MTEC

MASTECH ENGINEERING CO., LTD.
บริษัท มาสเทค เอ็นจิเนียริ่ง จำกัด

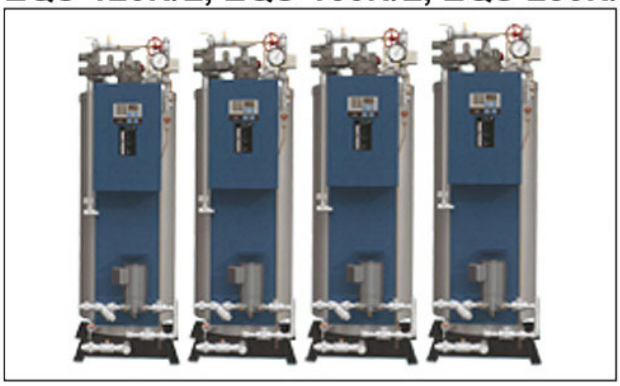
PRODUCTS 'S CATALOGUE AND SPECIFICATION

Website : www.mastech-en.com E-mail : sale@mastech-en.com

EQS-100k, EQS-200K/A, EQS-300K/A

Paragraph \ Model				EQS-100 K	EQS-200 K/A	EQS-300 K/A
Equivalent evaporation			kg/h	100	200	300
Heat output			kW	62.7	125	188
Heating surface			m2	2.83	3.89	4.95
Max. pressure			MPa	0.69	0.98	
Water quantity			L	38	53	63
Boiler efficiency			%	87		
Supply fuel				Kerosense (JIS #1, #2) A heavy oil (JIS #1, #2)		
Fuel Consumption	Kerosense		l/h	7.5	14.9	22.4
	A heavy oil		l/h	-	14.1	21.2
Power source				100V 1-phase 50/60 Hz	200V 3-phase 50/60 Hz	
Total electrical capacity	Kerosense		kW	0.35	1.00	
	A heavy oil		kW	-	1.05	
Connecting aparture	Fuel inlet		A	8		
	Feed water inlet		A	15		
	Steam discharge		A	20	25	
	Heating coil blowing		A	25		
	Safety valve outlet		A	20		25
	Exhaust gas Discharge		Φmm	150	200	250
Net weight			kg	235	330	390
Outside dimension	Depth		mm	780	920	961
	Width		mm	628	774	890
	Height		mm	1,604	1,644	1,821

EQS-120N/L, EQS-160N/L, EQS-250N/L, EQS-350N/L



Paragraph \ Model				EQS-120 N/L	EQS-160 N/L	EQS-250 N/L	EQS-350 N/L
Equivalent evaporation			kg/h	120	160	250	350
Heat output			kW	75.2	100	157	219
Heating surface			m2	2.0	3.1	4.0	4.8
Max. pressure			MPa	0.69			0.98
Water quantity			L	16	40	50	62
Boiler efficiency			%	88	87	88	
Supply fuel				Natural gas		Propane gas	
Fuel Consumption	Natural gas		m3(N)/h	7.4	10.0	15.4	21.6
	Propane gas		m3(N)/h	3.3	4.5	6.9	9.6
Power source				100V 1-phase 50/60 Hz		200V 3-phase 50/60 Hz	
Total electrical capacity			kW	0.35	0.60	1.00	1.35
Connecting aparture	Fuel inlet	Natural gas	A	20	25		32
		Propane gas	A	20	25		
	Feed water inlet		A	15			
	Steam discharge		A	20	25		32
	Heating coil blowing		A	20	25		
	Safety valve outlet		A	20		25	
	Exhaust gas Discharge		Φmm	120		150	200
Net weight			kg	220	285	375	465
Outside dimension	Depth		mm	600	750	830	910
	Width		mm	420	550	600	680
	Height		mm	1,740	1,901	1,990	2,020
Necessary Gas pressure	Natural gas		-	1962 Pa			
	Propane gas		-	2747 Pa			

EQS-401KS, EQS-501KS, EQS-751KS, EQS-1002KS, EQS-1502KS

Paragraph \ Model				EQS-401KS	EQS-501KS	EQS-751KS	EQS-1002KS	EQS-1502KS
Equivalent evaporation			kg/h	400	500	750	1,000	1,500
Heat output			kW	251	313	470	627	940
Heating surface			m2	4.95		7.64	9.96	
Max. pressure			MPa	0.98				
Water quantity			L	92	89	99	180	160
Boiler efficiency			%	88			90	
Supply fuel				Kerosene (JIS #1, #2) A heavy oil (JIS #1, #2)				
Fuel Consumption	Kerosene		l/h	29.4	36.8	55.2	71.9	107.9
	A heavy oil		l/h	27.9	34.9	52.3	68.2	102.3
Power source				200V 3-phase 50/60Hz				
Total electrical capacity			kW	1.6		3.2	4.1	8.3
Connecting aparture	Fuel inlet		A	15		20	15	
	Feed water inlet		A	20			25	
	Steam discharge		A	32			40	50
	Heating coil blowing		A	25				
	Safety valve outlet		A	25			32	
	Exhaust gas Discharge		Φmm	200		250		300
Net weight			kg	545		910	1,475	1,595
Outside dimension		Depth	mm	1,235		1,625	1,925	1,945
		Width	mm	790		1,060	1,345	1,545
		Height	mm	2,255		2,215	2,320	2,400

- **EQS-401NS/LS**
- **EQS-501NS/LS**
- **EQS-751NS/LS**
- **EQS-1002NS/LS**
- **EQS-1502NS/LS**
- **EQSH-2002NM/LM**

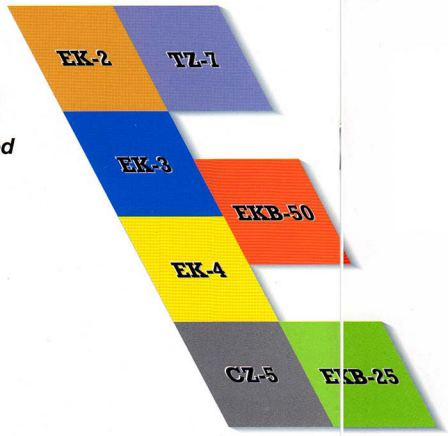
Paragraph \ Model				EQS-401NS EQS-401LS	EQS-501NS EQS-501LS	EQS-751NS EQS-751LS	EQS-1002NS EQS-1002LS	EQS-1502NS EQS-1502LS	EQSH-2002NM EQSH-2002LM
Equivalent evaporation			kg/h	400	500	750	1,000	1,500	2,000
Heat output			kW	251	313	470	627	940	1,253
Heating surface			m2	4.95		7.64	9.96		
Max. pressure			MPa	0.98					
Water quantity			L	92	89	99	180	160	150
Boiler efficiency			%	88			90		96
Supply fuel				Natural gas Propane gas					
Fuel Consumption		Natural gas m3(N)/h		24.6	30.8	46.2	60.0	90.3	112.9
		Propane gas m3(N)/h		10.9	13.7	20.6	26.8	40.2	50.3
Power source				200V 3-phase 50/60Hz					
Total electrical capacity			kW	1.6		3.2	3.9	7.9	10.3
Connecting aparture	Fuel inlet	Natural gas	A	40		50		40	40
		Propane gas	A	40		50		40	40
	Feed water inlet		A	20			25		32
	Steam discharge		A	32			40	50	65
	Heating coil blowing		A	25					
	Safety valve outlet		A	25			32		40
	Exhaust gas Discharge Φmm			200		250		300	380
Net weight			kg	555		925	1,515	1,635	2,060
Outside dimension		Depth	mm	1,235		1,625	1,925	1,945	2,130
		Width	mm	950		1,180	1,345	1,545	1,555
		Height	mm	2,255		2,215	2,320	2,400	2,420
Necessary Gas pressure		Natural gas	-	1962 Pa				0.098MPa ~0.294MPa	
		Propane gas	-	2747 Pa				0.098MPa ~0.294MPa	

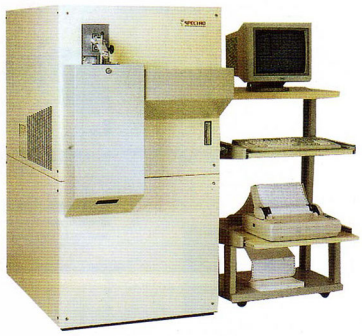
Model : Full Automatic Regeneration Type

Spec.	Unit	TS-6J	TS-12J	TS-18J	TS-28J	TS-40J	TS-54BF	TS-90CF	TS-120DF	Remarks
Ion exchange resin quantity	L	6	12	18	28	40	54	90	120	
Max. water passing rate	m³/h	0.36	0.75	1.10	1.75	2.5	3.4	3.70	8.0	
Water sampling quantity	m³/ Regeneration	App. 4.6	App. 9.3	App. 14	App. 22	App. 31	App. 42	App. 70	App. 93	If raw water hardness is 3° dH
Salt consumption	kg/ Regeneration	0.75	1.5	2.2	3.5	5.0	6.8	11.3	15.0	
Raw water pressure required	kg/cm²	1.5~5.0								
*1 Regeneration hour	min.	120					116	120		
Regeneration cycle		1 generation/day ~ 1 generation/7 days					1 generation/day ~ 1 generation/12 days			
Control system		5 cycle system								
*2 Power source		AC100V Single phase 50Hz or 60Hz								
Power consumption	VA	Working : 3 On regeneration : 3								
I/D of connecting port	A	15	20				25		50	Both in/out
*3 Operating weight	kg	38	81	96	110	70(53)	97(65)	177(125)	335(135)	
Accessories		Raw water inlet valve, Y-type strainer, Water gauge cock, Raw water pressure Gauge 8kg/cm², (In case of TS-120DF, 10/cm²) Drain hose, Power source code 3 m								

この道一筋に打込んで50年。自信をもって贈る“研究の成果と信頼性”

Over 50 years, having devoted all our energy to a wide field of research and improvement on the electrode materials, we are full of confidence in providing the desired dependability of “EK-METALS” products.





EKメタルの種類・特徴/ Kinds of Metals

種 Alloy	類	機械的性質/Mechanical properties 引張強さ Tensile strength N/mm²	伸び Elongation %	硬さ Hardness HRB	導電率 Electrical conductivity I.A.C.S.% at 20°C	耐熱温度 Temperature limit on heat resistance / °C	類似規格 Equivalent standard	特徴 用途 Characteristics & Applications	
EK-2	伸銅棒/Drawn bar	450~550	20~30	78~87	78~85	480~520	JISZ3234 2種 ISO5182-1978-2-1 RWMA II級	銅—クロム系合金にジルコニウムなどの特殊元素を添加し、耐久性を改善。導電性、耐熱性にも優れており、抵抗溶接用電極材料として最も広く使用されている。	With durability improved by adding special element to copperchromium-zirconium alloy, it excells in electric conductivity and heat resistance; hence,it is in use most widely as resistance welding electrode material.
	鍛造品/Forged Products	390~490	20~35	72~82					
	鋳物/Casting	340~440	15~35	70~80					
EK-3	伸銅棒/Drawn bar	510~640	15~30	85~92	50~70	490~530	RWMA B10級	銅—クロム—チタン系合金で、機械的強度が優れており、高加圧の溶接など、高力、耐久性が必要とされる電極材に適する。	Having excellent mechanical strength of copper-chromium-titanium alloy, EK-3 is suited to the electrode materials working under raised we;ding pressure where very high strength and durability are required.
	鍛造品/Forged Products	470~590	15~30	82~90					
EK-4	鍛造品 Forged Products	690~880	10~20	95~102	15~30	490~530	RWMA B12級	銅—クロム—チタン(高)系合金で、機械的強度ならびに耐摩耗性に優れ、高抗張力や耐久性が要求される導電材料として使用、ベリリウム銅25合金の代替品としても用いられる。	Having high mechanical strength as well as excellent wear resistance of copper-titanium alloy,EK-4 is quite suitable for the use of electric conductors where high tensile strength and durability are required.EK-4 will be used as a substitute for the high-priced beryllium-copper 25 alloy because it can compare with the latter quality.
CZ-5	伸銅棒＜φ32 Drawn bar	490~640	15~25	80~90	72~80	500~550	JISZ3234 2種 ISO5182-1978A-2-2 RWMA II級	銅—クロム—ジルコニウム系合金で高温強度に優れており、薄型シーム電極用としては最適。特に表面処理鋼板の抵抗溶接用電極として特性が最大限に発揮される。	Having high temperature endurance of copper-chromium-zirconium alloy, it is highly recommended to use CZ-5 for thin electrodes of seam welding machine. Especially CZ-5 shows its full ability in the application to resistance welding electrodes for surface treated steel plates.
	鍛造品 Forged Products	440~540	15~25	78~88					
TZ-7	鍛造品 Forged Products	540~690	12~25	87~95	45~60	490~530	JISZ3234 3種 ISO5182-1978A-3-1 RWMA III級	銅—クロム—ジルコニウム—チタン系合金で、機械的強度、耐摩耗性、耐久性に優れており高負荷の溶接用電極に適してる。ベリリウム銅50合金の代替品としても用いられる。	Having excellent electric conductivity and remarkably improved properties in mechanical strength wear resistance and durability of high chromium-zirconium-titanium alloy, TZ-7 is fit for the electrodes used under severe welding condition TZ-7 gives satisfactory results in a substitute for the beryllium-copper 50 alloy.
EKB-50	伸銅棒 Drawn bar	730~880	9~25	93~105	45~60	480~520	JISZ3234 3種 ISO5182-1978A-3-1 RWMA III級	銅—ベリリウム系合金に特殊元素を添加、適切な熱処理を施してある。高温域で高い強度と優れた熱伝導性、耐久性を有している。機械的性質に優れ展伸性、切削加工性も良好である。極めて過酷な条件で使用される電極材として最適である。	Having the most excellent strength,wear resistance and thermal durability of the beryllium-copper 50 alloy made by adding some special elements to copper beryllium base alloy .EKB-50proves its merits in the applications to flush butt and seam welding electrodes or holders of spot welder operating under very severe working environment.
	鍛造品 Forged Products	690~830	9~25	93~105					
EKB-25	伸銅棒 Drawn bar	1,100~1,500	2~8	HRC36~45	20~30	315~350	JIS-H3270 C1720	この合金は適切な熱処理を施すことにより、特殊鋼に匹敵する高強度と、優れたバネ性、導電性、耐摩耗性、耐食性、非発火性などの特徴をかねそなえる優れた材料です。	EKB-25 metal becomes to compare with special steels in high strength by means of the pertinently suitable heat treament and it has, besides, the outstanding properties relating to those of specific spring character, electric conductivity, corrosion resistance and wear resistance.
	鍛造品 Forged Products	970以上(Min)	(2以上)	HRC33以上(Min)	20以上(Min)		JIS-Z3234 4種相当		

