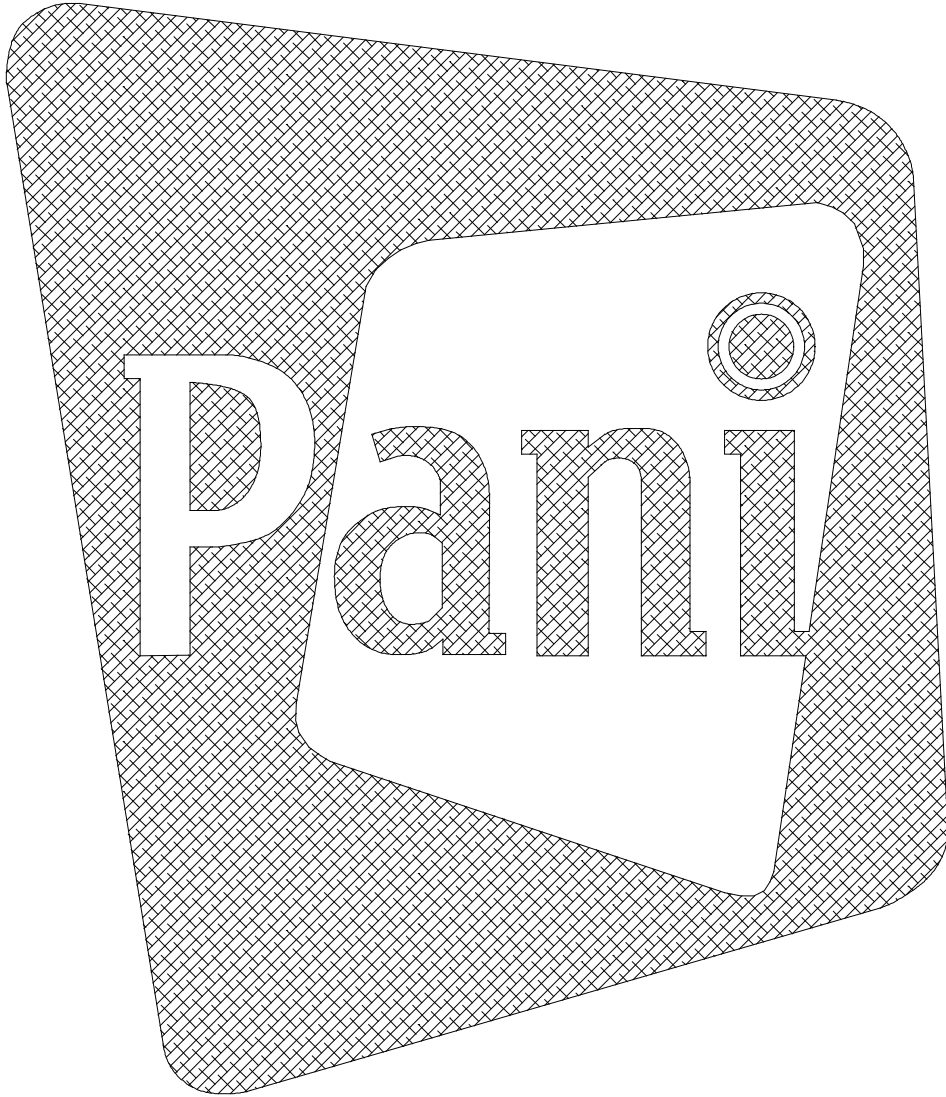


instruction manual

# High performance HMI-Projector



# BP 12 Platin

Order Code:.....22207

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Version September 2009

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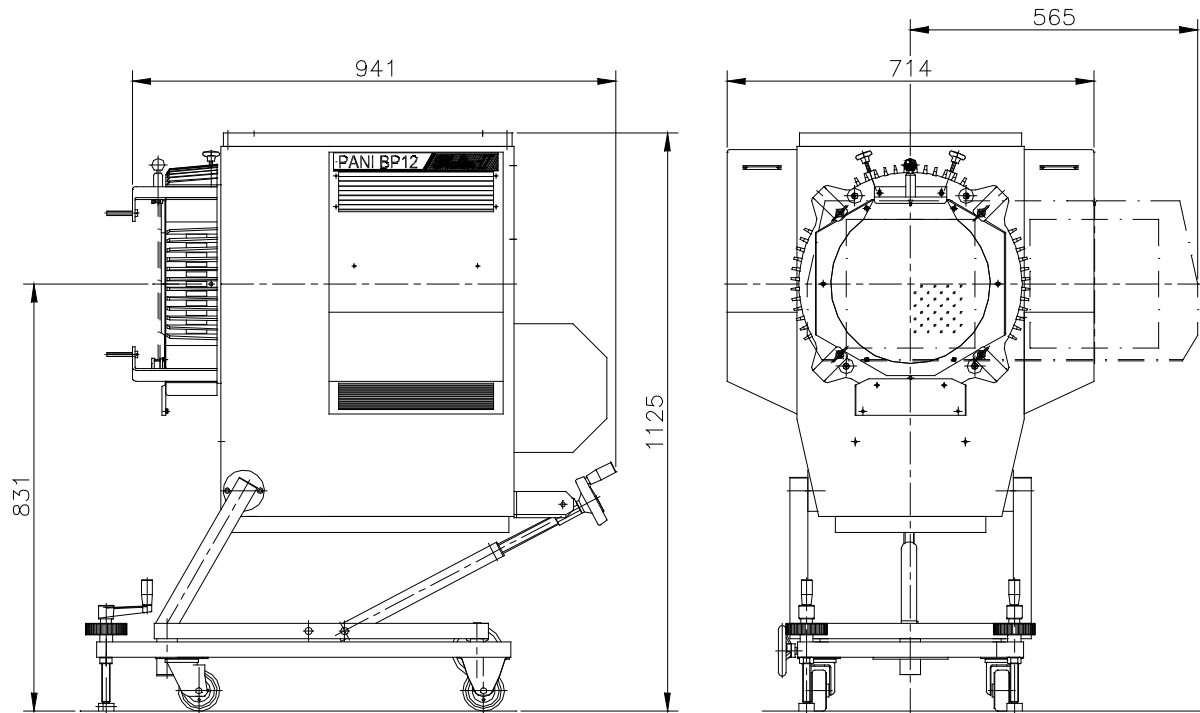
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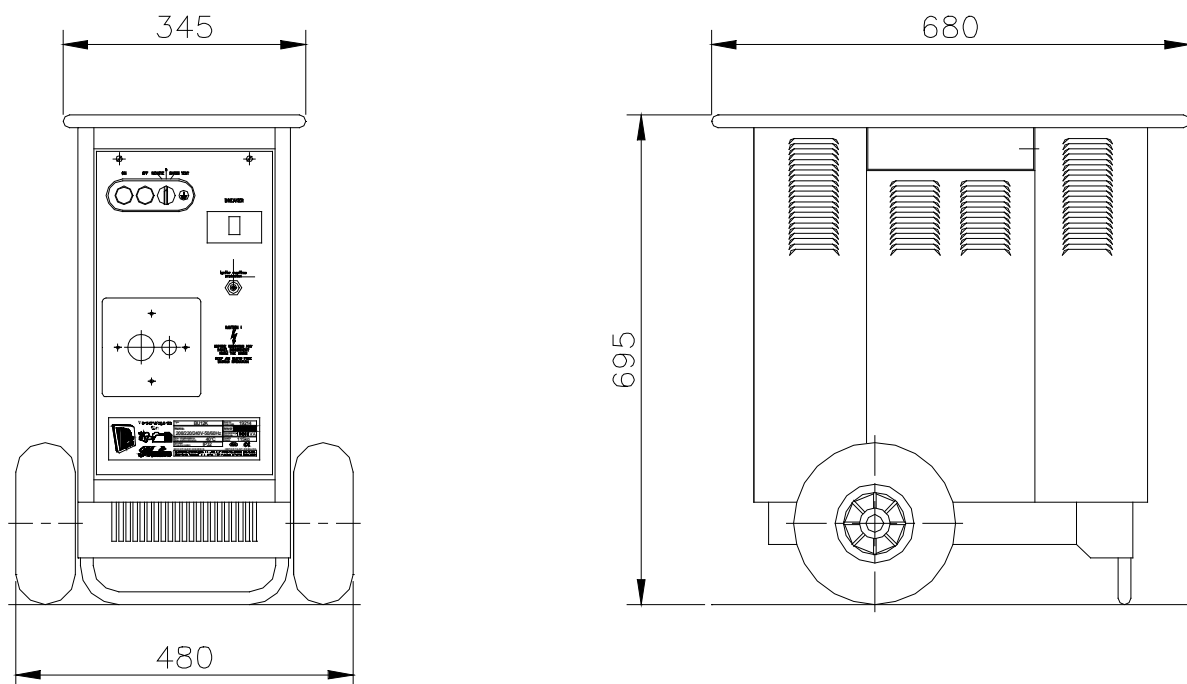
Internet: [www.pani.com](http://www.pani.com)

