



# AHB

TOOLING & MACHINERY, INC.

COMPLETE METALWORKING SOLUTIONS

# CLAMP TEK

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ISO Certified



# INTRODUCTION

The technical R&D of Clamptek originated in Taiwan where its headquarter is situated. Clamptek has its production base located in Dongguan. Due to its strong power in product development, manufacturing and sales capacity, it has ranked the No.1 in China and among top 10 worldwide in the field of toggle clamps, and gained the brand recognition and trust from clients. With perseverance and industry, Clamptek has made great contribution in the industrial equipment industry.

President Mike Tsung-Che Chiu Wei set up Taiwan CLAMPTEK ENTERPRISE CO., LTD. in 1974 and set up the factory in Houjie Town of Dongguan in 1999, in order to expand the production scale, the factories were transferred to the New Factory Area of Sangyuan Industrial Park of Dongcheng District of Dongguan City in 2013.

Clamptek has developed from the traditional production of manual clamps into the production of precision pneumatic & hydraulic clamping system, precision locknuts, hydraulic power units, precision fixture system, assembled flexible clamps, precision auto clamps and soldering toggle clamps.

Clamptek uses the clamps as the tools for clamping and fixating. It also efficiently organized the system of manual clamps, pneumatic/hydraulic clamps, hydraulic power units and precision fixture all together and to work and meet the client's automatization, fast and precisely clamping needs.

# INTRODUCCIÓN

La investigación y el desarrollo de tecnología de CLAMPTEK provienen de Taiwan en donde se ubica la casa matriz de la empresa. En virtud de su desarrollo de productos fuerte y su capacidad de producción y venta, la empresa ha alcanzado ocupar el No.1 de China y los primeros diez de todo el mundo en el ámbito de grapas rápidas(toggle clamp). Los clientes nos dan su confianza y sanción. Todos los trabajadores de CLAMPTEK están haciendo sus esfuerzos a dedicarse a la industria de equipos de China.

CLAMPTEK ENTERPRISE CO., LTD. fue fundado en 1974 por el señor Mike Tsung-Che Chiu Wei en Taiwan. La base de producción de CLAMPTEK está en Dongguan, establecido en 1999. Y con el fin de ampliar la escala de producción, la fábrica se trasladó a la zona de Sangyuan Parque Industrial del distrito de Dongcheng, Dongguan ciudad en 2013.

CLAMPTEK ha desarrollo su ámbito desde la producción de grapas rápidas manuales hacia los productos como: sistema de sujeción neumática & hidráulica de alta precisión, tuerca de bloqueo de alta precisión, estación hidráulica, y tenazas de soldadura.

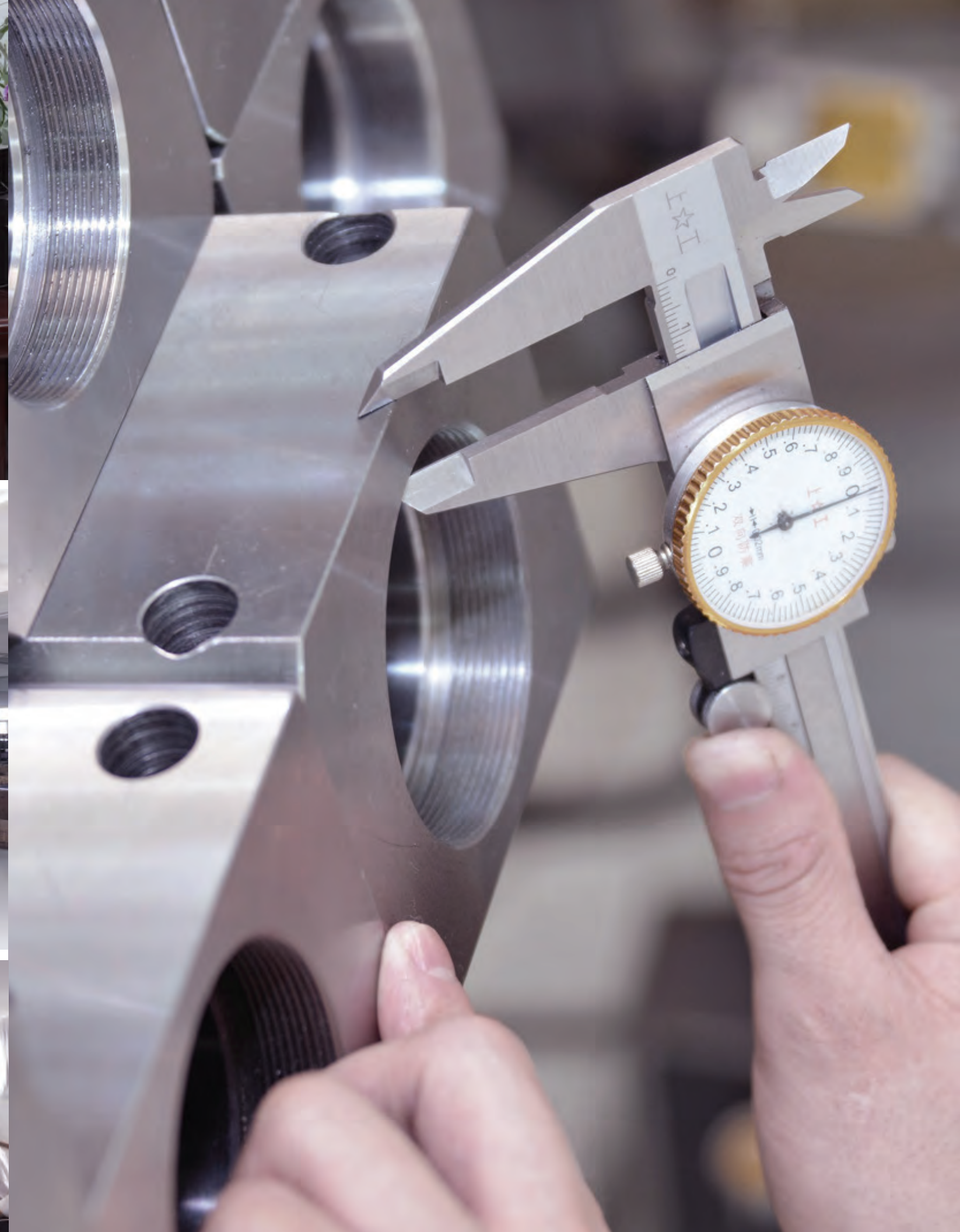
CLAMPTEK organiza la sujeción manual, sistema sujeción de neumática & hidráulica y sistema de energía hidráulica con el fin de satisfacer los requerimientos de nuestros clientes para las piezas de sujeción rápida con alta precisión.







**CLAMPTEK PRESIDENT**  
Mr. Mike TsungChe Chiu Wei





**CLAMPTEK'S R&D AND  
QUALITY MANAGEMENT  
SYSTEM**

**CLAMPTEK'S R&D Y SISTEMA  
COMPLETO ADMINISTRACIÓN  
DE CALIDAD**







In the aspect of quality, the company has set up a perfected quality management system. Clamptek has gradually set up a complete quality management system which works to perfect the production techniques and procedures and to manufacture eminent products within reasonable costs. Knowing the high quality requirement of clients, Clamptek not only demands the precision and quality in the production process, but reinforced the inspection of half and finished products during production and before shipment.

R&D is the base for further development. Being the pioneering brand in the clamp industry in mainland China, Clamptek devotes great energy to research and development, and the clients' demands has actually led the way for Clamptek. Clamptek not only imported the developed products from abroad, but strives to develop new products with intellectual property right. After years of researches and development, Clamptek has won market recognition and many patents in Europe countries, United States and Japan. In the future, Clamptek will devote more time and energy to R&D, hoping to provide better product options for the market, to bring growing profit for the company, to contribute for the society and to benefit and share with employees.

La empresa ya tiene un sistema completo y perfecto de garantía y administración de calidad, nuestra meta es producir productos de alta calidad mediante buscar constantemente la tecnología de producción y el proceso de fabricación más eficientes y más válidos; Clamptek sabe que los requerimientos de clientes son altos y detallados, entonces además de exigir la precisión y la calidad de nuestra producción, también tomamos mucha atención a las detecciones realizadas a nuestros productos semilaborados y terminados.

CLAMPTEK, como la marca líder de grapas rápidas (toggle clamps) de China, sigue dedicando a la investigación y el desarrollo con el fin de satisfacer todos los requerimientos de nuestros clientes. Persiguimos el desarrollo independiente para lograr el derecho de propiedad intelectual independiente, en realidad, lo hemos logrado gracias a los trabajos realizados por nuestro equipo de investigación, rompió el monopolio anterior de productos de alta tecnología por países Europeos, Americanos y Japón, etc. En el futuro, CLAMPTEK seguirá invirtiendo más recursos para la investigación y el desarrollo para que sea la opción mejor de la industria. Hacemos todos esfuerzos para ser el proveedor más avanzado de grapas y realizar nuestro objetivo: Número 1 de China y Top 10 de todo el mundo.





# THREE MAJOR BUSINESS FIELDS OF CLAMPTEK

## LOS TRES ÁREAS DE NEGOCIO DE CLAMPTEK

1

### CLAMPING SYSTEM SISTEMAS DE SUJECIÓN

Toggle clamps  
Hydraulic clamping system  
Pneumatic clamping system

Grapas rápidas  
Sistema de sujeción hidráulica  
Sistema de sujeción neumática

2

### PRECISION NON-STANDARD EQUIPMENTS EQUIPOS ESPECIFICO DE PRECISIÓN

Hydraulic power unit  
Precision machinery fixture system

Estación hidráulica  
Sistema de precision máquina para sujeto

3

### AGENT OF HI-TECH PRECISION PRODUCTS

### AGENTE GENERAL DE PRODUCTOS DE ALTA TECNOLOGÍA

Precision lock nut of YINSH (Taiwan)  
Precision bearing of TPI (Taiwan)

Tuercas de precisión de YINSH de Taiwan  
Rodamientos de precisión de TPI de Taiwan



# COMPARISON TABLE

(ENGLISH-SPANISH)

## TABLA COMPARATIVA

(INGLÉS-ESPAÑOL)

Model	Modelo
Weight	Peso
Holding Capacity	Fuerza de sujeción
Spindle Supplied	Modelo de tornillo de cabeza
Bar opens	Ángulo de apertura de la barra
Handle Opens	Ángulo de apertura del brazo
U-Bar	Barra en U
(Long) Solid Bar	Barra sólida (larga)
(Short) Solid Bar	Barra sólida (corta)
Open Bar	Barra de boca abierta
High Bar	Barra alta
Low Bar	Barra baja
Flanged Base	Base de brida
Straight Base	Base recta
Left Hand Flanged Base	Base de brida izquierda
Right Hand Flanged Base	Base de brida derecha
Straight Handle	Brazo recto
T-Handle	Brazo en T
Side Mounted	Instalación de la brida lateral
Plunger Stroke	Carrera
Fixed Spindle	Huso fijado
Stainless Steel	Aceero inoxidable
Cylinder Bore	Diámetro del cilindro
Cylinder Area	Área del cilindro
Maximum Cylinder Air Pressure	Presión máxima del cilindro
Maximum Holding Capacity	Fuerza de sujeción máxima
Clamping stroke	Carrera en condición sujetado
Total stroke	Carrera total
Oil/cylinder capacity clamp	Capacidad de cilindro en condición sujetado
Oil/cylinder capacity unclamp	Capacidad de cilindro en condición abierto
eff.piston area clamp	Área de efectividad del pistón en condición sujetado
eff.piston area unclamp	Área de efectividad del pistón en condición abierto
Range of temperature( °C)	Alcance de temperatura utilizado( °C)
Clamping arm mounting methods	Métodos de montaje del brazo de sujeción
Clamping arm removing methods	Métodos de eliminación del brazo de sujeción
Hydraulic cylinder insider diameter	Cilindro hidráulico diámetro interno
Cylinder insider diameter	Diámetro interno del cilindro
Piston rod diameter	Diámetro de la biela del pistón
Body external diameter	Diámetro externo del cuerpo
Port type	Tipo de puerto
Line type	Tipo de línea
Manifold type	Tipo colector
Manifold with flow control	Colector con control de flujo
Flange type	Tipo de brida
Threaded body	Cuerpo roscado
Flange with manifold	Brida con colector
Flange with flow control	Brida con control de flujo
Stroke extension	Carrera de extensión
Sensor switch	Interruptor de sensor
With magnetic induction	Con inducción magnética
Sprint extended piston	Pistón de velocidad extendida
Hydraulic extended piston	Pistón hidráulica extendida
Clamping arm type	Tipo brazo de sujeción
Single side arm	Brazo lateral individual
Double side arm	Brazo lateral doble

# PRODUCTS CATEGORY

## CATEGORÍA DE PRODUCTOS



**18**

Vertical toggle clamps  
Grapas rápidas vertical



**32**

Horizontal toggle clamps  
Grapas rápidas horizontal



**46**

Push-pull clamps  
Grapas rápidas de apriete y tracción



**60**

Latch type clamps  
Grapas rápidas gancho



**68**

Toggle pliers  
pinzas



**78**

Heavy duty weldables  
Grapas rápidas vertical modelo soldadura



**85**

F clamps  
Apretador en tipo F



**86**

C clamps  
Apretador en tipo C



**87**

Pneumatic toggle clamps  
Grapas rápidas neumática



**94**

Pneumatic clamping system  
Sistema de sujeción neumática



**108**

Hydraulic clamping system  
Sistema de sujeción hidráulico



**135**

Hydraulic valve  
Válvula hidráulica

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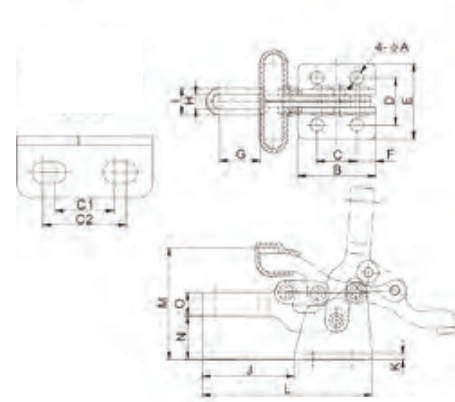


# VERTICAL TOGGLE CLAMPS

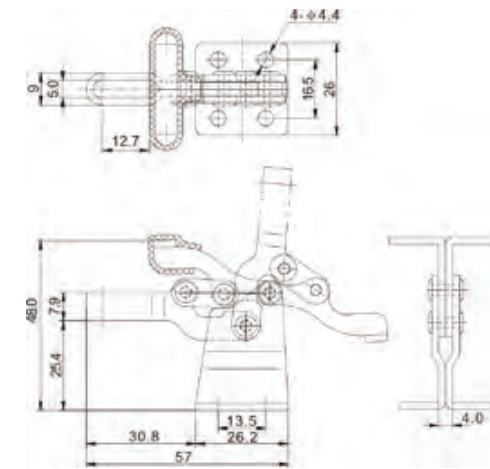
**GRAPAS RÁPIDAS  
VERTICAL**



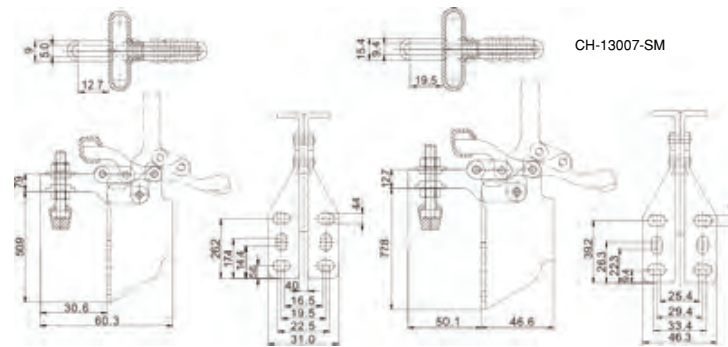
### CH-13005-SS



### CH-13005-HB



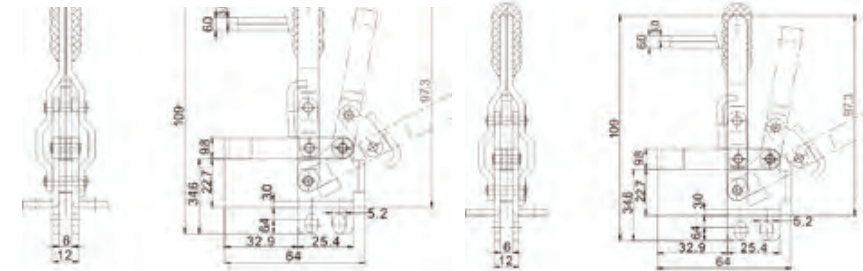
### CH-13005-SM



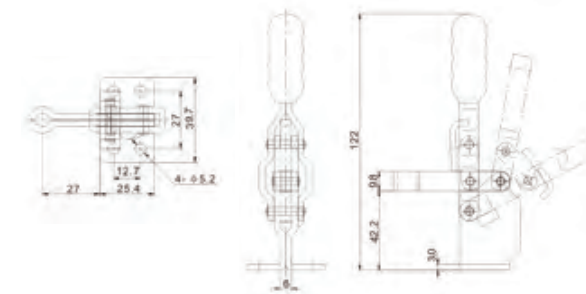
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	Φ A	B	C	C1	C2	D	E	F	G	H	I	J	K	L	M	N	O
CH-13005(SS)	680	60	CH-FC-10138	90°	170°	4.4	26.2	13.5	-	-	15.9	25.4	6.4	12.7	5	9	30.8	2	57	35.2	14.7	7.9
CH-13007(SS)	1500	230	CH-FC-56212	90°	170°	7	44	-	19	27	29.4	46	10.3	19.5	9.4	15.4	50.1	3	93.7	58.7	22.2	12.7
CH-13008	3200	590	CH-FC-38312	90°	170°	7.9	64.3	-	31	39	38.1	62.7	12.7	28.9	10.4	18.4	70.5	3	135	88.1	33.3	19
CH-13005-HB	680	86	CH-FC-10138	90°	170°																	
CH-13005-SM	680	66	CH-FC-10138	90°	170°																	
CH-13007-SM	1500	360	CH-FC-56212	90°	170°																	

Material : Steel .The product with(SS) mark is available also in stainless steel.

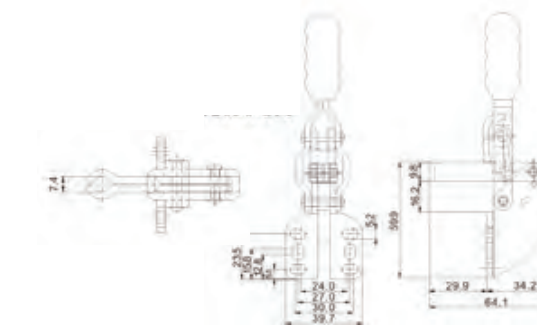
### CH-12050-USS



### CH-12050-HB



### CH-12050-SM



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	FIXED SPINDLE	SOLID BAR	U-BAR	FLANGED BASE	STRAIGHT BASE	STRAIGHT HANDLE	T-HANDLE
CH-12050(SS)	910	170	CH-FC-14134	100°	60°	•			•		•	
CH-12055	910	170	CH-FC-14134	100°	60°	•			•	•	•	
CH-12060	910	170	CH-FC-14134	100°	60°		•		•	•	•	
CH-12065	910	170	CH-FC-14134	100°	60°		•		•	•	•	
CH-12070	910	170	CH-FC-14134	100°	60°	•			•			•
CH-12075	910	170	CH-FC-14134	100°	60°	•			•			•
CH-12080	910	170	CH-FC-14134	100°	60°		•		•			•
CH-12085	910	170	CH-FC-14134	100°	60°		•		•	•		•
CH-12050-U(SS)	910	170	CH-FC-14134	100°	60°			•	•		•	
CH-12055-U	910	170	CH-FC-14134	100°	60°			•	•		•	
CH-12050-HB	910	186	CH-FC-14134	100°	60°				•	•		
CH-12050-SM	910	186	CH-FC-14134	100°	60°				•	•		

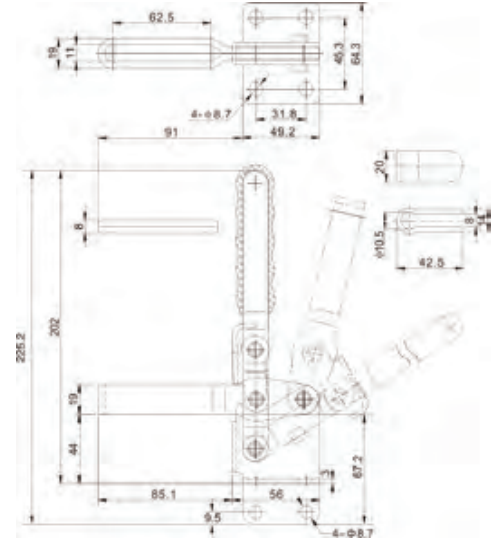
Material : Steel .The product with(SS) mark is available also in stainless steel.



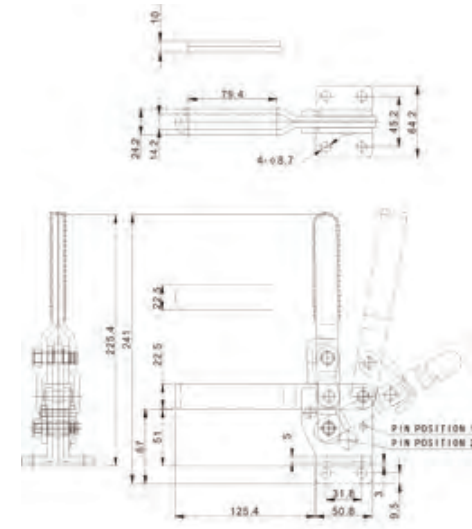




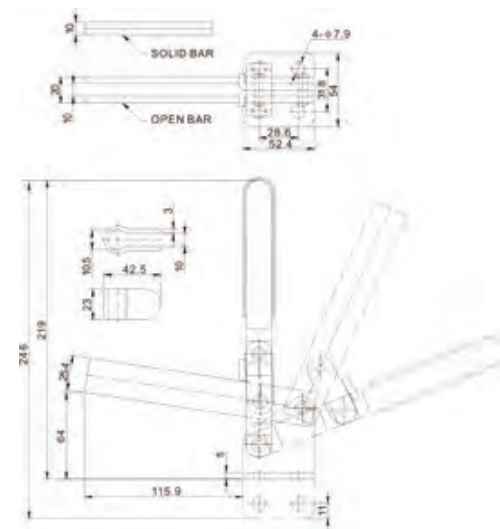
# CH-12265



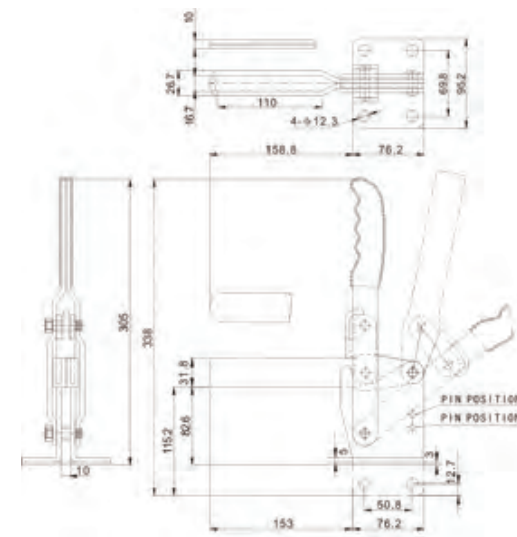
# CH-10247



# CH-12310



# CH-101-JS



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	U-BAR	SOLID BAR	OPEN BAR	FLANGED BASE	STRAIGHT BASE	STRAIGHT HANDLE	T-HANDLE
CH-12265(SS)	3400	635	CH-FC-38312	105°	58°	•			•	•	•	
CH-12270	3400	635	CH-FC-38312	105°	58°	•			•	•	•	
CH-12275	3400	680	CH-FC-38312	105°	58°		•		•	•	•	
CH-12280	3400	680	CH-FC-38312	105°	58°		•		•	•	•	
CH-12285	3400	710	CH-FC-38312	105°	58°	•			•	•	•	•
CH-12290	3400	710	CH-FC-38312	105°	58°	•			•	•	•	•
CH-12295	3400	735	CH-FC-38312	105°	58°		•		•	•	•	•
CH-12300	3400	735	CH-FC-38312	105°	58°		•		•	•	•	•
CH-12305	3640	990	CH-FC-38312	100°	65°			•	•	•	•	•
CH-12310	3640	990	CH-FC-38312	100°	65°			•	•	•	•	•
CH-12315	3640	990	CH-FC-38312	100°	65°		•		•	•	•	•
CH-12320	3640	990	CH-FC-38312	100°	65°		•		•	•	•	•

Material : Steel .The product with(SS) mark is available also in stainless steel.

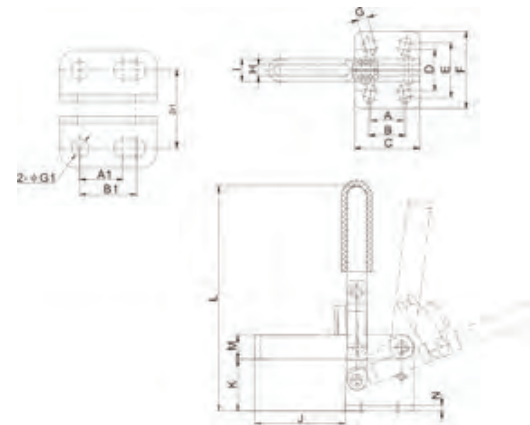
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	U-BAR	SOLID BAR	FLANGED BASE	STRAIGHT BASE
CH-10247	4500	1250	CH-SA-12300	100°-115°	62°-68°	•		•	
CH-10248	4500	1250	CH-SA-12300	100°-115°	62°-68°	•			•
CH-10249	4500	1250	CH-SA-12300	100°-115°	62°-68°		•	•	
CH-10250	4500	1250	CH-SA-12300	100°-115°	62°-68°		•		•
CH-101-J	5500	2540	CH-SA-58500	100°-140°	48°-60°	•		•	
CH-101-JS	5500	2540	CH-SA-58500	100°-140°	48°-60°		•	•	
CH-101-JSB	5500	2540	CH-SA-58500	100°-140°	48°-60°	•			•
CH-101-JSI	5500	2540	CH-SA-58500	100°-140°	48°-60°		•		•

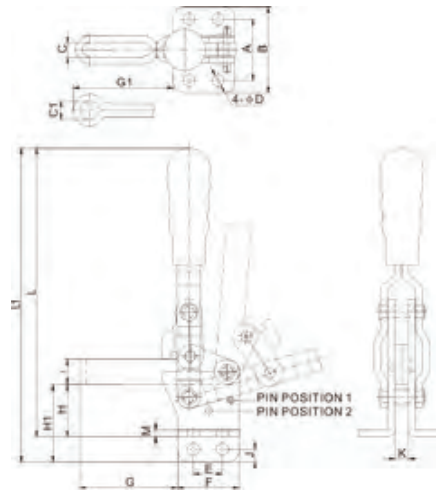
Material : Steel .



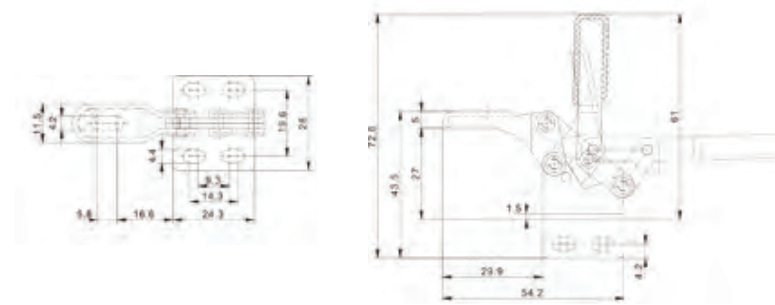
# CH-11002-B



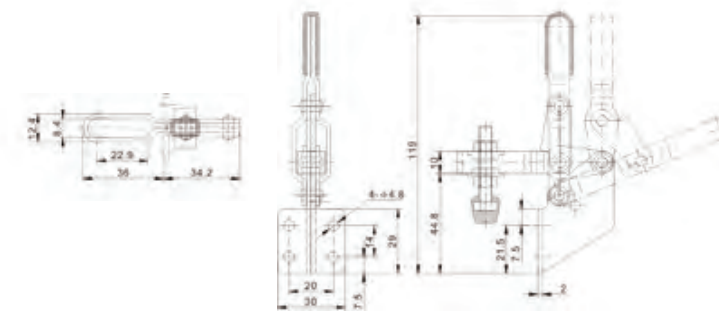
# CH-12501-C



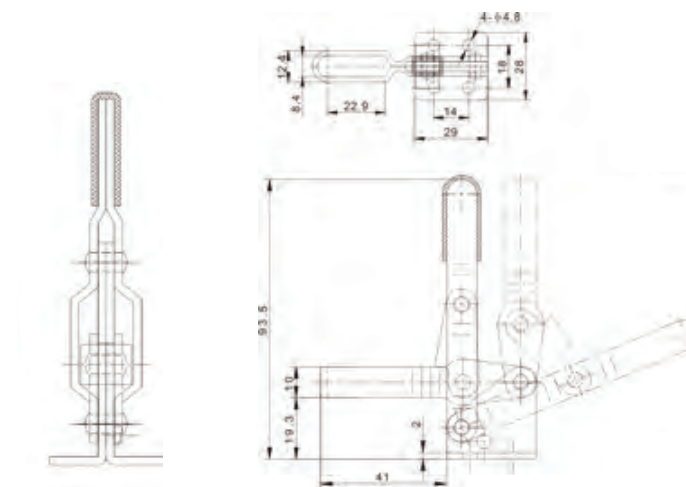
# CH-14009



# CH-101-B



# CH-102-BSS



MODEL	U-BAR	FIXED SPINDLE	FLANGED BASE	STRAIGHT BASE
CH-10751-B	•			•
CH-10752-B	•		•	
CH-11501-B	•			•
CH-11501-C		•		•
CH-11502-B	•		•	•
CH-11502-C		•	•	

MODEL	U-BAR	FIXED SPINDLE	FLANGED BASE	STRAIGHT BASE
CH-12501-B	•			•
CH-12501-C		•		•
CH-12502-B	•		•	
CH-12502-C		•	•	
CH-13501-B	•			•
CH-13502-B	•		•	

Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	A	A1	B	B1	C	D	D1	E	F	øG1	G	H	I	J	K	L	M	N
CH-11002-B	750	128	CH-SA-054008	96°	66°	14.3	-	16	-	29	18	-	24.2	34	-	4.8	5	10	38	22	97	10	2.5
CH-12002-B	1500	240	CH-SA-064010	108°	70°	12.7	-	19	-	35	25	-	27	42	-	5.5	6.1	11.1	44	31	137	13	3
CH-13002-B	1500	520	CH-SA-086512	106°	67°	-	19	-	25	43	-	34.4	-	52	8	-	9.4	15.4	100	35	196	19	3

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	A	B	C	C1	øD	E	F	G	G1	H	H1	I	J	K	L	L1	M
CH-10751-B	750	50	CH-SA-055008	130°-195°	90°-125°	-	-	5.5	-	4.4	16	26	31	-	-	28	9	5	4	-	98	2
CH-10752-B	750	50	CH-SA-055008	130°-195°	90°-125°	24	34	5.5	-	4.4	16	26	31	-	16	-	9	-	4	86.5	-	2
CH-11501-B	1500	230	CH-SA-065010	95°-185°	75°-110°	-	-	6.2	-	5.1	12.7	27	43	-	-	33.4	11	5.4	5.8	-	135	3
CH-11501-C	1500	230	CH-SA-065010	95°-185°	75°-110°	-	-	-	6.5	5.1	12.7	27	-	33	-	33.4	11	5.4	5.8	-	135	3
CH-11502-B	1500	230	CH-SA-065010	95°-185°	75°-110°	26.8	37.8	6.2	-	5.1	12.7	27	43	-	23	-	11	5.4	5.8	123	-	3
CH-11502-C	1500	230	CH-SA-065010	95°-185°	75°-110°	26.8	37.8	-	6.5	5.1	12.7	27	-	33	23	-	11	5.4	5.8	123	-	3
CH-12501-B	2500	418	CH-SA-085012	90°-150°	70°-100°	-	-	8.9	-	7.1	19	35	75	-	-	46	17.5	7	6	-	190	3
CH-12501-C	2500	418	CH-SA-085012	90°-150°	70°-100°	-	-	-	8.4	7.1	19	35	-	53	-	46	17.5	7	6	-	190	3
CH-12502-B	2500	418	CH-SA-085012	90°-150°	70°-100°	32	47	8.9	-	7.1	19	35	75	-	32	-	17.5	7	6	175	-	3
CH-12502-C	2500	418	CH-SA-085012	90°-150°	70°-100°	32	47	-	8.4	7.1	19	35	-	53	32	-	17.5	7	6	175	-	3
CH-13501-B	3500	800	CH-SA-108015	90°-180°	70°-100°	-	-	10.6	-	8.3	32	50	95	-	-	63.6	22	9.6	8	-	240	4
CH-13502-B	3500	800	CH-SA-108015	90°-180°	70°-100°	45	64	10.6	-	8.3	32	50	95	-	43	-	22	9.6	8	220	-	4

Material : Steel .

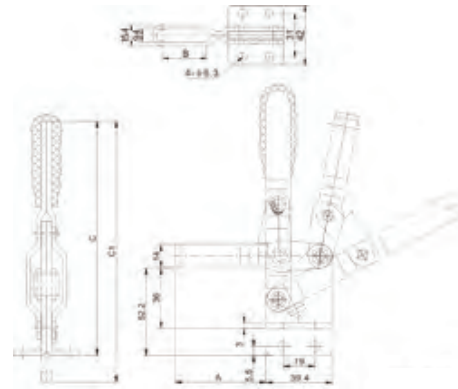
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	FLANGED BASE	STRAIGHT BASE
CH-13009	300	40	CH-FC-044207	80°	88°	•	
CH-14009	300	40	CH-FC-044207	80°	88°		•
CH-101-B	1000	120	CH-FC-14134	90°	65°		
CH-102-B(SS)	1000	115	CH-FC-14134	90°	65°		

Material : Steel .The product with(SS) mark is available also in stainless steel.

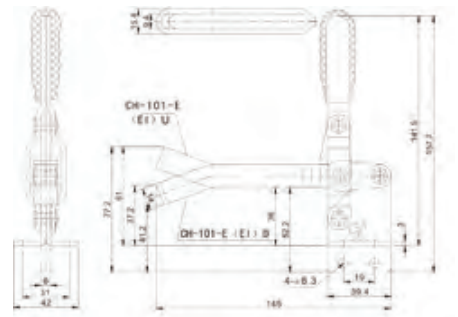
Unit:mm



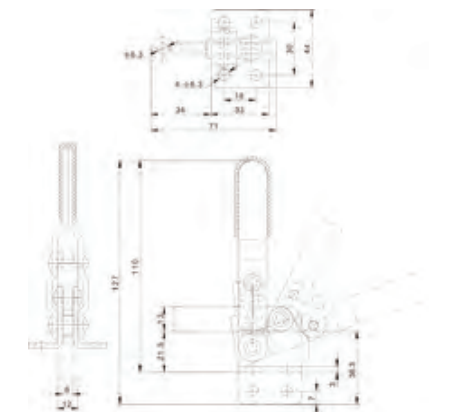
## CH-101-D



## CH-101-EID



## CH-11401



Unit:mm

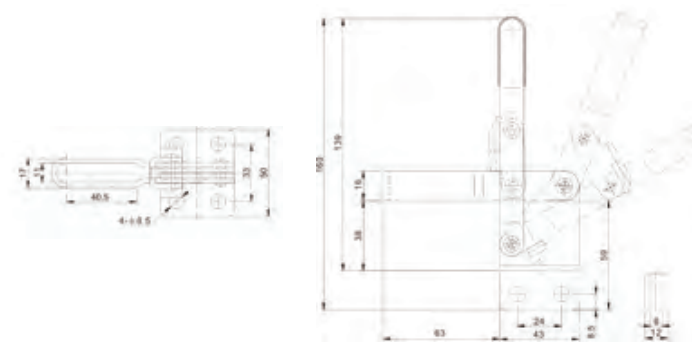
MODEL	A	B	C	C1
CH-101-D	54	32.7	145	-
CH-101-D-15	154	132.7	145	-
CH-101-DI	54	32.7	-	159
CH-101-DI-15	154	132.7	-	159
CH-101-E	104	82.7	145	-

MODEL	A	B	C	C1
CH-101-E-20	204	182.7	145	-
CH-101-EI	104	82.7	-	159
CH-101-EI-20	204	182.7	-	159
CH-101-DL	54	32.7	182	-

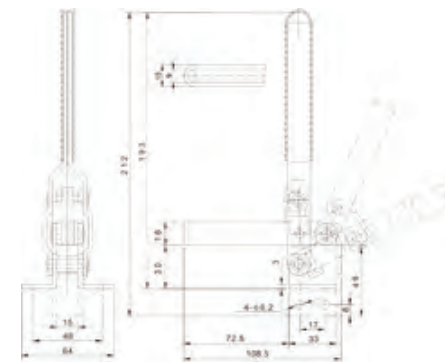
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	U-BAR	LONG U-BAR	CURVE UP U-BAR	CURVE DOWN U-BAR	FLANGED BASE	STRAIGHT BASE	STRAIGHT HANDLE	LONG HANDLE
CH-101-D	1800	330	CH-FC-56212	100°	60°	•				•		•	
CH-101-D-15	1800	412	CH-FC-56212	100°	60°		•			•		•	
CH-101-DI	1800	330	CH-FC-56212	100°	60°	•					•		
CH-101-DI-15	1800	412	CH-FC-56212	100°	60°		•				•		
CH-101-E	1800	380	CH-FC-56212	100°	60°		•			•		•	
CH-101-E-20	1800	440	CH-FC-56212	100°	60°		•			•		•	
CH-101-EI	1800	380	CH-FC-56212	100°	60°		•				•	•	
CH-101-EI-20	1800	440	CH-FC-56212	100°	60°		•				•	•	
CH-101-DL	1800	350	CH-FC-56212	100°	60°	•				•			•
CH-101-EU	1500	374	CH-FC-56212	100°	60°			•		•		•	
CH-101-ED	1500	374	CH-FC-56212	100°	60°				•	•		•	
CH-101-EIU	1500	374	CH-FC-56212	100°	60°			•			•	•	
CH-101-EID	1500	374	CH-FC-56212	100°	60°				•		•	•	
CH-11401	1000	200	CH-SA-064010	95°	65°					•			
CH-12401	1000	200	CH-SA-064010	95°	65°						•		

Material : Steel .

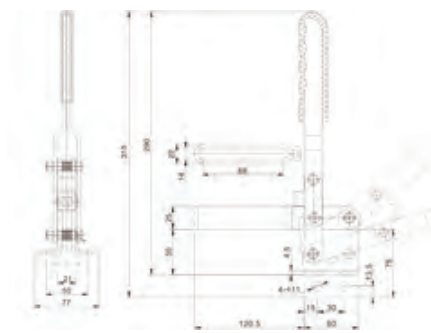
## CH-11421



## CH-12412



## CH-14412



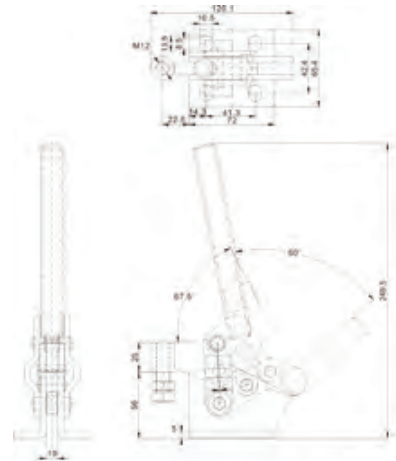
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	FLANGED BASE	STRAIGHT BASE
CH-11421(SS)	2000	370	CH-SA-085012	94°	45°	•	
CH-12421	2000	370	CH-SA-085012	94°	45°		•
CH-11412	2000	420	CH-SA-085012	110°	64°	•	
CH-12412	2000	420	CH-SA-085012	110°	64°		•
CH-14412	3000	1340	CH-SA-109015	115°	64°	•	
CH-13412	3000	1340	CH-SA-109015	115°	64°		•

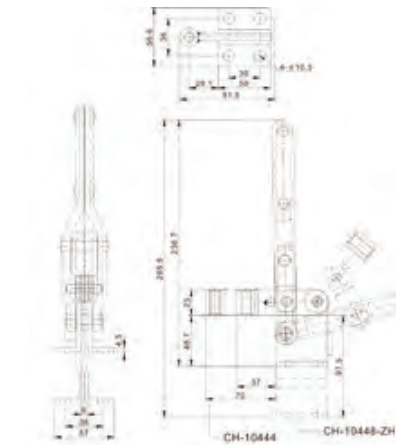
Material : Steel . The product with(SS) mark is available also in stainless steel.



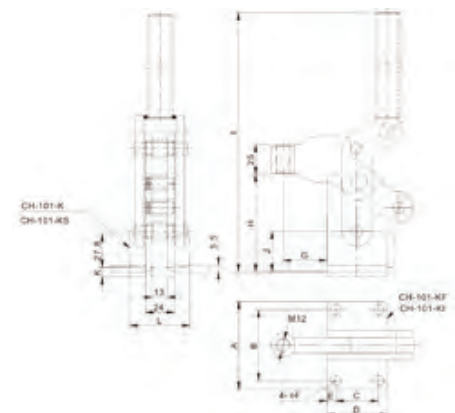
# CH-10648



# CH-10444



# CH-101-K



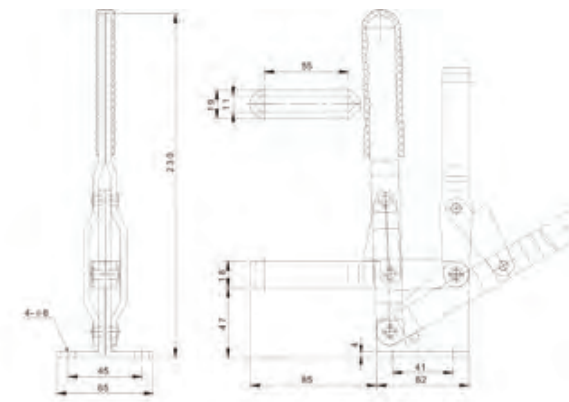
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	LONG BAR	SHORT BAR	FLANGED BASE	HIGH FLANGED BASE
CH-10444	4000	870	CH-SA-38200	129°	75.5°	•		•	
CH-10448-Z	4000	840	CH-SA-38200	129°	75.5°		•	•	
CH-10448-ZH	4000	1000	CH-SA-38200	129°	75.5°		•	•	•
CH-10648	4500	1310	CH-SA-125017	67.5°	60°			•	

Unit:mm

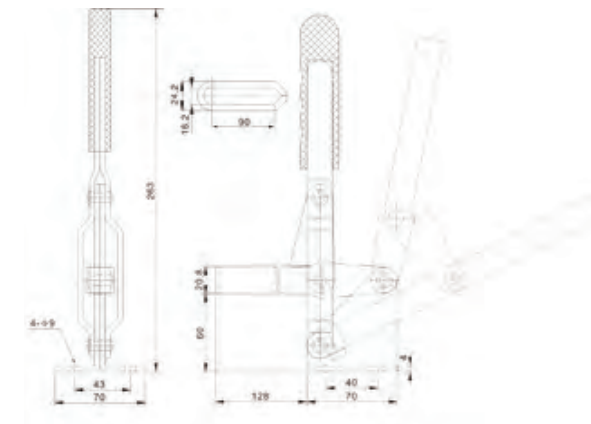
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	A	B	C	D	E	Φ F	G	H	I	J	K	L
CH-101-K	5000	1730	CH-SA-128017	-	-	-	50.5	-	-	36.1	82.8	288	40.3	0	50.5
CH-101-KI	5000	1680	CH-SA-128017	68	44	44	68	14.5	9	28.6	64.5	270	22	-	-
CH-101-KF	5000	1730	CH-SA-128017	84	69.6	36	50.5	7.25	9	36.1	80.5	285	38	-	-
CH-101-KS	5000	1730	CH-SA-128017	-	-	-	50.5	-	-	36.1	80.5	285	38	8	50.5

Material : Steel .

# CH-101-EL



# CH-101-H



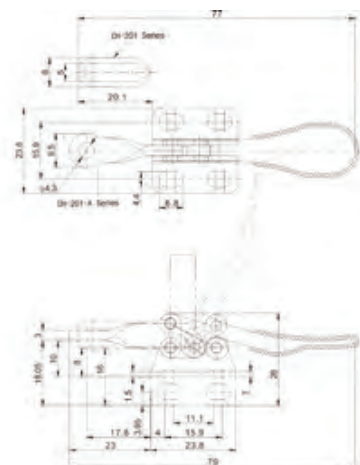
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS
CH-101-EL	3600	860	CH-FC-38312	90°	60°
CH-101-H	4500	1250	CH-SA-12300	101°	63°

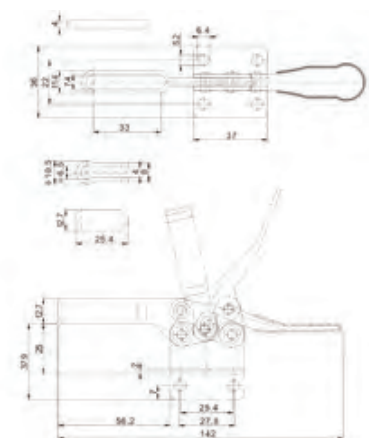
Material : Steel .



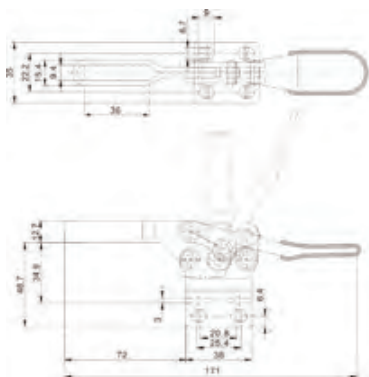
## CH-201-AI



## CH-201-B



## CH-225-DI

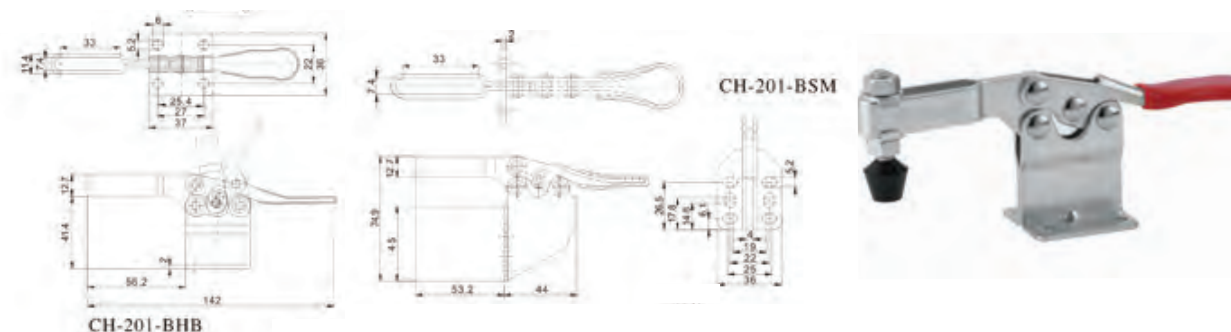


Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	T	SOLID BAR	U-BAR	FLANGED BASE	LEFT HAND FLANGED BASE	RIGHT HAND FLANGED BASE	STRAIGHT BASE
CH-201-A(SS)	270	30	CH-SA-08034(NYLON)	90°	80°	1.5	•		•			
CH-201-AI	270	30	CH-SA-08034(NYLON)	90°	80°	1.5	•					•
CH-201-AL	270	30	CH-SA-08034(NYLON)	90°	80°	3	•			•		
CH-201-AR	270	30	CH-SA-08034(NYLON)	90°	80°	3	•				•	
CH-201(SS)	270	35	CH-SA-08034(NYLON)	90°	80°	1.5		•	•			
CH-201-I	270	35	CH-SA-08034(NYLON)	90°	80°	1.5		•				•
CH-201-L	270	35	CH-SA-08034(NYLON)	90°	80°	3		•		•		
CH-201-R	270	35	CH-SA-08034(NYLON)	90°	80°	3		•			•	
CH-201-B(SS)	900	130	CH-FC-14134	85°	60°			•	•			
CH-201-BI	900	130	CH-FC-14134	85°	60°			•				•
CH-201-BS	900	130	CH-FC-14134	85°	60°		•		•			
CH-201-BSI	900	130	CH-FC-14134	85°	60°		•					•
CH-225-D(SS)	2270	265	CH-FC-56212	90°	65°			•	•			
CH-225-DI	2270	265	CH-FC-56212	90°	65°			•				•

Material : Steel .The product with(SS) mark is available also in stainless steel.

## CH-201-BHB



## CH-225-DSM



## CH-225-DHB



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS
CH-201-BHB	900	146	CH-FC-14134	85°	60°
CH-201-BSM	900	163	CH-FC-14134	85°	60°
CH-225-DHB(SS)	2270	286	CH-FC-56212	90°	65°
CH-225-DSM	2270	315	CH-FC-56212	90°	65°

Material : Steel .The product with(SS) mark is available also in stainless steel.



