

# OSP

—ORTMAN

—SYSTEM

—PLUS

—PNEUMATIC

## Attention!

All dimensions are in European-Standard.

Please convert all in US-Standard.

### Conversion Table

<b>Multiply</b>	<b>By</b>	<b>To Obtain</b>
Millimeters	.03937	Inches
Newtons	.2248	Lbs. (F)
Bar	14.5	PSI
Newtons-Meters	8.8512	In-Lbs.
Kilograms	2.205	Lbs.
<hr/>		
Inches	25.4	Millimeters
Lbs. (F)	4.448	Newtons
PSI	0.06895	Bar
In-Lbs.	.113	Newtons-Meters
Lbs.	.45359	Kilograms



**ORTMAN**  
FLUID POWER

Ortman Fluid Power • 3501 Wismann Lane • Quincy, Illinois 62305-3116  
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Internet <http://www.ortmanfluidpower.com>

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**OSP**  
—ORTMAN  
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<p><b>Basic Linear Drive – Standard Version</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Air Connection on the End-face</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Both Air Connection at One End</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Clevis Mounting</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Mid-Section Support</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Inversion Mounting</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Linear Guides – SLIDELINE</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Linear Guides – POWERSLIDE</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Linear Guides – GUIDELINE</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>Linear Guides – PROLINE</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> <li>● Series OSP-E Belt *</li> <li>● Series OSP-E Screw *</li> </ul>	
<p><b>Brakes</b></p> <ul style="list-style-type: none"> <li>● Active-Brakes</li> <li>● Passive-Brakes</li> </ul>	
<p><b>Proximity Sensors</b></p> <ul style="list-style-type: none"> <li>● Series OSP-P</li> </ul>	
<p><b>SENSOFLEX – Measuring Systems</b></p> <ul style="list-style-type: none"> <li>● Series SFI</li> <li>● Series SFA</li> </ul>	

