Machine tooling technology

Zero-Point Clamping System

- SPN

THE KNOW-HOW FACTORY
THE KNOW-HOW FACTORY
ZIMMER GROUP
COMMITTED TO OUR CUSTOMERS

WE HAVE SUCCEEDED FOR YEARS BY OFFERING OUR CUSTOMERS INNOVATIVE AND INDIVIDUALIZED SOLUTIONS. ZIMMER HAS GROWN CONTINUOUSLY AND TODAY WE HAVE REACHED A NEW MILESTONE: THE ESTABLISHMENT OF THE KNOW-HOW FACTORY. IS THERE A SECRET TO OUR SUCCESS?

Foundation. Excellent products and services have always been the foundation of our company’s growth. Zimmer is a source of ingenious solutions and important technical innovations. This is why customers with high expectations for technology frequently find their way to us. When things get tricky, Zimmer Group is in its best form.

Style. We have an interdisciplinary approach to everything we do, resulting in refined process solutions in six technology fields. This applies not just to development but to production. Zimmer Group serves all industries and stands ready to resolve even the most unique and highly individualized problems. Worldwide.

Motivation. Customer orientation is perhaps the most important factor of our success. We are a service provider in the complete sense of the word. With Zimmer Group, our customers have a single, centralized contact for all of their needs. We approach each customer’s situation with a high level of competence and a broad range of possible solutions.
HANDLING TECHNOLOGY

MORE THAN 30 YEARS OF EXPERIENCE AND INDUSTRY KNOWLEDGE: OUR PNEUMATIC, HYDRAULIC AND ELECTRICAL HANDLING COMPONENTS AND SYSTEMS ARE GLOBAL LEADERS.

Components. More than 2,000 standardized grippers, swivel units, robotic accessories and much more. We offer a complete selection of technologically superior products that are ready for rapid delivery.

Semi-standard. Our modular approach to design enables custom configurations and high rates of innovation for process automation.

DAMPING TECHNOLOGY

INDUSTRIAL DAMPING TECHNOLOGY AND SOFT CLOSE PRODUCTS EXEMPLIFY THE INNOVATION AND PIONEERING SPIRIT OF THE KNOW-HOW FACTORY.

Industrial damping technology. Whether standard or customized solutions, our products stand for the highest cycle rates and maximum energy absorption with minimal space requirements.

Soft Close. Development and mass production of pneumatic and fluid dampers with extraordinary quality and rapid delivery.

OEM and direct. Whether they need components, returning mechanisms or complete production lines – we are the trusted partner of many prestigious customers.

LINEAR TECHNOLOGY

WE DEVELOP LINEAR COMPONENTS AND SYSTEMS THAT ARE INDIVIDUALLY ADAPTED TO OUR CUSTOMERS’ NEEDS.

Clamping and braking elements. We offer you more than 4,000 types for profiled and round rails as well as for a variety of guide systems from all manufacturers. It makes no difference whether you prefer manual, pneumatic, electric or hydraulic drive.

Flexibility. Our clamping and braking elements ensure that movable components such as Z-axes or machining tables maintain a fixed position and that machines and systems come to a stop as quickly as possible in an emergency.
PROCESS TECHNOLOGY

MAXIMUM EFFICIENCY IS ESSENTIAL FOR SYSTEMS AND COMPONENTS USED IN PROCESS TECHNOLOGY. HIGH-LEVEL CUSTOM SOLUTIONS ARE OUR TRADEMARK.

A rich reservoir of experience. Our know-how ranges from the development of materials, processes and tools through product design to production of series products.

Deep production capabilities. The Zimmer Group pairs these capabilities with flexibility, quality and precision, even when making custom products.

Series production. We manufacture demanding products out of metal (MIM), elastomers and plastics with flexibility and speed.

MACHINE TECHNOLOGY

ZIMMER GROUP DEVELOPS INNOVATIVE METAL, WOOD AND COMPOSITE MATERIAL PROCESSING TOOL SYSTEMS FOR ALL INDUSTRIES. NUMEROUS CUSTOMERS CHOOSE US AS THEIR SYSTEMS AND INNOVATION PARTNER.

Knowledge and experience. Industry knowledge and a decades-long development partnership in exchangeable assemblies, tool interfaces and systems make us bound for new challenges around the world.

Components. We deliver numerous standard components from stock and develop innovative, customized systems for OEM and end customers – far beyond the metal and wood processing industries.

Variety. Whether you have machining centers, lathes or flexible production cells, the power tools, holders, assemblies and drilling heads of Zimmer Group are ready for action.

SYSTEM TECHNOLOGY

ZIMMER GROUP IS ONE OF THE LEADING SPECIALISTS IN THE DEVELOPMENT OF CUSTOMIZED SYSTEM SOLUTIONS WORLDWIDE.

Customized. A team made up of more than 20 experienced designers and project engineers develop and produce customized solutions for special tasks in close collaboration with end customers and system integrators. It doesn’t matter if it is a simple gripper and handling solution or a complex system solution.

Solutions. These system solutions are used in many industries, from mechanical engineering to the automotive and supplier industries to plastics engineering and consumer goods industries, all the way to foundries. The Know-how Factory helps countless companies to thrive competitively by increasing automation efficiency.
SPN ZERO-POINT CLAMPING SYSTEM
ORDER INFORMATION

STRUCTURE OF THE ORDER NUMBER

Example:

<table>
<thead>
<tr>
<th>SP</th>
<th>N</th>
<th>110</th>
<th>EL</th>
<th>07</th>
<th>6</th>
<th>0</th>
<th>A</th>
<th>00</th>
</tr>
</thead>
</table>

- **Clamping system**
  - P  Pneumatic

- **Characteristics**
  - N  Zero point clamping system

- **Size**
  - Diameter [mm]

- **Article**
  - EL  Element
  - PS  Clamping plate
  - BZ  Centering pin
  - BE  Retention pin
  - BS  Sword pin

- **Pull-in force**
  - in kN

- **Pressure**
  - In bar

- **Positioning check**
  - 0  without positioning check
  - 1  with positioning check

- **Change index**

- **Special variant**
SPN ZERO-POINT CLAMPING SYSTEM

ADVANTAGES

► Increased Productivity

By automating processes the Zimmer zero point clamping system dramatically increases productivity of processes that required precision. Machine set-up times are reduced by up to 92%, and cleaning and maintenance of the system is minimal. The option to link processes, one after the other, in a single workpiece clamping system, in various machining cells and equipped with identical clamping system geometries, allows previously unrealized synergies. The workpiece carrier with the Zimmer zero point clamping system accompanies the workpiece all the way through the production process, thus ensuring the ultimate in precision and cost efficiency.

WITHOUT ZERO POINT SYSTEM

| Machine running time | Set-up of workpiece |

WITH ZERO POINT SYSTEM

| Machine running time | Change of pallet |

► Highest repeatability and precision

The Zimmer zero point clamping system offers due to its market approved construction a repeating accuracy of 0.005mm. By its high pull-in force and the consequent use of hardened tool steel a highly precise and torsion resistant base stabilizes fragile and vibration susceptible workpieces in addition.

