5-AXIS CLAMPING SYSTEM
+ ACCESSORIES
CONTENTS

Visual Directory P. 10

Jaw Vices P. 11 – 27

GERMANY
norelem Normelemente KG
Volmarstraße 1
71706 Markgröningen
Tel. +49 7145 206-41
Fax. +49 7145 206-86
info@norelem.de
www.norelem.de

FRANCE
norelem SAS
5, rue des Libellules
10280 Fontaine-les-Grès
Tel. +33 03 25 71 89 30
info@norelem.fr
www.norelem.fr

SWITZERLAND
norelem Normelemente AG
Chili Ebnet 1
6403 Küsnacht am Rigi
Tel. +41 41 83387 00
info@norelem.ch
www.norelem.ch

UNITED KINGDOM
norelem LTD
Innovation Centre
1 Devon Way
B31 2TS Birmingham
Tel. +44 121 222 5321
info@norelem.co.uk
www.norelem.co.uk

SWEDEN
norelem AB
Zakritalsvägen 26
653 42 Karlstad
Tel. +46 545 688 11
info@norelem.se
www.norelem.se

With the publication of this catalogue, all previous publications become invalid. Dimensions and other data correspond to the current level of technology. We reserve the right to make technical changes. We accept no liability for any printing errors. Any reprinting or reproduction – in whole or in part – is permitted only with our prior consent. Copyright: norelem Normelemente KG / WE1ENCAT1703 / Printed in Germany
You get a green light for all your other ideas with our full range of high quality standard parts from our complete catalogue the BIG GREEN BOOK. Order your complimentary copy from www.norelem.com.
THE FULL RANGE IN THE BIG GREEN BOOK
5-AXIS CLAMPING SYSTEM COMPACT

We are setting standards with the new "5-axis clamping system compact" in this field. The system was specifically designed for the optimal machining of complex workpieces on modern 5-axis machines.

The intelligent clamping technology increases clamping rigidity for the highest cutting and feed forces. The optimal accessibility to the workpiece allows short, standard tooling to be used. Tooling costs are significantly reduced.

ADVANTAGES

- Very high tractive force
- High stiffness in the system
- Pull-down function of the jaw plates on both sides
- Optimum fine adjustment of the jaw plates on the workpiece
- Increased tool service life
- The workpiece is always centred due to the systematic construction
- Large clamping width, 20 mm to 320 mm, freely extendable
- Clamping depth adjustable from 3 to 20 mm using seating ledges
- Best tool accessibility from all sides
- Easy to clean
1. Positioning unit with jaw plate
2. Clamping element
3. Fine adjustment with knurled screw
4. Clamping screw
5. Extension shafts
6. Base plate
highest clamping force, maximum stiffness.
Clamped workpiece using jaw plates with pins. The high tractive force creates a positive clamping situation.

Clamped blank. Sure set-up through positive clamping pins.

Blank after clamping. Clamping pin imprint is visible on the edge of the workpiece.

With the coupling for cross-clamping, two 5-axis clamping systems can be compactly connected with each other offset by 90 degrees. Setups for workpieces with different dimensions of 4 sides are possible.

5-axis clamping system compact direct on the machine table. Workpiece clamping with smooth jaws.

The jaws can be quickly tightened or loosened using the adjustable handles. When the clamping lever is open, the jaws can be fine adjusted with the knurled knob.

FORCES

The new clamping technology ensures force flow separation and workpiece positioning. The intelligent force distribution in the system allows only weak forces to be transferred to the machine table.

- Division of force flow and positioning
- Highest clamping force on the workpiece
- Maximum stiffness
- Centric tension
41300  Page 12
5-axis clamping system compact jaw plate, smooth

