

user manual

BP2,5 CT



Pani

The Company for Stage Lighting and Projection

Version December 2009

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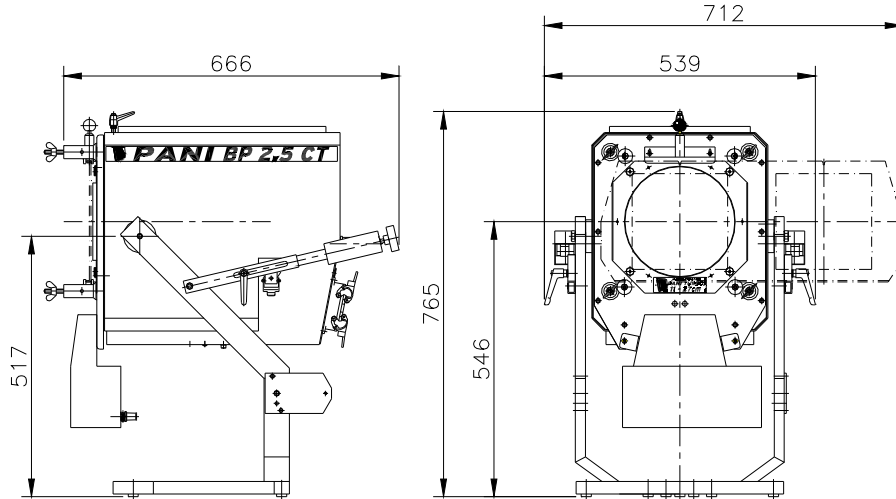
E – mail: light@pani.com

Internet: www.pani.com

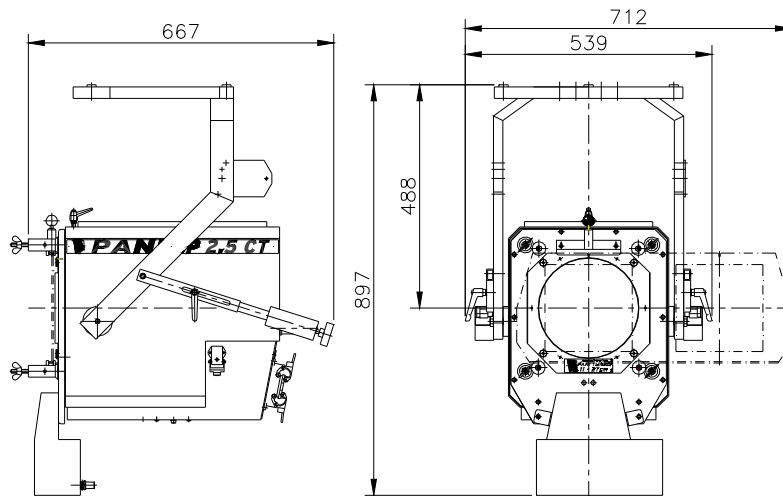
1) Dimension Drawing

1.1) Projector

1.1.1) Mounting Yoke "Standing"

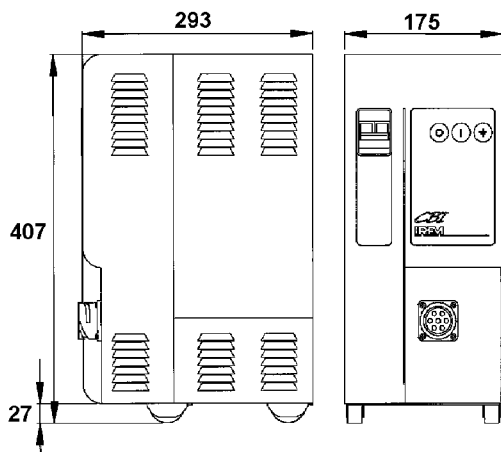


1.1.2) Mounting Yoke "Hanging"

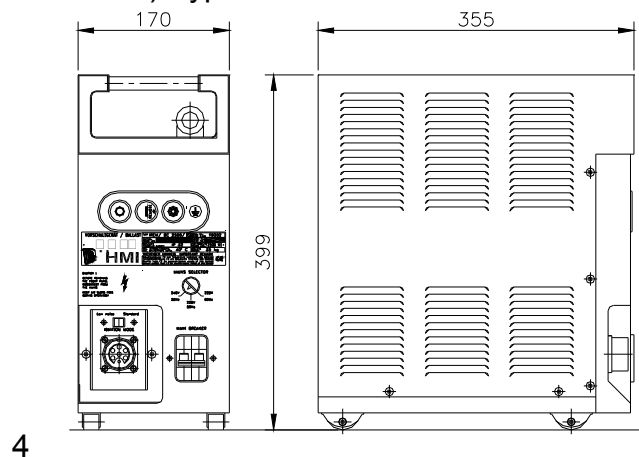


1.2) Ballast

1.2.1) Type CBI

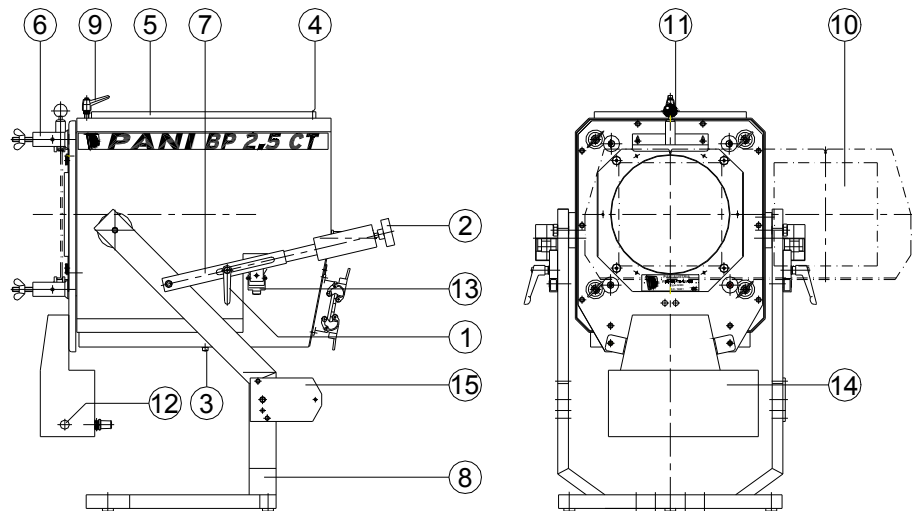


1.2.2) Type BC



2) Position Drawing

2.1) Projector



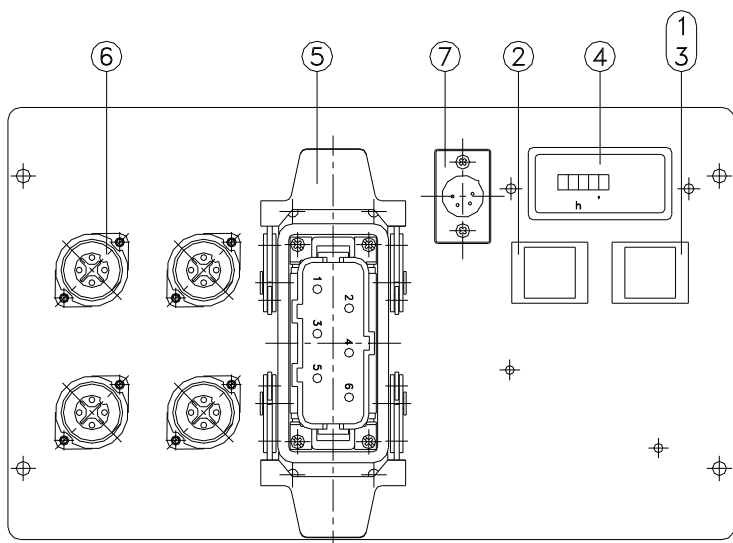
Legend

- (1) Adjustable Clamp Lever for Quick Adjust (On Both Sides)
- (2) Hand Wheel for Fine Adjustment
- (3) Lamp Adjustment
- (4) Fastener for Housing Cover
- (5) Housing Cover
- (6) Objective Support Bolts
- (7) Telescoping Rails
- (8) Support Yoke
- (9) Adjustable Clamp Lever for Front Plate
- (10) Slide Carrier
- (11) Slide Carrier Locking Pin
- (12) Mode Switch "Standard - Low Noise"
- (13) Ventilator Connector
- (14) Ventilator for Slide Cooling
- (15) Mounting Plate for Control Box G405/..

