CROSS TABLE
MK
PRECISION CROSS TABLE

NEW ACCURACY DIMENSIONS
With the MK cross table, WEISS is pushing forward into new dimensions of accuracy and opening up new application horizons in the area of micro-assembly, micro-machining, and measurement technology.
The MK series is a competitive 2-axis system for applications in the micro-range. Typical applications are micro-assembly, laser processing, micro-dosing technology, and measurement technology. The MK can be tailored precisely to the respective intended purpose in terms of precision and performance. The result is a solution that is the best possible combination of price and performance. The MK is available in three different sizes. The standard version is offered with Accuracy Class AC1, including autocollimator measurement protocol. There are also multiple options for the measurement system (absolute or incremental).

**BENEFITS**
- Exceptional price-performance ratio
- Numerous technical options
- Portfolio for complete application solutions
- Compact design

**FEATURES**
- Design of the linear motors eliminates tightening forces on the precision rails
- Constant precision via optimal temperature management
- Open frame design for backlight applications
- Compact design with small outer dimensions
- Highly dynamic via direct drives
- Freely programmable

Our cross tables are always equipped with the **WEISS Control Package**. This turns your cross table into a complete mechatronic system consisting of WEISS components, electronics, and software. Not only are the cables and drive controllers preassembled and ready-to-connect, the software is also preconfigured with the most important settings. Plug in, turn on, and put into operation.
**TECHNICAL DATA SHEET**

<table>
<thead>
<tr>
<th></th>
<th>MK1616</th>
<th>MK2020</th>
<th>MK3030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke x-axis</td>
<td>160 mm</td>
<td>215 mm</td>
<td>335 mm</td>
</tr>
<tr>
<td>Stroke y-axis</td>
<td>160 mm</td>
<td>215 mm</td>
<td>335 mm</td>
</tr>
<tr>
<td>Installation position</td>
<td>horizontal</td>
<td>horizontal</td>
<td>horizontal</td>
</tr>
<tr>
<td>Outer dimensions</td>
<td>307 x 351 x 96 mm</td>
<td>436 x 392 x 96 mm</td>
<td>606 x 562 x 146 mm</td>
</tr>
<tr>
<td>Max. transmitted light opening</td>
<td>180 x 180 mm</td>
<td>230 x 230 mm</td>
<td>320 x 320 mm</td>
</tr>
<tr>
<td>Running accuracy (side)*</td>
<td>AC1: 2 μm</td>
<td>AC1: 3 μm</td>
<td>AC1: 3 μm</td>
</tr>
<tr>
<td>Running accuracy (height)*</td>
<td>AC1: 3 μm</td>
<td>AC1: 4 μm</td>
<td>AC1: 6 μm</td>
</tr>
<tr>
<td>Pitch and yaw angle*</td>
<td>AC1: 5 arcsec</td>
<td>AC1: 5 arcsec</td>
<td>AC1: 5 arcsec</td>
</tr>
<tr>
<td>Repeatability</td>
<td>1 μm</td>
<td>1 μm</td>
<td>1 μm</td>
</tr>
<tr>
<td>Typical load</td>
<td>1-3 kg</td>
<td>1-5 kg</td>
<td>3-8 kg</td>
</tr>
<tr>
<td>Recommended max. load</td>
<td>10 kg</td>
<td>15 kg</td>
<td>20 kg</td>
</tr>
<tr>
<td>Moving mass in X-direction</td>
<td>2.5 kg</td>
<td>4 kg</td>
<td>11 kg</td>
</tr>
<tr>
<td>Moving mass in Y-direction</td>
<td>9.5 kg</td>
<td>16.4 kg</td>
<td>49 kg</td>
</tr>
<tr>
<td>Total weight</td>
<td>12 kg</td>
<td>20.4 kg</td>
<td>64 kg</td>
</tr>
</tbody>
</table>

*Other precision classes upon request. The accuracies listed are only achieved at constant temperature and without external loads.

