



**Cadi  
Company  
Inc.**

**MANUFACTURER AND DISTRIBUTOR OF  
HIGH CONDUCTIVITY COPPER ALLOYS  
AND RESISTANCE WELDING PRODUCTS**





CAPS



MESH WELDING ELECTRODES



FORGED ROUND BAR



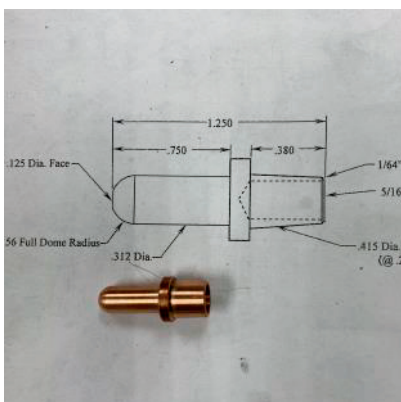
CHILL PLATE



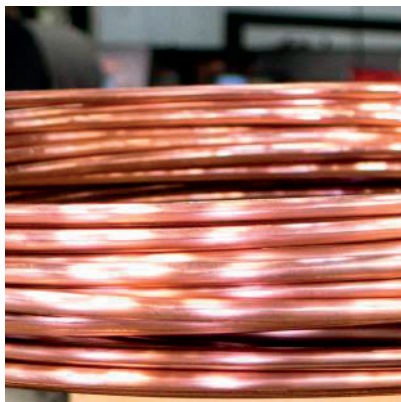
SEAM WELD WHEEL



VARIOUS ELECTRODES



ELECTRODE



COIL



THREADED ROD



COPPER ALLOY PLATE



NUT WELD ELECTRODE



Cadi Company, Inc. P.O. Box 1127, 60 Rado Drive, Naugatuck, CT 06770  
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**Cadi Company** is an ISO certified manufacturer and distributor of high conductivity copper alloys. We specialize in copper that is used to manufacture resistance welding components such as welding wheels, electrodes and numerous other applications that demand performance beyond the capability of standard coppers. Copper alloys are in stock, ready to ship in rod, bar, plate, and special sizes.

This catalog is a sampling of our frequently manufactured consumables. If you don't find it, we have it or can make it.

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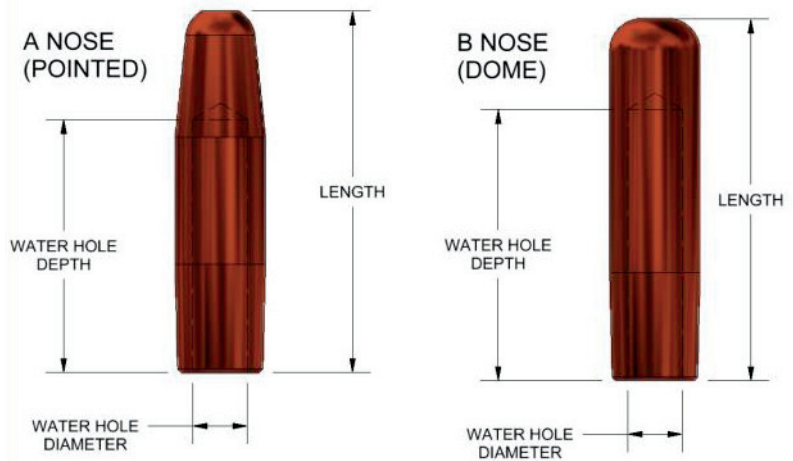
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# STANDARD WELDING ELECTRODES



Cadi Company standard electrodes are manufactured to RWMA specifications. Cadi makes all sizes in RWMA Class 1, 2, 3, and other Copper Alloys. Special shapes and sizes are available upon request.

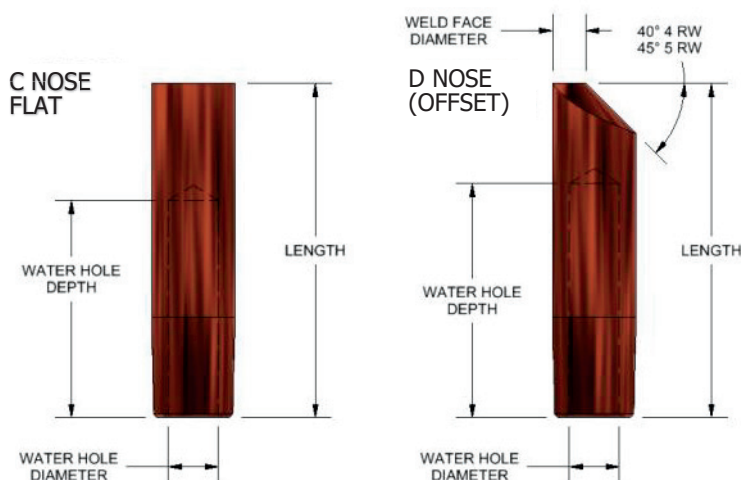


| RWMA Class 1                           | RWMA Class 2 | RWMA Class 3 | Weld Face Diameter for A Nose | Length | Water Hole Depth | Water Hole Diameter | Weld Face Diameter for B Nose          | RWMA Class 1 | RWMA Class 2 | RWMA Class 3 |
|----------------------------------------|--------------|--------------|-------------------------------|--------|------------------|---------------------|----------------------------------------|--------------|--------------|--------------|
| <b>4RW Taper Nominal 1/2" Diameter</b> |              |              |                               |        |                  |                     | <b>4RW Taper Nominal 1/2" Diameter</b> |              |              |              |
| CA-1404                                | CA-2404      | CA-3404      | 3/16"                         | 1"     | 1/2"             | 9/32"               | 3/16"                                  | CB-1404      | CB-2404      | CB-3404      |
| CA-1405                                | CA-2405      | CA-3405      | 3/16"                         | 1 1/4" | 3/4"             | 9/32"               | 3/16"                                  | CB-1405      | CB-2405      | CB-3405      |
| CA-1406                                | CA-2406      | CA-3406      | 3/16"                         | 1 1/2" | 1"               | 9/32"               | 3/16"                                  | CB-1406      | CB-2406      | CB-3406      |
| CA-1407                                | CA-2407      | CA-3407      | 3/16"                         | 1 3/4" | 1 1/4"           | 9/32"               | 3/16"                                  | CB-1407      | CB-2407      | CB-3407      |
| CA-1408                                | CA-2408      | CA-3408      | 3/16"                         | 2"     | 1 1/2"           | 9/32"               | 3/16"                                  | CB-1408      | CB-2408      | CB-3408      |
| CA-1409                                | CA-2409      | CA-3409      | 3/16"                         | 2 1/4" | 1 3/4"           | 9/32"               | 3/16"                                  | CB-1409      | CB-2409      | CB-3409      |
| CA-1410                                | CA-2410      | CA-3410      | 3/16"                         | 2 1/2" | 2"               | 9/32"               | 3/16"                                  | CB-1410      | CB-2410      | CB-3410      |
| CA-1411                                | CA-2411      | CA-3411      | 3/16"                         | 2 3/4" | 2 1/4"           | 9/32"               | 3/16"                                  | CB-1411      | CB-2411      | CB-3411      |
| CA-1412                                | CA-2412      | CA-3412      | 3/16"                         | 3"     | 2 1/2"           | 9/32"               | 3/16"                                  | CB-1412      | CB-2412      | CB-3412      |
| CA-1413                                | CA-2413      | CA-3413      | 3/16"                         | 3 1/4" | 2 3/4"           | 9/32"               | 3/16"                                  | CB-1413      | CB-2413      | CB-3413      |
| CA-1414                                | CA-2414      | CA-3414      | 3/16"                         | 3 1/2" | 3"               | 9/32"               | 3/16"                                  | CB-1414      | CB-2414      | CB-3414      |
| CA-1415                                | CA-2415      | CA-3415      | 3/16"                         | 3 3/4" | 3 1/4"           | 9/32"               | 3/16"                                  | CB-1415      | CB-2415      | CB-3415      |
| CA-1416                                | CA-2416      | CA-3416      | 3/16"                         | 4"     | 3 1/2"           | 9/32"               | 3/16"                                  | CB-1416      | CB-2416      | CB-3416      |
| <b>5RW Taper Nominal 5/8" Diameter</b> |              |              |                               |        |                  |                     | <b>5RW Taper Nominal 5/8" Diameter</b> |              |              |              |
| CA-1505                                | CA-2505      | CA-3505      | 1/4"                          | 1 1/4" | 1/2"             | 3/8"                | 1/4"                                   | CB-1505      | CB-2505      | CB-3505      |
| CA-1506                                | CA-2506      | CA-3506      | 1/4"                          | 1 1/2" | 3/4"             | 3/8"                | 1/4"                                   | CB-1506      | CB-2506      | CB-3506      |
| CA-1507                                | CA-2507      | CA-3507      | 1/4"                          | 1 3/4" | 1"               | 3/8"                | 1/4"                                   | CB-1507      | CB-2507      | CB-3507      |
| CA-1508                                | CA-2508      | CA-3508      | 1/4"                          | 2"     | 1 1/4"           | 3/8"                | 1/4"                                   | CB-1508      | CB-2508      | CB-3508      |
| CA-1509                                | CA-2509      | CA-3509      | 1/4"                          | 2 1/4" | 1 1/2"           | 3/8"                | 1/4"                                   | CB-1509      | CB-2509      | CB-3509      |
| CA-1510                                | CA-2510      | CA-3510      | 1/4"                          | 2 1/2" | 1 3/4"           | 3/8"                | 1/4"                                   | CB-1510      | CB-2510      | CB-3510      |
| CA-1511                                | CA-2511      | CA-3511      | 1/4"                          | 2 3/4" | 2"               | 3/8"                | 1/4"                                   | CB-1511      | CB-2511      | CB-3511      |
| CA-1512                                | CA-2512      | CA-3512      | 1/4"                          | 3"     | 2 1/4"           | 3/8"                | 1/4"                                   | CB-1512      | CB-2512      | CB-3512      |
| CA-1513                                | CA-2513      | CA-3513      | 1/4"                          | 3 1/4" | 2 1/2"           | 3/8"                | 1/4"                                   | CB-1513      | CB-2513      | CB-3513      |
| CA-1514                                | CA-2514      | CA-3514      | 1/4"                          | 3 1/2" | 2 3/4"           | 3/8"                | 1/4"                                   | CB-1514      | CB-2514      | CB-3514      |
| CA-1515                                | CA-2515      | CA-3515      | 1/4"                          | 3 3/4" | 3"               | 3/8"                | 1/4"                                   | CB-1515      | CB-2515      | CB-3515      |
| CA-1516                                | CA-2516      | CA-3516      | 1/4"                          | 4"     | 3 1/4"           | 3/8"                | 1/4"                                   | CB-1516      | CB-2516      | CB-3516      |
| <b>6RW Taper Nominal 3/4" Diameter</b> |              |              |                               |        |                  |                     | <b>6RW Taper Nominal 3/4" Diameter</b> |              |              |              |
| CA-1608                                | CA-2608      | CA-3608      | 9/32"                         | 2"     | 1 1/4"           | 7/16"               | 9/32"                                  | CB-1608      | CB-2608      | CB-3608      |
| CA-1610                                | CA-2610      | CA-3610      | 9/32"                         | 2 1/2" | 1 3/4"           | 7/16"               | 9/32"                                  | CB-1610      | CB-2610      | CB-3610      |
| CA-1612                                | CA-2612      | CA-3612      | 9/32"                         | 3"     | 2 1/4"           | 7/16"               | 9/32"                                  | CB-1612      | CB-2612      | CB-3612      |
| CA-1614                                | CA-2614      | CA-3614      | 9/32"                         | 3 1/2" | 2 3/4"           | 7/16"               | 9/32"                                  | CB-1614      | CB-2614      | CB-3614      |
| CA-1616                                | CA-2616      | CA-3616      | 9/32"                         | 4"     | 3 1/4"           | 7/16"               | 9/32"                                  | CB-1616      | CB-2616      | CB-3616      |
| <b>7RW Taper Nominal 7/8" Diameter</b> |              |              |                               |        |                  |                     | <b>7RW Taper Nominal 7/8" Diameter</b> |              |              |              |
| CA-1708                                | CA-2708      | CA-3708      | 5/16"                         | 2"     | 1 1/4"           | 1/2"                | 5/16"                                  | CB-1708      | CB-2708      | CB-3708      |
| CA-1710                                | CA-2710      | CA-3710      | 5/16"                         | 2 1/2" | 1 3/4"           | 1/2"                | 5/16"                                  | CB-1710      | CB-2710      | CB-3710      |
| CA-1712                                | CA-2712      | CA-3712      | 5/16"                         | 3"     | 2 1/4"           | 1/2"                | 5/16"                                  | CB-1712      | CB-2712      | CB-3712      |
| CA-1714                                | CA-2714      | CA-3714      | 5/16"                         | 3 1/2" | 2 3/4"           | 1/2"                | 5/16"                                  | CB-1714      | CB-2714      | CB-3714      |
| CA-1716                                | CA-2716      | CA-3716      | 5/16"                         | 4"     | 3 1/4"           | 1/2"                | 5/16"                                  | CB-1716      | CB-2716      | CB-3716      |

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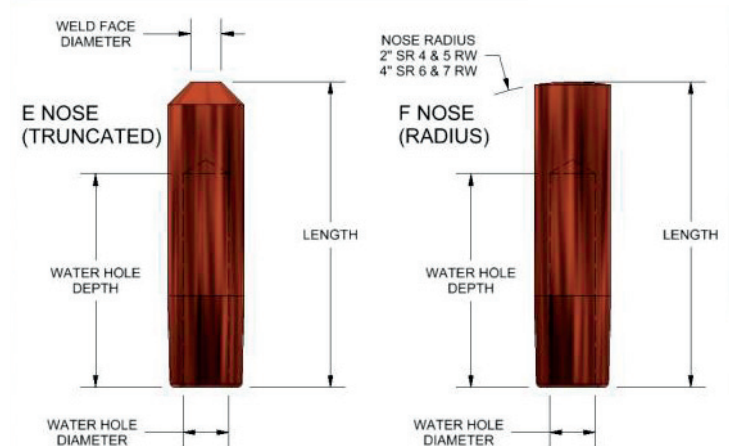
| RWMA Class 1                           | RWMA Class 2 | RWMA Class 3 | Weld Face Diameter for C Nose | Length | Water Hole Depth | Water Hole Diameter | Weld Face Diameter for D Nose          | RWMA Class 1 | RWMA Class 2 | RWMA Class 3 |
|----------------------------------------|--------------|--------------|-------------------------------|--------|------------------|---------------------|----------------------------------------|--------------|--------------|--------------|
| <b>4RW Taper Nominal 1/2" Diameter</b> |              |              |                               |        |                  |                     | <b>4RW Taper Nominal 1/2" Diameter</b> |              |              |              |
| CC-1404                                | CC-2404      | CC-3404      | .482"                         | 1"     | 1/2"             | 9/32"               | 3/16"                                  | CD-1404      | CD-2404      | CD-3404      |
| CC-1405                                | CC-2405      | CC-3405      | .482"                         | 1 1/4" | 3/4"             | 9/32"               | 3/16"                                  | CD-1405      | CD-2405      | CD-3405      |
| CC-1406                                | CC-2406      | CC-3406      | .482"                         | 1 1/2" | 1"               | 9/32"               | 3/16"                                  | CD-1406      | CD-2406      | CD-3406      |
| CC-1407                                | CC-2407      | CC-3407      | .482"                         | 1 3/4" | 1 1/4"           | 9/32"               | 3/16"                                  | CD-1407      | CD-2407      | CD-3407      |
| CC-1408                                | CC-2408      | CC-3408      | .482"                         | 2"     | 1 1/2"           | 9/32"               | 3/16"                                  | CD-1408      | CD-2408      | CD-3408      |
| CC-1409                                | CC-2409      | CC-3409      | .482"                         | 2 1/4" | 1 3/4"           | 9/32"               | 3/16"                                  | CD-1409      | CD-2409      | CD-3409      |
| CC-1410                                | CC-2410      | CC-3410      | .482"                         | 2 1/2" | 2"               | 9/32"               | 3/16"                                  | CD-1410      | CD-2410      | CD-3410      |
| CC-1411                                | CC-2411      | CC-3411      | .482"                         | 2 3/4" | 2 1/4"           | 9/32"               | 3/16"                                  | CD-1411      | CD-2411      | CD-3411      |
| CC-1412                                | CC-2412      | CC-3412      | .482"                         | 3"     | 2 1/2"           | 9/32"               | 3/16"                                  | CD-1412      | CD-2412      | CD-3412      |
| CC-1413                                | CC-2413      | CC-3413      | .482"                         | 3 1/4" | 2 3/4"           | 9/32"               | 3/16"                                  | CD-1413      | CD-2413      | CD-3413      |
| CC-1414                                | CC-2414      | CC-3414      | .482"                         | 3 1/2" | 3"               | 9/32"               | 3/16"                                  | CD-1414      | CD-2414      | CD-3414      |
| CC-1415                                | CC-2415      | CC-3415      | .482"                         | 3 3/4" | 3 1/4"           | 9/32"               | 3/16"                                  | CD-1415      | CD-2415      | CD-3415      |
| CC-1416                                | CC-2416      | CC-3416      | .482"                         | 4"     | 3 1/2"           | 9/32"               | 3/16"                                  | CD-1416      | CD-2416      | CD-3416      |
| <b>5RW Taper Nominal 5/8" Diameter</b> |              |              |                               |        |                  |                     | <b>5RW Taper Nominal 5/8" Diameter</b> |              |              |              |
| CC-1505                                | CC-2505      | CC-3505      | 5/8"                          | 1 1/4" | 1/2"             | 3/8"                | 1/4"                                   | CD-1505      | CD-2505      | CD-3505      |
| CC-1506                                | CC-2506      | CC-3506      | 5/8"                          | 1 1/2" | 3/4"             | 3/8"                | 1/4"                                   | CD-1506      | CD-2506      | CD-3506      |
| CC-1507                                | CC-2507      | CC-3507      | 5/8"                          | 1 3/4" | 1"               | 3/8"                | 1/4"                                   | CD-1507      | CD-2507      | CD-3507      |
| CC-1508                                | CC-2508      | CC-3508      | 5/8"                          | 2"     | 1 1/4"           | 3/8"                | 1/4"                                   | CD-1508      | CD-2508      | CD-3508      |
| CC-1509                                | CC-2509      | CC-3509      | 5/8"                          | 2 1/4" | 1 1/2"           | 3/8"                | 1/4"                                   | CD-1509      | CD-2509      | CD-3509      |
| CC-1510                                | CC-2510      | CC-3510      | 5/8"                          | 2 1/2" | 1 3/4"           | 3/8"                | 1/4"                                   | CD-1510      | CD-2510      | CD-3510      |
| CC-1511                                | CC-2511      | CC-3511      | 5/8"                          | 2 3/4" | 2"               | 3/8"                | 1/4"                                   | CD-1511      | CD-2511      | CD-3511      |
| CC-1512                                | CC-2512      | CC-3512      | 5/8"                          | 3"     | 2 1/4"           | 3/8"                | 1/4"                                   | CD-1512      | CD-2512      | CD-3512      |
| CC-1513                                | CC-2513      | CC-3513      | 5/8"                          | 3 1/4" | 2 1/2"           | 3/8"                | 1/4"                                   | CD-1513      | CD-2513      | CD-3513      |
| CC-1514                                | CC-2514      | CC-3514      | 5/8"                          | 3 1/2" | 2 3/4"           | 3/8"                | 1/4"                                   | CD-1514      | CD-2514      | CD-3514      |
| CC-1515                                | CC-2515      | CC-3515      | 5/8"                          | 3 3/4" | 3"               | 3/8"                | 1/4"                                   | CD-1515      | CD-2515      | CD-3515      |
| CC-1516                                | CC-2516      | CC-3516      | 5/8"                          | 4"     | 3 1/4"           | 3/8"                | 1/4"                                   | CD-1516      | CD-2516      | CD-3516      |
| <b>6RW Taper Nominal 3/4" Diameter</b> |              |              |                               |        |                  |                     | <b>6RW Taper Nominal 3/4" Diameter</b> |              |              |              |
| CC-1608                                | CC-2608      | CC-3608      | 3/4"                          | 2"     | 1 1/4"           | 7/16"               | 9/32"                                  | CD-1608      | CD-2608      | CD-3608      |
| CC-1610                                | CC-2610      | CC-3610      | 3/4"                          | 2 1/2" | 1 3/4"           | 7/16"               | 9/32"                                  | CD-1610      | CD-2610      | CD-3610      |
| CC-1612                                | CC-2612      | CC-3612      | 3/4"                          | 3"     | 2 1/4"           | 7/16"               | 9/32"                                  | CD-1612      | CD-2612      | CD-3612      |
| CC-1614                                | CC-2614      | CC-3614      | 3/4"                          | 3 1/2" | 2 3/4"           | 7/16"               | 9/32"                                  | CD-1614      | CD-2614      | CD-3614      |
| CC-1616                                | CC-2616      | CC-3616      | 3/4"                          | 4"     | 3 1/4"           | 7/16"               | 9/32"                                  | CD-1616      | CD-2616      | CD-3616      |
| <b>7RW Taper Nominal 7/8" Diameter</b> |              |              |                               |        |                  |                     | <b>7RW Taper Nominal 7/8" Diameter</b> |              |              |              |
| CC-1708                                | CC-2708      | CC-3708      | 7/8"                          | 2"     | 1 1/4"           | 1/2"                | 5/16"                                  | CD-1708      | CD-2708      | CD-3708      |
| CC-1710                                | CC-2710      | CC-3710      | 7/8"                          | 2 1/2" | 1 3/4"           | 1/2"                | 5/16"                                  | CD-1710      | CD-2710      | CD-3710      |
| CC-1712                                | CC-2712      | CC-3712      | 7/8"                          | 3"     | 2 1/4"           | 1/2"                | 5/16"                                  | CD-1712      | CD-2712      | CD-3712      |
| CC-1714                                | CC-2714      | CC-3714      | 7/8"                          | 3 1/2" | 2 3/4"           | 1/2"                | 5/16"                                  | CD-1714      | CD-2714      | CD-3714      |
| CC-1716                                | CC-2716      | CC-3716      | 7/8"                          | 4"     | 3 1/4"           | 1/2"                | 5/16"                                  | CD-1716      | CD-2716      | CD-3716      |



