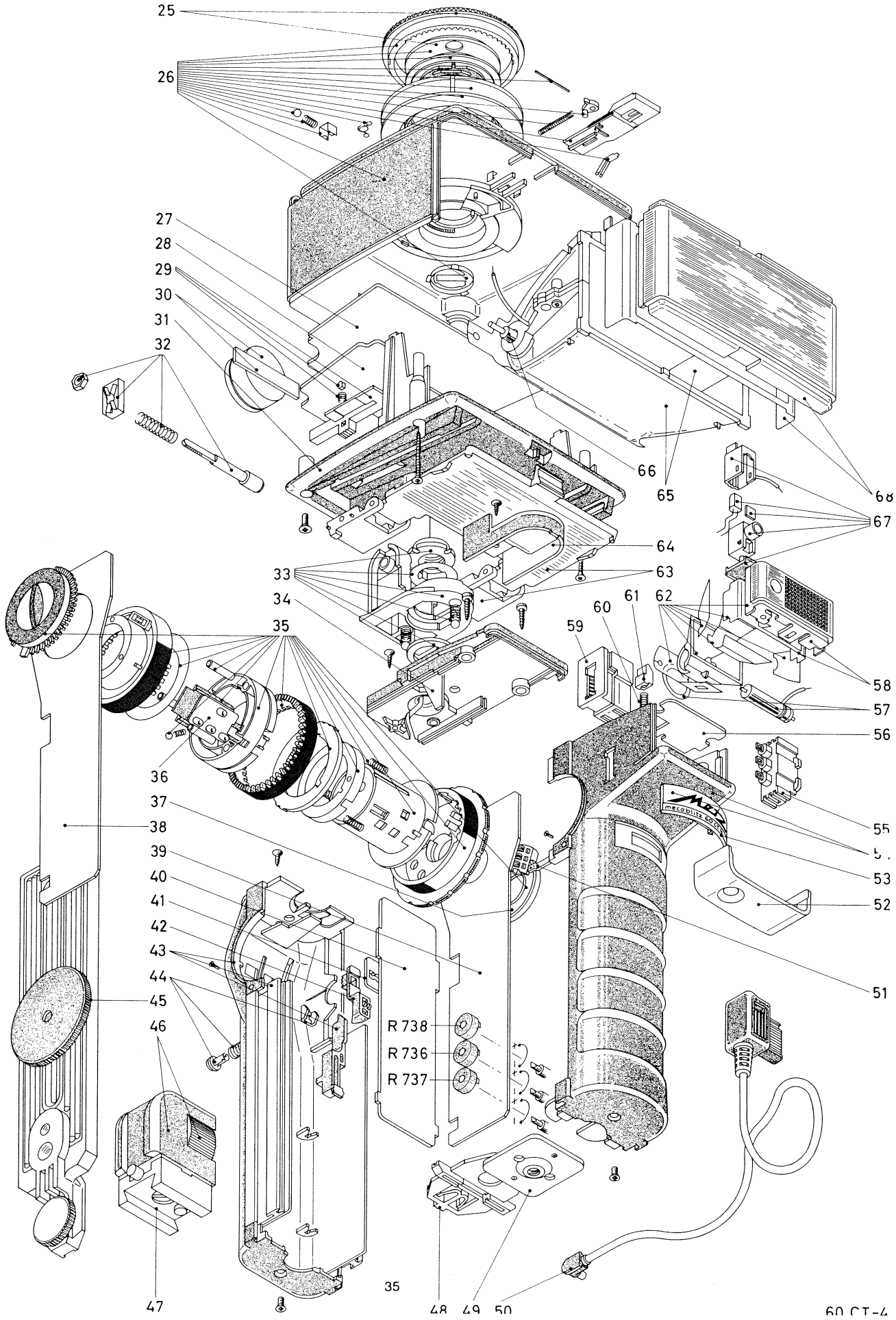
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R 738
R 736
R 737
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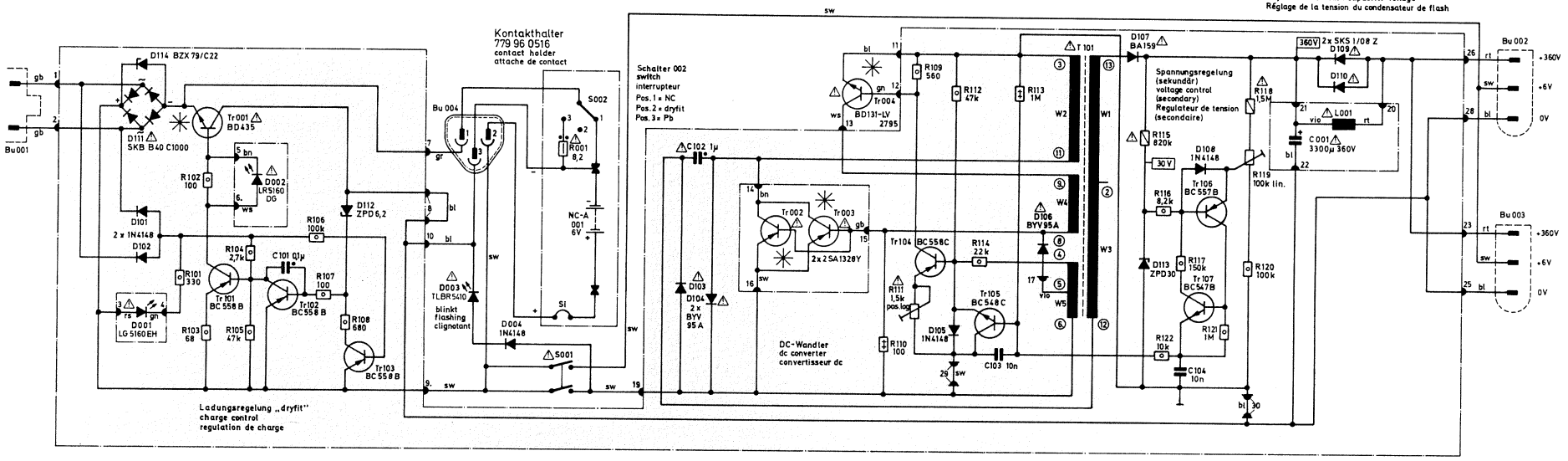
Schaltbildsatz, Leiterbildzeichnungen
Mecablitz 60 CT 4
bis Gerätenummer
25799

