TDZ hydraulics

HYDRAULIC VANE PUMPS

Versión Corel 1.0: 01-06-06

BH*, V* & DT6 HYDRAULIC VANE PUMPS

INTRODUCTION

TDZ vane pumps are manufactured in a wide range of displacements, from 2 cc/r to 269 cc/rev. for single pumps, 460 cc/rev. for double pumps and 560 cc/rev. for triple pumps.

All **TDZ** pumps have a low power to weight ratio, high efficiency, low noise levels, optional inlet and outlet port positions and ease of maintenance.

Ease of maintenance is achieved by the pump design, where the working components are contained within a cartridge which can quickly and easily be replaced without disconnecting the pump from the prime mover or moving it away from the pipe work. **TDZ** vane pumps are hydraulically balanced, reducing wear and eliminating bearing loads from within the pump.

The option to rotate the outlet port 90 degrees in relation to the inlet port provides flexibility and easy installation.

Depending on the application, there are three versions of the larger single, double and triple vane pumps: low noise industrial models VS and BHS, mobile models VQ and BHQ and multi-purpose models DT6 (275 bar).

Models VS, VQ and DT6 have UNC threads for the port flanges whilst models BHS, BHQ have metric threads. On single pumps the outlet port is at the shaft end for models VS, VQ, DT6 on models BHS and BHQ the outlet port is at the cover end.

SINGLE VANE PUMPS

BH*, V* and DT6 single vane pumps

BH* SINGLE VANE PUMP ORDERING CODE

F3	BHQ	4	67	D	1	A	00
1	2	3	4	5	6	7	8

1 - "F3" means special seals for fire-resistant fluids. Omit if not required.

2 - Pump Type:

BHP = 10 vane pump, industrial and mobile use, BSP, NPT & SAE threads.
BHS = 12 vane pump, industrial use (very quiet), metric threads.
BHQ = 10 vane pump and bronze plates, mobile use, metric threads.

3 - Pump model: 1, 2 and 3 in BHP types; 4, 6 and 7 in BHS and BHQ types.

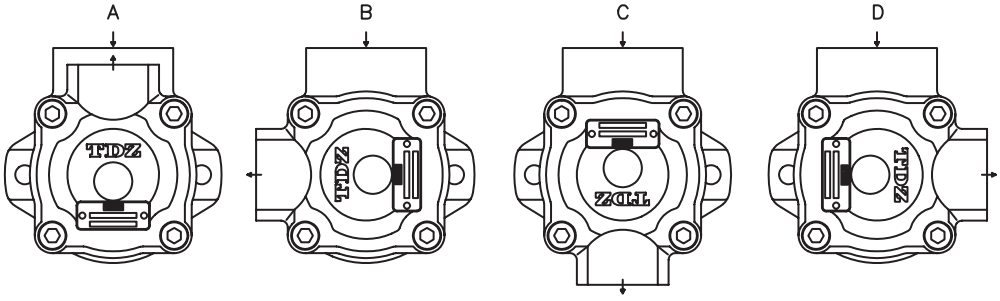
4 - Flow: BHP, BHS and BHQ in Litres per minute at 1000 rpm and 7 Bar.

5 - D = Right-hand direction of rotation (Clockwise).
Y = Left-hand direction of rotation.
(To check the direction of rotation view from the shaft end).

6 - Shaft type: See on each pump model.

7 - Oulet position, (viewed from shaft):
A: Outlet in line with inlet.
B: 90° on the right from inlet (Clockwise from inlet).
C: 180° from inlet.
D: 90° on the left from inlet (90° counterclockwise from inlet).

8- Special characteristics
Omit if not required.
Example: 02 : BSP
03 : UNF
04 : NPT



TDZ hydraulics

BH* SINGLE VANE PUMP CHARACTERISTICS

TDZ DESIGN VANE PUMPS

TYPE	FLOW			SPEED (rpm)		PRESSURE (Bar)		Nominal Power (3)	CONNECTION		WEIGHT (Kgs.)
	Lts.at 1000 rpm	Gal. At 1200 rpm	Reduction (2)	Mín.	Máx.	Contin.	Intermit.		Inlet	Outlet	
BHP1	2 3 4,5 5,5 6,5	0,6 0,9 1,2 1,7 2	0,18 0,18 0,36 0,36 0,36	600	2500	150	175	0,5 0,7 1 1,4 1,6	(4)	(4)	1
BHP2 *(1)*	7 8 10 12 15	2,2 2,5 3,2 3,8 4,7	0,7 1,1 1,1 1,1 1,1	600	2500	150	175	1,8 2 2,5 3 3,7	(4)	(4)	3,6
BHP3	6 16 18 25 27 35 38 44 50	2 5 6 8 9 11 12 14 16	0,9 1,7 2,8 4,5 4,8 4,8 5,4 6,6 7,8	600	2500 2000 1500	150 100	175 125	1,9 4,3 5,3 6,9 7,6 8,8 10,2 11,9 13,6	(4)	(4)	7,1
BHS4 **BHQ4**	26 40 45 55 60 67 80 88*	8 12 14 17 19 21 24 27*	4,5 5,7 5,7 5,8 5,8 6 6,2 6,5	600	2500 1800 (BHS) 1500	175 125	210 150	6,9 10,4 11,6 13,8 14,6 16,8 20,3 22,4	Ø38	Ø26	14,5
BHS6 **BHQ6**	66 81 97 112 121 142	21 25 30 35 38 45	8,6 9 10 11,4 11,4 13,1	600	2400 1800 (BHS) 1500	175 125	210 150	16,8 20,3 24,3 27,4 29,3 33,3	Ø60	Ø32	26,3
BHS7 **BHQ7**	138 148 162 180 193 214 240	42 47 50 57 60 67 75	15 15,7 14,3 17,9 18,6 22 26	600	2200 1800 (BHS)	155	175	32,3 36,3 37,9 43,2 46,1 51,2 57,4	Ø75	Ø38	38,3

*** 27 gallons (88 lts.) cartridge not mounted in BHQ4 vane pump model.**

(1) There is a version of this pump with built-in flow regulating and pressure limiter valves, ref. B2V. If a built-in tank with filter is required, the ref. Is **B2VC** (1.5 ltrs. tank) or **B2VA** (1 litre tank).

(2) Delivery flow reduction in Ltrs./min. at 100 Bar. 22 cST of oil viscosity at operating temperature. To calculate the approximate delivery flow at a given pressure and speed, use the following formula with flow reduction and theoretical flow values shown in the chart. Flow reduction values are independent of shaft speed.

$$\text{Approx. output flow (Ltrs./min.)} = \text{Theoretical flow} \times \frac{\text{R.P.M}}{1000} - \text{Reduction} \times \frac{\text{Pressure (Bar)}}{1000}$$

(3) Nominal power in H.P. at 100 Bar and 1000 RPM (to convert into Kw multiply by 0.735).
To obtain the real input power at different pressure and revolutions, use the formula as follows:

$$\text{Real input power} = \text{Input power} \times \frac{\text{R.P.M}}{1000} \times \frac{\text{Pressure (Bar)}}{1000}$$

(4) See options on dimension pages.

V* SINGLE VANE PUMP ORDERING CODE

F3	VS	25	67	D	1	A	00
1	2	3	4	5	6	7	8

1 - "F3" means special seals for fire-resistant fluids. Omit if not required.

2 - Pump Type:

VK = 10 vane pump, mobile and industrial use, UNC threads.
VS = 12 vane pump, industrial use (very quiet), UNC threads.
VQ = 10 vane pump and bronze plates, mobile use, UNC threads
.
3 - Pump model: VC10, VC20; 20, 25, 35 and 45 in VS and VQ types.

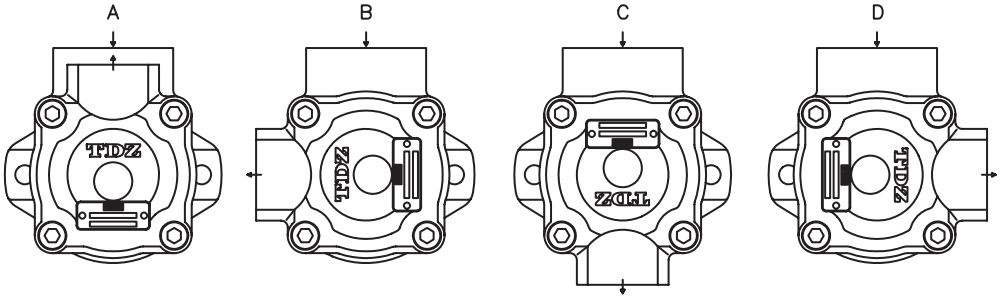
4 - Flow: VC, VS and VQ in US Gallons per minute at 1200 rpm and 7 Bar.

5 - D = Right-hand direction of rotation (Clockwise).
Y = Left-hand direction of rotation.
(To check the direction of rotation view from the shaft end).

6 - Shaft type: See on each pump model.

7 - Oulet position, (viewed from shaft):
A: Outlet in line with inlet.
B: 90° on the right from inlet (Clockwise from inlet).
C: 180° from inlet.
D: 90° on the left from inlet (90° counterclockwise from inlet).

