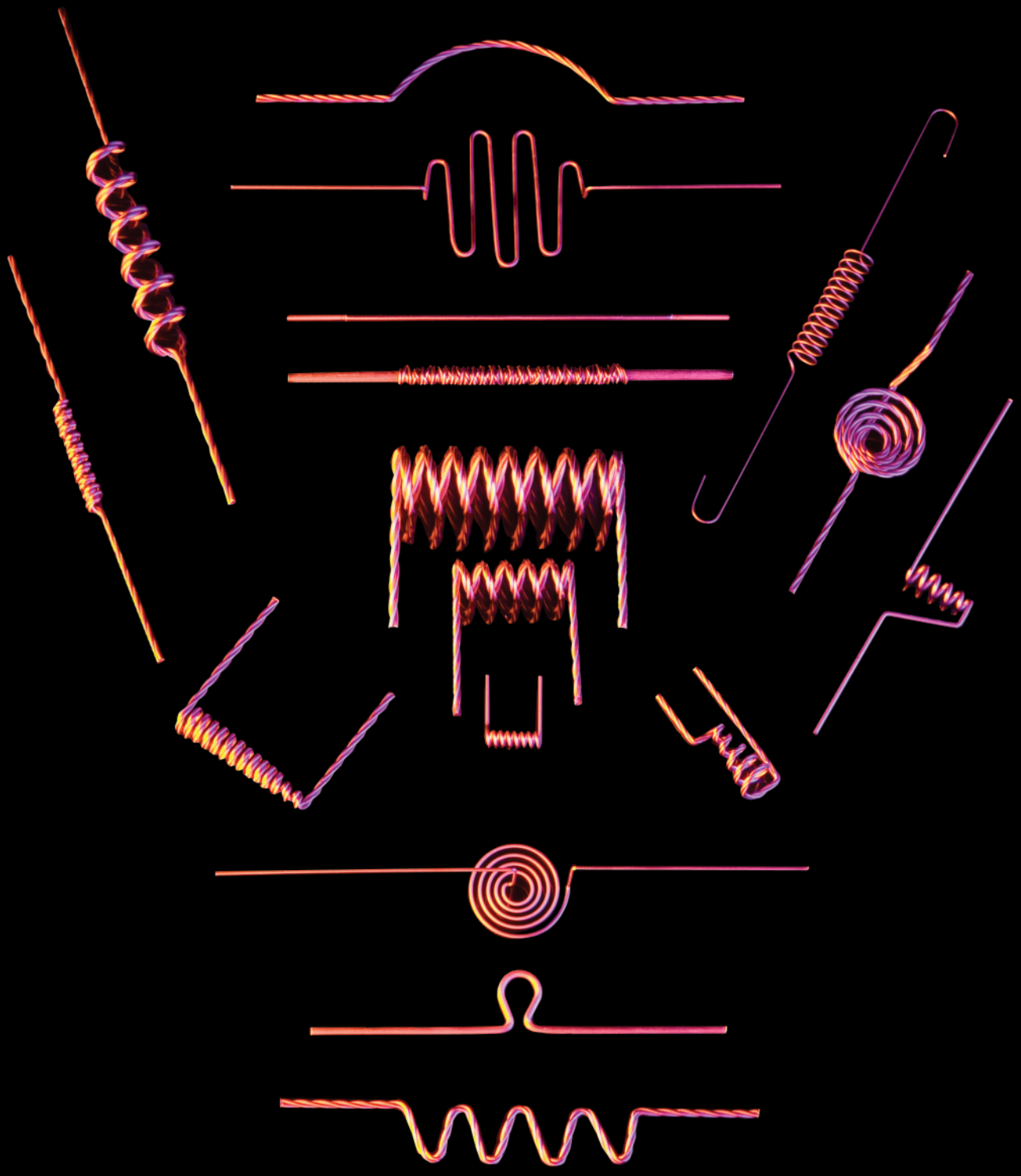
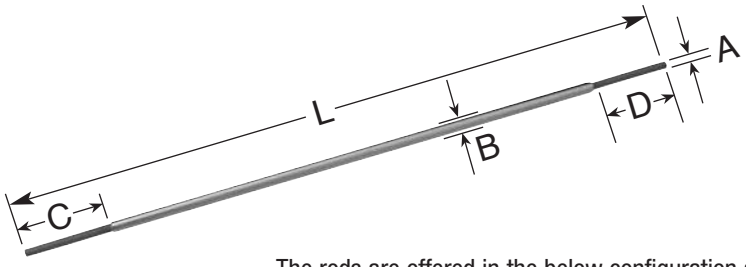


We offer an extensive selection of tungsten filaments, rod sources, point sources, baskets and heaters to fit most applications as well as custom fabrication. Our filaments are made in house using proven fabrication processes and materials, and are of the highest quality, reliability and consistency in the industry. The benefits of using our tungsten metalizing filaments include low cost, high rates with low power (limited capacity), repeatability and ease of use.

## CHROME PLATED TUNGSTEN RODS

The R.D. Mathis Company chrome plated tungsten rods are used for thin films of chromium in the electronics and optics industry. The advantage over chrome chips are: good thermal efficiency; regulation of film thickness; and elimination of spalling.




The rods are offered in the below configuration as standards.

| PART NUMBER | C&D | L | A | B |
|---|---|---|---|---|
| CRW-1 | 0.5 | 2 | 0.050 | 0.070 |
| CRW-2 | 0.5 | 4 | 0.050 | 0.070 |
| CRW-3 | 0.5 | 6 | 0.050 | 0.070 |

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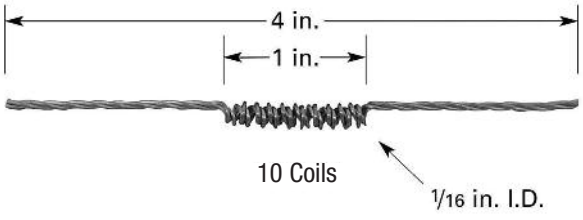
### TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F1 | 3x.025W |
| F1 | 3x.030W |
| F1 | .040W |

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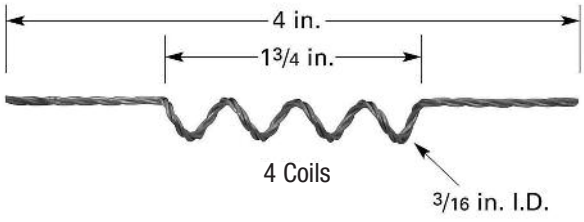
### TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F2 | 3x.025W |
| F2 | 3x.030W |
| F2 | 4x.030W |

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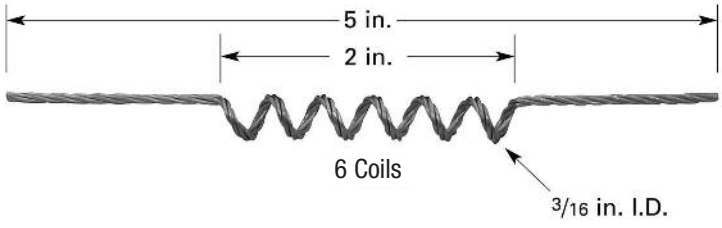
### TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F3 | 3x.025W |
| F3 | 3x.030W |
| F3 | 2x.040W |
| F3 | 4x.030W |
| F3 | .040W |

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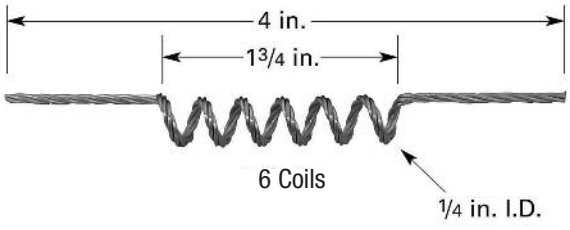
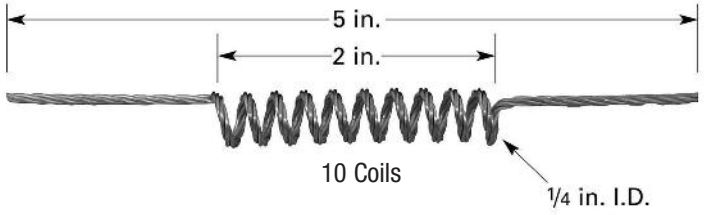
### TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F4 | 3x.025W |
| F4 | 3x.030W |
| F4 | 4x.030W |
| F4 | 2x.040W |
| F4 | .040W |



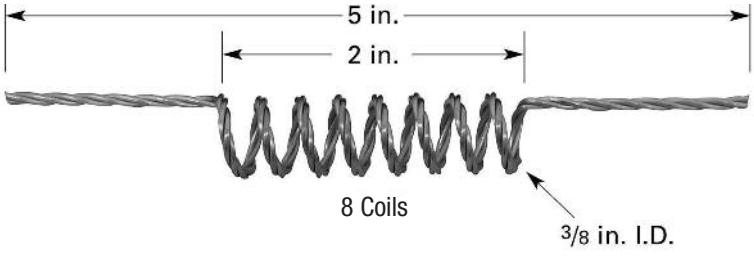
## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F5 | 3x.025W |
| F5 | 3x.030W |
| F5 | 4x.030W |
| F5 | 2x.040W |
| F5 | 3x.040W |
| F5 | .040W |



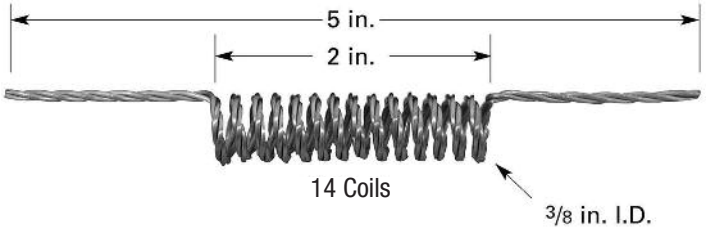

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F6 | 3x.025W |
| F6 | 3x.030W |
| F6 | 4x.030W |
| F6 | 2x.040W |
| F6 | 3x.040W |



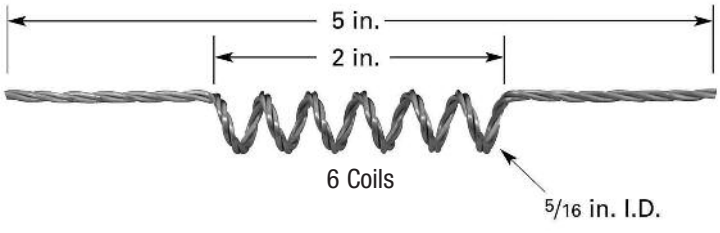

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F7 | 3x.030W |
| F7 | 4x.030W |
| F7 | 2x.040W |
| F7 | 3x.040W |



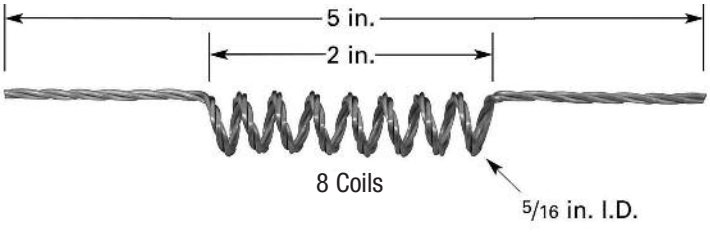

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F8 | 3x.030W |
| F8 | 4x.030W |
| F8 | 2x.040W |
| F8 | 3x.040W |



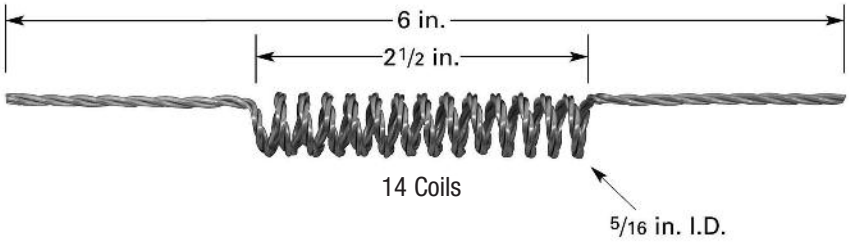

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F9 | 3x.030W |
| F9 | 4x.030W |
| F9 | 2x.040W |
| F9 | 3x.040W |



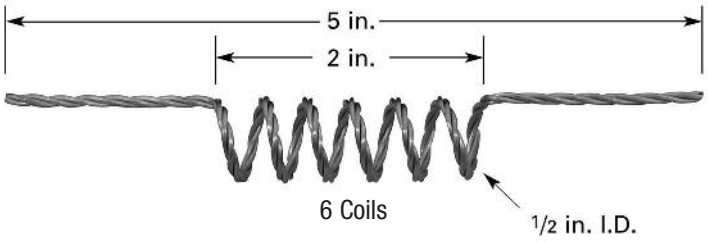

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F10 | 3x.030W |
| F10 | 4x.030W |
| F10 | 2x.040W |
| F10 | 3x.040W |



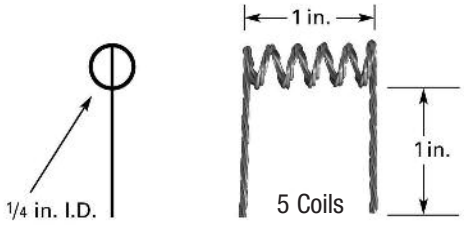
## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F11 | 3x.030W |
| F11 | 4x.030W |
| F11 | 2x.040W |
| F11 | 3x.040W |



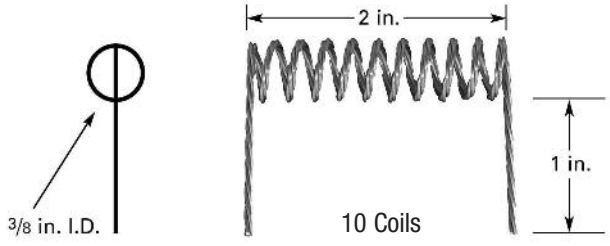

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F12 | 3x.025W |
| F12 | 3x.030W |



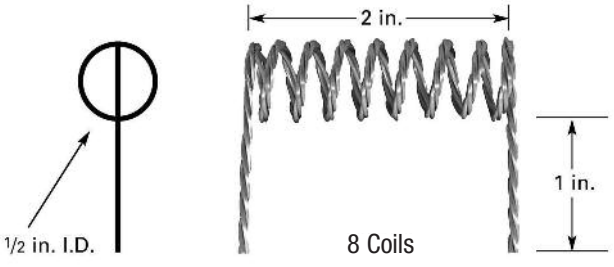

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F13 | 3x.025W |
| F13 | 3x.030W |
| F13 | 4x.030W |



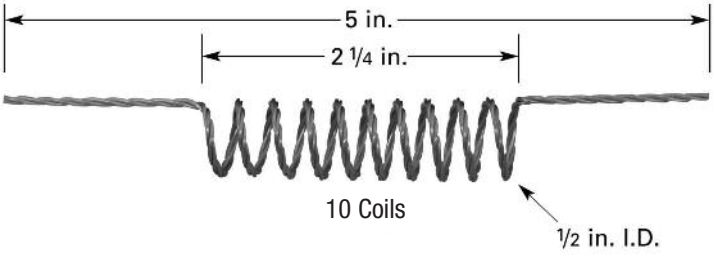

## TUNGSTEN FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| F14 | 3x.030W |
| F14 | 4x.030W |
| F14 | 3x.040W |




## TUNGSTEN FILAMENT

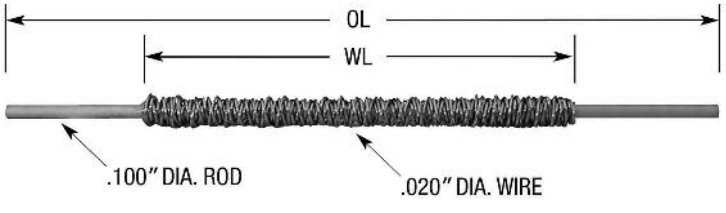
| TYPE | WIRE SIZE |
|---|---|
| F15 | 3x.030W |
| F15 | 4x.030W |
| F15 | 3x.040W |




## TUNGSTEN ROD SOURCE

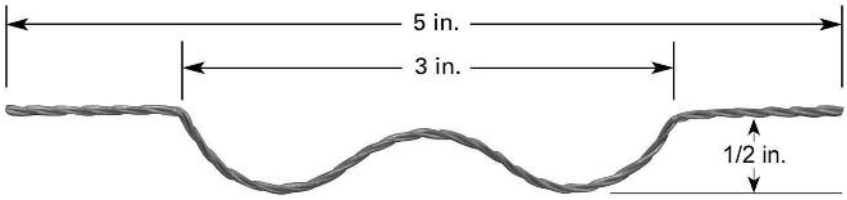
| PART # | OL | WL | WRAP LAYERS |
|---|---|---|---|
| F16A | 4 | 2 | 8 |
| F16B | 5 | 3 | 8 |
| F16C | 5 | 3 | 12 |
| F16D | 8 | 6 | 12 |

Dimensions are in inches



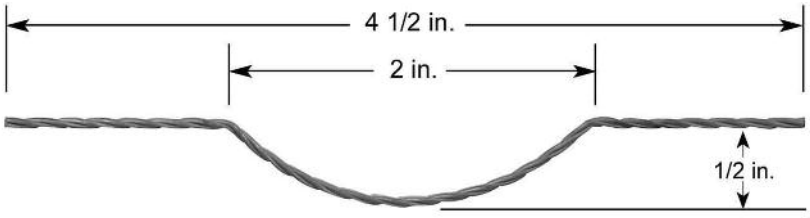
## POINT SOURCE LOOP FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| P1 | 3x.025W |
| P1 | 3x.030W |
| P1 | 4x.030W |
| P1 | .060W |



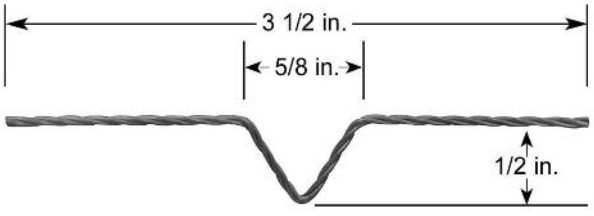

## POINT SOURCE LOOP FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| P2 | 3x.025W |
| P2 | 3x.030W |
| P2 | 4x.030W |
| P2 | .060W |



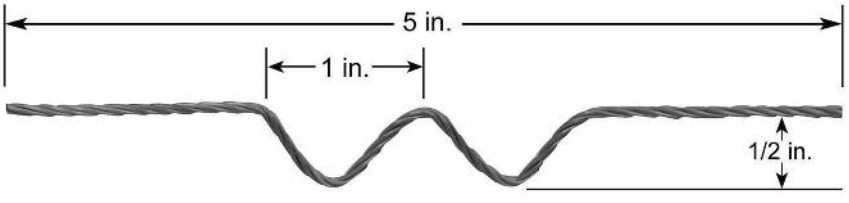

## POINT SOURCE LOOP FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| P3 | 3x.025W |
| P3 | 3x.030W |
| P3 | 4x.030W |
| P3 | .060W |



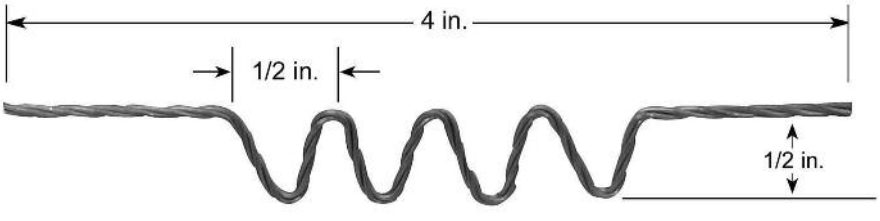

## POINT SOURCE LOOP FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| P4 | 3x.025W |
| P4 | 3x.030W |
| P4 | 4x.030W |
| P4 | .060W |



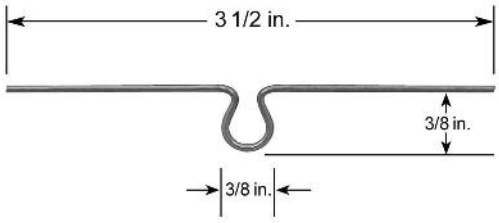

## POINT SOURCE LOOP FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| P5 | 3x.025W |
| P5 | 3x.030W |
| P5 | 4x.030W |
| P5 | .040W |
| P5 | .060W |



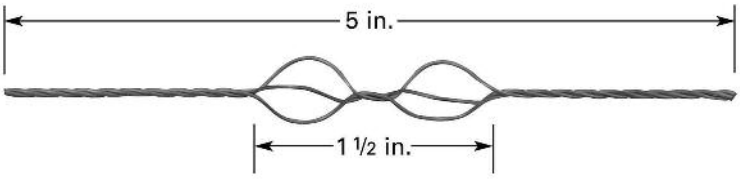
## POINT SOURCE LOOP FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| P6 | 3x.025W |
| P6 | .040W |
| P6 | .060W |




## POINT SOURCE LOOP FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| P7 | 3x.030W |
| P7 | 4x.030W |



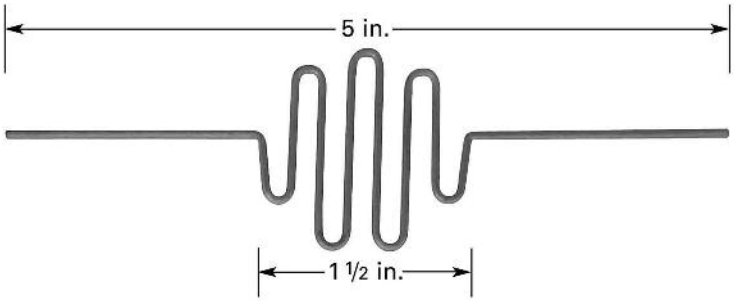

## LOOSE LAY WIRE

| TYPE | WIRE SIZE |
|---|---|
| P8 | 3x.025W |
| P8 | 3x.030W |

(Loose lay wire order by ft.)

