

Work supports - Collet-Lok® design

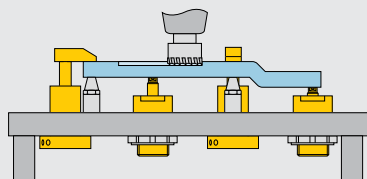
Shown: WPFS-100, WPTS-100

Collet-Lok®
products



WP series

Enerpac work supports provide either additional non-fixed location points to the clamps, or support to larger or thin section workpiece components, always in order to minimize workpiece deflection during machining. The Collet-Lok® design does not require hydraulic system pressure to maintain support position.



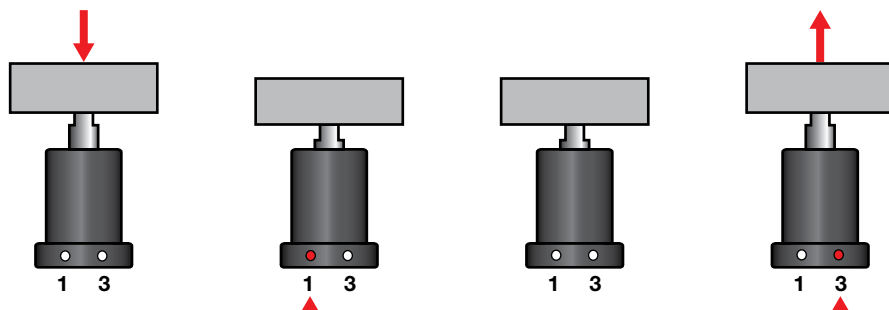
■ While pallet No. 1 is in the machine, a new work piece is loaded on to pallet No. 2.



Hydraulically locked, mechanically maintained work support

- Collet-Lok® design allows the work support to maintain support position after the hydraulic pressure is removed
- Collet-Lok® maintains a higher level of safety, as it is not dependent on hydraulic supply pressure
- Low deflection: lowest deflection of any work support available
- Threaded or flanged body increases mounting flexibility
- Capacities up to 10,000 lbs available

Collet-Lok® sequence



Step 1

Install the workpiece on the support cylinder. The plunger position will adjust to the contour of the workpiece.

Step 2

Pressurize oil port #1. The plunger will be locked in the supporting position.

Step 3

Depressurize oil port #1. Cylinder can be uncoupled from hydraulics and still support the workpiece.

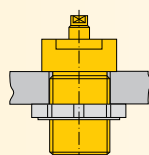
Step 4

Pressurize oil port #3. The plunger will be unlocked. When the workpiece is removed, plunger will extend into its original position.

Mounting style

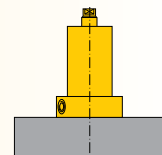
WPT series, Threaded mount

Threaded body can be used with a threaded hole in fixture plate or a jam nut with a bored hole. Ports are located in top collar block.



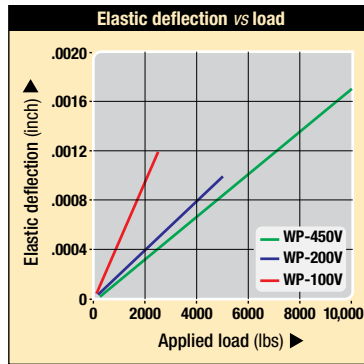
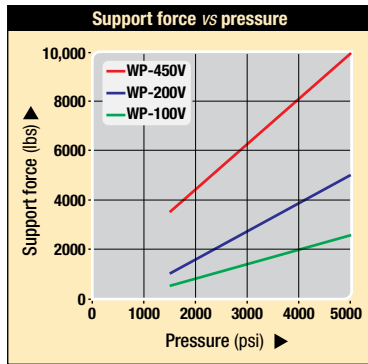
WPF series, Flange models

Mounts directly to fixture plate. Offers the flexibility of side ports or manifold ports on the underside of the flange.