Notizen:
Notes:

Generator-Leiterplatte 786 28 0327
circuit plate of generator
plaque de circuit pour generateur



786 46 0109-1/1 786 46 0109-2/1

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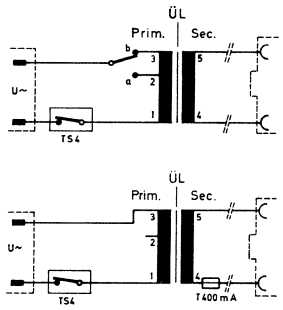
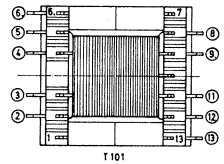
120/220	441 41 0252
120/240	441 41 0260
220/250	441 41 0279
240	441 41 0287



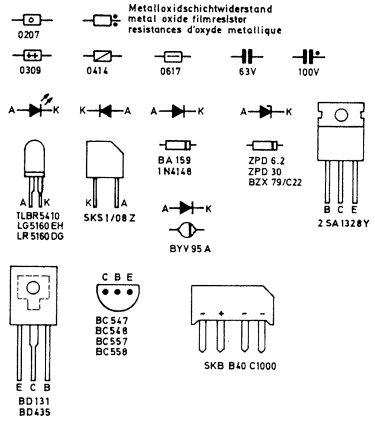
Ladegerät 720...729
charging unit
chargeur



freie Leitung/free line/connexion libre
Leiterplattenanschluß/wiring board
connection/branchement de plaques
de circuit imprimé
gedruckte Leitung/printed line/
connexion imprimé

Halbleiter mit Kühler
semiconductor with heat sink
semi conducteur avec refroidissement

Änderungen vorbehalten! subject to changes! modifications réservées!



Achtung! Bauteil für Sicherheit bzw. Funktion besonders wichtig.
Deshalb nur Original-Metz-Ersatzteil verwenden.
Bauteil-Nr. siehe Ersatzteil-Liste.

Attention! This component is especially important for safety resp. functioning.
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For the ident-number, please refer to the spare parts list.

Attention! Cette pièce est très importante vu la securité resp. le fonctionnement.
C'est pourquoi il faut utiliser seulement les pièces de rechange Metz.
Pour le numéro d'ordre, voir la liste des pièces de rechange.

0V Spannungen gemessen gegen Masse
mit Instrument Ri ≥ 10 MOhm
Voltages measured to chassis using
instrument Ri ≥ 10 MOhm
Les tensions mesurées contre chassis
en utilisant l'instrument Ri ≥ 10 MOhm

bl = blau/blue/bleu
bn = braun/brown/brun
gb = gelb/yellow/jaune
gr = grau/grey/gris
gn = grün/green/vert
or = orange
rs = rosa/pink/rosé
rt = rot/red/rouge
sw = schwarz/black/noir
vio = violett/violet
ws = weiss/white/blank

Schaltbild Generatorteil/circuit diagram generator stage/ 786 46 0109/1 8701
schema de circuit generateur

mecablitz 60 CT4

Lichtleistungs-Leiterplatte 786 28 0230
circuit plate of power ratio
plaque de circuit pour à puissance lumineuse

Kontakt-Leiterplatte 786 28 0152
circuit plate of contact
plaque de circuit pour contact

Automatik-Leiterplatte 786 28 0136
circuit plate of automatic
plaque de circuit pour automatique

Dioden-Leiterplatte 786 28 0144
circuit plate of diodes
plaque de circuit à diodes

Tonwahl-Leiterplatte 786 28 0222
circuit plate of acoustic signal
plaque de circuit pour signal acoustique

Zünd-Leiterplatte 786 28 0160
circuit plate of trigger circuit
plaque de circuit pour d'allumage

Schalter-Leiterplatte 786 28 0179
circuit plate of switches
plaque de circuit pour interrupteur

Bu001

Bu002

S301 S302 S303 S401 S501 S601 S602 S603 S604 S701 S702 S703 S704 S705 S706 S801 S901

Ty301 S6370 · Ty401 S6370 · Ty501 S1210 MH · Ty502 S1210 MH · Ty503 S1210 MH · Ty504 S1210 MH

T301 ZS1052 MZ · T401 ZS1052 MZ

Rö001 · Rö002

Dr501 Wv9165

IC901 TAE 2453A · IC701 U2000BG

D001 SFH 206 K

AG901 SM4A

Tr601 BC858C · Tr602 BC848C · Tr603 BC848C · Tr604 BC 848C · Tr605 BC 328-40 · Tr606 BC 516 · Tr701 BC848CR · Tr702 BC848C · Tr703 BC848C · Tr704 BC858CR · Tr705 BC848C · Tr706 2x BC 848C · Tr707 · Tr801 BC858CR · Tr802 BC848C · Tr803 BC848C · Tr804 BC848CR · Tr901 BC858CR · Tr902 BC848C · Tr903 BC858C · Tr905 BC858CR

