KCL®

Hydraulic Pumps

SMP series variable speed drives

Double lips/ Piston type Vane pump for Servo system energy saving

可 變 轉 速 驅 動 專 用 泵 浦

D001

KCL ® world-best pumps
HYDRAULIC EQUIPMENTS

KCL

CONTENT 目錄

INDEX

General

Content(目錄) 1

Feature description & Care in Application(特性說明與注意事項) 2

Single Pump

4SMP

Ordering code and dimensions(訂購指引/尺寸圖) 3

Technical data(技術資料) 4

5SMP1

Ordering code and dimensions(訂購指引/尺寸圖) 5

Technical data(技術資料) 6

5SMP2

Ordering code and dimensions(訂購指引/尺寸圖) 7

Technical data(技術資料) 8

Double Pump

42SMP

Ordering code and (訂購指引) 9

Dimensions and Technical data (尺寸圖/技術資料) 10

52SMP

Ordering code and (訂購指引) 11

Dimensions and Technical data (尺寸圖/技術資料) 12

54SMP

Ordering code and (訂購指引) 13

Dimensions and Technical data (尺寸圖/技術資料) 14

55SMP

Ordering code and (訂購指引) 15

Dimensions and Technical data (尺寸圖/技術資料) 16

66SMP

Ordering code and (訂購指引) 17

Dimensions and Technical data (尺寸圖/技術資料) 18

特性說明

1、 低噪音，低內漏量，抗污能力強，轉速範圍大。

2、 可承受長時間加壓能力，油泵使用壽命長，體積小，卡式內膽，安裝容易。

3、 維修簡單。

注意事項

1、 **油泵的進油口與出油口皆不可安裝止逆閥**。

2、 使用 SMP 系列節能泵，若採用正壓油箱啟動，則啟動轉速不受任何限制；反之，若為負壓啟動，則啟動轉速會受限制。

(正壓：油箱油面高於泵浦；負壓：油箱油面低於泵浦)

3、 **低轉速不可使用高壓力**，大致上 10 rpm 有 10 Bar，35 rpm 就有 35 Bar。

- **壓力建立模式必須注意: 吐出量一定要大於內漏量，方可建立壓力。(瞬間壓力)**

4、 **低轉速運轉時，系統保壓時間超過 5 秒以上，則須特別注意吐出量必須大於 2 倍內漏量，方能有穩定壓力。**

5、 作動油不可有過量的空氣及氣泡。

6、 作動油使用黏度 VG32, VG46, VG68 均可。

7、 **內漏量的多寡，與轉速無關，但與壓力與黏度兩者有關。**

8、 濾油口須加裝濾油網，建議過濾精度 100~150 μm，濾油網通過量必須是泵浦吐出量的 3 倍以上。

9、 內裝泵浦與驅動軸之間的偏心量為 ±0.05mm。

10、 作動油品清潔度最好能在 NAS 9 級 以內。

11、 出油口壓力範圍：建議進出油口的差值時時保持至少 1.5Bar.

12、 當系統進行速度的改變及方向的切換時，壓力的重新建立，盡可能在系統迴路考慮加裝過載保護裝置或另加旁通迴路。

13、 本系列泵浦，可針對非燃性液壓油(例如：水乙二醇)，特殊工作場所使用，屬於客製品 (非標準品)，訂購時須另行註明。

14、 **泵浦出油口，須加裝高壓過濾網。**

KCL

4SMP Ordering Code & Dimensions

4SMP – B22 – 1 – R 00 – A
① ② ③ ④⑤ ⑥

① **4SMP 系列：適用低轉速節能定量葉片泵**
4：4" 安裝，SMP：節能使用泵

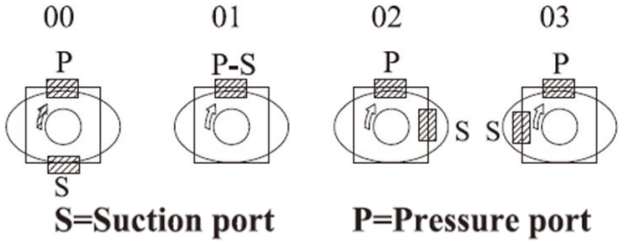
② **Cam ring for " P1 " (P1 流量)**
Volumetric displacement (cm^3/rev)

B16=15.9	B32=31.8
B22=22.5	B41=40.9
B25=24.9	B45=45.1
B28=28.0	B50=50.0

③ **Type of Shaft (心軸種類)**
1、 Keyed (Ø22.225 key 6.35 x 38.1)
2、 Keyed (Ø25.060 key 8.0/7.0x39.8)
3、 Splined (13 teeth)
5、 Keyed (Ø25.400 key 6.35 x 31.8)

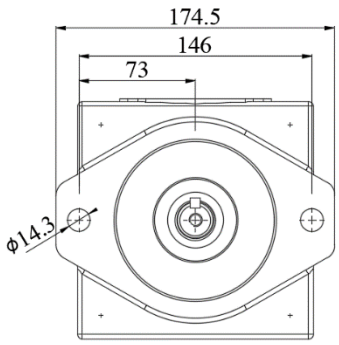
④ **Rotation (轉向，面對心軸)**
R： Clockwise (正)
L： Anti-Clockwise(反)

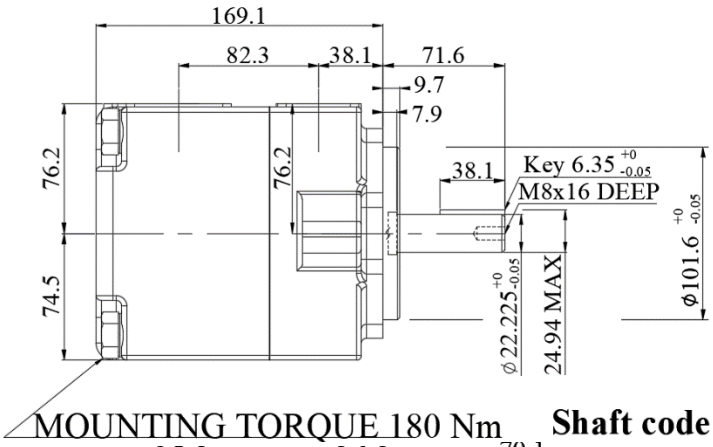
⑤ **Porting combination (油口方向)**
00 = standard

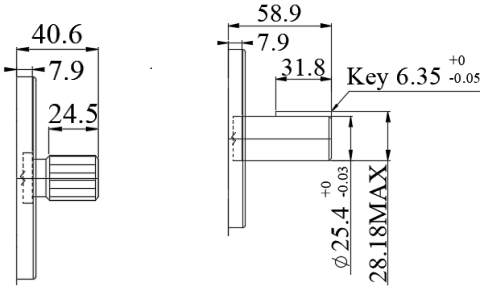


⑥ **Design letter**

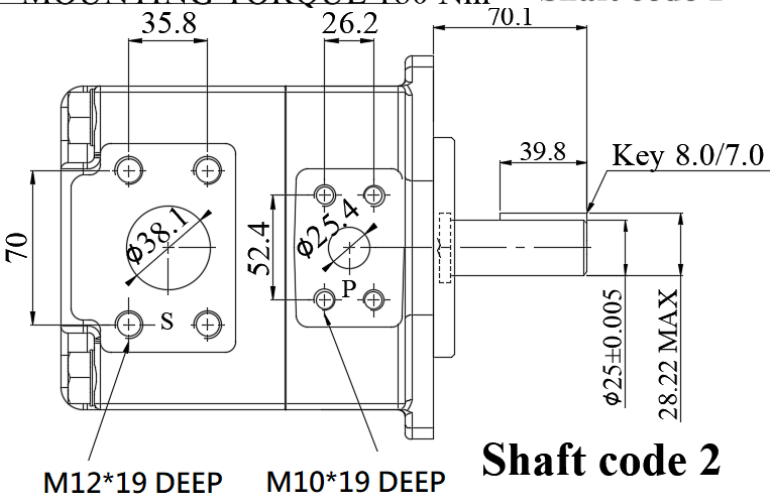
4SMP Dimensional Drawing





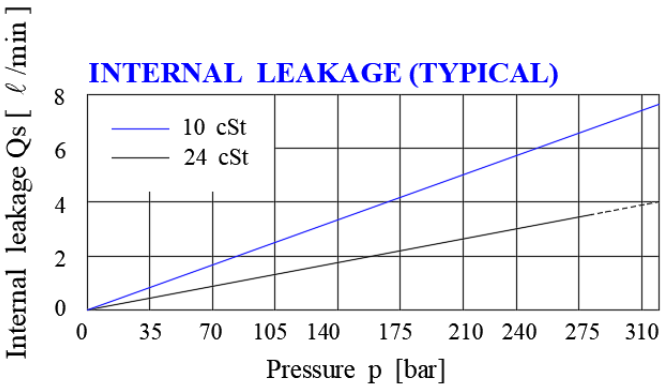


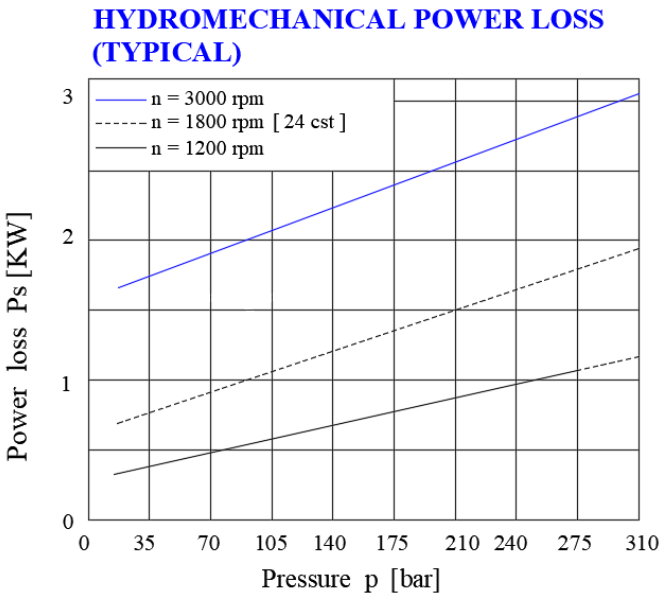
Shaft code 3 **Shaft code 5**

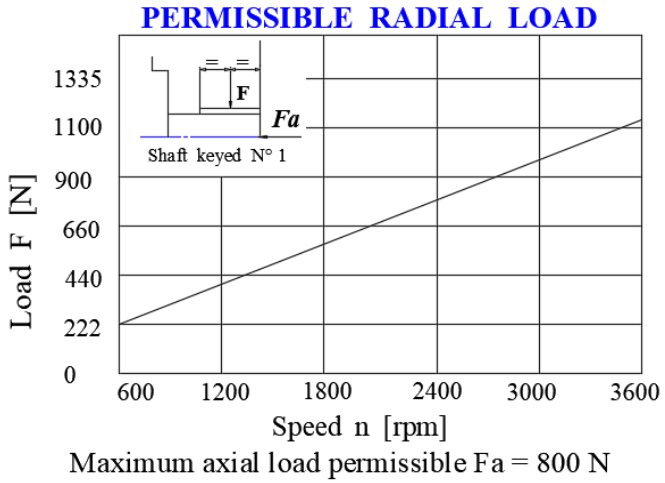


SAE B
Splined Shaft
Class 1-J498 b
16/32 dp.-13 teeth
30∘Pressure angle.
Flat root side fit.