## 1) Dimension Drawing

### 1.1) High Performance HMI- Projector BP 12 Platin-II

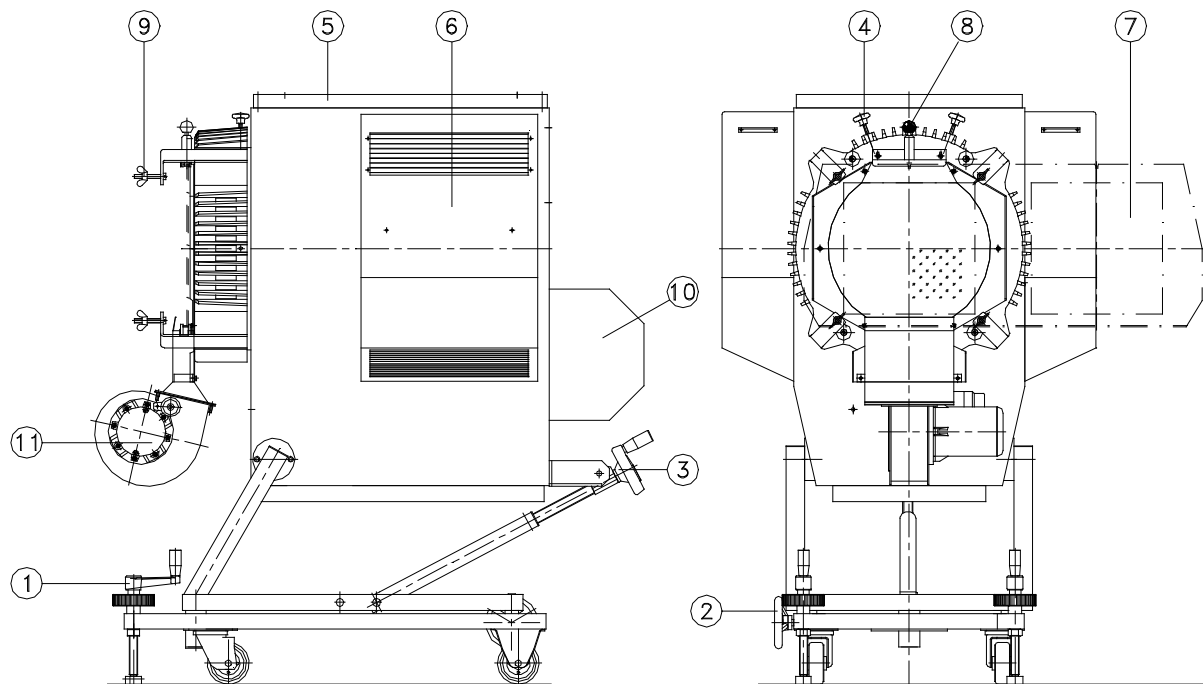


### 1.2) Ballast



## 2) Position Drawing

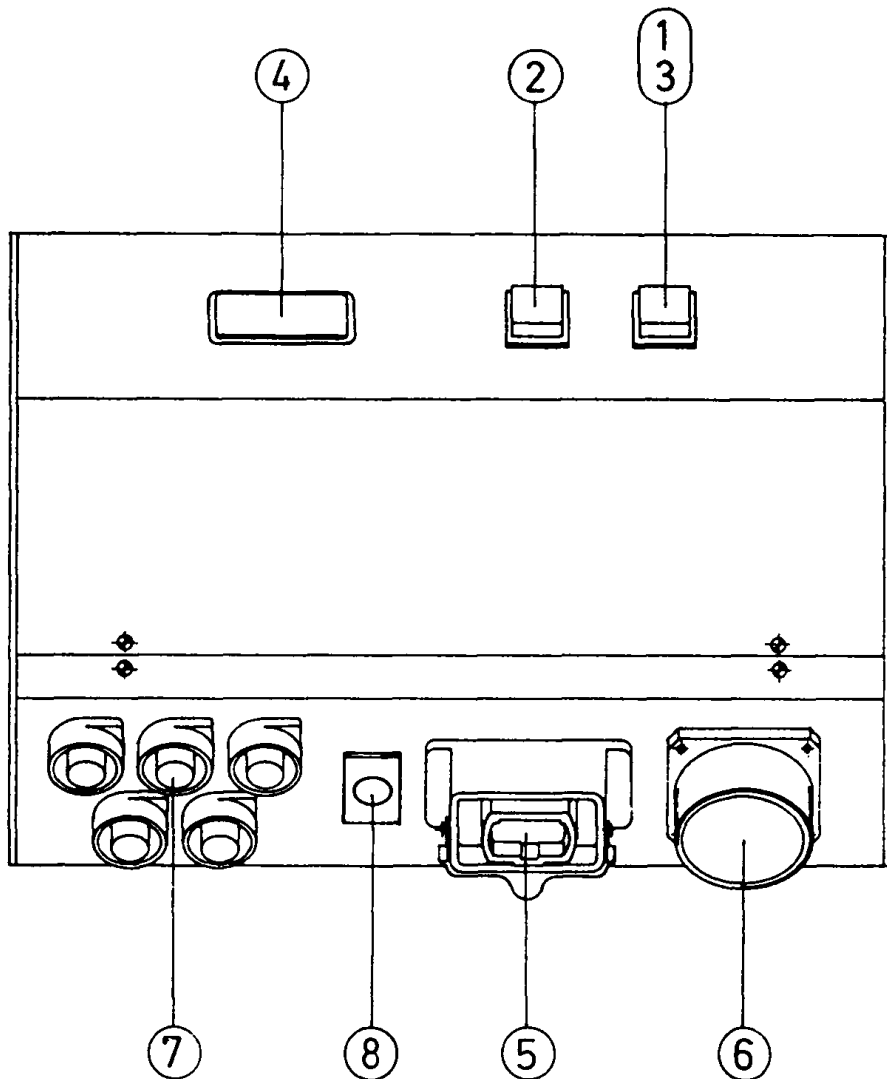
### 2.1) HMI- Projector BP 12 Platin-II with High Performance Fan



## LEGEND

- (1) Support Spindle
- (2) Horizontal Adjust
- (3) Height Adjust
- (4) Locking Screws
- (5) Housing Cover
- (6) Lamp Covers
- (7) Slide Carrier
- (8) Slide Locking Pin
- (9) Objective Lens Support Bolts
- (10) Projector Control Panel
- (11) High Performance Fan

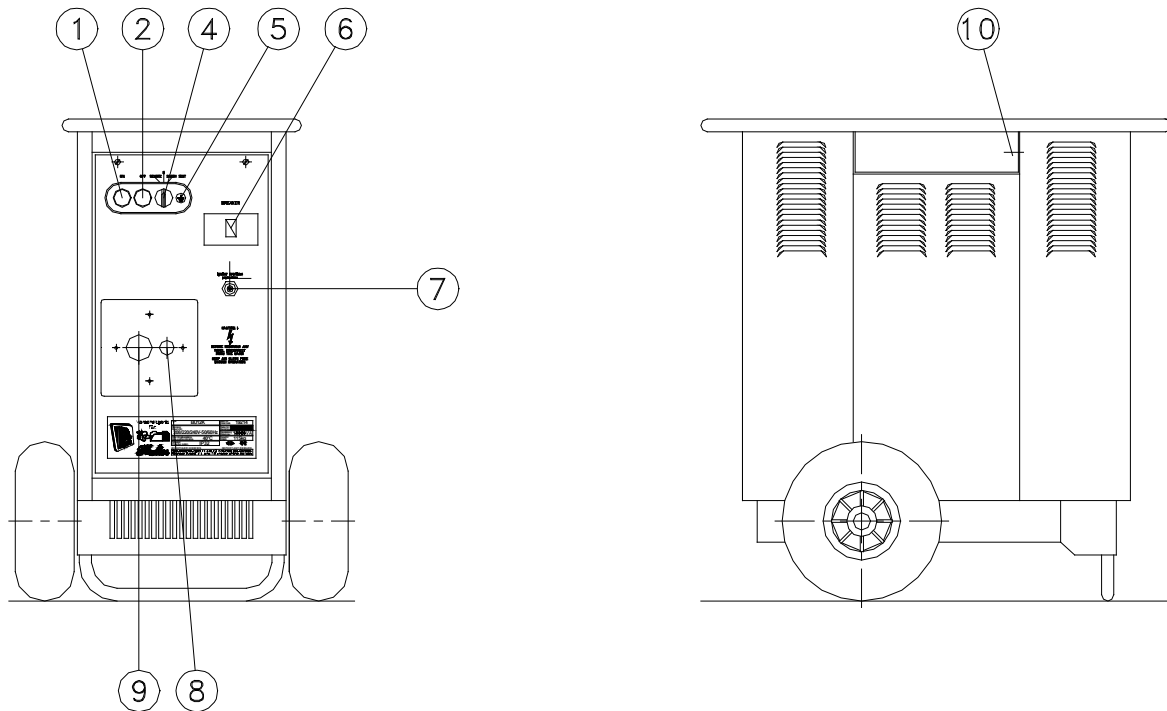
## 2.2) Control Panel on the Projector



### LEGEND

- (1) Source Power Signal Lamp
- (2) „ON“ – Push-button (green)
- (3) „OFF“ – Push-button (red)
- (4) Hour Counter
- (5) Connector for Control Cable
- (6) Connector for Main Power
- (7) Receptables for Accessory Power 4- pole (L, N, PE) with Key way (Amphenol)
- (8) Ignition socket for ignition by DMX 512

## 2.3) Ballast



### Control Panel on the Ballast

- 1 Source Power Signal Lamp**  
Lights up, when the ballast is connected on primary circuit.
- 2 ON- button (green)**  
Short pressing the ON-button causes operating the main contactor, closing the ignition circuit and igniting the HMI-lamp by high voltage.
- 3 OFF- button (red)**  
The lamp source will be broken. For re-ignition we recommend to enable the equipment to cool down some minutes. (Hot restrike is possible, but shortens the lamp lifetime).
- 4 Remoteswitch/ Ground Check Button**  
Position left (switch function): Remoteposition: ignition of the projector occurs automatically by powering up the equipment.  
Position right (bottom function): with correct polarity and intact earth the beside-lying, yellow indicator light (5) is lit up.
- 5 Grounding indicator light**
- 6 Main safety device**  
1 automatic circuit breaker, 2 pole
- 7 Overload protection**
- 8 Control cable**  
connection ballast – projector control panel Pos. 5
- 9 Supplying cable**  
connection ballast – projector control panel Pos. 6
- 10 Direct line cable**  
3x 6 mm<sup>2</sup>, 2m long, free ends.

