

Instruction manual

BP 4 CT



The Company for Stage Lighting and Projection

Pani

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PANI Projection and Lighting Vertriebs GmbH

A – 1070 Vienna, Kandlgasse 23

Austria, Europe

Tel.: + 43 1 / 521 08 – 0

Fax.: + 43 1 / 526 42 87

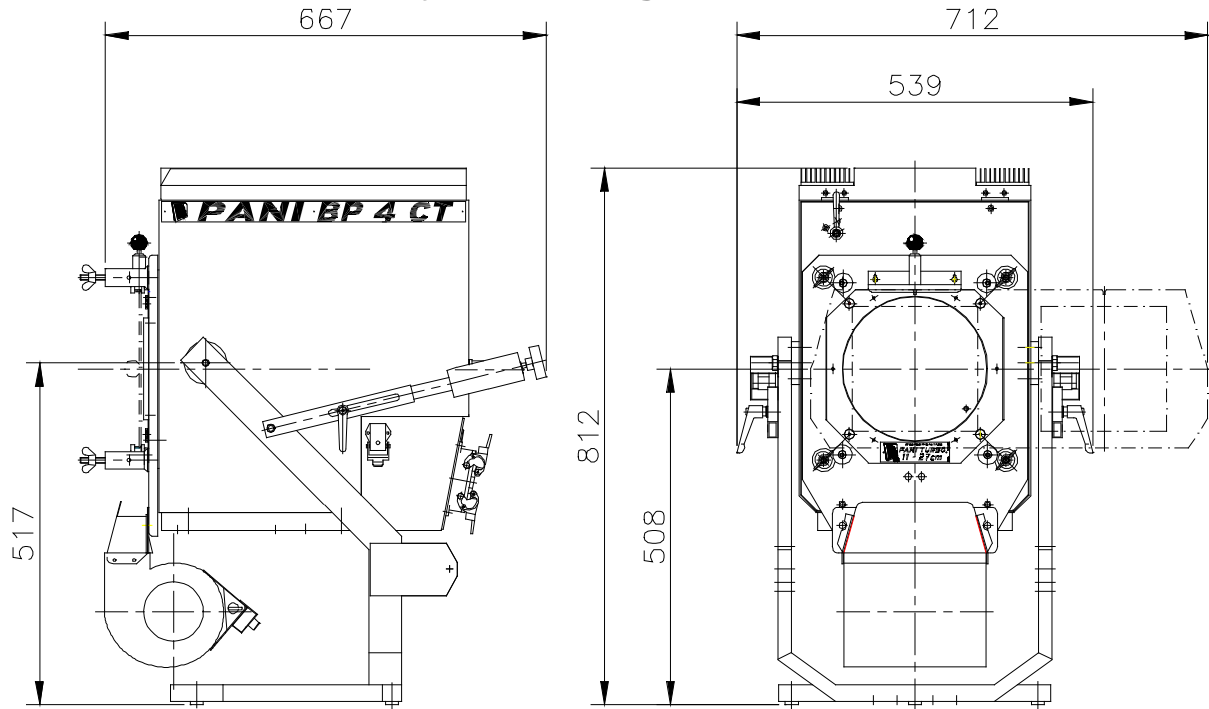
E – mail: light@pani.com

Internet: www.pani.com

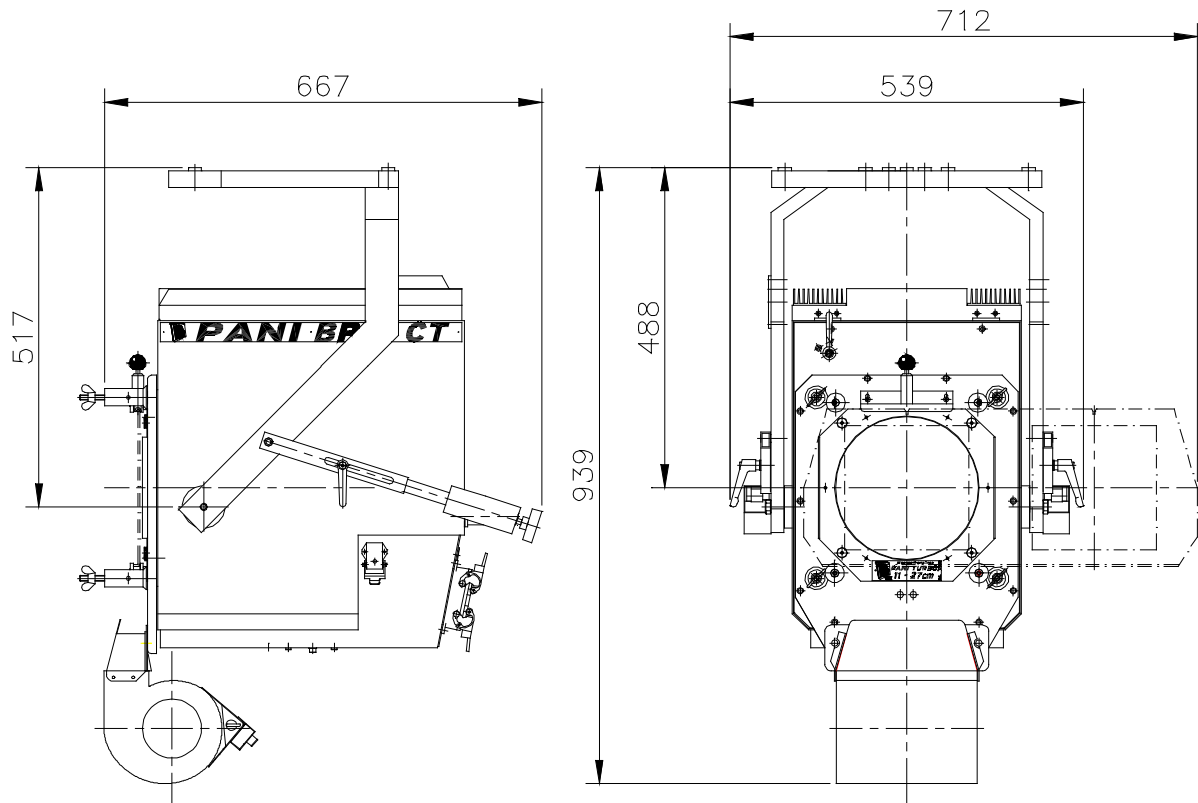
1) Dimension Drawing

1.1) Projector

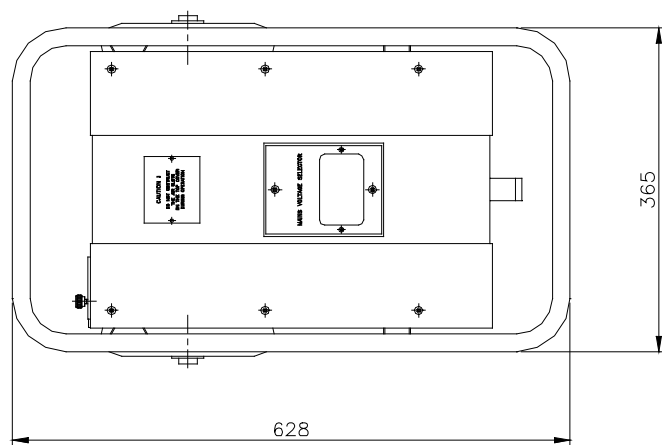
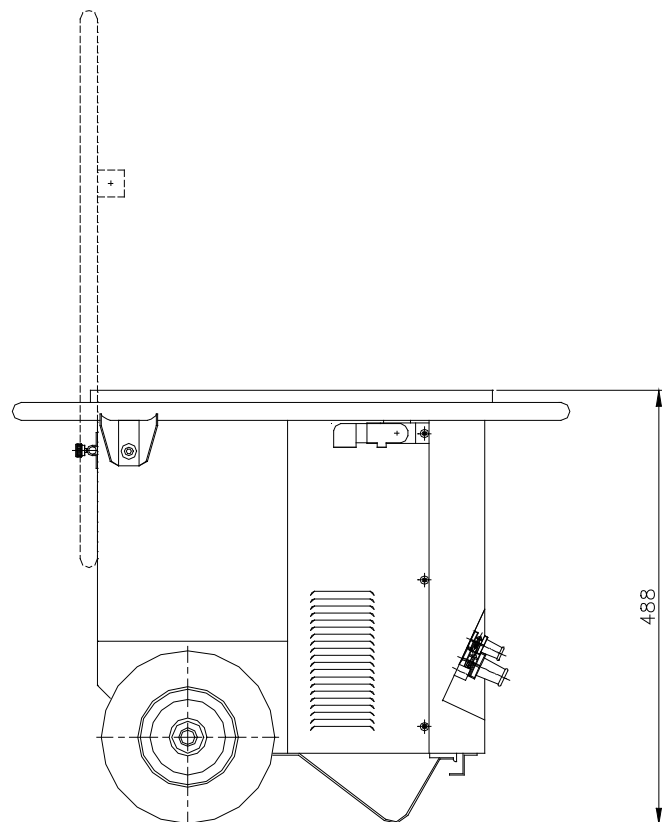
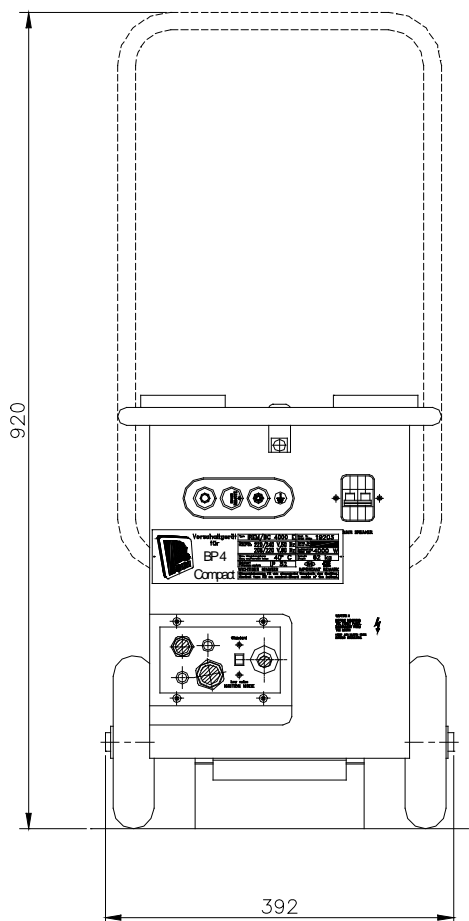
1.1.1) Yoke Assembly "Standing"



1.1.2) Yoke Assembly "Hanging"

