

# TYPE K SERIES

## Pneumatic Power Cylinders | Product Overview | Technical Information



- Piston rod with male thread

**Note:**

Operating pressure max. 6 bar [87psi], min 3 bar [44psi]. Use only clean, water- and oilfree compressed air. Piston rod is not secured against twisting and should not be loaded transversal.

See page MC-PPC-2 for more information.

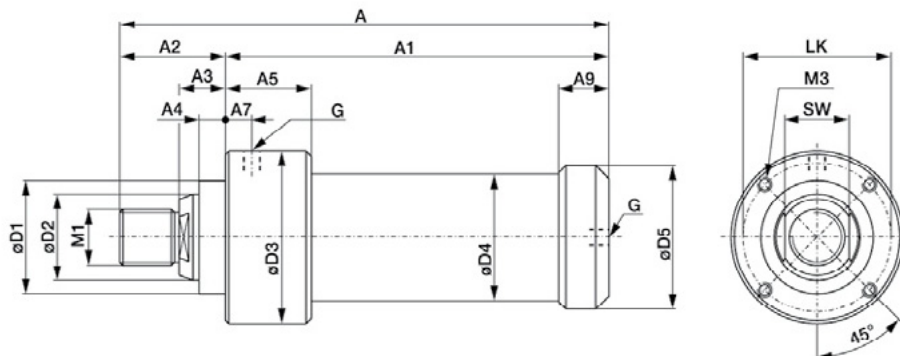
Model	Piston force within forward stroke at 6 bar kN [lbf]	Forward stroke mm [in]	Clamping force within power stroke at 6 bar kN [lbf]	Power stroke mm [in]	Piston dia. mm [in]	Air consumption per double stroke at 6 bar dm <sup>3</sup> [ft <sup>3</sup> ]	Stroke frequency depending on total stroke [min <sup>-1</sup> ]	Temperature range °C [°F]	Weight Kg [lbs]
K400-15-6-1	0,68 [153]	15 [0.59]	4 [900lbf]	6 [0.24]	40 [1.75]	0,71 [0.025]	5 to 30	- 5 to +75 [23 to 167]	1,20 [2.6]
K400-30-6-1		30 [1.18]				0,89 [0.031]			1,25 [2.8]
K400-50-6-1		50 [1.97]				1,14 [0.040]			1,30 [2.9]
K400-70-6-1		70 [2.76]				1,38 [0.049]			1,35 [3.0]
K400-120-6-1		120 [4.72]				1,98 [0.070]			1,50 [3.3]
K400-200-6-1		200 [7.87]				2,94 [0.104]			1,70 [3.7]
K600-15-6-1	1,06 [238]	15 [0.59]	6 [1350lbf]	6 [0.24]	50 [1.97]	1,34 [0.047]	5 to 30	- 5 to +75 [23 to 167]	2,05 [4.5]
K600-30-6-1		30 [1.18]				1,65 [0.058]			2,15 [4.7]
K600-50-6-1		50 [1.97]				2,06 [0.073]			2,30 [5.1]
K600-70-6-1		70 [2.76]				2,47 [0.087]			2,40 [5.3]
K600-120-6-1		120 [4.72]				3,50 [0.124]			2,70 [6.0]
K600-200-6-1		200 [7.87]				5,15 [0.182]			3,20 [7.1]
K1000-15-7-1	1,75 [393]	15 [0.59]	10 [2250lbf]	7* [0.27]	63 [2.48]	2,20 [0.078]	5 to 30	- 5 to +75 [23 to 167]	3,60 [7.9]
K1000-30-7-1		30 [1.18]				2,66 [0.094]			3,80 [8.4]
K1000-50-7-1		50 [1.97]				3,26 [0.115]			4,10 [9.0]
K1000-70-7-1		70 [2.76]				3,85 [0.136]			4,40 [9.7]
K1000-120-7-1		120 [4.72]				5,35 [0.189]			5,20 [11.5]
K1000-200-7-1		200 [7.87]				7,74 [0.273]			6,40 [14.1]
K3000-15-6-1	3 [674]	15 [0.59]	30 [6700lbf]	6* [0.24]	85 [3.35]	4,48 [0.158]	5 to 25	- 5 to +75 [23 to 167]	11,80 [26.0]
K3000-30-6-1		30 [1.18]				5,20 [0.184]			12,50 [27.6]
K3000-50-6-1		50 [1.97]				6,17 [0.218]			13,40 [29.5]
K3000-70-6-1		70 [2.76]				7,13 [0.252]			14,30 [31.5]
K3000-120-6-1		120 [4.72]				9,54 [0.337]			16,60 [36.6]
K3000-200-6-1		200 [7.87]				13,40 [0.473]			20,20 [44.5]
K4500-15-6-1	4,2 [944]	15 [0.59]	45 [10120lbf]	6* [0.24]	100 [3.94]	6,18 [0.218]	5 to 25	- 5 to +75 [23 to 167]	13,30 [29.3]
K4500-30-6-1		30 [1.18]				7,17 [0.253]			14,00 [30.9]
K4500-50-6-1		50 [1.97]				8,50 [0.300]			15,00 [33.1]
K4500-70-6-1		70 [2.76]				9,83 [0.347]			15,80 [34.8]
K4500-120-6-1		120 [4.72]				13,20 [0.466]			18,10 [39.9]
K4500-200-6-1		200 [7.87]				18,50 [0.653]			21,70 [47.8]

