

## Pre-analytical & Post-analytical Solutions

"smart processing for smart laboratories"

- BULK SORTER
- DECAPPER
- RECAPPER
- ARCHIVING RACK & CAP
- SMART CONVEYOR SYSTEM





## REFLEKS TT 2000 S Bulk Tube Sorter

TT 2000 S IQ VISION offers bulk loading and bulk sorting for a cost-effective optimisation of the sample reception and other work areas. It is easy to use and has low maintenance. It brings customised solutions for individual workflows and reduces turn-around time. It is the right solution for laboratories using LIS.

### **Bulk Loading**

Easy and continuous sample loading in bulk, with a hopper capacity of up to 800 tubes. Connection to TT Smartline for reception also possible. It is compatible with all standard tubes of 8-22mm diameter & 70-120mm length.

### **Sample Registration**

Sample tubes are registered via the barcode scanner for quick and dependable identification.

### **Sorting rules**

Sorting is based on LIS-transmitted rules. The software responds to STAT samples. It has a bi-directional connection to LIS, allowing the sending and receipt of data to and from LIS.

### **Continuous sorting to bins**

Throughput of 2000 tubes/hr  
It has 12 target bins +1 error bin by default and can be configured from 6 to 18 target bins. Sample tubes are continuously sorted and carried into assigned target bins. Optionally, it can connect to the TT Smartline conveyor system. The user can draw out any target bin anytime, and the process does not stop. Sorting continues without interruptions by assigning a matching target bin for the removed one; hence the throughput performance is guaranteed. This "Refleks Mode" feature can be cancelled on the screen menu if needed. Unidentifiable and mismatched sample tubes go in the error bin. It can sort the recapped sample tubes for archiving purposes.

### **User interface**

It has a colour touchscreen with a user-friendly multilingual interface (English & Turkish by default - other languages by option). The operating system uses Industrial PC Windows 10 Pro. Its reporting feature, independent of LIS, provides various reports.





## REFLEKS TT 2000 S IQ VISION Smart Bulk Tube Sorter

TT 2000 S IQ VISION offers bulk loading and bulk sorting for a cost-effective optimisation of the sample reception and other work areas. It is easy to use and has low maintenance. It brings customised solutions for individual workflows and reduces turn-around time.

It is the right solution for laboratories with no LIS or having complicated sorting rules such as clone tubes.

### **Bulk Loading**

Easy and continuous sample loading in bulk, with a hopper capacity of up to 800 tubes. Connection to TT Smartline for reception also possible.

It is compatible with all standard tubes of 8-22 mm diameter & 70-120 mm length.

### **Sample Registration**

Sample tubes are registered via the barcode scanner for quick and dependable identification.

### **Tube identification**

The integrated hi-res camera, together with the built-in software, identifies tube diameter, length, and cap colour for all processed tubes. This feature prevents mismatches between the barcode and the tube type, thus minimising handling errors.

### **Sorting rules**

Sorting is based either on LIS-transmitted rules or user-defined rules with barcode information, tube diameter, tube length, blood test, cap colour or any combinations. It can solve many labs' dreadful "Clone Tube" problem. The software responds to STAT samples.

It has a bi-directional connection to LIS, allowing the sending and receipt of data to and from LIS.

### **Continuous sorting to bins**

Throughput of 1600 tubes/hr

It has 12 target bins +1 error bin by default and can be configured from 6 to 18 target bins.

Sample tubes are continuously sorted and carried into assigned target bins. Optionally, it can connect to the TT Smartline conveyor system.

The user can draw out any target bin anytime, and the process does not stop. Sorting continues without interruptions by assigning a matching target bin for the removed one; hence the throughput performance is guaranteed. This "Refleks Mode" feature can be cancelled on the screen menu if needed.

Unidentifiable and mismatched sample tubes go in the error bin. It can sort the recapped sample tubes for archiving purposes.

### **User interface**

It has a colour touchscreen with a user-friendly multilingual interface (English & Turkish by default - other languages by option).

The operating system uses Industrial PC Windows 10 Pro.

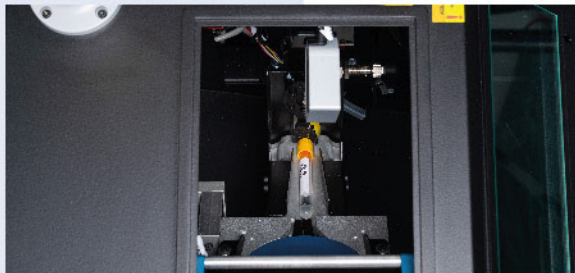
Its reporting feature, independent of LIS, provides various reports.



# REFLEKS TT 2000 S / TT 2000 S IQ VISION



- Easy and continuous sample bulk loading up to 800 tubes.
- Compatible with all standard tubes of 8-22 mm diameter & 70-120 mm length. Can introduce new tube types effortlessly through the interface.
- The elevator can feed all tube positions continuously.



