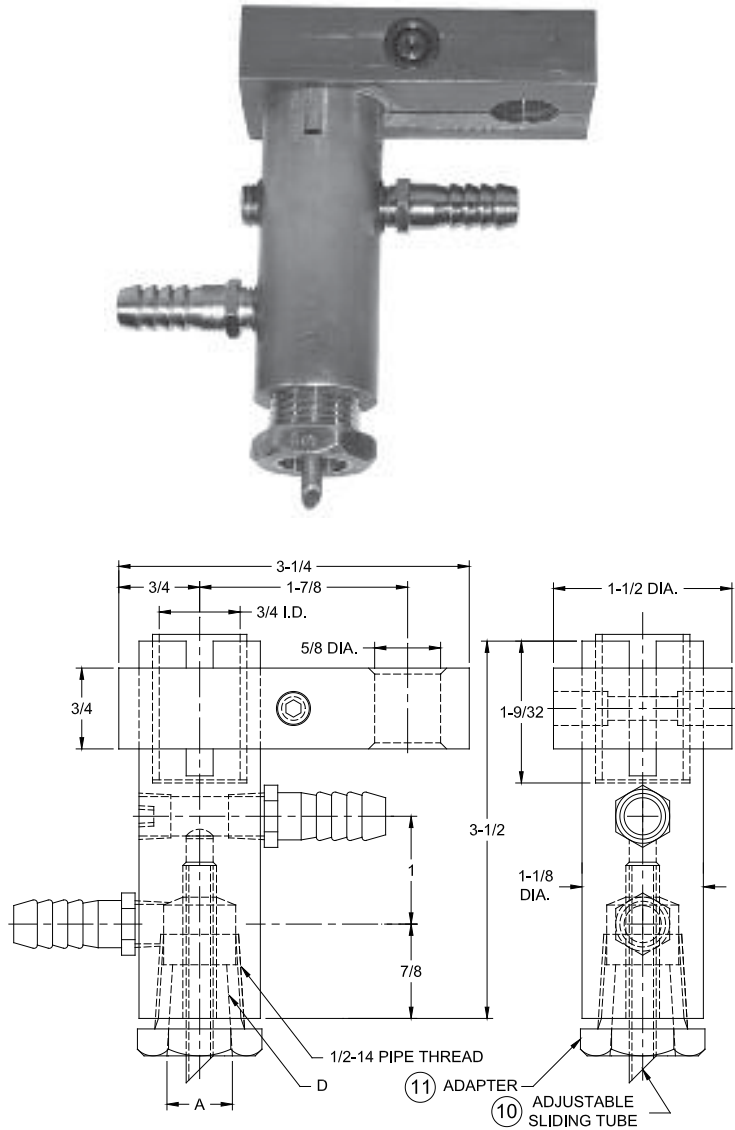
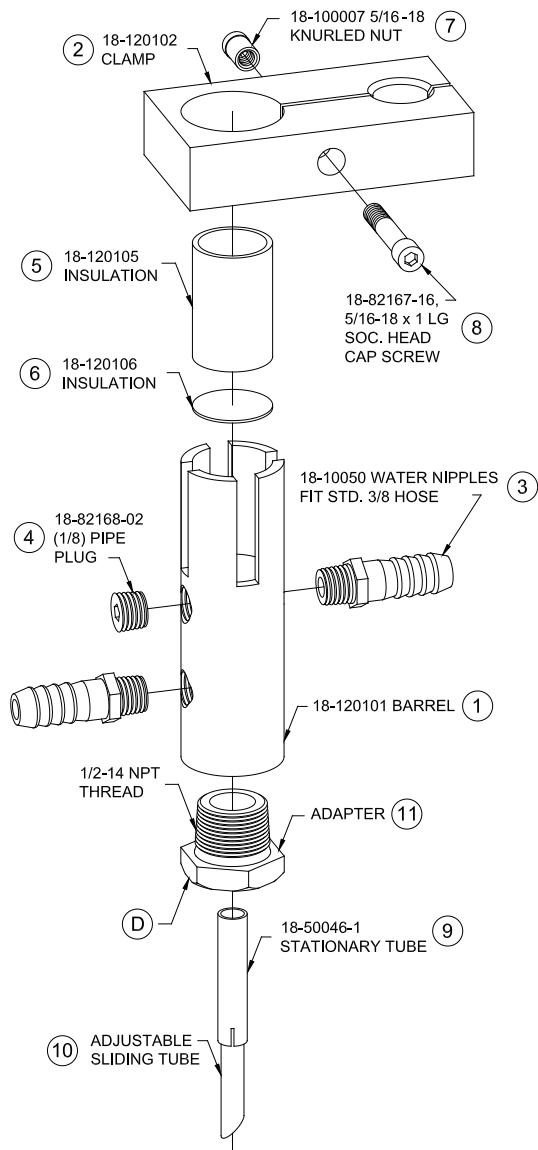