D301 2x1N4004 · D401 1N4004 · D501 1N4148 · D502 2x1N4004 · D503 · D504 1N4004 · D505 1N4004 · D601 ZPD 30 · D602 1N4004 · D603 1N4004 · D604 SD103A · D605 LG5160EH · D606 LR5160F (rt) · D607 BAW70 · D608 BA157 · D609 1N4004 · D610 2x BAW70 · D611 · D612 1N4004 · D613 1N4148 · D614 ZPD 24 · D701 BAV99 · D702 BAV99 · D703 BAV99 · D704 BAV99 · D705 ZPD 24 · D706 BAW56 · D707 BAW56 · D708 1N4148 · D801 · D802 · D803 · D804 · D901 BAW70 · D902 BAV99 · D903 BAV99 · D904 BAW70 · D905 BAV 70 · D906 BAV 70 · D907 BAW70 · D908 BAV99

4x CQX 41 NB

Chip 1206 · Chip 1206 · Chip 1808 · Chip 1812 · Chip BAV 70 BAV 99 BAW56 · Chip BC 848 C /CR BC 858 C /CR

0204 · 0207 · 0309 · 2,5W · 4W

Sicherungswiderstand surge resistor resistance de fusible

63V · 250V · 360V · 400V

Massewiderstand carbon resistor resistance au charbon

BA157 S0103A 1N4004 1N4148 · MZD 5,6 ZPD 24 ZPD 30 ZPY 5,6

BC 328-40 BC 516 · S6370 · SFH 206 K · LG5160EH LR5160F · CQX 41 NB · CR3JM-8 S1210 MH · ZS1052 MZ · TAE 2453A U2000 BG

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Attention! This component is especially important for safety resp. functioning. Therefore use only the original Metz spare part. For the ident-number, please refer to the spare parts list.

Attention! Cette pièce est très importante w. la securité resp. le fonctionnement. C'est pourquoi il faut utiliser seulement les pièces de rechange Metz. Pour le numéro d'ordre, voir la liste des pièces de rechange.

GV Spannungen gemessen gegen Masse mit Instrument Ri ≥ 10 MOhm
Voltages measured to chassis using instrument Ri ≥ 10 MOhm
Les tensions mesurées contre chassis en utilisant l'instrument Ri ≥ 10 MOhm

freie Leitung/free line/connexion libre
Leiterplattenanschluß/wiring board connection branchement de plaques de circuit imprimé
gedruckte Leitung/printed line/connexion imprimé

bl = blau/blue/bleu
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or = orange
rs = rosa/pink/rosé
rt = rot/red/rouge
sw = schwarz/black/noir
vio = violett/violet
ws = weiss/white/blanc

SCA-System/Sensor-Buchse
SCA system/sensor socket
systeme sca/douille sensor
(Sicht auf gelötete Seite/view on to soldered side/vue sur côté soude)

786 46 0117-1/1 786 46 0117-2/1

Impulsdiagramme bei Automatikbetrieb (Blitzdauer 0,2 ms)
pulse diagrams with automatic operation (flash duration 0,2 ms)
diagrammes d'impulsion par marche a automatique (durée d'eclair 0,2 ms)

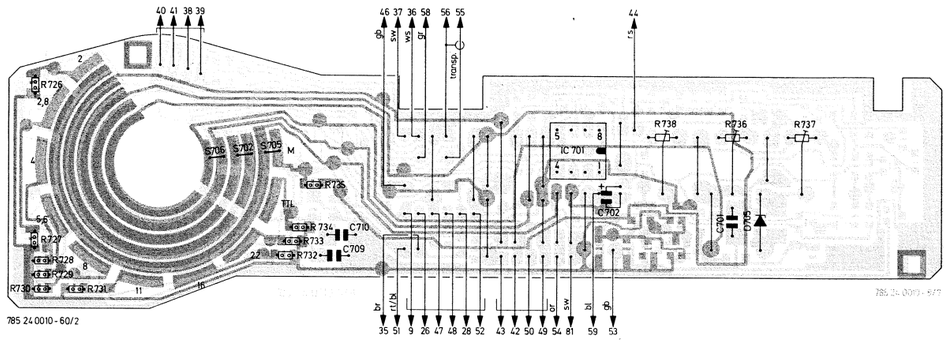
Änderungen vorbehalten! subject to changes! modification réservées!

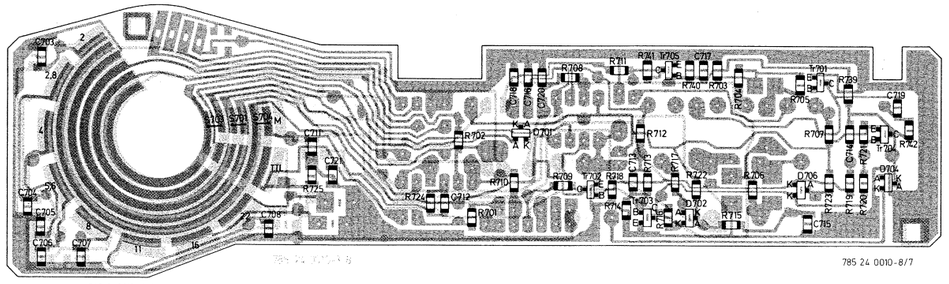
Schaltbild/Leuchtenstab circuit diagram/torch schéma de circuit/torche 786 46 0117/1 8701

