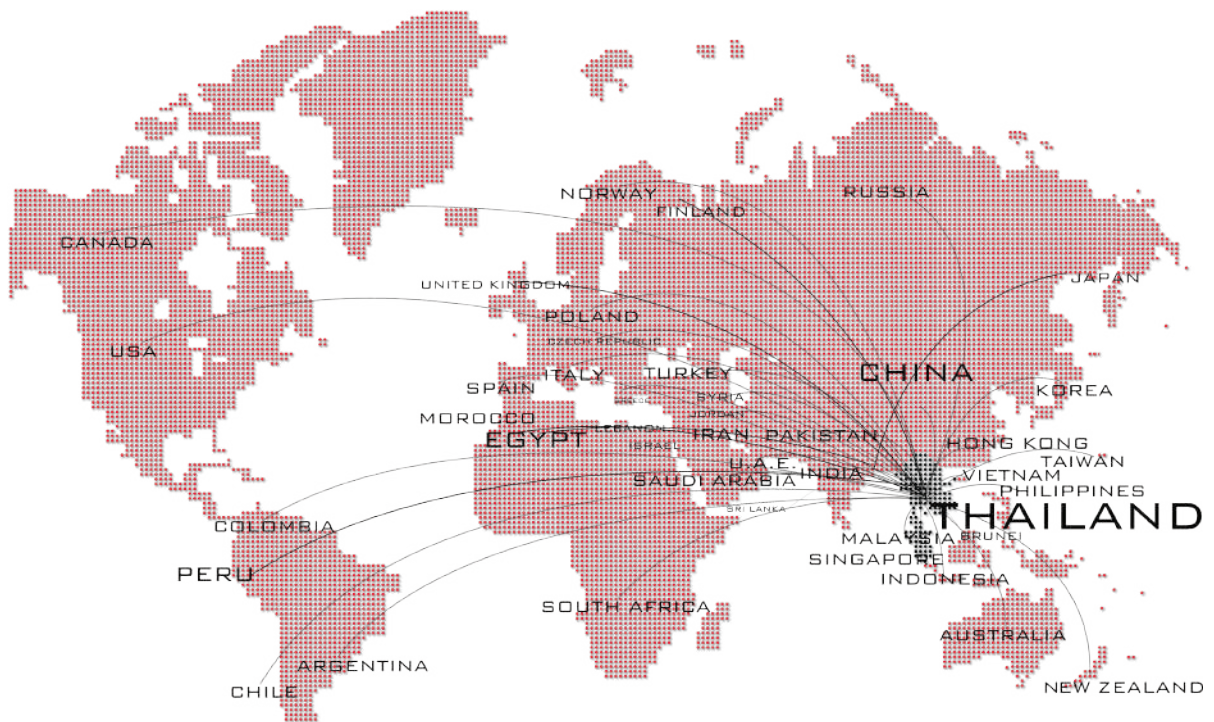


# Fixed Displacement Vane Pump

**catalogue 2025**



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# FLO-TECH ENGINEERING CO., LTD.

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*Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below*

## ISO 9001:2015

*Scope of certification*

**DESIGN & DEVELOP, PRODUCTION AND TRADING OF HYDRAULIC PUMP,  
HYDRAULIC MOTOR, HYDRAULIC VALVE, PNEUMATIC VALVE,  
POWER UNIT AND HYDRAULIC ACCESSORIES**

Original cycle start date:	17 March 2009
Expiry date of previous cycle:	NA
Certification / Recertification Audit date:	NA
Certification / Recertification cycle start date:	16 March 2024
Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:	16 March 2027

Certificate No.: TH022197

Version: 1

Issue date: 16 March 2024



0008

**Signed on behalf of BVCH SAS UK Branch**

*Certification Body Address: 5th Floor, 66 Prescott Street, London, E1 8HG, United Kingdom*

*Local Office: Bureau Veritas Certification (Thailand) Ltd. 16th Floor, Bangkok Tower, 2170 New Petchburi Road, Bangkapi, Huaykwang, Bangkok 10310, Thailand*

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: 66 2 670 4800





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# บริษัท โพล-เทคเอ็นจิเนียริง จำกัด

47 ซอยสุขสวัสดิ์ 14/18 แขวงจอมทอง เขตจอมทอง, กรุงเทพมหานคร 10150 ประเทศไทย

บูโร เวิร์ทส เซอทิฟิเคชัน (ประเทศไทย) รับรองว่าระบบบริหารงานขององค์กรนี้ได้รับการตรวจประเมิน และพบว่าสอดคล้องกับข้อกำหนดของมาตรฐานระบบบริหารตามรายละเอียดต่อไปนี้

## ISO 9001:2015

ขอบข่ายการรับรอง

การออกแบบพัฒนา, การผลิต, จัดหาและจัดจำหน่าย บีมไฮดรอลิก, มอเตอร์ไฮดรอลิก, วาล์วไฮดรอลิก, วาล์วนิวเมติกส์, ชุดต้นกำลังไฮดรอลิกและอุปกรณ์เสริมในระบบไฮดรอลิก

ได้รับการอนุมัติครั้งแรกเมื่อ	17 มีนาคม 2552
วันที่ใบรับรองหมดอายุของรอบการรับรองที่ผ่านมา	NA
วันที่ตรวจเพื่อให้อำนาจรับรอง	NA
รอบการให้การรับรองมีผลจากวันที่ / รอบการให้การรับรองเพื่อต่ออายุมีผลจากวันที่	16 มีนาคม 2567
ภายใต้เงื่อนไขการดำเนินการของระบบบริหารงานที่เป็นที่น่าพอใจอย่างต่อเนื่องขององค์กรดังกล่าวใบรับรองนี้หมดอายุวันที่	16 มีนาคม 2570

เลขที่ใบรับรอง TH022196

แก้ไขครั้งที่ 1

วันที่มีผลบังคับใช้ 16 มีนาคม 2567



ผู้อนุมัติการรับรอง

สำนักงาน: บริษัท บูโร เวิร์ทส เซอทิฟิเคชัน (ประเทศไทย) จำกัด ชั้น 16 อาคารกรุงเทพทาวเวอร์ 2170 ถ.เพชรบุรีตัดใหม่ บางกะปิ ห้วยขวาง กรุงเทพฯ 10310 ประเทศไทย

หากต้องการตรวจสอบถึงผลบังคับใช้ของใบรับรองนี้โปรดติดต่อ (+662 670 4800)

คำอธิบายเพิ่มเติมเกี่ยวกับขอบข่ายของใบรับรองนี้และการประยุกต์ใช้ข้อกำหนดของ ระบบบริหารงาน สามารถติดต่อขอรับได้จากองค์กรดังกล่าวตามที่ระบุไว้ด้านบน



# HOF Hydraulic Solutions Warranty Policy

---

## Warranty

Flowlution Co.,Ltd, sole distributor of "HOF Hydraulic Solutions", Warrants all of its products to be free from defects in material and workmanship under normal operating conditions and proper application in accordance with the specifications for operation as described by the manufacturer for the period of twelve (12) months in service.

## Limitations on Warranty

This Warranty is expressly in lieu of any other warranties expressed or implied. Buyer's sole and exclusive remedy under this Warranty shall be limited to the repair, replacement or exchange of warranted products at our option, F.O.B. our factory, or designated service center.

No special, incidental, consequential or other damage shall be recoverable. Flowlution Co.,Ltd shall not be liable for consequential damages or contingent liabilities including, but not limited to, loss of life, personal injury, loss of crops, loss due to fire or water damage, loss of business or business income, down time costs and trade or other commercial loss arising out of the failure of the product. Flowlution Co.,Ltd will in no event be liable for any sum in excess of the price received by it for the product for which liability is claimed or asserted.

No product shall be returned without prior authorization from Flowlution Co.,Ltd. Buyers and their agents shall prepay all transportation charges for the return of such products to Flowlution Co.,Ltd's factory or designated service center. There will be no acceptance of any charges for labor and/or parts incidental to the removal or remounting of product repaired or replaced under this Warranty.

The above Warranty does not cover conditions over which Flowlution Co.,Ltd has no control, including, without limitation, contamination, pressures in excess of recommended maximum, products damaged or subject to accident abuse or misuse after shipment from our factory, products altered or repaired by anyone other than Flowlution Co.,Ltd personnel, authorized Flowlution Co.,Ltd factory personnel or persons so designated in writing by Flowlution Co.,Ltd prior to commencement of said work.

A return goods authorization number must be obtained from Flowlution Co.,Ltd or Flowlution Co.,Ltd's authorized Service center, or Flowlution Co.,Ltd's authorized agent prior to any products being returned for Warranty.

For more details please contact [info@flowlution.com](mailto:info@flowlution.com) or [contact@hofhydraulic.com](mailto:contact@hofhydraulic.com)



นอกจากบริษัทจะมีผลิตภัณฑ์ที่มีคุณภาพแล้ว ด้านงานบริการหลังการขายก็เป็นอีกปัจจัยหนึ่งที่บริษัทให้ความสำคัญเป็นอย่างยิ่ง ทุกผลิตภัณฑ์ของบริษัทมีการรับประกันคุณภาพตามระยะเวลา และอายุการใช้งาน

## 1. เงื่อนไขการรับประกัน

### การเริ่มต้นการรับประกัน

บริษัท โอฟ คออินดัส จำกัด จะรับประกันสินค้าใหม่ที่ขายให้ผู้แทนจำหน่าย หรือ ลูกค้าทั่วไปโดยตรงจากบริษัท โอฟ คออินดัส จำกัด โดยเริ่มนับตั้งแต่วันที่ลูกค้า (รายแรก) ซื้อสินค้า

### ระยะเวลาประกัน

สินค้าทุกตัวที่จัดจำหน่ายโดย บริษัท โอฟ คออินดัส จำกัด จะมีอายุการรับประกัน เป็นระยะเวลา 1 ปี โดยเริ่มนับจาก เดือน/ปี ที่ลูกค้าซื้อสินค้า **ยกเว้น** ไส้กรอง, Suction filter (HF series) ทางบริษัท จะรับประกัน ในระยะเวลา 6 เดือน หรือ 500 ชั่วโมง โดยเริ่มนับจาก เดือน/ปี ที่ลูกค้าซื้อไปใช้งาน

**หมายเหตุ** ในกรณีที่ไม่มีหลักฐานการซื้อขาย ระยะเวลาการรับประกันจะเริ่มนับจาก เดือน/ปี ที่ผลิตเป็นหลัก

### ขอบเขตการรับประกัน

การรับประกันเป็นไปตามระยะเวลาประกันดังกล่าวและภายใต้เงื่อนไขของการรับประกัน ถ้าหากมีความเสียหายอันเนื่องมาจากความบกพร่องของวัสดุชิ้นส่วนหรือกระบวนการผลิตจากโรงงานผู้ผลิตภายใต้การใช้งาน และการบำรุงรักษาตามปกติ บริษัทฯ ยินดีซ่อมหรือเปลี่ยนวัสดุชิ้นส่วนที่บกพร่องให้โดยไม่คิดมูลค่า

### การซ่อม หรือเปลี่ยนชิ้นส่วน

ข้อตกลงในการรับประกันจำกัดเฉพาะการซ่อมหรือเปลี่ยนวัสดุชิ้นส่วน ซึ่งต้องดำเนินการโดย บริษัทโอฟ คออินดัส จำกัด หรือผู้แทนจำหน่ายที่ได้รับการแต่งตั้งเท่านั้น

## 2. ข้อยกเว้นในการรับประกัน

### การรับประกันไม่ครอบคลุมถึงกรณีต่อไปนี้

- ความเสียหาย ซึ่งเกิดจากการใช้สินค้าที่ไม่ถูกต้อง และการละเลย ไม่เอาใจใส่บำรุงรักษา
- ความเสียหาย ซึ่งเกิดกับชิ้นส่วนภายนอกที่เสื่อมสภาพได้จากการสัมผัส การเสียดสี การฉีกขาด รวมทั้งการเกิดสนิม
- ความเสียหาย ซึ่งเกิดจากการดัดแปลงสภาพ แก๊ว ต่อเติม การแยกออกจากกัน การซ่อมที่ไม่ถูกต้อง

- ความเสียหาย ซึ่งเกิดจากการใช้-โหล่เทียม น้ำมันเชื้อเพลิง สารหล่อลื่นต่าง ๆ ที่ผิดประเภท มีคุณภาพต่ำ
- ความเสียหาย ที่เกิดจากภัยธรรมชาติ และอุบัติเหตุ
- ความเสียหาย ที่เกิดจากการซ่อม หรือปรับแต่งโดยบุคคลซึ่งไม่ใช่จากบริษัท ฯ หรือผู้แทนจำหน่าย ที่บริษัท โอฟ/ คออินดิส จำกัด แต่งตั้ง (ต้องมีการแต่งตั้งอย่างจริงจัง มีเอกสาร, มีการอบรมสอนวิธีการใช้อุปกรณ์-เครื่องมือในการเปลี่ยนที่ถูกต้อง)
- ความเสียหายที่เกิดจากการขนส่งสินค้า เช่น การขนส่งสาธารณะ
- ค่าใช้จ่ายต่าง ๆ ค่าน้ำมัน ค่ารถบรรทุก ค่าลากจูง ค่าที่พิก ค่าเสียเวลา รวมถึงค่าเสียหาย เนื่องจากความไม่สะดวกหรือทำให้ธุรกิจเสียหาย
- ปรากฏการณ์ปกติ เช่น เสียงดัง การสั่นสะเทือน ซึ่งไม่มีผลกระทบต่อคุณภาพและสมรรถนะของสินค้า
- สินค้าที่ถูกทำให้มีเตอร์วัดชั่วโมงการใช้งานไม่ตรงกับความเป็นจริง

\* บริษัท ฯ สงวนสิทธิ์ในการที่จะเปลี่ยนแปลงข้อกำหนดในเรื่องการรับประกันนี้ได้โดยไม่ต้องแจ้งล่วงหน้า



# SAMPLE TEST REPORT

**Product Details** **Report No.** ATA10-0222/151085

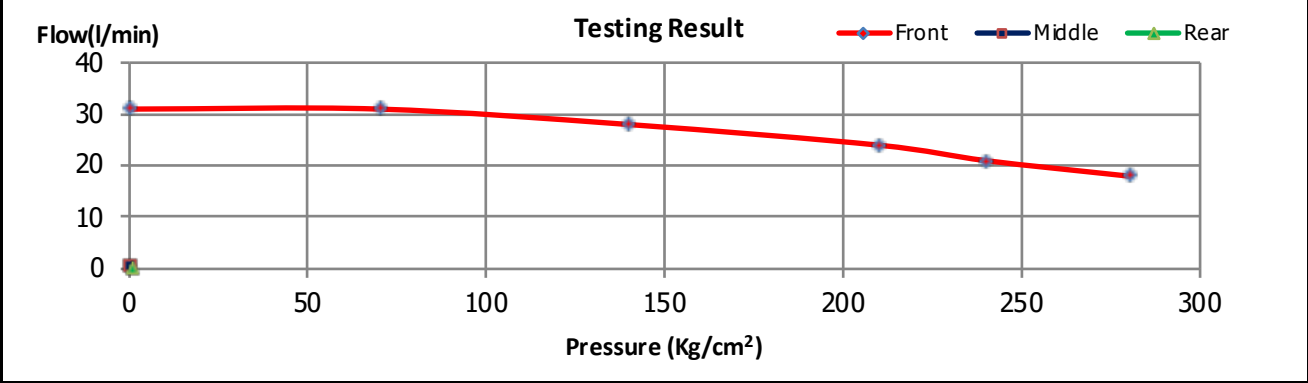
<b>Product</b>	PUMP		
<b>Model</b>	HT6CM-006-1R01	<b>Serial Number</b>	GS211XXXX

**Testing Conditions**

<b>Test Date</b>	01-01-2022	<b>Test By</b>	Wasan
<b>Oil Type</b>	ISO VG32	<b>Temperature</b>	50 ° C
<b>Viscosity</b>	21.33 cSt	<b>Second/Cycle</b>	3 Seconds

**Testing Result**

Part	Pressure (Kg/cm <sup>2</sup> )	600 RPM			1500 RPM			1800 RPM		
		Flow l/min	Efficiency %	Sound db(A)	Flow l/min	Efficiency %	Sound db(A)	Flow l/min	Efficiency %	Sound db(A)
Front	0				31.0	100	62			
	70				31.0	100	62			
	140				28.0	90	62			
	210				24.0	77	66			
	240				21.0	68	62			
	280				18.0	58	62			
Middle										
Rear										



**Observations:**

**Does the product pass the standard** Yes  No

**Approve by** **Date**



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# **I. Fixed Displacement Vane Pump Up to 215 Bar (3000 psi)**

# Single and Double Vane Pump HV10 and HV20 Series

## Features and Handling

- HV10/ HV20 Series are fixed displacement and balanced type vane pumps. With compact sizes, they are available in single pumps and double pumps for both industrial and mobile application.

- The vane design with self compensation for wear and clearances makes volumetric efficiency of pump nearly constant over the service life. (the vanes always adjust its orbit to contact with the cam ring, even though wear occurs between the cam ring and vane tips)

- The vane pump is not damaged at low speed and high pressure operation because pumping action does not start until the speed is high enough for the vane to throw out. With hydraulically balanced design, the bearing is externally loaded only. Therefore, the pump requires minimized maintenance with long service life

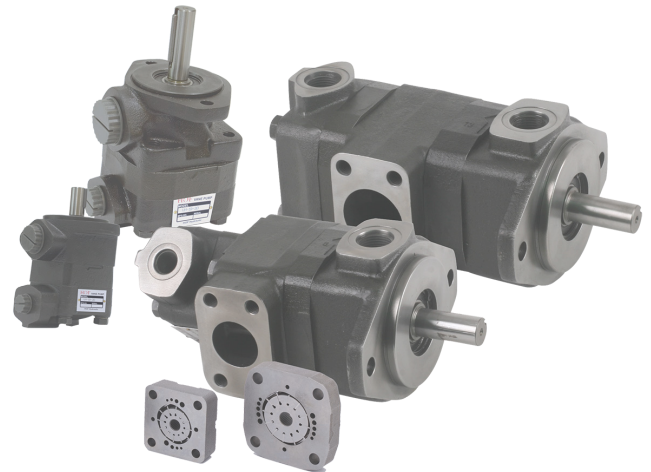
- The inlet or outlet ports can be rotated through increments of 90° in relation to each other, providing application flexibility and easy installation.

- With optional flow control and priority valve covers, the pump can be used in more applications. The flow control over can limit the flow to the primary circuit at the required flow rate, while diverts remaining flow to the tank. The priority valve cover maintains a constant flow to the primary circuit, while diverts remaining flow to the secondary circuit. Each cover comes with a relief valve to limits the maximum pressure of the primary circuit.

- For maximum service life, the pump should be protected from contamination. Filtering fluid before filling and during operation to maintain or exceed ISO cleanliness code 17/14. Replaceable elements should be changed as filter supplier instructions.

- The drive shaft must align with the power source shaft. Avoiding shaft end thrust and applications that impose radial loading.

- The start-up procedures should be as follows :
  - Check the rotation of power source to match the rotation of pump.
  - Check inlet and outlet ports to assure all connections are properly installed and check all mounting bolts and flanges to assure all are tight and properly aligned.



- Fill pump with fluid through the outlet port if the pump is mounted above the fluid level. The spline shaft models also need to be lubricated with an anti-fretting grease or similar lubricant.
- Place all controls in the neutral position so the pump is unloaded during initial start-up.
- Prime the pump within a few second when the pump is started.
- Bleed off entrapped air from outlet circuit until a steady output flow is observed.

*The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change at any time without notice.*

\*Foot Mounting is available for each pump. For more details, see Foot Mounts.

# Single Vane Pump

## HV10 Series

### Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Max. Speed rpm	Min. Speed rpm	Weight kg (lb)
HV 10	1	3.3 (0.20)	4.70 (1.25)	175 (2500)	160 (2250)	4800	650	5.4 - 5.8 (11.88 - 12.76)
	2	6.6 (0.40)	9.40 (2.50)			4500		
	3	9.8 (0.60)	14.20 (3.75)			4000		
	4	13.1 (0.80)	18.90 (5.00)			3400		
	5	16.4 (1.00)	23.60 (6.25)	3200				
	6	19.5 (1.19)	28.40 (7.50)	150 (2200)	140 (2000)	3000		
	7	22.8 (1.39)	33.10 (8.75)	140 (2000)	140 (2000)	2800		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Single Vane Pump

## HV10 Series

### Ordering Code : Single Pump

HV10 - 1 S 4 S - 1 C - 20 - L  
 1      2 3 4 5      6 7      8      9

#### 1. Model :

HV10 - Standard Cover  
SAE A 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

S - 1" 5/16 - 12 UN(SAE#16)  
P - 1" NPT  
B - 1" BSP

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

1 - 3.3 (0.20)  
2 - 6.6 (0.40)  
3 - 9.8 (0.60)  
4 - 13.1 (0.80)  
5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)

#### 5. Outlet Port Connection

S - 3/4" - 16 UNF(SAE#8)  
P - 1/2" NPT  
B - 1/2" BSP

#### 6. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
11 - Splined Shaft  
12 - Splined Shaft  
38 - Splined Shaft

#### 7. Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 8. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

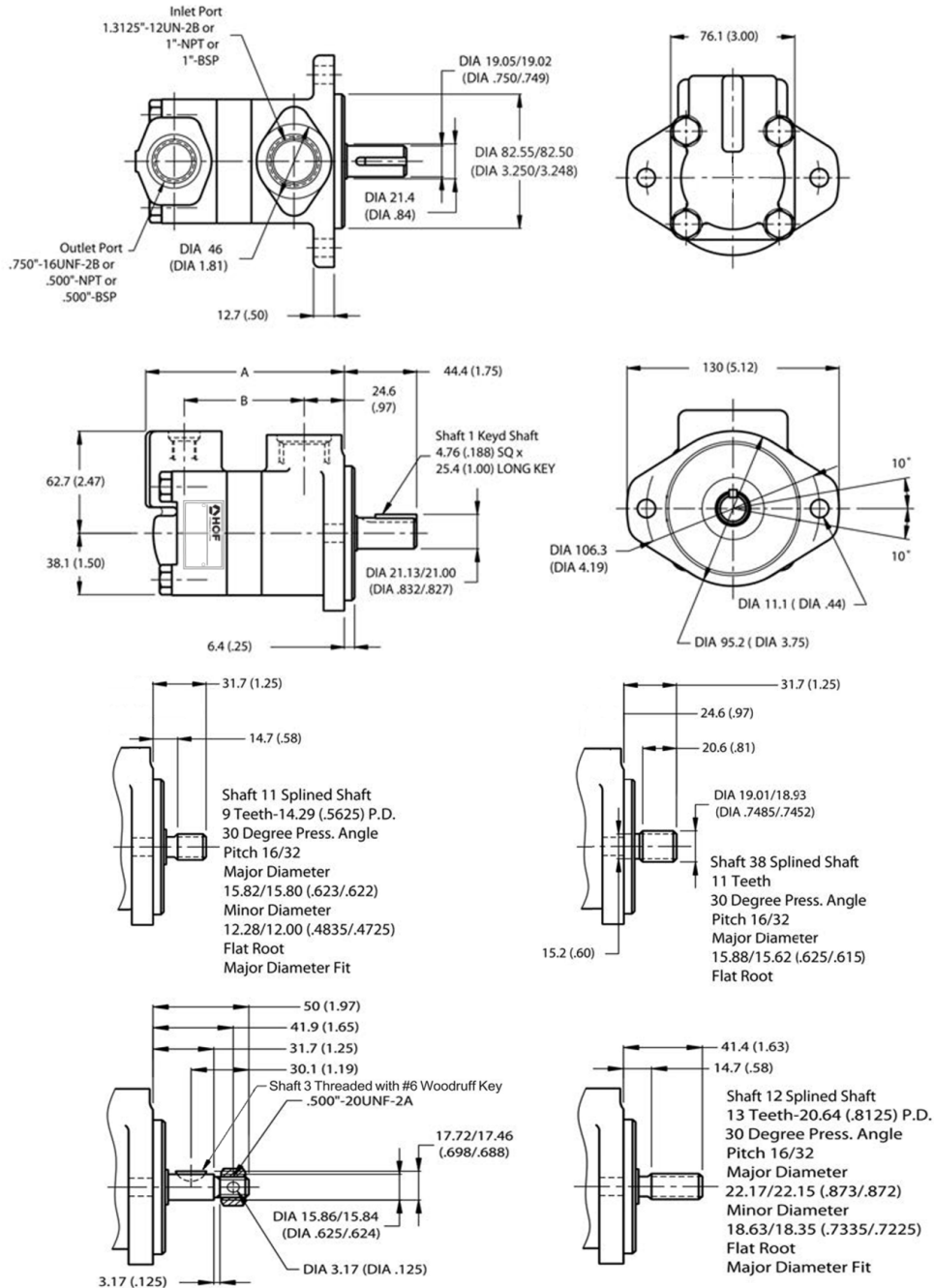
#### 9. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

# Single Vane Pump HV10 Series

## Installation Dimension mm (inch)

### HV10



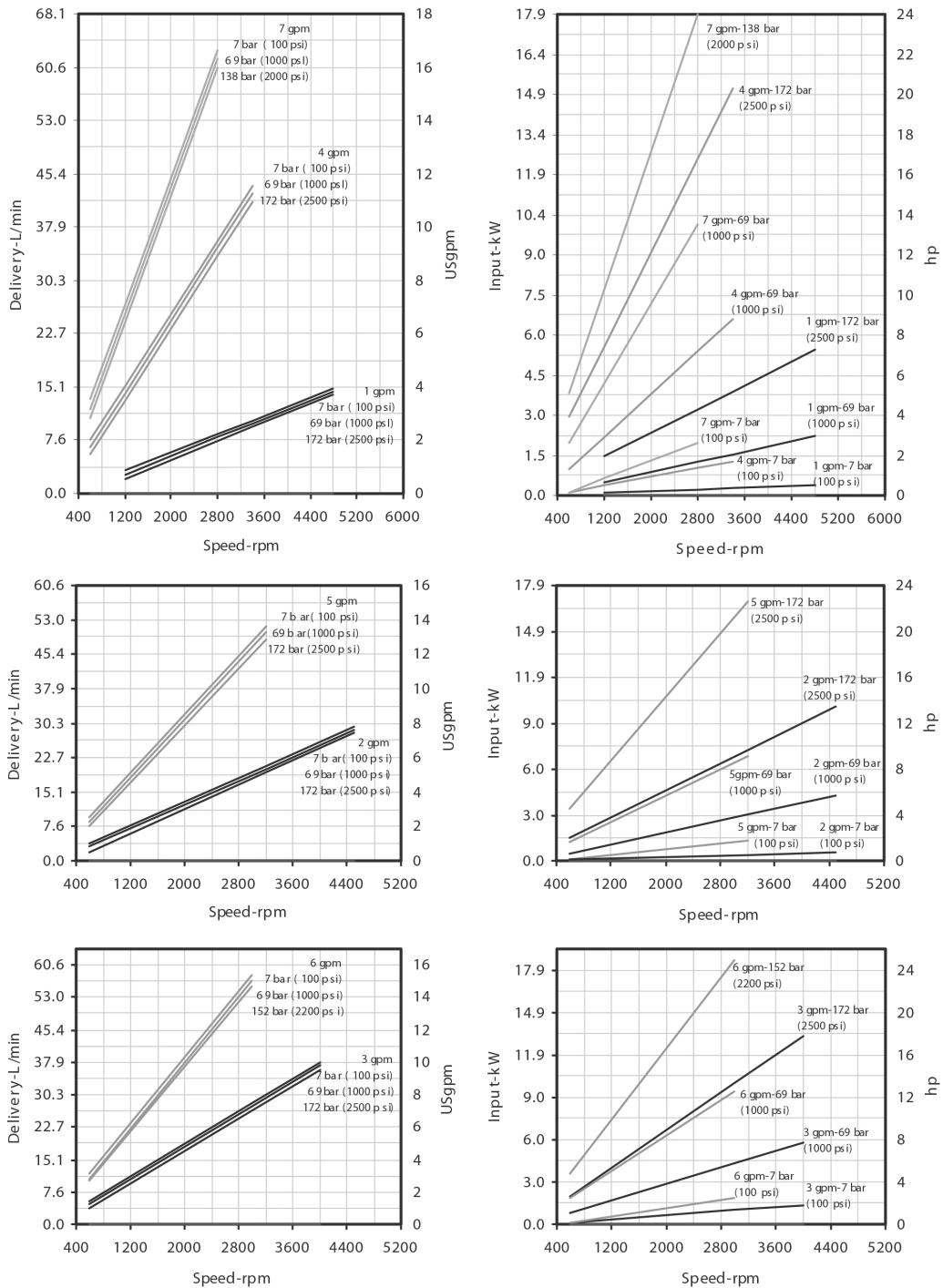
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	115.6 (4.55)	67.3 (2.65)
4, 5	121.9 (4.80)	73.7 (2.90)
6, 7	127.0 (5.00)	78.7 (3.10)

# Single Vane Pump HV10 Series

## Performance Characteristics

### HV10, Cover End of HV2010

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.



# Single Vane Pump

## HV10F/HV10P Series

### Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Max. Speed rpm	Min. Speed rpm	Weight kg (lb)
HV 10 F HV 10 P	1	3.3 (0.20)	4.70 (1.25)	175 (2500)	160 (2250)	4800	650	6.00 - 6.70 (13.2 - 14.74)
	2	6.6 (0.40)	9.40 (2.50)			4500		
	3	9.8 (0.60)	14.20 (3.75)			4000		
	4	13.1 (0.80)	18.90 (5.00)	150 (2200)	140 (2000)	3400		
	5	16.4 (1.00)	23.60 (6.25)			3200		
	6	19.5 (1.19)	28.40 (7.50)			3000		
	7	22.8 (1.39)	33.10 (8.75)			140 (2000)		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Single Vane Pump

## HV10F/HV10P Series

### Ordering Code : Single Pump HV10F

**HV10F - 1 S 4 P - 1 C 8 - H 20 - L**  

1
2
3
4
5
6
7
8
9
10
11

- |   |   |
|---|---|
| <p>1. Model :<br/>HV10F - Flow Control Cover<br/>SAE A 2 bolts mounting flange J744</p> <p>2. Mounting<br/>1 - Bolt Flange</p> <p>3. Inlet Port Connection<br/>S - 1" 5/16 - 12 UN(SAE#16)<br/>P - 1" NPT<br/>B - 1" BSP</p> <p>4. Displacement (at 1200 rpm)<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)<br/>1 - 3.3 (0.20)<br/>2 - 6.6 (0.40)<br/>3 - 9.8 (0.60)<br/>4 - 13.1 (0.80)<br/>5 - 16.4 (1.00)<br/>6 - 19.5 (1.19)<br/>7 - 22.8 (1.39)</p> <p>5. Outlet Port Connection<br/>HV10F<br/>P - 3/4" - 16 UNF(SAE#8) for outlet and<br/>1/2" NPT for tank port<br/>T - 3/4" - 16 UNF(SAE#8) for outlet and tank port</p> <p>6. Type of shaft<br/>1 - Straight Keyed Shaft<br/>3 - Threaded with woodruff Keyed Shaft<br/>11 - Splined Shaft<br/>12 - Splined Shaft<br/>38 - Splined Shaft</p> | <p>7. Outlet Port Position (Viewed from cover end)<br/>A - Opposite inlet<br/>B - 90° CCW from inlet<br/>C - Inline with inlet<br/>D - 90° CW from inlet</p> <p>8. Flow rate Setting L/min (USgpm)<br/>2 - 7.6 (2)<br/>3 - 11.4 (3)<br/>4 - 15.2 (4)<br/>5 - 19.0 (5)<br/>6 - 22.7 (6)<br/>7 - 26.5 (7)<br/>8 - 30.3 (8)</p> <p>9. Pressure Setting bar (psi)<br/>A - 17 (250)<br/>B - 34 (500)<br/>C - 52 (750)<br/>D - 69 (1000)<br/>E - 86 (1250)<br/>F - 103 (1500)<br/>G - 121 (1750)<br/>H - 138 (2000)<br/>J - 150 (2250)<br/>K - 172 (2500)</p> <p>10. Design<br/>Subject to change. Installation dimension remain<br/>the same for designs - 20 through -29</p> <p>11. Shaft Rotation (viewed from shaft end)<br/>R - Turn right<br/>L - Turn left</p> |
|---|---|

# Single Vane Pump

## HV10F/HV10P Series

### Ordering Code : Single Pump HV10P

**HV10P - 1 S 4 K - 1 C 8 - H 20 - L**

1	2	3	4	5	6	7	8	9	10	11
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#### 1. Model :

HV10P - Priority Valve Cover SAE A 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

S - 1" 5/16 - 12 UN(SAE#16)  
P - 1" NPT  
B - 1" BSP

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

1 - 3.3 (0.20)  
2 - 6.6 (0.40)  
3 - 9.8 (0.60)  
4 - 13.1 (0.80)  
5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)

#### 5. Outlet Port Connection

K - 9/16" - 18 UNF for primary outlet and tank port and 3/4" - 16 UNF(SAE#8) for secondary outlet

#### 6. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
11 - Splined Shaft  
12 - Splined Shaft  
38 - Splined Shaft

#### 7. Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 8. Flow rate Setting L/min (USgpm)

2 - 7.6 (2)  
3 - 11.4 (3)  
4 - 15.2 (4)  
5 - 19.0 (5)  
6 - 22.7 (6)  
7 - 26.5 (7)  
8 - 30.3 (8)

#### 9. Pressure Setting bar (psi)

A - 17 (250)  
B - 34 (500)  
C - 52 (750)  
D - 69 (1000)  
E - 86 (1250)  
F - 103 (1500)  
G - 121 (1750)  
H - 138 (2000)  
J - 150 (2250)  
K - 172 (2500)

#### 10. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

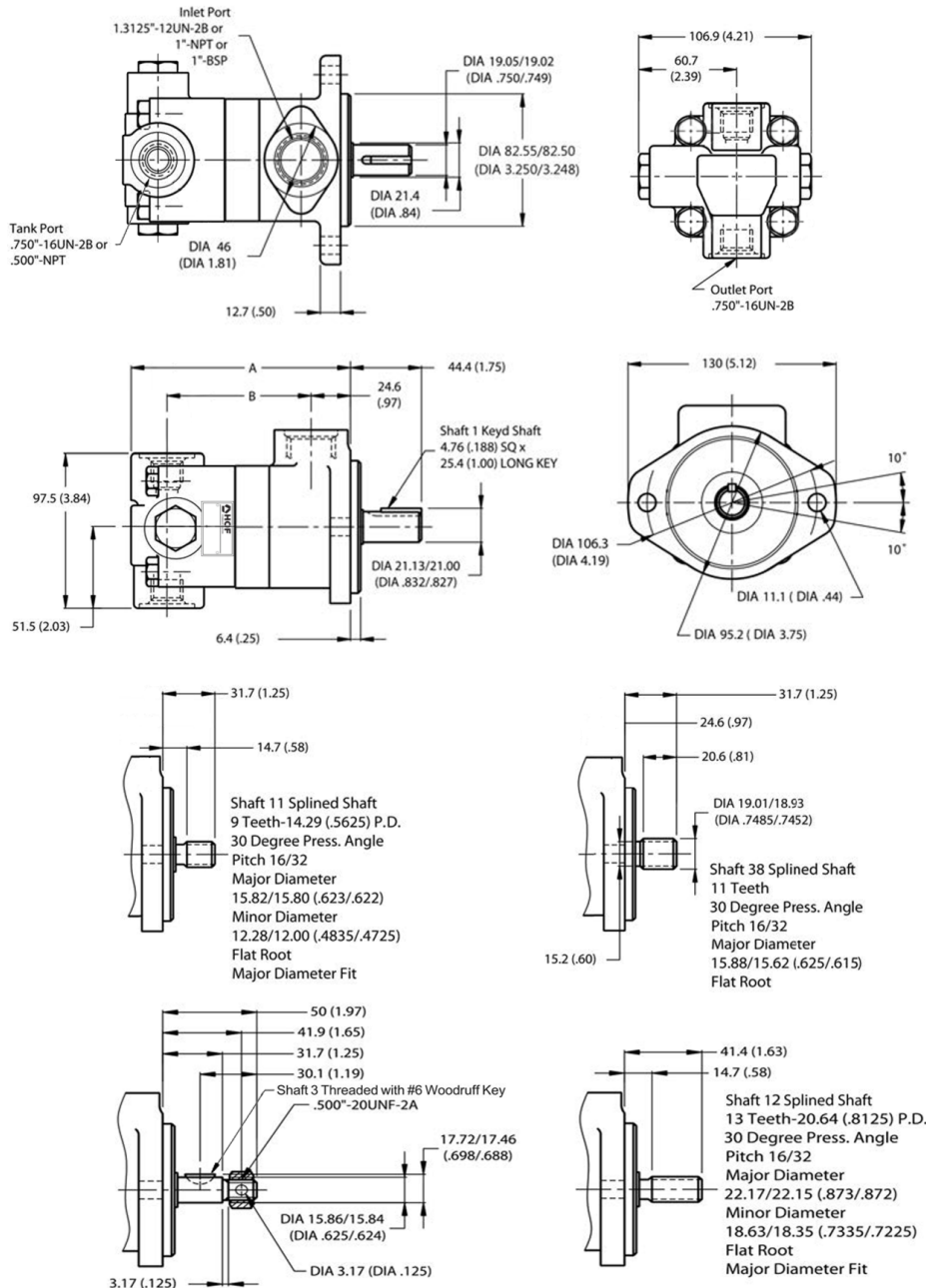
#### 11. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

# Single Vane Pump HV10F/HV10P Series

## Installation Dimension mm (inch)

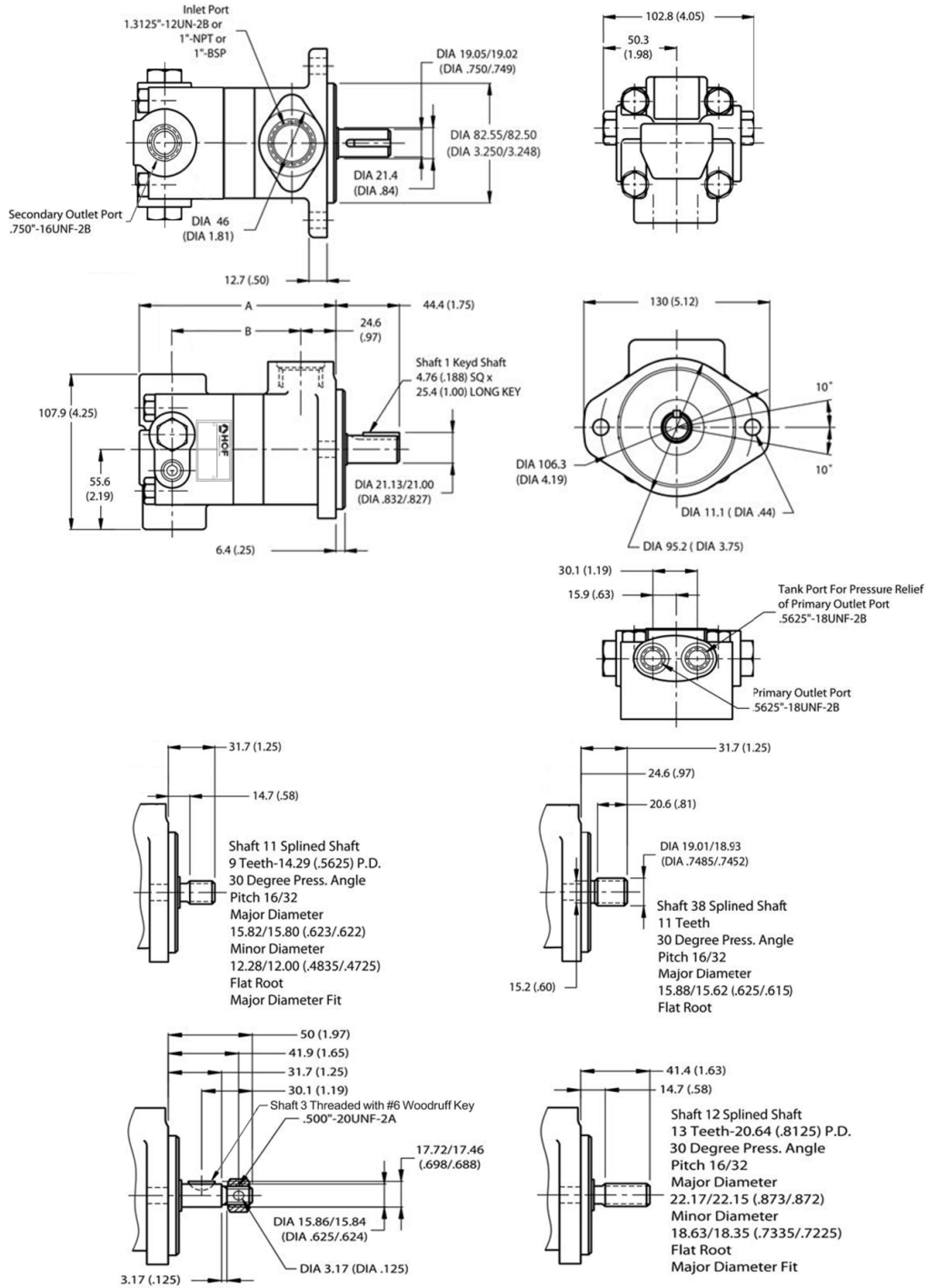
### HV10F



Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	128.8 (5.07)	84.8 (3.34)
4, 5	135.1 (5.32)	91.2 (3.59)
6, 7	140.2 (5.52)	96.3 (3.79)

# Single Vane Pump HV10F/HV10P Series

## HV10P



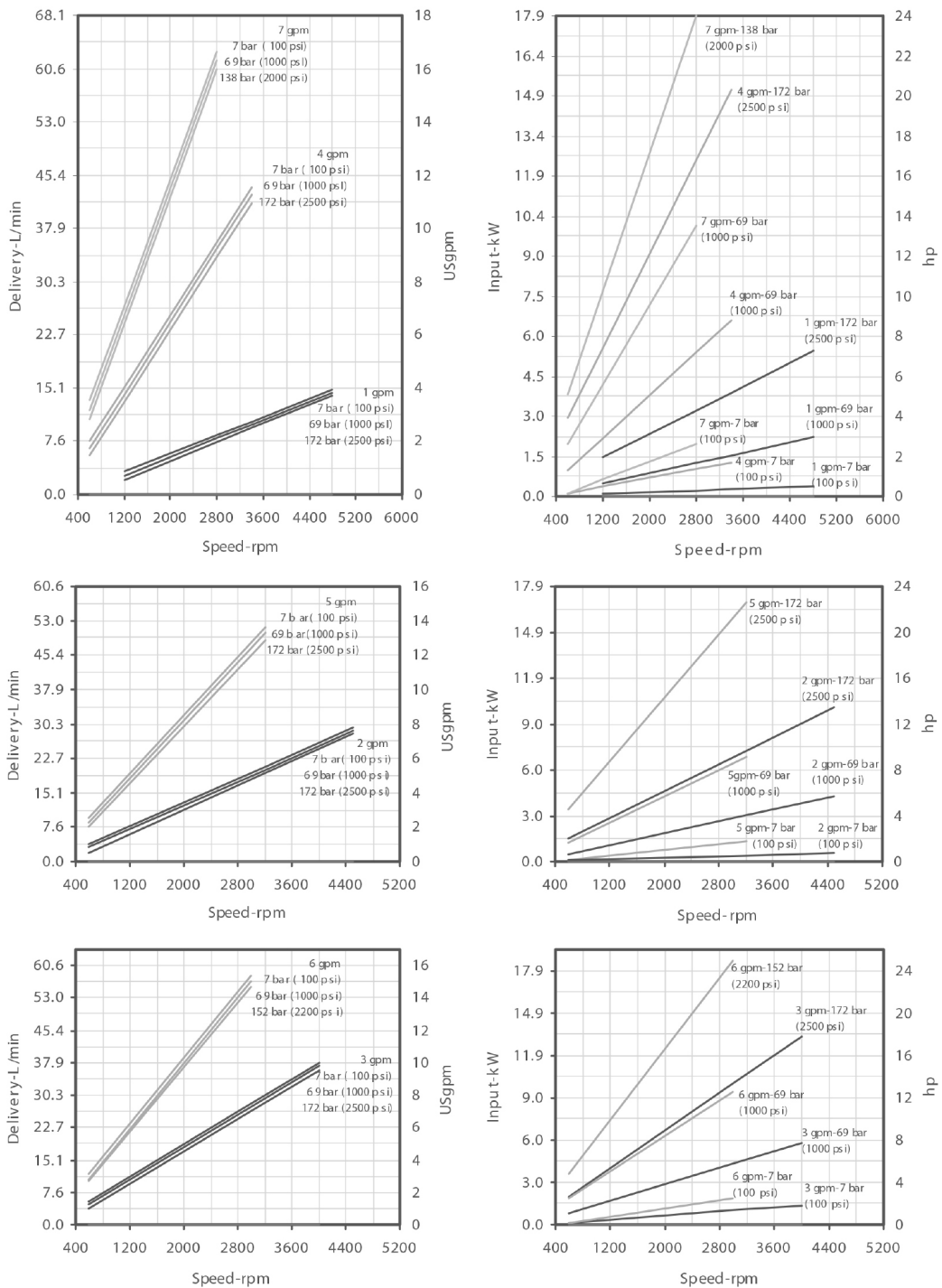
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	130.0 (5.12)	84.8 (3.34)
4, 5	136.4 (5.37)	91.2 (3.59)
6, 7	141.5 (5.57)	96.3 (3.79)

# Single Vane Pump HV10F/HV10P Series

## Performance Characteristics

### HV10, Cover End of HV2010

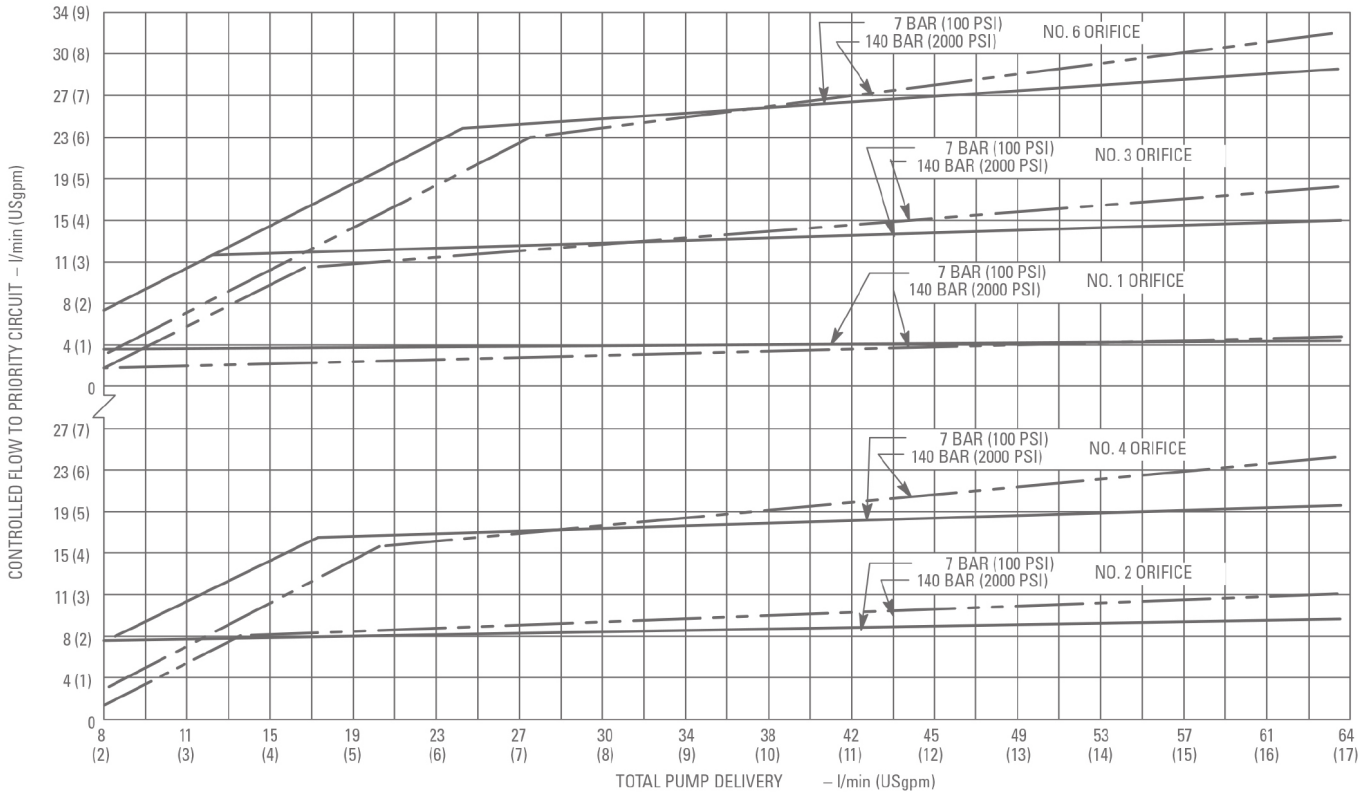
Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



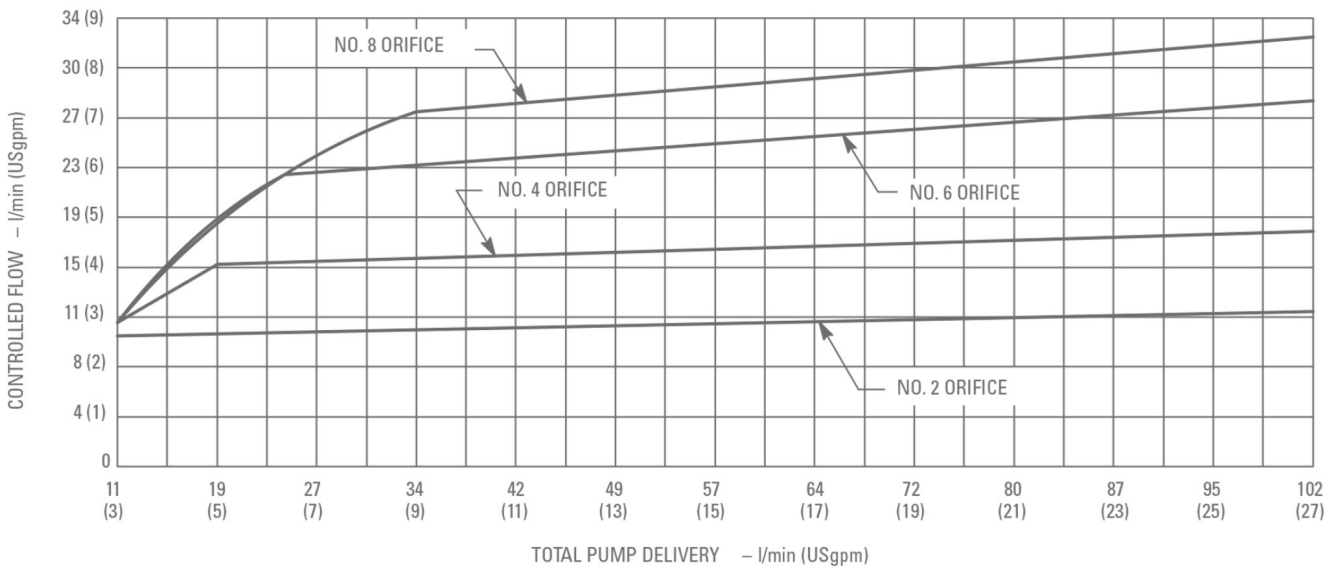
For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Single Vane Pump HV10F/HV10P Series

## Priority Valve : HV10P



## Flow control : HV10F



# Single Vane Pump

## HV20 Series

### Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement  cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi)  L/min (USgpm)	Max. Intermittent Pressure  bar (psi)	Max. Continuous Pressure  bar (psi)	Max. Speed  rpm	Min. Speed  rpm	Weight  kg (lb)
HV 20	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	650	7.50 - 8.50 (16.50 - 18.70)
	6	19.5 (1.19)	28.39 (7.50)			3400		
	7	22.8 (1.39)	33.11 (8.75)			3000		
	8	26.5 (1.62)	37.85 (10.00)			2800		
	9	29.7 (1.81)	42.57 (11.25)			2800		
	10	34.1 (2.08)	47.30 (12.51)			2500		
	11	36.4 (2.22)	52.04 (13.75)	2500				
	12	39.0 (2.38)	56.77 (15.00)	150 (2200)	140 (2000)	2400		
	13	42.4 (2.59)	61.50 (16.25)	2400				

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.



# Single Vane Pump

## HV20 Series

### Ordering Code : Single Pump

HV20 - 1 S 9 S - 1 C - 20 - L

1	2	3	4	5	6	7	8	9
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#### 1. Model :

HV20 - Standard Cover  
SAE A 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

S - 1" 5/8 - 12 UN(SAE#20)  
P - 1" 1/4 NPT  
B - 1" 1/4 BSP

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)  
8 - 26.5 (1.62)  
9 - 29.7 (1.81)  
10 - 34.1 (2.08)  
11 - 36.4 (2.22)  
12 - 39.0 (2.38)  
13 - 42.4 (2.59)

#### 5. Outlet Port Connection

S - 1" 1/16 - 12 UN(SAE#12)  
P - 3/4" NPT  
B - 3/4" BSP

#### 6. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
6 - Woodruff Keyed stub Shaft  
11 - Splined Shaft  
15 - Splined Shaft  
38 - Splined Shaft  
62 - Splined Shaft  
123 - Threaded with woodruff Keyed Shaft

#### 7. Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 8. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

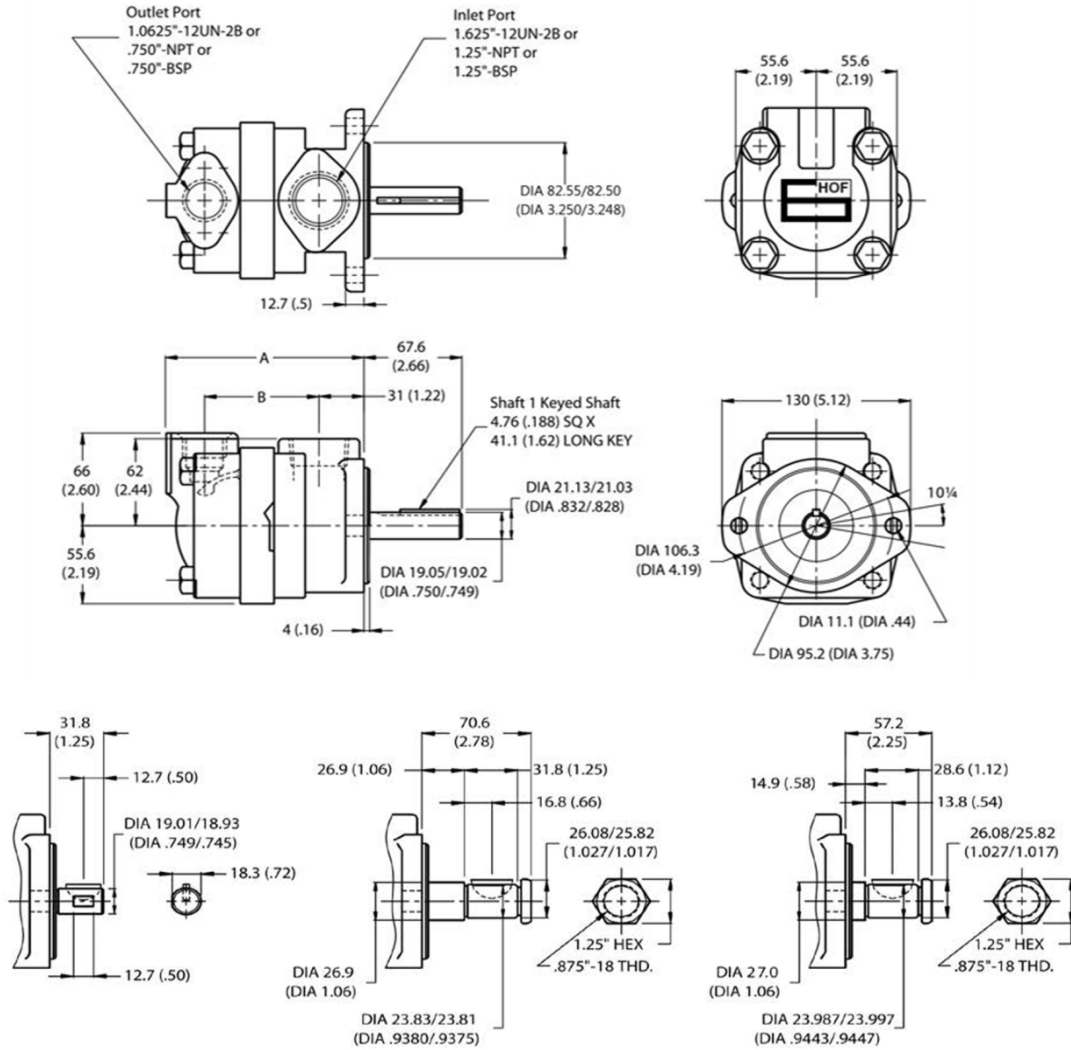
#### 9. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

# Single Vane Pump HV20 Series

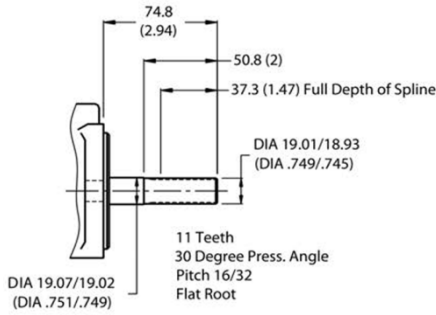
## Installation Dimension mm (inch)

### HV20

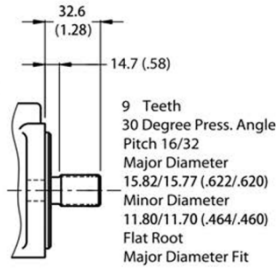


Shaft 6 Straight Stub Keyed Shaft    Shaft 3 Threaded with #6 Woodruff Key    Shaft 123 Threaded with #13 Woodruff Key

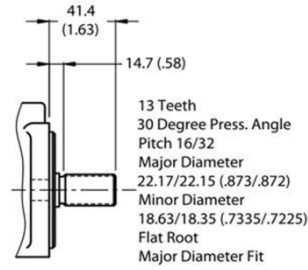
# Single Vane Pump HV20 Series



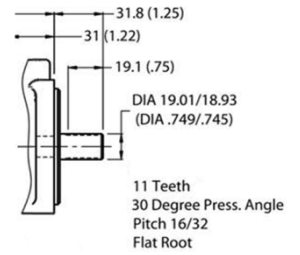
Shaft 11 Splined Shaft 11 Teeth



Shaft 62 Splined Shaft 9 Teeth



Shaft 15 Splined Shaft 13 Teeth



Shaft 38 Splined Shaft 11 Teeth

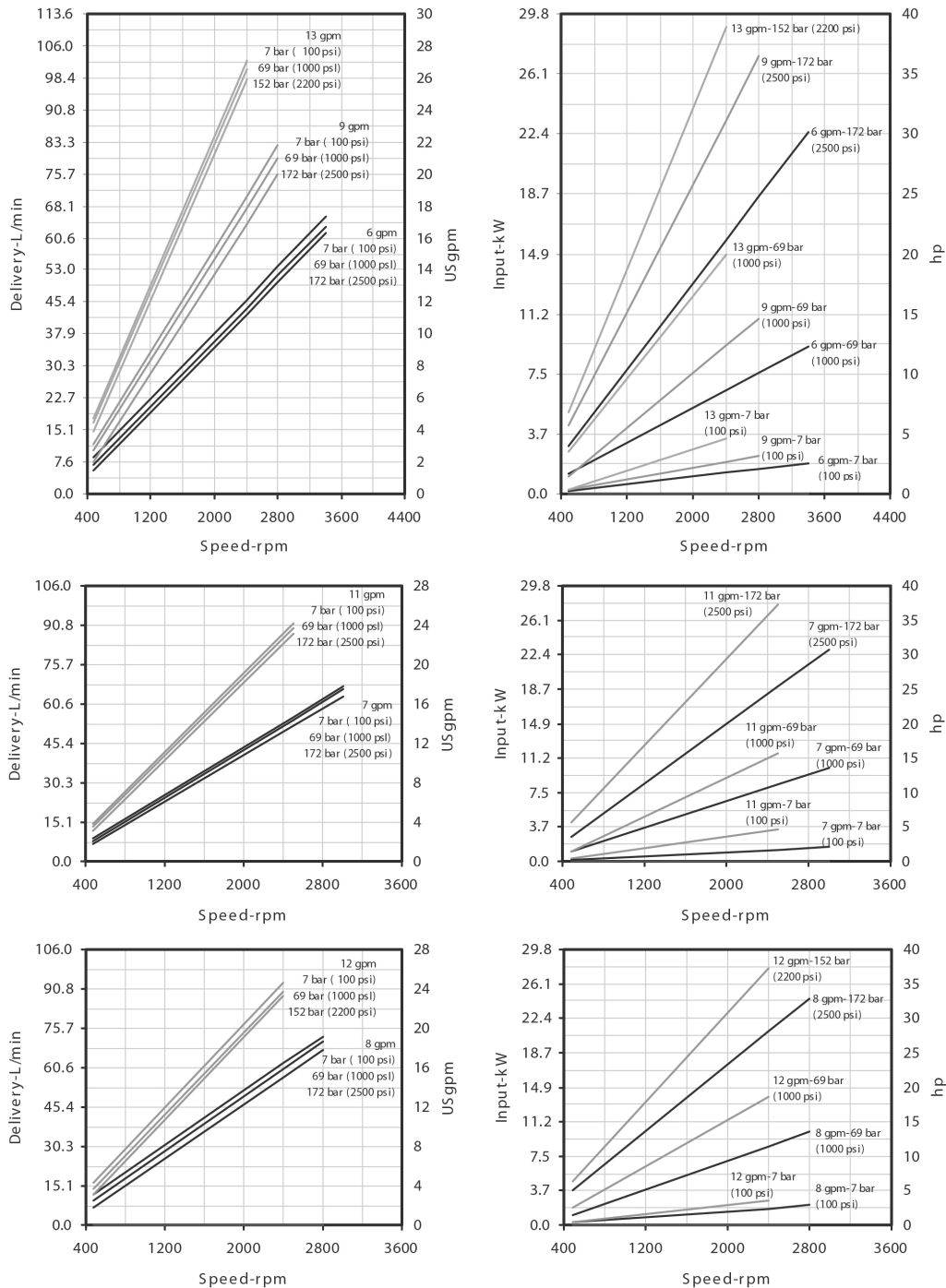
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
5, 6	125.2 (4.93)	71.1 (2.80)
7, 8, 9	131.6 (5.18)	77.5 (3.05)
10, 11	136.7 (5.38)	82.6 (3.25)
12, 13	140.2 (5.52)	86.1 (3.39)

# Single Vane Pump HV20 Series

## Performance Characteristics

### HV20, Shaft End of HV20, Cover End of HV2020

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Single Vane Pump

## HV20F NF/HV20P Series

### Specifications

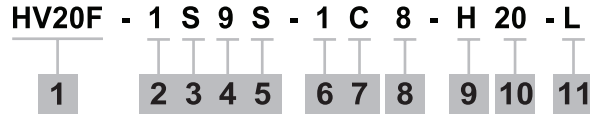
Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement  cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi)  L/min (USgpm)	Max. Intermittent Pressure  bar (psi)	Max. Continuous Pressure  bar (psi)	Max. Speed  rpm	Min. Speed  rpm	Weight  kg (lb)
HV 20 F NF & HV 20 P	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	650	9.30 - 10.60 (20.46 - 23.32)
	6	19.5 (1.19)	28.39 (7.50)			3400		
	7	22.8 (1.39)	33.11 (8.75)			3000		
	8	26.5 (1.62)	37.85 (10.00)			2800		
	9	29.7 (1.81)	42.57 (11.25)			2800		
	10	34.1 (2.08)	47.30 (12.51)			2500		
	11	36.4 (2.22)	52.04 (13.75)	2500				
	12	39.0 (2.38)	56.77 (15.00)	150 (2200)	140 (2000)	2400		
	13	42.4 (2.59)	61.50 (16.25)	2400				

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Single Vane Pump

## HV20F NF/HV20P Series

### Ordering Code : Single Pump HV20F NF



- |  |  |
|--|--|
| <p><b>1. Model :</b><br/>                 HV20F - Flow Control Cover<br/>                 HV20NF - Flow Control Cover &amp; Internal Drain<br/>                 SAE A 2 bolts mounting flange J744</p> <p><b>2. Mounting</b><br/>                 1 - Bolt Flange</p> <p><b>3. Inlet Port Connection</b><br/>                 S - 1" 5/8 - 12 UN(SAE#20)<br/>                 P - 1" 1/4 NPT<br/>                 B - 1" 1/4 BSP</p> <p><b>4. Displacement (at 1200 rpm)</b><br/>                 Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)<br/>                 5 - 16.4 (1.00)<br/>                 6 - 19.5 (1.19)<br/>                 7 - 22.8 (1.39)<br/>                 8 - 26.5 (1.62)<br/>                 9 - 29.7 (1.81)<br/>                 10 - 34.1 (2.08)<br/>                 11 - 36.4 (2.22)<br/>                 12 - 39.0 (2.38)<br/>                 13 - 42.4 (2.59)</p> <p><b>5. Outlet Port Connection</b><br/>                 HV20F<br/>                 S - 3/4" - 16 UNF (SAE#8) for outlet and<br/>                 1" 1/16 - 12 UN(SAE#12) for tank port<br/>                 P - 3/4" - 16 UNF(SAE#8) for outlet and<br/>                 1/2" NPT for tank port<br/>                 T - 3/4" - 16 UNF(SAE#8) for outlet and tank port<br/><br/>                 HV20NF<br/>                 S - 3/4" - 16 UNF(SAE#8) for outlet</p> <p><b>6. Type of shaft</b><br/>                 1 - Straight Keyed Shaft<br/>                 3 - Threaded with woodruff Keyed Shaft<br/>                 6 - Woodruff Keyed stub Shaft<br/>                 11 - Splined Shaft<br/>                 15 - Splined Shaft<br/>                 38 - Splined Shaft<br/>                 62 - Splined Shaft<br/>                 123 - Threaded with woodruff Keyed Shaft</p> | <p><b>7. Outlet Port Position (Viewed from cover end)</b><br/>                 A - Opposite inlet<br/>                 B - 90° CCW from inlet<br/>                 C - Inline with inlet<br/>                 D - 90° CW from inlet</p> <p><b>8. Flow rate Setting L/min (USgpm)</b><br/>                 2 - 7.6 (2)<br/>                 3 - 11.4 (3)<br/>                 4 - 15.2 (4)<br/>                 5 - 19.0 (5)<br/>                 6 - 22.7 (6)<br/>                 7 - 26.5 (7)<br/>                 8 - 30.3 (8)</p> <p><b>9. Pressure Setting bar (psi)</b><br/>                 A - 17 (250)<br/>                 B - 34 (500)<br/>                 C - 52 (750)<br/>                 D - 69 (1000)<br/>                 E - 86 (1250)<br/>                 F - 103 (1500)<br/>                 G - 121 (1750)<br/>                 H - 138 (2000)<br/>                 J - 150 (2250)<br/>                 K - 172 (2500)</p> <p><b>10. Design</b><br/>                 Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p><b>11. Shaft Rotation (viewed from shaft end)</b><br/>                 R - Turn right<br/>                 L - Turn left</p> |
|--|--|

# Single Vane Pump

## HV20F NF/HV20P Series

### Ordering Code : Single Pump HV20P

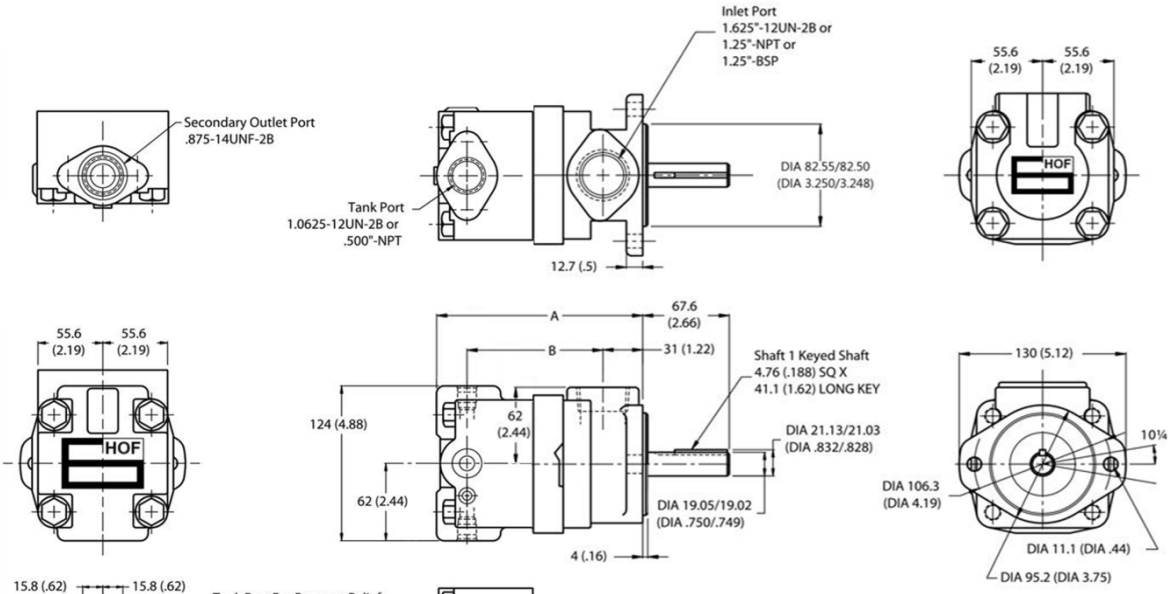
HV20P - 1 S 9 T - 1 C 8 - H 20 - L  
 1      2 3 4 5      6 7 8      9 10 11

- |  |  |
|--|--|
| <p>1. Model :<br/>HV20P - Priority Valve Cover<br/>SAE A 2 bolts mounting flange J744</p> <p>2. Mounting<br/>1 - Bolt Flange</p> <p>3. Inlet Port Connection<br/>S - 1" 5/8 - 12 UN(SAE#20)<br/>P - 1" 1/4 NPT<br/>B - 1" 1/4 BSP</p> <p>4. Displacement (at 1200 rpm)<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> <li>8 - 26.5 (1.62)</li> <li>9 - 29.7 (1.81)</li> <li>10 - 34.1 (2.08)</li> <li>11 - 36.4 (2.22)</li> <li>12 - 39.0 (2.38)</li> <li>13 - 42.4 (2.59)</li> </ul> <p>5. Outlet Port Connection<br/>T - 3/4" - 16 UNF (SAE#8) for primary outlet and tank port and 7/8" - 14 UN(SAE#10) for secondary outlet</p> <p>6. Type of shaft</p> <ul style="list-style-type: none"> <li>1 - Straight Keyed Shaft</li> <li>3 - Threaded with woodruff Keyed Shaft</li> <li>6 - Woodruff Keyed stub Shaft</li> <li>11 - Splined Shaft</li> <li>15 - Splined Shaft</li> <li>38 - Splined Shaft</li> <li>62 - Splined Shaft</li> <li>123 - Threaded with woodruff Keyed Shaft</li> </ul> | <p>7. Outlet Port Position (Viewed from cover end)</p> <ul style="list-style-type: none"> <li>A - Opposite inlet</li> <li>B - 90° CCW from inlet</li> <li>C - Inline with inlet</li> <li>D - 90° CW from inlet</li> </ul> <p>8. Flow rate Setting L/min (USgpm)</p> <ul style="list-style-type: none"> <li>2 - 7.6 (2)</li> <li>3 - 11.4 (3)</li> <li>4 - 15.2 (4)</li> <li>5 - 19.0 (5)</li> <li>6 - 22.7 (6)</li> <li>7 - 26.5 (7)</li> <li>8 - 30.3 (8)</li> </ul> <p>9. Pressure Setting bar (psi)</p> <ul style="list-style-type: none"> <li>A - 17 (250)</li> <li>B - 34 (500)</li> <li>C - 52 (750)</li> <li>D - 69 (1000)</li> <li>E - 86 (1250)</li> <li>F - 103 (1500)</li> <li>G - 121 (1750)</li> <li>H - 138 (2000)</li> <li>J - 150 (2250)</li> <li>K - 172 (2500)</li> </ul> <p>10. Design<br/>Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p>11. Shaft Rotation (viewed from shaft end)</p> <ul style="list-style-type: none"> <li>R - Turn right</li> <li>L - Turn left</li> </ul> |
|--|--|

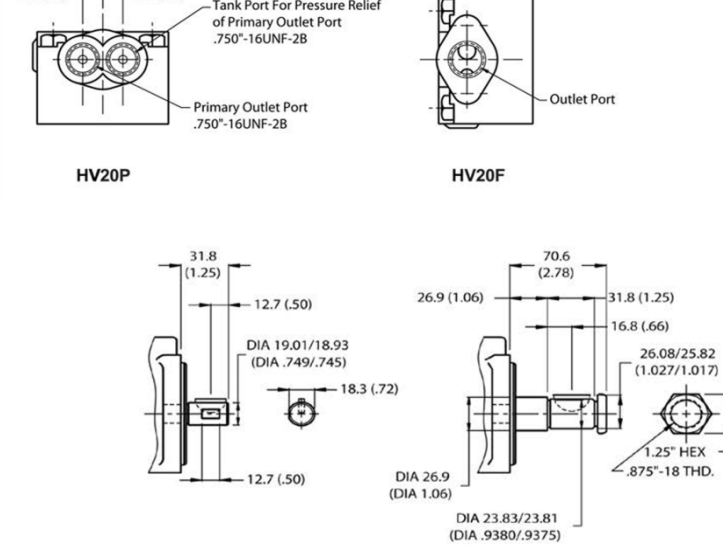
# Single Vane Pump HV20F NF/HV20P Series

## Installation Dimension mm (inch)

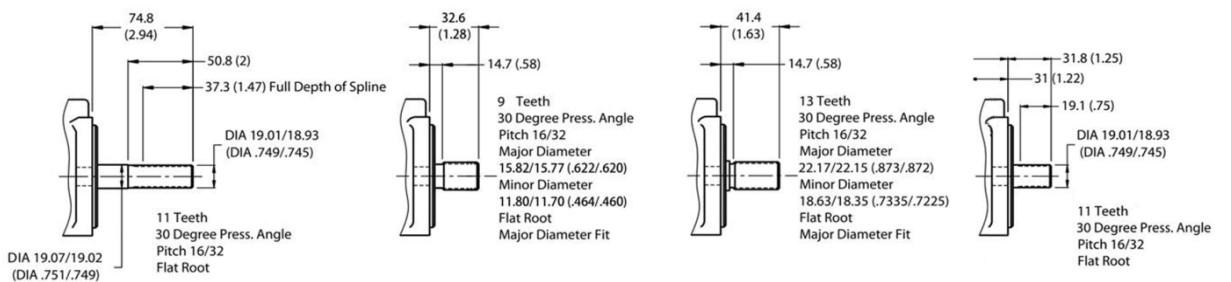
### Single Pump HV20F and HV20P



Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
5, 6	149.6 (5.89)	94.7 (3.73)
7, 8, 9	156.0 (6.14)	101.1 (3.98)
10, 11	161.0 (6.34)	105.9 (4.17)
12, 13	164.3 (6.47)	109.5 (4.31)



Shaft 6 Straight Stub Keyed Shaft    Shaft 3 Threaded with #6 Woodruff Key    Shaft 123 Threaded with #13 Woodruff Key

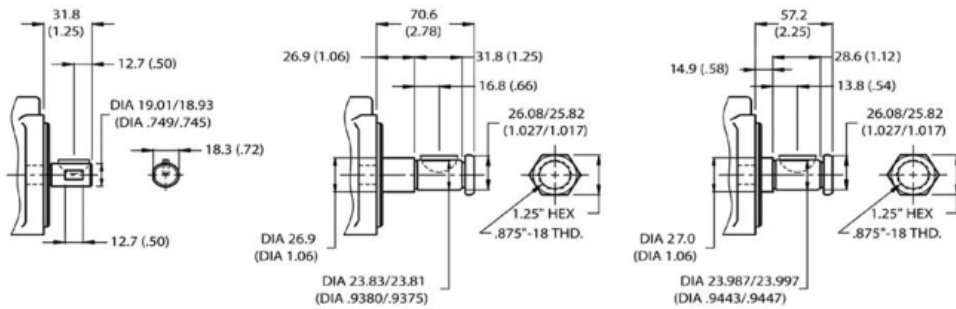
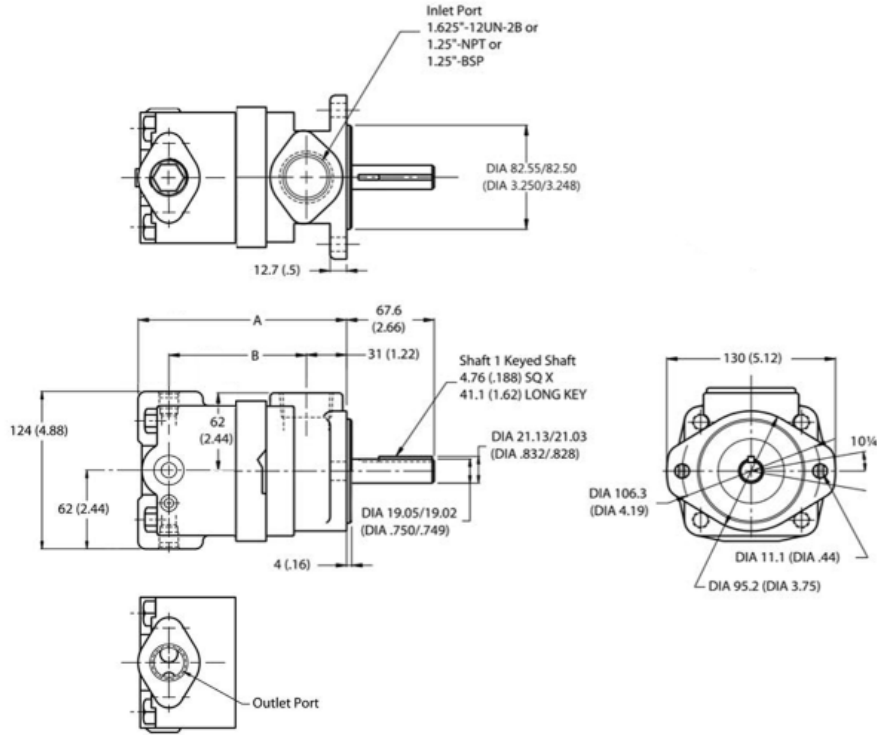


Shaft 11 Splined Shaft 11 Teeth    Shaft 62 Splined Shaft 9 Teeth    Shaft 15 Splined Shaft 13 Teeth    Shaft 38 Splined Shaft 11 Teeth

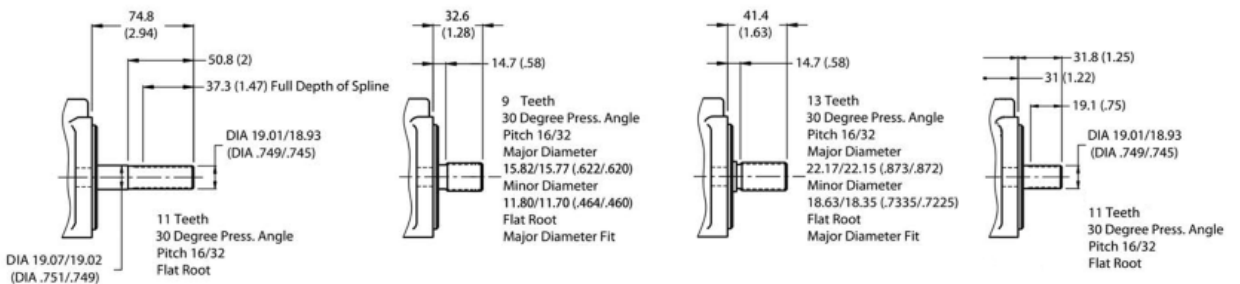


# Single Vane Pump HV20F NF/HV20P Series

## Single Pump HV20NF



Shaft 6 Straight Stub Keyed Shaft    Shaft 3 Threaded with #6 Woodruff Key    Shaft 123 Threaded with #13 Woodruff Key

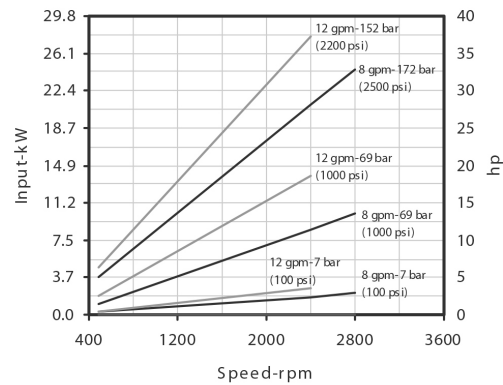
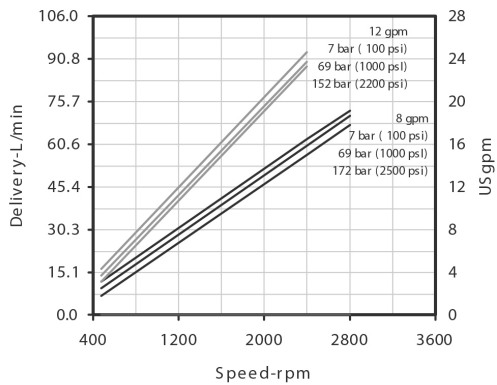
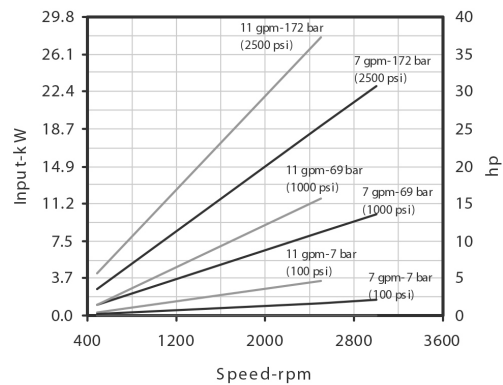
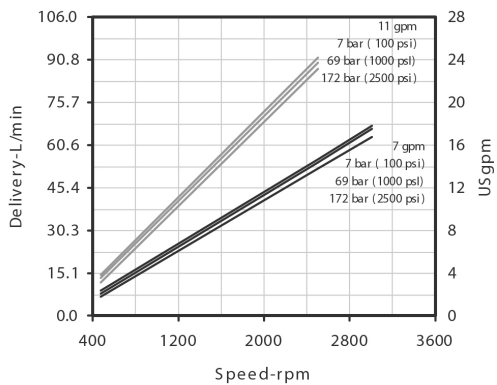
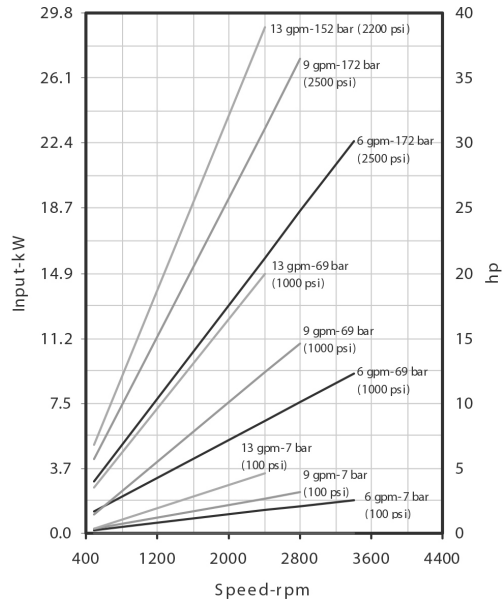
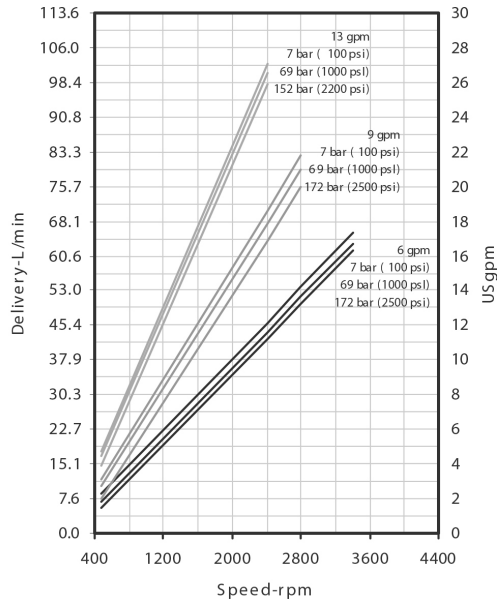


Shaft 11 Splined Shaft 11 Teeth    Shaft 62 Splined Shaft 9 Teeth    Shaft 15 Splined Shaft 13 Teeth    Shaft 38 Splined Shaft 11 Teeth

# Single Vane Pump HV20F NF/HV20P Series

## HV20, Shaft End of HV20, Cover End of HV2020

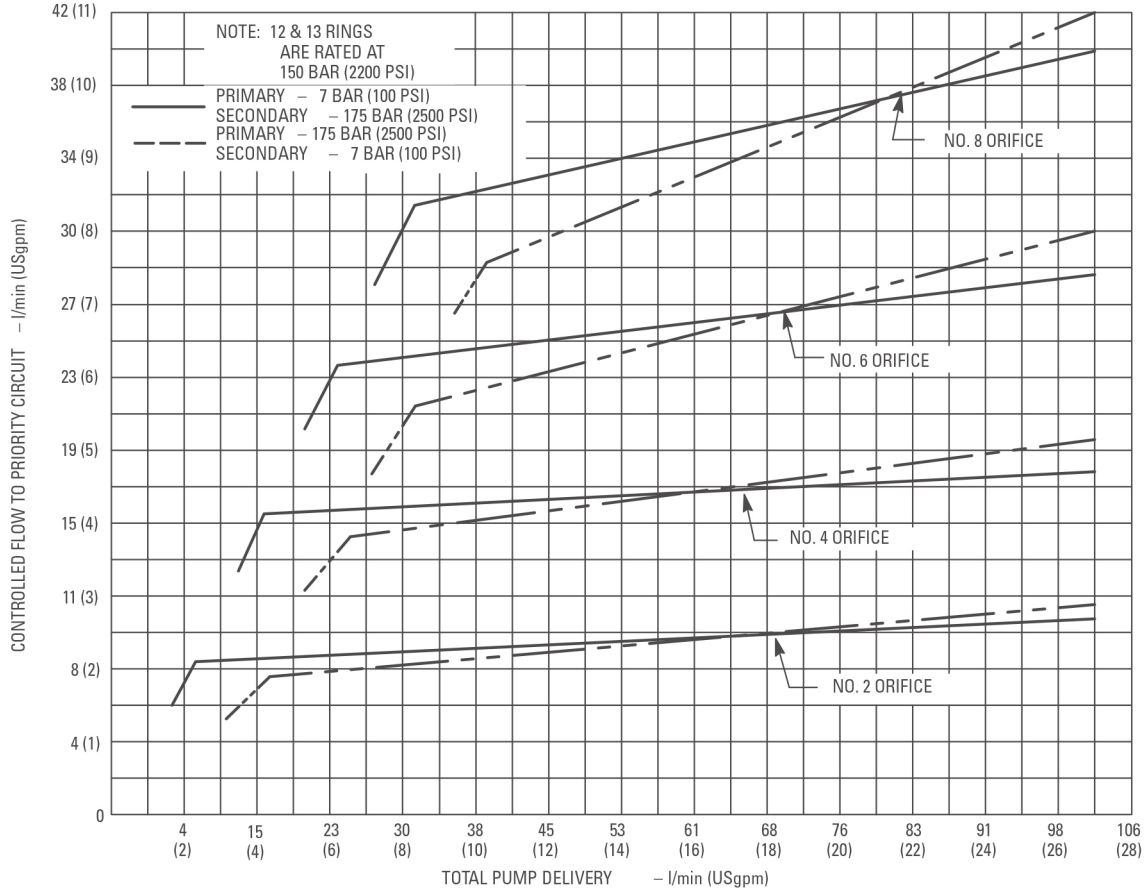
Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

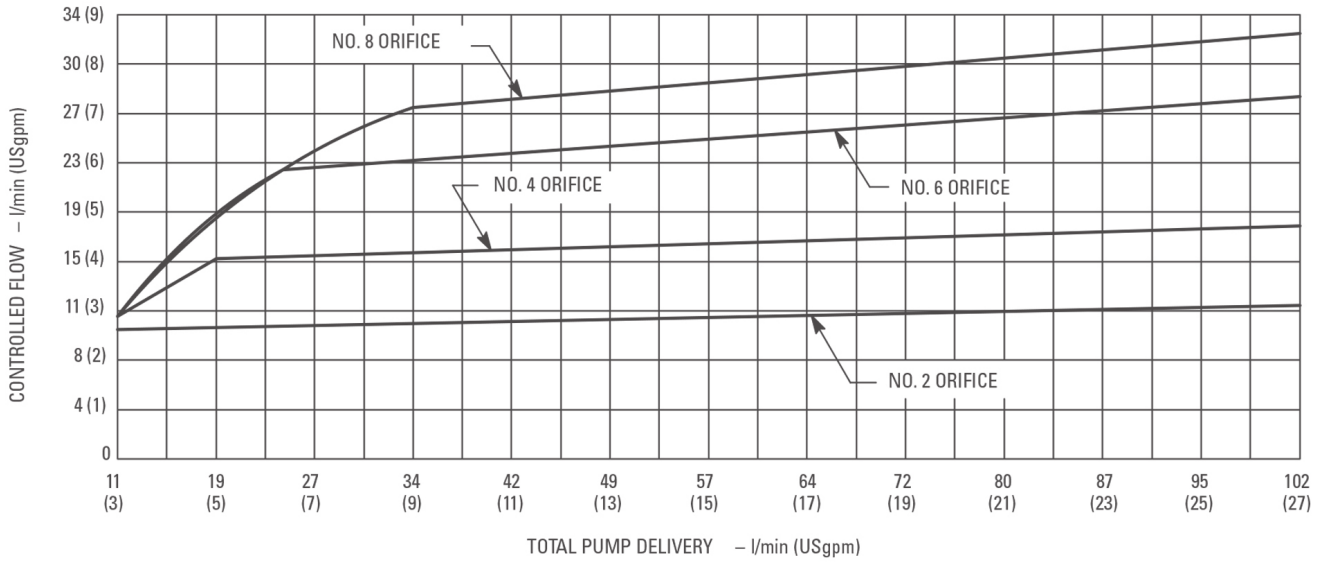
# Single Vane Pump HV20F NF/HV20P Series

## Priority Valve : HV20P



# Single Vane Pump HV20F NF/HV20P Series

## Flow control : HV20F NF



# Fixed Displacement Vane Pump HV2010 Series

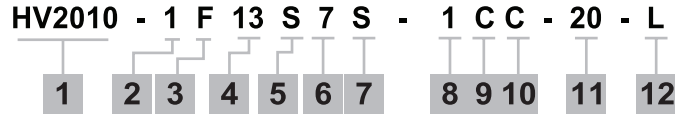
## Specifications

Model	Cartridge Position	Ring Size Delivery at 1200 r/min & 7 bar (100 psi)	Geometric Displacement	Delivery at 1500 r/min & 7 bar (100 psi)	Maximum Intermittent Pressure	Maximum Continuous Pressure	Maximum Speed	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	L/min (USgpm)	bar (psi)	bar (psi)	rpm	kg (lb)
HV2010	Shaft End	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	15.4 (33.9)
		6	19.5 (1.19)	28.39 (7.50)			3400	
		7	22.8 (1.39)	33.11 (8.75)			3000	
		8	26.5 (1.62)	37.85 (10.00)			2800	
		9	29.7 (1.81)	42.57 (11.25)			2800	
		10	34.1 (2.08)	47.30 (12.51)			2500	
		11	36.4 (2.22)	52.04 (13.75)			2500	
		12	39.0 (2.38)	56.77 (15.00)			2400	
	13	42.4 (2.59)	61.50 (16.25)	150 (2200)	140 (2000)	2400		
	Cover End	1	3.3 (0.20)	4.70 (1.25)	175 (2500)	160 (2250)	3000	
		2	6.6 (0.40)	9.40 (2.50)				
		3	9.8 (0.60)	14.20 (3.75)				
		4	13.1 (0.80)	18.90 (5.00)				
		5	16.4 (1.00)	23.60 (6.25)				
6		19.5 (1.19)	28.40 (7.50)	150 (2200)				140 (2000)
7	22.8 (1.39)	33.10 (8.75)	140 (2000)	140 (2000)	2800			

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Fixed Displacement Vane Pump HV2010 Series

## Ordering Code : Double Pump



### 1. Model :

HV2010 - Standard Cover  
SAE B 2 bolts mounting flange J744

### 2. Mounting

1 - Bolt Flange

### 3. Inlet Port Connection

F - 4-bolt Flange Dia. 1.5"

### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)  
8 - 26.5 (1.62)  
9 - 29.7 (1.81)  
10 - 34.1 (2.08)  
11 - 36.4 (2.22)  
12 - 39.0 (2.38)  
13 - 42.4 (2.59)

### 5. Shaft End Outlet Port Connection

S - 1" 1/16 - 12 UN(SAE#12)  
P - 3/4" NPT  
B - 3/4" BSP

### 6. Displacement P2 (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

1 - 3.3 (0.20)  
2 - 6.6 (0.40)  
3 - 9.8 (0.60)  
4 - 13.1 (0.80)  
5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)

### 7. Cover End Outlet Port Connection

S - 3/4" - 16 UNF(SAE#8)  
P - 1/2" NPT  
B - 1/2" BSP

### 8. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
11 - Splined Shaft

### 9. Shaft End Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

### 10. Cover End Outlet Port Position (Viewed from cover end)

A - 135° CCW from inlet  
B - 45° CCW from inlet  
C - 45° CW from inlet  
D - 135° CW from inlet

### 11. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

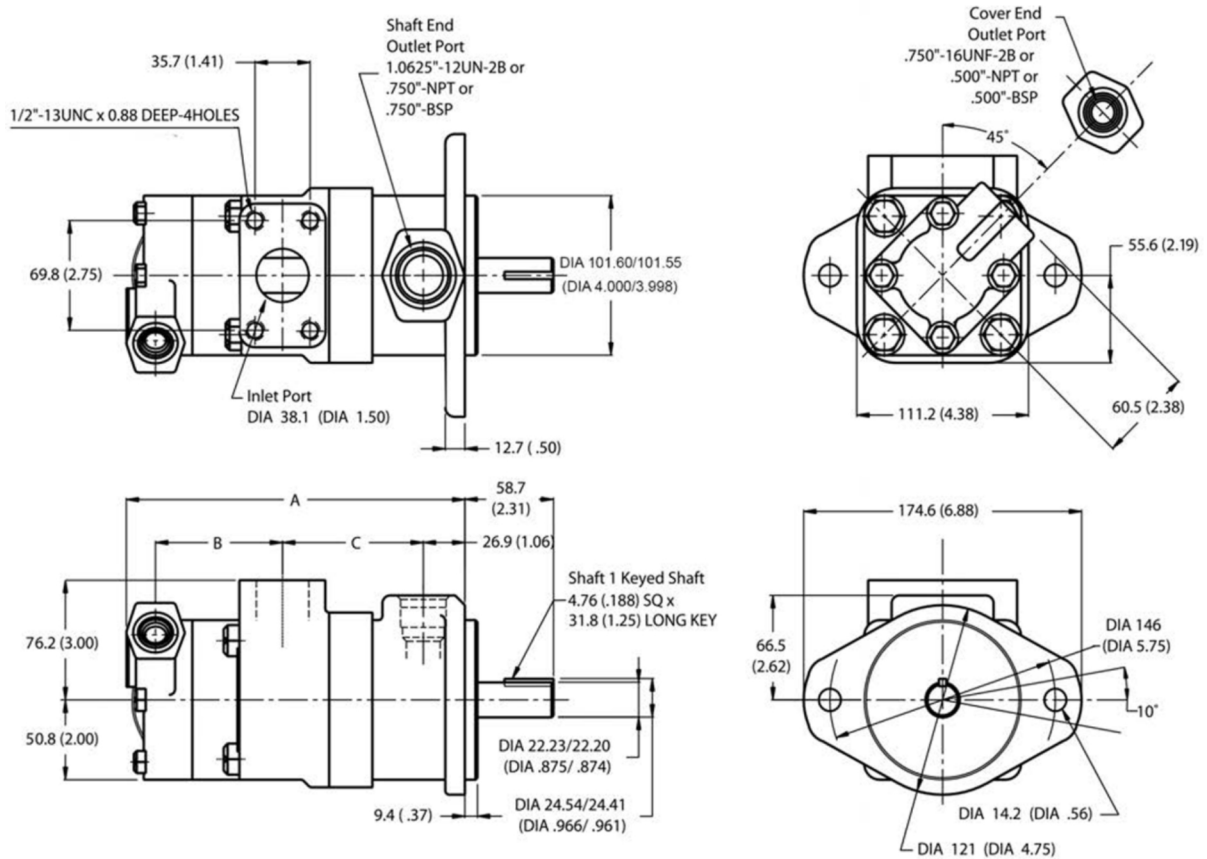
### 12. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

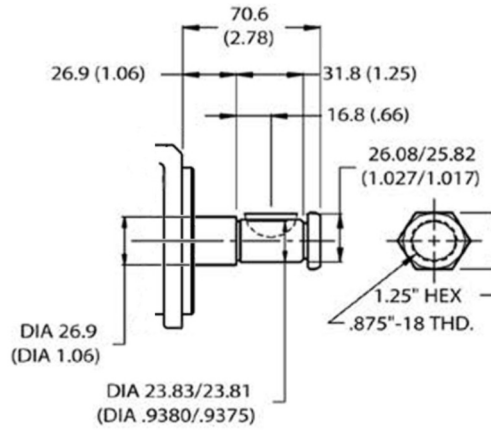
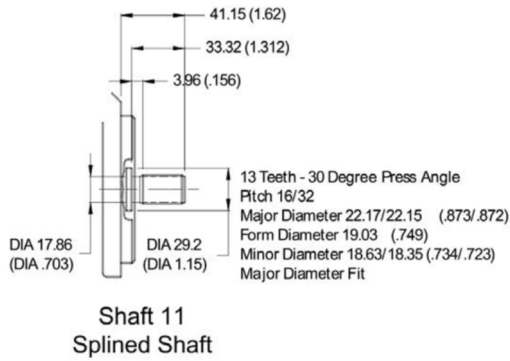
# Fixed Displacement Vane Pump HV2010 Series

## Installation Dimension mm (inch)

### Double Pump HV2010



# Fixed Displacement Vane Pump HV2010 Series



Delivery @ 1200 rpm & 7 bar (100psi)		Dimension		
Shaft End	Cover End	A	B	C
5, 6	1, 2, 3	206.7 (8.14)	75.9 (2.99)	80.0 (3.15)
	4, 5	213.1 (8.39)	82.3 (3.24)	
	6, 7	218.1 (8.59)	87.4 (3.44)	
7, 8, 9	1, 2, 3	213.1 (8.39)	75.9 (2.99)	86.4 (3.40)
	4, 5	219.5 (8.64)	82.3 (3.24)	
	6, 7	224.5 (8.84)	87.4 (3.44)	
10, 11	1, 2, 3	218.2 (8.59)	75.9 (2.99)	91.2 (3.59)
	4, 5	224.5 (8.84)	82.3 (3.24)	
	6, 7	229.6 (9.04)	87.4 (3.44)	
12, 13	1, 2, 3	221.7 (8.73)	75.9 (2.99)	94.7 (3.73)
	4, 5	227.8 (8.97)	82.3 (3.24)	
	6, 7	232.9 (9.17)	87.4 (3.44)	

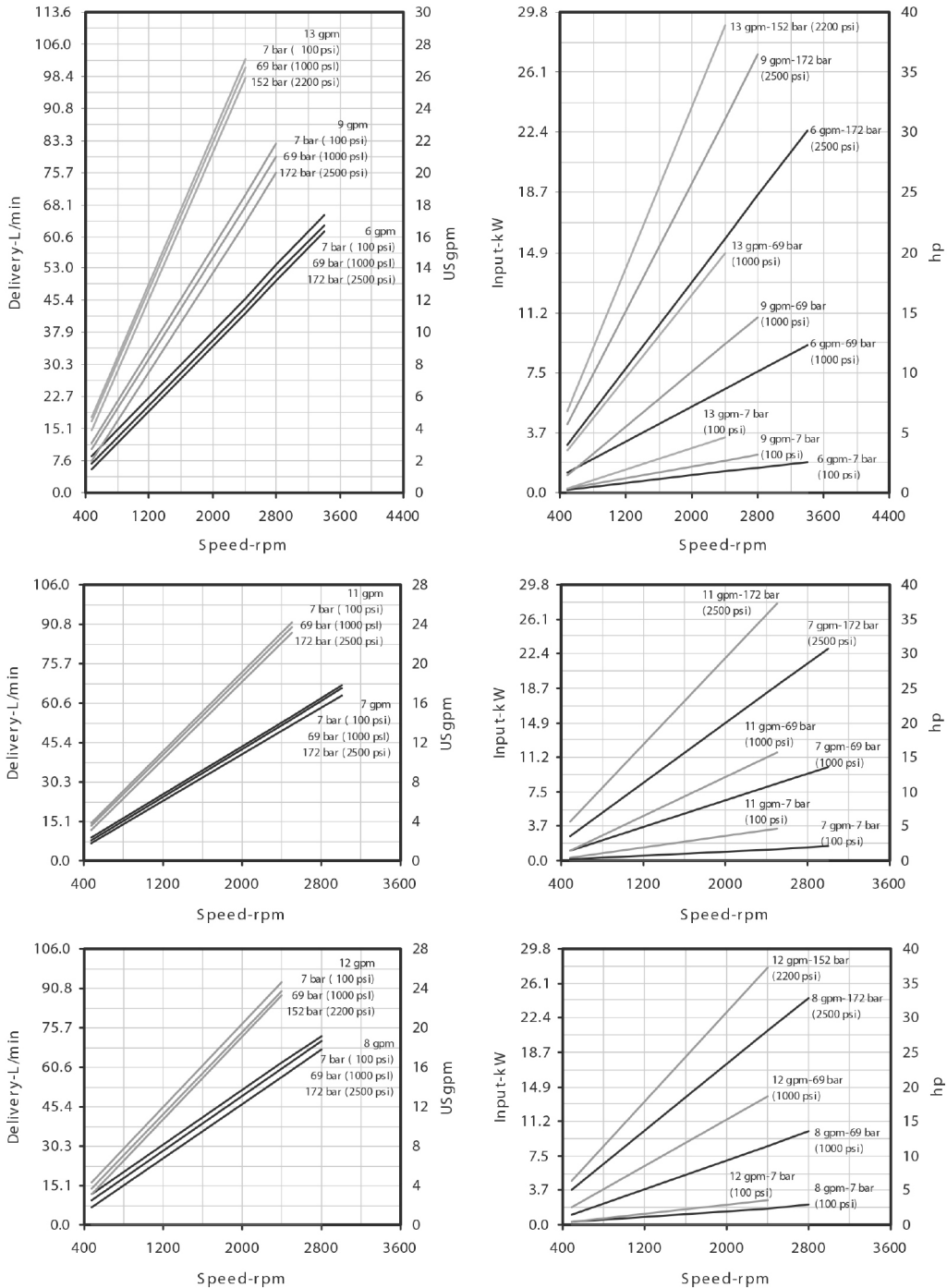


# Fixed Displacement Vane Pump HV2010 Series

## Performance Characteristics

### HV20, Shaft End of HV20

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

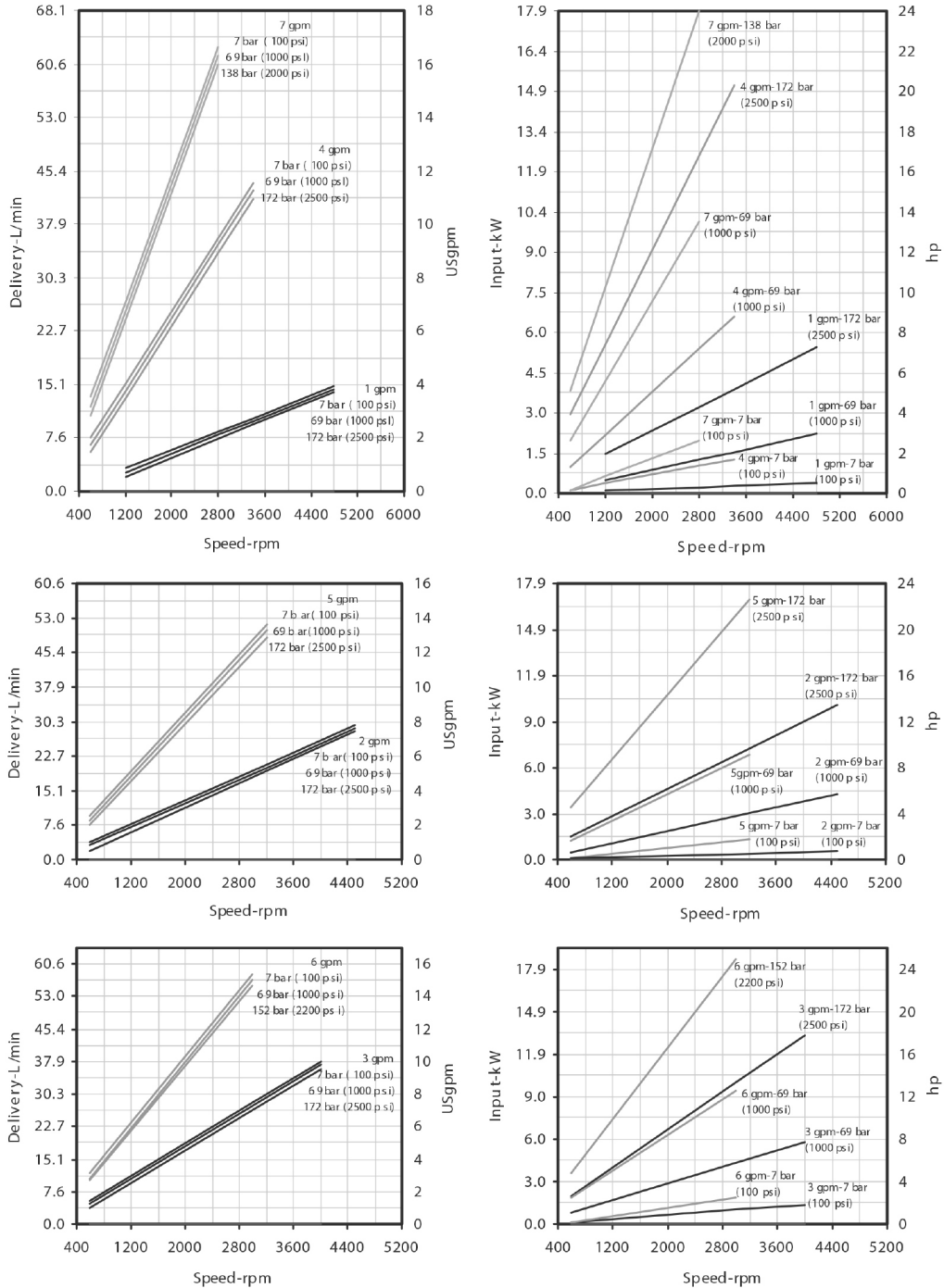


For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Fixed Displacement Vane Pump HV2010 Series

## HV10, Cover End of HV10

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Fixed Displacement Vane Pump HV2010F/ HV2010P Series

## Specifications

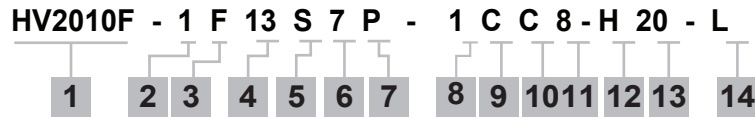
Model	Cartridge Position	Ring Size Delivery at 1200 r/min & 7 bar (100 psi)	Geometric Displacement	Delivery at 1500 r/min & 7 bar (100 psi)	Maximum Intermittent Pressure	Maximum Continuous Pressure	Maximum Speed	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	L/min (USgpm)	bar (psi)	bar (psi)	rpm	kg (lb)
HV2010	Shaft End	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	15.4 (33.9)
		6	19.5 (1.19)	28.39 (7.50)			3400	
		7	22.8 (1.39)	33.11 (8.75)			3000	
		8	26.5 (1.62)	37.85 (10.00)			2800	
		9	29.7 (1.81)	42.57 (11.25)			2800	
		10	34.1 (2.08)	47.30 (12.51)			2500	
		11	36.4 (2.22)	52.04 (13.75)			2500	
		12	39.0 (2.38)	56.77 (15.00)			2400	
	13	42.4 (2.59)	61.50 (16.25)	150 (2200)	140 (2000)	2400		
	Cover End	1	3.3 (0.20)	4.70 (1.25)	175 (2500)	160 (2250)	3000	
		2	6.6 (0.40)	9.40 (2.50)				
		3	9.8 (0.60)	14.20 (3.75)				
		4	13.1 (0.80)	18.90 (5.00)				
		5	16.4 (1.00)	23.60 (6.25)				
6		19.5 (1.19)	28.40 (7.50)	150 (2200)				140 (2000)
	7	22.8 (1.39)	33.10 (8.75)	140 (2000)	140 (2000)	2800		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Fixed Displacement Vane Pump

