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Care in Application (High Pressure Variable Vane Pump) 高壓變量泵使用注意事項

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Care in Application

1.Power Unit Circuit

In variable displacement vane Pump systems , the close circuit is recommended.

2.Shaft Rotation

Clockwise rotation viewed from the shaft end is standard.

3.Fluids Permissible

When working pressure lower than 70 bar , Hydraulic oil with a viscosity from 30 ~ 50(cst), (VG32) at 40°C is recommended.

4.Drain Pipe

External drain control type. Drain connection,must be piped directly to tank and backpressure must not exceed 0.3 bar.

5.Discharge port line must connect **check valve**

Discharge port line must connect **check valve** and cracking pressure must not exceed 0.5 bar

6.Oil Temperature Range

Oil temperature range should be from 15°C~60°C during running operation and should be more than 7°C at starting.

7.Alignment and Installation of Pumps

In case the pump is connected to an electric motor , limit the defection of the alignment between the shafts to 0.05 mm TIR , and angle ± 1 degree.Be sured the electric motor direction is accordingly with the pump's shaft before starting.

8.Suction Port min. Pressure

Suction port minimum working pressure is ± 0.03 bar.

9.Cautions for Starting

When the pump is to be operated for the first time , place the pump delivery side in NO-Load condition and repeat starting and stopping of the motor for several times to eject the air from,inside of the pump and piping. If keep on 10 minutes operation will be much better.

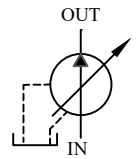
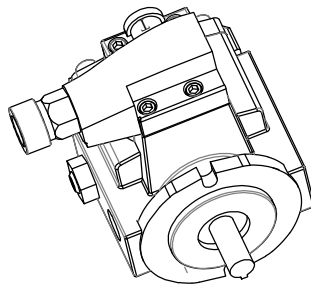
Make sure the maximum peak pressure (setting pressure + surge pressure) during operation does not exceed 14Mpa.

1. 一般輪葉變量泵建議使用閉迴路的設計
2. 泵的迴轉是順時針。
3. 作動油的黏度建議使用(VG32)。
4. 泵的內漏回油管，須單獨直接進入油箱並且控制背壓在 0.3bar 以內
5. 泵的輸出口須裝止回閥，並且控制開啟壓力在 0.5bar 以內
6. 作動油的溫度最好在(15°~60°)之間。
7. 泵與馬達心軸連接時的偏心量在 0.05mm 或 $\pm 1^\circ$ 以內。
8. 進油口的壓力必須控制在 0.03bar 以內。
9. 當泵是第一次運作時，須無載啟動停止操作數次將泵及管內空氣排出並最好保持10分鐘的無載運轉

YPV SERIES

Variable Vane Pump Features & Ordering Code

YPV-8
YPV-12
YPV-16
YPV-20
YPV-23



SYMBOL

FEATURES 特點

- *.壓力板作耐磨,耐疲勞及抗污處理,大幅提高耐磨,耐疲勞及高抗污性能.
- *.固定及活動雙軸環設計,內軸環作動滑順靈敏,穩定性高.
- *.作沖擊壓消除補償設計,脈動沖擊小.
- *.噪音低,高效率,高性能.
- *.軸環材質採用特殊合金鋼,壽命長.
- *.採用SAE規格安裝,符合國際通用規格.

Model	Pump capacity (cm ³ /rev)	Operating Pressure Mpa (Kg/cm ²)	Max. Pressure Mpa (Kg/cm ²)	No-load discharge Rate (l/min)		Weight (Kg)
				50HZ	60HZ	
YPV-8	8	1.5~ 25 (15.3~255)	30 (306)	12	14.4	16
YPV-12	12			18	21.6	
YPV-16	16			24	28.8	
YPV-20	20			30	36.0	
YPV-23	23			34.5	41.4	

ORDERING CODE 訂購指引

YPV - 16 - F - 1 - A 12 - 01 - 01

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① YPV 型號: 高壓變量葉片泵

② 流量 (cm³/rev): 8, 12, 16, 20, 23

③ F: 單座壓力閥

④ 壓力級數

1. 1.5 ~ 14 Mpa (15.3 ~ 142.8 kg/cm²)
2. 2.0 ~ 21 Mpa (20.4 ~ 214.2 kg/cm²)
3. 2.5 ~ 25 Mpa (25.5 ~ 255.0 kg/cm²)

⑤ A: SAE-A規格、ø82.55安裝

⑥ 轉速

12 : 1200 rpm
15 : 1500 rpm
18 : 1800 rpm

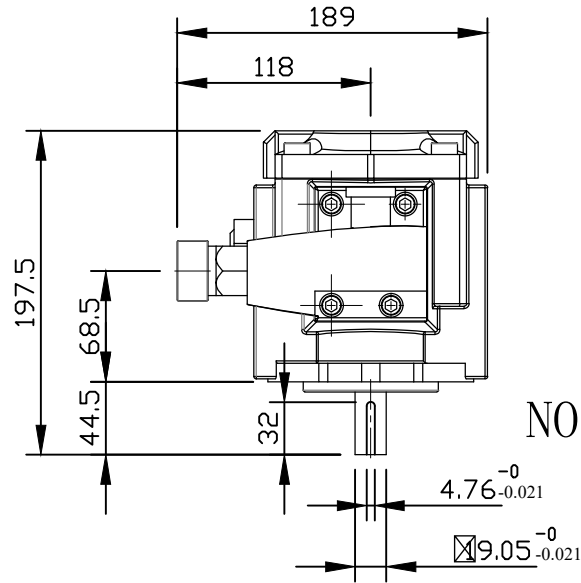
⑦ 轉軸

01 : ø19.05 (方形鍵)
02 : SAE-A-9-Tooth Spline 16/32dp

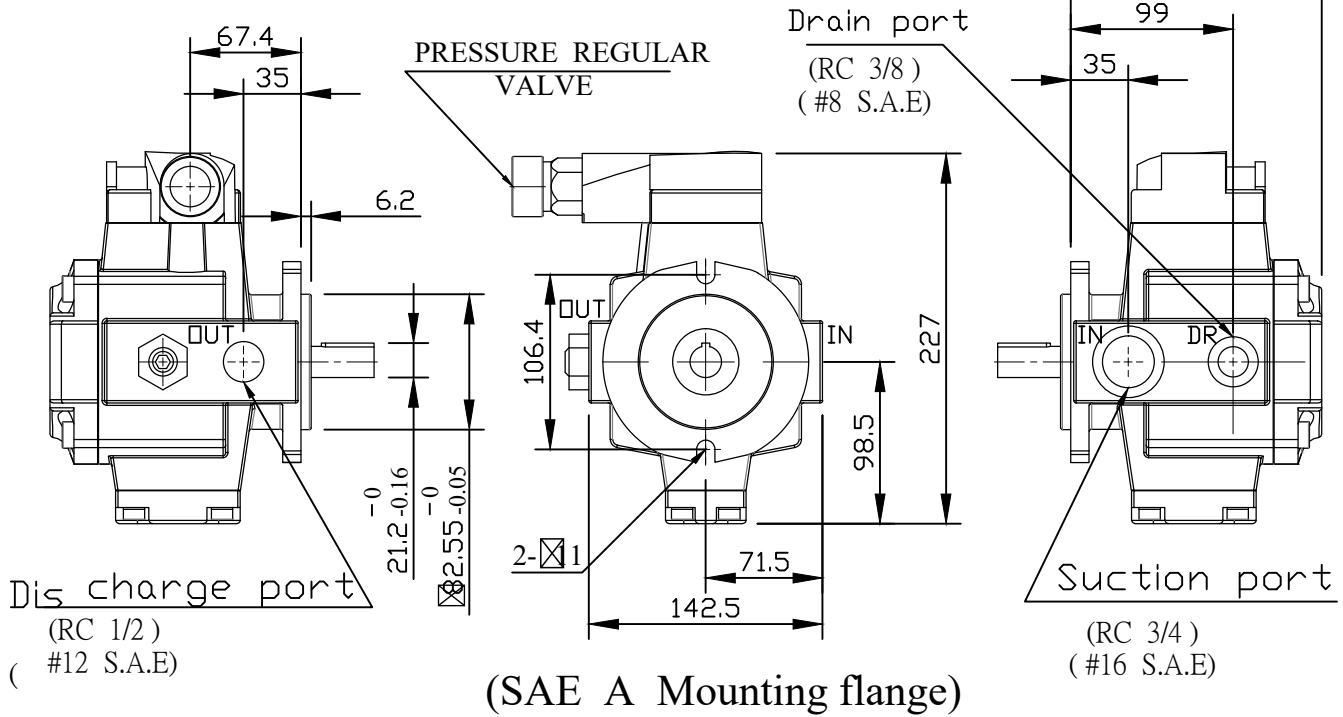
⑧ 管口牙規格

01: S= RC 3/4 P= RC 1/2 DR= RC 3/8
02: S= #16 S.A.E P= #12 S.A.E
DR= #8 S.A.E

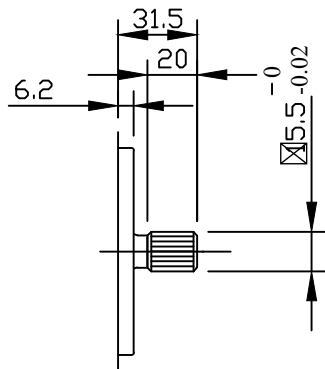
YPV-8
YPV-12
YPV-16
YPV-20
YPV-23



NO. 01-Shaft

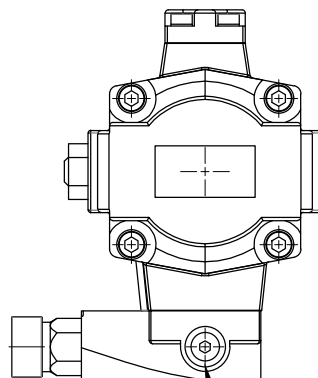


(SAE A Mounting flange)



Diametral Pitch : 16/32
Pressure Angle : 30°
No. of Teeth : 9
Available on "A" Cover only

NO.02-Shaft



* Shock Clipper port
Should be plumbed
to tank to activate
shock clipper

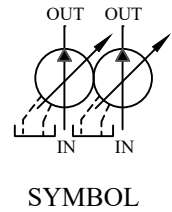
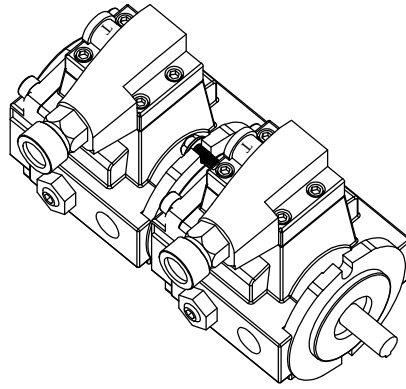
Shock Clipper port
(RC 1/4) , (#6 S.A.E)

*(須接獨立油管回油箱)

YPVV SERIES

Variable Double Pump Features & Ordering Code

YPVV - 8.*
 YPVV - 12.*
 YPVV - 16.*
 YPVV - 20.*
 YPVV - 23.*



FEATURES 特點

- *.壓力板作耐磨, 耐疲勞及抗污處理, 大幅提高耐磨, 耐疲勞及高抗污性能.
- *.固定及活動雙軸環設計, 內軸環作動滑順靈敏, 穩定性高.
- *.作沖擊壓消除補償設計, 脈動沖擊小.
- *.噪音低, 高效率, 高性能.
- *.軸環材質採用特殊合金鋼, 壽命長.
- *.採用SAE規格安裝, 符合國際通用規格.

Model	Pump capacity		Operating Pressure		Weight (Kg)
	P1 (cm ³ /rev)	P2 (cm ³ /rev)	P1 Mpa (Kg/cm ²)	P2 Mpa (Kg/cm ²)	
YPVV-**	8,12,16, 20,23	8,12,16, 20,23	1.5~ 25 (15.3~255)	1.5~ 25 (15.3~255)	32

ORDERING CODE 訂購指引

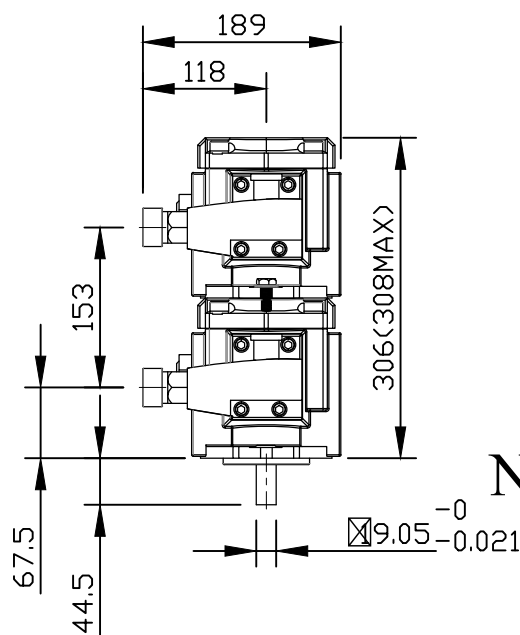
YPVV- 16 - 16 - F - 2 - 2 - A - 12 - 01 - 01

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

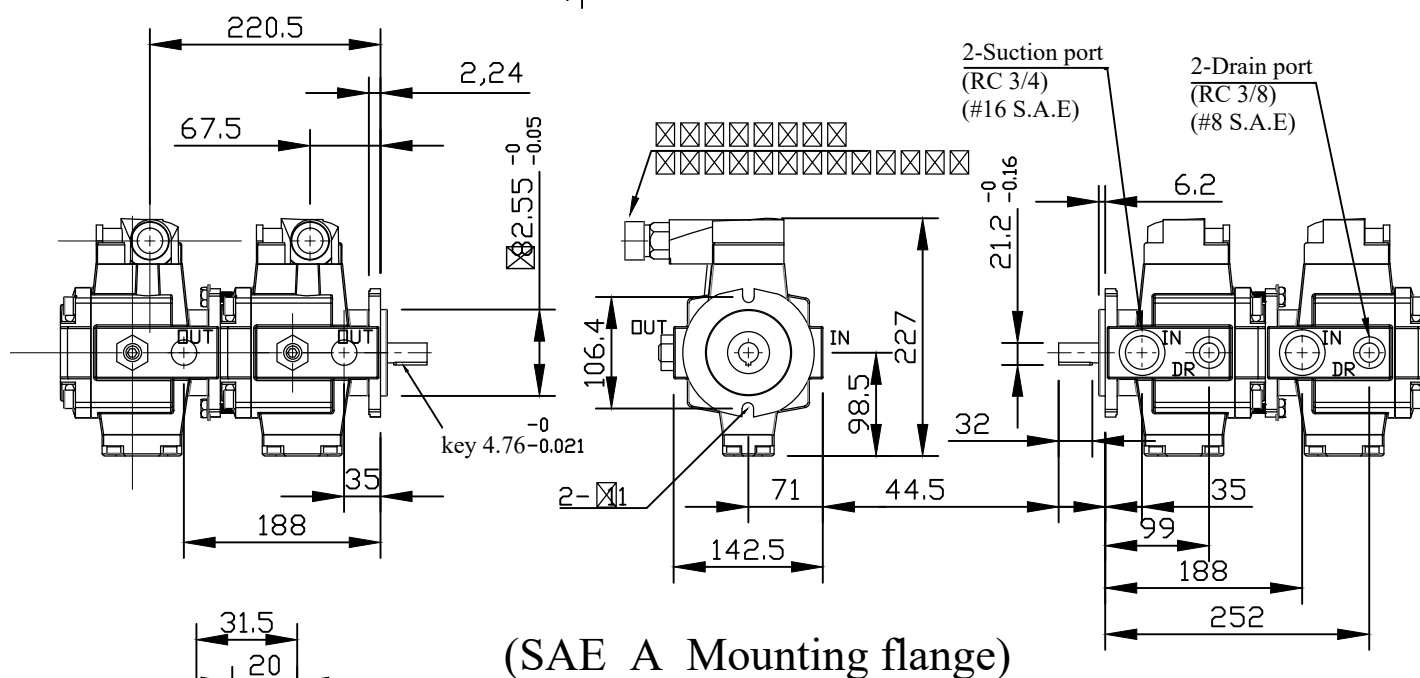
- | | |
|--|--|
| <p>① YPVV 型號: 高壓雙聯變量葉片泵</p> <p>② P1流量 (cm³/rev) : 8, 12, 16, 20, 23</p> <p>③ P2流量 (cm³/rev) : 8, 12, 16, 20, 23</p> <p>④ F : 單座壓力閥</p> <p>⑤ P1壓力級數</p> <ol style="list-style-type: none"> 1. 1.5 ~14 Mpa (15.3 ~ 142.8 kg/cm²) 2. 2.0 ~21 Mpa (20.4 ~ 214.2 kg/cm²) 3. 2.5 ~25 Mpa (25.5 ~ 255.0 kg/cm²) <p>⑥ P2壓力級數</p> <ol style="list-style-type: none"> 1. 1.5 ~14 Mpa (15.3 ~ 142.8 kg/cm²) 2. 2.0 ~21 Mpa (20.4 ~ 214.2 kg/cm²) 3. 2.5 ~25 Mpa (25.5 ~ 255.0 kg/cm²) | <p>⑦ A : SAE A規格、ø82.55安裝</p> <p>⑧ 轉速</p> <p>12.. 1200 rpm
 15.. 1500 rpm
 18.. 1800 rpm</p> <p>⑨ 轉軸</p> <p>01 : ☒9.05 (方形鍵)
 02 : SAE-A-9 -Tooth Spline 16/32dp</p> <p>⑩ 管口牙規格</p> <p>01: S= RC 3/4 P= RC 1/2 DR= RC 3/8
 02: S= #16 S.A.E P= #12 S.A.E
 DR= #8 S.A.E</p> |
|--|--|

YPVV-** Variable Double Pump Dimensional Drawing

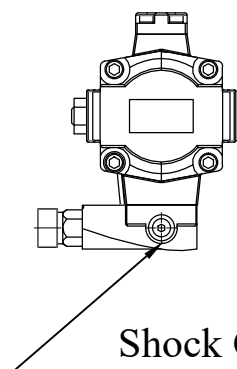
YPVV - 8.*
 YPVV - 12.*
 YPVV - 16.*
 YPVV - 20.*
 YPVV - 23.*



NO.01-Shaft



(SAE A Mounting flange)



Shock Clipper port

(RC 1/4) , (#6 S.A.E)

