### Heavy Duty-Guide HD

#### Features:
- Guide system: 4-row recirculating ball bearing guide
- Polished and hardened steel guide rail
- For highest loads in all directions
- Highest precision
- Integrated wiper system
- Integrated grease nipples
- Any lengths of stroke up to 3700 mm (longer strokes on request)
- Anodized aluminum guide carriage - dimensions compatible with OSP guide GUIDELINE
- Maximum speed $v = 5 \text{ m/s}$

#### Loads, Forces and Moments

The table shows the maximum permissible values for light, shock-free operation which must not be exceeded even under dynamic conditions.

### Technical Data

The table shows the maximum permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x\text{max}}} + \frac{M_y}{M_{y\text{max}}} + \frac{M_z}{M_{z\text{max}}} + \frac{F_y}{F_{y\text{max}}} + \frac{F_z}{F_{z\text{max}}} \leq 1$$

The sum of the loads should not $> 1$

#### Series

<table>
<thead>
<tr>
<th>Series</th>
<th>for linear drive</th>
<th>Max. moments (Nm)</th>
<th>Max. loads (N)</th>
<th>Mass of the linear drive with guide (kg) with 0 mm stroke</th>
<th>Mass guide carriage (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD 25</td>
<td>OSP-P25</td>
<td>Mx 260</td>
<td>My 320</td>
<td>Mz 320</td>
<td>Fy 6000</td>
</tr>
<tr>
<td>HD 32</td>
<td>OSP-P32</td>
<td>Mx 285</td>
<td>My 475</td>
<td>Mz 475</td>
<td>Fy 6000</td>
</tr>
<tr>
<td>HD 40</td>
<td>OSP-P40</td>
<td>Mx 800</td>
<td>My 1100</td>
<td>Mz 1100</td>
<td>Fy 15000</td>
</tr>
<tr>
<td>HD 50</td>
<td>OSP-P50</td>
<td>Mx 1100</td>
<td>My 1400</td>
<td>Mz 1400</td>
<td>Fy 18000</td>
</tr>
</tbody>
</table>
Note:
The HD heavy duty guide must be mounted on a flat surface for its entire length.

If T-grooves or T-bolts are used, the distance between them should not exceed 100 mm.

Variable Stop
Type VS25 to VS50
The variable stop provides simple stroke limitation and can be supplied mounted on the right or left, as required.
For further information see following data sheets:
For dimensions and order instructions see page B95
For shock absorber selection see pages B71-B72

Incremental displacement measuring system
ORIGA-Sensoflex
Series SFI-plus can be supplied mounted on the right or left, as required.
For further information see page B113

Arrangement of magnetic switches:
Magnetic switches can be fitted anywhere on either side.
For further information see following data sheets:
Magnetic Switches see pages B102-B108
Dovetail Cover see page B109
### Heavy Duty Guide HD

#### Dimensions

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>AF</th>
<th>FB</th>
<th>FC</th>
<th>FD</th>
<th>FE</th>
<th>FF</th>
<th>FG</th>
<th>FH</th>
<th>FI</th>
<th>FJ</th>
<th>QFL</th>
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<tbody>
<tr>
<td>HD25</td>
<td>100</td>
<td>22</td>
<td>22</td>
<td>120</td>
<td>145</td>
<td>110</td>
<td>70</td>
<td>M6</td>
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<td>78</td>
<td>100</td>
<td>73</td>
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<tr>
<td>HD32</td>
<td>125</td>
<td>25.5</td>
<td>30</td>
<td>120</td>
<td>170</td>
<td>140</td>
<td>80</td>
<td>M6</td>
<td>11</td>
<td>86</td>
<td>112</td>
<td>85</td>
<td>6</td>
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<tr>
<td>HD40</td>
<td>150</td>
<td>28</td>
<td>38</td>
<td>160</td>
<td>180</td>
<td>140</td>
<td>110</td>
<td>M8</td>
<td>14</td>
<td>108</td>
<td>132</td>
<td>104</td>
<td>7.5</td>
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<tr>
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<td>175</td>
<td>33</td>
<td>48</td>
<td>180</td>
<td>200</td>
<td>160</td>
<td>120</td>
<td>M8</td>
<td>14</td>
<td>118</td>
<td>150</td>
<td>118</td>
<td>7.5</td>
</tr>
</tbody>
</table>

**Note:**

The dimension FO is derived from the last two digits of the stroke.