mecablitz 60CT4

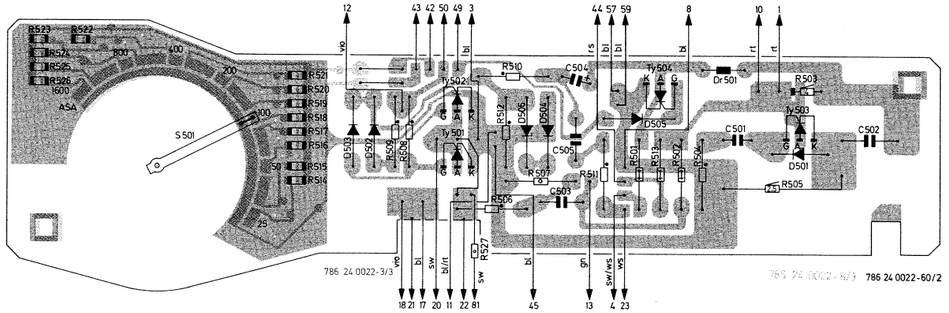
Leiterbildzeichnungen Mecablitz 60 CT 4

Automatik-Leiterplatte
Auto mode PC board / Plaque de circuits pour automatisme

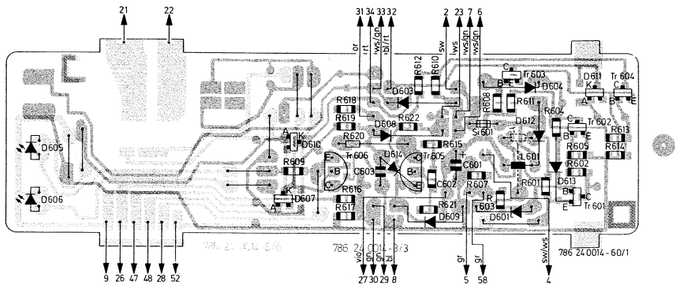




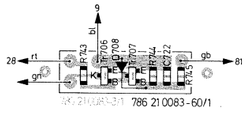
Kontakt-Leiterplatte
Contact PC board / Plaque de circuits pour contacts



Schalter-Leiterplatte
Switch PC board / Plaque de circuits pour interrupteur

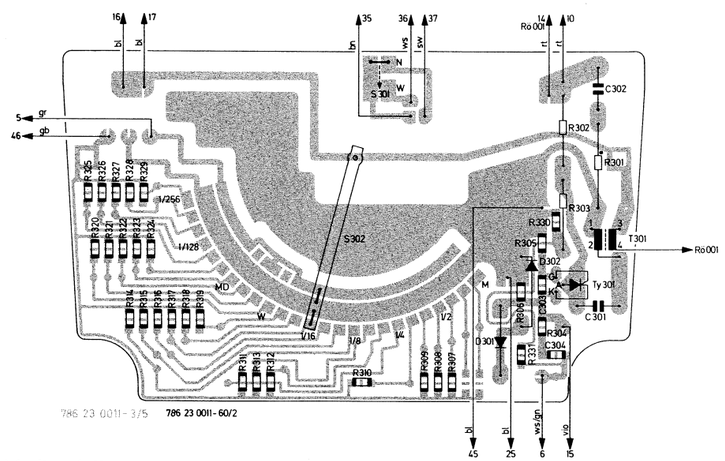


Impulse-Leiterplatte
Pulse PC board / Plaque de circuits pour pulse

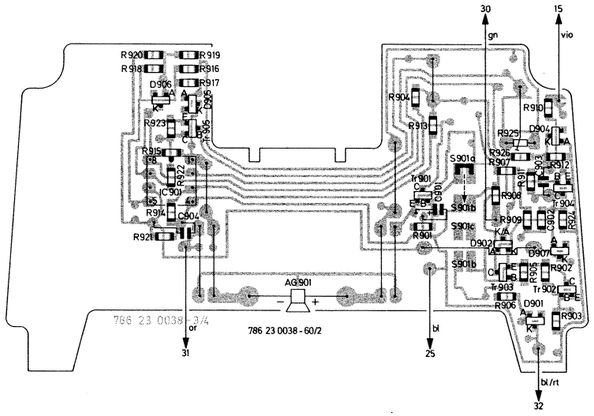


(bis 23880)

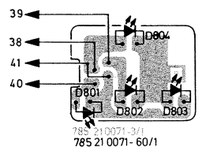
Lichtleistungsleiterplatte
Light output PC board / Plaque de circuits pour puissance lumineuse



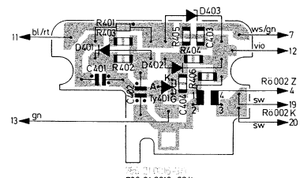
Tonwahl-Leiterplatte
PC-board for selection of acustic signal /
Plaque de circuits pour selection de signal sonore

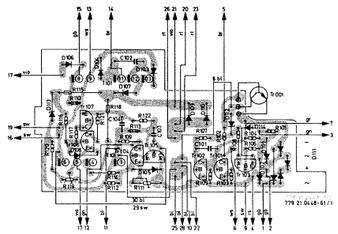


Dioden-Leiterplatte
Diode PC board / Plaque de circuits pour diode



Zünd-Leiterplatte
Ignition PC board / Plaque de circuits pour allumage





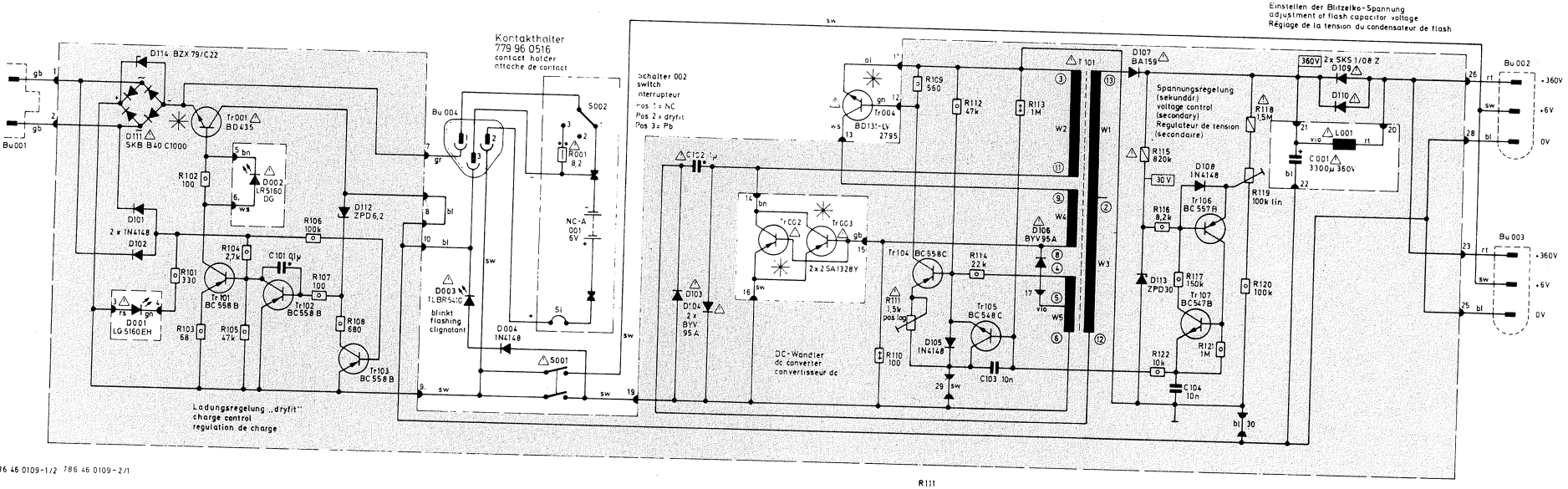
Generator-Leiterplatte
Powerpack PC board / Plaque de circuits pour generateur

