

## 'D' Series Features:-

- Heavy duty sleeve bushing design in a small frame size
- Displacements from 20.6cc/rev to 104.2cc/rev
- Working pressures up to 240bar
- Speeds up to 3500rpm
- Flows up to 27.5gpm
- High strength cast iron construction
- 100% factory tested
- High strength alloy steel gears and shaft sets
- A wide range of porting, mounting and shaft options available
- Pressure balanced wear plates maintain high pump efficiency throughout all operating ranges

VGP  
SGP

## Performance Data:

The performance data shown below are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Test were run with an oil reservoir temperature of 50°C and a viscosity of 38mm<sup>2</sup>/S at 40°C.

Note: Pump output flow is at the maximum rated pressure (See page 16, General pump data)

## VGP - D Performance Data :

D-Series		Gear Housing Widths								
		1.00"	1.25"	1.50"	1.75"	2.00"	2.25"	2.50"	2.75"	3.00"
cc/rev		20.5	30.2	40.1	50.8	62.0	72.5	82.8	93.6	104.2
Pressure	(bar)	240	240	240	240	240	220	200	190	170.0
	(psi)	3500	3500	3500	3500	3500	3250	3000	2750	2500
Max.Speed	(rpm)	2400	2400	2400	2400	2400	2400	2400	2400	2400
Pump Weight	(kg)	23.00	23.10	23.10	24.20	24.90	25.90	26.20	26.90	27.80

## Relational chart for Flow rate & Housing width:

Speed (rpm)	Gear Housing Widths / Flow Rate [ VGP - D Series ]																	
	1.00"		1.25"		1.5"		1.75"		2.0"		2.25"		2.50"		2.75"		3.00"	
	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm
D 1000	5.41	20.50	7.97	30.20	10.59	40.10	13.42	50.80	16.30	62.0	19.15	72.50	21.80	82.80	24.72	93.60	27.42	104.2
1500	7.52	28.50	11.38	43.10	15.36	58.15	19.59	74.15	24.17	91.52	28.20	106.75	32.25	122.10	36.56	138.41	40.34	152.71
2000	10.35	39.2	15.42	58.40	20.64	78.15	26.31	99.61	32.23	122.0	37.91	143.50	43.14	163.30	48.90	185.12	54.31	205.60
2400	12.47	47.20	18.52	70.12	24.87	94.14	31.65	119.82	38.67	146.4	45.39	171.81	51.94	196.62	58.78	222.51	65.28	247.12

## Relational chart for Housing width & Input Power :

Speed (rpm)	Gear Housing Widths / Input power [ VGP - D Series ]															
	1.25"		1.5"		1.75"		2.0"		2.25"		2.50"		2.75"		3.00"	
	HP	KW	HP	KW	HP	KW	HP	KW	HP	KW	HP	KW	HP	KW	HP	KW
D 1000	19	14	24	18	30	22	36	27	40	30	42	31	44	33	47	35
1500	27	20	35	26	43	32	54	40	58	43	61	45	63	47	66	49
2000	35	26	46	34	58	43	71	53	75	56	78	58	83	62	86	64
2400	40	30	54	40	68	51	84	63	90	67	93	69	98	73	101	75

Note: In accordance with our policy of continuous development, we reserve the right to change specifications shown in this catalogue without notice.

## D Series

### Gear Pump Ordering Code

VGP	D	a	R	CS <sub>2</sub>	2.0	*	7	S1	P2	GB	FB	*	*	-
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Veljan Gear Pump Series

**Pump type**

- a - Single Unit
- b - Multiple Unit

**Rotation**

- ( Viewed from shaft end )
- R - Clockwise
  - L - Counter Clockwise

**Mounting type**



- BS<sub>2</sub> - SAE 'B' 2-bolt
- CS<sub>2</sub> - SAE 'C' 2-bolt



- BS<sub>4</sub> - SAE 'B' 4-bolt
- CS<sub>4</sub> - SAE 'C' 4-bolt

**Housing for 'H1' & 'H2'**

(Displacement cc/rev)

- 1.00 = 20.50
- 1.25 = 30.20
- 1.50 = 40.10
- 1.75 = 50.80
- 2.00 = 62.00
- 2.25 = 72.50
- 2.50 = 82.80
- 2.75 = 93.60
- 3.00 = 104.2