41305  Page 13
Base plates

41320  Page 15
Jaw plates smooth

41325  Page 16
Jaw plates with pins

41330  Page 18
Jaw plates with pins for pendulum jaws

41335  Page 19
Jaw plates smooth for centre jaws

41340  Page 20
Centre jaws

41345  Page 21
Jaw plates with pins for centre jaws

41350  Page 23
Jaw pins

41355  Page 24
Extension shafts

41360  Page 24
Adapter shafts

41365  Page 25
Couplings for cross-clamping

41370  Page 26
Stop sets

41375  Page 27
Clamping claw sets

41380  Page 28
Cylinder clamping sets

Article new/expanded
**5-axis clamping system compact**

**jaw plate, smooth**

**Material:**
Base plate and jaw hardened steel. 
Vice jaws tool steel.

**Version:**
Jaws black oxidised. 
Jaw plates bright.

**Sample order:**
nlm 41300-124000901500

**Note:**
The clamping jaws can be re-adjusted to new workpieces rapidly and securely thanks to ease of use and quick adjustment by means of a scale. The workpiece always centres itself due to the symmetrical structure of the 5-axis clamping system. Short standard tools can be used thanks to optimum accessibility to the workpiece. This reduces tooling costs significantly. Clamping widths from 20 mm to 320 mm are possible.

**Assembly:**
The 5-axis clamping system compact can be mounted on T-slot tables, grid systems or, using an adapter flange on conventional zero-point clamping systems.

**Accessories:**
Seating ledge 41345. 
Jaw plates 41320. 
Pendulum jaws 41325. 
Centre jaws 41335. 
Coupling for cross-clamping 41365.

Order the seating ledges and jaw plates with pins separately.

**Tractive force 5-axis clamping system compact**

<table>
<thead>
<tr>
<th>Order No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>Tractive force max. kN</th>
<th>Suitable shoulder screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>41300-124000901500</td>
<td>70</td>
<td>90</td>
<td>8/3</td>
<td>12/17</td>
<td>57.5</td>
<td>52</td>
<td>07533-12055</td>
</tr>
<tr>
<td>41300-1240001251500</td>
<td>105</td>
<td>125</td>
<td>8/3</td>
<td>12/17</td>
<td>58</td>
<td>52</td>
<td>07533-12055</td>
</tr>
</tbody>
</table>
Base plates

Material:
Steel.

Version:
Black oxidised.
Function faces ground.

Sample order:
nlm 41305-090280

Note:
Base plates with locating slots on the underside for easy alignment of the plate on the machine table.
Securing via grid holes 12F7 for 40 mm and 50 mm grid spacing possible.
Lateral recesses provided for separate clamping means.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>A</th>
<th>A1</th>
<th>A2</th>
<th>B</th>
<th>L</th>
<th>Suitable shoulder screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>41305-090280</td>
<td>20x10</td>
<td>240</td>
<td>250</td>
<td>90</td>
<td>280</td>
<td>07533-12055</td>
</tr>
<tr>
<td>41305-125280</td>
<td>20x10</td>
<td>240</td>
<td>250</td>
<td>125</td>
<td>280</td>
<td>07533-12055</td>
</tr>
<tr>
<td>41305-090400</td>
<td>31x10</td>
<td>350</td>
<td>360</td>
<td>90</td>
<td>400</td>
<td>07533-12055</td>
</tr>
<tr>
<td>41305-125400</td>
<td>31x10</td>
<td>350</td>
<td>360</td>
<td>125</td>
<td>400</td>
<td>07533-12055</td>
</tr>
</tbody>
</table>
Vice jaws, complete

Material:
Jaws mild steel.
Jaw plates tool steel.

Version:
Jaws black oxidised.
Vice jaws bright.

Sample order:
nlm 41315-09015010

Note:
These vice jaws are for expanding the 5-axis clamping system compact.
With these vice jaws large workpieces can be held on all four sides by cross clamping. Base plates, extension shafts and the coupling for cross-clamping are also needed for this set up.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>41315-12515020</td>
<td>left</td>
<td>125</td>
</tr>
<tr>
<td>41315-12515010</td>
<td>right</td>
<td>125</td>
</tr>
<tr>
<td>41315-09015020</td>
<td>left</td>
<td>90</td>
</tr>
<tr>
<td>41315-09015010</td>
<td>right</td>
<td>90</td>
</tr>
</tbody>
</table>
41320

Jaw plates smooth

Material:
Tool steel.

Version:
Hardened, bright.