Schaltbildsatz, Leiterbildzeichnungen
Mecablitz 60 CT 4
ab Gerätenummer
25800

Notizen:
Notes:

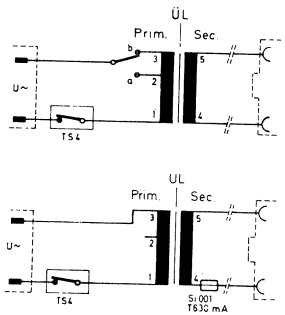
Generator-Leiterplatte 786 28 0327

circuit plate of generator
plaque de circuit pour generateur

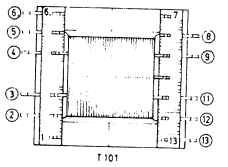


786 46 0109-1/2 786 46 0109-2/1

U~ a (V) b	ÜL
120/220	441 41 0252
120/240	441 41 0260
220/250	441 41 0279
240	441 41 0107



Ladegerät 720 ..729
charging unit
chargeur

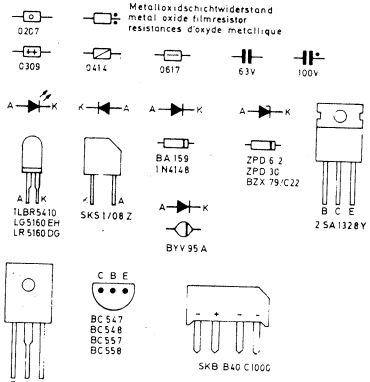


freie Leitung/free line/connexion libre

Leiterplattenanschluß/wiring board connection/branchement de plaques de circuit imprimé

gedruckte Leitung/printed line/connexion imprimé

Halbleiter mit Kühler
semiconductor with heat sink
semi conducteur avec refroidissement



Metalloxidschichtwiderstand
metal oxide filmresistor
resistances d'oxyde metallique

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0V Spannungen gemessen gegen Masse
mit Instrument $R_i \geq 10$ MOhm
Voltages measured to chassis using instrument $R_i \geq 10$ MOhm
Les tensions mesurées contre chassis en utilisant l'instrument $R_i \geq 10$ MOhm

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Änderungen vorbehalten! subject to changes! modifications réservées!

Schaltbild Generatorteil/circuit diagram generator stage/ schema de circuit generateur 786 46 0109/2 8711

mecablitz 60 CT4

Lichtleistungs-Leiterplatte 787 28 0226
circuit plate of power ratio
plaque de circuit pour à puissance lumineuse

Kontakt-Leiterplatte 786 28 0152
circuit plate of contact
plaque de circuit pour contact

Automatik-Leiterplatte 786 28 0136
circuit plate of automatic
plaque de circuit pour automatique

Dioden-Leiterplatte 786 28 0144
circuit plate of diodes
plaque de circuit à diodes
4x CQX 41 NB

Tonwahl-Leiterplatte 786 28 0222
circuit plate of acoustic signal
plaque de circuit pour signal acoustique

Zünd-Leiterplatte 786 28 0160
circuit plate of trigger circuit
plaque de circuit pour d'allumage

Schalter-Leiterplatte 788 28 0218
circuit plate of switches
plaque de circuit pour interrupteur

Chip 1206 · Chip 1206 · Chip 1808 · Chip 1812 · Chip BAV 70 BAV 99 BAW 56 · Chip BC 848 C/CR BC 858 C/CR
0204 · 0207 · 0309 · 2,5W · 4W
Sicherungswiderstand surge resistor resistance de fusible
Massewiderstand carbon resistor resistance au charbon
63V · 250V · 3KGV · 4GGV
BC 328-40 BC 516 · S6370 · BA 157 SO103A 1N4004 1N4148 · MZD 5,6 ZPD 24 ZPD 30 ZPY 5,6
SFH 206 K · CR3JM-8 S1210MH · LG5160EH LR5160F · CQX41 NB
ZS1052 MZ · TAE 2453A U2000 BG

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0V Spannungen gemessen gegen Masse mit Instrument $R_i \geq 10\,MOhm$
Voltages measured to chassis using instrument $R_i \geq 10\,MOhm$
Les tensions mesurées contre chassis en utilisant l'instrument $R_i \geq 10\,MOhm$

freie Leitung/free line/connexion libre
Leiterplattenanschluß/wiring board connection branchement de plaques de circuit imprimé
gedruckte Leitung/printed line/connexion imprimée

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sw = schwarz/black/noir
vio = violett/violet
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SCA-System/Sensor-Buchse
SCA system/sensor socket
systeme sca/douille sensor
(Sicht auf gelötete Seite/view on to soldered side/vue sur côté soude)

Impulsdiagramme bei Automatikbetrieb (Blitzdauer 0,2 ms)
pulse diagrams with automatic operation (flash duration 0,2 ms)
diagrammes d'impulsion par marche a automatique (durée d'eclair 0,2 ms)

Änderungen vorbehalten! subject to changes! modification réservées!

