SolderSmart®

Experience the new way of soldering.
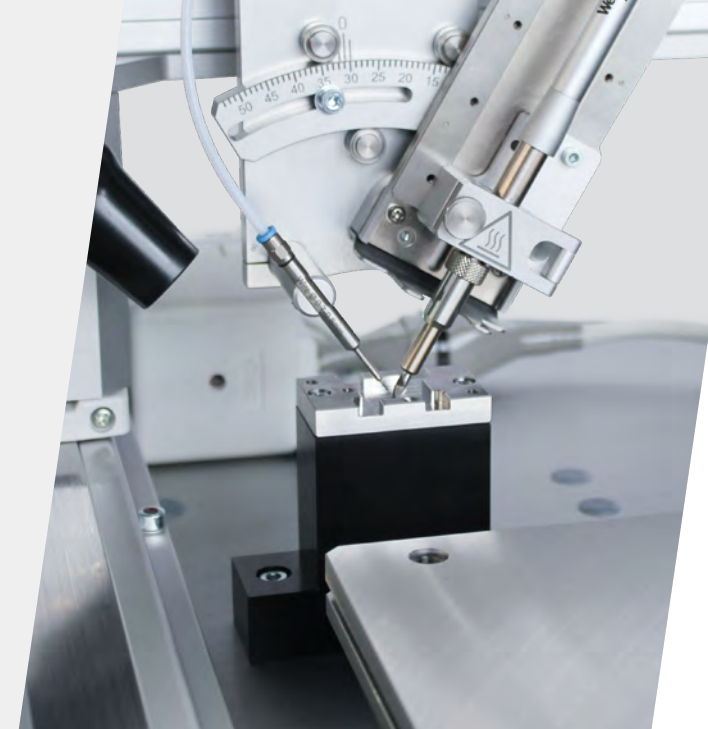
SolderSmart®

Precision & Quality
Integrated solution made in Switzerland

Hardware
Sophisticated hardware combination of the highest quality

Software
Software concept with high user-friendliness
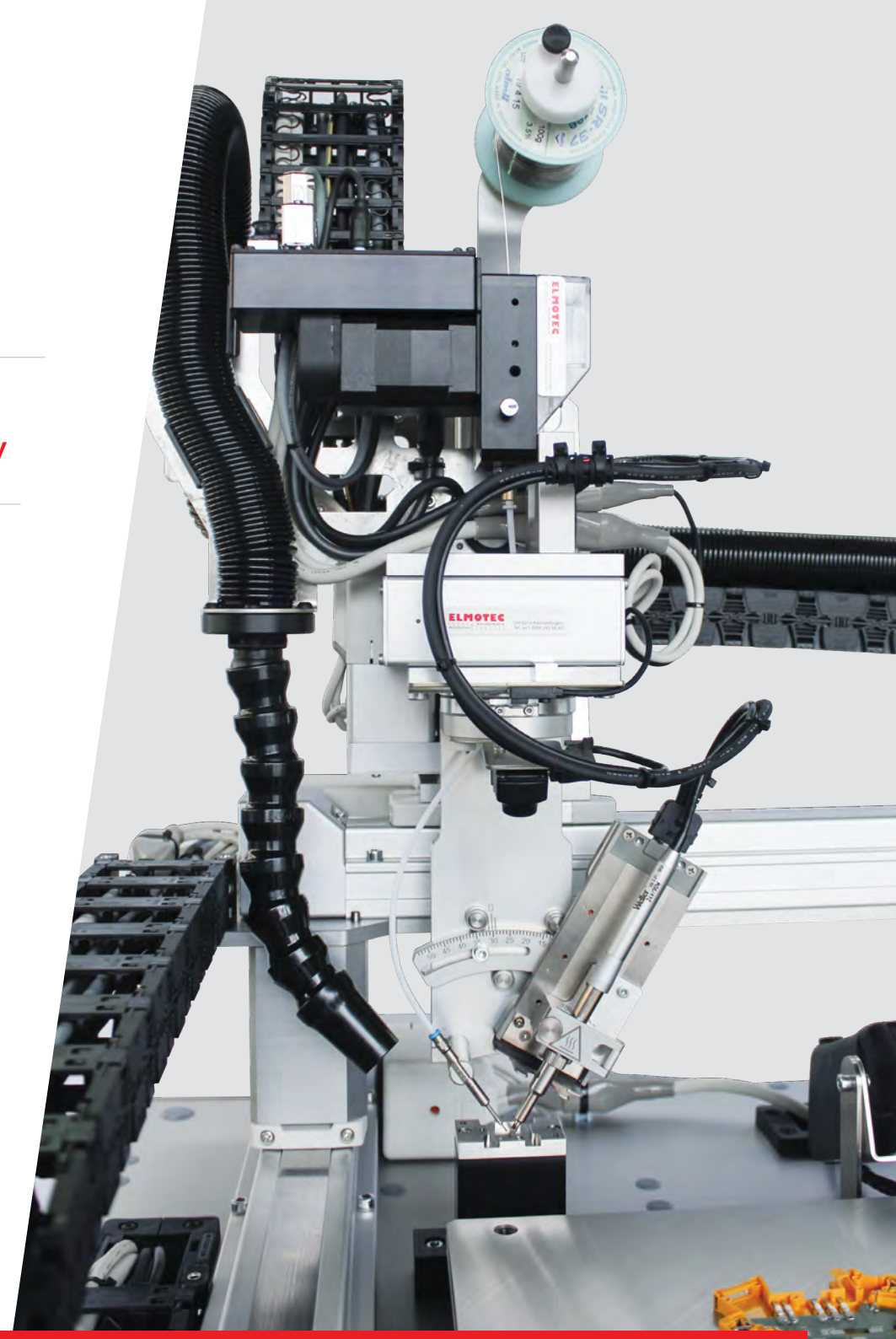
Options & Extensions
Modular upgrade options