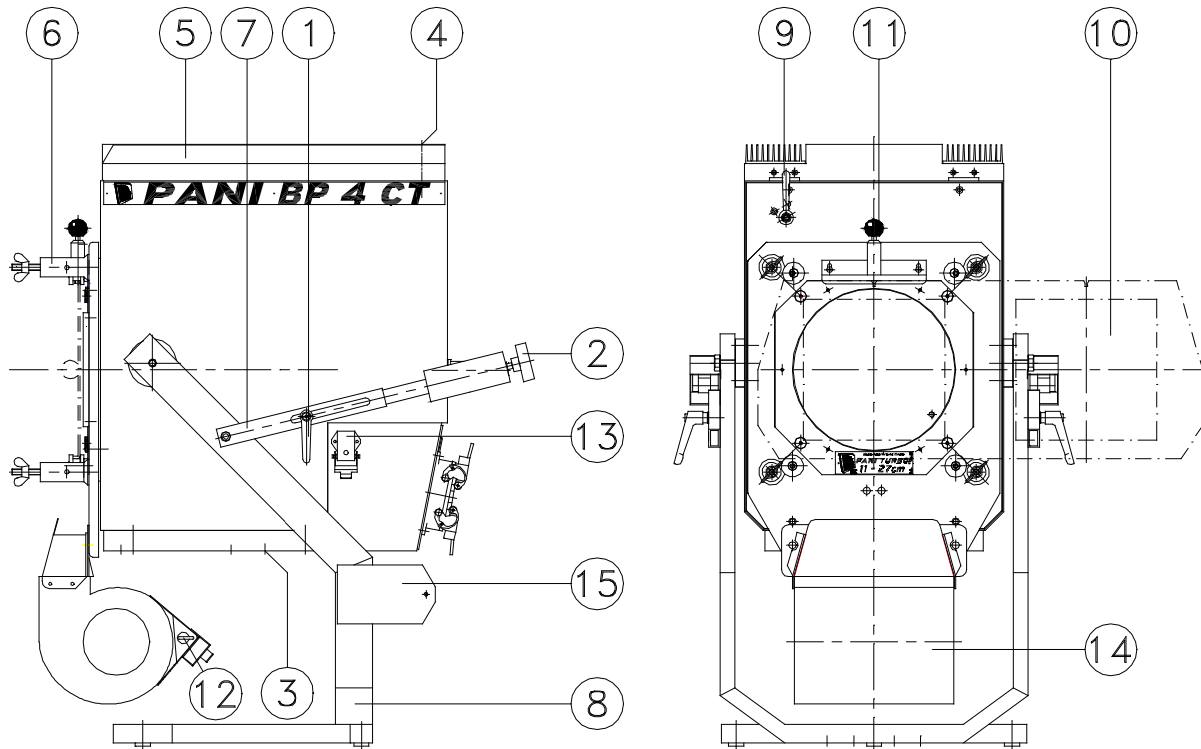


1.2) Ballast



2) Position Drawing

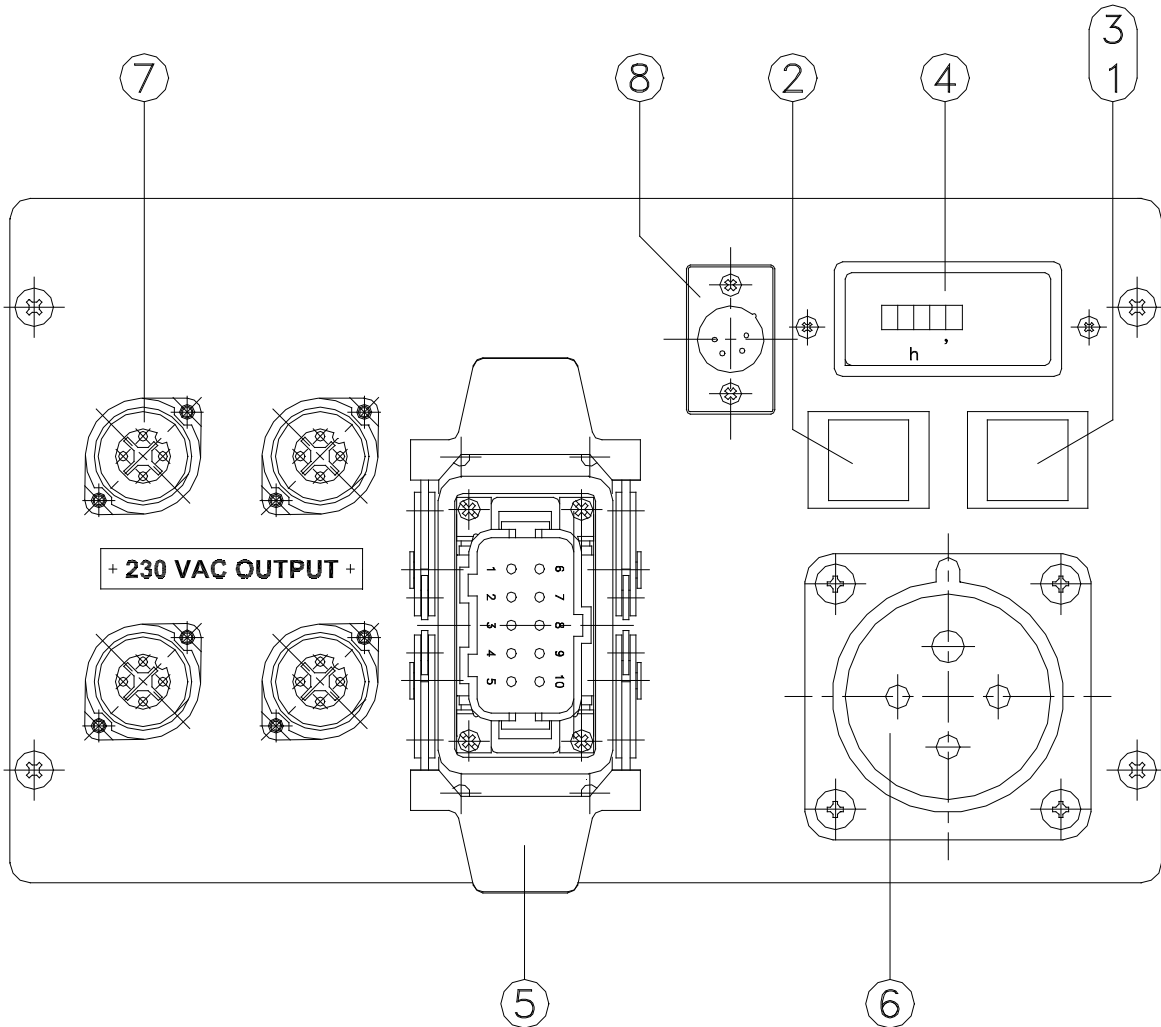
2.1) Projector



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 "TURBO - Standard - Low Noise"
- 13) Ventilator Connector
- 14) Ventilator for Slide Cooling
- 15) Mounting Plate for Control Box G405/..

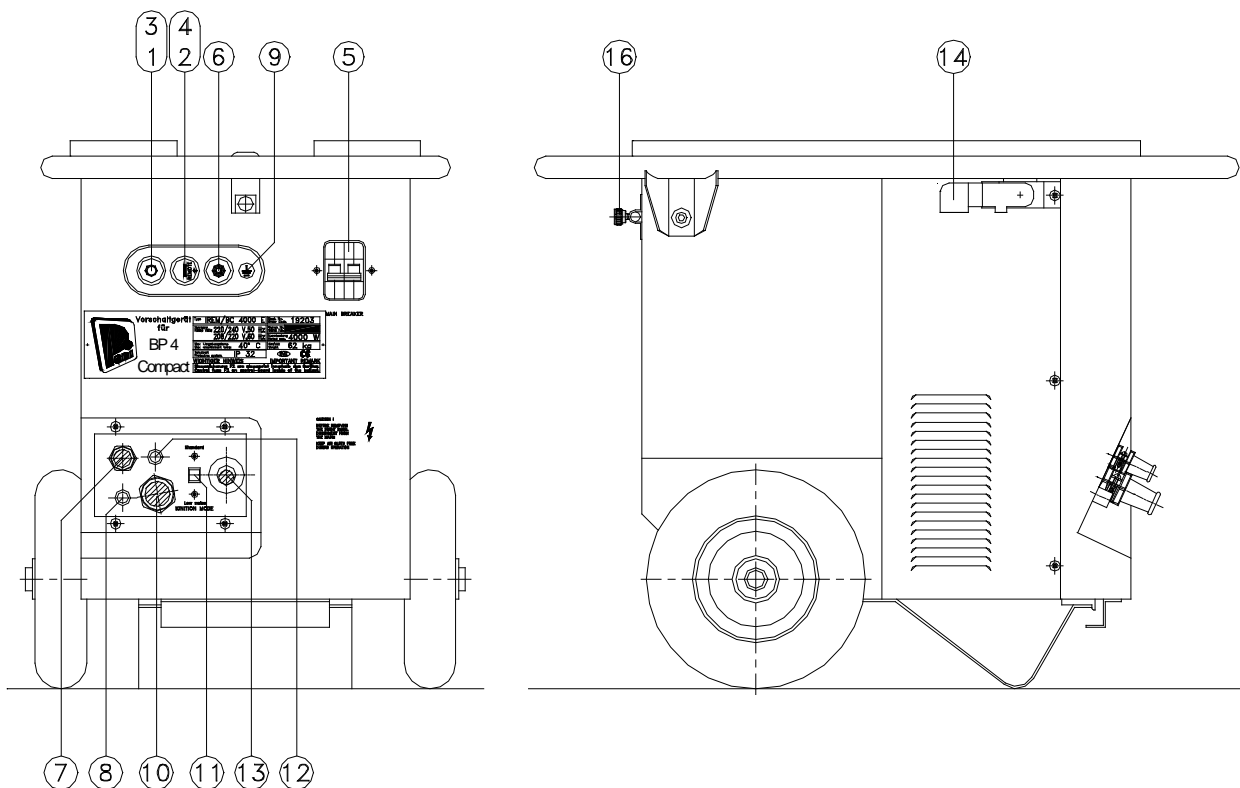
2.2) Control Panel on the Projector



Legend

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

2.3) Ballast



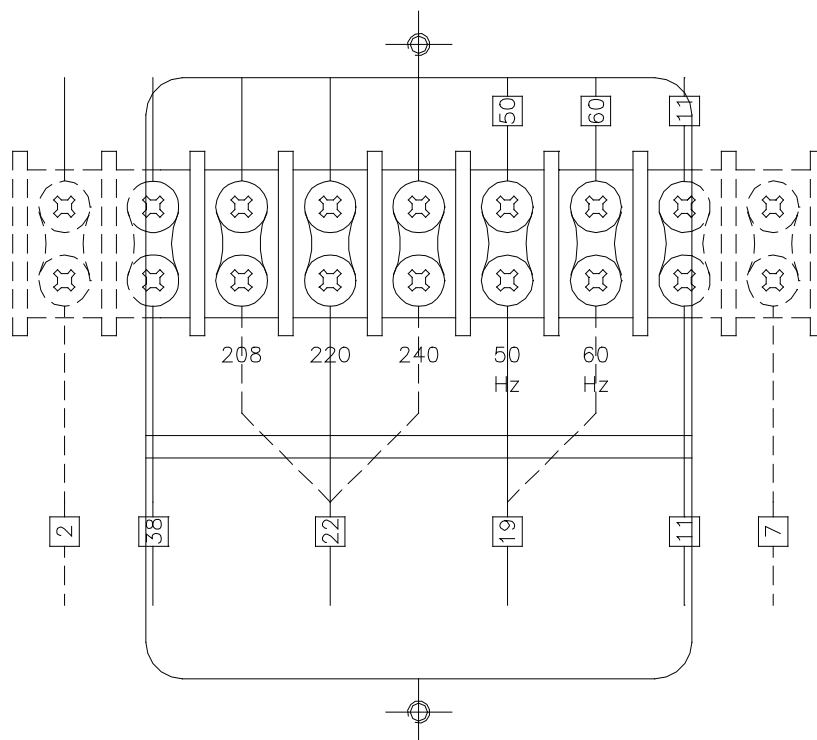
Control Panel on the Ballast

- (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) **Remote Cable** to the Projector
- (8) **Remote Fuse** F 2, 2 AT (melting fuse)
- (9) **Ground Control Lamp**
- (10) **Lamp Current Cable** to the Projector
- (11) **Remote Fuse** F 4, 10 AT (melting fuse)
- (12) **Low- Noise Switch**
In Low-Noise mode, silent ignition of the lamp is possible
- (13) **Main Connection Cable**
3x 4 mm², 2 m long with free ends.
- (14) Voltage and Frequency Selector on Ballast BC 4000/E**
(other types of ballast adequate)