# Modular Components - Overview

Linear Drives	OSP-P10 <sup>(1) (4)</sup>	OSP-P16 <sup>(1)</sup>	OSP-P25 <sup>(1)</sup>	OSP-P32 <sup>(1)</sup>	OSP-P40 <sup>(1)</sup>
Theoretical force / Effective force at 6 bar [N]	47 / 32	120 / 78	295 / 250	483 / 420	754 / 640
Velocity v [m/s]	> 0,005	> 0,005	> 0,005	> 0,005	> 0,005
Magnetic piston (three sides)	☒	☐	☐	☐	☐
Lubrication - Prelubricated	☐	☐	☐	☐	☐
Multiple air ports ( 4 x 90° )	☒	☐	☐	☐	☐
Both Air Connections at End-face	☒	○	○	○	○
Air Connection on the End-face	☒	○	○	○	○
Cushioning	☐	☐	☐	☐	☐
Cushion length [mm]	2,50	11	17	20	27
Stroke length [mm]	1 - 6000	1 - 6000	1 - 6000	1 - 6000	1 - 6000
Pressure range [bar]	0,0 - 8,0	0,0 - 8,0	0,0 - 8,0	0,0 - 8,0	0,0 - 8,0
Temperature range [°C] <i>eT</i>	-10 - + 80 °	-10 - + 80	-10 - + 80	-10 - + 80	-10 - + 80
Viton / chemical resistance	○	○	○	○	○
Stainless steel parts	○	○	○	○	○
Clevis mounting	○	○	○	○	○
Slow speed lubrication	○	○	○	○	○
Duplex Connection / Multiplex Connection	☒	on request	○	○	○
Tandem piston	○	○	○	○	○
<b>Self Guidance</b>					
L [N]	20	120	300	450	750
M [Nm]	1	4	15	30	60
Ms [Nm]	0,2	0,45	1,5	3	6
Mv [Nm]	0,3	0,5	3	5	8
<b>Slideline</b>					
L [N]	☒	325	675	925	1500
M [Nm]	☒	11	34	60	110
Ms [Nm]	☒	6	14	29	50
Mv [Nm]	☒	11	34	60	110
<b>Proline</b>					
L [N]	☒	☒	1210	1460	2600
M [Nm]	☒	☒	55	91	198
Ms [Nm]	☒	☒	23	36	72
Mv [Nm]	☒	☒	55	91	198
<b>Powerslide</b>					
L [N]	☒	1400	1400 - 3000	1400 - 3000	3000
M [Nm]	☒	45	63 - 175	70 - 175	175 - 250
Ms [Nm]	☒	14	14 - 65	20 - 65	65 - 90
Mv [Nm]	☒	45	63 - 175	70 - 175	175 - 250
<b>Guideline</b>					
L [N]	☒	☒	1650 - 2500	1650 - 2500	4400 - 8000
M [Nm]	☒	☒	115	145	440
Ms [Nm]	☒	☒	75	90	330
Mv [Nm]	☒	☒	90	115	310
Guideline with shock absorber for cushioning	☒	☒	○	○	○
<b>Active-Brake</b>					
Braking force at 6 bar (Brake surface dry) [N]	☒	☒	350	590	900
<b>Slideline SL / Proline PL with Brakes</b>					
<b>Active-Brake</b>			<b>SL/PL</b>	<b>SL/PL</b>	<b>SL/PL</b>
Braking force at 6 bar (Brake surface dry) [N]	☒	☒	325/on request	545/on request	835/on request
<b>Passive-Brake Multibrake</b>			<b>SL/PL</b>	<b>SL/PL</b>	<b>SL/PL</b>
Brake force (no pressure, Brake surface dry) [N]	☒	☒	470/315	790/490	1200/715
<b>Accessories</b>					
<b>Proximity Sensors</b>					
RS (closer, opener); ES (PNP, NPN)	○	○	○	○	○
<b>Displacement measuring systems</b>					
SFI - incremental	☒	☒	○	○	○
SFA - absolute	☒	☒	○	○	☒
<b>Integrated valves 3/2 WV NO VOE</b>	☒	☒	○	○	○
<b>Motor package (stepper/servo)</b>	☒	☒	☒	☒	☒
<b>Mountings</b>					
End Cap Mounting / Mid-Section support	○	○	○	○	○
Inversion mounting	☒	○	○	○	○
Shock absorber for intermediate position	☒	☒	on request	on request	on request
Adaptor Profile / T-Nut Profile	☒	○	○	○	○
<b>Special cylinders</b>					
Cleanroom - class 10	☒	on request	on request	on request	☒
High-speed up to 30 m/s	☒	on request	on request	on request	☒

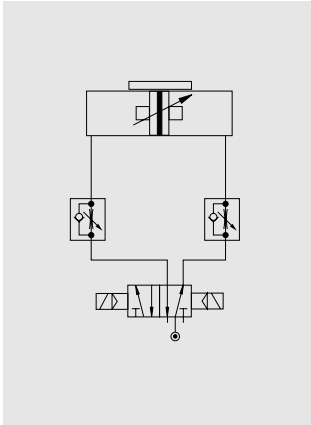
☐ = Standard version  
 ○ = Option  
 ☒ = not applicable  
 eT = other Temperature ranges on request

<sup>(1)</sup> = Rodless Pneumatic Cylinder <sup>(2)</sup> = Linear Actuator with ball screw  
<sup>(2)</sup> = Linear Actuator with toothed belt  
<sup>(3)</sup> = Linear Actuator with ball screw  
<sup>(4)</sup> = Rodless Pneumatic Cylinder Temperature ranges on request