2.2) Control Panel on the Projector

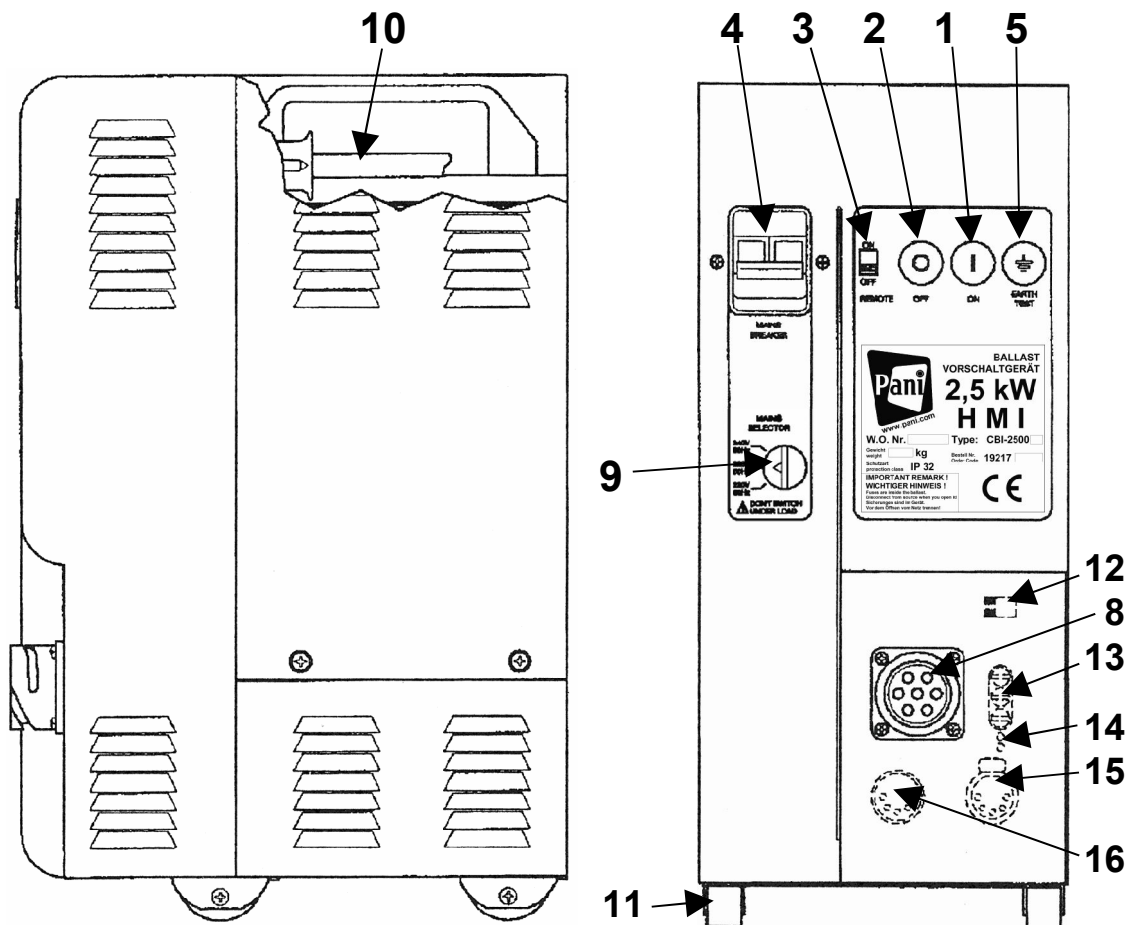
Legend

- (1) Power Indicator
- (2) ON- Push-button
- (3) OFF- Push-button
- (4) Elapsed Hour Counter
- (5) Ballast Connection
- (6) Outlets for auxilliary circuits (230 VAC) Amphenol 4-pole
- (7) Remote Ignition DMX 512



2.3) Ballast

2.3.1) Type CBI (new standard type)



Control Panel on the Ballast:

- (1) **ON- Push-button (green)**
Illuminated when power is connected to the ballast. When the "ON" - Push-button is momentarily pressed, the ignition cycle is activated and high voltage is applied to start the HMI lamp
 - (2) **OFF- Push-button (red)**
Lamp voltage is interrupted. It is recommended that the unit be allowed to cool down a few moments before re-ignition.
- ATTENTION:** *Re-ignition within 10 seconds of shut down is not possible because of circuit reasons!*
- (3) **Remote Switch** (remote ignition)
In switch position ON ignition is operated automatically , when power is applied (with operated main circuit braker 4).
 - (4) **Main Circuit Breaker**
2-pole Magnetic Circuit Breaker
 - (5) **Ground Test Indicator**
When depressed the indicator and correct polarity and grounding the orange indicating lamp glows orange.
 - (8) **Connector** for connecting ballast cable

(9) Voltage and Frequency Selector

With this turn-switch, operating voltage and frequency may be chosen:
240V/ 50 Hz 220V/ 50Hz and 220V/ 60Hz. (Ballast versions –A and –J have only frequency selector by a slide switch)

(10) Main Connection Cable

3x 2,5 mm², 2m long with Schuko- Connector

(11) Shock Absorber

4 rubber feet for vibration isolation

Optional Operating Elements (DMX-Control) :**(12) DMX ON/OFF Switch**

Activates the DMX – operation mode.

(13) turn-switches for DMX – address code

Defines the address for DMX – operation: from top to bottom:

unit position

decade position

hundreds position

(14) LED – indicators:

top indicator green: Operation OK

bottom indicator red: Fault

(15) DMX - OUT

DMX – output

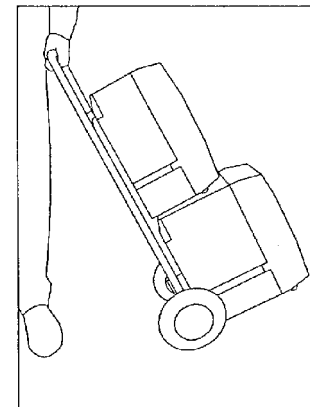
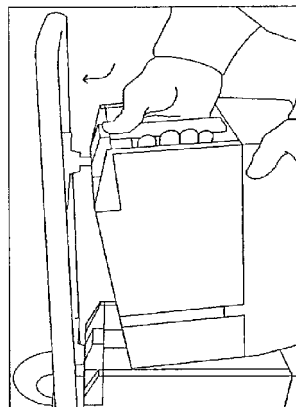
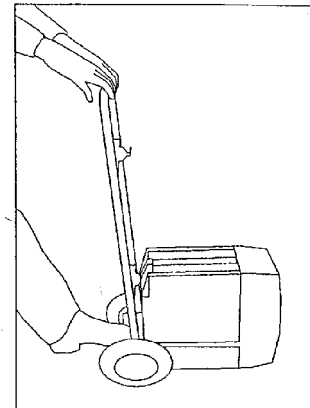
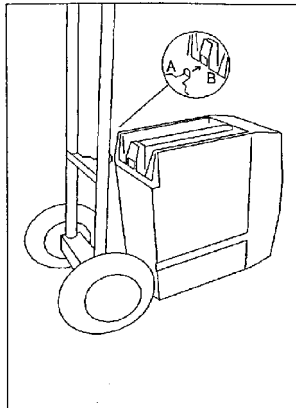
(16) DMX - IN

DMX – Input

Nonstandard accessory for CBI-ballasts on demand:**Trolley**

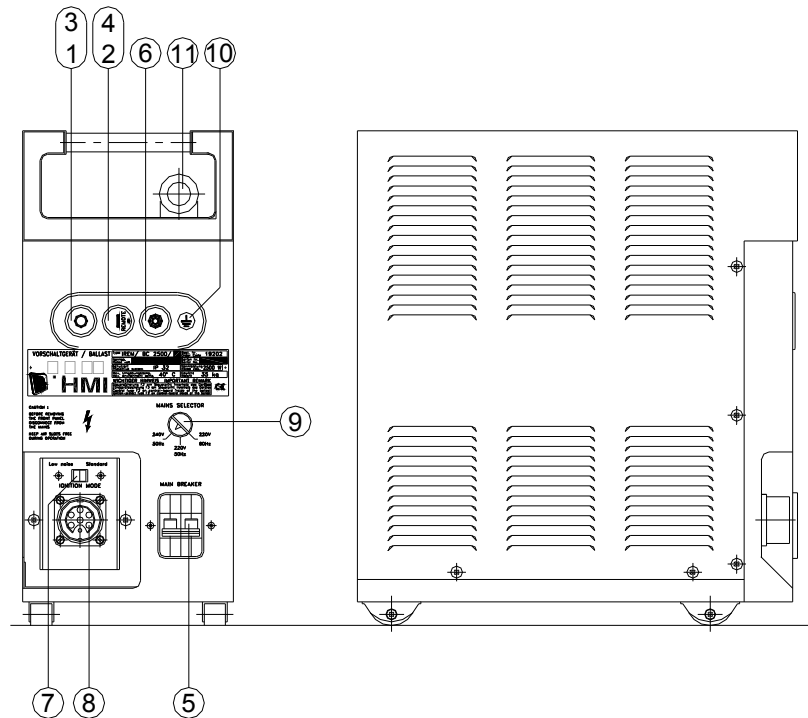
(available in 2 versions, for transport of 2 or 4 ballasts together)

Hanging on the hooks and stacking the ballasts enables a fast, easy and stable kind of transport albeit over longer distances.