ATTENTION: disconnect the ballast from the power supply

The lid on top of the ballast [Pos. 2.3(14)] can be removed after unscrewing the cross screws so that the voltage and the frequency may both be set by changing the connections 22 and 19



- (15) **Slide** for fixing the vertical position of transporting grip
- (16) **Snap lock** for fixing horizontal position of transporting grip

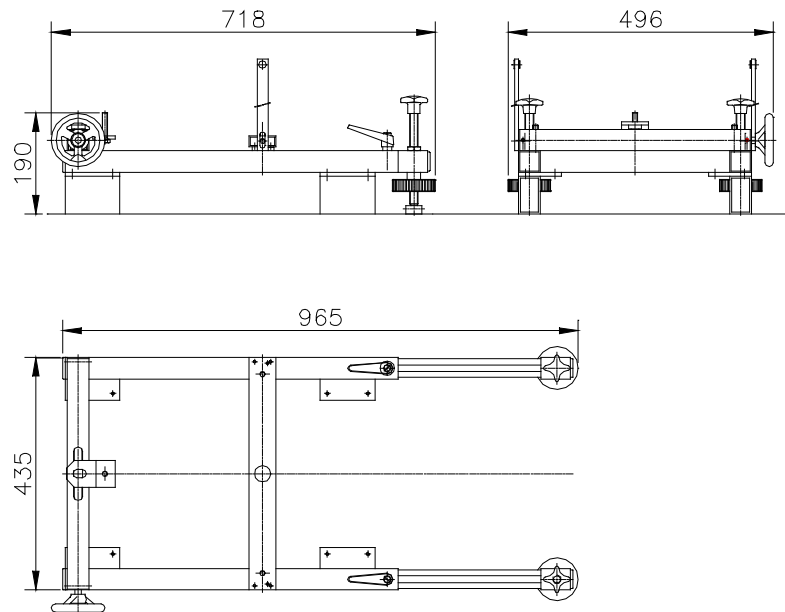
3) Mounting Accessories

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

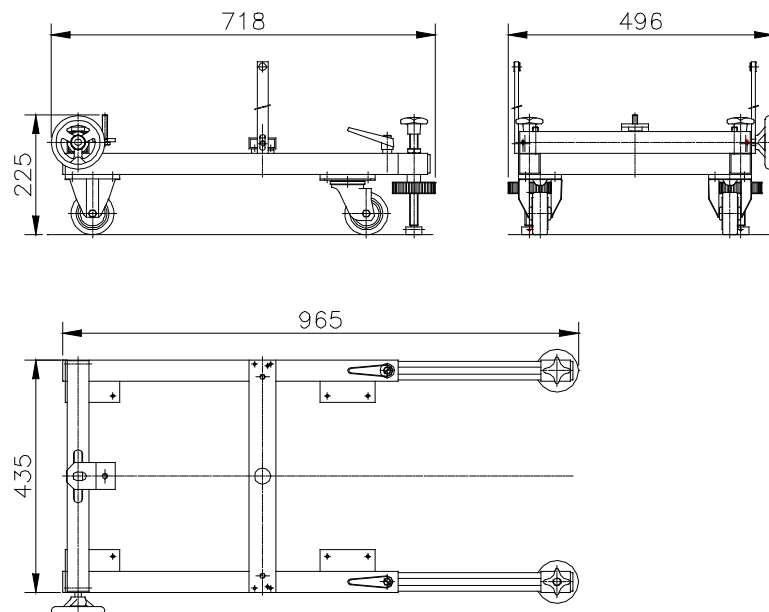
Order Code: 12036



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

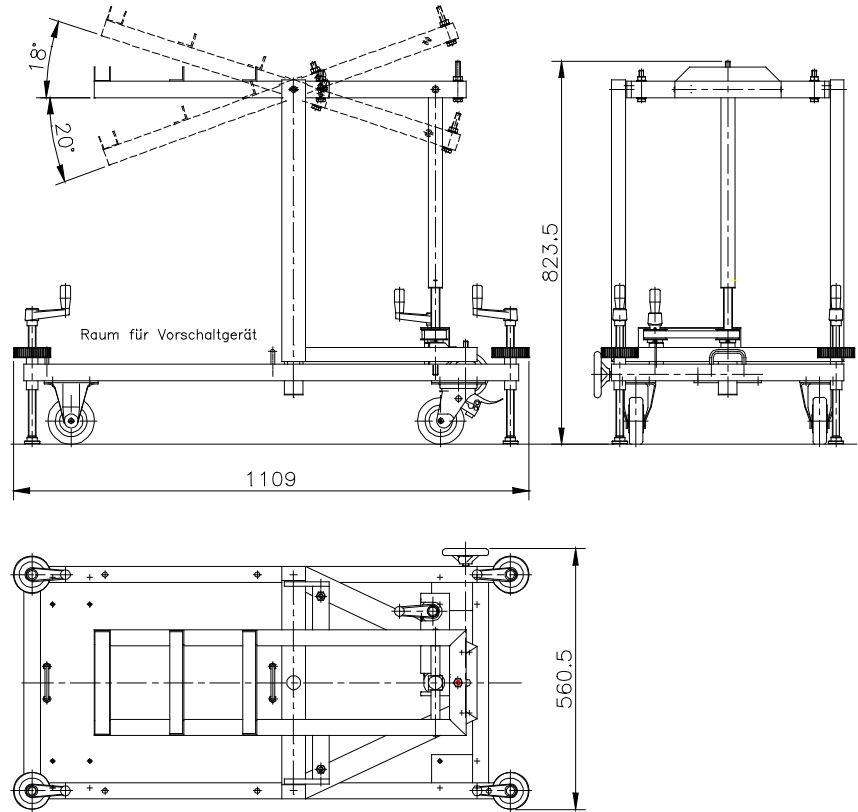
Horizontal fine adjustment ($\pm 6^\circ$) and telescoping rails provide additional flexibility and forward stabilization of the projector with the application of this accessory

Order Code: 12001



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

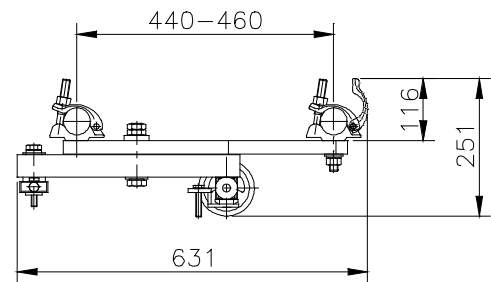
Rolling cart, with horizontal ($\pm 6^\circ$) and associated vertical ($+18^\circ -20^\circ$) adjustment for projectors and accessories (i.e. ZOOM- Objective).
Order Code: 12037



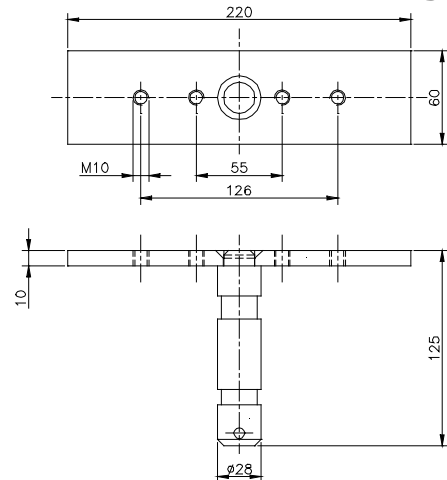
3.4) Hanging Apparatus for Projectors of the "Compact"-Series

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

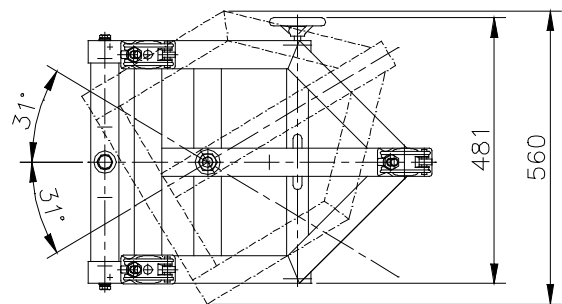
Order Code: 12038



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 (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 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 (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!

