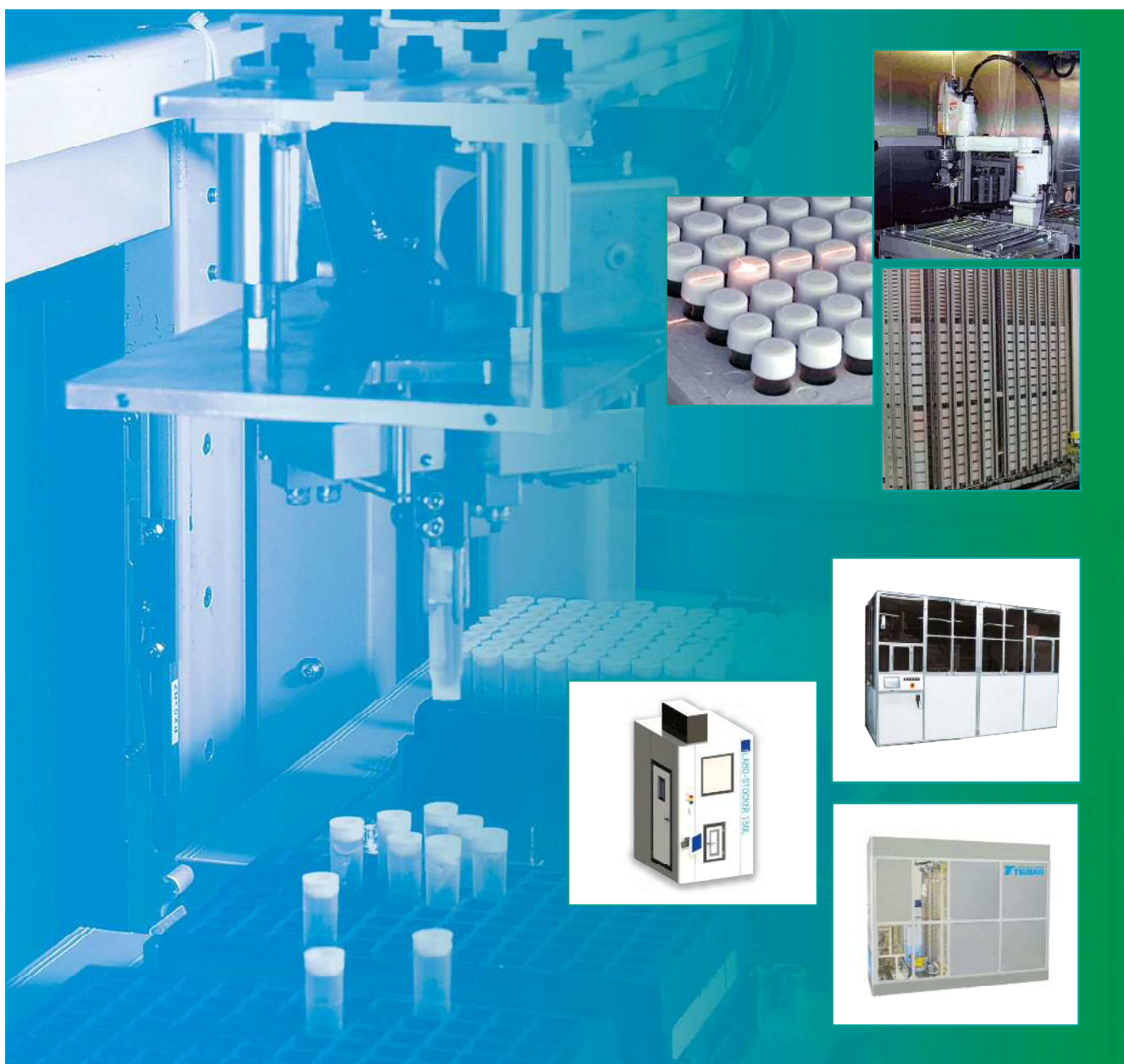


TSUBAKI LIFE SCIENCE SUPPORT EQUIPMENT



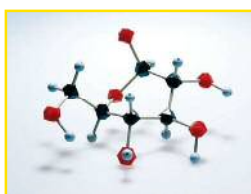
Proposals to the Fields of Life Science

Tsubakimoto Chain Co. through its Material Handling Division, has been proposing diverse automated systems for the storage, transportation and sorting of materials that are best suited to the needs of our customers in the sectors of automobiles, IT, newspapers, and distribution. And now, the company is fortifying its proposals to the life science field by making the best of the know-how it has gained in these fields.