► Improved process safety

The zero point clamping system eliminates mistakes during milling, lathing, wire and sinker EDM, flat and cylindrical grinding, drilling, laser cutting and measuring. The maintenance free construction also contributes to the unmatched process safety of the system.

► Exactly the right system for your production

An optional available air-flow system provides an integrated contact monitoring and cleaning function. The pin receivers opens only when a component is drawn in and closes automatically during decoupling again. Thus the Zimmer zero point clamping system represents the maximum is terms of freedom from maintenance and insensitivity to contamination. The zero point clamping system offers the option of fully automated or partly automated loading and unloading of manufacturing cells. So the system contributes significantly to the reduction of process times.
SPN ZERO-POINT CLAMPING SYSTEM
FUNCTIONAL DESCRIPTION

► SEALED
- No pin in the clamping element
- Locking piston protects the clamping mechanism to prevent the ingress of dirt or liquids
- No energy consumption

► CLAMPED
- Pin clamped in the clamping element
- Form fit interlock
- No energy consumption in the clamped state

► RELIEVED
- Pin relieved in the clamping element
- Clamping element pressurized
- Clamping mechanism opened
SPN ZERO-POINT CLAMPING SYSTEM
CONNECTION OPTION

► HOSE-LESS CONNECTION

- The clamping system is supplied with compressed air through an integrated channel

► HOSE CONNECTION

- The clamping element is supplied with compressed air by means of a pneumatic fitting and a pneumatic hose.

► PLUS CONNECTION

- Clamping force can be increased significantly if an additional PLUS connection is connected to the clamping system
- The PLUS connection must be pressurized with compressed air during the clamping process.
In order to best redirect the forces of the device to be clamped, the displayed arrangement of pins is recommended. This arrangement makes it possible to compensate for geometry errors that emerge from production tolerances or thermal expansion:

Configuration with a zero-point clamping system

The centering pin gets the position in all three X, Y and Z directions of the Cartesian coordinate system. As a result, it forms the zero point for the device to be secured in place.

Configuration with two zero-point clamping systems

The sword pin can compensate for a change in length in one direction while absorbing the forces in the other two directions. It must be positioned so that it can support the moments applied around the centering pin in the Z direction.

Configuration with four or more zero-point clamping systems

The retention pin can only absorb forces in the Z direction. It compensates for changes in length in the X and Y direction.
SPN ZERO-POINT CLAMPING SYSTEM

APPLICATIONS

TYPICAL

- Drilling
- Milling
- Honing
- Laser cutting
- Laser welding
- Measuring
- Friction stir welding
- Stamping

ATYPICAL

- Transport aircraft
- Robotics
## SPN ZERO-POINT CLAMPING SYSTEM
### IN OVERVIEW

<table>
<thead>
<tr>
<th>Products</th>
<th>Operating pressure min. [bar]</th>
<th>Clamping force [kN]</th>
<th>Clamping force with PLUS connection [kN]</th>
<th>Rotation prevention</th>
<th>Contact monitoring</th>
<th>Flat-surface cleaning</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN060EL</td>
<td>4 / 6</td>
<td>2,5 / 4</td>
<td>4,5 / 7,5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>16</td>
</tr>
<tr>
<td>SPN060EL with contact monitoring</td>
<td>4 / 6</td>
<td>2,5 / 4</td>
<td>4,5 / 7,5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>18</td>
</tr>
<tr>
<td>SPN060 - Pin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>SPN060PS02 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>SPN060PS04 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>SPN060PS06 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>SPN110EL</td>
<td>4 / 6</td>
<td>4 / 7</td>
<td>10 / 15</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>24</td>
</tr>
<tr>
<td>SPN110EL with contact monitoring</td>
<td>4 / 6</td>
<td>4 / 7</td>
<td>10 / 15</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>26</td>
</tr>
<tr>
<td>SPN110 - Pin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>SPN110PS02 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>SPN110PS04 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>SPN110PS06 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>SPN138EL</td>
<td>4 / 6</td>
<td>9 / 18</td>
<td>22,5 / 42</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>32</td>
</tr>
<tr>
<td>SPN138EL with contact monitoring</td>
<td>4 / 6</td>
<td>9 / 18</td>
<td>22,5 / 42</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>34</td>
</tr>
<tr>
<td>SPN138 - Pin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>SPN138PS02 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>SPN138PS04 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>SPN138PS06 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>SPN195EL</td>
<td>4 / 6</td>
<td>20 / 30</td>
<td>50 / 80</td>
<td>✓</td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>SPN195EL with contact monitoring</td>
<td>4 / 6</td>
<td>20 / 30</td>
<td>50 / 80</td>
<td>✓</td>
<td></td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>SPN195 - Pin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>44</td>
</tr>
<tr>
<td>SPN195PS02 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>SPN195PS04 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>46</td>
</tr>
<tr>
<td>SPN195PS06 - Clamping plate</td>
<td>4 / 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>47</td>
</tr>
</tbody>
</table>
SPN ZERO-POINT CLAMPING SYSTEM
SERIES SPN

► PRODUCT ADVANTAGES

► Patented locking piston
► Rustproof finish throughout the series
  The housing parts are made of stainless steel – contact parts are hardened and thus wear-free
► Built-in rotation prevention included in this series
  A drive pin can be inserted into the clamping module to counteract torque in the direction of the plunger axis.
► Easy insertion of the clamping pins due to optimum, conical lead-in chamfers
  Burring is prevented
  The pin will be centered automatically even if positioned at a slant
► Integrated cleaning air – optional

► TECHNICAL DETAILS

1 Housing
2 Centering pin
3 Cover
4 Clamp dog
5 Locking balls
6 Locking pistons
7 Locking springs
8 Torque support
9 PLUS connection
SPN ZERO-POINT CLAMPING SYSTEM
SPN060EL

► PRODUCT ADVANTAGES

► Pre-positioning 16mm before reaching end position
► Automatic centering and pull-in already 1mm before reaching end position
► Resistant against contamination
► Mechanical locked in clamping position
► Low operating pressure of 4/6bar
► Maintenance free

► EQUIPMENT FEATURES

- Pneumatic
- Stainless steel
- Form fit
- Pins compatible with reference system
- PLUS connection
- Low height
- Hose-less supply
- Repeatability
- Torque support
- Hardened
- Automatic sealing plug

► INCLUDED IN DELIVERY

- O-ring 46x1
  COR0460100
- Mounting screw M3x8
  C091203004M

www.zimmer-group.com ► Data, Drawings, 3-D Models, Operating Instructions
### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Order no.</th>
<th>SPN060EL04-60-A-00</th>
<th>SPN060EL02-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M8 (12.9)</td>
<td>M8 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>7.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
<td>Hardened stainless steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.47</td>
<td>0.47</td>
</tr>
</tbody>
</table>

#### Technical Data

1. Air connection
2. Plus connection
3. Side air connection
4. O-Ring
5. Clamping element mounting screw
6. Rotation prevention

