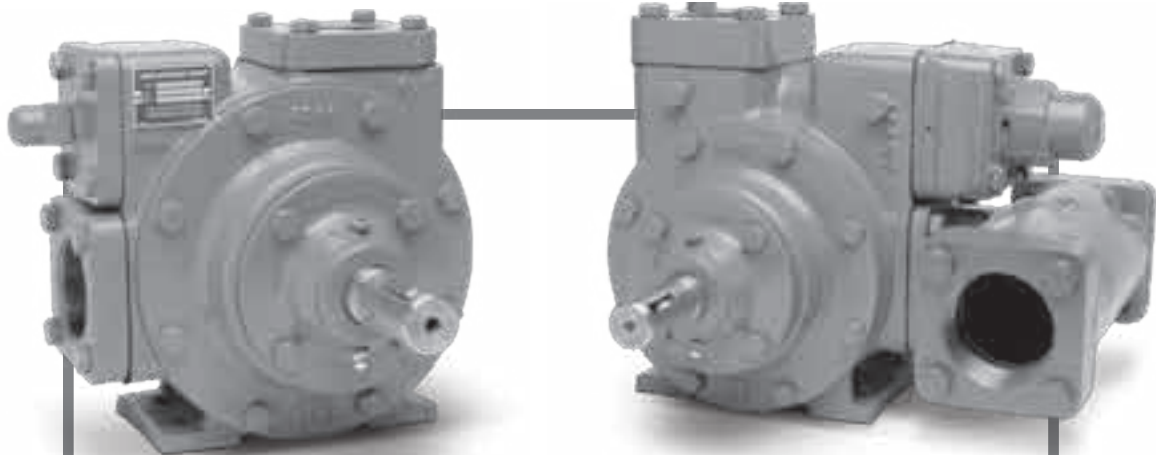


Petroleum Pumps

Sales Catalog for PT-Series



Model PT20

Model PT25 with optional air operated valve (AOV) and strainer



Model PT30

LIQUID CONTROLS GROUP
IDEX

General Information

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General Information

Principles of the PT-Series Pumps

The PT-Series pumps are a special type of rotary positive displacement pump, known as a sliding vane pump.

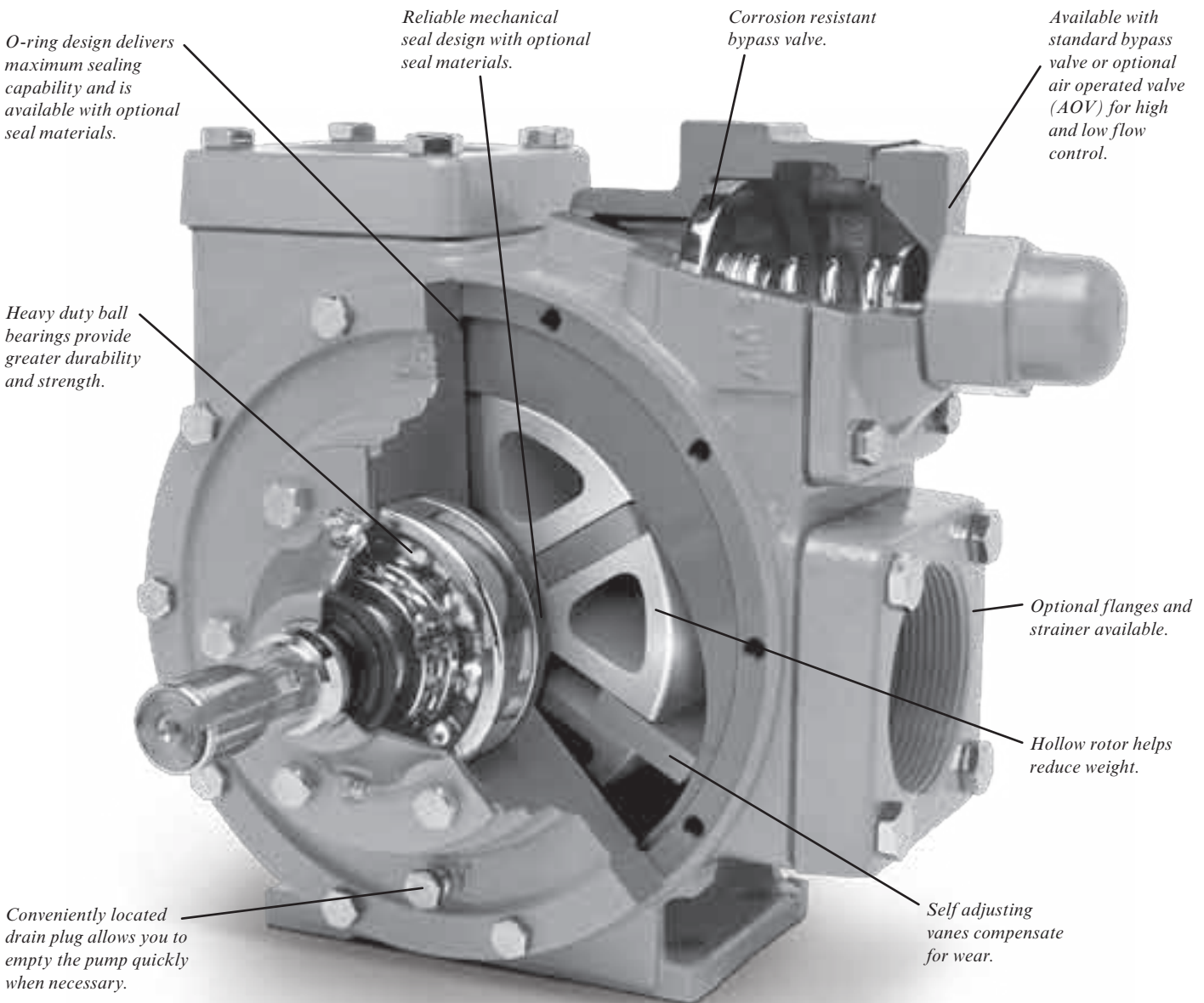
The sliding vane pump has many of the positive displacement advantages of the gear pump, plus the ability to compensate for wear, and operate at a lower noise level.

The sliding vane pump consists of a rotor turning inside a cam that is machined eccentrically in relation to the rotor. As the rotor turns, the liquid that is trapped between the rotor, cam and vanes is displaced. The PT-Series pumps are made with vanes produced from advanced polymers which exhibit extremely low coefficients of friction. The self adjusting vanes compensate for wear and help extend the life of the pump.

Exclusive Features of the PT-Series Pumps

The pumping of volatile liquids is one of the most difficult of all pumping jobs, and pumping from a delivery truck makes it even more difficult, so more attention must be given to the design and manufacturing of the pump and to its installation and operation.

In addition to being especially suited for handling volatile liquids, the PT-Series pumps have a number of other features to help make them more easily operated and maintained.