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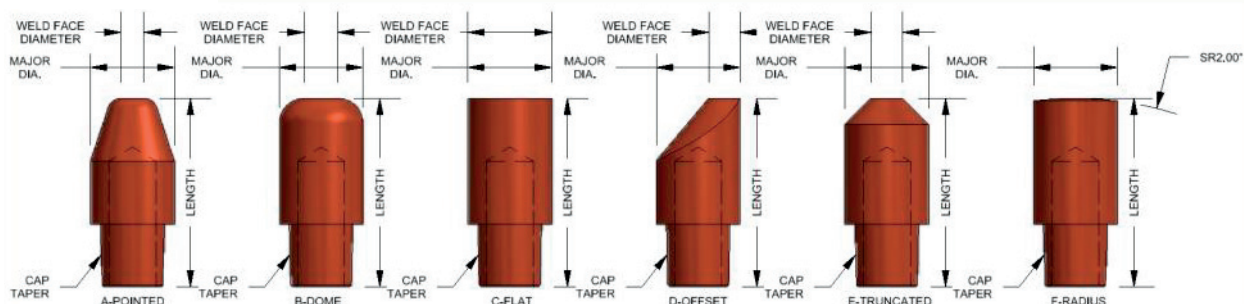


| RWMA Class 1                           | RWMA Class 2 | RWMA Class 3 | Weld Face Diameter for E Nose | Length | Water Hole Depth | Water Hole Diameter | Nose Radius for F Nose | RWMA Class 1 | RWMA Class 2 | RWMA Class 3 |
|----------------------------------------|--------------|--------------|-------------------------------|--------|------------------|---------------------|------------------------|--------------|--------------|--------------|
| <b>4RW Taper Nominal 1/2" Diameter</b> |              |              |                               |        |                  |                     |                        |              |              |              |
| CE-1404                                | CE-2404      | CE-3404      | 3/16"                         | 1"     | 1/2"             | 9/32"               | 2"                     | CF-1404      | CF-2404      | CF-3404      |
| CE-1405                                | CE-2405      | CE-3405      | 3/16"                         | 1 1/4" | 3/4"             | 9/32"               | 2"                     | CF-1405      | CF-2405      | CF-3405      |
| CE-1406                                | CE-2406      | CE-3406      | 3/16"                         | 1 1/2" | 1"               | 9/32"               | 2"                     | CF-1406      | CF-2406      | CF-3406      |
| CE-1407                                | CE-2407      | CE-3407      | 3/16"                         | 1 3/4" | 1 1/4"           | 9/32"               | 2"                     | CF-1407      | CF-2407      | CF-3407      |
| CE-1408                                | CE-2408      | CE-3408      | 3/16"                         | 2"     | 1 1/2"           | 9/32"               | 2"                     | CF-1408      | CF-2408      | CF-3408      |
| CE-1409                                | CE-2409      | CE-3409      | 3/16"                         | 2 1/4" | 1 3/4"           | 9/32"               | 2"                     | CF-1409      | CF-2409      | CF-3409      |
| CE-1410                                | CE-2410      | CE-3410      | 3/16"                         | 2 1/2" | 2"               | 9/32"               | 2"                     | CF-1410      | CF-2410      | CF-3410      |
| CE-1411                                | CE-2411      | CE-3411      | 3/16"                         | 2 3/4" | 2 1/4"           | 9/32"               | 2"                     | CF-1411      | CF-2411      | CF-3411      |
| CE-1412                                | CE-2412      | CE-3412      | 3/16"                         | 3"     | 2 1/2"           | 9/32"               | 2"                     | CF-1412      | CF-2412      | CF-3412      |
| CE-1413                                | CE-2413      | CE-3413      | 3/16"                         | 3 1/4" | 2 3/4"           | 9/32"               | 2"                     | CF-1413      | CF-2413      | CF-3413      |
| CE-1414                                | CE-2414      | CE-3414      | 3/16"                         | 3 1/2" | 3"               | 9/32"               | 2"                     | CF-1414      | CF-2414      | CF-3414      |
| CE-1415                                | CE-2415      | CE-3415      | 3/16"                         | 3 3/4" | 3 1/4"           | 9/32"               | 2"                     | CF-1415      | CF-2415      | CF-3415      |
| CE-1416                                | CE-2416      | CE-3416      | 3/16"                         | 4"     | 3 1/2"           | 9/32"               | 2"                     | CF-1416      | CF-2416      | CF-3416      |
| <b>5RW Taper Nominal 5/8" Diameter</b> |              |              |                               |        |                  |                     |                        |              |              |              |
| CE-1505                                | CE-2505      | CE-3505      | 1/4"                          | 1 1/4" | 1/2"             | 3/8"                | 2"                     | CF-1505      | CF-2505      | CF-3505      |
| CE-1506                                | CE-2506      | CE-3506      | 1/4"                          | 1 1/2" | 3/4"             | 3/8"                | 2"                     | CF-1506      | CF-2506      | CF-3506      |
| CE-1507                                | CE-2507      | CE-3507      | 1/4"                          | 1 3/4" | 1"               | 3/8"                | 2"                     | CF-1507      | CF-2507      | CF-3507      |
| CE-1508                                | CE-2508      | CE-3508      | 1/4"                          | 2"     | 1 1/4"           | 3/8"                | 2"                     | CF-1508      | CF-2508      | CF-3508      |
| CE-1509                                | CE-2509      | CE-3509      | 1/4"                          | 2 1/4" | 1 1/2"           | 3/8"                | 2"                     | CF-1509      | CF-2509      | CF-3509      |
| CE-1510                                | CE-2510      | CE-3510      | 1/4"                          | 2 1/2" | 1 3/4"           | 3/8"                | 2"                     | CF-1510      | CF-2510      | CF-3510      |
| CE-1511                                | CE-2511      | CE-3511      | 1/4"                          | 2 3/4" | 2"               | 3/8"                | 2"                     | CF-1511      | CF-2511      | CF-3511      |
| CE-1512                                | CE-2512      | CE-3512      | 1/4"                          | 3"     | 2 1/4"           | 3/8"                | 2"                     | CF-1512      | CF-2512      | CF-3512      |
| CE-1513                                | CE-2513      | CE-3513      | 1/4"                          | 3 1/4" | 2 1/2"           | 3/8"                | 2"                     | CF-1513      | CF-2513      | CF-3513      |
| CE-1514                                | CE-2514      | CE-3514      | 1/4"                          | 3 1/2" | 2 3/4"           | 3/8"                | 2"                     | CF-1514      | CF-2514      | CF-3514      |
| CE-1515                                | CE-2515      | CE-3515      | 1/4"                          | 3 3/4" | 3"               | 3/8"                | 2"                     | CF-1515      | CF-2515      | CF-3515      |
| CE-1516                                | CE-2516      | CE-3516      | 1/4"                          | 4"     | 3 1/4"           | 3/8"                | 2"                     | CF-1516      | CF-2516      | CF-3516      |
| <b>6RW Taper Nominal 3/4" Diameter</b> |              |              |                               |        |                  |                     |                        |              |              |              |
| CE-1608                                | CE-2608      | CE-3608      | 9/32"                         | 2"     | 1 1/4"           | 7/16"               | 4"                     | CF-1608      | CF-2608      | CF-3608      |
| CE-1610                                | CE-2610      | CE-3610      | 9/32"                         | 2 1/2" | 1 3/4"           | 7/16"               | 4"                     | CF-1610      | CF-2610      | CF-3610      |
| CE-1612                                | CE-2612      | CE-3612      | 9/32"                         | 3"     | 2 1/4"           | 7/16"               | 4"                     | CF-1612      | CF-2612      | CF-3612      |
| CE-1614                                | CE-2614      | CE-3614      | 9/32"                         | 3 1/2" | 2 3/4"           | 7/16"               | 4"                     | CF-1614      | CF-2614      | CF-3614      |
| CE-1616                                | CE-2616      | CE-3616      | 9/32"                         | 4"     | 3 1/4"           | 7/16"               | 4"                     | CF-1616      | CF-2616      | CF-3616      |
| <b>7RW Taper Nominal 7/8" Diameter</b> |              |              |                               |        |                  |                     |                        |              |              |              |
| CE-1708                                | CE-2708      | CE-3708      | 5/16"                         | 2"     | 1 1/4"           | 1/2"                | 4"                     | CF-1708      | CF-2708      | CF-3708      |
| CE-1710                                | CE-2710      | CE-3710      | 5/16"                         | 2 1/2" | 1 3/4"           | 1/2"                | 4"                     | CF-1710      | CF-2710      | CF-3710      |
| CE-1712                                | CE-2712      | CE-3712      | 5/16"                         | 3"     | 2 1/4"           | 1/2"                | 4"                     | CF-1712      | CF-2712      | CF-3712      |
| CE-1714                                | CE-2714      | CE-3714      | 5/16"                         | 3 1/2" | 2 3/4"           | 1/2"                | 4"                     | CF-1714      | CF-2714      | CF-3714      |
| CE-1716                                | CE-2716      | CE-3716      | 5/16"                         | 4"     | 3 1/4"           | 1/2"                | 4"                     | CF-1716      | CF-2716      | CF-3716      |

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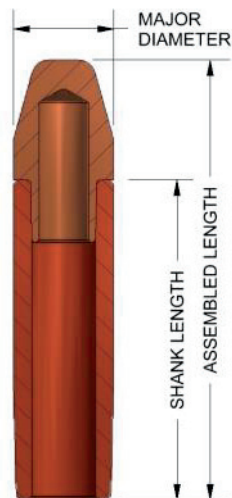
# MALE WELDING CAPS AND SHANKS



| CLASS 1 | CLASS 2 | CLASS 3 | NOSE TYPE | MAJOR DIAMETER | WELD FACE DIAMETER | LENGTH |
|---------|---------|---------|-----------|----------------|--------------------|--------|
| CA-14   | CA-24   | CA-34   | A         | 0.482"         | 3/16"              | 1-1/8" |
| CB-14   | CB-24   | CB-34   | B         | 0.482"         | 3/16"              | 1-1/8" |
| CC-14   | CC-24   | CC-34   | C         | 0.482"         | .482"              | 1-1/8" |
| CD-14   | CD-24   | CD-34   | D         | 0.482"         | 3/16"              | 1-1/8" |
| CE-14   | CE-24   | CE-34   | E         | 0.482"         | 3/16"              | 1-1/8" |
| CF-14   | CF-24   | CF-34   | F         | 0.482"         | SR2.00"            | 1-1/8" |
| CA-15   | CA-25   | CA-35   | A         | 0.625"         | 1/4"               | 1-1/4" |
| CB-15   | CB-25   | CB-35   | B         | 0.625"         | 1/4"               | 1-1/4" |
| CC-15   | CC-25   | CC-35   | C         | 0.625"         | 5/8"               | 1-1/4" |
| CD-15   | CD-25   | CD-35   | D         | 0.625"         | 1/4"               | 1-1/4" |
| CE-15   | CE-25   | CE-35   | E         | 0.625"         | 1/4"               | 1-1/4" |
| CF-15   | CF-25   | CF-35   | F         | 0.625"         | SR2.00"            | 1-1/4" |

## STRAIGHT SHANKS FOR MALE CAPS

| 4 RW CAP TAPER | MAJOR DIAMETER | LENGTH | ASSEMBLED LENGTH |
|----------------|----------------|--------|------------------|
| CG-2405        | 0.482"         | 1-1/4" | 2"               |
| CG-2406        | 0.482"         | 1-1/2" | 2-1/4"           |
| CG-2407        | 0.482"         | 1-3/4" | 2-1/2"           |
| CG-2408        | 0.482"         | 2"     | 2-3/4"           |
| CG-2409        | 0.482"         | 2-1/4" | 3"               |
| CG-2410        | 0.482"         | 2-1/2" | 3-1/4"           |
| CG-2411        | 0.482"         | 2-3/4" | 3-1/2"           |
| CG-2412        | 0.482"         | 3"     | 3-3/4"           |
| CG-2413        | 0.482"         | 3-1/4" | 4"               |
| CG-2414        | 0.482"         | 3-1/2" | 4-1/4"           |
| CG-2415        | 0.482"         | 3-3/4" | 4-1/2"           |
| CG-2416        | 0.482"         | 4"     | 4-3/4"           |



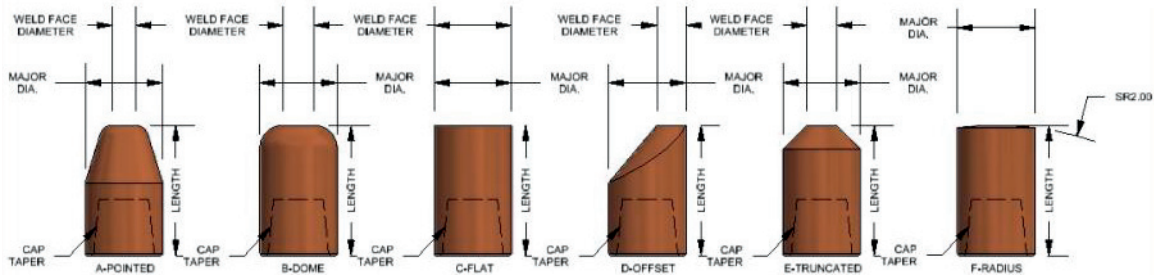
Cadi offers male caps and straight or bent shanks in 4, 5, 6 and 7 RW tapers (6 & 7 not shown).

| 5 RW CAP TAPER | MAJOR DIAMETER | LENGTH | ASSEMBLED LENGTH |
|----------------|----------------|--------|------------------|
| CG-2505        | 0.625"         | 1-1/4" | 2"               |
| CG-2506        | 0.625"         | 1-1/2" | 2-1/4"           |
| CG-2507        | 0.625"         | 1-3/4" | 2-1/2"           |
| CG-2508        | 0.625"         | 2"     | 2-3/4"           |
| CG-2509        | 0.625"         | 2-1/4" | 3"               |
| CG-2510        | 0.625"         | 2-1/2" | 3-1/4"           |
| CG-2511        | 0.625"         | 2-3/4" | 3-1/2"           |
| CG-2512        | 0.625"         | 3"     | 3-3/4"           |
| CG-2513        | 0.625"         | 3-1/4" | 4"               |
| CG-2514        | 0.625"         | 3-1/2" | 4-1/4"           |
| CG-2515        | 0.625"         | 3-3/4" | 4-1/2"           |

Cadi Company manufactures standard and to-print male and female RWMA and ISO welding caps and shanks. Caps and shanks are a two part alternative to straight electrodes in which the shank can be reused many times. Please specify if shanks are being used with ISO caps. The taper is different from RWMA standard.

Resistance welding cap technology gives the end user an economical, efficient alternative to standard electrodes. Their small size and ease of maintenance makes them ideal alternatives in high duty cycle applications. Standard nose configurations, special shapes and sizes are available in RWMA Class 1, 2, 3 and other Copper Alloys.

