

GSA⁺

旭陽國際精機

刀塔/Turret



ISO-9001



ISO-9001 品質保證



台灣精品



專利證書



金龍獎



歐洲安全標誌



MCS證書

《 COMPANY PREFACE 》

- GSA TECHNOLOGY CO., LTD. established in 1978, from time to time, our growing of devotion work stable, keeping in mind of honesty, faith, profession and innovation, non-stop communication and promotion of critical quality procedure, ensure every products could meet high quality of duration and precision.
- Further we display our products at IMTS-Chicago, EMO-Hannover, JIMTOF-Tokyo and TIMTOS-Taipei, and receiving reputation from the customer of the worldwide.
- To meet the request of customer, both upgrading the quality of our produces and purchasing new machinery of testing and inspection, collecting update technology to develop value-added products.
- The sales & service had been built around the network of worldwide, technical supporting and customer service are connected through our agents and dealers more than 30 countries of the world.
- We stay improving and innovating our products as the goal of never ending story, the satisfied of our customer and continuing devotion of our products are what we working for the mutual benefits of our customers and members of GSA.

《 公 司 簡 介 》

本公司創立於西元1978年，自成立以來，本公司一直在穩健踏實的努力下成長，本著誠信、務實、專精及恆心之理念，不斷研究與創新，施以嚴格之品質管制，以確保每台出廠機器都有高水準之品質。

並參加如：美國芝加哥、德國漢諾威、日本東京、歐洲EMO及台灣區等 國際性大展，皆獲致極高之評價。

為體認客戶之需求，提昇產品之品質，本公司不斷的添增新設備，吸取新資訊，開發具有經濟價值之新產品，且銷售市場已遍佈世界各國，於各國各地都委任經驗豐富之代理商，提供維修技術，定期與不定期和代理商或終端客戶檢討溝通，以加強日後機械改進及競爭能力，繼續挖掘市場潛力。

誠信、務實、專精、有恆心、有活力、有創意

GSA management system integrated honesty, trust, profession, faith, innovation and creation for the members of GSA.

《 COMPANY PREFACE 》

- 1978 Company established, started product of Precision-Index-Tables
- 1980 Professional manufacturer of Precision-Feed-Index-Tables
- 1985 Cooperated with venders in Switzerland, Germany, Japan & USA
- 1988 Products No. 1 awarded MCS (Mechanical Components Standards)
Professional manufacturer of CNC-Rotary-Table
- 1990 Built a new Factory 4,290m² of production-line 1,500m²
Phase-in products A/M-Pallet-Changer, CNC-Tilting-Rotary-Table
- 1991 Products win the "Golden Dragon Award" of Quality & Design
- 1992 Organized and set up branch office in Shanghai, China
- 1994 Products awarded "Symbol of Excellence winner"
- 1995 Complete the EC Declaration of Conformity and affix CE Mark
- 1996 Certificate approved of ISO-9001 by TÜV Rheinland, Germany
Products awarded again the "Symbol of Excellence winner"
- 1997 Release new series of Tool-Turret for CNC Lathe
- 1999 Ready to again Y2K and carry out ERP in whole factory
- 2000 Complete second factory building
- 2000 To set up service center in Shanghai, China
- 2001 Complete development of servo turret product lines
- 2002 To expand factory land size to 6,600m²
- 2002 Import high-precision boring machine from Yasuda and multi-platform
machine center from Okuma and other high-precision experiments etc..
- 2003 To expand factory buildings to 7,600m²
- 2004 OEM power milling turret and servo drive turret designed by Japan
- 2005 Golden Sun in Japan established. Import Makino High-Precision
Horizontal Machine Center
- 2006 Complete development of power turret
- 2007 Import Germany made CNC Hobbing Machine (P600/800)
from GLEASON PFAUTER
- 2007 Organized and set up GREAT STRONG PRECISION LIMITED CO.,
GSP in Shanghai, China
- 2008 Transferred the name of Golden Sun Industrial Co., Ltd to GSA
TECHNOLOGY CO., LTD. specialize in manufacturing CNC
Rotary Table and Turret which has built new factory land to 15,000 m²
- 2009 Implementation of 5S for workplace improvement
- 2010 Acquired Germany Made 5 Axes Milling Machine and 5-Face Double
Column Machining Center
- 2011 Implementation of T.O.C (Theory of Constraints) to reach goal of
QCD(Quality, Cost, Delivery)
- 2012 To build China new factory (Jiashan, Shanghai) 20,000m²

《 公 司 沿 革 》

- 1978 公司成立專業生產精密搪銑分割台
- 1980 專業生產精密自動分割台
- 1985 與德國、美國、日本等國同業技術交流
- 1988 台灣第一家榮獲分度盤類 MCS 評鑑合格專業
生產 CNC 電腦數控分度盤
- 1990 擴遷至現今4,290m²新廠房
專業生產手動/自動工作交換台
CNC電腦數控雙軸分度盤
- 1991 榮獲國家產品機械金龍獎
- 1992 成立上海辦事處
- 1994 榮獲台灣精品標誌
- 1995 CE安全標誌宣告
- 1996 通過 ISO 9001 品質認證
再度榮獲台灣精品標誌
- 1997 專業生產電腦車床刀塔
- 1999 完成Y2K準備及整廠ERP規劃
- 2000 成立上海維修中心，二期廠房增建完成
- 2001 全系列伺服刀塔開發完成
- 2002 擴增工廠土地面積至6,600m²
- 2002 引進安田精密鑄床與大隈多工作台加工中
心機等高精度加工設備
- 2003 擴建廠房總面積至7,600m²
- 2004 代工生產日本設計伺服動力銑削刀塔與伺服刀塔
- 2005 日本亘陽設立，引進牧野高精度臥式加工中心機
- 2006 動力刀塔開發完成
- 2007 引進德製CNC蝸輪、滾齒機GLEASON PFAUTER P600/800
- 2007 成立亘勇精密機械設備(上海)有限公司
- 2008 亘陽已於2008年2月1日正式分割成兩間公司，其中CNC
分度盤、刀塔移至旭陽(15,000m²)新廠專業生產
- 2009 全廠空調、並推行5S運動
- 2010 引進德國DMG高速五軸複合加工機與五面大型龍門中心加工機
- 2011 全廠推行T.O.C限制理論，達成Q(品質)、C(成本)、D(交期)
最高目標
- 2012 中國上海嘉善廠房動土，總面積20,000m²



行銷管理及品質管制

健全之行銷網路

國內：北、中、南三區

國外：代理商遍及全球40多個國家



生產與製造

- ◎ 計劃性庫存生產→交貨迅速。
- ◎ 零組件標準化→零件具互換性。
- ◎ 生產作業標準化→品質有保障。

PRODUCTION CONTROL & MANAGEMENT

- ◇ Planned production-quick delivery
- ◇ Standardize components-exchangeable parts.
- ◇ Procedure-quality assurance



防塵溫控製造室

- ◎ 溫度控制。
- ◎ 防塵。

PRODUCTION ROOM

- ◇ Temp. Control
- ◇ Anti-Dust



售後服務

堅強完整之售服陣容，
具有專業技術之售服人員。

AFTER SALES SERVICE

Perfect and strong service team
members with excellence professional technique

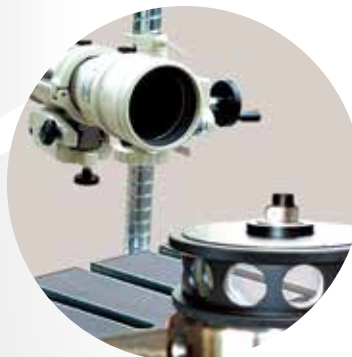
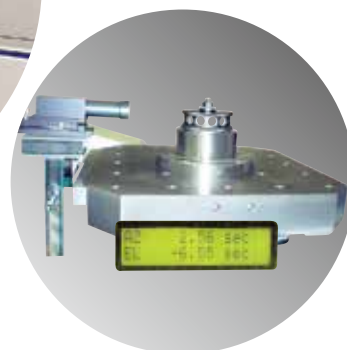
MARKETING & SALES MANAGEMENT

Complete sales network

◇ Domestic : 3Areas-North, Middle, South-Taiwan

◇ Oversea : Agents & dealers

spread out 40
countries of the world.



品質管制

已通過ISO 9001，從設計研發一直到售後服務皆符合國際水準。

Q. C. SYSTEM

Certificate approved of ISO 9001
to suit international standard from
design / research to after sell service.



企業資源規劃

導入ERP系統，記錄及整合企業
內外部的資源做有效管理。

GUIDE IN ERP SYSTEM

Guide in ERP system to record & unify
whole company resource for
effective management.



研究創新

開發設計部門，積極吸收新資訊，創新研發，
並採用CAD電腦輔助系統，強化工作效率。

RESEARCH NEW IDEA DESIGN

To increase work efficiency, R & D Dept, keeping
update technology & using CAD system.

加工機械設備 MACHINING FACILITIES

刀盤粗精加工採用德製五軸加工機

Adopting Germany Made DMG 5 Axes Milling Machine.

