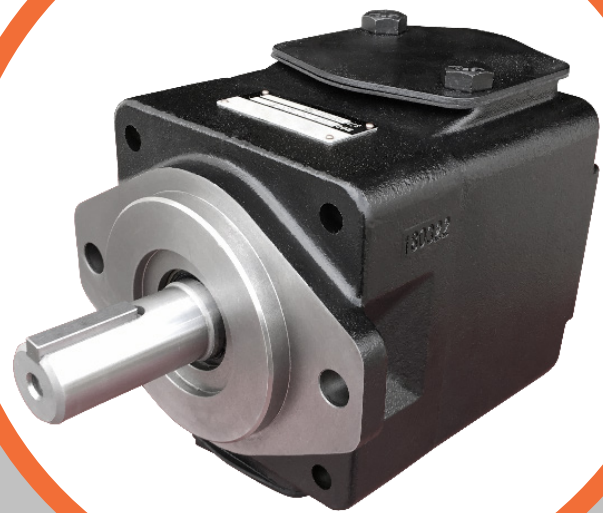
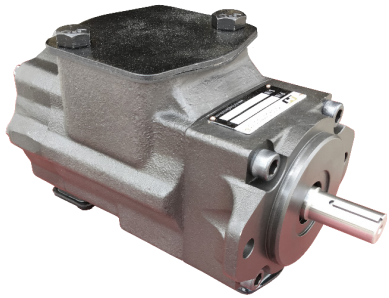
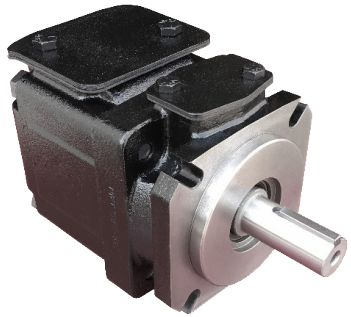
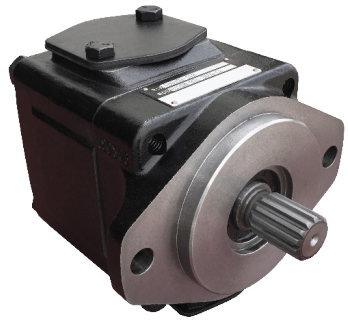
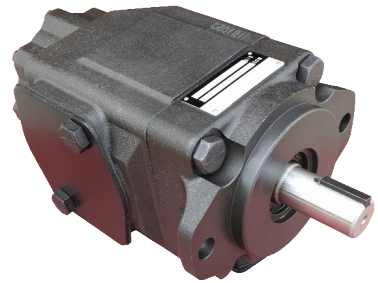
VANE PUMPS











HYFLOW®

122019

WARNING

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CONTENTS

SINGLE VANE PUMPS

DOUBLE VANE PUMPS

DRIVE TRAIN

VANE MOTORS

HTXB1,HTXB2

MODEL CODE

HTXB 1 - B09 - 1 R 00 - D 1 02 *

Series

Mounting
1 - SAE A
2 - SAE B

Cam ring		Displacement cm³/rev (in³/rev)		Cam ring		Displacement cm³/rev (in³/rev)	
B02	=	5.8	(0.35)	B08	=	24.9	(1.52)
B03	=	9.8	(0.60)	B09	=	28.0	(1.71)
B04	=	12.8	(0.78)	B10	=	31.8	(1.94)
B05	=	15.9	(0.97)	B11	=	34.9	(2.13)
B06	=	19.8	(1.21)	B12	=	41.0	(2.50)
B07	=	22.5	(1.37)	B14	=	45.0	(2.75)

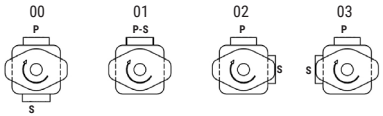
Type of Shaft

TXB1
1 = Keyed (non SAE)
2 = Keyed
3 = Splined (9 teeth)
4 = Splined (13 teeth)
5 = Keyed
V= Splined (11 teeth)

TXB2
1 = Keyed (non SAE)
2 = Keyed
4 = Splined (13 teeth)

Direction of rotation (view on shaft end)
R = Clockwise
L = Counter - clockwise

Porting combination: (00 = Standard)



S - Suction port P - Pressure port

Modification

Porting connections

Code	S	P
00	SAE 20 1" 5/8 12 UNF-2B	SAE 12 1" 1/16 12 UNF-2B
01	1" 1/4 SAE 4 bolt (UNC)	3/4" SAE 4 bolt (UNC)
MO	1" 1/4 SAE 4 bolt (METRIC)	3/4" SAE 4 bolt (METRIC)
02	1" 1/4 BSP	3/4" BSP
03	1" 1/4 NPTF	SAE 12 1" 1/16 12 UNF-2B
0X	1" 1/4 NPTF	3/4" NPTF
MX	ø28 SAE 4 bolt (METRIC)	ø15 SAE 4 bolt (METRIC)

Seal Class
1 - S1 (for mineral oil)
4 - S4 (for fire resistant fluids)
5 - S5 (for mineral oil and fire resistant fluids)

Design letter

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT6C, HT6CM

MODEL CODE

HT6C * * - *22 - 1 R 00 - B 1 *

Series
*M = Mobile (*omit for Industrial)
*Y = Metric port connection, omit for UNC

