

Activator wand and booster

Shown: RA-1061, B-81



B and RA-series

Mechanical energy transfer system uses external cylinder to operate receiver booster.

Contamination resistant closed hydraulic system

- No-leak palletized system, eliminates oil loss at connection point
- Closed design prevents machining chips and coolant from entering the hydraulic circuit
- Booster can be mounted in either horizontal or vertical position for flexible fixture design.



Hydraulic system schematics

The Activator Wand RA-1061 is placed into the receiver booster B-81 or B-171. The mechanical transfer of force from the activator wand plunger to the booster piston provides oil flow to the system.

Coilet-Lok® products

Swing clamps

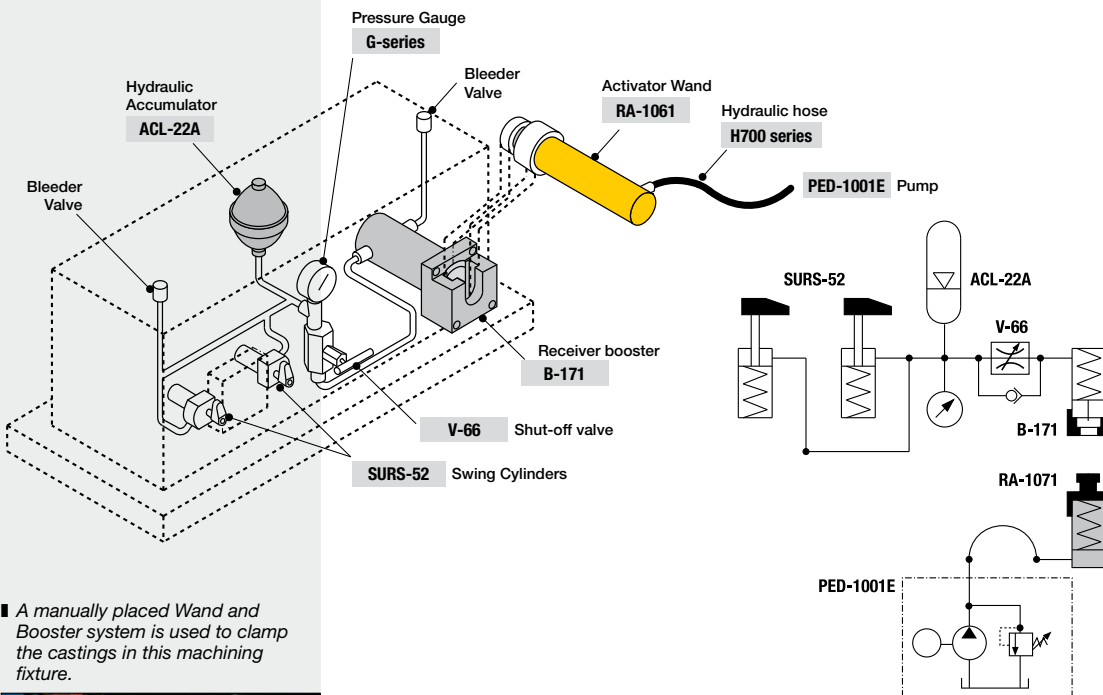
Work Supports

Linear Cylinders

Power Sources

Valves

Pallet Components



■ A manually placed Wand and Booster system is used to clamp the castings in this machining fixture.

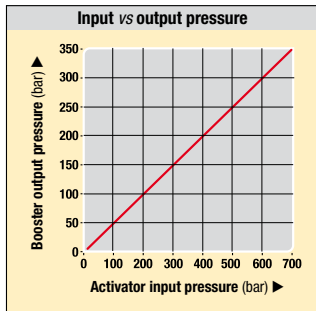


Product selection

Pressure ratio	Oil flow ratio	Oil volume per stroke cm ³	Stroke mm	Model number	Effective area cm ²	Operating pressure bar	Weight kg
▼ Receiver booster							
2 : 1	1,75 : 1	132,7	51,8	B-81	25,7	30 - 350	5,7
2 : 1	1,75 : 1	280,2	109,2	B-171	25,7	30 - 350	7,1
▼ Activator wand							
-	-	162,2	112,7	RA-1061	14,4	60 - 700	5,1



Dimensions & Options **B, RA-series**



- Ratio: 2 : 1
- Stroke: 51,8 - 112,7 mm
- Pressure: 30 - 350 bar

- E** Multiplicadores
- F** Multiplicateur
- D** Betätigungszyylinder und Druckverstärker



Options

Fittings

194 ▶



Hoses and couplers

192 ▶



For 700 bar pumps, refer to the Enerpac Industrial Tools Catalog E327e.