---

Data, Drawings, 3-D Models, Operating Instructions  
www.zimmer-group.com
SPN ZERO-POINT CLAMPING SYSTEM
SPN060EL WITH CONTACT MONITORING

► PRODUCT ADVANTAGES

► Integrated contact monitoring & Cleaning of supporting area function
► Contact monitoring by flow meter or dynamic air speed indicator possible
► Resistant against contamination
► Mechanical locked in clamping position
► Low operating pressure of 4/6bar
► Maintenance free

► EQUIPMENT FEATURES

- Pneumatic
- Form fit
- PLUS connection
- Hose-less supply
- Torque support
- Automatic sealing plug
- Stainless steel
- Pins compatible with reference system
- Low height
- Repeatability
- Hardened
- Flat-surface cleaning / contact monitoring

► INCLUDED IN DELIVERY

- O-ring 46x1
  COR0460100
- Mounting screw M3x8
  C091203004M

www.zimmer-group.com  ► Data, Drawings, 3-D Models, Operating Instructions
## TECHNICAL DATA

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
<th>SPN060EL04-61-A-00</th>
<th>SPN060EL02-41-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
<td></td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M8 (12.9)</td>
<td>M8 (12.9)</td>
<td></td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
<td></td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>4</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>7.5</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
<td></td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
<td>Hardened stainless steel</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.46</td>
<td>0.46</td>
<td></td>
</tr>
</tbody>
</table>

**Diagram**: 
- ![Diagram](image_url)

1. Air connection
2. Plus connection
3. Side air connection
4. O-Ring
5. Clamping element mounting screw
6. Rotation prevention
7. Contact monitoring

**Order numbers**:
- SPN060EL04-61-A-00
- SPN060EL02-41-A-00

**Operation modes**:
- Pneumatic

**Holding forces max.**:
- M8 (12.9)

**Operating pressure**:
- 6 ... 7 [bar]

**Retraction force**:
- 4 [kN]

**Pull-in force with PLUS connection**:
- 7.5 [kN]

**Operating temperature**:
- -10 ... +70 [°C]

**Rotation prevention**:
- Yes

**Contact monitoring**:
- Yes

**Repetition accuracy**:
- 0.005 [mm]

**Flat-surface cleaning**:
- Yes

**Material**:
- Hardened stainless steel

**Weight**:
- 0.46 [kg]
## SPN ZERO-POINT CLAMPING SYSTEM
### SPN060 - PIN

### TECHNICAL DRAWINGS

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN060BZ08-00-A-00</td>
<td>SPN060BE08-00-A-00</td>
</tr>
<tr>
<td>Ød1 [mm]</td>
<td>12 k6</td>
</tr>
<tr>
<td>Ød2 [mm]</td>
<td>16.3</td>
</tr>
<tr>
<td>Ød3 [mm]</td>
<td>14.8</td>
</tr>
<tr>
<td>Ød4 [mm]</td>
<td>5.5</td>
</tr>
<tr>
<td>SW [mm]</td>
<td>12</td>
</tr>
<tr>
<td>M</td>
<td>M8</td>
</tr>
<tr>
<td>a [mm]</td>
<td>2.5</td>
</tr>
<tr>
<td>g [mm]</td>
<td>11.5</td>
</tr>
<tr>
<td>l [mm]</td>
<td>18.7</td>
</tr>
<tr>
<td>ØD1 [mm]</td>
<td>12 H7</td>
</tr>
<tr>
<td>T [mm]</td>
<td>2.5+0.5</td>
</tr>
</tbody>
</table>

*ISO 4762

Holding force max. [kN] M6=18, M8=33, M10=53, M12=77, M16=145, M20=227

---

**SPN060BZ08-00-A-00**
- Centering pin

**SPN060BE08-00-A-00**
- Retention pin

**SPN060BS08-00-A-00**
- Sword pin
SPN ZERO-POINT CLAMPING SYSTEM
SPN060PS02 - CLAMPING PLATE

2-FOLD

- Compact design with optimized design height
- System assembly with high precision
- Integrated air supply/distribution

Order no.

<table>
<thead>
<tr>
<th>SPN060PS02-60-A-00</th>
<th>SPN060PS02-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation mode</strong></td>
<td>Pneumatic</td>
</tr>
<tr>
<td><strong>Holding force max.</strong></td>
<td>2xM8 (12.9)</td>
</tr>
<tr>
<td><strong>Operating pressure [bar]</strong></td>
<td>6 ... 7</td>
</tr>
<tr>
<td><strong>Retraction force [kN]</strong></td>
<td>2x4</td>
</tr>
<tr>
<td><strong>Operating temperature [°C]</strong></td>
<td>-10 ... +70</td>
</tr>
<tr>
<td><strong>Rotation prevention</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Contact monitoring</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Repetition accuracy [mm]</strong></td>
<td>0.005</td>
</tr>
<tr>
<td><strong>Flat-surface cleaning</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td><strong>Weight [kg]</strong></td>
<td>5.2</td>
</tr>
</tbody>
</table>

Technical Data

Order no. SPN060PS02-60-A-00 SPN060PS02-40-A-00
Operation mode Pneumatic Pneumatic
Holding force max. 2xM8 (12.9) 2xM8 (12.9)
Operating pressure [bar] 6 ... 7 4 ... 7
Retraction force [kN] 2x4 2x2.5
Operating temperature [°C] -10 ... +70 -10 ... +70
Rotation prevention Yes Yes
Contact monitoring No No
Repetition accuracy [mm] 0.005 0.005
Flat-surface cleaning No No
Material Hardened stainless steel/steel Hardened stainless steel/steel
Weight [kg] 5.2 5.2

Data, Drawings, 3-D Models, Operating Instructions   www.zimmer-group.com
SPN ZERO-POINT CLAMPING SYSTEM
SPN060PS04 - CLAMPING PLATE

4-FOLD

► Compact design with optimized design height
► System assembly with high precision
► Integrated air supply/distribution

Order no. | SPN060PS04-60-A-00 | SPN060PS04-40-A-00
---|---|---
Operation mode | Pneumatic | Pneumatic
Holding force max. | 4xM8 (12.9) | 4xM8 (12.9)
Operating pressure [bar] | 6 ... 7 | 4 ... 7
Retraction force [kN] | 4x2.5 | 4x2.5
Operating temperature [°C] | -10 ... +70 | -10 ... +70
Rotation prevention | Yes | Yes
Contact monitoring | No | No
Repetition accuracy [mm] | 0.005 | 0.005
Flat-surface cleaning | No | No
Material | Hardened stainless steel/steel | Hardened stainless steel/steel
Weight [kg] | 9.8 | 9.8

Order no. SPN060PS04-60-A-00 and SPN060PS04-40-A-00 are available.