Client Service
Comprehensive consulting, training and support

Technical Specifications
The most important features at a glance

ELMOTEC Löttechnik
Automation

SolderSmart®

Precision & Quality
made in Switzerland

**SolderSmart® is a reliable solution for
fully automatic point-by-point piston soldering.**

For simple and complex soldering solutions

❯ 4+1-axis soldering robot, versatile freedom of movement & high axis accuracy
❯ Increased productivity through interchangeable drawer system
❯ Point-by-point soldering with pre-soldering and drag-soldering options

Accuracy, reliability & traceability

❯ Consistently high quality soldering
❯ Traceability of the desired parameters via the database
  (e.g. with barcode or photo of the soldered parts)
❯ Integratable and selectable process control mechanisms

Autom. zero point calibration &
soldering tip measurement

❯ Fully automatic zero point calibration & soldering tip measurement
❯ Autom. soldering tip maintenance control

Intuitive operation

❯ Press arrow keys in all directions
❯ Input of coordinates
❯ Support of the camera with integrated function
❯ Duplicate left / right work area by copy+paste
❯ Versatile options & features, e.g. drag soldering

Support and distribution worldwide

❯ Distribution partner on site
❯ Worldwide online support & training

SolderSmart is used in a wide range in the
production and manufacturing process.

... our expert team is looking forward to your request.

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Löttechnik
Automation

Hardware

The plus points

Generous work surface

› 483*383mm working surface allows
  a large number of different part sizes

Drawer system `OPTIONAL`

Two drawers - while the robot is soldering on one side, the operator can replace already soldered parts on the other side

› 100% productivity, reduction of labour costs
› Control and release of the drawers via sensors
› One exchangeable plate per drawer included in the scope of delivery
› Double function: as separate drawers or as one plate

Integrated industrial PC

› Windows software & SolderSmart software included
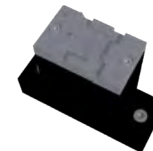› Integration into company network possible

Control panel

› Simple operation for start, stop, reset and emergency stop,
  incl. USB ports for data import and export.

Cleaning station

› Gentle cleaning with brushes, flexible adjustment
  of the interval (=long life of the soldering tip).

