

Air Hydraulic Pumps

98.4 cu. cm./min., Single-Acting (PA6 Series)

Single-speed pump designed to drive single-acting cylinders or tools. Pump can easily be operated by hand or foot. Generally recommended for tools and cylinders up to 15 ton.

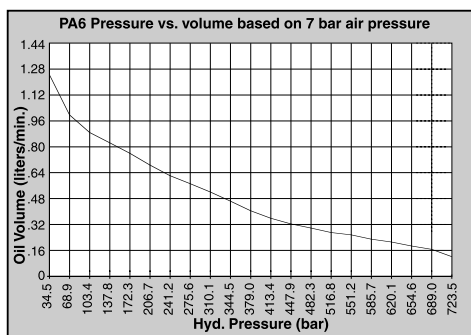


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- Single-speed pumps designed to drive single-acting cylinders, are compact, lightweight and portable.
- A quarter century record of proven reliability. The power unit of choice for major manufacturers of auto body, frame straighteners and other equipment.
- Operate at 3-8 bar shop air pressure at the pump.
- Internal relief valves protect circuit components, air inlet filter protects motor.

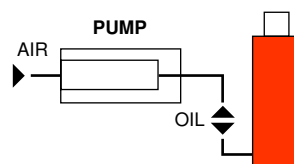
- All metal air motor, ductile iron pump. Serviceable pump motor is not a “throw away”, providing economical repair.
- Permanently vented reservoir cap.
- An inexpensive alternative to using manually operated pumps.
- Metal reservoir conversion kits and filters/regulators/lubricators found in accessories section. See pages 161-165.
- dBA 85 at 700 bar for all PA6 Series pumps.

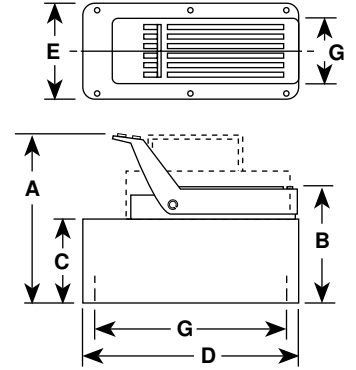
PERFORMANCE



Typical Set-up

Hook-up for single-acting cylinders





DIMENSIONS (MM)

Pump No.	A	B	C	D	E	G
PA6	197	149	111	241	127	102 x 229
PA6A	197	149	111	241	127	102 x 229
PA6AM	197	149	111	241	127	102 x 229
PA6M	197	149	111	241	127	102 x 229
PA6R	197	149	111	241	127	102 x 229
PA6RM	197	149	111	241	127	102 x 229
PA6M-1	200	152	111	321	187	none
PA6M-2	254	197	171	292	241	203 x 254
PA6-2	260	203	178	292	241	130 x 181

ORDERING INFORMATION

See current price list for shipping weights.

Description	Order No.	Air Supply Req'd (bar)	Reservoir (liters)		Oil Port	Prod. Wt. (kg)
			Cap.	Usable		
Base model pump with high density polyethylene reservoir.	PA6	3 - 8	1.7	1.6	3/8" NPTF	6.3
PA6 with externally adjustable relief valve.	PA6A	3 - 8	1.7	1.6	3/8" NPTF	6.8
PA6A with metal reservoir.	PA6AM	3 - 8	1.7	1.6	3/8" NPTF	7.7
PA6, except has metal reservoir.	PA6M	3 - 8	1.7	1.6	3/8" NPTF	8.2
PA6 with 3.7 meter remote control.	PA6R	3 - 8	1.7	1.6	3/8" NPTF	9.3
PA6R except has metal reservoir.	PA6RM	3 - 8	1.7	1.6	3/8" NPTF	9.8
PA6, except has 3.8 liter metal reservoir.	PA6M-1	3 - 8	3.8	3.0	3/8" NPTF	10.7
PA6, except has 7.6 liter, high density polyethylene reservoir.	PA6-2	3 - 8	7.6	7.3	3/8" NPTF	11.1
PA6, except has 9.5 liter metal reservoir.	PA6M-2	3 - 8	9.5	9.1	3/8" NPTF	14.5

Air Hydraulic Pumps

98.4 cu. cm./min., Double-Acting (PA6D Series)

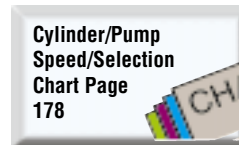
Single-speed pump designed to drive double-acting cylinders.
Generally recommended for tools or cylinders up to 15 ton.