Technical Data

- **Order no.**
  - SPN060PS04-60-A-00
  - SPN060PS04-40-A-00

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 6 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - No

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8

**Technical Data**

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 4 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - Yes

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8

**Technical Data**

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 4 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - Yes

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8

**Technical Data**

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 4 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - Yes

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8

**Technical Data**

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 4 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - Yes

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8

**Technical Data**

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 4 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - Yes

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8

**Technical Data**

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 4 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - Yes

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8

**Technical Data**

- **Operation mode**
  - Pneumatic

- **Holding force max.**
  - 4xM8 (12.9)

- **Operating pressure [bar]**
  - 4 ... 7

- **Retraction force [kN]**
  - 4x2.5

- **Operating temperature [°C]**
  - -10 ... +70

- **Rotation prevention**
  - Yes

- **Contact monitoring**
  - Yes

- **Repetition accuracy [mm]**
  - 0.005

- **Flat-surface cleaning**
  - No

- **Material**
  - Hardened stainless steel/steel

- **Weight [kg]**
  - 9.8
SPN ZERO-POINT CLAMPING SYSTEM
SPN060PS06 - CLAMPING PLATE

► 6-FOLD

► Compact design with optimized design height
► System assembly with high precision
► Integrated air supply/distribution

Order no.  
<table>
<thead>
<tr>
<th>SPN060PS06-60-A-00</th>
<th>SPN060PS06-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>6xM8 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>6x4</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>14.4</td>
</tr>
</tbody>
</table>

Order no. SPN060PS06-60-A-00 SPN060PS06-40-A-00
Operation mode Pneumatic Pneumatic
Holding force max. 6xM8 (12.9) 6xM8 (12.9)
Operating pressure [bar] 6 ... 7 4 ... 7
Retraction force [kN] 6x4 6x2.5
Operating temperature [°C] -10 ... +70 -10 ... +70
Rotation prevention Yes Yes
Contact monitoring No No
Repetition accuracy [mm] 0.005 0.005
Flat-surface cleaning No No
Material Hardened stainless steel/steel Hardened stainless steel/steel
Weight [kg] 14.4 14.4

► Technical Data

Diagram of the clamping system

1. Air connection
2. T-slot nut
3. T-slot nut mounting screw
4. Sealing cap
5. Clamping plate mounting screw
6. Clamping element

* Not included in delivery

Data, Drawings, 3-D Models, Operating Instructions  ▶  www.zimmer-group.com
SPN ZERO-POINT CLAMPING SYSTEM
SPN110EL

► PRODUCT ADVANTAGES

► Pre-positioning 24mm before reaching end position
► Automatic centering and pull-in already 2mm before reaching end position
► Resistant against contamination
► Mechanical locked in clamping position
► Low operating pressure of 4/6bar
► Maintenance free

► EQUIPMENT FEATURES

Pneumatic
Form fit
PLUS connection
Hose-less supply
Torque support
Automatic sealing plug

Stainless steel
Pins compatible with reference system
Low height
Repeatability
Hardened

► INCLUDED IN DELIVERY

O-ring
77x1.5
COR0770150

Mounting screw
M6x14
C0912060144D

www.zimmer-group.com ► Data, Drawings, 3-D Models, Operating Instructions
## TECHNICAL DATA

### Technical Data

<table>
<thead>
<tr>
<th>Order no.</th>
<th>SPN110EL07-60-A-00</th>
<th>SPN110EL04-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M8/M10 (12.9)</td>
<td>M8/M10 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
<td>Hardened stainless steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>1.64</td>
<td>1.64</td>
</tr>
</tbody>
</table>

### Diagram

1. Air connection
2. Plus connection
3. Side air connection
4. O-Ring
5. Clamping element mounting screw
6. Rotation prevention

![Diagram](image-url)
SPN ZERO-POINT CLAMPING SYSTEM
SPN110EL WITH CONTACT MONITORING

► PRODUCT ADVANTAGES

► Integrated contact monitoring & Cleaning of supporting area function
► Contact monitoring by flow meter or dynamic air speed indicator possible
► Resistant against contamination
► Mechanical locked in clamping position
► Low operating pressure of 4/6bar
► Maintenance free

► EQUIPMENT FEATURES

Pneumatic
Form fit
PLUS connection
Hose-less supply
Torque support
Automatic sealing plug

Stainless steel
Pins compatible with reference system
Low height
Repeatability
Hardened
Flat-surface cleaning / contact monitoring

► INCLUDED IN DELIVERY

O-ring
77x1.5
COR0770150

Mounting screw
M6x14
C0912060144D
### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN110EL07-61-A-00</td>
<td>SPN110EL04-41-A-00</td>
</tr>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M8/M10 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>7</td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>15</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>Yes</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>Yes</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>1.60</td>
</tr>
</tbody>
</table>

![Diagram of technical data](image-url)
SPN ZERO-POINT CLAMPING SYSTEM
SPN110 - PIN

TECHNICAL DRAWINGS

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ød1 [mm]</td>
</tr>
<tr>
<td>SPN110BZ08-00-A-00</td>
<td>18 k6</td>
</tr>
<tr>
<td>SPN110BE08-00-A-00</td>
<td>18 k6</td>
</tr>
<tr>
<td>SPN110BS08-00-A-00</td>
<td>18 k6</td>
</tr>
<tr>
<td>SPN110BZ10-00-A-00</td>
<td>18 k6</td>
</tr>
<tr>
<td>SPN110BE10-00-A-00</td>
<td>18 k6</td>
</tr>
<tr>
<td>SPN110BS10-00-A-00</td>
<td>18 k6</td>
</tr>
</tbody>
</table>

*ISO 4762

Holding force max. [kN] M6=18, M8=33, M10=53, M12=77, M16=145, M20=227
SPN ZERO-POINT CLAMPING SYSTEM
SPN110PS02 - CLAMPING PLATE

2-FOLD

- Compact design with optimized design height
- System assembly with high precision
- Integrated air supply/distribution

Order no. | SPN110PS02-60-A-00 | SPN110PS02-40-A-00
--- | --- | ---
Operation mode | Pneumatic | Pneumatic
Holding force max. | 2xM8/M10 (12.9) | 2xM8/M10 (12.9)
Operating pressure [bar] | 6 ... 7 | 4 ... 7
Retraction force [kN] | 2x7 | 2x4
Operating temperature [°C] | -10 ... +70 | -10 ... +70
Rotation prevention | Yes | Yes
Contact monitoring | No | No
Repetition accuracy [mm] | 0.005 | 0.005
Flat-surface cleaning | No | No
Material | Hardened stainless steel/steel | Hardened stainless steel/steel
Weight [kg] | 16.3 | 16.3

Air connection | ① | ①
T-slot nut* | ⑧ | ⑧
T-slot nut mounting screw* | ⑨ | ⑨
Sealing cap | ⑩ | ⑩
Clamping plate mounting screw* | ⑪ | ⑪
Clamping element | ⑫ | ⑫

* Not included in delivery

Technical Data

Data, Drawings, 3-D Models, Operating Instructions  www.zimmer-group.com
SPN ZERO-POINT CLAMPING SYSTEM
SPN110PS04 - CLAMPING PLATE

4-FOLD

- Compact design with optimized design height
- System assembly with high precision
- Integrated air supply/distribution

Order no.