Operating Specifications for the PT-Series

Standard connections:	2 in., 2-1/2 in., and 3 in. NPT
Optional connections:	BSPT, Slip-on weld
Maximum differential pressure:	125 psid (8.6 bar)
Temperature range:	-25° to 300°F (-32° to 149°C)
Maximum working pressure:	200 psi (13.8 bar)
Maximum speed:	780 RPM—all models 20 and 25 640 RPM—all models 30
Maximum flow:	Up to 271 GPM (1,026 L/min)
Maximum viscosity:	20,000 SSU (4,250 cP)
Fluids:	Refined petroleum products, industrial solvents, and other fluids

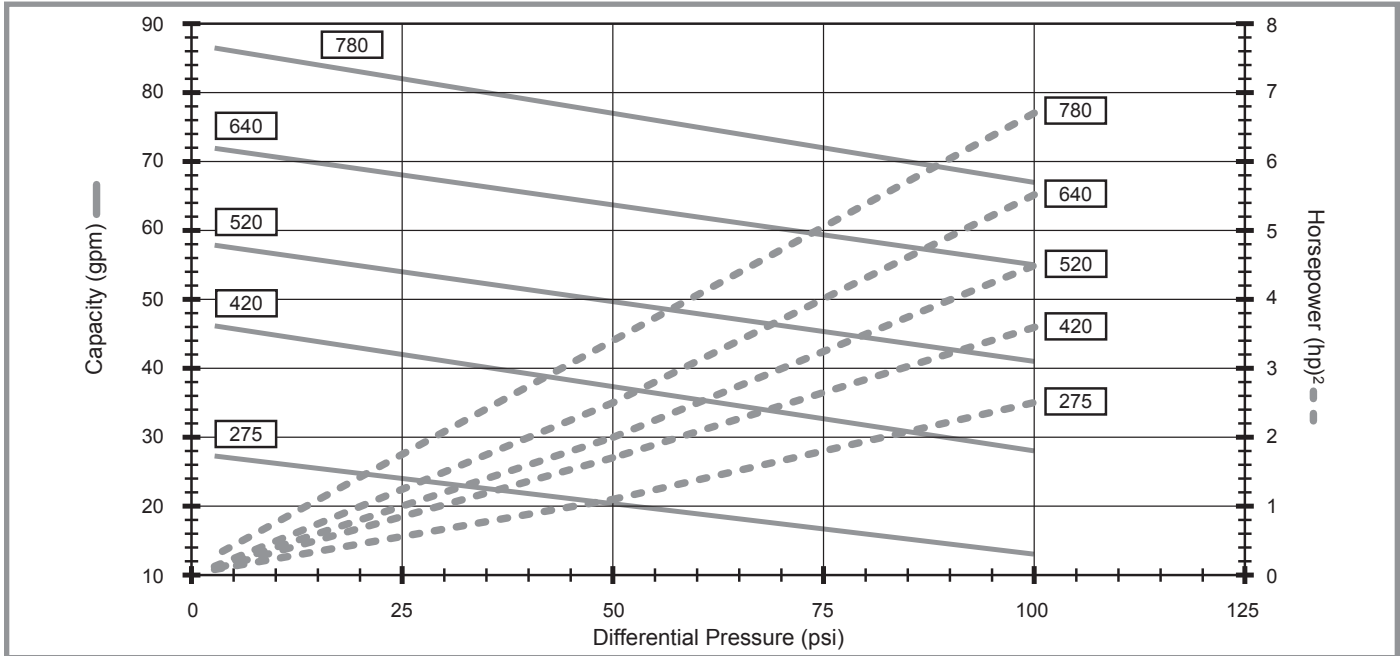
Material Specifications for the PT-Series

Part	Standard Material	Available Options
Case	Cast iron ASTM A48	
Head	Cast iron ASTM A48	
Flanges	Cast iron ASTM A48	
Rotor	Ductile iron ASTM A536	
Bearing cap	Steel	Bearing cover / spacer with hydraulic motor adapter (cast aluminum) and coupling (steel)
Bearings	Ball (single row), grease lubricated to 300°F (149°C) max.	
Vanes	Full size with 316 stainless steel wear plate to 240°F (115°C); 20,000 SSU (4,250 cP) max.	
Bypass valve	Cast iron ASTM A48 with nickel added	
Bypass/AOV cap	Cast iron ASTM A48	
Bypass valve cover	Cast iron ASTM A48	
Bypass valve spring	Plated steel	
Bypass valve spring ranges	35–125 psi (2.4–8.6 bar)	
Seal seat	Cast iron	
Seal metal parts	Steel	
Shaft	Double end keyed shaft, high strength steel	
O-rings	Viton® ¹ to 300°F (149°C)	Buna-N to 240°F (115°C)
Gaskets	Composition to 500°F (260°C)	
Vane drivers	Case hardened steel	
Gauge ports	1/4 in. NPT	

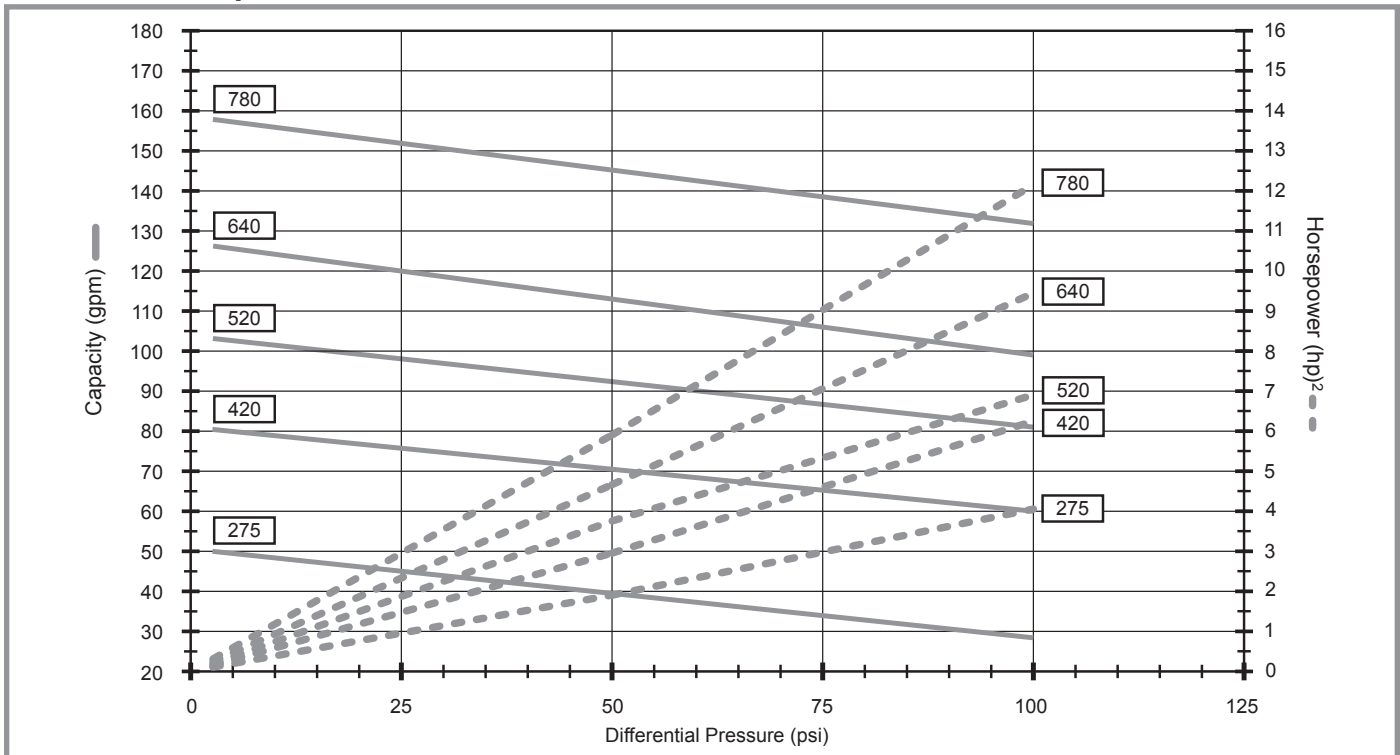
¹Viton® is a registered trademark of the DuPont company.

