

Series PHD & PHS Pneumatic Actuators

For Use with All Sizes of Ball and Butterfly Valves



PHD Actuator

PHS Actuator

Features

- Four Piston Rack-and-Pinion Design
- Manual Override
- Position Indicator
- Epoxy-Coated Housing
- High Torque Output
- Lightweight, Compact
- Permanent Lubrication
- Internal Manifold Air Transfer

Options

- Solenoid Valves
- AC and DC Solenoid Voltages
- Positioners
- Position Transmitter
- Limit Switch
- Proximity Switch
- Cycle Speed Control

All-Around Best Choice

Hayward Series PHD and PHS Actuators are the best choice for applications requiring pneumatically-actuated true union ball valves, three way ball valves or butterfly valves. These actuators are available in models with appropriate torque outputs for all valves from 1/4" all the way up to 24" pipeline size.

Two Modes of Operation

The Series PHD actuators are air-to-air (double-acting) actuators, while the PHS Series are air-to-spring (fail safe) actuators. Air-to-air actuators require air pressure for both actuation cycles, open and closed. Air-to-spring actuators utilize a mechanical spring to operate one of the actuation cycles. This type of actuator can be set to have the spring, rather than air pressure, either open or close the valve.

Compact Design

Series PHD/PHS actuators feature a four piston rack-and-pinion design. This design results in a high torque output actuator, yet one that is very lightweight and compact in comparison with other rack-and-pinion actuators.

Solenoids for Air Control

Electric solenoids are used to control the compressed air flow to the actuator. A variety of solenoids are available for this purpose.

Manual Override Standard

Both PHD and PHS actuators can be operated manually in the event of air or electric failure.

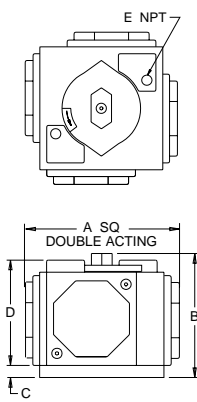
Technical Information

Actuator Specifications

Housing	Epoxy-coated aluminum
Output Shaft	Plated steel
Minimum Air Pressure	80 PSI
Maximum Air Pressure	120 PSI

Air Transfer	Internal Manifold
Air Connections	See Drawings Below
Cycle Time	Under 1 Second Typical – Depends on Solenoid
Operation	Rack & Pinion

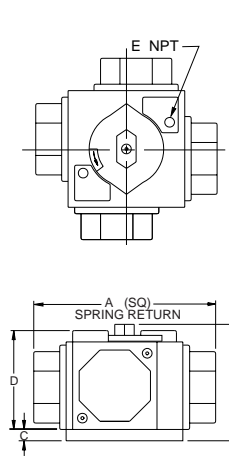
Series PHD - Air to Air/Double Acting



Dimensions PHD Series Pneumatic Actuators (Double Acting)					
Model Number	A Sq.	B	C	D	E NPT
PHD 15	3.09	2.94	0.31	2.36	1/8"
PHD 20	3.64	3.40	0.31	2.62	1/8"
PHD 25	4.72	4.10	0.38	3.32	1/8"
PHD 30	5.52	4.68	0.50	3.78	1/8"
PHD 45	8.11	6.91	0.75	5.70	1/4"
PHD 60	10.8	9.12	1.00	7.70	1/4"
PHD 75	12.6	11.24	1.00	9.57	1/4"

Torque Output @ 80 psi			
Model	Torque (in-lb)	Model	Torque (in-lb)
PHD 15	160	PHD 45	3626
PHD 20	318	PHD 60	8595
PHD 25	640	PHD 75	15060
PHD 30	1074		

Series PHS - Air to Spring/Fail Safe



Dimensions PHS Series Pneumatic Actuators (Spring Return)					
Model Number	A Sq.	B	C	D	E NPT
PHS 15	4.03	2.94	0.31	2.36	1/8"
PHS 20	4.78	3.45	0.31	2.71	1/8"
PHS 25	5.97	4.10	0.38	3.32	1/8"
PHS 30	6.91	4.68	0.50	3.78	1/8"
PHS 35	8.40	5.89	0.63	9.81	1/4"
PHS 45	10.02	6.91	0.75	5.7	1/4"
PHS 60	13.52	8.4	1.00	7.12	1/4"
PHS 75	16.53	11.24	1.00	9.57	1/4"

Torque Output @ 80 psi - Ending			
Model	Torque (in-lb)	Model	Torque (in-lb)
PHS 15	48	PHS 35	520
PHS 20	97	PHS 45	919
PHS 25	207	PHS 60	2447
PHS 30	350	PHS 75	4552

Selection Chart

Valve Size	True Union Ball Valve *	Butterfly Valve *	Three-Way Ball Valve *
1/4" to 1-1/4"	PHD15 or PHS15	N/A	PHD15 or PHS15
1-1/2" to 2"	PHD15 or PHS20	PHD20 or PHS25	PHD15 or PHS20
2-1/2"	PHD20 or PHS25	N/A	PHD20 or PHS25
3"	PHD20 or PHS25	PHD20 or PHS30	PHD20 or PHS25
4"	PHD20 or PHS25	PHD25 or PHS35	PHD20 or PHS30
6"	PHD20 or PHS25	PHD25 or PHS35	PHD20 or PHS30
8"	N/A	PHD35 or PHS45	N/A
10" to 12"	N/A	PHD45 or PHS60	N/A
14" and 16"	N/A	PHD60 or PHS75	N/A
18", 20" and 24"	N/A	PHD75	N/A

* Actuator size selections based on clean water at 70°F.



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