8- Special characteristic
Omit if not required
Example: 02 : BSP
03 : UNF
04 : NPT



TDZ hydraulics

SINGLE VANE PUMP CHARACTERISTICS

VICKERS DESIGN VANE PUMPS

TYPE	FLOW			SPEED (rpm)		PRESSURE (Bar)		Nominal Power (3)	CONNECTION		WEIGHT (Kgs.)
	Lts.at 1000 rpm	Gal.at 1200 rpm	Reduction (2)	Mín.	Máx.	Contin.	Intermit.		Inlet	Outlet	
VC10	3 6 9 13 16 19 22	1 2 3 4 5 6 7	0,8 0,9 1,2 1,6 1,7 1,8 1,9	600	4800 4500 4000 3400 3200 3000 2800	155 140	180	0,7 1,4 2,1 2,7 3,2 3,7 4,2	(4)	(4)	4,5
VC20 (1)	19 22 26 29 36 39 42	6 7 8 9 11 12 13	2,8 4,2 4,5 4,8 4,8 5,4 6,0	600	3400 3000 2800 2800 2500 2400 2400	155 140	180	3,9 4,4 5,1 5,6 6,5 7,5 8,1	(4)	(4)	7,3
VK20 VQ20	8 18 27 29 36 39 46	2 5 8 9 11 12 14	0,9 2,1 2,8 3,5 4,3 4,3 5,3	600	1800	175 210	210	1,9 4 6,6 6,9 7,3 7,4 7,6	Ø1½"	Ø3/4"	12
VS25 VQ25	26 40 45 55 60 67 80 88*	8 12 14 17 19 21 24 27	4,5 5,7 5,7 5,8 5,8 6 6,2 6,5	600	2500 1800 (VS) 1500	175 125	210 150	6,9 10,4 11,6 13,8 14,6 16,8 20,3 21,1	Ø1½"	Ø1"	15
VS35 VQ35	66 81 97 112 121 142	21 25 30 35 38 45	8,6 9 10 11,4 11,4 13,1	600	2400 1800 (VS) 1500	175 125	210 150	16,8 20,3 24,3 27,4 29,3 33,3	Ø2"	Ø1¼"	23
VS45 VQ45	138 148 162 180 193 214 240	42 47 50 57 60 67 75	15 15,7 14,3 17,9 18,6 22 26	600	2200 1800 (VS)	155	175	32,3 36,3 37,9 43,2 46,1 51,2 57,4	Ø3"	Ø1½"	35,5

*** 27 gallons (88 lts.) cartridge not mounted in BQ25 vane pump model.**

(1) There is a version of this pump with built-in flow regulating and pressure limiter valves, ref. VC20F.

(2) Delivery flow reduction in Ltrs./min. at 100 Bar. 22 cST of oil viscosity at operating temperature. To calculate the approximate delivery flow at a given pressure and speed, use the following formula with flow reduction and theoretical flow values shown in the chart. Flow reduction values are independent of shaft speed.

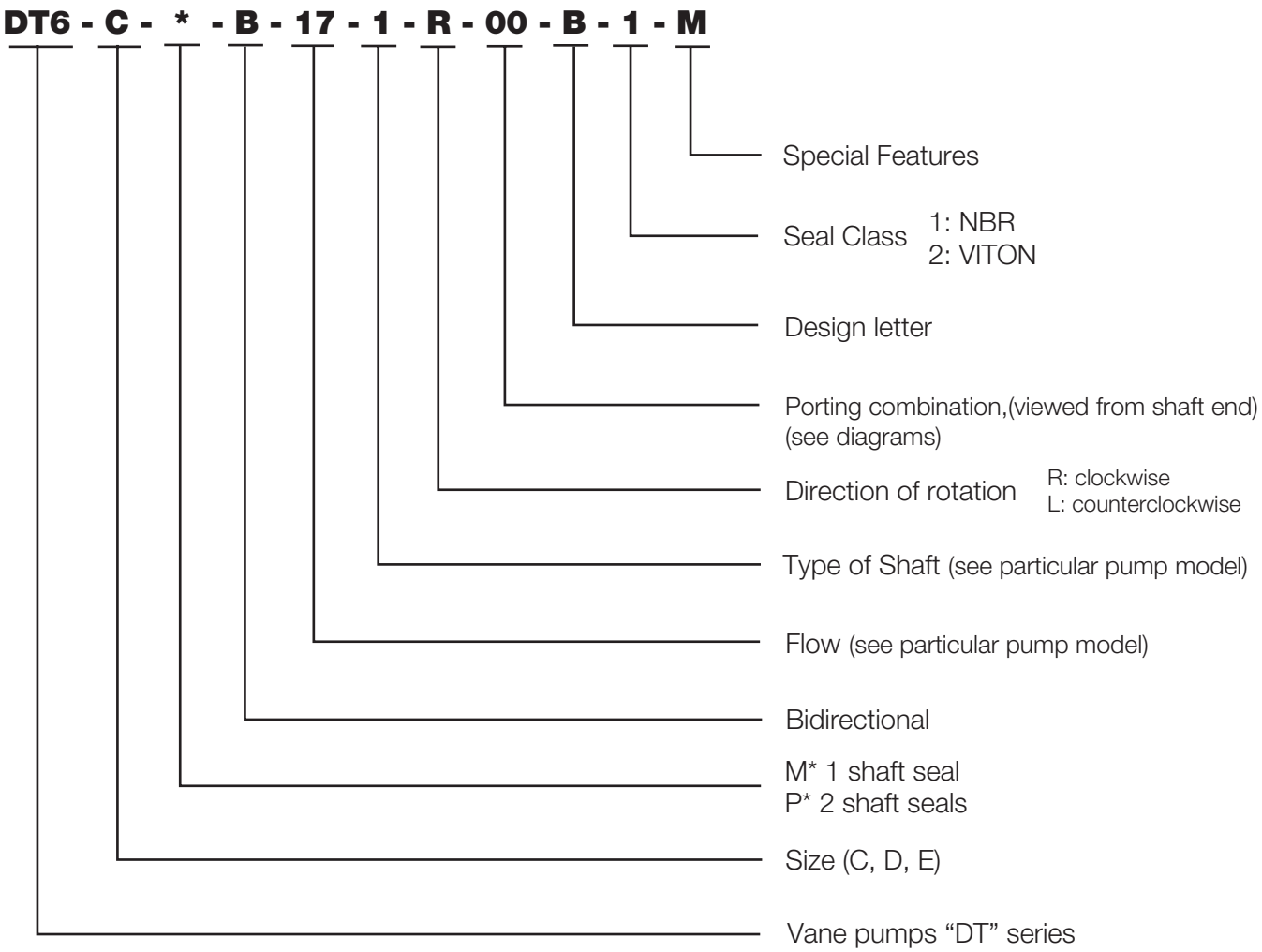
$$\text{Approx. output flow (Ltrs./min.)} = \text{Theoretical flow} \times \frac{\text{R.P.M}}{1000} - \text{Reduction} \times \frac{\text{Pressure (Bar)}}{1000}$$

(3) Nominal power in H.P. at 100 Bar and 1000 RPM (to convert into Kw multiply by 0.735).
To obtain the real input power at different pressure and revolutions, use the formula as follows:

$$\text{Real input power} = \text{Input power} \times \frac{\text{R.P.M.}}{1000} \times \frac{\text{Pressure (Bar)}}{100}$$

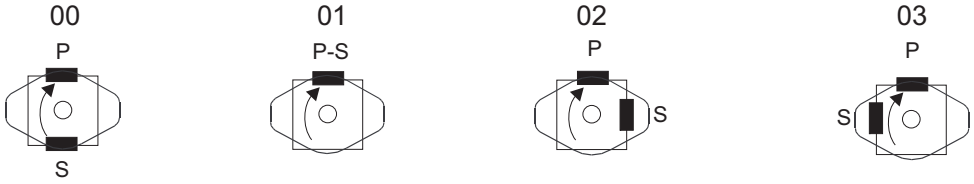
(4) See options on dimension pages.

DT-6 SINGLE VANE PUMPS ORDERING CODE



SINGLE PUMPS

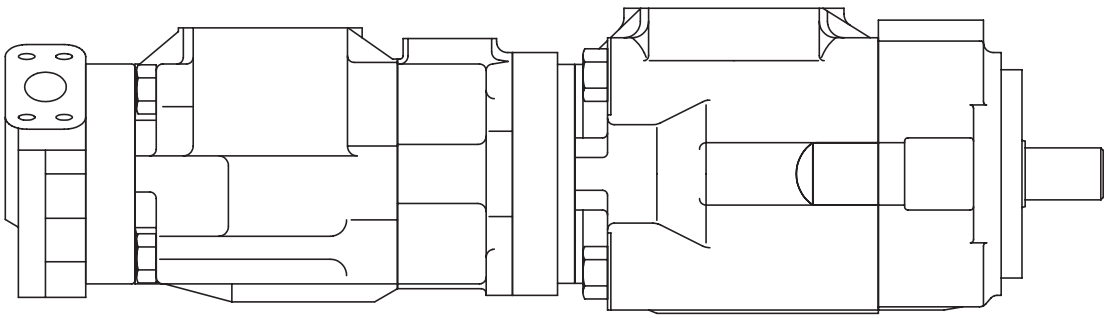
Pump Model	Cartridge model	Theoretical displacement Cm^3/rev	Maximum Pressure	Max. speed rpm	Min. speed rpm	Weight Kgs	Front flange Standard SAE j744c ISO 3019-1	SAE 4 holes flange	
								Suction	Pressure
DT6C	003	10.8	275	2800	400	15	SAE B	1 ½"	1"
	005	17.2							
	006	21.3							
	008	26.4							
	010	34.1							
	012	37.1							
	014	46.0							
	017	58.3							
	020	63.8							
	022	70.3							
	025	79.3		2500					
	028	88.8	210						
	031	100							
	DT6CP Pump model only mount B14 to B31 cartridges								
DT6D	014	47.6	240	2500	400	24	SAE C	2"	1 1/4"
	020	66.0							
	024	79.5							
	028	89.7							
	031	98.3							
	035	111.0							
	038	120.3							
	042	136.0		2200					
	045	145.7							
	050	158.0	210						
	061	190.5	120	1800					
DT6E	042	132.3	240	2200	400	44	SAE C	3"	1 ½"
	045	142.4							
	050	158.5							
	052	164.8							
	062	196.7							
	066	213.3							
	072	227.1							
	085	269.8	90	2000					



THRU DRIVE SINGLE VANE PUMPS

V**T thru drive single vane pumps

See single V* pumps for displacement & power diagrams (Pages 35, 37.39)



V*7TC thru drive pump with V*64 double pump

V* THRU DRIVE SINGLE VANE PUMPS ORDERING CODE

F3	VS	7T	C	60	D	86	A	A
1	2	3	4	5	6	7	8	9

1 - "F3" means special seals for fire-resistant fluids. Omit if not required

2 - Pump Type:

VS = **12 vane pump**, industrial use (very quiet), UNC threads
VQ = **10 vanes and bronze plates pump**, mobile use, UNC threads

3 - Pump model: 4T, 6T and 7T.

