



PV Series Vane Truck Pumps

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General Introduction

Petroland vane truck pumps are specifically designed to comply with the pumping requirements demanded by the LPG industry. Bulk delivery of LPG requires the use of heavy duty, reliable equipment and is an important part of every LPG marketer. The equipment used in modern bulk trucks must be designed and constructed to perform in a broad spectrum of operating conditions.

Sliding vane design is ideal for butane, propane, freon, fuel, gasoline, DME, anhydrous ammonia, propellants, refrigerants and similar liquefied gases.

Utilizing Petroland's unique sliding vane design, these positive displacement pumps offer the best combined characteristics of sustained high-level performance, energy efficiency, trouble-free operation., and low maintenance cost.

Pump models are available in 2 to 3-inch port sizes. All models have ductile iron construction for thermal shock resistance, low friction ball bearings for high efficiency and quiet operation.

Working Principle of Petroland Vane Pumps



Working Principle of Petroland PV Series Pumps

As shown in Figure, Petroland pumps use a rotor with sliding vanes that draw the liquid in behind each vane, through the inlet port and into the pumping chamber. As the rotor turns, the liquid is transferred between the vanes to the outlet where it is discharged as the pumping chamber is squeezed down. Each vane provides a positive mechanical push to the liquid before it.

Vane contact with the chamber wall is maintained by three forces:

- Centrifugal force from the rotor's rotation
- Push rods moving between opposing pairs of vanes
- Liquid pressure entering through the vane grooves and acting on the rear of the vanes.

Each revolution of a Petroland pump displaces a constant volume of fluid.

Applications:

- Capable of handling LPG, anhydrous ammonia and other liquefied gases
- Rail car loading and unloading
- Stationary transfer for various liquefied gas distribution applications
- Aerosol filling
- Propane, butane and butane/propane mixes
- Refrigerant gases (R132, R152 etc.) and DME



PV Series Pumps

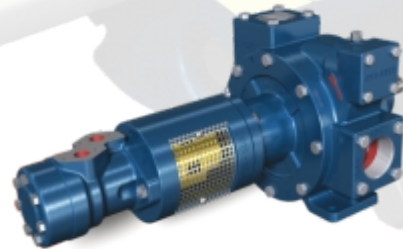
Superiority of Petroland Vane Pumps

- They require less horsepower than other positive displacement pumps. So you spend less on motors initially and less on electricity to operate the pumps after they are installed.
- High capacity at lower speeds. These lower operating speeds mean quieter operation, longer service life, and reduced maintenance requirements.
- Self-adjusting vanes keep performance high
- Vane replacement in easy inspection and no special tools require.
- Replaceable Casing Liner and End Discs
- Advanced Polymer
- Internal Relief Valve
- Cavitation Suppression Liner
- Ductile Iron Construction
- Dual Mech. Seals
- Dual-Ended Shaft
- External Ball Bearings



Couplings

These vane pumps can be couplings with V-Belt, Hydro Motor and Reducer. By the way, it is suitable coupling direct motor (750 rpm). V-Belt coupling is suitable especially for tanker unloading because of the construction. All couplings are available with or without motors.

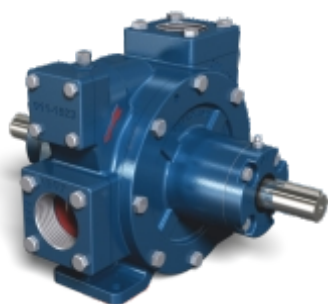


MATERIAL SPECIFICATIONS

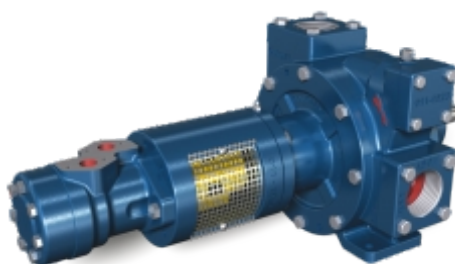
Part Name	Material	Part Name	Material
Case	Ductile Iron GGG 41.3	Shaft	8620 Steel
Head	Ductile Iron GGG 41.3	Vane	Advanced Polymer
Rotor	Ductile Iron GGG 41.3	Vane Driver	Advanced Polymer
Relief Valve Cap	Ductile Iron GGG 41.3	Relief Valve Spring	Steel
Bearing Cap	Ductile Iron GGG 41.3	Bearing	Steel
Cam	Ductile Iron GGG 41.3	Thrust Bearing	Steel
Side Plate	Cast Iron GG26	O-Rings	Viton ⁽¹⁾
Inlet / Outlet Connection	Ductile Iron GGG 41.3		

(1) It is available EPDM or Kalrez.

- Inlet / Outlet sizes is 2".
- Both directions of suction (left & right) are available because of the dual shaft especially in the truck applications.
- It is available BSP, NPT, DIN and ANSI 150 & 300 norms.
- Max. differential pressure 8.5 bar (125 psi).