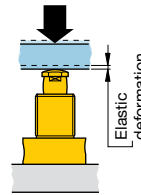
Product selection

Max. support force	Support plunger stroke	Flange models	Threaded models	Operating pressure		Locking system displacement		Plunger contact spring force	Max. oil flow
				min.	max.	lock	unlock		
lbs	in				psi		in ³ /min	lbs	in ³ /min
2000	0.39	WPFS-100V	-	1450	5000	0.24	0.24	4.50	400
4000	0.39	WPFS-200V	-	1450	5000	0.37	0.37	7.90	400
10,000	0.77	WPFS-450V	-	1450	5000	1.10	1.10	67.50	400
2000	0.39	-	WPTS-100V	1450	5000	0.24	0.24	3.37	400
4000	0.39	-	WPTS-200V	1450	5000	0.37	0.37	6.74	400



Deflection chart:

Elastic deformation of the work support resulting from the application of load.



Force: 2000 - 4000 lbs

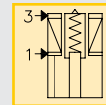
Stroke: 0.39 - .77 inch

Pressure: 1450 - 5000 psi

E Cilindros de soporte

F Vérin anti-vibreux

D Abstützzylinder



Options

Collet-Lok®
swing cylinders

12 ▶



Auto couplers

174 ▶



Positive clamping cylinders

80 ▶



Sequence valves

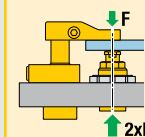
152 ▶



Important

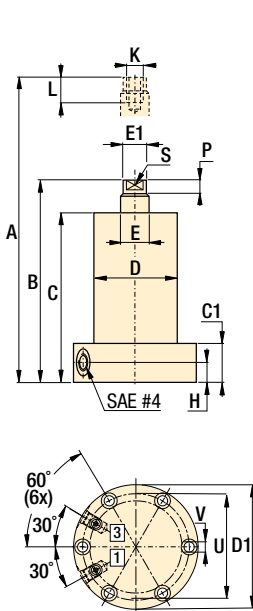
WARNING!

Support force and clamping force must be matched. Support force should be at least 150% of clamping force.

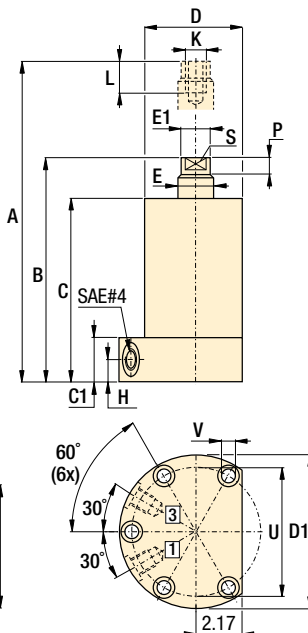


For proper application, clamp force, pressures and timing, consult Enerpac for support.

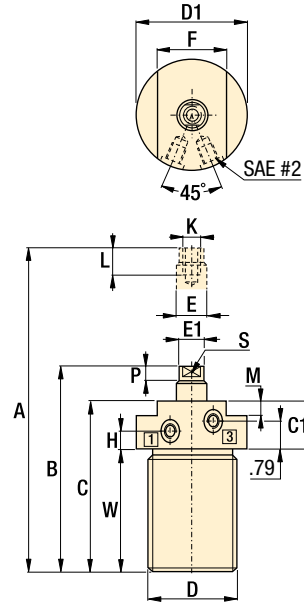
WPFS-100V, -200V



WPFS-450V



WPTS-100V, -200V



Product dimensions in inches []

Model number	A	B	C	C1	D	D1	E	E1	F	H	K	L	M	P	S	U	V	W	X	lbs
							Ø	Ø	Ø		UNF					Ø	Ø		Ø	
▼ Flange models																				
WPFS-100V	4.88	4.49	4.17	0.98	Ø 2.99	4.33	0.62	0.55	—	0.49	.313-24	0.59	—	0.2	Ø.11*	3.7	0.35	—	3.21	8.8
WPFS-200V	4.96	4.56	4.17	0.98	Ø 3.62	5.12	0.98	0.91	—	0.49	.500-20	0.79	—	0.2	Ø.11*	4.41	0.35	—	3.82	13.2
WPFS-450V	7.61	6.84	6.34	0.98	Ø 5.12	6.49	1.97	1.89	—	0.49	.750-16	1.18	—	0.39	1.18**	5.79	0.43	—	4.92	35.2
▼ Threaded models																				
WPTS-100V	4.84	4.45	4.13	1.50	2.375-12	2.94	0.62	0.55	2.17	0.61	.313-24	0.59	0.79	0.20	Ø.11*	—	—	2.64	—	6.6
WPTS-200V	4.92	4.53	4.13	1.50	3.125-16	3.73	0.98	0.91	2.76	0.61	.500-20	0.79	0.79	0.26	Ø.11*	—	—	2.64	—	8.8