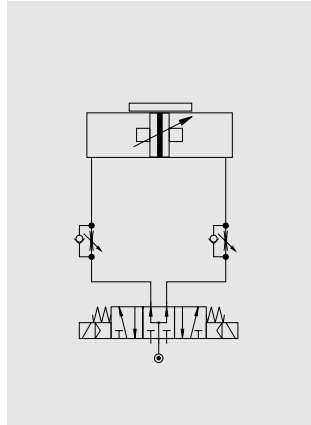
# Modular Components - Overview

OSP-P50 <sup>(1)</sup>	OSP-P63 <sup>(1)</sup>	OSP-P80 <sup>(1)</sup>	OSP-E25-B <sup>(2)</sup>	OSP-E32-B <sup>(2)</sup>	OSP-E50-B <sup>(2)</sup>	OSP-E25-S <sup>(3)</sup>	OSP-E32-S <sup>(3)</sup>	OSP-E50-S <sup>(3)</sup>
1178 / 1000	1870 / 1550	3010 / 2600	50	100 - 150	300 - 425	250	600	1500
> 0,005	> 0,005	> 0,005	0,05 - 3,0	0,05 - 5,0	0,05 - 5,0	0,01 - 0,25	0,01 - 0,5	0,01 - 1,25
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	32	39	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1 - 6000	1 - 6000	1 - 6000	100 - 3000	100 - 5000	100 - 5000	100 - 1300	100 - 3200	100 - 3200
0,0 - 8,0	0,0 - 8,0	0,0 - 8,0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-10 - + 80	-10 - + 80	-10 - + 80	- 30 - + 80	- 30 - + 80	- 30 - + 80	- 20 - + 80	- 20 - + 80	- 20 - + 80
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	on request	on request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1200	1650	2400	160	300	850	500	1200	3000
115	200	360	12	25	80	12	25	80
10	12	24	2	8	16	2	8	16
15	24	48	8	16	32	8	16	3
2000	2500	on request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	675	925	2000
180	260	on request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34	60	180
77	120	on request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14	29	77
180	260	on request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34	60	180
3890	<input type="checkbox"/>	<input type="checkbox"/>	1210	1460	3890	1210	1460	3890
313	<input type="checkbox"/>	<input type="checkbox"/>	55	91	313	55	91	313
139	<input type="checkbox"/>	<input type="checkbox"/>	23	36	139	23	36	139
313	<input type="checkbox"/>	<input type="checkbox"/>	55	91	313	55	91	313
3000 - 4000	<input type="checkbox"/>	<input type="checkbox"/>	1400 - 3000	1400 - 3000	3000 - 4000	1400 - 3000	1400 - 3000	3000 - 4000
250 - 350	<input type="checkbox"/>	<input type="checkbox"/>	63 - 175	70 - 175	250 - 350	63 - 175	70 - 175	250 - 350
90 - 140	<input type="checkbox"/>	<input type="checkbox"/>	14 - 65	20 - 65	90 - 140	14 - 65	20 - 65	90 - 140
250 - 350	<input type="checkbox"/>	<input type="checkbox"/>	63 - 175	70 - 175	250 - 350	63 - 175	70 - 175	250 - 350
4400 - 8000	<input type="checkbox"/>	<input type="checkbox"/>	1650 - 2500	1650 - 2500	4400 - 8000	1650 - 2500	1650 - 2500	4400 - 8000
500	<input type="checkbox"/>	<input type="checkbox"/>	115	145	500	115	145	500
375	<input type="checkbox"/>	<input type="checkbox"/>	75	90	375	75	90	375
355	<input type="checkbox"/>	<input type="checkbox"/>	90	115	355	90	115	355
<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1400	2170	4000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SL/PL</b>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1200/on request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SL/PL</b>	<b>SL</b>	<b>SL</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1870/1100	2900	2900	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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on request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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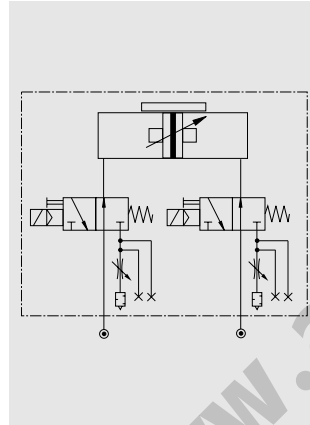
# CONTROL EXAMPLES FOR OSP-P



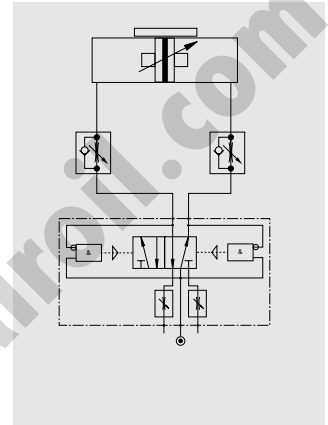
Control for an end-of-stroke application a 5/2-way valve controls the cylinder. The speed can be controlled separately for both directions.