Spotron

一般抵抗溶接用

溶接電流計

SP-3110

スポットロン株式会社

Welding Current Meter　SP－3110

Spotron

■ Outline :

Model SP-3110 is a handy type welding current meter, which measures welding current and weld time for spot welding, and digitally displays the result of measurements, which can be simultaneously printed by the built-in printer.

■ Features :

For AC current or rectified current type, effective value of welding current is measured at each half cycle and effective mean value is calculated and displayed after application of welding current. In case of the capacitor discharge type welder, current and time is measured and indicated in peak value and discharge time.

It's possible to measure 2 stage welding current, for example. Pre-Heat & after then Heat, by data memory function.

It can also storage up to 100 spots fo welding even in case of very fast working tact.

Measurement of resistance welding time has so wide range that the maximum realized up to 300 cycles.

Liquid crystal panel with the legible back-lite is employed.

Data recording is slso possible by small built-in thermal printer. Wave form and histogram can be printed on roll paper.

Designed to be handy, convenient for carrying, cordless with built-in rechageable battery.

■ Specification :

Applicable for		Those type of single phase AC, single phase rectified, three phase rectified, inverter weld current, capacitor discharge weld current, intermittent seam weld currten
Welding current	Ranges	300A－999A, 0.50kA－9.99kA, 8.0kA－20.0kA, 5.0kA～99.9kA
	Indication	Average of RMS value or PEAK value
	Accuracy	±2% at full scale point
Welding time	Ranges	CYCLE : 0.5－300 cycles, mSEC : 0.1－999mSec
	Indication	All over welding time by cycles or time=Tp, time=To
	Accuracy	CYCLE : ±0. 5 cycle, mSEC : ±0. 1 mSec
Printer	Items	Data 1 : Number of times measurement, operated date, weld current, weld time, phase control angle.
		Data 2 : Data 1 plus current and conduction control angle, printed for every each one cycle.
		Wave 1, 2 : Data 1 plus weld current wave form
		Graph : Histogram
	Speed	0. 7 Sec/line
	Paper	Thermal paper, roll width 58mm, roll 40mm
Data memory		Data 1:100 data max, Data 2:300 cycles, Wave 1,2:40 cycle, Graph:99999 times
Display		16 digit LCD with EL light
Power supply		Rechargeable battery, AC adaptor (100V only)
Dimensions		120(W) × 78(H) × 180(D)mm Weight 1. 7 kg (Approx)
Accessory		Toroidal coil (PU-10), AC adaptor (100V only), Recording paper, Soft case, Shoulder belt, Instructions manual,

Appearance and specifications are subject to change for improvement without notice. 2003.11

Manufacturer specialized in the measuring equipment for resistance welding

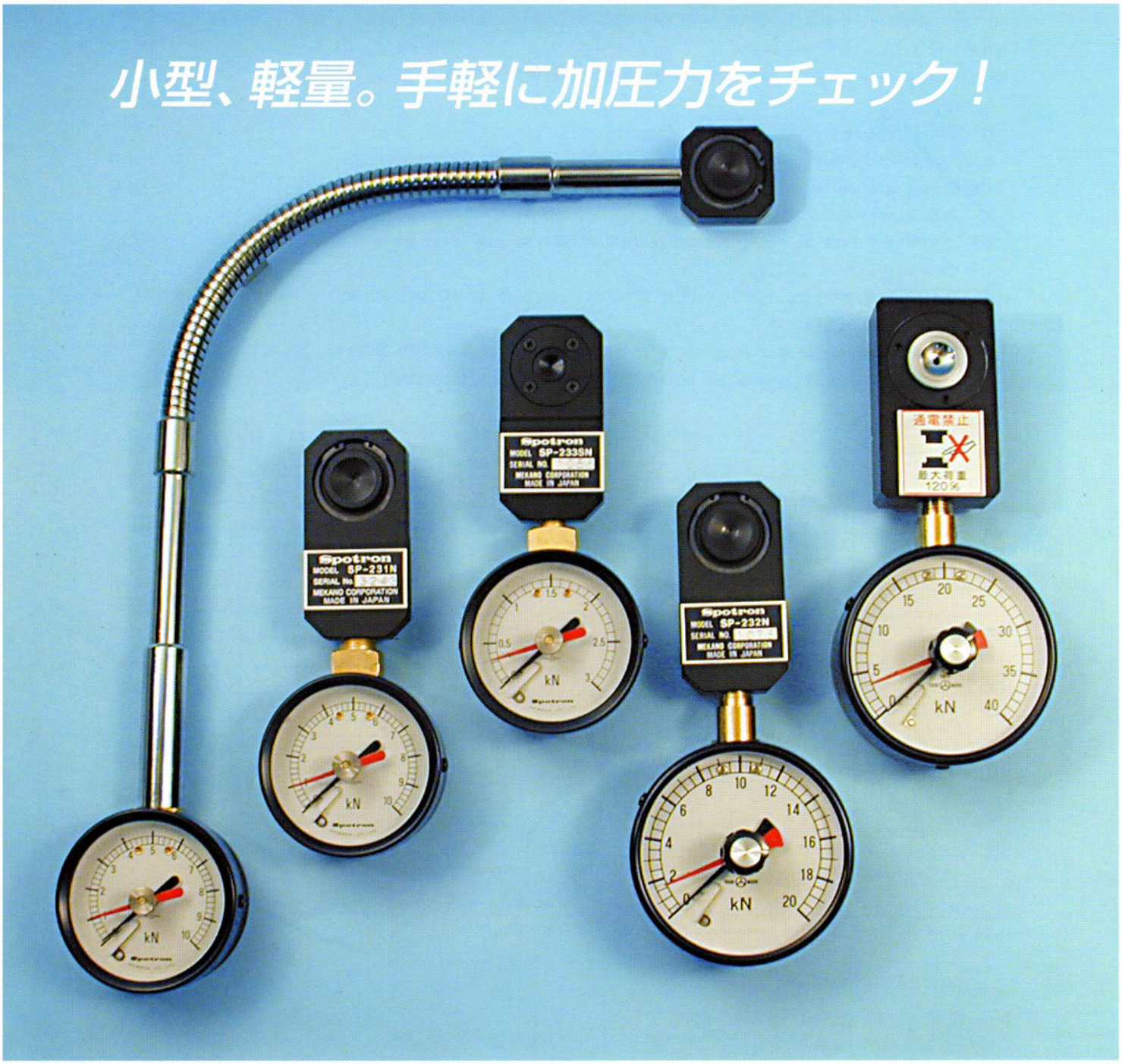
Distributor

Spotron

一般抵抗溶接用

油圧式加圧力計

SP-231Nシリーズ



スポットロン株式会社

For General Resistance weld

Spotron™

Hydraulic Weld Force Gauge SP-231N Series

■Outline:

For getting better result of weld, it is necessary to control fully pressure force put in between electrodes which is one of the three important factorsfor welding conditions. The weld force gauge of SP-231N series employs closed and sealed hydraulic system offering compactness, light weight and simplicity of handling.

Pressure receiving section is fabricated with insulated plate which safeguards against weld current on if applied by any chance.

In accordance with the international standard, unit of N(Newton) is adopted and indicated on the meter.

High reliability of this gauge supports severe quality control.

■Features:

(1) Seven types of variations fitted to the weld force are available.
(2) Be indicated with the international standard, unit of N(Newton).
(3) Closed and sealed hydraulic system offers small size, light weight and easy handlings.
(4) Insuration type to protect to a certain extent against weld current on when carelessly applied.
(5) Adoption of parting needle except SP-232N can point at maximun value of pressure force. (Optional for SP-232N)
(6) SP-241N has a flexible neck which is bendable from straight to U-form.
(7) With accessory of a hardcase convenient for keeping and custody.

■Specifications:

Model		SP-233SN	SP-236N	SP-231N	SP-232N	SP-233-3T	SP-233-4T	SP-241N
Range		0.25～3kN	0.3～6kN	0.5～10kN	1～20kN	1.5～30kN	2～40kN	0.5～10kN
Min. Scale		100N (10kgf)	200N (20kgf)	200N (20kgf)	200N (20kgf)	1kN (100kgf)	1kN (100kgf)	200N (20kgf)
Accuracy		±3%F.S.						
Weight (g)	Unit	400	420	500	670	900	900	560
	Case	400						700
Dimensions (mm)	A	10	13	18	18	25	25	18
	B	153	154	155	172	172	172	496
	C	38	38	38	40	52	52	38
	D	38	38	38	38	44	44	36
	E	71	76	76	76	76	76	36
	F	φ65	φ65	φ65	φ78	φ78	φ78	φ65

-- Appearance and specifications are subject to change for improvement without notice. -- 2003.11