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
003/B03/R03	0.66 (10.8)	017/B17/R17	3.56 (58.3)
005/B05/R05	1.05 (17.2)	020/B20/R20	3.89 (63.8)
006/B06/R06	1.30 (21.3)	022/B22/R22	4.29 (70.3)
008/B08/R08	1.61 (26.4)	025/B25/R25	4.84 (79.3)
010/B10/R10	2.08 (34.1)	028/B28/R28	5.42 (88.8)
012/B12/R12	2.26 (37.1)	031/B3/R311	6.10 (100.0)
014/B14/R14	2.81 (46.0)		

(Select 'B**' for Mobile and Industrial bi-directional)
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

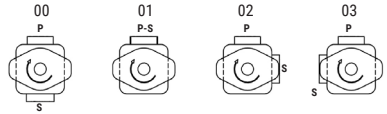
1 = Keyed (SAE B)
2 = Keyed (no SAE)
3 = Splined (SAE B)
4 = Splined (SAE B-B)

Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter
B = Industrial C = Mobile

Porting combination: (00 = Standard)



Direction of rotation
R = Clockwise
L = Counter - clockwise

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT6D, HT6DM, HT6DP

MODEL CODE

HT6D * * * - *42 - 1 R 00 - B 1 - *

Series

*N = Shaft seal installed reverse

*Q = Special mounting cap with orientation of 20° from standard (*omit, if not required)

*M = Mobile

*P = Mobile with double shaft seal (not for HT6DN) (*omit, if not required)

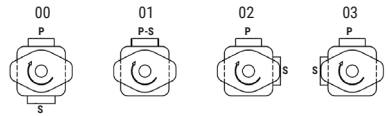
Y = Metric port connection (not for code 'Q'), omit for UNC

Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter
B = Industrial C = Mobile

Porting combination: (00 = Standard)



Direction of rotation
R = Clockwise
L = Counter - clockwise

Cam ring	Displacement in³/rev	(cm³/rev)	Cam ring	Displacement in³/rev	(cm³/rev)
014/B14/R14	= 2.90	(47.6)	035/B35/R35	= 6.80	(111.0)
017/B17/R17	= 3.55	(58.2)	038/B38/R38	= 7.30	(111.0)
020/B20/R20	= 4.00	(66.0)	042/B42/R42	= 8.30	(136.0)
024/B24/R24	= 4.80	(79.5)	045/B45/R45	= 8.90	(145.7)
028/B28/R28	= 5.50	(89.7)	050/B50/R50	= 9.64	(158.0)
031/B31/R31	= 6.00	(98.3)	061/B61/R61	= 11.65	(191.0)

(Select 'B**' for Mobile and Industrial bi-directional)
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6D/HT6DN/HT6DQ
1 = Keyed (SAE - C)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (no SAE)

Type of Shaft

HT6DM/HT6DNM/HT6DQM
1 = Keyed (SAE - C)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (no SAE)
T = Splined (SAE j718c)

Type of Shaft

HT6DP/HT6DQP
3 = Splined (no SAE)

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT6E, HT6EM, HT6EP

MODEL CODE

HT6E * * - *66 - 1 R 00 - A 1 *

Series
*M = Mobile
*P = Mobile with double shaft seal
(*omit for Industrial)

Y = Metric port connection, omit for UNC

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
042/B42/R42	= 8.07 (132.30)	057/B57/R57	= 11.02 (180.70)
045/B45/R45	= 8.70 (142.40)	062/B62/R62	= 12.00 (196.70)
050/B50/R50	= 9.67 (158.50)	066/B66/R66	= 13.00 (213.30)
052/B52/R52	= 10.00 (164.80)	072/B72/R72	= 13.86 (227.10)
		085/B85/R85	= 16.40 (269.80)

(Select '0**' for Standard and Mobile)
(Select 'B**' for Mobile and Industrial bi-directional)
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6E
1 = Keyed (SAE - CC)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (SAE - CC)

Type of Shaft

HT6EM
1 = Keyed (SAE - CC)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (SAE - CC)
T = Splined (SAE J718c)

Type of Shaft

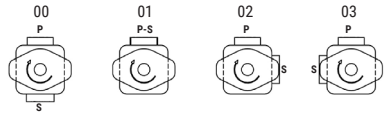
HT6EP
3 = Splined (no SAE)

Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter
A = Industrial B = Mobile

Porting combination: (00 = Standard)



Direction of rotation
R = Clockwise
L = Counter - clockwise

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT7B, HT7BS

MODEL CODE

HT7B/HT7BS - B10 - 1 R 00 - A 1 - M0 -

Series

HT7B series - 100 A2 HW
ISO 2 bolts 3019 - 2 mounting flange
HT7BS series - SAE B 2 bolts
Mounting flange J744c

Cam ring		Displacement in³/rev	Displacement (cm³/rev)	Cam ring		Displacement in³/rev	Displacement (cm³/rev)
B02	=	0.35	(5.7)	B09	=	1.71	(28.0)
B03	=	0.60	(9.8)	B10	=	1.94	(31.8)
B04	=	0.78	(12.8)	B11	=	2.13	(34.9)
B05	=	0.97	(15.9)	B12	=	2.50	(40.9)
B06	=	1.21	(19.8)	B14	=	2.75	(45.1)
B07	=	1.37	(22.5)	B15	=	3.05	(50.0)
B08	=	1.52	(24.9)				

Type of Shaft

HT7BS
1 = Keyed (SAE - B)
3 = Splined (SAE B)
4 = Splined (SAE BB)

HT7B - HT7BS
2 = Keyed (ISO R775)