Sample order:
nlm 41320-0900

Note:
For clamping pre-machined workpieces and for final machining.
Supplied singly.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>41320-0900</td>
<td>90</td>
</tr>
<tr>
<td>41320-1250</td>
<td>125</td>
</tr>
</tbody>
</table>

41320

Jaw plates with pins

Material:
Tool steel.

Version:
Plate hardened, bright.
Pins hardened, black oxidised.

Sample order:
nlm 41320-0901

Note:
For positive clamping without preforming, e.g. rough pieces, heavy cutting, castings etc.
Supplied singly.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>B</th>
<th>No. of pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>41320-0901</td>
<td>90</td>
<td>6</td>
</tr>
<tr>
<td>41320-1251</td>
<td>125</td>
<td>8</td>
</tr>
</tbody>
</table>
Pendulum jaws

Material:
Body mild steel.
Jaw plates tool steel.

Version:
Body black oxidised.
Vice jaws hardened, bright.

Sample order:
nlm 41325-09015010

Note:
Pendulum jaws are used to hold oblique workpieces.
The jaw plates of the pendulum jaws can be swivelled by ± 4°.
Pendulum jaws can also be used as fixed jaws.
Rigid design with 2 fastening screws.
Material:
Tool steel.

Version:
Hardened, bright.

Sample order:
nlm 41330-0900

Note:
For clamping pre-machined and ground workpieces.

Supplied singly.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>41330-0900</td>
<td>90</td>
</tr>
<tr>
<td>41330-1250</td>
<td>125</td>
</tr>
</tbody>
</table>
Jaw plates with pins
for pendulum jaws

Material:
Tool steel.

Version:
Vice jaw hardened, bright.
Pins hardened, black oxidised.

Note for ordering:
41330-0901

Note:
For positive clamping without preforming, e.g. rough pieces, heavy cutting, castings etc.

Supplied singly.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>B</th>
<th>No. of pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>41330-0901</td>
<td>90</td>
<td>6</td>
</tr>
<tr>
<td>41330-1251</td>
<td>125</td>
<td>8</td>
</tr>
</tbody>
</table>
Material:
Body mild steel.
Jaw plates tool steel.

Version:
Body black oxidised.
Vice jaws hardened, bright.

Sample order:
nlm 41335-0901500

Note:
Centre jaws are used to clamp 2 workpieces simultaneously. The centre jaws can be moved to suit the size of the workpiece. 2 different sized workpiece can be clamped.
41340

Jaw plates smooth
for centre jaws

Material:
Tool steel.

Version:
Hardened, bright.

Sample order:
nlm 41340-0900

Note:
For clamping pre-machined and ground workpieces.
Supplied singly.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>41340-0900</td>
<td>61</td>
<td>90</td>
</tr>
<tr>
<td>41340-1250</td>
<td>96</td>
<td>125</td>
</tr>
</tbody>
</table>

41340

Jaw plates with pins
for centre jaws

Material:
Tool steel.

Version:
Vice jaw hardened, bright.
Pins hardened, black oxidised.

Sample order:
nlm 41340-0901

Note:
For positive clamping without preforming, e.g. rough pieces, heavy cutting, castings etc.
Supplied singly.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>A</th>
<th>B</th>
<th>No. of pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>41340-0901</td>
<td>61</td>
<td>90</td>
<td>6</td>
</tr>
<tr>
<td>41340-1251</td>
<td>96</td>
<td>125</td>
<td>8</td>
</tr>
</tbody>
</table>
Material: Hardened steel

Version: Bright.

Sample order: nlm 41345-0900312

Note:
The seating ledges are suitable for adjusting the clamping depth of the workpiece on the compact 5-axis-clamping-system. The 12 mm version does not interfere with the positive-down effect. By the 17 mm version, the positive-down force is reduced but causes less edge deformation.

Supplied in pairs.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>B</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>41345-0900312</td>
<td>90</td>
<td>12</td>
</tr>
<tr>
<td>41345-0900317</td>
<td>90</td>
<td>17</td>
</tr>
<tr>
<td>41345-1250312</td>
<td>125</td>
<td>12</td>
</tr>
<tr>
<td>41345-1250317</td>
<td>125</td>
<td>17</td>
</tr>
</tbody>
</table>
Material: Tool steel.