**Example:**

For a cylinder OSP-P25 the adjacent table indicates that for x = 25 mm:

FO = 62.5 mm

#### Stroke 25 mm

**x**

<table>
<thead>
<tr>
<th>FO</th>
<th>HD25</th>
<th>HD32</th>
<th>HD40</th>
<th>HD50</th>
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<tr>
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<tr>
<td>01</td>
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<td>75.5</td>
<td>50.5</td>
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<td>03</td>
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<td>76.5</td>
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</tr>
</tbody>
</table>
Dimensions – Variable Stop Type VS25 to VS50

Dimension Table (mm) – Variable Stop Type VS25 to VS50

<table>
<thead>
<tr>
<th>Series</th>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>G</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>P</th>
<th>SW1</th>
<th>SW2</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSP-HD25</td>
<td>VS25</td>
<td>40</td>
<td>30</td>
<td>50</td>
<td>70</td>
<td>65.5</td>
<td>42</td>
<td>26</td>
<td>60</td>
<td>32</td>
<td>42</td>
<td>M12 x 1</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>OSP-HD32</td>
<td>VS32</td>
<td>60</td>
<td>40</td>
<td>54</td>
<td>73</td>
<td>71</td>
<td>44</td>
<td>28</td>
<td>63</td>
<td>34</td>
<td>53</td>
<td>M14 x 1.5</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>OSP-HD40</td>
<td>VS40</td>
<td>84</td>
<td>52</td>
<td>55</td>
<td>96</td>
<td>92</td>
<td>59</td>
<td>35</td>
<td>82</td>
<td>45</td>
<td>61</td>
<td>M20 x 1.5</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>OSP-HD50</td>
<td>VS50</td>
<td>84</td>
<td>-</td>
<td>60</td>
<td>107</td>
<td>105</td>
<td>66</td>
<td>37</td>
<td>89</td>
<td>49</td>
<td>66</td>
<td>M25 x 1.5</td>
<td>5</td>
<td>30</td>
</tr>
</tbody>
</table>

Order Information – Variable Stop Type VS25 to VS50

Order Instructions – Variable Stop Type VS25 to VS50

Item 1
Shock absorber with plastic cap

Item 2
Shock absorber holder complete with fittings

Item 3
Stop complete with fittings

Shock Absorber Selection
For shock absorber selection in dependence on mass and speed see pages B82-B83

Order Instructions – Variable Stop Type VS25 to VS50

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Size</th>
<th>VS25</th>
<th>VS32</th>
<th>VS40</th>
<th>VS50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>Order No.</td>
<td>Type</td>
<td>Order No.</td>
<td>Type</td>
<td>Order No.</td>
</tr>
<tr>
<td>1</td>
<td>Stop, complete</td>
<td>–</td>
<td>21257</td>
<td>–</td>
<td>21258</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>Shock absorber holder, complete</td>
<td>–</td>
<td>21202</td>
<td>–</td>
<td>21203</td>
<td>–</td>
</tr>
<tr>
<td>3 *</td>
<td>Shock absorber, standard</td>
<td>SA12</td>
<td>7706</td>
<td>SA14</td>
<td>7708</td>
<td>SA20</td>
</tr>
<tr>
<td></td>
<td>Shock absorber, version S</td>
<td>SA12S</td>
<td>7707</td>
<td>SA14S</td>
<td>7709</td>
<td>SA20S</td>
</tr>
</tbody>
</table>

* Shock absorber with plastic cap (see pages B82-B83)
Intermediate Stop Module

The intermediate stop module ZSM allows the guide carriage to stop at any desired intermediate positions with high accuracy. It can be retrofitted. Depending on the application, i.e. the number of intermediate stops, one or more intermediate position stops can be used. The intermediate position stops can be retracted and extended without the need for the guide carriage to be moved back out of position. Therefore the guide carriage can be made to stop at the defined intermediate positions in any order.

ORIGA intermediate stop module ZSM:

- Allows stopping at any intermediate positions
- Intermediate position stops can be located steplessly anywhere along the whole stroke length
- Movement to the next position without reverse stroke
- Compact unit
- Cost-effective positioning module without electrical or electronic components
- Option: end stop with fine adjustment

Intermediate Stop Module Type ZSM..HD

- Shock absorber holder with shock absorber
- End stop with fine adjustment
- Intermediate position stop complete with/without magnetic switch option

Technical Data

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>-10°C to +70°C</td>
</tr>
<tr>
<td>Operating pressure range</td>
<td>4 – 8 bar</td>
</tr>
<tr>
<td>Intermediate position grid</td>
<td>85 mm</td>
</tr>
</tbody>
</table>

Shock Absorber Type SA14S

The values relate to an effective driving force of 250 N (6 bar)
Dimensions – intermediate stop module Type ZSM..HD

- Intermediate position stop
- End stop with fine adjustment
- Shock absorber holder
- Magnet for sensing carriage position
- Magnetic switch only possible on side opposite shock absorber holder!