* Spanner holes (x 2)

** Wrench Flats

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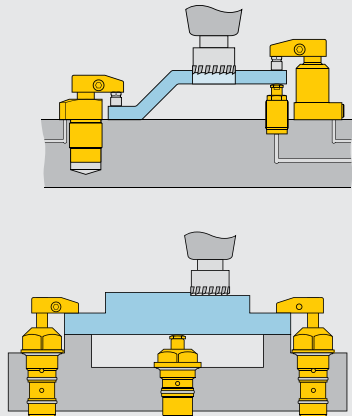
Work supports - Hydraulic advance

Shown: WFM-71, WFL-111



WF series

Enerpac work supports provide either additional non-fixed location points to the clamps, or support to larger or thin section workpiece components, always in order to minimize workpiece deflection during machining.



In order to load the workpiece sideways over the work supports, hydraulic advanced models are being used.



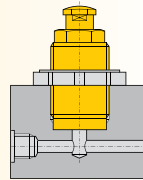
For unobstructed part loading

- Plunger stays retracted until pressure is applied allowing unobstructed loading
- Low pressure lock-up capability enables the use of machine tool hydraulic systems
- High rated support capacities allow for more compact fixture design
- Corrosion resistant materials – compatible with most coolants and environments
- Threaded and manifold air vent ports allow fixturing that prevents coolants and debris from being ingested into the mechanism
- Minimized deflection increases machining accuracy
- Multiple mounting configurations for design flexibility
- Contact bolt included

Four mounting styles

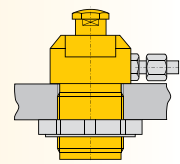
WFM series, Manifold models

Eliminates the need for fittings and tubing on the fixture.



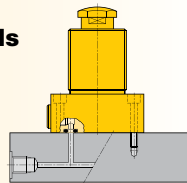
WFT series, Threaded models

Offers the flexibility of side or bottom porting.



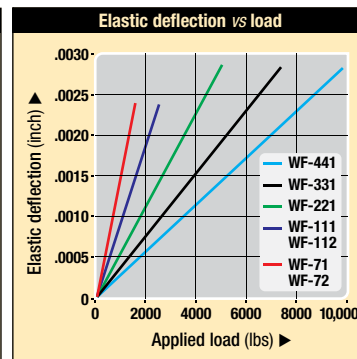
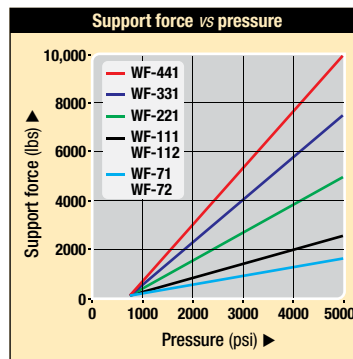
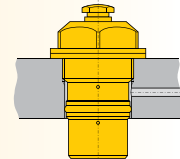
WFL series, Lower flange models

Plumbed directly – no fixture hole required.



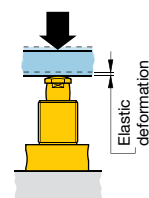
WFC series, Cartridge models

Can be designed into narrow fixture plates as thru-hole mounting is fully functional.



Deflection chart:

Elastic deformation of the work support resulting from the application of load.