Machine Job : Tool-Disc Machining from Roughing to Finish Machining.



底座採用高精度臥式切削中心機

Adopting CNC Horizontal Machining Center for Housing and Tool-Disc Machining.



底座採用OKUMA MA-60HB，加工主軸孔與蝸桿中心孔，鏜孔平面垂直可達0.005mm

Adopting OKUMA MA-60HB HMC for Housing machining, the parallelism and perpendicularity in boring machining can be reached 0.005mm in between spindle hole and center hole of worm shaft .



大型底座採用高精度龍門五面加工機

Adopting 5-Face CNC Double Column Machining Center for Large Size Housing Machining.



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油壓四角/六角刀架 **Hydraulic Hirthpost**

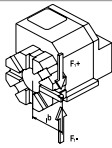
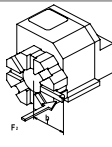
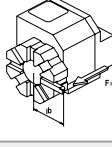
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特性 / Features

- 分割機構採用板形共軛凸輪，可快速平穩的驅動刀盤旋轉，且結構簡單，耐用性高，適合重切削。
- 使用油壓動力源來驅動刀盤旋轉、分度及鬆開鎖緊，動作確實順暢。
- 刀塔可左右就近選取刀具，配合近接開關及邏輯線路控制，不亂刀。
- Equipped "double-cam-plate" for indexing mechanism, smooth with turbo-speed to turning the tool-disc, with compact design & high durability, suitable for heavy cutting of precision.
- Driving source per hydraulic to turning tool-disc, indexing and clamping/unclamping, precisely and correctly.
- Smart selection of nearby tools, controlled via proximity-detector and PLC programming, no error of tool-disc change.

規格表 / Specification

型 號 Model		CLT-63		CLT-80		CLT-100		CLT-125		CLT-160		CLT-160A		CLT-200		CLT-300	
刀 數 Allowed number of tools	N	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	12
中 心 高 Center height	mm	63		80		100		125		160		160		200		300	
轉 動 慣 量 Inertia of movement for tool-disc	kg.m ²	5		12		15		18		21		21		40		40	
轉一刀位並鎖緊(theoretical value) Rotation and clamping	Sec.	0.6		0.6		0.8		0.8		1.2		1.2		1.5		1.5	
鎖 緊 力 Clamping force	kg	1060		2500		3400		3400		4200		8100		11130		11130	
轉最遠刀並鎖緊(theoretical value) Total indexing time for 180° (include clamping)	Sec.	1.4	1.6	1.4	1.6	1.5	1.85	1.5	1.85	3.6	5.2	3.6	5.2	4.5	6.5	4.5	6.5
油 壓 壓 力 Hydraulic working pressure	kgf / cm ²	25~30		33~37		33~37		33~37		33~37		33~37		33~37		33~37	
流 量 Flow Rate	L / min	20		30		40		40		40		40		50		50	
重 覆 精 度(theoretical value) Accuracy of repeatability	Sec.	±1"		±1"		±1"		±1"		±1"		±1"		±1"		±1"	
F1 x b 	Nm	2100		3200		6000		9000		15000		17500		24000		24000	
F2 x b 	Nm	2500		3800		10000		12000		16000		29000		40000		40000	
F3 x b 	Nm	1200		1600		4000		6000		8000		14500		20000		20000	
重 量 (不含刀盤) Net weight(without tool disc)	kgs	35		65		116		120		200		200		380		400	
離 合 齒 外 徑 / 型 態 Diameter of coupling / type	mm	Ø120 2 pcs		Ø140 2 pcs		Ø180 2 pcs		Ø180 2 pcs		Ø240 2 pcs		Ø280 2 pcs		Ø346 2 pcs		Ø346 2 pcs	

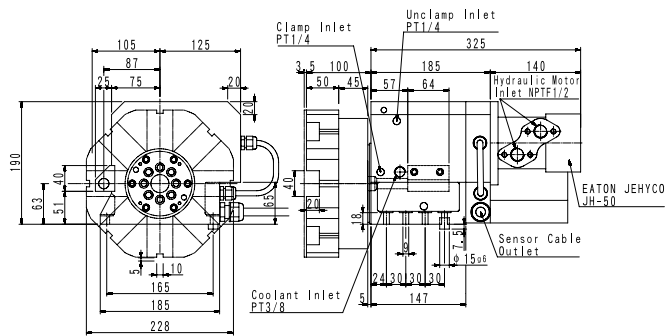
- ◆ 以上所列規範旭陽公司保留規格修改權力，客戶可提出需求規格另定規格協議。
- ◆ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

Item Model	CLT-63	CLT-80	CLT-100 CLT-120 CLT-125	CLT-160	CLT-200 CLT-300
8支刀盤 8N	Disc size 對邊 228mm	Disc size 對邊 270mm	Disc size 對邊 330mm	Disc size 對邊 385mm	Disc size 對邊 483mm
12支刀盤 12N	Disc size 對邊 290mm	Disc size 對邊 340mm	Disc size 對邊 420mm	Disc size 對邊 480mm	Disc size 對邊 600mm
搪刀座 Inside tool	Size 刀具規格 孔徑 Ø20	Size 刀具規格 孔徑 Ø32	Size 刀具規格 孔徑 Ø40	Size 刀具規格 孔徑 Ø40 Ø50	Size 刀具規格 孔徑 Ø50
端面刀座 Facing holder	Size 刀具規格 □20	Size 刀具規格 □20 □25	Size 刀具規格 □25	Size 刀具規格 □25 □32	Size 刀具規格 □32