## HV2010F/ HV2010P Series

### Ordering Code : Double Pump

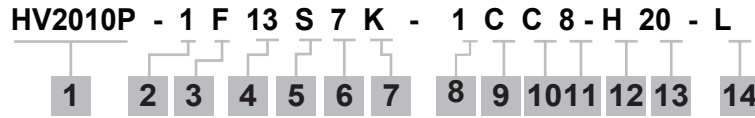


- |  |  |
|--|--|
| <p>1. Model :<br/>HV2010F - Flow Control Cover<br/>SAE B 2 bolts mounting flange J744</p> <p>2. Mounting<br/>1 - Bolt Flange</p> <p>3. Inlet Port Connection<br/>F - 4-bolt Flange Dia. 1.5"</p> <p>4. Displacement (at 1200 rpm)<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> <li>8 - 26.5 (1.62)</li> <li>9 - 29.7 (1.81)</li> <li>10 - 34.1 (2.08)</li> <li>11 - 36.4 (2.22)</li> <li>12 - 39.0 (2.38)</li> <li>13 - 42.4 (2.59)</li> </ul> <p>5. Shaft End Outlet Port Connection</p> <ul style="list-style-type: none"> <li>S - 1" 1/16 - 12 UN(SAE#12)</li> <li>P - 3/4" NPT</li> <li>B - 3/4" BSP</li> </ul> <p>6. Displacement P2 (at 1200 rpm)<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>1 - 3.3 (0.20)</li> <li>2 - 6.6 (0.40)</li> <li>3 - 9.8 (0.60)</li> <li>4 - 13.1 (0.80)</li> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> </ul> <p>7. Cover End Outlet Port Connection</p> <ul style="list-style-type: none"> <li>P - 3/4" - 16 UNF(SAE#8) for outlet and 1/2" NPT for tank port</li> <li>T - 3/4" - 16 UNF(SAE#8) for outlet and tank port</li> </ul> | <p>8. Type of shaft</p> <ul style="list-style-type: none"> <li>1 - Straight Keyed Shaft</li> <li>3 - Threaded with woodruff Keyed Shaft</li> <li>11 - Splined Shaft</li> </ul> <p>9. Shaft End Outlet Port Position (Viewed from cover end)</p> <ul style="list-style-type: none"> <li>A - Opposite inlet</li> <li>B - 90° CCW from inlet</li> <li>C - Inline with inlet</li> <li>D - 90° CW from inlet</li> </ul> <p>10. Cover End Outlet Port Position (Viewed from cover end)</p> <ul style="list-style-type: none"> <li>A - 135° CCW from inlet</li> <li>B - 45° CCW from inlet</li> <li>C - 45° CW from inlet</li> <li>D - 135° CW from inlet</li> </ul> <p>11. Flow rate Setting L/min (USgpm)</p> <ul style="list-style-type: none"> <li>2 - 7.6 (2)</li> <li>3 - 11.4 (3)</li> <li>4 - 15.2 (4)</li> <li>5 - 19.0 (5)</li> <li>6 - 22.7 (6)</li> <li>7 - 26.5 (7)</li> <li>8 - 30.3 (8)</li> </ul> <p>12. Pressure Setting bar (psi)</p> <ul style="list-style-type: none"> <li>A - 17 (250)</li> <li>B - 34 (500)</li> <li>C - 52 (750)</li> <li>D - 69 (1000)</li> <li>E - 86 (1250)</li> <li>F - 103 (1500)</li> <li>G - 121 (1750)</li> <li>H - 138 (2000)</li> <li>J - 150 (2250)</li> <li>K - 172 (2500)</li> </ul> <p>13. Design<br/>Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p>14. Shaft Rotation (viewed from shaft end)</p> <ul style="list-style-type: none"> <li>R - Turn right</li> <li>L - Turn left</li> </ul> |
|--|--|

# Fixed Displacement Vane Pump

## HV2010F/ HV2010P Series

### Ordering Code : Double Pump

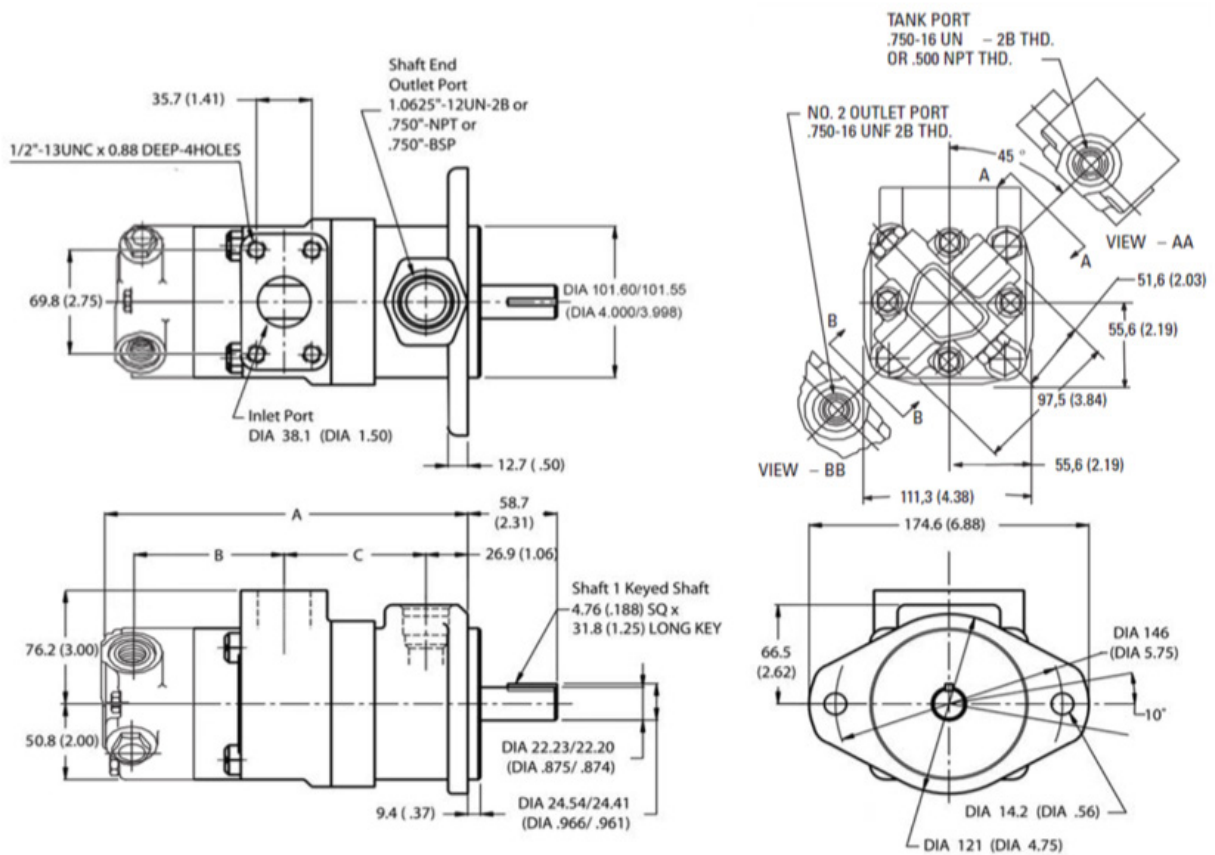


- |  |  |
|--|--|
| <p><b>1. Model :</b><br/>HV2010P - Priority Valve Cover<br/>SAE B 2 bolts mounting flange J744</p> <p><b>2. Mounting</b><br/>1 - Bolt Flange</p> <p><b>3. Inlet Port Connection</b><br/>F - 4-bolt Flange Dia. 1.5"</p> <p><b>4. Displacement (at 1200 rpm)</b><br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> <li>8 - 26.5 (1.62)</li> <li>9 - 29.7 (1.81)</li> <li>10 - 34.1 (2.08)</li> <li>11 - 36.4 (2.22)</li> <li>12 - 39.0 (2.38)</li> <li>13 - 42.4 (2.59)</li> </ul> <p><b>5. Shaft End Outlet Port Connection</b><br/>S - 1" 1/16 - 12 UN(SAE#12)<br/>P - 3/4" NPT<br/>B - 3/4" BSP</p> <p><b>6. Displacement P2 (at 1200 rpm)</b><br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>1 - 3.3 (0.20)</li> <li>2 - 6.6 (0.40)</li> <li>3 - 9.8 (0.60)</li> <li>4 - 13.1 (0.80)</li> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> </ul> <p><b>7. Cover End Outlet Port Connection</b><br/>K - 9/16" - 18 UNF for primary outlet and tank port 13. Design and 3/4" - 16 UNF(SAE#8) for secondary outlet</p> | <p><b>8. Type of shaft</b></p> <ul style="list-style-type: none"> <li>1 - Straight Keyed Shaft</li> <li>3 - Threaded with woodruff Keyed Shaft</li> <li>11 - Splined Shaft</li> </ul> <p><b>9. Shaft End Outlet Port Position (Viewed from cover end)</b><br/>A - Opposite inlet<br/>B - 90° CCW from inlet<br/>C - Inline with inlet<br/>D - 90° CW from inlet</p> <p><b>10. Cover End Outlet Port Position (Viewed from cover end)</b><br/>A - 135° CCW from inlet<br/>B - 45° CCW from inlet<br/>C - 45° CW from inlet<br/>D - 135° CW from inlet</p> <p><b>11. Flow rate Setting L/min (USgpm)</b></p> <ul style="list-style-type: none"> <li>2 - 7.6 (2)</li> <li>3 - 11.4 (3)</li> <li>4 - 15.2 (4)</li> <li>5 - 19.0 (5)</li> <li>6 - 22.7 (6)</li> <li>7 - 26.5 (7)</li> <li>8 - 30.3 (8)</li> </ul> <p><b>12. Pressure Setting bar (psi)</b></p> <ul style="list-style-type: none"> <li>A - 17 (250)</li> <li>B - 34 (500)</li> <li>C - 52 (750)</li> <li>D - 69 (1000)</li> <li>E - 86 (1250)</li> <li>F - 103 (1500)</li> <li>G - 121 (1750)</li> <li>H - 138 (2000)</li> <li>J - 150 (2250)</li> <li>K - 172 (2500)</li> </ul> <p><b>14. Shaft Rotation (viewed from shaft end)</b><br/>R - Turn right<br/>L - Turn left</p> |
|--|--|

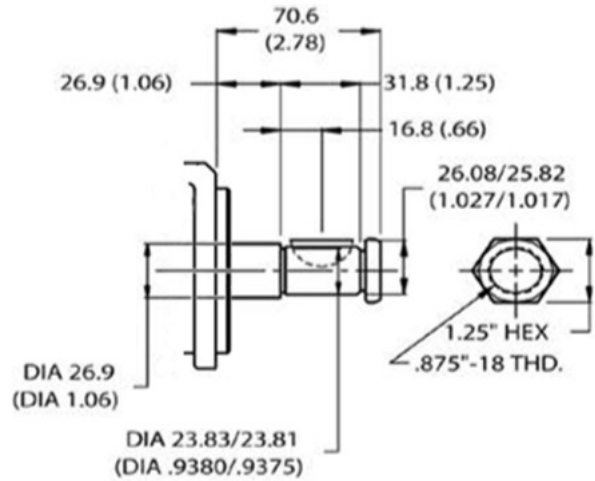
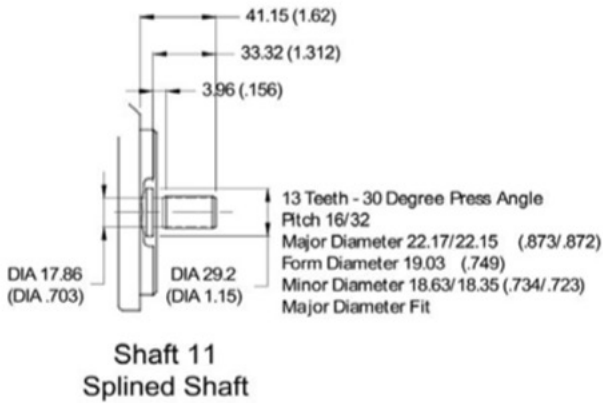
# Fixed Displacement Vane Pump HV2010F/ HV2010P Series

## Installation Dimension mm (inch)

### Double Pump HV2010F



# Fixed Displacement Vane Pump HV2010F/ HV2010P Series

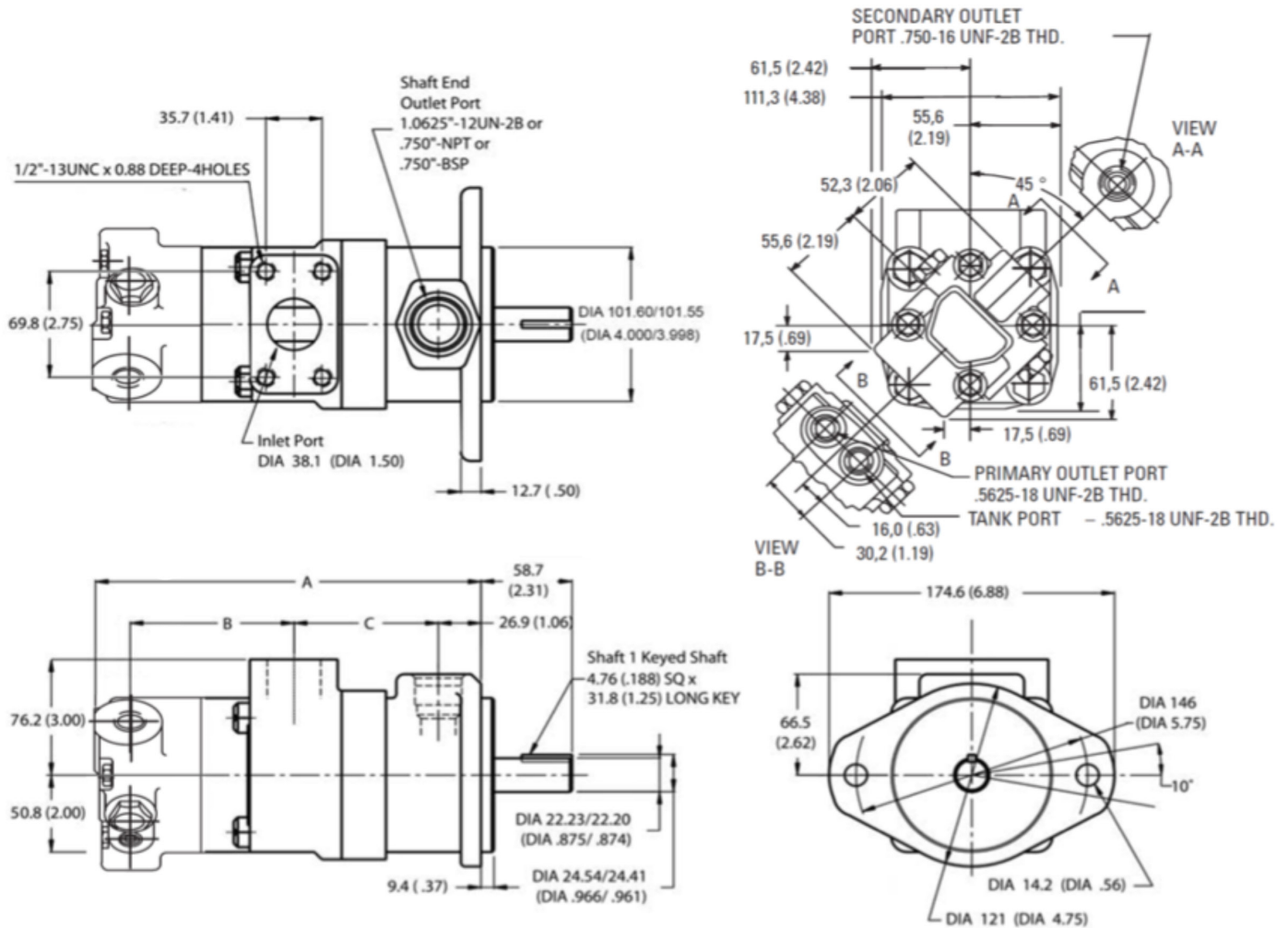


Delivery @ 1200 rpm & 7 bar (100psi)		Dimension		
Shaft End	Cover End	A	B	C
5, 6	1, 2, 3	219.7 (8.65)	93.5 (3.68)	80.0 (3.15)
	4, 5	226.0 (8.90)	99.8 (3.93)	
	6, 7	231.1 (9.10)	104.9 (4.13)	
7, 8, 9	1, 2, 3	226.1 (8.90)	93.5 (3.68)	86.4 (3.40)
	4, 5	232.4 (9.15)	99.8 (3.93)	
	6, 7	237.5 (9.35)	104.9 (4.13)	
10, 11	1, 2, 3	230.9 (9.09)	93.5 (3.68)	91.2 (3.59)
	4, 5	237.2 (9.34)	99.8 (3.93)	
	6, 7	242.3 (9.54)	104.9 (4.13)	
12, 13	1, 2, 3	234.4 (9.23)	93.5 (3.68)	94.7 (3.73)
	4, 5	240.8 (9.48)	99.8 (3.93)	
	6, 7	245.9 (9.68)	104.9 (4.13)	

# Fixed Displacement Vane Pump HV2010F/ HV2010P Series

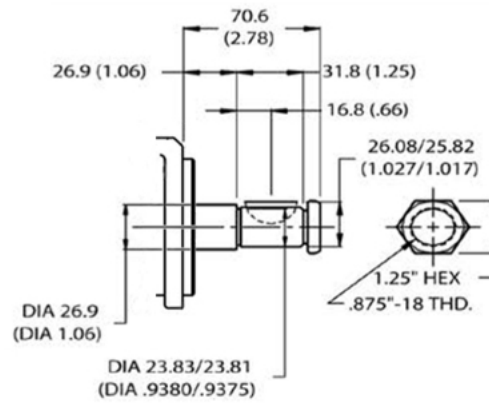
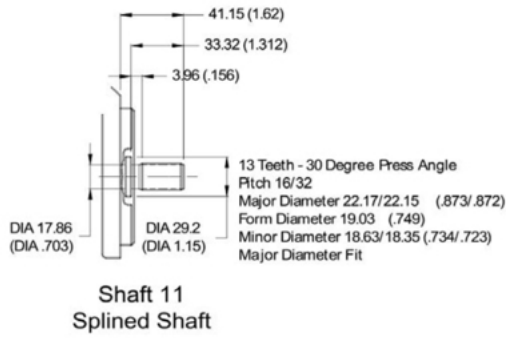
## Installation Dimension mm (inch)

### Double Pump HV2010P





# Fixed Displacement Vane Pump HV2010F/ HV2010P Series



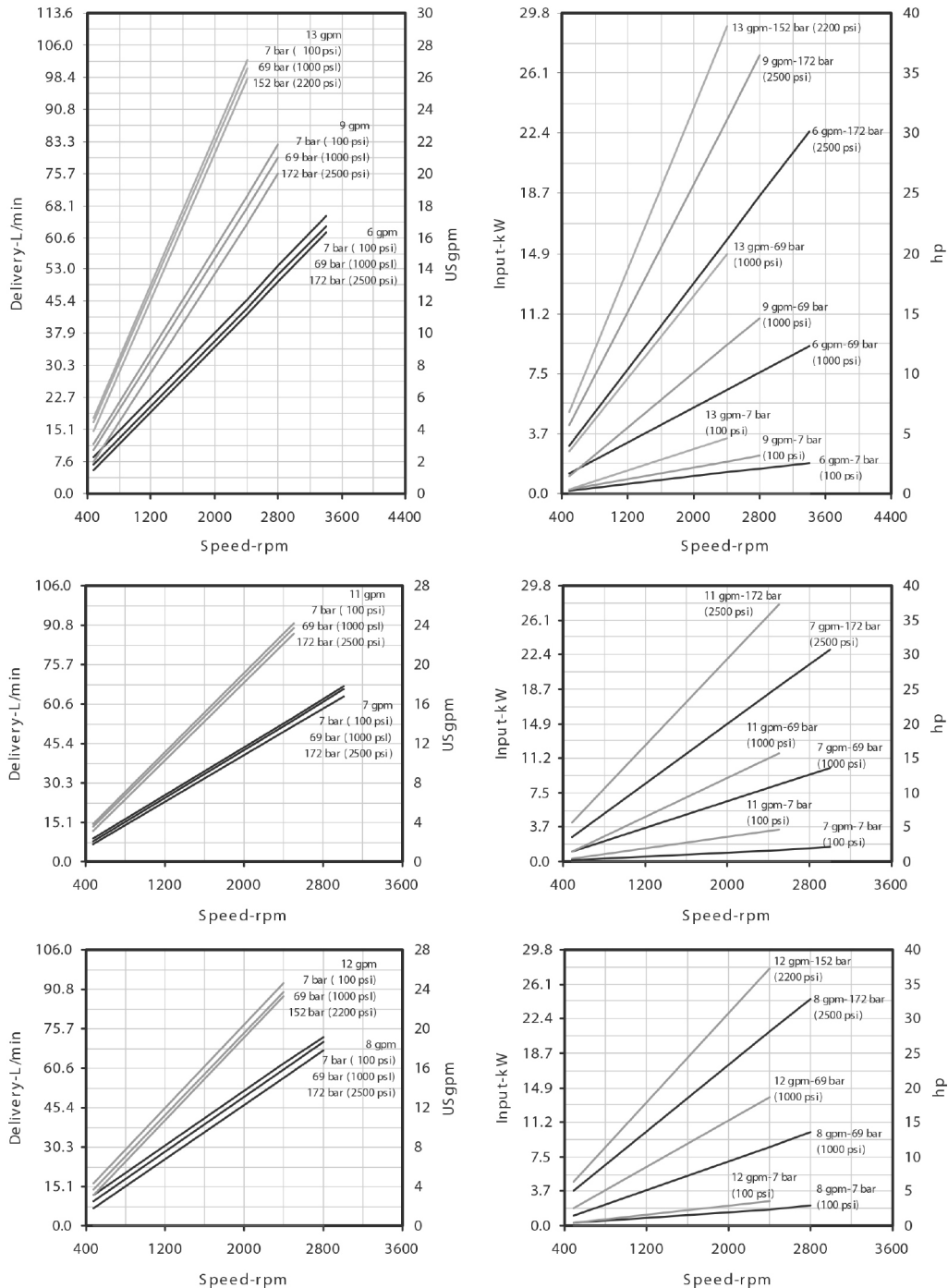
Delivery @ 1200 rpm & 7 bar (100psi)		Dimension		
Shaft End	Cover End	A	B	C
5, 6	1, 2, 3	221.2 (8.71)	93.5 (3.68)	80.0 (3.15)
	4, 5	227.5 (8.96)	99.8 (3.93)	
	6, 7	232.6 (9.16)	104.9 (4.13)	
7, 8, 9	1, 2, 3	227.6 (8.96)	93.5 (3.68)	86.4 (3.40)
	4, 5	233.9 (9.21)	99.8 (3.93)	
	6, 7	239.0 (9.41)	104.9 (4.13)	
10, 11	1, 2, 3	232.4 (9.15)	93.5 (3.68)	91.2 (3.59)
	4, 5	238.8 (9.40)	99.8 (3.93)	
	6, 7	243.8 (9.60)	104.9 (4.13)	
12, 13	1, 2, 3	236.0 (9.29)	93.5 (3.68)	94.7 (3.73)
	4, 5	242.3 (9.54)	99.8 (3.93)	
	6, 7	247.4 (9.74)	104.9 (4.13)	

# Fixed Displacement Vane Pump HV2010F/ HV2010P Series

## Performance Characteristics

### HV20, Shaft End of HV20

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

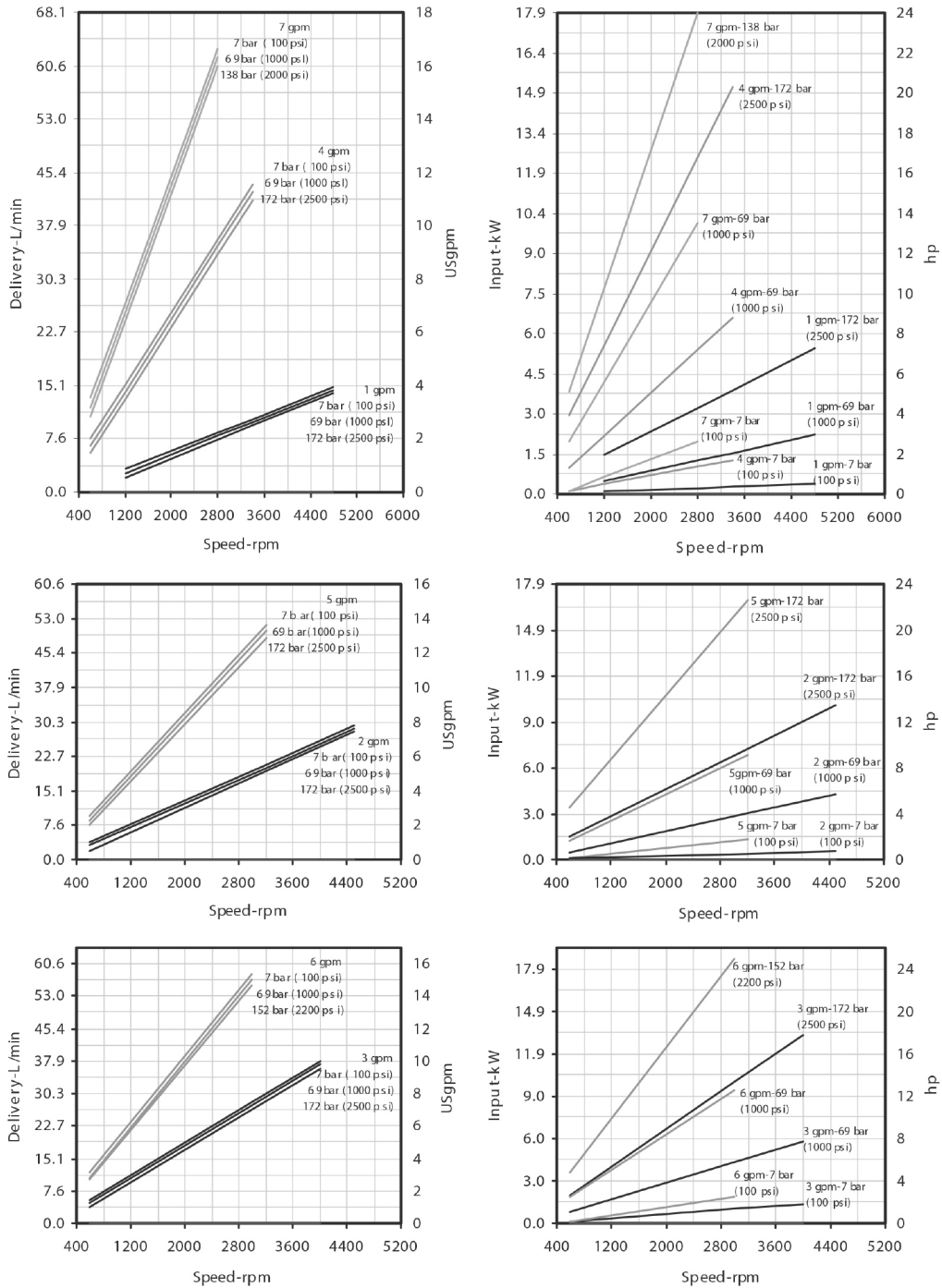


For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Fixed Displacement Vane Pump HV2020F/ HV2020P Series

## HV10, Cover End of HV2010

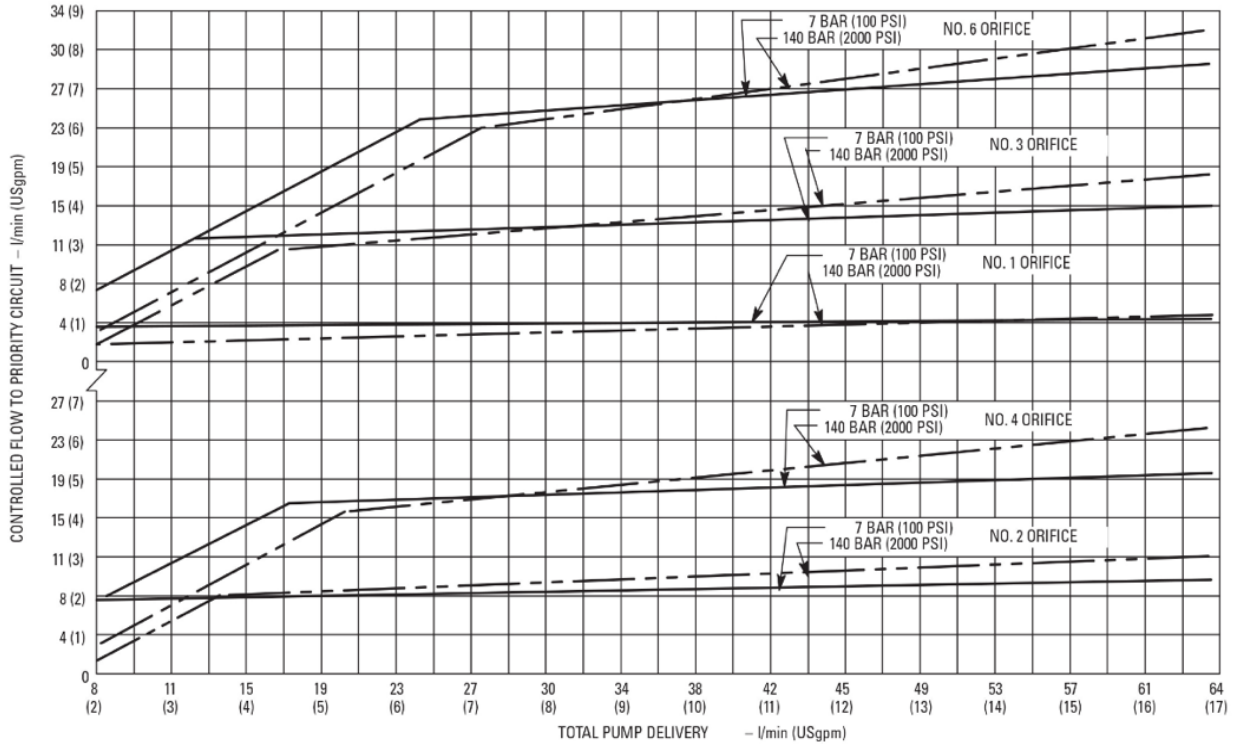
Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

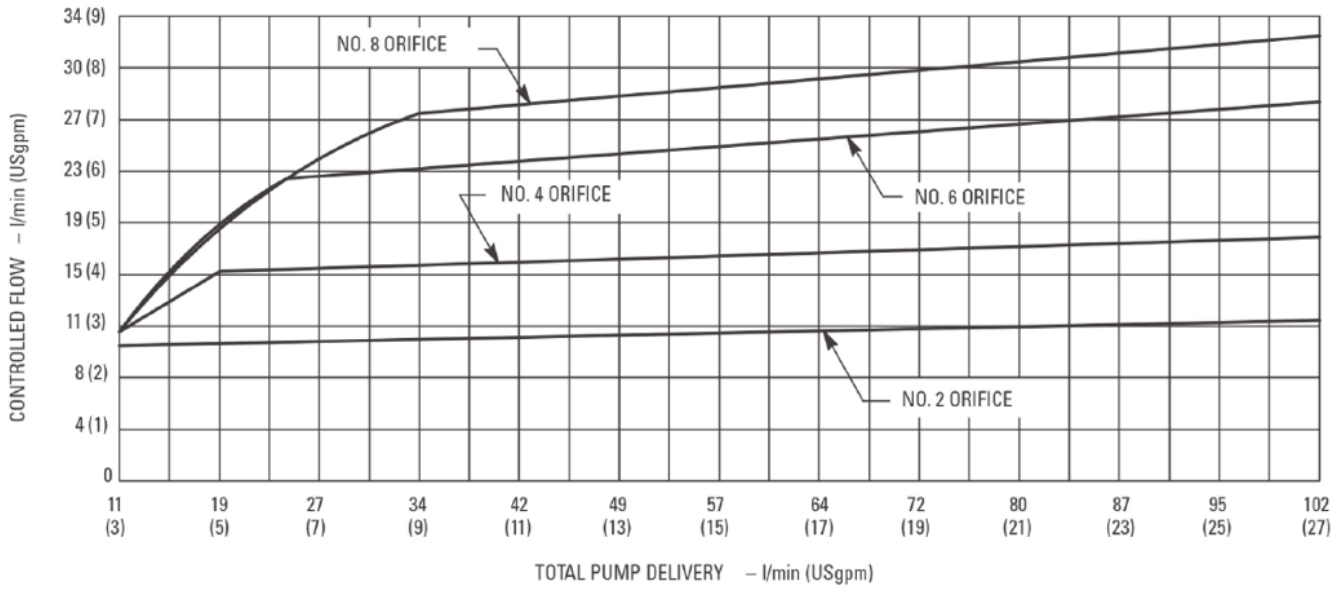
# Fixed Displacement Vane Pump HV2020F/ HV2020P Series

Priority Valve : HV2010P



# Fixed Displacement Vane Pump HV2020F/ HV2020P Series

## Flow Control : HV2010F



# Fixed Displacement Vane Pump HV2020 Series

## Specifications

Model	Cartridge Position	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Maximum Intermittent Pressure bar (psi)	Maximum Continuous Pressure bar (psi)	Maximum Speed rpm	Weight kg (lb)
HV2020	Shaft End	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	17.2 (37.8)
		6	19.5 (1.19)	28.39 (7.50)			3400	
		7	22.8 (1.39)	33.11 (8.75)			3000	
		8	26.5 (1.62)	37.85 (10.00)			2800	
		9	29.7 (1.81)	42.57 (11.25)			2800	
		10	34.1 (2.08)	47.30 (12.51)			2500	
		11	36.4 (2.22)	52.04 (13.75)			2500	
		12	39.0 (2.38)	56.77 (15.00)			2400	
	Cover End	13	42.4 (2.59)	61.50 (16.25)	150 (2200)	140 (2000)	2400	
		5	16.4 (1.00)	23.60 (6.25)	175 (2500)	175 (2500)	3000	
		6	19.5 (1.19)	28.39 (7.50)			3000	
		7	22.8 (1.39)	33.11 (8.75)			3000	
		8	26.5 (1.62)	37.85 (10.00)			2800	
		9	29.7 (1.81)	42.57 (11.25)			2800	
10	34.1 (2.08)	47.30 (12.51)	2500					
	11	36.4 (2.22)	52.04 (13.75)			2500		

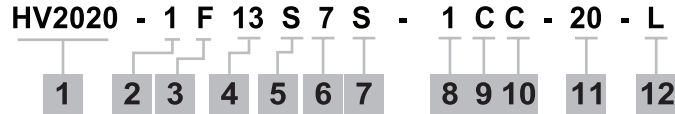
\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Fixed Displacement Vane Pump

## HV200 Series

### Ordering Code : Double Pump

HV2020 - 1 F 13 S 7 S - 1 C C - 20 - L



#### 1. Model :

HV2020 - Standard Cover  
SAE B 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

F - 4-bolt Flange Dia. 2.0"

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)  
8 - 26.5 (1.62)  
9 - 29.7 (1.81)  
10 - 34.1 (2.08)  
11 - 36.4 (2.22)  
12 - 39.0 (2.38)  
13 - 42.4 (2.59)

#### 5. Shaft End Outlet Port Connection

S - 1" 1/16 - 12 UN(SAE#12)  
P - 3/4" NPT  
B - 3/4" BSP

#### 6. Displacement P2 (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)  
8 - 26.5 (1.62)  
9 - 29.7 (1.81)  
10 - 34.1 (2.08)  
11 - 36.4 (2.22)

#### 7. Cover End Outlet Port Connection

S - 1" 1/16 - 12 UN(SAE#12)  
P - 3/4" NPT  
B - 3/4" BSP

#### 8. Type of shaft

1 - Straight Keyed Shaft  
11 - Splined Shaft

#### 9. Shaft End Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 10. Cover End Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 11. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

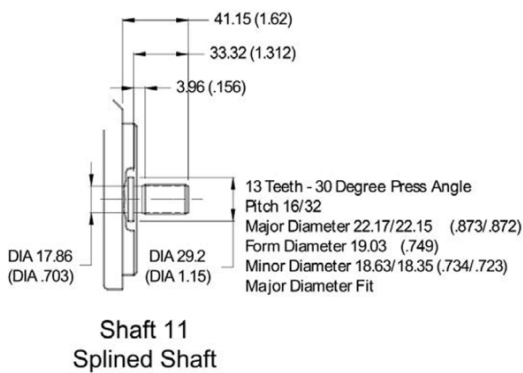
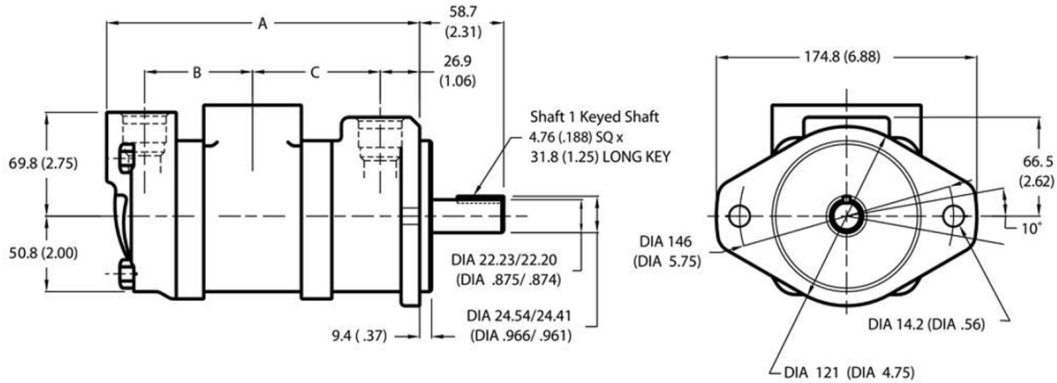
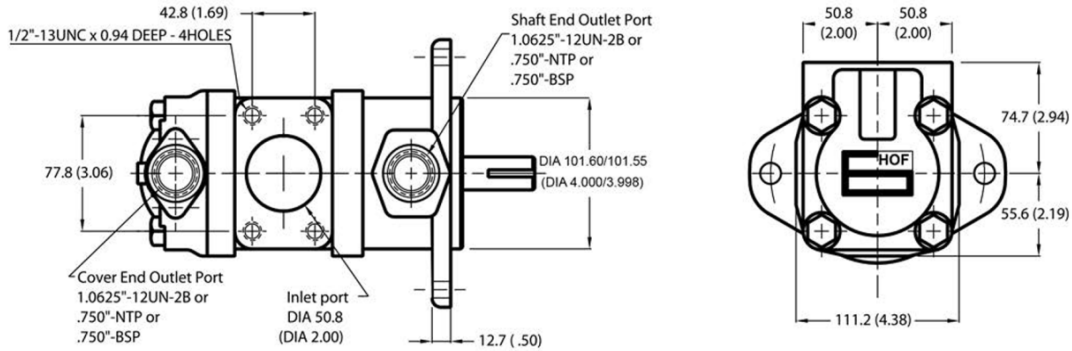
#### 12. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

# Fixed Displacement Vane Pump HV200 Series

## Installation Dimension mm (inch)

### Double Pump HV200



Delivery @ 1200 rpm & 7 bar (100psi)		Dimension		
Shaft End	Cover End	A	B	C
5, 6	5, 6	207.2 (8.16)	73.7 (2.90)	80.7 (3.18)
	7, 8, 9	213.6 (8.41)	80.0 (3.15)	
	10, 11	218.6 (8.61)	85.1 (3.35)	
7, 8, 9	5, 6	213.6 (8.41)	73.7 (2.90)	87.1 (3.43)
	7, 8, 9	220.0 (8.66)	80.0 (3.15)	
	10, 11	225.0 (8.86)	85.1 (3.35)	
10, 11	5, 6	218.7 (8.61)	73.7 (2.90)	92.2 (3.63)
	7, 8, 9	225.0 (8.86)	80.0 (3.15)	
	10, 11	229.9 (9.05)	85.1 (3.35)	
12, 13	5, 6	222.3 (8.75)	73.7 (2.90)	95.5 (3.76)
	7, 8, 9	228.3 (8.99)	80.0 (3.15)	
	10, 11	233.4 (9.19)	85.1 (3.35)	

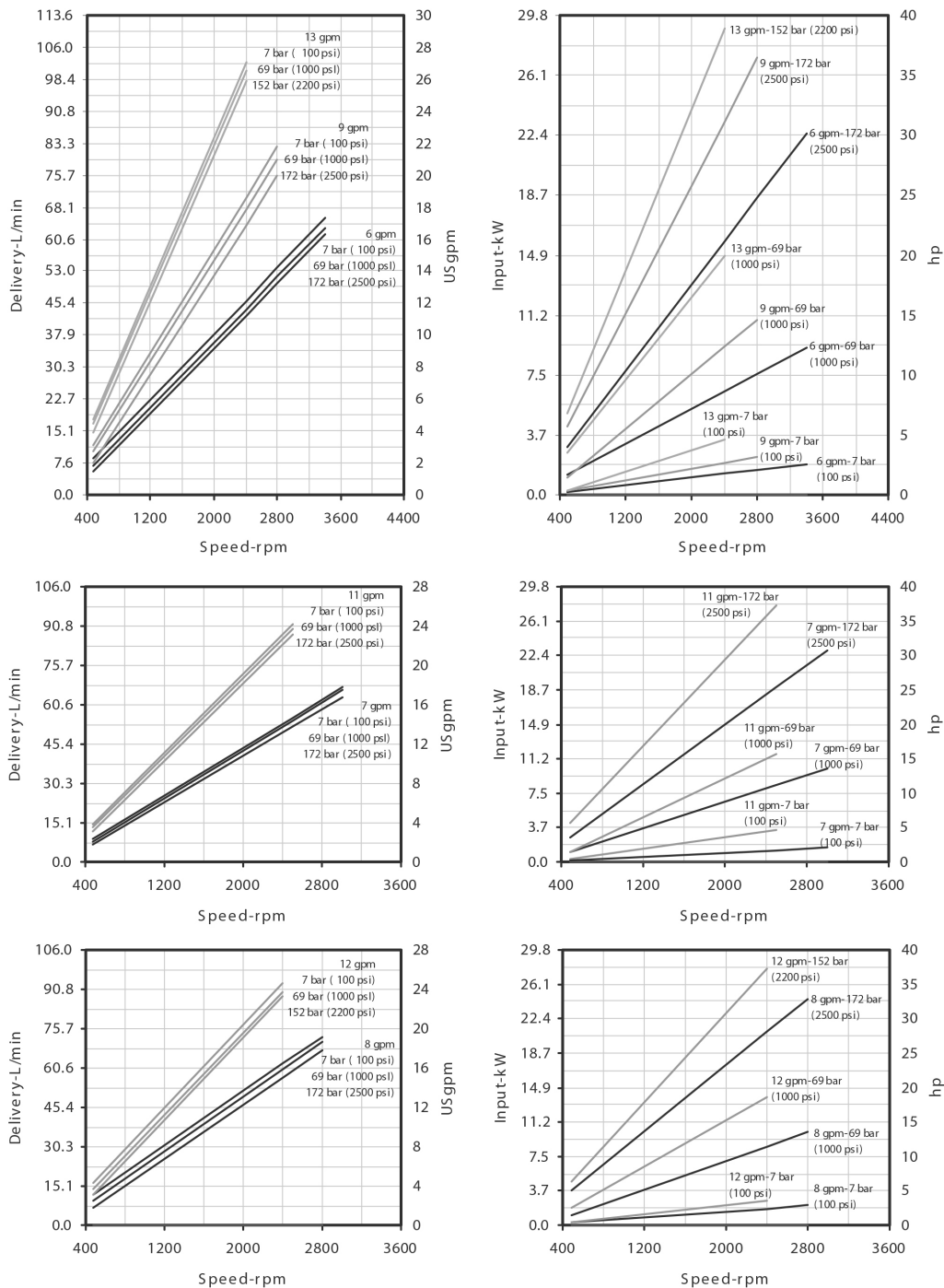


# Fixed Displacement Vane Pump HV200 Series

## Performance Characteristics

HV20, Shaft End of HV20, Cover End of HV20

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Fixed Displacement Vane Pump

## HV2020F NF/HV2020P Series

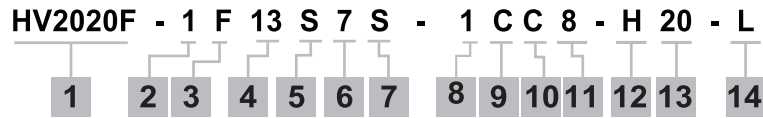
### Specifications

Model	Cartridge Position	Ring Size Delivery at 1200 r/min & 7 bar (100 psi)	Geometric Displacement	Delivery at 1500 r/min & 7 bar (100 psi)	Maximum Intermittent Pressure	Maximum Continuous Pressure	Maximum Speed	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	L/min (USgpm)	bar (psi)	bar (psi)	rpm	kg (lb)
HV2020F NF & HV2020P	Shaft End	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	17.2 (37.8)
		6	19.5 (1.19)	28.39 (7.50)			3400	
		7	22.8 (1.39)	33.11 (8.75)			3000	
		8	26.5 (1.62)	37.85 (10.00)			2800	
		9	29.7 (1.81)	42.57 (11.25)			2800	
		10	34.1 (2.08)	47.30 (12.51)			2500	
		11	36.4 (2.22)	52.04 (13.75)			2500	
		12	39.0 (2.38)	56.77 (15.00)			2400	
	13	42.4 (2.59)	61.50 (16.25)	150 (2200)	140 (2000)	2400		
	Cover End	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	175 (2500)	3000	
		6	19.5 (1.19)	28.39 (7.50)			3000	
		7	22.8 (1.39)	33.11 (8.75)			3000	
		8	26.5 (1.62)	37.85 (10.00)			2800	
		9	29.7 (1.81)	42.57 (11.25)			2800	
10		34.1 (2.08)	47.30 (12.51)	2500				
		11	36.4 (2.22)	52.04 (13.75)		2500		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Fixed Displacement Vane Pump HV2020F NF/HV2020P Series

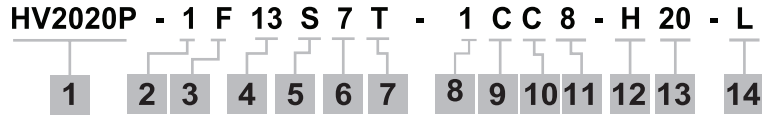
## Ordering Code : Double Pump HV2020F NF



- |  |  |
|--|--|
| <p><b>1. Model :</b><br/>                 HV2020F - Flow Control Cover<br/>                 HV2020NF - Flow Control Cover &amp; Internal Drain<br/>                 SAE B 2 bolts mounting flange J744</p> <p><b>2. Mounting</b><br/>                 1 - Bolt Flange</p> <p><b>3. Inlet Port Connection</b><br/>                 F - 4-bolt Flange Dia. 2.0"</p> <p><b>4. Displacement (at 1200 rpm)</b><br/>                 Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)<br/>                 5 - 16.4 (1.00)<br/>                 6 - 19.5 (1.19)<br/>                 7 - 22.8 (1.39)<br/>                 8 - 26.5 (1.62)<br/>                 9 - 29.7 (1.81)<br/>                 10 - 34.1 (2.08)<br/>                 11 - 36.4 (2.22)<br/>                 12 - 39.0 (2.38)<br/>                 13 - 42.4 (2.59)</p> <p><b>5. Shaft End Outlet Port Connection</b><br/>                 S - 1" 1/16 - 12 UN(SAE#12)<br/>                 P - 3/4" NPT<br/>                 B - 3/4" BSP</p> <p><b>6. Displacement P2 (at 1200 rpm)</b><br/>                 Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)<br/>                 5 - 16.4 (1.00)<br/>                 6 - 19.5 (1.19)<br/>                 7 - 22.8 (1.39)<br/>                 8 - 26.5 (1.62)<br/>                 9 - 29.7 (1.81)<br/>                 10 - 34.1 (2.08)<br/>                 11 - 36.4 (2.22)</p> <p><b>7. Cover End Outlet Port Connection</b><br/>                 HV2020F<br/>                 S - 3/4" - 16 UNF (SAE#8) for outlet and 1" 1/16 - 12 UN (SAE#12) for tank port<br/>                 P - 3/4" - 16 UNF(SAE#8) for outlet and 1/2" NPT for tank port<br/>                 T - 3/4" - 16 UNF(SAE#8) for outlet and tank port<br/>                 HV2020NF<br/>                 S - 3/4" - 16 UNF (SAE#8) for outlet</p> | <p><b>8. Type of shaft</b><br/>                 1 - Straight Keyed Shaft<br/>                 11 - Splined Shaft</p> <p><b>9. Shaft End Outlet Port Position (Viewed from cover end)</b><br/>                 A - Opposite inlet<br/>                 B - 90° CCW from inlet<br/>                 C - Inline with inlet<br/>                 D - 90° CW from inlet</p> <p><b>10. Cover End Outlet Port Position (Viewed from cover end)</b><br/>                 A - Opposite inlet<br/>                 B - 90° CCW from inlet<br/>                 C - Inline with inlet<br/>                 D - 90° CW from inlet</p> <p><b>11. Flow rate Setting L/min (USgpm)</b><br/>                 2 - 7.6 (2)<br/>                 3 - 11.4 (3)<br/>                 4 - 15.2 (4)<br/>                 5 - 19.0 (5)<br/>                 6 - 22.7 (6)<br/>                 7 - 26.5 (7)<br/>                 8 - 30.3 (8)</p> <p><b>12. Pressure Setting bar (psi)</b><br/>                 A - 17 (250)<br/>                 B - 34 (500)<br/>                 C - 52 (750)<br/>                 D - 69 (1000)<br/>                 E - 86 (1250)<br/>                 F - 103 (1500)<br/>                 G - 121 (1750)<br/>                 H - 138 (2000)<br/>                 J - 150 (2250)<br/>                 K - 172 (2500)</p> <p><b>13. Design</b><br/>                 Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p><b>14. Shaft Rotation (viewed from shaft end)</b><br/>                 R - Turn right<br/>                 L - Turn left</p> |
|--|--|

# Fixed Displacement Vane Pump HV2020F NF/HV2020P Series

## Ordering Code : Double Pump HV2020P

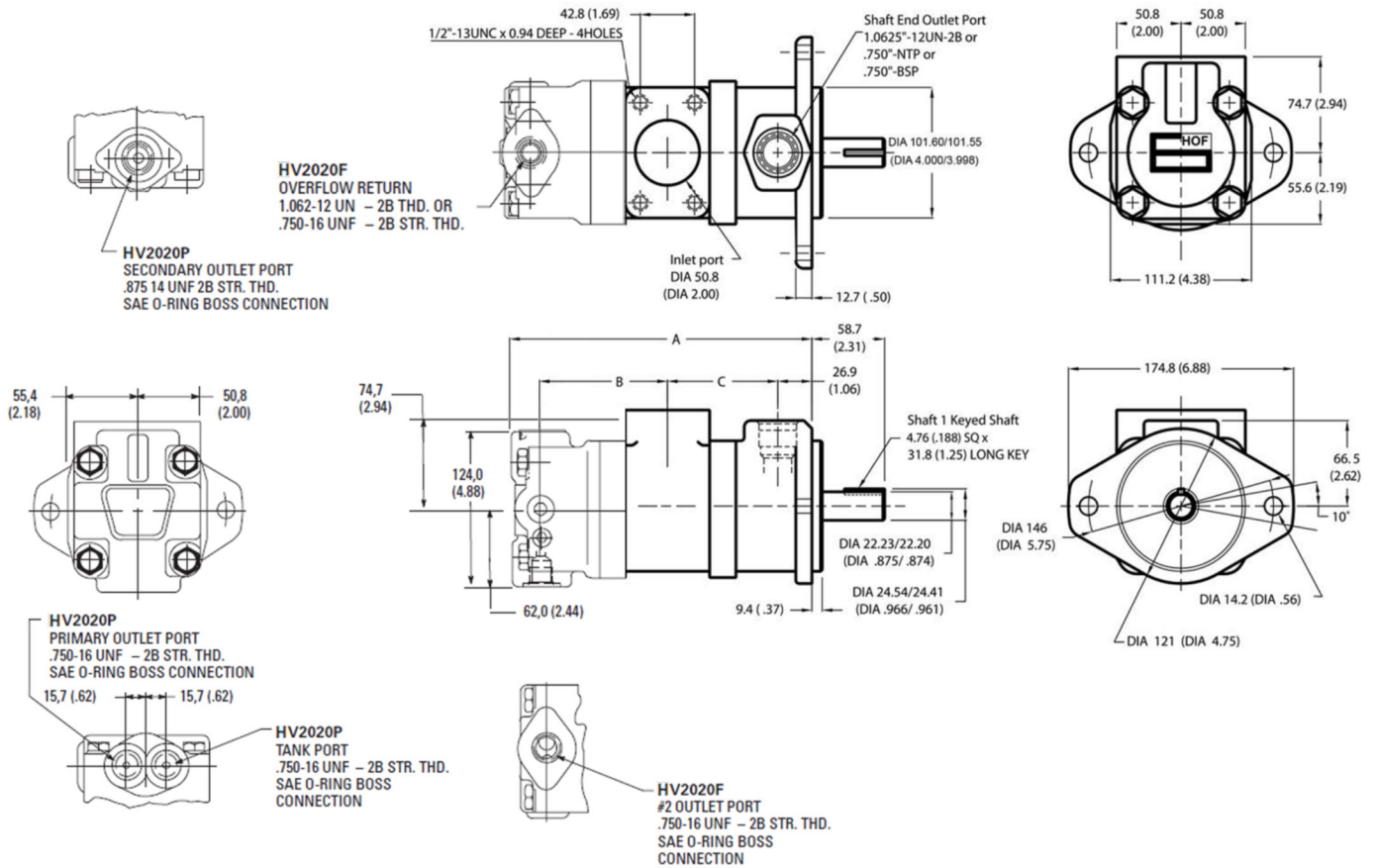


- |  |  |
|--|--|
| <p>1. Model :<br/>HV2020P - Priority Valve Cover<br/>SAE B 2 bolts mounting flange J744</p> <p>2. Mounting<br/>1 - Bolt Flange</p> <p>3. Inlet Port Connection<br/>F - 4-bolt Flange Dia. 2.0"</p> <p>4. Displacement (at 1200 rpm)<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> <li>8 - 26.5 (1.62)</li> <li>9 - 29.7 (1.81)</li> <li>10 - 34.1 (2.08)</li> <li>11 - 36.4 (2.22)</li> <li>12 - 39.0 (2.38)</li> <li>13 - 42.4 (2.59)</li> </ul> <p>5. Shaft End Outlet Port Connection<br/>S - 1" 1/16 - 12 UN(SAE#12)<br/>P - 3/4" NPT<br/>B - 3/4" BSP</p> <p>6. Displacement P2 (at 1200 rpm)<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> <li>8 - 26.5 (1.62)</li> <li>9 - 29.7 (1.81)</li> <li>10 - 34.1 (2.08)</li> <li>11 - 36.4 (2.22)</li> </ul> <p>7. Cover End Outlet Port Connection<br/>T - 3/4" - 16 UNF (SAE#8) for primary outlet and tank port and 7/8" - 14 UN(SAE#10) for secondary outlet</p> | <p>8. Type of shaft<br/>1 - Straight Keyed Shaft<br/>11 - Splined Shaft</p> <p>9. Shaft End Outlet Port Position (Viewed from cover end)<br/>A - Opposite inlet<br/>B - 90° CCW from inlet<br/>C - Inline with inlet<br/>D - 90° CW from inlet</p> <p>10. Cover End Outlet Port Position (Viewed from cover end)<br/>A - Opposite inlet<br/>B - 90° CCW from inlet<br/>C - Inline with inlet<br/>D - 90° CW from inlet</p> <p>11. Flow rate Setting L/min (USgpm)</p> <ul style="list-style-type: none"> <li>2 - 7.6 (2)</li> <li>3 - 11.4 (3)</li> <li>4 - 15.2 (4)</li> <li>5 - 19.0 (5)</li> <li>6 - 22.7 (6)</li> <li>7 - 26.5 (7)</li> <li>8 - 30.3 (8)</li> </ul> <p>12. Pressure Setting bar (psi)</p> <ul style="list-style-type: none"> <li>A - 17 (250)</li> <li>B - 34 (500)</li> <li>C - 52 (750)</li> <li>D - 69 (1000)</li> <li>E - 86 (1250)</li> <li>F - 103 (1500)</li> <li>G - 121 (1750)</li> <li>H - 138 (2000)</li> <li>J - 150 (2250)</li> <li>K - 172 (2500)</li> </ul> <p>13. Design<br/>Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p>14. Shaft Rotation (viewed from shaft end)<br/>R - Turn right<br/>L - Turn left</p> |
|--|--|

# Fixed Displacement Vane Pump HV2020F NF/HV2020P Series

## Installation Dimension mm (inch)

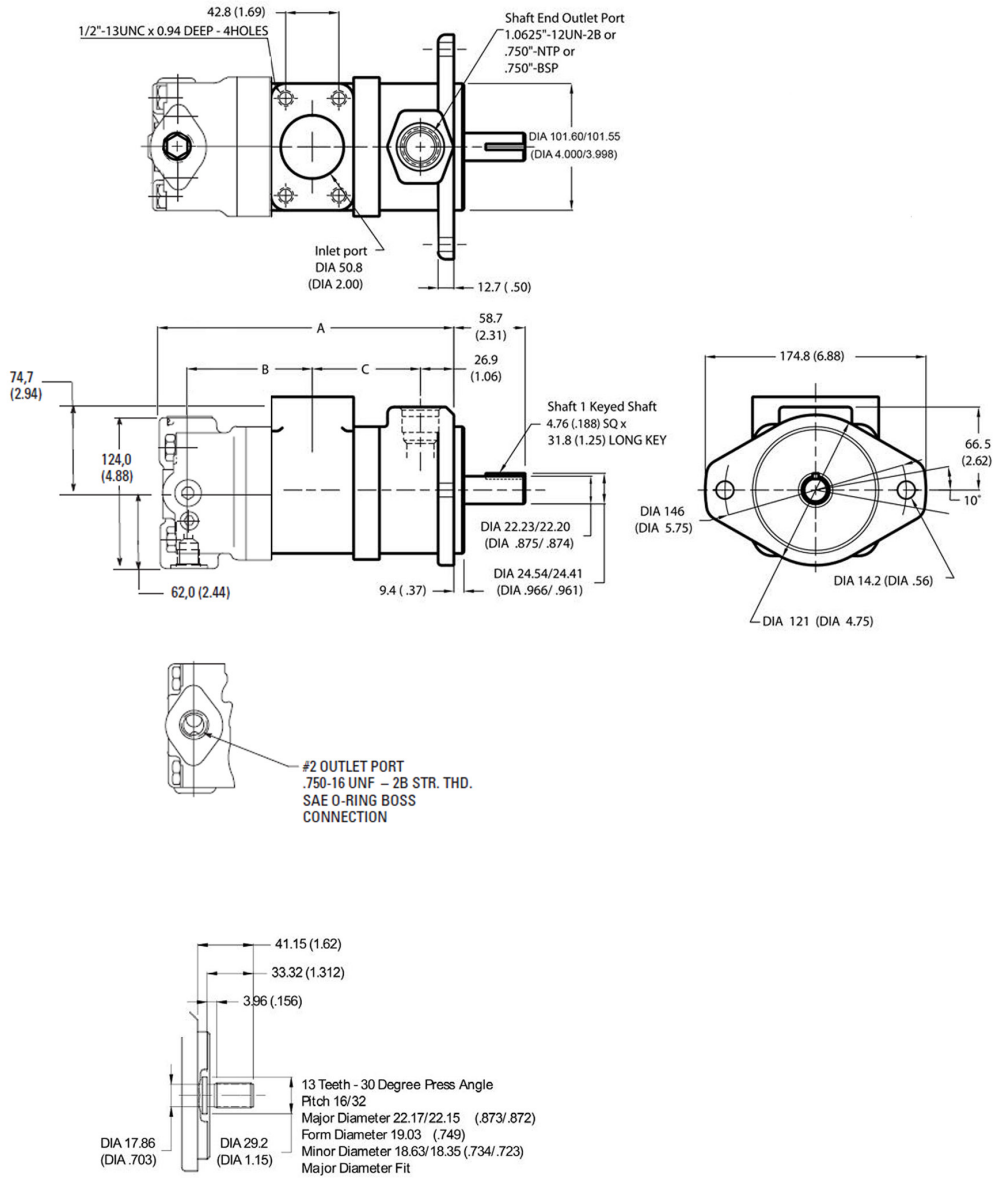
### Double Pump HV2020F and HV2020P



Delivery @ 1200 rpm & 7 bar (100psi)		Dimension		
Shaft End	Cover End	A	B	C
5, 6	5, 6	228.6 (9.00)	97.1 (3.82)	80.7 (3.18)
	7, 8, 9	234.9 (9.25)	103.4 (4.07)	
	10, 11	240.0 (9.45)	108.2 (4.26)	
7, 8, 9	5, 6	235.0 (9.25)	97.1 (3.82)	87.1 (3.43)
	7, 8, 9	241.3 (9.50)	103.4 (4.07)	
	10, 11	246.4 (9.70)	108.2 (4.26)	
10, 11	5, 6	240.0 (9.45)	97.1 (3.82)	92.2 (3.63)
	7, 8, 9	246.4 (9.70)	103.4 (4.07)	
	10, 11	251.2 (9.89)	108.2 (4.26)	
12, 13	5, 6	243.6 (9.59)	97.1 (3.82)	95.5 (3.76)
	7, 8, 9	249.7 (9.83)	103.4 (4.07)	
	10, 11	254.8 (10.03)	108.2 (4.26)	

# Fixed Displacement Vane Pump HV2020F NF/HV2020P Series

## Double Pump HV2020NF

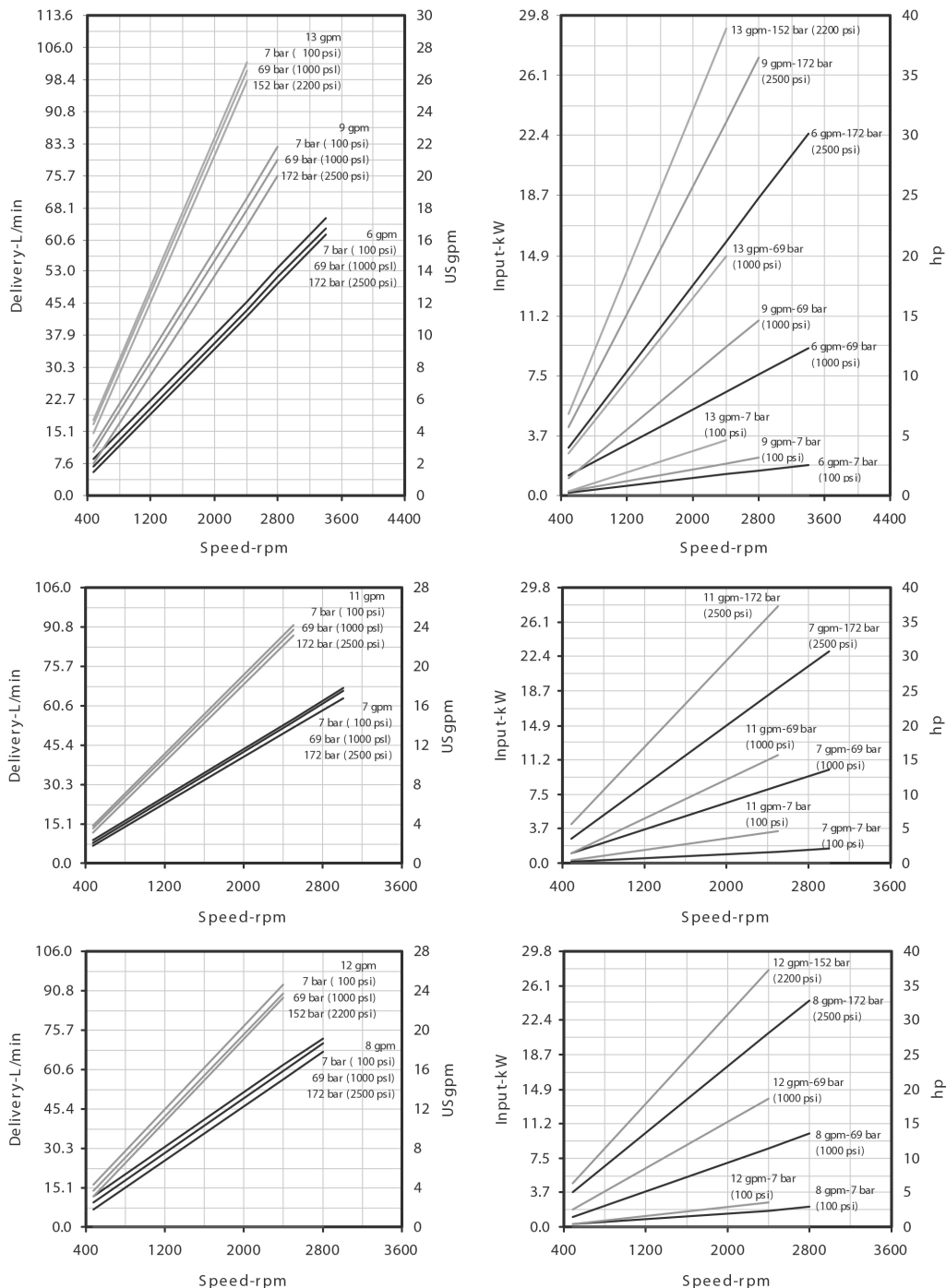


# Fixed Displacement Vane Pump HV2020F NF/HV2020P Series

## Performance Characteristics

HV20, Shaft End of HV20, Cover End of HV2020

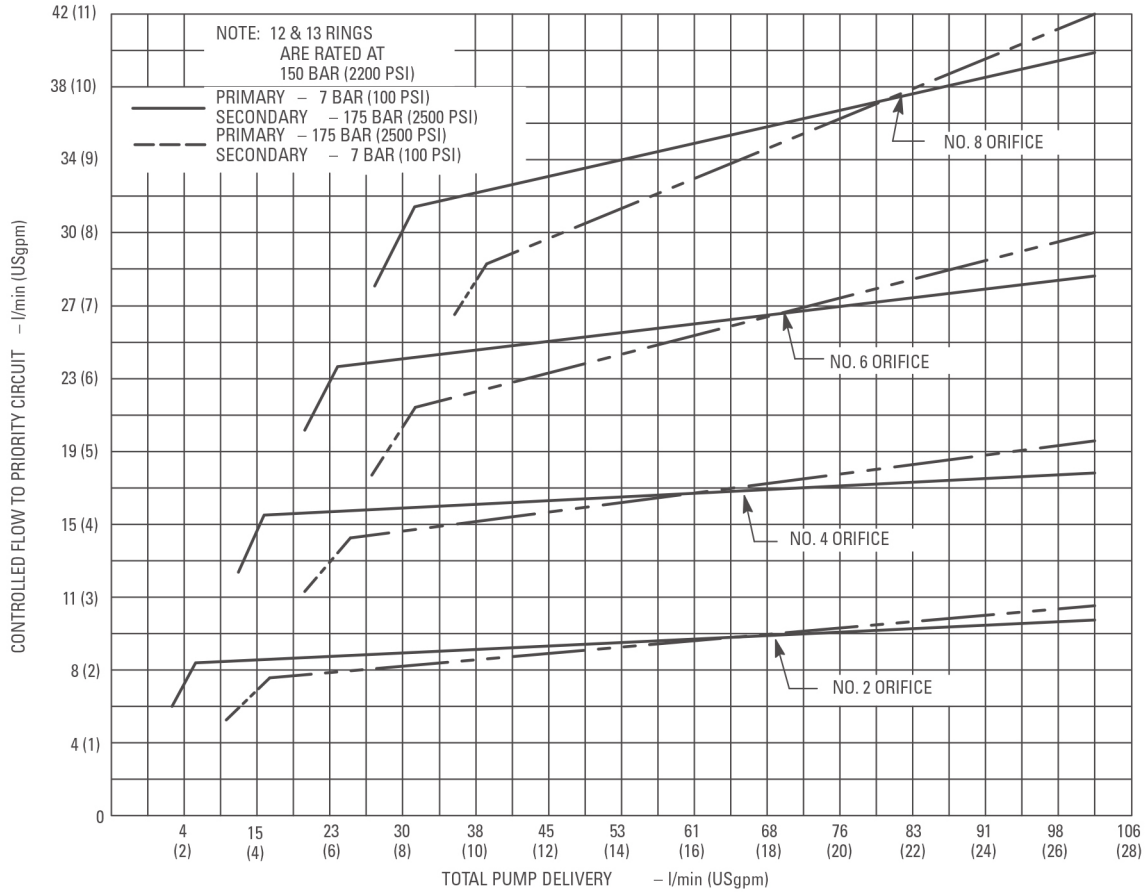
Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Fixed Displacement Vane Pump HV2020F NF/HV2020P Series

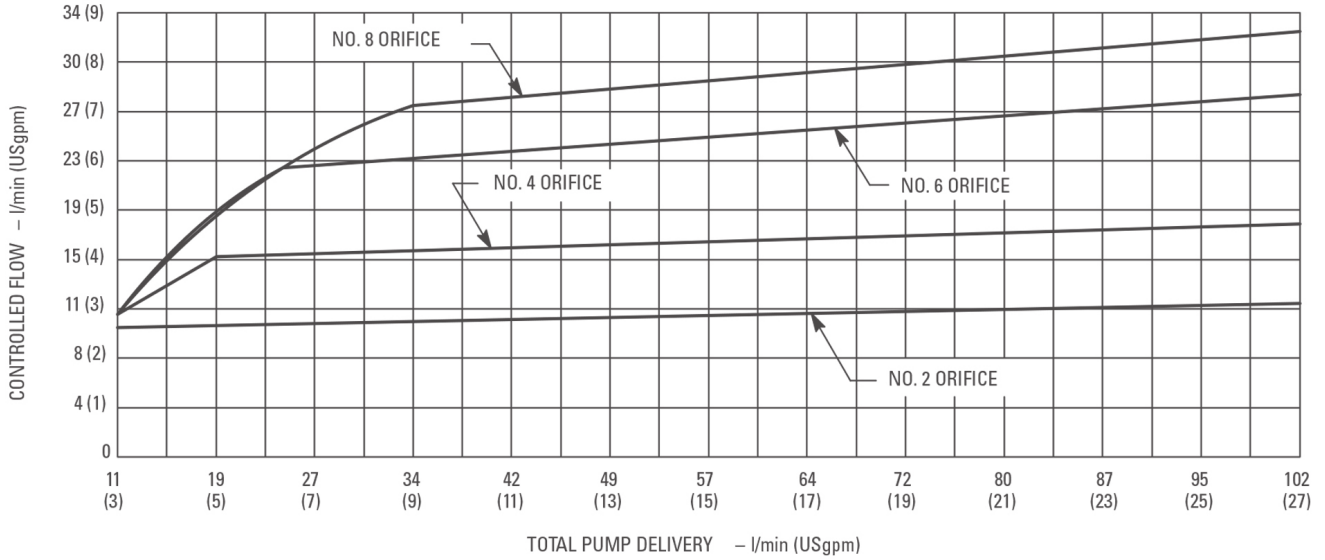
Priority Valve : HV2020P





# Fixed Displacement Vane Pump HV2020F NF/HV2020P Series

Flow control : HV2020F NF



# Single and Double Vane Pump

## HV and HVQ Series

### Features and Handling

- HV / HVQ Series are fixed displacement and balanced type vane pumps. Available in both 12 vanes design for industrial application with quiet operating and 10 vanes design for mobile application with higher pressure and wider range of speed.

- The vane design with self compensation for wear and clearances makes volumetric efficiency of pump nearly constant over the service life. (the vane always adjust its orbit to contact with the cam ring, even though wear occurs between the cam ring and vane tip)

- With a balanced intra-vane design, outlet pressure is continuously applied only to the area between the vane and insert. This area is small and thrust is correspondingly light. Top and bottom areas of the vane are subject to either inlet or outlet pressure, depending on the vane's location during rotor rotation. The valving of pressure to and from the bottom area of the vane is through holes drilled in the rotor. This varying pressure under the vane reduces wear and increases pump efficiency.

- The vane pump is not damaged at low speed and high pressure operation because pumping action does not start until the speed is high enough for the vane to throw out.

- The inlet or outlet ports can be rotated through increments of 90° in relation to each other, providing application flexibility and easy installation.

- With the cartridge independent of the shaft, allowing for easy change of flow capacity and field servicing without removing the pump from its mounting.

- For the cartridge kit of HVQ Series, the flexible plates are inserted between the support plates and the rotor. The flexible plates are assembled with the bronze facing towards the rotor to improve cold start capability and compensate thermal expansion in the rotor. This makes HVQ Series particularly suited for mobile application.

- For maximum service life, the pump should be protected from contamination. Filtering fluid before filling and during operation to maintain or exceed ISO cleanliness code 16/13. Appropriately size suction filter, with cold start bypass, of 149 micron absolute (100mesh) and 10 micron absolute return line filter is recommended. Replaceable elements should be changed as filter supplier instructions.



- The drive shaft must align with the power source shaft. Avoiding shaft end thrust and applications that impose radial loading.

- The start-up procedures should be as follows :
  - Check the rotation of power source to match the rotation of pump.
  - Check inlet and outlet ports to assure all connections are properly installed and check all mounting bolts and flanges to assure all are tight and properly aligned.
  - Fill pump with fluid through the outlet port if the pump is mounted above the fluid level. The spline shaft models also need to be lubricated with an anti-fretting grease or similar lubricant.
  - Place all controls in the neutral position so the pump is unloaded during initial start-up.
  - Prime the pump within a few second when the pump is started.
  - Bleed off entrapped air from outlet circuit until a steady output flow is observed.

*The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change at any time without notice.*

\*Foot Mounting is available for each pump. For more details, see Foot Mounts.

# High Performance Single Vane Pump

## 20 HV/HVQ Series

### Specifications :

#### 20 HV Series

Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Maximum Speed rpm	Maximum Pressure bar (psi)	Typical Delivery at max speed & pressure L/min (USgpm)	Typical Input Power at max speed & pressure kW (hp)	Weight kg (lb)
	USgpm						
20HV	2	7.0 (0.42)	1800	206 (3000)	11.3 (3.0)	5.2 (7.0)	12.5 (27.5)
	5	18 (1.10)			28.4 (7.5)	11.2 (15.0)	
	8	27 (1.67)			45.4 (12.0)	17.0 (22.8)	
	9	30.2 (1.84)			51.0 (13.5)	18.7 (25.1)	
	11	36 (2.22)		56.8 (15.0)	22.6 (30.3)		
	12	40 (2.47)		158 (2300)	60.9 (16.1)	19.3 (25.83)	
	14	45 (2.78)		138 (2000)	71.3 (18.85)	18.9 (25.28)	

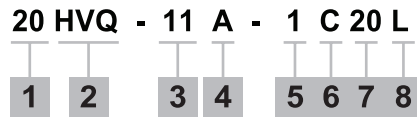
#### 20 HVQ Series

Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Maximum Speed rpm	Maximum Pressure bar (psi)	Typical Delivery at max speed & pressure L/min (USgpm)	Typical Input Power at max speed & pressure kW (hp)	Weight kg (lb)
	USgpm						
20HVQ	2	7.0 (0.42)	2700	206 (3000)	15.9 (4.2)	7.3 (9.8)	12.5 (27.5)
	5	18 (1.10)			41.6 (11.0)	17.9 (24.0)	
	8	27 (1.67)			64.3 (17.0)	26.1 (35.0)	
	9	30.2 (1.84)			71.5 (18.9)	32.9 (44.1)	
	11	36 (2.22)			87.1 (23.0)	35.4 (47.5)	
	12	39 (2.41)		158 (2300)	96.5 (25.5)	28.3 (38.0)	
	14	45 (2.80)		138 (2300)	113.6 (30.9)	29.1 (39.0)	

# High Performance Single Vane Pump

## 20 HV/HVQ Series

### Ordering Code : Single Pump



1. Model :

- 20 - Standard Bearing
- 21 - Heavy Duty Bearing
- SAE B 2 bolts mounting flange J744

2. Series

- HV - Industrial
- HVQ - Mobile

3. Displacement

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 02 - 7.0 (0.43)
- 05 - 18.0 (1.10)
- 08 - 27.3 (1.67)
- 09 - 30.3 (1.85)
- 11 - 36.3 (2.22)
- 12 - 40.4 (2.47)
- 14 - 45.5 (2.78)

4. Port Connection (4 bolts SAE flange J518C)

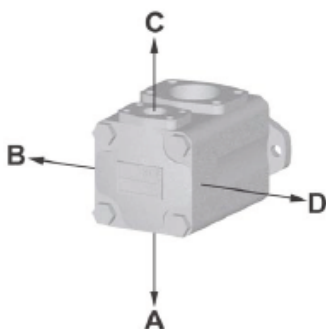
- A - UNC Port Connection
- AM - Metric Port Connection

5. Type of shaft

- 1 - Straight Keyed Shaft
- 151 - Splined Shaft

6. Outlet Port Position (Viewed from cover end)

- A - Opposite inlet
- B - 90° CCW from inlet
- C - Inline with inlet
- D - 90° CW from inlet



7. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

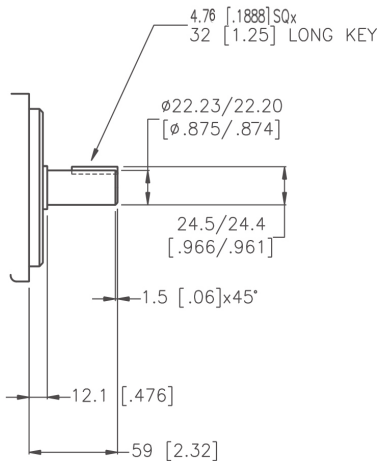
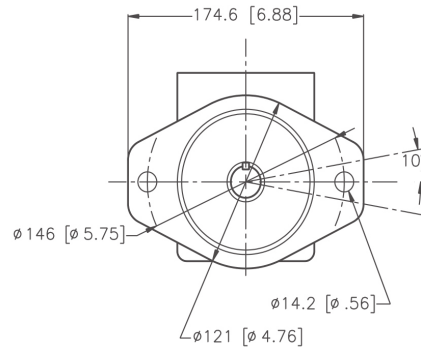
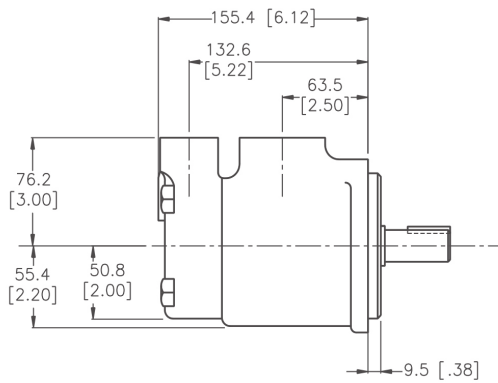
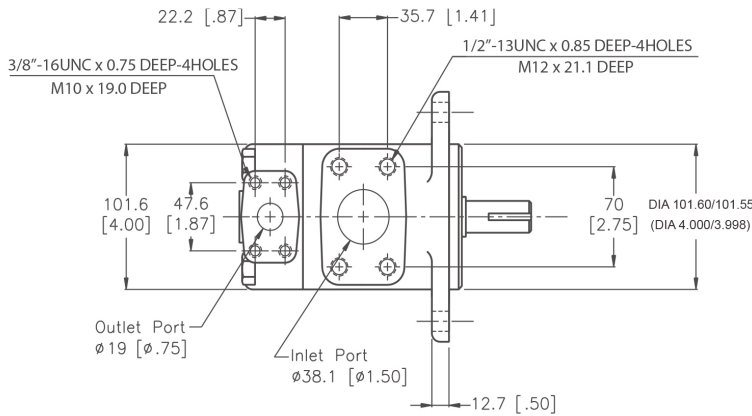
8. Shaft Rotation (viewed from shaft end)

- R - Turn right
- L - Turn left

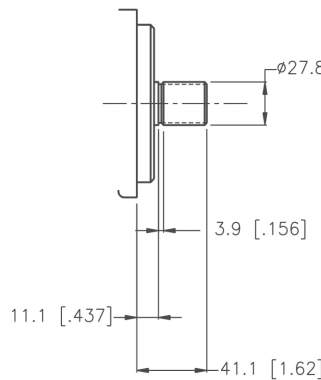
# High Performance Single Vane Pump 20 HV/HVQ Series

## Installation Dimension mm (inch)

### Single Pump 20HV/HVQ



Shaft 1  
Keyed Shaft



Shaft 151  
Splined Shaft

13 Teeth - 30° Press. Angle  
Pitch 16/32  
Major Diameter 22.17/22.15 [.873/.872]  
Form Diameter 19.03 [.749]  
Minor Diameter 18.63/18.35 [.734/.723]  
Major Diameter Fit

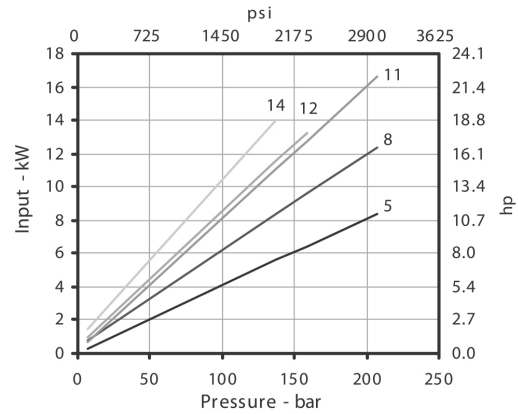
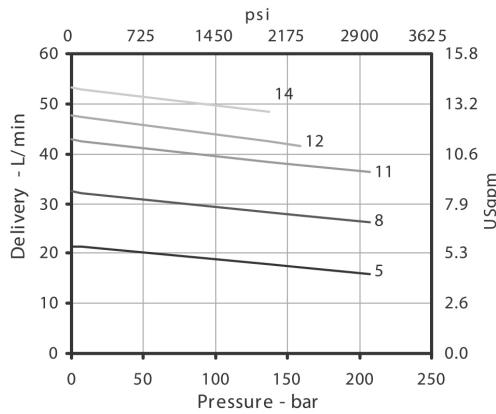
# High Performance Single Vane Pump 20 HV/HVQ Series

## Performance Characteristics

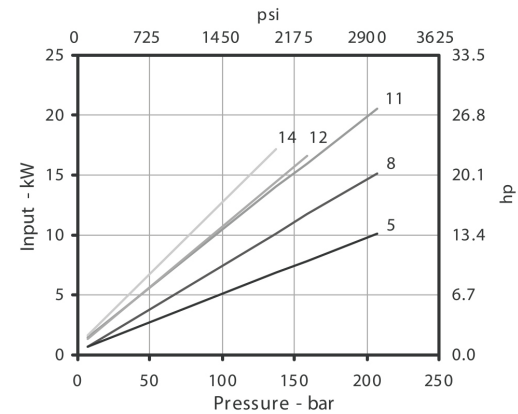
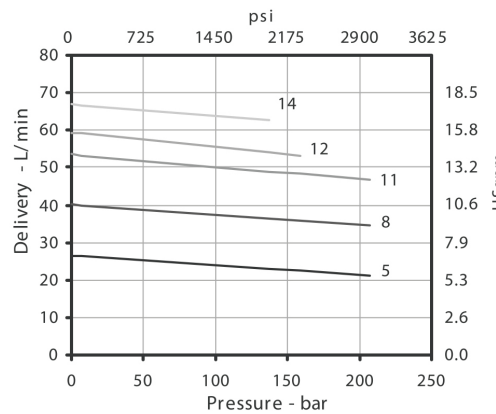
20HV, Cover End of 20HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

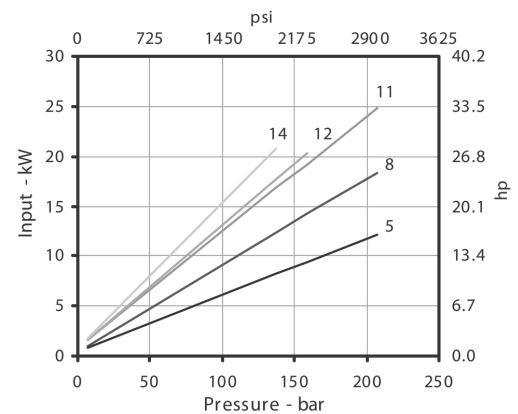
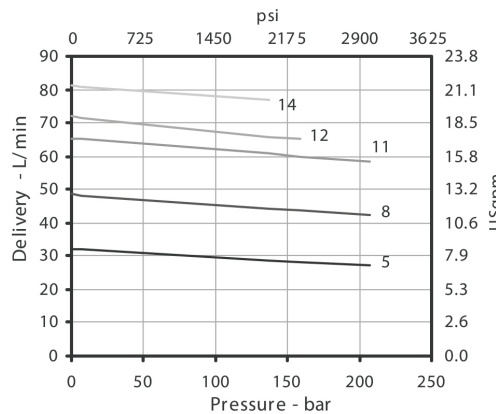
At 1200 rpm



At 1500 rpm



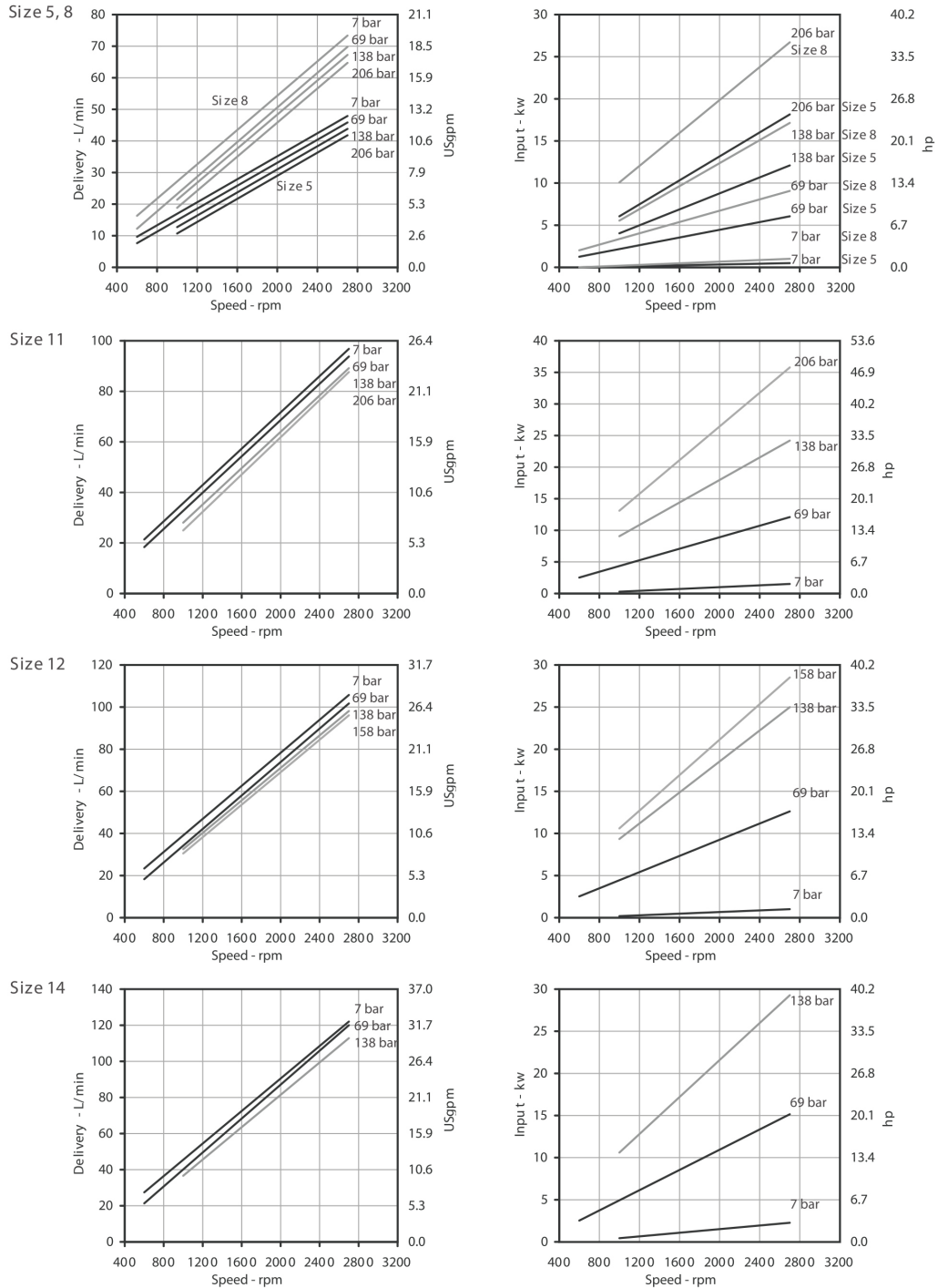
At 1800 rpm



# High Performance Single Vane Pump 20 HV/HVQ Series

## 20HVQ, Cover End of 20HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Single Vane Pump 25 HV/HVQ Series

## Specifications :

### 25 HV Series

Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
	USgpm						
25HV	12	39 (2.47)	1800	172 (2500)	62.1 (16.4)	22.9 (30.8)	14.8 (32.5)
	14	45 (2.78)			69.6 (18.4)	25.7 (34.5)	
	17	55 (3.39)			86.3 (22.8)	29.8 (40.0)	
	19	60.8 (3.72)			96.1 (25.4)	32.5 (43.5)	
	21	67 (4.13)			106.0 (28.0)	34.0 (45.6)	

### 25 HVQ Series

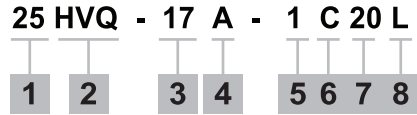
Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
	USgpm						
25HVQ 26HVQ	12	40 (2.45)	2700	206 (3000)	87.1 (23.0)	41.0 (55.0)	14.8 (32.5)
	14	45 (2.77)			102.2 (27.0)	46.6 (62.5)	
	17	55 (3.37)	2500		117.3 (31.0)	51.8 (69.5)	
	19	60.8 (3.72)			133.5 (34.5)	53.0 (71.0)	
	21	67 (4.12)			143.8 (38.0)	61.9 (83.0)	



# High Performance Single Vane Pump

## 25 HV/HVQ Series

### Ordering Code : Single Pump



1. Model :

- 25 - Standard Bearing
- 26 - Heavy Duty Bearing
- SAE B 2 bolts mounting flange J744

2. Series

- HV - Industrial (Except 26)
- HVQ - Mobile

3. Displacement

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 12 - 39.0 (2.47)
- 14 - 45.0 (2.78)
- 17 - 55.3 (3.39)
- 19 - 60.8 (3.72)
- 21 - 67.0 (4.13)

4. Port Connection (4 bolts SAE flange J518C)

- A - UNC Port Connection
- AM - Metric Port Connection

5. Type of shaft

- 1 - Straight Keyed Shaft
- 11 - Splined Shaft
- 86 - Heavy Duty Straight Keyed Shaft

6. Outlet Port Position (Viewed from cover end)

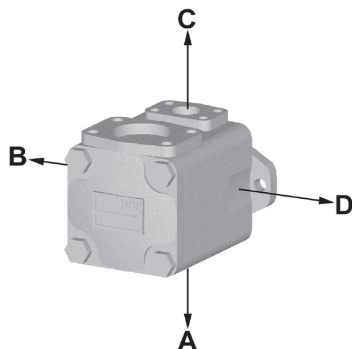
- A - Opposite inlet
- B - 90° CCW from inlet
- C - Inline with inlet
- D - 90° CW from inlet

7. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

8. Shaft Rotation (viewed from shaft end)

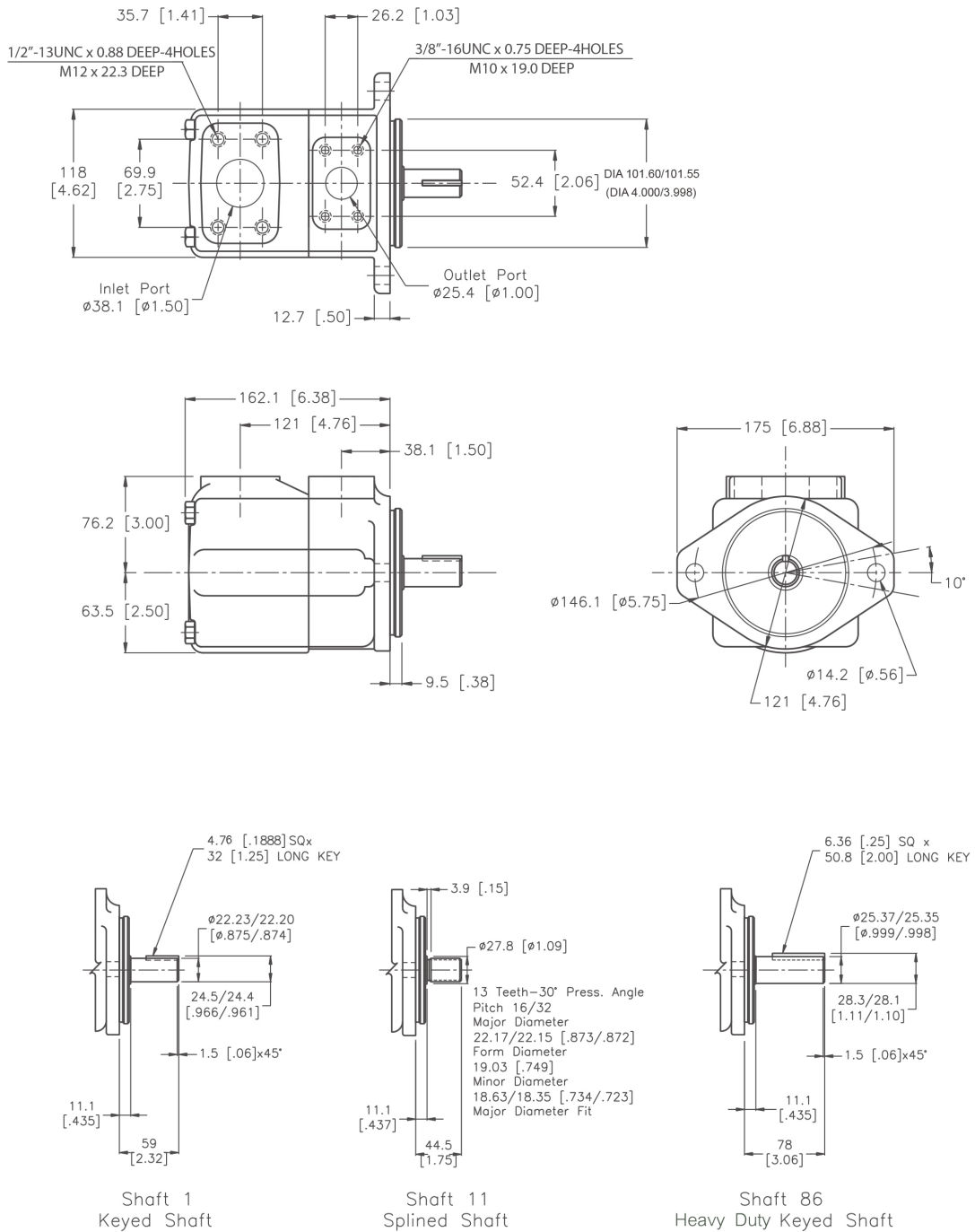
- R - Turn right
- L - Turn left



# High Performance Single Vane Pump 25 HV/HVQ Series

## Installation Dimension mm (inch)

### Single Pump 25HV/HVQ



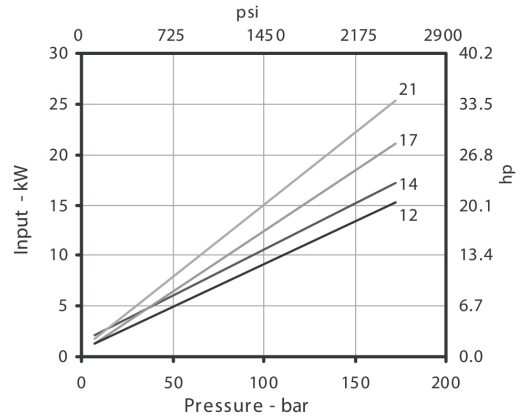
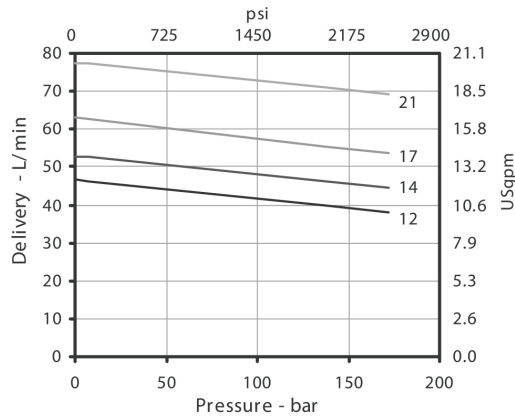
# High Performance Single Vane Pump 25 HV/HVQ Series

## Performance Characteristics

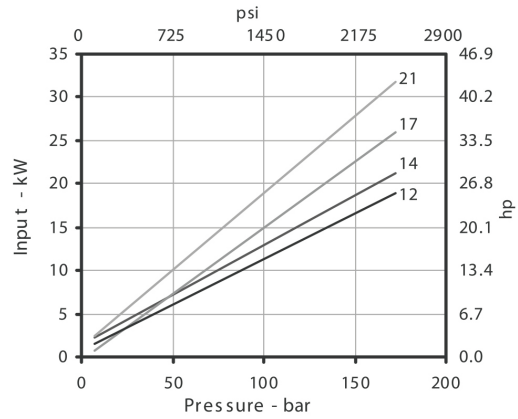
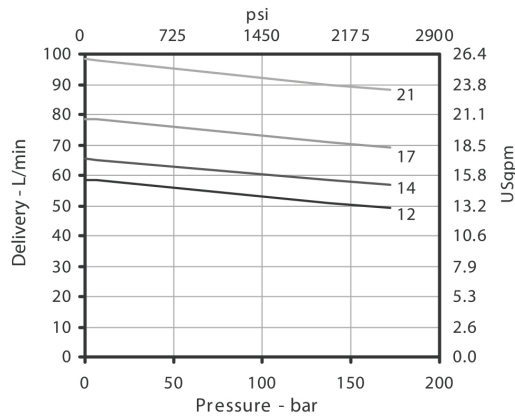
25HV, Shaft End of 25HV, Cover End of 25HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

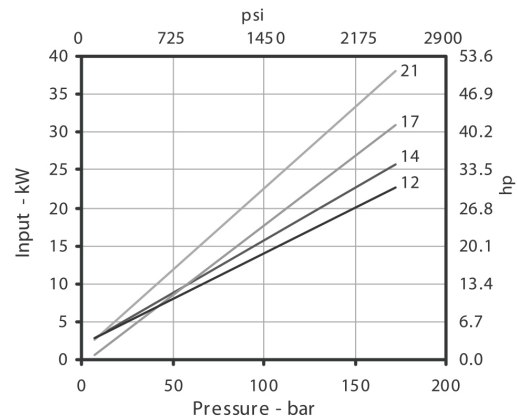
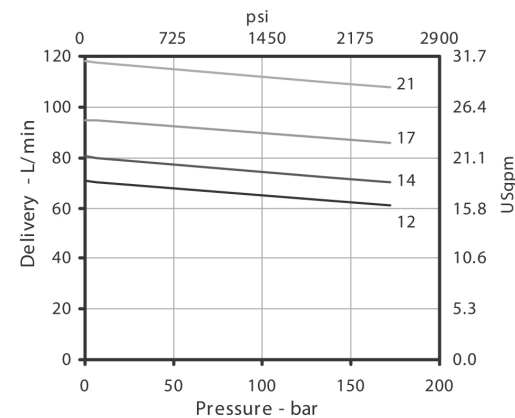
At 1200 rpm



At 1500 rpm



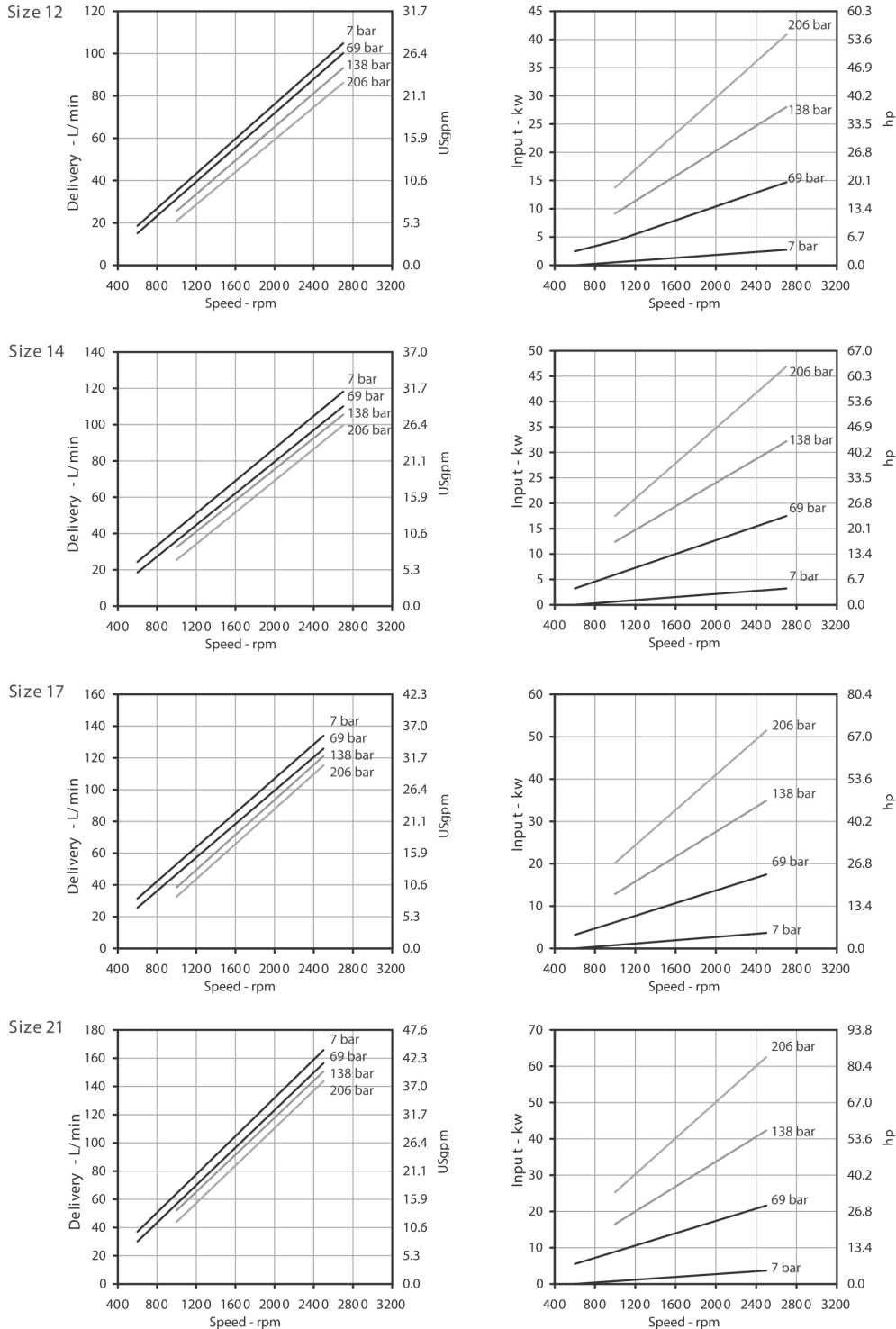
At 1800 rpm



# High Performance Single Vane Pump 25 HV/HVQ Series

## 25HVQ, Shaft End of 25HVQ, Cover End of 25HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Single Vane Pump

## 35 HV/HVQ Series

### Specifications :

#### 35 HV Series

Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Maximum Speed rpm	Maximum Pressure bar (psi)	Typical Delivery at max speed & pressure L/min (USgpm)	Typical Input Power at max speed & pressure kW (hp)	Weight kg (lb)
	USgpm						
35HV	21	68.3 (4.18)	1800	172 (2500)	106.3 (28.1)	34.0 (45.5)	24.0 (52.8)
	25	81 (4.94)			124.9 (33.0)	45.5 (61.0)	
	30	97 (5.91)			154.4 (40.8)	54.5 (73.0)	
	32	100.9 (6.15)			167.0 (44.0)	56.7 (76.0)	
	35	112 (6.83)			181.7 (48.0)	61.5 (82.4)	
	38	121 (7.37)			193.8 (51.2)	65.9 (88.3)	

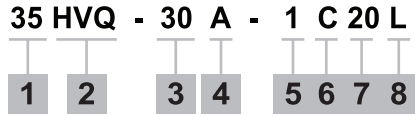
#### 35 HVQ Series

Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Maximum Speed rpm	Maximum Pressure bar (psi)	Typical Delivery at max speed & pressure L/min (USgpm)	Typical Input Power at max speed & pressure kW (hp)	Weight kg (lb)
	USgpm						
35HVQ 36HVQ	21	68.3 (4.18)	2500	206 (3000)	143.8 (38.0)	55.0 (73.9)	24.0 (52.8)
	25	81 (4.98)			170.3 (45.0)	75.3 (101.0)	
	30	97 (5.96)			208.2 (55.0)	87.7 (117.5)	
	32	100.9 (6.15)	2400		218.0 (57.6)	91.2 (122.3)	
	35	112 (6.88)			227.1 (60.0)	98.5 (132.0)	
	38	121 (7.42)			246.0 (65.0)	104.4 (140.0)	

# High Performance Single Vane Pump

## 35 HV/HVQ Series

### Ordering Code : Single Pump



1. Model :

- 35 - Standard Bearing
- 36 - Heavy Duty Bearing
- SAE C 2 bolts mounting flange J744

2. Series

- HV - Industrial (Except 36)
- HVQ - Mobile

3. Displacement

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 21 - 68.3 (4.18)
- 25 - 81.0 (4.94)
- 30 - 97.0 (5.91)
- 32 - 100.9 (6.15)
- 35 - 112.0 (6.83)
- 38 - 121.0 (7.37)

4. Port Connection (4 bolts SAE flange J518C)

- A - UNC Port Connection
- AM - Metric Port Connection

5. Type of shaft

- 1 - Straight Keyed Shaft
- 11 - Splined Shaft
- 86 - Heavy Duty Straight Keyed Shaft

6. Outlet Port Position (Viewed from cover end)

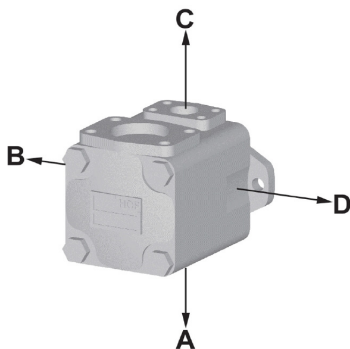
- A - Opposite inlet
- B - 90° CCW from inlet
- C - Inline with inlet
- D - 90° CW from inlet

7. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

8. Shaft Rotation (viewed from shaft end)

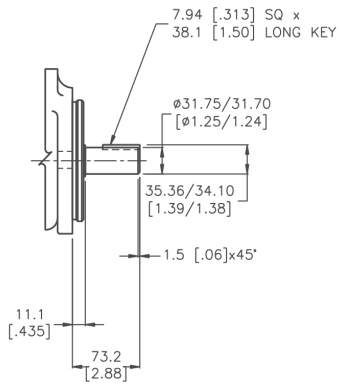
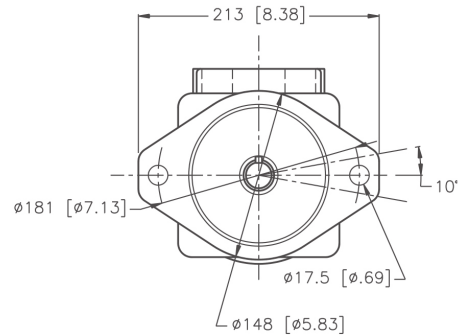
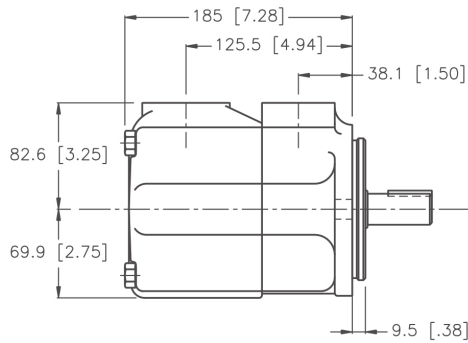
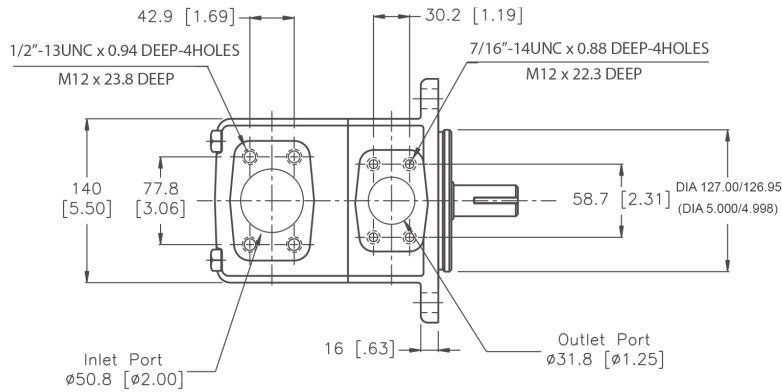
- R - Turn right
- L - Turn left



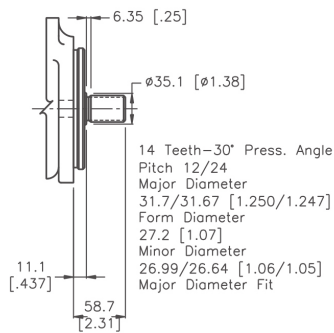
# High Performance Single Vane Pump 35 HV/HVQ Series