In recent years, automation has been making great strides in the field of life science. Candidates of future new drugs are being turned out in succession from samples of huge numbers of compounds and natural substances. How fast new drugs can be developed is a big concern in the area of the development of new drugs.

Drawing on its ample past achievements and diverse materials handling technologies, Tsubakimoto Chain Co. proposes, as a total system, automatic storage-and-picking hardware equipment that store samples at a stable quality and deliver them precisely, along with a software product that manages sample information in a centralized manner.

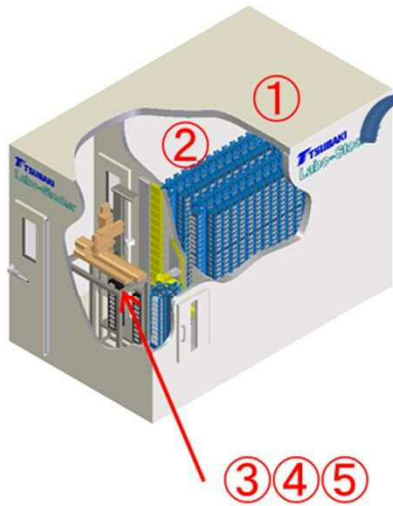
Tsubakimoto Chain Co. will continue to propose dream-inspiring automated systems that incorporate its cutting-edge technologies, including proposals suitable for handling materials at higher speeds and in minute amounts and proposals for DNA storage in the genetic-linked field and the biological sample storage field by the ultra-low temperature.



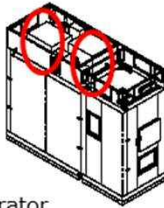
TSUBAKI LABOSTOCKER 384 (Sample Storage system)

<Specification>

- Outer Dimension : W1,050 × D2,820 × H2,430
- Storage Objects : Tsubaki 384Tube
- Storage Temperature : -20°C
- Storage Capacity : 2,376 racks (912,384 tubes)
- Outlet Capacity: Max. 450 tubes/hr. (Hit Rate ≥ 3)



① Freezing Unit



- Twin Type Refrigerator
- No refrigerant Piping
- -20°C can be maintained in case of one unit (w/ either one's failure)

Option

- Expansion: Max. 3 units (Max. 2.7M tubes)
- Mass Storage & Retrieval
 - 84 racks all together
 - w/ Defrosting Function



Installation Conditions

- Shipping Cargo Dimension W1.05m × D1.8m × H2.0m
- No Refrigerant Piping required, As-built Refrigerator (Exhaust Heat : 5kw or less)
- Installation Period : 5days

② Rotary Racks



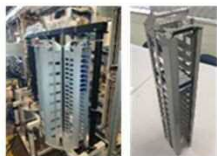
- Driven by Linear Motor
- Super High Efficiency

③ Rack Transfer



- Rectangular Coordinates
- 3-Direction Restriction (PAT)

④ Unit of ASR



- by Exclusive Cartridge
- Multiple cartridges set in

⑤ 384 Picking Robot



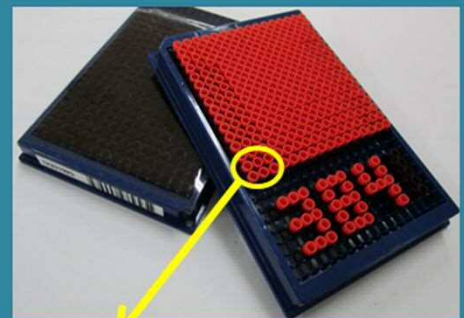
- Tube Fracture-preventative Mechanism
- Reading 2D-code at the bottom

Others

- Power Loss Recovery • • Auto-restart on restoration w/ Splash-Prevention
- Self-diagnosis Maintenance • • Monitoring the machine life and status