\* Power strokes up to 12 mm and other forward strokes upon request

# TYPE K SERIES

## Pneumatic Power Cylinders | Technical Information

### Type K in standard version



Dimensions for standard version of type K

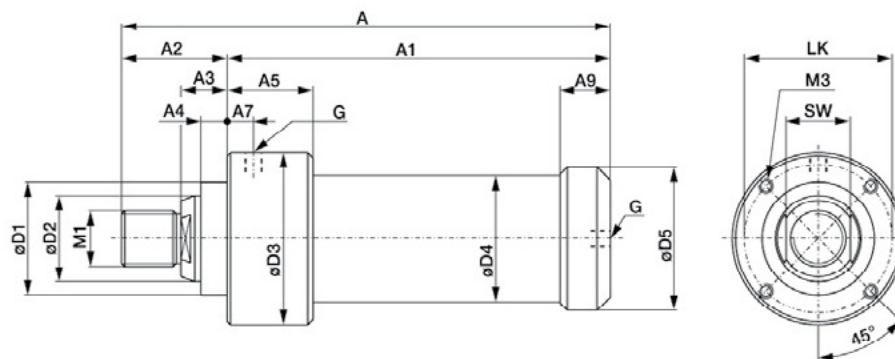
Differences of dimensions for cylinder with magnet piston rings see chart on page MC-PPC-10

Model	Dimensions for standard version of type K																	
	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>7</sub>	A <sub>9</sub>	ø D <sub>1</sub>	ø D <sub>2</sub>	ø D <sub>3</sub>	ø D <sub>4</sub>	ø D <sub>5</sub>	M <sub>1</sub>	M <sub>3</sub>	LK	SW	G
K400-15-6-1	186 [7.32]	145 [5.71]																
K400-30-6-1	201 [7.91]	160 [6.30]																
K400-50-6-1	221 [8.70]	180 [7.09]																
K400-70-6-1	241 [9.49]	200 [7.87]	41 [1.6]	21 [0.8]	12 [0.5]	39 [1.5]	10 [0.4]	23,5 [0.9]	40 <sub>h8</sub> [1.6]	25 <sub>h7</sub> [1.0]	63 [2.5]	44 [1.7]	49 [1.9]	M16 x 1,5 [0.06]	M5, 10mm deep [0.1]	54 [2.1]	21 [0.8]	G1/8
K400-120-6-1	291 [11.46]	250 [9.84]																
K400-200-6-1	371 [14.61]	330 [12.99]																
K600-15-6-1	201 [7.91]	160 [6.30]																
K600-30-6-1	216 [8.50]	175 [6.89]																
K600-50-6-1	236 [9.29]	195 [7.68]																
K600-70-6-1	256 [10.08]	215 [8.46]	41 [1.6]	21 [0.8]	12 [0.5]	39 [1.5]	10 [0.4]	23,5 [0.9]	40 <sub>h8</sub> [1.6]	25 <sub>h7</sub> [1.0]	73 [2.9]	54 [2.1]	59 [2.3]	M16 x 1,5 [0.06]	M6, 10mm deep [0.1]	64 [2.5]	21 [0.1]	G1/8
K600-120-6-1	306 [12.05]	265 [10.43]																
K600-200-6-1	386 [15.20]	345 [13.58]																
K1000-15-7-1	243 [9.57]	187 [7.36]																
K1000-30-7-1	258 [10.16]	202 [7.95]																
K1000-50-7-1	278 [10.94]	222 [8.74]																
K1000-70-7-1	298 [11.73]	242 [9.53]	56 [2.2]	25 [1.0]	15 [0.6]	52 [2.0]	10 [0.4]	29 [1.1]	63 <sub>h8</sub> [2.5]	40 <sub>h7</sub> [1.6]	100 [3.9]	68 [2.7]	74,5 [2.9]	M24 x 3,0 [0.98]	M8, 12mm deep [1]	85 [3.3]	32 [1.3]	G1/8
K1000-120-7-1	348 [13.70]	292 [11.50]																
K1000-200-7-1	428 [16.85]	372 [14.65]																