## Installation Dimension mm (inch)

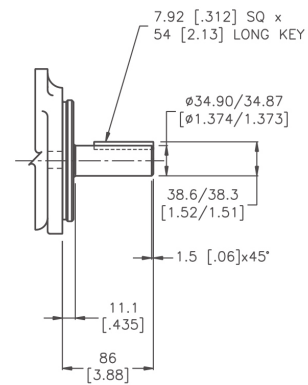
### Single Pump 35HV/HVQ



Shaft 1  
Keyed Shaft



Shaft 11  
Splined Shaft



Shaft 86  
Heavy Duty Keyed Shaft

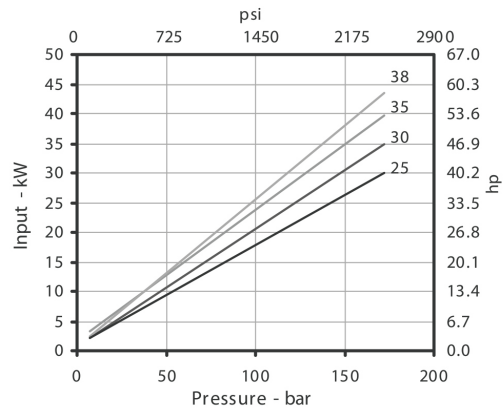
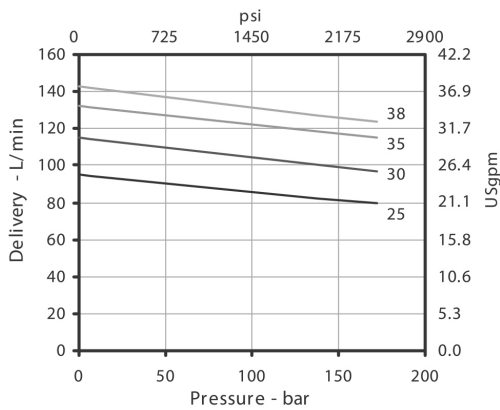
# High Performance Single Vane Pump 35 HV/HVQ Series

## Performance Characteristics

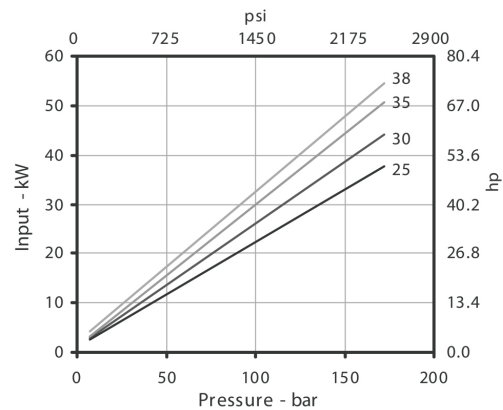
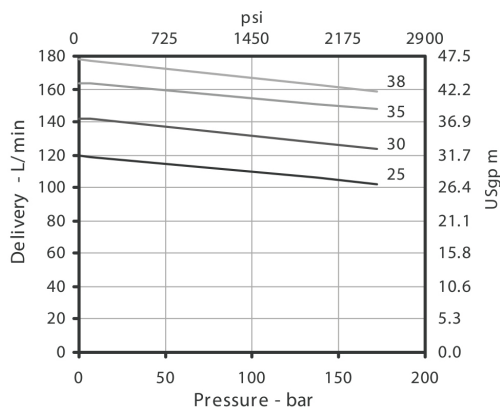
35HV, Shaft End of 35HV, Cover End of 35HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

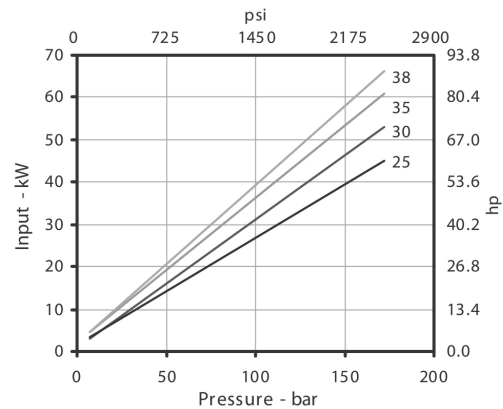
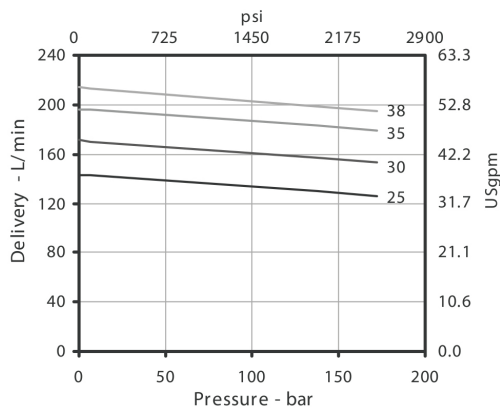
At 1200 rpm



At 1500 rpm



At 1800 rpm

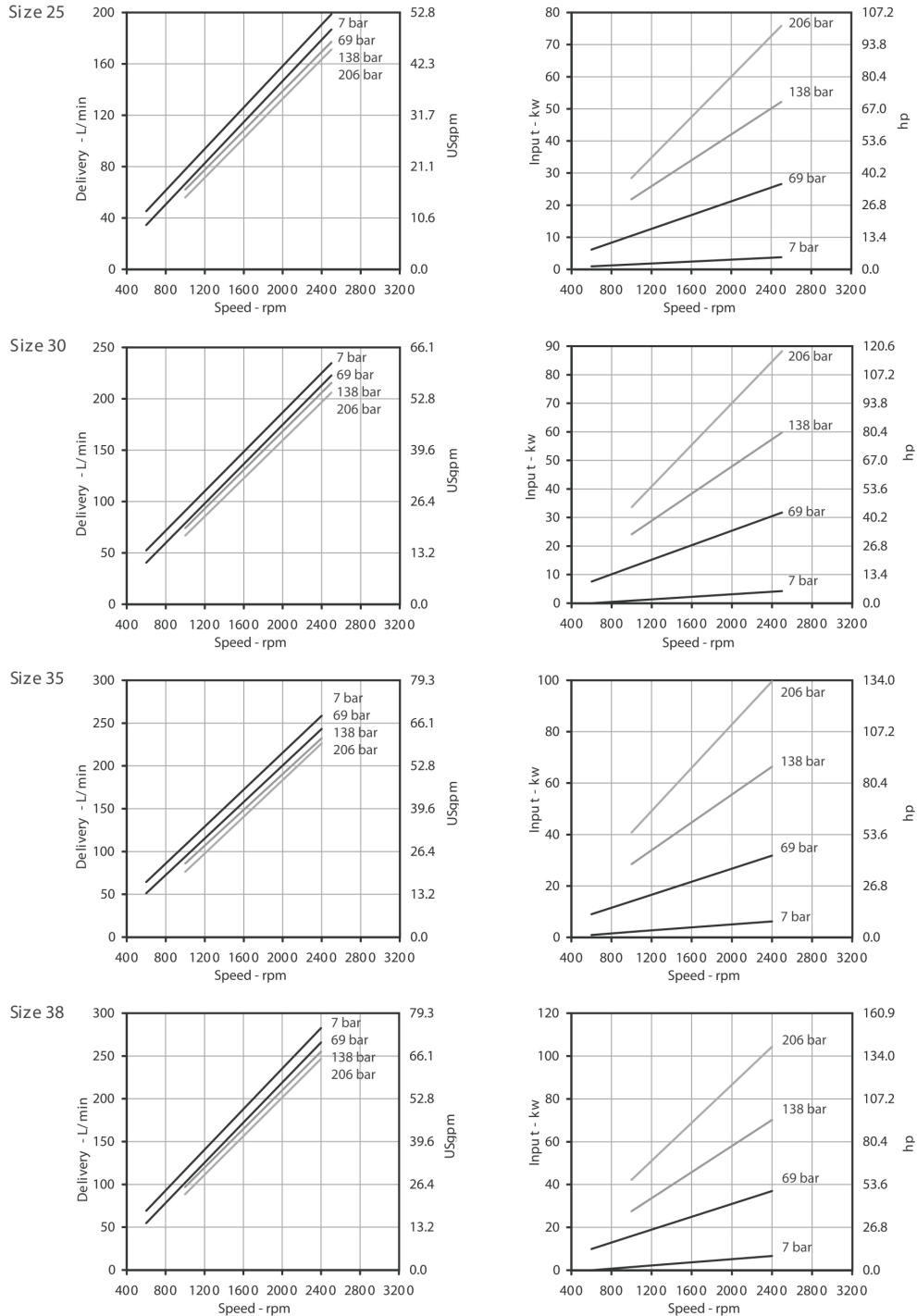




# High Performance Single Vane Pump 35 HV/HVQ Series

## 35HVQ, Shaft End of 35HVQ, Cover End of 35HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Single Vane Pump

## 45 HV/HVQ Series

### Specifications :

#### 45 HV Series

Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
	USgpm						
45HV	35	110.4 (6.73)	1800	172 (2500)	179.0 (47.2)	60.0 (80.4)	35.2 (77.4)
	38	119.8 (7.32)			194.0 (51.3)	65.1 (87.3)	
	42	138.0 (8.41)			208.2 (55.0)	75.3 (101.0)	
	47	151.4 (9.26)			244.1 (64.5)	82.5 (110.6)	
	50	162.0 (9.85)			253.6 (67.0)	87.3 (117.0)	
	52	164.0 (10.0)			266.0 (70.0)	89.1 (119.5)	
	57	183.6 (11.23)			295.0 (77.8)	94.0 (126.0)	
	60	193.0 (11.75)			310.4 (82.0)	103.7 (139.0)	
	62	196.0 (11.94)			317.0 (83.7)	106.5 (142.8)	
	64	202.0 (12.33)			327.0 (86.4)	109.7 (147.1)	
	66	208.0 (12.7)			337.0 (89.0)	113.0 (151.5)	

# High Performance Single Vane Pump

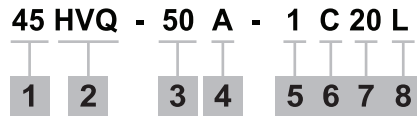
## 45 HV/HVQ Series

### 45 HVQ Series

Model	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
	USgpm						
45HVQ	35	110.4 (6.73)	2200	172 (2500)	219.0 (57.7)	73.3 (98.3)	35.2 (77.4)
	38	119.8 (7.32)			237.0 (62.7)	79.5 (106.7)	
	42	138.0 (8.41)			251.7 (66.5)	91.4 (122.5)	
	47	151.4 (9.26)			280.8 (74.2)	95.0 (127.3)	
	50	162.0 (9.85)			299.0 (79.0)	105.2 (141.0)	
	52	164.0 (10.0)			325.0 (85.7)	106.6 (143.0)	
	57	183.6 (11.23)			342.5 (90.5)	109.3 (146.6)	
	60	193.0 (11.75)			363.4 (96.0)	126.8 (170.0)	
	62	196.0 (11.94)			387.0 (102.3)	128.8 (172.7)	
	64	202.0 (12.33)			400.0 (105.7)	132.7 (178.0)	
	66	208.0 (12.7)			412.0 (109.0)	136.6 (183.2)	

# High Performance Single Vane Pump 45 HV/HVQ Series

## Ordering Code : Single Pump



**1. Model :**

45 - Standard Bearing SAE C 2 bolts mounting flange J744

**2. Series**

HV - Industrial  
HVQ - Mobile

**3. Displacement**

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 35 - 110.4 (6.73)
- 38 - 119.8 (7.32)
- 42 - 138.0 (8.41)
- 47 - 151.4 (9.26)
- 50 - 162.0 (9.85)
- 52 - 164.0 (10.0)
- 57 - 183.6 (11.23)
- 60 - 193.0 (11.75)
- 62 - 196.0 (11.94)
- 64 - 202.0 (12.33)
- 66 - 208.0 (12.7)

**4. Port Connection (4 bolts SAE flange J518C)**

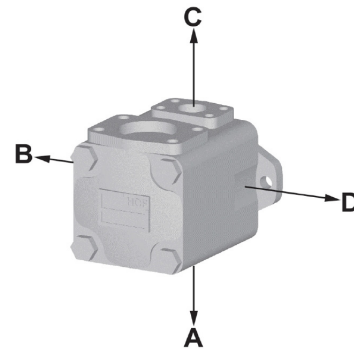
A - UNC Port Connection  
AM - Metric Port Connection

**5. Type of shaft**

1 - Straight Keyed Shaft  
11 - Splined Shaft  
86 - Heavy Duty Straight Keyed Shaft

**6. Outlet Port Position (Viewed from cover end)**

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet



**7. Design**

Subject to change. Installation dimension remain the same for designs - 20 through -29

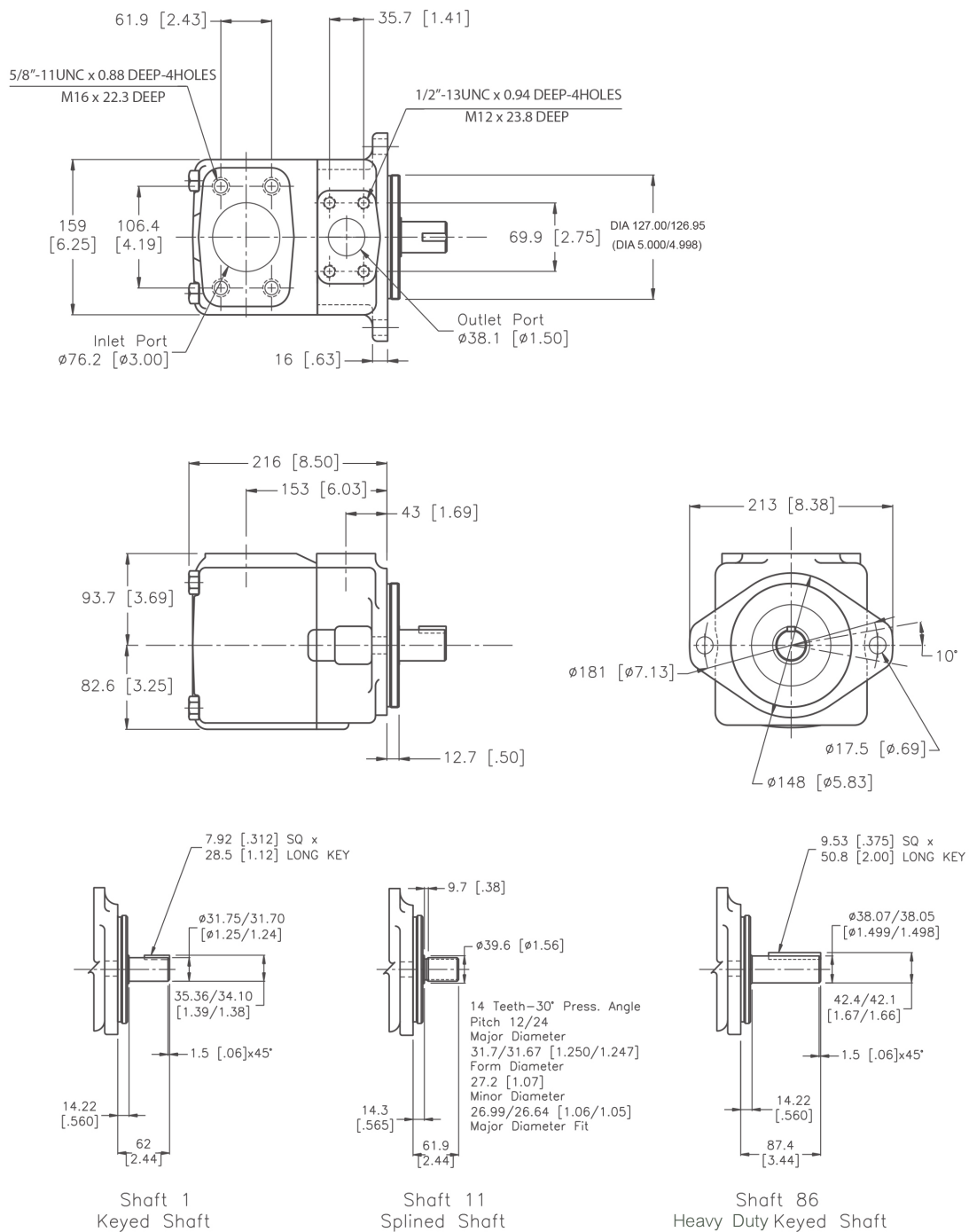
**8. Shaft Rotation (viewed from shaft end)**

R - Turn right  
L - Turn left

# High Performance Single Vane Pump 45 HV/HVQ Series

## Installation Dimension mm (inch)

### Single Pump 45HV/HVQ



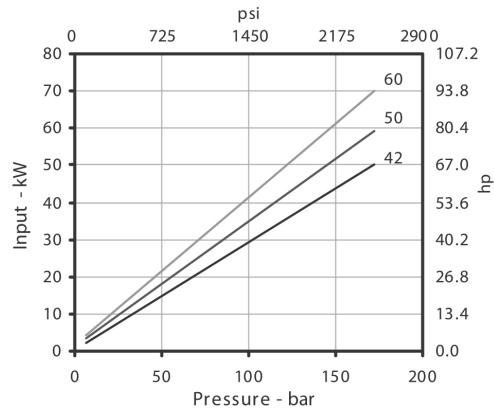
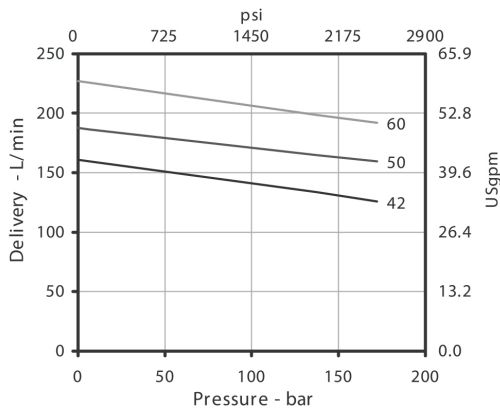
# High Performance Single Vane Pump 45 HV/HVQ Series

## Performance Characteristics

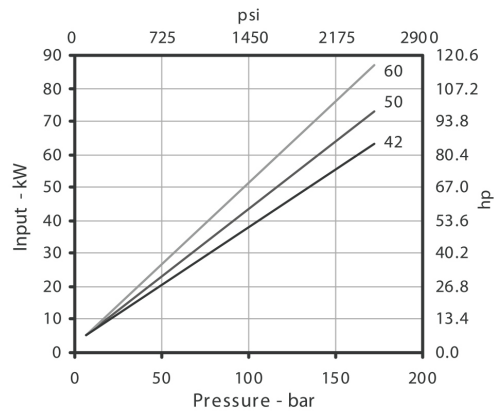
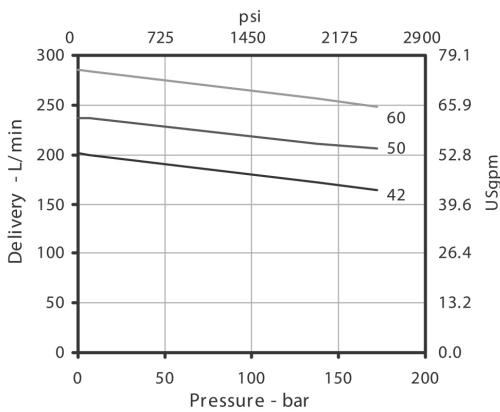
### 45HV, Shaft End of 45HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

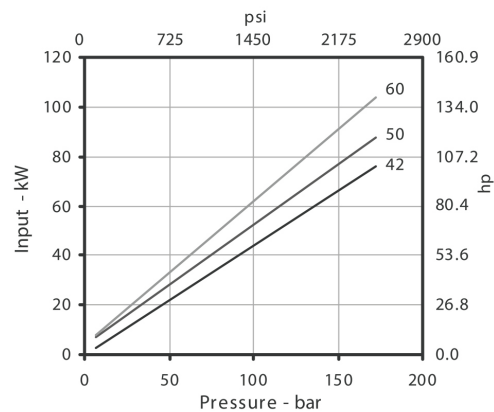
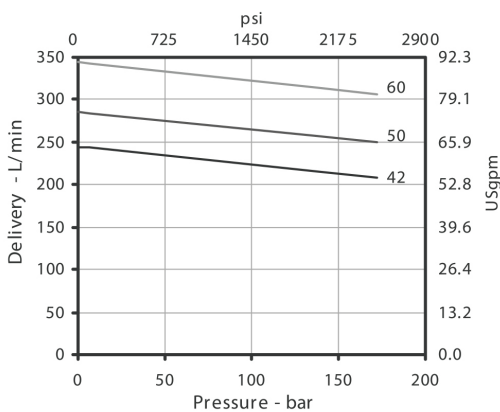
At 1200 rpm



At 1500 rpm



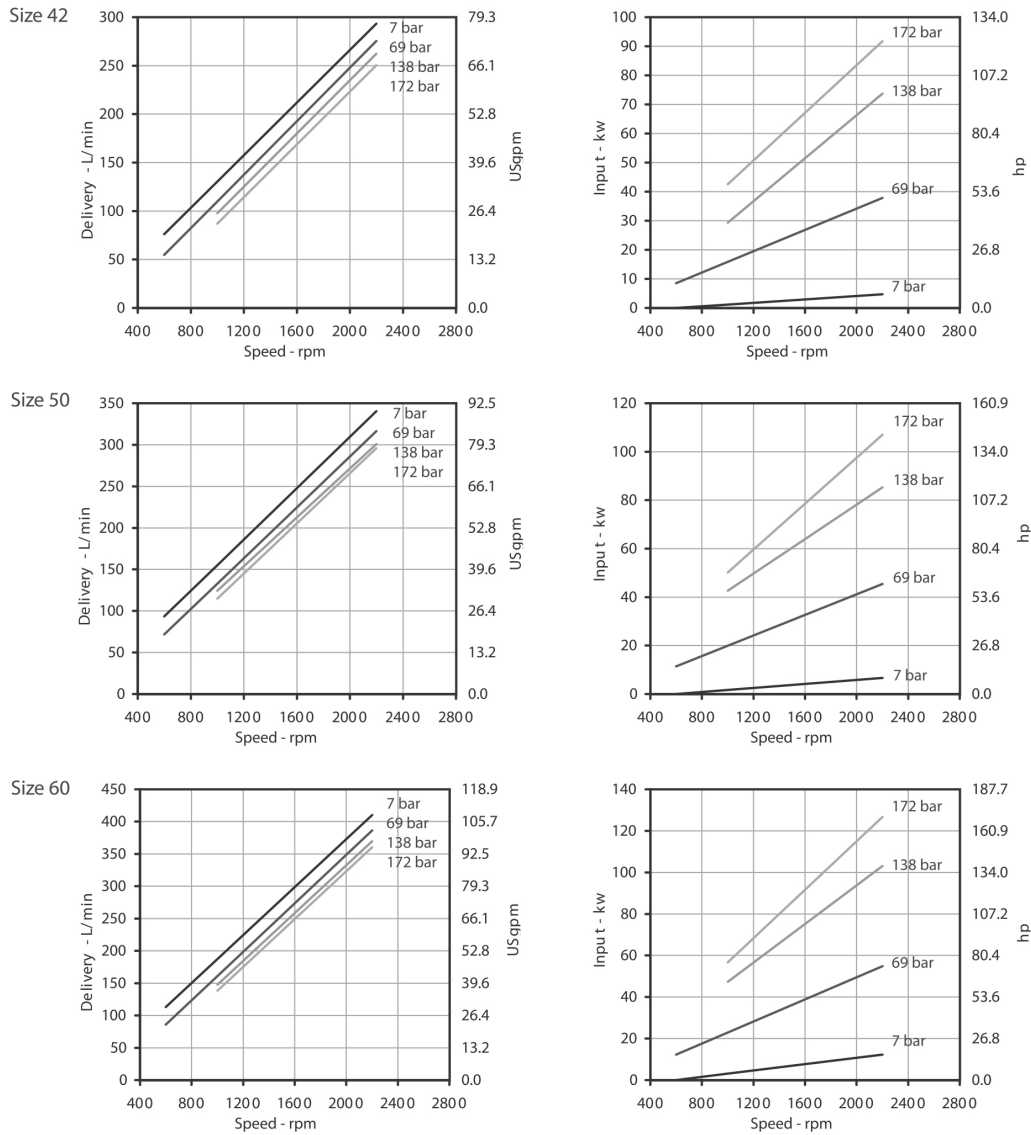
At 1800 rpm



# High Performance Single Vane Pump 45 HV/HVQ Series

## 45HVQ, Shaft End of 45HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 2520 HV/HVQ Series

## Specifications :

### 2520 HV Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight	
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)	
2520HV	Shaft End	12	39 (2.47)	1800	172 (2500)	62.1 (16.4)	22.9 (30.8)	21.0 (46.2)	
		14	45 (2.78)			69.6 (18.4)	25.7 (34.5)		
		17	55 (3.39)			86.3 (22.8)	29.8 (40.0)		
		19	60.8 (3.72)			91.6 (25.4)	32.5 (43.5)		
		21	67 (4.13)			106.0 (28.0)	34.0 (45.6)		
	Cover End	2	7.0 (0.42)		206 (3000)	11.3 (3.00)	5.2 (7.0)		
		5	18 (1.10)			28.4 (7.5)	11.2 (15.0)		
		8	27 (1.67)			45.4 (12.0)	17.0 (22.8)		
		9	30.2 (1.84)			51.0 (13.5)	18.7 (25.1)		
		11	36 (2.22)			56.8 (15.0)	22.6 (30.3)		
		12	40 (2.47)			158 (2300)	62.1 (16.4)		25.1 (33.7)
		14	45 (2.78)			138 (2000)	69.6 (18.4)		28.3 (37.9)

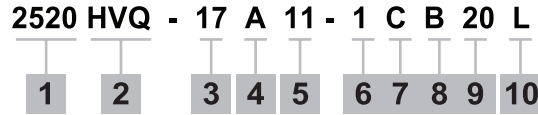
### 2520 HVQ Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight		
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)		
2520HVQ & 2620HVQ	Shaft End	12	40 (2.45)	2500	206 (3000)	87.1 (23.0)	41.0 (55.0)	21.0 (46.2)		
		14	45 (2.77)			102.2 (27.0)	46.6 (62.5)			
		17	55 (3.37)			117.3 (31.0)	51.8 (69.5)			
		19	60.8 (3.72)			130.5 (34.5)	53.0 (71.0)			
		21	67 (4.12)			143.8 (38.0)	61.9 (83.0)			
	Cover End	2	7.0 (0.42)		2700	206 (3000)	15.9 (4.2)		7.3 (9.8)	
		5	18 (1.10)				37.9 (10.0)		16.4 (22.0)	
		8	27 (1.67)				60.6 (16.0)		24.2 (32.5)	
		9	30.2 (1.84)				71.5 (18.9)		32.9 (44.1)	
		11	36 (2.22)				75.0 (19.82)		33.9 (45.42)	
		12	39 (2.41)				158 (2300)		88.9 (23.5)	26.1 (35.0)
		14	45 (2.80)				138 (2000)		104.1 (27.5)	26.9 (36.0)



# High Performance Double Vane Pump 2520 HV/HVQ Series

## Ordering Code : Double Pump



**1. Model :**

- 2520 - Standard Bearing
- 2620 - Heavy Duty Bearing
- SAE B 2 bolts mounting flange J744

**2. Series**

- HV - Industrial
- HVQ - Mobile

**3. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 12 - 39.0 (2.47)
- 14 - 45.0 (2.78)
- 17 - 55.3 (3.39)
- 19 - 60.8 (3.72)
- 21 - 67.0 (4.13)

**4. Port Connection (4 bolts SAE flange J518C)**

- A - UNC Port Connection
- AM - Metric Port Connection

**5. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 02 - 7.0 (0.43)
- 05 - 18.0 (1.10)
- 08 - 27.3 (1.67)
- 09 - 30.3 (1.85)
- 11 - 36.3 (2.22)
- 12 - 40.4 (2.47)
- 14 - 45.5 (2.78)

**6. Type of shaft**

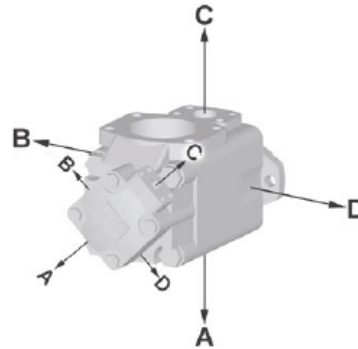
- 1 - Straight Keyed Shaft
- 11 - Splined Shaft
- 86 - Heavy Duty Straight Keyed Shaft

**7. Shaft End Outlet Port Position (Viewed from cover end)**

- A - Opposite inlet
- B - 90° CCW from inlet
- C - Inline with inlet
- D - 90° CW from inlet

**8. Cover End Outlet Port Position (Viewed from cover end)**

- A - 135° CCW from inlet
- B - 45° CCW from inlet
- C - 45° CW from inlet
- D - 135° CW from inlet



**9. Design**

Subject to change. Installation dimension remain the same for designs - 20 through -29

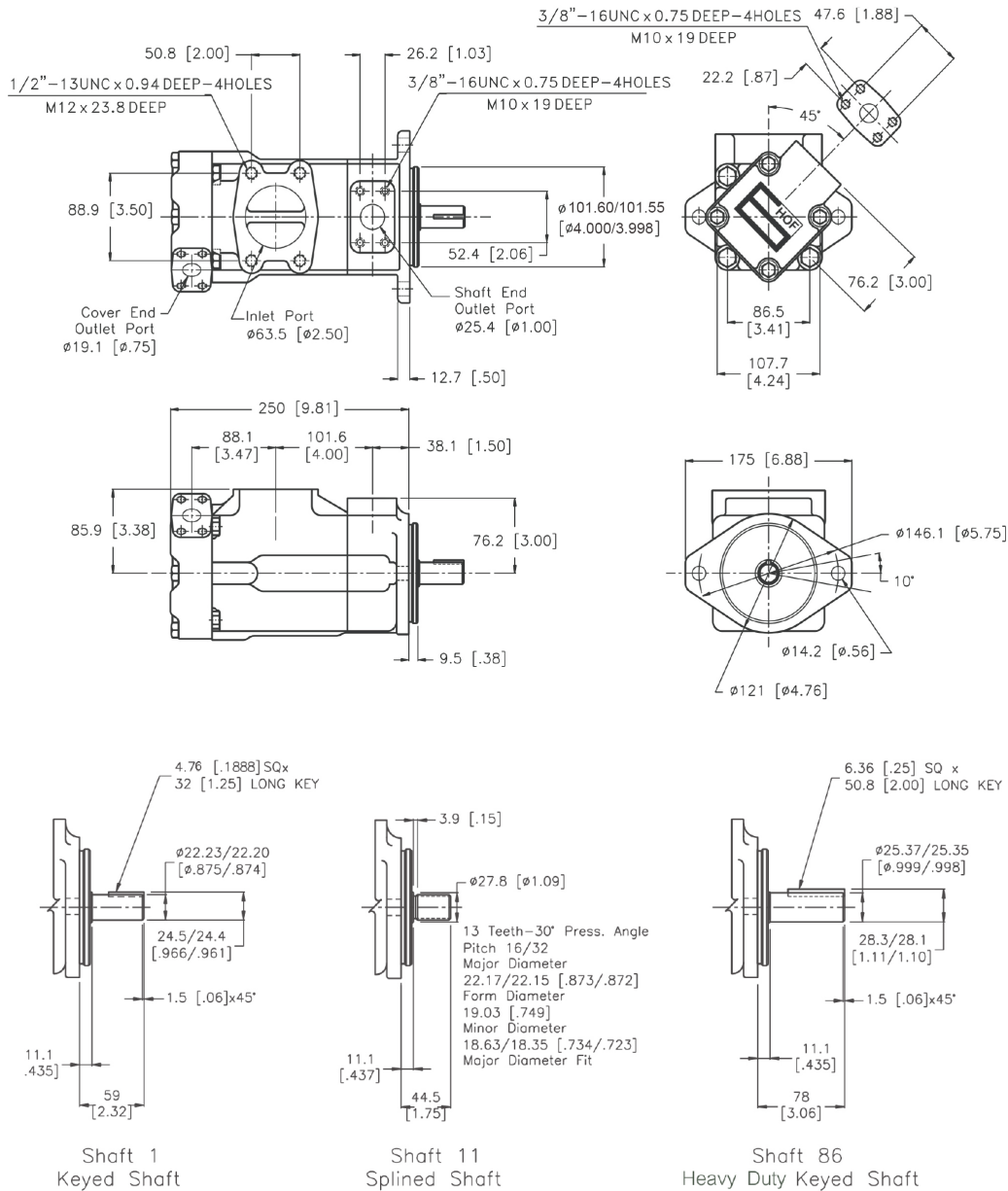
**10. Shaft Rotation (viewed from shaft end)**

- R - Turn right
- L - Turn left

# High Performance Double Vane Pump 2520 HV/HVQ Series

## Installation Dimension mm (inch)

### Double Pump 2520HV/HVQ



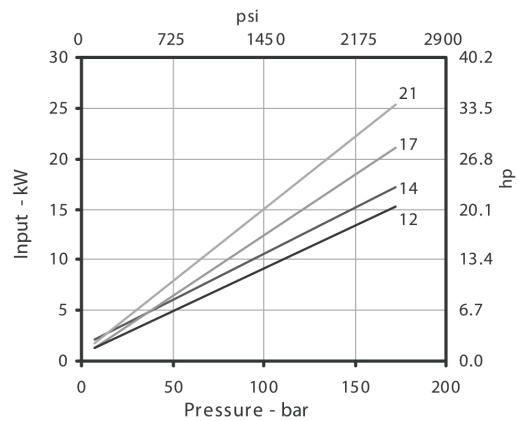
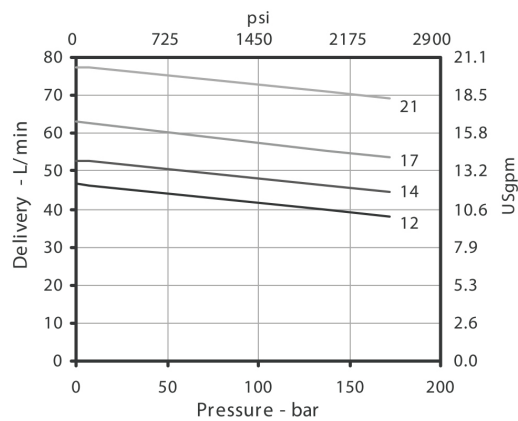
# High Performance Double Vane Pump 2520 HV/HVQ Series

## Performance Characteristics

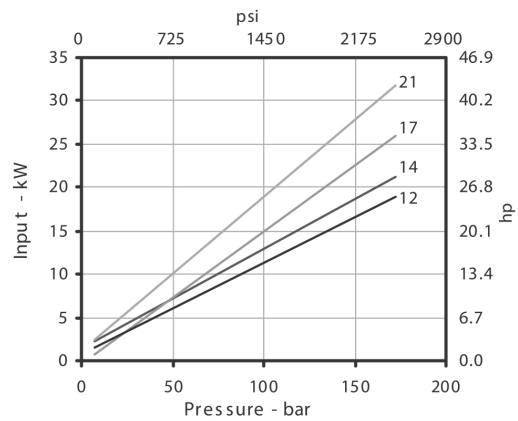
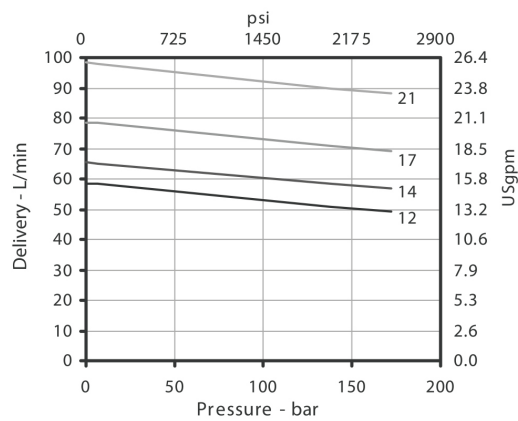
### 25HV, Shaft End of 25HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

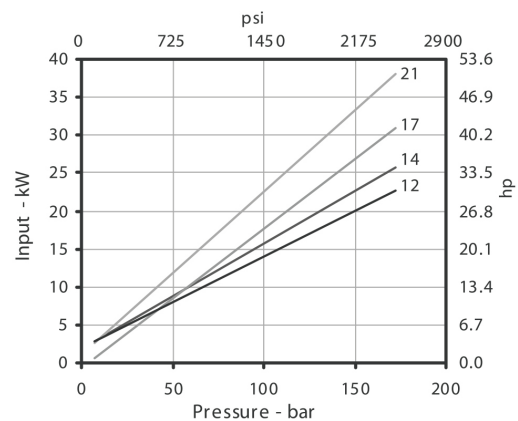
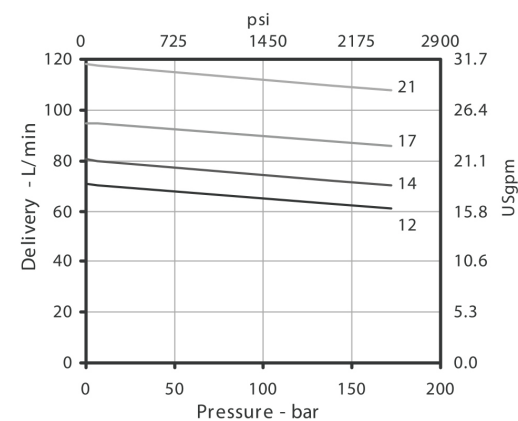
At 1200 rpm



At 1500 rpm



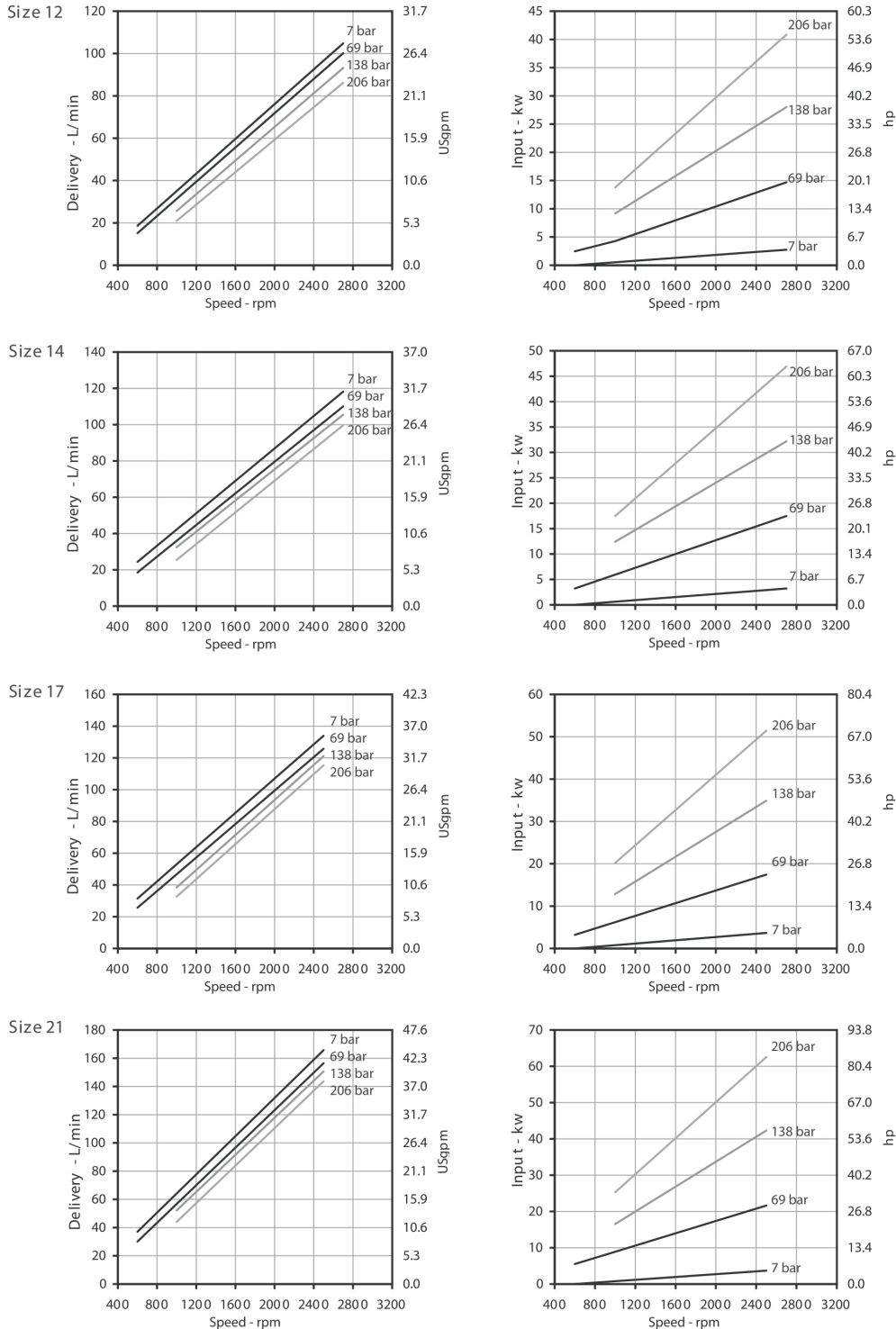
At 1800 rpm



# High Performance Double Vane Pump 2520 HV/HVQ Series

## 25HVQ, Shaft End of 25HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



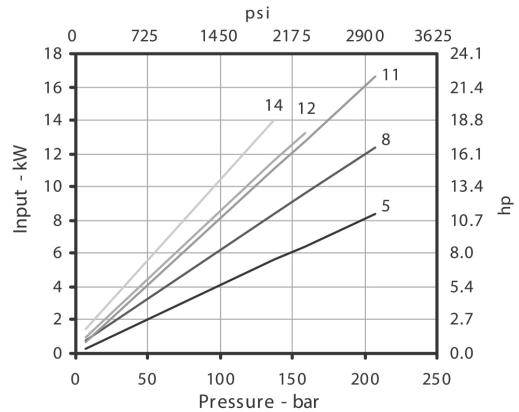
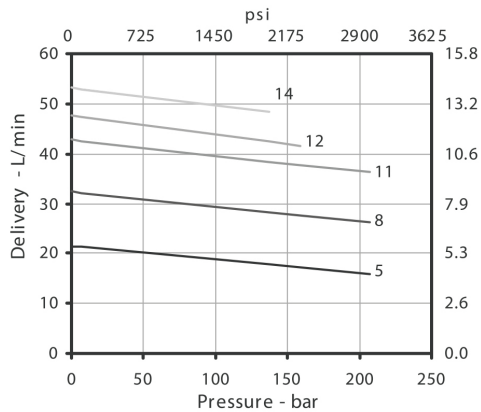
For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 2520 HV/HVQ Series

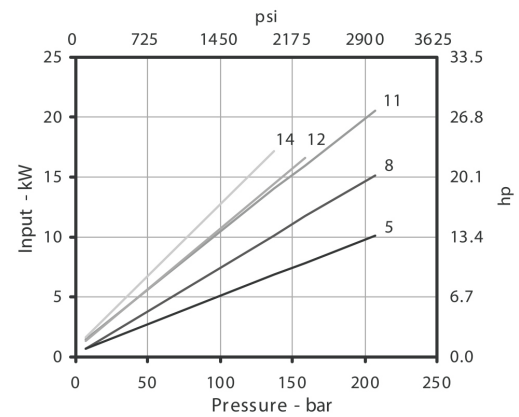
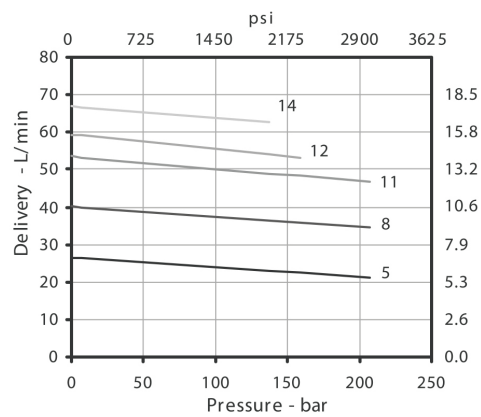
20HV, Cover End of 20HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

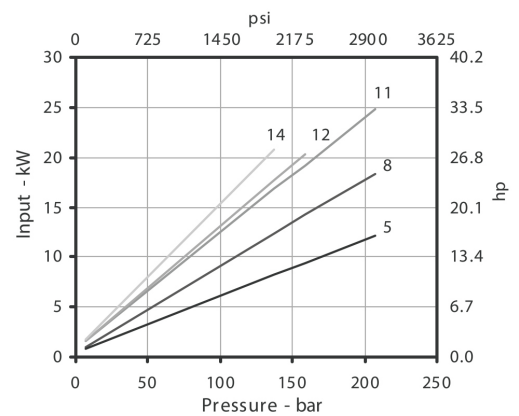
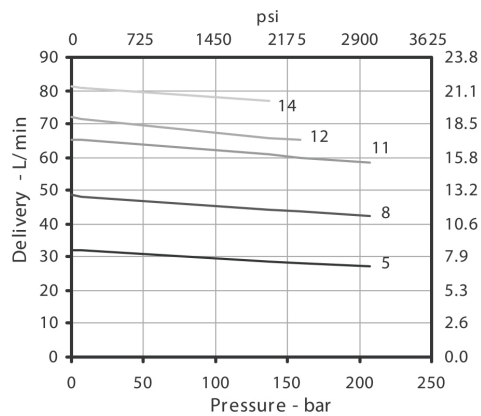
At 1200 rpm



At 1500 rpm



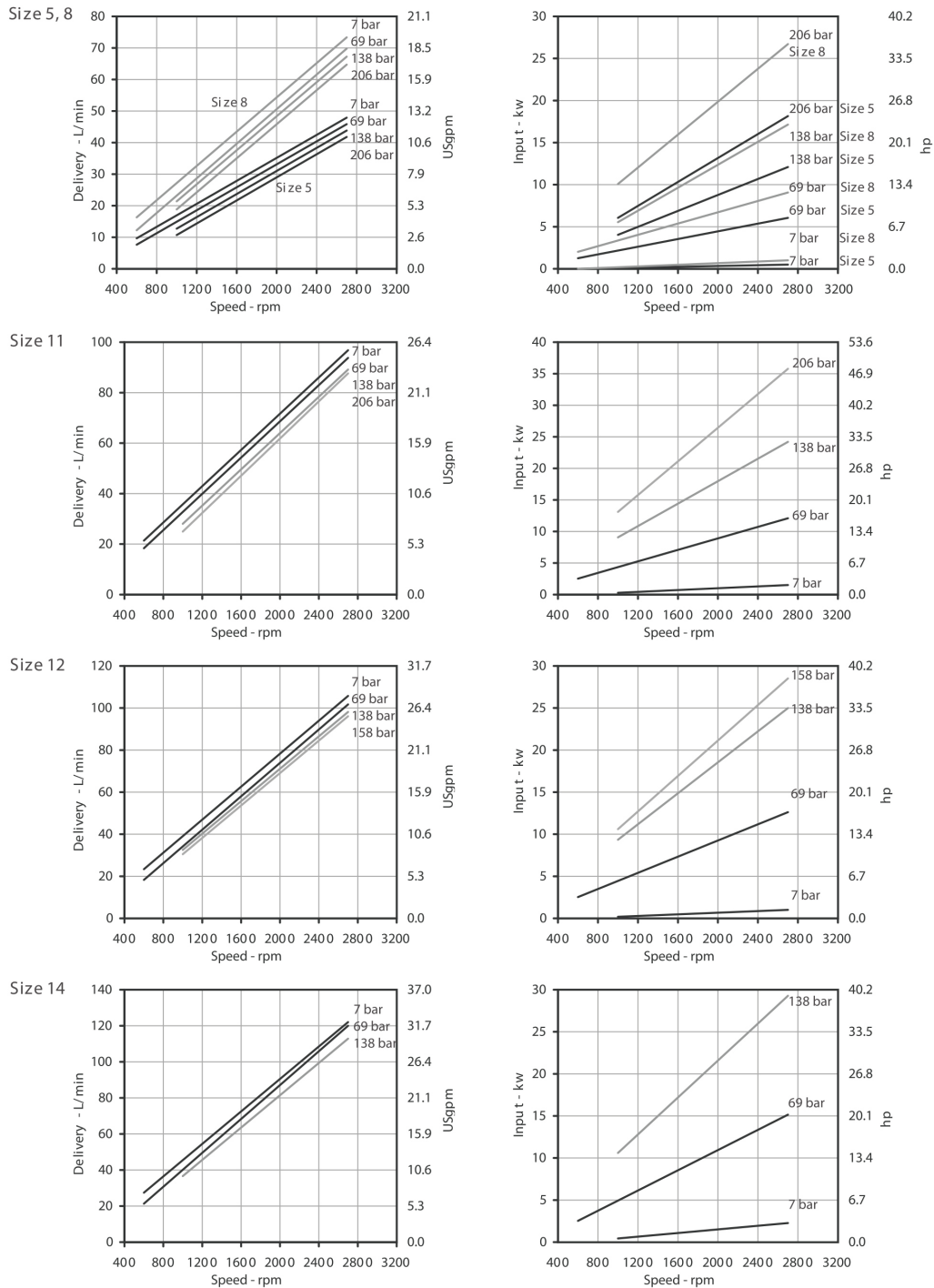
At 1800 rpm



# High Performance Double Vane Pump 2520 HV/HVQ Series

## 20HVQ, Cover End of 20HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 3520 HV/HVQ Series

## Specifications :

### 3520 HV Series

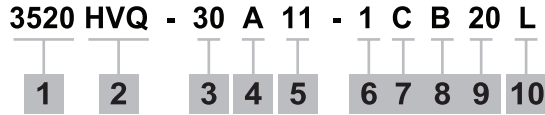
Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight	
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)	
3520HV	Shaft End	21	68.3 (4.18)	1800	172 (2500)	106.3 (28.1)	33.9 (45.5)	31.2 (68.6)	
		25	81.0 (4.94)			124.9 (33.0)	45.5 (61.0)		
		30	97.0 (5.91)			154.4 (40.8)	54.5 (73.0)		
		32	100.9 (6.15)			167.0 (44.0)	56.7 (76.0)		
		35	112.0 (6.83)			181.7 (48.0)	61.5 (82.4)		
		38	121.0 (7.37)			193.8 (51.2)	65.9 (88.3)		
	Cover End	2	7.0 (0.42)		206 (3000)	11.3 (3.00)	5.2 (7.0)		
		5	18.0 (1.10)			28.4 (7.5)	11.2 (15.0)		
		8	27.0 (1.67)			45.4 (12.0)	17.0 (22.8)		
		9	30.2 (1.84)			51.0 (13.5)	18.7 (25.1)		
		11	36.0 (2.22)			56.8 (15.0)	22.6 (30.3)		
		12	40.0 (2.47)			158 (2300)	62.1 (16.4)		25.1 (33.7)
		14	45.0 (2.78)			138 (2000)	69.6 (18.4)		28.3 (37.9)

### 3520 HVQ Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight	
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)	
3520HVQ & 3620HVQ	Shaft End	21	68.3 (4.18)	2500	206 (3000)	143.8 (38.0)	55.0 (73.9)	31.2 (68.6)	
		25	81.0 (4.94)			145.7 (38.5)	66.4 (89.0)		
		30	97.0 (5.91)			177.9 (47.0)	77.6 (104.0)		
		32	100.9 (6.15)			199.0 (52.6)	80.5 (109.5)		
		35	112.0 (6.83)			208.2 (55.0)	89.5 (120.0)		
		38	121.0 (7.37)			223.3 (59.0)	97.0 (130.0)		
	Cover End	2	7.0 (0.42)		206 (3000)	15.0 (4.0)	6.1 (8.2)		
		5	18.0 (1.10)			37.9 (10.0)	16.4 (22.0)		
		8	27.0 (1.67)			60.6 (16.0)	24.2 (32.5)		
		9	30.2 (1.84)			67.8 (17.9)	27.5 (36.8)		
		11	36.0 (2.22)			69.5 (18.35)	31.4 (42.05)		
		12	40.0 (2.47)			158 (2300)	88.9 (23.5)		26.1 (35.0)
		14	45.0 (2.78)			138 (2000)	104.1 (27.5)		26.9 (36.0)

# High Performance Double Vane Pump 3520 HV/HVQ Series

## Ordering Code : Double Pump



1. Model :

- 3520 - Standard Bearing
- 3620 - Heavy Duty Bearing
- SAE C 2 bolts mounting flange J744

2. Series

- HV - Industrial
- HVQ - Mobile

3. Displacement P1

- Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)
- 21 - 68.3 (4.18)
  - 25 - 81.0 (4.94)
  - 30 - 97.0 (5.91)
  - 32 - 100.9 (6.15)
  - 35 - 112.0 (6.83)
  - 38 - 121.0 (7.37)

4. Port Connection (4 bolts SAE flange J518C)

- A - UNC Port Connection
- AM - Metric Port Connection

5. Displacement P2

- Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)
- 02 - 7.0 (0.43)
  - 05 - 18.0 (1.10)
  - 08 - 27.3 (1.67)
  - 09 - 30.3 (1.85)
  - 11 - 36.3 (2.22)
  - 12 - 40.4 (2.47)
  - 14 - 45.5 (2.78)

6. Type of shaft

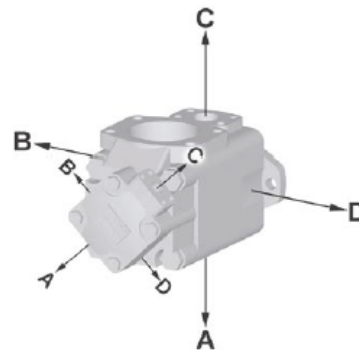
- 1 - Straight Keyed Shaft
- 11 - Splined Shaft
- 86 - Heavy Duty Straight Keyed Shaft

7. Shaft End Outlet Port Position (Viewed from cover end)

- A - Opposite inlet
- B - 90° CCW from inlet
- C - Inline with inlet
- D - 90° CW from inlet

8. Cover End Outlet Port Position (Viewed from cover end)

- A - 135° CCW from inlet
- B - 45° CCW from inlet
- C - 45° CW from inlet
- D - 135° CW from inlet



9. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

10. Shaft Rotation (viewed from shaft end)

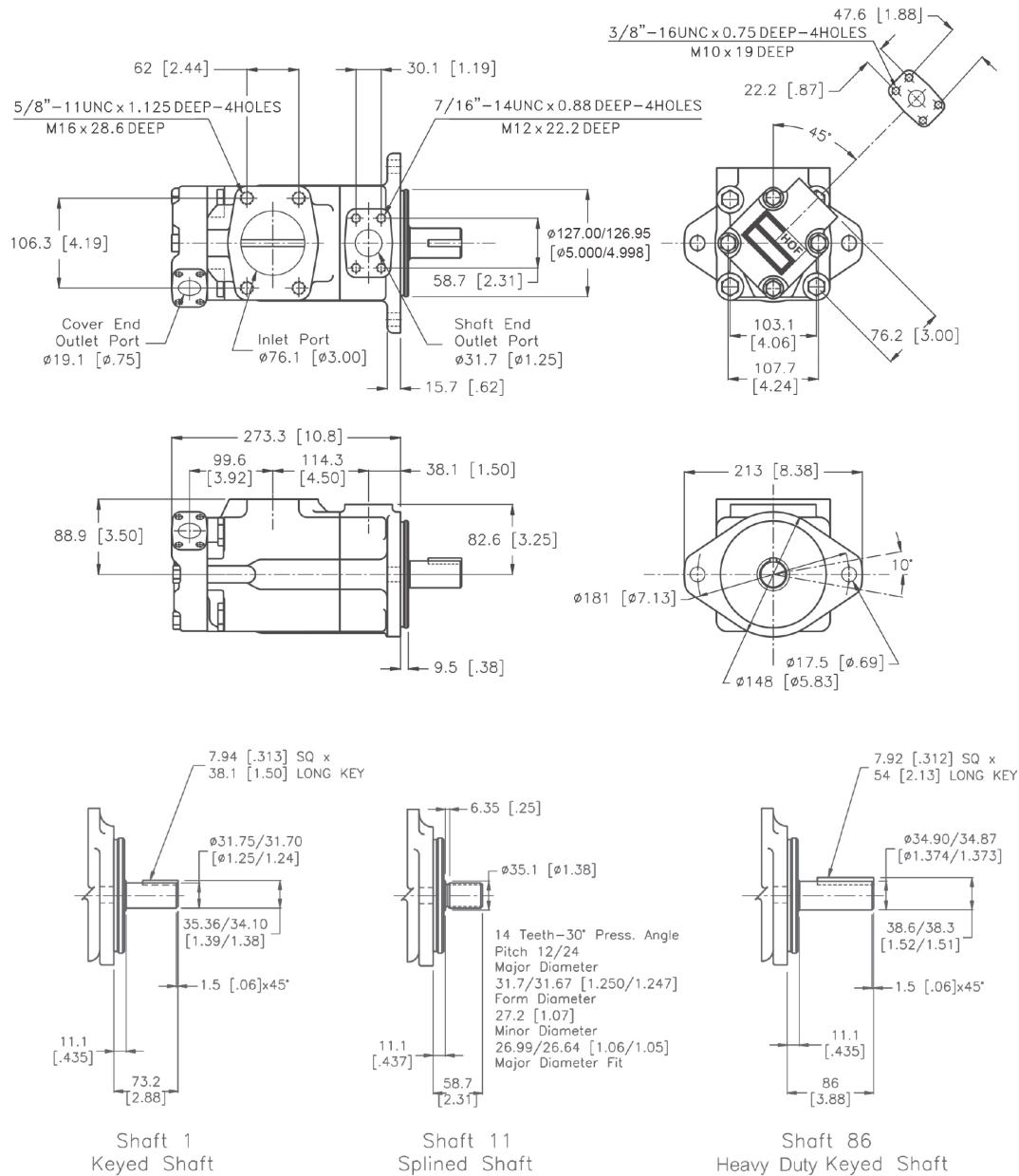
- R - Turn right
- L - Turn left



# High Performance Double Vane Pump 3520 HV/HVQ Series

## Installation Dimension mm (inch)

### Double Pump 3520HV/HVQ



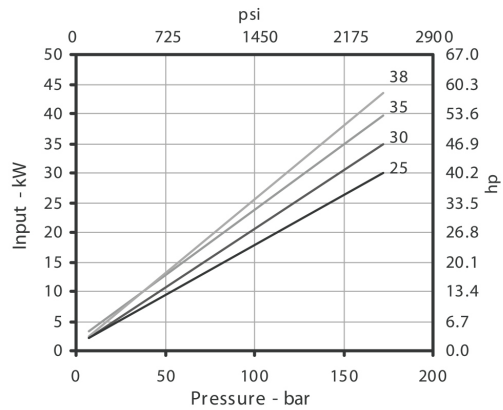
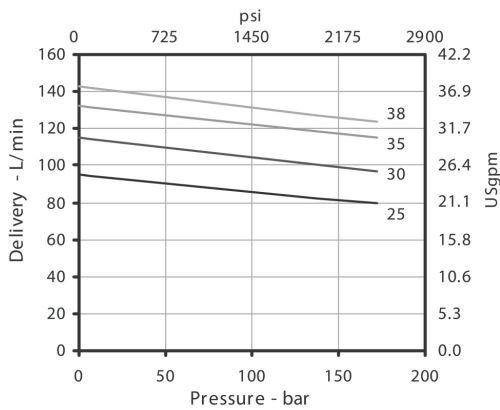
# High Performance Double Vane Pump 3520 HV/HVQ Series

## Performance Characteristics

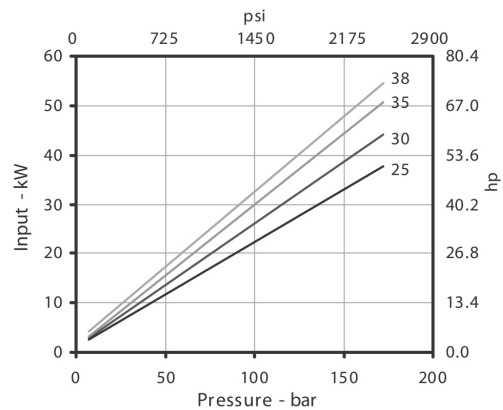
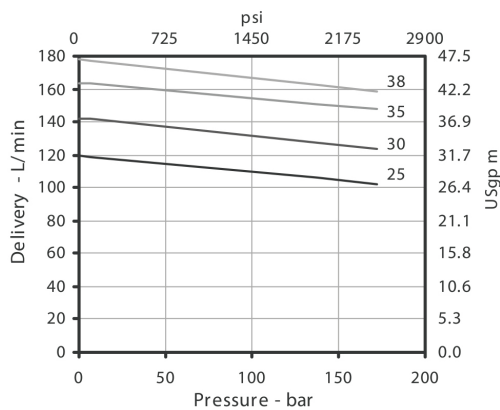
### 35HV, Shaft End of 35HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

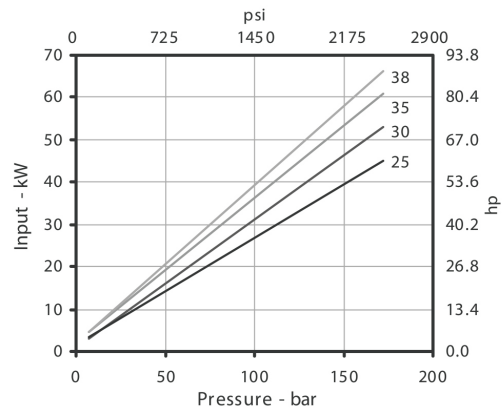
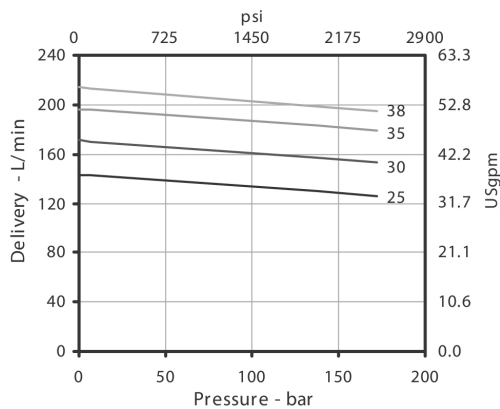
At 1200 rpm



At 1500 rpm



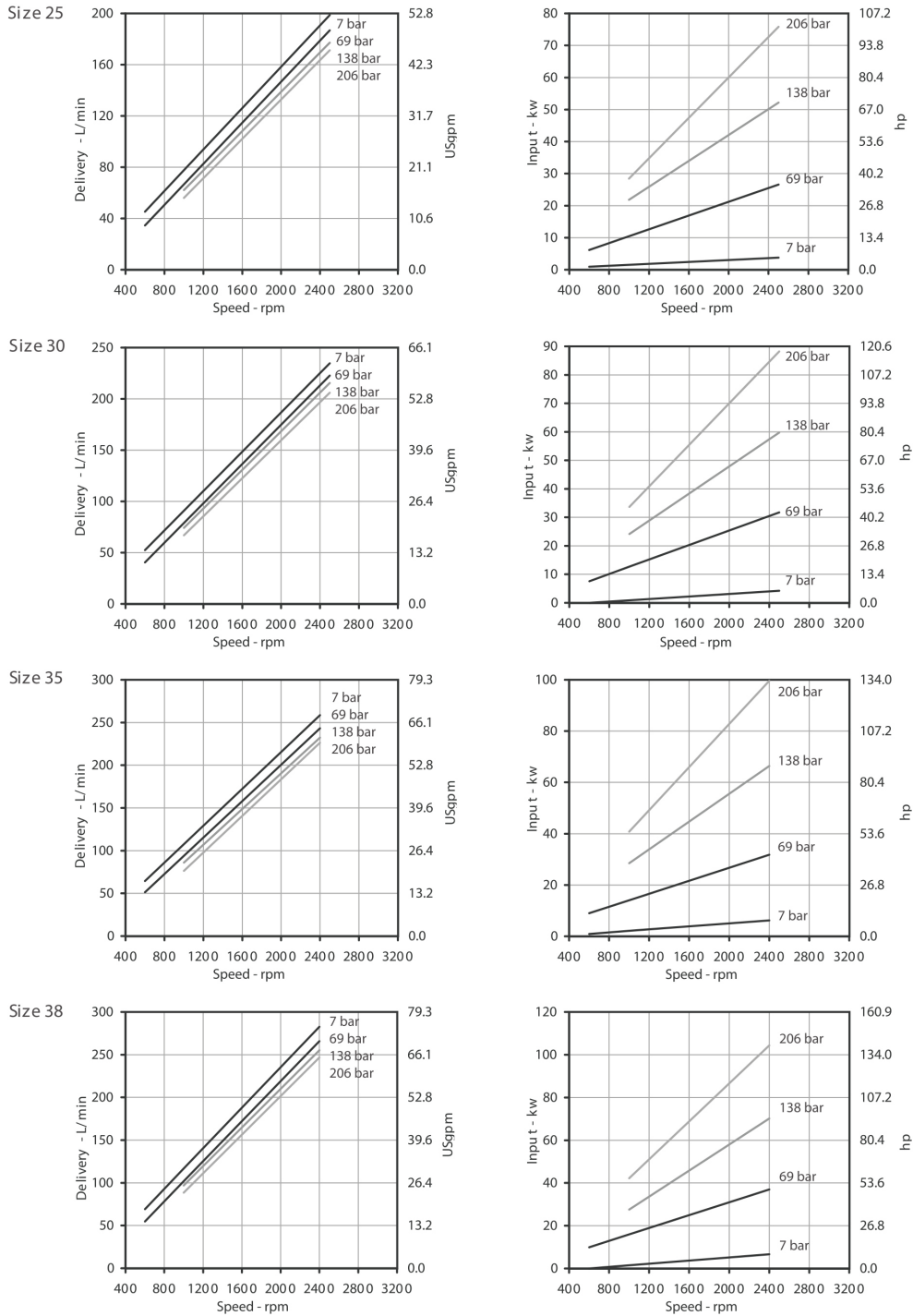
At 1800 rpm



# High Performance Double Vane Pump 3520 HV/HVQ Series

## 35HVQ, Shaft End of 35HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



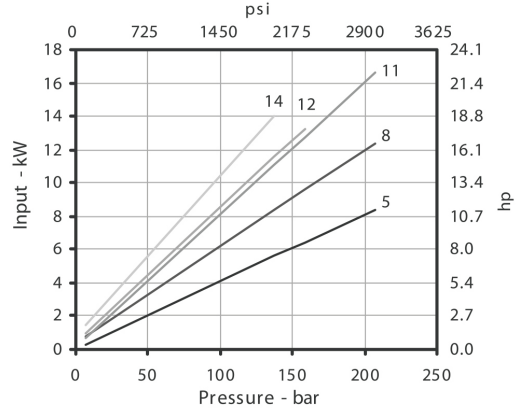
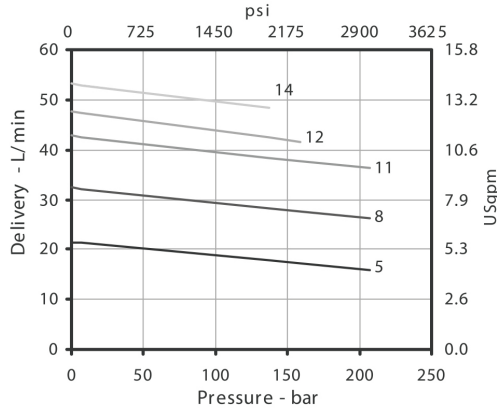
For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 3520 HV/HVQ Series

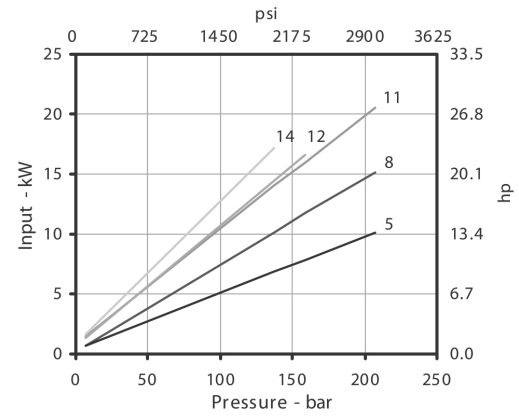
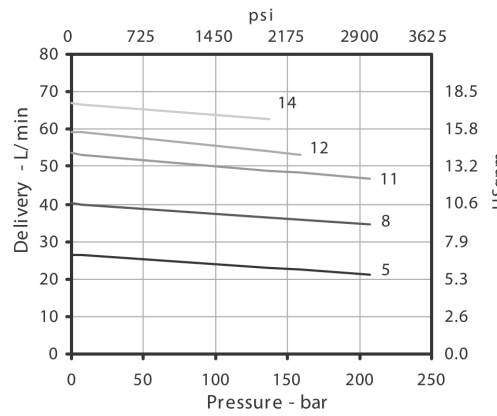
## 20HV, Cover End of 20HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

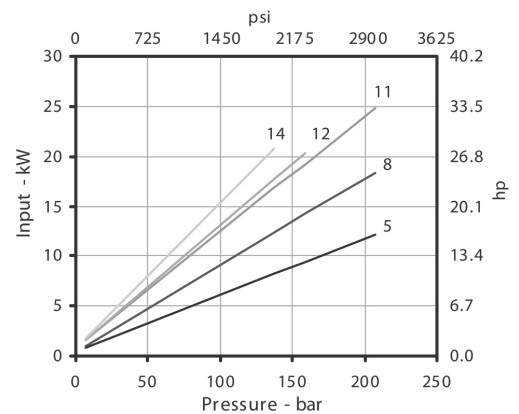
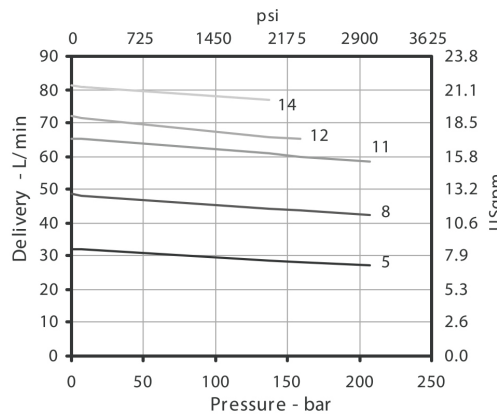
At 1200 rpm



At 1500 rpm



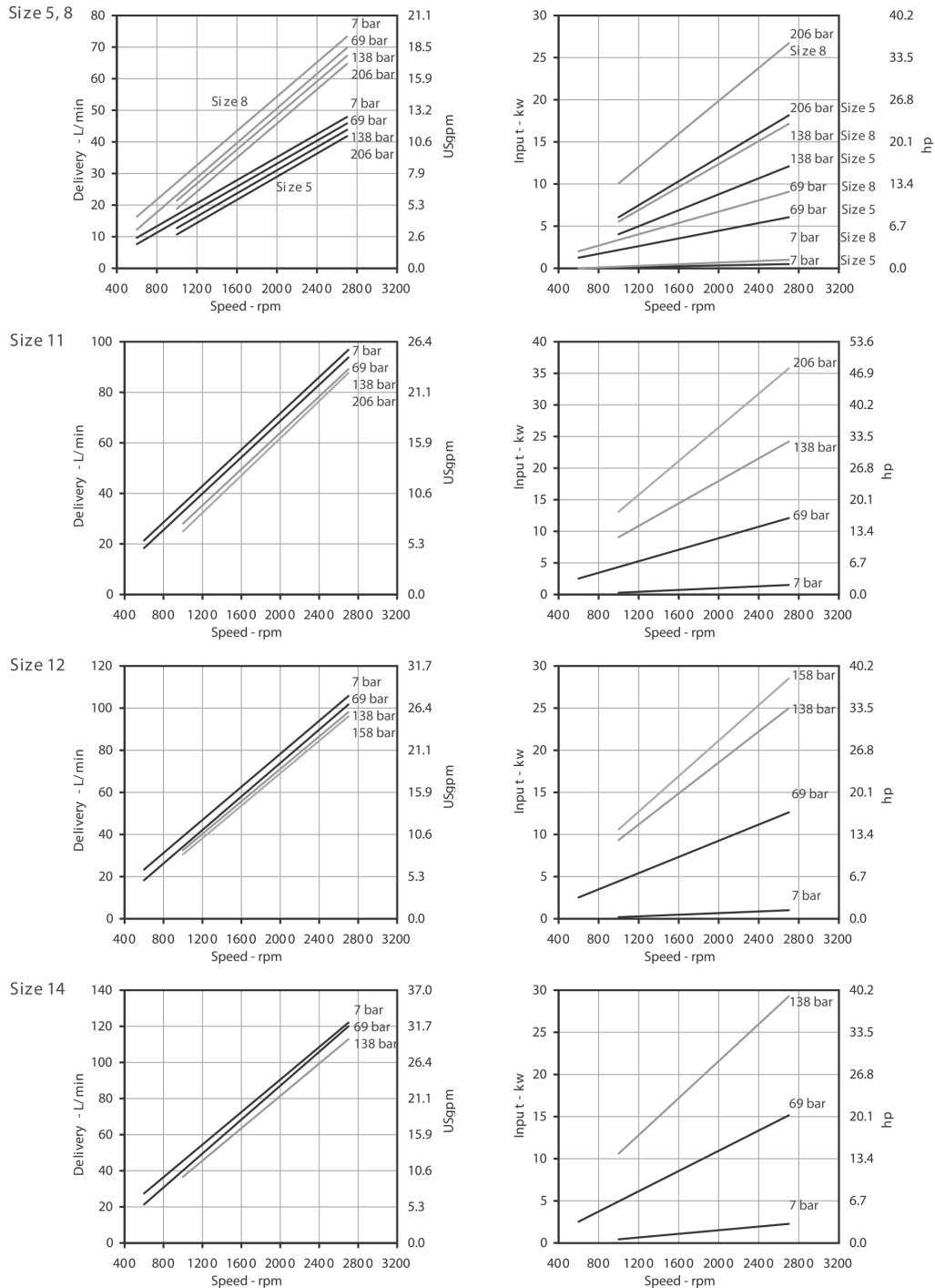
At 1800 rpm



# High Performance Double Vane Pump 3520 HV/HVQ Series

## 20HVQ, Cover End of 20HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 3525 HV/HVQ Series

## Specifications :

### 3525 HV Series

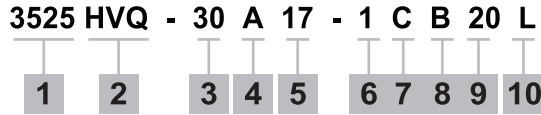
Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
3525HV	Shaft End	21	68.3 (4.18)	1800	172 (2500)	106.3 (28.1)	33.9 (45.5)	34.5 (75.9)
		25	81.0 (4.94)			124.9 (33.0)	45.5 (61.0)	
		30	97.0 (5.91)			154.4 (40.8)	54.5 (73.0)	
		32	100.9 (6.15)			167.0 (44.0)	56.7 (76.0)	
		35	112.0 (6.83)			181.7 (48.0)	61.5 (82.4)	
		38	121.0 (7.37)			193.8 (51.2)	65.9 (88.3)	
	Cover End	12	39.0 (2.47)			62.1 (16.4)	22.9 (30.8)	
		14	45.0 (2.78)			69.6 (18.4)	25.7 (34.5)	
		17	55.0 (3.39)			86.3 (22.8)	29.8 (40.0)	
		19	60.8 (3.72)			91.6 (25.4)	32.5 (43.5)	
		21	67.0 (4.13)			106.0 (28.0)	34.0 (45.6)	

### 3525 HVQ Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
3525HVQ & 3625HVQ	Shaft End	21	68.3 (4.18)	2500	206 (3000)	143.8 (38.0)	55.0 (73.9)	34.5 (75.9)
		25	81.0 (4.94)			145.7 (38.5)	66.4 (89.0)	
		30	97.0 (5.91)			177.9 (47.0)	77.6 (104.0)	
		32	100.9 (6.15)			199.0 (52.6)	80.5 (109.5)	
		35	112.0 (6.83)			208.2 (55.0)	89.5 (120.0)	
		38	121.0 (7.37)			223.3 (59.0)	97.0 (130.0)	
	Cover End	12	40.0 (2.45)			84.0 (22.18)	34.0 (46.4)	
		14	45.0 (2.77)			98.7 (26.08)	39.1 (52.47)	
		17	55.0 (3.37)			117.3 (31.0)	51.5 (69.0)	
		19	60.8 (3.72)			130.5 (34.50)	53.0 (71.0)	
		21	67.0 (4.12)			143.8 (38.0)	61.9 (83.0)	

# High Performance Double Vane Pump 3525 HV/HVQ Series

## Ordering Code : Double Pump



**1. Model :**

- 3525 - Standard Bearing
- 3625 - Heavy Duty Bearing
- SAE C 2 bolts mounting flange J744

**2. Series**

- HV - Industrial
- HVQ - Mobile

**3. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 21 - 68.3 (4.18)
- 25 - 81.0 (4.94)
- 30 - 97.0 (5.91)
- 32 - 100.9 (6.15)
- 35 - 112.0 (6.83)
- 38 - 121.0 (7.37)

**4. Port Connection (4 bolts SAE flange J518C)**

- A - UNC Port Connection
- AM - Metric Port Connection

**5. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 12 - 39.0 (2.47)
- 14 - 45.0 (2.78)
- 17 - 55.3 (3.39)
- 19 - 60.8 (3.72)
- 21 - 67.0 (4.13)

**6. Type of shaft**

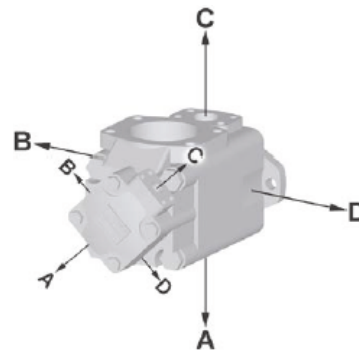
- 1 - Straight Keyed Shaft
- 11 - Splined Shaft
- 86 - Heavy Duty Straight Keyed Shaft

**7. Shaft End Outlet Port Position (Viewed from cover end)**

- A - Opposite inlet
- B - 90° CCW from inlet
- C - Inline with inlet
- D - 90° CW from inlet

**8. Cover End Outlet Port Position (Viewed from cover end)**

- A - 135° CCW from inlet
- B - 45° CCW from inlet
- C - 45° CW from inlet
- D - 135° CW from inlet



**9. Design**

Subject to change. Installation dimension remain the same for designs - 20 through -29

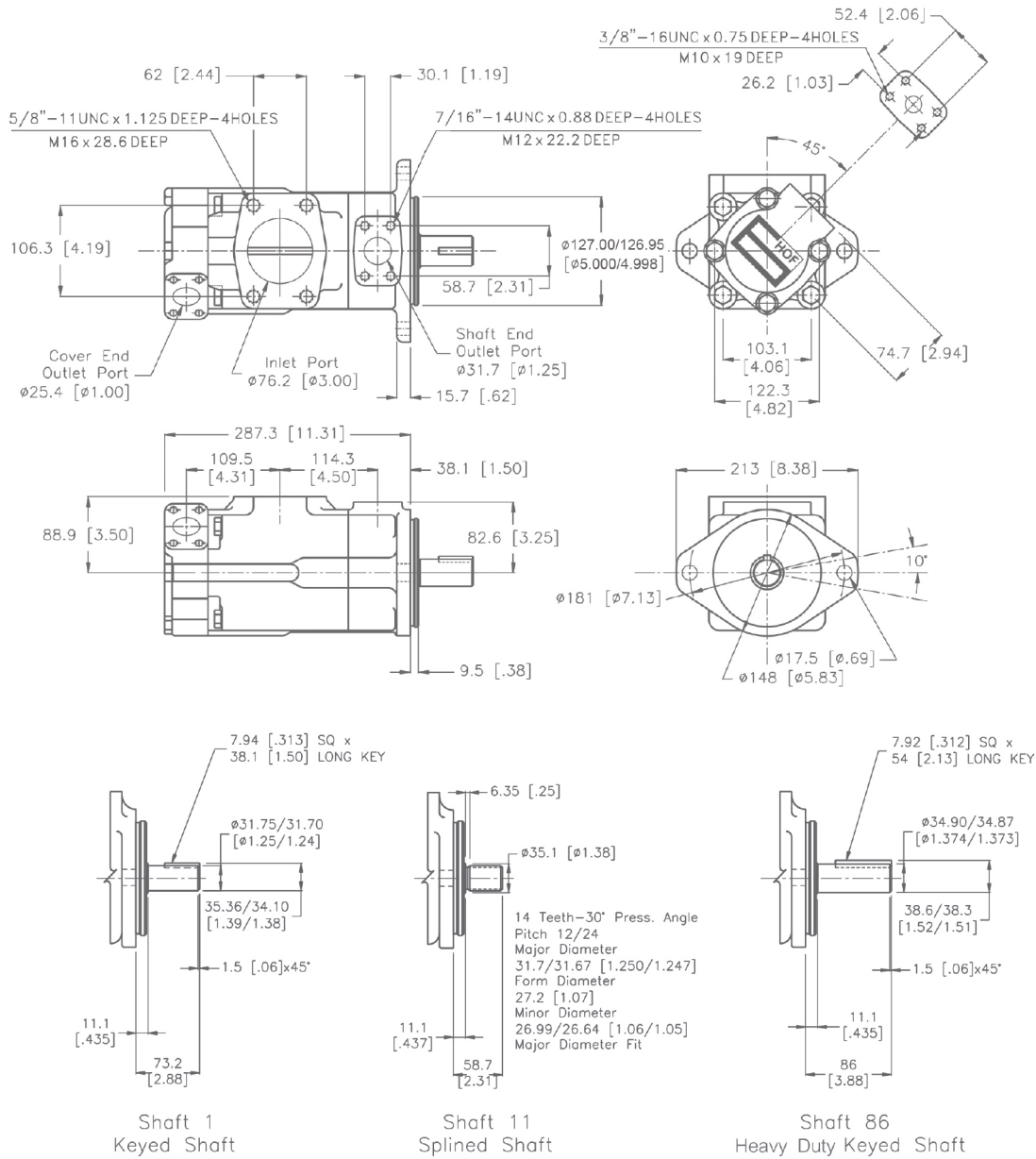
**10. Shaft Rotation (viewed from shaft end)**

- R - Turn right
- L - Turn left

# High Performance Double Vane Pump 3525 HV/HVQ Series

## Installation Dimension mm (inch)

### Double Pump 3525HV/HVQ





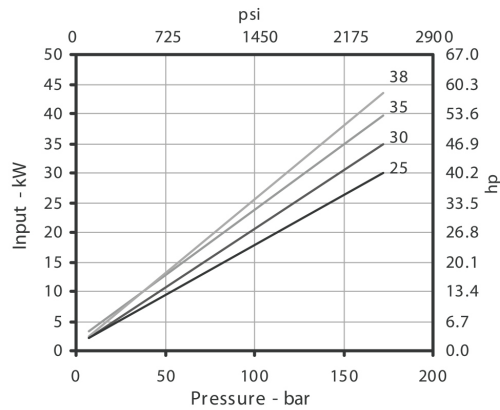
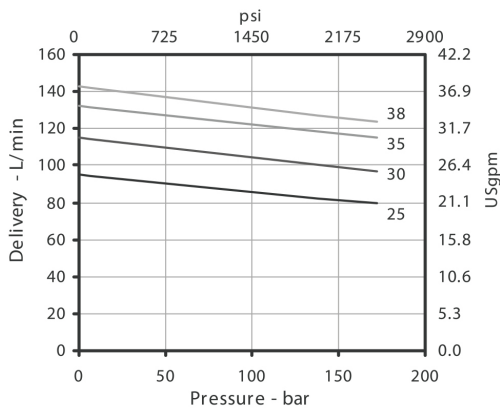
# High Performance Double Vane Pump 3525 HV/HVQ Series

## Performance Characteristics

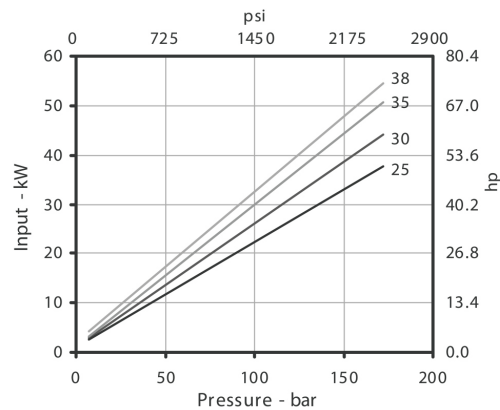
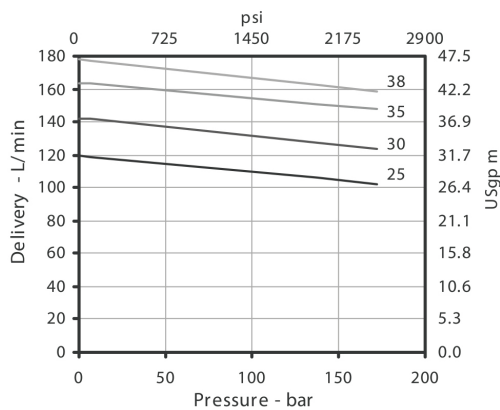
### 35HV, Shaft End of 35HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

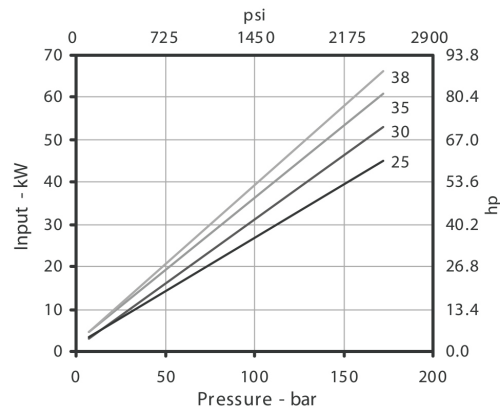
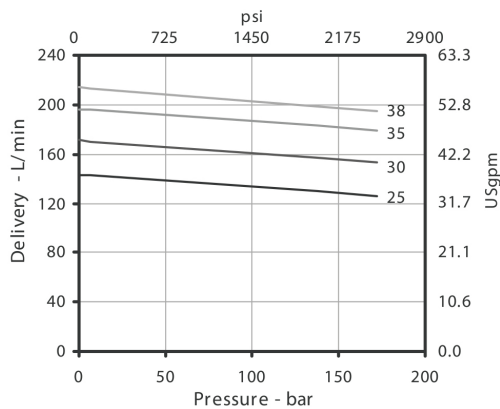
At 1200 rpm



At 1500 rpm



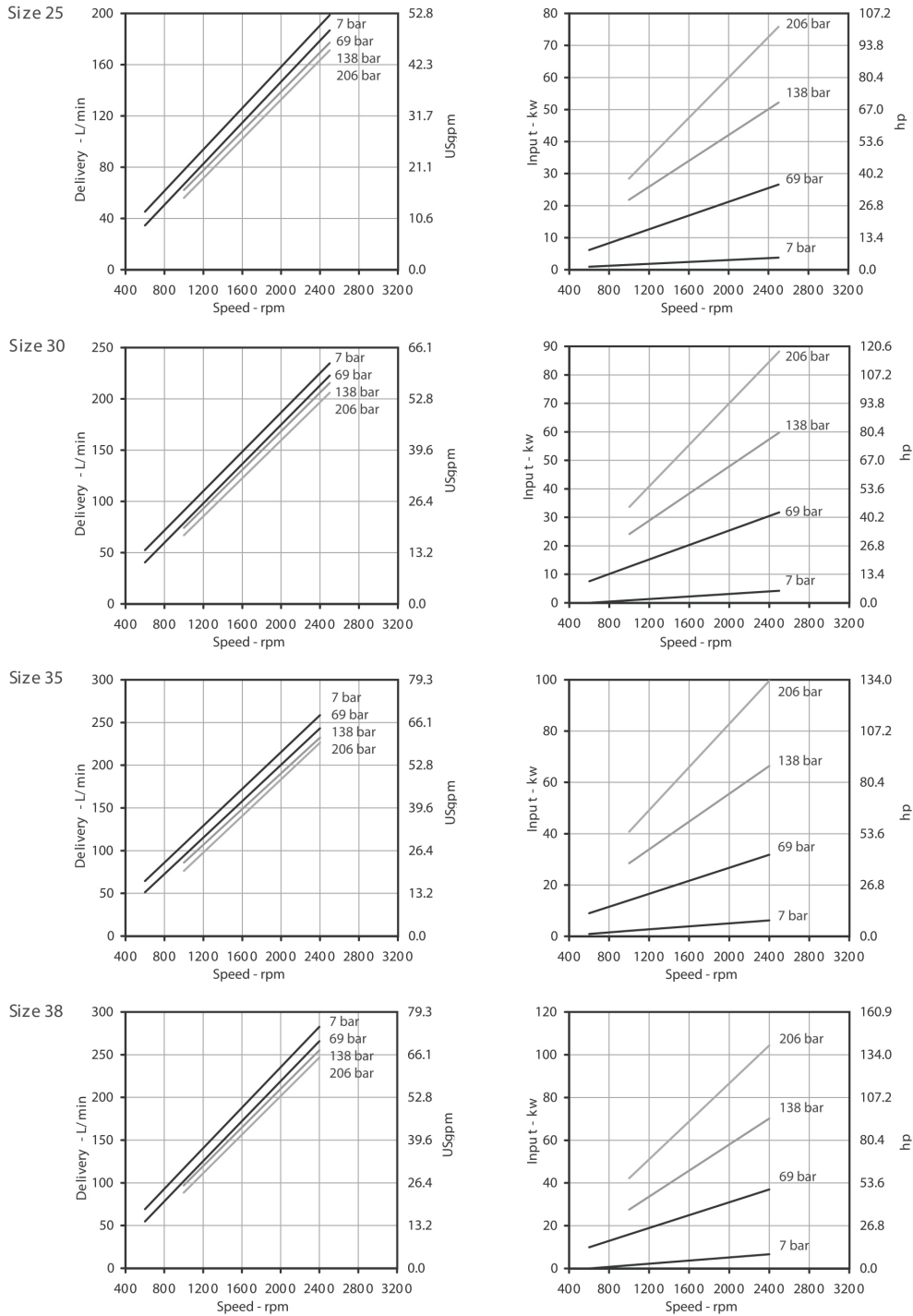
At 1800 rpm



# High Performance Double Vane Pump 3525 HV/HVQ Series

## 35HVQ, Shaft End of 35HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



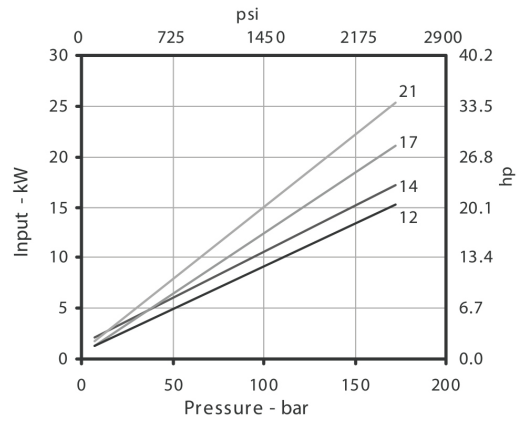
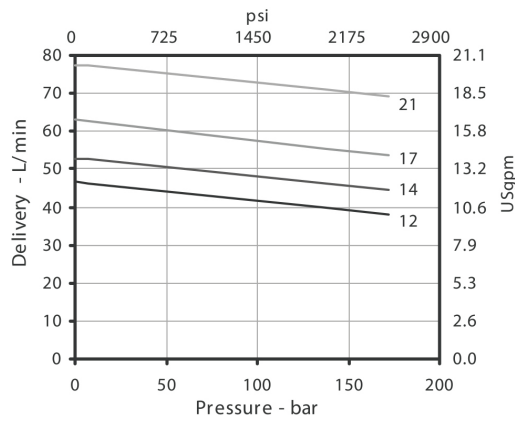
For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 3525 HV/HVQ Series

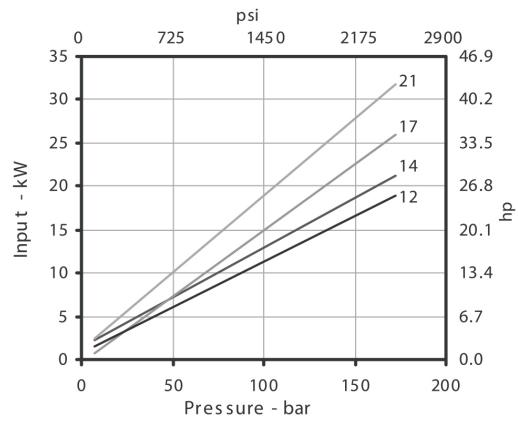
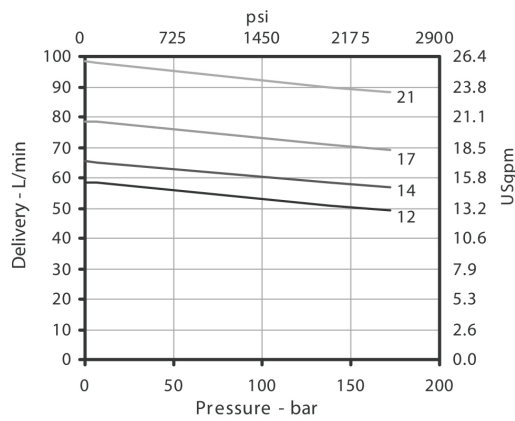
## 25HV, Cover End of 25HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

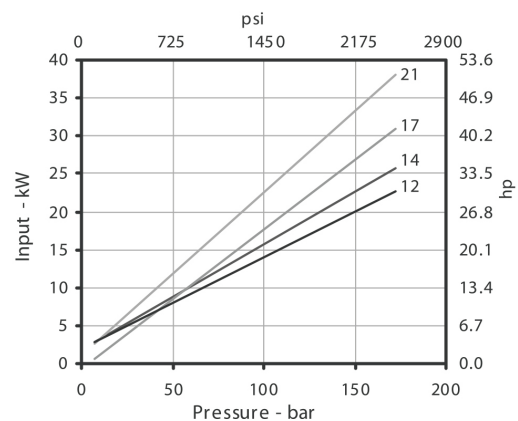
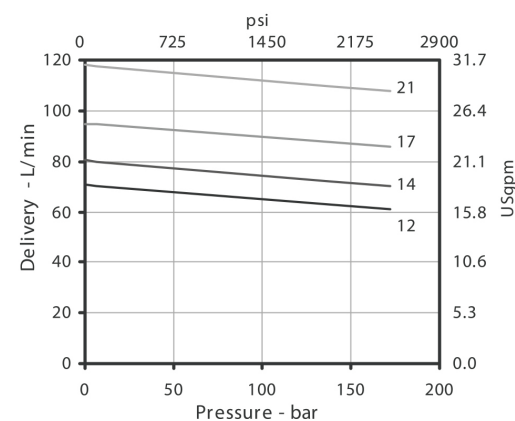
At 1200 rpm



At 1500 rpm



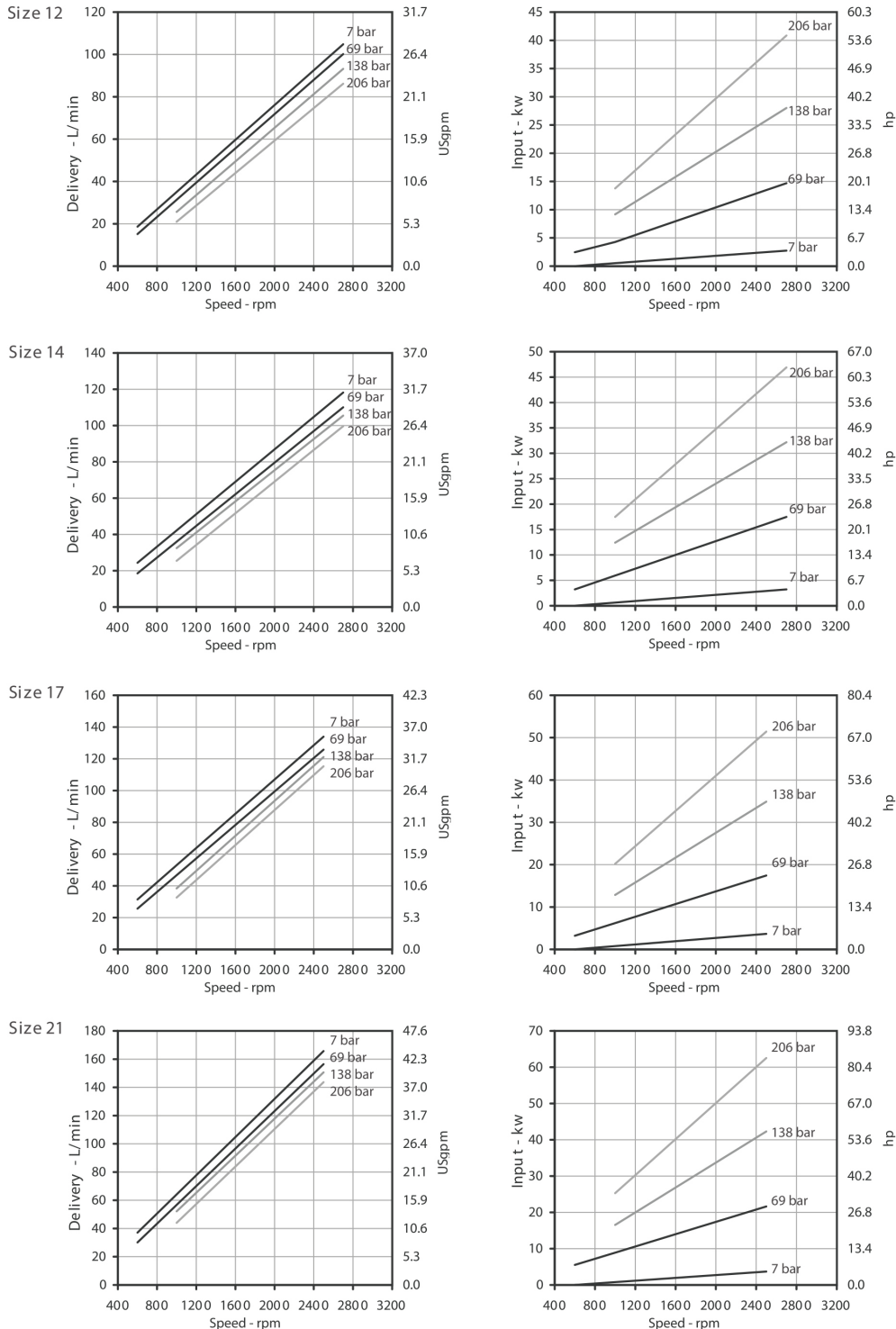
At 1800 rpm



# High Performance Double Vane Pump 3525 HV/HVQ Series

## 25HVQ, Cover End of 25HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 4520 HV/HVQ Series

## Specifications :

### 4520 HV Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
4520HV	Shaft End	35	110.4 (6.73)	1800	172 (2500)	179.0 (47.2)	60.0 (80.4)	43.0 (94.6)
		38	119.8 (7.32)			194.0 (51.3)	65.1 (87.3)	
		42	138.0 (8.41)			208.2 (55.0)	75.3 (101.0)	
		47	151.4 (9.26)			244.1 (64.5)	82.5 (110.6)	
		50	162.0 (9.85)			253.6 (67.0)	87.3 (117.0)	
		52	164.0 (10.0)			266.0 (70.0)	89.1 (119.5)	
		57	183.6 (11.23)			295.0 (77.8)	94.0 (126.0)	
		60	193.0 (11.75)			310.4 (82.0)	103.7 (139.0)	
		62	196.0 (11.94)			317.0 (83.7)	106.5 (142.8)	
		64	202.0 (12.33)			327.0 (86.4)	109.7 (147.1)	
	66	208.0 (12.7)	337.0 (89.0)		113.0 (151.5)			
	Cover End	2	7.0 (0.42)		206 (3000)	11.3 (3.0)	5.2 (7.0)	
		5	18.0 (1.10)			28.4 (7.5)	11.2 (15.0)	
		8	27.0 (1.67)			45.4 (12.0)	17.0 (22.8)	
9		30.2 (1.84)	51.0 (13.5)	18.7 (25.1)				
	11	36.0 (2.22)		56.8 (15.0)	22.6 (30.3)			
	12	40.0 (2.47)	158 (2300)	62.1 (16.4)	25.1 (33.7)			
	14	45.0 (2.78)	138 (2000)	69.6 (18.4)	28.3 (37.9)			

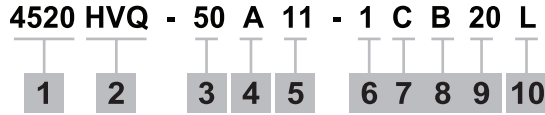
# High Performance Double Vane Pump 4520 HV/HVQ Series

## 4520 HVQ Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
4520HVQ	Shaft End	35	110.4 (6.73)	2200	172 (2500)	219.0 (57.7)	73.3 (98.3)	43.0 (94.6)
		38	119.8 (7.32)			237.0 (62.7)	79.5 (106.7)	
		42	138.0 (8.46)			251.7 (66.5)	91.4 (122.5)	
		47	151.4 (9.26)			280.8 (74.2)	95.0 (127.3)	
		50	162.0 (9.90)			299.0 (79.0)	105.2 (141.0)	
		52	164.0 (10.0)			325.0 (85.7)	106.6 (143.0)	
		57	183.6 (11.23)			342.5 (90.5)	109.3 (146.6)	
		60	193 (11.80)			363.4 (96.0)	126.8 (170.0)	
		62	196.0 (11.94)			387.0 (102.3)	128.8 (172.7)	
		64	202.0 (12.33)			400.0 (105.7)	132.7 (178.0)	
	66	208.0 (12.7)	412.0 (109.0)	136.6 (183.2)				
	Cover End	2	7.0 (0.42)	206 (3000)	13.6 (3.6)	5.6 (7.5)		
		5	18.0 (1.10)		32.2 (8.5)	14.5 (19.5)		
		8	27.0 (1.67)		51.1 (13.5)	21.3 (28.5)		
9		30.2 (1.84)	59.7 (15.7)		24.2 (32.5)			
	11	36.0 (2.22)	61.1 (16.15)	27.6 (37.01)				
	12	40.0 (2.47)	158 (2300)	77.6 (20.5)	23.1 (31.0)			
	14	45.0 (2.78)	138 (2000)	90.8 (24.0)	23.9 (32.0)			

# High Performance Double Vane Pump 4520 HV/HVQ Series

## Ordering Code : Double Pump



1. Model :  
4520 - Standard Bearing SAE C 2 bolts mounting flange J744

2. Series  
HV - Industrial  
HVQ - Mobile

3. Displacement P1  
Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

35	-	110.4	(6.73)
38	-	119.8	(7.32)
42	-	138.0	(8.41)
47	-	151.4	(9.26)
50	-	162.0	(9.85)
52	-	164.0	(10.0)
57	-	183.6	(11.23)
60	-	193.0	(11.75)
62	-	196.0	(11.94)
64	-	202.0	(12.33)
66	-	208.0	(12.7)

4. Port Connection (4 bolts SAE flange J518C)  
A - UNC Port Connection  
AM - Metric Port Connection

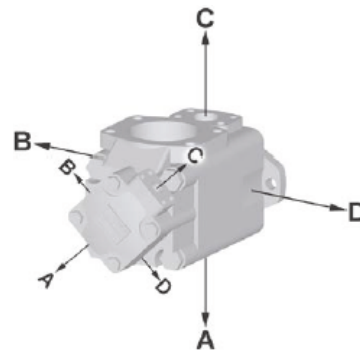
5. Displacement P2  
Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

02	-	7.0	(0.43)
05	-	18.0	(1.10)
08	-	27.3	(1.67)
09	-	30.3	(1.85)
11	-	36.3	(2.22)
12	-	40.4	(2.47)
14	-	45.5	(2.78)

6. Type of shaft  
1 - Straight Keyed Shaft  
11 - Splined Shaft  
86 - Heavy Duty Straight Keyed Shaft

7. Shaft End Outlet Port Position (Viewed from cover end)  
A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

8. Cover End Outlet Port Position (Viewed from cover end)  
A - 135° CCW from inlet  
B - 45° CCW from inlet  
C - 45° CW from inlet  
D - 135° CW from inlet



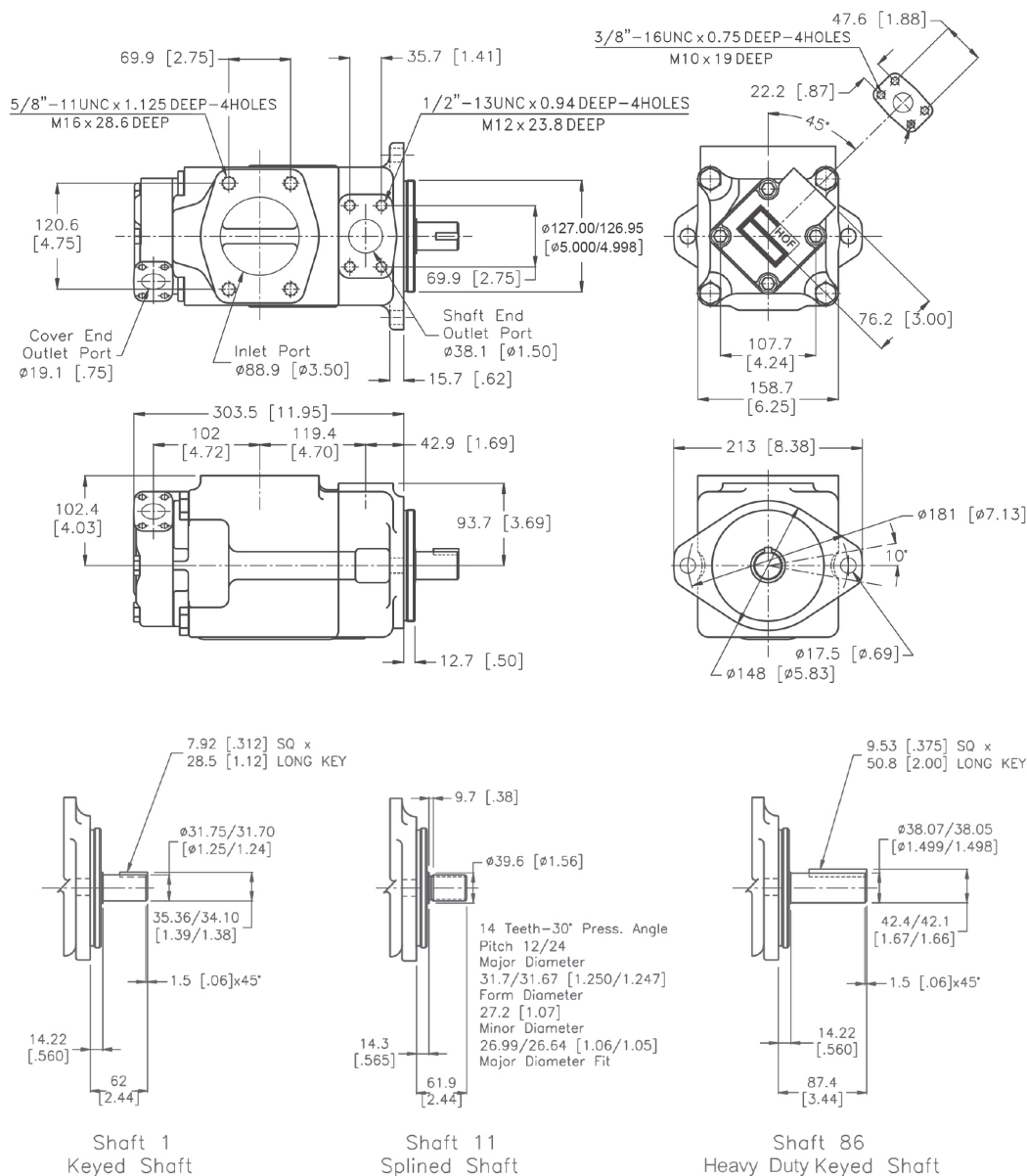
9. Design  
Subject to change. Installation dimension remain the same for designs - 20 through -29

10. Shaft Rotation (viewed from shaft end)  
R - Turn right  
L - Turn left

# High Performance Double Vane Pump 4520 HV/HVQ Series

## Installation Dimension mm (inch)

### Double Pump 4520HV/HVQ





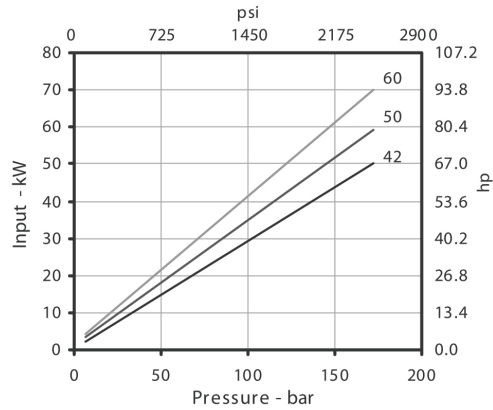
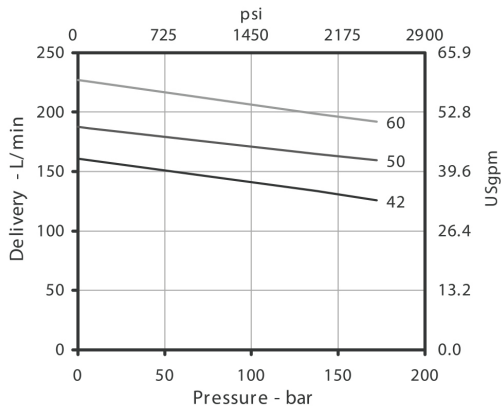
# High Performance Double Vane Pump 4520 HV/HVQ Series

## Performance Characteristics

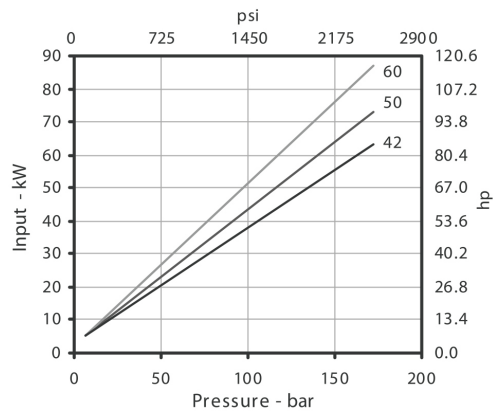
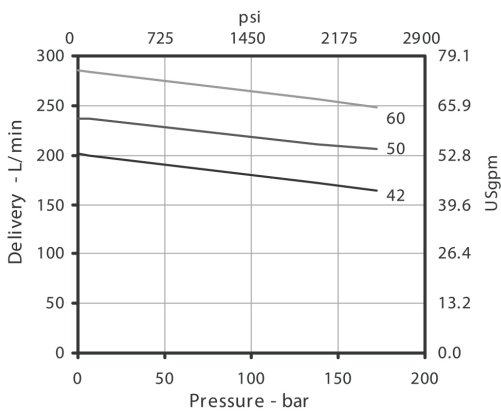
### 45HV, Shaft End of 45HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

