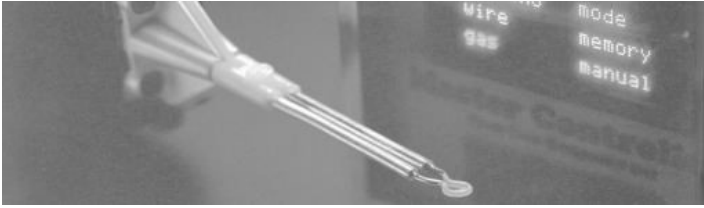




# Haug

New Power Cube Series

MODULAR INDUCTION SOLDERING SYSTEMS FOR THE SPECTACLE FRAME INDUSTRY



## Power Cube Series

*The growing needs for precision, accuracy and speed in the soldering of small metal pieces, in sectors that traditionally use manual processing - such as the spectacle frame production sector, have prompted CEIA to research and design the "Power Cube Series" which is marketed on a worldwide level by HAUG, Pforzheim, Germany.*

*This series is based on modular devices that are small in size and that are technologically highly advanced: the devices, in their various combinations, make up workstations, that vary in complexity from a single manual soldering point to multiple automatic points in which operator intervention is limited to the loading of the pieces to be processed.*

*All the configurations share certain special characteristics:*

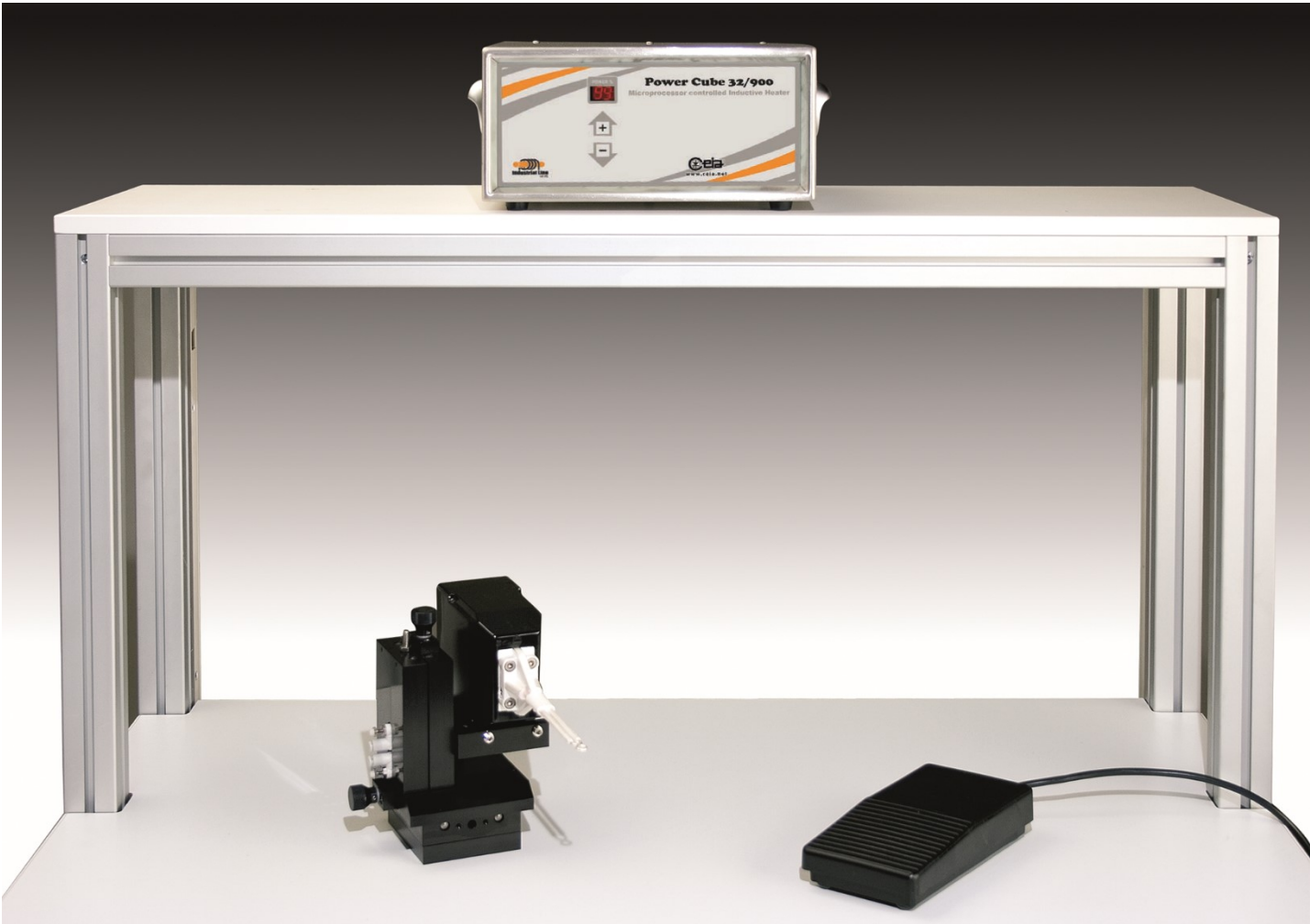
- *a high soldering yield with minimum running costs and reduced heating times*
- *a precise and repetitive control over the soldering parameters, easily programmed for all the phases of the cycle*
- *minimum space occupied in terms of the dimensions of the basic thanks to the use of the latest generation of electronic components*
- *the modular nature of the system which allows the choice of the configuration best suited to individual needs and the possibility to further enhance it with the addition of devices from the same series.*

*This catalogue outlines the standard working solutions that are available: in the appendix there is a description of the accessories the technical features of the basic devices and a detailed list of spare parts.*



MANUAL WORKSTATIONS: POWER CUBE

MANUAL WORKSTATION FOR ONE SINGLE SOLDERING POINT



Features of the system

- One soldering point operated manually
- Digital regulation of the heating power
- Automatic control over tuning
- System entirely controlled by microcomputer
- Activation of soldering by means of a pedal or external control
- Self-diagnosis and malfunctioning alarms
- Connections for link-up to other devices in the Power Cube series

