HYDAC Compact Power Unit CO1 MF21
For auxiliary functions in machine tools

"Always ready for operation but without consuming any energy" – energy efficiency thanks to accumulator charging function

Area of application:
Accumulator charging function with integrated safety valve and accumulator pressure release

3/2 directional seat valve with check valves in the inlet and outlet

Integrated Stat-Free® pressure filter element for optimal oil quality

Stat-Free® filter element as standard to prevent damaging electrical charging

Possible to install accumulators up to 3.5l directly on the flange

Optional:
Control can be extended using ML function modules directly on the flange

Technical specifications

\[ P_{\text{max}} = \text{up to 250 bar} \]
\[ Q_{\text{max}} = \text{up to 20 l/min} \]

According to EN 60034-1 suitable for:

Short-term operation:
\[ S2 = 5 \text{ min}^* \text{ (average value)} \]

Intermittent operation:
\[ S3 = 20 \%^* \text{ (average value)} \]
Mounting position of power unit

H = horizontal  V = vertical

Model Code

<table>
<thead>
<tr>
<th>Power unit series</th>
<th>Flange control</th>
<th>Add-on equipment</th>
<th>Valve voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CO1</strong> H B05 - R - 2.4 - 170 - TSM</td>
<td>M F21 - DVCRT - CE150</td>
<td>M1/EDS3 - M2/MA2 - MA/M - PS/SBO5 + 24DG + ML</td>
<td></td>
</tr>
</tbody>
</table>

Example

- **Power unit**
  - **CO1**
  - **H** = horizontal
  - **B05** = length 165 mm
  - **R** = right
  - **2.4**
  - **170**
  - **TSM**

- **Flange control**
  - **M F21**
  - **DVCRT**
  - **CE150**

- **Add-on equipment**
  - **M1/EDS3**
  - **M2/MA2**
  - **MA/M**
  - **PS/SBO5**
  - **24DG**
  - **ML**

- **Valve voltage**
  - **+**
  - **24DG**
  - **230AG**
  - **Z4**

Motor / reservoir orientations

L = left  T = top  R = right

NOTE: Reservoir orientation T not possible when ML stacking valves are added

Oil reservoir (see table, page 3)

- B04 = length 165 mm
- B05 = length 220 mm
- B08 = length 340 mm
- B12 = length 500 mm

Motor / reservoir orientation

- **L** = left
- **T** = top
- **R** = right

Flow rate + pressure (see table on page 3)

- **03**
- 3 phase 230/400 V - 50 Hz
- 3 phase 257/480 V - 60 Hz

Motor voltage (see table page 3)

- **03**
- 3 phase 230/400 V - 50 Hz
- 3 phase 257/480 V - 60 Hz

Thermal overload

- no details, without thermal overload = standard
- **TSM** = thermal overload motor, set temperature 80 °C
- **TSO** = thermal overload oil, set temperature 80 °C

**Valves**

- **D** = mechanical accumulator release (DV5E)
- **W** = WSM 06020 W - 01
- **W** = WSM 06020 W - 01M
- **C** = WSM08130C w/o coil
- **D** = WSM08130D w/o coil
- **O** = without WSM08
- **R** = check valve (without RV, no details)
- **TR** = back-pressure in the return line

Pressure relief valve

- e.g. **250 V** = DB4E up to 250 bar (not pre-set)
- **250V200** = DB4E pre-set to 200 bar
- **CE150** = DB4E ... CE (CE approved) set to 150 bar

**Add-on equipment**

- **DS1** = mech. pressure switch 10-100 bar (connector not supplied)
- **DS2** = mech. pressure switch 50-200 bar (connector not supplied)
- **EDS3** = EDS 4446-2-250-000
- **EDS8** = EDS 4446-2-250-000

**Accumulator**

- **SBO1** = accumulator SBO210-0.16
- **SBO3** = accumulator SBO210-0.32
- **SBO5** = accumulator SBO210-0.5
- **SBO7** = accumulator SBO210-0.75

**Valve voltage**

- **24DG** = 24 V DC coil without connector
- **230AG** = 230 V AC coil without connector
- **Z4** = with connector Z4 (no details: no connector)

Build-on controls

- **ML** = function module from the ML range (see brochure no. 5.308 ML)

For further data: see brochure no. 5.306 CO1

* see circuit diagram on page 3
The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

HYDAC Fluidtechnik GmbH
Justus-von-Liebig-Str.
D-66280 Sulzbach/Saar
Tel: 0 68 97 /509-01
Fax.: 0 68 97 /509-577
E-Mail: flute@hydac.com

Dimensions

![Diagram showing dimensions](image)