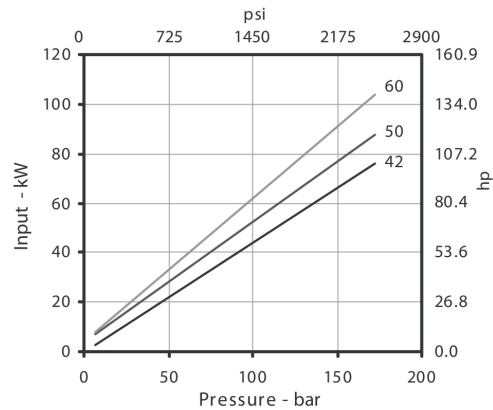
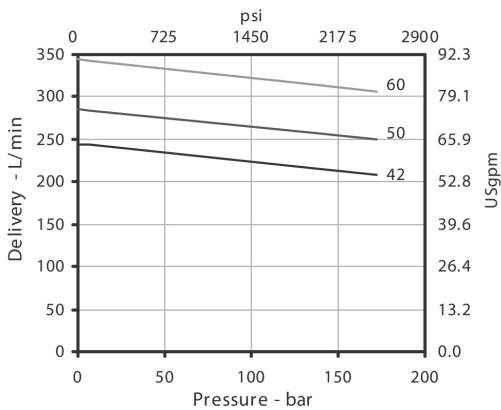
At 1200 rpm



At 1500 rpm



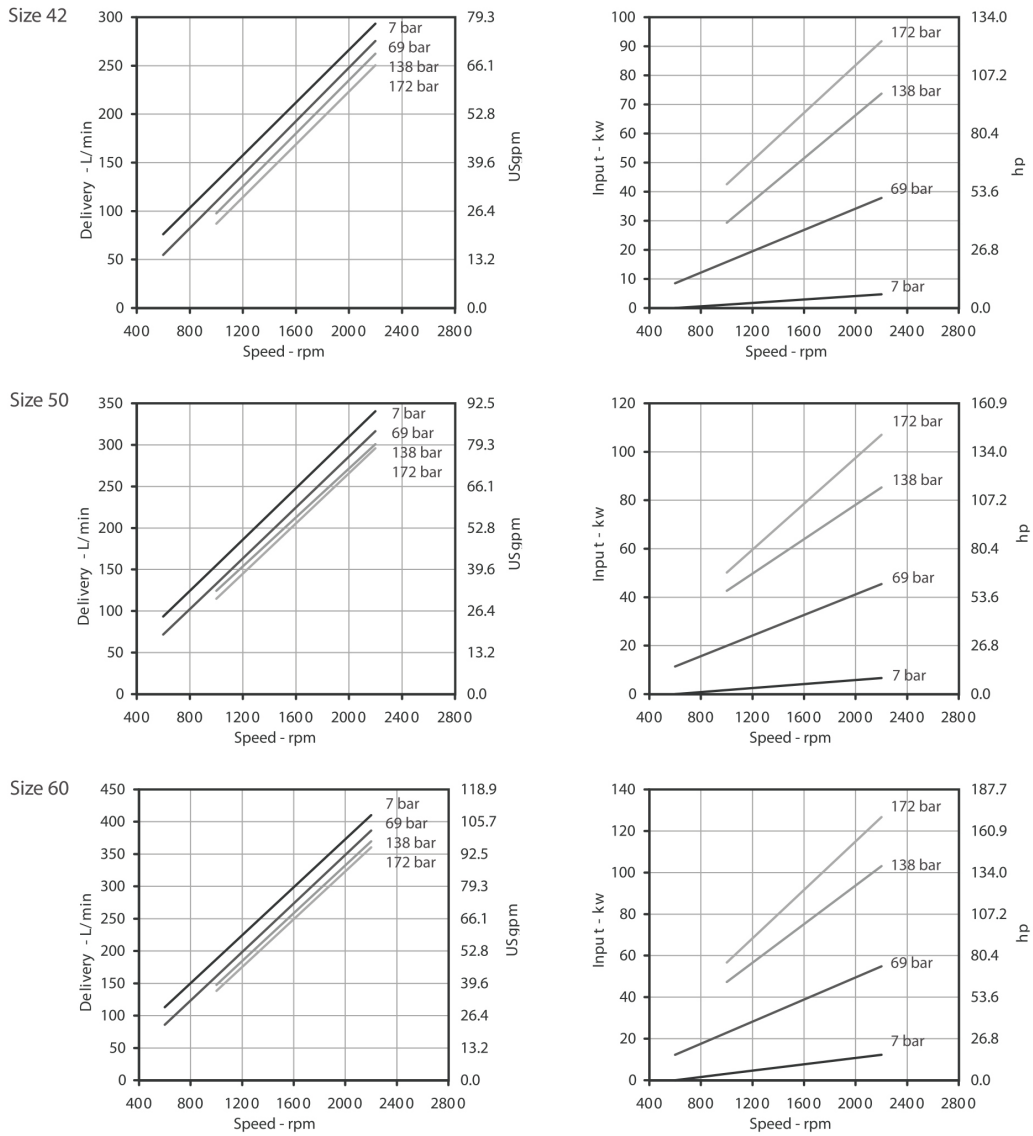
At 1800 rpm



# High Performance Double Vane Pump 4520 HV/HVQ Series

## 45HVQ, Shaft End of 45HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



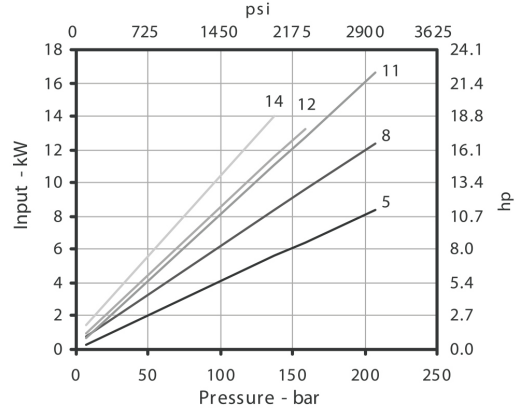
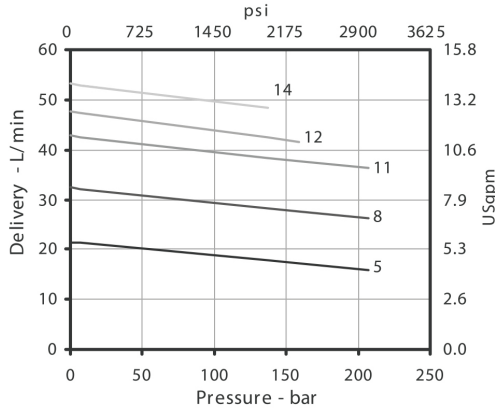
For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 4520 HV/HVQ Series

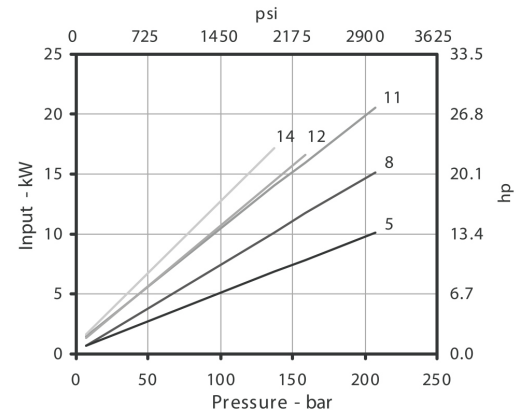
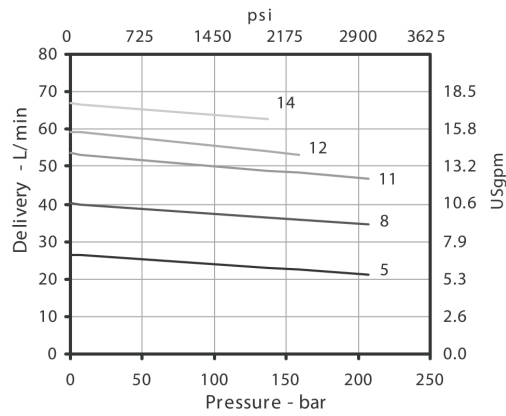
## 20HV, Cover End of 20HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

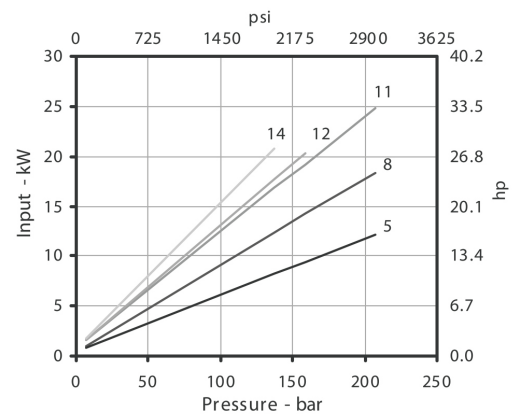
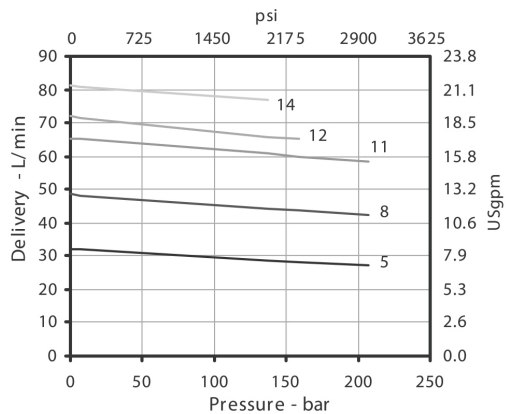
At 1200 rpm



At 1500 rpm



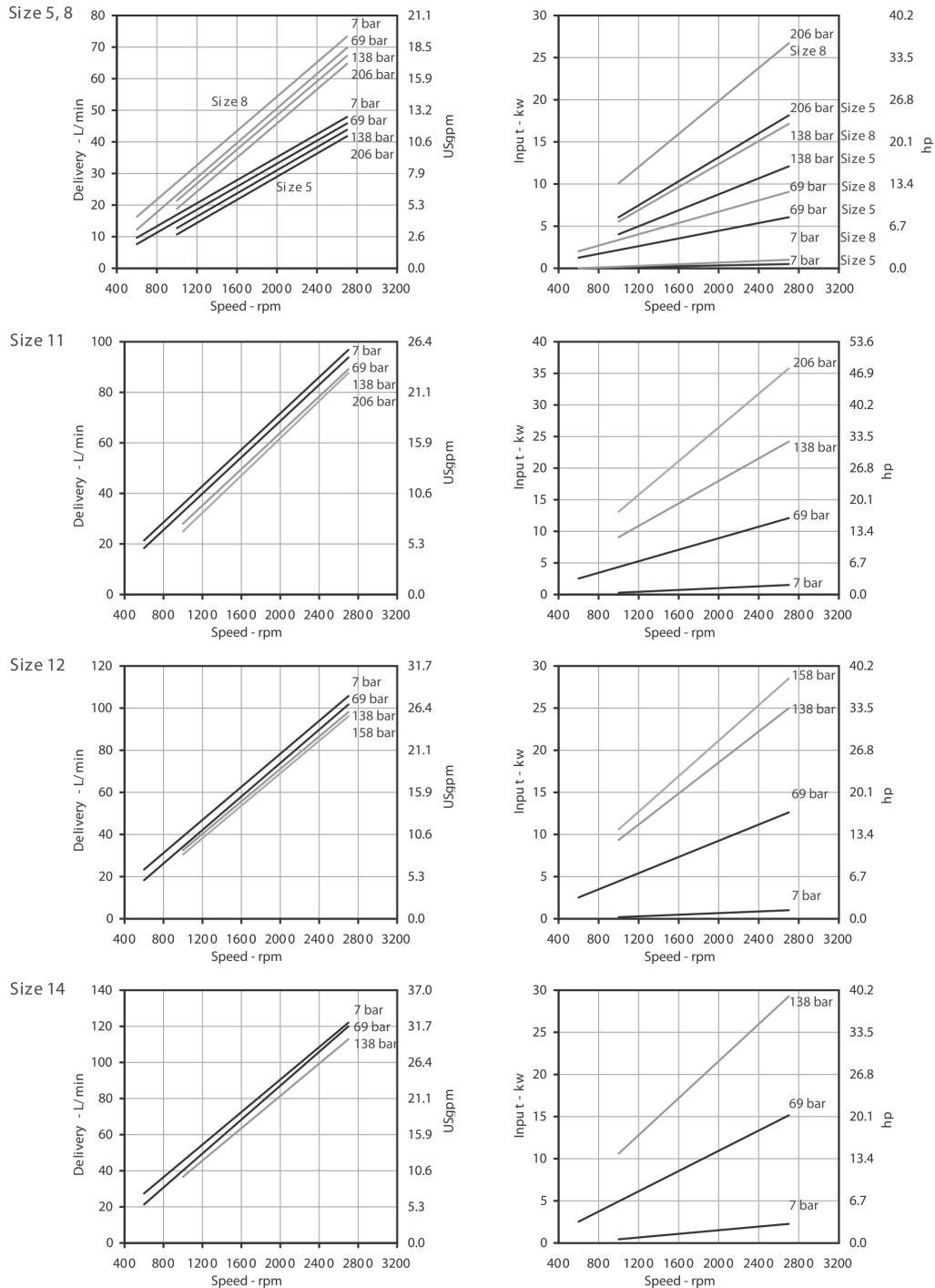
At 1800 rpm



# High Performance Double Vane Pump 4520 HV/HVQ Series

## 20HVQ, Cover End of 20HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 4525 HV/HVQ Series

## Specifications :

### 4525 HV Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
4525HV	Shaft End	35	110.4 (6.73)	1800	172 (2500)	179.0 (47.2)	60.0 (80.4)	44.0 (96.8)
		38	119.8 (7.32)			194.0 (51.3)	65.1 (87.3)	
		42	138.0 (8.41)			208.2 (55.0)	75.3 (101.0)	
		47	151.4 (9.26)			244.1 (64.5)	82.5 (110.6)	
		50	162.0 (9.85)			253.6 (67.0)	87.3 (117.0)	
		52	164.0 (10.0)			266.0 (70.0)	89.1 (119.5)	
		57	183.6 (11.23)			295.0 (77.8)	94.0 (126.0)	
		60	193.0 (11.75)			310.4 (82.0)	103.7 (139.0)	
		62	196.0 (11.94)			317.0 (83.7)	106.5 (142.8)	
		64	202.0 (12.33)			327.0 (86.4)	109.7 (147.1)	
	66	208.0 (12.7)	337.0 (89.0)			113.0 (151.5)		
	Cover End	12	39.0 (2.47)			62.1 (16.4)	22.9 (30.8)	
		14	45.0 (2.78)			69.6 (18.4)	25.7 (34.5)	
		17	55.0 (3.39)			86.3 (22.8)	29.8 (40.0)	
		19	60.8 (3.72)			91.6 (25.4)	32.5 (43.5)	
		21	67.0 (4.13)			106.0 (28.0)	34.0 (45.6)	

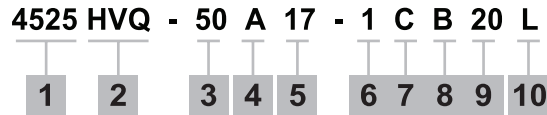
# High Performance Double Vane Pump 4525 HV/HVQ Series

## 4525 HVQ Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
4525HVQ	Shaft End	35	110.4 (6.73)	2200	172 (2500)	219.0 (57.7)	73.3 (98.3)	44.0 (96.8)
		38	119.8 (7.32)			237.0 (62.7)	79.5 (106.7)	
		42	138.0 (8.41)			251.7 (66.5)	91.4 (122.5)	
		47	151.4 (9.26)			280.8 (74.2)	95.0 (127.3)	
		50	162.0 (9.85)			299.0 (79.0)	105.2 (141.0)	
		52	164.0 (10.0)			325.0 (85.7)	106.6 (143.0)	
		57	183.6 (11.23)			342.5 (90.5)	109.3 (146.6)	
		60	193.0 (11.75)			363.4 (96.0)	126.8 (170.0)	
		62	196.0 (11.94)			387.0 (102.3)	128.8 (172.7)	
		64	202.0 (12.33)			400.0 (105.7)	132.7 (178.0)	
	66	208.0 (12.7)	412.0 (109.0)	136.6 (183.2)				
	Cover End	12	40.0 (2.45)	206 (3000)	73.9 (19.52)	30.5 (40.8)		
		14	45.0 (2.77)		86.9 (22.95)	34.4 (46.17)		
		17	55.0 (3.37)		100.3 (26.5)	45.5 (61.0)		
		19	60.8 (3.72)		120.6 (31.8)	48.8 (69.5)		
		21	67.0 (4.12)		124.9 (33.0)	54.5 (73.0)		

# High Performance Double Vane Pump 4525 HV/HVQ Series

## Ordering Code : Double Pump



1. Model :  
4525 - Standard Bearing SAE C 2 bolts mounting flange J744

2. Series  
HV - Industrial  
HVQ - Mobile

3. Displacement P1  
Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

35	-	110.4	(6.73)
38	-	119.8	(7.32)
42	-	138.0	(8.41)
47	-	151.4	(9.26)
50	-	162.0	(9.85)
52	-	164.0	(10.0)
57	-	183.6	(11.23)
60	-	193.0	(11.75)
62	-	196.0	(11.94)
64	-	202.0	(12.33)
66	-	208.0	(12.7)

4. Port Connection (4 bolts SAE flange J518C)  
A - UNC Port Connection  
AM - Metric Port Connection

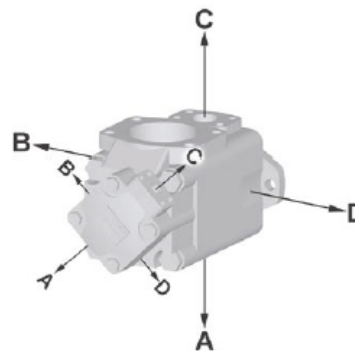
5. Displacement P2  
Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

12	-	39.0	(2.47)
14	-	45.0	(2.78)
17	-	55.3	(3.39)
19	-	60.8	(3.72)
21	-	67.0	(4.13)

6. Type of shaft  
1 - Straight Keyed Shaft  
11 - Splined Shaft  
86 - Heavy Duty Straight Keyed Shaft

7. Shaft End Outlet Port Position (Viewed from cover end)  
A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

8. Cover End Outlet Port Position (Viewed from cover end)  
A - 135° CCW from inlet  
B - 45° CCW from inlet  
C - 45° CW from inlet  
D - 135° CW from inlet



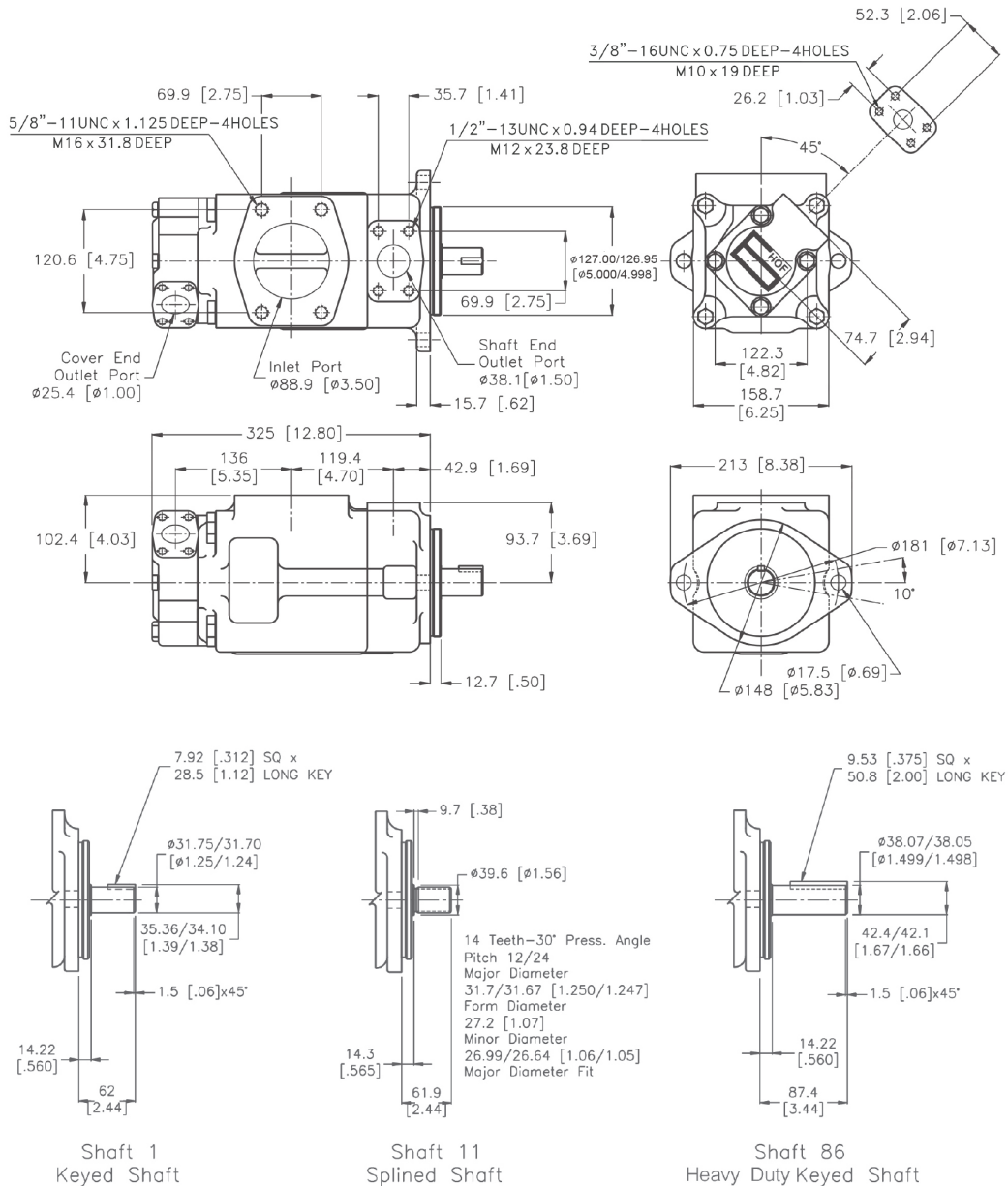
9. Design  
Subject to change. Installation dimension remain the same for designs - 20 through -29

10. Shaft Rotation (viewed from shaft end)  
R - Turn right  
L - Turn left

# High Performance Double Vane Pump 4525 HV/HVQ Series

## Installation Dimension mm (inch)

### Double Pump 4525HV/HVQ





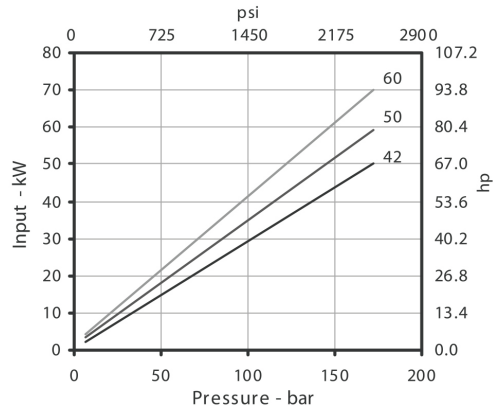
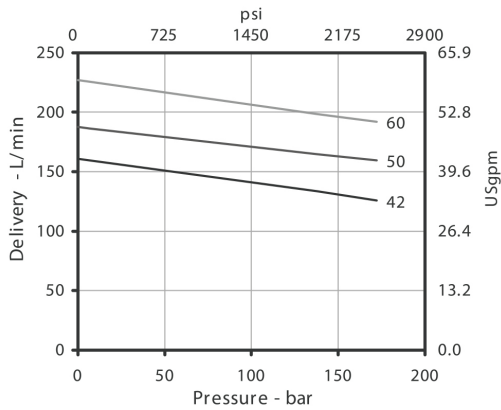
# High Performance Double Vane Pump 4525 HV/HVQ Series

## Performance Characteristics

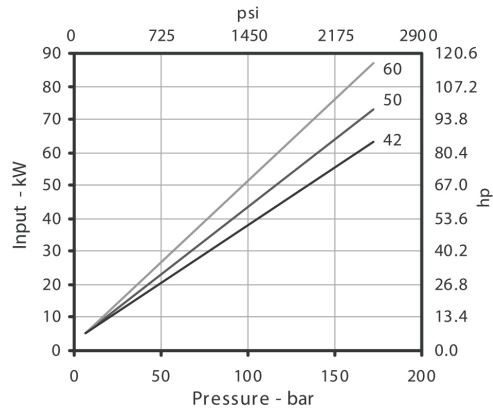
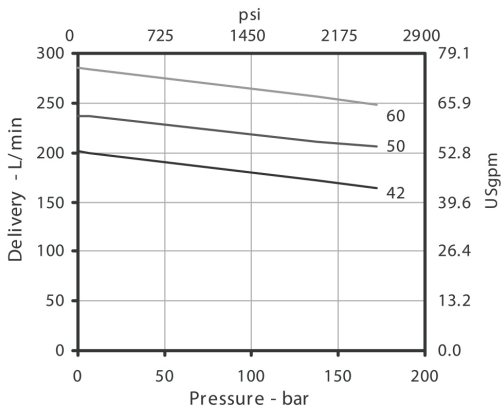
### 45HV, Shaft End of 45HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

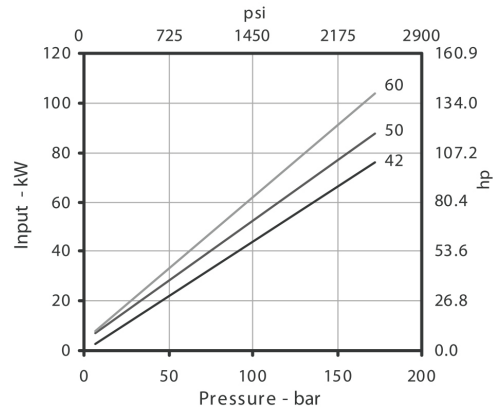
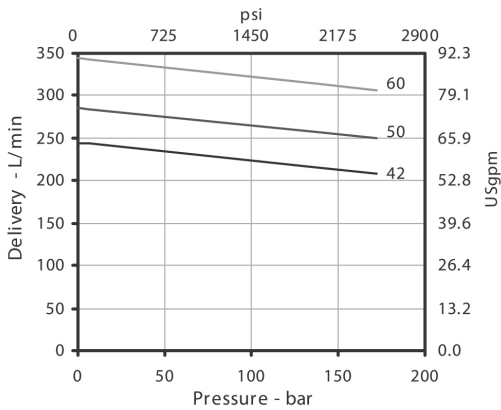
At 1200 rpm



At 1500 rpm



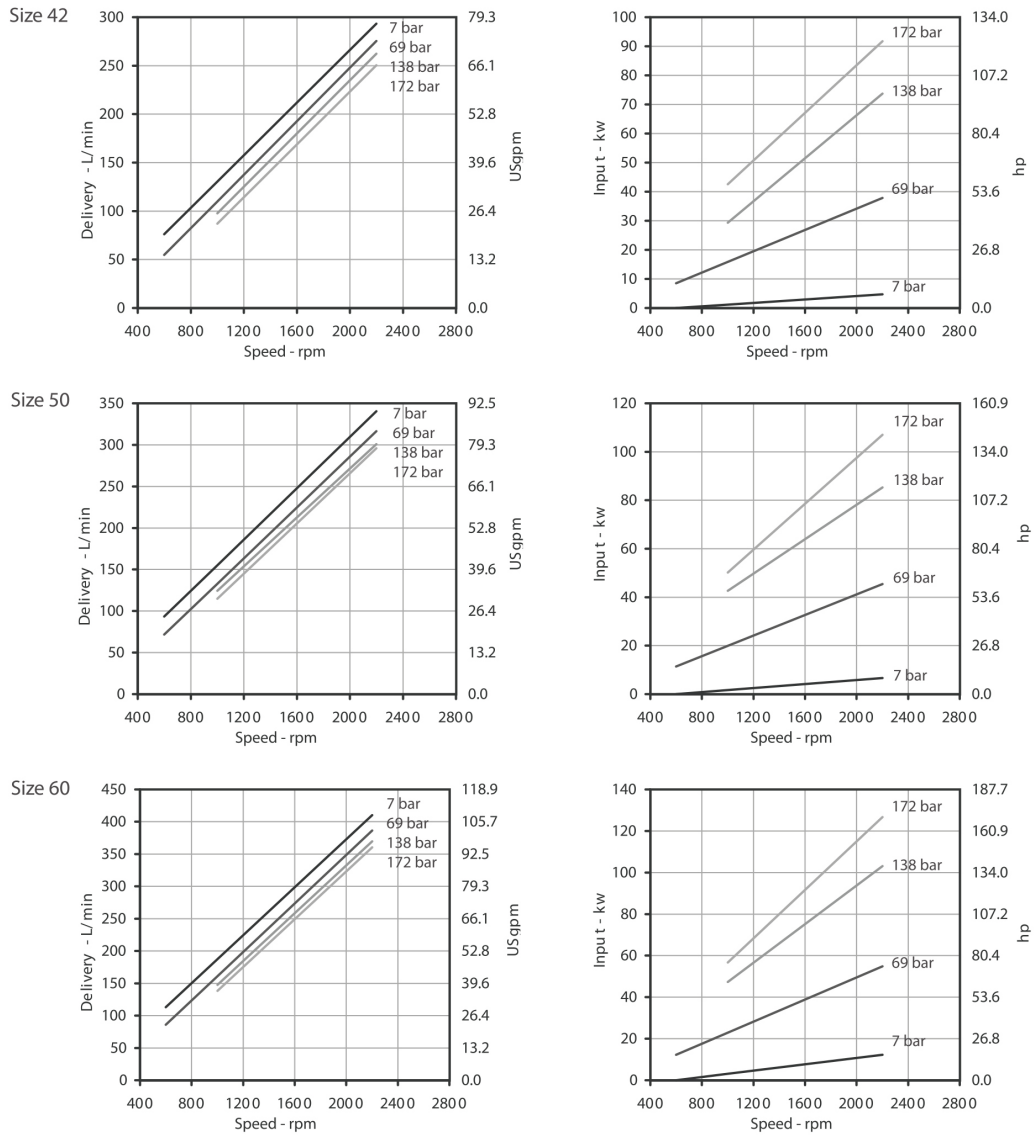
At 1800 rpm



# High Performance Double Vane Pump 4525 HV/HVQ Series

## 45HVQ, Shaft End of 45HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



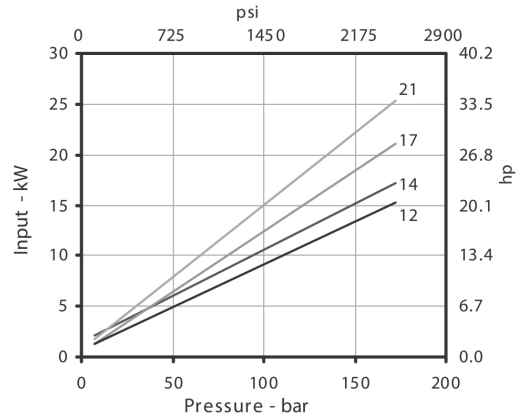
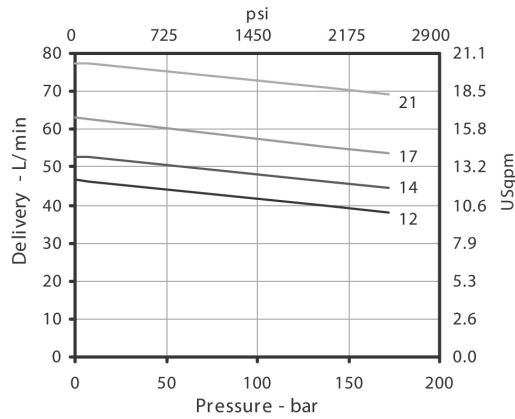
For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 4525 HV/HVQ Series

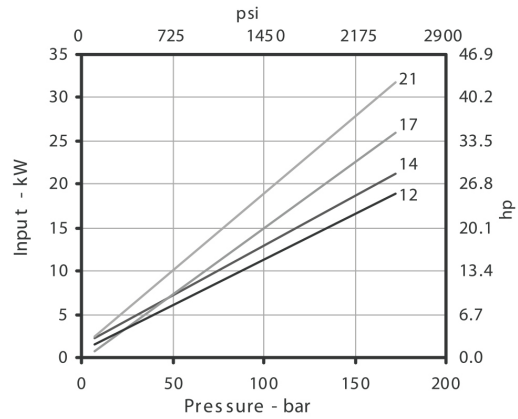
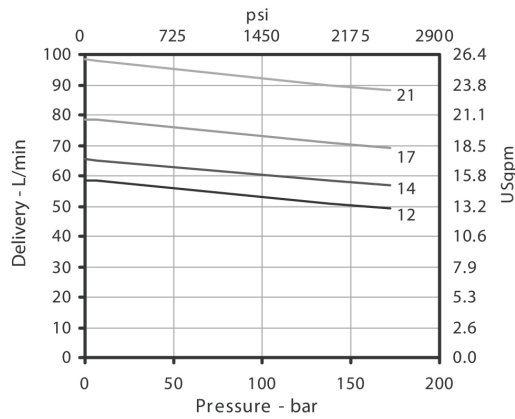
## 25HV, Cover End of 25HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

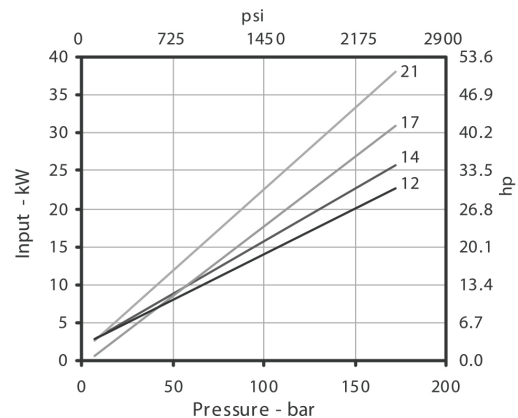
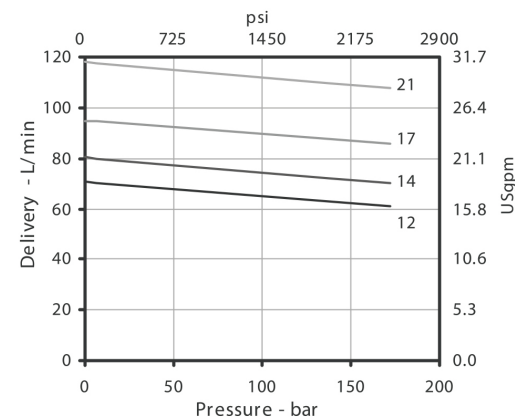
At 1200 rpm



At 1500 rpm



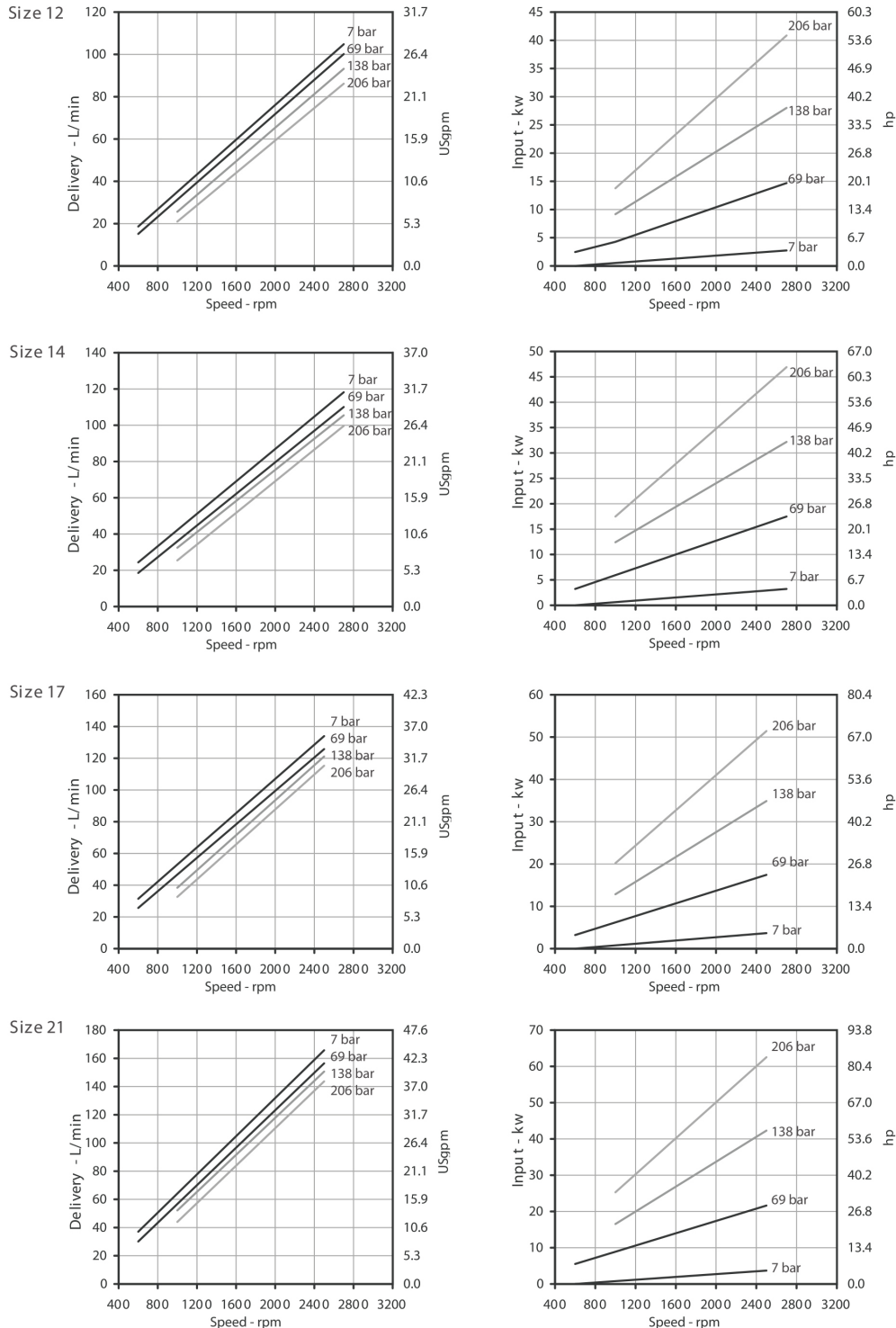
At 1800 rpm



# High Performance Double Vane Pump 4525 HV/HVQ Series

## 25HVQ, Cover End of 25HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 4535 HV/HVQ Series

## Specifications :

### 4535 HV Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
4535HV	Shaft End	35	110.4 (6.73)	1800	172 (2500)	179.0 (47.2)	60.0 (80.4)	56.4 (124.0)
		38	119.8 (7.32)			194.0 (51.3)	65.1 (87.3)	
		42	138.0 (8.41)			208.2 (55.0)	75.3 (101.0)	
		47	151.4 (9.26)			244.1 (64.5)	82.5 (110.6)	
		50	162.0 (9.85)			253.6 (67.0)	87.3 (117.0)	
		52	164.0 (10.0)			266.0 (70.0)	89.1 (119.5)	
		57	183.6 (11.23)			295.0 (77.8)	94.0 (126.0)	
		60	193.0 (11.75)			310.4 (82.0)	103.7 (139.0)	
		62	196.0 (11.94)			317.0 (83.7)	106.5 (142.8)	
		64	202.0 (12.33)			327.0 (86.4)	109.7 (147.1)	
	66	208.0 (12.7)	337.0 (89.0)			113.0 (151.5)		
	Cover End	21	68.3 (4.18)			106.3 (28.1)	33.9 (45.5)	
		25	81.0 (4.94)			124.9 (33.0)	45.5 (61.0)	
		30	97.0 (5.91)			154.4 (40.8)	54.5 (73.0)	
		32	100.9 (6.15)			167.0 (44.0)	56.7 (76.0)	
		35	112.0 (6.83)			181.7 (48.0)	61.5 (82.4)	
		38	121.0 (7.37)			193.8 (51.2)	65.9 (88.3)	

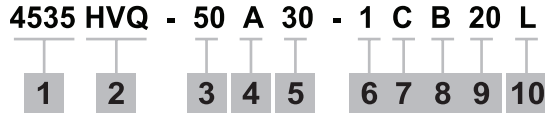
# High Performance Double Vane Pump 4535 HV/HVQ Series

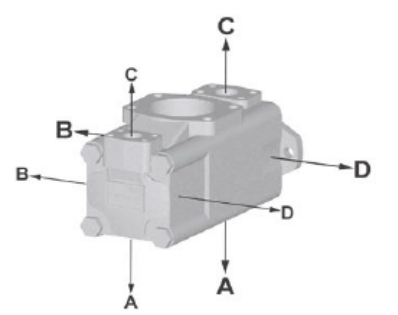
## 4535 HVQ Series

Model	Cartridge Position	Delivery at 1200 r/min & 7 bar (100 psi)	Displacement	Maximum Speed	Maximum Pressure	Typical Delivery at max speed & pressure	Typical Input Power at max speed & pressure	Weight
		USgpm	cm <sup>3</sup> /r (in <sup>3</sup> /r)	rpm	bar (psi)	L/min (USgpm)	kW (hp)	kg (lb)
4535HVQ	Shaft End	35	110.4 (6.73)	2200	172 (2500)	219.0 (57.7)	73.3 (98.3)	56.4 (124.0)
		38	119.8 (7.32)			237.0 (62.7)	79.5 (106.7)	
		42	138.0 (8.41)			251.7 (66.5)	91.4 (122.5)	
		47	151.4 (9.26)			280.8 (74.2)	95.0 (127.3)	
		50	162.0 (9.85)			299.0 (79.0)	105.2 (141.0)	
		52	164.0 (10.0)			325.0 (85.7)	106.6 (143.0)	
		57	183.6 (11.23)			342.5 (90.5)	109.3 (146.6)	
		60	193.0 (11.75)			363.4 (96.0)	126.8 (170.0)	
		62	196.0 (11.94)			387.0 (102.3)	128.8 (172.7)	
		64	202.0 (12.33)			400.0 (105.7)	132.7 (178.0)	
	66	208.0 (12.7)	412.0 (109.0)	136.6 (183.2)				
	Cover End	21	68.3 (4.18)	206 (3000)	128 (33.8)	51.9 (69.5)		
		25	81.0 (4.94)		145.7 (38.5)	66.4 (89.0)		
		30	97.0 (5.91)		177.9 (47.0)	77.6 (104.0)		
		32	100.9 (6.15)		199.9 (52.8)	80.6 (108.2)		
		35	112.0 (6.83)		208.2 (55.0)	89.5 (120.0)		
		38	121.0 (7.37)		223.3 (59.0)	97.0 (130.0)		

# High Performance Double Vane Pump 4535 HV/HVQ Series

## Ordering Code : Double Pump

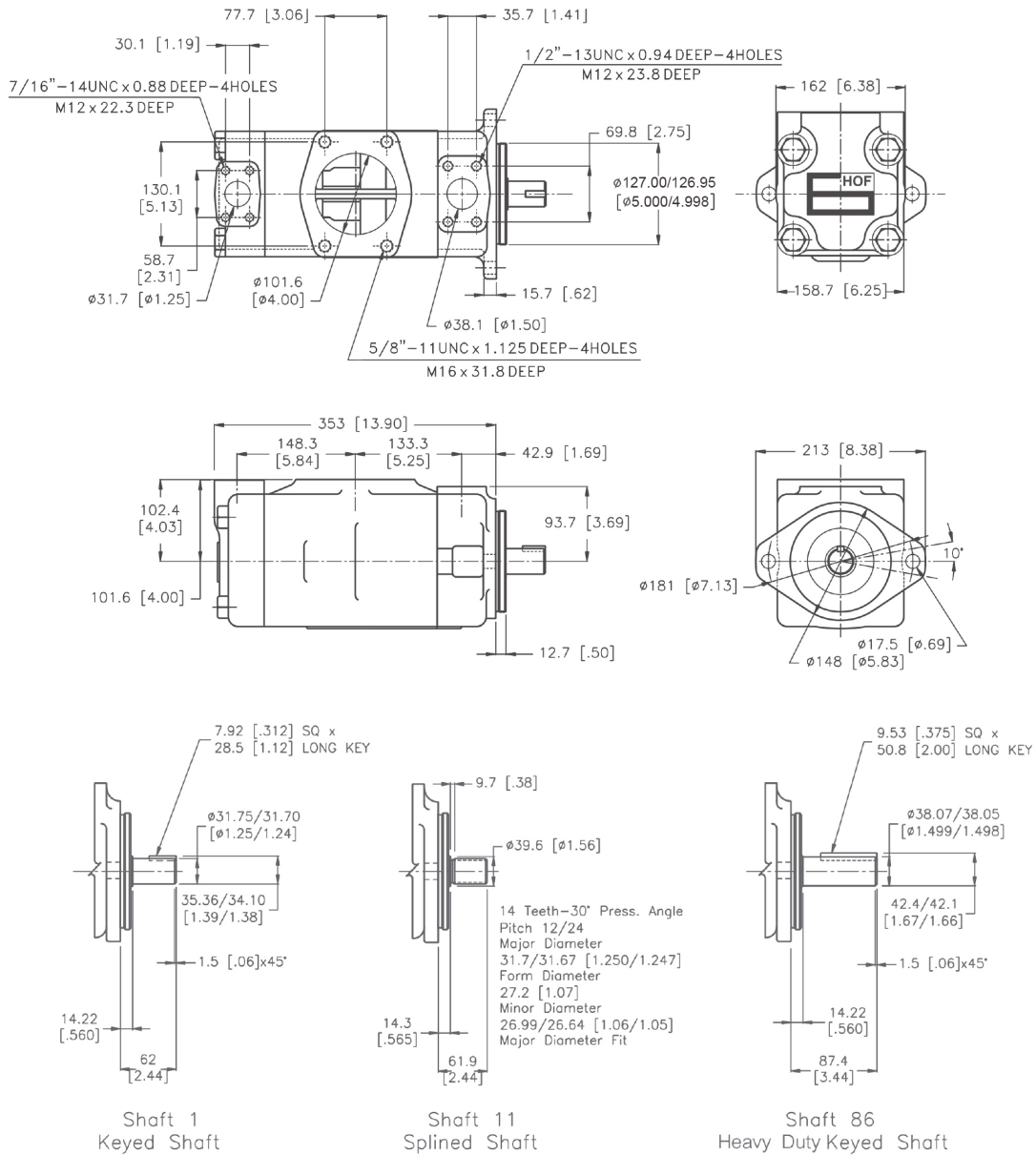


- |   |  |
|---|--|
| <p>1. Model :<br/>4535 - Standard Bearing SAE C 2 bolts mounting flange J744</p> <p>2. Series<br/>HV - Industrial<br/>HVQ - Mobile</p> <p>3. Displacement P1<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)<br/>35 - 110.4 (6.73)<br/>38 - 119.8 (7.32)<br/>42 - 138.0 (8.41)<br/>47 - 151.4 (9.26)<br/>50 - 162.0 (9.85)<br/>52 - 164.0 (10.0)<br/>57 - 183.6 (11.23)<br/>60 - 193.0 (11.75)<br/>62 - 196.0 (11.94)<br/>64 - 202.0 (12.33)<br/>66 - 208.0 (12.7)</p> <p>4. Port Connection (4 bolts SAE flange J518C)<br/>A - UNC Port Connection<br/>AM - Metric Port Connection</p> <p>5. Displacement P2<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)<br/>21 - 68.3 (4.18)<br/>25 - 81.0 (4.94)<br/>30 - 97.0 (5.91)<br/>32 - 100.9 (6.15)<br/>35 - 112.0 (6.83)<br/>38 - 121.0 (7.37)</p> <p>6. Type of shaft<br/>1 - Straight Keyed Shaft<br/>11 - Splined Shaft<br/>86 - Heavy Duty Straight Keyed Shaft</p> | <p>7. Shaft End Outlet Port Position (Viewed from cover end)<br/>A - Opposite inlet<br/>B - 90° CCW from inlet<br/>C - Inline with inlet<br/>D - 90° CW from inlet</p> <p>8. Cover End Outlet Port Position (Viewed from cover end)<br/>A - Opposite inlet<br/>B - 90° CCW from inlet<br/>C - Inline with inlet<br/>D - 90° CW from inlet</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>9. Design<br/>Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p>10. Shaft Rotation (viewed from shaft end)<br/>R - Turn right<br/>L - Turn left</p> |
|---|--|

# High Performance Double Vane Pump 4535 HV/HVQ Series

## Installation Dimension mm (inch)

### Double Pump 4535HV/HVQ





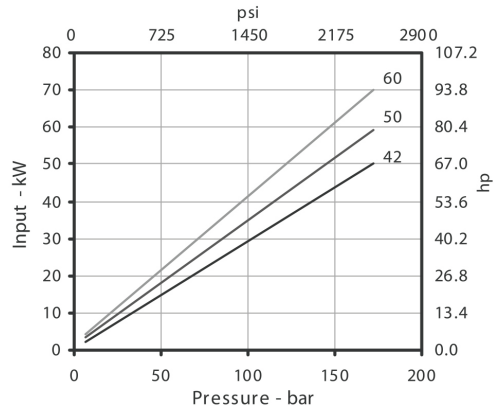
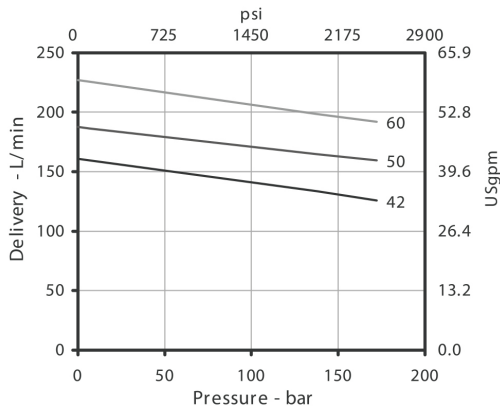
# High Performance Double Vane Pump 4535 HV/HVQ Series

## Performance Characteristics

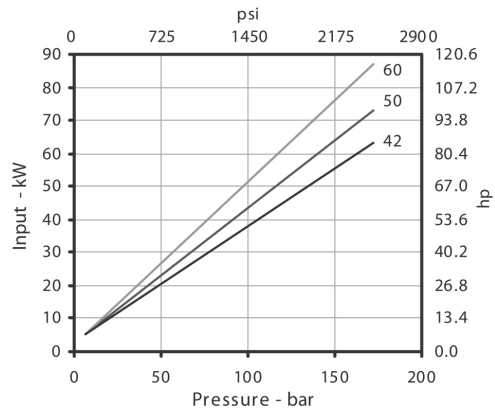
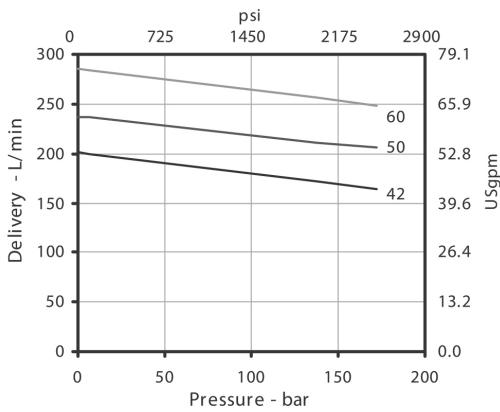
### 45HV, Shaft End of 45HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

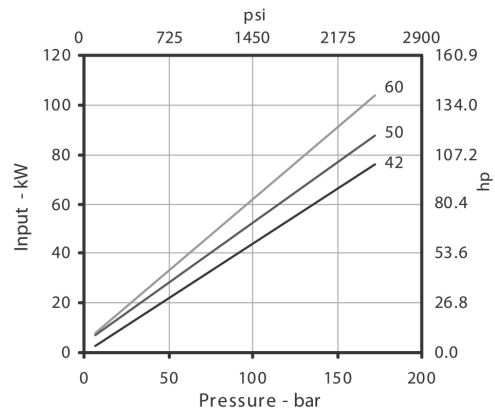
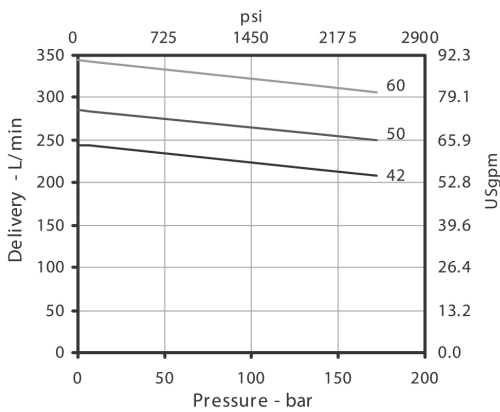
At 1200 rpm



At 1500 rpm



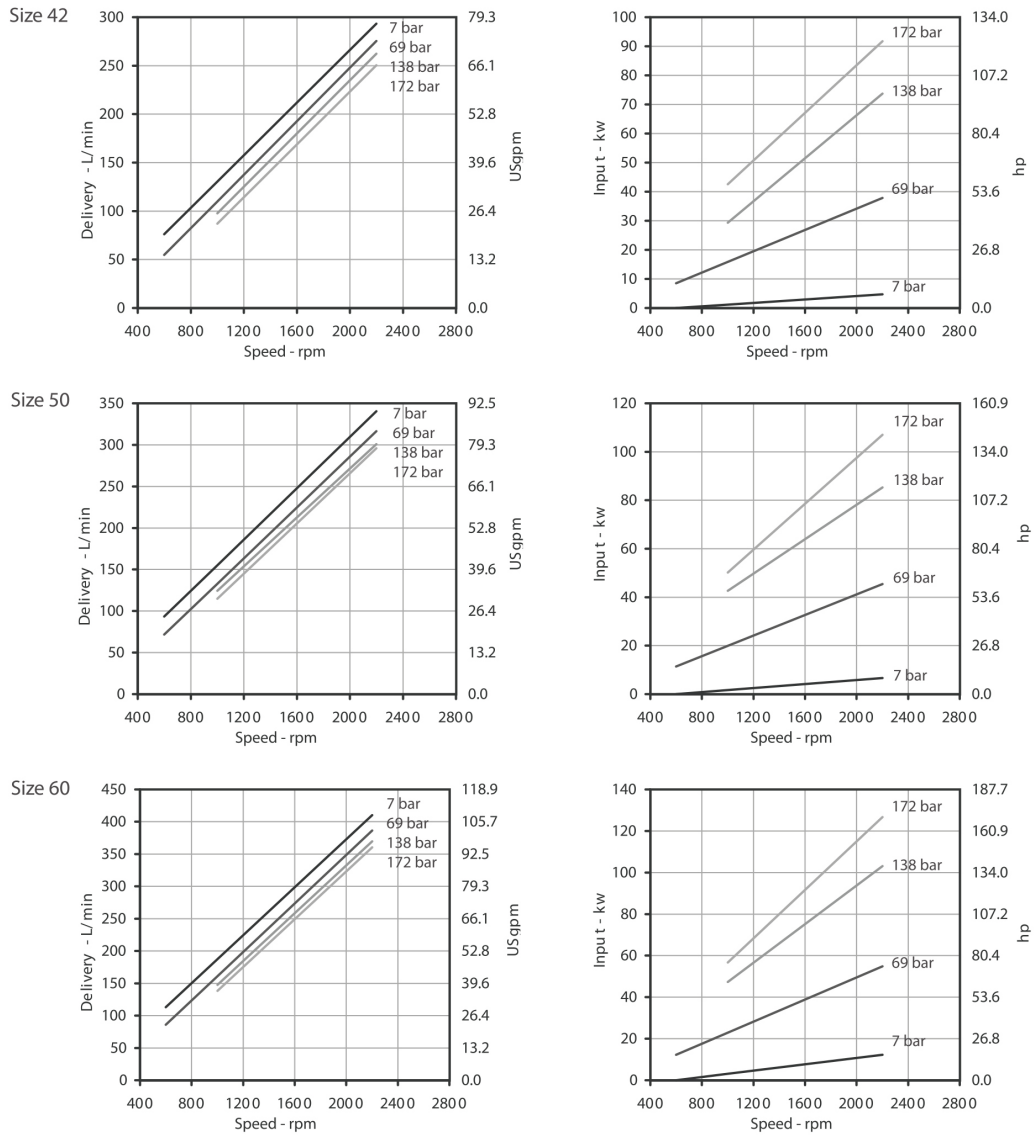
At 1800 rpm



# High Performance Double Vane Pump 4535 HV/HVQ Series

## 45HVQ, Shaft End of 45HVQ

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



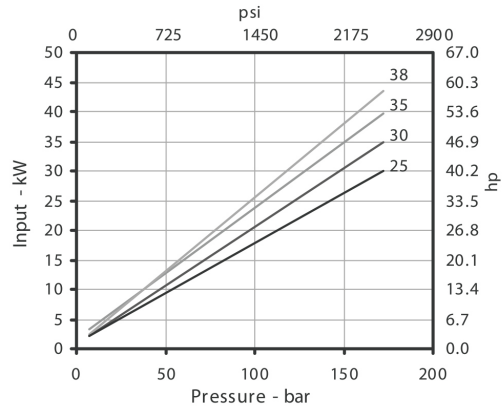
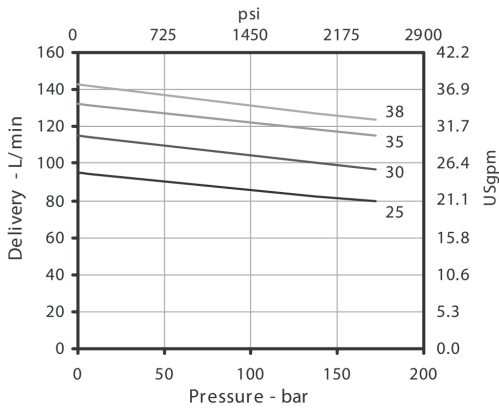
For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

# High Performance Double Vane Pump 4535 HV/HVQ Series

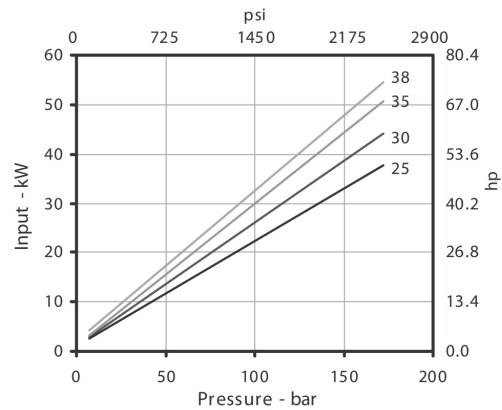
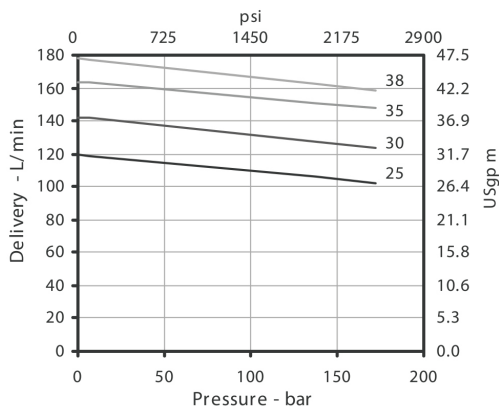
## 35HV, Cover End of 35HV

Based on SAE 10W Fluid at 50°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

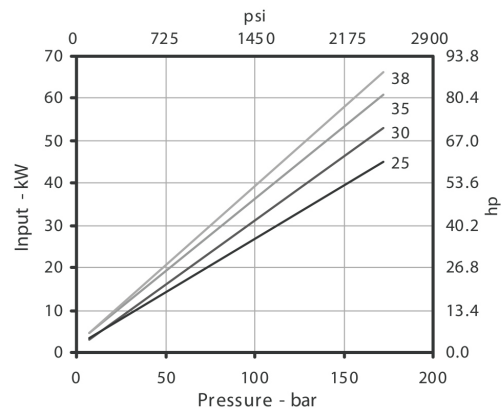
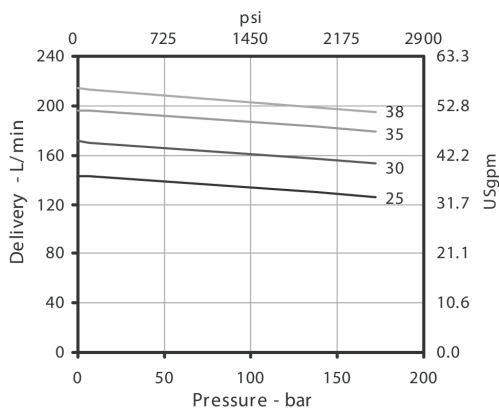
At 1200 rpm



At 1500 rpm



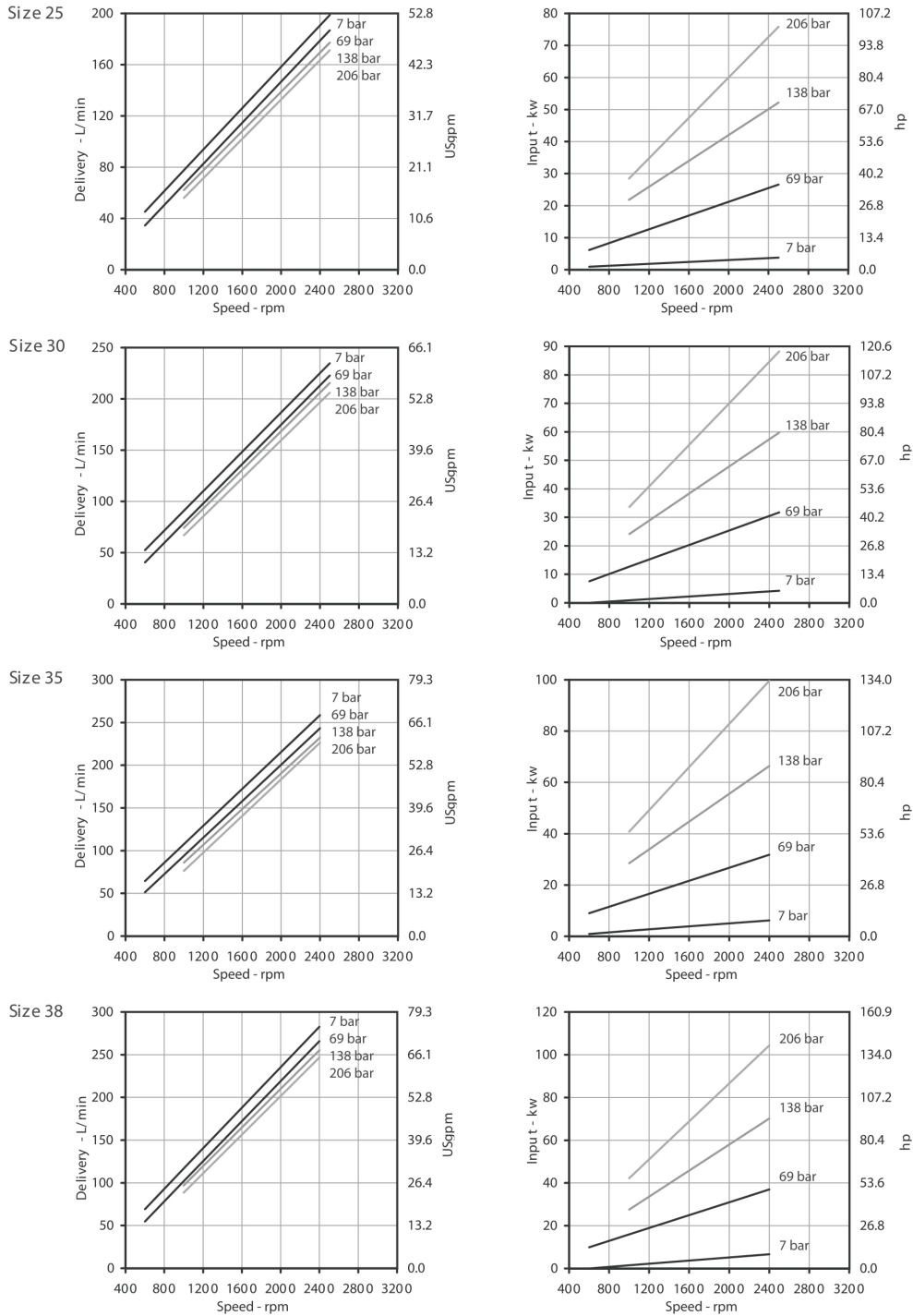
At 1800 rpm



# High Performance Double Vane Pump 4535 HV/HVQ Series

## 35HVQ, Cover End of 35HVQ

Based on SAE 10W Fluid at 82°C (180°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End Cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge

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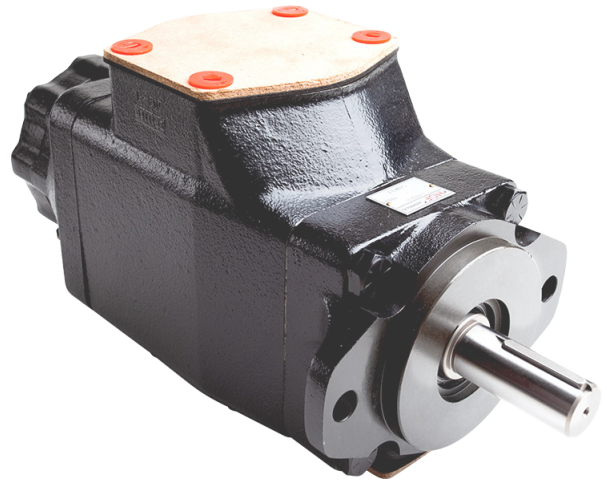
## **II. Fixed Displacement Vane Pump Up to 320 Bar (4640 psi)**

# High Pressure Single Vane Pump HT6/HT7 Series

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## Features and Handling

- HT6, HT7 Series are fixed displacement and balanced type single vane pumps. The pump is designed for higher operating pressure and greater flow at the same housing size.
- With a balanced pin-vane design, outlet pressure is continuously applied only the pin. The pin provides the steady light force against the vane. Top and bottom areas of the vane are subject to the same pressure, either inlet or outlet pressure, depending on the vane's location during rotor rotation. This pin-vane design minimizes noise level and improves volumetric efficiency.
- With the cartridge independent of the shaft, allowing for easy change of flow capacity and field servicing without removing the pump from its mounting.
- Allowing low flow at high pressure. (300 bar max) and high flow at low pressure \*For HT7 Series.



*\*Foot Mounting is available for each pump. For more details, see Foot Mounts.*

# High Pressure Single Vane Pump

## HT7B/HT7BS Series

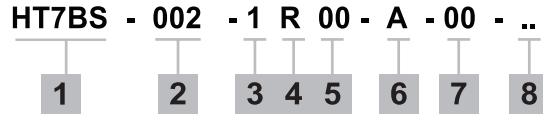
### Specification

HT7B, HT7BS for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
002	5.8 (0.35)	320 (4640)	290 (4200)	600	3600	23.5 (51.8)
003	9.8 (0.59)					
004	12.8 (0.78)					
005	15.9 (0.97)					
006	19.8 (1.20)					
007	22.5 (1.37)					
008	24.9 (1.51)					
009	28.0 (1.70)	300 (4350)	275 (4000)	3000	23.5 (51.8)	
010	31.8 (1.94)					
011	35.0 (2.13)					
012	41.0 (2.50)					
014	45.0 (2.74)	280 (4060)	240 (3500)			
015	50.0 (3.05)					

# High Pressure Single Vane Pump HT7B/HT7BS Series

## Ordering Code : Single Pump



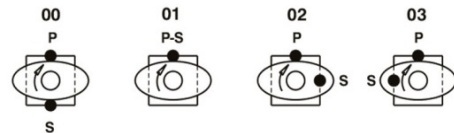
1. Model :  
 Industrial - HT7B ISO 2 bolts 3019-2 mounting flange 100 A2 HW  
 - HT7BS SAE B 2 bolts mounting flange J744

2. Displacement  
 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 002 - 5.8 (0.35)  
 003 - 9.8 (0.60)  
 004 - 12.8 (0.78)  
 005 - 15.9 (0.97)  
 006 - 19.8 (1.20)  
 007 - 22.5 (1.37)  
 008 - 24.9 (1.51)  
 009 - 28.0 (1.70)  
 010 - 31.8 (1.92)  
 011 - 35.0 (2.14)  
 012 - 41.0 (2.47)  
 014 - 45.0 (2.70)  
 015 - 50.0 (3.01)

3. Type of shaft  
 HT7B, HT7BS  
 2 - ISO R775-G38M Keyed Shaft  
  
 HT7BS  
 1 - SAE B Keyed Shaft  
 3 - SAE B Splined Shaft  
 4 - SAE BB Splined Shaft

4. Direction of rotation (Viewed from shaft end)  
 R - Turn right  
 L - Turn left

5. Porting combination  
 00 - standard



S - Suction port    P - Pressure port

6. Design letter

7. Port Connection (4 bolts SAE flange J518C)  
 00 - UNC Port Connection (Except HT7B)  
 M0 - Metric Port Connection

Code		4 bolt SAE flanges	
UNC	Metric	P1	S
00	M0	1"	1 1/2"
01	M1	3/4"	1 1/2"

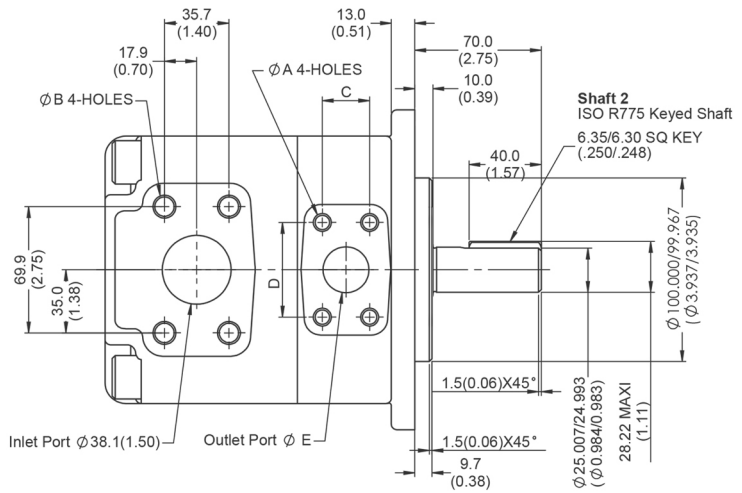
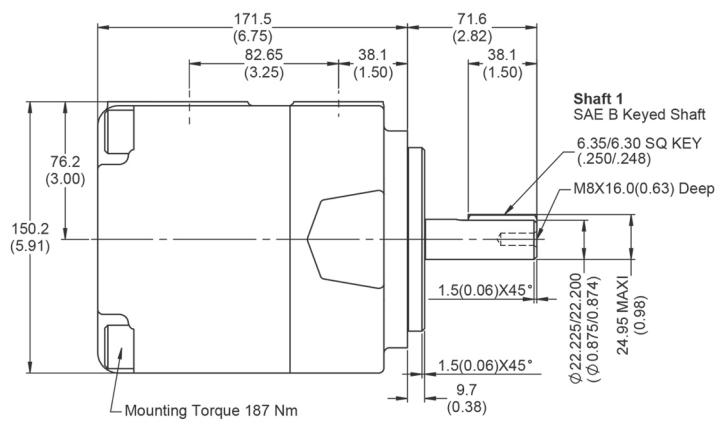
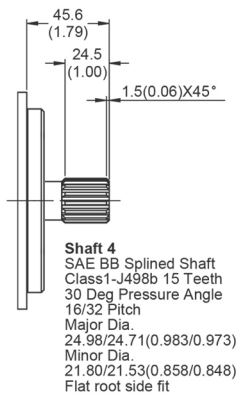
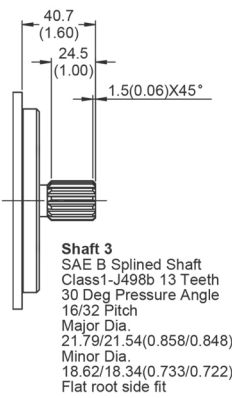
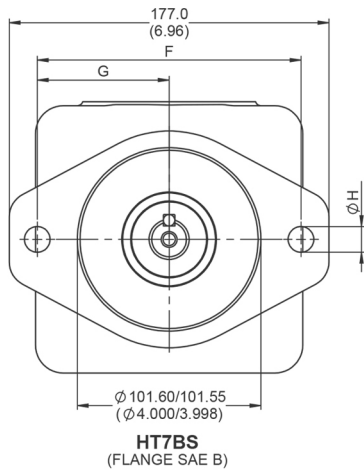
8. Modifications  
 Omit - Standard  
 718 - Surface grinding the flange face for the manifold.



# High Pressure Single Vane Pump HT7B/HT7BS Series

## Installation Dimension mm (inch)

### HT7B, HT7BS



**HT7B**  
(FLANGE ISO 3019/2 100A 2HW)

Model	HT7B/BS		HT7BS	
Code	M0	M1	00	01
$\phi$ A	M10 x19.0 DEEP		3/8"-16 UNC x 19.0 DEEP	
$\phi$ B	M12 x 22.4 DEEP		1/2" -13 UNC x 22.4 DEEP	
C	26.2	22.25	26.2	22.25
D	52.4	47.65	52.4	47.65
$\phi$ E	25.4	19.1	25.4	19.1
F	140.0		146.0	
G	70.0		73.0	
$\phi$ H	14.0		14.3	

Shaft torque limits [ml/rev. x bar]	
Shaft	$V_i \times p$ max.
1	16500
2	20600
3	
4	

# High Pressure Single Vane Pump

## HT7B/HT7BS Series

### Performance Characteristics

#### HT7B, HT7BS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 4650 PSI	p = 100 PSI	p = 2000 PSI	p = 4650 PSI
02	0.35 in <sup>3</sup> /rev	1500	2.29	1.84	1.26	0.67	3.48	7.23
03	0.59 in <sup>3</sup> /rev		3.88	3.43	2.85	0.80	5.36	11.52
04	0.78 in <sup>3</sup> /rev		5.07	4.62	4.04	0.80	6.70	14.74
05	0.97 in <sup>3</sup> /rev		6.31	5.86	5.28	0.93	8.17	18.09
06	1.20 in <sup>3</sup> /rev		7.84	7.39	6.81	0.93	10.05	22.25
07	1.37 in <sup>3</sup> /rev		8.90	8.45	7.89	1.07	11.39	25.20
08	1.51 in <sup>3</sup> /rev		9.88	9.43	8.84	1.07	12.46	27.74
09	1.70 in <sup>3</sup> /rev		11.09	10.56	10.06	1.20	13.94	31.09
010	1.94 in <sup>3</sup> /rev		12.60	12.15	11.57	1.20	15.68	35.12
011	2.13 in <sup>3</sup> /rev		13.86	13.41	12.91 <sup>1)</sup>	1.34	17.15	36.19 <sup>1)</sup>
012	2.50 in <sup>3</sup> /rev		16.24	15.79	15.29 <sup>1)</sup>	1.47	19.97	42.22 <sup>1)</sup>
014	2.74 in <sup>3</sup> /rev		17.83	17.38	16.88 <sup>1)</sup>	1.60	21.84	46.24 <sup>1)</sup>
015	3.05 in <sup>3</sup> /rev		19.81	19.36	18.91 <sup>2)</sup>	1.74	24.26	47.85 <sup>2)</sup>

1) 11 - 12 - 14 = 4350 PSI max. int.      2) 15 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Single Vane Pump

## HT6C Series

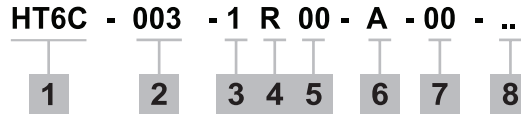
### Specification

#### HT6C for Single pump

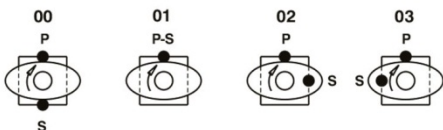
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
003	10.8 (0.66)	275 (4000)	240 (3500)	600	2800	15.0 (33.0)
005	17.2 (1.05)					
006	21.3 (1.30)					
008	26.4 (1.61)					
010	34.1 (2.08)					
012	37.1 (2.26)					
014	46.0 (2.81)					
017	58.3 (3.56)					
020	63.8 (3.89)					
022	70.3 (4.29)					
025	79.3 (4.84)	206 (3000)	160 (2300)		2500	
028	88.8 (5.42)					
031	100.0 (6.10)					

# High Pressure Single Vane Pump HT6C Series

## Ordering Code : Single Pump



- |   |  |
|---|--|
| <p>1. Model :<br/>Industrial - HT6C SAE B 2 bolts mounting flange J744</p> <p>2. Displacement<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>003 - 10.8 (0.66)</li> <li>005 - 17.2 (1.05)</li> <li>006 - 21.3 (1.30)</li> <li>008 - 26.4 (1.61)</li> <li>010 - 34.1 (2.08)</li> <li>012 - 37.1 (2.26)</li> <li>014 - 46.0 (2.81)</li> <li>017 - 58.3 (3.56)</li> <li>020 - 63.8 (3.89)</li> <li>022 - 70.3 (4.29)</li> <li>025 - 79.3 (4.84)</li> <li>028 - 88.8 (5.42)</li> <li>031 - 100.0 (6.10)</li> </ul> <p>3. Type of shaft</p> <ul style="list-style-type: none"> <li>1 - SAE B Keyed Shaft</li> <li>2 - non SAE Keyed Shaft</li> <li>3 - SAE B Splined Shaft</li> <li>4 - SAE BB Splined Shaft</li> </ul> <p>4. Direction of rotation (Viewed from shaft end)</p> <ul style="list-style-type: none"> <li>R - Turn right</li> <li>L - Turn left</li> </ul> <p>5. Porting combination</p> <p>00 - standard</p> | <p>6. Design letter</p> <p>7. Port Connection (4 bolts SAE flange J518C)</p> <ul style="list-style-type: none"> <li>00 - UNC Port Connection</li> <li>M0 - Metric Port Connection</li> </ul> <p>8. Modifications</p> <ul style="list-style-type: none"> <li>Omit - Standard</li> <li>718 - Surface grinding the flange face for the manifold.</li> </ul> |
|---|--|

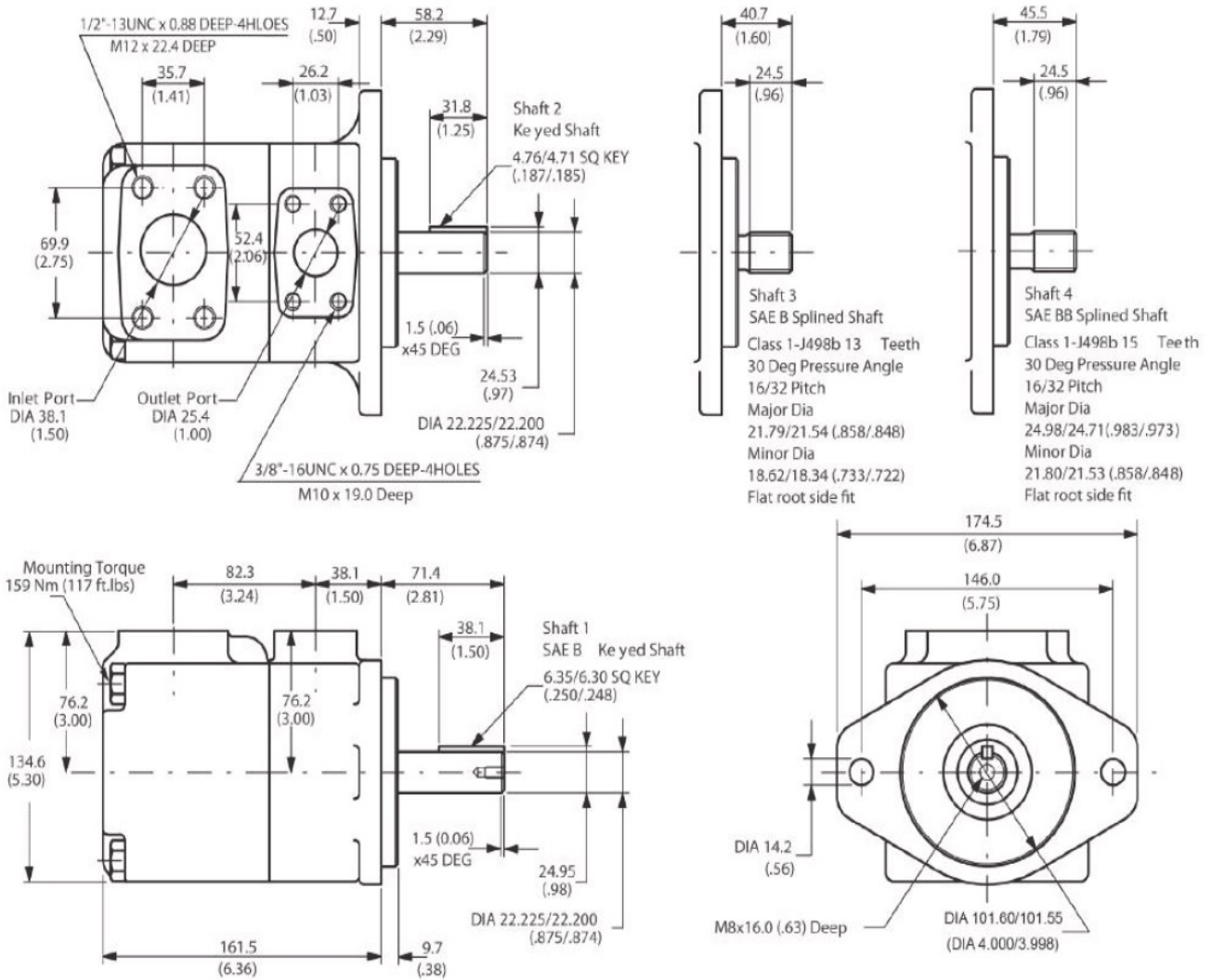


S - Suction port    P - Pressure port

# High Pressure Single Vane Pump HT6C Series

## Installation Dimension mm (inch)

### HT6C



# High Pressure Single Vane Pump HT6C Series

## Performance Characteristics

### HT6C

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
03	0.66 in <sup>3</sup> /rev	1200	3.42	-	-	1.43	-	-
		1800	5.14	3.61	-	2.11	8.45	-
05	1.05 in <sup>3</sup> /rev	1200	5.45	3.99	-	1.55	8.17	-
		1800	8.18	6.65	5.56	2.29	12.00	19.59
06	1.30 in <sup>3</sup> /rev	1200	6.75	5.22	4.13	1.62	9.69	16.13
		1800	10.13	8.60	7.51	2.40	14.28	23.57
08	1.61 in <sup>3</sup> /rev	1200	8.37	6.84	5.75	1.72	11.58	19.43
		1800	12.55	11.02	9.93	2.54	17.11	28.53
10	2.08 in <sup>3</sup> /rev	1200	10.81	9.28	8.19	1.86	14.43	24.42
		1800	16.22	14.69	13.60	2.76	21.38	36.00
12	2.26 in <sup>3</sup> /rev	1200	11.76	10.23	9.14	1.92	15.53	26.36
		1800	17.64	16.11	15.02	2.84	23.05	38.92
14	2.81 in <sup>3</sup> /rev	1200	14.58	13.05	11.96	2.08	18.83	32.12
		1800	21.88	20.35	19.26	3.09	27.99	47.56
17	3.56 in <sup>3</sup> /rev	1200	18.48	16.95	15.86	2.31	23.38	40.08
		1800	27.73	26.20	25.11	3.43	34.81	59.51
20	3.89 in <sup>3</sup> /rev	1200	20.23	18.70	17.61	2.41	25.41	43.64
		1800	30.34	28.81	27.42	3.58	37.86	64.85
22	4.29 in <sup>3</sup> /rev	1200	22.29	20.76	19.67	2.53	27.82	47.85
		1800	33.43	31.90	30.81	3.76	41.47	71.16
25 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	1200	25.14	23.61	22.52	2.70	31.15	53.68
		1800	37.71	36.18	35.09	4.01	46.46	79.90
28 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	1200	28.15	26.62	25.86 <sup>2)</sup>	2.87	34.66	51.37 <sup>2)</sup>
		1800	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
31 <sup>1)</sup>	6.10 in <sup>3</sup> /rev	1200	31.70	30.17	29.41 <sup>2)</sup>	3.08	38.80	57.58 <sup>2)</sup>
		1800	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 25 - 28 - 31 = 2500 R.P.M. max.      2) 28 - 31 = 3000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Single Vane Pump

## HT6CM/HT6CP Series

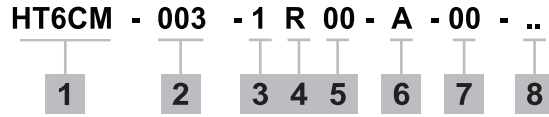
### Specification

HT6CM, HT6CP for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
003	10.8 (0.66)	275 (4000)	240 (3500)	400	2800	15.0 (33.0)
005	17.2 (1.05)					
006	21.3 (1.30)					
008	26.4 (1.61)					
010	34.1 (2.08)					
012	37.1 (2.26)					
014	46.0 (2.81)					
017	58.3 (3.56)					
020	63.8 (3.89)					
022	70.3 (4.29)					
025	79.3 (4.84)	206 (3000)	160 (2300)		2500	
028	88.8 (5.42)					
031	100.0 (6.10)					

# High Pressure Single Vane Pump HT6CM/HT6CP Series

## Ordering Code : Single Pump



1. Model :

- Mobile 1 Shaft seals (M) - HT6CM SAE B 2 bolts mounting flange J744
- Mobile 2 Shaft seals (P) - HT6CP SAE C 2 bolts mounting flange J744

2. Displacement

Volumetric displacement cm <sup>3</sup> /rec (in <sup>3</sup> /rev)	
6CM	6CP
003 - 10.8 (0.66)	014 - 46.0 (2.81)
005 - 17.2 (1.05)	017 - 58.3 (3.56)
006 - 21.3 (1.30)	020 - 63.8 (3.89)
008 - 26.4 (1.61)	022 - 70.3 (4.29)
010 - 34.1 (2.08)	025 - 79.3 (4.84)
012 - 37.1 (2.26)	028 - 88.8 (5.42)
014 - 46.0 (2.81)	031 - 100.0 (6.10)
017 - 58.3 (3.56)	
020 - 63.8 (3.89)	
022 - 70.3 (4.29)	
025 - 79.3 (4.84)	
028 - 88.8 (5.42)	
031 - 100.0 (6.10)	

6. Design letter

- 7. Port Connection (4 bolts SAE flange J518C)  
M0 - Metric Port Connection

8. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

3. Type of shaft

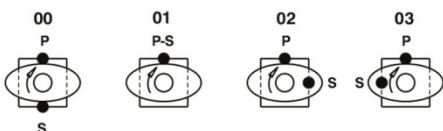
- HT6CM
  - 1 - SAE B Keyed Shaft
  - 2 - non SAE Keyed Shaft
  - 3 - SAE B Splined Shaft
  - 4 - SAE BB Splined Shaft
- HT6CP
  - 2 - non SAE Keyed Shaft
  - 3 - SAE C Splined Shaft

4. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

5. Porting combination

00 - standard



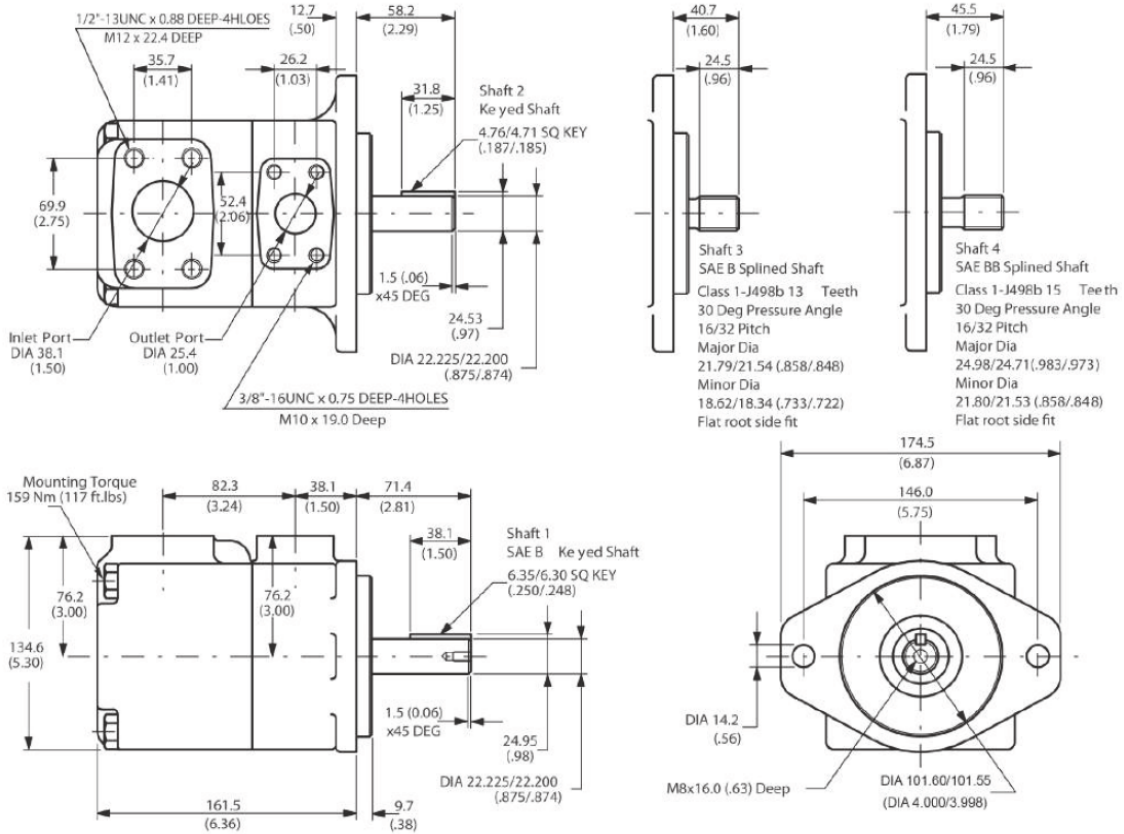
S - Suction port P - Pressure port



# High Pressure Single Vane Pump HT6CM/HT6CP Series

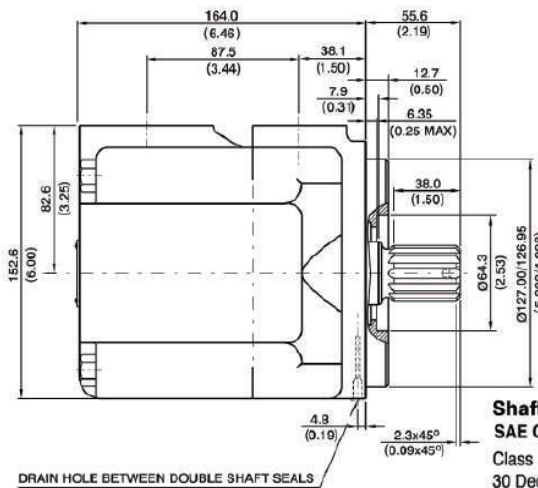
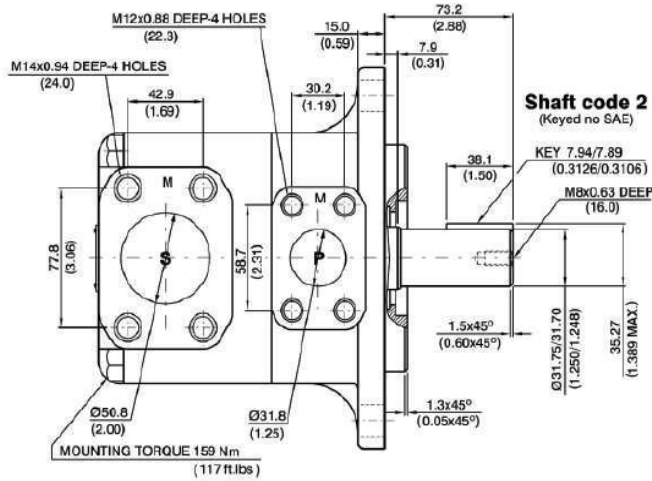
## Installation Dimension mm (inch)

### HT6CM

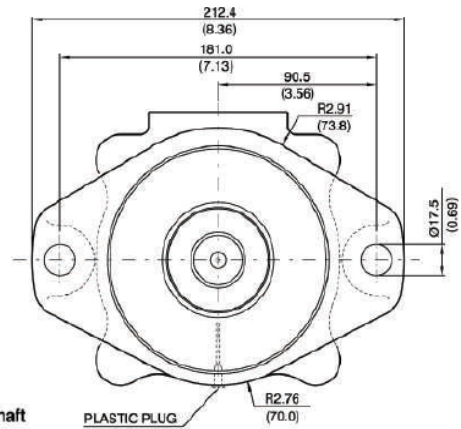


# High Pressure Single Vane Pump HT6CM/HT6CP Series

## HT6CP



**Shaft code 3**  
**SAE C Splined Shaft**  
Class 1-J498b 14 Teeth  
30 Deg Pressure Angle  
12/24 Pitch  
Major Dia  
31.22/30.96 (1.229/1.219)  
Minor Dia  
26.99/26.66 (1.063/1.050)  
Flat root side fit



# High Pressure Single Vane Pump HT6CM/HT6CP Series

## Performance Characteristics

### HT6CM, HT6CP

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
03	0.66 in <sup>3</sup> /rev	1200	3.42	-	-	1.43	-	-
		1800	5.14	3.61	-	2.11	8.45	-
05	1.05 in <sup>3</sup> /rev	1200	5.45	3.99	-	1.55	8.17	-
		1800	8.18	6.65	5.56	2.29	12.00	19.59
06	1.30 in <sup>3</sup> /rev	1200	6.75	5.22	4.13	1.62	9.69	16.13
		1800	10.13	8.60	7.51	2.40	14.28	23.57
08	1.61 in <sup>3</sup> /rev	1200	8.37	6.84	5.75	1.72	11.58	19.43
		1800	12.55	11.02	9.93	2.54	17.11	28.53
10	2.08 in <sup>3</sup> /rev	1200	10.81	9.28	8.19	1.86	14.43	24.42
		1800	16.22	14.69	13.60	2.76	21.38	36.00
12	2.26 in <sup>3</sup> /rev	1200	11.76	10.23	9.14	1.92	15.53	26.36
		1800	17.64	16.11	15.02	2.84	23.05	38.92
14	2.81 in <sup>3</sup> /rev	1200	14.58	13.05	11.96	2.08	18.83	32.12
		1800	21.88	20.35	19.26	3.09	27.99	47.56
17	3.56 in <sup>3</sup> /rev	1200	18.48	16.95	15.86	2.31	23.38	40.08
		1800	27.73	26.20	25.11	3.43	34.81	59.51
20	3.89 in <sup>3</sup> /rev	1200	20.23	18.70	17.61	2.41	25.41	43.64
		1800	30.34	28.81	27.42	3.58	37.86	64.85
22	4.29 in <sup>3</sup> /rev	1200	22.29	20.76	19.67	2.53	27.82	47.85
		1800	33.43	31.90	30.81	3.76	41.47	71.16
25 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	1200	25.14	23.61	22.52	2.70	31.15	53.68
		1800	37.71	36.18	35.09	4.01	46.46	79.90
28 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	1200	28.15	26.62	25.86 <sup>2)</sup>	2.87	34.66	51.37 <sup>2)</sup>
		1800	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
31 <sup>1)</sup>	6.10 in <sup>3</sup> /rev	1200	31.70	30.17	29.41 <sup>2)</sup>	3.08	38.80	57.58 <sup>2)</sup>
		1800	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 25 - 28 - 31 = 2500 R.P.M. max.      2) 28 - 31 = 3000 PSI max. int.  
- Not to use because internal leakage greater than 50% theoretical flow.  
- Port connection can be furnished with metric threads.

# High Pressure Single Vane Pump

## HT7D/HT7DS Series

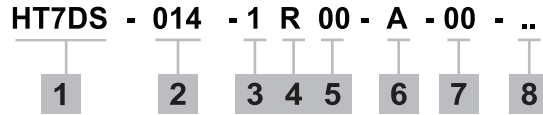
### Specification

#### HT7D for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
014	47.6 (2.90)	300 (4350)	250 (3600)	600	3000	27.0 (59.4)
017	58.2 (3.55)					
020	66.0 (4.03)					
022	70.0 (4.27)					
024	79.5 (4.85)					
028	89.7 (5.47)					
031	98.3 (6.00)	280 (4060)				
035	111.0 (6.77)					
038	120.3 (7.34)					
042	136.0 (8.30)	260 (3770)	235 (3400)		2500	
045	145.7 (8.89)	240 (3500)	206 (3000)		2200	
050	158.0 (9.64)	206 (3000)	160 (2300)			

# High Pressure Single Vane Pump HT7D/HT7DS Series

## Ordering Code : Single Pump



### 1. Model :

- Industrial - HT7D  
ISO 2 bolts 3019-2  
mounting flange 125 A2 HW
- HT7DS  
SAE C 2 bolts mounting flange J744

### 2. Displacement

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

### 3. Type of shaft

HT7D, HT7DS  
5 - ISO 3019-G38M Keyed Shaft

HT7DS

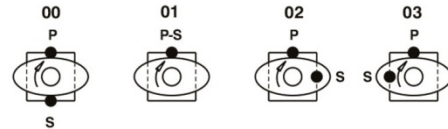
- 1 - SAE C Keyed Shaft
- 2 - non SAE Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - non SAE Splined Shaft

### 4. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

### 5. Porting combination

00 - standard



S - Suction port P - Pressure port

### 6. Design letter

### 7. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection (Except HT7D)
- M0 - Metric Port Connection

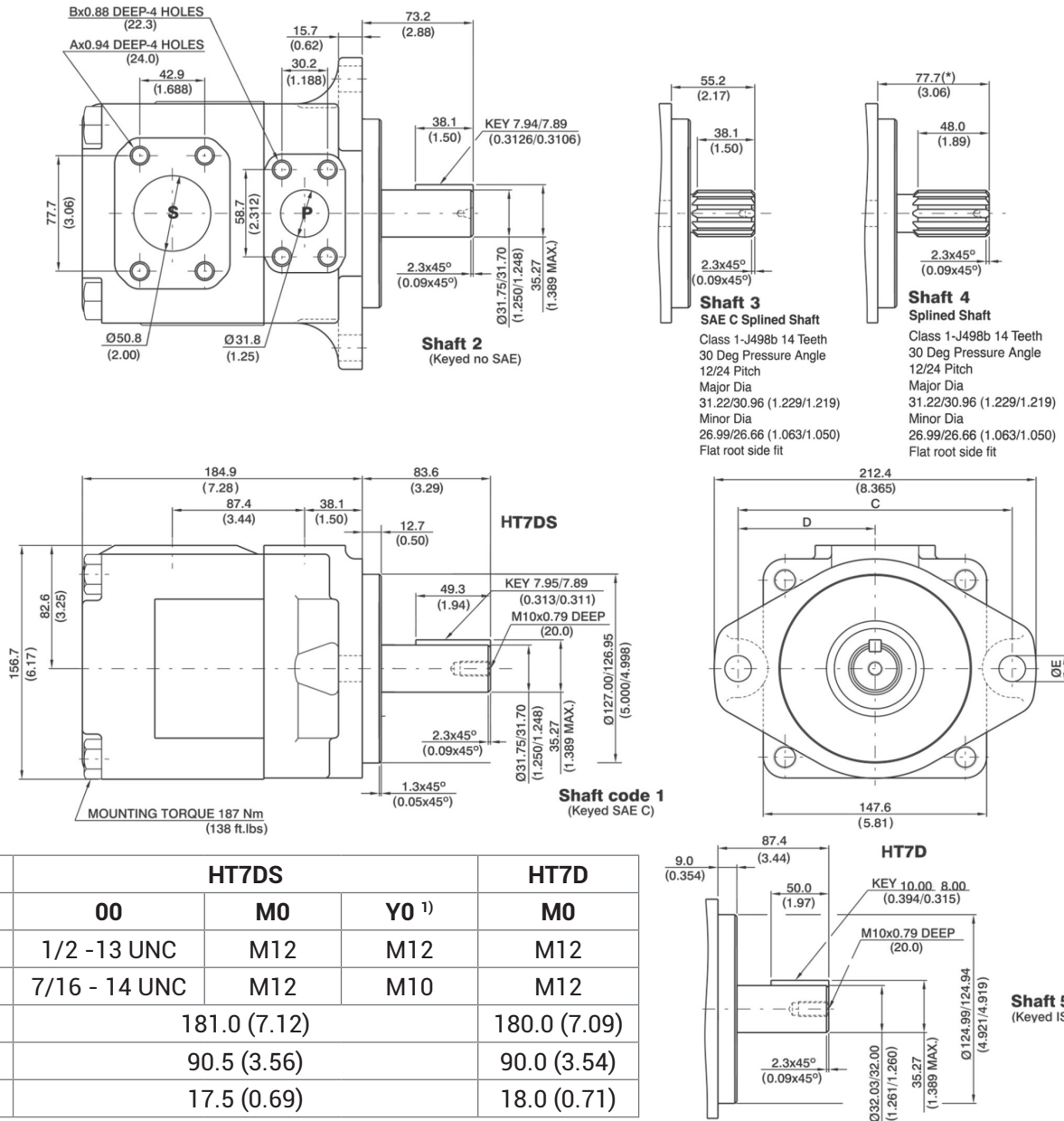
### 8. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Single Vane Pump HT7D/HT7DS Series

## Installation Dimension mm (inch)

### HT7D, HT7DS



Model	HT7DS			HT7D
Code	00	M0	Y0 <sup>1)</sup>	M0
A	1/2 - 13 UNC	M12	M12	M12
B	7/16 - 14 UNC	M12	M10	M12
C	181.0 (7.12)			180.0 (7.09)
D	90.5 (3.56)			90.0 (3.54)
E	17.5 (0.69)			18.0 (0.71)

1) 250 bar (3630 psi) max. int

# High Pressure Single Vane Pump HT7D/HT7DS Series

## Performance Characteristics

### HT7D, HT7DS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
14	2.68 in <sup>3</sup> /rev	1800	20.92	19.18	17.19	3.46	27.77	58.49
17	3.36 in <sup>3</sup> /rev		26.16	24.41	22.42	3.77	33.88	71.92
20	4.03 in <sup>3</sup> /rev		31.39	29.64	27.65	4.07	39.98	85.35
22	4.29 in <sup>3</sup> /rev		33.43	31.69	29.70	4.19	42.37	90.60
24	4.95 in <sup>3</sup> /rev		38.57	36.82	34.83	4.49	48.36	103.78
28	5.49 in <sup>3</sup> /rev		42.80	41.06	39.06	4.74	53.30	114.65
31	6.05 in <sup>3</sup> /rev		47.18	45.43	43.44	4.99	58.41	125.88
35	6.92 in <sup>3</sup> /rev		53.93	52.18	50.44 <sup>1)</sup>	5.39	66.29	130.39 <sup>1)</sup>
38	7.36 in <sup>3</sup> /rev		57.35	55.61	53.87 <sup>1)</sup>	5.59	70.28	138.38 <sup>1)</sup>
42	8.39 in <sup>3</sup> /rev		65.39	63.65	62.15 <sup>2)</sup>	6.05	79.66	149.39 <sup>2)</sup>
45	8.89 in <sup>3</sup> /rev		69.29	67.11	65.47 <sup>3)</sup>	6.74	83.75	144.41 <sup>3)</sup>
50	9.64 in <sup>3</sup> /rev		75.14	72.96	71.78 <sup>4)</sup>	7.08	90.58	134.54 <sup>4)</sup>

1) 35 - 38 = 4060 PSI max. int.

2) 42 = 3770 PSI max. int.

3) 45 = 3500 PSI max. int.

4) 50 = 3000 PSI max. int.

\*Special 2<sup>1</sup>/<sub>2</sub> (2.5 dia) suction also available

# High Pressure Single Vane Pump

## HT7DSW Series

### Specification

#### HT7DSW for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
014	47.6 (2.90)	300 (4350)	250 (3600)	600	3000	27.0 (59.4)
017	58.2 (3.55)					
020	66.0 (4.03)					
022	70.0 (4.27)					
024	79.5 (4.85)					
028	89.7 (5.47)					
031	98.3 (6.00)					
035	111.0 (6.77)	280 (4060)				
038	120.3 (7.34)					
042	136.0 (8.30)	260 (3770)	235 (3400)		2500	
045	145.7 (8.89)	240 (3500)	206 (3000)		2200	
050	158.0 (9.64)	206 (3000)	160 (2300)			



# High Pressure Single Vane Pump HT7DSW Series

## Ordering Code : Single Pump



1. Model :  
Industrial - HT7DSW SAE C 4 bolts mounting flange ISO 127-4

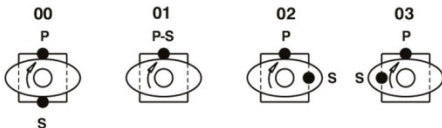
2. Displacement  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

3. Type of shaft  
X - SAE C Keyed Shaft  
W - SAE C Splined Shaft

4. Direction of rotation (Viewed from shaft end)  
R - Turn right  
L - Turn left

5. Porting combination  
00 - standard



S - Suction port P - Pressure port

6. Design letter

7. Port Connection (4 bolts SAE flange J518C)  
00 - UNC Port Connection  
M0 - Metric Port Connection

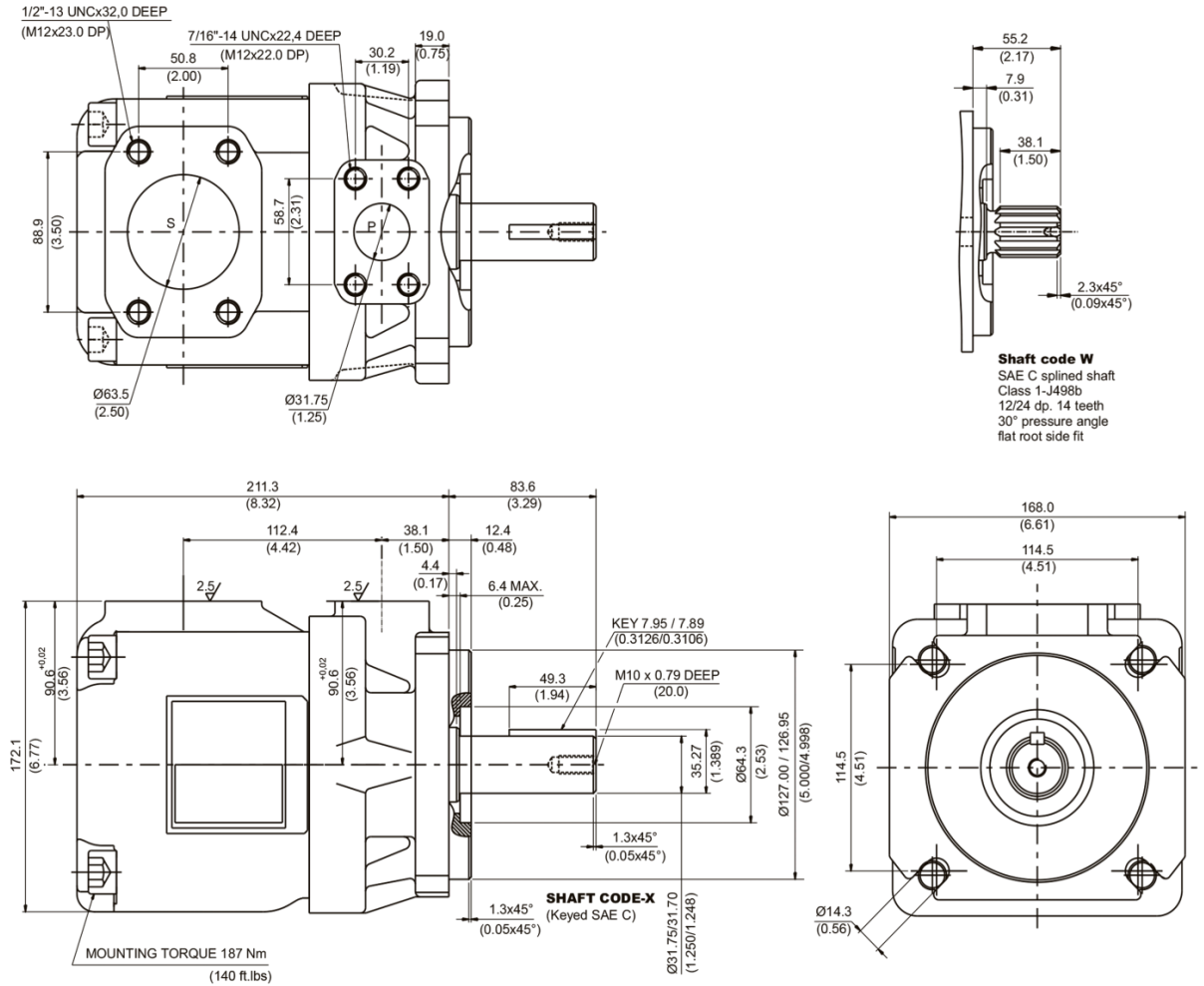
P = 1" 1/4 S = 2" 1/2		
	UNC	METRIC
HT7DSW	0	M0

8. Modifications  
Omit - Standard  
718 - Surface grinding the flange face for the manifold.

# High Pressure Single Vane Pump HT7DSW Series

## Installation Dimension mm (inch)

### HT7DSW



# High Pressure Single Vane Pump HT7DSW Series

## Performance Characteristics

### HT7DSW

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
14	2.68 in <sup>3</sup> /rev	1800	20.92	19.18	17.19	3.46	27.77	58.49
17	3.36 in <sup>3</sup> /rev		26.16	24.41	22.42	3.77	33.88	71.92
20	4.03 in <sup>3</sup> /rev		31.39	29.64	27.65	4.07	39.98	85.35
22	4.29 in <sup>3</sup> /rev		33.43	31.69	29.70	4.19	42.37	90.60
24	4.95 in <sup>3</sup> /rev		38.57	36.82	34.83	4.49	48.36	103.78
28	5.49 in <sup>3</sup> /rev		42.80	41.06	39.06	4.74	53.30	114.65
31	6.05 in <sup>3</sup> /rev		47.18	45.43	43.44	4.99	58.41	125.88
35	6.92 in <sup>3</sup> /rev		53.93	52.18	50.44 <sup>1)</sup>	5.39	66.29	130.39 <sup>1)</sup>
38	7.36 in <sup>3</sup> /rev		57.35	55.61	53.87 <sup>1)</sup>	5.59	70.28	138.38 <sup>1)</sup>
42	8.39 in <sup>3</sup> /rev		65.39	63.65	62.15 <sup>2)</sup>	6.05	79.66	149.39 <sup>2)</sup>
45	8.89 in <sup>3</sup> /rev		69.29	67.11	65.47 <sup>3)</sup>	6.74	83.75	144.41 <sup>3)</sup>
50	9.64 in <sup>3</sup> /rev		75.14	72.96	71.78 <sup>4)</sup>	7.08	90.58	134.54 <sup>4)</sup>

1) 35 - 38 = 4060 PSI max. int

2) 42 = 3770 PSI max. int.

