

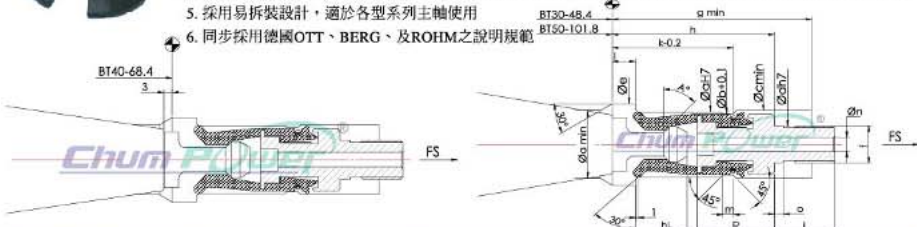
MAS 403 PULL STUD TYPE CLAMPING 四瓣爪 MAS 403 PULL STUD TYPE CLAMPING

Design Features :

- All the above materials are composed of alloy steel.
- The Gripper is in accordance with the global standard of Pull Stud JIS6339 (MAS403) system.
- Grippers are developed for integrated and comprise four clamping segments, which is suitable for high and low-speed turning spindles.
- The surfaces of Grippers are wear-resisting, anticorrosive and special tensile force treatment. The tensile force can bear 1,000 KG force which means 3 million times of lifetime testing circle in our each Grippers. (**ie.BT40)
- Easy to assemble and suitable for every type of spindles.
- Our Grippers adopt the rules of BERG, OTT and Röhm standards.

特點

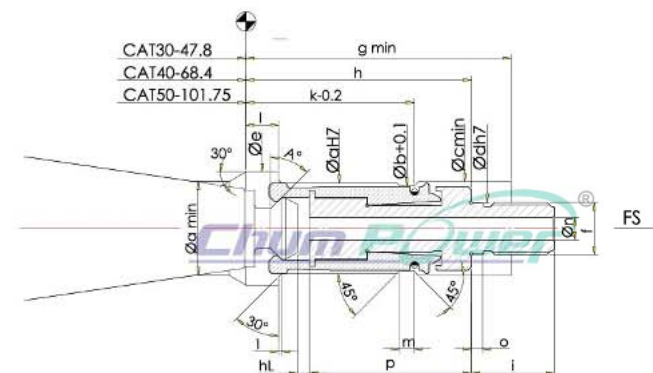
- 四瓣爪材料皆以合金鋼製成
- 此四瓣爪依據拉栓JIS6339(MAS 403)標準製作
- 一體式分隔爪片設計適用於各種高低轉速之主軸
- 爪片表面經耐磨耗、防腐蝕之特殊處理，拉力經循環壽命測試機測試可承受1000Kg、300萬次 (**BT40為例)
- 採用易拆裝設計，適於各型系列主軸使用
- 同步採用德國OTT、BERG、及ROHM之說明規範



Code No. 型號	Spec. 規格	A°	a	b	c	d	e	g	h	f
90001	BT30-45°	45°								
90002	BT30-60°	60°	19	17.8	20.2	10	24	50	47	M10*1.5P
90014	BT30-90°	90°								
9002098	BT40-45°	45°								
9002198	BT40-60°	60°	28	26.4	28.5	16	35	82	70	M16*1.5P
9002298	BT40-90°	90°								
90023	BT50-45°	45°								
90024	BT50-60°	60°	43	40.4	43.5	22	54	98	90	M22*1.5P
90015	BT50-90°	90°								
90035	BT60-45°	45°								
90036	BT60-60°	50°	62	58.6	62.5	30	77	130	125	M30*1.5P
90037	BT60-90°	90°								

Code No. 型號	Spec. 規格	i	k	l	m	n	o	p	hL	Fs max kN
90001	BT30-45°									
90002	BT30-60°	20°	37	7.5	3.5	3	3	20.5	3.5	10
90014	BT30-90°									
90003	BT40-45°									
90004	BT40-60°	26°	52	10	4.5	6	4	33	5	18
90005	BT40-90°									
90006	BT50-45°									
90007	BT50-60°	35°	69	16	5	9.5	5	37	5	35
90015	BT50-90°									
90035	BT60-45°									
90036	BT60-60°	40°	96	23	6.5	16	5	49.5	11	70
90037	BT60-90°									

CAT PULL STUD TYPE CLAMPING 四瓣爪 CAT PULL STUD TYPE CLAMPING



Design Features :

- All the above materials are composed of alloy steel.
- The Gripper is in accordance with the global standard of Pull Stud JIS6339 (MAS403) system.
- Grippers are developed for integrated and comprise four clamping segments, which is suitable for high and low-speed turning spindles.
- The surfaces of Grippers are wear-resisting, anticorrosive and special tensile force treatment. The tensile force can bear 1,000 KG force which means 3 million times of lifetime testing circle in our each Grippers. (**ie.CAT40)
- Easy to assembly and suitable for every type of spindles.
- Our Grippers adopt the rules of BERG, OTT and Röhm standards.

