Pneumatic gearwheel motors

PMW 160 - PMW 530
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<td>Lifting devices&lt;br&gt;Lifting winches</td>
</tr>
</tbody>
</table>

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Take a closer look at our Pneumatic Motors...

- rpm-adjustment by easy throttle control
- Direction change by way-valves with manual or remote control
- Higher start-torque than torque at max. power
- Save also in damp atmosphere and extreme climatical conditions
- With oiler for permanent operation and damp air
- Works with gas, air, nitrogen
- Special construction for operation with unoiled air
- Time-unlimited overload also at stand still
- Due standardized flange- and shaft dimensions exchangeable with electro-motors

![PMW530Z24PFA200](image)

### Pneumatic-Gearwheel-Motors PMW

<table>
<thead>
<tr>
<th>Type</th>
<th>Geom. air consumption Vg (cm³/U.)</th>
<th>Torque T (Nm)</th>
<th>Revolutions span n (rpm)</th>
<th>Operating pressure p (bar)</th>
<th>Power nominal P (kW)</th>
<th>Air consumption nominal Q (m³/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Start</td>
<td>Nominal</td>
<td>Nominal</td>
<td>maximal*</td>
<td>Nominal</td>
</tr>
<tr>
<td>PMW 160</td>
<td>155</td>
<td>10 - 15</td>
<td>9</td>
<td>3000</td>
<td>5000*</td>
<td>6</td>
</tr>
<tr>
<td>PMW 250</td>
<td>258</td>
<td>16 - 24</td>
<td>15</td>
<td>3000</td>
<td>5000*</td>
<td>6</td>
</tr>
<tr>
<td>PMW 400</td>
<td>387</td>
<td>23 - 34</td>
<td>22</td>
<td>3000</td>
<td>5000*</td>
<td>6</td>
</tr>
<tr>
<td>PMW 530</td>
<td>516</td>
<td>30 - 43</td>
<td>27</td>
<td>3000</td>
<td>5000*</td>
<td>6</td>
</tr>
</tbody>
</table>

* Maximum allowable speed, in relation to bearing, running at no-load.

The internal air ducts of the motor allow under load only a max. speed of \( n = 3000 \) rpm.

**Principle of function**

Series PMW 160 - PMW 530

Through different steering-covers gets the compressed air on two straight toothed steelrotors, which are in a casted housing with bearing for permanent operation. At the bringing down the drive rotor runs in a gearwheel of a beared and sealed drive shaft; by a transmission the revolutions can be reduced. The relaxed air escapes thread with silencer in the environment or will be recycled by the exhaust thread. In damp air a oiler is recommended to avoid corrosion.

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## Order key for pneumatic motors

### Type

#### Nominal size

- Consumed volume $V_g$: 160, 250, 400, 530

#### Drive off shaft

- Cylindrical with woodrufkey according DIN 6885
  - $\varnothing 24_{es} = Z24$
  - $\varnothing 28_{es} = Z28$

#### Exhaust leading

- Exhaust fitting in the open
  - Thread G 1 1/2 = W
  - Thread G 1 1/2 with silencer = WS

#### Steering / Control

- One defined direction - left or right
  - Left direction - looking to the drive off shaft = EL
  - Right direction - looking to the drive off shaft = ER

- Two directions with additional exhaust thread or - fitting
  - 2 radial connections = PU
  - 2 radial connections and additional steering connections G1/4 = PU1

- With integrated valves, pneumatic or manual control of the direction:
  - Pneumatic change of direction = PF
  - Manual control lever left (face to air supply) = ML
  - Manual control lever right (face to air supply) = MR

### Drive off flange

- Dimensions according IEC 72 part 7 (electro motors) according DIN 42948
  - Outer dia 200, fixing dia 165 with 8 holes dia 11, central dia 130g6 = A200
  - Outer dia 250, fixing dia 215 with 8 holes dia 11, central dia 180g6 = A250
  - Outer dia 300, fixing dia 265 with 4 holes dia 11, central dia 230g6 = A300
  - Outer dia 350, fixing dia 300 with 4 holes dia 11, central dia 250g6 = A350
  - Outer dia 160, fixing dia 130 with 4 holes M8x14deep, central dia 110g6 = B14
  - Feet B3 size 100L = F

### Accessories

- Drive-off flange, foot execution, silencer, speed regulation, ball valve, dirty trap sleeve, spring operating multi disk brake

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1) Motor version: **One direction** EL / ER Operating with sphere valve POS 7

  - Left running EL
  - Right running ER

2) Motor version: **One direction** EL / ER Operating with way-valve POS 8. Manual or electrical steering

  - Left running EL
  - Right running ER

3) Motor version: **Two directions** PU The external valve POS 12 has three conditions: Closed, left switched, right switched. Manual or electrical steering
4) Motor version: Two directions ML / MR Two directions, with integrated 4/3 way valve and manual control.

   hand lever left ML
   hand lever right MR

5) Motor version: Two directions PF Two directions, with integrated 4/3 way valve and pneumatic control. The control valve POS 11 can be switched manual or electrical.

* In damp air we recommend an oiler

<table>
<thead>
<tr>
<th>POS</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pneumatic Motor</td>
<td>PMW EL / ER</td>
</tr>
<tr>
<td>2</td>
<td>Pneumatic Motor</td>
<td>PMW ML / MR</td>
</tr>
<tr>
<td>3</td>
<td>Pneumatic Motor</td>
<td>PMW PF</td>
</tr>
<tr>
<td>4</td>
<td>Pneumatic Motor</td>
<td>PMW PU</td>
</tr>
<tr>
<td>5</td>
<td>Pressure Regulator</td>
<td>G3/4 or G1</td>
</tr>
<tr>
<td>6</td>
<td>Dirt trap</td>
<td>G1 or G1 1/2</td>
</tr>
<tr>
<td>7</td>
<td>Sphere valve</td>
<td>G3/4 or G1</td>
</tr>
<tr>
<td>8</td>
<td>Way valve</td>
<td>G3/4 or G1</td>
</tr>
<tr>
<td>9</td>
<td>3/2 way valve</td>
<td>DN 7</td>
</tr>
<tr>
<td>10</td>
<td>Oiler</td>
<td>G3/4 or G1</td>
</tr>
<tr>
<td>11</td>
<td>4/3 way valve</td>
<td>DN 7</td>
</tr>
</tbody>
</table>
| 12  | 4/3 way valve        | G3/4 or G1                           | ev. sphere valve

The connection-lines from the air supply to the pneumatic motor at max. motor power:

PMW 160 - PMW 250 = G1
PMW 400 - PMW 530 = G1 1/2

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Pneumatic gearwheel motor
PMW 160

Operating instructions and maintenance on separate datasheet Nr.: 02.000.087AE
Lubrication instructions and oil changes of planetary gear on separate datasheet No: PG1 - 010E

Motor characteristics

- Geometric displacement volume: $V_g = 155$ ccm/rev
- Nominal pressure: $p_N = 85$ PSI
- Max. operating pressure: $p_{max} = 140$ PSI
- Nominal speed: $n_N = 3000$ rpm
- Max. speed: $n_{max} = 4000$ rpm

Technical data at $n = 3000$ rpm ; $p = 6$ bar
- Nominal air consumption: $Q_{abs} = 3.9$ Nm$^3$/min
- Nominal torque: $T_N = 9$ Nm
- Min. start torque: $T_A = 10$ Nm
- Max. start torque: $T_A = 15$ Nm
- Nominal power: $P_N = 2.8$ kW

Pressure medium:
- Compressed air
  - if the compressed air is damp, we recommend an oiler.
- Nitrogen, natural gas etc.
  - in case of order please indicate the medium.

