## Specifications

<table>
<thead>
<tr>
<th>VMA-2520</th>
<th>VMA-4540</th>
<th>VMA-6555</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stroke</strong> (X × Y × Z)</td>
<td>250 × 200 × 200 mm</td>
<td>450 × 400 × 200 mm</td>
</tr>
<tr>
<td><strong>Measurement range with TP</strong></td>
<td>350 × 250 × 200 mm (with Vision AF)</td>
<td>450 × 350 × 200 mm (with Vision AF)</td>
</tr>
<tr>
<td><strong>Maximum weight</strong></td>
<td>15 kg</td>
<td>20 kg</td>
</tr>
<tr>
<td><strong>Maximum permissible error</strong></td>
<td>±2+8L/1000 µm</td>
<td>±2+6L/1000 µm</td>
</tr>
<tr>
<td><strong>Camera</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/3-in. progressive scan b/w camera (standard), 1/3-in. progressive scan color camera (optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Working distance</strong></td>
<td>73.5 mm (0.5 mm with Laser AF)</td>
<td></td>
</tr>
<tr>
<td><strong>VFD size on stage</strong></td>
<td>13.3 × 10.0 mm to 13.3 × 1.0 mm (0.6 × 0.5 mm to 0.6 × 0.05 mm with high-magnification option)</td>
<td></td>
</tr>
<tr>
<td><strong>EUXY,MPE</strong></td>
<td>EUX,MPE EUY,MPE</td>
<td></td>
</tr>
<tr>
<td><strong>Surface illumination</strong></td>
<td>White LED episcopic illumination</td>
<td></td>
</tr>
<tr>
<td><strong>Illumination</strong></td>
<td>On screen: 12.6 to 126x with 24-inch WUXGA (1920 × 1200 pixels) monitor</td>
<td></td>
</tr>
<tr>
<td><strong>Auto focus</strong></td>
<td>Video AF and optional Laser AF</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions &amp; weight</strong></td>
<td>650 × 700 × 1557 mm, 110 kg</td>
<td>1200 × 1640 × 1553 mm, 665 kg</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>20°C ± 3°C</td>
<td>20°C ± 3°C</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>70% or less</td>
<td>70% or less</td>
</tr>
<tr>
<td><strong>Electrical</strong></td>
<td>100V-240 V, 50/60 Hz</td>
<td>100V-240 V, 50/60 Hz</td>
</tr>
<tr>
<td><strong>Power source</strong></td>
<td>100V-240V, 50/60Hz</td>
<td>100V-240V, 50/60Hz</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>735 × 870 × 229 mm (TP20)</td>
<td>1450 × 1400 × 500 mm (with Vision AF)</td>
<td>12701 Grand River Avenue, Brighton, MI 48116 U.S.A.</td>
</tr>
<tr>
<td>175 × 200 × 170 mm (TP200)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>325 × 400 × 166 mm (TP20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>525 × 550 × 170 mm (TP200)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>600 × 550 × 166 mm (TP20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>650 × 550 × 200 mm (with Vision AF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12701 Grand River Avenue, Brighton, MI 48116 U.S.A.</td>
</tr>
</tbody>
</table>
Aiming for new heights, Nikon offers the ultimate in usability for a wide variety of measuring applications with the large FOV, long XYZ stroke iNEXIV VMA series.

Nikon CNC video measuring system iNEXIV VMA automatically measures various components, such as mechanical, plastic injection-molded and electronic parts, with high accuracy and repeatability. The wide actual field of view of maximum 13 mm (W) x 10 mm (H) at the lowest magnification enables easy confirmation of measurement points.

In addition, the 73.5 mm-working-distance objective lens and extended 200 mm 2-axis stroke allows measurements of tall and uneven objects with the very little possibility of collision between the objective lens and samples.

Three models in the iNEXIV VMA series are available, each with a different XY-stroke.

**iNEXIV VMA-2520**
A space-saving, low-cost model that is suited to measurement of small parts

**iNEXIV VMA-4540**
For measurement of a wide range of objects, such as molded and pressed parts

**iNEXIV VMA-6555**
For measurement of large samples and simultaneous measurement of multiple parts

Wide field of view and sharp, clear images
A wide FOV of up to 13 mm x 10 mm (at 0.35x) allows easy search and alignment of measuring targets. The 10x zoom with five specific steps provides accurate measurement as well as high-resolution images. An excellent Apochromat objective lens with high NA (0.11) and low distortion has been specially designed for the iNEXIV series, providing crisp, clear images.

<table>
<thead>
<tr>
<th>Optical magnification</th>
<th>0.35x</th>
<th>0.6x</th>
<th>1x</th>
<th>1.8x</th>
<th>2.5x</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOV size on stage</td>
<td>13.3 mm (W) x 10.0 mm (H)</td>
<td>7.8 mm (W) x 5.8 mm (H)</td>
<td>4.7 mm (W) x 3.5 mm (H)</td>
<td>2.6 mm (W) x 1.9 mm (H)</td>
<td>1.33 mm (W) x 1.0 mm (H)</td>
</tr>
<tr>
<td>1/3&quot; CCD size</td>
<td>12.6</td>
<td>21.6</td>
<td>36.1</td>
<td>54.0</td>
<td>72.0</td>
</tr>
<tr>
<td>Sample size on video window (640 x 480 pixels)*</td>
<td>7.8 x 5.8</td>
<td>4.7 x 3.5</td>
<td>2.6 x 1.9</td>
<td>1.33 x 1.0</td>
<td></td>
</tr>
</tbody>
</table>

* On a 24-inch WUXGA (1920 x 1200 pixels) monitor, recommended for the VMA series.