MULTI-SPOT WELDER ELECTRODE ADAPTERS

CMW electrode adapters for multispot air or hydraulic pistons are supplied with 3/4 diameter straight piston rod ends. These adapters are equipped with means for attaching the welding cable from the transformer and the water hoses to the inlet and outlet water connections.

These adapters are available in four basic assemblies as shown in the table.

MULTI-SPOT WELDER ELECTRODE ADAPTER REPLACEMENT PARTS

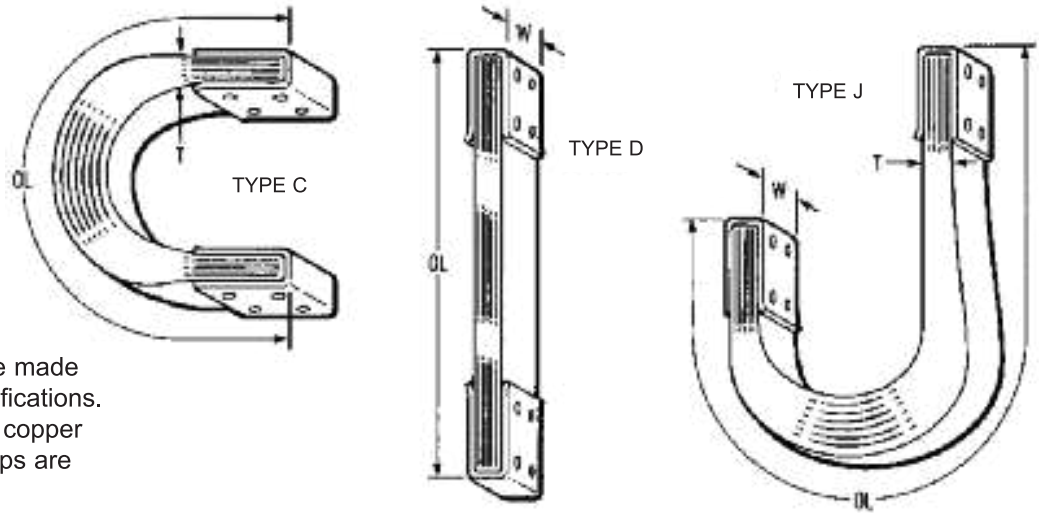


Part No. Assembly	Major Tape Dia. A	Attachment Type D	Adjustable Sliding tube 10	Adapter Part No. 11*
18-1201	--	1/2-14 NPT	18-10046-23	--
18-1202	.414	5 RW Male cap	--	18-7465-07
18-1203	.463	4 RW	18-10046-23	18-746-07
18-1204	.625	5 RW	18-10046-23	18-747-07

All assemblies include items 1, 2, 3, 4, 5, 6, 7, 8, and 9.

* See page 31 for adapter details.

SHUNTS AND JUMPERS



Laminated copper shunts are made to your size and shape specifications. High conductivity electrolytic copper strip is used, and terminal clips are riveted in place.

HOW TO ORDER

Give the following information:

Type (C, F, or J)

Outside length (OL)

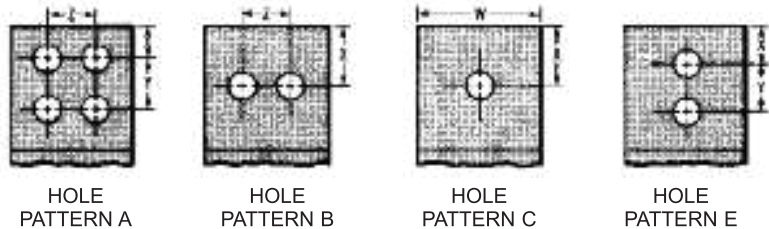
Width (W)

Thickness (less clip) (T)

Hole pattern (specify by letter code)

Hole location (X, Y, Z values)

Hole diameter



Air-cooled jumper cables are flexible, high-conductivity copper conductors with insulative sleeves. They are made in lengths to suit your needs.