Modification

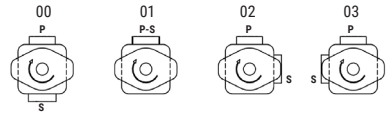
Mounting w/ connection variables
4 bolts SAE flange (J518C)

	UNC HT7BS		METRIC HT7B-HT7BS	
	00	01	M0	M1
P	1”	3/4”	1”	3/4”
S	1 1/2”			

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting combination: (00 = Standard)



S - Suction port P - Pressure port

Direction of rotation
R = Clockwise
L = Counter - clockwise

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT7D, HT7DS

MODEL CODE

HT7D/HT7DS - B42 - 1 R 00 - A 1 - M0 -

Series

HT7D - series - 125 A2 HW
ISO 2 bolts 3019-2 mounting flange
HT7DS - series - SAE C 2 bolts
Mounting flange J744c

Cam ring		Displacement in³/rev	(cm³/rev)	Cam ring		Displacement in³/rev	(cm³/rev)
B14	=	2.68	(43.9)	B31	=	6.05	(28.0)
B17	=	3.36	(55.0)	B35	=	6.92	(113.4)
B20	=	4.03	(66.0)	B38	=	7.36	(120.6)
B22	=	4.29	(70.3)	B42	=	8.39	(137.5)
B24	=	4.95	(81.3)	045	=	8.89	(145.7)
B28	=	5.49	(89.9)	050	=	9.64	(157.9)

Type of Shaft

HT7DS
1 = Keyed (SAE - C)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (no SAE)

HT7DS - HT7D
5 - Keyed (ISO 3019-2-G32M)

Modification

Mounting w/ connection variables
4 bolts SAE flange (J518C)

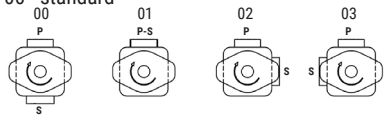
P = 1" 1/4			S = 2"
	UNC METRIC		
HT7D		M0	
HT7DS	00	M0	Y0 [1]

1) 250 bar max. int.

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting combination: (00 = Standard)
00 - standard



S - Suction port P - Pressure port

Direction of rotation (view on shaft end)
R = Clockwise
L = Counter - clockwise

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT7DSW

MODEL CODE

HT7DSW - *42 - X R 00 - A 1 - W1 -

Series

Cam ring		Displacement in³/rev	Displacement (cm³/rev)	Cam ring		Displacement in³/rev	Displacement (cm³/rev)
014/B14	=	2.68	(43.9)	031/B31	=	6.05	(99.1)
017/B17	=	3.36	(55.0)	035/B35	=	6.92	(113.4)
020/B20	=	4.03	(66.0)	038/B38	=	7.36	(120.6)
022/B22	=	4.29	(70.3)	042/B42	=	8.39	(137.5)
024/B24	=	4.95	(81.3)	045/B45	=	8.89	(145.7)
028/B28	=	5.49	(89.9)	050/B50	=	9.64	(157.9)

Type of Shaft

X = Keyed (SAE - C)
3 = Splined (SAE - C)

Modification

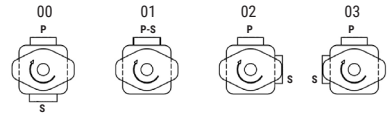
Mounting w/ connection variables
4 bolts SAE flange (J518)

P = 1-¼"	S = 2-½"	
	UNC	METRIC
HT7DSW	W1	M1

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting combination: (00 = Standard)



S - Suction port P - Pressure port

Direction of rotation (view on end shaft)
R = Clockwise
L = Counter - clockwise

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT7E, HT7ES

MODEL CODE

HT7E/HT7ES - 066 - 1 R 00 - A 1 - M0 *

Series

HT7E - series - 125 A2 HW
ISO 2 bolts 3019 - 2 mounting flange
HT7ES - series - SAE C 2 bolts
Mounting flange J744c

Cam ring		Displacement in³/rev	Displacement (cm³/rev)	Cam ring		Displacement in³/rev	Displacement (cm³/rev)
042	=	8.07	(132.30)	057	=	11.02	(180.70)
045	=	8.70	(142.40)	062	=	12.00	(196.70)
050	=	9.67	(158.50)	066	=	13.00	(213.30)
052	=	10.00	(164.80)	072	=	13.86	(227.10)
054	=	10.43	(170.90)	085	=	16.40	(269.80)

Type of Shaft

HT7ES
1 = Keyed (SAE - CC)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (SAE - CC)

HT7ES - HT7E
5 = Keyed (ISO R775-G38M)

Modification

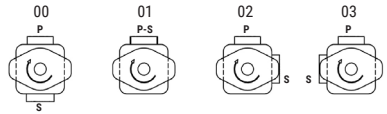
Mounting w/ connection variables
4 bolts SAE flange (J518C)

P = 1" 1/2		S = 3"
	UNC	METRIC
HT7E		M0
HT7ES	00	M0

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting combination: (00 = Standard)



S - Suction port P - Pressure port

Direction of rotation
R = Clockwise
L = Counter - clockwise

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT6CC, HT6CCM, HT6CCP, HT6CCZ

MODEL CODE

HT6CC * W - *22 - *10 - 1 R 00 - C 1 - 01 - *

Series
*M = Mobile
*P = Mobile with double shaft seal
*Z = Mobile with double shaft loaded capability.
(*omit for Industrial)