2.3.1) Type BC

(phased out model)

Control Panel on the Ballast**(1) Power indicator lamp**

Illuminated when power is connected to the ballast

(2) ON- Push-button (green)

When the "ON" - Push-button is momentarily pressed, the ignition cycle is activated and high voltage is applied to start the HMI lamp

(3) OFF- Push-button (red)

Lamp voltage is interrupted. It is recommended that the unit be allowed to cool down a few moments before re-ignition

ATTENTION: Re-ignition within 10 seconds of shut down is not possible.**(4) Remote Switch (remote ignition)**

When the switch is rotated 90° clockwise (remote mode) ignition is automatic, when power is applied

(5) Main Circuit Breaker

2-pole Magnetic Circuit Breaker

(6) Ground Test Indicator

When depressed the indicator glows yellow indicating correct polarity and grounding.

(7) Low- Noise Switch

In Low-Noise mode, silent ignition of the lamp is possible

(8) Connector for connecting ballast cable**(9) Voltage and Frequency Selector**

With the Main Selector switch, operating voltage and frequency may be chosen - 240V/ 50 Hz 220V/ 50Hz and 220V/ 60Hz. (only ballast BC2500-EP, frequency selector only for the other ballast versions)

(10) Ground Indicator Lamp

see No. 6.)

(11) Main Connection Cable3x 2,5 mm², 2m long with Schuko- Connector.

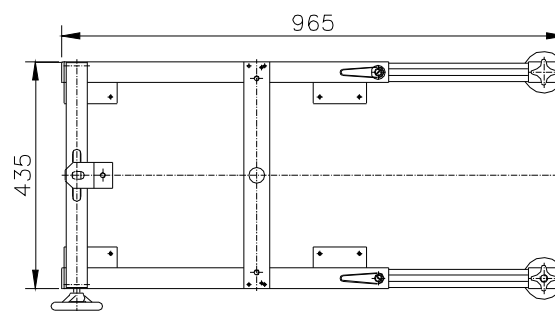
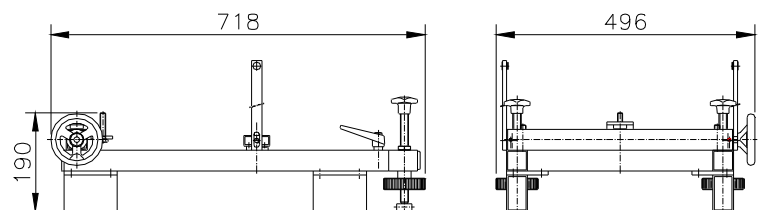
3) Mounting Accessories

For standing and hanging projector installations, the following options are available.

3.1) Undercarriage for Projectors of the "Compact"-Series

Horizontal fine adjustment ($\pm 6^\circ$) and telescoping rails provide additional flexibility and forward stabilization of the projector with the application of this accessory

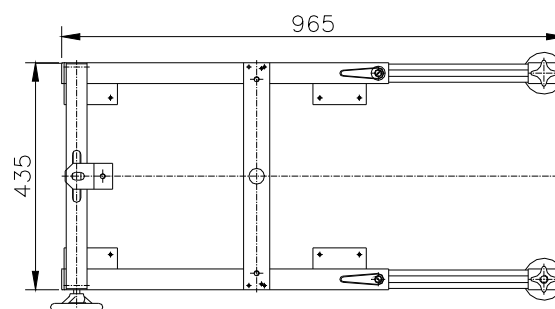
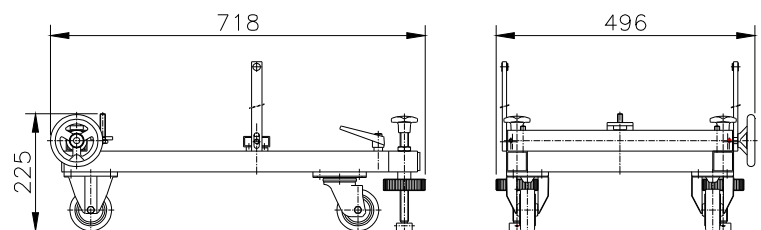
Order Code: 12036



3.2) Rolling Undercarriage for Projectors of the "Compact"-Series

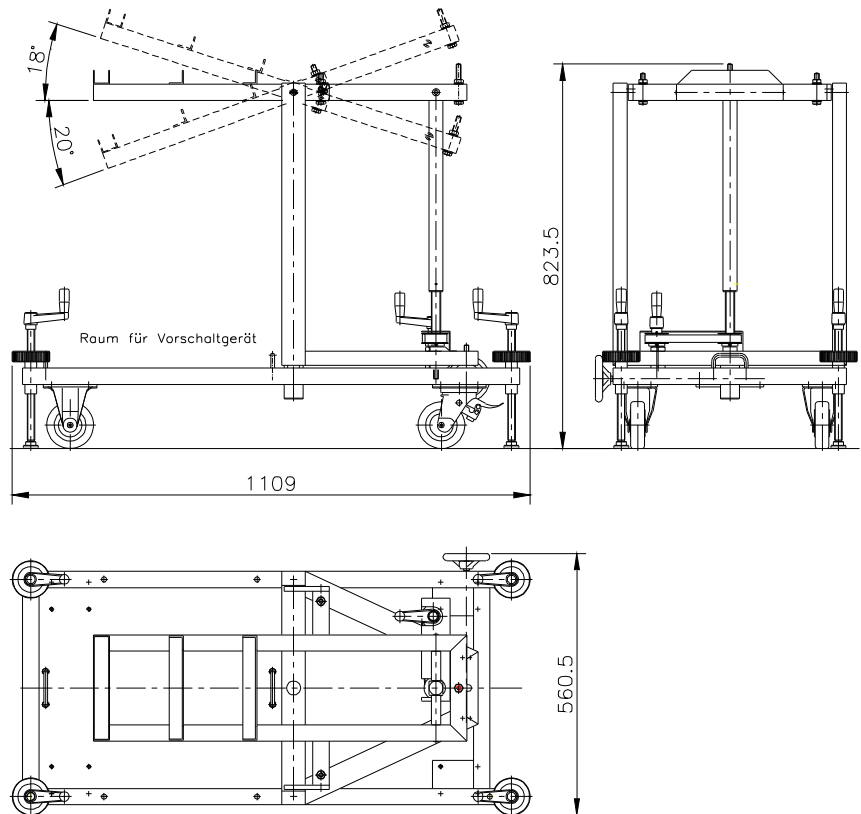
Horizontal fine adjustment ($\pm 6^\circ$) and telescoping rails provide additional flexibility and forward stabilization of the projector with the application of this accessory

Order Code: 12001



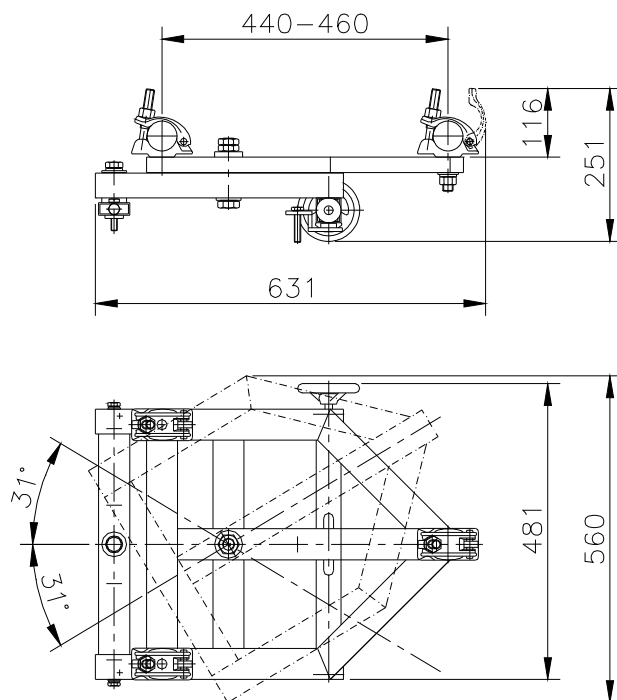
3.3) Projector Cart for Projectors of the "Compact"-Series