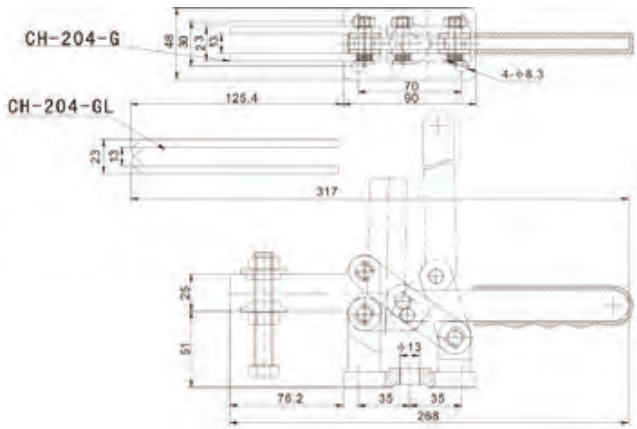




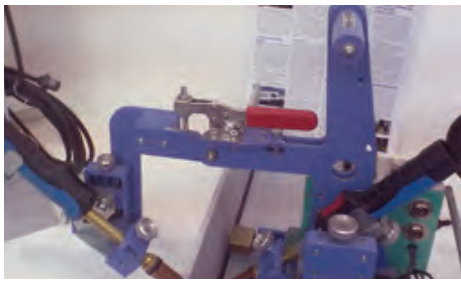
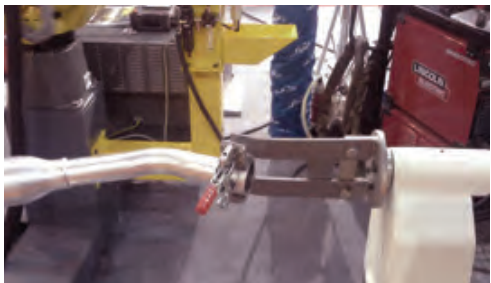
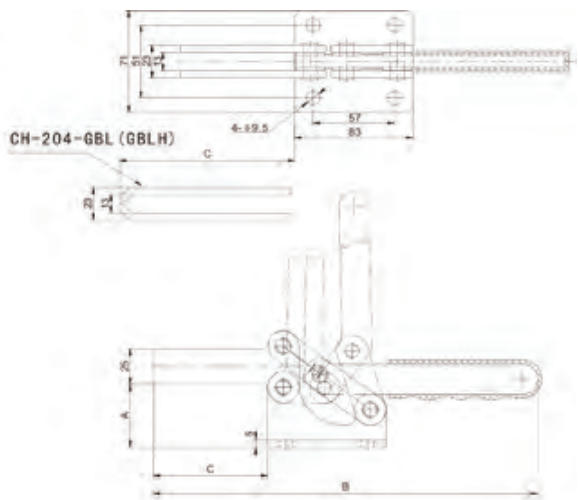




# CH-204-G



# CH-204-GBLH

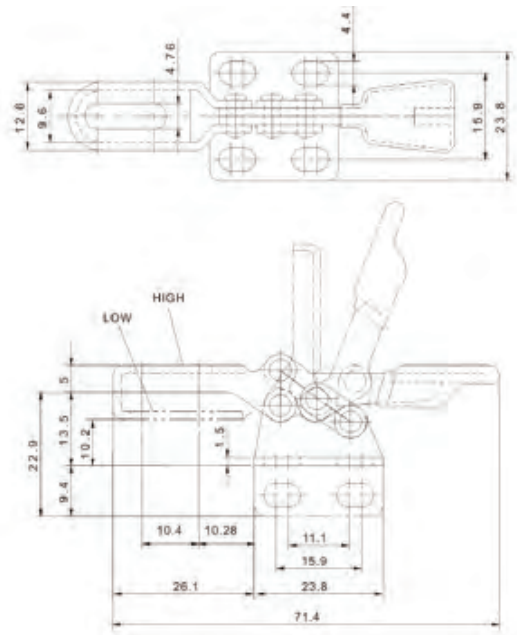


MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	SHORT BAR	OPEN BAR	LONG OPEN BAR	LONG BAR	LOW BASE	HIGH BASE	DUCTILE IRON BASE	A	B	C
CH-204-G	6360	1220	CH-SA-12300	91°	94°		•					•			
CH-204-GL	6360	1220	CH-SA-12300	91°	94°			•				•			
CH-204-GB	6300	1180	CH-SA-12300	90°	94°	•				•			45	269	80
CH-204-GBL	6300	1260	CH-SA-12300	90°	94°				•	•			45	316	128
CH-204-GBLH	6300	1465	CH-SA-12300	90°	94°				•		•		71	316	128

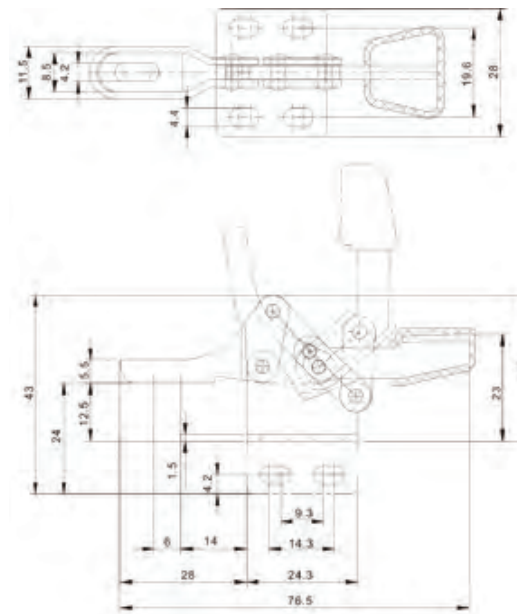
Material : Steel .

Unit:mm

# CH-22010



# CH-21800



MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	HIGH BAR	LOW BAR	FLANGED BASE	STRAIGHT BASE	RIGHT HAND FLANGED BASE	LEFT HAND FLANGED BASE
CH-22005	227	25	CH-SA-08034(NYLON)	90°	60°	•		•			
CH-22010	227	25	CH-SA-08034(NYLON)	90°	60°	•			•		
CH-22015	227	25	CH-SA-08034(NYLON)	90°	60°	•				•	
CH-22020	227	25	CH-SA-08034(NYLON)	90°	60°	•					•
CH-22025	227	25	CH-SA-08034(NYLON)	90°	60°		•	•			
CH-22030	227	25	CH-SA-08034(NYLON)	90°	60°		•		•		
CH-22035	227	25	CH-SA-08034(NYLON)	90°	60°		•			•	
CH-22040	227	25	CH-SA-08034(NYLON)	90°	60°		•				•
CH-20800(SS)	300	40	CH-FC-042507	90°	103°			•			
CH-21800	300	40	CH-FC-042507	90°	103°				•		

Material : Steel . The product with(SS) mark is available also in stainless steel.

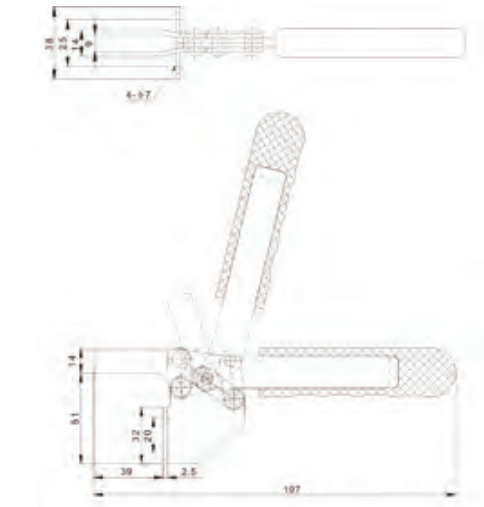
Unit:mm



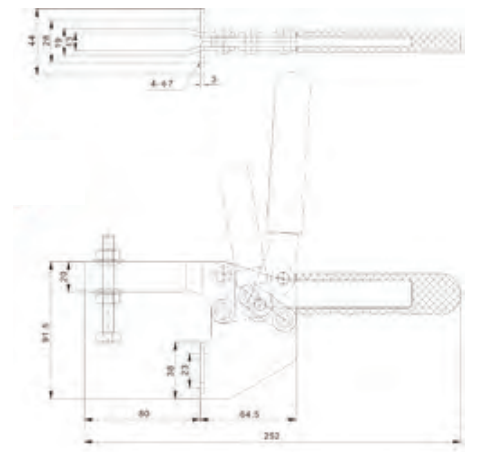




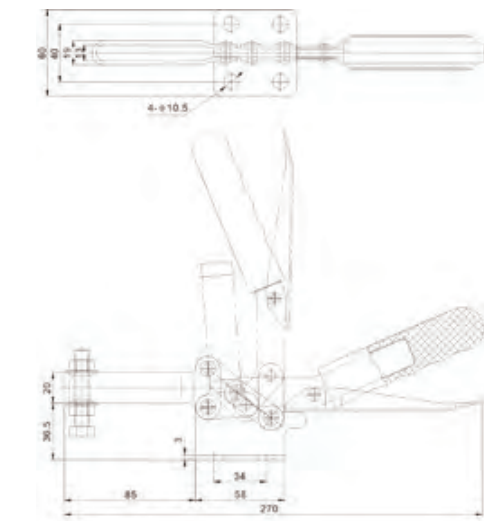
### CH-21383



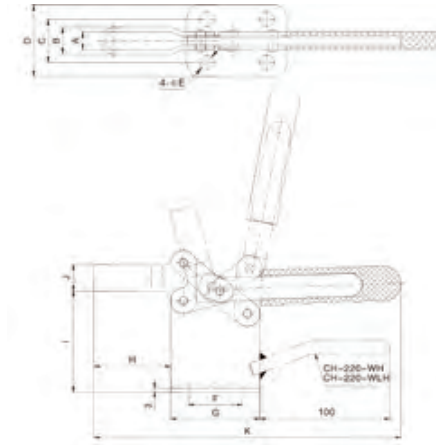
### CH-25383



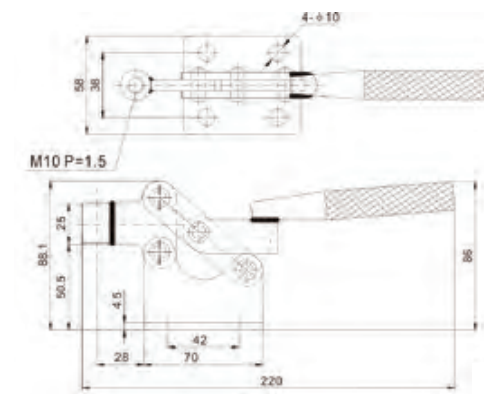
### CH-21385



### CH-220-WLH



### CH-20448



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS
CH-21383	2500	250	CH-SA-065010	72°	72°
CH-25383	2800	530	CH-SA-105015 OR CH-SA-086512	80°	80°
CH-21385	3000	560	CH-SA-38200	80°	85°

Material : Steel.

Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	A	B	C	D	ΦE	F	G	H	I	J	K
CH-200-W	4000	600	CH-FC-38312	75°	77°	12.6	18.6	30	50	10	42	70	60	54	20.5	240
CH-200-WL	4000	640	CH-FC-38312	75°	77°	12.6	18.6	30	50	10	42	70	110	54	20.5	290
CH-200-WH	4000	700	CH-FC-38412	75°	77°	12.6	18.6	30	50	10	42	70	60	79	20.5	240
CH-200-WLH	4000	745	CH-FC-38412	75°	77°	12.6	18.6	30	50	10	42	70	110	79	20.5	290
CH-220-WH	4000	790	CH-FC-38412	75°	77°	12.6	18.6	30	50	10	42	70	60	79	20.5	240
CH-220-WLH	4000	830	CH-FC-38412	75°	77°	12.6	18.6	30	50	10	42	70	110	79	20.5	290
CH-20448	3500	760	CH-SA-105015	90°	83°											

Material : Steel.



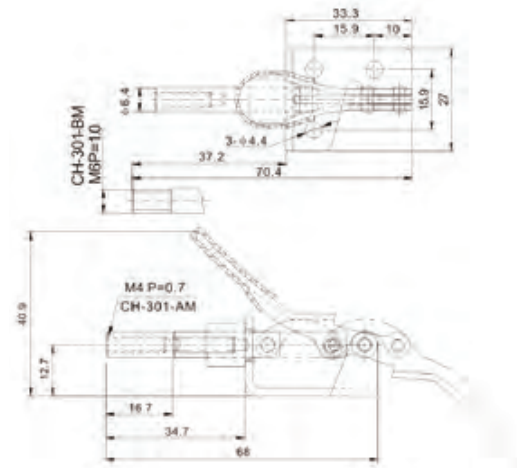
# PUSH-PULL CLAMPS

**GRAPAS RÁPIDAS  
DE APRIETE  
Y TRACCIÓN**

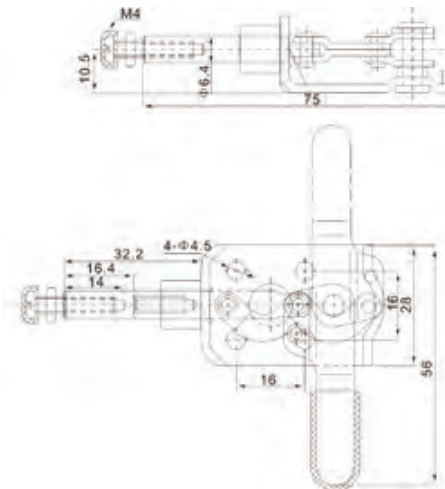




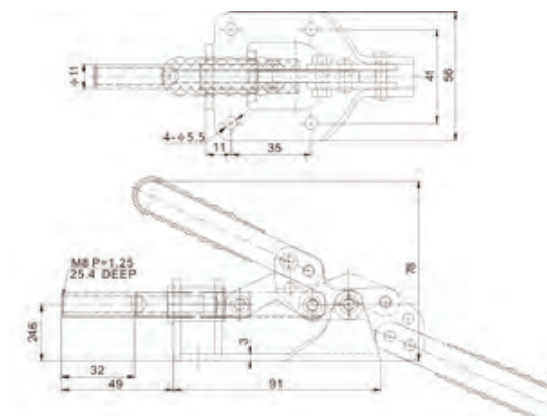
## CH-301-AM



## CH-301-CL CH-301-CR



## CH-302-FMSS

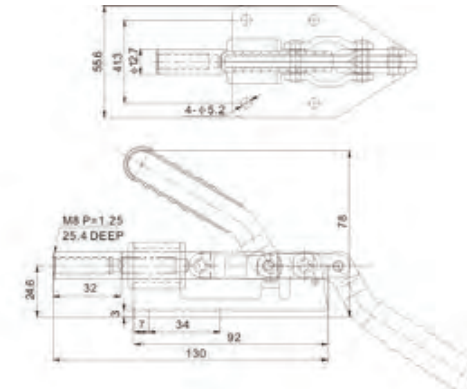


Unit:mm

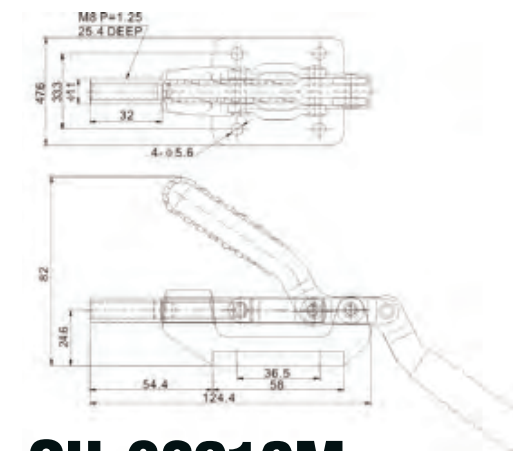
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)
CH-301-AM(SS)	450	50	CH-SA-042007(NYLON)	190°	16.7
CH-301-BM	450	50	M6 P=1.0 NUT	190°	16.7
CH-301-CR	400	56	CH-FC-042007	180°	16.4
CH-301-CL	400	56	CH-FC-042007	180°	16.4
CH-302-FM(SS)	1360	300	CH-SA-085012	180°	32

Material : Steel .The product with(SS) mark is available also in stainless steel.

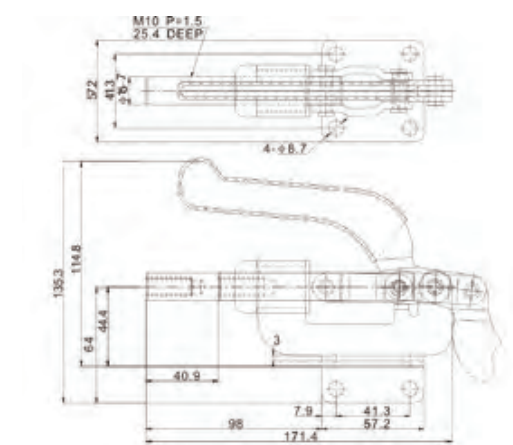
## CH-36092M



## CH-36003M



## CH-36012M



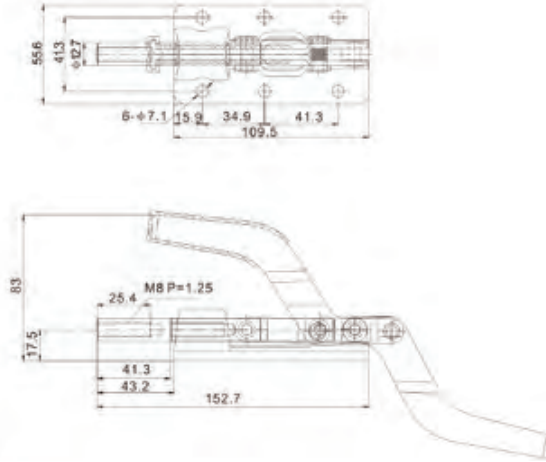
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)	FLANGED BAR	STRAIGHT BASE
CH-36092M(SS)	1800	397	CH-SA-085012	180°	32		
CH-36003M	2720	395	CH-SA-085012	180°	31.8		
CH-36010M	3640	800	CH-SA-105015	180°	40.9	•	
CH-36012M	3640	800	CH-SA-105015	180°	40.9		•

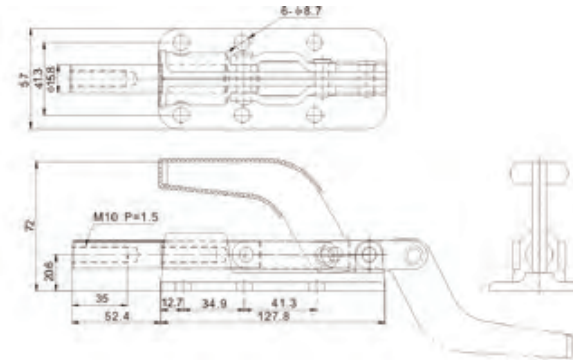
Material : Steel .The product with(SS) mark is available also in stainless steel.



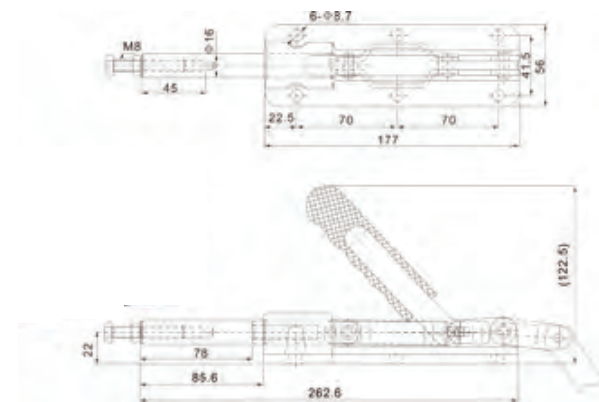
### CH-30607M



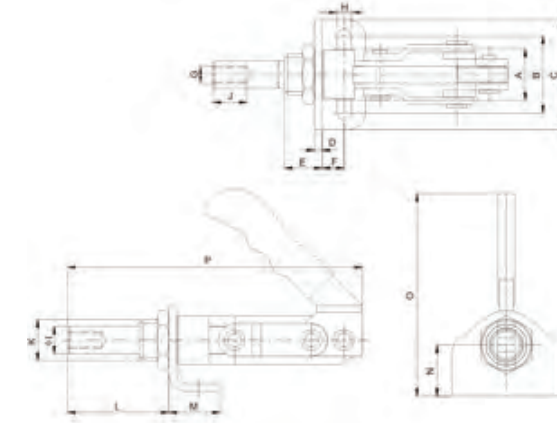
### CH-36330M



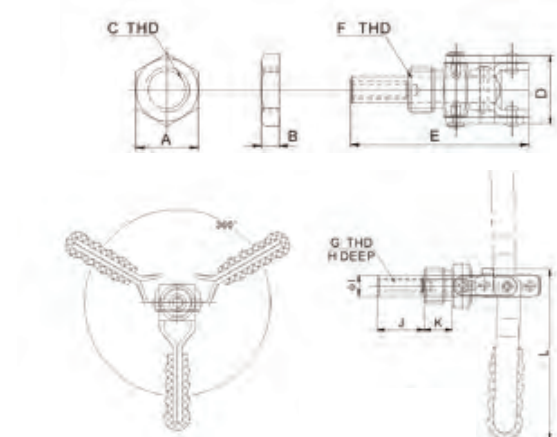
### CH-36330ML



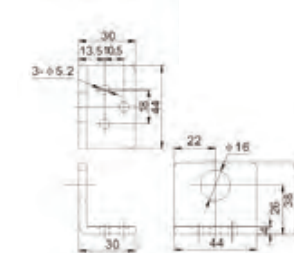
### CH-30450



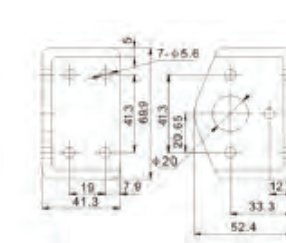
### CH-36202M



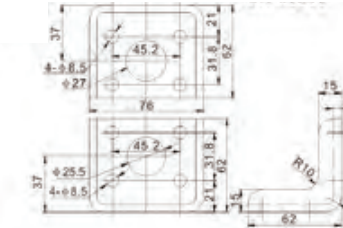
### CH-36203



### CH-36205



### CH-36225



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)
CH-30607M	3180	700	CH-SA-085012	180°	41.3
CH-30608M	3180	700	CH-SA-085012	180°	41.3
CH-36330M	11360	1050	CH-SA-105015	180°	50.8
CH-36330ML	3500	1250	CH-SA-085012	185°	78

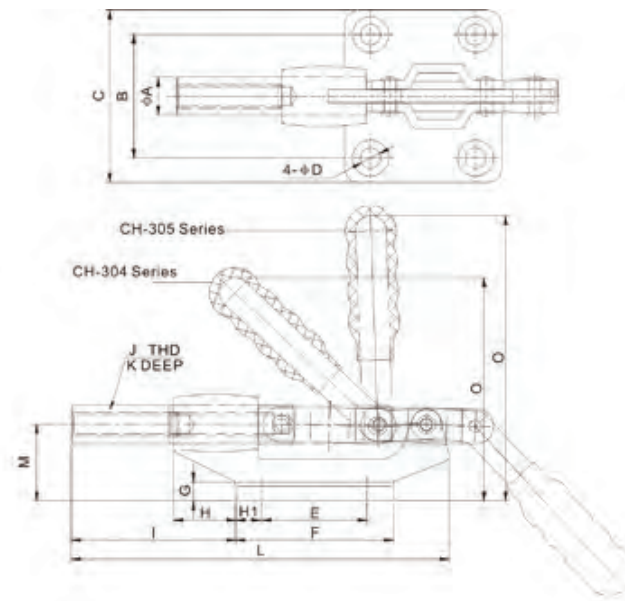
Material : Steel .The product with(SS) mark is available also in stainless steel.

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)	A	B	C	F	D	E	G	H	ΦI	J	K	L	M	N	O	P
CH-30250	2500	385	CH-SA-062010	190°	32	30	42	57	17	10	4	M6P=1.0	6.5	11	12	M20P=1.5	51	23	25	85	136
CH-30450	4500	774	CH-SA-103015	195°	38	30	45	64	22	13	4.5	M10P=1.5	8.5	16	25	M24P=1.5	59.5	28	28	115	173
CH-36202M(SS)	910	113	CH-SA-064010		20	24	6.4	M16 P=1.5	24	64.2	M6 P=1	15.8	9.4	21	12.7	75	OPTIONAL MOUNTING BRACKET				
CH-36204M(SS)	1360	270	CH-SA-085012		39	30	6.4	M20 P=1.5	28.2	115	M8 P=1.25	25.4	11	39.7	15.9	98	CH-36203				
CH-36224M(SS)	3180	770	CH-SA-105015		65.5	41	8	M27 P=2.0	40	170.8	M10 P=1.5	31.7	15.8	70.3	22.3	137	CH-36225M				

Material : Steel .The product with(SS) mark is available also in stainless steel.



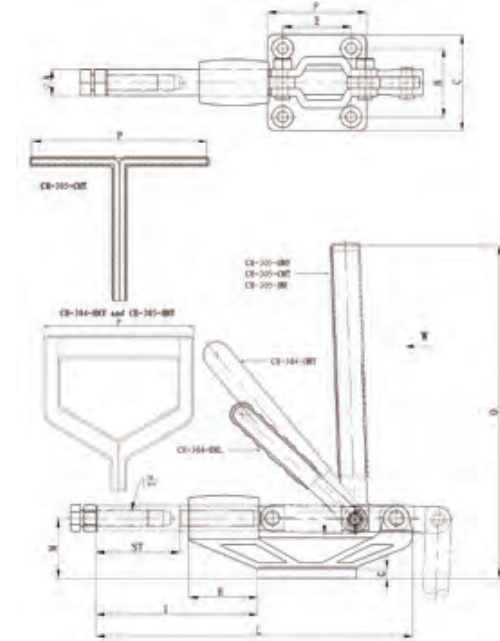
## CH-304-HM



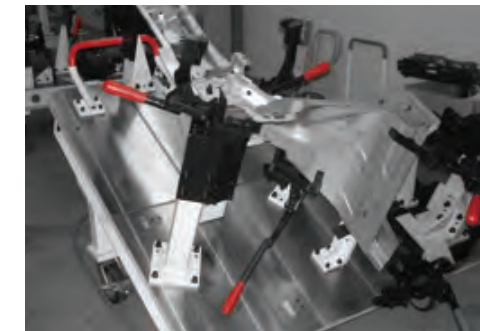
## CH-305-HM



## CH-304-HMY



## CH-305-HMY



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)	ΦA	B	C	ΦD	E	F	G	H	H1	I	J	K	L	M	O
CH-304-CM	2270	340	CH-SA-085012	180°	32	12.7	41.1	57.2	6.7	35	52.4	4.8	20.6	8.7	54.8	M8P=1.25	30.2	125.7	25.4	74.2
CH-305-CM	2270	340	CH-SA-085012	180°	32	12.7	41.1	57.2	6.7	35	52.4	4.8	20.6	8.7	54.8	M8P=1.25	30.2	125.7	25.4	94.8
CH-304-EM(SS)	3860	580	CH-SA-105015	180°	42	16	41.1	57.2	8.3	41.1	58.8	4.8	31.8	8.8	76	M10P=1.5	39.2	158.2	31.8	93.5
CH-305-EM	3860	580	CH-SA-105015	180°	42	16	41.1	57.2	8.3	41.1	58.8	4.8	31.8	8.8	76	M10P=1.5	39.2	158.2	31.8	119.5
CH-304-HM	6800	1480	CH-SA-125017	180°	60	19.2	50.8	71.4	8.3	50.8	73.2	6.4	50.8	11.1	119.8	M12P=1.75	50	235	44.4	133.4
CH-305-HM	6800	1480	CH-SA-125017	180°	60	19.2	50.8	71.4	8.3	50.8	73.2	6.4	50.8	11.1	119.8	M12P=1.75	50	235	44.4	171.6
CH-305-BM	1800	480	CH-SA-085012	185°	33.8	12	32	48	7	34	50	6.6	22	-	66.7	M8P=1.25	33.8	146.9	25	152.5

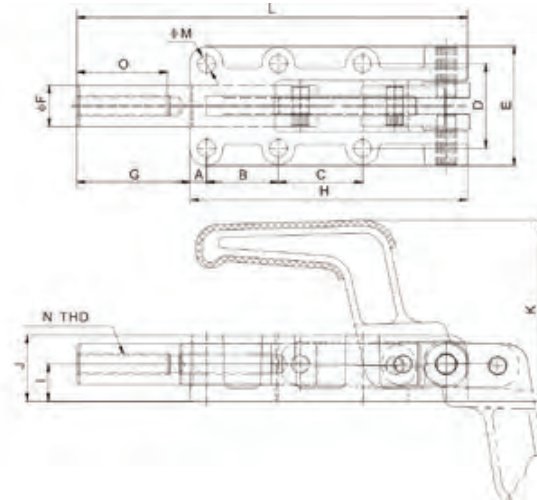
Material : Steel .The product with (SS) mark is available also in stainless steel.

Unit:mm

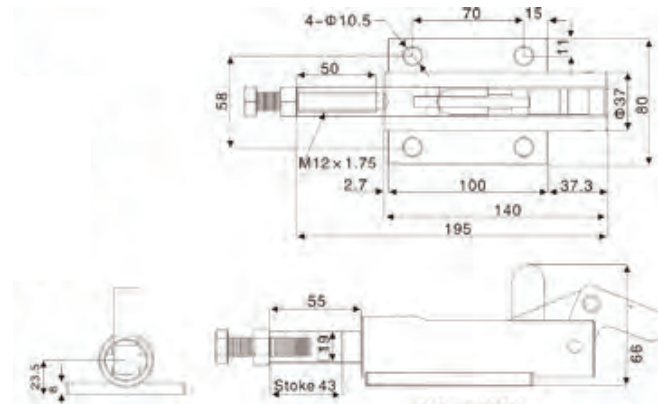
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	PLUNGER STROKE(mm)	ΦA	B	C	ΦD	E	F	G	H	I	J	K	L	M	O	P
CH-305-CMT	2270	395	CH-SA-085012	32	12.7	41.1	57.2	6.7	35	52.4	4.8	20.8	54.8	M8P=1.25	30.2	125.4	25.4	130	90
CH-304-EML	3860	663	CH-SA-105015	42	16	41.1	57.2	8.3	41.1	58.8	4.8	31.8	76	M10P=1.5	39.5	158.2	31.8	136.3	-
CH-304-HMY	6800	1600	CH-SA-125017	60	19.2	50.8	71.4	8.3	50.8	73.2	6.4	50.8	119.8	M12P=1.75	50	235	44.4	174.9	111
CH-305-HMY	6800	1600	CH-SA-125017	60	19.2	50.8	71.4	8.3	50.8	73.2	6.4	50.8	119.8	M12P=1.75	50	235	44.4	218	126

Material : Steel .

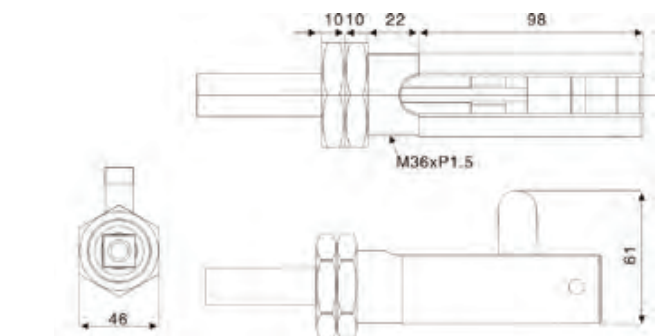
## CH-31200



## CH-30510M



## CH-30511M

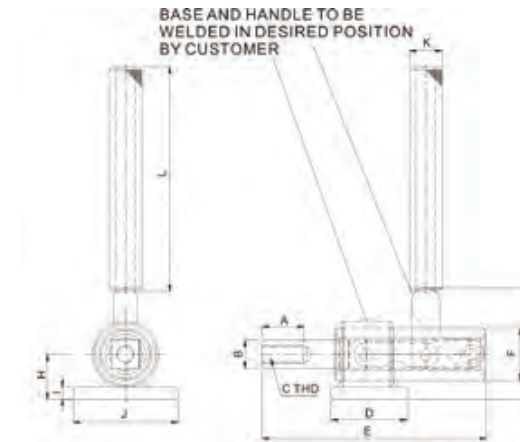


Unit:mm

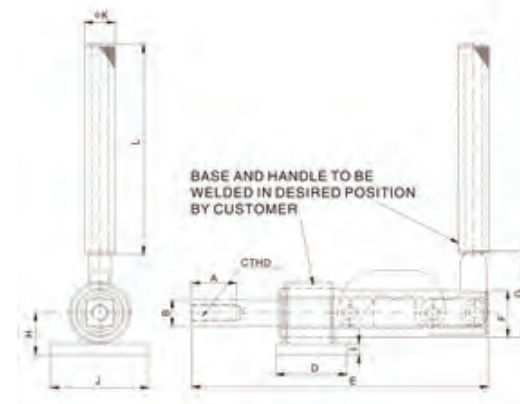
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)	A	B	C	D	E	ΦF	G	H	I	J	K	L	ΦM	N	O
CH-30600	6000	570	CH-SA-086512	185°	32	25	36.5	-	33.6	46	14	38	89	12	22	67	127	5.5	M8P=1.25	30
CH-31200	12000	1550	CH-SA-107515	185°	50	8	35	41	41	58	20	55	135	18	32	88	190	8.5	M10P=1.5	40
CH-32500	25000	4100	CH-SA-127517	185°	75	12	45	45	54	78	25	102	196	22	40	110	298	10.3	M12P=1.75	60
CH-35000	50000	6500	CH-SA-167520	185°	100	12	70	70	57	84	30	138	254	28	50	123	392	10.3	M16P=2	60
CH-30510M	11000	1750	CH-SA-125017	105°	43															
CH-30511M	11000	1300	CH-SA-125017	105°	43															

Material : Steel .

## CH-30509M



## CH-30519M



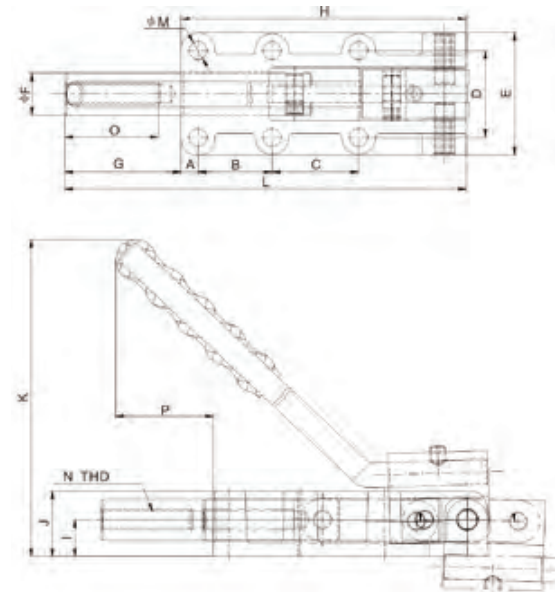
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	PLUNGER STROKE(mm)	HANDLE OPENS	A	ΦB	C	D	E	F	G	H	I	J	K	L
CH-30509M	11360	1414	CH-SA-125017	46	90°	30	18.7	M12P=1.75	50	150	34.9	74	30	8	70	21.7	152.4
CH-30609M	22730	2968	CH-SA-165020	59.5	90°	38.1	25	M16P=2	70	197.5	44.4	87	40	11.2	90	27.2	152.4
CH-30519M	11360	1700	CH-SA-125017	59.5	170°	30	18.7	M12P=1.75	50	212	34.9	74	30	8	70	21.7	152.4
CH-30619M	22730	3600	CH-SA-165020	77.8	170°	38.1	25	M16P=2.0	70	272	44.4	87	40	11.2	90	27.2	152.4

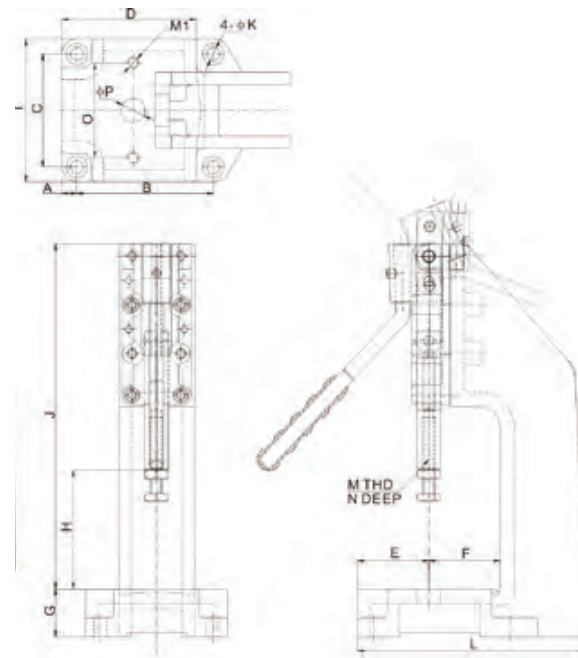
Material : Steel .



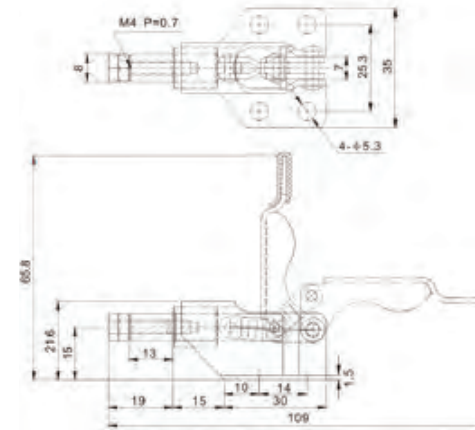
## CH-32500HL



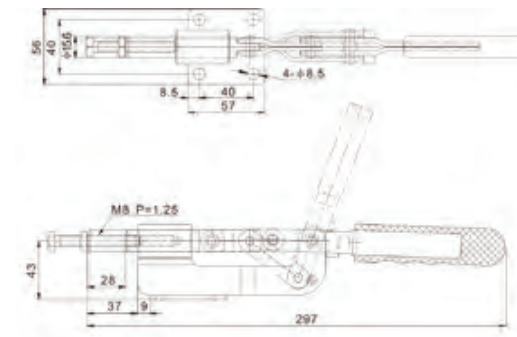
## CH-30600PR



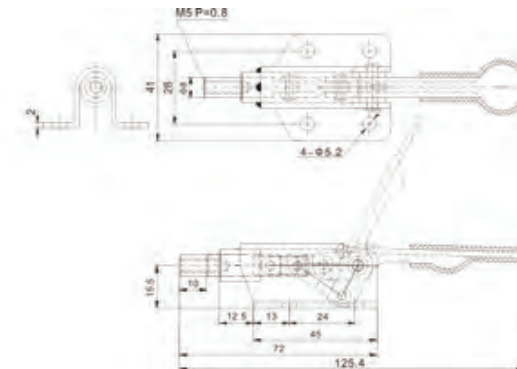
## CH-36006



## CH-36060



## CH-36070



MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
CH-30600HL	6000	660	CH-SA-086512	185°	32	25	36.5	-	33.6	46	14	38	89	12	22	132.7	127	5.5	M8P=1.25	30	65
CH-31200HL	12000	1750	CH-SA-107515	185°	50	8	35	41	41	58	20	55	135	18	32	200	190	8.5	M10P=1.5	42	100
CH-32500HL	25000	4320	CH-SA-127517	185°	75	12	45	45	54	78	25	102	196	22	40	278	298	10.3	M12P=1.75	60	115
CH-35000HL	50000	7100	CH-SA-167520	185°	100	12	70	70	57	84	30	138	254	28	50	355	392	10.3	M16P=2	60	172

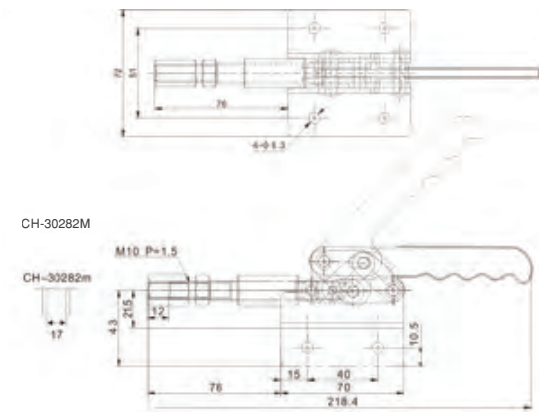
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	M1
CH-30600PR	6000	3700	CH-SA-086512	185°	32	12.1	95	80	94	50	50	30	75	100	202	9	155	M8P=1.25	30	70	15.6	M8*1.25
CH-31200PR	12000	8740	CH-SA-107515	185°	50	12.5	115	95	115.7	60	60	40	100	120	290	11	203	M10P=1.5	42	80	20	M10*1.5
CH-32500PR	25000	18830	CH-SA-127517	185°	75	14	145	125	137	67	75	50	120	150	418	11	238	M12P=1.75	60	90	30	M10*1.5

Unit:mm

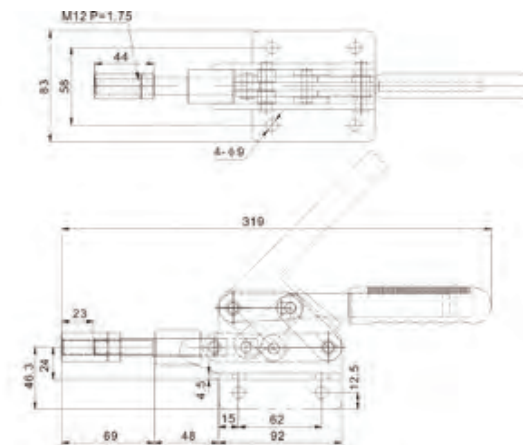
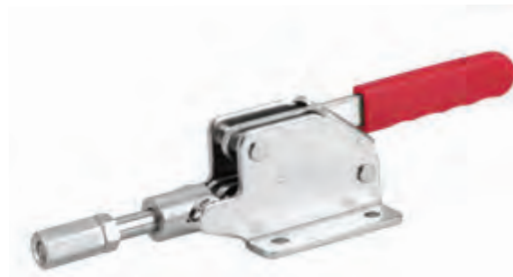
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)
CH-36006	500	64	CH-SA-041507	93°	13
CH-36060	3000	690	CH-SA-083012	76°	28
CH-36070	500	100	CH-SA-051508	66°	10

Material : Steel .

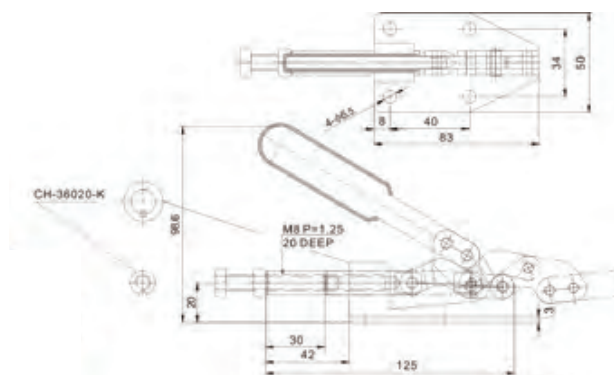
## CH-30282M



## CH-30290M



## CH-36020

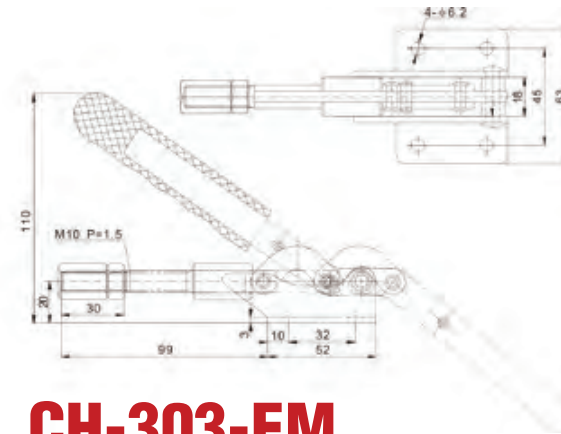


Unit:mm

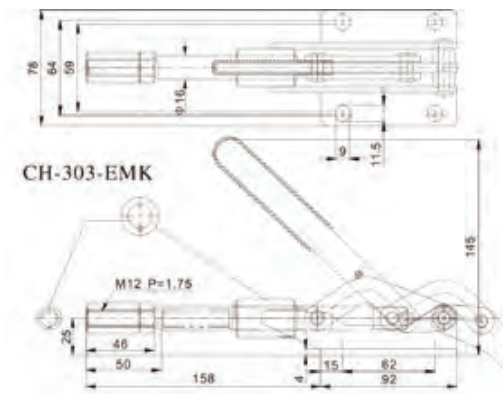
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)	FLANGED BASE	STRAIGHT BASE
CH-302-DM(SS)	1600	454	-	45°	12	•	
CH-30282M	1600	454	-	45°	12		•
CH-30290M	2950	1270	-	45°	23	•	
CH-30292M	2950	1270	-	45°	23		•
CH-36020	1800	380	CH-SA-085012	144.5°	30	•	
CH-36020-K	1800	380	CH-SA-085012	144.5°	30	•	

Material : Steel . The product with(SS) mark is available also in stainless steel.

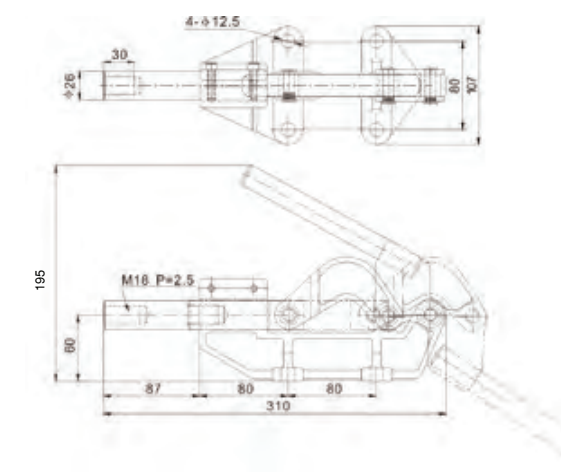
## CH-31501



## CH-303-EM



## CH-30513



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	HANDLE OPENS	PLUNGER STROKE(mm)
CH-31501	2000	380	-	190°	30
CH-303-EM	4540	965	-	190°	50
CH-303-EMK	4540	965	-	190°	50
CH-30513	16000	4200	CH-SA-185025	180°	76

Material : Steel.

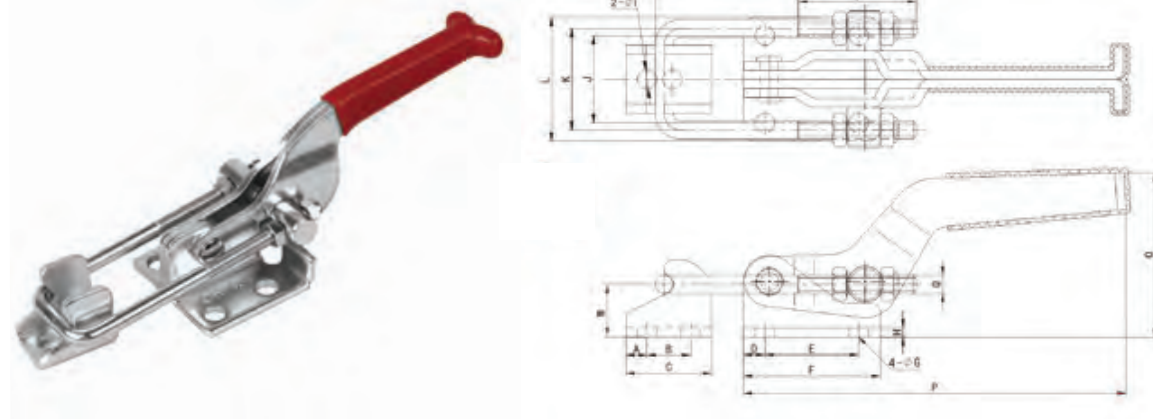




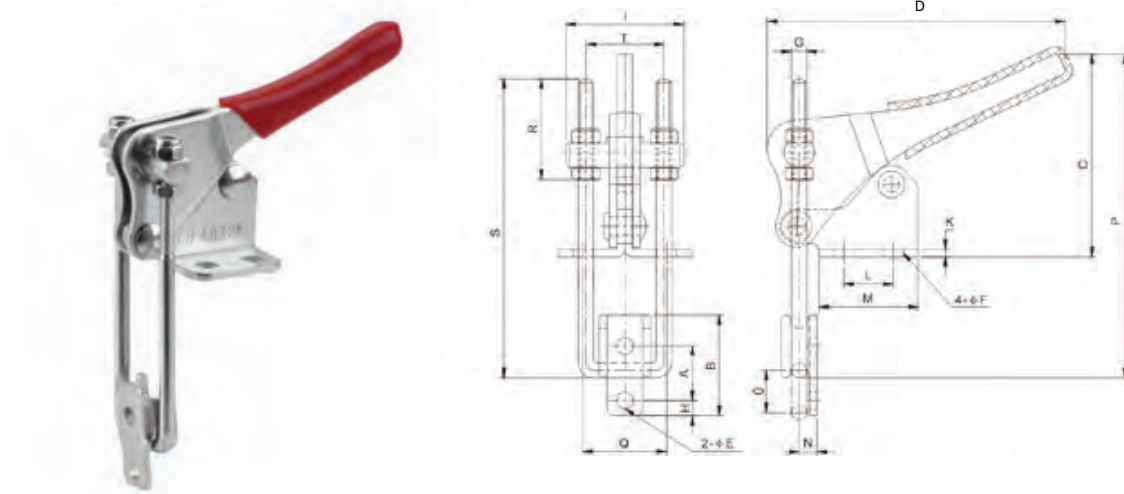
**LATCH TYPE  
CLAMPS**

**GRAPAS RÁPIDAS  
GANCHO**

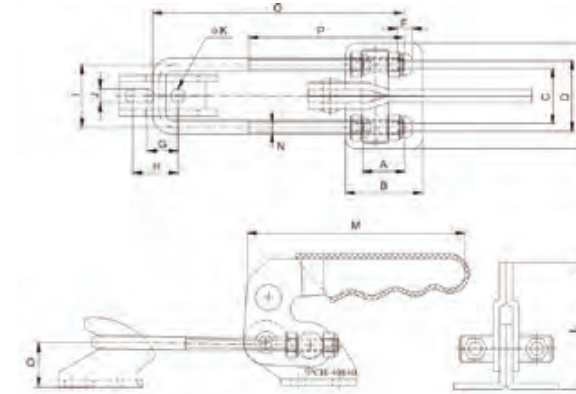
# CH-431



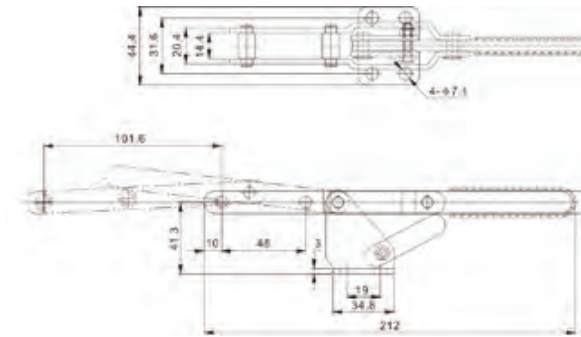
# CH-40324



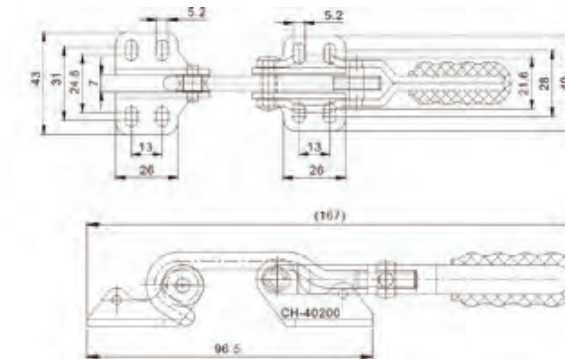
# CH-40840



# CH-43101



# CH-40200



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	A	B	C	D	E	F	ΦG	H	ΦI	J	K	L	M	N	O	P	Q	w
CH-40323(SS)	1630	70	5	10	20	5.2	15.9	26.2	4.4	2	4.4	19	19	28.2	24	57	29.3	75	M4 P=0.7	12
CH-431(SS)	3180	225	6.8	12	25.4	6.4	19	39.7	6.7	3	6.3	31.6	27	44.4	38	87	41.3	123.7	M5 P=0.8	12.2
CH-40341(SS)	9000	680	9.5	19.2	38.1	9.5	41.3	60.3	8.6	4	8.5	38.1	44.5	54	52	115	74	168.5	M8 P=1.25	23.2

Material : Steel .The product with(SS) mark is available also in stainless steel.

