



Spindle Clamping System

主軸配件



Makes Machine Tools Complete

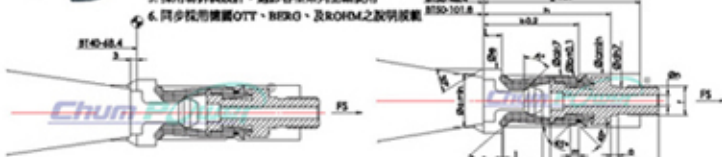
MAS 403 PULL STUD TYPE CLAMPING 四瓣爪 MAS 403 PULL STUD TYPE CLAMPING

Design Features :

1. All the above materials are composed of alloy steel.
2. The Gripper is in accordance with the global standard of Pull Stud J56339 (MAS403) system.
3. Grippers are developed for integrated and comprise four clamping segments, which is suitable for high and low-speed turning spindles.
4. 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. (**% BT40)
5. Easy to assemble and suitable for every type of spindles.
6. Our Grippers adopt the rules of BERG, OTT and Rohm standards.

特點

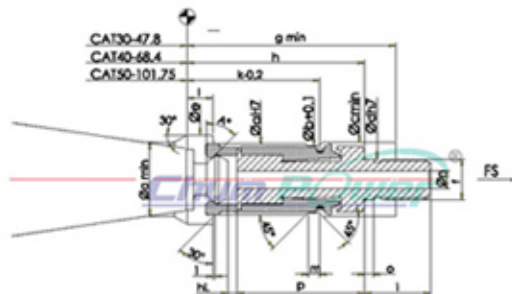
1. 四瓣爪材料皆以合金鋼製成
2. 此四瓣爪依據拉拔J56339(MAS 403)標準製作
3. 一體式分瓣爪片設計適用於各種高低轉速之主軸
4. 爪片表面經耐磨耗、防銹蝕之特殊處理，拉力經破壞壽命測試機測試可承受1000KG、300萬次 (**BT40為例)
5. 採用易拆裝設計，適用於各型系列主軸使用
6. 同步採用德國OTT、BERG、及ROHM之說明規範



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°	60°	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 :

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2. The Gripper is in accordance with the global standard of Pull Stud J56339 (MAS403) system.
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4. 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. (**% CAT40)
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特點

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2. 此四瓣爪依據拉拔J56339(MAS 403)標準製作
3. 一體式分瓣爪片設計適用於各種高低轉速之主軸
4. 爪片表面經耐磨耗、防銹蝕之特殊處理，拉力經破壞壽命測試機測試可承受1000KG、300萬次 (**CAT40為例)
5. 採用易拆裝設計，適用於各型系列主軸使用
6. 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
90008	CAT30		19	17.8	19.5	10	24	50	47	M10*1.5P
90009	CAT40	45°	28	26.4	28.5	16	35	82	70	M16*1.5P
90010	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
90008	CAT30	20	37	7.5	3.5	4	3	33	2.5	10
90009	CAT40	26	52	10	4.5	7	4	50	4	18
90010	CAT50	35	69	16	5	9.5	5	58	6.5	35

Shaft Coupling 連軸器

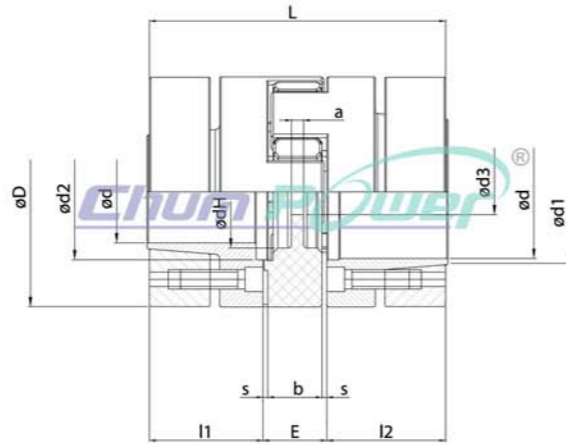


Features :