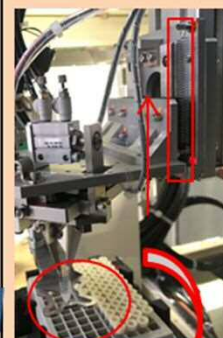
Tsubaki 384Tube

- Outer Dimension : W85.47 × D127.76 (mm) (available for both Cap & Seal Types)
- Height Dimension: Cap Type 14.36 Seal Type 17.76
- Internal Volume : 115μℓ (Filling 70μℓ max.)
- Tube ID : DATA MATRIX



Cap Airtightness Test

- Solution Volume DMSO 80μℓ
- Open/Close of Cap 50 times
- Storage Temperature -30°C
- Result 0.1% or less



Tube protection due to load-release mechanism in robot's arm (PAT)



Arm descending move eliminating adhered tube picking (PAT.P)

Notes: Available for 96 and vial picking

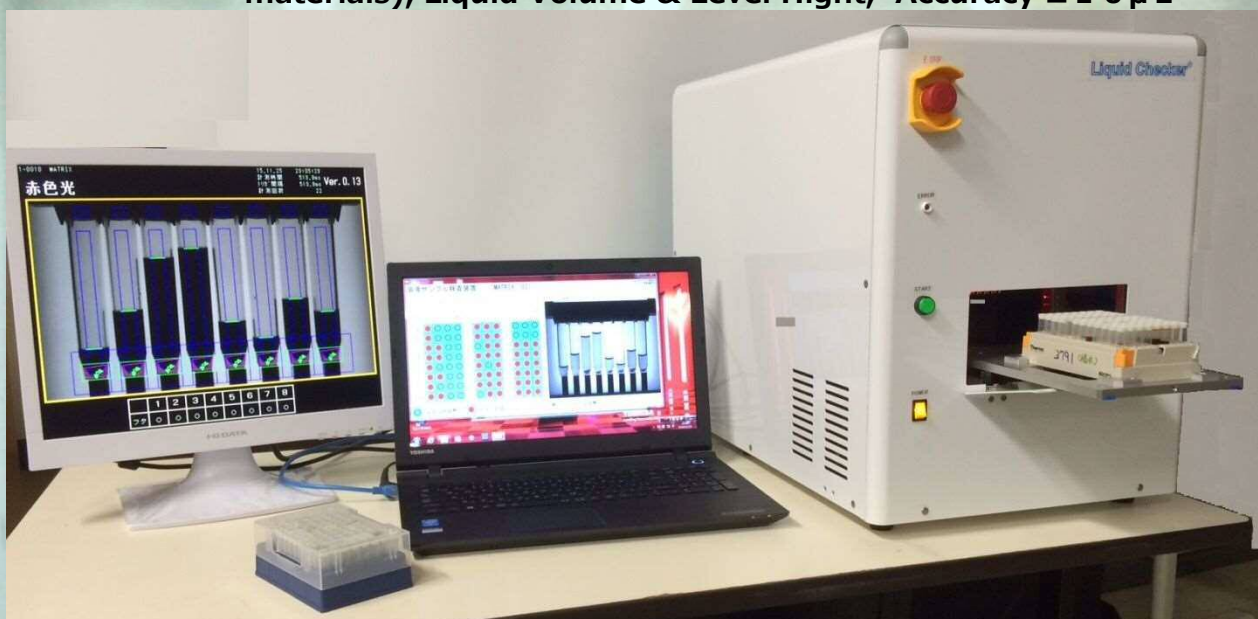
JAPAN Cool Technology

Liquid Checker

Discrimination/Inspection Apparatus for Compound Dissolving

detects the remainder of solvent (solution degree) & liquid volume in 96 Tube
Automated distinction of the remainder which effects the density unevenness

- ◆ Dimension 360W × 580D × 480H
- ◆ Throughput 90 sec./ 1 rack
- ◆ Q'ty of Rack 1 rack
- ◆ Check Items Dissolution Degree(Distinction: turbid, precipitate and floating materials), Liquid Volume & Level Hight, Accuracy $\pm 1.0 \mu\text{L}$