Hoses, Fittings & Gauges
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Pump Accessories
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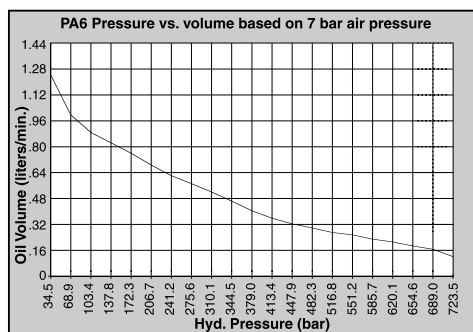
Cylinder/Pump Speed/Selection Chart
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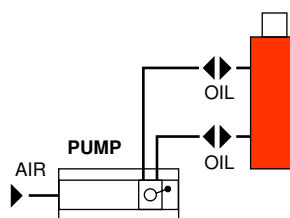
Choosing The Right Pump
Pages 181-184

- Compact, lightweight and portable single-speed pump for driving double-acting cylinders.
- A quarter century record of proven reliability. The power unit of choice for major manufacturers of auto body and frame straighteners and other equipment.
- Operate at 3-8 bar shop air pressure at the pump.
- Internal relief valves protect circuit components, air inlet filter protects motor.
- All metal air motor, ductile iron pump. Serviceable pump motor is not a "throw away", providing economical repair.
- Permanently vented reservoir cap.
- An inexpensive alternative to using manually operated pumps.
- Metal reservoir conversion kits and filters/regulators/lubricators found in accessories section. See pages 161-165.
- Four reservoir sizes available to best match your application.
- Four reservoir sizes available to best match your application.
- dBA 85 at 700 bar for all PA6 pumps.

PERFORMANCE

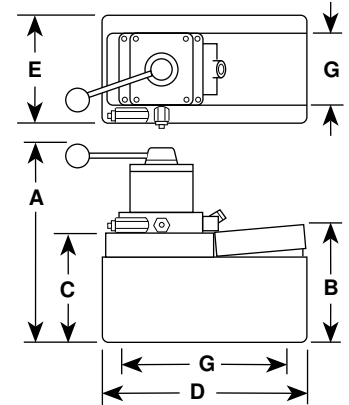


Typical Set-up
Hook-up for double-acting cylinders





PA6D pump, DG100 digital pressure gauge and 25 ton cylinder used in a test fixture.



DIMENSIONS (MM)

Pump No.	A	B	C	D	E	G
PA6D	264	149	111	241	127	102 x 229
PA6DM	264	149	111	241	127	102 x 229
PA6DM-1	279	146	111	321	187	none
PA6D2	324	203	178	287	235	130 x 181
PA6DM-2	318	197	171	292	241	203 x 254

ORDERING INFORMATION

See current price list for shipping weights.

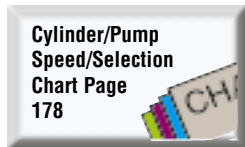
Description	Order No.	Valve No.	Air Supply Req'd (bar)	Reservoir (liters)		Oil Port	Prod. Wt. (kg)
				Cap.	Usable		
Base model pump with high density polyethylene reservoir.	PA6D	9504, 3-way/ 4-way	3 - 8	1.7	1.6	3/8" NPTF	8.3
PA6D, except has metal reservoir.	PA6DM	9504, 3-way/ 4-way	3 - 8	1.7	1.6	3/8" NPTF	9.2
PA6D, except has 3.8 liter metal reservoir.	PA6DM-1	9504, 3-way/ 4-way	3 - 8	3.8	3.0	3/8" NPTF	12.7
PA6D, except has 7.6 liter, high density polyethylene reservoir.	PA6D2	9504, 3-way/ 4-way	3 - 8	7.6	7.3	3/8" NPTF	13.0
PA6D, except has 9.5 liter metal reservoir.	PA6DM-2	9504, 3-way/ 4-way	3 - 8	9.5	9.1	3/8" NPTF	16.4