## 3.) Construction

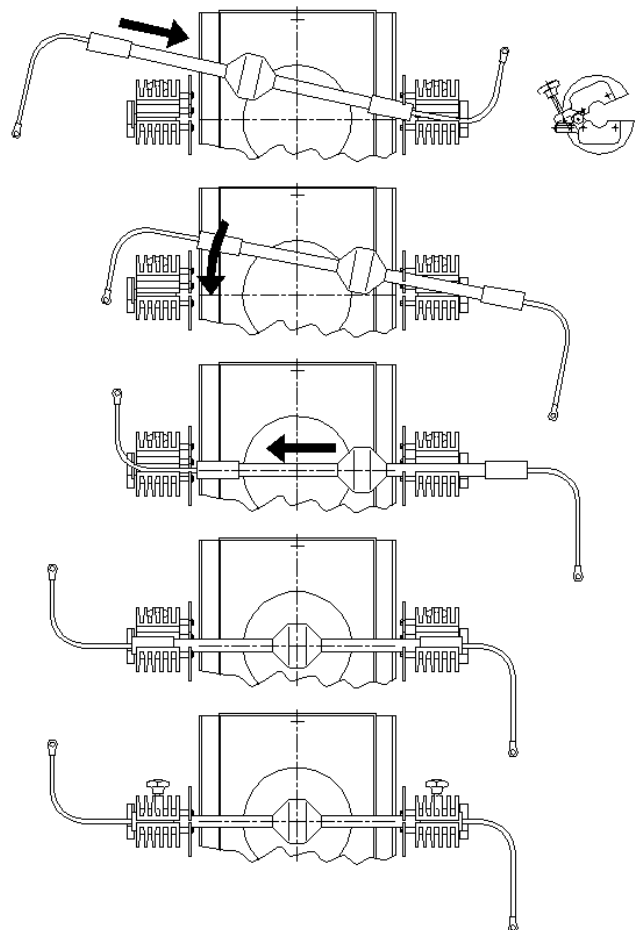
### 3.1) Mechanical Construction of the Projector

The Aluminium housing is mounted in a stable, mobile undercarriage. Once the unit is in place, the front casters may be lifted from the floor with the two support spindles, fixing the unit in position. The hand wheel for height adjustment may be found at the rear of the projector. The slide carrier may be rotated up to 90 degrees by loosening two locking screws and turning the projector head into any position. The 24cm by 24cm slide may be positioned exactly by turning the adjustment screw on the slide carrier. The slide carrier is fixed in accurate position by means of the spring loaded locking pin. Lifting the ball knob enables the moving of the slide into the new position, where it locks into position automatically.

## 4) Operating Reference

### 4.1) Inserting the HMI- Lamp

- Disconnect power from the projector.
- Open the left and right lamp access cover (the safety switches on both sides prevent from starting up the projector with open cover).
- Insert the lamp through one housing opening and put it onto the two open heat sink clamps. For some position of the lamp/mirror slide (see page 11) the inserting has to be in the way as it is described on the figure beside. Move it at last to the stop position of the right socket stand.



#### ATTENTION:

- Do not touch the quartz envelope of the lamp with your fingers during installation. Finger prints can be burned in!!
  - Position the lamp such that the fill port is in the direction of the reflector.
  - Lamp must be positioned along the optical axis, symmetrically in the heat sink clamps (oriented to the right stop position).
- Close the heat sink clamps by turning the star-handle. Take care, that no torsion or bending forces are transmitted to the quartz glass body of the lamp.
  - Mount the cables on the provided cable support point.

**ATTENTION:** Before you close the projector lamp access cover, control the good fastening of all connections!

## 5) Electrical Hook-Up

CIRCUIT DIAGRAM 102- 08- 07 SEE PAGE 8

The HMI- Projector BP 12 Platin operated by hte ballast BU 12 K (Order Code 19214). The lamp current is limited to 84A by a built in inductor. Therefore an electrical modification of the lamp current (dimming) is impossible.

In the ballast are also built in:

Compensation inductors, main contactor (interrupting the power supply when the projector is open), ON- OFF- button, main fuses, thermal overload-switch for ignition.

### 5.1) Main Connection

The main connection cable (3x 16 mm<sup>2</sup>, length 1,3 m, free ends, L, N, PE) has to be connected to a 220 / 240V / 50 Hz or a 208 / 220V / 60Hz supply; power consumption 74A.

*For rental purposes only: CEE-plug 125A 220-250V is mounted*

ATTENTION! Note the power rating plates when you use a combination of various types of ballast, because of different production types (voltage!).

### 5.2) Connection Cable Ballast - Projector

POSITION NUMBERS SEE PAGE 4

For the connection of the ballast with the projector a 7 pole control cable and a 4 pole supplying cable are necessary; Standard length: 3m (can be extended however at will – for extreme cable lengths examine the cable diameters!) Both cables are fixed on the ballast, the connection with the projector is established by using plugs. (projector-control housing pos. 5 and pos. 6). Turning on the projector may be operated from the projector or from the ballast. So it is possible to get the ballast into a greater distance to the projector.