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 "TURBO - Standard - Low Noise"

A "TURBO - Standard - Low Noise" mode switch is located on the slide cooling fan housing (12).

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. Use "TURBO" Mode if noise doesn't matter and dark slides should be protected for lasting projections.

POSITION NUMBERS SEE PAGE 5

5) Operation

5.1) HMI- Lamp

5.1.1) Installation and Replacement of the HMI- Lamp

For operation of the Projector a single ended HMI- Lamp 4000 W is required. Order Code: 37206

- a)** Disconnect the projector from the power source!
- b)** Open the quick fastener (4) on the housing with a screw driver. Lift up the housing cover (5) . 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 knurled 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 knurled 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

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. In direction of the optical axis the HMI-lamp can be brought into another position from the outside on the lower part of the projector by loosening the two screws on the bottom (3) and moving the two screws forwards or backwards. After finding the best position re-tighten the screws.

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

5.3) Yoke Assembly for „Standing“ or „Hanging“ Configurations

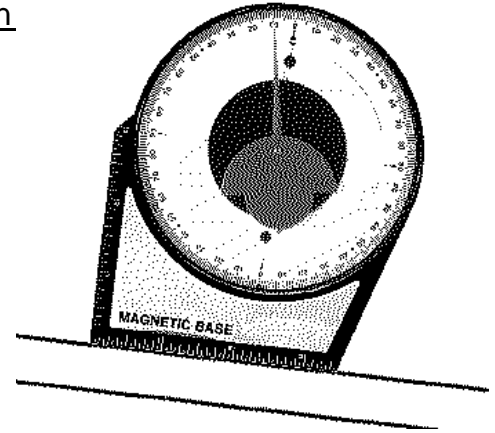
Separate the support yoke (8) (2 M 10 Nuts) and the telescope rails (7) on both sides from the projector; Turn the support yoke around 180° such that it is mounted again as a hanging yoke. Re-connect the telescoping rails.

POSITION NUMBERS SEEPAGE 5

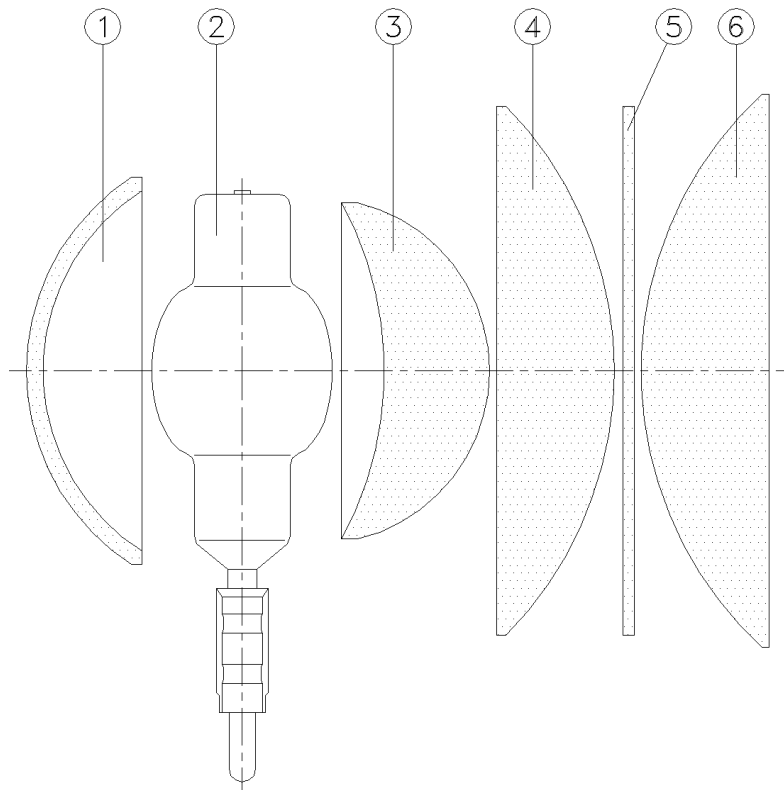
5.4) Using the Tilt Angle Meter

For safe operation it is necessary to respect the tilt range of the projector (see General Technical Data on page 21).

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.



6) Position Drawing Condenser System



Legend

(1)	Spherical Cold Mirror 165 mm Ø	Type:	Order Code:
(2)	HMI- Lamp 4000 W single ended		100-15-19
(3)	Meniscus Lens Ø 147 mm		37206
(4)	Middle Condenser Lens PC Ø 220 mm/ R 156 Borosilikat		222- 03- 05
(5)	PANI – Universal Filter		Ø 220 x 4
(6)	Front Condenser Lens for Objective 11- 27 cm, PC Ø 230 mm, multicoated, with Mounting Plate		12440
	Front Condenser Lens for Objective 33- 40 cm, PC Ø 230 mm, multicoated, with Mounting Plate		12441
	Front Condenser Lens for Objective 50- 60cm, PC Ø 230 mm, multicoated, with Mounting Plate		12442
	Front Condenser Lens for Objective 80 -125 cm, PC Ø 230 mm, multicoated, with Mounting Plate		12443

7) Electrical Connection

(See Electrical Schematic 230- 02- 01/a)

The HMI Stage Projector BP 4 CT is used in conjunction with the ballast 4000 W, 220/240V- 50 Hz, 208/220V- 60 Hz (Order Code: 19203).

The ballast incorporates a choke which limits lamp power to 24 A.

Main power is interrupted when the projector housing is opened.

7.1) Main Power Connection

Universal - ballast 4000 W, 220/240 V- 50 Hz, 208/ 220 V- 60 Hz

Main Power Cable 3x 4 square millimeters, two meters long with open leads

Phase R: brown, Neutral N: blue, Ground PE: yellow/green

Connected to power source 230 V/ 50 Hz, 25 A

7.2) Connecting Cable Ballast - Projector

On the Universal - ballast there is one lamp current cable mounted with a CEE - clutch 4x 32 A and one remote cable with a 10-pin clutch. Standard length is 3 m (may be extended – for extremely long runs wire gauge may need to be larger). Both cables are connected to the projector by using the mounted plugs.

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. 8). 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).