# TYPE K SERIES

Pneumatic Power Cylinders | Technical Information

## Type K in standard version



Model	Dimensions for standard version of type K																	
	Differences of dimensions for cylinder with magnet piston rings see chart on page MC-PPC-10																	
	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>7</sub>	A <sub>9</sub>	ø D <sub>1</sub>	ø D <sub>2</sub>	ø D <sub>3</sub>	ø D <sub>4</sub>	ø D <sub>5</sub>	M <sub>1</sub>	M <sub>3</sub>	LK	SW	G
K3000-15-6-1	315 [12.40]	235 [9.25]																
K3000-30-6-1	330 [12.99]	250 [9.84]																
K3000-50-6-1	350 [13.78]	270 [10.63]	50 [2.0]	35 [1.4]	20 [0.8]	70 [2.8]	20 [0.8]	45 [1.8]	85 <sub>h8</sub> [3.3]	65 <sub>h7</sub> [2.6]	130 [5.1]	95 [3.7]	108 [4.3]	M42 [1.65]	M10, 16mm deep [1.7]	112 [4.4]	55 [2.2]	G1/4
K3000-70-6-1	370 [14.57]	290 [11.42]																
K3000-120-6-1	420 [16.54]	340 [13.39]																
K3000-200-6-1	500 [19.69]	420 [16.54]																
K4500-15-6-1	315 [12.40]	235 [9.25]																
K4500-30-6-1	330 [12.99]	250 [9.84]																
K4500-50-6-1	350 [13.78]	270 [10.63]	80 [3.1]	35 [1.4]	20 [0.8]	70 [2.8]	20 [0.8]	45 [1.8]	85 <sub>h8</sub> [3.3]	65 <sub>h7</sub> [2.6]	145 [5.7]	110 [4.3]	123 [4.8]	M42 [1.65]	[1.7] M10, 16mm deep	127 [5.0]	55 [2.2]	G1/4
K4500-70-6-1	370 [14.57]	290 [11.42]																
K4500-120-6-1	420 [16.54]	340 [13.39]																
K4500-200-6-1	500 [19.69]	420 [16.54]																

# TYPE WK SERIES

## Pneumatic Power Cylinders | Product Overview | Technical Information



- Piston rod with ISO fit

**Note:**

Operating pressure max. [87psi]6 bar, min [44psi] 3 bar. Use only clean, water- and oilfree compressed air. Piston rod is not secured against twisting and should not be loaded transversal. See page MC-PPC-2 for more information.

Model	Piston force within forward stroke at 6 bar kN [lbf]	Forward stroke mm [in]	Clamping force within power stroke at 6 bar kN [lbf]	Power stroke mm [in]	Piston dia. mm [in]	Air consumption per double stroke at 6 bar dm <sup>3</sup> [ft <sup>3</sup> ]	Stroke frequency depending on total stroke [min <sup>-1</sup> ]	Temperature range °C [°F]	Weight [lbs] kg
WK400-15-6-1	0,68 [153]	15 [0.59]	4 [900lbf]	6 [0.24]	40 [1.75]	0,71 [0.025]	5 to 30	- 5 to +75 [23 to 167]	1,20 [2.6]
WK400-30-6-1		30 [1.18]				0,89 [0.031]			1,25 [2.8]
WK400-50-6-1		50 [1.97]				1,14 [0.040]			1,30 [2.9]
WK400-70-6-1		70 [2.76]				1,38 [0.049]			1,35 [3.0]
WK400-120-6-1		120 [4.72]				1,98 [0.070]			1,50 [3.3]
WK400-200-6-1		200 [7.87]				2,94 [0.104]			1,70 [3.7]
WK600-15-6-1	1,06 [238]	15 [0.59]	6 [1350lbf]	6 [0.24]	50 [1.97]	1,34 [0.047]	5 to 30	- 5 to +75 [23 to 167]	2,05 [4.5]
WK600-30-6-1		30 [1.18]				1,65 [0.058]			2,15 [4.7]
WK600-50-6-1		50 [1.97]				2,06 [0.073]			2,30 [5.1]
WK600-70-6-1		70 [2.76]				2,47 [0.087]			2,40 [5.3]
WK600-120-6-1		120 [4.72]				3,50 [0.124]			2,70 [6.0]
WK600-200-6-1		200 [7.87]				5,15 [0.182]			3,20 [7.1]
WK1000-15-7-1	1,75 [393]	15 [0.59]	10 [2250lbf]	7* [0.27]	63 [2.48]	2,20 [0.078]	5 to 30	- 5 to +75 [23 to 167]	3,60 [7.9]
WK1000-30-7-1		30 [1.18]				2,66 [0.094]			3,80 [8.4]
WK1000-50-7-1		50 [1.97]				3,26 [0.115]			4,10 [9.0]
WK1000-70-7-1		70 [2.76]				3,85 [0.136]			4,40 [9.7]
WK1000-120-7-1		120 [4.72]				5,35 [0.189]			5,20 [11.5]
WK1000-200-7-1		200 [7.87]				7,74 [0.273]			6,40 [14.1]
WK3000-15-6-1	3 [674]	15 [0.59]	30 [6700lbf]	6* [0.24]	85 [3.35]	4,48 [0.158]	5 to 25	- 5 to +75 [23 to 167]	11,80 [26.0]
WK3000-30-6-1		30 [1.18]				5,20 [0.184]			12,50 [27.6]
WK3000-50-6-1		50 [1.97]				6,17 [0.218]			13,40 [29.5]
WK3000-70-6-1		70 [2.76]				7,13 [0.252]			14,30 [31.5]
WK3000-120-6-1		120 [4.72]				9,54 [0.337]			16,60 [36.6]
WK3000-200-6-1		200 [7.87]				13,40 [0.473]			20,20 [44.5]
WK4500-15-6-1	4,2 [944]	15 [0.59]	45 [10120lbf]	6* [0.24]	100 [3.94]	6,18 [0.218]	5 to 25	- 5 to +75 [23 to 167]	13,30 [29.3]
WK4500-30-6-1		30 [1.18]				7,17 [0.253]			14,00 [30.9]
WK4500-50-6-1		50 [1.97]				8,50 [0.300]			15,00 [33.1]
WK4500-70-6-1		70 [2.76]				9,83 [0.347]			15,80 [34.8]
WK4500-120-6-1		120 [4.72]				13,20 [0.466]			18,10 [39.9]
WK4500-200-6-1		200 [7.87]				18,50 [0.653]			21,70 [47.8]
WK6000-30-6	6,0 [1350]	[1.18] 30	60,0 [13490lbf]	6* [0.24]	125,0 [4.92]	[0.367] 10,40	5 to 25	- 5 to +75 [23 to 167]	24,00 [52.9]
WK6000-50-6		[1.97] 50				[0.454] 12,85			24,50 [54.0]
WK6000-70-6		[2.76] 70				[0.536] 15,17			25,00 [55.1]
WK6000-120-6		[4.72] 120				[0.747] 21,15			26,50 [58.4]