* Shock Clipper port
 Should be plumbed
 to tank to activate
 shock clipper

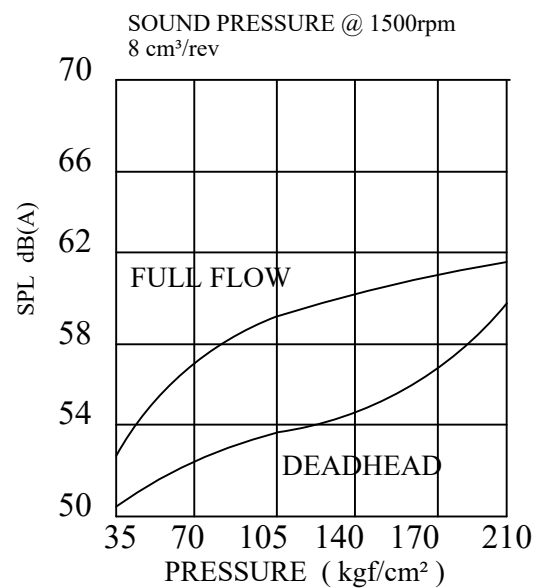
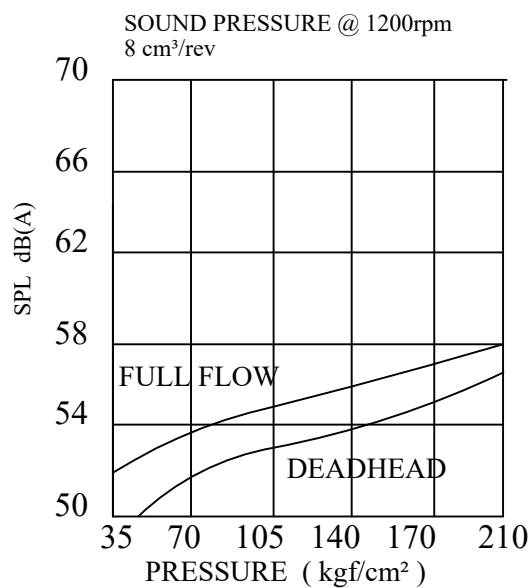
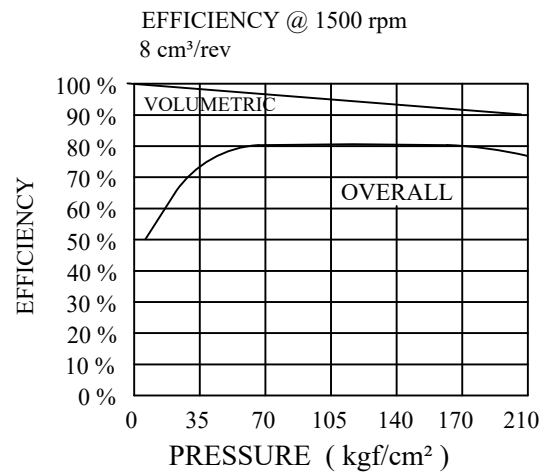
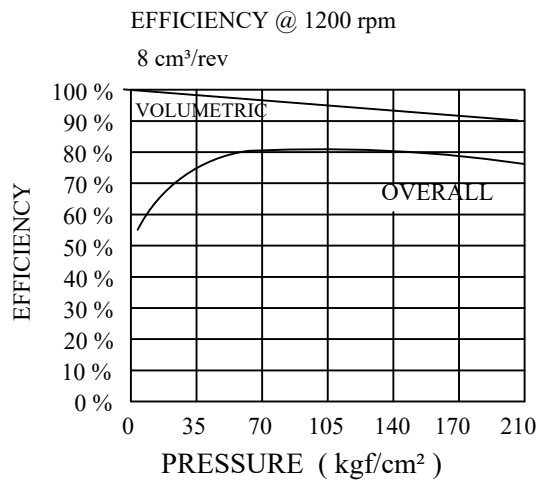
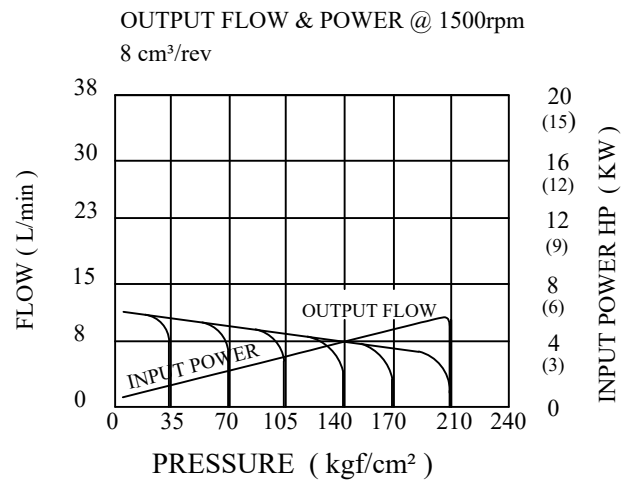
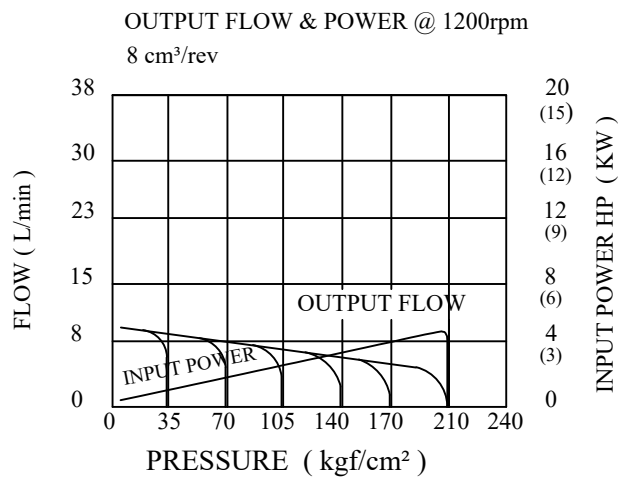
* (須接獨立油管回油箱)

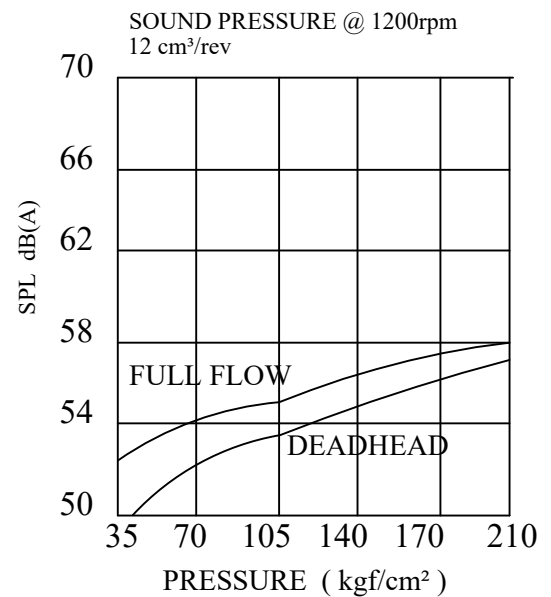
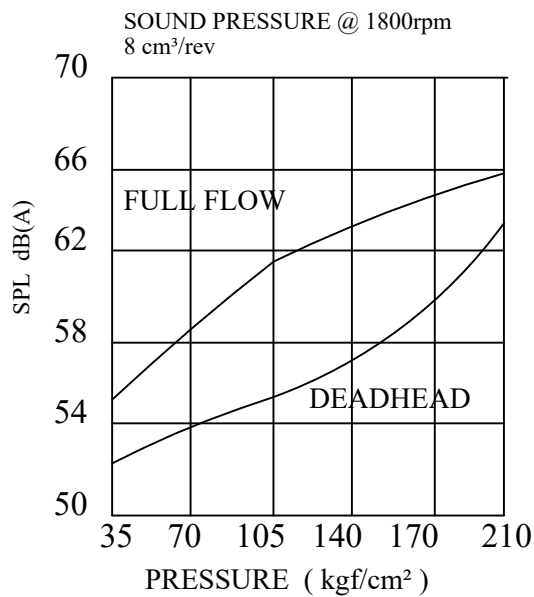
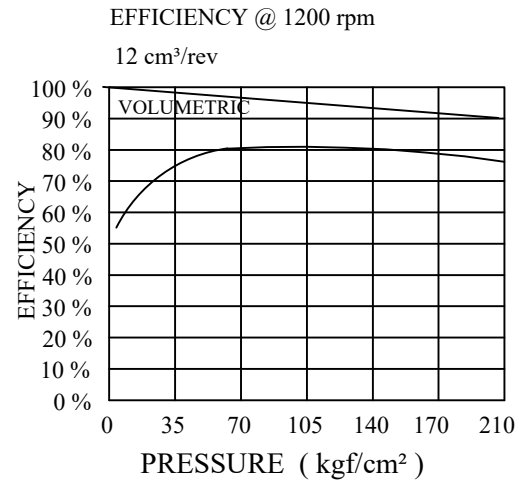
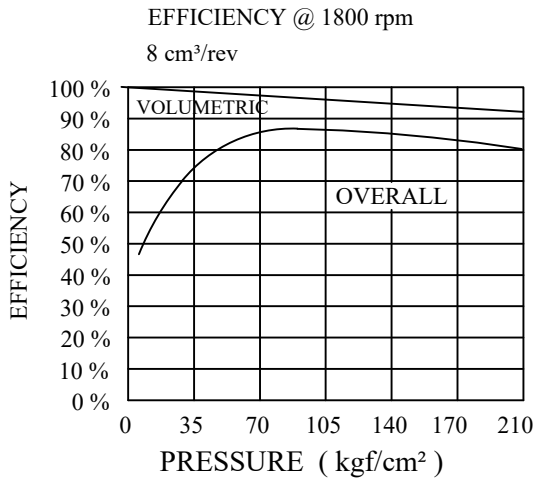
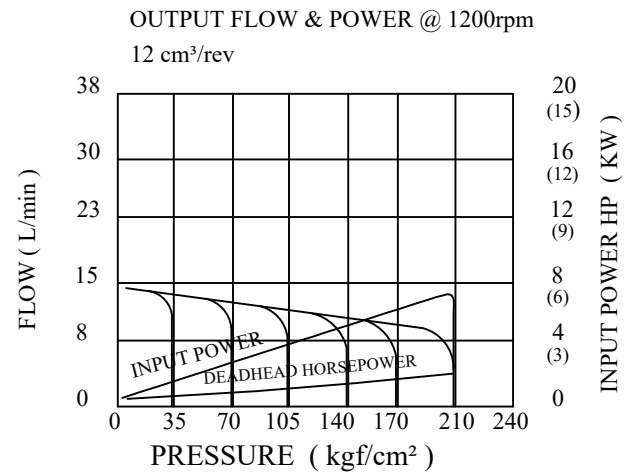
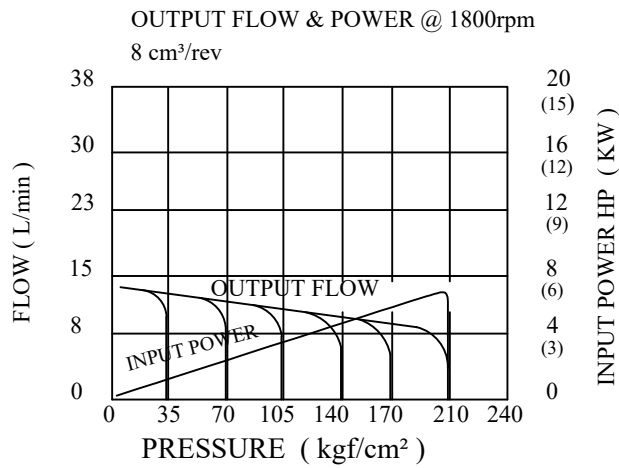
Diametral Pitch : 16/32

Pressure Angle : 30°

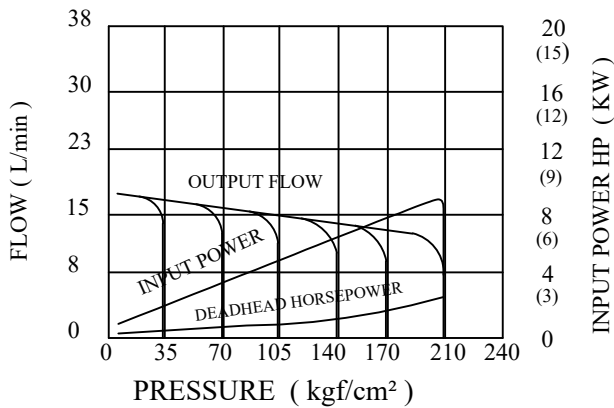
No. of Teeth : 9

Available on "A" Cover only

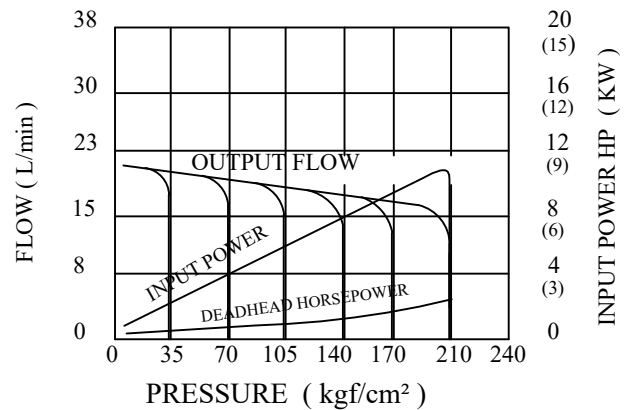




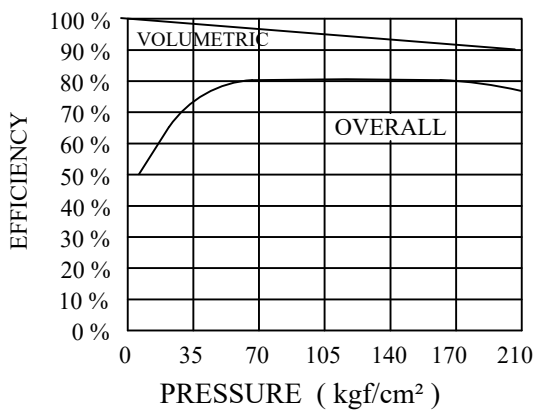
OUTPUT FLOW & POWER @ 1500rpm
12 cm³/rev



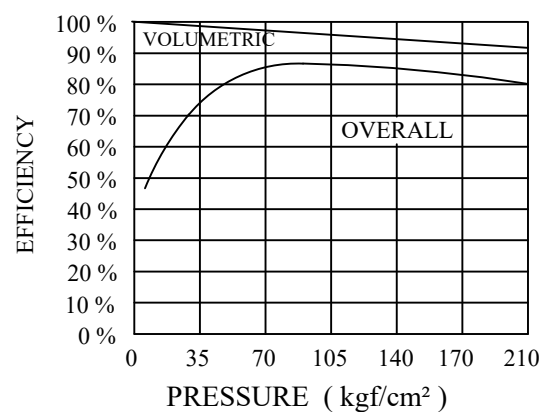
OUTPUT FLOW & POWER @ 1800rpm
12 cm³/rev



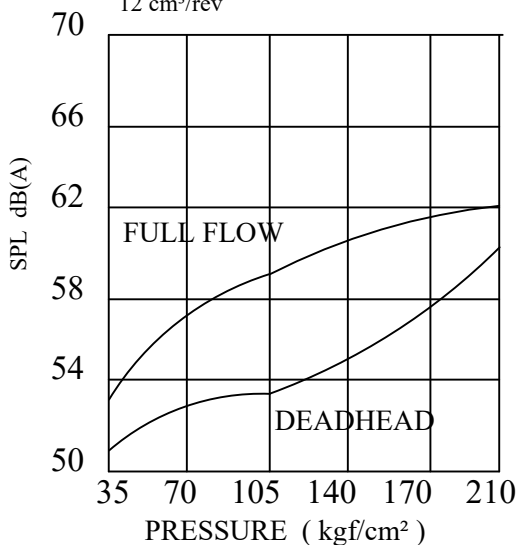
EFFICIENCY @ 1500 rpm
12 cm³/rev



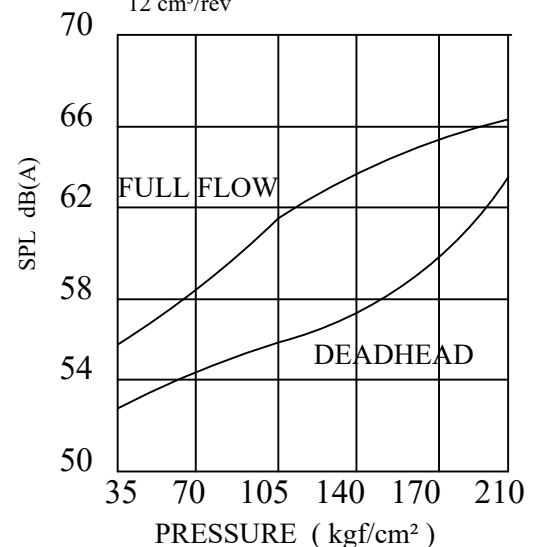
EFFICIENCY @ 1800 rpm
12 cm³/rev

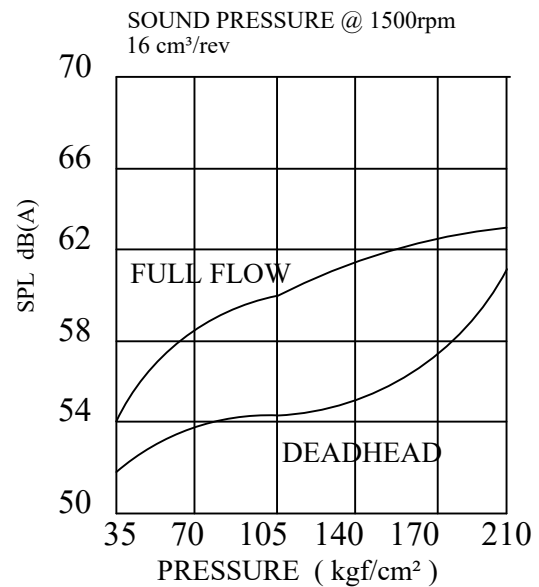
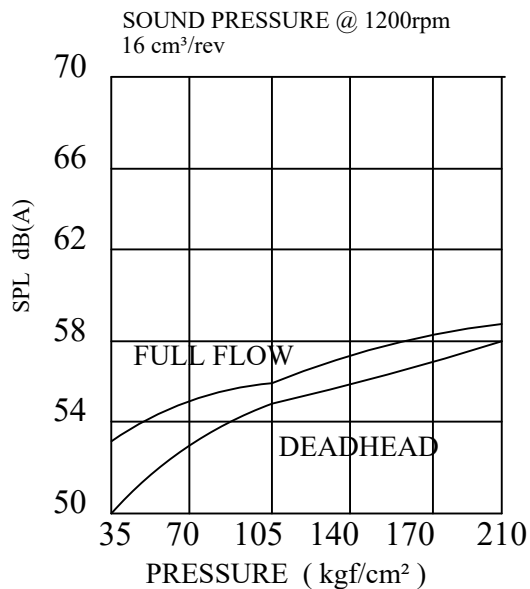
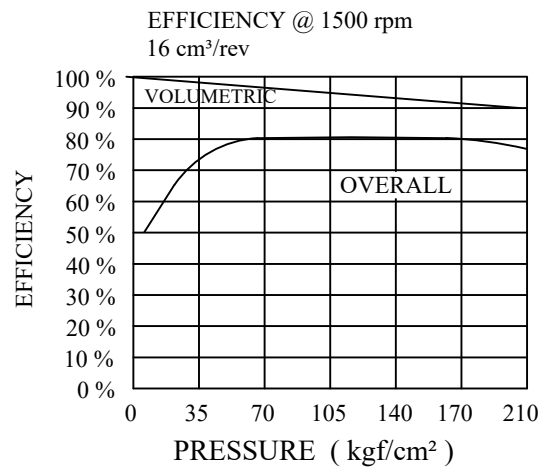
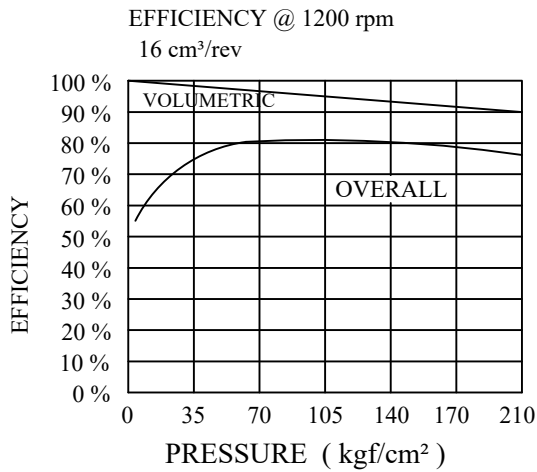
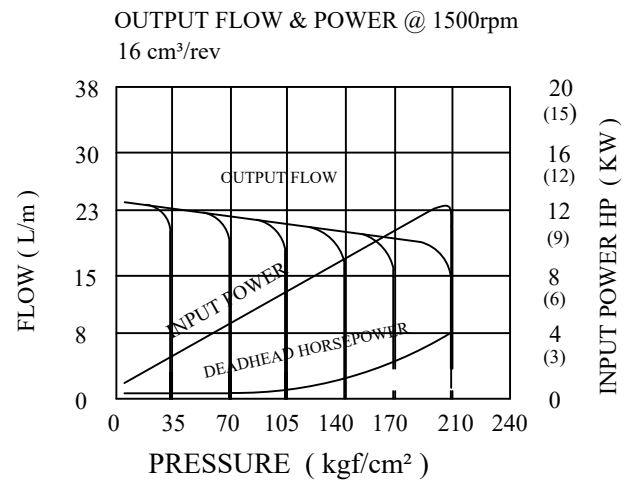
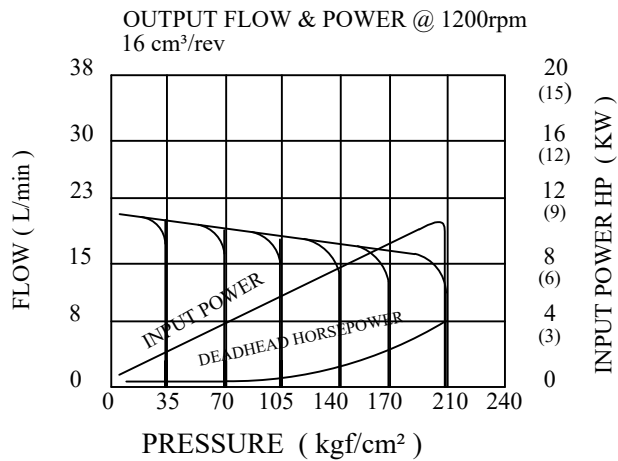


