

PZ-Series

Coro-Vane® Petroleum Pumps
For refined petroleum products and
industrial solvents



Solutions beyond products...

 **CORKEN**®
IDEX

PZ-Series Petroleum Pumps

A choice in petroleum pumps...

The Corken PZ-Series petroleum pumps offer the industry a choice in pump brand for greater flexibility and independence in the configuration and outfitting of fluid transfer systems and fuel delivery tankwagons. The pumps match common industry-standard flange-to-flange and mounting footprint dimensions for easy incorporation into existing or new vehicle layouts. And, they provide features that will be appreciated by system designers, truck outfitters, and end-user fuel marketers.

Multi-product package offering...

Common corporate ownership and shared distribution between Corken and Liquid Controls make it possible for customers to combine system components including pump, meter, and register in a single order to greatly simplify the procurement process. In terms of the ease of doing business, product functionality, and breadth of product offering, we believe that you will find the Corken/Liquid Controls solution for your system or petroleum tankwagon to be “simply the best”.

Viton®¹ O-rings standard on PZ-Series pumps...

Corken’s mechanical seal, fitted with Viton® O-rings is compatible with refined petroleum products including gasoline, fuel oil, kerosene, diesel fuel, AvGas, and others so you can pump nearly any product you are carrying without changing seals.

Controlling thrust loads and cavitation are critical for extended pump life...

The PZ-Series Coro-Vane® pumps are a new generation of vane pump for fuel transfer that controls heavy thrust loads better than any other truck pump on the market.

The thrust absorbing system of the PZ-Series pump is comprised of two needle roller thrust bearings at each shaft extension rated for up to 4,000 lbs. of thrust. This patented design protects the pump from dynamic and impact loads often imposed on the pump by the drive system. Premature failures due to axial thrust loads are minimized with these thrust absorbing bearings.

A state-of-the-art cam design virtually eliminates cavitation—even while pumping at low tank levels. By eliminating cavitation, the vanes, cam and sideplates remain lubricated and experience less wear. The PZ-Series also has vanes and vane drivers made of advanced nonmetallic composite materials that last longer than ordinary vanes and vane drivers.

This combination of innovative cam and thrust bearing design makes the PZ-Series a smart choice for anyone wanting improved performance and longer service life with exceptional reliability.

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

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- New low-impact, high strength vane driver and vane design extend pump life.
 - New precision-machined sideplates are reversible for extended life.
 - Highly reliable mechanical seals are easily replaced.
 - New innovative needle roller thrust bearing design controls heavy thrust loads.
 - The conveniently located pump drain at the bottom of the pump casing allows you to easily remove residual fluids when performing system maintenance.

Features & Benefits

- Manually adjustable internal bypass valve (standard bypass valve shown) or optional Air Operated Valve (AOV) available for high flow and low flow control.



- New high flow inlet design virtually eliminates cavitation, enhancing pump delivery and increasing pump life.

- Flanges available in NPT, Weld and, BSPT designs.

Why this pump lasts longer, needs service less often...

Besides its unique cam design and longer-lasting advanced materials, the PZ-Series Coro-Vane® pump has other features to extend pump life and reduce maintenance. Unlike pumps with conventional steel vane drivers that eventually penetrate the vane, the Z-Series pump has large diameter, nonmetallic, light weight vane drivers that are extremely durable. They will not damage the vanes, even at high RPM. And, precision-machined sideplates are reversible to provide twice the service life.

Maintenance made simple...

The PZ-Series pumps not only maintain Corken's tradition of excellence, but also its commitment to simplicity when the equipment requires service. By removing only eight bolts, the head assembly can be easily removed, giving you easy access to the reversible sideplate, mechanical seal and vanes.

Two bypass options are available...

The Corken PZ Series pumps are available with a choice of bypass valves: a standard manually adjustable bypass valve or an Air Operated Valve (AOV).

The standard bypass valve provides the normal functionality of a traditional bypass found on most positive displacement pumps. The valve provides recirculation of product within the pump for conditions when the pump is operating at full speed but with the hose-end nozzle either partially or fully closed. The standard valve is recommended for any application where entrained air in the system is not expected to be a significant issue, such as pumping out of a tank on a single-compartment vehicle.

