JUKI
smart.fast.modular.

STORAGE SOLUTION

ISM ULTRAFLEX 3600
ISM 2000
Automated storage systems

ISM ULTRAFLEX 3900
ISM 1100

ISM 500
Static storage systems

ISM 400
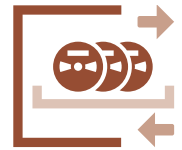
EFFICIENT STORAGE MANAGEMENT – A DECISIVE FACTOR OF SUCCESS
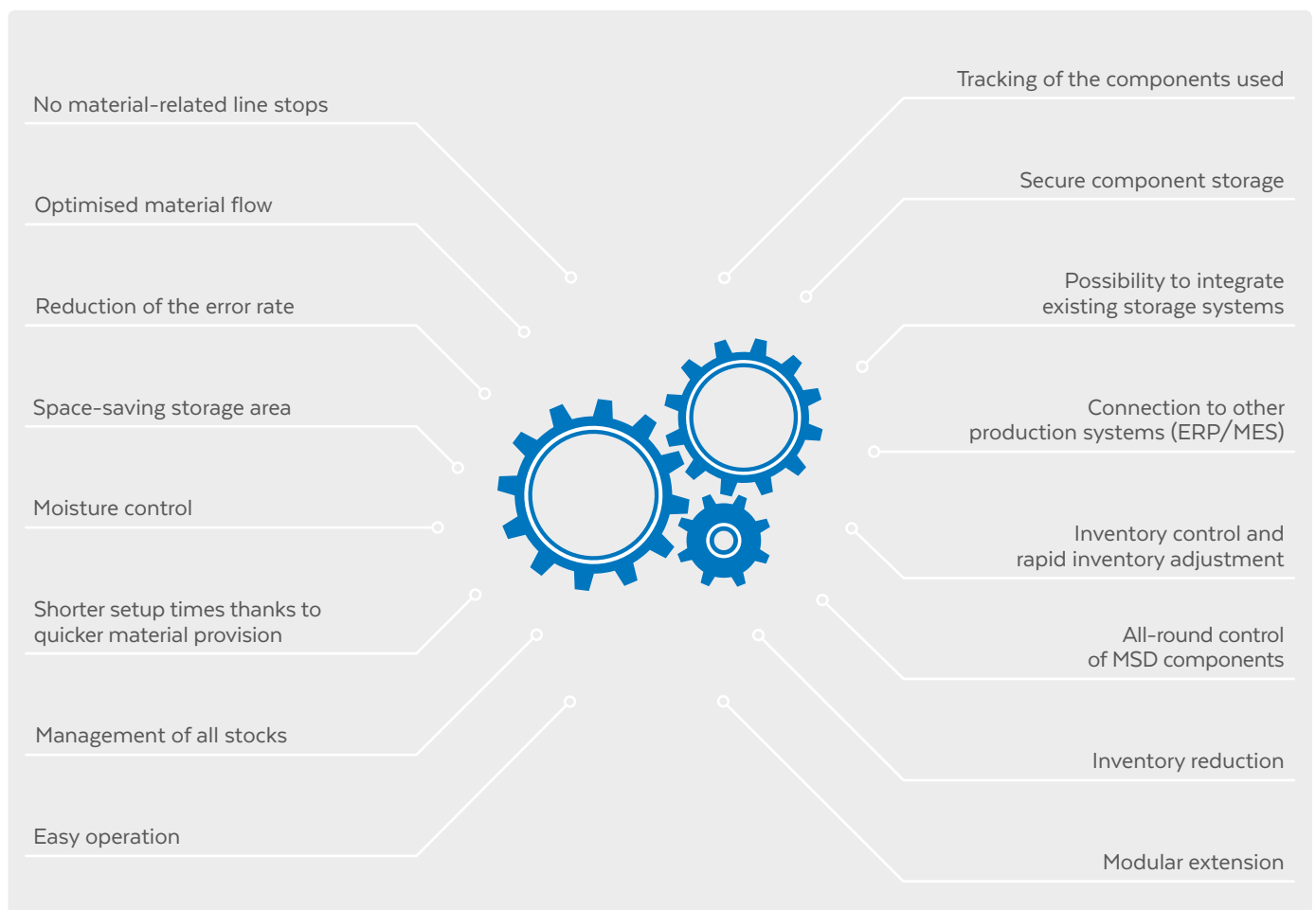
STORAGE MANAGEMENT SYSTEMS

Intelligent and efficient storage management has become an increasingly important factor of success in SMT production processes. It is the only way to ensure optimum output teamed with a more flexible product line. Besides, it is a crucial element on the road to Industry 4.0.