Version: Hardened.

Sample order: nlm 41060-05000

Note:
Suitable for standard jaw plates and jaw adapters of round workpieces.
Installed by pressing in.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Version</th>
<th>D1</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>41060-05000</td>
<td>flattened</td>
<td>7,5</td>
<td>Material over 1000 N/mm² tensile strength</td>
</tr>
<tr>
<td>41060-05400</td>
<td>cup point</td>
<td>4</td>
<td>Material up to ca. 1000 N/mm² tensile strength</td>
</tr>
<tr>
<td>41060-05600</td>
<td>cup point</td>
<td>6</td>
<td>Material up to ca. 1000 N/mm² tensile strength</td>
</tr>
</tbody>
</table>
Material:
Tool steel.

Version:
Vice jaw hardened, bright.
Pins hardened, black oxidised.

Sample order:
nlm 41350-09035

Note:
For holding round workpieces.
Supplied in pairs.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>B</th>
<th>Clamping range</th>
</tr>
</thead>
<tbody>
<tr>
<td>41350-09035</td>
<td>90</td>
<td>20 mm - 250 mm</td>
</tr>
<tr>
<td>41350-12535</td>
<td>125</td>
<td>20 mm - 320 mm</td>
</tr>
</tbody>
</table>
**41355**

**Extension shafts**

- **Material:** Carbon steel.
- **Version:** Black oxidised.
- **Sample order:** nlm 41355-060
- **Note:** For setting the clamping width. Supplied with union nut. The extension shafts can be combined as required.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>D</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>41355-060</td>
<td>34</td>
<td>60</td>
</tr>
<tr>
<td>41355-120</td>
<td>34</td>
<td>120</td>
</tr>
<tr>
<td>41355-240</td>
<td>34</td>
<td>240</td>
</tr>
<tr>
<td>41355-480</td>
<td>34</td>
<td>480</td>
</tr>
</tbody>
</table>

**41360**

**Adapter shafts**

- **Material:** Carbon steel.
- **Version:** Black oxidised.
- **Sample order:** nlm 41360-060
- **Note:** For setting the clamping width. Supplied with union nut. The adapter shafts are linked to the vice jaws by the lateral holes. An adapter shaft must be mounted in every compact 5-axis clamp.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>A</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>41360-060</td>
<td>56</td>
<td>74</td>
</tr>
<tr>
<td>41360-120</td>
<td>116</td>
<td>134</td>
</tr>
</tbody>
</table>
Material:
Carbon steel.

Version:
Black oxidised.

Sample order:
nlm 41365-178

Note:
Two 5-axis clamping systems can be connected using a coupling for cross-clamping, allowing a workpiece to be held on four sides.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>D</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>41365-178</td>
<td>50</td>
<td>178</td>
</tr>
</tbody>
</table>
Stop sets

Material:
Steel.

Version:
Swivel arm, black oxidised.
Stop pin bright.

Sample order:
nlm 41370-150

Note:
Stop set for direct fastening to jaws. The stop can be swivelled aside for machining the workpiece without losing the stop dimension.

Supplied complete with attachment parts.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Suitable for</th>
</tr>
</thead>
<tbody>
<tr>
<td>41370-150</td>
<td>5-axis compact clamping system</td>
</tr>
</tbody>
</table>
**Material:**
Carbon steel.

**Version:**
Black oxidised.

**Sample order:**
nlm 41375-0012

**Note:**
Clamping claw set for compact 5-axis clamping system. All common T-slots, grid and fastening hole spacings can be covered.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>B</th>
<th>B1</th>
<th>B2</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>41375-0012</td>
<td>40</td>
<td>12.8</td>
<td>-</td>
<td>M12</td>
</tr>
<tr>
<td>41375-0016</td>
<td>40</td>
<td>16.8</td>
<td>-</td>
<td>M16</td>
</tr>
<tr>
<td>41375-1412</td>
<td>40</td>
<td>12.8</td>
<td>13.5</td>
<td>M12</td>
</tr>
<tr>
<td>41375-1816</td>
<td>40</td>
<td>16.8</td>
<td>17.5</td>
<td>M16</td>
</tr>
</tbody>
</table>