

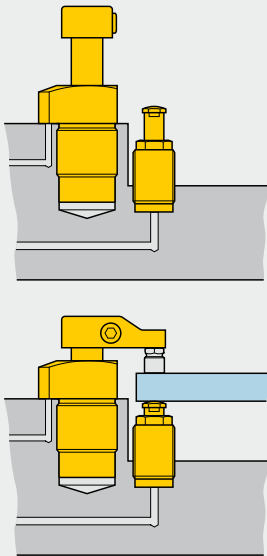
# Work supports - Spring advance

Shown: WSL-112, WSM-72



## 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.



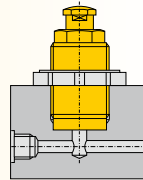
## Spring advance work support contacts workpiece as it is loaded into fixture

- 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

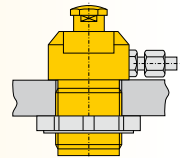
### WSM series, Manifold mount

Eliminates the need for fittings and tubing on the fixture.



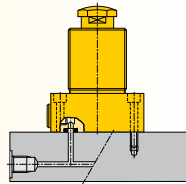
### WST series, Threaded body

Offers the flexibility of side or bottom porting.



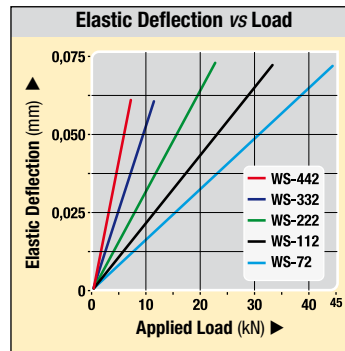
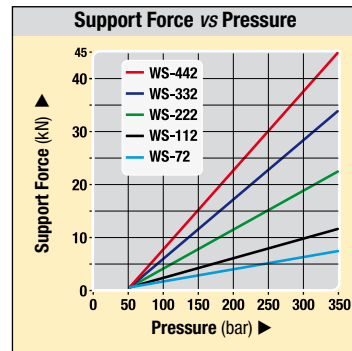
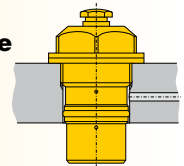
### WSL series, Lower flange

Plumbed directly – no fixture hole required.



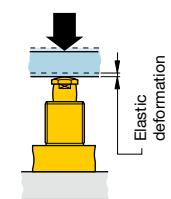
### WSC series, Cartridge mount style

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



### Deflection chart:

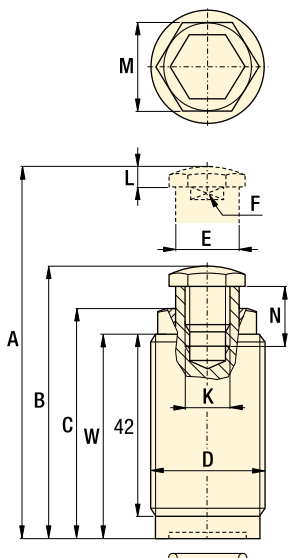
Elastic deformation of the work support resulting from the application of load.



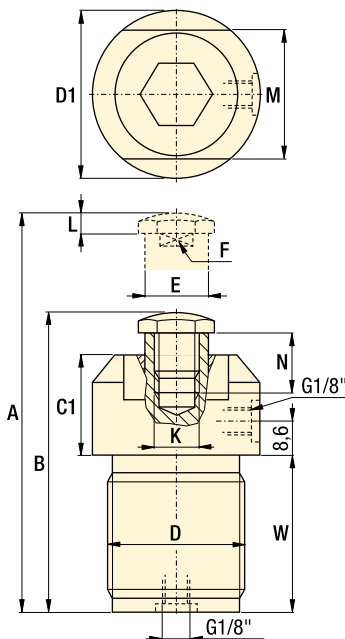
## Product selection

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. bar	max. bar	ext. N	retr. N		
7,3	9,7	WSM-72	-	-	-	48	350	8,9	25,8	0,66	0,7
7,3	9,7	-	WST-72	-	-	48	350	8,9	25,8	0,66	0,7
11,1	9,7	-	-	WSL-112	-	48	350	15,1	23,1	0,98	1,0
22,2	9,7	-	-	WSL-222	-	48	350	9,3	86,8	3,11	3,1
33,4	13,7	-	-	WSL-332	-	48	350	17,8	77,9	3,93	3,9
44,5	16,8	-	-	WSL-442*	-	48	350	14,7	97,9	4,92	4,9
7,3	9,7	-	-	-	WSC-72	48	350	8,9	25,8	0,66	0,7
11,1	9,7	-	-	-	WSC-112	48	350	15,1	23,1	0,98	1,0
22,2	11,9	-	-	-	WSC-222	48	350	9,3	86,8	3,11	3,1