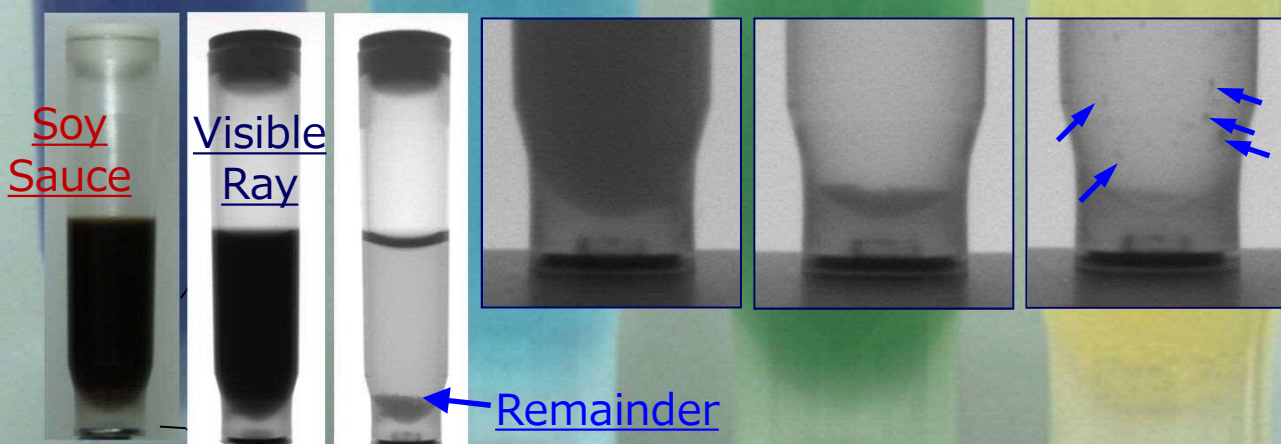


Features;Thick Solution Permeration for Distinction

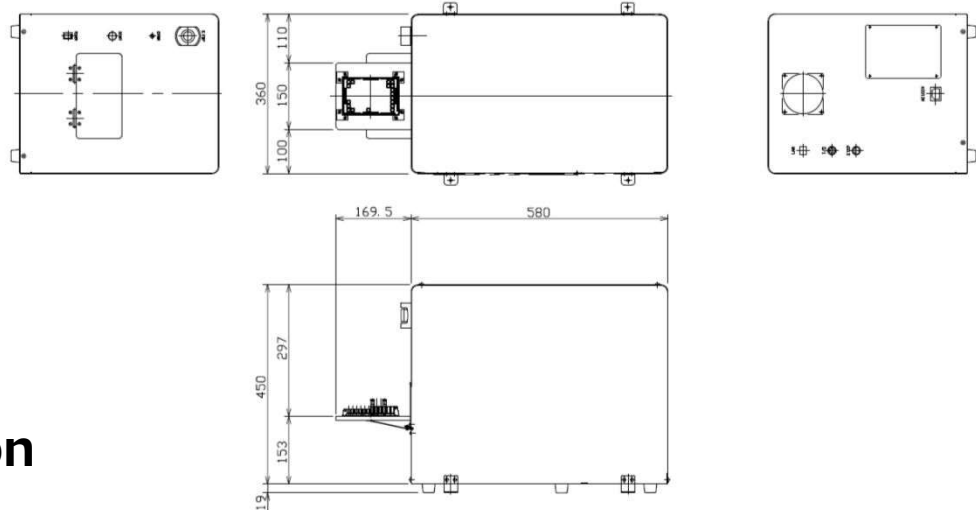
Turbidity

Precipitate

Floating



Dimension



Specification

Item	Notes
Outer Shape	360W × 580D × 480H
Weight	25 [kg]
96 Tube	<p>Manufacture : FCR&Bio, MATRIX Cap: Press-fit type</p> <p>Excluding: Tubes w/ Screw type cap and w/ Tube Fall Preventive Lock device</p>
Rack	<p>Manufacture : FCR&Bio, MATRIX SBS Standard: 127.76±0.25mm × 85.47±0.25mm × various height</p>
OS	Windows 7、Windows10
Out Put File	<p>CSV File Liquid height levels associated w/ Rack ID Distinction of Reminders, Turbidity, Floating Detection of the existence of Tubes and Caps</p>
Out Put Display	Imaging Image BMP(8/Image: 5MB)
Interface	<ul style="list-style-type: none"> ▪ Stand-alone Type : Push-button operation ▪ In-Line Panel type : I/O, File Triger
Power required	AC100V 50/60Hz (adjustable for any country code)

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