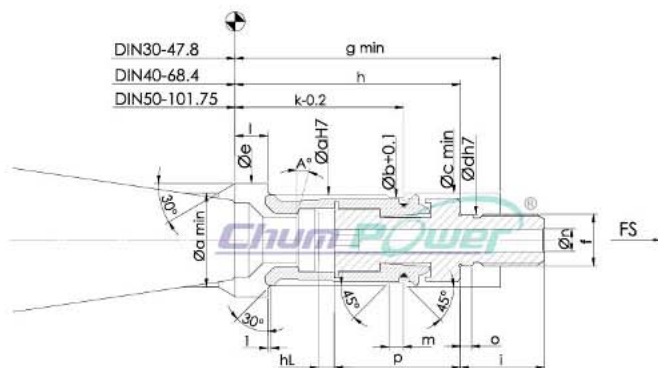
特點

- 四瓣爪材料皆以合金鋼製成
- 此四瓣爪依據拉栓JIS6339(MAS 403)標準製作
- 一體式分隔爪片設計適用於各種高低轉速之主軸
- 爪片表面經耐磨耗、防腐蝕之特殊處理，拉力經循環壽命測試機測試可承受1000Kg、300萬次 (**CAT40為例)
- 採用易拆裝設計，適於各型系列主軸使用
- 同步採用德國OTT、BERG、及ROHM之說明規範

Code No. 型號	Spec. 規格	A°	a	b	c	d	e	g	h	f
90025	CAT30	45°	19	17.8	19.5	10	24	50	47	M10*1.5P
90026	CAT40		28	26.4	28.5	16	35	82	70	M16*1.5P
90027	CAT50		43	40.4	43.5	22	54	98	90	M22*1.5P

Code No. 型號	Spec. 規格	i	k	l	m	n	o	p	hL	Fs max kN
90025	CAT30	20	37	7.5	3.5	4	3	33	2.5	10
90026	CAT40	26	52	10	4.5	7	4	50	4	18
90027	CAT50	35	69	16	5	9.5	5	58	6.5	35

DIN69872 PULL STUD TYPE CLAMPING 四瓣爪 DIN69872 PULL STUD TYPE CLAMPING



Design Features :

- All the above materials are composed of alloy steel.
- The Gripper is in accordance with the global standard of Pull Stud JIS6339 (MAS403) system.
- Grippers are developed for integrated and comprise four clamping segments, which is suitable for high and low-speed turning spindles.
- The surfaces of Grippers are wear-resisting, anticorrosive and special tensile force treatment. The tensile force can bear 1,000 KG force which means 3 million times of lifetime testing circle in our each Grippers. (**ie.DIN40)
- Easy to assembly and suitable for every type of spindles.
- Our Grippers adopt the rules of BERG, OTT and RöhM standards.

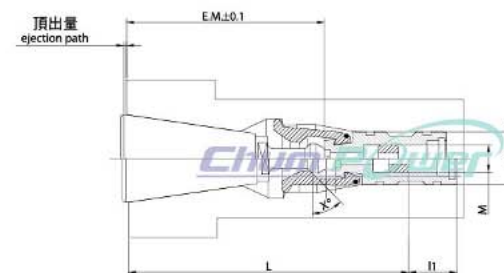
特點

- 四瓣爪材料皆以合金鋼製成
- 此四瓣爪依據拉栓JIS6339(MAS 403)標準製作
- 一體式分瓣爪片設計適用於各種高低轉速之主軸
- 爪片表面經耐磨耗、防腐蝕之特殊處理，拉力經循環壽命測試機測試可承受1000Kg、300萬次 (**DIN40為例)
- 採用易拆裝設計，適於各型系列主軸使用
- 同步採用德國OTT、BERG、及ROHM之說明規範

