

**instruction manual**

# Stage Projector BP 3000 Halogen



**Set J**

Order Code: .....22106

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Status of March 2007

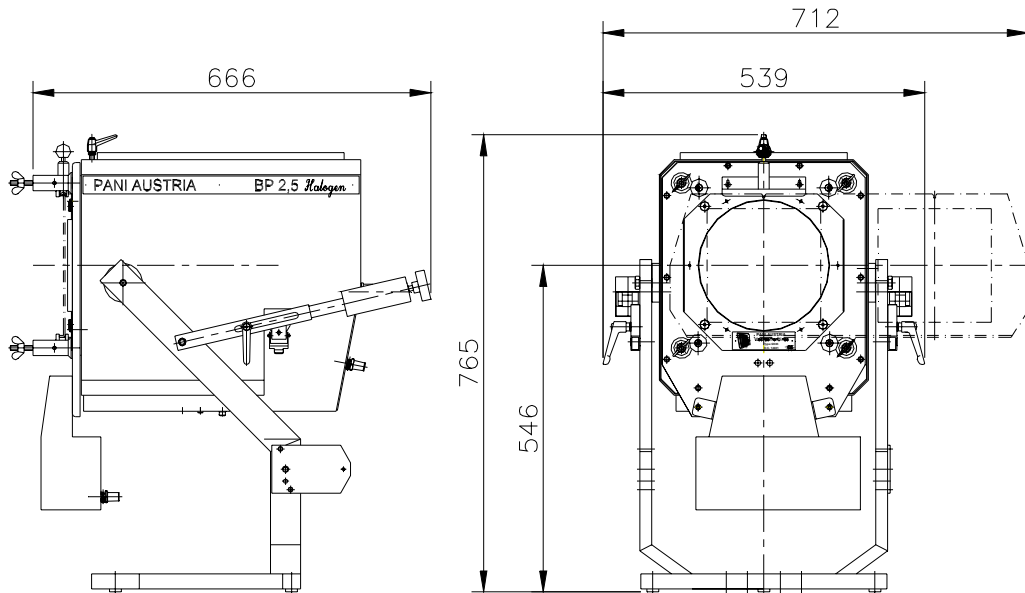
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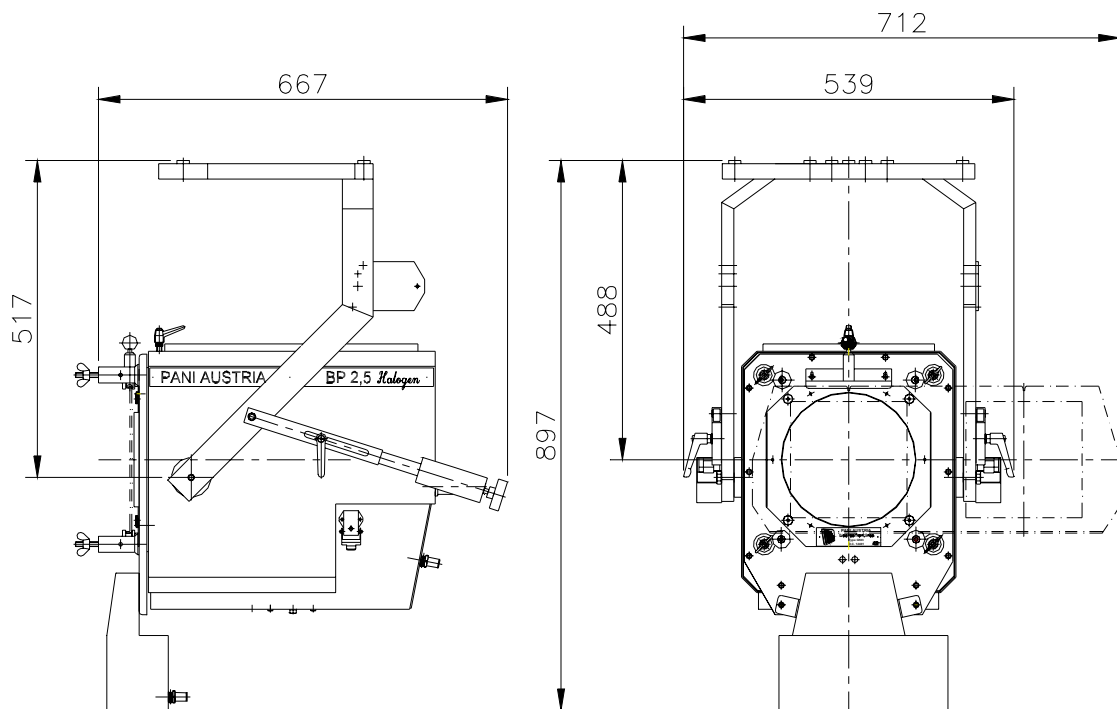
# 1) Dimension Drawing