**Shaft end details** (Shaft type)

- 3 = 13 SPLINE 7/8" SAE B
- 4 = 1" KEY SAE BB
- 5 = 15 SPLINE 1" SAE BB
- 6 = 1 1/4" KEY SAE C
- 7 = 14 SPLINE 1 1/4" SAE C

**Seal class**

- S 1 (for Mineral oil)
- S 4 (for fire resistant fluids)
- S 5 (for mineral oil and fire resistant fluids)

**Port Block type**

- P0 - No ports
- P1 - Pressure (1 Port) - side ported
- P2 - Suction & Pressure (2 Ports) - side ported
- R1 - Pressure (1 Port) - rear ported
- R2 - Suction & Pressure (2 Port) - rear ported

**Port connections - INLET**

See page 135, 136

H1 H2

**Ports Position**

- B1 - Common Inlet, Dual outlet
  - B2 - Separate (2-Inlet, 2-Outlets) stages (For Piggyback)
- See Page 14

**Connecting shaft**

- (For Tandem units)
- 3 - DD
  - 5 - DB
  - 6 - DC

**Rear Section (For Tandem / Piggyback)**

- VGP - B
- VGP - C
- VGP - D

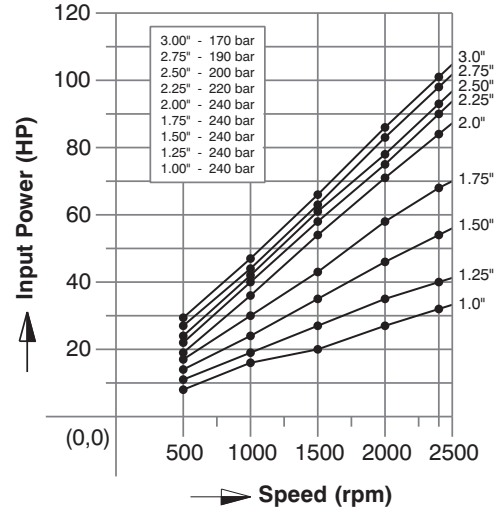
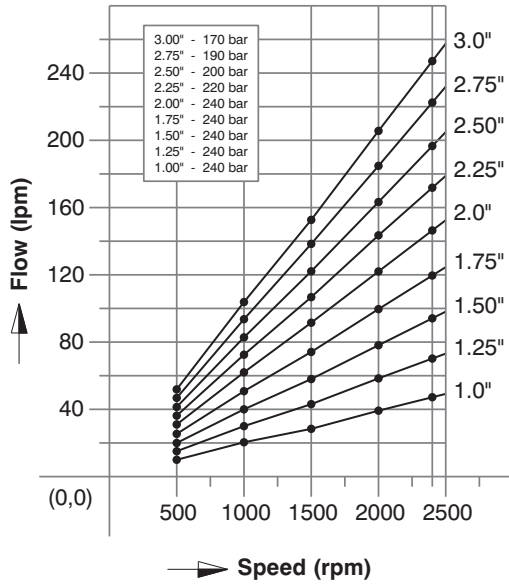
**Port Connections - OUTLET**

See page 135, 136

\* :- For Double pumps / Tandem pumps

VGP  
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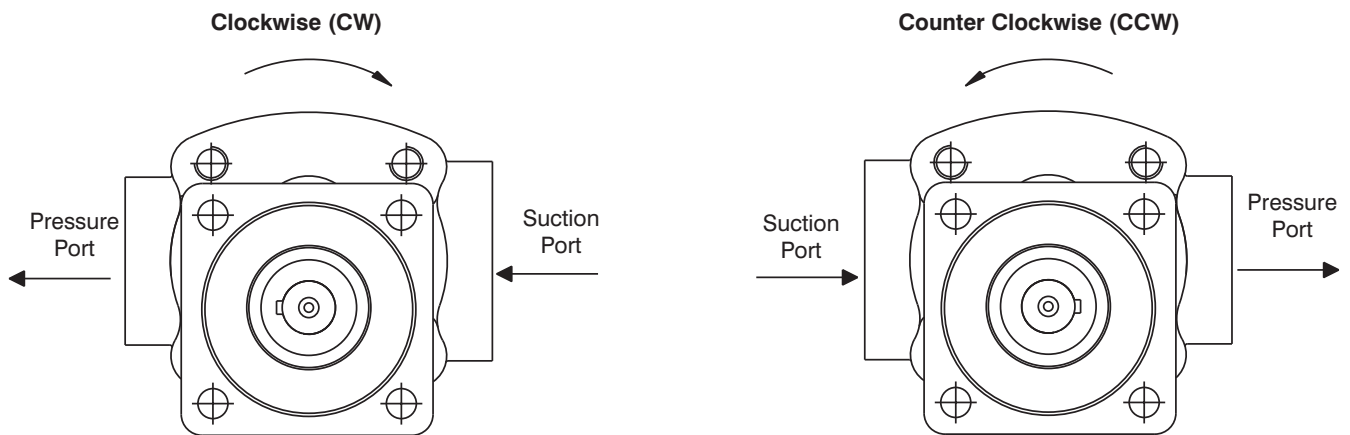
## Performance curves for VGP-D :