- According to DIN 69002, which is suitable for multiple spindle drives.
- Developed for stub spindles
- Integrated clamping system
- Designed for main spindle drives with high speeds
- Suitable for peripheral speeds of 50 m/s and more
- Backlash-free and high precisely shaft coupling
- Easy assembly by clamping and simply screws inside

特點

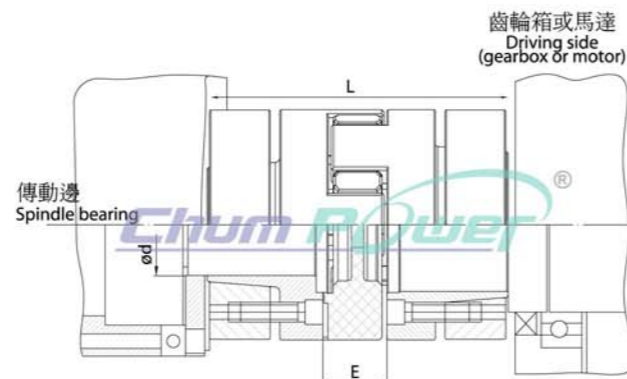
- 依據DIN69002標準製作，適用於複合加工機
- 具完備的短軸規格
- 結合完整的夾具系統
- 針對高轉速主軸設計
- 可適用於圓周回轉速50m/s以上
- 具高精度、動平衡結構
- 易拆裝



Code No. 型號	Size 尺寸	Dimensions(mm) 規格											
		d	D	d _H	L	I ₁ /I ₂	E	b	s	a	d ₁	d ₂	d ₃
SAA0001	14P	14"	32	10.5	50	18.5	13	10	1.5	2	17	17	8.5
SAA0002	19P37.5	16"	37.5	18	66	25	16	12	2	3	20	19	9.5
SAA0003	19P	19"	40	18	66	25	16	12	2	3	23	22	9.5
SAA0004	24P50	24"	50	27	78	30	18	14	2	3	28	29	12.5
SAA0005	24P	25"	55	27	78	30	18	14	2	3	30	30	12.5
SAA0006	28P	35"	65	30	90	35	20	15	2.5	4	40	40	14.5
SAA0007	38P	40"	80	38	114	45	24	18	3	4	46	46	16.5
SAA0008	42P	42"	95	46	126	50	26	20	3	4	52	55	18.5
SAA0009	48P	45"	105	51	140	56	28	21	3.5	4	52	60	20.5
SAA0010	55P	50"	120	60	160	65	30	22	4	4.5	55	72	22.5

Selection for stub spindles

Spindle drive Size	Size	Dimensions(mm)				
		d	D	I ₁ /I ₂	L	E
25x20	14 P	14	32	18.5	50	13
32kx25	19 P37.5	16	37.5	25	66	16
32gx30	19 P	19	40	25	66	16
40x35	24 P50	24	50	30	78	18
50x45	24 P	25	55	30	78	18
63x55	28 P	35	65	35	90	20



HSK Gripper 六瓣爪

Balancing Whole Gripper for HSK Toolholder as per DIN 69893



- Integrated Structure: Easy to be installed.
- High Rigidity. High Durability.
- Special Design: High Reliability.
- Suitable for high-speed machine center. To make HSK Tool-Holders steady.

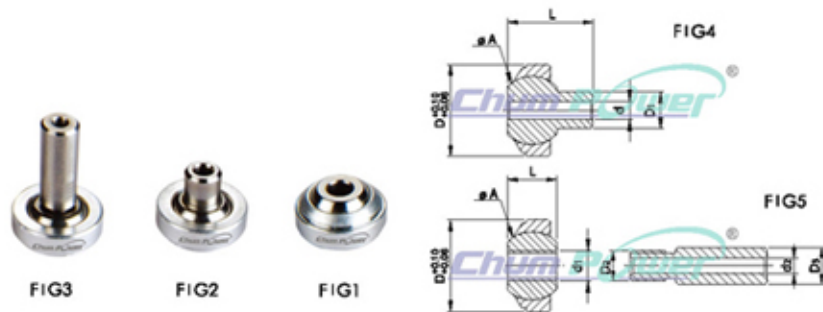
- 一體式結構，容易安裝。
- 剛性好，耐用。
- 特殊設計，作動可靠。
- 使用在HSK系列刀桿高速運轉時，平衡穩定。