Manufacturer Specialized in the measuring equipment for resistance welding

Distributor

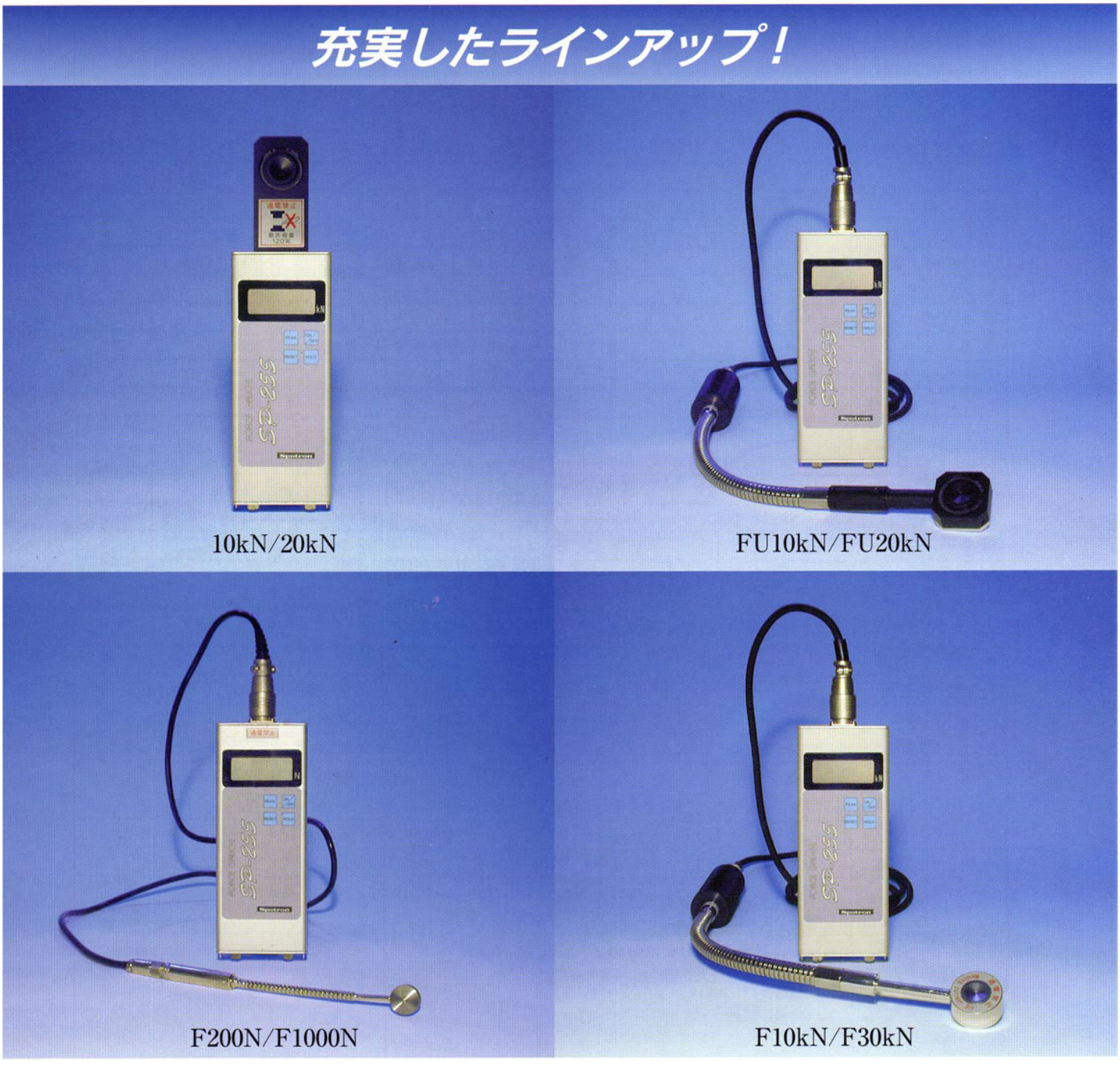
Spotron™

一般抵抗溶接用

デジタル加圧力計

SP-255 シリーズ

充実したラインアップ！



10kN/20kN

FU10kN/FU20kN

F200N/F1000N

F10kN/F30kN

スポットロン株式会社

Digital Type Welding Force Gauge Model SP-255 Series Spotron

■Outline:

The model SP-255 is a handy type digital welding force gauge which can measure weld force applied between electrodes that is one of the three important conditions for the spot welding. The model measures the force applied and displays data on LCD by using high accurate sensor.

■Features:

(1) Measuring forces are digitally displayed successively.
(2) To ensure accuracy , averaged value of sampling in 64 times/sec. is employed in display.
(3) It can hold an optional data measured.
(4) It can memory and indicate maximum load during measurment.
(5) Has a auto-zero reset function.
(6) Convenient in handling by incorporating dry batteries (UM-3x2)
(7) Auto-power off function for saving power consumption.
(8) Indication for requesting replacement of batteries.

■Specifications:

Item	Contents
Measurment display	Digital, successive (with hold function)
Display	3+1/2 digits LCD (Segment type)
Accuracy	±1% Full Scale (Static force)
Limit force	120% of fixed force
Power source	Dry battery ×2 (UM-3)
Battery life	8hrs (Alkaline battery, continuous use)
Temp. operated	0°～+40℃
Accessory	Case/Manual/Test Report

[Fixed type] The fixed neck type is standard type in this series which adopts hydraulic system.

Model	Measure range	Minimum force	Dimensions (mm)
SP-255-10kN	0.5kN～10.00kN	0.01kN (1kgf)	L262 × W68 × T36 /780g
SP-255-20kN	1.0kN～20.0 kN	0.1 kN (10kgf)	L262 × W68 × T36 /780g

[Flexible type] Two types are available, the one is fixed neck type and the other is flexible neck type which is convenient in the measuurment for the distant place.

SP-255-F 200N	10N ～ 200N	1 N (0.1kgf)	Senser φ20×L198 / 60g / Cable 1.0m
SP-255-F1000N	50N ～ 1000N	1 N (0.1kgf)	Senser φ20×L198 / 60g / Cable 1.0m
SP-255-F10kN	0.50kN ～ 10.00kN	0.01kN (1kgf)	Senser φ34×L470 / 550g / Cable 1.5m
SP-255-F30kN	1.5 kN ～ 30.0 kN	0.1 kN (10kgf)	Senser φ36×L472 / 570g / Cable 1.5m

Body L195×W68×T36/430g

[Flexible FU type] The new FU type is flexible long neck and closed hydraulic system, insurated against weld current.

SP-255-FU10kN	0.50kN ～ 10.00kN	0.01kN (1kgf)	Senser 36×36×L470/ 610g / Cable 1.5m
SP-255-FU20kN	1.0 kN ～ 20.0 kN	0.1 kN (10kgf)	Senser 36×36×L470/ 610g / Cable 1.5m

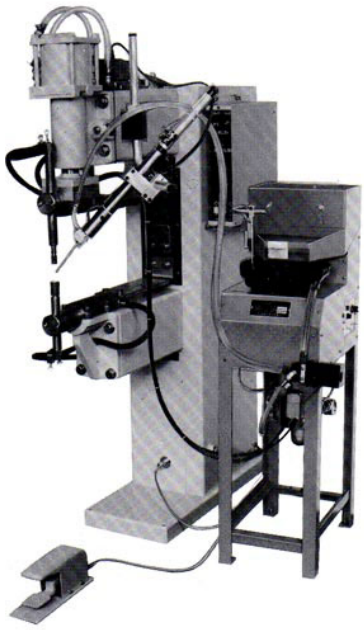
Body L195×W68×T36/430g

Manufacturer Specialized in the measuring equipment for resistance welding

Distributor

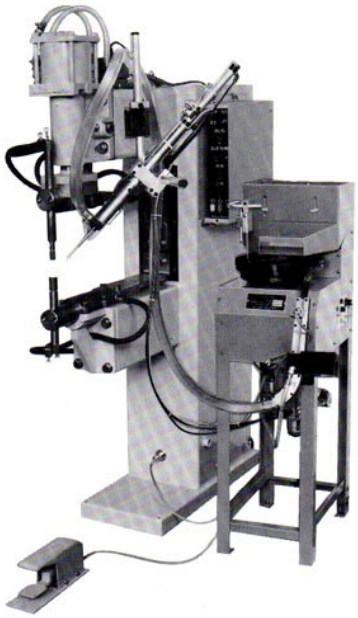
Nut Feeder of Hi-Technique and Hi-Reliability for nut welding work!

●Single Feed Type



①Single Feed Type (Square, Round and Hex Nuts)

This is the standard type equipped with Hopper & Leveler Switch, Bowl, Escapement and Feeding Head. Simply put the nuts into the Hopper and you can have them in the desired position with head and tail selected automatically.



②Single Feed Type (T-Nuts, Nut Direction Controlled Type)

Nut direction controlled feeding is often necessary when feeding T-Nuts. In this case we recommend this type for improving productivity.

※The above pictures show examples of installation to spot welding machines.

③Table Top Type

Compact body allows installation on spot welding machines or working benches.

④L-Type (Separate Type)

This L-Type is equipped with a large cylindrical bowl and is necessary when using large nuts (over M11) or a particular cycle time.(Hopper in the above picture is an optional part)

●Standard Equipment ○Optional

■Type and Function Table

Function Equipment \ Feeding Type / Symbol / Nut Symbol		Single			Double						
		S			D	R		M		Z	
		S.C.H	T	L	S.C.H different	S.C.H same	S.C.H different	S.C.H same	S.C.H different	S.C.H same	S.C.H different
Feeding Head		●	●	●	● 2 Units	● 2 Units	● 2 Units	● 2 Units	● 2 Units	● 2 Units	● 2 Units
Feeding Head Bracket		●	●	●	● 1 set	● 1 set	● 1 set	● 1 set	● 1 set	● 1 set	● 1 set
Types of Escapement	Standard	●			● 2 Units	● 2 Units	● 2 Units	● 2 Units	● 2 Units	● 2 Units	● 2 Units
	Ratchet		●								
	Push			●							
Hopper (9 Lit.)		●	●	●	●	●		●		●	
Mounting		●	●	●	●	●	●	●	●	●	●
Bowl	S-Type	●	●	●	●	●		●		●	
	L-Type						●		●		●
Anti-Overflow Switch	Circular Switch	●			●	●	●	●	●	●	●
	Proximity Switch		●	●							
Panel Cover		○	○	○	○	○	○	○	○	○	○
Jumbo Hopper (30 Lit.)		○	○	○		○		○		○	
Main Body Cover		○	○	○	○	○		○		○	

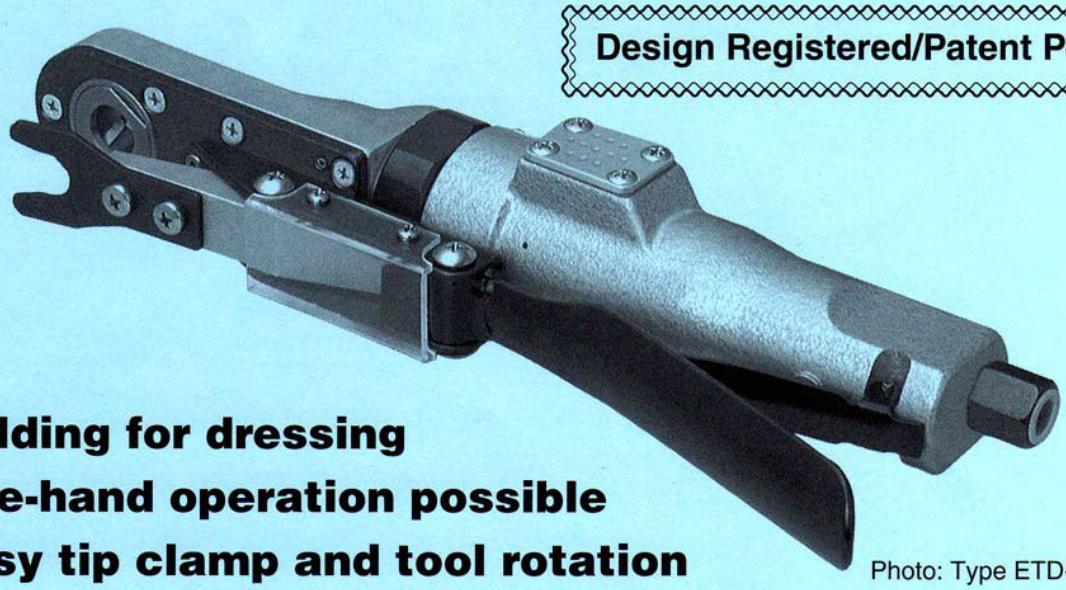
※ An L-Type Bowl is applyed to the Double Feed-Different Nut type, and also may be applyed to other types depending upon nut size (over M11) or duty cycle.

MEIKŪ

CAP TIP DRESSER

Type ETD-18A · ETD-25A

Design Registered/Patent Pending



☆Holding for dressing

☆One-hand operation possible

☆Easy tip clamp and tool rotation

Photo: Type ETD-18A

Specifications

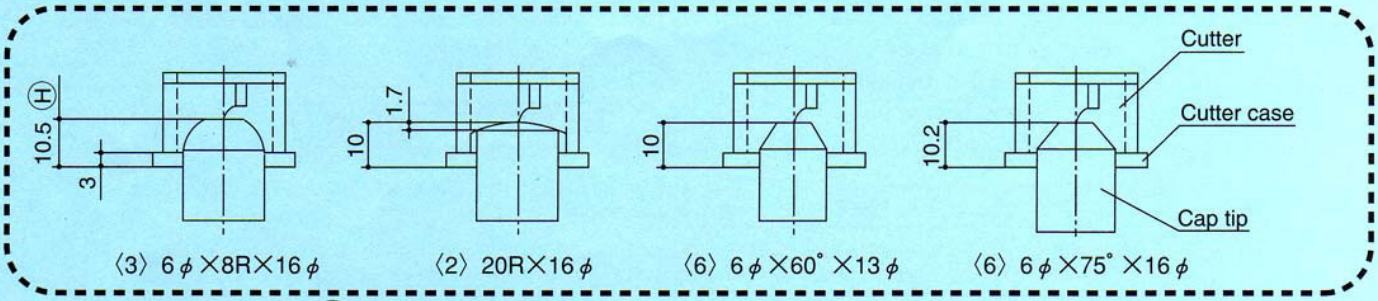
Type	Tip size mm (aprox.)	Clamp open size mm (aprox.)	No-load R.P.M (aprox.)	Air consumption m^3/min (aprox.)	Air pressure kg/cm^2 (aprox.)	Overall length mm (aprox.)	Weight kg (aprox.)	Hose inner dia mm (aprox.)
ETD-18A	9～16	25	1,300	0.5	5～6	309	2.0	9.5
ETD-25A	19～25	25	1,100	0.5	5～6	316	2.03	9.5

Note: The cutter and cutter case are common for type ETD-18A and 18F. ETD-25A is common with 25F.