3) 45 = 3500 PSI max. int

4) 50 = 3000 PSI max. int

\*Special 2½" (2.5 dia) suction also available

# High Pressure Single Vane Pump

## HT7DSWP Series

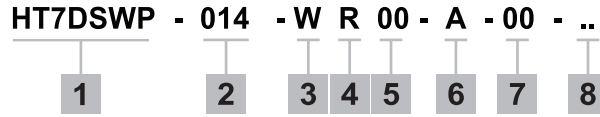
### Specification

#### HT7DSWP for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
014	47.6 (2.90)	300 (4350)	250 (3600)	600	3000	27.0 (59.4)
017	58.2 (3.55)					
020	66.0 (4.03)					
022	70.0 (4.27)					
024	79.5 (4.85)					
028	89.7 (5.47)					
031	98.3 (6.00)					
035	111.0 (6.77)	280 (4060)				
038	120.3 (7.34)					
042	136.0 (8.30)	260 (3770)	235 (3400)		2500	
045	145.7 (8.89)	240 (3500)	206 (3000)		2200	
050	158.0 (9.64)	206 (3000)	160 (2300)			

# High Pressure Single Vane Pump HT7DSWP Series

## Ordering Code : Single Pump



1. Model :

Mobile 2 Shaft seals (P) - HT7DSWP SAE C 4 bolts mounting flange ISO 127-4

6. Design letter

7. Port Connection (4 bolts SAE flange J518C)  
00 - UNC Port Connection

2. Displacement

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

P = 1" 1/4 S = 2" 1/2		
	UNC	
HT7DSWP	00	

8. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

3. Type of shaft

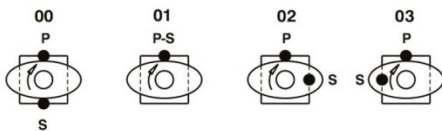
W - SAE C Splined Shaft

4. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

5. Porting combination

00 - standard

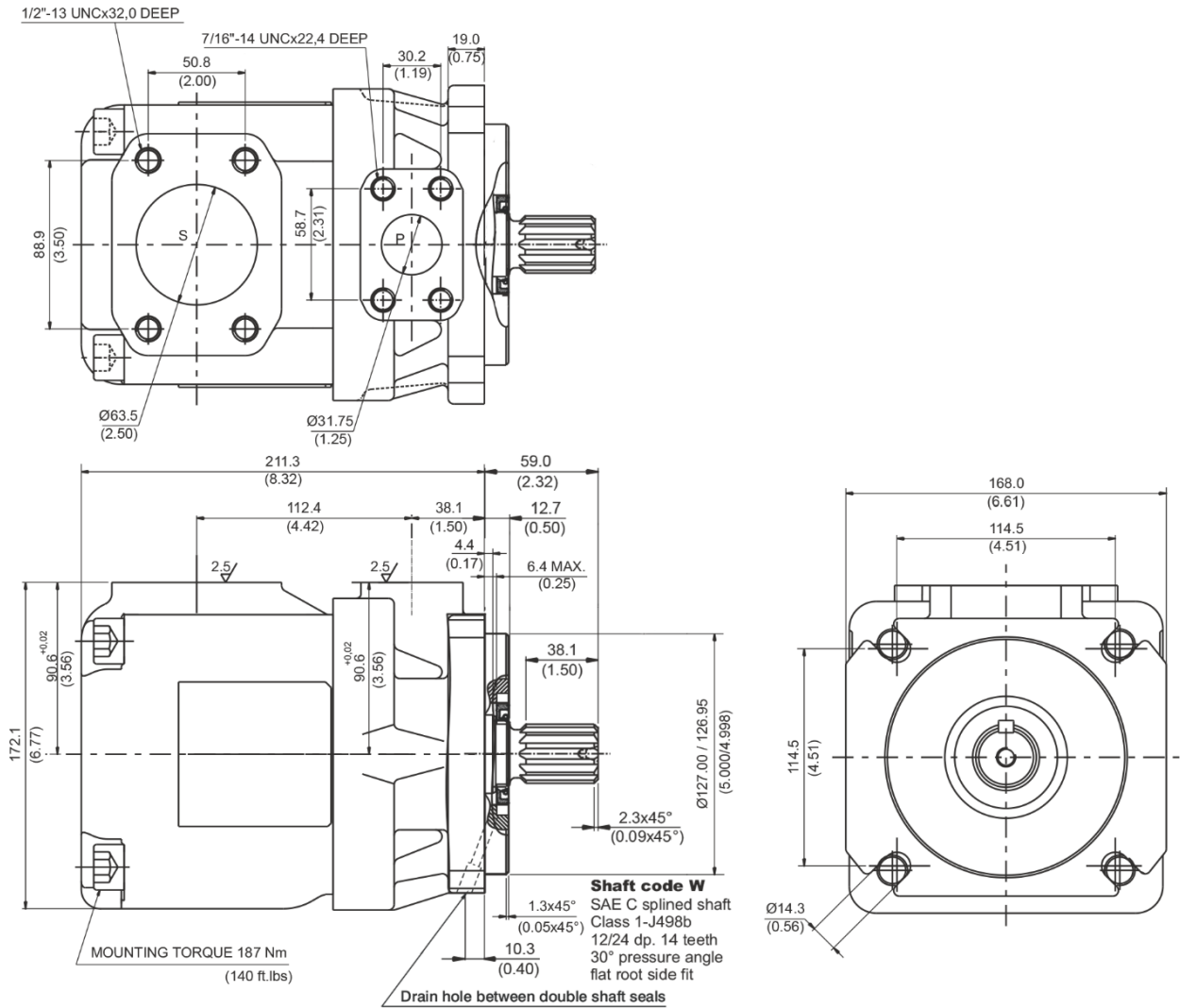


S - Suction port P - Pressure port

# High Pressure Single Vane Pump HT7DSWP Series

## Installation Dimension mm (inch)

### HT7DSWP



# High Pressure Single Vane Pump HT7DSWP Series

## Performance Characteristics

### HT7DSWP

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
14	2.68 in <sup>3</sup> /rev	1800	20.92	19.18	17.19	3.46	27.77	58.49
17	3.36 in <sup>3</sup> /rev		26.16	24.41	22.42	3.77	33.88	71.92
20	4.03 in <sup>3</sup> /rev		31.39	29.64	27.65	4.07	39.98	85.35
22	4.29 in <sup>3</sup> /rev		33.43	31.69	29.70	4.19	42.37	90.60
24	4.95 in <sup>3</sup> /rev		38.57	36.82	34.83	4.49	48.36	103.78
28	5.49 in <sup>3</sup> /rev		42.80	41.06	39.06	4.74	53.30	114.65
31	6.05 in <sup>3</sup> /rev		47.18	45.43	43.44	4.99	58.41	125.88
35	6.92 in <sup>3</sup> /rev		53.93	52.18	50.44 <sup>1)</sup>	5.39	66.29	130.39 <sup>1)</sup>
38	7.36 in <sup>3</sup> /rev		57.35	55.61	53.87 <sup>1)</sup>	5.59	70.28	138.38 <sup>1)</sup>
42	8.39 in <sup>3</sup> /rev		65.39	63.65	62.15 <sup>2)</sup>	6.05	79.66	149.39 <sup>2)</sup>
45	8.89 in <sup>3</sup> /rev		69.29	67.11	65.47 <sup>3)</sup>	6.74	83.75	144.41 <sup>3)</sup>
50	9.64 in <sup>3</sup> /rev		75.14	72.96	71.78 <sup>4)</sup>	7.08	90.58	134.54 <sup>4)</sup>

1) 35 - 38 = 4060 PSI max. int

2) 42 = 3770 PSI max. int.

3) 45 = 3500 PSI max. int

4) 50 = 3000 PSI max. int

\*Special 2½" (2.5 dia) suction also available

# High Pressure Single Vane Pump

## HT6DM/HT6DP Series

### Specification

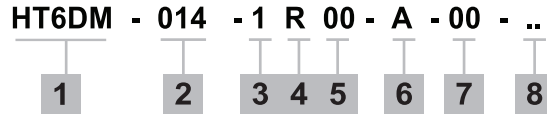
#### HT6DM, HT6DP for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
014	47.6 (2.90)	240 (3500)	206 (3000)	400	2500	26.4 (58.0)
017	58.2 (3.55)					
020	66.0 (4.03)					
024	79.5 (4.85)					
028	89.7 (5.47)					
031	98.3 (6.00)					
035	111.0 (6.77)					
038	120.3 (7.34)					
042	136.0 (8.30)					
045	145.7 (8.89)	206 (3000)	160 (2300)		2200	
050	158.0 (9.64)					
061	193.3 (11.8)					



# High Pressure Single Vane Pump HT6DM/HT6DP Series

## Ordering Code : Single Pump



1. Model :

- Mobile 1 Shaft seals (M) - HT6DM
- Mobile 2 Shaft seals (P) - HT6DP
- SAE C 2 bolts mounting flange J744

2. Displacement

- Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
- 014 - 47.6 (2.90)
  - 017 - 58.2 (3.55)
  - 020 - 66.0 (4.03)
  - 024 - 79.5 (4.85)
  - 028 - 89.7 (5.47)
  - 031 - 98.3 (6.00)
  - 035 - 111.0 (6.77)
  - 038 - 120.3 (7.34)
  - 042 - 136.0 (8.30)
  - 045 - 145.7 (8.89)
  - 050 - 158.0 (9.64)
  - 061 - 193.3 (11.80)

3. Type of shaft

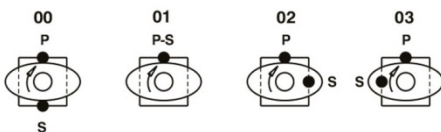
- HT6DM
- 1 - SAE C Keyed Shaft
  - 2 - non SAE Keyed Shaft
  - 3 - SAE C Splined Shaft
  - 4 - non SAE Splined Shaft
- HT6DP
- 3 - non SAE Splined Shaft

4. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

5. Porting combination

- 00 - standard



S - Suction port    P - Pressure port

6. Design letter

7. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection (Except HT7D)
- M0 - Metric Port Connection

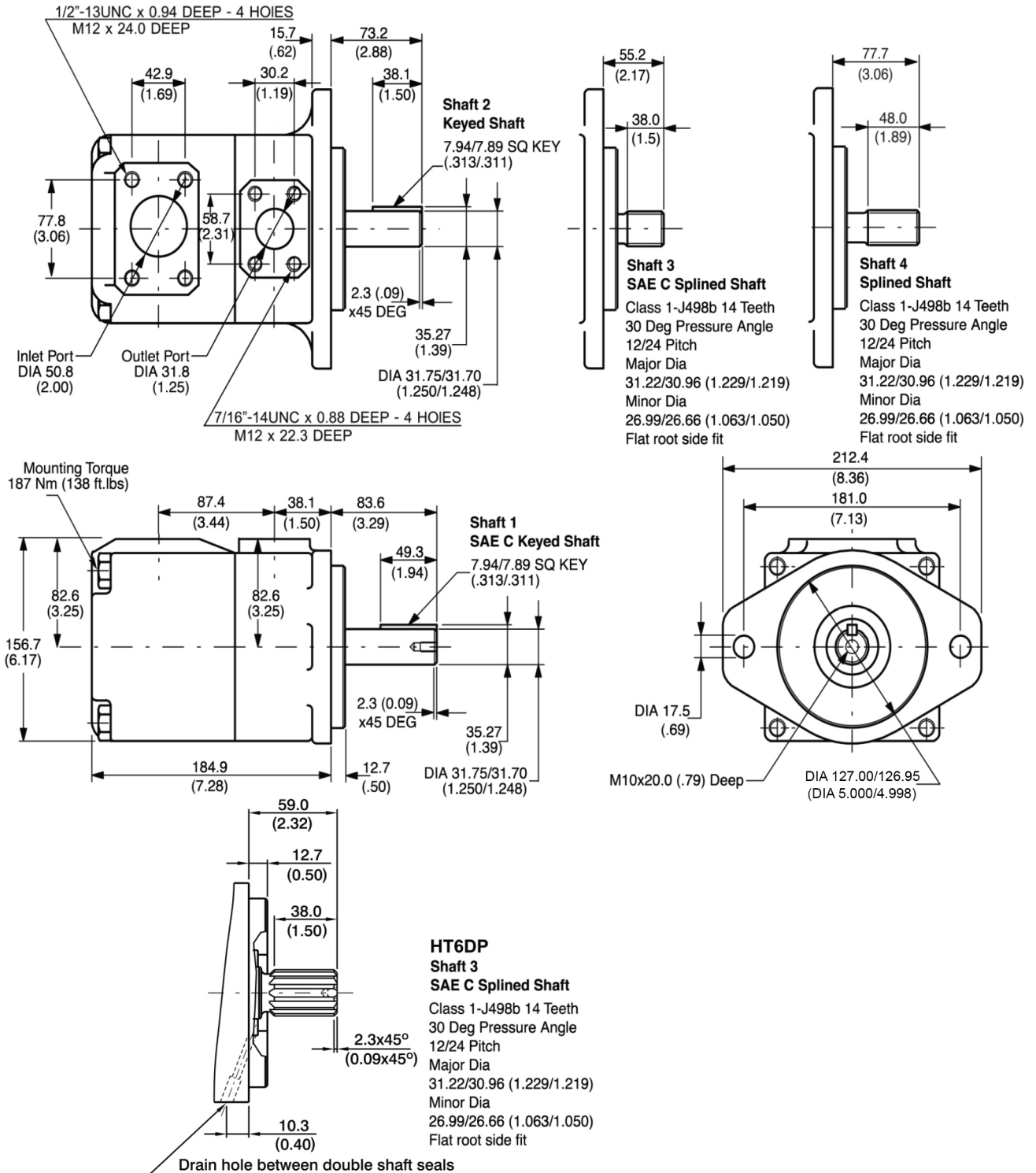
8. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Single Vane Pump HT6DM/HT6DP Series

## Installation Dimension mm (inch)

### HT6DM, HT6DP



# High Pressure Single Vane Pump HT6DM/HT6DP Series

## Performance Characteristics

### HT6DM, HT6DP

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
14	2.90 in <sup>3</sup> /rev	1200	15.09	12.91	11.27	2.44	19.60	33.20
		1800	22.64	20.46	18.82	4.02	29.31	49.34
17	3.55 in <sup>3</sup> /rev	1200	18.45	16.27	14.63	2.64	23.52	40.06
		1800	27.68	25.50	23.86	4.31	35.20	59.64
20	4.00 in <sup>3</sup> /rev	1200	20.92	18.74	17.10	2.78	26.41	45.11
		1800	31.39	29.21	27.57	4.53	39.52	67.21
24	4.80 in <sup>3</sup> /rev	1200	25.20	23.02	21.38	3.03	31.40	53.85
		1800	37.81	35.63	33.99	4.91	47.02	80.32
28	5.50 in <sup>3</sup> /rev	1200	28.44	26.26	24.62	3.22	35.17	60.45
		1800	42.66	40.48	38.84	5.19	52.68	90.23
31	6.00 in <sup>3</sup> /rev	1200	31.17	28.99	27.35	3.38	38.36	66.02
		1800	46.75	44.57	42.93	5.43	57.45	98.58
35	6.80 in <sup>3</sup> /rev	1200	35.19	33.01	31.37	3.61	43.05	74.24
		1800	52.79	50.61	48.97	5.78	64.50	110.91
38	7.30 in <sup>3</sup> /rev	1200	38.14	35.96	34.32	3.79	46.49	80.26
		1800	57.21	55.03	53.39	6.04	69.66	119.94
42 <sup>1)</sup>	8.30 in <sup>3</sup> /rev	1200	43.12	40.94	39.30	4.08	52.30	90.43
		1800	64.68	62.50	60.86	6.47	78.37	135.19
45 <sup>1)</sup>	8.90 in <sup>3</sup> /rev	1200	46.19	44.01	42.37	4.26	55.89	96.71
		1800	69.29	67.11	65.47	6.74	83.75	144.61
50 <sup>1)</sup>	9.64 in <sup>3</sup> /rev	1200	50.09	47.91	46.73 <sup>2)</sup>	4.48	60.44	89.93 <sup>2)</sup>
		1800	75.14	72.96	71.78 <sup>2)</sup>	7.08	90.58	134.54 <sup>2)</sup>
61 <sup>1)</sup>	11.8 in <sup>3</sup> /rev	1200	60.39	56.12	53.68 <sup>2)</sup>	5.50	72.76	121.79 <sup>2)</sup>
		1800	90.98	84.55	80.87 <sup>2)</sup>	8.30	109.61	183.48 <sup>2)</sup>

1) 42 - 45 - 50 - 61 = 2200 R.P.M. max.

2) 50 - 61 = 3000 PSI max. int.

Port connection can be furnished with metric threads.

# High Pressure Single Vane Pump

## HT7E/HT7ES Series

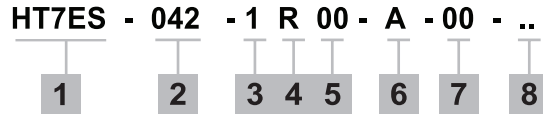
### Specification

HT7E, HT7ES for Single pump

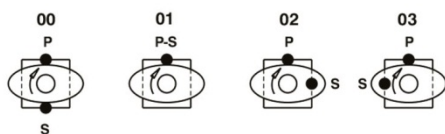
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
042	132.3 (8.07)	240 (3500)	206 (3000)	600	2200	43.0 (94.6)
045	142.4 (8.70)					
050	158.5 (9.67)					
052	164.8 (10.00)					
054	173.8 (10.60)					
057	180.7 (11.02)					
062	196.7 (12.00)					
066	213.3 (13.00)					
072	227.1 (13.86)	90 (1300)	75 (1100)		2000	
085	269.8 (16.40)					

# High Pressure Single Vane Pump HT7E/HT7ES Series

## Ordering Code : Single Pump



- |   |  |
|---|--|
| <p>1. Model :<br/>Industrial - HT7E ISO 2 bolts 3019-2 mounting flange 125 A2 HW<br/>- HT7ES SAE C 2 bolts mounting flange J744</p> <p>2. Displacement<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)<br/>042 - 132.3 (8.07)<br/>045 - 142.4 (8.70)<br/>050 - 158.5 (9.67)<br/>052 - 164.8 (10.00)<br/>054 - 173.8 (10.60)<br/>057 - 180.7 (11.02)<br/>062 - 196.7 (12.00)<br/>066 - 213.3 (13.00)<br/>072 - 227.1 (13.86)<br/>085 - 269.8 (16.40)</p> <p>3. Type of shaft<br/>HT7E, HT7ES<br/>5 - ISO R775-G38M Keyed Shaft<br/><br/>HT7ES<br/>1 - SAE CC Keyed Shaft<br/>2 - non SAE Keyed Shaft<br/>3 - SAE C Splined Shaft<br/>4 - SAE CC Splined Shaft</p> <p>4. Direction of rotation (Viewed from shaft end)<br/>R - Turn right<br/>L - Turn left</p> <p>5. Porting combination<br/>00 - standard</p> | <p>6. Design letter</p> <p>7. Port Connection (4 bolts SAE flange J518C)<br/>00 - UNC Port Connection (Except HT7E)<br/>M0 - Metric Port Connection</p> <p>8. Modifications<br/>Omit - Standard<br/>718 - Surface grinding the flange face for the manifold.</p> |
|---|--|

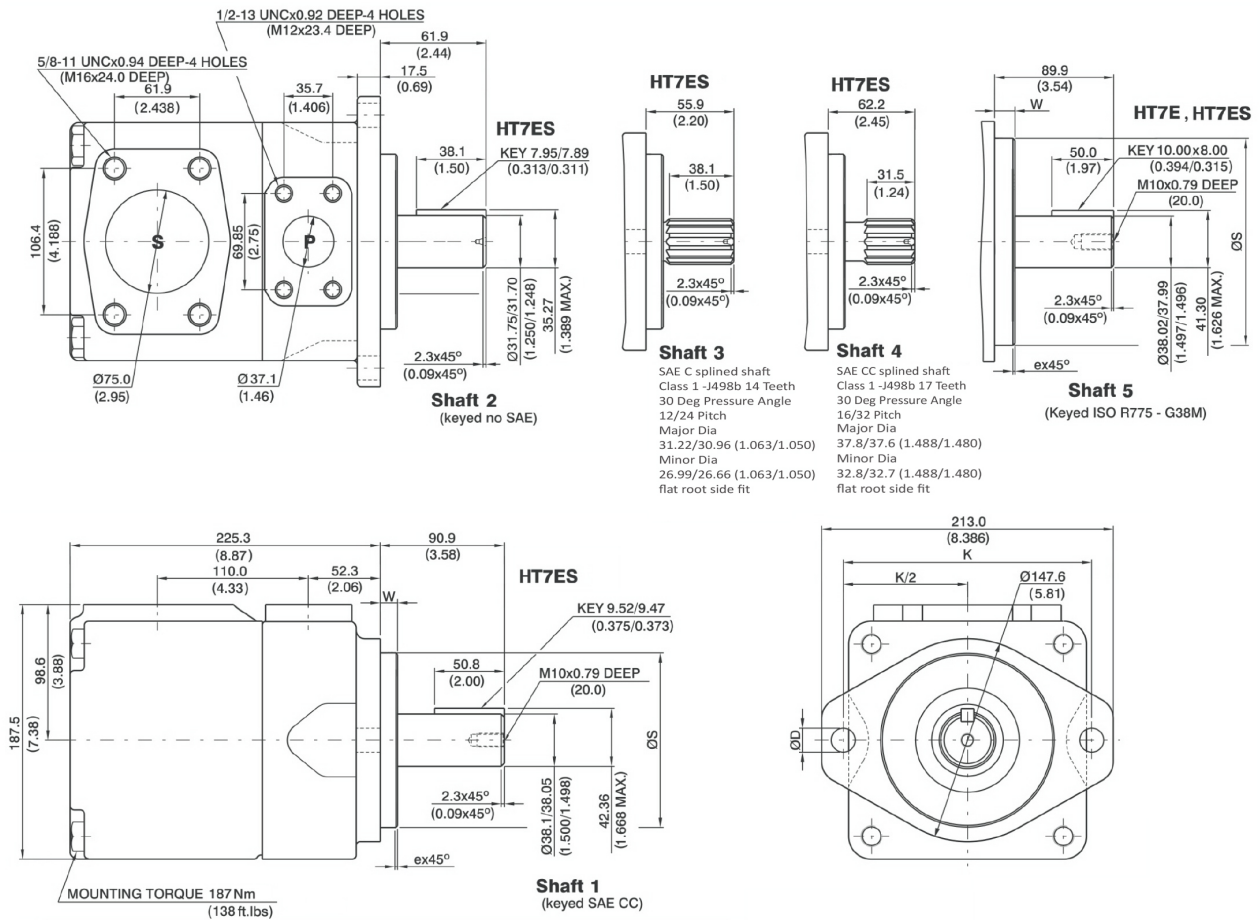


S - Suction port    P - Pressure port

# High Pressure Single Vane Pump HT7E/HT7ES Series

## Installation Dimension mm (inch)

### HT7E, HT7ES



### Alternate mounting flange

Series	ØS		ex45°	W	K	ØD
	MAX.	MIN.				
HT7E	124.99 (4.921)	124.94 (4.919)	2.0 (0.079)	9.49 (0.374)	180.0 (7.087)	18.0 (0.709)
HT7ES	127.00 (5.00)	126.94 (4.998)	12.7 (0.50)	12.7 (0.50)	181.0 (7.126)	17.5 (0.689)

# High Pressure Single Vane Pump HT7E/HT7ES Series

## Performance Characteristics

### HT7E, HT7ES

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
042	8.07 in <sup>3</sup> /rev	1800	62.92	60.37	58.52	8.09	78.44	133.80
045	8.70 in <sup>3</sup> /rev		67.72	65.17	63.32	8.37	84.04	143.60
050	9.67 in <sup>3</sup> /rev		75.38	72.83	70.98	8.82	92.97	159.24
052	10.00 in <sup>3</sup> /rev		78.37	75.82	73.97	8.99	96.47	165.36
054	10.43 in <sup>3</sup> /rev		81.27	78.72	76.87	9.17	99.75	177.46
057	11.18 in <sup>3</sup> /rev		87.12	84.57	82.72	9.51	106.57	189.84
062	12.00 in <sup>3</sup> /rev		93.54	90.99	89.14	9.88	114.17	196.34
066	13.00 in <sup>3</sup> /rev		101.44	98.89	97.04	10.34	123.38	212.46
072	13.86 in <sup>3</sup> /rev		108.00	105.45	103.60	10.72	131.04	225.86
085	16.40 in <sup>3</sup> /rev		127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-

1) 85 = 1300 PSI max. int.

\*Special 3<sup>1</sup>/<sub>2</sub> (3.5 dia) suction also available

# High Pressure Single Vane Pump

## HT6EM/HT6EP Series

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### Specification

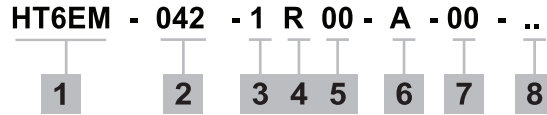
#### HT6EM/HT6EP for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
042	132.3 (8.07)	240 (3500)	206 (3000)	400	2200	42.0 (92.4)
045	142.4 (8.70)					
050	158.5 (9.67)					
052	164.8 (10.00)					
062	196.7(12.00)					
066	213.3 (13.00)					
072	227.1 (13.86)					



# High Pressure Single Vane Pump HT6EM/HT6EP Series

## Ordering Code : Single Pump



1. Model :

Mobile 1 Shaft seals (M) - HT6EM  
 Mobile 2 Shaft seals (P) - HT6EP SAE C 2 bolts mounting flange J744

7. Port Connection (4 bolts SAE flange J518C)

00 - UNC Port Connection  
 M0 - Metric Port Connection

2. Displacement

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 042 - 132.3 (8.07)  
 045 - 142.4 (8.70)  
 050 - 158.5 (9.67)  
 052 - 164.8 (10.00)  
 062 - 196.7 (12.00)  
 066 - 213.3 (13.00)  
 072 - 227.1 (13.86)

8. Modifications

Omit - Standard  
 718 - Surface grinding the flange face for the manifold.

3. Type of shaft

HT6EM  
 1 - SAE CC Keyed Shaft  
 2 - non SAE Keyed Shaft  
 3 - SAE C Splined Shaft  
 4 - SAE CC Splined Shaft  
 T - SAE J718c Splined Shaft

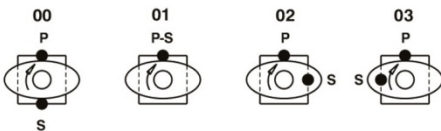
HT6EP  
 3 - non SAE Splined Shaft

4. Direction of rotation (Viewed from shaft end)

R - Turn right  
 L - Turn left

5. Porting combination

00 - standard



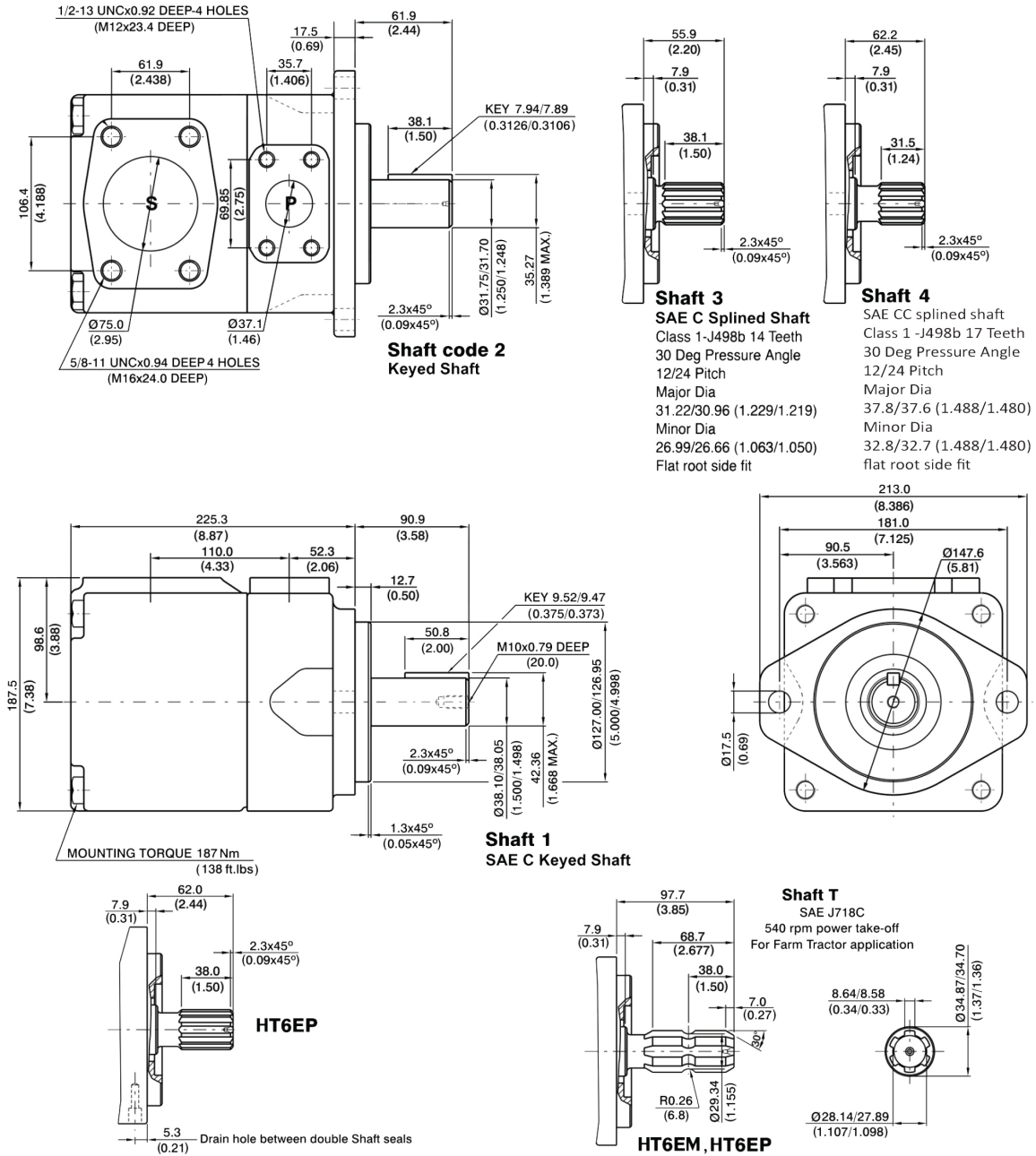
S - Suction port P - Pressure port

6. Design letter

# High Pressure Single Vane Pump HT6EM/HT6EP Series

## Installation Dimension mm (inch)

### HT6EM/HT6EP



**Shaft 3**  
 no SAE splined shaft  
 Class 1 -J498b 14 Teeth  
 30 Deg Pressure Angle  
 12/24 Pitch  
 Major Dia 31.22/30.96 (1.063/1.050)  
 Minor Dia 26.99/26.66 (1.063/1.050)  
 flat root side fit

# High Pressure Single Vane Pump

## HT6EM/HT6EP Series

### Performance Characteristics

#### HT6EM/HT6EP

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

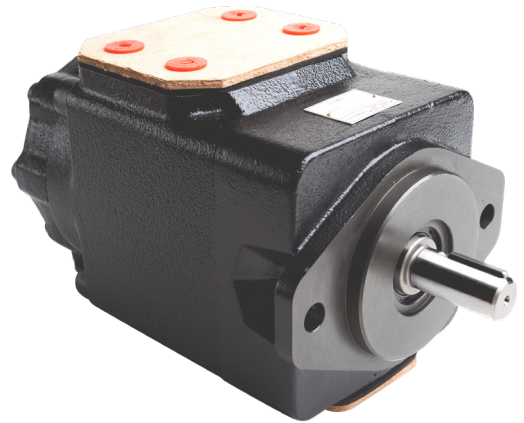
Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
042	8.07 in <sup>3</sup> /rev	1200	41.94	39.39	37.54	5.35	52.28	89.29
		1800	62.92	60.37	58.52	8.09	78.44	133.80
045	8.70 in <sup>3</sup> /rev	1200	45.15	42.60	40.75	4.33	54.72	94.43
		1800	67.12	65.17	63.32	6.87	82.09	141.51
050	9.67 in <sup>3</sup> /rev	1200	50.25	47.70	45.85	4.63	60.68	104.85
		1800	75.38	72.83	70.98	7.32	91.02	157.15
052	10.00 in <sup>3</sup> /rev	1200	52.25	49.70	47.85	4.75	63.01	108.93
		1800	78.37	75.82	73.97	7.49	94.52	163.27
062	12.00 in <sup>3</sup> /rev	1200	62.36	59.81	57.96	5.34	74.81	129.58
		1800	93.54	90.99	89.14	8.38	112.22	194.24
066	13.00 in <sup>3</sup> /rev	1200	67.62	65.07	63.22	5.65	80.95	140.33
		1800	101.44	98.89	97.04	8.84	121.43	210.37
072	13.86 in <sup>3</sup> /rev	1200	72.00	69.45	67.60	5.90	86.05	149.26
		1800	108.00	105.45	103.60	9.22	129.09	223.77

# High Pressure Double Vane Pump HT6, HT7, HT67 Series

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## Features and Handling

- HT6, HT7 HT67 Series are fixed displacement and balanced type double vane pumps. The pump is designed for higher operating pressure and greater flow at the same housing size.
- With a balanced pin-vane design, outlet pressure is continuously applied only the pin. The pin provides the steady light force against the vane. Top and bottom areas of the vane are subject to the same pressure, either inlet or outlet pressure, depending on the vane's location during rotor rotation. This pin-vane design minimizes noise level and improves volumetric efficiency.
- With the cartridge independent of the shaft, allowing for easy change of flow capacity and field servicing without removing the pump from its mounting.
- Allowing low flow at high pressure. (300 bar max) and high flow at low pressure \*For HT7, HT67 Series.



*\*Foot Mounting is available for each pump. For more details, see Foot Mounts.*

# High Pressure Double Vane Pump HT7BB/ HT7BBS Series

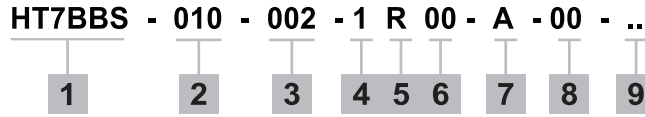
## Specification

### HT7BB, HT7BBS for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
002	5.8 (0.35)	320 (4640)	290 (4200)	002	5.8 (0.35)	320 (4640)	290 (4200)	600	2200	32.6 (71.87)
003	9.8 (0.59)			003	9.8 (0.59)					
004	12.8 (0.78)			004	12.8 (0.78)					
005	15.9 (0.97)			005	15.9 (0.97)					
006	19.8 (1.20)			006	19.8 (1.20)					
007	22.5 (1.37)			007	22.5 (1.37)					
008	24.9 (1.51)			008	24.9 (1.51)					
009	26.0 (1.70)			009	26.0 (1.70)					
010	31.8 (1.94)			010	31.8 (1.94)					
011	35.0 (2.13)			011	35.0 (2.13)					
012	41.0 (2.50)			012	41.0 (2.50)					
014	45.0 (2.74)			014	45.0 (2.74)					
015	50.0 (3.05)	280 (4060)	240 (3500)	015	50.0 (3.05)	280 (4060)	240 (3500)			

# High Pressure Double Vane Pump HT7BB/ HT7BBS Series

## Ordering Code : Double Pump



**1. Model :**

- Industrial - HT7BB ISO 2 bolts 3019-2 mounting flange 100 A2 HW
- HT7BBS SAE B 2 bolts mounting flange J744

**2. Displacement P1**

- Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
- 002 - 5.8 (0.35)
  - 003 - 9.8 (0.60)
  - 004 - 12.8 (0.78)
  - 005 - 15.9 (0.97)
  - 006 - 19.8 (1.20)
  - 007 - 22.5 (1.37)
  - 008 - 24.9 (1.51)
  - 009 - 28.0 (1.70)
  - 010 - 31.8 (1.92)
  - 011 - 35.0 (2.14)
  - 012 - 41.0 (2.47)
  - 014 - 45.0 (2.70)
  - 015 - 50.0 (3.01)

**3. Displacement P2**

- Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
- 002 - 5.8 (0.35)
  - 003 - 9.8 (0.60)
  - 004 - 12.8 (0.78)
  - 005 - 15.9 (0.97)
  - 006 - 19.8 (1.20)
  - 007 - 22.5 (1.37)
  - 008 - 24.9 (1.51)
  - 009 - 28.0 (1.70)
  - 010 - 31.8 (1.92)
  - 011 - 35.0 (2.14)
  - 012 - 41.0 (2.47)
  - 014 - 45.0 (2.70)
  - 015 - 50.0 (3.01)

**4. Type of shaft**

- HT7BB, HT7BBS
- 5 - ISO R775-G38M Keyed Shaft
- HT7BBS
- 1 - non SAE Keyed Shaft
- 2 - SAE BB Keyed Shaft
- 3 - SAE B Splined Shaft
- 4 - SAE BB Splined Shaft

**5. Direction of rotation (Viewed from shaft end)**

- R - Turn right
- L - Turn left

**6. Porting combination (see page Porting Diagrams)**

- 00 - standard

**7. Design letter**

**8. Port Connection (4 bolts SAE flange J518C)**

- 00 - UNC Port Connection (Except HT7BB)
- M0 - Metric Port Connection

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	M0	1"	3/4"	2½"
01	M1	3/4"	3/4"	2½"

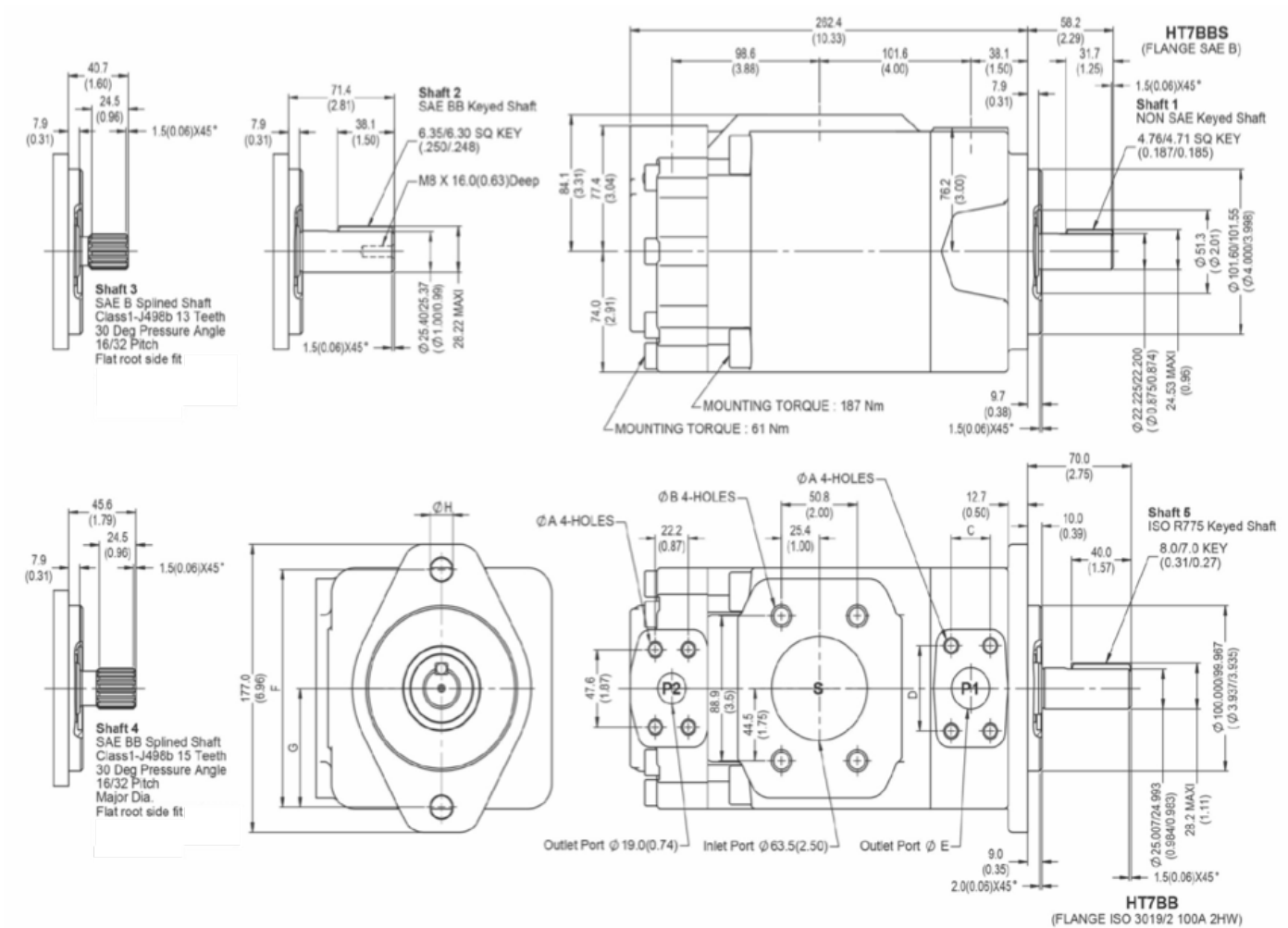
**9. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT7BB/ HT7BBS Series

## Installation Dimension mm (inch)

### HT7BB, HT7BBS



Model	HT7BB		HT7BBS	
Code	M0	M1	00	01
ØA	M10 x19.0 DEEP		3/8"-16 UNC x 19.0 DEEP	
ØB	M12 x 22.4 DEEP		1/2" -13 UNC x 22.4 DEEP	
C	26.2	22.25	26.2	22.25
D	52.4	47.65	52.4	47.65
ØE	25.4	19.1	25.4	19.1
F	140.0		146.0	
G	70.0		73.0	
ØH	14.0		14.3	

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	14300
2	21420
3	20600
4	32670
5	25300

# High Pressure Double Vane Pump

## HT7BB/ HT7BBS Series

### Performance Characteristics

#### HT7BB, HT7BBS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>1)</sup>	1.34	17.15	36.19 <sup>1)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>1)</sup>	1.47	19.97	42.22 <sup>1)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>1)</sup>	1.60	21.84	46.24 <sup>1)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>2)</sup>	1.74	24.26	47.85 <sup>2)</sup>

1) 011 - 012 - 014 = 4350 PSI max. int. 2) 015 = 4000 PSI Max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.



# High Pressure Double Vane Pump HT67CB/ HT67CBW Series

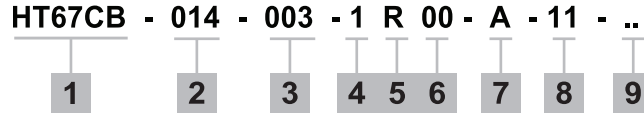
## Specification

### HT67CB, HT67CBW for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
003	10.8 (0.66)	275 (4000)	240 (3500)	002	5.8 (0.35)	300 (4350)	275 (4000)	600	2200	27.0 (59.4)
005	17.2 (1.05)			003	9.8 (0.59)					
006	21.3 (1.30)			004	12.8 (0.78)					
008	26.4 (1.61)			005	15.9 (0.97)					
010	34.1 (2.08)			006	19.8 (1.20)					
012	37.1 (2.26)			007	22.5 (1.37)					
014	46.0 (2.81)			008	24.9 (1.51)					
017	58.3 (3.56)			009	28.0 (1.70)					
020	63.8 (3.89)			010	31.8 (1.94)					
022	70.3 (4.29)			011	35.0 (2.13)					
025	79.3 (4.84)			012	41.0 (2.50)					
028	88.8 (5.42)	206 (3000)	160 (2300)	014	45.0 (2.74)	280 (4060)	240 (3500)			
031	100.0 (6.10)			015	50.0 (3.05)					

# High Pressure Double Vane Pump HT67CB/ HT67CBW Series

## Ordering Code : Double Pump

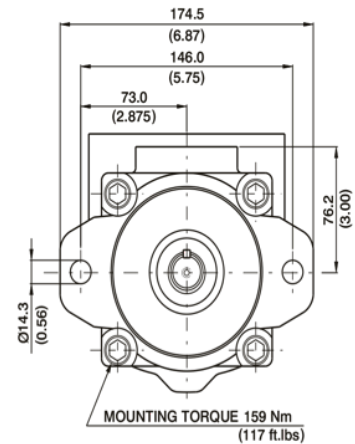
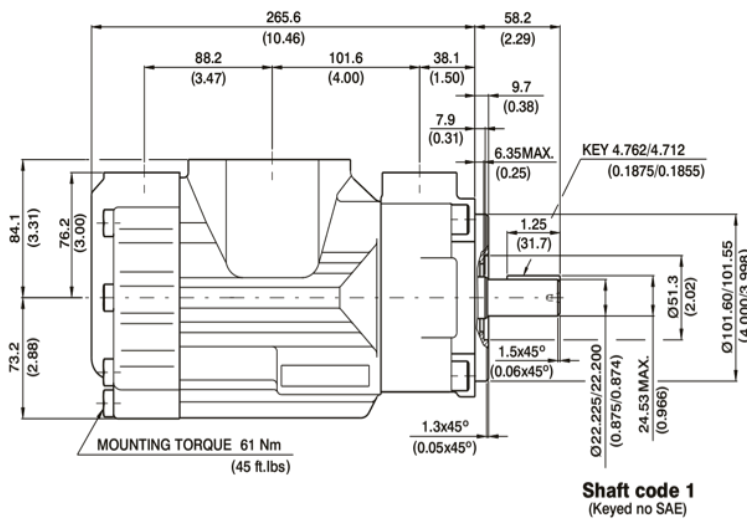
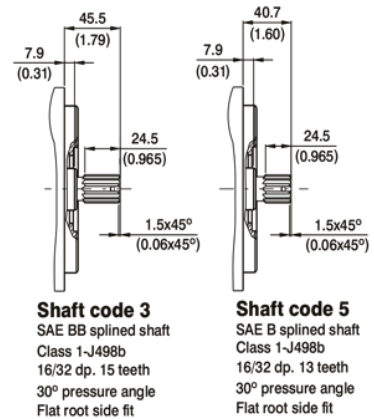
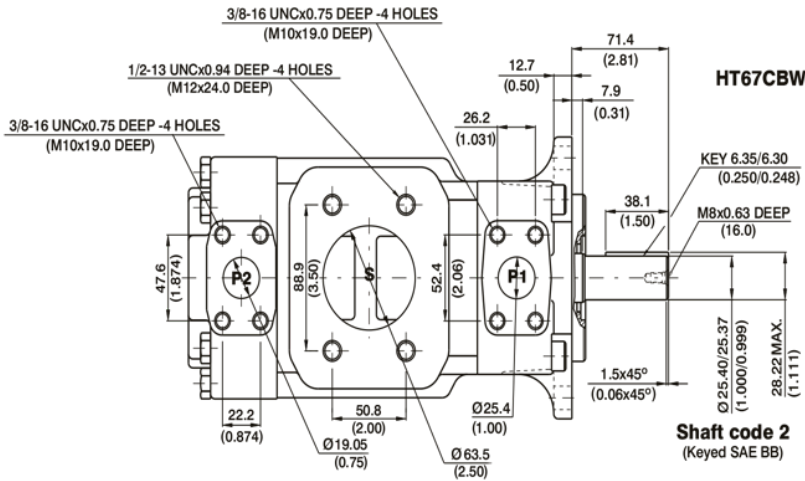


- |  |   |
|--|---|
| <p>1. Model :</p> <p>Industrial - HT67CB<br/>Severe Duty Shaft (W) - HT67CBW<br/>SAE B 2 bolts mounting flange J744</p> <p>2. Displacement P1<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>6C<br/>003 - 10.8 (0.66)<br/>005 - 17.2 (1.05)<br/>006 - 21.3 (1.30)<br/>008 - 26.4 (1.61)<br/>010 - 34.1 (2.08)<br/>012 - 37.1 (2.26)<br/>014 - 46.0 (2.81)<br/>017 - 58.3 (3.56)<br/>020 - 63.8 (3.89)<br/>022 - 70.3 (4.29)<br/>025 - 79.3 (4.84)<br/>028 - 88.8 (5.42)<br/>031 - 100.0 (6.10)</p> <p>3. Displacement P2<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>7B<br/>002 - 5.8 (0.35)<br/>003 - 9.8 (0.60)<br/>004 - 12.8 (0.78)<br/>005 - 15.9 (0.97)<br/>006 - 19.8 (1.20)<br/>007 - 22.5 (1.37)<br/>008 - 24.9 (1.51)<br/>009 - 28.0 (1.70)<br/>010 - 31.8 (1.92)<br/>011 - 35.0 (2.14)<br/>012 - 41.0 (2.47)<br/>014 - 45.0 (2.70)<br/>015 - 50.0 (3.01)</p> | <p>4. Type of shaft<br/>HT67CB<br/>1 - non SAE Keyed Shaft<br/>3 - SAE BB Splined Shaft<br/>5 - SAE B Splined Shaft</p> <p>HT67CBW<br/>2 - SAE BB Keyed Shaft</p> <p>5. Direction of rotation (Viewed from shaft end)<br/>R - Turn right<br/>L - Turn left</p> <p>6. Porting combination (see page Porting Diagrams)<br/>00 - standard</p> <p>7. Design letter</p> <p>8. Port Connection (4 bolts SAE flange J518C)<br/>00 - UNC Port Connection<br/>M0 - Metric Port Connection (HT67CB for port connection 11, M1 only)</p> |
|--|---|
- 
- | Code |        | 4 bolt SAE flanges |                    |                   |
|------|--------|--------------------|--------------------|-------------------|
| UNC  | Metric | P1                 | P2                 | S                 |
| 00   | 0M     | 1"                 | 1"                 | 3"                |
| 01   | M0     | 1"                 | 3/4" <sup>1)</sup> | 3"                |
| 10   | 1M     | 1"                 | 1"                 | 2½" <sup>2)</sup> |
| 11   | M1     | 1"                 | 3/4" <sup>1)</sup> | 2½" <sup>2)</sup> |
- 
- 1) for 46 ml/rev max.  
2) for 126 ml/rev max.  
always select the largest cartridge in the front place. (see page Hose Size Selection Nomograph)
9. Modifications  
Omit - Standard  
718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT67CB/ HT67CBW Series

## Installation Dimension mm (inch)

### HT67CB, HT67CBW



Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	14300 (12666)
2	21420 (18972)
3	32670 (28937)
5	20600 (18246)

# High Pressure Double Vane Pump

## HT67CB/ HT67CBW Series

### Performance Characteristics

#### HT67CB, HT67CBW

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q (GPM) & n = 1800 RPM			Input power P (HP) & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031 <sup>1)</sup>	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>
P2	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>3)</sup>	1.34	17.15	36.19 <sup>3)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>3)</sup>	1.47	19.97	42.22 <sup>3)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>3)</sup>	1.60	21.84	46.24 <sup>3)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>4)</sup>	1.74	24.26	47.85 <sup>4)</sup>

1) 025 - 028 - 031 = 2500 R.P.M. max. 2) 028 - 031 = 2200 PSI max. int. 3) 011 - 012 - 014 = 4350 PSI max. int. 4) 15 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump

## HT6CC/ HT6CCW Series

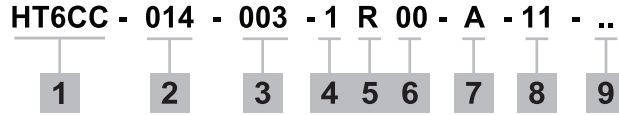
### Specification

#### HT6CC, HT6CCW for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
003	10.8 (0.66)	275 (4000)	240 (3500)	003	10.8 (0.66)	275 (4000)	240 (3500)	600	2800	27.0 (59.4)
005	17.2 (1.05)			005	17.2 (1.05)					
006	21.3 (1.30)			006	21.3 (1.30)					
008	26.4 (1.61)			008	26.4 (1.61)					
010	34.1 (2.08)			010	34.1 (2.08)					
012	37.1 (2.26)			012	37.1 (2.26)					
014	46.0 (2.81)			014	46.0 (2.81)					
017	58.3 (3.56)			017	58.3 (3.56)					
020	63.8 (3.89)			020	63.8 (3.89)					
022	70.3 (4.29)			022	70.3 (4.29)					
025	79.3 (4.84)	206 (3000)	160 (2300)	025	79.3 (4.84)	206 (3000)	160 (2300)			
028	88.8 (5.42)			028	88.8 (5.42)					
031	100.0 (6.10)			031	100.0 (6.10)					

# High Pressure Double Vane Pump HT6CC/ HT6CCW Series

## Ordering Code : Double Pump



**1. Model :**

- Industrial - HT6CC
- Severe Duty Shaft (W) - HT6CCW
- SAE B 2 bolts mounting flange J744

**4. Type of shaft**

- HT6CC
- 1 - non SAE Keyed Shaft
- 3 - SAE BB Splined Shaft
- 5 - SAE B Splined Shaft

**2. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

HT6CCW

- 2 - SAE BB Keyed Shaft

**5. Direction of rotation (Viewed from shaft end)**

- R - Turn right
- L - Turn left

**6. Porting combination (see page Porting Diagrams)**

- 00 - standard

**7. Design letter**

**8. Port Connection (4 bolts SAE flange J518C)**

- 00 - UNC Port Connection
- M0 - Metric Port Connection (HT67CB for port connection 11, M1 only)

**3. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	0M	1"	1"	3"
01	M0	1"	3/4" <sup>1)</sup>	3"
10	1M	1"	1"	2 1/2" <sup>2)</sup>
11	M1	1"	3/4" <sup>1)</sup>	2 1/2" <sup>2)</sup>

1) for 46 ml/rev max.

2) for 126 ml/rev max.

always select the largest cartridge in the front place. (see page Hose Size Selection Nomo graph)

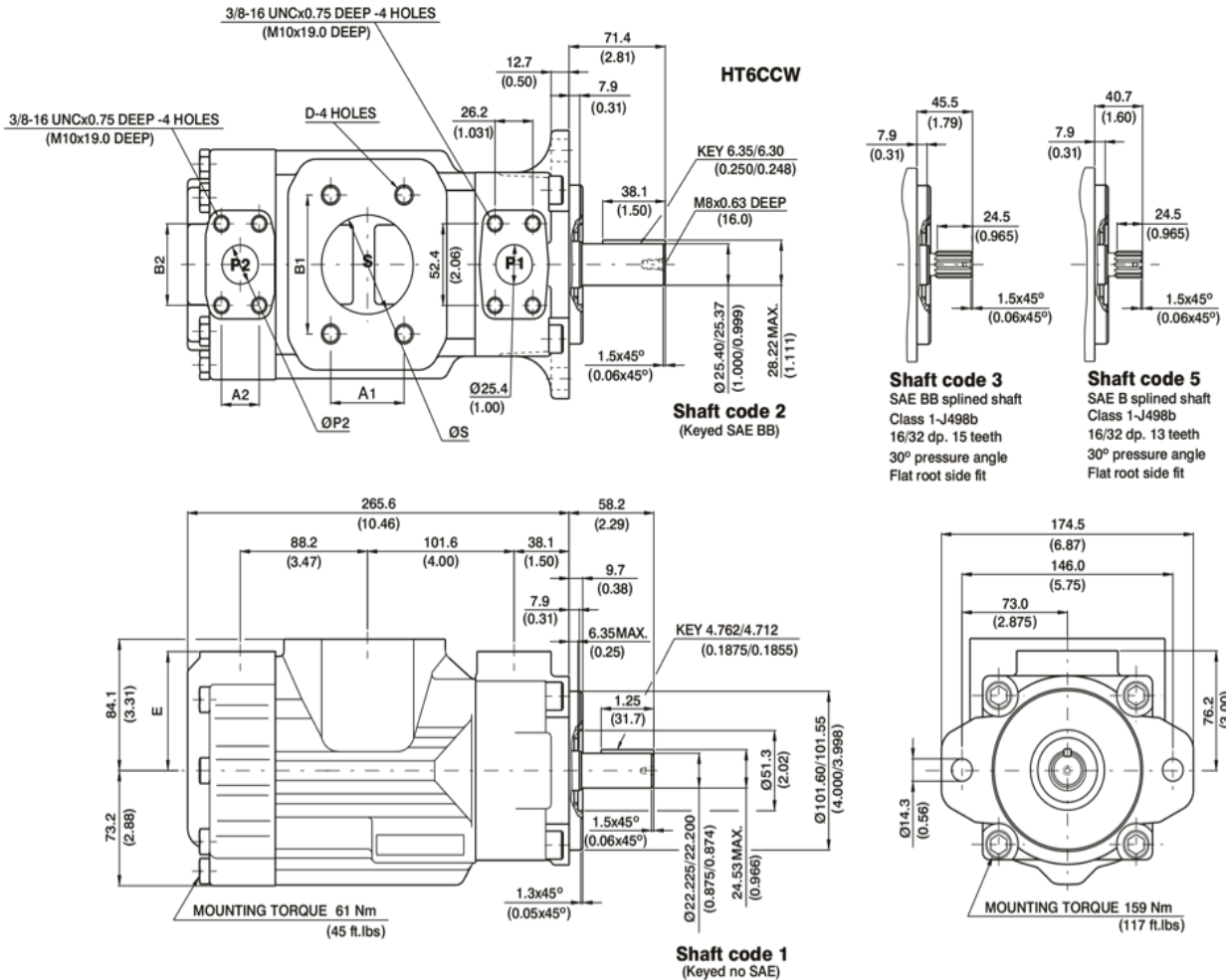
**9. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT6CC/ HT6CCW Series

## Installation Dimension mm (inch)

### HT6CC, HT6CCW



Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	14300 (12666)
2	21420 (18972)
3	32670 (28937)
5	20600 (18246)

Inlet Port Size	S	A1	B1	D
3"	76.2 (3.00)	61.9 (2.44)	106.4 (4.19)	5/8" - 11 UNC x 1.12 DEEP M16 x 28.4 DEEP
2½"	63.5 (2.50)	50.9 (2.00)	88.9 (3.50)	1/2" - 13 UNC x 0.94 DEEP M12 x 23.9 DEEP

Cover End Outlet Port Size	P2	A2	B2	E
1"	25.4 (1.00)	26.2 (1.03)	52.4 (2.06)	74.7 (2.94)
¾"	19.0 (0.75)	22.4 (0.88)	47.7 (1.88)	76.2 (3.00)

# High Pressure Double Vane Pump

## HT6CC/ HT6CCW Series

### HT6CC, HT6CCW

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 025 - 028 - 031 = 2500 R.P.M. max. 2) 028 - 031 = 2200 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.



# High Pressure Double Vane Pump

## HT6CCM/ HT6CCP/ HT6CCMW Series

### Specification

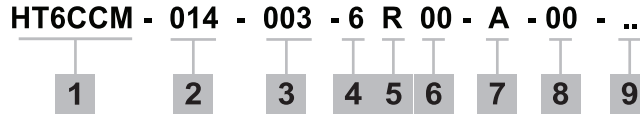
#### HT6CCM, HT6CCP, HT6CCMW for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
003	10.8 (0.66)	275 (4000)	240 (3500)	003	10.8 (0.66)	275 (4000)	240 (3500)	400	2800	27.0 (59.4)
005	17.2 (1.05)			005	17.2 (1.05)					
006	21.3 (1.30)			006	21.3 (1.30)					
008	26.4 (1.61)			008	26.4 (1.61)					
010	34.1 (2.08)			010	34.1 (2.08)					
012	37.1 (2.26)			012	37.1 (2.26)					
014	46.0 (2.81)			014	46.0 (2.81)					
017	58.3 (3.56)			017	58.3 (3.56)					
020	63.8 (3.89)			020	63.8 (3.89)					
022	70.3 (4.29)			022	70.3 (4.29)					
025	79.3 (4.84)			025	79.3 (4.84)					
028	88.8 (5.42)	206 (3000)	160 (2300)	028	88.8 (5.42)	206 (3000)	160 (2300)			
031	100.0 (6.10)			031	100.0 (6.10)					

# High Pressure Double Vane Pump

## HT6CCM/ HT6CCP/ HT6CCMW Series

### Ordering Code : Double Pump



1. Model :

- Mobile 1 Shaft seals(M) - HT6CCM
- Mobile 2 Shaft seals(P) - HT6CCP
- Severe Duty Shaft(W) - HT6CCMW
- SAE B 2 bolts mounting flange J744

HT6CCP

- 3 - non SAE Splined Shaft
- 4 - SAE BB Splined Shaft
- 6 - non SAE Splined Shaft

HT6CCMW

- 2 - SAE BB Keyed Shaft
- R - Special Keyed Shaft
- X - Special Keyed Shaft
- W - Special Keyed Shaft
- V - Special Keyed Shaft
- T - SAE J718c Splined Shaft
- S - DIN 5462 Keyed Shaft
- Q - SAE C Keyed Shaft

2. Displacement P1

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

5. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

6. Porting combination (see page Porting Diagrams)

- 00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection
- M0 - Metric Port Connection

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	0M	1"	1"	3"
01	M0	1"	3/4" <sup>1)</sup>	3"
10	1M	1"	1"	2½" <sup>2)</sup>
11	M1	1"	3/4" <sup>1)</sup>	2½" <sup>2)</sup>

1) for 46 ml/rev max.

2) for 126 ml/rev max.

always select the largest cartridge in the front place. (see page Hose Size Selection Nomograph)

3. Displacement P2

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

4. Type of shaft

- HT6CCM
- 1 - non SAE Keyed Shaft
- 3 - SAE BB Splined Shaft
- 5 - SAE B Splined Shaft
- 6 - DIN 5462 Splined Shaft

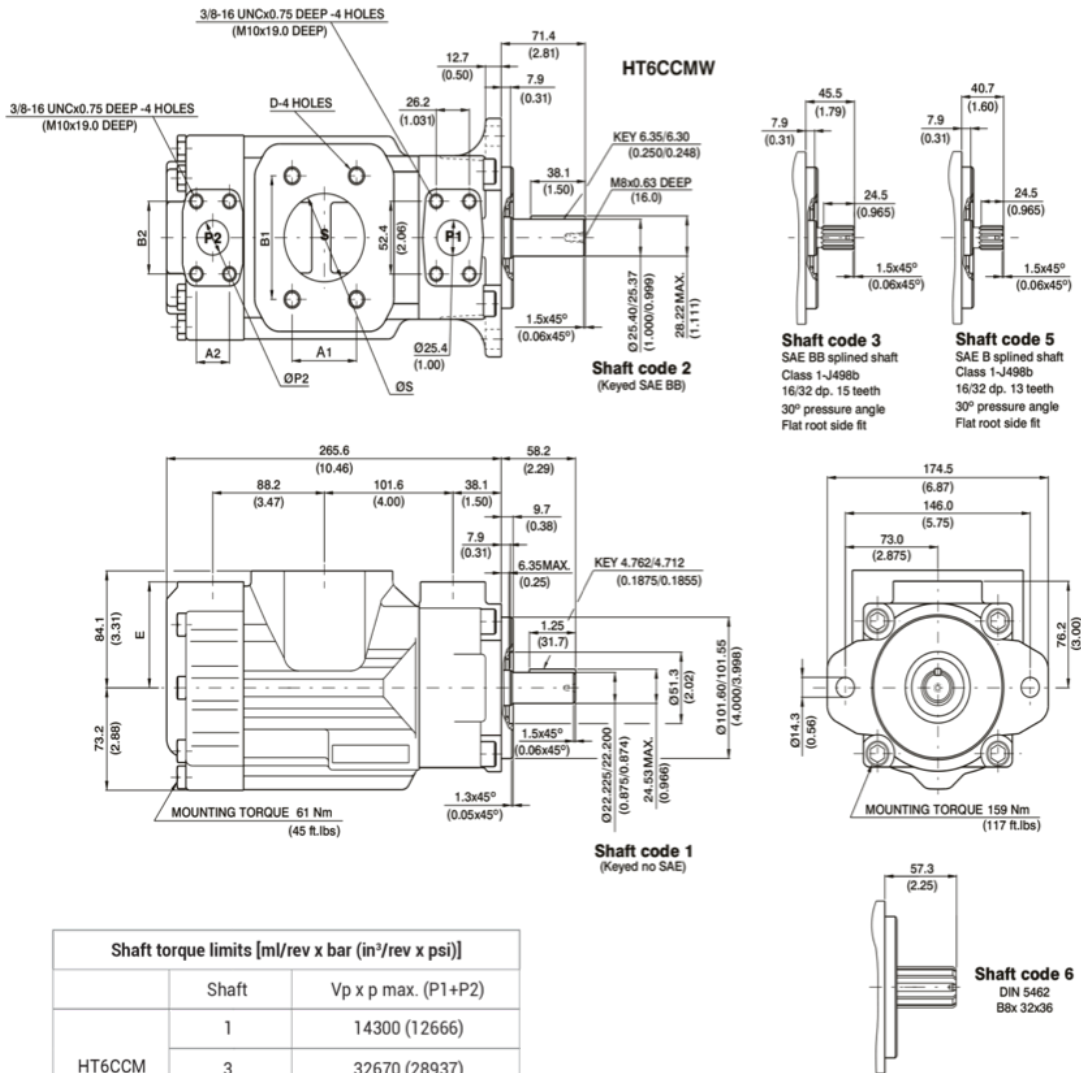
9. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT6CCM/ HT6CCP/ HT6CCMW Series

## Installation Dimension mm (inch)

### HT6CCM, HT6CCP, HT6CCMW for Double pump

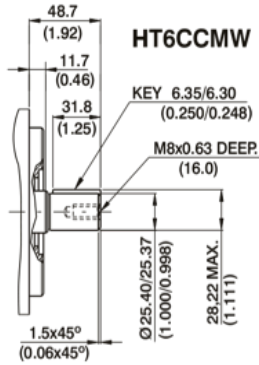


Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]		
	Shaft	Vp x p max. (P1+P2)
HT6CCM	1	14300 (12666)
	3	32670 (28937)
	5	20600 (18246)
HT6CCMW	2	21420 (18972)
	R	18100 (16032)
	X	25400 (22500)
	W	32670 (28937)
	V	
	T	
	S	
Q		
HT6CCP	3	20600 (18246)
	4	32670 (28937)
	6	

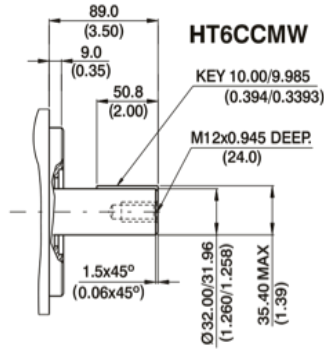
Inlet Port Size	S	A1	B1	D
3"	76.2 (3.00)	61.9 (2.44)	106.4 (4.19)	5/8" - 11 UNC x 1.12 DEEP M16 x 28.4 DEEP
2 1/2"	63.5 (2.50)	50.9 (2.00)	88.9 (3.50)	1/2" - 13 UNC x 0.94 DEEP M12 x 23.9 DEEP

Cover End Outlet Port Size	P2	A2	B2	E
1"	25.4 (1.00)	26.2 (1.03)	52.4 (2.06)	74.7 (2.94)
3/4"	19.0 (0.75)	22.4 (0.88)	47.7 (1.88)	76.2 (3.00)

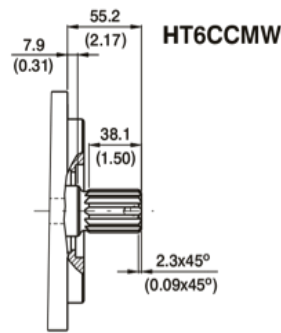
# High Pressure Double Vane Pump HT6CCM/ HT6CCP/ HT6CCMW Series



**Shaft code R**

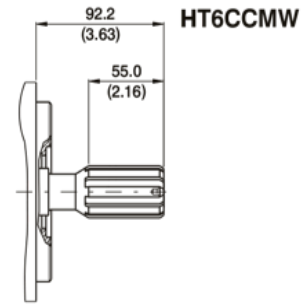


**Shaft code V**



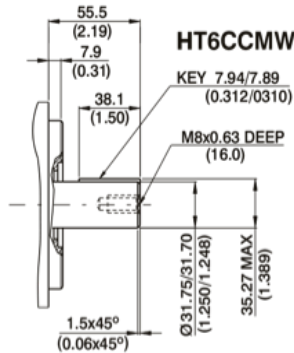
**Shaft code Q**

SAE C splined shaft  
Class 1-J498b  
12/24 Dp. 14 Teeth  
30° Pressure angle  
Flat root side fit

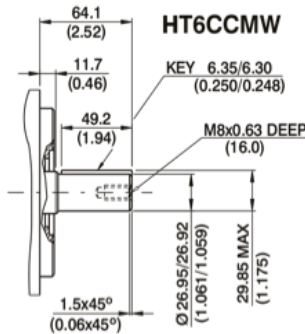


**Shaft code S**

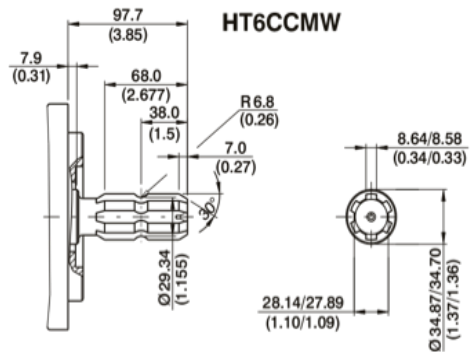
DIN 5462  
B8x32x36



**Shaft code W**

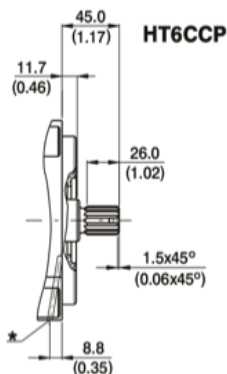


**Shaft code X**



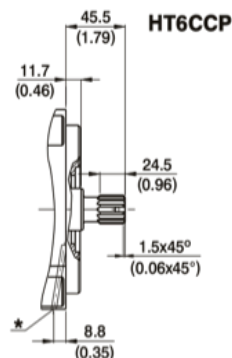
**Shaft code T**

SAE J718C  
540 rpm power take-off  
For Farm Tractor application



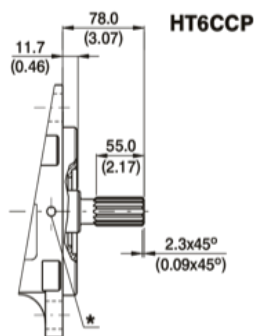
**Shaft code 3**

no SAE splined shaft  
Class 1-J498b  
16/32 dp. 13 teeth  
30° pressure angle  
Flat root side fit



**Shaft code 4**

SAE BB splined shaft  
Class 1-J498b  
16/32 dp. 15 teeth  
30° pressure angle  
Flat root side fit



**Shaft code 6**

non SAE splined shaft  
Class 1-J498b  
12/24 dp. 14 teeth  
30° pressure angle  
Flat root side fit

\*Drain hole between double Shaft seals

# High Pressure Double Vane Pump

## HT6CCM/ HT6CCP/ HT6CCMW Series

### Performance Characteristics

#### HT6CCM, HT6CCP, HT6CCMW

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 025 - 028 - 031 = 2500 R.P.M. max. 2) 028 - 031 = 2200 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Double Vane Pumps HT7DB/ HT7DBS/ HT7DBW Series

## Specification

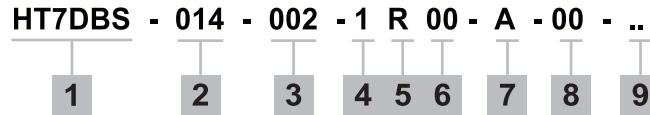
### HT7DB, HT7DBS, HT7DBW for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	002	5.8 (0.35)	300 (4350)	275 (4000)	600	2200	37.0 (81.4)
017	58.2 (3.55)			003	9.8 (0.59)					
020	66.0 (4.03)			004	12.8 (0.78)					
022	70.0 (4.27)			005	15.9 (0.97)					
024	79.5 (4.85)			006	19.8 (1.20)					
028	89.7 (5.47)			007	22.5 (1.37)					
031	98.3 (6.00)			008	24.9 (1.51)					
035	111.0 (6.77)			009	28.0 (1.70)					
038	120.3 (7.34)	010		31.8 (1.94)						
042	136.0 (8.30)	260 (3770)		235 (3400)	011					
045	145.7 (8.89)	240 (3500)	206 (3000)	012	41.0 (2.50)					
050	158.0 (9.64)	206 (3000)	160 (2300)	014	45.0 (2.74)					
				015	50.0 (3.05)	280 (4060)	240 (3500)			

# High Pressure Double Vane Pumps

## HT7DB/ HT7DBS/ HT7DBW Series

### Ordering Code



**1. Model :**

- Industrial - HT7DB ISO 2 bolts 3019-2 mounting flange 125 A2 HW
- HT7DBS SAE C 2 bolts mounting flange J744
- Severe Duty Shaft (W) - HT7DBW SAE C 2 bolts mounting flange J744

**4. Type of shaft**

- HT7DB, HT7DBS
- 5 - ISO 3019-2-G32M Keyed Shaft
- HT7DBS
- 1 - SAE C Keyed Shaft
- 2 - non SAE Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - SAE C spec. Splined Shaft

**2. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

HT7DBW

- 5 - non SAE Keyed Shaft

**5. Direction of rotation (view on shaft end)**

- R - Turn right
- L - Turn left

**6. Porting combination (see page Porting Diagrams)**

- 00 - standard

**7. Design letter**

**8. Port Connection**

- 00 - UNC Port Connection (Except HT7DB)
- M0 - Metric Port Connection

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	M0	1¼"	1"	3"
01	M1	1¼"	3/4"	3"

**3. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 002 - 5.8 (0.35)
- 003 - 9.8 (0.60)
- 004 - 12.8 (0.78)
- 005 - 15.9 (0.97)
- 006 - 19.8 (1.20)
- 007 - 22.5 (1.37)
- 008 - 24.9 (1.51)
- 009 - 28.0 (1.70)
- 010 - 31.8 (1.92)
- 011 - 35.0 (2.14)
- 012 - 41.0 (2.47)
- 014 - 45.0 (2.70)
- 015 - 50.0 (3.01)

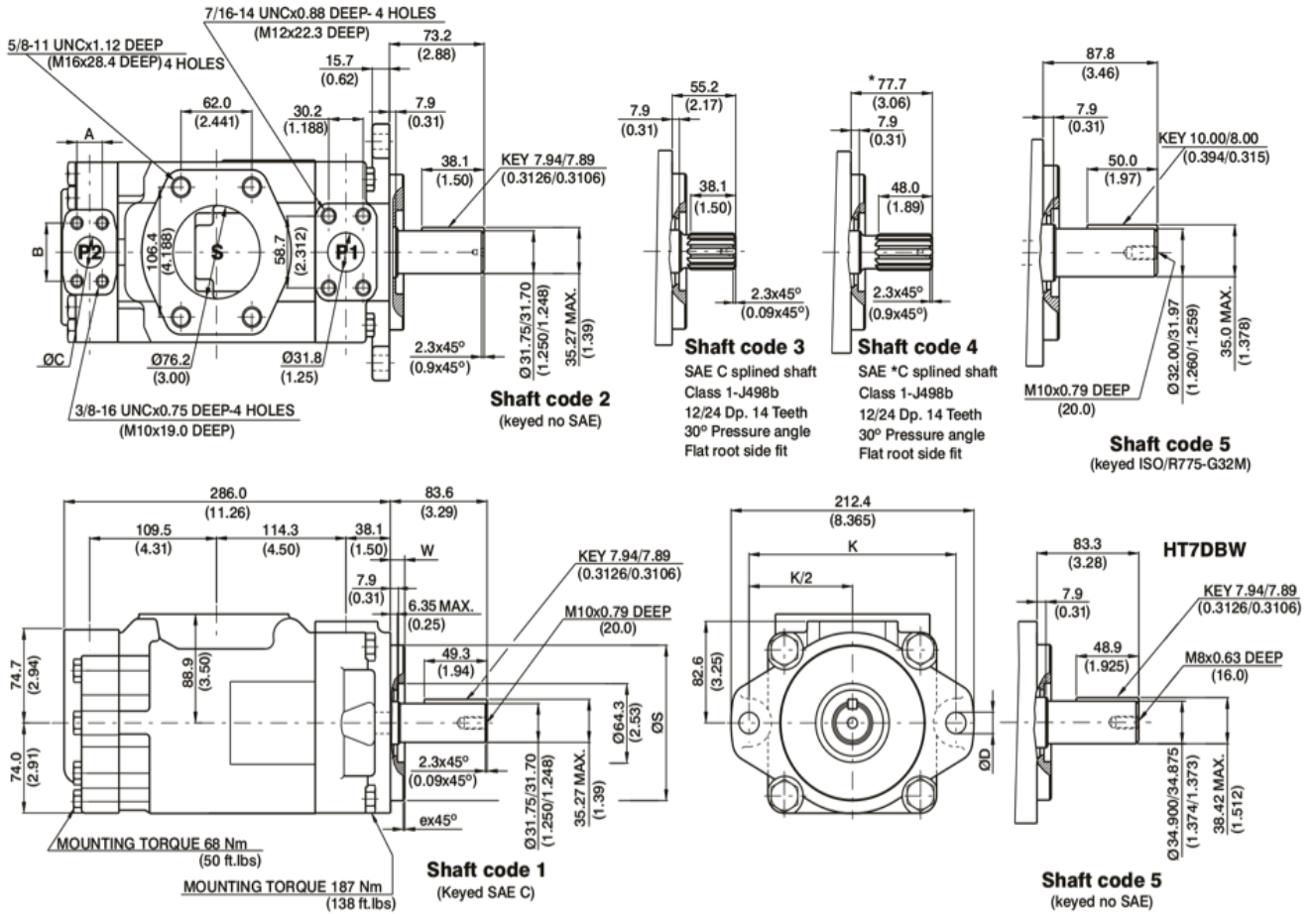
**9. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pumps HT7DB/ HT7DBS/ HT7DBW Series

## Installation Dimension mm (inch)

### HT7DB, HT7DBS, HT7DBW



Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	43240 (38299)
2	34590 (30638)
3	61200 (54207)
4	
5	42542 (37644)

Cover End Outlet Port Size	A	B	C
1"	26.2 (1.03)	52.4 (2.06)	25.4 (1.00)
3/4"	22.4 (0.88)	47.7 (1.88)	19.0 (0.75)

Alternate mounting flange						
Model	ØS		ex 45°	W	K	ØD
	MAX.	MIN.				
HT7DB	125.00 (4.921)	124.94 (4.919)	2.0 (0.079)	9.5 (0.374)	180.0 (7.087)	18.0 (0.709)
HT7DBS	127.00 (5.00)	126.94 (4.998)	1.3 (0.059)	12.7 (0.50)	181.0 (7.126)	17.5 (0.689)



# High Pressure Double Vane Pumps

## HT7DB/ HT7DBS/ HT7DBW Series

### Performance Characteristics

#### HT7DB, HT7DBS, HT7DBW

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
P2	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>2)</sup>	1.34	17.15	36.19 <sup>2)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>2)</sup>	1.47	19.97	42.22 <sup>2)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>2)</sup>	1.60	21.84	46.24 <sup>2)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>3)</sup>	1.74	24.26	47.85 <sup>3)</sup>

1) 050 = 3000 PSI max. int. 2) 011 - 012 - 014 = 4350 PSI max. int. 3) 015 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT6DCM/ HT6DCP/ HT6DCMW Series

## Specification

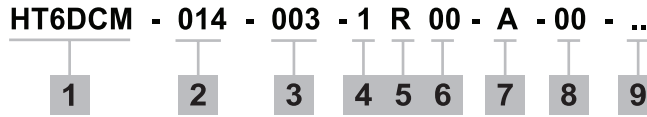
### HT6DCM, HT6DCP, HT6DCMW for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	240 (3500)	206 (3000)	003	10.8 (0.66)	275 (4000)	240 (3500)	400	2500	37.0 (81.4)
017	58.2 (3.55)			005	17.2 (1.05)					
020	66.0 (4.03)			006	21.3 (1.30)					
024	79.5 (4.85)			008	26.4 (1.61)					
028	89.7 (5.47)			010	34.1 (2.08)					
031	98.3 (6.00)			012	37.1 (2.26)					
035	111.0 (6.77)			014	46.0 (2.81)					
038	120.3 (7.34)			017	58.3 (3.56)					
042	136.0 (8.30)			020	63.8 (3.89)					
045	145.7 (8.89)			022	70.3 (4.29)					
050	158.0 (9.64)	206 (3000)	160 (2300)	025	79.3 (4.84)	206 (3000)	160 (2300)			
061	193.3 (11.80)			028	88.8 (5.42)					
				031	100.0 (6.10)					

# High Pressure Double Vane Pump

## HT6DCM/ HT6DCP/ HT6DCMW Series

### Ordering Code : Double Pump



**1. Model :**

- Mobile 1 Shaft seals (M) - HT6DCM
- Mobile 2 Shaft seals (P) - HT6DCP
- Severe Duty Shaft (W) - HT6DCMW
- SAE C 2 bolts mounting flange J744

**2. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)
- 061 - 193.3 (11.80)

**3. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

**4. Type of shaft**

- HT6DCM
- 1 - SAE C Keyed Shaft
  - 2 - non SAE Keyed Shaft
  - 3 - SAE C Splined Shaft
  - 4 - SAE C spec. Splined Shaft

HT6DCMW

- 5 - non SAE Keyed Shaft
- T - SAE J718c Splined Shaft
- V - Special Keyed Shaft

HT6DCP

- 3 - non SAE Splined Shaft

**5. Direction of rotation (Viewed from shaft end)**

- R - Turn right
- L - Turn left

**6. Porting combination (see page Porting Diagrams)**

- 00 - standard

**7. Design letter**

**8. Port Connection (4 bolts SAE flange J518C)**

- 00 - UNC Port Connection
- M0 - Metric Port Connection

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	M0	1¼"	1"	3"
01	M1	1¼"	3/4"	3"

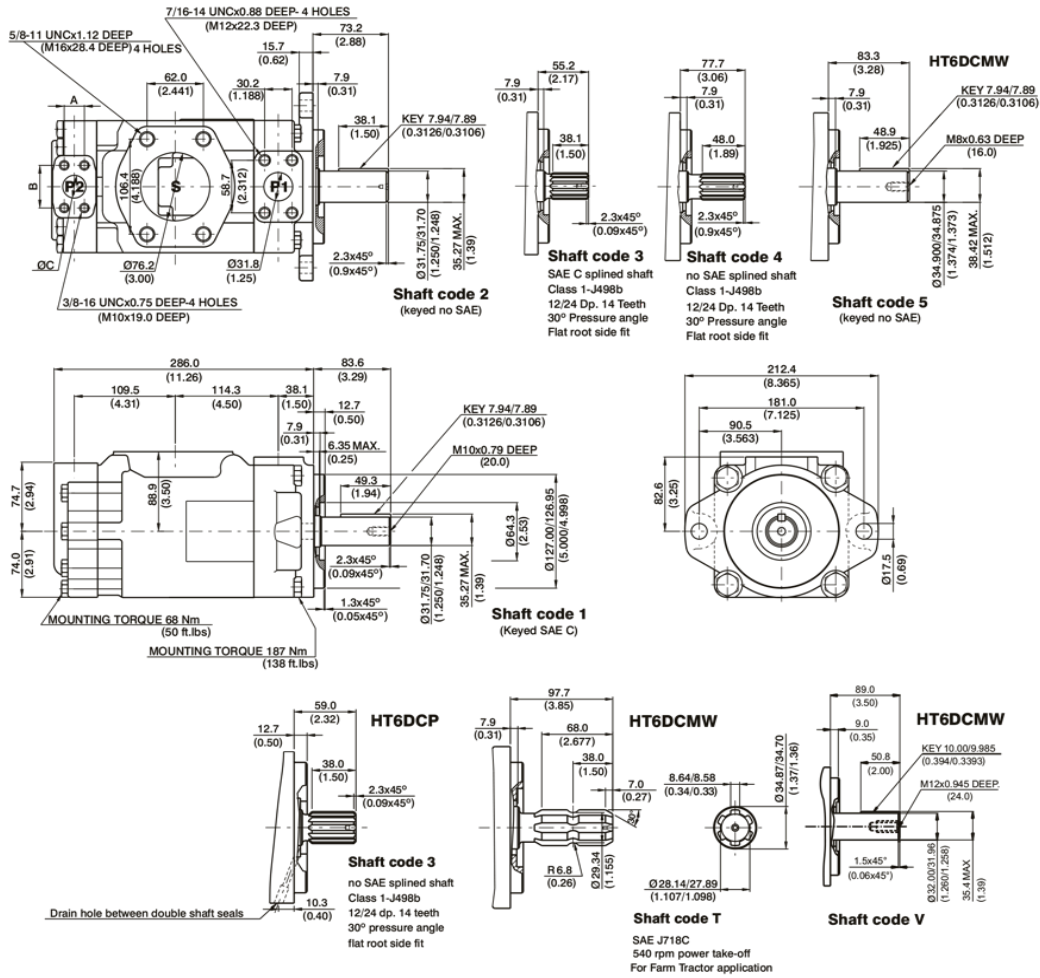
**9. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT6DCM/ HT6DCP/ HT6DCMW Series

## Installation Dimension mm (inch)

### HT6DCM, HT6DCP, HT6DCMW



Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	43240 (38299)
2	34590 (30638)
3	61200 (54207)
4	
5	55600 (49247)
T	66600 (58990)

Cover End Outlet Port Size	A	B	C
1"	26.2 (1.03)	52.4 (2.06)	25.4 (1.00)
3/4"	22.4 (0.88)	47.7 (1.88)	19.0 (0.75)

# High Pressure Double Vane Pump

## HT6DCM/ HT6DCP/ HT6DCMW Series

### Performance Characteristics

#### HT6DCM, HT6DCP, HT6DCMW

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042 <sup>2)</sup>	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045 <sup>2)</sup>	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050 <sup>2)</sup>	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
	061 <sup>2)</sup>	11.80 in <sup>3</sup> /rev	90.98	84.55	80.87 <sup>1)</sup>	8.30	109.61	183.48 <sup>1)</sup>
P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>1)</sup>	4.27	51.74	76.73 <sup>1)</sup>
031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>1)</sup>	4.58	57.95	86.06 <sup>1)</sup>	

1) 028 - 031 - 050 - 061 = 3000 PSI max. int.

2) 042 - 045 - 050 - 061 = 2200 R.P.M. max

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT67DC/ HT67DCW Series

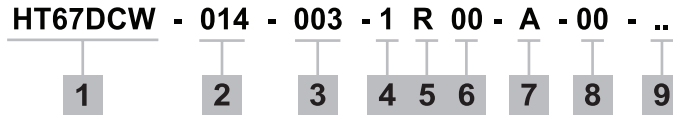
## Specification

### HT67DC, HT67DCW for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	003	10.8 (0.66)	275 (4000)	240 (3500)	600	2500	37.0 (81.4)
017	58.2 (3.55)			005	17.2 (1.05)					
020	66.0 (4.03)			006	21.3 (1.30)					
022	70.0 (4.27)			008	26.4 (1.61)					
024	79.5 (4.85)			010	34.1 (2.08)					
028	89.7 (5.47)			012	37.1 (2.26)					
031	98.3 (6.00)			014	46.0 (2.81)					
035	111.0 (6.77)			017	58.3 (3.56)					
038	120.3 (7.34)	020	63.8 (3.89)							
042	136.0 (8.30)	260 (3770)	235 (3400)	022	70.3 (4.29)					
045	145.7 (8.89)	240 (3500)	206 (3000)	025	79.3 (4.84)					
050	158.0 (9.64)	206 (3000)	160 (2300)	028	88.8 (5.42)					
				031	100.0 (6.10)					

# High Pressure Double Vane Pump HT67DC/ HT67DCW Series

## Ordering Code : Double Pump



1. Model :

- Industrial - HT67DC
- Severe Duty Shaft (W) - HT67DCW  
SAE C 2 bolts mounting  
flange J744

4. Type of shaft

- HT67DC
- 1 - SAE C Keyed Shaft
- 2 - non SAE Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - SAE C spec. Splined Shaft

2. Displacement P1

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 7D
- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

HT67DCW

- 5 - non SAE Keyed Shaft

5. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

6. Porting combination (see page Porting Diagrams)

- 00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection
- M0 - Metric Port Connection

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	M0	1 ¼"	1"	3"
01	M1	1 ¼"	3/4"	3"

3. Displacement P2

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 6C
- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

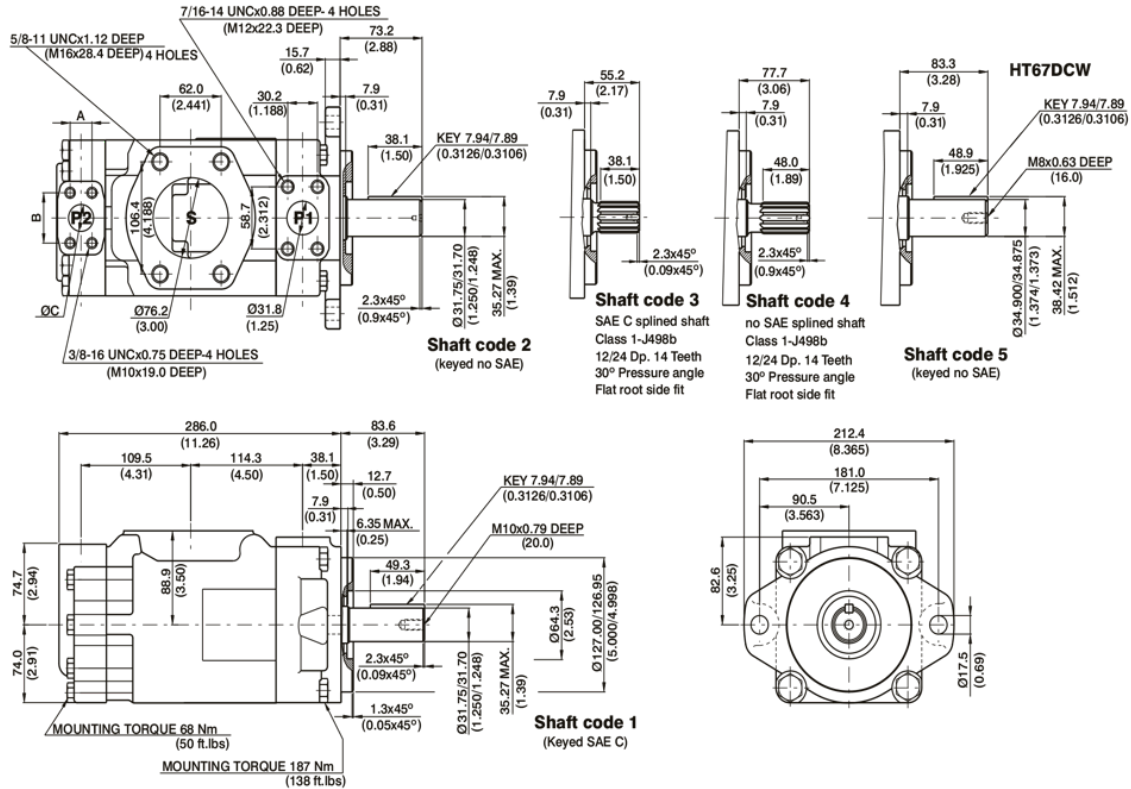
9. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT67DC/ HT67DCW Series

## Installation Dimension mm (inch)

### HT67DC, HT67DCW



Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	43240 (38299)
2	34590 (30638)
3	61200 (54207)
4	
5	55600 (49247)

Cover End Outlet Port Size	A	B	C
1"	26.2 (1.03)	52.4 (2.06)	25.4 (1.00)
3/4"	22.4 (0.88)	47.7 (1.88)	19.0 (0.75)



# High Pressure Double Vane Pump

## HT67DC/ HT67DCW Series

### Performance Characteristics

#### HT67DC, HT67DCW

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>1)</sup>	4.27	51.74	76.73 <sup>1)</sup>
031 <sup>using</sup>	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>1)</sup>	4.58	57.95	86.06 <sup>1)</sup>	

1) 028 - 031 - 050 = 3000 PSI max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT7DD/ HT7DDS Series

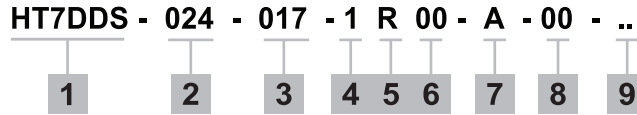
## Specification

### HT7DD, HT7DDS for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	014	47.6 (2.90)	300 (4350)	250 (3600)	600	2200	56.0 (123.4)
017	58.2 (3.55)			017	58.2 (3.55)					
020	66.0 (4.03)			020	66.0 (4.03)					
022	70.0 (4.27)			022	70.0 (4.27)					
024	79.5 (4.85)			024	79.5 (4.85)					
028	89.7 (5.47)			028	89.7 (5.47)					
031	98.3 (6.00)			031	98.3 (6.00)					
035	111.0 (6.77)	280 (4060)		035	111.0 (6.77)	280 (4060)				
038	120.3 (7.34)			038	120.3 (7.34)					
042	136.0 (8.30)	260 (3770)	230 (3400)	042	136.0 (8.30)	260 (3770)	230 (3400)			
045	145.7 (8.89)	240 (3500)	210 (3000)	045	145.7 (8.89)	240 (3500)	210 (3000)			
050	158.0 (9.64)	210 (3000)	160 (2300)	050	158.0 (9.64)	210 (3000)	160 (2300)			

# High Pressure Double Vane Pump HT7DD/ HT7DDS Series

## Ordering Code : Double Pump



1. Series :

- Industrial - HT7DD ISO 6 bolts 3019-2 mounting flange 125 B4 HW
- HT7DDS SAE C 6 bolts mounting flange J744c

2. Displacement P1

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

3. Displacement P2

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

4. Type of shaft

- HT7DD, HT7DDS
- 5 - ISO 3019-2-G32M Keyed Shaft
  
- HT7DDS
- 1 - SAE C Keyed Shaft
- 2 - SAE CC Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - SAE BB Splined Shaft

5. Direction of rotation (view on shaft end)

- R - Turn right
- L - Turn left

6. Porting combination (see page Porting Diagrams)

- 00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection (Except HT7DD)
- M0 - Metric Port Connection

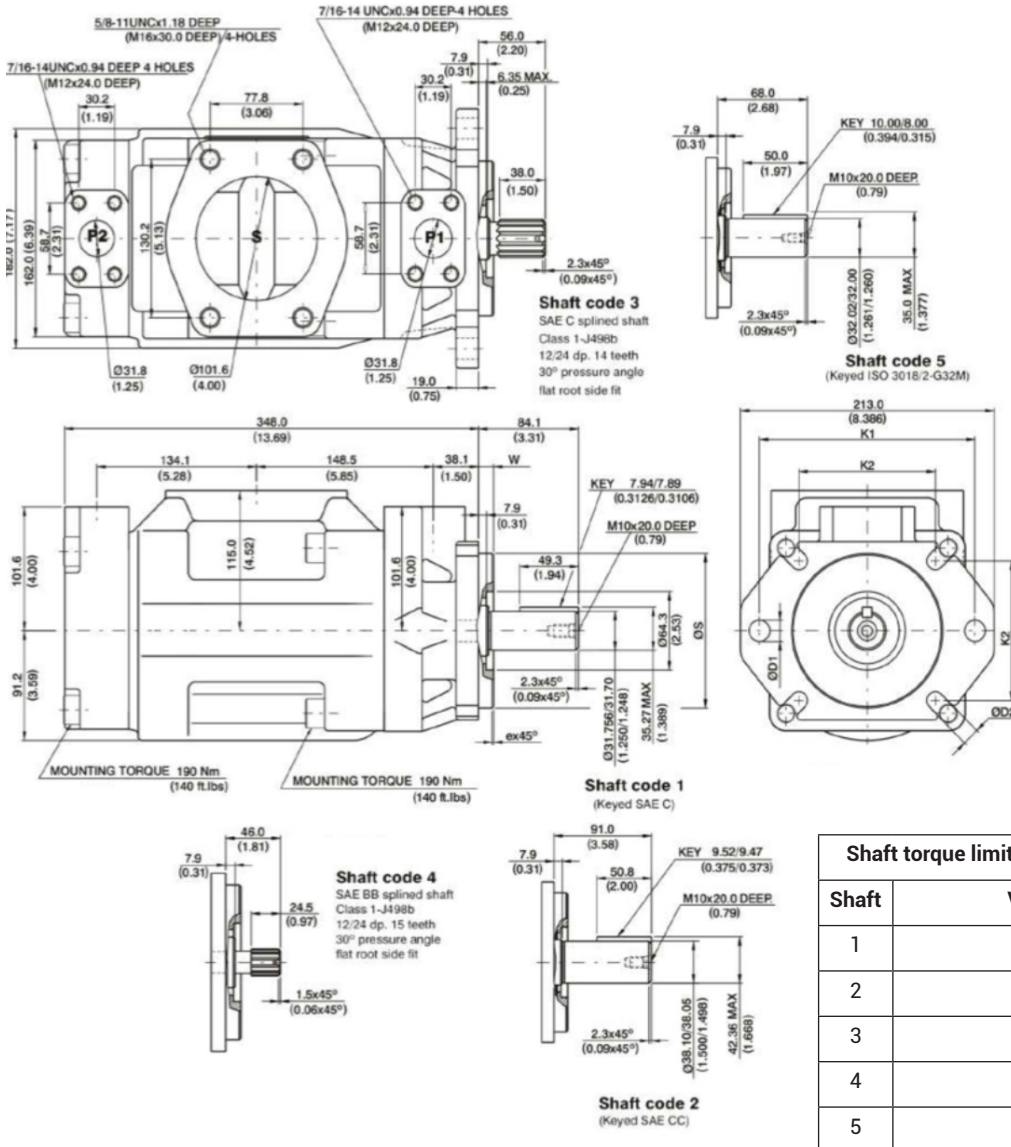
9. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT7DD/ HT7DDS Series

## Installation Dimension mm (inch)

### HT7DD, HT7DDS



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	43240 (38299)
2	71822 (63552)
3	61200 (54207)
4	28120 (31780)
5	35424 (40035)

Alternate mounting flange								
Model	ØS		ex 45°	W	K1	ØD1	K2	ØD2
	MAX.	MIN.						
HT7DD	125.00 (4.921)	124.94 (4.919)	2.0 (0.079)	9.5 (0.374)	180.0 (7.087)	18.0 (0.709)	113.1 (4.454)	13.9 (0.551)
HT7DDS	127.00 (5.00)	126.94 (4.998)	1.5 (0.059)	12.7 (0.50)	181.0 (7.126)	17.5 (0.689)	114.5 (4.508)	14.3 (0.563)

# High Pressure Double Vane Pump HT7DD/ HT7DDS Series

## Performance Characteristics

### HT7DD, HT7DDS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement Vp cm <sup>3</sup> /rev (in <sup>3</sup> /rev)	Speed n [R.P.M]	Flow Q [LPM (GPM)]			Input power P [KW (HP)]		
				p = 0 bar (0 PSI)	p = 140 bar (2000 PSI)	p = 250 bar (3630 PSI)	p = 7 bar (100 PSI)	p = 140 bar (2000 PSI)	p = 250 bar (3630 PSI)
P1 & P2	014	43.9 (2.68)	1800	79.1 (20.92)	72.5 (19.18)	67.3 (17.81)	2.6 (3.46)	20.7 (27.77)	35.0 (47.03)
	017	55.0 (3.36)		98.8 (26.16)	92.3 (24.41)	87.0 (23.04)	2.8 (3.77)	25.3 (33.88)	43.0 (57.71)
	020	66.0 (4.03)		118.6 (31.39)	112.0 (29.64)	106.8 (28.27)	3.0 (4.07)	29.8 (39.98)	50.9 (68.39)
	022	70.3 (4.29)		126.4 (33.43)	119.8 (31.69)	104.6 (30.32)	3.1 (4.19)	31.6 (42.37)	54.0 (72.57)
	024	81.1 (4.95)		145.8 (38.57)	139.2 (36.82)	134.0 (35.35)	3.4 (4.49)	36.1 (48.36)	61.9 (83.06)
	028	89.9 (5.49)		161.8 (42.80)	155.2 (41.06)	150.0 (39.69)	3.5 (4.74)	39.7 (53.30)	68.3 (91.70)
	031	99.1 (6.05)		178.3 (47.18)	171.7 (45.43)	166.5 (44.06)	3.7 (4.99)	43.6 (58.41)	75.0 (100.63)
	035	113.4 (6.92)		203.9 (53.93)	197.2 (52.18)	192.0 (50.81)	4.0 (5.39)	49.4 (66.29)	85.3 (114.42)
	038	120.6 (7.36)		216.8 (57.35)	210.2 (55.61)	204.9 (54.24)	4.2 (5.59)	52.4 (70.28)	90.5 (121.42)
	042	137.5 (8.39)		247.2 (65.39)	240.6 (63.65)	235.4 (62.28)	4.5 (6.05)	59.4 (79.66)	102.7 (137.83)
	045	145.7 (8.89)		262.0 (69.29)	253.6 (67.11)	246.8 (65.31)	5.0 (6.74)	62.4 (83.75)	108.7 (145.79)
	050	157.9 (9.64)		284.0 (75.14)	275.8 (72.96)	271.3 (71.78)	5.3 (7.08)	67.5 (90.58)	100.3 (134.50)

1) 035 - 038 = 280 bar (4060 PSI) Max. int.

2) 042 = 260 bar (3770 PSI) Max. int.

3) 045 = 240 bar (3500 PSI) Max. int.

4) 050 = 210 bar (3000 PSI) Max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT7EB/ HT7EBS Series

## Specification

### HT7EB, HT7EBS for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	002	5.8 (0.35)	300 (4350)	275 (4000)	600	2200	54.2 (119.2)
045	142.4 (8.70)			003	9.8 (0.59)					
050	158.5 (9.67)			004	12.8 (0.78)					
052	164.8 (10.00)			005	15.9 (0.97)					
054	173.8 (10.60)			006	19.8 (1.20)					
057	180.7 (11.02)			007	22.5 (1.37)					
062	196.7 (12.00)			008	24.9 (1.51)					
066	213.3 (13.00)			009	26.0 (1.70)					
072	227.1 (13.86)			010	31.8 (1.94)					
085	269.8 (16.40)			90 (1300)	75 (1100)					
				012	41.0 (2.50)					
				014	45.0 (2.74)					
				015	50.0 (3.05)					

# High Pressure Double Vane Pump

## HT7EB/ HT7EBS Series

### Ordering Code : Double Pump

HT7EBS - 042 - 002 - 1 R 00 - A - 00 - ..