HOW TO ORDER

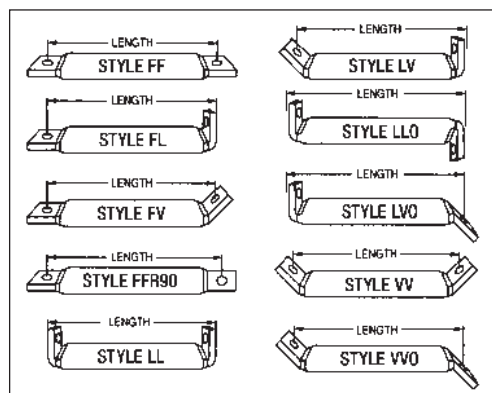
Give the following information:

Conductor rating (MCM)

Length between holes

Terminal orientation style

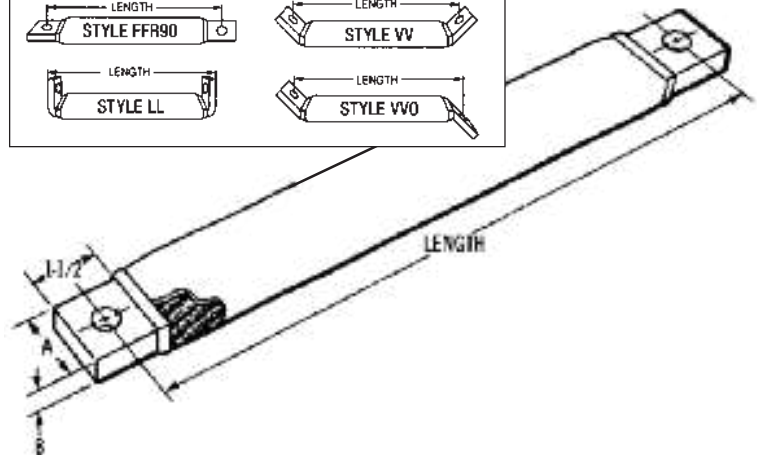
TERMINAL ORIENTATION



DIMENSIONS, INCHES

MCM Rating	O.D. (approx.)	Lug Width A	Lug Thickness B
600	1-5/8	1-3/8	.50
750	1-3/4	1-3/8	.60
1000	2	1-1/2	.70
1200	2-1/8	1-1/2	.82
1500	2-1/4	1-1/2	.99

Holes are 17/32 unless otherwise specified.



ACCESSORIES

TIP SOCKET REAMERS & TAP



Hole in reamer center permits water tube entry; no need to dismantle holder. 4 RW, Part No. 601-0004; 5 RW, Part No. 601-0005; 6 RW, Part No. 601-0006; 7 RW, Part No. 601-0007. 5/8-14 NPT Tap, Part No. 601-0025

TIP DRESSING TOOL



To remove mushroomed nose material on a pair of tips of 4 or 5 RW size, having pointed or dome noses. Other nose design dressers on special order. Dresser, Part No. 601-0102; Dresser cutter, Part No. 601-0103.

RADIUS TIP FILE



Tip File

To restore original contours of welding tips use this two-inch radius file. File, Part No. 601-0120; Handle, Part No. 601-0120-H; File & Handle, Part No. 601-0120-A.

WELDING TIP EXTRACTORS



No. 4 RW and 5 RW at opposite ends, EX-3, Part No. 601-0203



No. 4 RW, EX-1, Part No. 601-0201
No. 5 RW, EX-2, Part No. 601-0202



Standard Duty: EX-10-A, Part No. 601-0231
Heavy Duty: SW-250, Part No. 601-SW-250

MALE CAP SOCKET REAMERS

To ream or dress sockets to hold male caps. 4 RW, Part No. 601-0014; 5 RW, Part No. 601-0015; 6 RW, Part No. 601-0016.

QUICK-CONNECT COUPLINGS with automatic shut-off

Use these couplings to make up efficient, trouble free coolant systems. Any plug shown will mate with any socket shown. Always put the socket on the upstream side of a connection. Its built-in valve will automatically close upon disconnection.