4 - Rear pump mounting: With SAE mounting flange, 2-bolts.
A: SAE-A mounting flange
B: SAE-B mounting flange
C: SAE-C mounting flange

5 - Flow: In US Gallons per minute at 1200 rpm and 7 bar.

6 - D = Right-hand direction of rotation (Clockwise)
Y = Left-hand direction of rotation.
(To check the direction of rotation view from the shaft end).

7 - Shaft type:
1: Parallel keyed
11: Splined
86: Heavy duty parallel keyed

8 - Outlet position, (viewed from shaft):
A: In line with inlet
B: 90° on the right from inlet (Clockwise from inlet)
C: 180° from inlet
D: 90° on the left from inlet (Counterclockwise from inlet)

9- Rear flange positions, (viewed from the flange):
SAE A flanges:
A: 45° on the right (Clockwise)
B: 45° on the left (Counterclockwise)

SAE-B and SAE-C flanges:
A: In line with in-front flange
B: 90° rotated

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THRU DRIVE SINGLE VANE PUMPS CHARACTERISTICS

TYPE	FLOW			SPEED (rpm)		PRESSURE (Bar)		Nominal Power (2)	CONNECTION		WEIGHT (Kgs.)
	Lts.at 1000 rpm	Gal. At 1200 rpm	Reduction (1)	Mín.	Máx.	Contin.	Intermit.		Inlet	Outlet	
VS4T VQ4T	26 40 45 55 60 67 80 88*	8 12 14 17 19 21 24 27	4,5 5,7 5,7 5,8 5,8 6 6,2 6,5	600	2500 1800 (VS) 1500	175 125	210 150	6,9 10,4 11,6 13,8 14,6 16,8 20,3 23,8	Ø64	Ø25,4	19,5
VS6T VQ6T	66 81 97 112 121 142	21 25 30 35 38 45	8,6 9 10 11,4 11,4 13,1	600	2400 1800 (VS) 1500	175 125	210 150	16,8 20,3 24,3 27,4 29,3 33,3	Ø76	Ø31,8	29,5
VS7T VQ7T	138 148 162 180 193 214 240	42 47 50 57 60 67 75	15 15,7 14,3 17,9 18,6 22 26	600	2200 1800 (VS)	155	175	32,3 36,3 37,9 43,2 46,1 51,2 57,4	Ø89	Ø38,1	38

(1) Delivery flow reduction in Ltrs./min. at 100 Bar. 22 cST of oil viscosity at operating temperature. To calculate the approximate delivery flow at a given pressure and speed, use the following formula with flow reduction and theoretical flow values shown in the chart. Flow reduction values are independent of shaft speed.

$$\text{Approx. outpout flow (Ltrs./min.)} = \text{Theoretical flow} \times \frac{\text{R.P.M}}{1000} - \text{Reduction} \frac{\text{Pressure (bar)}}{100}$$

(2) Nominal power in H.P. at 100 Bar and 1000 RPM (to convert into Kw multiply by 0.735).
To obtain the real input power at different pressure and revolutions, use the formula as follows:

$$\text{Real input power} = \text{Input power} \times \frac{\text{R.P.M}}{1000} \times \frac{\text{Pressure (bar)}}{100}$$

REAR PUMP MOUNTING

The mounted pump to the V**T* should have the shaft shown below:

Model	Mounted pump shaft			
	DP splined	Teeth	Press angle	Flange
V**TA	16/32	9	30º	SAE-A
V**TB	16/32	13	30º	SAE-B
V**TC	12/24	14	30º	SAE-C

TRANSMISSIBLE MAXIMUM TORQUE

The torque of the V**T plus the torque of the rear pump, in pressure, shall be equal to or less than the below torques:

V*4T		V*6T		V*7T	
Shaft	Max. Torque Nm	Shaft	Max. Torque Nm	Shaft	Max. Torque Nm
1	313	1	392	1	588
11	313	11	568	11	803
86	392	86	588	86	803

MAXIMUM TORQUE OF THE MOUNTED REAR PUMP

The torque of the mounted pump to the V**T rear pump, in pressure, shall be equal to or less than the indicated torques on next page.

DOUBLE VANE PUMPS

BHP, VQ, VS and DT6 Double vane pumps
(mobile and industrial applications)

(See single pumps for displacement & power diagrams)

BHP & V* DOUBLE VANE PUMPS ORDERING CODE

F3	VS	43	21	8	D	1	A	A
1	2	3	4	5	6	7	8	9

1 - "F3" means special seals for fire-resistant fluids. Omit if not required

2 - Pump Type:

BHP = 10 vane pump, mobile and industrial uses, metrics threads.
VS = 12 vane pump, (except the cover end cartridge of the VS*3 pump), industrial uses (very quiet), UNC threads.
VQ = 10 vane pump, bronze plates, mobile uses, UNC threads.

3 - Model of pump: 33,42,42V,43,63,64,73,74 y 76.
V*****42 pump may include in the rear cartridge a cover with flow regulating and pressure limiter valves. If so, add one "V": VS42V.

4 - Pump flow at shaft side: BHP33 model in litres per minute at 1000 rpm and 7 Bar. All the other models in US gallons per minute at 1200 rpm and 7 Bar. (See flow chart).

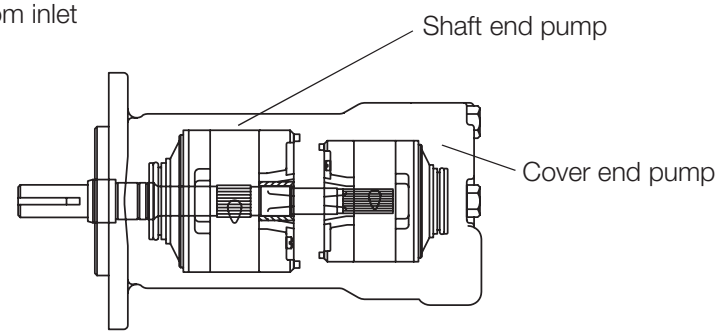
5 - Pump flow at cover side: BHP33 and VS42-VQ42 models in litres per minute at 1000 rpm and 7 Bar. All the other models in gallons per minute at 1200 rpm and 7 Bar. (See flow chart).

6 - D = Right-hand direction of rotation (Clockwise)
Y = Left-hand direction of rotation.
(To check the direction of rotation view from the shaft end).

7 - Shaft type:
1: Parallel keyed
2: Splined, (only mounted in BHP 33 model)
11: Splined
86: Heavy duty parallel keyed

8 - Shaft end outlet position, (viewed from shaft):
A: Outlet in line with inlet
B: 90° clockwise from inlet
C: 180° from inlet
D: 90° counterclockwise from inlet (Viewed from shaft)

9- Cover end outlet position, (viewed from shaft):
A: 45º clockwise from inlet
B: 135º clockwise from inlet
C: 135° counterclockwise from inlet
D: 45° counterclockwise from inlet
(Viewed from shaft)



TDZ hydraulics

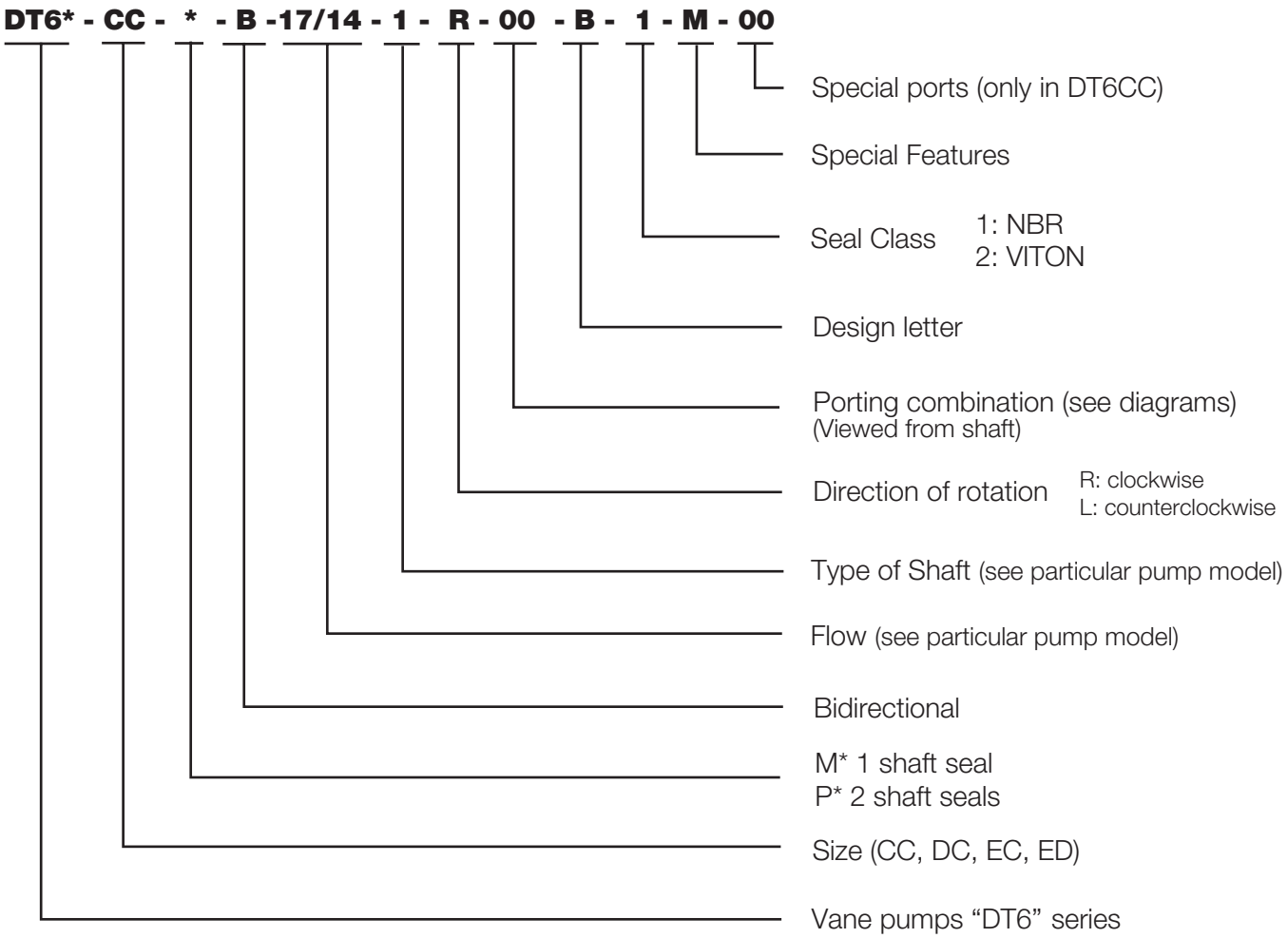
BHP AND V* DOUBLE VANE PUMP CHARACTERISTICS