## 1.1) Projector

### 1.1.1) Yoke Mounted for "Standing" Application

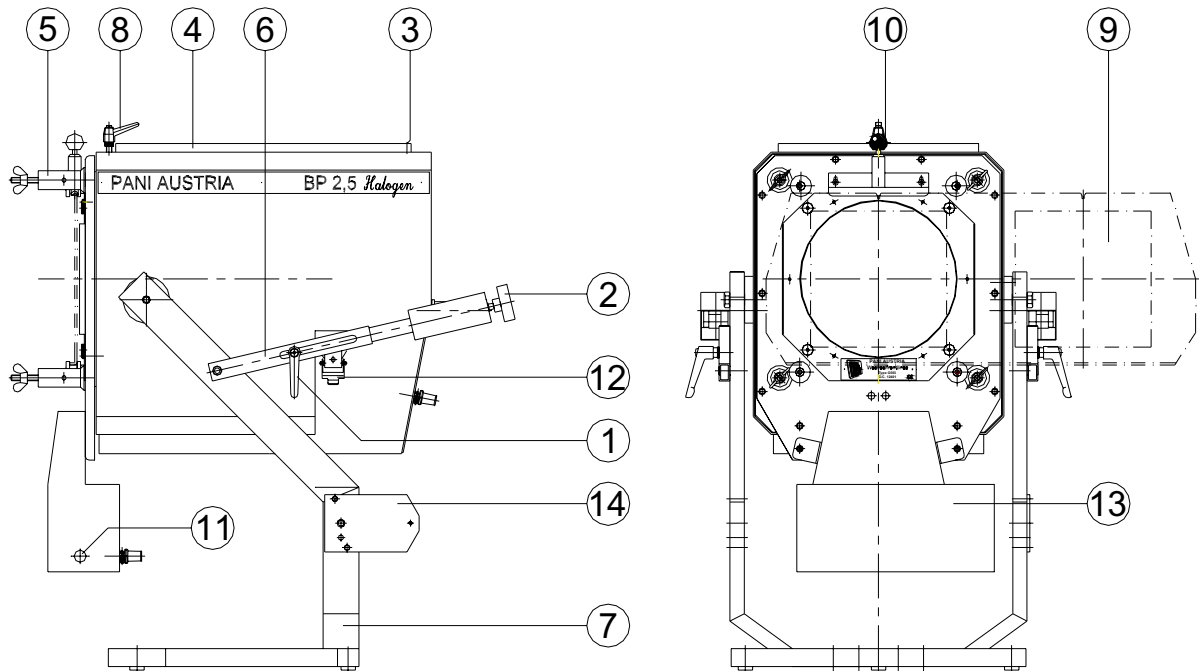


### 1.1.2) Yoke Mounted for "Hanging" Application



## 2) Position Drawing

### 2.1) Projector



#### Legend

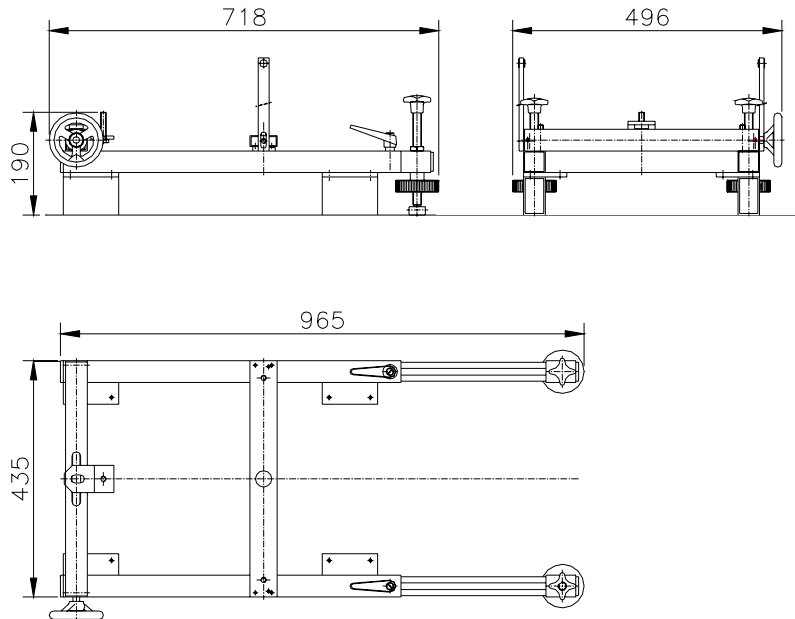
- 1 Adjustable Clamp Lever for Quick Adjust (On Both Sides)
- 2 Hand Wheel for Fine Adjustment
- 3 Fastener for Housing Cover
- 4 Housing Cover
- 5 Objective Lens Support Bolts
- 6 Telescoping Rails
- 7 Support Yoke
- 8 Clamp for Slide Carrier Rotation
- 9 Slide Carrier Position Lock
- 10 Slide Carrier
- 11 *function not implemented*
- 12 Ventilator Connector
- 13 Slide Cooling Ventilator Fan
- 14 Mounting Plate for Control Box G405/..