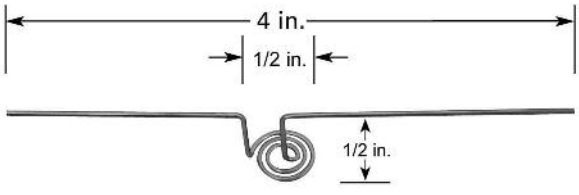
## HEATER FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| H1 | .040W |
| H1 | .060W |




## HEATER FILAMENT

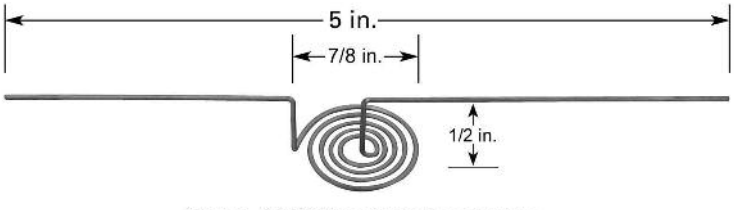
| TYPE | WIRE SIZE |
|---|---|
| H2 | .040W |
| H2 | .060W |



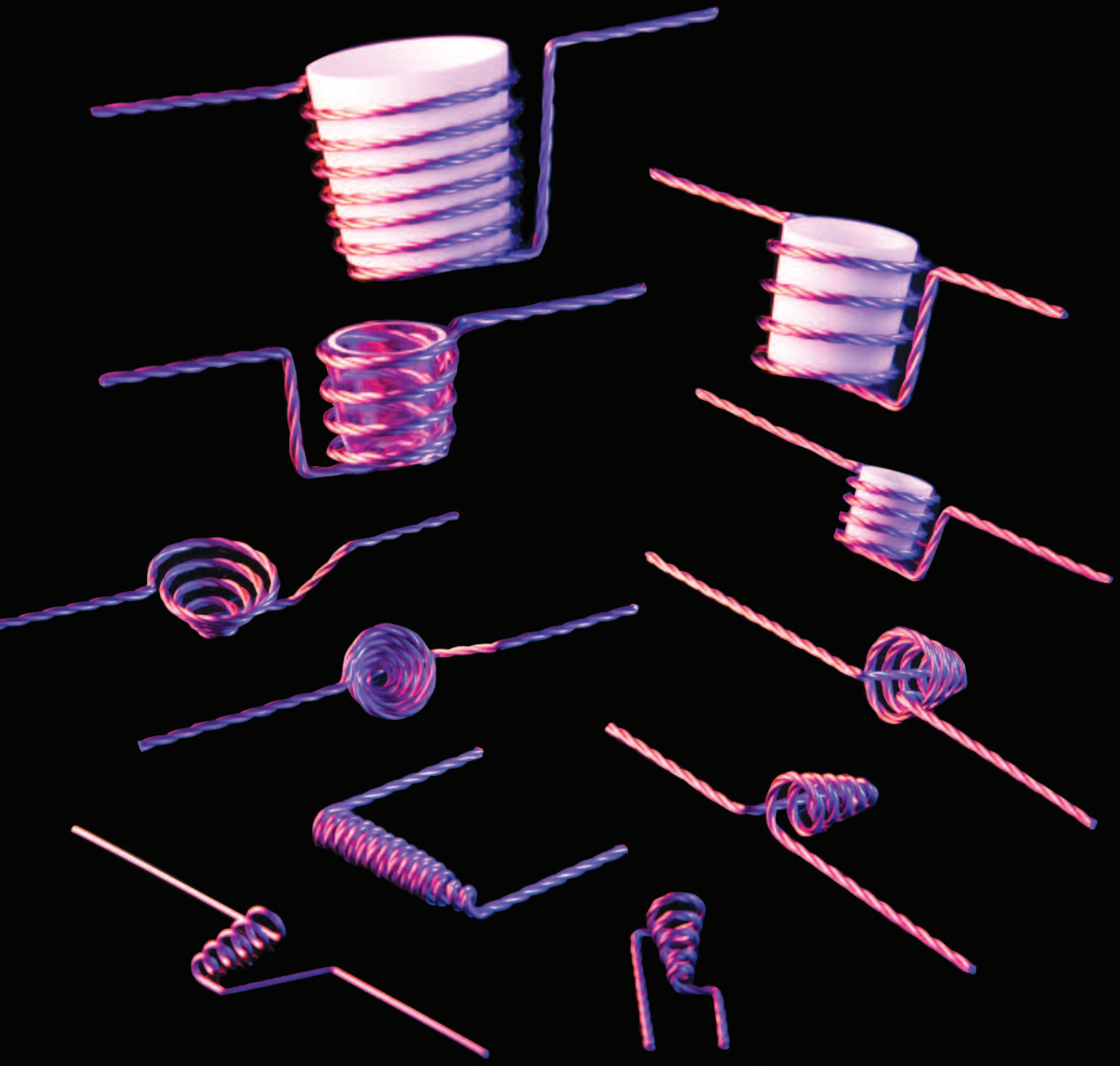

Note: .060W has one less turn

## HEATER FILAMENT

| TYPE | WIRE SIZE |
|---|---|
| H3 | .040W |
| H3 | .060W |



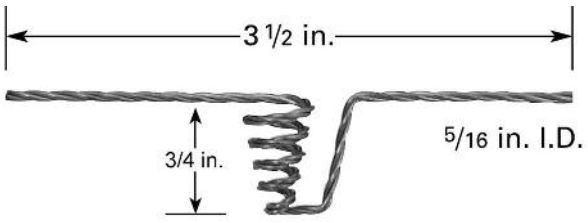

Note: .060W has two less turns



Baskets and basket heaters are made from the highest quality multi-strand or single strand tungsten wire. Our tungsten baskets are ideal for low cost, low volume coatings and require minimal power. Materials can be placed directly into baskets for evaporation. Basket heaters utilize a crucible and can be used for low and high volume coatings. Custom baskets are available.

**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B1 | 3x.025W |
| B1 | 3x.030W |
| B1 | .040W |




5 Coils

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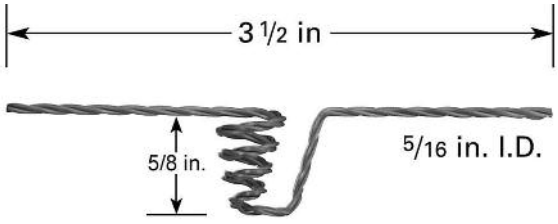
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B2 | 3x.025W |
| B2 | 3x.030W |
| B2 | .040W |




4 Coils

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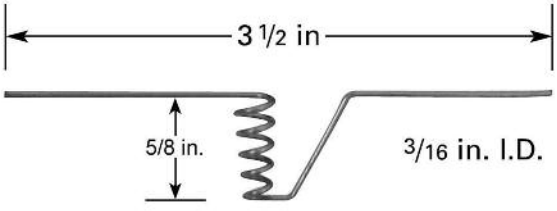
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B3 | 3x.025W |
| B3 | .040W |




5 Coils

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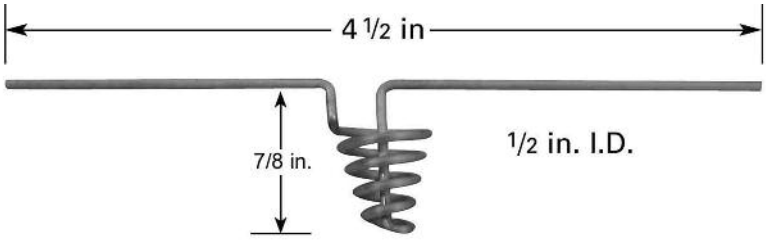
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B4 | 3x.030W |
| B4 | .060W0 |




5 Coils

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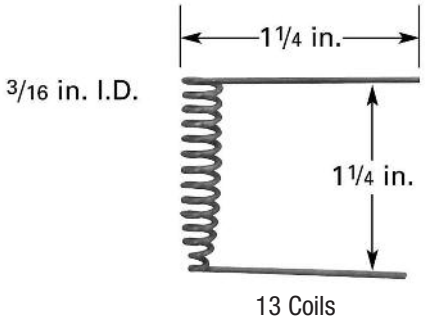
**BASKET**

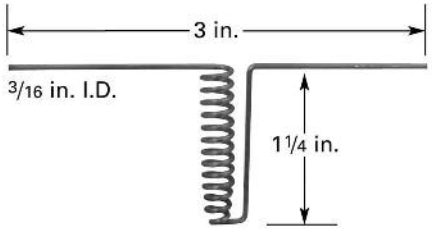
| TYPE | WIRE SIZE |
|---|---|
| B5 | 3x.025W |
| B5 | .040W |




13 Coils

**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B6 | 3x.025W |
| B6 | .040W |




13 Coils

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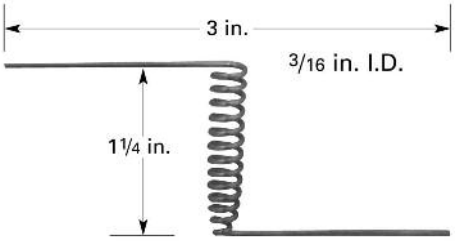
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B7 | 3x.025W |
| B7 | .040W |




13 Coils

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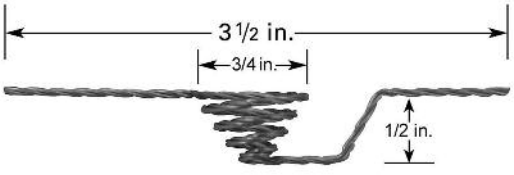
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B12A | 3x.025W |
| B12A | 3x.030W |
| B12A | .040W |




4 Coils

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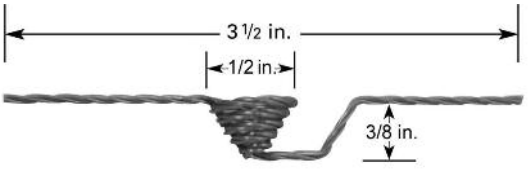
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B12B | 3x.025W |
| B12B | 3x.030W |
| B12B | .040W |
| B12B | .060W |




5 Coils

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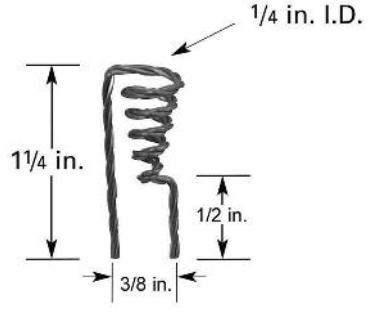
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B13 | 3x.025W |
| B13 | 3x.030W |
| B13 | .040W |




5 Coils

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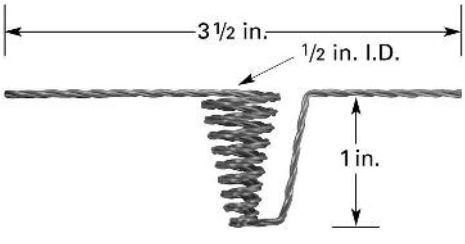
**BASKET**

| TYPE | WIRE SIZE |
|---|---|
| B14 | 3x.030W |
| B14 | 4x.030W |
| B14 | .060W |

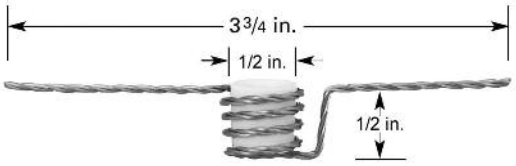



9 Coils

## BASKET HEATERS

| TYPE | WIRE SIZE |
|---|---|
| B8A | 3x.025W |
| B8A | 3x.030W |

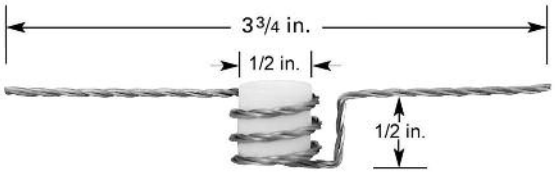
Use with C1 Crucible




## BASKET HEATERS

| TYPE | WIRE SIZE |
|---|---|
| B8B | 3x.025W |
| B8B | 3x.030W |

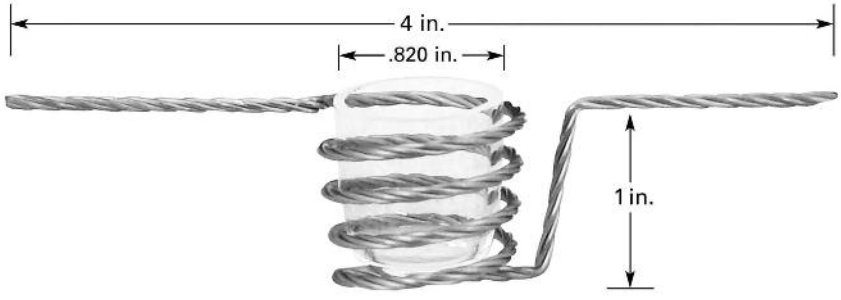
Use with C9 Crucible




## BASKET HEATERS

| TYPE | WIRE SIZE |
|---|---|
| B9 | 3x.030W |
| B9 | 4x.030W |
| B9 | 3x.040W |

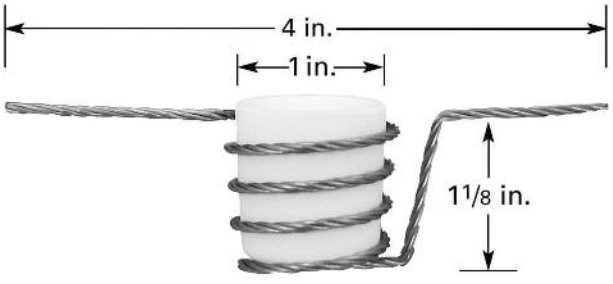
Use with C2 Crucible




## BASKET HEATERS

| TYPE | WIRE SIZE |
|---|---|
| B10 | 4x.030W |
| B10 | 3x.040W |

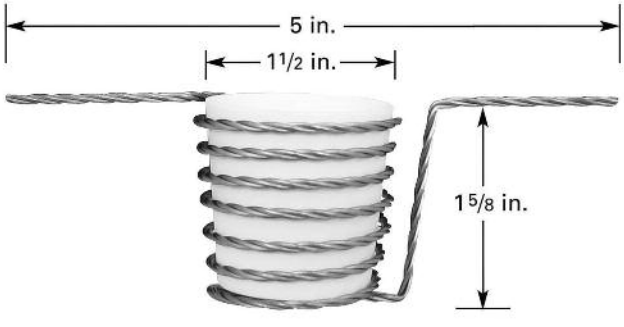
Use with C5 Crucible

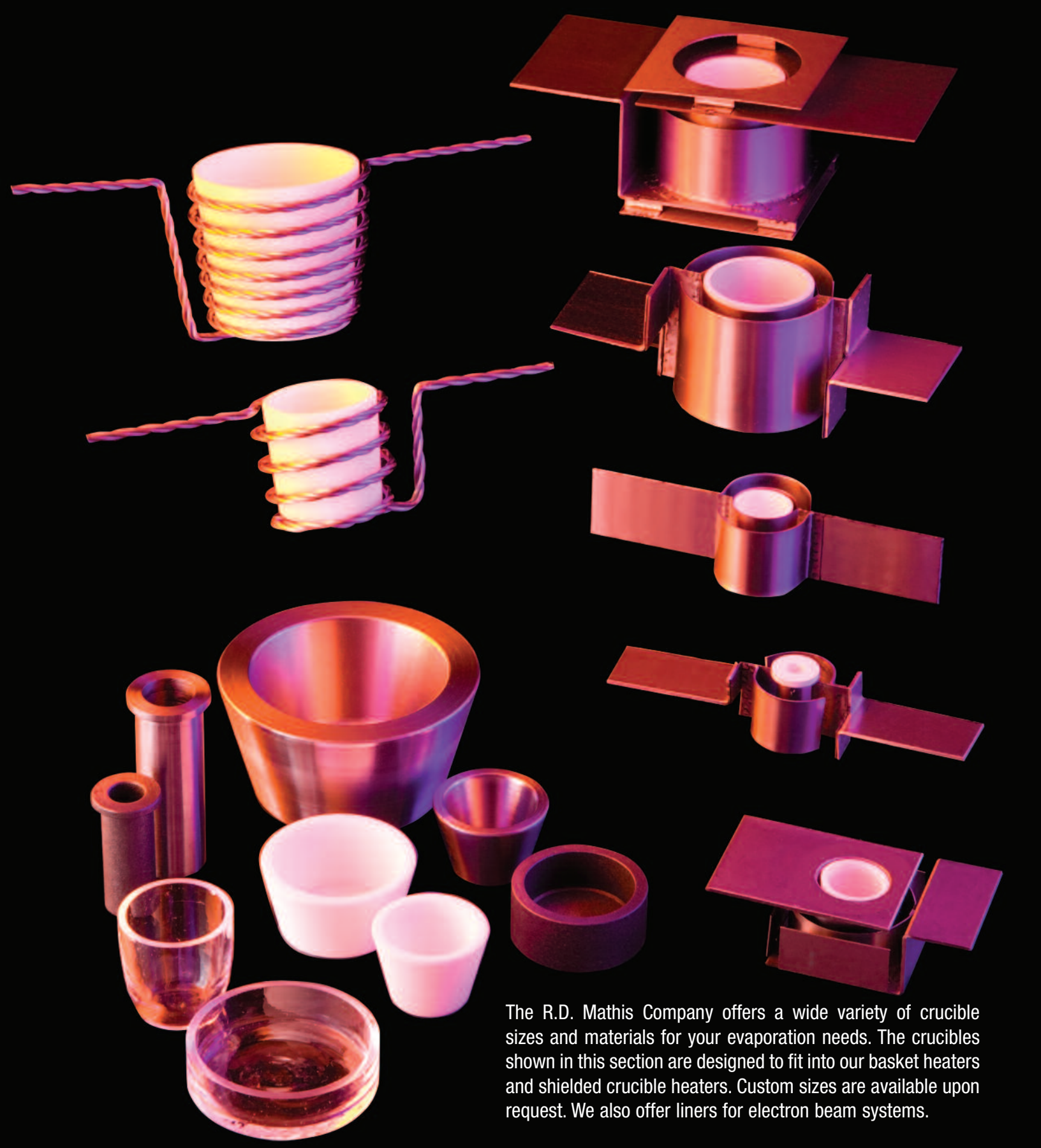



## BASKET HEATERS

| TYPE | WIRE SIZE |
|---|---|
| B11 | 3x.040W |

Use with C6 Crucible

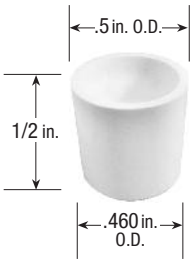




The R.D. Mathis Company offers a wide variety of crucible sizes and materials for your evaporation needs. The crucibles shown in this section are designed to fit into our basket heaters and shielded crucible heaters. Custom sizes are available upon request. We also offer liners for electron beam systems.