1/8" NPT female plug
Part No. 601-0300



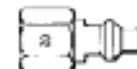
1/8" NPT female socket
Part No. 601-0314



1/8" NPT male plug
Part No. 601-0301



1/8" NPT male socket
Part No. 601-0315



1/4" NPT male plug
Part No. 601-0302



1/4" NPT female socket
Part No. 601-0316



1/4" NPT male plug
Part No. 601-0303



1/4" NPT male socket
Part No. 601-0317



3/8" NPT hose plug
Part No. 601-0309



3/8" NPT hose socket
Part No. 601-0320

CONDUCTIVE LUBE

Part No. 601-0400
1 lb. container

WATER HOSE

Part No. 601-0350
3/8 ID

HOSE CLAMP

Part No. 601-0340

MALE CAP EXTRACTORS

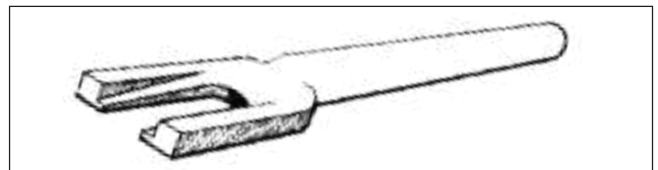
Male Caps, 4 & 5 RW, EX-45, Part No. 601-0240
Male Caps, 5 & 6 RW, EX-56, Part No. 601-0242



Male cap extractor has long lever handles for easier cap removal. In two dual-size models: EX-45 and EX-56.

Female Caps, 4 RW, EX-4F, Part No. 601-0220
Female Caps, 5 RW, EX-5F, Part No. 601-0221
Female Caps, 6 RW, EX-6F, Part No. 601-0222

Male Cap 4 RW
Male Cap 5 & 6 RW
Male Cap 7 RW



Female cap extractors are made for three Tuffcap shank sizes: Models EX-4F, EX-5F, and EX-6F.

WA2 WELD ANALYZER

- Current meter
- Easy to use
- Easily legible in all lighting conditions
- Positive keypad action
- Suitable for various applications
- Reads wave forms from 50 Hz upwards
- Traceable accuracy
- Data archiving
- Small and lightweight allowing for easy portability
- Calibration services available
- One year warranty



FEATURES

- Intuitive, flexible interface
- LCD 128 x 64 pixels FSTN with yellow/green backlight
- Embossed disc tactile keypad with antiglare display window
- Auto power-off
- Large choice of coils
- AC or MFDC operation
- Calibration certification
- USB connection
- Includes 6 inch flexible coil, batteries and carrying case
- Integrator output for oscilloscope connection
- WA Terminal software

OPTIONS

- Flexible coil – 3 inch (Part No. 313027) or 12 inch (Part No. 313021) diameter with 6.5 feet lead
- Attenuator – range multiplier for up to 300kA (Part No. 316009)
- Extension cable – 10 meters (Part No. 316010)

WA2 WELD ANALYZER

The Weld Analyzer offers the engineering professional the facilities to analyze, fault-find and improve process quality on today's sophisticated welding control systems. Full traceability gives you the confidence in your processes that your customers demand.



POWER SOURCE: Rechargeable NiMH
DISPLAY: 128 x 64 pixels FSTN transfective with yellow/green backlight
CURRENT RANGE: 2.00 to 60.00 kA
CURRENT DURATION: 9999 cycles (AC), 199.9 seconds (DC)

MONITORED PARAMETERS:

Current	Time	CONDUCTION ANGLE	Position
Peak RMS	Total weld time	Average conduction angle	Position of monitored parameter in weld pulse train
Average RMS	Any pulse time	Conduction angle of every sample	
Lowest RMS	Number of pulses	Accuracy $\pm 4^\circ$	
Accuracy +/- 2% of full scale	Accuracy +/- 0		
Measures and displays values for each + and - 1/2 cycle			

PROGRAMMABLE PARAMETERS:

AC	DC
Frequency	Current threshold
Blanking	Blanking
Weld capture	Weld capture

USB DRIVERS: www.ftdichip.com/Drivers/VCP.htm
DIMENSIONS: 3-3/80 w x 1-1/80 d x 6-3/40 h; 1 lb. including batteries



DISPLAY EXAMPLES:

Display	AC	DC
Data		
Detail		
Setup		

WELD FORCE GAUGES

Digital-Electronic



Digital-Hydraulic



Standard-Hydraulic



High-Capacity Hydraulic



We offer one of the broadest product lines available today

CMW supplies a broad range of weld force gauges, available with accuracies from 0.5% for Digital-Electronic gauges; to 2% accuracy for the Digital-Hydraulic which has a digital output driven by hydraulics; to our Standard Hydraulic models with 2%-3% accuracy. All are available in English and metric readouts.





Our **Digital-Electronic** gauge supplies the highest accuracy (0.5% for 95% of the gauges range). The gauge has large LCD readouts with peak-hold capabilities. All functions are electronic which prevents variations caused by flexing.

