Replacement Units & Parts

BENCHMARK B SERIES VANE PUMPS & MOTORS

Technical Information

HYDRAULEX GLOBAL

The Right Replacement, Right Now®

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BT6C Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6C * - 003 - 1 - L - 00 - B - 1

Series

Type M

Cartridge

Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)	015/B15 = 50.5 (3.08)
005/B05 = 17.2 (1.05)	017/B17 = 58.3 (3.56)
006/B06 = 21.3 (1.30)	020/B20 = 63.8 (3.89)
008/B08 = 26.4 (1.61)	022/B22 = 70.3 (4.29)
010/B10 = 34.1 (2.08)	025/B25 = 79.3 (4.84)
012/B12 = 37.1 (2.26)	028/B28 = 88.8 (5.42)
014/B14 = 46.0 (2.81)	031/B31 = 100.0 (6.10)

*0** = Uni-Directional B** = Bi-Directional*

Shaft

1 = Keyed SAE "B"
2 = Keyed Non SAE
3 = Splined SAE "B"
4 = Splined SAE "BB"

Seals

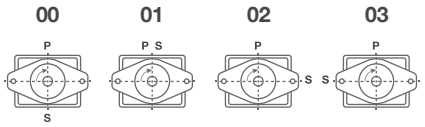
1 = Buna (Standard)
5 = Viton

Design Letter

B, C

Porting

00 = Standard



S - Suction Port P - Pressure Port

Rotation

R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6C Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6C	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.26	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025[1]	4.84	79.3	31.36	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028[1,2]	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
	031[1,2]	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4

[1] 025, 028, 031 = 2500 RPM max. [2] 028, 031 = 210 bar (3000 psi) max. int.

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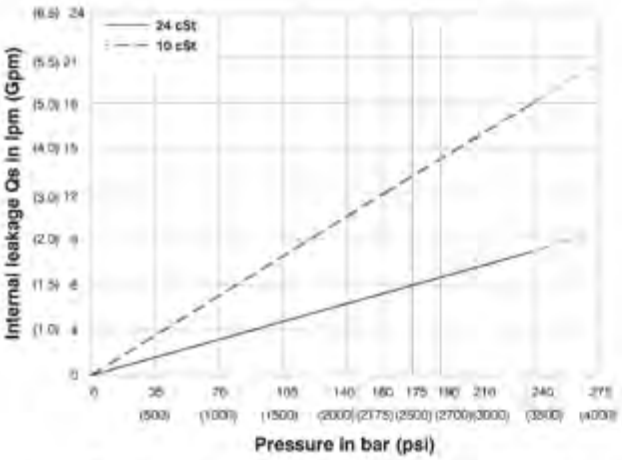
BT6C Series

Performance Graphs

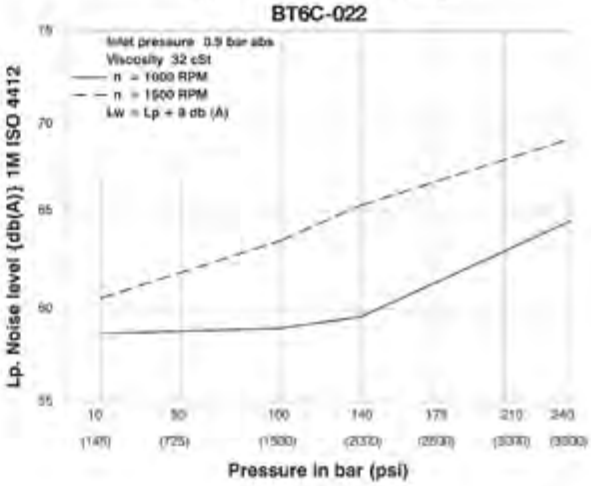
INTERNAL LEAKAGE (TYPICAL)



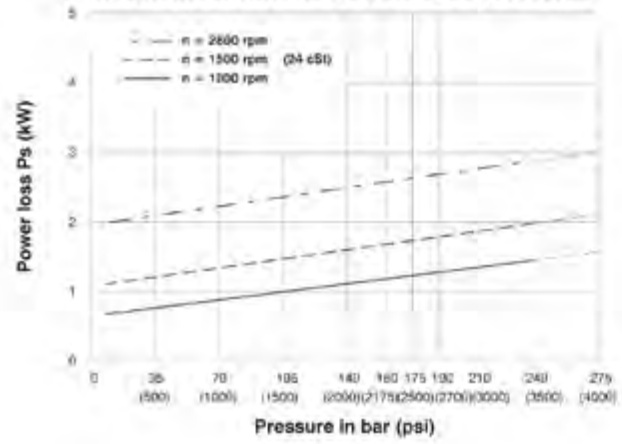
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow.

NOISE LEVEL (TYPICAL)

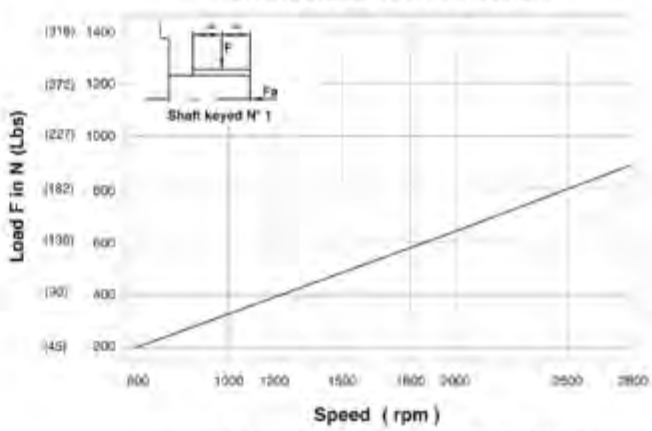
BT6C-022



HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum axial load permissible **Fa** = 800 N (180 Lbs)

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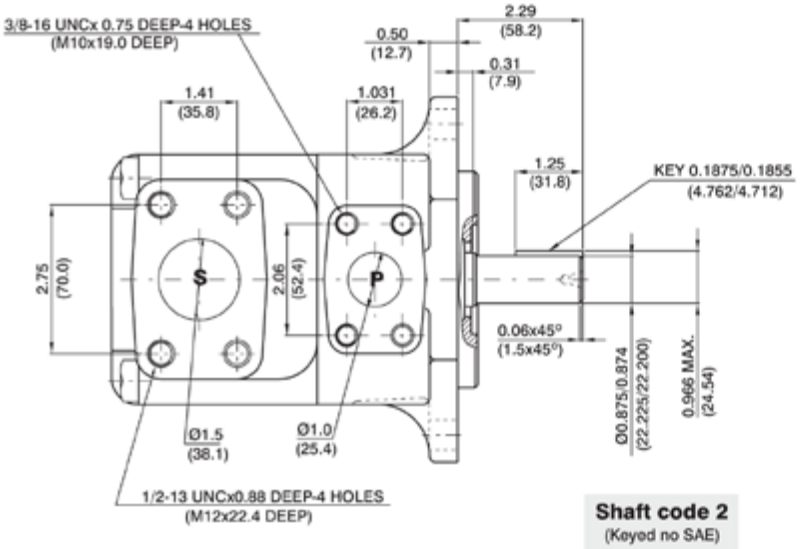
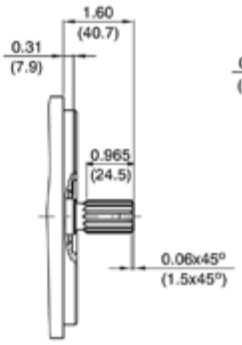
BT6C Series

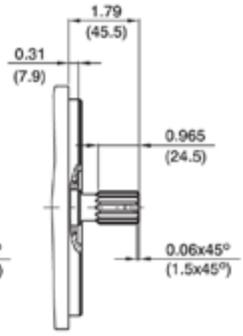
Specifications



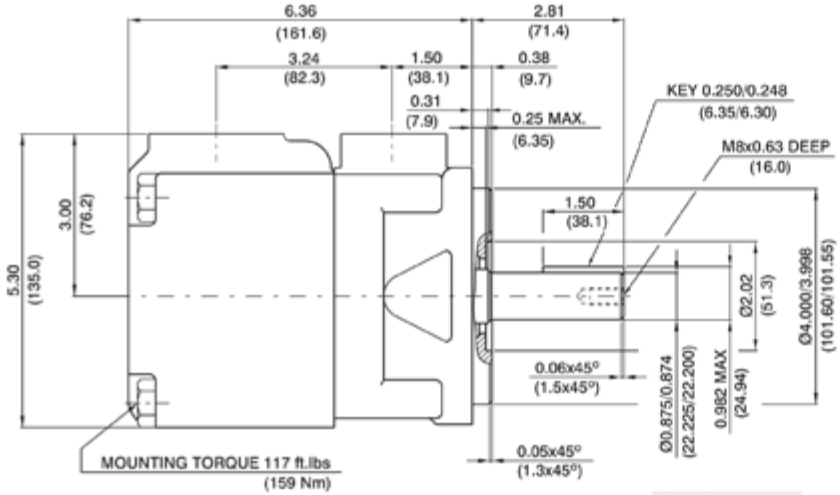
Shaft code 2
(Keyed no SAE)



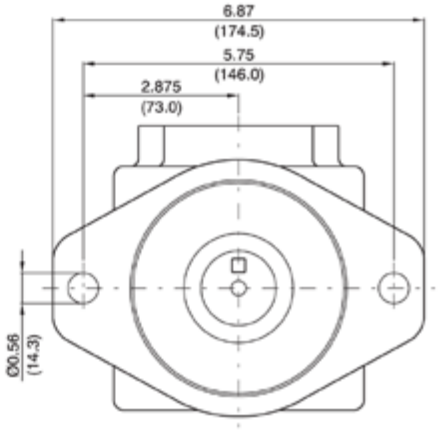
Shaft code 3
SAE B splined shaft
Class 1-J498b
16/32 dp. 13 teeth
30° pressure angle
flat root side fit



Shaft code 4
SAE BB splined shaft
Class 1-J498b
16/32 dp. 15 teeth
30° pressure angle
flat root side fit



Shaft code 1
(Keyed SAE B)



Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max.
1	14473 (16500)
2	12666 (14300)
3	18246 (20600)
4	19309 (21821)

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BT6D Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6D * - 014 - 1 - L - 00 - B - 1

Series

Type M

Cartridge
Displacement cm³/r (in³/r)

014/B14 = 47.6 (2.90)	035/B35 = 111.0 (6.77)
017/B17 = 58.2 (3.55)	038/B38 = 120.3 (7.34)
020/B20 = 66.0 (4.03)	042/B42 = 136.0 (8.30)
024/B24 = 79.5 (4.85)	045/B45 = 145.7 (8.89)
028/B28 = 89.7 (5.47)	050/B50 = 158.0 (9.64)
031/B31 = 98.3 (6.00)	061/B61 = 190.5 (11.62)

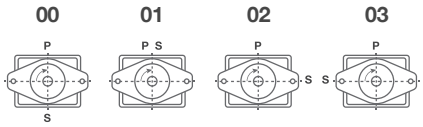
*0** = Uni-Directional B** = Bi-Directional*

Shaft
1 = Keyed SAE "C"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined Non SAE

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
B, C

Porting
00 = Standard



S - Suction Port P - Pressure Port

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6D Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6D	014	2.90	47.6	18.88	71.4	16.42	62.1	14.78	55.9	3.08	2.3	24.81	18.5	41.03	30.6
	017	3.55	58.2	23.1	87.3	20.6	78.0	18.99	71.8	3.35	2.5	29.77	22.2	49.62	37.0
	020	4.00	66.0	26.19	99.0	23.73	89.7	22.08	83.5	3.75	2.8	33.39	24.9	55.92	41.7
	024	4.80	79.5	31.56	119.3	29.10	110.0	27.46	103.8	4.02	3.0	39.69	29.6	66.78	49.8
	028	5.50	89.7	35.58	134.5	33.12	125.2	31.48	119.0	4.29	3.2	44.52	33.2	74.96	55.9
	031	6.00	98.3	39.00	147.5	36.53	138.1	34.89	131.9	4.42	3.3	48.54	36.2	81.80	61.0
	035	6.80	111.0	44.04	166.5	41.58	157.2	39.94	151.0	4.69	3.5	54.58	40.7	92.13	68.7
	038	7.30	120.3	47.72	180.4	45.26	171.1	43.62	164.9	4.96	3.7	58.87	43.9	99.64	74.3
	042[1]	8.30	136.0	53.96	204.0	51.50	194.7	49.86	188.5	5.36	4.0	66.25	49.4	112.24	83.7
	045[1]	8.89	145.7	57.80	218.5	55.34	209.2	53.70	203.0	5.50	4.1	70.81	52.8	120.02	89.5
	050[1,2]	9.64	158.0	62.69	237.0	60.23	227.7	59.25	224.0	5.90	4.4	76.44	57.0	113.98	85.0
	061[1,3]	11.62	190.5	76.25	285.7	73.54	278.0	-	-	6.16	4.6	81.26	60.6	-	-

[1] 042, 045, 050, 061 = 2200 RPM max. [2] 050 = 210 bar (3000 psi) max. int. [3] 061 = 120 bar (1740 psi) max. int., 061 = 80 bar (1160 psi) cont.

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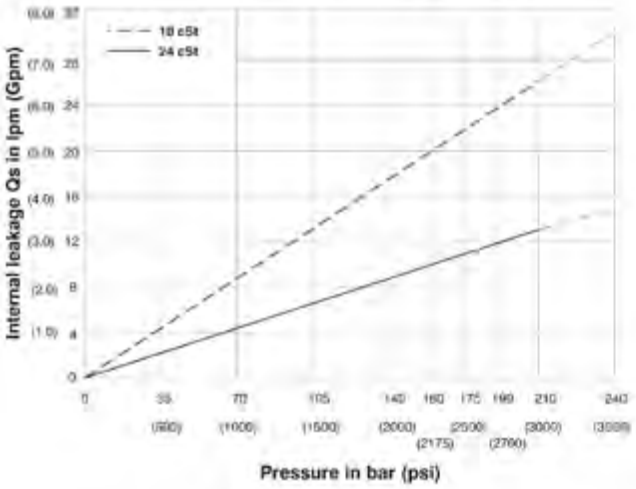
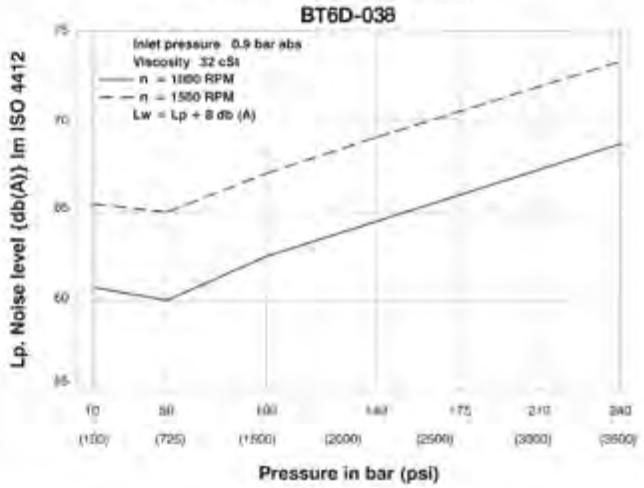
BT6D Series

Performance Graphs

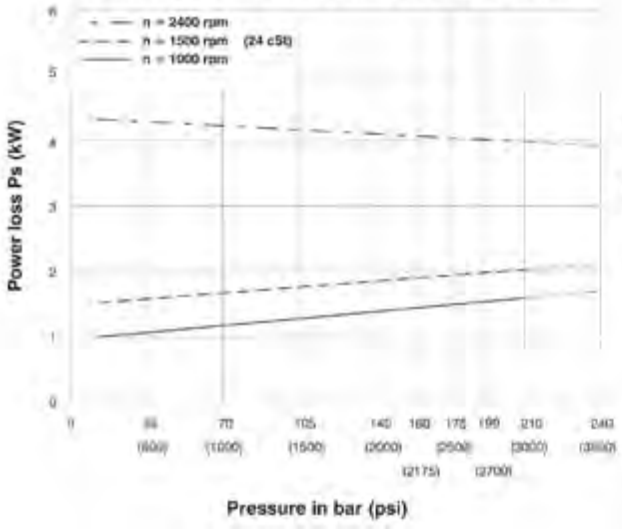
INTERNAL LEAKAGE (TYPICAL)



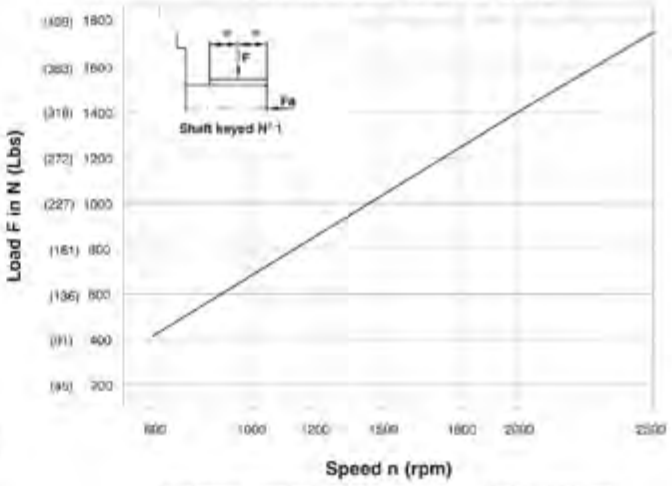
NOISE LEVEL (TYPICAL)



HYDROMECAHNICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum permissible axial load **Fa** = 1200 N (270 Lbs)

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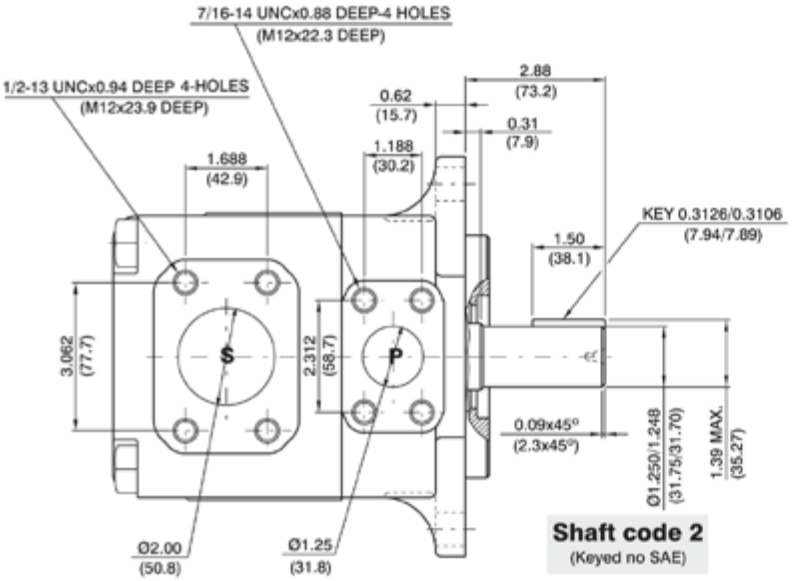
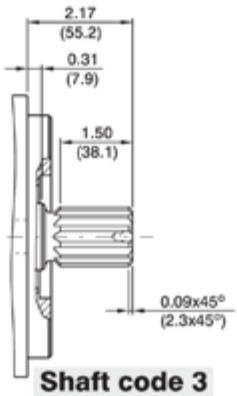
BT6D Series

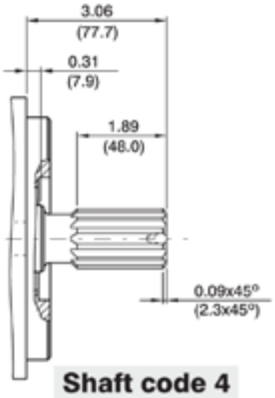
Specifications



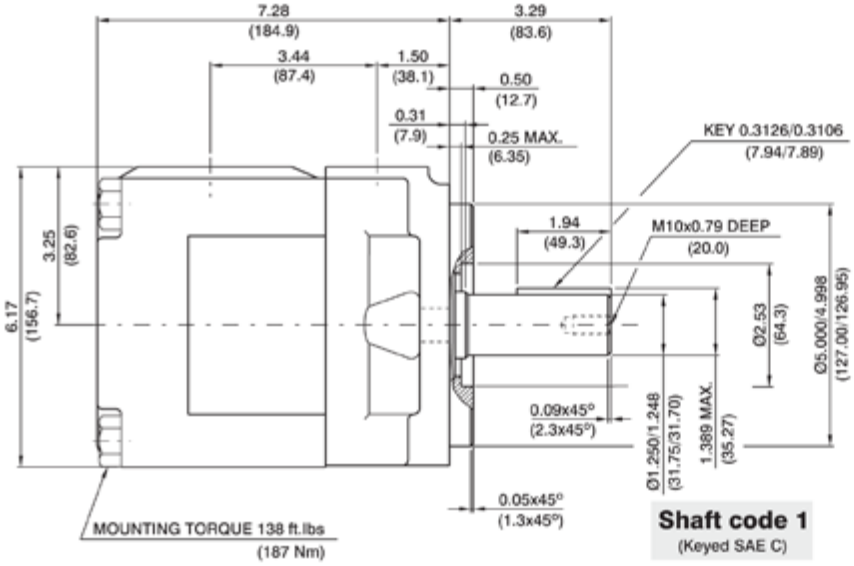
Shaft code 2
(Keyed no SAE)



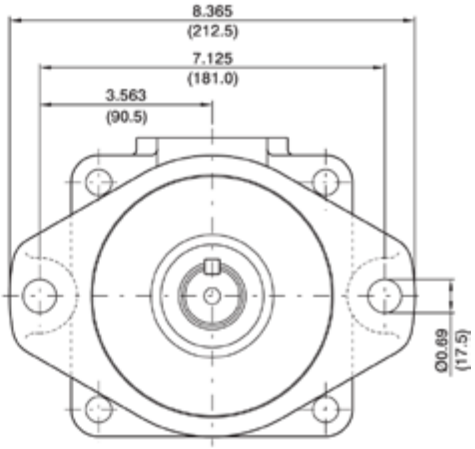
Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
flat root side fit



Shaft code 4
no SAE splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
flat root side fit



Shaft code 1
(Keyed SAE C)



Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max.
1	38299 (43283)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)

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BT6E Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6E * - 042 - 1 - L - 00 - A - 1

Series

Type M

Cartridge

Displacement cm³/r (in³/r)

042 = 132.3 (8.07)
045 = 142.4 (8.69)
050 = 158.5 (9.67)
052 = 164.8 (10.06)
057 = 180.7 (11.02)
062 = 196.7 (12.00)
066 = 213.3 (13.02)
072 = 227.1 (13.86)
085 = 269.8 (16.46)

Shaft

1 = Keyed SAE "CC"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined SAE "CC"

Seals

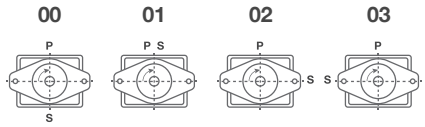
1 = Buna (Standard)
5 = Viton

Design Letter

A, B

Porting

00 = Standard



S - Suction Port P - Pressure Port

Rotation

R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6E Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6E	042	8.07	132.3	52.50	198.5	49.87	188.5	47.96	181.3	6.97	5.2	66.25	49.4	110.77	82.6
	045	8.70	142.4	56.51	213.6	53.86	203.6	51.98	196.5	7.24	5.4	70.94	52.9	118.95	88.7
	050	9.67	158.5	62.88	237.7	60.24	227.7	58.36	220.6	7.64	5.7	78.45	58.5	131.82	98.3
	052	10.00	164.8	65.40	247.2	62.75	237.2	60.87	230.1	7.78	5.8	81.53	60.8	136.92	102.1
	057	11.02	180.7	71.71	271.1	69.07	261.1	67.19	254.0	8.18	6.1	89.04	66.4	143.35	106.9
	062	12.00	196.7	78.04	295.0	75.40	285.0	73.52	277.9	8.58	6.4	96.42	71.9	162.67	121.3
	066	13.00	213.3	84.63	319.9	81.98	309.9	80.11	302.8	8.98	6.7	104.20	77.7	175.94	131.2
	072	13.86	227.1	90.11	340.6	87.46	330.6	85.58	323.5	9.25	6.9	110.77	82.6	187.07	139.5
	085[1,2]	16.40	269.8	107.00	404.7	105.21	397.7	-	-	9.78	7.3	87.56	65.3	-	-

[1] 085 = 2000 RPM max. [2] 085 = 90 bar (1300 psi) max. int., 085 = 75 bar (1100 psi) cont.

