

# LW-Series, Hydraulic Vertical Lifting Wedge

**ENERPAC**   
POWERFUL SOLUTIONS. GLOBAL FORCE.

▼ LW-16 with SB-2 and optional LWB-1



- Requires very small access gap of only 10 mm
- Lifting force 16 ton at 700 bar hydraulic pressure
- Each step can spread under full load
- Straight vertical lifting
- Unique interlocking wedge design: no first step bending and risk of slipping out
- Single-acting, spring return cylinder
- Lifting wedge LW-16 includes safety block SB-2
- Includes RC-Series Cylinder with CR-400 coupler.

▼ For lifting heavy equipment with minimum floor clearance the LW-16 is the ideal tool.



## LW Series

Maximum Lifting Force:

**16 ton (157 kN)**

Lifting Stroke:

**21 mm**

Tip Clearance / Maximum Spread \*:

**10 mm / 81,5 mm**

Maximum Operating Pressure:

**700 bar**



### Power Box

Tool box with P-392 hand pump, gauge adaptor assembly, hose and LW-16.

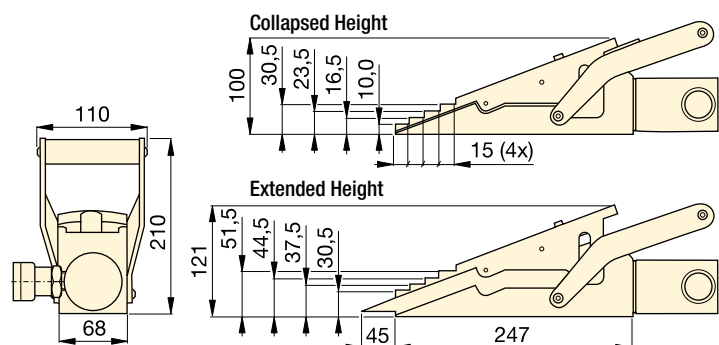
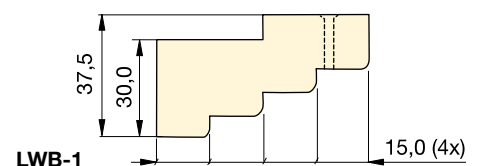
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### Control Manifolds

Control Manifold to control two or four lifting wedges simultaneously.  
**AM-21** with 3 ports 3/8" NPTF  
**AM-41** with 5 ports 3/8" NPTF.

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Maximum Lifting Force	Lifting Stroke	Model Number	Tip Clearance	Maximum Operating Pressure	Oil Capacity	
ton (kN)	(mm)		(mm)	(bar)	(cm <sup>3</sup> )	(kg)
<b>16 (157)</b>	<b>21</b>	<b>LW-16</b>	<b>10</b>	<b>700</b>	<b>78</b>	<b>9,0</b>

Use optional stepped block LWB-1 to increase wedge lifting height by 30 mm.

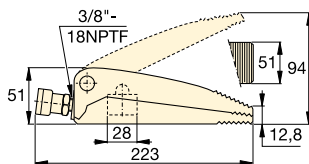
\* Using LWB-1.

# Hydraulic Wedgie and Spread Cylinders

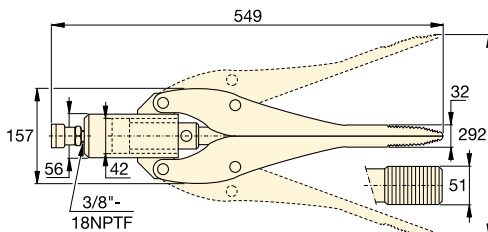
▼ Shown clockwise from top: **WR-15**, **WR-5**, **A-92**



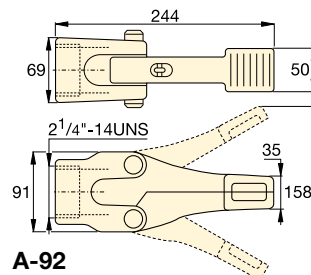
- **WR-5:** For use in very confined work areas
- **WR-15:** For long stroke spreading applications
- **Single-acting, spring return**
- **A-92:** Spreader attachment; threads on 10 ton RC-Series cylinders \* (except RC-101).