<table>
<thead>
<tr>
<th>Operation mode</th>
<th>Pneumatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holding force max.</td>
<td>4xM8/M10 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>4x4</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>36.5</td>
</tr>
</tbody>
</table>

Technical Data

<table>
<thead>
<tr>
<th>Order no.</th>
<th>SPN110PS04-60-A-00</th>
<th>SPN110PS04-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>4xM8/M10 (12.9)</td>
<td>4xM8/M10 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>4x4</td>
<td>4x4</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>36.5</td>
<td>36.5</td>
</tr>
</tbody>
</table>

*Not included in delivery

Air connection
T-slot nut
T-slot nut mounting screw
Sealing cap
Clamping plate mounting screw
Clamping element

www.zimmer-group.com ➤ Data, Drawings, 3-D Models, Operating Instructions
SPN ZERO-POINT CLAMPING SYSTEM
SPN110PS06 - CLAMPING PLATE

► 6-FOLD

► Compact design with optimized design height
► System assembly with high precision
► Integrated air supply/distribution

Order no.  
<table>
<thead>
<tr>
<th>Operation mode</th>
<th>SPN110PS06-60-A-00</th>
<th>SPN110PS06-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holding force max.</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6xM8/M10 (12.9)</td>
<td>6xM8/M10 (12.9)</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>6x7</td>
<td>6x4</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>56.7</td>
<td>56.7</td>
</tr>
</tbody>
</table>

*Not included in delivery

1. Air connection
2. T-slot nut*
3. T-slot nut mounting screw*
4. Sealing cap
5. Clamping plate mounting screw*
6. Clamping element

Order no. SPN110PS06-60-A-00 SPN110PS06-40-A-00
Operation mode Pneumatic Pneumatic
Holding force max. 6xM8/M10 (12.9) 6xM8/M10 (12.9)
Operating pressure [bar] 6x7 6x4
Retraction force [kN] -10 ... +70 -10 ... +70
Operating temperature [°C] Yes Yes
Rotation prevention No No
Contact monitoring 0.005 0.005
Repetition accuracy [mm] No No
Flat-surface cleaning Hardened stainless steel/steel Hardened stainless steel/steel
Material Weight [kg] 56.7 56.7

*Not included in delivery
SPN ZERO-POINT CLAMPING SYSTEM
SPN138EL

► PRODUCT ADVANTAGES

- Pre-positioning 24mm before reaching end position
- Automatic centering and pull-in already 2mm before reaching end position
- Resistant against contamination
- Mechanical locked in clamping position
- Low operating pressure of 4/6bar
- Maintenance free

► EQUIPMENT FEATURES

- Pneumatic
- Form fit
- Stainless steel
- Pins compatible with reference system
- PLUS connection
- Low height
- Hose-less supply
- Repeatability
- Torque support
- Hardened
- Automatic sealing plug

►INCLUDED IN DELIVERY

- O-ring 108x2
  COR1080200
- Mounting screw M6x16
  C0912060164D
**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
<th>SPN138EL18-60-A-00</th>
<th>SPN138EL09-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
<td></td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M12/M16 (12.9)</td>
<td>M12/M16 (12.9)</td>
<td></td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
<td></td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>18</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>42</td>
<td>22.5</td>
<td></td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
<td></td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
<td>Hardened stainless steel</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>3.66</td>
<td>3.66</td>
<td></td>
</tr>
</tbody>
</table>

- Air connection
- Plus connection
- Side air connection
- O-Ring
- Clamping element mounting screw
- Rotation prevention
SPN ZERO-POINT CLAMPING SYSTEM
SPN138EL WITH CONTACT MONITORING

► PRODUCT ADVANTAGES

► Integrated contact monitoring & Cleaning of supporting area function
► Contact monitoring by flow meter or dynamic air speed indicator possible
► Resistant against contamination
► Mechanical locked in clamping position
► Low operating pressure of 4/6bar
► Maintenance free

► EQUIPMENT FEATURES

Pneumatic
Form fit
PLUS connection
Hose-less supply
Torque support
Automatic sealing plug
Stainless steel
Pins compatible with reference system
Low height
Repeatability
Hardened
Flat-surface cleaning / contact monitoring

► INCLUDED IN DELIVERY

O-ring
108x2
COR1080200
Mounting screw
M6x16
C0912060164D

www.zimmer-group.com ▶ Data, Drawings, 3-D Models, Operating Instructions
### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
<th>SPN138EL18-61-A-00</th>
<th>SPN138EL09-41-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
<td></td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M12/M16 (12.9)</td>
<td>M12/M16 (12.9)</td>
<td></td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
<td></td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>18</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>42</td>
<td>22.5</td>
<td></td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
<td></td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
<td>Hardened stainless steel</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>3.60</td>
<td>3.60</td>
<td></td>
</tr>
</tbody>
</table>

**Order no.**
- SPN138EL18-61-A-00
- SPN138EL09-41-A-00

**Operation mode**
- Pneumatic

**Holding force max.**
- M12/M16 (12.9)

**Operating pressure [bar]**
- 6 ... 7

**Retraction force [kN]**
- 18

**Pull-in force with PLUS connection [kN]**
- 42

**Operating temperature [°C]**
- -10 ... +70

**Rotation prevention**
- Yes

**Contact monitoring**
- Yes

**Repetition accuracy [mm]**
- 0.005

**Flat-surface cleaning**
- Yes

**Material**
- Hardened stainless steel

**Weight [kg]**
- 3.60

**Additional Information**
- **Air connection**
- **Plus connection**
- **Side air connection**
- **O-Ring**
- **Clamping element mounting screw**
- **Rotation prevention**
- **Contact monitoring**