Use for severe duty shaft only
(only for HT6CC and HT6CCM)

P1 / P2

Cam ring (P1& P2) — Displacement in³/rev (cm³/rev)

003/B03/R03	=	0.66	(10.80)	015/B15/R15	= 3.08 (50.50)
005/B05/R05	=	1.05	(17.20)	017/B17/R17	= 3.56 (58.30)
006/B06/R06	=	1.30	(21.30)	020/B20/R20	= 3.89 (63.80)
008/B08/R08	=	1.61	(26.40)	022/B22/R22	= 4.29 (70.30)
010/B10/R10	=	2.08	(34.10)	025/B25/R25	= 4.84 (79.30)
012/B12/R12	=	2.26	(37.10)	028/B28/R28	= 5.42 (88.80)
014/B14/R14	=	2.81	(46.00)	031/B31/R31	= 6.10 (100.00)

(Select 'B**' for Mobile and Bi-directional)
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6CC/T6CCM
1 = Keyed (no SAE)
3 = Splined (SAE-BB)
5 = Splined (SAE-B)

HT6CCW
2 = Keyed (SAE-BB)
S = Splined (DIN 5462)

Type of Shaft

HT6CCMW
2 = Keyed (SAE-BB)
R = Keyed special
X = Keyed special
W = Keyed special
V = Keyed special
T = Splined (SAE j718c)
Q = Splined (SAE-C)
S = Splined (DIN 5462)

Type of Shaft

HT6CCP
3 = Splined (no SAE)
4 = Splined (SAE-BB)
6 = Splined (no SAE)
S = Splined (DIN 5462)

HT6CCZ
X = Keyed Non-SAE
W = Keyed Non-SAE
V = Keyed Non-SAE
S = Splined (DIN 5462)

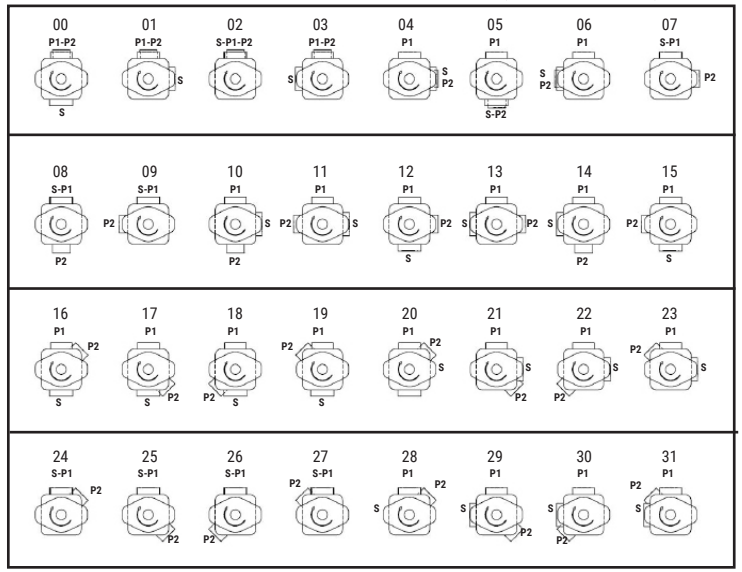
Modification
Port connection variables
SAE 4 bolt flange (J518c)

Code				
UNC	METRIC	P1	P2	S
00	OM	1"	1"	3"
01	W0	1"	3/4"	3"
10	1M	1"	1"	2½"
11	W1	1"	3/4"	2½"

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter
A = HT6CCZ C = Industrial D = Mobile

Porting combination: (00 = Standard)



Direction of rotation
R = Clockwise
L = Counter - clockwise

HT6DC, HT6DCM, HT6DCP

MODEL CODE

HT6DC * W * - *35 - *10 - 1 R 00 - C 1 - 00 - *

Series
*M = Mobile
*P = Mobile with double shaft seal
(*omit for Industrial)

Use for severe duty shaft only
(only for HT6DC and HT6DCM)

Y = Metric port connection, omit for UNC

P1

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
014/B14/R14	= 2.90 (47.60)	035/B35/R35	= 6.77 (111.00)
017/B17/R17	= 3.55 (58.20)	038/B38/R38	= 7.34 (120.30)
020/B20/R20	= 4.03 (66.00)	042/B42/R42	= 8.30 (136.00)
024/B24/R24	= 4.85 (79.50)	045/B45/R45	= 8.80 (145.70)
028/B28/R28	= 5.47 (89.70)	050/B50/R50	= 9.64 (158.00)
031/B31/R31	= 6.00 (98.30)	061/B61/R61	= 11.62 (190.50)

P2

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
003/B03/R03	= 0.66 (10.80)	015/B15/R15	= 3.08 (50.50)
005/B05/R05	= 1.05 (17.20)	017/B17/R17	= 3.56 (58.30)
006/B06/R06	= 1.30 (21.30)	020/B20/R20	= 3.89 (63.80)
008/B08/R08	= 1.61 (26.40)	022/B22/R22	= 4.29 (70.30)
010/B10/R10	= 2.08 (34.10)	025/B25/R25	= 4.84 (79.30)
012/B12/R12	= 2.26 (37.10)	028/B28/R28	= 5.42 (88.80)
014/B14/R14	= 2.81 (46.00)	031/B31/R31	= 6.10 (100.00)

(Select 'B**' for Mobile and Bi-directional)
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6DC/HT6DCM
1 = Keyed (SAE - C)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (no SAE)

