SMT Total System Software

**JaNets Basic Software**

<table>
<thead>
<tr>
<th>product name</th>
<th>major functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Editor</td>
<td>Data creation (single production program)</td>
</tr>
<tr>
<td>[Op] Line Manager</td>
<td>Line management (line monitoring, line production program creation, cluster optimization, production program download, line unit optimization, simulation)</td>
</tr>
<tr>
<td>[Op] external output</td>
<td>Machine monitoring function (external output) (machine operation status / production management information), MES linkage, Interface with ISM (delivery instruction, remaining quantity management), Feeder setup verification, Traceability</td>
</tr>
<tr>
<td>[Op] Data Exchange Format (JSON)</td>
<td></td>
</tr>
</tbody>
</table>

**IFS-NX Basic Software**

<table>
<thead>
<tr>
<th>product name</th>
<th>major functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFS-NX Software</td>
<td>Parts verification/Component inventory control, Feeder location search/Off-line setup function / Random feeder setup</td>
</tr>
<tr>
<td>[Op] Traceability license</td>
<td></td>
</tr>
<tr>
<td>[Op] Mounter license</td>
<td></td>
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<tr>
<td>[Op] Offline setup license</td>
<td></td>
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<tr>
<td>[Op] MSD License</td>
<td></td>
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<tr>
<td>[Op] Feeder maintenance license</td>
<td></td>
</tr>
<tr>
<td>[Op] PDA License</td>
<td></td>
</tr>
</tbody>
</table>

**Compatible models**

<table>
<thead>
<tr>
<th>series name</th>
<th>Compatible models</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS series</td>
<td>RS-1</td>
</tr>
<tr>
<td>FX series</td>
<td>FX-3 / FX-3R / FX-3RA / FX-3R-1 / FX-2</td>
</tr>
<tr>
<td>RX series</td>
<td>RX-6 / RX-8 / RX-8R / RX-7</td>
</tr>
<tr>
<td>KD series</td>
<td>KD-2077*2</td>
</tr>
<tr>
<td>JA series</td>
<td>JA-350*3</td>
</tr>
<tr>
<td>JM series</td>
<td>JM-20</td>
</tr>
</tbody>
</table>

* Only for IFS-NX
** Only for JaNets
*** Please contact us for details.

※ Please refer to the product specifications for details.

http://www.juki.co.jp
Total factory control and connection

Database Management
- Data sharing via DB server
- Machine management information
- Production program management

Maintenance Management
- Feeder maintenance history management

Machine Monitoring
- External output (Machine operation / production information)
- MES interface

Acceptance of components

Maintenance

Shipments of finished products

Parts verification
- Parts verification
- Off-line setup function*
- Random feeder setup*
- MSD*

External setup area

Automated warehousing

Parts warehouse

SMT Process

Post-process

Assembly / packaging process

Parts request
- Parts request
- Remaining parts management

ISM Interface

Line management
- Real time production monitoring
- Production program creation and editing
- Production program download
- Single job optimization
- Multi-job optimization
- Simulation

Traceability
- Database management
  (Search, summarize, export*)

*Requires IFS-NX compatibility

*Traceability of JaNets is data output only
Calculate maximum placement speed.

Line control software

Data creation function

- Cluster optimization
  Cluster optimization groups several different production files together in a common feeder setup. It reduces changeover time by eliminating the need to setup feeders between jobs.

- Flexline CAD
  Data conversion system to convert text data files generated by CAD systems or output from other machines to JUKI data format. Users can choose from pre-defined input formats or define and save custom conversion formats.

Extension function

- Line Manager
  A client PC delivers production programs to each machine in the line and manages the entire line. Production and machine management data is collected and consolidated. With the optional external output function, you can interface with MES software.

- Data Manager
  Production programs created on other client PCs can be shared.

ISM (storage tower) interface

The list of required components is extracted from the production program and sent to the ISM. The remaining number of components is calculated based on the BOM information and number of PCBs assembled and each reel's record is updated in the database. The ISM allows more efficient and accurate production planning and line operation.

Production program download / upload / monitoring
Software to download, upload, and monitor production programs sent to the line. Each line controlled separately. Production status monitor for individual lines.

Multi-line management
Production program download / upload / monitoring can be performed on multiple lines.

- Flexline CAD
  Data conversion system to convert text data files generated by CAD systems or output from other machines to JUKI data format. Users can choose from pre-defined input formats or define and save custom conversion formats.