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## Pump Rotation:

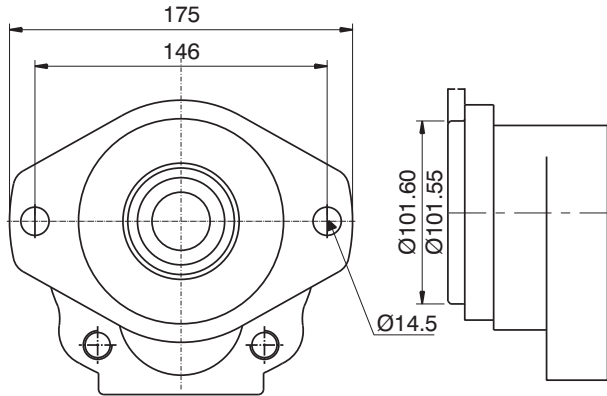
- To determine rotation view pump as shown. Look at shaft end cover of pump with the drive shaft at the top. Note the location of the ports
- Pump rotation as viewed from the shaft end: Clockwise rotation- outlet on right; Counter clockwise rotation - outlet on left



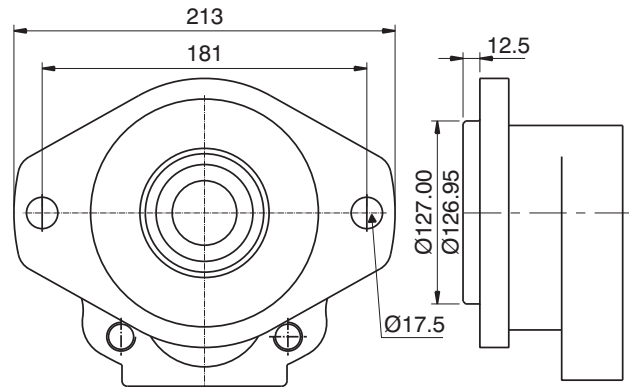
## FLANGE DETAILS - 'D' Series:-

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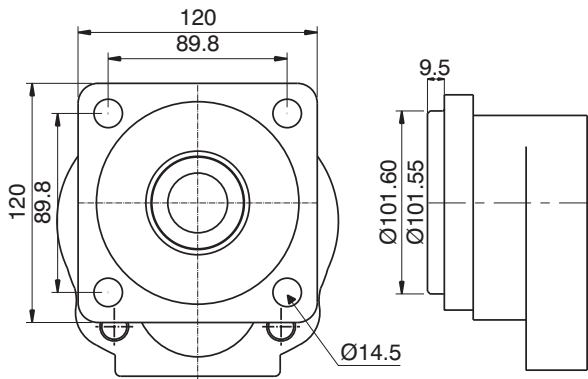
**\*S.A.E - "B" 2 - BOLT FLANGE**



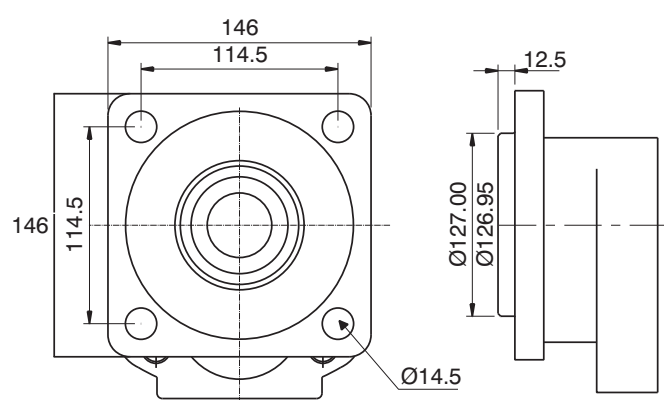
**S.A.E - "C" 2 - BOLT FLANGE**



**\*S.A.E - "B" 4 - BOLT FLANGE**



**S.A.E - "C" 4 - BOLT FLANGE**



\* - Codes designated by an asterisk \* are in due course

## Unit dimensions of VGP-D

Side ported (SAE Versions)