4-axis tip correction / zero point system

› Automatic calibration of the zero point by a fully automatic
  measurement of the soldering tip. This feature enables
  a reproducible and high quality of the Soldering results,
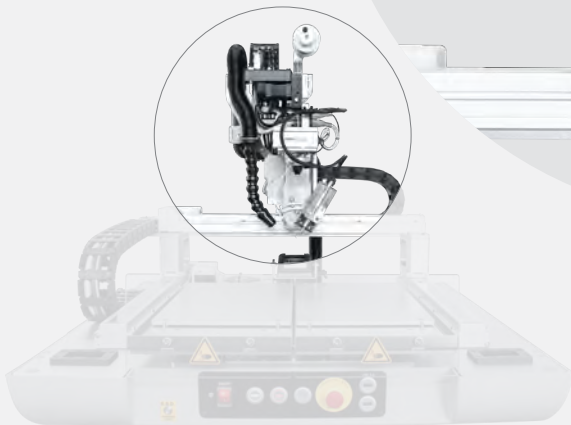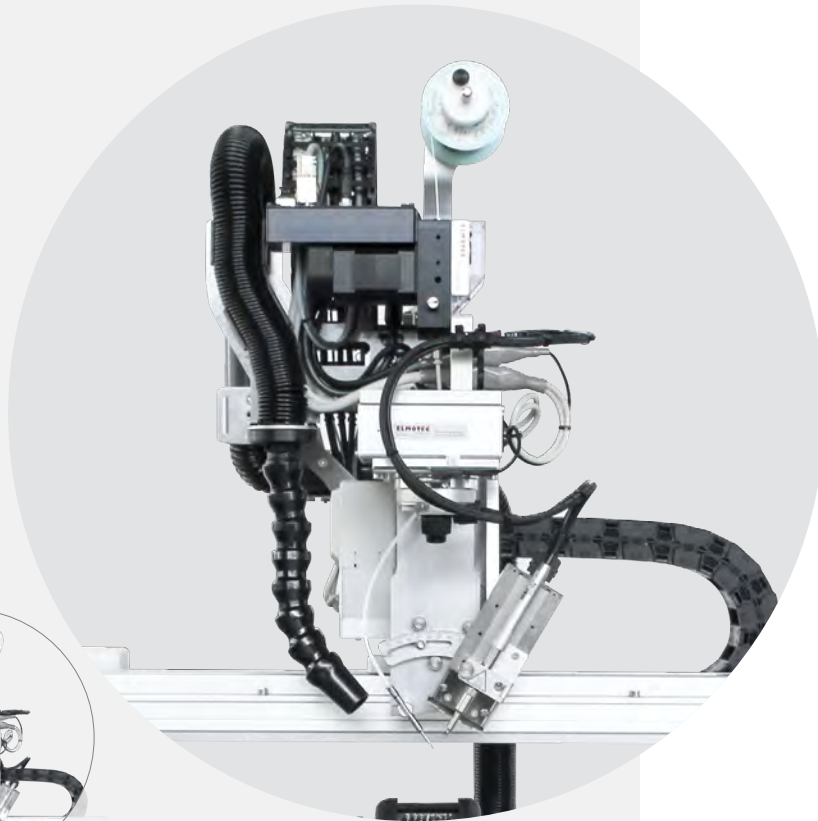 even after changing the soldering tip.

Handles for easy movement

› Four carrying handles on the sides serve for easy carrying.
  The handles allow the machine to move (weight approx. 75kg).

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Hardware
The plus points

High precision wire feeder
Integrated control, data logger, error memory

❯ Monitoring of process parameters (e.g. position, current, wire break)
❯ Precision controlled feed
❯ Efficient closed-loop control
❯ Flexible adjustment of the solder wire 0.5mm, 0.8mm, 1mm
❯ Monitoring of the wire for early replacement of the empty roll
❯ Automatic threading aid of the solder wire up to the soldering tip

Solder fume extraction device

❯ Direct suction at the soldering head
❯ Very high suction power
❯ Flexible connection to central system and on extraction systems from known manufacturers

Heating element & soldering station
90W heating element component basic model

❯ Refined non-twisting closure for the soldering iron
❯ Guaranteed constant heat transfer between heating element and soldering tip
❯ Soldering tip can be changed without removing the heating element
❯ Selection of soldering tips and soldering iron manufacturers OPTIONAL

Camera system OPTIONAL

❯ Mounted on soldering head
❯ Direct view of the process and solder point
❯ Real-time process tracking and traceability
❯ Alignment assistance included

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Software
Autom. zero point calibration & soldering tip measurement

An innovative system (made by Elmotec), enables precise zero point calibration and measurement of the soldering tip. This guarantees reproducible quality of the process with minimum effort and complexity.

Autom. zero point calibration

Ensures that the soldering tip is correctly aligned at all times

- ✓ After soldering tip change
- ✓ After heating element change
- ✓ After program change
- ✓ After maintenance
- ✓ After solder wire change

Autom. soldering tip measurement

Ensures that the correct size of soldering tip is used

- ✓ After soldering tip change
- ✓ After program change
- ✓ Store soldering tip size per program and activate automatic control
- ✓ After maintenance
- ✓ After solder wire change

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Software
Intuitive operation

Enables process safety & traceability

Monitoring and traceability secure the production.

> **Relevant parameters in an overview**

> **Automated process and control functions**
>> › Autom. soldering tip control
>> › Automatic zero point calibration

> **Process monitoring & recording**
> of all relevant process parameters for Traceability and quality control

> **Traceability and data storage**
>> › Desired soldering parameter (e.g. incl. pictures)
>> › Provision for transfer to superior control systems

Execution & handling of soldering program

Takes over tasks of the operator (worker) and simplifies handling.