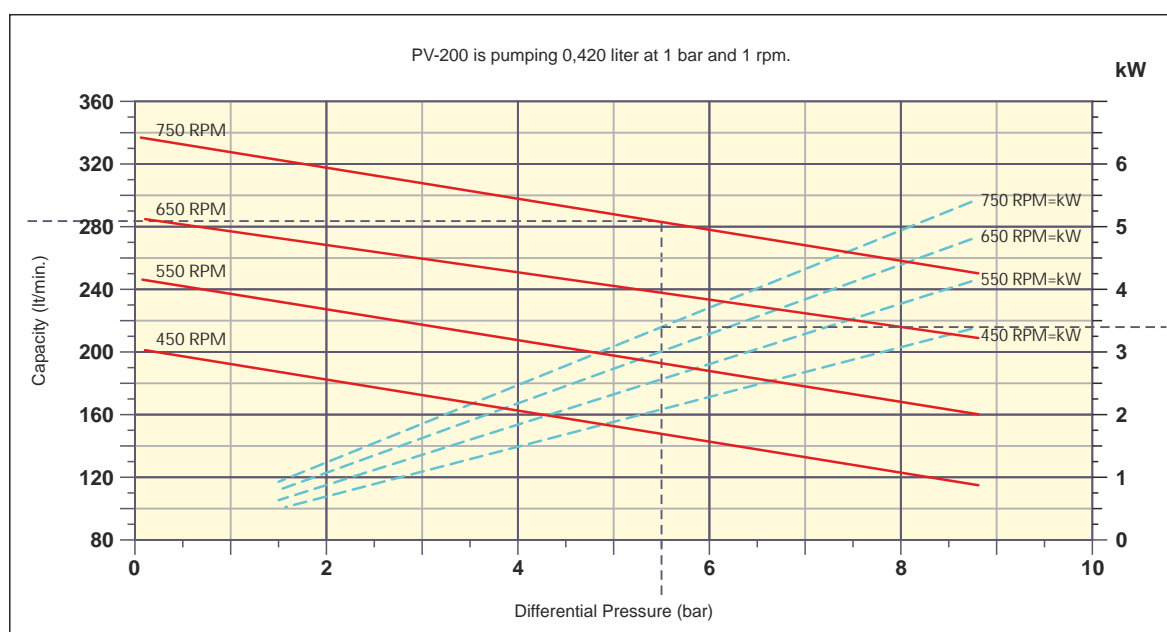
PV 200 (Left Suction)



PV 200 - Hydro Motor Coupling



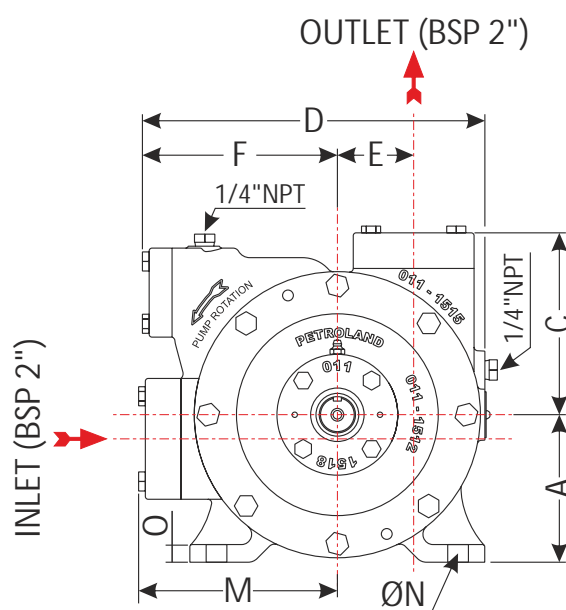
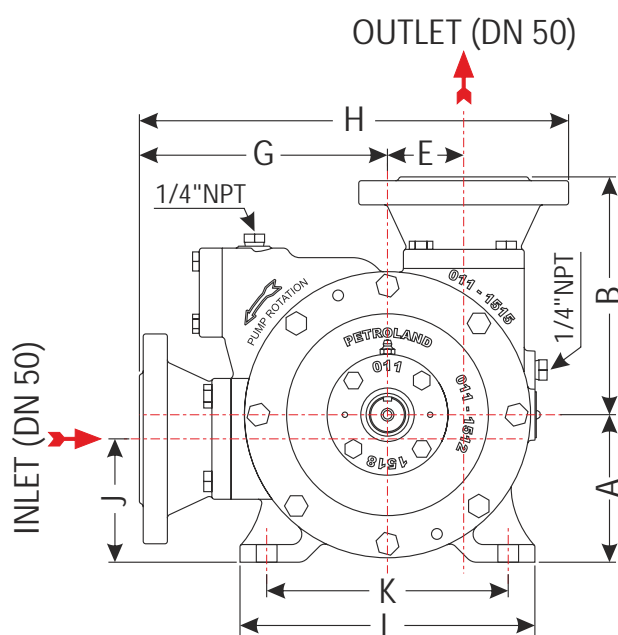
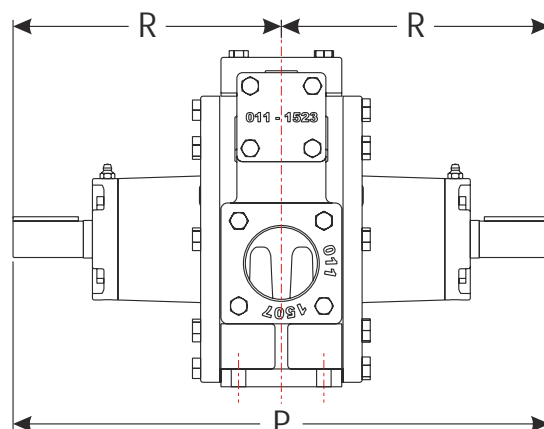
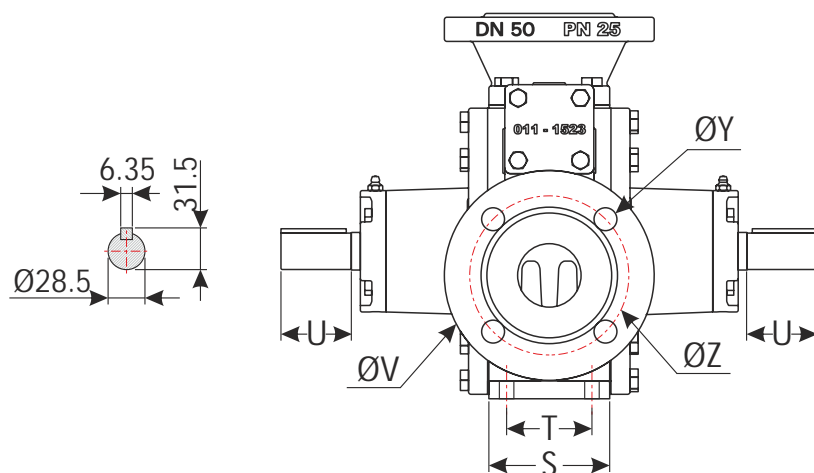
PV 200 with Flange (Right Suction)