心軸扭力限制 (mL/rev x bar)	
Shaft	**Vp x P max**
1	**16516**
2	**20620**
3	**20620**
5	**20620**







Maximum axial load permissible Fa = 800 N

RPM	Oil Temperature	Oil Viscosity	Remark
1800	40	VG32	泵重 23.5 Kg

Model	流量	0 Bar	140 Bar	290 Bar	P Max Bar (10 秒)	Max RPM
16	15.9 cc	28.6	26.9	25.1	320	3000
22	22.5 cc	40.4	38.8	37.1	320	
25	24.9 cc	44.7	43.1	41.3	320	
28	28.0 cc	50.3	48.6	46.8	320	
32	31.8 cc	57.2	55.5	53.7	320	
41	40.9 cc	73.7	72.1	70.4	300	
45	45.1 cc	80.8	79.3	77.7	300	
50	50.0 cc	89.8	88.3	86.7	280	

5SMP1 Ordering Code & Dimensions

5SMP1 – C58 – 1 – R 00 – A
① ② ③ ④⑤ ⑥

① **5SMP1 系列：適用低轉速節能定量葉片泵**
5：5” 安裝，SMP：節能使用泵

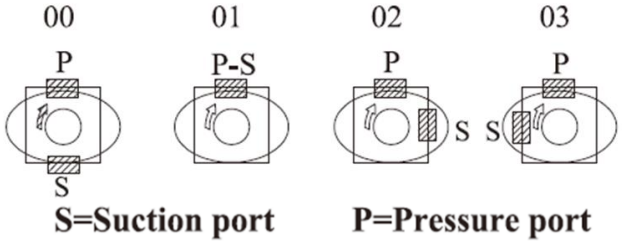
② **Cam ring for “ P1 “ (P1 流量)**
Volumetric displacement (cm^3/rev)

C58=58.3 C70=70.3
C64=64.8 C79=79.3

③ **Type of Shaft (心軸種類)**
1、 Keyed (Ø31.75 key7.94)

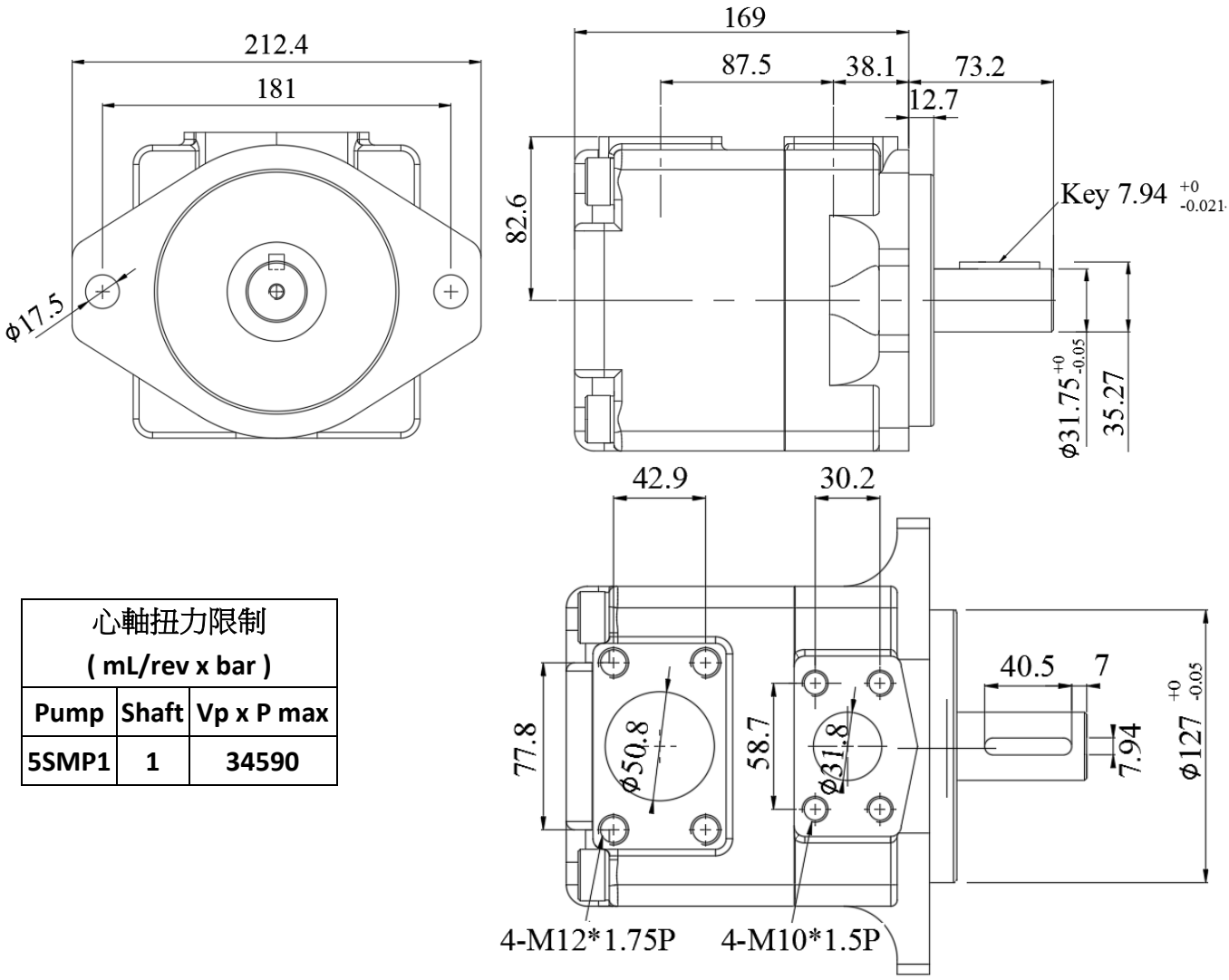
④ **Rotation (轉向，面對心軸)**
R： Clockwise (正)
L： Anti-Clockwise(反)

⑤ **Porting combination (油口方向)**
00 = standard



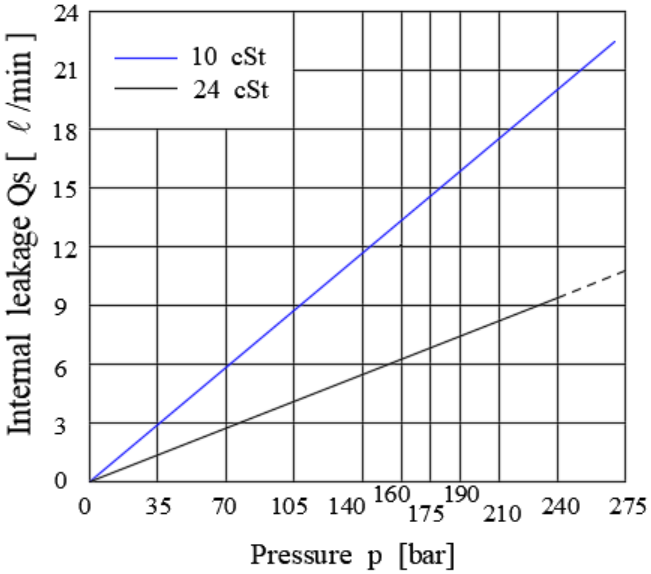
⑥ Design letter

5SMP1 Dimensional Drawing



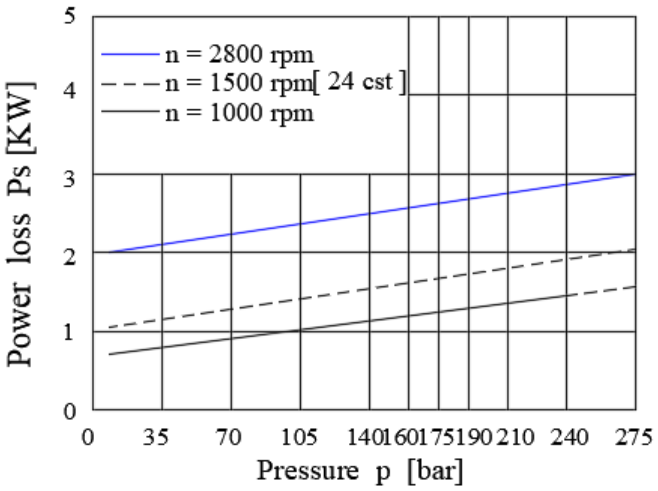
心軸扭力限制 (mL/rev x bar)		
Pump	**Shaft**	**Vp x P max**
5SMP1	**1**	**34590**

INTERNAL LEAKAGE (TYPICAL)

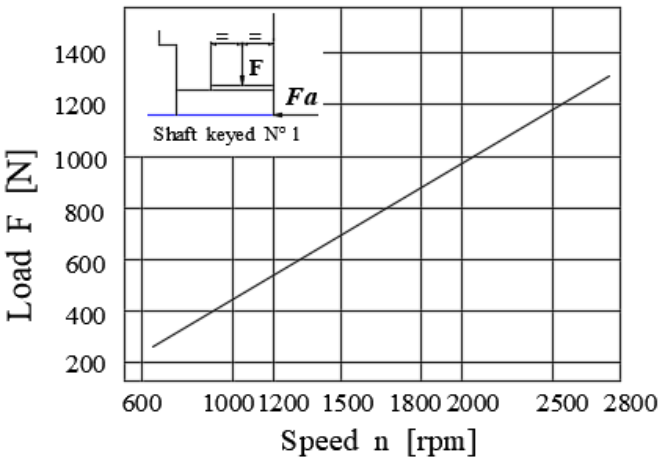


Do not operate pump more than5 seconds at any speed or viscosity if internal leakage is more than 50 % of theoretical flow.

HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 800 N

RPM	Oil Temperature	Oil Viscosity	Remark
1800	40	VG32	泵重 26.5 Kg

Model	流量	0 Bar	140 Bar	240 Bar	P Max Bar (10 秒)	Max RPM
58	58.3 cc	104.9	99.5	95.0	275	2800
63	63.8 cc	114.8	109.3	104.8		
70	70.3 cc	126.5	121.1	116.6		
79	79.3 cc	142.7	137.3	132.8		2500

5SMP2 Ordering Code & Dimensions

5SMP2 – D66 – 1 – R 00 – A
① ② ③ ④⑤ ⑥

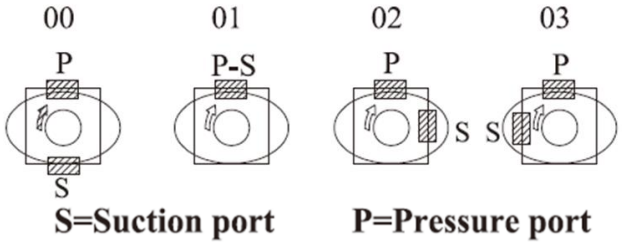
① **5SMP2 系列：適用低轉速節能定量葉片泵**
5：5" 安裝， SMP：節能使用泵

② **Cam ring for " P1 " (P1 流量)**
Volumetric displacement (cm^3/rev)
66=66.0 113=113.4
81=81.1 120=120.6
90=89.9 137=137.5
99=99.1

③ **Type of Shaft (心軸種類)**
1、 Keyed (Ø31.75 key7.94)
2、 Keyed (Ø34.9 key7.94)

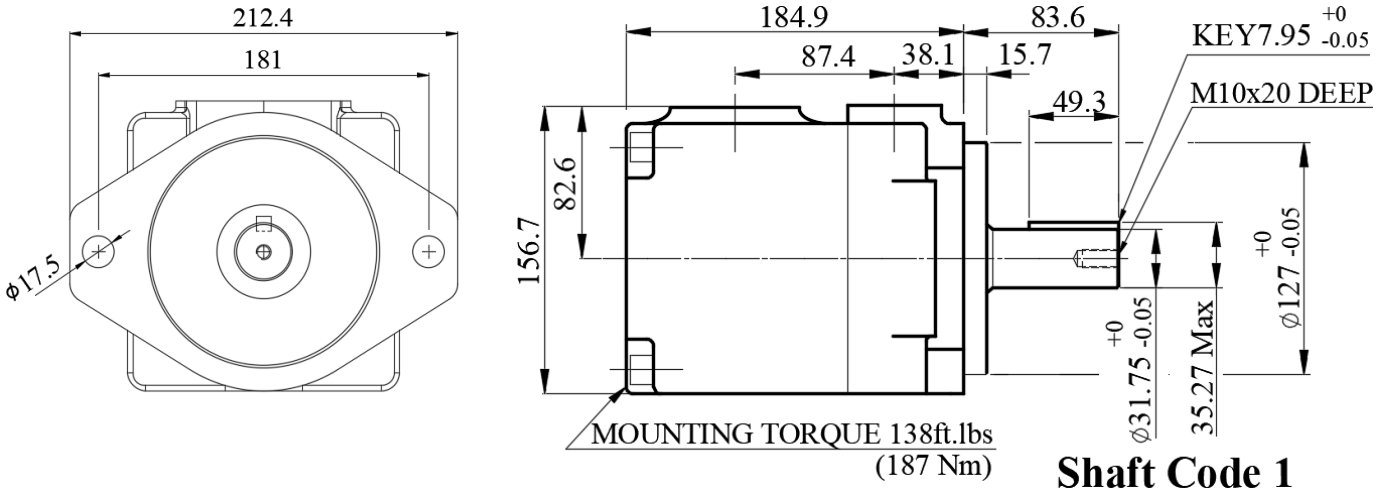
④ **Rotation (轉向，面對心軸)**
R： Clockwise (正)
L： Anti-Clockwise(反)

⑤ **Porting combination**
00 = standard

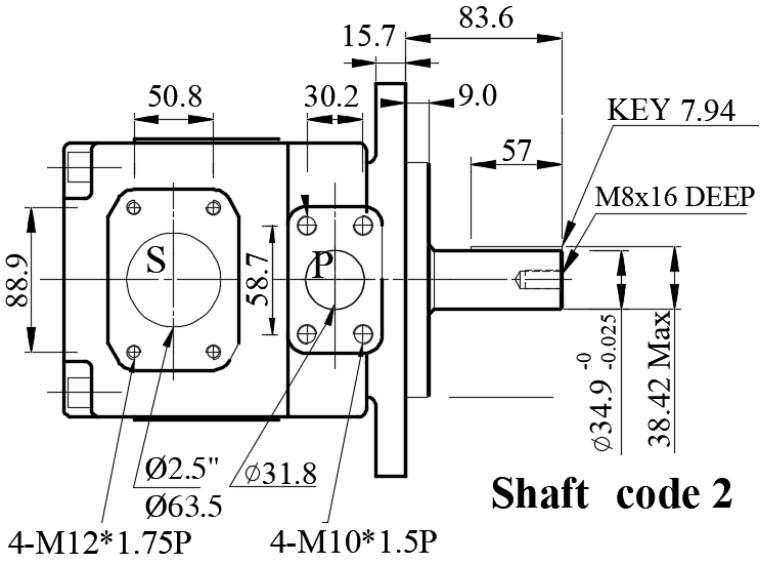


⑥ **Design letter**

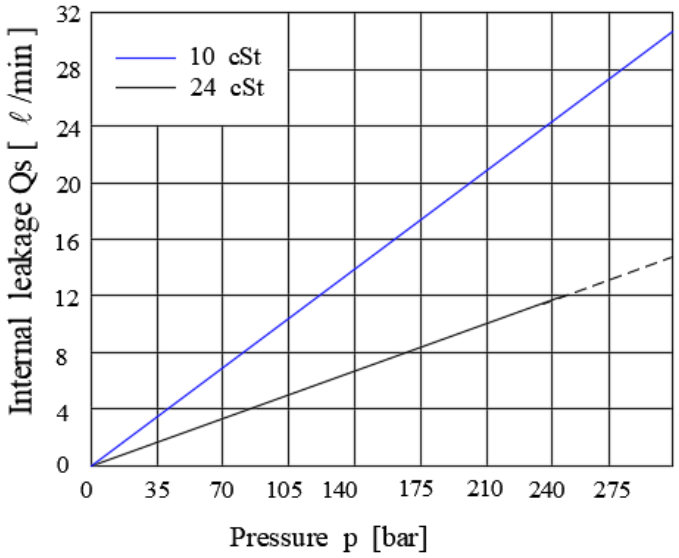
5SMP2 Dimensional Drawing



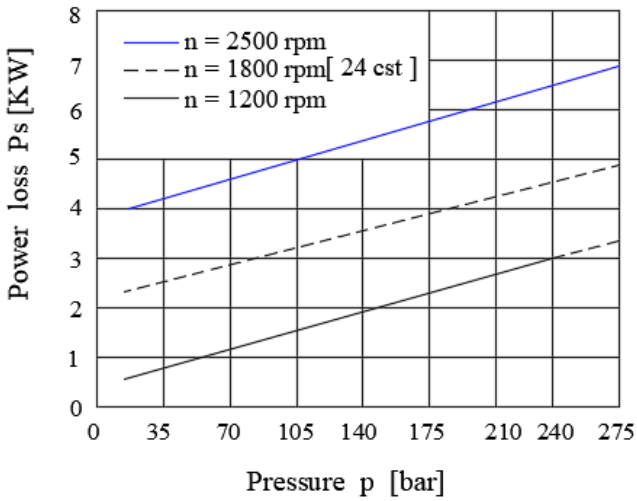
心軸扭力限制 (mL/rev x bar)		
Pump	**Shaft**	**Vp x P max**
5SMP2	**1**	**43283**
	2	**51684**



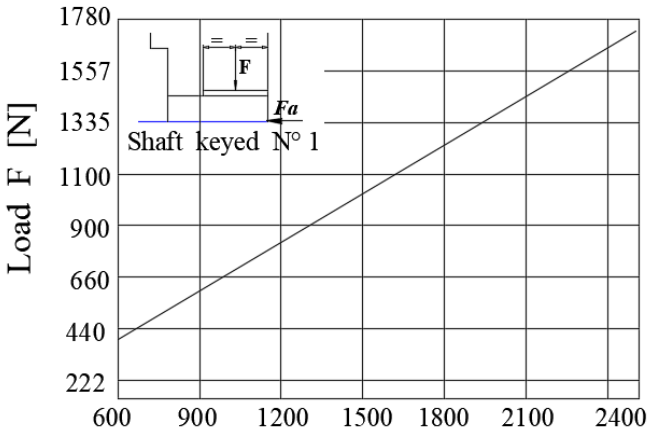
INTERNAL LEAKAGE (TYPICAL)



HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



RPM	Oil Temperature	Oil Viscosity	Remark
1800	40	VG32	泵重 28.2 Kg

Model	流量	0 Bar	140 Bar	240 Bar	P Max Bar (10 秒)	Max RPM
66	66.0 cc	118.6	112.0	105.4	300	3000
81	81.1 cc	145.8	139.2	126.0		
90	89.9 cc	161.8	155.2	142.0		
99	99.1 cc	178.3	171.7	158.5		
113	113.4 cc	203.9	197.2	184.0	280	
120	120.6 cc	216.8	210.2	197.0		
137	137.5 cc	247.2	240.6	235.8	260	

KCL

42SMP Ordering Code

42SMP – B16 – B22 – 1 R 00 – A 1 – M0 *

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① **Series**

42 : 4”安裝 (雙聯泵)

SMP：節能使用泵

② **Cam ring for “P1”(流量)**

Volumetric displacement (cm^3/rev)

B16 =15.9	B28 =28.0	B41 =40.9
B22 =22.5	B32 =31.8	B45 =45.1
B25 =24.9	B35 =34.9	B50 =50.0

③ **Cam ring for “P2”(流量)**

Volumetric displacement (cm^3/rev)

B16 =15.9	B28 =28.0	B41 =40.9
B22 =22.5	B32 =31.8	B45 =45.1
B25 =24.9	B35 =34.9	B50 =50.0

④ **Type of shaft (心軸種類)**

1= Keyed (ϕ 25.40 key 6.35 x 38.1)

2= Keyed (ϕ 31.75 key 7.94 x 38.1)

⑤ **Direction of rotation (轉向)**

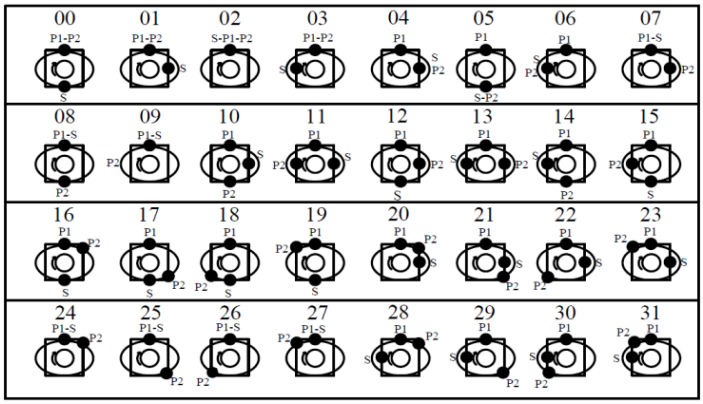
(view on shaft end)

R = clockwise (正轉)

L = counter-clockwise (反轉)

⑥ **Porting combination** (油口組合，面對心軸)

00 – standard



⑦ **Design letter**

⑧ **Seal class**

1= S1 (for mineral oil)

4= S4 (for fire resistant fluids)

5= S5 (for mineral oil and fire resistant fluids)

⑨ **Mounting W/connection variables**

M0 = 公制牙

(P1 & P2 = 1”， S = 2.5”)

⑩ **Modifications**

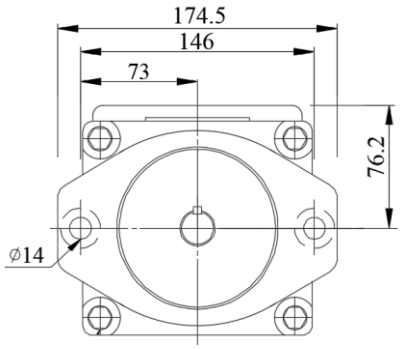
Operating Characteristics – Typical [24cSt]

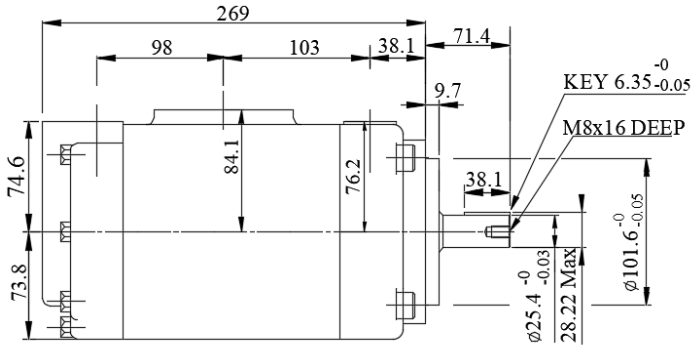
(泵重：34.9 Kg)

Pressure Port	Series	Volumetric Displacement Vp	Flow qve = 1800 rpm (ℓ/min)			Input power P = 1800 rpm (KW)			P Max Kgf/cm²	Max r.p.m
		Cm³/rev	P=0 bar	P=140 bar	P=320 bar	P=7 bar	P=140 bar	P=320 bar		
P1~P2	16	15.9	28.6	26.9	24.7	0.76	7.17	16.12	320	3600
	22	22.5	40.4	38.8	36.5	0.89	9.91	22.47		
	25	24.9	44.7	43.1	40.9	0.94	10.9	24.78		
	28	28.0	50.3	48.6	46.4	1.01	12.19	27.77		
	32	31.8	57.2	55.5	53.4	1.11	13.75	31.42		
	35	34.9	62.9	61.2	59.0	1.15	15.04	32.22	300	
	41	40.9	73.7	72.1	70.1	1.28	17.56	37.71		
	45	45.1	80.8	79.2	77.0	1.36	19.23	41.37		
	50	50.0	89.8	88.3	86.5	1.47	21.28	42.76	280	

KCL

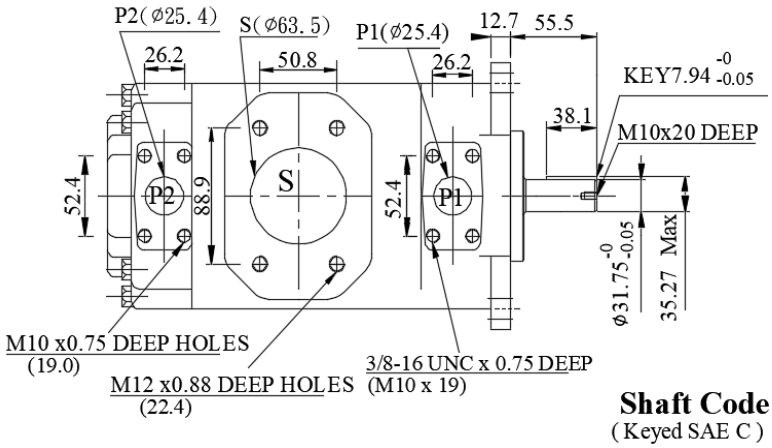
42SMP Dimensions and Technical data





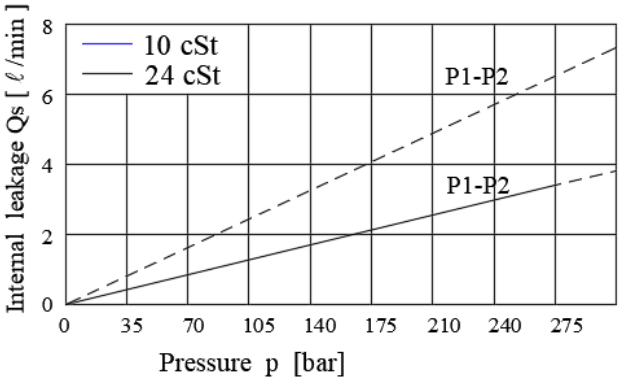
Shaft Code 1
(Keyed SAE BB)

心軸扭力限制 (mL/rev x bar)		
Pump	Shaft	Vp x P max
42SMP	1	21420
	2	43240

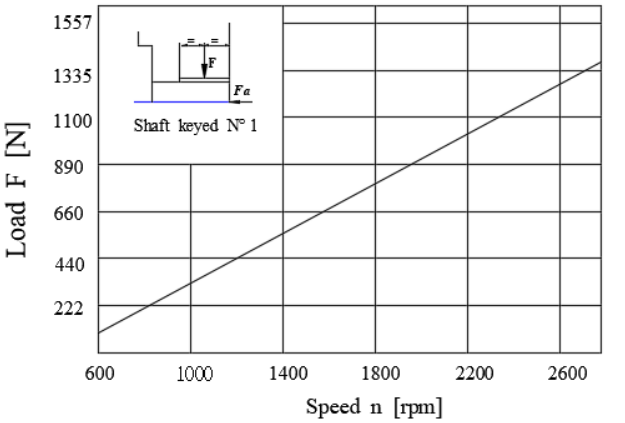


Shaft Code 2
(Keyed SAE C)

INTERNAL LEAKAGE (TYPICAL)

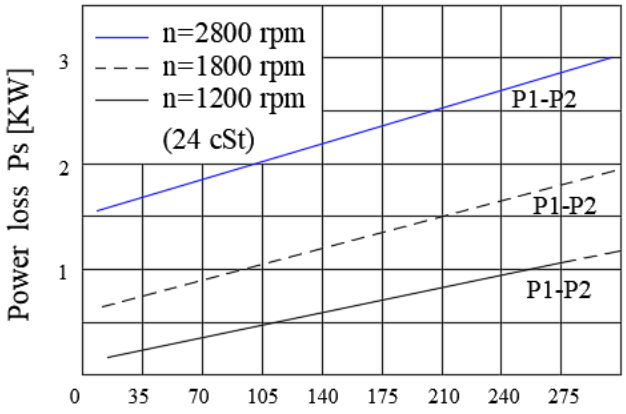


PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 800 N

HYDROMECHANICAL POWER LOSS (TYPICAL)



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

KCL

52SMP Ordering Code

52SMP – C58 – B50 – 1 R 00 – A 1 – M0 *

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Series

52： 5”安裝 (雙聯泵)

SMP：節能使用泵

② Cam ring for “P1” (流量)

Volumetric displacement (cm^3/rev)

C58 = 58.3 C70 = 70.3

C63 = 63.8 C79 = 79.3

③ Cam ring for “P2” (流量)

Volumetric displacement (cm^3/rev)

