Quick release couplings SPC
Self aligning and flat faced

Applications
- Machine tools: connection and disconnection of machining heads and broaching heads.
- Machine tools: hydraulic clamping and palletisation.
- Cooling: cooling of inserts and modules on moulds or electronic cooling.
- Complete integration into the machine.
- 2 installation options.
- Optimum flow.
- Compensation for misalignment at connection.
- Interface 0.
- Flat face non-spill design.
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Reliability
The SPC is designed for high frequency use of up to 1 million connections.

Non spill flat faced design
The flat faced SPC design prevents the introduction of air as well as any dirt from the working area into the circuit.

Optimum flow
The SPC range is compact and guarantees an excellent flow for minimal outside dimensions, whichever the direction of flow. In addition, the SPC maintains full flow even if the coupling is not fully connected. This tolerance is 2 mm.

2 installation options for complete integration into the machine
- Recessed installation into pocket to give the SPC minimum outside dimensions with in addition a 0 interface between plug and socket and therefore extra space saving.
- due to the 2 installation options, the SPC can be adapted to all your needs:
  - either floating on both sides (socket and plug installed recessed into pockets)
  - or plug installed fixed (socket installed recessed into the pocket and plug screwed in)

Take-up of any misalignment at connection
- A form of preguiding combined with an elastic connection permits a take-up of misalignment between plug and socket at connection

Floating on both sides: interface 0
- Recessed installation into pocket and fixing onto the machine by elastic ring

Plug rigidly installed with 0 or 4,2 mm interface
- Plug screwed into the machine with O ring sealing

Take up of all misalignment at connection
- Recessed installation into pocket and fixing onto the machine by elastic ring

∅ max. a = 0.5 mm for “floating both sides” version
∅ max. a = 0.25 mm for “plug mounted rigid” version

To ensure take up of misalignment at connection, the pocket centers must be within the circle $\delta_a$. 

∅ $\delta_a$ with $\delta_a$ = 3 mm
**Technical Features**

**Materials**
- High resistance stainless steel
- Fluorocarbon seals (FPM) as standard. Other seals: ask us to establish the chemical compatibility of the fluids in question.

**Connection stroke**

<table>
<thead>
<tr>
<th>Nominal bore (mm)</th>
<th>SPC 03</th>
<th>SPC 05</th>
<th>SPC 08</th>
<th>SPC 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature* (with FPM seals)</td>
<td>-10°C to +150°C</td>
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<td>-10°C to +150°C</td>
</tr>
<tr>
<td>Max. working pressure (bar)</td>
<td>450</td>
<td>350</td>
<td>250</td>
<td>160</td>
</tr>
<tr>
<td>Connection force (N)</td>
<td>12</td>
<td>17,5</td>
<td>20,5</td>
<td>28</td>
</tr>
<tr>
<td>Repulsion cross section (cm²)</td>
<td>0,30</td>
<td>0,85</td>
<td>1,77</td>
<td>3,60</td>
</tr>
<tr>
<td>Volume of air introduced** at connection (cm³)</td>
<td>0,002</td>
<td>0,025</td>
<td>0,055</td>
<td>0,063</td>
</tr>
<tr>
<td>Spillage** at disconnection (cm³)</td>
<td>0,002</td>
<td>0,015</td>
<td>0,026</td>
<td>0,038</td>
</tr>
<tr>
<td>Volume of liquid displaced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socket side (cm³)</td>
<td>0,21</td>
<td>1,01</td>
<td>2,26</td>
<td>6,80</td>
</tr>
<tr>
<td>Plug side (cm³)</td>
<td>0,17</td>
<td>0,79</td>
<td>2,00</td>
<td>5,59</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socket (g)</td>
<td>17,5</td>
<td>48,5</td>
<td>81</td>
<td>197,5</td>
</tr>
<tr>
<td>Plug in socket (g)</td>
<td>32</td>
<td>62</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>Screwed plug (g)</td>
<td>7</td>
<td>21,5</td>
<td>39</td>
<td></td>
</tr>
</tbody>
</table>

* For temperatures outside this range, please consult us.
** These are not cumulative values; they decrease with the number of cycles.

