



SP/SD/SU/SE type

立置式夾頭

STATIONARY CHUCK

使用說明書

INSTRUCTION MANUAL

Original instructions



重要 Important Notes :

- 請仔細閱讀本說明書, 充分瞭解之後再使用本製品。
本說明書請妥善保管, 製品使用者變更時, 請將此說明書交給新的使用者。
- Before you use the product. Please read this instruction carefully.
Keep the instruction carefully. If the user of the product altered,
please hand the instruction to the new user.



◎序言

為了確保你的安全，在使用你的夾頭之前，請務必詳閱本說明書內所記載之警告事項，並特別注意文中此  圖形符號下之說明。

◎ INTRODUCTION

To ensure safe operation of your Chuck, please read this instruction manual and pay particular attention to instructions marked with  including IMPORTANT instructions concerning chuck performance.



若未依照此符號底下的說明來操作機械將引起立即的危險，導致重大傷害或死亡。

Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.



若未依照此符號底下的說明來操作機械將引起潛在的危險，導致重大傷害或死亡。

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



若未依照此符號底下的說明來操作機械將引起潛在的危險，導致中輕度的傷害。

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



依照此符號底下的說明事先了解製品的性能，可避免不正確的操作夾頭。

Indicates for chuck performance and avoiding errors of mistake.

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2D圖檔(PDF、DWG格式)、3D圖檔(STEP格式)可以從官網下載。

You can download the outline drawing and 3D step at AUTOGRIP WEB Site.

注意事項

請詳閱本說明書，並依循指示說明。若未依照指示，錯誤的使用而致引起的損傷或意外事，本公司概不負責。

FOR SAFE OPERATION

Please read this manual and following instructions carefully. We cannot assume responsibility for damage or accidents caused by misuse, through noncompliance with the safety instructions.



DANGER
危險

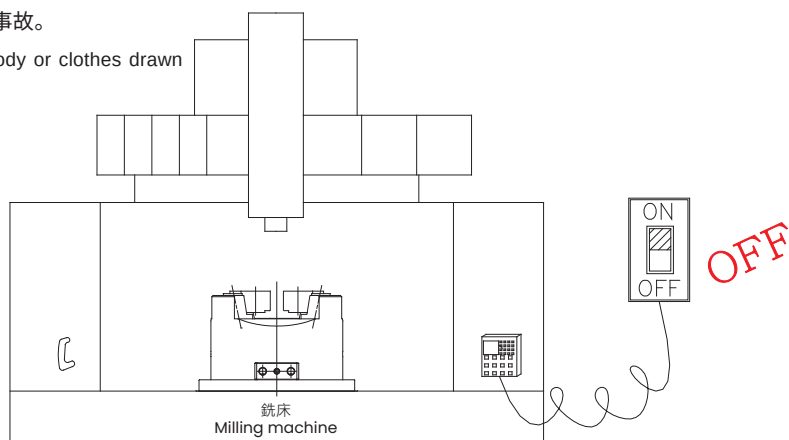


在安裝檢查或潤滑夾頭時，務必關掉所有電源，確保操作者之安全。

SWITCH OFF power before setting, inspecting, lubricating or changing the chuck to ensure operator safety.

易發生身體或衣物捲入等意外事故。

To avoid accident of operator body or clothes drawn into machine.



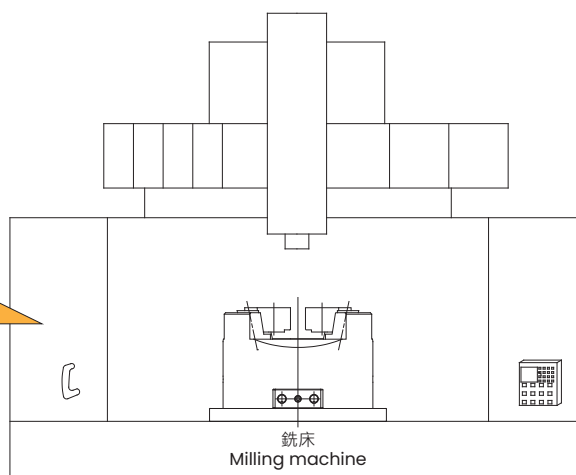
未關好安全門之前，切勿啟動主軸開關。

Don't start the spindle before closing the machine door.

避免工件或夾爪因未關門而飛出。

Workpiece or jaw may scatte while door open.

Close 關緊



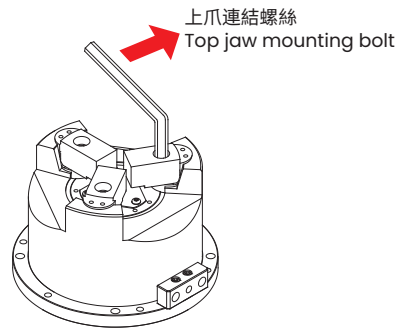


WARNING
警告



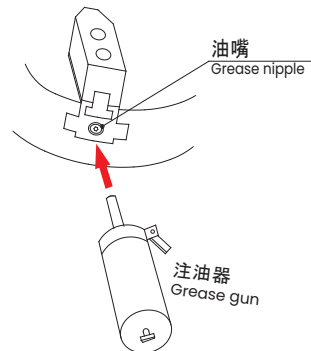
連結螺絲請依照附表所指定之力矩鎖緊。
Secure mounting bolts with specified torque.

螺絲規格 Bolt size	鎖緊力矩 Tightening torque
M6	12.7 N.m (1.3 kgf.m)
M8	38.2 N.m (3.9 kgf.m)
M10	72.6 N.m (7.4 kgf.m)
M12	106.8 N.m (10.9 kgf.m)
M14	170.6 N.m (17.4 kgf.m)
M16	250.0 N.m (25.5 kgf.m)
M20	402.1 N.m (41.0 kgf.m)



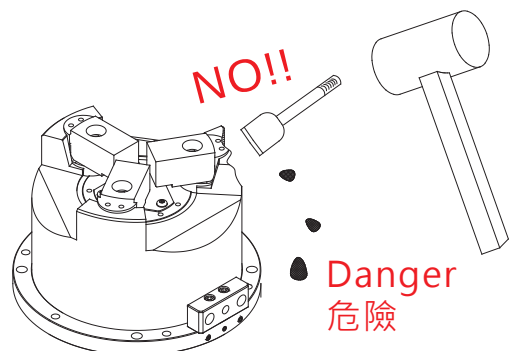
應確實給油。
Don't miss to lubricate chuck.

給油不足，會降低夾持力。
Lowering gripping force caused by insufficient lubrication.



不可隨意改造夾頭。
Don't attempt to modify the chuck.

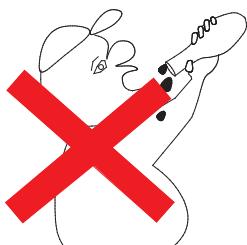
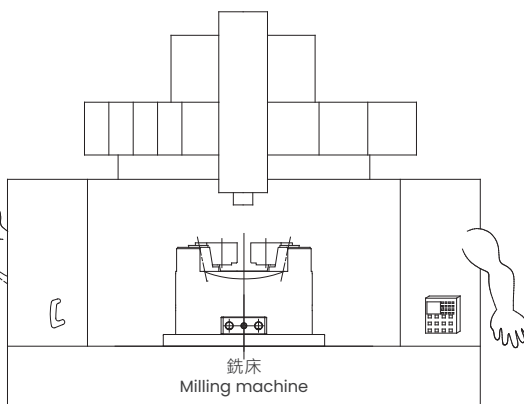
不當改造會損壞夾頭機能而發生危險。
Danger by function damaged of chuck.



**WARNING****警告**

操作機器前，請勿喝酒或服用麻醉性藥物。

Never attempt to operate machine after drinking alcohol or taking drugs.

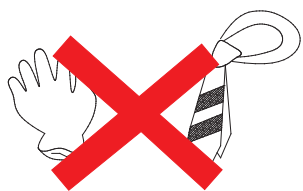
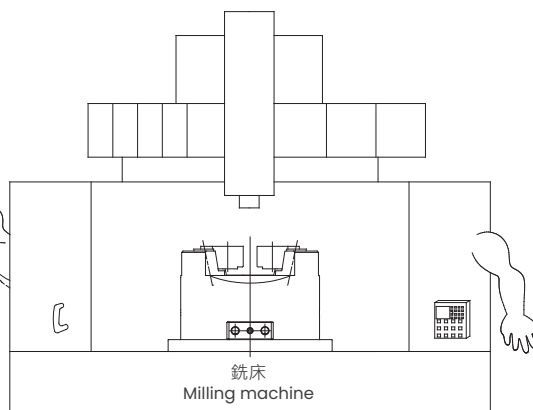
**NO!**

銑床
Milling machine



操作機器前，請勿穿戴手套或領帶。

Never attempt to operate machine with gloves and necktie worn.