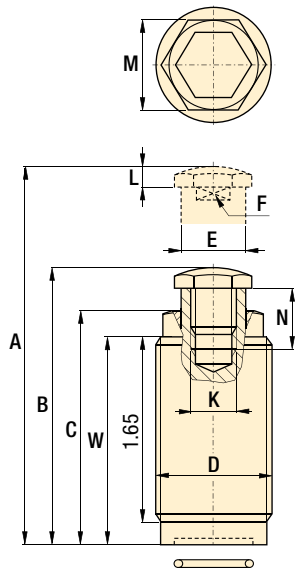


Product selection

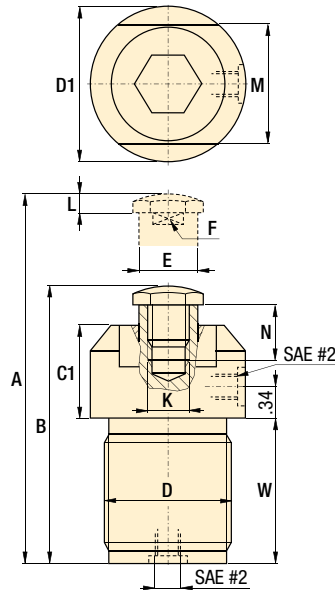
Max. support force	Support plunger stroke	Manifold mount	Threaded body	Lower flange	Cartridge style	Operating pressure		Plunger contact spring force		Oil capacity	Max. oil flow
						min.	max.	ext.	retr.		
lbs	in									in ³	in ³ /min
1650	.39	WFM-71	-	-	-	700	5000	2.0	5.8	.04	40
1650	.40	WFT-71	-	-	-	700	5000	2.0	5.8	.04	40
2500	.40	-	-	WFL-111	-	700	5000	3.4	5.2	.06	60
5000	.41	-	-	WFL-221	-	700	5000	2.1	19.5	.19	190
7500	.53	-	-	WFL-331	-	700	5000	4.0	17.5	.24	240
10,000	.65	-	-	WFL-441*	-	700	5000	3.3	22.0	.30	300
1650	.39	-	-	-	WFC-72	700	5000	2.0	5.8	.04	40
2500	.36	-	-	-	WFC-112	700	5000	3.4	5.2	.06	60
5000	.41	-	-	-	WFC-222	700	5000	2.1	19.5	.19	190

* This product is made to order. Please contact Enerpac for delivery information before specifying in your design.

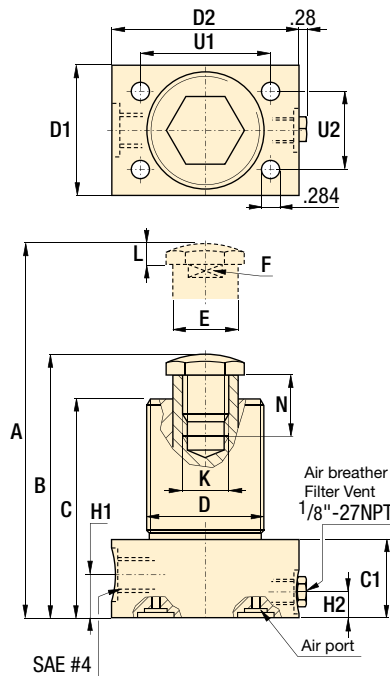
WFM series



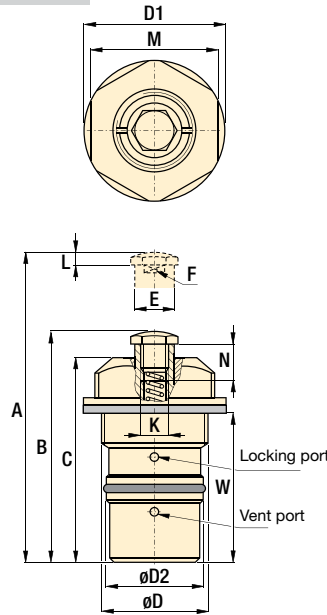
WFT series



WFL series



WFC series

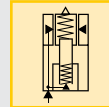


Force: 1650 - 10,000 lbs

Stroke: .36 - .65 inch

Pressure: 700 - 5000 psi

- E** Cilindros de soporte
- F** Vérin anti-vibreur
- D** Abstützzylinder



Options

Accessories

86 ▶



In-line filters

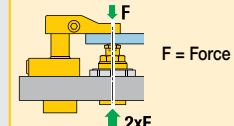
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Important

WARNING!

Support force and clamping force must be matched. Support force should be at least 150% of clamping force.