\* Power strokes up to 12 mm and other forward strokes upon request

Dimensions and technical information are subject to change without notice

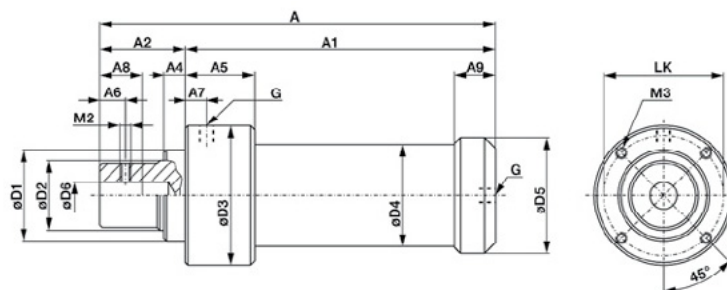
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# TYPE WK SERIES

Pneumatic Power Cylinders | Technical Information

## Type WK in standard version



Model	Dimensions for standard version of type WK Differences of dimensions for cylinder with magnet piston rings see chart on page MC-PPC-10																		
	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>7</sub>	A <sub>8</sub> **	A <sub>9</sub>	Ø D <sub>1</sub>	Ø D <sub>2</sub>	Ø D <sub>3</sub>	Ø D <sub>4</sub>	Ø D <sub>5</sub>	Ø D <sub>6</sub>	M <sub>2</sub>	M <sub>3</sub>	LK	G
WK400-15-6-1	186 [7.32]	145 [5.71]																	
WK400-30-6-1	201 [7.91]	160 [6.30]																	
WK400-50-6-1	221 [8.70]	180 [7.09]	41 [1.61]	21 [0.83]	12 [0.47]	39 [1.54]	10 [0.39]	25 [0.98]	23,5 [0.93]	40 <sub>h7</sub> [1.57]	25 <sub>h7</sub> [0.98]	63 [2.48]	44 [1.73]	49 [1.93]	10 <sup>H7</sup>	M6	M5, 10mm deep [0.06]	54 [2.13]	G1/8
WK400-70-6-1	241 [9.49]	200 [7.87]																	
WK400-120-6-1	291 [11.46]	250 [9.84]																	
WK400-200-6-1	371 [14.61]	330 [12.99]																	
WK600-15-6-1	201 [7.91]	160 [6.30]																	
WK600-30-6-1	216 [8.50]	175 [6.89]																	
WK600-50-6-1	236 [9.29]	195 [7.68]	41 [1.61]	21 [0.83]	12 [0.47]	39 [1.54]	10 [0.39]	25 [0.98]	23,5 [0.93]	40 <sub>h7</sub> [1.57]	25 <sub>h7</sub> [0.98]	73 [2.87]	54 [2.13]	59 [2.32]	10 <sup>H7</sup>	M6	M6, 10mm deep [0.06]	64 [2.52]	G1/8
WK600-70-6-1	256 [10.08]	215 [8.46]																	
WK600-120-6-1	306 [12.05]	265 [10.43]																	
WK600-200-6-1	386 [15.20]	345 [13.58]																	
WK1000-15-7-1	243 [9.57]	187 [7.36]																	
WK1000-30-7-1	258 [10.16]	202 [7.95]																	
WK1000-50-7-1	278 [10.94]	222 [8.74]	56 [2.20]	25 [0.98]	15 [0.59]	52 [2.05]	10 [0.39]	40 [1.57]	29 [1.14]	63 <sub>h8</sub> [2.48]	40 <sub>h7</sub> [1.57]	99,5 [3.92]	68 [2.68]	74,5 [2.93]	20 <sup>H7</sup>	M8	M8, 12mm deep [0.98]	85 [3.35]	G1/8
WK1000-70-7-1	298 [11.73]	242 [9.53]																	
WK1000-120-7-1	348 [13.70]	292 [11.50]																	
WK1000-200-7-1	428 [16.85]	372 [14.65]																	