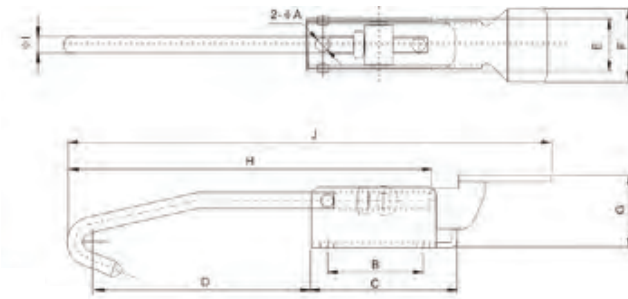
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	A	B	C	D	E	F	G	H	I	J	ΦK	L	M	N	O	P	Q	
CH-40820	2000	120	13	26	19	24	36	5.2	11	16	21	5.2	5.2	46	65	M4×0.7	92	55	12.9	
CH-40840	2500	306	19	35	25	32	48	6.5	14	20.6	28	6.5	6.5	58	100	M6×1.0	114.5	60	20.7	
CH-40870	7000	700	32	51	36	45	62	8.5	19	27	44.5	8.5	8.5	82	117	M8×1.25	152	60	24.2	
CH-43101	1700	310																		
CH-40200	2000	155																		

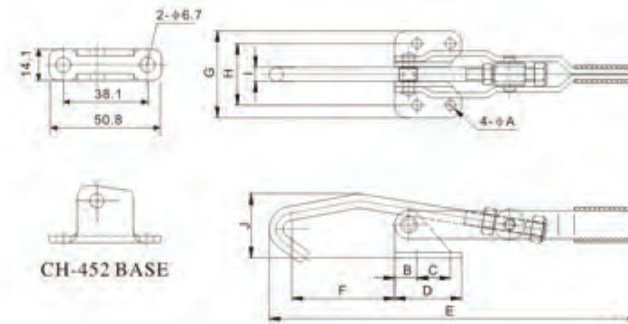
Material : Steel .



# CH-40702



# CH-452

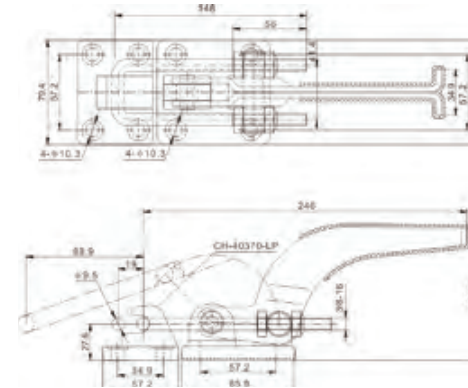


Unit:mm

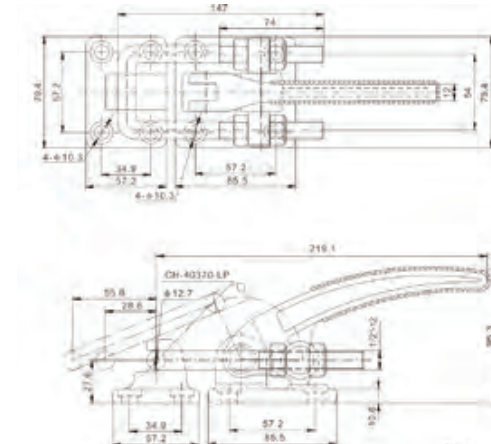
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	Φ A	B	C	D	E	F	G	H	Φ I	J	FLANGED BASE	NARROW BASE
CH-40402(SS)	1500	130	6.5	36	85	86.8	20	28	23	140	6	183.7		
CH-40702(SS)	2000	290	6.7	44.5	73.2	79.9	31	40	32	151	8	206.5		
CH-451(SS)	1700	270	5.6	12.7	19	38.1	211	58.4	49.2	34.9	8	36.5	●	
CH-452(SS)	1700	255	6.7	-	38.1	50.8	211	44.7	-	8	8	36.5		●
CH-40371	3400	690	8.7	7.9	31.8	47.6	288	79.4	65.7	49.2	9.5	57.3	●	
CH-43810(SS)	4500	1130	10.3	12.7	28.6	54	336	76.2	85.7	60.3	12.7	68	●	

Material : Steel .The product with(SS) mark is available also in stainless steel.

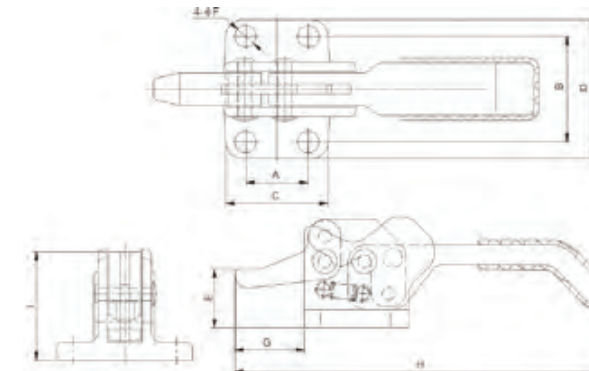
# CH-40370 AND CH-40370-LP



# CH-40380 AND CH-40370-LP



# CH-40580



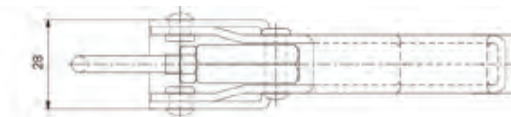
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	A	B	C	D	E	Φ F	G	H	I
CH-40370	18180	1330									
CH-40380(SS)	34000	1590									
CH-40550	1000	200	19	32	31	42	17.5	6.5	22	116	33
CH-40580	2200	940	35	51	62	68	25	8.5	40	222	52.8

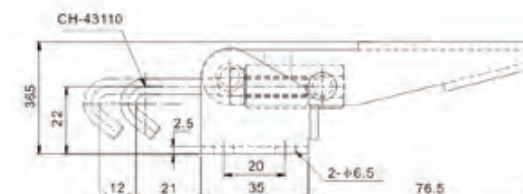
Material : Steel .The product with(SS) mark is available also in stainless steel.



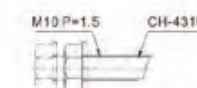
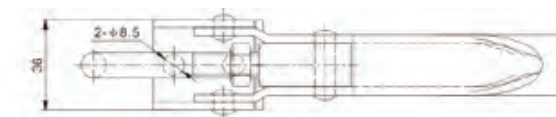
## CH-43110



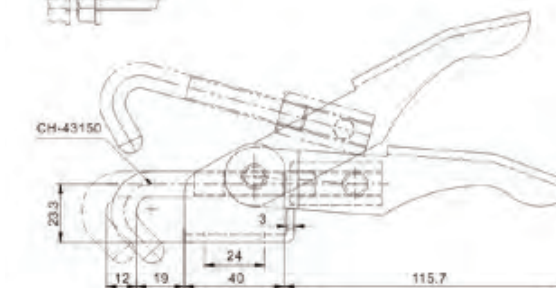
## CH-43120



## CH-43150



## CH-43160



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED
CH-43110	1700	180	M6 P=1.0 hook bolt
CH-43120	1700	180	CH-SA-065010
CH-43150	3000	385	M10 P=1.5 hook bolt
CH-43160	3000	385	CH-SA-107515

Material : Steel .

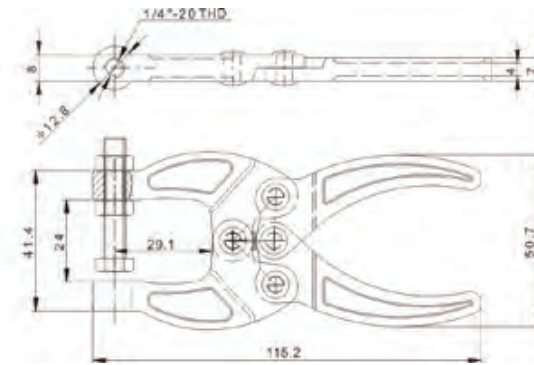




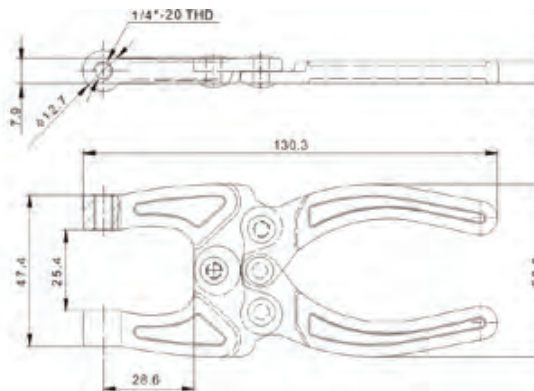
# **TOGGLE PLIERS**

## **PINZAS**

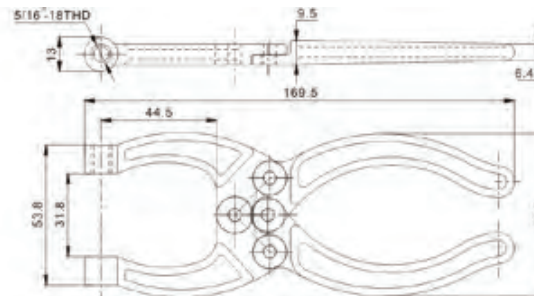
### CH-50350



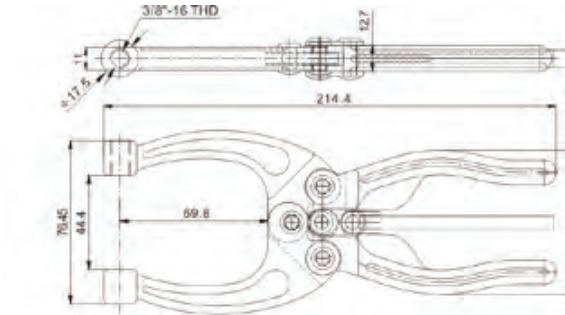
### CH-50350-1



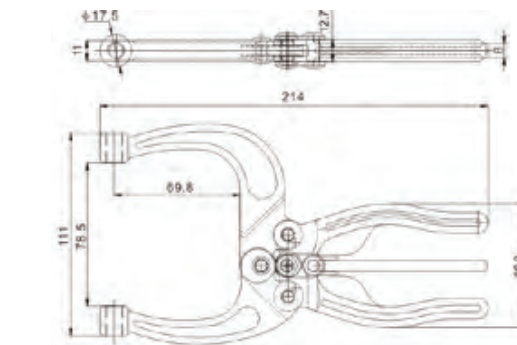
### CH-50360



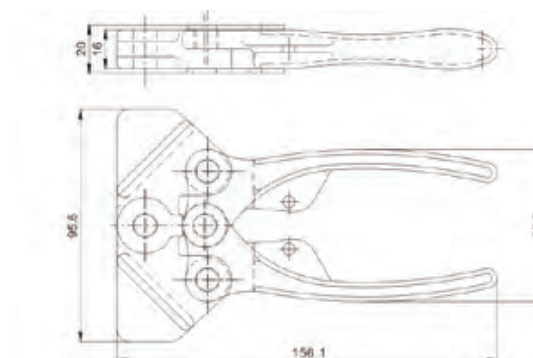
### CH-50380



### CH-50450



### CH-50480



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED
CH-50350	800	179	CH-SA-14112
CH-50350-1	900	185	CH-SA-14112
CH-50360	1590	290	CH-SA-56200

Material : Steel .

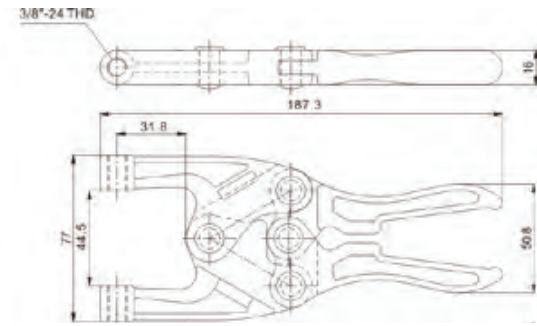
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED
CH-50380	3180	660	CH-SF-38300
CH-50450	3180	740	CH-SA-38300- CH-SF-38300
CH-50480	5000	600	-

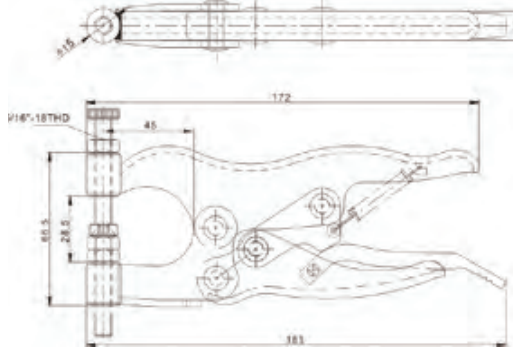
Material : Steel .



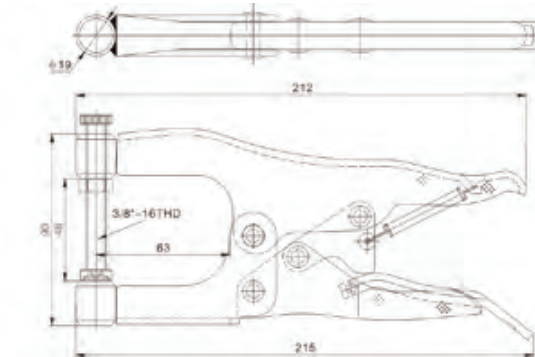
# CH-50385



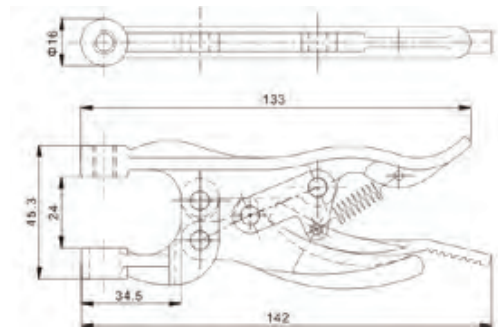
# CH-51010



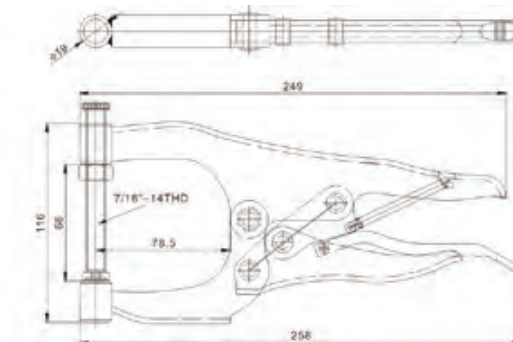
# CH-51020



# CH-51000



# CH-51030



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED
CH-50385	8200	710	CH-SA-38114
CH-51000	2000	255	

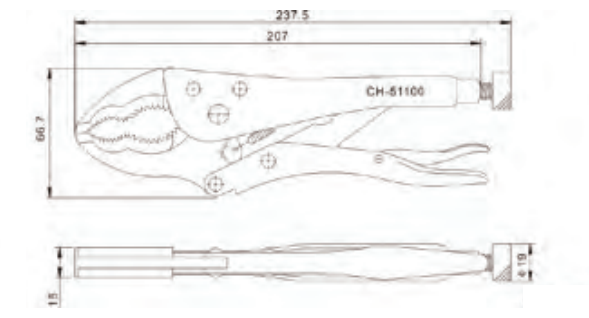
Material : Steel .

Unit:mm

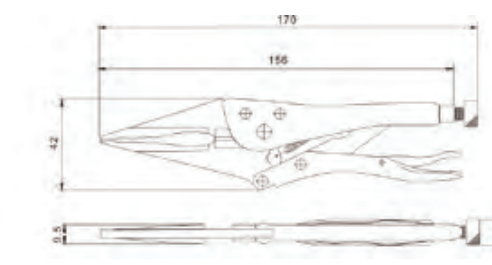
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS
CH-51010	2500	475	45°
CH-51020	3000	740	40°
CH-51030	2600	840	42°

Material : Steel .

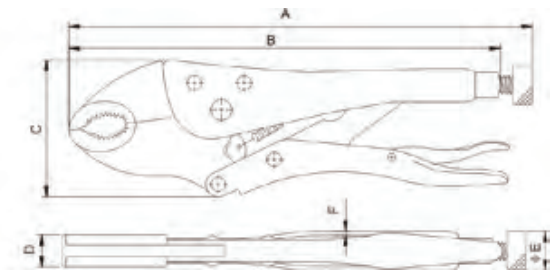
# CH-51100



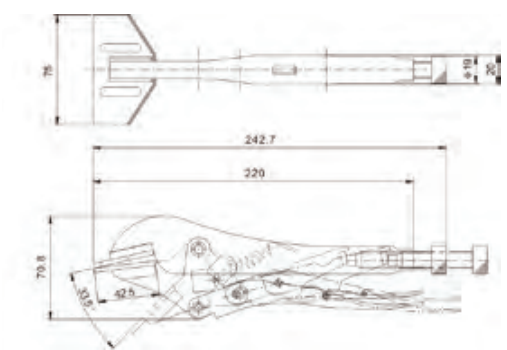
# CH-51106



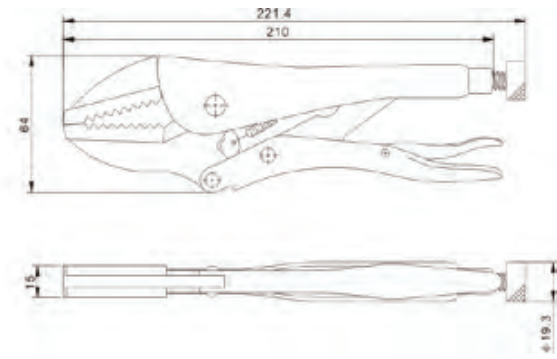
# CH-51105



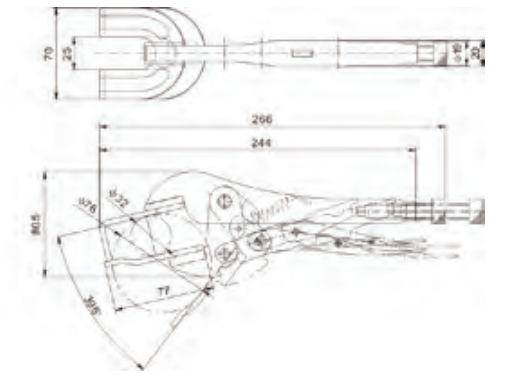
# CH-51108



# CH-51151



# CH-51109



Unit:mm

MODEL	HOLDING CAPACITY (N)	WEIGHT(g)	A	B	C	D	Ø E	F
CH-51100	3500	850						
CH-51105	1020	180	143	130	42	9	13	2
CH-51150	3500	340	190	170	52.5	11	16.5	2
CH-51152	6000	520	225	211	63	11	19	2
CH-51151	5800	520						

Material : Steel .

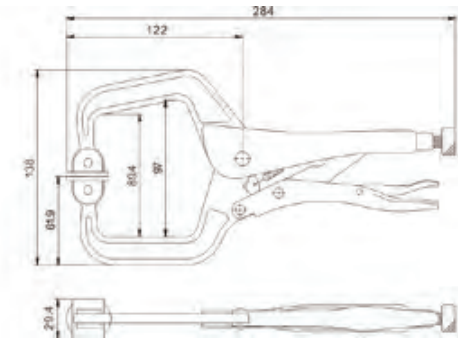
Unit:mm

MODEL	HOLDING CAPACITY (N)	WEIGHT(g)
CH-51106	1020	190
CH-51108	4540	698
CH-51109	2270	844

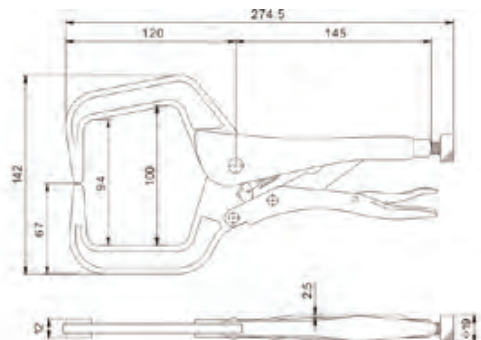
Material : Steel .



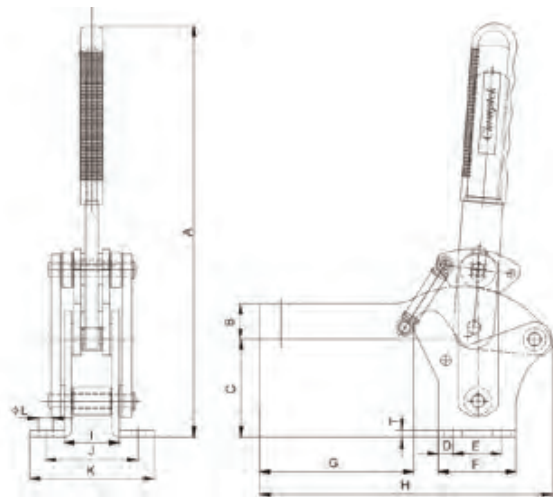
# CH-511SP



# CH-51111



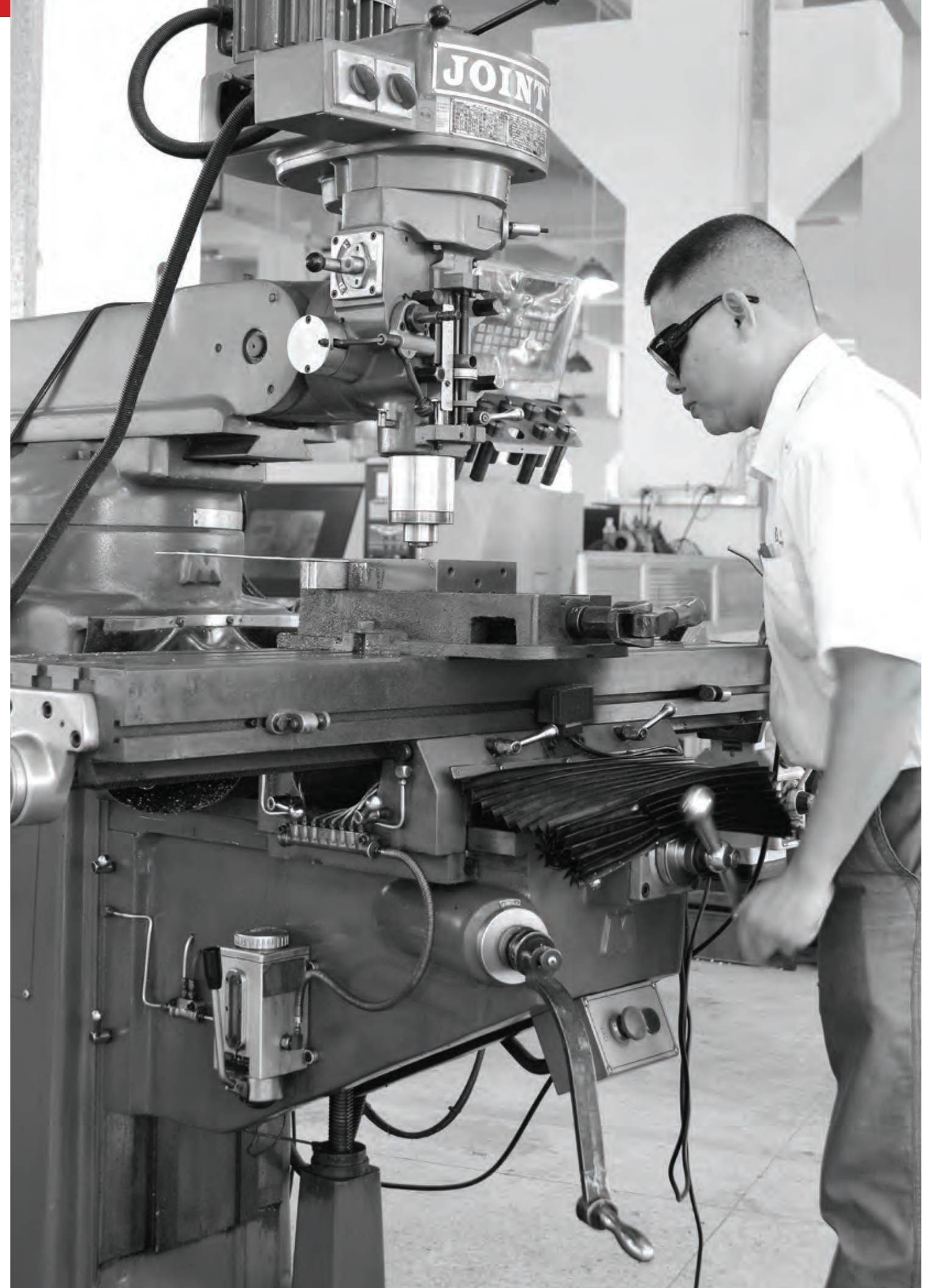
# CH-60131



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	BAR OPENS	HANDLE OPENS	A	B	C	D	E	F	G	H	I	J	K	ΦL	T
CH-511SP	3500	850																
CH-51111	3500	850																
CH-60130	2500	680	CH-SF-38300	70°	165°	220	19.5	39	6.5	22	35	68	118	20	48	62	φ8.5	4
CH-60131	3500	1590	CH-SF-12400	85°	170°	250	22	60	9	30	48	95	178	25	57	77	φ9	4.5

Material : Steel .





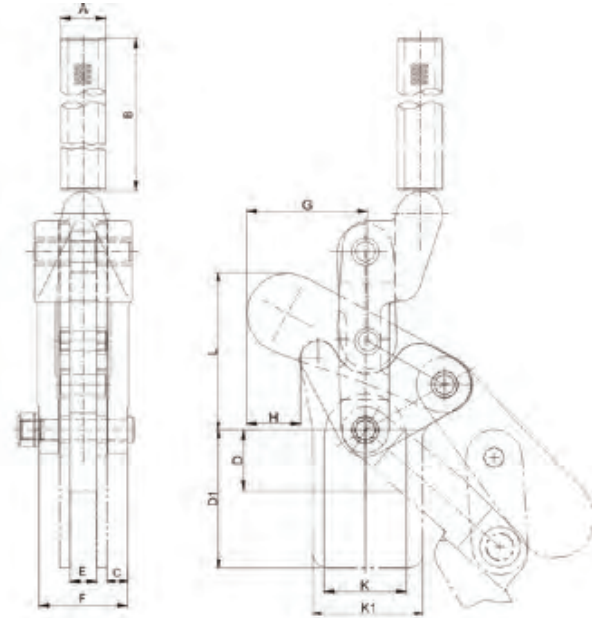


## **HEAVY DUTY WELDABLES**

**GRAPAS RÁPIDAS  
VERTICAL MODELO  
SOLDADURA**



## CH-70315



## CH-70305



## CH-70310

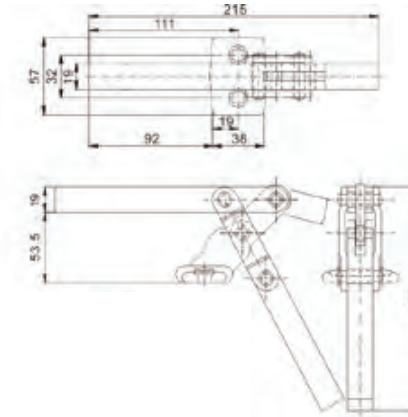


Unit:mm

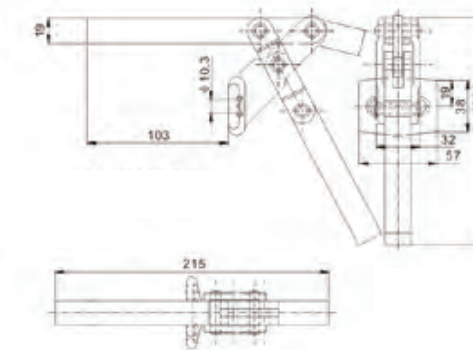
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	HANDLE OPENS	Φ A	B	C	D	D1	E	F	G	H	K	K1	L
CH-70305	5000	790	214°	134°	17.5	125	6.7	-	-	10	31.8	40	15	-	-	51
CH-70310	5000	850	214°	134°	17.5	125	6.7	20	-	10	31.8	40	15	29	-	51
CH-70315	5000	940	214°	134°	17.5	125	6.7	-	50	10	31.8	40	15	-	45	51
CH-70505	10000	1355	206°	130°	22.2	125	9.6	-	-	12.3	40.3	57	26	-	-	73
CH-70510	10000	1490	206°	130°	22.2	125	9.6	28	-	12.3	40.3	57	26	38	-	73
CH-70515	10000	1590	206°	130°	22.2	125	9.6	-	63.5	12.3	40.3	57	26	-	51	73
CH-70605	20000	2550	206°	130°	27	125	10.3	-	-	16	48.6	74.3	33	-	-	91
CH-70610	20000	2870	206°	130°	27	125	10.3	33	-	16	48.6	74.3	33	51	-	91
CH-70615	20000	2990	206°	130°	27	125	10.3	-	76	16	48.6	74.3	33	-	63.5	91

Material : Steel .

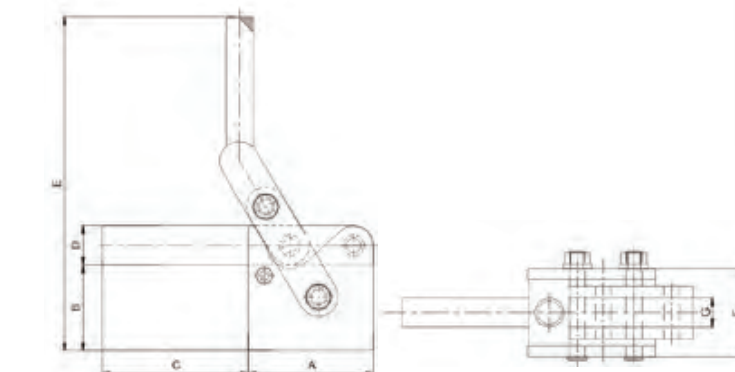
## CH-75027



## CH-75027-SM



## CH-75048

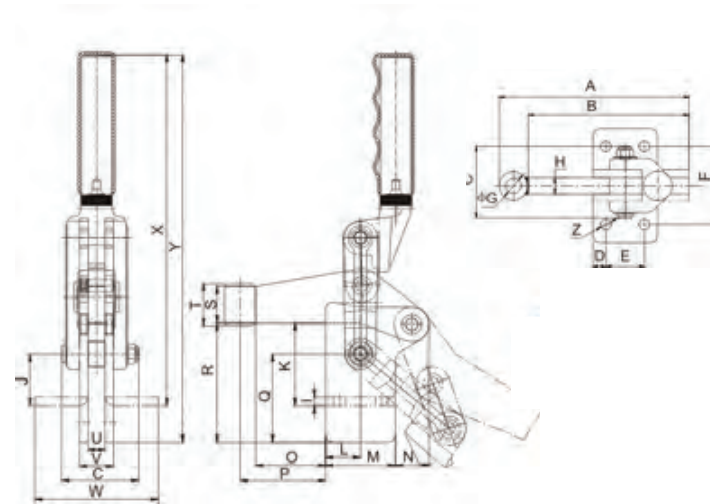


Unit:mm

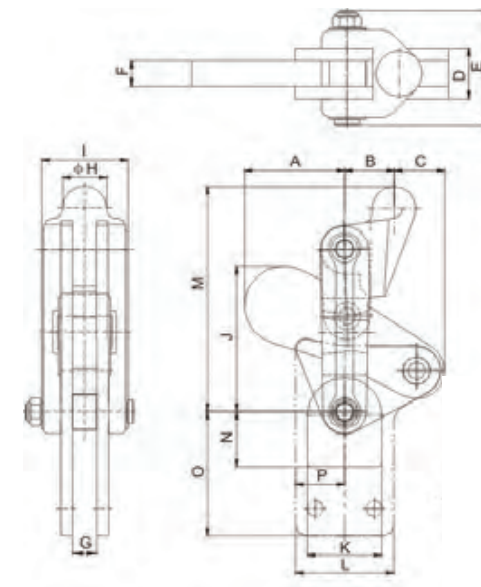
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	HANDLE OPENS	BAR OPENS	A	B	C	D	E	F	G
CH-75027	1700	310	-	195°	-	-	-	-	-	-	-
CH-75027-SM	1700	310	-	195°	-	-	-	-	-	-	-
CH-75048	7000	2700	125°	190°	82.6	67.2	108.9	25.4	261	56	19
CH-75078	16000	4300	120°	185°	101.6	69.2	118.5	32	272	65.2	22
CH-75088	25000	6350	120°	185°	127	82.6	124.5	38	318	69.4	25.4

Material : Steel .

### CH-70300B



### CH-70710



### CH-70320



### CH-70725



### CH-70720



### CH-70715



Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	HANDLE OPENS	A	B	C	D	E	F	G	ΦH	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	ΦZ
CH-70320	3000	290	210°	134°	84	-	27	-	-	6.5	-	-	-	15	20	12	45	-	28	42	15	-	6	12	-	-	-	-	136	-
CH-70300T	3000	250	210°	134°	29	14	10	12	27	6	6	16	20	32	-	27	107	-	28	15	-	-	-	-	-	-	-	-	-	-
CH-70300B	3000	310	34°-130°	45°-92°	84	-	27	6	19	32	6.5	-	5	13	27.2	15	33	8	45	-	-	15	-	-	-	42	122	-	6.5	
CH-70720	7000	1180	205°	130°	-	105	51	10	25	-	12.2	10	5	-	25	45	20	40	-	50	70	22	30	10	20	-	-	239	8.3	
CH-70725	7000	1250	180°	120°	127	105	51	10	25	50	12.2	10	5	28.8	50	25	45	20	40	51	-	22	30	-	-	67	215	-	8.3	
CH-71220	12000	1930	195°	130°	-	124	58	10	30	-	12.2	12	6	-	25	50	24	50	-	63	85	26	30	12	24	-	-	280	8.3	
CH-71225	12000	2110	180°	125°	146	124	58	10	30	60	12.2	12	6	36	58	25	50	24	50	61	-	26	30	-	-	88	251	-	8.3	
CH-72420	24000	3750	195°	130°	-	158	66	12	40	-	16.3	16	-	-	40	63	35	60	75	76	105	32	38	16	32	-	-	318	-	
CH-72425	24000	4100	195°	130°	188	158	66	12	40	75	16.3	16	8	46	75	40	63	35	60	75	-	32	38	-	-	105	295	-	10.3	

Material : Steel .

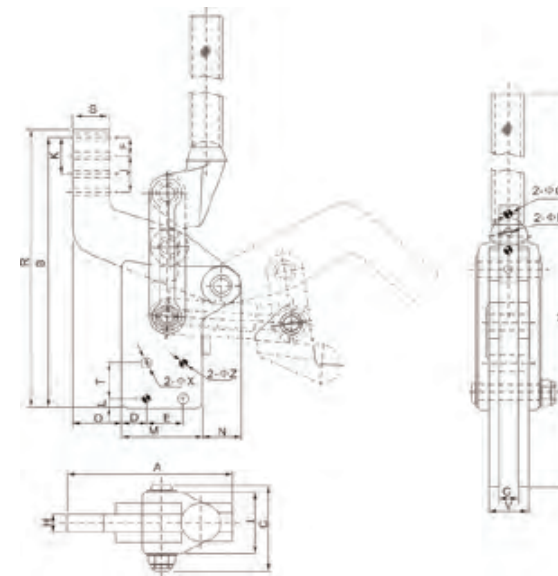
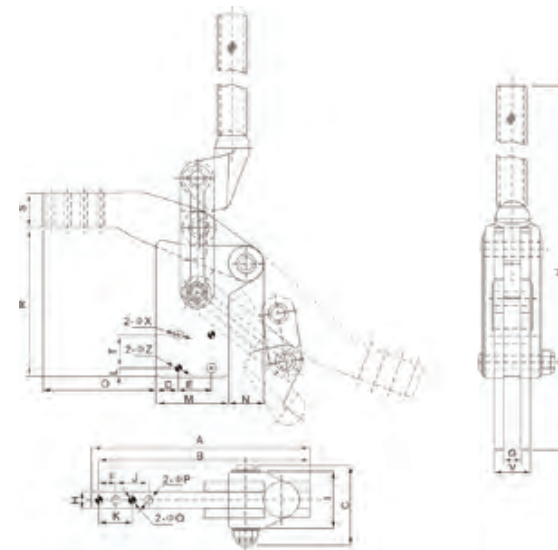
Unit:mm

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	HANDLE OPENS	A	B	C	D	E	F	G	ΦH	I	J	K	L	M	N	O	P
CH-70710	7000	700	205°	130°	40	23	16	20	51	10	10	20	38	52	29	-	94	20	-	-
CH-70715	7000	800	205°	130°	40	23	16	20	51	10	10	20	38	52	-	45	94	-	50	25
CH-71210	12000	1720	195°	130°	51	25	24	24	58	12	12	22	45	81	38	-	113	28	-	-
CH-71215	12000	1880	195°	130°	51	25	24	24	58	12	12	22	45	81	-	50	113	-	63	25
CH-72410	24000	2900	195°	130°	72	32	26	32	66	16	16	30	53	91	52	-	144	33	-	-
CH-72415	24000	3200	195°	130°	72	32	26	32	66	16	16	30	53	91	-	63	144	-	78.5	40

Material : Steel .



# CH-70200A



# CH-70200B

MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	HANDLE OPENS	A	B	C	D	E	F	G	ΦH	I	J	K	L	M	N	O	ΦP	ΦQ	R	S	T	V	ΦX	Y	ΦZ
CH-70200A	2500	300	200°	128°	90.2	84	27	5.9	15	7.5	6	15	19	15	5	26.8	8.1	55.3	5.5	4	45	15	15	12	5.5	154	4	
CH-70730A	7000	1280	200°	128°	141	133	48	10.5	24	15	10	15	35	30	30	10	45	20	75.7	7	6	80	20	19	20	9	239	6
CH-71230A	12000	2120	200°	128°	172.5	164.5	55	11.3	30	15	12	15	41.8	30	30	8	52.8	23	96.7	7	6	104	30	30	24	9	277.5	6
CH-72430A	24000	3780	200°	128°	198.5	192	67.5	20	30	15	16	16	52	30	30	7.5	65.5	31.5	101.5	7	6	134.5	30	30	32	9	343	6
CH-70200B	2500	300	130°	92°	53	95.1	27	5.9	15	7.5	6	15	19	15	5	26.8	8.1	18.1	5.5	4	101.3	15	15	12	5.5	154	4	
CH-70730B	7000	1280	130°	92°	81	158	48	10.5	24	15	10	15	35	30	30	10	45	20	15.7	7	6	166	20	19	20	9	239	6
CH-71230B	12000	2120	130°	92°	109.5	196	55	11.3	30	15	12	15	41.8	30	30	8	52.8	23	33.7	7	6	203.5	30	30	24	9	277.5	6
CH-72430B	24000	3780	130°	92°	137	223.5	67.5	20	30	15	16	16	52	30	30	7.5	65.5	31.5	40	7	6	230	30	30	32	9	343	6

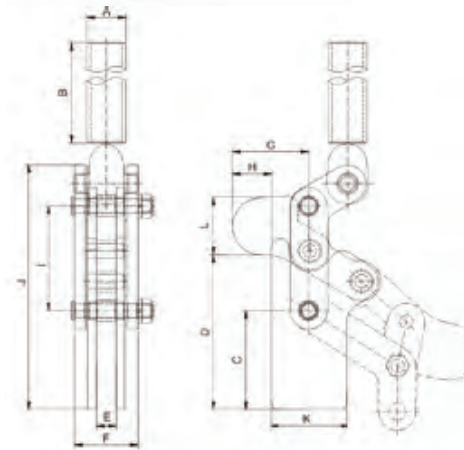
Material : Steel.

Unit:mm

# CH-701-C



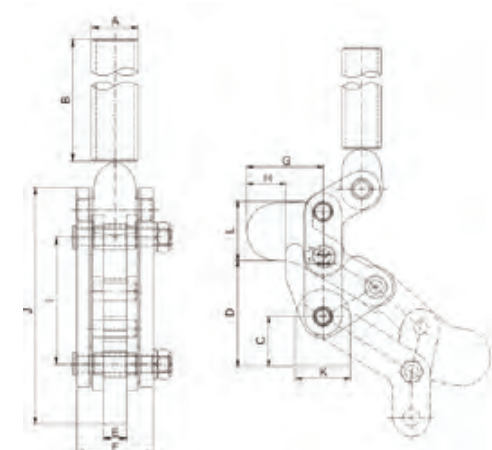
# CH-70101



# CH-702-C



# CH-70203

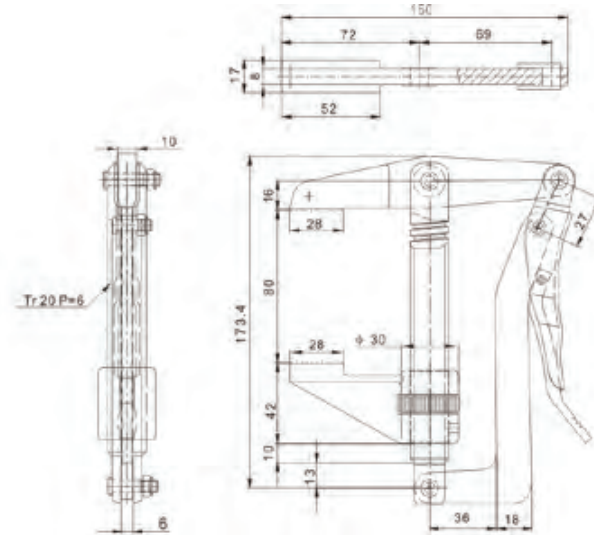


Unit:mm

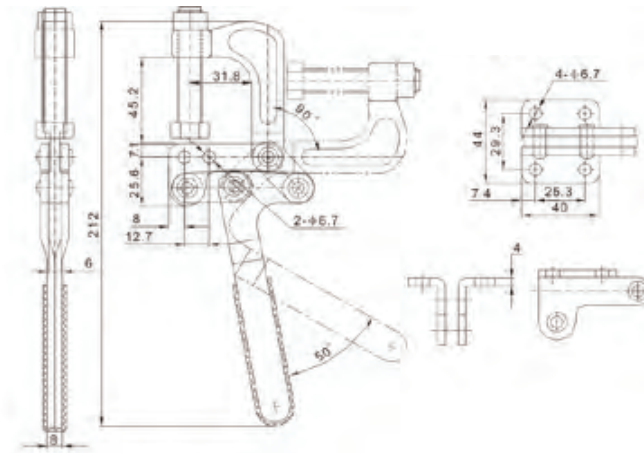
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	HANDLE OPENS	ΦA	B	C	D	E	F	G	H	I	J	K	ΦL
CH-702-C	2000	680	194°	123°	17.3	152.4	23.8	48	8	31.8	40	17	50.8	93	26	28
CH-70201	2000	680	194°	123°	17.3	152.4	23.8	48	8	31.8	40	17	50.8	93	26	28
CH-702-D	5000	1560	191°	122°	21.7	152.4	33.7	69	13	42	51	26	70	132	36.4	39
CH-70203	5000	1480	191°	122°	21.7	152.4	33.7	69	13	42	51	26	70	132	36.4	39
CH-702-K	10000	2550	197°	128°	27.2	152.4	37.2	84	16	46	59	26.7	90	161	50	50.5
CH-701-C	2000	740	194°	123°	17.3	152.4	50	75	8	31.8	40	17	50.8	121	44.5	28
CH-70101	2000	700	194°	123°	17.3	152.4	50	75	8	31.8	40	17	50.8	121	44.5	28
CH-701-D	5000	1680	191°	122°	21.7	152.4	66.8	102	13	42	51	26	70	165	50	39
CH-70103	5000	1590	191°	122°	21.7	152.4	66.8	102	13	42	51	26	70	165	50	39
CH-701-K	10000	2650	197°	128°	27.2	152.4	80	123	16	46	59	26.7	90	202	63	50.5

Material : Steel.

# CH-80070



# CH-80379



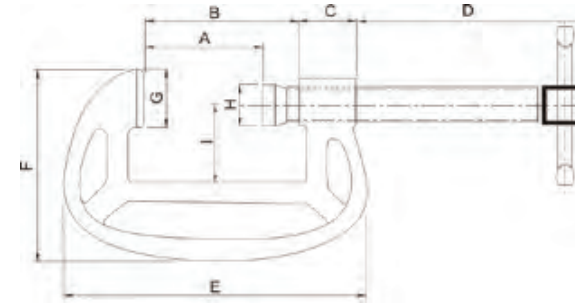
MODEL	HOLDING CAPACITY(N)	WEIGHT(g)	SCREW STROKE(mm)	SPINDLE SUPPLIED	JAW OPENS
CH-80070	2000	1032	85	-	-
CH-80325(SS)	3400	500	-	CH-SA-12212	90°
CH-80379(SS)	3400	500	-	CH-SA-12212	90°

Material : Steel .The product with(SS) mark is available also in stainless steel.

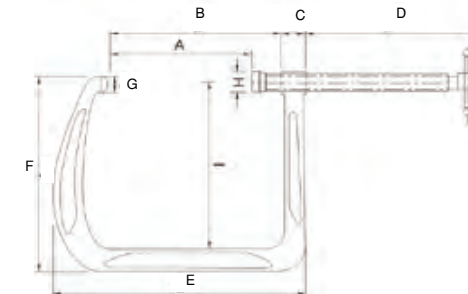
For other type and item of F CLAMP , is available also under request.

Usted puede conseguir otros tipos y modelos de APRETADOR EN TIPO F en bajo de pedido.

# SHALLOW THROAT C CLAMPS



# DEEP THROAT C CLAMPS



## SHALLOW THROAT C CLAMPS

MODEL	SIZE	WEIGHT(g)	A	B	C	D	E	F	G	H	I
M25	1"	200	25.5	36	20	49	80	58	20	Φ 16	24.5
M38	1-1/2"	290	39	50	20	69	97	68	20	Φ 16	31
M50	2"	450	45.8	66	21.6	87.8	120	70.5	22.2	Φ 15.8	31.3
M75	3"	1250	69.7	85.3	27	107.4	148.4	83.7	27.4	Φ 19	40
M100	4"	1400	98.2	117.5	32.4	143	192.2	106	31.5	Φ 22.2	51.5
M125	5"	2170	118.7	140	36.7	176.4	225	122.5	35.5	Φ 25.5	60.8
M150	6"	3170	141.4	175	40	198.8	270	137.8	41.5	Φ 25.5	72.3
M200	8"	4550	185.2	209.5	44	239.8	323	174.4	41.7	Φ 28	96
M250	10"	6100	243.5	270	44.5	330	380	203	43	Φ 28	124
M300	12"	9000	290	320	55	360	455	223	50	Φ 35	130

Material : Steel.

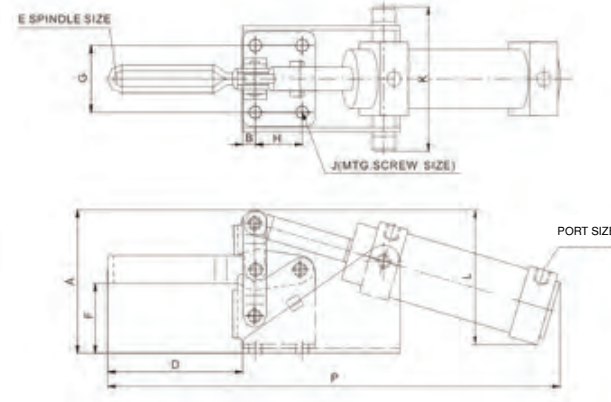
## DEEP THROAT C CLAMPS

MODEL	SIZE	WEIGHT(g)	A	B	C	D	E	F	G	H	I
M50	2"	320	53	64.5	20.5	83	115	95	22.5	Φ 16	59
M75	3"	1300	70	91.5	23.5	103	155	125	25	Φ 22.2	80.5
M100	4"	2050	105	131.5	31	145	216	178	28	Φ 25.5	117
M150	6"	3170	150	172	31	196	270	220	33	Φ 30	160

Material : Steel.