Mounting position: any

Direction of rotation: Looking at drive off shaft cone
- Please see data sheet

Control types:
- EL/ER: One direction left running / one direction right running.
- PU/PU1: Running in two directions with remote control.
  - Additional compressed air escapes over air-outlet cuff or air-outlet thread. PU1 with added steering connections G1/4.
- PF: With integrated valves, depending on control - left or right running. Control pressure $p = 3 - 10$ bar for direction - left or right and neutral position. By exoneration control pressure, neutral position.
- ML/MR: A hand lever controls the left- or right running and neutral position on control type PF.

Ordering data for pneumatic gearwheel motor PMW 160

<table>
<thead>
<tr>
<th>Motortype</th>
<th>Nominal size</th>
<th>Drive shaft</th>
<th>Exhaust</th>
<th>Controlling</th>
<th>Additional data</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMW</td>
<td>160</td>
<td>with key $\varnothing 24$ Z24</td>
<td>$\varnothing 28$ Z28</td>
<td>1 direction of rotation right</td>
<td>Flange DIN 42948</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fitting thread G1½ W</td>
<td>W</td>
<td>ER</td>
<td>A200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>thread G1½ W with silencer</td>
<td>WS</td>
<td>EL</td>
<td>A250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PU</td>
<td>A300</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PU1</td>
<td>A350</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PF</td>
<td>B14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hand lever control right</td>
<td>Foot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MR</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td></td>
</tr>
</tbody>
</table>

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**Basic version with exhaust fitting**

**PMW 160**

**Drive-off shaft:** Cylindrical with adjusting spring

**DIN 6885 A 8x7x40**

**Z24 / Z28**

**Weight:** 17.5 kg

**Steering control:**
- EL: One direction, left running
- ER: One direction, right running

**Drive-off shaft:** Cylindrical with adjusting spring

**DIN 6885 A 8x7x40**

**Z24 / Z28**

**Weight:** 21 kg

**Steering control:**
- PU: Two directions
- PU1: additional two steering connections G1/4

**Drive-off shaft:** Cylindrical with adjusting spring

**DIN 6885 A 8x7x40**

**Z24 / Z28**

**Weight:** 24 kg

**Steering control:** PF

**Additional dimensions**

**Exhaust fitting**

- Pressure connection at 1: left running
- Pressure connection at 2: right running
- No pressure at 1 or 2: motor stands still

**Compressed air connection**

- G1x14 deep

**Air supply**

- Ø 40

**Exhaust through exhaust fitting**

- Ø 158

**G1x14 deep**

**Additional dimensions**

- PMW 160

**Pneumatic control connections 1 + 2**

- G1/4x12 deep. For direction change pressureless: motor stands still

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Drive-off shaft: Cylindrical with adjusting spring
Z24 / Z28
weight: 18.5 kg

Steering control:
EL One direction, left running
ER One direction, right running

Drive-off shaft: Cylindrical with adjusting spring
Z24 / Z28
weight: 22 kg

Steering control:
PU Two directions additional dimensions
PU1 additional 2 steering connections G 1/4

Drive-off shaft: Cylindrical with adjusting spring
Z24 / Z28
weight: 25 kg

Steering control:
PF Two directions with locking position.

rotation direction:
face to drive-off shaft area
pressure connection at 1: left running
pressure connection at 2: right running
no pressure at 1 or 2: motor stands still

pneumatic control connections 1 + 2 G1/4x12 deep. For direction change pressureless: motor stands still

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### Basic version with exhaust fitting

**Drive-off shaft:** Cylindrical with adjusting spring  
**Z24 / Z28 weight:** 24 kg  
**DIN 6885 A 8x7x40**

**Steering control:**
- ML two directions with left mounted lever (looking at control)  
- MR two directions with right mounted lever (looking at control)

**Rotation direction:**
- Face to drive-off shaft area  
- Lever position at 1: left running  
- Lever position at 2: right running  
- Lever position at 3: motor stands still

### Basic version with exhaust thread

**Drive-off shaft:** Cylindrical with adjusting spring  
**Z24 / Z28 weight:** 25 kg  
**DIN 6885 A 8x7x40**

**Steering control:**
- ML two directions with left mounted lever (looking at control)  
- MR two directions with right mounted lever (looking at control)

**Rotation direction:**
- Face to drive-off shaft area  
- Pressure connection at 1: left running  
- Pressure connection at 2: right running

### Accessories:

**Drive-off flange:**
- Dimensions according IEC 72 part 7 (electric motors) and DIN 42948  
- A200; A250; A300; A350; B14

**Feet version:**
- Dimensions according IEC 72 B3 (electric motors) and DIN 42948

**Silencer:**
- Only for version "W" with exhaust thread to deliver

**Throttle device:**
- For exhaust speed regulation  
- Only for version "W" with exhaust thread to deliver

**Combined with gear and/or holding brake:**
- For individual motor solutions

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**PMW 160**

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All technical data relates to the unthrottled motor, 
that means without mounted exhaust air throttle, or silencer!
Operating instructions and maintenance on separate datasheet Nr.: 02.000.087AE
Lubrication instructions and oil changes of planetary gear on separate datasheet No: PG1 - 010E

Motor characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometric displacement volume</td>
<td>$V_g = 258 \text{ ccm/rev}$</td>
</tr>
<tr>
<td>Nominal pressure</td>
<td>$p_N = 85 \text{ PSI}$</td>
</tr>
<tr>
<td>max. operating pressure</td>
<td>$p_{max} = 140 \text{ PSI}$</td>
</tr>
<tr>
<td>Nominal speed</td>
<td>$n_N = 3000 \text{ rpm}$</td>
</tr>
<tr>
<td>max. speed</td>
<td>$n_{max} = 4000 \text{ rpm}$</td>
</tr>
</tbody>
</table>

Technical data at $n = 3000 \text{ rpm} ; p = 6 \text{ bar}$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal air consumption</td>
<td>$Q_{abs} = 6 \text{ Nm}^3/\text{min}$</td>
</tr>
<tr>
<td>Nominal torque</td>
<td>$T_N = 15 \text{ Nm}$</td>
</tr>
<tr>
<td>minimal start torque</td>
<td>$T_A = 16 \text{ Nm}$</td>
</tr>
<tr>
<td>maximal start torque</td>
<td>$T_{A1} = 24 \text{ Nm}$</td>
</tr>
<tr>
<td>Nominal power</td>
<td>$P_N = 4.7 \text{ kW}$</td>
</tr>
</tbody>
</table>

Pressure medium:
- Compressed air
  - if the compressed air is damp, we recommend an oiler.
- Nitrogen, natural gas etc.
  - in case of order please indicate the medium.