SOUND PRESSURE @ 1500rpm
12 cm³/rev

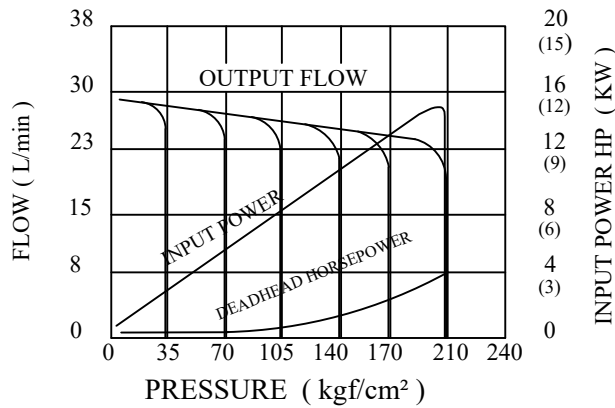


SOUND PRESSURE @ 1800rpm
12 cm³/rev

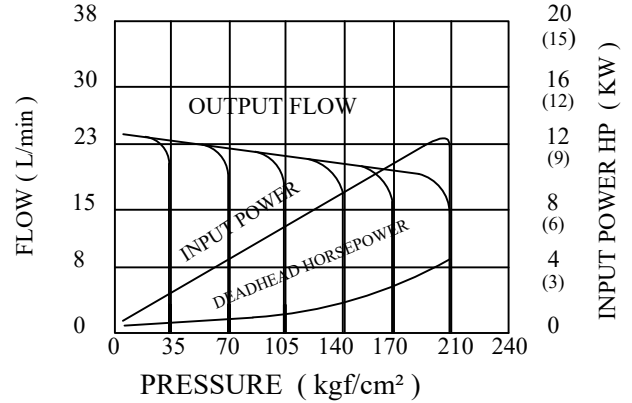




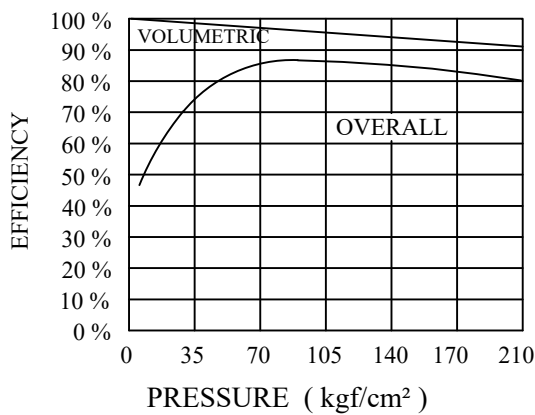
OUTPUT FLOW & POWER @ 1800rpm
16 cm³/rev



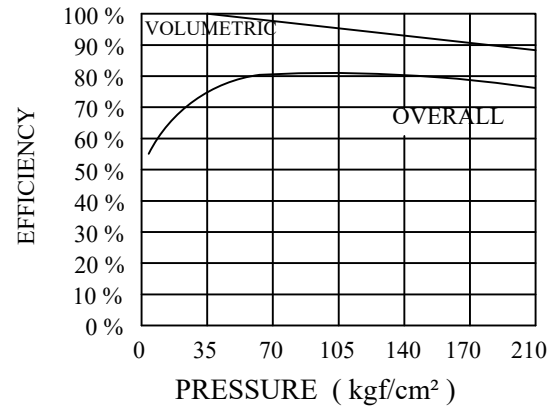
OUTPUT FLOW & POWER @ 1200rpm
20 cm³/rev



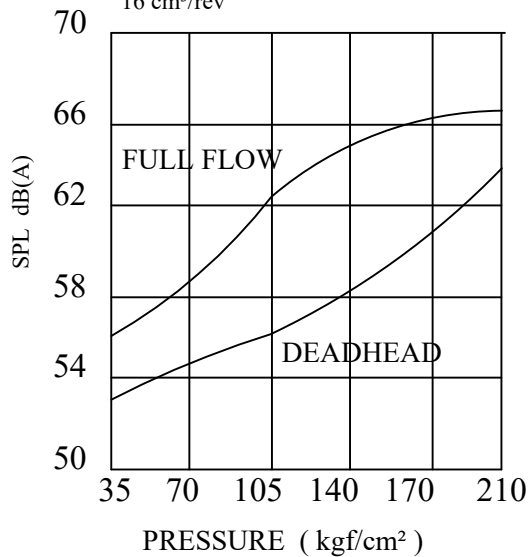
EFFICIENCY @ 1800 rpm
16 cm³/rev



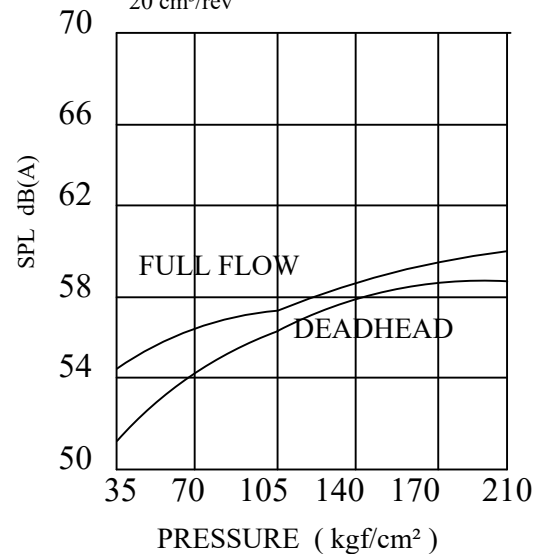
EFFICIENCY @ 1200 rpm
20 cm³/rev



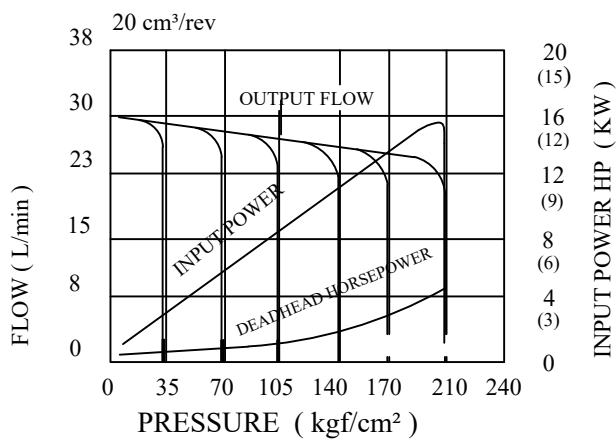
SOUND PRESSURE @ 1800rpm
16 cm³/rev



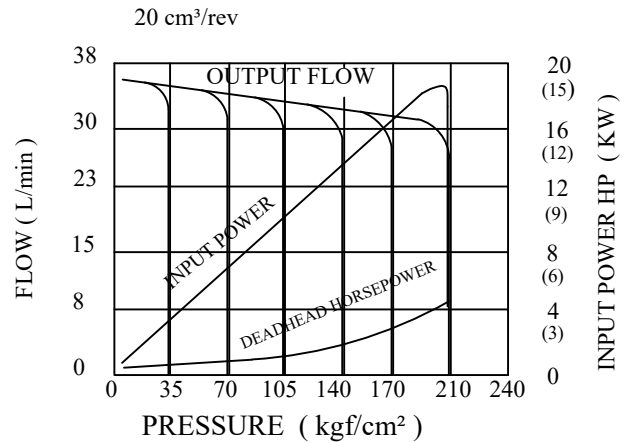
SOUND PRESSURE @ 1200rpm
20 cm³/rev



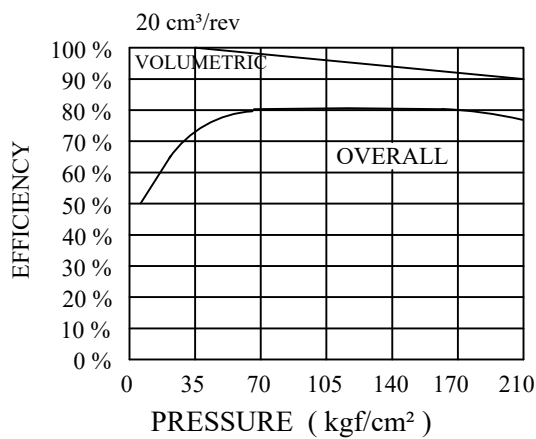
OUTPUT FLOW & POWER @ 1500rpm



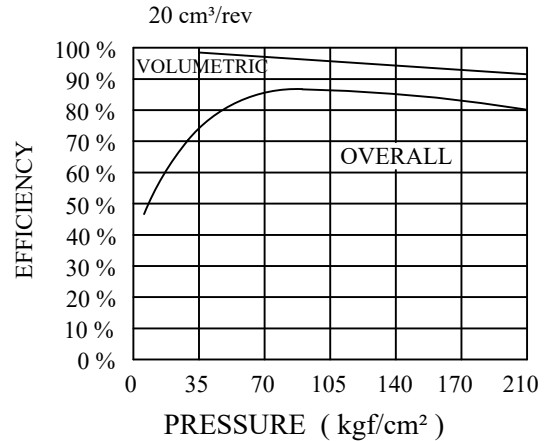
OUTPUT FLOW & POWER @ 1800rpm



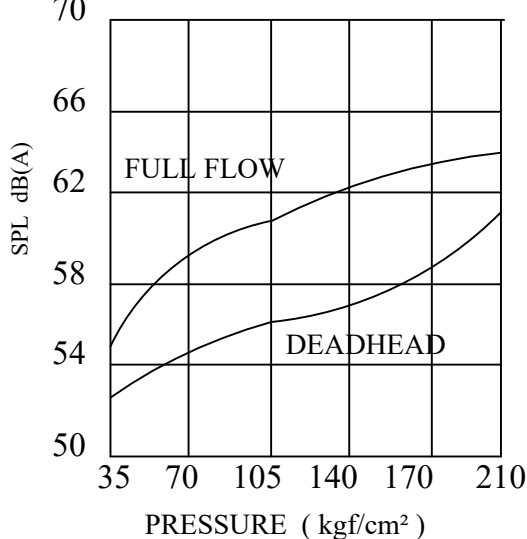
EFFICIENCY @ 1500 rpm



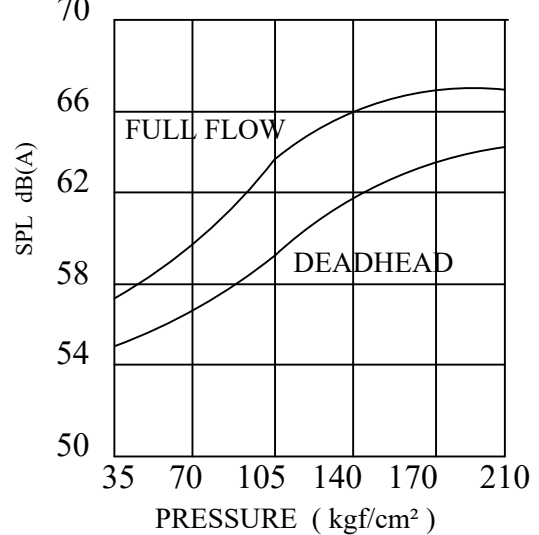
EFFICIENCY @ 1800 rpm



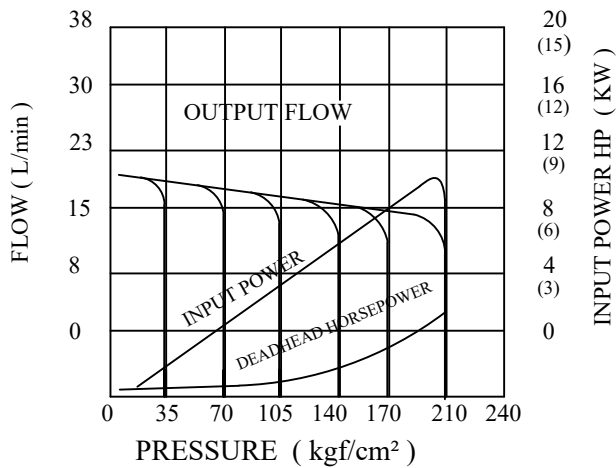
SOUND PRESSURE @ 1500rpm



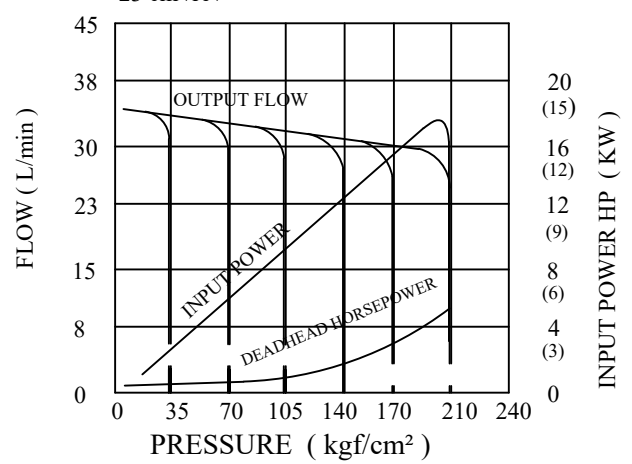
SOUND PRESSURE @ 1800rpm



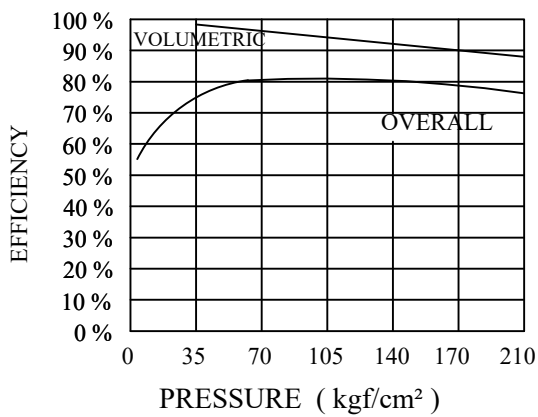
OUTPUT FLOW & POWER @ 1200rpm
23 cm³/rev



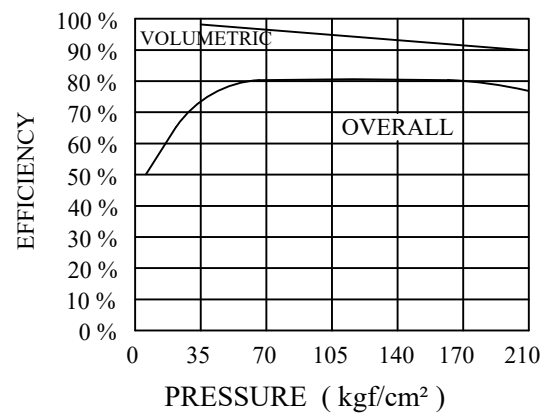
OUTPUT FLOW & POWER @ 1500rpm
23 cm³/rev



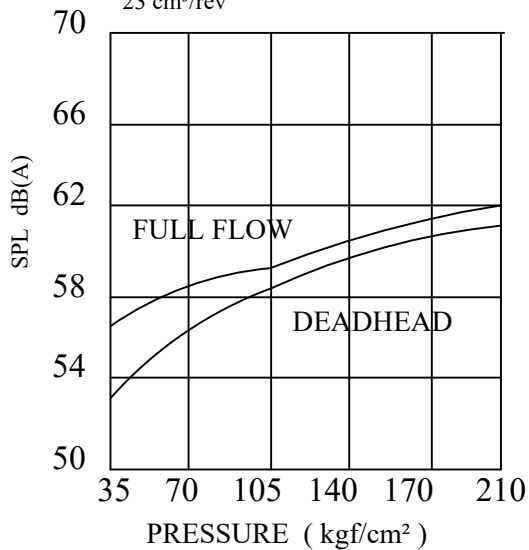
EFFICIENCY @ 1200 rpm
23 cm³/rev



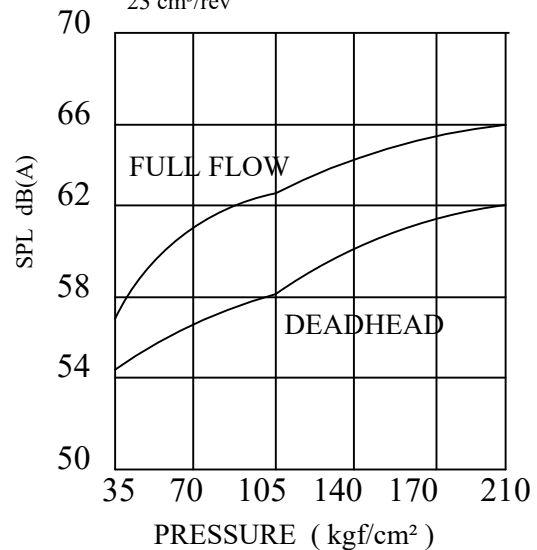
EFFICIENCY @ 1500 rpm
23 cm³/rev

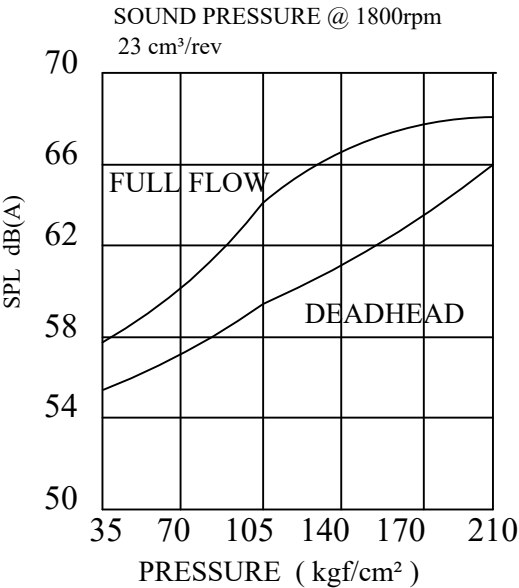
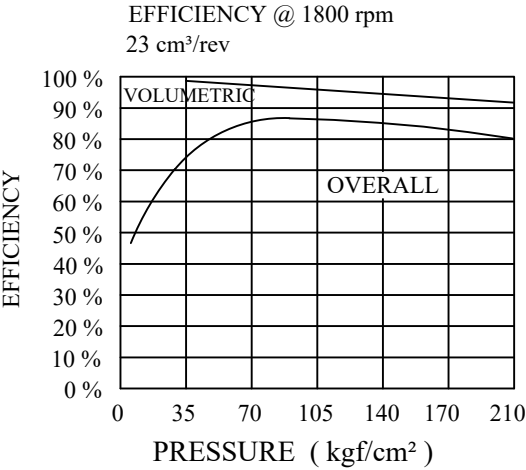
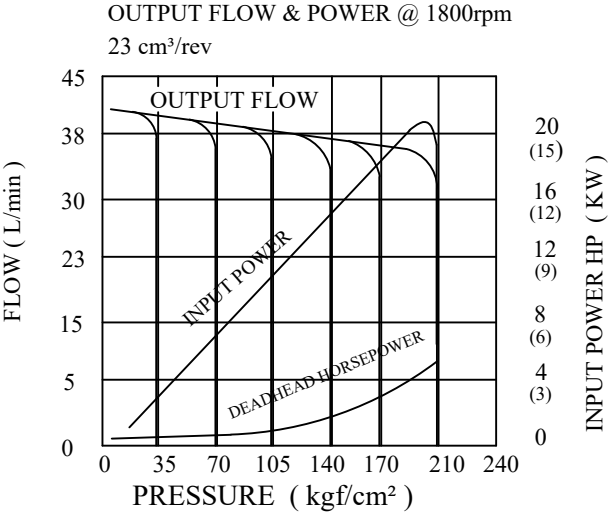