Type of Shaft

HT6DCW
5 = Keyed (no SAE)

HT6DCMW
5 = Keyed (no SAE)
T = Splined (SAE j718c)

Type of Shaft

HT6DCP
3 = Splined (no SAE)

Modification

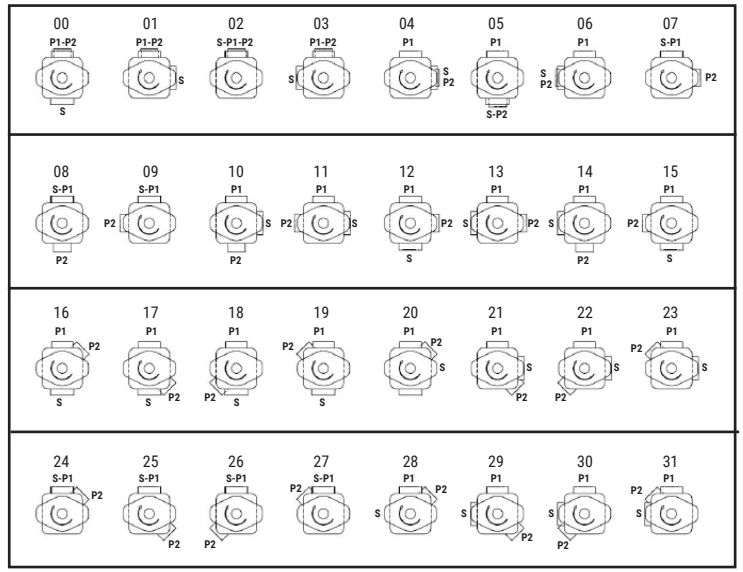
Mounting w/ connection variables

	UNC		METRIC	
	00	01	M0	M1
P2	1"	3/4"	1"	3/4"

Seal class
1 = S1 (for minreal oil)
4 = S4 (for fire resistant fluids)
5 = S5 (for mineral oil and fire resistant fluids)

Design letter
B = Industrial C = Mobile

Porting combination: (00 = Standard)



Direction of rotation
R = Clockwise
L = Counter - clockwise

HT6EC, HT6ECM, HT6ECP

MODEL CODE

HT6EC * * - *66 - *10 - 1 R 00 - C 1 - *

Series
*M = Mobile
*P = Mobile with double shaft seal
(*omit for Industrial)
Y = Metric port connection, omit for UNC

P1

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
042/R42	8.07 (132.30)	062/R62	12.00 (196.70)
045/R45	8.70 (142.40)	066/R66	13.00 (213.30)
050/R50	9.67 (158.50)	072/R72	13.86 (227.10)
052/R52	10.00 (164.80)	085/R85	16.40 (269.80)

P2

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
003/B03/R03	0.66 (10.80)	017/B17/R17	3.56 (58.30)
005/B05/R05	1.05 (17.20)	020/B20/R17	3.89 (63.80)
006/B06/R06	1.30 (21.30)	022/B22/R22	4.29 (70.30)
008/B08/R08	1.61 (26.40)	025/B25/R25	4.84 (79.30)
010/B10/R10	2.08 (34.10)	028/B28/R28	5.42 (88.80)
014/B14/R14	2.81 (46.00)	031/B31/R31	6.10 (100.00)

(Select 'B**' for Mobile and Bi-directional)
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6EC
1 = Keyed (SAE- CC)
2 = Keyed (no SAE)
3 = Splined (SAE-C)
5 = Splined (SAE-CC)

Type of Shaft

HT6ECM
1 = Keyed (SAE - CC)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (no SAE)
T = Splined (SAE J718c)

Type of Shaft

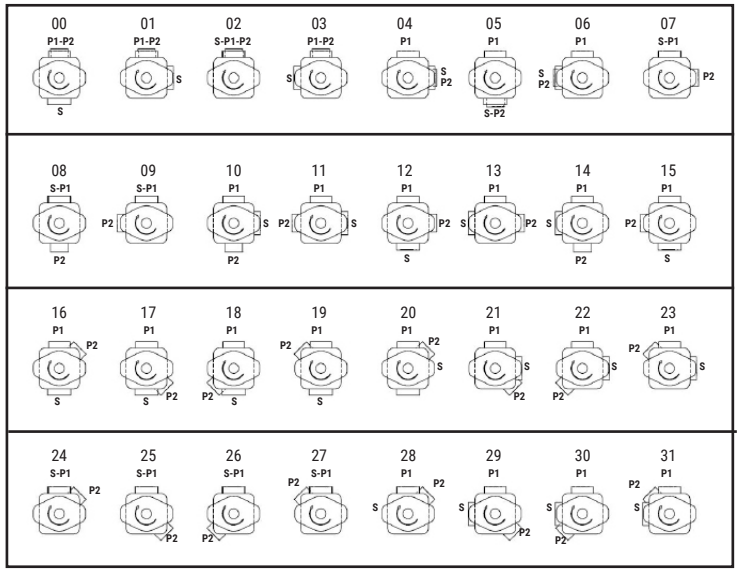
HT6ECP
3 = Splined (no SAE)

Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter
B = Industrial C = Mobile

Porting combination: (00 = Standard)



Direction of rotation
R = Clockwise
L = Counter - clockwise

HT6ED, HT6EDM, HT6EDP

MODEL CODE

HT6ED * * - *66 - *35 - 1 R 00 - C 1 - *

Series
*M = Mobile
*P = Mobile with double shaft seal
(*omit for Industrial)