CAPACITY TABLE									
PUMP RPM	BAR	LITER	KW	BAR	LITER	KW	BAR	LITER	KW
750	2	318	1,3	4	297	2,5	6	278	3,7
650	2	270	1,1	4	250	2,2	6	232	3,3
550	2	228	0,8	4	208	1,7	6	190	2,7
450	2	182	0,7	4	162	1,5	6	142	2,2

Design tolerance: Capacity and power values max. \pm %5.

PV 200 Technical Specifications



DIMENSIONS & WEIGHTS

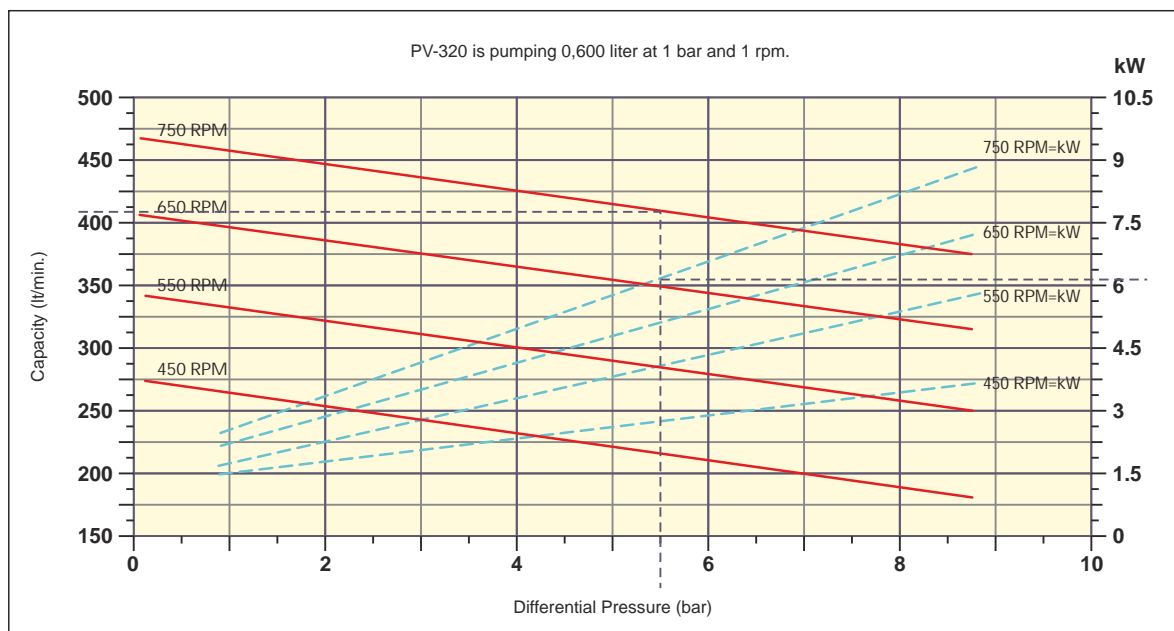
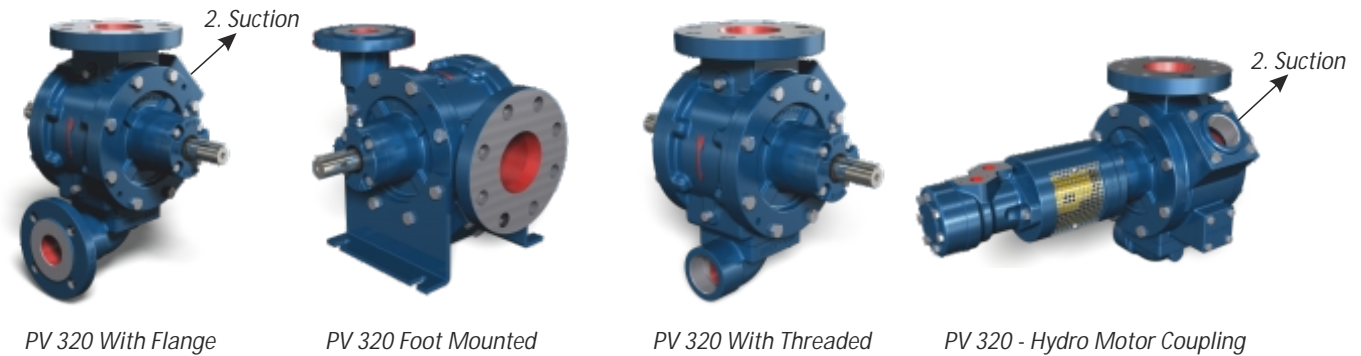
A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U	V	Y	Z	KG THREADED	KG FLANGED
116	187	143	267	60	151	195	338	97	203	232	158	13	12	422	211	95	70	55	165	18	125	44	50