Rolling cart, with horizontal ($\pm 6^\circ$) and associated vertical ($+18^\circ -20^\circ$) adjustment for projectors and accessories (i.e. ZOOM - Objective).
Order Code: 12037



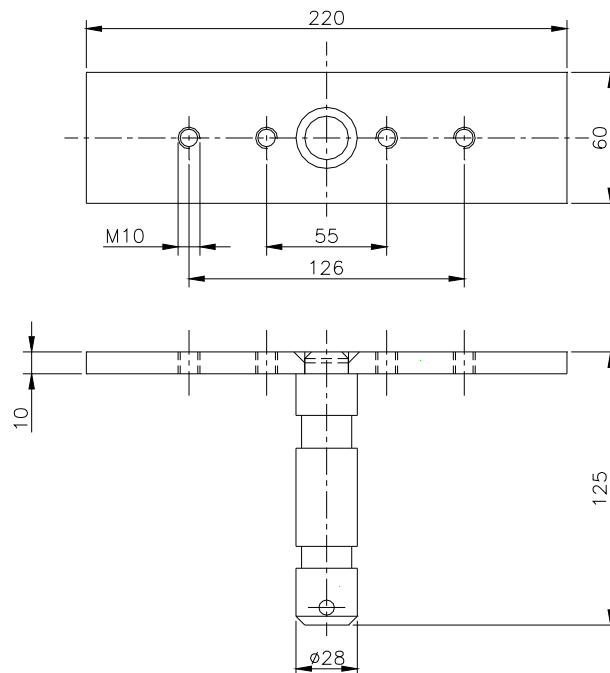
3.4) Hanging Apparatus for Projectors of the "Compact"-Series

With horizontal positioning ($\pm 31^\circ$) and associated fine adjustment ($\pm 6^\circ$), for mounting on 2 pipes $\varnothing 48\text{mm}$.
Order Code: 12038



3.5) 28mm DIN- Stud with Welded Mounting Plate

Order Code: 12039



4.1) Mechanical Construction of the Projector

The light sheet metal housing with double wall heat isolation system is mounted in a stable support yoke (8). Fine adjustment (2) is accomplished by means of adjustable telescoping rails on either side (7). The image plane with slide carrier can be rotated $\pm 90^\circ$ by loosening the clamping lever (9) on the upper part of the housing. The 18x18 cm diapositives individually can be exactly adjusted with the aid of adjustment screws. The slide carrier is held in exact position by means of a spring loaded locking pin (11). By lifting the ball knob (11), the slide may be freely moved into the new position where it locks into position automatically.

4.2) Electrical Assembly of the Projector

The complete electrical section is located in the black finished lower housing area; It is mounted to the green main housing with 4 screws.

4.3) Slide Carrier and Slide Cooling Fan

The slide cooling fan has two mounting configurations (It is mounted with 2 captured hex head screws- No. 4 hex wrench included):

The upper position, closest to the slide, provides optimum cooling, the slide carrier can however be rotated only $\pm 6^\circ$.

When choosing the lower position, the slide carrier can be rotated $\pm 90^\circ$.

ATTENTION: Slide cooling with the fan in the lower position is less efficient!

POSITION NUMBERS SEE PAGE 4

4.3.1) Electrical Connection of the Slide Cooling Fan

The electrical connection of the slide cooling fan is accomplished with a 5- pole connector, so that the fan housing can be removed from the projector both mechanically and electrically. 2 contacts in this connector are wire in such a way that when the connector is not plugged in the projector is shut down.

4.3.2) Mode Switch "Standard - Low Noise"

A "Standard - Low Noise" Mode switch is located on the slide cooling fan housing (12) (operated with a small screwdriver). **ATTENTION:** Use "Low- Noise" Mode only when silent operation is necessary, as cooling efficiency is reduced. Do not project dark slides or slides with large dark regions in this case.

5) Operating Tips

5.1) HMI- Lamp

5.1.1) Lamp Installation and Replacement of the HMI- Lamp

For operation of the Projector a single ended HMI- Lamp 2500 W is required. Order Code: 37202

- a) Disconnect the projector from the power source!
- b) Open the quick fastener (4) on the housing with a screw driver. Lift off the housing cover (5) and set it aside. A built in safety switch prevents an accidental operation of the unit when the housing is open.
- c) Lift out the reflector plate and reflector after removing the wing screw at the other end of the distance bar.
- d) Insert and / or replace the lamp.
- e) Replace the reflector into the slot of the bottom distance rods and tighten wing screw.
- f) Close the housing and lock the quick fastener.

ATTENTION: Do not touch the quartz envelope of the lamp with your fingers during installation. Finger prints can be burned in !

5.1.2) Lamp Adjustment

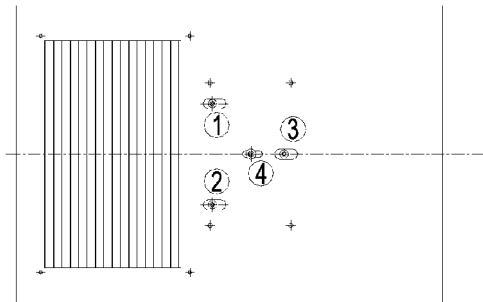
Three (3) adjustment screws are located on der underside of the Projector for adjustment of the lamp.

Each projector is carefully adjusted at the factory (lamp base, reflector and condenser). With the high precision manufacturing of halogen lamps, adjustment of the lamp is rarely necessary. The HMI-lamp is supported at three points and can be brought into the desired position from the outside on the lower part of the projector with a three point adjustment. Proper adjustment of the lamp renders correct light distribution and color reproduction and prevents improper imaging.

POSITION NUMBERS SEE PAGE 4

Following steps must be observed for adjustment of the lamp in this sequence:

- 1) With the aid of adjustment screws (1) and (2) the height of the lamp is moved in relation to the optical axis.
- 2) With the projector switched on, examine the light distribution. Adjust screws (1) and (2) accordingly.
- 3) Color shift: If the lamp is too far from the mirror, a blue color shift will appear; if too close, a yellow shift will occur. Turn screw (3) until this effect disappears.



Adjustment screw (1) (2) (3)
Hexagonal key Nr. 4

Screw (4) is adjusted at the factory
DON'T TWIST!

5.2) Vertical Adjustment of the Projector

a) Rough Positioning: For rough positioning, loosen the clamping lever on (1) both sides and move the projector to the desired position. Re-tighten the lever.

b) Fine Adjustment: For fine adjustment of the projektor turn the star grip (2) and bring the projector into the exact position.

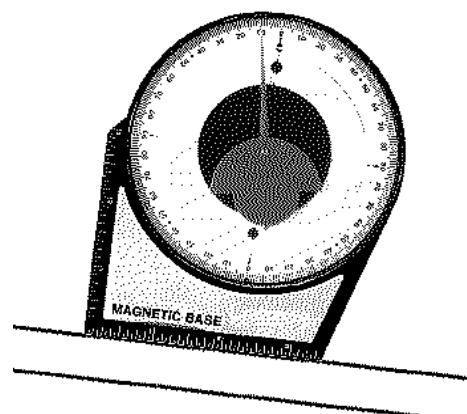
5.3) Yoke Assembly: „Standing“ or „Hanging“ Configuration

Separate the support yoke (8) (2 M 10 Nuts) and the telescope rails (7) on both sides from the projector; Turn the support yoke around 180° such that it is mounted again as a hanging yoke. Re-connect the telescoping rails.

5.4) Using the Tilt Angle Meter

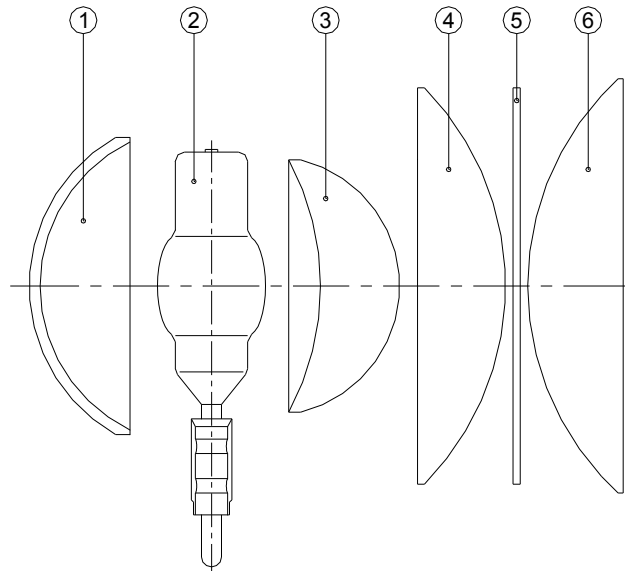
For safe operation it is necessary to respect the tilt range of the projector (see General Technical Data on page 18).