TYPE	SHAFT END							COVER END							WEIGHT (Kgs.)
	FLOW			MAX. rpm	PRESSURE (Bar)		Nominal Power (3)	FLOW			MAX. rpm	PRESSURE (Bar)		Nominal Power (3)	
	Lts.at 1000 rpm	Gal. At 1200 rpm	Reducc. (2)		Contin.	Interm.		Lts.a 1000 rpm	Gal. a 1200 rpm	Reducc. (2)		Contin.	Interm.		
BHP33	6 16 18 25 27 35 38 44 50	2 5 6 8 9 11 12 14 16	0,9 1,7 2,8 4,5 4,8 4,8 5,4 6,6 7,8	2500 2000 1500	150 100	175 125	1,9 4,3 5,3 6,9 7,6 8,8 10,2 11,9 13,6	6 16 18 25 27 35 38 44 50	2 5 6 8 9 11 12 14 16	0,9 1,7 2,8 4,5 4,8 4,8 5,4 6,6 7,8	2500 2000 1500	150 100	175 125	1,9 4,3 5,3 6,9 7,6 8,8 10,2 11,9 13,6	15
VS42 **VQ42** **(1)**	26 40 45 55 60 67 80 88*	8 12 14 17 19 21 24 27	4,5 5,7 5,7 5,8 5,8 6 6,2 6,5	2500 1800 (VS) 1500	175 125	210 150	6,9 10,4 11,6 13,8 15,2 16,8 20,3 22,4	7 8 10 12 15	2,2 2,5 3,2 3,8 4,7	0,7 1,1 1,1 1,1 1,1	2500	150	175	1,8 2 2,5 3 3,7	16
VS43 **VQ43**	26 40 45 55 60 67 80 88*	8 12 14 17 19 21 24 27	4,5 5,7 5,7 5,8 5,8 6 6,2 6,5	2500 1800 (VS) 1500	175 125	210 150	6,9 10,4 11,6 13,8 15,2 16,8 20,3 22,4	8 18 27 29 36 39 46	2 5 8 9 11 12 14	0,9 2,1 2,8 3,5 4,3 4,3 4,3	2500	175	210	1,9 4 6,6 6,9 7,3 7,4 7,6	21
VS63 **VQ63**	66 81 97 112 121 142	21 25 30 35 38 45	8,6 9 10 11,4 11,4 13,1	2400 1800 (VS) 1500	175 125	210 150	16,8 20,3 24,3 27,4 29,3 33,3	8 18 27 29 36 39 46	2 5 8 9 11 12 14	0,9 2,1 2,8 3,5 4,3 4,3 4,3	2500	175	210	1,9 4 6,6 6,9 7,3 7,4 7,6	31
VS64 **VQ64**	66 81 97 112 121 142	21 25 30 35 38 45	8,6 9 10 11,4 11,4 13,1	2400 1800 (VS) 1500	175 125	210 150	16,8 20,3 24,3 27,4 29,3 33,3	26 40 45 55 60 67 80 88*	8 12 14 17 19 21 24 27	4,5 5,7 5,7 5,8 5,8 6 6,2 6,5	2500 1800 (VS) 1500	175 125	210 150	6,9 10,4 11,6 13,8 15,2 16,8 20,3 22,4	33
VS73 **VQ73**	138 148 162 180 193 214 240	42 47 50 57 60 67 75	15 15,7 14,3 17,9 18,6 22 26	2200 1800 (VS)	155	175	32,3 36,3 37,9 43,2 46,1 51,2 57,4	8 18 27 29 36 39 46	2 5 8 9 11 12 14	0,9 2,1 2,8 3,5 4,3 4,3 4,3	2500 1800 (VS)	175	210	1,9 4 6,6 6,9 7,3 7,4 7,6	46
VS74 **VQ74**	138 148 162 180 193 214 240	42 47 50 57 60 67 75	15 15,7 14,3 17,9 18,6 22 26	2200 1800 (VS)	155	175	32,3 36,3 37,9 43,2 46,1 51,2 57,4	26 40 45 55 60 67 80 88*	8 12 14 17 19 21 24 27	4,5 5,7 5,7 5,8 5,8 6 6,2 6,5	2500 1800 (VS) 1500	175 125	210 150	6,9 10,4 11,6 13,8 15,2 16,8 20,3 22,4	45
VS76 **VQ76**	138 148 162 180 193 214 240	42 47 50 57 60 67 75	15 15,7 14,3 17,9 18,6 22 26	2200 1800 (VS)	155	175	32,3 36,3 37,9 43,2 46,1 51,2 57,4	66 81 97 112 121 142	21 25 30 35 38 45	8,6 9 10 11,4 11,4 13,1	2400 1800 (VS) 1500	175 125	210 150	16,8 20,3 24,3 27,4 29,3 33,3	55

* 27 gallons (88lts.) cartridge not mounted in **VQ**42, **VQ**43, **VQ**64, **VQ**74 vane pump model.

(1), (2) & (3) Please turn to next page

DT6 DOUBLE VANE PUMPS ORDERING CODE



GENERAL CHARACTERISTICS

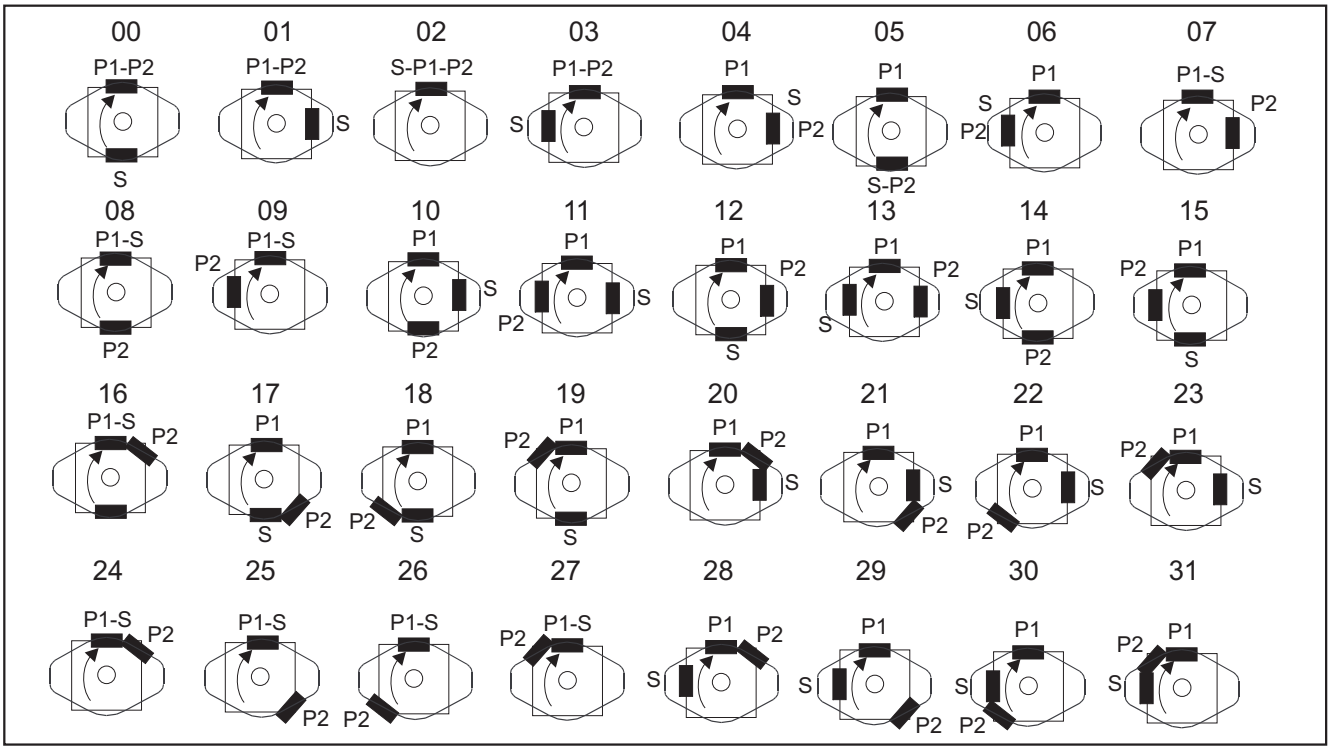
DOUBLE VANE PUMPS

Pump Model	P1			P2			Maxim. speed	Minim. speed	Front flange standard SAE j744c ISO 3019-1	Weight Kgs	SAE 4 Holes flange		
	Cartridge Model	Theoretical displacement Cm^3/rev	Maxim. Pressure Bar	Cartridge Model	Theoretical displacement Cm^3/rev	Maxim. Pressure Bar					Suction S	Pressure P1	Pressure P2
DT6CC/M	003 a 031	10.8 a 100	275	003 a 031	10.8 a 100	275	2800	400	SAE B	26	2 ½" ó 3"	1"	1" ó 3/4"
DT6DC/M	014 a 061	47.6 a 190.5	240	003 a 031	10.8 a 100	275	2800	400	SAE C	37	3"	1 1/4"	1"
DT6EC/M	042 a 085	132.3 a 269.8	240	003 a 031	10.8 a 100	275	2200	400	SAE C	55	3 ½"	1 ½"	1"
DT6ED/M	042 a 085	132.3 a 268.8	240	014 a 061	47.6 a 190.5	240	2200	400	SAE C	66	4"	1 ½"	1"