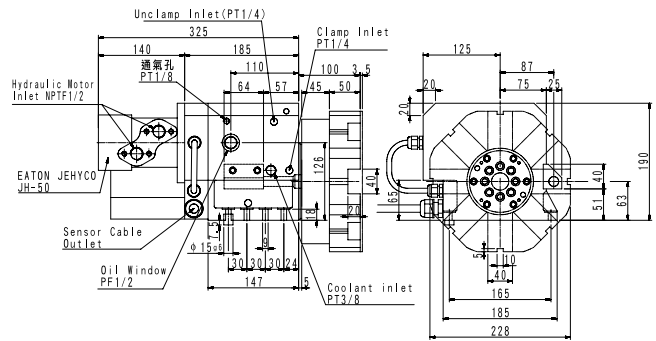
Hydraulic Turret

外觀尺寸圖 / Dimension

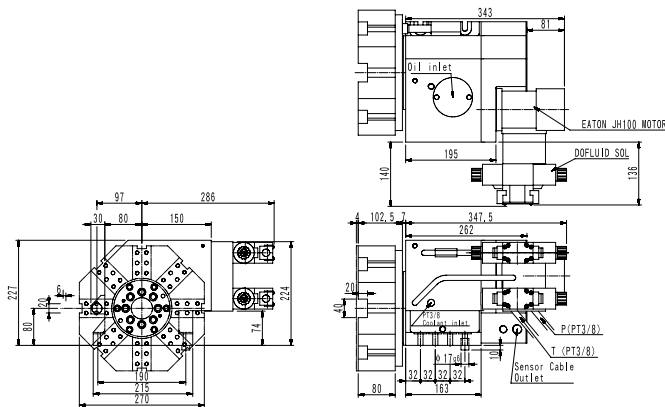
CLT-63L-8T



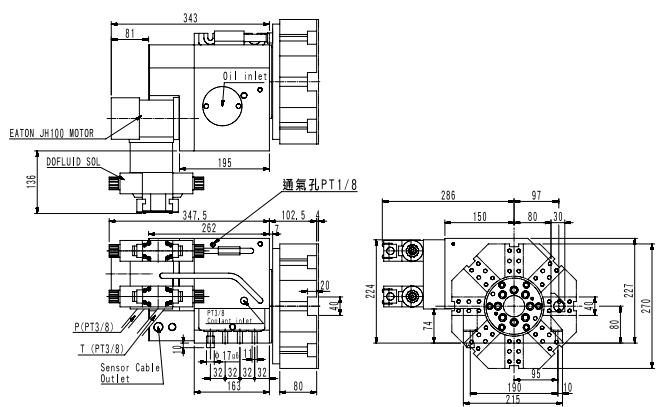
CLT-63-8T



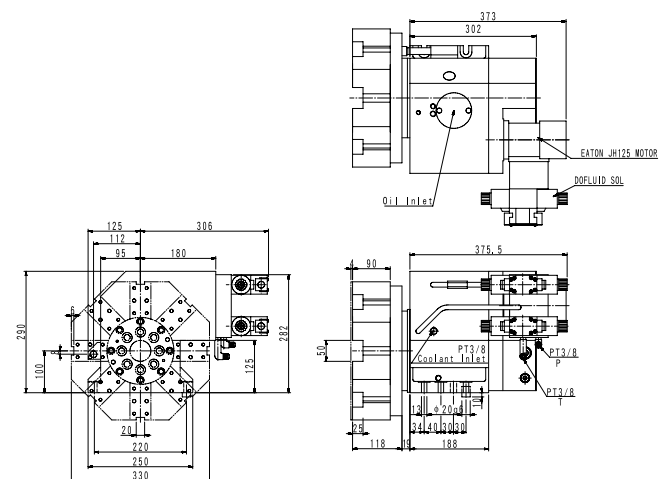
CLT-80L-8T



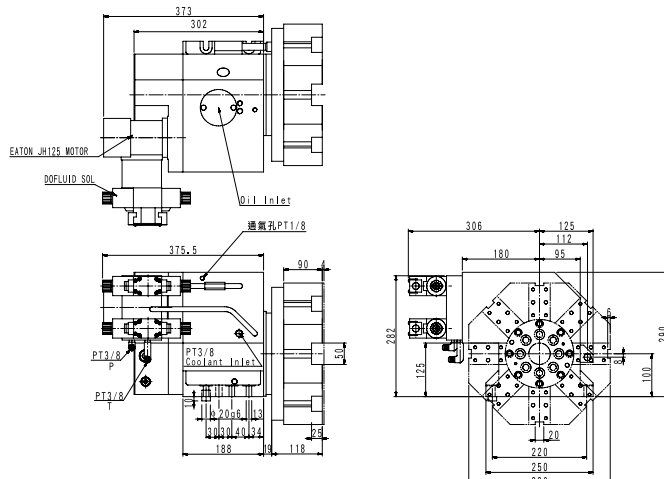
CLT-80-8T



CLT-100L-8T



CLT-100-8T



[illegible][illegible]

Technical drawing of the Eaton JH125 motor assembly, showing three views: front, side, and top.

Front View (Top Left): Shows the motor assembly with dimensions 373 (total width), 302 (motor width), and 118 (flange width). Labels include "EATON JH125 MOTOR", "DOFLUID SOL", and "Oil Inlet".

Side View (Bottom Left): Shows the motor assembly from the side with dimensions 375.5 (total height), 118 (flange height), 30 (motor height), and 188 (base width). Labels include "Oil Inlet", "PT3/8", "Coolant Inlet", and "PT3/8".

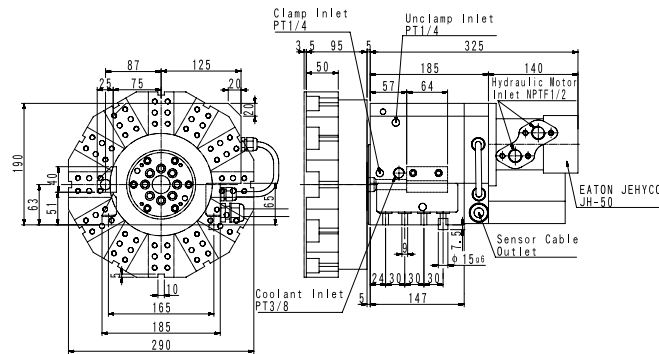
Top View (Right): Shows the motor assembly from above with dimensions 306 (total width), 125 (motor width), 112 (flange width), 180 (base width), 95 (motor height), 125 (flange height), 315 (total height), 150 (base height), 220 (motor width), 250 (flange width), and 330 (total width). Labels include "Oil Inlet", "PT3/8", "Coolant Inlet", and "PT3/8".

[illegible]

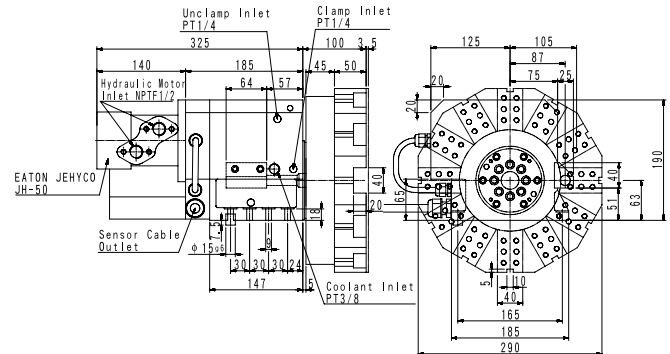
Hydraulic Turret

外觀尺寸圖 / Dimension

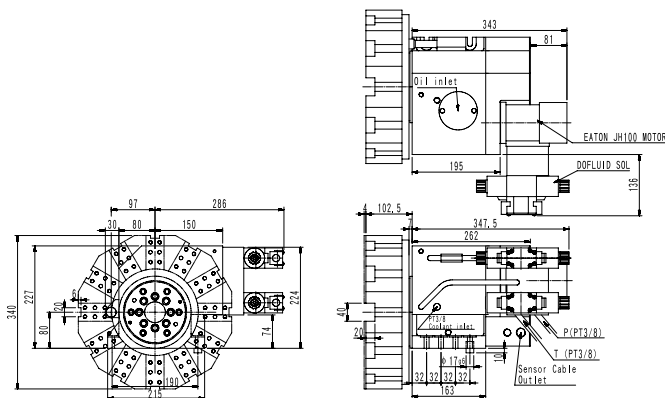
CLT-63L-12T



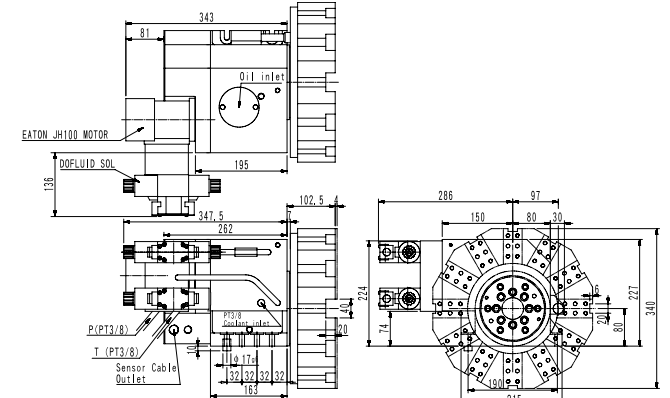
CLT-63-12T



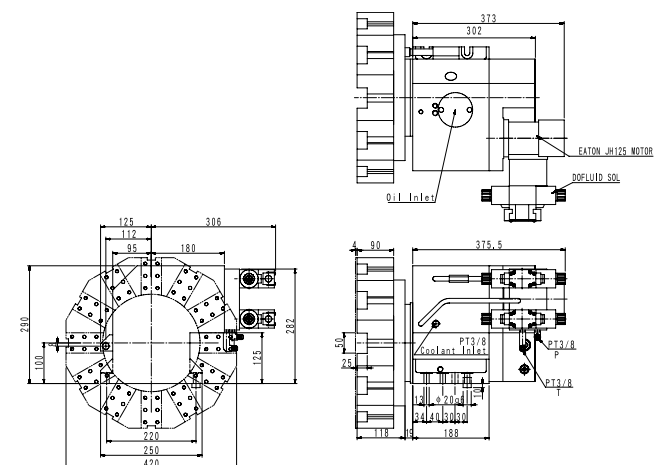
CLT-80L-12T



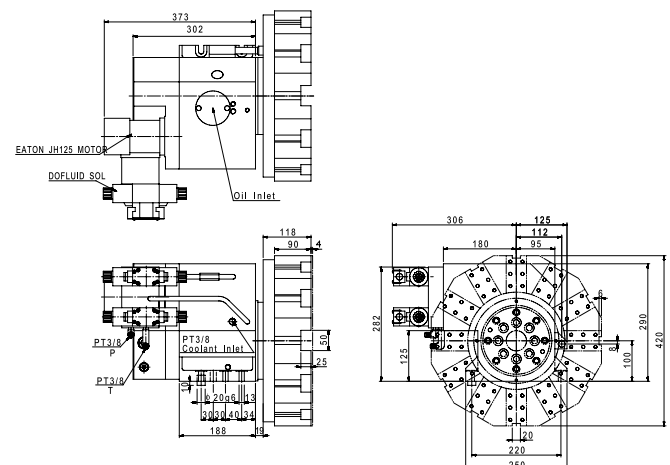
CLT-80-12T



CLT-100L-12T



CLT-100-12T



Technical drawing of a mechanical part, showing three views: front view, side view, and top view. Dimensions are given in millimeters.