Air Hydraulic Pumps

147.6 cu. cm./min., Single-Acting (PA9 Series)

Single-speed pump designed to drive single-speed cylinders or tools. Pump can be mounted vertically or horizontally. Ideal for operating portable hydraulic tools.

PUMPS

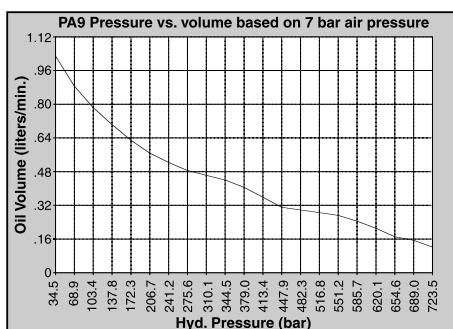


- PA9 series single-speed pumps are ideal for powering single-acting cylinders and portable hydraulic tools.
- Easier to operate than a hand pump, giving you the speed you need at an affordable price.
- A time-tested design constructed totally of metal (not plastic!) for years of dependable on the job service.
- Easy and economical to service; not a “throw away” unit.

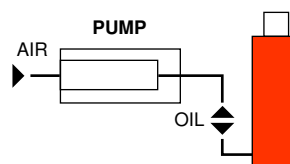
- Unique bladder design for all-position operation and storage.
- Operates on 3-8 bar shop air, at 3.8 liters/min.
- Heavy-duty, hard-coat anodized aluminum housing, distinctive styling.
- Oil filler with integral safety relief minimizes chance of damage to reservoir bladder if overfilling occurs.

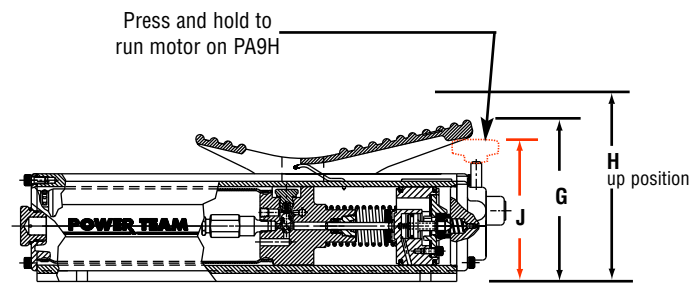
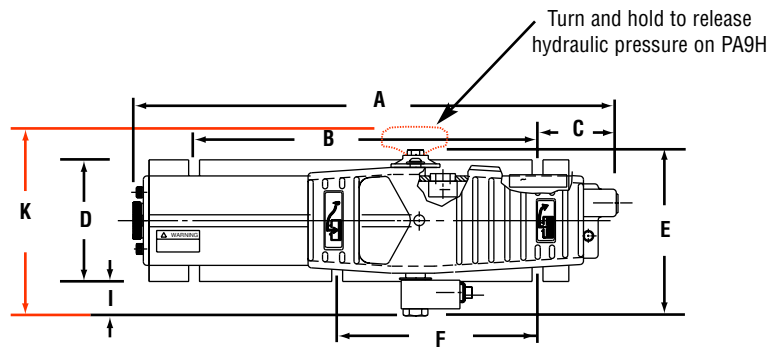
PERFORMANCE

Pressure vs volume based on 7 bar air pressure:



Typical Set-up
Hook-up for single-acting cylinders





Relief valve settings: up to 700 bar
Mounting holes (standard): 9.7 mm slots

DIMENSIONS (MM)

Pump No.	A	B	C	D	E	F	G	H	I	J	K
PA9	432	305	71.4	108	149	178	142	178	28.2	—	—
PA9H	432	305	71.4	108	—	178	—	178	28.2	122	170

ORDERING INFORMATION

See current price list for shipping weights.