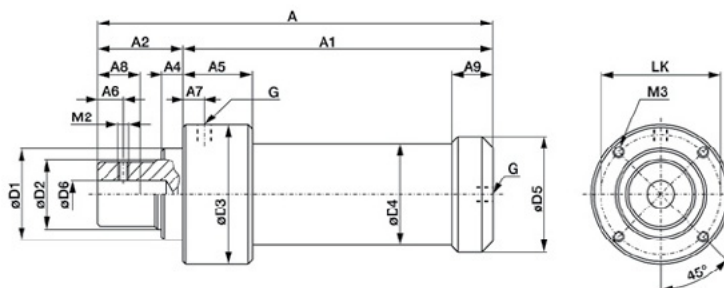
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# TYPE WK SERIES

## Pneumatic Power Cylinders | Technical Information

### Type WK in standard version



Dimensions for standard version of type WK

Differences of dimensions for cylinder with magnet piston rings see chart on page MC-PPC-10

Model	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>	A <sub>7</sub>	A <sub>8</sub> **	A <sub>9</sub>	øD <sub>1</sub>	øD <sub>2</sub>	øD <sub>3</sub>	øD <sub>4</sub>	øD <sub>5</sub>	øD <sub>6</sub>	M <sub>2</sub>	M <sub>3</sub>	LK	G
<b>WK3000-15-6-1</b>	315 [12.40]	235 [9.25]																	
<b>WK3000-30-6-1</b>	330 [12.99]	250 [9.84]																	
<b>WK3000-50-6-1</b>	350 [13.78]	270 [10.63]	80 [3.15]	35 [1.38]	20 [0.79]	70 [2.76]	20 [0.79]	40 [1.57]	45 [1.77]	85 <sub>h8</sub> [3.35]	65 <sub>h7</sub> [2.56]	130 [5.12]	95 [3.74]	108 [4.25]	25 <sup>H7</sup>	M10	M10, 16mm deep [16]	112 [4.41]	G1/4
<b>WK3000-70-6-1</b>	370 [14.57]	290 [11.42]																	
<b>WK3000-120-6-1</b>	420 [16.54]	340 [13.39]																	
<b>WK3000-200-6-1</b>	500 [19.69]	420 [16.54]																	
<b>WK4500-15-6-1</b>	315 [12.40]	235 [9.25]																	
<b>WK4500-30-6-1</b>	330 [12.99]	250 [9.84]																	
<b>WK4500-50-6-1</b>	350 [13.78]	270 [10.63]	80 [3.15]	35 [1.38]	20 [0.79]	70 [2.76]	20 [0.79]	40 [1.57]	45 [1.77]	85 <sub>h8</sub> [3.35]	65 <sub>h7</sub> [2.56]	145 [5.71]	110 [4.33]	123 [4.84]	25 <sup>H7</sup>	M10	M10, 16mm deep [1.65]	127 [5.00]	G1/4
<b>WK4500-70-6-1</b>	370 [14.57]	290 [11.42]																	
<b>WK4500-120-6-1</b>	420 [16.54]	340 [13.39]																	
<b>WK4500-200-6-1</b>	500 [19.69]	420 [16.54]																	
<b>WK6000-30-6</b>	365 [14.37]	285 [11.22]																	
<b>WK6000-50-6</b>	385 [15.16]	305 [12.01]	80 [3.15]	20 [0.79]	48 [1.89]	24 [0.94]	22 [0.87]	40 [1.57]	53 [2.09]	85 <sub>h8</sub> [3.35]	65 <sub>h7</sub> [2.56]	178 [7.01]	135 [5.31]	148 [5.83]	25 <sup>H7</sup>	M10	M10, 16mm deep [1.65]	150 [5.91]	G1/2
<b>WK6000-70-6</b>	405 [15.94]	325 [12.80]																	
<b>WK6000-120-6</b>	455 [17.91]	375 [14.76]																	

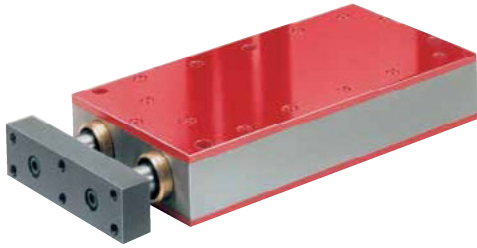
\*\* Usable depth of bore with ISO fit D6