Y = Metric port connection, omit for UNC

P1

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
042/R42	8.07 (132.30)	062/R62	12.00 (196.70)
045/R45	8.70 (142.40)	066/R66	13.00 (213.30)
050/R50	9.67 (158.50)	072/R72	13.86 (227.10)
052/R52	10.00 (164.80)	085/R85	16.40 (269.80)

(Select 'R**' for Mobile-spring assisted)

P2

Cam ring	Displacement in³/rev (cm³/rev)	Cam ring	Displacement in³/rev (cm³/rev)
014/B14/R14	2.90 (47.60)	038/B38/R38	7.30 (120.30)
020/B20/R20	4.00 (66.00)	042/B42/R42	8.30 (136.00)
024/B24/R24	4.85 (79.50)	045/B45/R45	8.90 (145.70)
028/B28/R28	5.00 (89.70)	050/B50/R50	9.64 (158.00)
031/B31/R31	6.00 (98.30)		
035/B35/R35	6.80 (111.00)		

(Select 'B**' for Mobile and Bi-directional)
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6ED
1 = Keyed (SAE - CC)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (SAE - CC)

Type of Shaft

HT6EDM
1 = Keyed (SAE - CC)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (no SAE)
T = Splined (SAE J718c)

Type of Shaft

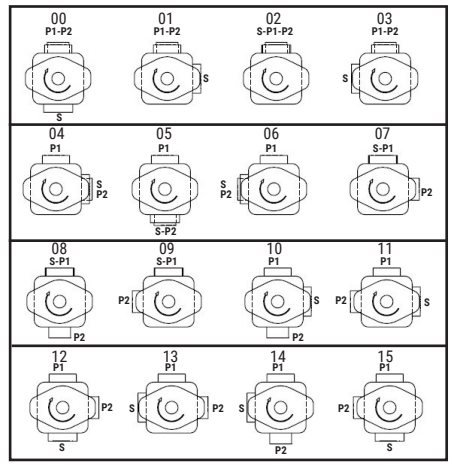
HT6EDP
3 = Splined (no SAE)

Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter
B = Industrial C = Mobile

Porting combination: (00 = Standard)



P - Pressure S - Suction

Direction of rotation
R = Clockwise
L = Counter - clockwise

HT7ED, HT7EDS

MODEL CODE

HT7ED/HT7EDS - 042 - B22 - 1 R 00 - A 1 - M0 - ..

Series
HT7ED - ISO - 2 bolts 3019-2
Mounting flange 125 B4 HW
HT7EDS - SAE - C 2 Bolts
Mounting flange J744

P1

Cam ring		Displacement in³/rev	(cm³/rev)	Cam ring		Displacement in³/rev	(cm³/rev)
042	=	8.07	(132.30)	057	=	11.02	(180.70)
045	=	8.70	(142.40)	062	=	12.00	(196.70)
050	=	9.67	(158.50)	066	=	13.00	(213.30)
052	=	10.00	(164.80)	072	=	13.86	(227.10)
054	=	10.43	(170.90)	085	=	16.40	(269.80)

P2

Cam ring		Displacement in³/rev	(cm³/rev)	Cam ring		Displacement in³/rev	(cm³/rev)
B14	=	2.68	(43.9)	B31	=	6.05	(99.1)
B17	=	3.36	(55.0)	B35	=	6.92	(113.4)
B20	=	4.03	(66.0)	B38	=	7.36	(120.6)
B22	=	4.29	(70.3)	B42	=	8.39	(137.5)
B24	=	4.95	(81.3)	045	=	8.89	(145.7)
B28	=	5.49	(89.9)	050	=	9.64	(157.9)

Type of Shaft

HT7EDS
1 = Keyed (SAE - CC)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (SAE - CC)

HT7ED-HT7EDS
5 = Keyed (ISO/R775 - G38M)

Modification

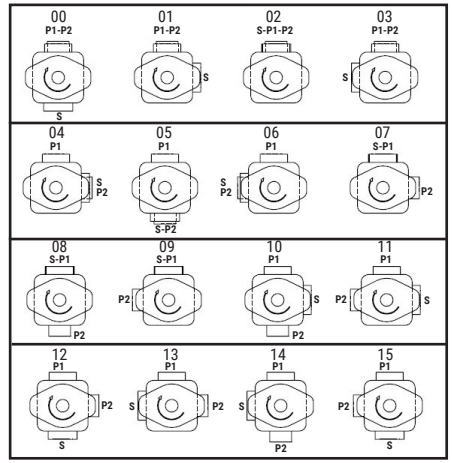
Mounting w/ connection variables
4 bolts SAE flange J518c

P1=1½"	P2=1¼"	S=4"
HT7EDS	HT7ED-HT7EDS	
UNC	METRIC	
01	M1	

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting combination: (00 = Standard)



P - Pressure S - Suction

Direction of rotation
R = Clockwise
L = Counter - clockwise

HT6CR, HT6CRM

MODEL CODE

HT6CR * * - *22 - 1 R 00 - B 3 0 - A 1 *

Series
M = Mobile (omit for industrial)
Y = Metric port connection, omit for UNC

Cam ring — Displacement in³/rev (cm³/rev)

