



X-TubeProcessor®

Smart 2.0

The compact 3-in-1 automation
system for flexible tube processing

Various tube sizes

Dispensing / Labeling / Capping

GxP, ERP + LIMS integration

Relieve your team from repetitive routine work

Laboratory workflows must be faster, safer and more flexible than ever. Manual steps are error-prone, tie up staff and make standardized processes difficult – especially under GMP/GLP conditions.

One system. A wide range of tubes. No compromises.

360
tubes/h

Productive

Processes e.g. 360 labeled tubes per hour

<0,9m²

Compact

Fits on any lab bench (< 0.9 m² footprint)

< 2
years ROI

Return-on-Investment

Smart 2.0 pays for itself in under two years*

* Based on reducing manual work by 4 h/day for 2 employees.

What's New with Smart 2.0

Greater Processing Flexibility

- 0.5–15 ml tubes and vials
- Wide range of tube and vial types
- Choice between micro annular gear pump and peristaltic pump

Control via X-Control Software

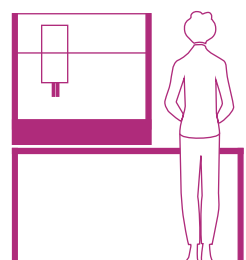
- Smart workflows with centralized and decentralized control
- Simpler job creation
- Efficient job and process management
- Easy management of labware

Supports Compliance (GxP)

- Seamless documentation
- User management
- Audit trail options

Tube-Specific Processing

- TwinCode enables tube-specific processing
- Seamless traceability of every single tube
- Tube-specific positioning in the rack





See Smart 2.0
book an
online-demo

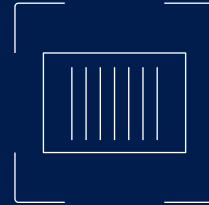


The Smart 2.0 is depicted with a HEPA filter for sterile operation.

More Control:

Smart software guides every step.

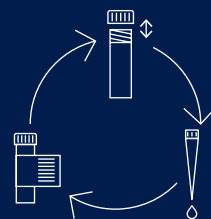
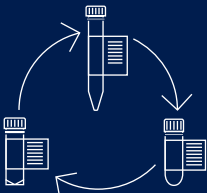
- Transparent, auditable workflows
- Barcode-based process control
- Role-based user permissions
- Automatic documentation of all processes



More Flexibility:

One system for many applications.

- Supports a wide range of tube formats
- Suitable for routine work, research and QC labs
- Ideal for diagnostics, life science services, biotech, environmental labs, pharma, biobanking and QC
- Easy Setup, no extra infrastructure needed
- One device, many workflows



More Efficiency:

Three process steps in one system.

- Less hands-on time
- More walkaway time
- Consistent, reproducible results

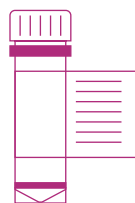
The 3-in-1 multitalent: Key functions of *Smart 2.0*



1

Cap Handling

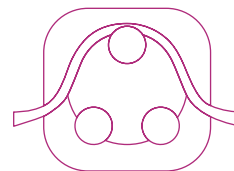
- Handles tube types from 0.5–15 ml
- Reliable opening and closing of screw-cap vessels
- Optional cap feeder for open micro screw tubes up to 2 ml
- Reduced error rates through automated handling



2

Labeling

- Label templates with dynamic data [lot no., expiry date]
- Label templates with fixed content
- Automatic positioning and labeling [e.g. Bartender files]
- Can be used as a network printer
- Optional label verification with TwinCode [in-process control]



3

Liquid Handling

Peristaltic pump

- Dispensing without medium contact
- Fast tube change to avoid cross-contamination
- Large reservoir bottle up to 1 liter

Microannular gear pump (optional)

- Very high dosing accuracy
- Stable dispensing even for large volumes

Both pumps:

- DosingPumpManager controls priming, cleaning and calibration.

Process times

Example calculation for micro screw tubes in serial processing:

Please feel free to ask us for an indication of the processing times for your individual workflow.