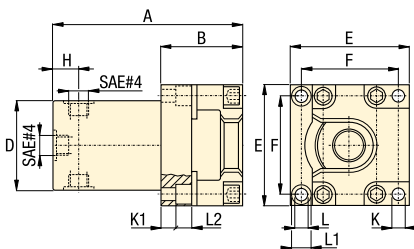
Existing fixtures with manual-connect single-acting circuits can be easily upgraded into the wand and booster.

Important

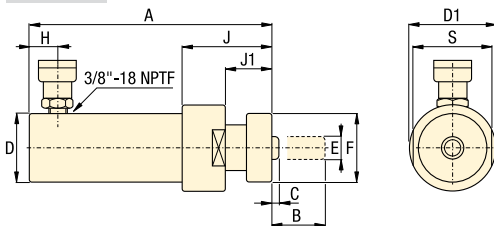
The activator wand has a 2 to 1 ratio of input pressure versus output force.

The booster output flow is 1,75 times the wand input flow.

B-81, -171



RA-1061



Product dimensions in mm [±0.1]

Model number	A	B	C	D	D1	E	F	H	J	J1	K	K1	L	L1	L2	S
▼ Receiver booster																
B-81	174,2	69,6	44,2	76,2	-	101,6	82,6	28,4	-	-	10,4	57,4	10,4	15,7	10,7	-
B-171	231,6	69,6	44,2	76,2	-	101,6	82,6	28,4	-	-	10,4	57,4	10,4	15,7	10,7	-
▼ Activator wand																
RA-1061	295,1	117,6	4,8	57,2	76,2	19,1	58,9	19,1	76,7	38,9	-	-	-	-	-	69,9

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ENERPAC 173

Pallet Components

System Components

Yellow Pages



Air hydraulic boosters *Application & selection*

Shown: AHB-46, B-5003, B-3006

Collet-Lok® products

Swing clamps

Work Supports

Linear Cylinders

Power Sources



AHB and B-series boosters

Large effective area of air piston allows compressed air to generate high output hydraulic pressure.

For high production applications

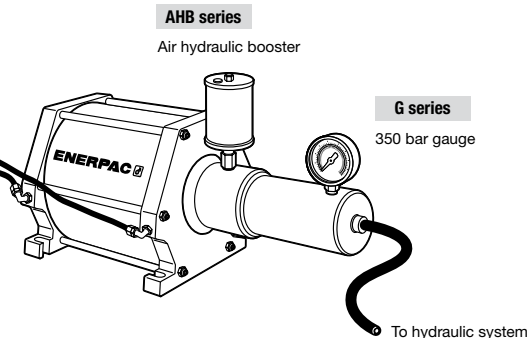
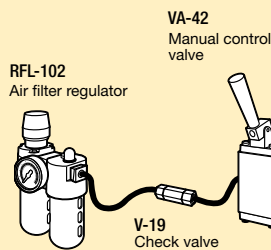
- High speed operation
- Extended service life
- Constant hydraulic output
- Large oil delivery per stroke allows quick filling of cylinders for clamping or punching

AHB series boosters

- Fiberglass wound air chamber eliminates possibility of rust due to moisture in air system
- Designed for fully automated production applications
- Double-acting, one-shot, high speed operation of air piston

B series boosters

- One-shot spring return
- Steel and cast iron construction
- Built-in stroke sensor for automatic cycle operation
30 VDC switch closes 25 mm before end of full air piston stroke
- Internal self-bleeding
Automatically purges air from system when booster piston is at highest point in circuit

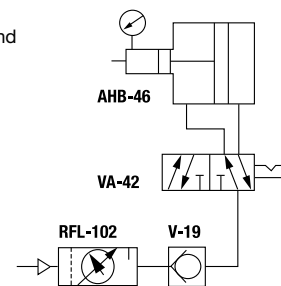


■ In an automated clamping set-up with both hydraulic and pneumatic components, AHB series boosters are used as a power source for the hydraulic system.