1

2

3

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9

1. Model :

- Industrial - HT7EB ISO 2 bolts 3019-2 mounting flange 125 A2 HW
- HT7EBS SAE C 2 bolts mounting flange J744

2. Displacement P1

- Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
- 042 - 132.3 (8.07)
  - 045 - 142.4 (8.70)
  - 050 - 158.5 (9.67)
  - 052 - 164.8 (10.00)
  - 054 - 173.8 (10.60)
  - 057 - 180.7 (11.02)
  - 062 - 196.7 (12.00)
  - 066 - 213.3 (13.00)
  - 072 - 227.1 (13.86)
  - 085 - 269.8 (16.40)

3. Displacement P2

- Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
- 002 - 5.8 (0.35)
  - 003 - 9.8 (0.60)
  - 004 - 12.8 (0.78)
  - 005 - 15.9 (0.97)
  - 006 - 19.8 (1.20)
  - 007 - 22.5 (1.37)
  - 008 - 24.9 (1.51)
  - 009 - 28.0 (1.70)
  - 010 - 31.8 (1.92)
  - 011 - 35.0 (2.14)
  - 012 - 41.0 (2.47)
  - 014 - 45.0 (2.70)
  - 015 - 50.0 (3.01)

4. Type of shaft

- HT7EB, HT7EBS
- 5 - ISO R775-G38M Keyed Shaft
- HT7EBS
- 1 - SAE CC Keyed Shaft
- 2 - non SAE Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - SAE CC Splined Shaft

5. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

6. Porting combination (see page Porting Diagrams)

- 00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)

- 01 - UNC Port Connection (Except HT7EB)
- M1 - Metric Port Connection

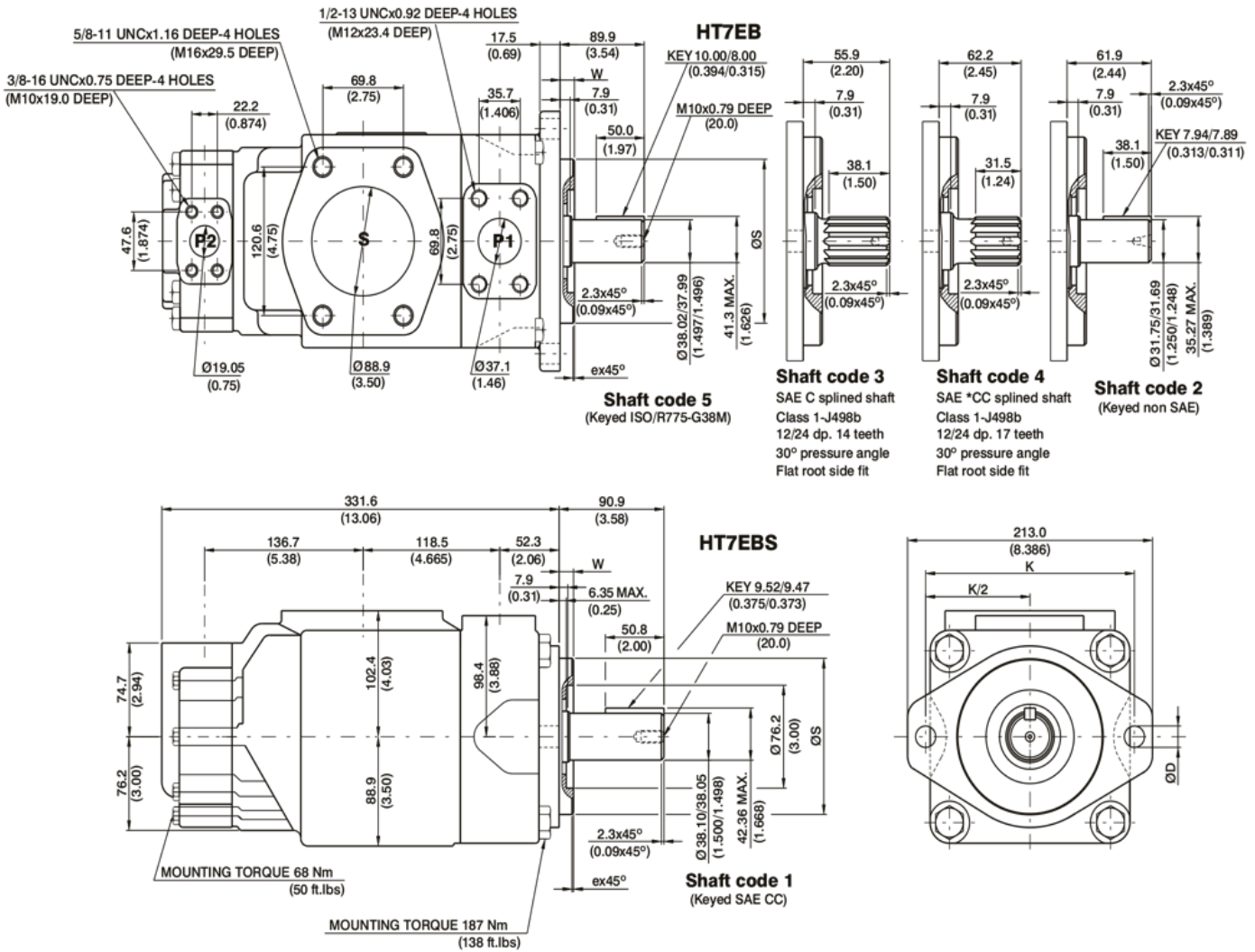
9. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT7EB/ HT7EBS Series

## Installation Dimension mm (inch)

### HT7EB, HT7EBS



Alternate mounting flange						
Model	ØS		ex 45°	W	K	ØD
	MAX.	MIN.				
HT7EB	124.99 (4.921)	124.94 (4.919)	2.0 (0.079)	9.49 (0.374)	180.0 (7.087)	18.0 (0.709)
HT7EBS	127.00 (5.00)	126.94 (4.998)	1.3 (0.051)	12.7 (0.50)	181.0 (7.126)	17.5 (0.689)

Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	68568 (60673)
2	34590 (30638)
3	61200 (54207)
4	68568 (60673)
5	



# High Pressure Double Vane Pump

## HT7EB/ HT7EBS Series

### Performance Characteristics

#### HT7EB, HT7EBS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	054	10.43 in <sup>3</sup> /rev	81.27	78.72	76.87	9.17	99.75	177.46
	057	11.18 in <sup>3</sup> /rev	87.12	84.57	82.72	9.51	106.57	189.84
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
	085	16.40 in <sup>3</sup> /rev	127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-
P2	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>2)</sup>	1.34	17.15	36.19 <sup>2)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>2)</sup>	1.47	19.97	42.22 <sup>2)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>2)</sup>	1.60	21.84	46.24 <sup>2)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>3)</sup>	1.74	24.26	47.85 <sup>3)</sup>

1) 085 = 1300 PSI max. int. 2) 011 - 012 - 014 = 4350 PSI max. int. 3) 15 = 4000 PSI Max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT6ECM/ HT6ECP Series

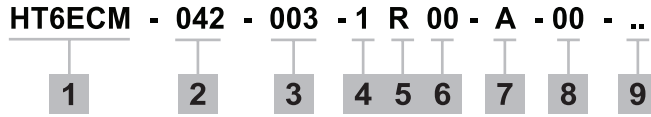
## Specification

### HT6ECM, HT6ECP for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	003	10.8 (0.66)	275 (4000)	240 (3500)	400	2200	54.2 (118.8)
045	142.4 (8.70)			005	17.2 (1.05)					
050	158.5 (9.67)			006	21.3 (1.30)					
052	164.8 (10.00)			008	26.4 (1.61)					
062	196.7 (12.00)			010	34.1 (2.08)					
066	213.3 (13.00)			012	37.1 (2.26)					
072	227.1 (13.86)			014	46.0 (2.81)					
				017	58.3 (3.56)					
		020	63.8 (3.89)							
		022	70.3 (4.29)							
		025	79.3 (4.84)							
		028	88.8 (5.42)	206 (3000)	160 (2300)					
		031	100.0 (6.10)							

# High Pressure Double Vane Pump HT6ECM/ HT6ECP Series

## Ordering Code : Double Pump



**1. Model :**

- Mobile 1 Shaft seals (M) - HT6ECM
- Mobile 2 Shaft seals (P) - HT6ECP
- SAE C 2 bolts mounting flange J744

**5. Direction of rotation (Viewed from shaft end)**

- R - Turn right
- L - Turn left

**2. Displacement**

- Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
- 042 - 132.3 (8.07)
  - 045 - 142.4 (8.70)
  - 050 - 158.5 (9.67)
  - 052 - 164.8 (10.00)
  - 062 - 196.7 (12.00)
  - 066 - 213.3 (13.00)
  - 072 - 227.1 (13.86)

**6. Porting combination (see page Porting Diagrams)**

- 00 - standard

**7. Design letter**

**8. Port Connection (4 bolts SAE flange J518C)**

- 00 - UNC Port Connection
- M0 - Metric Port Connection

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	0M	1½"	1"	3½"
01	M0	1½"	¾"	3½"

**3. Displacement P2**

- Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)
- 003 - 10.8 (0.66)
  - 005 - 17.2 (1.05)
  - 006 - 21.3 (1.30)
  - 008 - 26.4 (1.61)
  - 010 - 34.1 (2.08)
  - 012 - 37.1 (2.26)
  - 014 - 46.0 (2.81)
  - 017 - 58.3 (3.56)
  - 020 - 63.8 (3.89)
  - 022 - 70.3 (4.29)
  - 025 - 79.3 (4.84)
  - 028 - 88.8 (5.42)
  - 031 - 100.0 (6.10)

**9. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

**4. Type of shaft**

**HT6ECM**

- 1 - SAE CC Keyed Shaft
- 2 - non SAE Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - SAE CC Splined Shaft
- T - SAE J718c Splined Shaft

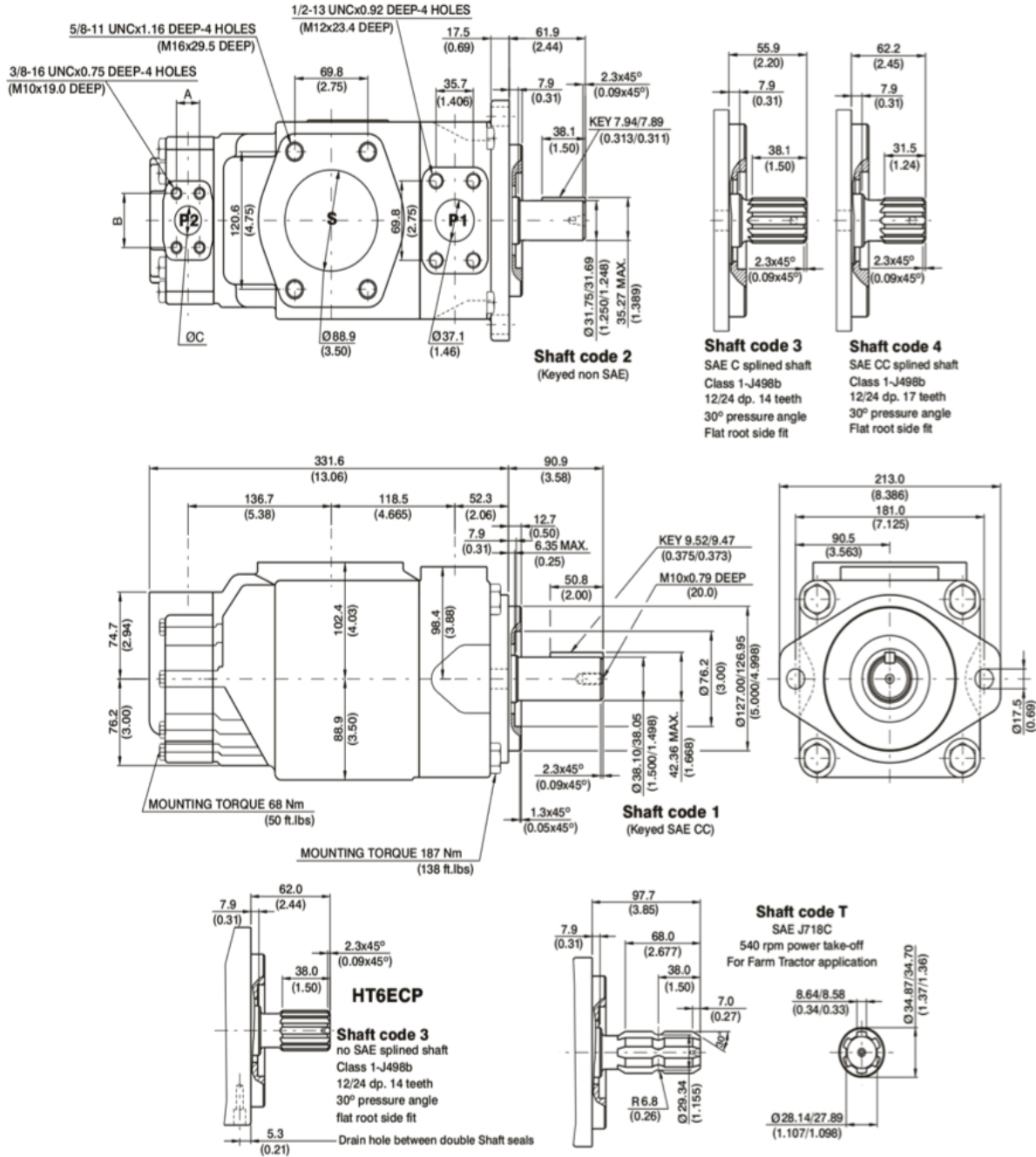
**HT6ECP**

- 3 - non SAE Splined Shaft

# High Pressure Double Vane Pump HT6ECM/ HT6ECP Series

## Installation Dimension mm (inch)

### HT6ECM, HT6ECP



Cover End Outlet Port Size	A	B	C
1"	26.2 (1.03)	52.4 (2.06)	25.4 (1.00)
3/4"	22.4 (0.88)	47.7 (1.88)	19.0 (0.75)

Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	72306 (64044)
2	34590 (30638)
3	61200 (54207)
4	76376 (67582)
T	70400 (63256)

# High Pressure Double Vane Pump

## HT6ECM/ HT6ECP Series

### Performance Characteristics

#### HT6ECM, HT6ECP

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q (GPM) & n = 1800 RPM			Input power P (HP) & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	6.87	82.09	141.51
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	7.32	91.02	157.15
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	7.49	94.52	163.27
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	8.38	112.22	194.25
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	8.84	121.43	210.37
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	9.22	129.09	223.77
P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>1)</sup>	4.27	51.74	76.73 <sup>1)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>1)</sup>	4.58	57.95	86.06 <sup>1)</sup>

1) 028 - 031 = 3000 PSI Max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT67EC Series

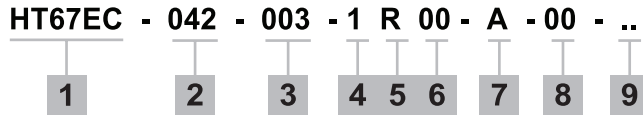
## Specification

### HT67EC for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	003	10.8 (0.66)	275 (4000)	240 (3500)	600	2200	54.2 (119.2)
045	142.4 (8.70)			005	17.2 (1.05)					
050	158.5 (9.67)			006	21.3 (1.30)					
052	164.8 (10.00)			008	26.4 (1.61)					
054	173.8 (10.60)			010	34.1 (2.08)					
057	180.7 (11.02)			012	37.1 (2.26)					
062	196.7 (12.00)			014	46.0 (2.81)					
066	213.3 (13.00)			017	58.3 (3.56)					
072	227.1 (13.86)			020	63.8 (3.89)					
085	269.8 (16.40)			90 (1300)	75 (1100)					
				025	79.3 (4.84)					
				028	88.8 (5.42)					
				031	100.0 (6.10)					

# High Pressure Double Vane Pump HT67EC Series

## Ordering Code : Double Pump



1. Model :  
Industrial - HT67EC SAE C 2 bolts mounting flange J744

2. Displacement P1  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
7E  
042 - 132.3 (8.07)  
045 - 142.4 (8.70)  
050 - 158.5 (9.67)  
052 - 164.8 (10.00)  
054 - 173.8 (10.60)  
057 - 180.7 (11.02)  
062 - 196.7 (12.00)  
066 - 213.3 (13.00)  
072 - 227.1 (13.86)  
085 - 269.8 (16.40)

3. Displacement P2  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
6C  
003 - 10.8 (0.66)  
005 - 17.2 (1.05)  
006 - 21.3 (1.30)  
008 - 26.4 (1.61)  
010 - 34.1 (2.08)  
012 - 37.1 (2.26)  
014 - 46.0 (2.81)  
017 - 58.3 (3.56)  
020 - 63.8 (3.89)  
022 - 70.3 (4.29)  
025 - 79.3 (4.84)  
028 - 88.8 (5.42)  
031 - 100.0 (6.10)

4. Type of shaft  
1 - SAE CC Keyed Shaft  
2 - non SAE Keyed Shaft  
3 - SAE C Splined Shaft  
4 - SAE CC Splined Shaft

5. Direction of rotation (Viewed from shaft end)  
R - Turn right  
L - Turn left

6. Porting combination (see page Porting Diagrams)  
00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)  
00 - UNC Port Connection  
M0 - Metric Port Connection

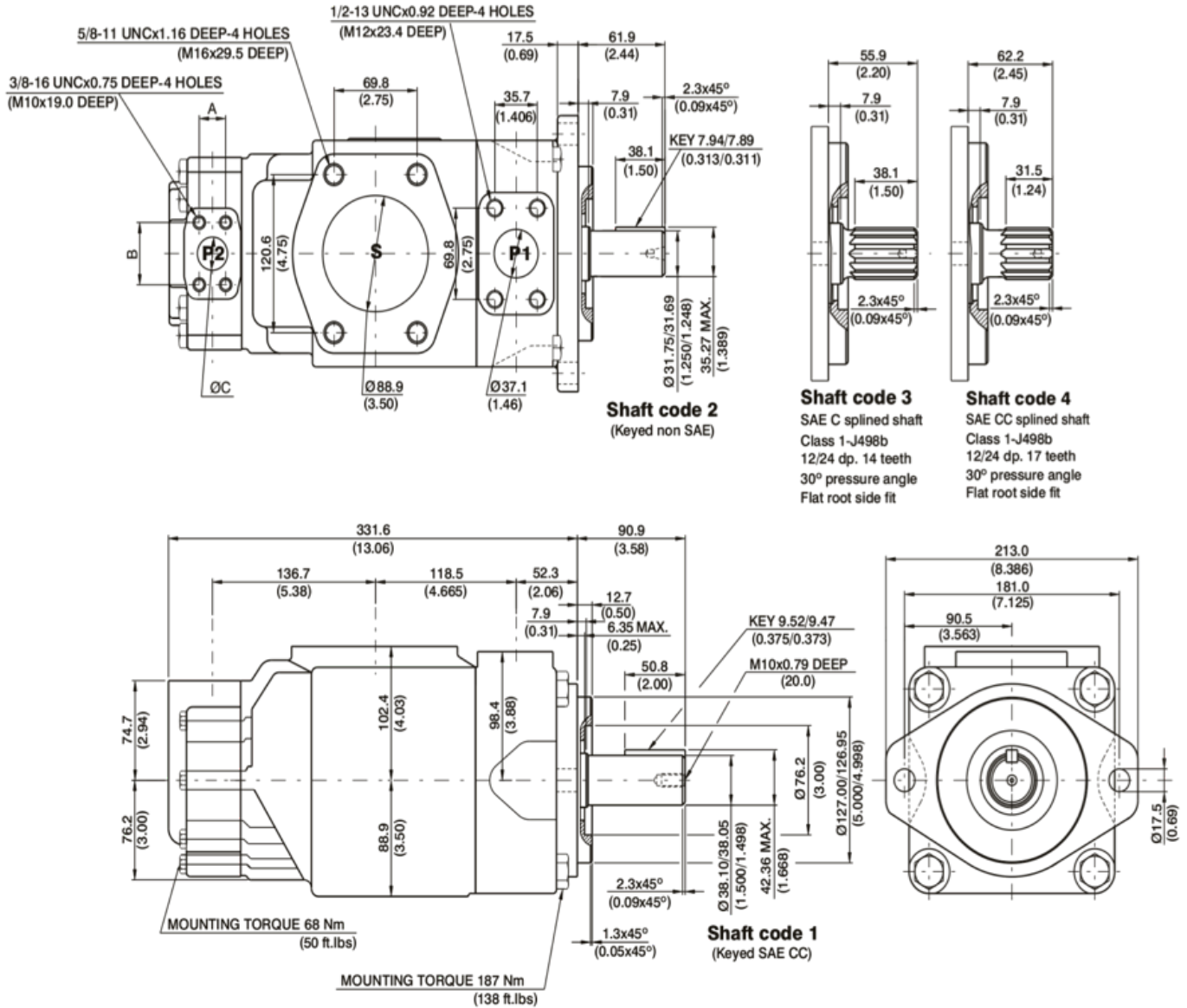
Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	M0	1½"	1"	3½"
01	M1	1½"	3/4"	3½"

9. Modifications  
Omit - Standard  
718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT67EC Series

## Installation Dimension mm (inch)

### HT67EC



Cover End Outlet Port Size	A	B	C
1"	26.2 (1.03)	52.4 (2.06)	25.4 (1.00)
3/4"	22.4 (0.88)	47.7 (1.88)	19.0 (0.75)

Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	72306 (64044)
2	34590 (30638)
3	61200 (54207)
4	76376 (67582)



# High Pressure Double Vane Pump HT67EC Series

## Performance Characteristics

### HT67EC

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	054	10.43 in <sup>3</sup> /rev	81.27	78.72	76.87	9.17	99.75	177.46
	057	11.18 in <sup>3</sup> /rev	87.12	84.57	82.72	9.51	106.57	189.84
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
	085	16.40 in <sup>3</sup> /rev	127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-
P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 085 = 1300 PSI max. int. 2) 028 - 031 = 3000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT6EDM/ HT6EDP Series

## Specification

### HT6EDM, HT6EDP for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	014	47.6 (2.90)	240 (3500)	206 (3000)	400	2200	64.0 (140.8)
045	142.4 (8.70)			017	58.2 (3.55)					
050	158.5 (9.67)			020	66.0 (4.03)					
052	164.8 (10.00)			024	79.5 (4.85)					
062	196.7 (12.00)			028	89.7 (5.47)					
066	213.3 (13.00)			031	98.3 (6.00)					
072	227.1 (13.86)			035	111.0 (6.77)					
				038	120.3 (7.34)					
		042	136.0 (8.30)	206 (3000)	160 (2300)					
		045	145.7 (8.89)							
		050	158.0 (9.64)							
				061	193.3 (11.8)					

# High Pressure Double Vane Pump

## HT6EDM/ HT6EDP Series

### Ordering Code : Double Pump

HT6EDM - 042 - 014 - 1 R 00 - A - 00 - ..

1

2

3

4

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9

1. Model :

Mobile 1 Shaft seals (M) - HT6EDM  
 Mobile 2 Shaft seals (P) - HT6EDP SAE C 2 bolts mounting flange J744

2. Displacement

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 042 - 132.3 (8.07)
- 045 - 142.4 (8.70)
- 050 - 158.5 (9.67)
- 052 - 164.8 (10.00)
- 062 - 196.7 (12.00)
- 066 - 213.3 (13.00)
- 072 - 227.1 (13.86)

3. Displacement P2

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)
- 061 - 193.3 (11.80)

4. Type of shaft

HT6EDM

- 1 - SAE CC Keyed Shaft
- 2 - non SAE Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - SAE CC Splined Shaft
- T - SAE J718c Splined Shaft

HT6EDP

- 3 - non SAE Splined Shaft

5. Direction of rotation (Viewed from shaft end)

R - Turn right  
 L - Turn left

6. Porting combination

00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)

00 - UNC Port Connection  
 M0 - Metric Port Connection

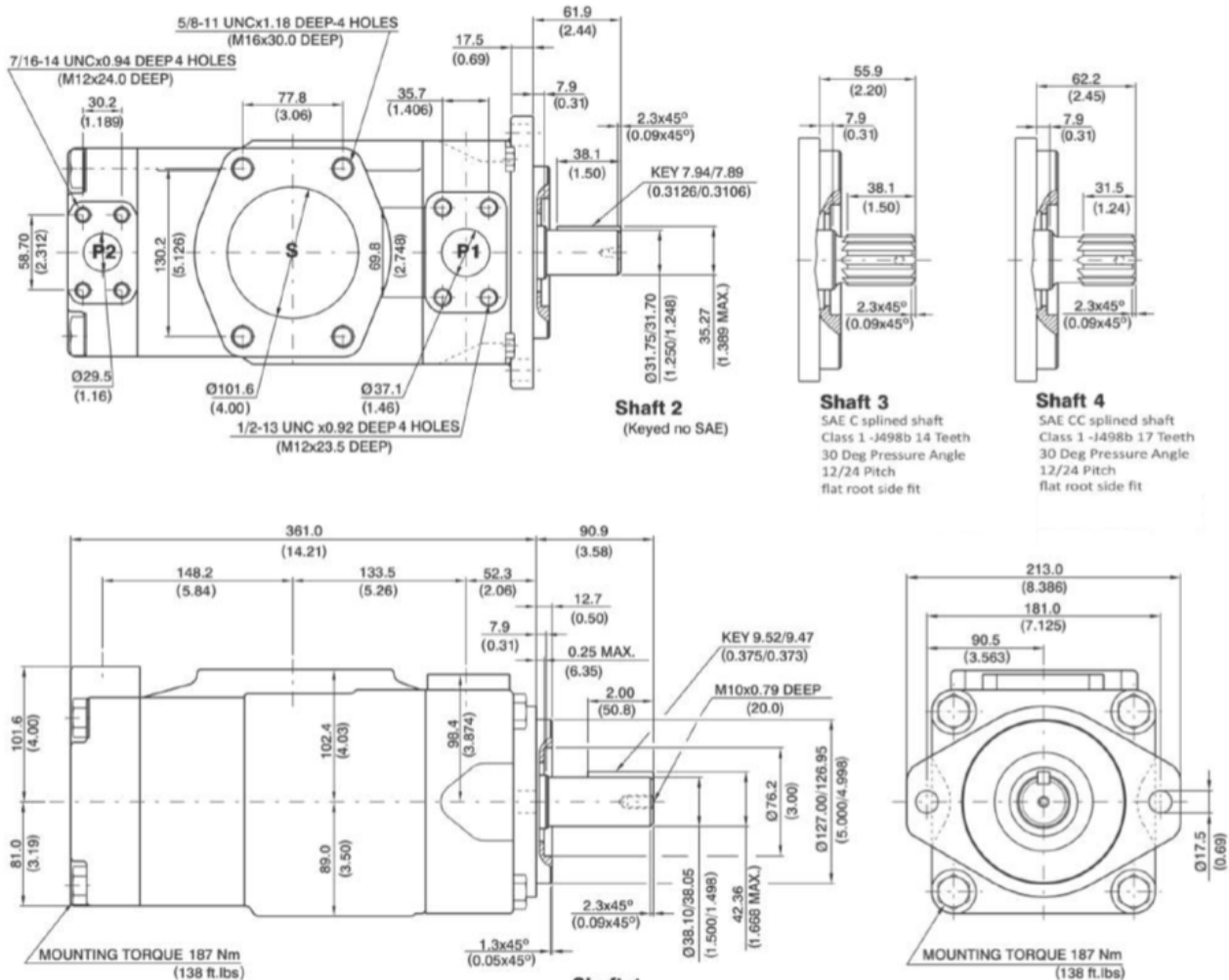
9. Modifications

Omit - Standard  
 718 - Surface grinding the flange face for the manifold.

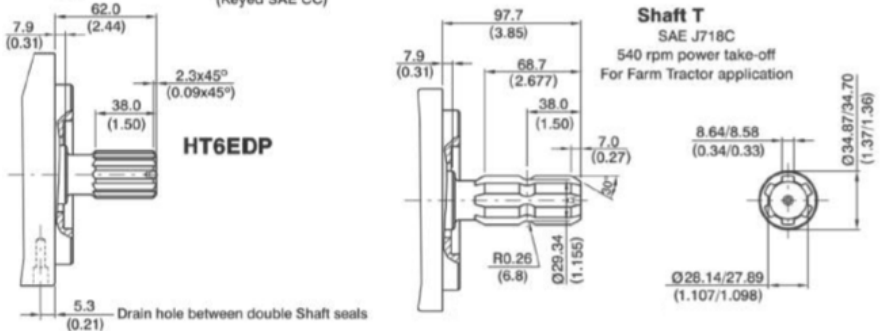
# High Pressure Double Vane Pump HT6EDM/ HT6EDP Series

## Installation Dimension mm (inch)

### HT6EDM, HT6EDP



Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	72306 (64044)
2	34590 (30638)
3	61200 (54207)
4	76376 (67582)
T	70400 (63256)



**Shaft 3**  
 no SAE splined shaft  
 Class 1 -J498b 14 Teeth  
 30 Deg Pressure Angle  
 12/24 Pitch  
 flat root side fit

# High Pressure Double Vane Pump HT6EDM/ HT6EDP Series

## Performance Characteristics

### HT6EDM, HT6EDP

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	6.87	82.09	141.51
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	7.32	91.02	157.15
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	7.49	94.52	163.27
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	8.38	112.22	194.25
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	8.84	121.43	210.37
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	9.22	129.09	223.77
P2	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
	061	11.8 in <sup>3</sup> /rev	90.98	84.55	80.87 <sup>1)</sup>	8.30	109.61	183.48 <sup>1)</sup>

1) 050-061 = 3000 PSI Max. int.

- Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT7ED/ HT7EDS Series

## Specification

### HT7ED, HT7EDS for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	014	47.6 (2.90)	300 (4350)	250 (3600)	600	2200	64.5 (141.9)
045	142.4 (8.70)			017	58.2 (3.55)					
050	158.5 (9.67)			020	66.0 (4.03)					
052	164.8 (10.00)			022	70.0 (4.27)					
054	173.8 (10.60)			024	79.5 (4.85)					
057	180.7 (11.02)			028	89.7 (5.47)					
062	196.7 (12.00)			031	98.3 (6.00)					
066	213.3 (13.00)			035	111.0 (6.77)	280 (4060)				
072	227.1 (13.86)			038	120.3 (7.34)					
085	269.8 (16.40)	90 (1300)	75 (1100)	042	136.0 (8.30)	260 (3770)	235 (3400)			
				045	145.7 (8.89)	240 (3500)	206 (3000)			
				050	158.0 (9.64)	206 (3000)	160 (2300)			

# High Pressure Double Vane Pump HT7ED/ HT7EDS Series

## Ordering Code : Double Pump

HT7EDS - 042 - 014 - 1 R 00 - A - 00 - ..  
1
2
3
4
5
6
7
8
9

1. Model :

Industrial - HT7ED ISO 2 bolts 3019-2 mounting flange 125 A2 HW  
 - HT7EDS SAE C 2 bolts mounting flange J744

5. Direction of rotation (Viewed from shaft end)

R - Turn right  
 L - Turn left

2. Displacement

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 042 - 132.3 (8.07)  
 045 - 142.4 (8.70)  
 050 - 158.5 (9.67)  
 052 - 164.8 (10.00)  
 054 - 173.8 (10.60)  
 057 - 180.7 (11.02)  
 062 - 196.7 (12.00)  
 066 - 213.3 (13.00)  
 072 - 227.1 (13.86)  
 085 - 269.8 (16.40)

6. Porting combination

00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)

00 - UNC Port Connection (Except HT7ED)  
 M0 - Metric Port Connection

9. Modifications

Omit - Standard  
 718 - Surface grinding the flange face for the manifold.

3. Displacement P2

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)  
 014 - 47.6 (2.90)  
 017 - 58.2 (3.55)  
 020 - 66.0 (4.03)  
 022 - 70.0 (4.27)  
 024 - 79.5 (4.85)  
 028 - 89.7 (5.47)  
 031 - 98.3 (6.00)  
 035 - 111.0 (6.77)  
 038 - 120.3 (7.34)  
 042 - 136.0 (8.30)  
 045 - 145.7 (8.89)  
 050 - 158.0 (9.64)

4. Type of shaft

HT7ED, HT7EDS  
 5 - ISO R775-G38M Keyed Shaft

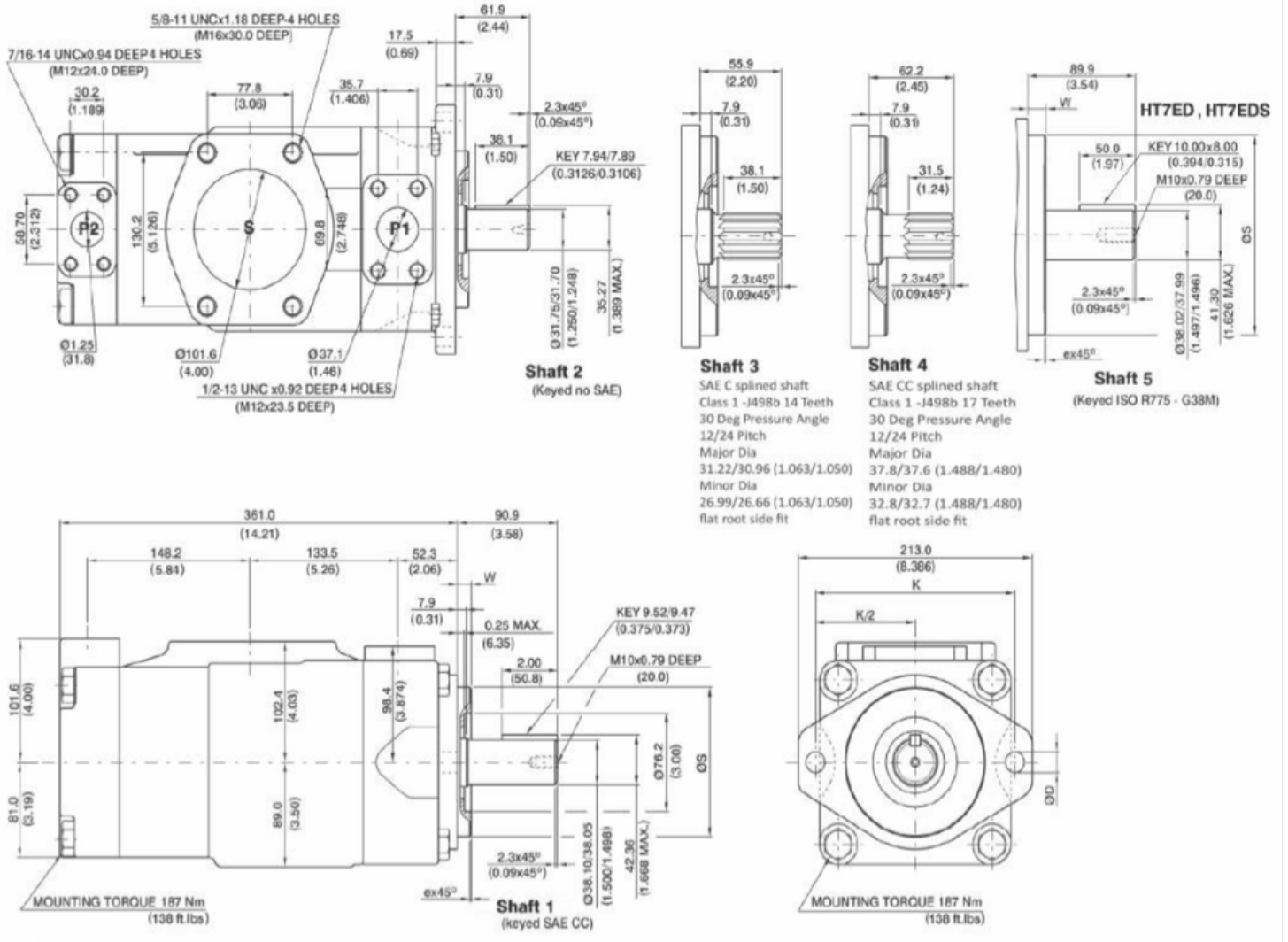
HT7EDS

1 - SAE CC Keyed Shaft  
 2 - non SAE Keyed Shaft  
 3 - SAE C Splined Shaft  
 4 - SAE CC Splined Shaft

# High Pressure Double Vane Pump HT7ED/ HT7EDS Series

## Installation Dimension mm (inch)

### HT7ED, HT7EDS



Shaft torque limits [ml/rev x bar (in <sup>3</sup> /rev x psi)]	
Shaft	Vp x p max. (P1+P2)
1	72372 (64039)
2	34590 (30638)
3	61200 (54207)
4	68568 (60673)
5	

Model	ØS		ex 45°	W	K	ØD
	MAX.	MIN.				
HT7ED	124.99 (4.921)	124.94 (4.919)	2.0 (0.079)	9.49 (0.374)	180.0 (7.087)	18.0 (0.709)
HT7EDS	127.00 (5.00)	126.94 (4.998)	1.3 (0.051)	12.7 (0.50)	181.0 (7.126)	17.5 (0.689)



# High Pressure Double Vane Pump HT7ED/ HT7EDS Series

## Performance Characteristics

### HT7ED, HT7EDS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q (GPM) & n = 1800 RPM			Input power P (HP) & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	054	10.43 in <sup>3</sup> /rev	81.27	78.72	76.87	9.17	99.75	177.46
	057	11.18 in <sup>3</sup> /rev	87.12	84.57	82.72	9.51	106.57	189.84
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
	085	16.40 in <sup>3</sup> /rev	127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-
			p = 0 PSI	p = 2000 PSI	p = 3630 PSI	p = 100 PSI	p = 2000 PSI	p = 3630 PSI
P2	014	2.68 in <sup>3</sup> /rev	20.92	19.18	17.81	3.46	27.77	47.03
	017	3.36 in <sup>3</sup> /rev	26.16	24.41	23.04	3.77	33.88	57.71
	020	4.03 in <sup>3</sup> /rev	31.39	29.64	28.27	4.07	39.98	68.39
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.95 in <sup>3</sup> /rev	38.57	36.82	35.45	4.49	48.36	83.06
	028	5.49 in <sup>3</sup> /rev	42.80	41.06	39.69	4.74	53.30	91.07
	031	6.05 in <sup>3</sup> /rev	47.18	45.43	44.06	4.99	58.41	100.63
	035	6.92 in <sup>3</sup> /rev	53.93	52.18	50.81	5.39	66.29	114.42
	038	7.36 in <sup>3</sup> /rev	57.35	55.61	54.24	5.59	70.28	121.42
	042	8.39 in <sup>3</sup> /rev	65.39	63.65	62.28	6.05	79.66	137.83
	045	8.89 in <sup>3</sup> /rev	69.29	67.11	65.31	6.74	83.75	145.79
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>2)</sup>	7.08	90.58	134.50 <sup>2)</sup>

1) 085 = 1300 PSI Max. int.    2) 050 = 3000 PSI Max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT7EE/ HT7EES Series

## Specification

### HT7EE, HT7EES for Double pump

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	042	132.3 (8.07)	240 (3500)	206 (3000)	600	2200	95.2 (209.4)
045	142.4 (8.70)			045	142.4 (8.70)					
050	158.5 (9.67)			050	158.5 (9.67)					
052	164.8 (10.00)			052	164.8 (10.00)					
054	173.8 (10.60)			054	173.8 (10.60)					
057	180.7 (11.02)			057	180.7 (11.02)					
062	196.7 (12.00)			062	196.7 (12.00)					
066	213.3 (13.00)			066	213.3 (13.00)					
072	227.1 (13.86)			072	227.1 (13.86)					
085	269.8 (16.40)			90 (1300)	75 (1100)					

# High Pressure Double Vane Pump

## HT7EE/ HT7EES Series

### Ordering Code

**HT7EES - 052 - 042 - 1 R 00 - A 0 - 00 - ..**  

1
2
3
4
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**1. Model :**

- Industrial - HT7EE ISO 4 bolts 3019-2 mounting flange 250 B4 HW
- HT7EES SAE E 4 bolts mounting flange J744

**2. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 042 - 132.3 (8.07)
- 045 - 142.4 (8.70)
- 050 - 158.5 (9.67)
- 052 - 164.8 (10.00)
- 054 - 173.8 (10.60)
- 057 - 180.7 (11.02)
- 062 - 196.7 (12.00)
- 066 - 213.3 (13.00)
- 072 - 227.1 (13.86)
- 085 - 269.8 (16.40)

**3. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 042 - 132.3 (8.07)
- 045 - 142.4 (8.70)
- 050 - 158.5 (9.67)
- 052 - 164.8 (10.00)
- 054 - 173.8 (10.60)
- 057 - 180.7 (11.02)
- 062 - 196.7 (12.00)
- 066 - 213.3 (13.00)
- 072 - 227.1 (13.86)
- 085 - 269.8 (16.40)

**4. Type of shaft**

- HT7EE, HT7EES
- 2 - ISO 3019-2-G45N Keyed Shaft
- HT7EES
- 1 - SAE CC Keyed Shaft
- 3 - SAE CC Splined Shaft
- 4 - SAE D&E Splined Shaft
- 5 - SAE D&E Keyed Shaft

**5. Direction of rotation (view on shaft end)**

- R - Turn right
- L - Turn left

**6. Porting combination (see page Porting Diagrams)**

- 00 - standard

**7. Design letter**

**8. Coupling adaptor**

- 0 - none
- 2 - SAE B
- 3 - SAE BB
- \* for SAE C, please contact HOF

**9. Port Connection (4 bolts SAE flange J518C)**

- 00 - UNC Port Connection (Except HT7EE)
- M0 - Metric Port Connection

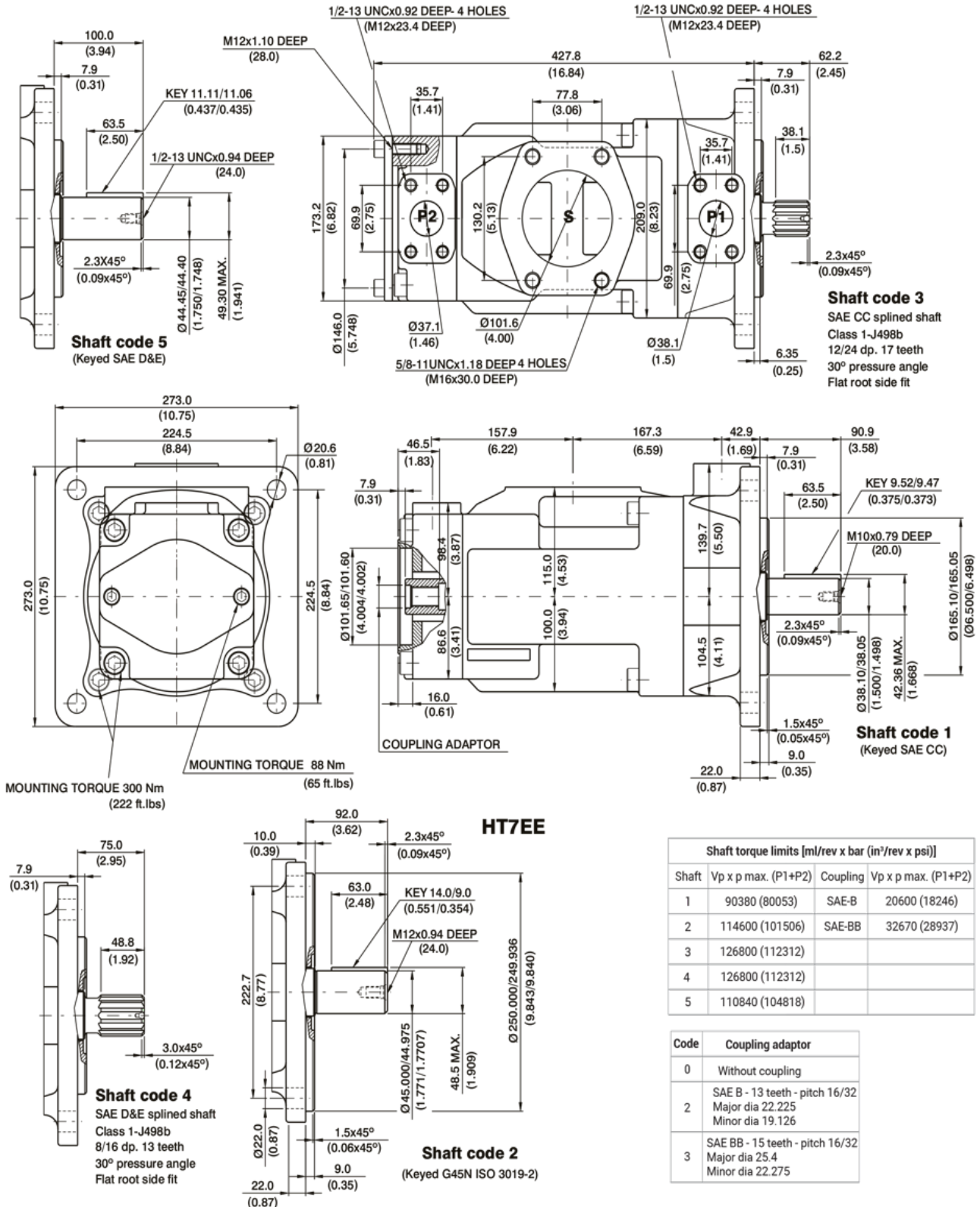
**10. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT7EE/ HT7EES Series

## Installation Dimension mm (inch)

HT7EE, HT7EES



# High Pressure Double Vane Pump

## HT7EE/ HT7EES Series

### Performance Characteristics

#### HT7EE, HT7EES

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	054	10.43 in <sup>3</sup> /rev	81.27	78.72	76.87	9.17	99.75	177.46
	057	11.18 in <sup>3</sup> /rev	87.12	84.57	82.72	9.51	106.57	189.84
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
	085	16.40 in <sup>3</sup> /rev	127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-

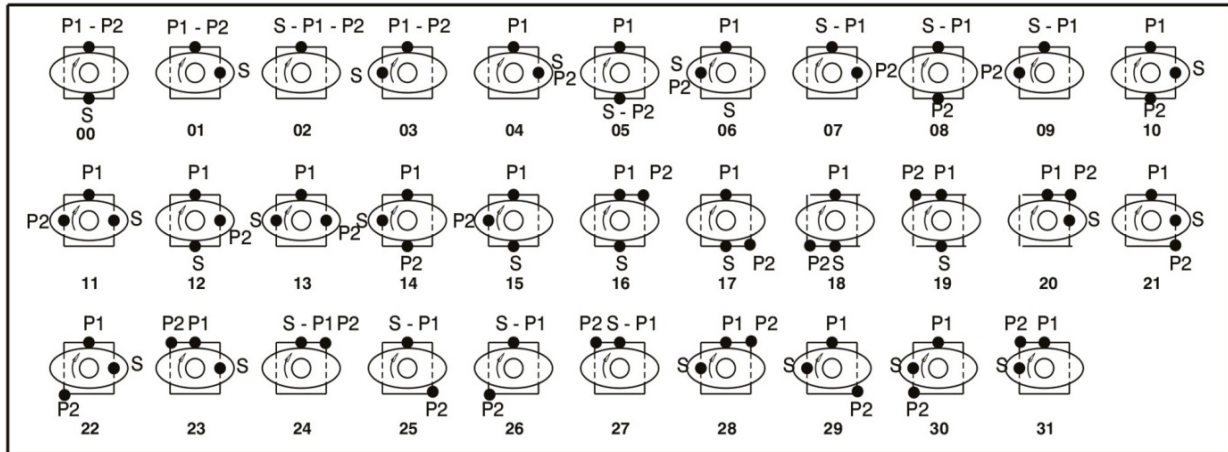
1) 085 = 1300 PSI max. int

- Not to use because internal leakage greater than 50% theoretical flow.

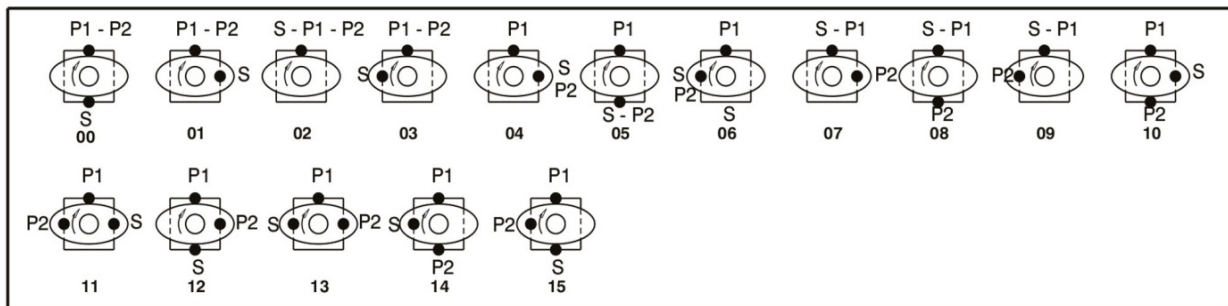
- Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT6/HT67/HT7 Series - Porting Diagram

## Porting Diagrams



HT6CC/HT6CCM/HT6CCP/HT6CCW/HT6CCMW, HT6DCM/HT6DCP/HT6DCMW, HT6ECM/HT6ECP  
 HT7BB/HT7BBS, HT7DB/HT7DBS, HT7EB/HT7EBS  
 HT67CB/HT67CBW, HT67DC/HT67DCW, HT67EC



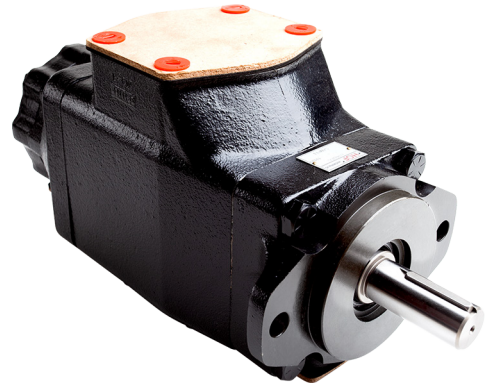
HT6EDM/HT6EDP  
 HT7DD/HT7DDS, HT7ED/HT7EDS, HT7EE/HT7EES

# High Pressure Triple Vane Pump HT6/HT67/HT7 Series

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## Features and Handling

- Fixed displacement and balanced type triple vane pumps. The pump is designed for higher operating pressure and greater flow at the same housing size.
- With a balanced pin-vane design, outlet pressure is continuously applied only the pin. The pin provides the steady light force against the vane. Top and bottom areas of the vane are subject to the same pressure, either inlet or outlet pressure, depending on the vane's location during rotor rotation. This pin-vane design minimizes noise level and improved volumetric efficiency.
- With the cartridge independent of the shaft, allowing for easy change of flow capacity and field servicing without removing the pump from its mounting.



# High Pressure Triple Vane Pump HT67DBB Series

## Specification

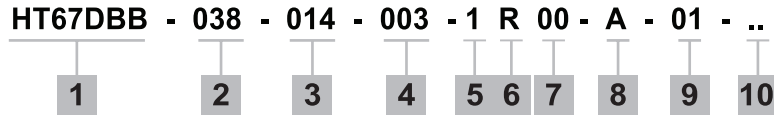
### HT67DBB for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	002	5.8 (0.35)	300 (4350)	275 (4000)	002	5.8 (0.35)	300 (4350)	275 (4000)	600	2500	62.0 (136.7)
017	58.2 (3.55)			003	9.8 (0.59)			003	9.8 (0.59)					
020	66.0 (4.00)			004	12.8 (0.78)			004	12.8 (0.78)					
022	70.0 (4.27)			005	15.9 (0.97)			005	15.9 (0.97)					
024	79.5 (4.80)			006	19.8 (1.20)			006	19.8 (1.20)					
028	87.7 (5.50)			007	22.5 (1.37)			007	22.5 (1.37)					
031	98.3 (6.00)			008	24.9 (1.51)			008	24.9 (1.51)					
035	111.0 (6.80)			280 (4060)	235 (3400)			009	26.0 (1.70)					
038	120.3 (7.30)	010	31.8 (1.94)			010	31.8 (1.94)							
042	136.0 (8.30)	011	35.0 (2.13)			011	35.0 (2.13)							
045	145.7 (8.90)	240 (3500)	206 (3000)	012	41.0 (2.50)	012	41.0 (2.50)							
050	158.0 (9.64)	206 (3000)	160 (2300)	014	45.0 (2.74)	014	45.0 (2.74)							
				015	50.0 (3.05)	280 (4060)	240 (3500)	015	50.0 (3.05)	280 (4060)	240 (3500)			



# High Pressure Triple Vane Pump HT67DBB Series

## Ordering Code



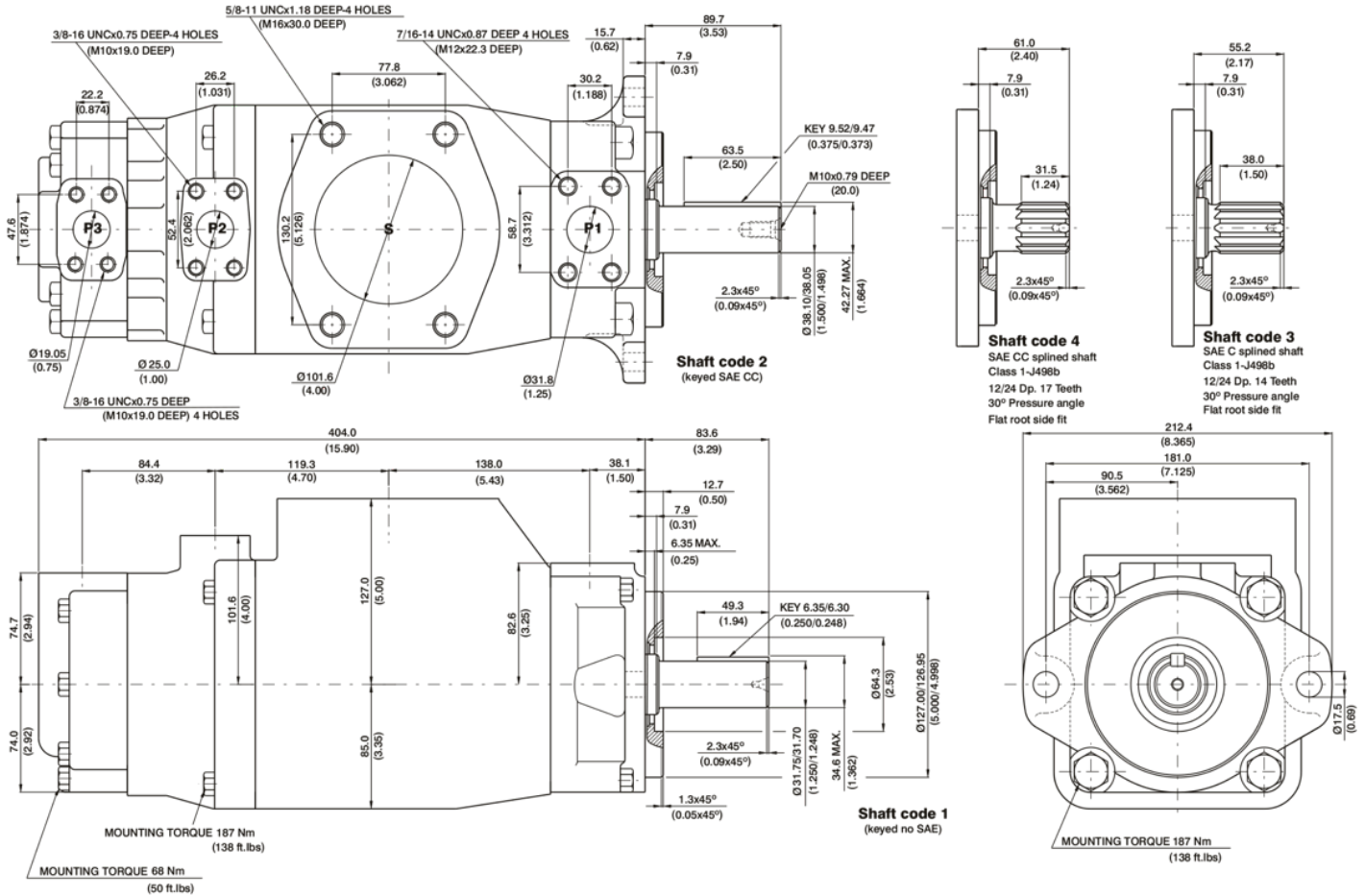
1. Model :
  - Industrial - HT67DBB
  - SAE C 2 bolts mounting flange J744
  
2. Displacement P1
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
  - 7D
  - 014 - 47.6 (2.90)
  - 017 - 58.2 (3.55)
  - 020 - 66.0 (4.03)
  - 022 - 70.0 (4.27)
  - 024 - 79.5 (4.85)
  - 028 - 89.7 (5.47)
  - 031 - 98.3 (6.00)
  - 035 - 111.0 (6.77)
  - 038 - 120.3 (7.34)
  - 042 - 136.0 (8.30)
  - 045 - 145.7 (8.89)
  - 050 - 158.0 (9.64)
  
3. Displacement P2
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
  - 7B
  - 002 - 5.8 (0.35)
  - 003 - 9.8 (0.60)
  - 004 - 12.8 (0.78)
  - 005 - 15.9 (0.97)
  - 006 - 19.8 (1.20)
  - 007 - 22.5 (1.37)
  - 008 - 24.9 (1.51)
  - 009 - 28.0 (1.70)
  - 010 - 31.8 (1.92)
  - 011 - 35.0 (2.14)
  - 012 - 41.0 (2.47)
  - 014 - 45.0 (2.70)
  - 015 - 50.0 (3.01)
  
4. Displacement P3
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
  - 7B
  - 002 - 5.8 (0.35)
  - 003 - 9.8 (0.60)
  - 004 - 12.8 (0.78)
  - 005 - 15.9 (0.97)
  - 006 - 19.8 (1.20)
  
5. Type of shaft
  - 1 - non SAE Keyed Shaft
  - 2 - SAE CC Keyed Shaft
  - 3 - SAE C Splined Shaft
  - 4 - SAE CC Splined Shaft
  
6. Direction of rotation (view on shaft end)
  - R - Turn right
  - L - Turn left
  
7. Porting combination (see page Porting Diagrams)
  - 00 - standard
  
8. Design letter
  
9. Port Connection (4 bolts SAE flange J518C)
  - 00 - UNC Port Connection
  - M0 - Metric Port Connection
  - (HT67DBB for port connection 01, M1 only)

Code		4 bolt SAE flanges			
UNC	Metric	P1	P2	P3	S
00	M0	1¼"	1"	1"	4"
01	M1	1¼"	1"	3/4"	4"
  
10. Modifications
  - Omit - Standard
  - 718 - Surface grinding the flange face for the manifold.

# High Pressure Triple Vane Pump HT67DBB Series

## Installation Dimension mm (inch)

### HT67DBB



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	43240 (38299)
2	66500 (58902)
3	61200 (54027)
4	66500 (58902)

# High Pressure Triple Vane Pump HT67DBB Series

## Performance Characteristics

### HT67DBB

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
P2 & P3	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>2)</sup>	1.34	17.15	36.19 <sup>2)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>2)</sup>	1.47	19.97	42.22 <sup>2)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>2)</sup>	1.60	21.84	46.24 <sup>2)</sup>
015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>3)</sup>	1.74	24.26	47.85 <sup>3)</sup>	

1) 050 = 3000 PSI max. int. 2) 011 - 012 - 014 = 4350 PSI max. int. 3) 015 = 4000 PSI max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Triple Vane Pump HT67DCB Series

## Specification

### HT67DCB for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	003	10.8 (0.66)	275 (4000)	240 (3500)	002	5.8 (0.35)	300 (4350)	275 (4000)	600	2500	62.0 (136.7)
017	58.2 (3.55)			005	17.2 (1.05)			003	9.8 (0.59)					
020	66.0 (4.00)			006	21.3 (1.30)			004	12.8 (0.78)					
022	70.0 (4.27)			008	26.4 (1.61)			005	15.9 (0.97)					
024	79.5 (4.80)			010	34.1 (2.08)			006	19.8 (1.20)					
028	87.7 (5.50)			012	37.1 (2.26)			007	22.5 (1.37)					
031	98.3 (6.00)			014	46.0 (2.81)			008	24.9 (1.51)					
035	111.0 (6.80)			280 (4060)	235 (3400)			017	58.3 (3.56)					
038	120.3 (7.30)	020	63.8 (3.89)			010	31.8 (1.94)							
042	136.0 (8.30)	260 (3770)	235 (3400)			022	70.3 (4.29)	011	35.0 (2.13)					
045	145.7 (8.90)	240 (3500)	206 (3000)	025	79.3 (4.84)	012	41.0 (2.50)							
050	158.0 (9.64)	206 (3000)	160 (2300)	028	88.8 (5.42)	014	45.0 (2.74)							
				031	100.0 (6.10)	206 (3000)	160 (2300)	015	50.0 (3.05)	280 (4060)	240 (3500)			

# High Pressure Triple Vane Pump HT67DCB Series

## HT67DCB for Triple pump

### Ordering Code

**HT67DCB - 038 - 014 - 003 - 1 R 00 - A - 01 - ..**  

1
2
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10

1. Model :  
 Industrial - HT67DCB  
 SAE C 2 bolts mounting flange J744

- 005 - 15.9 (0.97)
- 006 - 19.8 (1.20)
- 007 - 22.5 (1.37)
- 008 - 24.9 (1.51)
- 009 - 28.0 (1.70)
- 010 - 31.8 (1.92)
- 011 - 35.0 (2.14)
- 012 - 41.0 (2.47)
- 014 - 45.0 (2.70)
- 015 - 50.0 (3.01)

2. Displacement P1  
 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 7D  
 014 - 47.6 (2.90)  
 017 - 58.2 (3.55)  
 020 - 66.0 (4.03)  
 022 - 70.0 (4.27)  
 024 - 79.5 (4.85)  
 028 - 89.7 (5.47)  
 031 - 98.3 (6.00)  
 035 - 111.0 (6.77)  
 038 - 120.3 (7.34)  
 042 - 136.0 (8.30)  
 045 - 145.7 (8.89)  
 050 - 158.0 (9.64)

5. Type of shaft  
 1 - non SAE Keyed Shaft  
 2 - SAE CC Keyed Shaft  
 3 - SAE C Splined Shaft  
 4 - SAE CC Splined Shaft

6. Direction of rotation (view on shaft end)  
 R - Turn right  
 L - Turn left

3. Displacement P2  
 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 6C  
 003 - 10.8 (0.66)  
 005 - 17.2 (1.05)  
 006 - 21.3 (1.30)  
 008 - 26.4 (1.61)  
 010 - 34.1 (2.08)  
 012 - 37.1 (2.26)  
 014 - 46.0 (2.81)  
 017 - 58.3 (3.56)  
 020 - 63.8 (3.89)  
 022 - 70.3 (4.29)  
 025 - 79.3 (4.84)  
 028 - 88.8 (5.42)  
 031 - 100.0 (6.10)

7. Porting combination (see page Porting Diagrams)  
 00 - standard

8. Design letter

9. Port Connection (4 bolts SAE flange J518C)  
 00 - UNC Port Connection  
 M0 - Metric Port Connection  
 (HT67DCB for port connection 01, M1 only)

Code		4 bolt SAE flanges			
UNC	Metric	P1	P2	P3	S
00	M0	1 ¼"	1"	1"	4"
01	M1	1 ¼"	1"	3/4"	4"

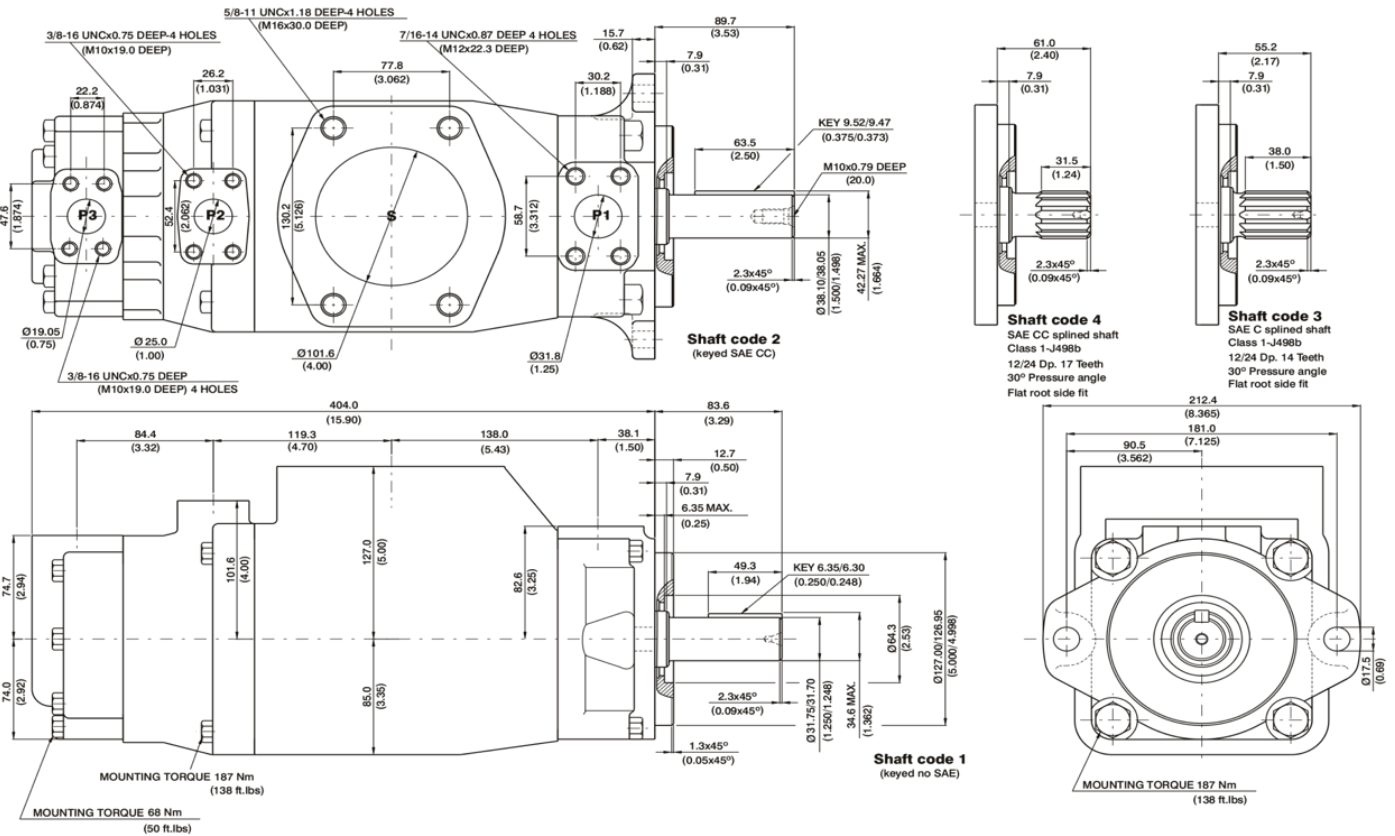
4. Displacement P3  
 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 7B  
 002 - 5.8 (0.35)  
 003 - 9.8 (0.60)  
 004 - 12.8 (0.78)

10. Modifications  
 Omit - Standard  
 718 - Surface grinding the flange face for the manifold.

# High Pressure Triple Vane Pump HT67DCB Series

## Installation Dimension mm (inch)

### HT67DCB



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	43240 (38299)
2	66500 (58902)
3	61200 (54207)
4	66500 (58902)

# High Pressure Triple Vane Pump HT67DCB Series

## Performance Characteristics

### HT67DCB

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>1)</sup>	4.27	51.74	76.73 <sup>1)</sup>
	031 <sup>using</sup>	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>1)</sup>	4.58	57.95	86.06 <sup>1)</sup>

# High Pressure Triple Vane Pump HT67DCB Series

## OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P3	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>2)</sup>	1.34	17.15	36.19 <sup>2)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>2)</sup>	1.47	19.97	42.22 <sup>2)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>2)</sup>	1.60	21.84	46.24 <sup>2)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>3)</sup>	1.74	24.26	47.85 <sup>3)</sup>

1) 028 - 031 - 050 = 3000 PSI max. int. 2) 011 - 012 - 014 = 4350 PSI max. int. 3) 015 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.



# High Pressure Triple Vane Pump HT6DCCM Series

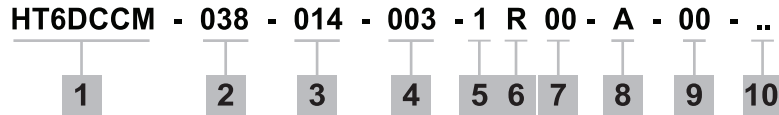
## Specification

### HT6DCCM for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	240 (3500)	206 (3000)	003	10.8 (0.66)	275 (4000)	240 (3500)	003	10.8 (0.66)	275 (4000)	240 (3500)	400	2500	62.0 (136.7)
017	58.2 (3.55)			005	17.2 (1.05)			005	17.2 (1.05)					
020	66.0 (4.03)			006	21.3 (1.30)			006	21.3 (1.30)					
024	79.5 (4.85)			008	26.4 (1.61)			008	26.4 (1.61)					
028	89.7 (5.47)			010	34.1 (2.08)			010	34.1 (2.08)					
031	98.3 (6.00)			012	37.1 (2.26)			012	37.1 (2.26)					
035	111.0 (6.77)			014	46.0 (2.81)			014	46.0 (2.81)					
038	120.3 (7.34)			017	58.3 (3.56)			017	58.3 (3.56)					
042	136.0 (8.30)			020	63.8 (3.89)			020	63.8 (3.89)					
045	145.7 (8.89)			022	70.3 (4.29)			022	70.3 (4.29)					
050	158.0 (9.64)	206 (3000)	160 (2300)	025	79.3 (4.84)	206 (3000)	160 (2300)	025	79.3 (4.84)	206 (3000)	160 (2300)	400	2500	62.0 (136.7)
061	193.3 (11.8)			028	88.8 (5.42)			028	88.8 (5.42)					
				031	100.0 (6.10)			031	100.0 (6.10)					

# High Pressure Triple Vane Pump HT6DCCM Series

## Ordering Code



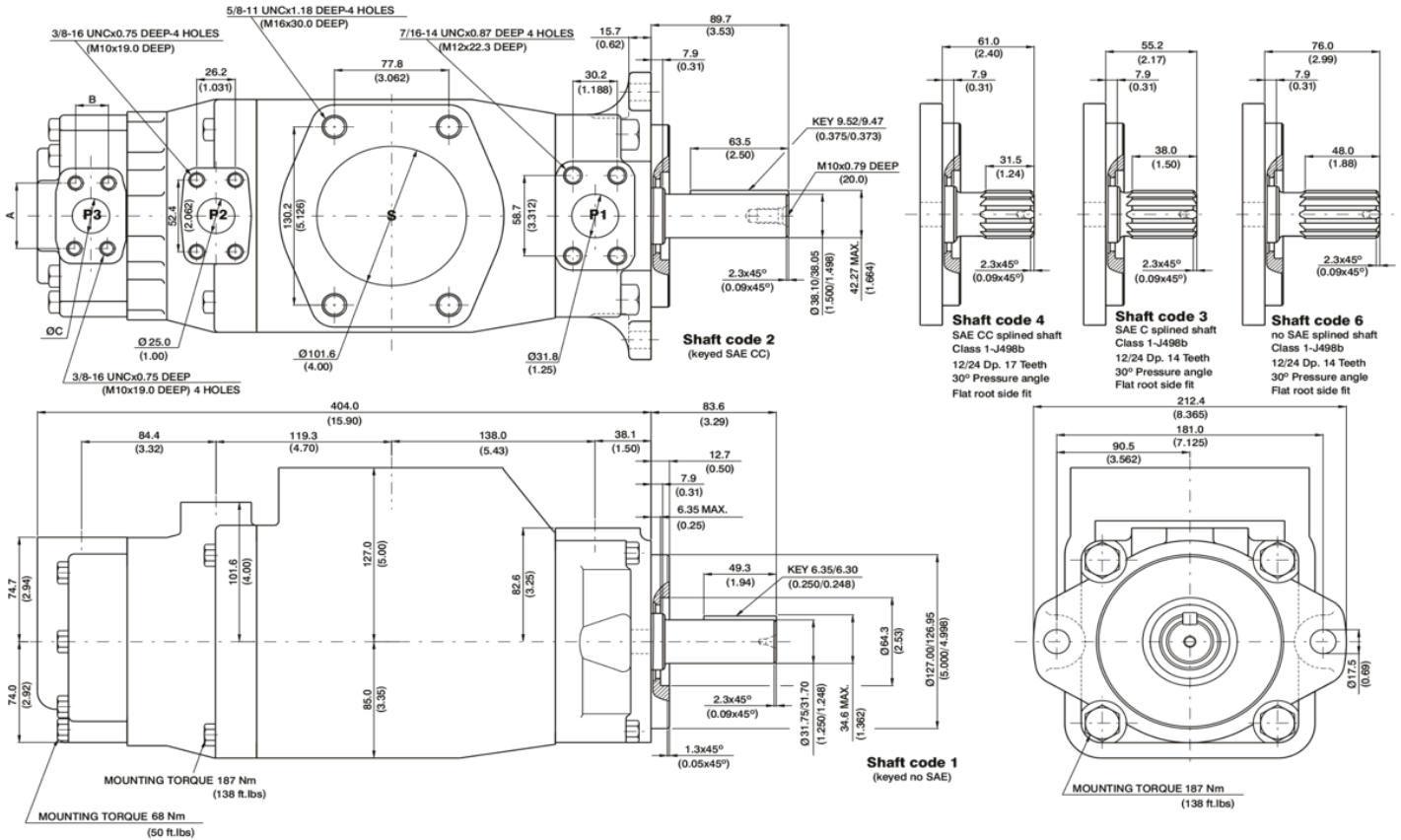
1. Model :
  - Mobile 1 Shaft seals(M) - HT6DCCM SAE C 2 bolts mounting flange J744
    - 020 - 63.8 (3.89)
    - 022 - 70.3 (4.29)
    - 025 - 79.3 (4.84)
    - 028 - 88.8 (5.42)
    - 031 - 100.0 (6.10)
  
2. Displacement P1
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
    - 014 - 47.6 (2.90)
    - 017 - 58.2 (3.55)
    - 020 - 66.0 (4.03)
    - 024 - 79.5 (4.85)
    - 028 - 89.7 (5.47)
    - 031 - 98.3 (6.00)
    - 035 - 111.0 (6.77)
    - 038 - 120.3 (7.34)
    - 042 - 136.0 (8.30)
    - 045 - 145.7 (8.89)
    - 050 - 158.0 (9.64)
    - 061 - 193.3 (11.80)
  
3. Displacement P2
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
    - 003 - 10.8 (0.66)
    - 005 - 17.2 (1.05)
    - 006 - 21.3 (1.30)
    - 008 - 26.4 (1.61)
    - 010 - 34.1 (2.08)
    - 012 - 37.1 (2.26)
    - 014 - 46.0 (2.81)
    - 017 - 58.3 (3.56)
    - 020 - 63.8 (3.89)
    - 022 - 70.3 (4.29)
    - 025 - 79.3 (4.84)
    - 028 - 88.8 (5.42)
    - 031 - 100.0 (6.10)
  
4. Displacement P3
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
    - 003 - 10.8 (0.66)
    - 005 - 17.2 (1.05)
    - 006 - 21.3 (1.30)
    - 008 - 26.4 (1.61)
    - 010 - 34.1 (2.08)
    - 012 - 37.1 (2.26)
    - 014 - 46.0 (2.81)
    - 017 - 58.3 (3.56)
  
5. Type of Shaft
  - 1 - non SAE Keyed Shaft
  - 2 - SAE CC Keyed Shaft
  - 3 - SAE C Splined Shaft
  - 4 - SAE CC Splined Shaft
  - 6 - non SAE Splined Shaft
  
6. Direction of rotation (view on shaft end)
  - R - Turn right
  - L - Turn left
  
7. Porting combination (see page Porting Diagrams)
  - 00 - standard
  
8. Design letter
  
9. Port Connection
  - 00 - UNC Port Connection
  - M0 - Metric Port Connection

Code		4 bolt SAE flanges			
UNC	Metric	P1	P2	P3	S
00	M0	1 ¼"	1"	1"	4"
01	M1	1 ¼"	1"	3/4"	4"
  
10. Modifications
  - Omit - Standard
  - 718 - Surface grinding the flange face for the manifold.

# High Pressure Triple Vane Pump HT6DCCM Series

## Installation Dimension mm (inch)

### HT6DCCM



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	43240 (38299)
2	66500 (58902)
3	61200 (54027)
4	66500 (58902)
6	61205 (54207)

Alternate part				
Port	Code	A	B	C
P3	00 & M0	52.4 (2.06)	26.2 (1.03)	25.4 (1.00)
	01 & M1	47.6 (1.874)	22.2 (0.874)	19.0 (0.75)

# High Pressure Triple Vane Pump HT6DCCM Series

## Performance Characteristics

### HT6DCCM

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042 <sup>2)</sup>	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045 <sup>2)</sup>	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050 <sup>2)</sup>	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
	061 <sup>2)</sup>	11.8 in <sup>3</sup> /rev	90.98	84.55	80.87 <sup>1)</sup>	8.30	109.61	183.48 <sup>1)</sup>
P2 & P3	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>1)</sup>	4.27	51.74	76.73 <sup>1)</sup>
031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>1)</sup>	4.58	57.95	86.06 <sup>1)</sup>	

1) 028 - 031 - 050 - 061 = 3000 PSI max. int.

2) 042 - 045 - 050 - 061 = 2200 R.P.M. max

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Triple Vane Pump HT67DCCS Series

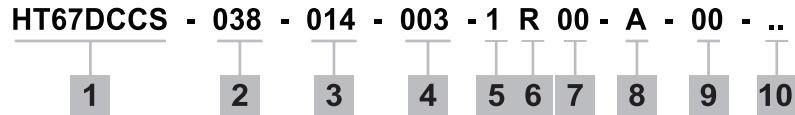
## Specification

### HT67DCCS for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	003	10.8 (0.66)	275 (4000)	240 (3500)	003	10.8 (0.66)	275 (4000)	240 (3500)	600	2500	62.0 (136.7)
017	58.2 (3.55)			005	17.2 (1.05)			005	17.2 (1.05)					
020	66.0 (4.00)			006	21.3 (1.30)			006	21.3 (1.30)					
022	70.0 (4.27)			008	26.4 (1.61)			008	26.4 (1.61)					
024	79.5 (4.80)			010	34.1 (2.08)			010	34.1 (2.08)					
028	87.7 (5.50)			012	37.1 (2.26)			012	37.1 (2.26)					
031	98.3 (6.00)			014	46.0 (2.81)			014	46.0 (2.81)					
035	111.0 (6.80)			280 (4060)	235 (3400)			017	58.3 (3.56)					
038	120.3 (7.30)	020	63.8 (3.89)			020	63.8 (3.89)							
042	136.0 (8.30)	260 (3770)	235 (3400)	022	70.3 (4.29)	206 (3000)	160 (2300)	022	70.3 (4.29)	206 (3000)	160 (2300)			
045	145.7 (8.90)	240 (3500)	206 (3000)	025	79.3 (4.84)			025	79.3 (4.84)					
050	158.0 (9.64)	206 (3000)	160 (2300)	028	88.8 (5.42)	206 (3000)	160 (2300)	028	88.8 (5.42)	206 (3000)	160 (2300)			
				031	100.0 (6.10)			031	100.0 (6.10)					

# High Pressure Triple Vane Pump HT67DCCS Series

## Ordering Code



1. Model :  
Industrial - HT67DCCS SAE C 2 bolts mounting flange J744

- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

2. Displacement P1  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
7D

- 014 - 47.6 (2.90)
- 017 - 58.2 (3.55)
- 020 - 66.0 (4.03)
- 022 - 70.0 (4.27)
- 024 - 79.5 (4.85)
- 028 - 89.7 (5.47)
- 031 - 98.3 (6.00)
- 035 - 111.0 (6.77)
- 038 - 120.3 (7.34)
- 042 - 136.0 (8.30)
- 045 - 145.7 (8.89)
- 050 - 158.0 (9.64)

5. Type of shaft

- 1 - non SAE Keyed Shaft
- 2 - SAE CC Keyed Shaft
- 3 - SAE C Splined Shaft
- 4 - SAE CC Splined Shaft

6. Direction of rotation (view on shaft end)

- R - Turn right
- L - Turn left

3. Displacement P2  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
6C

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

7. Porting combination (see page Porting Diagrams)

- 00 - standard

8. Design letter

9. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection
- M0 - Metric Port Connection

Code		4 bolt SAE flanges			
UNC	Metric	P1	P2	P3	S
00	M0	1¼"	1"	1"	4"
01	M1	1¼"	1"	3/4"	4"

4. Displacement P3  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
6C

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)

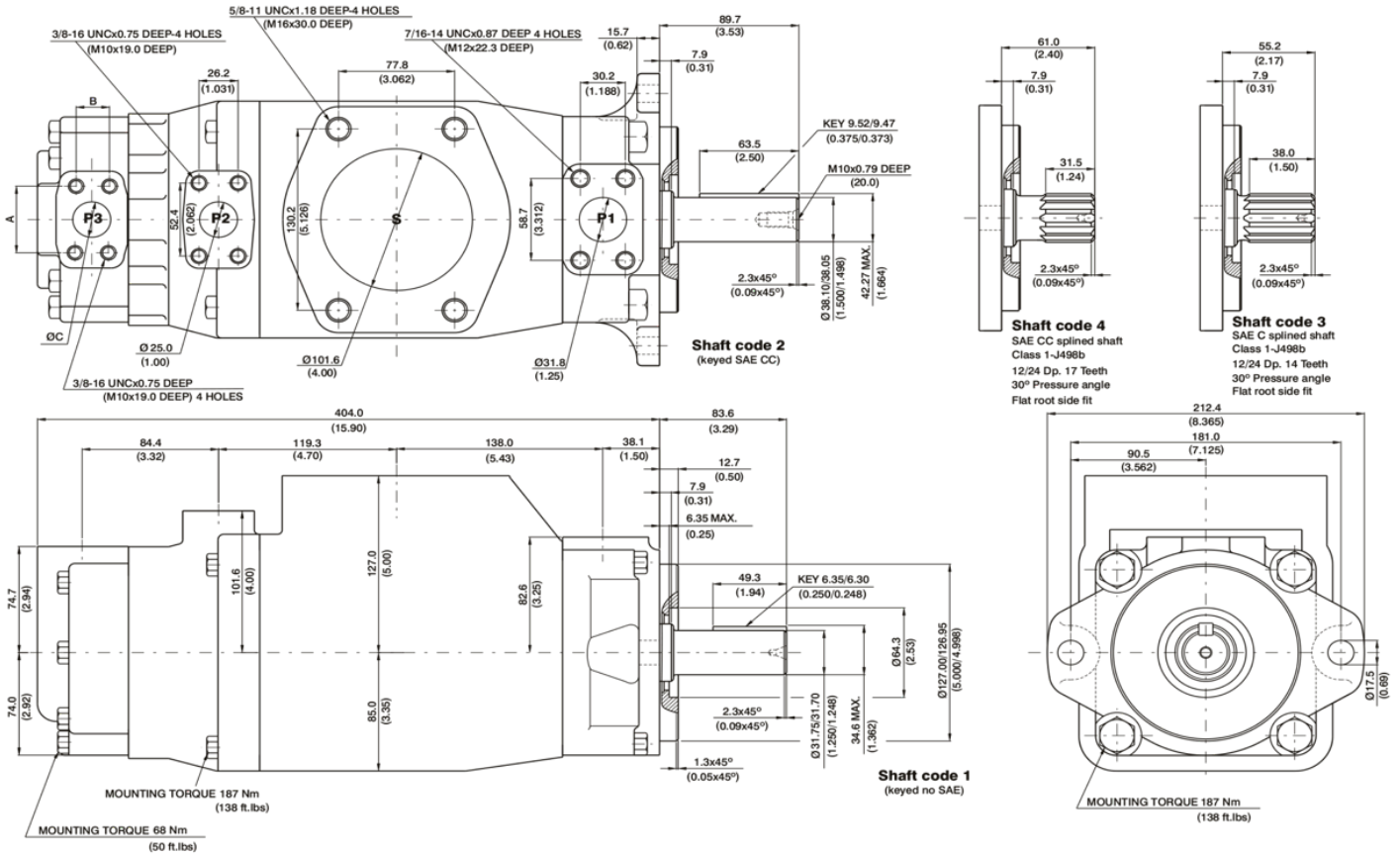
10. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Triple Vane Pump HT67DCCS Series

## Installation Dimension mm (inch)

### HT67DCCS



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	43240 (38299)
2	66500 (58902)
3	61200 (54027)
4	66500 (58902)

Alternate part				
Port	Code	A	B	C
P3	00 & M0	52.4 (2.06)	26.2 (1.03)	25.4 (1.00)
	01 & M1	47.6 (1.874)	22.2 (0.874)	19.0 (0.75)

# High Pressure Triple Vane Pump HT67DCCS Series

## Performance Characteristics

### HT67DCCS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
P2 & P3	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>1)</sup>	4.27	51.74	76.73 <sup>1)</sup>
031 <sup>using</sup>	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>1)</sup>	4.58	57.95	86.06 <sup>1)</sup>	

1) 028 - 031 - 050 = 3000 PSI max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.



# High Pressure Triple Vane Pump HT7DDB/HT7DDBS Series

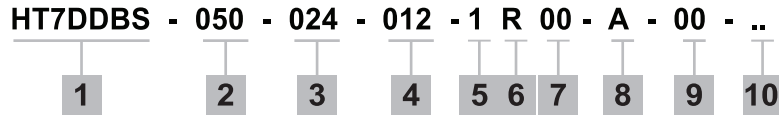
## Specification

### HT7DDB, HT7DDBS for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermit- tent Pressure bar (psi)	Max. Continu- ous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermit- tent Pressure bar (psi)	Max. Continu- ous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermit- tent Pressure bar (psi)	Max. Continu- ous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	014	47.6 (2.90)	300 (4350)	250 (3600)	002	5.8 (0.35)	300 (4350)	275 (4000)	600	2500	66.0 (145.5)
017	58.2 (3.55)			017	58.2 (3.55)			003	9.8 (0.59)					
020	66.0 (4.00)			020	66.0 (4.00)			004	12.8 (0.78)					
022	70.0 (4.27)			022	70.0 (4.27)			005	15.9 (0.97)					
024	79.5 (4.80)			024	79.5 (4.80)			006	19.8 (1.20)					
028	87.7 (5.50)			028	87.7 (5.50)			007	22.5 (1.37)					
031	98.3 (6.00)			031	98.3 (6.00)			008	24.9 (1.51)					
035	111.0 (6.80)	280 (4060)	235 (3400)	035	111.0 (6.80)	009	26.0 (1.70)							
038	120.3 (7.30)			038	120.3 (7.30)	010	31.8 (1.94)							
042	136.0 (8.30)			042	136.0 (8.30)	011	35.0 (2.13)							
045	145.7 (8.90)	240 (3500)	206 (3000)	045	145.7 (8.90)	240 (3500)	206 (3000)	012	41.0 (2.50)					
050	158.0 (9.64)	206 (3000)	160 (2300)	050	158.0 (9.64)	206 (3000)	160 (2300)	014	45.0 (2.74)					
								015	50.0 (3.05)	280 (4060)	240 (3500)			

# High Pressure Triple Vane Pump HT7DDB/HT7DDBS Series

## Ordering Code

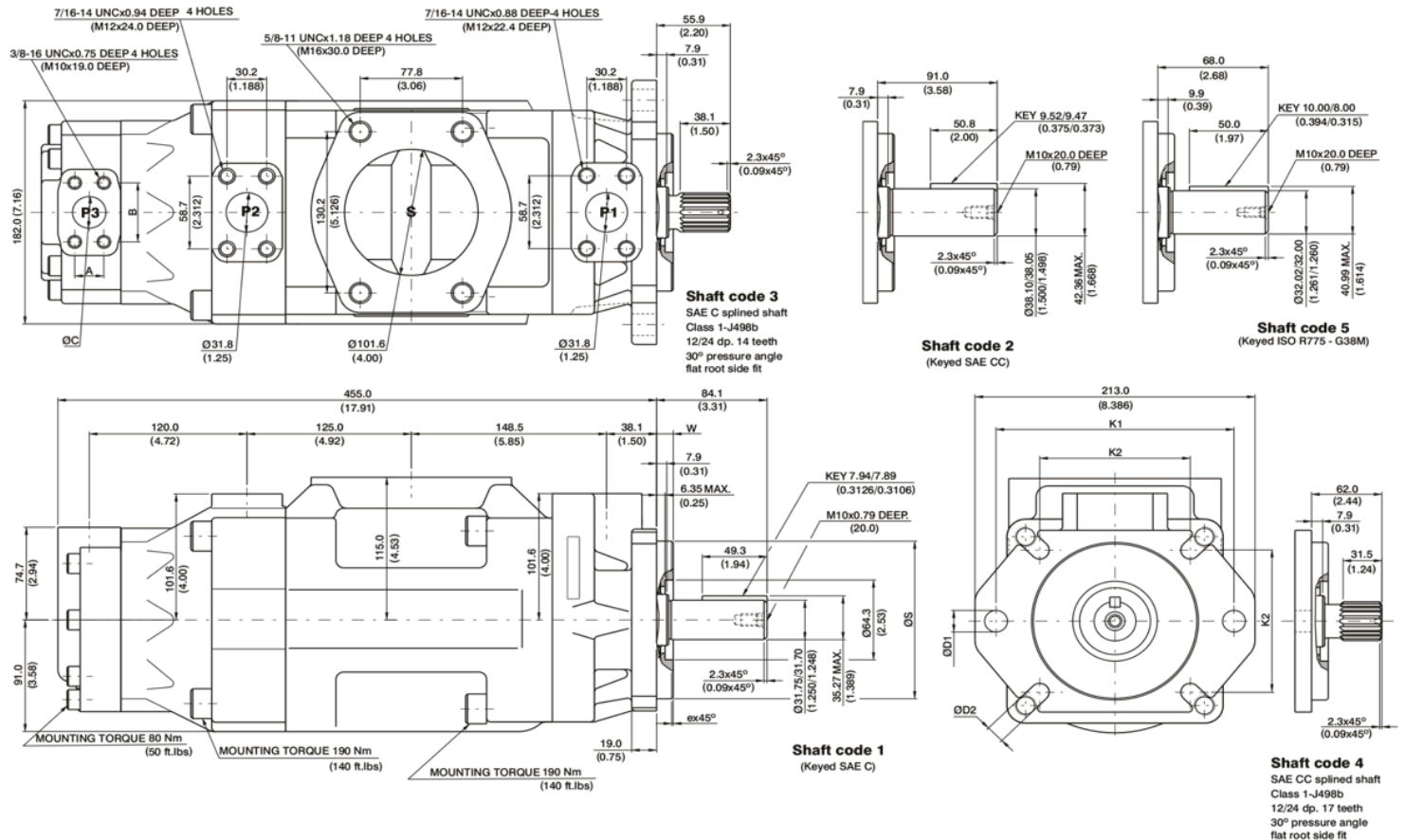


- | <p>1. Model :</p> <p>Industrial - HT7DDB<br/>ISO 6 bolts 3019-2 mounting flange<br/>125-A2-HW or 125 B4 HW</p> <p>- HT7DDBS SAE C 6 bolts mounting flange<br/>J744</p> <p>2. Displacement P1<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>014 - 47.6 (2.90)<br/>017 - 58.2 (3.55)<br/>020 - 66.0 (4.03)<br/>022 - 70.0 (4.27)<br/>024 - 79.5 (4.85)<br/>028 - 89.7 (5.47)<br/>031 - 98.3 (6.00)<br/>035 - 111.0 (6.77)<br/>038 - 120.3 (7.34)<br/>042 - 136.0 (8.30)<br/>045 - 145.7 (8.89)<br/>050 - 158.0 (9.64)</p> <p>3. Displacement P2<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>014 - 47.6 (2.90)<br/>017 - 58.2 (3.55)<br/>020 - 66.0 (4.03)<br/>022 - 70.0 (4.27)<br/>024 - 79.5 (4.85)<br/>028 - 89.7 (5.47)<br/>031 - 98.3 (6.00)<br/>035 - 111.0 (6.77)<br/>038 - 120.3 (7.34)<br/>042 - 136.0 (8.30)<br/>045 - 145.7 (8.89)<br/>050 - 158.0 (9.64)</p> <p>4. Displacement P3<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>002 - 5.8 (0.35)<br/>003 - 9.8 (0.60)<br/>004 - 12.8 (0.78)<br/>005 - 15.9 (0.97)<br/>006 - 19.8 (1.20)</p> | <p>007 - 22.5 (1.37)<br/>008 - 24.9 (1.51)<br/>009 - 28.0 (1.70)<br/>010 - 31.8 (1.92)<br/>011 - 35.0 (2.14)<br/>012 - 41.0 (2.47)<br/>014 - 45.0 (2.70)<br/>015 - 50.0 (3.01)</p> <p>5. Type of shaft<br/>HT7DDB, HT7DDBS<br/>5 - ISO 3019-2-G32M Keyed Shaft</p> <p>HT7DDBS<br/>1 - SAE C Keyed Shaft<br/>2 - SAE CC Keyed Shaft<br/>3 - SAE C Splined Shaft<br/>4 - SAE CC Splined Shaft</p> <p>6. Direction of rotation (view on shaft end)<br/>R - Turn right<br/>L - Turn left</p> <p>7. Porting combination (see page Porting Diagrams)<br/>00 - standard</p> <p>8. Design letter</p> <p>9. Port Connection (4 bolts SAE flange J518C)<br/>00 - UNC Port Connection (Except HT7DDB)<br/>M0 - Metric Port Connection</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="2">Code</th> <th colspan="4">4 bolt SAE flanges</th> </tr> <tr> <th>UNC</th> <th>Metric</th> <th>P1</th> <th>P2</th> <th>P3</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>M0</td> <td>1 ¼"</td> <td>1 ¼"</td> <td>1"</td> <td>4"</td> </tr> <tr> <td>01</td> <td>M1</td> <td>1 ¼"</td> <td>1 ¼"</td> <td>3/4"</td> <td>4"</td> </tr> </tbody> </table> <p>10. Modifications<br/>Omit - Standard<br/>718 - Surface grinding the flange face for the manifold.</p> | Code               |      | 4 bolt SAE flanges |    |  |  | UNC | Metric | P1 | P2 | P3 | S | 00 | M0 | 1 ¼" | 1 ¼" | 1" | 4" | 01 | M1 | 1 ¼" | 1 ¼" | 3/4" | 4" |
|---|--|--------------------|------|--------------------|----|--|--|-----|--------|----|----|----|---|----|----|------|------|----|----|----|----|------|------|------|----|
| Code  |  | 4 bolt SAE flanges |      |                    |    |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |      |    |
| UNC   | Metric   | P1                 | P2   | P3                 | S  |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |      |    |
| 00  | M0   | 1 ¼"               | 1 ¼" | 1"                 | 4" |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |      |    |
| 01  | M1   | 1 ¼"               | 1 ¼" | 3/4"               | 4" |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |      |    |

# High Pressure Triple Vane Pump HT7DDB/HT7DDBS Series

## Installation Dimension mm (inch)

### HT7DDB, HT7DDBS



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	43240 (38299)
2	72378 (64044)
3	61200 (54207)
4	66567 (58902)
5	53153 (47033)

Alternate connect.variables			
Code	A	B	C
00 & M0	26.2 (1.03)	52.4 (2.06)	25.4 (1.00)
01 & M1	22.2 (0.874)	47.6 (1.874)	19.5 (0.75)

Alternate mounting flange								
Model	ØS		ex 45°	W	K1	ØD1	K2	ØD2
	MAX.	MIN.						
HT7DDB	124.99 (4.921)	124.94 (4.919)	2.0 (0.079)	9.49 (0.374)	180.0 (7.087)	18.0 (0.709)	113.1 (4.454)	13.9 (0.551)
HT7DDBS	127.00 (5.00)	126.94 (4.998)	1.5 (0.059)	12.7 (0.50)	181.0 (7.126)	17.5 (0.689)	114.5 (4.508)	14.3 (0.563)

# High Pressure Triple Vane Pump

## HT7DDB/HT7DDBS Series

### Performance Characteristics

#### HT7DDB, HT7DDBS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>	
P3	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>2)</sup>	1.34	17.15	36.19 <sup>2)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>2)</sup>	1.47	19.97	42.22 <sup>2)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>2)</sup>	1.60	21.84	46.24 <sup>2)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>3)</sup>	1.74	24.26	47.85 <sup>3)</sup>

1) 050 = 3000 PSI max. int. 2) 011 - 012 - 014 = 4350 PSI max. int. 3) 015 = 4000 PSI max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Triple Vane Pump HT67DDCS Series

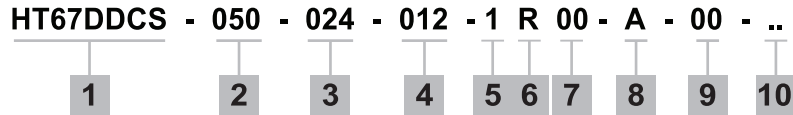
## Specification

### HT67DDCS for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
014	47.6 (2.90)	300 (4350)	250 (3600)	014	47.6 (2.90)	300 (4350)	250 (3600)	003	10.8 (0.66)	275 (4000)	240 (3500)	600	2500	66.0 (145.5)
017	58.2 (3.55)			017	58.2 (3.55)			005	17.2 (1.05)					
020	66.0 (4.00)			020	66.0 (4.00)			006	21.3 (1.30)					
022	70.0 (4.27)			022	70.0 (4.27)			008	26.4 (1.61)					
024	79.5 (4.80)			024	79.5 (4.80)			010	34.1 (2.08)					
028	87.7 (5.50)			028	87.7 (5.50)			012	37.1 (2.26)					
031	98.3 (6.00)			031	98.3 (6.00)			014	46.0 (2.81)					
035	111.0 (6.80)	280 (4060)		035	111.0 (6.80)	280 (4060)		017	58.3 (3.56)					
038	120.3 (7.30)			038	120.3 (7.30)			020	63.8 (3.89)					
042	136.0 (8.30)			260 (3770)	235 (3400)			042	136.0 (8.30)					
045	145.7 (8.90)	240 (3500)	206 (3000)	045	145.7 (8.90)	240 (3500)	206 (3000)	025	79.3 (4.84)					
050	158.0 (9.64)	206 (3000)	160 (2300)	050	158.0 (9.64)	206 (3000)	160 (2300)	028	88.8 (5.42)					
								031	100.0 (6.10)	206 (3000)	160 (3200)			

# High Pressure Triple Vane Pump HT67DDCS Series

## Ordering Code



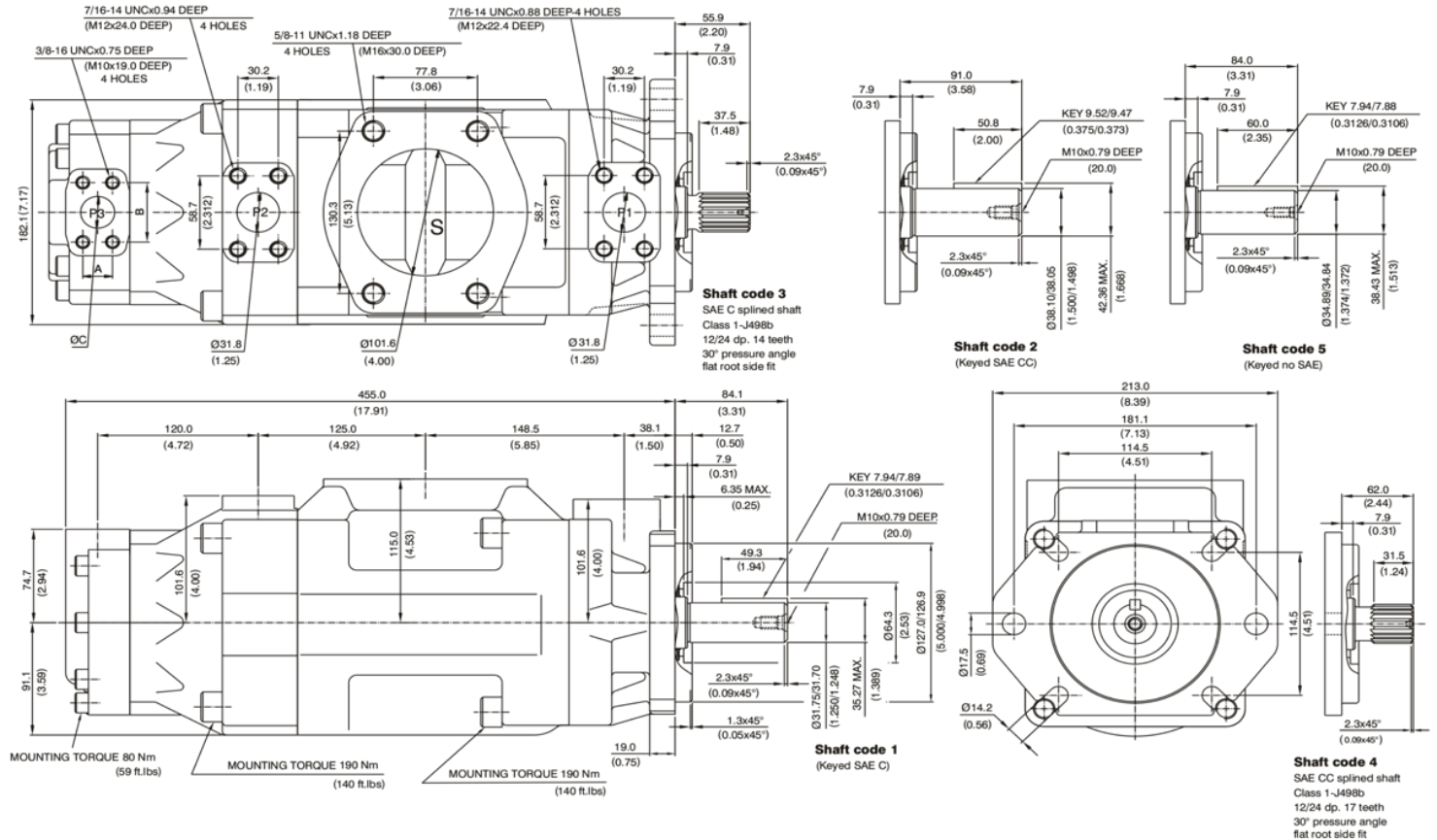
1. Model :
  - Industrial - HT67DDCS SAE C 6 bolts mounting flange J744
  - 022 - 70.3 (4.29)
  - 025 - 79.3 (4.84)
  - 028 - 88.8 (5.42)
  - 031 - 100.0 (6.10)
  
2. Displacement P1
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
  - 014 - 47.6 (2.90)
  - 017 - 58.2 (3.55)
  - 020 - 66.0 (4.03)
  - 022 - 70.0 (4.27)
  - 024 - 79.5 (4.85)
  - 028 - 89.7 (5.47)
  - 031 - 98.3 (6.00)
  - 035 - 111.0 (6.77)
  - 038 - 120.3 (7.34)
  - 042 - 136.0 (8.30)
  - 045 - 145.7 (8.89)
  - 050 - 158.0 (9.64)
  
3. Displacement P2
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
  - 014 - 47.6 (2.90)
  - 017 - 58.2 (3.55)
  - 020 - 66.0 (4.03)
  - 022 - 70.0 (4.27)
  - 024 - 79.5 (4.85)
  - 028 - 89.7 (5.47)
  - 031 - 98.3 (6.00)
  - 035 - 111.0 (6.77)
  - 038 - 120.3 (7.34)
  - 042 - 136.0 (8.30)
  - 045 - 145.7 (8.89)
  - 050 - 158.0 (9.64)
  
4. Displacement P3
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
  - 003 - 10.8 (0.66)
  - 005 - 17.2 (1.05)
  - 006 - 21.3 (1.30)
  - 008 - 26.4 (1.61)
  - 010 - 34.1 (2.08)
  - 012 - 37.1 (2.26)
  - 014 - 46.0 (2.81)
  - 017 - 58.3 (3.56)
  - 020 - 63.8 (3.89)
  
5. Type of shaft
  - 1 - SAE C Keyed Shaft
  - 2 - SAE CC Keyed Shaft
  - 3 - SAE C Splined Shaft
  - 4 - SAE CC Splined Shaft
  - 5 - non SAE Keyed Shaft
  
6. Direction of rotation (view on shaft end)
  - R - Turn right
  - L - Turn left
  
7. Porting combination (see page Porting Diagrams)
  - 00 - standard
  
8. Design letter
  
9. Port Connection (4 bolts SAE flange J518C)
  - 00 - UNC Port Connection
  - M0 - Metric Port Connection

Code		4 bolt SAE flanges			
UNC	Metric	P1	P2	P3	S
00	M0	1 ¼"	1 ¼"	1"	4"
01	M1	1 ¼"	1 ¼"	3/4"	4"
  
10. Modifications
  - Omit - Standard
  - 718 - Surface grinding the flange face for the manifold.

# High Pressure Triple Vane Pump HT67DDCS Series

## Installation Dimension mm (inch)

### HT67DDCS



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	43240 (38299)
2	72378 (64044)
3	61200 (54207)
4	66567 (58902)
5	55649 (49247)

Alternate connect.variables			
Code	A	B	C
00 & M0	26.2 (1.03)	52.4 (2.06)	25.4 (1.00)
01 & M1	22.2 (0.874)	47.6 (1.874)	19.5 (0.75)

# High Pressure Triple Vane Pump HT67DDCS Series

## Performance Characteristics

### HT67DDCS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	022	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>	
P3	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>1)</sup>	4.27	51.74	76.73 <sup>1)</sup>
	031 <sup>using</sup>	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>1)</sup>	4.58	57.95	86.06 <sup>1)</sup>

1) 028 - 031 - 050 = 3000 PSI max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.



# High Pressure Triple Vane Pump

## HT7EDB/ HT7EDBS Series

### Specification

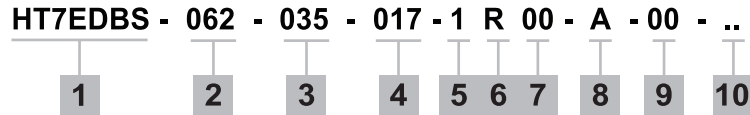
#### HT7EDB, HT7EDBS for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	014	47.6 (2.90)	300 (4350)	250 (3600)	002	5.8 (0.35)	300 (4350)	275 (4000)	600	2200	102.0 (224.9)
045	142.4 (8.70)			017	58.2 (3.55)			003	9.8 (0.59)					
050	158.5 (9.67)			020	66.0 (4.00)			004	12.8 (0.78)					
052	164.8 (10.00)			022	70.0 (4.27)			005	15.9 (0.97)					
054	173.8 (10.60)			024	79.5 (4.80)			006	19.8 (1.20)					
057	180.7 (11.02)			028	87.7 (5.50)			007	22.5 (1.37)					
062	196.7 (12.00)			031	98.3 (6.00)			008	24.9 (1.51)					
066	213.3 (13.00)			035	111.0 (6.80)			009	26.0 (1.70)					
072	227.1 (13.86)			038	120.3 (7.30)			010	31.8 (1.94)					
085	269.8 (16.40)			90 (1300)	75 (1100)			042	136.0 (8.30)					
				045	145.7 (8.90)	240 (3500)	206 (3000)	012	41.0 (2.50)					
				050	158.0 (9.64)	206 (3000)	160 (2300)	014	45.0 (2.74)					
								015	50.0 (3.05)					

# High Pressure Triple Vane Pump

## HT7EDB/ HT7EDBS Series

### Ordering Code

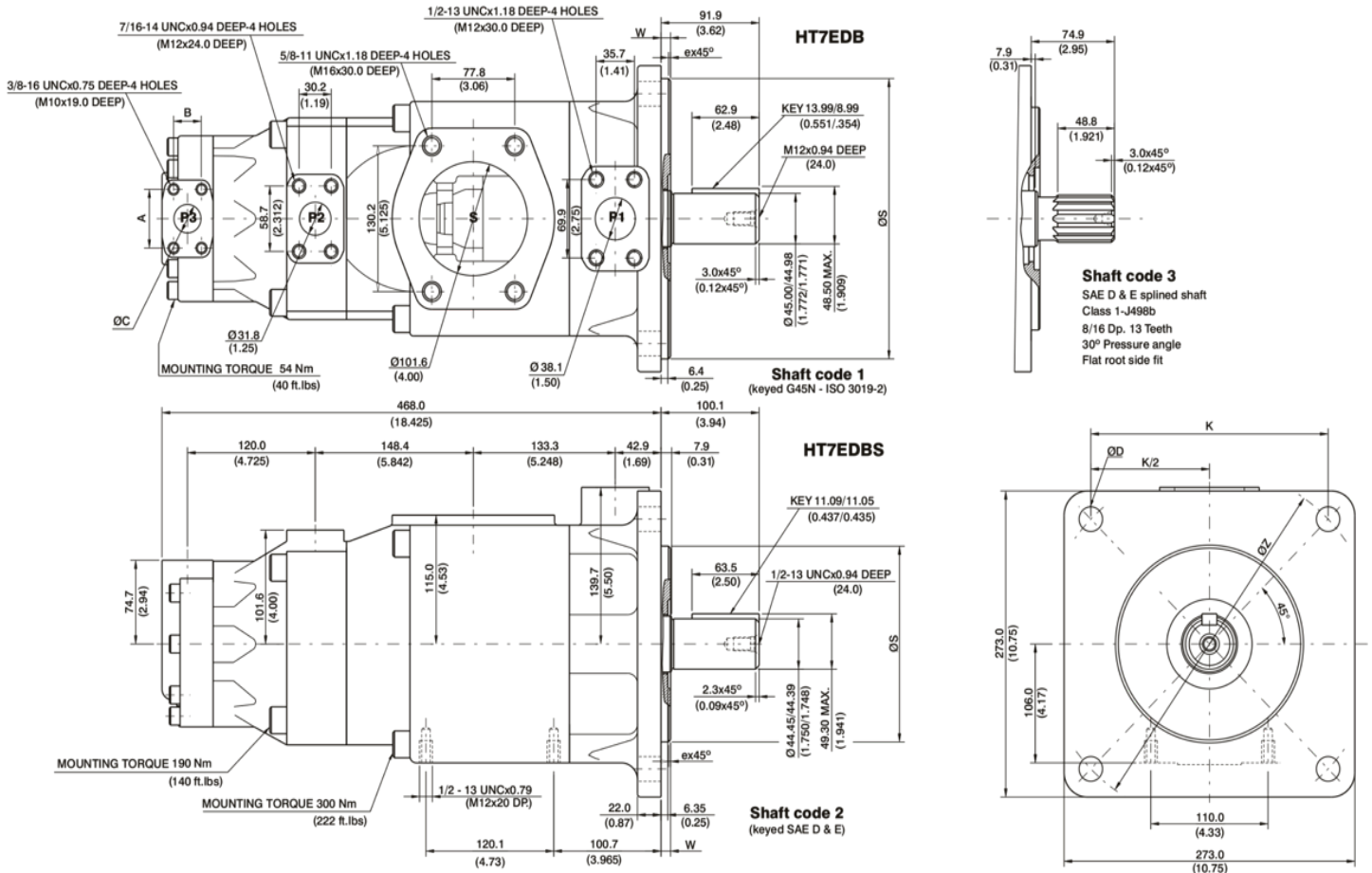


- | <p>1. Model :</p> <p>Industrial - HT7EDB<br/>                 ISO 4 bolts 3019-2 mounting flange<br/>                 250 B4 HW</p> <p>- HT7EDBS<br/>                 SAE E 4 bolts mounting flange J744</p> <p>2. Displacement P1<br/>                 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>042 - 132.3 (8.07)<br/>                 045 - 142.4 (8.70)<br/>                 050 - 158.5 (9.67)<br/>                 052 - 164.8 (10.00)<br/>                 054 - 173.8 (10.60)<br/>                 057 - 180.7 (11.02)<br/>                 062 - 196.7 (12.00)<br/>                 066 - 213.3 (13.00)<br/>                 072 - 227.1 (13.86)<br/>                 085 - 269.8 (16.40)</p> <p>3. Displacement P2<br/>                 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>014 - 47.6 (2.90)<br/>                 017 - 58.2 (3.55)<br/>                 020 - 66.0 (4.03)<br/>                 024 - 79.5 (4.85)<br/>                 028 - 89.7 (5.47)<br/>                 031 - 98.3 (6.00)<br/>                 035 - 111.0 (6.77)<br/>                 038 - 120.3 (7.34)<br/>                 042 - 136.0 (8.30)<br/>                 045 - 145.7 (8.89)<br/>                 050 - 158.0 (9.64)</p> <p>4. Displacement P3<br/>                 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>002 - 5.8 (0.35)<br/>                 003 - 9.8 (0.60)<br/>                 004 - 12.8 (0.78)<br/>                 005 - 15.9 (0.97)<br/>                 006 - 19.8 (1.20)<br/>                 007 - 22.5 (1.37)<br/>                 008 - 24.9 (1.51)<br/>                 009 - 28.0 (1.70)</p> | <p>010 - 31.8 (1.92)<br/>                 011 - 35.0 (2.14)<br/>                 012 - 41.0 (2.47)<br/>                 014 - 45.0 (2.70)<br/>                 015 - 50.0 (3.01)</p> <p>5. Type of Shaft<br/>                 HT7EDB<br/>                 1 - ISO 3019-2-G45N Keyed Shaft</p> <p>HT7EDBS<br/>                 2 - SAE D&amp;E Keyed Shaft<br/>                 3 - SAE D&amp;E Splined Shaft</p> <p>6. Direction of rotation (view on shaft end)<br/>                 R - Turn right<br/>                 L - Turn left</p> <p>7. Porting combination (see page Porting Diagrams)<br/>                 00 - standard</p> <p>8. Design letter</p> <p>9. Port Connection (4 bolts SAE flange J518C)<br/>                 00 - UNC Port Connection (Except HT7EDB)<br/>                 M0 - Metric Port Connection</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Code</th> <th colspan="4">4 bolt SAE flanges</th> </tr> <tr> <th>UNC</th> <th>Metric</th> <th>P1</th> <th>P2</th> <th>P3</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>M0</td> <td>1 ½"</td> <td>1 ¼"</td> <td>1"</td> <td>4"</td> </tr> <tr> <td>01</td> <td>M1</td> <td>1 ½"</td> <td>1 ¼"</td> <td>¾"</td> <td>4"</td> </tr> </tbody> </table> <p>10. Modifications<br/>                 Omit - Standard<br/>                 718 - Surface grinding the flange face for the manifold.</p> | Code               |      | 4 bolt SAE flanges |    |  |  | UNC | Metric | P1 | P2 | P3 | S | 00 | M0 | 1 ½" | 1 ¼" | 1" | 4" | 01 | M1 | 1 ½" | 1 ¼" | ¾" | 4" |
|--|--|--------------------|------|--------------------|----|--|--|-----|--------|----|----|----|---|----|----|------|------|----|----|----|----|------|------|----|----|
| Code   |  | 4 bolt SAE flanges |      |                    |    |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |    |    |
| UNC  | Metric   | P1                 | P2   | P3                 | S  |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |    |    |
| 00   | M0   | 1 ½"               | 1 ¼" | 1"                 | 4" |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |    |    |
| 01   | M1   | 1 ½"               | 1 ¼" | ¾"                 | 4" |  |  |     |        |    |    |    |   |    |    |      |      |    |    |    |    |      |      |    |    |

# High Pressure Triple Vane Pump HT7EDB/ HT7EDBS Series

## Installation Dimension mm (inch)

### HT7EDB, HT7EDBS



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	114715 (101506)
2	118458 (104818)
3	126928 (112312)

Alternate connect. variables			
Code	A	B	C
00 & M0	52.4 (2.06)	26.2 (1.03)	25.4 (1.00)
01 & M1	47.6 (1.874)	22.2 (0.874)	19.0 (0.75)

Alternate mounting flange							
Model	ØS		ex 45°	W	K1	ØZ	ØD
	MAX.	MIN.					
HT7EDB	250.0 (9.842)	249.94 (9.840)	2.0 (0.079)	8.99 (0.354)	-	315.0 (12.401)	21.99 (0.866)
HT7EDBS	165.10 (6.50)	165.05 (6.498)	2.0 (0.079)	8.99 (0.354)	224.5 (8.838)	-	20.59 (0.811)

# High Pressure Triple Vane Pump

## HT7EDB/ HT7EDBS Series

### Performance Characteristics

#### HT7EDB, HT7EDBS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	054	10.43 in <sup>3</sup> /rev	81.27	78.72	76.87	9.17	99.75	177.46
	057	11.18 in <sup>3</sup> /rev	87.12	84.57	82.72	9.51	106.57	189.84
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
	085	16.40 in <sup>3</sup> /rev	127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-
P2	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>2)</sup>	
P3	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>3)</sup>	1.34	17.15	36.19 <sup>3)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>3)</sup>	1.47	19.97	42.22 <sup>3)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>3)</sup>	1.60	21.84	46.24 <sup>3)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>4)</sup>	1.74	24.26	47.85 <sup>4)</sup>

1) 085 = 1300 PSI max. int. 2) 050 = 3000 PSI max. int 3) 011 - 012 - 014 = 4350 PSI max. int 4) 015 = 4000 PSI max. int  
 - Not to use because internal leakage greater than 50% theoretical flow. - Port connection can be furnished with metric threads.

