

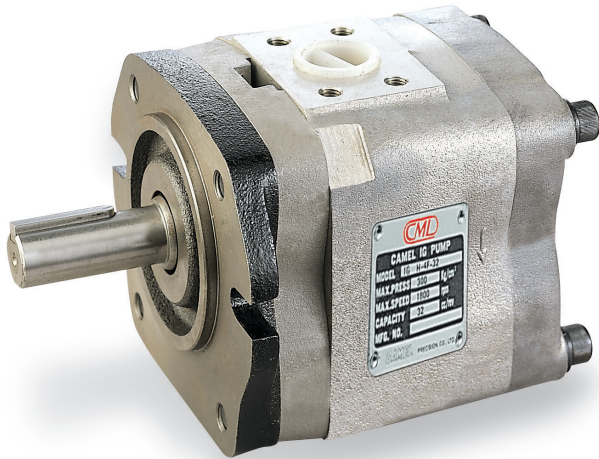


Internal Gear Pump 內齒輪幫浦

· C · A · M · E · L · H · Y · D · R · A · U · L · I · C · S ·

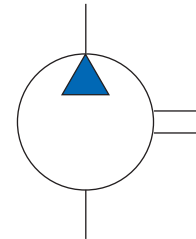


Page C1- C10
IG Series



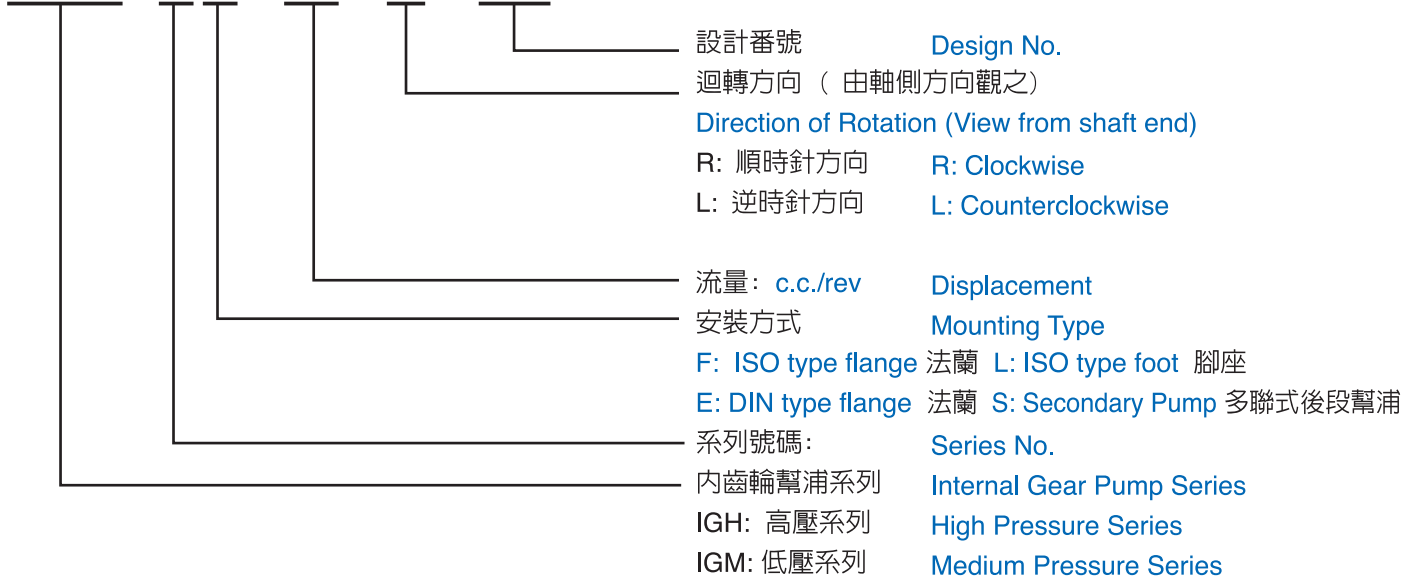
油壓記號

SYMBOL



型式號碼 / Model Code

IGH - 4F - 32 - R - 20



產品特性:

1. 高壓力, 最高300 kgf/cm².
2. 極靜音, 完全符合低音工作環靜要求.
3. 低脈衝, 運轉平順.
4. 徑向及軸向壓力補償, 效率超高
5. 優異的吸力, 作動油黏度範圍廣泛,
6. 流量範圍廣, 從3.5c.c 到 64 c.c.
7. 可以多聯式幫浦連結使用, 應用在多重迴路中.