B16 =15.9 B28 =28.0 B41 =40.9

B22 =22.5 B32 =31.8 B45 =45.1

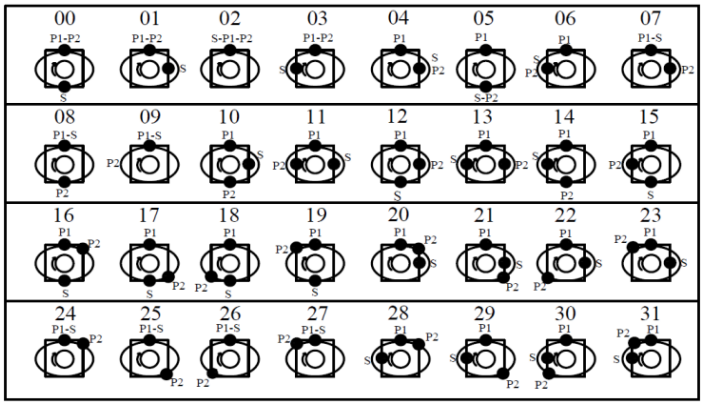
B25 =24.9 B35 =34.9 B50 =50.0

④ Type of shaft (心軸種類)

1= Keyed (ϕ 31.75 key 7.94 x 38.1)

⑥ Porting combination (油口組合，面對心軸)

00 – standard



⑦ Design letter

⑧ Seal class

1= S1 (for mineral oil)

4= S4 (for fire resistant fluids)

5= S5 (for mineral oil and fire resistant fluids)

⑤ Direction of rotation (轉向)
(view on shaft end)
R = clockwise (正轉)
L = counter-clockwise (反轉)

⑨ Mounting W/connection variables
M0 = 公制牙
(P1 & P2 = 1" , S = 3")

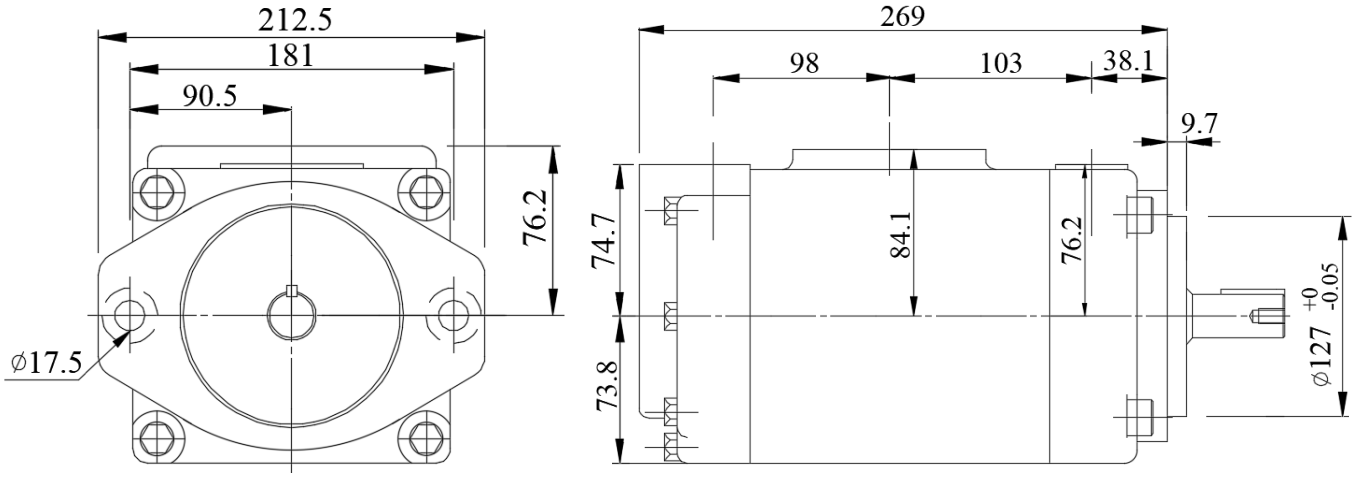
⑩ Modifications

Operating Characteristics – Typical [24cSt] (泵重：34.9 Kg)

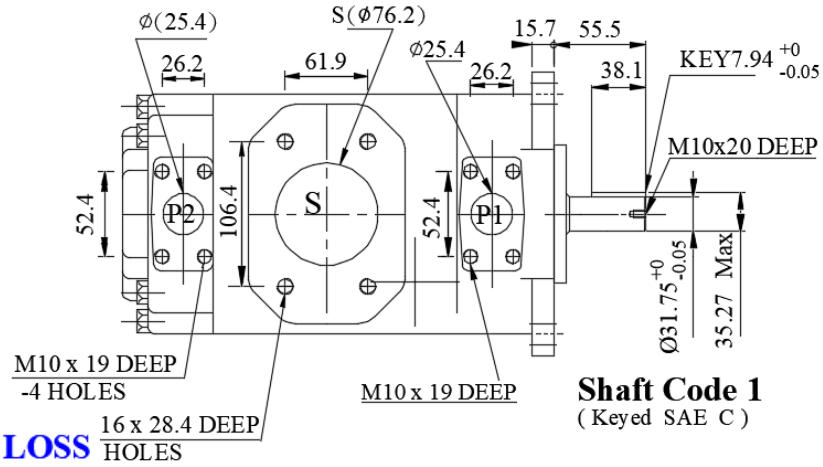
Pressure Port	Series	Volumetric Displacement Vp	Flow qve = 1800 rpm (ℓ/min)			Input power P = 1800 rpm(KW)			P Max Kgf/cm^2	Max r.p.m
		Cm^3/rev	P=0 bar	P=140 bar	P=275 bar	P=7 bar	P=140 bar	P=275 bar		
P1	58	58.3	104.8	99.9	95.3	2.55	25.95	44.54	275	2500
	63	63.8	114.7	109.8	105.2	2.66	28.23	48.52		
	73	70.3	126.4	121.5	116.9	2.8	30.92	53.22		
	79	79.3	142.5	137.6	133.1	2.99	34.64	59.74		
P2		Cm^3/rev	P=0 bar	P=140 bar	P=320 bar	P=7 bar	P=140 bar	P=320 bar	320	
	16	28.6	26.9	24.7	24.7	0.76	7.17	16.12		
	22	22.5	40.4	38.8	36.5	0.89	9.91	22.47		
	25	24.9	44.7	43.1	40.9	0.94	10.9	24.78		
	28	28.0	50.3	48.6	46.4	1.01	12.19	27.77		
	32	31.8	57.2	55.5	53.4	1.11	13.75	31.42		
	35	34.9	62.9	61.2	59.0	1.15	15.04	32.22	300	
	41	40.9	73.7	72.1	70.1	1.28	17.56	37.71		
	45	45.1	80.8	79.2	77.0	1.36	19.23	41.37		
	50	50.0	89.8	88.3	86.5	1.47	21.28	42.76	280	

KCL

52SMP Dimensions and Technical data

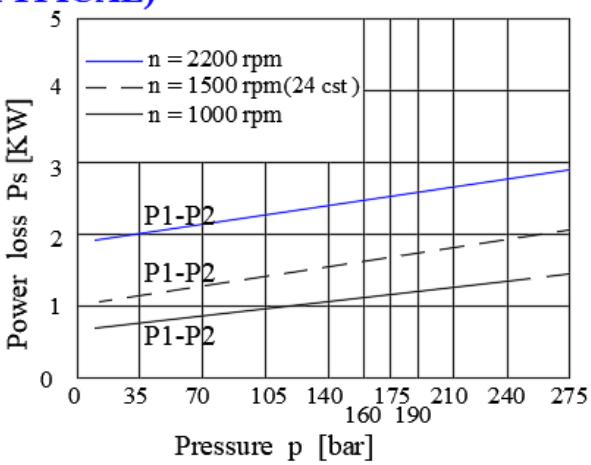


心軸扭力限制 (mL/rev x bar)		
Pump	Shaft	Vp x P max
52SMP	1	34590

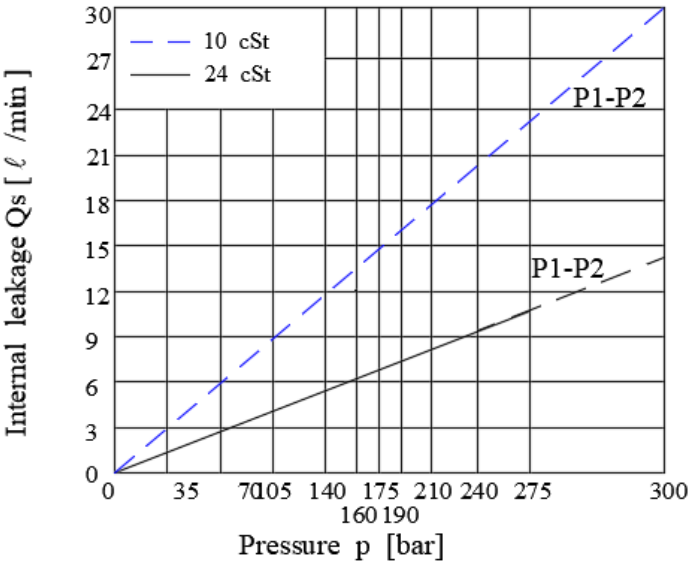


Shaft Code 1
(Keyed SAE C)

HYDROMECHANICAL POWER LOSS (TYPICAL)

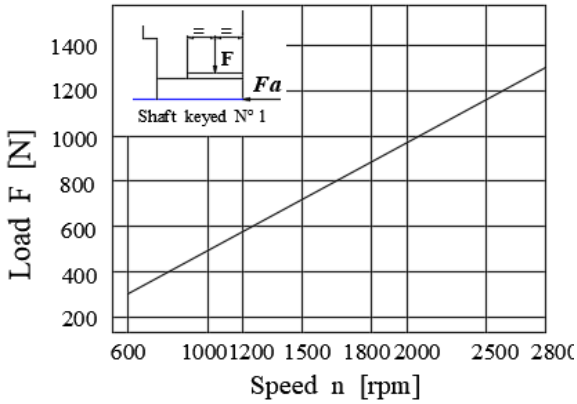


INTERNAL LEAKAGE (TYPICAL)