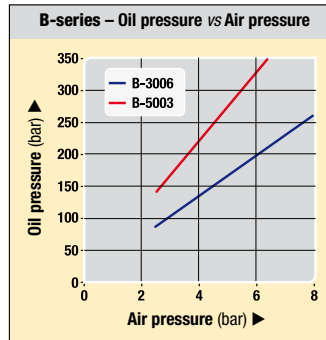
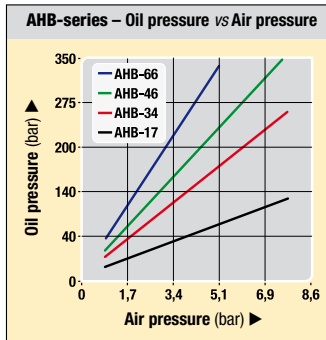


Hydraulic system schematics

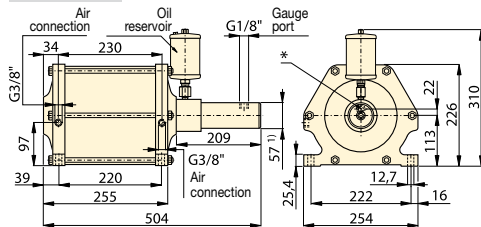
Complete power systems eliminate the guesswork of selecting valves and other system components. Plug in your 1 to 8 bar shop air line and connect your hydraulic components for a total system.



Dimensions & Options **AHB, B-series**



AHB series



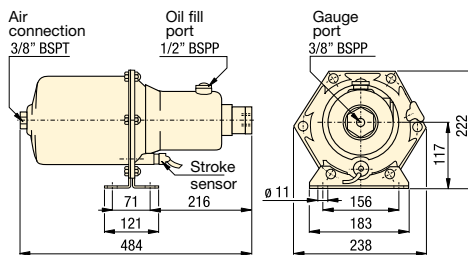
¹⁾ Ø 72 mm for model **AHB-17**

* Oil connection (G1/4")

*** Adapter to 3/8" NPT air connection is included.

NOTE: FZ-2060 Adaptor available for gauge port.

B series



Selection chart

Oil pressure bar	Oil volume per stroke cm ³	Air to oil pressure ratio	Model number	Air consumption per cycle ¹⁾ dm ³ at 6 bar air	Air piston diameter mm	Hydraulic piston diameter mm	Hydraulic stroke mm	Air operating pressure bar		
										at 5 bar air pressure
▼ AHB series										
83	110	295,0	1:16	AHB-17	62,6	203	51	145	1-8	18,8
175	235	139,3	1:34	AHB-34	63,6	203	35	145	1-8	16,8
240	315	100,0	1:46	AHB-46	63,9	203	30	145	1-8	16,4
330	-	73,7	1:64	AHB-66	64,1	203	25	145	1-5	16,0
▼ B series										
155	210	101,6	1:30	B-3006	27	180	31	132	3-9	14,0
260	350	60,6	1:50	B-5003	27	180	24	132	3-9	14,0

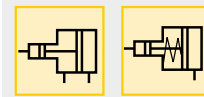
¹⁾ One cycle = advance + retract stroke.

Note: Seal material: Buna-N, Polyurethane.

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- Ratio: 1:16 - 1:64**
- Pressure: 100 - 350 bar**
- Oil flow: 60-295 cm³/stroke**
- Air: 27 - 64 dm³/cycle**

- (E) Multiplicadores**
- (F) Multiplicateurs**
- (D) Druckübersetzer**



Options

Air valves

☐ 106,158 ▶

Regulator-filter-lubricator

☐ 106,158 ▶

Fittings

☐ 194 ▶

Important

Boosters can provide high oil flow rates based on the volume of in-coming air. Do not exceed the flow rate requirements of the components being used.

For vertical mounting of booster, an elbow fitting is recommended for the oil reservoir.

Power Sources

Valves

Pallet Components

System Components

Yellow Pages

Oil/oil intensifiers

Shown: PID-402



PID-series

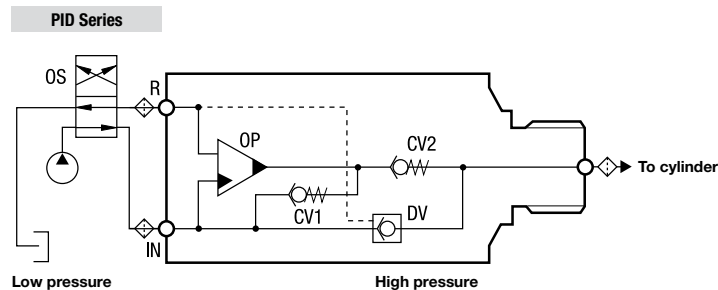
When hydraulic pressure from an existing power source is limited, Enerpac oil-to-oil intensifiers serve to increase output pressure to satisfy the required application.

High flow units intensify low inlet oil pressure to high outlet pressure

- Internal bypass valving enables high output flow rates
- Wide range of intensification ratios allows for adapting to various operating pressure requirements
- Compact and self-contained design allows for ease of installation
- Includes dump valve eliminating the need for an external pilot check valve
- Select fit of all internal components provides long operating life.