### 5.3) Remote Ignition - DMX 512

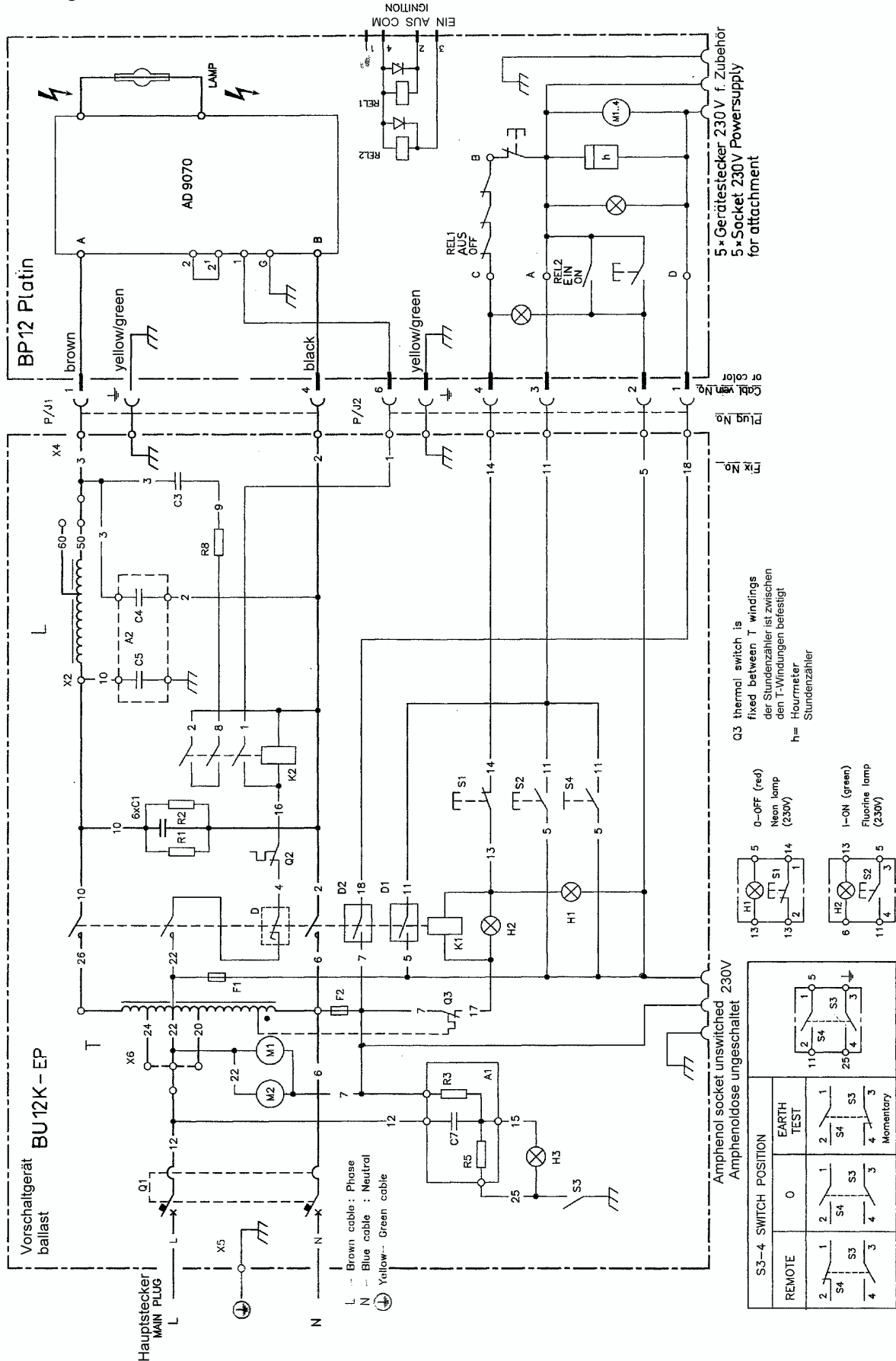
POSITION NUMBERS SEE PAGE 4

For ignition and shutdown of the projector by DMX 512 remote signal the projector is equipped with a relais print inside and a remote plug outside (Ignition Socket pos. 8). Additional the optional available Universal DMX 512 Interface and the ignition cable are necessary (for further information see manual of the "Universal DMX 512 Interface")



# 6) Circuit Diagram

Drawing No.: 102-08-04/c



## 7) Objective Lenses

### 7.1) Front Condenser Lens

POSITION DRAWING OF CONDENSER SYSTEM SEE PAGE 11

In the HMI-projector BP 12 Platin 3 different interchangeable multicoated front condenser lenses are used depending upon the applied projection objectives.

Order Code: 12410, Ø 320 mm/ f= 400 mm for Objectives f= 11; 13, 5; 18; 22; 27 cm,

Order Code: 12411, Ø 320 mm/ f= 500 mm for Objectives f= 33; 40; 50; 60 cm,

Order Code: 12412, Ø 320 mm/ f= 677 mm for Objectives f= 80 und 125 cm

### 7.2) Projection Objectives

PROJECTION DIAGRAM SEE PAGE 10

The projection objective lenses are mounted on the four support bolts and fixed by the four wing nuts. The focal length (f) of the required projection objective depends on the throwing distance and the desired picture width. It may be selected by using the projection diagram or the calculating tool on our homepage <http://www.pani.com/support/smart> assistance. To set the sharpness move the projection objective along the optical axis. The focus position is fixed by means of the two knurled nuts on either side of the projection objective.

**NOTE:** The projection objectives 11 and 13,5 cm have a limited object field so they are suggested under reserve to be used on a BP12 (i.e. 11cm: only ~Ø190mm of the slide is visible)

### 7.3) Effect- and Vario Objectives

To complete the system of projection lenses, effects and vario-objective lenses are available. Effects Lenses (focal lengths f= 80/ 100 mm, 110 mm, 150 mm, 180 mm, 250 mm and 310 mm) have higher light output and well colour correction but high distortion and the light becomes stronger to the center. They are applied to increase the depth effect and to obtain specific distortion.