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

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 800 N

KCL

54SMP Ordering Code

54SMP – D66 – C26 – 1 R 00 – A 1 – M0 *

① ② ③ ④⑤⑥ ⑦⑧ ⑨ ⑩

① Series

54 : 5” 安裝(雙聯泵)

SMP：節能使用泵

② Cam ring for “P1” (流量)

Volumetric displacement (cm^3/rev)

D66=66.0 D113=113.4

D81=81.1 D120=120.6

D90=89.9 D137=137.5

D99=99.1

③ Cam ring for “P2” (流量)

Volumetric displacement (cm^3/rev)

C26=26.4 C46 =46.0

C34=34.1 C58 =58.3

C37=37.1 C63 =63.8

④ Type of shaft (心軸種類)

1= Keyed (ϕ 31.75 key 7.94 x 49.3)

2= Keyed (ϕ 34.90 key 7.94 x 57.0)

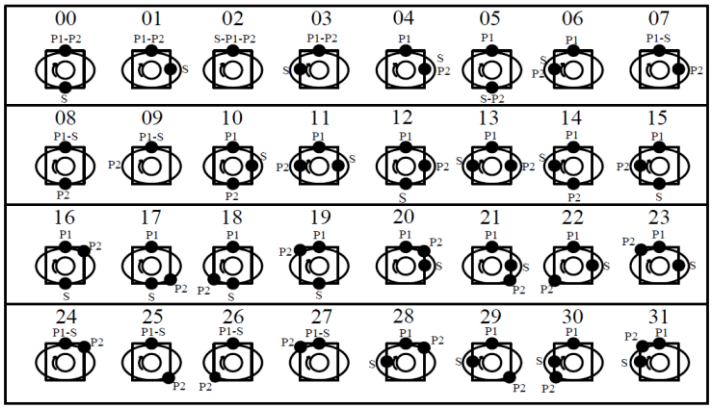
⑤ Direction of rotation (轉向)
(view on shaft end)

R = clockwise (正轉)

L = counter-clockwise (反轉)

⑥ Porting combination (油口組合，面對心軸)

00 – standard



⑦ Design letter

⑧ Seal class

1= S1 (for mineral oil)

4= S4 (for fire resistant fluids)

5= S5 (for mineral oil and fire resistant fluids)

⑨ Mounting W/connection variables

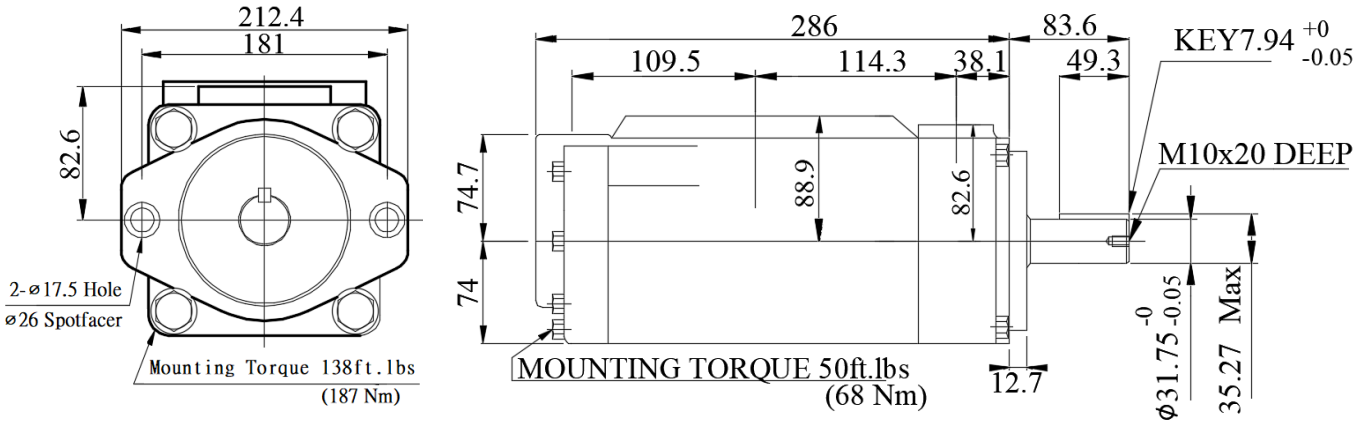
M0 = 公制牙

(P1=$1^1/_4$ ”, P2 = 1”, S = 3”)

⑩ Modifications

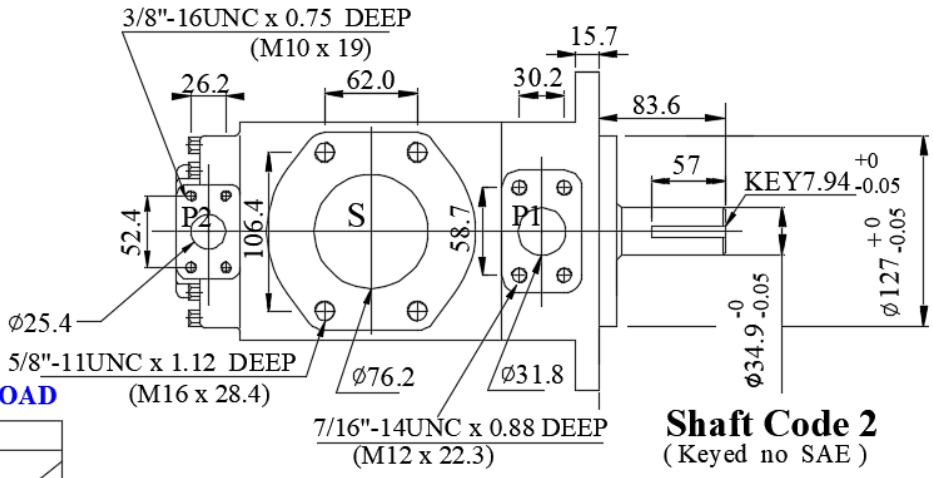
Operating Characteristics – Typical [24cSt] (泵重：38.2 Kg)

Pressure Port	Series	Volumetric Displacement Vp	Flow qve = 1800 rpm (ℓ/min)			Input power P = 1800rpm (KW)			P Max Kgf/cm^2	Max r.p.m
		Cm^3/rev	P=0 bar	P=140 bar	P=250 bar	P=7 bar	P=140 bar	P=250 bar		
P1	66	66.0	118.6	112.0	106.8	3.0	29.8	50.9	300	2500
	81	81.1	145.8	139.2	134.0	3.4	36.1	61.9		
	90	89.9	161.8	155.2	150.0	3.5	39.7	68.3		
	99	99.1	178.3	171.7	166.5	3.7	43.6	75.0		
	113	113.4	203.9	197.2	192.0	4.0	49.4	85.3		
	120	120.6	216.8	210.2	204.9	4.2	52.4	90.5		
	137	137.5	247.2	240.6	235.4	4.5	59.4	102.7		
P2		Cm^3/rev	P=0 bar	P=140 bar	P=300 bar	P=7 bar	P=140 bar	P=300 bar	275	
	26	26.4	47.4	42.6	30.72	1.89	12.75	26.16		
	34	34.1	61.3	56.4	44.64	2.06	15.94	33.0		
	37	37.1	66.7	61.8	50.04	2.11	17.18	35.4		
	46	46.0	82.7	77.8	66.0	2.3	20.87	43.8		
	58	58.3	104.8	99.9	88.2	2.55	25.95	54.84		
	63	63.8	114.7	109.8	98.04	2.66	28.23	59.76		



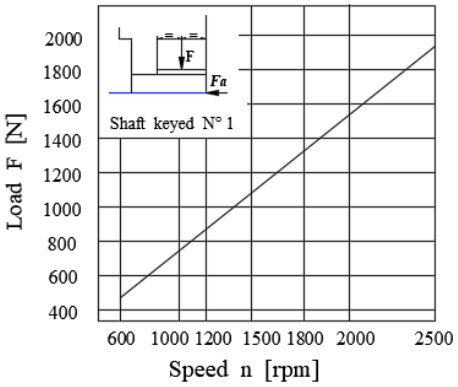
Shaft Code 1
(Keyed SAE C)

心軸扭力限制 (mL/rev x bar)		
Pump	**Shaft**	**Vp x P max**
54SMP	**1**	**43240**
	2	**55600**



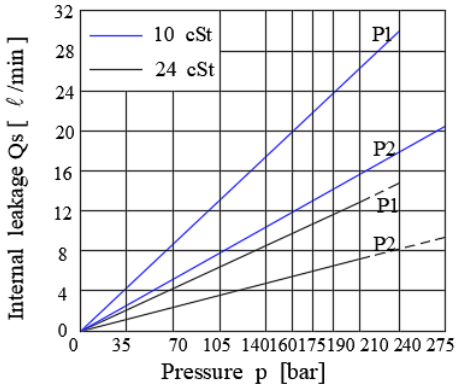
Shaft Code 2
(Keyed no SAE)

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 1200 N

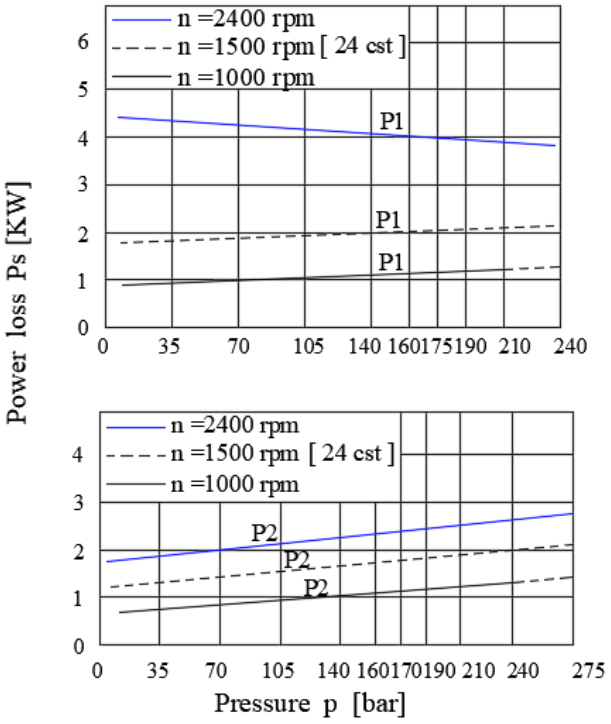
INTERNAL LEAKAGE (TYPICAL)



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.