SOUND PRESSURE @ 1200rpm
23 cm³/rev

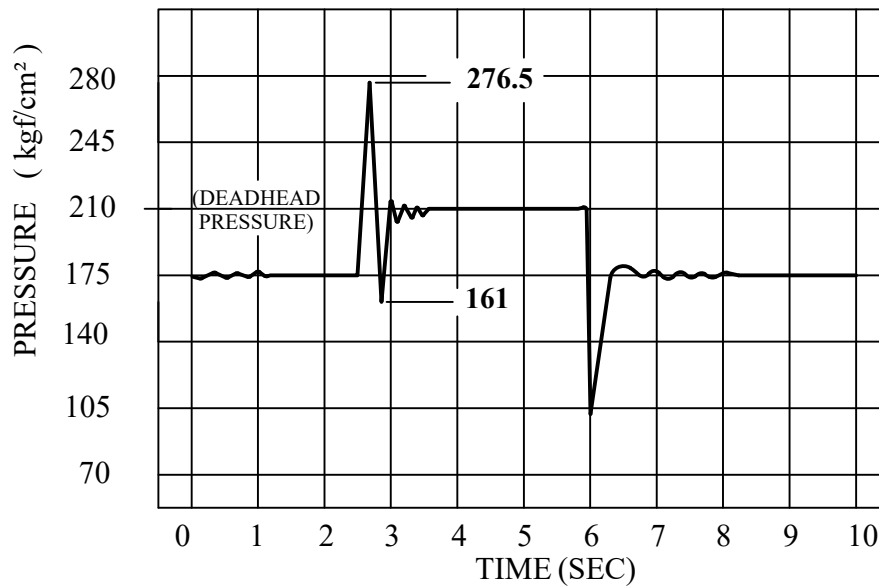


SOUND PRESSURE @ 1500rpm
23 cm³/rev

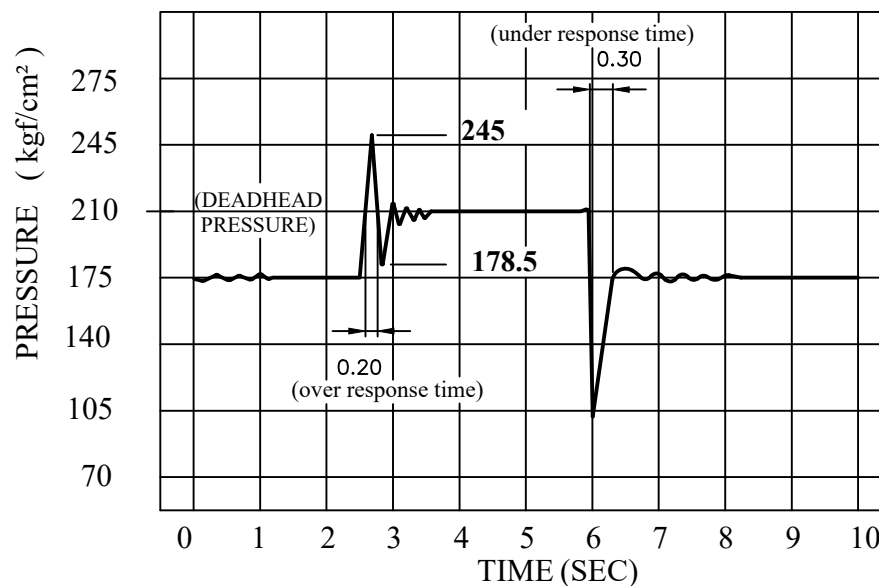




* YPV-16 REACTION CHARACTERISTICS SHOCK CLIPPER FUNTION



YPV-16 Single stage compensator, plot with shock clipper **inactive**.
Response overshoot : 66.5 (kgf/cm²); response undershoot : 49 (kgf/cm²)



YPV-16 Single stage compensator, plot with shock clipper **active**.
1. Response overshoot: 35 (kgf/cm²); response undershoot: 31.5 (kgf/cm²)
2. Response time (circuit dependent) : 20 ~30 ms

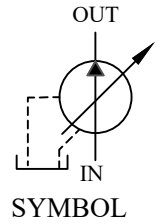
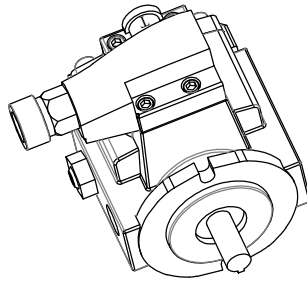
* CASE DRAIN FLOW

SPEC.	Mpa (Kgf/cm ²)	YPV- 8 / 12 / 16 / 20 /23 (L/min)
case drain flow while compensating @1800 rpm CASE DRAIN FLOW	7 (71.4)	1.5~2.3
	14 (142.8)	2.5~3.8
	21 (214.2)	3.5~4.8

YPV SERIES

Variable Vane Pump Features & Ordering Code

YPV-25
YPV-32
YPV-36
YPV-42



FEATURES 特點

- *.壓力板作耐磨, 耐疲勞及抗污處理, 大幅提高耐磨, 耐疲勞及高抗污性能.
- *.固定及活動雙軸環設計, 內軸環作動滑順靈敏, 穩定性高.
- *.作沖擊壓消除補償設計, 脈動沖擊小.
- *.噪音低, 高效率, 高性能.
- *.軸環材質採用特殊合金鋼, 壽命長.
- *.採用SAE規格安裝, 符合國際通用規格.

Model	Pump capacity (cm ³ / rev)	Operating Pressure Mpa (Kgf/cm ²)	Max. Pressure Mpa (Kgf/cm ²)	No-load discharge Rate (ℓ/min)		Weight (Kg)
				50HZ	60HZ	
YPV-25	25	1.5~ 21 (15.3~214.2)	25 (255)	37.5	45	28
YPV-32	32			48	57.6	
YPV-36	36			54	64.8	
YPV-42	42			63	75.6	

ORDERING CODE 訂購指引

YPV - 25 - F - 01 - B 12 - 01 - 01
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① YPV 型號: 高壓變量葉片泵

② 流量 (cm³ /rev) : 25 , 32 , 36, 42

③ F : 單座壓力閥

④ 壓力級數
 01: 1.5 ~ 14 Mpa (15.3 ~ 142.8 kgf/cm²)
 02: 2.0 ~ 21 Mpa (20.4 ~ 214.2 kgf/cm²)

⑤ B : SAE B規格、☒01.6 安裝

⑥ 轉速

12 : 1200 rpm
 15 : 1500 rpm
 18 : 1800 rpm

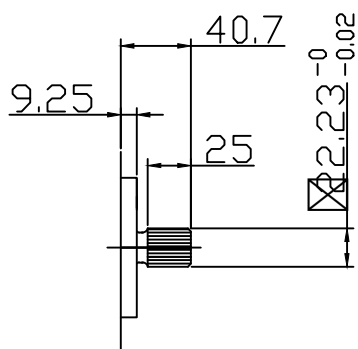
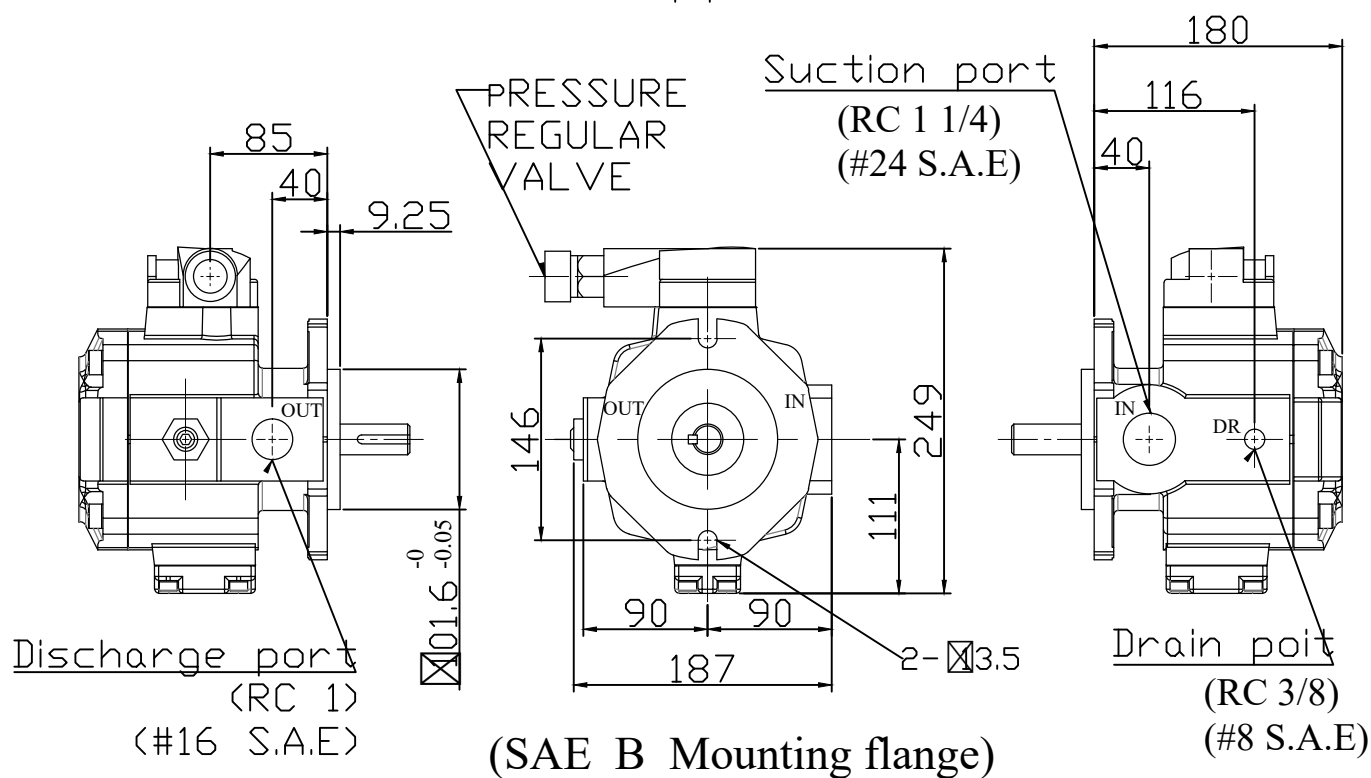
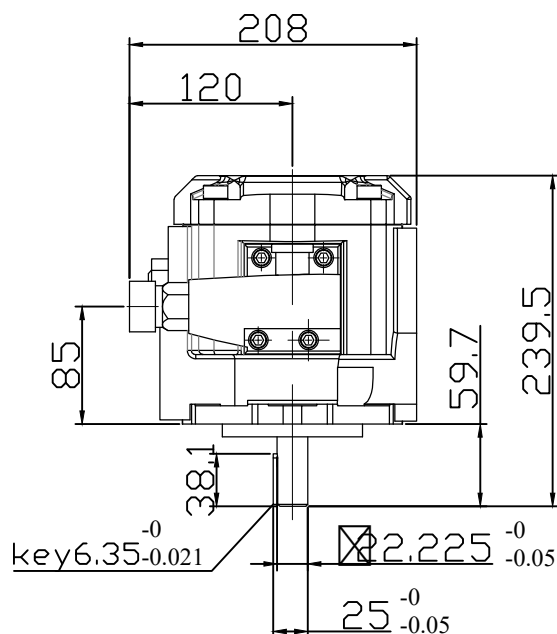
⑦ 轉軸

01 : ☒2.23(方形鍵)
 02 : SAE-B-13-Tooth Spline 16/32dp

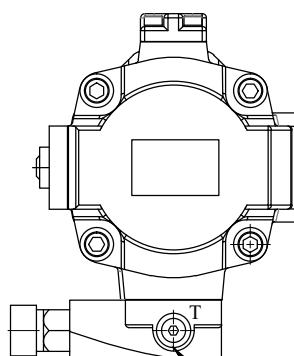
⑧ 管口牙規格

01: S= RC 1 1/4 , P= RC 1 , DR= RC $\frac{3}{8}$
 02: S= #24 S.A.E P= #16 S.A.E
 DR= #8 S.A.E

YPV-25
YPV-32
YPV-36
YPV-42



SAE-B splined shaft
Diametral Pitch : 16/32
Pressure Angle : 30°
No. of Teeth : 13
NO.02-Shaft



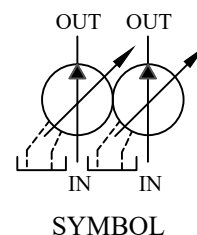
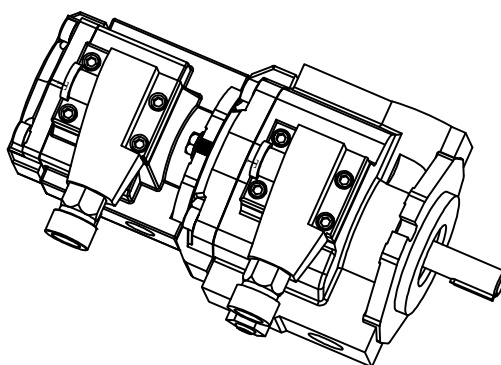
*Shock Clipper port
Should be plumbed
to tank to activate
shock clipper

Shock Clipper port
(RC 1/4) , (#6 S.A.E)
*(須接獨立油管回油箱)

YPVV SERIES 25-16

Variable Double Pump Features & Ordering Code

YKPVV-25 *
YKPVV-32 *
YPVV-36 *
YPVV-42 *



FEATURES 特點

- *.壓力板作耐磨,耐疲勞及抗污處理,大幅提高耐磨,耐疲勞性及高抗污性能.
- *.固定及活動雙軸環設計,內軸環作動滑順靈敏,穩定性高.
- *.作沖擊壓消除補償設計,脈動,沖擊小.
- *.噪音低,高效率,高性能.
- *.軸環材質採用特殊合金鋼,壽命長.
- *.採用SAE規格安裝,符合國際通用規格.

Model	Pump capacity		Operating Pressure		Weight (Kg)
	P1 (cm ³ /rev)	P2 (cm ³ /rev)	P1 Mpa (Kg/cm ²)	P2 Mpa (Kg / cm ²)	
YPVV-**	25, 32, 36, 42	8, 12, 16, 20, 23	1.5~ 21 (15.3~214.2)	1.5~ 25 (15.3~255)	44

ORDERING CODE 訂購指引

YPVV- 25 - 16 - F - 2 - 2 - A 12 - 01 - 01

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

⑦ A : SAE-B規格、ø101.6安裝

① YPVV 型號: 高壓雙聯變量葉片泵

⑧ 轉速

② P1流量 (cm³/rev) : 25 , 32, 36, 42

12 : 1200 rpm

③ P2流量 (cm³/rev) : 8 , 12, 16 , 20 , 23

15 : 1500 rpm

18 : 1800 rpm

④ F : 單座壓力閥

⑨ 轉軸

⑤ P1壓力級數

01 : 2.23 (方形鍵)

1 : 1.5 ~ 14 Mpa (15.3 ~ 142.8 Kg/cm²)

02 : SAE-B-13-Tooth Spline 16/32dp

2 : 2.0 ~ 21 Mpa (20.4 ~ 214.2 Kg/cm²)

⑩ 管口牙規格

⑥ P2壓力級數

01: P1 (S=RC 1-1/4 , P= RC 1 , DR= RC 3/8)

P2 (S=RC 3/4 , P= RC 1/2 , DR= RC 3/8)

1 : 1.5 ~ 14 Mpa (15.3 ~ 142.8 Kg/cm²)

02: P1 (S=#24 S.A.E, P=#16 S.A.E, DR=#8 S.A.E

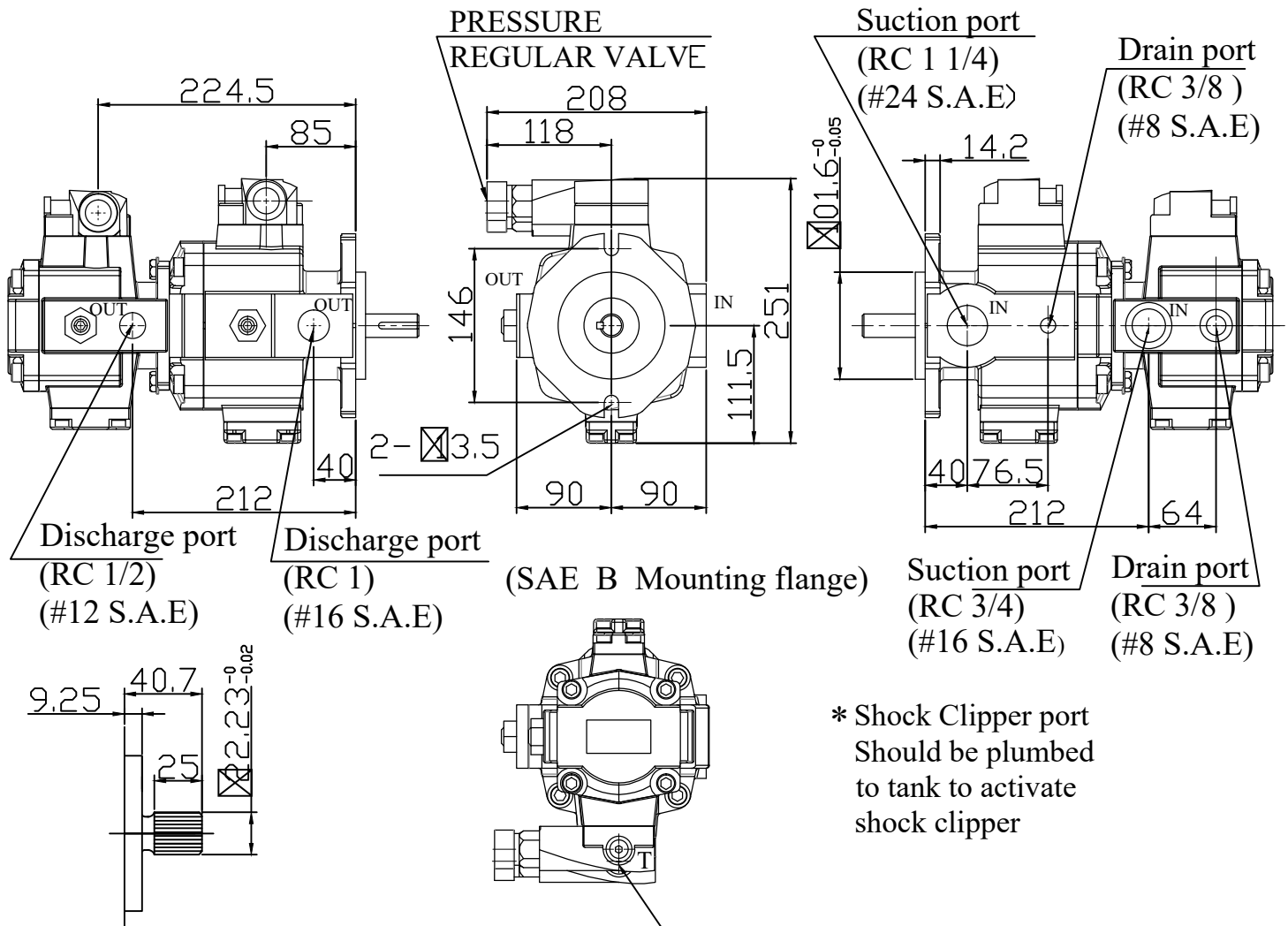
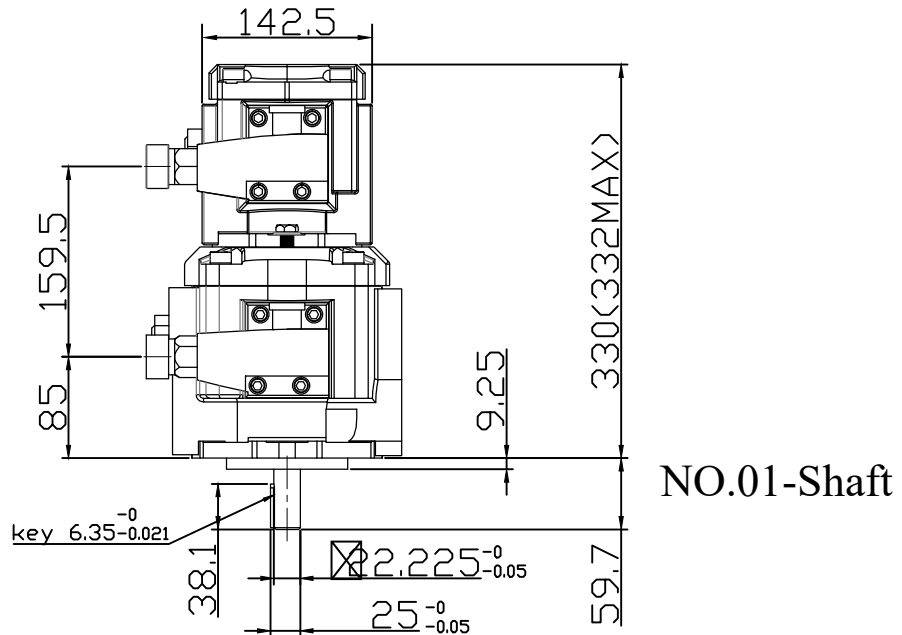
2 : 2.0 ~ 21 Mpa (20.4 ~ 214.2 Kg/cm²)

P2 (S=#16 S.A.E, P=#12 S.A.E, DR=#8 S.A.E

3 : 2.5 ~ 25 Mpa (25.5 ~ 255.0 Kg/cm²)

YPVV25-16 Variable Double Pump Dimensional Drawing

YPVV-25 *
YPVV-32 *
YPVV-36 *
YPVV-42 *



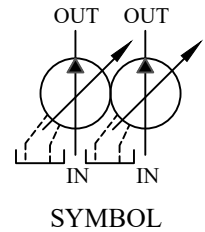
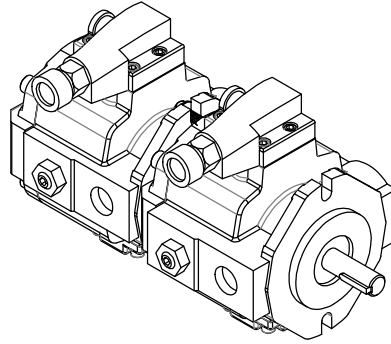
* Shock Clipper port
Should be plumbed
to tank to activate
shock clipper

SAE-B splined shaft
Diametral Pitch : 16/32
Pressure Angle : 30°
No. of Teeth : 13

NO.02-Shaft

YPVV SERIES 25-25 Variable Double Pump Features & Ordering Code

YPVV-25 *
YPVV-32 *
YPVV-36 *
YPVV-42 *



FEATURES 特點

- *.壓力板作耐磨,耐疲勞及抗污處理,大幅提高耐磨,耐疲勞性及高抗污性能.
- *.固定及活動雙軸環設計,內軸環作動滑順靈敏,穩定性高.
- *.作沖擊壓消除補償設計,脈動,沖擊小.
- *.噪音低,高效率,高性能.
- *.軸環材質採用特殊合金鋼,壽命長.
- *.採用SAE規格安裝,符合國際通用規格.