Dimensions and technical information are subject to change without notice



# TYPE WR SERIES

## Pneumatic Power Cylinders | Product Overview

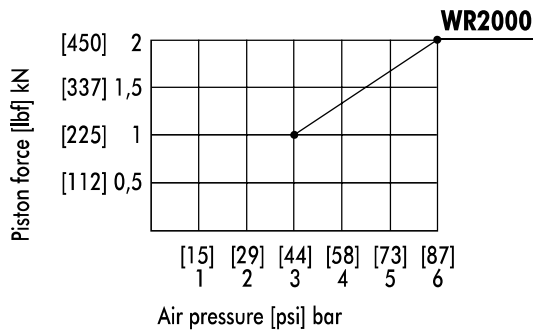
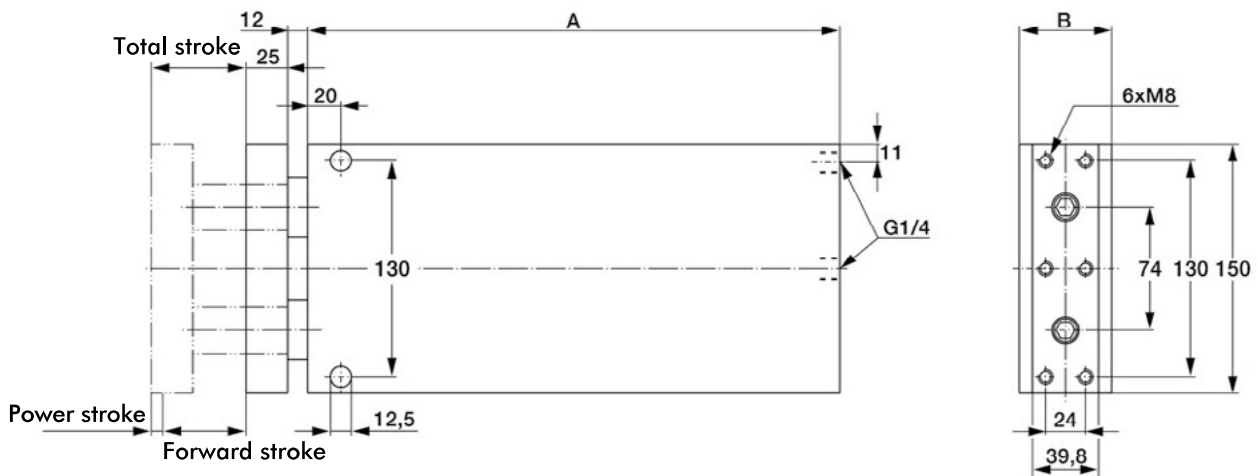


- Piston rods prevent twisting

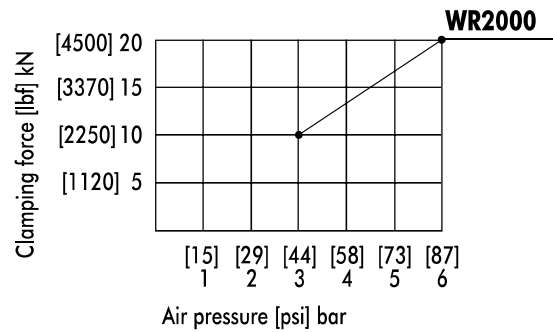
**Note:**

Use only clean, water- and oilfree compressed air. Force must be transmitted via the centre of the pressure plate. One-sided loading of the pressure plate should be avoided. For punching applications contact our technical support! See page MC-PPC-2 for more information.

**Type WR**



Return stroke force: half of piston force



Air pressure: max. [87psi] 6 bar; min. [44psi] 3 bar

Model	Piston force within forward stroke at 6 bar kN [lbf]	Forward stroke mm [in]	Clamping force within power stroke at 6 bar [lbf] kN	Power stroke mm [in]	Piston dia. mm [in]	Air consumption per double stroke at 6 bar dm <sup>3</sup> [ft <sup>3</sup> ]	Stroke frequency depending on total stroke [min <sup>-1</sup> ]	Temperature range °C [°F]	Weight kg [lbs]	A	B
WR 2000-15-7	2 [450]	15 [0.59]	20 [4500]	7 [0.27]	70 [2.76]	2,44 [0.086]	5 - 25	-5 up to +75 [23 to up167]	12,5 [27.6]	285	51,6
WR 2000-30-7		30 [1.18]							14,0 [30.9]	300	51,6
WR 2000-50-7		50 [1.97]							15,5 [34.1]	320	55,6
WR 2000-70-7		70 [2.76]							17,2 [37.9]	340	55,6
WR 2000-120-7		120 [4.72]							21,0 [46.3]	390	59,6