Code No. 型號	Spec. 規格	A°	a	b	c	d	e	g	h	f
90028	DIN30	15°	19	17.8	19.5	10	24	50	47	M10*1.5P
90029	DIN40		28	26.4	28.5	16	35	82	70	M16*1.5P
90030	DIN50		43	40.4	43.5	22	54	98	90	M22*1.5P

Code No. 型號	Spec. 規格	i	k	l	m	n	o	p	hL	Fs max kN
90028	DIN30	20	37	7.5	3.5	4	3	19.5	3.5	10
90029	DIN40	26	52	10	4.5	7	4	39	5	18
90030	DIN50	35	69	16	5	9.5	5	48	8	35

OTT PULL STUD TYPE CLAMPING 四瓣爪 OTT PULL STUD TYPE CLAMPING



Design Features :

- All the above materials are composed of alloy steel.
- The Gripper is in accordance with the global standard of Pull Stud JIS6339 (MAS403) system.
- The surfaces of Grippers are wear-resisting, anticorrosive and special tensile force treatment. The tensile force can bear 1,000 KG force which means 3 million times of lifetime testing circle in our each Grippers. (**ie BT40)
- Easy to assembly and suitable for every type of spindles.
- Our Grippers are followed the examples of OTT and RöhM standards.

特點

- 四瓣爪材料皆以合金鋼製成
- 此四瓣爪依據拉栓JIS6339(MAS 403)標準製作
- 爪片表面經耐磨耗、防腐蝕之特殊處理，拉力經循環壽命測試機測試可承受1000Kg、300萬次 (**BT40為例)
- 採用易拆裝設計，適於各型系列主軸使用
- 同步採用德國OTT及ROHM之說明規範

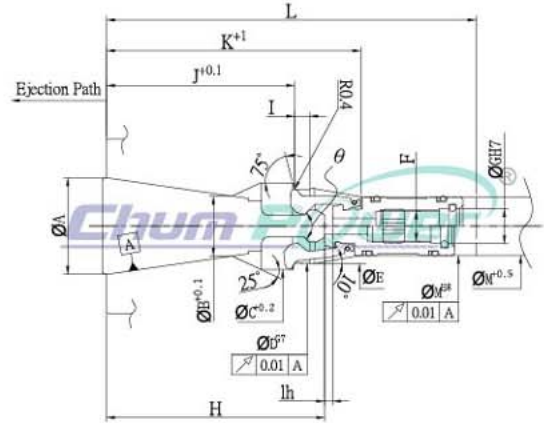
Code No. 型號	Spec. BT X° 規格	D	L	l1	E.M	M	ejection path 頂出量
90051	BT30-45°	19	109	23	70.4	M10x1.25	1
90052	BT30-60°	19	109	23	70.4	M10x1.25	1
90053	BT30-90°	19	109	23	70.4	M10x1.25	1
90054	BT40-45°	27	143	24.5	99.7	M14x1.5	0.65
90055	BT40-60°	27	143	24.5	99.7	M14x1.5	0.65
90056	BT40-90°	27	143	24.5	99.7	M14x1.5	0.65
90057	BT50-45°	40	188.5	31.5	145.75	M16x1.5	1
90058	BT50-60°	40	188.5	31.5	145.75	M16x1.5	1
90059	BT50-90°	40	188.5	31.5	145.75	M16x1.5	1

Code No. 型號	Spec. 規格	D	L	l1	E.M	M	ejection path 頂出量
90060	CAT 30	19	109	23	57.7	M10x1.25	1.6
90061	CAT 40	27	143	24.5	82.9	M14x1.5	1.6
90062	CAT 50	40	188.5	31.5	126	M16x1.5	1

Code No. 型號	Spec. 規格	D	L	l1	E.M	M	ejection path 頂出量
90063	DIN 30	19	109	23	70.7	M10x1.25	1
90064	DIN 40	27	143	24.5	93.6	M14x1.5	0.65
90065	DIN 50	40	188.5	31.5	134.6	M16x1.5	1