JUKI ISM storage management systems facilitate exactly this intelligent and flexible type of warehousing. By minimising the manual expenditure of time, it is possible to shift the focus on value-creating activities. An efficient storage management system saves time and money during the entire production process. Apart from that, it regularly communicates with your ERP/MES system.

JUKI STORAGE SOLUTION includes a wide range of different intelligent storage cabinets for your stock of components. STORAGE SOLUTION allows for flexible assembly and modular extension. What is more, it enables the smart integration of existing storage systems.
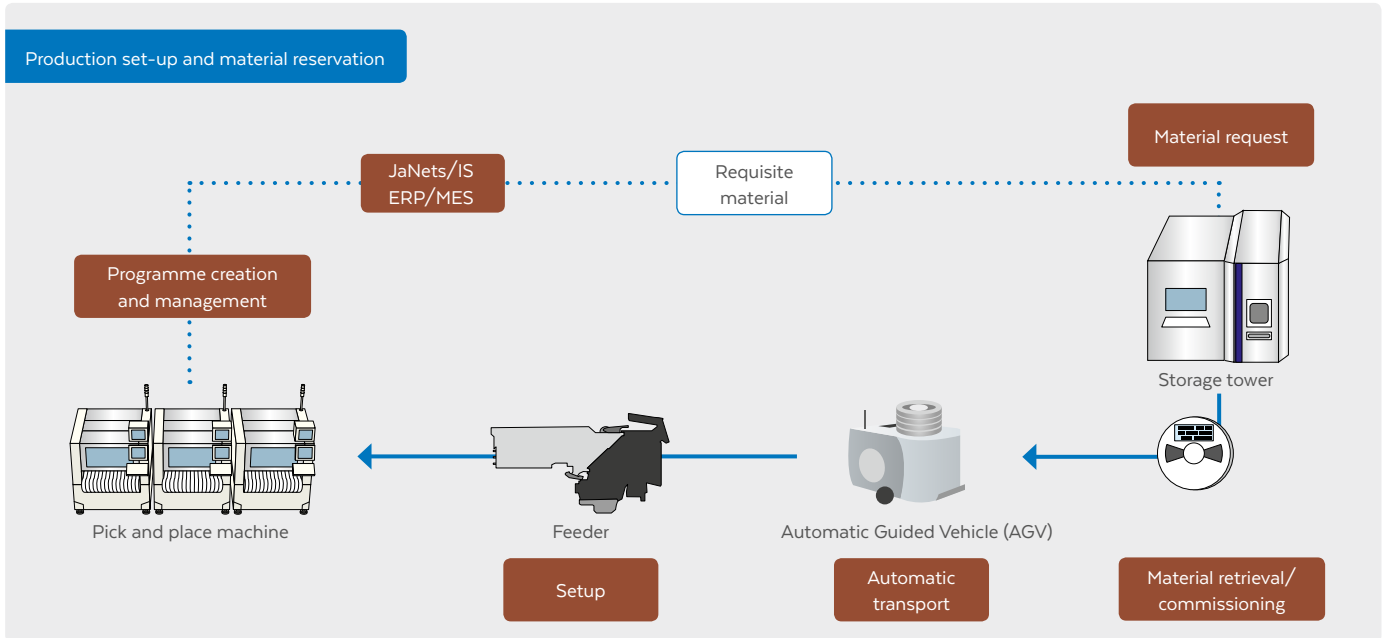
It is JUKI's goal to closely cooperate with their customers in order to develop an ideal, customised and intelligent storage concept – regardless of the particular requirements.