Set components

- This unit (Set up the clamp plate of the specified size.) … 1
- Cutter case (Specified size) … 1

Combination of cutter case and cap tip



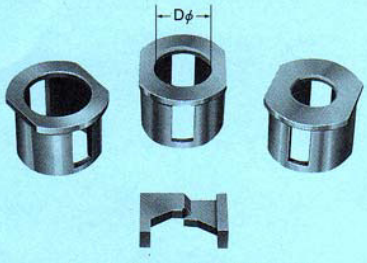
〈3〉 6φ×8R×16φ　〈2〉 20R×16φ　〈6〉 6φ×60°×13φ　〈6〉 6φ×75°×16φ

Note: The dimension Ⓗ varies depending on the diameter and shape of the tip.

ex. 6R→9.3 / 6.5R→9.5 / 8R→10.5

Cap tip length and correctable dimension

ex. 16φ×25ℓ …… 11mm
16φ×23ℓ …… 9mm
13φ×20ℓ …… 6mm



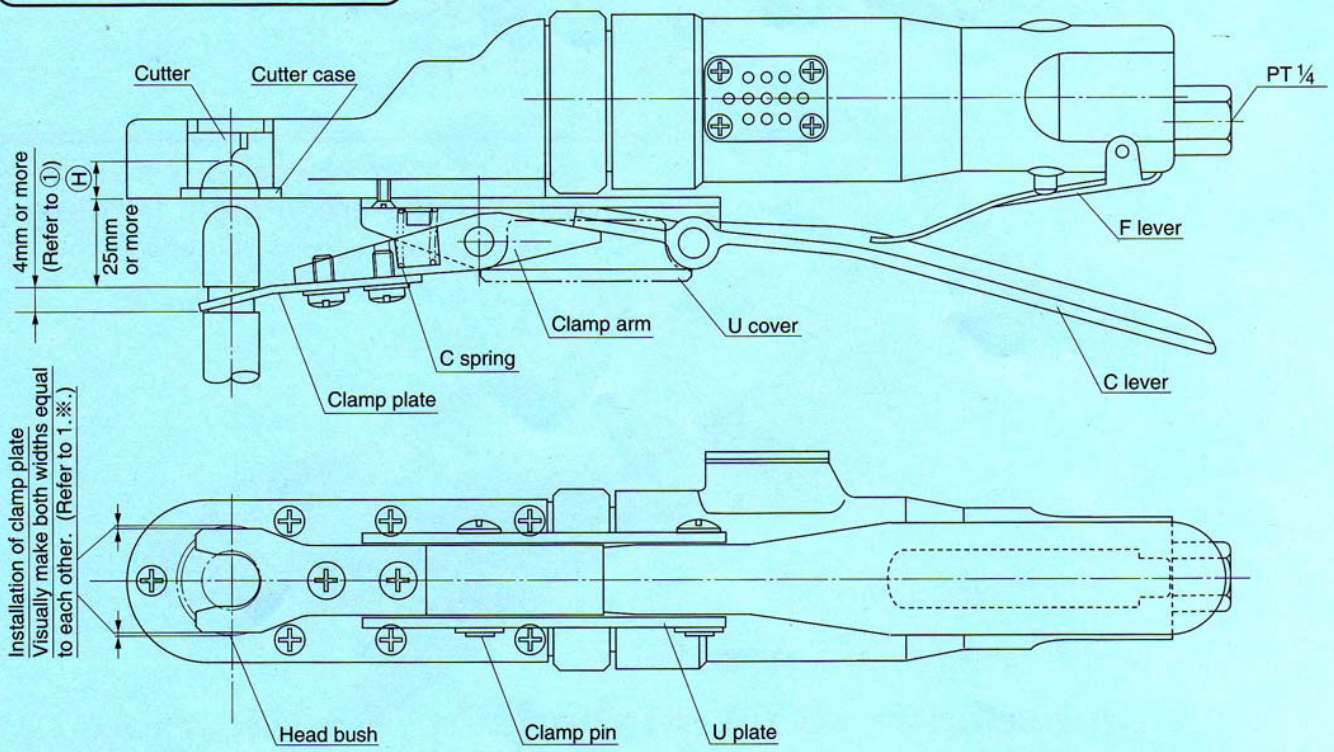
Cutter Cases and Cutter

Types of Cutter Cases

The cutter case bore diameter (Dφ) acts as a guide so that the cutter dresses at the correct location relative to the tip. Please specify a cutter case that matches the tip size.

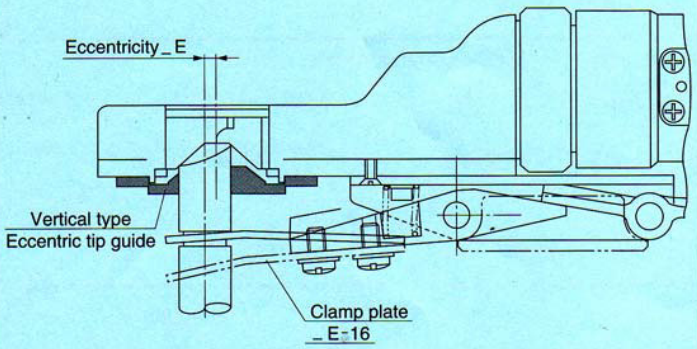
Standard cap tip dresser

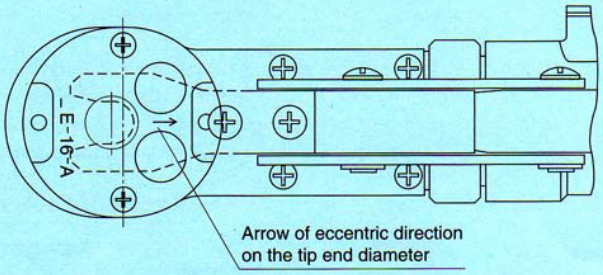
(fig.1)



Correction of eccentric tip

Normally for inner eccentricity (shown below) and outer eccentricity types possible

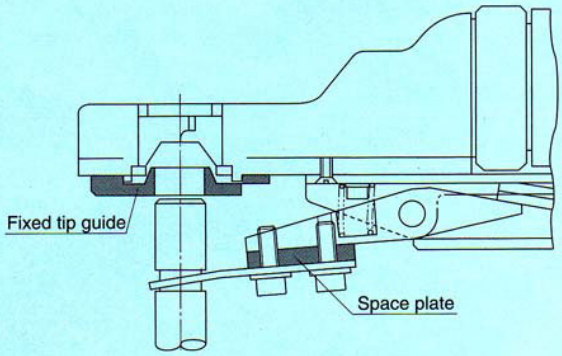




Tool type ETD-25A-E

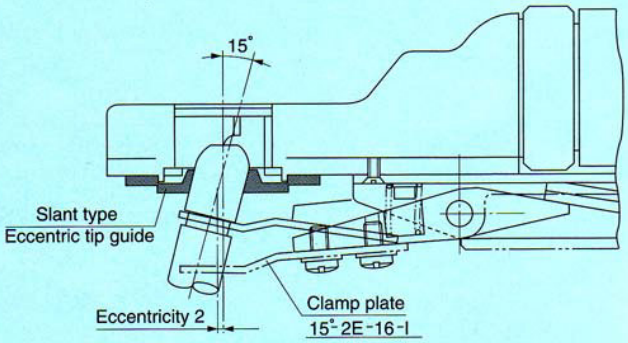
Installation of fixed tip guide

The tip is stably held for smooth finishing.



Type ETD-18A (25A) -G

Tip end 15° cutting



Tool type ETD-25A-E

Moreover, the special tips of various types can be corrected. Please contact MEIKU MANUFACTURING

CAP TIP DRESSER
Tool Handling Instruction　　Type ETD-18A・25A

① **The insertion part (width) of clamp plate = The gap must be 4mm or more. (fig.1)**

⚠ If it is 4mm or less wide, the clamp plate may not move smoothly or the cap tip may be pried off by the clamp chip. (Cooling water will spout out.)

② **Since the above gap may be gradually narrowed owing to the shock during spot-welding, assure the gap to be larger in the initial stage, or timely take care for the gap.**

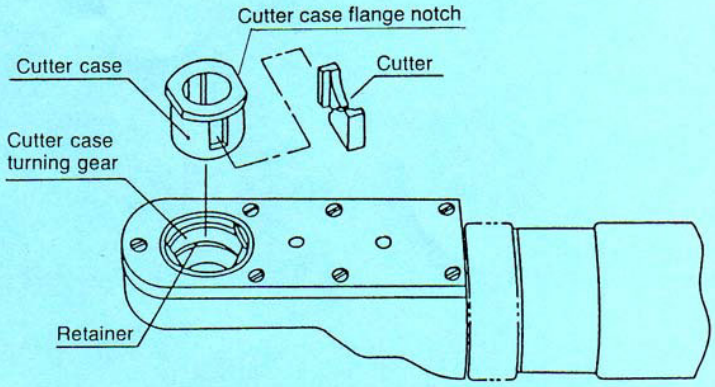
Installation Procedure for Cutter Case

⚠ When installing or detaching cutter case, you must first detach the air hose.

1. Insert cutter into cutter case window.
2. Align the cutter case flange notch to the turning gear notch and insert.

Note A: The cutter case is held by the resilience of the retainer (rubber "O" ring) shown in the diagram. Thus, a slight resistance will be felt when the cutter cases is inserted.If the retainer is worn and it becomes easy for the cutter case to come out, the retainer must be replaced.

Note B: Removal: Extrude the cutter case from the opposite side with a finger or using a tool.



Pneumatic Pressure

⚠ The pneumatic pressure must be set to 6kg/cm². (5-6kg/cm² is the appropriate range.)

Working Procedure (Refer to the illustration fig.1.)

⚠ Refer to the above figure. When beginning work, check to see if the cutter case is firmly retained on the tool side.

1. As shown above, insert the clamp plate to under the cap tip.

Note: Previously check whether a clamp plate suitable for the chip size is installed on the tool (The size is stamped. Here, common for ϕ13 and ϕ12.).

※ The installing screw has a slight play against the installation hole of the clamp plate. Therefore, when installing the clamp plate, visually align the outer diameter of the cutter case (or the outer diameter of the head bush) on the tool side to the width of the clamp plate, and fasten the clamp plate.

2. Grip the C lever to operate the clamp plate, and insert the chip into the port of the cutter case.

⚠ Do not touch cutter in rotation or the cutter case.

⚠ Never start operating the tool by pressing against the tip while the cutter is stopped.

Note a.: Keep the tool to be square to the axis center of the chip.

Note b.: Since the C lever is linked with the F lever, the tool will start revolving on the way of the chip insertion. Here, the air valve is a two-step type. It starts slowly revolving at the initial time and revolves at the full speed slightly before the chip comes into contact with the cutter.

3. Gradually increase the gripping force of the C lever, and finally weaken the force for the end.

Note a.: At first, slightly and slowly grip the C lever. When the feeling of the chip cutting becomes stable, strongly grip the lever for cutting. To end the cutting, finally release the force for light cutting.

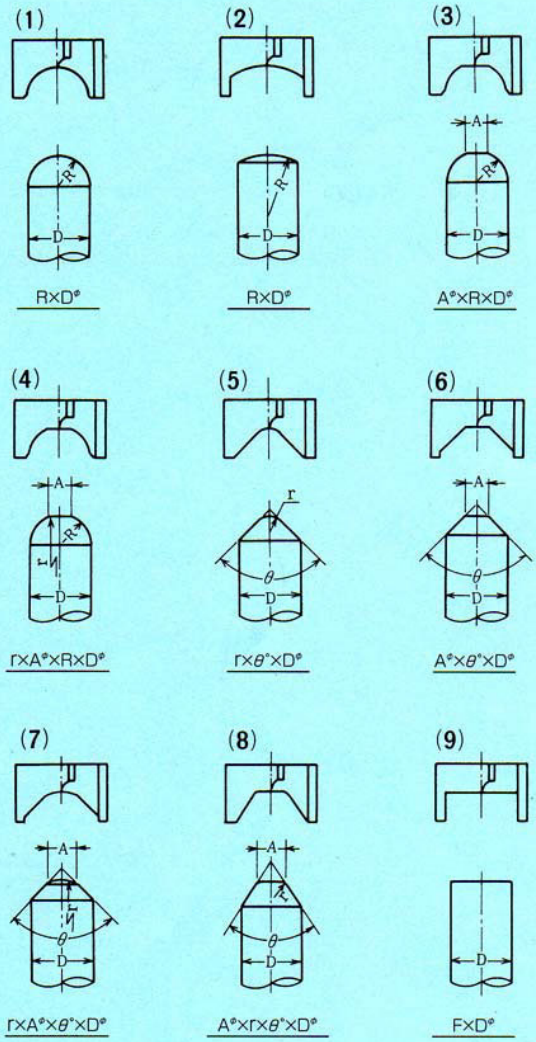
Note ⚠ Since the chip is abnormally shaped before reconditioning, the resisting force is large against the cutter as to produce a shock (the dragging force tries turning tool.) Therefore, at first, don't grip the C lever strongly.