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IFS-NX improves quality by preventing placement of incorrect parts, adds optional traceability capability, and improves efficiency by shortening setup time and component replacement. Two systems are available: RFID\(^*1\)\(^*2\)\(^*3\) and CAN\(^*1\)\(^*2\)\(^*3\) depending on the feeder types used. The function of both systems is identical.

*1 Compatible models, refer to the equipment specifications.
*2 RFID option of antenna and machine body is required separately.
*3 Compatible with mechanical feeders, EF series feeders, tray server and tray changers.

**Parts verification**
IFS-NX ensures the correct components are placed on the PCB by verifying the part number required to the reels used. Production cannot start if any component is incorrect. Match is also verified every time a component is replenished. Production programs and parts data are stored on the IS server. The HDD capacity should be sufficient for all current and future production programs.

**Random feeder setup**
This function allows the user to attach the feeder to the bank at arbitrary positions to enable production. This also updates the pick data in the production program based on the position by assigning the feeder at random positions during offline setup.

**Component inventory control, Feeder location search**
Components can be stored in registered locations to improve stock control and the component count is always maintained by the IFS-NX even during production.

**Off-line setup function**
Offline feeder setup using feeder trolleys reduces errors and shortens total setup time by guiding operators through the process.

**Traceability**
The component lot numbers can be recorded during production and linked to the serial number of the PCB they are placed on for a complete and accurate traceability record.

**Management of feeder maintenance history**
IFS-NX records and manages feeder maintenance and inspection history. Maintenance schedules are created and warnings can be set based on actual usage including pick cycles, hours of operation and mis-pick rates. Helps to decrease bottle necks and improves quality.

**Difference between RFID and CAN**
The RFID system uses tags on every feeder and antenna boards mounted on the feeder bank to read the position of every feeder. The CAN system\(^*\), compatible with electronic feeder only, uses the feeder’s unique ID and connects by the same connector that is used for feeder power and status.

**Recommended specifications for JaNets Client PC**

<table>
<thead>
<tr>
<th>CPU</th>
<th>RAM</th>
<th>HDD capacity</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel Core i3 3.0 GHz or higher</td>
<td>4GB or more</td>
<td>500 GB or more</td>
<td>Windows 7 Professional SP1 (32bit/64bit)</td>
</tr>
</tbody>
</table>

\(^*1\) Windows Server OS requires a license (CAL: Client Access License) corresponding to the number of client PCs connected to the server PC. These must be purchased directly by the end user and are not included.

**Recommended specifications for JaNets Server**

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<tr>
<th>CPU</th>
<th>RAM</th>
<th>HDD capacity</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Intel Xeon CPU (3,000GHz) or higher</td>
<td>8GB or more</td>
<td>1TB or more</td>
<td>Microsoft Windows Server 2012 R2 Standard Edition (64bit) (^*)</td>
</tr>
</tbody>
</table>

\(^*\) 1 Production programs and parts data are stored on the IS server. The HDD capacity should be sufficient for all current and future production programs.

**Recommended specifications for IFS-NX Client PC**

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<tbody>
<tr>
<td>Dual Core CPU (2,000GHz) or higher</td>
<td>8GB or more</td>
<td>1TB or more</td>
<td>Windows Server 2008 Standard SP2 or more (64bit)</td>
</tr>
</tbody>
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<tbody>
<tr>
<td>Intel Core i3 3.0 GHz or higher</td>
<td>8GB or more</td>
<td>300GB RAID1 HDD or 2 sets</td>
<td>Windows 7 Professional SP1 or more (32bit/64bit)</td>
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</tbody>
</table>

\(^*\) Depending on the combination of OS and COI language, the Windows Update environment may be required to install language packs and supplementary fonts of the language used.

\(^*1\) The recommended configuration is to install 32-bit drive and 32-bit drive, each with RAID 1 (1 total hard drive required).

\(^*2\) For Windows 7 and Windows 10, maximum connection of the number of client PCs with IP address excluding access point, label printer, MPC, number of handy terminals, number of machines, number of system software using cooperation function with IFS-NX server is limited to 20 devices. For Windows Server 2008 R2 and Windows Server 2012 R2, CAN (Client Access License) of the number total of connections is required.

\(^*3\) 1GB or more RAM is required from Windows Server 2008 R2 and Windows Server 2012 R2.