ADVANTAGES OF JUKI STORAGE SOLUTION

No material-related line stops

Optimised material flow

Reduction of the error rate

Space-saving storage area

Moisture control

Shorter setup times thanks to quicker material provision

Management of all stocks

Easy operation

Tracking of the components used

Secure component storage

Possibility to integrate existing storage systems

Connection to other production systems (ERP/MES)

Inventory control and rapid inventory adjustment

All-round control of MSD components

Inventory reduction

Modular extension

OPTIMISED MATERIAL FLOW

FEEDER SETUP WITH STORAGE SYSTEMS

Production set-up and material reservation

JaNets/IS
ERP/MES

Requisite
material

Material request

Programme creation
and management

Storage tower

Pick and place machine

Feeder

Automatic Guided Vehicle (AGV)

Setup

Automatic
transport

Material retrieval/
commissioning

RE-STORAGE OF LEFTOVER MATERIAL UPON COMPLETION OF PRODUCTION

Completion of production

Pick and place machine

Feedback of the pick and place
machine on the quantity used

Consumption data update

JaNets/IS
ERP/MES

Empty reels

Unused reels

DB

Automatic Guided Vehicle (AGV)

Storage tower

Define reel as inactive /
inventory = 0

Re-storage

Inventory data
update
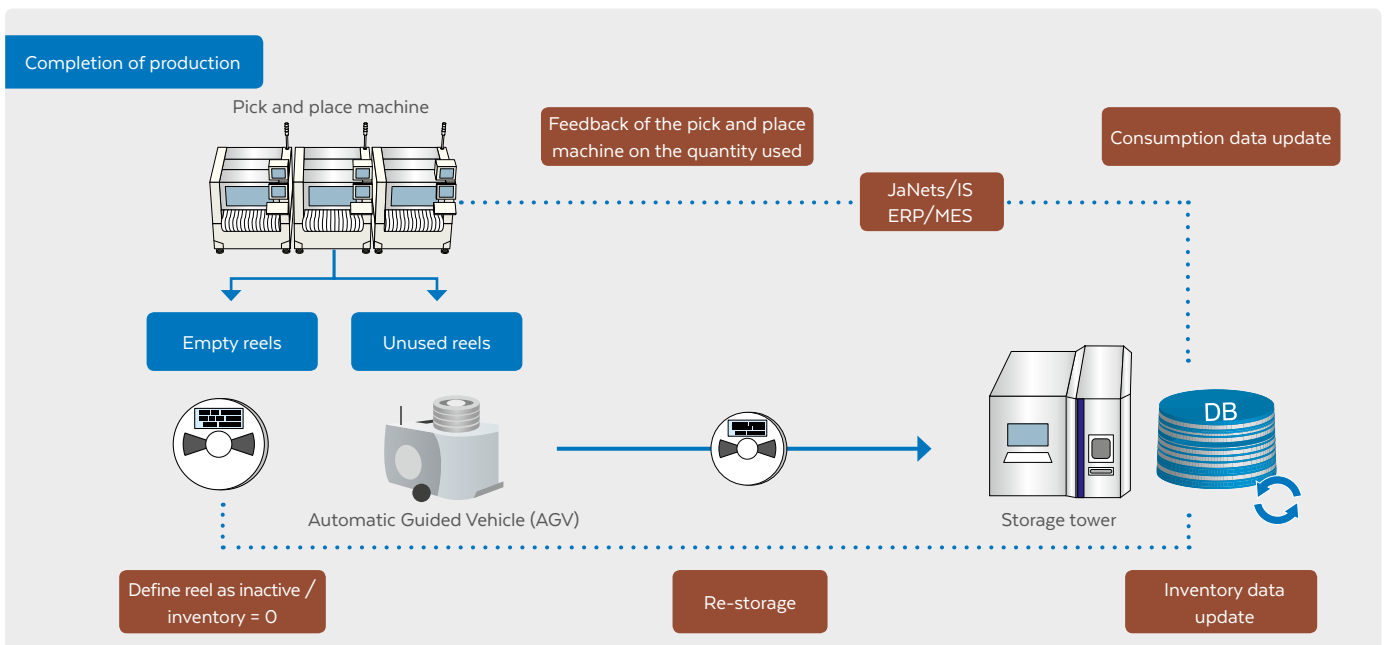
DIFFERENT REQUIREMENTS –
DIFFERENT STORAGE SYSTEMS