**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C1 | AO Alumina Oxide |
| C1 | Q Quartz |
| C1 | BN Boron Nitride* |
| C1 | BNC Boron Nitride Composite* |




Use with B8A Basket and with CH-1, CH-10, CH-11, ME-19 Heaters and ME18A Basket

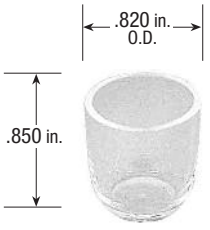
Wall thickness .040

Tapered

---

**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C2 | Q Quartz |




Use with B-9 Basket

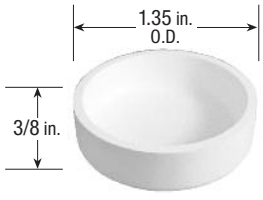
Wall thickness .050

Tapered

---

**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C3 | Q Quartz |

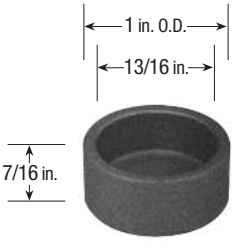



Wall thickness .070

---

**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C4 | Ta Tantalum |
| C4 | Mo Molybdenum |
| C4 | C Carbon |




Wall thickness .090

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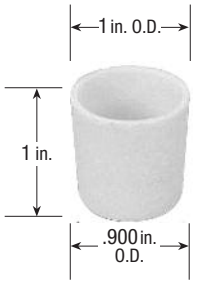
**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C5 | AO Alumina Oxide |
| C5 | Q Quartz |
| C5 | BN Boron Nitride* |
| C5 | BNC Boron Nitride Composite* |




Use with CH-5, CH-12 and CH-13 Heaters and with B10 Basket

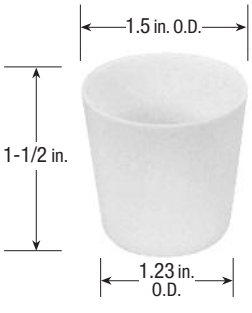
Wall thickness .060

Tapered

---

**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C6 | AO Alumina Oxide |
| C6 | Q Quartz |



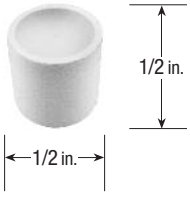

Use with CH-6 and CH-14 Heater and with B11 Basket

Wall thickness .070

Tapered

**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C9 | AO Alumina Oxide |
| C9 | Q Quartz |
| C9 | BN Boron Nitride* |
| C9 | BNC Boron Nitride Composite* |
| C9 | Ta Tantalum |
| C9 | Mo Molybdenum |
| C9 | C Carbon |




Use with CH-1, CH-10, CH-11 and ME-19 Heaters B8B and ME18B Baskets

Wall thickness .040 Straight Wall

---

**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C7 | BN Boron Nitride* |
| C7 | C Carbon |
| C7 | Q Quartz |
| C7 | Ta Tantalum |
| C7 | Mo Molybdenum |


Use with CH-7 Heater

Susceptor Type 1/4 in. I.D.

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**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C10 | BN Boron Nitride* |
| C10 | C Carbon |
| C10 | Q Quartz |
| C10 | Ta Tantalum |
| C10 | Mo Molybdenum |


Use with CH-9 and ME-20 Heaters

Susceptor Type 5/32 in. I.D.

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**CRUCIBLE**

| TYPE | MATERIAL |
|---|---|
| C8 | BN Boron Nitride* |
| C8 | C Carbon |
| C8 | Q Quartz |
| C8 | Ta Tantalum |
| C8 | Mo Molybdenum |


Use with CH-8 Heater

Susceptor Type 3/8 in. I.D.

## *BORON NITRIDES

Boron Nitride is similar to graphite in crystal structure. It is an excellent dielectric over a wide range of temperatures. It is not attacked by many materials used for thin film fabrication. All Boron Nitride crucibles should be slowly heated and thoroughly outgassed before use. Custom Boron Nitride, Carbon, Tantalum and Molybdenum crucibles on request.

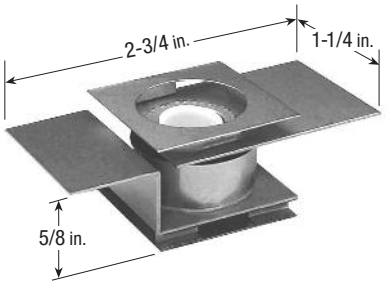
Shielded Crucible Heaters provide uniform heating to the installed crucible and allow very high rates, as well as high temperatures, up to 1800°C, to be achieved. Due to the rigid construction, heater and crucible life is extended. The thermal shields protect your vacuum components by reducing the radiant heat that your system is exposed to. Custom sizes are available on request. Please contact our technical staff if you would like more information about these products.

**CRUCIBLE HEATER**

TYPE
CH-1

Use with C1 and C9 Crucibles

Crucible size
1/2 in. x 1/2 in.

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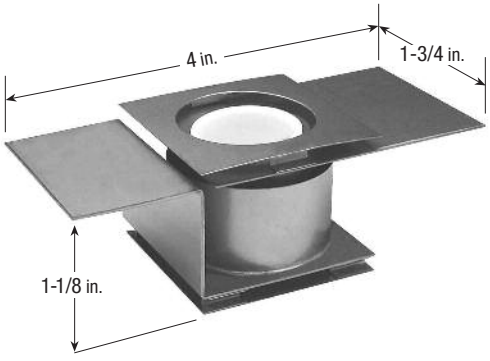
**CRUCIBLE HEATER**

TYPE
CH-5



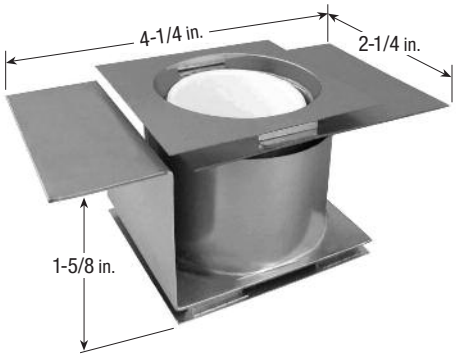

Use with C5 Crucible

Crucible size
1 in. x 1 in.

---

**CRUCIBLE HEATER**

TYPE
CH-6



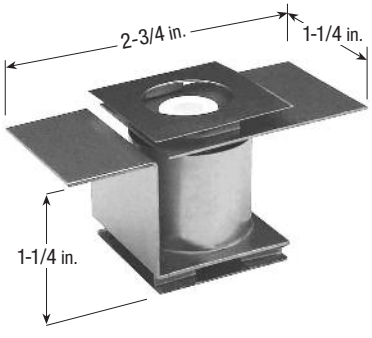

Use with C6 Crucible

Crucible size
1-1/2 in. x 1-1/2

---

**CRUCIBLE HEATER**

TYPE
CH-7




Use with C7 Crucible

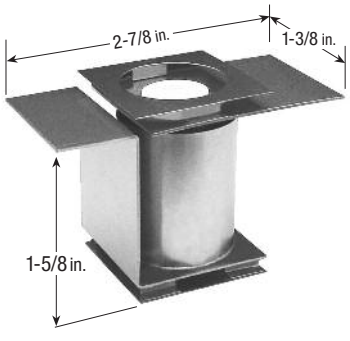
Susceptor Type

Crucible size
3/8 in. x 1 in.

---

**CRUCIBLE HEATER**

TYPE
CH-8




Use with C8 Crucible

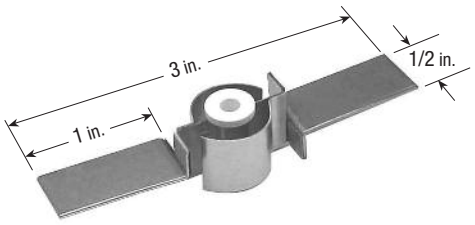
Susceptor Type

Crucible size
1/2 in. x 1-1/2 in.

**CRUCIBLE HEATER**

TYPE
CH-9

Use with C10 Crucible




Susceptor Type

Horizontal Leads

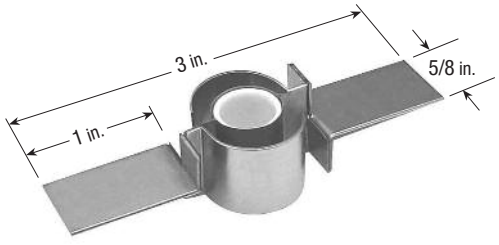
Crucible size
1/4 in. x 1/2 in.

---

**CRUCIBLE HEATER**

TYPE
CH-10

Use with C1 and C9
Crucibles




Horizontal Leads

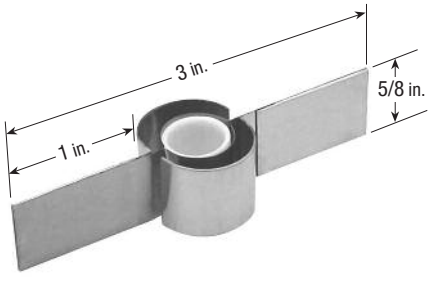
Crucible size
1/2 in. x 1/2 in.

---

**CRUCIBLE HEATER**

TYPE
CH-11

Use with C1 and
C9 Crucibles




Vertical Leads

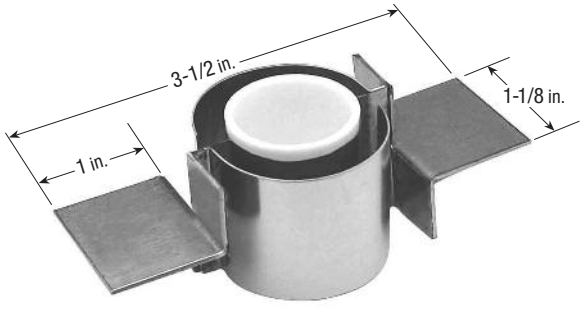
Crucible size
1/2 in. x 1/2 in.

---

**CRUCIBLE HEATER**

TYPE
CH-12

Use with C5 Crucible



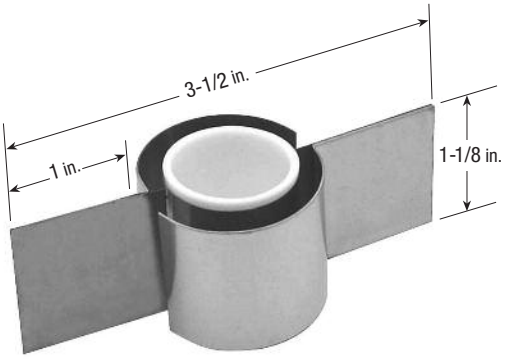

Horizontal Leads

Crucible size
1 in. x 1 in.

**CRUCIBLE HEATER**

TYPE
CH-13

Use with C5
Crucible




Vertical Leads

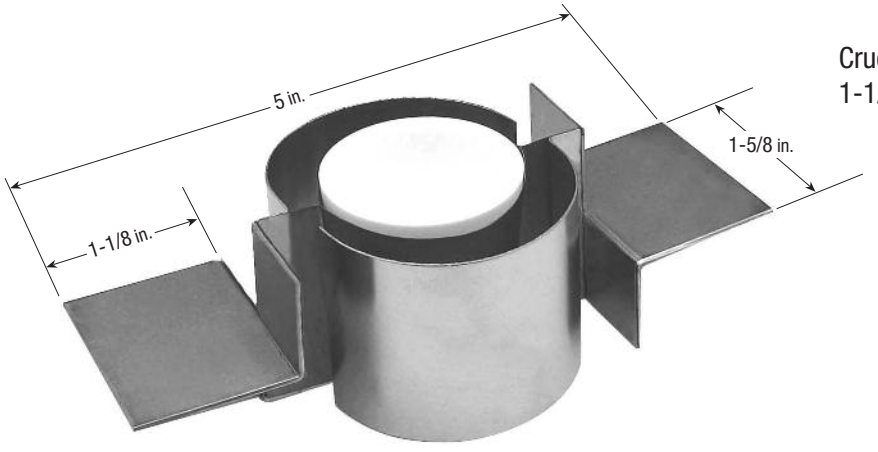
Crucible size
1 in. x 1 in.

---

**CRUCIBLE HEATER**

TYPE
CH-14

Use with C6
Crucible




Horizontal Leads

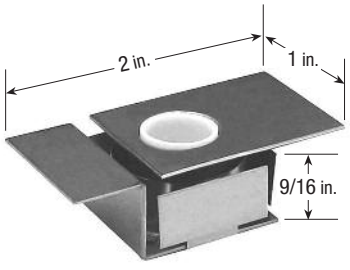
Crucible size
1-1/2 in. x 1-1/2 in.

---

**CRUCIBLE HEATER**

TYPE
ME-19

Use with C1 and
C9 Crucibles




Crucible size
1/2 in. x 1/2 in.

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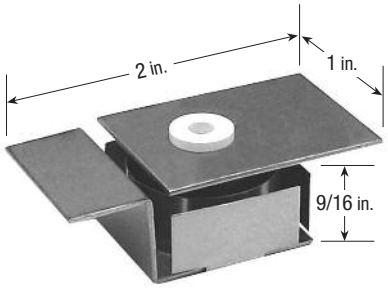
**CRUCIBLE HEATER**

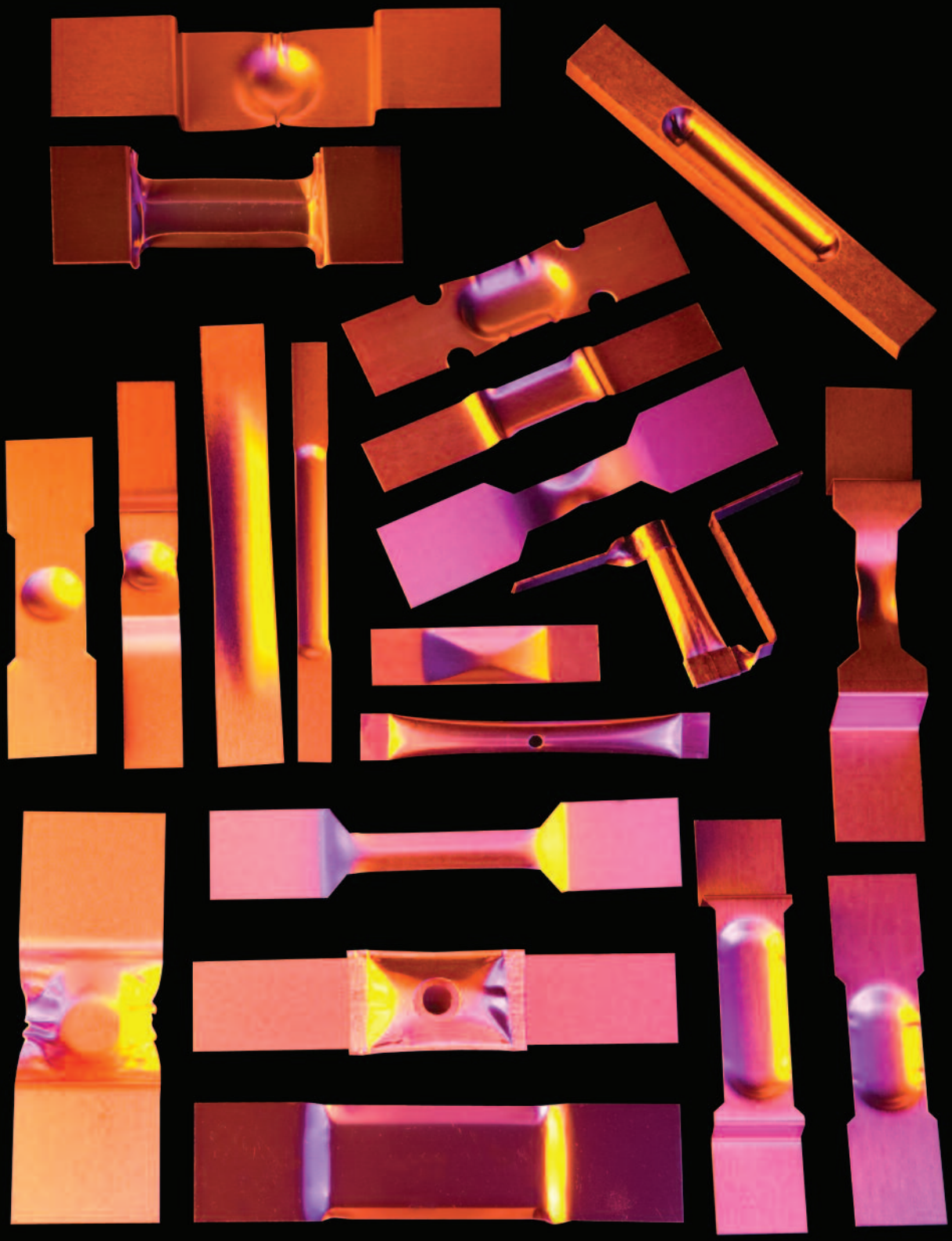
TYPE
ME-20

Use with C10 Crucible




Susceptor Type

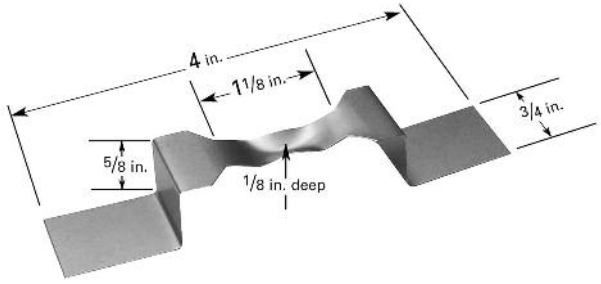
Crucible size
1/4 in. x 1/2 in.