# High Pressure Triple Vane Pump HT6EDCM Series

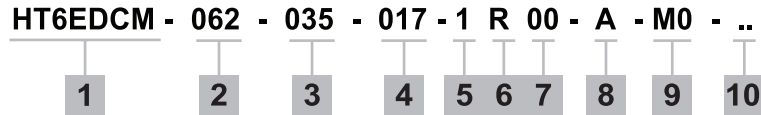
## Specification

### HT6EDCM for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	014	47.6 (2.90)	240 (3500)	206 (3000)	003	10.8 (0.66)	275 (4000)	240 (3500)	400	2200	102.0 (224.9)
045	142.4 (8.70)			017	58.2 (3.55)			005	17.2 (1.05)					
050	158.5 (9.67)			020	66.0 (4.00)			006	21.3 (1.30)					
052	164.8 (10.00)			024	79.5 (4.80)			008	26.4 (1.61)					
057	180.7 (11.02)			028	87.7 (5.50)			010	34.1 (2.08)					
062	196.7 (12.00)			031	98.3 (6.00)			012	37.1 (2.26)					
066	213.3 (13.00)			035	111.0 (6.80)			014	46.0 (2.81)					
072	227.1 (13.86)			038	120.3 (7.30)			017	58.3 (3.56)					
				042	136.0 (8.30)			020	63.8 (3.89)					
		045	145.7 (8.90)	022	70.3 (4.29)									
		050	158.0 (9.64)	025	79.3 (4.84)									
		061	193.3 (11.8)	028	88.8 (5.42)									
				031	100.0 (6.10)	206 (3000)	160 (3200)							

# High Pressure Triple Vane Pump HT6EDCM Series

## Ordering Code



**1. Model :**

Mobile 1 Shaft seals (M) - HT6EDCM  
 ISO 4 bolts 3019-2  
 mounting flange  
 250 B4 HW

**2. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 042 - 132.3 (8.07)  
 045 - 142.4 (8.70)  
 050 - 158.5 (9.67)  
 052 - 164.8 (10.00)  
 062 - 196.7 (12.00)  
 066 - 213.3 (13.00)  
 072 - 227.1 (13.86)

**3. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 014 - 47.6 (2.90)  
 017 - 58.2 (3.55)  
 020 - 66.0 (4.03)  
 024 - 79.5 (4.85)  
 028 - 89.7 (5.47)  
 031 - 98.3 (6.00)  
 035 - 111.0 (6.77)  
 038 - 120.3 (7.34)  
 042 - 136.0 (8.30)  
 045 - 145.7 (8.89)  
 050 - 158.0 (9.64)  
 061 - 193.3 (11.80)

**4. Displacement P3**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)  
 003 - 10.8 (0.66)  
 005 - 17.2 (1.05)  
 006 - 21.3 (1.30)  
 008 - 26.4 (1.61)  
 010 - 34.1 (2.08)  
 012 - 37.1 (2.26)  
 014 - 46.0 (2.81)  
 017 - 58.3 (3.56)  
 020 - 63.8 (3.89)  
 022 - 70.3 (4.29)  
 025 - 79.3 (4.84)  
 028 - 88.8 (5.42)  
 031 - 100.0 (6.10)

**5. Type of Shaft**

1 - ISO 3019-2-G45N Keyed Shaft  
 3 - SAE D&E Splined Shaft

**6. Direction of rotation (view on shaft end)**

R - Turn right  
 L - Turn left

**7. Porting combination (see page Porting Diagrams)**

00 - standard

**8. Design letter**

**9. Port Connection (4 bolts SAE flange J518C)**

00 - UNC Port Connection  
 M0 - Metric Port Connection  
 (HT6EDCM for port connection M0, M1 only)

Code		4 bolt SAE flanges			
UNC	Metric	P1	P2	P3	S
00	M0	1½"	1¼"	1"	4"
01	M1	1½"	1¼"	3/4"	4"

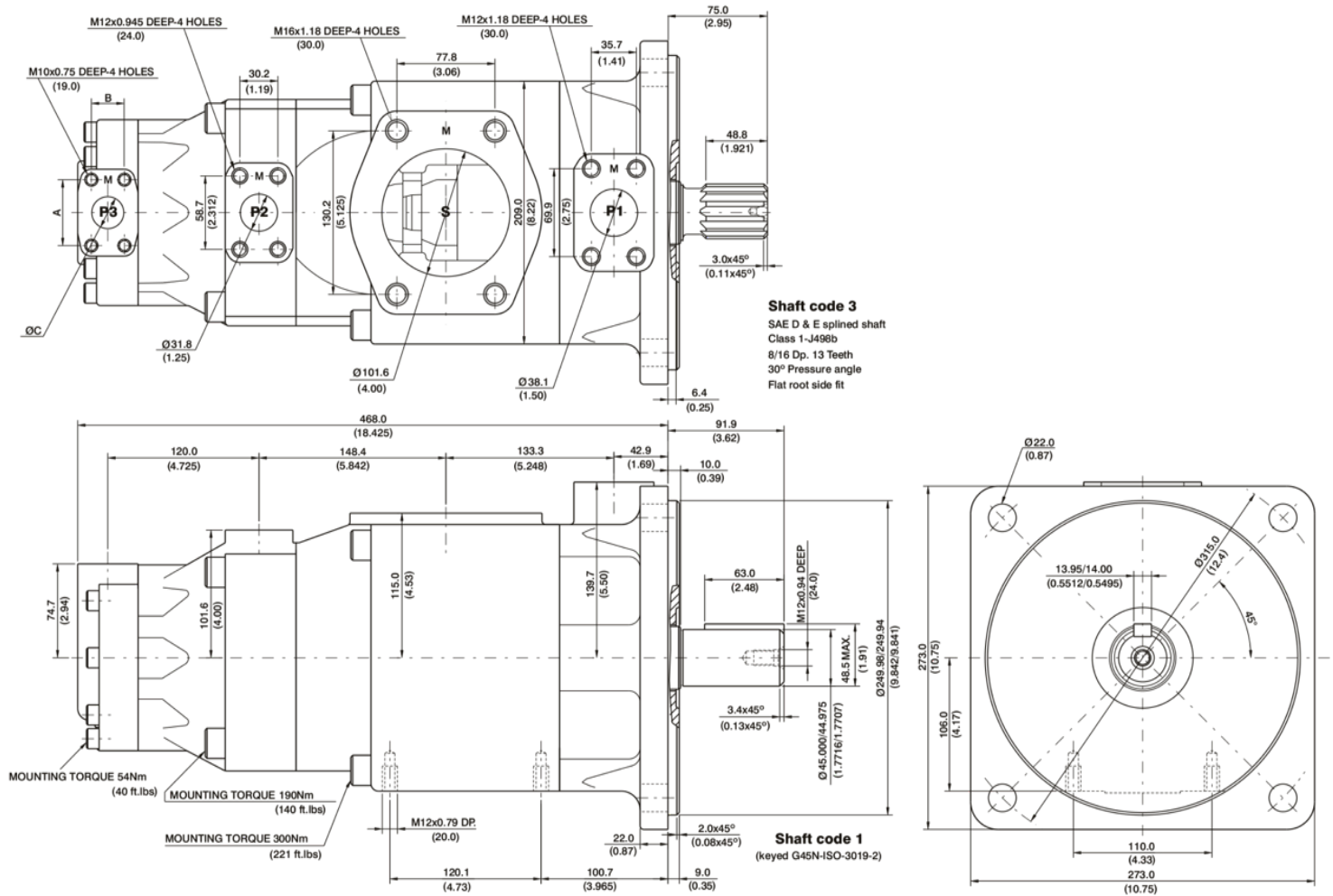
**10. Modifications**

Omit - Standard  
 718 - Surface grinding the flange face for the manifold.

# High Pressure Triple Vane Pump HT6EDCM Series

## Installation Dimension mm (inch)

### HT6EDCM



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	114715 (101506)
3	126928 (112312)

Alternate connect. variables			
Code	A	B	C
00 & M0	52.4 (2.063)	26.1 (1.031)	25.4 (1.00)
01 & M1	47.5 (1.874)	22.1 (0.874)	18.9 (0.748)

# High Pressure Triple Vane Pump HT6EDCM Series

## Performance Characteristics

### HT6EDCM

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
P2	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
	050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>1)</sup>	7.08	90.58	134.54 <sup>1)</sup>
	061	11.8 in <sup>3</sup> /rev	90.98	84.55	80.87 <sup>1)</sup>	8.30	109.61	183.48 <sup>1)</sup>
P3	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 050 - 061 = 3000 PSI max. int

2) 028 - 031 = 3000 PSI max. int

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.



# High Pressure Triple Vane Pump

## HT67EDC/ HT67EDCS Series

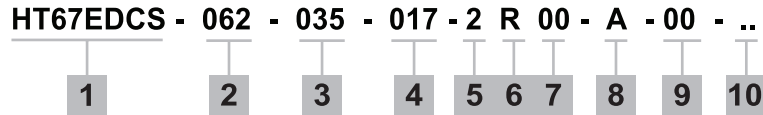
### Specification

#### HT67EDC, HT67EDCS for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	014	47.6 (2.90)	300 (4350)	250 (3600)	003	10.8 (0.66)	275 (4000)	240 (3500)	600	2200	102.0 (224.9)
045	142.4 (8.70)			017	58.2 (3.55)			005	17.2 (1.05)					
050	158.5 (9.67)			020	66.0 (4.00)			006	21.3 (1.30)					
052	164.8 (10.00)			022	70.0 (4.27)			008	26.4 (1.61)					
054	173.8 (10.60)			024	79.5 (4.80)			010	34.1 (2.08)					
057	180.7 (11.02)			028	87.7 (5.50)			012	37.1 (2.26)					
062	196.7 (12.00)			031	98.3 (6.00)			014	46.0 (2.81)					
066	213.3 (13.00)			035	111.0 (6.80)			017	58.3 (3.56)					
072	227.1 (13.86)			038	120.3 (7.30)			020	63.8 (3.89)					
085	269.8 (16.40)			90 (1300)	75 (1100)			042	136.0 (8.30)					
				045	145.7 (8.90)	240 (3500)	206 (3000)	025	79.3 (4.84)					
				050	158.0 (9.64)	206 (3000)	160 (2300)	028	88.8 (5.42)					
								031	100.0 (6.10)	206 (3000)	160 (3200)			

# High Pressure Triple Vane Pump HT67EDC/ HT67EDCS Series

## Ordering Code



1. Model :
  - Industrial - HT67EDC
    - ISO 4 bolts 3019-2 mounting flange 250 B4 HW
      - 014 - 46.0 (2.81)
      - 017 - 58.3 (3.56)
      - 020 - 63.8 (3.89)
      - 022 - 70.3 (4.29)
      - 025 - 79.3 (4.84)
    - HT67EDCS
      - SAE E 4 bolts mounting flange J744
        - 028 - 88.8 (5.42)
        - 031 - 100.0 (6.10)
  
2. Displacement P1
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
    - 042 - 132.3 (8.07)
    - 045 - 142.4 (8.70)
    - 050 - 158.5 (9.67)
    - 052 - 164.8 (10.00)
    - 054 - 173.8 (10.60)
    - 057 - 180.7 (11.02)
    - 062 - 196.7 (12.00)
    - 066 - 213.3 (13.00)
    - 072 - 227.1 (13.86)
    - 085 - 269.8 (16.40)
  
3. Displacement P2
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
    - 014 - 47.6 (2.90)
    - 017 - 58.2 (3.55)
    - 020 - 66.0 (4.03)
    - 022 - 70.0 (4.27)
    - 024 - 79.5 (4.85)
    - 028 - 89.7 (5.47)
    - 031 - 98.3 (6.00)
    - 035 - 111.0 (6.77)
    - 038 - 120.3 (7.34)
    - 042 - 136.0 (8.30)
    - 045 - 145.7 (8.89)
    - 050 - 158.0 (9.64)
  
4. Displacement P3
  - Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)
    - 003 - 10.8 (0.66)
    - 005 - 17.2 (1.05)
    - 006 - 21.3 (1.30)
    - 008 - 26.4 (1.61)
    - 010 - 34.1 (2.08)
    - 012 - 37.1 (2.26)
  
5. Type of Shaft
  - HT67EDC
    - 1 - ISO 3019-2-G45N Keyed Shaft
  - HT67EDCS
    - 2 - SAE D&E Keyed Shaft
    - 3 - SAE D&E Splined Shaft
  
6. Direction of rotation (view on shaft end)
  - R - Turn right
  - L - Turn left
  
7. Porting combination (see page Porting Diagrams)
  - 00 - standard
  
8. Design letter
  
9. Port Connection (4 bolts SAE flange J518C)
  - 00 - UNC Port Connection (Except HT67EDC)
  - M0 - Metric Port Connection

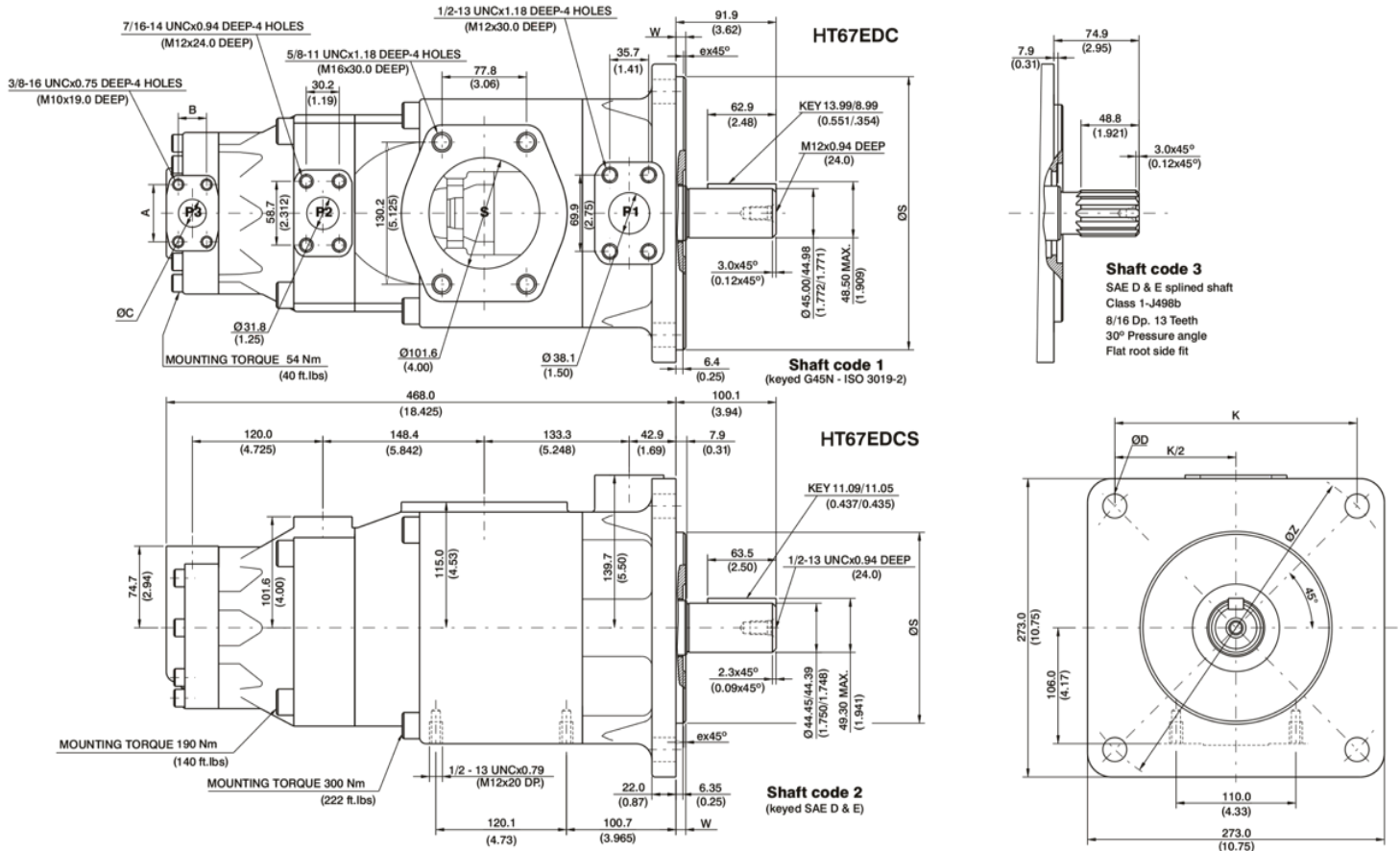
Code		4 bolt SAE flanges			
UNC	Metric	P1	P2	P3	S
00	M0	1½"	1¼"	1"	4"
01	M1	1½"	1¼"	3/4"	4"

10. Modifications
  - Omit - Standard
  - 718 - Surface grinding the flange face for the manifold.

# High Pressure Triple Vane Pump HT67EDC/ HT67EDCS Series

## Installation Dimension mm (inch)

### HT67EDC, HT67EDCS



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
1	114715 (101506)
2	118458 (104818)
3	126928 (112312)

Alternate connect. variables			
Code	A	B	C
00 & M0	52.4 (2.063)	26.1 (1.031)	25.4 (1.00)
01 & M1	47.5 (1.874)	22.1 (0.874)	18.9 (0.748)

Alternate mounting flange							
Model	ØS		ex 45°	W	K1	ØZ	ØD
	MAX.	MIN.					
HT67EDC	250.0 (9.842)	249.94 (9.840)	2.0 (0.079)	8.99 (0.354)	-	315.0 (12.401)	21.99 (0.866)
HT67EDCS	165.10 (6.50)	165.05 (6.498)	2.0 (0.079)	8.99 (0.354)	224.5 (8.838)	-	20.59 (0.811)

# High Pressure Triple Vane Pump HT67EDC/ HT67EDCS Series

## Performance Characteristics

### HT67EDC, HT67EDCS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	054	10.43 in <sup>3</sup> /rev	81.27	78.72	76.87	9.17	99.75	177.46
	057	11.18 in <sup>3</sup> /rev	87.12	84.57	82.72	9.51	106.57	189.84
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
	085	16.40 in <sup>3</sup> /rev	127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-
P2	014	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	017	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	020	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	024	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	028	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	031	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	035	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	038	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	042	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
	045	8.90 in <sup>3</sup> /rev	69.29	67.11	65.47	6.74	83.74	144.61
050	9.64 in <sup>3</sup> /rev	75.14	72.96	71.78 <sup>2)</sup>	7.08	90.58	134.54 <sup>2)</sup>	
P3	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>3)</sup>	4.27	51.74	76.73 <sup>3)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>3)</sup>	4.58	57.95	86.06 <sup>3)</sup>

1) 085 = 1300 PSI max. int. 2) 050 = 3000 PSI max. int. 3) 028 - 031 = 3000 PSI max. int.

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

# High Pressure Triple Vane Pump HT7EEC/ HT7EECS Series

## Specification

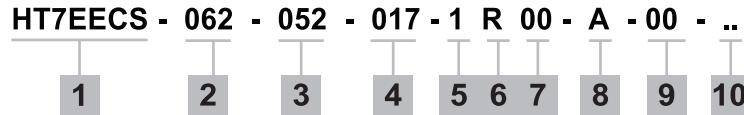
### HT7EEC, HT7EECS for Triple pump

Shaft End Pump				Middle Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
042	132.3 (8.07)	240 (3500)	206 (3000)	042	132.3 (8.07)	240 (3500)	206 (3000)	003	10.8 (0.66)	275 (4000)	240 (3500)	600	2200	114.8 (253.1)
045	142.4 (8.70)			045	142.4 (8.70)			005	17.2 (1.05)					
050	158.5 (9.67)			050	158.5 (9.67)			006	21.3 (1.30)					
052	164.8 (10.00)			052	164.8 (10.00)			008	26.4 (1.61)					
054	173.8 (10.60)			054	173.8 (10.60)			010	34.1 (2.08)					
057	180.7 (11.02)			057	180.7 (11.02)			012	37.1 (2.26)					
062	196.7 (12.00)			062	196.7 (12.00)			014	46.0 (2.81)					
066	213.3 (13.00)			066	213.3 (13.00)			017	58.3 (3.56)					
072	227.1 (13.86)			072	227.1 (13.86)			020	63.8 (3.89)					
085	269.8 (16.40)			90 (1300)	75 (1100)			085	269.8 (16.40)					
								025	79.3 (4.84)					
								028	88.8 (5.42)					
								031	100.0 (6.10)					

# High Pressure Triple Vane Pump

## HT7EEC/ HT7EECS Series

### Ordering Code

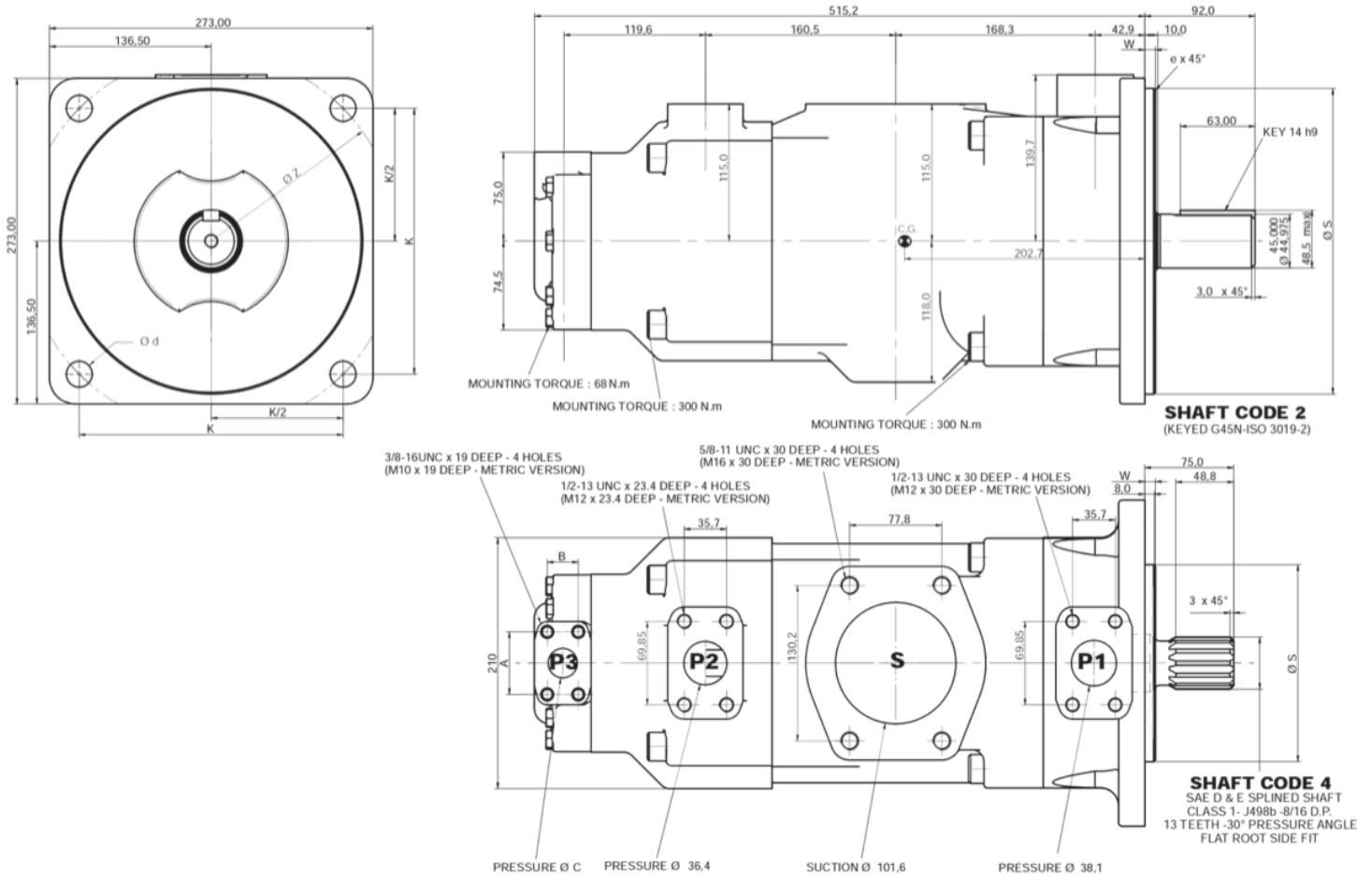


- | <p>1. Model :</p> <p>Industrial - HT7EEC<br/>ISO 4 bolts 3019-2 mounting flange<br/>250 B4 HW</p> <p>- HT7EECS<br/>SAE E 4 bolts mounting flange J744</p> <p>2. Displacement P1<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>042 - 132.3 (8.07)<br/>045 - 142.4 (8.70)<br/>050 - 158.5 (9.67)<br/>052 - 164.8 (10.00)<br/>054 - 173.8 (10.60)<br/>057 - 180.7 (11.02)<br/>062 - 196.7 (12.00)<br/>066 - 213.3 (13.00)<br/>072 - 227.1 (13.86)<br/>085 - 269.8 (16.40)</p> <p>3. Displacement P2<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>042 - 132.3 (8.07)<br/>045 - 142.4 (8.70)<br/>050 - 158.5 (9.67)<br/>052 - 164.8 (10.00)<br/>054 - 173.8 (10.60)<br/>057 - 180.7 (11.02)<br/>062 - 196.7 (12.00)<br/>066 - 213.3 (13.00)<br/>072 - 227.1 (13.86)<br/>085 - 269.8 (16.40)</p> <p>4. Displacement P3<br/>Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)</p> <p>003 - 10.8 (0.66)<br/>005 - 17.2 (1.05)<br/>006 - 21.3 (1.30)<br/>008 - 26.4 (1.61)<br/>010 - 34.1 (2.08)<br/>012 - 37.1 (2.26)<br/>014 - 46.0 (2.81)<br/>017 - 58.3 (3.56)</p> | <p>020 - 63.8 (3.89)<br/>022 - 70.3 (4.29)<br/>025 - 79.3 (4.84)<br/>028 - 88.8 (5.42)<br/>031 - 100.0 (6.10)</p> <p>5. Type of Shaft<br/>HT7EEC, HT7EECS<br/>2 - ISO 3019-2-G45N Keyed Shaft</p> <p>HT7EECS<br/>4 - SAE D&amp;E Splined Shaft</p> <p>6. Direction of rotation (view on shaft end)<br/>R - Turn right<br/>L - Turn left</p> <p>7. Porting combination (see page Porting Diagrams)<br/>00 - standard</p> <p>8. Design letter</p> <p>9. Port Connection (4 bolts SAE flange J518C)<br/>00 - UNC Port Connection (Except HT7EEC)<br/>M0 - Metric Port Connection</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Code</th> <th colspan="4">4 bolt SAE flanges</th> </tr> <tr> <th>UNC</th> <th>Metric</th> <th>P1</th> <th>P2</th> <th>P3</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>M0</td> <td>1½"</td> <td>1½"</td> <td>1"</td> <td>4"</td> </tr> <tr> <td>01</td> <td>M1</td> <td>1½"</td> <td>1½"</td> <td>3/4"</td> <td>4"</td> </tr> </tbody> </table> <p>10. Modifications<br/>Omit - Standard<br/>718 - Surface grinding the flange face for the manifold.</p> | Code               |     | 4 bolt SAE flanges |    |  |  | UNC | Metric | P1 | P2 | P3 | S | 00 | M0 | 1½" | 1½" | 1" | 4" | 01 | M1 | 1½" | 1½" | 3/4" | 4" |
|--|---|--------------------|-----|--------------------|----|--|--|-----|--------|----|----|----|---|----|----|-----|-----|----|----|----|----|-----|-----|------|----|
| Code   |   | 4 bolt SAE flanges |     |                    |    |  |  |     |        |    |    |    |   |    |    |     |     |    |    |    |    |     |     |      |    |
| UNC  | Metric  | P1                 | P2  | P3                 | S  |  |  |     |        |    |    |    |   |    |    |     |     |    |    |    |    |     |     |      |    |
| 00   | M0  | 1½"                | 1½" | 1"                 | 4" |  |  |     |        |    |    |    |   |    |    |     |     |    |    |    |    |     |     |      |    |
| 01   | M1  | 1½"                | 1½" | 3/4"               | 4" |  |  |     |        |    |    |    |   |    |    |     |     |    |    |    |    |     |     |      |    |

# High Pressure Triple Vane Pump HT7EEC/ HT7EECS Series

## Installation Dimension mm (inch)

### HT7EEC, HT7EECS



Shaft torque limits [ml/rev x bar (in3/rev x psi)]	
Shaft	Vp x p max. (P1+P2+P3)
2	118340
4	126800

Alternate connect. variables			
Code	A	B	C
00 & M0	52.4	26.2	25.4
01 & M1	47.6	22.2	19.0

Alternate mounting flange							
Model	$\phi S$		ex 45°	W	K1	$\phi Z$	$\phi D$
	MAX.	MIN.					
HT7EEC	250.0 (9.842)	249.94 (9.840)	2.0	9.0	-	315	22.0
HT7EECS	165.10 (6.50)	165.05 (6.498)	2.0	9.0	224.5	-	20.8

# High Pressure Triple Vane Pump

## HT7EEC/ HT7EECS Series

### Performance Characteristics

#### HT7EEC, HT7EECS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

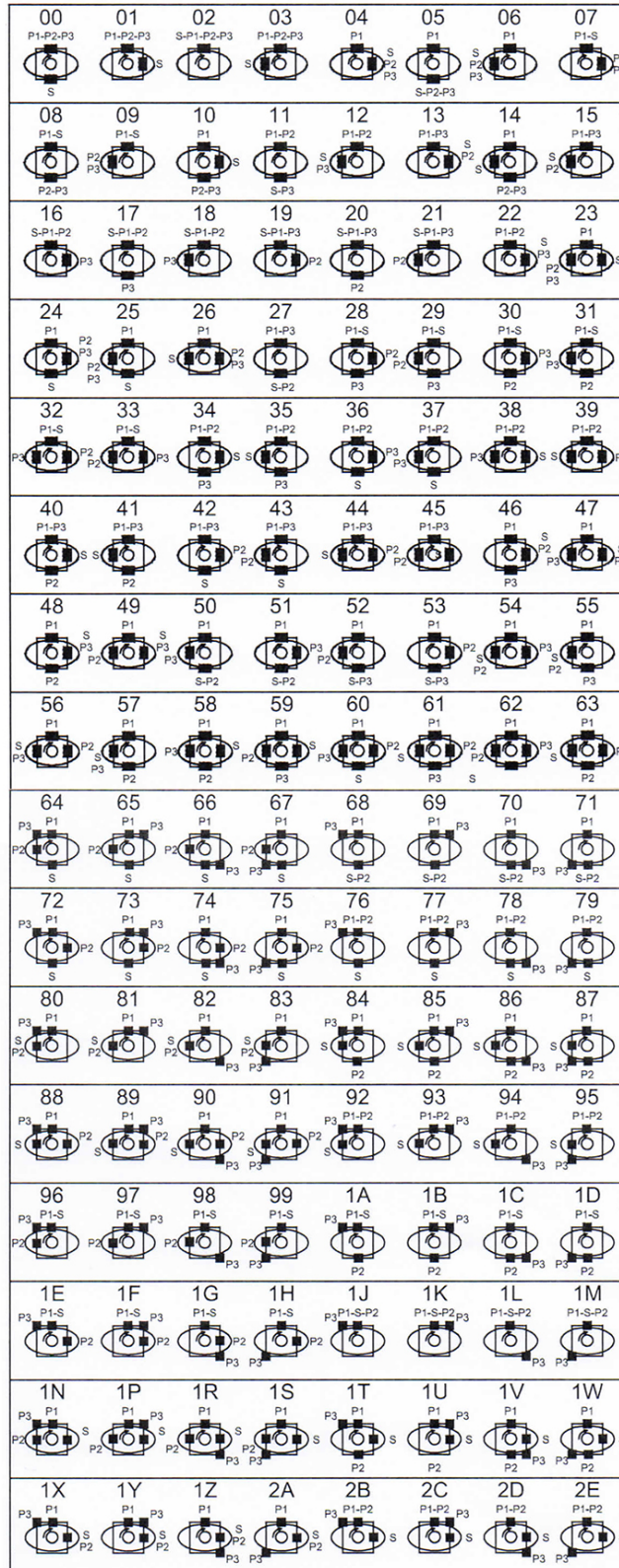
Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	042	8.07 in <sup>3</sup> /rev	62.92	60.37	58.52	8.09	78.44	133.80
	045	8.70 in <sup>3</sup> /rev	67.72	65.17	63.32	8.37	84.04	143.60
	050	9.67 in <sup>3</sup> /rev	75.38	72.83	70.98	8.82	92.97	159.24
	052	10.00 in <sup>3</sup> /rev	78.37	75.82	73.97	8.99	96.47	165.36
	054	10.43 in <sup>3</sup> /rev	81.27	78.72	76.87	9.17	99.75	177.46
	057	11.18 in <sup>3</sup> /rev	87.12	84.57	82.72	9.51	106.57	189.84
	062	12.00 in <sup>3</sup> /rev	93.54	90.99	89.14	9.88	114.17	196.34
	066	13.00 in <sup>3</sup> /rev	101.44	98.89	97.04	10.34	123.38	212.46
	072	13.86 in <sup>3</sup> /rev	108.00	105.45	103.60	10.72	131.04	225.86
	085	16.40 in <sup>3</sup> /rev	127.79	126.13 <sup>1)</sup>	-	11.88	101.66 <sup>1)</sup>	-
P3	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 085 = 1300 PSI max. int. 2) 028 - 031 = 3000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.



# High Pressure Triple Vane Pump HT6/HT67/HT7 Series - Porting Diagram

## Porting Diagrams



# High Pressure Single Vane Pump HT6GC/ HT67GB/ HT6ZC (Truck Pump)

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## Features and Handling

- HT6GC, HT67GB and HT6ZC Series are fixed displacement and balanced type single vane pumps. The pump is designed for higher load than HT6CM pump by having double row ball bearing with needle bearing and 2 shaft seals.
- Can be connected to PTO directly.



# High Pressure Single Vane Pump

## HT6GC/ HT67GB/ HT6ZC (Truck Pump)

### Specification

#### HT6GC, HT6ZC for Single pump

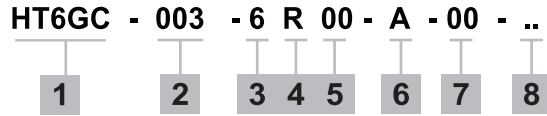
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
003	10.8 (0.66)	275 (4000)	240 (3500)	600	2800	17.5 (38.5)
005	17.2 (1.05)					
006	21.3 (1.30)					
008	26.4 (1.61)					
010	34.1 (2.08)					
012	37.1 (2.26)					
014	46.0 (2.81)					
017	58.3 (3.56)					
020	63.8 (3.89)					
022	70.3 (4.29)					
025	79.3 (4.84)	206 (3000)	160 (2300)		2500	
028	88.8 (5.42)					
031	100.0 (6.10)					

#### HT67GB for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Min. Speed rpm	Max. Speed rpm	Weight
002	5.8 (0.35)	320 (4640)	290 (4200)	600	3600	17.5 (38.5)
003	9.8 (0.59)					
004	12.8 (0.78)					
005	15.9 (0.97)					
006	19.8 (1.20)					
007	22.5 (1.37)					
008	24.9 (1.51)					
009	28.0 (1.70)					
010	31.8 (1.94)					
011	35.0 (2.13)					
012	41.0 (2.50)					
014	45.0 (2.74)					
015	50.0 (3.05)	280 (4060)	240 (3500)			

# High Pressure Single Vane Pump HT6GC/ HT67GB/ HT6ZC (Truck Pump)

## Ordering Code



1. Model :

Truck Pump - HT6GC, HT67GB  
ISO 4 bolts - 7653 (R17-102)

- HT6ZC  
UNI Flange 3 bolts

7. Port Connection (4 bolts SAE flange J518C)

01 - UNC Port Connection  
M1 - Metric Port Connection

Code	UNC		Metric	
	00	01	M0	M1
S = 1.½"	SAE	SAE	SAE	SAE
P = 1	BSPP	SAE	BSPP	SAE

2. Displacement

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

6C	7B
003 - 10.8 (0.66)	002 - 5.8 (0.35)
005 - 17.2 (1.05)	003 - 9.8 (0.60)
006 - 21.3 (1.30)	004 - 12.8 (0.78)
008 - 26.4 (1.61)	005 - 15.9 (0.97)
010 - 34.1 (2.08)	006 - 19.8 (1.20)
012 - 37.1 (2.26)	007 - 22.5 (1.37)
014 - 46.0 (2.81)	008 - 24.9 (1.51)
017 - 58.3 (3.56)	010 - 31.8 (1.92)
020 - 63.8 (3.89)	012 - 41.0 (2.47)
022 - 70.3 (4.29)	015 - 50.0 (3.01)
025 - 79.3 (4.84)	
028 - 88.8 (5.42)	
031 - 100.0 (6.10)	

8. Modifications

Omit - Standard  
718 - Surface grinding the flange face for the manifold.

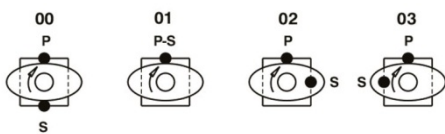
3. Type of shaft

6 - DIN 5462 Splined Shaft (HT6GC, HT67GB)  
6 - DIN 5463 Splined Shaft (HT6ZC)

4. Direction of rotation (view on shaft end)

R - Turn right  
L - Turn left

5. Porting combination (see page Porting Diagrams)



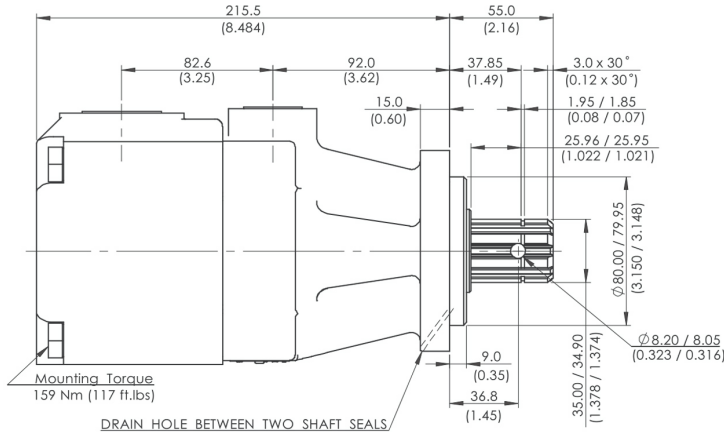
S - Suction port    P - Pressure port

6. Design letter

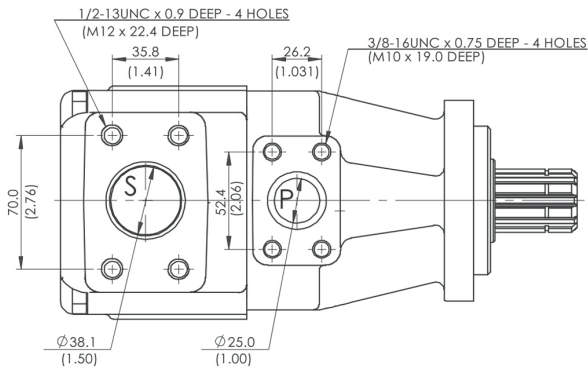
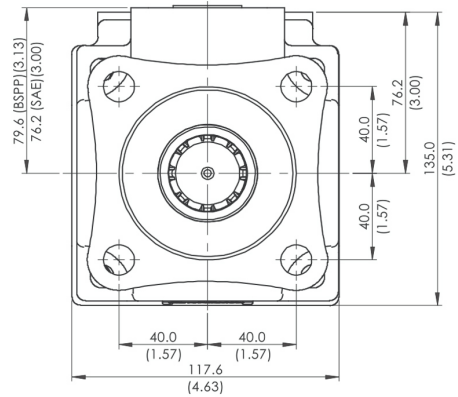
# High Pressure Single Vane Pump HT6GC/ HT67GB/ HT6ZC (Truck Pump)

## Installation Dimension mm (inch)

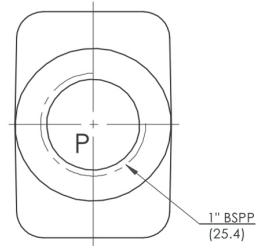
### HT6GC, HT67GB



Shaft code 6  
(DIN 5462) B8x32x36

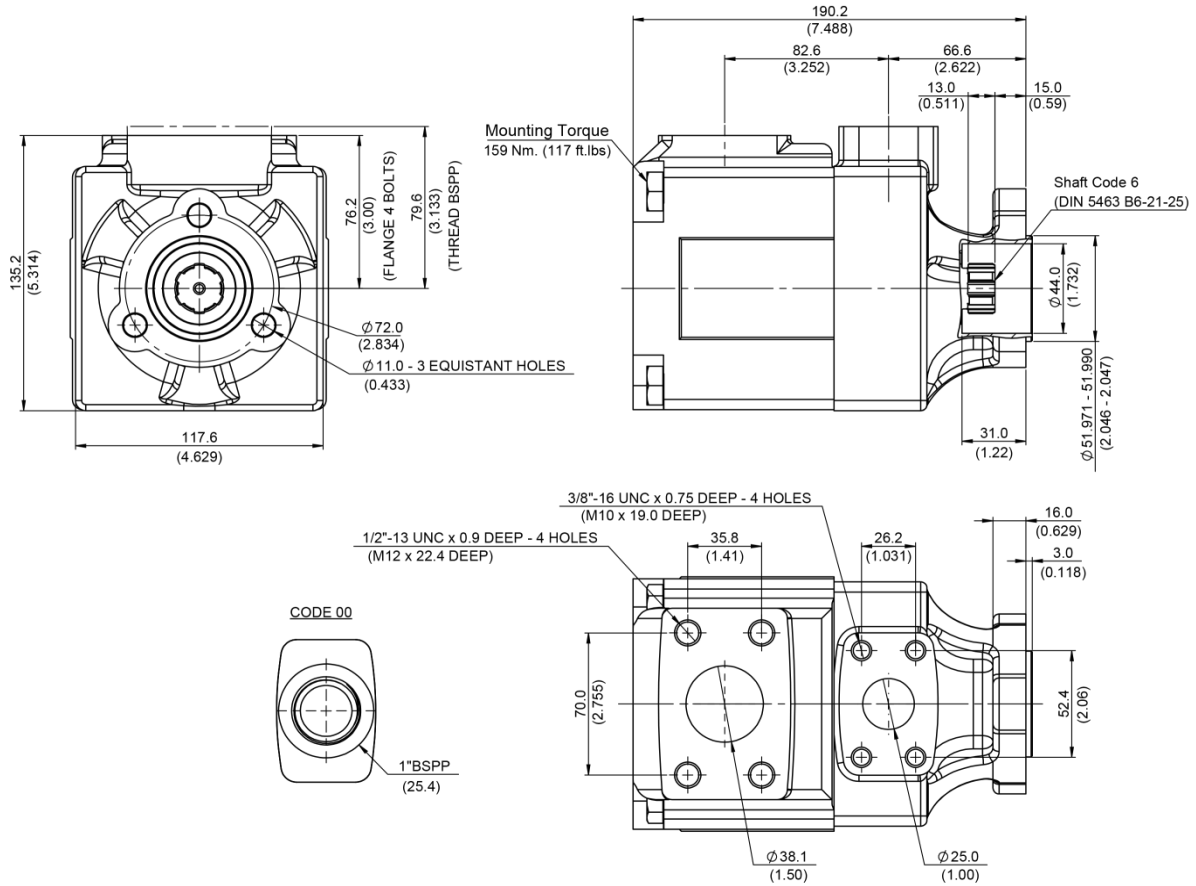


CODE 00



# High Pressure Single Vane Pump HT6GC/ HT67GB/ HT6ZC (Truck Pump)

## HT6ZC



# High Pressure Single Vane Pump HT6GC/ HT67GB/ HT6ZC (Truck Pump)

## Performance Characteristics

### HT6GC, HT6ZC

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Speed n [R.P.M]	Flow Q [GPM]			Input power P [HP]		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 100 PSI	p = 2000 PSI	p = 3500 PSI
003	0.66 in <sup>3</sup> /rev	1200	3.42	-	-	1.43	-	-
		1800	5.14	3.61	-	2.11	8.45	-
005	1.05 in <sup>3</sup> /rev	1200	5.45	3.99	-	1.55	8.17	-
		1800	8.18	6.65	5.56	2.29	12.00	19.59
006	1.30 in <sup>3</sup> /rev	1200	6.75	5.22	4.13	1.62	9.69	16.13
		1800	10.13	8.60	7.51	2.40	14.28	23.57
008	1.61 in <sup>3</sup> /rev	1200	8.37	6.84	5.75	1.72	11.58	19.43
		1800	12.55	11.02	9.93	2.54	17.11	28.53
010	2.08 in <sup>3</sup> /rev	1200	10.81	9.28	8.19	1.86	14.43	24.42
		1800	16.22	14.69	13.60	2.76	21.38	36.00
012	2.26 in <sup>3</sup> /rev	1200	11.76	10.23	9.14	1.92	15.53	26.36
		1800	17.64	16.11	15.02	2.84	23.05	38.92
014	2.81 in <sup>3</sup> /rev	1200	14.58	13.05	11.96	2.08	18.83	32.12
		1800	21.88	20.35	19.26	3.09	27.99	47.56
017	3.56 in <sup>3</sup> /rev	1200	18.48	16.95	15.86	2.31	23.38	40.08
		1800	27.73	26.20	25.11	3.43	34.81	59.51
020	3.89 in <sup>3</sup> /rev	1200	20.23	18.70	17.61	2.41	25.41	43.64
		1800	30.34	28.81	27.42	3.58	37.86	64.85
022	4.29 in <sup>3</sup> /rev	1200	22.29	20.76	19.67	2.53	27.82	47.85
		1800	33.43	31.90	30.81	3.76	41.47	71.16
025 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	1200	25.14	23.61	22.52	2.70	31.15	53.68
		1800	37.71	36.18	35.09	4.01	46.46	79.90
028 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	1200	28.15	26.62	25.86 <sup>2)</sup>	2.87	34.66	51.37 <sup>2)</sup>
		1800	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
031 <sup>1)</sup>	6.10 in <sup>3</sup> /rev	1200	31.70	30.17	29.41 <sup>2)</sup>	3.08	38.80	57.58 <sup>2)</sup>
		1800	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 25 - 28 - 31 = 2500 R.P.M. max.      2) 28 - 31 = 3000 PSI max. int.  
- Not to use because internal leakage greater than 50% theoretical flow.  
- Port connection can be furnished with metric threads.

# High Pressure Single Vane Pump

## HT6GC/ HT67GB/ HT6ZC (Truck Pump)

### HT67GB

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Series	Volumetric Displacement	Flow Q {GPM} & n = 1500 RPM			Input power P {HP} & n = 1500 RPM		
		p = 0 PSI	p = 2000 PSI	p = 4650 PSI	p = 0 PSI	p = 2000 PSI	p = 4650 PSI
003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>1)</sup>	1.34	17.15	36.19 <sup>1)</sup>
012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>1)</sup>	1.47	19.97	42.22 <sup>1)</sup>
014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>1)</sup>	1.60	21.84	46.24 <sup>1)</sup>
015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>2)</sup>	1.74	24.26	47.85 <sup>2)</sup>

1) 11 - 12 - 14 = 4350 PSI max. int.      2) 15 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

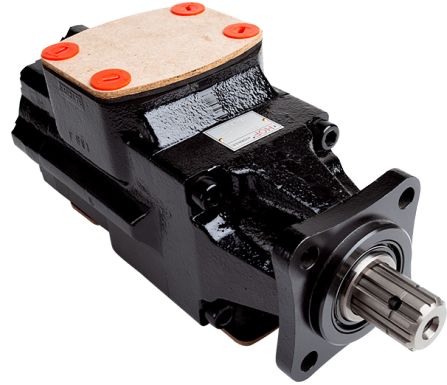


# High Pressure Double Vane Pump HT6GCC Series (Truck Pump)

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## Features and Handling

- HT6GCC Series is fixed displacement and balanced type double vane pumps. The pump is designed for higher load than HT6CM pump by having double row ball bearing with needle bearing and 2 shaft seals.
- Can be connected to PTO directly.



\* Performance Characteristics same as HT6C, HT6CC.

# High Pressure Double Vane Pump HT6GCC Series (Truck Pump)

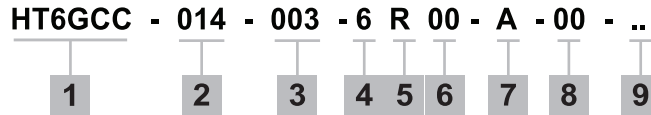
## Specification

### HT6GCC for Double pump

Shaft End Pump				Cover End Pump				Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)		
003	10.8 (0.66)	280 (4000)	240 (3500)	003	10.8 (0.66)	280 (4000)	240 (3500)	2800	28.0 (61.6)
005	17.2 (1.05)			005	17.2 (1.05)				
006	21.3 (1.30)			006	21.3 (1.30)				
008	26.4 (1.61)			008	26.4 (1.61)				
010	34.1 (2.08)			010	34.1 (2.08)				
012	37.1 (2.26)			012	37.1 (2.26)				
014	46.0 (2.81)			014	46.0 (2.81)				
017	58.3 (3.56)			017	58.3 (3.56)				
020	63.8 (3.89)			020	63.8 (3.89)				
022	70.3 (4.29)			022	70.3 (4.29)				
025	79.3 (4.84)	210 (3000)	160 (2300)	025	79.3 (4.84)	210 (3000)	160 (2300)	2500	
028	88.8 (5.42)			028	88.8 (5.42)				
031	100.0 (6.10)			031	100.0 (6.10)				

# High Pressure Double Vane Pump HT6GCC Series (Truck Pump)

## Ordering Code



1. Model :  
Truck Pump - HT6GCC ISO 4 bolts - 7653 (R17-102)

2. Displacement P1  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

3. Displacement P2  
Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

4. Type of shaft  
6 - DIN 5462 Splined Shaft

5. Direction of rotation (view on shaft end)  
R - Turn right  
L - Turn left

6. Porting combination (see page Porting Diagrams)  
00 - standard

7. Design letter

8. Port Connection (4 bolts SAE flange J518C)  
00 - UNC Port Connection  
M0 - Metric Port Connection

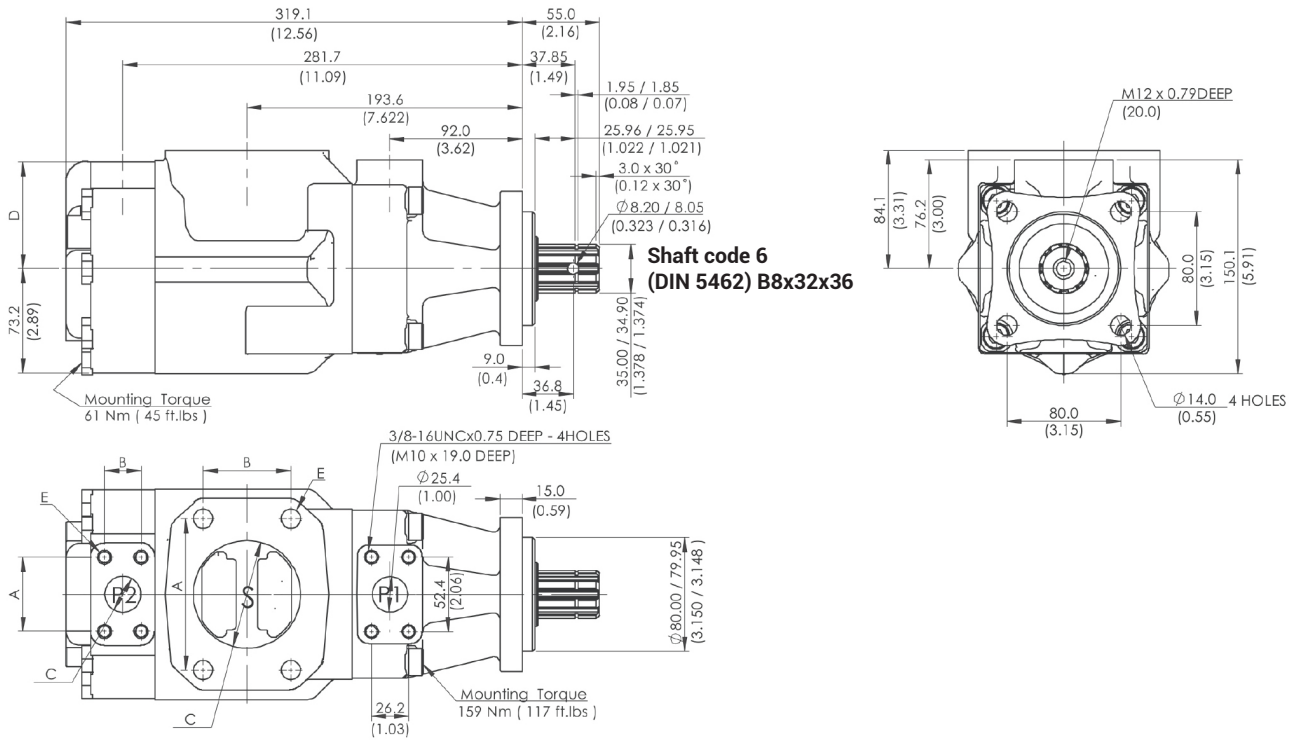
Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	0M	1"	1"	3"
01	M0	1"	3/4"	3"
10	1M	1"	1"	2½"
11	M1	1"	3/4"	2½"

1) for 46 ml/rev max.  
2) for 126 ml/rev max.  
always select the largest cartridge in the front place. (see page Hose Size Selection Nomograph)

10. Modifications  
Omit - Standard  
718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT6GCC Series (Truck Pump)

## Installation Dimension mm (inch)



Port	A	B	C	D	E
S	106.4 (4.19)	61.9 (2.44)	$\phi 76.2$ (3.00)	-	5/8" - 11 UNC x 1.12 DEEP (M16 x 28.4 DEEP)
S	88.9 (3.50)	50.8 (2.00)	$\phi 63.5$ (2.50)	-	1/2" - 13 UNC x 0.94 DEEP (M12 x 24.0 DEEP)
P2	47.7 (1.88)	22.2 (0.88)	$\phi 19.0$ (0.75)	76.2 (3.00)	3/8" - 16 UNC x 0.75 DEEP (M10 x 19.0 DEEP)
P2	52.4 (2.06)	26.2 (1.03)	$\phi 25.4$ (1.00)	74.7 (3.94)	

# High Pressure Double Vane Pump HT6GCC Series (Truck Pump)

## Performance Characteristics

### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

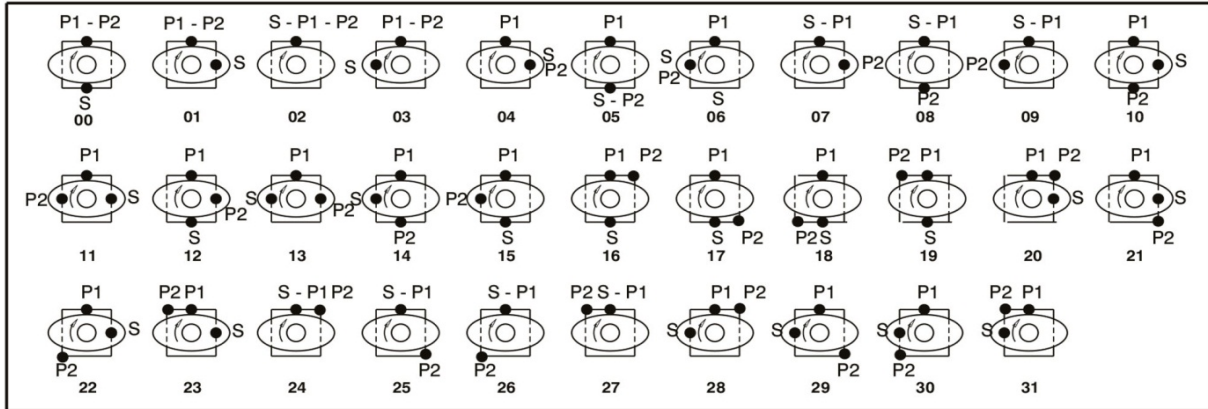
Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

1) 025 - 028 - 031 = 2500 R.P.M. max. 2) 028 - 031 = 2200 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump

## HT6GCC/HT6CCZ Series (Truck Pump) - Porting Diagram

### Porting Diagrams

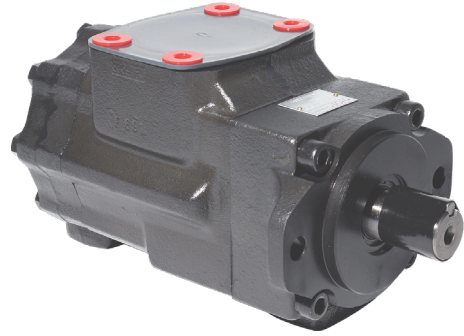


# High Pressure Double Vane Pump HT6CCZ Series (Truck Pump)

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## Features and Handling

- HT6CCZ Series is fixed displacement and balanced type double vane pumps. The pump is designed to carry high shaft loads by double row ball bearing at the front and needle ball bearing at the rear.



*\*Foot Mounting is available for each pump. For more details, see Foot Mounts.*

# High Pressure Double Vane Pump HT6CCZ Series (Truck Pump)

## Specification

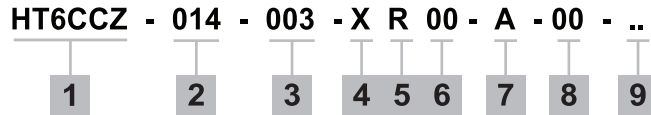
### HT6CCZ for Double pump

Shaft End Pump				Cover End Pump				Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)		
003	10.8 (0.66)	280 (4000)	240 (3500)	003	10.8 (0.66)	280 (4000)	240 (3500)	2800	27.0 (59.4)
005	17.2 (1.05)			005	17.2 (1.05)				
006	21.3 (1.30)			006	21.3 (1.30)				
008	26.4 (1.61)			008	26.4 (1.61)				
010	34.1 (2.08)			010	34.1 (2.08)				
012	37.1 (2.26)			012	37.1 (2.26)				
014	46.0 (2.81)			014	46.0 (2.81)				
017	58.3 (3.56)			017	58.3 (3.56)				
020	63.8 (3.89)			020	63.8 (3.89)				
022	70.3 (4.29)			022	70.3 (4.29)				
025	79.3 (4.84)			025	79.3 (4.84)				
028	88.8 (5.42)	210 (3000)	160 (2300)	028	88.8 (5.42)	210 (3000)	160 (2300)	2500	
031	100.0 (6.10)			031	100.0 (6.10)				



# High Pressure Double Vane Pump HT6CCZ Series (Truck Pump)

## Ordering Code



**1. Model :**

Truck Pump - HT6CCZ  
SAE B 2 bolts mounting flange J744

**2. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

**3. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 003 - 10.8 (0.66)
- 005 - 17.2 (1.05)
- 006 - 21.3 (1.30)
- 008 - 26.4 (1.61)
- 010 - 34.1 (2.08)
- 012 - 37.1 (2.26)
- 014 - 46.0 (2.81)
- 017 - 58.3 (3.56)
- 020 - 63.8 (3.89)
- 022 - 70.3 (4.29)
- 025 - 79.3 (4.84)
- 028 - 88.8 (5.42)
- 031 - 100.0 (6.10)

**4. Type of shaft**

- X - Special Keyed Shaft
- W - Special Keyed Shaft
- V - Special Keyed Shaft
- S - DIN 5462 Splined Shaft
- Z - DIN 5462 Splined Shaft

**5. Direction of rotation (view on shaft end)**

- R - Turn right
- L - Turn left

**6. Porting combination (see page Porting Diagrams)**

- 00 - standard

**7. Design letter**

**8. Port Connection (4 bolts SAE flange J518C)**

- 00 - UNC Port Connection
- M0 - Metric Port Connection

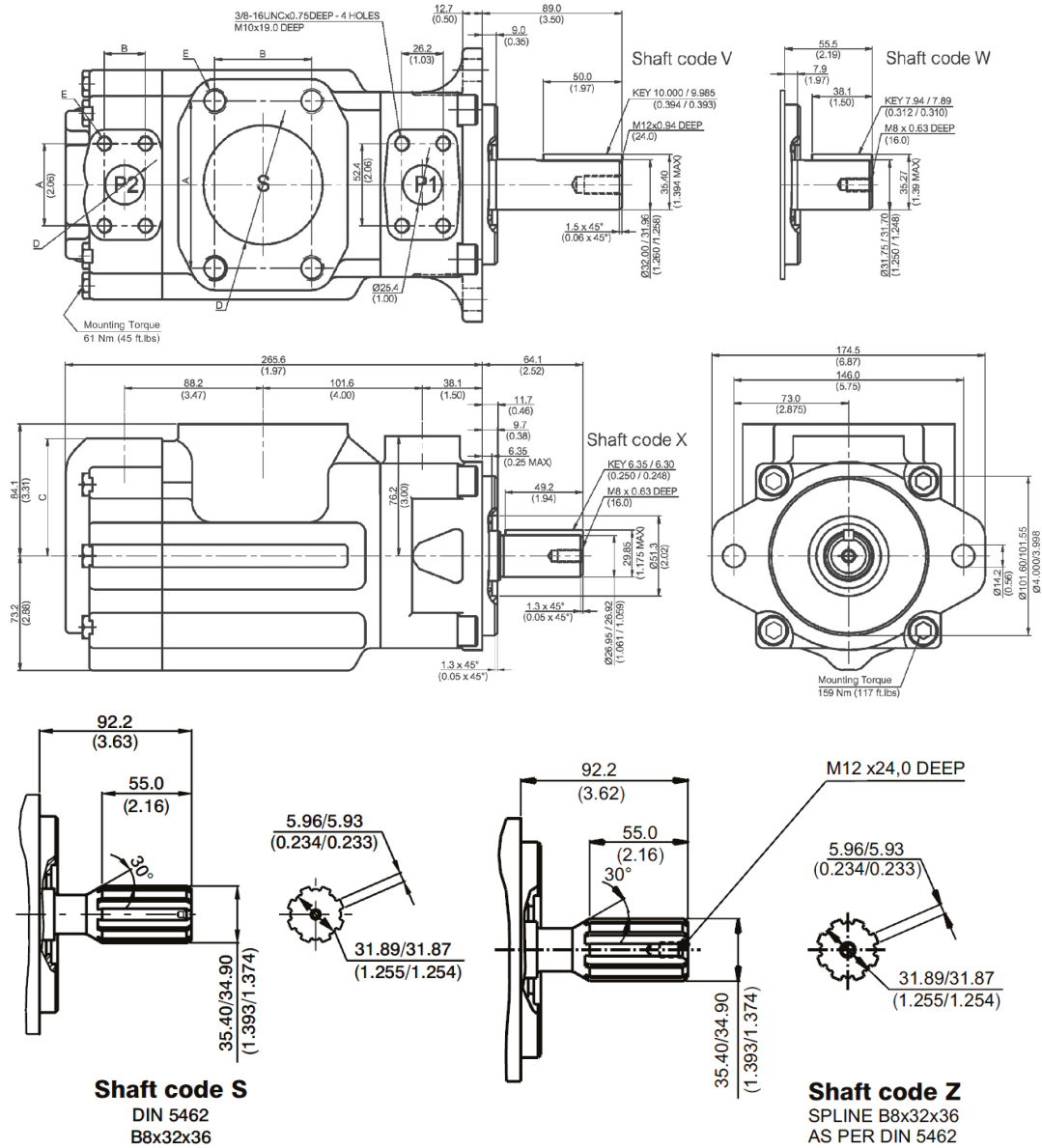
Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	0M	1"	1"	3"
01	M0	1"	3/4"	3"
10	1M	1"	1"	2½"
11	M1	1"	3/4"	2½"

**9. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT6CCZ Series (Truck Pump)

## Installation Dimension mm (inch)



Port	A	B	C	D	E
S	106.4 (4.19)	61.9 (2.44)	-	Ø 76.2 (3.00)	5/8" - 11 UNC x 1.12 DEEP (M16 x 28.4 DEEP)
S	88.9 (3.50)	50.8 (2.00)	-	Ø 63.5 (2.50)	1/2" - 13 UNC x 0.94 DEEP (M12 x 24.0 DEEP)
P2	47.6 (1.874)	22.2 (0.874)	76.2 (3.00)	Ø 19.0 (0.75)	3/8" - 16 UNC x 0.75 DEEP (M10 x 19.0 DEEP)
P2	52.4 (2.06)	26.2 (1.03)	74.7 (2.94)	Ø 25.4 (1.00)	

# High Pressure Double Vane Pump HT6CCZ Series (Truck Pump)

## Performance Characteristics

### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	003	0.66 in <sup>3</sup> /rev	5.14	3.61	-	2.11	8.45	-
	005	1.05 in <sup>3</sup> /rev	8.18	6.65	5.56	2.29	12.00	19.59
	006	1.30 in <sup>3</sup> /rev	10.13	8.60	7.51	2.40	14.28	23.57
	008	1.61 in <sup>3</sup> /rev	12.55	11.02	9.93	2.54	17.11	28.53
	010	2.08 in <sup>3</sup> /rev	16.22	14.69	13.60	2.76	21.38	36.00
	012	2.26 in <sup>3</sup> /rev	17.64	16.11	15.02	2.84	23.05	38.92
	014	2.81 in <sup>3</sup> /rev	21.88	20.35	19.26	3.09	27.99	47.56
	017	3.56 in <sup>3</sup> /rev	27.73	26.20	25.11	3.43	34.81	59.51
	020	3.89 in <sup>3</sup> /rev	30.34	28.81	27.42	3.58	37.86	64.85
	022	4.29 in <sup>3</sup> /rev	33.43	31.90	30.81	3.76	41.47	71.16
	025 <sup>1)</sup>	4.84 in <sup>3</sup> /rev	37.71	36.18	35.09	4.01	46.46	79.90
	028 <sup>1)</sup>	5.42 in <sup>3</sup> /rev	42.23	40.70	39.94 <sup>2)</sup>	4.27	51.74	76.73 <sup>2)</sup>
	031	6.10 in <sup>3</sup> /rev	47.56	46.03	45.27 <sup>2)</sup>	4.58	57.95	86.06 <sup>2)</sup>

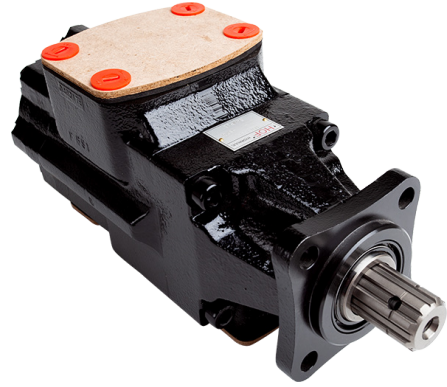
1) 025 - 028 - 031 = 2500 R.P.M. max. 2) 028 - 031 = 2200 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# High Pressure Double Vane Pump HT67GBB Series (Truck Pump)

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## Features and Handling

- HT67GBB Series is fixed displacement and balanced type double vane pumps. The pump is designed for higher load than HT6CM pump by having double row ball bearing with needle bearing and 2 shaft seals.
- Can be connected to PTO directly.



\* Performance Characteristics same as HT6C, HT6CC.

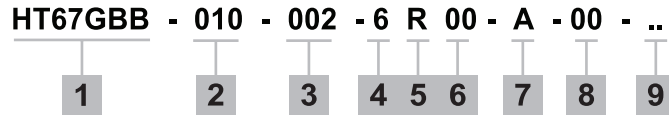
# High Pressure Double Vane Pump HT67GBB Series (Truck Pump)

## Specification

Shaft End Pump				Cover End Pump				Min. speed rpm	Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)			
002	5.8 (0.35)	320 (4640)	290 (4200)	002	5.8 (0.35)	320 (4640)	290 (4200)	600	2200	28.0 (61.6)
003	9.8 (0.59)			003	9.8 (0.59)					
004	12.8 (0.78)			004	12.8 (0.78)					
005	15.9 (0.97)			005	15.9 (0.97)					
006	19.8 (1.20)			006	19.8 (1.20)					
007	22.5 (1.37)			007	22.5 (1.37)					
008	24.9 (1.51)			008	24.9 (1.51)					
009	26.0 (1.70)			009	26.0 (1.70)					
010	31.8 (1.94)			010	31.8 (1.94)					
011	35.0 (2.13)			011	35.0 (2.13)					
012	41.0 (2.50)			012	41.0 (2.50)					
014	45.0 (2.74)			014	45.0 (2.74)					
015	50.0 (3.05)	280 (4060)	240 (3500)	015	50.0 (3.05)	280 (4060)	240 (3500)			

# High Pressure Double Vane Pump HT67GBB Series (Truck Pump)

## Ordering Code



**1. Model :**

Truck Pump - HT67GBB  
ISO 4 bolts - 7653 (R17-102)

**2. Displacement P1**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 002 - 5.8 (0.35)
- 003 - 9.8 (0.60)
- 004 - 12.8 (0.78)
- 005 - 15.9 (0.97)
- 006 - 19.8 (1.20)
- 007 - 22.5 (1.37)
- 008 - 24.9 (1.51)
- 009 - 28.0 (1.70)
- 010 - 31.8 (1.92)
- 011 - 35.0 (2.14)
- 012 - 41.0 (2.47)
- 014 - 45.0 (2.70)
- 015 - 50.0 (3.01)

**3. Displacement P2**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- 002 - 5.8 (0.35)
- 003 - 9.8 (0.60)
- 004 - 12.8 (0.78)
- 005 - 15.9 (0.97)
- 006 - 19.8 (1.20)
- 007 - 22.5 (1.37)
- 008 - 24.9 (1.51)
- 009 - 28.0 (1.70)
- 010 - 31.8 (1.92)
- 011 - 35.0 (2.14)
- 012 - 41.0 (2.47)
- 014 - 45.0 (2.70)
- 015 - 50.0 (3.01)

**4. Type of shaft**

6 - DIN 5462 Splined Shaft

**5. Direction of rotation (view on shaft end)**

R - Turn right  
L - Turn left

**6. Porting combination (see page Porting Diagrams)**

00 - standard

**7. Design letter**

**8. Port Connection (4 bolts SAE flange J518C)**

00 - UNC Port Connection  
M0 - Metric Port Connection

Code		4 bolt SAE flanges		
UNC	Metric	P1	P2	S
00	0M	1"	1"	3"
01	M0	1"	3/4" <sup>1)</sup>	3"
10	1M	1"	1"	2½" <sup>2)</sup>
11	M1	1"	3/4" <sup>1)</sup>	2½" <sup>2)</sup>

1) for 46 ml/rev max.

2) for 126 ml/rev max.

always select the largest cartridge in the front place. (see page Hose Size Selection Nomograph)

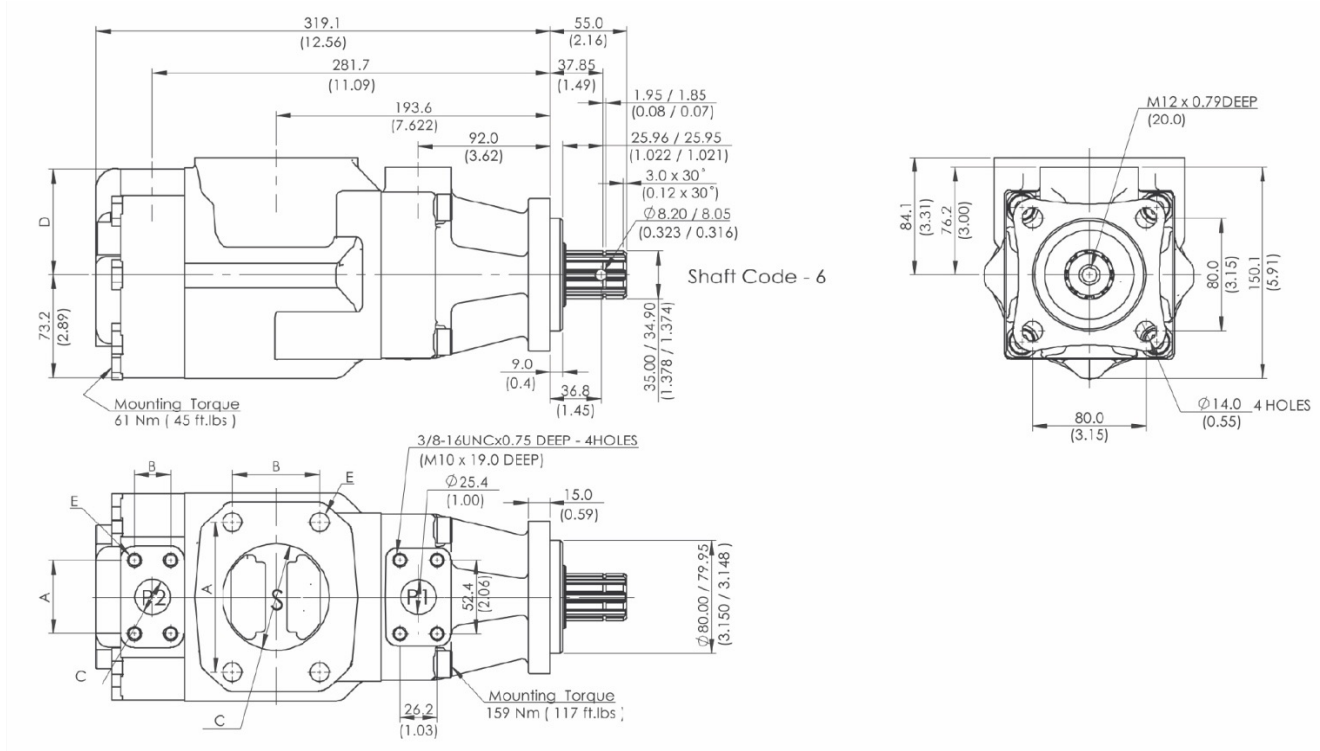
**9. Modifications**

Omit - Standard

718 - Surface grinding the flange face for the manifold.

# High Pressure Double Vane Pump HT67GGB Series (Truck Pump)

## Installation Dimension mm (inch)



Port	A	B	C	D	E
S	106.4 (4.19)	61.9 (2.44)	$\phi 76.2$ (3.00)	-	5/8" - 11 UNC x 1.12 DEEP (M16 x 28.4 DEEP)
S	88.9 (3.50)	50.8 (2.00)	$\phi 63.5$ (2.50)	-	1/2" - 13 UNC x 0.94 DEEP (M12 x 24.0 DEEP)
P2	47.7 (1.88)	22.2 (0.88)	$\phi 19.0$ (0.75)	76.2 (3.00)	3/8" - 16 UNC x 0.75 DEEP (M10 x 19.0 DEEP)
P2	52.4 (2.06)	26.2 (1.03)	$\phi 25.4$ (1.00)	74.7 (3.94)	

# High Pressure Double Vane Pump HT67GBB Series (Truck Pump)

## Performance Characteristics

### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1 & P2	002	0.35 in <sup>3</sup> /rev	2.29	1.84	1.26	0.67	3.48	7.23
	003	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	004	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	005	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	006	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	007	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	008	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	009	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	010	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	011	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>1)</sup>	1.34	17.15	36.19 <sup>1)</sup>
	012	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>1)</sup>	1.47	19.97	42.22 <sup>1)</sup>
	014	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>2)</sup>	1.60	21.84	46.24 <sup>1)</sup>
	015	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>2)</sup>	1.74	24.26	47.85 <sup>2)</sup>

1) 011 - 012 - 014 = 4350 PSI max. int. 2) 015 = 4000 PSI max. int.

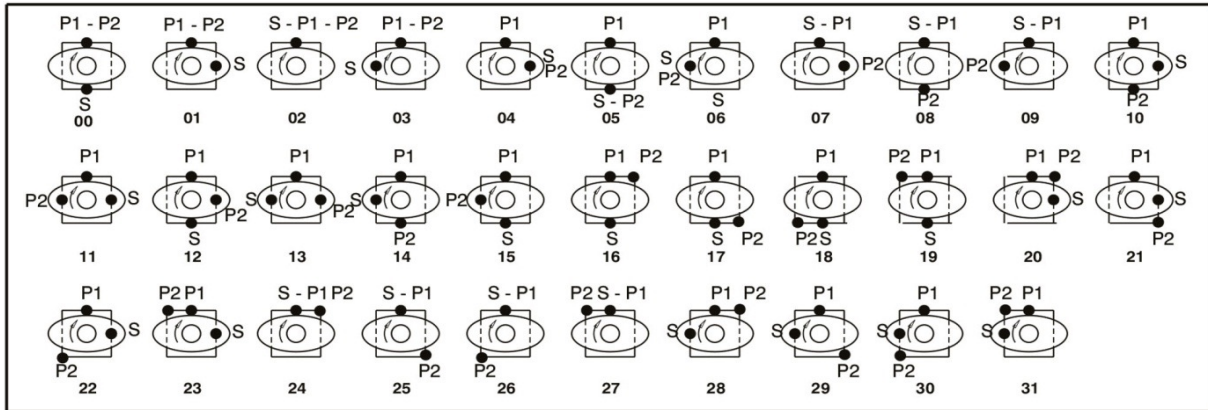
- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.



# High Pressure Double Vane Pump HT67GBB Series (Truck Pump)

## Porting Diagrams



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## **III. Fixed Displacement Variable Speed Vane Pump**

# Variable Speed Single Vane Pumps HT7 Series

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## Features and Handling

- Variable Speed HT7 series are fixed displacement and balanced type Single and Double Vane pumps. With special cartridge kits designed to be able to operate at variable speed from lower than 400 RPM upto 3600 RPM.
- Upto 60% potential energy saving in hydraulic system.
- Saving in the Total Cost of Ownership (TCO)
- Suitable for plastic processing machines , die casting machines , press machines and other general mechanical engineering with speed lower than 400 RPM



# Variable Speed Single Vane Pump HT7B/HT7BS Series

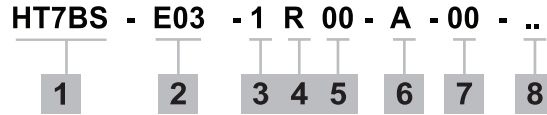
## Specification

HT7B, HT7BS for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Max. Speed rpm	Weight
E03	9.8 (0.59)	320 (4640)	290 (4200)	3600	23.5 (51.8)
E04	12.8 (0.78)				
E05	15.9 (0.97)				
E06	19.8 (1.20)				
E07	22.5 (1.37)				
E08	24.9 (1.51)				
E09	28.0 (1.70)				
E10	31.8 (1.94)	300 (4350)	275 (4000)	3000	
E11	35.0 (2.13)				
E12	41.0 (2.50)				
E14	45.0 (2.74)	280 (4060)	240 (3500)	3000	
E15	50.0 (3.05)				

# Variable Speed Single Vane Pump HT7B/HT7BS Series

## Ordering Code : Single Pump



1. Model :

- Industrial - HT7B ISO 2 bolts 3019-2 mounting flange 100 A2 HW
- HT7BS SAE B 2 bolts mounting flange J744

2. Displacement

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- E03 - 9.8 (0.60)
- E04 - 12.8 (0.78)
- E05 - 15.9 (0.97)
- E06 - 19.8 (1.20)
- E07 - 22.5 (1.37)
- E08 - 24.9 (1.51)
- E09 - 28.0 (1.70)
- E10 - 31.8 (1.92)
- E11 - 35.0 (2.14)
- E12 - 41.0 (2.47)
- E14 - 45.0 (2.70)
- E15 - 50.0 (3.01)

6. Design letter

7. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection (Except HT7B)
- M0 - Metric Port Connection

8. Modifications

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold

3. Type of shaft

HT7B

- 2 - ISO R775-G38M Keyed Shaft

HT7BS

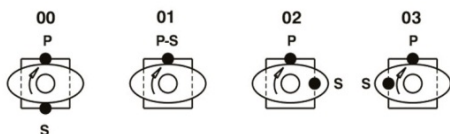
- 1 - SAE B Keyed Shaft
- 3 - SAE B Splined Shaft
- 4 - SAE BB Splined Shaft

4. Direction of rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

5. Porting combination

00 - standard

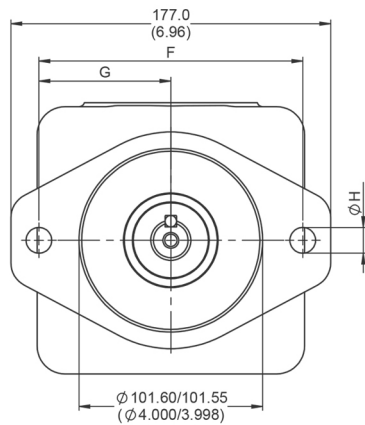


S - Suction port P - Pressure port

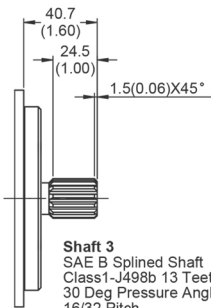
# Variable Speed Single Vane Pump HT7B/HT7BS Series

## Installation Dimension mm (inch)

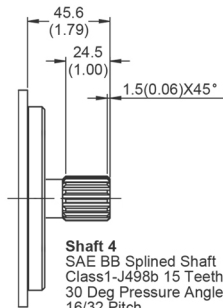
### HT7B, HT7BS



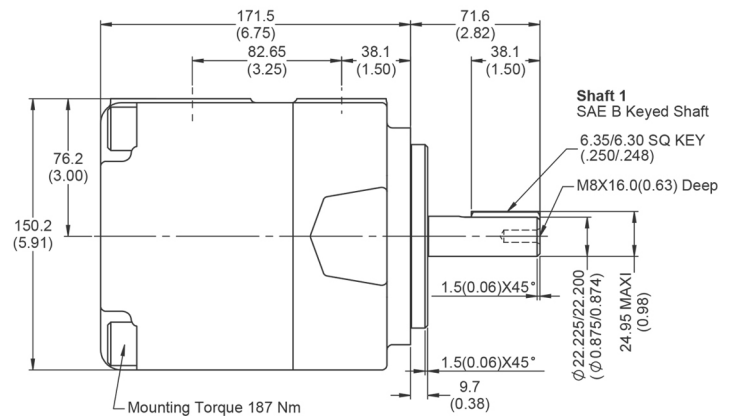
**HT7BS**  
(FLANGE SAE B)



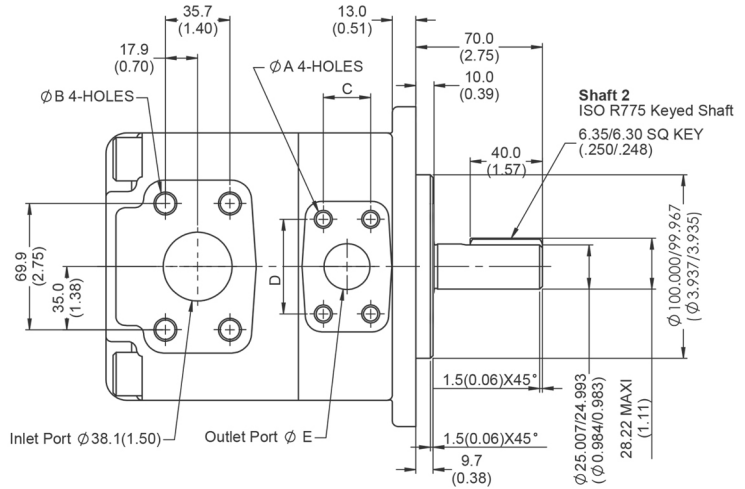
**Shaft 3**  
SAE B Splined Shaft  
Class1-J498b 13 Teeth  
30 Deg Pressure Angle  
16/32 Pitch  
Major Dia. 21.79/21.54(0.858/0.848)  
Minor Dia. 18.62/18.34(0.733/0.722)  
Flat root side fit



**Shaft 4**  
SAE BB Splined Shaft  
Class1-J498b 15 Teeth  
30 Deg Pressure Angle  
16/32 Pitch  
Major Dia. 24.98/24.71(0.983/0.973)  
Minor Dia. 21.80/21.53(0.858/0.848)  
Flat root side fit



Mounting Torque 187 Nm



**HT7B**  
(FLANGE ISO 3019/2 100A 2HW)

Model	HT7B/BS		HT7BS	
Code	M0	M1	00	01
ØA	M10 x19.0 DEEP		3/8"-16 UNC x 19.0 DEEP	
ØB	M12 x 22.4 DEEP		1/2" -13 UNC x 22.4 DEEP	
C	26.2	22.25	26.2	22.25
D	52.4	47.65	52.4	47.65
ØE	25.4	19.1	25.4	19.1
F	140.0		146.0	
G	70.0		73.0	
ØH	14.0		14.3	

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	16500
2	20600
3	
4	

# Variable Speed Single Vane Pump HT7B/HT7BS Series

## Performance Characteristics

### HT7B, HT7BS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

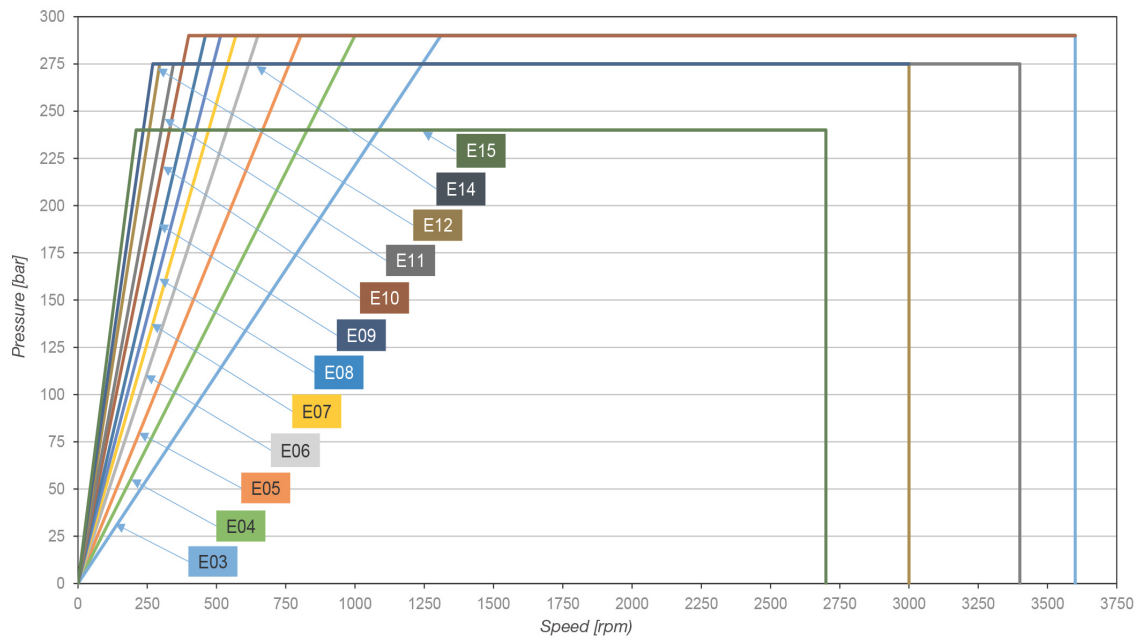
Series	Volumetric Displacement	Flow Q (GPM) & n = 1500 RPM			Input power P (HP) & n = 1500 RPM		
		p = 0 PSI	p = 2000 PSI	p = 4650 PSI	p = 0 PSI	p = 2000 PSI	p = 4650 PSI
E03	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
E04	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
E05	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
E06	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
E07	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
E08	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
E09	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
E10	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
E11	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>1)</sup>	1.34	17.15	36.19 <sup>1)</sup>
E12	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>1)</sup>	1.47	19.97	42.22 <sup>1)</sup>
E14	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>1)</sup>	1.60	21.84	46.24 <sup>1)</sup>
E15	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>2)</sup>	1.74	24.26	47.85 <sup>2)</sup>

1) 11 - 12 - 14 = 4350 PSI max. int.      2) 15 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# Variable Speed Single Vane Pump HT7B/HT7BS Series

## Performance Graph

### HT7B, HT7BS Operating Range





# Variable Speed Single Vane Pump HT7D/HT7DS Series

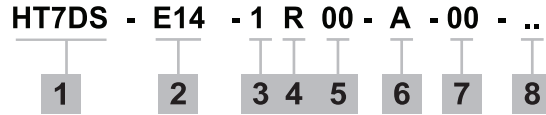
## Specification

### HT7D, HT7DS for Single pump

Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Max. Speed rpm	Weight
E14	47.6 (2.90)	300 (4350)	250 (3600)	3000	27.0 (59.4)
E17	58.2 (3.55)				
E20	66.0 (4.03)				
E22	70.0 (4.27)				
E24	79.5 (4.85)				
E28	89.7 (5.47)				
E31	98.3 (6.00)	280 (4060)	2800	2500	
E35	111.0 (6.77)				
E38	120.3 (7.34)	260 (3770)	235 (3400)	2500	
E42	136.0 (8.30)				

# Variable Speed Single Vane Pump HT7D/HT7DS Series

## Ordering Code : Single Pump



**1. Model :**

- Industrial - HT7D ISO 2 bolts 3019-2 mounting flange 125 A2 HW
- HT7DS SAE C 2 bolts mounting flange J744

**2. Displacement**

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- E14 - 47.6 (2.90)
- E17 - 58.2 (3.55)
- E20 - 66.0 (4.03)
- E22 - 70.0 (4.27)
- E24 - 79.5 (4.85)
- E28 - 89.7 (5.47)
- E31 - 98.3 (6.00)
- E35 - 111.0 (6.77)
- E38 - 120.3 (7.34)
- E42 - 136.0 (8.30)

**3. Type of shaft**

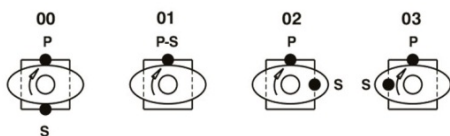
- HT7D**
- 5 - ISO 3019-G38M Keyed Shaft
- HT7DS**
- 1 - SAE C Keyed Shaft
  - 3 - SAE C Splined Shaft

**4. Direction of rotation (Viewed from shaft end)**

- R - Turn right
- L - Turn left

**5. Porting combination**

00 - standard



S - Suction port    P - Pressure port

**6. Design letter**

**7. Port Connection (4 bolts SAE flange J518C)**

- 00 - UNC Port Connection (Except HT7D)
- M0 - Metric Port Connection

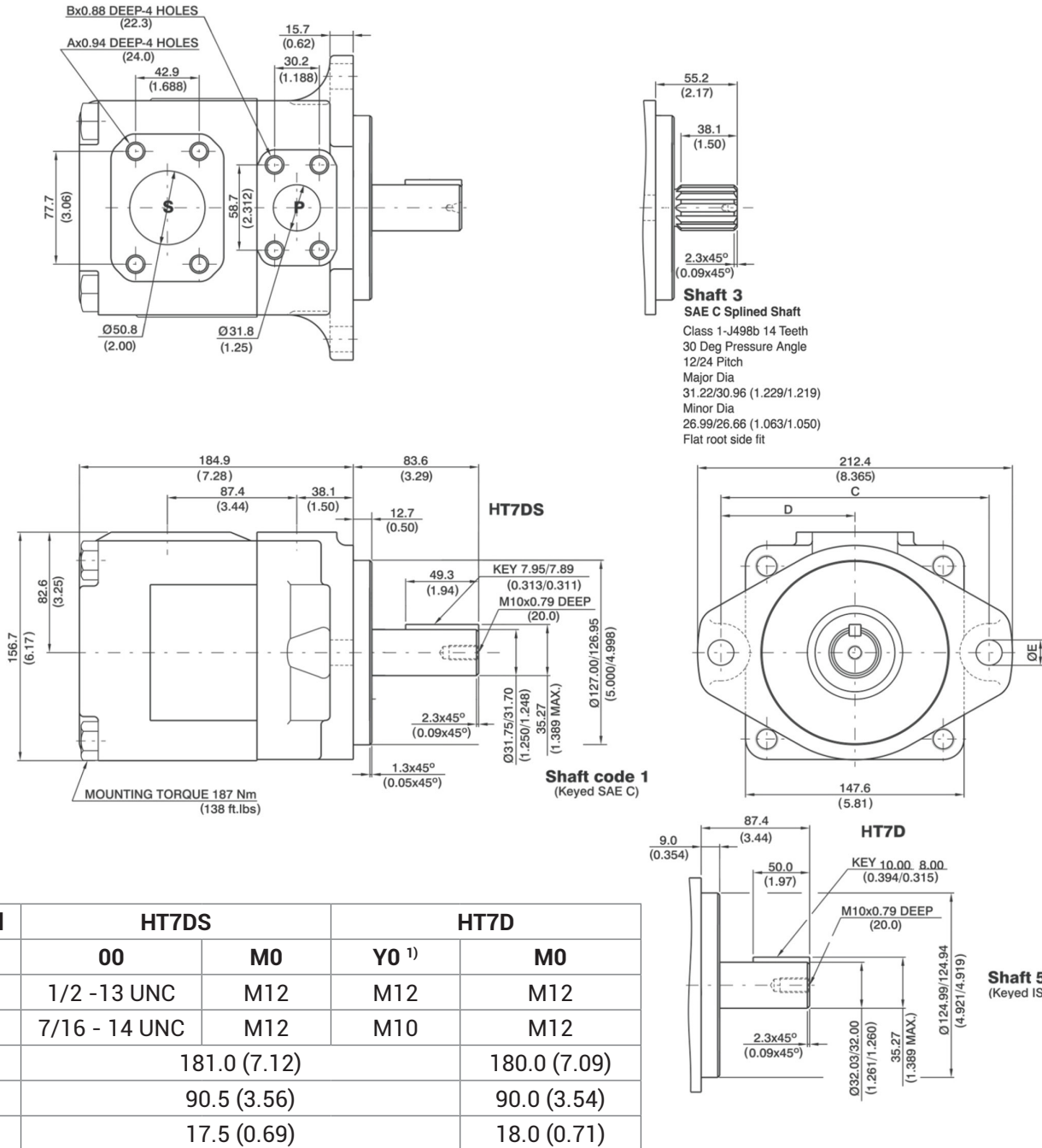
**8. Modifications**

- Omit - Standard
- 718 - Surface grinding the flange face for the manifold

# Variable Speed Single Vane Pump HT7D/HT7DS Series

## Installation Dimension mm (inch)

### HT7D, HT7DS



Model	HT7DS		HT7D	
	00	M0	Y0 <sup>1)</sup>	M0
A	1/2 -13 UNC	M12	M12	M12
B	7/16 - 14 UNC	M12	M10	M12
C	181.0 (7.12)		180.0 (7.09)	
D	90.5 (3.56)		90.0 (3.54)	
E	17.5 (0.69)		18.0 (0.71)	

1) 250 bar (3630 psi) max. int

# Variable Speed Single Vane Pump HT7D/HT7DS Series

## Performance Characteristics

### HT7D, HT7DS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

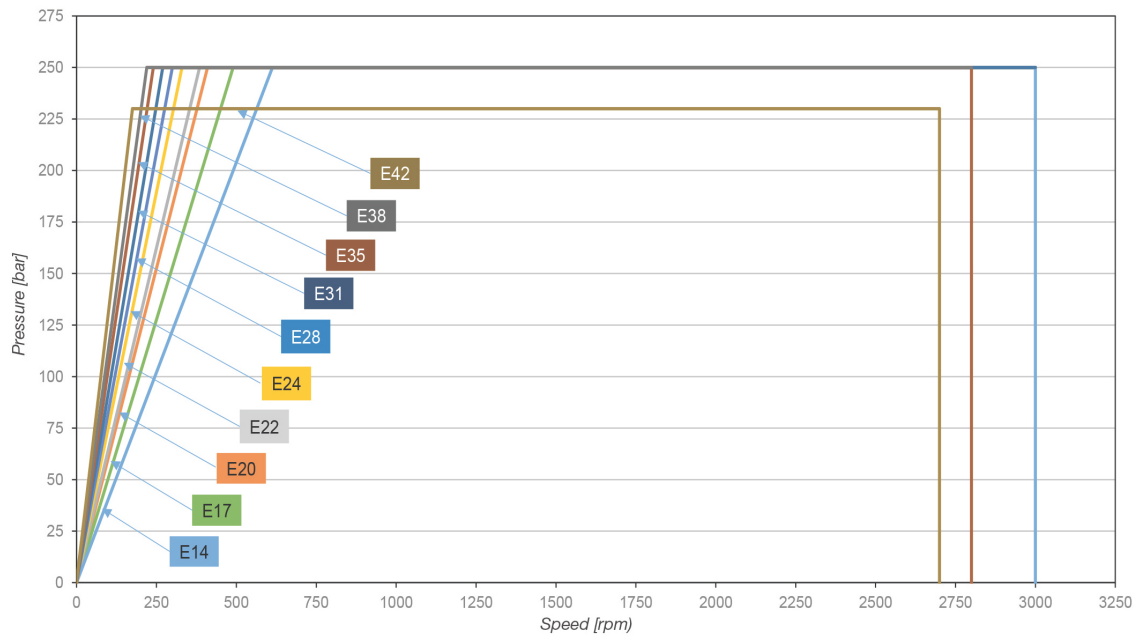
Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
		p = 0 PSI	p = 2000 PSI	p = 4350 PSI	p = 0 PSI	p = 2000 PSI	p = 4350 PSI
E14	2.68 in <sup>3</sup> /rev	20.92	19.18	17.19	3.46	27.77	58.49
E17	3.36 in <sup>3</sup> /rev	26.16	24.41	22.42	3.77	33.88	71.92
E20	4.03 in <sup>3</sup> /rev	31.39	29.64	27.65	4.07	39.98	85.35
E22	4.29 in <sup>3</sup> /rev	33.43	31.69	29.70	4.19	42.37	90.60
E24	4.95 in <sup>3</sup> /rev	38.57	36.82	34.83	4.49	48.36	103.78
E28	5.49 in <sup>3</sup> /rev	42.80	41.06	39.06	4.74	53.30	114.65
E31	6.05 in <sup>3</sup> /rev	47.18	45.43	43.44	4.99	58.41	125.88
E35	6.92 in <sup>3</sup> /rev	53.93	52.18	50.44 <sup>1)</sup>	5.39	66.29	130.39 <sup>1)</sup>
E38	7.36 in <sup>3</sup> /rev	57.35	55.61	53.87 <sup>1)</sup>	5.59	70.28	138.38 <sup>1)</sup>
E42	8.39 in <sup>3</sup> /rev	65.39	63.65	62.15 <sup>2)</sup>	6.05	79.66	149.39 <sup>2)</sup>

1) 35 - 38 = 4060 PSI max. int.      2) 42 = 3770 PSI max. int.  
\*Special 2½" (2.5 dia) suction also available

# Variable Speed Single Vane Pump HT7D/HT7DS Series

## Performance Graph

### HT7D, HT7DS Operating Range



# Variable Speed Double Vane Pump HT7BB/HT7BBS Series

## Specification

### HT7BB, HT7BBS for Double pump

Shaft End Pump				Cover End Pump				Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)		
E03	9.8 (0.59)	300 (4350)	275 (4000)	E03	9.8 (0.59)	300 (4350)	275 (4000)	3000	32.6 (71.87)
E04	12.8 (0.78)			E04	12.8 (0.78)				
E05	15.9 (0.97)			E05	15.9 (0.97)				
E06	19.8 (1.20)			E06	19.8 (1.20)				
E07	22.5 (1.37)			E07	22.5 (1.37)				
E08	24.9 (1.51)			E08	24.9 (1.51)				
E09	28.0 (1.70)			E09	28.0 (1.70)				
E10	31.8 (1.94)			E10	31.8 (1.94)				
E11	35.0 (2.13)			E11	35.0 (2.13)				
E12	41.0 (2.50)			E12	41.0 (2.50)				
E14	45.0 (2.74)			E14	45.0 (2.74)				
E15	50.0 (3.05)	280 (4060)	240 (3500)	E15	50.0 (3.05)	280 (4060)	240 (3500)	2700	

# Variable Speed Double Vane Pump

## HT7BB/HT7BBS Series

### Ordering Code : Double Pump

HT7BBS - E10 - E03 - 1 R 00 - A - 00 - ..

1	2	3	4	5	6	7	8	9
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#### 1. Model :

- Industrial - HT7BB ISO 2 bolts 3019-2 mounting flange 100 A2 HW
- HT7BBS SAE B 2 bolts mounting flange J744

#### 5. Direction of rotation (Viewed from shaft end)

- R - Turn right  
L - Turn left

#### 2. Displacement P1

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- E03 - 9.8 (0.60)  
E04 - 12.8 (0.78)  
E05 - 15.9 (0.97)  
E06 - 19.8 (1.20)  
E07 - 22.5 (1.37)  
E08 - 24.9 (1.51)  
E09 - 28.0 (1.70)  
E10 - 31.8 (1.92)  
E11 - 35.0 (2.14)  
E12 - 41.0 (2.47)  
E14 - 45.0 (2.70)  
E15 - 50.0 (3.01)

#### 6. Porting combination

- 00 - Standard

#### 7. Design letter

#### 8. Port Connection (4 bolts SAE flange J518C)

- 00 - UNC Port Connection (Except HT7BB)  
M0 - Metric Port Connection

#### 9. Modifications

- Omit - Standard  
718 - Surface grinding the flange face for the manifold.

#### 3. Displacement P2

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

- E03 - 9.8 (0.60)  
E04 - 12.8 (0.78)  
E05 - 15.9 (0.97)  
E06 - 19.8 (1.20)  
E07 - 22.5 (1.37)  
E08 - 24.9 (1.51)  
E09 - 28.0 (1.70)  
E10 - 31.8 (1.92)  
E11 - 35.0 (2.14)  
E12 - 41.0 (2.47)  
E14 - 45.0 (2.70)  
E15 - 50.0 (3.01)

#### 4. Type of shaft

HT7BB

- 5 - ISO R775-G38M Keyed Shaft

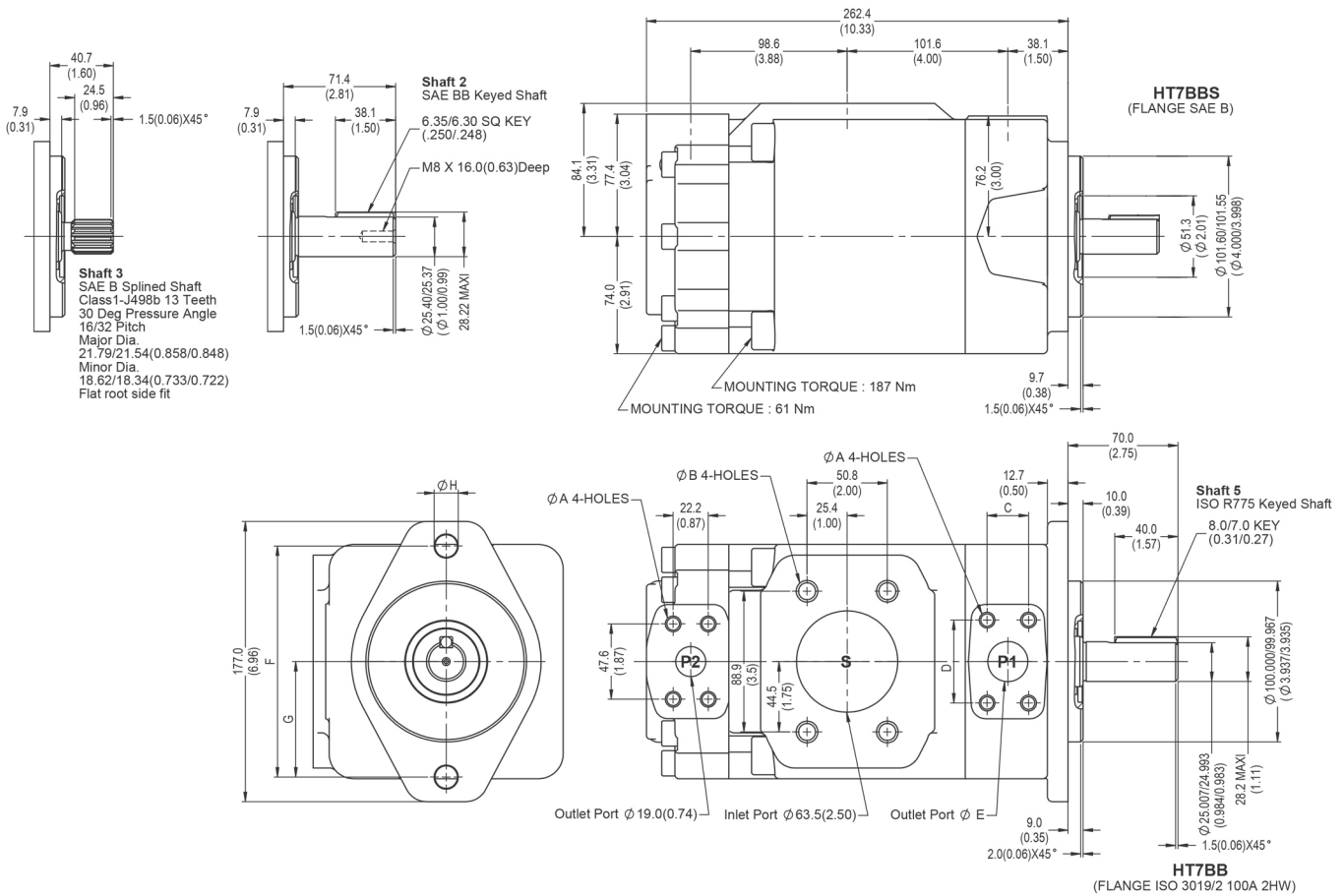
HT7BBS

- 2 - SAE BB Keyed Shaft  
3 - SAE B Splined Shaft

# Variable Speed Double Vane Pump HT7BB/HT7BBS Series

## Installation Dimension mm (inch)

### HT7BB, HT7BBS



Model	HT7BB		HT7BBS	
Code	M0	M1	00	01
ØA	M10 x19.0 DEEP		3/8"-16 UNC x 19.0 DEEP	
ØB	M12 x 22.4 DEEP		1/2" -13 UNC x 22.4 DEEP	
C	26.2	22.25	26.2	22.25
D	52.4	47.65	52.4	47.65
ØE	25.4	19.1	25.4	19.1
F	140.0		146.0	
G	70.0		73.0	
ØH	14.0		14.3	

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	14300
2	21420
3	20600
4	32670
5	25300



# Variable Speed Double Vane Pump

## HT7BB/HT7BBS Series

### Performance Characteristics

#### HT7BB, HT7BBS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	E03	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	E04	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	E05	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	E06	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	E07	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	E08	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	E09	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	E10	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	E11	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>1)</sup>	1.34	17.15	36.19 <sup>1)</sup>
	E12	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>1)</sup>	1.47	19.97	42.22 <sup>1)</sup>
	E14	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>1)</sup>	1.60	21.84	46.24 <sup>1)</sup>
	E15	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>2)</sup>	1.74	24.26	47.85 <sup>2)</sup>
P2	E03	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	E04	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	E05	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	E06	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	E07	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	E08	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	E09	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	E10	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	E11	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>1)</sup>	1.34	17.15	36.19 <sup>1)</sup>
	E12	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>1)</sup>	1.47	19.97	42.22 <sup>1)</sup>
	E14	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>1)</sup>	1.60	21.84	46.24 <sup>1)</sup>
	E15	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>2)</sup>	1.74	24.26	47.85 <sup>2)</sup>

1) 011 - 012 - 014 = 4350 PSI max. int. 3) 015 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# Variable Speed Double Vane Pump HT7DB/HT7DBS Series

## Specification

### HT7DB, HT7DBS for Double pump

Shaft End Pump				Max. speed rpm	Cover End Pump				Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)		Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)		
E14	47.6 (2.90)	300 (4350)	250 (3600)	3000	E03	9.8 (0.59)	300 (4350)	275 (4000)	3000	38.6 (85.1)
E17	58.2 (3.55)				E04	12.8 (0.78)				
E20	66.0 (4.03)				E05	15.9 (0.97)				
E22	70.0 (4.27)				E06	19.8 (1.20)				
E24	79.5 (4.85)				E07	22.5 (1.37)				
E28	89.7 (5.47)				E08	24.9 (1.51)				
E31	98.3 (6.00)				E09	28.0 (1.70)				
E35	111.0 (6.77)	280 (4060)		2800	E10	31.8 (1.94)				
E38	120.3 (7.34)				E11	35.0 (2.13)				
E42	136.0 (8.30)	260 (3770)	235 (3400)	2500	E12	41.0 (2.50)	280 (4060)	240 (3500)	2700	
					E14	45.0 (2.74)				
					E15	50.0 (3.05)				

# Variable Speed Double Vane Pump

## HT7DB/HT7DBS Series

### Ordering Code : Double Pump

HT7DBS - E14 - E03 - 1 R 00 - A - 00 - ..