Principal advantages

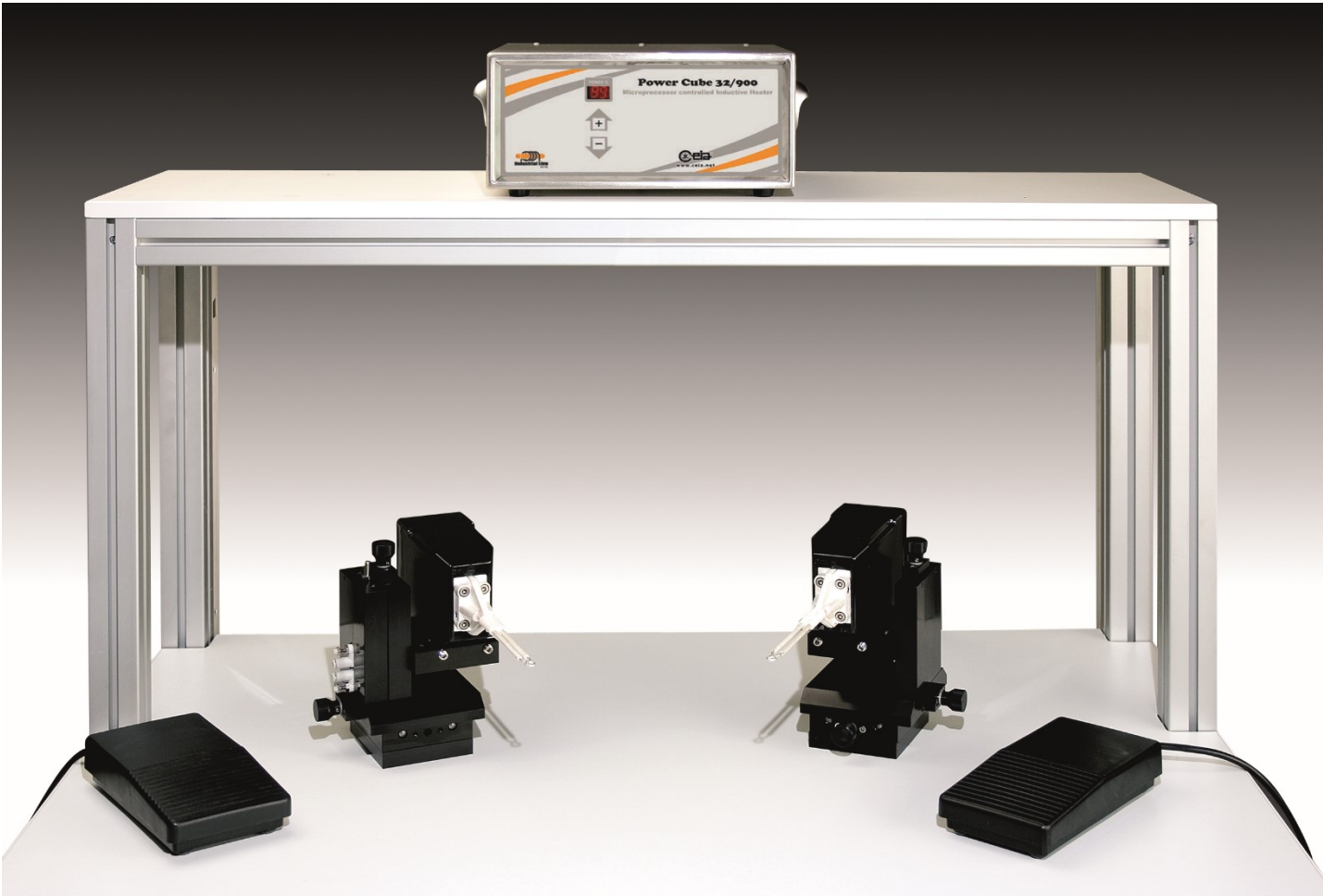
- Rapid heating up - High yield
- Extreme simplicity of use
- Absolutely precise repetition of the amount of power distributed
- Low running cost
- No calibration needed
- Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations
- High performances-to-price ratio
- The system may be made to function at higher configurations by adding other devices of the Power Cube series

Composition

| Item                           | Description   | Q.ty |
|--------------------------------|---|------|
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator  | 1    |
| HH-10                          | Heating head (for Power Cube 32/45)<br>with activation pedal PE10   | 1    |
| ES-35                          | High precision adjustable support for<br>heating head (optional)<br>(Photo shows pneumatic version ES-35-P) | 1    |

MANUAL WORKSTATIONS: POWER CUBE

MANUAL WORKSTATION FOR TWO ALTERNATING SOLDERING POINTS



Features of the system

- Two soldering points operated manually
- Digital regulation of the heating power
- Automatic control over tuning
- System entirely controlled by microcomputer
- Activation of soldering by means of a pedal or external control
- Self-diagnosis and malfunctioning alarms
- Connections for link-up to other devices in the Power Cube series

Principal advantages

- Rapid heating up - High yield
- Extreme simplicity of use
- Absolutely precise repetition of the amount of power distributed
- Low running cost
- No calibration needed
- Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations
- High performances-to-price ratio
- The system may be made to function at higher configurations by adding other devices of the Power Cube series

Composition

| Item                           | Description  | Q.ty |
|--------------------------------|--|------|
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator   | 1    |
| HH-10                          | Heating head (for Power Cube 32/45)<br>with activation pedal PE10  | 2    |
| ES-35                          | High precision adjustable support for<br>heating head (optional)<br>(Photo shows pneumatic version ES-35-P<br>on the left hand side) | 2    |

SEMI-AUTOMATIC WORKSTATIONS: POWER CUBE + MASTER CONTROLLER V3+ BASIC

SEMI-AUTOMATIC WORKSTATION FOR ONE SINGLE SOLDERING POINT



Features of the system

- Semi-automatic workstation with a single soldering point
- Regulation of the heating power
- Programming of the temperature of the workpiece and control by means of optical pyrometers
- Control and synchronization of the gas dispensers in order to prevent oxidation and to cool the workpiece
- System entirely controlled by microcomputer
- Activation of soldering by means of a pedal or external control
- Outlet for an external wire feeder
- Self-diagnosis of all the phases of the soldering cycle
- Input for synchronization with external devices

Principal advantages

- Rapid heating up - High yield
- Manual intervention limited to the placing of the soldering alloy
- Low running cost
- Fully guided programming of all the cycle parameters (by means of a built-in keyboard)
- No time wasted in setting up configurations, thanks to the 100 settings storable and thanks to the Chip Card system which allows production to be better organized and gives an unlimited storage capacity.
- Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations
- The system may be made to function at higher configurations by adding other devices of the Power Cube series