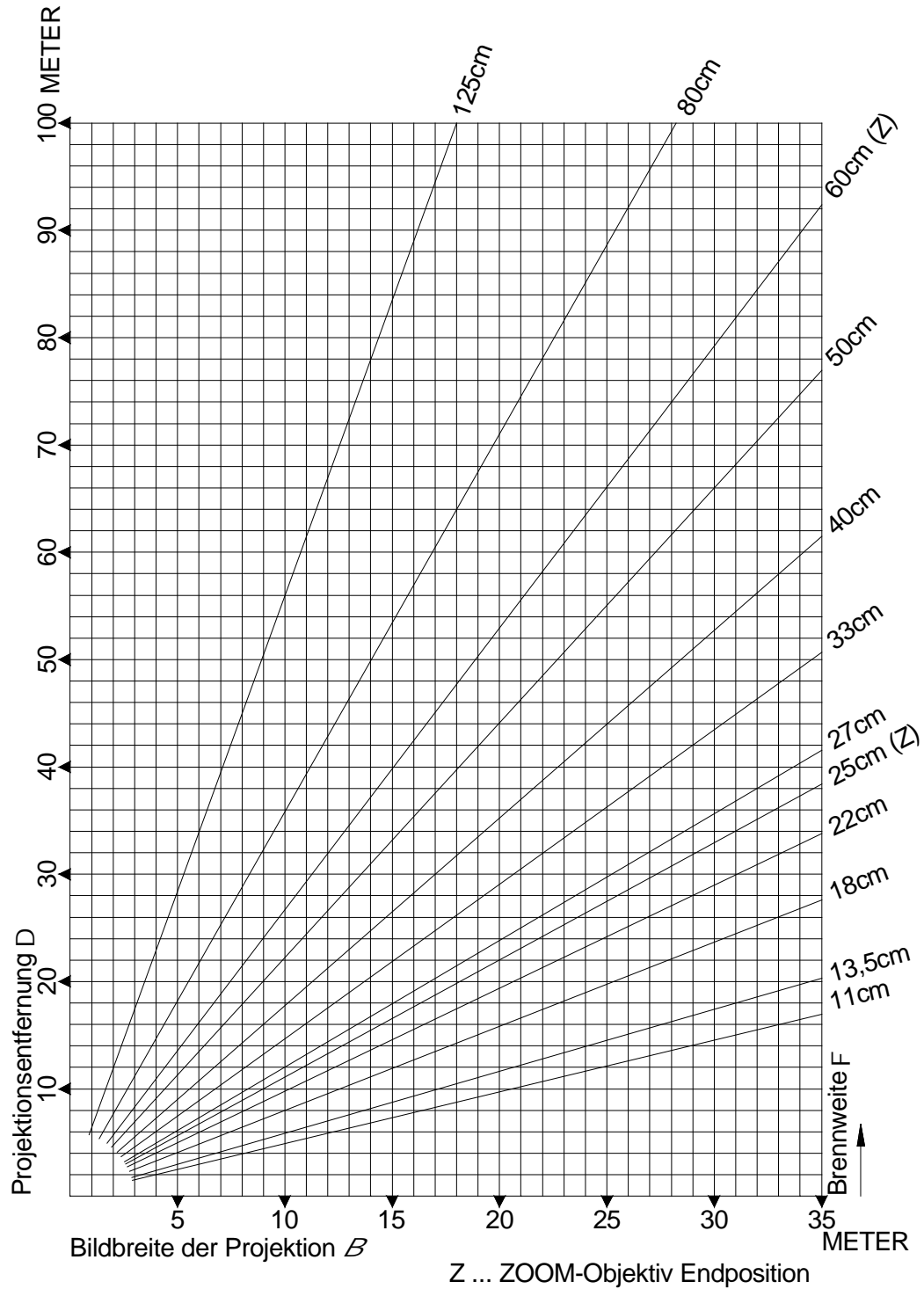
With the aid of the vario objectives with focal lengths of f=20-40cm/motorized and f=30-60cm manual it is possible to enlarge or reduce images (in the given limits) at different speeds. For example in touring theater where image sizes and projection distances vary.

#### IMPORTANT NOTES:

Never operate the projector **without objective lens!** (dangerous area near the light output of the projector)

#### WHEN USING WIDE ANGLE OBJECTIVE LENSES

Never keep the dimming shutter closed for longer than 1 minute when projecting **without slide!** (danger for objective and grey scale glass)



### 8) Projection diagram for O= 23cm

Berechnungsformeln:

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

Legend:

- 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 ) =**  
 = 23 cm for glass slide  
 = 21,5 cm for filmholder

## 9) Condenser System

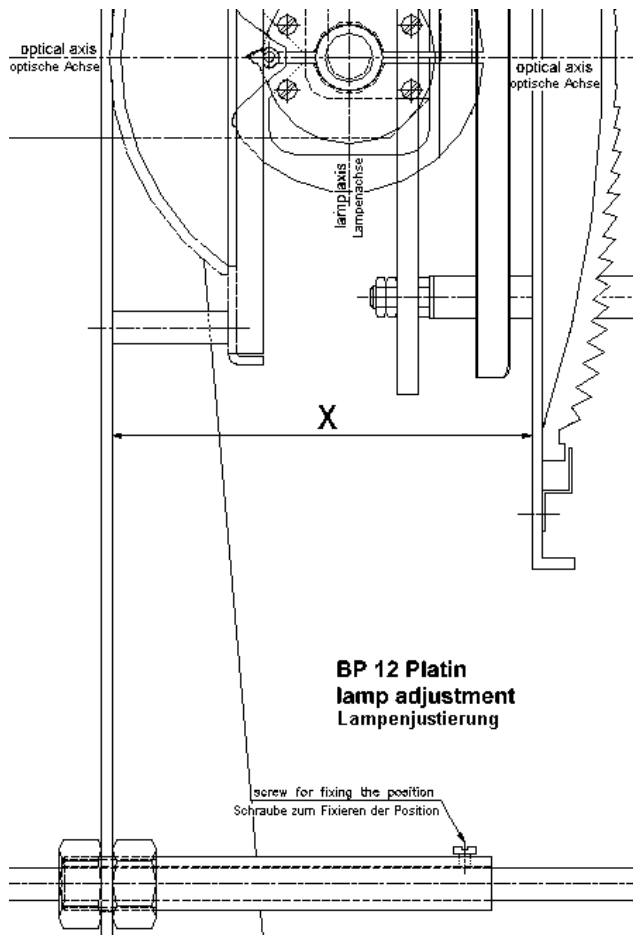
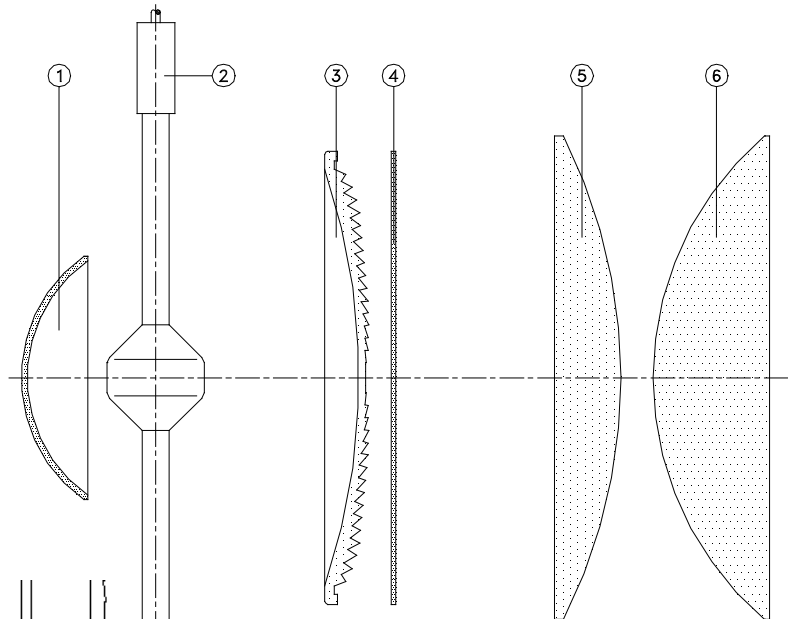
- (1) Cold Light Mirror Ø 155mm
- (2) HMI- Lamp 12000 W/ GS
- (3) Fresnel Lens Ø 300 mm
- (4) Heat Absorption Filter 300x 300x 3 mm
- (5) Middle Lens PC Ø 320 mm
- (6) Front Condenser Lens 11 - 27 cm, PC Ø 320 mm  
 Front Condenser Lens 33 - 60 cm, PC Ø 320 mm  
 Front Condenser Lens 80 - 125 cm, PC Ø 320 mm