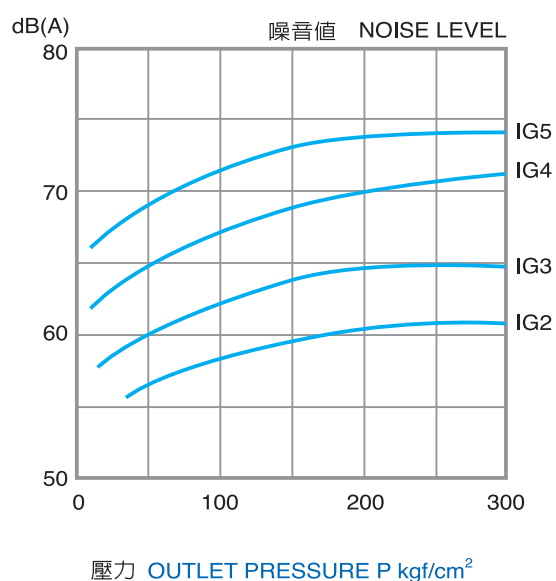
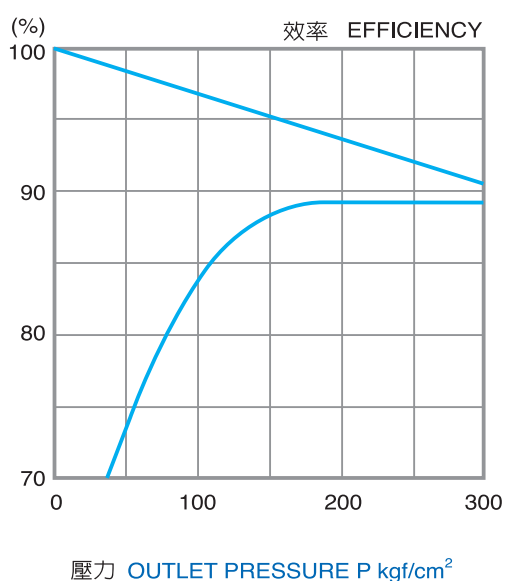
FEATURE:

1. High Pressure, max pressure 300 kgf/cm².
2. Extremely low noise.
3. Low pulsation.
4. High overall efficiency through axial & radial pressure compensation.
5. Good suction attribute and wide oil viscosity range.
6. Displacement from 3.5 to 64 c.c. and multiple stage pump being available.

技術資料 / Technical Data

型式 MODEL	理論流量 Theoretical Displacment c.c/rev.	最高壓力 MAX Pressure kgf/cm ²		容許迴轉速 Shaft Speed		重量 WEIGHT Kg	入口 inlet port	出口 outlet port
		持續Cont	瞬間peak	Min	Max			
IGM-2	3.5	220	250	600	3000	2.4	1/2"	1/2"
	5					2.5		
IGH-2	6.5	250	300	600	3800	2.6		
	8					2.8		
IGM-3	10	220	250	600	3000	4.8	1"	1/2"
	13					5.0		
IGH-3	16	250	300	600	3000	5.3		
IGM-4	20	220	250	600	3000	9.5	1-1/4"	3/4"
	25					10.0		
IGH-4	32	250	300	600	3000	10.5		
IGM-5	40	220	250	600	2500	19.5	1-1/2"	1"
	50					20.5		
IGH-5	64	250	300	600	2500	21.5		