# PNEUMATIC POWER CYLINDERS

## Features

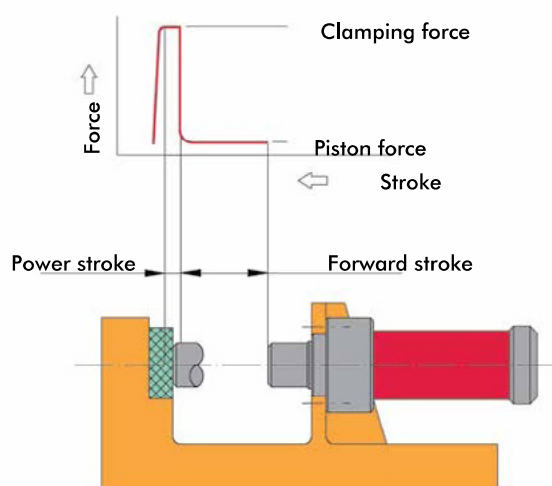
### Your requirements

Power element of machines, tools and devices for the following applications:

- Clamping
- Coining
- Punching
- Riveting
- Stamping
- Pressing
- Notching
- Clinching

### The solution

DESTACO's double acting power cylinder, which is based on the wedge lever principle.



### Product features

- Mechanical advantage: 10:1
- Characteristic are the two steps of stroke: the forward stroke to move a certain distance and the power stroke with an amplified force on a short distance
- Exact positioning of cylinder by flange mount on cylinder's head
- Cylinder works in any position
- High durability because of solid and maintenance free wedge lever mechanics.
- End position control by magnetic field sensing

### Technical Data

Power forces at 6 bar	4 – 60 kN
Forward strokes	15 – 200 mm
Power strokes	6 and 7 mm*
Air pressure	max. 6 bar, min 3 bar
Mechanical advantage	max. 10:1

Cylinders require clean, water- and oil free air

\*power strokes up to max. 12 mm upon request

### Round design: Type K and WK

- Piston rod with male thread (Type K) or ISO fit (Type WK)



### Rectangular design: Type WR

- Two piston rods prevent twisting



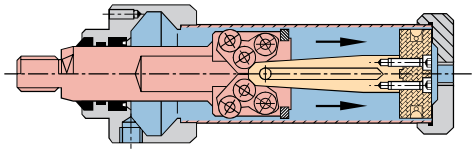
### Application Recommendations

- Compressed air should be treated by filter, water separator and pressure regulator. Oiler is not allowed!
- For an adequate piston speed air hoses with 6mm I.D. should be used.
- Do not increase the max. air pressure of 6 bar, because this would reduce the cylinder's life cycle considerably.
- The piston rods of type K and WK are not secured against twisting, an external device should be provided.
- Piston rod should not be subjected to transversal forces. Force should always be exerted by coaxial force through the piston rod to the work piece.
- For Type WR, force must be transmitted via the centre of the pressure plate.
- Connection between rod and tool should be performed as frictional connection (coupling), not as form fitting connection.
- For punching operations we recommend a force reserve of approx. 30 %.
- If the cylinder is used for positioning in the extended rod position you should consider that a possible counter-force will cause an axial deflection of approx. 1 mm. This feature is due to the cylinder's design because after the nominal power stroke the clamping force drops down to the level of the piston force (see force-stroke diagram left side).
- Valves are not usable to avoid piston movement. If the piston should be positioned within the range of the forward stroke, both chambers of the cylinder have to be vented. If the cylinder should stay at a retracted position the piston rod chamber should be under pressure and the piston chamber should be vented.
- For further facts and additional applications features see operating instruction MAPnkz-2.

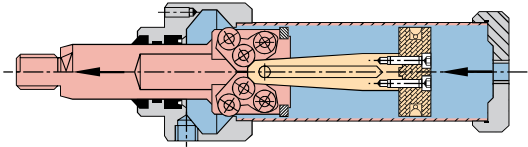


# PNEUMATIC POWER CYLINDERS

## Functions

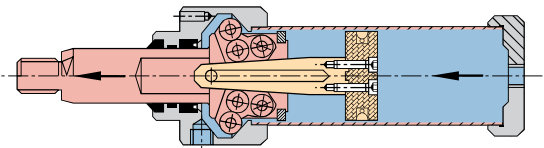


Basic position



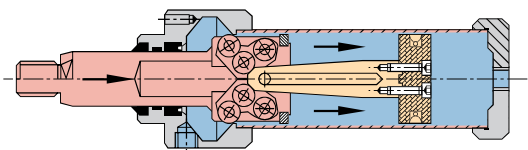
Forward stroke

Piston force is identical to the force of a common pneumatic cylinder with adequate piston diameter