Front View Dimensions:

- Overall width: 404.8
- Overall height: 275
- Top flange width: 104.48
- Top flange thickness: 22
- Central hole diameter: $\phi 22$
- Bottom flange width: 56
- Bottom flange thickness: 15
- Overall depth: 140

Side View Dimensions:

- Overall width: 420
- Overall height: 480
- Top flange width: 35
- Top flange thickness: 110.4
- Central slot width: 32
- Central slot depth: 64
- Bottom flange width: 140
- Bottom flange thickness: 23
- Bottom flange hole diameter: $\phi 30 \pm 0.01$

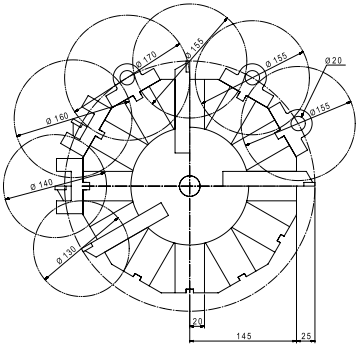
Top View Dimensions:

- Overall width: 338
- Overall height: 308
- Top flange width: 163
- Top flange thickness: 150
- Central hole diameter: $\phi 140$
- Central hole offset: 170
- Bottom flange width: 161
- Bottom flange thickness: 180
- Bottom flange hole diameter: $\phi 191$
- Bottom flange hole offset: 210
- Bottom flange hole diameter: $\phi 270$
- Bottom flange hole offset: 160
- Bottom flange hole diameter: $\phi 342$
- Bottom flange hole offset: 160
- Bottom flange hole diameter: $\phi 308$
- Bottom flange hole offset: 40

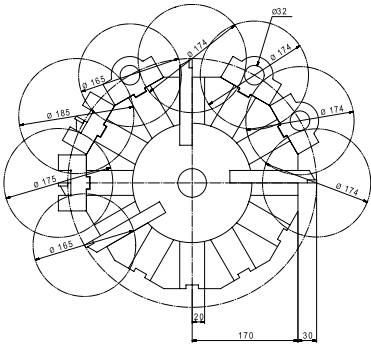
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干涉圖 / Allowable cutting capacity

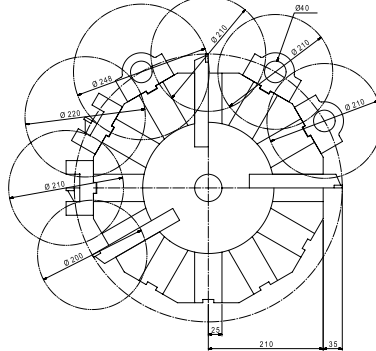
CLT-63-12T



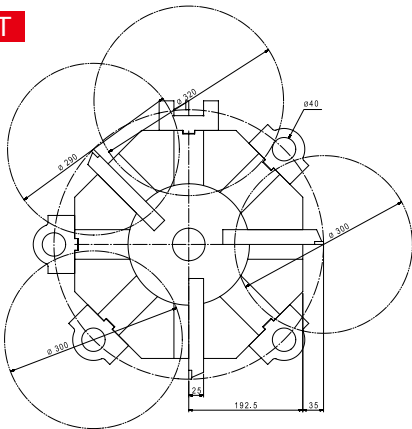
CLT-80-12T



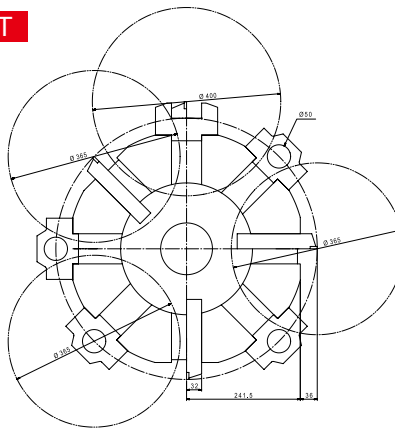
CLT-100-12T



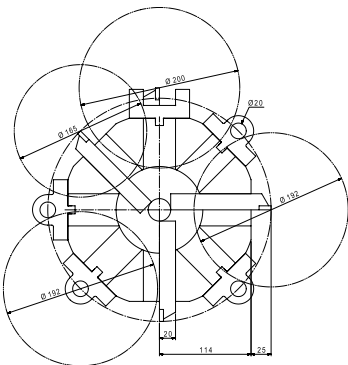
CLT-160-8T



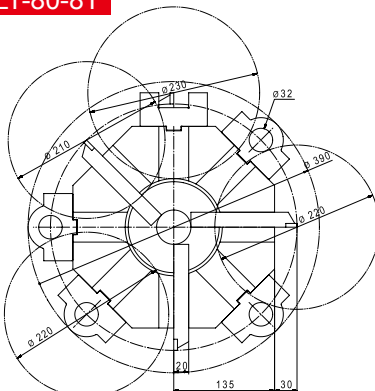
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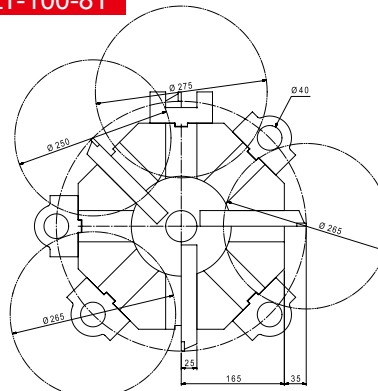
CLT-63-8T



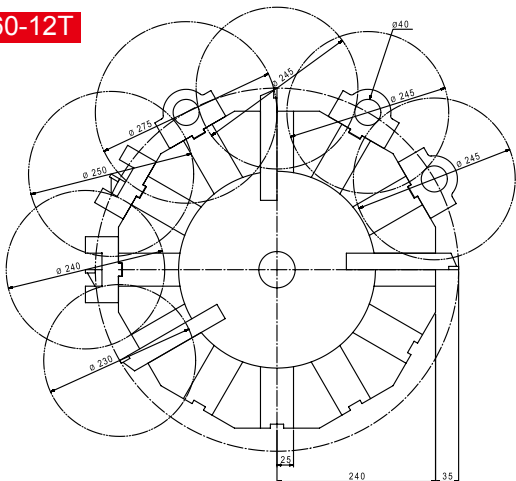
CLT-80-8T



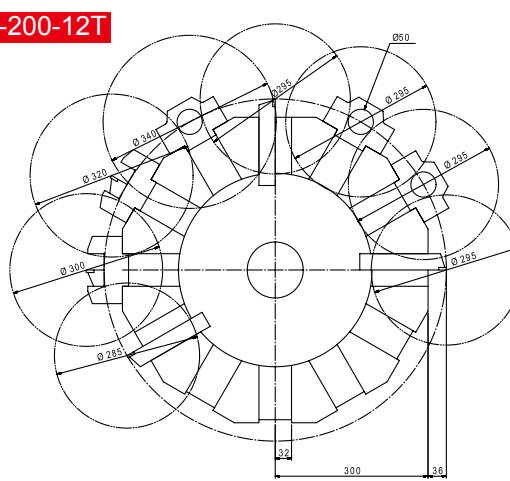
CLT-100-8T



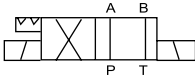
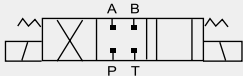
CLT-160-12T