Schaltung von Geräte-Nr. 25800
circuitry from model no. 25800
circuit de modèle No. 25800

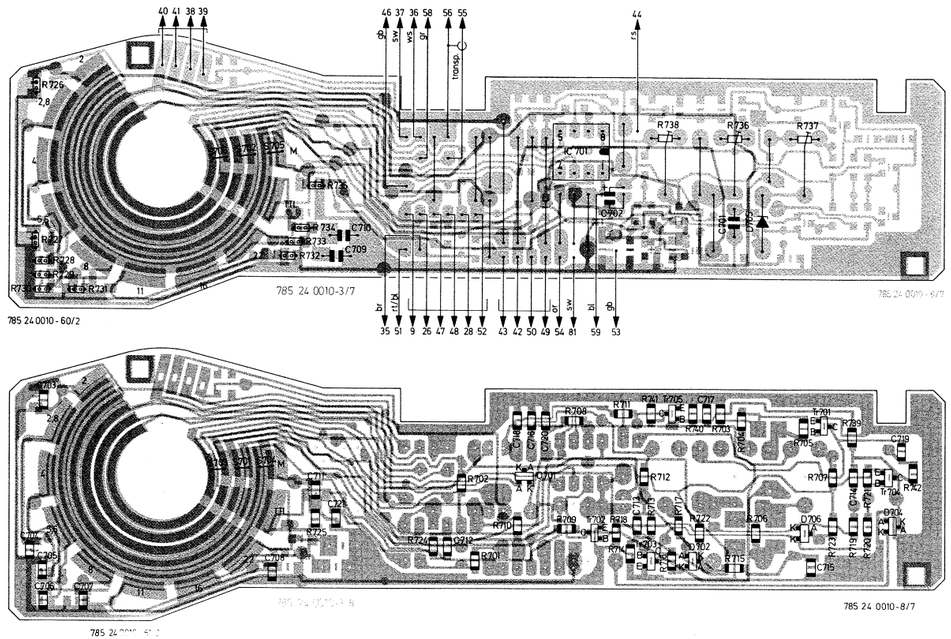
Schaltbild/Leuchtenstab circuit diagram/torch schéma de circuit/torche 786 46 0117/28711