Performance Curves¹

PT/PTH20 Pumps



PT/PTH25 Pumps



¹These curves depict performance of the PUMP ONLY. Performance will vary in applications due to system design and variables. Approximate capacities and horsepowers are based on 30 SSU (3 cP) fluid.

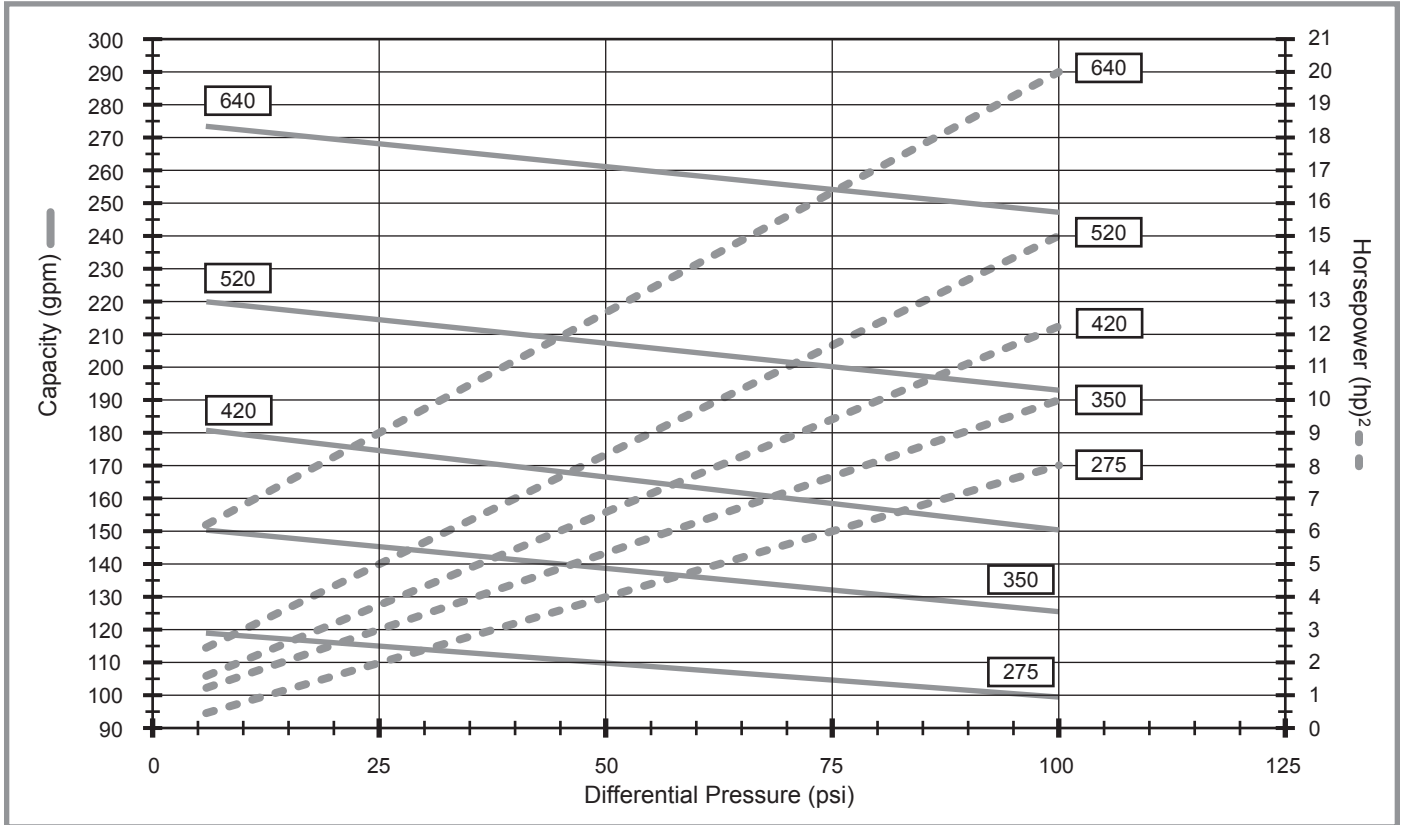
$$^2\text{Torque (in}\cdot\text{lb)} = \frac{\text{hp} \times 63025}{\text{RPM}}$$

PT/PTH20 and PT/PTH25 Viscosity Chart

Viscosity (SSU)	100	1,000	5,000	10,000	20,000
Maximum RPM	780	640	520	420	275

Performance Curves¹

PT/PTH30 Pumps



¹These curves depict performance of the PUMP ONLY. Performance will vary in applications due to system design and variables. Approximate capacities and horsepowers are based on 30 SSU (3 cP) fluid.

²Torque (in•lb) = $\frac{hp \times 63025}{RPM}$

PT/PTH30 Viscosity Chart

Viscosity (SSU)	100	1,000	5,000	10,000	20,000
Maximum RPM	640	520	420	350	275

Model Number and Identification Code for the PT-Series

Base model number	PT20	PT25	PT30	
Base model number (with hydraulic drive option)	PTH20	PTH25	PTH30	

Specifications

Strainer	No strainer	Standard	Standard	Standard	N
	Strainer	Optional	Optional	Optional	S

Internal bypass valve	Bypass valve	Standard	Standard	Standard	S
	Air operated valve	Optional	Optional	Optional	A

Bypass valve spring	35 – 50 psi	Optional	N/A	N/A	4
	50 – 75 psi	Optional	N/A	N/A	1
	75 – 110 psi	Standard	N/A	N/A	2
	110 – 125 psi	Optional	N/A	N/A	3
	50 – 110 psi	N/A	Standard	Standard	2
	110 – 125 psi	N/A	Optional	Optional	3

Seal O-ring material	Buna-N	Optional	Optional	Optional	A
	Viton® ¹	Standard	Standard	Standard	D

Seal seat material	Cast iron	Standard	Standard	Standard	2
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Inlet flange	2 in NPT	Standard	Optional	N/A	E
	2.5 in. NPT	N/A	Standard	N/A	J
	3 in. NPT	N/A	N/A	Standard	P
	2 in BSPT	Optional	Optional	N/A	M
	2.5 in. BSPT	N/A	Optional	N/A	N
	3 in. BSPT	N/A	N/A	Optional	R
	2 in. Weld	Optional	N/A	N/A	F
	2.5 in. Weld	N/A	Optional	N/A	K
	3 in. Weld	N/A	N/A	Optional	Q
Less flange	Optional	Optional	Optional	X	

Outlet flange	2 in. NPT	Standard	Optional	N/A	E
	2.5 in. NPT	N/A	Standard	N/A	J
	3 in. NPT	N/A	N/A	Standard	P
	2 in BSPT	Optional	Optional	N/A	M
	2.5 in. BSPT	N/A	Optional	N/A	N
	3 in. BSPT	N/A	N/A	Optional	R
	2 in. Weld	Optional	N/A	N/A	F
	2.5 in. Weld	N/A	Optional	N/A	K
	3 in. Weld	N/A	N/A	Optional	Q
Less flange	Optional	Optional	Optional	X	

¹Viton® is a registered trademark of the DuPont company.
N/A = Not Applicable

Model Number and Identification Code for Strainer and Air Operated Valve (AOV)