SPINDLE CLAMPING SYSTEM

ROHM PULL STUD TYPE CLAMPING 四瓣爪 ROHM PULL STUD TYPE CLAMPING



主軸配件

D-05

Code No. 型號	Spec. BT X° 規格	θ	A	B	C	D	E	F	G	H	I	J	K	L	M	lh	ejection path 頂出量
90201	BT30-45°	45°	31.75	19.5	24.5	19.5	20	M10×1.25P	12	71.4	6	63.5	80	135	19	4.5	0.5
90202	BT30-60°	60°															
90203	BT30-90°	90°															
90204	BT40-45°	45°	44.45	27.6	40	34	34.5	M14×1.5P	16	100.4	7	86.5	117	170	27	4.5	1.0
90205	BT40-60°	60°															
90206	BT40-90°	90°															
90207	BT50-45°	45°	69.85	43	56	49	49.5	M16×1.5P	20	147.4	8	126.5	163	230	40	4.8	1.0
90208	BT50-60°	60°															
90209	BT50-90°	90°															

Code No. 型號	Spec. BT X° 規格	θ	A	B	C	D	E	F	G	H	I	J	K	L	M	lh	ejection path 頂出量
90210	CAT30	90°	31.75	19.5	24.5	19.5	20	-	12	-	6	63.5	80	125	19	-	-
90211	CAT40		44.45	27.6	40	34	34.5	M14×1.5P	16	83.6	7	79.5	117	180	27	5	1.0
90212	CAT50		69.85	43	56	49	49.5	M16×1.5P	20	126	8	126.5	163	230	40	6	1.0

Code No. 型號	Spec. BT X° 規格	θ	A	B	C	D	E	F	G	H	I	J	K	L	M	lh	ejection path 頂出量
90213	DIN30	150°	31.75	19.5	24.5	19.5	20	M10×1.25P	12	71.3	6	63.5	80	135	19	3.6	0.5
90214	DIN40		44.45	27.6	40	35	34.5	M14×1.5P	16	98.2	7	86.5	117	170	27	3.8	1.0
90215	DIN50		69.85	43	53	49	49.5	M16×1.5P	20	136.6	8	126.5	163	230	40	4.8	1.0

Spray Nozzle Series

Press Fit Type



The Coolant Spray Nozzle could easily adjust its direction and spray precisely. When the coolants correspond with three pressures-low, medium and high pressures, it can precisely aim at workpiece. They are suitable for CNC Machine Center, CNC Lathes, CNC Milling Machine, Grinding Machine and so on. The products can enhance the processing efficiency and accuracy. Also it is helpful for extending the lifetime of tools and decreasing the cost.

噴水頭系列 壓配型

可任意調整噴水口角度，並有效對應低、中、高冷卻液液壓，正確噴向瞄準點。適用於綜合切削機、銑床、車床等各式工具機。此項產品除可提高加工效率及精度外，亦有助於延長工具使用壽命和減少成本消耗。

Code No. 型號	Nominal dimensions mm 規格								Ball dia 球徑 A	Allowable tilting angle degree 可調整角度 α	FIG
	D	D1	D2	D3	L	d	d1	d2			
90101	15	-	-	-	8	-	ø4	-	7/16"	29	1
90102	15	ø6	-	-	14	ø6x6L	-	-	7/16"	29	2,4
90103	15	-	M5x0.8	ø6	8	-	M5x0.8	2.5	7/16"	29	3,5
90104	12	-	-	-	7	-	M5x0.8	-	9mm	28	1
90108	10	-	-	-	5.5	-	M4x0.7	-	9mm	23	1

Spray Nozzle Series

Thread Mount Type

The Coolant Spray Nozzle could easily adjust its direction and spray precisely. When the coolants correspond with three pressures-low, medium and high pressures, it can improve cooling efficiency of tools. They are suitable for CNC Machine Center, CNC Lathes, CNC Milling Machine, Grinding Machine and so on. The products can enhance the processing efficiency and accuracy. Also it is helpful for extending the lifetime of tools and decreasing the cost.

噴水頭系列 螺紋型

可任意調整噴水口角度，並有效對應低、中、高冷卻液液壓，提昇刀具冷卻效率。適用於綜合切削機、銑床、車床等各式工具機。此項產品除可提高加工效率及精度外，亦有助於延長工具使用壽命和減少成本消耗。