Do not exceed maximum flow rates to avoid premature lockup.

Custom cylinders including longer stroke lengths are available on request.

Product dimensions in inches []

Model number	Capacity	A	B	C	C1	D	D1	D2	E	F	H1	H2	K	L	M	N**	U1	U2	W	
	lbs								Ø				mm							lbs
WFM-71	1650	3.02	2.63	2.20	—	1.250-16 UN	—	—	0.591	0.51	—	—	M10x1,5	0.18	0.95	0.51	—	—	2.00	.5
WFT-71	1650	3.53	3.13	—	1.03	1.375-18 UNEF	1.72	—	0.591	0.51	—	—	M10x1,5	0.18	1.34	0.51	—	—	1.65	.5
WFL-111	2500	3.93	3.54	3.10	1.08	1.375-18 UNEF	1.50	2.38Ø	0.629	0.49	.56	.70	M10x1,5	0.18	—	0.73	1.62	0.94	—	1.4
WFL-221	5000	4.13	3.72	3.07	1.04	2.625-20 UN	2.75	3.25	1.496	1.00	.55	.52	M20x2,5	0.24	—	0.92	2.19	2.19	—	4.8
WFL-331	7500	4.42	3.89	3.46	1.07	2.88Ø	3.00	3.50	1.771	1.18	.53	.43	M20x2,5	0.24	—	0.93	2.44	2.44	—	6.3
WFL-441*	10,000	5.09	4.44	4.06	1.19	3.37Ø	3.50	4.00	2.165	1.44	.53	.43	M20x2,5	0.24	—	1.24	2.94	2.94	—	9.5
WFC-72	1650	3.22	2.83	2.46	—	M33x1,5	1.66	1.18	0.591	0.51	—	—	M10x1,5	0.18	1.50	0.51	—	—	1.98	.9
WFC-112	2500	4.03	3.67	3.23	—	M42x1,5	2.25	1.50	0.629	0.49	—	—	M10x1,5	0.18	2.00	0.73	—	—	2.37	2.0
WFC-222	5000	4.56	4.15	3.60	—	M60x1,5	3.00	2.25	1.496	1.00	—	—	M20x2,5	0.24	2.75	0.92	—	—	2.72	4.0

* This product is made to order. Please contact Enerpac for delivery information before specifying in your design.

** Note: Dimension N is factory set. May change on types 221, 331 and 441 due to adjusted contact spring force.

Note: For manifold mounting dimensions (L50).

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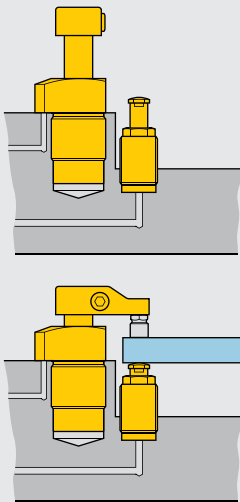
Work supports - Spring advance

Shown: WSL-111, WSM-71



WS series

Enerpac work supports provide either additional non-fixed location points to the clamps, or support to larger or thin section workpiece components, always in order to minimize workpiece deflection during machining.



Spring advance work supports with extended plungers, waiting for the next workpiece.



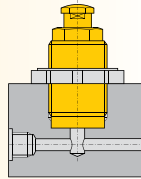
Spring advance work support contacts workpiece as it is loaded into fixture

- Low pressure lock-up capability enables the use of machine tool hydraulic systems
- High rated support capacities allow for more compact fixture design
- Corrosion resistant materials, compatible with most coolants and environments
- Threaded and manifold air vent ports allow fixturing that prevents coolants from being drawn into the system
- Minimized deflection increases machining accuracy
- Multiple mounting configurations allow design flexibility
- Can be operated as air advance by removing the spring and applying air pressure on the vent port

Mounting style

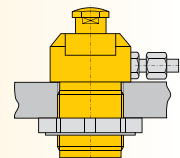
WSM series, Manifold mount

Eliminates the need for fittings and tubing on the fixture.



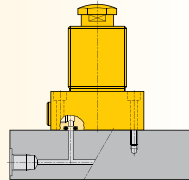
WST series, Threaded body

Offers the flexibility of side or bottom porting.