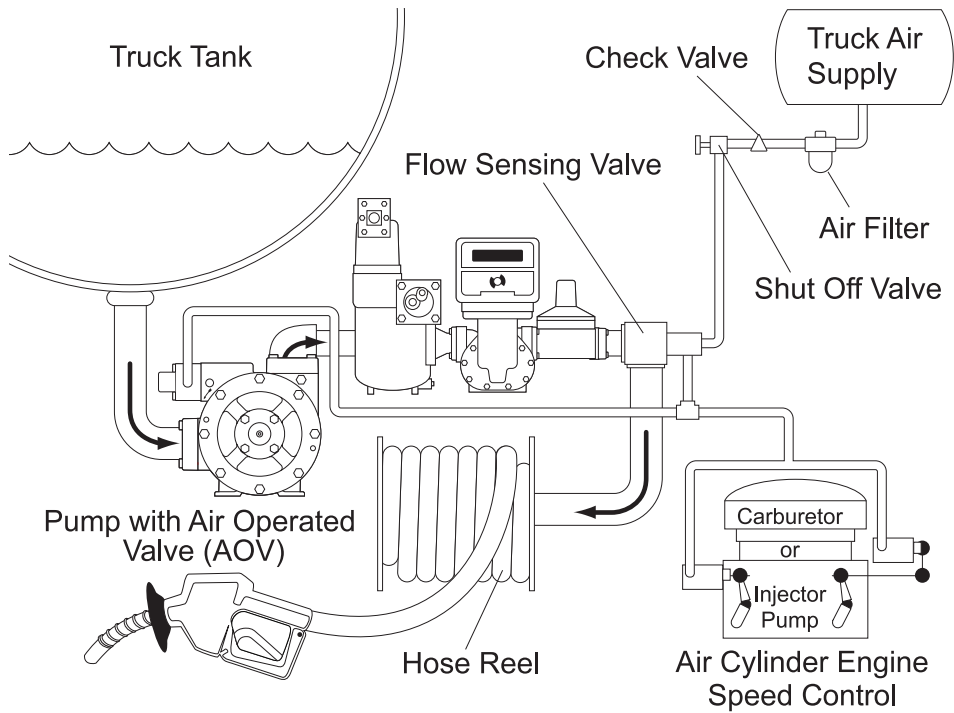
Strainer Assembly¹

Pump Model	Strainer Assembly Part Number
PT/PTH20	4684-X
PT/PTH25	4689-X
PT/PTH30	4680-X

Air Operated Valve Assembly (AOV)

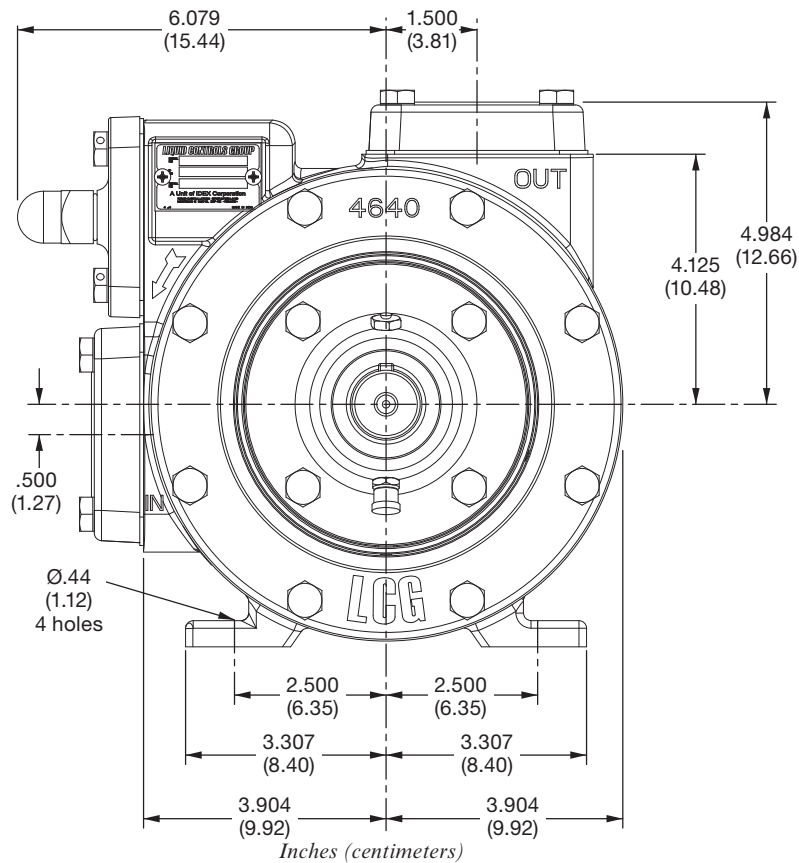
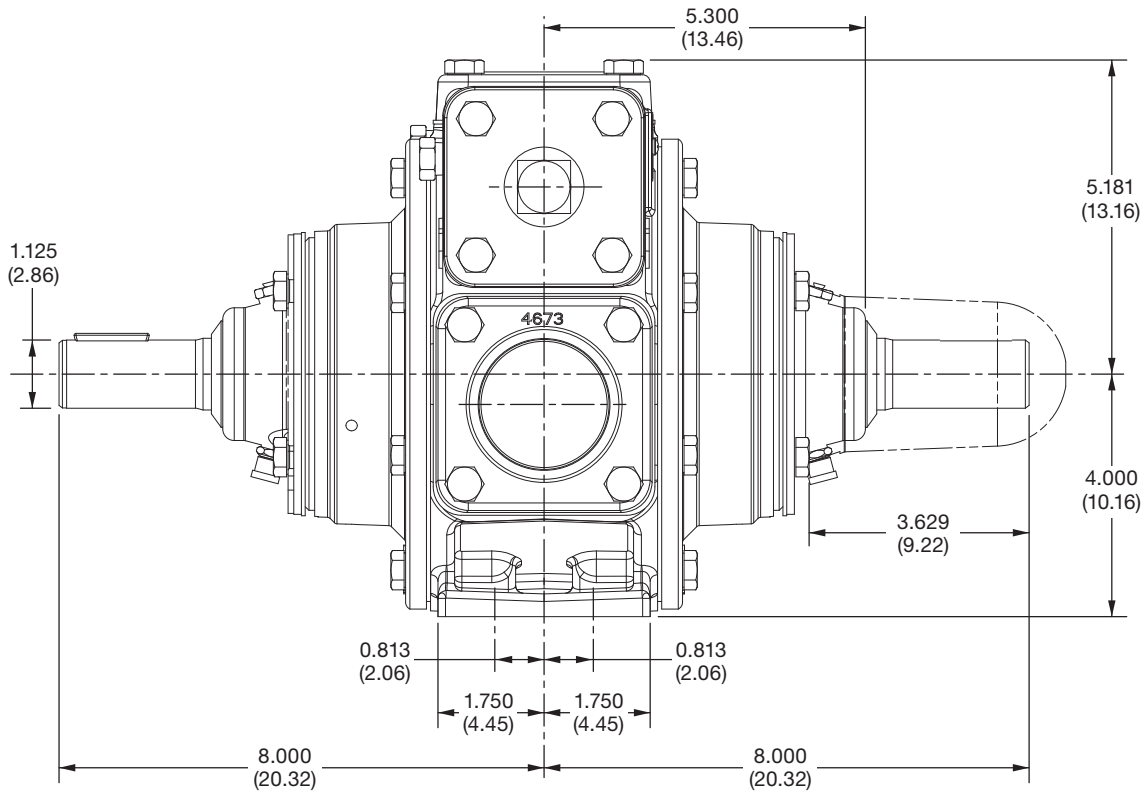
Pump Model	AOV Part Number
PT/PTH20	5470-1XA (Buna-N)
PT/PTH25	5462-1XA (Buna-N)
PT/PTH30	5566-XA (Buna-N)