Model	Pump capacity		Operating Pressure		Weight (Kg)
	P1 (cm ³ /rev)	P2 (cm ³ /rev)	P1 Mpa (Kg/cm ²)	P2 Mpa (Kg/cm ²)	
YPVV-**	25, 32, 36, 42	25, 32, 36, 42	1.5~ 21 (15.3~214.2)	1.5~ 21 (15.3~214.2)	65

ORDERING CODE 訂購指引

YPVV- 25 - 25 - F - 2 - 2 - A 12 - 01 - 01

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① YPVV 型號: 高壓雙聯變量葉片泵

② P1流量 (cm³/rev) : 25 , 32, 36, 42

③ P2流量 (cm³/rev) : 25 , 32, 36, 42

④ F : 單座壓力閥

⑤ P1壓力級數

1. 1.5 ~ 14 Mpa (15.3 ~ 142.8 Kg/cm²)
2. 2.0 ~ 21 Mpa (20.4 ~ 214.2 Kg/cm²)

⑥ P2壓力級數

1. 1.5 ~ 14 Mpa (15.3 ~ 142.8 Kg/cm²)
2. 2.0 ~ 21 Mpa (20.4 ~ 214.2 Kg/cm²)

⑦ A : SAE-B規格、☒01.6 安裝

⑧ 轉速

12 : 1200 rpm
15 : 1500 rpm
18 : 1800 rpm

⑨ 轉軸

01 : ☒2.23(方形鍵)
02 : SAE-B-13-Tooth Spline 16/32dp

⑩ 管口牙規格

01: P1 , P2
(S=RC 1 1/4 , P= RC 1 , DR= RC 3/8)
02: P1 , P2
(S= #24 S.A.E, P=#16 S.A.E, DR=#8 S.A.E)

YPVV 25-25 Variable Double Pump Dimensional Drawing

YPVV-25 *

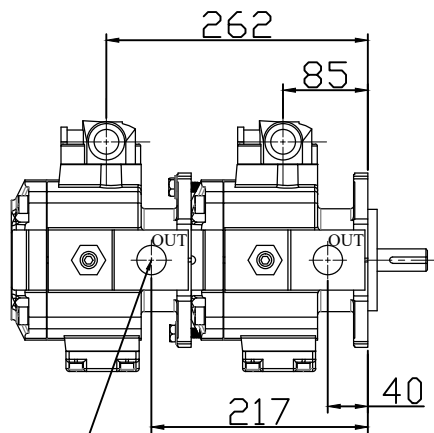
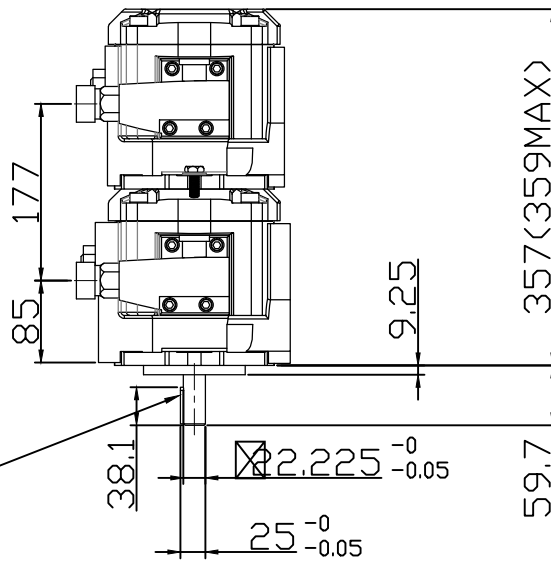
YPVV-32 *

YPVV-36 *

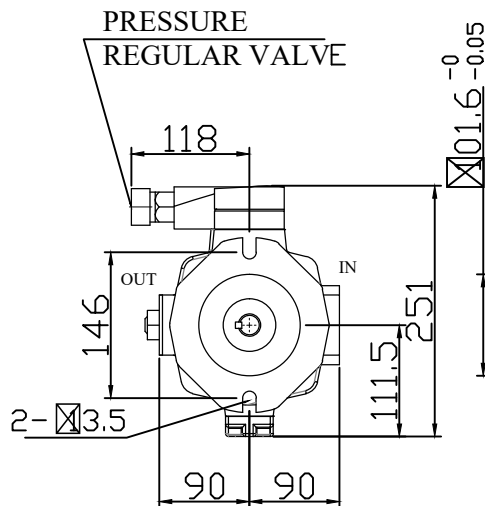
YPVV-42 *

NO.01-Shaft

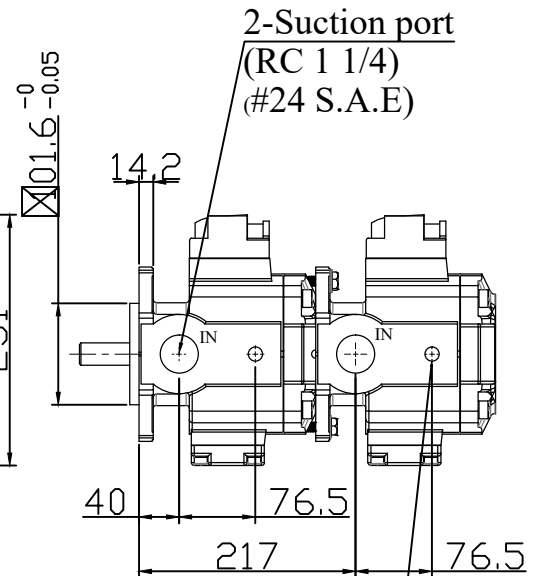
key 6.35⁻⁰_{-0.021}



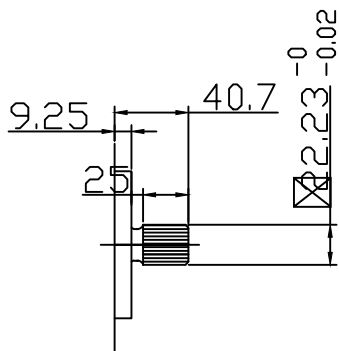
2-Discharge port
(RC 1)
(#16 S.A.E)



(SAE B Mounting flange)

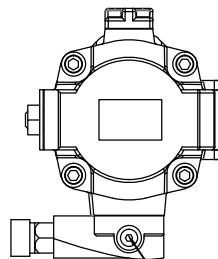


2-Drain port
(RC 3/8)
(#8 S.A.E)



SAE-B splined shaft
Diametral Pitch : 16/32
Pressure Angle : 30°
No. of Teeth : 13

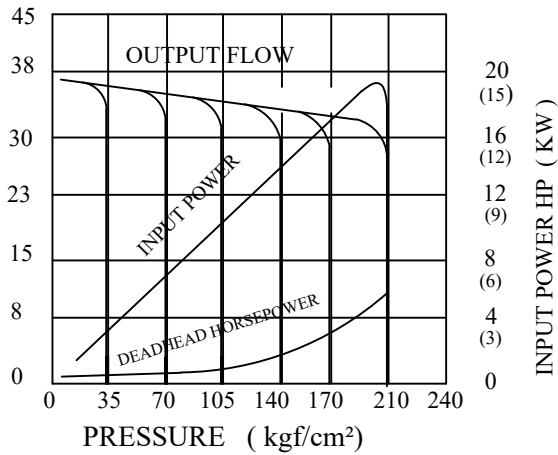
NO.02-Shaft



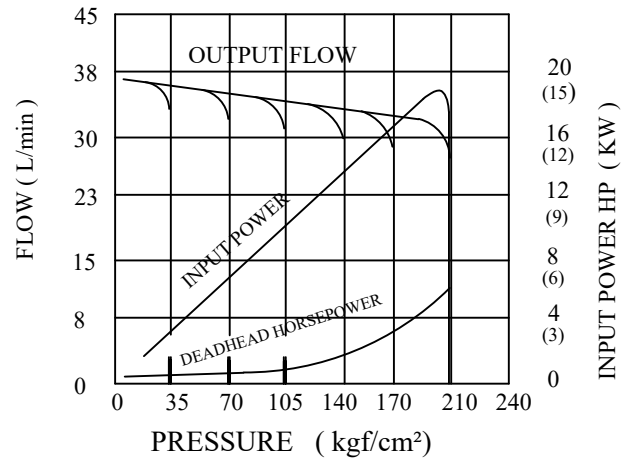
Shock Clipper port
(RC 1/4) , (#6 S.A.E)
(須接獨立油管回油箱)

* Shock Clipper port
Should be plumbed
to tank to activate
shock clipper

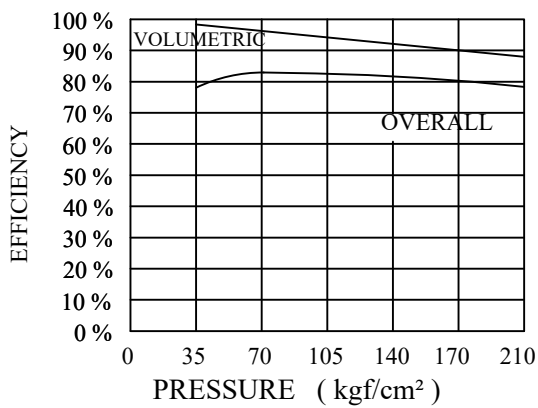
OUTPUT FLOW & POWER @ 1200rpm
25 cm³/rev



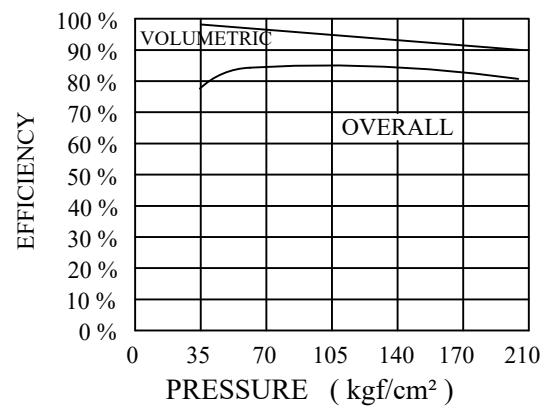
OUTPUT FLOW & POWER @ 1500rpm
25 cm³/rev



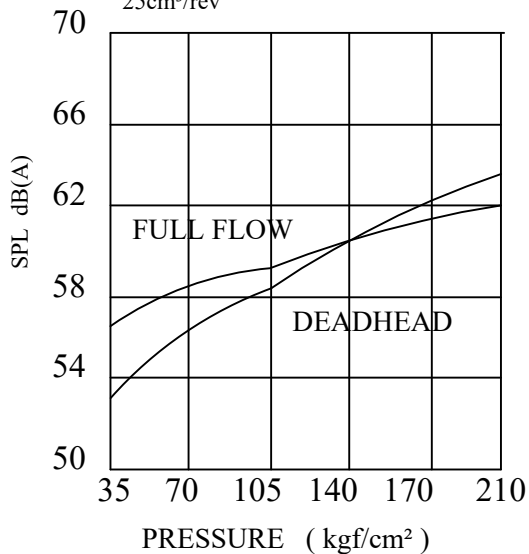
EFFICIENCY @ 1200 rpm
25 cm³/rev



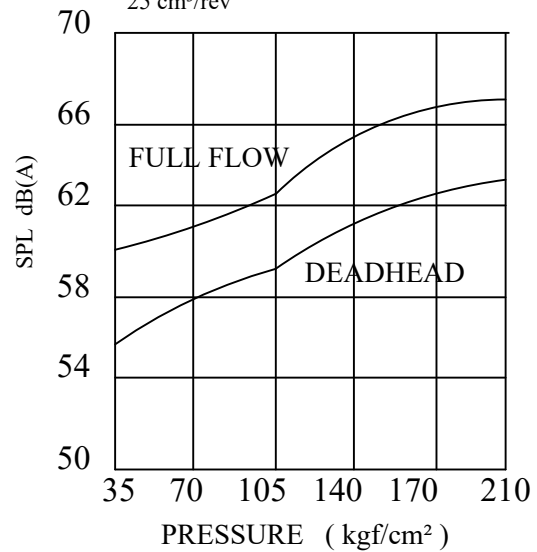
EFFICIENCY @ 1500 rpm
25 cm³/rev



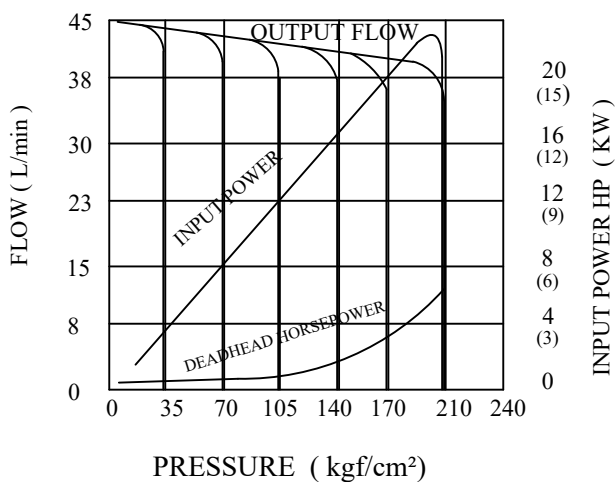
SOUND PRESSURE @ 1200rpm
25cm³/rev



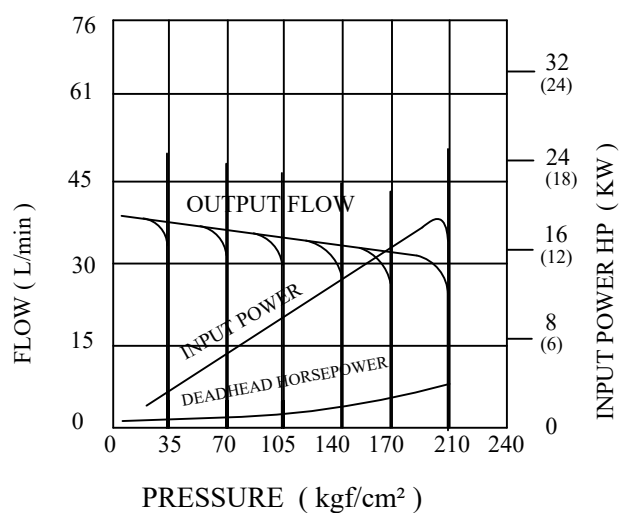
SOUND PRESSURE @ 1500rpm
25 cm³/rev



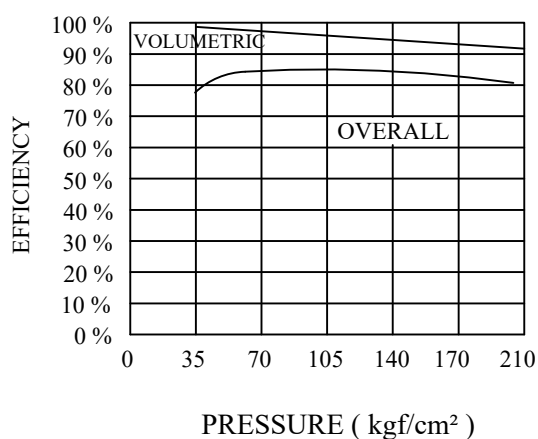
OUTPUT FLOW & POWER @ 1800rpm
25 cm³ /rev



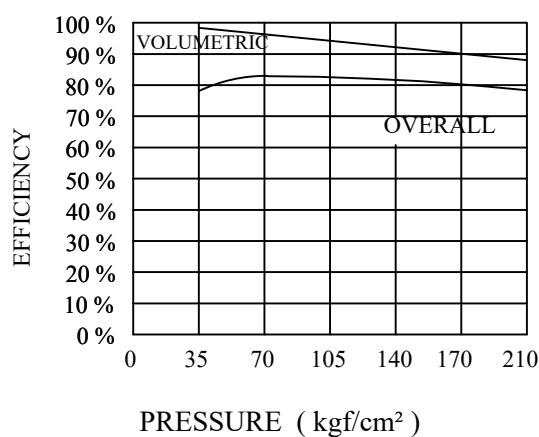
OUTPUT FLOW & POWER @ 1200rpm
32 cm³ /rev



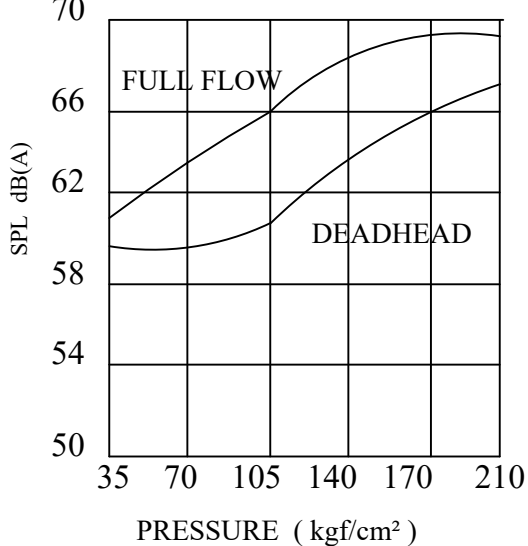
EFFICIENCY @ 1800 rpm
25 cm³ /rev



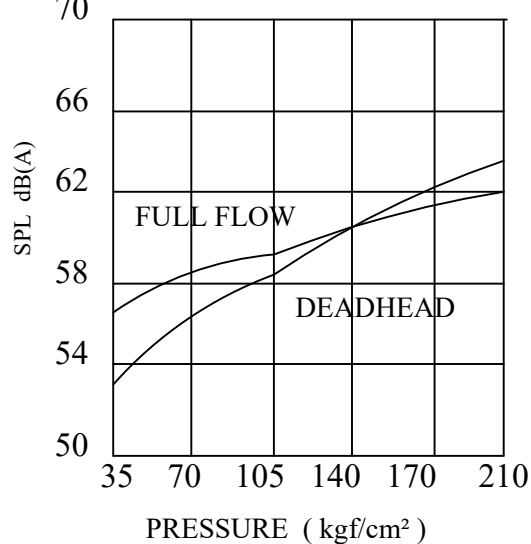
EFFICIENCY @ 1200 rpm
32 cm³ /rev



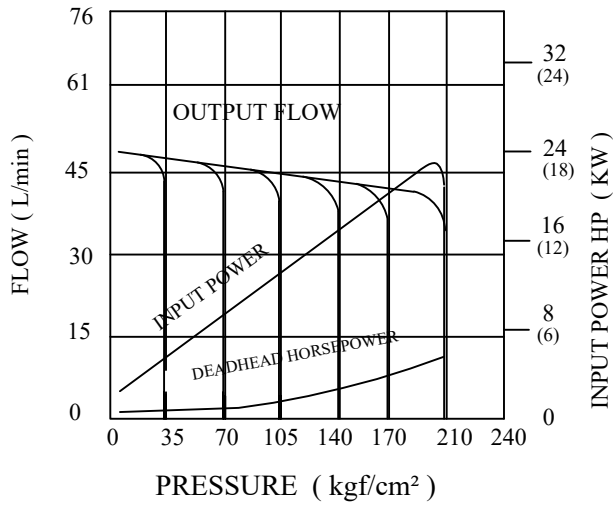
SOUND PRESSURE @ 1800rpm
25 cm³ /rev



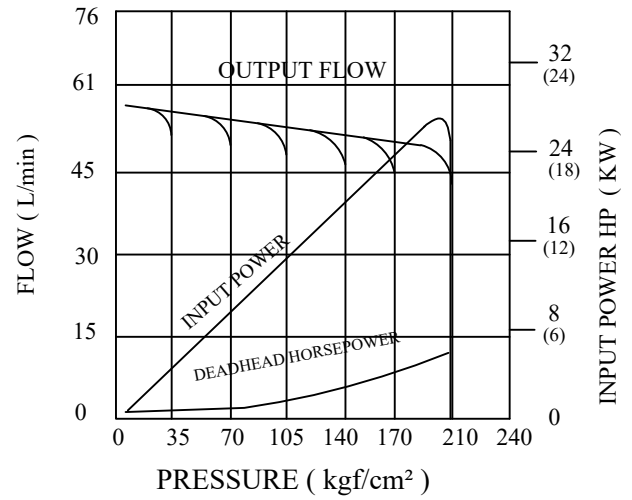
SOUND PRESSURE @ 1200rpm
32cm³ /rev



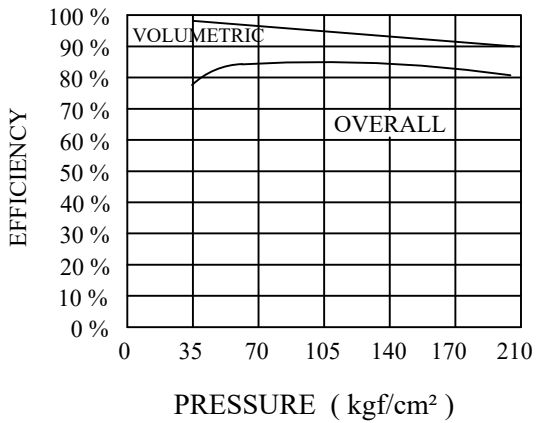
OUTPUT FLOW & POWER @ 1500rpm
32 cm³ /rev