Intensifier principle

- When oil is supplied to the inlet (IN) port it flows freely past the check valves (CV) and the dump valve to the cylinder and advances it.
- As the inlet pressure increases the oscillating pump (OP) automatically increases the outlet pressure by the chosen intensification.
- Once the maximum pressure is reached, the pump frequency lowers and balances at the maximum pressure.
- Free flow from the cylinder to tank occurs when the directional control valve is switched to supply the R-port.
- 10 micron filtration is required on all ports in the circuit to ensure trouble free operation. Filters and flow control included.



■ PID-Series intensifier utilizes low pressure machine hydraulics to power clamping cylinders.



Product selection

Maximum pressure	Pressure intensification ratio	Maximum input flow	Maximum output flow	Model number	Inlet pressure range	
bar		l/min	l/min	with dump valve	bar	kg
700	1 : 3,2	10,0	2,5	PID-322F	21 - 107	1,2
700	1 : 4,0	9,5	2,0	PID-402F	21 - 86	1,2
700	1 : 5,0	9,0	1,5	PID-502F	21 - 69	1,2
700	1 : 6,6	8,7	1,2	PID-662F	21 - 56	1,2

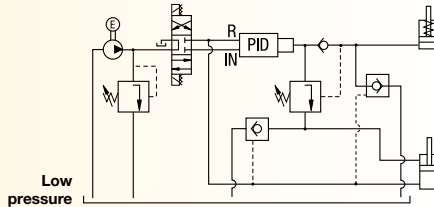
* Operating pressures above 350 bar require high pressure fittings or intensifier models with BSSP ports. Contact Enerpac for details.

Dimensions & Options **PID-series**

i System set-up information:

With dump valve (PID models)

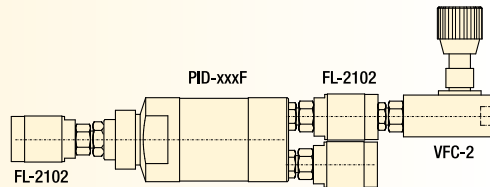
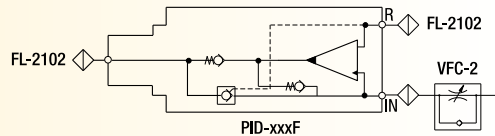
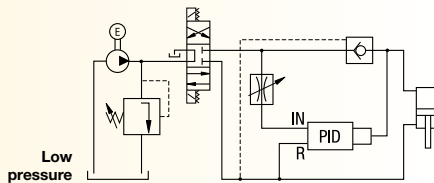
The intensifier with the dump valve is used to achieve high pressure on the advance side of a double-acting cylinder.



With external dump valve

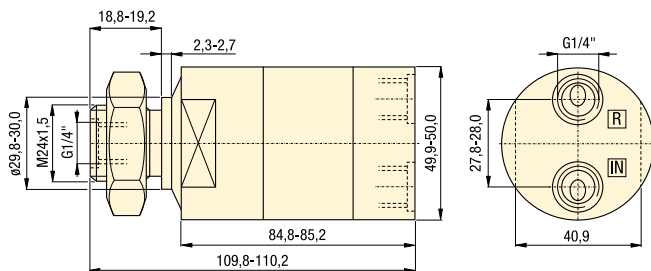
In a system where the pump's oil flow is higher than the maximum inlet oil flow of the intensifier, an external check valve and flow control valve reduces the pump's oil flow.

This application can be set up when machines are equipped with low pressure hydraulics but the pressure to clamp the workpiece must be higher.



A Product dimensions in mm [\varnothing]

PID-series



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- Ratio: 1 : 3,2 - 1 : 6,6
- Flow: 1,2 - 2,5 l/min
- Pressure: 65 - 700 bar

- E** Multiplicadores
- F** Multiplicateur
- D** Öl-Öl Druckübersetzer



Options

- FL-series, high-pressure filters**
193 ▶
- Directional valves**
135 ▶
- FZ-series fittings**
194 ▶

Important

Do not exceed maximum allowable inlet pressure.

10 micron filtration is included to ensure trouble-free operation.

Applications above 350 bar require high pressure fittings or intensifier models with BSPP ports. Contact Enerpac for details.

PID models with dump valve provide an economical means of relieving pressure from the system.

Can be panel mounted into machine (M24x1,5 thread).