Code No. 型號	A	B	E	Code No. 型號	F
90069	63	80	63	90077	80
90070	80	100	-	-	-
90071	100	125	-	-	-
90072	125	160	-	-	-

Code No. 型號	A	B	E	Code No. 型號	F
90074	-	-	25	-	-
90066	32	40	32	-	-
90067	40	50	40	90075	50
90068	50	63	50	90076	63

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，正確噴向磨頭點。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	Allowable tilting angle degree 可調整角度	FIG	
	D	D1	D2	D3	L	d	d1				d2
90101	15	-	-	-	8	-	ø4	-	7/16"	29	1
90102	15	ø6	-	-	14	ø6x5L	-	-	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，提高刀具冷卻效率。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 螺紋規格	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

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.

Moreover, it is accordance with RoHS standard and passed SGS certification which avoids polluting the environment.

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。符合RoHS標準，且高過SGS認證，不污染環境。



Code No. 型號	Thread mount 螺紋組接	L	L1	D1	D2	d	H
9011110	PT 1/8	20					
9011210	PT 1/8	40	10	6	5	4	17
9011010	PT 1/8	60					
9011310	PT 1/4	20					
9011410	PT 1/4	40	10	6	5	4	17
9011510	PT 1/4	60					
9011610	PT 3/8	30					
9011710	PT 3/8	50	13	8	10	6	24
9011810	PT 3/8	70					
9011910	PT 1/2	40					
9012010	PT 1/2	60	18	10	12	8	32
9012110	PT 1/2	80					
9012210	M10*1.25P	20					
9012310	M10*1.25P	40	8	6	5	4	17
9012410	M10*1.25P	60					
9012510	M20*1.5P	30					
9012610	M20*1.5P	50	13	8	10	6	24
9012710	M20*1.5P	70					
9012810	M24*2.0P	40					
9012910	M24*2.0P	60	18	10	12	8	31
9013010	M24*2.0P	80					
9013110	NPT 1/4	20					
9013210	NPT 1/4	40	10	6	5	4	17
9013310	NPT 1/4	60					
9013410	NPT 3/8	30					
9013510	NPT 3/8	50	13	8	10	6	24
9013610	NPT 3/8	70					

Spray Nozzle Series

Leak Lock Type

Special design for avoiding oil leaking. Not delaying spraying fluid which prolongs the longevity of the tool holders. Slope angle: $\pm 35^\circ$. The angle is easy to adjust by hand. Easy operation and greatest stability when operating. We have Multiple sizes for your reference. Customer requested sizes are available. Leak lock spray nozzle is made by stainless steel. It extends the lifetime of the tools and avoids corrosion. Moreover, it is accordance with RoHS standard and passed SGS certification which avoids polluting the environment. We have self-made testing equipment and QC before delivery. With our quality assurance, you can have confidence in us.

噴水頭系列 止漏型

特殊設計可立即停止供給切削液，將不再有切削液滴漏的困擾，且出水不延遲，可延長刀具使用壽命，傾斜角度： $\pm 35^\circ$ ，以手即可輕易調整至您希望的角度，容易操作使用且穩定性佳，規格齊全供您選擇，並可依客戶需求訂作，亦有不銹鋼材質的噴水頭，可延長產品壽命，防止生鏽，且通過SGS認證，符合RoHS標準，不污染環境，擁有自製的檢驗設備，出貨前一律全檢，讓您對品質更安心。



Alloy Steel Type 合金鋼型

Code No. 型號	Thread mount 螺紋組接	L	L1	D1	D2	d	H
9017500	PT 1/8	40					
9017600	PT 1/8	60	10	6	6	4	17
9017700	PT 1/4	40					
9017800	PT 1/4	60					
9017900	PT 3/8	30					
9018000	PT 3/8	50	13	8	10	6	24
9018100	PT 3/8	70					
9018500	NPT 1/4	40	10	6	6	4	17
9018600	NPT 1/4	60					
9018700	NPT 3/8	30					
9018800	NPT 3/8	50	13	8	10	6	24
9018900	NPT 3/8	70					
9019000	M10*1.25P	40	10	6	6	4	17
9019100	M10*1.25P	60					
9019200	M20*1.5P	30					
9019300	M20*1.5P	50	13	8	10	6	24
9019400	M20*1.5P	70					

