Standard solutions for CNC press brakes
CE and non CE design

Standard electrohydraulic solutions for CNC synchronized press brakes are available in three sizes with different executions:

- PB06, solution with central block design for small / medium machines, including:
  - central manifold with proportional pressure control, size 06 synchronization servoproportional valves, safety valves.
- PB10, solution with modular blocks design for medium / big machines, including:
  - size 16 or 25 pressure control block
  - n°2 size 10 synchronization control blocks, at choice to be installed on the prefilling blocks or assembled in any other point of the press brake.
- PB11, solution like PB10, but with size 10P pilot operated proportional directional valves for synchronization control with high flow performances

PB*-*C designs are CE certified by TÜV according to the EN 12622.
PB*-*N are non CE version, without monitored safety valves.

See sections (1) and (5) for blocks composition and available proportional controls.

### MODEL CODE OF BLOCKS SOLUTION

<table>
<thead>
<tr>
<th>PB</th>
<th>06</th>
<th>N</th>
<th>HTEB</th>
<th>NP</th>
</tr>
</thead>
</table>
| Press brake solution
| Size and design
| 06= size 06, central block
| 10= size 10, modular block
| 11= size 10P, modular block
| Design certified
| C = CE certified
| N = non CE

Double solenoid, 3 position, w/o driver and transducer
(driver functions included in machine CNC or by separated driver)

- HE = ZE solenoid
- HA = ZO solenoid

Double solenoid, 3 position, with transducer
- HT = without driver (1)
- HTE = analog driver
- HTEB = basic digital driver
- HTES = full digital driver with optional fieldbus interfaces

Single solenoid, 4 position, sleeve execution with fail safe
- LT = without driver (1)
- LTE = analog driver
- LTEB = basic digital driver
- LTES = full digital driver with optional fieldbus interfaces

(1) including separated card driver E-ME-T-2"H (Eurocard format)

### MODEL CODE OF PREFILLING BLOCKS

| PFB | 25 |
| Prefilling block

Prefilling size (2)

- 25, 32, 40 normally coupled with solution type PB06
- 50, 63 normally coupled with solution type PB10 (11)

(2) Other prefilling sizes or based on customized mounting surfaces available on request
3 BASIC FOR THE SIZING OF THE BLOCKS SOLUTIONS

<table>
<thead>
<tr>
<th>Pressing Force (kN)</th>
<th>Pump flow (l/min)</th>
<th>Working pressure (bar)</th>
<th>Block solution model code</th>
<th>Proportional valve nominal flow at Δp 15 bar per edge (l/min)</th>
<th>Typical Prefilling valve size</th>
<th>Nominal prefilling flow in suction condition (l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 - 1250</td>
<td>Up to 50</td>
<td>Up to 315</td>
<td>PB06-*-16 all models</td>
<td>28, 40, 50 for control type HE, HA, HT, HTE, HTEB, HTES</td>
<td>25</td>
<td>150</td>
</tr>
<tr>
<td>1250 - 2000</td>
<td>Up to 100</td>
<td></td>
<td>PB10-*-16 all models</td>
<td>9, 18, 27 for control type LT, LTE, LTHE, LTES</td>
<td>225</td>
<td>32</td>
</tr>
<tr>
<td>2000 - 3000</td>
<td>Up to 150</td>
<td></td>
<td>PB10-*-16 all models</td>
<td>60, 80, 105 for control type HA, HTE, HTEB, HTES</td>
<td>150</td>
<td>40</td>
</tr>
<tr>
<td>3000 - 6000</td>
<td>Up to 200</td>
<td></td>
<td>PB10-*-25</td>
<td>40, 60 for control type LT, LTE, LTHE, LTES</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>6000 - 10000</td>
<td>Up to 220</td>
<td></td>
<td>PB10-*-25</td>
<td></td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>10000 - 15000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>800</td>
<td>80</td>
</tr>
</tbody>
</table>

Note: The above data are indicative. The sizing of the block solutions must be checked by Atos according to the specific machine characteristics.