003/B03/R03	=	0.66	(10.80)	017/B17/R17	=	3.56	(58.30)
005/B05/R05	=	1.05	(17.20)	020/B20/R20	=	3.89	(63.80)
006/B06/R06	=	1.30	(21.30)	022/B22/R22	=	4.29	(70.30)
008/B08/R08	=	1.61	(26.40)	025/B25/R25	=	4.84	(79.30)
010/B10/R10	=	2.08	(34.10)	028/B28/R28	=	5.42	(88.80)
012/B12/R12	=	2.26	(37.10)	031/B31/R31	=	6.10	(100.00)
014/B14/R14	=	2.81	(46.00)				

(Select 'B**' for Mobile and Bi-directional
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6CR/HT6CRM
1 = Keyed (SAE - BB)
2 = Keyed (no SAE)
3 = Splined (SAE - B)
4 = Splined (SAE - BB)
5 = Keyed (no SAE)

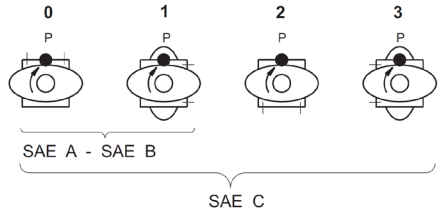
Direction of rotation
R = Clockwise
L = Counter - clockwise

Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

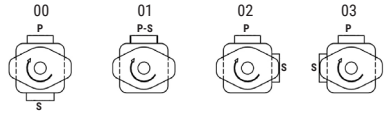
Porting Adapter



Coupling
1 = SAE A
2 = SAE B
3 = SAE B - B
4 = SAE C
5 = SAE J498B 16/32-11 teeth

Adapter
0 = None
A = SAE A
B = SAE B
C = SAE C

Porting combination: (00 = Standard)



To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT6DR, HT6DRM

MODEL CODE

HT6DR * * - *35 - 1 R 00 - A 1 0 - A 1 *

Series
M = Mobile (omit for industrial)
Y = Metric port connection, omit for UNC

Cam ring — Displacement — Cam ring — Displacement

	in³/rev	(cm³/rev)		in³/rev	(cm³/rev)
014/B14/R14	= 2.90	(47.6)	038/B38/R38	= 7.30	(120.3)
020/B20/R20	= 4.00	(66.0)	042/B42/R42	= 8.30	(136.0)
024/B24/R24	= 4.85	(79.5)	045/B45/R45	= 8.90	(145.7)
028/B28/R28	= 5.50	(89.7)	050/B50/R50	= 9.64	(158.0)
031/B31/R31	= 6.00	(98.3)			
035/B35/R35	= 6.80	(111.0)			

(Select 'B**' for Mobile and Bi-directional
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6DR/HT6DRM
1 = Keyed (SAE C)
2 = Keyed (no SAE)
3 = Splined (SAE - C)
4 = Splined (no SAE)

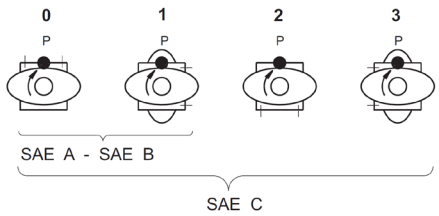
Direction of rotation
R = Clockwise
L = Counter - clockwise

Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

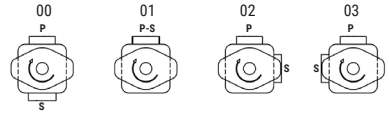
Porting Adapter



Coupling
1 = SAE A
2 = SAE B
3 = SAE B - B
4 = SAE C
5 = SAE J498B 16/32-11 teeth

Adapter
0 = None B = SAE B
A = SAE A C = SAE C

Porting combination: (00 = Standard)



To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HT6ER, HT6ERM

MODEL CODE

HT6ER * * - *66 - 1 R 00 - C 4 0 - A 1 *

Series
M = Mobile (omit for industrial)
Y = Metric port connection, omit for UNC

Cam ring — Displacement in³/rev (cm³/rev)

Cam ring	Displacement in³/rev	(cm³/rev)
042/R42	8.07	(132.30)
045/R45	8.70	(142.40)
050/R50	9.67	(158.50)
052/R52	10.00	(164.80)
057/R57	11.02	(180.70)
062/R62	12.00	(196.70)
066/R66	13.00	(213.30)
072/R72	13.86	(227.10)
085/R85	16.40	(269.80)

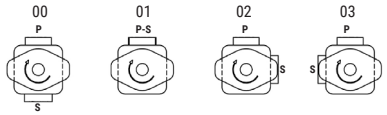
(Select '0**' for Standard and Mobile
(Select 'R**' for Mobile-spring assisted)

Type of Shaft

HT6ER/HT6ERM
1 = Keyed (SAE - C)
3 = Splined (SAE - C)
4 = Splined (SAE - CC)

Direction of rotation
R = Clockwise
L = Counter - clockwise

Porting combination: (00 = Standard)

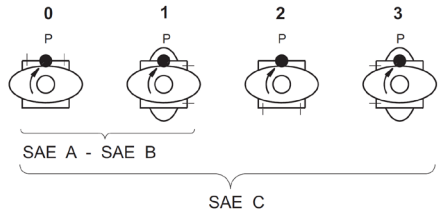


Modification

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting Adapter



Coupling
1 = SAE A
2 = SAE B
3 = SAE B - B
4 = SAE C
5 = SAE J498B 16/32-11 teeth

Adapter
0 = None
A = SAE A
B = SAE B
C = SAE C

To change porting position, follow the steps below:
Secure the pump and remove 4 bolts from housing. Move the housing 1 to 2 mm away from the mounting flange. Insert two bolts halfway into the housing. Install a wrench between the two bolts and turn in the desired direction, so that the required position of the pressure port, with respect to suction is obtained. Reinstall the bolts and tighten to the corresponding mounting torque, as provided.
Instructions: Do not remove the housing completely from the mounting flange, remove only 1 to 2 mm to avoid the cartridge pin from moving out from the housing dowel pin hole. Make sure no piece of paint enters the gap to avoid leakage. If it is difficult to turn housing, put some hydraulic oil into the pressure port to lubricate the pressure port seals.