- Scans all 1D & 2D barcodes.
- Tube acceptance details are stored in the "Log" file.
- The integrated hi-res camera takes photos of processed tubes. The specialist physician can check the images before they are allowed into the analysers. (IQ Vision)



- 12 target bins plus 1 error bin. The number of bins can be changed from 6 to 18.
- It has a light-warning system for bin activities.
- The user can set the "bin full" level on the screen.
- Uninterrupted sorting continues by assigning a matching bin number even if the user draws out the bin, thanks to the "Refleks Mode."
- Start/Stop by drawing bin" mode may be selected from the screen menu if needed.



- It has a reporting feature. Independent of LIS, various reports are available for sorted tubes, such as:
  - sample acceptance times
  - targeted bins
  - total number of samples by barcode
  - total number of samples by cap colour, tube diameter, tube length or combinations. (IQ Vision)
- Access to reports is governed at the level of the user's authorisation.
- Reports are retrieved in xls format via USB, printed via external printer, or shown on screen.
- Historical statistics are stored in the internal hard disk as much time as needed.





## Refleks TT 2000 S / TT 2000 S IQ VISION

### TECHNICAL SPECIFICATIONS

#### Dimensions

1940 × 1200 × 720 mm (w × h × d)

#### Weight

240kg (appr.)

#### Sample Throughput

up to 2000 samples/hr (TT 2000 S)

up to 1600 samples/hr (TT 2000 S IQ Vision)

#### Operating System

Industrial Windows 10 Pro (IPC)

#### User Interface

Color Touch Screen | Turkish, English  
(other languages - optional)

#### Sorter Mode On-line

LIS-transmitted rules based on barcodes

According to LIS or user-defined rules (IQ Vision only)

#### Sorter Mode Off-line

According to cap colour

According to user-defined rules (IQ Vision only)

#### Tube Loading Capacity

800+ tubes (varies per tube size)

#### Bin Capacity

250 tubes (varies per tube size)

#### Barcode Type

1D Barkod: EAN, UPC, Code 128, Code 39, Code 39  
(Extended), Interleaved 2-of-5, Codebar, 2D Barcode  
(optional)

#### Number of Bins

12 Target bins

1 Error Bins

#### Compatible Tube Sizes

Length: 70-120 mm Diameter: 8-22 mm

#### Power

220 VAC / 50-60Hz

#### LIS Interface

RJ35

#### Data Transmission

Internet / TCP/IP protocol

#### Origin

Turkey

#### Refleks Mode

Continuous operation with the matching bin assignment feature. When the bin is drawn out, the device continues sorting.

#### Reporting Feature

Independent of LIS, various reports are available, such as:

- sample acceptance times
  - targeted bins
  - total number of samples by barcode
  - total number of samples by cap colour, tube diameter, tube length or combinations. (IQ Vision)
- Users require authorisation for access to reports. Reports are retrieved in xls format via USB, printed via external printer, or shown on screen. Historical statistics are stored in the internal hard disk

#### Other Specifications

- Drawer full/empty backlighting
- Tube lifting by a sliding elevator system
- Audio & Visual warning system



## **REFLEKS DC 2000 SL** **Stand-alone Decapper**

DC 2000 SL is a stand-alone tube decapper opening tubes in the original analyser racks to prevent re-racking and reduce turnaround time (TAT).

- Throughput of 1600 tubes/hr
- Automated decapping of all tubes of  $\varnothing$  11 mm - 16 mm with push caps & stoppers
- Opening tubes with L 75 mm or 100 mm by factory default
- Can be tailored for tubes with  $\varnothing$  8 mm-22 mm X L 70 mm-120 mm
- Decapping in a mixed operation with differing diameters
- Opening tubes in the analyser racks – no reloading is needed, thus reducing the turnaround time (TAT).
- Fitting most of the universal racks\*, such as:
  - o Beckmann Coulter: AU / Dx1 / Iris series
  - o Abbott: Alinity Series
  - o Roche: Cobas Series
  - o Siemens: Advia Series
  - o Adjustments possible during manufacturing for other requested racks
- Detecting tubes with no caps
- Automatic push-forwarding of racks
- Daily tracking of decapping quantities
- Stand-alone decapper / no need to connection to LIS
- Easy operation & minimum maintenance
- Waste bin capacity of 5,000 caps
- Minimising infection to staff by aerosol & splashing effect
- Eliminating repetitive stress injury (RSI) in hand and wrist of the staff

\*All these brands are proprietary of the respective companies.





## TECHNICAL SPECIFICATIONS

### Dimensions

650 × 1200 × 650 mm (w × h × d)

### Weight

110kg (appr.)