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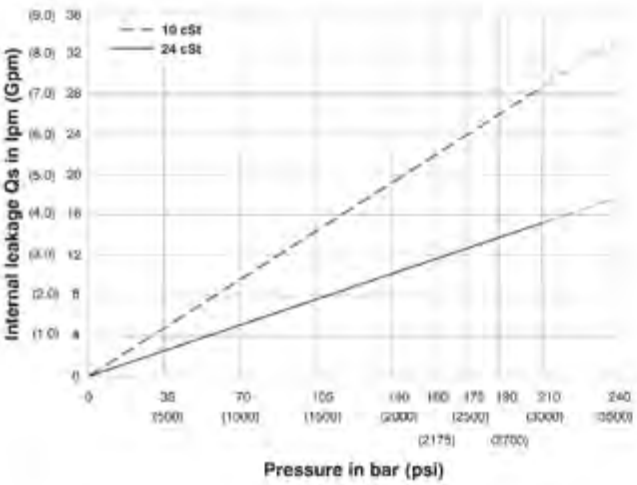
BT6E Series

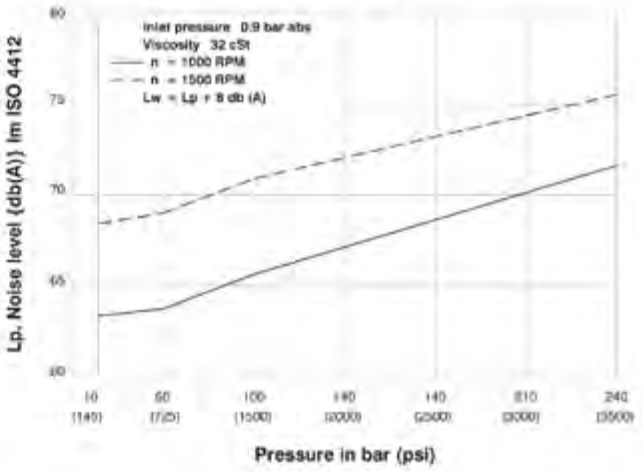
Performance Graphs

INTERNAL LEAKAGE (TYPICAL)

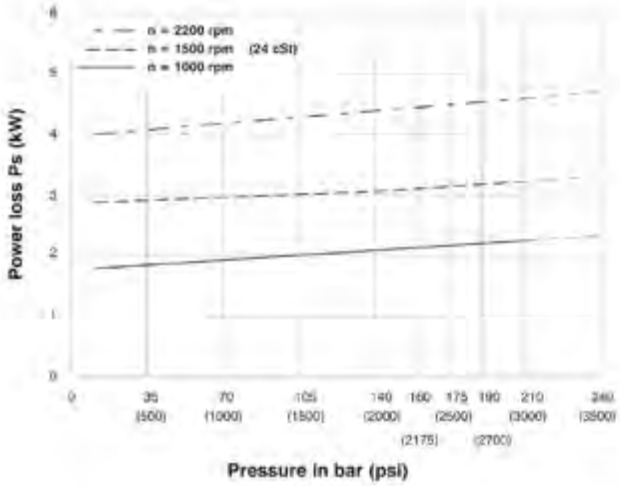


NOISE LEVEL (TYPICAL)

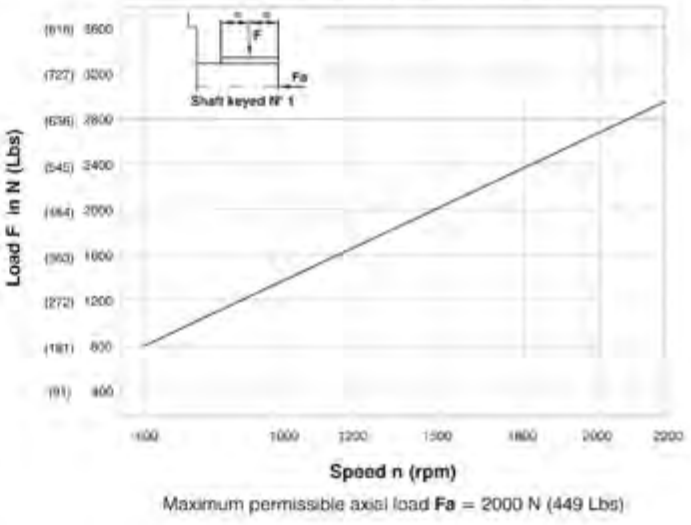
BT6E-050



HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum permissible axial load **Fa** = 2000 N (449 Lbs)

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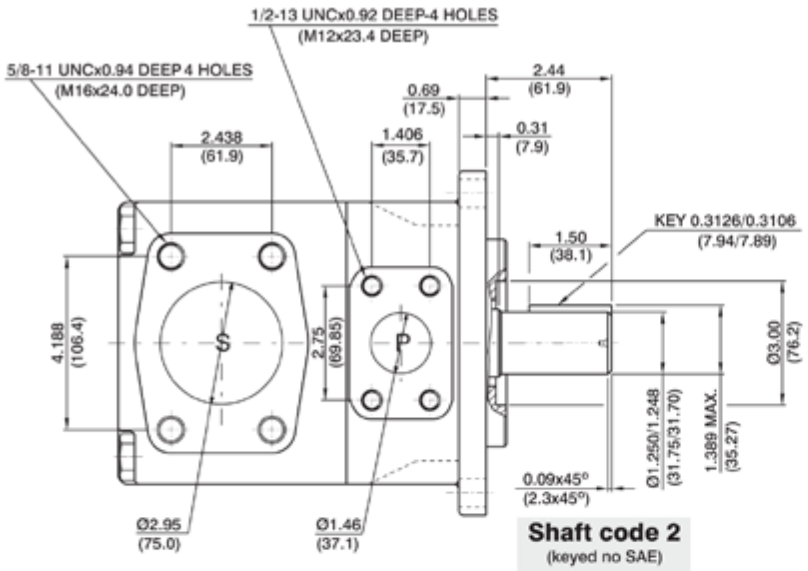
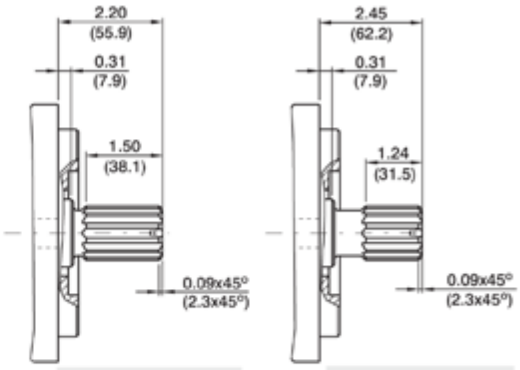
BT6E Series

Specifications

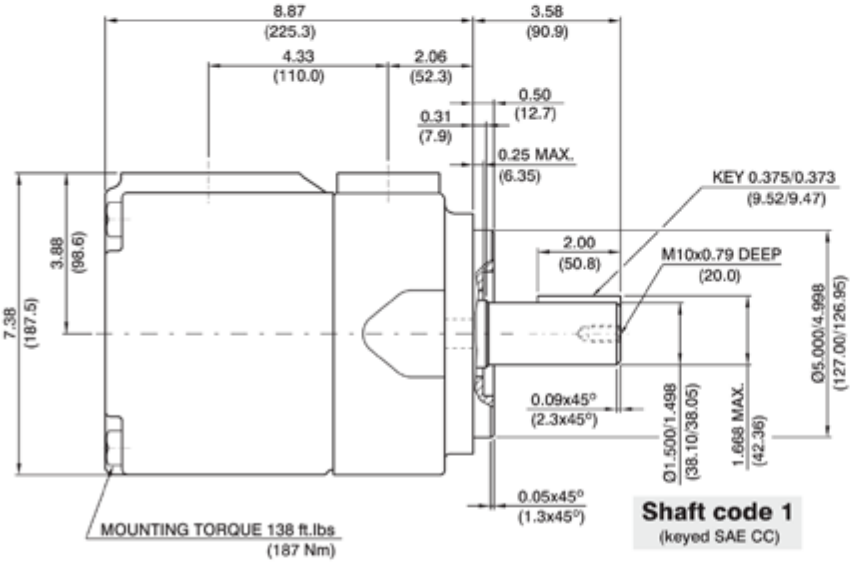


Shaft code 2
(keyed no SAE)

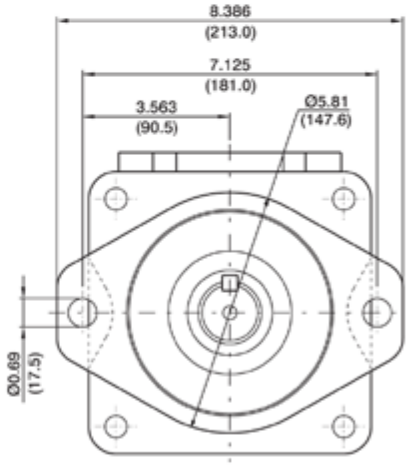


Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
flat root side fit

Shaft code 4
SAE CC splined shaft
Class 1-J498b
12/24 dp. 17 teeth
30° pressure angle
flat root side fit



Shaft code 1
(keyed SAE CC)



Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max.
1	48273 (54555)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)

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BT7D Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT7D - B14 - 1 - L - 00 - A - 1 - 00

Series

Cartridge

Displacement cm³/r (in³/r)

B14 = 43.9 (2.68)	B31 = 99.1 (6.05)
B17 = 55.0 (3.36)	B35 = 113.4 (6.92)
B20 = 66.0 (4.03)	B38 = 120.6 (7.36)
B22 = 70.3 (4.29)	B42 = 137.5 (8.39)
B24 = 81.1 (4.95)	B45 = 145.7 (8.89)
B28 = 89.9 (5.49)	B50 = 157.9 (9.64)

Shaft

1 = Keyed SAE "C"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined Non SAE

Rotation

R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

Mounting & Port Connections

4 bolts SAE Flange J518

P = 1-1/4" S = 2"			
	UNC	Metric	
BT7D	00	M0	Y0[1]

[1] 250 bar (3630 psi) max. int.

Seals

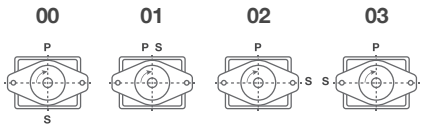
1 = Buna (Standard)
5 = Viton

Design Letter

A

Porting

00 = Standard



S - Suction Port P - Pressure Port

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BT7D Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 300 bar (4350 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 300 bar (4350 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT7D	B14	2.68	43.9	20.92	79.1	19.18	72.5	17.19	64.9	3.46	2.6	27.77	20.7	58.49	43.6
	B17	3.36	55.0	26.16	98.8	24.41	92.3	22.42	84.7	3.77	2.8	33.88	25.3	71.92	53.6
	B20	4.03	66.0	31.39	118.6	29.64	112.0	27.65	104.5	4.07	3.0	39.98	29.8	85.35	63.6
	B22	4.29	70.3	33.43	126.4	31.69	119.8	29.70	112.3	4.19	3.1	42.37	31.6	90.60	67.6
	B24	4.95	81.1	38.57	145.8	36.82	139.2	34.83	131.6	4.49	3.4	48.36	36.1	103.78	77.4
	B28	5.49	89.9	42.80	161.8	41.06	155.2	39.06	147.6	4.74	3.5	53.30	39.7	114.65	85.5
	B31	6.05	99.1	47.18	178.3	45.43	171.7	43.44	164.2	4.99	3.7	58.41	43.6	125.88	93.7
	B35[1]	6.92	113.4	53.93	203.9	52.18	197.2	50.44	190.6	5.39	4.0	66.29	49.4	130.39	97.2
	B38[1]	7.36	120.6	57.35	216.8	55.61	210.2	53.87	203.6	5.59	4.2	70.28	52.4	138.38	103.2
	B42[2]	8.39	137.5	65.39	247.2	63.65	240.6	62.15	234.9	6.05	4.5	79.66	59.4	149.39	111.4
	B45[3]	8.89	145.7	69.29	262.0	67.11	253.6	65.47	247.5	6.74	5.0	83.75	62.4	144.41	107.7
	B50[4]	9.64	157.9	75.14	284.0	72.96	275.8	71.78	271.3	7.08	5.3	90.58	67.5	134.54	100.3

[1] B35, B38 = 280 bar (4060 psi) max. int. [2] B42 = 260 bar (3770 psi) max. int.
[3] B45 = 240 bar (3500 psi) max. int. [4] B50 = 210 bar (3000 psi) max. int.

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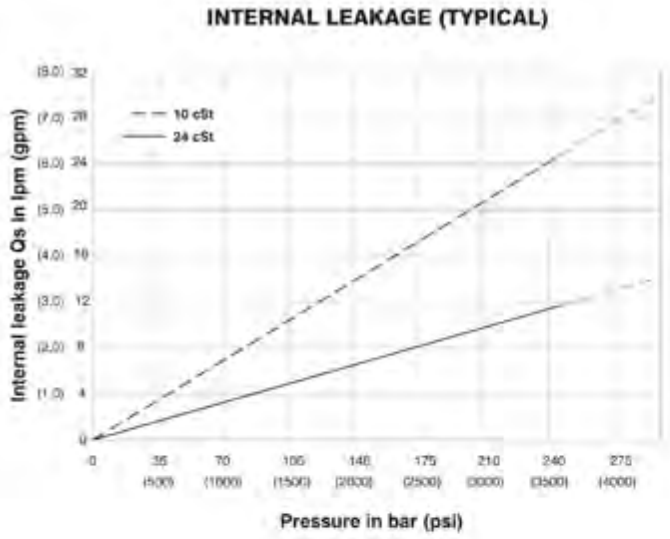
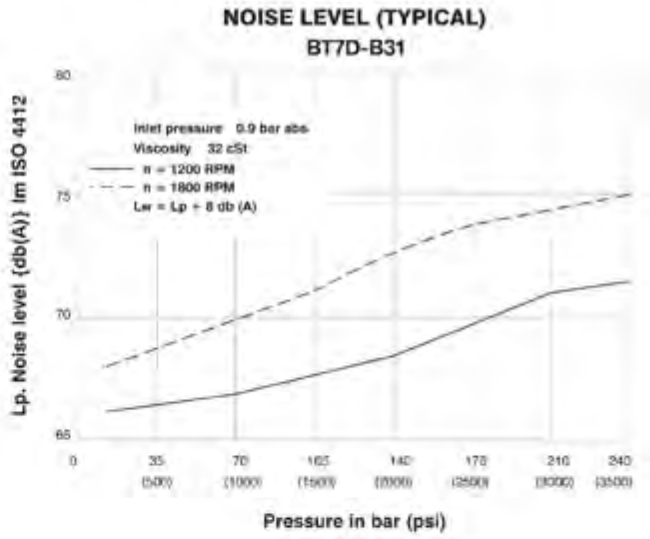
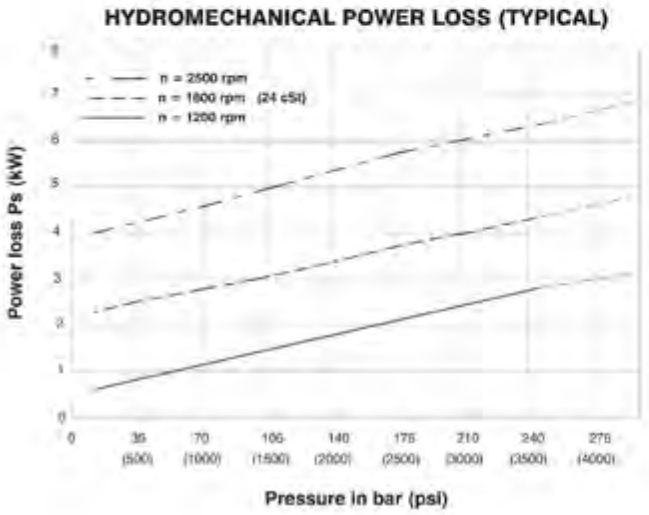
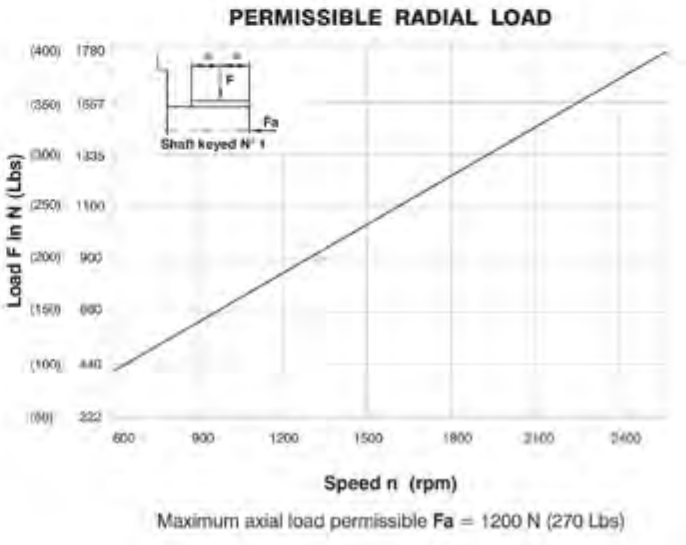
BT7D Series

Performance Graphs









Maximum axial load permissible **Fa** = 1200 N (270 Lbs)

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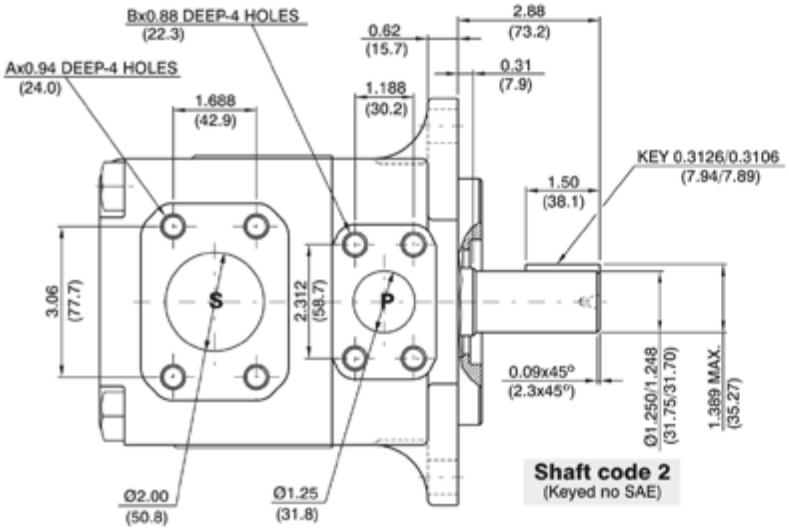
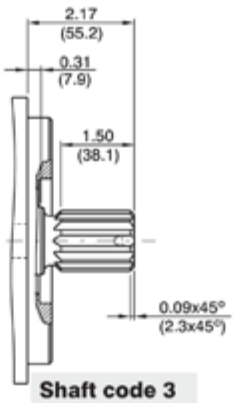
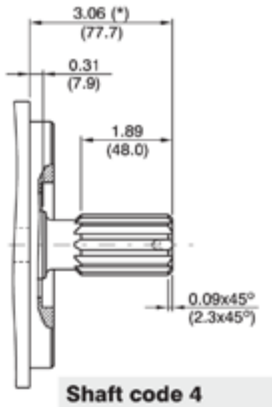
BT7D Series

Specifications

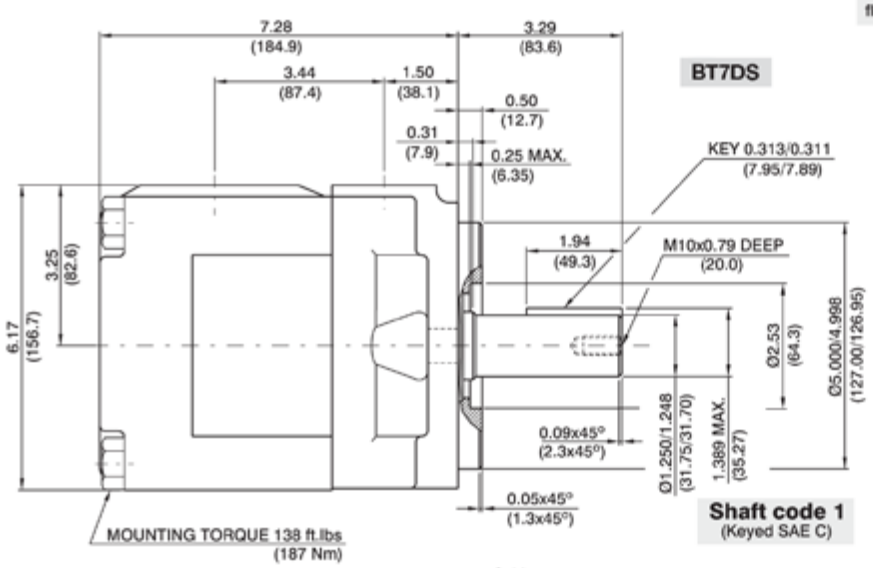


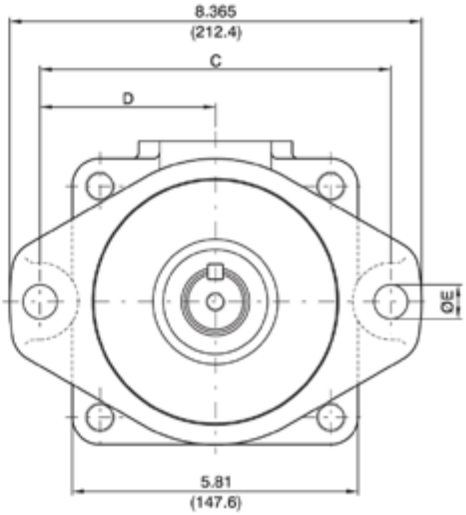


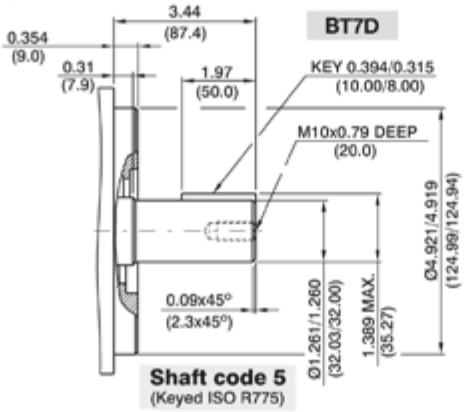
Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
flat root side fit



Shaft code 4
SAE C spc(*) splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
flat root side fit







Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max.
1	38299 (43283)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)
5	39238 (44344)

	BT7DS		BT7D	
	00	M0	Y0 [1]	M0
A	1/2-13 UNC	M12	M12	M12
B	7/16-14 UNC	M12	M10	M12
C	7.12 (181.0)			7.09 (180.0)
D	3.56 (90.5)			3.54 (90.0)
E	0.69 (17.5)			0.71 (18.0)

1) 250 bar (3630 psi) max.int

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BT7E Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT7E - 042 - 1 - L - 00 - A - 1 - 00

Series

Cartridge
Displacement cm³/r (in³/r)

042 = 132.2 (8.07)	057 = 183.2 (11.18)
045 = 142.5 (8.70)	062 = 196.6 (12.00)
050 = 158.5 (9.67)	066 = 213.0 (13.00)
052 = 163.8 (10.00)	072 = 227.1 (13.86)
054 = 170.9 (10.43)	085 = 268.7 (16.40)

Shaft
1 = Keyed SAE "CC"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined SAE "CC"

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

Mounting & Port Connections
4 bolts SAE Flange J518

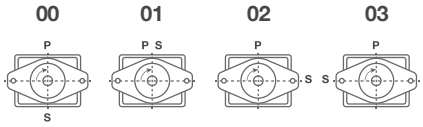
P = 1-1/2" S = 3"		
	UNC	Metric
BT7E	00	M0

[1] 250 bar (3630 psi) max. int.

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
A

Porting
00 = Standard



S - Suction Port P - Pressure Port

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BT7E Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT7E	042	8.07	132.2	62.92	237.8	60.37	228.2	58.52	221.2	8.09	6.03	78.44	58.49	133.80	99.77
	045	8.70	142.5	67.72	255.9	65.17	246.3	63.32	239.3	8.37	6.24	84.04	62.66	143.60	107.08
	050	9.67	158.5	75.38	284.9	72.83	275.3	70.98	268.3	8.82	6.58	92.97	69.32	159.24	118.75
	052	10.00	163.8	78.37	296.2	75.82	286.6	73.97	279.6	8.99	6.70	96.47	71.94	165.36	123.31
	054	10.43	170.9	81.27	307.2	78.72	297.6	76.87	290.6	9.17	6.84	99.75	74.38	177.46	132.33
	057	11.18	183.2	87.12	329.3	84.57	319.7	82.72	312.7	9.51	7.09	106.57	79.47	189.84	141.56
	062	12.00	196.6	93.54	353.6	90.99	343.9	89.14	336.9	9.88	7.37	114.17	85.13	196.34	146.41
	066	13.00	213.0	101.44	383.4	98.89	373.8	97.04	366.8	10.34	7.71	123.38	92.00	212.46	158.43
	072	13.86	227.1	108.00	408.2	105.45	398.6	103.60	391.6	10.72	7.99	131.04	97.71	225.86	166.42
	085[1]	16.40	268.7	127.79	483.0	126.13	476.7	-	-	11.88	8.85	101.66	75.80	-	-

[1] 085 = 90 bar (1300 psi) max. int. & 085 = 2000 RPM max.

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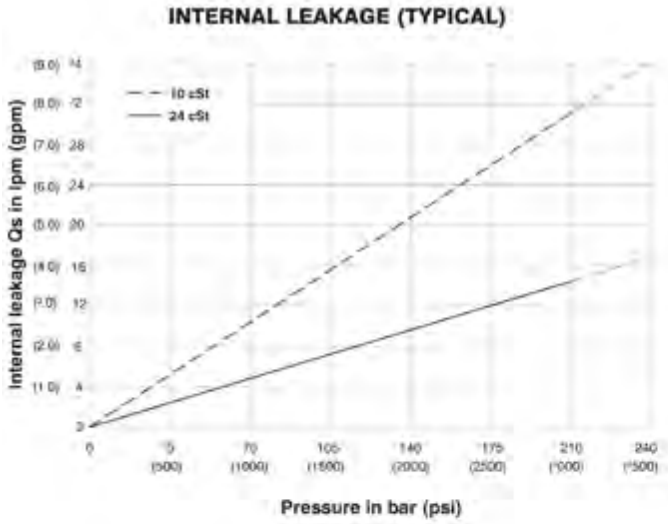
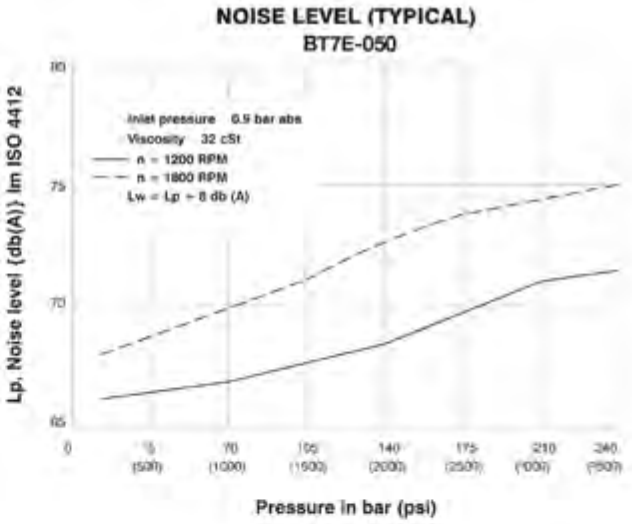
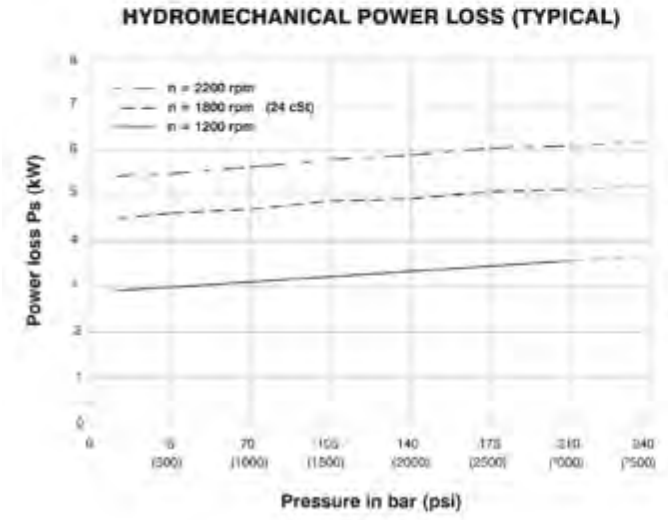
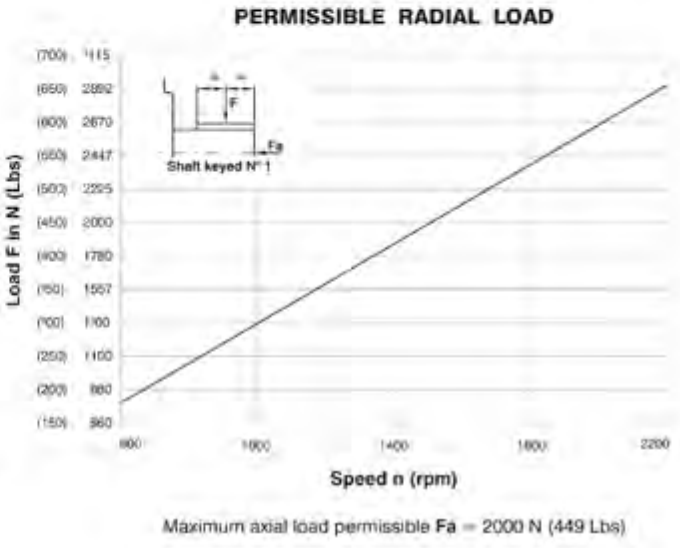
BT7E Series