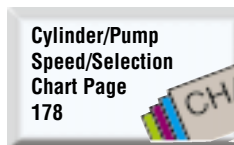
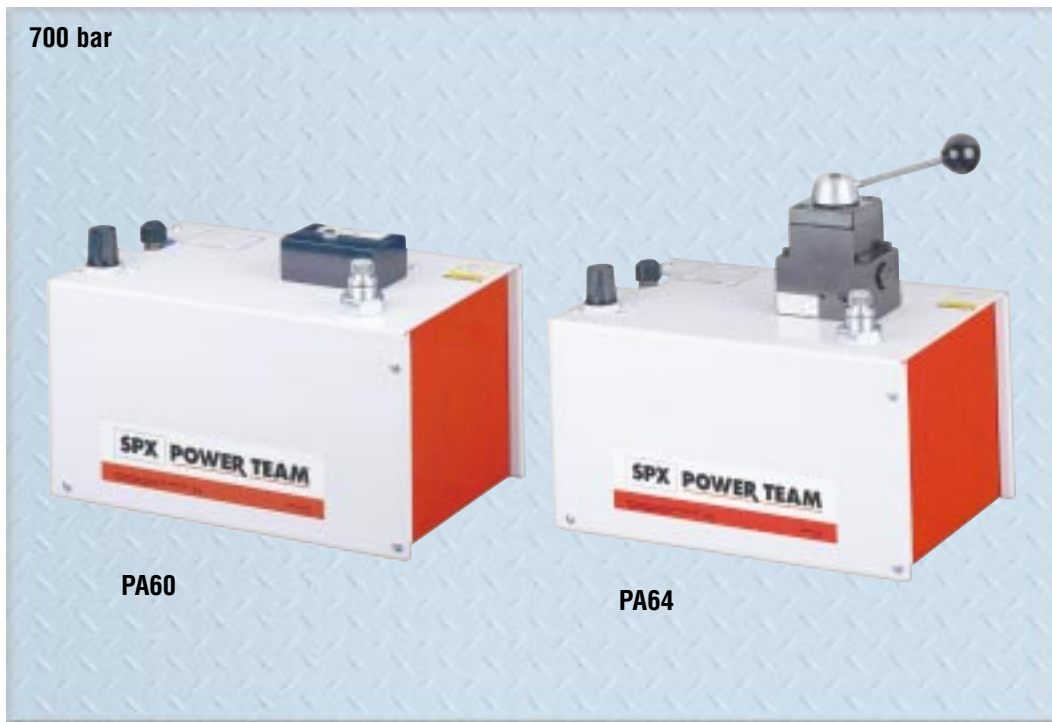
For Use with Cyl. Type	Order No.	Air Supply Req'd	Reservoir		Oil Port	Max. Pressure Output	Prod. Weight
			Cap.	Usable			
Single-Acting	PA9	3 - 8 bar	574 cu. cm.	549 cu. cm.	3/8" NPTF	700 bar	6.8 kg
Single-Acting	PA9H	3 - 8 bar	574 cu. cm.	549 cu. cm.	3/8" NPTF	700 bar	6.8 kg

Air Hydraulic Pumps

98.4 cu. cm./min. – Two-speed (PA60 Series)

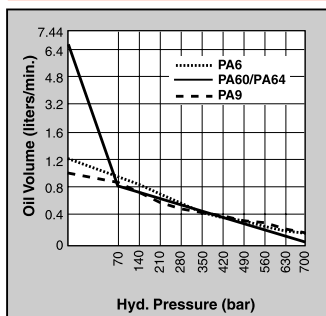
Similar to PA6 for performance with two-speed feature to rapidly advance cylinder or tool to the work.