Composition

| Item                           | Description  | Q.ty |
|--------------------------------|--|------|
| Master Controller V3+ BASIC    | Master Controller V3+ BASIC electronic control unit  | 1    |
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator   | 1    |
| HH-10                          | Heating head (for Power Cube 32/45) with activation pedal PE10   | 1    |
| SH15/SLE-550-D3                | Optical sensor 200°C-1600°C with support SH23 and additional lens 120 or 240mm focus                     | 1    |
| SH15/SLE-550-D4                | Optical sensor 500°C-2000°C with support SH23 and additional lens 120 or 240mm focus                     |      |
| SG-100                         | Anti-oxidizing gas dispenser system  | 1    |
| ES-35                          | High precision adjustable support for heating head (optional)<br>(Photo shows pneumatic version ES-35-P) | 1    |
| ES-3M-MS                       | High precision adjustable base for optical pyrometer (optional)  | 1    |

Tables and overhead structures are optional



SEMI-AUTOMATIC WORKSTATIONS: POWER CUBE + MASTER CONTROLLER V3+ BASIC

SEMI-AUTOMATIC WORKSTATION FOR TWO ALTERNATING SOLDERING POINTS



Features of the system

- Semi-automatic workstation with two alternating soldering points
- Regulation of the heating power
- Programming of the temperature of the workpiece and control by means of optical pyrometers
- Control and synchronization of the gas dispensers in order to prevent oxidation and to cool the workpiece
- System entirely controlled by microcomputer
- Activation of soldering by means of a pedal or external control
- Outlet for an external wire feeder
- Self-diagnosis of all the phases of the soldering cycle
- Input for synchronization with external devices

Principal advantages

- Rapid heating up - High yield
- Manual intervention limited to the placing of the soldering alloy
- Low running cost
- Fully guided programming of all the cycle parameters (by means of a built-in keyboard)
- No time wasted in setting up configurations, thanks to the 100 settings storable and thanks to the Chip Card system which allows production to be better organized and gives an unlimited storage capacity.
- Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations
- The system may be made to function at higher configurations by adding other devices of the Power Cube series

Composition

| Item                           | Description   | Q.ty |
|--------------------------------|---|------|
| Master Controller V3+ BASIC    | Master Controller V3+ BASIC electronic control unit   | 1    |
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator  | 1    |
| HH-10                          | Heating head (for Power Cube 32/45) with activation pedal PE10  | 2    |
| SH15/SLE-550-D3                | Optical sensor 200°C-1600°C with support SH23 and additional lens 120 or 240mm focus  | 2    |
| SH15/SLE-550-D4                | Optical sensor 500°C-2000°C with support SH23 and additional lens 120 or 240mm focus  |      |
| SG-100                         | Anti-oxidizing gas dispenser system   | 2    |
| ES-35                          | High precision adjustable support for heating head (optional) (Photo shows pneumatic version ES-35-P on the left hand side) | 2    |
| ES-3M-MS                       | High precision adjustable base for optical pyrometer (optional)   | 2    |

Tables and overhead structures are optional

SEMI-AUTOMATIC WORKSTATIONS: POWER CUBE + MASTER CONTROLLER V3+ BASIC

SEMI-AUTOMATIC WORKSTATION FOR TWO SIMULTANEOUS SOLDERING POINTS



Features of the system

- Two simultaneous, semi-automatic soldering points
- Regulation of the heating power
- Programming of the temperature of the workpiece and control by means of optical pyrometers
- Control and synchronization of the gas dispensers in order to prevent oxidation and to cool the workpiece
- System entirely controlled by microcomputer
- Activation of soldering by means of a pedal or external control
- Outlet for an external wire feeder
- Self-diagnosis of all the phases of the soldering cycle
- Input for synchronization with external devices

Principal advantages

- Rapid heating up - High yield
- Manual intervention limited to the placing of the soldering alloy
- Low running cost
- Fully guided programming of all the cycle parameters (by means of a built-in keyboard)
- No time wasted in setting up configurations, thanks to the 100 settings storable and thanks to the Chip Card system which allows production to be better organized and gives an unlimited storage capacity.
- Soldering of frames requiring only one single positioning of the frame components
- Two simultaneous soldering operations
- Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations

Composition

| Item                           | Description   | Q.ty |
|--------------------------------|---|------|
| Master Controller V3+ BASIC    | Master Controller V3+ BASIC electronic control unit   | 1    |
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator  | 2    |
| HH-10                          | Heating head (for Power Cube 32/45) with activation pedal PE10  | 2    |
| SH15/SLE-550-D3                | Optical sensor 200°C-1600°C with support SH23 and additional lens 120 or 240mm focus  | 2    |
| SH15/SLE-550-D4                | Optical sensor 500°C-2000°C with support SH23 and additional lens 120 or 240mm focus  |      |
| SG-100                         | Anti-oxidizing gas dispenser system   | 2    |
| ES-35                          | High precision adjustable support for heating head (optional) (Photo shows pneumatic version ES-35-P on the left hand side) | 2    |
| ES-3M-MS                       | High precision adjustable base for optical pyrometer (optional)   | 2    |



Tables and overhead structures are optional

**AUTOMATIC WORKSTATIONS: POWER CUBE + MASTER CONTROLLER V3+ ADVANCED**  
**AUTOMATIC WORKSTATION FOR ONE SINGLE SOLDERING POINT**



**Features of the system**

- Single soldering point, completely automatic
- Regulation of the heating power
- Programming of the temperature of the workpiece and control by means of optical pyrometers
- Control and synchronization of the gas dispenser in order to prevent oxidation and to cool the workpiece
- Control and synchronization of the solder-wire feeder with accurate and repeatable supply of the wire and control over the maximum torque
- System entirely controlled by microcomputer
- Self-diagnosis of all phases of the soldering cycle
- Programming protected from tampering
- Chip card system: a device for reading and recording the program cards

**Principal advantages**

- Extremely high precision system - Perfect quality soldering
- Soldering cycle requiring no intervention by operator
- Heats rapidly - High yield
- Low running cost
- Fully guided programming of all the cycle parameters
- No time wasted in setting up configurations, thanks to the 100 settings storable and thanks to the Chip Card system which allows production to be better organized and gives an unlimited storage capacity.
- Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations

**Composition**

| Item                           | Description  | Q.ty |
|--------------------------------|--|------|
| Master Controller V3+ ADVANCED | Master Controller V3+ ADVANCED electronic control unit   | 1    |
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator   | 1    |
| HH-10                          | Heating head (for Power Cube 32/45) with activation pedal PE10   | 1    |
| SH15/SLE-550-D3                | Optical sensor 200°C-1600°C with support SH23 and additional lens 120 or 240mm focus                     | 1    |
| SH15/SLE-550-D4                | Optical sensor 500°C-2000°C with support SH23 and additional lens 120 or 240mm focus                     |      |
| SG-100                         | Anti-oxidizing gas dispenser system  | 1    |
| LG-100                         | Solder-wire feeder   | 1    |
| WLC-1                          | Wire length control sensor (optional)  | 1    |
| MC                             | Memory card for Master Controller V3+  | 1    |
| ES-35                          | High precision adjustable support for heating head (optional)<br>(Photo shows pneumatic version ES-35-P) | 1    |
| ES-3M                          | High precision adjustable base for wire feeder (optional)  | 1    |
| ES-3M-MS                       | High precision adjustable base for optical pyrometer (optional)  | 1    |