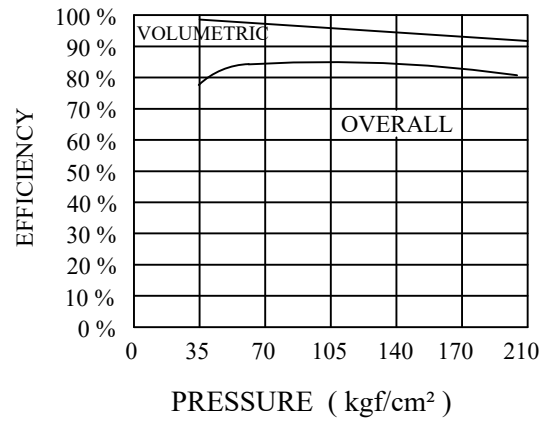
OUTPUT FLOW & POWER @ 1800rpm
32 cm³ /rev



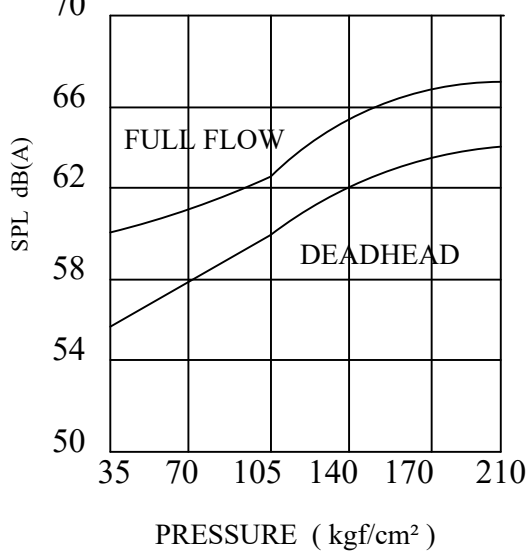
EFFICIENCY @ 1500 rpm
32 cm³ /rev



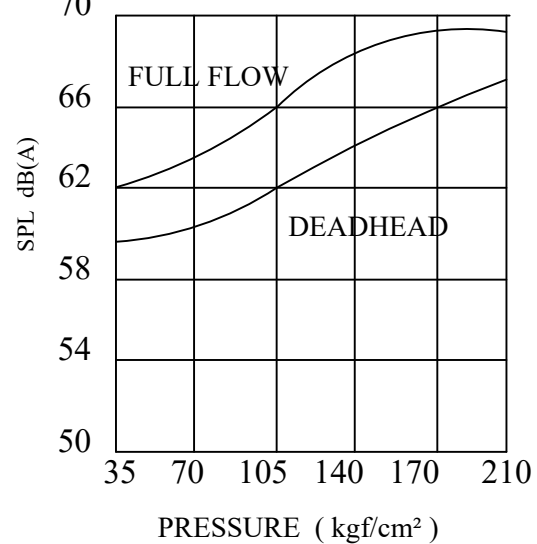
EFFICIENCY @ 1800 rpm
32 cm³ /rev



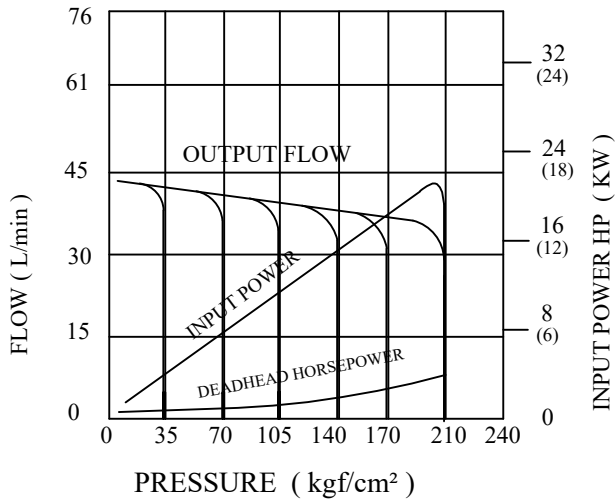
SOUND PRESSURE @ 1500rpm
32 cm³ /rev



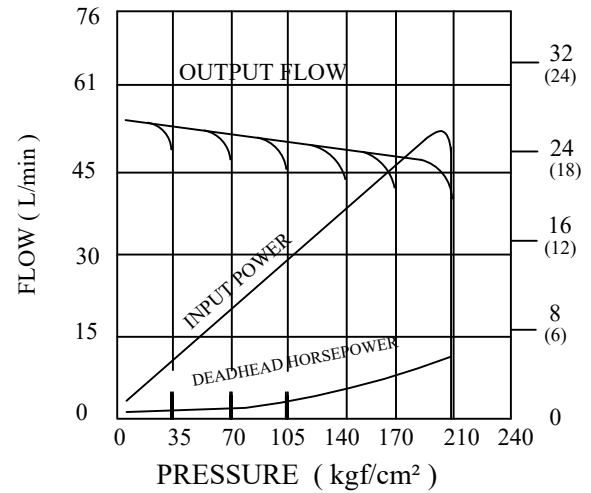
SOUND PRESSURE @ 1800rpm
32 cm³ /rev



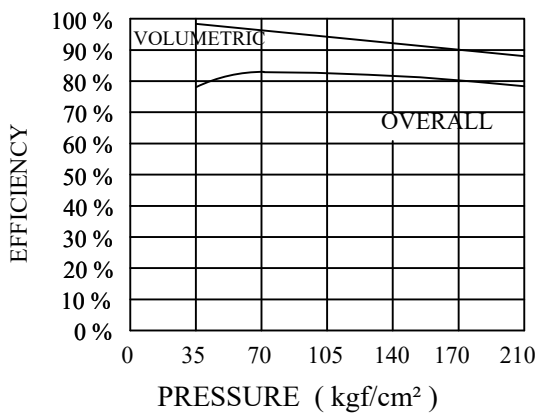
OUTPUT FLOW & POWER @ 1200rpm
36 cm³ /rev



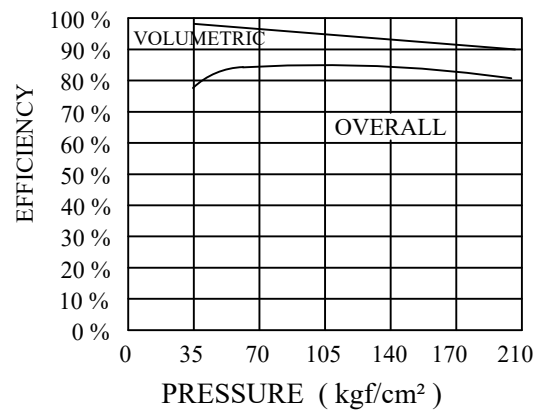
OUTPUT FLOW & POWER @ 1500rpm
36 cm³ /rev



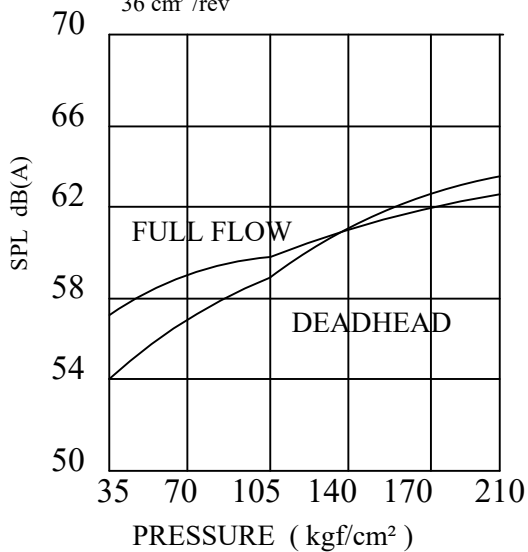
EFFICIENCY @ 1200 rpm
36 cm³ /rev



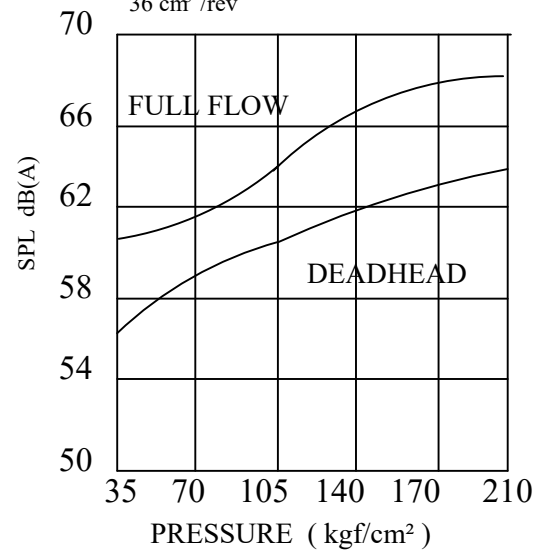
EFFICIENCY @ 1500 rpm
36 cm³ /rev



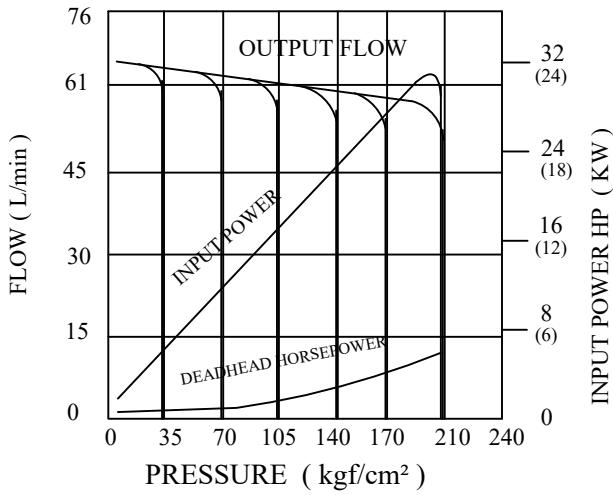
SOUND PRESSURE @ 1200rpm
36 cm³ /rev



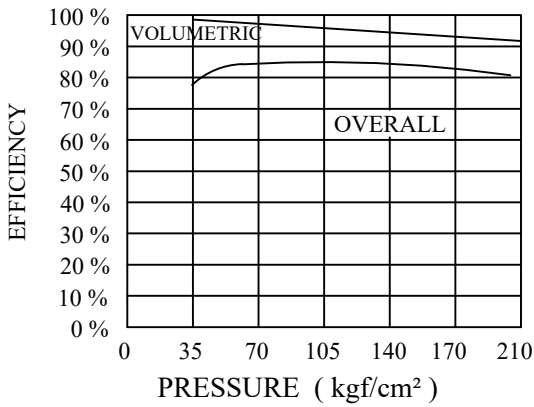
SOUND PRESSURE @ 1500rpm
36 cm³ /rev



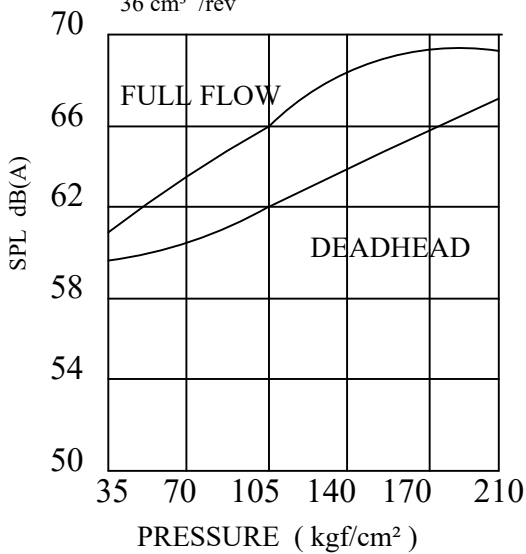
OUTPUT FLOW & POWER @ 1800rpm
36 cm³ /rev



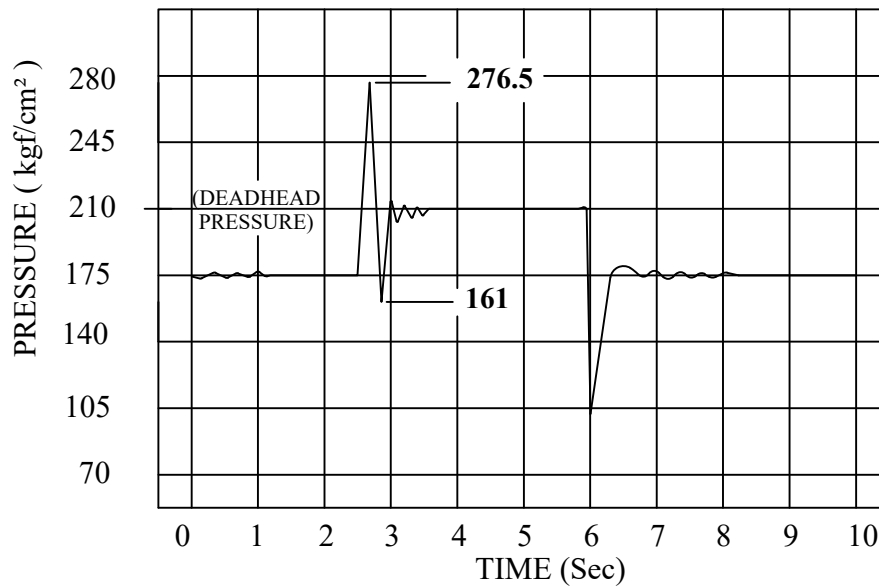
EFFICIENCY @ 1800 rpm
36 cm³ /rev



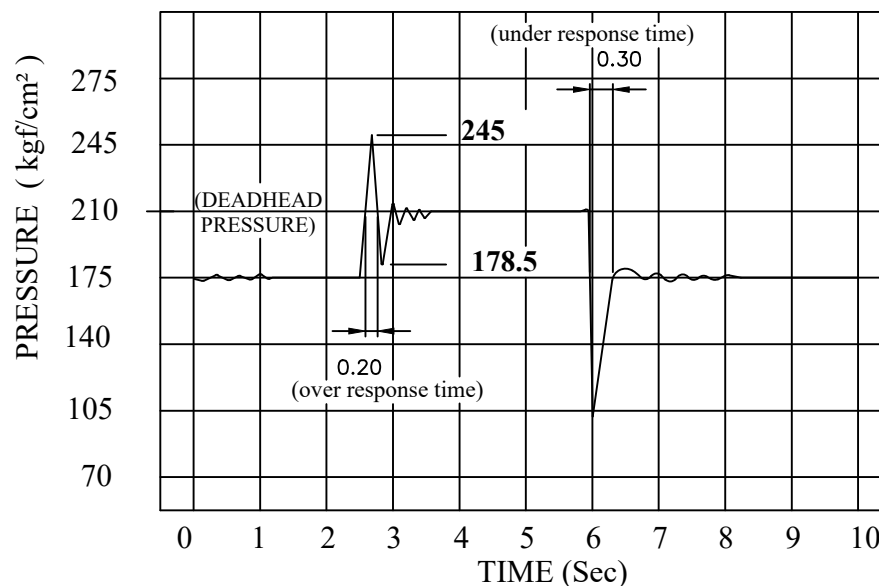
SOUND PRESSURE @ 1800rpm
36 cm³ /rev



* YPV-25 REACTION CHARACTERISTICS
SHOCK CLIPPER FUNTION



YPV-25 Single stage compensator, plot with shock clipper **inactive**.
Response overshoot: 66.5 (kgf/cm²) ; response undershoot: 49 (kgf/cm²)

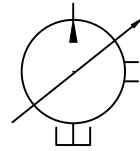


YPV-25 Single stage compensator, plot with shock clipper **active**.
1. Response overshoot : 35 (kgf/cm²); response undershoot : 31.5 (kgf/cm²)
2. response time (circuit dependent) : 20 ~30 ms

* CASE DRAIN FLOW

SPEC.	Mpa (Kgf / cm ²)	YPV- 25 / 32 / 36 (l/min)
case drain flow while compensating @1800 rpm CASE DRAIN FLOW	7 (71.4)	2.0~3.5
	14 (142.8)	4.0~5.0
	21 (214.2)	5.0~6.0

Care in Application



SYMBOL

1.Power Unit Circuit

In variable displacement vane Pump systems , the close circuit is recommended.

2.Shaft Rotation

Clockwise rotation viewed from the shaft end is standard.

3.Fluids Permissible

When working pressure lower than 70 bar , Hydraulic oil with a viscosity from 30 ~ 50(cst), (VG32) at 40°C is recommended.

4.Drain Pipe

External drain control type. Drain connection,must be piped directly to tank and backpressure must not exceed 0.3 bar.

5.Oil Temperature Range

Oil temperature range should be from 15°C~60°C during running operation and should be more than 7°C at starting.

6.Alignment and Installation of Pumps

In case the pump is connected to an electric motor , limit the defection of the alignment between the shafts to 0.05 mm TIR , and angle ± 1 degree.Be sured the electric motor direction is accordingly with the pump's shaft before starting.

7.Suction Port min. Pressure

Suction port minimum working pressure is ± 0.03 bar.

8.Cautions for Starting

When the pump is to be operated for the first time , place the pump delivery side in NO-Load condition and repeat starting and stopping of the motor for several times to eject the air from,inside of the pump and piping. If keep on 10 minutes operation will be much better.

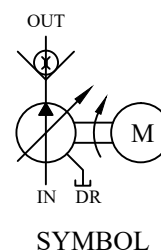
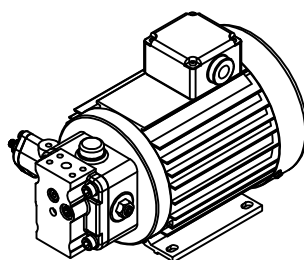
9. sure the maximum peak pressure (setting pressure + surge pressure) during operation does not exceed 14Mpa.