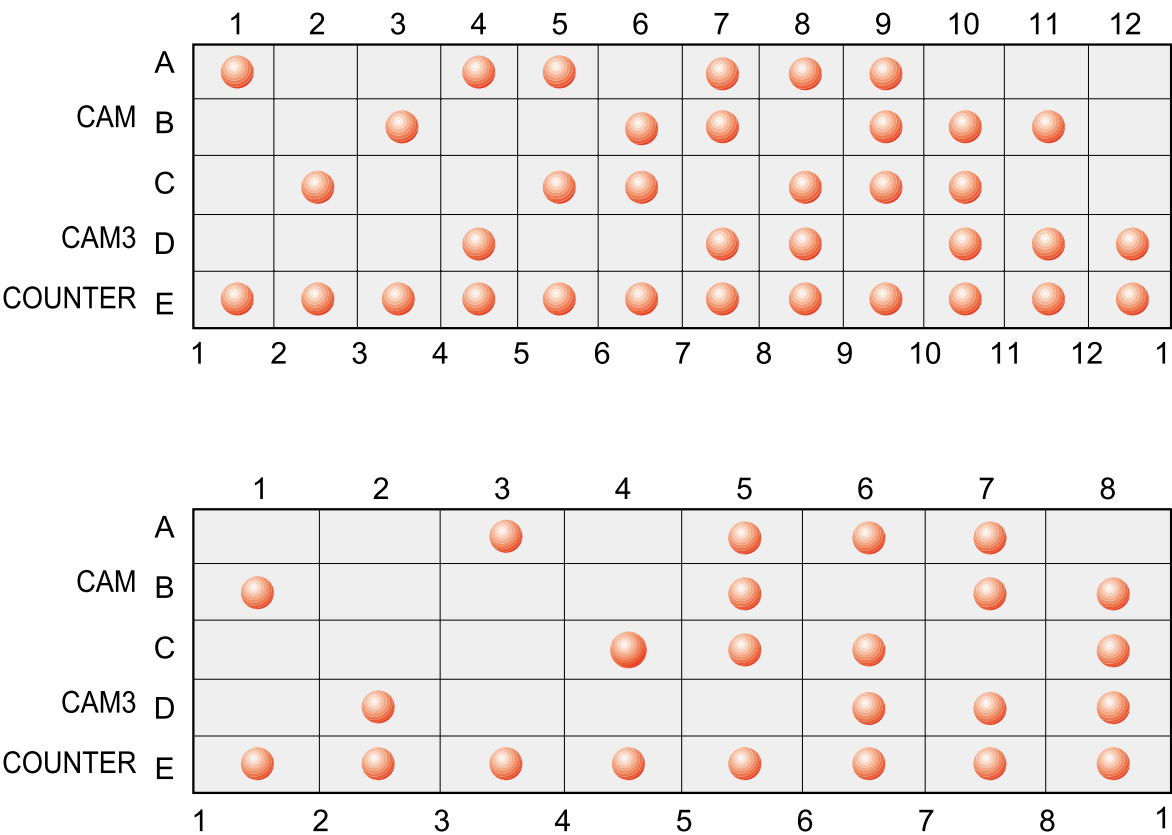
CLT-200-12T



CLT-63, 80, 100,125,200,300

項次 Item	內容 Article	特性 Specification	線碼 Cable code	信號 Signal
Sensor A	刀位檢出感測器 Position Sensor	10~30V DC 100 mA (負載 Load) 輸出 Output-PNP-NO	 -24V -A -0	棕 24V Brown 24V 黑 信號 Black Out 藍 0V Blue 0V
Sensor B	刀位檢出感測器 Position Sensor	10~30V DC 100 mA (負載 Load) 輸出 Output-PNP-NO	 -24V -B -0	棕 24V Brown 24V 黑 信號 Black Out 藍 0V Blue 0V
Sensor C	刀位檢出感測器 Position Sensor	10~30V DC 100 mA (負載 Load) 輸出 Output-PNP-NO	 -24V -C -0	棕 24V Brown 24V 黑 信號 Black Out 藍 0V Blue 0V
Sensor D	刀位檢出感測器 Position Sensor	10~30V DC 100 mA (負載 Load) 輸出 Output-PNP-NO	 -24V -D -0	棕 24V Brown 24V 黑 信號 Black Out 藍 0V Blue 0V
Sensor E	刀盤停止轉動檢出感測器 Disk sensor	10~30V DC 100 mA (負載 Load) 輸出 Output-PNP-NO	 -24V -E -0	棕 24V Brown 24V 黑 信號 Black Out 藍 0V Blue 0V
Sensor F	刀盤鬆開鎖緊檢出感測器 Disk unclamp sensor	10~30V DC 100 mA (負載 Load) 輸出 Output-PNP-NO	 -24V -F -0	棕 24V Brown 24V 黑 信號 Black Out 藍 0V Blue 0V
Sol A	刀盤鬆開電磁閥 Disk clamp(unclamp) solenoid	DC24V AC110V		
Sol B	刀盤正反轉電磁閥 Disk rotation solenoid	DC24V AC110V		

CLT-63, 80, 100,125,200,300



CLT-160 作動順序
鬆開信號→油壓馬達電磁閥作動→油壓馬達迴轉→刀位位置信號感應→鎖緊電磁閥鎖緊作動→
離合齒鎖緊→鎖緊信號作動→馬達電磁閥回到中間位置→馬達停止轉動

CLT-160 Movement Sequence
Unclamp Signal on→Solenoid valve action for hydraulic motor→Rotating of hydraulic motor→
Sensing of tool position→Solenoid valve action for turret clamping→Hirth couplings clamping→
Action for clamping signal→Solenoid valve of hydraulic motor return to middle position→
Hydra-ulic motor stop

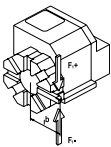
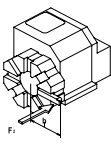
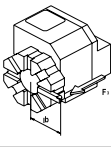
伺 服 刀 塔



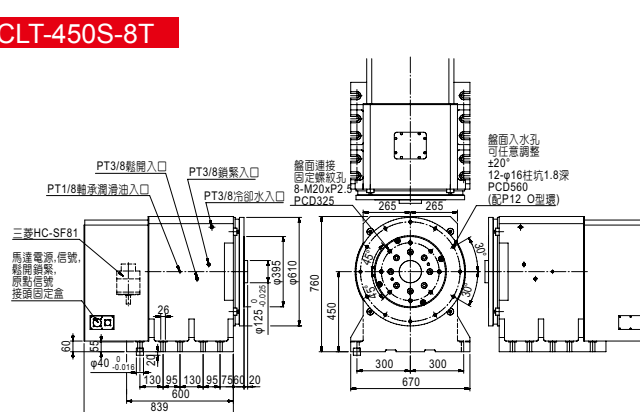
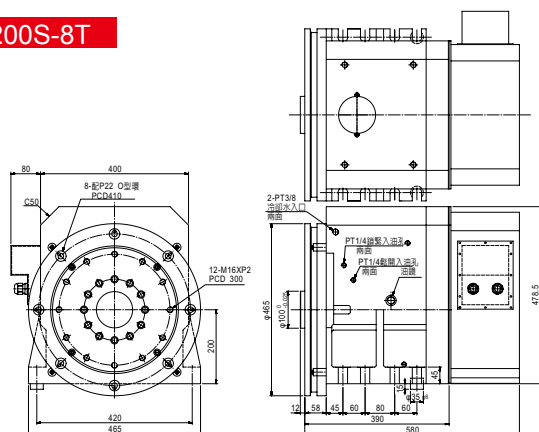
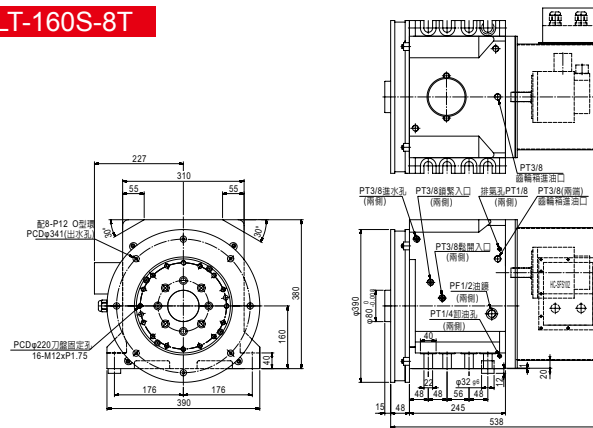
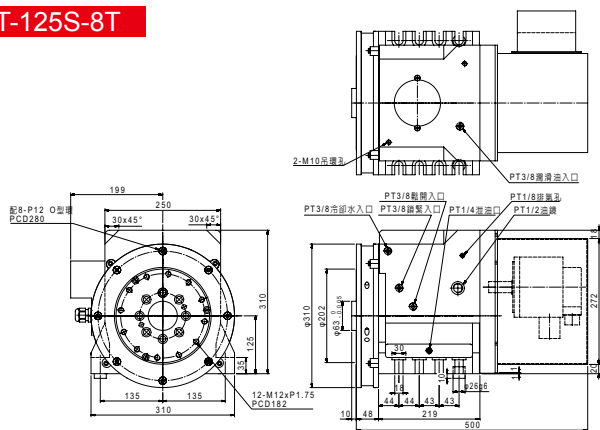
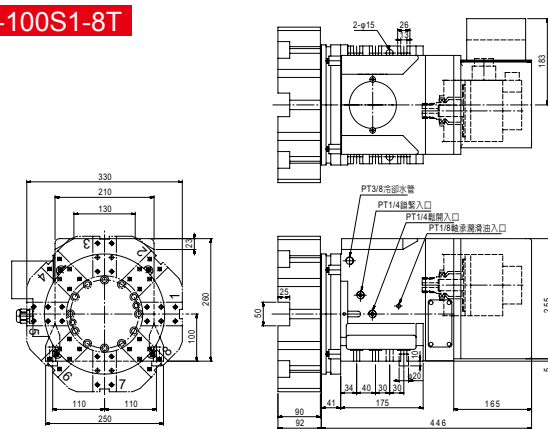
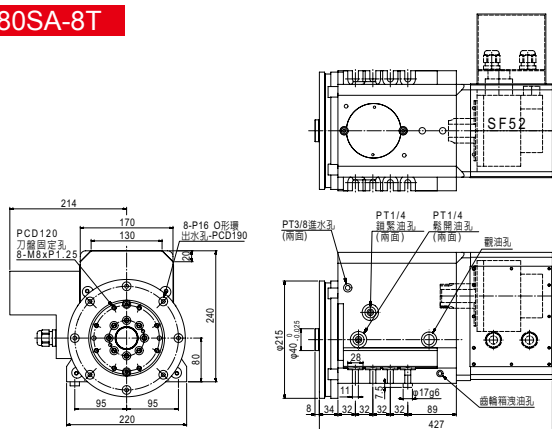
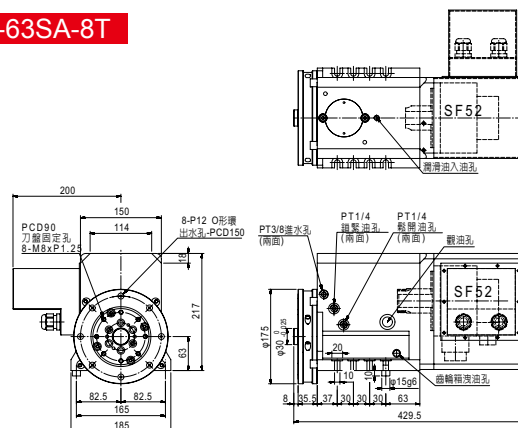
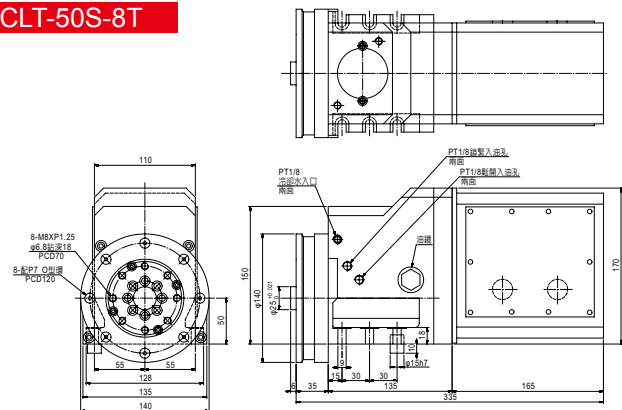
特性 / Features