### Sample Throughput

Up to 1600 tubes/hr

### Loading Capacity

10 racks (varies on rack type & model)

### On-Hold Area Capacity

10 racks (varies on rack type & model)

### Power

220 VAC / 50-60 hz

### Origin

Turkey

### Waste Cap Capacity

5000 Caps

### Other Specifications

- Automatic Rack Loading Unit
- Decapping Unit Protection Cover
- "On-Hold Area Full" Alert - audio / visual
- Number of Decapped Tubes Report
- Decapping on Original Analyzer Racks
- Colour Touchscreen
- Turkish / English User Interface

Tubes are decapped in the universal analyzer racks.  
(13mm x 100mm, 16mm x 100mm tubes)

**Beckman Coulter**

- ✓ AU + Dxl + Iris Series

**Abbott**

- ✓ Alinity Series

**Roche**

- ✓ Cobas Series

**Siemens**

- ✓ Advia Series







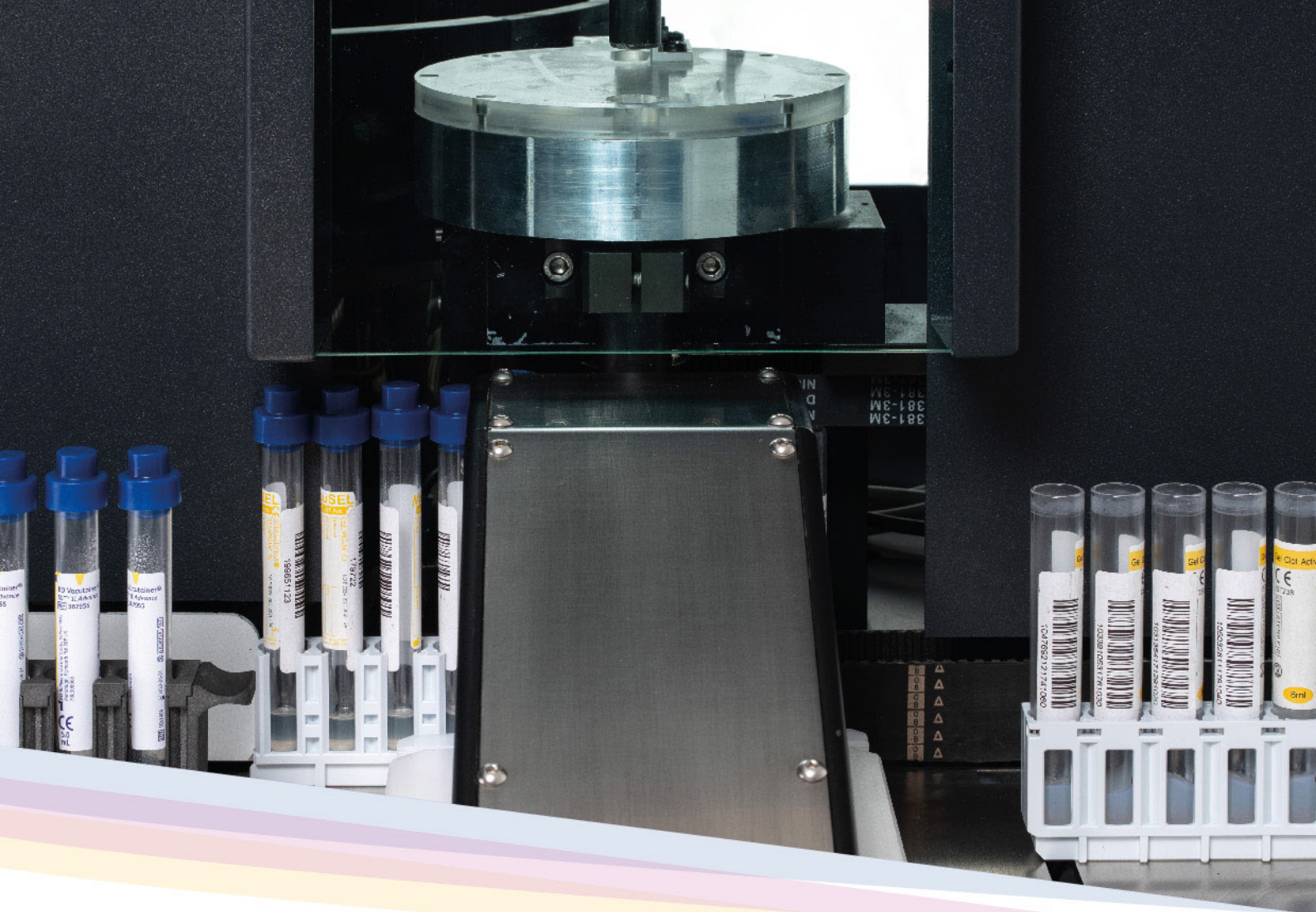




## **RC 2000 SL Recapper**

RC 2000 SL is a tube recapper closing tubes out of the analysers. It is ideally suited for sample archiving.