Typical Truck Delivery System Using an Air Operated Valve (AOV) Assembly



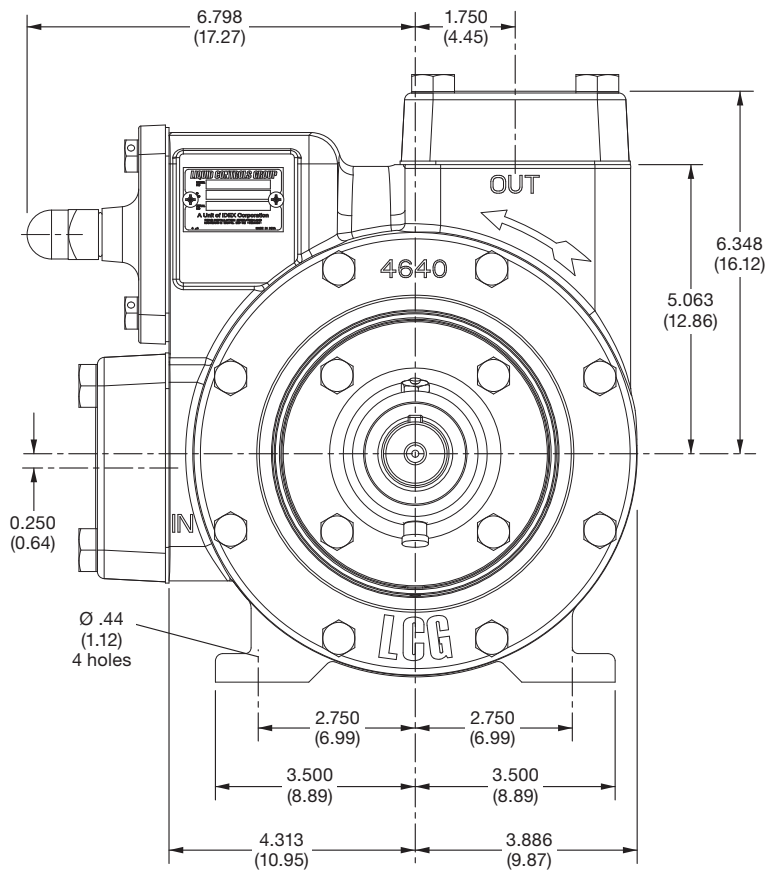
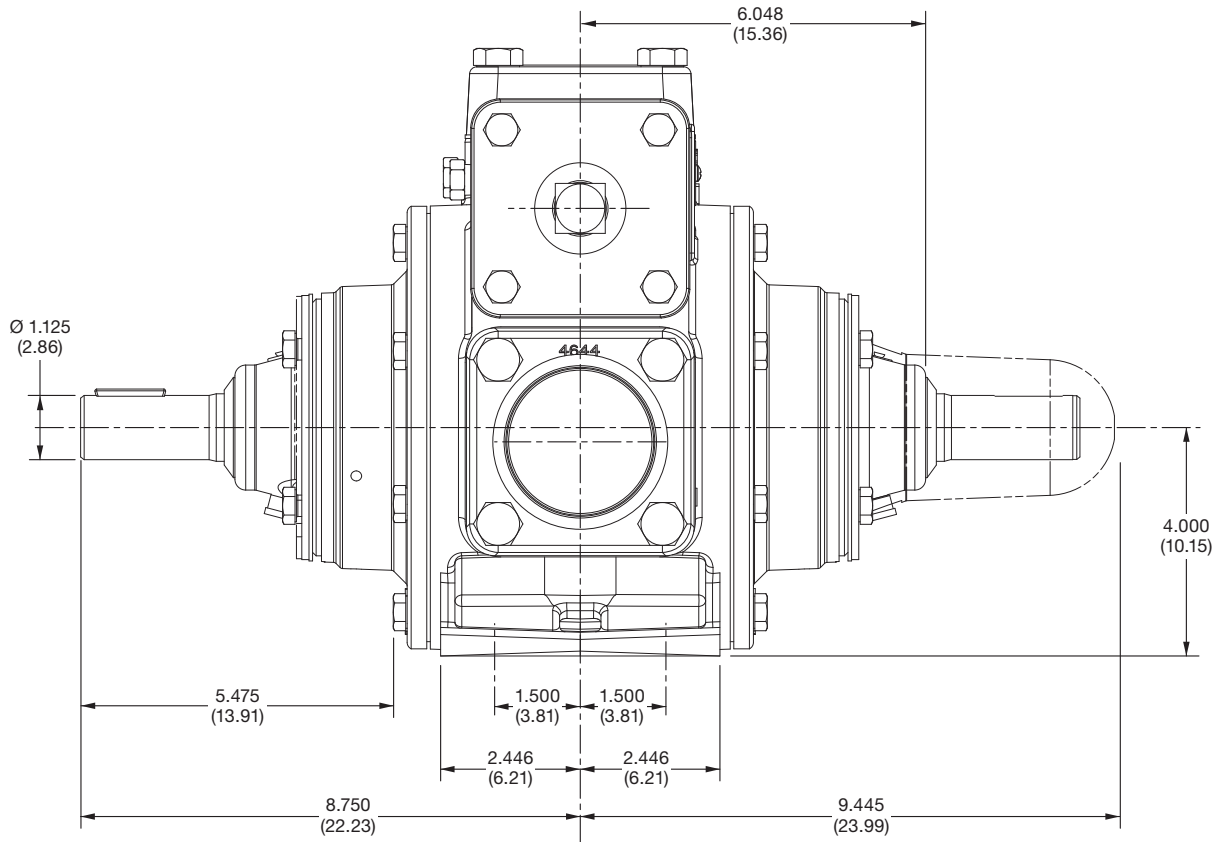
Use either a direct "Push" throttle rod or connected "Pull" with cable