Tables and overhead structures are optional

## AUTOMATIC WORKSTATION FOR TWO ALTERNATING SOLDERING POINTS



- Two alternating soldering points, completely automatic
- Regulation of the heating power
- Programming of the temperature of the workpiece and control by means of optical pyrometers
- Control and synchronization of the gas dispensers in order to prevent oxidation and to cool the workpiece
- Control and synchronization of the solder-wire feeders with accurate and repeatable supply of the wire and control over the maximum torque
- System entirely controlled by microcomputer
- Self-diagnosis of all phases of the soldering cycle
- Programming protected from tampering
- Chip card system: a device for reading and recording the program cards

- **Extremely high precision system - Perfect quality soldering**
- **Soldering cycle requiring no intervention by operator**
- **Heats rapidly - High yield**
- **Low running cost**
- **Fully guided programming of all the cycle parameters**
- **No time wasted in setting up configurations, thanks to the 100 settings storable and thanks to the Chip Card system which allows production to be better organized and gives an unlimited storage capacity.**
- **Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations**

| Item                           | Description  | Q.ty |
|--------------------------------|--|------|
| Master Controller V3+ ADVANCED | Master Controller V3+ ADVANCED<br>Electronic control unit  | 1    |
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator   | 1    |
| HH-10                          | Heating head (for Power Cube 32/45)<br>with activation pedal PE10  | 2    |
| SH15/SLE-550-D3                | Optical sensor 200°C-1600°C<br>with support SH23<br>and additional lens 120 or 240mm focus   | 2    |
| SH15/SLE-550-D4                | Optical sensor 500°C-2000°C<br>with support SH23<br>and additional lens 120 or 240mm focus   |      |
| SG-100                         | Anti-oxidizing gas dispenser system  | 2    |
| LG-100                         | Solder-wire feeder   | 2    |
| WLC-1                          | Wire length control sensor (optional)  | 2    |
| MC                             | Memory card for Master Controller V3+  | 1    |
| ES-35                          | High precision adjustable support for heating<br>head (optional)<br>(Photo shows pneumatic version ES-35-P on<br>the left hand side) | 2    |
| ES-3M                          | High precision adjustable base for wire<br>feeder (optional)   | 2    |
| ES-3M-MS                       | High precision adjustable base for optical<br>pyrometer (optional)   | 2    |

**AUTOMATIC WORKSTATIONS: POWER CUBE + MASTER CONTROLLER V3+ ADVANCED**  
**AUTOMATIC WORKSTATION FOR TWO SIMULTANEOUS SOLDERING POINTS**



**Features of the system**

- Two simultaneous soldering points, completely automatic
- Regulation of the heating power
- Programming and control of the temperature of the workpiece by means of optical pyrometers
- Control and synchronization of the gas dispensers in order to prevent oxidation and to cool the workpiece
- Control and synchronization of the solder-wire feeders with accurate and repeatable supply of the wire and control over the maximum torque
- System entirely controlled by microcomputer
- Self-diagnosis of all the phases of the soldering cycle
- Programming protected from tampering'
- Chip card system': a device for reading and recording the program cards

**Principal advantages**

- Extremely high precision system - Perfect quality soldering
- Soldering cycle requiring no intervention by operator
- Heats rapidly - High yield
- Low running cost
- Fully guided programming of all the cycle parameters
- No time wasted in setting up configurations, thanks to the 100 settings storable and thanks to the Chip Card system which allows production to be better organized and gives an unlimited storage capacity.
- Conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE-Regulations

**Composition**

| Item                           | Description  | Q.ty |
|--------------------------------|--|------|
| Master Controller V3+ ADVANCED | Master Controller V3+ ADVANCED electronic control unit   | 1    |
| Power Cube 32<br>Power Cube 45 | Power Cube 32 generator<br>Power Cube 45 generator   | 2    |
| HH-10                          | Heating head (for Power Cube 32/45) with activation pedal PE10   | 2    |
| SH15/SLE-550-D3                | Optical sensor 200°C-1600°C with support SH23 and additional lens 120 or 240mm focus   | 2    |
| SH15/SLE-550-D4                | Optical sensor 500°C-2000°C with support SH23 and additional lens 120 or 240mm focus   |      |
| SG-100                         | Anti-oxidizing gas dispenser system  | 2    |
| LG-100                         | Solder-wire feeder   | 2    |
| WLC-1                          | Wire length control sensor (optional)  | 2    |
| MC                             | Memory card for Master Controller V3+  | 1    |
| ES-35                          | High precision adjustable support for heating head (optional)<br>(Photo shows pneumatic version ES-35-P on the left hand side) | 2    |
| ES-3M                          | High precision adjustable base for wire feeder (optional)  | 2    |
| ES-3M-MS                       | High precision adjustable base for optical pyrometer (optional)  | 2    |

Tables and overhead structures are optional

# POWER CUBE SERIES - TECHNICAL FEATURES



Power Cube 32



Power Cube 45



Power Cube 64



Heating Head HH10  
Mounted on positioning base ES-35



Mini Heating Head HH15

## Feature Highlights

- Dual Alternate, high power output
- High level of performance with minimal operating costs
- Very compact and integrable Generators
- Miniaturized Heating Heads (optional)
- High Safety: all models output isolated from the mains
- Continuous generation interrupted by special software
- Maintains stable and accurate output power even as working conditions change
- Supplied with Calibration Certificate
- Built-in Self-diagnosis
- Digital and analog control of the output power
- Interfaces with CEIA Master Controller V3+ unit to manage heating cycles [temperature, time and power]
- Remote analog power adjustment 0-10V (optional)

## Generator

- stainless steel container
- Dimensions 275x265x140 (LxWxH) mm (Power Cube 32/45)  
275x265x280 (LxWxH) mm (Power Cube 64)
- power supply cable from mains: length 2m
- weight: 10kg (Power Cube 32/45)  
20kg (Power Cube 64)
- designed to be connected to:
  - one or two heating heads
  - one or two activating pedals
  - Master Controller - in order to build up automatic or semi-automatic soldering stations