**WR-5**



**WR-15**



**A-92**

Cylinder Capacity	Tip Clearance	Model Number	Maximum Spread	Cylinder Effective Area	Oil Capacity	
ton (kN)	(mm)		(mm)	(cm <sup>2</sup> )	(cm <sup>3</sup> )	(kg)
1,0 (8,9)	12,8	<b>WR-5</b>	94	6,5	10	2,3
0,75 (6)	32,0	<b>WR-15</b>	292	14,5	64	11,3
1,0 (8,9)	35,0	<b>A-92 *</b>	158	—	—	3,6

\* Maximum system pressure must be limited to half the rated pressure (350 bar).

## A WR Series



Capacity:

**0,75 - 1,0 ton**

Tip Clearance:

**12,8 - 35 mm**

Maximum Spread:

**94 - 292 mm**

Maximum Operating Pressure:

**700 bar**



### RC-Series Cylinders

10 ton RC-Series DUO cylinders (except RC-101) fit into A-92 Spreader Attachment.

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### Power Box

Tool box with P-392 hand pump, gauge adaptor assembly, hose and WR-5.

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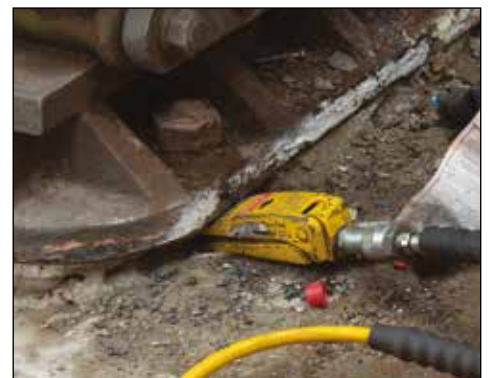


### Best Match Hand Pump

To power your WR-5 and WR-15 the **P-392** hand pump is an ideal choice. Use Enerpac H700-Series hose (page 116) for hydraulic connection.

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▼ A WR-5 wedgie cylinder is used to loosen a bridge bearing.



# FS-Series, Hydraulic Flange Spreaders

▼ FS-56



- Lightweight, ergonomic design for ease of use
- Adjustable jaw widths from 70 mm to 216 mm for a wide range of applications
- Single-acting, spring return RC-Series DUO cylinders for fast trouble-free operation.

## FS, STF Series



Capacity:

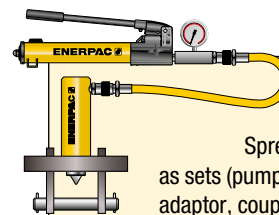
**5 and 10 ton**

Spread:

**70 - 216 mm**

Maximum Operating Pressure:

**700 bar**



### Tool-Pump Sets

Both Flange

Spreaders are available

as sets (pump, tool, gauge, gauge adaptor, couplers and hose) for your ordering convenience.

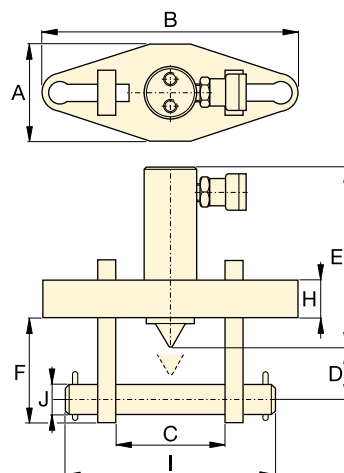
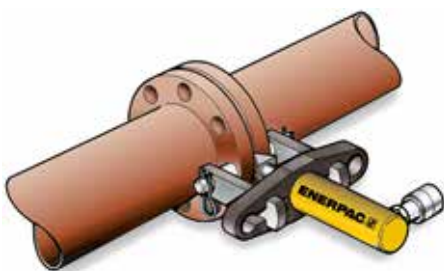
Spreader Model Nr.	Pump Model Nr.	Set Model Number
FS-56	P-392	<b>STF-56H</b>
FS-109	P-392	<b>STF-109H</b>
FS-109	PATG-1102N	<b>STF-109A</b>



### Wedge Spreaders


Friction-free, smooth and parallel wedge movement with unique interlock wedge design. Eliminates flange damage and risk of spreading arm failure.