# FEMALE WELDING CAPS AND SHANKS

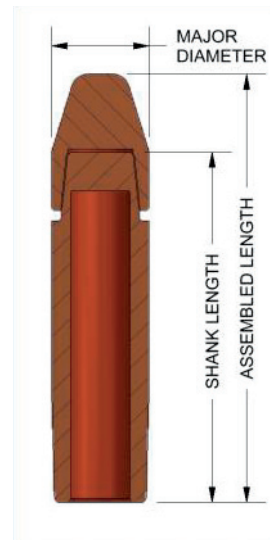


| CLASS 1 | CLASS 2 | CLASS 3 | NOSE TYPE | MAJOR DIAMETER | WELD FACE DIAMETER | LENGTH |
|---------|---------|---------|-----------|----------------|--------------------|--------|
| CFA-14  | CFA-24  | CFA-34  | A         | 0.482"         | 3/16"              | .84"   |
| CFB-14  | CFB-24  | CFB-34  | B         | 0.482"         | 3/16"              | .84"   |
| CFC-14  | CFC-24  | CFC-34  | C         | 0.482"         | 0.482"             | .84"   |
| CFD-14  | CFD-24  | CFD-34  | D         | 0.482"         | 3/16"              | .84"   |
| CFE-14  | CFE-24  | CFE-34  | E         | 0.482"         | 3/16"              | .84"   |
| CFF-14  | CFF-24  | CFF-34  | F         | 0.482"         | SR2.00"            | .84"   |
| CFA-15  | CFA-25  | CFA-35  | A         | 0.625"         | 3/16" or 1/4"      | .88"   |
| CFB-15  | CFB-25  | CFB-35  | B         | 0.625"         | 3/16" or 1/4"      | .88"   |
| CFC-15  | CFC-25  | CFC-35  | C         | 0.625"         | 5/8"               | .88"   |
| CFD-15  | CFD-25  | CFD-35  | D         | 0.625"         | 3/16" or 1/4"      | .88"   |
| CFE-15  | CFE-25  | CFE-35  | E         | 0.625"         | 3/16" or 1/4"      | .88"   |
| CFF-15  | CFF-25  | CFF-35  | F         | 0.625"         | SR2.00"            | .88"   |

## STRAIGHT SHANKS FOR FEMALE CAPS

| 4 RW CAP TAPER | MAJOR DIAMETER | SHANK LENGTH | ASSEMBLED LENGTH |
|----------------|----------------|--------------|------------------|
| CFG-2405       | 0.482"         | 1-1/4"       | 1.85"            |
| CFG-2406       | 0.482"         | 1-1/2"       | 2.10"            |
| CFG-2407       | 0.482"         | 1-3/4"       | 2.35"            |
| CFG-2408       | 0.482"         | 2"           | 2.60"            |
| CFG-2409       | 0.482"         | 2-1/4"       | 2.85"            |
| CFG-2410       | 0.482"         | 2-1/2"       | 3.10"            |
| CFG-2411       | 0.482"         | 2-3/4"       | 3.35"            |
| CFG-2412       | 0.482"         | 3"           | 3.60"            |
| CFG-2413       | 0.482"         | 3-1/4"       | 3.85"            |
| CFG-2414       | 0.482"         | 3-1/2"       | 4.10"            |
| CFG-2415       | 0.482"         | 3-3/4"       | 4.35"            |
| CFG-2416       | 0.482"         | 4"           | 4.60"            |

| 5 RW CAP TAPER | MAJOR DIAMETER | SHANK LENGTH | ASSEMBLED LENGTH |
|----------------|----------------|--------------|------------------|
| CFG-2505       | 0.625"         | 1-1/4"       | 1.89"            |
| CFG-2506       | 0.625"         | 1-1/2"       | 2.14"            |
| CFG-2507       | 0.625"         | 1-3/4"       | 2.39"            |
| CFG-2508       | 0.625"         | 2"           | 2.64"            |
| CFG-2509       | 0.625"         | 2-1/4"       | 2.89"            |
| CFG-2510       | 0.625"         | 2-1/2"       | 3.14"            |
| CFG-2511       | 0.625"         | 2-3/4"       | 3.39"            |
| CFG-2512       | 0.625"         | 3"           | 3.64"            |
| CFG-2513       | 0.625"         | 3-1/4"       | 3.89"            |
| CFG-2514       | 0.625"         | 3-1/2"       | 4.14"            |
| CFG-2415       | 0.625"         | 3-3/4"       | 4.39"            |
| CFG-2416       | 0.625"         | 4"           | 4.64"            |



Cadi offers female caps and straight or bent shanks in 4, 5, 6 and 7 RW tapers (6 & 7 not shown).

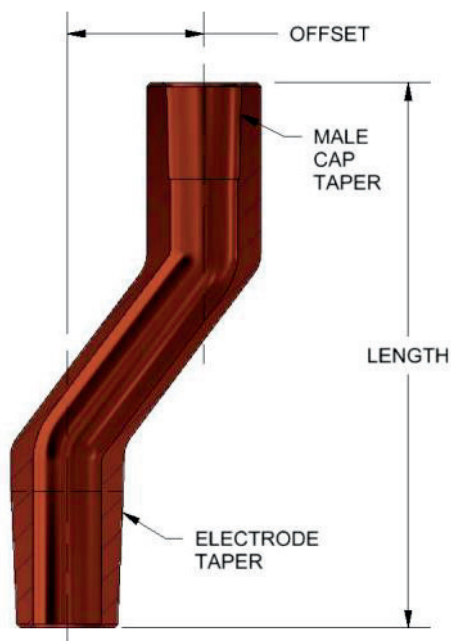
Cadi Company manufactures standard and to-print male and female RWMA and ISO welding caps and shanks. Please specify if shanks are being used with ISO caps. The taper is different from RWMA standard. Caps and shanks are a two part alternative to straight electrodes in which the shank can be reused many times. Female shanks may be ordered with, or without a thru hole. Add a "-T" to the part number to specify a thru hole.

Resistance welding cap technology gives the end user an economical, efficient alternative to standard electrodes. Their small size and ease of maintenance makes them ideal alternatives in high duty cycle applications. All standard nose configurations are available. Special shapes and sizes are available in RWMA Class 1, 2, 3, and other Copper Alloys.



## OFFSET SHANKS FOR MALE AND FEMALE CAPS

### OFFSET SHANKS FOR MALE CAPS



| PART NUMBER | OFFSET | LENGTH | ASSEMBLED LENGTH |
|-------------|--------|--------|------------------|
| CG-2410-08  | 1/2"   | 2-1/2" | 3-1/4"           |
| CG-2410-12  | 3/4"   | 2-1/2" | 3-1/4"           |
| CG-2410-16  | 1"     | 2-1/2" | 3-1/4"           |
| CG-2412-08  | 1/2"   | 3"     | 3-3/4"           |
| CG-2412-20  | 1-1/4" | 3"     | 3-3/4"           |
| CG-2413-16  | 1"     | 3-1/4" | 4"               |

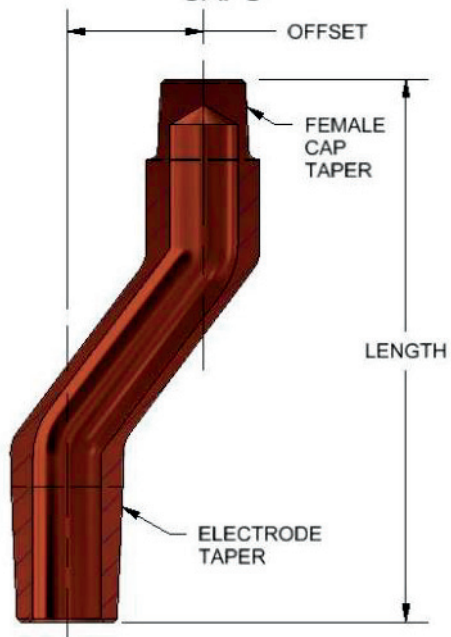
|            |      |        |        |
|------------|------|--------|--------|
| CG-2510-08 | 1/2" | 2-1/2" | 3-1/4" |
| CG-2510-12 | 3/4" | 2-1/2" | 3-1/4" |
| CG-2510-16 | 1"   | 2-1/2" | 3-1/4" |
| CG-2512-8  | 1/2" | 3"     | 3-3/4" |
| CG-2512-12 | 3/4" | 3"     | 3-3/4" |
| CG-2513-16 | 1"   | 3-1/4" | 4"     |

Items listed are several of the most popular sizes. Other lengths and offsets are available.

Shanks for female caps may be ordered with or without a thru hole. Please add a "-T" for shanks with a thru hole.

Please specify if shanks are to be used with Metric ISO caps. The taper is different.

### OFFSET SHANKS FOR FEMALE CAPS

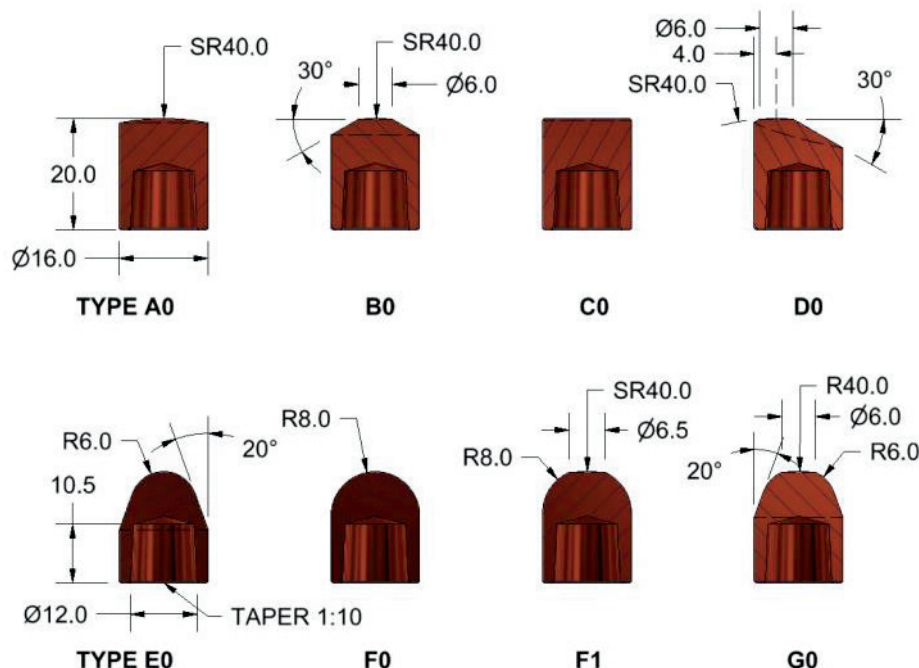


| PART NUMBER | OFFSET | LENGTH | ASSEMBLED LENGTH |
|-------------|--------|--------|------------------|
| CFG-2411-08 | 1/2"   | 2-3/4" | 3-1/4"           |
| CFG-2411-12 | 3/4"   | 2-3/4" | 3-1/4"           |
| CFG-2411-16 | 1"     | 2-3/4" | 3-1/4"           |
| CFG-2413-08 | 1/2"   | 3-1/4" | 3-3/4"           |
| CFG-2413-20 | 1-1/4" | 3-1/4" | 3-3/4"           |
| CFG-2414-16 | 1"     | 3-1/2" | 4"               |

|             |      |        |        |
|-------------|------|--------|--------|
| CFG-2511-08 | 1/2" | 2-3/4" | 3-1/4" |
| CFG-2511-12 | 3/4" | 2-3/4" | 3-1/4" |
| CFG-2511-16 | 1"   | 2-3/4" | 3-1/4" |
| CFG-2513-08 | 1/2" | 3-1/4" | 3-3/4" |
| CFG-2513-12 | 3/4" | 3-1/4" | 3-3/4" |
| CFG-2514-16 | 1"   | 3-1/2" | 4"     |

Cadi shanks are made with RWMA Class 2 copper. Class 1 or Class 3 are available as an option.

# METRIC ISO CAPS



Cadi produces a wide variety of Metric ISO electrode caps. Standard 16 mm diameter caps are shown above. ISO caps are available in 13, 16 and 20 mm diameters. Preferred lengths are 18, 20 and 22 mm respectively. Weld face diameters are 5, 6, and 8 mm respectively. Dimensions may vary slightly for 13 and 20 mm diameter caps. In the standard configuration, these caps have a 1:10 taper.

Cadi's ISO caps adhere to the ISO 5821 International Standard.

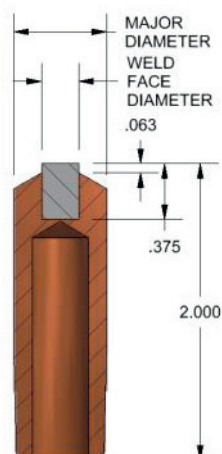
ISO caps are available in the same alloys as our RWMA caps.

The same shanks that are available for RWMA caps are also available for ISO caps. Please specify that ISO caps are being used when ordering shanks. The tapers are different.

We can also make caps with the ISO taper to your custom design. Contact your Cadi representative for more information on custom caps.

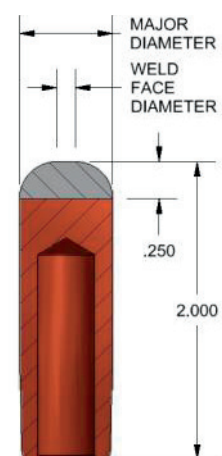
| TYPE | DIAMETER | LENGTH   | WELD FACE | WELD FACE RADIUS | TAPER MAJOR DIAMETER |
|------|----------|----------|-----------|------------------|----------------------|
| A0   | 13/16/20 | 18/20/22 |           | 30/40/50         | 10/12/15             |
| B0   | 13/16/20 | 18/20/22 | 5/6/8     | 30/40/50         | 10/12/15             |
| C0   | 13/16/20 | 18/20/22 |           |                  | 10/12/15             |
| D0   | 13/16/20 | 18/20/22 | 5/6/8     | 32/40/50         | 10/12/15             |
| E0   | 13/16/20 | 18/20/22 |           | 5/6/8            | 10/12/15             |
| F0   | 13/16/20 | 18/20/22 |           | 6.5/8/10         | 10/12/15             |
| F1   | 13/16/20 | 18/20/22 | 5/6/8     | 50/50/50         | 10/12/15             |
| G0   | 13/16/20 | 18/20/22 | 5/6/8     | 32/40/50         | 10/12/15             |

## REFRACTORY METAL-FACED ELECTRODES



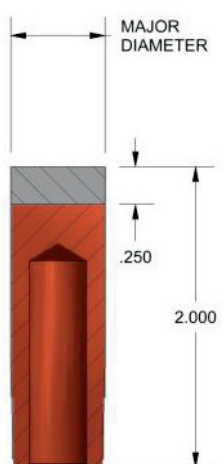
| 4 RW<br>TAPER | NOSE TYPE | MAJOR<br>DIAMETER | WELD FACE<br>DIAMETER | LENGTH | INSERT<br>MATERIAL    |
|---------------|-----------|-------------------|-----------------------|--------|-----------------------|
| FC10 408      | A         | 0.482"            | 3/16"                 | 2"     | COPPER TUNGSTEN (10W) |
| FCM 408       | A         | 0.482"            | 3/16"                 | 2"     | MOLYBDENUM (100M)     |
| FCT 408       | A         | 0.482"            | 3/16"                 | 2"     | TUNGSTEN (100W)       |

| 5 RW<br>TAPER | NOSE TYPE | MAJOR<br>DIAMETER | WELD FACE<br>DIAMETER | LENGTH | INSERT<br>MATERIAL    |
|---------------|-----------|-------------------|-----------------------|--------|-----------------------|
| FC10 508      | A         | 0.625"            | 1/4"                  | 2"     | COPPER TUNGSTEN (10W) |
| FCM 508       | A         | 0.625"            | 1/4"                  | 2"     | MOLYBDENUM (100M)     |
| FCT 508       | A         | 0.625"            | 1/4"                  | 2"     | TUNGSTEN (100W)       |



| 4 RW<br>TAPER | NOSE TYPE | MAJOR<br>DIAMETER | WELD FACE<br>DIAMETER | LENGTH | INSERT<br>MATERIAL    |
|---------------|-----------|-------------------|-----------------------|--------|-----------------------|
| FD10 408      | B         | 0.482"            | 1/8"                  | 2"     | COPPER TUNGSTEN (10W) |
| FDM 408       | B         | 0.482"            | 1/8"                  | 2"     | MOLYBDENUM (100M)     |
| FDT 408       | B         | 0.482"            | 1/8"                  | 2"     | TUNGSTEN (100W)       |

| 5 RW<br>TAPER | NOSE TYPE | MAJOR<br>DIAMETER | WELD FACE<br>DIAMETER | LENGTH | INSERT<br>MATERIAL    |
|---------------|-----------|-------------------|-----------------------|--------|-----------------------|
| FD10 508      | B         | 0.625"            | 1/8"                  | 2"     | COPPER TUNGSTEN (10W) |
| FDM 508       | B         | 0.625"            | 1/8"                  | 2"     | MOLYBDENUM (100M)     |
| FDT 508       | B         | 0.625"            | 1/8"                  | 2"     | TUNGSTEN (100W)       |



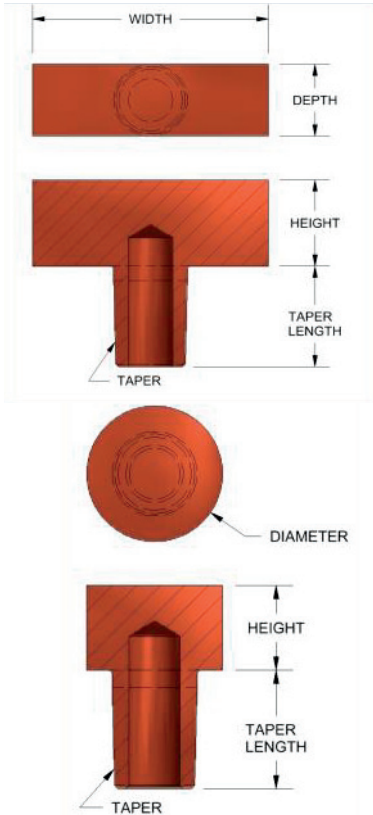
| 4 RW<br>TAPER | NOSE TYPE | MAJOR<br>DIAMETER | WELD FACE<br>DIAMETER | LENGTH | INSERT<br>MATERIAL    |
|---------------|-----------|-------------------|-----------------------|--------|-----------------------|
| FF10 408      | C         | 0.482"            | .482"                 | 2"     | COPPER TUNGSTEN (10W) |
| FFM 408       | C         | 0.482"            | .482"                 | 2"     | MOLYBDENUM (100M)     |
| FFT 408       | C         | 0.482"            | .482"                 | 2"     | TUNGSTEN (100W)       |

| 5 RW<br>TAPER | NOSE TYPE | MAJOR<br>DIAMETER | WELD FACE<br>DIAMETER | LENGTH | INSERT<br>MATERIAL    |
|---------------|-----------|-------------------|-----------------------|--------|-----------------------|
| FF10 508      | C         | 0.625"            | 5/8"                  | 2"     | COPPER TUNGSTEN (10W) |
| FFM 508       | C         | 0.625"            | 5/8"                  | 2"     | MOLYBDENUM (100M)     |
| FFT 508       | C         | 0.625"            | 5/8"                  | 2"     | TUNGSTEN (100W)       |

Cadi Company manufactures standard and to-print refractory metal-faced electrodes that can be used in high heat, high force applications, and heat balancing to improve nugget size or location. RWMA Class 2 copper is used for the electrode body. Special shapes and sizes are available upon request.



# BACKUP AND SWIVEL ELECTRODES



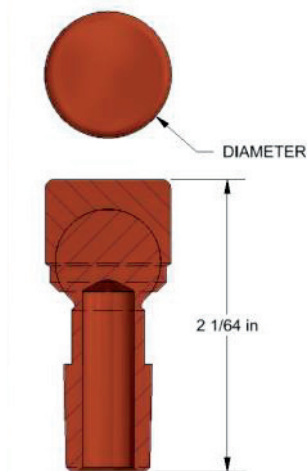
## RECTANGULAR BACKUP ELECTRODES

| PART NUMBER | RW TAPER | WIDTH  | DEPTH | HEIGHT | TAPER LENGTH |
|-------------|----------|--------|-------|--------|--------------|
| C-237       | 4RW      | 1/2"   | 1/2"  | 11/16" | 13/16"       |
| C-109       | 5RW      | 5/8"   | 5/8"  | 7/8"   | 7/8"         |
| C-382       | 4RW      | 1"     | 1/2"  | 3/4"   | 7/8"         |
| C-383       | 5RW      | 1"     | 1/2"  | 3/4"   | 7/8"         |
| C-384       | 4RW      | 1-1/2" | 5/8"  | 3/4"   | 7/8"         |
| C-385       | 5RW      | 1-1/2" | 5/8"  | 3/4"   | 7/8"         |
| C-127       | 4RW      | 2"     | 5/8"  | 3/4"   | 7/8"         |
| C-125       | 5RW      | 2"     | 5/8"  | 3/4"   | 7/8"         |

## ROUND BACKUP ELECTRODES

| PART NUMBER | RW TAPER | DIAMETER | HEIGHT | TAPER LENGTH |
|-------------|----------|----------|--------|--------------|
| C-375       | 4RW      | 7/8"     | 5/8"   | 7/8"         |
| C-378       | 5RW      | 7/8"     | 5/8"   | 7/8"         |
| C-161       | 4RW      | 1"       | 5/8"   | 7/8"         |
| C-183       | 5RW      | 1"       | 5/8"   | 7/8"         |
| C-376       | 4RW      | 1-1/4"   | 5/8"   | 5/8"         |
| C-379       | 5RW      | 1-1/4"   | 5/8"   | 7/8"         |
| C-377       | 4RW      | 1-1/2"   | 5/8"   | 7/8"         |
| C-380       | 5RW      | 1-1/2"   | 5/8"   | 7/8"         |

Cadi Company manufactures standard and to-print backup electrodes in round, square, and rectangular shapes. Electrodes are available in RWMA Class 1, 2, or 3 and can be faced with copper-tungsten, molybdenum, tungsten and other refractory metals. The standard material for backup electrodes is RWMA Class 2. Special shapes, sizes, and materials are available upon request.