Performance Graphs









Maximum axial load permissible **Fa** = 2000 N (449 Lbs)

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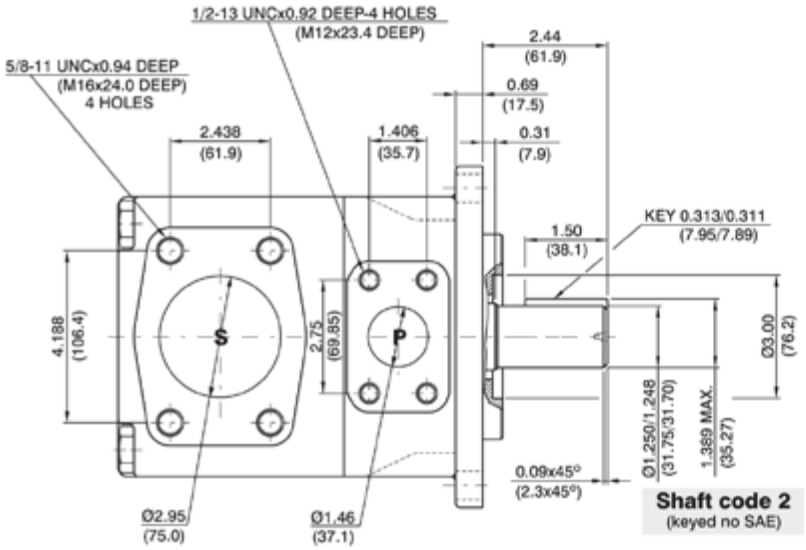
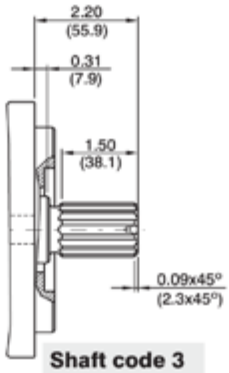
BT7E Series

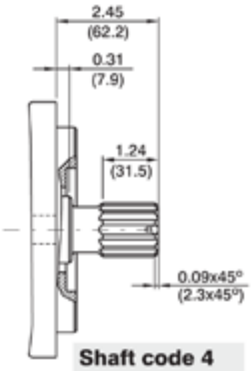
Specifications



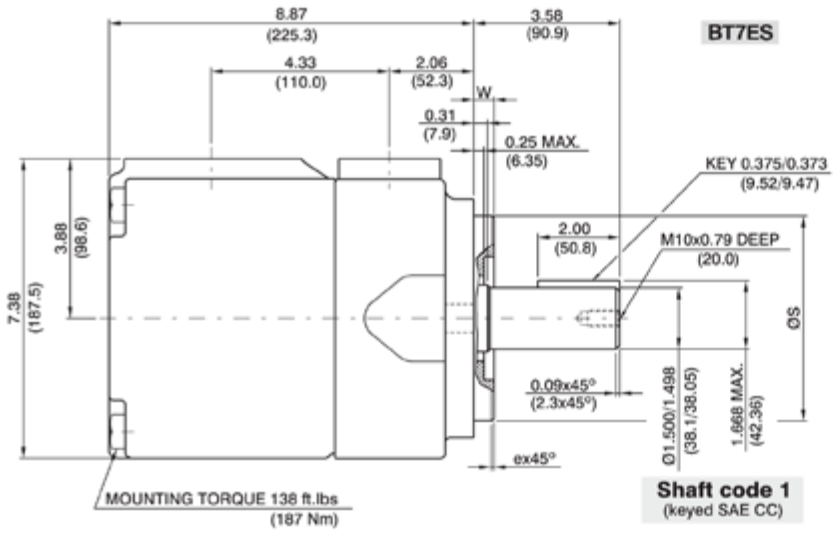
Shaft code 2
(keyed no SAE)



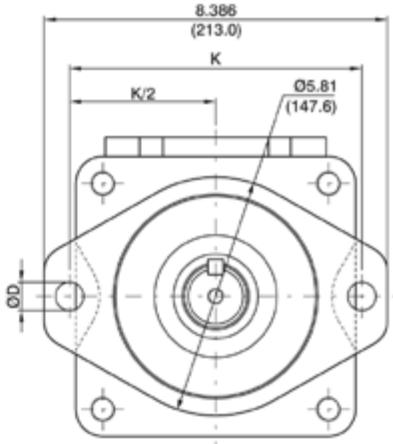
Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
flat root side fit

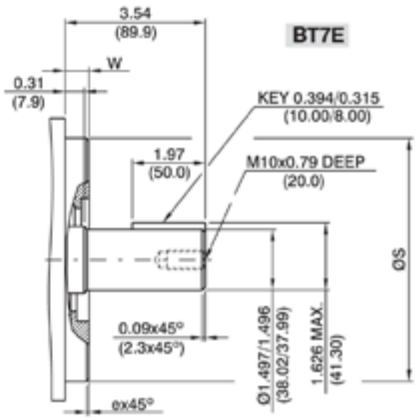


Shaft code 4
SAE CC splined shaft
Class 1-J498b
16/32 dp. 17 teeth
30° pressure angle
flat root side fit



Shaft code 1
(keyed SAE CC)





Shaft code 5
(Keyed ISO R775 - G38M)

Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max.
1	48273 (54555)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)
5	48273 (54555)

Alternate mounting flange						
Series	ØS		ex45°	W	K	ØD
	MAX.	Min.				
VT7E	4.921 (124.99)	4.919 (124.94)	0.079 (2.0)	0.374 (9.49)	7.087 (180.0)	0.709 (18.0)
VT7ES	5.00 (127.00)	4.998 (126.94)	0.051 (1.3)	0.50 (12.7)	7.126 (181.0)	0.689 (17.5)

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BT6CC Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6CC * - 022 - 003 - 1 - L - 00 - C - 1 - 00
(P1 = 022, P2 = 003)

Series

Type M or W

Cartridge

Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)	015/B15 = 50.5 (3.08)
005/B05 = 17.2 (1.05)	017/B17 = 58.3 (3.56)
006/B06 = 21.3 (1.30)	020/B20 = 63.8 (3.89)
008/B08 = 26.4 (1.61)	022/B22 = 70.3 (4.29)
010/B10 = 34.1 (2.08)	025/B25 = 79.3 (4.84)
012/B12 = 37.1 (2.26)	028/B28 = 88.8 (5.42)
014/B14 = 46.0 (2.81)	031/B31 = 100.0 (6.10)

*0** = Uni-Directional B** = Bi-Directional*

Shaft

1 = Keyed Non SAE
3 = Splined SAE "BB"
5 = Splined SAE "B"

W Version

2 = Keyed SAE "BB"

Rotation

R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

Mounting & Port Connections

	P1 = 1" S = 3"		P1 = 1" S = 2" [2]	
P2	**1"**	**3/4" [1]**	**1"**	**3/4" [1]**
UNC	00	01	10	11
Metric	0M	W0	1M	W1

[1] for 46 ml/rev max.
[2] for 126 ml/rev max.

Seals

1 = Buna (Standard)
5 = Viton

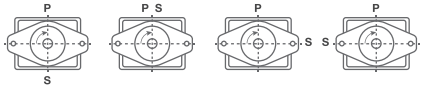
Design Letter

C, D

Porting

00 = Standard

00 **01** **02** **03**



S - Suction Port P - Pressure Port

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BT6CC Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6CC (P1 & P2)	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.22	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025[1]	4.84	79.3	31.46	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028[1,2]	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
	031[1,2]	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4

[1] 025, 028, 031 = 2500 RPM max. [2] 028, 031 = 210 bar (3000 psi) max. int.

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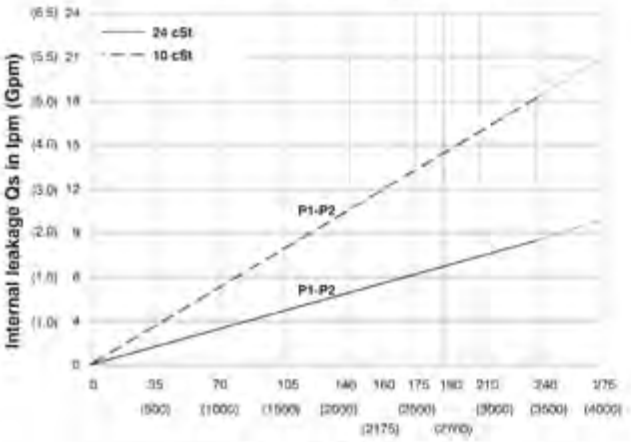
BT6CC Series

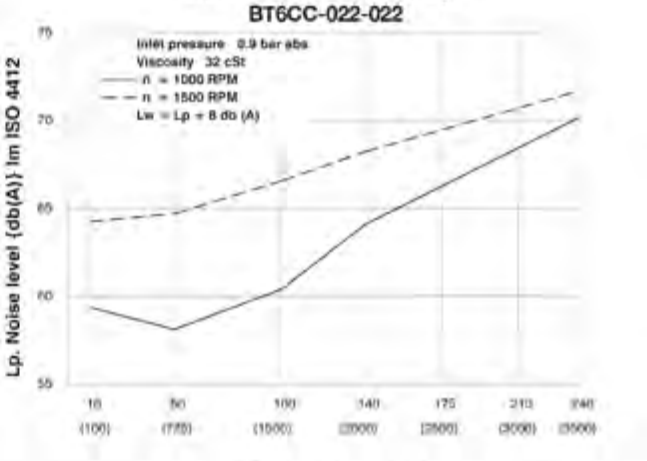
Performance Graphs

INTERNAL LEAKAGE (TYPICAL)



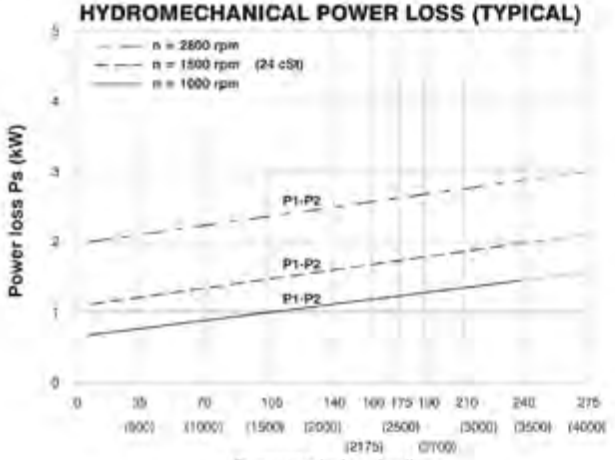
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL)
BT6CC-022-022



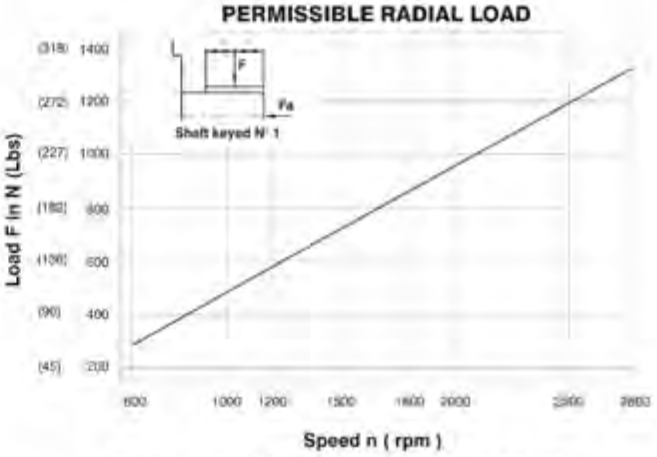
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum axial load permissable Fa = 800 N (180 Lbs)

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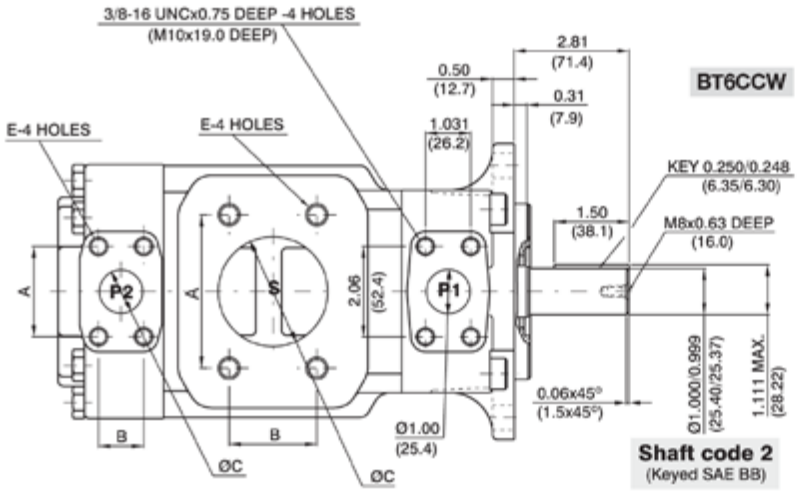
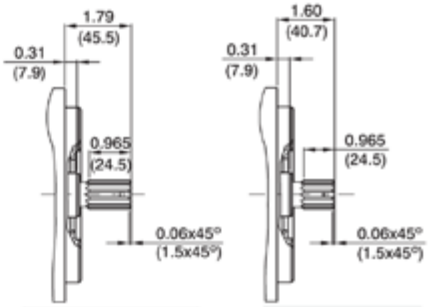
BT6CC Series

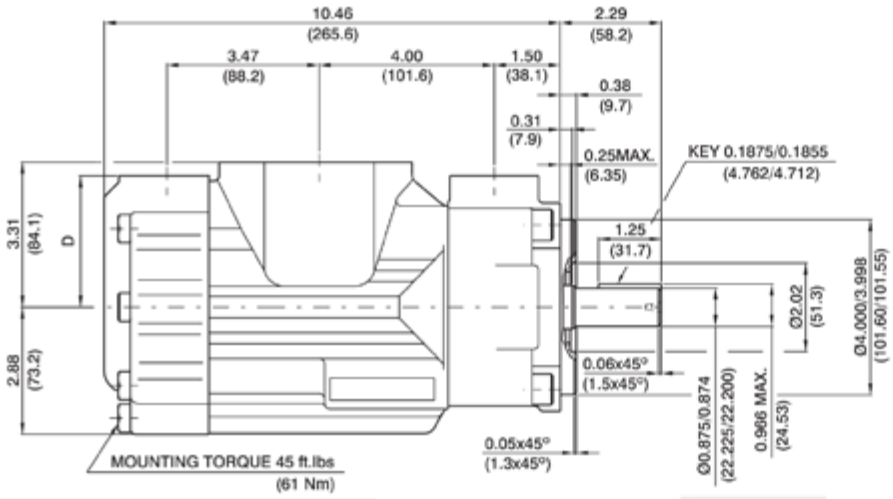
Specifications



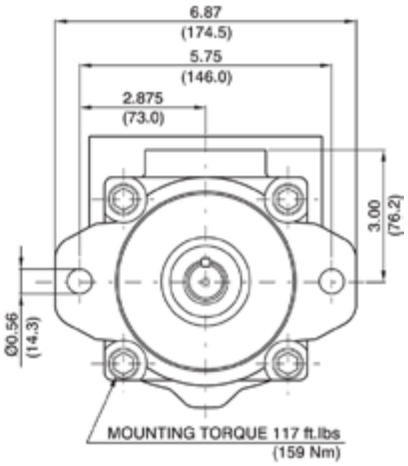


Shaft code 3
SAE BB splined shaft
Class 1-J498b
16/32 dp. 15 teeth
30° pressure angle
Flat root side fit

Shaft code 5
SAE B splined shaft
Class 1-J498b
16/32 dp. 13 teeth
30° pressure angle
Flat root side fit

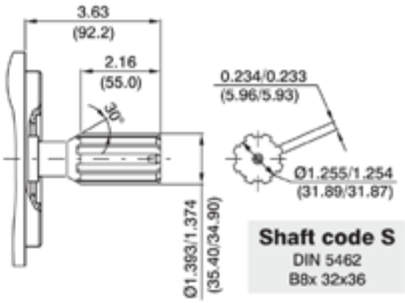


Shaft code 1
(Keyed no SAE)



Shaft torque limits in³/rev x psi(ml/rev x bar)	
Shaft	Vp x p max. (P1+P2)
1	12666 (14300)
2	18972 (21420)
3	28937 (32670)
5	18246 (20600)

PORT	A	B	C	D	E
S	4.19 (106.4)	2.44 (61.9)	3.00 (76.2)		5/8-11UNCx1.12 DEEP (M16x28.4 DEEP)
S	3.50 (88.9)	2.00 (50.8)	2.50 (63.5)		1/2-13UNCx0.94 DEEP M12x24.0 DEEP
P2	1.874 (47.6)	0.874 (22.2)	0.75 (19.0)	3.00 (76.2)	3/8-16UNCx0.75 DEEP (M10x19.0 DEEP)
P2	2.06 (52.4)	1.03 (26.2)	1.00 (25.4)	2.94 (74.7)	



Shaft code S
DIN 5462
B8x 32x36

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BT6DC Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6DC * - 024 - 003 - 1 - L - 00 - C - 1 - 00

P1 P2

Series

Type M or W

Cartridge
Displacement cm³/r (in³/r)

014/B14 = 47.6 (2.90)	035/B35 = 111.0 (6.77)
017/B17 = 58.2 (3.55)	038/B38 = 120.3 (7.34)
020/B20 = 66.0 (4.03)	042/B42 = 136.0 (8.30)
024/B24 = 79.5 (4.85)	045/B45 = 145.7 (8.89)
028/B28 = 89.7 (5.47)	050/B50 = 158.0 (9.64)
031/B31 = 98.3 (6.00)	061/B61 = 190.5 (11.62)

*0** = Uni-Directional B** = Bi-Directional*

Cartridge
Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)	015/B15 = 50.5 (3.08)
005/B05 = 17.2 (1.05)	017/B17 = 58.3 (3.56)
006/B06 = 21.3 (1.30)	020/B20 = 63.8 (3.89)
008/B08 = 26.4 (1.61)	022/B22 = 70.3 (4.29)
010/B10 = 34.1 (2.08)	025/B25 = 79.3 (4.84)
012/B12 = 37.1 (2.26)	028/B28 = 88.8 (5.42)
014/B14 = 46.0 (2.81)	031/B31 = 100.0 (6.10)

*0** = Uni-Directional B** = Bi-Directional*

Shaft
1 = Keyed SAE "C"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined Non SAE

W Version
5 = Keyed Non SAE

Mounting & Port Connections

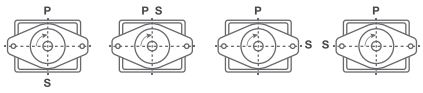
P2	1"	3/4"	1"	3/4"
UNC	00	01	M0	M1

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
B, C

Porting
00 = Standard

00 01 02 03



S - Suction Port P - Pressure Port

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6DC Series

Operating Characteristics - Typical (24 cST) (Input Power p (kw) for one cartridge only)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6DC (P1)	014	2.90	47.6	18.88	71.4	16.42	62.1	14.78	55.9	3.08	2.3	24.81	18.5	41.03	30.6
	017	3.55	58.2	23.1	87.3	20.6	78.0	18.99	71.8	3.35	2.5	29.77	22.2	49.62	37.0
	020	4.00	66.0	26.19	99.0	23.73	89.7	22.08	83.5	3.75	2.8	33.39	24.9	55.92	41.7
	024	4.80	79.5	31.56	119.3	29.10	110.0	27.46	103.8	4.02	3.0	39.69	29.6	66.78	49.8
	028	5.50	89.7	35.58	134.5	33.12	125.2	31.48	119.0	4.29	3.2	44.52	33.2	74.96	55.9
	031	6.00	98.3	39.00	147.5	36.53	138.1	34.89	131.9	4.42	3.3	48.54	36.2	81.80	61.0
	035	6.80	111.0	44.04	166.5	41.58	157.2	39.94	151.0	4.69	3.5	54.58	40.7	92.13	68.7
	038	7.30	120.3	47.72	180.4	45.26	171.1	43.62	164.9	4.96	3.7	58.87	43.9	99.64	74.3
	042[1]	8.30	136.0	53.96	204.0	51.50	194.7	49.86	188.5	5.36	4.0	66.25	49.4	112.24	83.7
	045[1]	8.89	145.7	57.80	218.5	55.34	209.2	53.70	203.0	5.50	4.1	70.81	52.8	120.02	89.5
	050[1,2]	9.64	158.0	62.69	237.0	60.23	227.7	59.25	224.0	5.90	4.4	76.44	57.0	113.98	85.0
	061[1,3]	11.62	190.5	76.25	285.7	73.54	278.0	-	-	6.16	4.6	81.26	60.6	-	-

[1] 042, 045, 050, 061 = 2200 RPM max. [2] 050 = 210 bar (3000 psi) max. int. [3] 061 = 120 bar (1740 psi) max. int., 061 = 80 bar (1160 psi) cont.

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6DC (P2)	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.26	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025[1]	4.84	79.3	31.46	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028[1,2]	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
	031[1,2]	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4

[1] 025, 028, 031 = 2500 RPM max. [2] 028, 031 = 210 bar (3000 psi) max. int.

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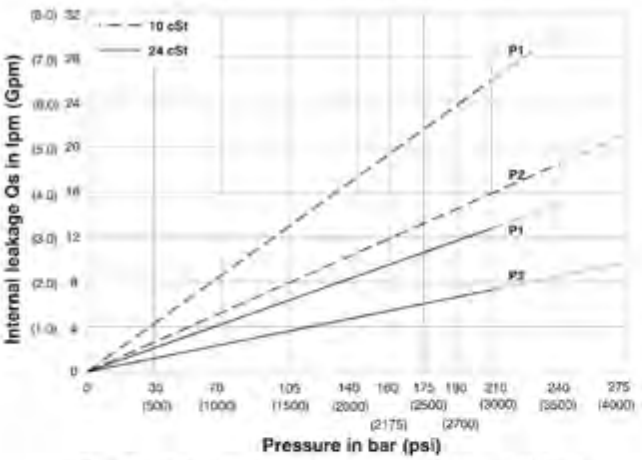
BT6DC Series

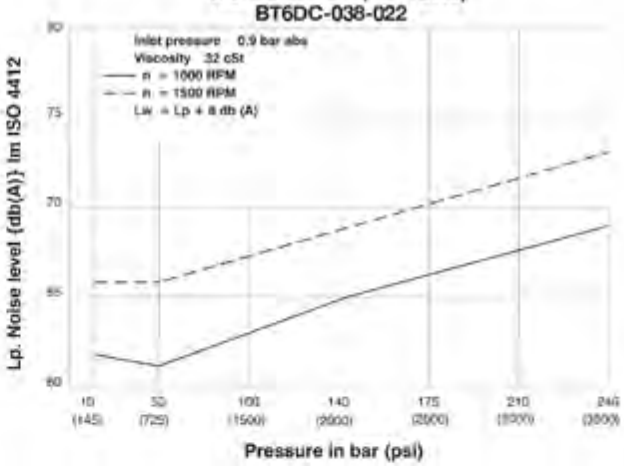
Performance Graphs

INTERNAL LEAKAGE (TYPICAL)



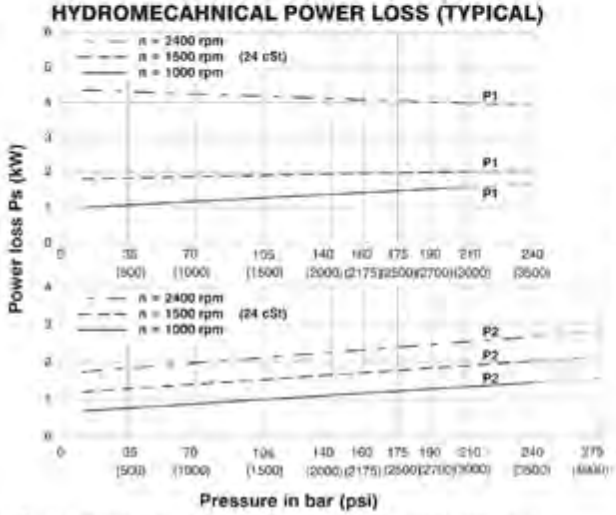
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL)
BT6DC-038-022



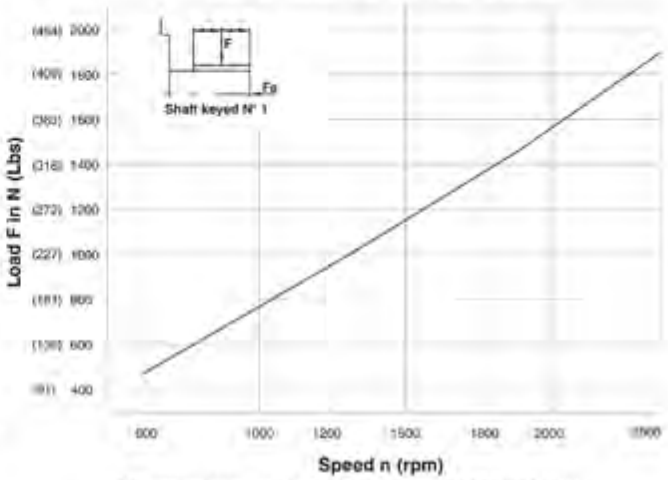
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECAHNICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 1200 N (270 Lbs)

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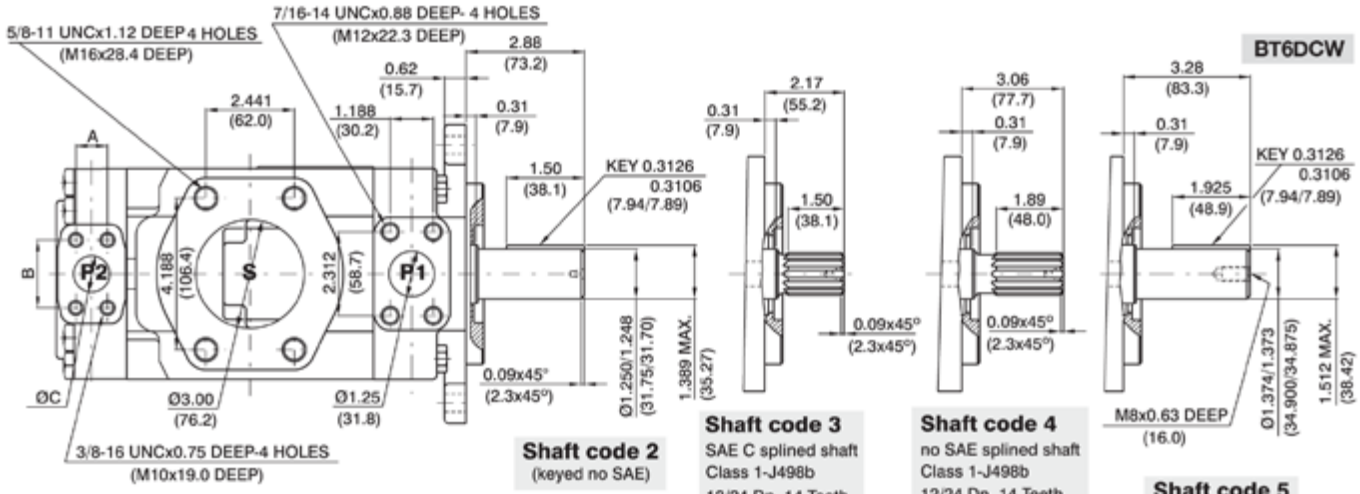
BT6DC Series

Specifications



Alternate connect.variables		
	00 & M0	01 & M1
A	1.031 (26.2)	0.874 (22.2)
B	2.06 (52.4)	1.874 (47.6)
C	1.00 (25.4)	0.75 (19.05)

Shaft torque limits in³/revxpsi(ml/revxbar)	
Shaft	Vp x p max. (P1+P2)
1	38299 (43240)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)
5	49247 (55600)

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BT6EC Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6EC * - 042 - 003 - 1 - L - 00 - C - 1
(P1 = 042, P2 = 003)

Series
BT6EC

Type M
*

Cartridge
Displacement cm³/r (in³/r)

042 = 132.3 (8.07)	062 = 196.7 (12.00)
045 = 142.4 (8.69)	066 = 213.3 (13.02)
050 = 158.5 (9.67)	072 = 227.1 (13.86)
052 = 164.8 (10.06)	085 = 269.8 (16.46)
057 = 183.2 (11.18)	

Cartridge
Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)	015/B15 = 50.5 (3.08)
005/B05 = 17.2 (1.05)	017/B17 = 58.3 (3.56)
006/B06 = 21.3 (1.30)	020/B20 = 63.8 (3.89)
008/B08 = 26.4 (1.61)	022/B22 = 70.3 (4.29)
010/B10 = 34.1 (2.08)	025/B25 = 79.3 (4.84)
012/B12 = 37.1 (2.26)	028/B28 = 88.8 (5.42)
014/B14 = 46.0 (2.81)	031/B31 = 100.0 (6.10)

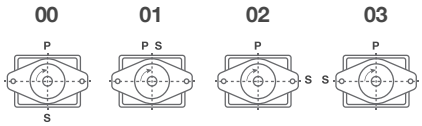
*0** = Uni-Directional B** = Bi-Directional*

Shaft
1 = Keyed SAE "CC"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined SAE "CC"

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
B, C

Porting
00 = Standard



S - Suction Port P - Pressure Port

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6EC Series

Operating Characteristics - Typical (24 cST) (Input Power p (kw) for one cartridge only)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6EC (P1)	042	8.07	132.3	52.50	198.5	49.87	188.5	47.96	181.3	6.97	5.2	66.25	49.4	110.77	82.6
	045	8.70	142.4	56.51	213.6	53.86	203.6	51.98	196.5	7.24	5.4	70.94	52.9	118.95	88.7
	050	9.67	158.5	62.88	237.7	60.24	227.7	58.36	220.6	7.64	5.7	78.45	58.5	131.82	98.3
	052	10.00	164.8	65.40	247.2	62.75	237.2	60.87	230.1	7.78	5.8	81.53	60.8	136.92	102.1
	057	11.02	180.7	71.71	271.1	69.07	261.1	67.19	254.0	8.18	6.1	89.04	66.4	143.35	106.9
	062	12.00	196.7	78.04	295.0	75.40	285.0	73.52	277.9	8.58	6.4	96.42	71.9	162.67	121.3
	066	13.00	213.3	84.63	319.9	81.98	309.9	80.11	302.8	8.98	6.7	104.20	77.7	175.94	131.2
	072	13.86	227.1	90.11	340.6	87.46	330.6	85.58	323.5	9.25	6.9	110.77	82.6	187.07	139.5
	085[1]	16.40	269.8	107.00	404.7	105.21	397.7	-	-	9.78	7.3	87.56	65.3	-	-

[1] 085 = 90 bar (1300 psi) max. int. & 085 = 2000 RPM max.