4 MAIN CHARACTERISTICS

- Ambient temperature: -20°C to +70°C for -A execution; -20°C to +60°C for -T, -TE, -TEB and -TES executions.
- Fluid: Hydraulic oil as per DIN 51524 ..., 535
- Recommended viscosity: 15 ÷ 100 mm²/s at 40°C (ISO VG 15 ÷ 100)
- Fluid contamination class: ISO 18/15, achieved with in line filters at 10 μm value to β10 ≥ 75 (recommended)
- Fluid temperature: -20°C +60°C

5 BLOCKS ASSEMBLING

<table>
<thead>
<tr>
<th>Control block solution</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB06-<em>-HE P</em>-16</td>
<td>N° 1 central synchro block with size 06 proportional valves without transducer, driver functions integrated in the machine CNC, and size 16 proportional pressure control.</td>
</tr>
<tr>
<td>PB06-<em>-HA P</em>-16</td>
<td>N° 1 central block with size 06 double solenoid proportional valves with position transducer and size 16 proportional pressure control. N° 1 Eurocard driver E-ME-T-25H.</td>
</tr>
<tr>
<td>PB06-<em>-HT P</em>-16</td>
<td>as PB06-*-HT but with size 06 servopropotional valves with transducer and integral electronics: analog (HTE), digital basic (HTEB), digital full with optional fieldbus interfaces (HTES)</td>
</tr>
<tr>
<td>PB06-<em>-HTE P</em>-16</td>
<td>as PB06-*-HT but with size 06 servopropotional valves, 4 position, sleeve execution, with transducer.</td>
</tr>
<tr>
<td>PB06-<em>-LTE L</em>-16</td>
<td>as PB06-*-HT but with size 10 single solenoid servopropotional valves, 4 position, sleeve execution, with transducer and integral electronics: analog (LTE), digital basic (LTEB), digital full with optional fieldbus interfaces (LTES)</td>
</tr>
</tbody>
</table>
### Control block solution

<table>
<thead>
<tr>
<th>Composition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB10-<em>-HE P</em>-16, PB10-<em>-HE P</em>-25, PB10-<em>-HA P</em>-16, PB10-<em>-HA P</em>-25</td>
<td>N° 1 proportional pressure control block size 16 or size 25 📊, N° 2 synchronization blocks 📊 with size 10 proportional valves without transducer, driver functions integrated in the machine CNC.</td>
</tr>
<tr>
<td>PB10-<em>-HT P</em>-16, PB10-<em>-HT P</em>-25</td>
<td>N° 1 proportional pressure control block size 16 or size 25 📊, N° 2 synchronization blocks 📊 with size 10 servoproportional valves with transducer, N° 1 Eurocard driver E-ME-T-21H</td>
</tr>
<tr>
<td>PB10-<em>-HTE P</em>-16, PB10-<em>-HTEB P</em>-16, PB10-<em>-HTE P</em>-16, PB10-<em>-HTEB P</em>-16, PB10-<em>-HTEP P</em>-16, PB10-<em>-HTEB P</em>-16, PB10-<em>-HTEP P</em>-16</td>
<td>as PB10-*-HT but with size 10 servoproportional valves, with transducer and integral electronics: analog (HTE), digital basic (HTEB), digital full with optional fieldbus interfaces (HTES)</td>
</tr>
<tr>
<td>PB10-<em>-LT L</em>-16, PB10-<em>-LT L</em>-25</td>
<td>as PB10-*-HT but with size 10 single solenoid servoproportional valve, 4 position, sleeve execution, with position transducer</td>
</tr>
<tr>
<td>PB10-<em>-LTE L</em>-16, PB10-<em>-LTE L</em>-25</td>
<td>as PB10-*-HT but with size 10 single solenoid servoproportional valve, 4 position, sleeve execution, with position transducer and integral electronics: analog (LTE), digital basic (LTEB), digital full with optional fieldbus interfaces (LTES)</td>
</tr>
<tr>
<td>PB11-<em>-HT P</em>-25</td>
<td>as PB10-*-HT but with size 10P pilot operated servoproportional valve, with position transducer</td>
</tr>
<tr>
<td>PB11-<em>-HTE P</em>-25, PB11-<em>-HTEB P</em>-25, PB11-<em>-HTE P</em>-25, PB11-<em>-HTEB P</em>-25, PB11-<em>-HTEP P</em>-25, PB11-<em>-HTEB P</em>-25, PB11-<em>-HTEP P</em>-25</td>
<td>as PB10-*-HT but with size 10P pilot operated servoproportional valve, with position transducer and integral electronics: analog (HTE), digital basic (HTEB), digital full with optional fieldbus interfaces (HTES)</td>
</tr>
</tbody>
</table>