The **Digital-Hydraulic** delivers better accuracy than standard hydraulic gauges but at a lower price than all-digital models. The unit of measure is field selectable between pounds, kilograms, newtons and kilonewtons. The peak-hold feature allows for reading variable forces, which are common in resistance welding machinery. Gauges maintain an accuracy of 2% for 30% to 90% of the gauge's range.

CMW's **Standard Hydraulic** gauges are the low cost method for obtaining general force measurements. These gauges are available in a standard block style, with extensions. Sizes range from 600 lb. up to 10 tons with accuracy of 2% at the mean and 3% outside of mean for 70% of the gauge's range.

WELD FORCE GAUGES

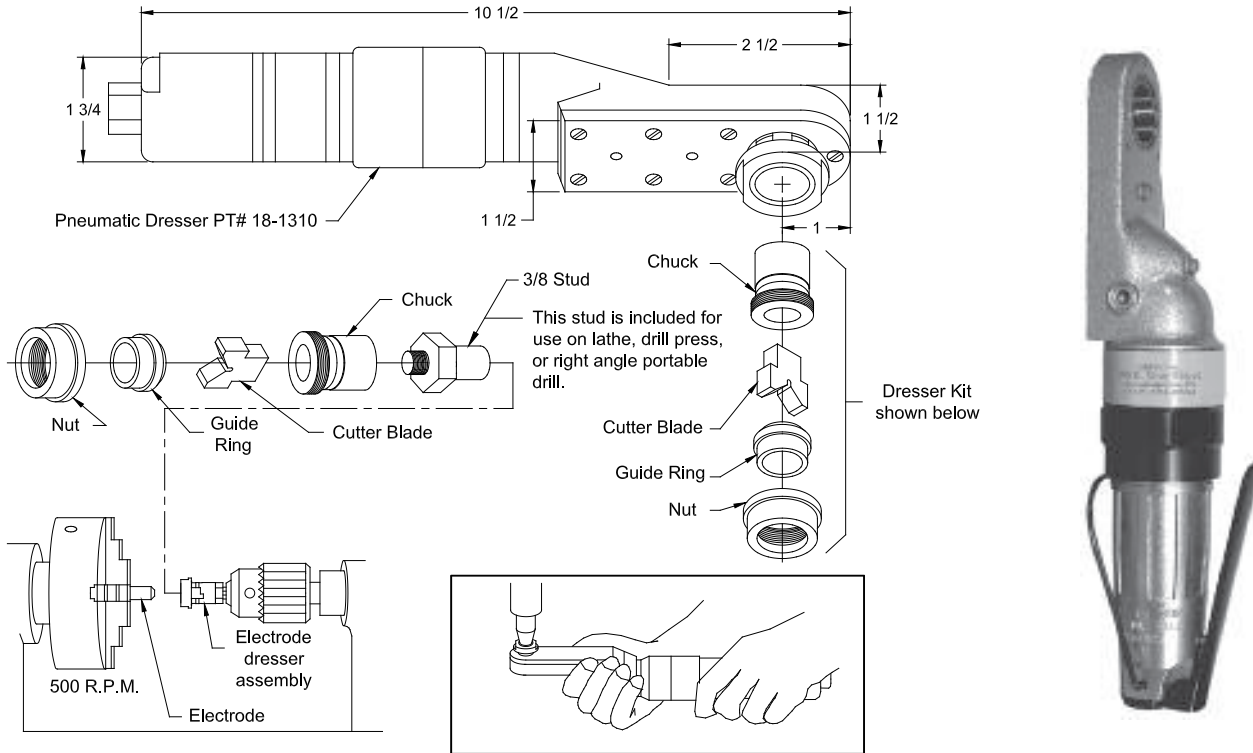
STANDARD GAUGE DATA

Description	Features	Maximum Reading	Increment Every	Opening Required	Extension Length	Item Number
Digital-Electronic Weld Probe 	<ul style="list-style-type: none"> • Analog output • Auto shut-off • No-weld setting-not required • Accuracy 0.5% over full range 	0-1000 lbs/ 0-454 Kg	1 lb 1 Kg	1/4"	10"	601-8010MD 601-8045MD-KG
		0-3000 lbs/ 0-1360 Kg	1 lb 1 Kg	1/2"	10"	601-8300MD 601-8136MD-KG
		0-5000 lbs/ 0-2270 Kg	1 lb 1 Kg	1.1"	10"	601-8500MD 601-8227MD-KG
		0-10,000 lbs/ 0-4540 Kg	1 lb 1 Kg	1.1"	10"	601-8100MD 601-8453MD-KG
Digital-Hydraulic* 	<ul style="list-style-type: none"> • Accuracy 2% • NIST traceable certification • Field selectable units switch between: Pounds Kilograms Newtons Kilonewtons 	0-3000 lbs. 0-1360 Kg 0-13,300 N	1 lb 1 Kg 1 N	3/4"	—	601-3000DR
		0-5000 lbs 0-2270 Kg 0-22,200 N	1 lb 1 Kg 1 N	3/4"	—	601-5000DR
		0-10,000 lbs 0-4540 Kg 0-44,500 N	1 lb 1 Kg 1 N	3/4"	—	601-9999DR
		0-3000 lbs 0-1360 Kg 0-13,300 N	1 lb 1 Kg 1 N	3/4"	12"	601-3000DR-12S
Standard-Hydraulic* 	<ul style="list-style-type: none"> • Accuracy 3% 	0-600 lbs	10 lb	3/4"	—	601-8006
		0-1000 lbs	20 lb	3/4"	—	601-8010
		0-2000 lbs	50 lb	3/4"	—	601-8020
		0-2000 lbs	50 lb	3/4"	12"	601-8020-12
		0-3000 lbs	20 lb	3/4"	—	601-8030
		0-3000 lbs	20 lb	3/4"	12"	601-8030-12
		0-5000 lbs	100 lb	3/4"	—	601-5000
		0-6000 lbs	50 lb	3/4"	—	601-6000
		0-6000 lbs	50 lb	3/4"	18"	601-6000-18
		0-10,000 lbs	100 lb	3/4"	—	601-8100
		0-5000 Kg	50 Kg	3/4"	—	601-8101
		Gauge Case 	<ul style="list-style-type: none"> • Convenient padded gauge storage/carrying case • 4" D x 10" W x 10" L • Fits all hydraulic gauges 			