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6EC (P2)	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.26	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025[1]	4.84	79.3	31.46	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028[1,2]	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
	031[1,2]	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4

[1] 025, 028, 031 = 2500 RPM max. [2] 028, 031 = 210 bar (3000 psi) max. int.

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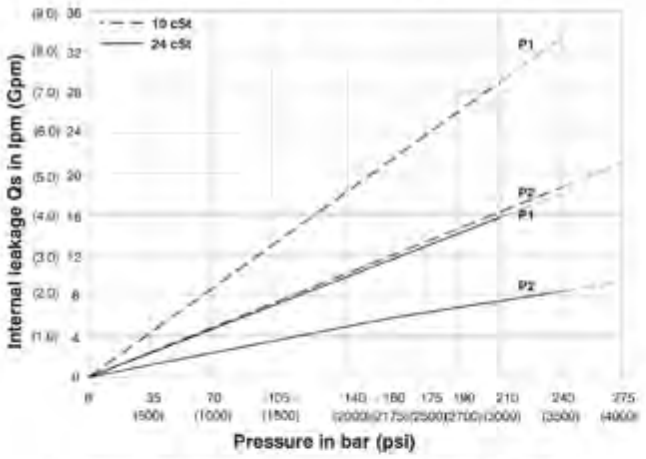
BT6EC Series

Performance Graphs

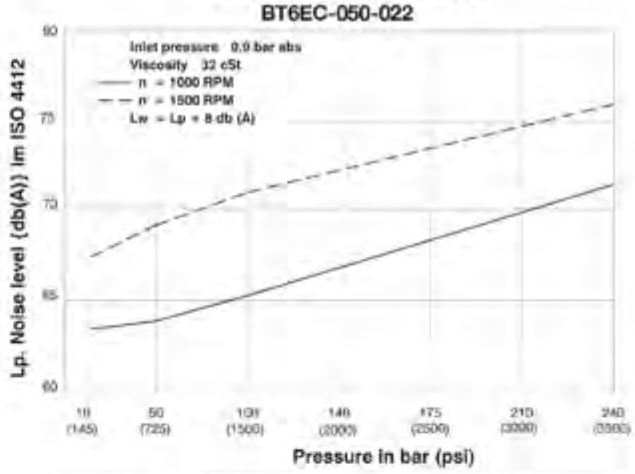
INTERNAL LEAKAGE (TYPICAL)



Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

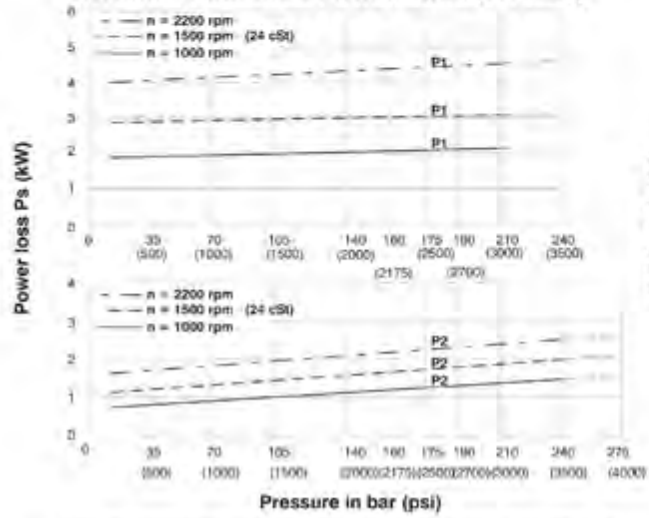
NOISE LEVEL (TYPICAL)

BT6EC-050-022



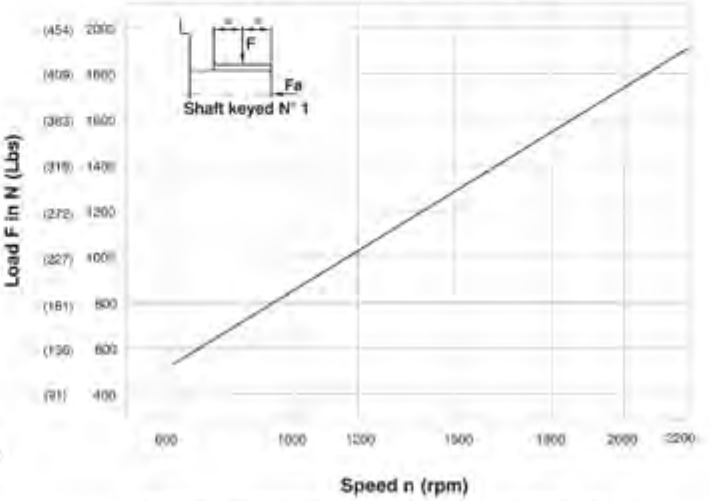
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load **Fa** = 2000 N (449 Lbs)

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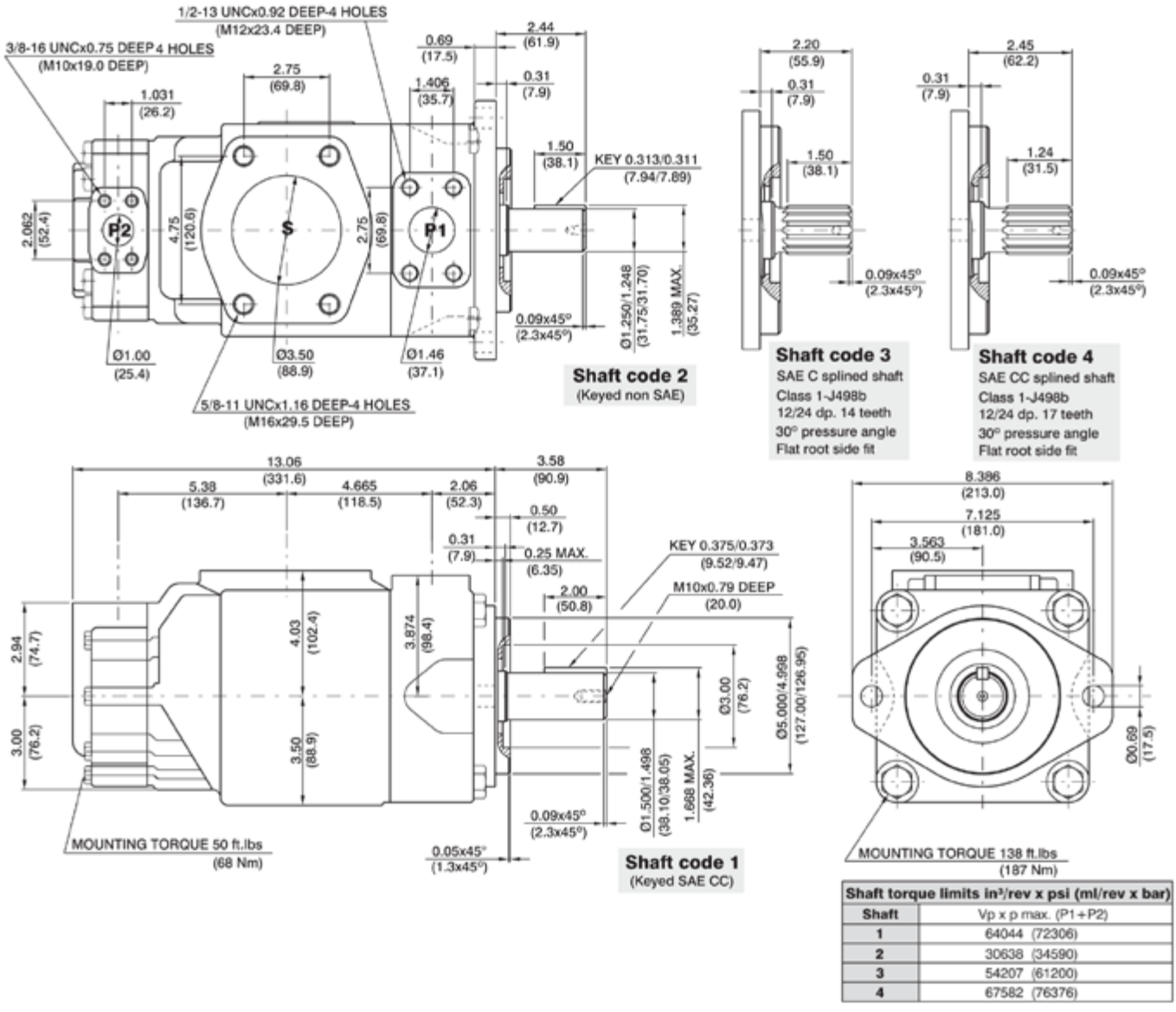
BT6EC Series

Specifications



Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max. (P1+P2)
1	64044 (72306)
2	30638 (34590)
3	54207 (61200)
4	67582 (76376)

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BT6ED Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6ED * - 042 - 014 - 1 - L - 00 - C - 1
(P1 = 042, P2 = 014)

Series
BT6ED

Type M
*

Cartridge
Displacement cm³/r (in³/r)

042 = 132.3 (8.07)	062 = 196.7 (12.00)
045 = 142.4 (8.69)	066 = 213.3 (13.02)
050 = 158.5 (9.67)	072 = 227.1 (13.86)
052 = 164.8 (10.06)	085 = 269.8 (16.46)
057 = 183.2 (11.18)	

Cartridge
Displacement cm³/r (in³/r)

014/B14 = 47.6 (2.90)	035/B35 = 111.0 (6.77)
017/B17 = 58.2 (3.55)	038/B38 = 120.3 (7.34)
020/B20 = 66.0 (4.03)	042/B42 = 136.0 (8.30)
024/B24 = 79.5 (4.85)	045/B45 = 145.7 (8.89)
028/B28 = 89.7 (5.47)	050/B50 = 158.0 (9.64)
031/B31 = 98.3 (6.00)	061/B61 = 190.5 (11.62)

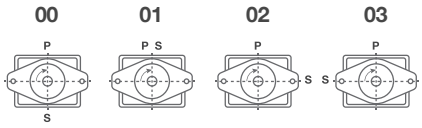
*0** = Uni-Directional B** = Bi-Directional*

Shaft
1 = Keyed SAE "CC"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined SAE "CC"

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
B, C

Porting
00 = Standard



S - Suction Port P - Pressure Port

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6ED Series

Operating Characteristics - Typical (24 cST) (Input Power p (kw) for one cartridge only)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6ED (P1)	042	8.07	132.3	52.50	198.5	49.87	188.5	47.96	181.3	6.97	5.2	66.25	49.4	110.77	82.6
	045	8.70	142.4	56.51	213.6	53.86	203.6	51.98	196.5	7.24	5.4	70.94	52.9	118.95	88.7
	050	9.67	158.5	62.88	237.7	60.24	227.7	58.36	220.6	7.64	5.7	78.45	58.5	131.82	98.3
	052	10.00	164.8	65.40	247.2	62.75	237.2	60.87	230.1	7.78	5.8	81.53	60.8	136.92	102.1
	057	11.02	180.7	71.71	271.1	69.07	261.1	67.19	254.0	8.18	6.1	89.04	66.4	143.35	106.9
	062	12.00	196.7	78.04	295.0	75.40	285.0	73.52	277.9	8.58	6.4	96.42	71.9	162.67	121.3
	066	13.00	213.3	84.63	319.9	81.98	309.9	80.11	302.8	8.98	6.7	104.20	77.7	175.94	131.2
	072	13.86	227.1	90.11	340.6	87.46	330.6	85.58	323.5	9.25	6.9	110.77	82.6	187.07	139.5
	085[1]	16.40	269.8	107.00	404.7	105.21[2]	397.7[2]	-	-	9.78	7.3	87.56[2]	65.3[2]	-	-

[1] 085 = 90 bar (1300 psi) max. int. & 085 = 2000 RPM max. [2] 085 = 75 bar (1100 psi) cont.

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6ED (P2)	014	2.90	47.6	18.88	71.4	16.42	62.1	14.78	55.9	3.08	2.3	24.81	18.5	41.03	30.6
	017	3.55	58.2	23.1	87.3	20.6	78.0	18.99	71.8	3.35	2.5	29.77	22.2	49.62	37.0
	020	4.00	66.0	26.19	99.0	23.73	89.7	22.08	83.5	3.75	2.8	33.39	24.9	55.92	41.7
	024	4.80	79.5	31.56	119.3	29.10	110.0	27.46	103.8	4.02	3.0	39.69	29.6	66.78	49.8
	028	5.50	89.7	35.58	134.5	33.12	125.2	31.48	119.0	4.29	3.2	44.52	33.2	74.96	55.9
	031	6.00	98.3	39.00	147.5	36.53	138.1	34.89	131.9	4.42	3.3	48.54	36.2	81.80	61.0
	035	6.80	111.0	44.04	166.5	41.58	157.2	39.94	151.0	4.69	3.5	54.58	40.7	92.13	68.7
	038	7.30	120.3	47.72	180.4	45.26	171.1	43.62	164.9	4.96	3.7	58.87	43.9	99.64	74.3
	042[1]	8.30	136.0	53.96	204.0	51.50	194.7	49.86	188.5	5.36	4.0	66.25	49.4	112.24	83.7
	045[1]	8.89	145.7	57.80	218.5	55.34	209.2	53.70	203.0	5.50	4.1	70.81	52.8	120.02	89.5
	050[1,2]	9.64	158.0	62.69	237.0	60.23	227.7	59.25	224.0	5.90	4.4	76.44	57.0	113.98	85.0
	061[1,3]	11.62	190.5	76.25	285.7	73.54	278.0	-	-	6.16	4.6	81.26	60.6	-	-

[1] 042, 045, 050, 061 = 2200 RPM max. [2] 050 = 210 bar (3000 psi) max. int. [3] 061 = 120 bar (1740 psi) max. int., 061 = 80 bar (1160 psi) cont.

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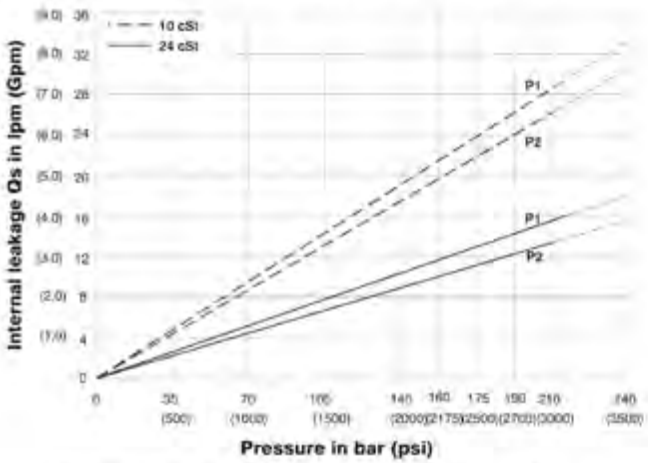
BT6ED Series

Performance Graphs

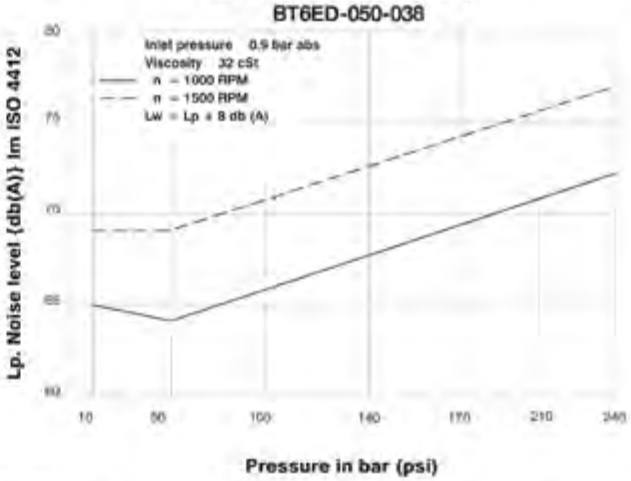
INTERNAL LEAKAGE (TYPICAL)



Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow.

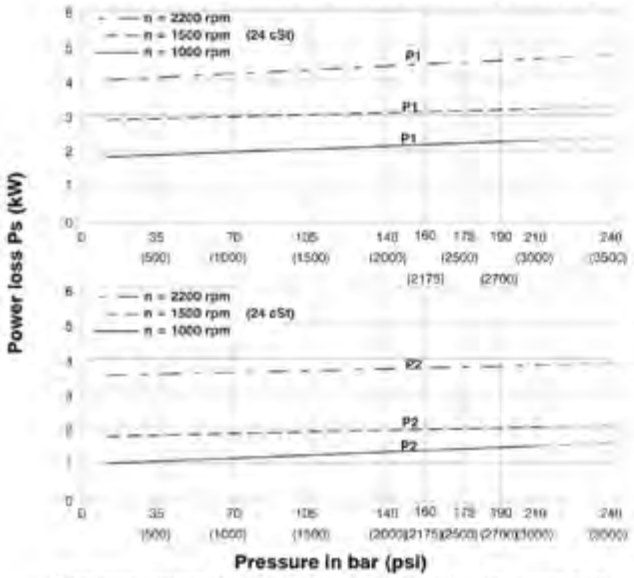
NOISE LEVEL (TYPICAL)

BT6ED-050-038



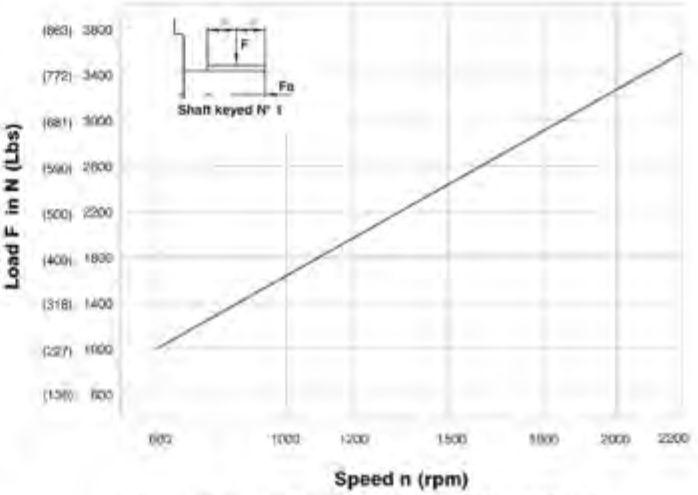
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 2000 N (449 Lbs)

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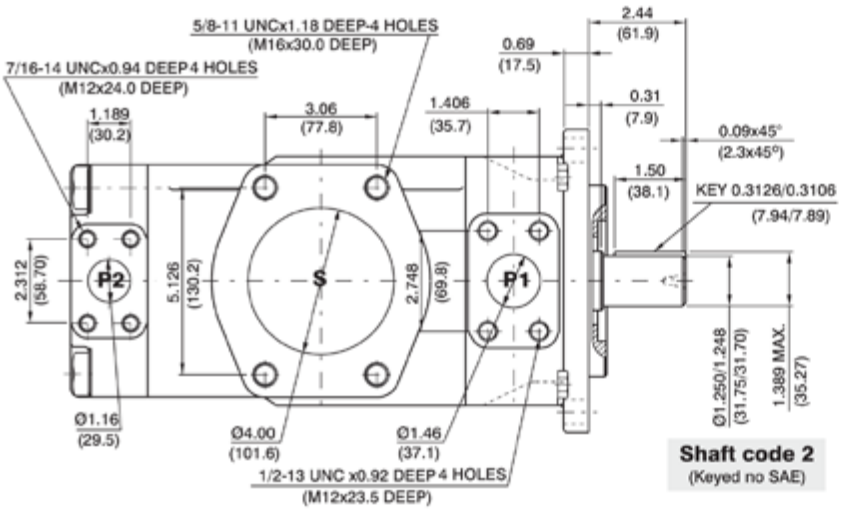
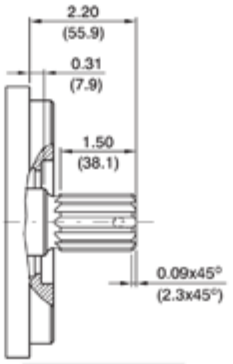
BT6ED Series

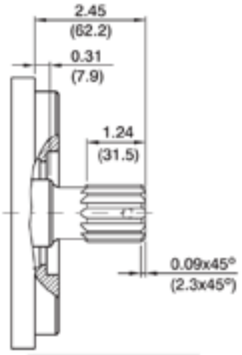
Specifications



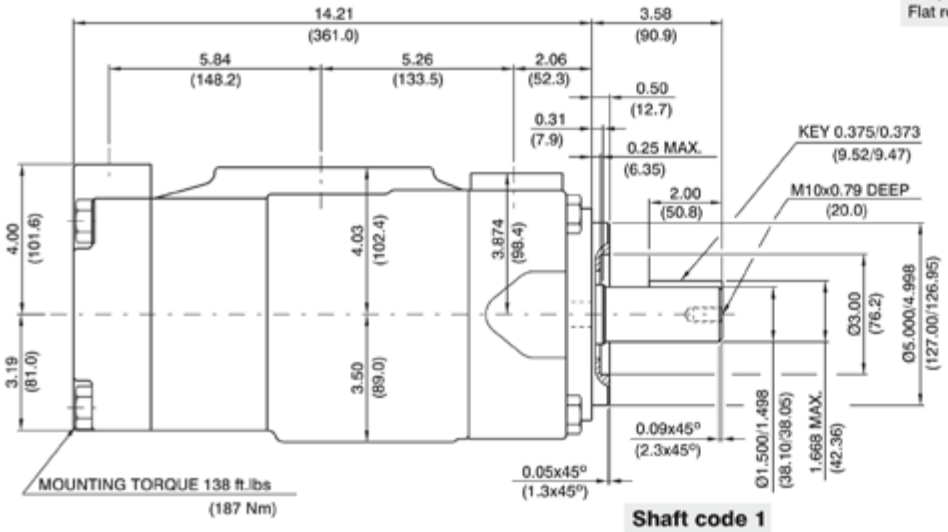
Shaft code 2
(Keyed no SAE)



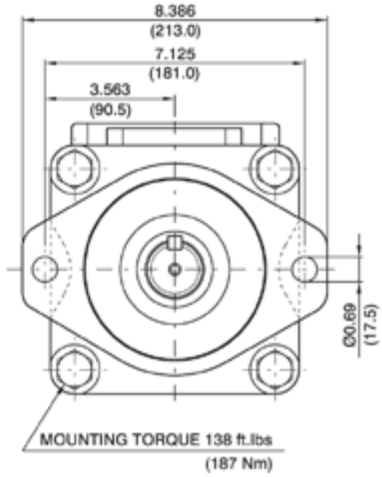
Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
Flat root side fit



Shaft code 4
SAE CC splined shaft
Class 1-J498b
12/24 dp. 17 teeth
30° pressure angle
Flat root side fit



Shaft code 1
(Keyed SAE CC)



Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max. (P1+P2)
1	64044 (72306)
2	30638 (34590)
3	54207 (61200)
4	67582 (76376)

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BT6EE Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6EE / S - 045 - 042 - 1 - L - 00 - A - 1 - 0
(045 = P1, 042 = P2)

Series
BT6EE Series - 250 B4HW
ISO 3019-2 Mounting Flange
BT6EES Series - SAE 4 Bolts
Mounting Flange J744c

Cartridge
Displacement cm³/r (in³/r)

042 = 132.3 (8.07)	062 = 196.7 (12.00)
045 = 142.4 (8.69)	066 = 213.3 (13.02)
050 = 158.5 (9.67)	072 = 227.1 (13.86)
052 = 164.8 (10.06)	085 = 269.8 (16.46)
057 = 183.2 (11.18)	

Shaft
2 = Keyed (G45N ISO 3019-2)

BT6EES Shafts
1 = Keyed SAE "CC"
3 = Splined SAE "CC"
4 = Splined SAE "D&E"
5 = Keyed SAE "D&E"

Coupling Adapter
0 = None
2 = SAE "B"
3 = SAE "BB"

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
A

Porting
00 = Standard
thru 15

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6EE Series

Operating Characteristics - Typical (24 cST) (Input Power p (kw) for one cartridge only)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6EE (P1 & P2)	042	8.07	132.3	52.50	198.5	49.87	188.5	47.96	181.3	6.97	5.2	66.25	49.4	110.77	82.6
	045	8.70	142.4	56.51	213.6	53.86	203.6	51.98	196.5	7.24	5.4	70.94	52.9	118.95	88.7
	050	9.67	158.5	62.88	237.7	60.24	227.7	58.36	220.6	7.64	5.7	78.45	58.5	131.82	98.3
	052	10.00	164.8	65.40	247.2	62.75	237.2	60.87	230.1	7.78	5.8	81.53	60.8	136.92	102.1
	057	11.02	180.7	71.71	271.1	69.07	261.1	67.19	254.0	8.18	6.1	89.04	66.4	143.35	106.9
	062	12.00	196.7	78.04	295.0	75.40	285.0	73.52	277.9	8.58	6.4	96.42	71.9	162.67	121.3
	066	13.00	213.3	84.63	319.9	81.98	309.9	80.11	302.8	8.98	6.7	104.20	77.7	175.94	131.2
	072	13.86	227.1	90.11	340.6	87.46	330.6	85.58	323.5	9.25	6.9	110.77	82.6	187.07	139.5
	085[1]	16.40	269.8	107.00	404.7	105.21[2]	397.7[2]	-	-	9.78	7.3	87.56[2]	65.3[2]	-	-

[1] 085 = 90 bar (1300 psi) max. int. & 085 = 2000 RPM max. [2] 085 = 75 bar (1100 psi) cont.

