BETE has developed an innovative solution to expand spray dryer capacity up to 10,000 psi with our new high pressure Twist & Dry (TD-K) nozzle equipped with a PEEK (polyetheretherketone) backup ring.

**Product Name:**
TD-K for high pressure applications.
Includes models TD-7K (up to 7,000 psi) and TD-10K (up to 10,000 psi)

**Advancements from Current Line:**
New high pressure capacity; increased from 3,500 psi to 10,000 psi

**Operating Conditions:**
- TD-10K: up to 10,000 psi at temperatures up to 450°F; achieved with a PEEK backup ring and Duplex 2205 carrier
- TD-7K: up to 7,000 psi at temperatures up to 450°F; achieved with a PEEK backup ring

**Customer Requirements:**
Spray dryer operators have reported that they can increase yield by operating at higher pressures.

**BETE’s Solution:**
By modifying the TD body to take a backup ring, BETE developed the TD-K configuration which allows leak-proof operation up to 10,000 psi.

**Benefits:**
- Operate at high pressures and temperatures
- Greater yield capacity
- Safe, leak-proof operation
- Minimal additional cost

**Technical Questions?**
Please contact:
Jacob Callery
Applications Engineering
(jcall@bete.com)
413-772-2166 x 113

**High Pressure TD-K Components:**
- PEEK Backup Ring
- Silicone O-ring
- Duplex 2205 Carrier
- Viton O-ring also available

[www.bete.com/td-k.html](http://www.bete.com/td-k.html)
# Twist & Dry Material Selection Guide

<table>
<thead>
<tr>
<th>Maximum Pressure</th>
<th>Temperature</th>
<th>Material Selection</th>
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</thead>
<tbody>
<tr>
<td>bar</td>
<td>psi</td>
<td>up to 400°F (204°C)</td>
</tr>
<tr>
<td>689</td>
<td>10,000</td>
<td>TD-10K</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Viton 90 O-ring w/ PEEK Backup Ring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carrier in Duplex 2205</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TD-10K only available in Carriers 5, 11 and 12</td>
</tr>
<tr>
<td>483</td>
<td>7,000</td>
<td>TD-7K</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Viton 90 O-ring w/ PEEK Backup Ring</td>
</tr>
<tr>
<td>241</td>
<td>3,500</td>
<td>TD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Viton 90 O-ring</td>
</tr>
<tr>
<td>55</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Silicone O-ring</td>
</tr>
</tbody>
</table>

### Material Guide

- **Viton 90 O-ring w/ PEEK Backup Ring**: Ideal for moderate temperatures and pressures.
- **Silicone O-ring**: Suitable for applications requiring high temperature resistance.
- **Duplex 2205 Carrier**: Recommended for environments with aggressive media.

### Carriers

- **Carrier 1 (CI1)** (shown)
- **Carrier 11 (CI11)** - without lugs
- **Carrier 2 (CI2)** (shown)
- **Carrier 5 (CI5)** - without lugs
- **Carrier 10 (CI10)** (shown)
- **Carrier 12 (CI12)** - without lugs

### Part Number Structure

- **¼ TD 2 - 025 - CI11 - 7K - 45 - B @7H**

#### Pressure

- **7K** if pressure is greater than 3,500 psi and less than or equal to 7,000 psi; needs PEEK backup ring
- **10K** if pressure is greater than 7,000 psi and less than or equal to 10,000 psi; needs PEEK backup ring + Duplex 2205 carrier material

#### Temperature

- **45** if temperature is greater than 400°F (204°C) and less than or equal to 450°F (232°C); needs Silicone O-ring