**NO!**

銑床
Milling machine

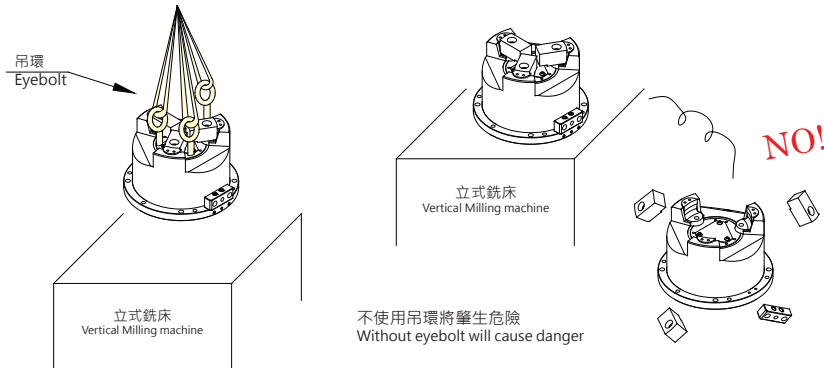


CAUTION
注意



拆裝夾頭時，務必使用吊環。

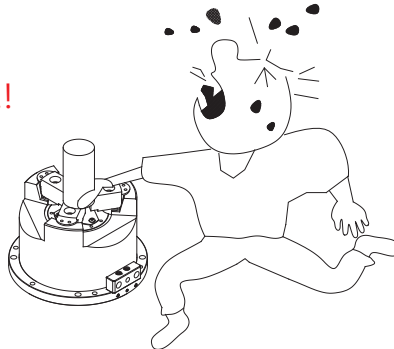
Have to using eyebolt when mounting or dismantle chuck.



夾持工件時，請注意不要被夾到手。

When clamping workpiece, make sure your hand not to be hurt.

Danger!!
危險



不可敲擊夾頭，夾爪或夾持之工件物。

Never hammer chuck, jaws or clamped workpiece.

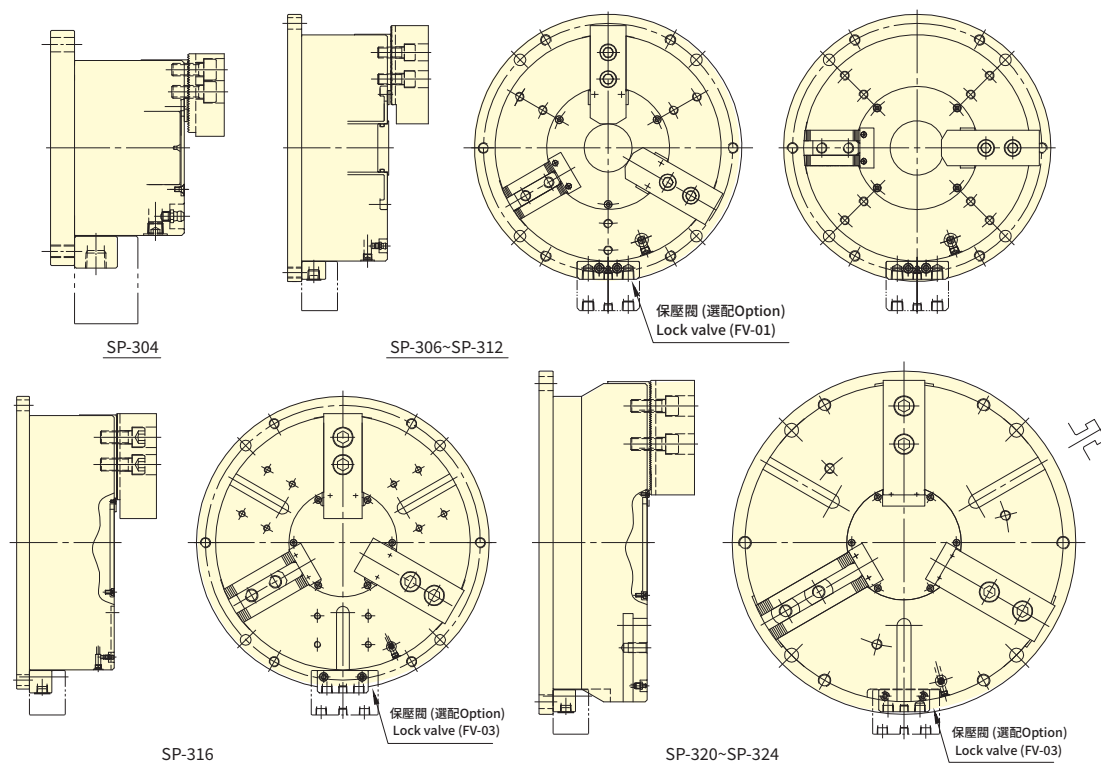


2. 立置式三爪夾頭 (SP-Type)

2.1 立置式三爪夾頭規格 (SP-Type)

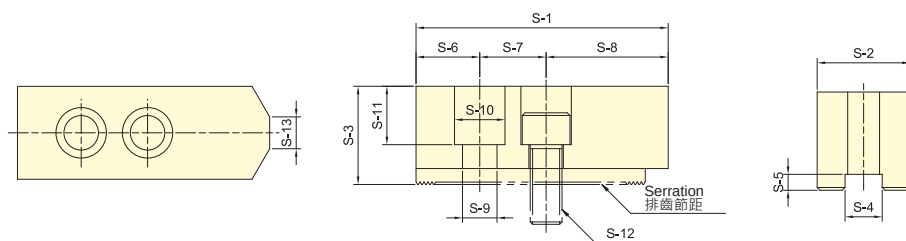
2. Stationary Chuck(SP-Type)

2.1 Specification of stationary Chuck(SP-Type)



型號 Model	爪行程 (直徑) Jaw stroke (Dia.) (mm)	夾持直徑 Chuck Dia. (mm)		最大夾持力 Max. clamping force kN(kgf)		最大使用壓力 Max. pressure MPa(kgf/cm ²)		最低使用壓力 Min. pressure (kgf/cm ²)	空氣消耗量 Air consumption lit (at 6.0 kgf/cm ²)	重量 Weight (kg)
		最大 Max.	最小 Min.	氣壓 Pneumatic	油壓 Hydraulic	氣壓 Pneumatic	油壓 Hydraulic			
SP-304	5.1	110	10	7.5(765)	22.0(2243)	0.7(7)	1.2(12)	2	0.5	7
SP-206	5.5	168	30	34.1(3477)	46.1(4752)	0.7(7)	1.2(12)	2	1.4	16
SP-306	5.5	168	30	35.5(3620)	60.0(5252)	0.7(7)	1.2(12)	2	1.4	16.5
SP-208	6.8	210	42	43.2(4405)	74.0(7545)	0.7(7)	1.2(12)	2	2.5	27.7
SP-308	6.8	210	42	51.5(5251)	88.3(9004)	0.7(7)	1.2(12)	2	2.5	28.7
SP-210	7	254	52	60.5(6169)	94.5(9636)	0.7(7)	1.2(12)	2	4.2	41.8
SP-310	7	254	52	68.2(6955)	118.7(12104)	0.7(7)	1.2(12)	2	4.2	42
SP-312	9.3	304	60	75.8(7729)	148 (15091)	0.7(7)	1.2(12)	2	6.4	52.8
SP-316	14.5	400	30	120.7(12305)	120.7(12305)	0.7(7)	0.7(7)	2	10.6	147.8
SP-320	16	500	45	155.6(15865)	155.6(15865)	0.7(7)	0.7(7)	2	15	232.7
SP-324	16	600	140	215.9(22015)	215.9(22015)	0.7(7)	0.7(7)	2	22	338.7