## Power Supply

- power supply voltage 180 — 260Vac single phase - 50/60 Hz
- maximum absorbed power:  
2.8 kW (Power Cube 32); 3.5 kW (Power Cube 45);  
5.6 kW (Power Cube 64)
- average power at inductor  
32 kVAR (Power Cube 32) 45 kVAR (Power Cube 45)  
64 kVAR (Power Cube 64)
- cooling by water pressure 300kPa:  
rate of flow 1.5 - 2 l/min for each head connected

## Safety features

- galvanic insulation of mains electrical supply
- low operating voltage = no danger for the operator
- Compliant with the Regulations on Electrical Safety and Electromagnetic Compatibility

## Operating conditions

- operating temperature +15 up to +55°C
- storage temperature -20 up to +70°C
- relative humidity 0 - 95% (without condensation)

## Commands and controls

- activation of cycle by means of pedal or external control
- Regulation of the heating power 10 - 99%
- automatic control over synchronization

## Self-diagnosis

- monitors the temperature and pressure of the cooling water
- checks the connection and the correct dimensioning of the inductor signals internal malfunctioning
- checks power supply voltage range

## Heating heads

- container in plastic material of high thermal and mechanical resistance
- Weights: HH10 1,6kg  
HH15 1,3kg
- connecting cable to central electronics unit: length 1.5m

# POWER CUBE SERIES - TECHNICAL FEATURES



## POWER CUBE SYSTEM 900

### Advanced solid-state Generator, controlled by microcomputer

The Power Cube System 900 is a high power Induction unit in a very compact size with embedded advanced microprocessor based control software and state-of-the-art electronics.

The system consists of a **Power Cube generator series 900** equipped with an **integrated Controller** and a graphic **TFT display for programming**.

### Fully integrated Heating System

- Programmable Generator, controlled by microcomputer
- One or two heating heads, applicable on special adjustable supports
- One or two antioxidant/cooling gas diffusers
- One or two CEIA SLE optical pyrometers with Lens and stand SH-23
- FieldBus interface

### Feature Highlights

- HIGH POWER OUTPUT
- CONTINUED ACTIVATION OF ONE HEAD or ALTERNATE ACTIVATION OF TWO HEADS
- INCORPORATED TEMPERATURE CONTROL with 3 control modes
- MANAGEMENT OF TWO OPTICAL SENSORS for control of the heating temperature
- FIELD BUS INTERFACE
- INTERNAL MEMORY to store up to 10 working receipts
- WIDE RANGE OF ANALOG-DIGITAL I/O SIGNALS
- MAINTAINS STABLE AND ACCURATE OUTPUT POWER even as working conditions change
- HIGH SAFETY: all models output isolated from the mains
- BUILT-IN SELF-DIAGNOSIS
- COMPLIANT with the Regulations on Electrical Safety and Electromagnetic Compatibility
- Supplied with CALIBRATION CERTIFICATE

### Power Supply

- power supply voltage 180 — 260Vac single phase - 50/60 Hz
- maximum absorbed power: 3.5 kW
- average power at inductor 45 kVAR
- cooling by water pressure 300kPa: rate of flow 1.5 - 2 l/min for each head connected

The functions managed by the Generator include the temperature reading by means of CEIA optical

pyrometers of the SLE series, the related power regulation and the activation (by means of relays)

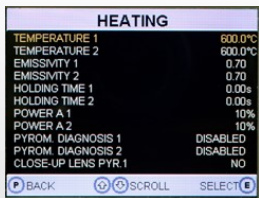
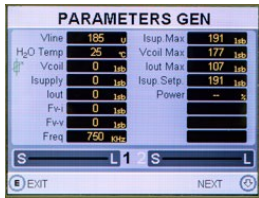
of antioxidant/cooling gas diffusers.

A wide 3.5" high-resolution colour display allows the operator to access programming function

parameters quickly. **All the process parameters are available on screen.**

### Integrated advanced Controller

- Digital and analogical control of the power
- 3 programmable control modes
- Management of two optical sensors to control the temperature
- Extremely fast closed-loop control algorithm (0.5ms feedback control time) for the most accurate power and temperature regulation
- Constant and repeatable power generation via microprocessor control
- Independent programming for each heating head
- Internal memory with 10 sets of working parameters



### Interface Functions

The Field Bus and RS-232 interfaces allow connection to a PLC or other external logic for remote programming, activation, inhibition, control of the output power, the temperature, the operational status of the generator and any working parameters.

### Field Bus Management (Industry 4.0)

Management and control of the heating process via Field Bus protocol:

- EtherCAT
- EtherNet liP
- ModBUS
- ProfiBUS
- ProfiNET

## POWER CUBE SERIES - TECHNICAL FEATURES



### MASTER CONTROLLER V3+

#### Feature Highlights

- Programming and management of up to two independent heating stations, consisting of:
  - » CEIA Power Cube Generator
  - » CEIA SH/SLE series non-contact temperature sensor
  - » automatic solder dispenser
  - » antioxidant gas diffuser
- High-definition graphic display
- Internal memory and removable SDC Card containing up to 100 work programs
- Multiple interface Capability including:
  - » Industrial current/voltage 110
  - » Field Bus
  - » RS-232
  - » up to 22 input and 22 output
- Validation and Reporting of each heating cycle for Production Quality Control and Certification
- "STATUS" key for immediate reading of main Generator working parameters
- "QUICK ACCESS" key for fast programming of user defined parameters

#### Thermal Profile Management and monitoring

- Up to 20 Programmable Temperature and Time Segments per process
- Up to 100 different storable processes
- Maximum Power Output Programmable for Each Individual Segment
- Temperature Tolerance Window Programmable for Each Individual Segment
- Out-of Tolerance and End-of-Cycle Outputs for each process

Thanks to the Thermal Profile Monitoring software, coupled with the new CEIA SH1S/SLE Optical Pyrometers, the user is now able to set specific temperature profiles, monitor and certify the heating process of each production item.