## SWIVEL HEAD ELECTRODES

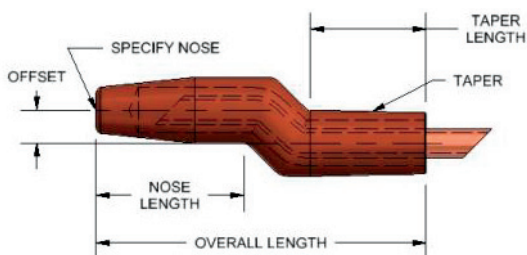
| PART NUMBER | RW TAPER | DIAMETER | HEIGHT  | TYPE          |
|-------------|----------|----------|---------|---------------|
| C-369       | 4RW      | 7/8"     | 2-1/64" | BLIND HOLE    |
| C-370       | 5RW      | 7/8"     | 2-1/64" | BLIND HOLE    |
| C-216       | 4RW      | 1"       | 2-1/64" | BLIND HOLE    |
| C-120       | 5RW      | 1"       | 2-1/64" | BLIND HOLE    |
| C-204       | 4RW      | 1-1/4"   | 2-1/64" | BLIND HOLE    |
| C-217       | 5RW      | 1-1/4"   | 2-1/64" | BLIND HOLE    |
| C-348       | 4 RW     | 1"       | 2-1/64" | BALL & SPRING |
| C-350       | 5 RW     | 1"       | 2-1/64" | BALL & SPRING |
| C-349       | 4 RW     | 1-1/4"   | 2-1/64" | BALL & SPRING |
| C-351       | 5 RW     | 1-1/4"   | 2-1/64" | BALL & SPRING |
| C-373       | 4 RW     | 7/8"     | 2-1/64" | THRU HOLE     |
| C-328       | 5 RW     | 7/8"     | 2-1/64" | THRU HOLE     |
| C-352       | 4 RW     | 1"       | 2-1/64" | THRU HOLE     |
| C-354       | 5 RW     | 1"       | 2-1/64" | THRU HOLE     |
| C-353       | 4 RW     | 1-1/4"   | 2-1/64" | THRU HOLE     |
| C-355       | 5 RW     | 1-1/4"   | 2-1/64" | THRU HOLE     |

Many other diameters and lengths available.

Swivel head electrodes compensate for minor misalignments and minimize marking of the work surface. RWMA Class 2 is the standard material used, however RWMA Class 1 and 3 are optional. Special sizes and shapes are available upon request.

## DOUBLE BEND ELECTRODES

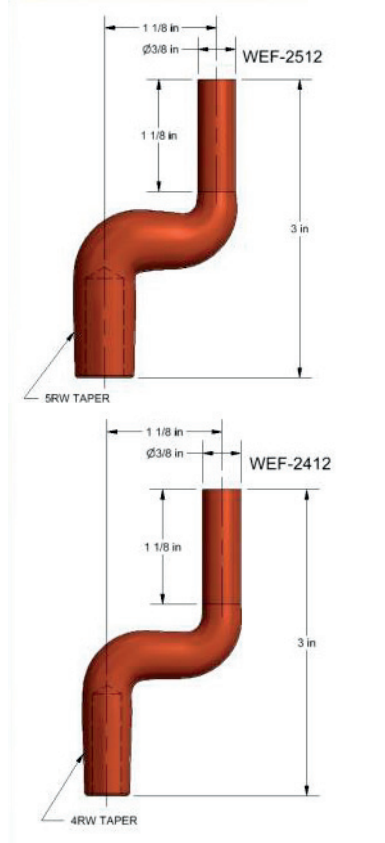
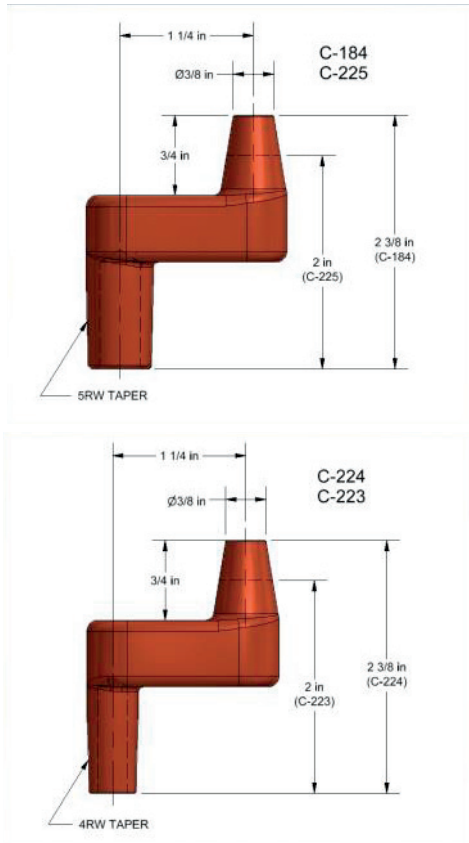
Cadi manufactures double bend electrodes from standard RWMA Class 2 straight electrodes with water tubes in place. This assures water cooling at the weld face, giving longer life and more consistent weld quality. Cadi double bend electrodes may be ordered in all standard nose designs, and, as a special item, in either RWMA Class 1 or 3. Water tubes may be deleted upon request. Special shapes and sizes are available.



Double bend electrodes are available from 2" to 4" overall length. 4RW or 5RW tapers and offsets to 1-1/4". Standard Nose Length is 3/4" for 4RW and 1" for 5RW. Standard taper length is 7/8" for 4RW and 1" for 5RW. Bent electrode overall length dimensions may vary  $\pm 1/16"$ . Custom nose length, taper lengths and offsets are available upon request.

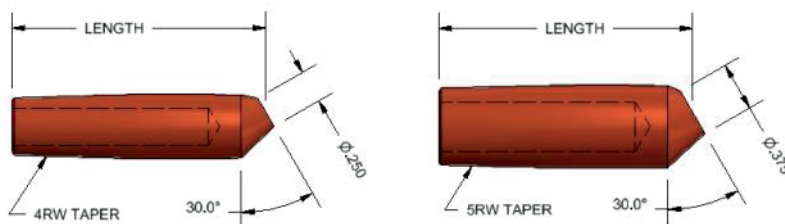
| OFFSET | TAPER  | TAPER LENGTH | NOSE LENGTH | OVERALL LENGTH | PART NUMBER |
|--------|--------|--------------|-------------|----------------|-------------|
| 1/2"   | 4RW    | 7/8"         | 3/4 "       | 2"             | CA-2408-8   |
|        |        |              |             | 2-1/4"         | CA-2409-8   |
|        |        |              |             | 2-1/2"         | CA-2410-8   |
|        | 5RW    | 1"           | 1 "         | 2-1/2"         | CA-2510-8   |
|        |        |              |             | 2-3/4"         | CA-2511-8   |
|        |        |              |             | 3"             | CA-2512-8   |
| 3-1/4" |        |              |             | CA-2513-8      |             |
| 3/4"   | 4RW    | 7/8"         | 3/4"        | 2"             | CA-2408-12  |
|        |        |              |             | 2-1/4"         | CA-2409-12  |
|        |        |              |             | 2-1/2"         | CA-2410-12  |
|        | 5RW    | 1"           | 1"          | 2-3/4"         | CA-2511-12  |
|        |        |              |             | 3"             | CA-2512-12  |
|        |        |              |             | 3-1/4"         | CA-2513-12  |
| 1"     |        |              |             | 4RW            | 7/8"        |
|        | 2-1/2" | CA-2410-16   |             |                |             |
|        | 2-3/4" | CA-2411-16   |             |                |             |
|        | 3"     | CA-2412-16   |             |                |             |
|        | 5RW    | 1"           | 1"          | 2-3/4"         | CA-2511-16  |
|        |        |              |             | 3"             | CA-2512-16  |
| 3-1/4" |        |              |             | CA-2513-16     |             |
| 3-1/2" |        |              |             | CA-2514-16     |             |
| 1-1/4" | 4RW    | 7/8"         | 3/4"        | 2-1/2"         | CA-2410-20  |
|        |        |              |             | 2-3/4"         | CA-2411-20  |
|        |        |              |             | 3"             | CA-2412-20  |
|        | 5RW    | 1"           | 1"          | 2-3/4"         | CA-2511-20  |
|        |        |              |             | 3"             | CA-2512-20  |
|        |        |              |             | 3-1/4"         | CA-2513-20  |
| 3-1/2" |        |              |             | CA-2514-20     |             |

## IRREGULAR SHAPED ELECTRODES



Crank type electrodes are drop forged from RWMA Class 2 copper alloy for additional strength and life. WEF electrodes are cold formed from RWMA Class 2 extruded bar.

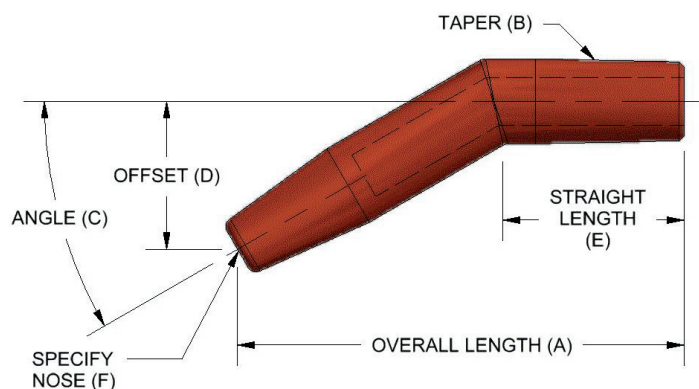
## 30° OFFSET NOSE ELECTRODES



| PART NUMBER | TAPER | LENGTH |
|-------------|-------|--------|
| C-218-2     | 4RW   | 2"     |
| C-218-3     | 4RW   | 3"     |
| C-218-4     | 4RW   | 4"     |
| C-219-2     | 5RW   | 2"     |
| C-219-3     | 5RW   | 3"     |
| C-219-4     | 5RW   | 4"     |

RWMA Class 2 is the standard material used, however other alloys are available. These electrodes are for use with welder arms having an angled hole. This allows for extra reach into the parts being welded.

# SINGLE BEND ELECTRODES



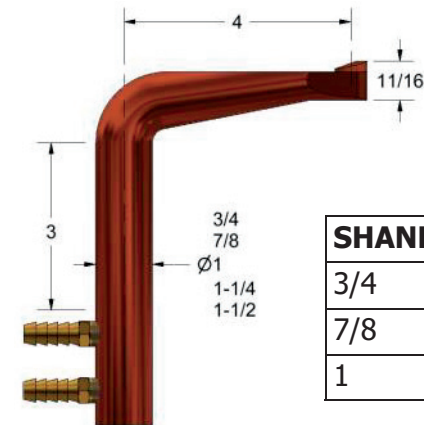
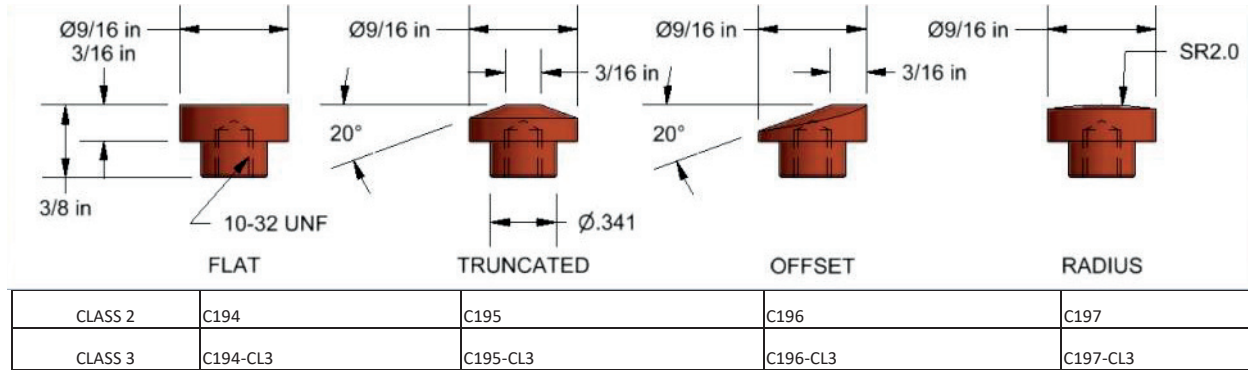
| PART NUMBER       | OVERALL LENGTH (A) | TAPER (B) | ANGLE (C) | OFFSET (D) | STRAIGHT LENGTH (E) | NOSE TYPE (F)                                               |
|-------------------|--------------------|-----------|-----------|------------|---------------------|-------------------------------------------------------------|
| CA2407-S-15-4-5   | 1 3/4              | 4RW       | 15°       | 1/4        | 5/8                 | A = POINTED<br><br>(See example below for other nose types) |
| CA2412-S-15-4-15  | 3                  | 4RW       |           | 1/4        | 1 7/8               |                                                             |
| CA2416-S-15-13-5  | 4                  | 4RW       |           | 13/16      | 5/8                 |                                                             |
| CA2508-S-15-4-7   | 2                  | 5RW       |           | 1/4        | 7/8                 |                                                             |
| CA2512-S-15-4-15  | 3                  | 5RW       |           | 1/4        | 1 7/8               |                                                             |
| CA2515-S-15-10-8  | 3 3/4              | 5RW       |           | 5/8        | 1                   |                                                             |
| CA2408-S-30-7-6   | 2                  | 4RW       | 30°       | 7/16       | 3/4                 |                                                             |
| CA2412-S-30-7-14  | 3                  | 4RW       |           | 7/16       | 1 3/4               |                                                             |
| CA2415-S-30-23-7  | 3 3/4              | 4RW       |           | 1 7/16     | 7/8                 |                                                             |
| CA2508-S-30-9-7   | 2                  | 5RW       |           | 9/16       | 7/8                 |                                                             |
| CA2512-S-30-9-15  | 3                  | 5RW       |           | 9/16       | 1 7/8               |                                                             |
| CA2515-S-30-24-8  | 3 3/4              | 5RW       | 45°       | 1 1/2      | 1                   |                                                             |
| CA2407-S-45-10-6  | 1 3/4              | 4RW       |           | 5/8        | 3/4                 |                                                             |
| CA2412-S-45-12-15 | 3                  | 4RW       |           | 3/4        | 1 7/8               |                                                             |
| CA2413-S-45-33-6  | 3 1/4              | 4RW       |           | 2 1/16     | 3/4                 |                                                             |
| CA2508-S-45-17-7  | 2                  | 5RW       |           | 1 1/16     | 7/8                 |                                                             |
| CA2512-S-45-17-13 | 3                  | 5RW       |           | 1 1/16     | 1 5/8               |                                                             |
| CA2515-S-45-33-8  | 3 3/4              | 5RW       |           | 2 1/16     | 1                   |                                                             |
| CA2408-S-60-23-7  | 2                  | 4RW       | 60°       | 1 7/16     | 7/8                 |                                                             |
| CA2412-S-60-23-15 | 3                  | 4RW       |           | 1 7/16     | 1 7/8               |                                                             |
| CA2411-S-60-40-7  | 2 3/4              | 4RW       |           | 2 1/2      | 7/8                 |                                                             |
| CA2510-S-60-25-9  | 2 1/2              | 5RW       |           | 1 9/16     | 1 1/8               |                                                             |
| CA2513-S-60-25-15 | 3 1/4              | 5RW       |           | 1 9/16     | 1 7/8               |                                                             |
| CA2512-S-60-38-10 | 3                  | 5RW       |           | 2 3/8      | 1 1/4               |                                                             |

Cadi manufactures single bend electrodes from standard RWMA Class 2 straight electrodes. Single bend electrodes may be ordered in all standard nose designs and as a special item in either RWMA Class 1 or 3. Single bend electrodes are available in a wide variety of lengths and offsets. 4RW and 5RW tapers are available. Special shapes and sizes are available. Bent electrode overall length may vary  $\pm 1/16"$ . "D" DIM=1/16" Increments.

| CADI PART NUMBER EXAMPLE: CA2512-S-45-9-10 |                                                                                                |                                             |                                         |                                            |             |                     |                                 |                                        |
|--------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------|--------------------------------------------|-------------|---------------------|---------------------------------|----------------------------------------|
|                                            | Nose (F)                                                                                       |                                             | Taper (B)                               | Overall Length (A)                         |             | Angle of Offset (C) | Offset (D)                      | Straight Length (E)                    |
| C                                          | A                                                                                              | 2                                           | 5                                       | 12                                         | S           | 45                  | 9                               | 10                                     |
| Cadi                                       | A = Pointed Nose (other nose types: B = Dome, C = Flat, D = Offset, E = Truncated, F = Radius) | Class 2 Material, other materials available | 5RW Taper<br>4=4RW=(1MT)<br>5=5RW=(2MT) | 12=3"<br>Overall Length in 1/4" increments | Single Bend | 45° Angle           | 9/16 Offset in 1/16" increments | 5/8 straight length in 1/8" increments |



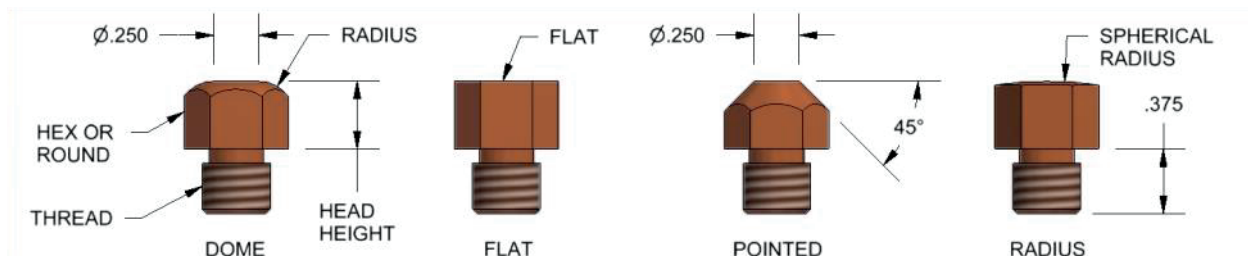
## PADDLE TIP HOLDERS AND SOCKET TIPS



Paddle tip holders accept the socket tips above. They are useful for reaching welds with limited access. With a 4" offset and low head height, they can reach areas not accessible with standard offset holders. A bushing is used so the holder can fit 1-1/2" diameter holes.

| SHANK DIA. | PART NUMBER | SHANK DIA. | PART NUMBER |
|------------|-------------|------------|-------------|
| 3/4        | CPH-75-4    | 1-1/4      | CPH-125-4   |
| 7/8        | CPH-88-4    | 1-1/2      | CPH-150-4   |
| 1          | CPH-100-4   |            |             |

## THREADED TIPS

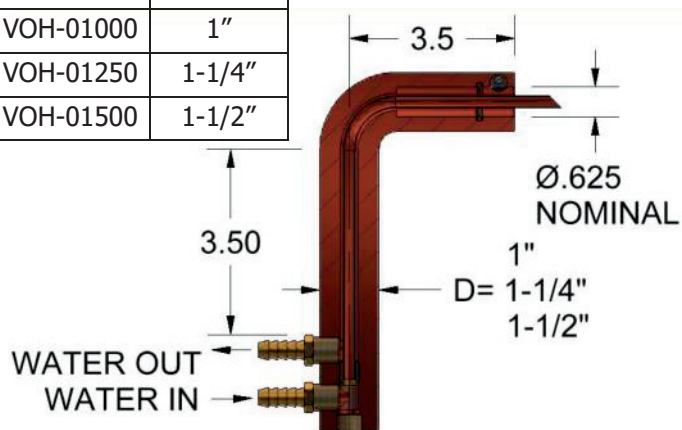


| Threaded Tips | Shape                | Button     | Alloy                    | Hex Size                                                                     | Thread                                                             | Head Height                                                     | - | Face                                              | Additional Info.                             |
|---------------|----------------------|------------|--------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------|---|---------------------------------------------------|----------------------------------------------|
|               | H = Hex<br>R = Round | B = Button | 150<br>181<br>182<br>180 | 37 = 3/8"<br>43 = 7/16"<br>50 = 1/2"<br>56 = 9/16"<br>62 = 5/8"<br>75 = 3/4" | 25 = 1/4 - 20<br>31 = 5/16 - 18<br>37 = 3/8 - 16<br>43 = 7/16 - 14 | 25 = 1/4"<br>31 = 5/16"<br>37 = 3/8"<br>43 = 7/16"<br>50 = 1/2" | - | A = Pointed<br>B = Dome<br>C = Flat<br>F = Radius | Diameter or Radius of Weld Face as Required. |
| Example:      | H                    | B          | 182                      | 50                                                                           | 37                                                                 | 37                                                              | - | F                                                 | 2.0 (Radius Dia.)                            |

Cadi Threaded Tips are highly customizable to fit a wide array of applications. Custom shapes and sizes are readily available.