mecablitz 60CT4

Leiterbildzeichnungen Mecablitz 60 CT 4

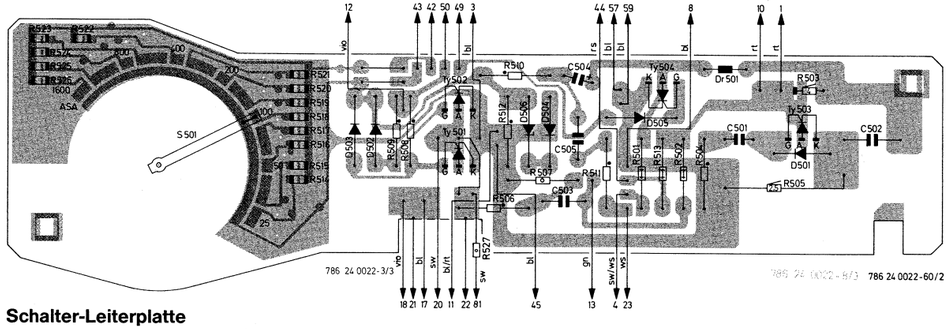
Automatik-Leiterplatte

Auto mode PC board / Plaque de circuits pour automatisme



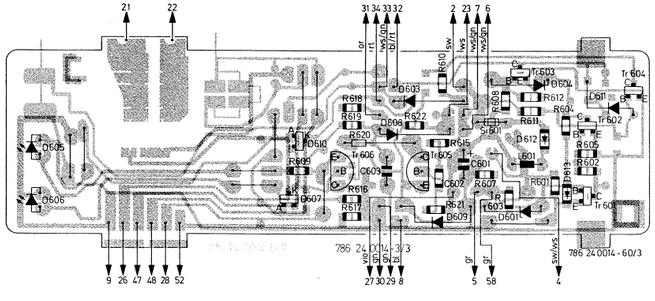
Kontakt-Leiterplatte

Contact PC board / Plaque de circuits pour contacts



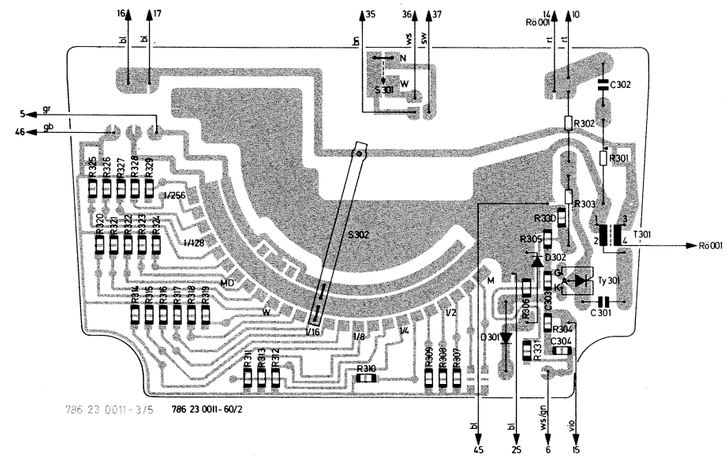
Schalter-Leiterplatte

Switch PC board / Plaque de circuits pour interrupteur



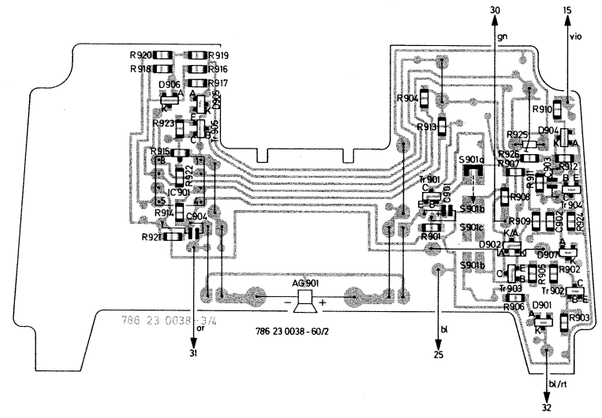
Lichtleistungsleiterplatte

Light output PC board / Plaque de circuits pour puissance lumineuse



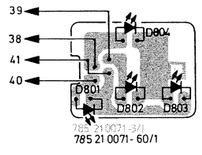
Tonwahl-Leiterplatte

PC-board for selection of acustic signal /
Plaque de circuits pour selection de signal sonore



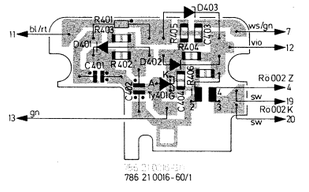
Dioden-Leiterplatte

Diode PC board / Plaque de circuits pour diode



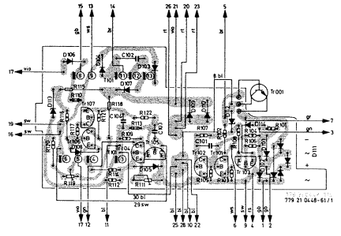
Zünd-Leiterplatte

Ignition PC board / Plaque de circuits pour allumage



Generator-Leiterplatte

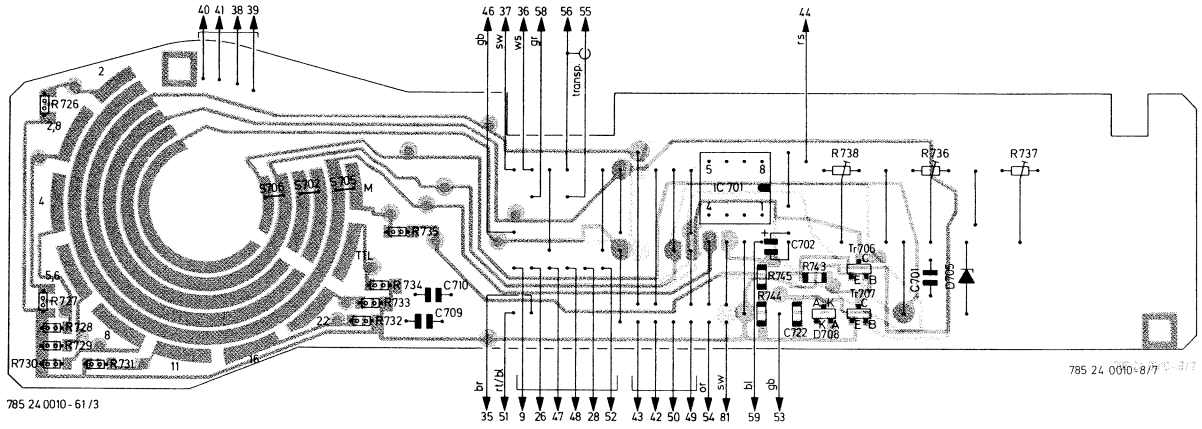
Powerpack PC board / Plaque de circuits pour generateur