**Specifications**

<table>
<thead>
<tr>
<th>P [kW]</th>
<th>No. of poles</th>
<th>L motor [mm]</th>
<th>ø motor [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.37</td>
<td>4</td>
<td>220 ± 5</td>
<td>141 ± 5</td>
</tr>
<tr>
<td>0.55</td>
<td>4</td>
<td>220 ± 5</td>
<td>141 ± 5</td>
</tr>
<tr>
<td>0.75</td>
<td>4</td>
<td>220 ± 5</td>
<td>141 ± 5</td>
</tr>
<tr>
<td>1.1</td>
<td>4</td>
<td>255 ± 5</td>
<td>159 ± 5</td>
</tr>
<tr>
<td>1.5</td>
<td>4</td>
<td>255 ± 5</td>
<td>159 ± 5</td>
</tr>
<tr>
<td>2.2</td>
<td>2</td>
<td>255 ± 5</td>
<td>159 ± 5</td>
</tr>
<tr>
<td>2.2*</td>
<td>4</td>
<td>280 ± 5</td>
<td>176 ± 5</td>
</tr>
<tr>
<td>3*</td>
<td>2</td>
<td>280 ± 5</td>
<td>176 ± 5</td>
</tr>
</tbody>
</table>

*On 2.2 and 3 kW motors the flange must have at least 15 mm of support.

**Flow rate:** up to 20.0 l/min

**Continuous pressure:** max. 250 bar

**Coil duty rating:** S2 (short-term operation) : 5 min
S3 (intermittent duty) : 20 %

**Motor:**
- PN = 0.37 kW ... 3.0 kW
- 4; 5.5 kW on request

**Motor voltages:**
- 3 phase 230/400 V - 50 Hz
- (other motor voltages on request, min. order 10 pcs.)

**Protection class:** DIN EN 60034-5 min IP54

**Pump displacement:** 1.0 cm³/rev ... 10.0 cm³/rev

**Reservoir volume:** 1.8 - 8.4 l
**Usable volume:** 1.2 - 7.8 l

**Operating fluid:** Hydraulic oil to DIN 51524 Part 2

**Temperature range of operating fluid:** -20 °C to max. +80 °C

**Ambient temperature range:** -20 °C to max. +40 °C

**Viscosity range:** 10 - 380 mm²/s is recommended

**Filtration:** Operating fluid to ISO 4406 Class 21/19/16 or cleaner

**Cooling:** Convection or air cooling

**Weight:** from 12 to 20 kg

**Installation:** Vertical, horizontal

*Reservoir length 58 L motor

*Oil reservoir support to be supplied by customer
Oil reservoir

<table>
<thead>
<tr>
<th>Reservoir code</th>
<th>Filling volume / Usable volume [l]**</th>
<th>Reservoir length [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B04</td>
<td>1.9 / 1.5 (R and L)</td>
<td>165 ± 5</td>
</tr>
<tr>
<td>B05</td>
<td>2.7 / 2.2</td>
<td>220 ± 5</td>
</tr>
<tr>
<td>B08</td>
<td>4.4 / 3.5</td>
<td>340 ± 5</td>
</tr>
<tr>
<td>B12</td>
<td>6.5 / 5.2</td>
<td>500 ± 5</td>
</tr>
</tbody>
</table>

* where mounted horizontally, support for oil reservoir must be provided by the customer – see dimensions
** cannot be selected if stacking valves are to be added
*** The usable volume given is the maximum value (achieved with a clean suction filter, low to medium flow rate and viscous fluid!)

Subject to modifications.

Flow rate and pressure

<table>
<thead>
<tr>
<th>Flow rate</th>
<th>Motor output at 3 – 50 Hz 230 / 400 V</th>
<th>Motor output at 3 – 60 Hz 257 / 480 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Hz</td>
<td>Motor code 03</td>
<td></td>
</tr>
<tr>
<td>60 Hz</td>
<td>0.37 kW [bar]</td>
<td>0.55 kW [bar]</td>
</tr>
<tr>
<td></td>
<td>0.75 kW [bar]</td>
<td>1.1 kW [bar]</td>
</tr>
<tr>
<td></td>
<td>1.5 kW [bar]</td>
<td>2.2 kW [bar]</td>
</tr>
<tr>
<td></td>
<td>3.0 kW [bar]</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>1.6</td>
<td>4</td>
</tr>
<tr>
<td>2.4</td>
<td>2.9</td>
<td>4</td>
</tr>
<tr>
<td>3.7</td>
<td>4.4</td>
<td>4</td>
</tr>
<tr>
<td>5.0</td>
<td>6.0</td>
<td>4</td>
</tr>
<tr>
<td>6.3*</td>
<td>7.6**</td>
<td>4</td>
</tr>
<tr>
<td>7.4</td>
<td>8.9</td>
<td>2</td>
</tr>
<tr>
<td>8.6*</td>
<td>10.3*</td>
<td>4</td>
</tr>
<tr>
<td>10.0</td>
<td>12.0</td>
<td>2</td>
</tr>
<tr>
<td>12.6*</td>
<td>15.1*</td>
<td>2</td>
</tr>
<tr>
<td>13.3*</td>
<td>16.0*</td>
<td>4</td>
</tr>
<tr>
<td>17.3*</td>
<td>20.7*</td>
<td>2</td>
</tr>
<tr>
<td>20.0*</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

4-pole motor types are low-noise

Circuit diagram

Example of ML build-on control

3D model of flange unit