## CH-10247-A



## CH-10101-A



## CH-12050-A



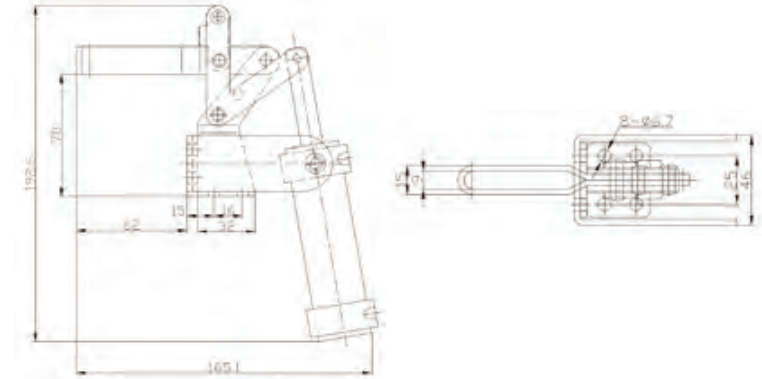
## CH-12265-A



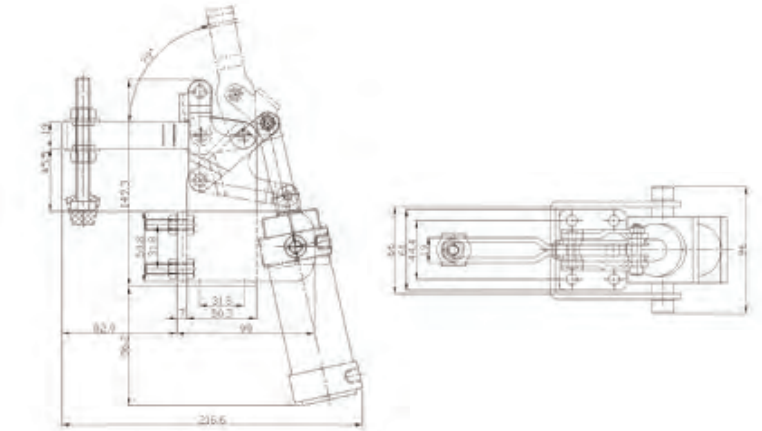
## CH-12132-A



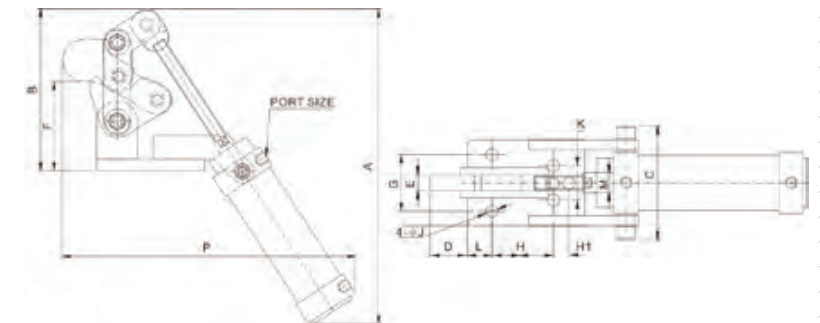
## CH-20820-A



## CH-20830-A



## CH-702-DA



MODEL	CYLINDER INSIDE DIAMETER(mm)	CYLINDER AREA(cm <sup>2</sup> )	MAXIMUM CYLINDER AIR PRESSURE(bar)(Psi)	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	PORT SIZE	P	A	B	D	E	F	G	H	J	K	L
CH-10101-A	20	3.14	10 140	500	280	82°	G1/8"	170	47.7	4.8	25.7	CH-FC-10138	21	23.8	15.9	4.5	52	55
CH-12050-(U)A	32	7.07	10 140	910	620	92°	G1/8"	185	57	6.3	35	CH-FC-14134	25.7	27	12.7	5.2	69	51
CH-12130-A	32	7.07	10 140	2270	900	92°	G1/8"	246	75.4	11	68	CH-FC-56212	34.8	31.8	19	7.1	74	73
CH-12132-A	32	7.07	10 140	2270	900	92°	G1/8"	270	75.4	11	92.6	CH-FC-56212	34.8	31.8	19	7.1	74	73
CH-12265-A	40	12.56	10 140	3400	1640	86°	G1/8"	302	97	8.7	92	CH-FC-38312	47.2	45.2	31.8	8.7	98	92
CH-12275-A	40	12.56	10 140	3400	1800	86°	G1/8"	308	97	8.7	91	CH-FC-38312	47.2	45.2	31.8	8.7	98	92
CH-10247-A	50	19.63	10 140	4500	3620	95°	G1/8"	407	112	9.5	125.4	CH-SA-12300	56.1	45.2	31.8	8.7	112	104
CH-10249-A	50	19.63	10 140	4500	3640	95°	G1/8"	407	112	9.5	125.4	CH-SA-12300	56.1	45.2	31.8	8.7	112	104

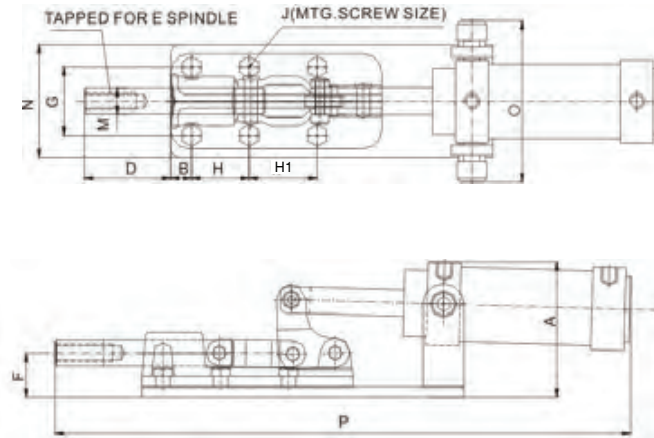
Material : Steel.

MODEL	CYLINDER INSIDE DIAMETER(mm)	CYLINDER AREA(cm <sup>2</sup> )	MAXIMUM CYLINDER AIR PRESSURE(bar)(Psi)	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	PORT SIZE	SPINDLE SUPPLIED
CH-20820-A	32	7.07	10 140	1000	1000	80°	G1/8"	CH-FC-56212
CH-20830-A	40	12.56	10 140	3400	2060	79°	G1/8"	CH-FC-38312

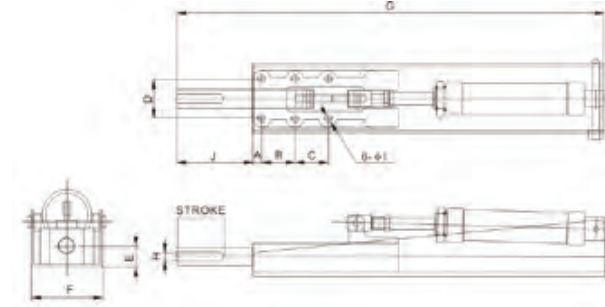
MODEL	CYLINDER INSIDE DIAMETER(mm)	CYLINDER AREA(cm <sup>2</sup> )	MAXIMUM CYLINDER AIR PRESSURE(bar)(Psi)	HOLDING CAPACITY(N)	WEIGHT(g)	BAR OPENS	PORT SIZE	P	A	B	C	D	E	F	Ø J	M	G	H	H1	K	L
CH-702-CA	32	7.07	10 140	2000	1140	65°	G1/8"	236	158	103	80	27	8	56.4	8.5	12	38	35	20	-	15
CH-702-DA	40	12.56	10 140	5000	3015	72°	G1/8"	263	277	142	93	34	13	81	11	16	46	50	-	28	20
CH-702-KA	63	31	10 140	10000	6250	80°	G3/8"	416	360	175	126	33	16	90.4	12.4	20	60	65	45	50	20

Material : Steel.

### CH-36301-A



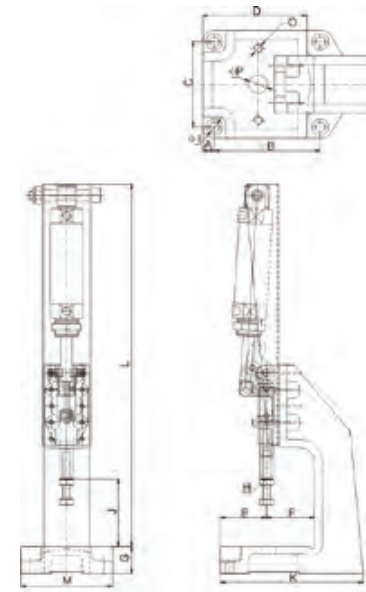
### CH-32500HL-A



### CH-36003-A



### CH-30600PR-A



### CH-36330-A



### CH-305-EA



MODEL	CYLINDER INSIDE DIAMETER(mm)	CYLINDER AREA(cm <sup>2</sup> )	MAXIMUM PRESSURE(bar)(Psi)	CYLINDER AIR CAPACITY(N)	HOLDING CAPACITY(N)	WEIGHT(g)	PLUNGER STROKE(mm)	PORT SIZE	P	A	B	D	E	F	G	H	H1	J	M	N	O
CH-36301-A	20	3.14	10	140	450	280	7.5	G1/8"	189	40	7.4	35.2	CH-SA-042007	14.7	15.9	15.9	-	4.4	6.4	34	51
CH-36003-A	32	7.07	10	140	2720	960	19.7	G1/8"	259.3	69.5	10.8	54.5	CH-SA-085012	27.7	33.3	36.5	-	5.6	11.1	56	70
CH-36330-A	40	12.56	10	140	11360	2570	28	G1/8"	347	84	12.7	51.5	CH-SA-105015	26.6	41.3	34.9	41.3	8.7	15.9	68	97
CH-305-EA	32	7.07	10	140	3860	1540	23.6	G1/8"	310.8	75.8	8.9	75	CH-SA-105015	37.8	41.3	41.3	-	8.3	15.9	57.2	74

Material : Steel.

MODEL	CYLINDER INSIDE DIAMETER(mm)	CYLINDER AREA(cm <sup>2</sup> )	MAXIMUM PRESSURE(bar)(Psi)	CYLINDER AIR CAPACITY(N)	HOLDING CAPACITY(N)	WEIGHT(g)	SPINDLE SUPPLIED	PLUNGER STROKE(mm)	A	B	C	D	E	F	G	H	ΦI	J	k	L	M	ΦP	O
CH-30600HL-A	32	7.07	10	140	6000	1540	CH-SA-086512	25	25	36.5	-	33.6	14	59	325	M8 P=1.25	5.5	38	-	-	-	-	-
CH-31200HL-A	40	12.56	10	140	12000	3900	CH-SA-107515	32	8	35	41	41	21	76	435	M10 P=1.5	8.5	55	-	-	-	-	-
CH-32500HL-A	40	12.56	10	140	25000	7730	CH-SA-127517	50	12	45	45	54	26	96	577	M12 P=1.75	10.3	102	-	-	-	-	-
CH-30600PR-A	32	7.07	10	140	6000	4570	CH-SA-086512	25	10	95	80	94	48	52	30	M8 P=1.25	9	75	150	432	100	15.6	M8*1.25
CH-31200PR-A	40	12.56	10	140	12000	10890	CH-SA-107515	32	12.5	115	95	113	57	63	40	M10 P=1.5	11	100	203	534	120	20	M10*1.5
CH-32500PR-A	40	12.56	10	140	25000	22160	CH-SA-127517	50	12.5	145	125	139	71	79	50	M12 P=1.75	11	120	238	748	150	30	M10*1.5

Material : Steel.

Unit:mm



# HYDRAULIC & PNEUMATIC CLAMPING TECHNOLOGY

## TECNOLOGIA DE SISTEMA DE SUJECIÓN HIDRÁULICO & NEUMÁTICO





# THEORETICAL CLAMPING FORCE CALCULATION FORMULA

## CÁLCULO DE LA FUERZA TEÓRICA

### PNEUMATIC & HYDRAULIC CLAMPS FORCE CALCULATION FORMULA

Push  $F=P \times A$  Pull  $F=P \times (A-a)$

F: Push - pull force(KN)

P: Operating pressure(bar)

A1: Piston force area (cm<sup>2</sup>)

a: Piston rod area (cm<sup>2</sup>)

### CÁLCULO DE LA FUERZA TEÓRICA DE SISTEMA DE SUJECIÓN HIDRÁULICO Y NEUMÁTICA

Fuerza de empuje  $F=P \times A$

Fuerza de tracción  $F=P \times (A-a)$

F: Fuerza de sujeción (KN)

P: Presión utilizado (bar)

A1: Área de la fuerza sujeta al pistón (cm<sup>2</sup>)

a: Área de diámetro de la varilla de pistón (cm<sup>2</sup>)

### SWING CLAMPING FORCE CALCULATION FORMULA

$F = P \times A2 = P \times (A1 - a)$

F: Swing clamp force(KN)

P: Operating pressure(bar)

A1: piston force area (cm<sup>2</sup>)

a: Piston rod area (cm<sup>2</sup>)

A2 Piston pull force area (cm<sup>2</sup>)

### CÁLCULO DE FUERZA DE SUJECIÓN TEÓRICA (GARRA GIRATORIA)

$F = P \times A2 = P \times (A1 - a)$

F: Fuerza de sujeción (KN)

P: Presión utilizado (bar)

A1: Área de la fuerza sujeta al pistón (cm<sup>2</sup>)

a: Área de diámetro de la varilla de pistón (cm<sup>2</sup>)

A2: Área de la fuerza sujeta al extremo tirado de pistón (cm<sup>2</sup>)

### LEVERAGE CLAMP FORCE CALCULATION FORMULA

$F = P \times A \times L1 \div L2$

F: Leverage clamp force(KN)

P: Operating pressure(bar)

A1: piston force area(cm<sup>2</sup>)

L1: The distance between piston rod centre point and leverage point (mm)

L2: The distance between Leverage point and clamp arm clamp point (mm)

### CÁLCULO DE FUERZA DE SUJECIÓN TEÓRICA (GRAPA DEL TIPO PALANCA)

$F = P \times A \times L1 \div L2$

F: Fuerza de sujeción (KN)

P: Presión utilizado (bar)

A: Área de la fuerza sujeta al pistón (cm<sup>2</sup>)

L1: Distancia del centro de pistón al punto de soporte del palanca(mm)

L2: Distancia del punto de soporte del palanca al punto de brazo (mm)

## PRESSURE CONVERSION TABLE TABLA DE INTERCAMBIO DE PRESIÓN

	Pa	bar	kgf/cm <sup>2</sup>	atm	at	Torr	mmH <sub>2</sub> O	mmHg	Psi
1 Pa	1	0.00001	0.00001	0.00001	0.00001	0.0075	0.10197	0.0075	0.00014
1 bar	100000	1	1.01972	0.9869	1.01972	750.062	10.1972	750.062	14.504
1 Kgf/cm <sup>2</sup>	98066.5	0.98067	1	0.9678	1	735.6	10	735.6	14.22
1 atm	101325	1.01325	1.033	1	1.033	760	10.332	760	14.7
1 at	98067	0.98067	1	0.9678	1	735.6	10	735.6	14.22
1 Torr	133.3	0.00133	0.00136	0.00132	0.00136	1	13.6	1	0.01934
1 mmH <sub>2</sub> O	9.8067	0.000098	0.0001	0.0000968	0.0001	0.07356	1	0.07356	0.00142
1 mmHg	133.322	0.00133	0.00136	0.00132	0.00136	1	13.5951	1	0.01934
1 Psi	6894.76	0.06895	0.07031	0.06805	0.07031	51.7149	703.07	51.7149	1

Note: The swing direction is indicate the clamps under pressure .

Nota: La dirección de la Garra giratoria se refiere a la presionar hacia abajo.



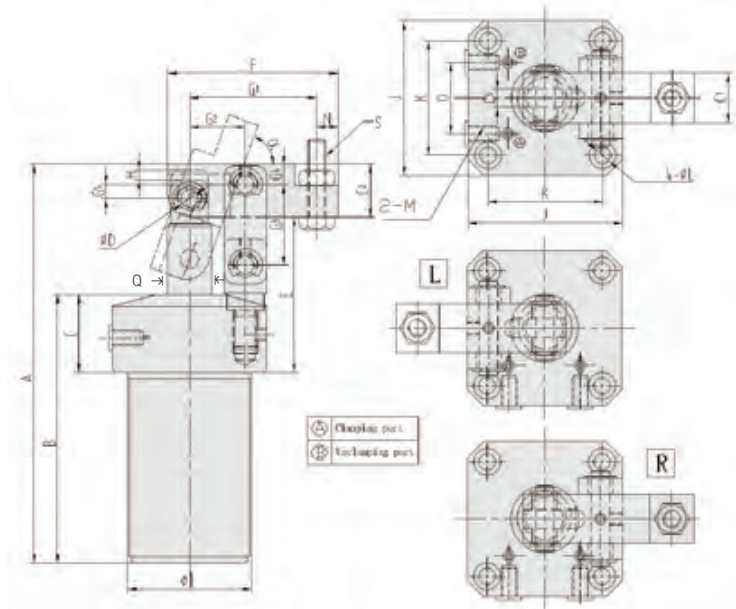


**PNEUMATIC CLAMPING  
SYSTEM**

**SISTEMA DE SUJECIÓN  
NEUMÁTICA**

**CPLCU-PNEUMATIC LEVERAGE CLAMP** **CPLCU-GRAPA NEUMÁTICA DE TIPO PALANCA**

**CALC-PNEUMATIC LEVERAGE CLAMP** **CALC-GRAPA NEUMÁTICA DE TIPO PALANCA**



**FEATURES**

Body material: Aluminum alloy 6061T6 hard coat. Piston rod: S45C, Hard Chromed. Use high-quality seal to avoid leakage and keep long operation. Leverage structure design, the fixture can clamp easily, perform efficiently.

**CARACTERÍSTICAS**

Material del cuerpo: Aleación de aluminio 6061T6 recubrimiento duro. Pistón: S45C, Cromado duro. Use sello de alta calidad para evitar fugas y mantener un largo funcionamiento. Diseño de estructura de palanca, el aparato puede sujetar fácilmente y realizarlo de manera eficiente.

Max: operating pressure 7 bar  
Min: operating pressure 4 bar  
Double acting

Presión máx. de funcionamiento: 7 bares  
Presión mín. de funcionamiento: 4 bares  
Doble efecto

**NOTE**

When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

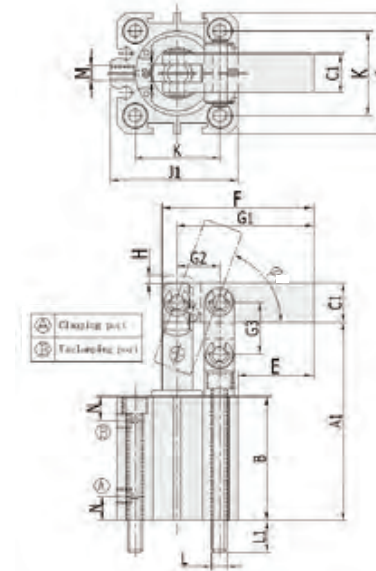
CPLCU - 40 R

<b>CPLCU</b>	Series	CPLCU
<b>40</b>	Cylinder inside diameter	φ 25, φ 32, φ 40, φ 50, φ 63
<b>R</b>	Lever arm direction	R, L, Blank

MODEL	CLAMPING FORCE AT 7 bar (kN)	CLAMPING STROKE (mm)	TOTAL STROKE (mm)	CYLINDER CAPACITY CLAMP (cm <sup>3</sup> )	CYLINDER CAPACITY UNCLAMP (cm <sup>3</sup> )	EFF. PISTON AREA CLAMP (cm <sup>2</sup> )	EFF. PISTON AREA UNCLAMP (cm <sup>2</sup> )	RANGE OF TEMPERATURE (°C)
CPLCU-25	0.27	20	24	11.78	8.09	4.91	3.37	-10~+60°C
CPLCU-32	0.42	28	31	24.92	18.69	8.04	6.03	-10~+60°C
CPLCU-40	0.67	30	33	41.45	34.82	12.56	10.55	-10~+60°C
CPLCU-50	1.07	30	33	64.78	54.42	19.63	16.49	-10~+60°C
CPLCU-63	1.70	30	33	102.83	92.47	31.16	28.02	-10~+60°C

Unit:mm

MODEL	A	B	C	C1	C2	C3	φD	E	F	G1	G2	G3	G4	G5	H	I	J	K	L	M	N	O	Q	S	α
CPLCU-25	128.5	86.5	25	16	17	6	φ6	50	55	41	18	26	6.5	4.5	2	M40×1.5	50	37	φ5.5-φ9×5.5D	M5	7	23	φ14	M6	70°
CPLCU-32	149.5	97.5	25	18	20	8	φ6	57	68	52	22	33	8	5	4	M50×1.5	60	45	φ6.5-φ11×6.5D	PT1/8	8	23	φ16	M8	75°
CPLCU-40	157.5	97.5	25	20	25	8	φ8	60	75	56	24	33	13	4	3	M55×1.5	65	50	φ6.5-φ11×6.5D	PT1/8	10	26	φ16	M8	78°
CPLCU-50	174	104	25	22	30	10	φ10	65	87.5	63.5	27.5	44	11	10	3	M65×1.5	75	58	φ8.5-φ14×8.5D	PT1/8	14	32	φ20	M12	70°
CPLCU-63	179	105	25	22	30	10	φ10	69	98	74	32	48	11	10	3	M80×1.5	90	70	φ8.5-φ14×8.5D	PT1/8	14	35	φ20	M12	60°



**FEATURES**

Applied Standardized fixture pneumatic clamp in this series of product, and fitted with lever type holding structure. Piston push out for clamping. Main spare parts of this product be installed outside of the body for convenient maintenance. The material of body is aluminum alloy. The surface of internal is smooth, and have long service life. Clamping spare parts material is carbon steel which used for mechanical configuration, firm and wear-resistance. All models of this series equipped with magnetic induction are available.

**CARACTERÍSTICAS**

Aplicado al cilindro de fijación estandarizada de esta serie productos, y equipado con estructura de sujeción tipo palanca. Pistón de empuje hacia afuera para sujetar. Las piezas de repuestos principales se instalarán fuera del cuerpo para un mantenimiento conveniente. El material del cuerpo es de aleación de aluminio. La superficie interna es lisa, y tienen una larga vida útil. La sujeción de material de repuestos es de acero al carbono utilizado para la configuración mecánica, firme y resistente al desgaste. Todos los modelos de esta serie están equipadas con inducción magnética.

Max: operating pressure 7 bar  
Min: operating pressure 1 bar  
Double acting

Presión máx. de funcionamiento: 7 bares  
Presión mín. de funcionamiento: 1 bar  
Doble efecto

**NOTE**

When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTE**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CALC - MS 32 S1

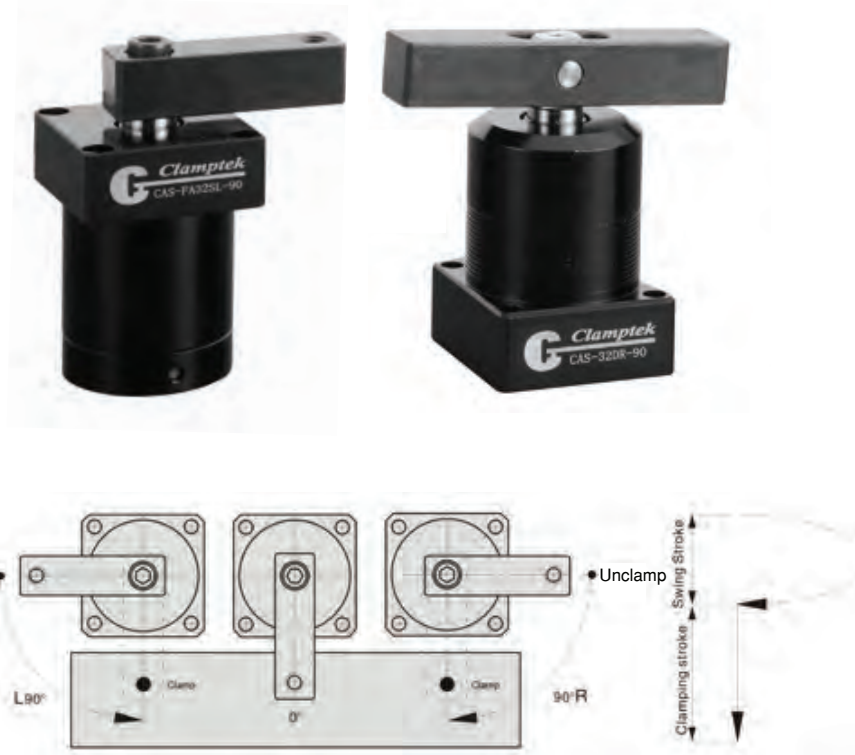
<b>CALC</b>	Series	CALC
<b>MS</b>	Blank	Standard type
	MS	With magnetic induction
<b>32</b>	Cylinder inside diameter	φ25, φ32, φ40, φ50, φ63, φ80, φ100
<b>S1</b>	Sensor switch	1Pcs of S1, 2Pcs of S2

MODEL	CLAMPING FORCE AT 7 bar (kN)	CLAMPING STROKE (mm)	TOTAL STROKE (mm)	CYLINDER CAPACITY CLAMP (cm <sup>3</sup> )	CYLINDER CAPACITY UNCLAMP (cm <sup>3</sup> )	EFF. PISTON AREA CLAMP (cm <sup>2</sup> )	EFF. PISTON AREA UNCLAMP (cm <sup>2</sup> )	RANGE OF TEMPERATURE (°C)
CALC-25	0.20	17	20	9.82	8.24	4.91	4.12	-10~+60°C
CALC-32	0.31	20	23	18.49	15.89	8.04	6.91	-10~+60°C
CALC-40	0.56	22	25	31.40	26.40	12.56	10.56	-10~+60°C
CALC-50	0.91	27	30	58.89	49.47	19.63	16.49	-10~+60°C
CALC-63	1.69	32	35	109.06	98.00	31.16	28	-10~+60°C
CALC-80	2.79	40	43	216.03	195.22	50.24	45.4	-10~+60°C
CALC-100	4.69	45	48	376.80	50.21	78.5	10.46	-10~+60°C

Unit:mm

MODEL	STANDARD TYPE	WITH MAGNET	C1	C2	φD	E	F	G1	G2	G3	H	J	J1	K	L	L1	M	N	α		
	<b>A1</b>	<b>B</b>	<b>A1</b>	<b>B</b>																	
CALC-25	65.5	41	75.5	51	□13	6	φ5	25	50	45	14	17	3	40	-	28	M5×0.8	10.5	M5×0.8	8	75°
CALC-32	78	49	93	64	□16	8	φ6	31	60	53	17	20	3	44	50	34	M5×0.8	11	PT1/8	9	70°
CALC-40	82.5	51.5	97.5	66.5	□16	8	φ6	32	65	58	20	22	3	52	58	40	M6×1.0	9.5	PT1/8	10	65°
CALC-50	96.6	58.6	106.6	68.6	□19	10	φ8	35	75	66	23	27	3	62	71	48	M6×1.0	11	PT1/4	11	70°
CALC-63	115.5	72.5	125.5	82.5	□22	10	φ8	38.5	85	76	29.5	32	3	75	84.5	60	M6×1.0	11	PT1/4	11	65°
CALC-80	138	84	148	94	□22	10	φ10	47	105	94	37	40	3	94	104	74	M8	15.5	PT1/4	14	65°
CALC-100	163.5	99	173.5	109	□25	12	φ12	53	125	110	45	45	3	114	124	90	M10	15	PT1/4	18	60°





**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CAS-MF 25 S R×90 -W

<b>CAS</b>	Series	CAS		
<b>MF</b>	Type	Blank: Line type MF: Manifold with flow control M: Manifold type FA: Flange type TB: Threaded body		
	<b>25</b>	Cylinder inside diameter	φ25:25mm φ32:32mm φ40:40mm φ50:50mm φ63:63mm	
		<b>S</b>	Clamping arm type	S: Single side arm D: Double side arm
			<b>R</b>	Rotating direction
<b>90</b>		Rotating angle		90:90° 45:45° 60:60°
	<b>W</b>	Welding accessory		

**FEATURES**

When the piston push down, the clamping arm will rotate to the design angle, then push down on straight line hold the workpiece. You had better install a flow control valve to adjust the acting speed, and don't clamping workpiece when the clamp is running, Otherwise will be easy to damage the body and the spare parts.  
The material of cylinder body is aluminum alloy, surface processed with hardening and internal face is smooth,so the service life of product is long.

**CARACTERÍSTICAS**

Cuando el pistón empuje hacia abajo, el brazo de sujeción rotará con el ángulo de diseño, a continuación, presione hacia abajo en línea recta para sostener la pieza de trabajo. Se ha de instalar una válvula de control de flujo para ajustar la velocidad de actuación, no sujetar la pieza de trabajo cuando el brazo esté en marcha, de lo contrario será fácil dañar el cuerpo y las piezas de repuesto.  
La parte del cilindro es de aleación de aluminio, superficie tratada con endurecimiento, cara interna lisa, por lo que la vida útil del producto es larga.

Max.operating pressure 7 bar  
Min: operating pressure 4 bar  
Double acting

Presión máx. de funcionamiento: 7 bares  
Presión mín. de funcionamiento: 4 bares  
Doble efecto

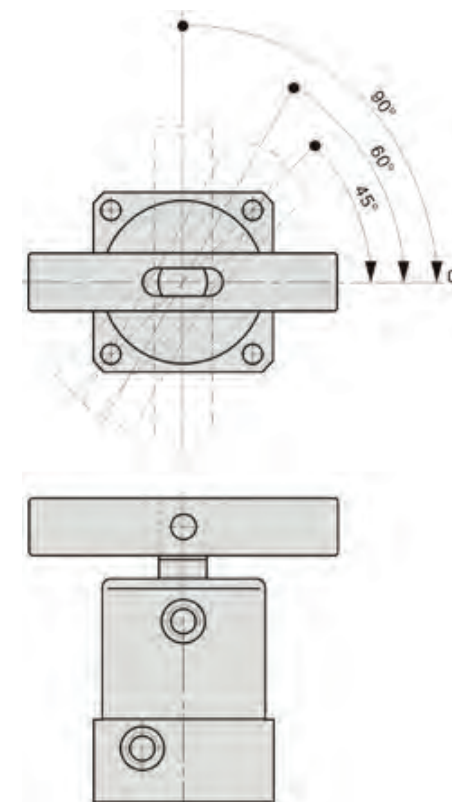
**NOTE**

When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

MODEL	CLAMPING FORCE AT 7 bar (kN)	SWING STROKE(mm)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	CYLINDER CAPACITY CLAMP(cm <sup>3</sup> )	CYLINDER CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
CAS-25	0.24	12	12	24	8.09	11.78	3.37	4.91	-10~+60 °C
CAS-32	0.43	12	12	24	14.47	19.30	6.03	8.04	-10~+60 °C
CAS-40	0.75	12	12	24	25.32	30.14	10.55	12.56	-10~+60 °C
CAS-50	1.18	14	14	28	46.17	54.96	16.49	19.63	-10~+60 °C
CAS-63	2.00	15	15	30	84.06	93.48	28.02	31.16	-10~+60 °C



**CLAMPING ARM MOUNTING METHODS**

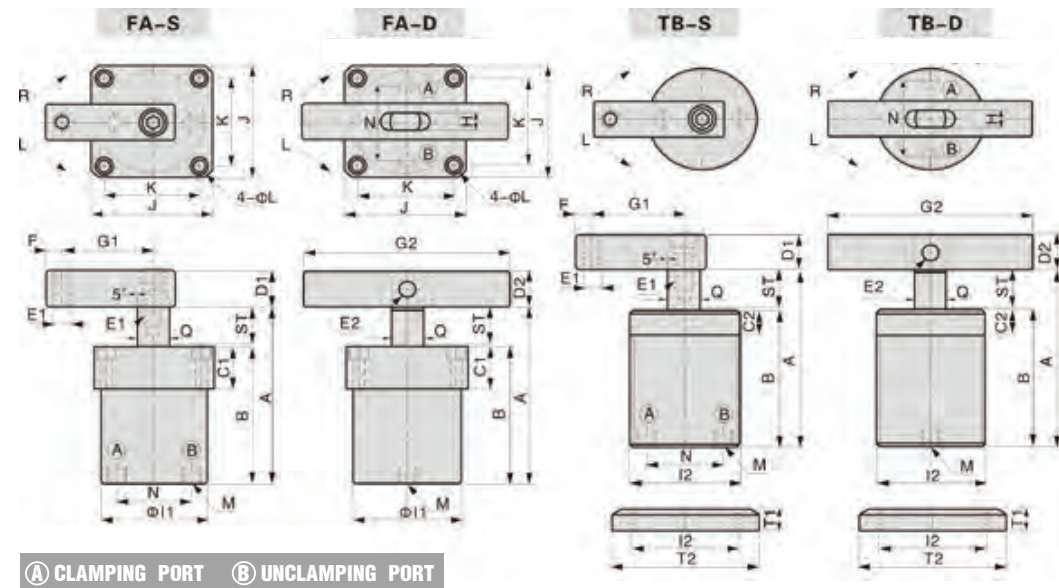


**CLAMPING ARM REMOVING METHODS**

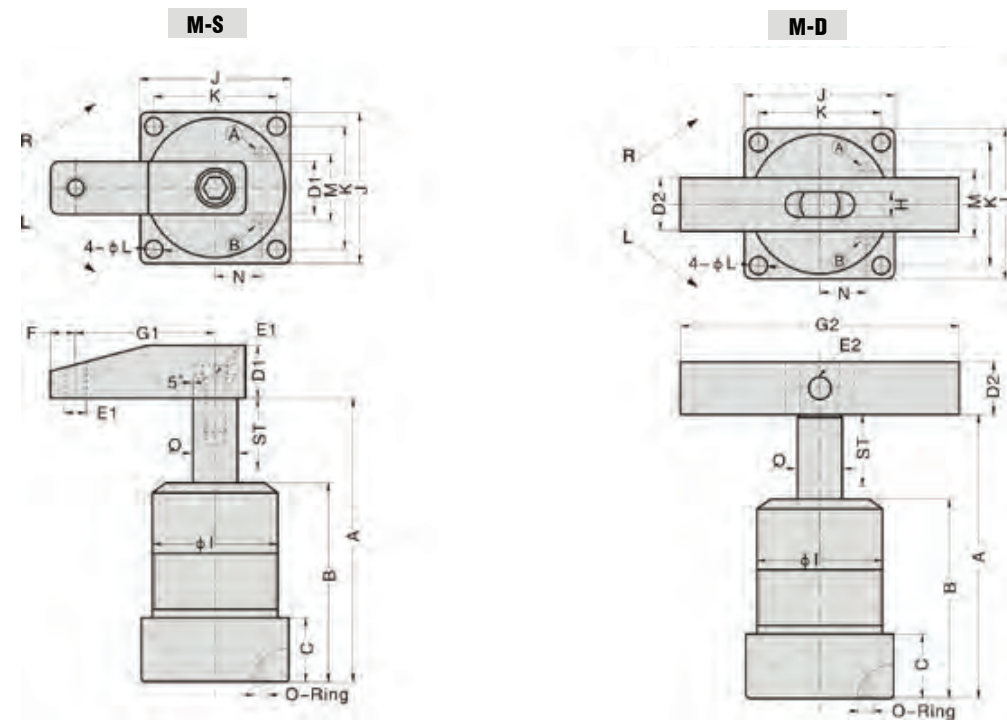


\* The following drawing of FA-D & TB-D & M-D ,double side swing clamp,all show unclamping state, swing angle 90° .

\* The following drawing of Line type-D & MF-D,double side swing clamp,all show unclamping state, swing angle 90° .

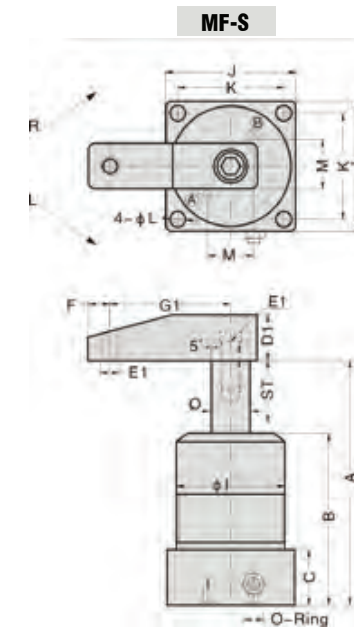


Ⓐ CLAMPING PORT Ⓑ UNCLAMPING PORT

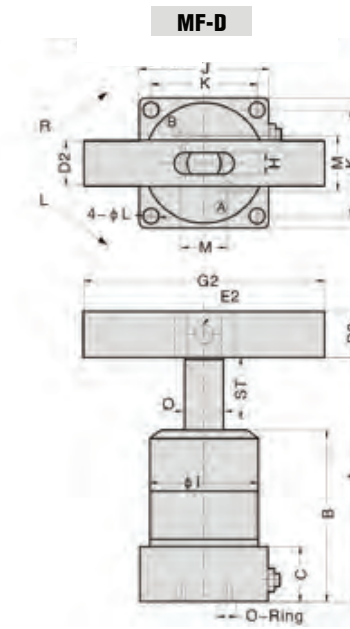


M-S

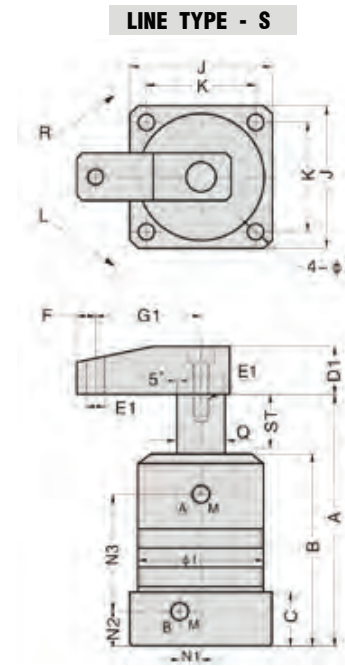
M-D



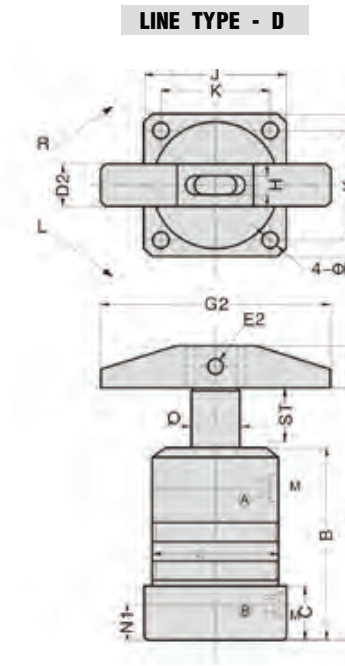
MF-S



MF-D



LINE TYPE - S



LINE TYPE - D

Ⓐ CLAMPING PORT Ⓑ UNCLAMPING PORT

Unit:mm

MODEL	ST: SWING/CLAMPING	A UNCLAMPING	B	C	C1	C2	D1	D2	E1	E2	F	G1	G2	H	ΦI	Φ11	I2	J	K	L	M	N	O-Ring	T1 × 2PCS	T2	Q
CAS-M32	24:12/12	101.5	71	23	-	-	□19	□19	M8	φ8	9	50	100	9	φ50	-	-	54	44	φ6.5	24	16.5	S4	-	-	φ16
CAS-M40	24:12/12	107	75	27	-	-	□19	□19	M8	φ8	9	50	100	9	φ55	-	-	58	48	φ6.5	26	20	S3	-	-	φ16
CAS-M50	28:14/14	114.5	80	26	-	-	□25	□22	M10	φ8	10	70	120	10	φ65	-	-	69	55	φ8.5	30	25	S3	-	-	φ20
CAS-M63	30:15/15	121	86.5	30	-	-	□25	□22	M10	φ8	10	70	120	10	φ75	-	-	82	64	φ8.5	40.5	28	S4	-	-	φ20
CAS-FA32	26:11/15	108	78	-	22	-	□19	□19	M8	φ8	9	50	100	9	φ50	-	-	54	44	φ5.6-φ9×5.5D.	PT1/8	32	-	-	-	φ16
CAS-TB32	26:11/15	108	78	-	-	12	□19	□19	M8	φ8	9	50	100	9	-	M50×1.5	-	54	44	-	PT1/8	32	-	11	φ70	φ16
CAS-FA40	26:11/15	108	78	-	22	-	□19	□19	M8	φ8	9	50	100	9	φ55	-	-	60	48	φ6.8-φ10.5×6.5D.	PT1/8	40	-	-	-	φ16
CAS-TB40	26:11/15	108	78	-	-	12	□19	□19	M8	φ8	9	50	100	9	-	M55×1.5	-	60	48	-	PT1/8	40	-	11	φ75	φ16
CAS-FA50	30:13/17	124	90	-	25	-	□25	□22	M10	φ8	10	70	120	10	φ65	-	-	69	55	φ6.8-φ10.5×6.5D.	PT1/8	50	-	-	-	φ20
CAS-TB50	30:13/17	124	90	-	-	15	□25	□22	M10	φ8	10	70	120	10	-	M65×1.5	-	69	55	-	PT1/8	50	-	12	φ85	φ20
CAS-FA63	30:13/17	124	90	-	25	-	□25	□22	M10	φ8	10	70	120	10	φ75	-	-	82	64	φ9-φ14×9D.	PT1/8	63	-	-	-	φ20

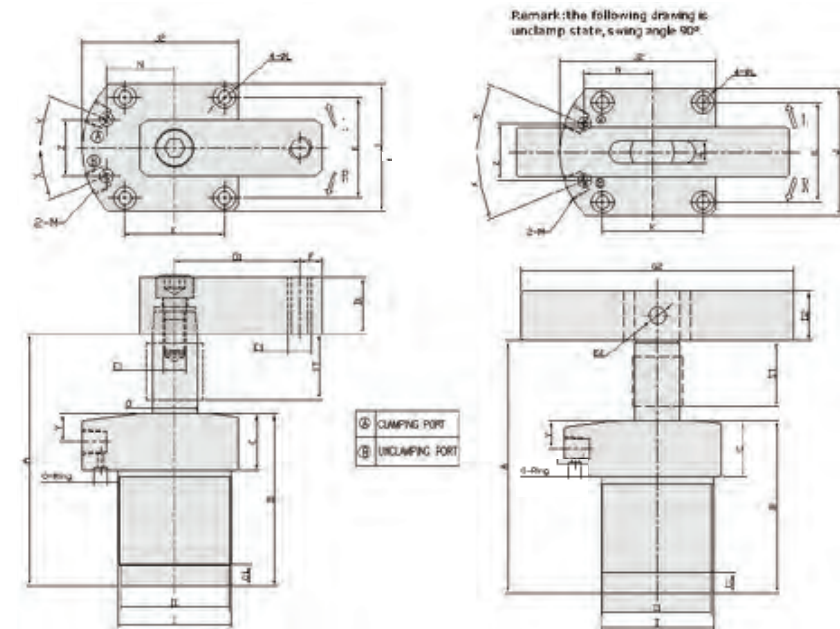
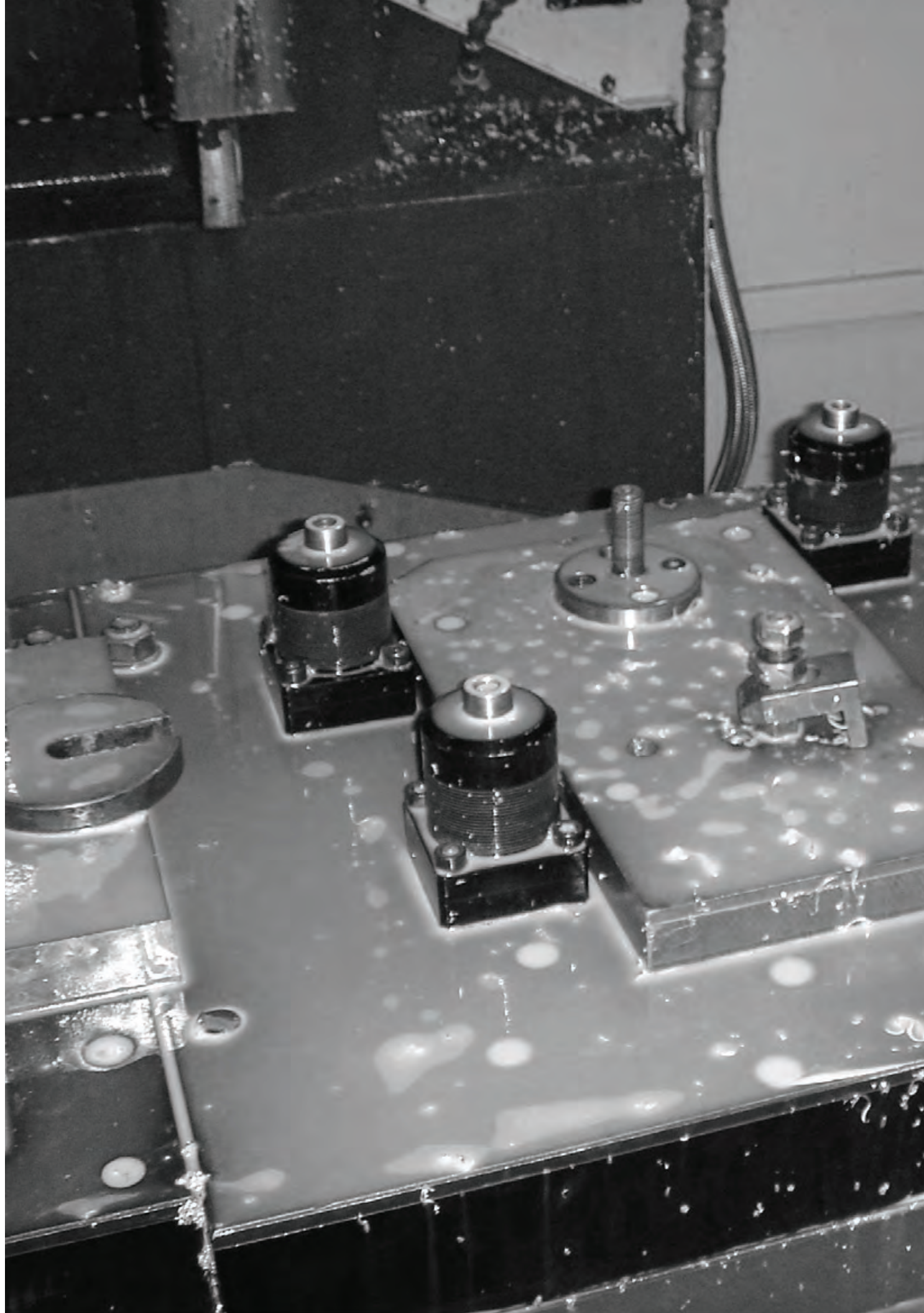
Unit:mm

MODEL	ST: SWING/CLAMPING	A UNCLAMPING	B	C	D1	D2	E1	E2	F	G1	G2	H	ΦI	J	K	L	M	N1	N2	N3	Q	O-Ring
CAS-25	24:12/12	98	66.5	23	□16	□19	M6	φ6	8	30	100	9	φ35	40	31	φ4.5	M5	7.5	13	38	φ14	-
CAS-32	24:12/12	101.5	71	23	□19	□19	M8	φ8	9	50	100	9	φ50	54	44	φ6.5	PT1/8	11.5	14.5	44.5	φ16	-
CAS-40	24:12/12	107	75	27	□19	□19	M8	φ8	9	50	100	9	φ55	58	48	φ6.5	PT1/8	11	17	46	φ16	-
CAS-50	28:14/14	114.5	80	26	□25	□22	M10	φ8	10	70	120	10	φ65	69	55	φ8.5	PT1/8	17	17.5	50.5	φ20	-
CAS-63	30:15/15	121	86.5	30	□25	□22	M10	φ8	10	70	120	10	φ75	82	64	φ8.5	PT1/8	21.8	21	53	φ20	-
CAS-MF32	24:12/12	101.5	71	23	□19	□19	M8	φ8	9	50	100	9	φ50	54	44	φ6.5	19	-	-	-	φ16	P7
CAS-MF40	24:12/12	107	75	27	□19	□19	M8	φ8	9	50	100	9	φ55	58	48	φ6.5	23	-	-	-	φ16	P7
CAS-MF50	28:14/14	114.5	80	26	□25	□22	M10	φ8	10	70	120	10	φ65	69	55	φ8.5	28	-	-	-	φ20	P9
CAS-MF63	30:15/15	121	86.5	30	□25	□22	M10	φ8	10	70	120	10	φ75	82	64	φ8.5	32	-	-	-	φ20	P9

SWING CLAMP



**NAU-PNEUMATIC SWING CLAMP** **NAU-GARRA GIRATORIA DE SISTEMA NEUMÁTICA**



**FEATURES**

Aluminum alloy body Blackening , Surface heat-treatment for product good wear-resisting .  
The type of clamping includes single side swing clamp and double side swing clamp.

**CARACTERÍSTICAS**

Cuerpo con aleación de aluminio ennegrecimiento, superficie del tratamiento térmico para productos resistentes al desgaste. El tipo de sujeción incluye garra giratoria de un solo lado y garra giratoria de doble lado.