Type:

Order Code:

- 222-03-04
- H 1701
- 85 40 51
- KG 1
- R 3545/ G
- G 706/ G
- G 705/ G
- G 707/ G

- 24-0043
- 37205
- 24-0033
- 24-0035
- 24-0034
- 24-0057
- 24-0058
- 24-0034



The lamp/mirror slide may be deadjusted from the standard – position for some objectives to get better light output and light homogeneity. Therefore loosen the two screws on the guiding tubes of the lamp/mirror slide (see figure aside) and move the slide into a position which is corresponding to the table below.

Value X is measured between the slide plate and the lens plate of the fresnel lens (see figure aside).

Objectives	X
18 – 40 cm (Standard setting)	193
50 cm	181
60 – 125 cm	175

After moving the slide into the desired position, do not forget to fasten the fixing screw.

**NOTE:** The deadjusted position may cause bad results with the other objective lenses.

## 10) Basic Unit as Delivered

1 High Performance- HMI- Projector 12kW Platin-II for slide format 24x 24 cm	
1 Ballast BU 12 K, 220/240V/ 50 Hz,	Order Code: 19205
with 2m source cable 3x 6mm <sup>2</sup> with free ends	
and 3m supplying cable with connector	Type G 752
and 3m control cable with 10- pole connector	Type G 573
1 Front Condenser Lens selective	Order Code: 12410, 12411, 12412
1 Slide Carrier for 2 Slides 24x 24 cm	
1 Test Slide with Raster on Tempered Glass 24x 24 cm	Order Code: 12810
1 Adjustable Slide Mask 24x 24 cm	Order Code: 12025
1 HMI- Lamp 12000W/ GS	Order Code: 37205

## 11) Accessories

	Type	Order Code:
Interchangeable Condenser Lens f= 11 cm to f= 27 cm, Ø 320 mm, multicoated	G 706/ G	12410
Interchangeable Condenser Lens f= 33 cm to f= 60 cm, Ø 320 mm, multicoated	G 705/ G	12411
Interchangeable Condenser Lens f= 80 cm bis f= 125 cm. Ø 320 mm. multicoated	G 707/ G	12412
Grey Scale Shutter G 405 PCS-III-DMX with processor control for grey scales 20,5x 22 cm, incl. Control Box, for external control 0 to +/- 10 VDC, damping electronic for flattening the 8bit control voltage, costumizing to light linearity, incl. guiding rails for use on objectives f = 11 - 27 cm G 405 PCS-III-DMX 22704		
guiding rails for use on objectives 11- 27 cm	G 405/ 27	12011
guiding rails for use on objectives 33- 40 cm, 80 cm, 125 cm and 150 cm	G 405/ 40	12012
guiding rails for use on objectives f= 50 cm and vario - objective f= 20-40 cm	G 405/ 50	12013
guiding rails for use on objectives f= 60 cm and vario - objective f= 30-60 cm	G 405/ 60	12014
High Performance Slide Cooling Fan for BP 12 Platin-II	CMB/2-140/50	432519
Additional fan for all kinds of Gray Scale Shutters G 405 in combination with wide angle objectives 11 -18 cm	G 409	12004
Carousel Slide Changer for 12 slides 24x24		12518

## 12) General Technical Data

### Projector:

#### Tilt range of the Projektor:

12° up  
35° down

Protection Class: IP 20

Ambient Operating Temperature: max. 35°C

<u>Weight:</u>	<u>unpacked</u>	<u>packed</u>
	124 kg	180 kg

Carton Dimensions: Bx Hx T=120x 84x 171 cm  
1,73 m<sup>3</sup>

### Ballast:

Supply Voltage:: 220/240V - 50 Hz,  
208/220V – 60Hz

Supply Current: 74 A

Circuit Rating: 100 A

<u>Weight:</u>	<u>unpacked</u>	<u>packed</u>
	120 kg	135 kg

Carton Dimensions: Bx Hx T= 78x 51x 87 cm  
0,35 m<sup>3</sup>

### Lamp:

Wattage	12000 W
Rated Life	500 hours
Color Temperature	6000 K
Lumen Output	1 150 000 lm
Lamp Voltage	160 V
Ignition Voltage	70 kV
Lamp Power	84 A
Lamp Base	S 30
Arc Length	25 mm