Outline Dimensions for the PT20



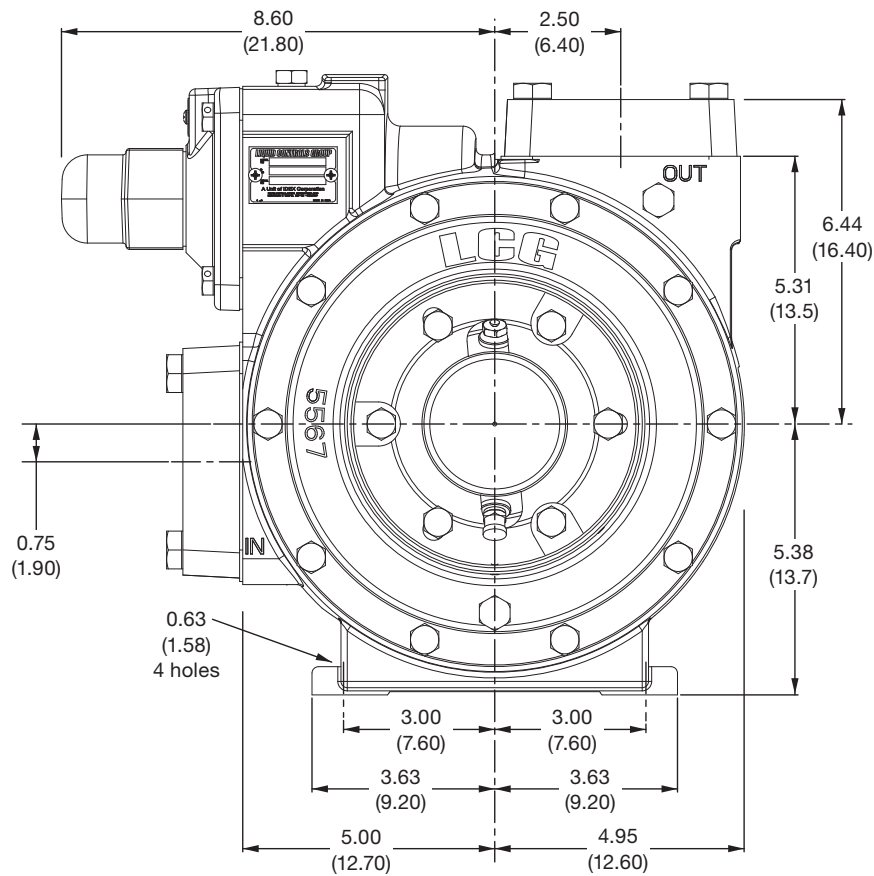
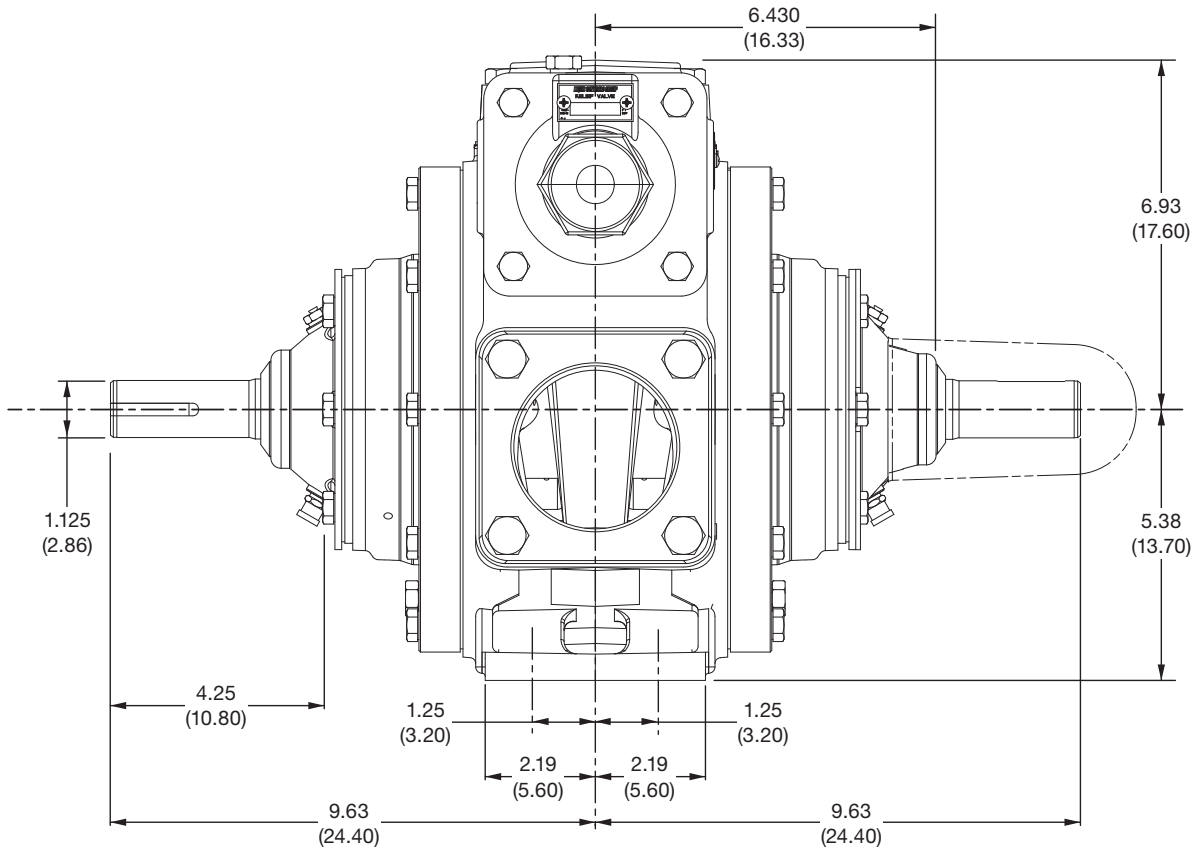
Inches (centimeters)

Outline Dimensions for the PT25



Inches (centimeters)

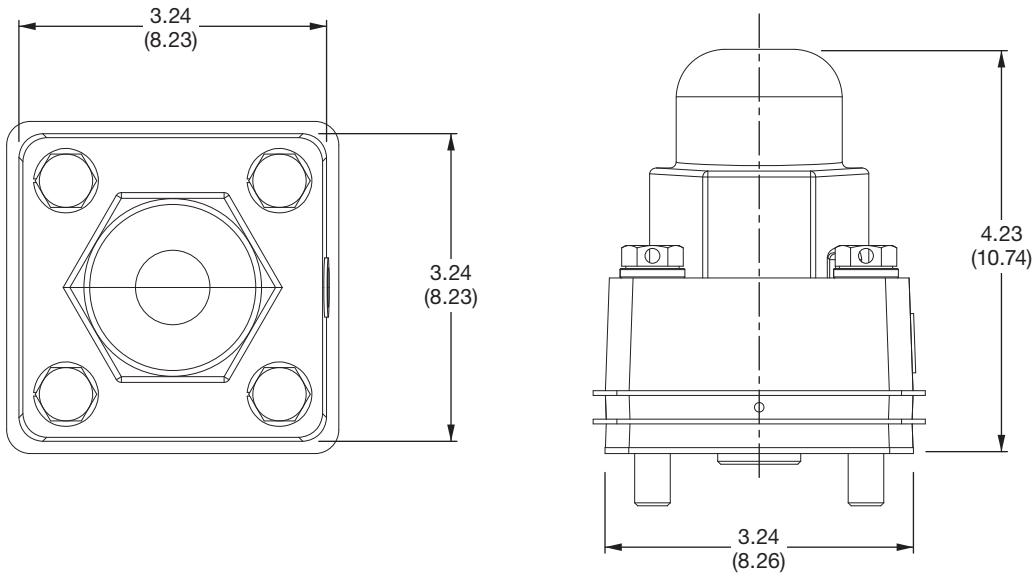
Outline Dimensions for the PT30



Inches (centimeters)

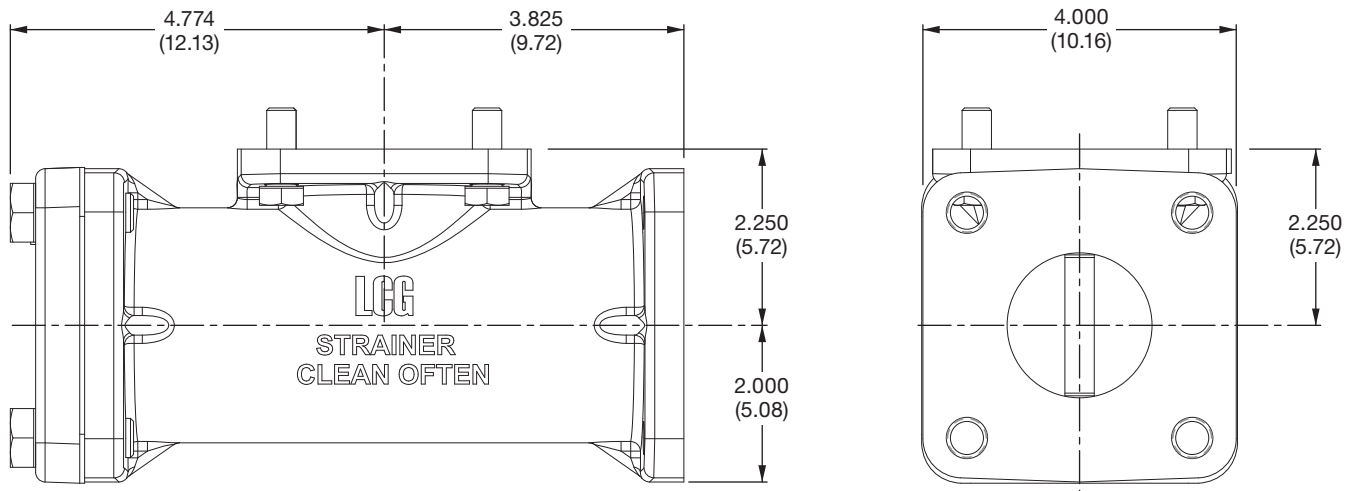
Outline Dimensions for Air Operated Valve and Strainer