Code No. 型號	Thread mount 螺紋組接	L	L1	D1	D2	d	H
9011100	PT 1/8	20	10	6	5	4	17
9011200	PT 1/8	40					
9011000	PT 1/8	60					
9011300	PT 1/4	20	10	6	5	4	17
9011400	PT 1/4	40					
9011500	PT 1/4	60					
9011600	PT 3/8	30	13	8	10	6	24
9011700	PT 3/8	50					
9011800	PT 3/8	70					
9011900	PT 1/2	40	18	10	12	8	32
9012000	PT 1/2	60					
9012100	PT 1/2	80					
9012200	M10*1.25P	20	8	6	5	4	17
9012300	M10*1.25P	40					
9012400	M10*1.25P	60					
9012500	M20*1.5P	30	13	8	10	6	24
9012600	M20*1.5P	50					
9012700	M20*1.5P	70					
9012800	M24*2.0P	40	18	10	12	8	31
9012900	M24*2.0P	60					
9013000	M24*2.0P	80					
9013100	NPT 1/4	20	10	6	5	4	17
9013200	NPT 1/4	40					
9013300	NPT 1/4	60					
9013400	NPT 3/8	30	13	8	10	6	24
9013500	NPT 3/8	50					
9013600	NPT 3/8	70					

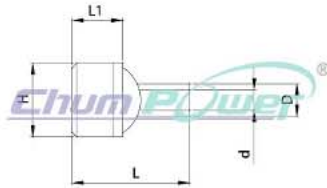
Spray Nozzle Series

Plastic Type

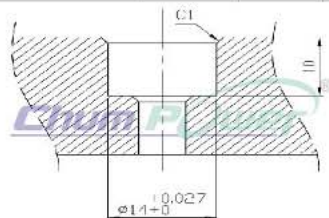
The Coolant Spray Nozzle could easily adjust its direction and spray precisely. When the coolants correspond with three pressures-low, medium and high pressures, it can improve cooling efficiency of tools. They are suitable for CNC Machine Center, CNC Lathes, CNC Milling Machine, Grinding Machine and so on. The products can enhance the processing efficiency and accuracy. Also it is helpful for extending the lifetime of tools and decreasing the cost.

噴水頭系列 塑材型

可任意調整噴口水口角度，並有效對應低、中、高冷卻液液壓，提昇刀具冷卻效率。適用於綜合切削機、銑床、車床等各式工具機。此項產品除可提高加工效率及精度外，亦有助於延長工具使用壽命和減少成本消耗。



Code No. 型號	H	L	L1	D	d	FIG
90151	10	-	7	6	3	1
90152	12	-	8	M5	3	1
90154	14	-	10	M6	3.8	1
90156	16	-	11	M7	4.4	1
90157	14	17	10	6	3	2
90158	12	15	8	5	3	2
9015200	12	15	8	5	3	3
9015400	14	22	10	6	3.8	3
9015600	16	25.5	11	7	4.4	3



壓配視圖

Spindle Accuracy Testing Bar

主軸精度測試棒

Features:

1. Accuracy Guarantee
2. Complete Product Range

特點

1. 精度保證
2. 具備完整規格



Code No. 型號	Size 規格	D	L
SWA0001	BT30-250	30	250
SWA0002	BT40-350	40	350
SWA0003	BT50-350	63	350
SWA0004	NT30-250	30	250
SWA0005	NT40-350	40	350
SWA0006	NT50-350	63	350
SWA0007	HSK32-250	30	250
SWA0008	HSK50-250	40	250
SWA0009	HSK63-350	63	350

Testing Bar



EZ-BAR

LASER COOLANT POINTER 雷射導水筆

Introduction & Features

- The Laser Coolant Pointer is designed for the machines where you need to adjust the coolant Spray Nozzles of the spindle.
- The main purpose is for the operator to correct the angle of coolant water and to prevent the operator from being sprayed by the coolant water. Leading by the laser coolant pointer can be adaptable for every kinds of cutting process (as Fig.1 and Fig.2).
- At the same time, it can improve the trouble of occupying too much space for the traditional adjustable coolant system hoses.

特點:

- 雷射導水筆搭配主軸噴水頭即能簡便地校正冷卻水柱與刀具散熱點的角度。
- 雷射導水筆的導引與主軸噴水頭的配合，適用於工具機上的各種切削加工，(如圖1、圖2)並且有助於減少使用者與切削水直接接觸。
- 同時此項產品的設計亦可有效解決傳統噴水軟管占空間的困擾。



Fig. 1. Drilling 圖1 鑽孔
Fig. 2. Face Milling 圖2 面銑

Name of each parts (Fig. 3) 各部位名稱(圖3)