1	2	3	4	5	6	7	8	9
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#### 1. Model :

Industrial - HT7DB ISO 2 bolts 3019-2 mounting flange 125 A2 HW  
- HT7DBS SAE C 2 bolts mounting flange J744

#### 2. Displacement P1

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

E14 - 47.6 (2.90)  
E17 - 58.2 (3.55)  
E20 - 66.0 (4.03)  
E22 - 70.0 (4.27)  
E24 - 79.5 (4.85)  
E28 - 89.7 (5.47)  
E31 - 98.3 (6.00)  
E35 - 111.0 (6.77)  
E38 - 120.3 (7.34)  
E42 - 136.0 (8.30)

#### 3. Displacement P2

Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)

E03 - 9.8 (0.60)  
E04 - 12.8 (0.78)  
E05 - 15.9 (0.97)  
E06 - 19.8 (1.20)  
E07 - 22.5 (1.37)  
E08 - 24.9 (1.51)  
E09 - 28.0 (1.70)  
E10 - 31.8 (1.92)  
E11 - 35.0 (2.14)  
E12 - 41.0 (2.47)  
E14 - 45.0 (2.70)  
E15 - 50.0 (3.01)

#### 4. Type of shaft

HT7DB  
5 - ISO 3019-2-G32M Keyed Shaft

HT7DBS  
1 - SAE C Keyed Shaft  
3 - SAE C Splined Shaft

#### 5. Direction of rotation (Viewed from shaft end)

R - Turn right  
L - Turn left

#### 6. Porting combination (see page Porting Diagrams)

00 - Standard

#### 7. Design letter

#### 8. Port Connection (4 bolts SAE flange J518C)

00 - UNC Port Connection (Except HT7DB)  
M0 - Metric Port Connection

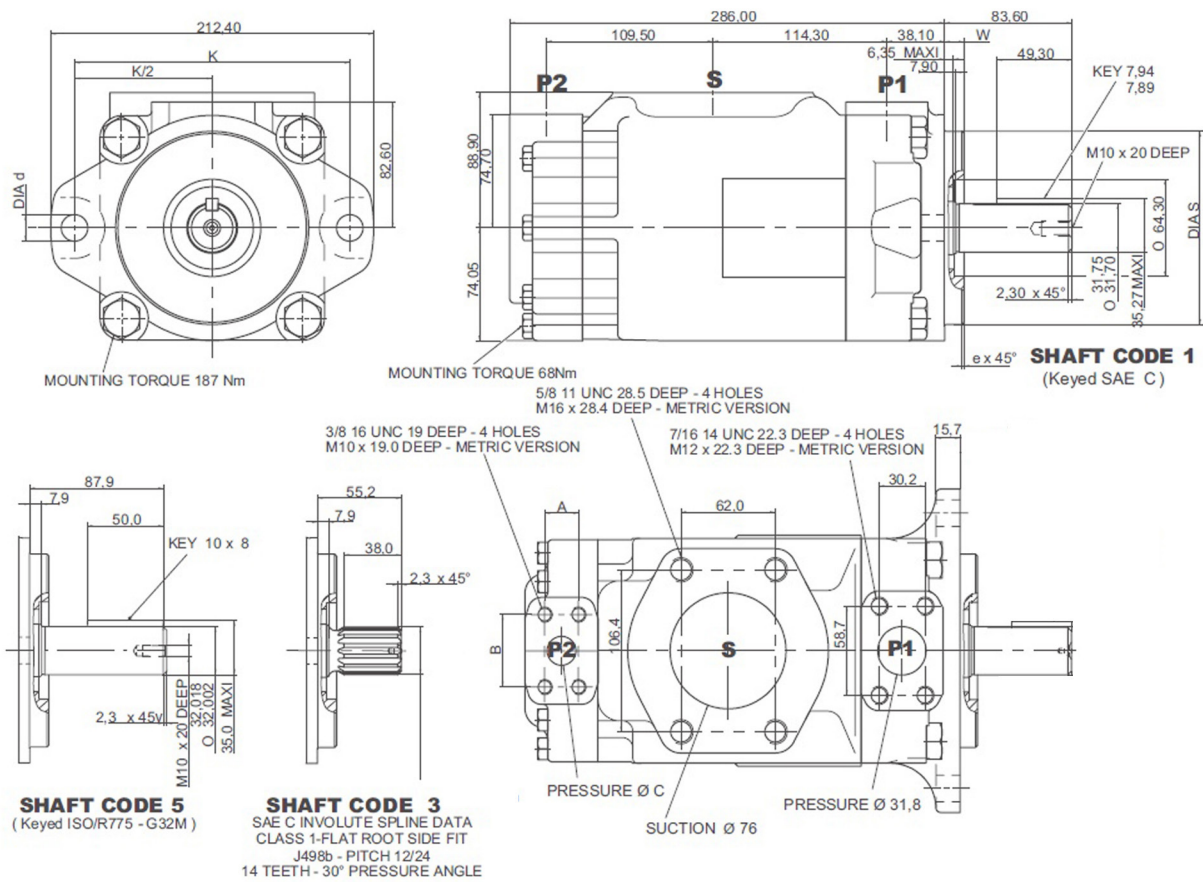
#### 9. Modifications

Omit - Standard  
718 - Surface grinding the flange face for the manifold.

# Variable Speed Double Vane Pump HT7DB/HT7DBS Series

## Installation Dimension mm (inch)

### HT7DB, HT7DBS



Alternate mounting flange						
Model	ØS		ex 45°	W	K	ØD
	MAX.	MIN.				
HT7DB	125.00	124.937	2.0	9.5	180.0	18.0
HT7DBS	127.00	126.950	1.3	12.7	181.0	17.5

Alternate connect. variables		
	00 & M0	01 & M1
A	26.20	22.20
B	52.35	47.60
C	25.0	19.0

# Variable Speed Double Vane Pump

## HT7DB/HT7DBS Series

### Performance Characteristics

#### HT7DB, HT7DBS

##### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	E14	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	E17	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	E20	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	E22	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	E24	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	E28	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	E31	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	E35	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	E38	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	E42	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
P2	E03	0.59 in <sup>3</sup> /rev	3.88	3.43	2.85	0.80	5.36	11.52
	E04	0.78 in <sup>3</sup> /rev	5.07	4.62	4.04	0.80	6.70	14.74
	E05	0.97 in <sup>3</sup> /rev	6.31	5.86	5.28	0.93	8.17	18.09
	E06	1.20 in <sup>3</sup> /rev	7.84	7.39	6.81	0.93	10.05	22.25
	E07	1.37 in <sup>3</sup> /rev	8.90	8.45	7.89	1.07	11.39	25.20
	E08	1.51 in <sup>3</sup> /rev	9.88	9.43	8.84	1.07	12.46	27.74
	E09	1.70 in <sup>3</sup> /rev	11.09	10.56	10.06	1.20	13.94	31.09
	E10	1.94 in <sup>3</sup> /rev	12.60	12.15	11.57	1.20	15.68	35.12
	E11	2.13 in <sup>3</sup> /rev	13.86	13.41	12.91 <sup>2)</sup>	1.34	17.15	36.19 <sup>2)</sup>
	E12	2.50 in <sup>3</sup> /rev	16.24	15.79	15.29 <sup>2)</sup>	1.47	19.97	42.22 <sup>2)</sup>
	E14	2.74 in <sup>3</sup> /rev	17.83	17.38	16.88 <sup>2)</sup>	1.60	21.84	46.24 <sup>2)</sup>
	E15	3.05 in <sup>3</sup> /rev	19.81	19.36	18.91 <sup>3)</sup>	1.74	24.26	47.85 <sup>3)</sup>

1) 050 = 3000 PSI max. int. 2) 011 - 012 - 014 = 4350 PSI max. int. 3) 015 = 4000 PSI max. int.  
 - Not to use because internal leakage greater than 50% theoretical flow.  
 - Port connection can be furnished with metric threads.

# Variable Speed Double Vane Pump HT7DD/HT7DDS Series

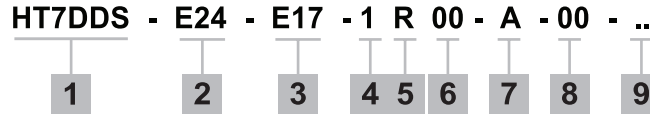
## Specification

### HT7DD, HT7DDS for Double pump

Shaft End Pump				Cover End Pump				Max. speed rpm	Weight kg (lb)
Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Size	Displacement cm <sup>3</sup> /r 1(in <sup>3</sup> /r)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)		
E14	47.6 (2.90)	300 (4350)	250 (3600)	E14	47.6 (2.90)	300 (4350)	250 (3600)	3000	56.0 (123.5)
E17	58.2 (3.55)			E17	58.2 (3.55)				
E20	66.0 (4.03)			E20	66.0 (4.03)				
E22	70.0 (4.27)			E22	70.0 (4.27)				
E24	79.5 (4.85)			E24	79.5 (4.85)				
E28	89.7 (5.47)			E28	89.7 (5.47)				
E31	98.3 (6.00)	E31	98.3 (6.00)	2800					
E35	111.0 (6.77)	E35	111.0 (6.77)						
E38	120.3 (7.34)	280 (4060)	235 (3400)	E38	120.3 (7.34)	280 (4060)	2500		
E42	136.0 (8.30)	260 (3770)		E42	136.0 (8.30)	260 (3770)		235 (3400)	

# Variable Speed Double Vane Pump HT7DD/HT7DDS Series

## Ordering Code : Double Pump

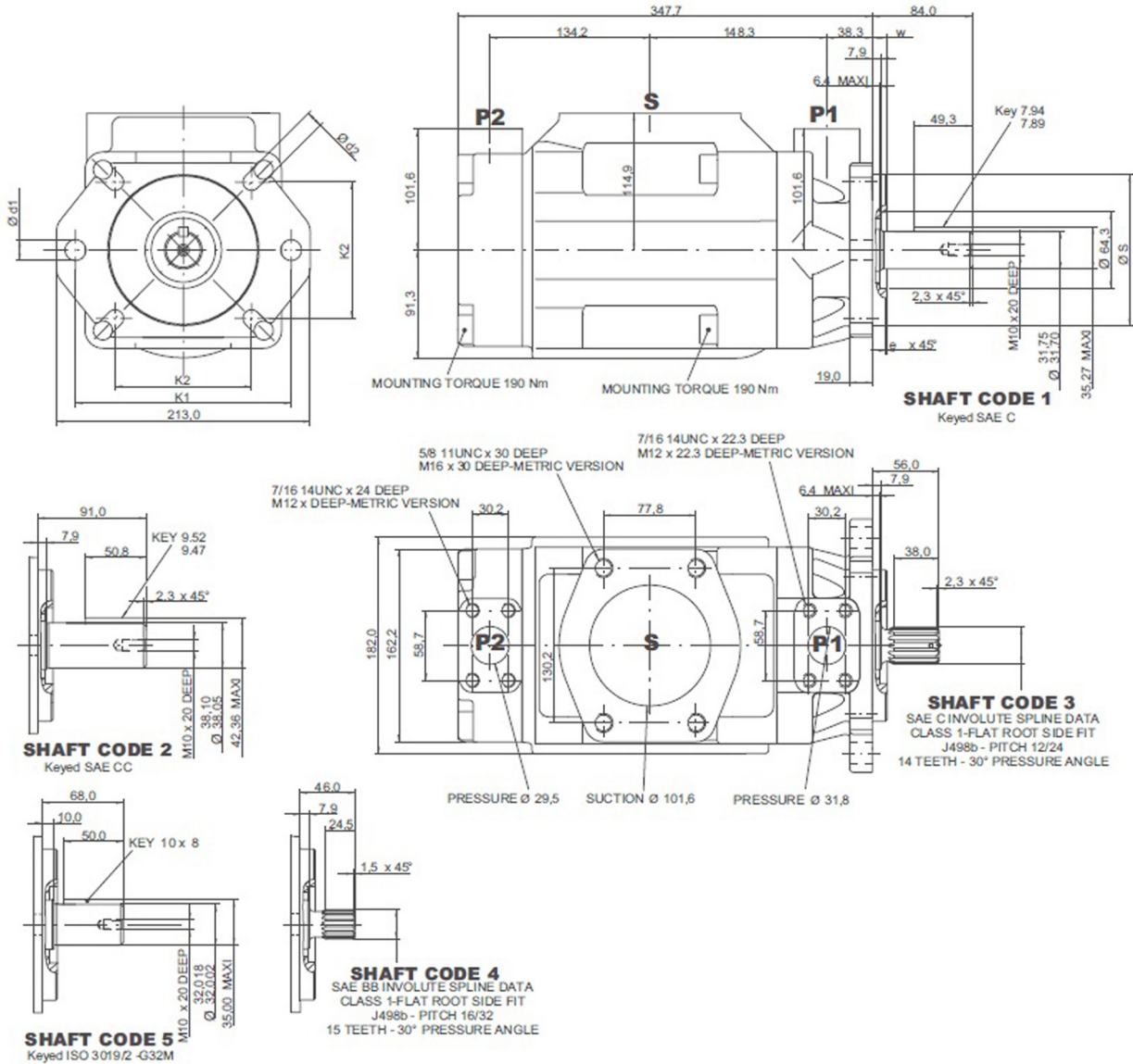


- |  |  |
|--|--|
| <p><b>1. Model :</b><br/>                 Industrial - HT7DD ISO 6 bolts 3019-2 mounting flange 125-A2-HW or 125 B4 HW<br/><br/>                 - HT7DDS SAE C 6 bolts mounting flange J744</p> <p><b>2. Displacement P1</b><br/>                 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)<br/>                 E03 - 9.8 (0.60)<br/>                 E04 - 12.8 (0.78)<br/>                 E05 - 15.9 (0.97)<br/>                 E06 - 19.8 (1.20)<br/>                 E07 - 22.5 (1.37)<br/>                 E08 - 24.9 (1.51)<br/>                 E09 - 28.0 (1.70)<br/>                 E10 - 31.8 (1.92)<br/>                 E11 - 35.0 (2.14)<br/>                 E12 - 41.0 (2.47)<br/>                 E14 - 45.0 (2.70)<br/>                 E15 - 50.0 (3.01)</p> <p><b>3. Displacement P2</b><br/>                 Volumetric displacement cm<sup>3</sup>/rec (in<sup>3</sup>/rev)<br/>                 E03 - 9.8 (0.60)<br/>                 E04 - 12.8 (0.78)<br/>                 E05 - 15.9 (0.97)<br/>                 E06 - 19.8 (1.20)<br/>                 E07 - 22.5 (1.37)<br/>                 E08 - 24.9 (1.51)<br/>                 E09 - 28.0 (1.70)<br/>                 E10 - 31.8 (1.92)<br/>                 E11 - 35.0 (2.14)<br/>                 E12 - 41.0 (2.47)<br/>                 E14 - 45.0 (2.70)<br/>                 E15 - 50.0 (3.01)</p> <p><b>4. Type of shaft</b><br/>                 HT7DD<br/>                 5 - ISO 3019-2-G32M Keyed Shaft<br/><br/>                 HT7DDS<br/>                 1 - SAE C Keyed Shaft<br/>                 2 - SAE CC Keyed Shaft<br/>                 3 - SAE C Splined Shaft<br/>                 4 - SAE BB Splined Shaft</p> | <p><b>5. Direction of rotation (Viewed from shaft end)</b><br/>                 R - Turn right<br/>                 L - Turn left</p> <p><b>6. Porting combination (see page Porting Diagrams)</b><br/>                 00 - Standard</p> <p><b>7. Design letter</b></p> <p><b>8. Port Connection (4 bolts SAE flange J518C)</b><br/>                 00 - UNC Port Connection (Except HT7DD)<br/>                 M0 - Metric Port Connection</p> <p><b>9. Modifications</b><br/>                 Omit - Standard<br/>                 718 - Surface grinding the flange face for the manifold.</p> |
|--|--|

# Variable Speed Double Vane Pump HT7DD/HT7DDS Series

## Installation Dimension mm (inch)

### HT7DD, HT7DDS



### Alternate mounting flange

Model	ØS		ex 45°	W	K1	Ød1	K2	Ød2
	MAX.	MIN.						
HT7DD	125.00	124.937	2.0	9.5	180.0	18.0	113.14	14.0
HT7DDS	127.00	126.950	1.3	12.7	181.0	17.5	114.50	14.3



# Variable Speed Double Vane Pump HT7DD/HT7DDS Series

## Performance Characteristics

### HT7DD, HT7DDS

#### OPERATING CHARACTERISTICS - TYPICAL [115 SUS]

Pressure port	Series	Volumetric Displacement	Flow Q {GPM} & n = 1800 RPM			Input power P {HP} & n = 1800 RPM		
			p = 0 PSI	p = 2000 PSI	p = 3500 PSI	p = 0 PSI	p = 2000 PSI	p = 3500 PSI
P1	E14	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	E17	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	E20	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	E22	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	E24	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	E28	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	E31	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	E35	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	E38	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	E42	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19
P2	E14	2.90 in <sup>3</sup> /rev	22.64	20.46	18.82	4.02	29.31	49.34
	E17	3.55 in <sup>3</sup> /rev	27.68	25.50	23.86	4.31	35.20	59.64
	E20	4.00 in <sup>3</sup> /rev	31.39	29.21	27.57	4.53	39.52	67.21
	E22	4.29 in <sup>3</sup> /rev	33.43	31.69	30.32	4.19	42.37	72.57
	E24	4.80 in <sup>3</sup> /rev	37.82	35.63	33.99	4.91	47.02	80.32
	E28	5.50 in <sup>3</sup> /rev	42.66	40.48	38.84	5.19	52.68	90.23
	E31	6.00 in <sup>3</sup> /rev	46.75	44.57	42.93	5.43	57.45	98.58
	E35	6.80 in <sup>3</sup> /rev	52.79	50.61	48.97	5.78	64.50	110.91
	E38	7.30 in <sup>3</sup> /rev	57.21	55.03	53.39	6.04	69.66	119.94
	E42	8.30 in <sup>3</sup> /rev	64.68	62.50	60.86	6.47	78.37	135.19

- Not to use because internal leakage greater than 50% theoretical flow.

- Port connection can be furnished with metric threads.

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## **IV. Fixed Displacement Power Steering Vane Pump**

# Single Vane Pump

## HV10 Series

### Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Max. Speed rpm	Min. Speed rpm	Weight kg (lb)
HV 10	1	3.3 (0.20)	4.70 (1.25)	175 (2500)	160 (2250)	4800	650	5.4 - 5.8 (11.88 - 12.76)
	2	6.6 (0.40)	9.40 (2.50)			4500		
	3	9.8 (0.60)	14.20 (3.75)			4000		
	4	13.1 (0.80)	18.90 (5.00)			3400		
	5	16.4 (1.00)	23.60 (6.25)	3200				
	6	19.5 (1.19)	28.40 (7.50)	150 (2200)	140 (2000)	3000		
	7	22.8 (1.39)	33.10 (8.75)	140 (2000)	140 (2000)	2800		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Single Vane Pump

## HV10 Series

### Ordering Code : Single Pump

HV10 - 1 S 4 S - 1 C - 20 - L  
 1      2 3 4 5      6 7      8      9

#### 1. Model :

HV10 - Standard Cover  
SAE A 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

S - 1" 5/16 - 12 UN(SAE#16)  
P - 1" NPT  
B - 1" BSP

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

1 - 3.3 (0.20)  
2 - 6.6 (0.40)  
3 - 9.8 (0.60)  
4 - 13.1 (0.80)  
5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)

#### 5. Outlet Port Connection

S - 3/4" - 16 UNF(SAE#8)  
P - 1/2" NPT  
B - 1/2" BSP

#### 6. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
11 - Splined Shaft  
12 - Splined Shaft  
38 - Splined Shaft

#### 7. Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 8. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

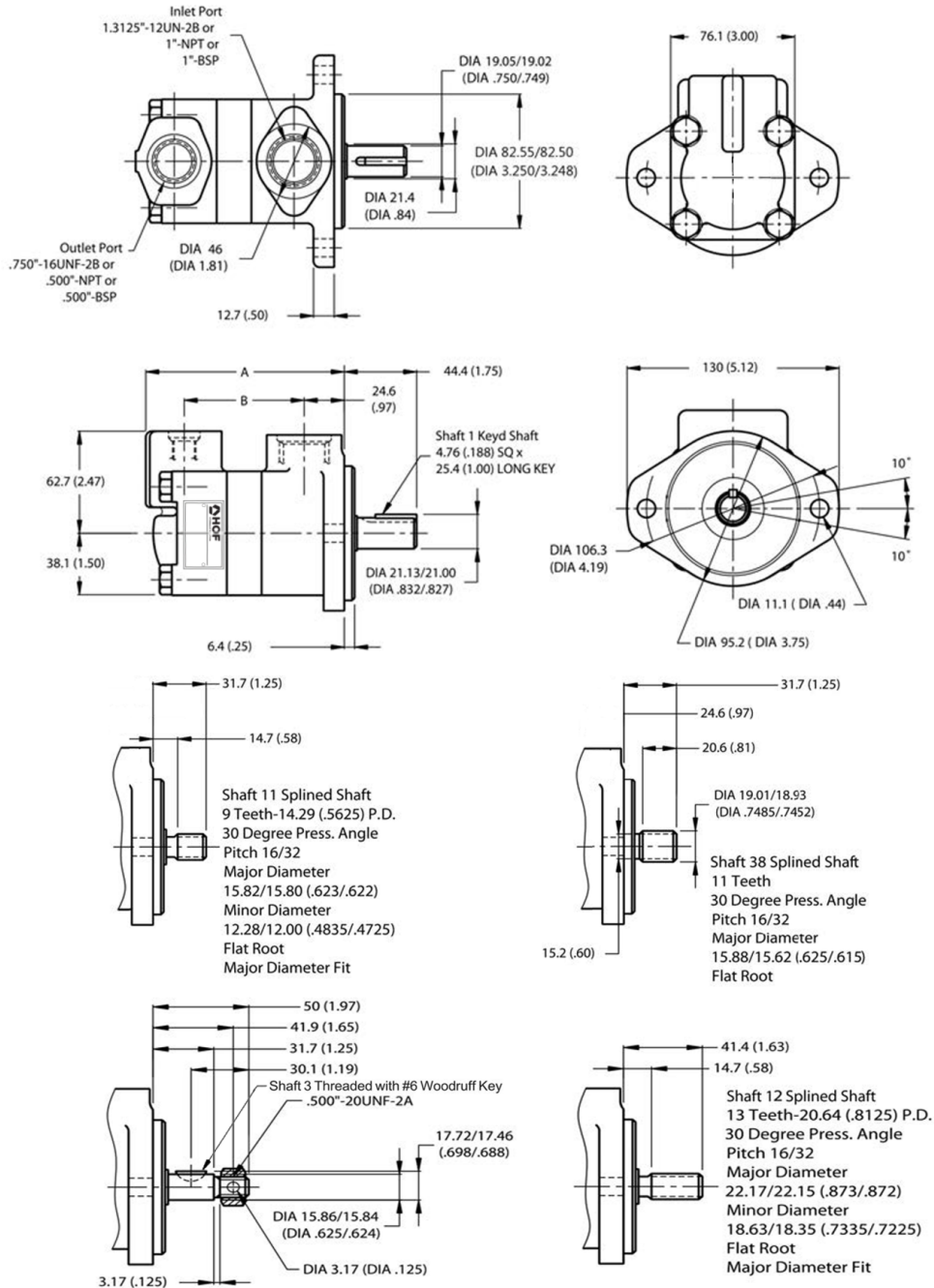
#### 9. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

# Single Vane Pump HV10 Series

## Installation Dimension mm (inch)

### HV10



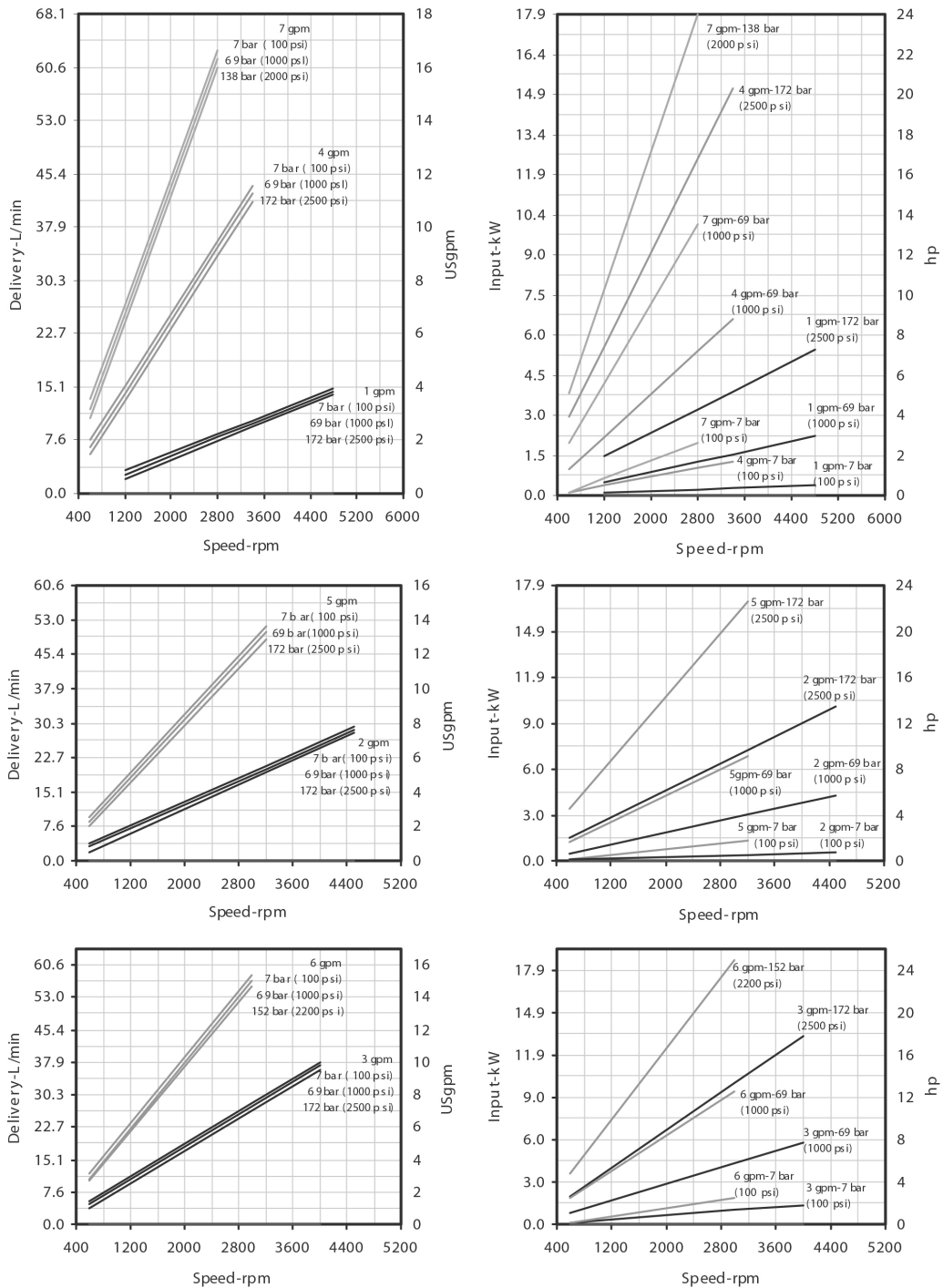
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	115.6 (4.55)	67.3 (2.65)
4, 5	121.9 (4.80)	73.7 (2.90)
6, 7	127.0 (5.00)	78.7 (3.10)

# Single Vane Pump HV10 Series

## Performance Characteristics

### HV10, Cover End of HV2010

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Single Vane Pump HV10F/HV10P Series

## Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Max. Intermittent Pressure bar (psi)	Max. Continuous Pressure bar (psi)	Max. Speed rpm	Min. Speed rpm	Weight kg (lb)
HV 10 F HV 10 P	1	3.3 (0.20)	4.70 (1.25)	175 (2500)	160 (2250)	4800	650	6.00 - 6.70 (13.2 - 14.74)
	2	6.6 (0.40)	9.40 (2.50)			4500		
	3	9.8 (0.60)	14.20 (3.75)			4000		
	4	13.1 (0.80)	18.90 (5.00)	3400				
	5	16.4 (1.00)	23.60 (6.25)	3200				
	6	19.5 (1.19)	28.40 (7.50)	150 (2200)	140 (2000)	3000		
	7	22.8 (1.39)	33.10 (8.75)	140 (2000)	140 (2000)	2800		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Single Vane Pump

## HV10F/HV10P Series

### Ordering Code : Single Pump HV10F

**HV10F - 1 S 4 P - 1 C 8 - H 20 - L**  

1
2
3
4
5
6
7
8
9
10
11

#### 1. Model :

HV10F - Flow Control Cover  
SAE A 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

S - 1" 5/16 - 12 UN(SAE#16)  
P - 1" NPT  
B - 1" BSP

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

1 - 3.3 (0.20)  
2 - 6.6 (0.40)  
3 - 9.8 (0.60)  
4 - 13.1 (0.80)  
5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)

#### 5. Outlet Port Connection

HV10F  
P - 3/4" - 16 UNF(SAE#8) for outlet and  
1/2" NPT for tank port  
T - 3/4" - 16 UNF(SAE#8) for outlet and tank port

#### 6. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
11 - Splined Shaft  
12 - Splined Shaft  
38 - Splined Shaft

#### 7. Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 8. Flow rate Setting L/min (USgpm)

2 - 7.6 (2)  
3 - 11.4 (3)  
4 - 15.2 (4)  
5 - 19.0 (5)  
6 - 22.7 (6)  
7 - 26.5 (7)  
8 - 30.3 (8)

#### 9. Pressure Setting bar (psi)

A - 17 (250)  
B - 34 (500)  
C - 52 (750)  
D - 69 (1000)  
E - 86 (1250)  
F - 103 (1500)  
G - 121 (1750)  
H - 138 (2000)  
J - 150 (2250)  
K - 172 (2500)

#### 10. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

#### 11. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left



# Single Vane Pump

## HV10F/HV10P Series

### Ordering Code : Single Pump HV10P

**HV10P - 1 S 4 K - 1 C 8 - H 20 - L**

1	2	3	4	5	6	7	8	9	10	11
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#### 1. Model :

HV10P - Priority Valve Cover SAE A 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

S - 1" 5/16 - 12 UN(SAE#16)  
P - 1" NPT  
B - 1" BSP

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

1 - 3.3 (0.20)  
2 - 6.6 (0.40)  
3 - 9.8 (0.60)  
4 - 13.1 (0.80)  
5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)

#### 5. Outlet Port Connection

K - 9/16" - 18 UNF for primary outlet and tank port and 3/4" - 16 UNF(SAE#8) for secondary outlet

#### 6. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
11 - Splined Shaft  
12 - Splined Shaft  
38 - Splined Shaft

#### 7. Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 8. Flow rate Setting L/min (USgpm)

2 - 7.6 (2)  
3 - 11.4 (3)  
4 - 15.2 (4)  
5 - 19.0 (5)  
6 - 22.7 (6)  
7 - 26.5 (7)  
8 - 30.3 (8)

#### 9. Pressure Setting bar (psi)

A - 17 (250)  
B - 34 (500)  
C - 52 (750)  
D - 69 (1000)  
E - 86 (1250)  
F - 103 (1500)  
G - 121 (1750)  
H - 138 (2000)  
J - 150 (2250)  
K - 172 (2500)

#### 10. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

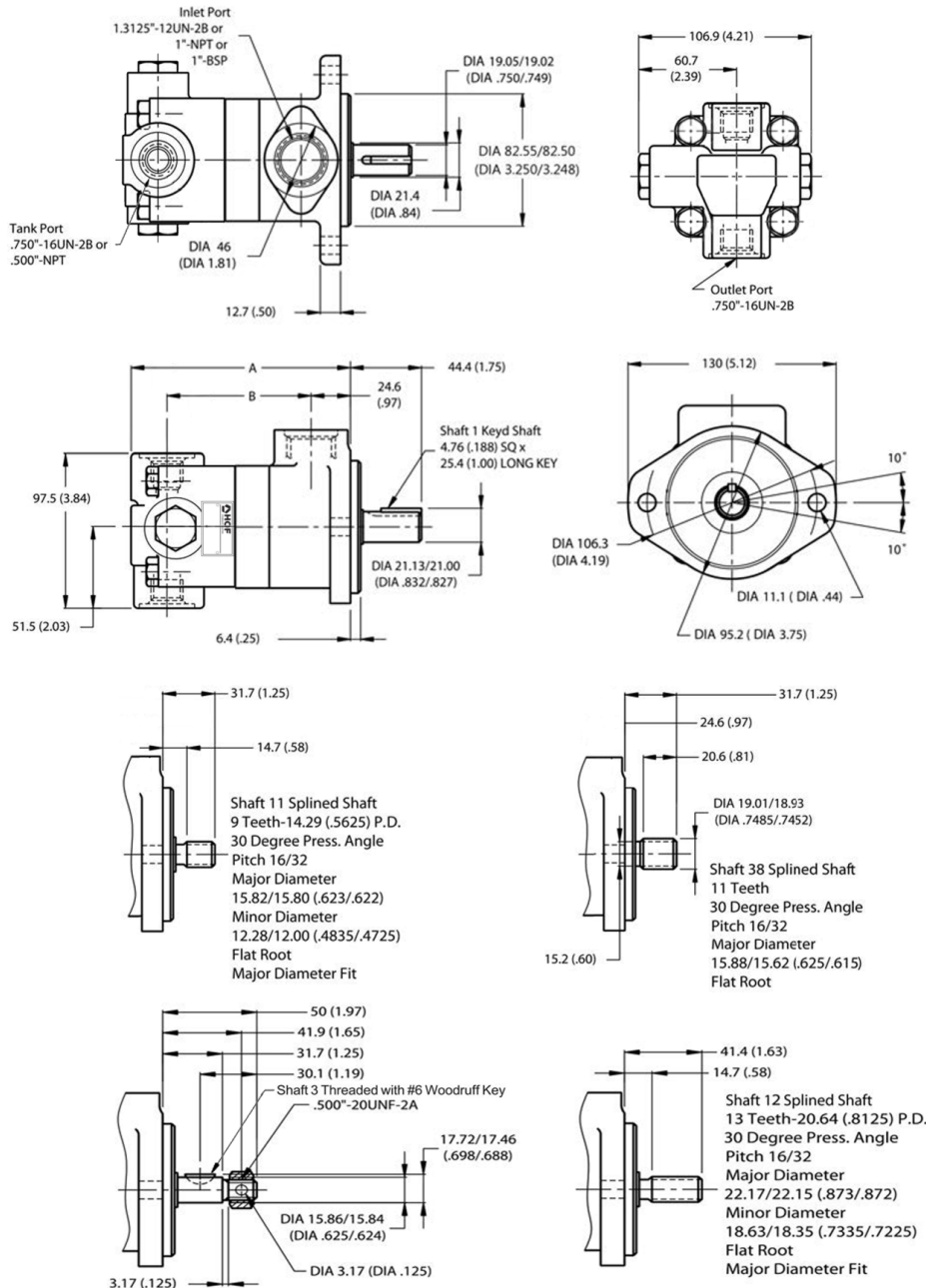
#### 11. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

# Single Vane Pump HV10F/HV10P Series

## Installation Dimension mm (inch)

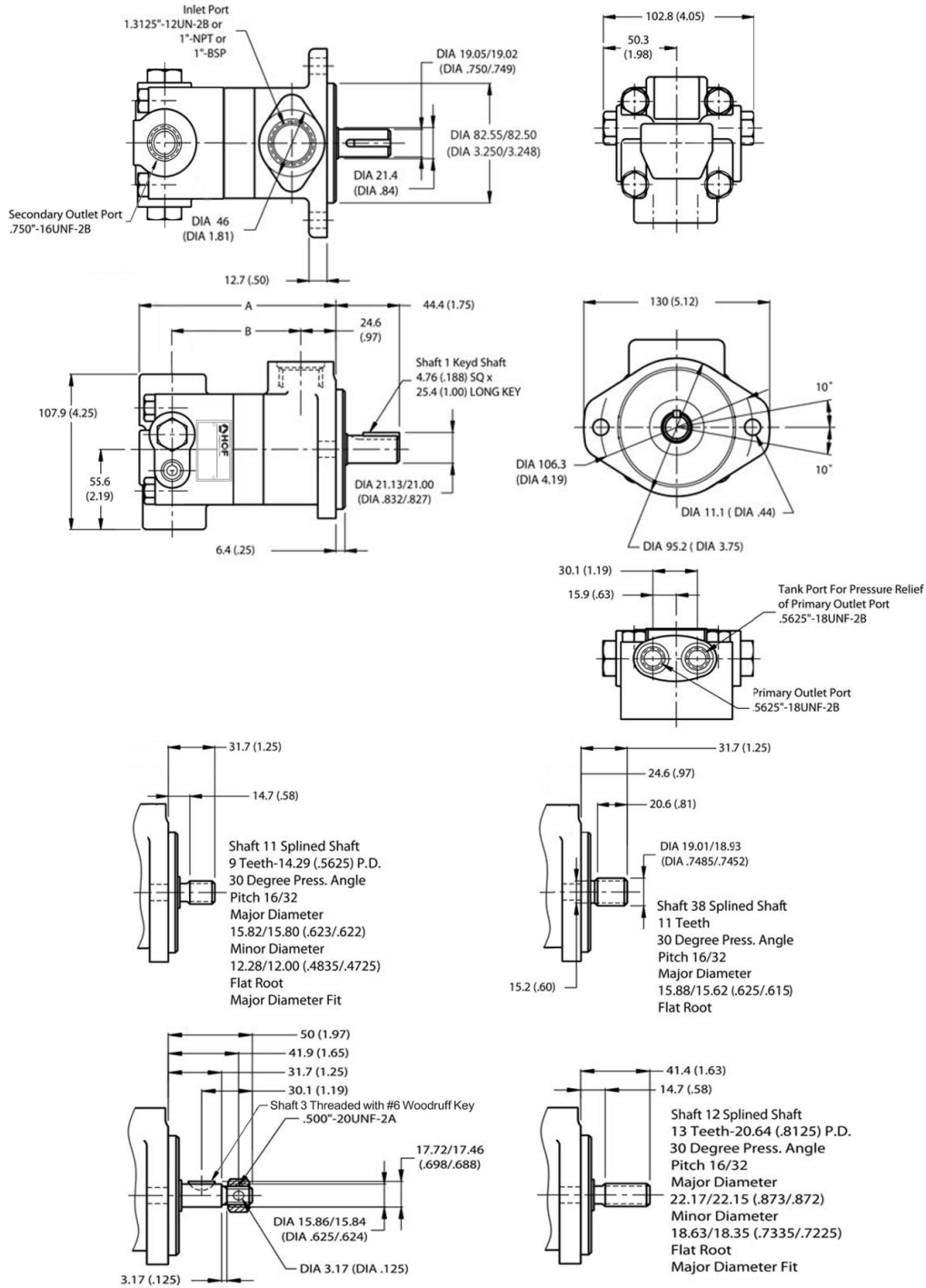
### HV10F



Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	128.8 (5.07)	84.8 (3.34)
4, 5	135.1 (5.32)	91.2 (3.59)
6, 7	140.2 (5.52)	96.3 (3.79)

# Single Vane Pump HV10F/HV10P Series

## HV10P



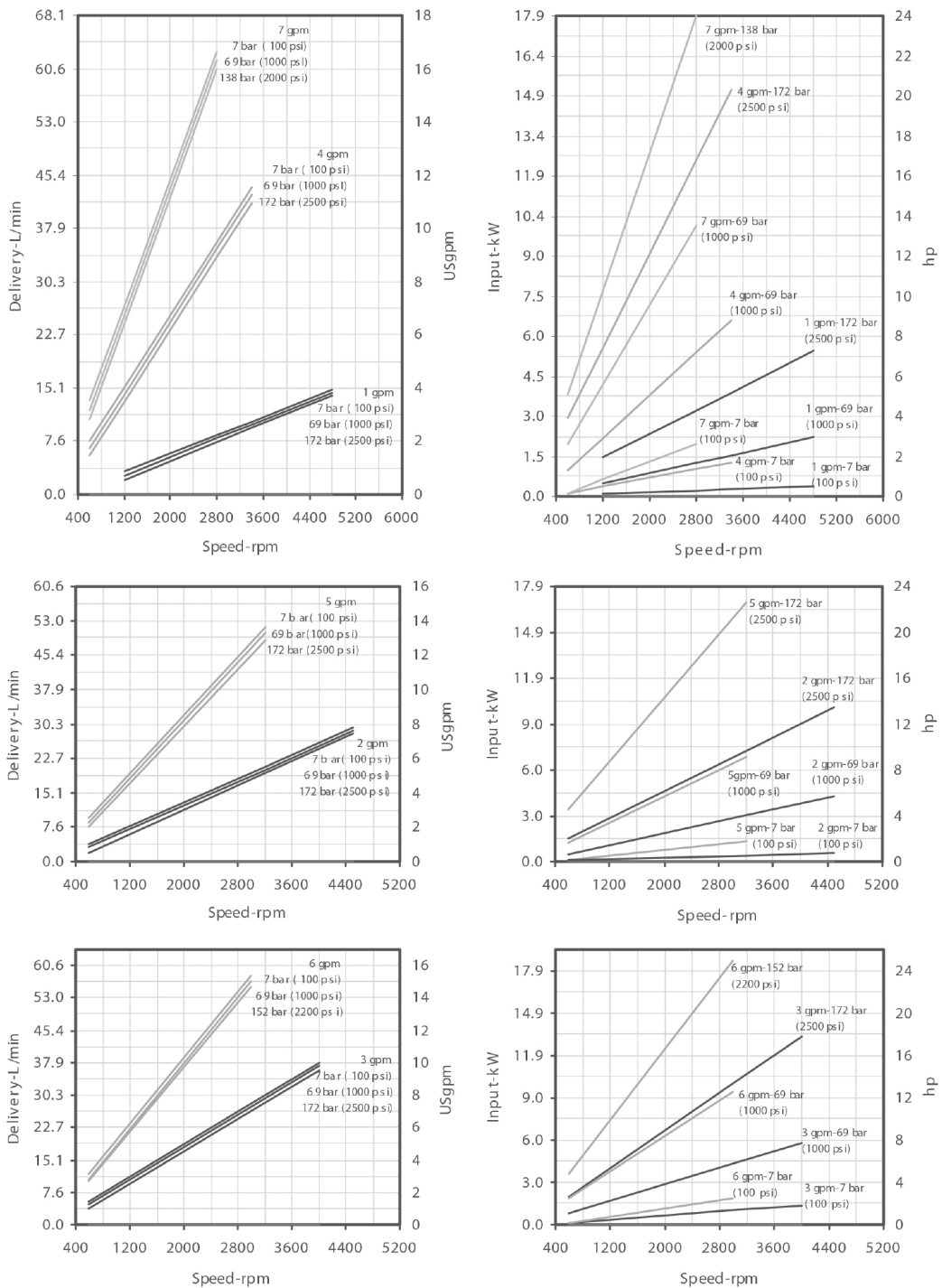
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
1, 2, 3	130.0 (5.12)	84.8 (3.34)
4, 5	136.4 (5.37)	91.2 (3.59)
6, 7	141.5 (5.57)	96.3 (3.79)

# Single Vane Pump HV10F/HV10P Series

## Performance Characteristics

### HV10, Cover End of HV2010

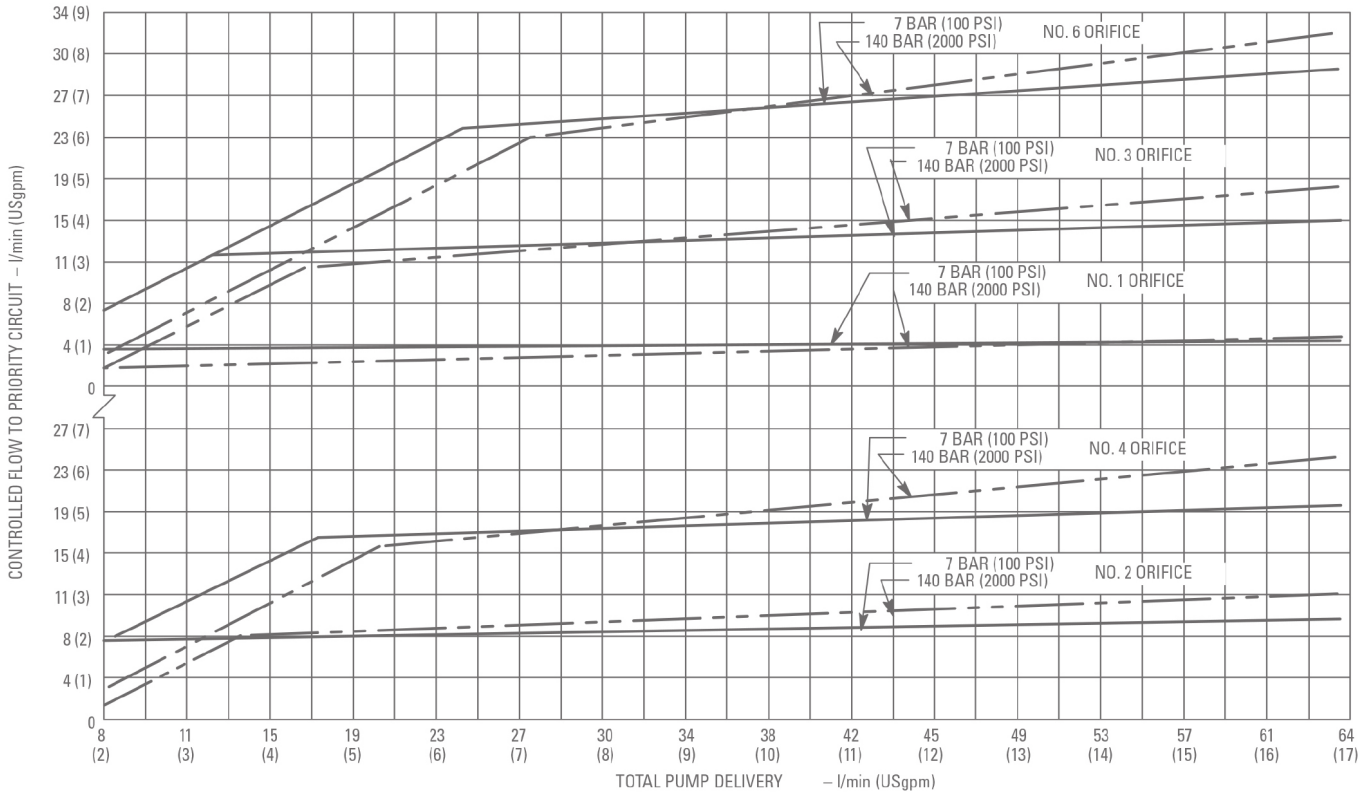
Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



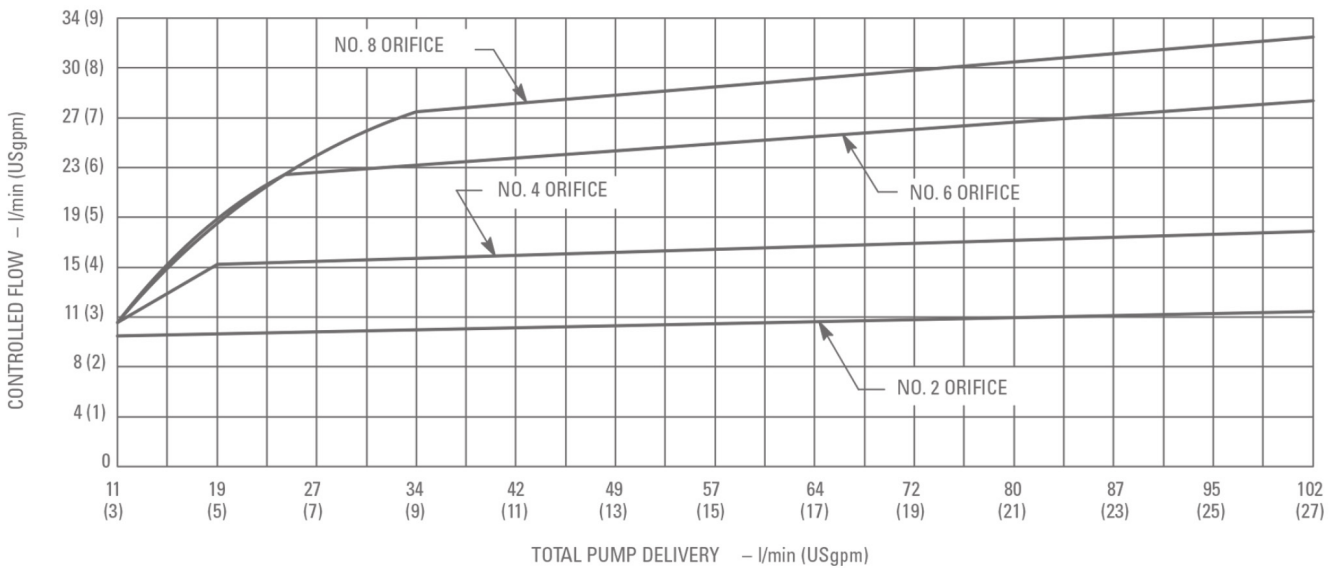
For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Single Vane Pump HV10F/HV10P Series

## Priority Valve : HV10P



## Flow control : HV10F



# Single Vane Pump

## HV20 Series

### Specifications

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement  cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi)  L/min (USgpm)	Max. Intermittent Pressure  bar (psi)	Max. Continuous Pressure  bar (psi)	Max. Speed  rpm	Min. Speed  rpm	Weight  kg (lb)
HV 20	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	650	7.50 - 8.50 (16.50 - 18.70)
	6	19.5 (1.19)	28.39 (7.50)			3400		
	7	22.8 (1.39)	33.11 (8.75)			3000		
	8	26.5 (1.62)	37.85 (10.00)			2800		
	9	29.7 (1.81)	42.57 (11.25)			2800		
	10	34.1 (2.08)	47.30 (12.51)			2500		
	11	36.4 (2.22)	52.04 (13.75)	2500				
	12	39.0 (2.38)	56.77 (15.00)	150 (2200)	140 (2000)	2400		
	13	42.4 (2.59)	61.50 (16.25)	150 (2200)	140 (2000)	2400		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Single Vane Pump

## HV20 Series

### Ordering Code : Single Pump

HV20 - 1 S 9 S - 1 C - 20 - L

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

#### 1. Model :

HV20 - Standard Cover  
SAE A 2 bolts mounting flange J744

#### 2. Mounting

1 - Bolt Flange

#### 3. Inlet Port Connection

S - 1" 5/8 - 12 UN(SAE#20)  
P - 1" 1/4 NPT  
B - 1" 1/4 BSP

#### 4. Displacement (at 1200 rpm)

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

5 - 16.4 (1.00)  
6 - 19.5 (1.19)  
7 - 22.8 (1.39)  
8 - 26.5 (1.62)  
9 - 29.7 (1.81)  
10 - 34.1 (2.08)  
11 - 36.4 (2.22)  
12 - 39.0 (2.38)  
13 - 42.4 (2.59)

#### 5. Outlet Port Connection

S - 1" 1/16 - 12 UN(SAE#12)  
P - 3/4" NPT  
B - 3/4" BSP

#### 6. Type of shaft

1 - Straight Keyed Shaft  
3 - Threaded with woodruff Keyed Shaft  
6 - Woodruff Keyed stub Shaft  
11 - Splined Shaft  
15 - Splined Shaft  
38 - Splined Shaft  
62 - Splined Shaft  
123 - Threaded with woodruff Keyed Shaft

#### 7. Outlet Port Position (Viewed from cover end)

A - Opposite inlet  
B - 90° CCW from inlet  
C - Inline with inlet  
D - 90° CW from inlet

#### 8. Design

Subject to change. Installation dimension remain the same for designs - 20 through -29

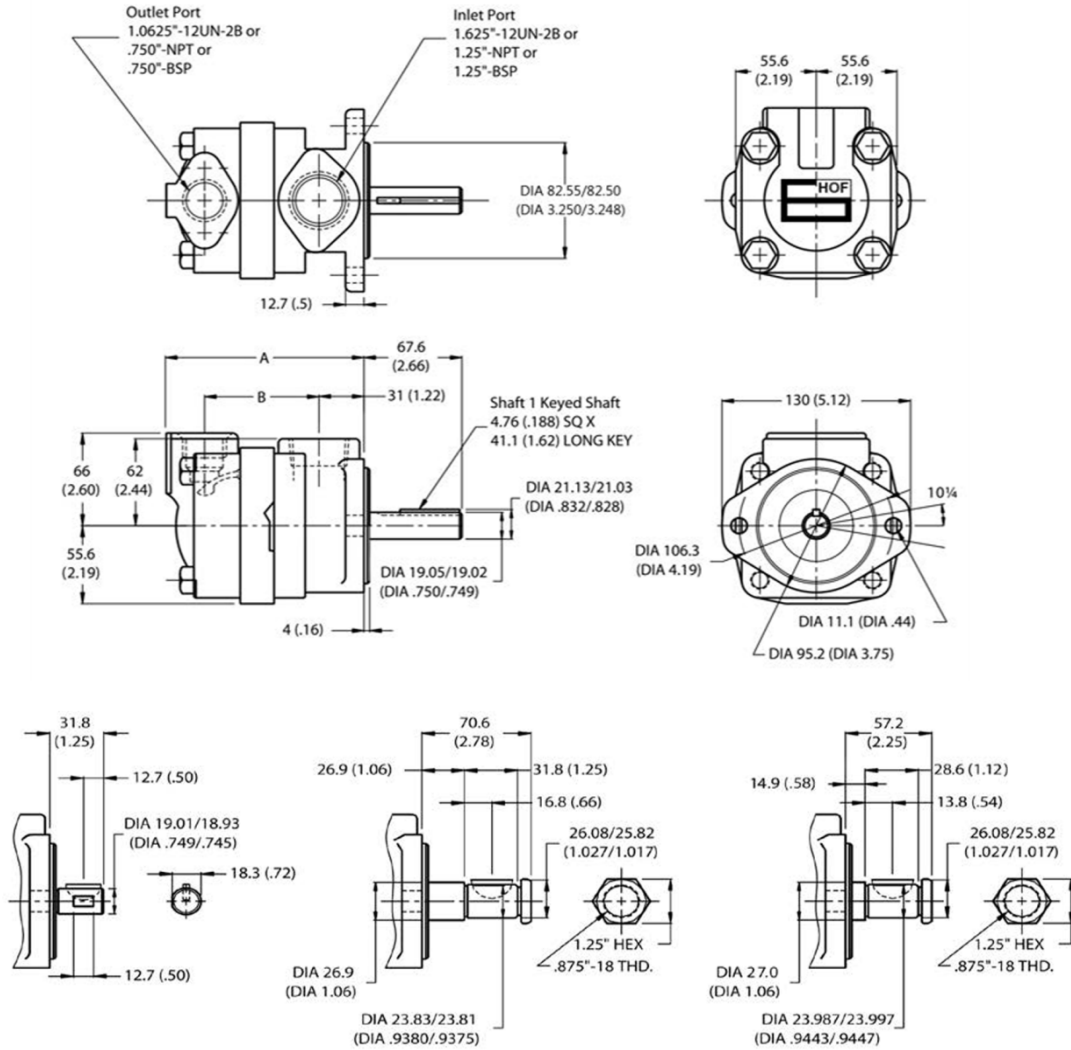
#### 9. Shaft Rotation (viewed from shaft end)

R - Turn right  
L - Turn left

# Single Vane Pump HV20 Series

## Installation Dimension mm (inch)

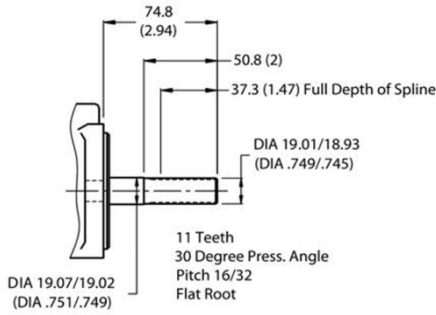
### HV20



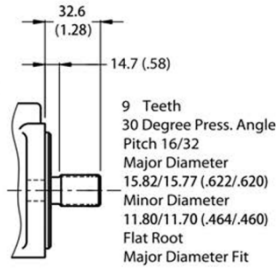
Shaft 6 Straight Stub Keyed Shaft    Shaft 3 Threaded with #6 Woodruff Key    Shaft 123 Threaded with #13 Woodruff Key



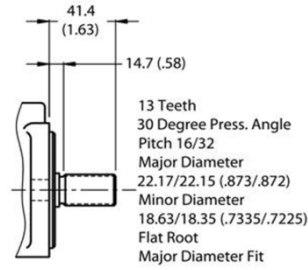
# Single Vane Pump HV20 Series



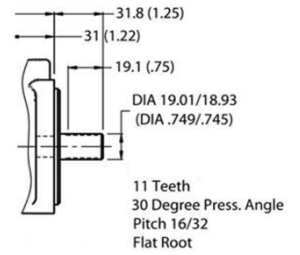
Shaft 11 Splined Shaft 11 Teeth



Shaft 62 Splined Shaft 9 Teeth



Shaft 15 Splined Shaft 13 Teeth



Shaft 38 Splined Shaft 11 Teeth

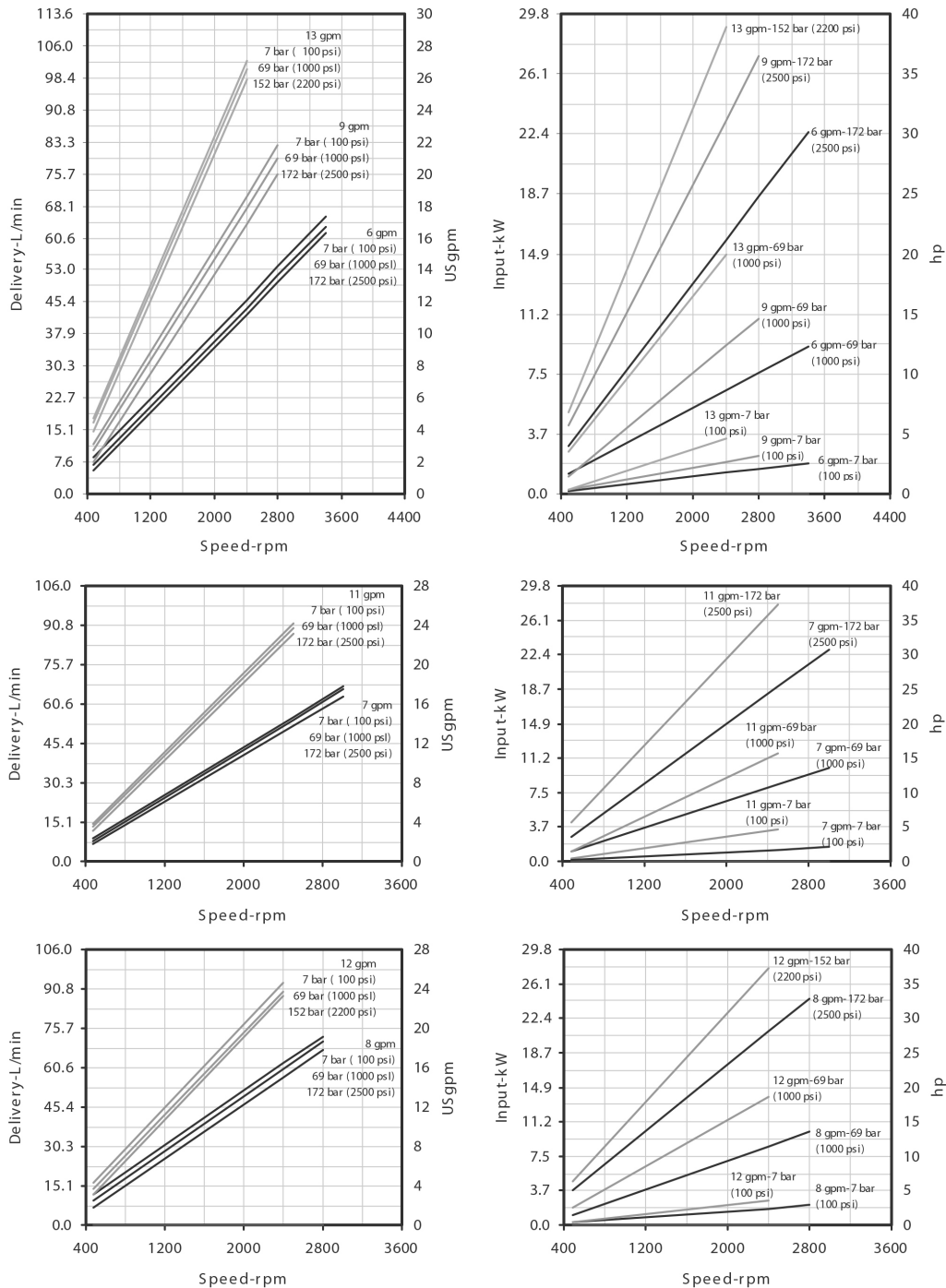
Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
5, 6	125.2 (4.93)	71.1 (2.80)
7, 8, 9	131.6 (5.18)	77.5 (3.05)
10, 11	136.7 (5.38)	82.6 (3.25)
12, 13	140.2 (5.52)	86.1 (3.39)

# Single Vane Pump HV20 Series

## Performance Characteristics

### HV20, Shaft End of HV20, Cover End of HV2020

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)



For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.

# Single Vane Pump

## HV20F NF/HV20P Series

### Specifications

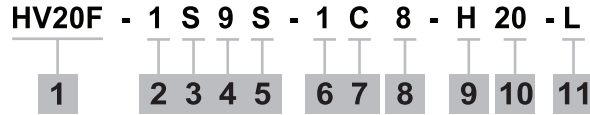
Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi) USgpm	Geometric Displacement  cm <sup>3</sup> /r (in <sup>3</sup> /r)	Delivery at 1500 r/min & 7 bar (100 psi) L/min (USgpm)	Max. Intermittent Pressure  bar (psi)	Max. Continuous Pressure  bar (psi)	Max. Speed  rpm	Min. Speed  rpm	Weight  kg (lb)
HV 20 F NF & HV 20 P	5	16.4 (1.00)	23.60 (6.25)	175 (2500)	160 (2250)	3400	650	9.30 - 10.60 (20.46 - 23.32)
	6	19.5 (1.19)	28.39 (7.50)			3400		
	7	22.8 (1.39)	33.11 (8.75)			3000		
	8	26.5 (1.62)	37.85 (10.00)			2800		
	9	29.7 (1.81)	42.57 (11.25)			2800		
	10	34.1 (2.08)	47.30 (12.51)			2500		
	11	36.4 (2.22)	52.04 (13.75)	2500				
	12	39.0 (2.38)	56.77 (15.00)	150 (2200)	140 (2000)	2400		
	13	42.4 (2.59)	61.50 (16.25)			2400		

\* A transient (peak) pressure 10% over the continuous pressure rating for 0.5 seconds or less duration is allowed.

# Single Vane Pump

## HV20F NF/HV20P Series

### Ordering Code : Single Pump HV20F NF



- |   |   |
|---|---|
| <p>1. Model :</p> <ul style="list-style-type: none"> <li>HV20F - Flow Control Cover</li> <li>HV20NF - Flow Control Cover &amp; Internal Drain<br/>SAE A 2 bolts mounting flange J744</li> </ul> <p>2. Mounting</p> <ul style="list-style-type: none"> <li>1 - Bolt Flange</li> </ul> <p>3. Inlet Port Connection</p> <ul style="list-style-type: none"> <li>S - 1" 5/8 - 12 UN(SAE#20)</li> <li>P - 1" 1/4 NPT</li> <li>B - 1" 1/4 BSP</li> </ul> <p>4. Displacement (at 1200 rpm)</p> <p>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> <li>8 - 26.5 (1.62)</li> <li>9 - 29.7 (1.81)</li> <li>10 - 34.1 (2.08)</li> <li>11 - 36.4 (2.22)</li> <li>12 - 39.0 (2.38)</li> <li>13 - 42.4 (2.59)</li> </ul> <p>5. Outlet Port Connection</p> <p>HV20F</p> <ul style="list-style-type: none"> <li>S - 3/4" - 16 UNF (SAE#8) for outlet and<br/>1" 1/16 - 12 UN(SAE#12) for tank port</li> <li>P - 3/4" - 16 UNF(SAE#8) for outlet and<br/>1/2" NPT for tank port</li> <li>T - 3/4" - 16 UNF(SAE#8) for outlet and tank port</li> </ul> <p>HV20NF</p> <ul style="list-style-type: none"> <li>S - 3/4" - 16 UNF(SAE#8) for outlet</li> </ul> <p>6. Type of shaft</p> <ul style="list-style-type: none"> <li>1 - Straight Keyed Shaft</li> <li>3 - Threaded with woodruff Keyed Shaft</li> <li>6 - Woodruff Keyed stub Shaft</li> <li>11 - Splined Shaft</li> <li>15 - Splined Shaft</li> <li>38 - Splined Shaft</li> <li>62 - Splined Shaft</li> <li>123 - Threaded with woodruff Keyed Shaft</li> </ul> | <p>7. Outlet Port Position (Viewed from cover end)</p> <ul style="list-style-type: none"> <li>A - Opposite inlet</li> <li>B - 90° CCW from inlet</li> <li>C - Inline with inlet</li> <li>D - 90° CW from inlet</li> </ul> <p>8. Flow rate Setting L/min (USgpm)</p> <ul style="list-style-type: none"> <li>2 - 7.6 (2)</li> <li>3 - 11.4 (3)</li> <li>4 - 15.2 (4)</li> <li>5 - 19.0 (5)</li> <li>6 - 22.7 (6)</li> <li>7 - 26.5 (7)</li> <li>8 - 30.3 (8)</li> </ul> <p>9. Pressure Setting bar (psi)</p> <ul style="list-style-type: none"> <li>A - 17 (250)</li> <li>B - 34 (500)</li> <li>C - 52 (750)</li> <li>D - 69 (1000)</li> <li>E - 86 (1250)</li> <li>F - 103 (1500)</li> <li>G - 121 (1750)</li> <li>H - 138 (2000)</li> <li>J - 150 (2250)</li> <li>K - 172 (2500)</li> </ul> <p>10. Design</p> <p>Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p>11. Shaft Rotation (viewed from shaft end)</p> <ul style="list-style-type: none"> <li>R - Turn right</li> <li>L - Turn left</li> </ul> |
|---|---|

# Single Vane Pump

## HV20F NF/HV20P Series

### Ordering Code : Single Pump HV20P

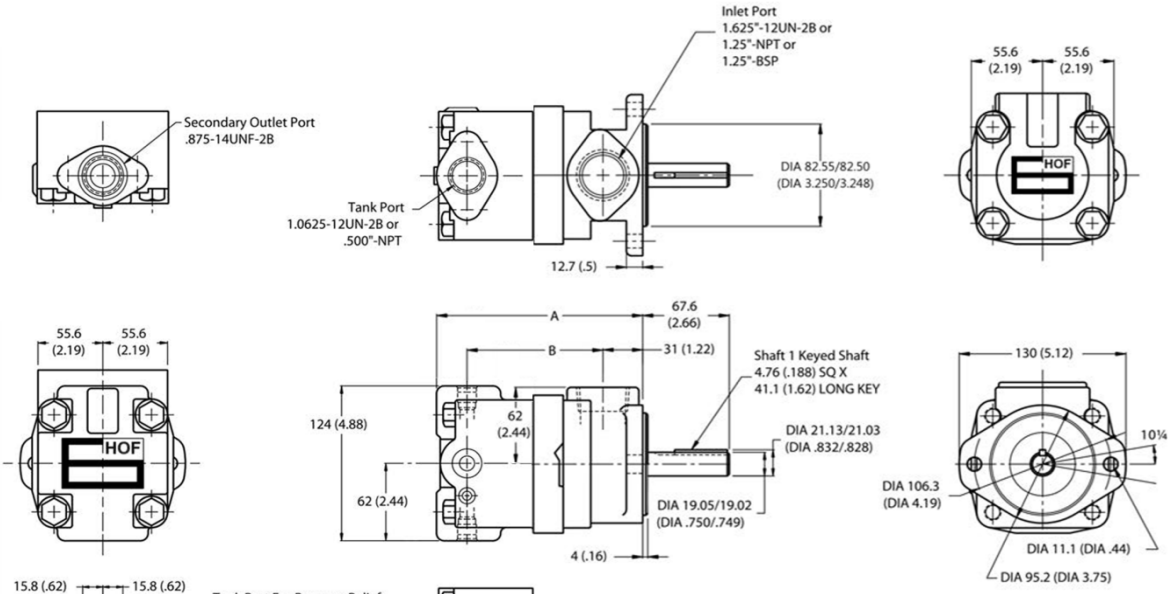
HV20P - 1 S 9 T - 1 C 8 - H 20 - L  
 1      2 3 4 5      6 7 8      9 10 11

- |  |  |
|--|--|
| <p>1. Model :<br/>HV20P - Priority Valve Cover<br/>SAE A 2 bolts mounting flange J744</p> <p>2. Mounting<br/>1 - Bolt Flange</p> <p>3. Inlet Port Connection<br/>S - 1" 5/8 - 12 UN(SAE#20)<br/>P - 1" 1/4 NPT<br/>B - 1" 1/4 BSP</p> <p>4. Displacement (at 1200 rpm)<br/>Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)</p> <ul style="list-style-type: none"> <li>5 - 16.4 (1.00)</li> <li>6 - 19.5 (1.19)</li> <li>7 - 22.8 (1.39)</li> <li>8 - 26.5 (1.62)</li> <li>9 - 29.7 (1.81)</li> <li>10 - 34.1 (2.08)</li> <li>11 - 36.4 (2.22)</li> <li>12 - 39.0 (2.38)</li> <li>13 - 42.4 (2.59)</li> </ul> <p>5. Outlet Port Connection<br/>T - 3/4" - 16 UNF (SAE#8) for primary outlet and tank port and 7/8" - 14 UN(SAE#10) for secondary outlet</p> <p>6. Type of shaft</p> <ul style="list-style-type: none"> <li>1 - Straight Keyed Shaft</li> <li>3 - Threaded with woodruff Keyed Shaft</li> <li>6 - Woodruff Keyed stub Shaft</li> <li>11 - Splined Shaft</li> <li>15 - Splined Shaft</li> <li>38 - Splined Shaft</li> <li>62 - Splined Shaft</li> <li>123 - Threaded with woodruff Keyed Shaft</li> </ul> | <p>7. Outlet Port Position (Viewed from cover end)</p> <ul style="list-style-type: none"> <li>A - Opposite inlet</li> <li>B - 90° CCW from inlet</li> <li>C - Inline with inlet</li> <li>D - 90° CW from inlet</li> </ul> <p>8. Flow rate Setting L/min (USgpm)</p> <ul style="list-style-type: none"> <li>2 - 7.6 (2)</li> <li>3 - 11.4 (3)</li> <li>4 - 15.2 (4)</li> <li>5 - 19.0 (5)</li> <li>6 - 22.7 (6)</li> <li>7 - 26.5 (7)</li> <li>8 - 30.3 (8)</li> </ul> <p>9. Pressure Setting bar (psi)</p> <ul style="list-style-type: none"> <li>A - 17 (250)</li> <li>B - 34 (500)</li> <li>C - 52 (750)</li> <li>D - 69 (1000)</li> <li>E - 86 (1250)</li> <li>F - 103 (1500)</li> <li>G - 121 (1750)</li> <li>H - 138 (2000)</li> <li>J - 150 (2250)</li> <li>K - 172 (2500)</li> </ul> <p>10. Design<br/>Subject to change. Installation dimension remain the same for designs - 20 through -29</p> <p>11. Shaft Rotation (viewed from shaft end)</p> <ul style="list-style-type: none"> <li>R - Turn right</li> <li>L - Turn left</li> </ul> |
|--|--|

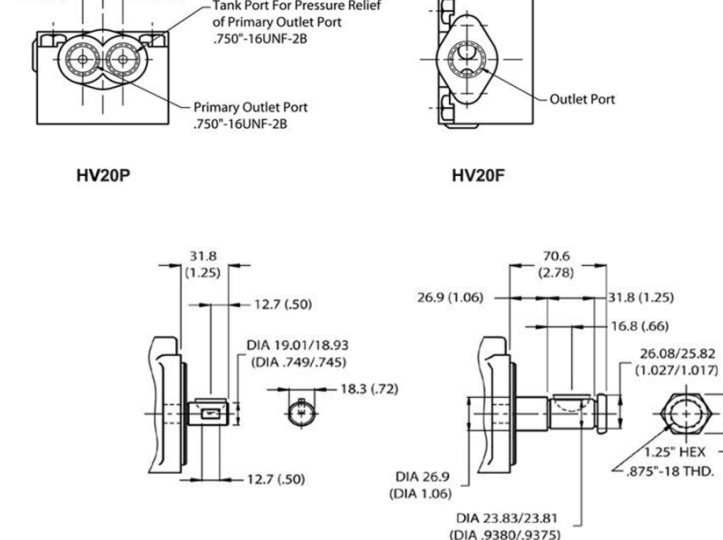
# Single Vane Pump HV20F NF/HV20P Series

## Installation Dimension mm (inch)

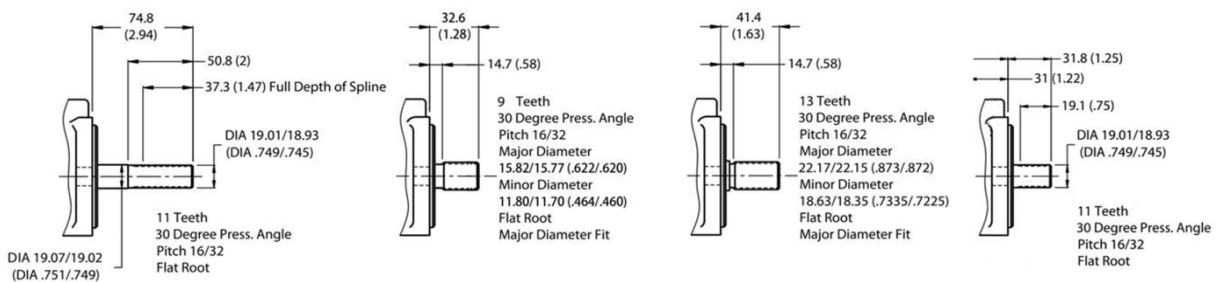
### Single Pump HV20F and HV20P



Delivery @ 1200 rpm & 7 bar (100psi)	Dimension	
	A	B
5, 6	149.6 (5.89)	94.7 (3.73)
7, 8, 9	156.0 (6.14)	101.1 (3.98)
10, 11	161.0 (6.34)	105.9 (4.17)
12, 13	164.3 (6.47)	109.5 (4.31)



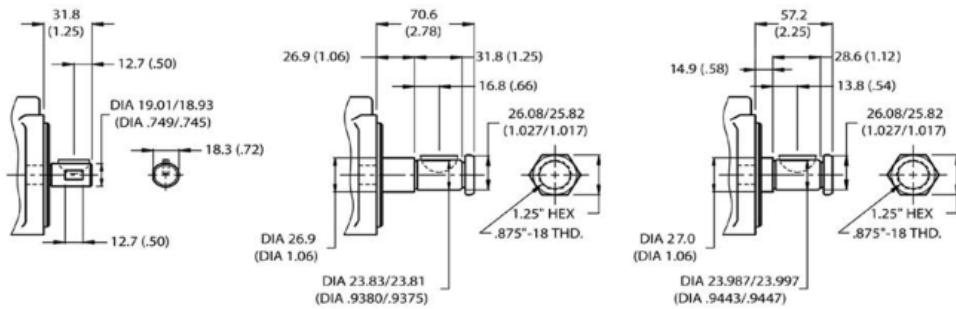
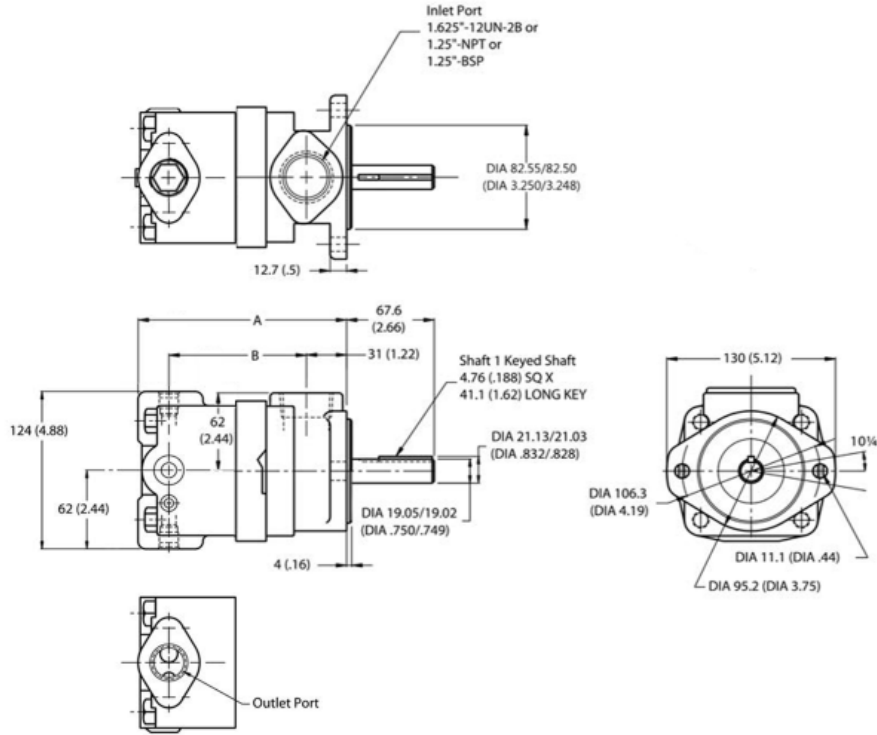
Shaft 6 Straight Stub Keyed Shaft    Shaft 3 Threaded with #6 Woodruff Key    Shaft 123 Threaded with #13 Woodruff Key



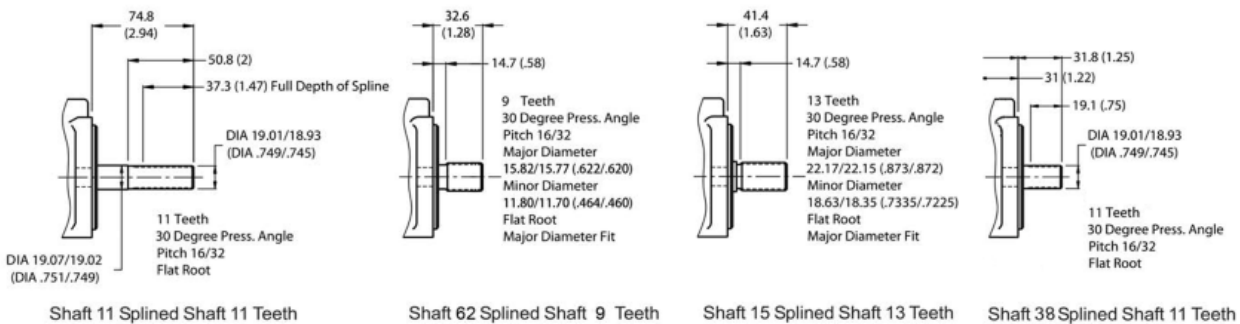
Shaft 11 Splined Shaft 11 Teeth    Shaft 62 Splined Shaft 9 Teeth    Shaft 15 Splined Shaft 13 Teeth    Shaft 38 Splined Shaft 11 Teeth

# Single Vane Pump HV20F NF/HV20P Series

## Single Pump HV20NF



Shaft 6 Straight Stub Keyed Shaft    Shaft 3 Threaded with #6 Woodruff Key    Shaft 123 Threaded with #13 Woodruff Key

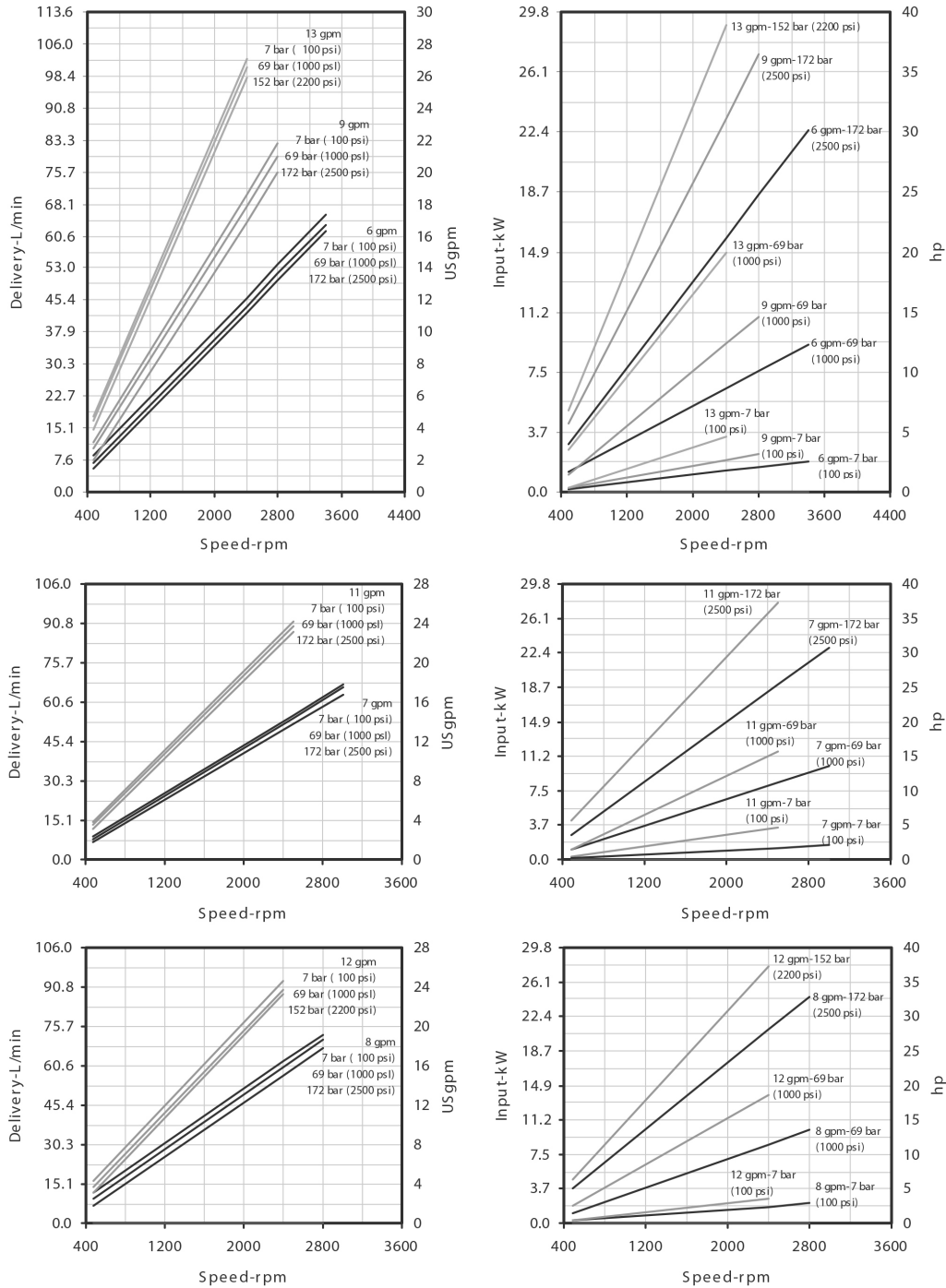


Shaft 11 Splined Shaft 11 Teeth    Shaft 62 Splined Shaft 9 Teeth    Shaft 15 Splined Shaft 13 Teeth    Shaft 38 Splined Shaft 11 Teeth

# Single Vane Pump HV20F NF/HV20P Series

## HV20, Shaft End of HV20, Cover End of HV2020

Based on viscosity 32 cSt (150 SSU) oil at 49°C (120°F) and pump inlet at 0 PSIG (14.7 PSIA)

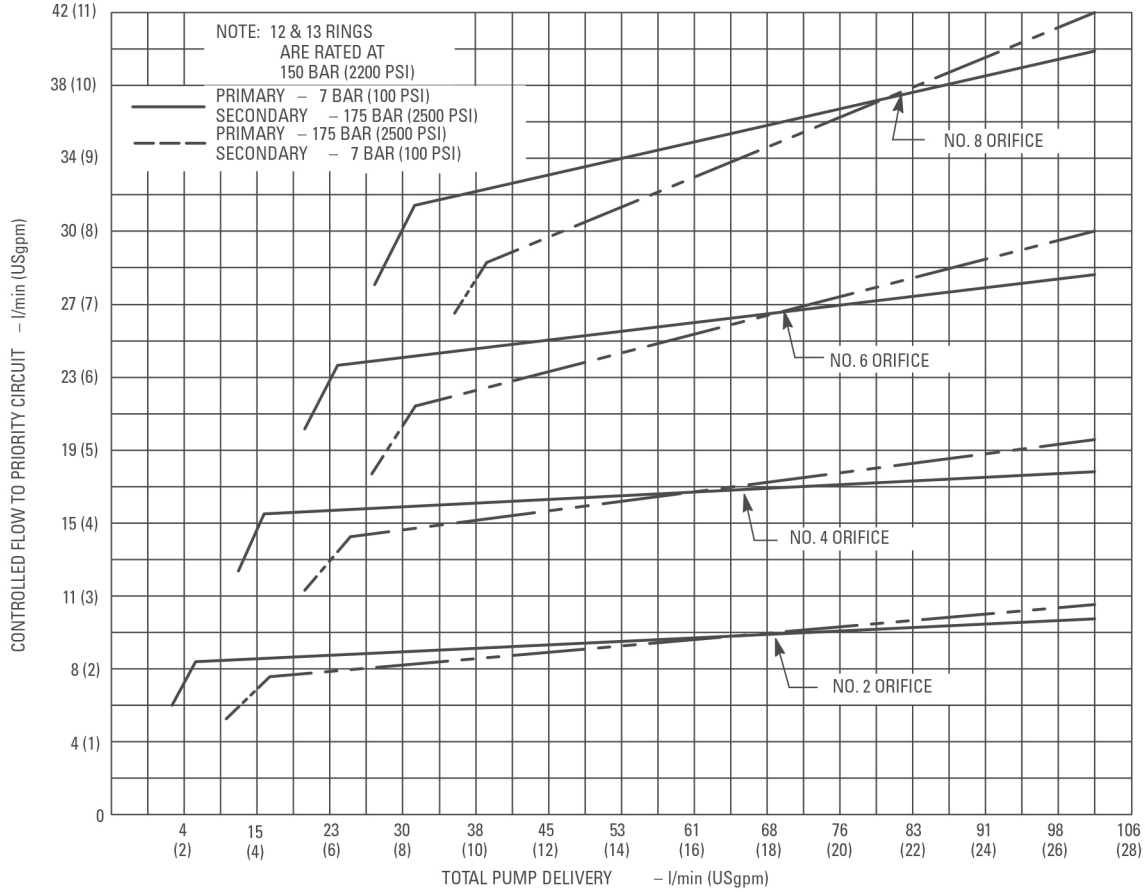


For the Cover End cartridge, the speed could not exceed the maximum speed of the shaft End Cartridge.



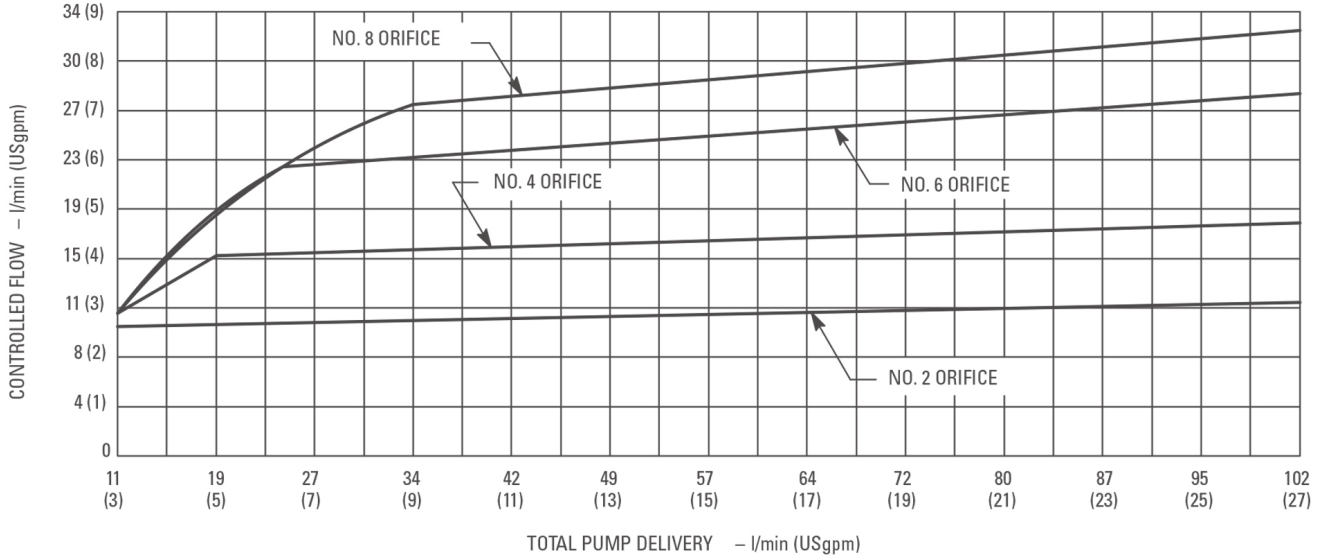
# Single Vane Pump HV20F NF/HV20P Series

## Priority Valve : HV20P



# Single Vane Pump HV20F NF/HV20P Series

## Flow control : HV20F NF



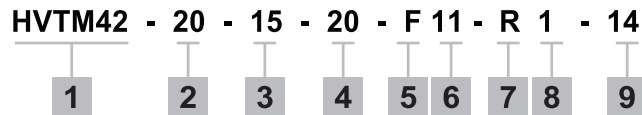
# Power Steering Vane Pump HVTM42 Series

## Specifications :

Model	Ring Size Delivery at 1200 r/min & 7 bar (100 psi)  USgpm	Geometric Displacement  cm <sup>3</sup> /r (in <sup>3</sup> /r)	Maximum Speed			Maximum Pressure  bar (psi)	Weight  kg (lb)
			at 7 bar (100 psi)  rpm	at 100 bar (1500 psi)  rpm	at 140 bar (2000 psi)  rpm		
HVTM42	1	3.4 (0.21)	7000	5000	4250	140 (2000)	7.2 (15.8)
	1.5	5.0 (0.31)		4500	4000		
	2	6.2 (0.38)		4200	3800		
	4	12.9 (0.79)		2800	2800		
	5	15.7 (0.96)	6000	2500	2300		
	6	19.3 (1.18)	5000	2500	2000		

# Power Steering Vane Pump HVTM42 Series

## Ordering Code



1. Model : HVTM42

2. Delivery (USgpm at 1200rpm & 7 bar)

- 10 - 1.0 USgpm
- 15 - 1.5 USgpm
- 20 - 2.0 USgpm
- 40 - 4.0 USgpm
- 50 - 5.0 USgpm
- 60 - 6.0 USgpm

3. Controlled Flow (at 1500rpm & 7 bar)

USgpm (L/min)

- 15 - 1.5 (6.0)
- 20 - 2.0 (8.0)
- 25 - 2.5 (9.5)
- 30 - 3.0 (11.0)
- 35 - 3.5 (13.0)
- 40 - 4.0 (15.0)
- 45 - 4.5 (17.0)
- 50 - 5.0 (19.0)
- 55 - 5.5 (21.0)
- 60 - 6.0 (23.0)
- 65 - 6.5 (25.0)
- 70 - 7.0 (26.5)
- 75 - 7.5 (28.0)

4. Relief Valve Setting psi (bar)

- 05 - 500 (35)
- 07 - 750 (52)
- 10 - 1000 (70)
- 12 - 1250 (86)
- 15 - 1500 (100)
- 17 - 1750 (120)
- 20 - 2000 (140)

5. Filter for tank

- NF - Standard baffle without filter
- F - With filter

6. Tank or Manifold

- NO - Without Tank
- 11 - With 115 cu.in.(1884 cc.) Tank
- 07 - With 70 cu.in.(1147 cc.) Tank
- MA - Manifold without bypass tube
- MB - Manifold with bypass tube
- ME - Cast iron manifold with no bypass tube
- MF - Cast iron manifold with bypass tube

7. Shaft Rotation (Viewed from shaft end)

- R - Turn right
- L - Turn left

8. Shaft

- 1 - Threaded with woodruff Keyed Shaft

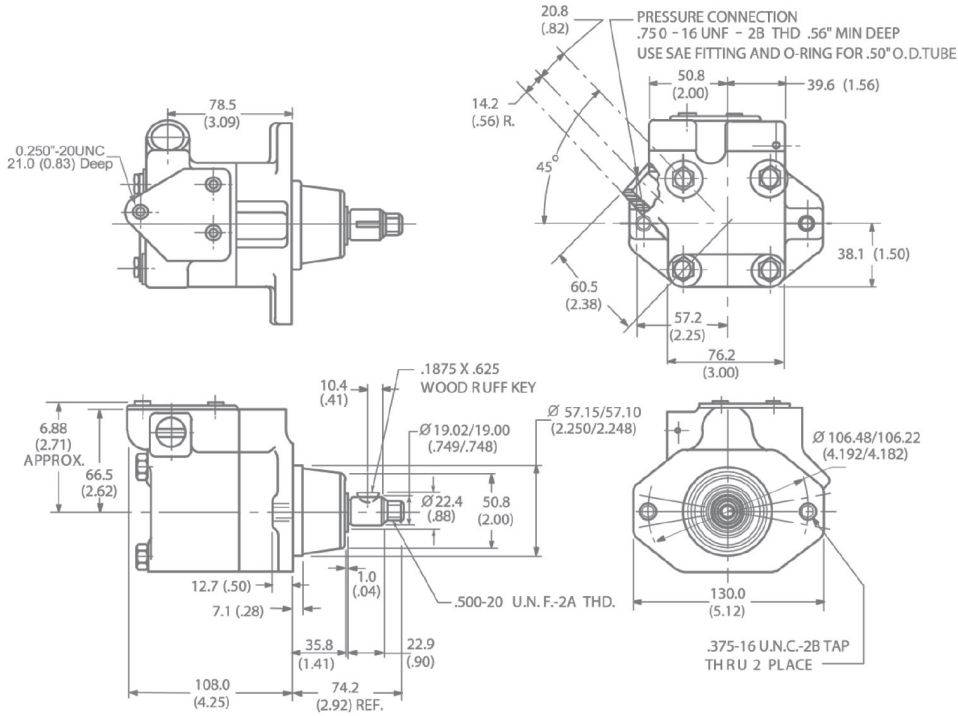
9. Design

Subject to change installation dimensions remain the same for design -10 through -19

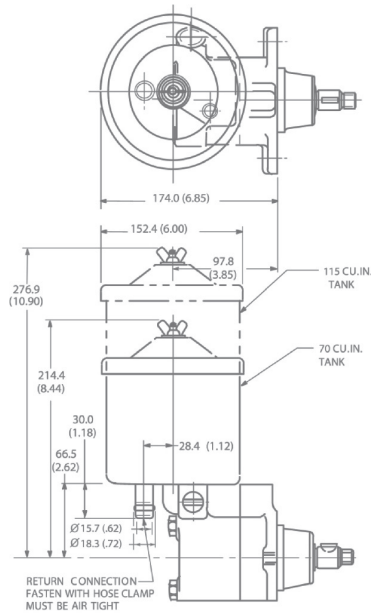
# Power Steering Vane Pump HVTM42 Series

## Installation Dimension mm (inch)

### HVTM42 without reservoir or manifold

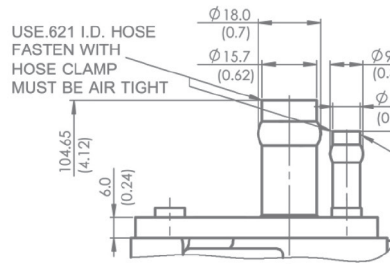
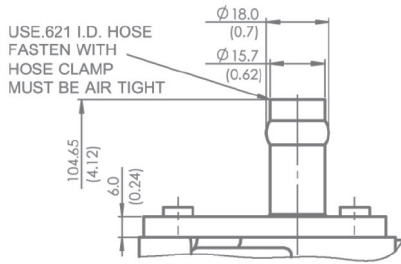


### HVTM42 Tank Dimensions

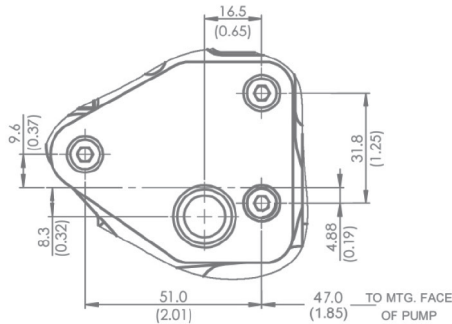


# Power Steering Vane Pump HVTM42 Series

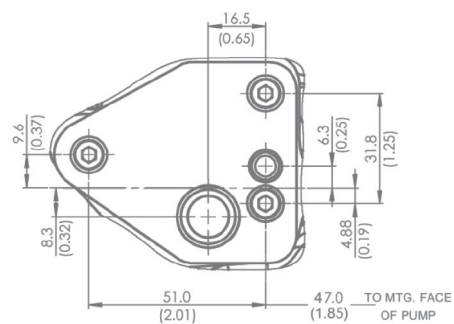
## Manifold options for HVTM42



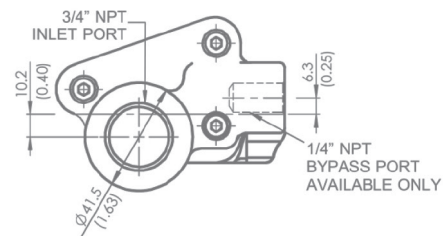
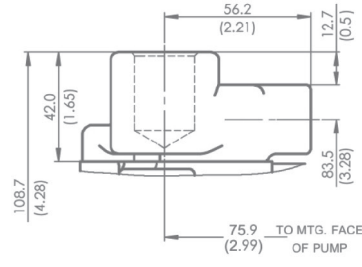
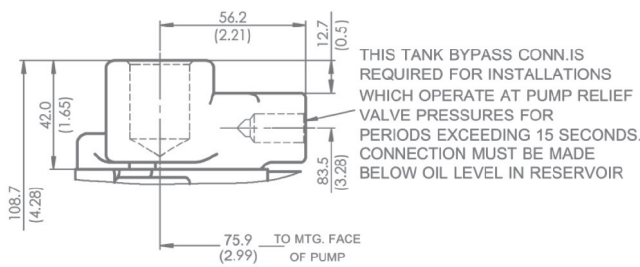
THIS TANK BYPASS CONN.IS  
REQUIRED FOR INSTALLATIONS  
WHICH OPERATE AT PUMP RELIEF  
VALVE PRESSURES FOR  
PERIODS EXCEEDING 15 SECONDS.  
CONNECTION MUST BE MADE  
BELOW OIL LEVEL IN RESERVOIR



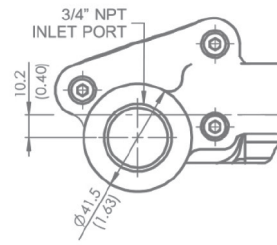
MA Manifold



MB Manifold



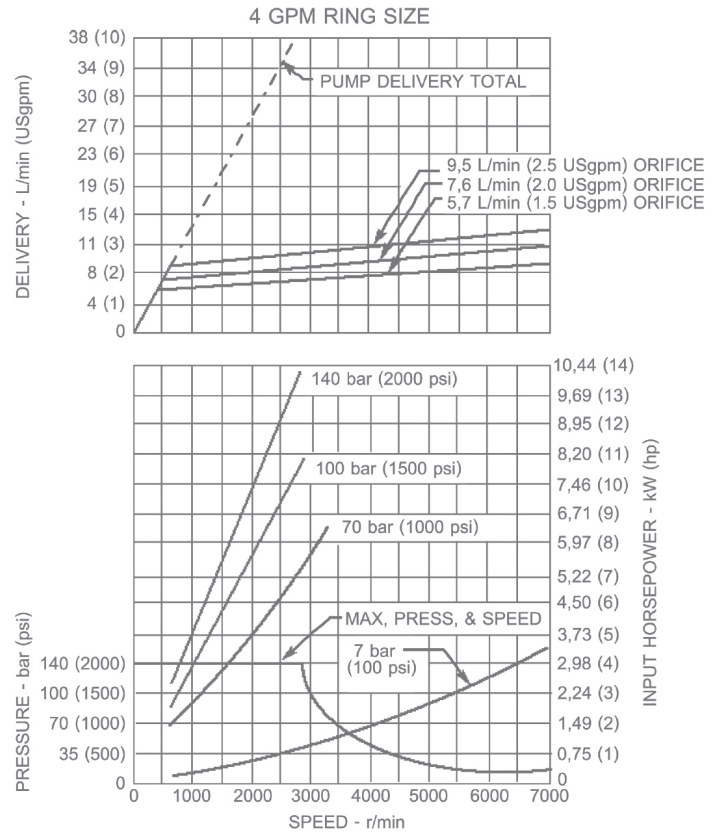
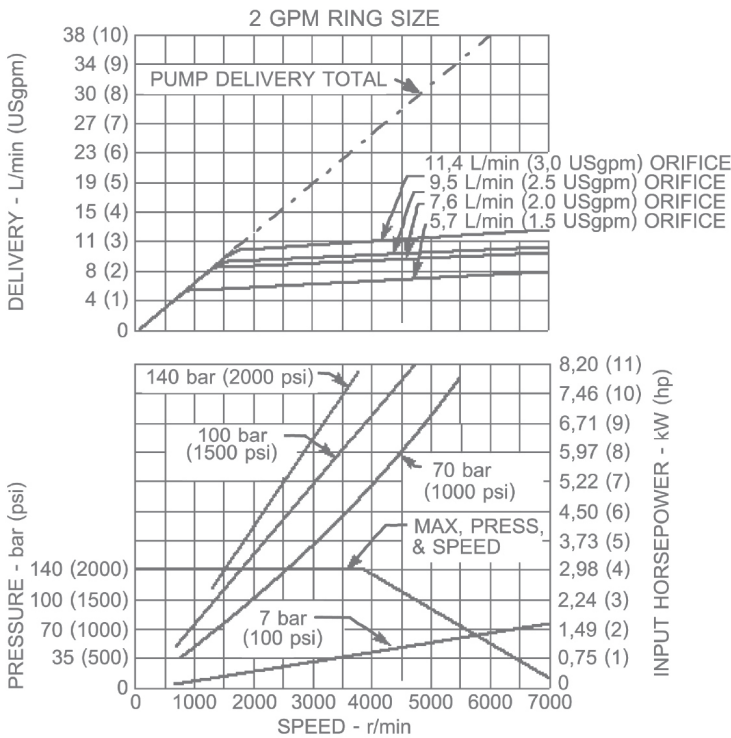
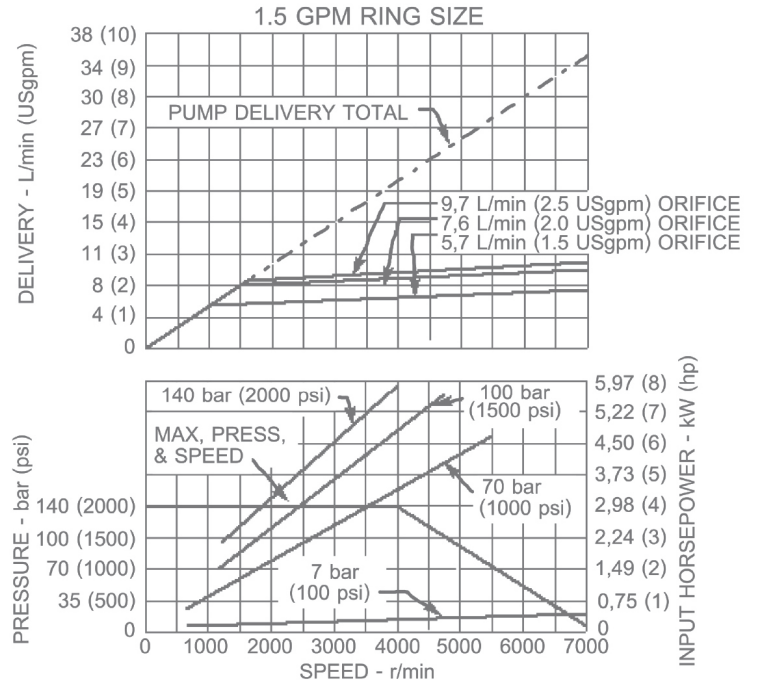
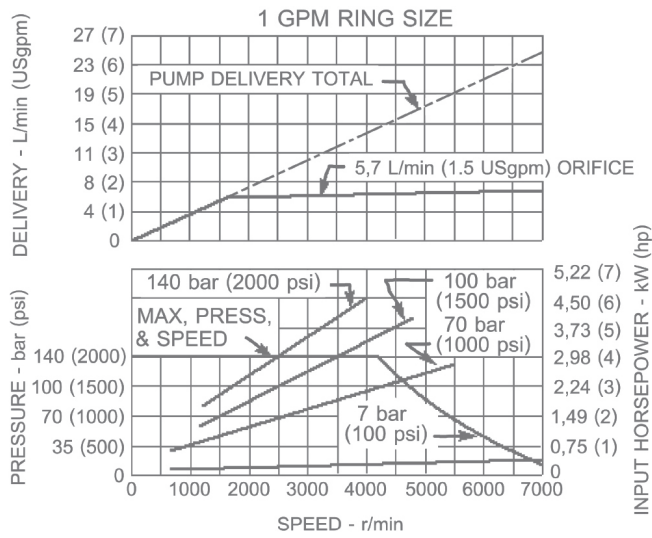
MF Manifold



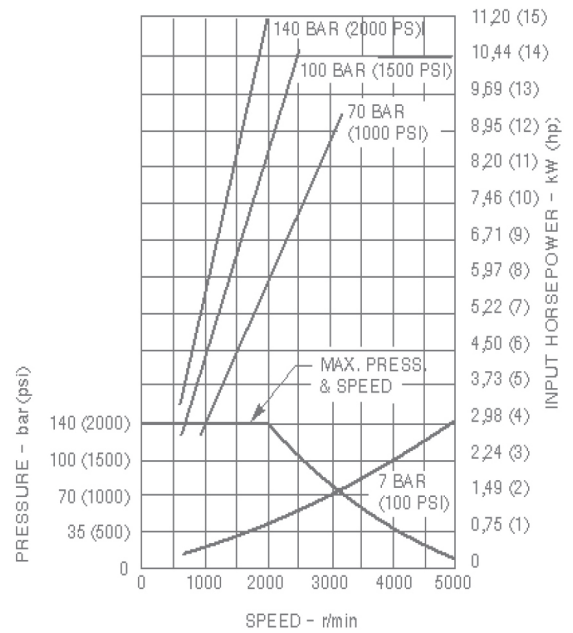
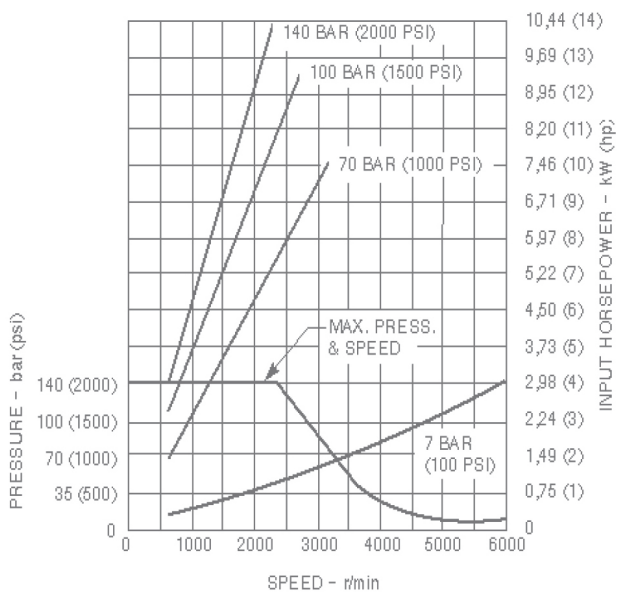
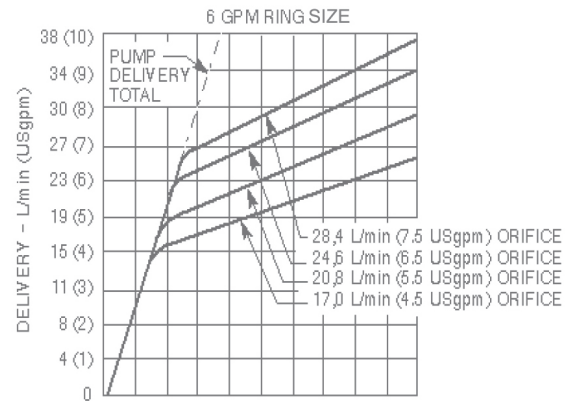
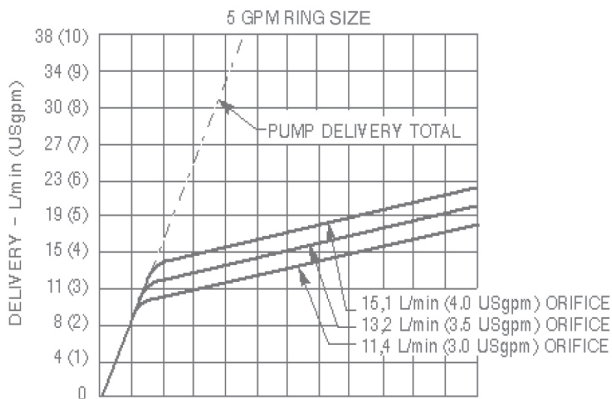
ME Manifold

# Power Steering Vane Pump HVTM42 Series

## Performance Characteristics



# Power Steering Vane Pump HVTM42 Series





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