Material incoming desk

JUKI storage systems

Automated storage systems	Static storage systems
ISM UltraFlex 3600 ISM UltraFlex 3900	ISM 500
ISM 2000	ISM 400
ISM 1100	
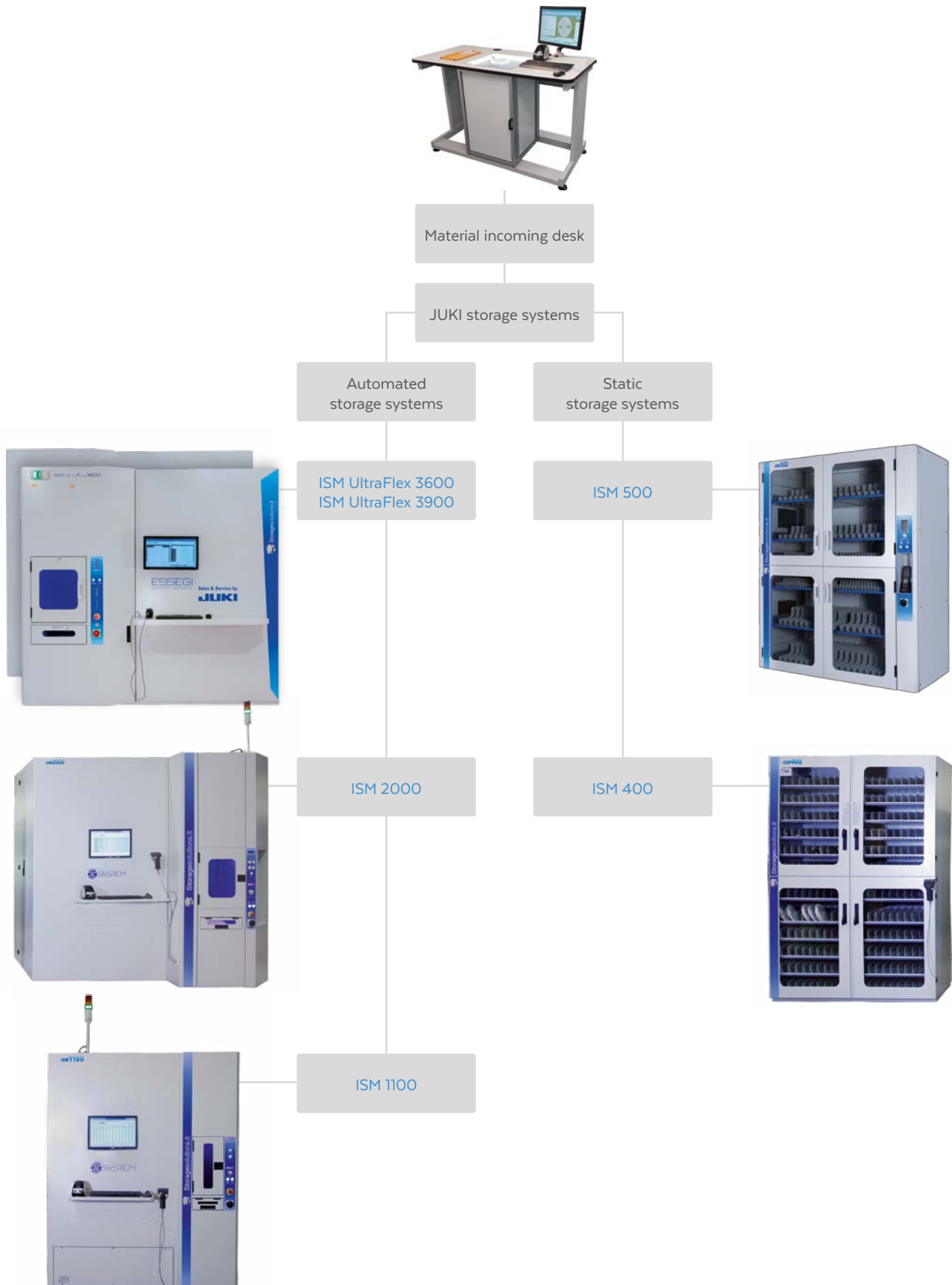
EFFICIENT STORAGE THANKS TO INTELLIGENT STORAGE SOFTWARE

SOFTWARE WITH MANY ADVANTAGES

Comprehensive storage management
Included in the scope of delivery, the AutoSMD software guarantees comprehensive storage management. The inventory level including both the available and the allocated quantities can be controlled at all times. Thanks to the order preparation and planning functionality, the required parts as well as the SMD and THT components will be blocked. Thus, those parts will be excluded from planning. Once the minimum stock level has been reached, it is possible to automatically send a request for material to the ERP system. In order to be able to react in time, you can always update your stocks in your ERP/MES systems.