- | | |
|----------------------|---------|
| 1. Laser Head | 1. 雷射頭 |
| 2. Big O-Ring | 2. 大O型環 |
| 3. Battery | 3. 電池 |
| 4. Body | 4. 本體 |
| 5. Small O-Ring | 5. 小O型環 |
| 6. Adjust Link Stick | 6. 調整接桿 |

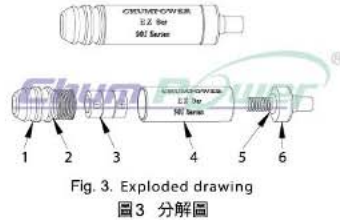


Fig. 3. Exploded drawing 圖3 分解圖

The Code No. & Spec. of the Adjust Link Stick (Fig.4) 調整接桿編號與規格，如下表及圖4所示

Code No.	Spec.			
	A	B	C	D
90100L				
90100L-AA	ø6mm	5mm	-	-
90100L-BB	-	-	ø4mm	7mm
90100L-CC	-	-	ø5mm	7mm
90100L-DD	-	-	ø6mm	7mm

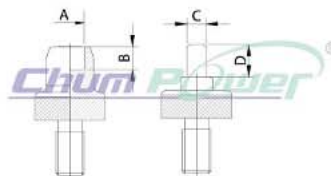


Fig. 4. Adapter Spec. 圖4 調整接桿規格

EZ-BAR

Installations & Attentions

※ Please confirm the following steps before installing :

- Please confirm the neck of Laser Head & Adjust Link Stick shall wear the Big O-Ring & Small O-Ring to avoid infiltrating the water.
- The negative of battery shall be headed forward the Laser Head.
- The inner of the Body shall insert the plastic cushion to avoid the results of short circuit in the negative of battery & Body.

※ Installation :

- After you confirmed as above, you can assemble the all parts according to Fig.3.

安裝步驟與注意事項

安裝前請確認.....

- 為避免滲水，請確認雷射頭與調整接桿之頸部套有大O型環及小O型環。
- 電池負極帶朝向雷射頭。
- 本體內部嵌入塑膠墊片，用以避免電池負極與本體造成短路。

安裝.....

- 確認工作完畢後，依照圖3爆炸圖順序裝入即可。



Attentions on Usage & Maintenance

- When the Adjust Link Stick is screwed in the Body completely, the Laser Collation Bar is under the condition of "ON".
- After correcting the position of the Fountain Outlet, please screw out the Adjust Link Stick slightly. It'll avoid the unnecessary consumption for electric power.
- To check the cleanness of the lens of Laser Head as regular. If it is dirty, you can wipe it with the cotton bud.
- To check the O-Ring as regular, if it keeps the elasticity and without transfiguration to avoid infiltrating the water.
- You may not aim to your eyes by 650nm Diode Laser. Otherwise, it'll hurt your retina.

使用與保養注意事項

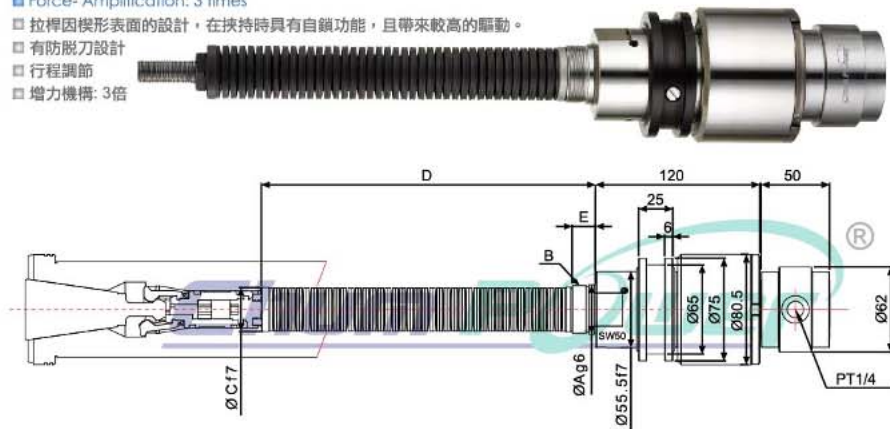
- 當調整接桿完全旋入本體時，雷射導水筆處於開啓的狀態。
- 噴水口角度位置校正結束後，請將調整接桿略為旋出，避免電量消耗。
- 定期檢查雷射頭鏡面之清潔，骯髒時可使用棉花棒進行擦拭。
- 定期檢查O型環是否保持彈性及變形，以避免滲水。
- 不可將紅外線二極體雷射對準眼睛，以避免傷害到視網膜。