Note b.: If it is excessively cut, the lives of the chip and cutter will be shortened. Determine the gripping strength and reconditioning time from the experience. (The cutting ability and durability of the cutter depend on the cutter relief angle, chip material, wear during chip reconditioning etc.)

4. Release the C lever, lower the clamp late, and release the chip from the tool (cutter case). Then, pull the clamp plate out of the lower part of the chip.

◇The tool direction is reversed on the chip that directs downward.Moreover, for the slant direction and others, refer to the above when using the tool.

■Shapes of Tip Cutters



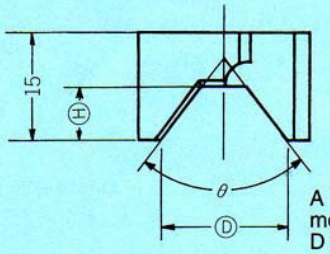
■ETD-18F Classification Table.

Cutter No.	TIP shape (Nominal)	Max. diameter that can be repaired (Dφ)	Reserve articles
〈1〉	5R	10φ	—
	6R	12φ	6R×12φ
	6.5R	13φ	6.5R×13φ
	8R	16φ	8R×16φ
〈2〉	10R or more (~200R)	18φ	16R×18φ 20R×18φ
〈3〉	Aφ×6R	12φ	
	Aφ×6.5R	13φ	5φ×6.5R×13φ 6φ×6.5R×13φ
	Aφ×8R	16φ	5φ×8R×16φ 6φ×8R×16φ 8φ×8R×16φ
〈4〉	rxAφ×6R	12φ	
	rxAφ×8R	16φ	40r×6φ×8R×16φ 40r×8φ×8R×16φ
〈5〉	5~6r×60°	13φ	
	3~4r×90°	16φ	
	5r or more×90°	18φ	
〈6〉	6~9φ×50°	13φ	
	10φ or more×50°	16φ	
	5~7φ×60°	13φ	6φ×60°×13φ
	(6φ×60°)	16φ	6φ×60°×16φ
	8~9φ×60°	16φ	
	10φ or more×60°	18φ	
	3~4φ×75°	13φ	
	5~6φ×75°	16φ	6φ×75°×16φ
	7φ or more×75°	18φ	
	3φ×90°	16φ	
	4φ or more×90°	18φ	4φ×90°×18φ 5φ×90°×18φ 6φ×90°×18φ
	3φ or more×120°	18φ	5φ×120°×18φ 6φ×120°×18φ
〈7〉	rxAφ×θ°	Dφ	
〈8〉	Aφxrxθ°	Dφ	
〈9〉	F	18φ	F×18φ

※ETD-25F is also classified the same as above. However. there are no reserve.

■Example of Cutter Manufacturing Limitations

(using No.6 above as an example).



A leeway of at least 1mm more than the actual chip Dφ is necessray.

(1) The cutting edge depth (H) is limited to 7.5mm (which is 1/2 of the total height of 15mm) or less due to strength considerations.

(2) Should the cutting edge angle θ° on two-blade cutters get too small, chatter will result and the finished shape will be susceptible to breakage. Therefore we limit it to a minimum of 50 degrees.

※ We cannot make items that do not meet conditions (1) and (2).

■Cutter Nominal Dimensions and Manufacturing Dimensions

When ordering, please use the adove classification table with regards to tip shape when specifying the nominal dimensions for cutters. However, depending on the shape of the tip and as long as the cutting edge depth (H) is not exceeded,we make cutters that can be used up to the maximum diameter of the tip (ETD-0 → 18φ, ETD-1 → 25φ). For example, for an order for a cutter to handle 10R × 16φ tips, the cutter we make will be specified only as 10R. The cutter we supply will in fact be an item for 10R × 18φ. If the tip diameter is 18φ or less, dressing can be performed with this cutter by merely replacing the cutter case with one that matches the tip diameter.

(Ordering example)	Cutter No.	Tip shape (Nominal)		Cutter Supplied
	(6)	6φ×75°×12φ	→	6φ×75°×16φ
	(9)	16φF	→	18φF

※For difficult specifications, please send us a print or else an actual cutter.

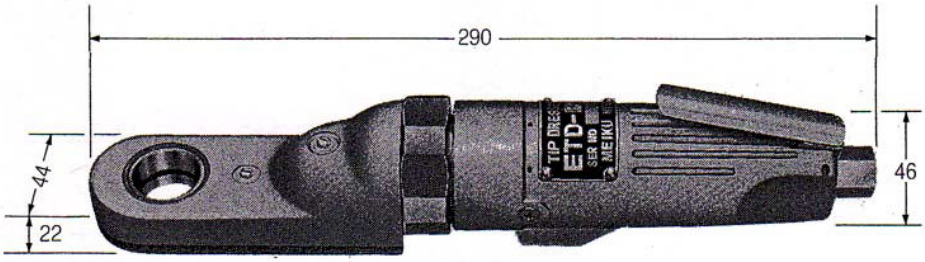
■Cutter Repair

The cutting edges can be repaired two to four times. Please send as many together at once as you can.

For Repairing Welding Tips

TIP DRESSER from Meiku

★ *Small, light and easy to handle*
★ *Quick and accurate work*
★ *Low air consumption*
★ *Easy to change cutter and cutter case*

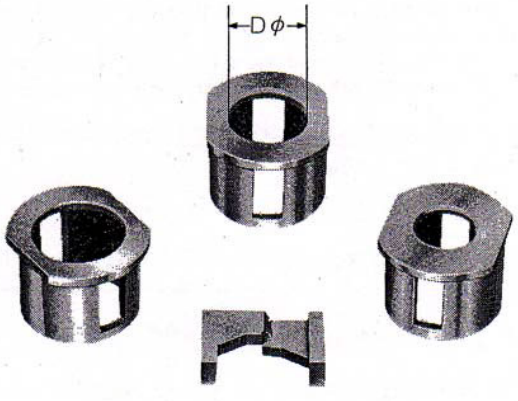


ETD-18F

Tip size	8 ~ 18 mm
No-load RPM	1,300 r.p.m.
Weight	1.65 kg

ETD-25F

Tip size	19 ~ 25 mm
No-load RPM	1,100 r.p.m.
Weight	1.68 kg



Cutter Cases and Cutter

Types of Cutter Cases

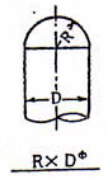
The cutter case bore diameter (Dϕ) acts as a guide so that the cutter dresses at the correct location relative to the tip.
Please specify a cutter case that matches the tip size.

Note: The following cutter cases and cutters are available severally.

ETD-18F = ETD-0, ETD-25F = ETD-1

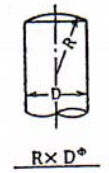
■ Shapes of Tip Cutters

(1)



R× D°

(2)

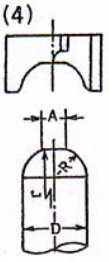


R× D°

(3)

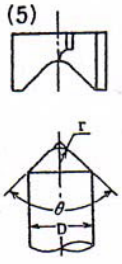
A°× R× D°

(4)



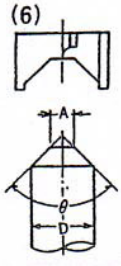
r× A°× R× D°

(5)



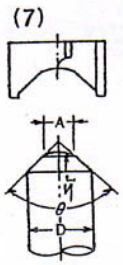
r× θ°× D°

(6)



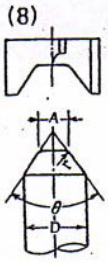
A°× θ°× D°

(7)



r× A°× θ°× D°

(8)



A°× r× θ°× D°

(9)

D° F

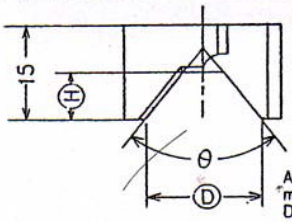
◇ ETD–18F Classification Table

cutter No.	Tip shape (Nominal)	Max. diameter that can be repaired (Dφ)	Reserve articles
(1)	5R 6R 6.5R 8R	10φ 12φ 13φ 16φ	6 R ×12φ 6.5 R ×13φ 8 R ×16φ
(2)	10R or more ～150R	18φ	16R ×18φ 20R ×18φ
(3)	Aφ × 6R Aφ × 6.5R Aφ × 8R	12φ 13φ 16φ	5φ× 6.5R ×13φ 5φ× 8R ×16φ 6φ× 8R ×16φ
(4)	r×Aφ×6R r×Aφ×8R	12φ 16φ	40r× 6φ×8 R ×16φ
(5)	5～6 r× 60° 3～4 r× 90° 5r or more× 90°	13φ 16φ 18φ	
(6)	6～9 φ× 50° 10φ or more× 50° 5～7 φ× 60° 8～9 φ× 60° 10φ or more× 60° 3～4 φ× 75° 5～6 φ× 75° 7φ or more× 75° 3 φ× 90° 4φ or more× 90° 3φ or more× 120°	13φ 16φ 13φ 16φ 18φ 13φ 16φ 18φ 16φ 18φ 18φ	6 φ× 60° ×13φ 6 φ× 75° ×16φ 4 φ× 90° ×18φ 5 φ× 90° ×18φ 6 φ× 90° ×18φ 5 φ× 120° ×18φ
(7)	r×Aφ×θ°	Dφ	
(8)	Aφ×r×θ°	Dφ	
(9)	F	18φ	F×18φ

※ ETD-25F is also classified the same as above. However there are no reserve.

■ Example of Cutter Manufacturing Limitations

(using No.6 above as an example)



A leeway of at least 1mm more than the actual chip Dφ is necessray.

(1) The cutting edge depth (H) is limited to 7.5mm (which is ½ of the total height of 15mm) or less due to strength considerations.

(2) Should the cutting edge angle θ° on two-blade cutters get too small, chatter will result and the finished shape will be susceptible to breakage. Therefore we limit it to a minimum of 50 degrees.

※ We cannot make items that do not meet conditions (1) and (2).

■ Cutter Nominal Dimensions and Manufacturing Dimensions

When ordering, please use the above classification table with regards to tip shape when specifying the nominal dimensions for cutters. However, depending on the shape of the tip and as long as the cutting edge depth (H) is not exceeded, we make cutters that can be used up to the maximum diameter of the tip (ETD-0 → 18φ, ETD-1 → 25φ). For example, for an order for a cutter to handle 10R × 16φ tips, the cutter we make will be specified only as 10R. The cutter we supply will in fact be an item for 10R × 18φ. If the tip diameter is 18φ or less, dressing can be performed with this cutter by merely replacing the cutter case with one that matches the tip diameter.

(Ordering example)	Cutter No.	Tip shape (Nominal)		Cutter Supplied
	(6)	6φ × 75° × 12φ	→	6φ × 75° × 16φ
	(9)	16φF	→	18φF

※ For difficult specifications, please send us a print or else an actual cutter.

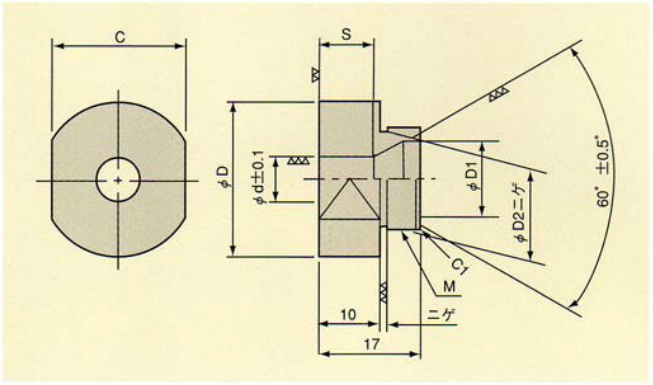
■ Cutter Repair

The cutting edges can be repaired two to four times. Please send as many together at once as you can.