Paperless order management
Thanks to the electronic order planning and inventory removal management, annoying material printouts are a thing of the past. The material is made available to the operator. Material requested by the pick and place machine can be directly retrieved from storage.

Integration of existing storage systems
It is possible to integrate an existing storage system – regardless of whether it is another automated storage system or a high-bay warehouse – into the JUKI storage management system. The space required in a high-bay warehouse will be optimised by the dynamic (chaotic) type of warehousing.
Inventory removal occurs in a route-optimised way by means of a PDA. Thus, you will save time and minimise human errors during the retrieval process.

Monitoring of MSD components
MSD components are monitored by the system, the floor time is tracked at package level, and expired material will not be released for orders. Thus, the reject rate relating to components and finished PCBs is reduced significantly.


Connection to ERP/MES systems and production lines
The AutoSMD software can be connected to all known MES/ERP systems, which facilitates the exchange of data at all levels. The entire production chain, including the supply chain, can thus work in a transparent and efficient manner. Since the ISM towers can be used regardless of the brand, they do not necessarily have to be used along with a JUKI production line. Moreover, the material can be automatically entered into an existing ERP/MES system.

Traceability
A comprehensive barcode library enables automatic material recognition upon storage, which reduces the error rate to a significant extent. In order to allow future error analyses, traceability pictures of each reel are saved at the same time.
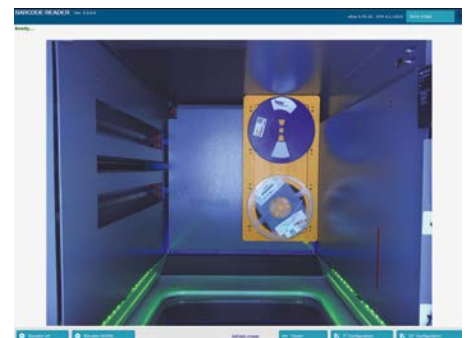
STORAGE SOLUTION HARDWARE

AUTO INCOMING DESK

Receiving goods in one step
The JUKI material auto incoming desk allows receiving goods in one step. All you have to do is place the component reel on the glass plate above the camera. The whole process is automated: material recognition, print of the unique ID barcode label and entry into the database. The system registers the components in a straightforward, easy and reliable way. Thus, they can be stored immediately or made available for production.
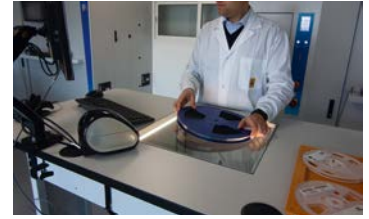
FULLY-AUTOMATED STORAGE SYSTEM
ISM UltraFlex 3600 and ISM UltraFlex 3900

Efficiency
User interaction is not required during the fully-automated storage or retrieval of up to 54 reels. Meanwhile, the employee can complete other tasks. Besides, automated storage saves valuable time, time that – in case of traditional shelf warehouses – is otherwise spent for manual commissioning, the search for material as well as for storage and re-storage.

Space-saving solution
Using the ISM UltraFlex 3600, up to approx. 3,600 7-inch reels may be flexibly stored on a floor space of only 3.6 m^2. Naturally, there are also solutions for 15-inch reels and for the shared storage of 7- and 15-inch reels. Moreover, it is possible to more than double the capacity of the ISM UltraFlex 3600 by adding the ISM UltraFlex 3900 extension module.

Cases in storage

Protected by cases, the component reels are always stored in a clean and safe way. ESD compliance is guaranteed at all times. Moreover, the cases facilitate quick re-storage, which also applies to reels that are damaged or slightly bent out of shape. Maximum storage space optimisation is ensured by the dynamic (chaotic) type of warehousing. Cases with different heights are stored space-saving in the tower.