---

**Order no.**
- SPN138EL18-61-A-00
- SPN138EL09-41-A-00

**Operation mode**
- Pneumatic

**Holding force max.**
- M12/M16 (12.9)

**Operating pressure [bar]**
- 6 ... 7

**Retraction force [kN]**
- 18

**Pull-in force with PLUS connection [kN]**
- 42

**Operating temperature [°C]**
- -10 ... +70

**Rotation prevention**
- Yes

**Contact monitoring**
- Yes

**Repetition accuracy [mm]**
- 0.005

**Flat-surface cleaning**
- Yes

**Material**
- Hardened stainless steel

**Weight [kg]**
- 3.60

---

**Order no.**
- SPN138EL18-61-A-00
- SPN138EL09-41-A-00

**Operation mode**
- Pneumatic

**Holding force max.**
- M12/M16 (12.9)

**Operating pressure [bar]**
- 6 ... 7

**Retraction force [kN]**
- 18

**Pull-in force with PLUS connection [kN]**
- 42

**Operating temperature [°C]**
- -10 ... +70

**Rotation prevention**
- Yes

**Contact monitoring**
- Yes

**Repetition accuracy [mm]**
- 0.005

**Flat-surface cleaning**
- Yes

**Material**
- Hardened stainless steel

**Weight [kg]**
- 3.60
SPN ZERO-POINT CLAMPING SYSTEM
SPN138 - PIN

► TECHNICAL DRAWINGS

<table>
<thead>
<tr>
<th>Order no.</th>
<th>SPN138BZ12-00-A-00</th>
<th>SPN138BE12-00-A-00</th>
<th>SPN138BS12-00-A-00</th>
<th>SPN138BZ16-00-A-00</th>
<th>SPN138BE16-00-A-00</th>
<th>SPN138BS16-00-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ød1 [mm]</td>
<td>25 k6</td>
<td>25 k6</td>
<td>25 k6</td>
<td>25 k6</td>
<td>25 k6</td>
<td>25 k6</td>
</tr>
<tr>
<td>Ød2 [mm]</td>
<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
</tr>
<tr>
<td>Ød3 [mm]</td>
<td>28.3</td>
<td>28.3</td>
<td>28.3</td>
<td>28.3</td>
<td>28.3</td>
<td>28.3</td>
</tr>
<tr>
<td>Ød4 [mm]</td>
<td>16.5</td>
<td>16.5</td>
<td>16.5</td>
<td>16.5</td>
<td>16.5</td>
<td>16.5</td>
</tr>
<tr>
<td>SW [mm]</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>M *</td>
<td>M12</td>
<td>M12</td>
<td>M12</td>
<td>M16</td>
<td>M16</td>
<td>M16</td>
</tr>
<tr>
<td>Mx *</td>
<td>M10</td>
<td>M10</td>
<td>M10</td>
<td>M16</td>
<td>M16</td>
<td>M16</td>
</tr>
<tr>
<td>a [mm]</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>b [mm]</td>
<td>10.5</td>
<td>10.5</td>
<td>10.5</td>
<td>10.5</td>
<td>10.5</td>
<td>10.5</td>
</tr>
<tr>
<td>l [mm]</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>T [mm]</td>
<td>5+0.5</td>
<td>5+0.5</td>
<td>5+0.5</td>
<td>5+0.5</td>
<td>5+0.5</td>
<td>5+0.5</td>
</tr>
</tbody>
</table>

*ISO 4762

Holding force max. [kN] M6=18, M8=33, M10=53, M12=77, M16=145, M20=227

SPN138BZ12-00-A-00
Centering pin

SPN138BE12-00-A-00
Retention pin

SPN138BZ16-00-A-00
Centering pin

SPN138BE16-00-A-00
Retention pin

SPN138BS12-00-A-00
Sword pin

SPN138BS16-00-A-00
Sword pin
SPN ZERO-POINT CLAMPING SYSTEM
SPN138PS02 - CLAMPING PLATE

2-FOLD

► Compact design with optimized design height
► System assembly with high precision
► Integrated air supply/distribution

Order no. | Technical Data |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN138PS02-60-A-00</td>
<td>SPN138PS02-40-A-00</td>
</tr>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>2xM12/M16 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>2x18</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>36.4</td>
</tr>
</tbody>
</table>

Data, Drawings, 3-D Models, Operating Instructions  ►  www.zimmer-group.com

1. Air connection
2. T-slot nut
3. T-slot nut mounting screw
4. Sealing cap
5. Clamping plate mounting screw
6. Clamping element

* Not included in delivery
SPN ZERO-POINT CLAMPING SYSTEM
SPN138PS04 - CLAMPING PLATE

► 4-FOLD

► Compact design with optimized design height
► System assembly with high precision
► Integrated air supply/distribution

### Order no.

<table>
<thead>
<tr>
<th>Operation mode</th>
<th>SPN138PS04-60-A-00</th>
<th>SPN138PS04-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holding force max.</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>4x18</td>
<td>4x8</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>80.2</td>
<td>80.2</td>
</tr>
</tbody>
</table>

### Technical Data

1. Air connection
2. T-slot nut*
3. T-slot nut mounting screw*
4. Sealing cap
5. Clamping plate mounting screw*
6. Clamping element

* Not included in delivery

www.zimmer-group.com ▶ Data, Drawings, 3-D Models, Operating Instructions
SPN ZERO-POINT CLAMPING SYSTEM
SPN138PS06 - CLAMPING PLATE

6-FOLD

- Compact design with optimized design height
- System assembly with high precision
- Integrated air supply/distribution

Order no.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>SPN138PS06-60-A-00</th>
<th>SPN138PS06-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>6xM12/M16 (12.9)</td>
<td>6xM12/M16 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>6x18</td>
<td>6x9</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>117.4</td>
<td>117.4</td>
</tr>
</tbody>
</table>

Technical Data

- Air connection
- T-slot nut*
- T-slot nut mounting screw*
- Sealing cap
- Clamping plate mounting screw*
- Clamping element

* Not included in delivery

Order no.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>SPN138PS06-60-A-00</th>
<th>SPN138PS06-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>6xM12/M16 (12.9)</td>
<td>6xM12/M16 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>6x18</td>
<td>6x9</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>117.4</td>
<td>117.4</td>
</tr>
</tbody>
</table>

* Not included in delivery
SPN ZERO-POINT CLAMPING SYSTEM
SPN195EL

► PRODUCT ADVANTAGES

SPN195EL is the ideal ZPS for your heavy duty machinery. It has been designed with the main focus on being immune against angel error while inserting of large-scale parts.

► Resistant against contamination (patent sealing piston)
► Pre-positioning 48mm before reaching end position
► Automatic centering and pull-in already 4mm before reaching end position
► No-sensitive against staining
► Mechanical locked in clamping position
► Low operating pressure of 4/6bar
► Maintenance free

► EQUIPMENT FEATURES

- Pneumatic
- Stainless steel
- Form fit
- Pins compatible with reference system
- PLUS connection
- Low height
- Hose-less supply
- Repeatability
- Torque support
- Hardened
- Automatic sealing plug

► INCLUDED IN DELIVERY

- O-ring
155x2.5
COR1550250
- Mounting screw
M10x25
C0912100254D
### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
<th>SPN195EL30-60-A-00</th>
<th>SPN195EL20-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
<td></td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M20 (12.9)</td>
<td>M20 (12.9)</td>
<td></td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
<td></td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>30</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>80</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
<td></td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
<td>Hardened stainless steel</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>9.85</td>
<td>9.85</td>
<td></td>
</tr>
</tbody>
</table>

Diagram:

- **1** Air connection
- **2** Plus connection
- **3** Side air connection
- **4** O-Ring
- **5** Clamping element mounting screw
- **6** Rotation prevention

Data, Drawings, 3-D Models, Operating Instructions  ➤ www.zimmer-group.com
SPN ZERO-POINT CLAMPING SYSTEM
SPN195EL WITH CONTACT MONITORING

PRODUCT ADVANTAGES

- Integrated contact monitoring & Cleaning of supporting area function
- Contact monitoring by flow meter or dynamic air speed indicator possible
- Resistant against contamination
- Mechanical locked in clamping position
- Low operating pressure of 4/6bar
- Maintenance free

EQUIPMENT FEATURES

- Pneumatic
- Stainless steel
- Form fit
- Pins compatible with reference system
- PLUS connection
- Low height
- Hose-less supply
- Repeatability
- Torque support
- Hardened
- Automatic sealing plug
- Flat-surface cleaning / contact monitoring