### 3) Mounting Accessories

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

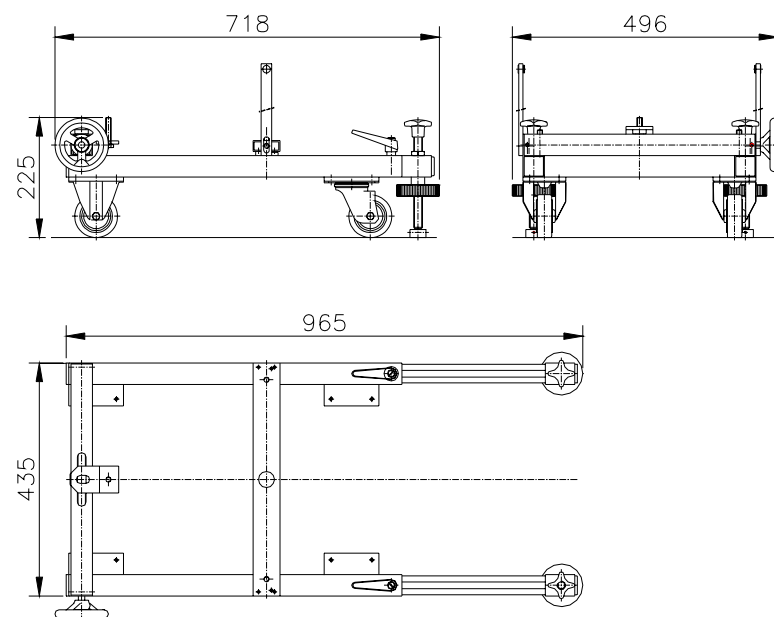
#### 3.1) Undercarriage for Projectors of the "Compact"-Series

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



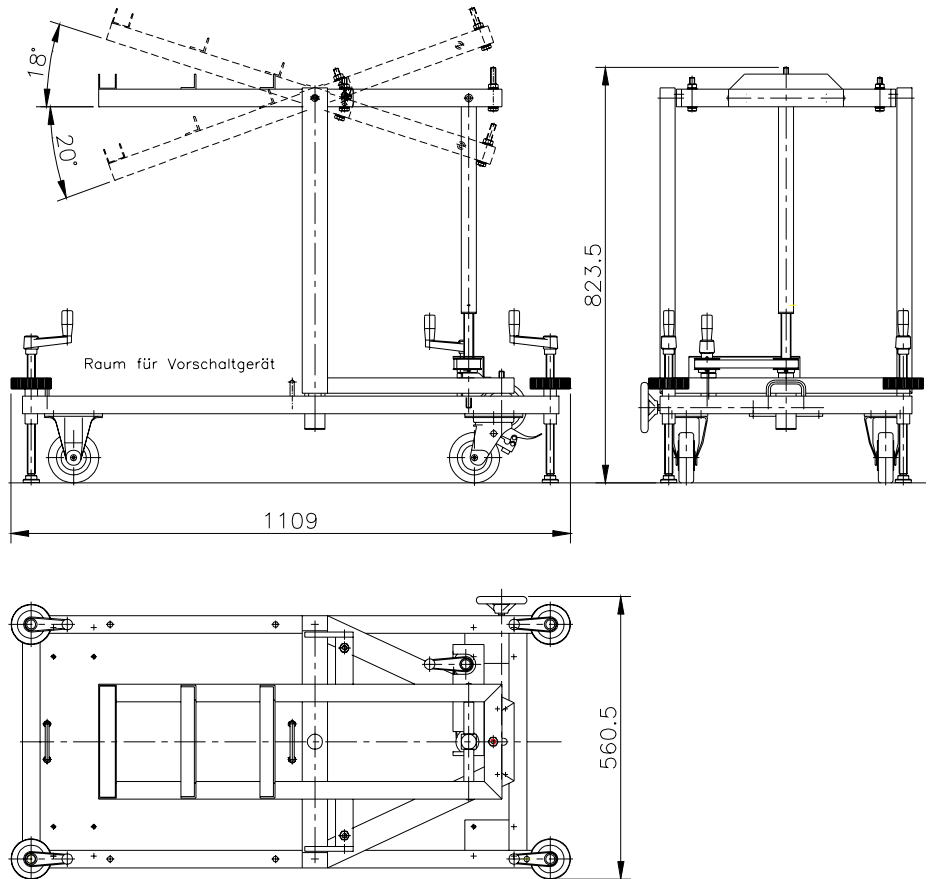
#### 3.2) Rolling Undercarriage for Projectors of the "Compact"-Series