Max:operating pressure 7 bar  
Min: operating pressure 4 bar  
Double acting

Presión máx. de funcionamiento: 7 bares  
Presión mín. de funcionamiento: 4 bares  
Doble efecto

**NOTE**

When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTA**

Quando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

NAU - L 40x90

NAU	Series	NAU,NAUD
L	Rotating direction	Turn right R or turn left L
40	Cylinder inside diameter	φ32,φ40,φ50,φ63
90	Rotating angle	Standard angle 90° Order angle 0° ,45° ,60°

MODEL	CLAMPING FORCE AT 7 bar (kN)	SWING STROKE(mm)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	CYLINDER CAPACITY CLAMP(cm³)	CYLINDER CAPACITY UNCLAMP(cm³)	EFF.PISTON AREA CLAMP(cm²)	EFF.PISTON AREA UNCLAMP(cm²)	RANGE OF TEMPERATURE(°C)
NAU-32	0.34	14	15	29	14.21	23.32	4.9	8.04	-10~+60°C
NAU-40	0.66	14	15	29	27.32	36.42	9.42	12.56	-10~+60°C
NAU-50	1.15	14	15	29	47.82	56.93	16.49	19.63	-10~+60°C
NAU-63	1.84	14	15	29	76.13	90.36	26.25	31.16	-10~+60°C

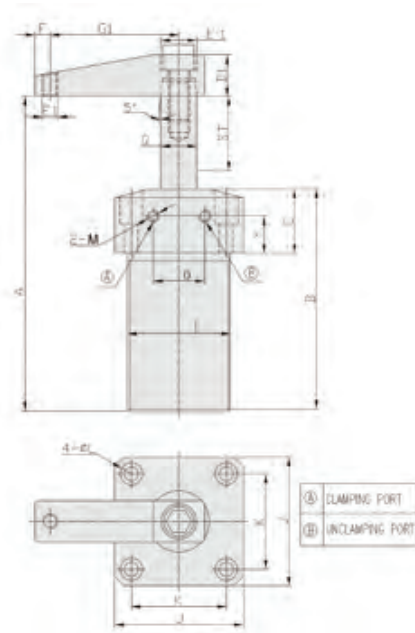
Unit:mm

MODEL	ST: SWING/CLAMPING	A UNCLAMP	B	C	C1	D1	D2	E1	E2	F	G1	G2	H	I	I1	J1	J2	K	L	M	N	Z	X	Y	O-RING	Q
NAU-32	29:14/15	111	76	25	9	□25	-	M10	10	55	-	-	M50×1.5	φ48	56	69	44	φ6.5/φ10.5×6.5D	PT1/8	30	24.9	22.5°	12.5	P5	φ20	
NAUD-32	29:14/15	111	76	25	9	-	□22	-	φ8	-	-	120	10	M50×1.5	φ48	56	69	44	φ6.5/φ10.5×6.5D	PT1/8	30	24.9	22.5°	12.5	P5	φ20
NAU-40	29:14/15	113.6	80	27	9	□25	-	M10	10	55	-	-	M55×1.5	φ53	62	71.5	48	φ6.5/φ10.5×6.5D	PT1/8	31.4	26	22.5°	14	P5	φ20	
NAUD-40	29:14/15	113.6	80	27	9	-	□22	-	φ8	-	-	120	10	M55×1.5	φ53	62	71.5	48	φ6.5/φ10.5×6.5D	PT1/8	31.4	26	22.5°	14	P5	φ20
NAU-50	29:14/15	114.5	80	27	9	□25	-	M10	10	55	-	-	M65×1.5	φ63	74	87	57	φ8.5/φ14×9D	PT1/8	37.6	27.4	20°	14	P7	φ20	
NAUD-50	29:14/15	114.5	80	27	9	-	□22	-	φ8	-	-	120	10	M65×1.5	φ63	74	87	57	φ8.5/φ14×9D	PT1/8	37.6	27.4	20°	14	P7	φ20
NAU-63	29:14/15	118	85	32	9	□32	-	M12	11	75	-	-	M80×1.5	φ77	88	105.5	70	φ11/φ16.5×11D	PT1/8	46	38	22.5°	19	P7	φ25	
NAUD-63	29:14/15	118	85	32	9	-	□25	-	φ10	-	-	140	12	M80×1.5	φ77	88	105.5	70	φ11/φ16.5×11D	PT1/8	46	38	22.5°	19	P7	φ25

SWING CLAMP



**NPSU-PNEUMATIC SWING CLAMP** **NPSU-GARRA GIRATORIA DE SISTEMA NEUMÁTICA**



**FEATURES**

This product is main for clamp in fixture, compressed-air in and out through the hole on flange. Aluminum alloy body Blackening, Surface heat-treatment for product good wear-resisting. The top of flange have four screwholes for installation. Round nuts link the Piston rod and fixture.

**CARACTERÍSTICAS**

Este producto es principal para la garra de fijación, de aire comprimido de entrada y salida a través del agujero de la brida. Cuerpo con aleación de aluminio ennegrecimiento, superficie del tratamiento térmico para productos resistentes al desgaste. La parte superior de la brida tiene cuatro orificios de tornillos para instalación. Tuercas redondas unen la biela del pistón y el accesorio.

Max:operating pressure 7 bar  
Min: operating pressure 4 bar  
Double acting

Presión máx. de funcionamiento: 7 bares  
Presión mín. de funcionamiento: 4 bares  
Doble efecto

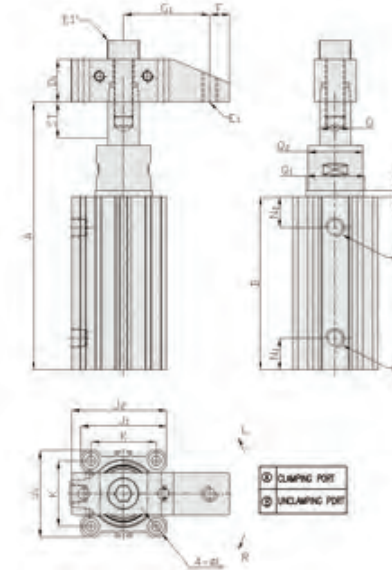
MODEL	CLAMPING FORCE AT 7 bar (kN)	CLAMPING STROKE(mm)	SWING STROKE(mm)	TOTAL STROKE(mm)	CYLINDER CAPACITY CLAMP(cm <sup>3</sup> )	CYLINDER CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
NPSU-25	0.24	13	14	27	9.18	13.26	3.4	4.91	-10~+60°C
NPSU-32	0.42	16	14	30	18.12	24.12	6.04	8.04	-10~+60°C
NPSU-40	0.74	15	15	30	31.68	37.68	10.56	12.56	-10~+60°C
NPSU-50	1.155	17	15	32	52.77	62.82	16.49	19.63	-10~+60°C
NPSU-63	1.96	15	15	30	84.09	93.48	28.03	31.16	-10~+60°C

Unit:mm

MODEL	ST: SWING/CLAMPING	A UNCLAMP	B	C	D1	E1	G1	F	M	E'1	K	J	I	O	L	Y	Q
NPSU-25	27:13/14	118.5	86.5	25	□16	M6	50	6	M5	M8	37	50	M40×1.5	20	φ5.5-φ9×5.5D	14.5	φ14
NPSU-32	30:16/14	133.5	97.5	25	□19	M8	60	9	PT1/8	M8	45	60	M50×1.5	22	φ6.5-φ10.5×6.5D	13	φ16
NPSU-40	30:15/15	133.5	97.5	25	□19	M8	70	9	PT1/8	M8	50	65	M55×1.5	26	φ6.5-φ10.5×6.5D	13	φ16
NPSU-50	32:17/15	141	104	25	□25	M12	80	10	PT1/8	M10	58	75	M65×1.5	32	φ8.5-φ14×9D	11	φ20
NPSU-63	30:15/15	140	105	25	□25	M12	90	10	PT1/8	M10	70	90	M80×1.5	35	φ8.5-φ14×9D	11	φ20

**PNEUMATIC CLAMPING SYSTEM SISTEMA DE SUJECIÓN NEUMÁTICA**

**PB-PNEUMATIC SWING CLAMP INDUCTION TYPE NEUMÁTICA DE TIPO INDUCCIÓN**



**FEATURES**

This product is perfect, design in brief, the structure is compact, the weight is light, the service life is long and holding capacity is strong. Two types available--- long stroke and short stroke. Fixing from top, base or the side of cylinder is ok. Be applied in industry automatization. clipping of foil, clipping and transporting of work piece on the conveyer belt, main used for packing pipelining.

**CARACTERÍSTICAS**

Este producto es perfecto, diseño breve, estructura compacta, peso ligero, la vida útil es larga y la capacidad de retención es fuerte. Dos tipos disponibles - carrera larga y carrera corta. La fijación de la parte superior, la base o el lado del cilindro es aceptable. Se aplica en la industria de automatización, recorte de papel de aluminio, el recorte y el transporte de la pieza de trabajo en la cinta transportadora, utilizado principalmente para el embalaje de la canalización.

Max:operating pressure 7 bar  
Min: operating pressure 4 bar  
Double acting

Presión máx. de funcionamiento: 7 bares  
Presión mín. de funcionamiento: 4 bares  
Doble efecto

**NOTE**

When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**  
PB-S 40 R × 90 - S1

PB	Series	PB
S	Stroke	L: Long stroke S: Short stroke
40	Cylinder inside diameter	φ25, φ32, φ40, φ50
R	Rotating direction	Turn right or turn left
90	Rotating angle	Standard angle 90° Order angle 0°, 45°, 60°
S1	Sensor switch	1 Pcs of S1, 2 Pcs of S2

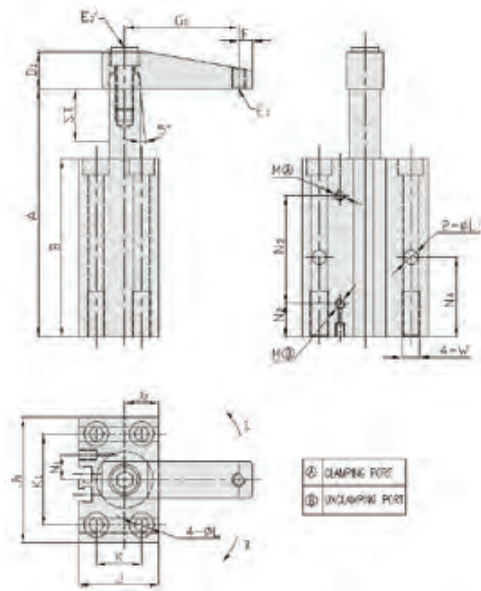
MODEL	CLAMPING FORCE AT 7 bar (kN)	CLAMPING STROKE(mm)	SWING STROKE(mm)	TOTAL STROKE(mm)	CYLINDER CAPACITY CLAMP(cm <sup>3</sup> )	CYLINDER CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
PBS-25	0.23	10	9.5	19.5	6.57	9.57	3.37	4.91	-10~+60°C
PBL-25	0.23	20	9.5	29.5	9.94	14.48	3.37	4.91	-10~+60°C
PBS-32	0.42	10	15	25	15.05	20.10	6.02	8.04	-10~+60°C
PBL-32	0.42	20	15	35	21.07	28.14	6.02	8.04	-10~+60°C
PBS-40	0.74	10	15	25	26.40	31.40	10.56	12.56	-10~+60°C
PBL-40	0.74	20	15	35	36.96	43.96	10.56	12.56	-10~+60°C
PBS-50	1.155	20	19	39	64.35	76.56	16.5	19.63	-10~+60°C
PBL-50	1.155	50	19	69	113.85	135.45	16.5	19.63	-10~+60°C

Unit:mm

MODEL	ST: SWING/CLAMPING	A UNCLAMP	B	C	D1	E1	E'1	F	G1	J1	J2	K	L	M	N1	N2	Q	Q1	Q2	T
PBS-25	19:9.5/10	109	73	3	□16	M6	M8	7	32	40	42	28	φ5.5-φ9×9D	M5	16.5	14	φ12	φ26	φ25	11
PBL-25	29:9.5/20	129	83	3	□16	M6	M8	7	32	40	42	28	φ5.5-φ9×9D	M5	16.5	14	φ12	φ26	φ25	11
PBS-32	25:15/10	134	80	3	□22	M8	M10	10	45	45	49.5	34	φ5.5-φ9×9D	PT1/8	16.5	16	φ16	φ30	φ29	14.8
PBL-32	35:15/20	154	90	3	□22	M8	M10	10	45	45	49.5	34	φ5.5-φ9×9D	PT1/8	16.5	16	φ16	φ30	φ29	14.8
PBS-40	25:15/10	134.5	80	3	□22	M8	M10	10	45	52	57	40	φ5.5-φ9×9D	PT1/8	19	16	φ16	φ30	φ29	14.8
PBL-40	35:15/20	154.5	90	3	□22	M8	M10	10	45	52	57	40	φ5.5-φ9×9D	PT1/8	19	16	φ16	φ30	φ29	14.8
PBS-50	39:19/20	186.5	101.5	3.5	□25	M10	M12	10	65	64	71	50	φ6.6-φ11×13D	PT1/4	24	17	φ20	φ37	φ36	20
PBL-50	69:19/50	246.5	131.5	3.5	□25	M10	M12	10	65	64	71	50	φ6.6-φ11×13D	PT1/4	24	17	φ20	φ37	φ36	20



**PSB-PNEUMATIC BLOCK SWING CLAMP** **PSB-GARRA GIRATORIA DE SISTEMA NEUMÁTICA EN TIPO BLOQUE**



**FEATURES**

This product is perfect, design in brief, the structure is compact, the weight is light, the service life is long and holding capacity is strong. You can install an inductor on this product if you need. Fixing from top, base or the side of swing clamp is ok.

**CARACTERÍSTICAS**

Este producto es perfecto, diseño breve, estructura compacta, peso ligero, la vida útil es larga y la capacidad de retención es fuerte. Puede instalar una inductor para este producto, si lo necesita. La fijación de la parte superior, la base o el lado del cilindro es aceptable.

Max: operating pressure 7 bar  
Min: operating pressure 4 bar  
Double acting

Presión máx. de funcionamiento: 7 bares  
Presión mín. de funcionamiento: 4 bares  
Doble efecto

**NOTE**

When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

PSB - L 40x90 S1

<b>PSB</b>	Series	PSB
<b>L</b>	Rotating direction	Turn right R or turn left L
<b>40</b>	Cylinder inside diameter	φ 25, φ32, φ40, φ50, φ63
<b>90</b>	Rotating angle	Standard angle 90
<b>S1</b>	Sensor switch	1Pcs of S1 2Pcs of S2

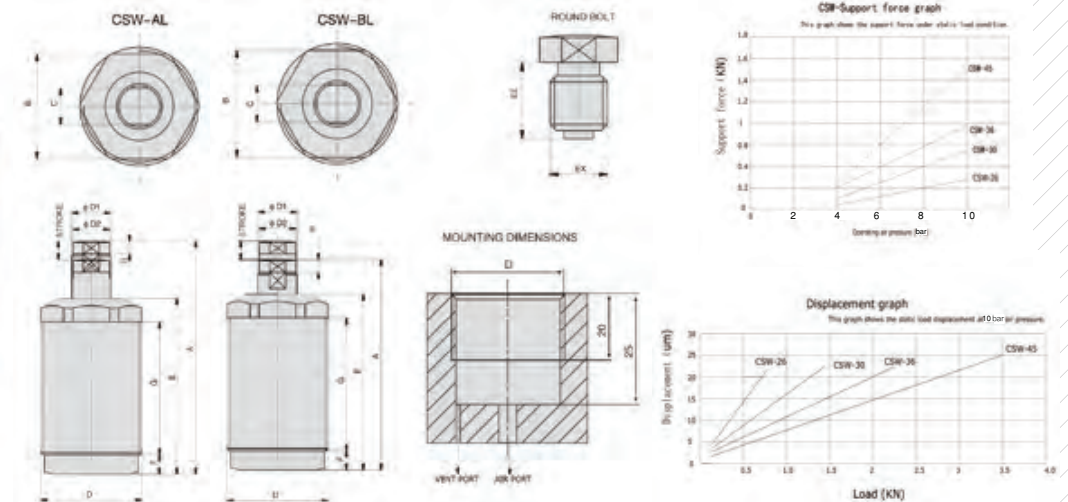
MODEL	CLAMPING FORCE AT 7 bar (KN)	CLAMPING STROKE(mm)	SWING STROKE(mm)	TOTAL STROKE(mm)	CYLINDER CAPACITY CLAMP(cm <sup>3</sup> )	CYLINDER CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
PSB-25	0.23	14	13	27	9.10	13.26	3.37	4.91	-10~+60°C
PSB-32	0.42	14	16	30	18.06	24.12	6.02	8.04	-10~+60°C
PSB-40	0.74	15	15	30	31.68	37.68	10.56	12.56	-10~+60°C
PSB-50	1.155	15	17	32	52.80	62.82	16.5	19.63	-10~+60°C
PSB-63	1.96	15	15	30	84.06	93.48	28.02	31.16	-10~+60°C

Unit:mm

MODEL	ST: SWING/CLAMPING	A	B	D1	E1	E1'	F	G1	J	J1	J2	K	K1	N1	N2	N3	N4	L	L'	M	W	Q
PSB-25	27:13/14	109	78	□16	M6	M8	6	50	35	55	15	20	40	11	14.5	47.5	35	φ 6.8-φ11*7D	φ 6.8	M5	M8*20D	φ14
PSB-32	30:16/14	126	90	□19	M8	M8	9	60	45	60	20	30	45	12	21	51.5	45	φ 6.8-φ11*7D	φ 6.8	PT1/8	M8*25D	φ16
PSB-40	30:15/15	126	90	□19	M8	M8	9	70	55	70	25	37	52	15	22	49	40	φ 8.5-φ14*9D	φ 8.5	PT1/8	M10*20D	φ16
PSB-50	32:17/15	137	100	□25	M12	M10	10	80	65	85	30	46	66	17.5	25	53.5	40	φ 8.5-φ14*9D	φ 8.5	PT1/8	M10*30D	φ20
PSB-63	30:15/15	137	100	□25	M12	M10	10	90	80	100	37.5	60	80	18	20.5	56.5	35	φ10.5-φ16.5*10.5D	φ10.5	PT1/8	M12*25D	φ20

**PNEUMATIC CLAMPING SYSTEM SISTEMA DE SUJECIÓN NEUMÁTICA**

**CSW-PNEUMATIC SUPPORT CLAMP** **CSW-ELEMENTO DE SOPORTE NEUMÁTICO**



**FEATURES**

Compact structure, reasonable design, long service life. In 4-10 bar working conditions stable performance. According to the different thickness of work piece, replaceable piston rod out of the spring strength. The piston rod piece out of contact force is small, 0.2-0.6 bar range, especially suitable for thin work piece.

**CARACTERÍSTICAS**

Estructura compacta, diseño razonable, larga vida útil. Rendimiento de trabajo en condiciones de trabajo de 4-10bares. De acuerdo al diferente grosor de la pieza de trabajo, el pistón sustituible de la fuerza del resorte. El pistón de la fuerza de contacto es pequeña, el rango es de 0.2-0.6 bares, adecuado especialmente para piezas de trabajo fino.

Max: operating pressure 10 bar  
Min: operating pressure 4 bar  
Single acting

Presión máx. de funcionamiento: 10 bares  
Presión mín. de funcionamiento: 4 bares  
Simple efecto

**NOTE**

Columns fortress can not exert eccentric load. Can not exert overloaded. Can not turn the piston rod when it's locking state.

**NOTA**

Las columnas no puede ejercer carga excéntrica. No se puede ejercer sobrecarga. No se puede girar el pistón cuando está en estado bloqueado.

Type A: Supporting with a spring, the spring is used to control a clamping force when the knocking-out rod (piston rod) extends to a highest knocking-out position and clamps the work piece.

Type B: Supporting with air pressure, it is operated by means of oil pressure and is knocked out when being filled with oil and clamp the work piece.

Type A: Soporte con resorte, el resorte se utiliza para controlar una fuerza de sujeción cuando la biela del pistón se extiende a una posición más alta sujetando la pieza de trabajo.

Type B: Soporte con la presión neumático, de se opera por medio de la presión del aire y es manteniendo la posición de sujeto, cuando se llena con aceite sujetando la pieza de trabajo.

MODEL	CLAMPING FORCE AT 10 bar (KN)	CLAMPING FORCE AT 4 bar (KN)	STROKE (mm)	CYLINDER CAPACITY(cm <sup>3</sup> )	PISTON AREA(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
CSW-26AL	0.60	0.05	6.5	1.20	0.64	-10~+60°C
CSW-26BL	0.60	0.05	6.5	1.20	0.64	-10~+60°C
CSW-30AL	0.80	0.1	6.5	1.80	0.64	-10~+60°C
CSW-30BL	0.80	0.1	6.5	1.80	0.64	-10~+60°C
CSW-36AL	0.90	0.2	8	2.70	0.79	-10~+60°C
CSW-36BL	0.90	0.2	8	2.70	0.79	-10~+60°C
CSW-45AL	1.50	0.35	8	4.80	1.13	-10~+60°C
CSW-45BL	1.50	0.35	8	4.80	1.13	-10~+60°C

Unit:mm

MODEL	A	B	C	D	E	F	G	H	D1	D2	EE	EX
CSW-26AL	68.5	22	9	M26*1.5	54	4.6	41	3	φ10	φ9.8	10	M8
CSW-26BL	62	22	9	M26*1.5	54	4.6	41	3	φ10	φ9.8	10	M8
CSW-30AL	75.5	24	9	M30*1.5	60	5	46	4.2	φ10	φ9.8	10	M8
CSW-30BL	69	24	9	M30*1.5	60	5	46	4.2	φ10	φ9.8	10	M8
CSW-36AL	81	30	9	M36*1.5	62.5	5	46	4.2	φ10	φ9.8	10	M8
CSW-36BL	73	30	9	M36*1.5	62.5	5	46	4.2	φ10	φ9.8	10	M8
CSW-45AL	95	36	10	M45*1.5	76	6	59	4.2	φ12	φ11.5	19.5	M8
CSW-45BL	87	36	10	M45*1.5	76	6	59	4.2	φ12	φ11.5	19.5	M8



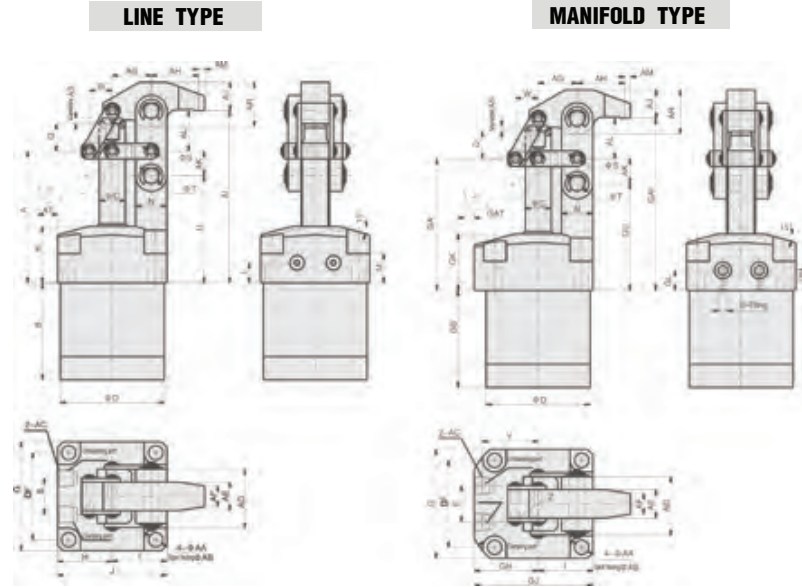
**HYDRAULIC CLAMPING  
SYSTEM**

**SISTEMA DE SUJECIÓN  
HIDRÁULICO**



**CLF5H-HYDRAULIC LEVERAGE CLAMP** **CLF5H-GRAPA HIDRÁULICO DEL TIPO PALANCA**

**CLKA-HYDRAULIC LEVERAGE CLAMP** **CLKA-GRAPA HIDRÁULICO DEL TIPO PALANCA**



**FEATURES**

Operate conveniently, this series products design with connecting rod structure, at the time of termination holding state, clamping arm can be put lower than holding position, and reduce the interference with loading and unloading operation.  
Clamping arm of the products is very flexible. It can holding more capacity than swing clamp and leverage clamp, and can reduce the interference of the surrounding equipment, so it can save working space.  
Product with special dustproof design and high sealing, can prevent the cutting chips and coolant to infiltration. So it can be used in more severe conditions.

**CARACTERÍSTICAS**

Operar convenientemente, esta serie de productos diseñados con estructura de varilla de conexión, al momento de la terminación del estado holding, el brazo de sujeción se puede poner bajo posición holding, y reducir la interferencia con la operación de carga y descarga.  
El brazo de sujeción de los productos es muy flexible.  
Puede que tenga mas capacidad de soporte que la garra giratoria y grapa de palanca, y puede reducir la interferencia del equipo que lo rodea, por lo que puede ahorrar espacio de trabajo.  
Producto con un diseño especial a prueba de polvo y alto sellado, puede prevenir las virutas de corte y refrigerante a la infiltración.

Max: operating pressure 70 bar  
Min: operating pressure 5 bar

Presión máx. de funcionamiento: 70 bares  
Presión mín. de funcionamiento: 5 bares

MODEL	CLAMPING FORCE AT 70 bar (KN)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm³)	OIL CAPACITY UNCLAMP(cm³)	EFF.PISTON AREA CLAMP(cm²)	EFF.PISTON AREA UNCLAMP(cm²)	RANGE OF TEMPERATURE(°C)
CLF5H-25	2.90	31.5	34	16.694	11.458	4.91	3.37	-10~+70°C
CLF5H-32	4.41	35.5	38	30.552	25.08	8.04	6.60	-10~+70°C
CLF5H-40	7.09	41	44	55.264	46.464	12.56	10.56	-10~+70°C
CLF5H-50	11.36	47	50	98.15	82.45	19.63	16.49	-10~+70°C

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Q	S	T	U	W	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AR	AT
CLF5H-25	70	59.5	14	47	21	40	50	25	25	50	30.5	11.5	13.5	12	12	4	6	56.5	13	5.5	9.5	PT1/8	22	12	8	19	23	88	13	13.5	18	4	20	12
CLF5H-32	75	70.5	14	55	21	47	59	29.5	29.5	59	30.5	11.5	15.5	16	14	5	8	60	13	6.6	11	PT1/8	28	16	12	21.5	28	95	15	15	20	4	23	11
CLF5H-40	89.5	79.5	16	65	25	55	69	34.5	34.5	69	37.5	13.5	20.5	20	20	6	10	72	16	9	14	PT1/4	36	19	14	24.5	31	117.5	18	17.5	28	4	28	18
CLF5H-50	101.5	86.5	20	80	28	67	84	42	42	84	43.5	15.5	22.5	24	21	6	12	83	17.5	11	18	PT1/4	42	22	16	30	37	132.5	22	19	31	4	34	15

MODEL	GA	GB	C	D	E	F	G	GH	I	GJ	GK	GL	GM	N	Q	S	T	GU	W	O-RING	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	GAI	AJ	AK	AL	AM	AR	GAT
CLF5H-25G	70.5	59	14	47	21	40	50	35	25	60	31	12	18	12	12	4	6	57	13	S4	29	39	5.5	9.5	PT1/8	22	12	8	19	23	88.5	13	13.5	18	4	20	2
CLF5H-32G	75.5	70	14	55	21	47	59	37.5	29.5	67	31	12	17	16	14	5	8	60.5	13	S4	32	43	6.6	11	PT1/8	28	16	12	21.5	28	95.5	15	15	20	4	23	3
CLF5H-40G	90	79	16	65	25	55	69	45.5	34.5	80	38	14	21	20	20	6	10	72.5	16	S4	37	51	9	14	PT1/4	36	19	14	24.5	31	118	18	17.5	28	4	28	7
CLF5H-50G	102	86	20	80	28	67	84	51	42	93	44	16	23	24	21	6	12	83	17.5	S5	44	57	11	18	PT1/4	42	22	16	30	37	133	22	19	31	4	34	6

**MANIFOLD TYPE**

**NOTE**

The practical clamping force is 60%-70% of theoretical clamping force. High temperature oil seals are available on request.

**NOTA**

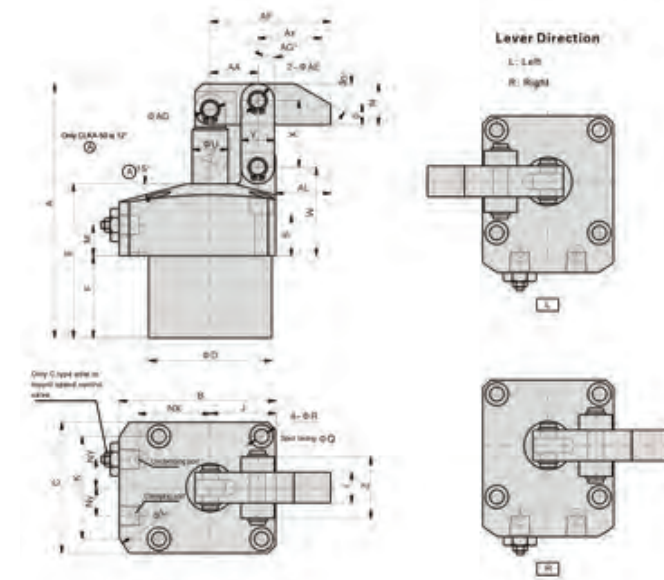
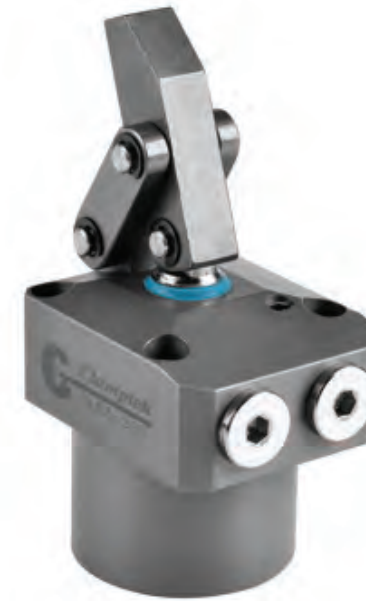
La fuerza de sujeción práctica es 60% -70% de la fuerza de sujeción teórica. Los sellos de aceite de alta temperatura están disponibles bajo pedido.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CLF5H - 32 C L

<b>CLF5H</b>	Series	CLF5H
<b>32</b>	Hydraulic cylinder inside diameter	φ25, φ32, φ40, φ50
<b>G</b>	Port type	Blank: line type G: Manifold type

Unit:mm



**FEATURES**

Product with optimal design, so the clamping capacity is better than others clamps.  
Product with the integrated structure on support site and cylinder body, so made product will be more impact, and strength will be improved.  
Product with special dustproof design, to make sure a high sealing performance.  
Product with lower flange design, more suitable for compact and light fixture.

**CARACTERÍSTICAS**

Producto con diseño óptimo, por lo que la capacidad de sujeción es mejor que otras grapas.  
Producto con estructura integrada en el sitio de soporte y la parte del cilindro, producto de impacto y fuerza mejorada.  
Producto con diseño especial a prueba de polvo, para asegurarse un alto rendimiento de sellado.  
Producto con diseño de brida inferior, adecuado para el accesorio compacto y ligero.

Max: operating pressure 70 bar  
Min: operating pressure 5 bar

Presión máx. de funcionamiento: 70 bares  
Presión mín. de funcionamiento: 5 bares

**NOTE**

The practical clamping force is 60%-70% of theoretical clamping force. High temperature oil seals are available on request.

**NOTA**

La fuerza de sujeción práctica es 60% -70% de la fuerza de sujeción teórica. Los sellos de aceite de alta temperatura están disponibles bajo pedido.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CLKA - 32 C L

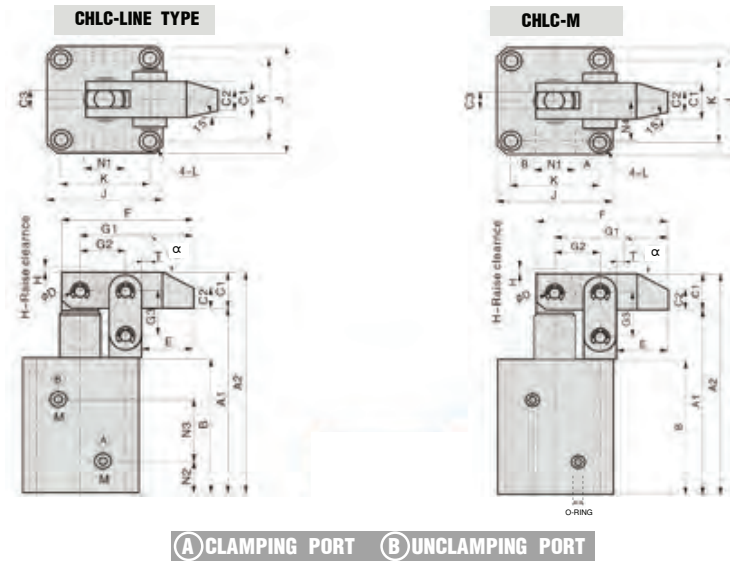
<b>CLKA</b>	Series	CLKA
<b>32</b>	Hydraulic cylinder inside diameter	φ22, φ25, φ32, φ40 φ50, φ63, φ70, φ80
<b>C</b>	Port type	Blank: line type G: Manifold type C: manifold with flow type
<b>L</b>	Lever direction	Blank: standard L:Left R:Right

MODEL	CLAMPING FORCE AT 70 bar (KN)	SWING STROKE(mm)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm³)	OIL CAPACITY UNCLAMP(cm³)	EFF.PISTON AREA CLAMP(cm²)	EFF.PISTON AREA UNCLAMP(cm²)	RANGE OF TEMPERATURE(°C)
CLKA-22	2.07	16	16	18.5	7.03	5.57	3.8	3.01	-10~+70°C
CLKA-25	2.74	17.5	17.5	20.5	10.07	7.75	4.91	3.78	-10~+70°C
CLKA-32	4.52	20.5	20.5	23.5	18.89	15.28	8.04	6.5	-10~+70°C
CLKA-40	6.49	23	23	26	32.66	27.43	12.56	10.55	-10~+70°C
CLKA-50	10.73	26.5	26.5	29.5	57.91	48.65	19.63	16.49	-10~+70°C
CLKA-63	17.79	32	32	35	109.06	95.76	31.16	27.36	-10~+70°C
CLKA-70	21.35	38	38	41	141.37	132.55	34.48	32.33	-10~+70°C
CLKA-80	30.94	46	46	49	246.18	199.04	50.24	40.62	-10~+70°C

Unit:mm

MODEL	A	B	C	D	E	F	I	J	K	L	M	N	O	Nx	Ny	Q	R	S	U	W	X	Y	Z	AA	AD	AE	AF	AG	AL	AX	PORT WITH LINE TYPE	O-RING HOLE (GIG TYPE)
CLKA-22	78.5	49	40	36	48	23	10	20	31.4	66	11	12.5	6	23.5	8	7.5	4.5	15.5	10	30	20	11	19	14.5	5	5	37	19.6	17	19	2-PT1/8	P5
CLKA-25	87.5	54	45	40	54	29	12	22.5	34	72	11	14	8	26	9	9	5.5	15	12	30.5	22	13	21	16	6	6	40	20.2	17.5	20.5	2-PT1/8	P5
CLKA-32	99	61	51	48	60	32	12	25.5	40	81	12	16	8	30	11	9	5.5	16	14	34.5	26	13	24	18.5	6	6	47	18.9	21.5	23.5	2-PT1/8	P5
CLKA-40	110.5	69	60	55	65	37	16	30	47	88	12	20	12	33.5	12	11	6.8	13.5	16	35.5	30	16	28	21	6	8	55	19.3	25	29	2-PT1/8	P5
CLKA-50	127.5	81	70	65	73.5	43.5	19	35	55	106	13	25	17	39.5	15	11	6.8	16	20	39	35.5	19	37	24.5	8	10	61.5	20	26.5	32	2-PT1/4	P7
CLKA-63	151	94.5	85	75	84	47	22	42.5	63	116	16	32	24	45	16	14	9	17.5	22	48	43.5	25	40	30	10	12	72.5	21.4	30	37.5	2-PT1/4	P7
CLKA-70	180	109.5	100	90	101	61	25	50	75	136	16	38	30	52.5	18.5	17.5	11	17	28	52.5	52.5	28	49	36	12	15	82.5	22.4	32.5	41.5	2-PT3/8	P7
CLKA-80	209	127	120	105	115	65	32	60	88	152	19	45	37	60	22.5	20	14	23	35.5	64	64	32	64	44	15	18	100	23.1	40	51	2-PT3/8	P7

**CHLC-HYDRAULIC LEVERAGE CLAMP** **CHLC-GRAPA HIDRÁULICO DEL TIPO PALANCA**



(A) CLAMPING PORT (B) UNCLAMPING PORT

**FEATURES**

The clamp structure of this model is based on the lever principle: it will be tightened as piston pushing out. The clamping force is stronger than the swing clamp. The parts are installed outside the cylinder barrel for maintaining easily. The cylinder barrel and clamp structure are made of carbon steel. It is firm, durable and long-lived to use. The material of the piston is 45 steel, heat treatment, chrome plated.

**CARACTERÍSTICAS**

La estructura de la garra de este modelo se basa en el principio de palanca: se aprieta como pistón de empuje hacia afuera. La fuerza de sujeción es más fuerte que la garra giratoria. Las partes están instaladas fuera del cuerpo cilíndrico para mantenimiento fácil. La parte del cilindro y la estructura de la garra están hechas de acero al carbono. Es firme, duradero y de larga vida útil. El material del pistón es de 45 de acero, tratamiento térmico, cromado.

Max: operating pressure 50 bar  
Min: operating pressure 10 bar  
Double acting

Presión máx. de funcionamiento: 50 bares  
Presión mín. de funcionamiento: 10 bares  
Doble efecto

**NOTE**

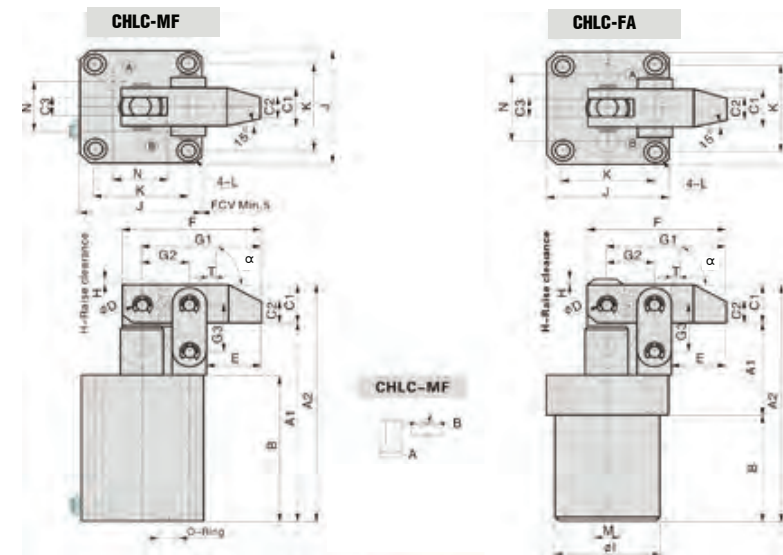
When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTA**

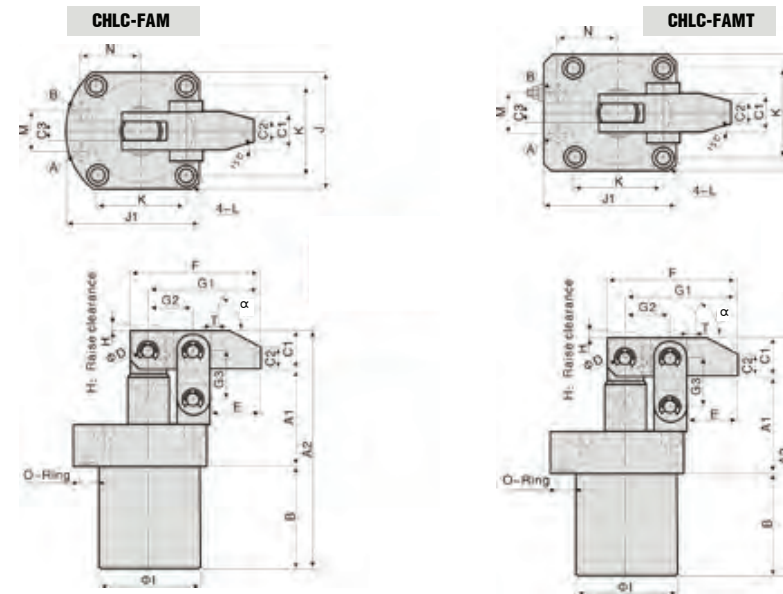
Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

<b>CHLC</b>	Series	CHLC
		Blank: Line type
		M: Manifold type
<b>MF</b>	Type	MF: Manifold with flow control
		FA: Flange type
		FAM: Flange with manifold
		FAMT: Flange with flow control
<b>25</b>	Hydraulic cylinder inside diameter	φ25, φ32, φ40, φ50
<b>A</b>	A integrated	φ63



(A) CLAMPING PORT (B) UNCLAMPING PORT



(A) CLAMPING PORT (B) UNCLAMPING PORT

MODEL	CLAMPING FORCE AT 50 bar (KN)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm <sup>3</sup> )	OIL CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
CHLC-25	1.67	22	25	12.28	5.93	4.91	2.37	-10~+70°C
CHLC-32	2.73	22	25	20.10	12.25	8.04	4.9	-10~+70°C
CHLC-40	4.16	26	30	37.68	25.86	12.56	8.62	-10~+70°C
CHLC-50	6.49	30	34	66.74	45.80	19.63	13.47	-10~+70°C
CHLC-63	9.86	36	40	124.64	85.04	31.16	21.26	-10~+70°C

Unit:mm

MODEL	A1	A2	B	C1	C2	C3	φD	E	F	G1	G2	G3	H	J	K	L	M	N1	N2	N3	N4	O-Ring	α	T
CHLC-25	103	122	76	□19	11	9	φ8	25	64	55	22	24	3	55	42	φ6.8-φ10.5*6.5D	PT1/8	-	17	33	-	-	61°	4
CHLC-M25	103	122	76	□19	11	9	φ8	25	64	55	22	24	3	55	42	φ6.8-φ10.5*6.5D	-	18	-	20	P7	-	61°	4
CHLC-32	112	131	85	□19	11	9	φ8	25	64	55	22	24	3	57	44	φ6.8-φ10.5*6.5D	PT1/8	-	19	38	-	-	61°	5
CHLC-M32	112	131	85	□19	11	9	φ8	25	64	55	22	24	3	57	44	φ6.8-φ10.5*6.5D	-	22	-	22	P7	-	61°	5
CHLC-40	122	144	90	□22	13	10	φ10	30	77	66	26	29	4	69	52	φ9-φ14*9D	PT1/4	-	19	40	-	-	61°	5.5
CHLC-M40	122	144	90	□22	13	10	φ10	30	77	66	26	29	4	69	52	φ9-φ14*9D	-	26	-	26	P8	-	61°	5.5
CHLC-50	137	162	100	□25	15	11	φ12	35.5	90	77	30	33	4	75	58	φ9-φ14*9D	PT1/4	-	21.5	45	-	-	61°	7.5
CHLC-M50	137	162	100	□25	15	11	φ12	35.5	90	77	30	33	4	75	58	φ9-φ14*9D	-	32	-	29	P8	-	61°	7.5
CHLC-63	155	187	111	□32	19	15	φ15	43	110	94	36	39	4	96	75	φ11-φ18*11D	PT1/4	-	22	52	-	-	66°	2
CHLC-M63	155	187	111	□32	19	15	φ15	43	110	94	36	39	4	96	75	φ11-φ18*11D	-	38	-	38	P9	-	66°	2

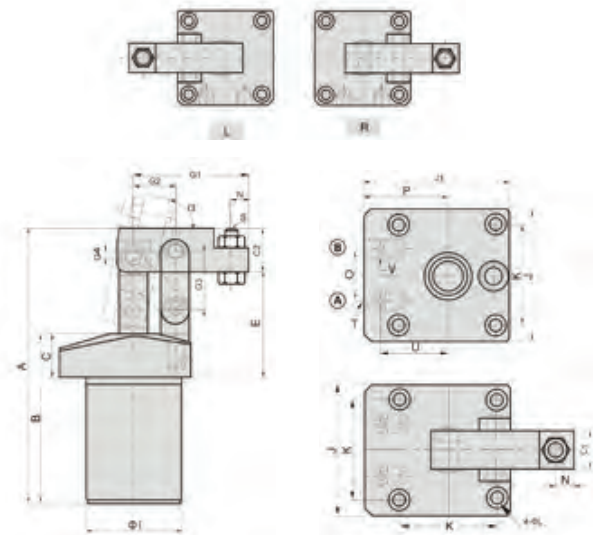
MODEL	A1	A2	B	C1	C2	C3	φD	E	F	G1	G2	G3	H	φI	J	J1	K	L	M	N	O-Ring	α	T
CHLC-MF25	112	131	85	□19	11	9	φ8	25	64	55	22	24	3	-	55	-	42	φ6.8-φ10.5*6.5D	-	19	P7	61°	4
CHLC-MF32	115	134	88	□19	11	9	φ8	25	64	55	22	24	3	-	57	-	44	φ6.8-φ10.5*6.5D	-	21	P7	52°	11
CHLC-MF40	130	152	98	□22	13	10	φ10	30	77	66	26	29	4	-	69	-	52	φ9-φ14*9D	-	23	P9	58°	7.5
CHLC-MF50	145	170	108	□25	15	11	φ12	35.5	90	77	30	33	4	-	75	-	58	φ9-φ14*9D	-	28	P9	61°	7.5
CHLC-FA25	49	131	63	□19	11	9	φ8	25	64	55	22	24	3	φ45	55	-	42	φ6.8-φ10.5*6.5D	PT1/4	25	-	61°	4
CHLC-FA32	52	134	63	□19	11	9	φ8	25	64	55	22	24	3	φ50	57	-	44	φ6.8-φ10.5*6.5D	PT1/4	32	-	61°	5
CHLC-FA40	57	152	73	□22	13	10	φ10	30	77	66	26	29	4	φ58	69	-	52	φ9-φ14*9D	PT1/4	40	-	61°	5.5
CHLC-FA50	67	170	78	□25	15	11	φ12	35.5	90	77	30	33	4	φ68	75	-	58	φ9-φ14*9D	PT1/4	50	-	61°	7.5
CHLC-FAM25	49	122	54	□19	11	9	φ8	25	64	55	22	24	3	φ45	55	64	42	φ6.8-φ10.5*6.5D	20	28	P6	61°	4
CHLC-FAM32	52	131	60	□19	11	9	φ8	25	64	55	22	24	3	φ50	57	65.5	44	φ6.8-φ10.5*6.5D	22	29	P6	61°	5
CHLC-FAM40	57	144	65	□22	13	10	φ10	30	77	66	26	29	4	φ58	69	79	52	φ9-φ13.5*9D	25	34.5	P9	61°	5.5
CHLC-FAM50	67	162	70	□25	15	11	φ12	35.5	90	77	30	33	4	φ68	75	87	58	φ9-φ13.5*9D	30	39	P9	61°	7.5
CHLC-FAMT25	49	122	54	□19	11	9	φ8	25	64	55	22	24	3	φ45	55	64	42	φ6.8-φ10.5*6.5D	20	28	P6	61°	4
CHLC-FAMT32	52	131	60	□19	11	9	φ8	25	64	55	22	24	3	φ50	57	65.5	44	φ6.8-φ10.5*6.5D	22	29	P6	61°	5
CHLC-FAMT40	57	144	65	□22	13	10	φ10	30	77	66	26	29	4	φ58	69	79	52	φ9-φ13.5*9D	25	34.5	P9	61°	5.5
CHLC-FAMT50	67	162	70	□25	15	11	φ12	35.5	90	77	30	33	4	φ68	75	87	58	φ9-φ13.5*9D	30	39	P9	61°	7.5

Unit:mm

LEVERAGE CLAMP



**LHC01-HYDRAULIC LEVERAGE CLAMP** **LHC01-GRAPA HIDRÁULICO DEL TIPO PALANCA**



(A) CLAMPING PORT (B) UNCLAMPING PORT

**CHS-HYDRAULIC SWING CLAMP** **CHS-GARRA GIRATORIA DE SISTEMA HIDRÁULICO**



**FEATURES**

Use high-quality seal to avoid leakage and keep long operation.  
Lever principle design is applied on this hydraulic clamp. Clamping work piece easily and improve efficiency.  
The material of the cylinder body and the piston is 45 steel, heat treatment,chrome plated.

**CARACTERÍSTICAS**

Use sello de alta calidad para evitar fugas y mantener un largo funcionamiento.  
Se aplica un diseño de palanca sobre la grapa hidráulica. Facilidad al sujetar la pieza de trabajo y eficiencia mejorada.  
El material del cuerpo del cilindro y el pistón es 45 acero, tratamiento térmico, cromado.

Max:operating pressure 50 bar  
Min: operating pressure 20 bar  
Double acting

Presión máx. de funcionamiento: 50 bares  
Presión mín. de funcionamiento: 20 bares  
Doble efecto

**NOTE**

Please don't exceed 1.5 times of the original length, if you need to increase the length of the clamping arm The practical clamping force is 60%-70% of theoretical clamping force.High temperature oil seals are available on request.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.La fuerza de sujeción práctica es 60% -70% de la fuerza de sujeción teórica.Los sellos de aceite de alta temperatura están disponibles bajo pedido.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

LHC01 - D 40 R A

<b>LHC01</b>	Series	LHC01
<b>D</b>	Acting type	D: Double acting
<b>40</b>	Hydraulic cylinder insider diameter	φ25,φ32,φ40,φ50,φ63
<b>R</b>	Lever arm direction	R, L, Blank
<b>A</b>	Cylinder body molding	

MODEL	CLAMPING FORCE AT 50 bar (KN)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm <sup>3</sup> )	OIL CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
LHC01D-25	1.92	22	24	11.78	8.09	4.91	3.37	-10~+60° C
LHC01D-32	2.94	28	31	24.92	18.69	8.04	6.03	-10~+60° C
LHC01D-40	4.71	30	33	41.45	34.82	12.56	10.55	-10~+60° C
LHC01D-50	7.49	30	33	64.78	54.42	19.63	16.49	-10~+60° C
LHC01D-63	11.87	30	33	102.83	92.47	31.16	28.02	-10~+60° C

Unit:mm

MODEL	A	B	C	E	C2	G1	I	J1	J	K	G1	G2	N	O	P	L	S	T	U	V	α	G4	G3
LHC01D-25	128.5	86.5	25	50	17	16	M40*1.5	60	50	37	48	18	7	23	35	φ 5.5-φ9*5.5D	M6*1.0	PT1/8	26	P7	75°	4.5	26
LHC01D-32	149	97	25	57	20	18	M50*1.5	70	60	45	60	22	8	23	40	φ 6.5-φ11*6.5D	M8*1.25	PT1/8	30.5	P7	75°	5	33
LHC01D-40	157	97	25	60	25	20	M55*1.5	75	65	50	66	24	10	26	42.5	φ 6.5-φ11*6.5D	M8*1.25	PT1/8	33	P7	75°	4	33
LHC01D-50	174	104	25	65	30	22	M65*1.5	88	75	58	77.5	27.5	14	32	50.5	φ 8.5-φ14*8.5D	M12*1.75	PT1/8	38	P7	65°	10	44
LHC01D-63	179	105	25	69	30	22	M80*1.5	108	90	70	88	32	14	35	63	φ 8.5-φ14*8.5D	M12*1.75	PT1/8	48	P7	60°	10	48

**FEATURES**

The product is ideal for mass production on a special purpose machine and jig in machining center. It will greatly upgrade the production efficiency.  
When the hydraulic clamp actuate, and the piston moves downward, the clamping arm will swing to a rated angle. Then it lowers until the workpiece is clamped securely.  
To avoid too fast motion, a flow control valve is suggested to connect to the hydraulic swing clamp cylinder. Do not clamp workpiece while the clamp is swinging to avoid damaging the cylinder barrel and internal parts.  
The cylinder body is manufactured from structural carbon steel.Inside surface is specially treated for maximum smoothness and long service life.