Mounting position:
- any

Direction of rotation:
- Looking at drive off shaft cone
  - Please see data sheet

Control types:
- EL/ER : One direction left running / one direction right running.
- PU/PU1 : Running in two directions with remote control.
  - Additional compressed air escapes over air-outlet cuff or air-outlet thread. PU1 with added steering connections G1/4.
- PF : With integrated valves, depending on control- left or right running. Control pressure $p = 3 - 10 \text{ bar}$ for direction- left or right and neutral position. By exonation control pressure, neutral position.
- ML/MR : A hand lever controls the left- or right running and neutral position on control type PF.

Power, torque and air consumption are rising proportional about the working pressure.

Ordering data for pneumatic gearwheel motor PMW 250

<table>
<thead>
<tr>
<th>Motortype</th>
<th>Nominal size</th>
<th>Drive shaft</th>
<th>Exhaust</th>
<th>Controling</th>
<th>Additional data</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMW</td>
<td>250</td>
<td>with key $\varnothing 24$ $Z24$ $Z22$ $W$ $W5$</td>
<td>thread G1½ with silencer</td>
<td>1 direction of rotation right $ER$ left $EL$</td>
<td>Flange DIN 42948 $A200$ $A250$ $A300$ $A350$ $B14$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 directions of rotation $PU$ $PU1$</td>
<td>Foot $F$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remote control 2 directions of rotation $PF$</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hand lever control right $MR$ left $ML$</td>
<td></td>
</tr>
</tbody>
</table>

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Drive-off shaft: Cylindrical with adjusting spring
DIN 6885 A 8x7x40
Z24 / Z28 weight: 19 kg

Steering control:
- EL One direction, left running
- ER One direction, right running

with flange 4xM8x15 deep

Pressure connection at 1: left running
Pressure connection at 2: right running

Drive-off shaft: Cylindrical with adjusting spring
DIN 6885 A 8x7x40
Z24 / Z28 weight: 22.5 kg

Steering control:
- PU Two directions
- PU1 additional two steering connections G1/4

rotation direction:
face to drive-off shaft area
pressure connection at 1: left running
pressure connection at 2: right running

Drive-off shaft: Cylindrical with adjusting spring
DIN 6885 A 8x7x40
Z24 / Z28 weight: 22.5 kg

Steering control: PF Two directions with locking position.

rotation direction:
face to drive-off shaft area
pressure connection at 1: left running
pressure connection at 2: right running
no pressure at 1 or 2: motor stands still

pneumatic control connections 1 + 2 G1/4x12 deep. For direction change
pressureless: motor stands still

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Basic version with exhaust thread
waterproofed version "W"

PMW 250

Drive-off shaft: Cylindrical with adjusting spring
Z24/Z28 weight: 20 kg

Steering control: EL One direction, left running
ER One direction, right running

Drive-off shaft: Cylindrical with adjusting spring
Z24/Z28 weight: 23.5 kg

Steering control: PU Two directions additional dimensions
PU1 additional 2 steering connections G 1/4

Drive-off shaft: Cylindrical with adjusting spring
Z24/Z28 weight: 26.5 kg

Steering control: PF Two directions with locking position.

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Basic version with exhaust fitting

Drive-off shaft: Cylindrical with adjusting spring

Z24 / Z28 weight: 25,5 kg

Steering control:
- ML two directions with left mounted lever (looking at control)
- MR two directions with right mounted lever (looking at control)

ML MR

rotation direction:
face to drive-off shaft area
lever position at 1: left running
lever position at 2: right running
lever position at 3: motor stands still

Basic version with exhaust thread

Drive-off shaft: Cylindrical with adjusting spring

Z24 / Z28 weight: 26,5 kg

Steering control:
- ML two directions with left mounted lever (looking at control)
- MR two directions with right mounted lever (looking at control)

ML MR

rotation direction:
face to drive-off shaft area
pressure connection at 1: left running
pressure connection at 2: right running

Accessories:

Drive-off shaft: Z28

Drive-off flange:
Dimensions according IEC 72 part 7 (electric motors)
and DIN 42948
A200; A250; A300; A350; B14

Feet version:
Dimensions according IEC 72 B3 (electric motors)
and DIN 42948

Silencer:
Only for version "W" with exhaust thread to deliver

Throttle device:
For exhaust speed regulation
Only for version "W" with exhaust thread to deliver

Combined with gear and/or holding brake
For individual motor solutions

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Operating instructions and maintenance on separate datasheet
Nr.: 02.000.087AE
Lubrication instructions and oil changes of planetary gear on
separate datasheet No: PG1 - 010E

**Motor characteristics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometric displacement volume</td>
<td>$V_g = 387$ ccm/rev</td>
</tr>
<tr>
<td>Nominal pressure</td>
<td>$p_N = 85$ PSI</td>
</tr>
<tr>
<td>max. operating pressure</td>
<td>$p_{max} = 140$ PSI</td>
</tr>
<tr>
<td>Nominal speed</td>
<td>$n_N = 3000$ rpm</td>
</tr>
<tr>
<td>max. speed</td>
<td>$n_{max} = 4000$ rpm</td>
</tr>
</tbody>
</table>

**Technical data at $n = 3000$ rpm ; $p = 6$ bar**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal air consumption</td>
<td>$Q_{abs} = 8.4$ Nm$^3$/min</td>
</tr>
<tr>
<td>Nominal torque</td>
<td>$T_N = 22$ Nm</td>
</tr>
<tr>
<td>minimal start torque</td>
<td>$T_A = 23$ Nm</td>
</tr>
<tr>
<td>maximal start torque</td>
<td>$T_A = 34$ Nm</td>
</tr>
<tr>
<td>Nominal power</td>
<td>$P_N = 6.9$ kW</td>
</tr>
</tbody>
</table>

**Pressure medium:**

- Compressed air
  - if the compressed air is damp, we recommend an oiler.
- Nitrogen, natural gas etc.
  - in case of order please indicate the medium.

**Mounting position:** any

**Direction of rotation:** Looking at drive off shaft cone
Please see data sheet

**Control types:**

- EL/ER : One direction left running / one direction right running.
- PU/PU1 : Running in two directions with remote control.
  - Additional compressed air escapes over air-outlet cuff or air-outlet thread. PU1 with added steering connections G1/4.
  - With integrated valves, depending on control- left or right running. Control pressure $p = 3 - 10$ bar for direction- left or right and neutral position. By exoneration control pressure, neutral position.
- PF : A hand lever controls the left- or right running and neutral position on control type PF.
- ML/MR : A hand lever controls the left- or right running and neutral position on control type PF.