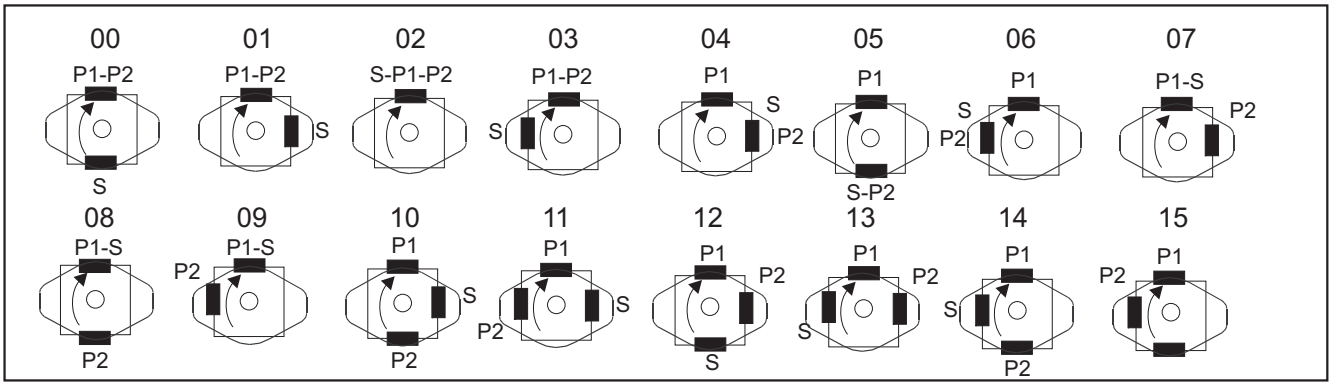
C - 025,028,031 - 2500 rpm maximum 028,031 - 210 bar max intermitent
D - 042,045,050 - 2200 rpm maximum 050 - 210 bar maximum intermitent - 061 - 120 bar maximum intermitent
E - 085 - 2000 rpm maximum - 90 bar maximum intermitent

Above mentioned values of maximum speed and maximum pressure are based on use of antiwear oil only. Please contact **TDZ** for particular values when different fluids are used, (synthetic fluids, water in oil emulsions, water glycol, etcetera)

DOUBLE VANE PUMPS - PORTING COMBINATION — DT6CC-DT6DC-DT6EC



DOUBLE VANE PUMPS - PORTING COMBINATION — DT6ED



S= Suction port | P1= Shaft end pressure port | P2= Cover end pressure port

DOUBLE PUMPS DT6CC - OPERATING CHARACTERISTICS

SHAFT END SECTION

FLOW														SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	11	17	21	26	34	37	46	58	64	70	79	89	100	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	3	5	6	8	10	12	14	17	20	22	25	28	31	400	2800*	275	240*	15

* See page 41 for further information about speed & pressure.

COVER END SECTION

FLOW														SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	11	17	21	26	34	37	46	58	64	70	79	89	100	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	3	5	6	8	10	12	14	17	20	22	25	28	31	400	2800*	275	240*	15

* See page 41 for further information about speed & pressure.

DT6CC - FLOW & INPUT POWER DIAGRAMS

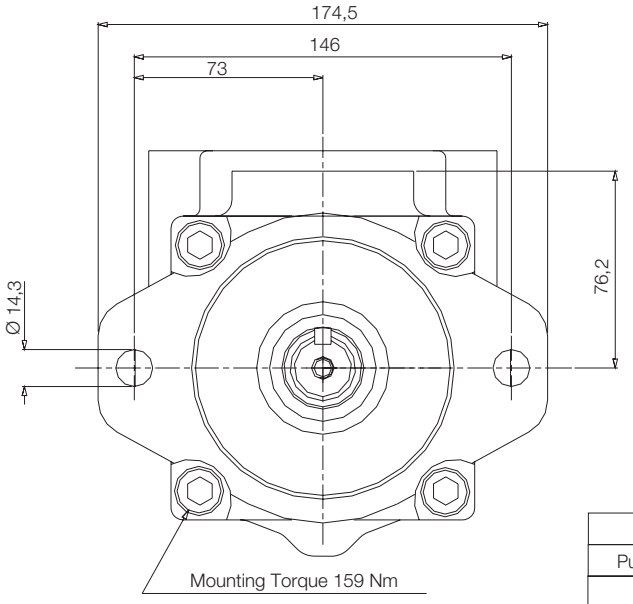
SHAFT END

See **DT6C** Single Pumps for flow and input power diagrams (page 42)

COVER END

See **DT6C** Single Pumps for flow and input power diagrams (page 42)

DOUBLE PUMPS DT6CC - DIMENSIONS



Suction and pressure Port dimenssion variables.

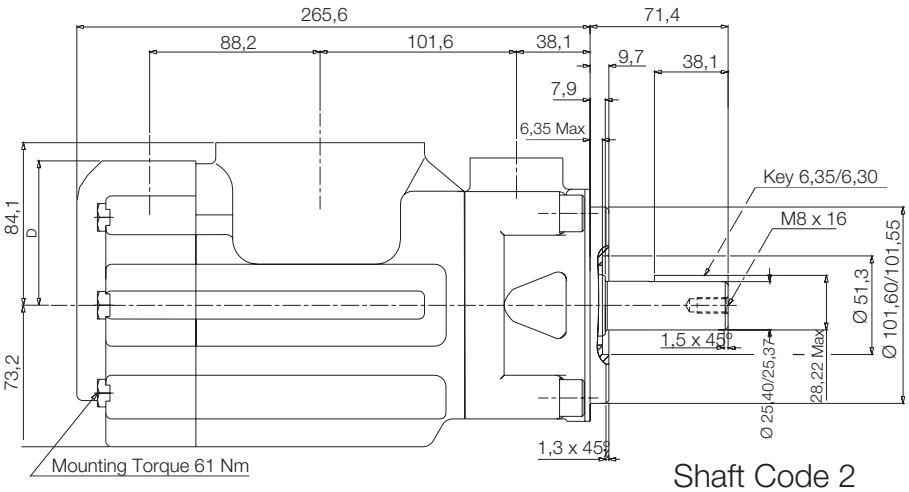
Thread	Port	A	B	C	D	E
S	3"	106,4	61,9	76,2		5/8"-11UNC x 28,4
S	2 ½"	88,9	50,8	63,5		1/2"-13UNC x 23,9
P1	1"	52,4	26,2	25,4	76,2	
P2	3/4"	47,7	22,4	19,0	76,2	
P2	1"	52,4	26,2	25,4	74,7	

***Add the following numbers at the end of the DT6CC reference depending your option.**

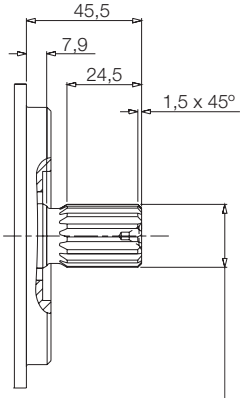
	Code **00***	Code **01***	Code **10***	Code **11***
S	3"	3"	2 ½"	2 ½"
P1	1"	1"	1"	1"
P2	1"	3/4"	1"	3/4"

You may use suction "S" of 2 ½" for 126 cc/rev. maximum
You may use pressure port "P2" of 3/4" for 46 cc/rev. maximum

Shaft torque limits cc/rev x bar		
Pump	Shaft code	V x P max (P1+P2)
DT6CC	1	14300
	3	32670
	5	20600
DT6CCW	2	21470

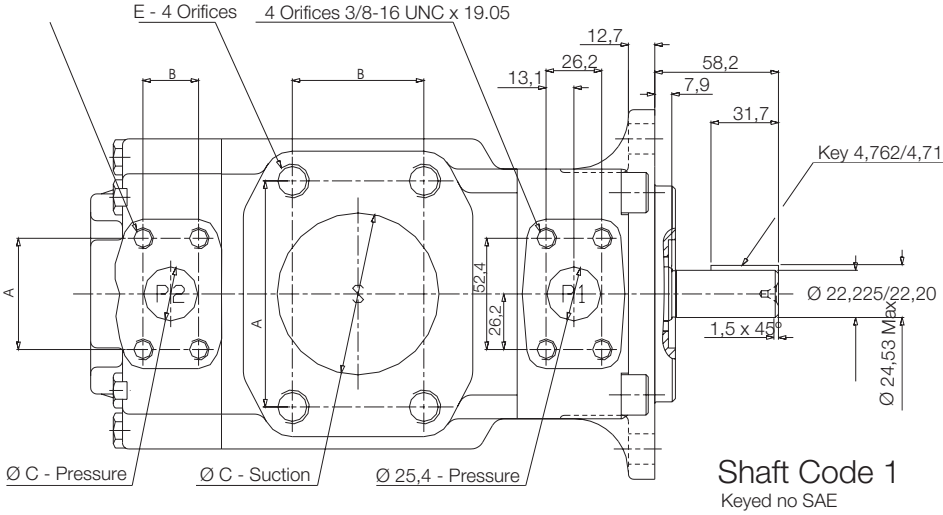


Shaft Code 2
SAE BB

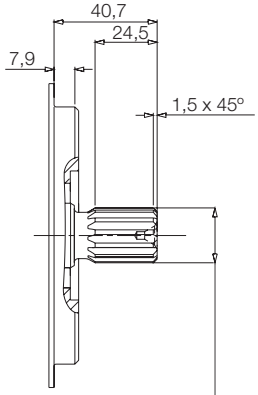


Shaft Code 3

SAE BB Splined shaft
1-J498b 16/32 d.p. -
15 Teeth
30° Pressure angle



Shaft Code 1
Keyed no SAE



Shaft Code 5

SAE B Splined shaft
1-J498b 16/32 d.p. -
13 Teeth
30° Pressure angle

DT6DC - OPERATING CHARACTERISTICS

SHAFT END SECTION

FLOW												SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	48	66	80	90	98	111	120	136	146	158	191	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	14	20	24	28	31	35	38	42	45	50	61	400	2500*	240	210	24

* See page 41 for further information about speed & pressure.

COVER END SECTION

FLOW													SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	11	17	21	26	34	37	46	58	64	70	79	89	100	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	3	5	6	8	10	12	14	17	20	22	25	28	31	400	2800*	275	240*	15

* See page 41 for further information about speed & pressure.