**Hydraulic flow/pressure drop graph**

**Test conditions**
- Direction of flow:
  - Plug: Hydraulic
  - Socket: Pressure
- Oil: INVAROL FJ13 (H515)
- Density: 833 kg/m³ at 40°C
- Viscosity: 13,4 cst at 40°C

**Flow (l/min.) vs. Pressure drop (bar)**

- Cv = 0,111
- V = 5 m/s
- Pressure drop (bar):
  - 0.1 0.2 0.3 0.5 1 2 3 5 10 20 30 50
- Flow (l/min.):
  - 0.1 0.5 0.3 0.2 0.1 0.05 0.03 0.02 0.01

- Cv = 0,548
- V = 5 m/s
- Pressure drop (bar):
  - 0.1 0.2 0.3 0.5 1 2 3 5 10 20 30 50
- Flow (l/min.):
  - 0.1 0.5 0.3 0.2 0.1 0.05 0.03 0.02 0.01

- Cv = 1,74
- V = 5 m/s
- Pressure drop (bar):
  - 0.1 0.2 0.3 0.5 1 2 3 5 10 20 30 50
- Flow (l/min.):
  - 0.1 0.5 0.3 0.2 0.1 0.05 0.03 0.02 0.01

- Cv = 4,23
- V = 5 m/s
- Pressure drop (bar):
  - 0.1 0.2 0.3 0.5 1 2 3 5 10 20 30 50
- Flow (l/min.):
  - 0.1 0.5 0.3 0.2 0.1 0.05 0.03 0.02 0.01
**Installation**

1. **Recessed SPC plug and socket**

   - **Models**: SPC 03, SPC 05, SPC 08, SPC 12
   - **Drawing references**: R 335 010 10, R 335 011 11, R 335 012 10, R 335 013 11

2. **SPC with screwed plug and socket installed recessed in pocket**

   - **Models**: SPC 03, SPC 05, SPC 08, SPC 12
   - **Drawing references**: R 335 010 11, R 335 011 11, R 335 012 11, R 335 013 11

3. **Installation tool**

   - **Models**: SPC 03, SPC 05, SPC 08, SPC 12
   - **Installation tool for screwed plug**: R 135 910 00, R 135 911 00, R 135 912 00, R 135 913 00
   - **Removal tool for socket**: R 235 900 00, R 235 902 00, R 235 900 00, R 235 902 00

**Part Numbers**

1. **Sockets**

   - **Models**: SPC 03, SPC 05, SPC 08, SPC 12
   - **Dimensions (mm)**: E, G, dH, I

2. **Plugs installed recessed in pocket**

   - **Models**: SPC 03, SPC 05, SPC 08, SPC 12
   - **Dimensions (mm)**: øA, D, C, J
   - **Part Numbers**: SPC 03 12.5 33 12 2, SPC 05 18.5 43.5 17.5 2, SPC 08 23.5 49.5 20.5 2, SPC 12 31.5 64 28 2

3. **Screwed plug**

   - **Models**: SPC 03, SPC 05, SPC 08, SPC 12
   - **Threading Dimensions (mm)**: F, øA, B, C, J
   - **Part Numbers**: SPC 03.5008/IA/MD/J V, SPC 05.5414/IA/MD/J V, SPC 08.5418/IA/MD/J V, SPC 12.5424/IA/MD/J V

4. **Option: sockets with valve to eliminate overpressure in the circuit**

   - **Models**: SPC 03, SPC 05, SPC 08, SPC 12
   - **Opening pressure at ± 5% (bar)**: 13, 6.5, 5, 4.3

We retain the right to carry out any modifications to our products without prior notice.