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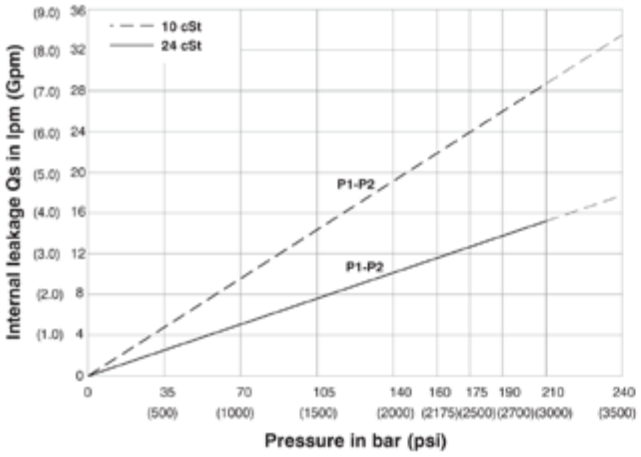
BT6EE Series

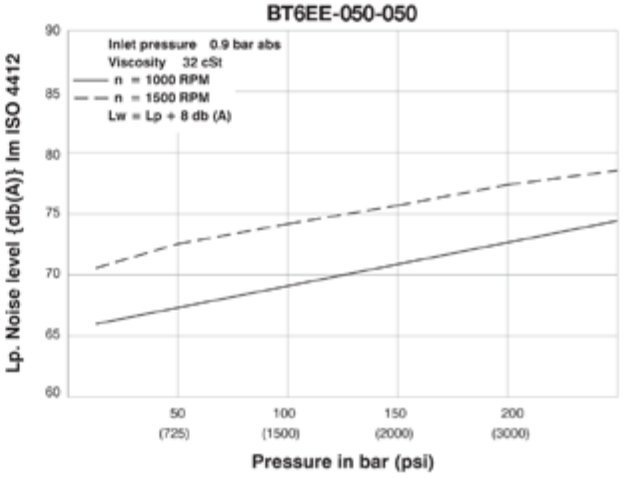
Performance Graphs

INTERNAL LEAKAGE (TYPICAL)



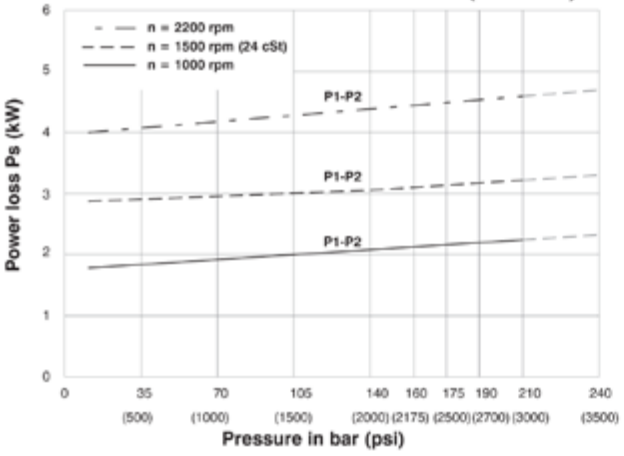
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL)
BT6EE-050-050



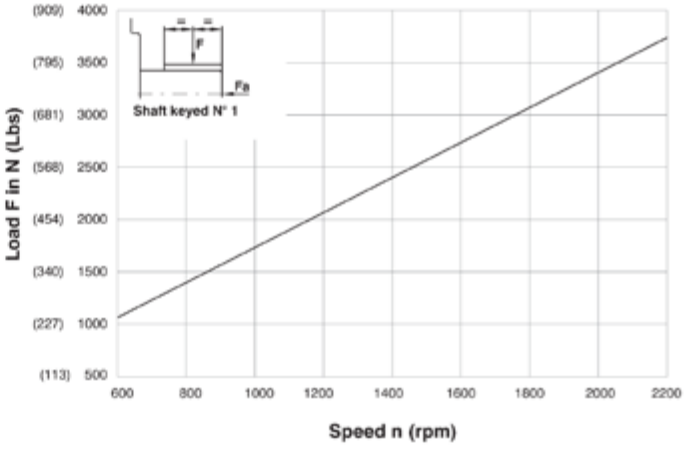
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load **Fa** = 2000 N (449 Lbs)

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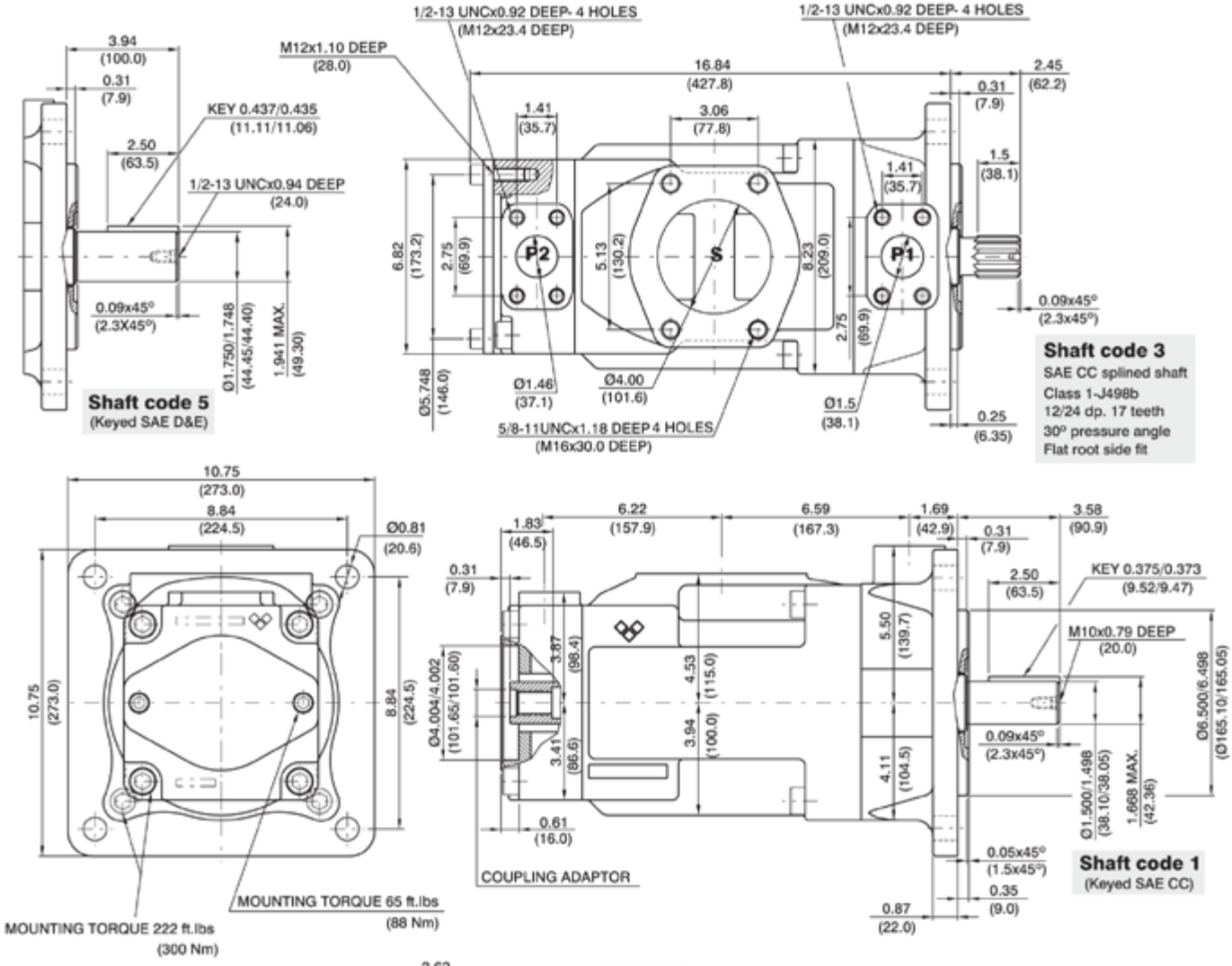
BT6EE Series

Specifications



Shaft torque limits in³/rev x psi (ml/rev x bar)			
Shaft	Vi x p Max.	Copling	Vi x p Max.
1	80053 (90380)	SAE-B	18246 (20600)
2	101506 (114600)	SAE-BB	28937 (32670)
3	112312 (126800)		
4	112312 (126800)		
5	104818 (110840)		

Code	Coupling adaptor
0	Without coupling
2	SAE B -13 teeth -pitch 16/32 Major dia (min) 0.875 (22.225) Minor dia (min.) 0.753 (19.126)
3	SAE BB -15 teeth -pitch 16/32 Major dia (min) 1.00 (25.4) Minor dia (min.) 0.877 (22.275)

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BT67DC Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT67DC * - 014 - 003 - 1 - L - 00 - A - 1 - 00

Series

Type W

Cartridge
Displacement cm³/r (in³/r)

014/B14 = 43.9 (2.68)	031/B31 = 98.3 (6.05)
017/B17 = 55.0 (3.36)	035/B35 = 113.4 (6.92)
020/B20 = 66.0 (4.03)	038/B38 = 120.6 (7.36)
022/B22 = 70.3 (4.29)	042/B42 = 137.5 (8.39)
024/B24 = 81.1 (4.95)	045/B45 = 145.7 (8.89)
028/B28 = 89.9 (5.49)	050/B50 = 157.9 (9.64)

*0** = Uni-Directional B** = Bi-Directional*

Cartridge
Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)	015/B15 = 50.5 (3.08)
005/B05 = 17.2 (1.05)	017/B17 = 58.3 (3.56)
006/B06 = 21.3 (1.30)	020/B20 = 63.8 (3.89)
008/B08 = 26.4 (1.61)	022/B22 = 70.3 (4.29)
010/B10 = 34.1 (2.08)	025/B25 = 79.3 (4.84)
012/B12 = 37.1 (2.26)	028/B28 = 88.8 (5.42)
014/B14 = 46.0 (2.81)	031/B31 = 100.0 (6.10)

*0** = Uni-Directional B** = Bi-Directional*

Shaft
1 = Keyed SAE "C"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined Non SAE

W Version
5 = Keyed Non SAE

Mounting & Port Connections

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

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
A

Porting
00 = Standard
thru 31

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT67DC Series

Operating Characteristics - Typical (24 cST) (Input Power p (kw) for one cartridge only)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1800 RPM						Input Power p & n = 1800 RPM					
				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)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT67DC (P1)	014	2.68	43.9	20.92	79.1	19.18	72.5	17.81	67.3	3.46	2.6	27.77	20.7	47.03	35.07
	017	3.36	55.0	26.16	98.8	24.41	92.3	23.04	87.0	3.77	2.8	33.88	25.3	57.71	43.03
	020	4.03	66.0	31.39	118.6	29.64	112.0	28.27	106.8	4.07	3.0	39.98	29.8	68.39	50.99
	022	4.29	70.3	33.43	126.4	31.69	119.8	30.32	104.6	4.19	3.1	42.37	31.6	72.57	54.11
	024	4.95	81.1	38.57	145.8	36.82	139.2	35.45	134.0	4.49	3.4	48.36	36.1	83.06	61.93
	028	5.49	89.9	42.80	161.8	41.06	155.2	39.69	150.0	4.74	3.5	53.30	39.7	91.70	68.38
	031	6.05	99.1	47.18	178.3	45.43	171.7	44.06	166.5	4.99	3.7	58.41	43.6	100.63	75.03
	035	6.92	113.4	53.93	203.9	52.18	197.2	50.81	192.0	5.39	4.0	66.29	49.4	114.42	85.32
	038	7.36	120.6	57.35	216.8	55.61	210.2	54.24	204.9	5.59	4.2	70.28	52.4	121.42	90.54
	042	8.39	137.5	65.39	247.2	63.65	240.6	62.28	235.4	6.05	4.5	79.66	59.4	137.83	102.77
	045	8.89	145.7	69.29	262.0	67.11	253.6	65.31	246.8	6.74	5.0	83.75	62.4	145.79	108.71
	050[1]	9.64	157.9	75.14	284.0	72.96	275.8	71.78	271.3	7.08	5.3	90.58	67.5	134.50	100.3

[1] 050 = 210 bar (3000 psi) max. int.

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1800 RPM						Input Power p & n = 1800 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 275 bar (4000 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 275 bar (4000 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT67DC (P2)	003	0.66	10.8	5.14	19.6	3.85	14.6	-	-	2.11	1.57	8.45	6.30	-	-
	005	1.05	17.2	8.18	30.9	6.89	26.0	5.68	21.5	2.29	1.70	12.00	8.94	19.81	14.77
	006	1.30	21.3	10.13	38.3	8.84	33.4	7.63	28.8	2.40	1.78	14.28	10.64	23.79	17.74
	008	1.61	26.4	12.55	47.4	11.26	42.6	10.05	37.9	2.54	1.89	17.11	12.75	28.75	21.43
	010	2.08	34.1	16.22	61.3	14.93	56.4	13.71	51.8	2.76	2.06	21.38	15.94	36.22	27.00
	012	2.26	37.1	17.64	66.7	16.35	61.8	15.14	57.2	2.84	2.11	23.05	17.18	39.14	29.18
	014	2.81	46.0	21.88	82.7	20.59	77.8	19.37	73.2	3.09	2.30	27.99	20.87	47.78	35.62
	015	3.08	50.5	23.99	90.7	22.83	86.3	21.56	81.5	3.21	2.40	30.30	22.60	51.36	38.30
	017	3.56	58.3	27.73	104.8	26.44	99.9	25.22	95.3	3.43	2.55	34.81	25.95	59.73	44.54
	020	3.89	63.8	30.34	114.7	29.05	109.8	27.84	105.2	3.58	2.66	37.86	28.23	65.07	48.52
	022	4.29	70.3	33.43	126.4	32.14	121.5	30.93	116.9	3.76	2.80	41.47	30.92	71.38	53.22
	025	4.84	79.3	37.71	142.5	36.42	137.6	35.21	133.1	4.01	2.99	46.46	34.64	80.12	59.74
	028	5.42	88.8	42.23	159.6	40.94	154.7	40.32[1]	152.4[1]	4.27	3.18	51.74	38.58	76.73[1]	57.22[1]
	031	6.10	100.0	47.56	179.7	46.27	174.9	45.65[1]	172.5[1]	4.58	3.41	57.95	43.21	86.06[1]	64.17[1]

[1] 028, 031 = 210 bar (3000 psi) max. int.

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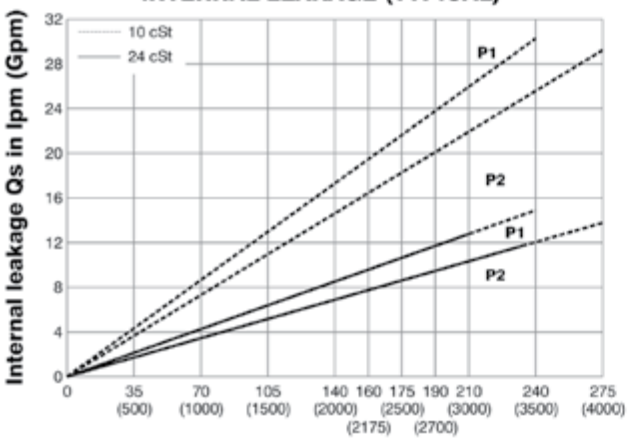
BT67DC Series

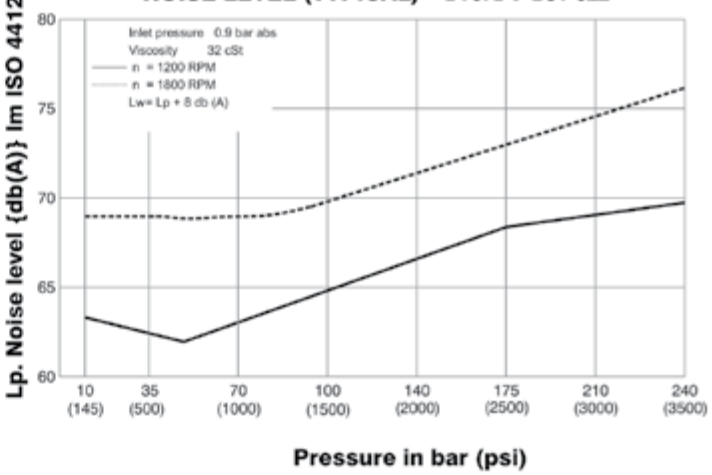
Performance Graphs

INTERNAL LEAKAGE (TYPICAL)



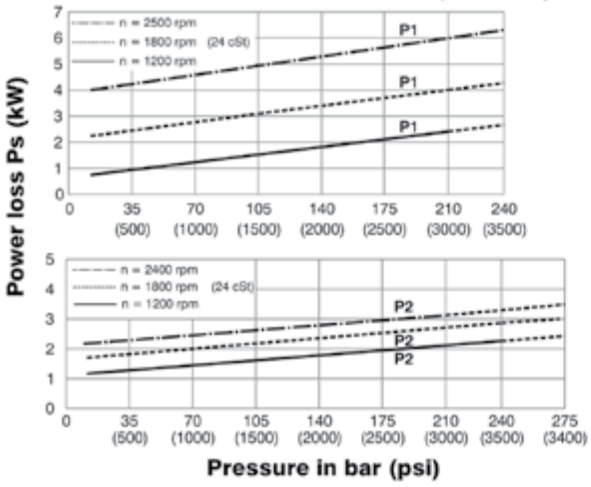
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL) - BT67DC-B31-022



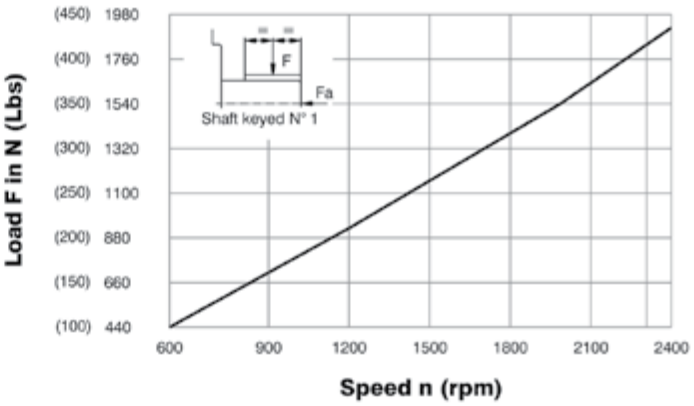
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECAHNICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 1200 N (270 Lbs)

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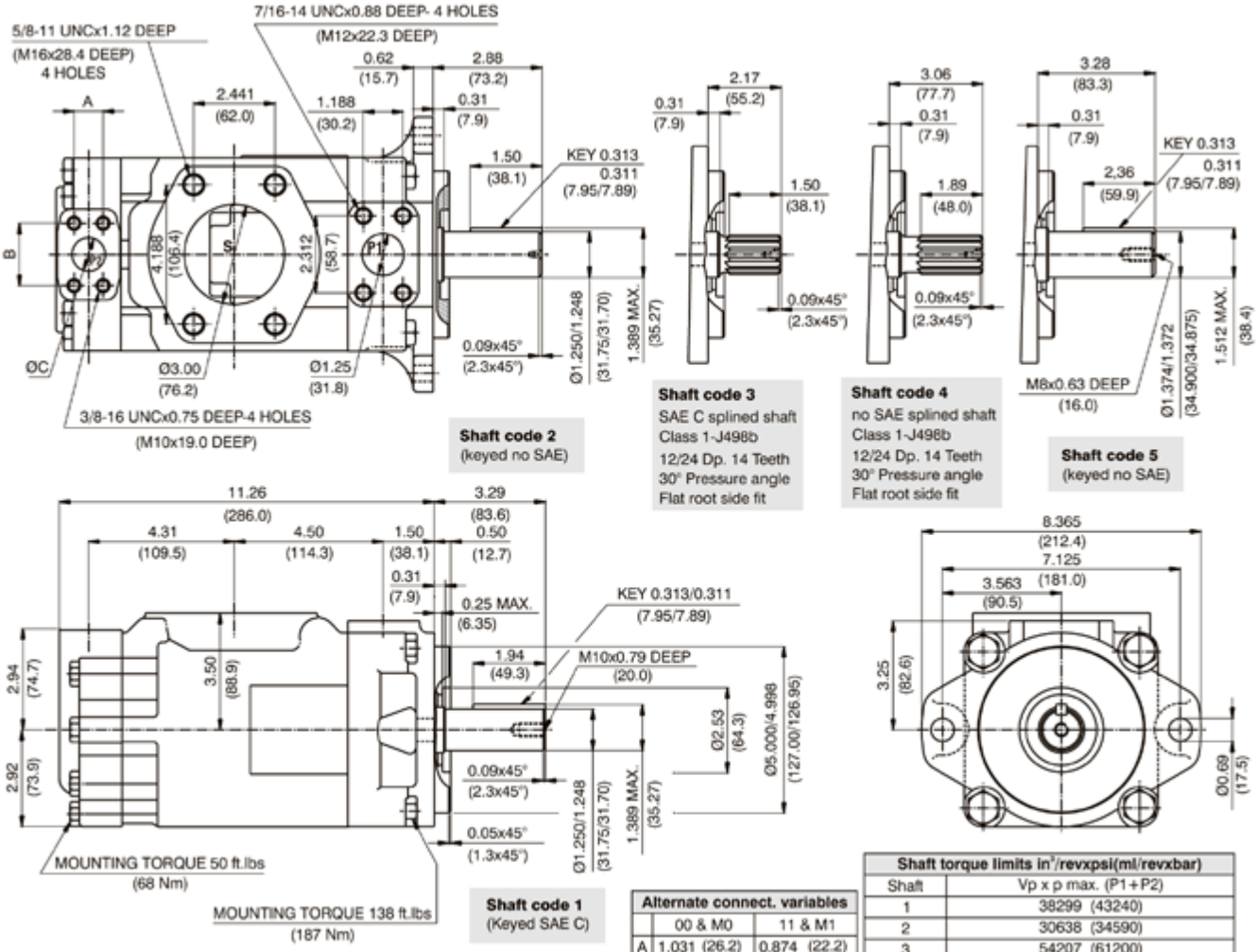
BT67DC Series

Specifications



Alternate connect. variables		
	00 & M0	11 & M1
A	1.031 (26.2)	0.874 (22.2)
B	2.06 (52.4)	1.874 (47.6)
C	1.00 (25.4)	0.75 (19.05)

Shaft torque limits in³/revxpsi(ml/revxbar)	
Shaft	Vp x p max. (P1+P2)
1	38299 (43240)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)
5	49247 (55600)

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BT67EC Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT67EC - 042 - 003 - 1 - L - 00 - A - 1 - 00
(042 = P1, 003 = P2)

Series

Cartridge
Displacement cm³/r (in³/r)

042 = 132.3 (8.07)
045 = 142.4 (8.69)
050 = 158.5 (9.67)
052 = 164.8 (10.06)
057 = 183.2 (11.18)
062 = 196.7 (12.00)
066 = 213.3 (13.02)
072 = 227.1 (13.86)
085 = 269.8 (16.46)

Cartridge
Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)
005/B05 = 17.2 (1.05)
006/B06 = 21.3 (1.30)
008/B08 = 26.4 (1.61)
010/B10 = 34.1 (2.08)
012/B12 = 37.1 (2.26)
014/B14 = 46.0 (2.81)
015/B15 = 50.5 (3.08)
017/B17 = 58.3 (3.56)
020/B20 = 63.8 (3.89)
022/B22 = 70.3 (4.29)
025/B25 = 79.3 (4.84)
028/B28 = 88.8 (5.42)
031/B31 = 100.0 (6.10)

*0** = Uni-Directional B** = Bi-Directional*

Shaft
1 = Keyed SAE "CC"
2 = Keyed Non SAE
3 = Splined SAE "C"
4 = Splined SAE "CC"

Mounting & Port Connections

	P1 = 1-1/2" S = 3-1/2"	
P2	**1"**	**3/4"**
UNC	00	01
Metric	M0	M1

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
A

Porting
00 = Standard
thru 31

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT67EC Series

Operating Characteristics - Typical (24 cST) (Input Power p (kw) for one cartridge only)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT67EC (P1)	042	8.07	132.3	52.50	198.5	49.87	188.5	47.96	181.3	6.97	5.2	66.25	49.4	110.77	82.6
	045	8.70	142.4	56.51	213.6	53.86	203.6	51.98	196.5	7.24	5.4	70.94	52.9	118.95	88.7
	050	9.67	158.5	62.88	237.7	60.24	227.7	58.36	220.6	7.64	5.7	78.45	58.5	131.82	98.3
	052	10.00	164.8	65.40	247.2	62.75	237.2	60.87	230.1	7.78	5.8	81.53	60.8	136.92	102.1
	057	11.02	180.7	71.71	271.1	69.07	261.1	67.19	254.0	8.18	6.1	89.04	66.4	143.35	106.9
	062	12.00	196.7	78.04	295.0	75.40	285.0	73.52	277.9	8.58	6.4	96.42	71.9	162.67	121.3
	066	13.00	213.3	84.63	319.9	81.98	309.9	80.11	302.8	8.98	6.7	104.20	77.7	175.94	131.2
	072	13.86	227.1	90.11	340.6	87.46	330.6	85.58	323.5	9.25	6.9	110.77	82.6	187.07	139.5
	085[1]	16.40	269.8	107.00	404.7	105.21[2]	397.7[2]	-	-	9.78	7.3	87.56[2]	65.3[2]	-	-

[1] 085 = 90 bar (1300 psi) max. int. & 085 = 2000 RPM max.