INCLUDED IN DELIVERY

- O-ring 155x2.5
  COR1550250
- Mounting screw M10x25
  C0912100254D
## TECHNICAL DATA

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
<th>SPN195EL30-61-A-00</th>
<th>SPN195EL20-41-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
<td></td>
</tr>
<tr>
<td>Holding force max.</td>
<td>M20 (12.9)</td>
<td>M20 (12.9)</td>
<td></td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
<td></td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>30</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Pull-in force with PLUS connection [kN]</td>
<td>80</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
<td></td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel</td>
<td>Hardened stainless steel</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>9.70</td>
<td>9.70</td>
<td></td>
</tr>
</tbody>
</table>

---

1. Air connection
2. Plus connection
3. Side air connection
4. O-Ring
5. Clamping element mounting screw
6. Rotation prevention
7. Contact monitoring

---

Data, Drawings, 3-D Models, Operating Instructions  ▶ www.zimmer-group.com
SPN ZERO-POINT CLAMPING SYSTEM
SPN195 - PIN

► TECHNICAL DRAWINGS

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPN195BZ20-00-A-00</td>
</tr>
<tr>
<td>Ød1 [mm]</td>
<td>30 k6</td>
</tr>
<tr>
<td>Ød2 [mm]</td>
<td>59.7</td>
</tr>
<tr>
<td>Ød3 [mm]</td>
<td>54</td>
</tr>
<tr>
<td>Ød4 [mm]</td>
<td>25</td>
</tr>
<tr>
<td>Ød5 [mm]</td>
<td>4</td>
</tr>
<tr>
<td>s [mm]</td>
<td>36</td>
</tr>
<tr>
<td>t [mm]</td>
<td>4</td>
</tr>
<tr>
<td>M</td>
<td>M20</td>
</tr>
<tr>
<td>Mx *</td>
<td>M16</td>
</tr>
<tr>
<td>a [mm]</td>
<td>5</td>
</tr>
<tr>
<td>b [mm]</td>
<td>16.5</td>
</tr>
<tr>
<td>l [mm]</td>
<td>48</td>
</tr>
<tr>
<td>ØD1 [mm]</td>
<td>30 H7</td>
</tr>
<tr>
<td>T [mm]</td>
<td>5+0.5</td>
</tr>
</tbody>
</table>

*ISO 4762
Holding force max. [kN] M6=18, M8=33, M10=53, M12=77, M16=145, M20=227

www.zimmer-group.com  ►  Data, Drawings, 3-D Models, Operating Instructions
SPN ZERO-POINT CLAMPING SYSTEM
SPN195PS02 - CLAMPING PLATE

2-FOLD

► Compact design with optimized design height
► System assembly with high precision
► Integrated air supply/distribution

Order no.
Operation mode
Holding force max.
Operating pressure [bar]
Retraction force [kN]
Operating temperature [°C]
Rotation prevention
Contact monitoring
Flat-surface cleaning
Material
Weight [kg]

<table>
<thead>
<tr>
<th></th>
<th>SPN195PS02-60-A-00</th>
<th>SPN195PS02-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>2xM20 (12.9)</td>
<td>2xM20 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>2x30</td>
<td>2x20</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>67.5</td>
<td>67.5</td>
</tr>
</tbody>
</table>

Technical Data

1. Air connection
2. T-slot nut*
3. T-slot nut mounting screw*
4. Sealing cap
5. Clamping plate mounting screw*
6. Clamping element

* Not included in delivery

Order no.
SPN195PS02-60-A-00
SPN195PS02-40-A-00

Operation mode: Pneumatic
Holding force max.: 2xM20 (12.9)
Operating pressure: 6 ... 7 [bar]
Retraction force: 2x30 [kN]
Operating temperature: -10 ... +70 [°C]
Rotation prevention: Yes
Contact monitoring: No
Flat-surface cleaning: 0.005 [mm]
Material: Hardened stainless steel/steel
Weight: 67.5 [kg]

www.zimmer-group.com
SPN ZERO-POINT CLAMPING SYSTEM
SPN195PS04 - CLAMPING PLATE

4-FOLD

► Compact design with optimized design height
► System assembly with high precision
► Integrated air supply/distribution

<table>
<thead>
<tr>
<th>Order no.</th>
<th>SPN195PS04-60-A-00</th>
<th>SPN195PS04-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>4xM20 (12.9)</td>
<td>4xM20 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>4x30</td>
<td>4x20</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>146.7</td>
<td>146.7</td>
</tr>
</tbody>
</table>

Order no. SPN195PS04-60-A-00 SPN195PS04-40-A-00

1 Air connection
2 T-slot nut*
3 T-slot nut mounting screw*
4 Sealing cap
5 Clamping plate mounting screw*
6 Clamping element
7 Air connection
8 T-slot nut
9 T-slot nut mounting screw
10 Sealing cap
11 Clamping plate mounting screw
12 Clamping element

* Not included in delivery

www.zimmer-group.com  ►  Data, Drawings, 3-D Models, Operating Instructions
SPN ZERO-POINT CLAMPING SYSTEM
SPN195PS06 - CLAMPING PLATE

6-FOLD

- Compact design with optimized design height
- System assembly with high precision
- Integrated air supply/distribution

Order no.

<table>
<thead>
<tr>
<th>Operation mode</th>
<th>SPN195PS06-60-A-00</th>
<th>SPN195PS06-40-A-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
</tr>
<tr>
<td>Holding force max.</td>
<td>6xM20 (12.9)</td>
<td>6xM20 (12.9)</td>
</tr>
<tr>
<td>Operating pressure [bar]</td>
<td>6 ... 7</td>
<td>4 ... 7</td>
</tr>
<tr>
<td>Retraction force [kN]</td>
<td>6x30</td>
<td>6x20</td>
</tr>
<tr>
<td>Operating temperature [°C]</td>
<td>-10 ... +70</td>
<td>-10 ... +70</td>
</tr>
<tr>
<td>Rotation prevention</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Contact monitoring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Repetition accuracy [mm]</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Flat-surface cleaning</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Material</td>
<td>Hardened stainless steel/steel</td>
<td>Hardened stainless steel/steel</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>226.0</td>
<td>226.0</td>
</tr>
</tbody>
</table>

Technical Data

Data, Drawings, 3-D Models, Operating Instructions
www.zimmer-group.com
Can clamping pins be integrated directly into the workpiece?
The clamping pins can be integrated directly into the workpiece using the Zimmer zero-point clamping system to clamp the workpiece with precision, repeatability and cost efficiency. This approach makes it possible to perform complete 5-side machining in one workpiece clamping setup.

Why are there different clamping pins available?
The various clamping pins ensure the desired precision clamping behavior in different three-dimensional axes. The centering pin defines the reference point for the workpiece and provides precision in the X, Y and Z direction. The sword pin provides precision in the X or Y and Z direction and the clamping pin clamps only in the Z direction.