**Power, torque and air consumption are rising proportional about the working pressure.**

---

**Ordering data for pneumatic gearwheel motor PMW 400**

<table>
<thead>
<tr>
<th>Mototype</th>
<th>Nominal size</th>
<th>Drive shaft</th>
<th>Exhaust</th>
<th>Controlling</th>
<th>Additional data</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMW</td>
<td>400</td>
<td>with key ø24 Z24 ø28 Z28</td>
<td>fitting thread G1½ W WS</td>
<td>1 direction of rotation right left ER EL</td>
<td>Flange DIN 42948 A200 A250 A300 A350 B14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 directions of rotation PU PU1</td>
<td>Foot F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remote control 2 directions of rotation PF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hand lever control right left MR ML</td>
<td></td>
</tr>
</tbody>
</table>

---

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## Basic version with exhaust fitting

### PMW 400

**Drive-off shaft:** Cylindrical with adjusting spring

| Z24 / Z28 | weight: 21 kg |

**Steering control:**

- **EL** One direction, left running
- **ER** One direction, right running

**Dimensions (DIN 6885 A 8x7x40):**

| Ø 90 | 79 |
| 50 |
| 40 |

- with flange 4xM8x15 deep

**Face to drive-off shaft area:**

- Pressure connection at 1: left running
- Pressure connection at 2: right running

**Exhaust:**

- Exhaust through exhaust fitting
- G1x14 deep

**Air supply:**

- Ø 40

---

**Drive-off shaft:** Cylindrical with adjusting spring

| Z24 / Z28 | weight: 24,5 kg |

**Steering control:**

- **PU** Two directions
- **PU1** Two directions with locking

**Additional dimensions:**

**Pressure and exhaust connection:**

- G1x14 deep

**Rotation direction:**

- Face to drive-off shaft area
- Pressure connection at 1: left running
- Pressure connection at 2: right running

---

**Drive-off shaft:** Cylindrical with adjusting spring

| Z24 / Z28 | weight: 27,5 kg |

**Steering control:**

- **PF** Two directions with locking position

**Additional dimensions:**

**Compressed air connection:**

- G1x14 deep

**Rotation direction:**

- Face to drive-off shaft area
- Pressure connection at 1: left running
- Pressure connection at 2: right running
- Pressureless: motor stands still

---

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Catalogue

LM1 - 004E

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Edition 2010-08/03
Drive-off shaft: Cylindrical with adjusting spring Z24 / Z28 weight: 22 kg
Steering control: EL One direction, left running
       ER One direction, right running

Drive-off shaft: Cylindrical with adjusting spring Z24 / Z28 weight: 25.5 kg
Steering control: PU Two directions additional dimensions
       PU1 additional 2 steering connections G 1/4
rotation direction:
face to drive-off shaft area
pressure connection at 1: left running
pressure connection at 2: right running

Drive-off shaft: Cylindrical with adjusting spring Z24 / Z28 weight: 28.5 kg
Steering control: PF Two directions with locking position.
rotation direction:
face to drive-off shaft area
pressure connection at 1: left running
pressure connection at 2: right running
no pressure at 1 or 2: motor stands still
pneumatic control connections 1 + 2 G1/4x12 deep. For direction change pressureless: motor stands still

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### Basic version with exhaust fitting

**Drive-off shaft:** Cylindrical with adjusting spring 
Z24 / Z28  
weight: 27.5 kg  
DIN 6885 A 8x7x40

**Steering control:**  
- ML two directions with left mounted lever (looking at control)  
- MR two directions with right mounted lever (looking at control)

- rotation direction: face to drive-off shaft area  
- lever position at 1: left running  
- lever position at 2: right running  
- lever position at 3: motor stands still

### Basic version with exhaust thread

**Drive-off shaft:** Cylindrical with adjusting spring  
Z24 / Z28  
weight: 28.5 kg  
DIN 6885 A 8x7x40

**Steering control:**  
- ML two directions with left mounted lever (looking at control)  
- MR two directions with right mounted lever (looking at control)

- rotation direction: face to drive-off shaft area  
- pressure connection at 1: left running  
- pressure connection at 2: right running

### Accessories:

**Drive-off flange:**  
Dimensions according IEC 72 part 7 (electric motors) and DIN 42948  
A200; A250; A300; A350; B14

**Feet version:**  
Dimensions according IEC 72 B3 (electric motors) and DIN 42948

**Silencer:**  
Only for version "W" with exhaust thread to deliver

**Throttle device:**  
For exhaust speed regulation  
Only for version "W" with exhaust thread to deliver

**Combined with gear and/or holding brake**  
For individual motor solutions

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Operating instructions and maintenance on separate datasheet
Nr.: 02.000.087AE
Lubrication instructions and oil changes of planetary gear on
separate datasheet No: PG1 - 010E

Motor characteristics

Geometric displacement volume \( V_g = 516 \, \text{ccm/rev} \)
Nominal pressure \( P_N = 85 \, \text{PSI} \)
max. operating pressure \( P_{max} = 140 \, \text{PSI} \)
Nominal speed \( n_N = 3000 \, \text{rpm} \)
max. speed \( n_{max} = 4000 \, \text{rpm} \)

Technical data at \( n = 3000 \, \text{rpm} ; \, p = 6 \, \text{bar} \)
Nominal air consumption \( Q_{abs} = 12 \, \text{Nm}^3/\text{min} \)
Nominal torque \( T_N = 27 \, \text{Nm} \)
minimal start torque \( T_{S} = 30 \, \text{Nm} \)
maximal start torque \( T_{A} = 43 \, \text{Nm} \)
Nominal power \( P_N = 8.5 \, \text{kW} \)

Pressure medium:
- Compressed air
  - if the compressed air is damp, we recommend
  an oiler.
- Nitrogen, natural gas etc.
  - in case of order please indicate the medium.

Mounting position: any

Direction of rotation: Looking at drive off shaft cone
- Please see data sheet

Control types:
- EL/ER : One direction left running / one direction right running.
- PU/PU1 : Running in two directions with remote control.
- PF : With integrated valves, depending on control- left or right running. Control pressure \( p = 3 - 10 \, \text{bar for direction- left or right and neutral position. By exoneration control pressure, neutral position.} \)
- ML/MR : A hand lever controls the left- or right running and neutral position on control type PF.