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



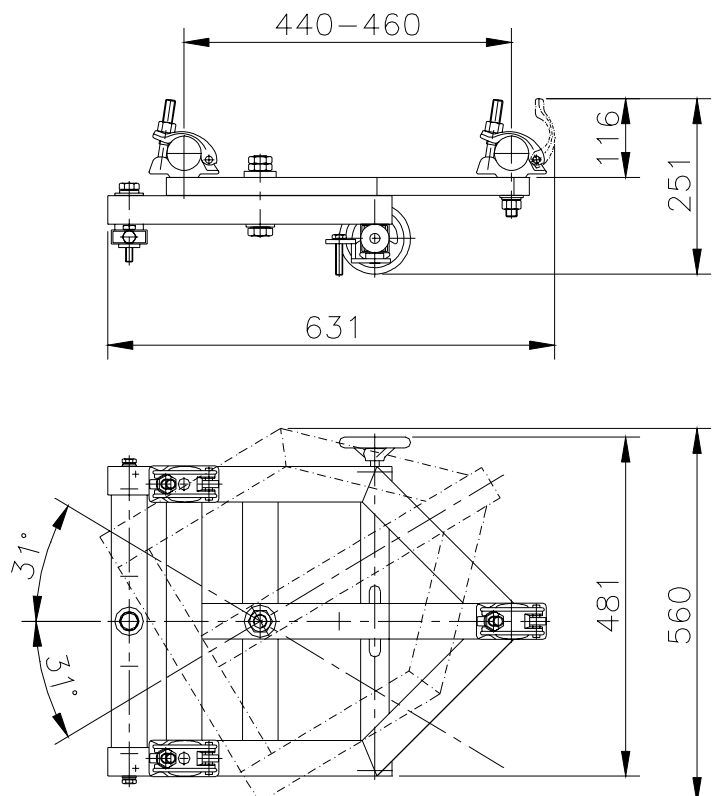
### 3.3) Projector Cart for Projectors of the "Compact"-Series

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



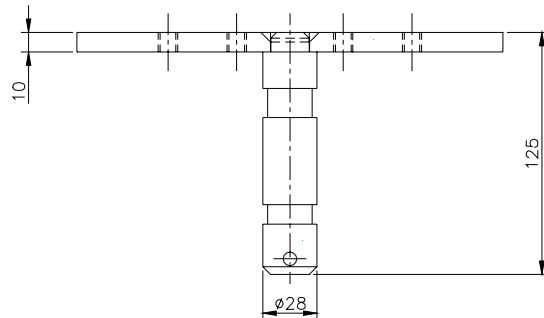
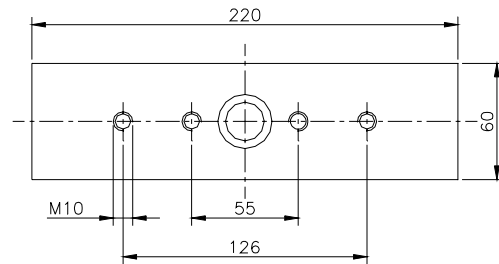
### 3.4) Hanging Apparatus for Projectors of the "Compact"-Series

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) Construction

### 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 (7). Fine adjustment (2) is accomplished by means of adjustable telescoping rails on either side (6). The image plane with slide carrier can be rotated  $\pm 90^\circ$  by loosening the clamping lever (8) on the upper part of the housing. The 18x 18 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 (10). By lifting the ball knob (10), the slide may be freely moved into the new position where it locks into position automatically.

POSITION NUMBERS SEE PAGE 3

### 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 blue 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!

#### 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.

## 5) Operating Recommendations

### 5.1) Installation of the Halogen Lamp

A halogen lamp 3000W / 100V / G38 is required for operation of the projector. Installation may be performed as follows:

- a) Disconnect the projector from the power source!
- b) Open the quick fastener (3) on the housing with a screwdriver. Lift off the housing cover (4) 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 by removing the two milled nuts.
- d) Insert and /or replace the lamp.
- e) Replace the reflector and tighten the milled nuts.
- f) Replace the housing and close the quick fastener.

**ATTENTION:** When installing the halogen lamp be sure not to touch the glass envelope. Fingerprints be burned into the glass causing early lamp failure. Each is factory set and further adjustment of the lamp is not required.

#### 5.1.2) Lamp Adjustment

Each projector is carefully adjusted at the factory (lamp base, reflector and condenser). With the precision manufacturing of halogen lamps, adjustment of the lamp is rarely necessary.

### 5.3) 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 projector turn the star grip (2) and bring the projector into the exact position.