Evaporation boats are capable of depositing a wide variety of materials. The R.D. Mathis Company offers an extensive selection of standard tungsten, tantalum and molybdenum boats, as well as, custom fabrication to meet your specific evaporation needs. All of our evaporation boats are made in our factory, using the highest quality materials and processes. Our boats are available in a variety of materials and thicknesses. If you need help in selecting the right boat for your process, or need a custom boat, please give our technical staff a call.

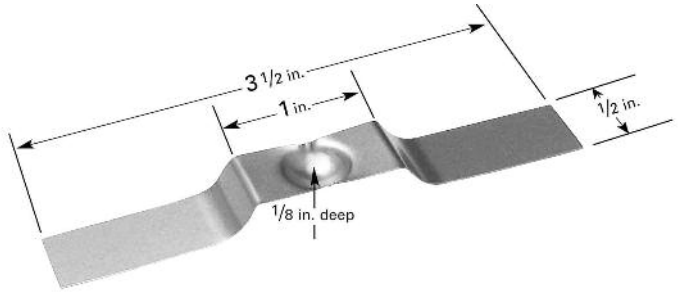
## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S1 | .005W | S1 | .010Ta |
| S1 | .010W | S1 | .005Mo |
| S1 | .015W | S1 | .010Mo |
| S1 | .005Ta | | |



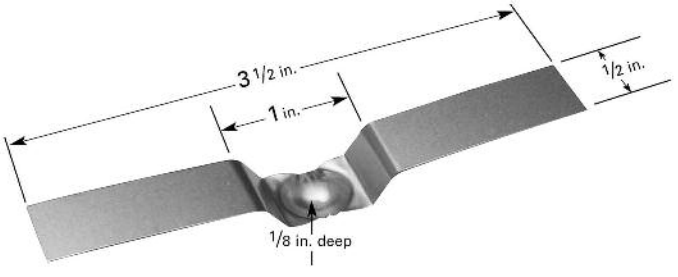

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S2A | .005W | S2A | .010Ta |
| S2A | .010W | S2A | .005Mo |
| S2A | .015W | S2A | .010Mo |
| S2A | .005Ta | | |



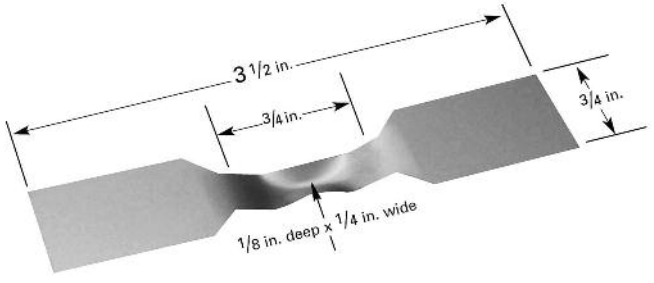

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S2B | .005W | S2B | .010Ta |
| S2B | .010W | S2B | .005Mo |
| S2B | .015W | S2B | .010Mo |
| S2B | .005Ta | | |



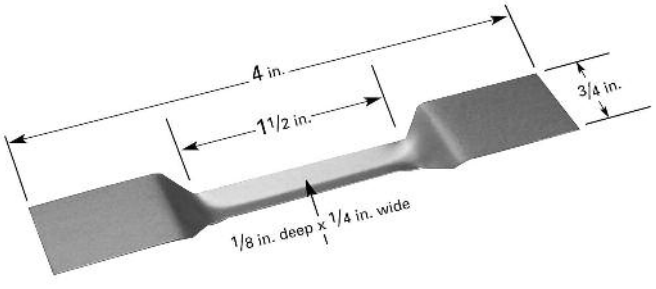

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S3 | .005W | S3 | .010Ta |
| S3 | .010W | S3 | .005Mo |
| S3 | .015W | S3 | .010Mo |
| S3 | .005Ta | | |



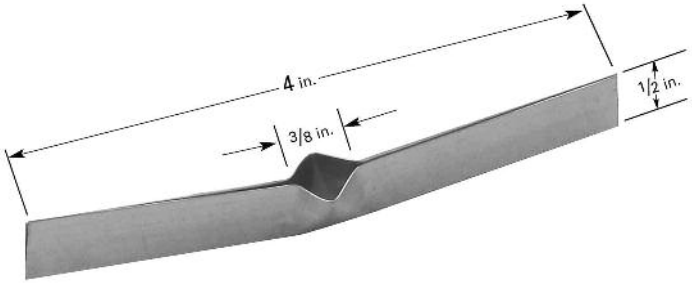

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S4 | .005W | S4 | .010Ta |
| S4 | .010W | S4 | .005Mo |
| S4 | .015W | S4 | .010Mo |
| S4 | .005Ta | | |



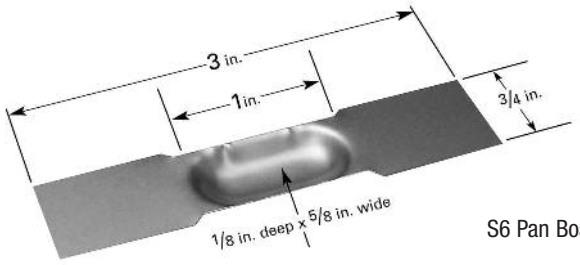

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S5 | .005W |
| S5 | .005Ta |
| S5 | .010Ta |
| S5 | .005Mo |
| S5 | .010Mo |



**BOAT SOURCE**

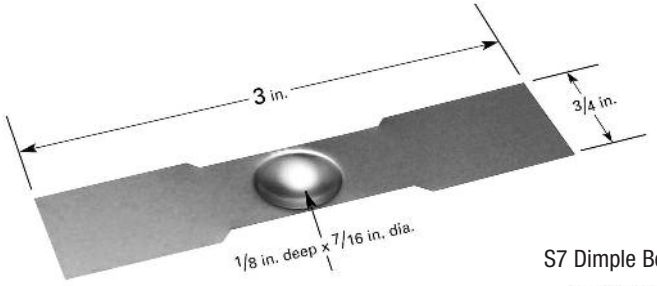
| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S6 | .005W | S6 | .005Mo |
| S6 | .010W | S6 | .010Mo |
| S6 | .005Ta | | |
| S6 | .010Ta | | |




S6 Pan Boat

**BOAT SOURCE**

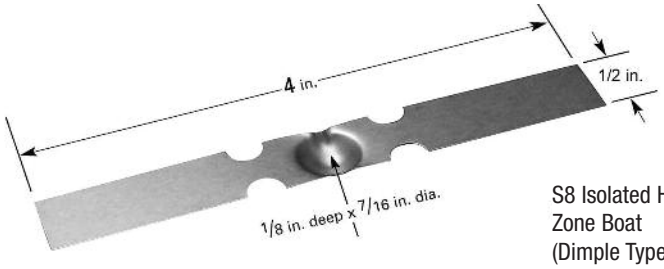
| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S7 | .005W | S7 | .005Mo |
| S7 | .010W | S7 | .010Mo |
| S7 | .005Ta | | |
| S7 | .010Ta | | |




S7 Dimple Boat

**BOAT SOURCE**

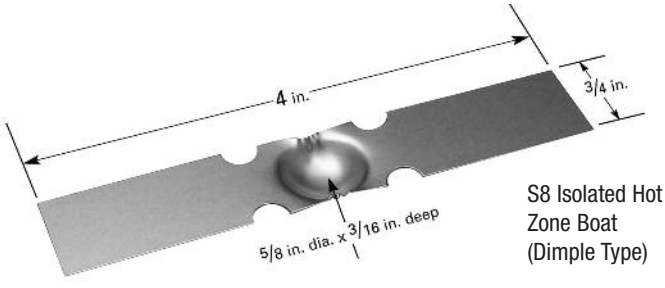
| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S8A | .005W | S8A | .010Ta |
| S8A | .010W | S8A | .005Mo |
| S8A | .015W | S8A | .010Mo |
| S8A | .005Ta | | |




S8 Isolated Hot Zone Boat (Dimple Type)

**BOAT SOURCE**

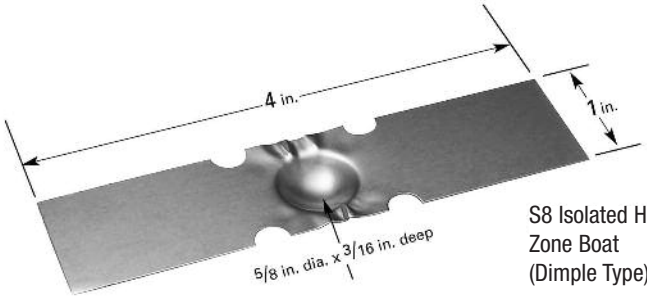
| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S8B | .005W | S8B | .010Ta |
| S8B | .010W | S8B | .005Mo |
| S8B | .015W | S8B | .010Mo |
| S8B | .005Ta | | |




S8 Isolated Hot Zone Boat (Dimple Type)

**BOAT SOURCE**

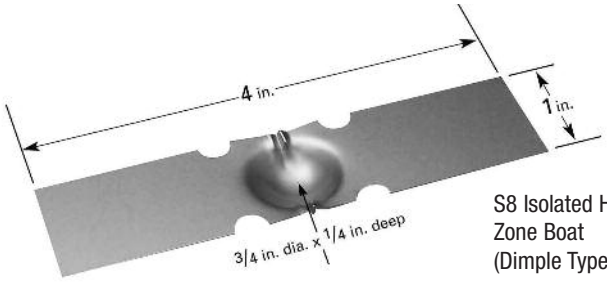
| TYPE | MATERIAL |
|---|---|
| S8C | .010W |
| S8C | .010Ta |
| S8C | .015Ta |
| S8C | .010Mo |
| S8C | .015Mo |




S8 Isolated Hot Zone Boat (Dimple Type)

**BOAT SOURCE**

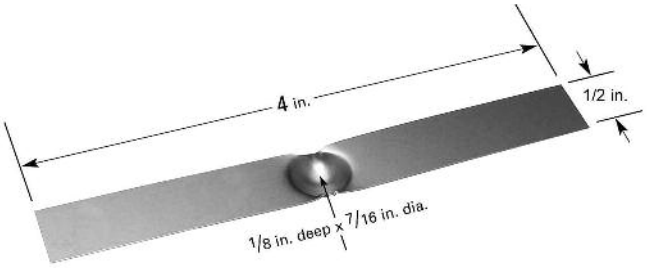
| TYPE | MATERIAL |
|---|---|
| S8D | .010W |
| S8D | .010Ta |
| S8D | .015Ta |
| S8D | .010Mo |
| S8D | .015Mo |




S8 Isolated Hot Zone Boat (Dimple Type)

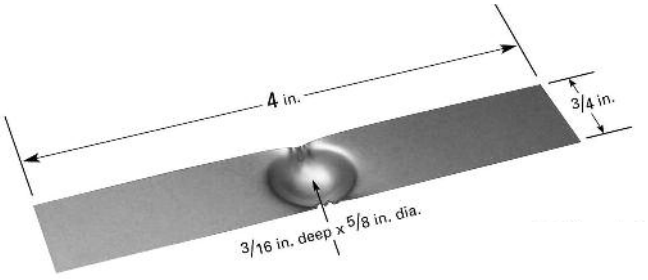
**BOAT SOURCE**

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S9A | .005W | S9A | .010Ta |
| S9A | .010W | S9A | .005Mo |
| S9A | .015W | S9A | .010Mo |
| S9A | .005Ta | | |



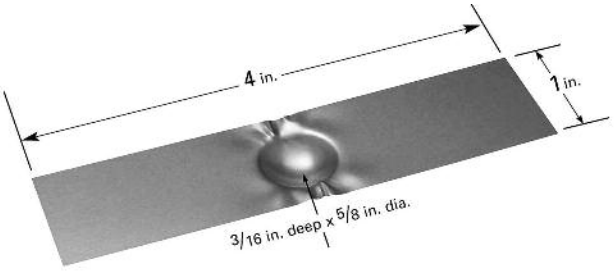

**BOAT SOURCE**

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S9B | .005W | S9B | .010Ta |
| S9B | .010W | S9B | .005Mo |
| S9B | .015W | S9B | .010Mo |
| S9B | .005Ta | | |



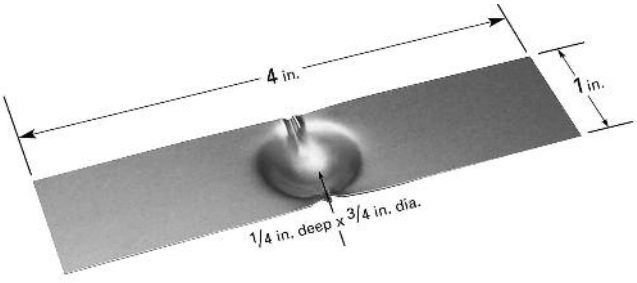

**BOAT SOURCE**

| TYPE | MATERIAL |
|---|---|
| S9C | .010W |
| S9C | .010Ta |
| S9C | .015Ta |
| S9C | .010Mo |
| S9C | .015Mo |



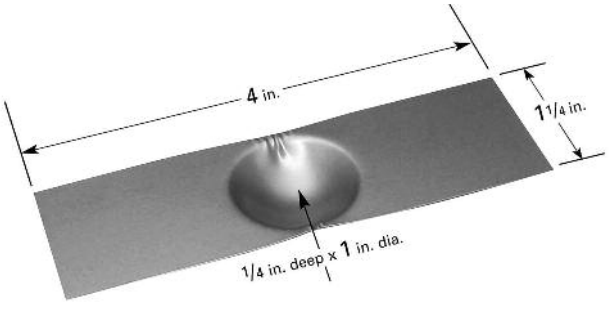

**BOAT SOURCE**

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S9D | .010W | S9D | .010Mo |
| S9D | .010Ta | S9D | .015Mo |
| S9D | .015Ta | | |
| S9D | .025Ta | | |



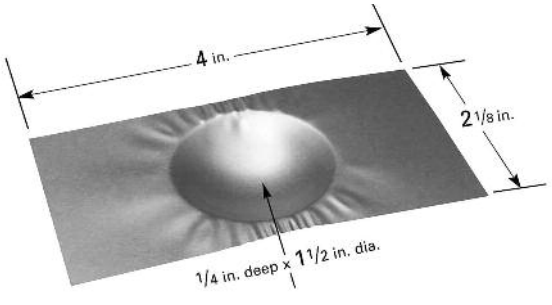

**BOAT SOURCE**

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S9E | .010W | S9E | .010Mo |
| S9E | .010Ta | S9E | .015Mo |
| S9E | .015Ta | | |
| S9E | .025Ta | | |



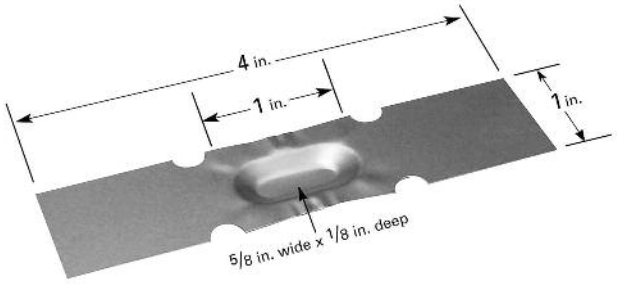

**BOAT SOURCE**

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S9F | .010W | S9F | .010Mo |
| S9F | .010Ta | S9F | .015Mo |
| S9F | .015Ta | | |
| S9F | .025Ta | | |



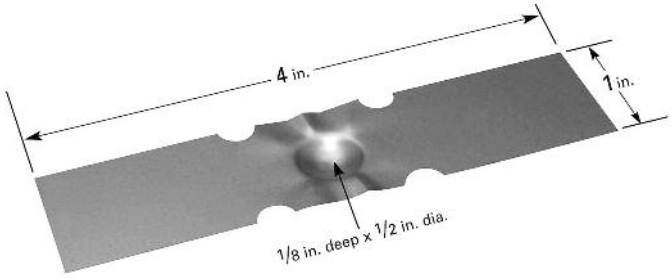
## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S10 | .005W | S10 | .005Mo |
| S10 | .010W | S10 | .010Mo |
| S10 | .005Ta | | |
| S10 | .010Ta | | |



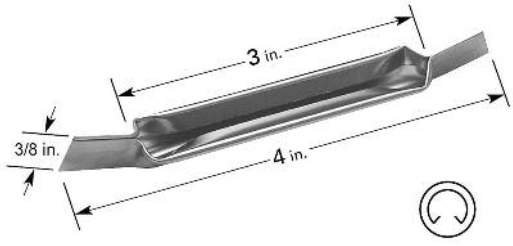

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S11 | .005W | S11 | .005Mo |
| S11 | .010W | S11 | .010Mo |
| S11 | .005Ta | | |
| S11 | .010Ta | | |



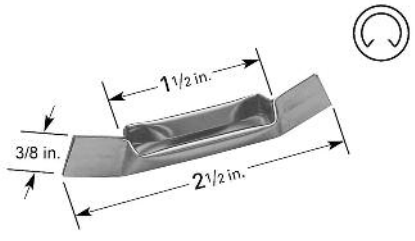

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S12A | .005Ta |
| S12A | .010Ta |
| S12A | .005Mo |
| S12A | .010Mo |



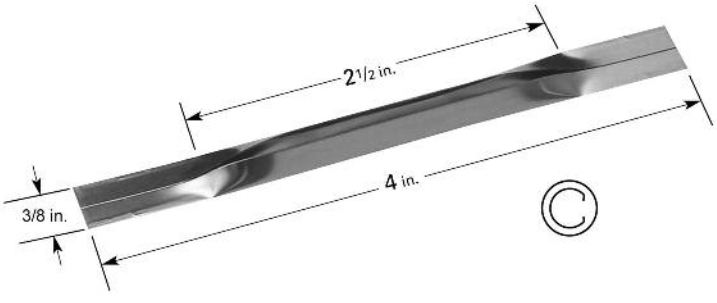

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S12B | .005Ta |
| S12B | .010Ta |
| S12B | .005Mo |
| S12B | .010Mo |



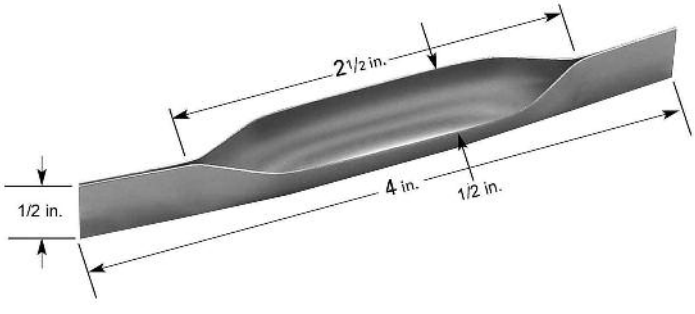

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S13 | .005W |
| S13 | .005Ta |
| S13 | .010Ta |
| S13 | .005Mo |
| S13 | .010Mo |