Flange dimensions in accordance with DIN 2545 norm at standard products.
Dimensions are mm.

PV 320



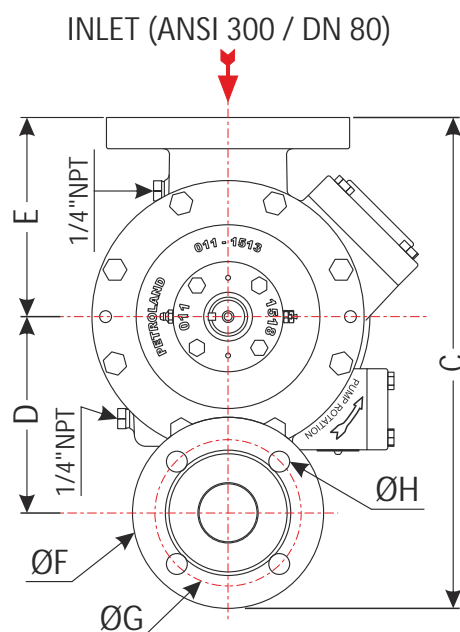
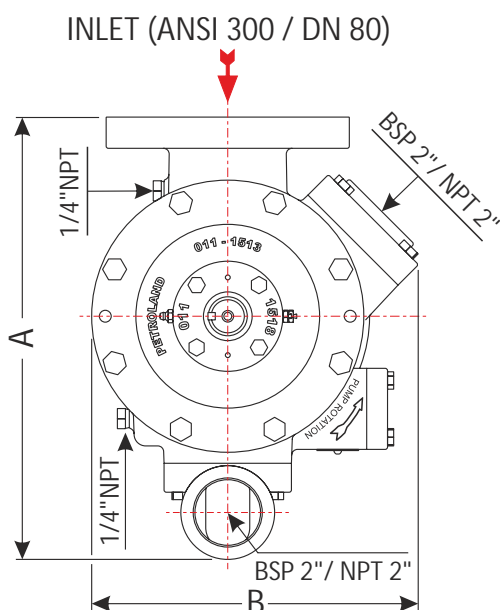
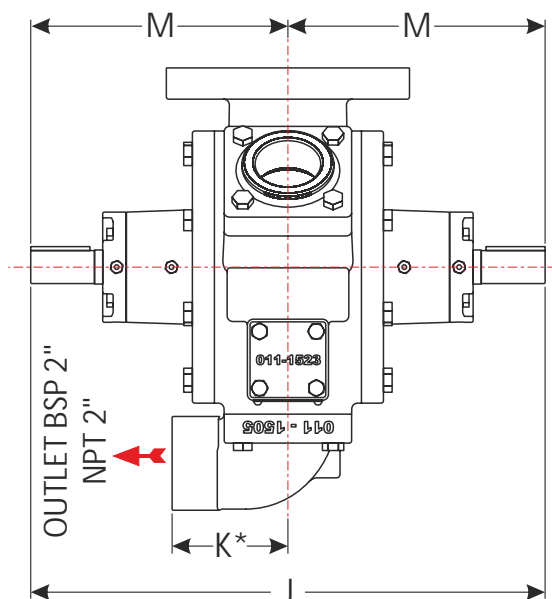
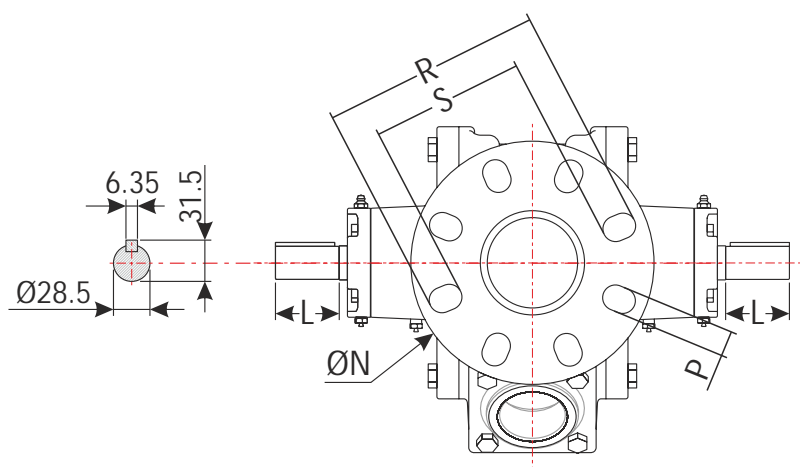
- Inlet size is 3", Outlet size is 2".
- PV 320 Model pump is coupling to the main storage directly without require any fittings in the truck applications.
- It is available BSP, NPT, DIN and ANSI 150 & 300 norms.
- Max. differential pressure 8.5 bar (125 psi).
- These pumps can transfer liquid to the main truck which inside unloading storage because of the double suction.



