# Electric 3-way valve

**Type CTR 20**

<table>
<thead>
<tr>
<th>Main application:</th>
<th>Refrigerant: R744 for other refrigerants contact Danfoss</th>
<th>Ambient temperature:</th>
<th>Fluid temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat reclaim</td>
<td></td>
<td>Min. -40 °C / -40 °F</td>
<td>Min. 0 °C / 32 °F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. 60 °C / 140 °F</td>
<td>Max. 150 °C / 302 °F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stepper motor type:</th>
<th>Max working pressure:</th>
<th>Total full steps:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bipolar</td>
<td>140 Bar / 2030 psig</td>
<td>6600</td>
</tr>
</tbody>
</table>

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<tr>
<th>Phase Current:</th>
<th>Coil resistance:</th>
<th>Step rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 mA RMS / 141 mA Peak</td>
<td>52 Ohm ±10% (25 °C)</td>
<td>75 stp./sec.</td>
</tr>
</tbody>
</table>

**Note!**
Valves are delivered in approximately half opened position and is ready for brazing.

**Warning!**
Do not connect directly to AC / DC power source. Connect valve to appropriate controller/driver only. Do not operate valve while assembling or disassembling.

### Flow direction

**A.**
1 in 2 outs

**B.**
2 in 1 out

For more information on the product, please scan the QR code.
Recommendation: Solder nozzle 4 - 6 mm N (5/32 in - 15/64 in)
Materials used for brazing:
- Flux: Metalli tenacity No. 5 Powder or Braze Tec special h paste.
- Filler: Silver-Flo 55 (BS/AG 14/ DIN L-Ag55 Sn) or Silver-Flo 56 (AWS B Ag-7).
- Filler metals containing Phosphor i.e. BS: CP 1/ DIN L-Ag 15P or BS: CP 3/ DIN L-Ag P7 must not be used.

Recommendation for TIG welding
- Power approximately 60A.
- Use Shield gas charge - Argon.
- Material for welding - approximately 2 mm thick stainless steel alloy.
Electrical connections

A1 and A2 = coil I  
B1 and B2 = coil II

Warning /

For your own notes
1. Unskrew the big nut with 5 rotations.
   Spanner: 72 mm / 2.8 in

2. Lift the motor with a screwdriver until it is loose.

3. Unscrew the big nut fully.

4. Service kit with 3 O-rings
   Code no. 027H7248
   
   - Green dot
   - Red dot
   - No color

5. Align
   The “fixing” pin must be placed in the gap

6. Max. torque: 130 Nm / 95.9 ft-lbf