The NIEHOFF Line Philosophy

Overall integration for superior performance.

- The entire line delivers technically innovative solutions for your production tasks.

The modular NIEHOFF system is designed for maximum flexibility. The modular system enables all variations required in practice. This drawing machine is designed for maximum operational data acquisition, quality assurance, and coiling systems. The modular NIEhoff system guarantees superb line availability.

For optimized system availability and reliability. The modular NIEHOFF system is always on hand. Our experienced customer support team is always on hand.

NIEHOFF – your partner with a worldwide service and sales network.

Any product combinations will deliver the advantage to terms of quality and performance.
The NIHOFF Line Philosophy

General integration for superior performance

- The NIHOFF line delivers technically innovative solutions for your production tasks.
- The NIHOFF line combines the automation of different production areas, machine systems in overall production processes – potential for future integration of NIHOFF solutions for your production tasks:

   - The entire line delivers technically innovative solutions for your production tasks.
   - All possible combinations will deliver the ultimate performance.
   - Due to freely programmable control systems, guarantee superb line availability.
   - Capable combinations of individual NIHOFF components and the excellent quality standards in terms of quality and performance!

   - Operational data acquisition and coiling systems.
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   - MASCHINENFABRIK NIEHOFF GmbH & Co. KG
   - Internet: www.niehoff.de
   - E-Mail: info@niehoff.de

An Example of Sophisticated Manufacturing Diversity

Future-oriented machine construction technology – the modular system enables all variations required in practice.

- Drawing machines – systems – know-how – worldwide
- Proven quality, capable, reliable
- Worldwide of the wire and cable industry

M 85 / MM 85

Tandem Rod Breakdown Machine

Proven quality, capable, reliable
High-Tech Standard and Possible Variants

Technical data

Advantages of this safe investment choice

Design:
- Fully reconditioned existing lines
- Easily integrable into existing plants
- High production speed (220 m/min)
- High production speed (210 m/min)
- High production speed (200 m/min)
- High production speed (190 m/min)
- High production speed (180 m/min)
- High production speed (170 m/min)
- High production speed (160 m/min)
- High production speed (150 m/min)
- High production speed (140 m/min)
- High production speed (130 m/min)
- High production speed (120 m/min)
- High production speed (110 m/min)
- High production speed (100 m/min)
- High production speed (90 m/min)
- High production speed (80 m/min)
- High production speed (70 m/min)
- High production speed (60 m/min)
- High production speed (50 m/min)
- High production speed (40 m/min)
- High production speed (30 m/min)
- High production speed (20 m/min)
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- High production speed (219 m/min)
- High production speed (220 m/min)
High-Tech Standard and Possible Variants

Technical data

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Max. production speed (m/s)</th>
<th>Production output (t/a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D 85</td>
<td>M 85</td>
<td>38</td>
<td>9000</td>
</tr>
<tr>
<td></td>
<td>MM 85</td>
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<td>D 200</td>
<td>M 85</td>
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<td>9500</td>
</tr>
<tr>
<td></td>
<td>MM 85</td>
<td>38</td>
<td>9500</td>
</tr>
</tbody>
</table>

Advantages of this safe investment choice

Design:
- Fully automated winding function
- Mechanically removable winding head for easy maintenance and cleaning
- Reactionless machine design
- High flexibility for different winding geometries
- Easy handling due to a single part change design
- Flexible and easy reprogramming of control software
- High flexibility in the winding and guiding process

Increase in quality:
- High-quality wire due to the optimized wire path (2° inclination of the gearing/drawing capstans)
- Reduced wire waste due to the optimized wire path (2° inclination of the gearing/drawing capstans)
- Increased productivity due to the optimized wire path (2° inclination of the gearing/drawing capstans)
- Improved surface quality of the wires due to the optimized wire path (2° inclination of the gearing/drawing capstans)

Increase in productivity:
- Reduced downtime when changing the machine setup for different dimensions
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Cost effectiveness:
- Production of wires with different finished diameters
- Reduced consumption of electric energy per ton of produced wire
- Long service intervals and extended drawing tool service life minimize the requirement to stock and use spare parts
- Reduced consumption of oil and drawing lubricant
High-Tech Standard and Possible Variants

Technical data

Advantages of this safe investment choice

Design:
- Optimized wire cooling/lubrication (fully-immersed drawing basin)
- Helically geared precision gearing for extremely smooth operation and uniform load transmission
- Vibration-damping grey cast iron housing for long service life
- Highly reliable separation of drawing emulsion and gear oil via mechanical seal (long service intervals)

User-friendly design
- Increase in quality: high surface quality of the wires due to the optimized wire path (2° inclination of the gearing/drawing capstans)
- Increase in productivity: reduced downtime when changing the machine setup for different dimensions via multi-motor drive technology (quick drawing die change system)
- Reduced downtime due to touchscreen-based user guidance and fault display

Cost-effectiveness:
- Production of wires with different finished diameters
- Reduced consumption of electric energy per ton of produced wire
- Long service intervals and extended drawing tool service life minimize the requirement to stock and use spare parts
- Reduced consumption of oil and drawing lubricant

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. production speed (m/s)</th>
<th>Production output (t/a)</th>
<th>(7000 h and 80% utilization)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 85 Cu</td>
<td>38</td>
<td>25000</td>
<td>1</td>
</tr>
<tr>
<td>MM 85 Cu</td>
<td>38</td>
<td>31000</td>
<td>2</td>
</tr>
<tr>
<td>M 85 Al / Al-alloy</td>
<td>38 25</td>
<td>9500/8000</td>
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</tr>
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<td>MM 85 Al / Al-alloy</td>
<td>38 25</td>
<td>18000/16000</td>
<td>2</td>
</tr>
</tbody>
</table>
The NIEHOFF Line Philosophy

Overall integration for superior performance

The M 85 line concept already incorporates the solutions for your production tasks:

- The entire line delivers technically innovative so-
- Potential for future integration of NIEHOFF ma-
- Automation of different production areas,
- Overall integration for superior performance

Due to freely programmable control systems and the excellent quality standards, the line can guarantee superb line availability.

Capable combinations of individual NIEHOFF components and the functional diversity required in practice.

This drawing machine is designed for maximum dynamic spoolers

Variable number of wires with:

<table>
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<th>Ø (mm)</th>
<th>draft</th>
<th>2 to 14 wires per level</th>
</tr>
</thead>
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<tr>
<td>1.15</td>
<td>1</td>
<td>26.0</td>
</tr>
<tr>
<td>1.29</td>
<td>2</td>
<td>26.0</td>
</tr>
<tr>
<td>1.45</td>
<td>3</td>
<td>26.0</td>
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<tr>
<td>1.63</td>
<td>4</td>
<td>26.0</td>
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<tr>
<td>1.83</td>
<td>5</td>
<td>32.0</td>
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<tr>
<td>2.05</td>
<td>6</td>
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<tr>
<td>2.89</td>
<td>11</td>
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<tr>
<td>3.74</td>
<td>14</td>
<td>32.0</td>
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</tbody>
</table>

(We reserve the right to modify technical specifications according to technical improvement and advances.)