Use the delivered Tilt Angle Meter by applying it on the top edge of the projector (before operation). The red locator indicates the actual tilt angle.



POSITION NUMBERS SEEPAGE 4

6) Position Drawing Condenser System



Legend

- (1) HPAL Mirror 89/160
- (2) HMI- Lamp 2500 W single ended
- (3) Meniscus Lens Ø 140 mm
Middle Condenser Lens PC Ø 220 mm/ R 157
- (5) PANI – Universal Filter
- (6) Front Condenser Lens for Objective 11- 27 cm,
PC Ø 230 mm, multicoated, with Mounting Plate
- Front Condenser Lens for Objective 33- 40 cm,
PC Ø 230 mm, multicoated, with Mounting Plate
- Front Condenser Lens for Objective 50- 60cm,
PC Ø 230 mm, multicoated, with Mounting Plate
- Front Condenser Lens for Objective 80 -125 cm,
PC Ø 230 mm, multicoated, with Mounting Plate

Type:	Order Code:
H 1253	100-15-70
	37202
	222- 03- 02 (4)
	Ø 220 x 4
	12440
	12441
	12442
	12443

7) Electrical Connection

(See Electrical Schematic 222 – 15 - 35)

The Stage Projector BP 2,5 CT is used in conjunction with the ballast BC 2500 W, 220/240V - 50Hz, Current 16 A (Order Code: D 1525). The ballast incorporates a choke which limits lamp power to 25,6 A. Main power is interrupted when the projector housing is opened.

7.1) Main Connection

BC 2500 W, 220/240V - 50Hz

Main Power Cable 3x2,5 square millimeters, two meters long with Schuko connector (black). Phase R: brown, Neutral N: blue, Ground: yellow/green
Connected to power source 220VAC/50Hz. 16 A

7.2) Connecting Cable Ballast - Projector

Between the ballast and projector is a 3x4 square mm + 4x1 square mm in a single cable. The standard length is 3 meters. This can be extended but must be tested if extremely long runs are required. The connection is made with connector bodies at both the ballast and projector end of the cable. The "ON" and the "OFF" function can be performed at either the ballast or the projector. Thus, it is possible to locate the ballast away from the projector.

7.3) Remote Ignition - DMX 512

For ignition and shut down of the projector by a DMX 512 signal, a relay card and associated DMX In connector are located on the projector (Ignition Pos. 7). In addition the optional Universal DMX 512 interface and the corresponding ignition cable are necessary (for further information see the instruction manual of the Universal DMX 512 Interface).

8) Objective Lenses

8.1) Front Condenser Lens

In the BP 2.5 CT, there are 4 different front condenser lenses to choose from, depending on the focal length objective lens required. These are as follows:

PC Diameter 230 mm, multicoated

for Objective Lens $f = 11; 13,5; 18; 22$ and 27 cm, Best. Nr.: 12440

PC Diameter 230 mm, multicoated

for Objective Lens $f = 33$ and 40 cm, Best. Nr.: 12441

PC Diameter 230 mm, multicoated

for Objective Lens $f = 50$ and 60 cm Best. Nr.: 12442

PC Diameter 230 mm, multicoated

for Objective Lens $f = 80$ cm and 125 cm Best. Nr.: 12443

8.2) Projection Objective Lenses

Optional projection objective lenses (focal lengths from $f=11$ to 80 cm) and one ZOOM projections objective lens $25 - 60$ cm are mounted on the four support bolts on the front of the projector. Each lens is fixed in place by four wing nuts. The focal length (f) depends upon the projection distance and desired picture size. This is illustrated further with the aid of the projection diagram. Focus is achieved by sliding the objective lens forward or back along the optical axis. The focus position is fixed in place by two milled nuts located on either side of each objective lens.

8.3) Effect- and Varioobjective Lenses

To enhance the system of projection objective lenses, effects and vario-objective lenses are available. Effects Lenses (focal lengths of $f=80/100$ mm, 150 mm, 180 mm, 250 mm and 310 mm) provide a strong light output with good color correction, and may be used where an increase in depth or specific distortions are desired.

With the aid of the vario-objective lenses [focal lengths of $f=20-40$ cm (motorized) and $f=30-60$ cm manual it is possible to enlarge or reduce image size. With the the $f=20 - 40$ cm / motorized it is possible to change the image size at different speeds.

IMPORTANT REMARKS

WHEN USING WIDE ANGLE LENSES (11-18cm):

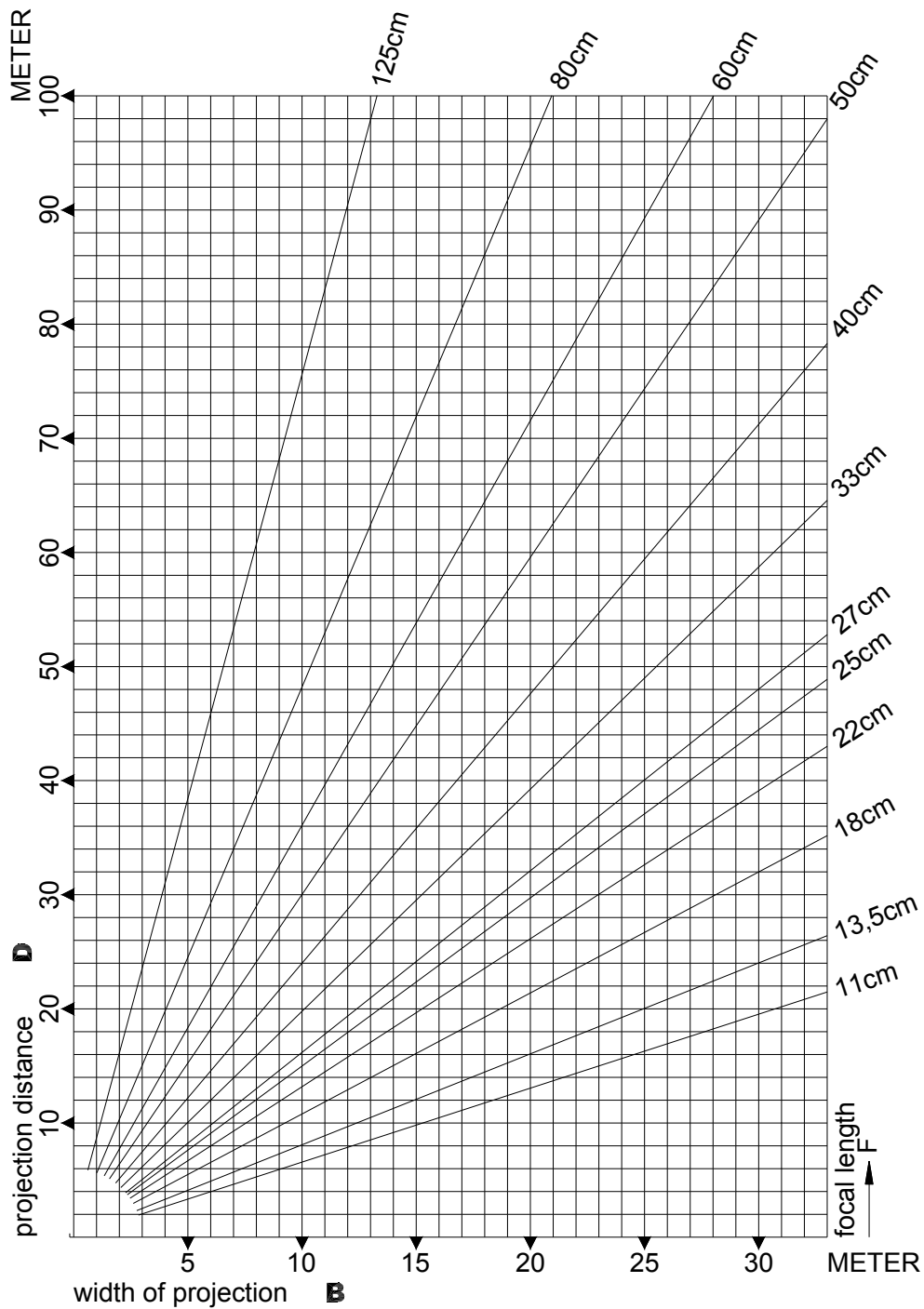
The projector must **never** be operated without a slide, with dimming shutters closed for longer than one minute!