- 全系列採用3片離合齒及油壓鎖緊耐用性高適合重切削。
- 使用三菱馬達、驅動器為動力源，來驅動刀盤旋轉，動作快速轉一刀位只需0.1秒，定位精度±2秒。
- 可接受OEM/ODM訂單製作。
- All Series Use 3 Pieces Hirth Coupling & Hydraulic Clamp /unclamp System Suitable For Heavy Cutting Long Term Operation.
- Driving Source Per Mitsubishi Servo Motor/ Drive To Turing Tool Disc. Index Time Per Station Only Need 0.1 Sec. Indexing Accuracy :±2 Sec.
- Accepted OEM/ODM Orders.

規格表 / Specification

型 號 Model		CLT-50S		CLT-63SA		CLT-80SA		CLT-100S1		CLT-125S		CLT-160S		CLT-200S		CLT-450S	
刀數 Allowed number of tools	N	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	12
中心高 Center height	mm	50		63		80		100		125		160		200		450	
轉動慣量 Inertia of movement for tool-disc	kg.m ²	0.4	0.6	0.5	0.8	1	2	3	5	5	9	15	22	22	32	105	68
轉一刀位並鎖緊(theoretical value) Rotation and clamping	Sec.	0.25	0.2	0.33	0.29	0.33	0.29	0.48	0.42	0.8	0.6	1.2	1.1	1.4	1.3	2.9	2.4
鎖緊力 Clamping force	kg	500		1200		2000		3600		5200		7900		11000		22600	
轉最遠刀並鎖緊(theoretical value) Total indexing time for 180° (include clamping)	Sec.	0.6		0.8		0.8		1.02		2.2		2.7		3.2		7.4	
油壓壓力 Hydraulic working pressure	kgf/cm ²	28~32		28~32		33~37		33~37		33~37		33~37		33~37		33~37	
流量 Flow Rate	L/min	20		20		20		20		30		30		30		40	
定位精度(theoretical value) Indexing Accuracy	Sec.	±2"		±2"		±2"		±2"		±2"		±2"		±2"		±3"	
重覆精度(theoretical value) Accuracy of repeatability	Sec.	±1"		±1"		±1"		±1"		±1"		±1"		±1"		±1"	
重量(不含刀盤) Net weight (without tool disc)	kgs	30		40		60		116		180		280		450		1000	
離合齒外徑 / 型態 Diameter of coupling / type	mm	Ø80 3 pcs		Ø110 3 pcs		Ø135 3 pcs		Ø170 3 pcs		Ø200 3 pcs		Ø250 3 pcs		Ø350 3 pcs		Ø430 3 pcs	
伺服器馬達型號 Servo motor type		HC-UCF43		HC-SF52		HC-SF52		HC-SF52		HC-SF102		HC-SF102		HC-SF152		HC-SF81	
F1 x b 	nm	500		1000		2500		5200		6000		12000		24000		80000	
F2 x b 	nm	600		1200		3000		6000		10000		16000		32000		95000	
F3 x b 	nm	300		600		1600		3000		4000		7000		15000		45000	
齒數比 Gear Ratio		1:30		1:36		1:36		1:45/1:80		1:45		1:60		1:90		1:200	

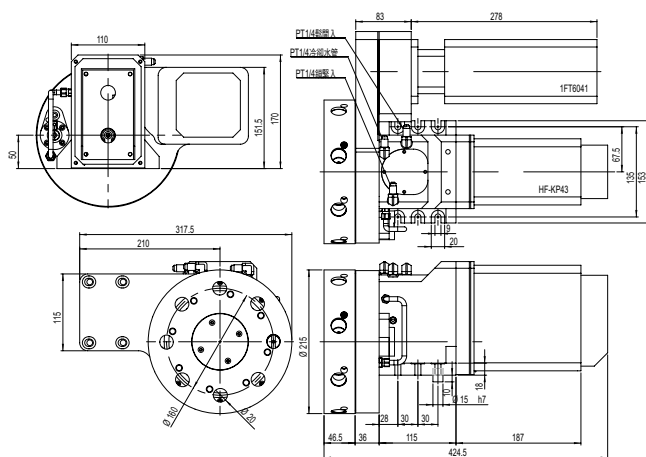
- ◆ 以上所列規範旭陽公司保留規格修改權力，客戶可提出需求規格另定規格協議。
- ◆ GSA remains the right of modification. All specifications can be modified according to customers' requirement.



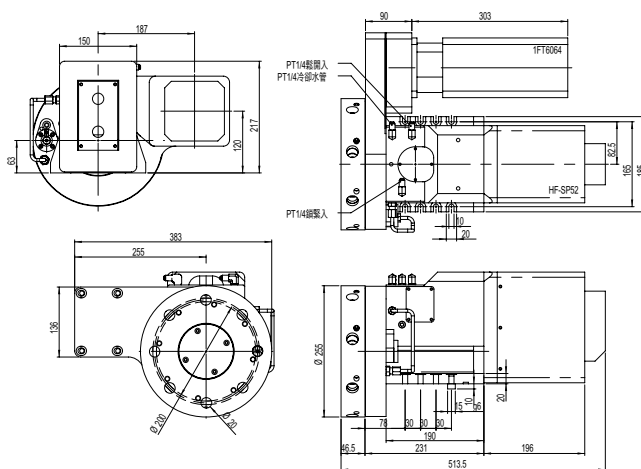
- 動力刀具最高轉速可達R. P. M. 5000/6000，扭力超強，適用重銑切削、鑽孔、攻牙。
- 動力刀座的聯結器採用DIN 1809介面。
- 旋轉定位採用三片式離合齒及油壓鎖緊，耐用性高，適合重切削。
- 動作快速，轉一刀位只需0.1秒(相鄰刀)，定位精度 ± 2 秒，重覆精度 ± 1 秒。
- 動力主軸馬達可依不同控制器型號作改變，如西門子、三菱。
- 刀盤型式採用VDI定點精度可達0.01mm(未裝刀座)，同心度達0.005mm。
- 旋轉定位與動力刀具交換時間在1秒內。
- 低噪音、耐用性佳。

- Maximum speed of the power tooling can be reached 5,000/6,000 rpm with strong clamping force which is suitable for heavy cutting such as milling, drilling and tapping machining.
- Adopting interface coupling of power tool holder with DIN 1809 type.
- Adopting 3 pcs Hirth Coupling & Hydraulic Clamping /Unclamping System suitable for heavy cutting long term operation.
- There is need 0.1 sec. only with speedy rotation time(adjacent), Indexing accuracy: ± 2 sec. Accuracy of repeatability: ± 1 sec.
- Spindle Motor can be changed according to different controller model such as SIEMENS and MITSUBISHI.
- Adopting tool disc model of VDI type, position accuracy can be reached 0.01mm (without tool holder), concentricity can be reached 0.005mm.
- Changing time between in rotating position and power tooling within one second.
- Low noise and high durability.