Do the zero-point clamping systems feature temperature compensation?
The Zimmer zero-point clamping systems can be implemented to provide temperature compensation if you only use sword pins. (see page 10)

Which distance tolerances should be observed for in-house production?
Zimmer recommends a distance tolerance of +/- 0.015 mm for clamping pins and zero-point clamping systems.

What is a “PLUS connection”? How does a PLUS connection work?
Zimmer zero-point clamping systems come standard with an additional pneumatic connection. This connection can be used to increase the clamping force significantly.

How does the contact monitoring work?
The contact monitoring makes it possible to check whether the workpiece or clamping pallet is laying flat on the surface of the zero-point clamping system by using a connected flowmeter or Pitot tube.

How are the clamping force and the holding force of a zero-point clamping system defined?
The clamping force describes the force that is used for clamping the pin and for form fit clamping in the zero-point clamping system. The holding force of the zero-point clamping system is limited by the maximum permitted pulling force of the pin mounting screw.

How is the repeatability defined?
Repeatability defines the tolerance zone within which the reference points defined on the workpiece can be clamped, released and clamped again. On Zimmer zero-point clamping systems, this repeatability is less than or equal to 0.005 mm.
CALCULATION EXAMPLE

 FORMULAS

Layout:
4 clamping elements (assumed to be D110)
X = 200 mm
A = 350 mm
$F_{\text{Cut}} = 5 \text{ kN}$ (cutting force)
Safety $V = 2$

$\sum M = 0$ (total of all moments = zero)
$2[safety2] * F_{\text{Cut}} * A - 2[4\text{elements}] * (F_{\text{C}} * (X + D/2) + F_{\text{C}} * D/2) = 0$
$- F_{\text{C}} = 2 * F_{\text{Cut}} * A / (2X + 2D)$
$F_{\text{C}} = 2 * 5 \text{ kN} * 350 \text{ mm} / (2 * 200 \text{ mm} + 2 * 110 \text{ mm})$
$F_{\text{C}} = 5.6 \text{ kN}$

Selection of clamping elements:
SPN110EL07-60-A-00 clamping force = 7 kN
### Customer Information
- **Customer number**: [Blank]
- **Company**: [Blank]
- **Contact**: [Blank]
  - Mr. [ ] Ms. [ ]

### Sales database
- **Processed by**: [Blank]
- **Desired delivery date**: [Blank]
- **Amount**: [Blank]
  - Pot. amount (annually): [Blank]
- **Date**: [Blank]

### Article
- **Desired price**: [Blank]
- **Other**: [Blank]

### Area or application
#### Clamping device
- **Milling** [ ]
- **Drilling** [ ]
- **Measuring** [ ]
- **Other** [ ]
- **Rotate** [ ]
- **Rubbing** [ ]
- **Laser processing** [ ]

#### Process force
- **N**: [Blank]
- **Compressed air system pressure**: [Blank] bar
- **Insertion force necessary**: [Blank] N
- **Lever arm between process force and clamping system**: [Blank] mm
- **Holding force necessary**: [Blank] N
- **Number of plannes clamping system per clamping device**: [Blank] piece

#### Alignment
- **Sketch** [ ]
- **3D Model** [ ]
- **Other** [ ]

#### Environment
- **Temperature**
  - min. [Blank] °C
  - max. [Blank] °C
- **Chips** [ ]
- **Dirt** [ ]
- **Oil / Fat** [ ]
- **Cool lubrication** [ ]
- **Other** [ ]

#### Number of clamping cycles per hour
- [Blank] cycles

#### Handling
- **Manual** [ ]
- **Automatic** [ ]

#### Additional functions
- Flat-surface cleaning / positioning check [ ]

### Notes/comments
[Blank]
The contents of this catalog are not legally binding and are intended solely for informational purposes. Any final agreement will be in the form of a written order confirmation from ZIMMER GMBH, which occurs only subject to the respective current General Terms and Conditions of Sale and Delivery of ZIMMER GMBH. These can be found online at www.zimmer-group.com.

All of the products listed in this catalog are designed for their intended use, e.g. machines for automation. The recognized technical regulations for safety and professional work must be followed for use and installation. Furthermore, the respective laws, guidelines from TÜV, guidelines from the respective trade association and VDE stipulations shall apply.

The technical data listed in this catalog must be observed by the user. The conditions of use may not fall below or exceed the specified data. If information is missing, it cannot be assumed that there are no upper or lower limits or no limitations for specific use cases. Consultation is required in these cases.

Disposal is not included in the price, which would have to be taken into account accordingly in the event of return to or disposal by ZIMMER GMBH.

TECHNICAL DATA AND FIGURES
The technical data and figures have been compiled with great care and to the best of our knowledge. We cannot guarantee that the information is up to date, correct or complete.

The specifications and information—such as figures, drawings, descriptions, dimensions, weights, materials, technical and other performance data and the described products and services—contained in general product descriptions, ZIMMER GMBH catalogs, brochures and price lists in any form are subject to change and may be modified or updated at any time without prior notification. They are binding only to the extent expressly specified in a contract or order confirmation. Slight deviations from such descriptive product information shall be considered approved and shall not affect fulfillment of agreements insofar as they are reasonable for the customer.

LIABILITY
Products from Zimmer Group are subject to the German Product Liability Act. This catalog does not contain any guarantees, assurances of quality or procurement agreements for the products it depicts, neither expressly nor implied, including for the availability of products. Advertising statements relating to quality features, properties or applications for the products are not legally binding.

To the extent permitted by law, ZIMMER GMBH is exempt from any liability for direct or indirect damage, subsequent damage and requests of any kind or on any legal basis resulting from the use of information contained in this catalogue.

TRADEMARK, COPYRIGHT AND REPRODUCTION
The depiction of commercial property rights in this catalog—such as brands, logos, registered trademarks or patents—does not include the granting of licenses or use rights. Their use is not permitted without the expressed written agreement of ZIMMER GMBH. All contents of this catalog are the intellectual property of ZIMMER GMBH. For the purposes of copyright, any unlawful use of intellectual property, including excerpts, is prohibited. Reprinting, copying or translating (including in the form of excerpts) are permitted only with the prior written consent of ZIMMER GMBH.

STANDARDS
DECLARATION OF INCORPORATION IN TERMS OF THE EC DIRECTIVE 2006/42/EC ON MACHINERY (ANNEX II 1 B)
We hereby declare that our elements meet the following basic requirements of the Machinery Directive 2006/42/EC as an incomplete machine

No.1.1.2., No.1.1.3., No.1.1.5., No.1.3.2, No. 1.3.4, No. 1.3.7, No.1.5.3, No.1.5.4, No.1.5.8., No.1.6.4, No.1.7.1, No.1.7.3, No.1.7.4.

We also declare that the specific technical documents were produced in accordance with Annex VII Part B of this Directive. We undertake to provide the market supervisory bodies with electronic versions of the incomplete machine’s special documents via our documentation department should they have reason to request them.

The incomplete machine may only be commissioned if the machine or system in which the incomplete machine is to be installed has been determined to satisfy the conditions of the Machinery Directive 2006/42/EC and the EC Declaration of Conformity has been produced in accordance with Annex II A.