What is SpeedPorts?
**SpeedPorts** is an innovative and patented manufacturing system for block hydraulic cylinders.

SpeedPorts **dramatically increases** the oil flow on face-seal mounted O-Ring port cylinder while keeping the external dimensions of the cylinder **unchanged**. Thus creating unparalleled compact speed.
No performance difference between a SpeedPorts oil delivery and a typical threaded oil delivery.

Now you can have an extremely compact cylinder with the same speed as a much bigger one.
Pressure Drop vs. Speed

Each hydraulic circuit has pressure drops consequent to oil flow in:

- Valves
- Connectors
- Pipes
- Fittings
- Holes drilled on mold plates
- Cylinder oil ports

Therefore, to calculate oil pressure available inside of the cylinder:

\[
\text{Pump Pressure Output} - \text{Oil Ports} - \text{Overall Circuit Loss (other items above)} = \text{Pressure Available}
\]
Example: Cylinder **without** SpeedPorts

- Oil port size: **6 - 8 mm**
- Cylinder Rod Speed: **0.3 m/s**
- Oil Pump Output Pressure: **120 bar**

\[
\text{Pump Pressure Output - Oil Ports - Overall Circuit Loss} = \text{Pressure Available}
\]

\[
120 \text{ bar} - 20 \text{ bar} - \sim 15 \text{ bar} = 75 \text{ bar}
\]
Example: Cylinder with SpeedPorts

- Oil port size: **14 mm**
- Cylinder Rod Speed: **0.3 m/s**
- Oil Pump Output Pressure: **120 bar**

\[
\text{Pump Pressure Output} - \text{Oil Ports} - \text{Overall Circuit Loss} = \text{Pressure Available}
\]

\[
120 \text{ bar} - 2 \text{ bar} - \sim 15 \text{ bar} = 103 \text{ bar}
\]
What’s the difference?

**With SpeedPorts:**

- Much more pressure left (**103 bar**), therefore...
  - Faster
  - Stronger
  - Safer

**Without SpeedPorts:**

- Much less pressure left (**75 bar**), therefore...
  - Less fast
  - Less
  - Less safe
What’s the difference?
May The **Force** Be With You!

<table>
<thead>
<tr>
<th></th>
<th>Oil Pressure bar</th>
<th>Oil Flow l/min</th>
<th>Bore mm</th>
<th>Stroke mm</th>
<th>Cylinders no.</th>
<th>Speed m/s</th>
<th>Pressure loss bar</th>
<th>Cycle time s</th>
<th>Force N</th>
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<tbody>
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<td>SpeedPorts</td>
<td>150</td>
<td>125</td>
<td>40</td>
<td>200</td>
<td>2</td>
<td>0.83</td>
<td>8.00</td>
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<td>17.505</td>
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<td>0.83</td>
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<tr>
<td>Standard Cylinder</td>
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<td>20.00</td>
<td><strong>1</strong></td>
<td><strong>16.026</strong></td>
</tr>
</tbody>
</table>
May The **Force** Be With You!

- Standard cylinders present huge pressure drops (Δ -69 bar) at the same speed (0.8 m/s)
- To obtain almost the same force (but not quite; 16 N vs. 17.5 N) a standard cylinder has to move twice as slow (0.4 m/s vs. 0.83 m/s), **doubling** cycle times (0.48 s vs. 1 s)
- Of course, this difference is valid for any bore, since **SpeedPorts** will always have **more oil delivery** than a standard cylinder of the same size
The Quest for Savings

- A SpeedPorts cylinder can then move **two to three times faster** than a standard cylinder.
- Mold cycle times can drop of about 10%, leading to **huge savings** in the long run.
Hamlet’s Dilemma, also known as: Fast and Furious or Slow and Cheap?

It may seem that SpeedPorts requires a higher overall cost, due to a larger circuit, larger valves, pumps, and so on.

A cylinder with SpeedPorts technology, though, costs just as little as a standard cylinder: therefore the user can decide whether to go faster (with a theoretical extra cost for a larger circuit) or keep the speed as it is.

Actually, SpeedPorts puts a knife in the hands of the mold maker. Why?
Mold Maker vs. Mold User

- Mold makers usually are on a limited budget, but want to provide a safe solution (even if slower) to safeguard their good name and avoid troubles.

- Now mold makers are in the position of negotiating: does the user want more speed? He can pay more. If the user accepts to be limited to the same speed, he can pay the same but get longer life.

- Mold users want efficiency and profit. The cost of a larger circuit and pump to go faster will be negligible when compared to the profits and pieces made.

- They don’t care how long the cylinder will last, if that’ll make them save time.
Are SpeedPorts Cylinders **Compatible** with Other Brands?

- SpeedPorts is applied to V500 CZ cylinders with either **manifold** or **threaded** oil ports.
- Our V500 CZ has been designed to adhere to the European standards for block cylinders, and is therefore **compatible with other manufacturers’ products** (like AHP, HEB, some Meusburger cylinders, and HPS with the use of flanges).
Isn’t High Speed a Risk to be Avoided?

• V500 CZ can reach a speed of 1 m/s even on low oil pressure with an unloaded rod. The fastest comparable standard cylinder barely reaches 0.5 m/s.

• Our cushioning system, which is hydraulic and highly effective, and not just a rubber bumper like some others, fits the SpeedPorts technology perfectly.

• It dissipates the high impact energy at both stroke ends, allowing the cylinder to reach higher speeds without risks of failure.
For sales and support in the United States contact:

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