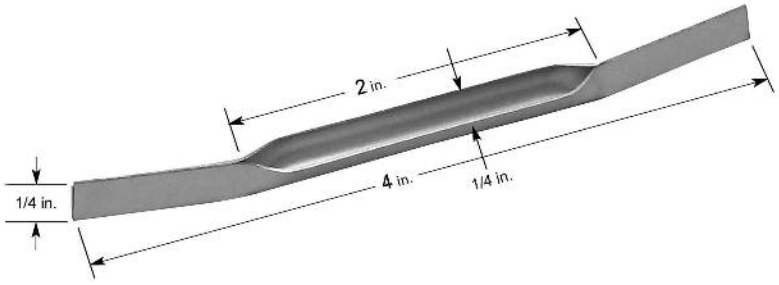

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S14 | .005W | S14 | .010Ta |
| S14 | .010W | S14 | .005Mo |
| S14 | .015W | S14 | .010Mo |
| S14 | .005Ta | | |



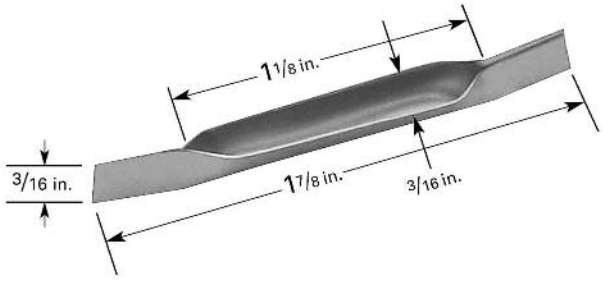
## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S15 | .005W | S15 | .010Ta |
| S15 | .010W | S15 | .005Mo |
| S15 | .015W | S15 | .010Mo |
| S15 | .005Ta | | |



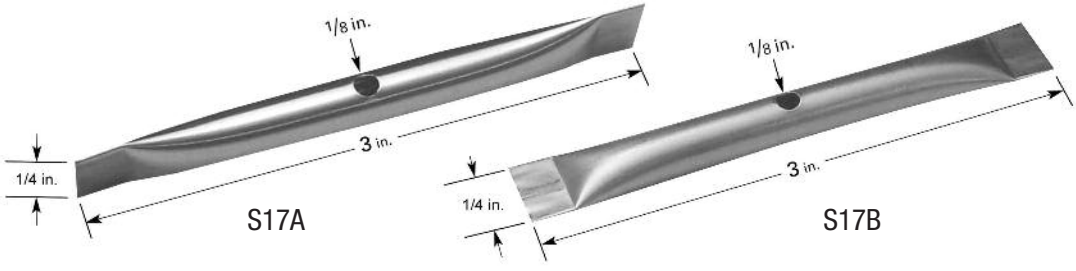

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S16 | .005W | S16 | .005Mo |
| S16 | .010W | S16 | .010Mo |
| S16 | .005Ta | | |
| S16 | .010Ta | | |



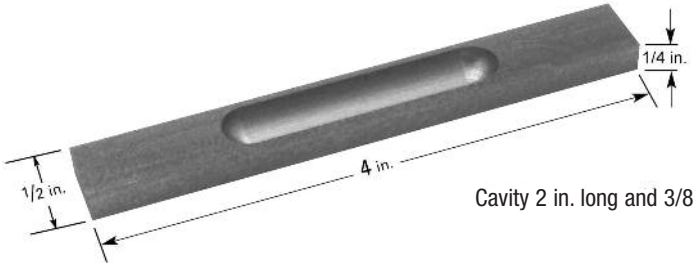

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S17A | .005Ta |
| S17B | .005Ta |
| S17A | .010Ta |
| S17B | .010Ta |




## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S18 | Mo Molybdenum |
| S18 | C Carbon |
| S18 | Ta Tantalum |

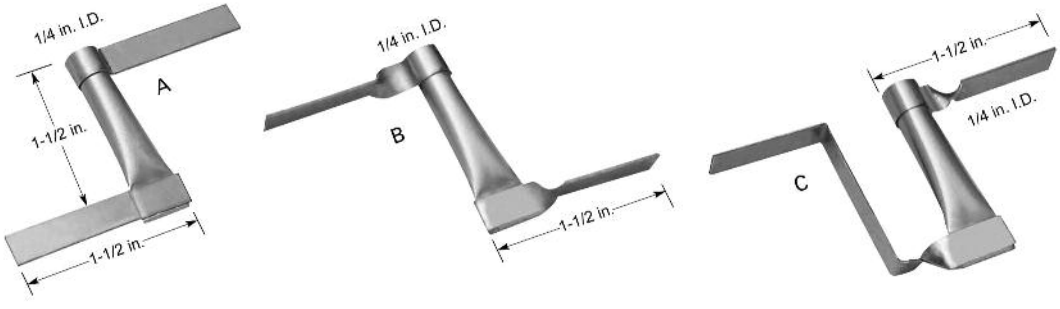



Cavity 2 in. long and 3/8 in. wide

## BOAT SOURCE

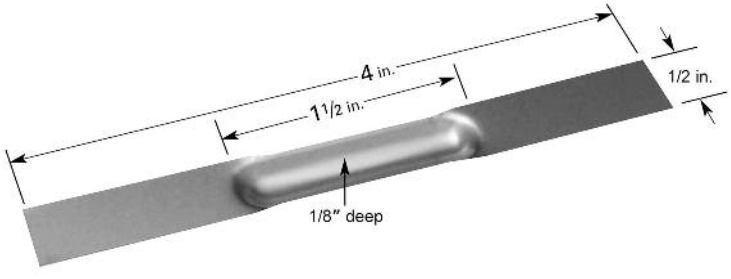
| TYPE | MATERIAL |
|---|---|
| S19A | Ta Tantalum |
| S19B | Ta Tantalum |
| S19C | Ta Tantalum |

Height – 1-1/2 in.



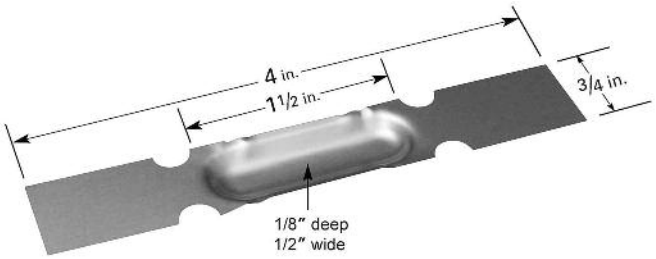

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S20A | .005W | S20A | .010Ta |
| S20A | .010W | S20A | .005Mo |
| S20A | .015W | S20A | .010Mo |
| S20A | .005Ta | | |



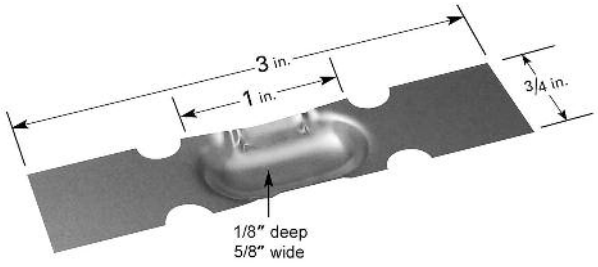
## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S21 | .005W | S21 | .005Mo |
| S21 | .010W | S21 | .010Mo |
| S21 | .005Ta | | |
| S21 | .010Ta | | |




## BOAT SOURCE

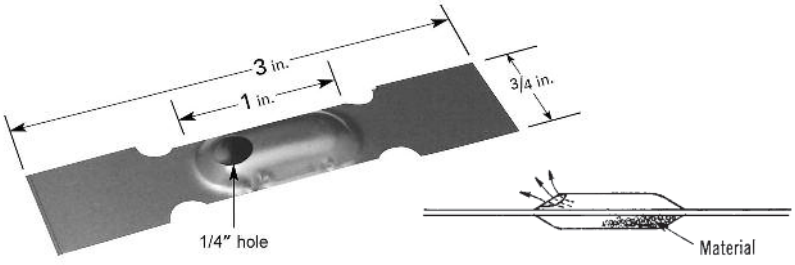
| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S22 | .005W | S22 | .005Mo |
| S22 | .010W | S22 | .010Mo |
| S22 | .005Ta | | |
| S22 | .010Ta | | |




## BOAT SOURCE

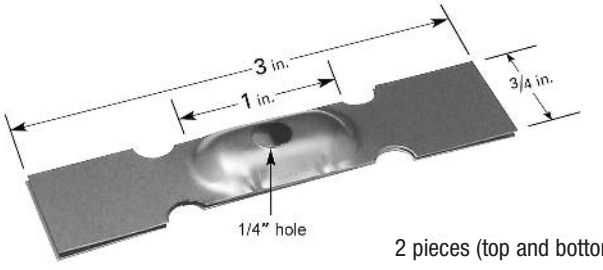
| TYPE | MATERIAL |
|---|---|
| S23 | .010W |
| S23 | .010Ta |
| S23 | .010Mo |

2 pieces (top and bottom)




## BOAT SOURCE

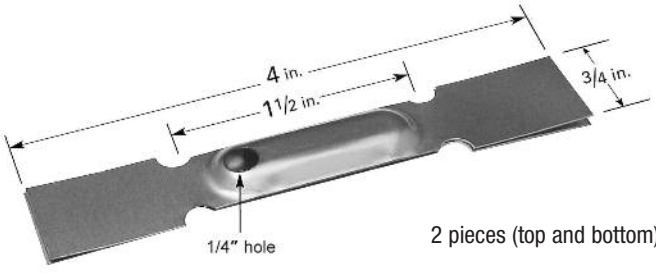
| TYPE | MATERIAL |
|---|---|
| S24 | .005W |
| S24 | .010W |
| S24 | .005Ta |
| S24 | .010Ta |
| S24 | .005Mo |
| S24 | .010Mo |




2 pieces (top and bottom)

## BOAT SOURCE

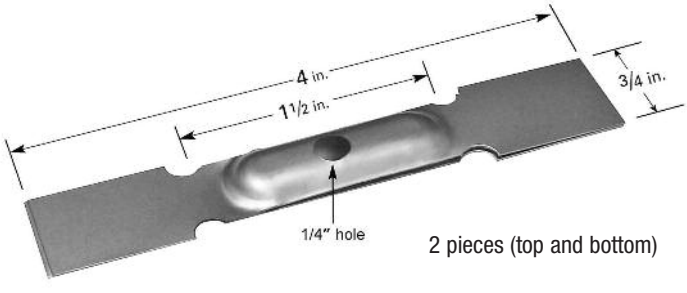
| TYPE | MATERIAL |
|---|---|
| S25 | .010W |
| S25 | .010Ta |
| S25 | .010Mo |




2 pieces (top and bottom)

## BOAT SOURCE

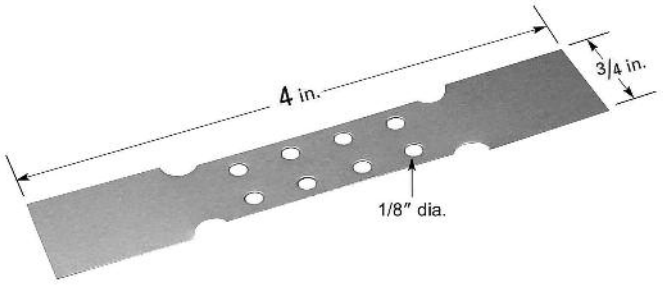
| TYPE | MATERIAL |
|---|---|
| S26 | .010W |
| S26 | .010Ta |
| S26 | .010Mo |




2 pieces (top and bottom)

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S33 | .005W |
| S33 | .005Ta |
| S33 | .005Mo |



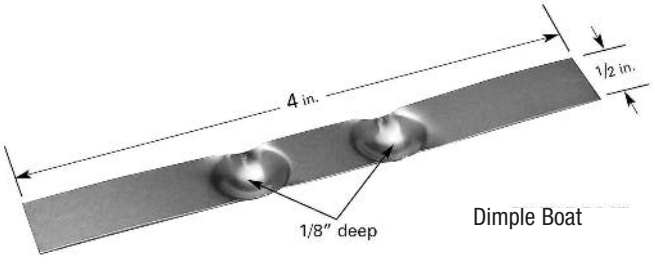

Insert fits between top and bottom of S25 & S26 Covered Boat Sources providing additional baffling, reducing spitting.

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S27 | .005W | S27 | .005Mo |
| S27 | .010W | S27 | .010Mo |
| S27 | .005Ta | | |
| S27 | .010Ta | | |

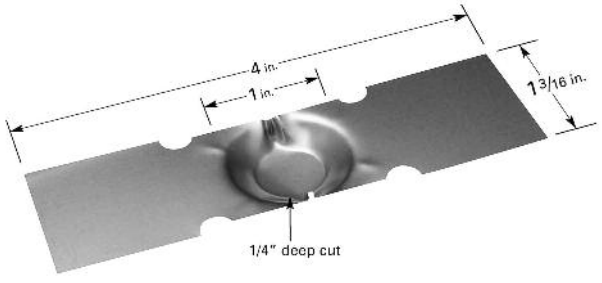

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S28 | .005W | S28 | .005Mo |
| S28 | .010W | S28 | .010Mo |
| S28 | .005Ta | | |
| S28 | .010Ta | | |




## DEEP CUP BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S29 | .005W | S29 | .015Ta |
| S29 | .010W | S29 | .005Mo |
| S29 | .005Ta | S29 | .010Mo |
| S29 | .010Ta | | |

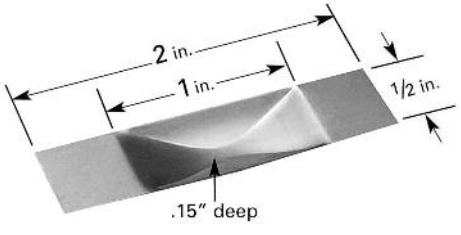



## WRAPPED/COVERED BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S30A | .005W |
| S30A | .010W |
| S30A | .005Ta |
| S30A | .010Ta |


## ELONGATED DIMPLE BOAT

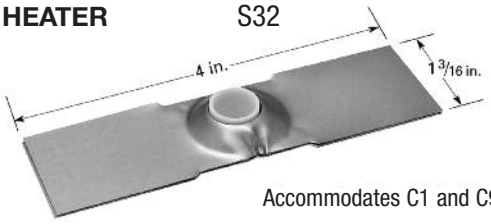
| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S31A | .005W | S31A | .015Ta |
| S31A | .010W | S31A | .005Mo |
| S31A | .015W | S31A | .010Mo |
| S31A | .005Ta | S31A | .015Mo |
| S31A | .010Ta | | |



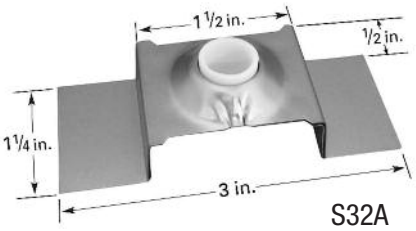
## TUNGSTEN CRUCIBLE HEATER

| TYPE | MATERIAL |
|---|---|
| S32 | .010W |
| S32A | .010W |

S32



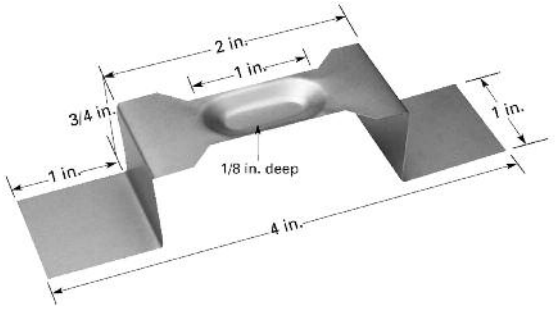

Accommodates C1 and C9 Crucibles




S32A

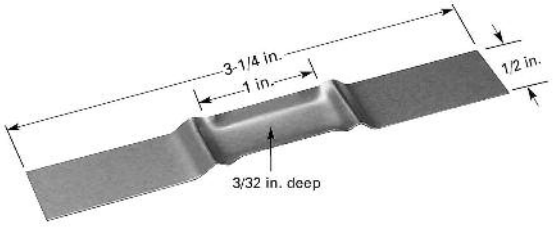
## DIMPLE BOAT

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S34 | .005W | S34 | .005Mo |
| S34 | .010W | S34 | .010Mo |
| S34 | .005Ta | | |
| S34 | .010Ta | | |



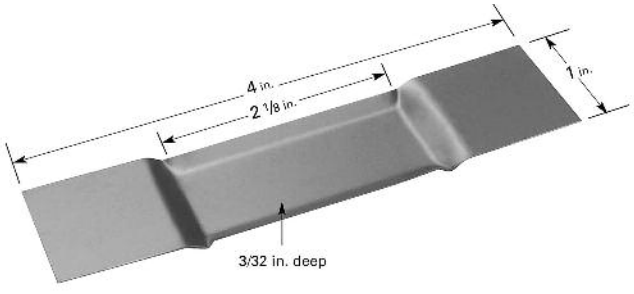

## FLAT BOAT

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S35 | .005W | S35 | .005Mo |
| S35 | .010W | S35 | .010Mo |
| S35 | .005Ta | | |
| S35 | .010Ta | | |



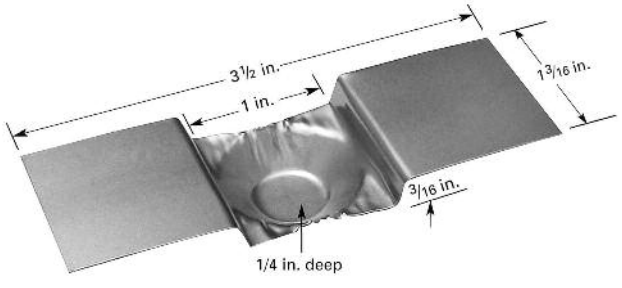

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S36 | .010W |
| S36 | .010Ta |
| S36 | .015Ta |
| S36 | .010Mo |



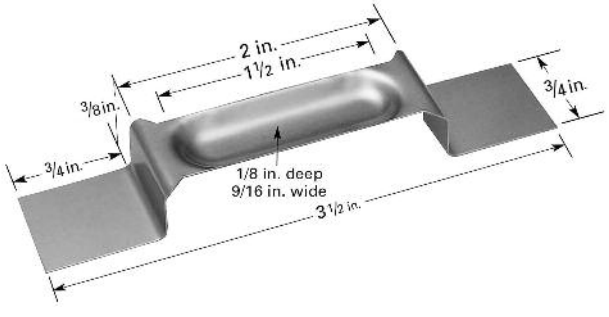

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S37 | .005Ta |
| S37 | .010Ta |
| S37 | .005Mo |
| S37 | .010Mo |



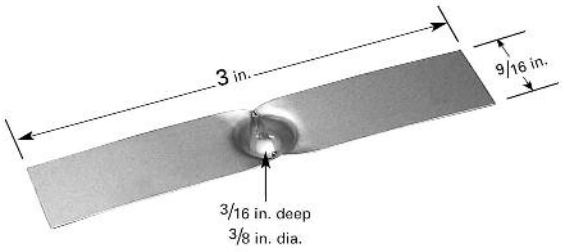

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S38 | .005W | S38 | .005Mo |
| S38 | .010W | S38 | .010Mo |
| S38 | .005Ta | | |
| S38 | .010Ta | | |