CAPACITY TABLE									
PUMP RPM	BAR	LITER	KW	BAR	LITER	KW	BAR	LITER	KW
750	2	445	3,4	4	425	5,2	6	410	6,5
650	2	388	2,8	4	365	4,2	6	340	5,4
550	2	320	2,2	4	300	3,3	6	280	4,3
450	2	255	1,8	4	232	2,3	6	215	2,8

Design tolerance: Capacity and power values max. \pm %5.

PV 320 Technical Specifications



DIMENSIONS & WEIGHTS

A	B	C	D	E	F	G	H	J	K*	L	M	N	P	R	S	KG THREADED	KG FLANGED
382	282	424	170	172	165	125	18	444	100	55	222	210	22	191	141	56	60

* Flanged outlet is 148 mm.

PV 320 model standard pump suction flange in accordance with DN 80 ve ANSI 300.

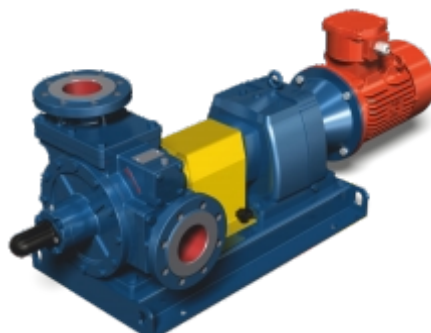
Flange dimensions in accordance with DIN 2545 norm at standard products.

Dimensions are mm.

- Inlet / Outlet sizes is 3".
- Both directions of suction (left & right) are available because of the dual shaft especially in the truck applications.
- It is available BSP, NPT, DIN and ANSI 150 & 300 norms.
- More capacity at same rpm accordance in with similar 3".