性能曲線 / Performance Curve

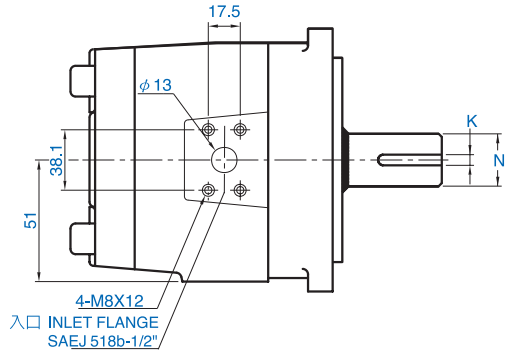


馬力-流量特性 / Delivery & Power Rating

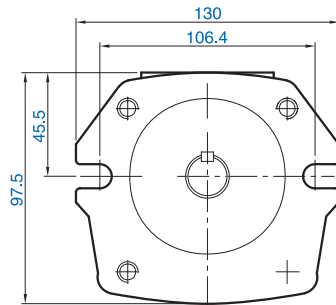
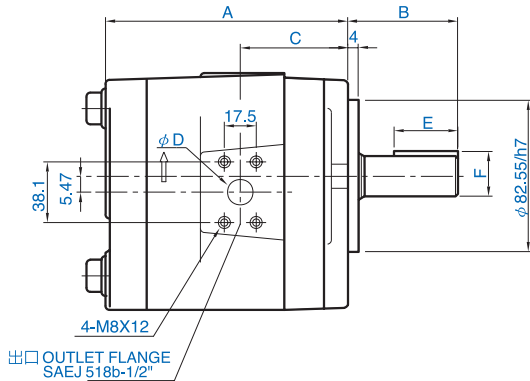
轉速 SPEED	ITEMS PRESSURE MODEL	吐出量DELIVERY l/min						輸入馬力POWER INPUT kw					
		7	70	140	210	250	300	7	70	140	210	250	300
1000 rpm	IG※-2-3.5	3.59	3.48	3.39	3.28	3.24	3.16	0.13	0.61	1.10	1.60	1.89	2.26
	-5	5.32	5.09	4.95	4.79	4.70	4.61	0.14	0.77	1.44	2.22	2.58	3.13
	-6.5	6.54	6.36	6.20	6.04	5.94	5.82	0.16	0.95	1.78	2.74	3.19	3.87
	-8	8.18	7.95	7.74	7.55	7.42	7.28	0.16	1.17	2.20	3.38	3.93	4.77
	IG※-3-10	10.1	9.95	9.7	9.4	9.3	9.1	0.17	1.56	2.68	4.17	4.96	6.0
	-13	13.1	13.0	12.6	12.4	12.2	12.0	0.26	1.98	3.50	5.25	6.17	7.58
	-16	15.7	15.3	15.0	14.7	14.5	14.2	0.32	2.32	4.15	6.23	7.33	9.01
	IG※-4-20	20.6	20.1	19.7	19.2	19.0	18.7	0.42	3.07	5.45	8.08	9.61	11.5
	-25	25.6	25.1	24.6	24.1	23.8	23.5	0.48	3.72	6.76	10.1	11.9	14.3
	-32	32.6	31.5	30.9	30.3	30.0	29.6	0.54	4.62	8.50	12.6	15.0	18.0
	IG※-5-40	40.7	39.8	38.9	38.1	37.6	37.0	1.1	6.06	10.7	16.0	18.9	23.3
	-50	50.2	49.2	48.3	47.3	46.8	46.1	1.2	7.28	13.3	19.7	23.3	28.0
-64	63.9	62.5	61.4	60.2	59.5	58.6	1.3	9.14	16.9	25.0	30.3	35.6	
1500 rpm	IG※-2-3.5	5.40	5.24	5.11	4.97	4.90	4.80	0.19	0.94	1.65	2.41	2.83	3.39
	-5	7.85	7.65	7.44	7.25	7.13	6.98	0.22	1.15	2.17	3.25	3.78	4.60
	-6.5	9.1	9.58	9.35	9.13	8.99	8.84	0.23	1.44	2.68	4.01	4.67	5.67
	-8	12.2	11.8	11.60	11.35	11.2	11.0	0.25	1.75	3.30	4.95	5.76	7.00
	IG※-3-10	15.2	14.8	14.5	14.2	14.0	13.8	0.26	2.27	4.07	6.10	7.26	8.82
	-13	19.8	19.4	19.0	18.7	18.5	18.2	0.40	2.89	5.31	7.78	9.26	11.4
	-16	23.6	23.1	22.6	22.2	22.0	21.7	0.49	3.39	6.30	9.35	11.0	13.5
	IG※-4-20	30.9	30.3	29.7	29.2	28.8	28.4	0.61	4.61	8.17	12.2	14.4	17.3
	-25	38.4	37.7	37.1	36.5	36.1	35.7	0.77	5.58	10.2	15.1	17.9	21.5
	-32	48.3	47.5	46.7	45.9	45.4	44.9	1.02	6.93	12.8	18.9	22.5	27.0
	IG※-5-40	61.1	59.9	58.8	57.6	56.9	56.2	1.80	9.33	16.3	24.2	28.7	35.3
	-50	75.4	74.0	72.8	71.6	70.8	70.0	2.0	11.2	20.1	29.8	35.4	42.5
-64	95.4	94.1	92.5	91.0	90.0	89.0	2.1	14.1	25.5	37.9	45.0	54.0	