- Throughput of 1200 tubes/hr
- Automated recapping of  $\varnothing$  13 mm & 16 mm tubes using the patented one-size-fits-all archive cap
- Closing tubes with L 75 mm & 100 mm in our archive racks
- Adjustable cap tightness
- Detecting tubes with caps & missing tubes in the rack
- Two Operation Modes: Connection to LIS & stand-alone
- Reading rack barcode & matching with closed tubes for sample archiving
- Preventing cross-contamination from previously used caps
- Minimising infection to staff by aerosol & splashing effect and eliminating repetitive stress injury (RSI).
- Easy operation & minimum maintenance



## TECHNICAL SPECIFICATIONS

### Dimensions

950 × 1600 × 900 mm (w × h × d)

### Weight

400kg (appr.)

### Sample Throughput

Up to 1200 tubes/hr

### Loading Capacity

10 racks

### On-Hold Area Capacity

100 tubes (10 racks)

### Power

220 VAC / 50-60 hz

### Origin

Turkey

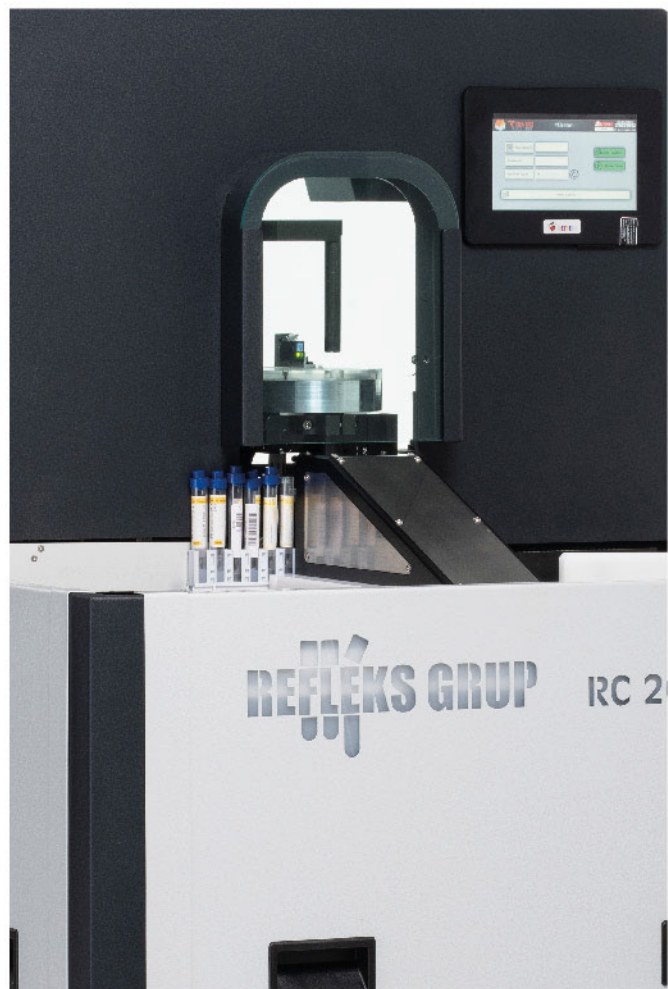
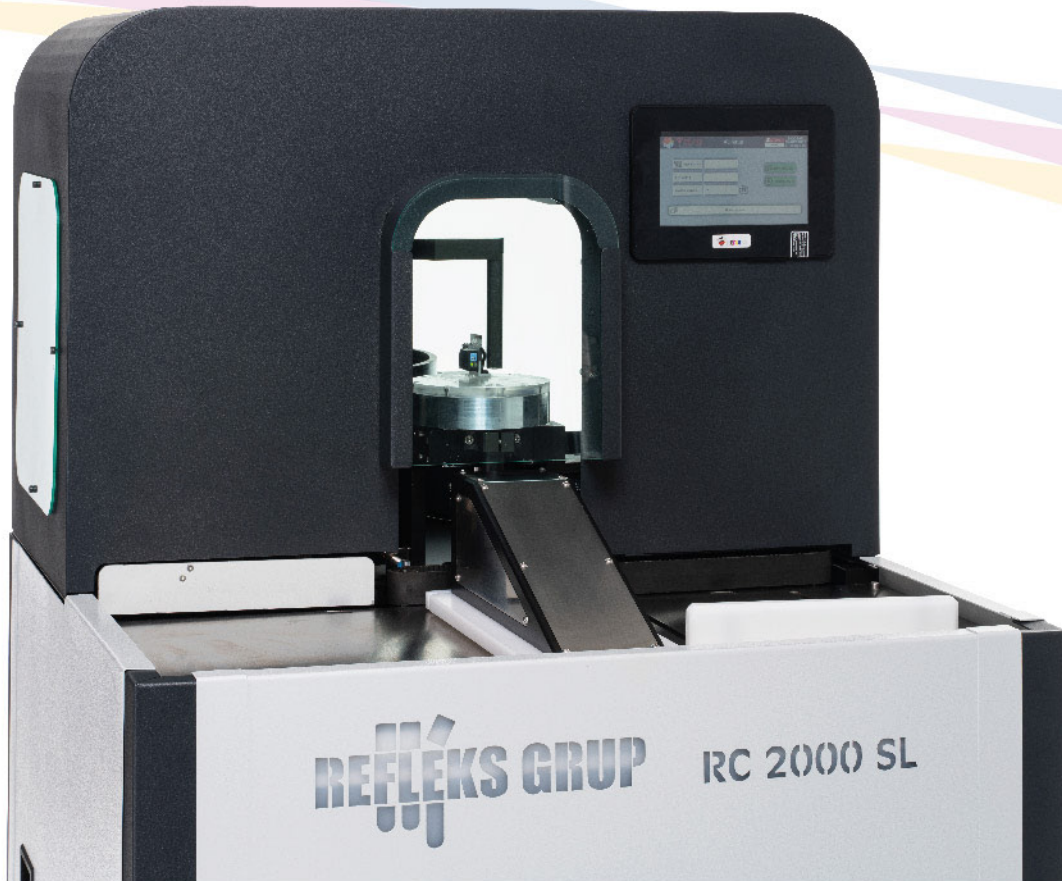
### Cap Hopper Capacity