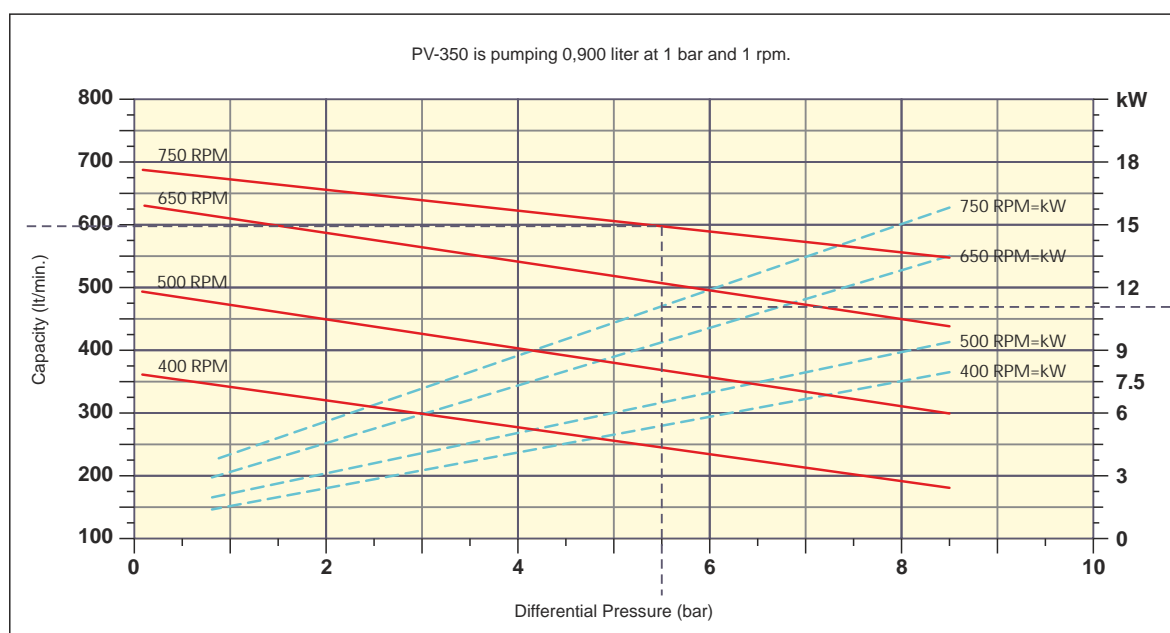
PV 350 With Threaded



PV 350 With Reducer Coupling



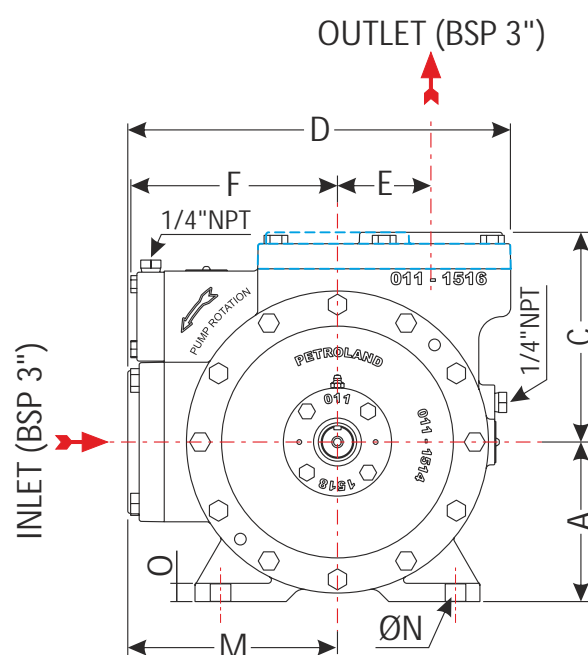
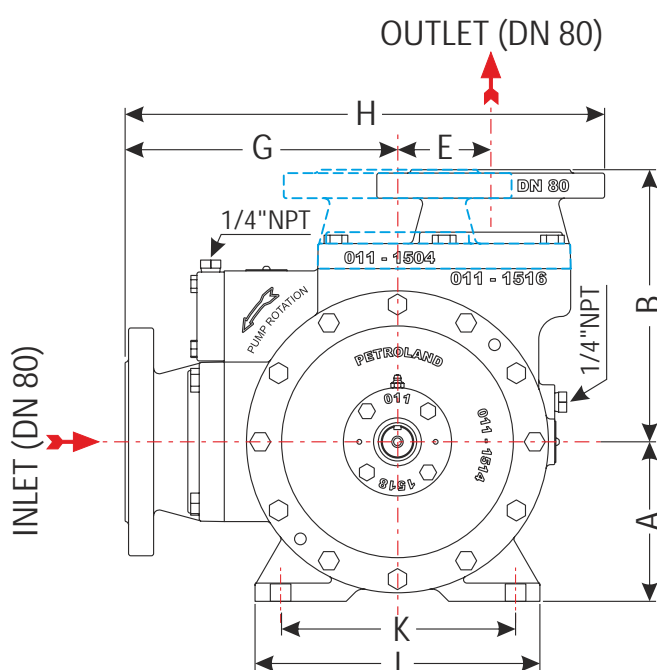
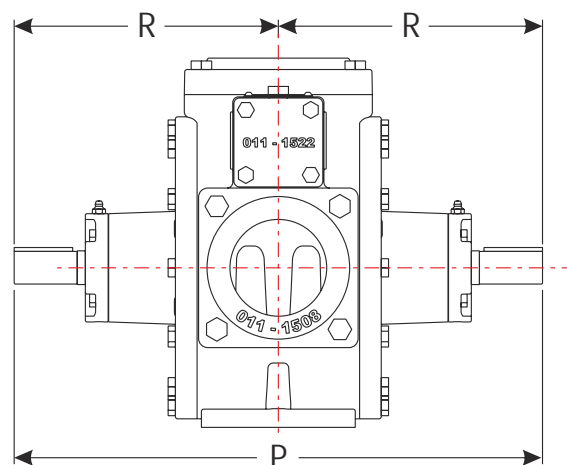
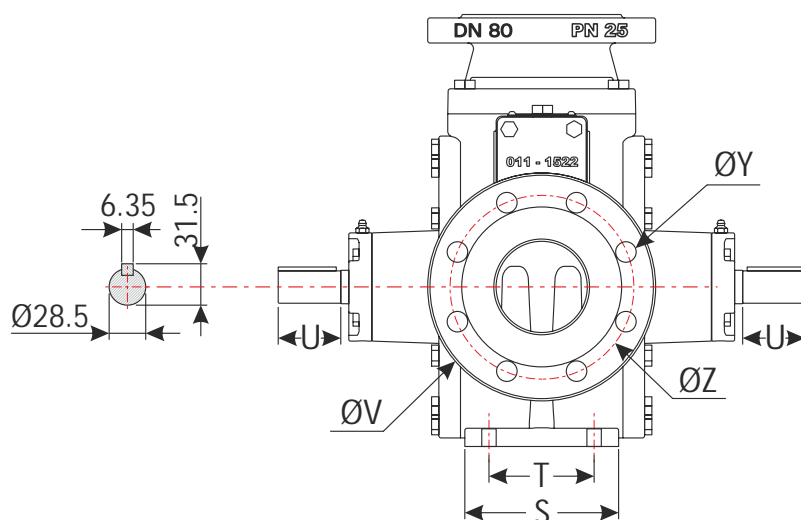
PV 350 With Flange