油溫 : OIL TEMPERATURE 40°C ± 5
 作動油 : OPERATING FLUID:ISO VG68

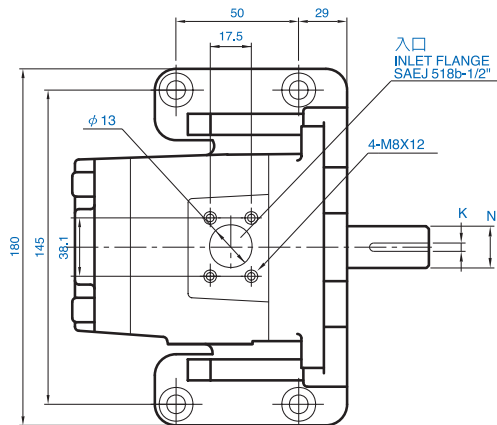
● IG*-2E(F)-*法蘭型 (順時針方向迴轉)
 Flange Type (Clockwise Rotation)



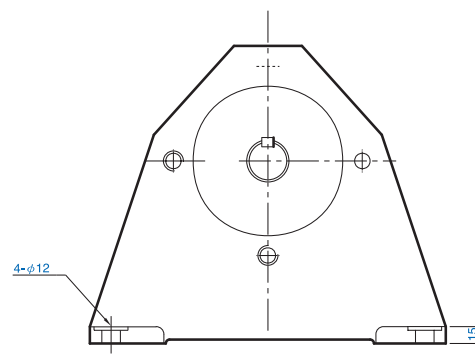
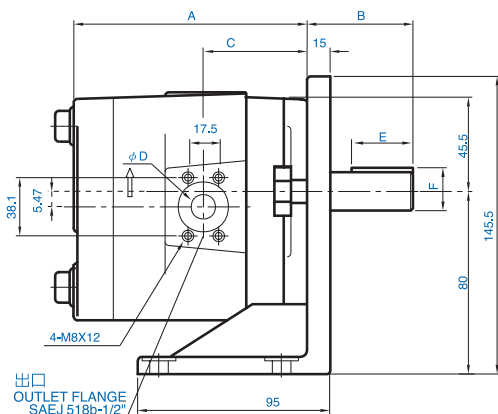
型式Model	A	C	ØD
IG*-2*-3.5	102.5	51	Ø8.9
IG*-2*-5	107.5	53.5	Ø11
IG*-2*-6.5	111.5	55.5	Ø12
IG*-2*-8	116.5	58	Ø13