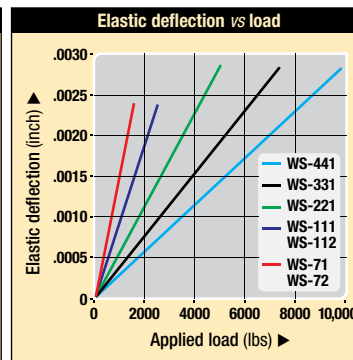
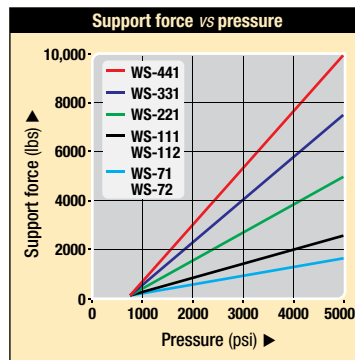
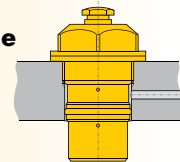
WSL series, Lower flange

Plumbed directly – no fixture hole required.



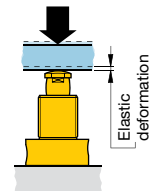
WSC series, Cartridge mount style

Can be designed into narrow fixture plates as thru-hole mounting is fully functional.



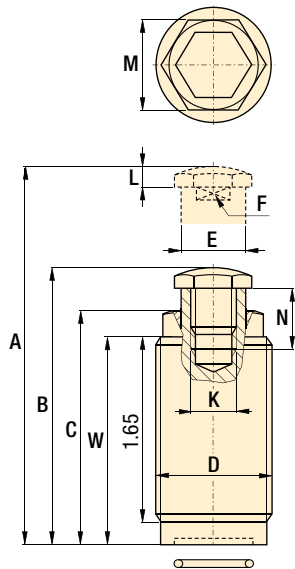
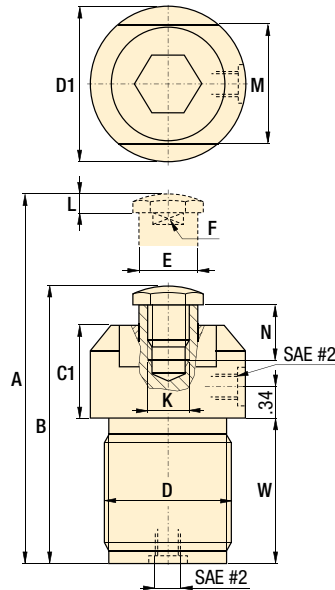
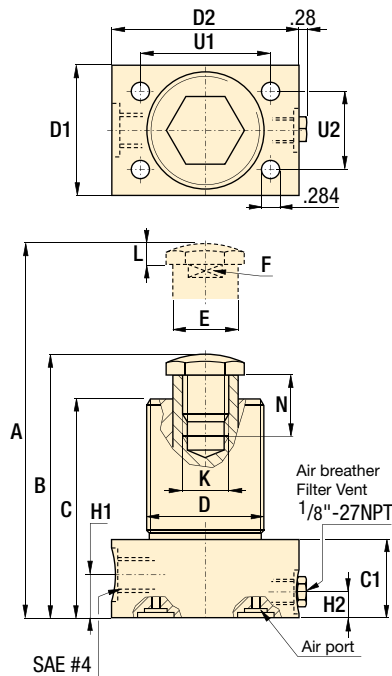
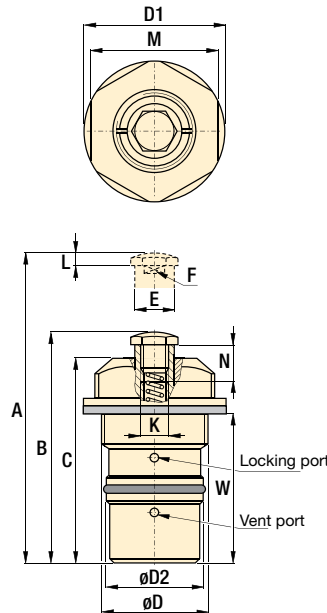
Deflection chart:

Elastic deformation of the work support resulting from the application of load.