**CARACTERÍSTICAS**

El producto es ideal para la producción en masa en una máquina de propósito especial y plantilla en el centro mecanizado. Se actualizará en gran medida la eficiencia de la producción.  
Cuando la grapa hidráulica se acciona y el pistón se mueve hacia abajo, el brazo de sujeción se moverá a un ángulo nominal. Luego se reduce hasta que la pieza se sujeta con seguridad.  
Para evitar un movimiento demasiado rápido, se sugiere una válvula de control de flujo para conectar a la grapa giratoria de sistema hidráulico.No sujetar la pieza de trabajo mientras la grapa se balancea para no dañar el cuerpo cilíndrico y las partes internas.  
La parte del cilindro está fabricado en acero al carbono estructural, la superficie interna está tratada de forma especial para máxima suavidad y larga vida útil.

Max:operating pressure 70 bar  
Min: operating pressure 10 bar  
Double acting

Presión máx. de funcionamiento: 70 bares  
Presión mín. de funcionamiento: 10 bares  
Doble efecto

**NOTE**

When you need to increase the length of the clamping arm, please don't exceed 1.5 times of the original length.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

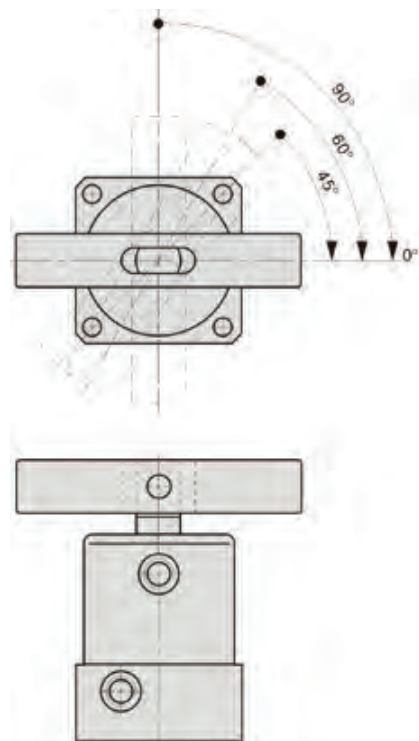
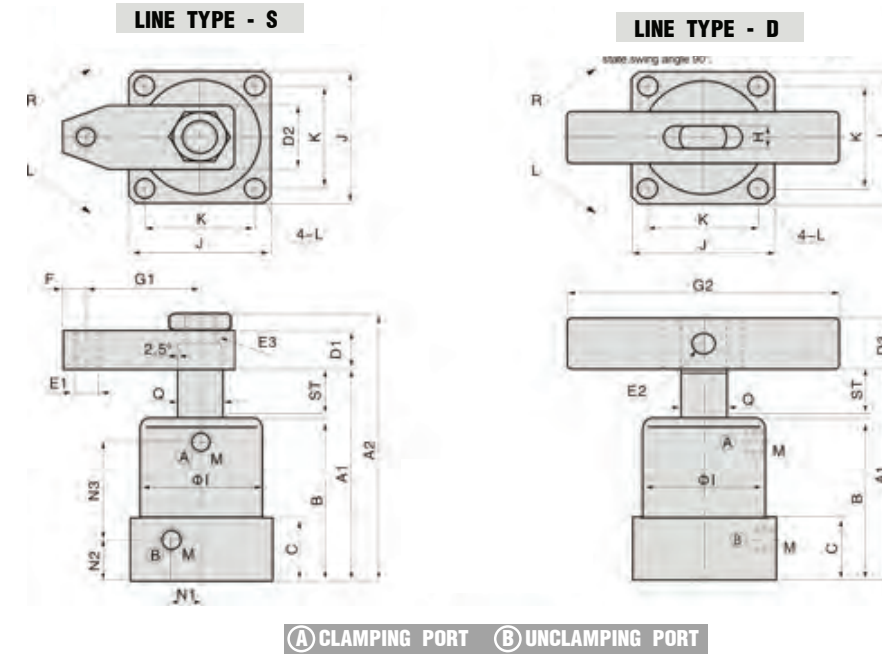
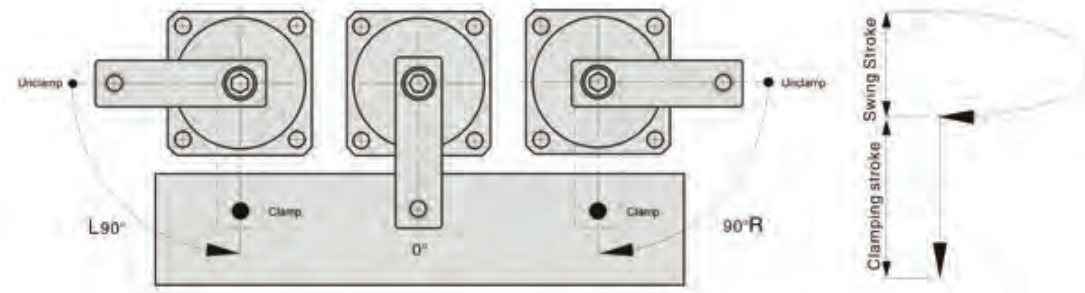
**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CHS - MF 25 S R x 90 E

<b>CHS</b>	Series	CHS
<b>MF</b>	Type	Blank: Line type MF: Manifold with flow control M: Manifold type FA: Flange type TB: Threaded body FAM: Flange with manifold FAMT: Flange with flow control
	Hydraulic cylinder inside diameter	φ25,φ32,φ40,φ50,φ63,
	Clamping arm type	S: Single side arm D: Double side arm
	Rotating direction	R: Turn right L: Turn left N:0 No swing
<b>90</b>	Rotating angle	90° ,45° ,60°
	E	Stroke extension -line type

MODEL	CLAMPING FORCE AT 70 bar (KN)	SWING STROKE (mm)	EXTENDED CLAMPING STROKE (mm)	STANDARD TOTAL STROKE(mm)	EXTENDED TOTAL STROKE(mm)	OIL STANDARD CAPACITY CLAMP(cm <sup>3</sup> )	OIL STANDARD CAPACITY UNCLAMP(cm <sup>3</sup> )	OIL EXTENDED CAPACITY CLAMP(cm <sup>3</sup> )	OIL STANDARD CAPACITY UNCLAMP(cm <sup>3</sup> )	OIL EXTENDED CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE (°C)
CHS-25	1.69	9	13	-	22	-	5.21	-	10.80	-	2.37	4.91	-10~+60° C
CHS-32	3.50	11	15	30	26	41	12.74	20.09	20.90	32.96	4.9	8.04	-10~+60° C
CHS-40	6.15	11	15	30	26	41	22.41	35.34	32.66	51.50	8.62	12.56	-10~+60° C
CHS-50	9.62	13	17	34	30	47	40.41	63.31	58.89	92.26	13.47	19.63	-10~+60° C
CHS-63	15.18	13	17	34	30	47	63.78	99.92	93.48	146.45	21.26	31.16	-10~+60° C

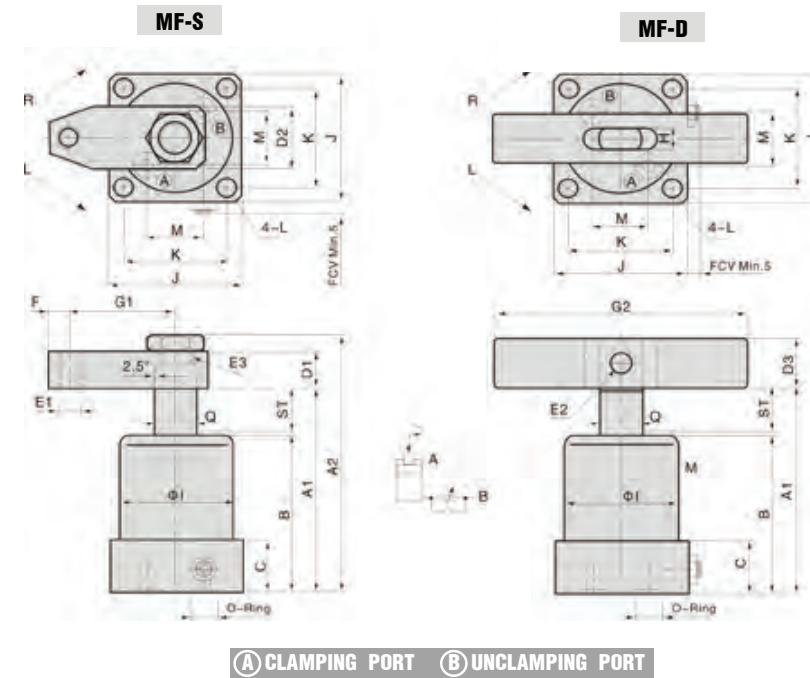
\* The following drawing of Line type-D&MF-D ,double side swing clamp,all show unclamping state, swing angle 90° .



CLAMPING ARM MOUNTING METHODS



CLAMPING ARM REMOVING METHODS



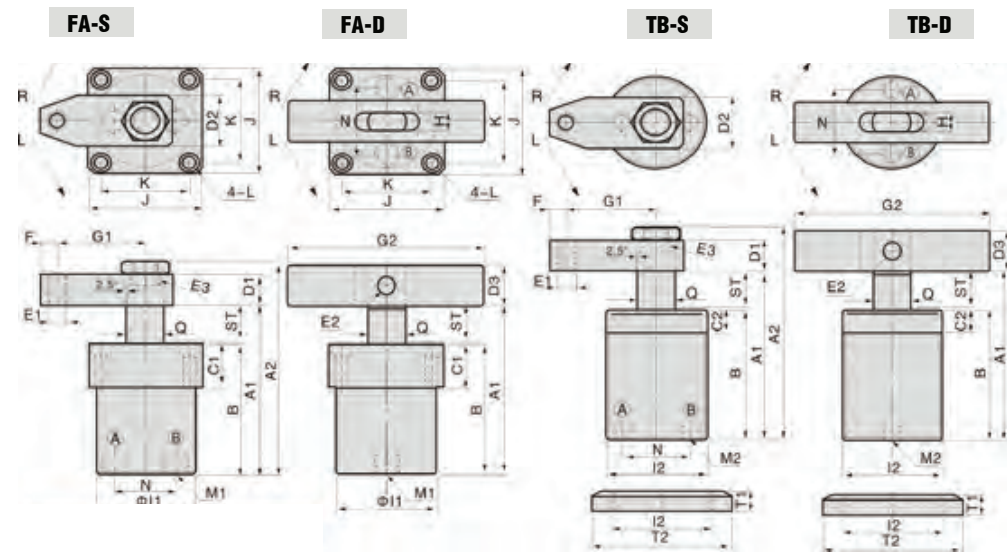
SWING CLAMP

Unit:mm

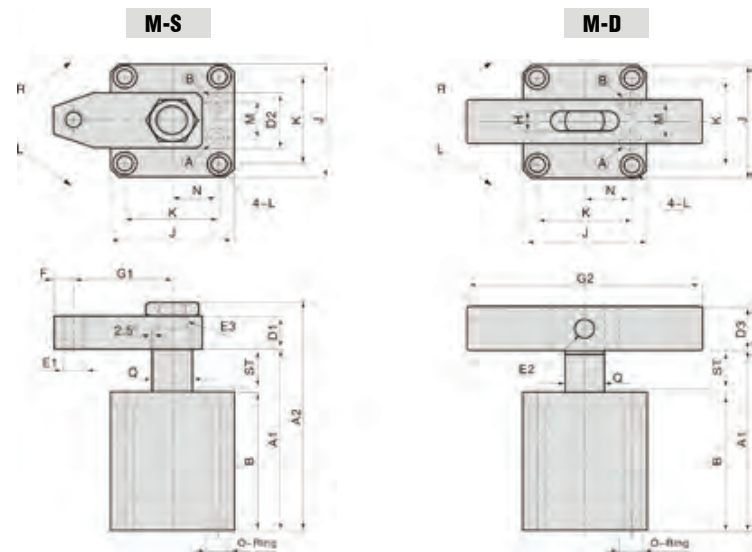
MODEL	ST: SWING/CLAMPING	A1 UNCLAMP	A2 UNCLAMP	B	C	D1	D2	D3	E1	E2	E3	F	G1	G2	H	I	J	K	L	M	N1	N2	N3	O-RING	Q
CHS-25	22:9/13	104	127	76	27	16	27	□19	M10	φ8	M14×1.5	10	50	140	9	φ46	52	40	φ6.8	PT1/8	8	17	46	-	φ18
CHS-32	26:11/15	118	144	85	30	18	31	□22	M10	φ8	M16×1.5	10	55	160	10	φ50	56	44	φ6.8	PT1/8	10	19	52	-	φ20
CHS-40	26:11/15	123	150	90	30	18	31	□22	M10	φ10	M18×1.5	10	60	160	10	φ54	63	48	φ9	PT1/8	12	19	57	-	φ22.4
CHS-50	30:13/17	137	167	100	34	20	37	□25	M12	φ12	M20×1.5	12	65	180	12	φ66	72	57	φ9	PT1/4	15	21.5	63.5	-	φ28
CHS-63	30:13/17	142	177	105	34	23	48	□32	M16	φ15	M24×2	15	75	200	15	φ80	88	70	φ11	PT1/4	17	22	68	-	φ35.5
CHS-MF25	22:9/13	104	127	76	22	16	27	□19	M10	φ8	M14×1.5	10	50	140	9	φ46	55	42	φ6.8	19	-	-	-	P7	φ18
CHS-MF32	26:11/15	118	144	85	25	18	31	□22	M10	φ8	M16×1.5	10	55	160	10	φ50	57	44	φ6.8	21	-	-	-	P7	φ20
CHS-MF40	26:11/15	123	150	90	25	18	31	□22	M10	φ10	M18×1.5	10	60	160	10	φ54	63	48	φ9	23	-	-	-	P9	φ22.4
CHS-MF50	30:13/17	137	167	100	30	20	37	□25	M12	φ12	M20×1.5	12	65	180	12	φ66	72	57	φ9	28	-	-	-	P9	φ28
CHS-MF63	30:13/17	142	177	105	30	23	48	□32	M16	φ15	M24×2	15	75	200	15	φ80	88	70	φ11	32	-	-	-	P9	φ35.5



\* The following drawing of FA-D&TB-D&M-D, double side swing clamp, all show unclamping state, swing angle 90°.



(A) CLAMPING PORT (B) UNCLAMPING PORT



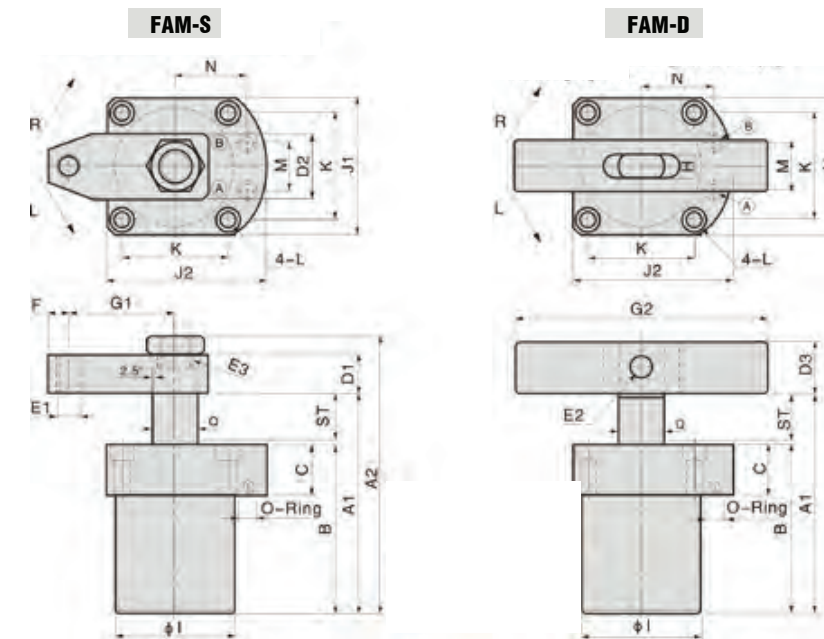
(A) CLAMPING PORT (B) UNCLAMPING PORT

Unit:mm

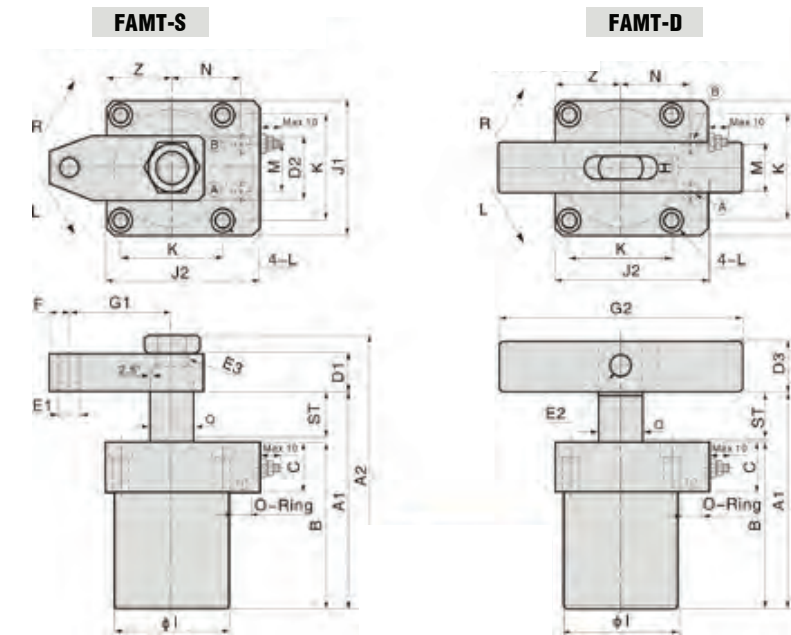
MODEL	ST: SWING/CLAMPING	A1 UNCLAMP	A2 UNCLAMP	B	C1	C2	D1	D2	D3	E1	E2	E3	F	G1	G2	H	I1	I2	J	K	L	M1	M2	N	T1×2PCS	T2	Q
CHS-FA25	22:9/13	104	127	76	22	-	16	27	□19	M10	φ8	M14×1.5	10	50	140	9	φ45	-	53	40	φ6.8-φ10.5×6.5D	PT1/4	-	28	-	-	φ18
CHS-FA32	26:11/15	118	144	85	25	-	18	31	□22	M10	φ8	M16×1.5	10	55	160	10	φ50	-	57	44	φ6.8-φ10.5×6.5D	PT1/4	-	32	-	-	φ20
CHS-FA40	26:11/15	123	150	90	25	-	18	31	□22	M10	φ10	M18×1.5	10	60	160	10	φ58	-	69	52	φ9-φ13.5×9D	PT1/4	-	40	-	-	φ22.4
CHS-FA50	30:13/17	137	167	100	30	-	20	37	□25	M12	φ12	M20×1.5	12	65	180	12	φ68	-	75	58	φ9-φ13.5×9D	PT1/4	-	50	-	-	φ28
CHS-FA63	30:13/17	142	177	105	30	-	23	48	□32	M16	φ15	M24×2	15	75	200	15	φ81	-	90	70	φ11-φ17×11D	PT1/4	-	63	-	-	φ35.5
CHS-TB25	22:9/13	104	127	76	-	12	16	27	□19	M10	φ8	M14×1.5	10	50	140	9	-	M45×1.5	-	-	-	-	PT1/8	28	10	φ65	φ18
CHS-TB32	26:11/15	118	144	85	-	12	18	31	□22	M10	φ8	M16×1.5	10	55	160	10	-	M50×1.5	-	-	-	-	PT1/8	32	11	φ70	φ20
CHS-TB40	26:11/15	123	150	90	-	15	18	31	□22	M10	φ10	M18×1.5	10	60	160	10	-	M55×1.5	-	-	-	-	PT1/8	40	11	φ70	φ22.4
CHS-TB50	30:13/17	137	167	100	-	15	20	37	□25	M12	φ12	M20×1.5	12	65	180	12	-	M65×1.5	-	-	-	-	PT1/8	50	12	φ85	φ28

MODEL	ST: SWING/CLAMPING	A1 UNCLAMP	A2 UNCLAMP	B	D1	D2	D3	E1	E2	E3	F	G1	G2	H	J	K	L	M	N	O-RING	Q
CHS-M25	22:9/13	104	127	76	16	27	□19	M10	φ8	M14 1.5	10	50	140	9	55	42	φ6.8-φ10.5×6.5D	18	20	P7	φ18
CHS-M32	26:11/15	118	144	85	18	31	□22	M10	φ8	M16 1.5	10	55	160	10	57	44	φ6.8-φ10.5×6.5D	22	22	P7	φ20
CHS-M40	26:11/15	123	150	90	18	31	□22	M10	φ10	M18 1.5	10	60	160	10	69	52	φ9-φ13.5×9D	26	26	P8	φ22.4
CHS-M50	30:13/17	137	167	100	20	37	□25	M12	φ12	M20 1.5	12	65	180	12	75	58	φ9-φ13.5×9D	32	30	P8	φ28

\* The following drawing of FAM-D & FAMT-D, double side swing clamp, all show unclamping state, swing angle 90°.



(A) CLAMPING PORT (B) UNCLAMPING PORT



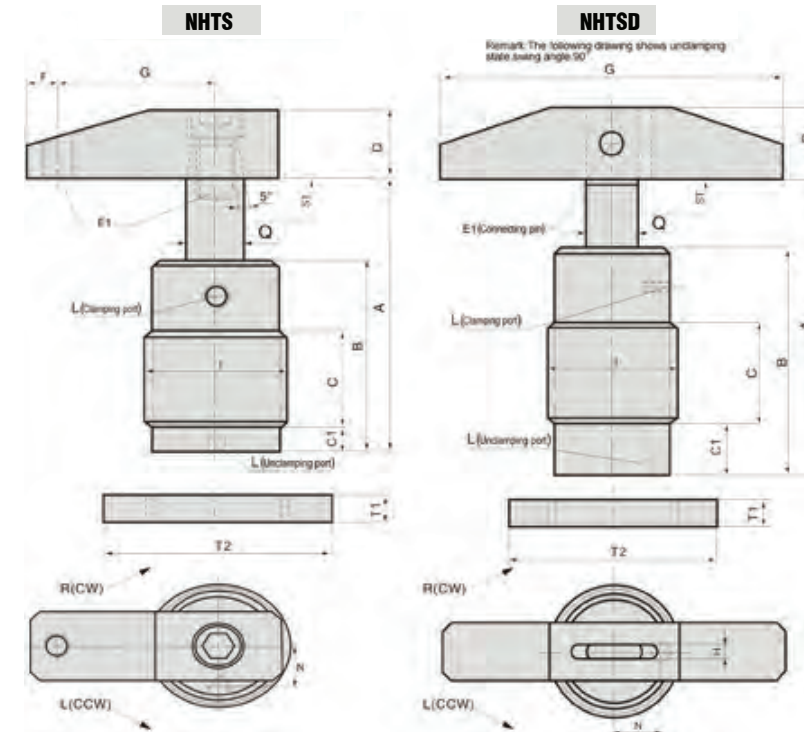
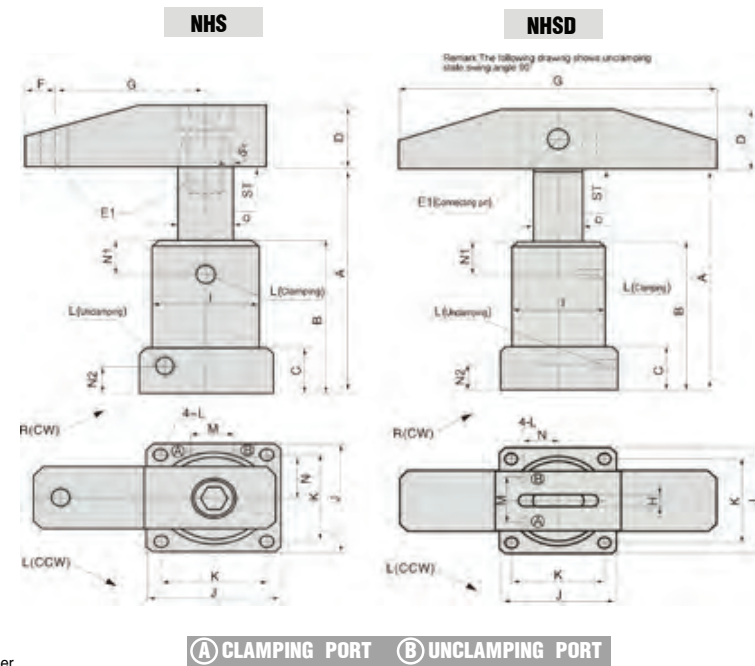
(A) CLAMPING PORT (B) UNCLAMPING PORT

Unit:mm

MODEL	ST: SWING/CLAMPING	A1 UNCLAMP	A2 UNCLAMP	B	C	D1	D2	D3	E1	E2	E3	F	G1	G2	H	I	J1	J2	K	L	M	N	O-RING	Q	Z
CHS-FAM25	22:9/13	104	127	76	22	16	27	□19	M10	φ8	M14×1.5	10	50	140	9	φ45	55	64	42	φ6.8-φ10.5×6.5D	20	28	P6	φ18	
CHS-FAM32	26:11/15	118	144	85	25	18	31	□22	M10	φ8	M16×1.5	10	55	160	10	φ50	57	65.5	44	φ6.8-φ10.5×6.5D	22	29	P6	φ20	
CHS-FAM40	26:11/15	123	150	90	25	18	31	□22	M10	φ10	M18×1.5	10	60	160	10	φ58	69	79	52	φ9-φ13.5×9D	26	34.5	P9	φ22.4	
CHS-FAM50	30:13/17	137	167	100	30	20	37	□25	M12	φ12	M20×1.5	12	65	180	12	φ68	75	87	58	φ9-φ13.5×9D	30	39	P9	φ28	
CHS-FAMT25	22:9/13	104	127	76	22	16	27	□19	M10	φ8	M14×1.5	10	50	140	9	φ45	55	64	42	φ6.8-φ10.5×6.5D	20	28	P6	φ18	27.5
CHS-FAMT32	26:11/15	118	144	85	25	18	31	□22	M10	φ8	M16×1.5	10	55	160	10	φ50	57	65.5	44	φ6.8-φ10.5×6.5D	22	29	P6	φ20	28.5
CHS-FAMT40	26:11/15	123	150	90	25	18	31	□22	M10	φ10	M18×1.5	10	60	160	10	φ58	69	77	52	φ9-φ13.5×9D	26	34.5	P6	φ22.4	34.5
CHS-FAMT50	30:13/17	137	167	100	30	20	37	□25	M12	φ12	M20×1.5	12	65	180	12	φ68	75	87	58	φ9-φ13.5×9D	30	39	P9	φ28	37.5

SWING CLAMP

**NHS & NHTS-HYDRAULIC SWING CLAMP**  
**NHS & NHTS-GARRA GIRATORIA DE SISTEMA HIDRÁULICO**



**FEATURES**

The hydraulic swing clamping cylinder is used to be the situation that is need to a larger clamping force, and be applied in batch quantity produce, the automation degree is high. The cylinder are made of carbon steel 45.

**CARACTERÍSTICAS**

El cilindro de la garra giratoria de sistema hidráulico se utiliza en situaciones que se necesite una fuerza de sujeción más grande, y se aplicará en lotes la cantidad de productos, el grado de automatización es alto. El cilindro está hecho de acero al carbono 45.

Max: operating pressure 45 bar  
 Min: operating pressure 20 bar  
 Double acting

Presión máx. de funcionamiento: 45 bares  
 Presión mín. de funcionamiento: 20 bares  
 Doble efecto

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

NHS - L 40x90 - G

<b>NHS</b>	Series	NHS, NHSD, NHTS, NHTSD
<b>L</b>	Rotating direction	Turn right R or turn left L
<b>40</b>	Hydraulic cylinder inside diameter	φ 25, φ 32, φ 40, φ 50, φ 63
<b>90</b>	Rotating angle	Standard angle 90 Order angle 0°, 45° (± 2°) 60° ± 2°
<b>G</b>	Piping method	Blank: line type G: manifold type

MODEL	CLAMPING FORCE AT 45 bar (KN)	SWING STROKE(mm)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm³)	OIL CAPACITY UNCLAMP(cm³)	EFF.PISTON AREA CLAMP(cm²)	EFF.PISTON AREA UNCLAMP(cm²)	RANGE OF TEMPERATURE(°C)
NHS-25	1.08	12	14	26	6.16	12.77	2.37	4.91	-10~+60°C
NHSD-25	1.08	12	14	26	6.16	12.77	2.37	4.91	-10~+60°C
NHTS-25	1.08	12	14	26	6.16	12.77	2.37	4.91	-10~+60°C
NHTSD-25	1.08	12	14	26	6.16	12.77	2.37	4.91	-10~+60°C
NHS-32	2.25	14	15	29	14.21	23.32	4.9	8.04	-10~+60°C
NHSD-32	2.25	14	15	29	14.21	23.32	4.9	8.04	-10~+60°C
NHTS-32	2.25	14	15	29	14.21	23.32	4.9	8.04	-10~+60°C
NHTSD-32	2.25	14	15	29	14.21	23.32	4.9	8.04	-10~+60°C
NHS-40	4.32	14	15	29	27.32	36.42	9.42	12.56	-10~+60°C
NHSD-40	4.32	14	15	29	27.32	36.42	9.42	12.56	-10~+60°C
NHTS-40	4.32	14	15	29	27.32	36.42	9.42	12.56	-10~+60°C
NHTSD-40	4.32	14	15	29	27.32	36.42	9.42	12.56	-10~+60°C
NHS-50	6.76	14	15	29	42.72	56.93	14.73	19.63	-10~+60°C
NHSD-50	6.76	14	15	29	42.72	56.93	14.73	19.63	-10~+60°C
NHTS-50	6.76	14	15	29	42.72	56.93	14.73	19.63	-10~+60°C
NHTSD-50	6.76	14	15	29	42.72	56.93	14.73	19.63	-10~+60°C
NHS-63	12.05	14	15	29	76.15	90.36	26.26	31.16	-10~+60°C
NHSD-63	12.05	14	15	29	76.15	90.36	26.26	31.16	-10~+60°C

Unit:mm

MODEL	ST	A	B	C	D	G	F	H	N1	L	E1	N2	K	J	Q	L	I	M	N
NHS-25	26	100	70	23	25x25	50	10	-	16.5	PT1/8	M10*1.5	15	40	50	φ18	φ6.5	φ45	18	15
NHS-32	29	111	76	25	25x25	55	10	-	16.5	PT1/8	M10*1.5	15.5	44	55	φ20	φ6.5	φ50	24	17
NHS-40	29	113.6	80	27	25x25	55	10	-	10	PT1/8	M10*1.5	18	48	62	φ20	φ8.5	φ54	26	20
NHS-50	29	114.5	80	27	30x30	55	10	-	11.5	PT1/8	M10*1.5	18	57	74	φ25	φ8.5	φ65	30	25
NHS-63	29	118	85	32	32x32	75	11	-	13	PT1/8	M12*1.75	22.5	70	88	φ25	φ10.5	φ80	40	30
NHSD-25	26	100	70	23	19x19	100	-	9	16.5	PT1/8	φ8	15	40	50	φ18	φ6.5	φ45	18	15
NHSD-32	29	111	76	25	22x22	120	-	10	16.5	PT1/8	φ8	15.5	44	55	φ20	φ6.5	φ50	24	17
NHSD-40	29	113.6	80	27	22x22	120	-	10	10	PT1/8	φ8	18	48	62	φ20	φ8.5	φ54	26	20
NHSD-50	29	114.5	80	27	22x22	120	-	10	11.5	PT1/8	φ8	18	57	74	φ25	φ8.5	φ65	30	25
NHSD-63	29	118	85	32	25x25	140	-	12	13	PT1/8	φ10	22.5	70	88	φ25	φ10.5	φ80	40	30

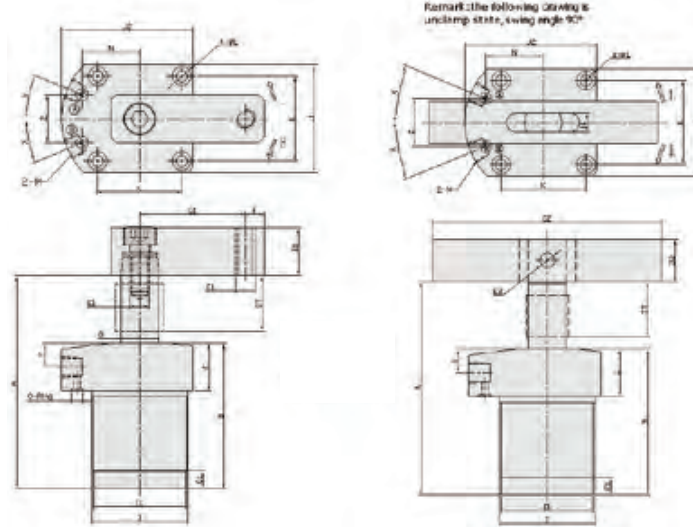
MODEL	ST	A	B	C	D	N	G	F	C1	H	L	E1	I	T2	Q	T1
NHTS-25	26	100	70	35	25x25	12.5	50	10	9	-	PT1/8	M10*1.5	M45*1.5	φ65	φ18	10
NHTS-32	29	111	76	40	25x25	12.5	55	10	10	-	PT1/8	M10*1.5	M50*1.5	φ70	φ20	11
NHTS-40	29	113.6	80	45	25x25	15	55	10	11	-	PT1/8	M10*1.5	M55*1.5	φ75	φ20	11
NHTS-50	29	114.5	80	45	30x30	16.5	55	10	11	-	PT1/8	M10*1.5	M65*1.5	φ85	φ25	12
NHTSD-25	26	100	70	35	19x19	12.5	100	-	9	9	PT1/8	φ8	M45*1.5	φ65	φ18	10
NHTSD-32	29	111	76	40	22x22	12.5	120	-	10	10	PT1/8	φ8	M50*1.5	φ70	φ20	11
NHTSD-40	29	113.6	80	45	22x22	15	120	-	11	10	PT1/8	φ8	M55*1.5	φ75	φ20	11
NHTSD-50	29	114.5	80	45	22x22	16.5	120	-	11	10	PT1/8	φ8	M65*1.5	φ85	φ25	12

SWING CLAMP

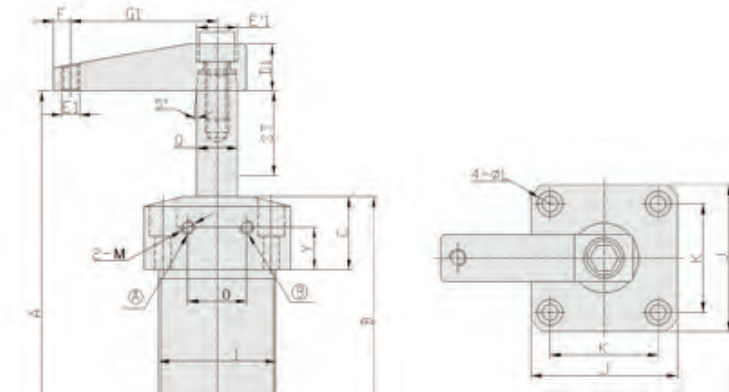


**NHU-HYDRAULIC SWING CLAMP** **NHU-GARRA GIRATORIA DE SISTEMA HIDRÁULICO**

**NHSU-HYDRAULIC SWING CLAMP** **NHSU-GARRA GIRATORIA DE SISTEMA HIDRÁULICO**



(A) CLAMPING PORT (B) UNCLAMPING PORT



(A) CLAMPING PORT (B) UNCLAMPING PORT

**FEATURES**

The standard rotating angle is 90° and the optional rotating angles are including 0°, 45° and 60°. The total stroke is equal to the sum of the swing stroke and the clamping stroke, and is usually used within the clamping stroke. The type of clamping are including single side swing clamping and double side swing clamping. The material of the cylinder body is medium carbon steel.

**CARACTERÍSTICAS**

El ángulo de rotación estándar es de 90° y los ángulos de rotación opcionales están incluyendo 0°, 45° y 60°. La carrera total es igual a la suma de la carrera de giro y la carrera de sujeción, y se utiliza por lo general dentro de la carrera de sujeción. El tipo de sujeción está incluyendo garra giratoria de un solo lado y garra giratoria de doble lado. El material del cuerpo de cilindro es de acero de carbono medio.

Max: operating pressure 45 bar  
Min: operating pressure 20 bar  
Double acting

Presión máx. de funcionamiento: 45 bares  
Presión mín. de funcionamiento: 20 bares  
Doble efecto

**NOTE**

Please don't exceed 1.5 times of the original length, if you need to increase the length of the clamping arm.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

NHU - L 40 × 90

<b>NHU</b>	Series	NHU
<b>L</b>	Rotating direction	Turn right R or turn left L
<b>40</b>	Hydraulic cylinder	φ32, φ40, φ50, φ63
	Inside diameter	
<b>90</b>	Rotating angle	Standard angle 90° (±2°) Order angle 0°, 45° (±2°), 60° (±2°)

MODEL	CLAMPING FORCE AT 45 bar (kN)	SWING STROKE(mm)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm <sup>3</sup> )	OIL CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
NHU-32	2.25	14	15	29	14.70	24.12	4.9	8.04	-10~+60°C
NHU-40	4.32	14	15	29	28.26	37.68	9.42	12.56	-10~+60°C
NHU-50	6.76	14	15	29	47.14	62.82	14.73	19.63	-10~+60°C
NHU-63	12.05	14	15	29	78.78	93.48	26.26	31.16	-10~+60°C

Unit:mm

MODEL	ST: SWING/CLAMPING	A UNCLAMP	B	C	C1	D1	D2	E1	E2	F	G1	G2	H	I	I1	J1	J2	K	L	M	N	Z	X	Y	O-RING	Q
NHU-32	29:14/15	111	76	25	9	φ25	□22	M10	φ8	10	55	120	10	M50*1.5	φ48	56	69	44	φ6.5-φ10.5*6.5D	PT1/8	30	24.9	22.5°	12.5	P5	φ20
NHU-40	29:14/15	113.6	80	27	9	φ25	□22	M10	φ8	10	55	120	10	M55*1.5	φ53	62	71.5	48	φ6.5-φ10.5*6.5D	PT1/8	31.4	26	22.5°	14	P5	φ20
NHU-50	29:14/15	114.5	80	27	9	φ32	□22	M12	φ8	11	75	120	10	M65*1.5	φ63	74	87	57	φ8.5-φ14*9D	PT1/8	37.6	27.4	20°	14	P7	φ25
NHU-63	29:14/15	118	85	32	9	φ32	□25	M12	φ10	11	75	140	12	M80*1.5	φ77	88	105.5	70	φ11-φ16.5*11D	PT1/8	46	38	22.5°	19	P7	φ25

**FEATURES**

For recessed installation in the fixture. Oil goes into and goes out from the flange hole. The material of the cylinder body is 45#Steel. Surface is treated with hard coat for wear resistance. The four screw holes on the flange are used for installation.

**CARACTERÍSTICAS**

Para instalación empotrada en el aparato. Entrada y salida del aceite del orificio de la brida. El material del cuerpo del cilindro es de 45 # de acero. La superficie es tratada con recubrimiento duro para resistencia al desgaste. Los cuatro orificios para tornillos de la brida se utilizan para la instalación.

Max: operating pressure 45 bar  
Min: operating pressure 20 bar  
Double acting

Presión máx. de funcionamiento: 45 bares  
Presión mín. de funcionamiento: 20 bares  
Doble efecto

**NOTE**

Please don't exceed 1.5 times of the original length, if you need to increase the length of the clamping arm.

**NOTA**

Cuando usted necesite incrementar la longitud del brazo de sujeción, por favor, no exceda de 1.5 veces de la longitud original.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

NHSU - L 40 × 90

<b>NHSU</b>	Series	NHSU
<b>L</b>	Rotating direction	Turn right R or turn left L
<b>40</b>	Hydraulic cylinder	φ25, φ32, φ40, φ50, φ63
	Inside diameter	
<b>90</b>	Rotating angle	Standard angle 90° (±2°) Order angle 0°, 45° (±2°), 60° (±2°)

SWING CLAMP

MODEL	CLAMPING FORCE AT 45 bar (kN)	SWING STROKE(mm)	CLAMPING STROKE(mm)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm <sup>3</sup> )	OIL CAPACITY UNCLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	EFF.PISTON AREA UNCLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
NHSU-25	1.55	13	14	27	9.10	13.26	3.37	4.91	-10~+60°C
NHSU-32	2.77	16	14	30	18.09	24.12	6.03	8.04	-10~+60°C
NHSU-40	4.84	15	15	30	31.65	37.68	10.55	12.56	-10~+60°C
NHSU-50	7.57	17	15	32	52.77	62.82	16.49	19.63	-10~+60°C
NHSU-63	12.96	15	15	30	84.06	93.48	28.02	31.16	-10~+60°C

Unit:mm

MODEL	ST	A	B	C	D1	E1	F	G1	M	E'1	K	J	I	O	L	Y	Q
NHSU-25	27	118.5	86.5	25	16*16	M6	6	50	M6	M8	37	50	M40*1.5	20	φ5.5-φ9*5.5D	11.5	φ14
NHSU-32	30	133.5	97.5	25	19*19	M8	9	60	PT1/8	M8	45	60	M50*1.5	22	φ6.5-φ10.5*6.5D	13	φ16
NHSU-40	30	133.5	97.5	25	19*19	M8	9	70	PT1/8	M8	50	65	M55*1.5	26	φ6.5-φ10.5*6.5D	13	φ16
NHSU-50	32	141	104	25	25*25	M12	10	80	PT1/8	M10	58	75	M65*1.5	32	φ8.5-φ14*9D	11	φ20
NHSU-63	30	140	105	25	25*25	M12	10	90	PT1/8	M10	70	90	M80*1.5	35	φ8.5-φ14*9D	11	φ20

**CHTB-HYDRAULIC  
PUSH PULL CYLINDER Y TRACCIÓN CILINDRO**



**FEATURES**

Compact construction for space saving. Ideal for application in a restricted space.  
Standardized specifications. Direct installation without need of any further accessories for saving cost.  
The cylinder barrel is manufactured from structural carbon steel. Internal surface is specially treated.  
Smoothness and long service life.  
Axial and side manifold type without upgrading pipe made the cylinder appearance better.

**CARACTERÍSTICAS**

Diseño compacto para ahorrar espacio. Ideal para su aplicación en espacios reducidos.  
Especificaciones estandarizadas. Instalación directa y sin necesidad de accesorios adicionales para ahorrar costos.  
El cuerpo del cilindro se fabrica a partir de acero al carbono estructural. La superficie interna se trata de manera especial. Suavidad y larga vida útil.  
Colector axial y lateral sin tubo de modernización hacen un cilindro mejor.

Max: operating pressure 140 bar  
Min: operating pressure 5 bar

Presión máx. de funcionamiento: 140 bares  
Presión mín. de funcionamiento: 5 bares

**NOTE**  
You are welcome to order the special strokes under request.

**NOTA**  
Usted puede comprar la carrera especial bajo del pedido.



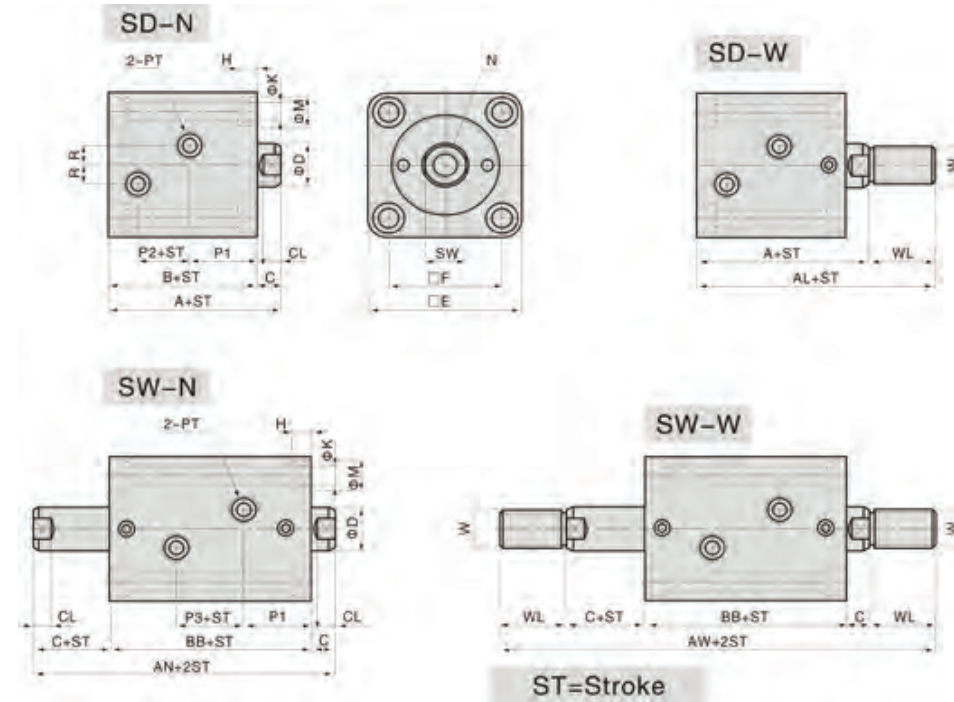
**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CHTB - SD 32 X 20 N

<b>CHTB</b>	Series	CHTB
		SD: Axial single end rod type SW: Axial double end rod type SDMA: Axial front manifold type SDMB: Axial back manifold type LA: Lateral single end rod type LW: Lateral double end rod type LAM: Lateral manifold single end rod type LWM: Lateral manifold double end rod type
<b>SD</b>	Mounting type	
<b>32</b>	Hydraulic cylinder inside diameter	φ20, φ25, φ32, φ40, φ50 φ63, φ80
<b>20</b>	Standard stroke	Please refer to the <stroke specification>
<b>N</b>	Rod end type	N: Female thread N W: Male thread W

CHTM - SD 32 X 20 N - S1

<b>CHTM</b>	Series	CHTM: Magnetic-type
		SD: Single end rod type SW: Double end rod type
<b>SD</b>	Mounting type	
<b>32</b>	Hydraulic cylinder inside diameter	φ32, φ40, φ50, φ63, φ80
<b>20</b>	Standard stroke	10, 20, 30, 40, 50
<b>N</b>	Rod end type	N: Female thread N W: Male thread W
<b>S1</b>	Sensor switch	1Pcs of S1, 2Pcs of S2 Pressure DC 4-24V AC4-120V Electricity 5-40mA



CHTB Hydraulic axial mounting type SD&SW

Unit:mm

BORE	A	AL	AN	AW	B	BB	C	CL	D	SW	E	F	H	K	M	N	W	WL	P1	P2	P3	R	PT
φ20	51	71	-	-	43	-	8	6	12	10	42	30	5.5	5.6	9	M8*1.25*12D	M10*1.25	20	22.5	11	-	5	1/8
φ25	53	75	-	-	45	-	8	6	14	12	48	36	5.5	5.6	9	M10*1.5*15D	M12*1.25	22	23	12	-	5	1/8
φ32	64	89	89	139	54	69	10	7	20	17	62	47	6.5	6.8	11	M12*1.75*15D	M16*1.5	25	28	14	13	10	1/4
φ40	65	95	90	150	55	70	10	7	25	22	70	52	9	9	14	M16*2.0*20D	M22*1.5	30	28	15	14	10	1/4
φ50	71	106	97	167	60	75	11	8	30	27	80	58	11	11	18	M20*2.5*25D	M26*1.5	35	29.5	18	16	10	1/4
φ63	80	120	108	188	67	82	13	10	35	32	94	69	13	13	20	M27*3.0*35D	M30*1.5	40	31	20	20	10	3/8
φ80	95	140	127	217	78	93	17	14	45	41	114	86	15	15	22	M30*3.5*35D	M39*1.5	45	33	27	27	15	3/8

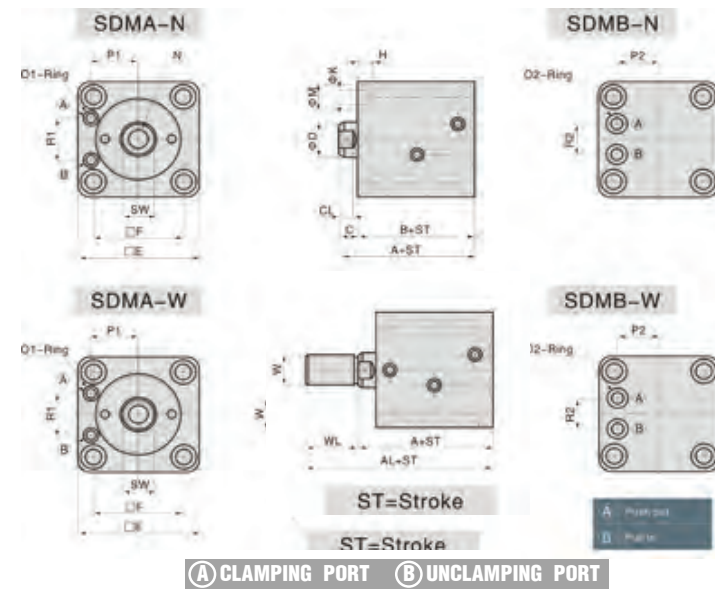
**Specification**

TYPE BORE STROKE	SD SDM								SW LA LW				LAM LWM			
	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ32	φ40	φ50	φ63	φ32	φ40	φ50	φ63	
5	-	-	•	•	•	•	•	-	-	-	-	-	-	-	-	
10	•	•	•	•	•	•	•	•	•	•	•	-	-	-	-	
15	-	-	•	•	•	•	•	-	-	-	-	-	-	-	-	
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
25	-	-	•	•	•	•	•	-	-	-	-	-	-	-	-	
30	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
40	-	-	•	•	•	•	•	•	•	•	•	•	•	•	•	
50	-	-	•	•	•	•	•	•	•	•	•	•	•	•	•	

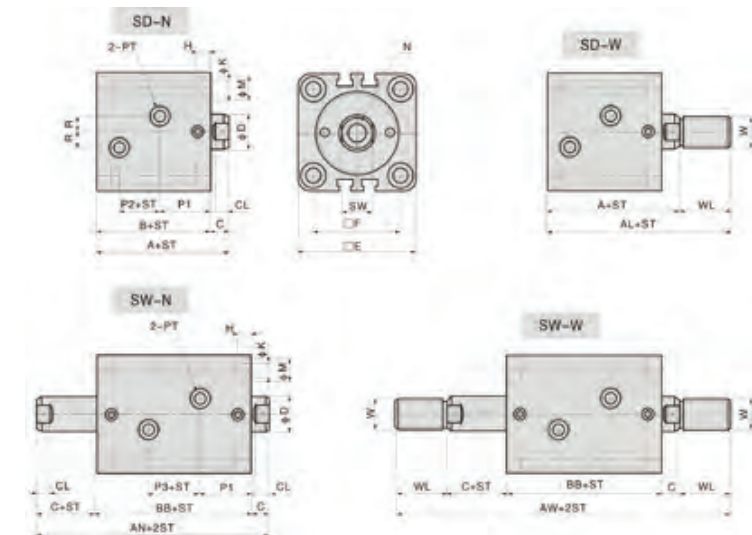
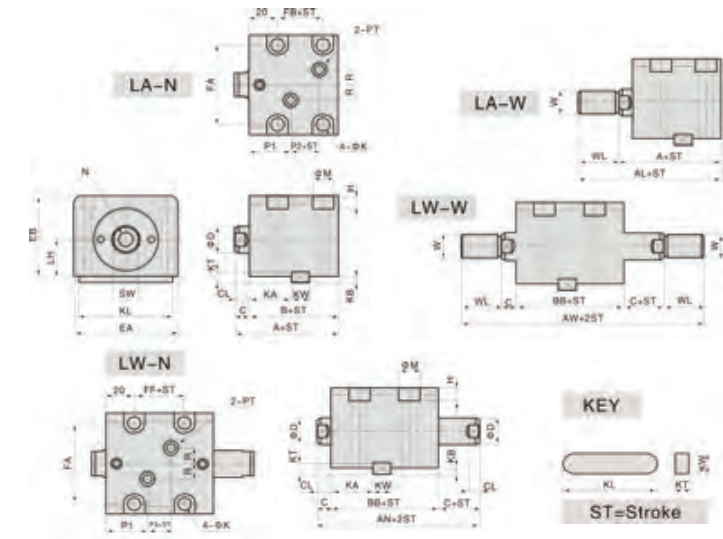
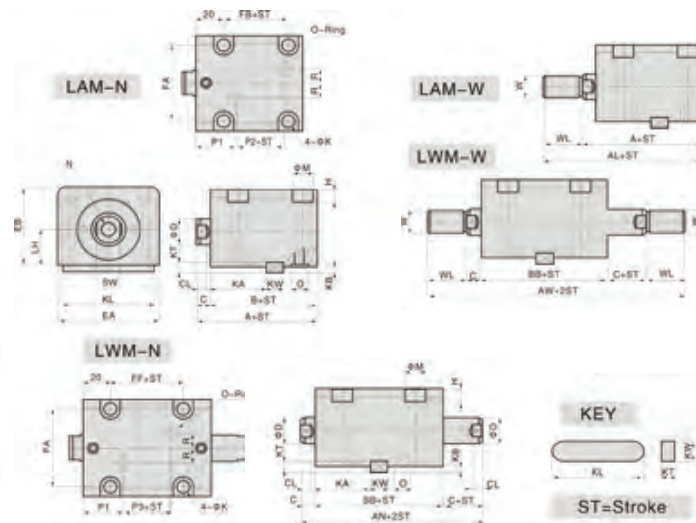
Remark: Please extend 5mm of the cylinder body length with "-" mark.