5470-1XA Air Operated Valve (AOV) Assembly for the PT/PTH20 Pumps



Inches (centimeters)

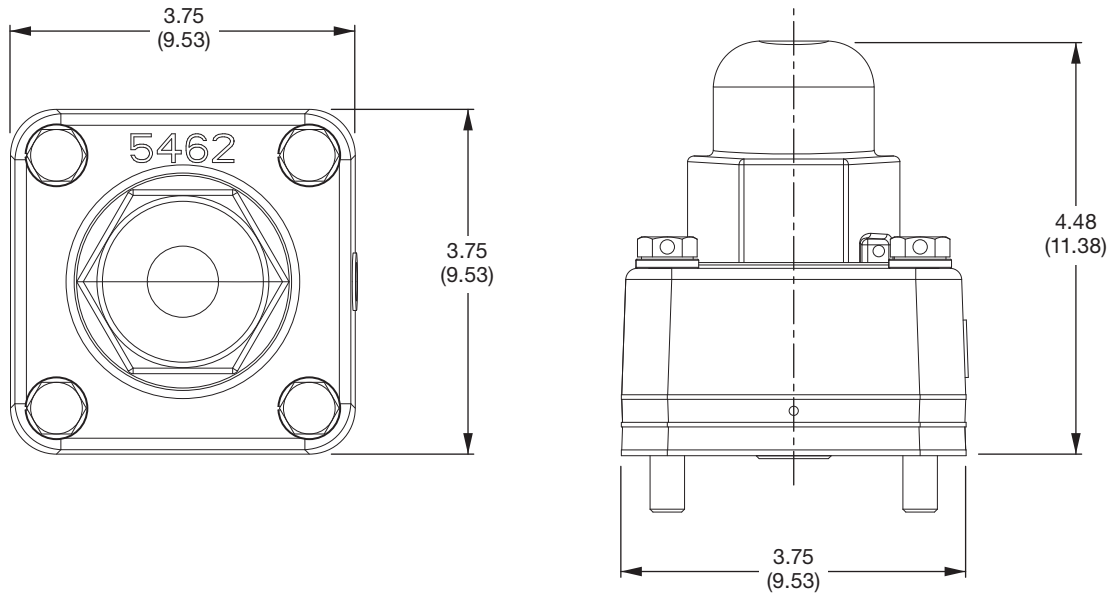
4684-X Strainer Assembly for the PT/PTH20 Pumps



Inches (centimeters)

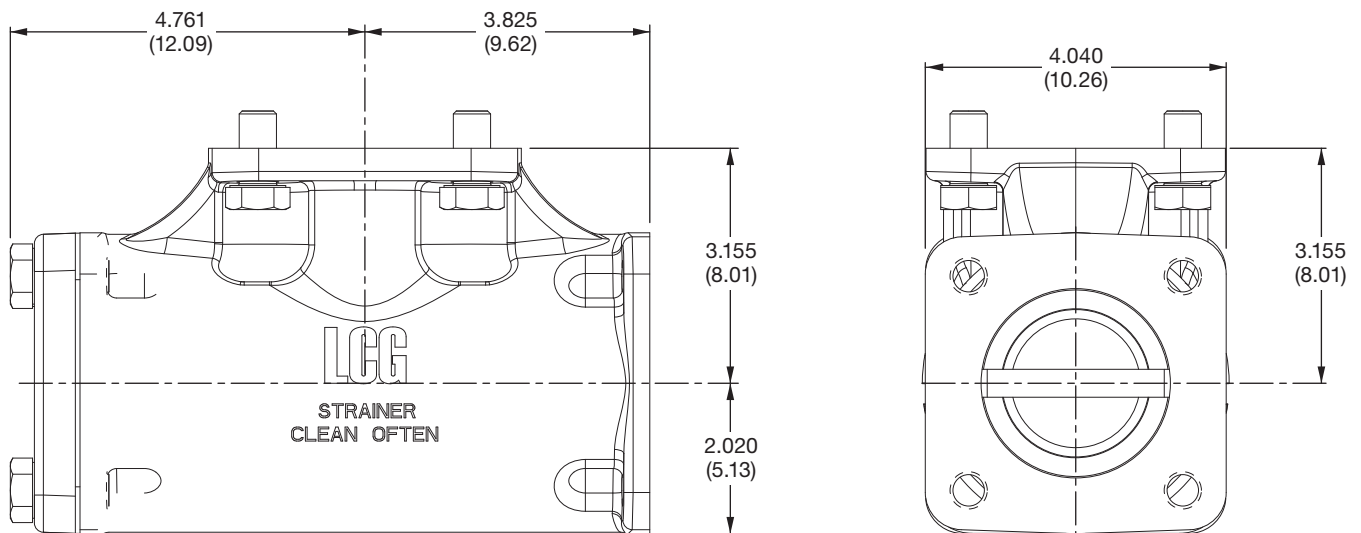
Outline Dimensions for Air Operated Valve and Strainer

5462-1XA Air Operated Valve (AOV) Assembly for the PT/PTH25 Pumps



Inches (centimeters)

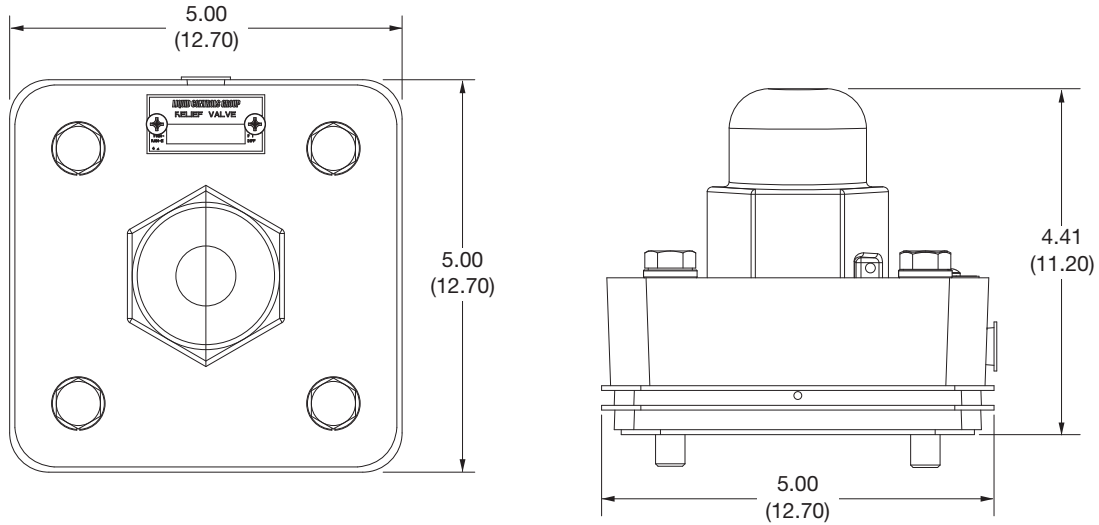
4689-X Strainer Assembly for the PT/PTH25 Pumps