The Air Operated Valve (AOV) is a diaphragm type actuator that allows the operator to set the discharge pressure at two different high and low settings. The flow can be increased and decreased by simply adding or taking away air pressure to the diaphragm. The actuator is designed to work with a flow sensing pilot valve. When the operator opens the nozzle, the flow sensing pilot valve puts pressure behind the diaphragm and allows high pressure operation of the pump. When the operator closes the nozzle and flow is stopped, the flow sensing pilot valve vents the actuating air or liquid that is behind the diaphragm. This loss of pressure behind the diaphragm permits the internal bypass valve to open so the pump can automatically go into low pressure bypass and minimize hose pressure.

Exercising your choice is easy...

Contact your Corken or Liquid Controls representative for details.

Solutions beyond products...



Specifications

Operating Specifications

PZ7 and PZ10	
Standard connections:	2" or 2-1/2" NPT
Optional connections:	2" or 2-1/2" BSPT, Slip-on Weld
Maximum differential pressure:	125 psid (8.6 bar)
Temperature range:	Up to 300°F (149°C)
Maximum working pressure:	200 psi (13.8 bar)
Maximum speed:	800 RPM
Fluids handled:	Refined petroleum products and industrial solvents

Material Specifications

Part	Model	Material
Case	All	Ductile iron ASTM A536
Head	All	Ductile iron ASTM A536
Flanges	All	Ductile iron ASTM A536
Rotor	All	Ductile iron ASTM A536
Bearing cap	All	Ductile iron ASTM A536
Sideplates	All	Cast iron Class 30
Vanes & vane drivers	All	Advanced polymer
Bypass valve	All	17- 4 PH Stainless steel
Bypass valve spring	All	Steel
Seal seat	All	Cast iron
Seal metal parts	All	Steel
Shaft	All	8620 steel
Thrust bearing	All	Steel
O-rings	All	Viton ^{®1} (standard), Buna-N (optional)

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PZ7 Performance Chart

Pump Speed	Differential Pressure		Nominal Flowrate ²		Brake Hp Required		Torque Required	
	RPM	psi	bar	gpm	L/min	bhp	kW	in•lbs
800	90	6.2	98	371	6.8	5.0	536	60.5
800	50	3.4	105	397	3.8	2.2	299	33.8
640	90	6.2	78	295	5.5	4.1	542	61.2
640	50	3.4	84	318	3.1	2.3	305	34.5
575	90	6.2	70	273	4.9	3.7	537	60.7
575	50	3.4	75	284	2.7	2.0	296	33.4
420	90	6.2	51	182	3.6	2.7	540	61.0
420	50	3.4	55	197	2.0	1.5	300	33.9

PZ10 Performance Chart

Pump Speed	Differential Pressure		Nominal Flowrate ²		Brake Hp Required		Torque Required	
	RPM	psi	bar	gpm	L/min	bhp	kW	in•lbs
800	90	6.2	152	575	10.3	7.7	811	91.7
800	50	3.4	161	609	5.7	4.3	449	50.7
640	90	6.2	121	458	8.2	6.1	808	91.2
640	50	3.4	128	485	4.6	3.4	453	51.2
575	90	6.2	109	413	7.3	5.4	800	90.4
575	50	3.4	115	435	4.1	3.1	449	50.8
420	90	6.2	80	303	5.4	4.0	810	91.6
420	50	3.4	85	321	3.0	2.2	450	50.9

²Nominal flow rate at pump outlet. The actual flow rate from the hose nozzle will be less, depending on hose length, hose diameter, nozzle size, product viscosity, and other system flow restrictions. Approximate capacities and horsepowers are based on a 38 SSU (3 cP) fluid.



Corken, Inc. • A Unit of IDEX Corporation

3805 N.W. 36th St., Oklahoma City, OK 73112 U.S.A.
 (405) 946-5576 or 1-800-631-4929
 FAX (405) 948-7343

Visit our website at <http://www.corken.com>
 E-mail us at info.corken@idexcorp.com