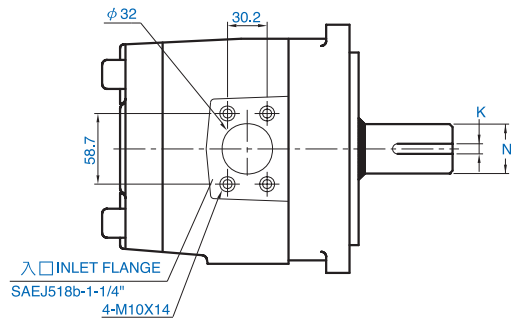
● IG*-2L-*腳座型 (順時針方向迴轉)
 Foot Type (Clockwise Rotation)



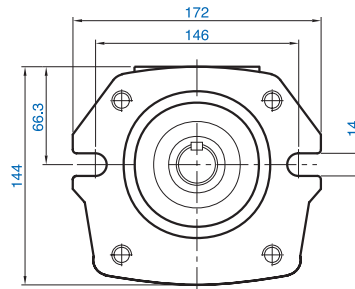
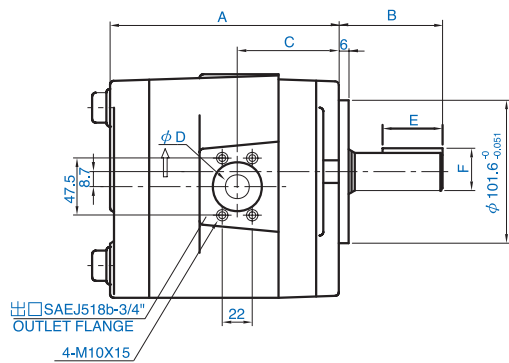
型式Model	B	E	F	K	N
IG*-2E-*	41	30	20.5	6/h7	18/h7
IG*-2F(L)-*	59	34	17.73/h7	3.968/h7	15.875/h7



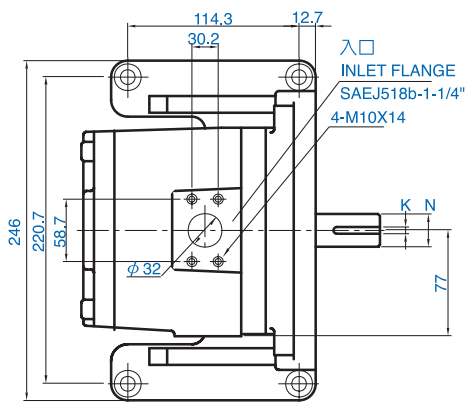
● IG*4E(F)-*法蘭型 (順時針方向迴轉)
Flange Type (Clockwise Rotation)



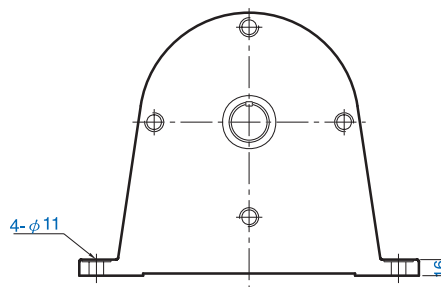
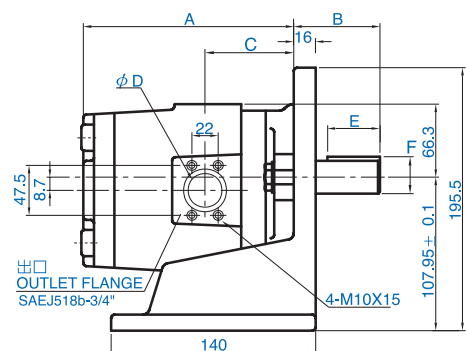
型式 Model	A	C	ØD
IG*-4*-20	150	71	Ø18
IG*-4*-25	156	74	Ø20
IG*-4*-32	164	78	Ø24