PUMPS

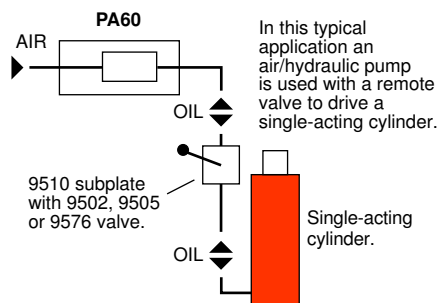


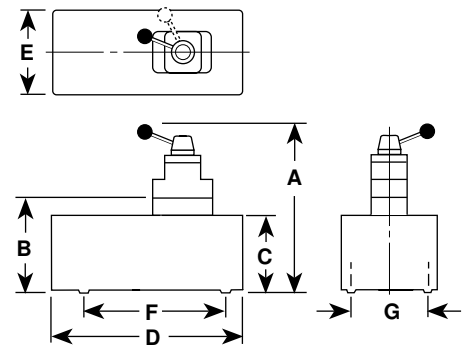
- Two-speed pump for rapid oil delivery at low pressure to quickly advance cylinder or tool.
- Second speed produces high pressure to produce force necessary to complete work.
- Equipped with air pressure regulator, air filter and lubricator.
- Serviceable air motor (not a throw-away) for economical repair.
- Internal relief valves to protect circuit components.
- Permanently vented reservoir cap.

PERFORMANCE



Typical Set-up





SPECIFICATIONS AND DIMENSIONS

Pump No.	Dimensions (mm)							Max. Pressure Output (bar)	Oil Del. * (liters/min. @)				
	A	B	C	D	E	F	G		0 bar	7 bar	70 bar	350 bar	700 bar
PA60	–	240	206	362	244	181	130	700	6.24	5.60	0.80	0.19	0.10
PA64	362	–	206	362	244	181	130	700	6.24	5.60	0.80	0.19	0.10

* Typical delivery. Actual flow will vary with field conditions.

ORDERING INFORMATION

Requires .56 cu. m/min. at 7 bar shop air pressure at the pump.

SINGLE- & DOUBLE-ACTING

Description	Order No.	Valve No.	Valve Function	Air Supply Req'd (bar)	Reservoir (liter)		Oil Port	Prod. Wt. (kg)
					Cap.	Usable		
For use with remote valves.	PA60	Manifold	–	3 - 8	7.6	6.8	3/8" NPTF	24.5
For use with single- or double-acting cylinders.	PA64	9507, 3 way/ 4-way	Advance Hold Return	3 - 8	7.6	6.8	3/8" NPTF	25.4

NOTE: Air inlet port 1/4" NPTF.

Air Hydraulic Pumps

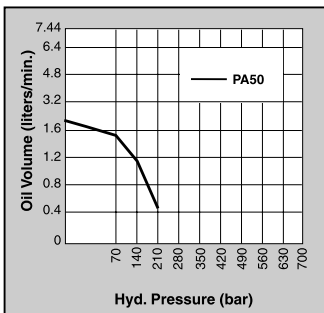
459.2 cu. cm./min. — “low pressure” (PA50 Series)

Designed to operate low pressure (220 bar) systems, single-speed.
Pump models available to drive single-acting or single- and double-acting systems.