#### Integrated Web server and Data Log System

- Integrated Webserver with 2-port 100base-T Ethernet switch
- No client software required, only a web browser
- Zero configuration network for simple setup
- Built-in Rich Internet Application (RIA) for Status Monitoring, Remote Programming, Logging and Thermal Profile Management
- Internal storage capacity for more than 100.000.000 data samples

#### Wire Feeder Control

- Control up to two independent Wire Feeders, one for each heating station
- Control parameters:
  - » Quantity and speed of wire feeding
  - » Quantity and speed of wire rewind
  - » Activation time of alloy feeding
  - » Wire feeding motor torque
  - » Wire presence sensor

#### Field Bus Management

- Management and control of the heating process via Field Bus protocol:
  - » Profinet
  - » EtherCAT
  - » EtherNet liP
  - » Others upon request [DeviceNet, Profibus, CANopen, CC-Link, campanet, ControlNet, Modbus-RU or Iep, SERCOS III]

#### Main Master Controller functions managed

- Start / Stop cycle
- Abort / Reset cycle
- Set Point Power
- Temperature measured in real time
- Set Point Temperature
- Power output in real time
- Thermal profile step in progress
- Generator diagnosis

#### Central electronics unit

- stainless steel container
- dimensions 275x265x140 (LxWxH) mm
- weight: 5.7kg
- power supply cable from mains: length 2.6 m

#### Power Supply

- power supply voltage: 180 - 260 Vac single phase - 50/60 Hz
- maximum absorbed power: 43W

#### Safety features

- galvanic insulation of mains electrical supply
- low operating voltage: no danger for the operator
- conforms to the international standards currently applicable for electrical safety, E.M.C. and to the applicable CE regulations

#### Operating conditions

- operating temperature: +15° - +55°C
- storage temperature: -20° - +70°C
- relative humidity: 0 - 95% (without condensation)

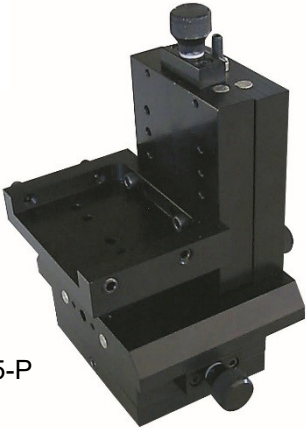
#### Commands and controls

- activation of soldering by means of pedal or external control (norm, open contact)
- regulation of the heating power
- control and timing of the heating heads
- control over the temperature of the workpiece being processed by means of optical pyrometers
- programming of heating and temperature holding times
- control and timing of anti-oxidizing gas dispensers
- control and timing of the solder-wire feeders
- manual activation of the wire feeder for setting up
- "end of cycle" signal
- "machine ready" signal
- "piece at temperature" signal
- "generator on" signal
- counting of the soldering cycles
- 'reset' input

## POWER CUBE SERIES - ACCESSORIES



Precision support ES-35



Precision support ES-35-P  
pneumatic version

### High precision support ES-35 or ES-35-P for heating heads (optional)

The positioners are specularly produced so as to facilitate positioning on symmetrical workstations, even at very close distances.

They allow a micrometric movement of the head along the horizontal axes (20mm each) and the vertical axis (42mm – 142mm) and a rotation of 360°.

Pneumatic stroke of ES-35-P = 25mm

The dimensions of the positioner without the head are:  
135x140x195mm (LxWxH)



### Adjustable Precision base ES-3M for optical pyrometer and wire feeder

A special adjustable precision base may be mounted to the optical pyrometer or to the solder-wire feeder.

This accessory allows perfect aiming of the pyrometer in the soldering area, avoiding errors in temperature readings during a work cycle.

In addition, the base is particularly useful since it allows improved positioning of the wire feeder, thereby providing optimum soldering, without dripping.

The base is designed to be fastened to the work surface.

The positioner allows a micrometric movement along the horizontal axes (11mm each) and vertical axis (5mm each).

The dimensions of the positioner are 130x140x115mm (LxWxH)  
length of the rod: 200mm.



### Solder wire dispenser LG-100 (support ES-3M optional)

In order to carry out completely automatic soldering-brazing cycles, CEIA presents their wire solder dispensers for low and high temperature applications. Using a pneumatic piston, activated by the Master Controller control unit, the dispenser approaches the soldering area and dispenses the brazing alloy.

Parameters like the advance phase of the piston, the alloy feeding speed, the quantity of the wire and the torque of the motor can be set at the control unit. The quality and repeatability of the final result are ensured by the use of a low-power direct-current Motor monitored via a digital encoder.

- Control up to two independent Wire Feeders, one for each heating station
- Control parameters:
  - » Quantity and speed of wire feeding
  - » Quantity and speed of wire rewind
  - » Activation time of alloy feeding
  - » Wire feeding motor torque
  - » Wire presence sensor



### Gas diffuser SG-100

The employment of an anti-oxidation gas diffusion system is often required in high temperature brazing applications. In these cases, it is necessary to protect the heating zone with an inert atmosphere which facilitates diffusion of the soldering alloy and reduces the formation of oxides upon the metal to the minimum.

For this purpose, CEIA has designed a device for gas diffusion which can be connected to the Master Controller units.

The SG100 kit consists of a set of electrovalves (to be time-programmed via the CEIA Master Controller Units), a flow regulator and a diffusion system which can be positioned close to the item to be soldered.



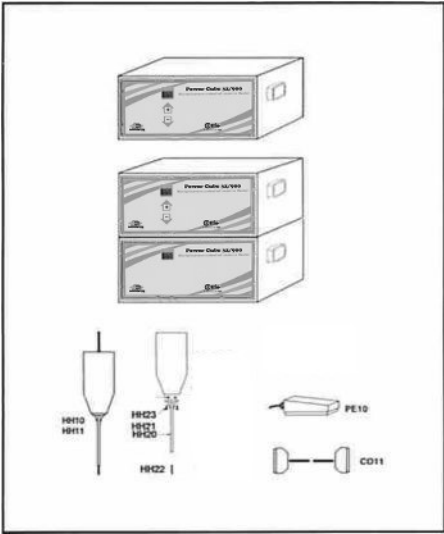
### Compact measuring sensor SH15 SLE (optical pyrometer)

Along with the CEIA optical temperature sensors (SH15/SLE series), the CEIA Master Controllers allow the implementation of efficient induction soldering systems and achievement of completely repeatable, economical heating processes and finished products.