PUSH-PULL CYLINDER





A CLAMPING PORT B UNCLAMPING PORT



CHTB Hydraulic manifold type SDMA & SDMB.

Unit:mm

BORE	A	AL	B	C	CL	D	SW	E	F	H	K	M	N	W	WL	SDMA	SDMB				
																P1	R1	O1	P2	R2	O2
φ20	51	71	43	8	6	12	10	42	30	5.5	5.6	9	M8*1.25*12D	M10*1.25	20	16.5	13	P3	13	11	P5
φ25	53	75	45	8	6	14	12	48	36	5.5	5.6	9	M10*1.5*15D	M12*1.25	22	19.5	18	P4	16	13	P7
φ32	64	89	54	10	7	20	17	62	47	6.5	6.8	11	M12*1.75*15D	M16*1.5	25	24	24	P6	20	20	P9
φ40	65	95	55	10	7	25	22	70	52	9	9	14	M16*2.0*20D	M22*1.5	30	27	26	P6	24	20	P9
φ50	71	106	60	11	8	30	27	80	58	11	11	18	M20*2.5*25D	M26*1.5	35	32	27	P6	29	20	P9
φ63	80	120	67	13	10	35	32	94	69	13	13	20	M27*3.0*35D	M30*1.5	40	38	35	P8	35	26	P11
φ80	95	140	78	17	14	45	41	114	86	15	15	22	M30*3.5*35D	M39*1.5	45	47	45	P11	44	30	P11

CHTB Hydraulic manifold type LAM & LWM.

BORE	A	AL	AN	AW	B	BB	C	CL	D	SW	EA	EB	LH	FA	FB	FF	H	K	M	N	W	WL	P1	P2	P3	R	O	KW	KT	KL	KA	KB
32	64	89	89	139	54	69	10	7	20	17	70	56	25	56	24	32	9	9	14	M12*1.75*15D	M16*1.5	25	28	14	13	10	P9	12	8	63	38	4.5
40	65	95	90	150	55	70	10	7	25	22	80	64	29	62	23	32	11	11	18	M16*2.0*20D	M22*1.5	30	28	15	14	10	P9	12	8	70	38	4.5
50	71	106	97	167	60	75	11	8	30	27	94	74	34	74	27	35	13	13	20	M20*2.5*25D	M26*1.5	35	29.5	18	16	10	P11	14	9	80	40	5
63	80	120	108	188	67	82	13	10	35	32	114	89	42	90	32	42	15	15	22	M27*3.0*35D	M30*1.5	40	31	20	20	10	P11	16	10	100	42	5.5

CHTB Hydraulic side mounting type LA & LW.

Unit:mm

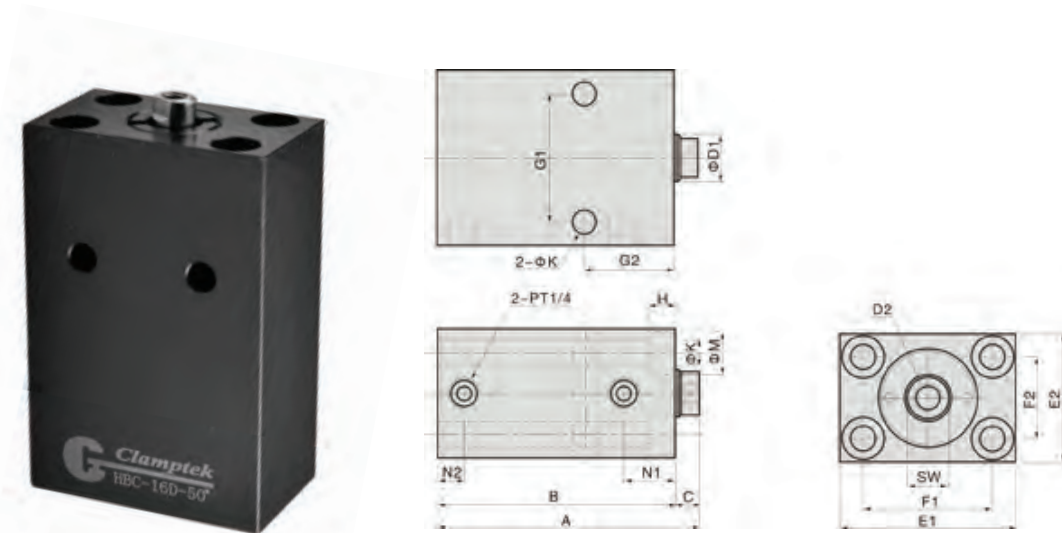
BORE	A	AL	AN	AW	B	BB	C	CL	D	SW	EA	EB	LH	FA	FB	FF	H	K	M	N	W	WL	P1	P2	P3	R	PT	KW	KT	KL	KA	KB
φ32	64	89	89	139	54	69	10	7	20	17	70	56	25	56	24	32	9	9	14	M12*1.75*15D	M16*1.5	25	28	14	13	10	1/4	12	8	63	28	4.5
φ40	65	95	90	150	55	70	10	7	25	22	80	64	29	62	23	32	11	11	18	M16*2.0*20D	M22*1.5	30	28	15	14	10	1/4	12	8	70	28	4.5
φ50	71	106	97	167	60	75	11	8	30	27	94	74	34	74	27	35	13	13	20	M20*2.5*25D	M26*1.5	35	29.5	18	16	10	1/4	14	9	80	29	5
φ63	80	120	108	188	67	82	13	10	35	32	114	89	42	90	32	42	15	15	22	M27*3.0*35D	M30*1.5	40	31	20	20	10	1/4	16	10	100	31	5.5

CHTM Hydraulic magnetic type SD & SW.

BORE	A	AL	AN	AW	B	BB	C	CL	D	SW	E	F	H	K	M	N	W	WL	P1	P2	P3	R	PT
φ32	83	108	104	154	73	84	10	7	20	17	62	47	6.5	6.8	11	M12*1.75*15D	M16*1.5	25	27	29	30	10	1/4
φ40	80	110	101	161	70	81	10	7	25	21	70	52	9	9	14	M16*2.0*20D	M22*1.5	30	27	27	27	10	1/4
φ50	86	121	109	179	75	87	11	8	30	27	80	58	11	11	18	M20*2.5*25D	M24*1.5	35	28	31	31	10	1/4
φ63	97	142	120	210	84	94	13	10	35	32	94	69	13	13	20	M27*3.0*35D	M30*1.5	45	30	36	34	10	1/4
φ80	112	167	140	250	95	106	17	14	40	37	114	86	15	15	22	M30*3.5*35D	M36*1.5	55	35	38	36	15	3/8

PUSH-PULL CYLINDER

**HBC-HYDRAULIC PUSH PULL CYLINDER** **HBC-HIDRÁULICA DE APRIETE Y TRACCIÓN CILINDRO**



Max: operating pressure 300 bar  
Min: operating pressure 5 bar  
Double acting and single acting

Presión máx. de funcionamiento: 300 bares  
Presión mín. de funcionamiento: 5 bares  
Doble efecto de simple efecto

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**  
HBC - 32 S 20

<b>HBC</b>	Series	HBC
<b>32</b>	Hydraulic cylinder inside diameter	φ16, φ25, φ32, φ40
<b>S</b>	Acting type	S Single-acting D Double-acting
<b>20</b>	Standard stroke	Refer to the dimension table

**FEATURES**

The series of hydraulic cylinder complies with Germany specifications. Employ imported oil seal for outstanding pressure resistance. Standardized specification and full interchangeability. Axial and side mounting type available. Single and double acting available.

**CARACTERÍSTICAS**

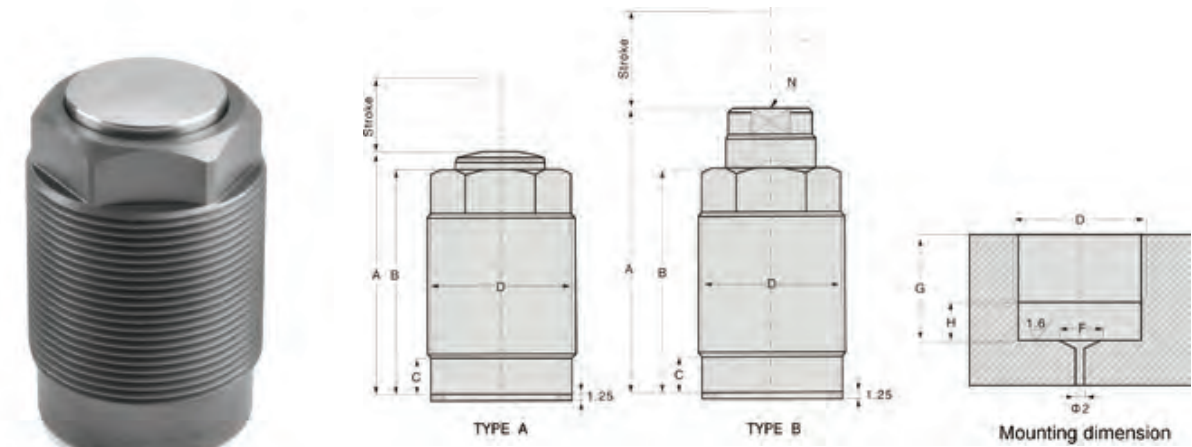
La serie de cilindro hidráulico cumple con las especificaciones de Alemania. Emplear el sello de aceite importado de resistencia para la presión excepcional. Especificación estandarizada y completa intercambiabilidad. Tipo axial y montaje lateral disponibles. Efecto simple y doble disponible.

HYDRAULIC CYLINDER INSIDE DIAMETER(mm)	PISTON DIAMETER(mm)	PRESSURE AREA(cm <sup>2</sup> )		OPERATION PRESSURE(bar)			
		F1	F2	100		300	
φ16	10	2.01	1.22	201	122	603	366
φ25	16	4.91	2.9	491	290	1473	870
φ32	20	8.04	4.9	804	490	2412	1470
φ40	25	12.57	7.66	1257	766	3771	2298

**DIMENSION TABLE** Unit:mm

BORE	SINGLE ACTING		DOUBLE ACTING			C	D1	D2	SW	E1	E2	F1	F2	G1	G2	H	K	M	N1	N2	
	STROKE	A	B	STROKE	A																B
φ16	8	62	56	16	62	56	6	10	M6×1.0 12Deep	8	60	35	40	22	30	30	6.5	6.8	11	16.5	11
φ16	20	97	91	50	97	91	6	10	M6×1.0 12Deep	8	60	35	40	22	30	30	6.5	6.8	11	16.5	11
φ25	8	71	64	20	71	64	7	16	M10×1.5 15Deep	13	65	45	50	30	50	33	9	9	14	18	11
φ25	20	101	94	50	101	94	7	16	M10×1.5 15Deep	13	65	45	50	30	50	33	9	9	14	18	11
φ32	10	85	75	25	85	75	10	20	M12×1.75 15Deep	17	75	55	55	35	55	38	11	11	18	22	11
φ32	20	110	100	50	110	100	10	20	M12×1.75 15Deep	17	75	55	55	35	55	38	11	11	18	22	11
φ40	10	89	79	25	89	79	10	25	M16×2.0 25Deep	22	85	63	63	40	63	40	11	11	18	24	11
φ40	20	114	104	50	114	104	10	25	M16×2.0 25Deep	22	85	63	63	40	63	40	11	11	18	24	11

**CTC-THREADED CYLINDERS** **CTC-ELEMENTO DE SOPORTE HIDRÁULICO EN ROSCADO CILINDRO**



**FEATURES**

The Thread-body single acting hydraulic cylinder use imported oil seal and accessories to guaranteed the quality . No oil leakage while clamping in high pressure for long time. The volume of the thread-body single acting hydraulic cylinder is small. It can be used in a small space in the fixture.This hydraulic cylinder is used to extend out, and then spring returns, but it can't be used for pulling back. The angle degree between the cylinder and workpiece could not be larger than 10 while installing.The bottom of the cylinder barrel needs a leakage-proof gasket.

**CARACTERÍSTICAS**

El cilindro hidráulico de simple efecto con cuerpo roscado utiliza sellos de aceite y accesorios importados para garantizar la calidad. No hay fugas de aceite durante la sujeción prolongada a altas presiones. El cilindro hidráulico de simple efecto con cuerpo roscado tiene un volumen reducido. Ocupa poco espacio en el portapiezas. Este cilindro hidráulico sólo se puede utilizar para extender, no se puede retraer. El retorno se efectúa por resorte. Durante la instalación, el grado del ángulo entre el cilindro y la pieza de trabajo no debe ser mayor de 10 . La parte inferior del cuerpo del cilindro necesita una junta obturadora a prueba de fugas.

Max: operating pressure 250 bar  
Min: operating pressure 20 bar  
Single acting

Presión máx. de funcionamiento: 250 bares  
Presión mín. de funcionamiento: 20 bares  
Simple efecto

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**  
CTC - 16 A

<b>CTC</b>	Series	CTC
<b>16</b>	Piston diameter	φ12 φ16 φ20 φ25
<b>A</b>	Type	Divide A type and B type

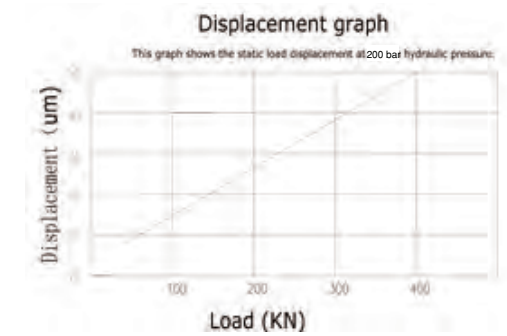
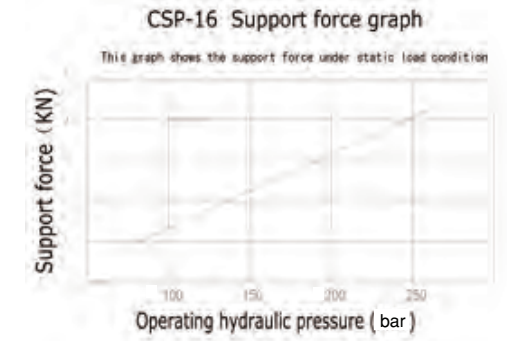
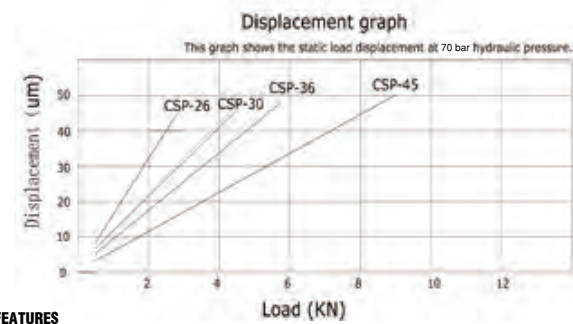
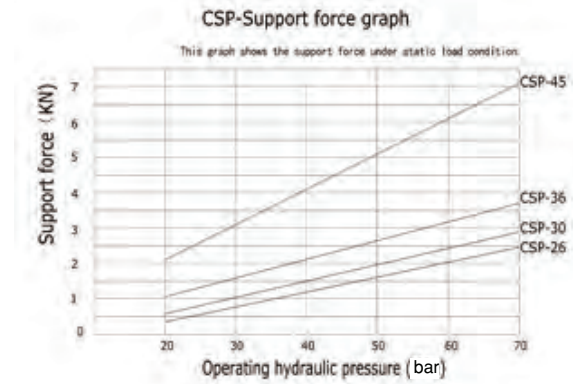
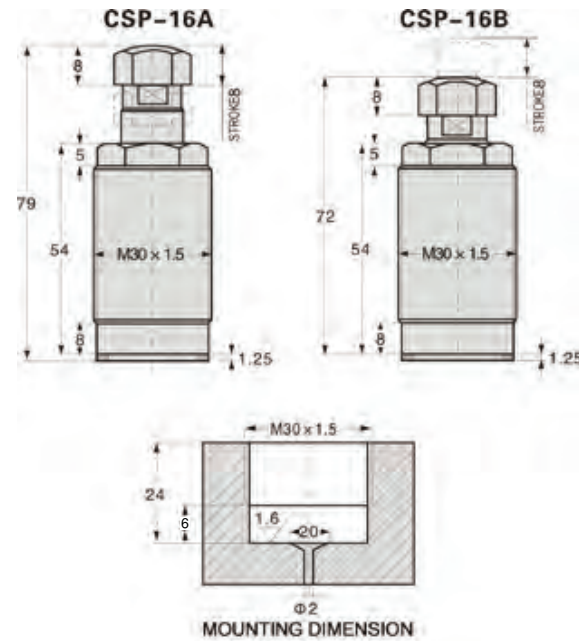
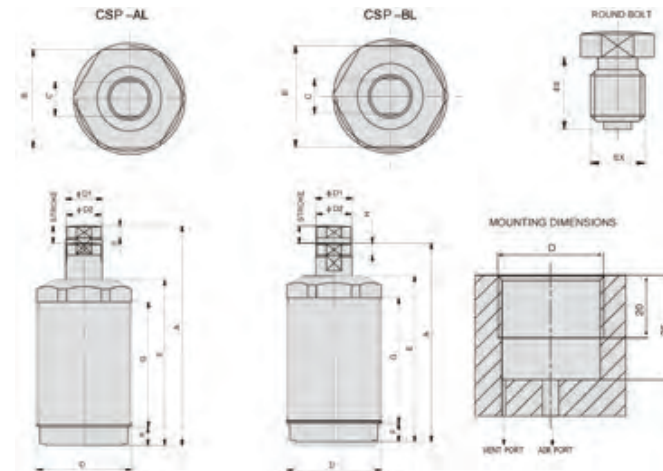
MODEL	CLAMPING FORCE AT 250 bar (kN)	TOTAL STROKE(mm)	OIL CAPACITY CLAMP(cm <sup>3</sup> )	EFF.PISTON AREA CLAMP(cm <sup>2</sup> )	RANGE OF TEMPERATURE(°C)
CTC-12A	4.43	10	2.14	1.77	-10~+70° C
CTC-16A	7.08	12	4.24	2.83	-10~+70° C
CTC-20A	10.38	15	7.29	4.15	-10~+70° C
CTC-25A	15.38	16	11.85	6.15	-10~+70° C
CTC-12B	4.43	10	2.14	1.77	-10~+70° C
CTC-16B	7.08	12	4.24	2.83	-10~+70° C
CTC-20B	10.38	15	7.29	4.15	-10~+70° C
CTC-25B	15.38	16	11.85	6.15	-10~+70° C

Unit:mm

MODEL	A	B	C	D	F	G	H	N	ST
CTC-12A	38	36	7	M22×1.5	12	16	6	-	10
CTC-16A	46.5	44.5	8	M26×1.5	16	20	7	-	12
CTC-20A	57.5	51	8	M30×1.5	20	24	7	-	15
CTC-25A	58.5	55	11	M38×1.5	25	28	10	-	16
CTC-12B	45	36	7	M22×1.5	12	16	6	M6×1.0	10
CTC-16B	52	44.5	8	M26×1.5	16	20	7	M6×1.0	12
CTC-20B	64.5	51	8	M30×1.5	20	24	7	M8×1.25	15
CTC-25B	67.5	55	11	M38×1.5	25	28	10	M8×1.25	16



**CSP-HYDRAULIC SUPPORT CLAMP** **CSP-ELEMENTO DE SOPORTE HIDRÁULICO**



**FEATURES**

The working pressure of supporting cylinder is from 20 to 70 bar, with clamp cover and double acting piston, taking the low pressure on the oil to gain high supporting pressure. The contact strength between piston rod and the work pieces is small ( 0.3-0.87 bar ), and it can be applied on the various types of work pieces. The size is small ( four kinds, M26-M45. Large caliber, high supporting strength, can work steadily within the low pressure.) No need to change the size of fixture plate, and can be installed in small space.

**CARACTERÍSTICAS**

La presión de trabajo del cilindro de soporte es de 20 a 70 bares, con la cubierta de la grapa y el pistón de doble acción, tomando la baja presión en el aceite para obtener alta presión de apoyo. La fuerza de contacto entre la biela del pistón y las piezas de trabajo es pequeña (0.3-0.87 bares), y se puede aplicar sobre los diferentes tipos de piezas de trabajo. El tamaño es pequeño (cuatro tipos, M26-M45. Grueso calibre, alta resistencia de soporte, puede trabajar de manera constante en baja presión.). No es necesario cambiar el tamaño de la placa de fijación, y puede ser instalado en un espacio pequeño.

**LOW PRESSURE**

Max:operating pressure 70 bar  
Min: operating pressure 20 bar  
Presión máx. de funcionamiento: 70 bares  
Presión mín. de funcionamiento: 20 bares

**HIGH PRESSURE**

Max:operating pressure 250 bar  
Min: operating pressure 100 bar  
Presión máx. de funcionamiento: 250 bares  
Presión mín. de funcionamiento: 100 bares

Single acting  
Simple efecto

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CSP - 26AL - C-L

<b>CSP</b>	Series	CSP
	Hydraulic cylinder inside diameter	φ26,φ30,φ36,φ45
<b>26</b>	Type	Low pressure AL: type A BL: type B
	Type	High pressure A: type A B: type B
<b>C</b>	version	L:low spring H:high spring
<b>L</b>	Plunger spring force	

**Low pressure**

MODEL	CLAMPING FORCE AT 70 bar (KN)	CLAMPING FORCE AT 20 BAR (KN)	STROKE(mm)	OIL CAPACITY(cm³)	PISTON AREA(cm²)
CSP-26AL	2.30	0.39	5.5	0.30	0.79
CSP-26BL	2.30	0.39	5.5	0.30	0.79
CSP-30AL	2.70	0.6	8	0.50	1.13
CSP-30BL	2.70	0.6	8	0.50	1.13
CSP-36AL	3.70	1.2	8	0.60	1.54
CSP-36BL	3.70	1.2	8	0.60	1.54
CSP-45AL	6.80	2.1	10	1.30	2.01
CSP-45BL	6.80	2.1	10	1.30	2.01

**High pressure**

MODEL	CLAMPING FORCE AT 250 bar (KN)	CLAMPING FORCE AT 100 BAR (KN)	STROKE(mm)	OIL CAPACITY(cm³)	PISTON AREA(cm²)
CSP-16A	4.10	1.4	8	0.60	2.01
CSP-16B	4.10	1.4	8	0.60	2.01

**NOTE**

Columns fortress cannot exert eccentric load.  
Can't exert overloaded.  
Can't turn the piston rod when it's locking state.

**NOTA**

Las columnas no puede ejercer carga excéntrica.  
No se puede ejercer sobrecarga  
No se puede girar el pistón cuando está en estado bloqueado.

Type A: Supporting with the spring, the spring is used to control a clamping force when the piston rod extends to a highest support position, then clamps the work piece and lock the piston in a supporting condition .

Type B: Supporting with oil pressure, it is operated by means of oil pressure and is keeping in a supporting condition when being filled with oil and clamp the work piece.

Tipo A: Soporte con resorte, el resorte se utiliza para controlar una fuerza de sujeción cuando la biela del pistón se extiende a una posición más alta sujetando la pieza de trabajo.

Tipo B: Soporte con la presión de hidraulico, de se opera por medio de la presión del aceite y es manteniendo la posición de sujeto, cuando se llena con aceite sujetando la pieza de trabajo.

SUPPORT CLAMP

Unit:mm

MODEL	A	B	C	D	E	F	G	H	D1	D2	EE	EX
CSP-26AL	71.5	22	9	M26*1.5	57	6	44	3.6	φ10	φ9.8	10	M8
CSP-26BL	66	22	9	M26*1.5	57	6	44	3.6	φ10	φ9.8	10	M8
CSP-30AL	81	24	10	M30 1.5	62	6	48	5.1	φ12	φ11.5	10.9	M8
CSP-30BL	73	24	10	M30*1.5	62	6	48	5.1	φ12	φ11.5	10.9	M8
CSP-36AL	77	30	12	M36*1.5	58	6	44	4.7	φ14	φ13.5	10.3	M10
CSP-36BL	69	30	12	M36*1.5	58	6	44	4.7	φ14	φ13.5	10.3	M10
CSP-45AL	92	36	14	M45*1.5	71	7	54.8	4.6	φ16	φ15.5	13.4	M10
CSP-45BL	82	36	14	M45*1.5	71	7	54.8	4.6	φ16	φ15.5	13.4	M10

**CSF-HYDRAULIC CSF-ELEMENTO DE SUPPORT CLAMP SOPORTE HIDRÁULICO**



**FEATURES**

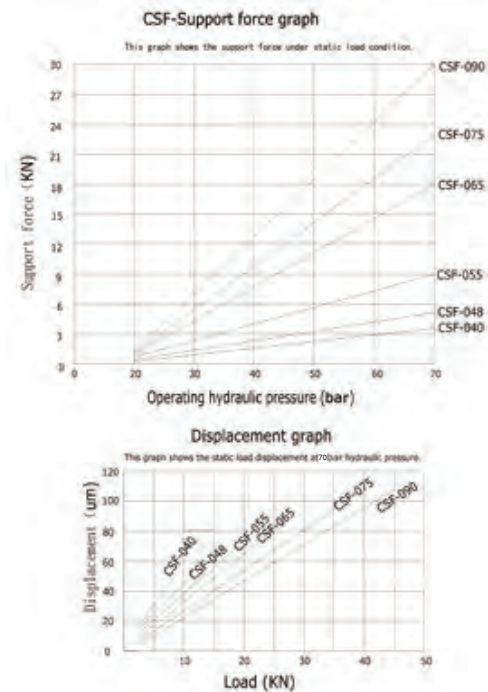
This series of products with compact structure, reasonable design, long service life, in 20-70 bar working conditions, can keep stable performance. According to the different thickness of work piece, which can adjust the piston rod out spring strength. Piston rod out of contact force is small, 0.4-0.8 bar range, suitable for all kinds of work piece. This product support power is large, can eliminate mechanical load and working vibration in the cutting process.

**CARACTERÍSTICAS**

La serie de productos con estructura compacta, diseño razonable, larga vida de servicio, en las condiciones de trabajo 20-70 bar, puede mantener un rendimiento estable. De acuerdo al diferente grosor de la pieza de trabajo, que se puede ajustar a la biela del pistón de salida de la fuerza del resorte. El pistón de salida de la fuerza del contacto es pequeña, el rango de 0.4-0.8bares, apto para todo tipo de piezas de trabajo. La potencia de soporte del producto es grande, se puede eliminar la carga mecánica y la vibración de trabajo en el proceso de corte.

Max: operating pressure 70 bar  
Min: operating pressure 20 bar  
Double acting

Presión máx. de funcionamiento: 70 bares  
Presión mín. de funcionamiento: 20 bares  
Doble efecto



**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CSF - 040 B L C

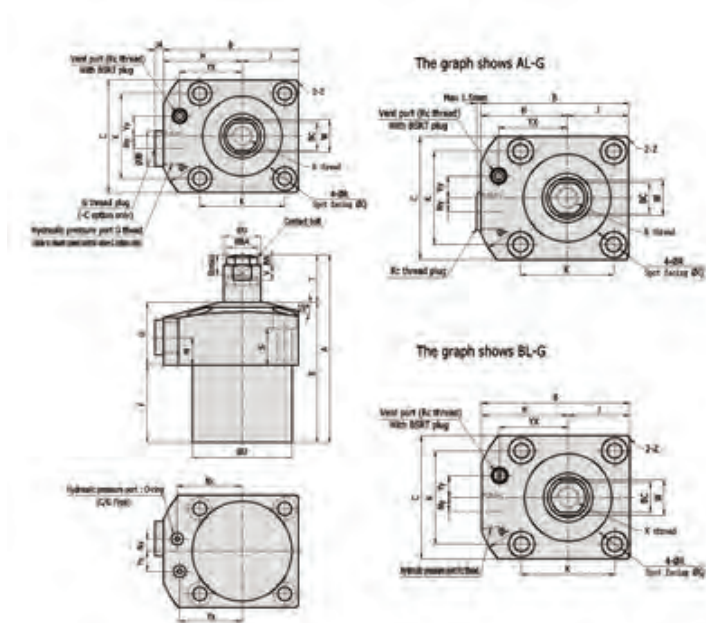
<b>CSF</b>	Series	CSF
		040:40mm, 048:48mm, 055:55mm, 065:65mm, 075:75mm, 090:90mm
	A: sprint extended piston B: Hydraulic extended piston	
<b>040</b>		
<b>B</b>	L: Low pressure	
<b>L</b>	Piping method	
<b>C</b>	C: with G thread plug, air venting function G: with R thread plug S: line type, with Rc thread port	

MODEL	CLAMPING FORCE AT 70 bar (KN)	CLAMPING FORCE AT 20 bar (KN)	STROKE(mm)	OIL CAPACITY(cm <sup>3</sup> )	PISTON AREA(cm <sup>2</sup> )
CSF-040AL	3.2	0.5	8	0.6	1.77
CSF-040BL	3.2	0.5	8	0.6	1.77
CSF-048AL	4.8	0.6	10	1.3	2.01
CSF-048BL	4.8	0.6	10	1.3	2.01
CSF-055AL	9	0.8	12	2	3.14
CSF-055BL	9	0.8	12	2	3.14
CSF-065AL	18	0.95	14	3.3	3.80
CSF-065BL	18	0.95	14	3.3	3.80
CSF-075AL	23	1.3	16	5.7	4.91
CSF-075BL	23	1.3	16	5.7	4.91
CSF-090AL	30	1.55	20	9.1	7.07
CSF-090BL	30	1.55	20	9.1	7.07

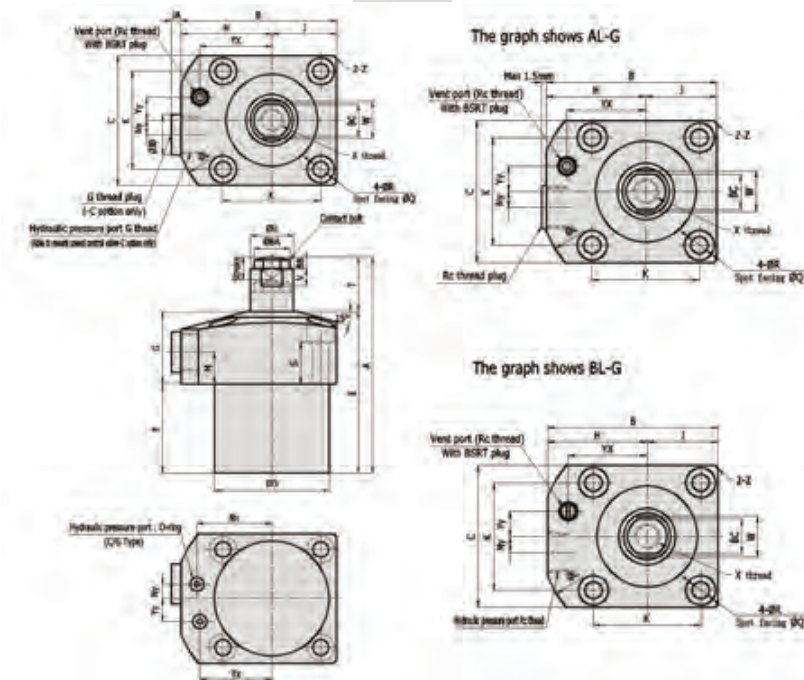
MODEL	A	B	C	D	E	F	G	H	J	K	L	M	Nx	Ny	P	Q	R	S	T	U	V	W	X
CSF-040AL	75	54	45	40	56	31	25	31.5	22.5	34	68	11	26	5	3	9.5	5.5	14.5	19	15	6	13	M10*11
CSF-040BL	67	54	45	40	56	31	25	31.5	22.5	34	68	11	26	5	3	9.5	5.5	14.5	11	15	6	13	M10*11
CSF-048AL	85	61	51	48	64	39	25	35.5	25.5	40	73	11	30	0	3	9.5	5.5	13.5	21	16	6	13	M10*11
CSF-048BL	75	61	51	48	64	39	25	35.5	25.5	40	73	11	30	0	3	9.5	5.5	13.5	11	16	6	13	M10*11
CSF-055AL	97	69	60	55	70	45	25	39	30	47	80	11	33.5	0	3	11	6.8	11.5	27	20	8	17	M12*13
CSF-055BL	85	69	60	55	70	45	25	39	30	47	80	11	33.5	0	3	11	6.8	11.5	15	20	8	17	M12*13
CSF-065AL	115	81	70	65	85	56	29	46	35	55	94	11	39.5	0	5	11	6.8	14.5	30	22	9	19	M12*13
CSF-065BL	101	81	70	65	85	56	29	46	35	55	94	11	39.5	0	5	11	6.8	14.5	16	22	9	19	M12*13
CSF-075AL	142	92	80	75	107	72	35	52	40	63	106	13	45	0	5	14	9	17	35	25	9	22	M16*20
CSF-075BL	126	92	80	75	107	72	35	52	40	63	106	13	45	0	5	14	9	17	19	25	9	22	M16*20
CSF-090AL	169	107	95	90	128	88	40	59.5	47.5	75	126	13	52.5	0	5	17.5	11	18	41	30	10.5	24	M16*20
CSF-090BL	149	107	95	90	128	88	40	59.5	47.5	75	126	13	52.5	0	5	17.5	11	18	21	30	10.5	24	M16*20

Unit:mm

**CSF-AL**



**CSF-BL**



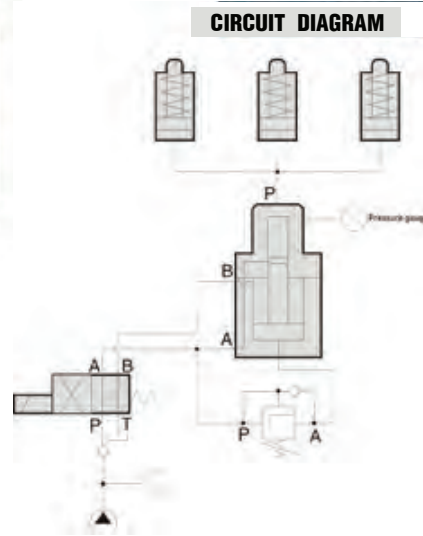
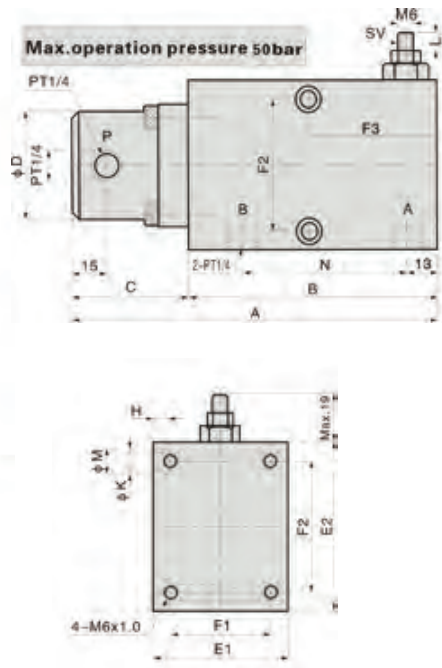
Unit:mm

MODEL	Yx	Yy	Z	BA	BB	BC	JA	ST	JB	HYDRAULIC PORT		O-RING (-C/-G TYPE)	VENT PORT BSPT (RC-THREAD)
										-C TYPE	-S TYPE		
CSF-040AL	25	8	C1	14.5	4	13	3	8	16	G1/8	G1/8	P5	PT1/8
CSF-040BL	25	8	C1	12.5	4	11	3	8	11	G1/4	G1/8	P5	PT1/8
CSF-048AL	28	11	C3	15.5	4	14	3	10	17	G1/4	G1/8	P5	PT1/8
CSF-048BL	28	11	C3	12.5	4	11	3	10	11	G1/4	G1/8	P5	PT1/8
CSF-055AL	31	13	R40	19	6	17	3	12	17	G1/4	G1/8	P5	PT1/8
CSF-055BL	31	13	R40	16.5	6	14	3	12	11	G1/4	G1/8	P5	PT1/8
CSF-065AL	37	14	R47	21	6	19	3	14	17	G1/4	G1/8	P7	PT1/8
CSF-065BL	37	14	R47	16.5	6	14	3	14	11	G1/4	G1/8	P7	PT1/8
CSF-075AL	42.5	15	R53	24	9	21	3	16	17	G1/4	G1/4	P7	PT1/8
CSF-075BL	42.5	15	R53	21.5	9	19	3	16	13	G1/4	G1/4	P7	PT1/8
CSF-090AL	50	15	R63	28	9	24	3	20	17	G1/4	G1/4	P7	PT1/8
CSF-090BL	50	15	R63	21.5	9	19	3	20	17	G1/4	G1/4	P7	PT1/8

SUPPORT CLAMP



# HB-HYDRAULIC BOOSTER    HB-COMPENSADOR HIDRÁULICO DE TENSIÓN



### FEATURES

A hydraulic sequential valve is attached to this booster .when operating , it oils cylinder and makes it be at the dual pressure and let the sequential valve act , and then it will have multiple boosting pressure .  
It's fit for hydraulic special purpose machine and MC clamp in low pressure circuit .  
It needs a solenoid valve installed in the circuit, and then it will be able to operate HB .  
Adjustment reference for csv sequence valve super-charger. The super-charger may be converted automatically low oil- pressure into high oil-pressure and obtain a high pressure clamping.

### CARACTERÍSTICAS

Una válvula hidráulica de secuencia está unida a este refuerzo cuando esté funcionando, que los aceites de cilindros y la hace estar a la doble presión y dejar que el acto de la válvula secuencial, y entonces tendrá aumento de presión múltiple.  
Es acto para máquina hidráulica de propósito especial y la grapa MC en el circuito de baja presión.  
Se necesita una válvula de solenoide instalado en el circuito, entonces será capaz de operar ajuste de referencia HB para la válvula de secuencia sv super-cargador. El super cargador puede convertir automáticamente de baja presión de aceite en alta presión de aceite y obtener un fijación de alta presión.

### NOTE

Pressure set at 30 bar before delivery.

### NOTA

El presión tiene que establecer en 30 bar antes de envío .

Max:operating pressure 50 bar  
Min: operating pressure 20 bar

Presión máx. de funcionamiento: 50 bares  
Presión mín. de funcionamiento: 20 bares

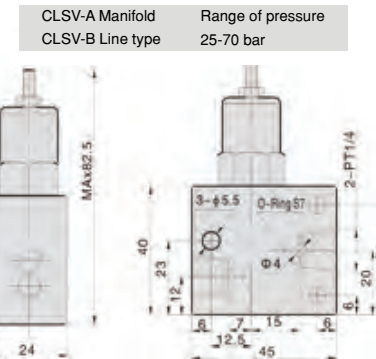
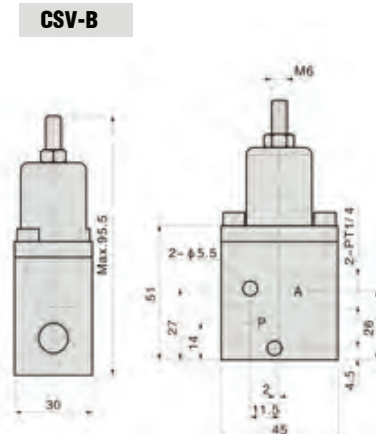
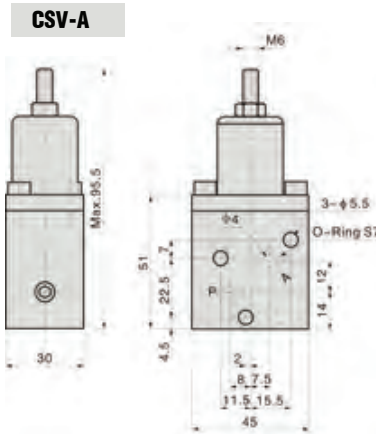
Unit:mm

MODEL	MULTIPLE BOOST	HIGH PRESSURE OUT PUT	A	B	C	φ D	E1	E2	F1	F2	F3	H	φ K	φ M	N
HB-9*6	9	6cc	157	107	50	φ46	58	72	43	56	55	7	φ 7	φ11	71
HB-8*22	8	22cc	210	139	71	φ 58	82	95	62	80	70	9	φ 9	φ14	96
HB-5*35	5	35cc	210	139	71	φ 58	82	95	62	80	70	9	φ 9	φ14	96
HB-3.8*45	3.8	45cc	210	139	71	φ 58	82	95	62	80	70	9	φ 9	φ14	96



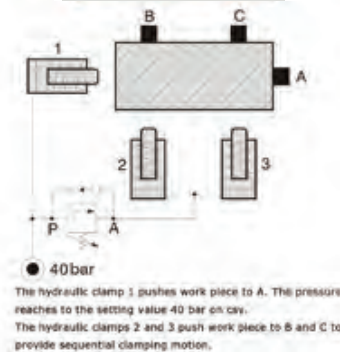


**CSV-HYDRAULIC SEQUENCE VALVE** **CSV-VÁLVULA HIDRÁULICA DE SECUENCIA**



CLSV-A Manifold  
CLSV-B Line type  
Range of pressure  
25-70 bar

**CIRCUIT DIAGRAM**



**FEATURES**

This series of hydraulic sequence valve is especially ideal for your fitting on the circuit of fixture. The hydraulic cylinder motion sequences are decided by the pressure. The sequence valve features Type and Pressure Range compact construction and high pressure resistance. It requires no further control when fitting on the circle, and provides a positive sequential motion control. This series provides two types mounting type for choice. A type is a manifold mounting type and B type is a line mounting type. You get a flexible choice of mounting types to suit your fixture design.

**CARACTERÍSTICAS**

Esta serie de válvula hidráulica de secuencia es especialmente ideal para su instalación en el circuito de sujeción. Las secuencias de movimiento del cilindro hidráulico se deciden por la presión. Las características de valor de secuencia, tipo, rango de presión, diseño compacto y alta resistencia a la presión. No requiere ningún control adicional cuando ajuste el círculo, y proporciona un control de movimiento secuencial positivo. Esta serie ofrece dos tipos de opción de montaje. Tipo A es un montaje del colector y tipo B es un tipo de montaje de línea. Usted obtiene un sistema flexible de los tipos de montaje para adaptarse a su diseño del aparato.

Max.operating pressure 250 bar  
Min: operating pressure 25 bar

Presión máx. de funcionamiento: 250 bares  
Presión mín. de funcionamiento: 25 bares

**NOTE**

You should set the pressure difference not be less than 10 bar when multiple sequence valves used in parallel circuit. Setting the pressure difference and working pressure must be exceed 10 bar.

**NOTA**

Establecer la diferencia de presión no será menor que 10 bar cuando múltiples válvulas de secuencia utilizados en circuito paralelo. Ajuste de la diferencia de presión y presión de trabajo debe ser exceda 10 bar.