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT67EC (P2)	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.26	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025[1]	4.84	79.3	31.36	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028[1,2]	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
	031[1,2]	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4

[1] 025, 028, 031 = 2500 RPM max. [2] 028, 031 = 210 bar (3000 psi) max. int.

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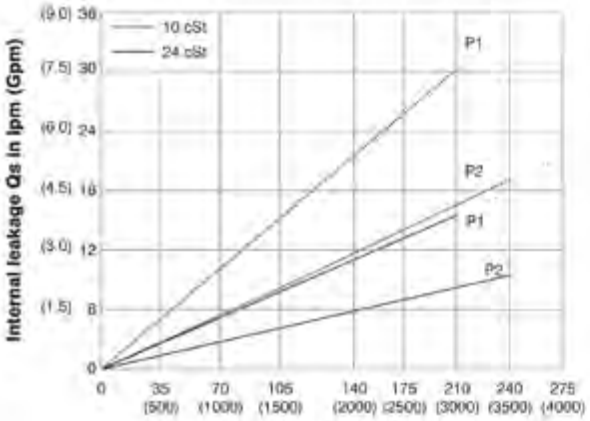
BT67EC Series

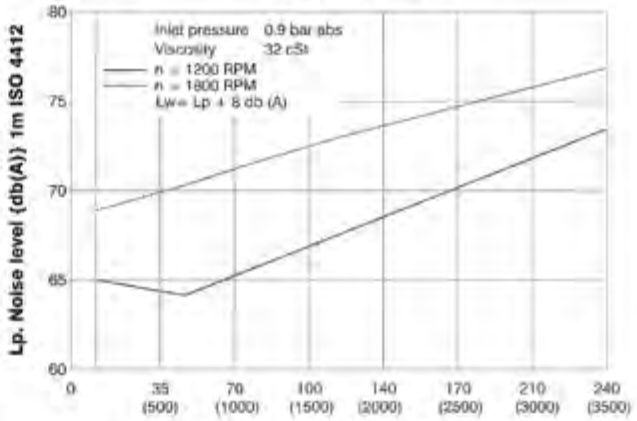
Performance Graphs

INTERNAL LEAKAGE (TYPICAL)



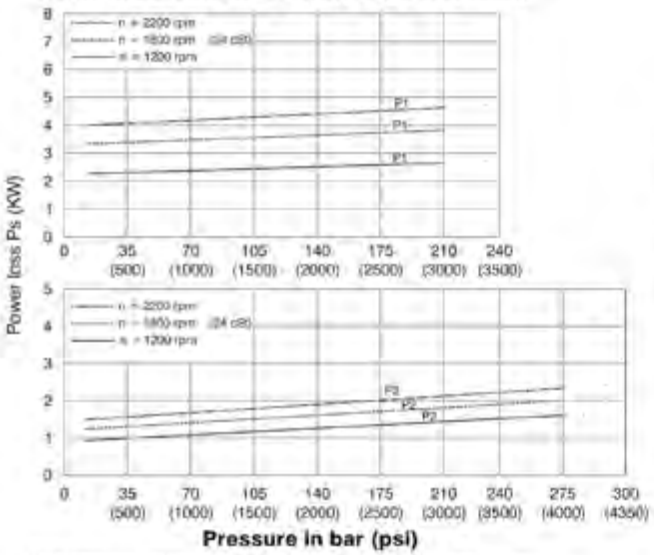
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50 of theoretical flow.
Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL)
BT67EC-050-022



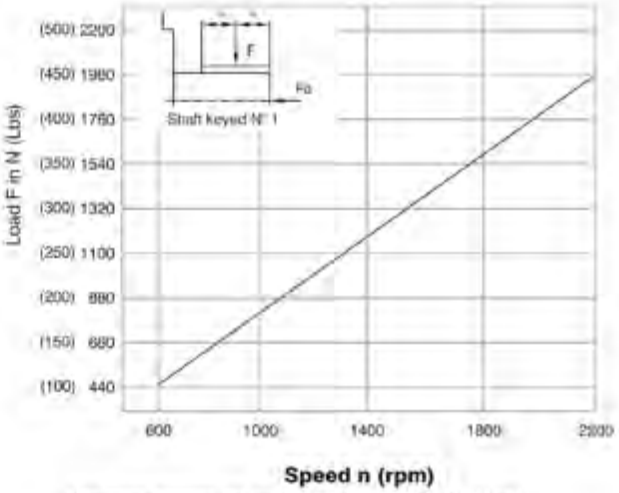
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 2000 N (449 Lbs)

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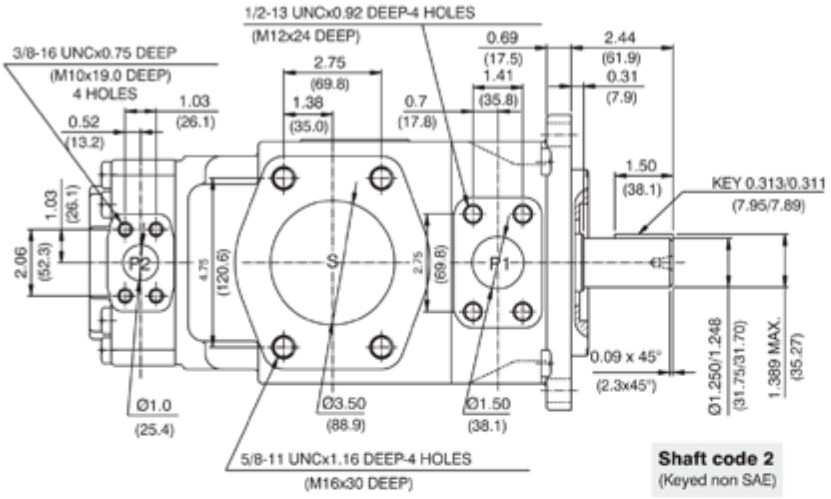
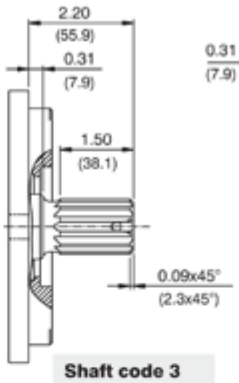
BT67EC Series

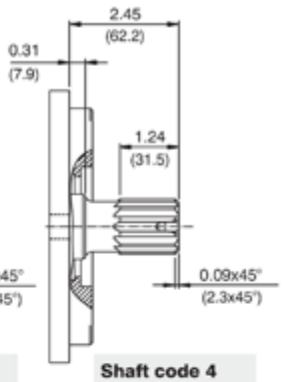
Specifications



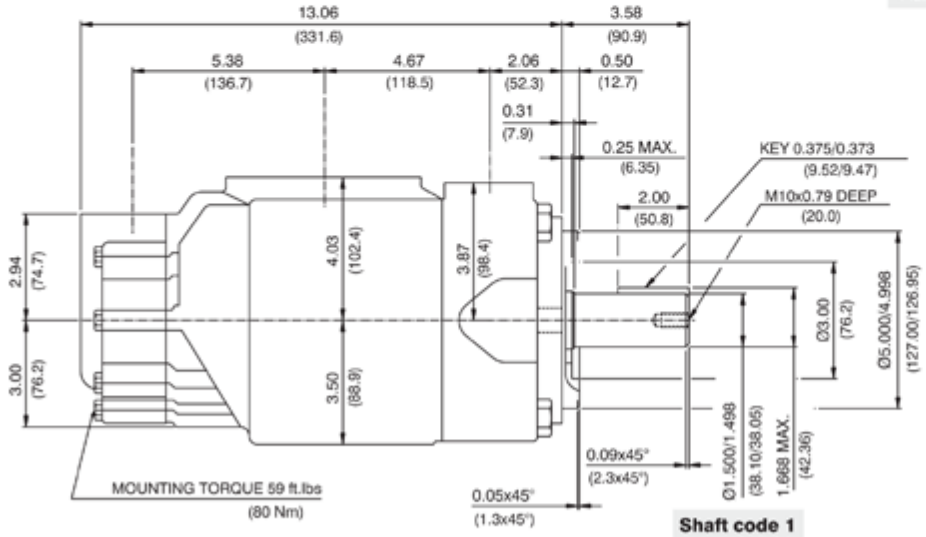
Shaft code 2
(Keyed non SAE)



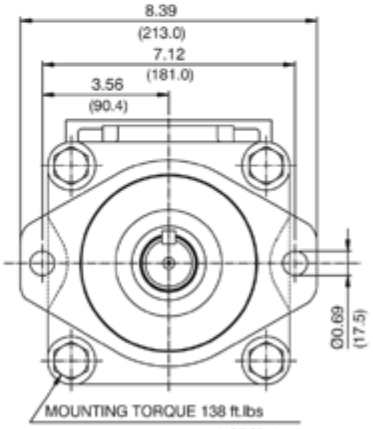
Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
Flat root side fit



Shaft code 4
SAE CC splined shaft
Class 1-J498b
16/32 dp. 17 teeth
30° pressure angle
Flat root side fit



Shaft code 1
(Keyed SAE CC)



Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max. (P1+P2)
1	64039 (72306)
2	30638 (34590)
3	54207 (61200)
4	67582 (76376)

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BT6CR Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6CR - 003 - 1 - L - 00 - A - 1 - 0 - A - 1

Series

Cartridge

Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)	015/B15 = 50.5 (3.08)
005/B05 = 17.2 (1.05)	017/B17 = 58.3 (3.56)
006/B06 = 21.3 (1.30)	020/B20 = 63.8 (3.89)
008/B08 = 26.4 (1.61)	022/B22 = 70.3 (4.29)
010/B10 = 34.1 (2.08)	025/B25 = 79.3 (4.84)
012/B12 = 37.1 (2.26)	028/B28 = 88.8 (5.42)
014/B14 = 46.0 (2.81)	031/B31 = 100.0 (6.10)

*0** = Uni-Directional B** = Bi-Directional*

Shaft

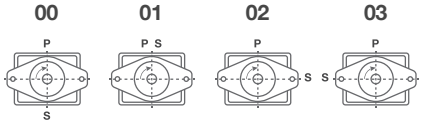
1 = Keyed SAE "BB"
2 = Keyed Non SAE
3 = Splined SAE "B"
4 = Splined SAE "BB"

Rotation

R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

Porting

00 = Standard



S - Suction Port P - Pressure Port

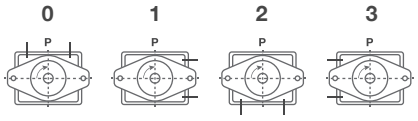
Seals

1 = Buna (Standard)
5 = Viton

Design Letter

A

Adapter Support Position



SAE "C"

Coupling

1 = SAE "A"
2 = SAE "B"
3 = SAE "BB"
4 = SAE "C"

Adapter

0 = None
A = SAE "A"
B = SAE "B"
C = SAE "C"

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BT6CR Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6CR	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.26	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025[1]	4.84	79.3	31.46	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028[1,2]	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
	031[1,2]	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4

[1] 025, 028, 031 = 2500 RPM max. [2] 028, 031 = 210 bar (3000 psi) max. int.

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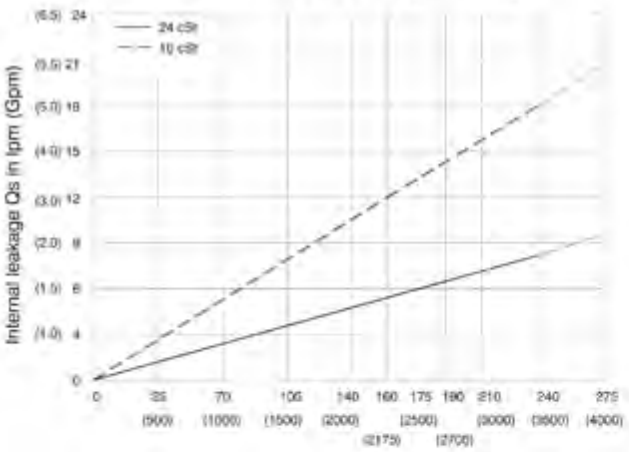
BT6CR Series

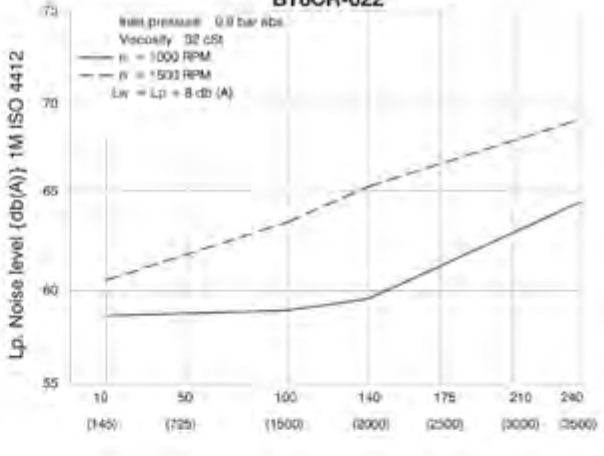
Performance Graphs

INTERNAL LEAKAGE (TYPICAL)

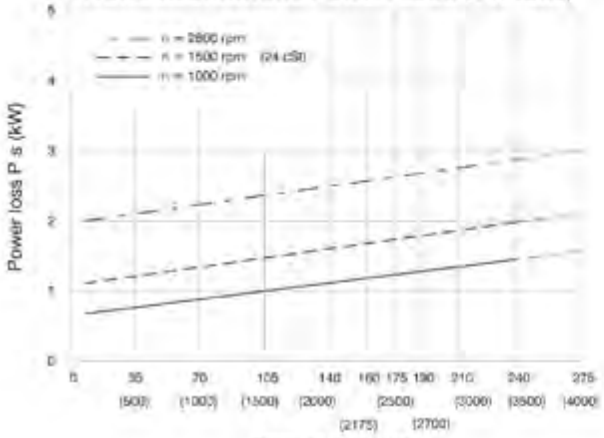


Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow.

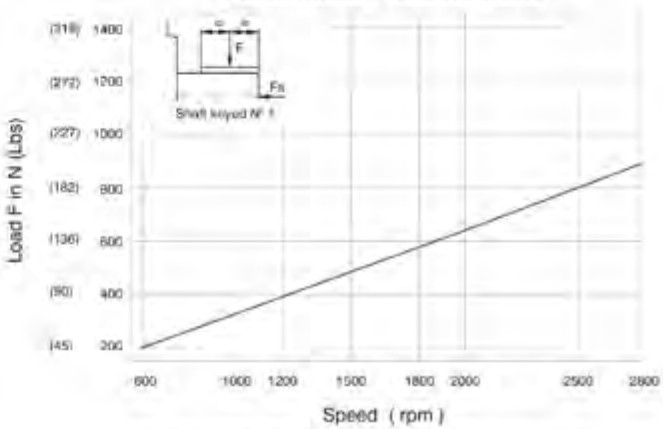
NOISE LEVEL (TYPICAL) BT6CR-022



HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum axial load permissible Fa = 800 N (180 Lbs)

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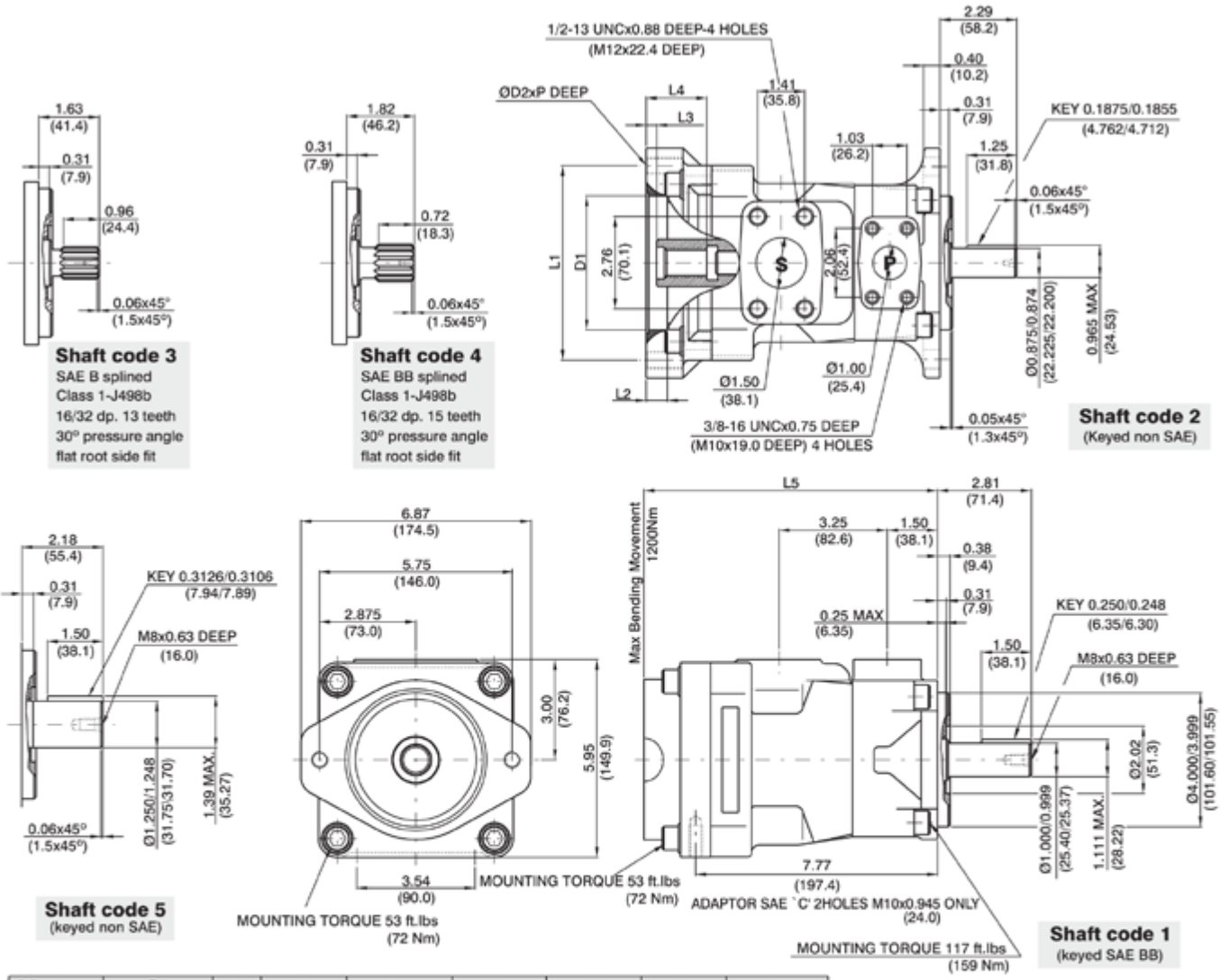
BT6CR Series

Specifications



Adaptor	D1	D2	P	L1	L2	L3	L4	L5
SAE "A"	3.25 (82.60)	M10	0.94 (24)	4.19 (106.4)	0.43 (11)	0.31 (7.9)	1.26 (32)	8.23 (209)
SAE "B"	4.00 (101.65)	M12	1.10 (28)	5.75 (146.0)	0.63 (16)	0.31 (7.9)	1.81 (46)	8.78 (223)
SAE "C"	5.00 (127.10)	M16	-	7.12 (181.0)	0.63 (16)	0.31 (7.9)	2.20 (56)	9.17 (233)

Adaptor	SAE "A"			SAE "B"		SAE "C"
Coupling drive	SAE A	SAE (11teeth)	SAE B	SAE B	SAE BB	SAE C
Number of teeth	9	11	13	13	15	14
Pitch	16/32	16/32	16/32	16/32	16/32	12/24
Pressure angle	30°	30°	30°	30°	30°	30°
Major dia.(min)	0.625 (15.875)	0.750 (19.05)	0.875 (22.225)	0.875 (22.225)	1.00 (25.40)	1.250 (31.75)
Minor dia.(min)	0.500 (12.70)	0.630 (16.00)	0.753 (19.125)	0.753 (19.125)	0.877 (22.275)	1.086 (27.585)

Shaft torque limits in³/rev x psi (ml/rev x bar)			
Shaft	V x P max.	Coupling drive	V x P max.
1	18972 (21420)	SAE"A"	9743 (11000)
2	12666 (14300)	SAE"B"	18246 (20600)
3	18246 (20600)	SAE"BB"	19530 (22050)
4	28937 (32670)	SAE"C"	19530 (22050)
5	30274 (34180)	SAE"11teeth"	14039 (15850)

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BT6DR Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6DR - 014 - 1 - L - 00 - A - 1 - 0 - A - 1

Series

Cartridge

Displacement cm³/r (in³/r)

014/B14 = 47.6 (2.90)	035/B35 = 111.0 (6.77)
017/B17 = 58.2 (3.55)	038/B38 = 120.3 (7.34)
020/B20 = 66.0 (4.03)	042/B42 = 136.0 (8.30)
024/B24 = 79.5 (4.85)	045/B45 = 145.7 (8.89)
028/B28 = 89.7 (5.47)	050/B50 = 158.0 (9.64)
031/B31 = 98.3 (6.00)	061/B61 = 190.5 (11.62)

*0** = Uni-Directional B** = Bi-Directional*

Shaft

1 = Keyed SAE "C"
2 = Keyed SAE "CC"
3 = Splined SAE "C"

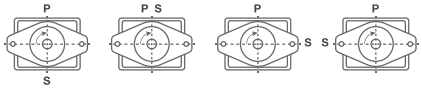
Rotation

R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

Porting

00 = Standard

00 01 02 03



S - Suction Port P - Pressure Port

Seals

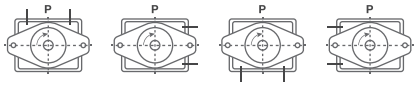
1 = Buna (Standard)
5 = Viton

Design Letter

A

Adapter Support Position

0 1 2 3



SAE "C"

Coupling

1 = SAE "A"
2 = SAE "B"
3 = SAE "BB"
4 = SAE "C"

Adapter

0 = None
A = SAE "A"
B = SAE "B"
C = SAE "C"

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BT6DR Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6DR	014	2.90	47.6	18.88	71.4	16.42	62.1	14.78	55.9	3.08	2.3	24.81	18.5	41.03	30.6
	017	3.55	58.2	23.1	87.3	20.6	78.0	18.99	71.8	3.35	2.5	29.77	22.2	49.62	37.0
	020	4.00	66.0	26.19	99.0	23.73	89.7	22.08	83.5	3.75	2.8	33.39	24.9	55.92	41.7
	024	4.80	79.5	31.56	119.3	29.10	110.0	27.46	103.8	4.02	3.0	39.69	29.6	66.78	49.8
	028	5.50	89.7	35.58	134.5	33.12	125.2	31.48	119.0	4.29	3.2	44.52	33.2	74.96	55.9
	031	6.00	98.3	39.00	147.5	36.53	138.1	34.89	131.9	4.42	3.3	48.54	36.2	81.80	61.0
	035	6.80	111.0	44.04	166.5	41.58	157.2	39.94	151.0	4.69	3.5	54.58	40.7	92.13	68.7
	038	7.30	120.3	47.72	180.4	45.26	171.1	43.62	164.9	4.96	3.7	58.87	43.9	99.64	74.3
	042[1]	8.30	136.0	53.96	204.0	51.50	194.7	49.86	188.5	5.36	4.0	66.25	49.4	112.24	83.7
	045[1]	8.89	145.7	57.80	218.5	55.34	209.2	53.70	203.0	5.50	4.1	70.81	52.8	120.02	89.5
	050[1,2]	9.64	158.0	62.69	237.0	60.23	227.7	59.25	224.0	5.90	4.4	76.44	57.0	113.98	85.0
	061[1,3]	11.62	190.5	76.25	285.7	73.54	278.0	-	-	6.16	4.6	81.26	60.6	-	-

[1] 042, 045, 050, 061 = 2200 RPM max. [2] 050 = 210 bar (3000 psi) max. int. [3] 061 = 120 bar (1740 psi) max. int., 061 = 80 bar (1160 psi) cont.