ENERPAC 179

Pallet Components
 System Components
 Yellow Pages

Accumulators *Application & selection*

Shown: ACL-201A, WA-502, ACL-21A

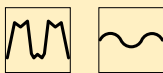


 Enerpac accumulators supply auxiliary pressure to dampen shock loads or to compensate pressure drop in applications where system pressure needs to be maintained.

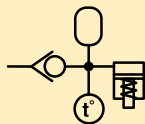
Accumulator applications:

- Energy storage
- Circuit pulsation dampening
- Thermal expansion compensation

Pulse dampening



Thermal expansion



■ ACBS-202 Accumulator package used to maintain pressure on a machine tool fixture.



162 **ENERPAC** 

Accumulators

...maintain circuit pressure

- Ideal for high frequency and rapid discharge applications
- ACL series are pre-charged to 100 bar
- Corrosion resistant bodies on ACL series
- Spring actuated accumulator for ACM-1
- High energy storage capacity in a compact package
- WA accumulators are piston type
- ACL accumulators are diaphragm type
- ACM accumulators use internal spring.

Product selection

Operating pressure bar	Model number	Max. rated oil volume cm ³	Gas volume cm ³	Pre-charged nitrogen pressure bar	Usable oil capacity cm ³ at 350 bar
▼ Pre-charged accumulators					
0-210	ACM-1	1,6	—	—	—
100-350	ACL-22A	14,7	20,0	100	8,7
100-350	ACL-202A	126,2	169,9	100	73,9
100-350	ACL-502A	337,6	450,0	100	196,6
▼ Uncharged accumulators					
0-350 ¹⁾	WA-502	41,0	41,0	—	41,0
0-350 ¹⁾	WA-5010	163,9	163,9	—	122,9

¹⁾ See pre-charge chart on page 163 for hydraulic operating pressures.

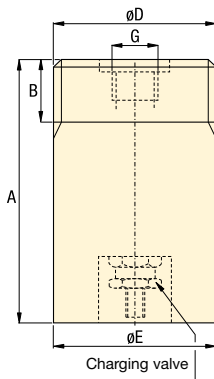
Dimensions & options **AC, WA-series**

Recommended pre-charge

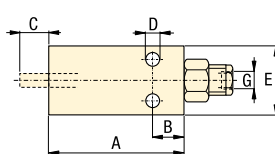
Operating pressure bar	Model number	Nitrogen pressure bar	Usable oil capacity ¹⁾ cm ³
0 - 70	WA-502	35	24,6
70 - 210	WA-502	70	32,8
210 - 350	WA-502	80	41,0
0 - 70	WA-5010	35	90,1
70 - 210	WA-5010	70	106,5
210 - 350	WA-5010	80	190,5

¹⁾ At maximum operating pressure.

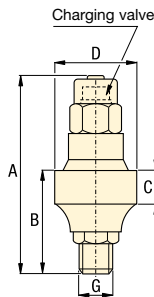
WA-502, WA-5010



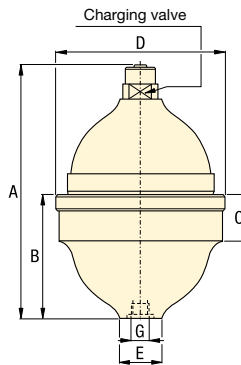
ACM-1



ACL-22A



ACL-202A, 502A



Product dimensions in mm [± 0.1]

Model number	A	B	C	D	E	F	G	Recommended charging tool	kg
▼ Pre-charged accumulators									
ACM-1	133	19	13	6,7	45	-	1/4"-27 NPTF	-	1,0
ACL-22A	91	37	18	42,9	23	-	G1/4"	WAT-2	0,5
ACL-202A	137	69	29	84,5	29	-	G1/4"	WAT-2	1,2
ACL-502A	171	89	35	114,0	40	-	G3/8"	WAT-2	2,8
▼ Uncharged accumulators									
WA-502	119	30	-	2 3/4" -16 UN	70	-	SAE #8	WAT-1	3,2
WA-5010	181	30	-	2 3/4" -16 UN	70	-	SAE #8	WAT-1	5,2

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Pressure: 0 - 350 bar

Oil volume: 1,6 - 337,6 cm³

Gas volume: 20 - 450 cm³

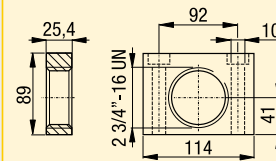
- E** Acumuladores
- F** Accumulateurs
- D** Druckspeicher



Options

AW-50 Mounting block

For WA-series accumulators.



Hydraulic oil

193 ▶



Fittings

194 ▶