## VARIABLE OFFSET HOLDERS

| Part #    | Diameter |
|-----------|----------|
| VOH-01000 | 1"       |
| VOH-01250 | 1-1/4"   |
| VOH-01500 | 1-1/2"   |

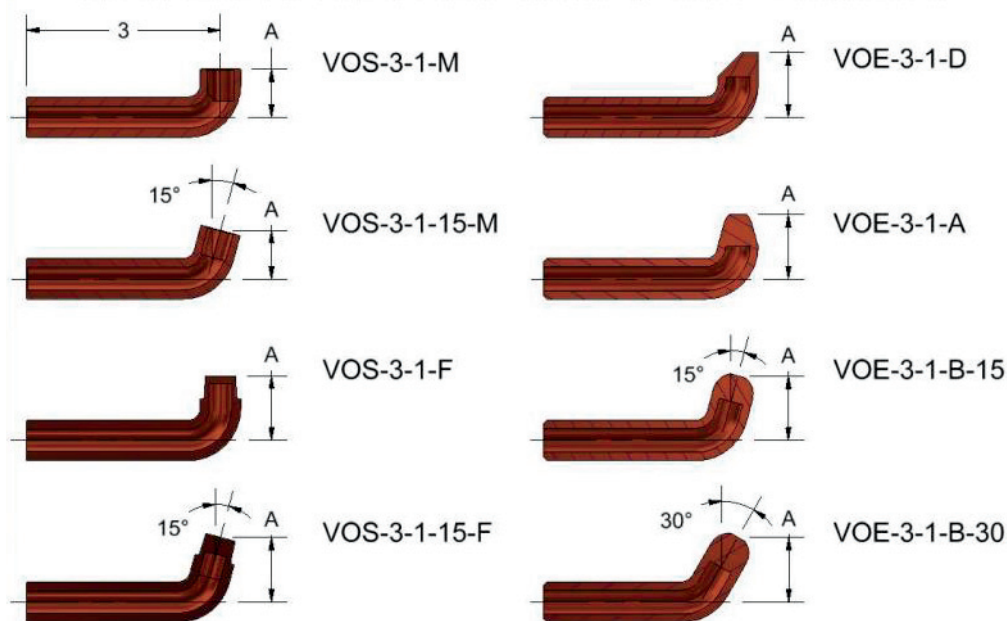


Cadi Variable Offset Holders allow the end user to set the amount of offset across a range, rather than a fixed amount as seen when using 2" or 4" offset holders. Total offset is between 4" and 5".

These holders can be made from Class 2 or 3 copper depending on the application.

Tips are straight shank. They are secured in position with a locking wedge.

## VARIABLE OFFSET ADAPTERS AND ELECTRODES



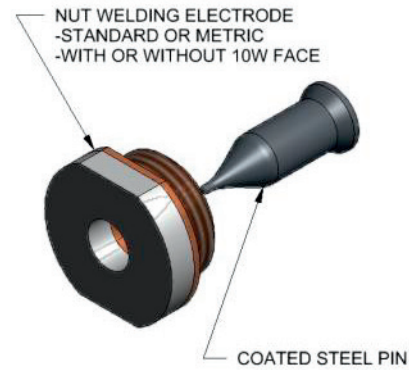
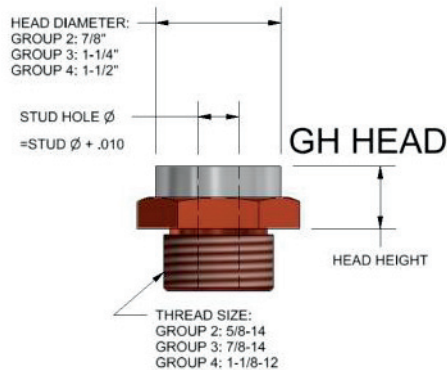
Straight shank electrodes are a one piece design. Straight shank cap adapters are a two piece design and can use any of the 5RW caps seen on pages 5-6. Male cap adapters are made with a thru hole to get water to the cap. Female cap adapters have a blind hole reducing or eliminating spillage when changing caps.

Straight shank electrodes are available with an "A" dimension of 1" or 2". Straight shank cap adapters have a nose length of 3/4" for male adapters and 1" for female adapters. All standard electrodes and adapters are 3" long to the center of the weld face or taper.

Standard material for these items is RWMA Class 2.

Special shapes, sizes and materials are available on request. Contact your Cadi representative for more information.

# STUD AND NUT WELDING ELECTRODES



**SIZES FROM 4MM  
THROUGH 15MM.**

| GH Head          | Size                                                                                                                                                      | Head Height              | Nut or Stud       | Face Diameter                           | Hole Diameter                                                |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------|-----------------------------------------|--------------------------------------------------------------|
|                  | Group 2 for Projection Ring Dia. of 7/8 or less<br>Group 3 for Projection Ring Dia. of 1-1/4 or less<br>Group 4 for Projection Ring Dia. of 1-1/2 or less | 5 for 1/2"<br>6 for 5/8" | N= Nut<br>S= Stud | 08 = 7/8"<br>12 = 1-1/4"<br>15 = 1-1/2" | Hole Diameter =<br>Stud diameter +.010<br>PIN diameter +.002 |
| Example: GH<br>- | 2                                                                                                                                                         | 5                        | S                 | 08                                      | 323 (hole diameter<br>for 5/16" stud)                        |

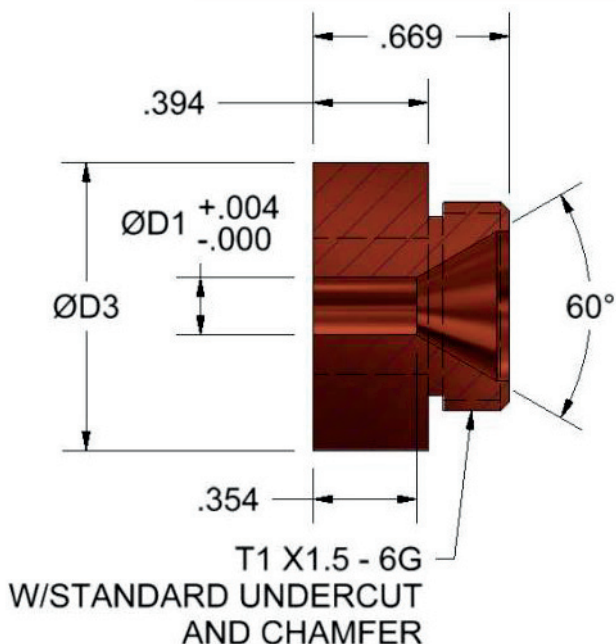
Cadi manufactures the highest quality stud and nut electrodes available. Electrodes are available in RWMA Classes 1, 2, 3, and other Copper Alloys and can be faced with copper-tungsten, molybdenum, tungsten and other refractory metals. Hexagon, round with wrench flat, and special shapes and sizes are available.



**Cadi Company, Inc. P.O. Box 1127, 60 Rado Drive, Naugatuck, CT 06770**  
**www.cadicompany.com 800-243-3650 203-729-1111**



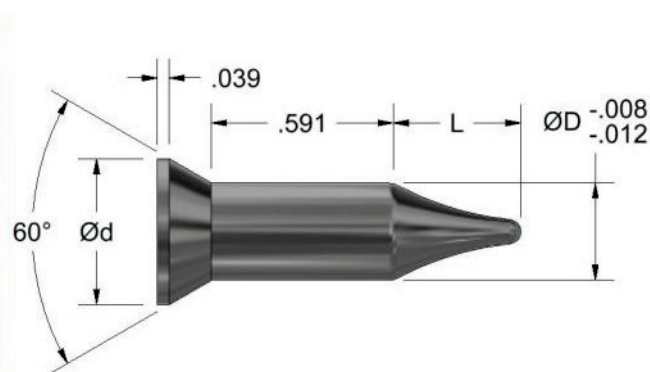
## METRIC NUT WELDING ELECTRODES



Standard material for nut welding electrodes is RWMA CL2 copper. Optionally, electrode may be faced with copper tungsten, molybdenum, or tungsten. Class 1 or Class 3 is available on request. Hexagon, round with wrench flat, and special shapes and sizes are available.

### NUT WELDING ELECTRODES

| NUT  | PART NUMBER | DIA (D3) | DIA (D1) | THREAD (T1) |
|------|-------------|----------|----------|-------------|
| 4MM  | CNWE-M04    | 25       | 5        | 18          |
| 5MM  | CNWE-M05    | 25       | 6        | 18          |
| 6MM  | CNWE-M06    | 25       | 7        | 18          |
| 7MM  | CNWE-M07    | 25       | 8        | 18          |
| 8MM  | CNWE-M08    | 25       | 9        | 18          |
| 9MM  | CNWE-M09    | 25       | 10       | 18          |
| 10MM | CNWE-M10    | 30       | 12       | 22          |
| 11MM | CNWE-M11    | 30       | 12       | 22          |
| 12MM | CNWE-M12    | 30       | 13       | 22          |
| 13MM | CNWE-M13    | 30       | 14       | 22          |
| 14MM | CNWE-M14    | 32       | 15       | 26          |
| 15MM | CNWE-M15    | 32       | 16       | 26          |
| 16MM | CNWE-M16    | 32       | 16       | 26          |
| 16MM | CNWE-M16.5  | 32       | 16.5     | 26          |



Cadi guide pins are made to the highest standards. Our insulating coating process is designed to increase the life of the pin, while providing excellent electrical insulation.

We can make any special design you need, in the quantities you require.

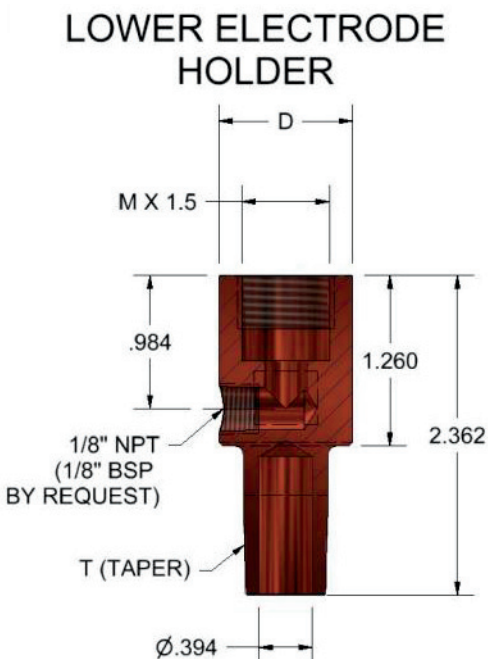
Many pins are in stock and available for immediate delivery. Call your Cadi representative today for a competitive quote.

### METRIC GUIDE PINS

| NUT  | PART NUMBER | DIA (D) | LENGTH (L) | DIA (d) |
|------|-------------|---------|------------|---------|
| 4MM  | CGP-M04     | 5.0     | 5.5        | 12      |
| 5MM  | CGP-M05     | 6.0     | 7.5        | 12      |
| 6MM  | CGP-M06     | 7.0     | 9.5        | 12      |
| 7MM  | CGP-M07     | 8.0     | 10.5       | 12      |
| 8MM  | CGP-M08     | 9.0     | 11.0       | 12      |
| 9MM  | CGP-M09     | 10.0    | 11.0       | 12      |
| 10MM | CGP-M10     | 11.0    | 12.0       | 16      |
| 11MM | CGP-M11     | 12.0    | 13.5       | 16      |
| 12MM | CGP-M12     | 13.0    | 15.0       | 16      |
| 13MM | CGP-M13     | 14.0    | 15.0       | 16      |
| 14MM | CGP-M14     | 15.0    | 16.0       | 21      |
| 15MM | CGP-M15     | 16.0    | 16.0       | 21      |
| 16MM | CGP-M16     | 17.0    | 17.0       | 21      |
| 16MM | CGP-M16.5   | 16.5    | 17.0       | 21      |



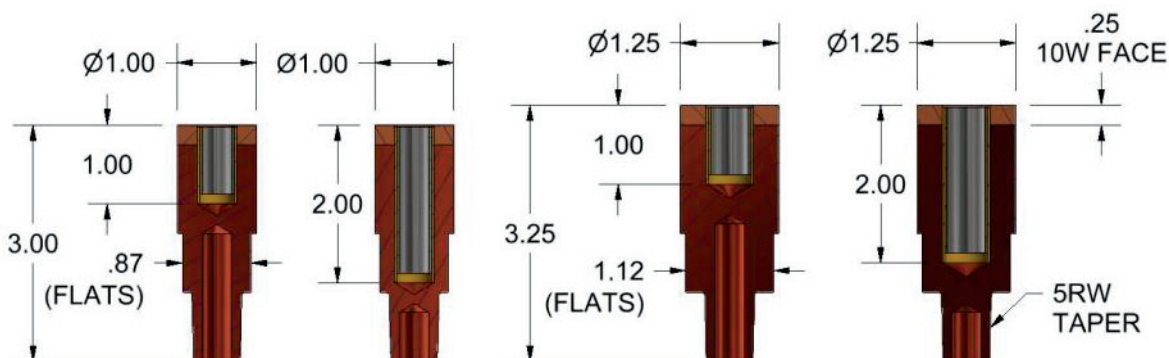
## METRIC NUT WELDING HOLDERS



| PART NUMBER  | DIA (D) | TAPER (T) | THREAD (M) |
|--------------|---------|-----------|------------|
| CNWH-25A     | 25MM    | MT #1     | 18         |
| CNWH-25B     | 25MM    | 1/10      | 18         |
| CNWH-25C     | 25MM    | MT #2     | 18         |
| CNWH-25C-THD | 25MM    | 5/8-11    | 18         |
| CNWH-30A     | 30MM    | MT #2     | 22         |
| CNWH-30B     | 30MM    | 1/10      | 22         |
| CNWH-35A     | 35MM    | MT #2     | 26         |

Choose the holder required based on the thread of the nut welding electrode and taper of the machine's electrode holder. Cadi's Lower Electrode Holders are all made from RWMA Class 2. Threaded holder length will vary.

## STUD WELDING ELECTRODES



| 1" DEEP HOLE<br>1" DIAMETER |      |             | 2" DEEP HOLE<br>1" DIAMETER |      |             | 1" DEEP HOLE<br>1.25" DIAMETER |                      |                                        | 2" DEEP HOLE<br>1.25" DIAMETER |                      |                                        |
|-----------------------------|------|-------------|-----------------------------|------|-------------|--------------------------------|----------------------|----------------------------------------|--------------------------------|----------------------|----------------------------------------|
| SCREW SIZE                  | ID   | PART NUMBER | SCREW SIZE                  | ID   | PART NUMBER | SCREW SIZE                     | ID                   | PART NUMBER                            | SCREW SIZE                     | ID                   | PART NUMBER                            |
| 6MM                         | .243 | CSWE-243-1  | 6MM                         | .243 | CSWE-243-2  | .437                           | .444                 | CSWE-444-1                             | .437                           | .444                 | CSWE-444-2                             |
| .250                        | .256 | CSWE-256-1  | .250                        | .256 | CSWE-256-2  | 12MM                           | .479                 | CSWE-479-1                             | 12MM                           | .479                 | CSWE-479-2                             |
| .312<br>8MM                 | .319 | CSWE-319-1  | .312<br>8MM                 | .319 | CSWE-319-2  | .500                           | .506<br>.569         | CSWE-506-1                             | .500                           | .506<br>.569         | CSWE-506-2                             |
| .375                        | .381 | CSWE-381-1  | .375                        | .381 | CSWE-381-2  | .625                           | .652<br>.694<br>.777 | CSWE-652-1<br>CSWE-694-1<br>CSWE-777-1 | .625                           | .652<br>.694<br>.777 | CSWE-652-2<br>CSWE-694-2<br>CSWE-777-2 |
| 10MM                        | .400 | CSWE-400-1  | 10MM                        | .400 | CSWE-400-2  |                                |                      |                                        |                                |                      |                                        |

Cadi stud welding electrodes are made with a Class 2 body and a long-lasting 10W copper tungsten weld face. Insulation is made with long-life materials for extended service.

## SEAM WELD WHEELS AND BLANKS

**Cadi Company** is an ISO certified manufacturer and distributor of seam weld wheel blanks and finished wheels using RWMA Copper Alloys.

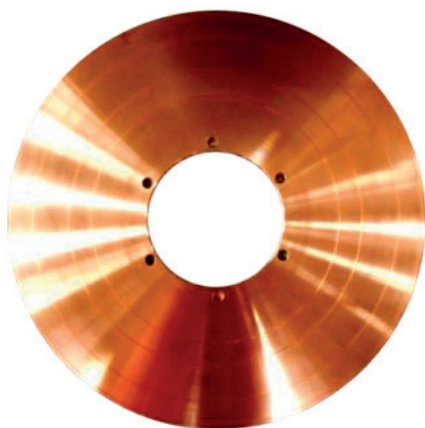
Cadi Company has:

- A tailored process for individually hot forging blanks consistent with best metallurgical processes.
- A proprietary process that yields maximum hardness while maintaining necessary ductility.
- A metallurgically engineered process that yields optimum grain structure.