- Emissivity adjustable from 0.1 to 1 (SH15/SLE series)
- High Accuracy
- High-Speed
- Very Compact design
- Available with different focus distance and aiming spot size
- LED aiming light
- Supplied with Calibration Report traceable to Certified International Standards
- AISI30Q Stainless Steel Construction

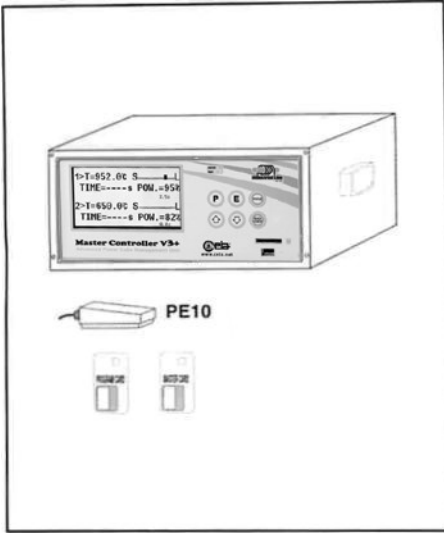
POWER CUBE SERIES - SPARE PARTS

POWER CUBE



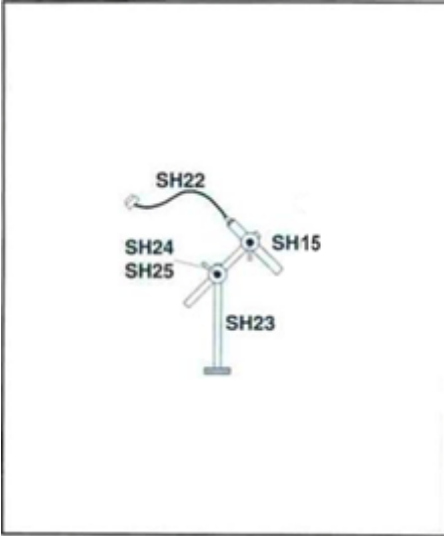
| Item          | Description  | Code      |
|---------------|--|-----------|
| Power Cube 32 | Power Cube 32 Generator                              | PC-IL-32  |
| Power Cube 45 | Power Cube 45 Generator                              | PC-IL-45  |
| Power Cube 64 | Power Cube 64 Generator                              | PC-IL-64  |
| HH-10         | Heating head with cable for Power Cube 32 and 45     | HH-10     |
| HH-11         | Heating head with cable for Power Cube 64            | HH-11     |
| HH-20         | Inductor   | GS-IH     |
| PE-10         | Activation Pedal                                     | PE-10     |
| HH-21         | O-Ring for inductor holder                           | HH-21     |
| HH-22         | Silver plated copper tube for inductor Ø1,8mm x 1,0m | GS-1,8    |
| HH-23         | Fixing screw for inductor support                    | DS-000025 |

MASTER CONTROLLER



| Item                           | Description  | Code    |
|--------------------------------|--|---------|
| Master Controller V3+ Basic    | Master Controller V3+ Basic electronic control unit    | MC-V3-B |
| Master Controller V3+ Advanced | Master Controller V3+ Advanced electronic control unit | MC-V3-S |
| PE-10                          | Activation Pedal                                       | PE-10   |
| Memory Card                    | Memory Card for Master Controller V3                   | 55265   |

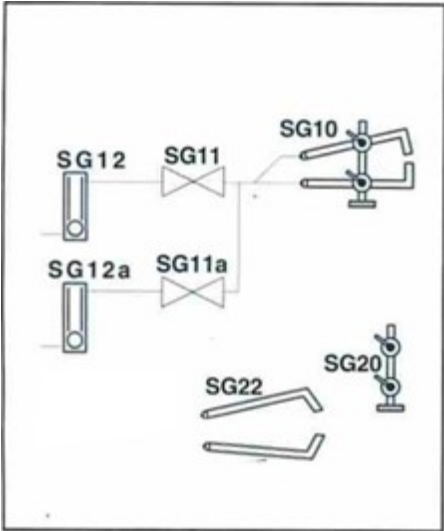
OPTICAL PYROMETER



| Item    | Description  | Code            |
|---------|--|-----------------|
| SH15-D3 | Compact measuring sensor (range 200-1600°C) focus 550mm      | SH15/SLE-550-D3 |
| SH15-D4 | Compact measuring sensor (range 500-2000°C) focus 550mm      | SH15/SLE-550-D4 |
| CL-240  | Additional lens for sensor SH15/SLE-550 focus distance 240mm | CL240/SH15      |
| CL-120  | Additional lens for sensor SH15/SLE-550 focus distance 120mm | CL120/SH15      |
| SH-22   | Connecting cable   | HZ700005        |
| SH-23   | Adjustable stand   | SH-23           |
| SH-24   | Handle for stand   | 21785           |
| SH-25   | Handle for pyrometer   | 21788           |
| ES-3M   | High precision adjustable base (optional)                    | ES-3M           |

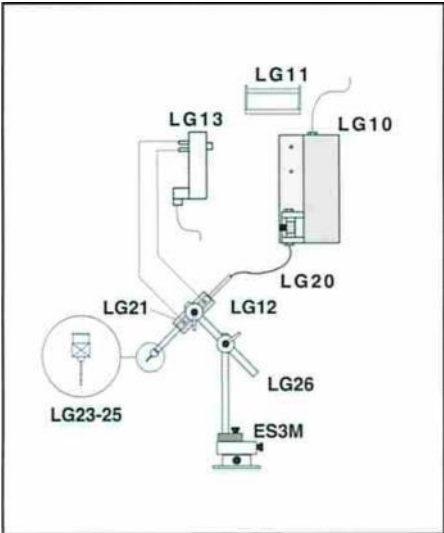
POWER CUBE SERIES - SPARE PARTS

COOLING AND ANTI-OXIDIZING GAS DISPENSER SYSTEM



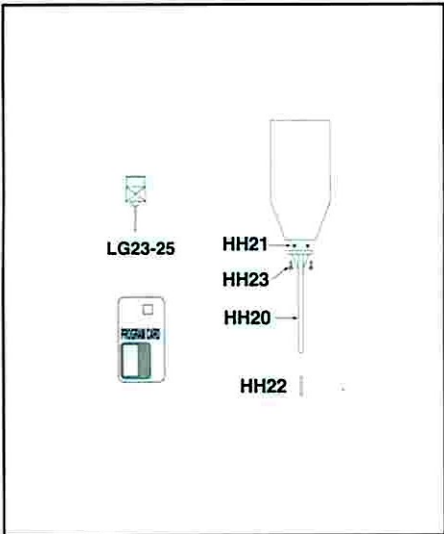
| Item   | Description   | Code        |
|--------|---|-------------|
| SG-100 | Complete anti-oxidizing gas dispenser system (including SG10, SG11, SG12) | SG-100      |
| SG-10  | Gas tubes (SG22) with adjustable stand                                    | 21785+21784 |
| SG-11  | Opening/closing gas electrovalve  | 22072       |
| SG-12  | Flow regulator with flow meter  | 22082       |
| SG-22  | angled gas tube   | 24786       |