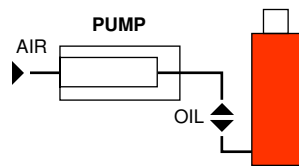


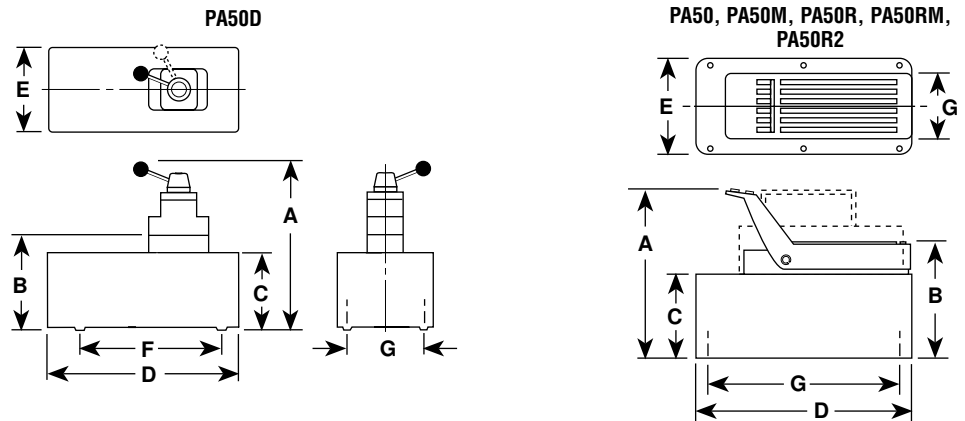
- Single-speed, low pressure (220 bar) output pumps.
- All metal air motor for long dependable service.
- Serviceable air motor (not a throw away) for economical repair.
- Air inlet filter protects motor. Filter in outlet port protects against contaminated systems.
- Standard or large reservoirs to suit your application's oil requirements.

PERFORMANCE



Typical Set-up
Hook-up for single-acting cylinders





SPECIFICATIONS AND DIMENSIONS

Pump No.	Dimensions (mm)							Max. Pressure Output (bar)	Oil Del.* (liters/min. @)				
	A	B	C	D	E	F	G		0 bar	7 bar	70 bar	350 bar	700 bar
PA50, PA50R, PA50M, PA50RM	197	149	111	241	127	–	102 x 229	220	2.05	1.76	1.41	0.45†	–
PA50R2	260	203	178	292	241	–	130 x 181	220	2.05	1.76	1.41	0.45†	–
PA50D	264	149	111	241	127	229	102	220	2.05	1.76	1.41	0.45†	–

* Typical delivery. Actual flow will vary with field conditions.

† PA50 Series measured at 220 bar.

ORDERING INFORMATION

Requires .56 cu. m/min. at 7 bar shop air pressure at the pump.

SINGLE-ACTING

Description	Order No.	Valve No.	Air Supply Req'd (bar)	Reservoir (liters)		Oil Port	Prod. Wt. (kg)
				Cap.	Usable		
Base model pump with high density polyethylene reservoir.	PA50	–	3 - 8	1.7	1.6	3/8" NPTF	6.4
PA50, except has metal reservoir.	PA50M	–	3 - 8	1.7	1.6	3/8" NPTF	7.3
PA50, except has 3.7 meter remote control.	PA50R	–	3 - 8	1.7	1.6	3/8" NPTF	8.4
PA50R, except has metal reservoir.	PA50RM	–	3 - 8	1.7	1.6	3/8" NPTF	9.3
PA50R, except has 7.6 liter reservoir.	PA50R2	–	3 - 8	7.6	7.3	3/8" NPTF	12.9

NOTE: Air inlet port 1/4" NPTF.

SINGLE- AND DOUBLE-ACTING

Description	Order No.	Valve No.	Air Supply Req'd (bar)	Reservoir (liters)		Oil Port	Prod. Wt. (kg)
				Cap.	Usable		
PA50, except designed to operate either single- or double-acting systems. Valve function: Advance / Return.	PA50D	9504, 3-way/4-way	3 - 8	1.7	1.6	3/8" NPTF	8.3

NOTE: Air inlet port 1/4" NPTF.

Air Hydraulic Pumps

278.8 cu. cm./min. — Two-speed (PA17 Series)

Two-speed pump with rotary-style air motor. Generally recommended for cylinders up to 50 ton capacity.