Dimension Table (mm) – Intermediate Stop Module Type ZSM..HD

<table>
<thead>
<tr>
<th>Series</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZSM25</td>
<td>94</td>
<td>35</td>
<td>78</td>
<td>224</td>
<td>145</td>
<td>39</td>
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<td>M5</td>
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<td>66</td>
<td>70</td>
<td>26</td>
<td>60</td>
<td>93</td>
<td>6</td>
<td>45</td>
</tr>
</tbody>
</table>

Shock Absorber Arrangement in Dependence on Direction of Movement

- From right to left
  - Shock absorber holder, right, Order No. 21342R
  - End stop or intermediate position stop

- In both directions
  - Shock absorber holder, both sides, Order No. 21342B
  - End stop or intermediate position stop

- From left to right
  - Shock absorber holder, left, Order No. 21342L
  - End stop or intermediate position stop
Order Instructions – intermediate Stop Module Type ZSM..HD

Illustration shows version with shock absorber holder for movement in both directions and magnetic switch option with T-slot switches.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>For intermediate stop module</th>
<th>Order-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Shock absorber holder with shock absorber SA14S, both sides</td>
<td>ZSM25HD</td>
<td>21342B</td>
</tr>
<tr>
<td>2*</td>
<td>Shock absorber holder with shock absorber SA14S, left</td>
<td>ZSM25HD</td>
<td>21342L</td>
</tr>
<tr>
<td>3*</td>
<td>Shock absorber holder with shock absorber SA14S, right</td>
<td>ZSM25HD</td>
<td>21342R</td>
</tr>
<tr>
<td>4</td>
<td>Intermediate position stop complete, without magnetic switch option</td>
<td>ZSM25HD</td>
<td>21343</td>
</tr>
<tr>
<td>5</td>
<td>Intermediate position stop complete, with magnetic switch option</td>
<td>ZSM25HD</td>
<td>21344</td>
</tr>
<tr>
<td>6</td>
<td>End stop with fine adjustment</td>
<td>ZSM25HD</td>
<td>21346</td>
</tr>
</tbody>
</table>

* The shock absorbers are installed in the shock absorber holder and adjusted in our workshop.

Note:
For movement onwards from the intermediate position, the intermediate position stop must advance.
The intermediate position stop can only advance if both cylinder chambers of the OSP-P cylinder are pressurized.
## Ordering Instructions / Part Numbering System for OSP-P HD Series

### Bore
- 25
- 32
- 40
- 50

### Piston Style
- 0 Standard
- 1 Tandem
- S Special

### Seals
- 0 Standard
- 1 Viton
- S Special

### Stroke
- xxxxxx

### Piston Mountings
- 0 none

### Lubrication
- 0 Standard
- 1 Slow Speed
- 4 Food
- 5 Clean Room
- S Special

### Corrosion Resist, Hardware
- 0 Standard
- 1 Stainless
- S Special

### Cushioning / Stops
- 0 Standard
- 2 VS soft left
- 3 VS hard left
- 4 VS soft right
- 5 VS hard right
- 6 VS soft both sides
- 7 VS hard both sides
- S Special

### Air Connections / Porting
- 0 Standard (position #2)
- 1 end face (position #5)
- 2 single end porting
- 3 left stand (pos #2), right end face (pos #5)
- 4 right stand (pos #2), left end face (pos #5)
- 5 single end porting end face

### Add. Carriage
- 0 without
- D Guide Carriage

### Dovetail Cover
- 0 Standard
- X Without Cover Rail
- S Special

### End Cap Mounts
- 0 without

### Guides / Brakes
- D HD Heavy Duty

### Cushioning / Stops
- 0 Standard
- 2 VS soft left
- 3 VS hard left
- 4 VS soft right
- 5 VS hard right
- 6 VS soft both sides
- 7 VS hard both sides
- S Special

### Air Connections / Porting
- A 3/2 Way valve VOE
  - 24V = (25,32,40,50)
- B 3/2 Way valve VOE
  - 220V~/110V= (25,32,40,50)
- C 3/2 Way valve VOE
  - 48V= (25,32,40,50)
- E 3/2 Way valve VOE
  - 110V= (25,32,40,50)
- S Special

### End Cap Position
- 0 l+ 0° = in front (pos #2)
- 1 l+ 90° = underneath (pos #3)
- 2 l+ 180° = at the back (pos #4)
- 3 l+ 270° = same face as outerband (pos #2,1)
- 4 190° = underneath; r 0° = in front (pos #3,2)
- 5 180° = at the back; r 0° = in front (pos #4,2)
- 6 1270° = same face as outerband; r 0° = in front (pos #1,2)
- 7 10° = in front; r 90° = underneath (pos #5,3)
- 8 1180° = at the back; r 90° = underneath (pos #4,3)
- 9 1260° = same face as outerband; r 90° = underneath (pos #1,3)

### Note:
- Position #2 is the standard location.