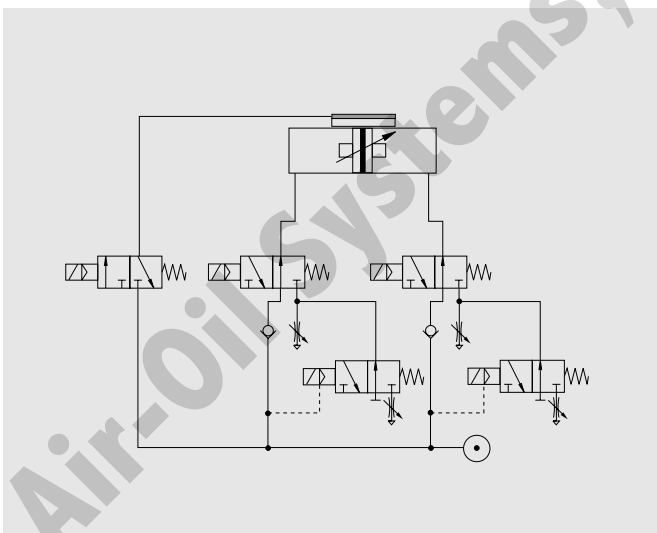
If a 5/3-way valve (with pressurized middle position) is used to control the cylinder, it is possible to stop at intermediate positions.



The optional integrated VOE Valves offer optimal control, and allow accurate positioning of intermediate positions with the lowest possible equal speeds.

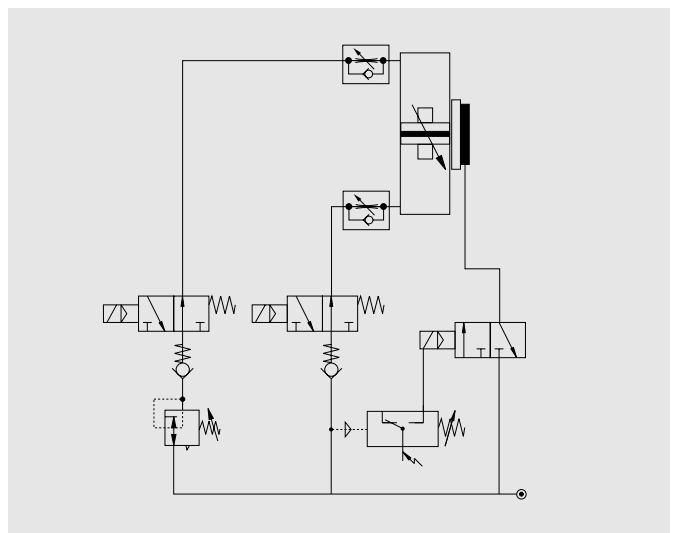


ORTMAN FLUID POWER's pneumatic oscillating valve allows automatic reciprocating motion, with full control of the oscillating motion's speed in both directions. This solution does not require any sensors or other pneumatic accessories.



Fast/Slow speed cycle control with pneumatic brake for accurate positioning at high velocities. Additional 3/2-way valves with adjustable throttle valves at the exhaust of the standard directional control valves for two

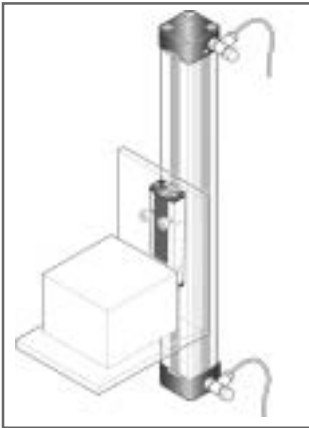
displacement speeds in each direction of the piston's travel. The valve controlling the brake is activated after the slow speed cycle is activated.