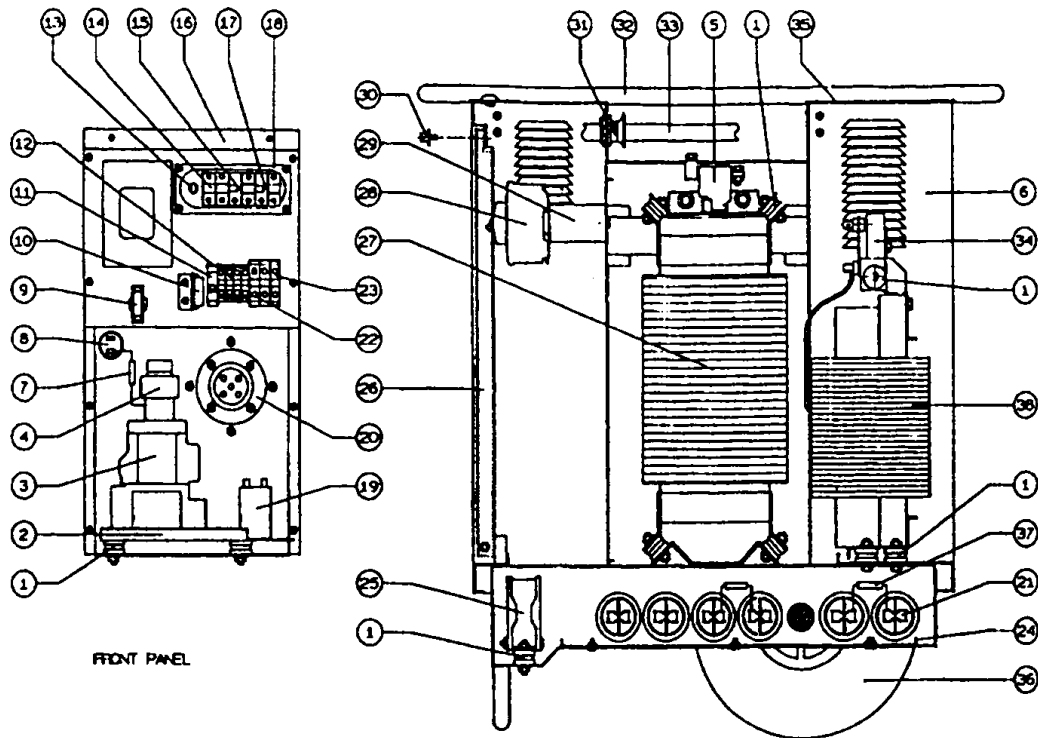
## 13) Spare Parts

### BP 12 Platin-II

Order text	Order Code:	number per unit
<b>Housing</b>		
Heat Dissipation	11-0089	2
Louvers for 11-0089	11-0095	2
Pins for Cover	11-0090	4
Housing Screen (left+right)	11-0091	2
Louvers for Cover Case	11-0092	2
Louvers for Cover	11-0093	2
Louvers under Side of Cover Base	11-0094	2
Double Louvers (left+right)	11-0069	2
Safety Switch	90-0015	2
Support Bracket for Control Box	11-0236	1
Objective Support Brackets	21-0057	4
<b>Optical Section</b>		
Heat Guard	11-0097	2
Electrical Protective Cover	31-0036	2
<b>Lamp Assembly</b>		
Star Grip Bolts for lamp Terminals	11-0098	2
Lamp Base Stand	31-0037	2
Lamp Base Supports 230 V	31-0038	2
Attachment Spindle	11-0099	2
Attachment Plate	11-0100	2
<b>Control Panel Housing</b>		
PVC Flashover Protection of Projector Control Panel	11-0101	2
Laminated Paper Flashover Protection of Proj. Contr. Pan.		11-0102 1

Order text	Order Code:	number per unit
<b>Optical Material</b>		
Fresnel Lens (lamp side) Ø 300 mm	24-0033	1
Planconvex Lens (middle lens) Ø 320 mm/ f= 677 mm	24-0034	1
Interchangeable Front Condenser Lens		
f= 11- 27 cm Ø 320 mm/ f= 400 mm	24-0057	1
f= 33- 60 cm Ø 320 mm/ f= 500 mm	24-0058	1
f= 80- 125 cm Ø 320 mm/ f= 677 mm	24-0034	1
Heat Absorption Filter KG 1; 300x 300x 3 mm(4- part)	24-0035	1
Cold Light Mirror inner Ø=155 r=95	24-0043	1
<b>Mechanical Material</b>		
Swivel Casters	21-0060	2
Fixed Casters	21-0061	2
Fluted Grip Bolts M6- 50	21-0033	2
Hand Wheel (Undercarriage)	21-0062	1
Lock Bolt with Slot Head and Circlip	21-0142	2
Catch Lower Part	21-0143	2
<b>Elektrical Material</b>		
Igniter	22-0035	1
Igniter Cable	22-0036	1
Tangential Blower	21-0001	1
Tangential Blower Class H	21-0058	2
Tangential Blower Class H	21-0059	2
Axial Blower	21-0089	1
Accessory Connector – 3 pole	21-0025	5
Hour Counter 230V/50Hz	22-0004	1
„ON“-Push Button (green)	23-0008	1
„OFF“-Push Button (red)	23-0009	1
Connector for Control Cable	22-0034	1
<b>Undercarriage</b>		
Crank Handle	21-0063	2
Grip Disc	21-0110	2
Liftr-off Spindle complete	90-0132	2
<b>Lamp Base</b>		
Lamp Base (left+right) complete	31-0040	1
Heat Shield for Heat Sink	21-0153	4
Fluted Grip Bolts	21-0033	2
Wing Nut M8 zinc coated	21-0019	4





**Ballast BU-12K**

Pos.	Order Text	Order Code:	number per unit
1	Shock Mounts	88941401	23
2	Contacteur Base	81015418	1
3	Contacteur	88472241	1
4	Timer	88472210	1
5	Clamp Sak G28	84610128	2
6	Housing	71111025	1
7	Resistor	88201475	1
8	Capacitor	88312200	1
9	Thermal Overload Protection	88501120	1
10	H.F. Dejam Unit	78800506	1
11	Mounting	84610154	2
12	Clamp WDU4	84610155	4
13	Yellow/ transp. Cap	88530301	1
13	Control Lamp	88530180	1
14	Contact	88402365	1
14	Socket	88402362	1
14	Control Lamp	88530192	1
15	"OFF"-Push Button red	88402350	1
15	Contact	88402368	1
15	Socket	88402362	1
16	Control Lamp	88530192	1
16	Internal Panel	71011949	1
17	Knob	88402360	1
17	Commutator	88402361	1
17	Contact	88402365	1
18	Push Button Frame	87435201	1
19	Relais	88445000	1
20	Socket for Connection Cable	71019109	1
21	Capacitor	88320080	6
22	Clamp WDU 35	84610170	2
23	Clamp WPE 16N	84610168	2
24	Capacitor Base	71105030	1
25	Fan	88711060	2
26	Frontpanel	81012366	1
27	Choke	63090155	1
28	Circuit Braker	88505263	1
29	Base for Circuit Braker	81014403	1
30	Screws	85900009	2
31	Screwed Cable Gland	87534089	1
32	Handle	71119012	1
33	Line Cord	93643160	1
34	Voltage Selector Plate	84650000	1
35	Cover	71012218	1
36	Wheel	88941296	2
37	Resistor	88205393	1
38	Auto- Transformer	63010177	1