SP 夾頭之標準軟爪 Standard Soft Jaw For SP Chuck

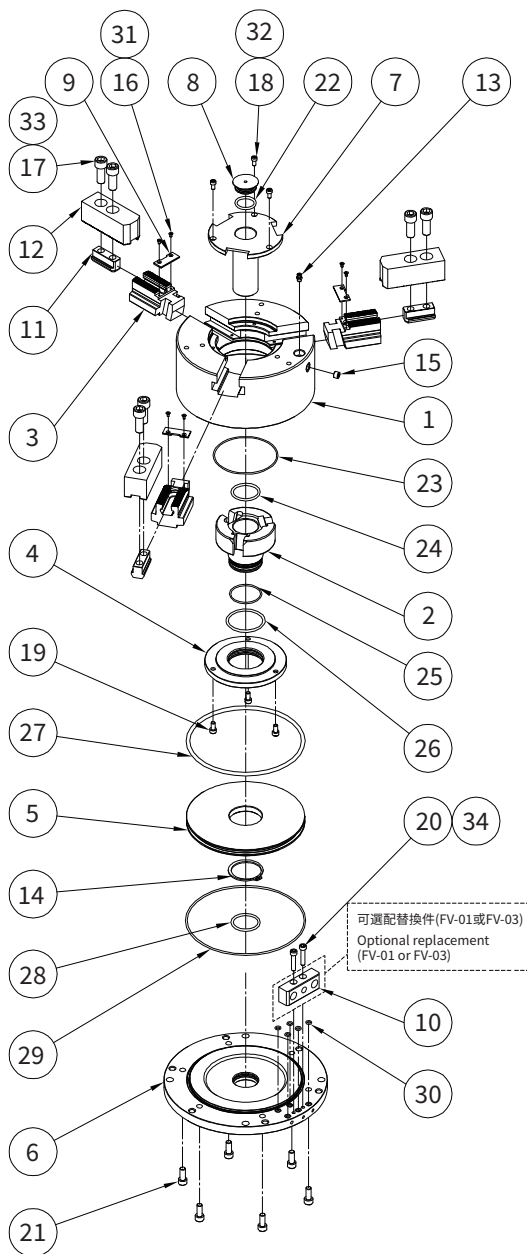


保留規格權力 Subject to technical changes.

型號 Model	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10	S-11	S-12	S-13	排齒節距 Serration Pitch
SJ-04	52	23	23	10	5	10	14	28	9	14	13	M8	3	1.5 × 60°
SJ-05	62	25	30	10	5	10	14	38	9	14	20	M8	3.5	1.5 × 60°
SJ-06	73	31	36	12	5	15	20	38	11	17	24	M10	14	1.5 × 60°
SJ-08	95	35	37	14	5	24	25	46	13	19	22	M12	16	1.5 × 60°
SJ-10	110	40	42	16	5	30	30	50	13	19	27	M12	18	1.5 × 60°
SJ-12H	130	50	50	21	5	40	30	60	17	25	30	M16	23	1.5 × 60°
SJ-12P	130	50	50	18	5	40	30	60	16	23	30	M14	23	1.5 × 60°
SJ-15H	165	62	62	22	8	37	43	85	21	32	37	M20	-	1.5 × 60°
SJ-15P	165	62	62	25.5	6	37	43	85	21	32	37	M20	-	1.5 × 60°
SJ-21	180	64	70	25	9	40	60	80	21	32	45	M20	-	3.0 × 60°

2.2 立置式三爪夾頭零件表 (SP-Type)

2.2 Parts list of stationary Chuck (SP-Type)



NO.	零件名稱	Name of parts	Q'ty
1	本體	Body	1
2	中仁	Wedge plunger	1
3	主爪	Master jaw	2 or 3
4	內蓋	Sealing disk	1
5	活塞	Piston	1
6	底座	Base Plate	1
7	防塵蓋	Cover	1
8	中孔塞 (4" 以上)	Central hole plug (4" or over)	1
9	防塵壓板	Cover	2 or 3
10	油路板	Manifold block	1
11	T 形螺帽	T-nut	2 or 3
12	軟爪	Soft jaw	2 or 3
13	油嘴	Grease nipple	1
14	C 型軸用扣環	Snap Ring	1
15	六角孔固定螺絲	Hex.socket set screw	1
16	錐平頭六角孔螺絲	Hex.socket plain screw	4 or 6
17	軟爪連結螺栓	Jaw mounting bolt	4 or 6
18	六角孔圓頭螺栓	Hex.socket cap bolt	4 or 3
19	六角孔圓頭螺栓	Hex.socket cap bolt	3
20	六角孔圓頭螺栓	Hex.socket cap bolt	2
21	六角孔圓頭螺栓	Hex.socket cap bolt	6
22	O 型環 (4" 以上)	O-ring(4" or over)	1
23	O 型環	O-ring	1
24	O 型環 (4" 以上)	O-ring(4" or over)	1
25	O 型環	O-ring	1
26	O 型環	O-ring	1
27	O 型環	O-ring	1
28	O 型環	O-ring	1
29	O 型環	O-ring	1
30	O 型環	O-ring	5
31	L 形六角扳手 (附件)	Hex.key (accessory)	1
32	L 形六角扳手 (附件)	Hex.key (accessory)	1
33	L 形六角扳手 (附件)	Hex.key (accessory)	1
34	L 形六角扳手 (附件)	Hex.key (accessory)	1

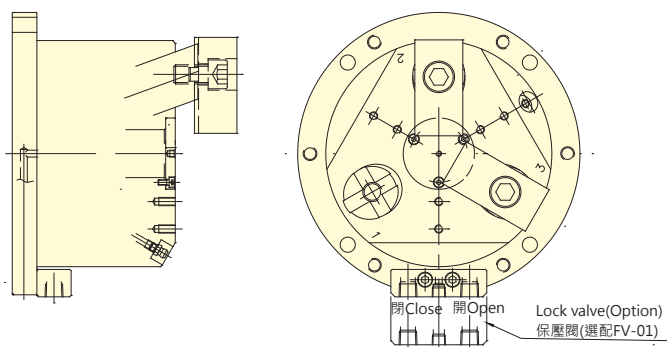
Fig.1

3. 立置式後拉夾頭 (SD-Type)

3. Stationary pull back chuck (SD-Type)

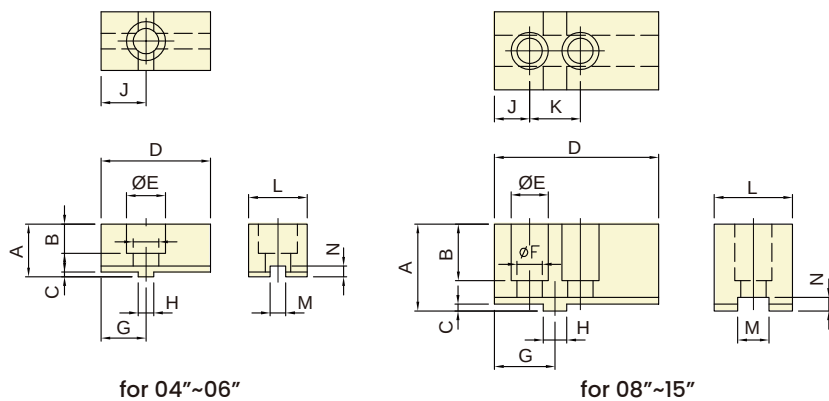
3.1 立置式後拉夾頭規格 (SD-Type)

3.1 Specification of Stationary pull back chuck (SD-Type)



型號 Model	爪行程 (直徑) Jaw stroke (Dia.) (mm)	夾持直徑 Chuck Dia. (mm)		最大夾持力 Max. clamping force kN(kgf)		最大使用壓力 Max. pressure MPa(kgf/cm ²)		最低使用壓力 Min. pressure (kgf/cm ²)	空氣消耗量 Air consumption lit (at 6.0 kgf/cm ²)	重量 Weight (kg)
		最大 Max.	最小 Min.	氣壓 Pneumatic	油壓 Hydraulic	氣壓 Pneumatic	油壓 Hydraulic			
SD-304	5	110	18	5.0(510)	10.9(1112)	0.6(6)	1.3(13)	2	0.26	8.1
SD-306	7.2	165	35	11.5(1173)	25(2550)	0.6(6)	1.3(13)	2	0.58	20.6
SD-308	7.2	210	28	21.7(2213)	47(4793)	0.6(6)	1.3(13)	2	1.02	34.1
SD-310	10.8	254	40	36.0(3680)	60.0(6118)	0.6(6)	1.0(10)	2	2.05	55

SD 夾頭之標準生爪 Standard Soft Jaw For SD Chuck



型號 Model	A	B	C	D	E	F	G	H	J	K	L	M	N
3D-04	22	13	2.5	52	17.5	11	19	8	19	-	25	8	5.5
3D-05	27	15	2.5	56	20	13	23	8	23	-	30	8	5.5
3D-06	34	21	3	70	23	15.5	27	10	27	-	35	10	6
3D-08	44.5	29	3.5	84	19	13	31	12	18	26	40	16	7
3D-10	49.5	32	3.5	100	22	15	38	15	22	32	50	18	7
3D-12	54.5	36	3.5	120	26	18	42	17	24	36	60	20	7
3D-15	65	40	5	165	26	18	60	20	40	40	70	24	10