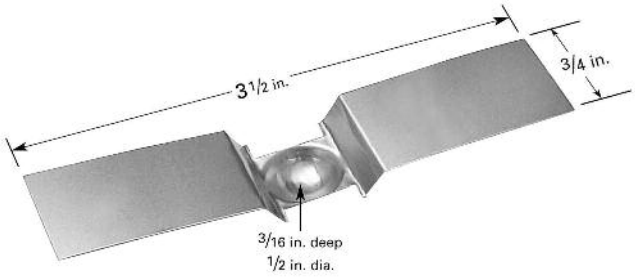
## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S39 | .005Ta |
| S39 | .010Ta |
| S39 | .005Mo |
| S39 | .010Mo |



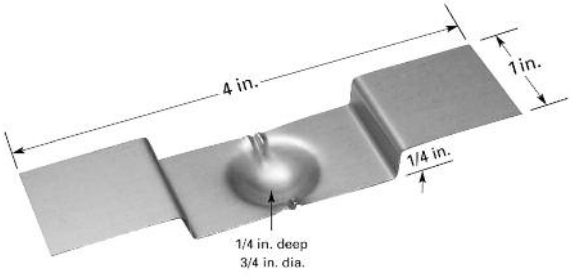

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S40 | .005W |
| S40 | .005Ta |
| S40 | .010Ta |
| S40 | .005Mo |
| S40 | .010Mo |



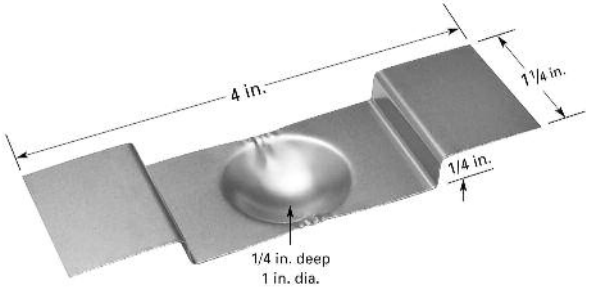

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S42 | .005W | S42 | .015Ta |
| S42 | .010W | S42 | .010Mo |
| S42 | .015W | S42 | .015Mo |
| S42 | .010Ta | | |



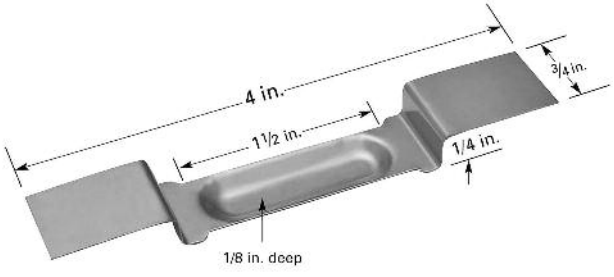

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S43 | .005W | S43 | .015Ta |
| S43 | .010W | S43 | .010Mo |
| S43 | .015W | S43 | .015Mo |
| S43 | .010Ta | | |



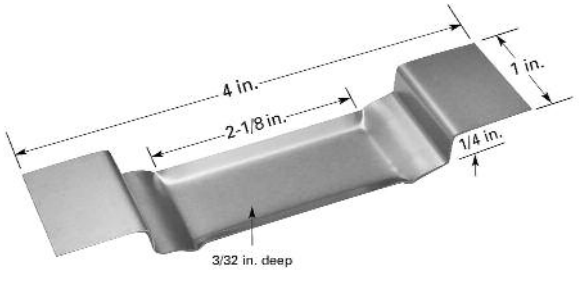

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S44 | .005W | S44 | .015Ta |
| S44 | .010W | S44 | .005Mo |
| S44 | .015W | S44 | .010Mo |
| S44 | .005Ta | S44 | .015Mo |
| S44 | .010Ta | | |



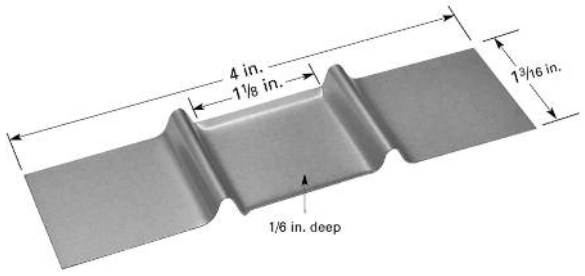

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S45 | .005W | S45 | .015Ta |
| S45 | .010W | S45 | .005Mo |
| S45 | .015W | S45 | .010Mo |
| S45 | .005Ta | S45 | .015Mo |
| S45 | .010Ta | | |



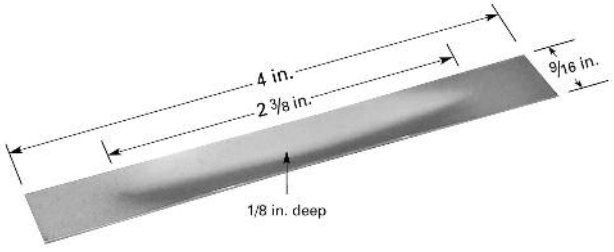
## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S46 | .005W | S46 | .005Mo |
| S46 | .010W | S46 | .010Mo |
| S46 | .005Ta | | |
| S46 | .010Ta | | |



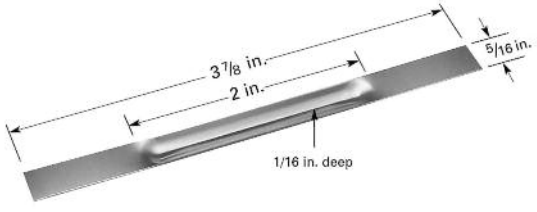

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S47 | .010W | S47 | .015Ta |
| S47 | .015W | S47 | .020Ta |
| S47 | .020W | S47 | .010Mo |
| S47 | .010Ta | S47 | .015Mo |



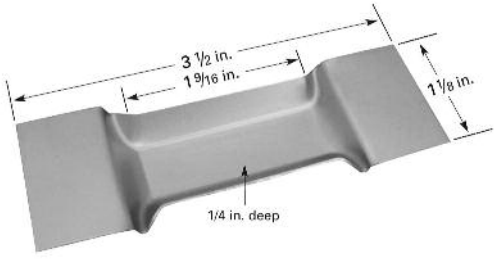

## BOAT SOURCE

| TYPE | MATERIAL |
|---|---|
| S48 | .005W |
| S48 | .010W |
| S48 | .010Ta |
| S48 | .010Mo |



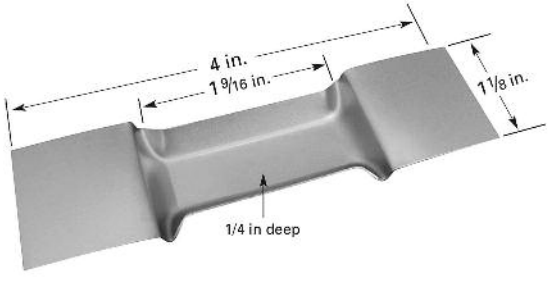

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S49 | .010W | S49 | .015Ta |
| S49 | .015W | S49 | .020Ta |
| S49 | .020W | S49 | .010Mo |
| S49 | .010Ta | S49 | .015Mo |



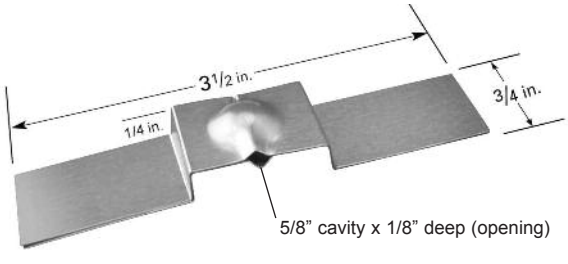

## BOAT SOURCE

| TYPE | MATERIAL | TYPE | MATERIAL |
|---|---|---|---|
| S50 | .010W | S50 | .015Ta |
| S50 | .015W | S50 | .020Ta |
| S50 | .020W | S50 | .010Mo |
| S50 | .010Ta | S50 | .015Mo |

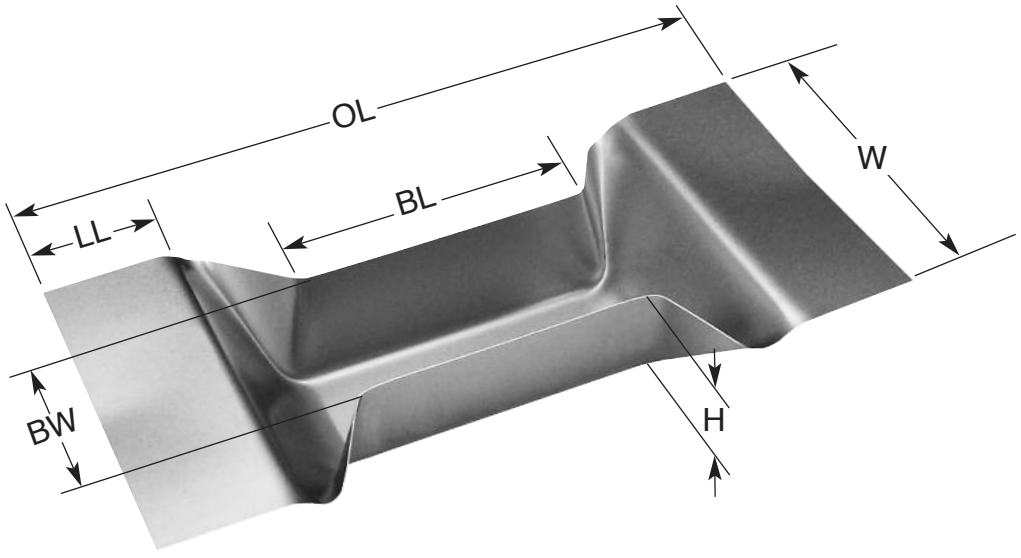



## BOAT SOURCE

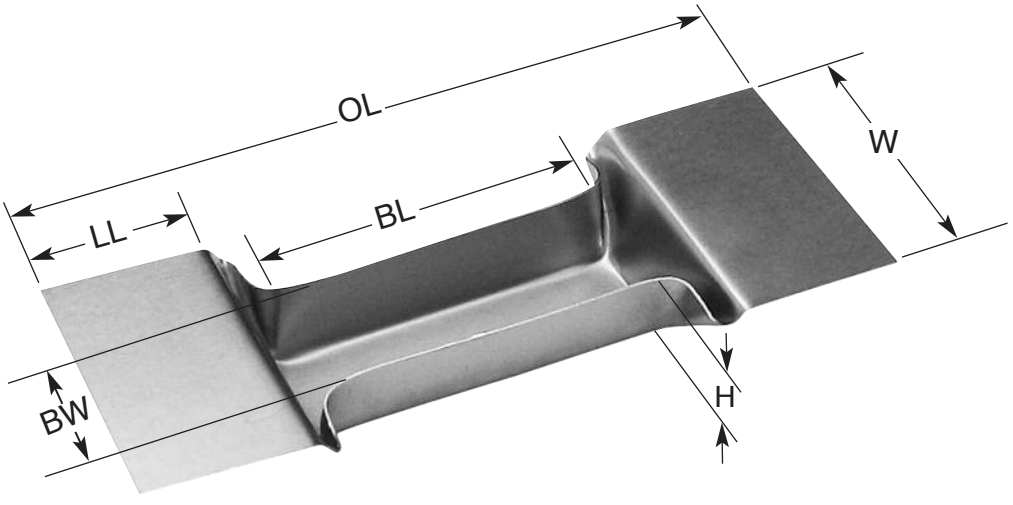
| TYPE | MATERIAL |
|---|---|
| S51 | .010W |
| S51 | .010Ta |
| S51 | .010Mo |



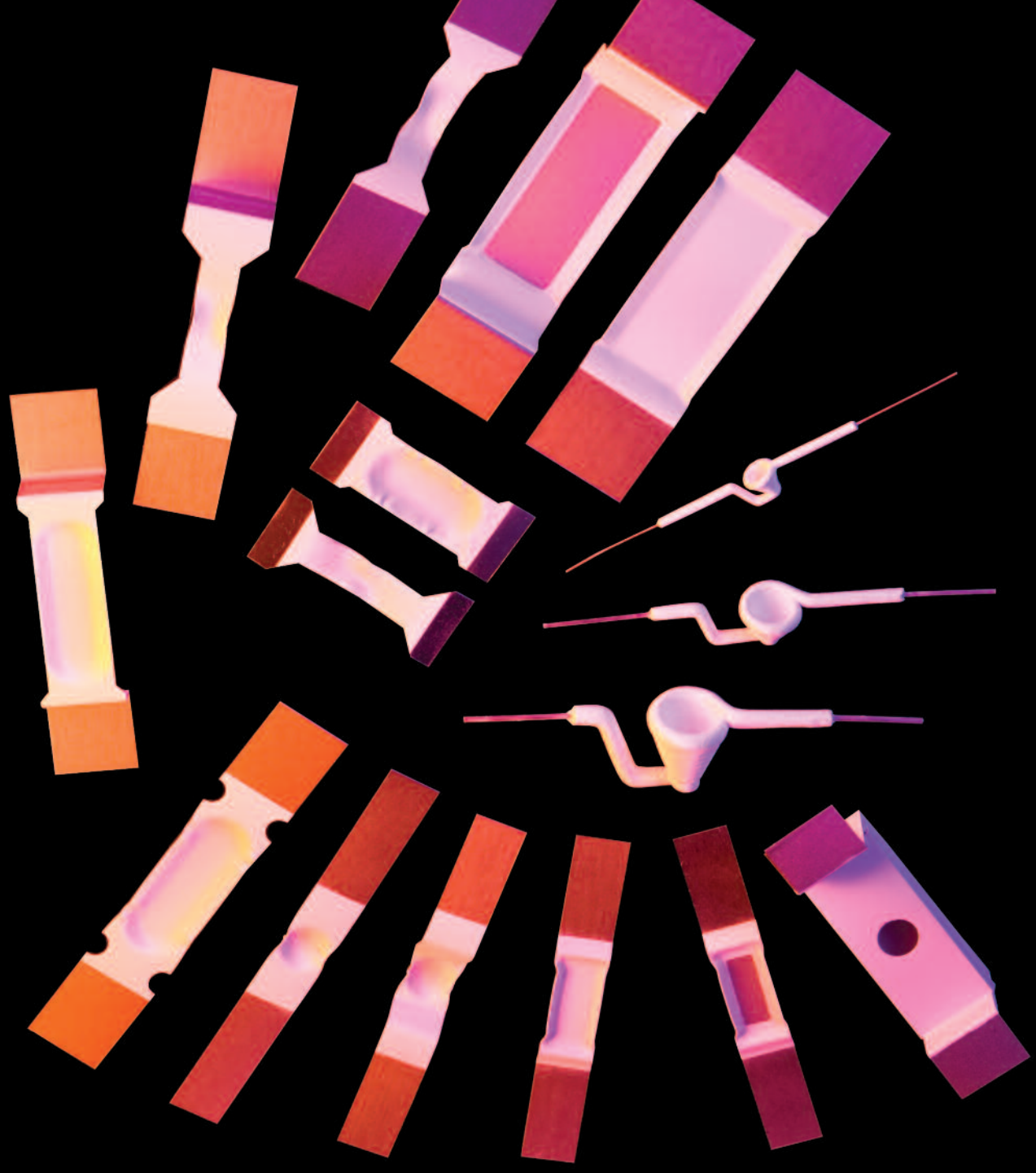
# FOLDED BOATS




| BASIC PART NUMBER | BL | BW | H | OL | W | LL | VOL | MATERIAL |
|---|---|---|---|---|---|---|---|---|
| FB1 | 1.88 | .75 | .73 | 4.5 | 2.13 | .75 | 17CC | AVAILABLE IN .005, .010, & .015 Mo & Ta<br>TUNGSTEN ON REQUEST |
| FB2 | 1.88 | 1.3 | .47 | 4.34 | 2.13 | .75 | 19CC | |
| FB3 | 3.75 | 1.0 | .50 | 6.16 | 2.13 | .82 | 31CC | |
| FB4 | 3.75 | .75 | .75 | 6.16 | 2.13 | .75 | 35CC | |
| AVAILABLE ON REQUEST: $AL_2O_3$ COATED INSIDE OR $AL_2O_3$ BARRIER TYPE | | | | | | | | |




| BASIC PART NUMBER | BL | BW | H | OL | W | LL | VOL | MATERIAL |
|---|---|---|---|---|---|---|---|---|
| FB10 | .66 | .45 | .43 | 1.42 | 1.25 | .38 | 2CC | AVAILABLE IN .005, .010, & .015 Mo & Ta<br>TUNGSTEN ON REQUEST |
| FB11 | 1.25 | .38 | .31 | 2.56 | 1.00 | .56 | 3CC | |
| FB12 | 1.56 | .50 | .31 | 2.94 | 1.13 | .69 | 4CC | |
| AVAILABLE ON REQUEST: $AL_2O_3$ COATED INSIDE OR $AL_2O_3$ BARRIER TYPE | | | | | | | | |

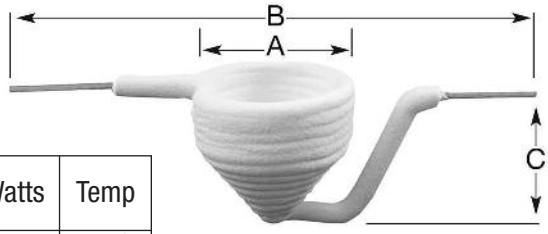


Alumina ($Al_2O_3$) coated evaporation sources have been developed to replace alumina crucibles for some specific applications. The advantages of this type of source is good heat transfer and the inertness of alumina with most metals. Also, the evaporant does not wet the alumina, resulting in no resistant change of the boat when the evaporant melts. Due to the non wetting characteristics of alumina, the evaporant forms a sphere when melted resulting in a point source.

This type of source will give long life compared to the non protected sources. Coated sources will require from thirty to fifty percent more power to effect an evaporation due to the difference in heat conduction. The alumina is semi-conductor grade and is applied to the boat by a plasma spray technique. Temperatures of 1850˚C should be avoided and when an evaporation is effected the power should be reduced slightly to avoid over heating.