Ordering data for pneumatic gearwheel motor PMW 530

<table>
<thead>
<tr>
<th>Mototype</th>
<th>Nominal size</th>
<th>Drive shaft</th>
<th>Exhaust</th>
<th>Controlling</th>
<th>Additional data</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMW 530</td>
<td>Z24 224</td>
<td>with key ( \phi 24 )</td>
<td>fitting thread G1( \frac{1}{2} ) ( W )</td>
<td>1 direction of rotation ( \text{right} ) ( \text{left} ) ( \text{ER} ) ( \text{EL} )</td>
<td>Flange DIN 42948</td>
</tr>
<tr>
<td></td>
<td>Z28 228</td>
<td>( \phi 28 )</td>
<td>thread G1( \frac{1}{2} ) ( \text{W} )</td>
<td>2 directions of rotation ( \text{PU} ) ( \text{PU1} )</td>
<td>A200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>with silencer ( W )</td>
<td>Remote control ( 2 ) ( \text{directions of rotation} ) ( \text{PF} )</td>
<td>A250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hand lever control ( \text{right} ) ( \text{left} ) ( \text{MR} ) ( \text{ML} )</td>
<td>A300</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A350</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>B14</td>
</tr>
</tbody>
</table>

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Basic version with exhaust fitting

PMW 530

Drive-off shaft: Cylindrical with adjusting spring
Z24 / Z28
weight: 22.5 kg

Steering control: EL One direction, left running
ER One direction, right running

Drive-off shaft: Cylindrical with adjusting spring
Z24 / Z28
weight: 26 kg

Steering control: PU Two directions
PU1 additional two steering connections G1/4

Drive-off shaft: Cylindrical with adjusting spring
Z24 / Z28
weight: 29 kg

Steering control: PF Two directions with locking

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**Basic version with exhaust thread waterproofed version “W”**

**PMW 530**

**Drive-off shaft:** Cylindrical with adjusting spring

**Steering control:**
- EL: One direction, left running
- ER: One direction, right running

- DIN 6885 A 8x7x40
- Z24 / Z28 weight: 23.5 kg

- Exhaust thread: G1 1/2x22 deep
- Air supply: Ø 90 g6
- Ø 24 k6

**Rotation direction:**
- Face to drive-off shaft area
- Pressure connection at 1: left running
- Pressure connection at 2: right running

**Drive-off shaft:** Cylindrical with adjusting spring

**Steering control:** PU Two directions additional dimensions

- PU1 additional 2 steering connections G 1/4

- rotation direction:
  - Face to drive-off shaft area
  - Pressure connection at 1: left running
  - Pressure connection at 2: right running
  - No pressure at 1 or 2: motor stands still

- Exhaust thread: G1x14 deep
- Air supply: Ø 90 g6
- Ø 24 k6

**Drive-off shaft:** Cylindrical with adjusting spring

**Steering control:** PF Two directions with locking position.

- DIN 6885 A 8x7x40
- PF additional dimensions

- Rotation direction:
  - Face to drive-off shaft area
  - Pressure connection at 1: left running
  - Pressure connection at 2: right running
  - No pressure at 1 or 2: motor stands still

- Pneumatic control connections 1 + 2 G1/4x12 deep. For direction change pressureless: motor stands still

- G1x14 deep

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## Basic version with exhaust fitting

**Drive-off shaft:** Cylindrical with adjusting spring

<table>
<thead>
<tr>
<th>Z24 / Z28</th>
<th>weight: 29 kg</th>
</tr>
</thead>
</table>

**Steering control:**
- ML: two directions with left mounted lever (looking at control)
- MR: two directions with right mounted lever (looking at control)

<table>
<thead>
<tr>
<th>rotation direction:</th>
<th>face to drive-off shaft area</th>
</tr>
</thead>
<tbody>
<tr>
<td>lever position at 1:</td>
<td>left running</td>
</tr>
<tr>
<td>lever position at 2:</td>
<td>right running</td>
</tr>
<tr>
<td>lever position at 3:</td>
<td>motor stands still</td>
</tr>
</tbody>
</table>

## Basic version with exhaust thread

**Drive-off shaft:** Cylindrical with adjusting spring

<table>
<thead>
<tr>
<th>Z24 / Z28</th>
<th>weight: 30 kg</th>
</tr>
</thead>
</table>

**Steering control:**
- ML: two directions with left mounted lever (looking at control)
- MR: two directions with right mounted lever (looking at control)

<table>
<thead>
<tr>
<th>rotation direction:</th>
<th>face to drive-off shaft area</th>
</tr>
</thead>
<tbody>
<tr>
<td>pressure connection at 1:</td>
<td>left running</td>
</tr>
<tr>
<td>pressure connection at 2:</td>
<td>right running</td>
</tr>
</tbody>
</table>

---

**Accessories:**

**Drive-off flange:**
- Dimensions according IEC 72 part 7 (electric motors) and DIN 42948
  - A200; A250; A300; A350; B14

**Feet version:**
- Dimensions according IEC 72 B3 (electric motors) and DIN 42948

**Silencer:**
- Only for version "W" with exhaust thread to deliver

**Throttle device:**
- For exhaust speed regulation
  - Only for version "W" with exhaust thread to deliver

**Combined with gear and/or holding brake**
- For individual motor solutions

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All technical data relates to the unthrottled motor, that means without mounted exhaust air throttle, or silencer!
These motors have a pneumatic-gear-wheel-motor of the size PMW 160, PMW 250, PMW 400 or PMW 530 with flanged planetal gear of 1, 2 or 3 stages. A holding brake can be flanged between motor and gear. Please demand for other gear ratios or gear types (foot-gear, angular-gear, worm gear etc.).

The rpm should not be higher than in the tables as max. rpm indicated. The rpm will be regulated or limited by the charge or a throttle valve. Depending to the mounting position it must be guaranteed, that the gear parts inside are provided with oil. For a vertical mounting there should therefor be an oil-compensating bin.

**Mounting position horizontal (B3)**

**Mounting position vertical (V6)**
compensating bin for gear oil
AN: 80.9031.0001

**Mounting position vertical (V5)**

Please use gear oils with EP- addition, a minimum viscosity of 95 and a viscosity-class according ISO-standardization 3448, temperature-independant. For usual applications use for operating temperatures between +40°C and +65°C - viscosity VG 320 according ISO 3448. For other temperatures please see operating instructions.

**Commissioning:** Fill in oil; see operating and servicing manual.

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| P M W | - | - | i |

**Nominal size**
Consumed volume
Vg = 160, 250, 400, 530

**Drive off shaft**
zylindrical with woodrufkey
according DIN 6885
Ø 24\(_{\text{a}}\) = Z24
Ø 28\(_{\text{a}}\) = Z28

**Exhaust leading**
Exhaust fitting in the open = W
Thread G 1\(\frac{1}{2}\) = W
Thread G 1\(\frac{1}{2}\) with silencer = WS

**Steering / Control**
One defined direction - left or right:
Left direction - looking to the drive off shaft = EL
Right direction - looking to the drive off shaft = ER
Two directions with additional exhaust thread or exhaust fitting:
2 radial connections = PU
With integrated valves, pneumatic or manual control of the direction:
pneumatic change of direction = PF
Manual control lever left (face to air supply) = ML
Manual control lever right (face to air supply) = MR