COMMON SAFETY REMARK:

***NEVER USE THE PROJECTOR WITHOUT ANY OBJECTIVE LENS,
BECAUSE OF SAFETY REASONS !!!***

9) Projection Diagram

for O= 17cm



calculating formulas

$F = \frac{O \times D}{B + O}$	$B = O \times \left(\frac{D}{F} - 1 \right)$	$D = F \times \left(\frac{B}{O} + 1 \right)$	$O = \frac{B \times F}{D - F}$
--------------------------------	---	---	--------------------------------

F ... focal length of projection lens

B ... width of the image

D ... projection distance (measured from the middle of the objective lens)

O ... object size (i.e. the used slide format)

used slide format (O)=

17cm for glass slides

15,5cm for filmholder

10) Slide (Transparency) Material

Because of the ever changing available film materials, we do not wish to suggest any specific type. Our best recommendation however comes from our own experience with film type Duraclear (from Kodak) and type Ilfochrome (from Ilford). We can suggest that only professional photo labs who will care for your work be used. Not only for which development process is used but also the quality.

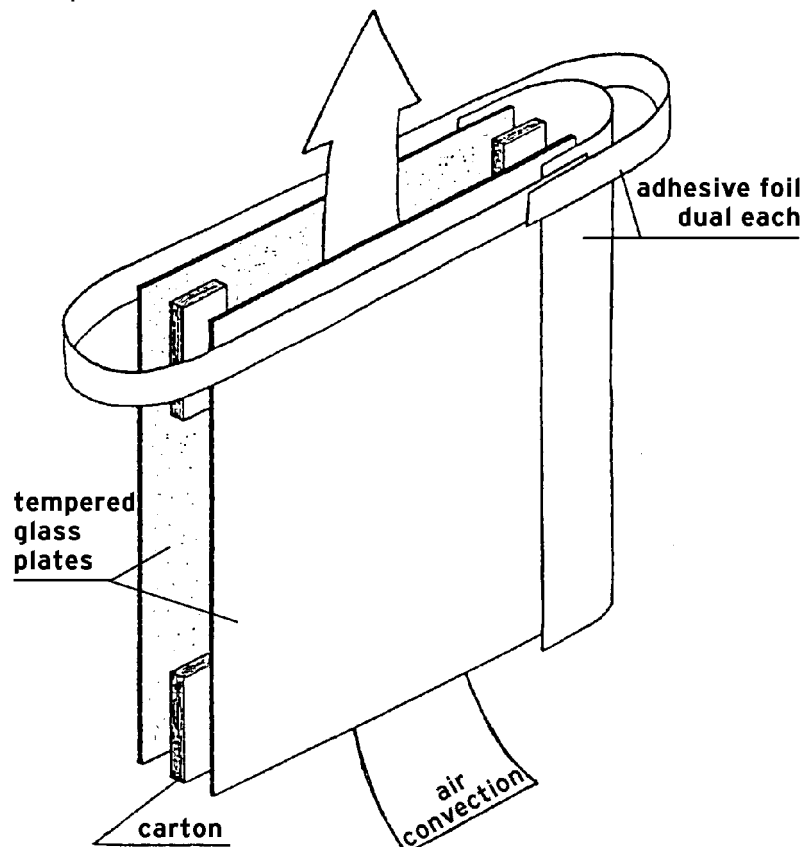
Since short times also budget-priced ink jet printed foils are used to make slides.

Please inform yourself about actuals on our homepage (www.pani.com). In the download area you'll find the latest information.

Photographic transparencies should not be mounted between glass. The heat build-up will be such that the slides will be destroyed. Necessary cooling of photographic transparencies can only be guaranteed when using Special Slide Frames (Order code: 12802 for 18 x 18 cm).

For simple and fast mounting in these frames we recommend the use of the Special Slide Punching Machine (Order code: 12801 for 18 x 18 cm slides).

With hand painted slides, two glass plates are required such that the hand painted side is protected by a cover glass. An air gap of 1 mm is achieved by placing 4 cardboard strips between the plates at the corners. The assembly is held together with two strips of tape as shown below.

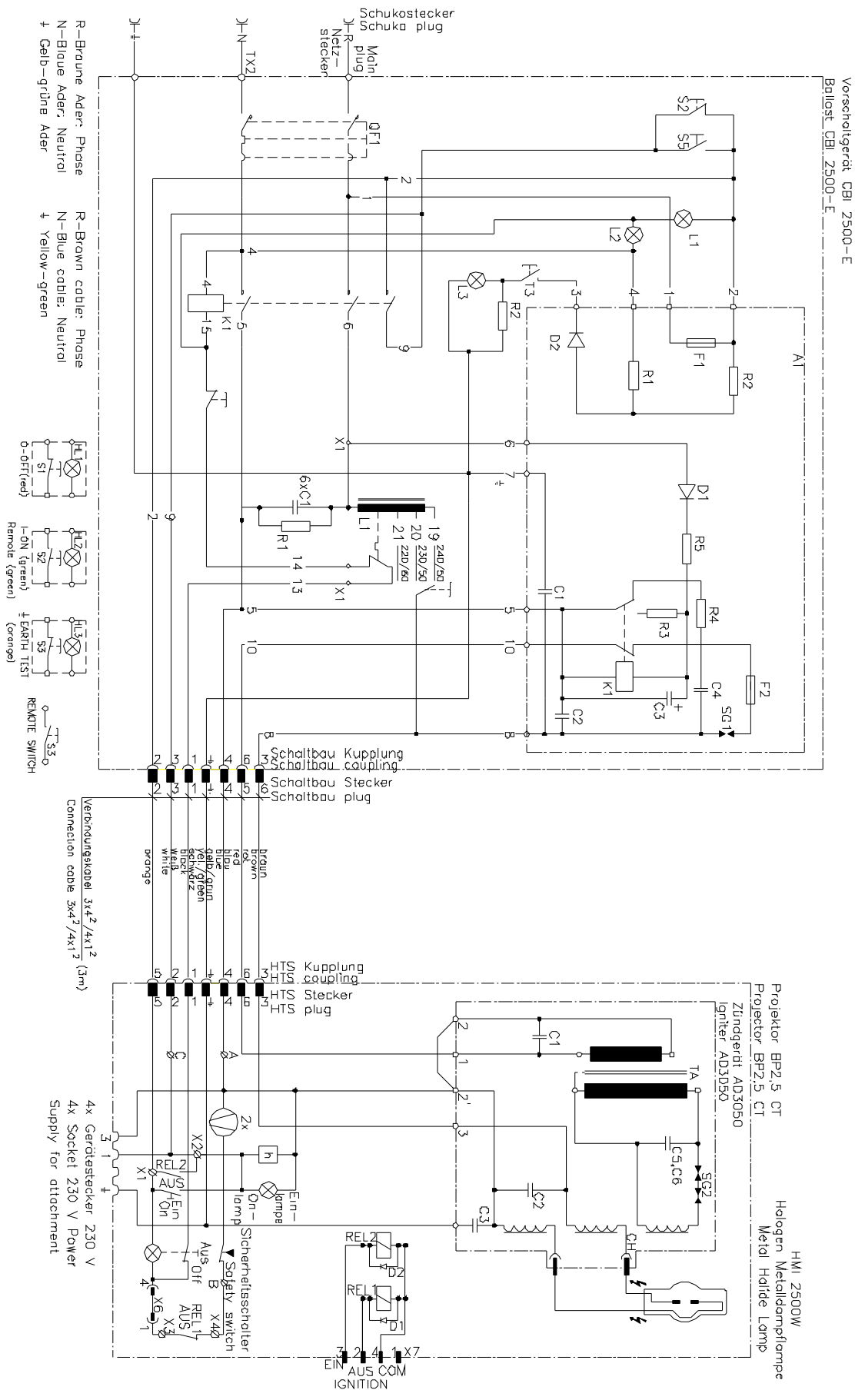


General remark:

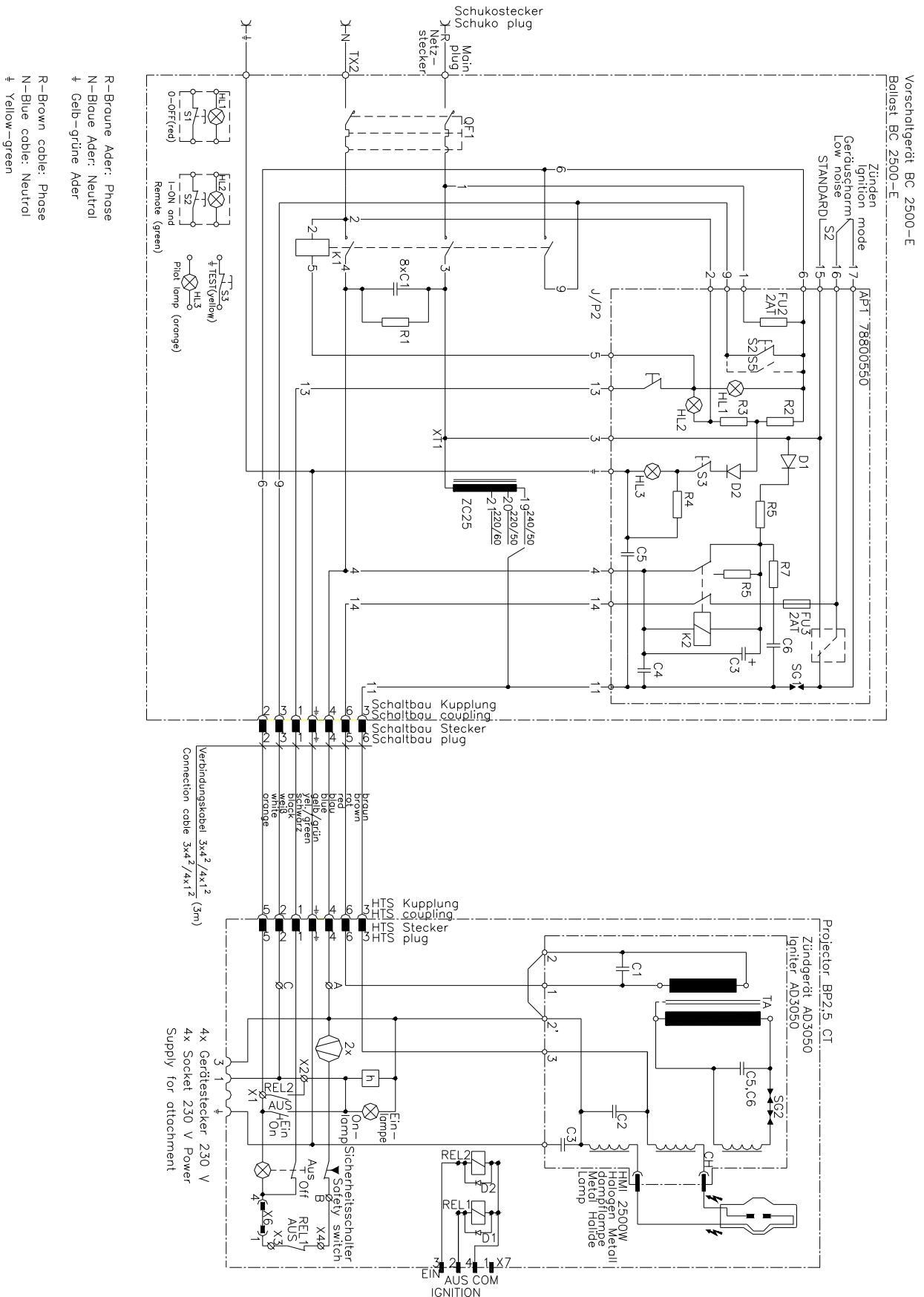
If possible, insert the slide with the layer averted from the projector to protect the layer!

11) Electrical Schematic

BP 2,5 CT and ballast CBI 2500-E: Drawing No.: 222-15-36



BP 2,5 CT and ballast BC 2500 - E
Drawing No.: 222 – 15 – 35



12) Basic Unit as Delivered

1 HMI- STAGE PROJECTOR 2,5 kW CT

The Projector is supplied with a universal mounting yoke for hanging and standing configurations, includes 28 mm Stud with Mounting Plate.

1 Ballast 2500 W, 220/ 240 V- 50 Hz,

with 2 m mainconnection cable 3x 2,5 mm with Schuko connector, Type: D 1525

3 m Connecting Cable between Ballast and Projector,

Type: H 525

1 Front Condenser Lens (as desired) for 11-27cm, 33-40cm, 50-60cm or 80-125cm

1 Slide Carrier for 2 Projection slides 18x 18 cm

1 Test slide with Raster on tempered glass 18x 18 cm

Order Code: 12805

1 Adjustable slide mask

Order Code: 12019

1 HMI- Lamp 2500 W/ 220 V

single ended G 38

Order Code: 37202

1 No. 4 Hex Wrench for Lamp Adjustment

1 screened sketch block

Type: G 1583

1 "Dark" - Slide (for protection of dimming shutter)

Type: G 1581

1 Tilt Angle Meter

1 User Manual

1 Pani "Effects" Brochure

13) Accessories

Description	Type:	Order Code:
Interchangeable Front Condenser Lens for Objective f = 11 cm to 27 cm, multicoated, Diameter 230 mm		12440
Interchangeable Front Condenser Lens for Objective f= 33 cm and 40 cm, multicoated, Diameter 230 mm		12441
Interchangeable Front Condenser Lens for Objective f= 50 cm and 60 cm, multicoated, Diameter 230 mm		12442
Interchangeable Front Condenser Lens for Objective f= 80 cm and 125cm, multicoated, Diameter 230 mm		12443
HMI- Lamp 2500 W, single ended G 38	H 1253	37202
Dimming Shutter/ PCS III		
with processor control for Gray Scale Glass		
20.5x 22 cm,incl. control box 120/ 220 V-50/60 Hz,		
external control 0 to +/-10 VDC and 120/ 220 VAC		
Dimmer output voltage, Dampening for smoothing of		
8 bit control voltage steps, selectable light linearity.		
incl. guide rails for use with objective lenses f= 11-27 cm	G 405/PCS	22704
Interchangeable guide rails 1 pair for use with objective Lenses f= 11-27 cm	G 405/ 27	12011
Interchangeable guide rails 1 pair for use with lens f= 33-40 cm, 80 cm, 125 cm and ZOOM 25-60cm	G 405/ 40	12012
Interchangeable guide rails 1pair for use with objective lenses f= 50 cm and Vario-lens f= 20-40 cm	G 405/ 50	12013
Interchangeable guide rails 1 pair for use with objective lenses f= 60 cm and Vario-lens f= 30-60 cm	G 405/ 60	12014

Description	Type:	Order Code:
Quick frames 18x18cm for film slides 12812		
Tool kit for Quick frames		12811
Tempered glass plate 18x 18 cm	G 502	12803
Test slide with raster on Tempered glass 18x 18 cm	G 506	12805
Test Slide with Raster on Film, with Frame	G 509	
Automatic Slide Changer- 32/ Random Access	AMD-32	12511
Undercarriage for Projectors of the "Compact"-Series		12036
Rolling Undercarriage for Projectors of the "Compact"-Series		12001
Projector Cart for Projectors of the "Compact"-Series		12037
Hanger for Projectors of the "Compact"-Series		12038
28mm DIN-Stud with welded Mounting Plate		12039
High Performance- Objective Lens f= 11 cm/ 1: 1,8	G 903 /II	12413
High Performance- Objective Lens f= 13,5 cm/ 1: 1,8	G 904/ II	12414
High Performance- Objective Lens f= 18 cm/ 1: 2,4	G 918/ II	12415
Projection Objective Lens f= 22 cm/ 1: 2,8	G 907	12417
Projection Objective Lens f= 27 cm/ 1: 3	G 908	12418
Projection Objective Lens f= 33 cm/ 1: 3,6	G 909	12419
Projection Objective Lens f= 40 cm/ 1: 3,6	G 910/ II	12420
Projection Objective Lens f= 50 cm/ 1: 3,8	G 911/ II	12421
Projection Objective Lens f= 60 cm/ 1: 3,8	G 912	12422
Projection Objective Lens f= 80 cm/ 1: 4,5	G 913	12423
Projection Objective Lens f= 125 cm/ 1: 7,6	G 914	12424
ZOOM- Objective Lens 25- 60 cm/ 1: 2,7- 3,9 Without Motor Drive		12433
Effect Objective Lens f= 85/ 100 mm	G 951	12426
Effect Objective Lens f= 110 mm, Weitwinkel	G 952	12427
Effect Objective Lens f= 150 mm	G 953	12428
Effect Objective Lens f= 180 mm	G 954	12429
Effect Objective Lens f= 250 mm	G 957	12430
Effect Objective Lens f= 310 mm	G 958	12431
Effect Vario- Objective Lens f= 20- 40 cm- with motor drive 230 V, includes control box	G 915	12432
Effect Vario- Objective lens f= 30-60 cm-manual	G 916	12425