SOLDERING WIRE FEEDER SYSTEM



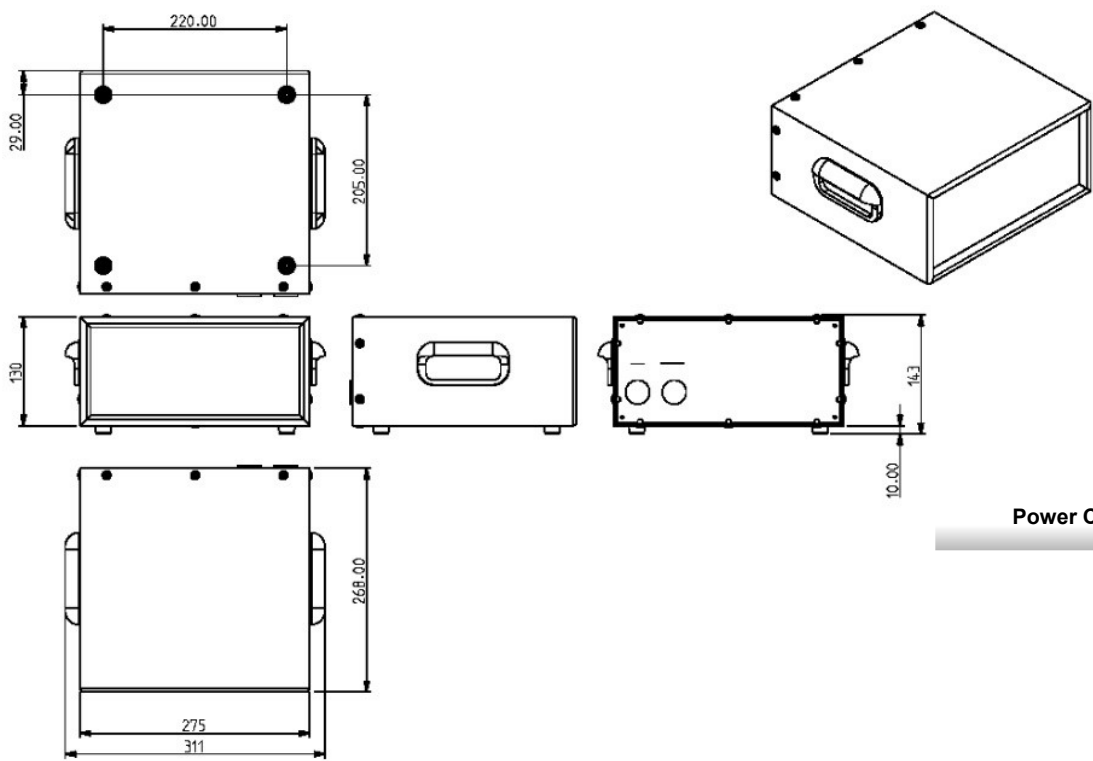
| Item   | Description   | Code   |
|--------|---|--------|
| LG-100 | Complete solder-wire feeding system (including all items of the figure except ES3M) | LG-100 |
| LG-10  | Motor   | 21628  |
| LG-12  | Wire cylinder on support  | 24335  |
| LG-20  | Motor-cylinder connection   | 21701  |
| LG-21  | Wire applicator   | 21699  |
| LG-23  | Nozzle 0,5mm diameter   | 24056  |
| LG-24  | Nozzle 0,4mm diameter   | 24057  |
| LG-25  | Nozzle 0,3mm diameter   | 24058  |
| ES-3M  | High precision adjustable base (optional)   | ES-3M  |

CONSUMPTION MATERIALS

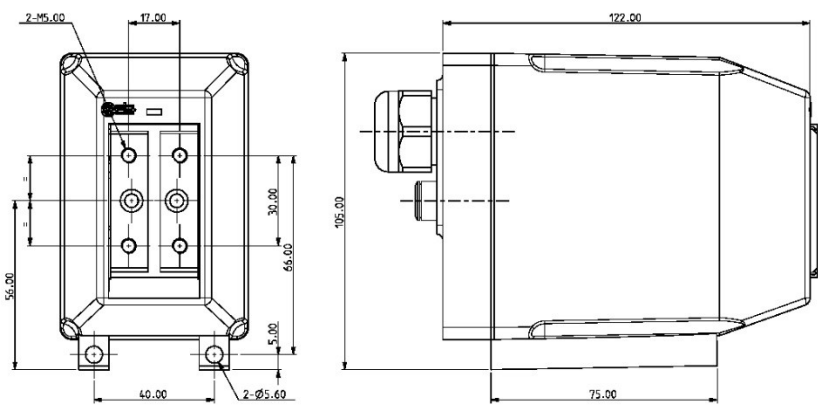


| Item        | Description   | Code   |
|-------------|---|--------|
| LG-23       | Nozzle 0,5mm diameter                               | 24056  |
| LG-24       | Nozzle 0,4mm diameter                               | 24057  |
| LG-25       | Nozzle 0,3mm diameter                               | 24058  |
| HH-20       | Inductor  | GS-IH  |
| HH-21       | O-ring  | HH-22  |
| HH-22       | Silver plated copper tube for inductor (1 meter)    | GS-1,8 |
| HH-23       | Fixing screw for inductor support (set of 8 pieces) | 32841  |
| Memory Card | Memory card for Master Controller V3+               | 55265  |

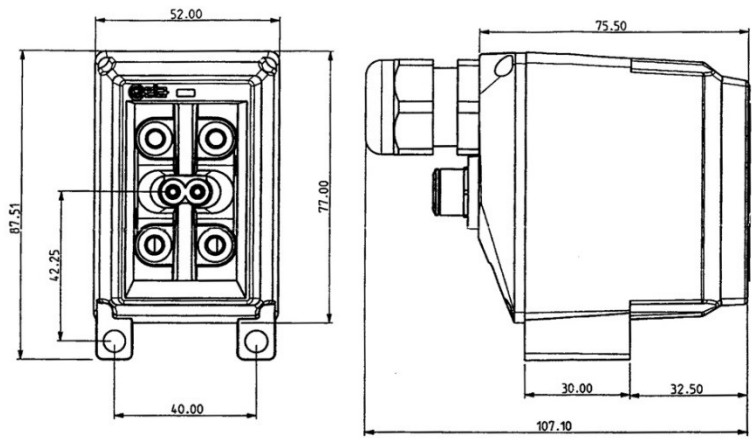
POWER CUBE SERIES - DIMENSIONS



Power Cube / Master Controller



Heating Head HH-10



Heating Head HH-15

## POWER CUBE SERIES - CUSTOMER SERVICE

### WATER COOLING SYSTEMS

On request, closed-loop cooling systems with suitable dimensions can be planned and supplied for your work stations



**On customers request, technical training courses about programming and operation of work stations can be organized.**

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75181 Pforzheim Germany

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