Cases with flexible height adjustment

Double case

View into the tower

STORAGE SOLUTION HARDWARE

ISM UltraFlex 3900 extension module
By adding an ISM UltraFlex 3900 module, you will more than double your storage capacity. The ISM UltraFlex 3900 and the ISM UltraFlex 3600 are interconnected by two conveyor belts. Both will then act as a single unit with a total storage capacity of up to 7,500 reels.

Error prevention
Fully-automated storage prevents human allocation errors. All sources of error are eliminated, because all materials are scanned and photographed during storage process. What is more, the internal system software can report stored materials and any missing parts back to the existing ERP system.

MSD monitoring
The optional humidity control keeps the humidity inside the system at 5% RH. Delicate MSD components are thus protected against excessive humidity (RH > 5%). Besides, the software records the prevailing humidity throughout the component's entire storage cycle. Expired components will be blocked for the production.

AUTOMATED STORAGE SYSTEM
ISM 2000 and ISM 1100

Patented multiple pick positions
Automated storage systems have been developed with the objective of achieving optimum performance when it comes to storage capacity and overall size. Thanks to these systems, reels and trays stored in cases can be stored and retrieved very rapidly. The patented multiple pick positions allow moving up to 27 reels into and out of storage at the same time. This applies to all products available.

All models available are listed on the back of this brochure.

STATIC STORAGE SYSTEM

Storage space for different types of components
JUKI has designed static storage systems for the manual, smart and dynamic (chaotic) storage and retrieval of different materials such as reels, JEDEC trays, SMT/THT bars, prepared feeders, PCBs, THT components and much more.

All models available are listed on the back of this brochure.

SPECIFICATIONS

	Automated storage systems			
	ISM UltraFlex 3600	ISM UltraFlex 3900	ISM 2000	ISM 1100
Max. number of storage places	3,622	3,840	2,059	1,100
Storage/retrieval quantity	54	–	27	27
Weight (including cases, w/o materials)	1,500 kg	approx. 1,500 kg	1,650 kg	458 kg
Dimensions (width × depth × height)	2,520 × 1,450 × 2,450 mm	2,568 × 1,377 × 2,450 mm	2,630 × 1,650 × 2,400 mm	1,735 × 920 × 2,200 mm
Energy consumption	0.4 kWh (w/o dehumidifier)	0.4 kWh (w/o dehumidifier)	1.2 kWh (w/o dehumidifier)	1.0 kWh (w/o dehumidifier)
Operating system	Win 10	–	Win 10	Win 10
Dehumidifier	optional	optional	optional	optional
Operation	Touchscreen and keyboard, mouse and handheld scanner	Operating via ISM UltraFlex3600	LCD display, keyboard, mouse and handheld scanner	LCD display, keyboard, mouse and handheld scanner
Number of types offered (see individual brochures for details)	3 and custom-made types	3 and custom-made types	5	3

	Static storage systems	
	ISM 500	ISM 400
Max. number of storage places	640	480
Storage/retrieval quantity	manual, PDA-controlled	
Dimensions (width × depth × height)	1,754 × 800 × 2,200 mm	1,550 × 810 × 2,200 mm
Energy consumption	0.2 kWh (w/o dehumidifier)	0.2 kWh (w/o dehumidifier)
Weight (including cases, w/o materials)	350–850 kg	350–670 kg
Dehumidifier	optional	optional
Miscellaneous	• Manual component storage and retrieval • LED controls • Up to 3 storage and/or retrieval operations at the same time	• Manual component storage and retrieval • LED controls • Up to 3 storage and/or retrieval operations at the same time
Number of racks	6–16	6–12

	Material incoming desk
Dimensions (width × depth)	1.6 × 0.8 m
Working height	1.1 m
Weight	101-222.67 kg (including loaded cases)
Energy consumption	100-240 V; 5 A; 50-60 Hz
Hardware	Touchscreen / keyboard / mouse / 18-MP camera / label printer / barcode scanner / PC i7, 8 GB RAM, 256 GB
Software	Console / Halcon 1D-2D library / Auto-Incoming Software / picture traceability option
Software options	Verification of part numbers / comparison delivery

Specifications and design subject to change without notice.

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