> **Autom. set-up and preparation**
> of the soldering process by the robot

> **Selection of the soldering program**
> (e.g. based on image, name, QR or barcode)

> **Software supported error handling**
> operator will be informed of the reason for the error and measure proposed

> **Easy switching between drawer or complete panel**
> for different component sizes

Defined user access levels

Differentiates responsibilities and prevents errors.

> **Defined responsibilities**
> Password protected area ensures that operator only has access to its relevant process data

Intuitive teaching & programming

Makes the programming of new soldering programs as easy as never before.

> **Intuitive teaching of solder points**
> by input of the geometries, by pressing the arrow keys, via camera

> **Simple copy/paste functions**
> for parameters and soldering programs

> **Soldering profiles**
> Freely definable soldering profiles and predefined standard profiles to choose from

> **Test mode function**
> Direct control of the created soldering program by using test mode

Supervised maintenance & wearing parts replacement

Maximizes the service life of wearing parts and prevents unplanned downtime.

> **Support for wear part replacement**
>> › Integrated control processes (soldering tip, soldering wire etc.)
>> › Integrated counters

> **Easy maintenance execution**
>> › Autom. note on maintenance
>> › Execution of the maintenance by intuitive clicking of the buttons

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Options & Extensions
Upgrade

☑ Base model
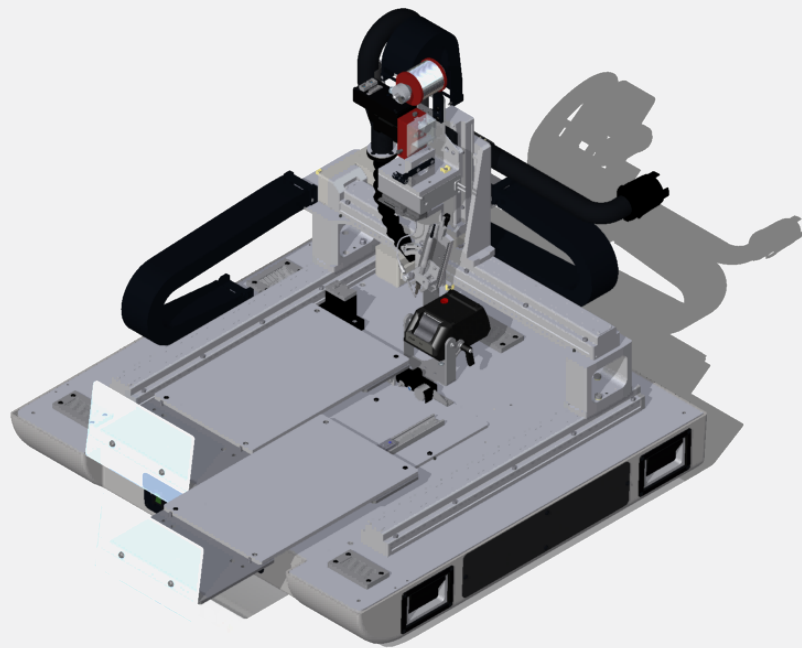
with grooved plate and soldering equipment (without hood / drawers)

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☑ Upgrade Options

Hood
› Protection for the user, the environment and the machine
› CE / ESD

Touch screen
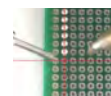› Enables intuitive operation-keyboard/screen and mouse are no longer required
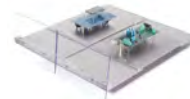
Drawers
› 100% productivity, reduction of labour costs
› Self locking and unlocking drawers
› Includes two removable plates
› Flexible use as drawers or a complete plate

Camera
› Supports the administrator & operator during teaching by zoom option
› 5 MP USB colour camera
› Traceability of the process
› Alignment assistance included

LED lighting
› Direct lighting for the working surface (for option with hood)

Scanner
› Increases process safety & traceability
› Scanner incl. software interface
› Recognition of the components via barcode or QR code

Machine Vision System
› Automatically detects and corrects inaccuracies of the component or the workpie carrier
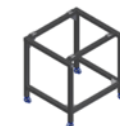
Machine frame
› Vibration damped rollers, which can be levelled and fixed.

SolderSmart®

Client Service

Comprehensive support

Analysis & test soldering

To confirm the quality of your soldered products according to IPC standards, our experts carry out comprehensive test soldering. Thereby you receive important information and recommendations on cycle times, optimal production processes, soldering parameters and recommended product design to optimize the soldering process.