CAPACITY TABLE									
PUMP RPM	BAR	LITER	KW	BAR	LITER	KW	BAR	LITER	KW
750	2	658	5,5	4	625	8,8	6	575	11,8
650	2	587	4,5	4	540	7,2	6	495	9,9
500	2	450	3	4	400	5,1	6	360	6,9
400	2	325	2,3	4	275	4	6	230	5,8

Design tolerance: Capacity and power values max. \pm %5.

PV 350 Technical Specifications



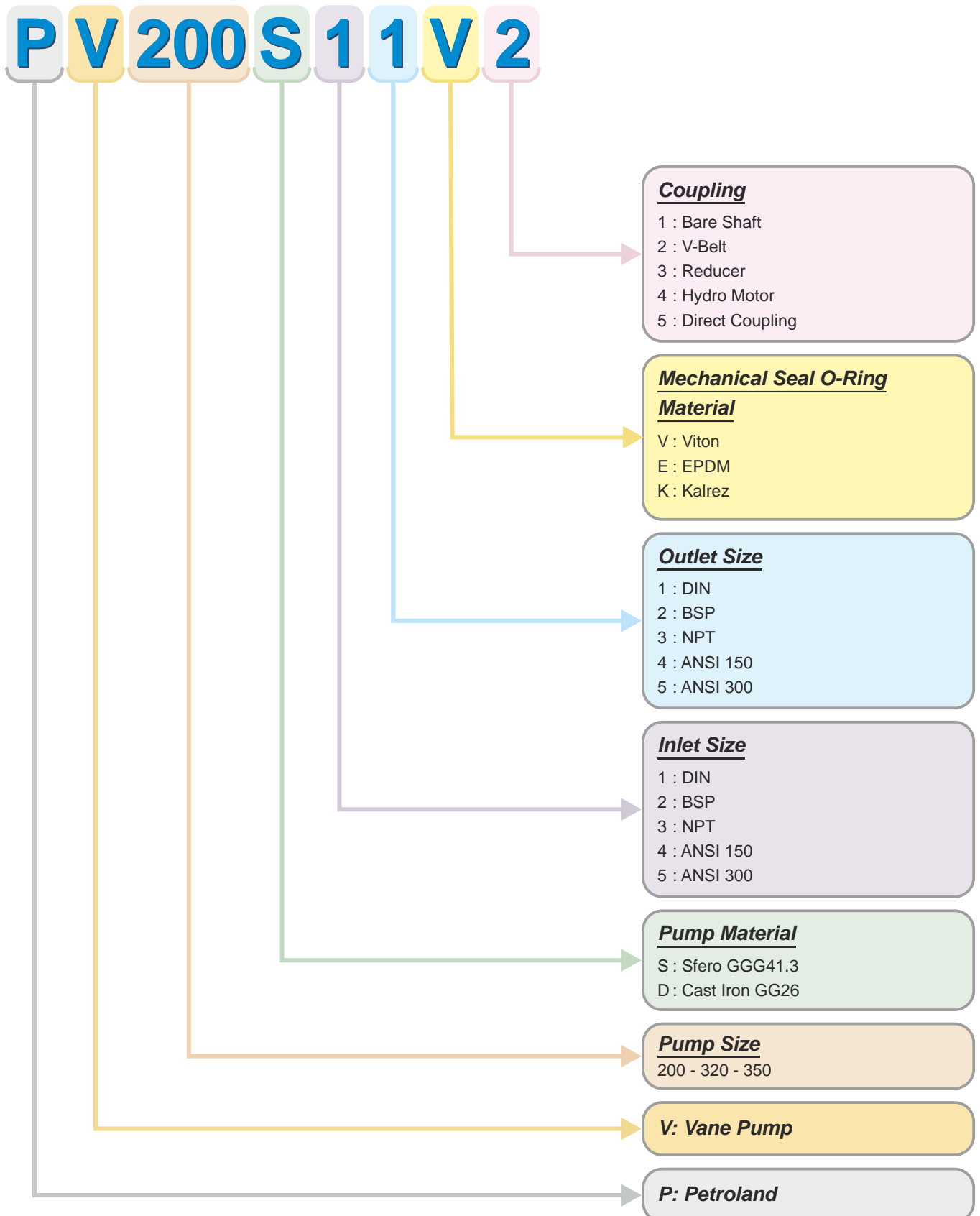
DIMENSIONS & WEIGHTS

A	B	C	D	E	F	G	H	K	L	M	N	O	P	R	S	T	U	V	Y	Z	KG THREADED	KG FLANGED
140	240	184	330	82	180	239	391	210	250	184	14	16	462	231	136	90	55	200	18	160	78	88