360

Labeling
tubes/h

310

Dispensing +
Capping
tubes/h

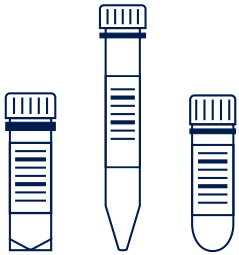
200

Dispensing +
Capping +
Labeling
tubes/h

Intelligent and flexible.

The workstation that adapts to your tubes.

Flexible processing of different tube and vial types



- 0.5–15 ml tubes & vials
- No gripper change required
- Plastic & glass
- Capacity up to 6 racks in SBS format

Compatible with:

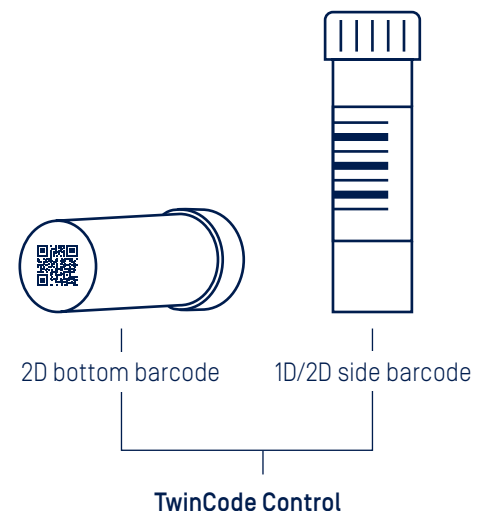
Micro screw-cap tubes, cryovials, biobank tubes, HPLC vials, FACS tubes, blood collection tubes, conical tubes and many more...



See Smart 2.0
book an
online-demo

Tube-specific processing and traceability with TwinCode.

The *Smart 2.0* processes both bottom and side barcodes. Barcodes ensure traceability and, in combination with X-Control software, guide process-relevant decisions such as dispensing, labeling, in-process control and documentation.



1. Process control via barcodes

- Bottom/side barcode for tube-specific dispensing
- Bottom barcode for tube-specific labeling
- Ideal for LIMS-driven workflows

2. Verification and safety

- For label print verification
- For rack position verification
- Barcode data linked to exportable job logfiles

3. Complete traceability

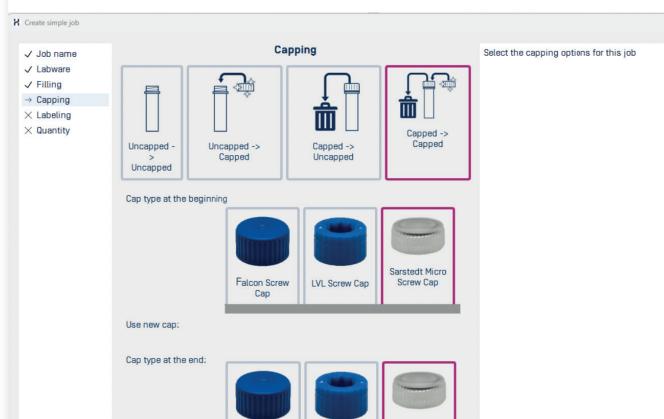
- Linking barcode information with exportable job log files
- Enables complete traceability of the manufacturing process with Individual tube identification
- Support for GLP/GMP processes

X-Control: The modular intelligence for connected labs.

The *Smart 2.0* software platform enables transparent and flexible control over tube and vial processing.