POSITION NUMBERS SEE PAGE 6

8) Objective Lenses

8.1) Front Condenser Lens

In the BP 4 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,

Order Code: 12440

PC Diameter 230 mm, multicoated

for Objective Lens $f = 33$ and 40 cm,

Order Code: 12441

PC Diameter 230 mm, multicoated

for Objective Lens $f = 50$ and 60 cm

Order Code: 12442

PC Diameter 230 mm, multicoated

for Objective Lens $f = 80$ cm and 125 cm

Order Code: 12443

8.2) Projection Objective Lenses

Optional projection objective lenses (focal lengths from $f=11$ to 125 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 NOTES

WHEN USING WIDE ANGLE LENSES:

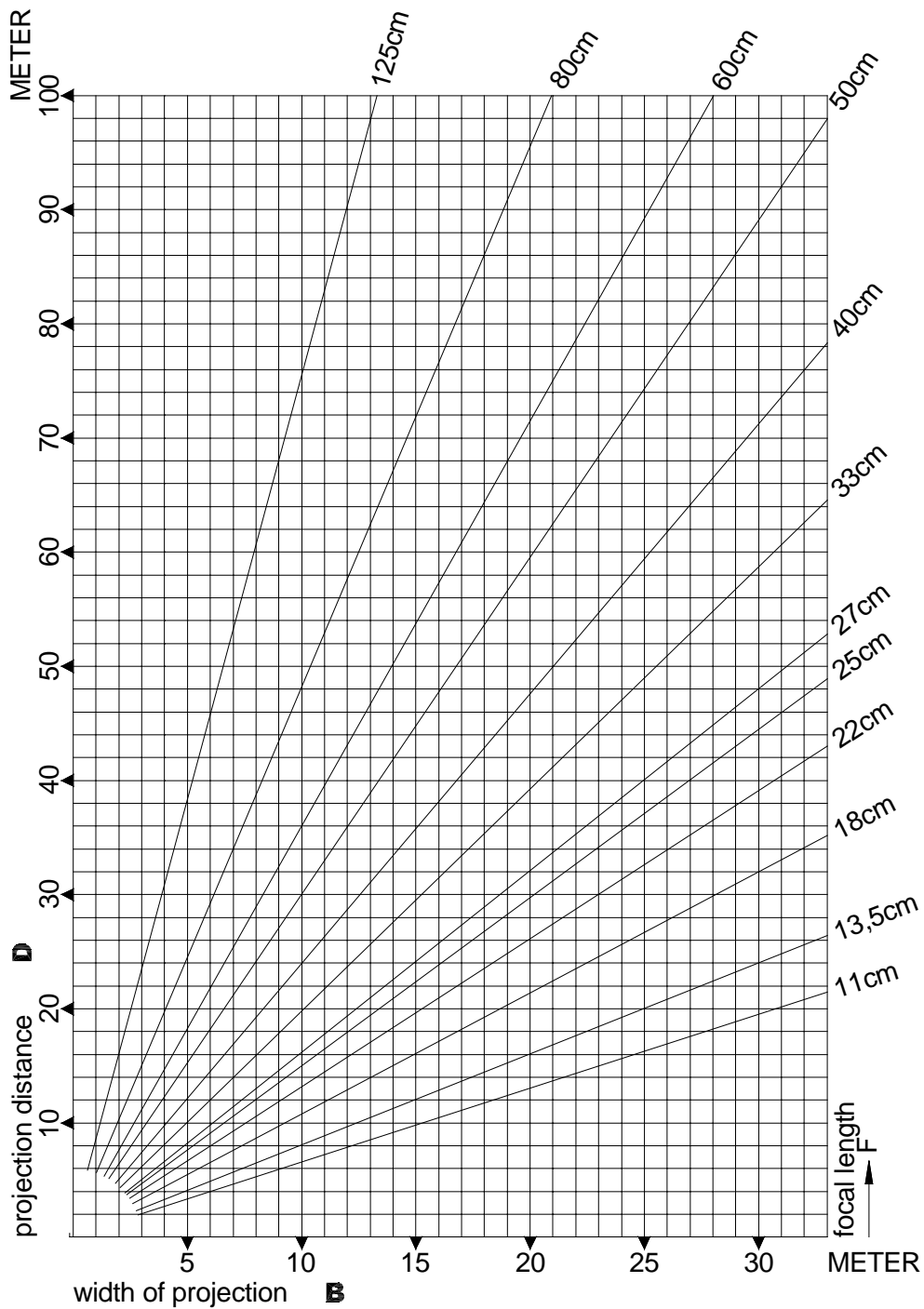
The projector must **never** be operated **without** a slide, with dimming shutters closed for longer than one minute!

GENERAL SAFETY TIP:

NEVER USE THE PROJECTOR WITHOUT ANY OBJECTIVE LENS!!!

9) Projection Diagram

for $O = 17\text{cm}$



calculating formulas

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

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 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.

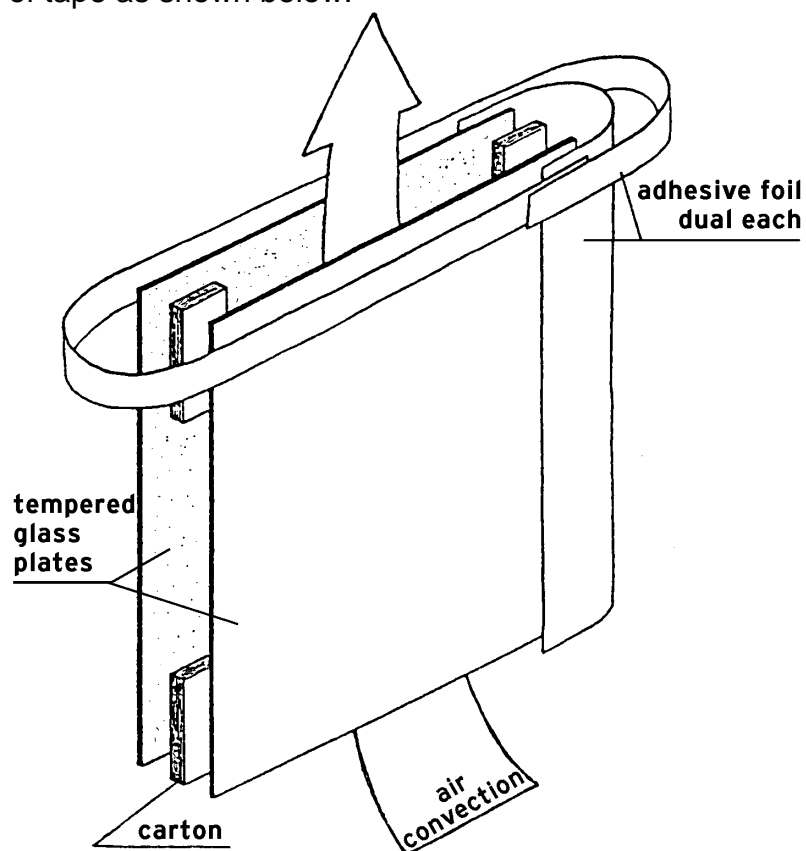
Since short times also budget-priced ink jet printed foils are used to make slides.

Please inform yourself about actuals on our homepage (www.pani.com). 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:

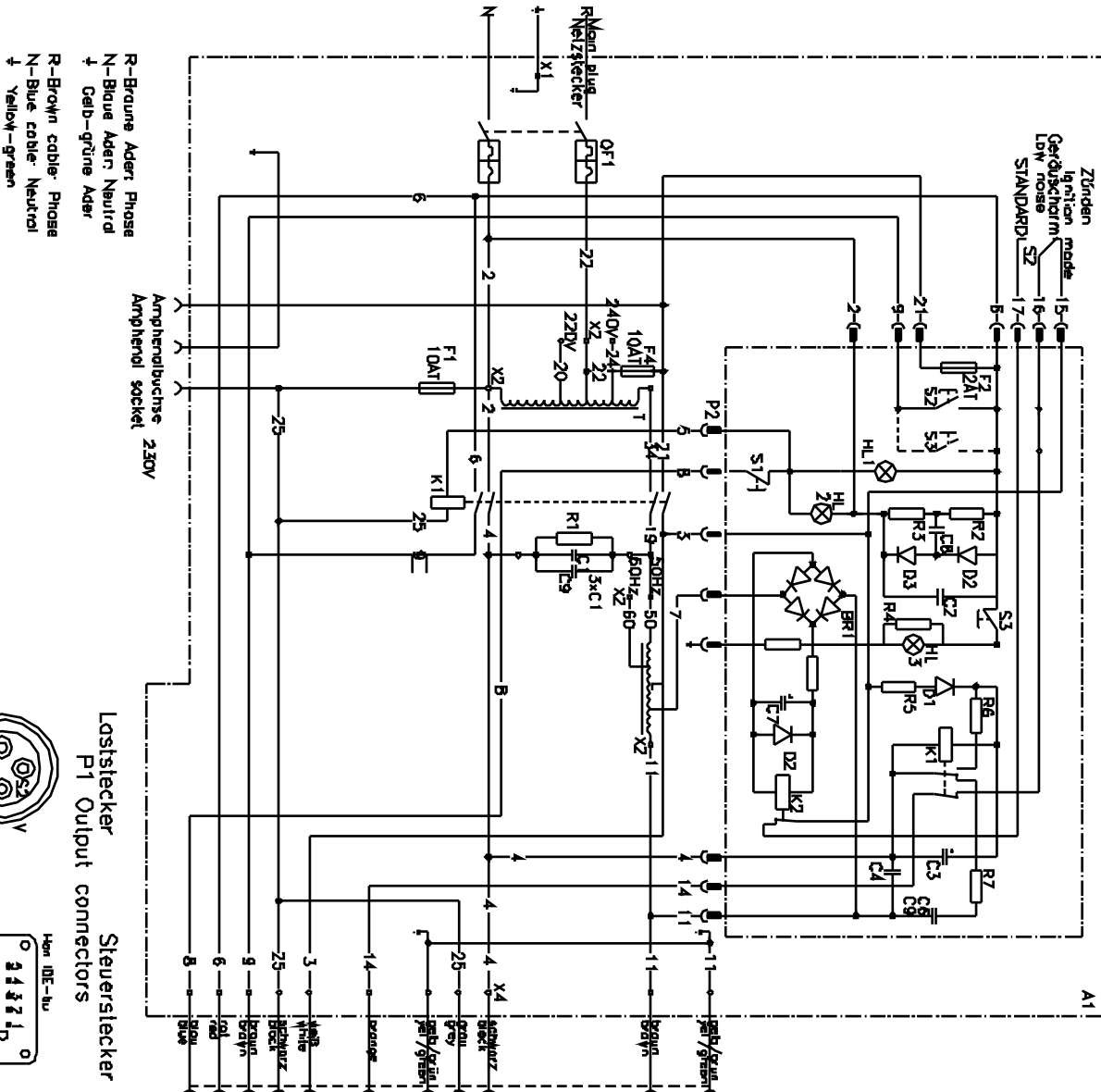
If possible, insert the slide with the layer averted from the projector to protect the layer!

11) Electrical Schematic

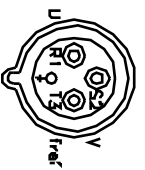
BP 4 CT

Drawing No.: 230-02-01

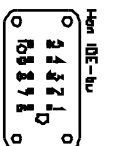
Vorschaltgerät BC 4000-EP
Ballast BC 4000-EP



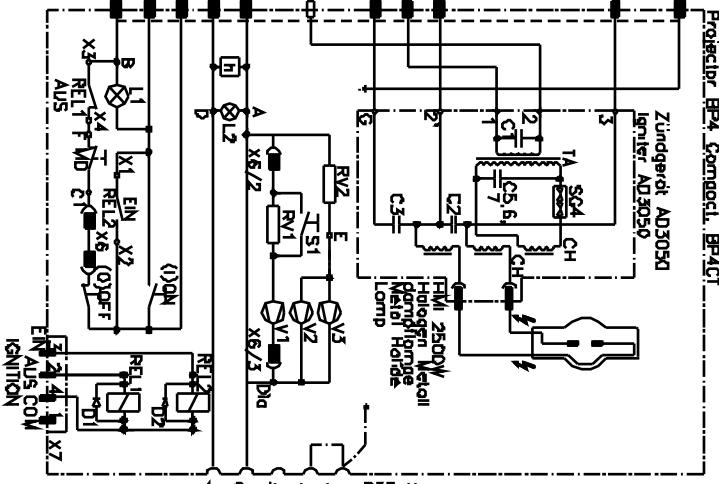
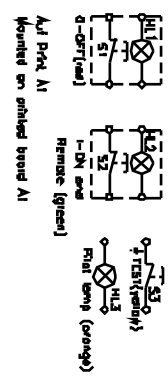
R-Braune Adert. Phase
 N-Blau Adert. Neutral
 † Gelb-grüne Adert
 R-Brown cable. Phase
 N-Blue cable. Neutral
 † Yellow-green



Losstecker P1 Output connectors



Steuerstecker



4x Gerätestecker 230 V
 4x Socket 230 V Power
 Supply for attachment

12) Basic Unit as Delivered

- | | | | |
|---|--|----------------------------|--|
| 1 | HMI- STAGE PROJECTOR 4 KW - CT | | |
| | The Projector is supplied with a universal mounting yoke for hanging and standing configurations and mounted on a rolling undercarriage. | | |
| 1 | Universal - ballast 4000 W,
220/ 240 V- 50 Hz, 208 /220 V- 60 Hz
with 2 m mainconnection cable 3x 4 mm ² with free ends,
3 m lamp current cable with clutch CEE 4x 32 A und
3 m remote cable with 10-pin clutch | Type: H 509
Type: H 510 | |
| 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 4000 W / 200 V / single ended G38 | Order Code: 37206 | |
| 1 | screened sketch block, | Type: G 1583 | |
| 1 | "Dark" - Slide (for protection of dimming shutter) | Type: G 1581 | |
| 1 | Tilt Angle Meter | | |
| 1 | User Handbook | | |
| 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 4000 W/200V, G 38 single ended		37206
Dimming Shutter G405 PCS-III-DMX with processor control for Gray Scale Glass 20.5x 22 cm,incl. control box 100/ 230 V-50/60 Hz, external control 0 to +/-10 VDC and DMX512 incl. demultiplexer for additional 5 channels for ignition on the projector as well as for controlling effect drives. 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	
Film Scroller CS-70		
DMX-, PC- or automated driven film moving unit for up to 70 slides or scenes up to 13m usable film		12520
Automatic Slide Changer AMD-32 up to 32 slides in cassette		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 220 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: max. 35°C

<u>Weight:</u>	<u>unpacked</u>	<u>packed</u>
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Projector	65 kg	80 kg
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Carton Dimensions: Bx Hx T= 62x 115x 91 cm
0,65 m³

<u>Weight:</u>	<u>unpacked</u>	<u>packed</u>
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Ballast:	73 kg	83 kg
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Carton Dimensions: Bx Hx T= 41x 70x 74 cm
0,21 m³

Ballast:

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

Current: 23 A

Circuit Breaker: 25 AT

Lamp:

Wattage	4000 W
Rated Life	500 Hours
Color Temperature	6000 K
Light Output	380 000
Im	
Lamp Voltage	200 V
Lamp Current	24 A
Lamp Base	G 38
Ignition Voltage	50 kV