DT6DC - FLOW & INPUT POWER DIAGRAMS

SHAFT END

See **DT6D** Single Pumps for flow and input power diagrams (page 44)

COVER END

See **DT6C** Single Pumps for flow and input power diagrams (page 42)

DT6EC - OPERATING CHARACTERISTICS

SHAFT END SECTION

FLOW									SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	132	142	156	165	197	213	227	270	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	42	45	50	52	62	66	72	85	400	2200*	240	210	44

* See page 41 for further information about speed & pressure.

COVER END SECTION

FLOW													SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	11	17	21	26	34	37	46	58	64	70	79	89	100	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	3	5	6	8	10	12	14	17	20	22	25	28	31	400	2800*	275	240*	15

* See page 41 for further information about speed & pressure.

DT6EC - FLOW & INPUT POWER DIAGRAMS

SHAFT END

See **DT6E** Single Pumps for flow and input power diagrams (page 46)

COVER END

See **DT6C** Single Pumps for flow and input power diagrams (page 42)

DT6ED - OPERATING CHARACTERISTICS

SHAFT END SECTION

FLOW									SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	132	142	156	165	197	213	227	270	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	42	45	50	52	62	66	72	85	400	2200*	240	210	44

* See page 41 for further information about speed & pressure.

COVER END SECTION

FLOW												SPEED (rpm)		PRESSURE (bar)		WEIGHT (Kgs.)
Lts/min.at 1000 rpm	48	66	80	90	98	111	120	136	146	158	191	Mín.	Máx.	Intermit.	Contin.	
Gal/min.at 1200 rpm	14	20	24	28	31	35	38	42	45	50	61	400	2500*	240	210	24

* See page 41 for further information about speed & pressure.

DT6ED - FLOW & INPUT POWER DIAGRAMS

SHAFT END

See **DT6E** Single Pumps for flow and input power diagrams (page 46)

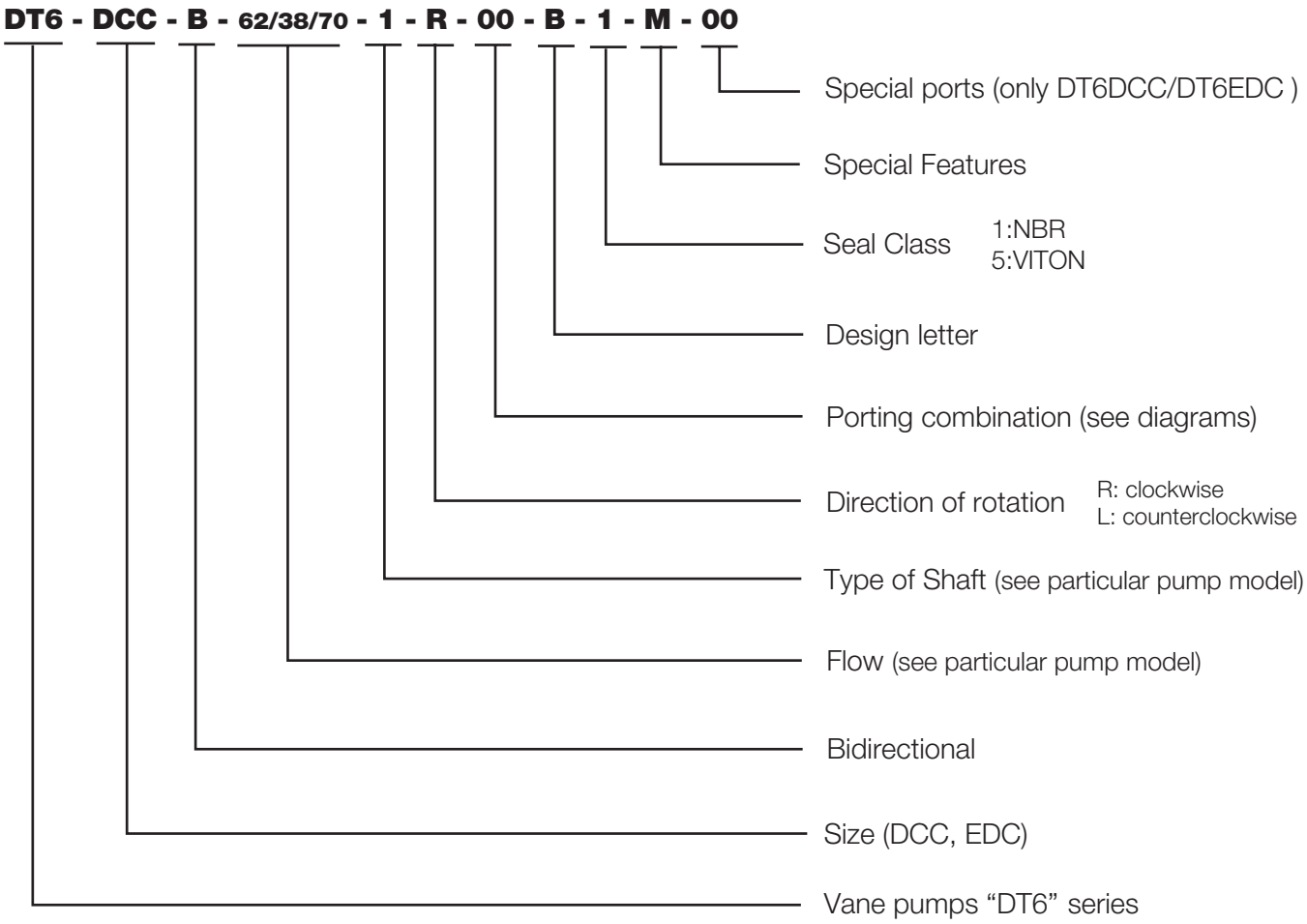
COVER END

See **DT6D** Single Pumps for flow and input power diagrams (page 44)

TRIPLE VANE PUMPS

DT6 Triple vane pumps

DT6 TRIPLE VANE PUMPS ORDERING CODE



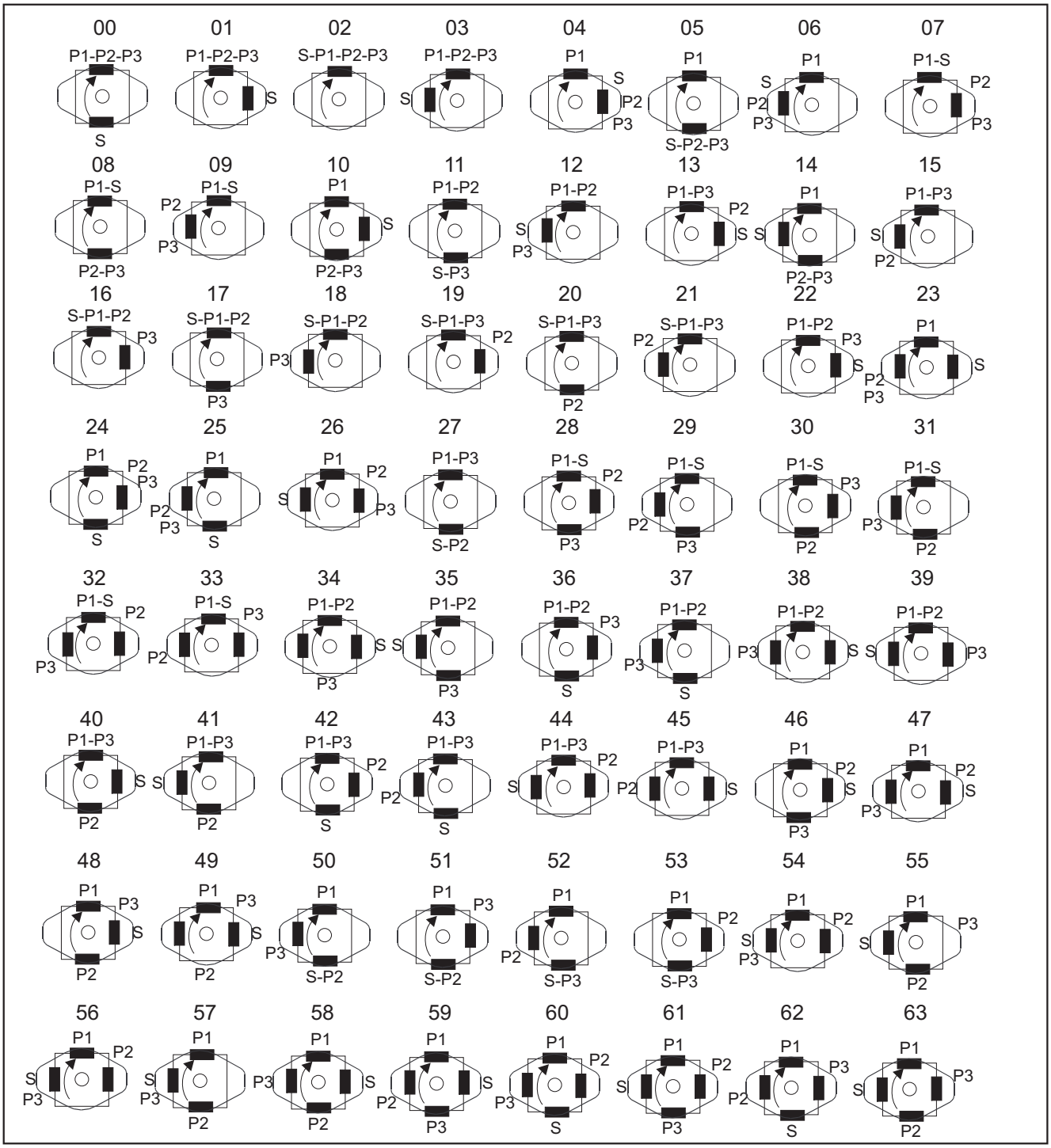
TRIPLE VANE PUMPS

Series	P1			P2			P3			Maximum speed	Front Flange Standard SAE j744c ISO 3019-1	Weight Kgs	SAE 4 holes flange			
	Cartridge model	Theoretical displacem. Cm^3/rev	Maximum Pressure	Cartridge model	Theoretical displacem. Cm^3/rev	Maximum Pressure	Cartridge model	Theoretical displacem. Cm^3/rev	Maximum Pressure				Suction S	Pressure P1	Pressure P2	Pressure P3
DT6DCC	014 a 061	47.6 a 190.5	240	003 a 031	10.8 a 100	275	003 a 031	10.8 a 100	275	2500	SAE C	61	4"	1 1/4"	1"	1" ó 3/4"
DT6EDC	042 a 085	132.3 a 269.8	240	014 a 061	47.6 a 190.5	240	003 a 031	10.8 a 100	275	2200	ISO 3019-2	100	4"	1 ½"	1 1/4"	1" ó 3/4"