Hydraulic Drawbar(Integrated Design)

一體式油壓拉桿

APPLICATION:

- When clamped, the drawbar is locked through the wedge surface with high power transmission.
- Prevent the cutting tools from slipping.
- With stroke control
- Force- Amplification: 3 times
- 拉桿因楔形表面的設計，在夾持時具有自鎖功能，且帶來較高的驅動。
- 有防脫刀設計
- 行程調節
- 增力機構: 3倍



Code NO. 型號	Type 規格	A	B	C	D	E
9200110	40#	36	M35xP1.5	32	226.5	17
9200115	50#	48	M45xP1.5	41	257	19

TYPE	9200110	9200115
spring pressure in clamping position	4000 N	7500 N
spring arrangement	1-fach / single	2-fach / double
pull force in clamping position	ca. 12000 N	ca. 25000 N
speed	12000 min ⁻¹	12000 min ⁻¹
opening force	80 bar	100 bar
opening force max	120 bar	120 bar
piston-Ø 48 - piston area	17,35 cm ²	17,35 cm ²
coolant lubrication	--	--
air	--	--
wedge stroke	16,1 mm	16,1 mm
total clamping stroke	6,2 mm	6,2 mm

Rotary Joint

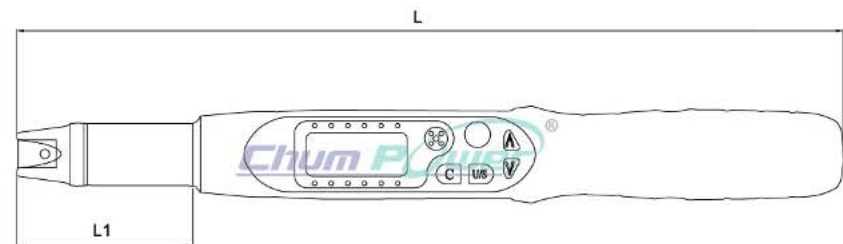
冷卻水迴轉接頭



Code NO. 型號	L	L1	M
9200120	66	58	M10xp1

Digital Torque Wrench

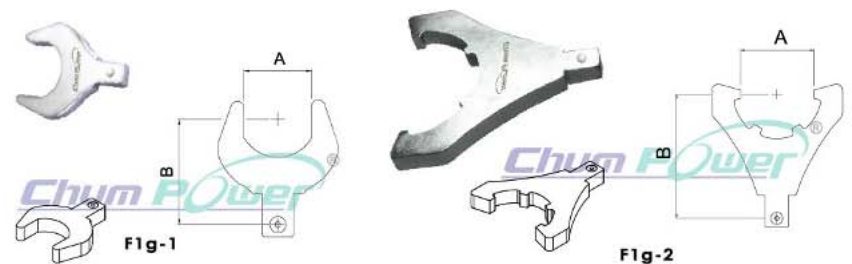
數位扭力扳手



Code NO. 型號	Square Drive (inch)	L (mm)	L1 (mm)	Max. Operation Range	Alarm Setting Range
STE0001	3/8	374	92	135 N-m/99.5 ft-lb 1195 in-lb/1378 kg-cm	6.8-135 N-m/5-99.5 ft-lb 60-1195 in-lb/69-1378 kg-cm
STE0002	1/2	374	92	135 N-m/99.5 ft-lb 1195 in-lb/1378 kg-cm	6.8-135 N-m/5-99.5 ft-lb 60-1195 in-lb/69-1378 kg-cm
STE0003	1/2	470	189	200 N-m/147.5 ft-lb 1770 in-lb/2041 kg-cm	10-200 N-m/7.4-147.5 ft-lb 88-1770 in-lb/102-2041 kg-cm
STE0004	1/2	589	308	340 N-m/250.7 ft-lb 3009 in-lb/3469 kg-cm	17-340 N-m/12.5-250.7 ft-lb 150-3009 in-lb/173-3469 kg-cm

Head

扳手接頭



Code NO. 型號	Type 規格	A	L1	FLG.
STE3001	ER16	25	40	1
STE3002	ER20	30	50	1
STE3003	ER25	37	60	2
STE3004	ER32	45	70	2
STE3005	ER40	58	83	2
STE3006	ER50	72	95	2