**Drive off flange**
Dimensions according IEC 72 part 7 (electro motors) according DIN 42948
Outer Ø 200, Fixing Ø 165 with 8 holes Ø 11, centrical Ø 130g6 = A200
Outer Ø 250, Fixing Ø 215 with 8 holes Ø 11, centrical Ø 180g6 = A250
Outer Ø 300, Fixing Ø 265 with 4 holes Ø 11, centrical Ø 230g6 = A300
Outer Ø 350, Fixing Ø 300 with 4 holes Ø 11, centrical Ø 250g6 = A350
Outer Ø 160, Fixing Ø 130 with 4 holes M8x14 deep, centrical Ø 110g6 = B14
Foot B3 size 100L = F

**Planetal gear**
Tye of technical data sheet
(...EM, ...ED, ...ET, ...PD, ...PDA)

**Drive-off shaft gear**
zylindrical with adjusting spring according DIN 6885 = Z
splined shaft according DIN 5482 = K
holow shaft according DIN 5482 = H

gear ratio’s according datasheets
Changes reserved!
The technical data (nominal power and absolute nominal air consumption) concerns to the nominal pressure and nominal motor speed.

<table>
<thead>
<tr>
<th>Type</th>
<th>i</th>
<th>Start torque minimal (Nm)</th>
<th>Start torque maximal (Nm)</th>
<th>Nominal torque (Nm)</th>
<th>security factor $K_{\text{Nom}}$</th>
<th>speed minimal (rpm)</th>
<th>speed maximal (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMW160...-EM1010...</td>
<td>3,38</td>
<td>31</td>
<td>47</td>
<td>30</td>
<td>33,9</td>
<td>296</td>
<td>888</td>
</tr>
<tr>
<td>PMW160...-EM1010...</td>
<td>4,39</td>
<td>40</td>
<td>61</td>
<td>38</td>
<td>22,7</td>
<td>228</td>
<td>683</td>
</tr>
<tr>
<td>PMW160...-EM1010...</td>
<td>6,00</td>
<td>55</td>
<td>83</td>
<td>52</td>
<td>12,2</td>
<td>167</td>
<td>500</td>
</tr>
<tr>
<td>PMW160...-EM1010...</td>
<td>6,94</td>
<td>64</td>
<td>96</td>
<td>61</td>
<td>9,6</td>
<td>144</td>
<td>432</td>
</tr>
<tr>
<td>PMW160...-EM1010...</td>
<td>10,50</td>
<td>97</td>
<td>145</td>
<td>92</td>
<td>3,3</td>
<td>95</td>
<td>286</td>
</tr>
<tr>
<td>PMW160...-ED2010...</td>
<td>11,42</td>
<td>102</td>
<td>152</td>
<td>97</td>
<td>10,4</td>
<td>88</td>
<td>263</td>
</tr>
<tr>
<td>PMW160...-ED2010...</td>
<td>14,84</td>
<td>132</td>
<td>198</td>
<td>126</td>
<td>8,0</td>
<td>67</td>
<td>202</td>
</tr>
<tr>
<td>PMW160...-ED2010...</td>
<td>19,27</td>
<td>172</td>
<td>257</td>
<td>163</td>
<td>5,4</td>
<td>52</td>
<td>156</td>
</tr>
<tr>
<td>PMW160...-ED2010...</td>
<td>20,28</td>
<td>180</td>
<td>271</td>
<td>172</td>
<td>5,8</td>
<td>49</td>
<td>148</td>
</tr>
<tr>
<td>PMW160...-ED2010...</td>
<td>23,46</td>
<td>209</td>
<td>313</td>
<td>198</td>
<td>5,1</td>
<td>43</td>
<td>128</td>
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<tr>
<td>PMW160...-ED2010...</td>
<td>26,34</td>
<td>234</td>
<td>352</td>
<td>223</td>
<td>3,9</td>
<td>38</td>
<td>114</td>
</tr>
<tr>
<td>PMW160...-ED2010...</td>
<td>30,47</td>
<td>271</td>
<td>407</td>
<td>258</td>
<td>3,4</td>
<td>33</td>
<td>98</td>
</tr>
<tr>
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**Indications for listed data:**
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Technical data:
Nominal pressure : $p_{\text{nom}} = 85$ PSI
max. operating pressure : $p_{\text{max}} = 114$ PSI
Nominal power : $P_{\text{nom}} = 4.7$ kW
Air consumption absolute : $Q_{\text{abs}} = 6.0$ Nm$^3$/min
Nominal speed : $n_{\text{nom}} = 3000$ rpm

The technical data (nominal power and absolute nominal air consumption) concerns to the nominal pressure and nominal motor speed.

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**Type** | **A** | **B** | **C<sub>r</sub>** | **D** | **E** | **E<sub>1</sub>** | **F** | **G** | **H** | **I** | **K** | **L** | **L<sub>1</sub>** | **N** | **O** | **P** | **Q**
PMW250...-EM1010... | 180 | 165 | 110 | 42<sub>65</sub> | 55 | 82 | 183 | 7 | 6 | 13 | 6 | 70 | 127 | 20 | 5 | 30 | 48
PMW250...-ED2010... | 180 | 165 | 110 | 42<sub>65</sub> | 55 | 82 | 183 | 7 | 6 | 13 | 6 | 70 | 167 | 20 | 5 | 30 | 48
PMW250...-ED2020MR... | 220 | 195 | 150 | 65<sub>68</sub> | 68 | 105 | 240 | 15 | 5 | 16 | 7,5 | 90 | 245 | 20 | 8 | 38 | 58
PMW250...-ED2030MR... | 220 | 195 | 150 | 65<sub>68</sub> | 68 | 105 | 240 | 15 | 5 | 16 | 7,5 | 90 | 245 | 20 | 8 | 38 | 58
PMW250...-ET3030MR... | 220 | 195 | 150 | 65<sub>68</sub> | 68 | 105 | 240 | 15 | 5 | 16 | 7,5 | 90 | 284 | 20 | 8 | 38 | 58
PMW250...-ET3045MR... | 220 | 195 | 150 | 65<sub>68</sub> | 68 | 105 | 240 | 15 | 5 | 16 | 7,5 | 90 | 312 | 20 | 8 | 38 | 58
PMW250...-ET3065MR... | 280 | 250 | 200 | 80<sub>90</sub> | 90 | 130 | 280 | 40 | 15 | 20 | 10 | 110 | 375 | 20 | 10 | 50 | 80
PMW250...-ET3090MR... | 325 | 295 | 230 | 90<sub>170</sub> | 90 | 170 | 355 | 36 | 5 | 25 | 5 | 160 | 376 | 25 | 10 | 50 | 80