Training

› Software and machine operation as well as simple independent spare parts exchange within one day learnable
› Training includes theory and practice
› Own commissioning after training possible

Maintenance - and servicing

› Low maintenance due to robust construction
› Complete maintenance of the machine possible within one hour
› Short delivery times for spare and wear parts, local distributor in the respective country
› Technical support from our specialists for SolderSmart according to customer requirements virtually and on site
› Rental device available in case of repairs

After-Sales

› Latest software updates with new features available
› Teaching & parameter finding: optimized programming of your products by our customer service
› Service and maintenance contract on request

CONSULTING & SUPPORT

We accompany you throughout the entire process: from the analysis of the most suitable soldering process, through the process of implementation, to training, commission and after sales support.

Do you have a complex soldering task?

Contact us, our soldering experts will be pleased to check your individual request.

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SolderSmart®

Technical specifications
At a glance

WORKING SURFACE
483x383mm

AXIS ACCURACY
± 0.02mm

CARTESIAN AXIS SYSTEM
4 axes plus an additional 5th axis (linear motor)

SPEED
Ca. 400mm/s

CONNECTION
Device plug C14

CONTROL
Electric only

POWER CONSUMPTION
Max. 10A

INTERFACES
Ethernet/ USB / digital I.O / HDMI

SUPPLY VOLTAGE
1x 110VAC / 1x 230VAC, 50-60Hz

VERSIONS
**Stand-alone or
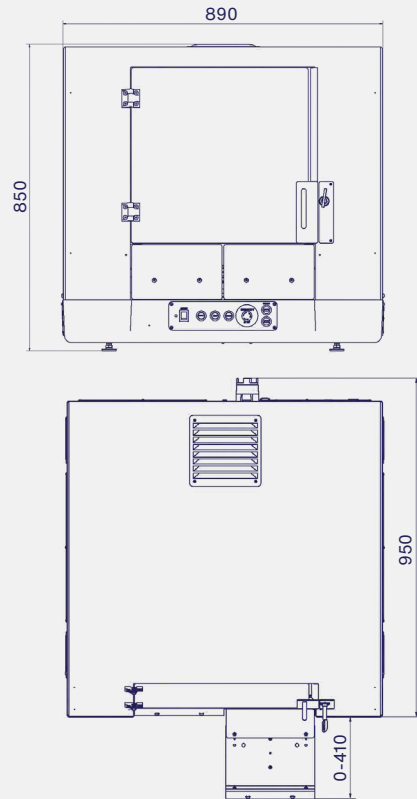in a production line**

DIMENSIONS
**880x880x770
(830mm with hood)**
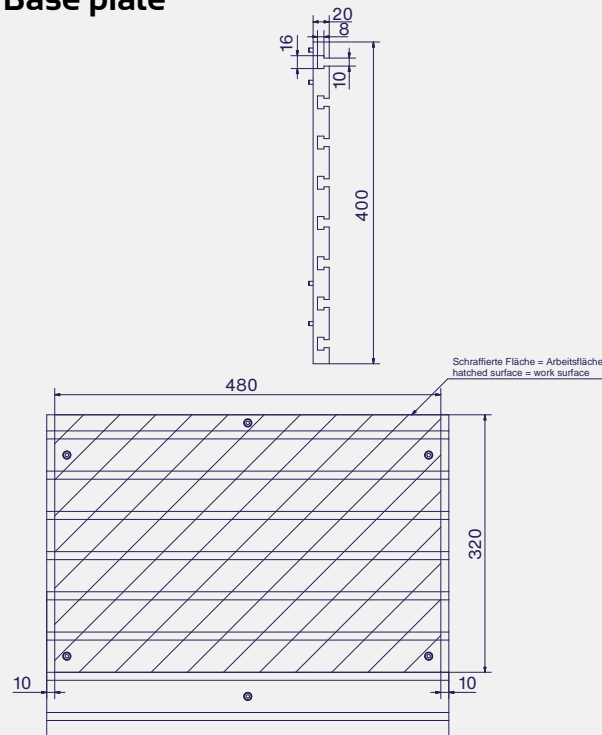
X, Y, Z-DRIVE
Stepper motors

WEIGHT
75 kg (base version)

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Technical specifications
Dimensions

Outsite dimensions

890

850

950

0 - 410

Base plate

20
8
16
10

400

480

320

10

10

Schraffierte Fläche = Arbeitsfläche
hatched surface = work surface

Drawers and change plates

unterkante Achsportal
lower edge axle portal

101

100

Überfahrhöhe
Crossing height

Arbeitshöhe
Working height

Arbeitsbereich
Work area

483

50.8

382.5

25.8

0 - 450mm

155

Maximaler Schubladenauszug
Maximum drawer pull-out