### Prefilling block model code

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFB-25, 32, 40</td>
<td>Separated prefilling blocks 📊, size 25, 32, 40 to be selected according to the machine characteristics - normally coupled with PB06 solution</td>
</tr>
<tr>
<td>PFB-50, 63</td>
<td>Prefilling blocks 📊, size 50 or 63 to be selected according to the machine characteristics - normally coupled with PB10, PB11 solution</td>
</tr>
</tbody>
</table>
6 CENTRAL BLOCK DESIGN TYPE PB06

6.1 Certified hydraulic scheme -C (with -HE proportional control type)

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves \( \bullet \) and \( \bullet \)

6.2 Installation dimensions of PB06-*-HE central block

Dotted line = PB06-C execution

Fastening bolts:
2 socket head screw M8x110 class 12.9

Port dimensions:
\( P1 = G \ 1/2" \)
\( P2 = G \ 1/2" \) (plugged)
\( T = G \ 3/4" \)
\( T1 = G \ 1/2" \)
\( A / A1 / A2 = G \ 3/8" \)
\( B = G \ 3/8" \)
\( B1 / B2 = G \ 1/2" \)
\( M* = G \ 1/4" \)
6.3 Certified hydraulic scheme -C (with -HA proportional control type)

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ① and ④.

6.4 Installation dimensions of PB06-*-HA central block

Dotted line = PB06-C execution

Fastening bolts:
2 socket head screw M8x110 class 12.9

Port dimensions:
P1 = G 1/2”
P2 = G 1/2” (plugged)
T = G 3/4”
T1 = G 1/2”
A / A1 / A2 = G 3/8”
B = G 3/8”
B1 / B2 = G 1/2”
M* = G 1/4”
### 6.5 Certified hydraulic scheme -C (with -HT, -HTE proportional control type)

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Atlas code</th>
<th>-N</th>
<th>-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUBPLATE</td>
<td>DHE-0631/2/FV-X</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>2.1</td>
<td>SAFETY VALVE</td>
<td>DHE-0631/2-X</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>2.2</td>
<td>DIRECTIONAL VALVE</td>
<td>DHE-0631/2-X</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>3.1</td>
<td>PROP. RELIEF VALVE</td>
<td>DHO-TE-071-L*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>3.2</td>
<td>PROP. RELIEF VALVE</td>
<td>DHO-TE-071-L*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>4</td>
<td>SAFETY PRESSURE RELIEF VALVE</td>
<td>CART M4050RS</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>5</td>
<td>BALANCING VALVE</td>
<td>CART M4050SR</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>6.1</td>
<td>SAFETY VALVE</td>
<td>JO-DL-4-JPV-X</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>6.2</td>
<td>CARTRIDGE</td>
<td>JO-DL-4-JNC-X</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>7</td>
<td>CHECK VALVE</td>
<td>DR-5/G</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>8</td>
<td>PROP. RELIEF VALVE</td>
<td>UMZ0-A-3/15/18</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>9</td>
<td>CARTRIDGE</td>
<td>15-KM-03680</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>10</td>
<td>MINNESS</td>
<td>Y-AK-04-GOR</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>11</td>
<td>PREFILLING VALVE</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ③ and ④.