Product selection

Max. support force	Support plunger stroke	Manifold mount	Threaded body	Lower flange	Cartridge style	Operating pressure		Plunger contact spring force		Oil capacity	Max. oil flow
						min.	max.	ext.	retr.		
lbs	in									in ³	in ³ /min
1650	.38	WSM-71	-	-	-	700	5000	2.0	5.8	.04	40
1650	.38	WST-71	-	-	-	700	5000	2.0	5.8	.04	40
2500	.38	-	-	WSL-111	-	700	5000	3.4	5.2	.06	60
5000	.38	-	-	WSL-221	-	700	5000	2.1	19.5	.19	190
7500	.54	-	-	WSL-331	-	700	5000	4.0	17.5	.24	240
10,000	.66	-	-	WSL-441*	-	700	5000	3.3	22.0	.30	300
1650	.38	-	-	-	WSC-72	700	5000	2.0	5.8	.04	40
2500	.38	-	-	-	WSC-112	700	5000	3.4	5.2	.06	60
5000	.47	-	-	-	WSC-222	700	5000	2.1	19.5	.19	190

WSM series

WST series

WSL series

WSC series


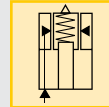
Force: 1650 - 10,000 lbs

Stroke: .38 - .66 inch

Pressure: 700 - 5000 psi

E Cilindros de soporte

F Vérin anti-vibreur

D Abstützzylinder

Options
Accessories

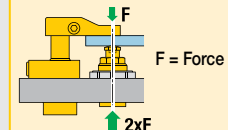
86 ▶


In-line filters

193 ▶


Important
WARNING!

Support force and clamping force must be matched.
Support force should be at least 150% of clamping force.



Do not exceed maximum flow rates to avoid premature lockup.

Custom cylinders including longer stroke lengths are available on request.

Product dimensions in inches []

Model number	Capacity lbs	A	B	C	C1	D	D1	D2	E0	F	H1	H2	K	L	M	N**	U1	U2	W	lbs
													mm							
WSM-71	1650	3.00	2.62	2.20	—	1.250-16 UN	—	—	.591	.51	—	—	M10x1,5	.18	.95	.51	—	—	2.00	.5
WST-71	1650	3.51	3.13	—	1.03	1.375-18 UNEF	1.72 ϕ	—	.591	.51	—	—	M10x1,5	.18	1.34	.51	—	—	1.65	.5
WSL-111	2500	3.36	2.98	2.54	.95	1.375-18 UNEF	1.50	2.38	.629	.49	.44	.39	M10x1,5	.18	—	.73	1.62	.94	—	1.4
WSL-221	5000	3.91	3.53	2.95	.98	2.625-20 UN	2.75	3.25	1.496	1.00	.48	.40	M20x2,5	.24	—	.92	2.19	2.19	—	4.8
WSL-331	7500	4.29	3.75	3.37	1.07	2.88 ϕ	3.00	3.50	1.771	1.18	.51	.37	M20x2,5	.24	—	.93	2.44	2.44	—	6.3
WSL-441*	10,000	4.99	4.33	4.04	1.19	3.37 ϕ	3.40	4.00	2.165	1.44	.53	.43	M20x2,5	.24	—	1.24	2.94	2.94	—	9.5
WSC-72	1650	3.20	2.82	2.46	—	M33x1,5	1.67 ϕ	1.18	.591	.51	—	—	M10x1,5	.18	1.50	.51	—	—	1.98	0.9
WSC-112	2500	3.38	3.00	2.56	—	M42x1,5	2.25 ϕ	1.50	.629	.49	—	—	M10x1,5	.18	2.00	.73	—	—	1.70	2.0
WSC-222	5000	3.98	3.51	3.00	—	M60x1,5	3.00 ϕ	2.25	1.496	1.00	—	—	M20x2,5	.24	2.75	.92	—	—	2.12	4.0

* This product is made to order. Please contact Enerpac for delivery information before specifying in your design.

** Note: Dimension N is factory set. May change on types 221, 331 and 441 due to adjusted contact spring force.

Note: For manifold mounting dimensions (L50).

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