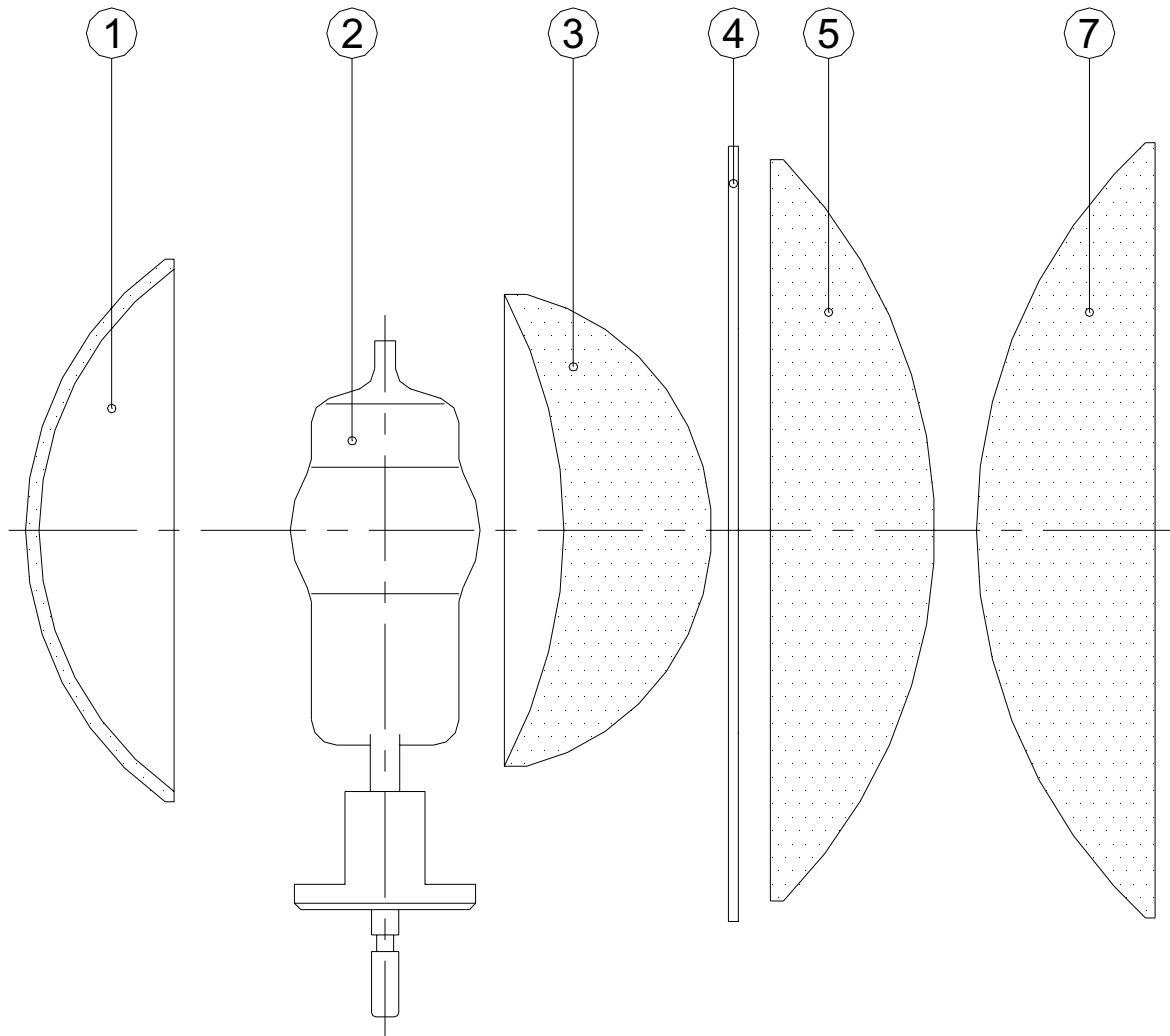
### 5.4) Yoke Assembly for „Standing“ or „Hanging“ Configurations

Separate the support yoke (7) (2 M 10 Nuts) and the telescope rails (6) 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.

POSITION NUMBERS SEE PAGE 3



## 6) Position Drawing Condenser System



### Legend

	Type	Order Code
(1) Spherical Cold Mirror 161mm Ø		222- 03- 04
(2) HMI- Lamp 3000 W single ended		
(3) Meniscus Inner Condenser Lens 140mm Ø		222- 03- 02
(4) Heat Reflection Filter (3 - Segment)		231x 230x 3
(5) Middle Condenser Lens 220mm Ø		R 157
(6) Heat Absorption Filter (2- Segment)		230x 220x 4
(7) Front Condenser Lens for Objective 11 - 27 cm, PC Diameter 230 mm, with Mounting	G 503	12401
Front Condenser Lens for Objective 33 - 40cm, PC Diameter 230 mm, with Mounting	G 505/II	12434
Front Condenser Lens for Objective 50- 60, PC Diameter 230 mm, with Mounting	G 505	12402
Front Condenser Lens for Objective 80 cm, PC Diameter 240 mm, with Mounting	G 504/G	12404