1. 一般輪葉變量泵建議使用閉迴路的設計
2. 泵的迴轉是順時針。
3. 作動油的黏度建議使用(VG32)。
4. 泵的內漏回油管，須單獨直接進入油箱並且控制背壓在0.3bar以內。
5. 作動油的溫度最好在(15°~60°)之間。
6. 泵與馬達心軸連接時的偏心量在0.05mm或 $\pm 1^\circ$ 以內。
7. 進油口的壓力必須控制在0.03bar以內。
8. 當泵是第一次運作時，須無載啟動停止操作數次將泵及管內空氣排出並最好保持10分鐘的無載運轉
9. 設定壓力時, 要確認沖擊壓不可超過14Mpa

YUVN SERIES

Variable Vane Uni-Pump Features & Ordering Code

YUVN-8
YUVN-12
YUVN-16
YUVN-21



FEATURES 特點

- *.Energy efficient high performance up 30~40% (高效高性能)
- *.Lightweight, compact design (重量輕，結構緊湊)
- *.Low noise, long life (噪音低，壽命長)
- * Low heat generation, low temperature rise (低發熱，低溫升)

Model	Capacity (cm ³ /rev)	Operating Pressure Mpa (kgf/cm ²)	No-load discharge Rate (L/min)		Input power (HP)	Net Weight (Kg)
			50HZ	60HZ		
YUVN-8-A(B)-2- *-4-A-10	8	1.5~ 4.0(15.3~40.8)	12	14.4	1~2	1HP:22 2HP:29 3HP:38.5 5HP:45
YUVN-8-A(B)-3- *-4-A-10		3.5~ 6.0 (35.7~61.2)				
YUVN-8-A(B)-4- *-4-A-10		5.5~ 8.0 (56.1~81.6)				
YUVN-12-A(B)-2- *-4-A-10	12	1.5~ 4.0(15.3~40.8)	18	21.6	1~2	
YUVN-12-A(B)-3- *-4-A-10		3.5~ 6.0 (35.7~61.2)			2~3	
YUVN-12-A(B)-4- *-4-A-10		5.5~ 8.0 (56.1~81.6)			2~3	
YUVN-16-A(B)-2- *-4-A-10	16	1.5~ 4.0(15.3~40.8)	24	28.8	1~2	
YUVN-16-A(B)-3- *-4-A-10		3.5~ 6.0 (35.7~61.2)			2~3	
YUVN-16-A(B)-4- *-4-A-10		5.5~ 8.0 (56.1~81.6)			3~5	
YUVN-21-A(B)-2- *-4-A-10	21	1.5~ 4.0(15.3~40.8)	31.5	37.8	2~3	
YUVN-21-A(B)-3- *-4-A-10		3.5~ 6.0 (35.7~61.2)			3~5	
YUVN-21-A(B)-4- *-4-A-10		5.5~ 8.0 (56.1~81.6)			3~5	

ORDERING CODE 訂購指引

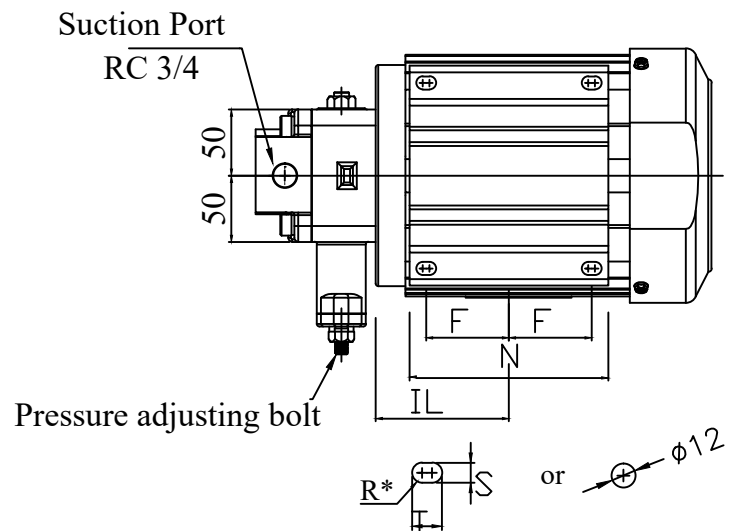
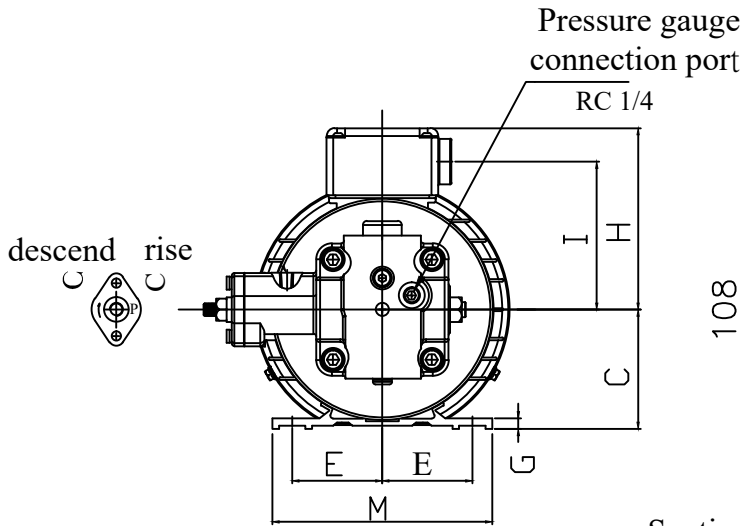
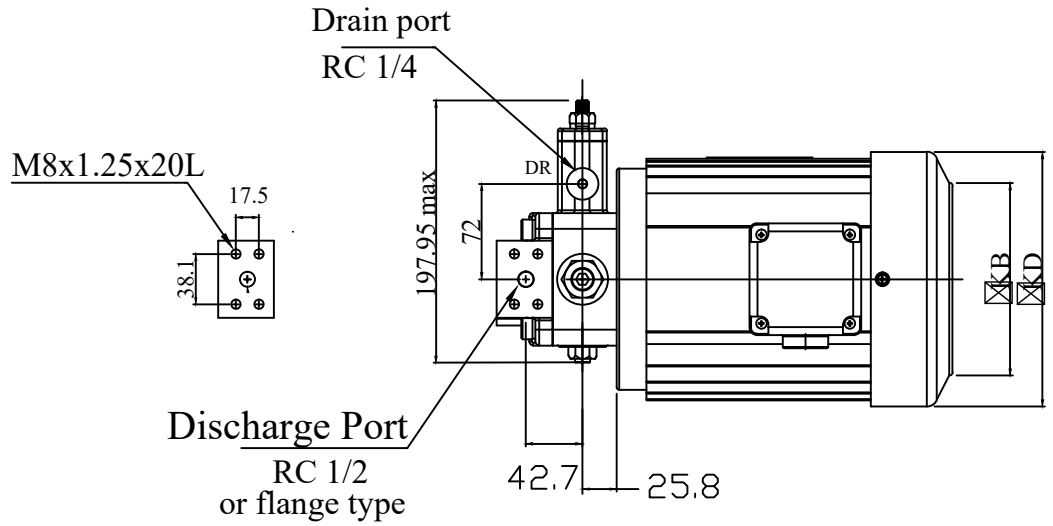
YUVN - 8 - A - 3 - 1 - 22 - 1 - 4 - A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- | | |
|--|--|
| <p>① YUVN Series Uni-pump</p> <p>② Displacement (cm³/rev) : 8 , 12 , 16 , 21</p> <p>③ A : Motor-side leak-proof (馬達端防漏型)
B : Pump-side leak-proof (泵軸端防漏型)</p> <p>④ Pressure adjustment range
2 : 15 ~ 40 (Kg/cm²)
3 : 35 ~ 61 (Kg/cm²)
4 : 56 ~ 80 (Kg/cm²)</p> <p>⑤ Shaft Type
1 : 方形鍵 3 : Spline
2 : 一字鍵
* 參見 KVDN 外形尺寸說明</p> | <p>⑥ Motor voltage (volt)
22 : AC-220 V 44 : AC-440 V
38 : AC-380 V</p> <p>⑦ Motor output (Kw)
1 : 0.75 kw
2 : 1.5 kw
3 : 2.2 kw</p> <p>⑧ Number of motor poles 4p</p> <p>⑨ Type of Suction Port & Discharge Port
A or No : RC
B: NPT
C: SAE
D: BSP</p> |
|--|--|

YUVN Dimensional Drawing

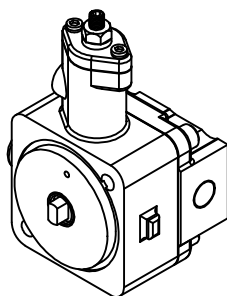
YUVN-8
YUVN-12
YUVN-16
YUVN-21



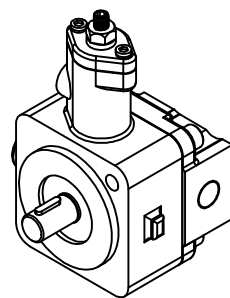
Model No		Motor Dimensions mm (mm)															
		A	C	E	F	G	H	I	L	M	N	O	S x T	IL	~~K~~ B	~~K~~ D	R*/ ~~X~~
YUVN-*-A*-1- 4	1.5 - 4 2HP	23	90	70	62.5	8	135	107	253.5	166	150	143	15 x 10	100.5	~~X~~ 47	~~X~~ 84	R6
YUVN-*-A*-2- 4	2.2 - 4 3HP	25	100	80	70	10	147	119	278.5	195	180	155	~~X~~ 2	110	~~X~~ 67	~~X~~ 105.4	~~X~~ 2

YVDN SERIES Variable Vane Pump Features & Ordering Code

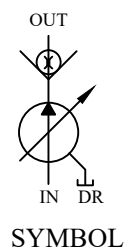
YVDN-8
YVDN-12
YVDN-16
YVDN-21



(A型：馬達端防漏型)



(B型：泵軸端防漏型)



SYMBOL

FEATURES 特點

- *.Energy efficient high performance up 30~40% (高效高性能)
- *.Lightweight, compact design (重量輕，結構緊湊)
- *.Low noise, long life (噪音低，壽命長)
- *.Low heat generation, low temperature rise (低發熱，低溫升)

Model	Capacity (cm ³ /rev)	Operating Pressure Mpa (Kgf/cm ²)	No-load discharge Rate (L/min)		Input power (HP)	Net Weight (Kg)
			50HZ	60HZ		
YVDN-8	8	1.5~ 4.0(15.3~40.8)	12	14.4	1~2	7
		3.5~ 6.0 (35.7~61.2)				
		5.5~ 8.0 (56.1~81.6)				
YVDN-12	12	1.5~ 4.0(15.3~40.8)	18	21.6	1~2	
		3.5~ 6.0 (35.7~61.2)			2~3	
		5.5~ 8.0 (56.1~81.6)			2~3	
YVDN-16	16	1.5~ 4.0(15.3~40.8)	24	28.8	1~2	
		3.5~ 6.0 (35.7~61.2)			2~3	
		5.5~ 8.0 (56.1~81.6)			3~5	
YVDN-21	21	1.5~ 4.0(15.3~40.8)	31.5	37.8	2~3	
		3.5~ 6.0 (35.7~61.2)			3~5	
		5.5~ 8.0 (56.1~81.6)			3~5	

ORDERING CODE 訂購指引

YVDN - 8 - A - 3 - 1 - A

①

②

③

④

⑤

⑥

① YUVN Series Uni-pump

② Displacement (cm³ /rev) : 8 , 12 , 16 , 21

③ A : Motor-side leak-proof (馬達端防漏型)
B : Pump-side leak-proof (泵軸端防漏型)

④ Pressure adjustment range

2 : 15 ~ 40 (Kgf/cm²)

3 : 35 ~ 61 (Kgf/cm²)

4 : 56 ~ 80 (Kgf/cm²)

⑤ Shaft Type

1 : 方形鍵

3 : Splined

2 : 一字鍵

* 參見 KVDN 外形尺寸說明

⑥ Type of Suction Port & Discharge Port

A or No : RC

B: NPT

C: SAE

D: BSP

YVDN Dimensional Drawing

YVDN-8

YVDN-12

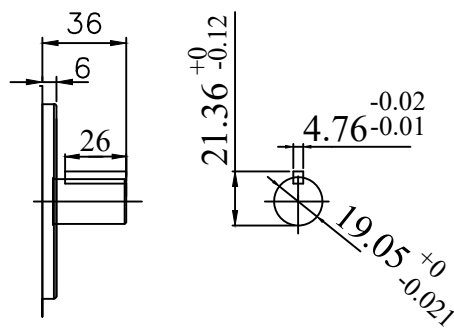
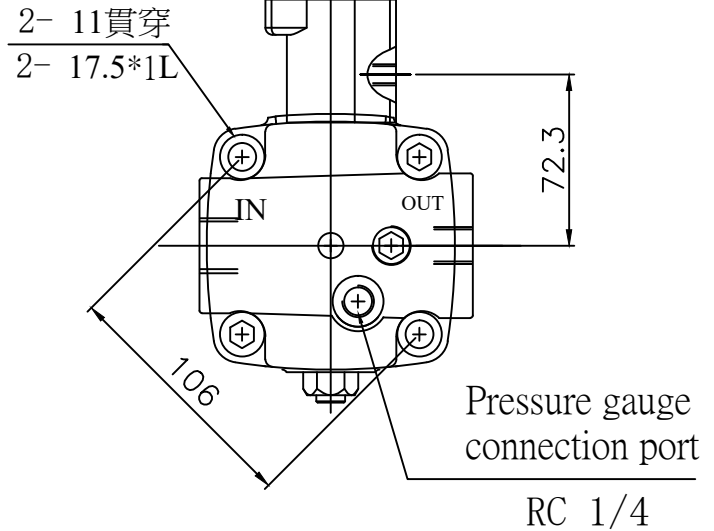
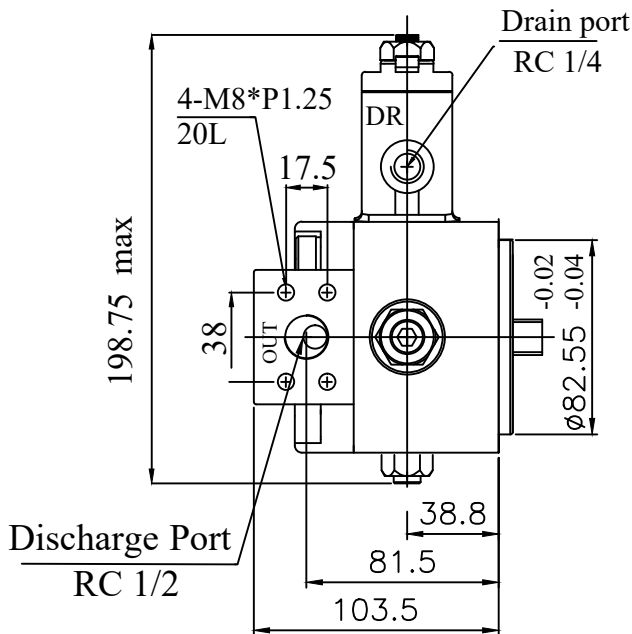
Motor-side leak-proof (馬達端防漏型 YVDN-*-A-*)

YVDN-16

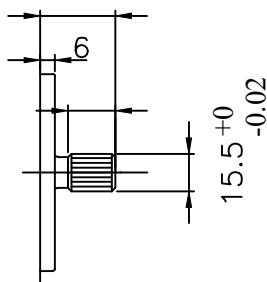
YVDN-21

Pressure adjusting

bolt(M10*P1.25)



NO : 01 - Shaft

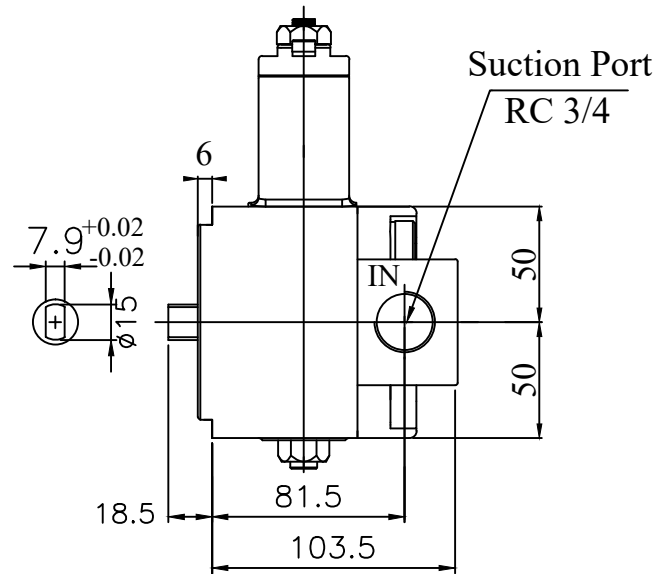


Diametral Pitch : 16/32

Pressure Angle : 30°

No. of Teeth : 9

NO.03-Shaft

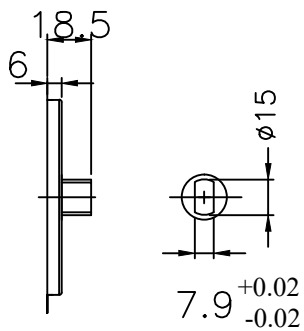
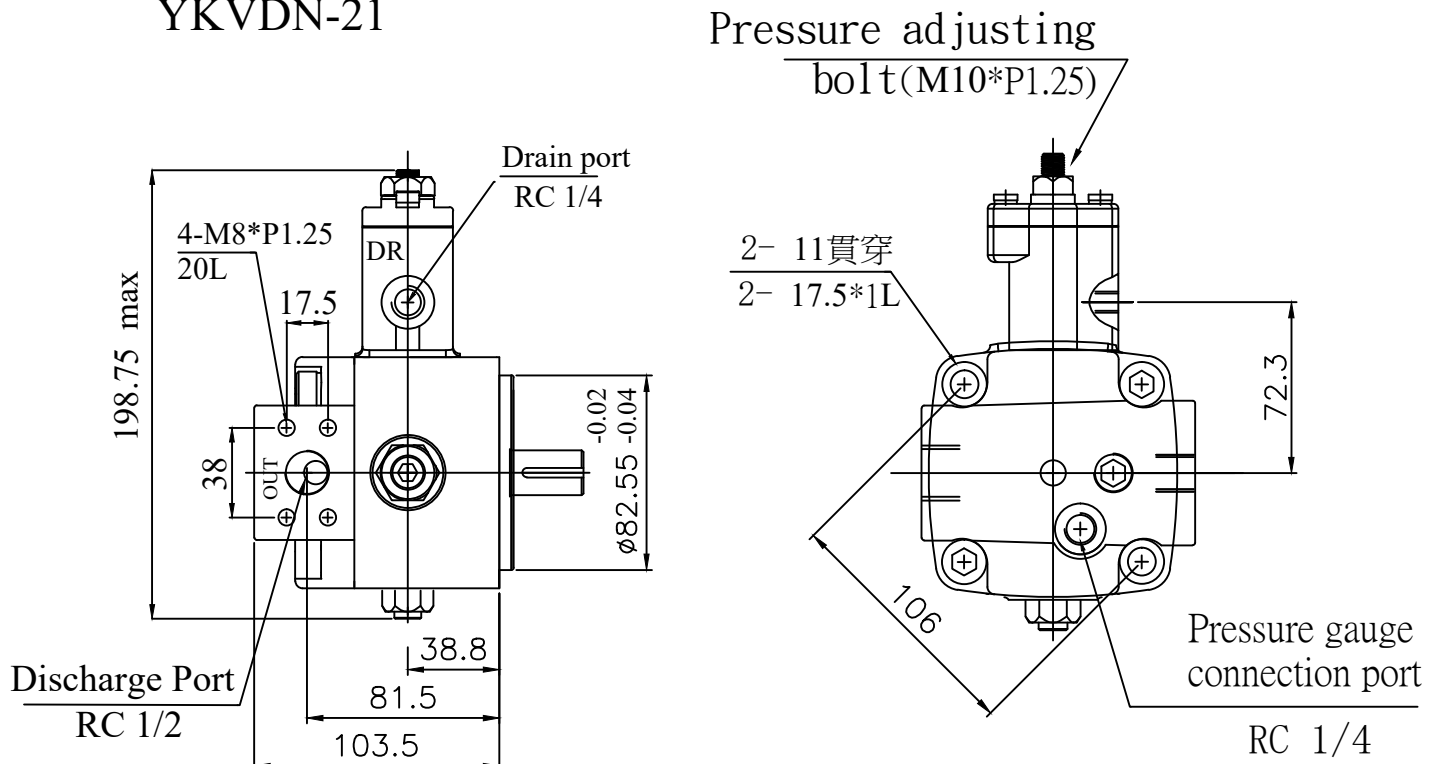


NO : 02 - Shaft

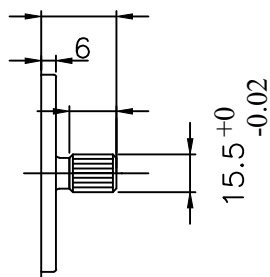
YVDN Dimensional Drawing

YVDN-8
YVDN-12
YVDN-16
YKVDN-21

Pump-side leak-proof (泵端防漏型 YVDN-*-B-*)