HYDROMECHANICAL POWER LOSS (TYPICAL)



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

55SMP – D81 – D66 – 1 R 00 – A 1 – M0 *

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Series
55： 5” 安裝(雙聯泵)
SMP：節能使用泵

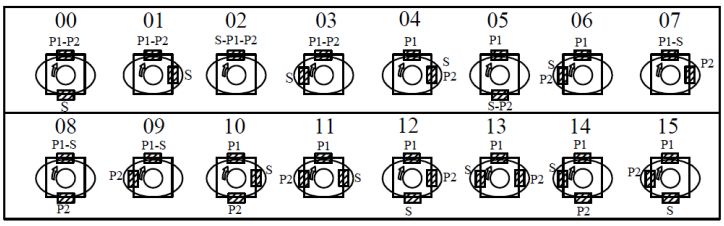
② Cam ring for “P1” (流量)
Volumetric displacement (cm^3/rev)
D66=66.0 D113=113.4
D81=81.1 D120=120.6
D90=89.9 D137=137.5
D99=99.1

③ Cam ring for “P2” (流量)
Volumetric displacement (cm^3/rev)
D66=66.0 D113=113.4
D81=81.1 D120=120.6
D90=89.9 D137=137.5
D99=99.1

④ Type of shaft (心軸種類)
1= Keyed (ϕ 38.1 key 9.52 x 55.0)

⑤ Direction of rotation (轉向)
(view on shaft end)
R = clockwise (正轉)
L = counter-clockwise(反轉)

⑥ Porting combination (油口組合，面對心軸)
00 – standard



⑦ Design letter

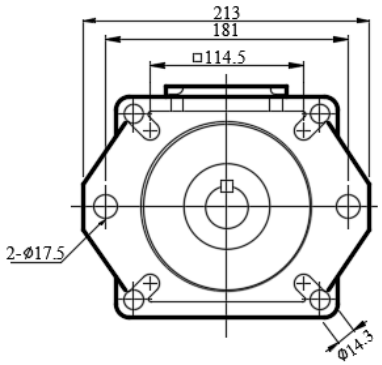
⑧ Seal class
1= S1 (for mineral oil)
4= S4 (for fire resistant fluids)
5= S5 (for mineral oil and fire resistant fluids)

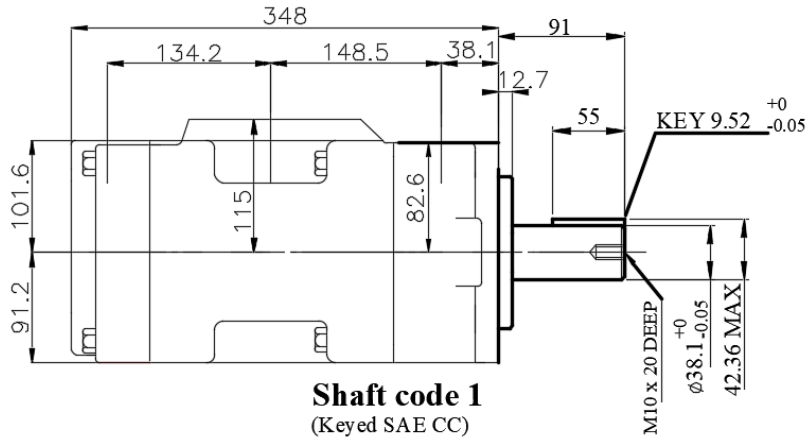
⑨ Mounting w/connection variables
M0 = 公制牙
(P1 & P2 = $1\frac{1}{4}$”, S = 4”)

⑩ Modifications

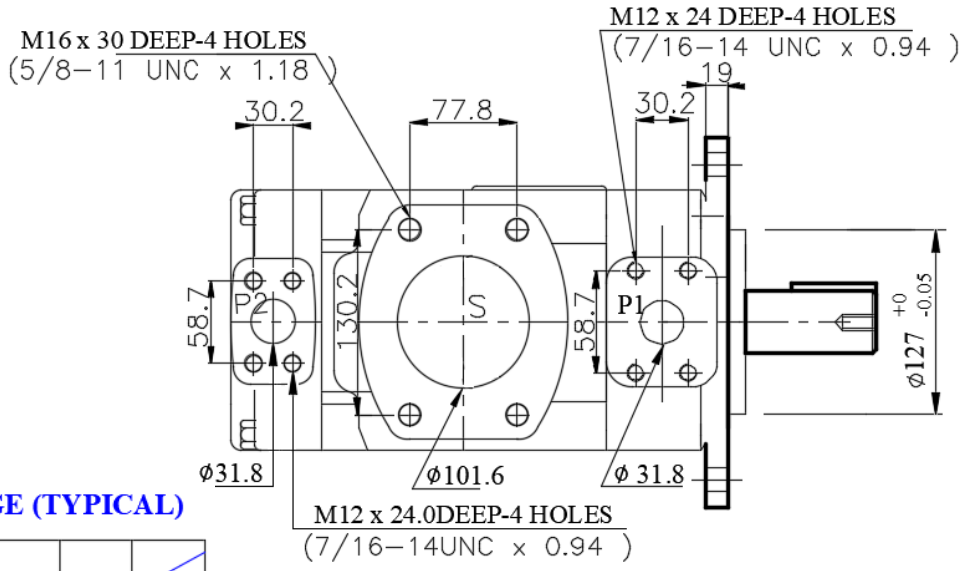
Operating Characteristics – Typical [24cSt] (泵重：37.7 Kg)

Pressure Port	Series	Volumetric Displacement Vp	Flow qve = 1800 rpm (ℓ/min)			Input power P = 1800 rpm (KW)			P Max	Max
		Cm^3/rev	P=0 bar	P=140 bar	P=300 bar	P=7 bar	P=140 bar	P=300 bar	Kgf/cm^2	r.p.m
P1~P2	66	66.0	118.6	112.0	104.5	3.0	29.8	63.6	300	3000
	81	81.1	145.8	139.2	131.6	3.4	36.1	77.4		
	90	89.9	161.8	155.2	147.6	3.5	39.7	85.5		
	99	99.1	178.3	171.7	164.2	3.7	43.6	93.7		
	113	113.4	203.9	197.2	190.6	4.0	49.4	97.2	280	
	120	120.6	216.8	210.2	203.6	4.2	52.4	103.2		
	137	137.5	247.2	240.6	234.9	4.5	59.4	111.4	260	



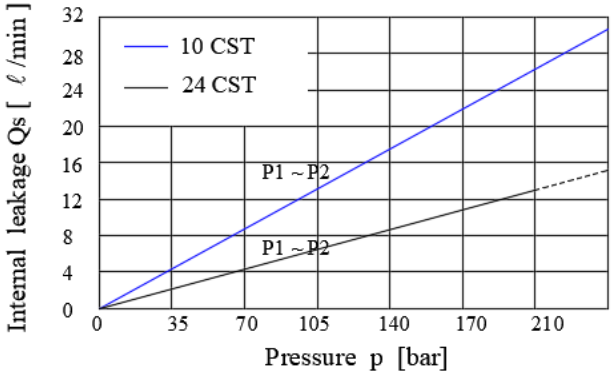


Shaft code 1
(Keyed SAE CC)



心軸扭力限制 (mL/rev x bar)		
Pump	**Shaft**	**Vp x P max**
55SMP	**1**	**61200**

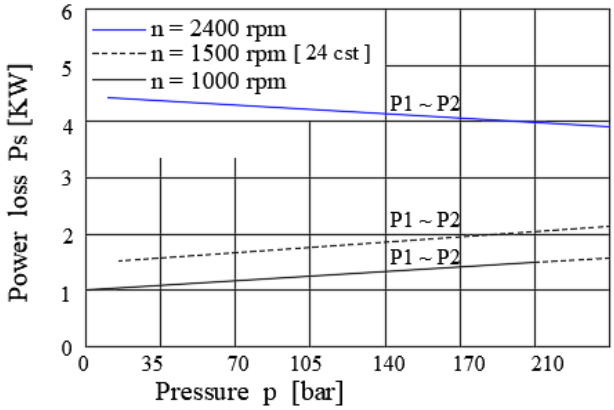
INTERNAL LEAKAGE (TYPICAL)



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

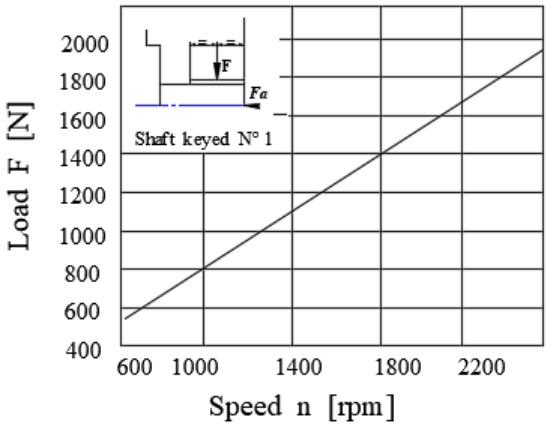
Total leakage is the sum of each section loss at its operating conditions.