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### Flange Spreader Matching Chart

ASA Rating (bar)	Pipe Size (mm)	
	FS-56	FS-109
10	127 - 508	558 - 1066
20	63 - 355	406 - 711
27	63 - 304	355 - 609
35	63 - 254	304 - 508
62	12 - 152	203 - 406
103	12 - 88	101 - 203
172	12 - 63	76 - 101

Maximum Flange Thickness (mm)	Stud Size (mm)	Standard Wedge (mm)	Capacity (ton)	Stroke (mm)	Oil Capacity (cm³)	Model Number	Dimensions (mm)										 (kg)
							A	B	C		D	E	F	H	I	J	
2 x 57	19 - 28	3 - 28	5	38	24,6	FS-56*	76	209	70	155	32	196	88	25	206	19	11,5
2 x 92	31 - 41	3 - 28	10	54	78,7	FS-109*	108	279	104	216	50	152	114	38	273	31	18,1

\* Available as Tool-Pump Set, see note on this page.

# Hydraulic and Mechanical Wedge Spreaders

▼ FSH-14 and FSM-8 with safety blocks SB-1



- **Integrated wedge concept:** Friction-free, smooth and parallel wedge movement eliminates flange damage and spreading arm failure
- **Unique interlocking wedge design** - no first step bending and risk of slipping out of joint
- **Requires very small access gap of only 6 mm**
- **Stepped spreader arm design** - each step can spread under full load
- **Few moving parts mean durability and low maintenance**
- **Safety block SB-1 and ratchet spanner SW-22 included with FSM-8 mechanical wedge spreader**
- **Safety block SB-1 and Enerpac RC-102 single-acting cylinder included with FSH-14 hydraulic wedge spreader.**

## FSH, FSM, STF Series

Tip Clearance / Maximum Spread <sup>1)</sup>:

**6 mm / 80 mm**

Maximum Spread Force:

**8 - 14 ton**

Maximum Operating Pressure:

**700 bar (FSH-14)**



### Stepped Blocks FSB-1

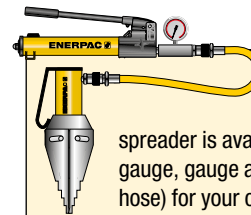
Use stepped blocks to increase wedge opening up to 80 mm. Fits both FSH-14 and FSM-8.



### AM-Series Control Manifolds

For simultaneously and even spreading of flange joints, 180° apart with FSH-14.

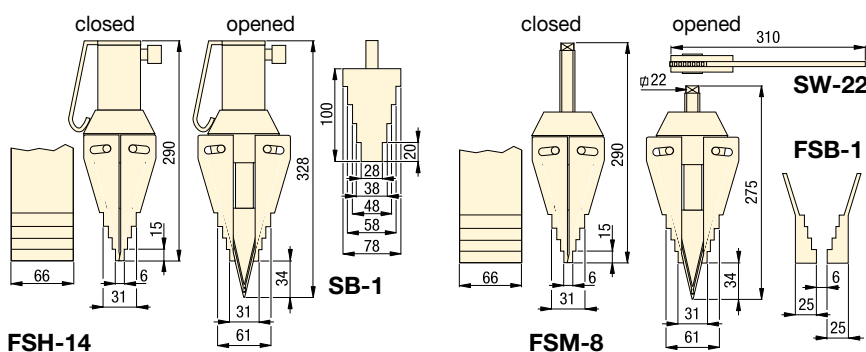
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### Tool-Pump Sets

The hydraulic flange spreader is available as set (pump, tool, gauge, gauge adaptor, couplers and hose) for your ordering convenience.

Spreader Model Nr.	Handpump Model Nr.	Set Model Number
FSH-14	P-392	STF-14H



Maximum Spreading Force ton (kN)	Model Number	Tip Clearance (mm)	Maximum Spread <sup>1)</sup> (mm)	Spreader Type	Oil Capacity (cm <sup>3</sup> )	(kg)
14 (125)	FSH-14*	6	80	Hydraulic	78	7,1
8 (72)	FSM-8	6	80	Mechanical	—	6,5

<sup>1)</sup> Using stepped blocks FSB-1

\* Available as pump-tool set, see note on this page.

▼ Flange maintenance and joint separation with FSH-14 Hydraulic Wedge Spreader.