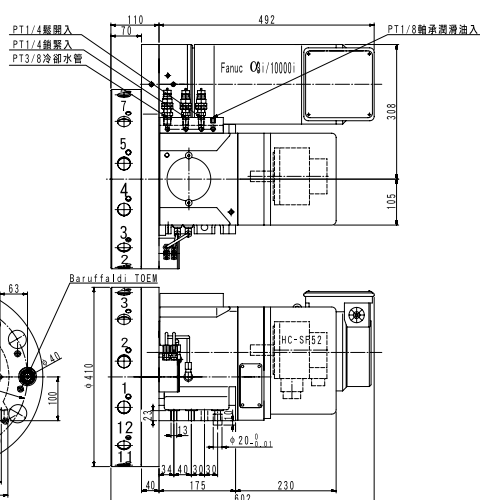
CLT-50SP



CLT-63SAP



CLT-100SP



Power Tooling Turret

規格表 / Specification

項目	Item	單位 / Unit	CLT-50SP	CLT-63SAP	CLT-100SP	
刀數	Allowed number of tools	N	8	8	8	12
中心高	Center height	mm	50	63	100	
轉動慣量	Inertia of movement for tool-disc	kg.m ²	0.35	0.5	3.0	5.0
旋轉一刀位時間	Rotation time (adjacent)	sec.	0.13	0.12	0.18	0.12
旋轉及鎖緊	Rotation and clamping	sec.	0.28	0.32	0.48	0.42
鎖緊力	Clamping force	kg	500	1225	3600	
180度分割時間	Total indexing time for 180°	sec.	0.52	0.48	0.72	
轉180度所需時間 (含鎖緊)	Total indexing time for 180° (include clamping)	sec.	0.66	0.78	1.02	
油壓壓力	Hydraulic working pressure	kgf/cm ²	25~30	25~30	33~37	
油壓流量	Hydraulic flow rate	L/min	12	12	30	
分割精度	Indexing accuracy	sec.	±2"	±2"	±2"	
重複精度	Accuracy of repeatability	sec.	±1"	±1"	±1"	
淨重 (含刀盤)	Net weight (with tool disc)	kgs	75	125	270	

旋轉本體部分 / Rotating

伺服馬達型號	Servo motor model (rotating)		HF-KP43 (MITSUBISHI) 0.4KW	HF-SP52 (MITSUBISHI) 0.5KW	HC-SF52 (MITSUBISHI) 0.5KW
齒數比	Gear ratio for rotating		30:1	36:1	45:1
最大扭力	Max torque for rotating	N/m	3.8	7.16	108
離合齒外徑/型態	Diameter of coupling type	mm	Ø80 / 3pcs	Ø110 / 3pcs	Ø170 / 3pcs
刀盤淨重	Weight of tool disc	kgs	14	14	116

動力馬達 / Power Tooling

主軸馬達型號 (標準)	Spindle motor model (tooling)		1FT6041(SIEMENS) 1.07KW	1FT6044(SIEMENS) 2.2KW	α3/10000i (FANUC) 5.5KW
刀具尺寸	Tool holder shaft size	mm	Ø20 (VDI-20)	Ø20 (VDI-20)	Ø40 (VDI-40)
驅動離合齒	Rotating tool holder coupling		DIN 1809	DIN 1809	Baruffaldi TOEM
齒數比	Gear ratio for power tooling		1:1	1:1	1.315:1
最大扭力	Max torque for power tooling	N/m	10	14	30
最高時速(R.P.M.)	Max speed at the power tooling	RPM	6000	6000	5000

- ◆ 以上所列規範旭陽公司保留規格修改權力，客戶可提出需求規格另定規格協議。
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油壓四角/六角刀架



特性 / Features

- 適用於CNC大型車床及立式車床使用。
- 可左右任意選刀。
- 分割機構採用2片式直齒離合器，重覆精度±1秒。
- 刀架附切削液噴水孔。
- 耐用性強，適合重切削。
- Suitable for large for large type & vertical CNC lathe.
- Smart selection of nearby tools.
- Build-in 2pcs hirth coupling, repeatability: ± 1 sec.
- With coolant holes.
- With compact design & high durability, suitable for heavy cutting.

規格表 / Specification

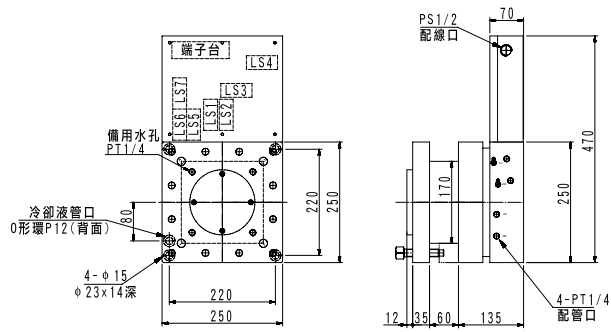
型 號	Model		HP250-F4	HP250-F6	HP350-F4	HP350-F6	HP451-S
刀架尺寸	Carrier dia.	mm	250	250	350	350	450
分割數	Division		4等分	6等分	4等分	6等分	8/6/4等分
移動量(上升下降)	Clamp/unclamp		10		5		5.5
刀架回轉方向	Rotating driving volume		左右任意 Left or right		左右任意 Left or right		左右任意 Left or right
作動液壓容量	Hydraulic driving volume	C.c	103		276		
驅動方式	Driving type		油壓驅動・電器制御 Hydraulic Electric		油壓驅動・電器制御 Hydraulic Electric		伺服馬達驅動 Servo driving
鎖緊力	Clamp force	kg	2060(油壓 35kg/cm ²) 2060 (hydraulic 35kg/cm ²)		2905(油壓 35kg/cm ²) 2905 (hydraulic 35kg/cm ²)		7700(油壓 35kg/cm ²) 7700 (hydraulic 35kg/cm ²)
回轉扭矩	Rotating torque	kgf · m	9.8 (油壓 35kg/cm ²) 9.8 (hydraulic 35kg/cm ²)		35 (油壓 35kg/cm ²) 35 (hydraulic 35kg/cm ²)		200 (油壓 35kg/cm ²) 200 (hydraulic 35kg/cm ²)
定位連結器(2pcs)	Hirth coupling size (2pcs)	mm	24x210 (齒輪 外徑) 24x210 (teeth xdia.)		24x280 (齒輪 外徑) 24x280 (teeth xdia.)		48x380 (齒輪 外徑) 48x380 (teeth xdia.)
分割精度 (theoretical value)	Indexing accuracy	Sec.	$\pm 3''$		$\pm 3''$		$\pm 3''$
重覆精度 (theoretical value)	Accuracy of repeatability	Sec.	$\pm 1''$		$\pm 1''$		$\pm 1''$
重 量	Net weight	kg	90	97	240		
適合主軸出力	Suitable output of spindle	kw	11.0		30.0		40.0

- ◆ 以上所列規範旭陽公司保留規格修改權力，客戶可提出需求規格另定規格協議。
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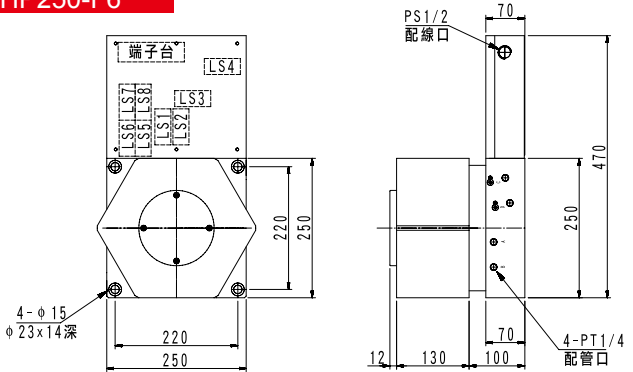
外觀尺寸圖 / Dimension

- LS1 : 刀架上升確認 LS3 : 右回轉
- LS2 : 刀架下跌確認 LS4 : 左回轉 LS5,6,7:刀架位置確認
- LS1 : Unclamping confirm LS3 : Right rotating
- LS2 : Clamping confirm LS4 : Left rotating LS5,6,7:position confirm

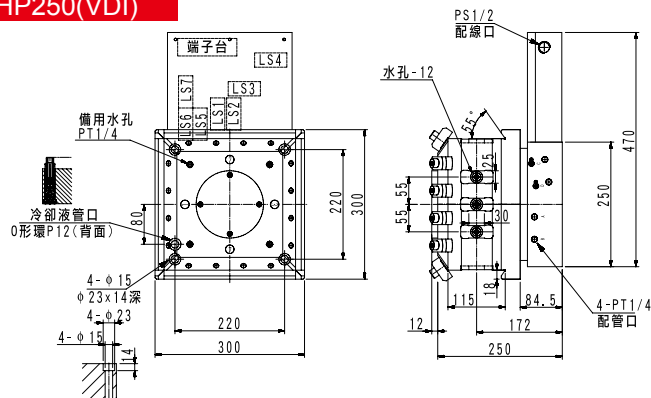
HP250-F4



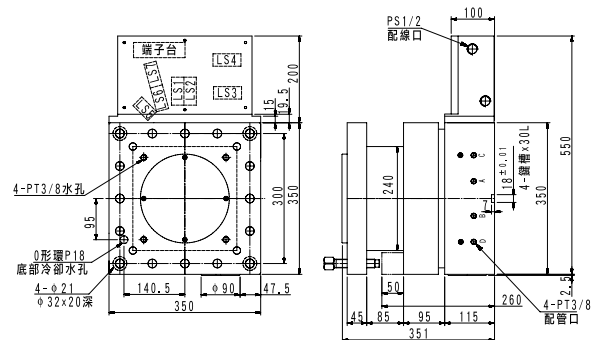
HP250-F6



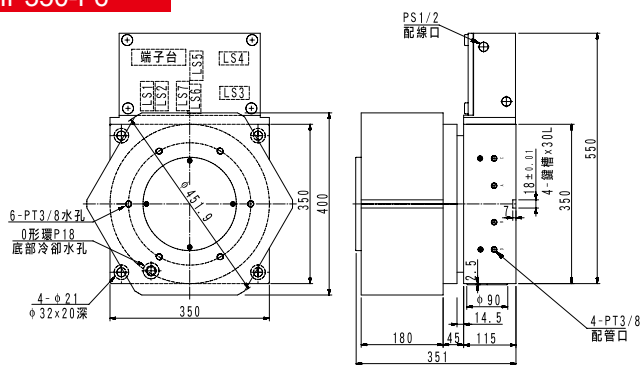
HP250(VDI)