Power stroke

Beginning of mechanical force amplification. Mechanical advantage max. 10:1



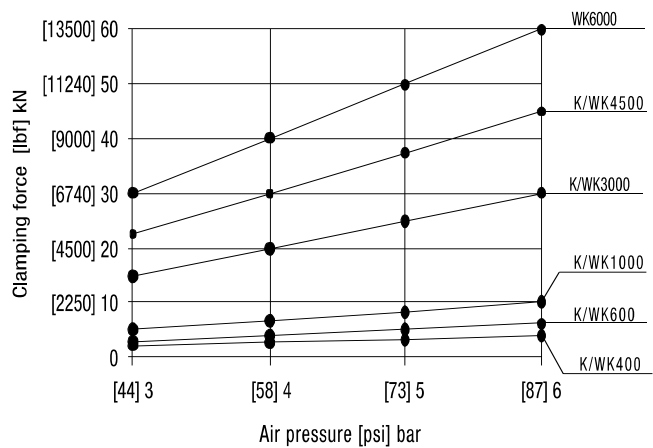
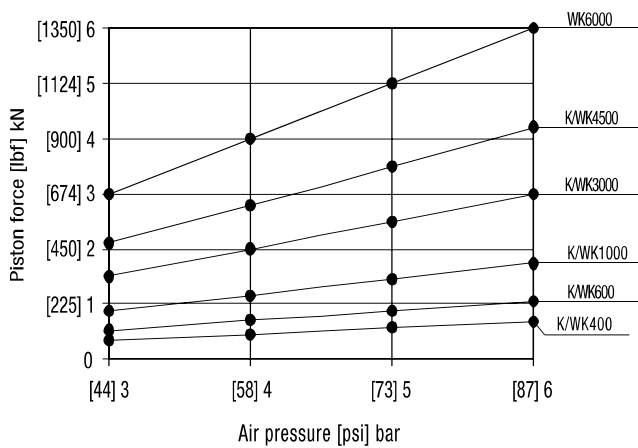
Return stroke

The return stroke can be initiated in any position of piston. The force during return stroke is approx. half of piston force.

## Forces

Force within forward stroke

Clamping force within power stroke



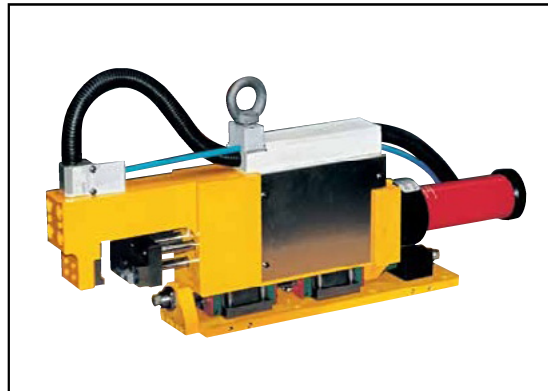
Return stroke force: half of piston force

# PNEUMATIC POWER CYLINDERS

## Application Examples



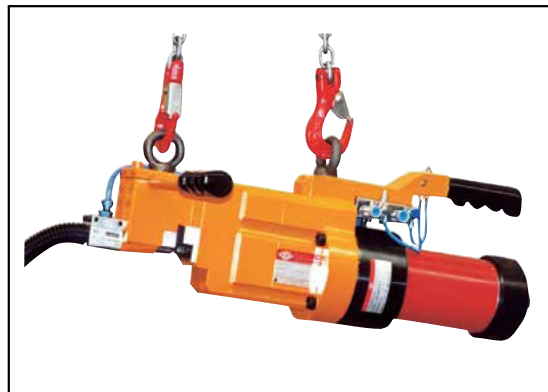
Radius clenching unit for profiled aluminium



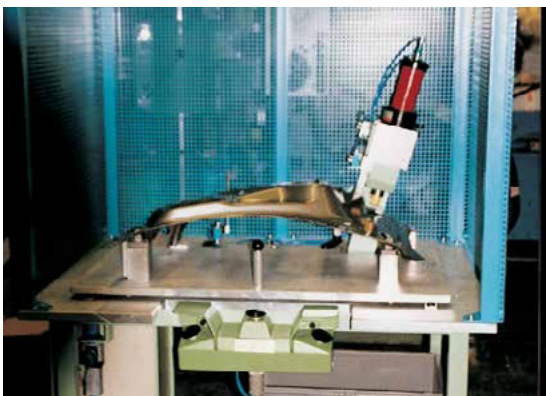
Special punching unit for 2 holes Ø 3,4 in steel 0,9 mm



Special device for 2 holes Ø 12 in steel 1,2 mm



Mobile punching unit for holes Ø 6,2 in crossbeams



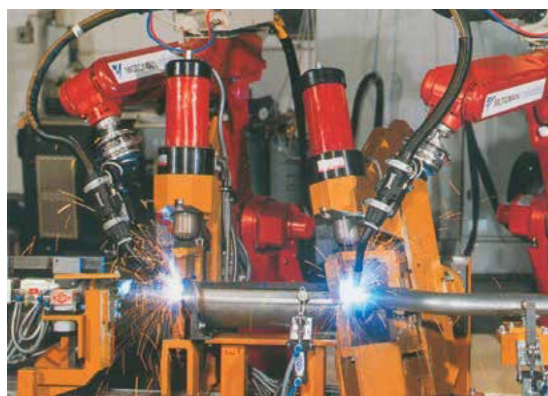
Device for holes Ø 8 in sheet metal



Stamping units placed in line



Stamping units placed in line



Welding fixture for exhaust components

Dimensions and technical information are subject to change without notice