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| Type | **R<sub>r</sub>** | **S** | **T<sub>r</sub>** | **U** | **W** | b | d | d<sub>1</sub> | d<sub>2</sub> | t | y | y<sub>1</sub> | F<sub>r</sub> (N) | F<sub>ra</sub> (N) | kg |
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
PMW250...-EM1010... | 42 | B40x36 | 35 | 24 | 200 | 12 | 9 | M6 | M16x36 | 45 | 27,5 | 41 | 10000 | 8000 | 39
PMW250...-ED2010... | 42 | B40x36 | 35 | 24 | 200 | 12 | 9 | M6 | M16x36 | 45 | 27,5 | 41 | 10000 | 8000 | 39
PMW250...-ED2020MR... | 60 | B58x53 | 50 | 32 | 200 | 18 | 14 | M10 | M20x42 | 69 | 34 | 52,5 | 30000 | 28000 | 56
PMW250...-ED2030MR... | 60 | B58x53 | 50 | 32 | 200 | 18 | 14 | M10 | M20x42 | 69 | 34 | 52,5 | 30000 | 28000 | 58
PMW250...-ET3030MR... | 60 | B58x53 | 50 | 32 | 200 | 18 | 14 | M10 | M20x42 | 69 | 34 | 52,5 | 30000 | 28000 | 66
PMW250...-ET3045MR... | 60 | B58x53 | 50 | 32 | 200 | 18 | 14 | M10 | M20x42 | 69 | 34 | 52,5 | 30000 | 28000 | 75
PMW250...-ET3065MR... | 72 | B70x64 | 62 | 40 | 200 | 22 | 16 | M10 | M20x42 | 85 | 45 | 65 | 70000 | 63000 | 104
PMW250...-ET3090MR... | 85 | B80x74 | 70 | 45 | 200 | 25 | 18 | M10 | M24x50 | 95 | 45 | 85 | 70000 | 58000 | 143

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DÜSTERLOH Fluidtechnik GmbH * Im Vogelsang 105 * 45527 Hattingen * ☎ +49 (0) 2324 / 709-0 * Fax +49 (0) 2324 / 709-110
Technical data:
Nominal pressure : \( p_{\text{nom}} = 85 \text{ PSI} \)
Nominal power : \( P_{\text{nom}} = 6.9 \text{ kW} \)
max. operating pressure : \( p_{\text{max}} = 114 \text{ PSI} \)
air consumption absolute : \( Q_{\text{abs}} = 8.4 \text{ Nm}^3/\text{min} \)
Nominal speed : \( n_{\text{nom}} = 3000 \text{ rpm} \)

The technical data (nominal power and absolute nominal air consumption) concerns to the nominal pressure and nominal motor speed.

<table>
<thead>
<tr>
<th>Type</th>
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<th>Start torque minimal (Nm)</th>
<th>Start torque maximal (Nm)</th>
<th>Nominal torque (Nm)</th>
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Indications for listed data:
Start torque : The minimal / maximal start torque depends to the tooth position.
Nominal torque : Nominal torque at nominal pressure of 6 bar and nominal speed.
Security factor : Gear-security factor allowed gear torque / nominal torque
Speed, minimal : The minimum speed can be reached by motor throttling.
Speed, nominal : Nominal and maximal speed of the gear motor.

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Specifications:
The gear housing has a ventilation filter, an oil level plug for oil control and a drain plug for oil change.

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### Technical data:

- **Nominal pressure**: $P_{\text{nom}} = 85$ PSI
- **Nominal power**: $P_{\text{nom}} = 8.5$ kW
- **Max. operating pressure**: $P_{\text{max}} = 114$ PSI
- **Air consumption absolute**: $Q_{\text{abs}} = 12$ Nm$^3$/min
- **Nominal speed**: $n_{\text{nom}} = 3000$ rpm

The technical data (nominal power and absolute nominal air consumption) concerns to the nominal pressure and nominal motor speed.

### Table

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<th>Start torque maximal (Nm)</th>
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### Indications for listed data:

- **Start torque**: The minimal / maximal start torque depends to the tooth position.
- **Nominal torque**: Nominal torque at nominal pressure of 6 bar and nominal speed.
- **Security factor**: Gear-security factor allowed gear torque / nominal torque
- **Speed, minimal**: The minimum speed can be reached by motor throttling.
- **Speed, nominal**: Nominal and maximal speed of the gear motor.
Specifications:
The gear housing has a ventilation filter, an oil level plug for oil control and a drain plug for oil change.

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Drive-off flange:
Flange dimensions according IEC72 part 7 (electro-motors) and DIN42948.

A200  size  80 / 90S / 90L
A250  size  100L / 112M
A300  size  132S / 132 M
A350  size  160M / 160L
B14   size  71
B14k  size  90L, (IMV18; IMV19)

Order-no. contains:
1 flange
4 screws M8x35 DIN912 - 12.9
4 DUBO-securing-screws M8

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<td>3,5</td>
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<td>4 thread-holes M8x14, 19 deep</td>
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indications in (mm)
The motor foot is developed for pneumatic motors and is corresponding to the IEC-electrical standard B3 100L. The foot is fixed with 4 screws and 4 DUBO-safety screws on the drift flange.

weight: 4.5 kg

order declaration: foot F, AN: 12.2000.14
Technical details: nominal pressure $p_n = 6$ bar; weight $m = 2.5$ kg

- thread diameter: G1 1/2
- temperature range: -10 °C - +150 °C
- any mounting position
- multiple system DBP
- order declaration: silencer G1 1/2, AN: 20.5070.0111

The housing case consists as a coating metal plate. Hole plates are galvanized and the synthetec felt is age resistant.

The silencer is oil and water resistant.

The silencer cleaning can be follow with petrol.

The three most important requirements are joint in this type:

1) high exhaust
2) short ventilation time
3) high sound absorbing

Sound calibration by a ventilation time over an air volume about 6 litre in a distance over 1,5 m.

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This valve throttles in both flow directions. The compressed air flows through side drillings to the throttling point. This is formed between the housing and the adjustable sleeves. The throttle crosssection may be steplessly varied by rotating the sleeve.

weight: 4.1 kg

order declaration:
exhaust throttling, complete AN: 93.0000.0024

Order-no. contains:
1 throttle valve NG 30, AN: 80.4121.3010
1 twin plug G1 1/2 - G1 1/2, AN: 18.1070.1212
2 o-ring seal A48 x 55 DIN 7603 CU, AN: 18.1160.1169

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## Accessories

**ball valve**

- **DN4 - DN25**: steel case
- **DN32 - DN50**: gray cast case
- **ball**: brass
- **packing seal**: Perbunan
- **connecting thread**: pipe inside thread DIN ISO 228/1

### Dimensions

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<th>F</th>
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<th>H</th>
<th>R</th>
<th>SW₁</th>
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<td>23</td>
<td>120</td>
<td>80</td>
<td>115</td>
<td>205</td>
<td>16</td>
<td>25</td>
<td>3.2</td>
</tr>
<tr>
<td>20.2076.0050</td>
<td>50</td>
<td>G2</td>
<td>24</td>
<td>140</td>
<td>100</td>
<td>125</td>
<td>205</td>
<td>16</td>
<td>25</td>
<td>5.2</td>
</tr>
</tbody>
</table>