3.2 立置式後拉夾頭零件表 (SD-Type)

3.2 Parts list of Stationary pull back chuck(SD-Type)

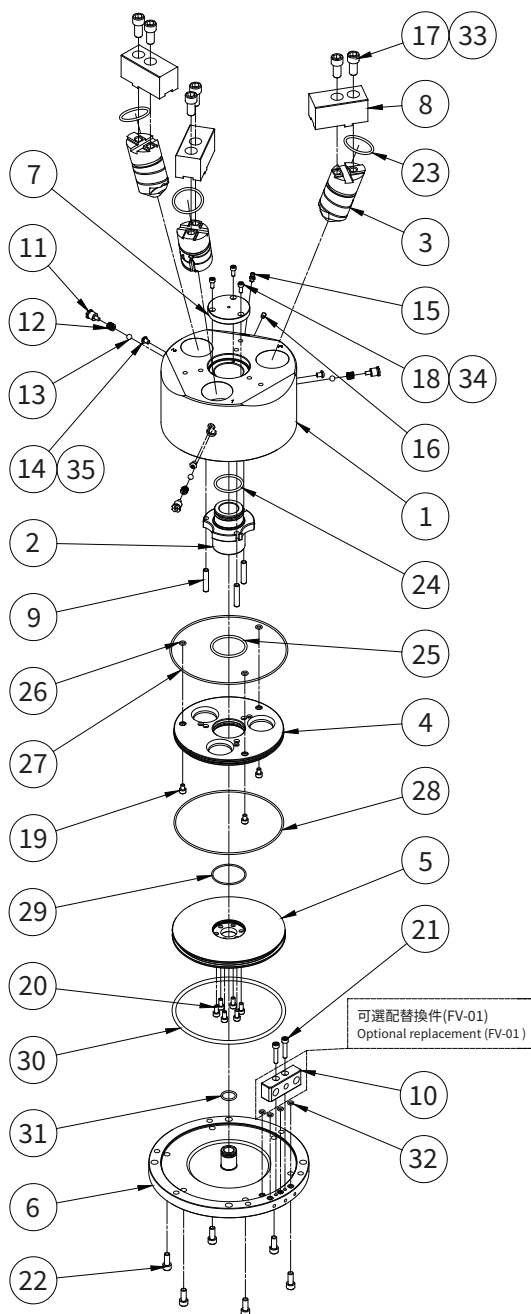


Fig.2

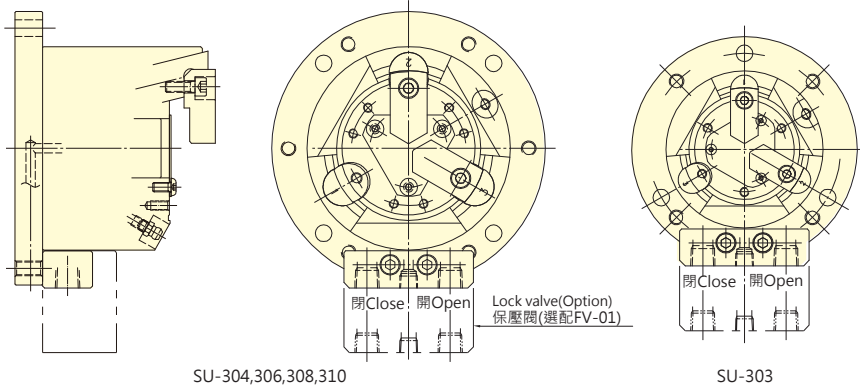
NO.	零件名稱	Name of parts	Q'ty
1	本體	Body	1
2	中仁	Wedge plunger	1
3	主爪	Master jaw	3
4	內蓋	Sealing disk	1
5	活塞	Piston	1
6	底座	Base Plate	1
7	防塵蓋	Cover	1
8	軟爪	Soft jaw	3
9	止迴銷	Guide pin	3
10	油路板	Manifold block	1
11	鋼珠頂針	Steel ball thimble	3
12	彈簧	Spring	3
13	鋼珠	Steel ball	3
14	低頭螺絲	Low head screw	3
15	油嘴	Grease nipple	1
16	六角孔固定螺絲	Hex. socket set screw	1
17	軟爪連結螺栓	Jaw mounting bolt	6 or 3
18	六角孔圓頭螺栓	Hex. socket cap bolt	3
19	六角孔圓頭螺栓	Hex. socket cap bolt	3
20	六角孔圓頭螺栓	Hex. socket cap bolt	6
21	六角孔圓頭螺栓	Hex. socket cap bolt	2
22	六角孔圓頭螺栓	Hex. socket cap bolt	6
23	O 型環	O-ring	1
24	O 型環	O-ring	1
25	O 型環	O-ring	3
26	O 型環	O-ring	1
27	O 型環	O-ring	1
28	O 型環	O-ring	1
29	O 型環	O-ring	1
30	O 型環	O-ring	1
31	O 型環	O-ring	1
32	O 型環	O-ring	4
33	L 形六角扳手 (附件)	Hex. key (accessory)	1
34	L 形六角扳手 (附件)	Hex. key (accessory)	1
35	L 形六角扳手 (附件)	Hex. key (accessory)	1

4. 立置式爪背托後拉夾頭 (SU-Type)

4.1 立置式爪背托後拉夾頭規格 (SU-Type)

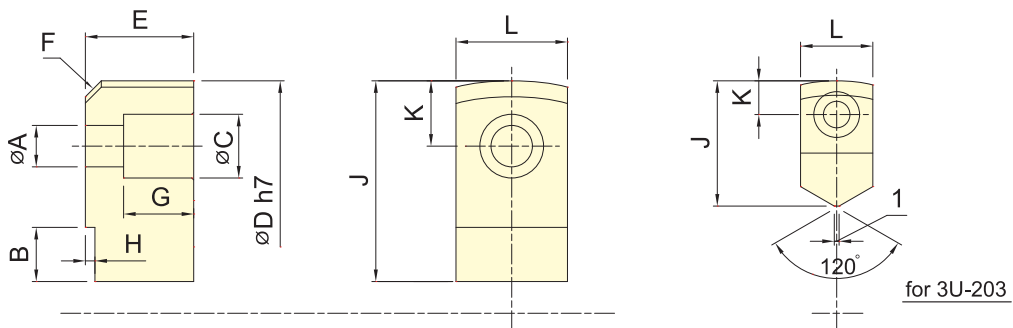
4. Stationary Pull Lock Chuck (SU-Type)

4.1 Specification of Stationary Pull Lock Chuck (SU-Type)



型號 Model	爪行程 (直徑) Jaw stroke (Dia.) (mm)	夾持 直徑 chucking Dia. (mm)		最大夾持力 Max. clamping force kN(kgf)		最大使用壓力 Max. pressure MPa(kgf/cm ²)		最低使用壓力 Min. pressure (kgf/cm ²)	空氣消耗量 Air consumption lit (at 6.0 kgf/cm ²)	重量 Weight (kg)
		最大 Max.	最小 Min.	氣壓 Pneumatic	油壓 Hydraulic	氣壓 Pneumatic	油壓 Hydraulic			
SU-303	2	42	4	5.2(530)	12.8(1305)	0.6(6)	1.3(13)	2	0.16	5.7
SU-304	3	60	5	6.7(683)	16.0(1632)	0.6(6)	1.3(13)	2	0.26	7.4
SU-306	5	105	31	18.5(1886)	40.0(4079)	0.6(6)	1.3(13)	2	0.58	18.0
SU-308	5	132	32	37(3773)	80.0(8158)	0.6(6)	1.3(13)	2	1.02	31.5
SU-310	5	163	44	46.2(4710)	100.0(10100)	0.6(6)	1.3(13)	2	2.11	53