## 7) Electrical Hook-Up

( see schematic 228- 01- 09/a )

### 7.1) Main Connection

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 100VAC/50Hz. 30 A

## 8) Objective Lenses

### 8.1) Front Condenser Lens

In the BP 3000 Halogen, there are 2 different front condenser lenses to choose from, depending on the focal length objective lens required. These are as follows:

Type: G 503, Diameter 230 mm

for Objective Lens f= 11; 13,5; 18; 22 and 27 cm,

Order Code: 12401

Type G 505/ II, Diameter 230 mm

for Objective Lens f= 33, 40, 50 and 60 cm,

Order Code: 12434

### 8.2) Projection Objective Lenses

Optional projection objective lenses (focal lengths from f=11 to 60cm) 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 Vario-objective

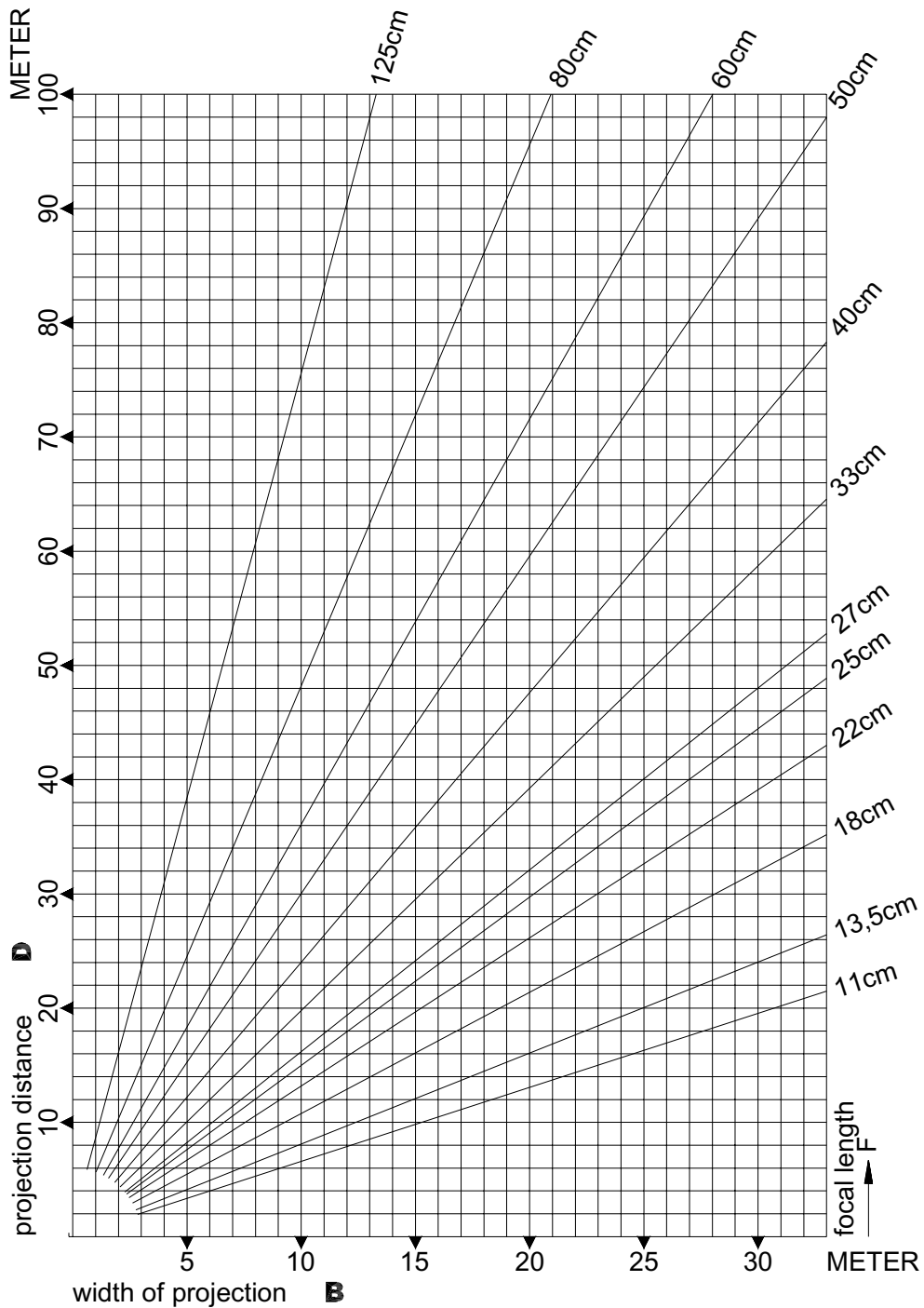
To enhance the system of projection objective lenses, effects and vario-objective lenses are available. Effects Lenses (focal lengths of f=80/100 mm, 150 mm, 180 mm, 250mm and 310 mm) provide a strong light output with good color correction, and may be used where an increase in depth or specific distortions 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 f=20 – 40 cm / motorized it is possible to change the image size at different speeds.