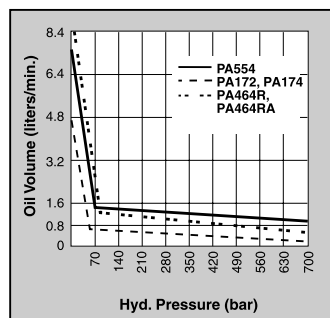
PUMPS



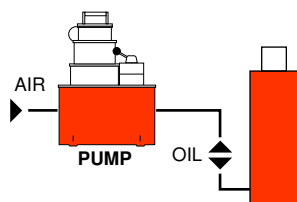
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- Use where air is preferred source of energy, where electricity is unavailable or sparks are a concern.
- Two-speed operation for high speed cylinder advance.
- Durable 7.6 liter thermoplastic reservoir. (Metal reservoir conversion kits are available.)
- Features air motor capable of starting under full load.

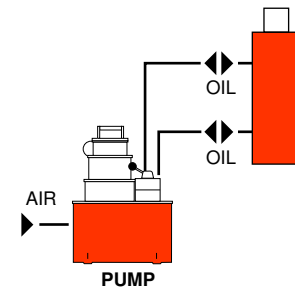
PERFORMANCE

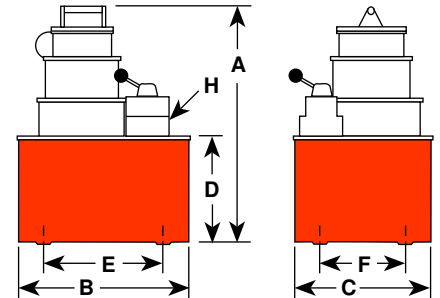


Typical Set-up
Hook-up for single-acting cylinders



Typical Set-up
Hook-up for double-acting cylinders





SPECIFICATIONS AND DIMENSIONS

Pump No.	Dimensions (mm)							Max. Pressure Output (bar)	Oil Del. * (liters/min. @)				
	A	B	C	D	E	F	H		0 bar	7 bar	70 bar	350 bar	700 bar
PA172	359	289	235	178	181	130	3/8" NPTF	700	4.6	3.8	0.4	0.4	0.3
PA174	359	289	235	178	181	130	3/8" NPTF	700	4.6	3.8	0.4	0.4	0.3

* Typical delivery. Actual flow will vary with field conditions.

ORDERING INFORMATION

Requires .56 cu. m/min. at 6 bar shop air pressure at the pump. dBA 85/90 at 700 bar.

SINGLE-ACTING

Description	Order No.	Valve No.	Valve Function	Air Supply Req'd (bar)	Reservoir (liters)		Prod. Wt. (kg)
					Cap.	Usable	
Base model pump with 7.6 liter thermoplastic reservoir.	PA172	9517, 2-Way	Advance/Return*	3 - 8	7.6	4.7	18.1

SINGLE- & DOUBLE-ACTING

Description	Order No.	Valve No.	Valve Function	Air Supply Req'd (bar)	Reservoir (liters)		Prod. Wt. (kg)
					Cap.	Usable	
PA172, except has 9500 valve for use with single- or double-acting cylinders.	PA174	9500, 4-way	Advance Hold Return*	3 - 8	7.6	4.7	18.6

* Holds pressure in advance position when valve motor is shut off, in return position with motor running. Pump will build pressure when motor is shut off, oil returns to reservoir.

Air Hydraulic Pumps

754-902 cu. cm./min. — Two-speed (PA46 & PA55 Series)

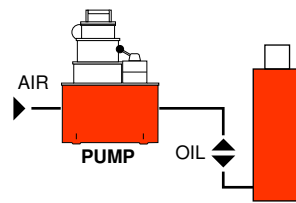
Two-speed pump with rotary-style air motor. Generally recommended for cylinders up to 150 ton capacity.



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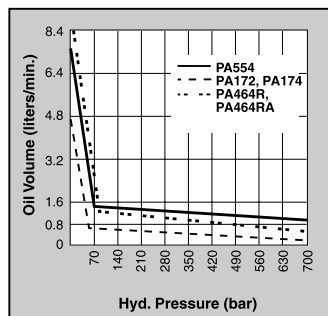
- Use where air is the preferred source of energy.
- Features 2.24 kW motor capable of starting under full load.
- Two-speed operation for high speed cylinder advance.
- Models available with full remote control over advance and return, except for PA554.
- Tandem center valve holds the load when pump is shut off.