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

Model	Type	Pressure range
CSV-A	Manifold type	25-250 bar
CLSV-A		25-70 bar
CSV-B	Line type	25-250bar
CLSV-B		25-70 bar

**CPRV-HYDRAULIC PRESSURE REDUCING VALVE** **CPRV-VÁLVULA HIDRÁULICA DE REDUCCIÓN DEL PRESIÓN**

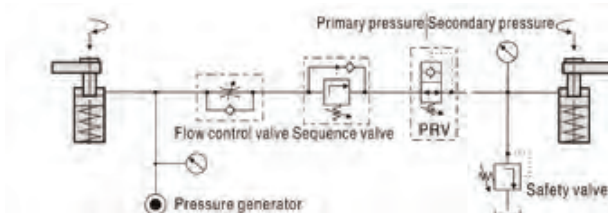
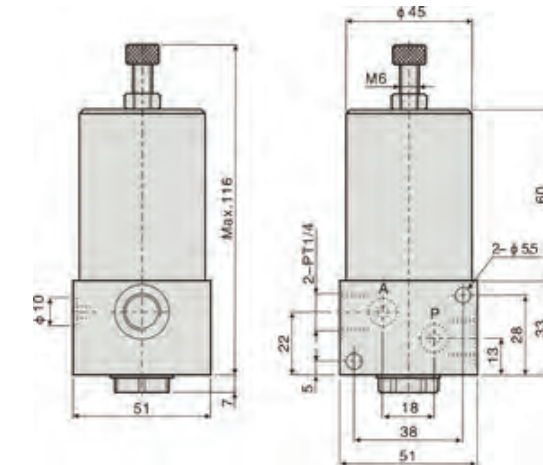


Max. operating pressure: 500 bar

**ORDERING INDICATION MÉTODO DE ETIQUETADO DEL PEDIDO**

CPRV - M 02 1

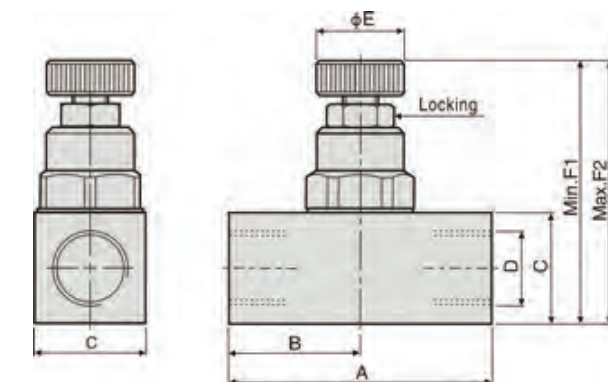
CPRV	Series	CPRV
M	Piping method	Blank :Line type M:Manifold
02	Model	02
1	Pressure range (bar)	① 5-30 ② 210-50 ③ 20-120 ④ 30-240 ⑤ 50-380



**CFCV-HYDRAULIC FLOW CONTROL VALVE** **CFCV-VÁLVULA HIDRÁULICA DE FLUJO**



Max. operating pressure: 210 bar



MODEL	A	B	C	D	φ E	F1	F2
CFCV-01	35	19	□15.9	PT1/8	φ12	41	44.5
CFCV-02	45	22.5	□ 19	PT1/4	φ15	45	48.5

HYDRAULIC VALVE

Unit:mm





**PTA SWIVEL  
CLAMPING SCREW**

**PTA TORNILLO DE  
PRESIÓN CON BOLA  
Y ACANALADO**

**PTB SWIVEL (SHOULDER)  
CLAMPING SCREW**

**PTB TORNILLO DE PRESIÓN  
CON BOLA Y HOMBRO**

**PTC GRIPPER SCREW**

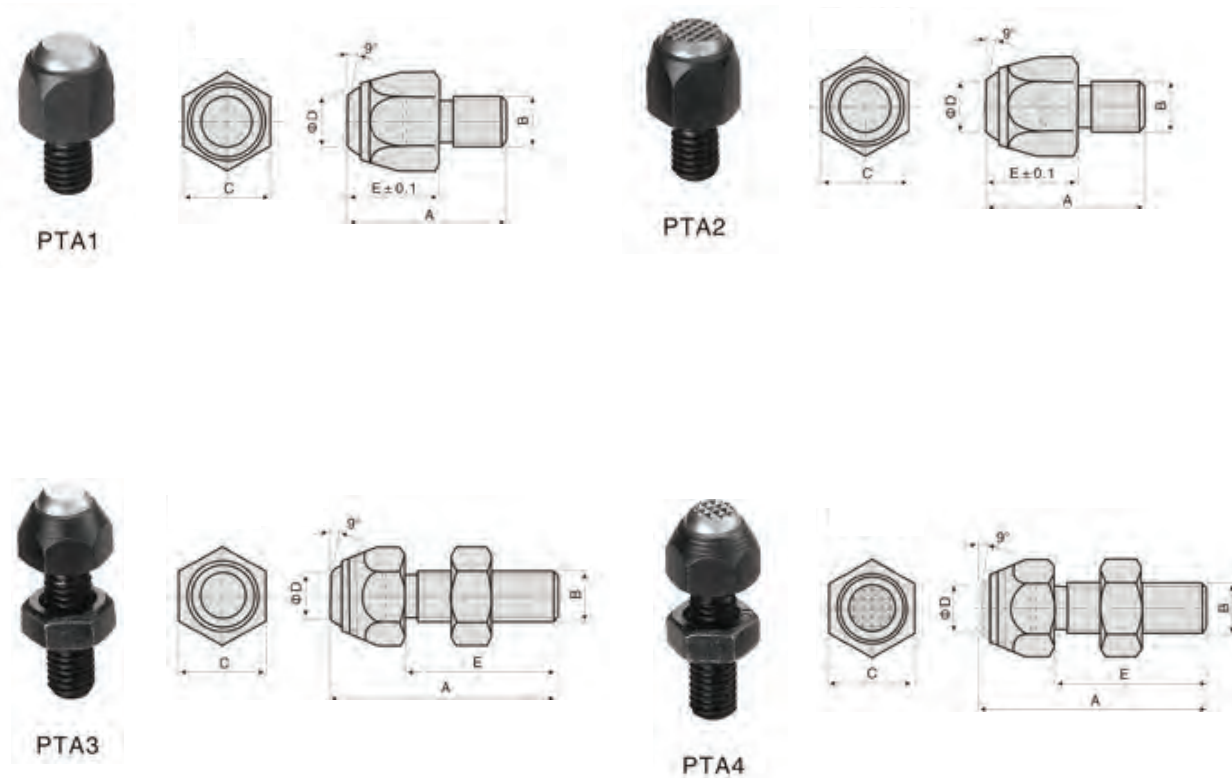
**PTC TORNILLO DE PRESIÓN  
CON DIENTE**

**PTD GRIPPER NUT**

**PTD TORNILLO DE TUERCA**

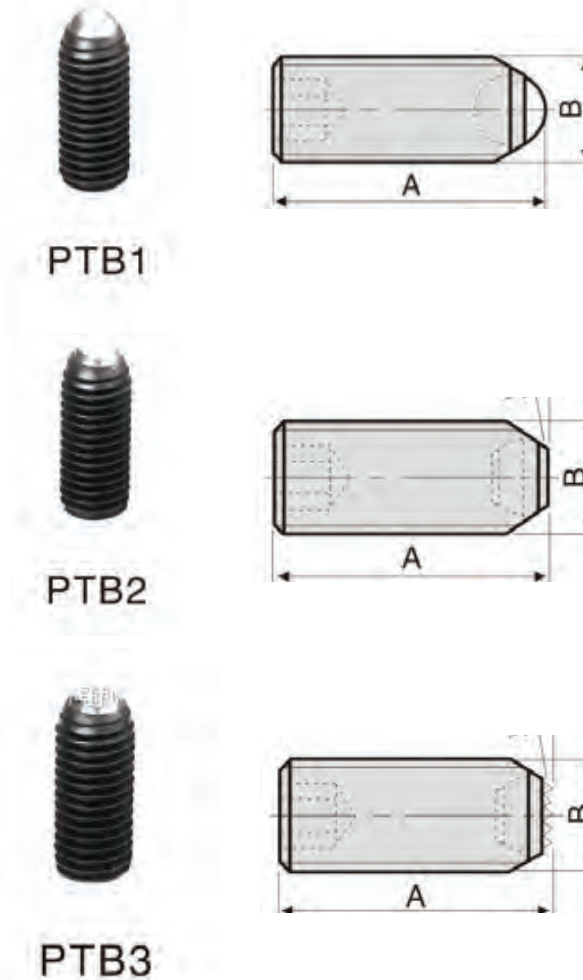
**TYPE: SMOOTH BALL END BOLT & SERRATED BALL END BOLT**

**MATERIAL-BODY:S45C STEEL BALL:SUJ2  
HARDNESS-BODY:HRC35° STEEL BALL:HRC62°**



**TYPE: ROUND END & FLAT END & SERRATED END**

**MATERIAL-BODY:SCM21 STEEL BALL:SUJ2  
HARDNESS-BODY:HRC32° ~ 38° STEEL BALL:HRC62°**



MODEL	PTA1-0006 PTA2-0006	PTA1-0108 PTA2-0108	PTA1-0210 PTA2-0210	PTA1-0312 PTA2-0312	PTA1-0416 PTA2-0416	PTA1-0520 PTA2-0520	PTA1-0624 PTA2-0624	PTA1-0730 PTA2-0730
A	21	25	30	35	42	55	65	80
B	M6*1.0	M8*1.25	M10*1.5	M12*1.75	M16*2.0	M20*2.5	M24*2.0	M30*2.0
C	10	14	17	22	27	36	36	46
D	6	8	10	12	14	14	18	21
E	10	12	16	22	26	27	32	35
g	12	15	25	70	140	280	560	880

MODEL	PTA3-0108 PTA4-0108	PTA3-0210 PTA4-0210	PTA3-0312 PTA4-0312	PTA3-0416 PTA4-0416	PTA3-0520 PTA4-0520	PTA3-0624 PTA4-0624	PTA3-0730 PTA4-0730
A	36	45	50	60	87	98	110
B	M8*1.25	M10*1.5	M12*1.75	M16*2.0	M20*2.5	M24*2.0	M30*2.0
C	14	17	17	24	36	36	46
D	7	8	10	12	14	18	21
E	25	30	35	40	60	66	75
g	25	55	55	140	330	595	1030

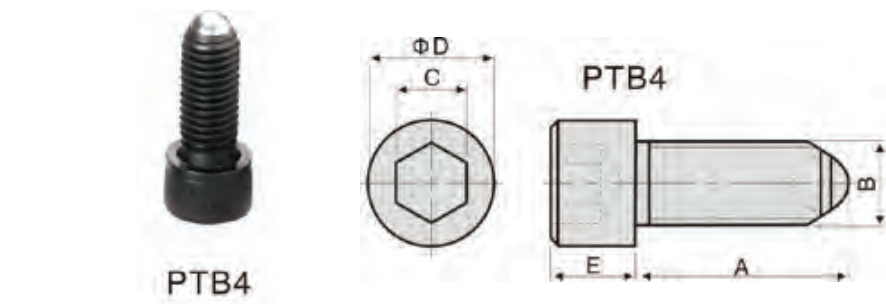
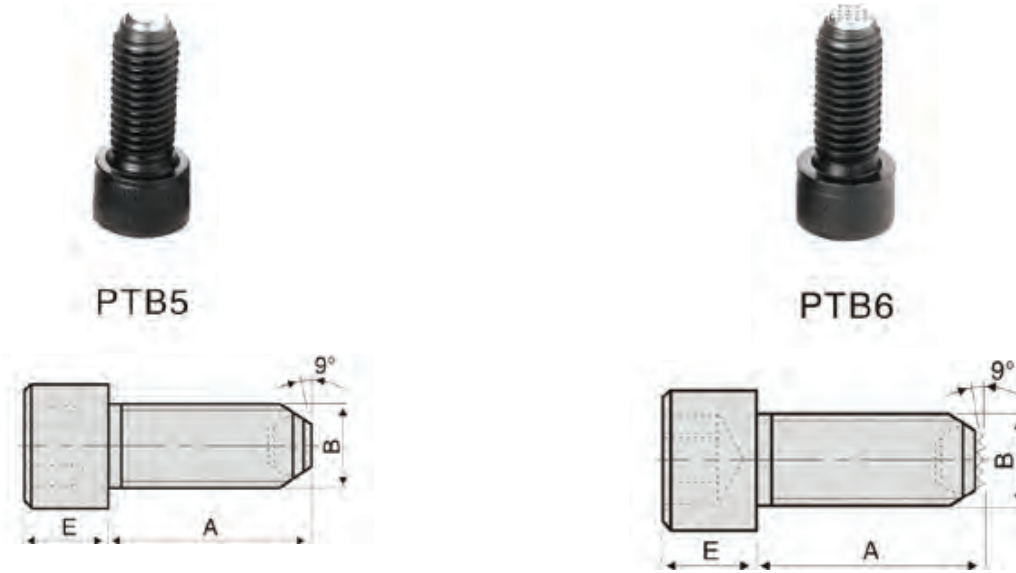
MODEL	PTB1-0206	PTB1-0306	PTB1-0408	PTB1-0508	PTB1-0608	PTB1-0710	PTB1-0810	PTB1-0910	PTB1-1012	PTB1-1112	PTB1-1212	PTB1-1312
A	13.5	23.5	12	20	30	17	27	37	23.2	31.2	41.2	51.2
B	M6*1.0	M6*1.0	M8*1.25	M8*1.25	M8*1.25	M10*1.5	M10*1.5	M10*1.5	M12*1.75	M12*1.75	M12*1.75	M12*1.75
C	3	3	4	4	4	5	5	5	6	6	6	6
g	2.4	3.8	3.2	5.8	9	6.7	11.2	16.2	12.5	20	30	40

MODEL	PTB1-1416	PTB1-1516	PTB1-1616	PTB1-1716	PTB1-1816	PTB2-2006 PTB3-3806	PTB2-2106 PTB3-3906	PTB2-2208 PTB3-4008	PTB2-2308 PTB3-4108	PTB2-2408 PTB3-4208	PTB2-2510 PTB3-3811	PTB2-2610 PTB3-4410
A	25.6	35.6	45.6	55.6	65.6	13	23	11.2	19.2	29.2	15	25
B	M16*2.0	M16*2.0	M16*2.0	M16*2.0	M16*2.0	M6*1.0	M6*1.0	M8*1.25	M8*1.25	M8*1.25	M10*1.5	M10*1.5
C	8	8	8	8	8	3	3	4	4	4	5	5
g	28	40	45	55	65	2.4	3.8	3.2	5.8	9	5.7	11.2

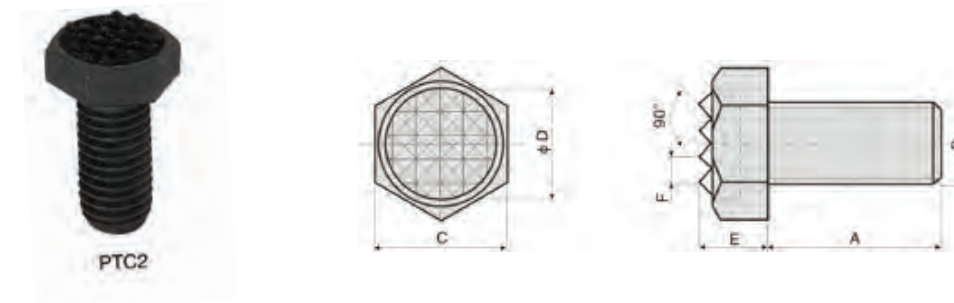
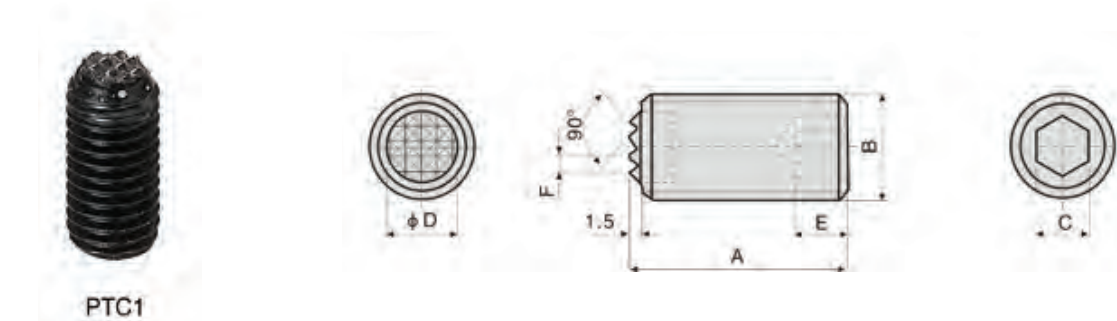
MODEL	PTB2-2710 PTB3-4510	PTB2-2812 PTB3-4612	PTB2-2912 PTB3-4712	PTB2-3012 PTB3-4812	PTB2-3112 PTB3-4912	PTB2-3216 PTB3-5016	PTB2-3316 PTB3-5116	PTB2-3416 PTB3-5216	PTB2-3516 PTB3-5316	PTB2-3616 PTB3-5416
A	35	22	30	40	50	24	34	44	54	64
B	M10*1.5	M12*1.75	M12*1.75	M12*1.75	M12*1.75	M16*2.0	M16*2.0	M16*2.0	M16*2.0	M16*2.0
C	5	6	6	6	6	8	8	8	8	8
g	16.2	12.5	20	30	40	28	40	45	55	65

Unit:mm





MATERIAL-BODY:S45C STEEL BALL:SKH9  
HARDNESS-BODY:HRC35° STEEL BALL:HRC60°



Unit:mm

MODEL	PTB4-0106	PTB4-0206	PTB4-0306	PTB4-0408	PTB4-0508	PTB4-0608	PTB4-0710	PTB4-0810	PTB4-0910	PTB4-1012	PTB4-1112	PTB4-1212	PTB4-1312	PTB4-1416
A	14.5	23.5	33.5	18.7	28.7	38.7	25	40	60	31.2	46.2	66.2	81.2	40.6
B	M6	M6	M6	M8	M8	M8	M10	M10	M10	M12	M12	M12	M12	M16
C	5	5	5	6	6	6	8	8	8	10	10	10	10	14
D	10	10	1	13	13	13	16	16	16	18	18	18	18	24
E	6	6	6	8	8	8	10	10	10	12	12	12	12	16
g	5.3	7.4	9.5	13.5	20	24	26	34	46	40	50	70	83	90

MODEL	PTB4-1516	PTB4-1616	PTB4-1716	PTB5-1806 PTB6-3506	PTB5-1906 PTB6-3606	PTB5-2006 PTB6-3706	PTB5-2108 PTB6-3808	PTB5-2208 PTB6-3908	PTB5-2308 PTB6-4008	PTB5-2410 PTB6-4110	PTB5-2510 PTB6-4210	PTB5-2610 PTB6-4310
A	50.6	65.6	90.6	14	23	33	18	28	38	24	39	59
B	M16	M16	M16	M6	M6	M6	M8	M8	M8	M10	M10	M10
C	14	14	14	5	5	5	6	6	6	8	8	8
D	24	24	24	10	10	10	13	13	13	16	16	16
E	16	16	16	6	6	6	8	8	8	10	10	10
g	110	130	170	5.3	7.4	9.5	13.5	20	24	26	34	46

MODEL	PTB5-2712 PTB6-4412	PTB5-2812 PTB6-4512	PTB5-2912 PTB6-4612	PTB5-3012 PTB6-4712	PTB5-3116 PTB6-4816	PTB5-3216 PTB6-4916	PTB5-3316 PTB6-5016	PTB5-3416 PTB6-5116
A	30	45	65	80	39	49	64	89
B	M12	M12	M12	M12	M16	M16	M16	M16
C	10	10	10	10	14	14	14	14
D	18	18	18	18	24	24	24	24
E	12	12	12	12	16	16	16	16
g	40	50	70	83	90	110	13	170

Unit:mm

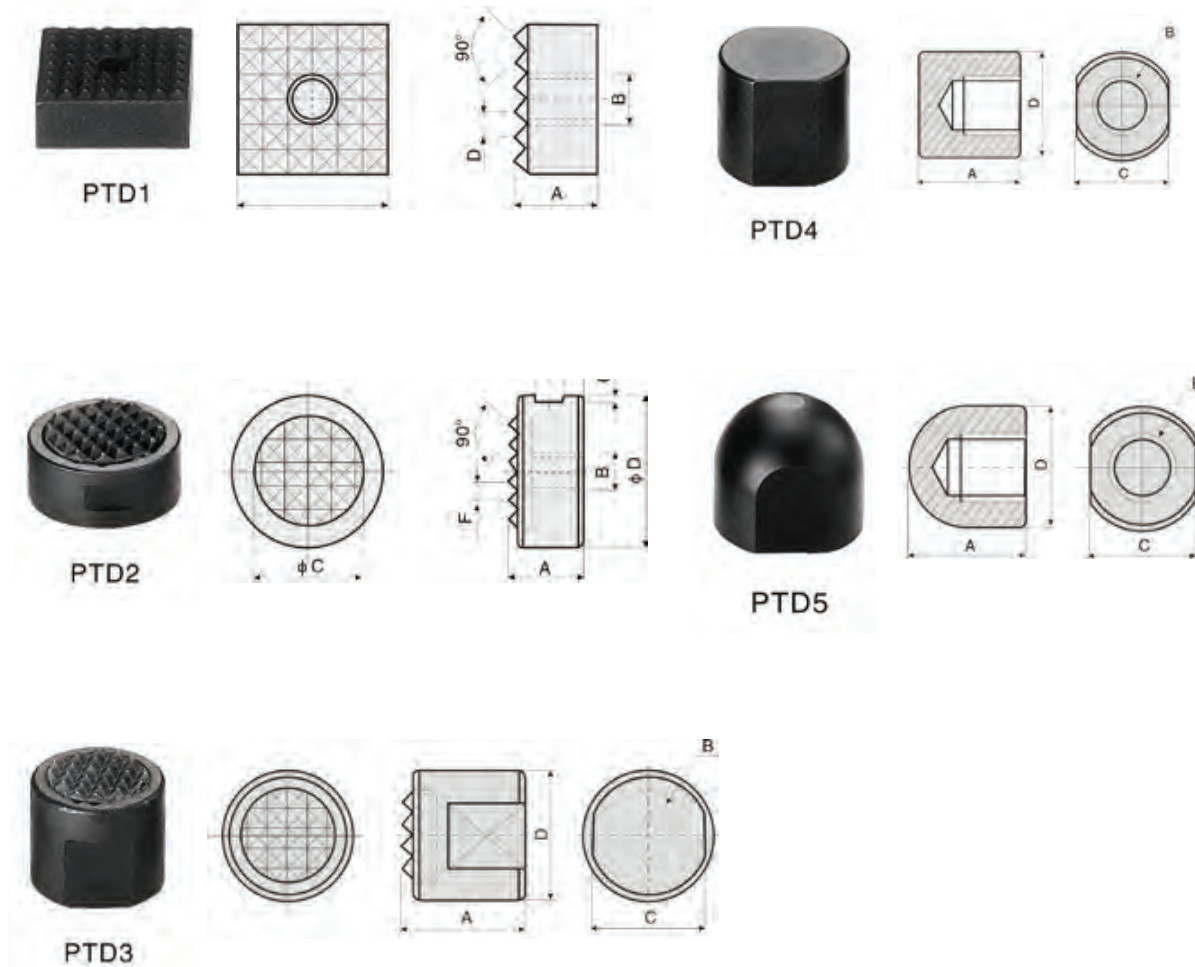
MODEL	PTC1-0110	PTC1-0210	PTC1-0312	PTC1-0412	PTC1-0516	PTC1-0616	PTC1-0720	PTC1-0820
A	25	50	25	50	25	50	25	50
B	M10*1.5	M10*1.5	M12*1.75	M12*1.75	M16*2.0	M16*2.0	M20*2.5	M20*2.5
C	5	5	6	6	8	8	10	10
D	6.5	6.5	8	8	11.5	11.5	13	13
E	4	5	5	5	6	6	8	8
R	2.3	2.3	2.3	2.3	3	3	3	3
g	15	30	22	45	37	78	58	120

MODEL	PTC2-0106	PTC2-0208	PTC2-0310	PTC2-0410	PTC2-0512	PTC2-0612	PTC2-0716	PTC2-0816	PTC2-0920	PTC2-1020
A	25	25	25	40	25	40	35	50	40	60
B	M6*1.0	M8*1.25	M10*1.5	M10*1.5	M12*1.75	M12*1.75	M16*2.0	M16*2.0	M20*2.5	M20*2.5
C	10	13	17	17	19	19	24	24	30	30
D	7.9	9.5	12.7	12.7	15.9	15.9	19.1	19.1	25.4	25.4
E	6	7.3	8.4	8.4	9.5	9.5	12	12	14.5	14.5
F	2.3	3	3	3	3	3	3	3	3	3
g	8	15	30	35	35	50	85	100	160	205

**TYPE: GRIPPER PAD(SQUARE) & GRIPPER PAD(ROUND) & SERRATED END & FLAT END & ROUND END**

**MATERIAL FOR PTD1/PTD2/PTD3: BODY:SKH9  
HARDNESS-HRC60°**

**MATERIAL FOR PTD4/PTD5: BODY:SCM440  
HARDNESS-HRC60°**

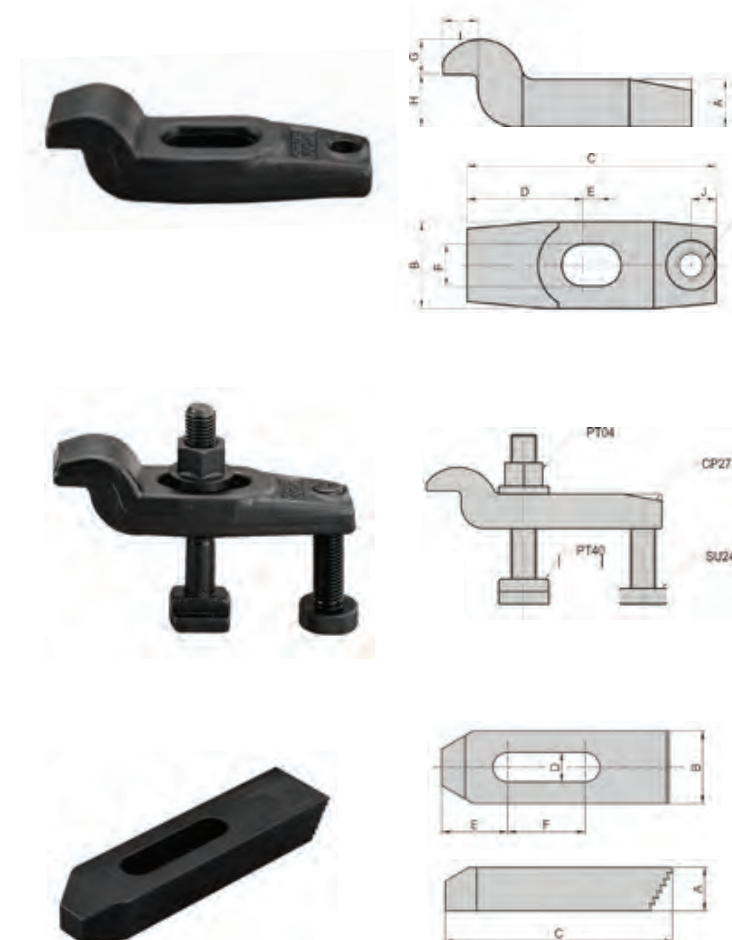


Unit:mm

MODEL	PTD1-0110	PTD1-0212	PTD1-0320	PTD1-0425	PTD3-0112	PTD3-0216	PTD4-0112	PTD4-0216	PTD5-0112	PTD5-0216
A	10	10	10	10	20	25	20	25	20	25
B	M5*0.8	M6*1.0	M6*1.0	M6*1.0	M12*1.75	M16*2.0	M12*1.75	M16*2.0	M12*1.75	M16*2.0
C	10	12	20	25	19	24	19	24	19	24
D	2.3	3	3	3	22	28	22	28	22	28
g	8	10	30	43	43	80	43	76	42	63

MODEL	PTD2-0110	PTD2-0212	PTD2-0316	PTD2-0420	PTD2-0525
A	10	12	12	12	12
B	M5*0.8	M6*1.0	M6*1.0	M6*1.0	M6*1.0
C	8.1	9.6	13	16.3	19.5
D	10	12	16	20	25
E	3.4	4	4	4	4
F	2.3	3	3	3	3
g	5	8	16	25	40



**THREADED GOOSE NECK CLAMP**

**MATERIAL: STEEL 45  
HEAT TREATMENT: HRC 32°~38  
SURFACE: BLACK OXIDATING.**

**CP28 GOOSE NECK CLAMP**

**MATERIAL: STEEL 45  
HEAT TREATMENT: HRC 32°~38  
SURFACE: BLACK OXIDATING.**

**CP25 STEP CLAMP**

**MATERIAL: STEEL 45  
HEAT TREATMENT: HRC 32°~38  
SURFACE: BLACK OXIDATING.  
APPLICATION: USED WITH SU25° TOGETHER**

Unit:mm

MODEL	A	B	C	D	E	F	G	H	I	J	K	Kg
CP27-16100	19	35	100	46.5	7	17	14	21	14	10	M12*1.75	0.78
CP27-16150	22	45	150	62	26	17	15	24	22	12	M16*2.0	1.7

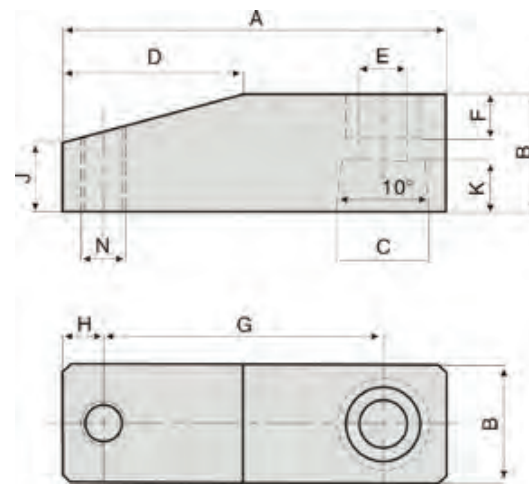
MODEL	CP27	PT40	PT04	SU24	Kg
CP28-ZC-40	16100	16100	1624	12060	1.5
CP-28-ZC-60	16150	16100	1624	16070	2.6

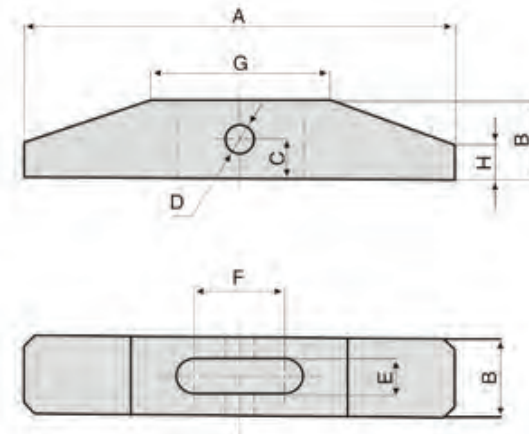
MODEL	A	B	C	D	E	F	Kg
CP25-10063	13	25	63	11	18	19	0.100
CP25-10100	16	25	100	11	27	37	0.215
CP25-10150	19	32	150	11	30	50	0.570
CP25-12063	13	25	63	13	20	14	0.100
CP25-12100	19	32	100	13	29	34	0.320
CP25-12150	22	32	150	13	32	50	0.650
CP25-14063	13	25	63	15	20	14	0.100
CP25-14100	19	32	100	15	29	34	0.315
CP25-14150	22	32	150	15	32	50	0.600
CP25-16063	16	32	63	17	22	12	0.160
CP25-16100	19	38	100	17	31	26	0.400
CP25-16150	22	38	150	17	40	47	0.710
CP25-18063	16	32	63	20	22	12	0.140
CP25-18100	19	38	100	20	31	26	0.380
CP25-18150	22	38	150	20	40	47	0.750
CP25-20100	19	38	100	21	31	26	0.360
CP25-20150	25	38	150	21	43	44	0.750
CP25-20200	25	50	200	21	55	65	1.500
CP25-24150	32	50	150	26	43	38	1.290
CP25-24200	32	50	200	26	53	57	2.000
CP25-24250	38	50	250	26	60	64	2.950



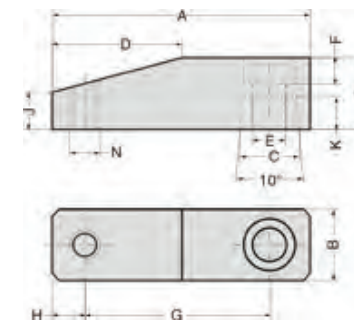
**NHS&NHTS**



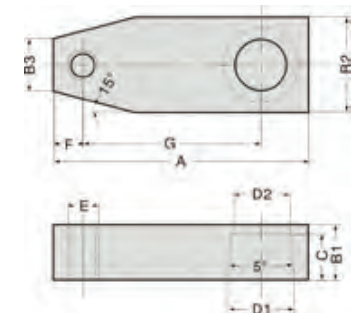
**NHSD&NHTSD**



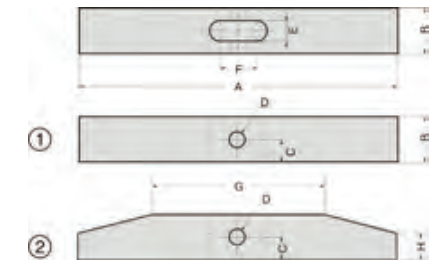
**CAS**



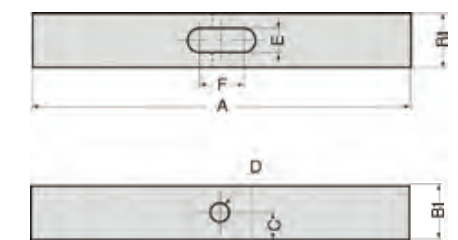
**CHS**



**CAS-D**



**CHS-D**



**NHS&NHTS HYDRAULIC SWING CLAMP ARM DIMENSION**

Unit:mm

MODEL	A	B	C	D	E	F	G	H	J	K	N
NHS-25	74	25*25	φ18	37	11	9	50	10	17	12	M10
NHTS-25	74	25*25	φ18	37	11	9	50	10	17	12	M10
NHS-32	80	25*25	φ20	47.5	11	9	55	10	17	12	M10
NHTS-32	80	25*25	φ20	47.5	11	9	55	10	17	12	M10
NHS-40	80	25*25	φ20	47.5	11	9	55	10	17	12	M10
NHTS-40	80	25*25	φ20	47.5	11	9	55	10	17	12	M10
NHS-50	80	30*30	φ25	47.5	11	9	55	10	17	12	M10
NHTS-50	80	30*30	φ25	47.5	11	9	55	10	17	12	M10
NHS-63	103	32*32	φ25	48.5	13	12	75	11	19	14	M12
NHSD-25	100	19*19	9.5	φ 8	9	21	40	9.8	-	-	-
NHTSD-25	100	19*19	9.5	φ 8	9	21	40	9.8	-	-	-
NHSD-32	120	22*22	9.5	φ 8	10	25	50	9.8	-	-	-
NHTSD-32	120	22*22	11	φ 8	10	25	50	9.8	-	-	-
NHSD-40	120	22*22	11	φ 8	10	25	50	9.8	-	-	-
NHTSD-40	120	22*22	11	φ 8	10	25	50	9.8	-	-	-
NHSD-50	120	22*22	11	φ 8	10	25	50	9.8	-	-	-
NHTSD-50	120	22*22	11	φ 8	10	25	50	9.8	-	-	-
NHSD-63	140	25*25	12.5	φ 10	12	30	60	9.8	-	-	-

**CAS PNEUMATIC SWING CLAMP ARM DIMENSION**

Unit:mm

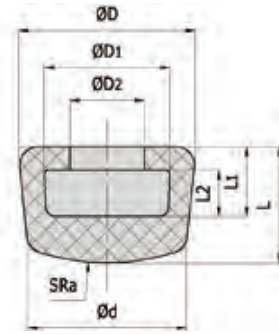
MODEL	A	B	C	D	E	F	G	H	J	K	N
CAS-25	48	16	φ14	28	φ7	6	30	8	8	6	M6
CAS-25D	100	19	9.5	φ6	9	21	40	9.8	-	-	-
CAS-32	70	19	φ16	35	φ9	7	50	9	9.8	9	M8
CAS-32D	100	19	9.5	φ8	9	21	40	9.8	-	-	-
CAS-40	70	19	φ16	35	φ9	7	50	9	9.8	9	M8
CAS-40D	100	19	9.5	φ8	9	21	40	9.8	-	-	-
CAS-50	95	25	φ20	47.5	φ11	9	70	10	17	12	M10
CAS-50D	120	22	11	φ8	10	25	50	9.8	-	-	-
CAS-63	95	25	φ20	47.5	φ11	9	70	10	17	12	M10
CAS-63D	120	22	11	φ8	10	25	50	9.8	-	-	-

**CHS HYDRAULIC SWING CLAMP ARM DIMENSION**

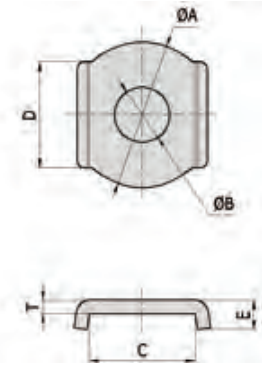
Unit:mm

MODEL	A			B1	B2	B3	C	D	D1	D2	E	F	G
	STANDARD WITH THREAD	STANDARD WITHOUT THREAD	EXTENSION										
CHS-25	74	74	100	16	27	15	13	-	φ 18	φ 15	M10*1.5	10	50
CHS-32	81	81	110	18	31	17	14	-	φ 20	φ 17	M10*1.5	10	55
CHS-40	86	86	120	18	31	17	15	-	φ 22.4	φ 19	M10*1.5	10	60
CHS-50	96	96	130	20	37	19	16	-	φ 28	φ 21	M12*1.75	12	65
CHS-63	114	114	150	23	48	24	18	-	φ 35.5	φ 25	M16*2.0	15	75
CHS-25D	-	140	200	□19	-	-	9.5	φ 8	-	-	9	16	-
CHS-32D	-	160	230	□22	-	-	11	φ 8	-	-	10	19	-
CHS-40D	-	160	230	□22	-	-	11	φ 10	-	-	10	21	-
CHS-50D	-	180	260	□25	-	-	12.5	φ 12	-	-	12	26	-
CHS-63D	-	200	-	□32	-	-	16	φ 15	-	-	15	33	-

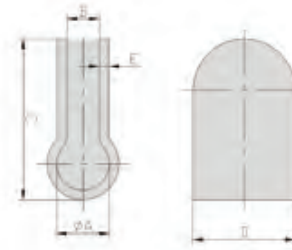
# CH-NC



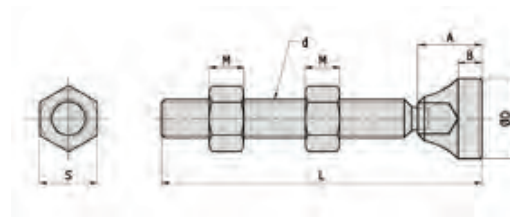
# CH-FW



# CH-BR



# CH-SF



Unit:mm

MODEL	L	L1	L2	ØD	ØD1	ØD2	Ød	SRa
CH-NC-140	11	6	3.7	16	10.5	6.4	14	SR20
CH-NC-516	12.5	7.5	5	19	13.5	8	17	SR24
CH-NC-380	14	8.5	6	22	16	10	20.8	SR25
CH-NC-120	16	10.5	8	30	21.5	13	26	-

MODEL	ØA	ØB	C	D	E	T
CH-FW-080	12	4.4	8.4	8.2	3.1	1
CH-FW-100	12.6	4.9	9.4	8.4	2.6	1
CH-FW-140	14.2	6.3	11.5	7	3.9	1.5
CH-FW-141	16.6	6.8	12.6	10.8	3.4	1.5
CH-FW-516	21.6	8.2	15.7	15.7	4.5	2
CH-FW-120	31	13	24.7	22.9	6.5	3
CH-FW-580	36	16	27	23.6	7	3

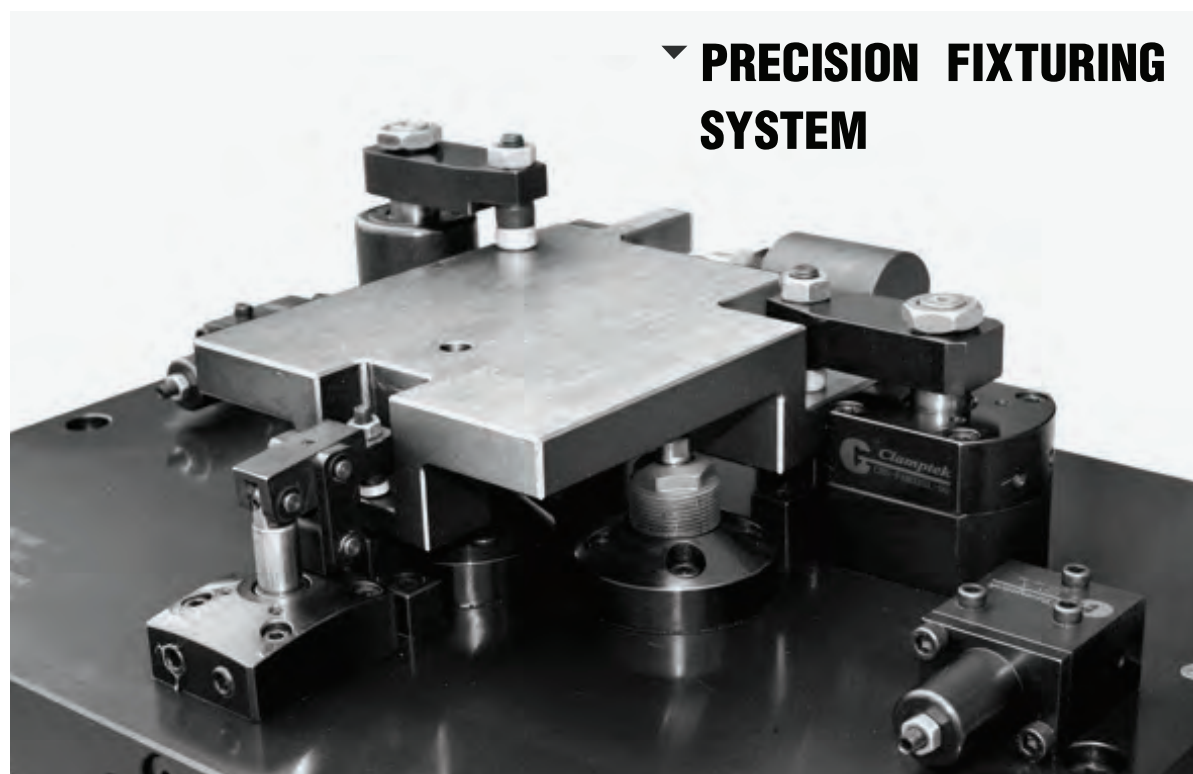
MODEL	ØA	B	C	D	E
CH-BR-140	8.3	6	32.5	12.7	3
CH-BR-141	6.5	6	22.3	9.5	3
CH-BR-142	6.5	4	25.4	12.7	2
CH-BR-516	8.3	6	32.5	15.9	2.5
CH-BR-380	10.5	8	42.5	20	3
CH-BR-120	13	10	43	23	3
CH-BR-580	16.5	10	50	31.8	3

MODEL	L	M	A	B	ØD	d	S
CH-SF-05035	35	4.7	10	4	12	M5*P0.8	8
CH-SF-06050	50	5.2	10	4	12	M6*P1.0	10
CH-SF-08065	65	6.8	13	5.5	20	M8*P1.25	13
CH-SF-10085	85	8.4	15	5.5	20	M10*P1.5	16
CH-SF-38300	78	6.8	11	4.5	16	3/8"-16	13

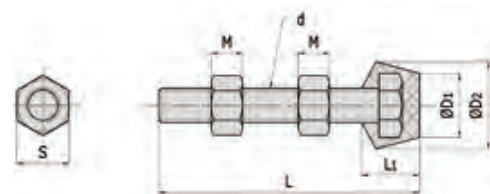
## COMPARISON TABLE OF TOGGLE CLAMPS

CLAMPTEK	DESTACO	KAKUTA	CARRLANE	AMF
CH-12143	207-TL	HV 352-TL	-	-
CH-12142	207-L	HV 353-L	CL-353-VTC	-
CH-13008	309-U	HV 400	-	-
CH-12130	207-U	HV 450	CL-450-VTC	90035
CH-12130-SS	207-USS	HV 450-2S	CL-450-VTC-S	-
CH-12135	207-UB	HV 451-B	CL-451-VTC	90233
CH-12137	207-ULB	HV 451-BL	-	-
CH-12136	207-TUB	HV 451-BT	-	-
CH-12138	207-TULB	HV 451-BTL	-	-
CH-12131	207-TU	HV 452-T	CL-452-VTC	-
CH-12133	207-TUL	HV 452-TL	-	-
CH-12132	207-UL	HV 453-L	CL-453-VTC	-
CH-12275	210-S	HV 550	CL-550-VTC	90449
CH-12280	210-SB	HV 551-B	CL-551-VTC	90563
CH-12300	210-TSB	HV 551-BT	-	-
CH-12295	210-TS	HV 552-T	CL-552-VTC	-
CH-12265	210-U	HV 650	CL-650-VTC	90043
CH-12270	210-UB	HV 651-B	CL-651-VTC	90241
CH-12290	210-TUB	HV 651-BT	-	-
CH-12285	210-TU	HV 652-T	CL-652-VTC	-
CH-10249	247-S	HV 750	CL-750-VTC	90456
CH-10250	247-SB	HV 751-B	CL-751-VTC	-
CH-10247	247-U	HV 850	CL-850-VTC	90050
CH-10248	247-UB	HV 851-B	CL-851-VTC	-
CH-101-JS	267-S	HV 950	CL-950-VTC	90464
CH-101-J	267-U	HV 1050	CL-1050-VTC	90068
CH-101-A	201-U	HV 150	CL-150-VTC	90019
CH-101-ASS	201-USS	HV 150-2S	CL-151-VTC-S	95026
CH-101-AI	201-UB	HV 151-B	CL-151-VTC	90217
CH-101-AIT	201-TUB	HV 151-BT	-	-
CH-101-AT	201-TU	HV 152-T	CL-152-VTC	-
CH-13005	305-U	HV 200	CL-200-VTC	-
CH-13005-SS	305-USS	HV 200-2S	CL-200-VTC-S	-
CH-12050	202	HV 250	CL-250-VTC	90514
CH-12050-SS	202-SS	HV 250-2S	CL-250-VTC-S	-
CH-12050-U	202-U	HV 250-U	-	90027
CH-12055	202-B	HV 251-B	CL-251-VTC	-
CH-12075	202-TB	HV 251-BT	-	-
CH-12070	202-T	HV 252-T	CL-252-VTC	-
CH-13007	307-U	HV 300	-	-
CH-12140	207-S	HV 350	CL-350-VTC	90431
CH-12145	207-SB	HV 351-B	CL-351-VTC	90555
CH-12147	207-LB	HV 351-BL	-	-
CH-12146	207-TSB	HV 351-BT	-	-
CH-12148	207-TLB	HV 351-BTL	-	-
CH-12141	207-TS	HV 352-T	CL-352-VTC	-
CH-201-A	205-S	HH 150	CL-150-HTC	-
CH-201-ASS	205-SSS	HH 150-2S	CL-150-HTC-S	-
CH-201-AI	205-SB	HH 151-B	CL-151-HTC	-
CH-201-AL	205-SL	HH 154-LE	CL-153-HTC	-
CH-201-AR	205-SR	HH 155-R	CL-152-HTC	-

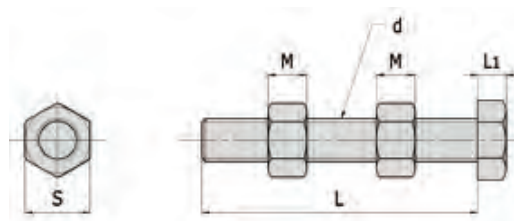




# CH-FC



# CH-SA



Unit:mm

MODEL	L	L1	M	d	ØD1	ØD2	S
CH-FC-108515	85	24.5	8.4	M10*P1.5	15	23	16
CH-FC-38312	3-1/2"(89)	24.5	5.3	3/8"-16	15	23	14
CH-FC-38412	4-1/2"(114)	24.5	5.3	3/8"-16	15	23	14
CH-FC-38334	3-3/4"(95)	24.5	5.3	3/8"-16	15	23	14
CH-FC-086312	63	19	6.8	M8*P1.25	13	18.5	13
CH-FC-087512	75	19	6.8	M8*P1.25	13	18.5	13
CH-FC-56212	2-1/2"(63)	19	5	5/16"-18	13	18.5	12.8
CH-FC-56300	3	19	5	5/16"-18	13	18.5	12.8
CH-FC-064410	44	14	5.2	M6*P1.0	10	15	10
CH-FC-065110	51	14	5.2	M6*P1.0	10	15	10
CH-FC-14134	1-3/4"(45)	14	3.8	1/4"-20	10	15	10.8
CH-FC-14218	2-1/8"(54)	14	3.8	1/4"-20	10	15	10.8
CH-FC-042507	25	11.5	3.2	M4*P0.7	10.5	13.5	7
CH-FC-044207	42	11.5	3.2	M4*P0.7	10.5	13.5	7
CH-FC-10138	1-3/8"(35)	11.5	3.1	3/16"-24	10.5	13.5	7.8

MODEL	L	L1	M	d	S
CH-SA-041507	15	2.8	3.2	M4*P0.7	7
CH-SA-042007	20	2.8	3.2	M4*P0.7	7
CH-SA-042507	25	2.8	3.2	M4*P0.7	7
CH-SA-044007	40	2.8	3.2	M4*P0.7	7
CH-SA-051508	15	3.5	4.7	M5*P0.8	8
CH-SA-053008	30	3.5	4.7	M5*P0.8	8
CH-SA-064010	40	4	5.2	M6*P1.0	10
CH-SA-065010	50	4	5.2	M6*P1.0	10
CH-SA-083012	30	5.3	6.8	M8*P1.25	13
CH-SA-085012	50	5.3	6.8	M8*P1.25	13
CH-SA-086512	65	5.3	6.8	M8*P1.25	13
CH-SA-105015	50	6.4	8.4	M10*P1.5	16
CH-SA-107515	75	6.4	8.4	M10*P1.5	16
CH-SA-109015	90	6.4	8.4	M10*P1.5	16
CH-SA-125017	50	7.5	10.8	M12*P1.75	18
CH-SA-08034	3/4"(19)	3	3	5/32"-32	7
CH-SA-10118	1-1/8"(28)	3.1	4	3/16"-24	7.8
CH-SA-14112	1-1/2"(38)	3.8	5.8	1/4"-20	10.8
CH-SA-14134	1-3/4"(45)	3.8	5.8	1/4"-20	10.8
CH-SA-56200	2"(50)	5	6.7	5/16"-18	12.8
CH-SA-56212	2-1/2"(63)	5	6.7	5/16"-18	12.8
CH-SA-38300	3"(76)	5.3	7.8	3/8"-16	14
CH-SA-38400	4"(100)	5.3	7.8	3/8"-16	14
CH-SA-12300	3"(76)	7.3	9.5	1/2"-12	18.7
CH-SA-12412	4-1/2"(114)	7.3	9.5	1/2"-12	18.7
CH-SA-58500	5"(127)	10	11.5	5/8"-11	24

# TABLA COMPARATIVA DE GRAPAS RÁPIDAS

CLAMPTEK	DESTACO	KAKUTA	CARRLANE	AMF
CH-201	205-U	HH 250	CL-250-HTC	93005
CH-201-SS	205-USS	HH 250-2S	CL-250-HTC-S	-
CH-201-I	205-UB	HH 251-B	CL-251-HTC	93203
CH-201-L	205-UL	HH 254-LE	CL-253-HTC	-
CH-201-R	205-UR	HH 255-R	CL-252-HTC	-
CH-201-B	215-U	HH 350	CL-350-HTC	-
CH-201-BSS	215-USS	HH 350-2S	CL-350-HTC-S	-
CH-201-BS	215-S	HH 350-S	CL-300-HTC	-
CH-201-BI	215-UB	HH 351-B	CL-351-HTC	-
CH-201-BSI	215-SB	HH 351-SB	-	-
CH-225-D	225-U	HH 450	CL-450-HTC	-
CH-225-DSS	225-USS	HH 450-2S	CL-450-HTC-S	-
CH-225-DI	225-UB	HH 451-B	CL-451-HTC	90233
CH-20235	235-U	HH 550	CL-550-HTC	90449
CH-20235-SS	235-USS	HH 550-2S	CL-550-HTC-S	-
CH-20236	235-UB	HH 551-BN	-	-
CH-36204	604	FM 150	CL-250-TPC	94318
CH-36224	624	FM 250	CL-350-TPC	94334
CH-36202	602	FM 50	CL-150-TPC	94300
CH-301-A	601	SL 10	CL-50-SPC	-
CH-36003	603	SL 105-2	-	-
CH-36092	609	SL 110	-	-
CH-301-B	601-O	SL 15-2	CL-51-SPC	-
CH-302-F	605	SL 150	CL-150-SPC	-
CH-36010	610	SL 250	CL-250-SPC	-
CH-36012	618	SL 251-B	-	-
CH-30607	607	SL 310	-	-
CH-36330	630	SL 350	CL-350-SPC	-
CH-40323-SS	323-MSS	FA 100-2S	CL-100-PA-S	-
CH-40324	324	FA 130	CL-110-PA	-
CH-431	331	FA 200	CL-200-PA	-
CH-431-SS	331-SS	FA 200-2S	CL-200-PA-S	-
CH-40334	334	FA 230	CL-210-PA	-
CH-40341	341	FA 300	CL-300-PA	-
CH-40341-SS	341-SS	FA 300-2S	CL-300-PA-S	-
CH-40344	344	FA 330	CL-310-PA	-
CH-40370	375	FA 600	CL-400-PA	-
CH-40380	385	FA 700	CL-500-PA	93856
CH-43101	301	PA 150	CL-150-PA	-
CH-451	351	PA 250	CL-250-PA	94540
CH-451-SS	351-SS	PA 250-2S	CL-250-PA-S	-
CH-452	351-B	PA 251-B	CL-251-PA	94680
CH-452-SS	351-BSS	PA 251-B2S	-	-
CH-40371	371	PA 270	-	-
CH-43810	381	PA 350	CL-350-PA	-
CH-50350	424	SA 150	CL-50-PL	-
CH-80325	325	SA 2	CL-325-PL-S	-
CH-50360	441	SA 250	CL-150-PL	-
CH-50380	462	SA 450	CL-254-PL	-
CH-50450	463	SA 550	CL-454-PL	-