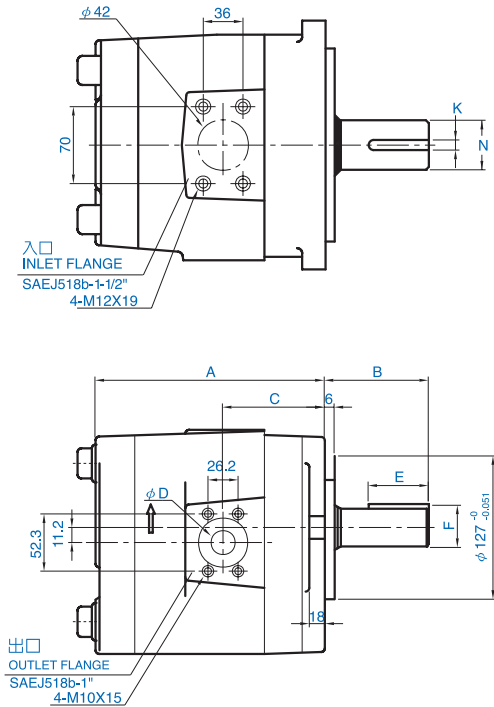
● IG*-4L-*脚座型 (順時針方向迴轉)
Foot Type (Clockwise Rotation)



型式 Model	B	E	F	K	N
IG*-4E-*	72	45	28	8/h7	25/h7
IG*-4F(L)-*	78	38	27.85/h7	6.375/h7	25.385/h7

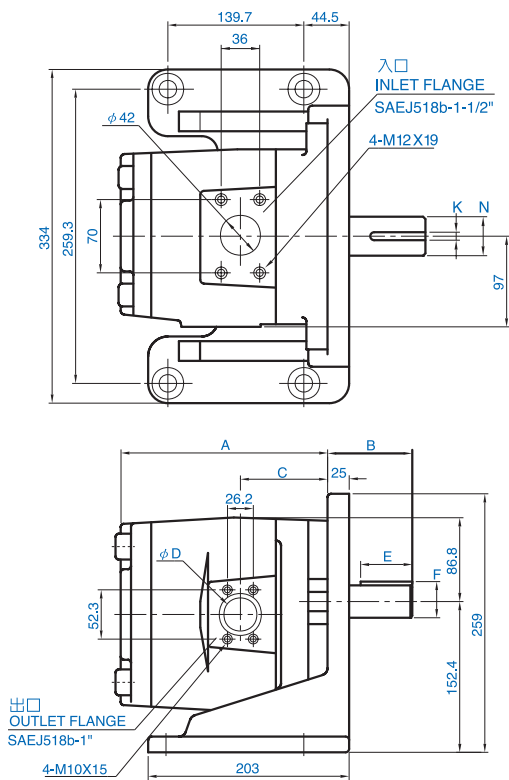


● IG※5E(F)-※法蘭型 (順時針方向迴轉)
 Flange Type (Clockwise Rotation)

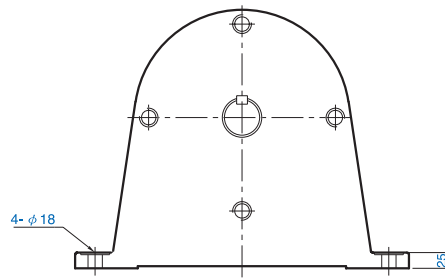


型式Model	A	C	ØD
IG*-5*-40	191	92	Ø24
IG*-5*-50	198	95.5	Ø26
IG*-5*-64	208	100.5	Ø28

● IG※-5L-※腳座型 (順時針方向迴轉)
 Foot Type (Clockwise Rotation)