**indications in (mm)**
Material: Housing made of brass, nickel plated
Sieve made of special steel

Fitting position: The mesh bottom of the socket dirt trap should be mounted slant to the ground

Flow direction: The flow direction is shown by an arrow head

<table>
<thead>
<tr>
<th>Part no.</th>
<th>A</th>
<th>$p_{\text{max}}$</th>
<th>Mesh size of the sieve</th>
<th>L</th>
<th>H</th>
<th>C</th>
<th>SW</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.2080.1100</td>
<td>G1</td>
<td>20 bar</td>
<td>0.80 mm</td>
<td>87</td>
<td>60</td>
<td>11</td>
<td>40</td>
<td>0.4 kg</td>
</tr>
<tr>
<td>20.2080.1200</td>
<td>G11/2</td>
<td>20 bar</td>
<td>0.80 mm</td>
<td>106</td>
<td>75</td>
<td>12</td>
<td>55</td>
<td>1.0 kg</td>
</tr>
<tr>
<td>20.2080.1300</td>
<td>G2</td>
<td>20 bar</td>
<td>0.80 mm</td>
<td>126</td>
<td>90</td>
<td>15</td>
<td>70</td>
<td>1.4 kg</td>
</tr>
</tbody>
</table>

The dirt trap protects the electropneumatic valves against dirt and should therefore be installed between the air receiver and the pressure reducing valve. The sieve catches items like flakes of rust, fibres and all kinds of other materials to protect the valves against plugging up or becoming untight.
The mesh bottom of the dirt trap should be cleaned from time to time.
Material: Housing made of brass, nickel plated
Sieve made of special steel

Fitting position: The mesh bottom of the socket dirt trap should be mounted slant to the ground

Flow direction: The flow direction is shown by an arrow head

<table>
<thead>
<tr>
<th>Part no.</th>
<th>A</th>
<th>$p_{\text{max}}$</th>
<th>Mesh size of the sieve</th>
<th>L</th>
<th>H</th>
<th>C</th>
<th>SW</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.9990.0431</td>
<td>G1</td>
<td>40 bar</td>
<td>0.25 mm</td>
<td>90</td>
<td>64</td>
<td>14</td>
<td>41</td>
<td>0.8 kg</td>
</tr>
<tr>
<td>20.9990.0420</td>
<td>G11/2</td>
<td>40 bar</td>
<td>0.25 mm</td>
<td>120</td>
<td>84</td>
<td>18</td>
<td>55</td>
<td>1.4 kg</td>
</tr>
<tr>
<td>20.9990.0427</td>
<td>G2</td>
<td>40 bar</td>
<td>0.25 mm</td>
<td>150</td>
<td>102</td>
<td>20</td>
<td>70</td>
<td>2.4 kg</td>
</tr>
</tbody>
</table>

The dirt trap protects the electropneumatic valves against dirt and should therefore be installed between the air receiver and the pressure reducing valve. The sieve catches items like flakes of rust, fibres and all kinds of other materials to protect the valves against plugging up or becoming untight.

The mesh bottom of the dirt trap should be cleaned from time to time.
The spring-operated multi-disk brake serves as a holding brake and can be opened at connection G1/4 with a working pressure about 2 - 10 bar.

The outlet flange A200 corresponds to DIN 42948.

The air should be filtered and have 1 up to 3 drops of oil per m³.

**Ordering information:** Spring-operated multi-disk brake LB42A200 to part No.: 12.1720.29  
(Fastening material of PMW motors is belonging to scope of supply.)

**Technical data:**
- **Medium:** compressed air
- **Operating pressure:** 2 up to 10 bar
- **Brake laminas:** dry running
- **Holding torque static:** 42 Nm
- **Holding torque dynamic:** 33 Nm
- **Temperature range:** up to 90°C
- **Shutter speed:** 50 - 70 ms (regardless of steering vale reaktion time)
- **Weight:** 15 kg

Changes reserved!
DÜSTERLOH Fluidtechnik GmbH * Im Vogelsang 105 * 45527 Hattingen * ☏ +49 (0) 2324 / 709-0 * Fax +49 (0) 2324 / 709-110
pneumatic motor with gear
PMW250Z24PFA200-ED2010Z, i= 14.84
93.0000.88

Attentions:
Gearbox without oil!

rotation direction:
Looking at drive-off-shaft area
Pressure at 1: Left running
Pressure at 2: Right running

Technical details in relation at the gearbox driving shaft:

- Power: P = 4.7 KW
- Torque: T = 209 Nm
- Pressure: p = 85 PSI
- Speed range: n = 67 - 202 rpm
- Air consumption: Q = 6.0 cbm/min
- Gear ratio: i = 14.84
- Installation position: horizontal (B3)

Changes reserved!
DUESTERLOH Fluidtechnik GmbH * Im Vogelsang 105 * 45527 Hattingen * +49 (0) 2324 / 709-0 * Fax +49 (0) 2324 / 709-110
pneumatic motor with gear and brake
PMW250Z24ELS-LB42-ET3045MRKS, i= 108.6
93.0000.47A

ventilating filter G1/4
brake control connection G1/4

Rotation direction: left running
looking at drive-off-shaft area

Attention:
Gearbox without oil!

Technical details in relation to the gearbox driving shaft

- power : P = 4.7 kW
- torque : T = 1629 Nm
- pressure : p = 85 PSI
- speed : n = 9 - 27 rpm
- air consumption : Q = 6 cbm/min
- gear ratio : i = 108.6
- installation position : horizontal B3

Changes reserved!
DÜSTERLOH Fluidtechnik GmbH * Im Vogelsang 105 * 45527 Hattingen * +49 (0) 2324 / 709-0 * Fax +49 (0) 2324 / 709-110
pneumatic motor with foot-gear
PMW400Z24PFA200-PD1010Z, i=6.94
93.0000.89

Pneumatic control connections 1 + 2
G1/4, 12mm deep, pressureless: Motor stands still

Rotation direction:
Looking at drive-off-shaft area
Pressure at 1 : Left running
Pressure at 2 : Right running

Technical details in relation at the gearbox driving shaft

Power : P = 7.8 kW
Torque : T = 172 Nm
Pressure : p = 96 PSI
Speed range : n = 144 - 432 rpm
Air consumption : Q = 9.5 cbm/min
Gear ratio : i = 6.94
Installation position : horizontal (B3)

Attention:
Gearbox without oil!
Technical details in relation of the gearbox driving shaft:

- **Power**: P= 8.4 KW
- **Torque**: T= 400 Nm
- **Pressure**: p= 85 PSI
- **Speed range**: n= 60 - 200 rpm
- **Air consumption**: Q= 12,0 cbm/min
- **Gear ratio**: i= 16,53
- **Installation position**: horizontal
- **Drive shaft position**: right

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Attention:
Gearbox without oil!

Rotation direction:
- **Looking at drive-off-shaft area**
  - Pressure at 1: Left running
  - Pressure at 2: Right running