C - 025,028,031 - 2500 rpm maximum, 028,031 - 210 bar maximum intermitent
D - 042,045,050 - 2200 rpm maximum, 050 - 210 bar maximum intermitent - 061 - 120 bar max intermitente
E - 085 - 2000 rpm max - 90 bar maximum intermitent

TRIPLE VANE PUMPS - PORTING COMBINATION

DT6DCC-DT6EDC



S= Suction port | P1= Shaft end pressure port | P2= Middle pressure port | P3= Cover end pressure port

DT6DCC - OPERATING CHARACTERISTICS

SHAFT END SECTION

FLOW												SPEED (rpm)		PRESSURE (bar)		WEIGHT
Lts/min.at 1000 rpm	48	66	80	90	98	111	120	136	146	158	191	Mín.	Máx.	Intermit.	Contin.	**(Kgs.)**
Gal/min.at 1200 rpm	14	20	24	28	31	35	38	42	45	50	61	400	2500*	240	210	24

* See page 41 for further information about speed & pressure.

MIDDLE SECTION

FLOW														SPEED (rpm)		PRESSURE (bar)		WEIGHT
Lts/min.at 1000 rpm	11	17	21	26	34	37	46	58	64	70	79	89	100	Mín.	Máx.	Intermit.	Contin.	**(Kgs.)**
Gal/min.at 1200 rpm	3	5	6	8	10	12	14	17	20	22	25	28	31	400	2800*	275	240*	15

* See page 41 for further information about speed & pressure.

COVER END SECTION

FLOW														SPEED (rpm)		PRESSURE (bar)		WEIGHT
Lts/min.at 1000 rpm	11	17	21	26	34	37	46	58	64	70	79	89	100	Mín.	Máx.	Intermit.	Contin.	**(Kgs.)**
Gal/min.at 1200 rpm	3	5	6	8	10	12	14	17	20	22	25	28	31	400	2800*	275	240*	15

* See page 41 for further information about speed & pressure.

DT6DCC - FLOW & INPUT POWER DIAGRAMS

SHAFT END

See **DT6D** Single Pumps for flow and input power diagrams (page 44)

MIDDLE BODY

See **DT6C** Single Pumps for flow and input power diagrams (page 42)

COVER END

See **DT6C** Single Pumps for flow and input power diagrams (page 42)

DT6EDC - OPERATING CHARACTERISTICS

SHAFT END SECTION

FLOW									SPEED (rpm)		PRESSURE (bar)		WEIGHT
Lts/min.at 1000 rpm	132	142	156	165	197	213	227	270	Mín.	Máx.	Intermit.	Contin.	(Kgs.)
Gal/min.at 1200 rpm	42	45	50	52	62	66	72	85	400	2200*	240	210	44

* See page 41 for further information about speed & pressure.

MIDDLE SECTION

FLOW												SPEED (rpm)		PRESSURE (bar)		WEIGHT
Lts/min.at 1000 rpm	48	66	80	90	98	111	120	136	146	158	191	Mín.	Máx.	Intermit.	Contin.	(Kgs.)
Gal/min.at 1200 rpm	14	20	24	28	31	35	38	42	45	50	61	400	2500*	240	210	24

* See page 41 for further information about speed & pressure.

COVER END SECTION

FLOW													SPEED (rpm)		PRESSURE (bar)		WEIGHT
Lts/min.at 1000 rpm	11	17	21	26	34	37	46	58	64	70	79	89	100	Mín.	Máx.	Intermit.	Contin.	(Kgs.)
Gal/min.at 1200 rpm	3	5	6	8	10	12	14	17	20	22	25	28	31	400	2800*	275	240*	15

* See page 41 for further information about speed & pressure.

DT6EDC - FLOW & INPUT POWER DIAGRAMS

SHAFT END

See **DT6E** Single Pumps for flow and input power diagrams (page 46)

MIDDLE BODY

See **DT6D** Single Pumps for flow and input power diagrams (page 44)

COVER END

See **DT6C** Single Pumps for flow and input power diagrams (page 42)

SPECIAL VANE PUMPS

- CH25 Compact power pack

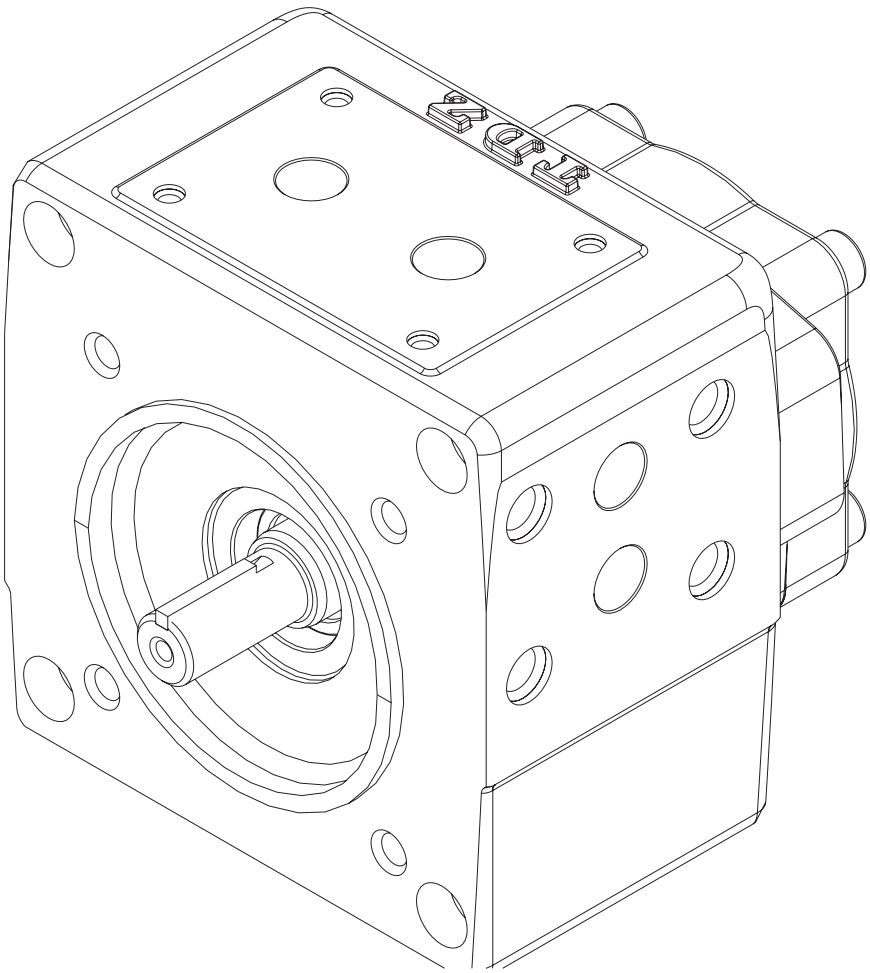
- Pumps with flow regulating and pressure limiting valves

- Pumps with valves and tank of 1,5 Ltrs. or 1 Lt. with built-in filter
- Pumps with valves and manual flow regulating key
- 1.5 litres and 1 litre oil tanks with built-in filter

These pumps include in a compact set, one BHP2 vane pump, one pressure limiter valve and one flow regulating pilot valve; being also possible to add an oil tank with paper filter cartridge.
So, in a very small place and at an economical cost almost all necessary elements are available for many simple hydraulic circuits.
Flow regulating valve gives constant delivery flow, even with changes in pump rotation speed and load.

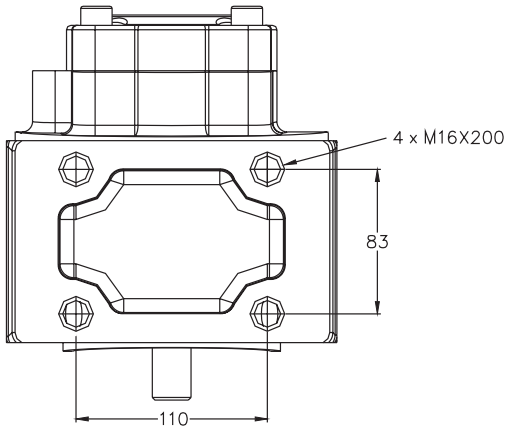
CH25 PRODUCT INFORMATION

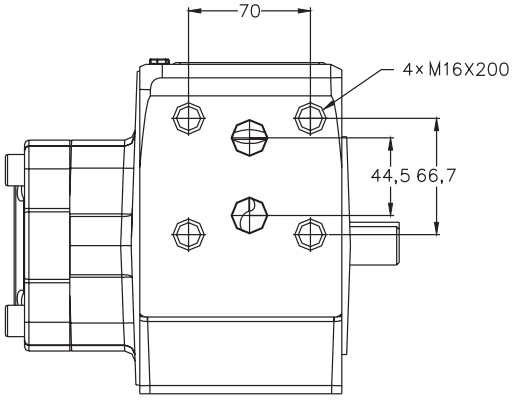
The CH-25 contributes a definitive solution of the problems that appear in the installation of a hydraulic system, such as the assembly and the design. It is a set formed by a simple o multiple vane pump, a veried group of valves to be able to make easily tipical schemes, a built-in high pressure filter and support to be able to be connected a electric standard B5 motor of diverse powers, all integrated it in an extremely compact equipment. The reason that it mounts a vane pump must to the requirements of the industry today, then facility and flexibility of handling and spare parts, high capacity of flow (to 80 GPM), high work pressure (to 270 bar), very high efficiency (94%), and all it with a highly quiet operation due to its compact design.