プロジェクション電極

トヨタタイプ

下部電極



W-PN-C□

ナットサイズ

単位＝mm

名　称	d	D	D_1	D_2	M	C	S
W-PN-C4	5	25	13	15	18×1.5	22	12
W-PN-C5	6	25	13	15	18×1.5	22	12
W-PN-C6	7	25	13	15	18×1.5	22	12
W-PN-C8	9	25	13	15	18×1.5	22	12
W-PN-C10	11	30	17	19	22×1.5	27	12
W-PN-C12	13	30	17	19	22×1.5	27	12

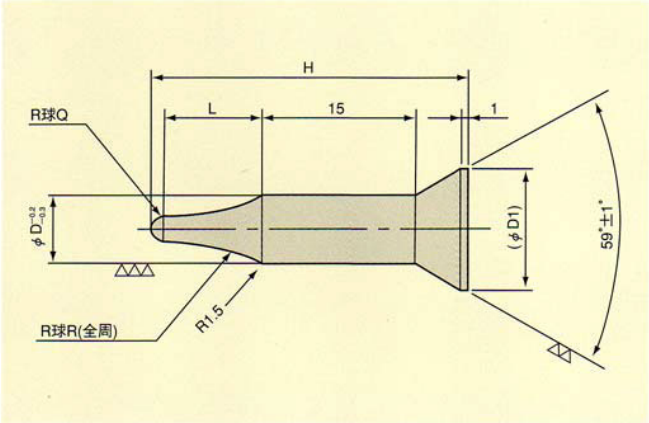
W-PN-C□A

ナットサイズ

単位＝mm

名　称	d	D	D_1	D_2	M	C	S
W-PN-C4A	5	25	13	15	18×1.5	22	9
W-PN-C5A	6	25	13	15	18×1.5	22	9
W-PN-C6A	7	25	13	15	18×1.5	22	9
W-PN-C8A	9	25	13	15	18×1.5	22	9
W-PN-C10A	11	30	17	19	22×1.5	27	9
W-PN-C12A	13	30	17	19	22×1.5	27	9

KCFガイドピン



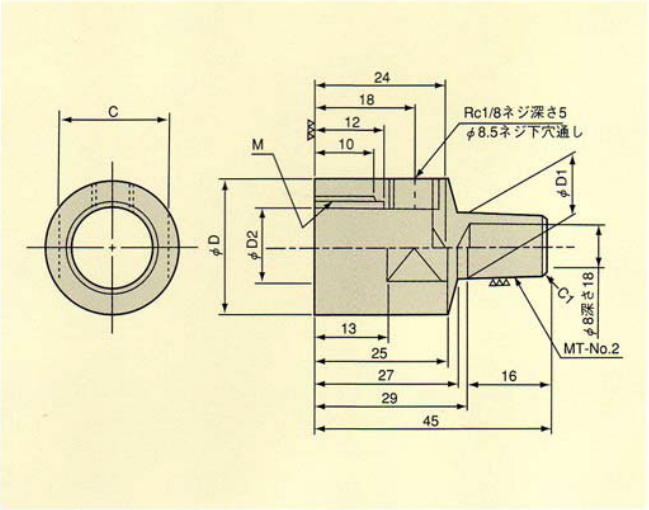
W-PN-P□

ナットサイズ

単位＝mm

名　称	D	D_1	L	R	Q	H
W-PN-P4	5	12	5.5	11.0	1.0	28.7
W-PN-P5	6	12	7.5	15.0	1.0	29.8
W-PN-P6	7	12	9.5	23.6	1.5	30.9
W-PN-P8	9	12	11	21.7	1.5	31.1
W-PN-P10	11	16	12	22.3	2.0	34.4
W-PN-P12	13	16	15	27.0	2.0	35.7

下部電極ホルダー



W-PN-B□

ナットサイズ

単位＝mm

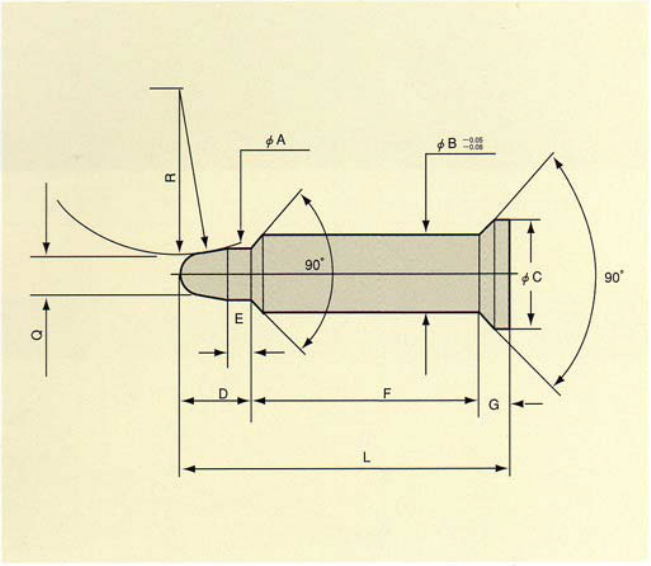
名　称	φD	ϕD_1	ϕD_2	C	M
W-PN-B2	30	15.875	20	27	22×1.5
W-PN-B3	25	15.875	15	22	18×1.5

KCFガイドピン

●ご注文は、下記の記号にてお願いします。

KCF-M□-□

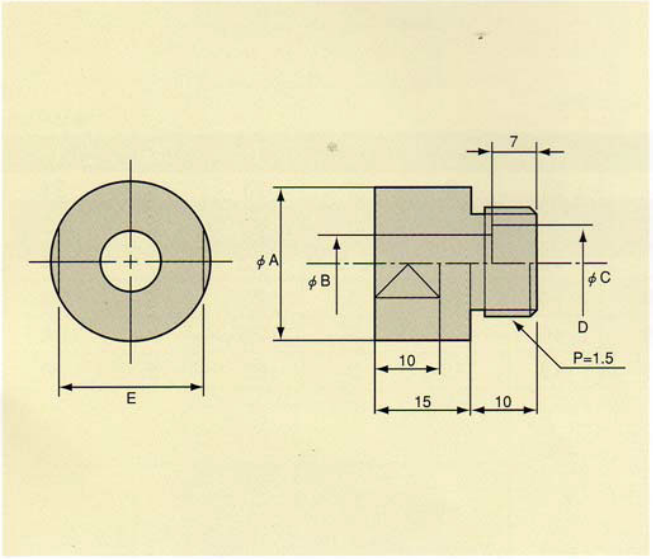
ナット径　ピン径φB



単位＝mm

名　称	A	B	C	D	E	F	G	L	Q	R
KCF-M4-□	3.2	4~7	10	5	2	22	4	31	2.5	9
KCF-M5-□	4.1	5~8	10	6	2.5	22	4	32	3	13.3
KCF-M6-□	4.9	6~9	10	7	2.5	22	3	32	3.5	15.5
KCF-M8-□	6.6	8~11	12	8	3	23	3	34	5	17.5
KCF-M10-□	8.5	10~13	15	10	3.5	24	3	37	7	30.5
KCF-ユニファイ-□	9.7	11~14	16	12	4	24	3	39	8	37.5
KCF-M12-□	10.4	12~15	16	12	4	24	3	39	9	41

下部電極

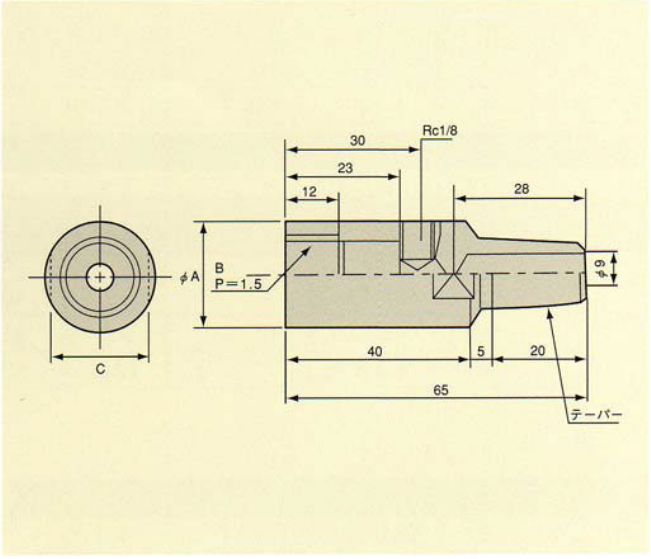


単位＝mm

名　称	φA	φB	φC	D	E
125MO-□	25	-	12.5	M18	22
130MO-□	30	-	16.5	M22	27
135MO-□	35	-	16.5	M22	32

※φB寸法はピン径に合わせ各種製作致します。

下部電極ホルダー

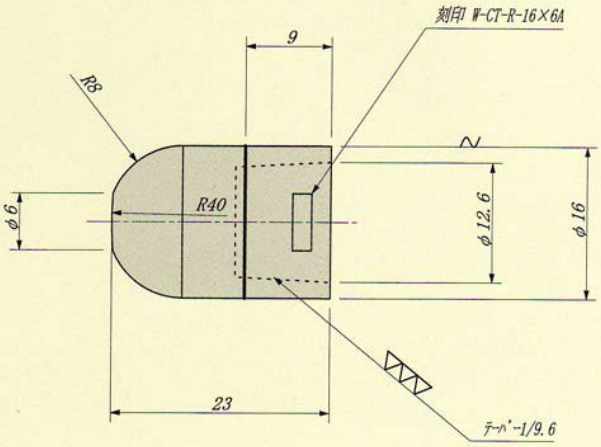


単位＝mm

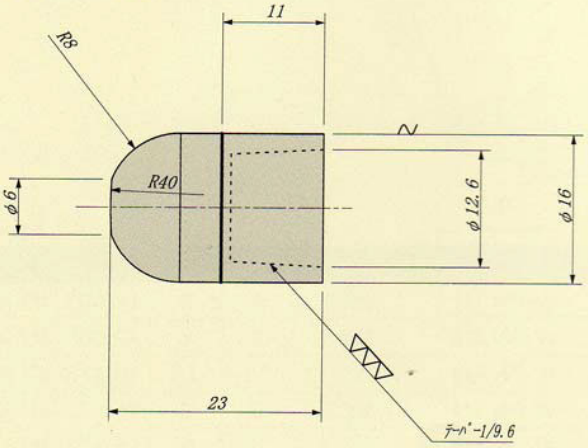
名　称	φA	B	C	テーパー
125MF	25	M18	22	16 1/10, 16 1/5
130MF	30	M22	27	16 1/10, 16 1/5
135MF	35	M22	32	16 1/10, 16 1/5