### 6.6 Installation dimensions of PB06-*-HT(E) central block

**Dotted line = HTE proportional control type**

**ZH-7P**
Power supply connector metallic or plastic, to be ordered separately.

**ZBE-06**
Sensor plastic connector, to be ordered separately.

Safety valves with monitor signal only for -C execution.

Fastening bolts:
2 socket head screw M8x110 class 12.9

Port dimensions:
- \( P_1 = G \ 1/2" \)
- \( P_2 = G \ 1/2" \) (plugged)
- \( T = G \ 3/4" \)
- \( T_1 = G \ 1/2" \)
- \( A / A1 / A2 = G \ 3/8" \)
- \( B = G \ 3/8" \)
- \( B_1 / B_2 = G \ 1/2" \)
- \( M* = G \ 1/4" \)
6.7 Certified hydraulic scheme -C (with -HTEB, -HTES proportional control type)

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Atlas code</th>
<th>N</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUBPLATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>SAFETY VALVE</td>
<td>DHE-063/10/FV-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>DIRECTIONAL VALVE</td>
<td>DHE-063/10-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>PROPORTIONAL VALVE</td>
<td>03086 DHEO-DTEB-NP-071-L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>PROPORTIONAL VALVE</td>
<td>03086 DHEO-DES-NP-071-L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SAFETY PRESSURE RELIEF VALVE</td>
<td>CART M4/05R5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>BALANCING VALVE</td>
<td>CART M4/05R5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>SAFETY VALVE</td>
<td>JO-DL-4-3PV-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>CARTRIDGE</td>
<td>JO-DL-4-2NC-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>CHECK VALVE</td>
<td>DR-5/G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PROP. RELIEF VALVE</td>
<td>UHMC-A-1/315/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>CARTRIDGE</td>
<td>15-KM-6026B</td>
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<tr>
<td>10</td>
<td>MINMESS</td>
<td>Y-AX-04-GOR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>PREFILLING VALVE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ③ and ④.

6.8 Installation dimensions of PB06-^HTES central block

![Diagram showing installation dimensions]

Fastening bolts:
2 socket head screw M8x110 class 12.9

Port dimensions:
- \( P1 = G \ 1/2" \)
- \( P2 = G \ 1/2" \) (plugged)
- \( T = G \ 3/4" \)
- \( T1 = G \ 1/2" \)
- \( A / A1 / A2 = G \ 3/8" \)
- \( B = G \ 3/8" \)
- \( B1 / B2 = G \ 1/2" \)
- \( M* = G \ 1/4" \)

Sensor plastic connector, to be ordered separately.

Safety valves with monitor signal only for -C execution.
6.9 Certified hydraulic scheme -C (with -LT, -LTE proportional control type)

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Atos code</th>
<th>N</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUBPLATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>SAFETY VALVE</td>
<td>DHE-0631/2FV-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>DIRECTIONAL VALVE</td>
<td>DHE-0631/2X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>SERVOPROPORTIONAL VALVE</td>
<td>DLHZO-T-040-L*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>SERVOPROPORTIONAL VALVE</td>
<td>DLHZO-TE-040-L*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SAFETY PRESSURE RELIEF VALVE</td>
<td>CART M4/350RS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>BALANCING VALVE</td>
<td>CART M4/350R</td>
<td></td>
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<tr>
<td>6.1</td>
<td>SAFETY VALVE</td>
<td>JO-DL-4-2FV-X</td>
<td></td>
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</tr>
<tr>
<td>6.2</td>
<td>CARTRIDGE</td>
<td>JO-DL-4-2NC-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>CHECK VALVE</td>
<td>DR-5/G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PROP. RELIEF VALVE</td>
<td>LMZO-A-1/3/16/18</td>
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</tr>
<tr>
<td>9</td>
<td>CARTRIDGE</td>
<td>15-KM-05/80</td>
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<tr>
<td>10</td>
<td>MINIMESS</td>
<td>Y-AK-04-GOR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>PREFILLING VALVE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ① and ②.