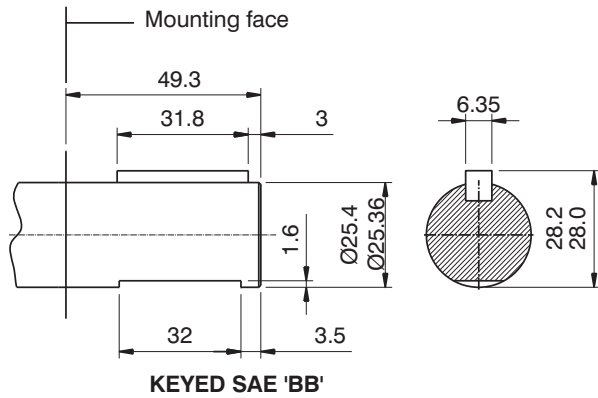
### Shafts:

- Pump rotation as viewed from the shaft end: Clockwise rotation- outlet on right; Counter clockwise rotation - outlet on left
- Satisfactory drive shaft transmission capacity is indicated with the product of pressure(P) & Displacement (D) is less than or equal to (<) a given constant. The units of P & D are expressed in psi & in<sup>3</sup>/rev. respectively

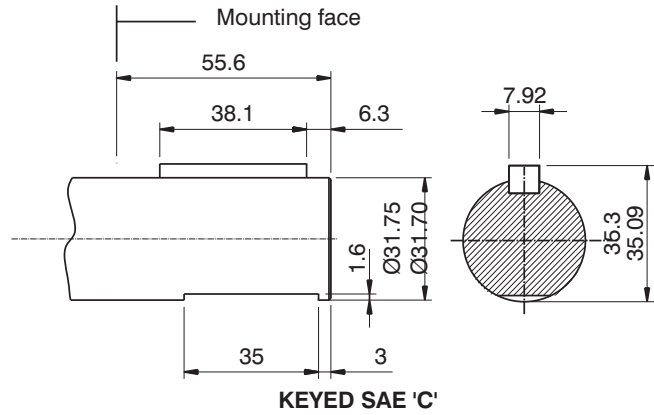
VGP  
SGP

### Drive shaft configurations:

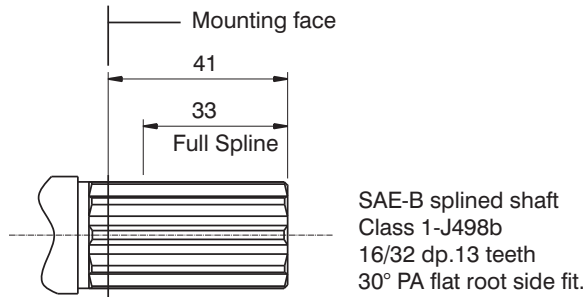
#### SHAFT CODE 4:



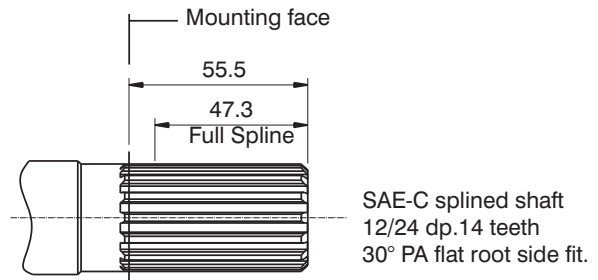
#### SHAFT CODE 6:



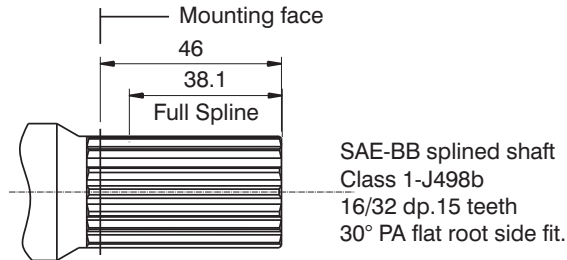
#### SHAFT CODE 3:



#### SHAFT CODE 7:



#### SHAFT CODE 5:-

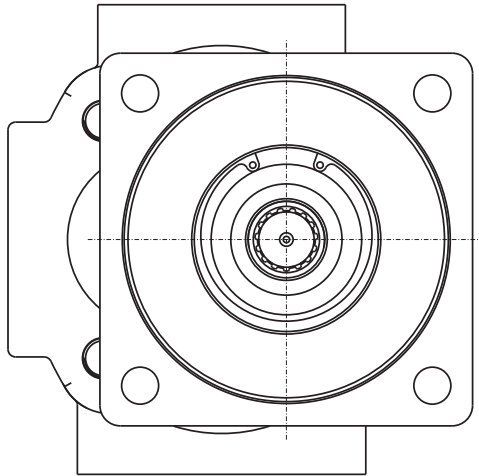


### Drive shaft (Shaft loads) Maximum Input Torque for VGP - D series :

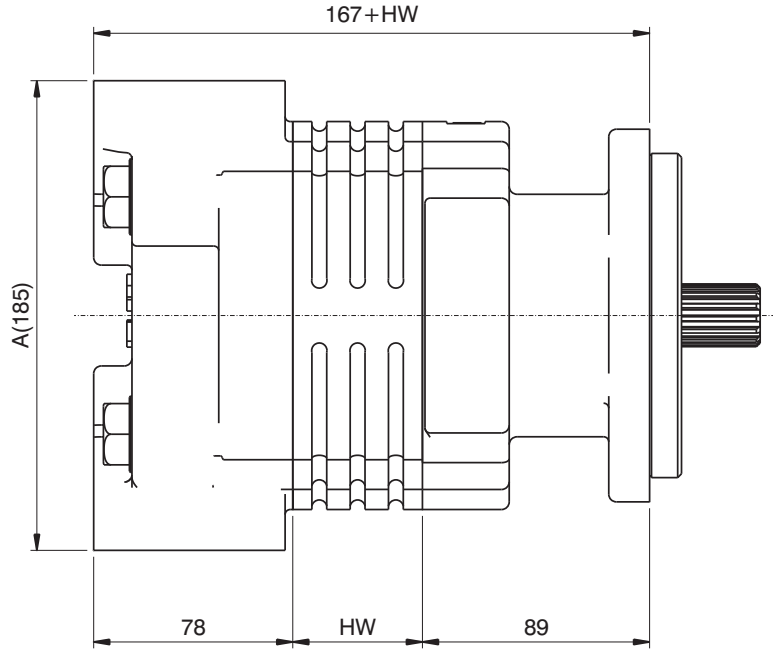
Code	Shaft type	Torque rating	
		Nm	lb-ft
3	13 TEETH SPLINE SAE B	330	240
4	KEYED SAE BB	340	250
5	15 TEETH SPLINED SAE BB	500	370
6	KEYED SAE C	675	500
7	14 TEETH SPLINED SAE C	958	705

## Single Pump Unit Dimensions Data of VGP - D :

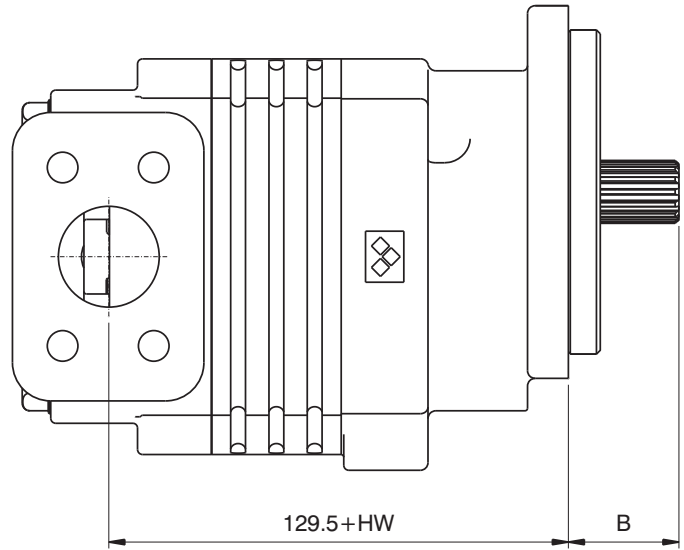
VGP  
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Side View



Front View



Top View

### Housing Table (HW)

Inches	mm
1"	25.40
1 1/4"	31.75
1 1/2"	38.10
1 3/4"	44.45
2"	50.80
2 1/4"	57.15
2 1/2"	63.50
2 3/4"	69.85
3"	76.20

A - Dimension varies with the type of ports.

B - Dimension varies with the type of drive shaft ends.

HW - Housing width