Stainless Type 不銹鋼型

Code No. 型號	Thread mount 螺紋組接	L	L1	D1	D2	d	H
9017510	PT 1/8	40					
9017610	PT 1/8	60	10	6	6	4	17
9017710	PT 1/4	40					
9017810	PT 1/4	60					
9017910	PT 3/8	30					
9018010	PT 3/8	50	13	8	10	6	24
9018110	PT 3/8	70					
9018510	NPT 1/4	40	10	6	6	4	17
9018610	NPT 1/4	60					
9018710	NPT 3/8	30					
9018810	NPT 3/8	50	13	8	10	6	24
9018910	NPT 3/8	70					
9019010	M10*1.25P	40	10	6	6	4	17
9019110	M10*1.25P	60					
9019210	M20*1.5P	30					
9019310	M20*1.5P	50	13	8	10	6	24
9019410	M20*1.5P	70					

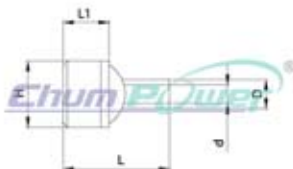
Spray Nozzle Series

Plastic Type

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噴水頭系列 塑料型

可任意調整噴水口角度，並有效對應低、中、高冷卻液液壓，提升刀具冷卻效率。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

D-13

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

D-14



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變更地校正冷却水柱與刀具熱點的角度。
- 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)

1. Laser Head
2. Big O-Ring
3. Battery
4. Body
5. Small O-Ring
6. Adjust Link Stick

各部位名稱(圖3)

1. 雷射頭
2. 大O型環
3. 電池
4. 本體
5. 小O型環
6. 調整接桿

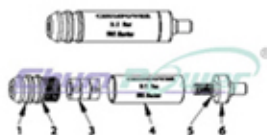


Fig. 3. Exploded drawing 圖3 分解圖

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

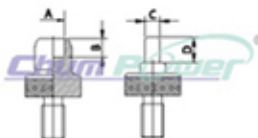


Fig. 4. Adapter Spec. 圖4 調整接桿規格

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裝有大O型環及小O型環。
 - 電池負極需向前雷射頭。
 - 本體內底部裝入塑膠墊片，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順序順序裝入即可。



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。
- 噴水口角度位置調整結束後，請將調整接桿略旋出，避免電量消耗。
- 定期檢查雷射頭鏡面之清潔，調整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。

Annular Supplementary Spray loop

Custom-Built product

Features:

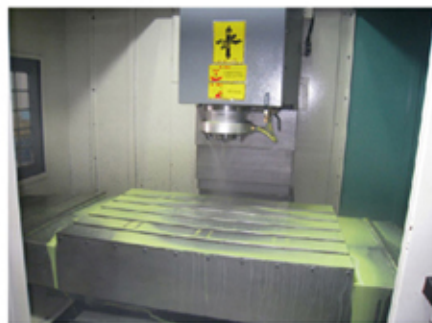
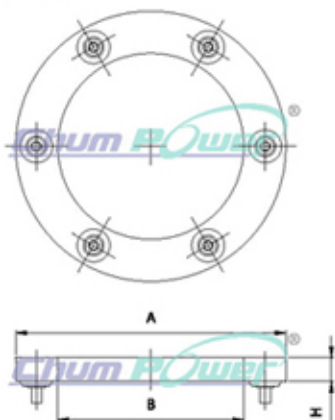
1. Enhance the traditional spray system.
2. Improve the imperfection of traditional spindle that can not be cooling completely.
3. Accuracy Guarantee.
4. Custom-Built product can fit the special machine usage.
5. One year guarantee

環噴輔助環

依客制尺寸製作

特點:

1. 加強傳統噴水系統
2. 改善傳統主軸不完全的冷卻能力
3. 精度保證
4. 依客制尺寸製作最適合主軸使用的產品
5. 一年保固



Order form:

A-B-H-The numbers of spray hole -The code no. of spray nozzle

Example: 350mm-280mm-150mm- 6 - 90132

客制格式參考:

A-B-H-環水口數量-環水口型號

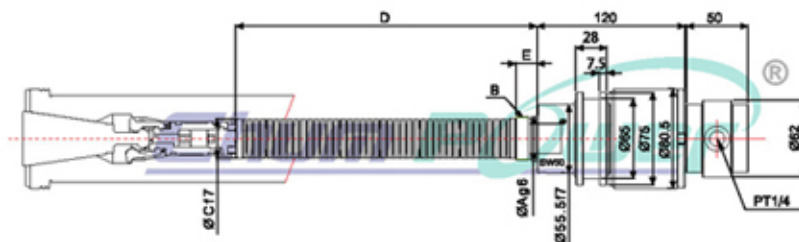
例: 350mm-280mm-150mm-6-90132

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
- 拉桿器楔形表面的設計，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



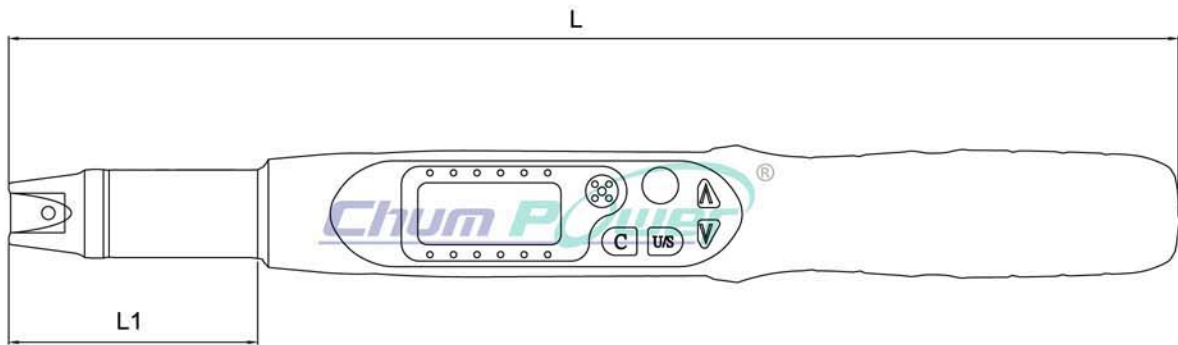
Code NO. 型號	L	L1	M
9200120	66	58	M10xp1

SPINDLE CLAMPING SYSTEM

主軸配件

Digital Torque Wrench

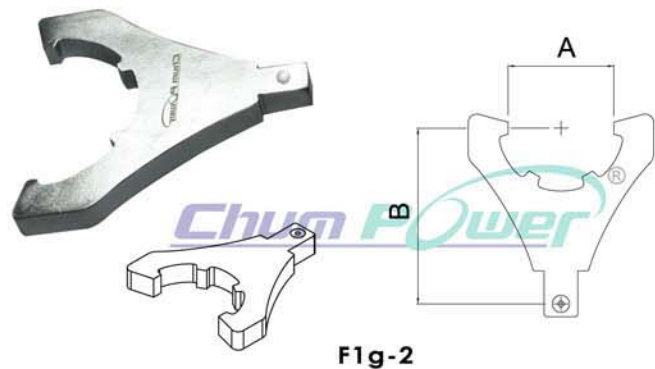
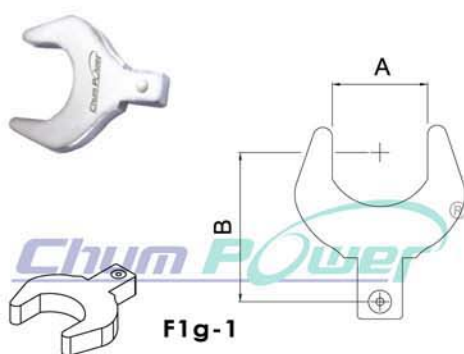
數位扭力扳手



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