Typical Set-up
Hook-up for single-acting cylinders

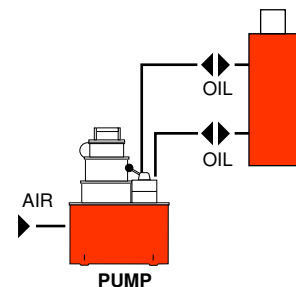


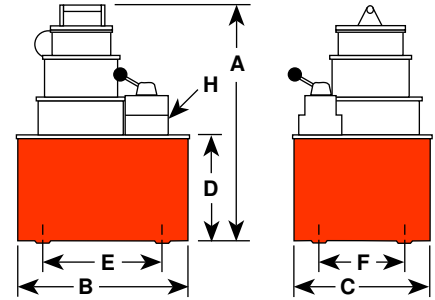
PA554 pump and RH2008 Center Hole cylinder used to tension cables.

PERFORMANCE



Typical Set-up
Hook-up for double-acting cylinders





SPECIFICATIONS AND DIMENSIONS

Pump No.	Dimensions (mm)							Max. Pressure Output (bar)	Oil Del. * (liters/min. @)				
	A	B	C	D	E	F	H		0 bar	7 bar	70 bar	350 bar	700 bar
PA462	381	292	241	178	254	203	3/8" NPTF	700	7.4	7.2	0.8	0.8	0.7
PA464	381	292	241	178	254	203	3/8" NPTF	700	7.4	7.2	0.8	0.8	0.7
PA464R	381	292	241	178	254	203	3/8" NPTF	700	7.4	7.2	0.8	0.8	0.7
PA464RA	381	292	241	178	254	203	3/8" NPTF	700	7.4	7.2	0.8	0.8	0.7
PA554	483	292	241	178	254	203	3/8" NPTF	700	7.4	7.2	1.3	1.1	0.9

* Typical delivery. Actual flow will vary with field conditions.

NOTE: Four mounting holes 1/2 in.-20.

ORDERING INFORMATION

Requires 1.4 cu. m/min. at 6 bar shop air pressure at the pump. dBA 85/90 at 700 bar.

SINGLE-ACTING

Description	Order No.	Valve No.	Valve Function	Air Supply Req'd (bar)	Reservoir (liters)		Prod. Wt. (kg)
					Cap.	Usable	
Base model pump with 9.5 liter steel reservoir.	PA462	9584, 2-way	Advance / Hold / Return	3 - 8	9.5	9.4	27.2

SINGLE- & DOUBLE-ACTING

Description	Order No.	Valve No.	Valve Function	Air Supply Req'd (bar)	Reservoir (liters)		Prod. Wt. (kg)
					Cap.	Usable	
PA462, except has 9500 valve capable of running 2 single-acting cylinders or one double-acting cylinder.	PA464	9500, 4-way	Advance / Hold / Return*	3 - 8	9.5	9.4	27.6
PA462 with air actuated valve for full remote control over advance and return. Includes 3.7 meter remote control.	PA464R†	9594 4-way	Advance / Hold / Return	3 - 8	9.5	9.4	35.3
PA464R except, has automatic dump feature. 7.6 meter remote control.	PA464RA∞†	9594, 4-way	Advance / Hold / Return*	3 - 8	9.5	9.4	35.8
High performance pump with 9.5 liter steel reservoir.	PA554	9500, 4-way	Advance / Hold / Return*	3 - 8	9.5	8.4	22.2

* Holds when motor is shut-off and valve is in "advance" position.

† The PA464RA has an "automatic dump" feature. Pressure is **not** held when operator releases "advance" or "return" button. PA464R will "hold" only in the "advance" position with the motor shut off.

∞ Not to be used for lifting.