SU 夾頭之標準生爪 Standard Soft Jaw For SU Chuck

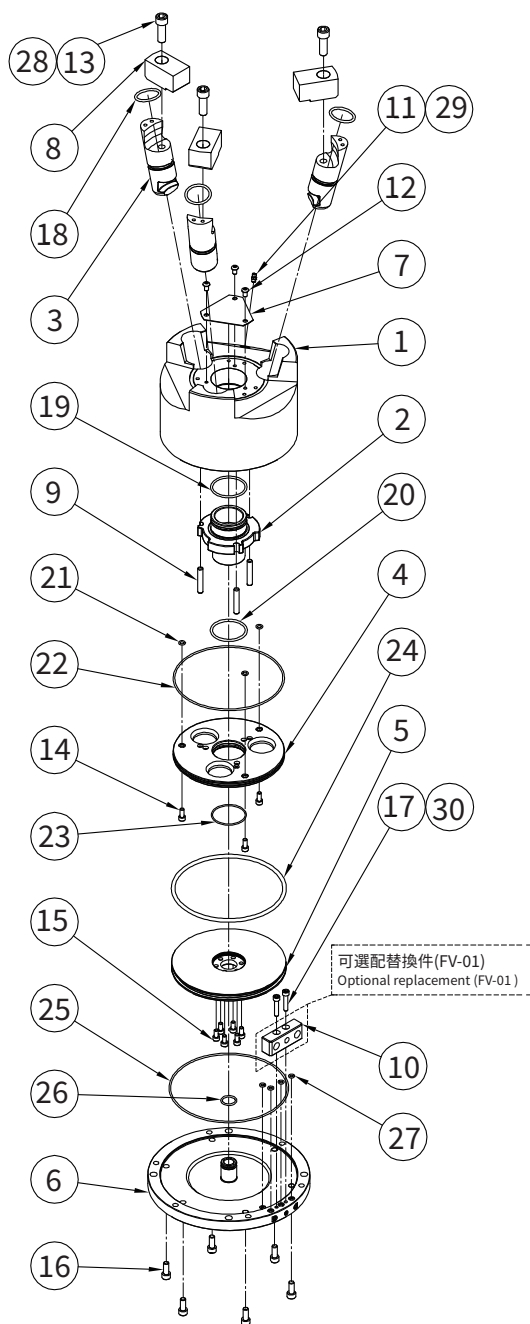


保留規格權力 Subject to technical changes.

型號 Model	A	B	C	D	E	F	G	H	J	K	L
3U-203	5.5	11	9.5	66	12	C3	7	3	26	7	15
3U-204	6.6	11	11	84	17	C4	11	3	32	9.5	20
3U-205	9	13.5	14	108	20	C4	12	3	41.5	13	24
3U-206	11	15	17	129	30	C6	20	3	50	17	30
3U-208	13	17	20	156	34	C6	22	3	63	20.5	35
3U-210	15	20	22	187	39	C6	24	4	74	23	40

4.2 立式爪背托後拉夾頭零件表 (SU-Type)

4.2 Parts list of stationary Pull Lock Chuck(SU-Type)



NO.	零件名稱	Name of parts	Q'ty
1	本體	Body	1
2	中仁	Wedge plunger	1
3	主爪	Master jaw	3
4	內蓋	Sealing disk	1
5	活塞	Piston	1
6	底座	Base Plate	1
7	防塵蓋	Cover	1
8	軟爪	Soft jaw	3
9	止迴銷	Guide pin	3
10	油路板	Manifold block	1
11	油嘴	Grease nipple	1
22	六角孔半圓頭螺栓	Hex. socket cap bolt	3
33	軟爪連結螺栓	Jaw mounting bolt	3
14	六角孔圓頭螺栓	Hex. socket cap bolt	3
15	六角孔圓頭螺栓	Hex. socket cap bolt	6
16	六角孔圓頭螺栓	Hex. socket cap bolt	6
17	六角孔圓頭螺栓	Hex. socket cap bolt	2
18	O 型環	O-ring	3
19	O 型環	O-ring	1
20	O 型環	O-ring	1
21	O 型環	O-ring	3
22	O 型環	O-ring	1
23	O 型環	O-ring	1
24	O 型環	O-ring	1
25	O 型環	O-ring	1
26	O 型環	O-ring	1
27	O 型環	O-ring	4
28	L 形六角扳手 (附件)	Hex. key (accessory)	1
29	L 形六角扳手 (附件)	Hex. key (accessory)	1
30	L 形六角扳手 (附件)	Hex. key (accessory)	1

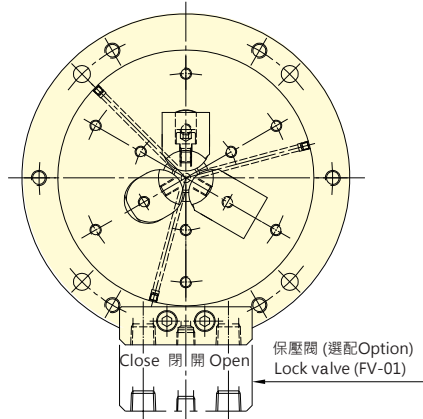
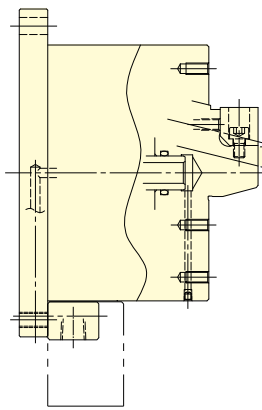
Fig.3

5. 立置式內張後拉夾頭 (SE-Type)

5.1 立置式內張後拉夾頭規格 (SE-Type)

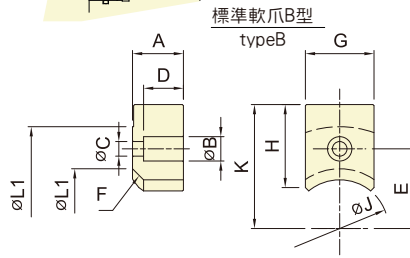
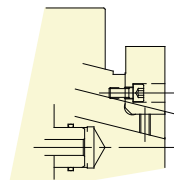
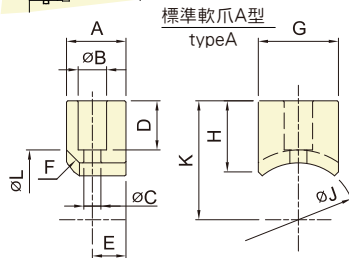
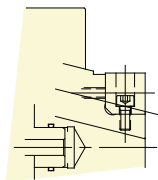
5. Stationary Pull Back Chuck for internal gripping(SE-Type)

5.1 Specification of stationary Pull Back Chuck for internal gripping(SE-Type)



型號 Model	爪行程 (直徑) Jaw stroke (Dia.) (mm)	夾持直徑 Chuck Dia. (mm)		最大夾持力 Max. clamping force kN(kgf)		最大使用壓力 Max. pressure MPa(kgf/cm ²)		最低使用壓力 Min. pressure (kgf/cm ²)	空氣消耗量 Air consumption lit (at 6.0 kgf/cm ²)	重量 Weight (kg)
		最大 Max.	最小 Min.	氣壓 Pneumatic	油壓 Hydraulic	氣壓 Pneumatic	油壓 Hydraulic			
SE-305	3	83	29	14.3(1459)	41(4181)	0.7(7)	1.3(13)	2	0.46	14.6
SE-306	5	110	44	20(2040)	57(5812)	0.7(7)	1.3(13)	2	0.58	20
SE-308	5	150	50	32(3263)	78(7954)	0.7(7)	1.3(13)	2	1.02	33

SE 夾頭之標準軟爪 Standard Soft Jaw For SE Chuck



保留規格權力 Subject to technical changes.

型號 Model		A	B	C	D	E	F	G	H	J	K	L	L1
3E-05	A 型	20	11	6.6	16.5	10	C5	25	22	29	34.5	39	-
	B 型	20	11	6.6	15	25.5	C5	25	30	29	42.5	39	69
3E-06	A 型	23	11	7	19	13	C5	31	27.5	44	46	54	-
	B 型	23	11	6.6	18	36	C5	31	37.5	44	56	54	92
3E-08	A 型	30	14	9	25	15	C6	35	36	50	56	62	-
	B 型	30	14	9	24	41	C6	35	56	50	76	62	112

5.2 立置式內張後拉夾頭零件表 (SE-Type)