Cadi weld wheels are made from RWMA Class 2 (C18150 and C18200) and RWMA Class 3 (C18000 and C17510) copper alloys. Cadi Class 2 wheels are specially forged to increase hardness to R75<sub>B</sub> minimum. Wheel blanks are in stock to 30" in diameter. Machined forgings are available for:

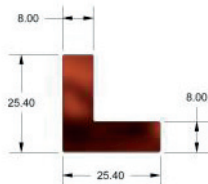
- weld wheels and shafts
- flash/butt welding arms and dies
- various arms and platen mounts
- other custom parts from print



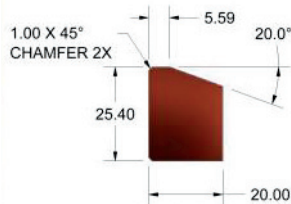
Cadi understands the metallurgical issues of seam welding wheel manufacturing. We have applied this knowledge to develop a proprietary process that consistently delivers quality seam welding wheels for demanding applications.

| RWMA CLASS                 | UNS                                    | Hardness<br>R <sub>B</sub> | Electrical<br>Conductivity<br>%IACS | Applications                                                         |
|----------------------------|----------------------------------------|----------------------------|-------------------------------------|----------------------------------------------------------------------|
| <b>Class 2</b>             | C18200<br>CuCr                         | 65 min                     | 75 min                              | Hot-rolled steel                                                     |
| <b>Class 2<br/>Premium</b> | C18150<br>CuCrZr                       | 75 min                     | 75 min                              | Coated Materials<br>Galvanized Steel                                 |
|                            | C18200<br>CuCr                         |                            |                                     | Premium grade for hot-<br>rolled steel used with<br>higher pressures |
| <b>Class 3</b>             | C18000<br>CuNiSiCr<br>(Beryllium free) | 90 min                     | 45 min                              | Stainless Steel<br>High temperature Steels                           |
|                            | C17510<br>CuNiBe                       |                            |                                     |                                                                      |

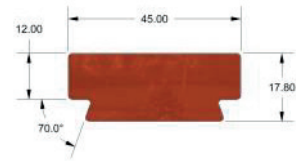
# WIRE MESH WELDING DIES



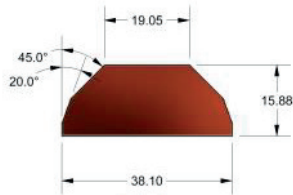
SP00199



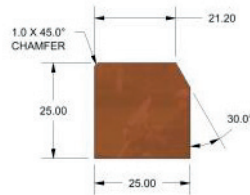
SP00196



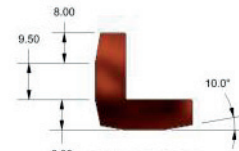
SP00198



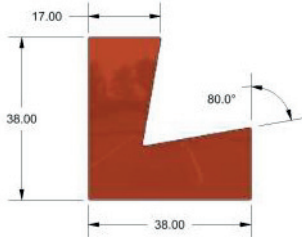
D-1



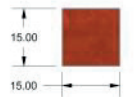
MG 215



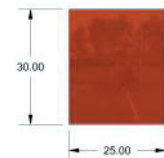
SP00199  
MOD 1



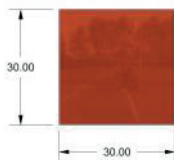
SP00202



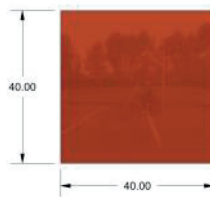
15 X 15



25 X 30



30 X 30



40 X 40



40 OCTAGON

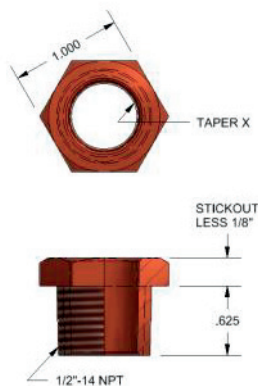
Other standard shapes and custom designs may be made to order.

Cadi stocks a complete line of extruded and machined welding dies for various mesh welding machines. These shapes are primarily stocked in RWMA Class 3 (C18000). The material can be supplied as finished electrodes made to print or as bar stock ready for your individual application. Available in any length up to a 12 ft. mill length. Cadi has prints for dozens of various custom mesh welding electrodes, holders, shunts and other supports.



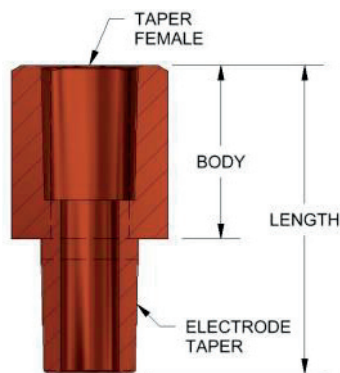
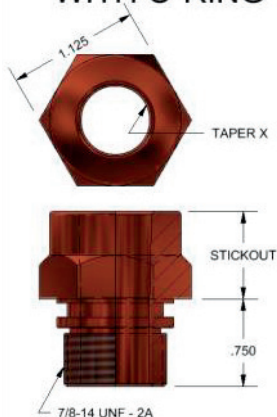
# ELECTRODE ADAPTORS

## 1/2" NPT THREAD



For best results, always use Cadi Coppr-Lube to seal NPT threads.

## STRAIGHT THREAD WITH O-RING



## 1/2" & 5/8" NPT ADAPTORS

| Part No.                                         | Length | Stickout | Thread Size |
|--------------------------------------------------|--------|----------|-------------|
| HA182-100-050P-087-4RW<br>HA182-100-050P-087-5RW | 7/8"   | 3/8"     | 1/2" NPT    |
| HA182-100-050P-112-4RW<br>HA182-100-050P-112-5RW | 1-1/8" | 1/2"     |             |
| HA182-100-050P-137-4RW<br>HA182-100-050P-137-5RW | 1-3/8" | 3/4"     |             |
| HA182-100-050P-162-4RW<br>HA182-100-050P-162-5RW | 1-5/8" | 1"       |             |
| HA182-100-050P-187-4RW<br>HA182-100-050P-187-5RW | 1-7/8" | 1-1/4"   |             |
| HA182-100-050P-212-4RW<br>HA182-100-050P-212-5RW | 2-1/8" | 1-1/2"   |             |
| HA182-100-050P-237-4RW<br>HA182-100-050P-237-5RW | 2-3/8" | 1-3/4"   |             |
| HA182-100-050P-262-4RW<br>HA182-100-050P-262-5RW | 2-5/8" | 2"       |             |
| HA182-100-062P-087-4RW<br>HA182-100-062P-087-5RW | 7/8"   | 3/8"     | 5/8" NPT    |
| HA182-100-062P-112-4RW<br>HA182-100-062P-112-5RW | 1-1/8" | 1/2"     |             |
| HA182-100-062P-137-4RW<br>HA182-100-062P-137-5RW | 1-3/8" | 3/4"     |             |

Cadi manufactures a wide variety of electrode adaptors for most applications.

Adaptors are designed to fit standard tip holders as well as barrel holders on multi-gun welders.

In addition to the NPT threads 1/2-14 and 5/8-14, we also have 3/4-14 NPT threaded adaptors available in many of the same lengths.

Cadi also manufactures 1-12 straight thread adaptors in two different configurations; one with a 3/8" tall hex, and the other with an 11/16" tall hex. All straight thread adaptors are supplied with the correct o-ring.

Standard material for Cadi electrode adaptors is RWMA CL 2. Class 1 and Class 3 are available as an option.

For a complete listing, reference the **Cadi Cylinder Mounted Welding Accessories Catalog** on the Cadi website under technical resources or contact Cadi for a printed copy.

## 7/8"-14 ADAPTORS

| Part No.             | Length | Stickout | Thread Size |
|----------------------|--------|----------|-------------|
| HA182-112-087S-112-X | 1-1/8" | 3/8"     | 7/8-14      |
| HA182-112-087S-125-X | 1-1/4" | 1/2"     |             |
| HA182-112-087S-137-X | 1-3/8" | 5/8"     |             |
| HA182-112-087S-150-X | 1-1/2" | 3/4"     |             |
| HA182-112-087S-162-X | 1-5/8" | 7/8"     |             |
| HA182-112-087S-175-X | 1-3/4" | 1"       |             |
| HA182-112-087S-187-X | 1-7/8" | 1-1/8"   |             |
| HA182-112-087S-200-X | 2"     | 1-1/4"   |             |
| HA182-112-087S-212-X | 2-1/8" | 1-3/8"   |             |
| HA182-112-087S-225-X | 2-1/4" | 1-1/2"   |             |
| HA182-112-087S-237-X | 2-3/8" | 1-5/8"   |             |
| HA182-112-087S-250-X | 2-1/2" | 1-3/4"   |             |
| HA182-112-087S-262-X | 2-5/8" | 1-7/8"   |             |

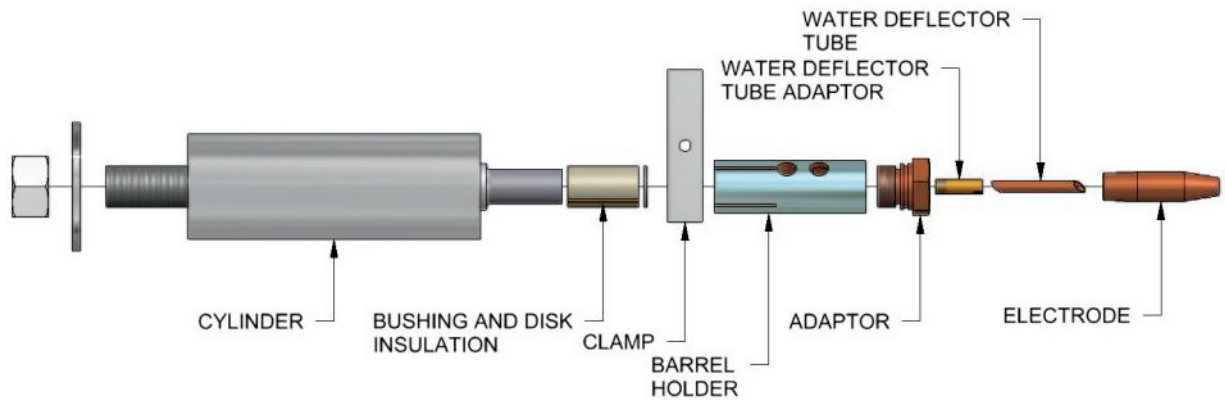
(X) = 4 for 4RW TAPER  
5 for 5RW TAPER

## TAPER TO TAPER ADAPTORS

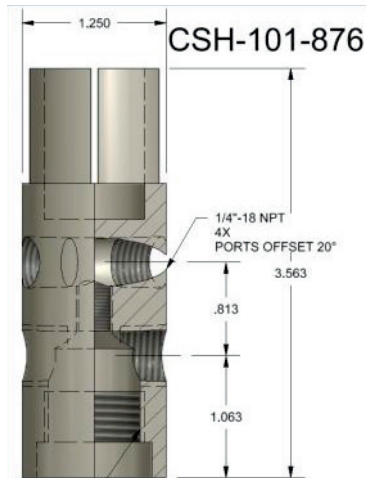
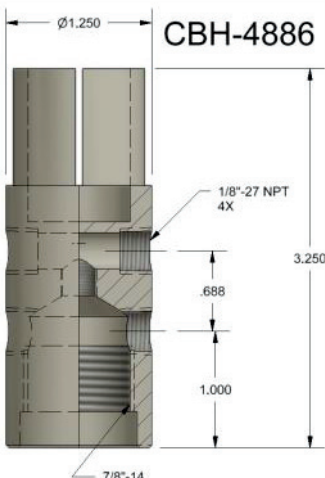
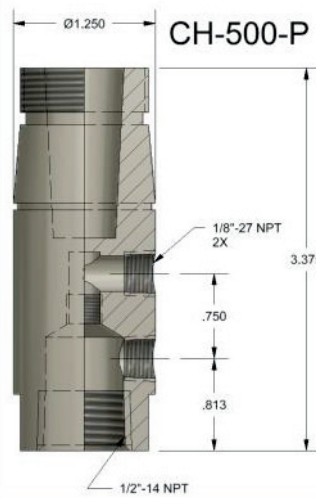
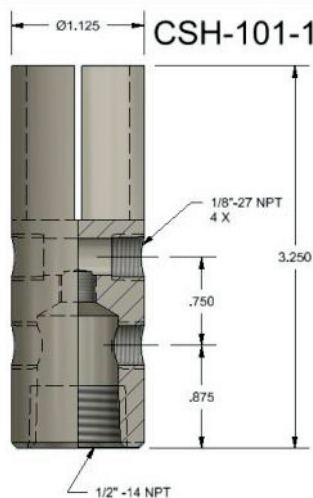
| Part No.              | Length | Body   | ELECTRODE TAPER | TAPER FEMALE |
|-----------------------|--------|--------|-----------------|--------------|
| HA182-112-5RW-112-4RW | 1-1/8" | 1/4"   | 5RW             | 4RW          |
| HA182-112-5RW-200-4RW | 2"     | 1"     | 5RW             | 4RW          |
| HA182-112-5RW-250-4RW | 2-1/2" | 1-1/2" | 5RW             | 4RW          |
| HA182-112-5RW-300-4RW | 3"     | 2"     | 5RW             | 4RW          |
| HA182-112-5RW-400-4RW | 4"     | 3"     | 5RW             | 4RW          |
| HA182-112-5RW-200-5RW | 2"     | 1"     | 5RW             | 5RW          |
| HA182-112-5RW-250-5RW | 2-1/2" | 1-1/2" | 5RW             | 5RW          |
| HA182-112-5RW-300-5RW | 3"     | 2"     | 5RW             | 5RW          |
| HA182-112-5RW-400-5RW | 4"     | 3"     | 5RW             | 5RW          |
| HA182-112-5RW-500-5RW | 5"     | 4"     | 5RW             | 5RW          |
| HA182-112-4RW-237-5RW | 2"     | 1"     | 4RW             | 5RW          |



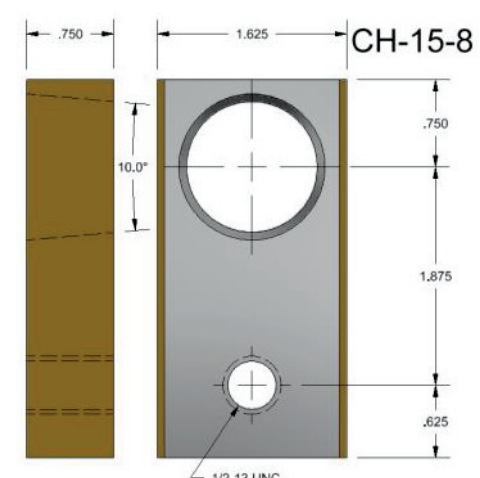
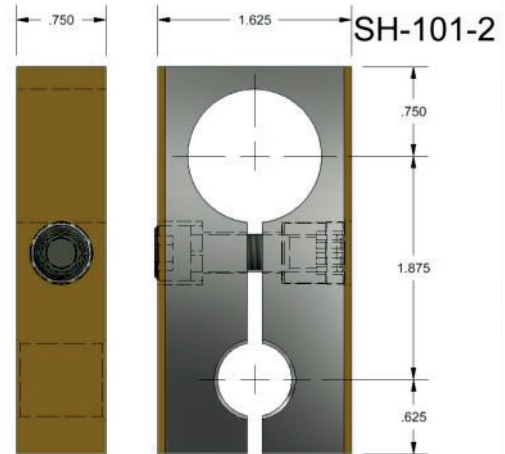
# CYLINDER MOUNTED WELDING ACCESSORIES



## STRAIGHT ELECTRODE HOLDERS



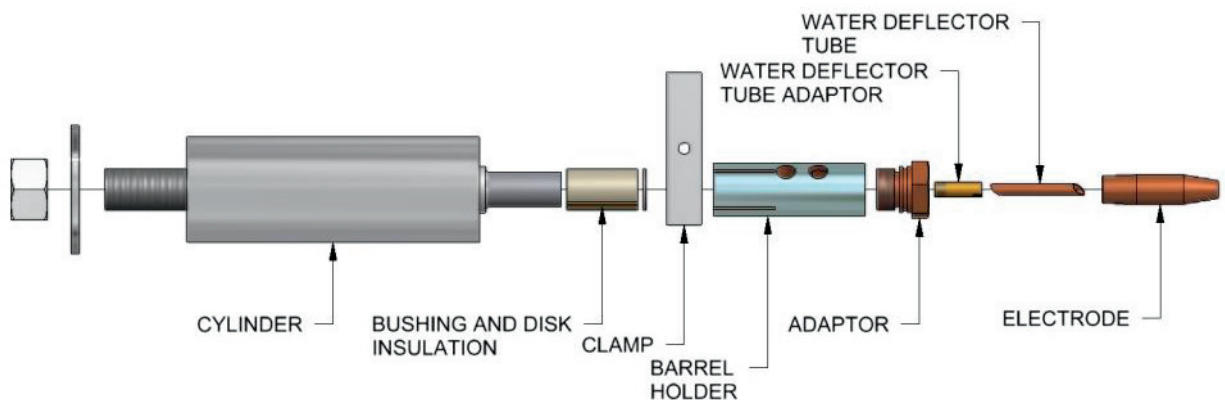
## CLAMPS/LUGS



Cadi offers straight holders and clamps in a variety sizes and shapes. Our straight holders and clamps are all silver plated for optimum conductivity. Adapter threads may be NPT or straight with an O-ring. For a complete listing, reference the **Cadi Cylinder Mounted Welding Accessories Catalog** on the Cadi website under technical resources or contact Cadi for a printed copy.