1000 Caps

### Other Specifications

- Automatic Rack Loading Unit
- Recapping Unit Protection Cover
- Cap Detection Feature
- Communication with LIS









## REFLEKS IQ CAP & IQ RACK

### Recap & Archive

We are proud to present our new innovative products for closing the caps and storing blood sample tubes for post-analytical procedures.

Organisations such as WHO, CLSI and EFLM published a variety of procedures that standardise the storing conditions of various sample types. Moreover, blood samples must be kept closed to prevent evaporation.

The archive rack IQ Rack and patented recap IQ Cap are intended to use with Recapper RC 2000 SL.

Thanks to the unique design of IQ Cap, 13x75 & 13x100 & 16x100 mm tubes can be closed with the same cap. While IQ Cap is as effective at manual closing as with the recapper, IQ Rack is also apt for archiving purposes.

#### IQ CAP

- Patented one-size-fits-all recap
- Closes all  $\varnothing$  13 mm & 16 mm tubes
- Intended for use with Recapper DC 2000 SL
- Effective also at manual closing

#### IQ RACK

- Simple rack for archiving
- Compatible with most tube types with L 75 mm & 100 mm
- Intended for use with Recapper DC 2000 SL
- Ideal solution for cost-effective archiving purposes





## **REFLEKS – TT SMARTLINE**

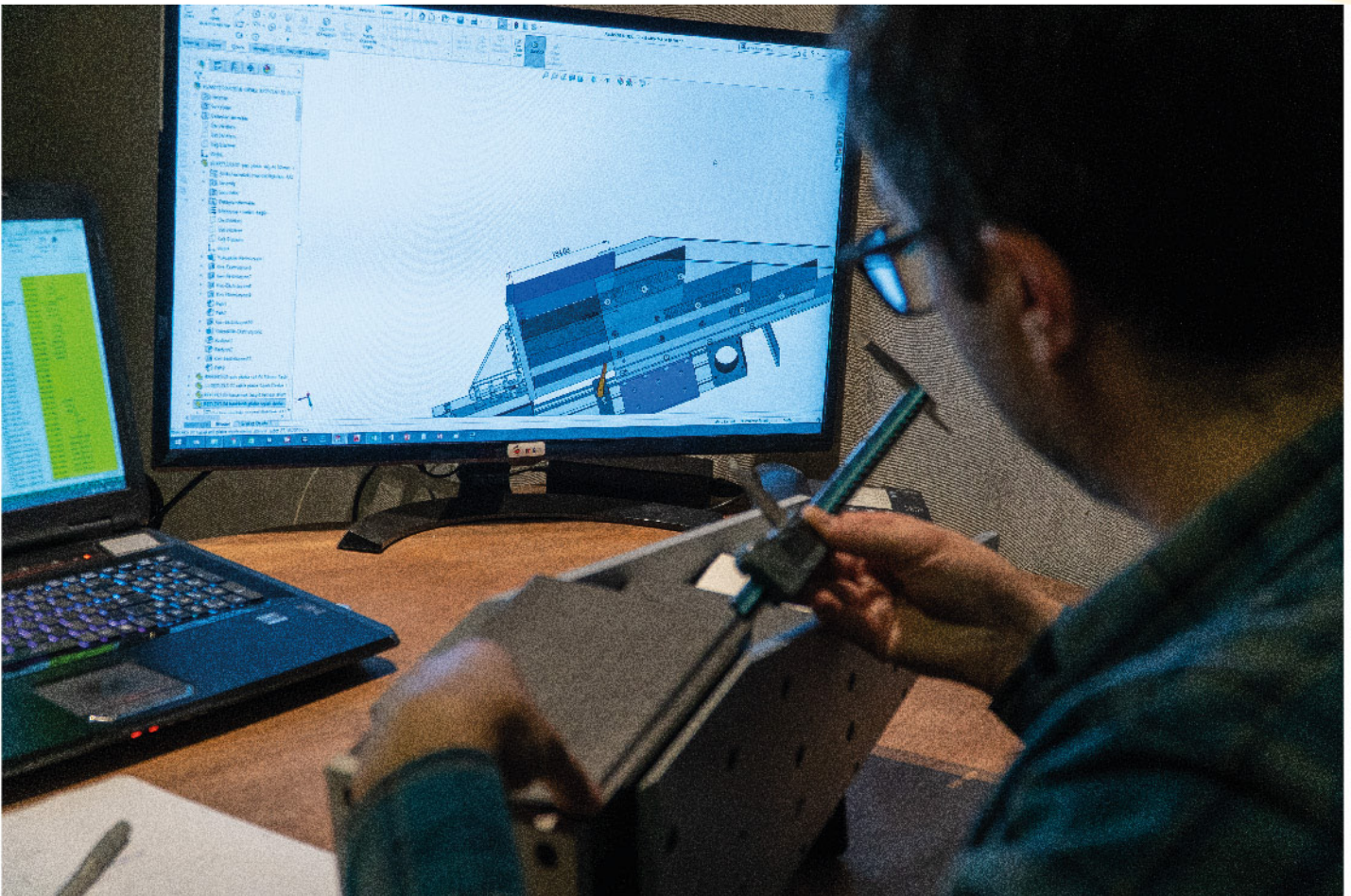
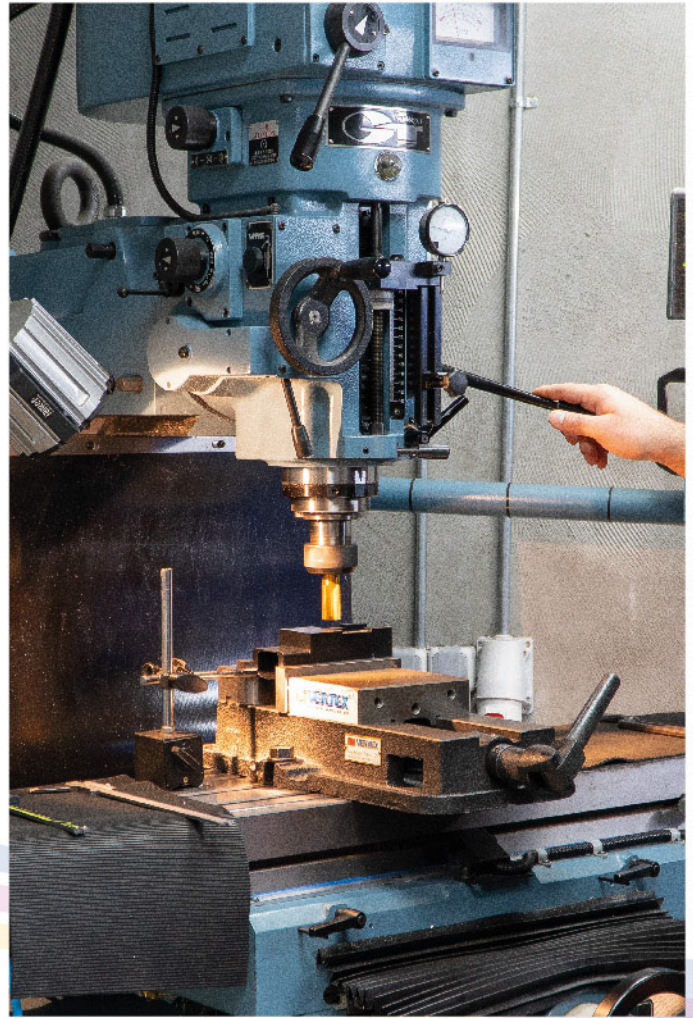
### **Smart Conveyor System**

TT SMARTLINE is a smart conveyor belt system for sample tube reception & distribution over long distances inside the buildings of laboratories. It will significantly reduce the pressure on existing transport systems and release the capacity to be used for other items.