5.2 SE-Type Parts list of stationary Pull Back Chuck for internal grip- ping(SE-Type)

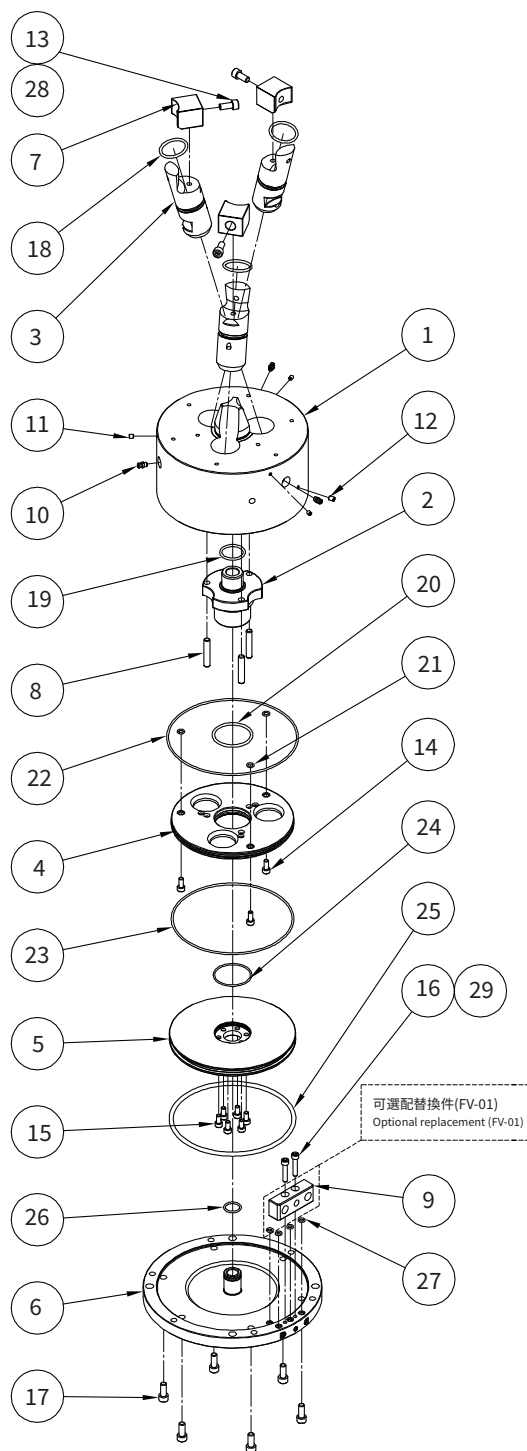


Fig.4

NO.	零件名稱	Name of parts	Q'ty
1	本體	Body	1
2	中仁	Wedge plunger	1
3	主爪	Master jaw	3
4	內蓋	Sealing disk	1
5	活塞	Piston	1
6	底座	Base Plate	1
7	軟爪	Soft jaw	3
8	止迴銷	Guide pin	3
9	油路板	Manifold block	1
10	油嘴	Grease nipple	3
11	六角孔固定螺絲	Hex. socket set screw	3
12	六角孔固定螺絲	Hex. socket set screw	1
13	軟爪連結螺栓	Jaw mounting bolt	3
14	六角孔圓頭螺栓	Hex. socket cap bolt	3
15	六角孔圓頭螺栓	Hex. socket cap bolt	6
16	六角孔圓頭螺栓	Hex. socket cap bolt	2
17	六角孔圓頭螺栓	Hex. socket cap bolt	6
18	O 型環	O-ring	3
19	O 型環	O-ring	1
20	O 型環	O-ring	1
21	O 型環	O-ring	3
22	O 型環	O-ring	1
23	O 型環	O-ring	1
24	O 型環	O-ring	1
25	O 型環	O-ring	1
26	O 型環	O-ring	1
27	O 型環	O-ring	4
28	L 形六角扳手 (附件)	Hex. key (accessory)	1
29	L 形六角扳手 (附件)	Hex. key (accessory)	1

6. 使用上的注意事項

- (1) 依照工件外形及切削情況來設定油壓壓力, 如果管狀的工件被高壓夾持將造成變形。
- (2) 夾持斜面或錐度的鑄品工件時, 使用的特殊爪需具有齒狀之夾持面工件物才不會飛散。
- (3) 作業開始之前, 檢查上爪和工作物的位置是否與刀具、刀具座產生干涉。
- (4) 長時間停置機器時, 夾頭上不可夾持工作物。
- (5) 當操作不當或機械故障所造成刀具或刀具座撞擊夾頭, 立即停機檢查上爪、主爪、連結螺絲及夾持精度等是否正常。
- (6) 為了維持加工的準確, 當替換軟爪時, 需仔細清潔接合部分。



WARNING
警告

- 工件必須夾持於行程的中點位置, 或在中點以內, 這樣將可達成最好的精度及穩定度, 儘量防止用行程的末端來夾持工件。
- 在夾頭繼續運作時不可用鐵錘或類似的工具拆除工件。拆除的話, 將損壞工件精度和機器功能, 機器的使用壽命也會明顯變短。



DANGER
危險

- 當檢查、潤滑或更換夾頭時必須切斷電源。
- 夾頭加工期間絕不可操作夾頭開或夾。否則工件可能脫離、飛散。

6. Precautions

- (1) Set the hydraulic pressure according to the shape of workpiece and cutting conditions. If, for example, a pipe shaped workpiece is gripped with high pressure, it may cause distortion.
- (2) When gripping inclined or tapered parts such as casting, etc., use special jaws with spikes so that the workpiece will not discharge.
- (3) Before machining. That the top jaws locator or workpiece do not interfere with the tool or tool holder.
- (4) When stopping the machine for a long period of time, remove the workpiece from the chuck.
- (5) If the chuck or workpiece is misused by interfering with the tool or tool rest due to malfunction or tape error. Immediately stop the machine and check the top jaw, cap screws for mounting jaw and etc., and gripping accuracy.
- (6) When replacing the soft jaw, clean the fitting part carefully in order to maintain the processing accuracy.

- It is the most desirable that the workpiece is gripped at mid stroke of the master jaws. To grip the workpiece correctly, avoid gripping at stroke end.
- Never strike a workpiece, which is kept on the chuck, by a hammer or the likes. If strike, the workpiece accuracy and functions of the machine will be much damaged. And the life of the machine will be also shortened remarkably.

- Cut off the power supply when checking, greasing or changing the chuck.
- Never processing the chuck during operation. Otherwise the workpiece may be disengaged and fly-out.



WARNING 警告

- 在操作期間夾頭的推力應該在規定的允許範圍內。用過度的推力操作是危險的,因為它將減少使用年限並且導致失敗。
- 注意) 追加工或安裝治具時需注意工件是否與機台運作產生干涉現象,避免造成撞機。
- 斜線區域為可追加工範圍。
- The chuck thrust should be kept within the specified allowable range during operation. To operate with excessive thrust can be dangerous, as it will deteriorate service life and cause failure.
- Note) When processing or installing the fixture, carefully check the workpiece is interfering with the operation of the machine, to avoid damage of crash.
- Shaded area is possible to bore or tap additionally.

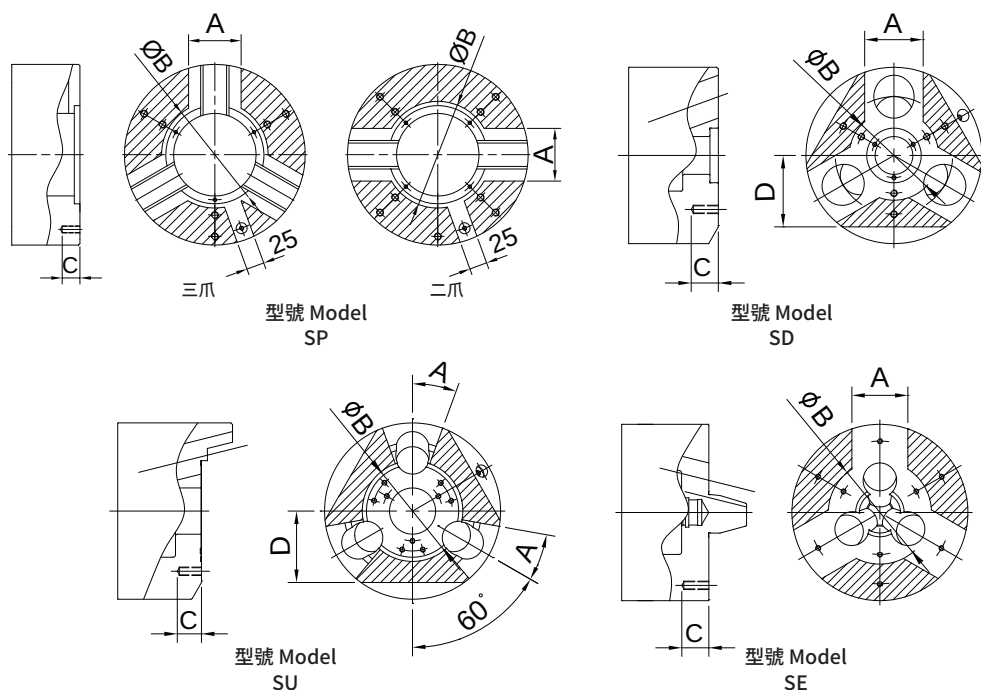


Fig.11

- C 為鑽孔或攻牙可允許之深度。
- C is permissible depth of drilling or processing.