HM4C, HM4C1, HM4SC, HM4SC1

MODEL CODE

HM4 * C * * - 043 - 1 N 00 - A 1 - 01 **

Series
*S = Severe duty motor
*1 = Internal drain (omit for external drain)
*Q = 4 bolt SAE - C mounting
(omit for standard SAE-B 2 bolt mounting

Cam ring — Torque

		in.lbf/psi	(Nm/bar)
024	=	0.24	(0.40)
031	=	0.33	(0.56)
043	=	0.45	(0.74)
055	=	0.57	(0.94)
067	=	0.69	(1.13)
075	=	0.78	(1.27)

Type of Shaft
1 = Keyed (SAE-B)
2 = Keyed (no SAE)
3 = Splined (SAE-B)

N = bi-directional

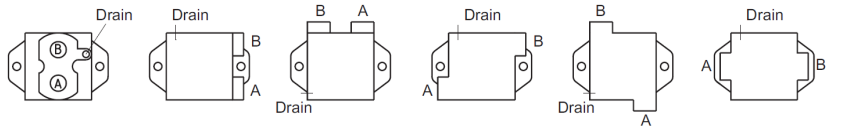
Modification

Port connections
01 = SAE threaded port
SAE drain
02 = SAE 4 bolt flange
UNC threaded - SAE drain
04 = SAE 4 bolt flange
UNC threaded - BSPP drain
M4 = SAE 4 bolt flange
METRIC threaded - BSPP drain

Seal class
1 = S1 (Standard)
5 = S5 (Severe duty)

Design letter

Porting combination: (00 = Standard)



Rear port | Side port | Opposite ports (offset) | Opposite ports (in line) (Not for internal drain motor)

View from shaft end

CW rotation	A = inlet	CCW Rotation	A = outlet
	B = outlet		B = inlet

HM4D, HM4D1, HM4SD, HM4SD1

MODEL CODE

HM4 * D * - 062 - 1 N 00 - B 1 - 01 **

Series
*S = Severe duty motor
*1 = Internal drain (omit for external drain)

Cam ring — Torque

	in.lbf/psi	(Nm/bar)
062 =	0.63	(1.0)
074 =	0.75	(1.2)
088 =	0.88	(1.4)
102 =	0.96	(1.6)
113 =	1.13	(1.8)
128 =	1.28	(2.1)
138 =	1.38	(2.2)

Type of Shaft
1 = Keyed (no SAE)
3 = Keyed (SAE A)
S = Splined (SAE J718c)

N = bi-directional

Modification

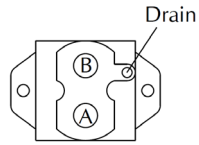
Port connections
01 = SAE threaded port
SAE drain
02 = SAE 4 bolt flange
UNC threaded - SAE drain
04 = SAE 4 bolt flange
UNC threaded - BSPP drain
M4 = SAE 4 bolt flange
METRIC threaded - BSPP drain

Seal class
1 = S1 (HM4D-HM4D1)
5 = S5 (HM4SD/HM4SD1)

Design letter

Porting combination: (00 = Standard)

00



View from shaft end

CW rotation	A = inlet	CCW Rotation	A = outlet
	B = outlet		B = inlet

HYFLOW SOUTHEAST, INC. VANE PUMP WARRANTY

Hyflow Southeast vane pump is warranted for a period of (1) one year (12 months) from the date of service or 1-1/2 years (18 months) from date of sales/builds, or 12 months of date of installation, whichever is sooner, against any defect in material and workmanship which existed at the time of sale by Hyflow Southeast., according to the following provisions, subject to the requirements that the pump must be used only in the appropriate applications and following the Installation and Owner's Manual instructions

If during the warranty period the vane pump fails due to a defect in any part in material or workmanship that existed at the time of the sale by Hyflow Southeast Inc., the defective part will be repaired or replaced, at the discretion of Hyflow Southeast Inc., at no charge, if the defective part is returned to Hyflow Southeast Inc. with transportation prepaid. Authorization from your sales representative is required to initiate the warranty.

WARNING: The above warranty shall terminate if any alterations or repairs are made to the vane pump other than at Hyflow Southeast Inc.

The foregoing warranty is in lieu of all other obligations and liabilities, including negligence and all warranties of merchantability and suitability, expressed or implied, and state Hyflow Southeast' entire and exclusive liability and buyer's exclusive remedy for any claim of damages in connection with the sale, repair or replacement of the above goods, their design, installation or operation. Hyflow Southeast Inc. will in no event be liable for any direct, indirect, special, incidental or consequential damages whatsoever, and our liability under no circumstances will exceed the contract price for the goods for which liability is claimed.

Hyflow Southeast Inc. is not liable for any repair related cost incurred to the Buyer at any time if the repair is conducted by the buyer without written authorization from Hyflow Southeast Inc.

Notes

HYFLOW®

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