**Cadi Company, Inc. P.O. Box 1127, 60 Rado Drive, Naugatuck, CT 06770**  
**www.cadicompany.com 800-243-3650 203-729-1111**

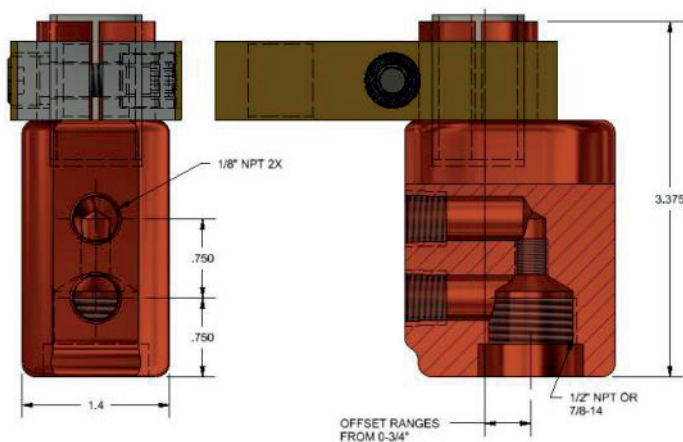




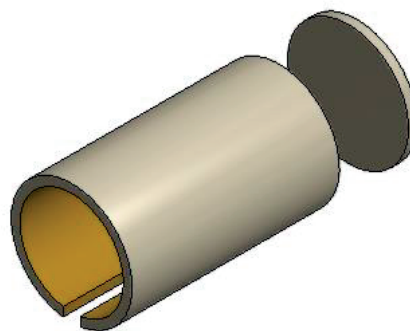
## OFFSET ELECTRODE HOLDERS

## STANDARD INSULATION

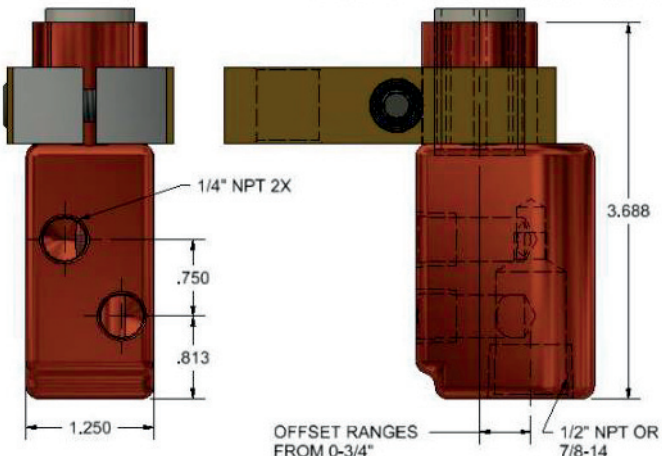
### SERIES 5 OFFSET HOLDER



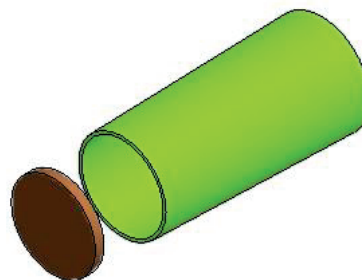
### CSH-101



### SERIES 6 OFFSET HOLDER

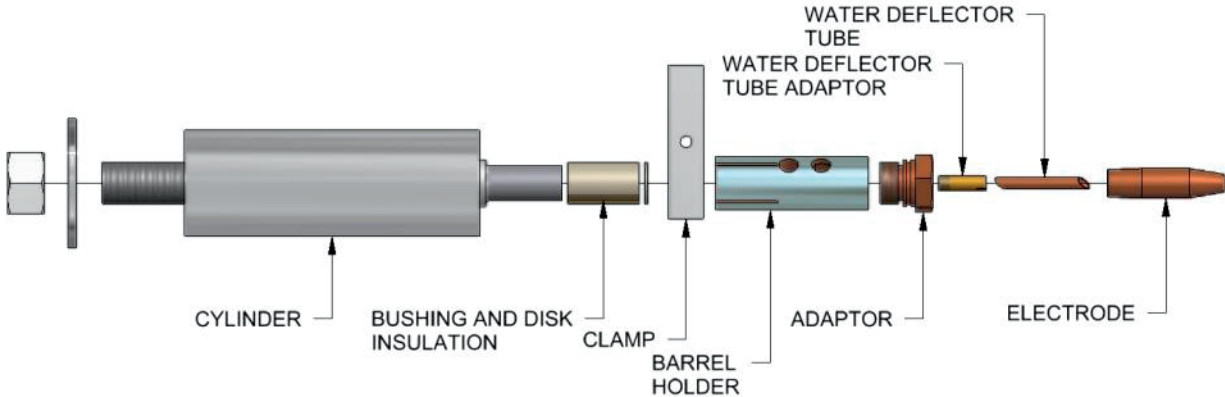


### SERIES H



Cadi manufactures a complete line of offset electrode holders. Many different heights and offsets are available. Adapter threads may be NPT or straight with an O-ring. For a complete listing, reference **Cadi Cylinder Mounted Welding Accessories Catalog** on the Cadi website under technical resources or contact Cadi for a printed copy.

# CYLINDER MOUNTED WELDING ACCESSORIES



## WATER DEFLECTOR TUBE ADAPTORS

| Part No.  | Length |
|-----------|--------|
| SF-101-6  | 3/4"   |
| SF-101-8  | 1"     |
| SF-101-10 | 1-1/4" |
| SF-101-12 | 1-1/2" |
| SF-101-14 | 1-3/4" |
| SF-101-16 | 2"     |
| SF-101-18 | 2-1/4" |
| SF-101-20 | 2-1/2" |
| SF-101-22 | 2-3/4" |
| SF-101-24 | 3"     |
| SF-101-26 | 3-1/4" |
| SF-101-28 | 3-1/2" |

WATER DEFLECTOR TUBE ADAPTOR



WATER DEFLECTOR TUBE



5/16-32 UNEF-2A



## WATER DEFLECTOR TUBES

| Part No.  | Length | TAPER |
|-----------|--------|-------|
| SF-201-5  | 1-1/4" | 4RW   |
| SF-201-6  | 1-1/2" | 4RW   |
| SF-201-7  | 1-3/4" | 4RW   |
| SF-201-8  | 2"     | 4RW   |
| SF-201-9  | 2-1/4" | 4RW   |
| SF-201-10 | 2-1/2" | 4RW   |
| SF-201-11 | 2-3/4" | 4RW   |
| SF-201-12 | 3"     | 4RW   |
| SF-201-11 | 3-1/4" | 4RW   |
| SF-201-14 | 3-1/2" | 4RW   |
| SF-202-5  | 1-1/4" | 5RW   |
| SF-202-6  | 1-1/2" | 5RW   |
| SF-202-7  | 1-3/4" | 5RW   |
| SF-202-8  | 2"     | 5RW   |
| SF-202-9  | 2-1/4" | 5RW   |

Cadi water tubes are made to the exact specifications you require. We make all of the standard lengths and special lengths per your application.

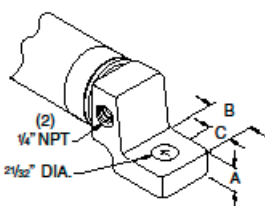


**CADI COPPR-LUBE** is an electrically conductive paste-like lubricant that provides a solution to prevent galling and seizing of components in resistance welding environments. It applies easily as a paste by brush which allows it to flow easily into threads and cavities.

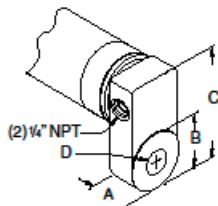
Cadi Company, Inc. P.O. Box 1127, 60 Rado Drive, Naugatuck, CT 06770  
[www.cadicompany.com](http://www.cadicompany.com) 800-243-3650 203-729-1111



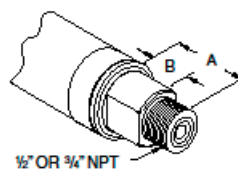
## WATER COOLED CABLES



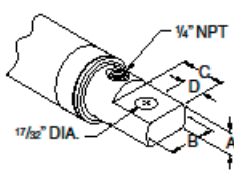
**TYPE B**



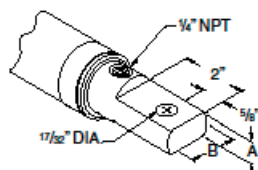
**TYPE B-2**



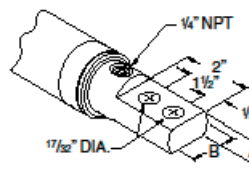
**TYPE B-4**



**TYPE B-5**



**TYPE B-6**

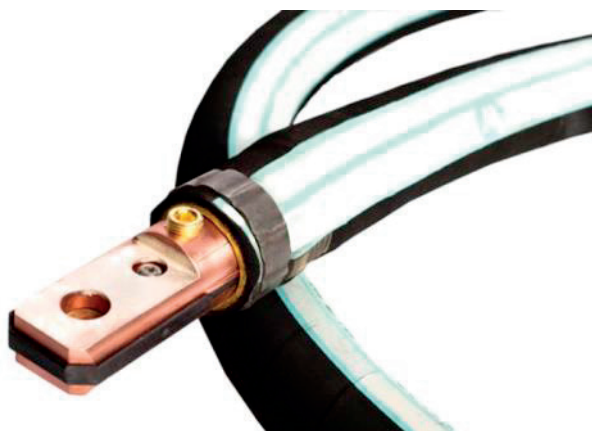


**TYPE B-6 (2-HOLE)**

### WATER COOLED:

All water cooled cables come equipped with a full length filter tube to ensure free flow water passage through the entire length of the cable. Extreme bending or kinking of the cable will not restrict water flow.

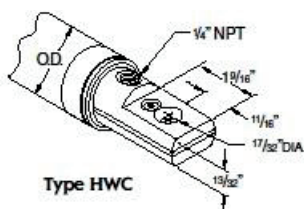
Cables are available from 350 MCM to 1000 MCM.



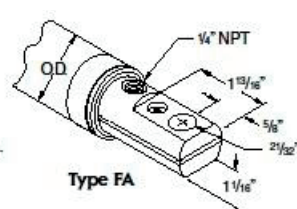
### KICKLESS:

A special design combines the low reactance feature of an alternate-polarity cross section with a unique connection on the terminal end. The result is a high-performance, long-life cable suitable for the high standards and demands of the automotive and appliance industries.

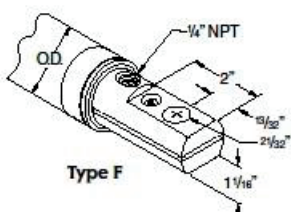
Cables are available from 300 MCM to 650 MCM.



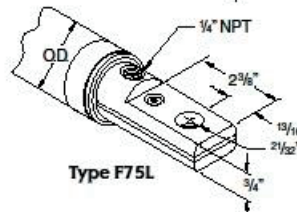
**Type HWC**



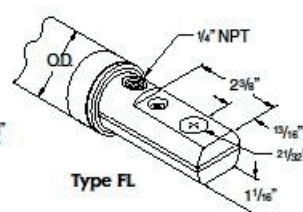
**Type FA**



**Type F**



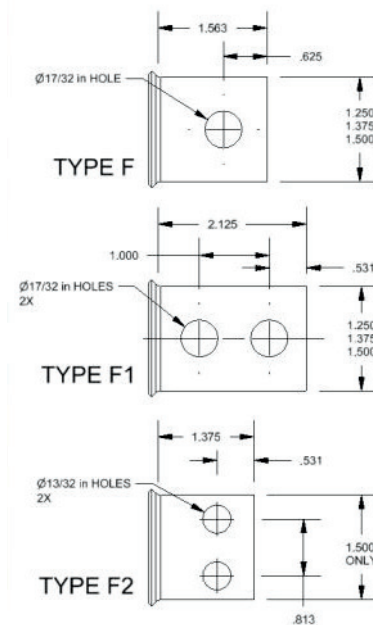
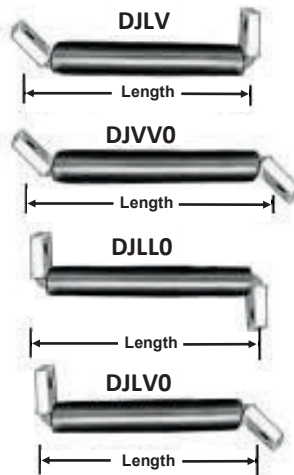
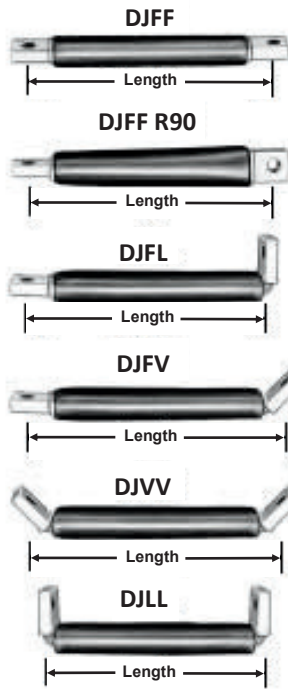
**Type F75L**



**Type FL**



# AIR COOLED CABLES



Air cooled cables (DJ) provide an economical alternative for lighter duty applications not requiring water cooled cables.

The length is measured from the bolt hole centers on straight or 45° terminals. On terminals with 90° bends, measure to the extreme outside edge. On terminals with two holes, measure to the center of the outer holes.

Standard terminal width is 1-1/4". 1-3/8" and 1-1/2" are available; specify when ordering.

Cables are also available as DJ-IC Isolated Conductor (each individual rope is in rubber tubing), DJ-SC Stabilized Collar (reduces strand failure at the cable terminal) and DJ-XF (36 AWG Copper Rope).

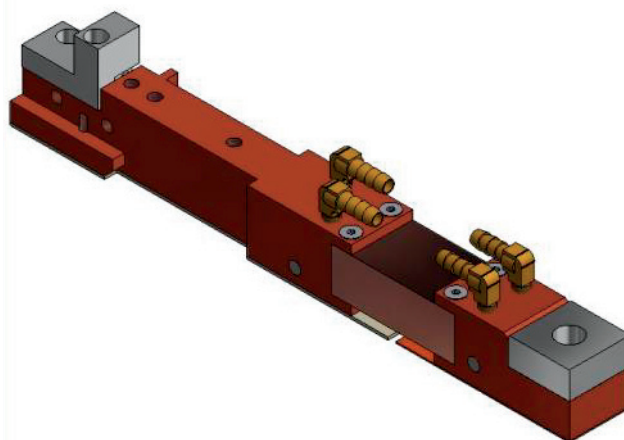
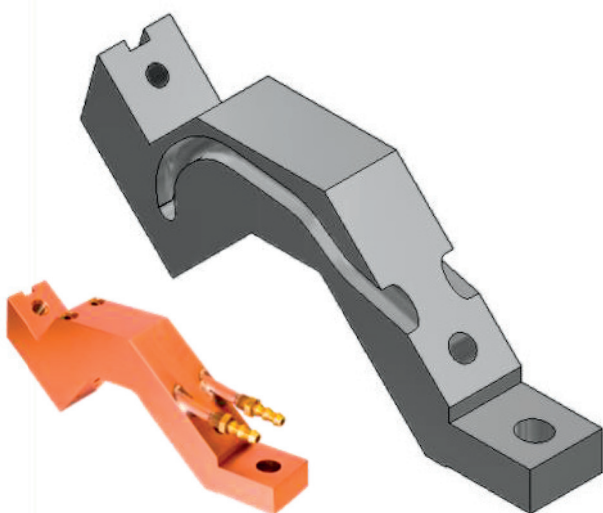
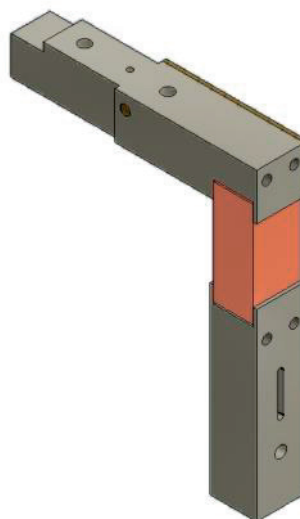
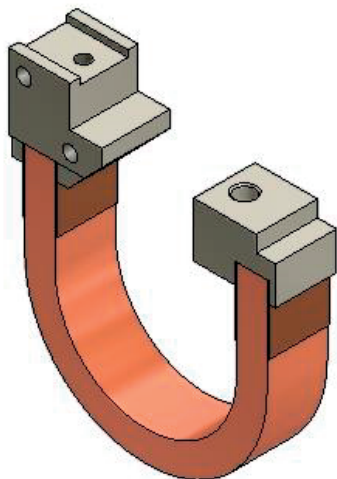
DJ-IC eliminates frictional wear by use of rubber tubing for each rope.

DJ-SC uses a Stabilizer Flare on the terminal to reduce stress on the cable ends. This significantly reduces strand failure at the terminal.

DJ-XF uses 36 AWG strand rope and an extremely flexible protective cover. The DJ-XF is twice as flexible as the standard DJ air cooled cable.

Air cooled cables are available from 350 MCM to 2000 MCM cross sections.

## LAMINATED SHUNTS

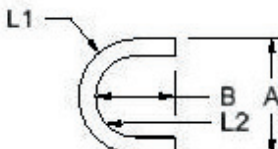
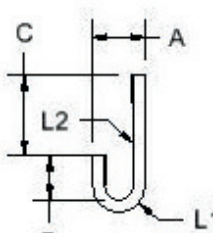
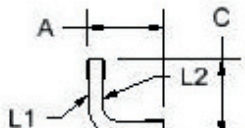
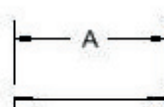
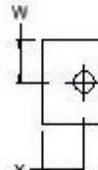
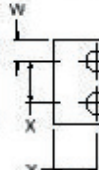
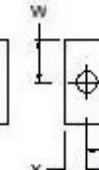
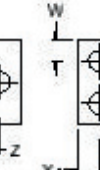
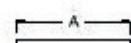


Cadi manufactures a wide assortment of special copper shunts. We can produce any shunt from your drawing, or reverse engineer the part from your sample.

We can also refurbish old shunts having worn or missing laminations. Very expensive shunts may not need to be replaced, just repaired.

# LAMINATED SHUNT SELECTION FORM



|                                                                                                                                                              |                                                                     |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--|----------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------|---------------|--------------|------------|---------------------|--|
| 4                                                                                                                                                            | 3                                                                   | 2 | 1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
|                                                                                                                                                              |                                                                     |   |   | <h2 style="text-align: center;">SHUNT SPECIFICATIONS:</h2> <p>TYPE: (CIRCLE ONE): PRESS WELDED      RIVETED</p> <p>STYLE (CIRCLE ONE): "C"      "J"      "L"      "V"      "FLAT"</p> <p>THICKNESS OF STACK _____ SHUNT WIDTH _____ A _____ B _____ C _____</p> <p>LENGTH: L1 OUTSIDE LENGTH _____ L2 INSIDE LENGTH _____</p> <p>MATERIAL THICKNESS: .005    .010</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| <div style="text-align: center;">  <p><b>"C" SHUNT</b></p> </div>           |                                                                     |   |   | <div style="text-align: center;">  <p><b>"J" SHUNT</b></p> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| <div style="text-align: center;">  <p><b>"L" SHUNT</b></p> </div>          |                                                                     |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| <div style="text-align: center;">  <p><b>"V" SHUNT<br/>45°</b></p> </div> |                                                                     |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| <div style="text-align: center;">  <p><b>"FLAT" SHUNT</b></p> </div>      |                                                                     |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
|                                                                                                                                                              |                                                                     |   |   | <div style="text-align: center;">      <p>PATTERN A    PATTERN B    PATTERN C    PATTERN D    OTHER</p> <p>FOR WIDER SHUNTS, SHOW HOLE PATTERN ON ATTACHED SHEET.</p> </div> <p>HOLE PATTERN (CIRCLE ONE):<br/> A    B    C    D    OTHER</p> <p>DIMENSION: "W" _____ "X" _____ "Y" _____ "Z" _____</p> <p>HOLE DIAMETER _____</p> <p>END CLIP (.062" THICK STANDARD) (INDICATE STYLE WITH DIMENSION)</p> <div style="display: flex; align-items: center;"> <p>DIMENSION: NO FLARE: _____ FLARE: _____</p>   </div> <p>COVER OPTION: TEFLON    FIBERGLASS</p> <p>PLATING OPTION: SILVER    TIN    OTHER _____</p> <p>QUANTITY: _____</p> <p>COMPANY NAME: _____</p> <p>ADDRESS: _____</p> <p>CITY: _____ STATE _____ ZIP _____</p> <p>PHONE: _____ FAX: _____</p> <p>CONTACT NAME: _____</p> <p>EMAIL ADDRESS: _____</p> |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
|                                                                                                                                                              |                                                                     |   |   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">TITLE</td> </tr> <tr> <td colspan="2" style="text-align: center; font-size: 1.2em;">LAMINATED SHUNT FORM</td> </tr> <tr> <td style="text-align: center;">  <p>CADI COMPANY, INC.<br/>60 RADO DRIVE<br/>NAUGATUCK, CT 06770</p> </td> <td style="text-align: center;"> <p>CADI COMPANY, INC.<br/>60 RADO DRIVE<br/>NAUGATUCK, CT 06770</p> </td> </tr> <tr> <td style="text-align: center;"> <p>SIZE<br/>A</p> </td> <td style="text-align: center;"> <p>DWG NO</p> </td> </tr> <tr> <td style="text-align: center;"> <p>SCALE</p> </td> <td style="text-align: center;"> <p>REV</p> </td> </tr> <tr> <td colspan="2" style="text-align: center;"> <p>SHEET 1 OF 1</p> </td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | TITLE |  | LAMINATED SHUNT FORM |  |  <p>CADI COMPANY, INC.<br/>60 RADO DRIVE<br/>NAUGATUCK, CT 06770</p> | <p>CADI COMPANY, INC.<br/>60 RADO DRIVE<br/>NAUGATUCK, CT 06770</p> | <p>SIZE<br/>A</p> | <p>DWG NO</p> | <p>SCALE</p> | <p>REV</p> | <p>SHEET 1 OF 1</p> |  |
| TITLE                                                                                                                                                        |                                                                     |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| LAMINATED SHUNT FORM                                                                                                                                         |                                                                     |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
|  <p>CADI COMPANY, INC.<br/>60 RADO DRIVE<br/>NAUGATUCK, CT 06770</p>      | <p>CADI COMPANY, INC.<br/>60 RADO DRIVE<br/>NAUGATUCK, CT 06770</p> |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| <p>SIZE<br/>A</p>                                                                                                                                            | <p>DWG NO</p>                                                       |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| <p>SCALE</p>                                                                                                                                                 | <p>REV</p>                                                          |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| <p>SHEET 1 OF 1</p>                                                                                                                                          |                                                                     |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |
| 4                                                                                                                                                            | 3                                                                   | 2 | 1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |  |                      |  |                                                                                                                                                         |                                                                     |                   |               |              |            |                     |  |

Use the form above to specify your laminated shunt. Return to your Cadi representative for a fast, competitive quote.