キャップチップ

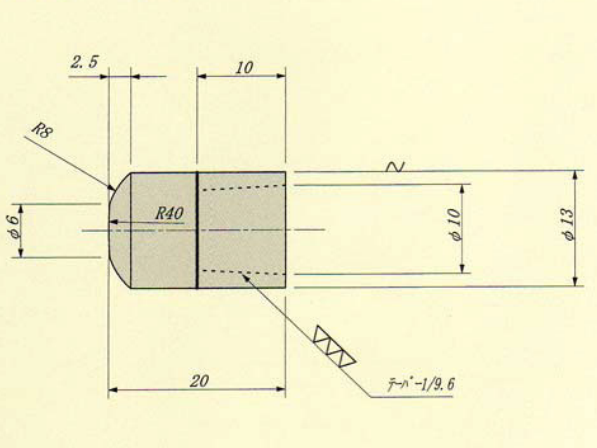
W-CT-R-16×6A



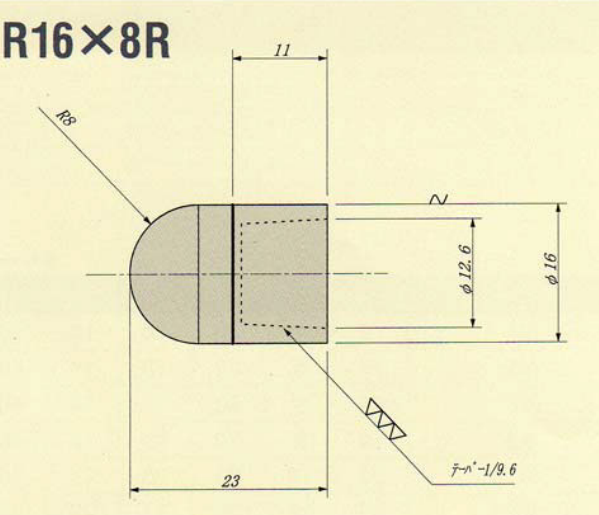
R16×6A



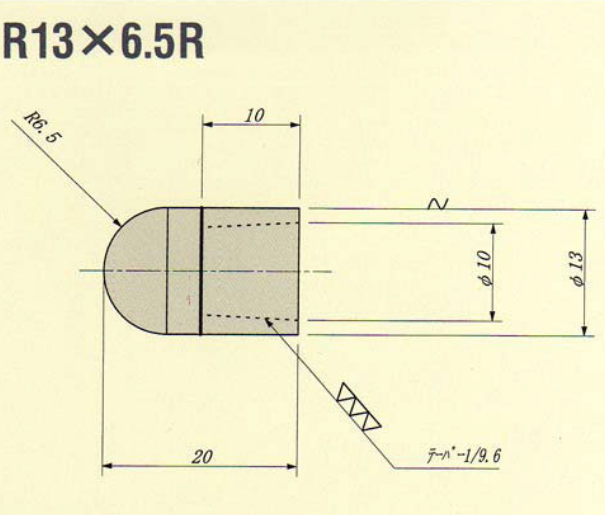
R13×6A

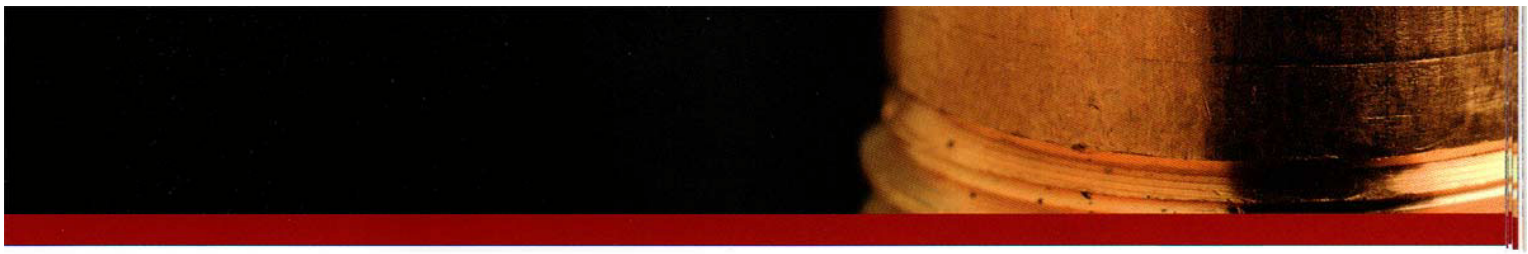


R16×8R

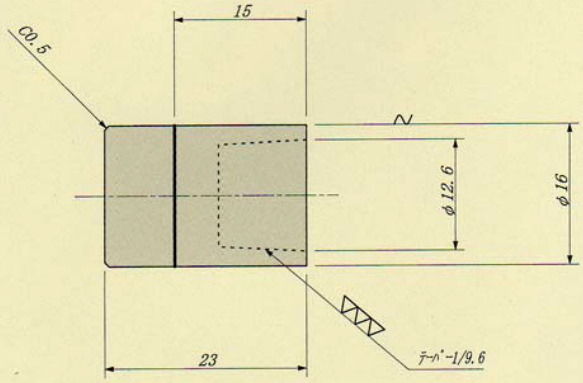


R13×6.5R

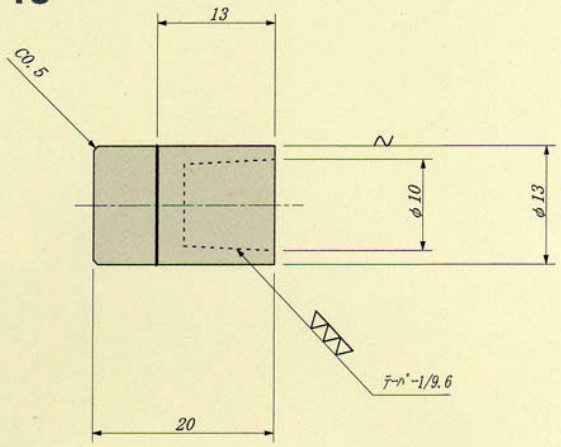




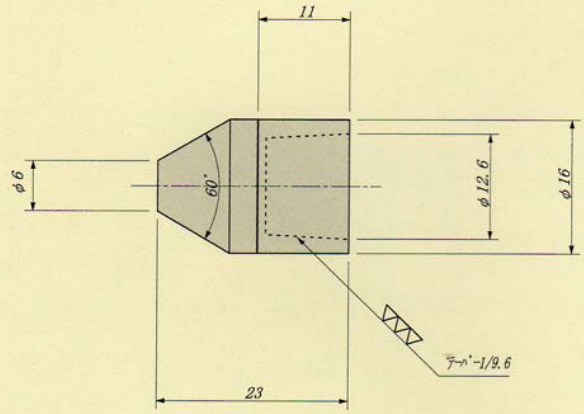
F16



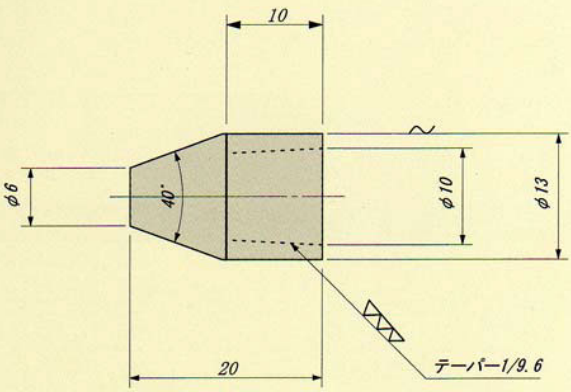
F13



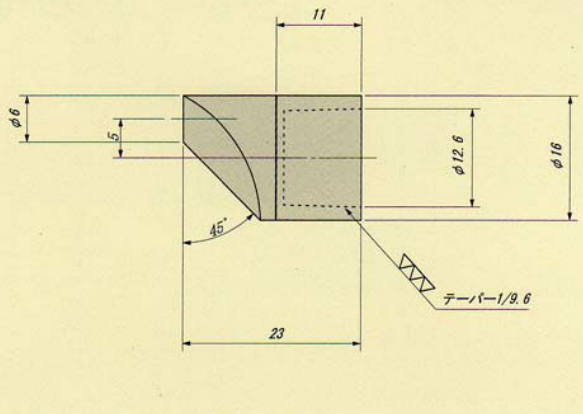
P16×6A



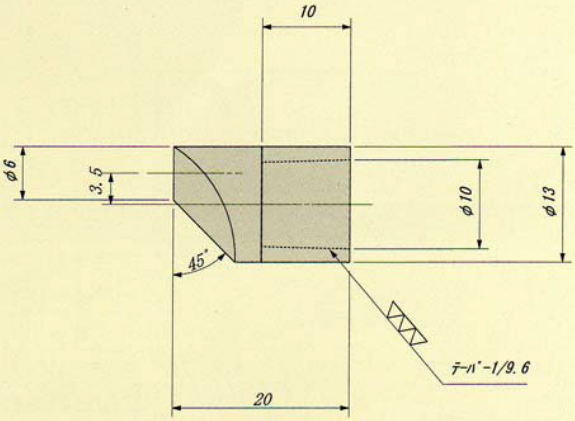
P13×6A



E16×6A



E13×6A

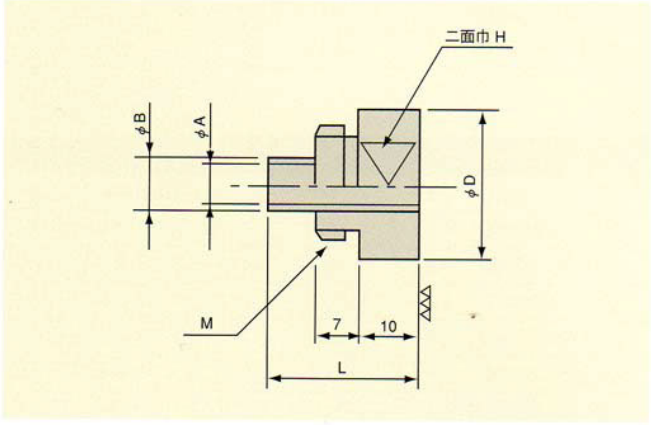


ボルト溶接電極

キャップ

W-BN-A□-C

ボルトサイズ



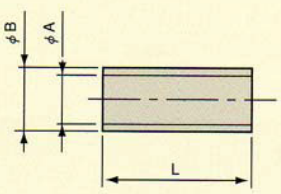
単位＝mm

名　称	使用ボルト	A	B	M	D	H	L
W-BN-A4-C	M4	4.2	6.2	18×1.5	25	22	22
W-BN-A5-C	M5	5.2	7.2	18×1.5	25	22	25
W-BN-A6-C	M6	6.2	8.2	18×1.5	25	22	25
W-BN-A8-C	M8	8.2	10.2	18×1.5	25	22	25
W-BN-A10-C	M10	10.2	12.2	22×1.5	30	27	30
W-BN-A12-C	M12	12.2	14.2	22×1.5	30	27	30

スリーブ

W-BN-B□-S-□

ボルトサイズ　全長



単位＝mm

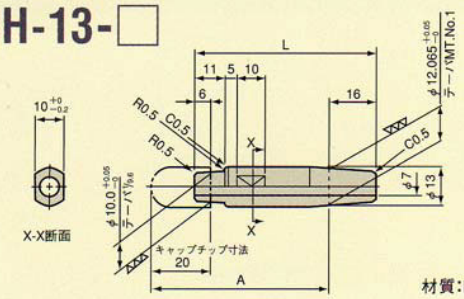
名　称	使用ボルト	A	B	L
W-BN-B4-S	M4	4.2	6.2	22
W-BN-B5-S	M5	5.2	7.2	25 30
W-BN-B6-S	M6	6.2	8.2	25 30
W-BN-B8-S	M8	8.2	10.2	25 30
W-BN-B10-S	M10	10.2	12.2	30
W-BN-B12-S	M12	12.2	14.2	30

ストレートシャンク

W-SH-□-□

径　有効長A

W-SH-13-□

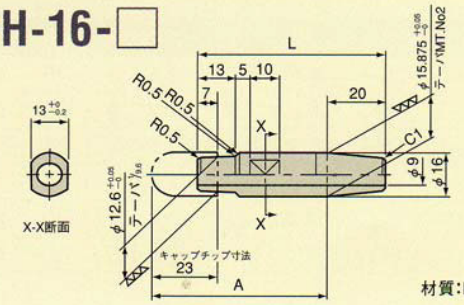


材質:BeA-25

単位=mm

名　称	有効長A	全長 L
W-SH-13-40	40	42
W-SH-13-50	50	52
W-SH-13-60	60	62
W-SH-13-70	70	72
W-SH-13-80	80	82
W-SH-13-90	90	92
W-SH-13-100	100	102

W-SH-16-□

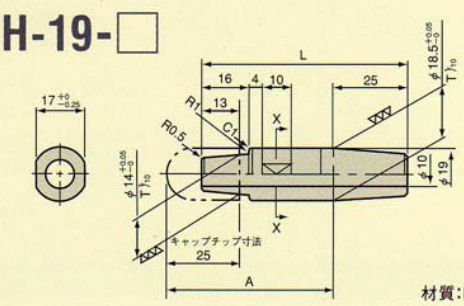


材質:BeA-25

単位=mm

名　称	有効長A	全長 L
W-SH-16-40	40	44
W-SH-16-50	50	54
W-SH-16-60	60	64
W-SH-16-70	70	74
W-SH-16-80	80	84
W-SH-16-90	90	94
W-SH-16-100	100	104
W-SH-16-120	120	124
W-SH-16-150	150	154

W-SH-19-□



材質:BeA-25

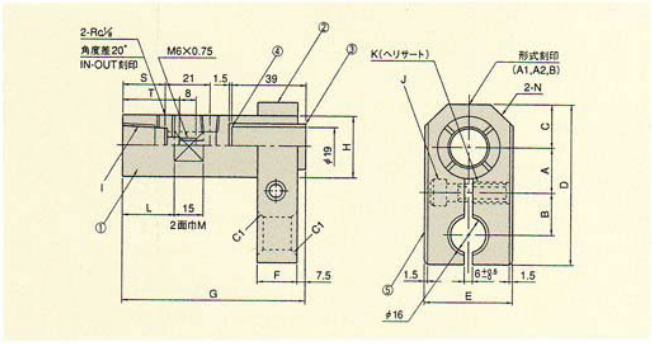
単位=mm

名　称	有効長A	全長 L
W-SH-19-40	40	53
W-SH-19-50	50	63
W-SH-19-60	60	73
W-SH-19-80	80	93
W-SH-19-100	100	113
W-SH-19-120	120	133

■組合表

ポイントホルダー	ネジアダプター	シャンク	キャップチップ
W-PH-A1,A2	W-AD-A(B)-※	W-SH-16(13)-※	W-CT-□-16(13)
W-PH-B	W-AD-D(E)-※	W-SH-19-※	W-CT-□-19
W-PH-C2×13,19	W-AD-A(B)-※	W-SH-16(13)-※	W-CT-□-16(13)