Job Creation

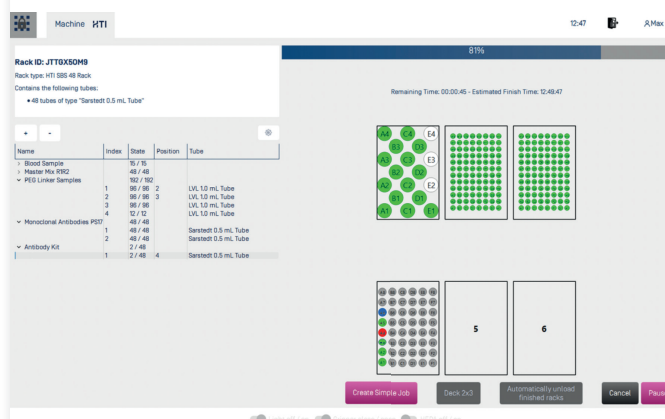
Jobs created in under 3 minutes



- **Various jobs** can be defined quickly and flexibly. User-training is quickly completed.
- **Labware availability** at a glance – you can see immediately which labware you can use. (Rack, tubes, labels)
- **Intuitive symbols for different process steps enables simple creation of work orders/jobs** (Tube handling, dispensing, cap handling, labeling, and barcode function)
- **The recipe function** allows freely definable work steps such as cap and tube handling, dispensing, and labeling. In addition, parameters such as the number of tubes or fillings can be locked to ensure protected process sequences.
- **Take advantage of the high flexibility** offered by numerous processing combinations. (Capping, labeling, dispensing, liquid classes, various tube and vial types, etc.)

Job Management

All jobs under control – from anywhere



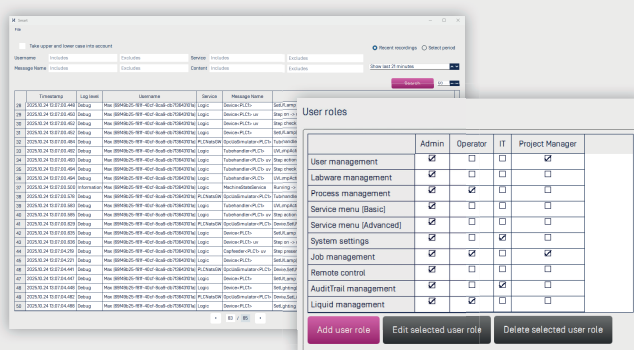
- **Local or decentralized** – Plan, manage, and control all jobs clearly in one place – locally on the machine or decentralized via the Job Manager Remote.
- **Individual labeling** with position assignment in the rack.
- **Clear status display** – Order management clearly visualizes the progress and status of jobs with color coding (grey, green, blue, red).
- **ERP/LIMS integration** is carried out via the optional REST API interface and guarantees smooth integration into your processes.

Compliance required? Well prepared for GMP/GLP.

The workstation that adapts to your tubes.

Control & Governance

GMP/GLP ready



User Management

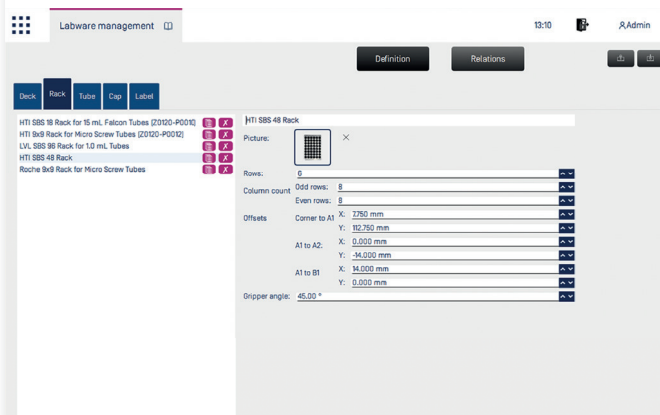
- Management of role-based access rights
- Creation and management of user accounts
- Unique and traceable authorization management

Audit Trail

- Complete recording of system activity with time-stamp, user and event identification
- Selectable log level display of events with export function
- Optional access to the audit trail database for external analysis functions
- Export the Audit Trail via CSV or PDF

Labware & Pump

Simple management of new
labware and liquids



Labware Management

- Easy management of usable racks, tubes, caps, and labels (labware) with assignment function
- Labware-Manager-Pro enables flexible creation of additional usable labware

DosingPumpManager

- Control of routine pump processes such as priming, cleaning, and calibration
- Management of existing liquid classes
- Creation of custom liquid classes for new buffers and solutions

Partnership-driven. Competent and proven in practice.

For more than 20 years, HTI has continuously reinvented itself — together with and for our customers. With our engineering services and automation solutions for laboratory and production environments, we are the reliable partner for your long-term success.

Service and Quality

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- International service availability
- Remote & on-site support

+20 years
experience in
laboratory
automation

**+ 1100 devices
and equipment**
developed and
produced

Quality management
according to
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