型號 Model	A	B	C
SP-304	46	75	15
SP-206	61	110	15
SP-306	61	110	15
SP-208	68	130	20
SP-308	68	130	20
SP-210	74	150	20
SP-310	74	150	20
SP-312	80	180	25
SP-316	100	190	25
SP-320	110	200	25
SP-324	120	300	25

型號 Model	A	B	C	D
SD-304	45	55	15	40
SD-306	60	85	20	65
SD-308	70	105	20	85
SD-310	80	125	20	100

型號 Model	A	B	C	D
SU-304	25°	32	10	40
SU-306	20°	95	20	65
SU-308	20°	120	20	85
SU-310	20°	146	20	100

型號 Model	A	B	C
SE-305	50	80	15
SE-306	60	110	15
SE-308	70	130	20

7. 軟爪的製造成形

7.1 立置式爪背托後拉夾頭

- 使用夾頭時，當軟爪夾持工件的徑向位置，座金則控制工件的軸向基準位置，因此“軟爪的成形”和“座金的製造”會影響工件夾持的精準度，
- 盡可能將工件夾持於行程的中點。

7. Forming of soft jaws

7.1 Stationary Pull Lock Chuck

- In using the chuck, the locator sets the datum position for the workpiece in axial direction while the soft jaws grip the workpiece in radial direction. Therefore, it is "forming of soft jaws" and "manufacture of locator" which influence the gripping accuracy.
- It is desirable to chuck the workpiece in the central part of the stroke.

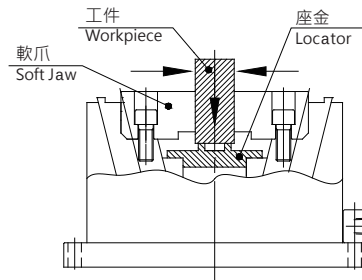
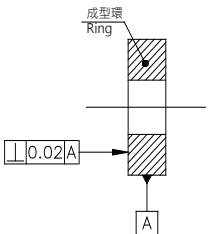
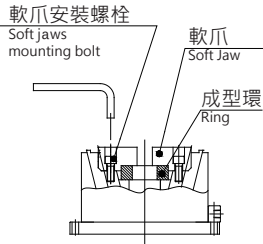


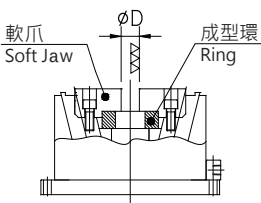
Fig.12

軟爪的成形必須按照下列步驟。

Forming of soft jaws should be done in the following procedures.

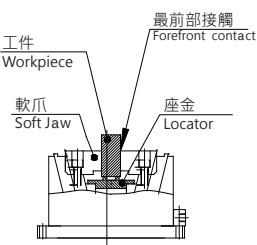
• 準備表面粗度▽▽▽內且無變形內壁厚度的適當成型環。 注意) 夾持成型環的外徑尺寸時要在爪行程中點。 注意) 建議輕敲成型環的中心孔並且插入螺栓。		• Prepare the Ring for forming. • Forming outer dia. of Ring is limited to ▽▽▽ finishing. Ensure the Ring is strong with a suitable wall thickness. Note) Set the forming outer dia. of Ring dimension to grip around the middle of the jaw stroke. Note) It is recommended to tap the center hole of Ring and insert the bolt.
• 降低油壓壓力至夾爪可動即可。 • 拆卸軟爪和座金。 • 把成型環安裝到夾頭上並且用軟爪安裝螺栓暫時固定軟爪。 CAUTION 注意 • 如果暫時固定的軟爪不夠緊，當夾持成型環時軟爪是會滑動的。成型環的安裝將會不準確。 • 當夾持成型環時，用標準力矩鎖緊軟爪安裝螺栓。 • 在鉗住夾頭和設定實際加工油壓壓力的工作條件之後再夾持成型環，進行車修軟爪。		• Reduce the oil pressure to the movable jaw. • Remove soft jaws and locator. • Fit the Ring to the chuck and fix the soft jaws temporarily with soft jaw mounting bolts. CAUTION 注意 • If the temporary soft jaw fixing is not tight enough, the soft jaws are lifed when gripping the Ring. • The Ring will not be set accurately. • Tighten the soft jaw mounting bolts to the standard torque when gripping the Ring. • Grip the Ring again and cut the soft jaw after unclamping the chuck and setting the oil pressure of the actual processing to the working condition.

- 成形一個工件夾持部分 $\varnothing D$ 時，需持續夾持成型環，其尺寸必須相同 (H7) 於工件夾持直徑，且表面粗糙度小於 6s。
- 製程中其壓力必須與實際夾持工件時相同。
注意) 如成型環產生變形時，須用較厚的成型環。



- Form the part $\varnothing D$ for gripping the workpiece with the Ring still gripped.
- Machine the part $\varnothing D$ to the same diameter (H7) as the workpiece and surface roughness less than 6s.
- Set the gripping pressure for the soft jaw to be approximately the same as when the workpiece is gripped.
Note) If the Ring is distorted, alternatively use a stronger Ring with additional wall thickness.

- 軟爪成形後，拆卸成型環。
- 安裝座金。
- 安裝軟爪，夾持工件以檢查軟爪行程。
- 試切工件而後檢視其加工精度…等。
- 當軟爪在它的最前部夾持接觸越穩固時，工件可以夾持得更好且在工件的末端將有較少的振動。



- After forming soft jaws, remove the Ring.
- Mount the locator.
- Mount the soft jaw, grip the workpiece to check the soft jaws stroke.
- Perform trial cutting to inspect machining accuracy, etc.
- When the gripping contact of the soft jaw is stronger in its forefront part, the workpiece can be gripped better with less vibrations at end of the workpiece.

座金的製作

- 當工件藉由夾頭的拉力強烈擠壓座金時，工件被夾持。因此，對基準面的硬度和精度而言，基準面的偏擺度對工件的最後精度影響極大。
- 基準面應該有足夠的硬度和精度。(參考 Fig.13)

Manufacture of Locator

- Workpiece is gripped while it is strongly pressed against the locator by pulling force of the chuck. Therefore, the run-out of the datum surface greatly influences finish accuracy of the workpiece in terms of its perpendicularity and parallel.
- The datum face should have sufficient hardness and accuracy.(refer to Fig.13)

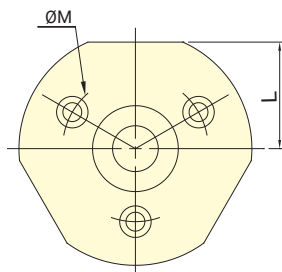
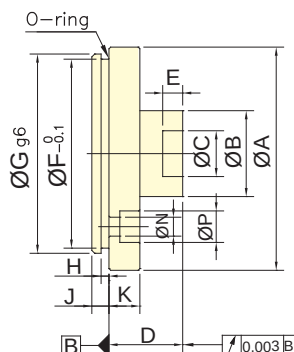
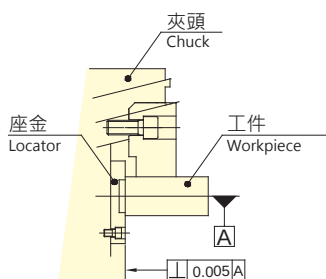


Fig.13

- 尺寸請參考下列表和 Fig.13。

- For dimensions, refer to the table below and Fig.13.

型號 Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	O-ring size (製造廠)(Marker)
SU-304	依照工作而定 Determined, depending on workpiece					29	32	2.3	4	9	18	42	5.5	9.5	S29(NOK)
SU-306						32	35	2.3	5	9	20	49	5.5	9.5	S32(NOK)
SU-308						50	55	4	6.5	12	30	71	6.6	11	G50(NOK)
SU-310						60	65	4	6.5	12	37	85	9	15	G60(NOK)

7.2 立置式後拉夾頭

當安裝軟爪時，必須依照工件形狀加工成形，當夾持工件時，從行程末端開始測量，軟爪行程必須是剩下的軟爪行程的 1/4。因此，當軟爪夾持工件的外徑($\varnothing D$ 值)的話，內部的行程必須剩下 1/4(參考 Fig.14)。軟爪成形時，迴轉缸的壓力必須與工件實際上被切割時相同。

7.2 Stationary pull back chuck

When the soft jaw are installed, they must be machine formed to align flush with the workpiece. When the workpiece is gripped, the jaw stroke should be such that there is one-fourth of the jaw stroke remaining, as measured from the stroke end.

Thus, if you are gripping the outside diameter ($\varnothing D$) of the workpiece with the jaw, one-fourth of the inside stroke should remain (refer to Fig.14). The cylinder pressure when the soft jaw are formed should be the same as when the workpiece is actually cut.