* Hydraulic gauges should be selected to be used near mid-range.

PNEUMATIC DRESSER

PNEUMATIC POWER HANDLE ELECTRODE DRESSER PART NO. 18-1310



Light weight and rugged construction, this CMW Pneumatic Power Handle requires a clearance of only 1-1/2" with a standard ring and 2" with an extended ring. In most situations this allows dressing of electrodes without removal from the welder. Operating at a cutting speed of 1200 rpm, it enables the operator to dress electrodes quickly and accurately. Cutters and guide rings are easily replaced. These must be matched to the electrode nose and are selected from the chart below.

CMW Electrode Dresser 18-1310 is supplied without blade holder, ring, and cutter blade. When ordering, specify the "Kit" appropriate for your dressing needs as selected from the table below. "The stud" furnished with the kit is not required when using the Pneumatic Power Handle. It may optionally be used, but will increase the clearance required on the welder for dressing. Additional special cutters can be furnished upon special request.

These kits may also be used for cap electrode dressing.

Size To Dress									
4 RW .482 Dia	Nose style CMW Electrode No.	Dome x11x..	Pointed x21x..	Flat x31x..	2" Radius x51x..	3" Radius x81x..	4" Radius x91x..	10" Radius x61x..	Truncated x71x..
	Kit to Order**	18-1390411	18-1390420	18-1390410	18-1390413	18-1390414	18-1390415	18-1390416	18-1390412
	Replacement Blade Replacement Guide Ring (Each for above kit)	18-139411 18-139401	18-139420 18-139402	18-139410 18-139401	18-139413 18-139401	18-139414 18-139401	18-139415 18-139401	18-139416 18-139401	18-139412 18-139401
5 RW .625 Dia	CMW Electrode No.	x12x..	x22x..	x32x..	x52x..	x82x..	x92x..	x62x..	x72x..
	Kit to Order**	18-1390511	18-1390520	18-1390510	18-1390513	18-1390514	18-1390515	18-1390516	18-1390512
	Replacement Blade Replacement Guide Ring (Each for above kit)	18-139511 18-139501	18-139520 18-139502	18-139510 18-139501	18-139513 18-139501	18-139514 18-139501	18-139515 18-139501	18-139516 18-139501	18-139512 18-139501

** Note: This kit includes Stud for (for 3/8 Keyed Chuck), Chuck, 1 Guide Ring, 1 Appropriate blade, and Retaining Nut.

Note: Cutters are **NOT** designed to conform to "Electrode Cap" geometries. Caps are intended for value salvage when expended.