Inches (centimeters)

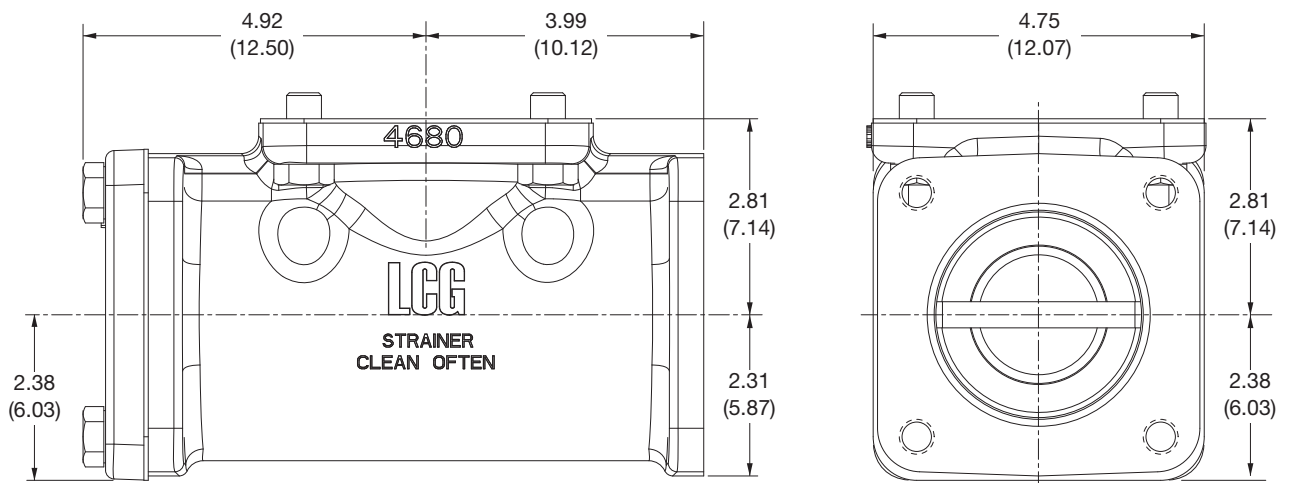
Outline Dimensions for Air Operated Valve and Strainer

5566-XA Air Operated Valve (AOV) Assembly for the PT/PTH30 Pumps



Inches (centimeters)

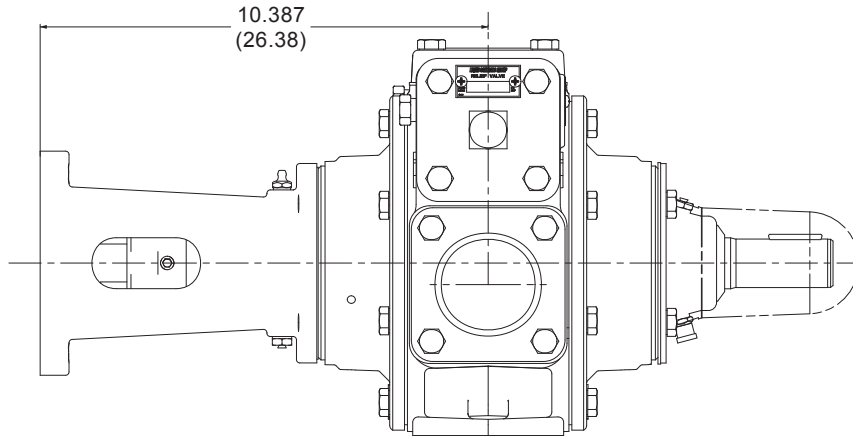
4680-X Strainer Assembly for the PT/PTH30 Pumps



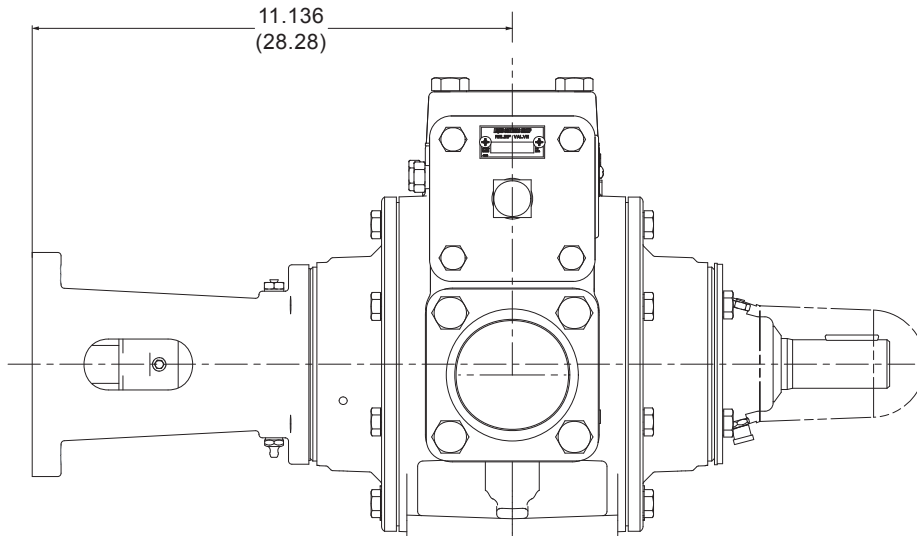
Inches (centimeters)

Outline Dimensions for Hydraulic Drive Option

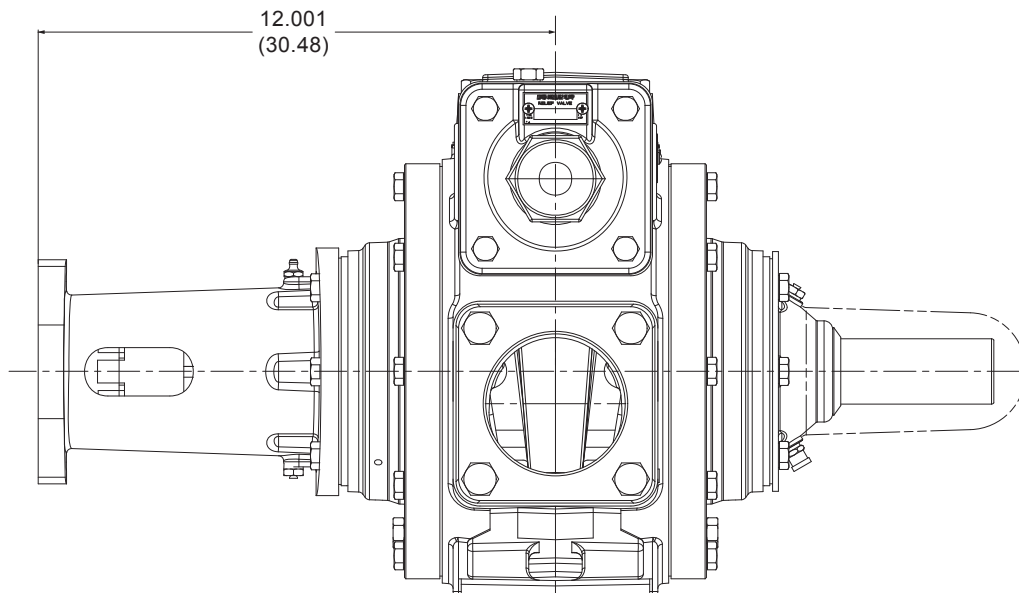
PTH20 Pump



PTH25 Pump



PTH30 Pump





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