6.10 Installation dimensions of PB06-*-LT(E) central block

Dotted line = LTE proportional control type

Fastening bolts:
2 socket head screw M8x110 class 12.9

Port dimensions:
P1 = G 1/2"  P2 = G 1/2" (plugged)
T = G 3/4"
T1 = G 1/2"
A / A1 / A2 = G 3/8"
B = G 2/8"
B1 / B2 = G 1/2"
M* = G 1/4"

Sensor plastic connector, to be ordered separately

Safety valves with monitor signal only for -C execution

Power supply connector metallic or plastic, to be ordered separately
6.11 Certified hydraulic scheme -C (with -LTEB, -LTES proportional control type)

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Atlas code</th>
<th>N</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUBPLATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>SAFETY VALVE</td>
<td>DHE-0631/0/FV-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>DIRECTIONAL VALVE</td>
<td>DHE-0631/02-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>SERVOPROPORTIONAL VALVE</td>
<td>DLHZ0-TEB-NP-040-L*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>SERVOPROPORTIONAL VALVE</td>
<td>DLHZ0-TESS-NP-040-L*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SAFETY PRESSURE RELIEF VALVE</td>
<td>CART MA350RS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>BALANCING VALVE</td>
<td>CART MA350R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>SAFETY VALVE</td>
<td>JO-DL-4-2-FV-X</td>
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<td></td>
</tr>
<tr>
<td>6.2</td>
<td>CARTRIDGE</td>
<td>JO-DL-4-2-FVC-X</td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>CHECK VALVE</td>
<td>DR-5/G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PROP. RELIEF VALVE</td>
<td>LMZ0-A-1/3/16/18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>CARTRIDGE</td>
<td>15-KM-503800</td>
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<td></td>
</tr>
<tr>
<td>10</td>
<td>MINMESS</td>
<td>Y-AK-04-GR</td>
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<td></td>
</tr>
<tr>
<td>11</td>
<td>PREFILLING VALVE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ③ and ⑤.

6.12 Installation dimensions of PB06-*-LTES central block

- Fastening bolts: 2 socket head screw M8x110 class 12.9
- Port dimensions:
  - P1 = G 1/2"  P2 = G 1/2" (plugged)
  - T = G 3/4"
  - T1 = G 1/2"
  - A / A1 / A2 = G 3/8"
  - B = G 3/8"
  - B1 / B2 = G 1/2"
  - M* = G 1/4"
- Sensor plastic connector, to be ordered separately
- Safety valves with monitor signal only for -C execution
7 MODULAR BLOCK DESIGN TYPE PB10

7.1 Certified hydraulic scheme -C (with -HE proportional control type)

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑨

7.2 Installation dimensions of PB10-*-HE synchronization block (for pressure control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1"  P1 = G 1" (plugged)
T = G 1 1/4"
A / A1 = G 3/4"
B / B1 = G 1"
M* = G 1/4"

Dotted line = PBBC execution

ZBE-06
Sensor plastic connector to be ordered separately
7.3 Certified hydraulic scheme -C (with -HA proportional control type)

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ① and ⑤

7.4 Installation dimensions of PB10-**-HA synchronization block (for pressure control blocks see section 9.2)
7.5 Certified hydraulic scheme -C (with -HT, -HTE proportional control type)

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ⑪ and ⑫.

7.6 Installation dimensions of PB10-*HT(E) synchronziation block (for pressure control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1" P1 = G 1" (plugged)
A / A1 = G 3/4"
B / B1 = G 1"
M* = G 1/4"

Dotted line = HTE execution

ZBE-06
Sensor plastic connector to be ordered separately
7.7 Certified hydraulic scheme -C (with -HTEB, -HTES proportional control type)

Note: the -N solution has the same hydraulic scheme but without monitor signal on valves ① and ②.