**MOTOR DATA**

<table>
<thead>
<tr>
<th></th>
<th>MK1616 (effective AC)</th>
<th>MK2020 (effective AC)</th>
<th>MK3030 (effective AC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage range</td>
<td>24-80 V</td>
<td>24-80 V</td>
<td>24-80 V</td>
</tr>
<tr>
<td>Peak force</td>
<td>67 N</td>
<td>67 N</td>
<td>255 N</td>
</tr>
<tr>
<td>Peak current</td>
<td>7.5 A</td>
<td>7.5 A</td>
<td>15 A</td>
</tr>
</tbody>
</table>

**MEASUREMENT SYSTEMS**

<table>
<thead>
<tr>
<th></th>
<th>MK1616</th>
<th>MK2020</th>
<th>MK3030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renishaw (incremental)</td>
<td>sin/cos</td>
<td>sin/cos</td>
<td>sin/cos</td>
</tr>
<tr>
<td>Renishaw (incremental)</td>
<td>TTL</td>
<td>TTL</td>
<td>TTL</td>
</tr>
<tr>
<td>Numeric (absolute)</td>
<td>SSI (upon request)</td>
<td>SSI (upon request)</td>
<td>SSI (upon request)</td>
</tr>
</tbody>
</table>

**AUGMENTED REALITY**

You can learn how this works at: [www.weiss-gmbh.de/AR](http://www.weiss-gmbh.de/AR)
WEISS CONTROL PACKAGE
THE PREMIUM SOLUTION

A complete package of hardware and software components that is unparalleled in terms of intuitive operation and easy startup. It includes the respective automation components, custom-fit motor and encoder cables, as well as matching drive controllers.

The WEISS Application Software (W.A.S.) is the integral component. It makes commissioning a breeze and provides application-related services. Numerous interfaces and standards ensure excellent system connectivity.

WEISS PRODUCT
ELECTRONICS
In addition to the Safe Torque Off (STO) function up to SIL3, the drive controllers also offer a Safe Motion function. Motor and encoder cables are tailored precisely to the system and your requirements. Coded, marked, and cut to the right length.

THIRD-PARTY DRIVES
The system openness of our solution is virtually without limits. It is even possible to integrate third-party drives into the package.

With the W.A.S., we have created a software that reduces the complexity of the control system to such an extent that commissioning can be done without any special knowledge. You will not have to spend much time with details on the drive hardware or programming the drive programs. The most important mechanical data and control settings are preconfigured.

» Fast commissioning
» Maximum ease of operation
» Preconfigured and designed for use with automation hardware
» Application-related data at the touch of a button
» Integrated maintenance and diagnostic functionalities

FIELDBUS INTERFACES
PROFIBUS DP | PROFINET IO | EtherCAT
Ethernet / IP | Ethernet Powerlink
Modbus / TCP | Ethernet / UDP

The openness of the system goes even further with the integration of the interoperable OPC UA interface. This interface allows you to transfer functionalities to external systems quickly and easily – without a detour through the superordinate control level.

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SMART SERVICES TODAY
CONDITION MONITORING
Predict errors before they occur. The power consumption of the motor is analyzed constantly using PCM (Permanent Current Monitoring). If it changes, the machine can be checked and unexpected production downtimes avoided.

AUTO-TUNING
When existing components are placed in a new context, the associated controller usually does not work anymore. With “auto-tuning”, the necessary readjustment can be done quickly, easily, and at the touch of a button. The W.A.S. independently determines the new optimum control parameters and adjusts the drive controllers accordingly.

DIAGNOSTIC REPORTS
Cryptic error messages are now a thing of the past. Our messages are tailored to the application, easy to understand, and provide specific handling recommendations that you can implement directly.
WEISS EXPERTISE
COMPLETE MECHATRONIC SYSTEMS

Product design in a complete system
Application development with customers
Validation and service life testing
Tailored electronics packages
Intuitive operating software
Open and compatible with other systems

Own production of cams, bearings, and guides
Highest production quality
High level of in-house production
IoT
AI
Cloud Computing