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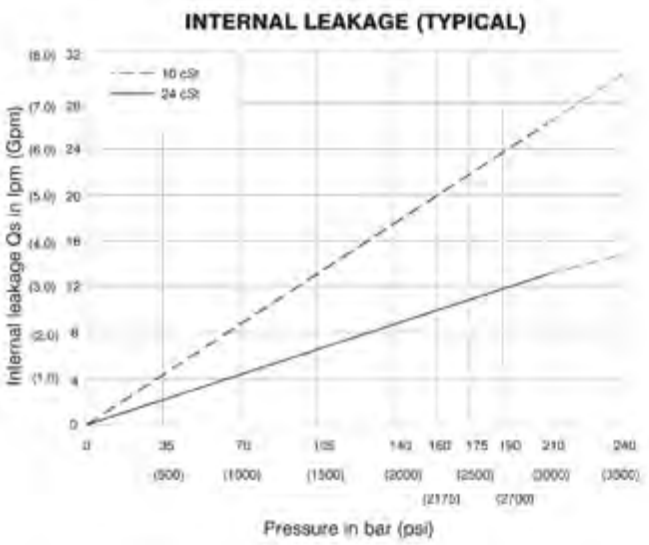
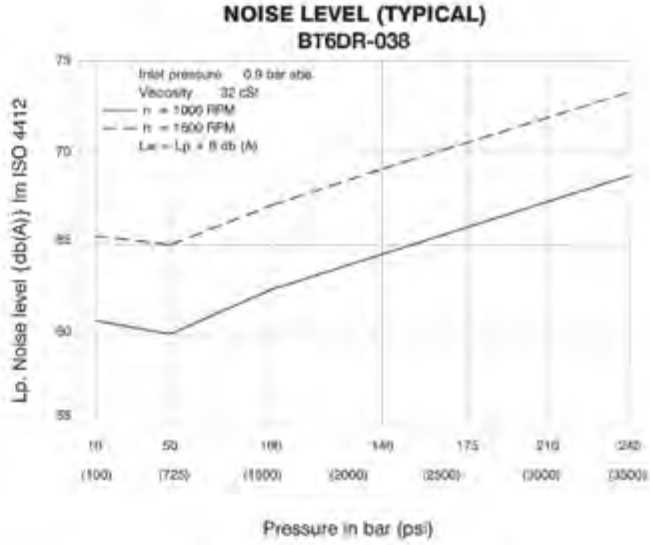
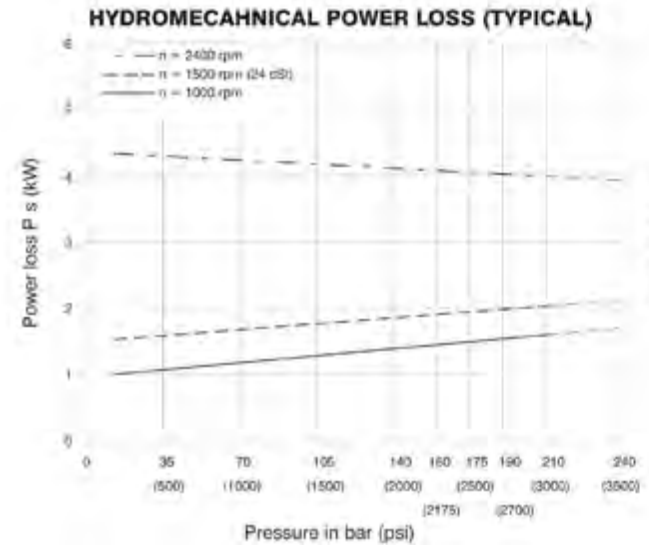
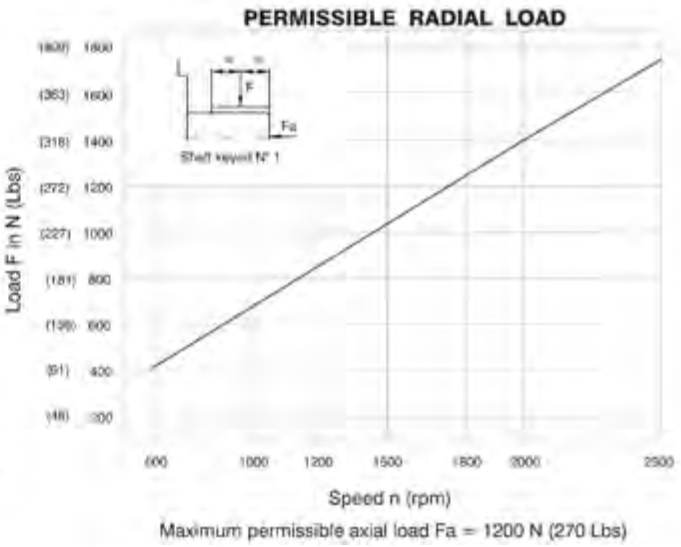
BT6DR Series

Performance Graphs









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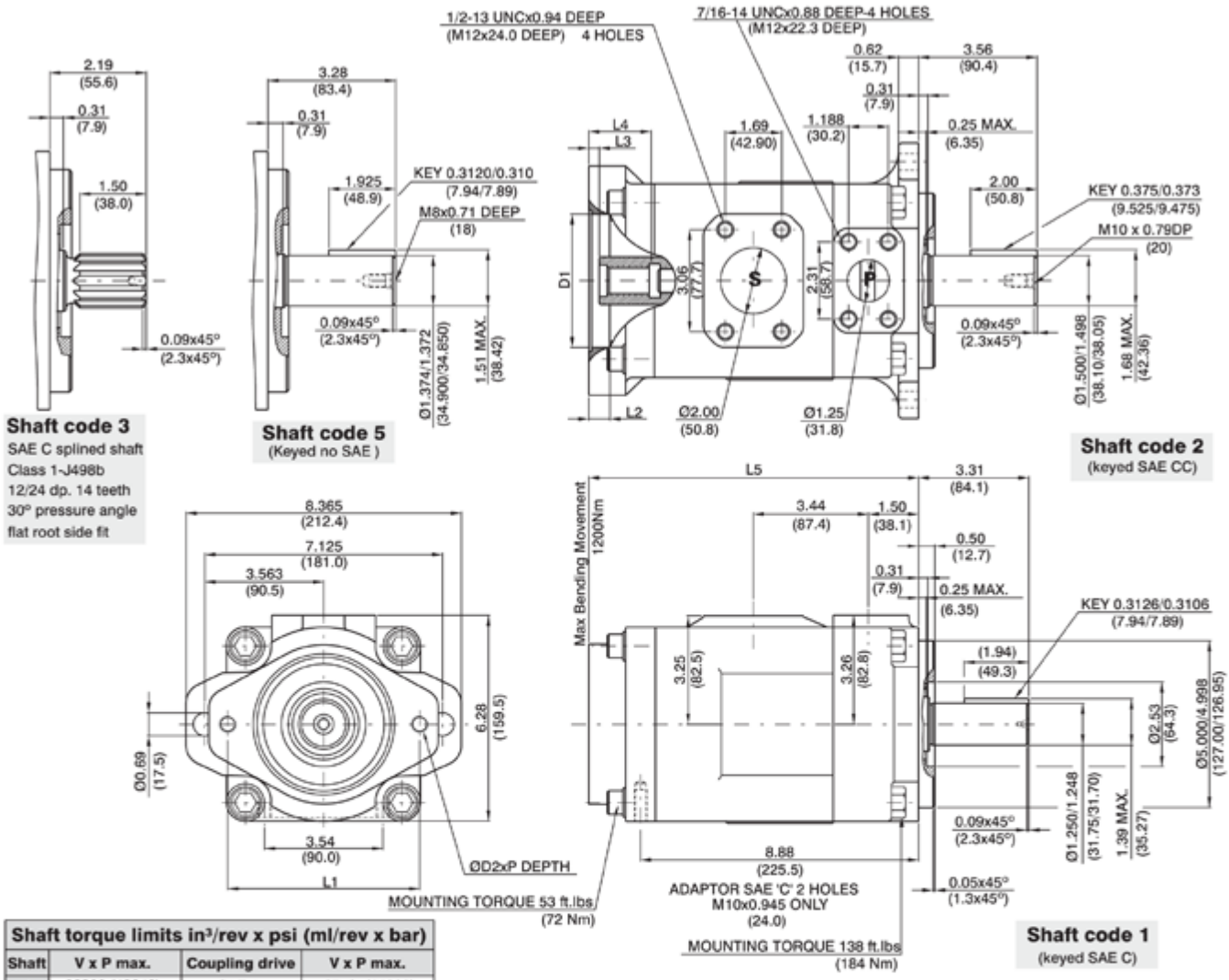
BT6DR Series

Specifications



Shaft torque limits in³/rev x psi (ml/rev x bar)			
Shaft	V x P max.	Coupling drive	V x P max.
1	38300 (43240)	SAE"A"	9743 (11000)
2	58491 (66036)	SAE"B"	18246 (20600)
3	54207 (61200)	SAE"BB"	28937 (32670)
5	49247 (55600)	SAE"C"	33118 (37390)
		SAE"11teeth"	14039 (15850)

Adaptor	D1	D2	P	L1	L2	L3	L4	L5
SAE "A"	3.25 (82.60)	M10	0.94 (24)	4.19 (106.4)	0.43 (11)	0.31 (7.9)	1.26 (32)	9.33 (237)
SAE "B"	4.00 (101.65)	M12	1.10 (28)	5.75 (146.0)	0.63 (16)	0.31 (7.9)	1.81 (46)	9.88 (251)
SAE "C"	5.00 (127.10)	M16	-	7.12 (181.0)	0.63 (16)	0.31 (7.9)	2.20 (56)	10.27 (261)

Adaptor	SAE "A"			SAE "B"		SAE "C"
Coupling drive	SAE A	SAE (11teeth)	SAE B	SAE B	SAE BB	SAE C
Number of teeth	9	11	13	13	15	14
Pitch	16/32	16/32	16/32	16/32	16/32	12/24
Pressure angle	30°	30°	30°	30°	30°	30°
Major dia.(min)	0.625 (15.875)	0.750 (19.05)	0.875 (22.225)	0.875 (22.225)	1.00 (25.40)	1.250 (31.75)
Minor dia.(min)	0.500 (12.70)	0.630 (16.00)	0.753 (19.134)	0.753 (19.134)	0.877 (22.268)	1.086 (27.585)

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BT6ER Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6ER - 042 - 1 - L - 00 - A - 1 - 0 - A - 1

Series

Cartridge
Displacement cm³/r (in³/r)

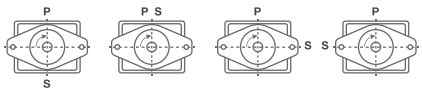
042 = 132.3 (8.07)
045 = 142.4 (8.69)
050 = 158.5 (9.67)
052 = 164.8 (10.06)
057 = 183.2 (11.18)
062 = 196.7 (12.00)
066 = 213.3 (13.02)
072 = 227.1 (13.86)
085 = 269.8 (16.46)

Shaft
1 = Keyed SAE "CC"
2 = Splined SAE "C"
3 = Splined SAE "CC"

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

Porting
00 = Standard

00 01 02 03

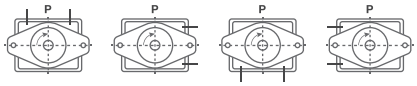


S - Suction Port P - Pressure Port

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
A

Adapter Support Position
0 1 2 3



SAE "C"

Coupling
1 = SAE "A"
2 = SAE "B"
3 = SAE "BB"
4 = SAE "C"

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

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BT6ER Series

Operating Characteristics - Typical (24 cST)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6ER	042	8.07	132.3	52.50	198.5	49.87	188.5	47.96	181.3	6.97	5.2	66.25	49.4	110.77	82.6
	045	8.70	142.4	56.51	213.6	53.86	203.6	51.98	196.5	7.24	5.4	70.94	52.9	118.95	88.7
	050	9.67	158.5	62.88	237.7	60.24	227.7	58.36	220.6	7.64	5.7	78.45	58.5	131.82	98.3
	052	10.00	164.8	65.40	247.2	62.75	237.2	60.87	230.1	7.78	5.8	81.53	60.8	136.92	102.1
	057	11.02	180.7	71.71	271.1	69.07	261.1	67.19	254.0	8.18	6.1	89.04	66.4	143.35	106.9
	062	12.00	196.7	78.04	295.0	75.40	285.0	73.52	277.9	8.58	6.4	96.42	71.9	162.67	121.3
	066	13.00	213.3	84.63	319.9	81.98	309.9	80.11	302.8	8.98	6.7	104.20	77.7	175.94	131.2
	072	13.86	227.1	90.11	340.6	87.46	330.6	85.58	323.5	9.25	6.9	110.77	82.6	187.07	139.5
	085[1]	16.40	269.8	107.00	404.7	105.21[2]	397.7[2]	-	-	9.78	7.3	87.56[2]	65.3[2]	-	-

[1] 085 = 90 bar (1300 psi) max. int. & 085 = 2000 RPM max. [2] 085 = 75 bar (1100 psi) cont.

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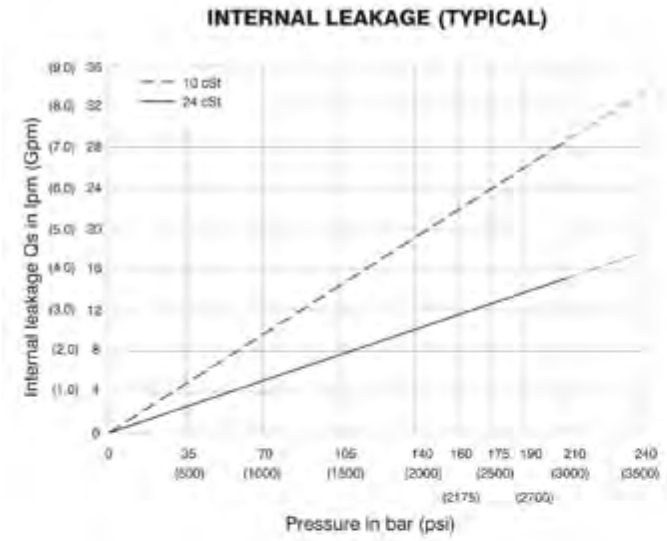
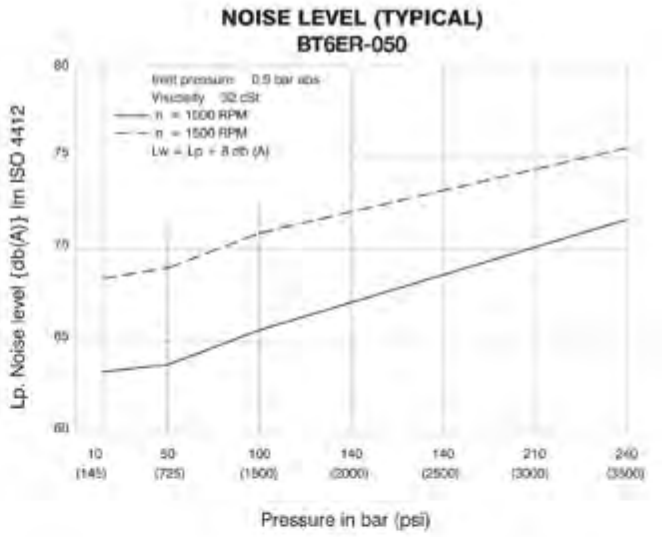
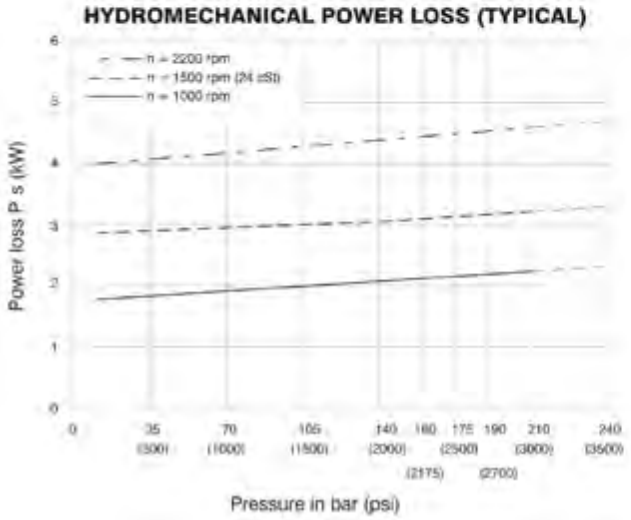
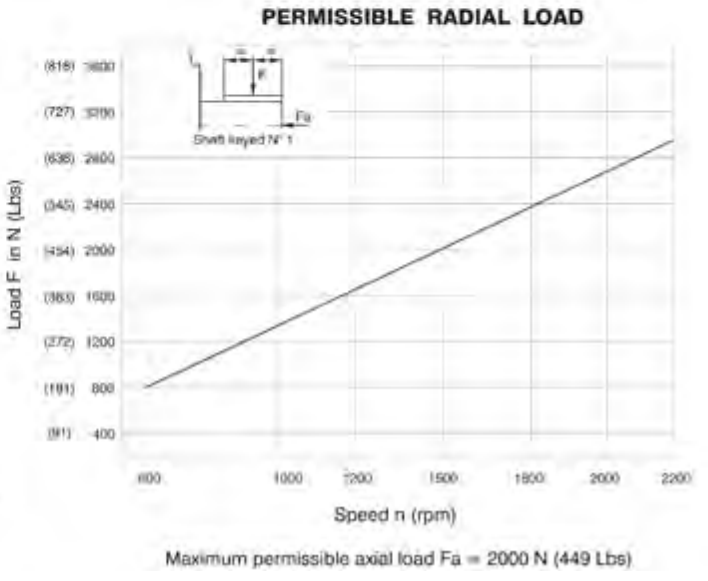
BT6ER Series

Performance Graphs









Maximum permissible axial load Fa = 2000 N (449 Lbs)

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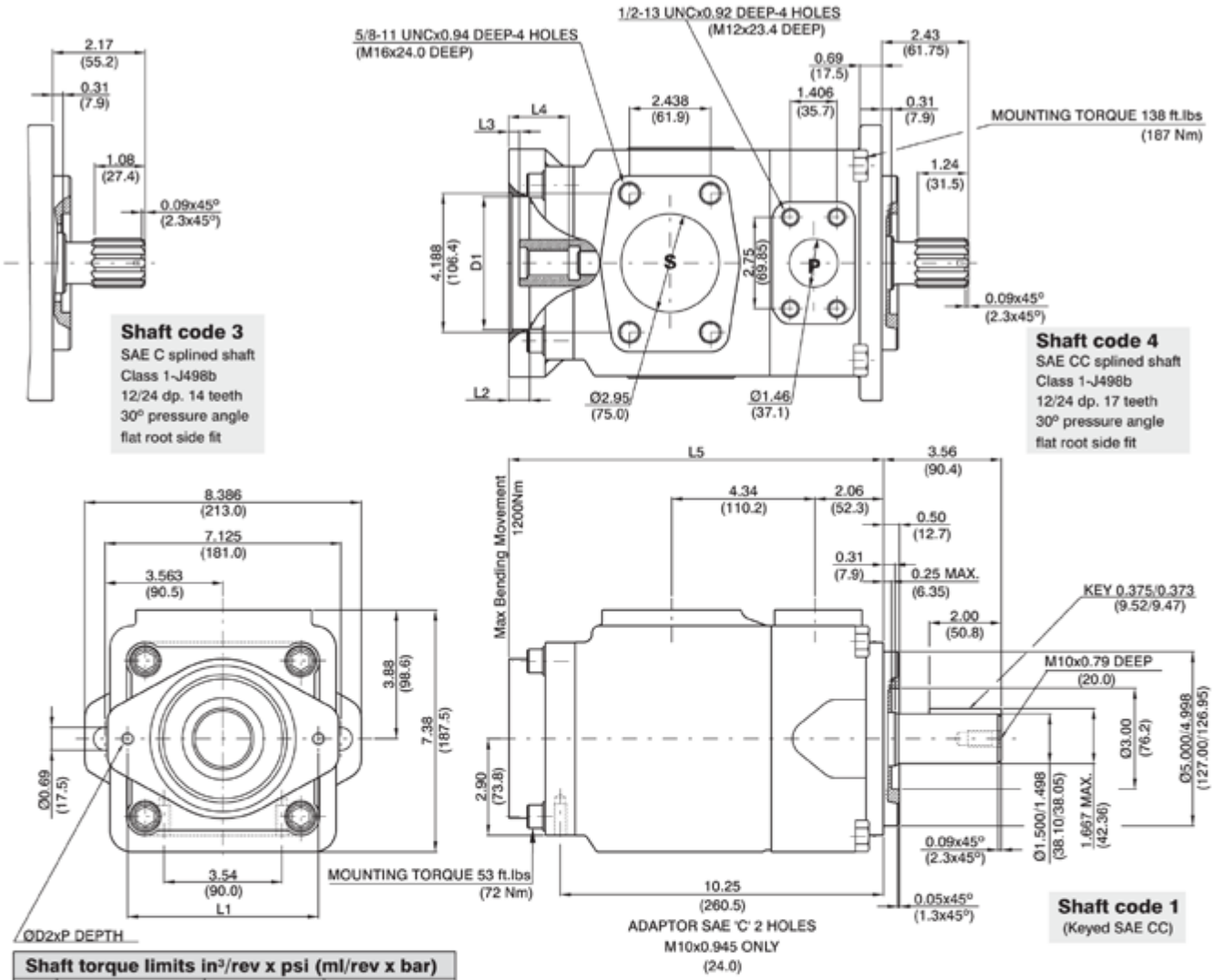
BT6ER Series

Specifications



Shaft torque limits in³/rev x psi (ml/rev x bar)			
Shaft	V x P max.	Coupling drive	V x P max.
1	71355 (80560)	SAE"A"	9743 (11000)
3	54207 (61200)	SAE"B"	18246 (20600)
4	106474 (120210)	SAE"BB"	28937 (32670)
		SAE"C"	58884 (66480)
		SAE"11teeth"	14039 (15850)

Adaptor	D1	D2	P	L1	L2	L3	L4	L5
SAE "A"	3.25 (82.60)	M10	0.94 (24)	4.19 (106.4)	0.43 (11)	0.31 (7.9)	1.26 (32)	10.71 (272)
SAE "B"	4.00 (101.65)	M12	1.10 (28)	5.75 (146.0)	0.63 (16)	0.31 (7.9)	1.81 (46)	11.26 (286)
SAE "C"	5.00 (127.10)	M16	-	7.12 (181.0)	0.63 (16)	0.31 (7.9)	2.20 (56)	11.65 (296)

Adaptor	SAE "A"			SAE "B"		SAE "C"
Coupling drive	SAE A	SAE (11teeth)	SAE B	SAE B	SAE BB	SAE C
Number of teeth	9	11	13	13	15	14
Pitch	16/32	16/32	16/32	16/32	16/32	12/24
Pressure angle	30°	30°	30°	30°	30°	30°
Major dia.(min)	0.625 (15.875)	0.750 (19.05)	0.875 (22.225)	0.875 (22.225)	1.00 (25.40)	1.250 (31.75)
Minor dia.(min)	0.500 (12.70)	0.630 (16.00)	0.753 (19.134)	0.753 (19.134)	0.877 (22.268)	1.086 (27.585)

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BT6DCC Series

High Performance Vane Pump

- High pressure efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BT6DCC * - 014 - 003 - 003 - 1 - L - 00 - A - 1 - 00

P1 P2 P3

Series

Type M

Cartridge
Displacement cm³/r (in³/r)

014/B14 = 47.6 (2.90)	035/B35 = 111.0 (6.77)
017/B17 = 58.2 (3.55)	038/B38 = 120.3 (7.34)
020/B20 = 66.0 (4.03)	042/B42 = 136.0 (8.30)
024/B24 = 79.5 (4.85)	045/B45 = 145.7 (8.89)
028/B28 = 89.7 (5.47)	050/B50 = 158.0 (9.64)
031/B31 = 98.3 (6.00)	061/B61 = 190.5 (11.62)

*0** = Uni-Directional B** = Bi-Directional*

Cartridge
Displacement cm³/r (in³/r)

003/B03 = 10.8 (0.66)	015/B15 = 50.5 (3.08)
005/B05 = 17.2 (1.05)	017/B17 = 58.3 (3.56)
006/B06 = 21.3 (1.30)	020/B20 = 63.8 (3.89)
008/B08 = 26.4 (1.61)	022/B22 = 70.3 (4.29)
010/B10 = 34.1 (2.08)	025/B25 = 79.3 (4.84)
012/B12 = 37.1 (2.26)	028/B28 = 88.8 (5.42)
014/B14 = 46.0 (2.81)	031/B31 = 100.0 (6.10)

*0** = Uni-Directional B** = Bi-Directional*

Shaft
1 = Keyed Non SAE
2 = Keyed SAE "CC"
3 = Splined SAE "C"
4 = Splined SAE "CC"
6 = Splined Non SAE

Mounting & Port Connections

P3	1"	3/4"
UNC	00	01
Metric	M0	M1

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
A, B

Porting
00 = Standard
thru 63

Rotation
R = Right - Clockwise
L = Left - Counter-clockwise
(View from shaft end)

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BT6DCC Series

Operating Characteristics - Typical (24 cST) (Input Power p (kw) for one cartridge only)

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6DCC (P1)	014	2.90	47.6	18.88	71.4	16.42	62.1	14.78	55.9	3.08	2.3	24.81	18.5	41.03	30.6
	017	3.55	58.2	23.1	87.3	20.6	78.0	18.99	71.8	3.35	2.5	29.77	22.2	49.62	37.0
	020	4.00	66.0	26.19	99.0	23.73	89.7	22.08	83.5	3.75	2.8	33.39	24.9	55.92	41.7
	024	4.80	79.5	31.56	119.3	29.10	110.0	27.46	103.8	4.02	3.0	39.69	29.6	66.78	49.8
	028	5.50	89.7	35.58	134.5	33.12	125.2	31.48	119.0	4.29	3.2	44.52	33.2	74.96	55.9
	031	6.00	98.3	39.00	147.5	36.53	138.1	34.89	131.9	4.42	3.3	48.54	36.2	81.80	61.0
	035	6.80	111.0	44.04	166.5	41.58	157.2	39.94	151.0	4.69	3.5	54.58	40.7	92.13	68.7
	038	7.30	120.3	47.72	180.4	45.26	171.1	43.62	164.9	4.96	3.7	58.87	43.9	99.64	74.3
	042[1]	8.30	136.0	53.96	204.0	51.50	194.7	49.86	188.5	5.36	4.0	66.25	49.4	112.24	83.7
	045[1]	8.89	145.7	57.80	218.5	55.34	209.2	53.70	203.0	5.50	4.1	70.81	52.8	120.02	89.5
	050[1,2]	9.64	158.0	62.69	237.0	60.23	227.7	59.25	224.0	5.90	4.4	76.44	57.0	113.98	85.0
	061[1,3]	11.62	190.5	76.25	285.7	73.54	278.0	-	-	6.16	4.6	81.26	60.6	-	-

[1] 042, 045, 050, 061 = 2200 RPM max. [2] 050 = 210 bar (3000 psi) max. int. [3] 061 = 120 bar (1740 psi) max. int., 061 = 80 bar (1160 psi) cont.

Pressure Port	Series	Volumetric Displacement		Flow q & n = 1500 RPM						Input Power p & n = 1500 RPM					
				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
BT6DCC (P2 & P3)	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.26	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025[1]	4.84	79.3	31.46	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028[1,2]	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
	031[1,2]	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4

[1] 025, 028, 031 = 2500 RPM max. [2] 028, 031 = 210 bar (3000 psi) max. int.

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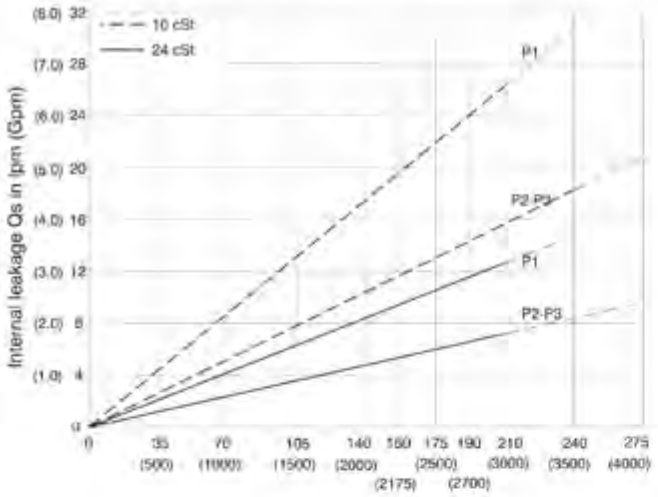
BT6DCC Series

Performance Graphs

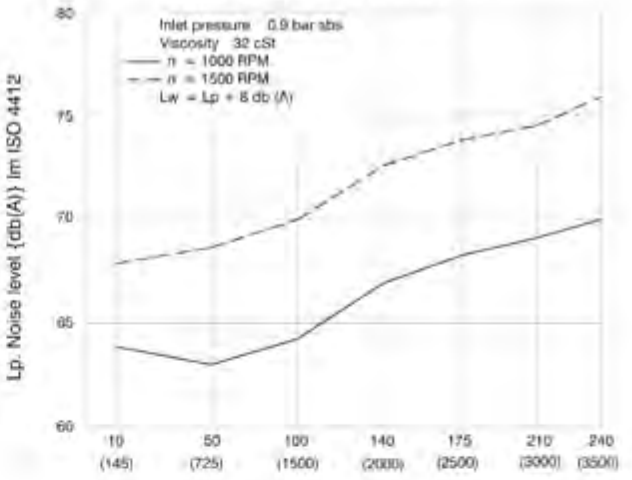
INTERNAL LEAKAGE (TYPICAL)



Total leakage is the sum of each section loss at its operating conditions.