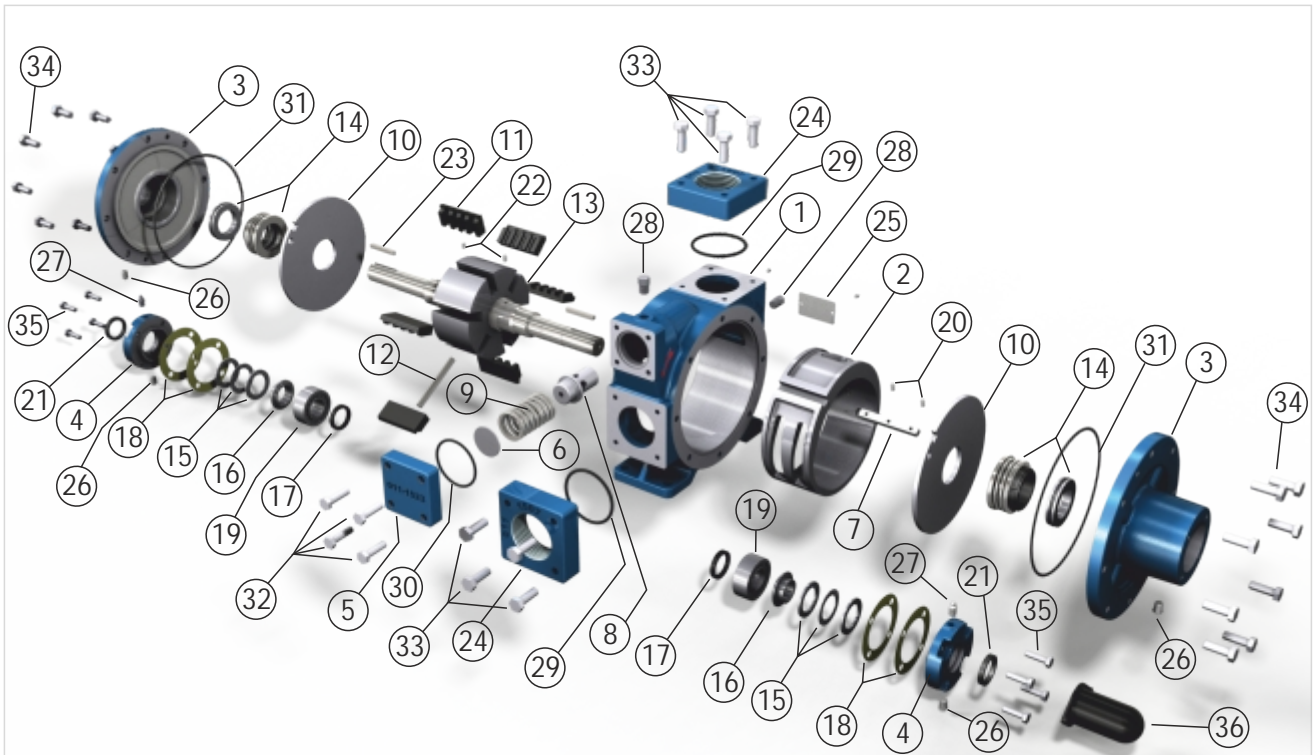
Flange dimensions in accordance with DIN 2545 norm at standard products.

Dimensions are mm.

Outlet flange of PV 350 Model pump can be mounted 2 directions: 1) Outlet from pump axis. 2) It is 82 mm. (E) far from pump axis.



PV Series Pump Part List



PV SERIES PART LIST					
No	Description	Qty	No	Description	Qty
1	Case	1	19	Bearing	2
2	Cam	1	20	Cam Key Pin	2
3	Head	2	21	Grease Seal	2
4	Bearing Cap	2	22	Mechanical Seal Fitting Pin	2
5	Relief Valve Cap	1	23	Shaft Key	2
6	Shim	1	24	Inlet / Outlet Flange	2
7	Cam Key	1	25	Label	1
8	Poppet	1	26	Relief Fitting	4
9	Relief Valve Spring	1	27	Grease Zerk	2
10	Sideplate	2	28	Lubricap	2
11	Vane	6	29	O-Ring – Flange	2
12	Vane Driver	3	30	O-Ring – Relief Valve Cap	1
13	Rotor-Shaft Assembly	1	31	O-Ring – Case	2
14	Mechanical Seal	2	32	Relief Valve Cap Bolt	4
15	Thrust Bearing	2	33	Inlet-Outlet Flange Bolt ⁽¹⁾	4
16	Bearing Race Mounting	2	34	Head Bolt ⁽²⁾	8
17	Grease Seal	2	35	Bearing Head Bolt	4
18	Bearing Cap Shim	*	36	Shaft Shield	1

* Thickness of line shim are available 0.05 / 0.10 / 0.20 mm. at variable quantities.

(1) These are 6 pcs bolt on the outlet flange of PV 350 model pump.

(2) These are 8 pcs in PV 200 and PV 320 model pumps, these are 12 pcs in PV 350 model pump.