**EVAPORATION SOURCE**

## Alumina Coated Tungsten Baskets




| Part Number | Wire Dia. | **"A"** Top I.D. | Inside Depth | **"B"** OAL | **"C"** Height | Volts | Amps | Watts | Temp |
|---|---|---|---|---|---|---|---|---|---|
| RDM-WBAO-1 | .020" | .150" | .225" | 4" | .375" | 5.70 | 11 | 63 | 1475˚C |
| RDM-WBAO-2 | .040" | .375" | .350" | 4" | .500" | 6.20 | 40 | 248 | 1475˚C |
| RDM-WBAO-3 | .040" | .420" | .425" | 4" | .575" | 6.90 | 39 | 272 | 1475˚C |
| RDM-WBAO-4 | .040" | .790" | .725" | 4" | .875" | 13.00 | 33 | 429 | 1475˚C |
| RDM-WBAO-5 | .050" | .500" | .775" | 4" | .925" | 7.00 | 50 | 350 | 1475˚C |
| RDM-WBAO-6 | .060" | .900" | .975" | 4" | 1.125" | 15.80 | 49 | 768 | 1475˚C |

Dash Numbers are in order of size (height)

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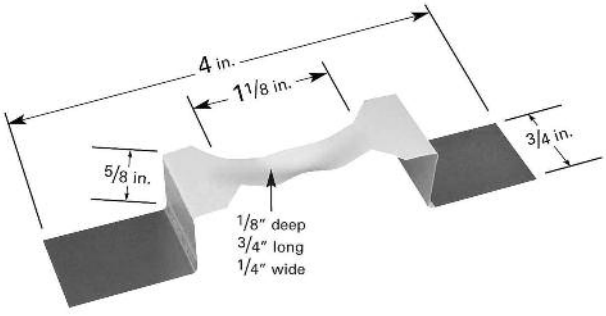
**EVAPORATION SOURCE**

## S1-AO-MO
## S1-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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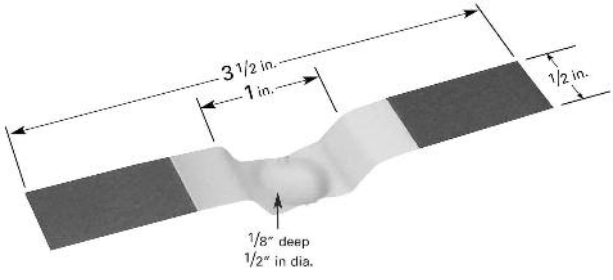
**EVAPORATION SOURCE**

## S2B-AO-MO
## S2B-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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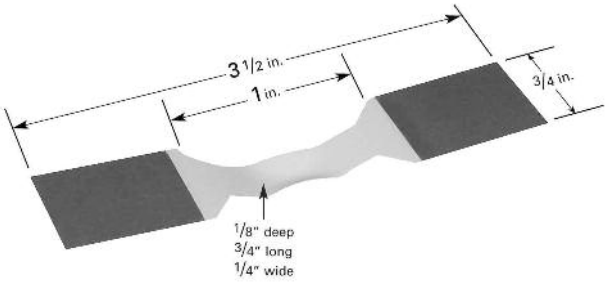
**EVAPORATION SOURCE**

## S3-AO-MO
## S3-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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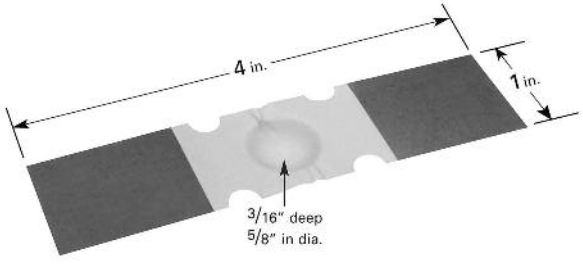
**EVAPORATION SOURCE**

## S8C-AO-MO
## S8C-AO-W

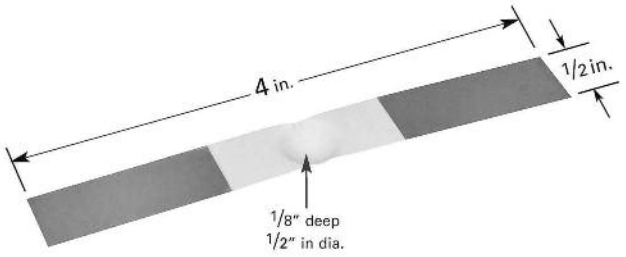
0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat



**EVAPORATION SOURCE**

## S9A-AO-MO
## S9A-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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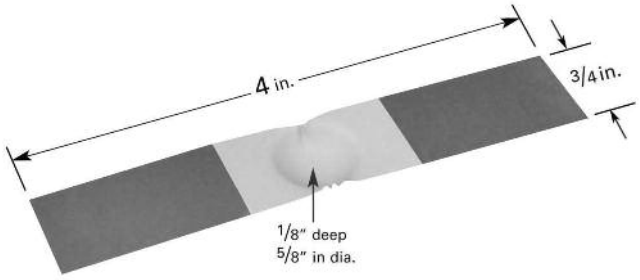
**EVAPORATION SOURCE**

## S9B-AO-MO
## S9B-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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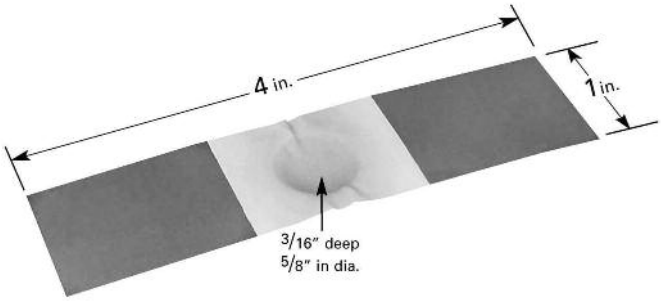
**EVAPORATION SOURCE**

## S9C-AO-MO
## S9C-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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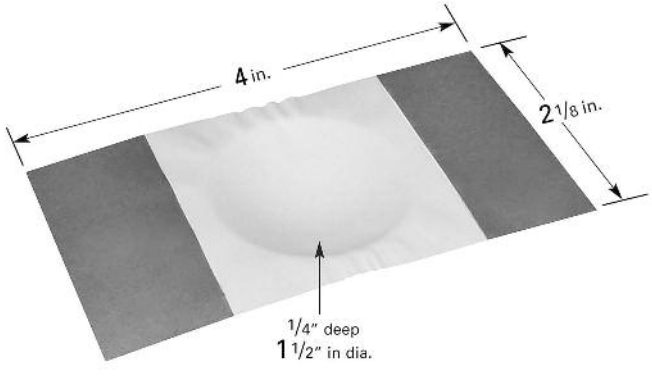
**EVAPORATION SOURCE**

## S9F-AO-MO

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat

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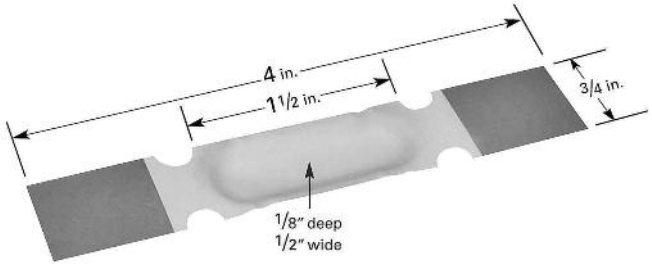
**EVAPORATION SOURCE**

## S21-AO-MO
## S21-AO-W

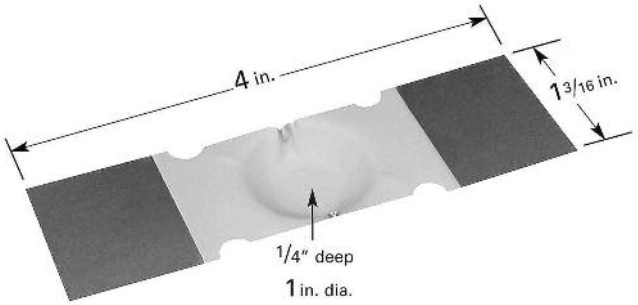
0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat



**EVAPORATION SOURCE**

## S29-AO-MO
## S29-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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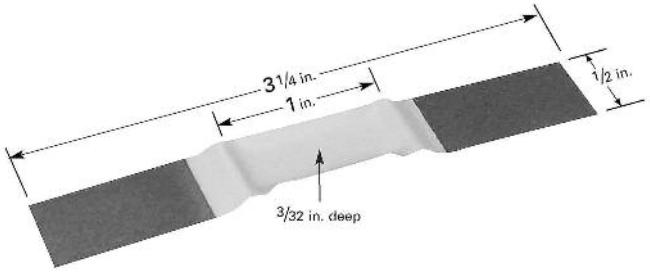
**EVAPORATION SOURCE**

## S35A-AO-MO
## S35A-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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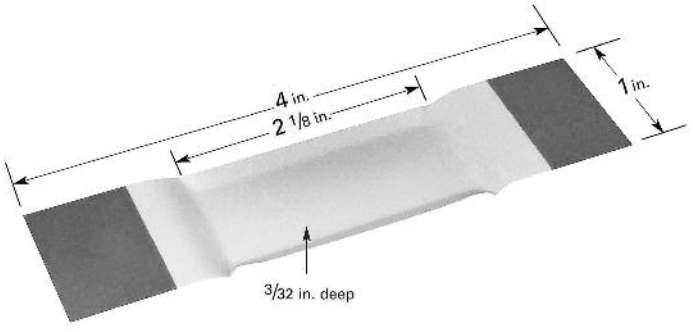
**EVAPORATION SOURCE**

## S36-AO-MO
## S36-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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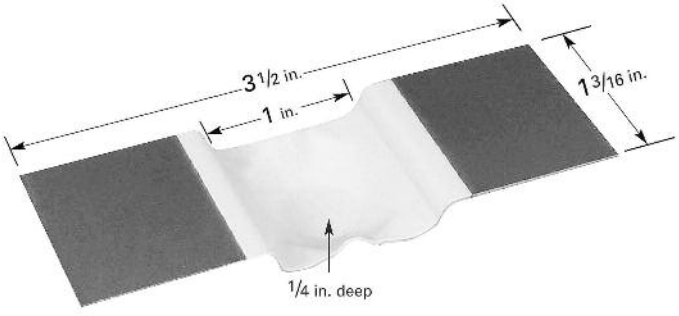
**EVAPORATION SOURCE**

## S37-AO-MO

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat

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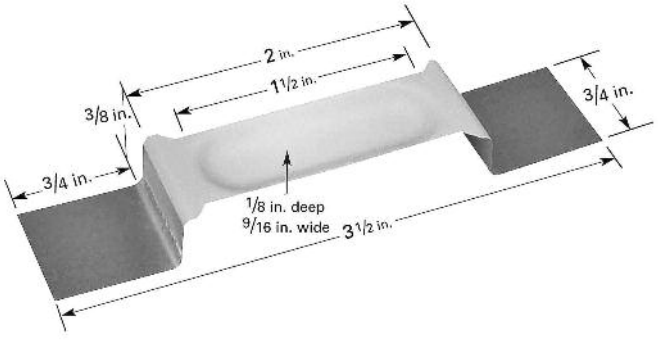
**EVAPORATION SOURCE**

## S38A-AO-MO
## S38A-AO-W

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat



## *TUNGSTEN & MOLYBDENUM BOATS WITH ALUMINA BARRIERS*

This type of source has been designed to give the benefit of a refractory metal boat and a ceramic barrier. The exposed metal area in the bottom of the boat allows the evaporant to be in good thermal contact with the source. The alumina barrier will inhibit the evaporant from creeping toward the heat sink or from wetting the entire boat.

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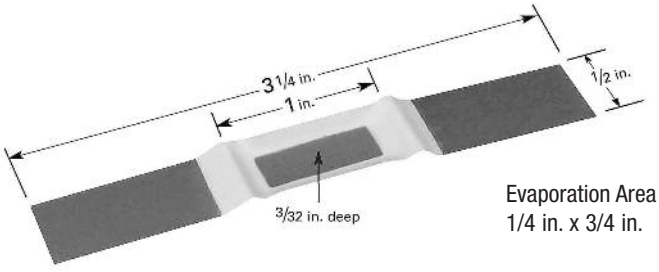
**EVAPORATION SOURCE**

**S35B-AO-MO**

**S35B-AO-W**




Evaporation Area
1/4 in. x 3/4 in.

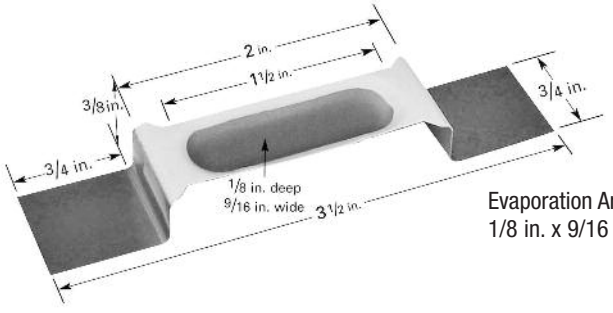
0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

---

**EVAPORATION SOURCE**

**S38B-AO-MO**

**S38B-AO-W**




Evaporation Area
1/8 in. x 9/16 in.

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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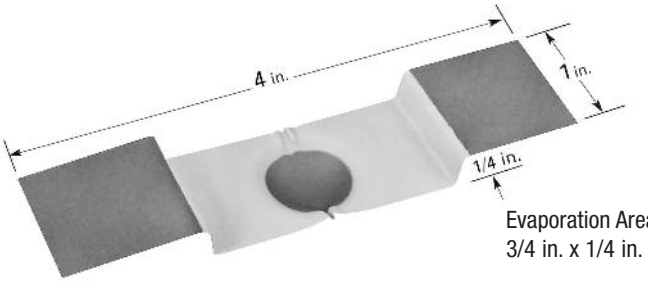
**EVAPORATION SOURCE**

**S42B-AO-MO**

**S42B-AO-W**




Evaporation Area
3/4 in. x 1/4 in.

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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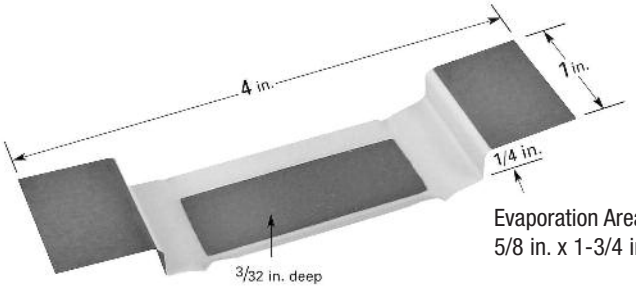
**EVAPORATION SOURCE**

**S45B-AO-MO**

**S45B-AO-W**




Evaporation Area
5/8 in. x 1-3/4 in.

0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat
0.010 Tungsten Boat

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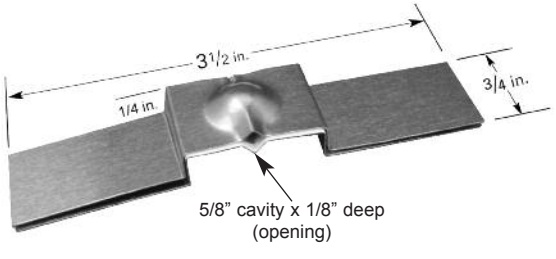
**EVAPORATION SOURCE**