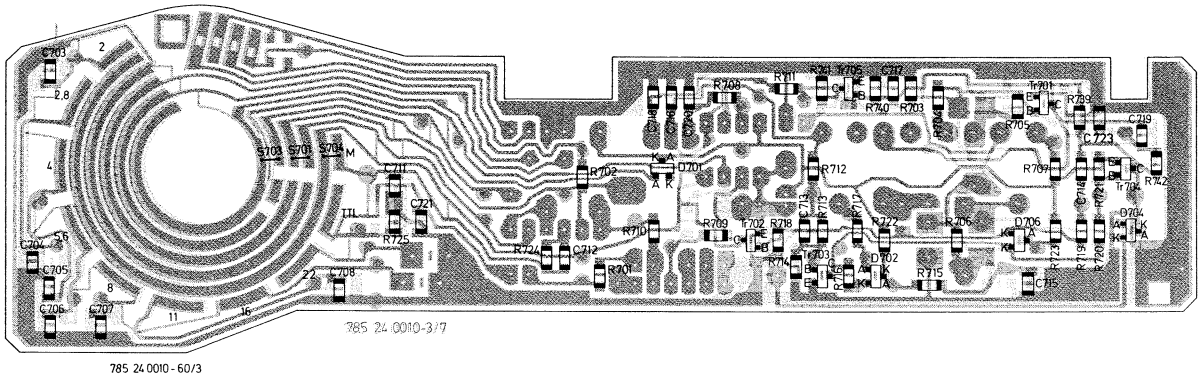


Leiterbildzeichnungen Mecablitz 60 CT 4

Automatik-Leiterplatte

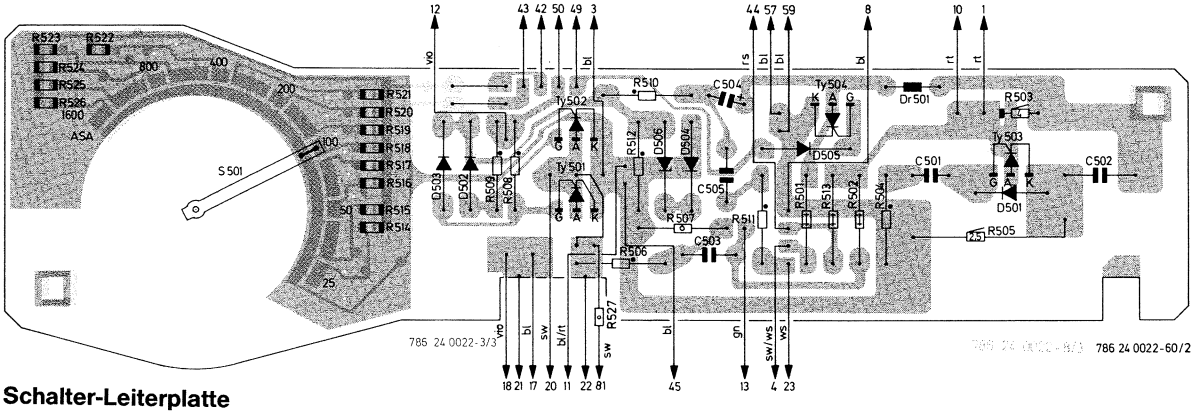
Auto mode PC board / Plaque de circuits pour automatisme





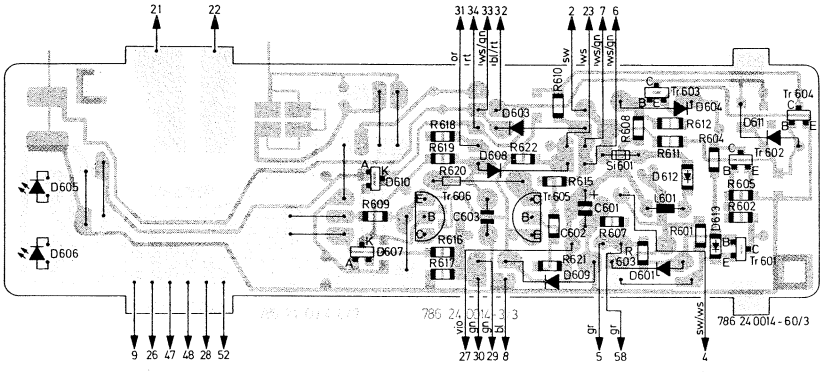
Kontakt-Leiterplatte

Contact PC board / Plaque de circuits pour contacts



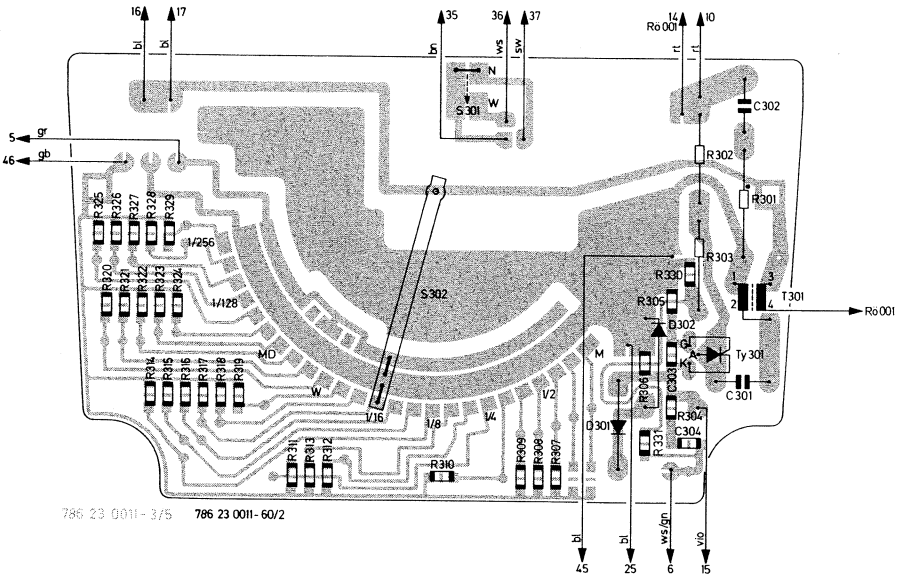
Schalter-Leiterplatte

Switch PC board / Plaque de circuits pour interrupteur



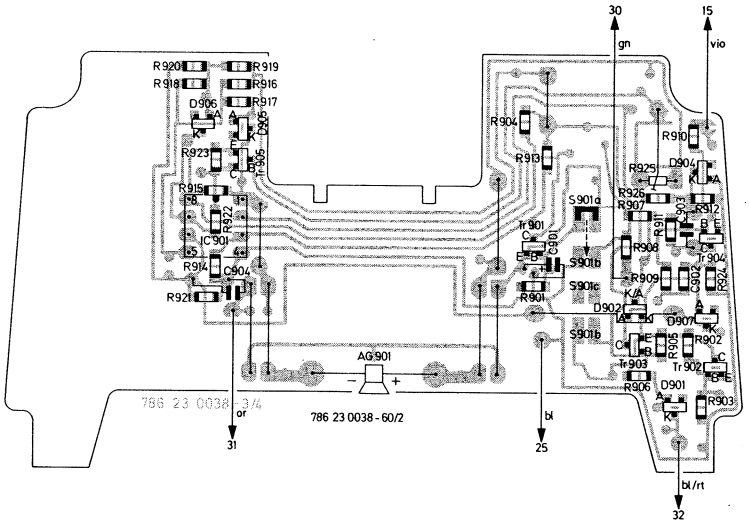
Lichtleistungsleiterplatte

Light output PC board / Plaque de circuits pour puissance lumineuse



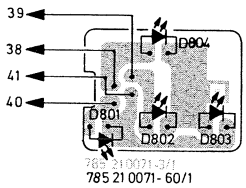
Tonwahl-Leiterplatte

PC-board for selection of acustic signal /
Plaque de circuits pour selection de signal sonore



Dioden-Leiterplatte

Diode PC board / Plaque de circuits pour diode



Zünd-Leiterplatte

Ignition PC board / Plaque de circuits pour allumage