15) Spare Parts

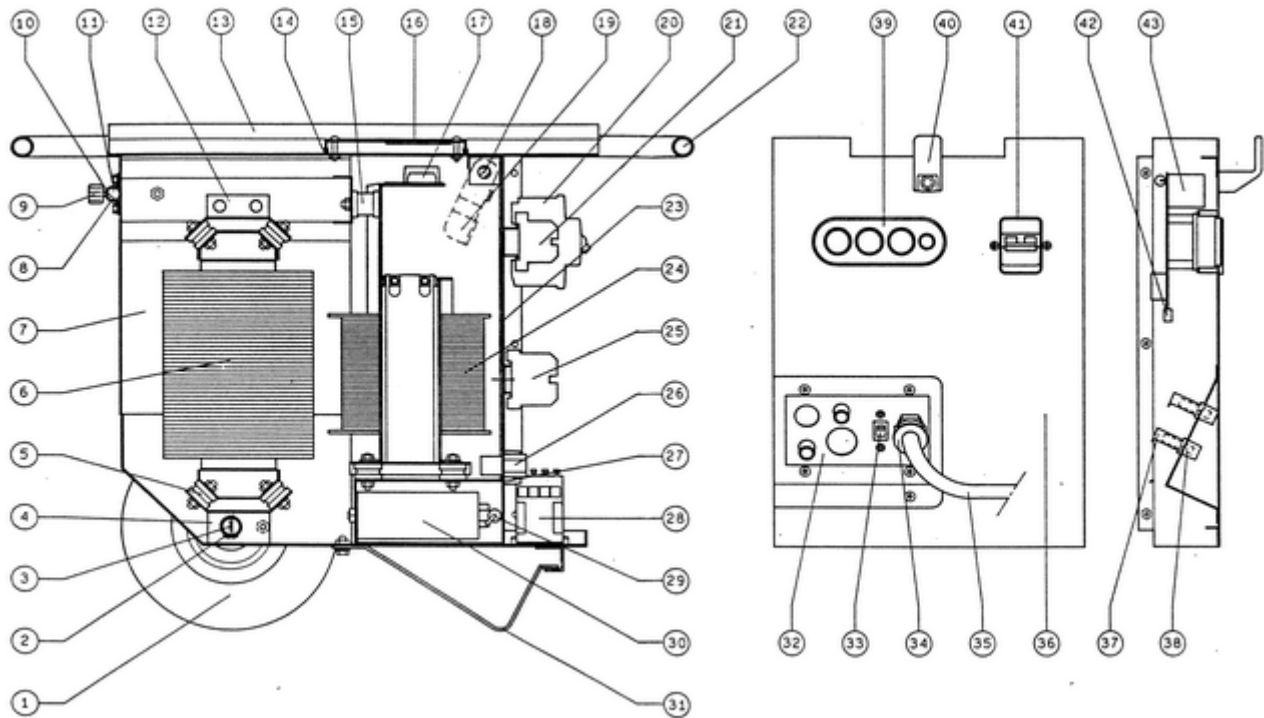
BP 4 CT		Main Assy. No.: 230-	
Description		Order Code:	Qty./Unit
Housing		Main Assy. No.: 230- 01-	
Mounting plate		11-0227	1
Mounting plate for tangential blower		11-0228	1
Lamp Base Support		11-0226	1
Cover Hinge		31-0050	2
Electromechanical Parts		Main Assy. No.: 230- 02-	
Tangential Blower		21-0097	1
Tangential Blower		21-0098	1
Radial Blower		432577	1
CEE- Connector 4x32A		22-0017	1
Annex Housing HB. 10. AG- VS		21-0101	1
Pin Insert HE 6/10 Sti. s		21-0100	1
Hour Counter		22-0004	1
Igniter		22-0037	1
ON - Pushbutton (green)		23-0008	1
OFF- Pushbutton (red)		23-0009	1
Connector		21-0025	1
Miniature Voltage Selector SWA		23-0017	1
Snap Guides		21-0102	1
Lamp Base G38 with Lock Lever		22-0045	1
Resistor in Aluminum Housing		23-0018	1
Resistor in Aluminum Housing		23-0019	1
Mechanical Materials		Main Assy. No.: 230- 03-	
Wing Nuts M8 Galvanized		21-0019	4
Adjustable Clamping Lever M8		21-0086	2
Adjustable Clamping Grip		21-0104	1
Label "PANI BP4CT"		21-1516	2
Lock with spring ring		21-0141	1
Lock base		21-0143	1

Description	Order Code:	Qty. /Unit
Optical Materials	Haupt Nr.: 230- 04-	
Plano-Convex Lens for Objective11 - 27 cm	Ø 230/ 300 MC	1
Plano-Convex Lens for Objective33 - 40 cm	Ø 230/ 360 MC	1
Plano-Convex Lens for Objective50 - 60 cm	Ø 230/ 390 MC	1
Plano-Convex Lens for Objective80 -125cm	Ø 230/ 500 MC	1
Plano-Convex Lens (Middle Lens)	Ø 220/ 300 BS	1
Meniscus Lens Ø 147	222 - 03 – 05	1
PANI – Universal Filter	Ø220	1
Spherical Cold Mlrror Dia.165 mm	100 - 15 - 19	1
Ventilator Housing	Haupt Nr.: 230- 05-	
Switch Bracket	11-0125	1
Mounting Screw for Ventilator Housing	21-0106	2
Cable Bushung with Retaining Clamp and Guard	90-0012	1
Power Connector C146A	90-0054	1
Ventilator Housing Complete	90-0055	1
Ventilator Connector	90-0114	1
Hanger for G405 PCS Control Box	Haupt Nr.: 222- 06-	complete
Tilt Mechanism with Fine Adjustment	Haupt Nr.: 222- 08-	
Grip	31-0070	1
Grip for Fine Adjustment	31-0047	1
Pinion Gear	21-0150	2
Rack	21-0088	1
Undercarriage	12036	
Plate for Support Bracket	31-0071	2
Lift-off Spindle Complete	11-0203	2
PVC Sleeve - Black	21-0111	2
PVC Sleeve - Black	21-0112	2
Hand Wheel	21-0062	2
Adjustable Clamp Lever Ø32/M10	21-0107	2

Description	Order Code:	Qty. /Unit
Rolling Undercarriage	12001	
Plate for Support Bracket	31-0071	2
Lift-off Spindle Complete	11-0203	2
Casters	21-0060	2
Fixed Rollers	21-0061	2
PVC Sleeve - Black	21-0111	2
PVC Sleeve - Black	21-0112	2
Hand Wheel	21-0062	2
Adjustable Clamp Lever \varnothing 32/M10	21-0107	2
Projection Cart	12037	
Frame	21-0147	1
Casters	21-0148	2
Fixed Rollers	21-0149	2
Hanging Apparatus	12038	1
Safety Switch	90-0015	1
Slide Carrier	12513	
Guide Rollers	11-0107	4
Excentric Guide Rollers	11-0108	4
Side Springs	21-0071	2
Bolts	21-0072	2
Nuts	21-0073	2
Adjustment Spindle	21-0074	2
Angle Bracketl	21-0075	4
Spring	21-0076	8
Cylindrical Screw	21-0077	2
Ball Knob	21-0078	2
Pressure Springs	31-0042	4
Slide Holder 18x 18	31-0043	2
Locking Pin and Guide Rollers for Slide Carrier	11-0219	1
Pin Insert	21-0113	1
CEE- Coupling 4x32A	22-0046	1
Connector Housing CHV10	22-0047	1
Cable Strain Relief Complete	90-0034	1
Cable Strain Relief Complete	90-0056	1

Ballast BC 4000- EP(standard)

For spareparts of the ballast versions -A and -J please contact the PANI-support team!



Pos.	Description	Order Code:	Qty. /Unit
2	Wheels	88941295	2
6	Choke	63090141	1
8	Clip	82931450	1
9	Knob	88941014	1
15	Swing Bracket	88941400	1
16	Terminal Cover (Voltage Selector)	72000535	1
17	Terminal Block	84620079	1
19	Lever	81029531	1
20	Protective Cover	88505240	1
21	Grounding Clamp	84610156	1
22	Hand Grip	71019511	1
24	Auto- Transformer	63010150	1
25	Grounding Clamp	84610156	1
25	Clamp	84610155	9
25	Lock	84610154	1
25	End Plate	84610152	1
28	Guard	88471122	1
29	Resistor	88205396	1
30	Capacitor 20 μ F	88320020	1
30	Capacitor 40 μ F	88320041	1
31	Swing Bracket Feet	81019505	1
33	Disc Switch	88901500	1
37	Fuse Holder 6,3x 32	88516200	2
38	Fuse Cap 6,3x 32	88516201	2
38	Fuse 10 AT	88526102	2
43	Control Card Complete	78800590	1