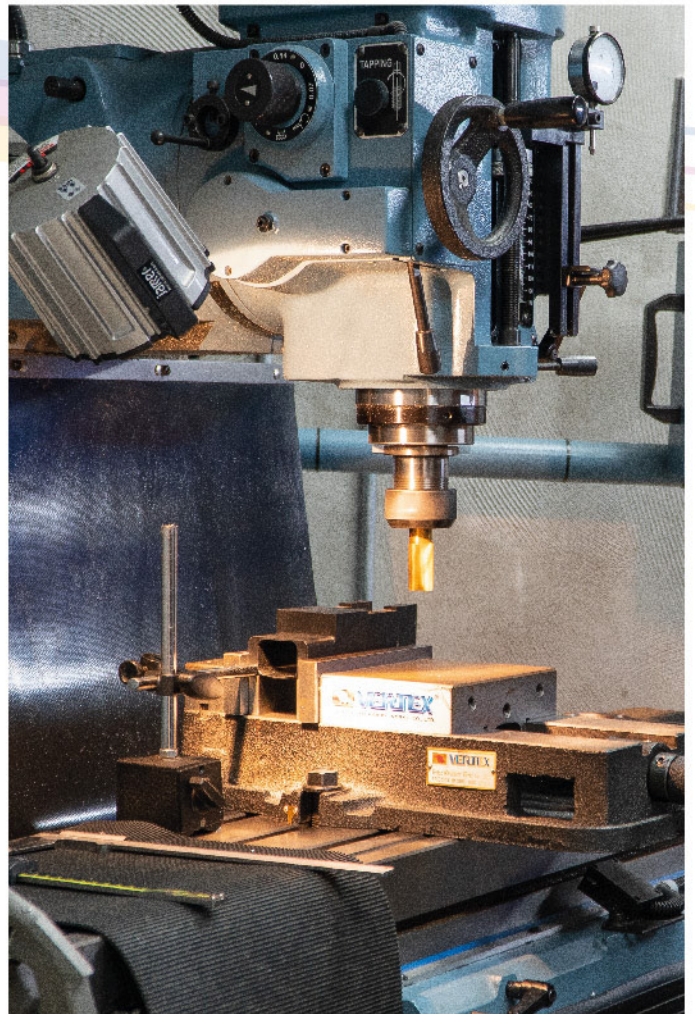
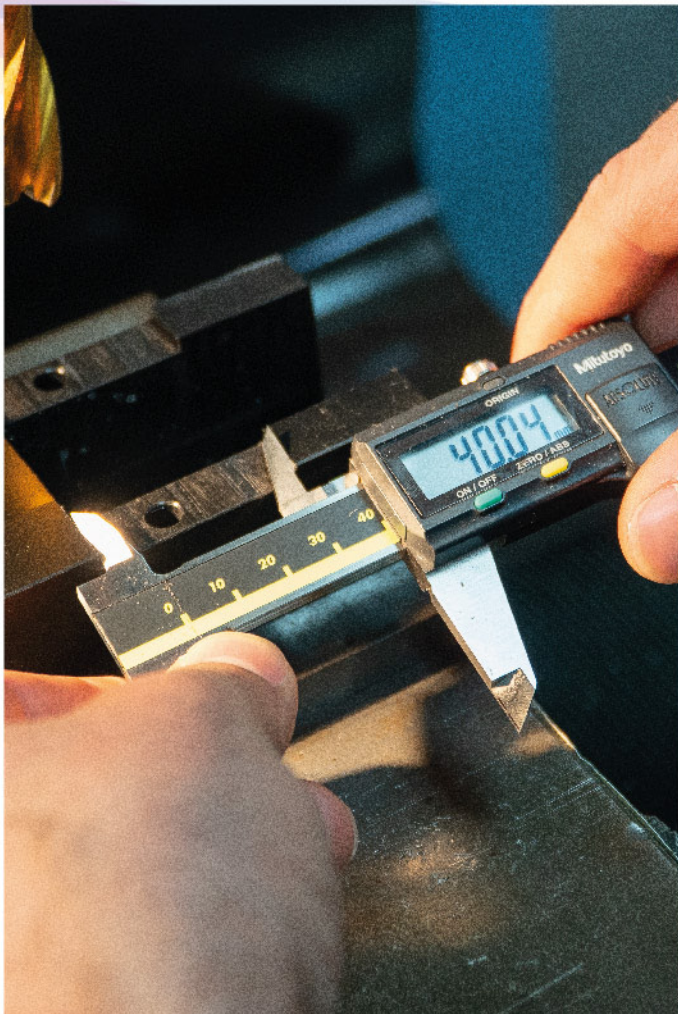
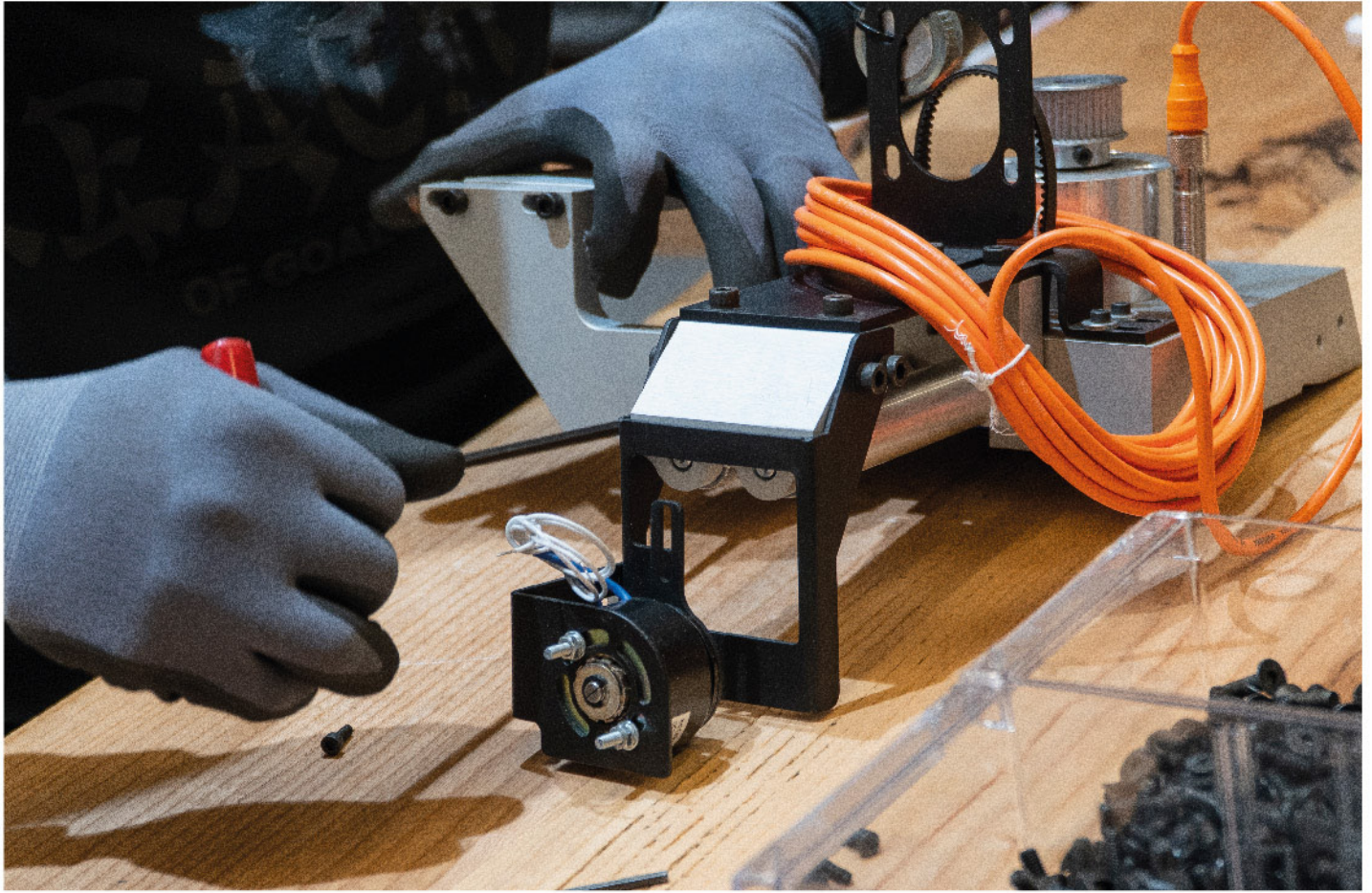
- Throughput of up to 1,600 tubes/hr
- Transporting samples both horizontally and vertically
- Tailor-made dimensions
- Compatible with all test tubes of 80-110 mm in length and 12-18 mm in diameter (including the cap)
- Continuous feeding and transport of sample tubes
- Direct connection to tube sorters TT 2000 S & TT 2000 S - IQ VISION
- Compatible with laboratory automation bulk loaders
- Low maintenance
- Easy access to the conveyor belt for maintenance, service, and cleaning

The product and its parts shown in the pictures are examples. The bands can be customised in length and width as requested.













ENDMED is a family company established in 1997 in the medical supply sector in Turkey. We started our medical devices business in the last decade when Turkish State Institutions asked to bundle the supplies and related services in their tenders. Today many states in the world follow the same practice.

This bundling requires considerable automation of the pre-analytical and post-analytical processes in the laboratories if you want to be competitive in the tenders. Moreover, private businesses also reduce their costs and turnaround times (TAT), thanks to such automation.

We started our R&D journey with the bulk tube sorter, our first product developed with the support and endorsement of the Technological Research Council of Turkey (TÜBİTAK), together with the consultancy of Istanbul Technical University (İTÜ).

Since then, we have developed various other solutions to reduce the turnaround time of laboratory services. With the experience of more than 25 years, we continue our R&D activities to solve the problems of hospitals, clinics, and laboratories and increase their efficiency.

We provide "smart processing solutions for smart laboratories" concerning their pre-analytical and post-analytical needs.



**ENDMED ENDÜSTRİ MEDİKAL MALZEME ve CİHAZLARI SAN. ve TİC. LTD. ŞTİ**

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