## 9) Projection Diagram

for O= 17cm



### calculating formulas

$F = \frac{O \times D}{B + O}$	$B = O \times \left( \frac{D}{F} - 1 \right)$	$D = F \times \left( \frac{B}{O} + 1 \right)$	$O = \frac{B \times F}{D - F}$
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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 Agfaclear (from Agfa), 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](http://www.pani.com) ). In the download area you'll find the latest information.

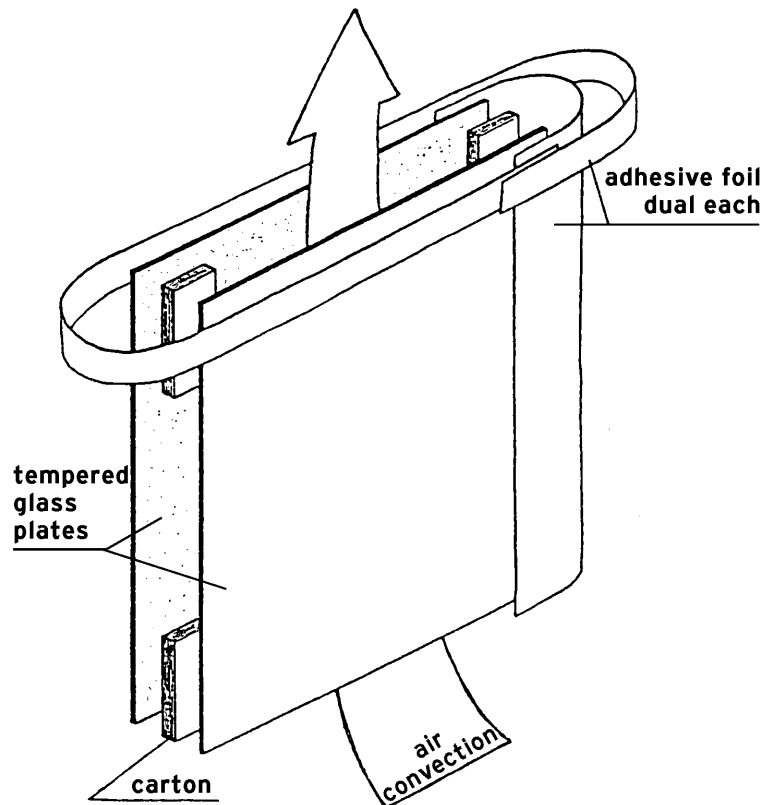
Photographic transparencies should not be mounted between glass. The heat build-up will be such that the slides will be destroyed. Necessary cooling of photographic transparencies can only be guaranteed when using Special Slide Frames (Order code: 12802 for 18 x 18 cm).

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 1mm 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.

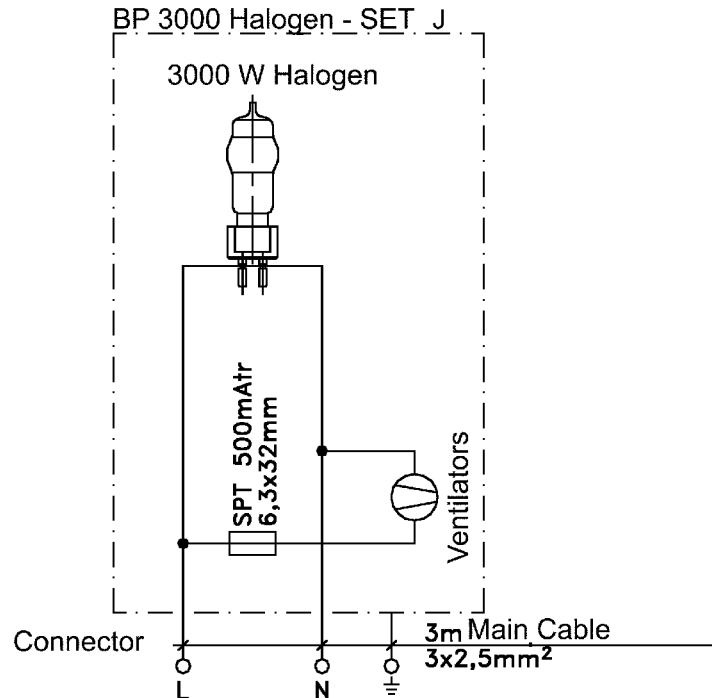
General remark:

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



## 11) Electrical Schematic

BP 3000 Halogen  
Drawing No. : 222- 02- 01/ b



**NOTE:** Disney version separates Lamp and Fan into two separate circuits on two separate cables unless otherwise specified!