A wide range of effects devices can be seen in our "Effects" brochure

14) General Technical Data

Projector:

Tilt Angle Range of Projector:

floor mounted: 22°up, 45°down
hanging: 28°up, 39°down

Protection Class: IP 20

Max. Operating Temp. 35°C

<u>Weight:</u>	<u>Unpacked</u>	<u>Packed</u>
Projector	49 kg	73,5 kg
Carton Dimensions:	80x70x90cm = 0,62m ³	

Ballast (CBI)	28,5 kg	39,6 kg
Carton Dimensions:	50x30x48cm = 0,72m ³	

Ballast:

Supply Voltage: 220/ 240 V- 50 Hz
220 V- 60 Hz
Current / Circuit Breaker 15 A / 16 A

Lamp:

Wattage 2500 W
Rated Life 500 hrs.
Color Temperature 6000 K
Light Output 240 000 lm
Lamp Voltage 115 V
Lamp Current 25,6 A
Lamp Base G 38
Ignition Voltage 50 kV

15) Spare Parts

BP 2,5 CT

Main Assy. No.: 222- 15

Description	Order Code:	Qty./Unit
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Housing Main Assy. No.: 222- 01-

Ball	65- 01- 18	3
Springs for Lamp Adjustment	65- 01- 19	2

Electro-mechanical Parts Main Assy. No.: 222- 02-

Tangential Blower	QLZ 06/1800- A18- 2513- 16	1
Axial Blower	Type 840. 110	2
Annex Housing HB. 16. AG- VS	42. 50. 16. 000	1
Pin Insert HSB 6/35 Sti. s	HT 42. 10. 06. 62	1
Elapsed Hour Counter	A 1900 00005 A0 220V 50Hz	1
Igniter	AD 3050/B	1
Cable for Igniter l=280 mm; l=460 mm	Type 26 931 1x 4 ²	ea 1x
ON- Push-button (green)	1111 PF- B5 220V N/KV	1
OFF- Push-button (red)	1105 PN- B5 220V N/KR	1
Connector	31. 11. 000	1

Description	Order Code:	Qty./Unit
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Optical Materials

Main Assy. No.: 222- 03-

Plano Convex Lens for Objective	11- 27 cm	Ø 230/ 300 SLC	1
Plano Convex Lens for Objective	33- 40 cm	Ø 230/ 360 SLC	1
Plano Convex Lens for Objective	50- 60 cm	Ø 230/ 390 SLC	1
Plano Convex Lens for Objective	80-125 cm	Ø 230/ 500 SLC	1
Plano Convex Lens (middlelens)		Ø 220/ 300 SLC(2)	1
Meniscus Lens	Ø 147mm	222 - 03 - 05	1
PANI – universal filter	Ø220	1	
HPAL Mirror 89/160		100 - 15 - 70	1

Mechanical Material

Main Assy. No.: 222- 04-

Hand Wheel DIN 950		Al 80 B12A black anodized	1
Plastic Clamping Lever		GN 500 42 M6 sw	1
Adjustable Clamping Lever		GN 300 63 M8 12 sw	2
Wing Nut		M 8; DIN 315	4
Safety Switch complete		68- 36-	1

Undercarriage

Main Assy. No.: 222- 07-

Pull Out		222- 07- 03/a	2
Support Bracket		222- 07- 04	1
Overlay for Support Bracket		PN 1030	2
Lift off Spindle		222- 07- 13	2
Pressure Piece		DIN 6311- 20- S	2
PVC Sleeve Black		35x 35 Nr. 218-0035/037/27	2
PVC Sleeve Black		40x 40 Nr. 218-0040/040/27	2

Rolling Undercarriage

Main Assy. No.: 230- 06-

Pull Out		230- 05- 02	1
Support Bracket		222- 07- 04	1
Overlay for Support Bracket		PN 1030	2
Lift off Spindle		68- 28- 04 a	2
Pressure Piece		DIN 6311- 20- S	2
Casters		CD 80 CB	2
Wheels		CDF 80 CB	2
PVC Sleeve Black		35x 35 Nr. 218-0035/037/27	2
PVC Sleeve Black		40x 40 Nr. 218-0040/040/27	2

Projector Cart

Main Assy. No.: 240- 01-

Strap Cover		240- 01- 16/a	1
Strap		16 T5/ 455	1
Casters		441i 08 R 100C ZPI	2
Wheels		439a 08 R 100C ZPI	2

Hanger for Projector

Main Assy. No.: 242- 02-

complete

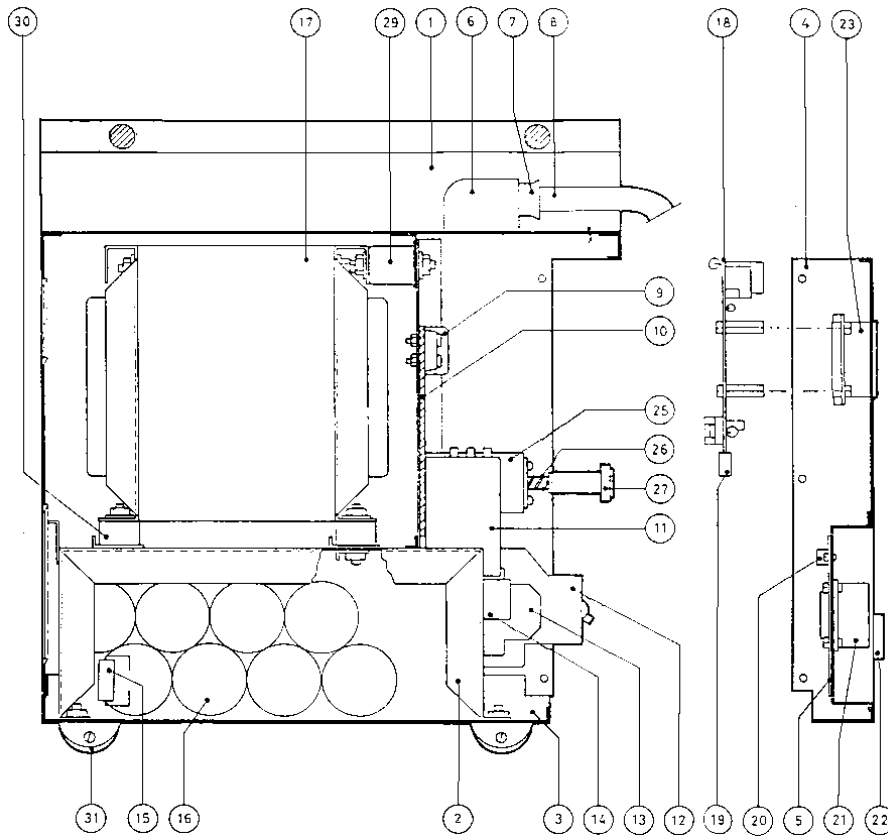
28mm DIN-Stud with welded Mounting Plate

Main Assy. No.: 65- 04- 11

complete

Ballast BC 2500- EP (phased out model)

For spareparts of the ballast versions -A and -J and for all parts of the ballast CBI 2500-E please contact the PANI-support team!



Description	Order Code:	Pos.	Qty. / Unit
Housing	71111507	1	1
Capacitor Box	71104763	2	1
Base Plate	71115311	3	1
Front Panel	71011955	4	1
Connector Plate	81014176	5	1
Cable Clamp	87534075	7	1
Power Cable	93643016	8	1
Clamp	84620063	9	1
Guard	88471122	11	1
Circuit Breaker	88502132	12	1
Grounding Clamp	84610156	13	1
Resistor	88205275	15	1
Capacitor	88320030	16	5
Choke	63090152	17	1
Printed Circuit Board	78800550	18	1
Push Switch	88901500	20	1
Output Coupling (complete)	97000170	21	1
Circuit Breaker Frame	87435204	22	1
Frame with Push-button	74140003	23	1
Voltage Selector Switch	88430122	25	1
Voltage Selector Switch	87444276	27	1
Shock Mounts H 25	88941400	29	2
Shock Mounts H 15	88941401	30	4
Feet	87330020	31	4