7.8 Installation dimensions of PB10-**-HTES synchronization block (for pressure control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1"  P1 = G 1" (plugged)
T = G 1 1/4"
A / A1 = G 3/4"
B / B1 = G 1"
M* = G 1/4"

Hydraulic scheme

ZBE-06
Sensor plastic connector to be ordered separately
7.9 Certified hydraulic scheme -C (with -LT, -LTE proportional control type)

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
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<td>BALANCING VALVE</td>
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<td>8</td>
<td>CARTRIDGE</td>
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<td>9</td>
<td>SAFETY VALVE</td>
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<tr>
<td>10.1</td>
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<tr>
<td>11</td>
<td>CHECK VALVE</td>
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<td>12</td>
<td>MININESS</td>
<td>Y-AK-04-GDR</td>
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</table>

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves ⑤ and ⑥

7.10 Installation dimensions of PB10-*LT(E) synchronization block (for pression control blocks see section 9.2)

**SYNCHRONIZATION CONTROL BLOCK**

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1"
P1 = G 1" (plugged)
T = G 1 1/4"
A / A1 = G 3/4"
B / B1 = G 1"
M* = G 1/4"

**Hydraulic scheme**

Dotted line = TE proportional control type

**ZH-7P**
Power supply connector metallic or plastic, to be ordered separately

**ZBE-06**
Sensor connector plastic to be ordered separately

Safety valve with monitor signal only for -C execution
7.11 Certified hydraulic scheme -C (with -LTEB, -LTES proportional control type)

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves ③ and ④.

7.12 Installation dimensions of PB10-*-LTES synchronization block (for pression control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1”  P1 = G 1” (plugged)
T = G 1 1/4”
A / A1 = G 3/4”
B / B1 = G 1”
M* = G 1/4”

Hydraulic scheme

Safety valve with monitor signal only for -C execution

ZBE-06
Sensor connector plastic to be ordered separately
8.1 Certified hydraulic scheme -C (with -HT, -HTE proportional control type)

8.2 Installation dimensions of PB11-STAR synchronization block (for pressure control blocks see section 9.2)

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1"  P1 = G 1" (plugged)
T = G 1 1/4"
A / A1 = G 3/4"
B / B1 = G 1"
M* = G 1/4"

Dotted line = TE proportional control type

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves ③ and ⑥

---

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1"  P1 = G 1" (plugged)
T = G 1 1/4"
A / A1 = G 3/4"
B / B1 = G 1"
M* = G 1/4"

Dotted line = TE proportional control type

---

Hydraulic scheme
8.3 Certified hydraulic scheme -C (with -HTEB, -HTES proportional control type)

Note: the PBB solution has the same hydraulic scheme but without monitor signal on valves ⑧ and ⑨

8.4 Installation dimensions of PB11--HTES synchronization block (for pression control blocks see section 9.2)

SYNCHRONIZATION CONTROL BLOCK

Fastening bolts:
4 socket head screw M8x140 class 12.9

Port dimensions:
P = G 1"  P1 = G 1" (plugged)
T = G 1 1/4"
A / A1 = G 3/4"
B / B1 = G 1"
M* = G 1/4"

Hydraulic scheme

Safety valve with monitor signal only for -C execution

2H-4P/68
Sensor connector plastic to be ordered separately
9 PRESSURE CONTROL BLOCK (FOR PB-10 AND PB-11)

9.1 Hydraulic scheme of pressure control blocks for PB1*

Composition of pressure control block size 16

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Atos code</th>
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<th>C</th>
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<td>SUBPLATE</td>
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<td>CARTRIDGE</td>
<td>SC LI-16313</td>
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<tr>
<td>9</td>
<td>PROP. PRESSURE VALVE</td>
<td>LIMZO-A-1/315/18</td>
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<tr>
<td>10.1</td>
<td>SAFETY VALVE</td>
<td>DHE-0631/2/AFV-X</td>
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<td>10.2</td>
<td>DIRECTIONAL VALVE</td>
<td>DHE-0631/2/ANC-X</td>
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<td>CHECK VALVE</td>
<td>CART ADR-10</td>
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Composition of pressure control block size 25

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Atos code</th>
<th>N</th>
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<td>PROP. PRESSURE VALVE</td>
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<tr>
<td>10.1</td>
<td>SAFETY VALVE</td>
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<td>10.2</td>
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<td>11</td>
<td>CHECK VALVE</td>
<td>CART ADR-10</td>
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</tbody>
</table>