HYDROMECHANICAL POWER LOSS (TYPICAL)



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

PERMISSIBLE RADIAL LOAD



Maximum axial load permissible Fa = 1200 N

KCL

66SMP Ordering Code

66SMP – E132 – E132 – 1 R 00 – A 1 – M0 *

① ② ③④⑤ ⑥⑦ ⑧ ⑨

① Series

66 : 6.5” 安裝(雙聯泵)

SMP：節能使用泵

② Cam ring for “P1” & “P2” (流量)

Volumetric displacement (cm^3/rev)

E132=132.3	E181=180.7
E142=142.4	E197=196.7
E159=158.5	E213=213.3
E165=164.8	E227=227.1

③ Type of shaft (心軸種類)

1= Keyed (Ø38.1 key 9.52 x 55.0)

2= Keyed (Ø45.0 key 14.0/9.0 x63)

3= Splined (12/24dp. 17 teeth)

5= Keyed (Ø44.45 key11.11x63.5)

④ Direction of rotation (轉向)

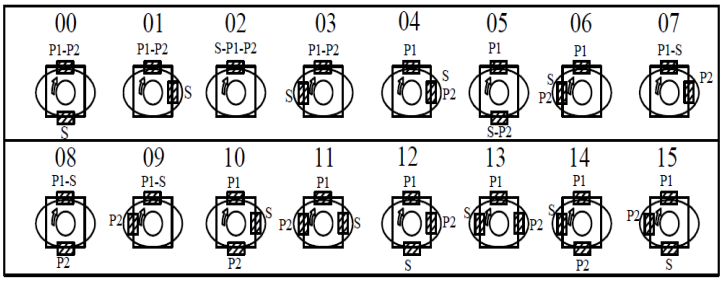
(view on shaft end)

R = clockwise (正轉)

L = counter-clockwise(反轉)

⑤ Porting combination (油口組合，面對心軸)

00 – standard



⑥ Design letter

⑦ Seal class

1= S1 (for mineral oil)

4= S4 (for fire resistant fluids)

5= S5 (for mineral oil and fire-resistant fluids)

⑧ Mounting w/ connection variables

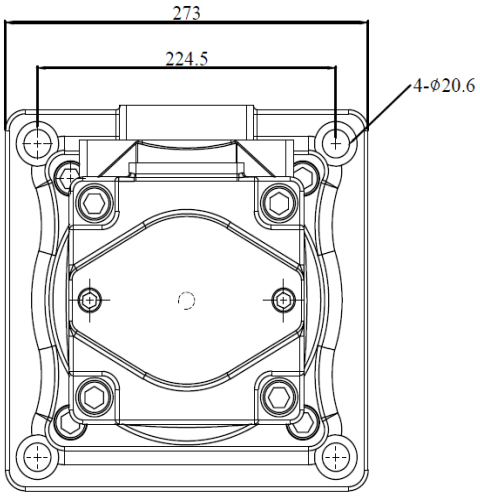
M0 = 公制牙

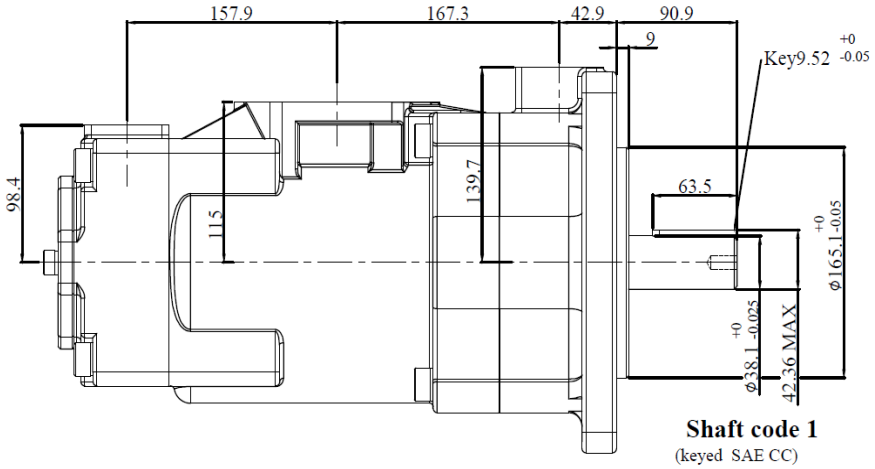
P1 & P2 = $1\frac{1}{2}$” S = 4”)

⑨ Modifications

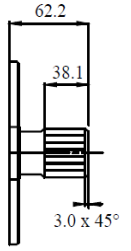
Operating Characteristics – Typical [24 cSt] (泵重：102.4 Kg)

Pressure Port	Series	Volumetric Displacement Vp	Flow qve = 1500 rpm (ℓ/min)			Input power P = 1500 rpm (KW)			P Max Kgf/cm^2	Max r.p.m
		Cm^3/rev	P=0 bar	P=140 bar	P=240 bar	P=7 bar	P=140 bar	P=300 bar		
P1~P2	E132	132.3	198.5	188.5	181.3	5.2	49.4	82.6	240	2200
	E142	142.4	213.6	203.6	196.5	5.4	52.9	88.7		
	E159	158.5	237.7	227.7	220.6	5.7	58.5	98.3		
	E165	164.8	247.2	237.2	230.1	5.8	60.8	102.1		
	E181	180.7	271.1	261.1	254.0	6.1	66.4	106.9		
	E197	196.7	295.0	285.0	277.9	6.4	71.9	121.3		
	E213	213.3	319.9	309.9	302.8	6.7	77.7	131.2		
	E227	227.1	340.6	330.6	323.5	6.9	82.6	139.5		

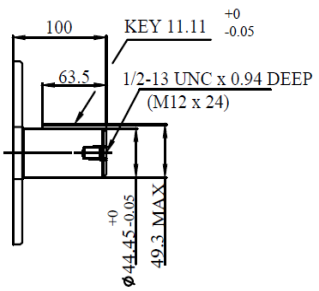




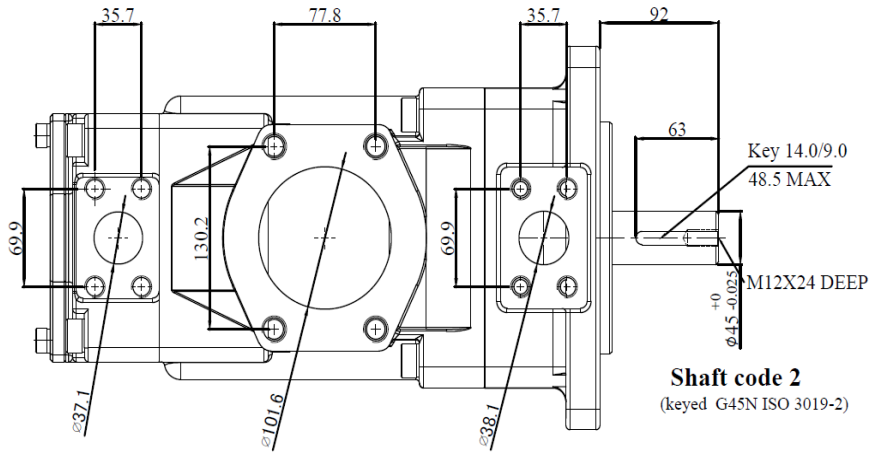
Shaft code 1
(keyed SAE CC)



Shaft code 3
SAE CC Splined shaft
Class 1- J498b
12/24dp. 17 teeth
30° pressureangle
Flat root side fit

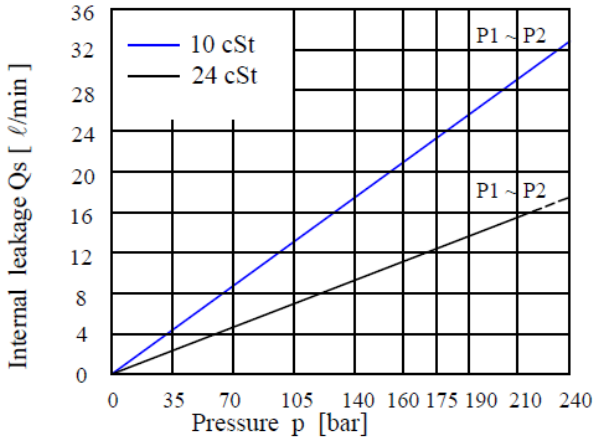


Shaft code 5
(keyed SAE D&E)



Shaft code 2
(keyed G45N ISO 3019-2)

INTERNAL LEAKAGE (TYPICAL)

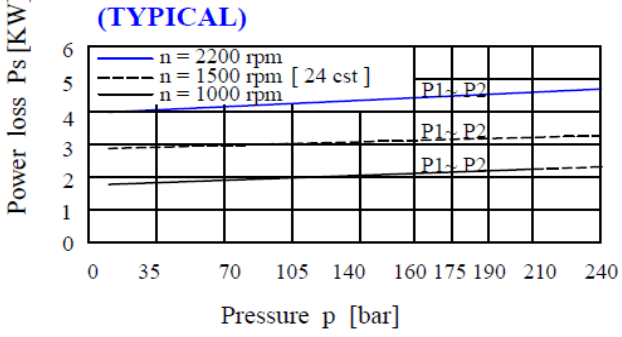


心軸扭力限制 (mℓ/rev x bar)			
Shaft	**Vi x P max**	**Copling**	**Vi x P max.**
1	**90380**	**SAE-B**	**20600**
2	**114600**	**SAE-BB**	**32670**
3	**126800**		
5	**110840**		

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

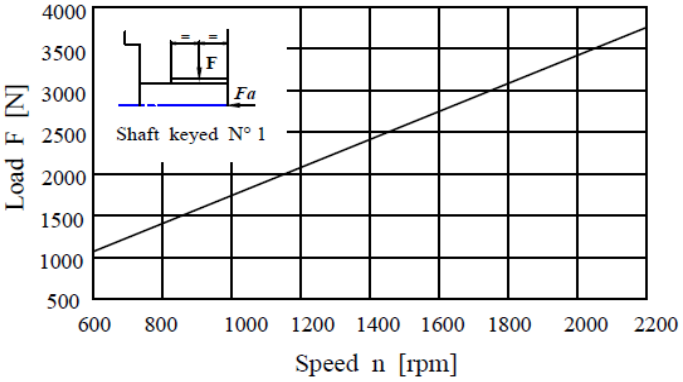
Total leakage is the sum of each section loss at its operating conditions.

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

版本修訂

日期	修改項目	原內容	修正內容
2018.09.28	注意事項 第一條	油泵出油口不宜安裝止逆閥。	油泵的進油口與出油口皆不可安裝止逆閥。
2018.12.05	注意事項 第三條	-	加注“(瞬間壓力)“
2018.12.07	注意事項 第十四條	-	新增”泵浦出油口，須加裝高壓過濾網”