NO : 02 - Shaft

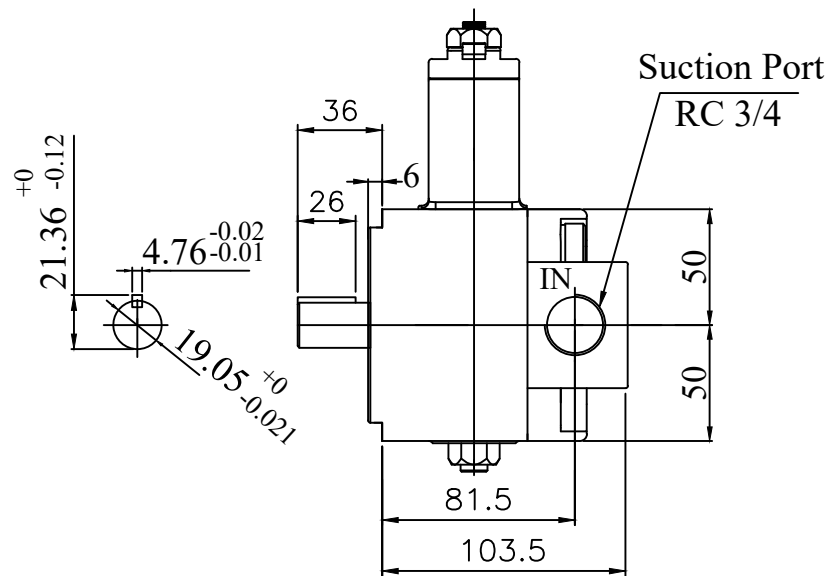


Diametral Pitch : 16/32

Pressure Angle : 30°

No. of Teeth : 9

NO.03-Shaft



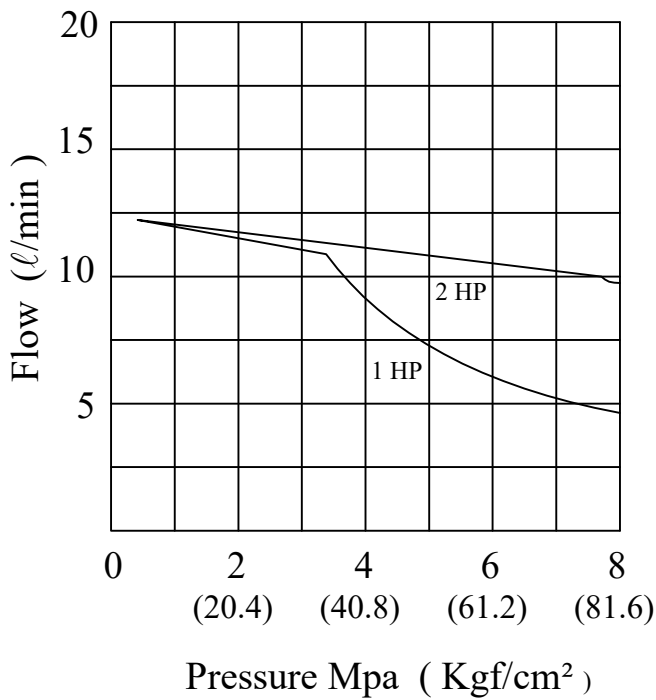
NO : 01 - Shaft

Motor Hp selection curves

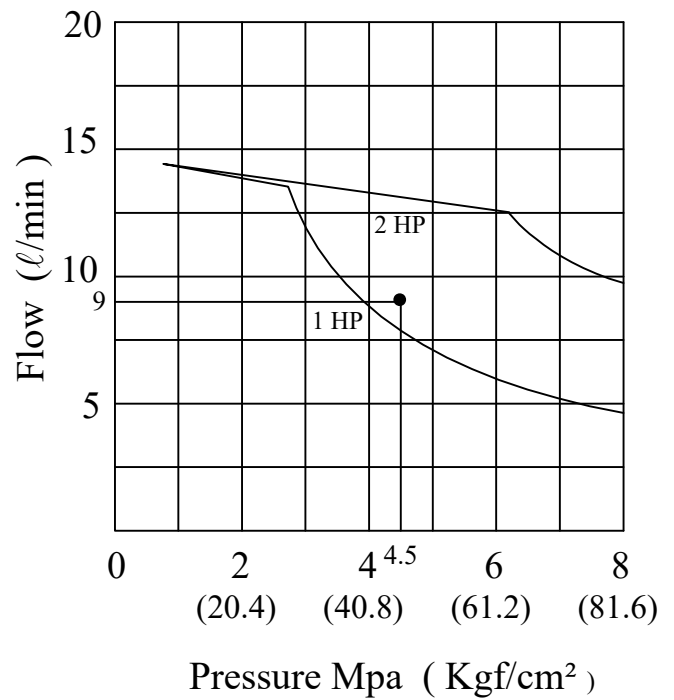
select a uni-pump that has a Pressure and flow rate that is within the range of the drive so that the drive will not overload

Example: $Q=9 \text{ l/min}$, $P=4.5 \text{ Mpa}$ must be used 2HP motor

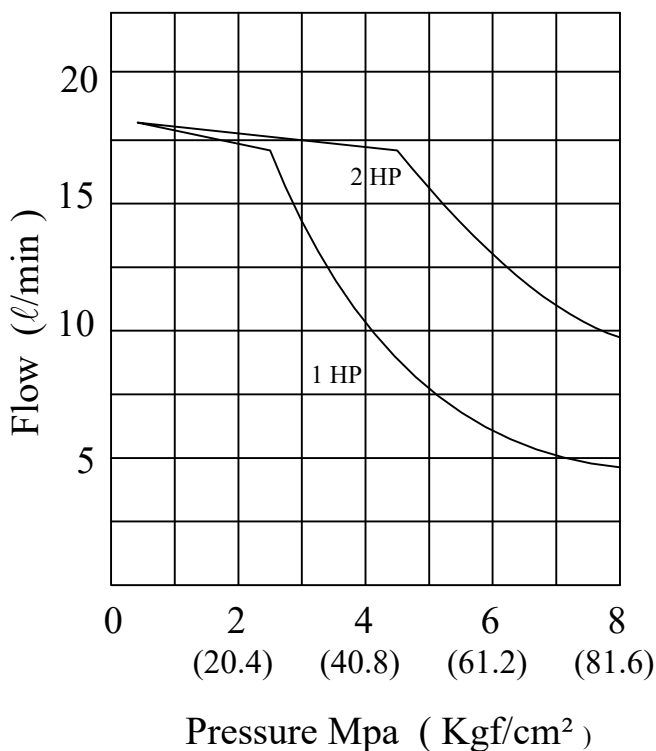
YVDN - 8 - * - * (1500rpm)



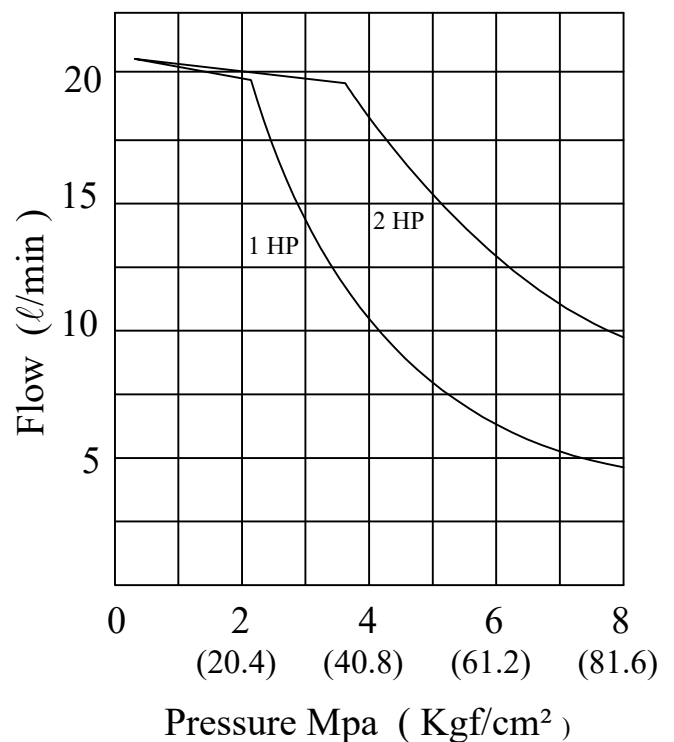
YVDN - 8 - * - * (1800rpm)



YVDN - 12 - * - * (1500rpm)



YVDN - 12 - * - * (1800rpm)

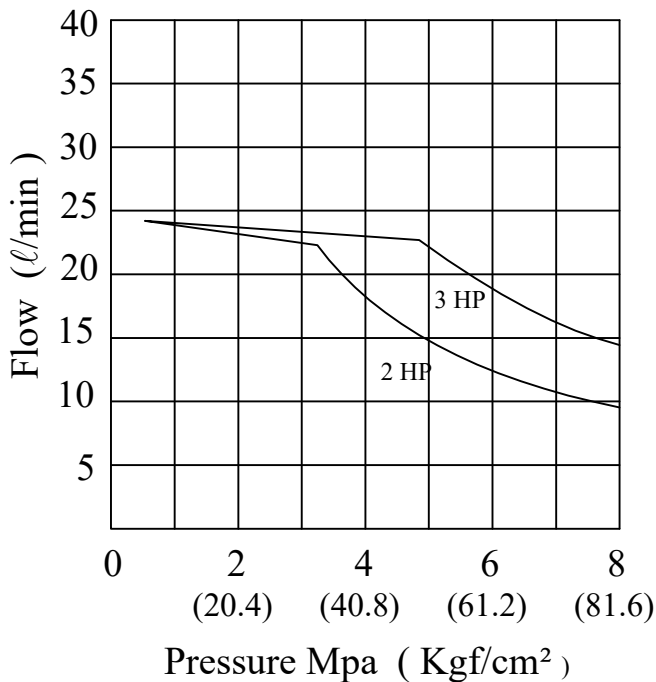


Motor Hp selection curves

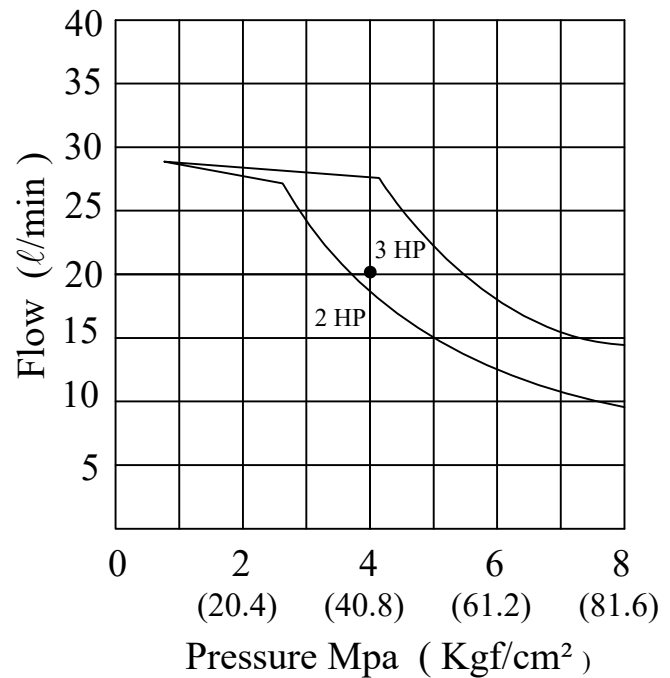
select a uni-pump that has a Pressure and flow rate that is within the range of the drive so that the drive will not overload

Example: $Q = 20 \text{ l/min}$, $P = 4.0 \text{ Mpa}$ must be used 3HP motor

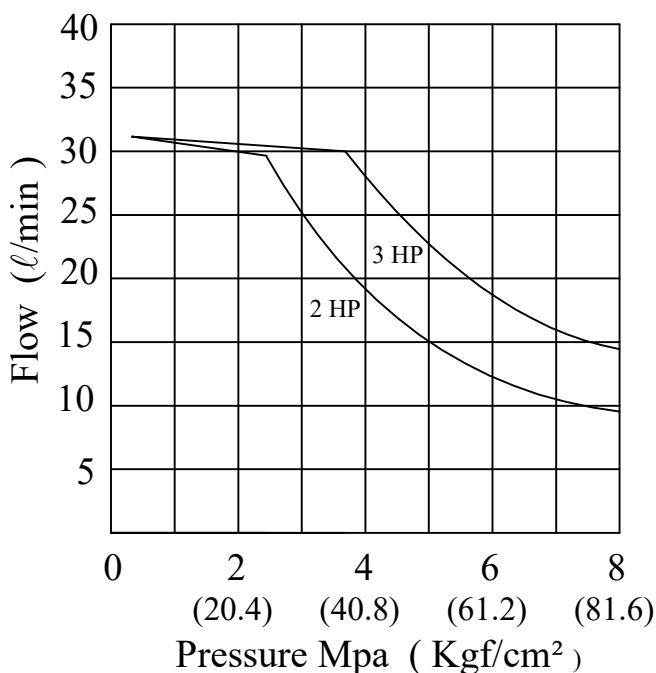
YVDN - 16 - * - * (1500rpm)



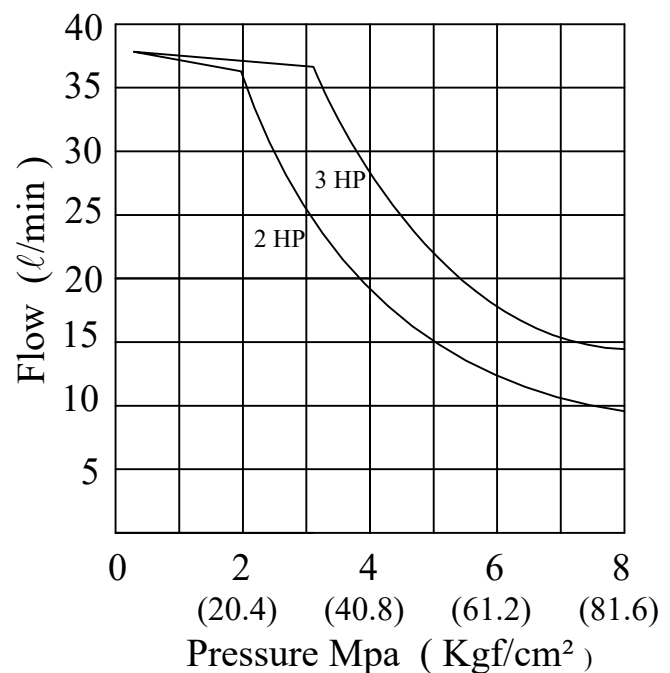
YVDN - 16 - * - * (1800rpm)



YVDN - 21 - * - * (1500rpm)

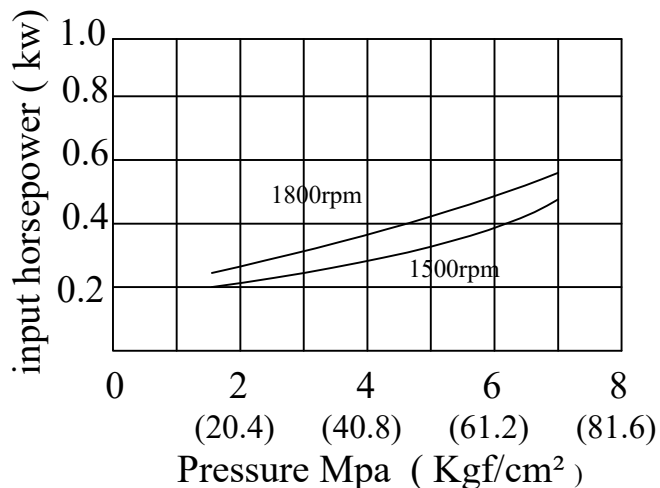


YVDN - 21 - * - * (1800rpm)

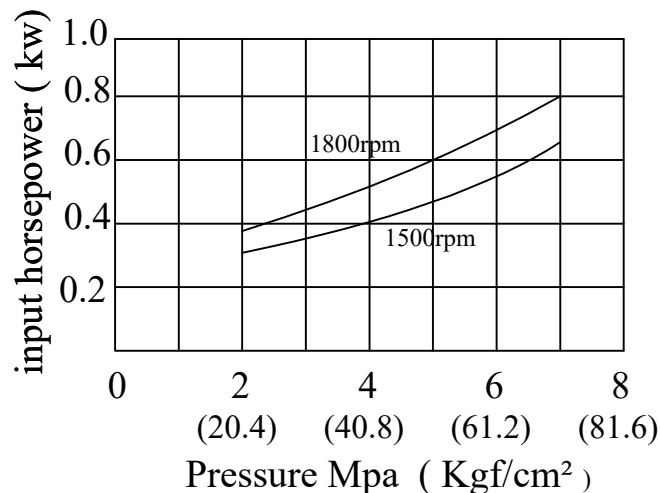


Deadhead input horsepower

YVDN - 8 / 12 - * - *

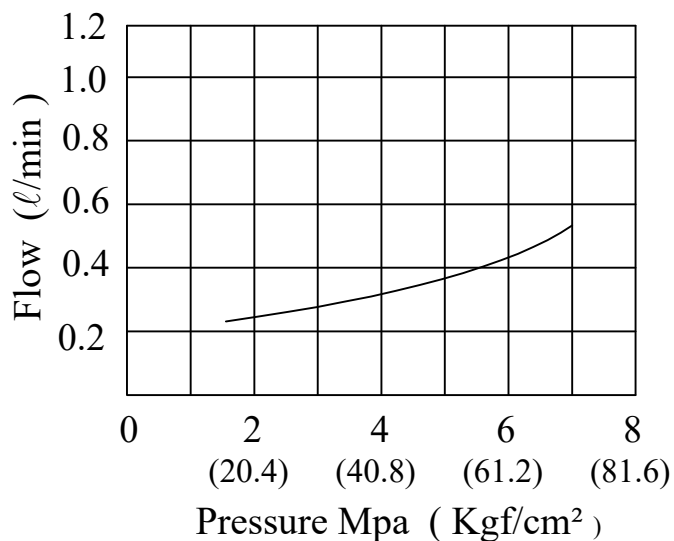


YVDN - 16 / 21 - * - *

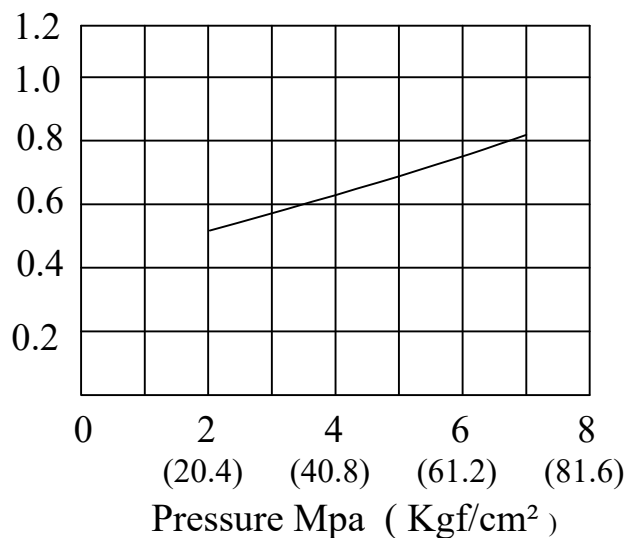


Deadhead drain volume

YVDN - 8 / 12 - * - *

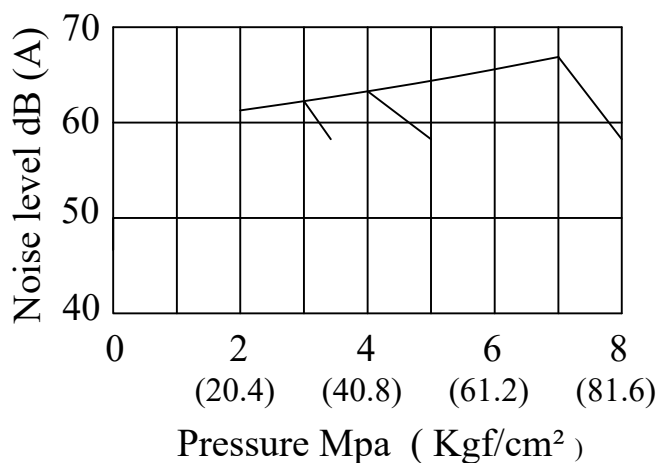


YVDN - 16 / 21 - * - *

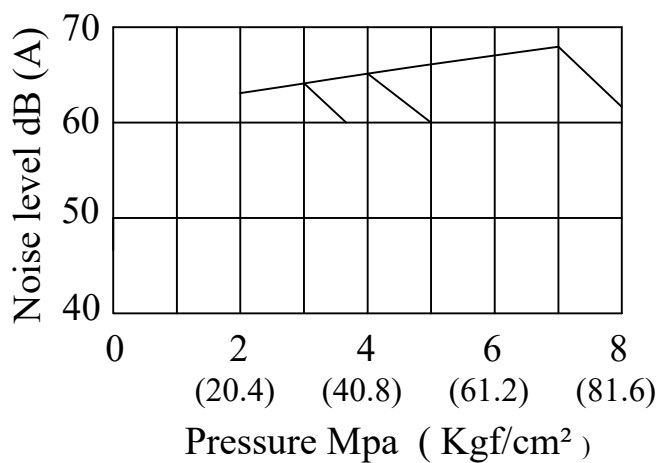


Noise characteristics

YUVN-8/12-* -4- 2 -4-A-10
(2HP*4P @1800 rpm)

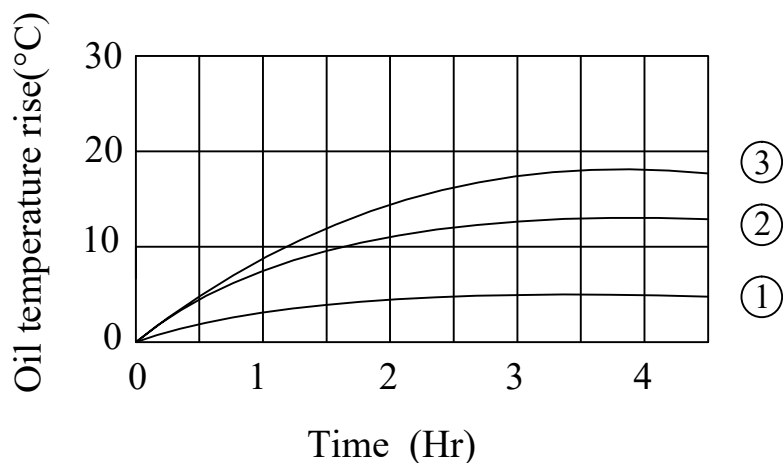


YUVN-16/21-* -4- 3 -4-A-10
(3HP*4P @1800 rpm)



Oil temperature rise characteristics

YUVN-16-* -4- * -4-A-10
(1800 rpm ,Tank capacity 20 liter)



PS:

- ③ cutoff Pressure 7.0 Mpa (71.4 Kgf/cm²)
- ② cutoff Pressure 5.0 Mpa (51.0 Kgf/cm²)
- ① cutoff Pressure 3.5 Mpa (35.7 Kgf/cm²)