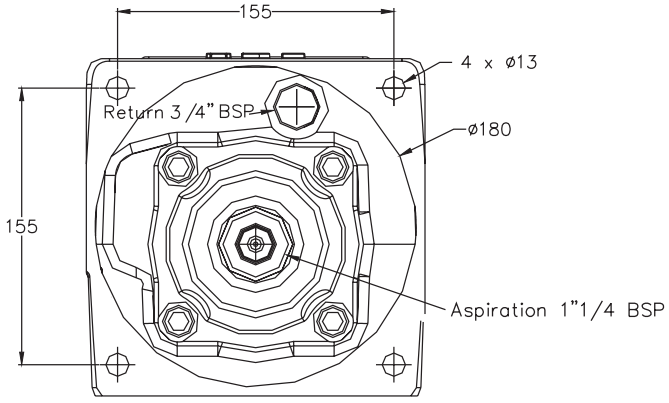
CH25 MAIN DIMENSIONS

Available pump displacements:
26, 40, 45, 55, 60, 67, 80 and 88 Cm3/rev.
Maximum Pressure: 210 bar.

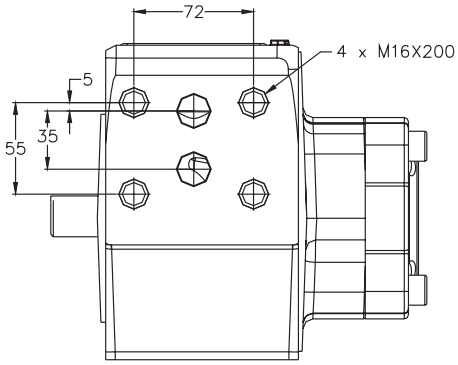




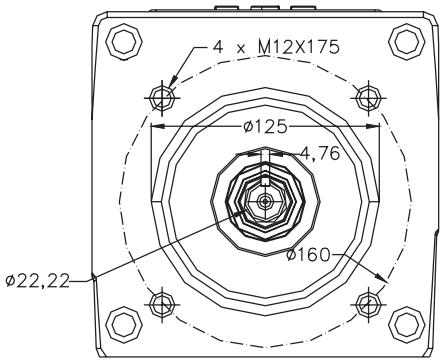
G06 Pressure control valve mounting side



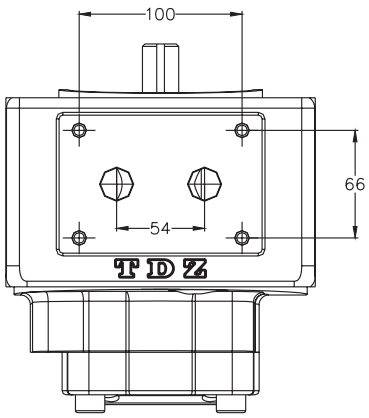
Tank vertical mounting dimensions



Pressure filter mounting side.



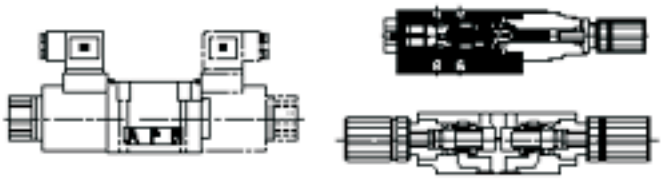
Electrical motor coupling bell acording ISO 4



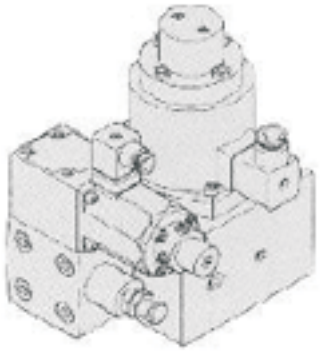
Stackable mounting bases side

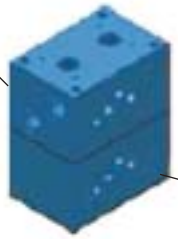
CH25 ASSEMBLY SCHEME

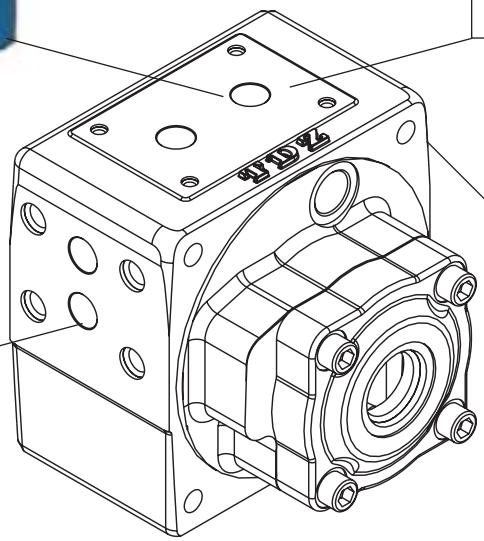
Modular elements on CETOP manifold



Proportional control of Pressure and Flow.

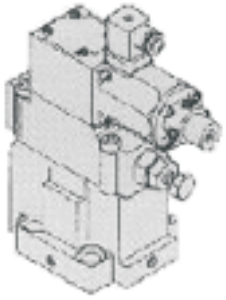






Pressure filter on board

Electrohydraulic pressure control or remote pressure control



Assembly examples

VANE MOTORS

MHP & MD4C

VANE MOTORS CODE

F3	MHP	2	10	D	1	A
1	2	3	4	5	6	7

1 - "F3" means special seals for fire-resistant fluids. Omit if not required

2 - Motor Type:

MHP = 10 vanes motor, mobile and industrial use, metric threads.

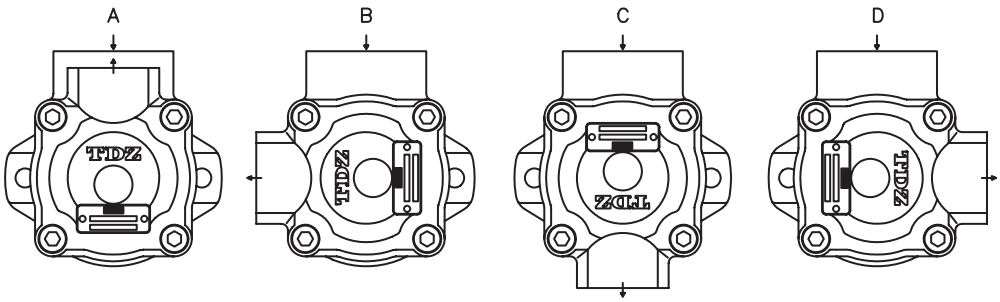
3 - Motor Model:
Models 2

4 - Flow: In litres per minute at 1000 rpm and 7 bar.

5 - D = Right-hand direction of rotation, (Clockwise)
Y = Left-hand direction of rotatio, (Counterclockwise)
(To check the direction of rotation view from the shaft end).

6 - Shaft type: See on each motor model information.

7 - Oulet position (Viewed from shaft):
A: Outlet in line with inlet
B: 90° clockwise from inlet
C: 180° from inlet
D: 90° counterclockwise from inlet



MD4C - ORDERING CODE & OPERATING CHARACTERISTICS

MD4C 075 1 N 00 C 1 02 ..

Series external drain

Nominal flow (nominal torque)

024	(0,39 Nm/bar)
027	(0,45 Nm/bar)
031	(0,55 Nm/bar)
043	(0,74 Nm/bar)
055	(0,93 Nm/bar)
067	(1,13 Nm/bar)
075	(1,27 Nm/bar)
100	(1,56 Nm/bar)

Type of shaft

1= Keyed (SAE B)
2= Keyed (no SAE)
3= Splined (SAE B)
9= Special (non SAE)

Rotation

N = Bi-direccional

View from shaft end:

CW Rotation: A= INLET, B= OUTLET

CCW Rotation: A= OUTLET, B= INLET

Modification

Port connections

01 = Threaded Port
1" 5/16 UNF
9/16"-18 UNF Drain

02 = 4 Bolt Flange
3/8''-16 UNC Threaded
9/16"-18 UNF Drain

03 = Threaded Port 3/4'' BSP
3/8" BSP Drain

04 = 4 Bolt Flange
3/8-16 UNC Threaded
3/8'' BSP Drain

M4 = 4 Bolt Flange
Metric Threaded M10x20
3/8'' BSP Drain

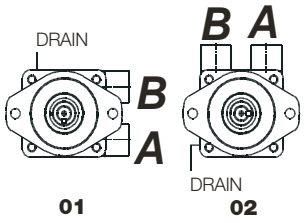
Seal Class

1 = NBR 5= Viton

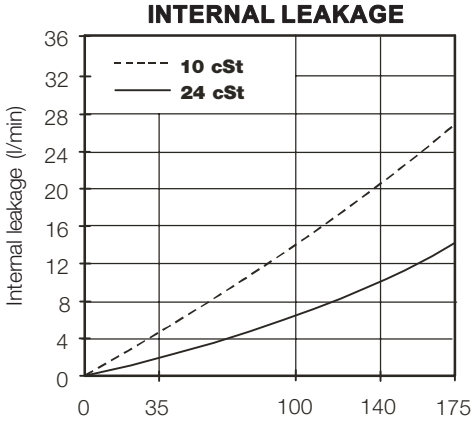
Desing letter

Porting combination

01 = Side ports (right/left)
02 = Side ports (up/down)



INTERNAL LEAKAGE



OPERATING CHARATERISTICS (24 cSt)

Model	Volumetric displacement (Vi)	Input flow at n = 2000 RPM		Torque T At n = 2000 RPM	Poweroutput At n = 2000 RPM
		Teórico	a 175 bar p	a 175 bar p	a 175 bar p
	cc/rev	l/min	l/min	Nm	kW
MD4C-024	24.4	49.0	63.0	60.5	12.7
MD4C-027	28.2	56.0	70.0	70.0	14.7
MD4C-031	34.5	69.0	83.0	86.8	18.0
MD4C-043	45.5	93.0	107.0	120.0	25.1
MD4C-055	58.8	118.0	132.0	149.0	31.2
MD4C-067	71.1	142.0	156.0	170.0	35.6
MD4C-075	80.1	160.0	174.0	198.0	41.5
MD4C-100	100.0	200	217.5	247.5	51.2