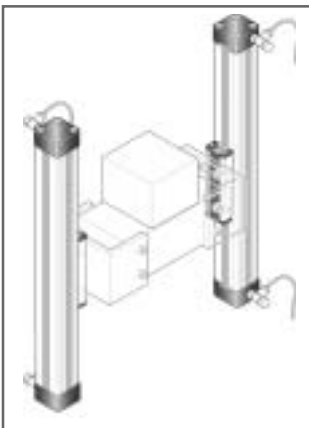
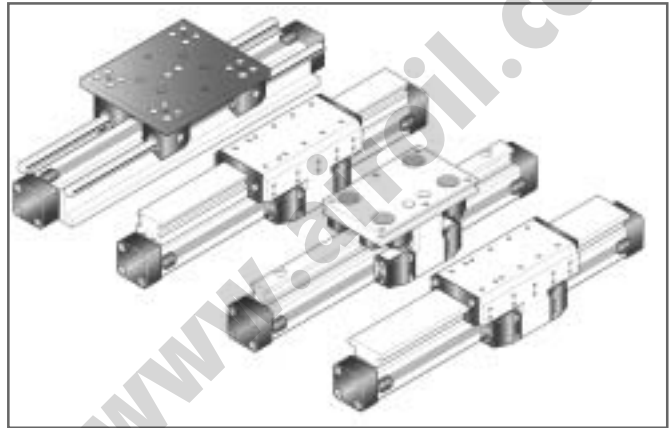
The combination of an OSP cylinder with the passive MULTIBRAKE as shown here, allows accurate positioning and safety in case of loss of pneumatic air pressure.

# OSP-P APPLICATION EXAMPLES

ORTMAN SYSTEM PLUS – rodless linear drives offer maximal flexibility for any application.



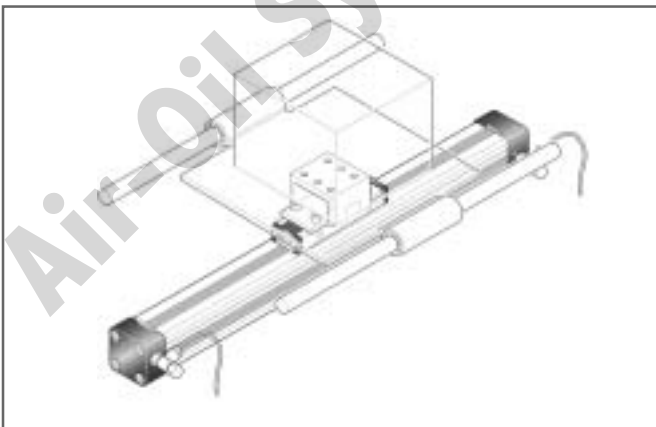
The high load capacity of the piston can cope with high bending moments without additional guides.



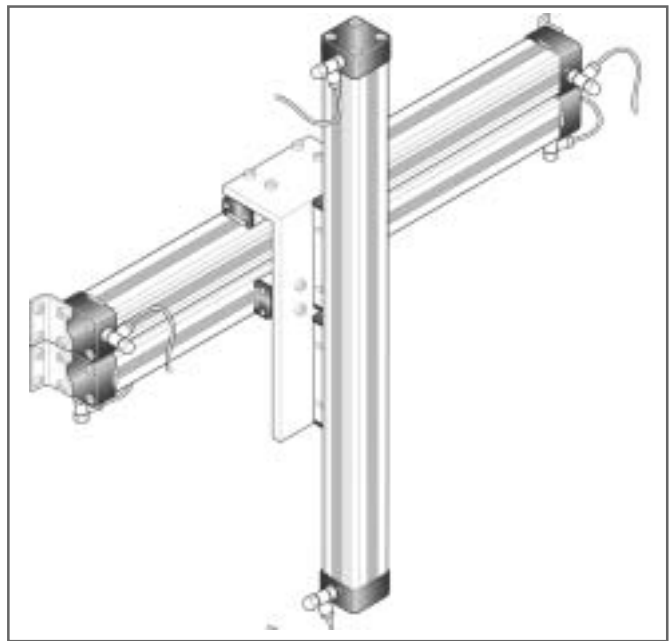
The mechanical design of the OSP-P allows synchronized movement of two cylinders.

Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

Optimal system performance by combining multi-axis cylinder combinations.



When using external guides, the clevis mounting is used to compensate for deviations in parallelism.



For further information and assembly instructions, please contact your local ORTMAN FLUID POWER dealer.



**Air-Oil Systems, Inc. [www.airoil.com](http://www.airoil.com)**