## 12) Basic Unit as Delivered

- 1 STAGE PROJECTOR BP 3000 HALOGEN  
including choice of Front Condenser Lens (G 503, G 505/ II, G 505), Slide Carrier, adjustable slide mask and test 18x 18 cm. The Projector is supplied with a universal mounting yoke for hanging and standing configurations, includes 28 mm Stud with Mounting Plate.
- 3 Meter main cable 3x2,5 square mm with Schucko connector.
- 1 Halogen Lamp 3000 W / 100 V, G38 (Order Code: 37115 )  
Test slide with raster grid on tempered glass 18x18cm, Order Code: G 506
- 1 Adjustable slide mask, Order Code: G 511/01
- 1 User Handbook
- 1 Pani "Effect" Brochure

## 13) Accessories

Description	Type:	Order Code:
Interchangeable Front Condenser Lens for Objective f= 11 cm -27 cm, Diameter230 mm	G 503	12401
Interchangeable Front Condenser Lens for Objective f= 33 cm and 40 cm, Diameter230 mm	G 505/II	12434
Interchangeable Front Condenser Lens for Objective f= 50 cm and60 cm, Diameter230 mm	G 505	12402
Interchangeable Front Condenser Lens for Objective f= 80 cmDiameter240 mm	G 504/G	12404
Halogen Lamp 3000 W / 100V G 38		37115
Quick frames 18x18cm for film slide		12812
Tool kit for Quick frames12811		
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	
Motor Drive for Slide Carrier 18x 18 cm	G 520/18	12502
Automatic Slide Changer- 32Random 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, Wide Angle	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 220 V, includes control box	G 915	12432
Effect Vario- Objective lens f= 30-60 cm-manual	G 916	12425

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



## 14) General Technical Data

### Tilt Angle Range of Projector:

floor mounted: 30° up, 40° down  
 hanging: 40° up, 30° down  
 Protection Class: IP 20  
 Max. Operating Temp. 35°C

Weight:	Unpacked	Packed
Projector	45 kg	65 kg

Carton Dimensions: 80x70x90cm  
 0,62 square meters

Current	25 A
Circuit Breaker	30 A

### Lamp:

Wattage	3000 W
Rated Life	400 Hours
Color Temperature	3200 K
Lamp Voltage	100 V
Lamp Socket	G38

## 15) Spare Parts

BP 3000 Halogen

Main Assy. No.: 228-

Description

Order Code:

Qty / Unit

### Optical Materials

Main Assy. No.: 222 - 03-

Plano Convex Lens for Obj. 11- 27cm	Ø 230/ 300	1
Plano Convex Lens for Obj. 33- 40 cm	Ø 230/ 390	1
Plano Convex Lens for Obj. 50- 60 cm	Ø 230/ 500	1
Plano Convex Lens for Obj. 80 cm	Ø 40/ 800	1
Plano Convex Lens (Middle Lens)	Ø 220/ 300	1
Heat Reflection Filter	231 x 230 x 3	1
Spherical Cold Mirror Ø161	222- 03- 04	

### Mechanical Materials

Main Assy. No.: 222 - 04-

Hand Wheel DIN 950	Al 80 B 12 A schwarz eloxiert	1
Plastic Clamp Lever	GN 500 42 M6 sw	1
Adjustable Clamp Lever	GN 300 63 M8 12sw	2
Wing Nuts	M8; DIN 315	4

**Vertical Tilt Lock with  
Fine Adjustment**

Main Assy. No.: 232 - 08-

Adjustment Spindle	222 - 08 - 02	1ea
Supports for Gear Rack	222 - 08 - 05	2
Adjustment Strip	222 - 08 - 07	2
Grip for Fine Adjustment	222 - 08 - 08	1
Cover	222 - 08 - 10	2
Gear Rack	axle distance 455	1

**Misc. Parts**

Main Assy. No.: 228 - 01 -

Lamp Base Support	228 - 01 - 01	1
Lens Stand-off Spacer	228 - 01 - 03	4
Cover for Ventilator Fan	228 - 01 - 07	1
Bracket for Ventilator Fan	228 - 01 - 08	2

**Electromechanical Parts**

Main Assy. No.: 228 - 02-

Ventilator Fan (Tangent Blower)	QLD 06/1200- A 105- 3020 L -178nm	1
Ventilator Fan (Tangent Blower)	QLZ 06/1800- A 17- 2513 L -15 dg	1
Fuse Holder	FEU 0031. 1681	1
Ring Cap Lock	FEK 0031. 1661	1
Fuse Insert	SPT 6,3x32 500mAT 0001.2521	1
Lamp Base	G 38	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	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