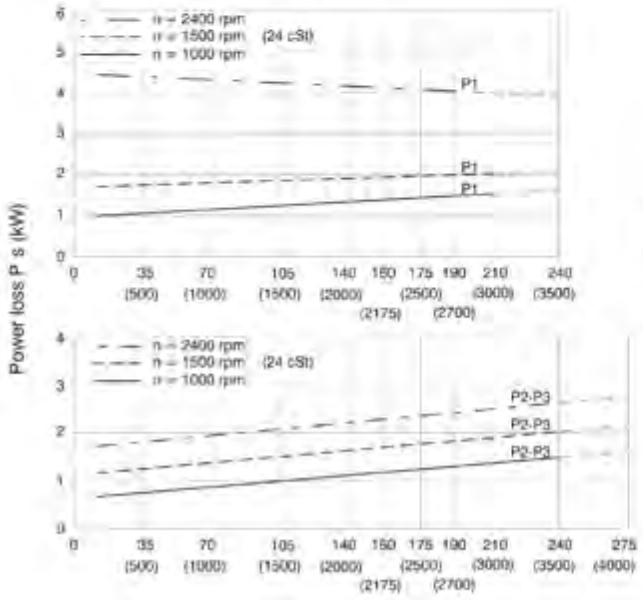
NOISE LEVEL (TYPICAL)

BT6DCC-038-022-022



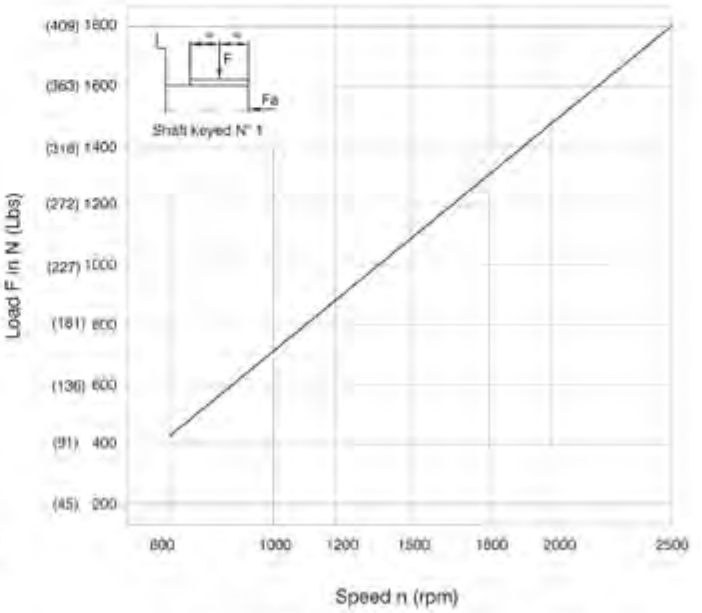
Triple pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECAHNICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum axial load permissible Fa=1200 N (449 Lbs)

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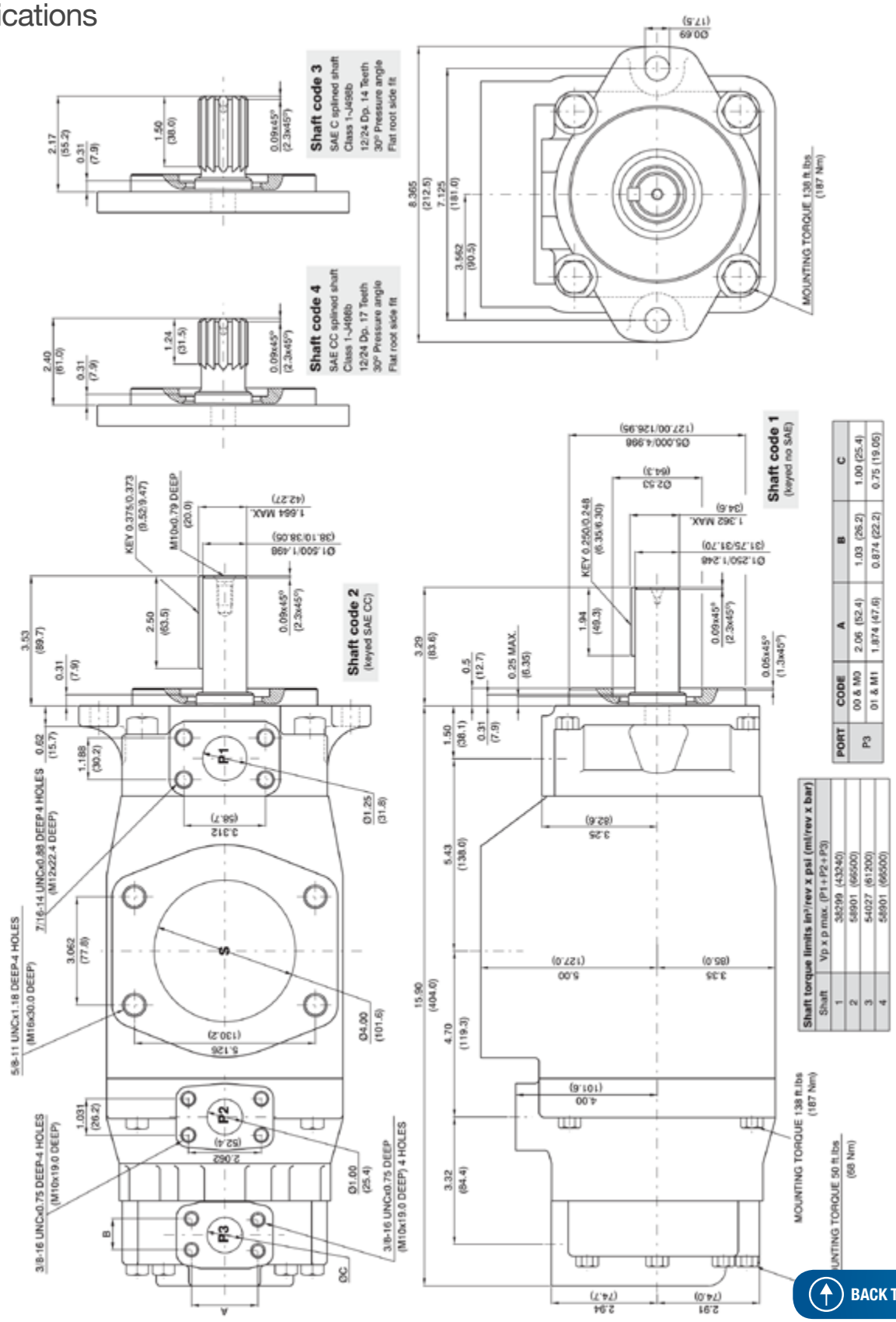
BT6DCC Series

Specifications



PORT	CODE	A	B	C
P3	00 & M0	2.06 (52.4)	1.03 (26.2)	1.00 (25.4)
	01 & M1	1.874 (47.6)	0.874 (22.2)	0.75 (19.05)

Shaft torque limits in³/rev x psi (ml/rev x bar)	
Shaft	Vp x p max. (P1+P2+P3)
1	38299 (43240)
2	58901 (66500)
3	54027 (61200)
4	58901 (66500)

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BM4C Series

High Performance Vane Motor

- High starting torque efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BM4C - 024 - 1 - N - 00 - A - 1 - 01

Series
BM4C = External Drain
BM4C1 = Internal Drain

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

Shaft
1 = Keyed SAE "B"
2 = Keyed Non SAE
3 = Splined SAE "B"

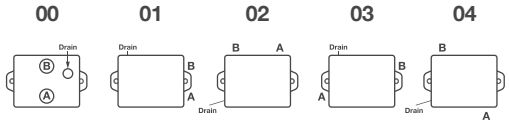
Rotation
N = Bi-directional
Clockwise Rotation: A = Inlet, B = Outlet
Counter-Clockwise Rotation: A = Outlet, B = Inlet
(View from shaft end)

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

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
A

Porting
00 = Standard



Rear Port | Side Ports | Opposite Ports

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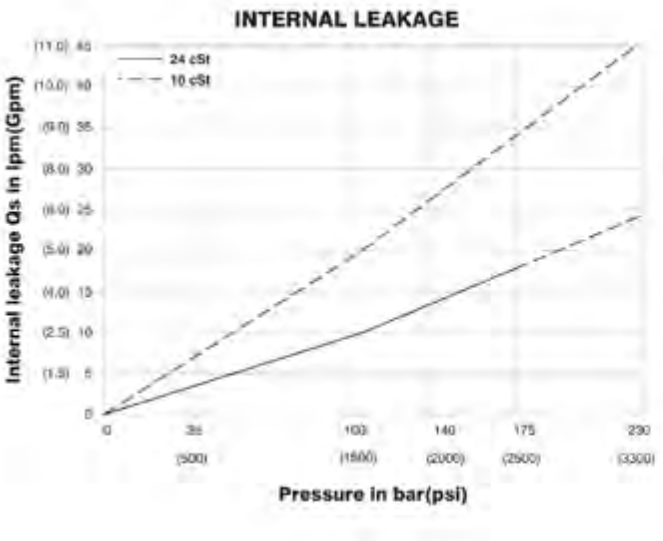
BM4C Series

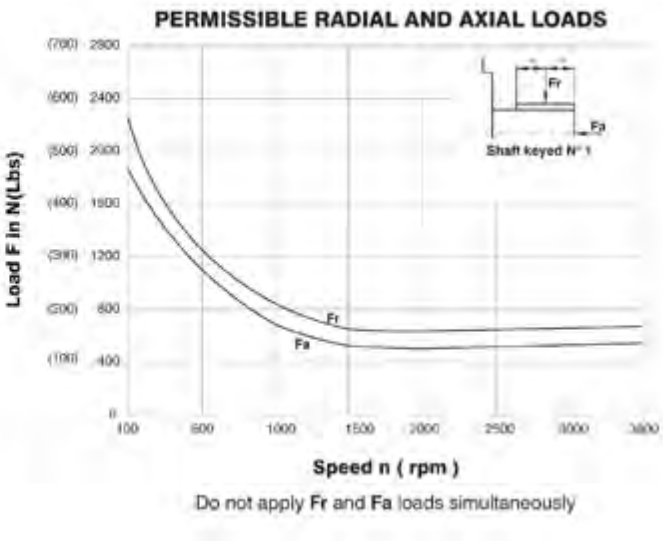
Operating Characteristics - Typical (24 cST)

Model	Series	Volumetric Displacement		Input Flow at n = 2000 RPM				Torque T at n = 2000 RPM		Power Output at n = 2000 RPM	
				Theoretical		p = 175 bar (2500 psi)		p = 175 bar (2500 psi)		p = 175 bar (2500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	in/lbf	Nm	hp	kw
BM4C	024	1.49	24.4	13.0	49.0	17.7	67.0	535.4	60.5	17.0	12.7
	027	1.72	28.2	14.8	56.0	19.5	74.0	619.5	70.0	19.7	14.7
	031	2.11	34.5	18.5	69.0	23.2	87.0	768.0	86.8	24.0	18.0
	043	2.84	46.5	24.6	93.0	29.3	111.0	1062.0	120.0	33.6	25.1
	055	3.59	58.8	31.2	118.0	36.0	136.0	1318.6	149.0	41.8	31.2
	067	4.34	71.1	37.5	142.0	42.3	160.0	1504.5	170.0	47.7	35.6
	075	4.89	80.1	42.3	160.0	47.0	178.0	1752.2	198.0	55.6	41.5

BM4C Series

Performance Graphs





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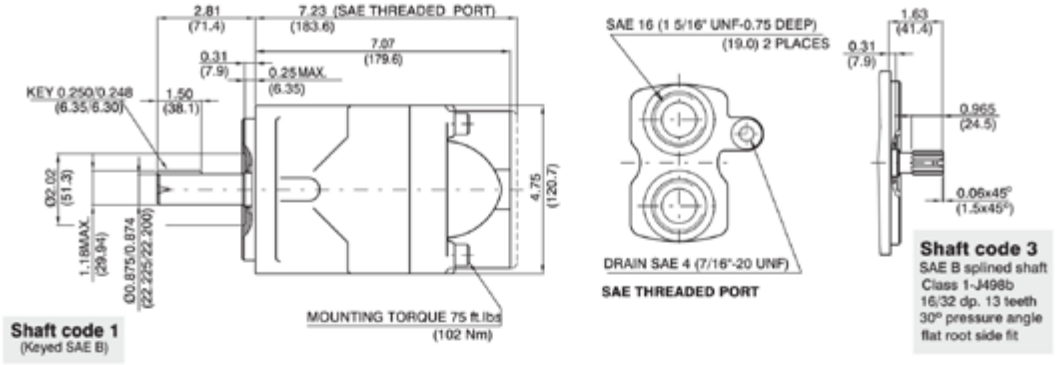
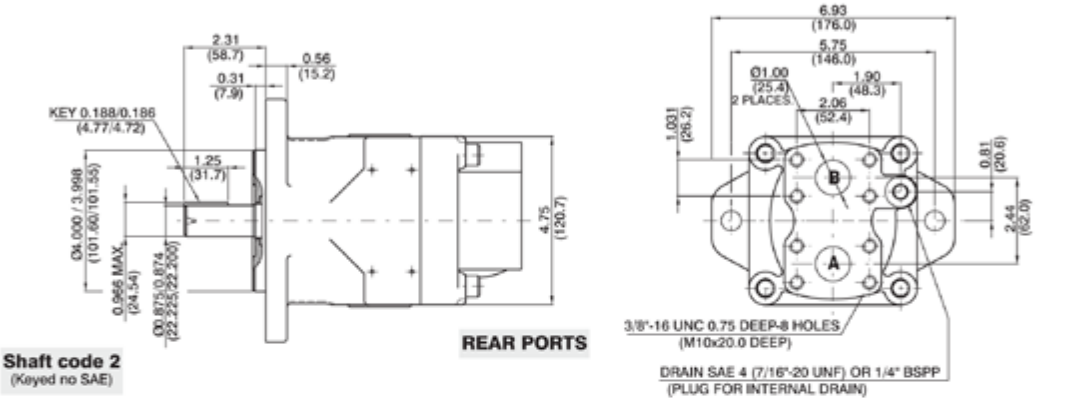
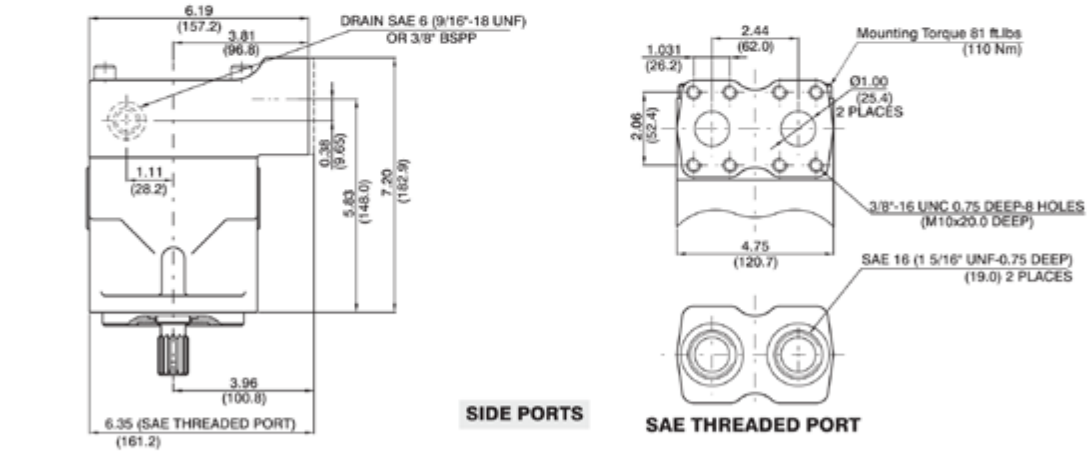
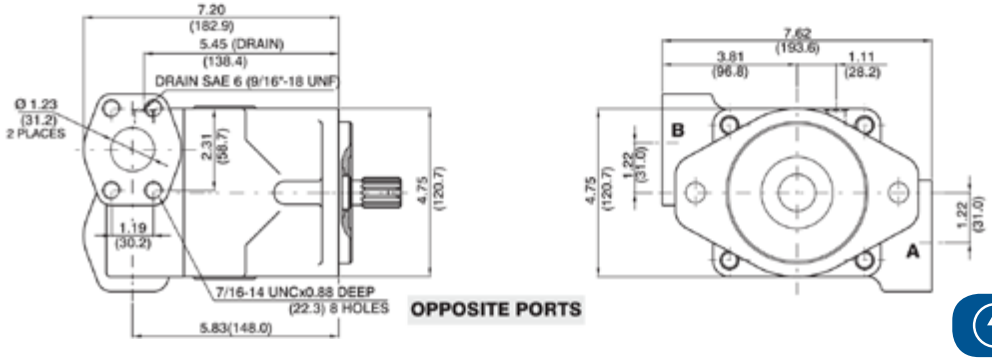
BM4C Series

Specifications









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BM4D Series

High Performance Vane Motor

- High starting torque efficiency
- Cartridge Kit design allows for drop-in assemblies, easy conversion, and ease of maintenance
- Engineered for a wide speed range
- Low noise level design
- Wide range of acceptable viscosities
- High pressure efficiency with special fluids such as phosphate esters and water glycols
- Great mounting flexibility and installation compatibility

BM4D - 062 - 1 - N - 00 - B - 1 - 01

Series
BM4D = External Drain
BM4D1 = Internal Drain

Torque
062 = 1.04 Nm/bar
074 = 1.22 Nm/bar
088 = 1.45 Nm/bar
102 = 1.68 Nm/bar
113 = 1.86 Nm/bar
128 = 2.11 Nm/bar
138 = 2.30 Nm/bar

Shaft
1 = Keyed SAE "C"
2 = Splined SAE "C"

Rotation
N = Bi-directional
Clockwise Rotation: A = Inlet, B = Outlet
Counter-Clockwise Rotation: A = Outlet, B = Inlet
(View from shaft end)

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

Seals
1 = Buna (Standard)
5 = Viton

Design Letter
B

Porting
00 = Standard

00

Rear Port

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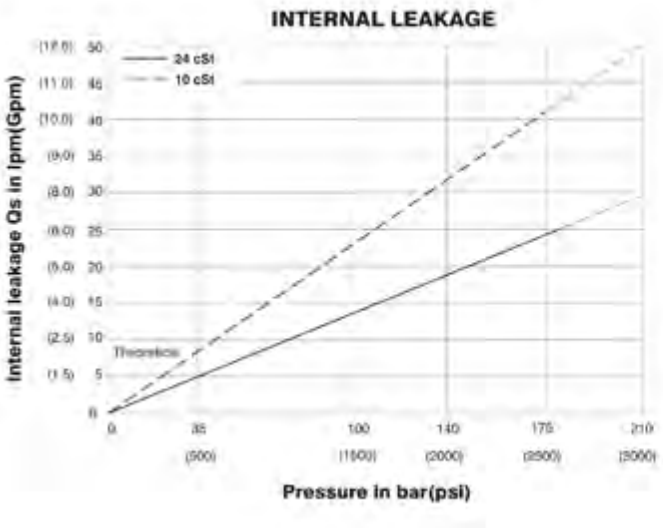
BM4D Series

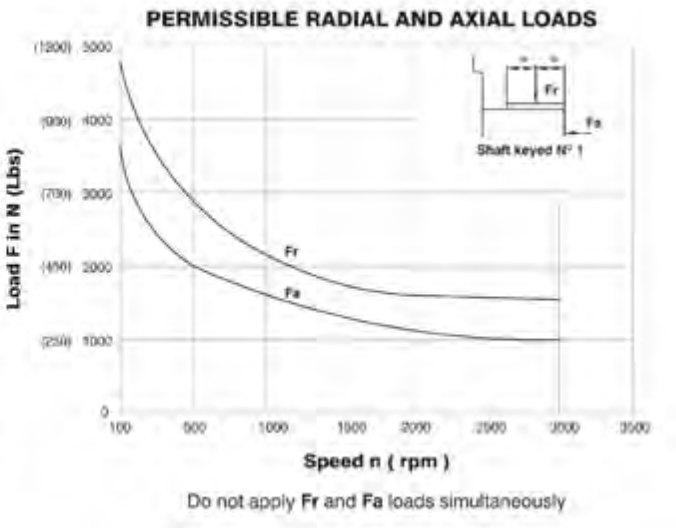
Operating Characteristics - Typical (24 cST)

Model	Series	Volumetric Displacement		Input Flow at n = 2000 RPM				Torque T at n = 2000 RPM		Power Output at n = 2000 RPM	
				Theoretical		p = 175 bar (2500 psi)		p = 175 bar (2500 psi)		p = 175 bar (2500 psi)	
		in³/rev	cm³/rev	gpm	lpm	gpm	lpm	in/lbf	Nm	hp	kw
BM4D	062	3.97	65.1	33.8	130.0	40.0	154.0	1460.0	165.0	46.4	34.6
	074	4.69	76.8	41.5	154.0	47.8	178.0	1770.0	200.0	56.2	41.9
	088	5.56	91.1	48.0	182.0	54.4	206.0	2088.5	236.0	66.2	49.4
	102	6.44	105.5	55.5	211.0	61.8	241.0	2336.3	264.0	74.1	55.3
	113	7.12	116.7	61.5	233.0	67.9	257.0	2655.0	300.0	84.2	62.8
	128	8.08	132.4	70.0	265.0	76.3	289.0	3009.0	340.0	95.5	71.2
	138	8.81	144.4	76.3	289.0	82.7	313.0	3292.0	372.0	104.5	77.9

BM4D Series

Performance Graphs





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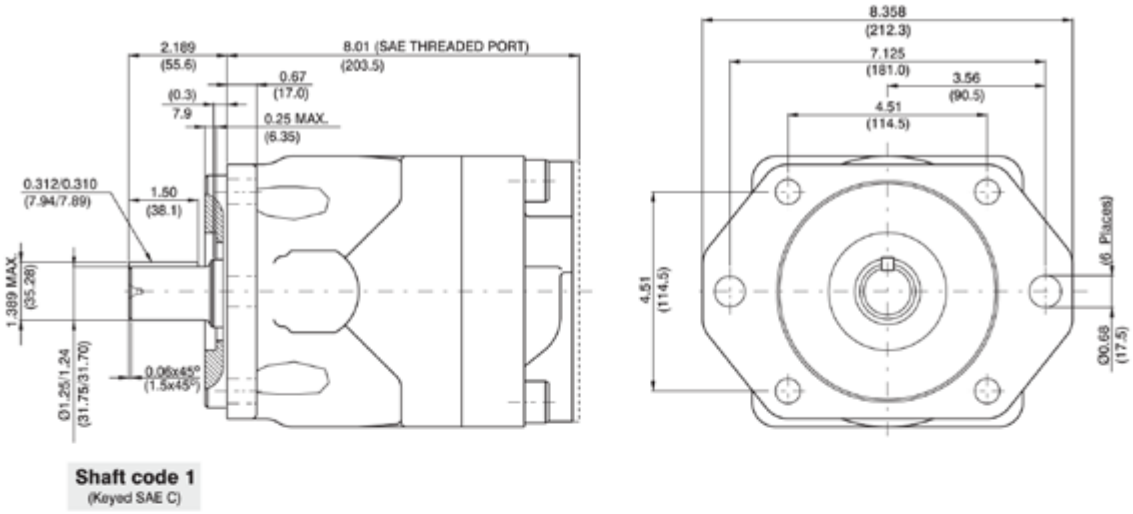
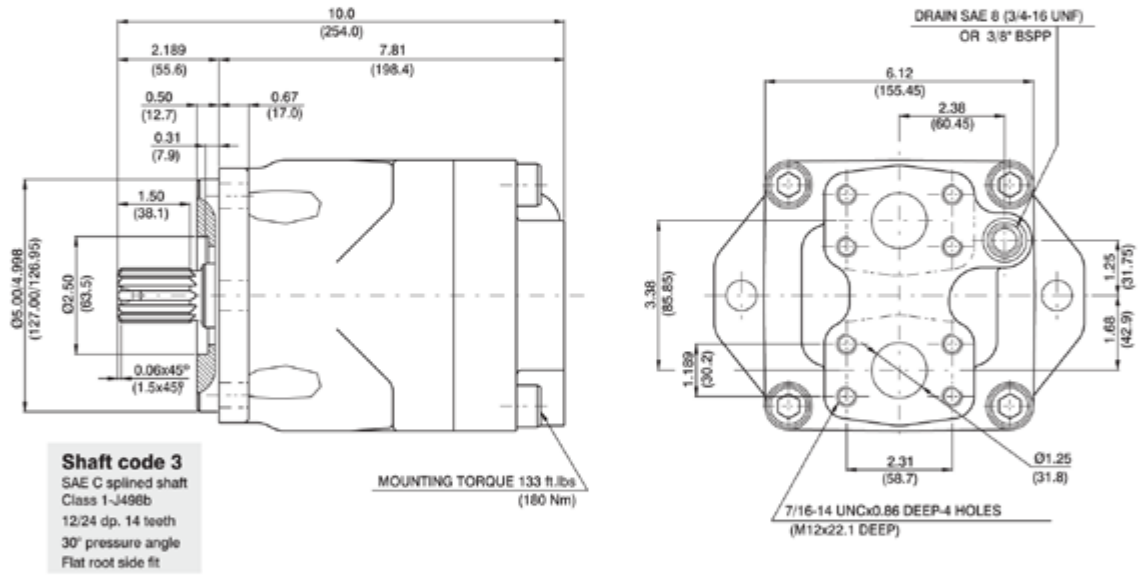
BM4D Series

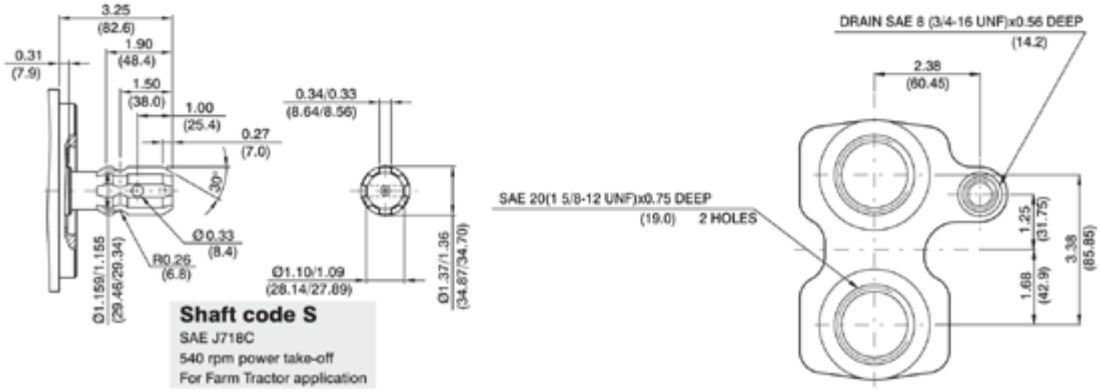
Specifications



Shaft code 1
(Keyed SAE C)



Shaft code 3
SAE C splined shaft
Class 1-J498b
12/24 dp. 14 teeth
30° pressure angle
Flat root side fit



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

SAE THREADED PORT

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- Servo Motors
- Orbital Motors
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