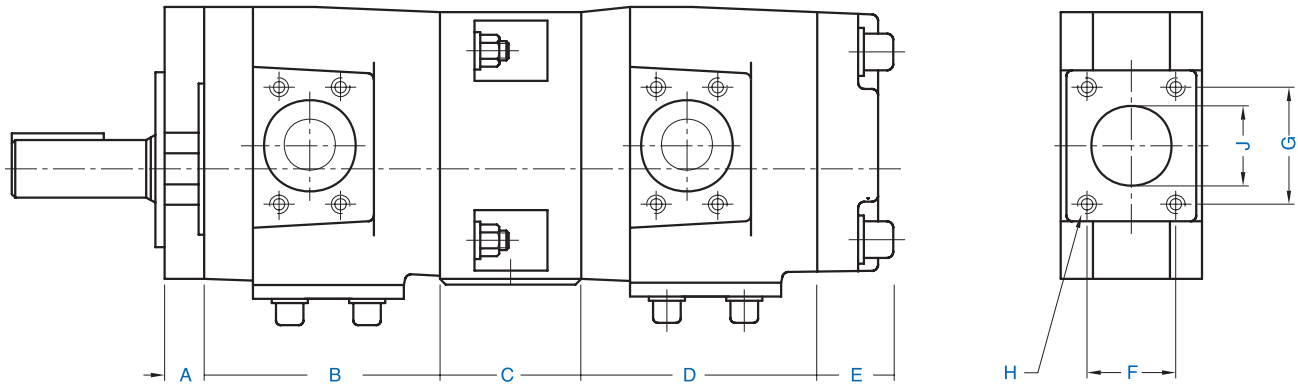
型式Model	B	E	F	K	N
IG*-5E-*	89	50	35	10/h7	32/h7
IG*-5F(L)-*	85	50	35.33/h7	7.938/h7	31.75/h7



Multiple Stage Internal Gear Pump

多 聯 式
內 齒 輪 幫 浦

尺寸圖 / Dimensions



相關尺寸說明 \ Dimensions

型式Model	IG2				IG3			IG4			IG5		
Displacement	3.5	5.5	6.5	8	10	13	16	20	25	32	40	50	64
A	19	19	19	19	18	18	18	20	20	20	22	22	22
B,D	64	69	73	78	84	90	95	102	108	116	138	145	155
E	24	24	24	24	28	28	28	42	42	42	39	39	39

連接座尺寸 \ Dimension of Connecting Housing

型式Model	C	F	G	H	I	J	Intake Flange
No.2	60	22.2	47.6	M8x12	54.5	Ø20	3/4"
No.3	70	30.2	58.7	M10x14	70.2	Ø31	1-1/4"
No.4	70	36	70	M12x20	74.3	Ø40	1-1/2"
No.5	90	50.8	89	M12x20	90	Ø60	2-1/2"

單位 unit: mm

連接座尺寸說明:

- No.2, 適用於 IG*-2E(S)/IG*-2S
- No.3, 適用於 IG*-3E(S)/IG*-3S(2S)
- No.4, 適用於 IG*-4E(S)/IG*-4S(3S, 2S)
- No.5, 適用於 IG*-5E(S)/IG*-5S(4S, 3S, 2S)

Remark of Connecting Housing :

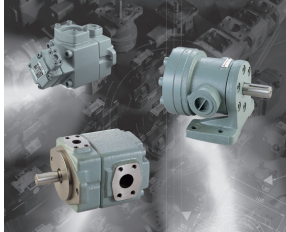
- No.2, applicable to IG*-2E(S)/IG*-2S
- No.3, applicable to IG*-3E(S)/IG*-3S(2S)
- No.4, applicable to IG*-4E(S)/IG*-4S(3S, 2S)
- No.5, applicable to IG*-5E(S)/IG*-5S(4S, 3S, 2S)

操作指南:

1. 液壓油:符合DIN第2及第3部份之HLP油,黏度為ISO 46-68.
最適操作黏度: 20-100 cSt.
最大作動黏度: 1500 cSt.
最小黏度: 15 cSt.
2. 操作溫度範圍: 5 to 70°C.
3. 吸入壓力:Absolute 0.8-1.3 kgf/cm².
4. 過濾器:吸入口過濾器 100um.
回油過濾器: 25um.
壓油清潔度, NAS 1638 第9級.
5. 流速:吸油管:2M /sec.
壓力管:5M /sec.
回油管:3M /sec.
6. 運轉:傳動軸不得承受任何徑向或軸向壓力.
請使用彈性連軸器, 幫浦和馬達傳動軸必須緊密連接.
安裝時不得使用敲擊或任何不當之強力方式.
請注意幫浦與馬達之轉動方向是否配合.
其他藉由鏈條或皮帶傳動時請向我方查詢.
7. 幫浦之安裝方向不限,但請注意在首次操作時務必將空氣排除.
8. 幫浦之啟動及停止前請先確定是在無負載狀況下方能為之.
9. 吸油管及壓力管之連結切勿過緊.
10. 運轉及初次啟動:在遵循以上指示後請確認系統及連接機器之設備完全符合國家標準後方得啟動幫浦.
 - a. 檢查電動馬達之空轉及其轉動方向.
 - b. 幫浦運轉時應注意油槽之油量是否足夠.
不足時請先填滿油,再運轉.
 - c. 幫浦啟動時應於無負載狀況下運轉,
 - d. 重覆短暫啟動幫浦(寸動).直到幫浦開始供油.
 - e. 在幫浦開始負載前,應將系統中的空氣全部排除,使運轉時不會產生空蝕現象及噪音.
 - f. 注意溫度變化,當幫浦表面溫度明顯高於油溫時,請立刻停止運轉並檢查相關機械設備
 - g. 液壓設備在修理過程或首次啟動時系統會產生大量污損,因此應使設備在無負載狀況下運轉並在運轉100小時後更換過濾器.在更換幫浦時應特別留意壓油及設備組件之清潔.
 - h. 液壓設備之操作應由經驗豐富及合格之專業人員為之.

Operating Instruction:

1. Hydraulic Oil:
Use the hydraulic oil viscosity as same as ISO 46-68.
(Viscosity over 90 cSt). The hydraulic oil cleanness should be kept within NAS 1638, 9 degree.
Optimal Operation Viscosity : 20-100 cSt
Maximum Operation Viscosity: 1500 cSt.
Minimum Operation Viscosity: 15 cSt.
2. Operating temperature: 5 to 70°C.
3. Suction Pressure: Absolute 0.8-1.3 kgf/cm²
4. Filter: Suction strainer 100um.
Return filter: 25 um.
Hydraulic oil cleanness: NAS 1638 the 9th degree.
5. Flow speed: Suction Line: 2 M/ Sec.
Pressure Line: 5 M/sec.
Return Line: 3 M/sec.
6. Rotation:
Do not cause any axial or radial pressure to the drive shaft.
Use flexible coupling if necessary. Tighten closely the pump shaft and motor shaft. Do not use improper way of installing the pump, such as hitting. Be aware of the rotation direction of pump and motor.
Any other means of installation, please consult with the suppliers.
7. Bleed the air when pump runs for the first time.
8. Please make sure the pump is on no-load state when starting and stop operation.
9. Do not fasten too tight when being connected with the suction line and pressure line.
10. Star-up operation: Follow the instruction and all other requirements before start up operation.
 - a. Make sure the rotation of electric motor is right.
 - b. Check the oil level of oil tank before starting and fill the oil when it is insufficient.
 - c. Repeat power on and off when pump is first running until the pump start is to supply oil.
 - d. Pump should be run under no load state when starting.
 - e. Before starting , run the pump under no-load state, bleed the air out of the circuit to prevent noise and cavitation.
 - f. Be aware of the temperature variation: Once the temperature of pump is apparently higher than oil, Stop pump running and check all equipment closely.
 - g. When starting the running of pump at the first time or after repair, whole hydraulic system are liable to be contaminated. Pleaserun the pump under no-load state and replace or clean all filters after 100 hours.
 - h. the operation of hydraulic system should be handled by professionals.



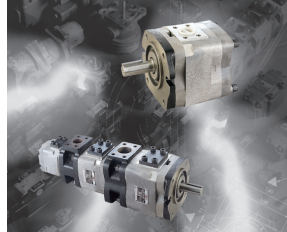
Fixed Displacement

▲ Vane Pump



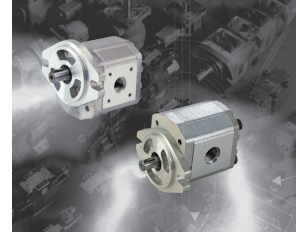
Variable Displacement

▲ Vane Pump



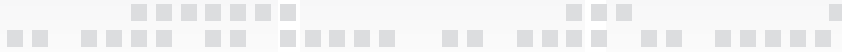
Internal

▲ Gear Pump



External

▲ Gear Pump



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