Robust 73.5 mm working distance
A long 73.5 mm working distance minimizes the possibility of contact between the objective lens and valuable parts. It is ideal for measuring large step heights, tall bosses and deep holes.

Large XY stroke and long Z stroke
Three models with different XY strokes are available to suit user requirements: 250 x 200 mm, 450 x 400 mm and 650 x 550 mm. The three models enable measurements of various samples, ranging from small parts to large PCBs and panels, and also long parts and simultaneous measurements of multiple parts. An extended 200 mm Z-axis stroke is perfect for tall workpieces.
Tools for realizing non-stop automatic measurement

Fast and accurate vision AF (Auto Focus)
The inNEXIV VMA series is equipped with highly repeatable vision AF that offers high-speed, high-precision focusing and height/depth measurement. Non-contact measurement using vision AF does not damage or deform parts, and does not necessitate fixing.

Laser AF (option)
The Laser AF with a long 63 mm working distance is optionally available, enabling height measurement of flat surfaces with high repeatability, keeping a wide FOV at a low magnification.

Versatile illuminations
The inNEXIV VMA series is equipped with episcopic (top), diascopic (bottom) and 8-segment ring (with 18-degree oblique angle) LED illuminators. Combining these illuminators with superior optics provides accurate detection of low contrast edges.

Intelligent search
Even when a workpiece is misaligned, the system automatically searches the target location based on the target image recorded in a teaching file, enabling accurate automatic measurement by eliminating possible detection errors.

Digital chart comparator
Deviation of contours can be checked by overlaying charts generated digitally from 2D CAD data onto video images. Digital charts always accompany video images.

Options for expanding measurement possibilities

Touch probe for measurement of imperceptible parts from top and bevel angle (option)
The inNEXIV VMA series can accommodate optional Renishaw® TP20 or TP200 touch probes. Touch probes provide measurements of 3D shapes parts where vision AF cannot be used, such as the inner diameter of an oil seal or the clearance angle of an indexable insert. The touch probe offsets from the optical axis, but works coaxially in the same XY2 coordinate system as the optical axis using inNEXIV VMA TP AutoMeasure software.

Extended 1.5x high-magnification (option)
Each model can be modified before shipment to extend magnification to 1.5x, powerful enough for precise measurement of minute electronic parts.

User-friendly standard software inNEXIV VMA AutoMeasure

Sample: Ø23.5 mm coin

0.52x
8.9 mm (W) x 6.7 mm (H)

0.9x
5.2 mm (W) x 3.9 mm (H)

1.5x
3.1 mm (W) x 2.3 mm (H)

2.7x
1.9 mm (W) x 1.3 mm (H)

5.2x
0.89 mm (W) x 0.67 mm (H)

Optional software

inNEXIV VMA Profiler/CAD Reader: 2D profile shape analysis program
inNEXIV VMA Virtual AutoMeasure: CAD interface off-line teaching support program
Gear evaluation software: Analysis of flat gears in terms of pitch deviations, tooth profile errors, tooth space run out, base tangent length, dimension over pin
NEXIV EDF/Stitching Express: Image analysis and archiving program for creating an all-in-focus EDF (Extended Depth of Focus) image from multiple images at different 2 axis. This also generates a stitched image with super wide FOV from multiple images on the same XY plane.

Dedicated software to meet measurement requirements

Recorded image

XY coordinate

Even the bottom of a small diameter hole can be brought into correct focus.

Top light

Mid-depth of implant

Mid-depth of implant

Bottom of implant

Any 8-segment light can be selected for effective edge detection.
Three models with different XYZ strokes to suit various sample sizes

**Standard stroke model**
**iNEXIV VMA-2520**

- **Stroke**: 250 (X) x 200 (Y) x 200 (Z) mm
- **Measuring head travel**: Z direction (single column type)
- **Stage travel**: X-Y direction

High-performance, compact and affordable model that is suitable for small samples (within 250 x 200 x 200 mm)

**Middle stroke model**
**iNEXIV VMA-4540**

- **Stroke**: 450 (X) x 400 (Y) x 200 (Z) mm
- **Measuring head travel**: X-Y direction (bridge type)
- **Stage travel**: Y direction

Suitable for midsize samples (250 x 200 x 200 mm – 450 x 400 x 200 mm) and simultaneous measurement of multiple small parts. High cost-performance with the same strong cast-iron body and direct bearing as the top-end model in the NEXIV VMZ-R series.

**Large stroke model**
**iNEXIV VMA-6555**

- **Stroke**: 650 (X) x 550 (Y) x 200 (Z) mm
- **Measuring head travel**: X-Y direction (bridge type)
- **Stage travel**: Y direction

Suitable for large samples (450 x 400 x 200 mm or larger) and simultaneous measurement of multiple parts. High cost-performance with the same strong cast-iron body and direct bearing as the top-end model in the NEXIV VMZ-R series.