9.2 Installation dimensions of PB10 and PB11 pressure control blocks

PRESSURE CONTROL BLOCK size 16

Fastening bolts:
2 socket head screw M8x95 class 12.9

Port dimensions:
P = G 1"
T = G 1"
A = G 3/8"
B = G 3/8"
M2 = G 1/4"

PRESSURE CONTROL BLOCK size 25

Fastening bolts:
2 socket head screw M10x115 class 12.9

Port dimensions:
P = 1 1/4" SAE 6000
T = G 2"
A = G 3/8"
B = G 3/8"
M2 = G 1/4"
10.1 Certified hydraulic scheme with crowning option PB-06C (example with -HT* proportional control type)

Note: the PB06-N solution has the same hydraulic scheme but without monitor signal on valves 2 and 3.

10.2 Installation dimensions of PB06-* central block with crowning option (example with -T* proportional control type)

**CROWNING OPTION FOR CENTRAL BLOCK DESIGN TYPE PB06**

### Composition of crowning option

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
<th>Atos code</th>
<th>N</th>
<th>C</th>
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<td>SUBPLATE</td>
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<tr>
<td>13</td>
<td>CROWNING PROP. REDUCING VALVE</td>
<td>RZGD-A-033</td>
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</tbody>
</table>

**Dotted line = TE proportional control type**

**Crowning proportional reducing valve**

**SUBPLATE**
- Fastening bolts: 2 socket head screw M8x110 class 12.9
- Port dimensions:
  - P1 = G 1/2"
  - P2 = G 1/2" (connected to crowing block)
  - T = G 3/4"
  - T1 = G 1/2"
  - A / A1 / A2 = G 3/8"
  - B = G 3/8"
  - B1 / B2 = G 1/2"
  - M* = G 1/4"

**CROWNING BLOCK**
- Fastening bolts: 4 socket head screw M6x50 class 12.9
- Port dimensions:
  - C = G1/4"
  - MC = G1/4"
11 CROWNING OPTION FOR MODULAR BLOCK DESIGN TYPE PB1*

11.1 Installation dimensions of pressure control block with crowning option for PB1* solution

**Size 16**

For solution PB1* the crowning proportional reducing valve is installed on the pressure control block.

Fastening bolts:
2 socket head screw M8x115 class 12.9

Port dimensions:
- P = G 1”
- T = G 1”
- A = G 3/8”
- B = G 3/8”
- C = G 3/8”
- M2 = G 1/4”
- MC = G 1/4”

**Block’s hydraulic scheme**

Crowning proportional reducing valve type RZGO-A-033

**Size 25**

For solution PB1* the crowning proportional reducing valve is installed on the pressure control block.

Fastening bolts:
2 socket head screw M6x115 class 12.9

Port dimensions:
- P = G 1 1/4” SAE 3000
- T = G 2”
- A = G 3/8”
- B = G 3/8”
- C = G 3/8”
- M2 = G 1/4”
- MC = G 1/4”

**Block’s hydraulic scheme**

Crowning proportional reducing valve type RZGO-A-033
### INSTALLATION DIMENSIONS OF PREFILLING BLOCKS TYPE PFB-*

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Size</th>
<th>Dimensions</th>
<th>Bolts</th>
<th>Seal</th>
<th>Port</th>
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<td>PFB-32</td>
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<td>Ø2428</td>
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<td>PFB-40</td>
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<td>Ø5078</td>
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<td>OR 4237</td>
<td>G 3/8&quot;</td>
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</tbody>
</table>

**Cylinder surface**

**Hydraulic scheme**

**Model code**

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Size</th>
<th>Dimensions</th>
<th>Bolts</th>
<th>Seal</th>
<th>Port</th>
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</thead>
<tbody>
<tr>
<td>PFB-32</td>
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<td>Ø63</td>
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<td>OR 4237</td>
<td>G 3/8&quot;</td>
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</tbody>
</table>

**Cylinder surface**

**Hydraulic scheme**