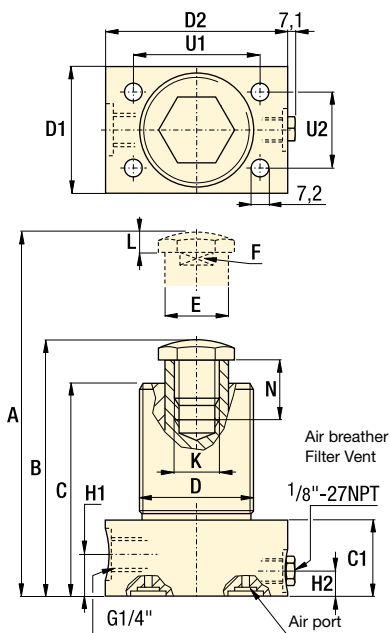
**WSM series**



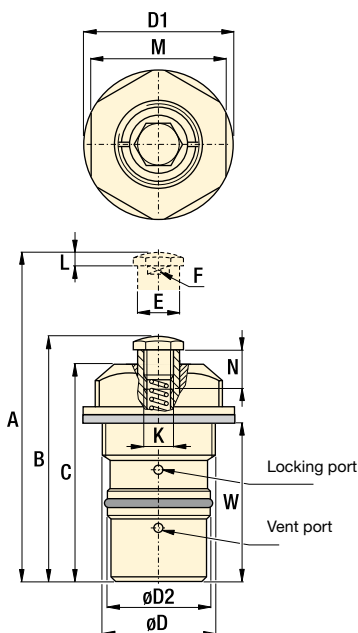
**WST series**



**WSL series**



**WSC series**

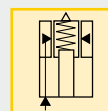


Force: 7,3 - 44,5 kN

Stroke: 9,7 - 16,8 mm

Pressure: 50 - 350 bar

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



**Options**

**Accessories**

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**In-line filters**

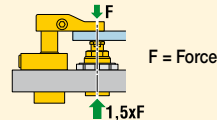
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**Important**

**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.

Mounting dimensions ▶ 50 ▶

**Product dimensions in mm** [ ]

Model number	Capacity kN	A	B	C	C1	D	D1	D2	E0	F	H1	H2	K	L	M	N**	U1	U2	W	
<b>WSM-72</b>	7,3	76,2	66,5	55,9	-	M30x1,5	-	-	15,0	13,0	-	-	M10x1,5	4,6	24,1	13,0	-	-	50,8	0,2
<b>WST-72</b>	7,3	89,2	79,5	-	26,2	M35x1,5	43,6 ø	-	15,0	13,0	-	-	M10x1,5	4,6	34,0	13,0	-	-	41,9	0,2
<b>WSL-112</b>	11,1	85,3	75,7	64,5	24,1	M35x1,5	38,1	60,5	16,0	12,4	11,2	9,9	M10x1,5	4,6	-	18,5	41,1	23,9	-	0,6
<b>WSL-222</b>	22,2	99,3	89,7	74,9	24,9	M68x1,5	69,9	82,6	38,0	25,4	12,2	10,2	M20x2,5	6,1	-	23,4	55,6	55,6	-	2,2
<b>WSL-332</b>	33,4	109,0	95,3	85,6	27,2	73,2	76,2	88,9	45,0	30,0	13,0	9,4	M20x2,5	6,1	-	23,6	62,0	62,0	-	2,9
<b>WSL-442*</b>	44,5	126,7	110,0	102,6	30,2	85,6	86,4	101,6	55,0	36,6	13,5	10,9	M20x2,5	6,1	-	31,5	74,7	74,7	-	4,3
<b>WSC-72</b>	7,3	81,3	71,6	62,5	-	M33x1,5	42,4 ø	30,0	15,0	13,0	-	-	M10x1,5	4,6	38,1	13,0	-	-	50,3	0,4
<b>WSC-112</b>	11,1	85,9	76,2	65,0	-	M42x1,5	57,1 ø	38,1	16,0	12,4	-	-	M10x1,5	4,6	50,8	18,5	-	-	43,1	0,9
<b>WSC-222</b>	22,2	101,0	89,2	76,2	-	M60x1,5	76,2 ø	57,2	38,0	25,4	-	-	M20x2,5	6,1	69,9	23,4	-	-	53,9	1,8

\* 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 222, 332 and 442 due to adjusted contact spring force.  
 Note: For manifold mounting dimensions (▶ 50).

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