ポイントホルダー



W-PH-□□×□

ホルダーアームの記号
・ストレート-A
・ストレート-B
・オフセット-C

取付クランパーの記号
・A_1-1
・A_2-2
・B-□

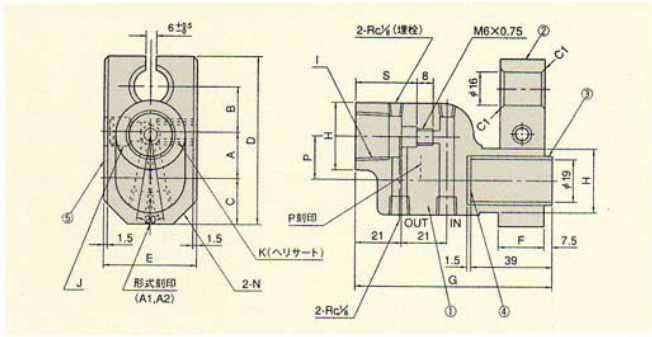
オフセットアームの記号
・13-13
・13-19

品番	名称	材質
1	ホルダーアーム	Cu
2	クランパー	Cu
3	ブッシング	布入ベーク
4	絶縁座	バルカナイズファイバー
5	絶縁板	布入ベーク

W-PH-□□

単位＝mm

規格	A	B	C	D	E	F	G	H	I	J	K	L	M	N	S	T
W-PH-A1	16	25	23	78	41	19	90.5	φ29	NPT½14山	M8X28ボルト	M8X1.25	24	27	C10	21	29
W-PH-A2	29			91												
W-PH-B	21	33	27	95	48	24	96.5	φ35	NPT¾14山	M10X32ボルト	M10X1.5	29	32	C13	26	34



W-PH-C□×□

取付クランパー A_1-1 / A_2-2

偏芯寸法

品番	名称	材質
1	ホルダーアーム	HBsC
2	クランパー	Cu
3	ブッシング	布入ベーク
4	絶縁座	バルカナイズファイバー
5	絶縁板	布入ベーク

W-PH-C□×□

単位＝mm

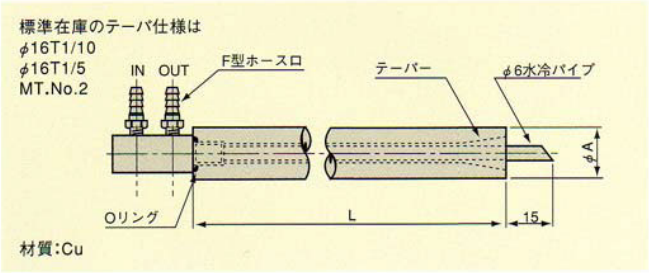
規格	A	B	C	D	E	F	G	H	I	J	K	N	P	S
W-PH-C1X13	16	25	23	78	41	19	90.5	φ29	NPT½14山	M8X28ボルト	M8X1.25	C10	13	29
W-PH-C2X13	29			91										
W-PH-C1X19	16			78									19	
W-PH-C2X19	29			91										

ホルダー、アダプター

ストレートホルダー

W-HL-□×□×□

A寸法　L寸法　テーパ



材質:Cu

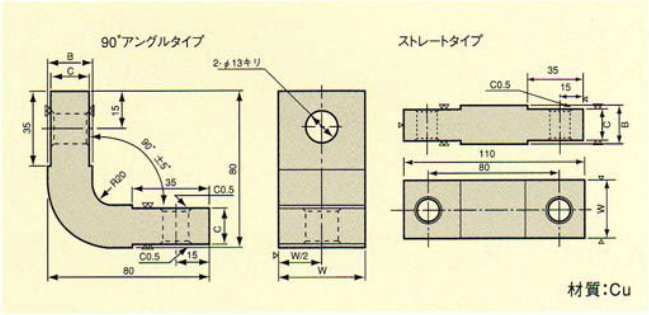
単位=mm

名　称	径φA	長さL
W-HL-25×200×テーパ	25	200
W-HL-25×250×テーパ	25	250
W-HL-25×300×テーパ	25	300
W-HL-32×200×テーパ	32	200
W-HL-32×250×テーパ	32	250
W-HL-32×300×テーパ	32	300

※その他各種ご注文にて製作いたします。

ケーブルアダプター

W-CA-□



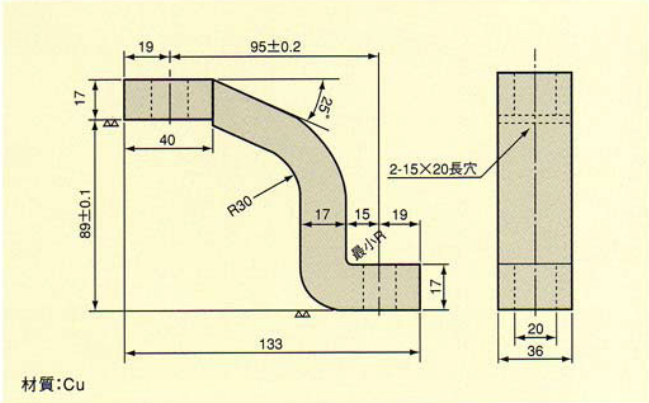
材質:Cu

単位=mm

名　称	W	B	C	適応二次ケーブル
W-CA-A（90°アングル）	35	20	19	600～750MCM
W-CA-B（90°アングル）	38	25	24	1000～1500MCM
W-CA-C（ストレート）	35	20	19	600～750MCM
W-CA-D（ストレート）	38	25	24	1000～1500MCM

トランスアダプター

W-JCu-S-100



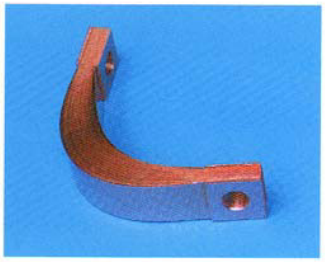
材質:Cu

シャント

Cタイプ

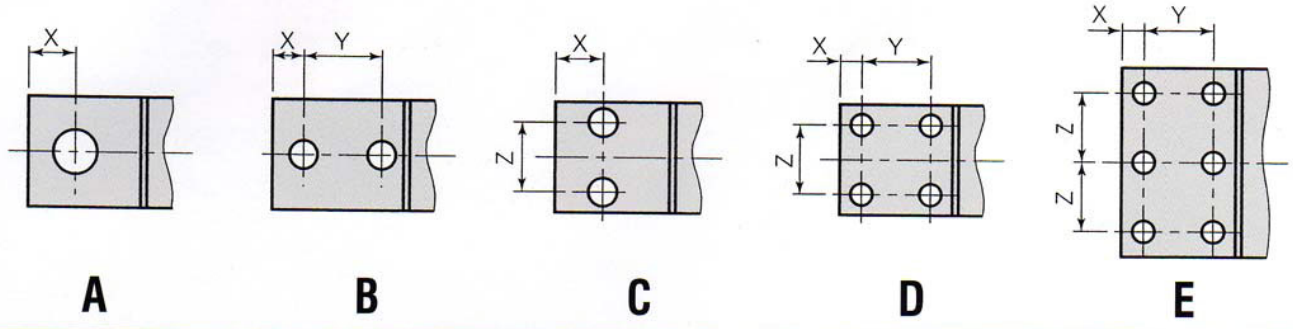
Jタイプ

Sタイプ



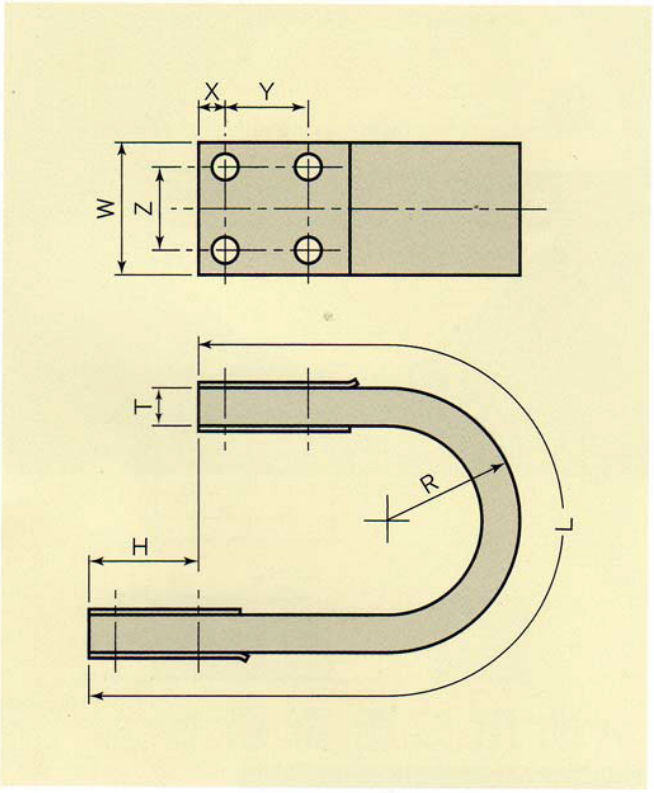
Lタイプ

シャント孔のパターン



シャントの取付孔のサイズ、ピッチには、さまざまなタイプがあります。ご指示のサイズにて製作いたします。

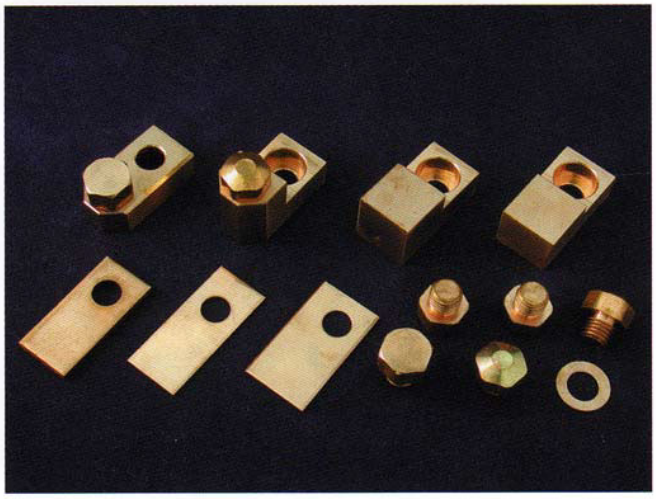
単位＝mm



SH		Description	
1	W	width	横幅
2	T	thickness	厚み
3	L	length	外周長
4	C～L	type	シャントのタイプ
5	A～F	hole pattern	取り付け孔のタイプ
6	R	1/2×shunt outside dia	
7	H		

SH-W-T-L-C~L-A~F-R-H
1 2 3 4 5 6 7

インサート電極



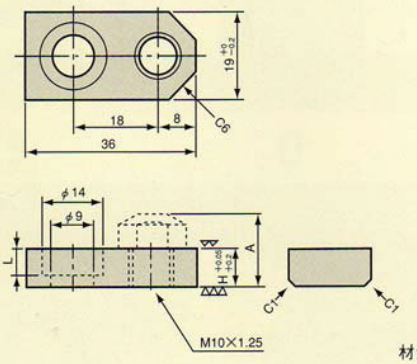
インサート電極（チップ取替式）

W-IN-□-S

有効長A

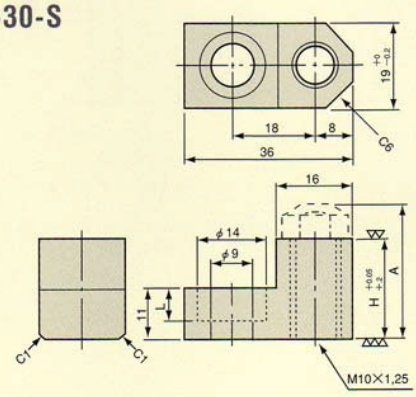
名　称	H	L	有効長A
W-IN-16-S	8	6	16
W-IN-19-S	11	8	19
W-IN-30-S	22	8	30

W-IN-16-S·19-S



材質:BeA-50

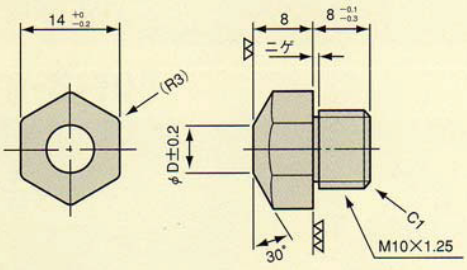
W-IN-30-S



材質:BeA-50

インサート用ベースチップ

W-BT-S-□



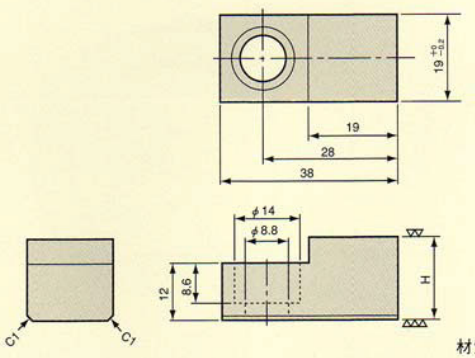
材質:CrCu

名　称	D
W-BT-S-1	6
W-BT-S-2	8
W-BT-S-3	14

インサート電極

W-IN-□

H寸法



材質:CrCu

名　称	H
W-IN-16	16
W-IN-19	19

MTEC

MASTECH ENGINEERING CO., LTD.
บริษัท มาสเทค เอ็นจิเนียริ่ง จำกัด

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