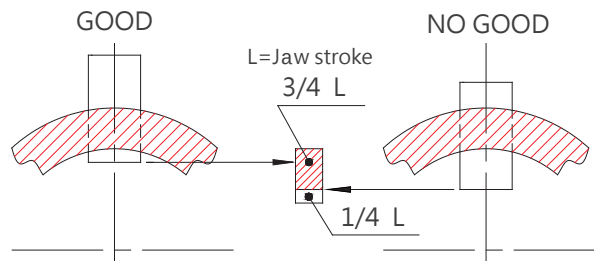
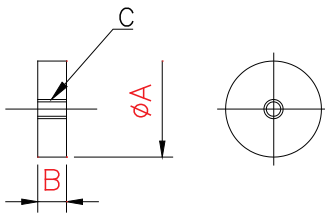


Fig.14

- 成型環的規格 (參考 Fig.15)

- Specification of plug(refer to Fig.15)



夾頭尺寸 Chuck size	4	6	8	10
A (mm)	15.5	26.4	32.4	40.6
B (mm)	13	16	16	20
C	M6	M8	M8	M10

Fig.15

- 藉由鋼珠和鋼珠頂針調整主爪的擺動角度。
鋼珠頂針所需的鬆開量顯示於表格，安裝完後再鎖緊低頭螺絲。
低頭螺絲的鎖緊力矩，請參考表格。

- The swing angle of master jaw is controlled by steel ball and steel ball thimble.
Set steel ball thimble in the position which loosens the quantity which is shown in table from the position to fasten, install Low head screw in the position of the hollow of steel ball thimble.
For the torque to be applied to the Low head screw, refer to table.

型號 Model	鋼珠頂針鬆開圈數 loosens quantity of steel ball thimble	低頭螺絲鎖緊力矩 Low head screw fasten torque (N-m)
SD-304	1/2~3/4 turn(圈)	2.0
SD-306	3/4~1 turn(圈)	4.1
SD-308	3/4~1 turn(圈)	4.1
SD-310	3/4~1 turn(圈)	4.1



- 在鬆開鋼珠頂針之後，使用規格說明書中的圈數。否則，鋼球將推開鋼珠頂針並且可能損壞它。

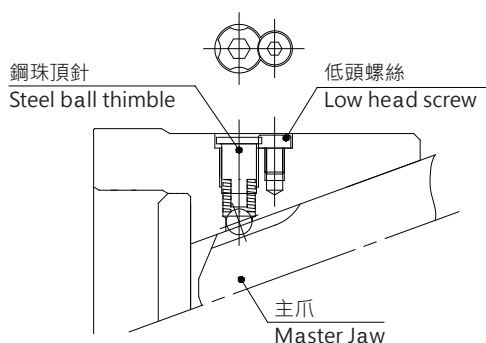


Fig.16

- Use after loosening steel ball thimble in specification's turn. Otherwise, the steel ball pushes up steel ball thimble and may damage it.

8. 維護及檢查



- 長時間定期地潤滑可保持夾頭壽命，錯誤的潤滑將導致夾持力減弱、精度不良，磨損及卡住，故必須潤滑夾頭。

8. Maintenance and inspection

- To maintain the chuck for a long period of time, it is necessary to lubricate the chuck on a regular basis. Inadequate lubrication causes malfunction at low hydraulic pressure, reduces gripping force and affects gripping accuracy, and causes wear and seizure. Consequently, securely lubricate the chuck.

潤滑的處所	潤滑油種類	潤滑週期
使用潤滑油槍將潤滑油注入每一個主爪周圍的油嘴。	二硫化鉬潤滑油	每日一次，但如果夾頭在高速旋轉或大量的水性切削液於加工中使用時，需要更多的潤滑，請依照不同的情況來決定。

Section to be lubricated	Grease useds	Lubrication cycle
Apply grease from the grease nipple at the periphery end of each master jaw with a grease gun.	Moly Kote EP Grease (DOW CORNING CO.,LTD)	Once a day. However, when the chuck is operated at high speed rotation or a large amount of water soluble cutting oil is used, more of lubricated is needed according to service conditions.

- 加工完後務必以風槍或類似的工具清潔夾頭本體及滑道面。
- 避免因生鏽而降低夾持力，需使用防銹之切銷油。

- After machining, clean the chuck body and slideway with air gun, etc.
- Use rust prevention coolant oil so that rust does not reduce gripping force.



- 每六個月 (或每 10 萬次) 取下夾頭做一次徹底之清潔 (切削鑄鐵則每二個月至少一次)。檢查零件有無損壞或磨損，如嚴重時立即更換新品。
- 組裝前須充份潤滑。

- Disassemble and clean the chuck at least once per 6 months or every 100,000th used (once every two months for the casting). See if parts are worn or cracked and replace it if required.
- Lubricated the chuck before reassembling.

9. 故障排除

- 如夾頭故障，請停下來檢查，依下列情況來處置。

不正常情況	可能原因	對策
夾頭不能動作	夾頭的零件損壞。	分解夾頭及更換。
	滑動部份被卡住。	分解夾頭及取出被卡住的部份，以油石修整之或更換。
	夾頭停止運作。	檢視油壓系統，如減壓閥、洩壓閥…等。
主爪的全行程不足	內部積存了太多的雜屑。	分解後清理。
	拉桿鬆脫。	重新鎖緊拉桿。
工作物有滑動的情況	主爪的夾持行程不足。	重新夾持工件使得主爪的位置於行程的中點。
	夾頭的夾持力不足。	檢視所設定的油壓壓力是否到達。
	上爪的形成直徑與工件的直徑不同。	使用正確的成形方法重做一次。
	切削力量太大。	重新計算一次切削力量而確認是否合乎此夾頭的規格。
	主爪滑道的潤滑油不足。	依據潤滑過程重新潤滑各部而後在沒有工件下操作夾頭數次。
精度不良	主爪與上爪間有外在因素干擾，如灰塵…。	取下夾爪並且完全清理。
	上爪固定螺絲沒有鎖緊。	以適當力矩鎖緊。
	夾持力過大，使工件變形。	降低夾持力到適當程度，使得機器可以夾緊工作物但不致變形。
	上爪高度太高，使上爪或固定螺絲變形。	降低上爪至標準高度。(選用一個標準的尺寸)
	在成形上爪的過程不當或不完善。	確定成形圈是否對稱，與平行在夾頭之端面。 檢查成形圈的外形是否因夾持力過大而導致變形。 例外，檢查在成形時油壓壓力及成形面的表面粗度。

備註：

◎簡單的故障請自行處理，如無法自行處理或特殊狀況時，可通知您的經銷商或寄回本公司處理。

9. Troubleshooting

- If the chuck malfunctions, stop the lathe and try the following countermeasures.

Problem	Possible Reasons	Countermeasures
Chuck will not work	Chuck part is damaged.	Disassemble and replace part.
	Slidway seizes.	Disassemble and repair damaged part with oil stone or make change.
	Chuck is not working.	Examine the hydraulic system, pressure reduction valve, over valve.....etc.
Insufficient master jaw total stroke	Too much swarf in chuck.	Disassemble and clean.
	Draw pipe is loose.	Afresh locking Draw pipe.
Workpiece slippage	Insufficient master jaw clamping stroke.	Make arrangement such that when workpiece is chucked the master jaw will be in the stroke center.
	Chucking force is insufficient.	Check that hydraulic pressure adequately set.
	Formed dia of top jaw does not match workpiece dia.	Reform top jaw according to correct method.
	Cutting force is too high.	Calculate cutting force and confirm whether the force matches chuck specifications.
	Insufficient lubrication on master jaws and each slidway.	Lubricate from the grease nipple and chucking operation of jaws several times without workpiece in the chuck.
Poor accuracy	Foreign mater is caught in serrations between master and top jaws, dust...ect.	Remove top jaw and clean serrations thoroughly.
	Top jaw mounting bolts are inadequately tightened.	Tighten bolts to correct torque.
	Workpiece is deformed by too much gripping force.	Reduce gripping force to prevent deformation.
	Top jaw is deformed and top jaw bolts are extended because top jaw is too high.	Reduce the height of the top jaw by replacing with standard size jaw.
	Forming of top jaw is inadequate.	Check that forming plug is parallel to chuck end face and plug is not deformed due to gripping force. Also, check hydraulic pressure while forming, and face roughness.

Remark:

Please contact your local distributor or agent. If no distributor or agent locally, then contact Autogrip Machinery Co., Ltd. On receipt of the product, we will inform you immediately of repair chedule.
Please call us if you find any problems.



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We reserve the right to modify without prior notice.



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