**Cadi Company, Inc. P.O. Box 1127, 60 Rado Drive, Naugatuck, CT 06770**  
**www.cadicompany.com 800-243-3650 203-729-1111**



## WELD CONTROLS AND WATER CHILLERS



Cadi supplies a wide range of weld controls for retro-fit or new installations.

Single phase, three phase, and mid-frequency are available.

Controls are available in many configurations and cabinet sizes:

- Single SCR
- Cascade (up to 8 SCRs)
- Multiple Controls in a Single Cabinet
- Flat Pack (No Cabinet)
- Constant Current
- With or Without a Circuit Breaker

Installation is available.



Water chillers are available in a wide assortment of sizes and configurations.

- Refrigerated Models Start at 2 Tons
- Self-Contained Recirculating Pumps
- Digital Temperature Controllers
- Vertical Air Discharge
- Cleanable Air Filters
- Brazed Plate Evaporator
- Powder Coated Cabinet



# COPPER ALLOY BAR STOCK



**Large supply of ready-to-ship rod, bar, plate, all shapes and sizes.**

| RWMA Class | UNS    | Copper Alloy                                    |
|------------|--------|-------------------------------------------------|
| Class 1    | C15000 | Copper Zirconium                                |
| Class 2    | C18200 | Copper Chromium                                 |
| Class 2    | C18150 | Copper Chromium Zirconium                       |
| Class 3    | C17510 | Copper Nickel Beryllium                         |
| Class 3    | C18000 | Copper Nickel Silicon Chromium (Beryllium Free) |
| Class 4    | C17200 | Copper Beryllium                                |
| Class 20   | C15760 | Dispersion Strengthened Copper                  |

**Cadi Company** is an ISO certified manufacturer and distributor of high conductivity copper alloys. We specialize in copper that is used to manufacture resistance welding components; such as welding wheels, electrodes, and numerous other applications that demand the performance beyond the capabilities of standard coppers.

## Typical Usages of RWMA Copper Alloys:

**Class 1:** Recommended for spot welding of coated steels and high conductivity materials, excluding copper and silver.

**Class 2:** Recommended for spot and seam welding, cold and hot rolled steels, coated materials, current carrying shafts and arms, back-up bars for both resistance and arc welding, and electrical current carrying structural parts.

**Class 3:** Recommended for spot and seam welding of high resistance alloys such as stainless steel. Other uses include flash welding dies, back-up bars, and projection welding electrodes.

**Class 4:** Recommended for flash and upset welding dies, projection welding and seam welding bushings and other applications requiring harder copper alloy.

**Class 20:** Welding of metallic coated metals, most commonly galvanized steel.

## REFRACTORY METALS



### Refractory metals

- ♦ Class 10 (30% Cu), 11 (25% Cu), and 12 (20% Cu) are sintered metals of copper and tungsten.
- ♦ These combinations produce dense, hard metals with optimum wear resistance and strength at high temperatures.
- ♦ Good thermal and electrical conductivity.
- ♦ Used as facing material on copper alloy electrodes.
- ♦ The additional cost of these refractory metals is outweighed by the lower production cost per weld due to longer tool life, less electrode dressing time, and high stability which provides uniform heating and prevents misalignments for higher weld quality.

| RWMA Class | Alloy Number       | Copper Alloy    |
|------------|--------------------|-----------------|
| Class 10   | N/A                | Copper Tungsten |
| Class 11   | ASTM B702 C1D      | Copper Tungsten |
| Class 12   | ASTM B702 C1E      | Copper Tungsten |
| Class 13   | N/A                | Tungsten        |
| Class 14   | ASTM B387 TYPE 360 | Molybdenum      |

### Typical Uses of Refractory Metals:

**Class 10:** Recommend for flash and butt welding die inserts, spot welding low conductivity ferrous metals (for example stainless steel).

**Class 11:** Recommended for electrodes and die inserts in most flash and butt welding dies and for projection welding dies with moderate weld pressure and light electrical upsetting, electro-forging dies.

**Class 12:** Recommended for high volume projection welding dies with high pressure, electrical upsetting of non-ferrous metals and low carbon steel like die facings.

**Class 13:** Recommended for cross-wire welding of metals such as copper and brass. Also used for electro blazing electrode material and some electrical upsetting operations.

**Class 14:** Recommended for electro brazing electrode material and cross-wire welding of nonferrous metals. Also used as an electrode for welding or brazing of braided or solid copper conductors to ferrous or nonferrous terminals, lugs or fittings.

# COPPER ALLOYS PHYSICAL PROPERTIES



## Physical & Mechanical Properties Group A (Class 1, 2, 3, 4)

| Group A Copper Base Alloys <sup>1</sup>               |               | Minimum Hardness Rockwell B or C as noted <sup>2</sup> |        |        |        | Minimum Electrical Conductivity % IACS [MS/m] |            |          |            |
|-------------------------------------------------------|---------------|--------------------------------------------------------|--------|--------|--------|-----------------------------------------------|------------|----------|------------|
| Size Range                                            |               | Class                                                  |        |        |        | Class                                         |            |          |            |
| IN                                                    | MM            | 1                                                      | 2      | 3      | 4      | 1                                             | 2          | 3        | 4          |
| Diameter - Round Bar Stock                            |               |                                                        |        |        |        |                                               |            |          |            |
| Up to 1"                                              | Up to 25      | 65 HRB                                                 | 75 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 1"-2"                                            | Over 25-51    | 60 HRB                                                 | 70 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 2"-3"                                            | Over 51-76    | 55 HRB                                                 | 65 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 3"-3 1/2"                                        | Over 76-89    | 50 HRB                                                 | 65 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 3-1/2" - 4"                                      | Over 89 – 102 | 48 HRB                                                 | 60 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 4" - 4-1/2"                                      | Over 102– 114 | 45 HRB                                                 | 60 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Thickness - Square, Rectangular & Hexagonal Bar Stock |               |                                                        |        |        |        |                                               |            |          |            |
| Up to 1"                                              | Up to 25      | 55 HRB                                                 | 70 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 1"                                               | Over 25       | 50 HRB                                                 | 65 HRB |        |        | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Thickness - Forgings and Plates                       |               |                                                        |        |        |        |                                               |            |          |            |
| Up to 1"                                              | Up to 25      | 55 HRB                                                 | 65 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 1" to 2"                                         | Over 25 - 51  | 50 HRB                                                 | 65 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |
| Over 2"                                               | Over 51       | 50 HRB                                                 | 65 HRB | 90 HRB | 33 HRC | 80% [46]                                      | 75% [43.5] | 45% [26] | 20% [11.6] |

Reference: AWS J1.3/J1.3M-2020 Table 5

<sup>1</sup> All materials are in a fully heat treated condition unless otherwise specified.

<sup>2</sup> Round Rod tested at mid radius in accordance with ASTM test method E18.

## COPPER ALLOYS PHYSICAL PROPERTIES

| CHEMICAL COMPOSITIONS OF RWMA MATERIALS GROUP A— COPPER BASE ALLOYS |        |                                |                 |          |                                        |          |          |          |          |          |           |          |
|---------------------------------------------------------------------|--------|--------------------------------|-----------------|----------|----------------------------------------|----------|----------|----------|----------|----------|-----------|----------|
|                                                                     | UNS #  | DESCRIPTION                    | Cu <sup>1</sup> | Fe       | Co                                     | Ni       | Cr       | Si       | Be       | Pb       | Zr        | Al       |
| 1                                                                   | C15000 | COPPER ZIRCONIUM               | 99.80 MIN.      |          |                                        |          |          |          |          |          | 0.10-0.20 |          |
| 2                                                                   | C18150 | COPPER CHROMIUM ZIRCONIUM      | Bal.            |          |                                        |          | 0.5-1.5  |          |          |          | 0.02-0.20 |          |
|                                                                     | C18200 | COPPER CHROMIUM                | Bal.            | 0.10 max |                                        |          | 0.6-1.2  | 0.10 max |          | 0.50 max |           |          |
| 3                                                                   | C17500 | COPPER BERYLLIUM COBALT        | Bal.            | 0.10 max |                                        | 2.4-2.7  |          | 0.20 max | 0.4-0.7  |          |           | 0.20 max |
|                                                                     | C17510 | COPPER NICKEL BERYLLIUM        | Bal.            | 0.10 max | 1.4-2.2                                | 0.30 max |          | 0.20 max | 0.2-0.6  |          |           | 0.20 max |
|                                                                     | C17540 | COPPER NICKEL COBALT BERYLLIUM | Bal.            | 0.20 max | 0.8-1.3                                | 0.8-1.3  |          |          | 0.4-0.7  |          |           |          |
|                                                                     | C18000 | COPPER NICKEL SILICON CHROMIUM | Bal.            | 0.15 max | 1.8-3.0                                |          | 0.1-0.8  | 0.4-0.8  |          |          |           |          |
| 4                                                                   | C17200 | COPPER BERYLLIUM               | Bal.            |          | Ni +Co= 0.20 min.<br>Ni+Fe+Co=0.60 max |          | 0.20 max | 1.8-2.0  | 0.02 max |          | 0.20 max  |          |

References: American Welding Society Publication J1.3 Table 4 Notes: 1. Including Ag.

| PHYSICAL AND MECHANICAL PROPERTIES FOR GROUP B (ROD & BAR) |                    |                                     |                                                        |                                                      |
|------------------------------------------------------------|--------------------|-------------------------------------|--------------------------------------------------------|------------------------------------------------------|
| CLASS                                                      | UNS NUMBER         | ROCKWELL HARDNESS <sup>1</sup> MIN. | ELECTRICAL CONDUCTIVITY <sup>1</sup> %IACS [Ms/M] MIN. | ULTIMATE COMPRESSIVE STRENGTH <sup>1</sup> ksi [Mpa] |
| CLASS 10                                                   | N/A <sup>2</sup>   | 70 HRB                              | 45% [26]                                               | 135 [930]                                            |
| CLASS 11                                                   | ASTM B702 C 1D     | 94 HRB                              | 40% [23]                                               | 160 [1103]                                           |
| CLASS 12                                                   | ASTM B702 C 1E     | 98 HRB                              | 38% [22]                                               | 170 [1172]                                           |
| CLASS 13                                                   | N/A <sup>2</sup>   | 69 HRA                              | 30% [17.4]                                             | 200 [1379]                                           |
| CLASS 14                                                   | ASTM B387 TYPE 360 | 85 HRB                              | 30% [17.4]                                             | 88 [607]                                             |

Reference: American Welding Society Publication J1.3 Table 6 Notes: 1. For information only. 2. Not Assigned. Note: The conductivity and hardness noted may differ from ASTM standards.

| CHEMICAL COMPOSITION OF RWMA MATERIALS                   |                            |                 |       |               |
|----------------------------------------------------------|----------------------------|-----------------|-------|---------------|
| GROUP B REFRACTORY METAL AND REFRACTORY METAL COMPOSITES |                            |                 |       |               |
| CLASS                                                    | UNS NUMBER                 | DESCRIPTION     | CU1   | W             |
| 10                                                       | NA <sup>1</sup>            | COPPER TUNGSTEN | 43-47 | BAL.          |
| 11                                                       | ASTM B702 C 1D             | COPPER TUNGSTEN | 23-27 | BAL.          |
| 12                                                       | ASTM B702 C 1 E            | COPPER TUNGSTEN | 18-22 | BAL.          |
| 13                                                       | NA <sup>2</sup>            | TUNGSTEN        |       | 99.9 MIN.     |
| 14                                                       | ASTM B287 ALLOY 360 OR 361 | MOLYBDENUM      |       | (MO) 99.9 MIN |

References: American Welding Society Publication J1.3 & ASTM Table 4 Notes: 1. Not assigned 2. Not assigned.



# MATERIAL COMPATIBILITY



| <b>MATERIAL COMPATIBILITY of Similar Ferrous Metals</b> |                                        |
|---------------------------------------------------------|----------------------------------------|
| <b>WORKPIECE MATERIAL</b>                               | <b>RECOMMENDED ELECTRODE CLASS(ES)</b> |
| Chrome Plate                                            | 2                                      |
| Cold-Rolled Steel                                       | 2                                      |
| Galvanized Steel                                        | 1, 2, 20                               |
| Stainless Steel                                         | 2, 3                                   |
| Terne Plate                                             | 1, 2, 20                               |
| Tin Plate                                               | 1, 2, 20                               |

| <b>MATERIAL COMPATIBILITY of Similar Non-Ferrous Metals</b> |                                        |
|-------------------------------------------------------------|----------------------------------------|
| <b>WORKPIECE MATERIAL</b>                                   | <b>RECOMMENDED ELECTRODE CLASS(ES)</b> |
| Aluminum and Aluminum Alloys                                | 1, 2                                   |
| Bronze                                                      | 2                                      |
| Copper                                                      | 13, 14                                 |
| Cupronickel                                                 | 2                                      |
| Magnesium                                                   | 2                                      |
| Nickel and Nickel Alloys                                    | 2                                      |
| Nickel - Silver                                             | 2                                      |
| Phosphor Bronze                                             | 2                                      |
| Red Brass                                                   | 2                                      |
| Silicon                                                     | 13, 14                                 |
| Titanium                                                    | 1, 2                                   |
| Yellow Brass                                                | 2                                      |

| <b>MATERIAL COMPATIBILITY of Refractory Metals</b> |                                    |
|----------------------------------------------------|------------------------------------|
| <b>WORKPIECE MATERIAL</b>                          | <b>RECOMMENDED ELECTRODE CLASS</b> |
| Tungsten                                           | 2                                  |
| Molybdenum                                         | 2                                  |

References: American Welding Society Publication J1.3 & ASTM Table 3. Note: The same electrode alloy should be used on both sides for all materials listed.

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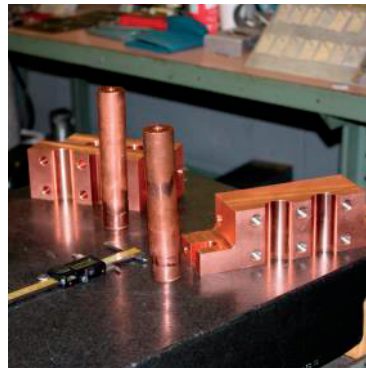
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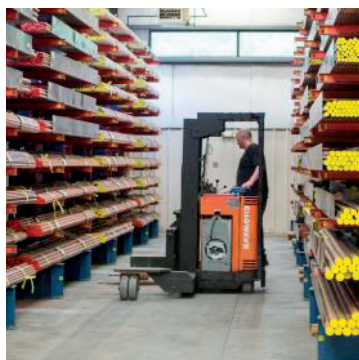
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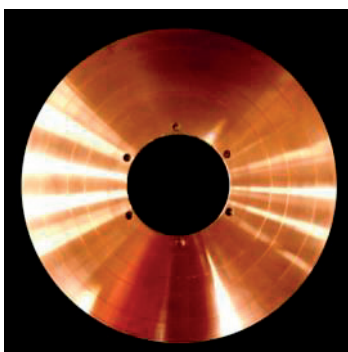
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# RESISTANCE WELDING PRODUCTS



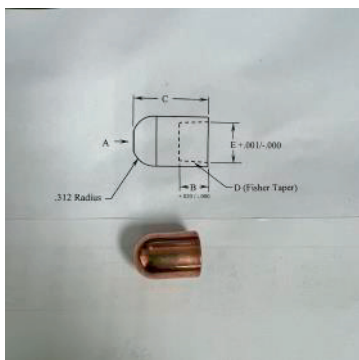
BAR STOCK



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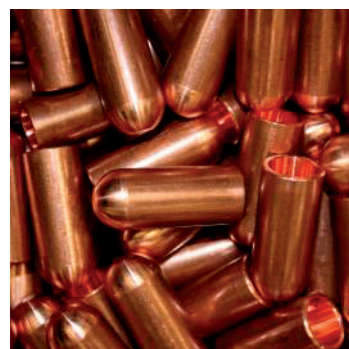
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DOM E CAP



RESISTANCE WELDING PARTS



LONG DOME CAPS



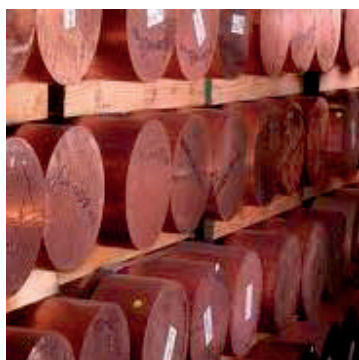
MESH WELDING DIES



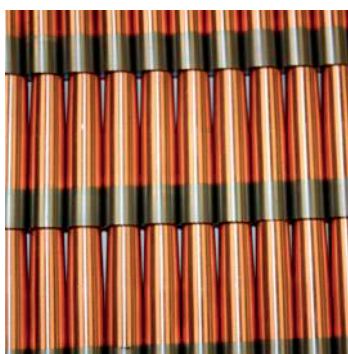
SEAM WELD WHEEL BLANKS



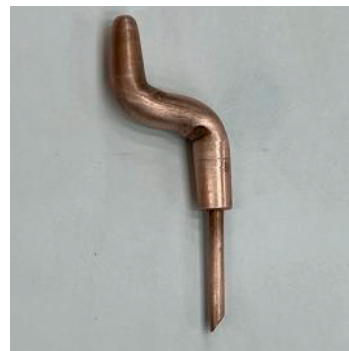
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