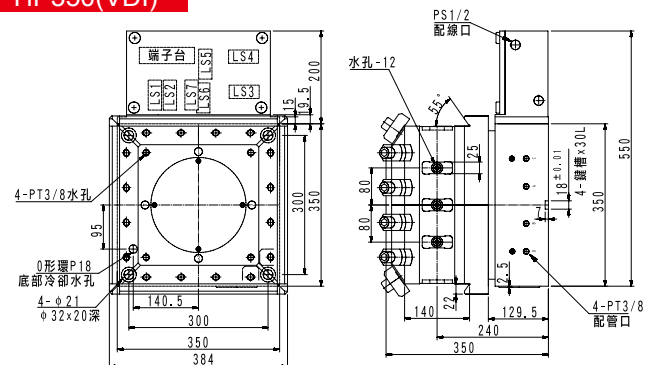
HP350-F4



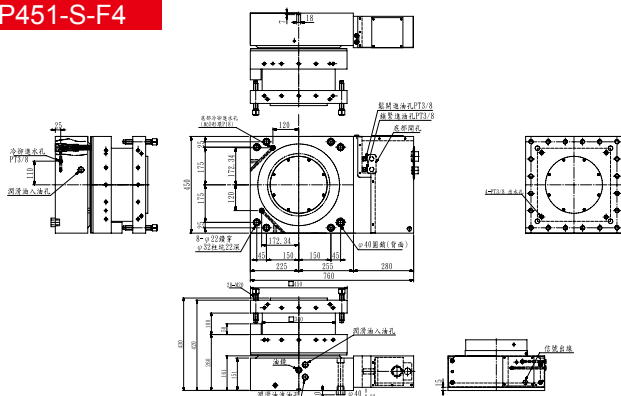
HP350-F6



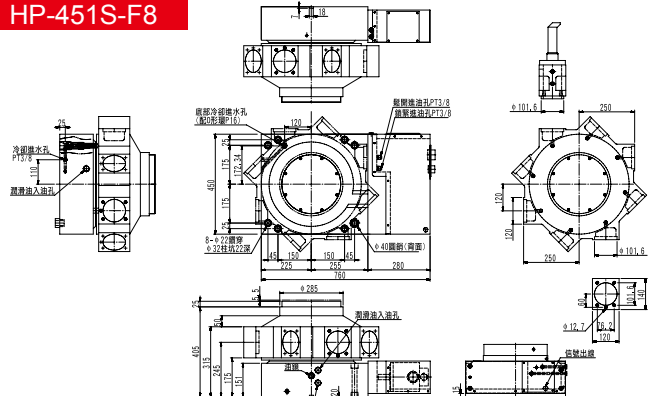
HP350(VDI)



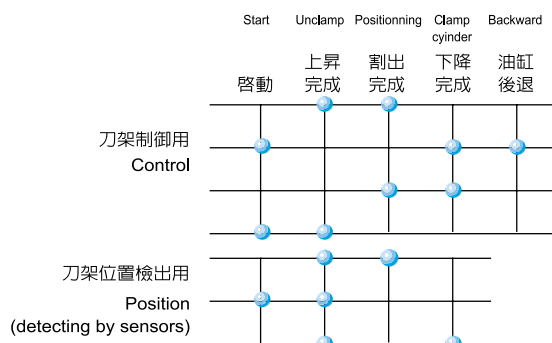
HP451-S-F4



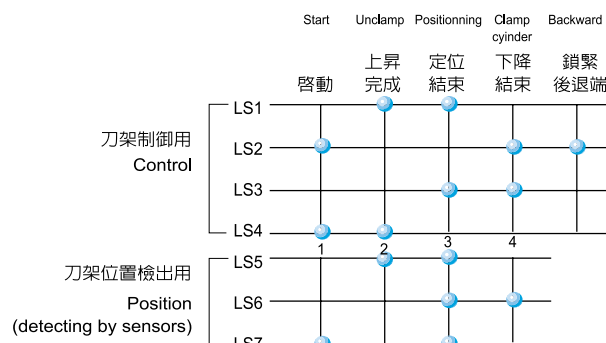
HP-451S-F8



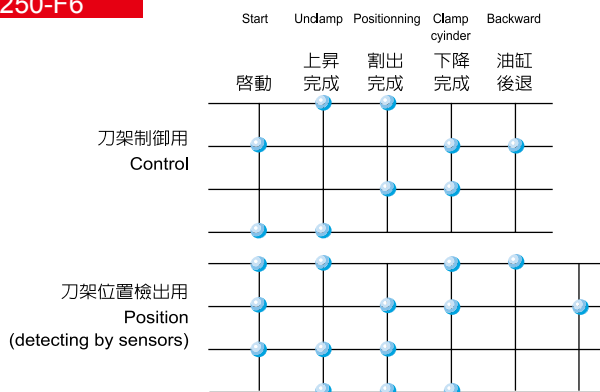
HP250-F4



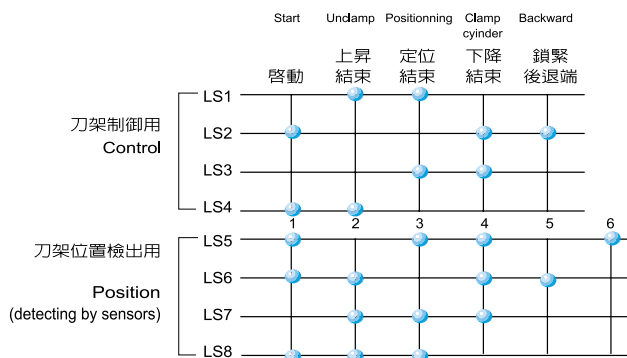
HP350-F4



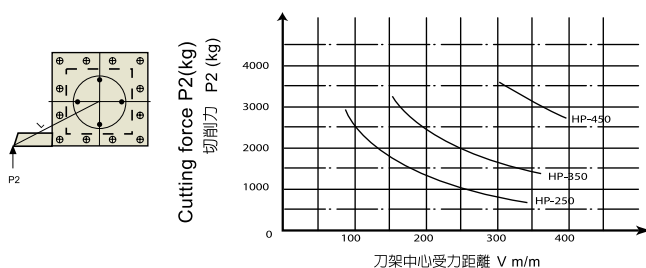
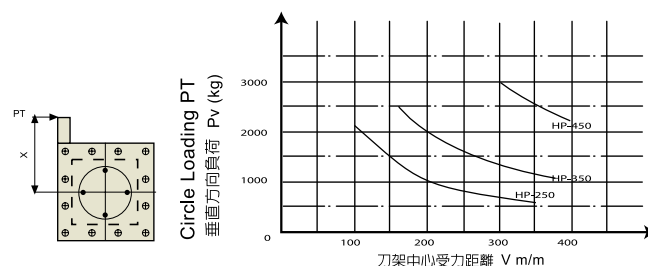
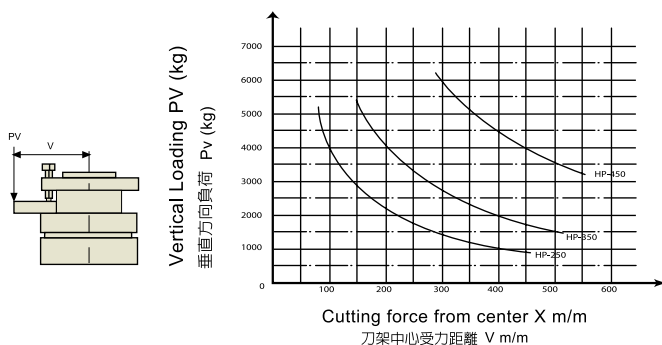
HP250-F6



HP350-F6



容許負荷及切削圖 / Allowable Loading & Cutting Force



Hydraulic Hirthpost

產品應用實例 / Application of Products



■ CLT-80-12T (油壓刀塔 Hydraulic Turret)
■ 配合：CNC 車床
■ Application: CNC Lathe



■ CLT-200-12T (油壓刀塔 Hydraulic Turret)
■ 配合：CNC 車床
■ Application: CNC Lathe



■ CLT-100-12T+CLT-100-12T
■ 配合：雙主軸 CNC 車床
■ Application: Two spindle CNC Lathe



■ CLT-63-8T
■ 配合：CNC 車床
■ Application: CNC Lathe



■ HP-350-F4
■ 配合：CNC 車床
■ Application: CNC Lathe



■ HP-350-F6
■ 配合：CNC 大型車床 (平台式)
■ Application: Large size CNC Flat Type Lathe



■ CLT-160-12T
■ 配合：CNC 車床
■ Application: CNC Lathe



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