**S51-AO-MO**

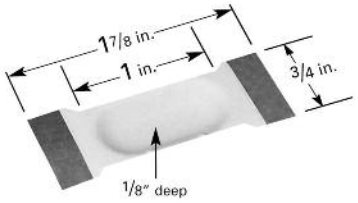



0.005 $Al_2O_3$ Coating
0.010 Molybdenum Boat

**EVAPORATION SOURCE**

## ME3-AO

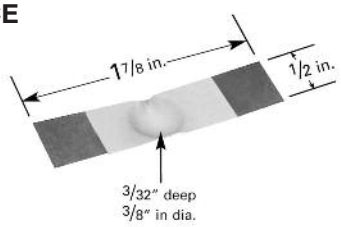
$Al_2O_3$ Coating
0.005 Mo Boat




**EVAPORATION SOURCE**

## ME4-AO

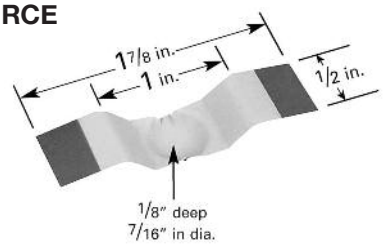
$Al_2O_3$ Coating
0.005 Mo Boat




**EVAPORATION SOURCE**

## ME6B-AO

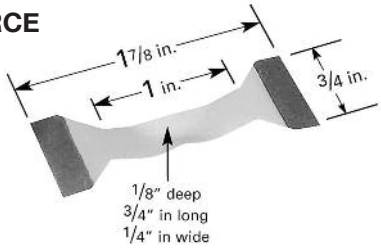
$Al_2O_3$ Coating
0.005 Mo Boat




**EVAPORATION SOURCE**

## ME9-AO

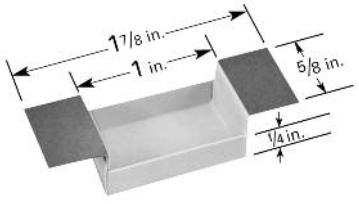
$Al_2O_3$ Coating
0.005 Mo Boat




**EVAPORATION SOURCE**

## ME22-AO

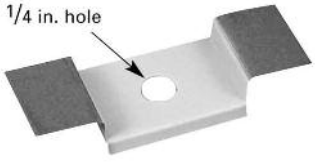
$Al_2O_3$ Coating
0.010 Ta Boat




**EVAPORATION SOURCE**

## ME22A-AO

$Al_2O_3$ Coating
0.005 Ta Cover

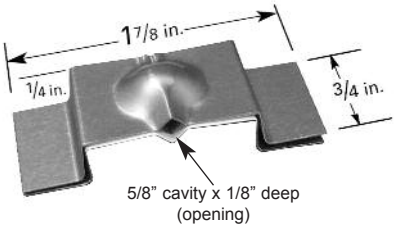



Both under and top surfaces coated

**EVAPORATION SOURCE**

## ME25-AO-MO

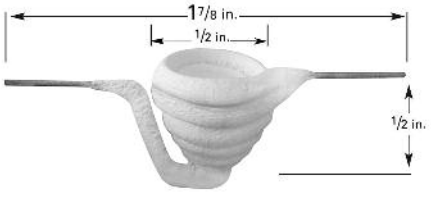
$Al_2O_3$ Coating
0.005 Mo Boat




**EVAPORATION SOURCE**

## ME17-.030W-AO

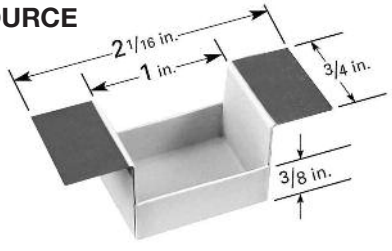
.030W




**EVAPORATION SOURCE**

## SB3-AO

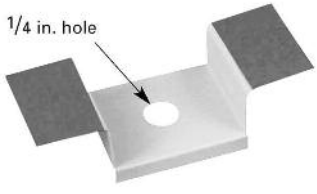
$Al_2O_3$ Coating
0.010 Ta Boat




**EVAPORATION SOURCE**

## SB3A-AO

$Al_2O_3$ Coating
0.005 Ta Cover

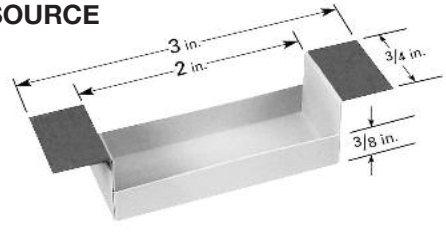



Both under and top surfaces coated

**EVAPORATION SOURCE**

## SB5-AO

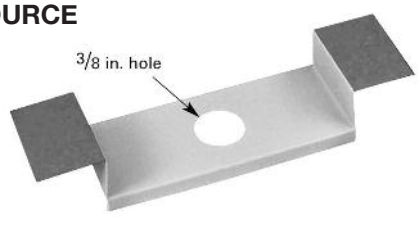
$Al_2O_3$ Coating
0.010 Ta Boat



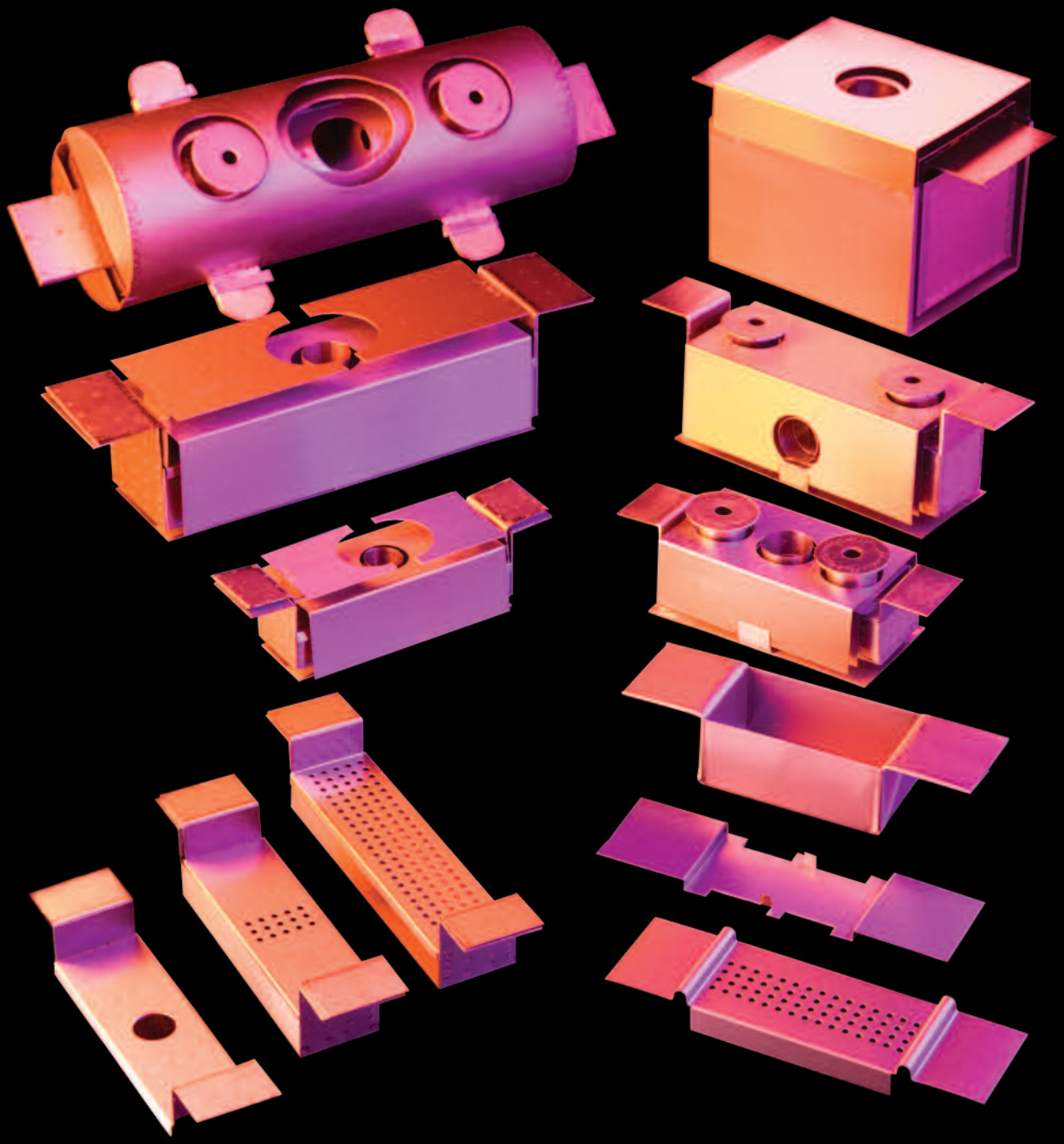

**EVAPORATION SOURCE**

## SB5A-AO

$Al_2O_3$ Coating
0.005 Ta Cover

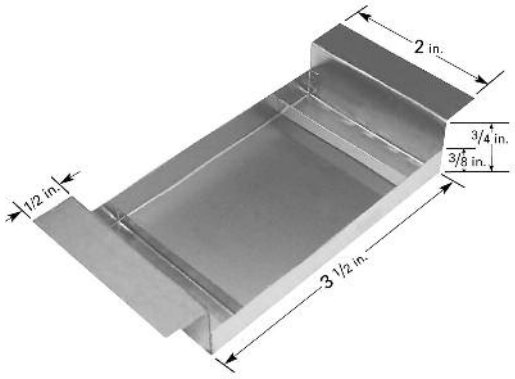



Both under and top surfaces coated

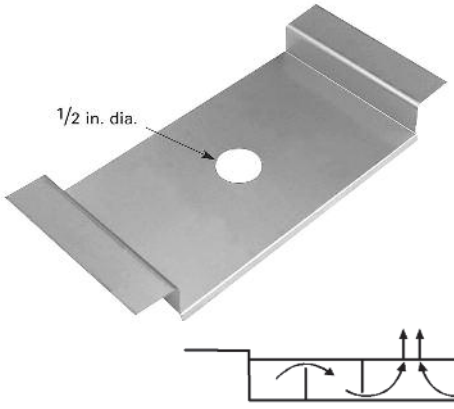


This section includes Special Tantalum Boats, Folded Baffled Box Sources and Shielded Baffled Box Sources. Special tantalum boats have welded corners and offer the benefits of long life along with covered evaporation areas to help reduce spitting and contain volatile materials. These are available in a variety of sizes and offer baffling in some cases. Custom sizes are easily made and available on request. Also shown are Folded Baffled Box sources, available in Molybdenum and Tantalum, and offer exceptional baffling, without heat shielding. These are available in varying capacities as standard items, as well as custom sizes on request. The last section includes Shielded Baffled Box Sources and High Volume Sources that are ideal for SiO, Zns and other subliming materials.

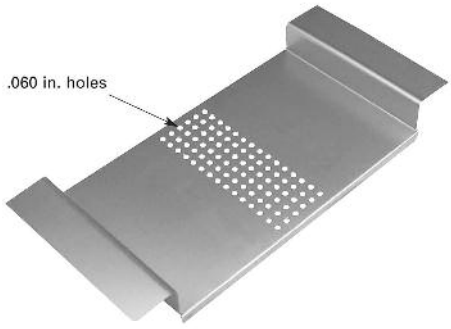
SB-1
(0.010 Ta)
Baffled

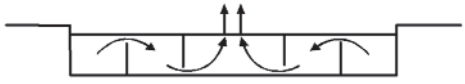



SB-1A Cover
(0.005 Ta)
Baffled




SB-1B Cover
(0.005 Ta)
Baffled



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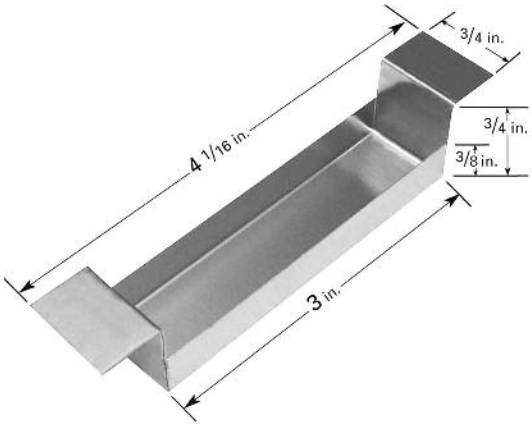
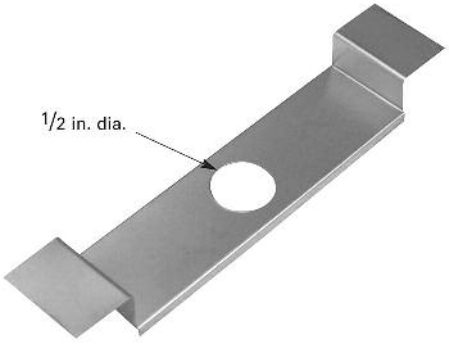
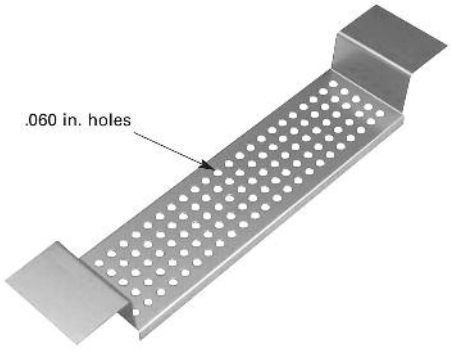
SB-2
(0.010 Ta)




SB-2A Cover
(0.005 Ta)




SB-2B Cover
(0.005 Ta)

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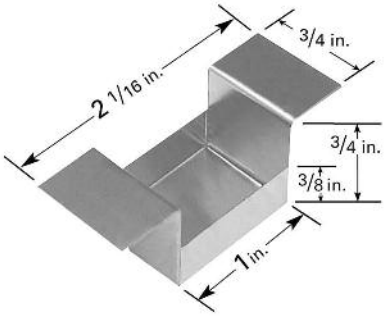
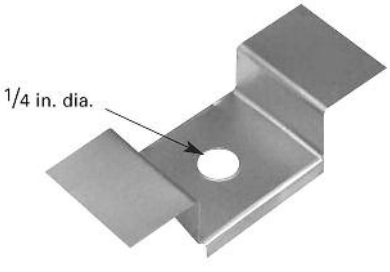
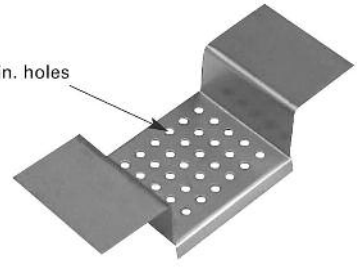
SB-3
(0.010 Ta)



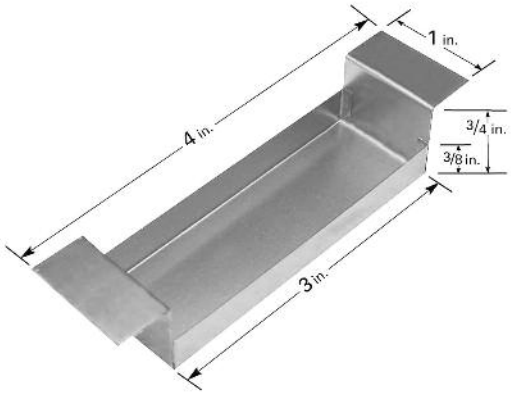

SB-3A Cover
(0.005 Ta)



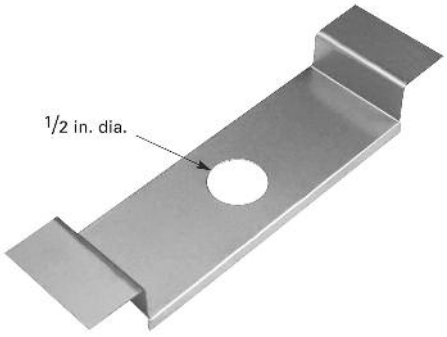

SB-3B Cover
(0.005 Ta)



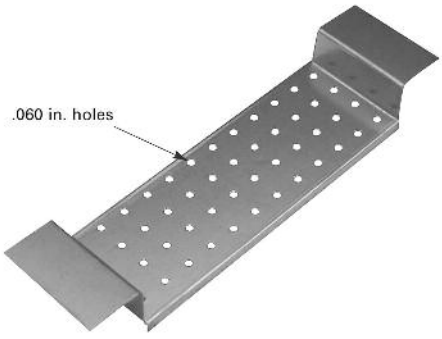
SB-4
(0.010 Ta)



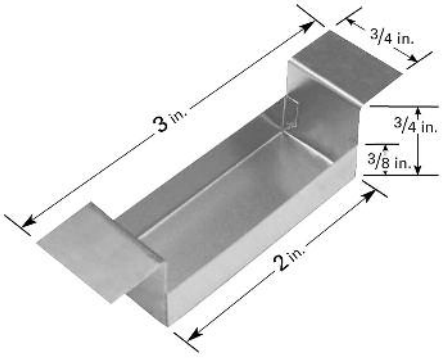

SB-4A Cover
(0.005 Ta)



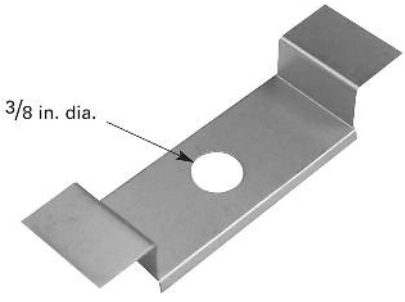

SB-4B Cover
(0.005 Ta)



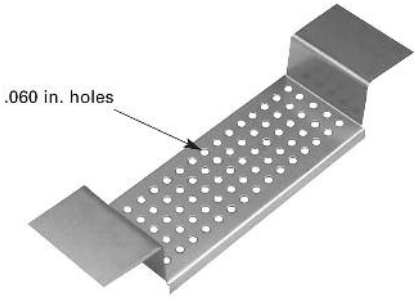

SB-5
(0.010 Ta)



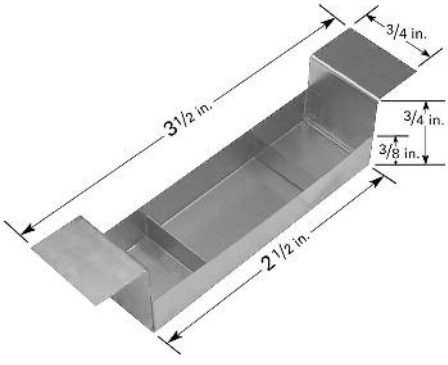

SB-5A Cover
(0.005 Ta)



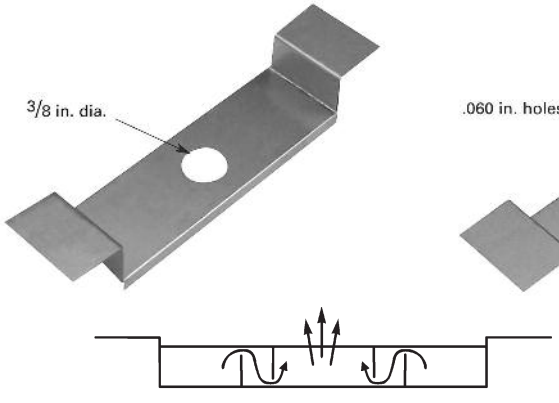

SB-5B Cover
(0.005 Ta)



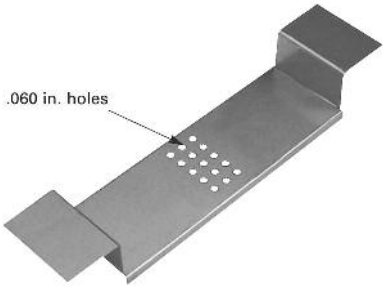

SB-6
(0.005 Ta)
Baffled



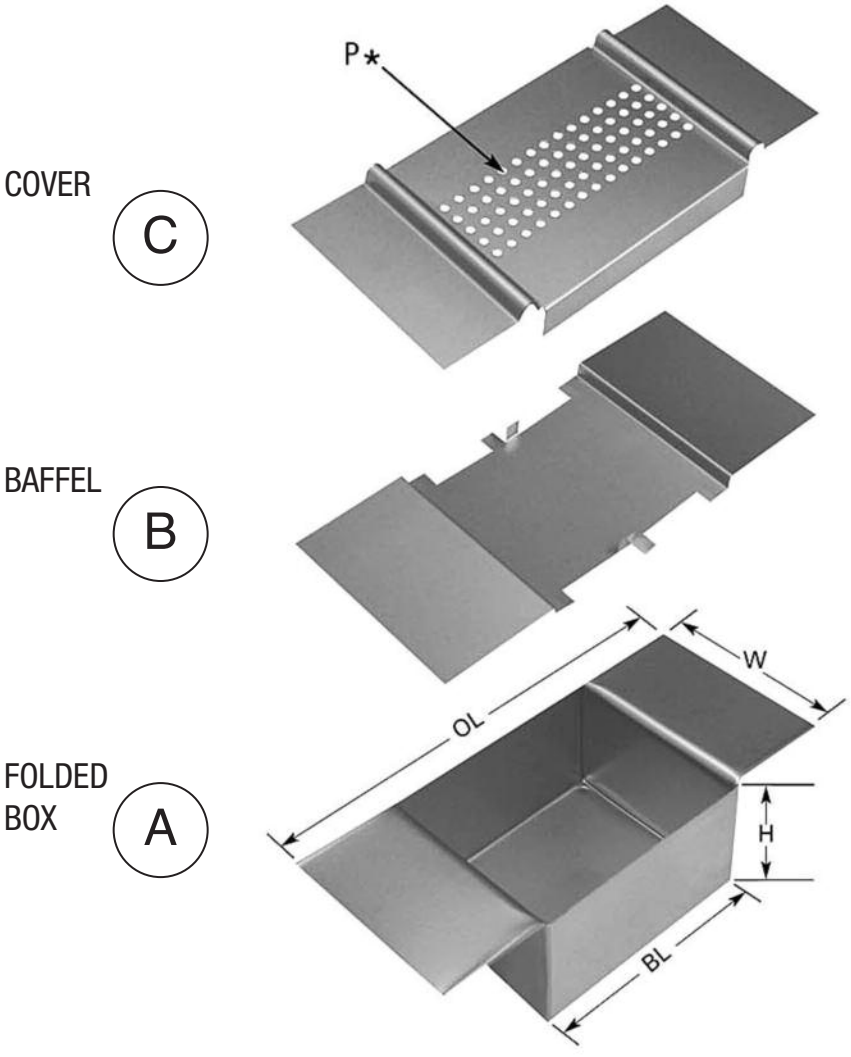

SB-6A Cover
(0.005 Ta)
Baffled Cover




SB-6B Cover
(0.005 Ta)
Baffled Cover



# FOLDED BAFFLED BOX SOURCE




**STANDARD MATERIALS**

| STANDARD | $Al_2O_3$ COATED |
|---|---|
| .005<br>Mo OR Ta | .005 OR .010<br>Mo OR Ta |
| .005<br>Mo OR Ta | NORMALLY<br>NOT USED |
| .005 OR .010<br>Mo OT Ta | .010<br>Mo OR Ta |

| BASIC PART NUMBER | BL | W | H | OL | P | VOL |
|---|---|---|---|---|---|---|
| SB-7 | 1.75 | 1 | .75 | 3.5 | 0.06 (60 HOLES) 4 X 15 ROWS | 21CC |
| SB-8 | 1.75 | 1.5 | 1 | 3.5 | 0.06 (75 HOLES) 5 X 15 ROWS | 43CC |
| SB-9 | 3.0 | 1.38 | .75 | 4.75 | 0.06 (115 HOLES) 5 X 23 ROWS | 50CC |
| SB-10 | 2.75 | 2 | 1.25 | 4 | 0.12 (65 HOLES) 5 X 13 ROWS | 112CC |

* = SINGLE HOLE SIZES AVAILABLE ON REQUEST

DIMENSIONS IN INCHES

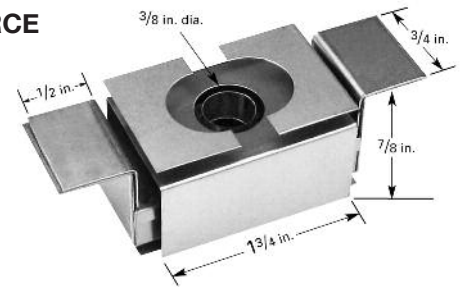
EXAMPLE: SB-10-C-.010 Ta-A0, MODIFIED, 3/4 DIA. HOLE IN CENTER

BASIC PART NUMBER
PART (COVER, BAFFLE BOX)
MATERIAL THICKNESS & TYPE
USE ONLY FOR $Al_2O_3$ COATED PARTS
LIST ANY MODIFICATIONS

**BAFFLED BOX SILICON MONOXIDE SOURCE**

**3.5 GRAM**

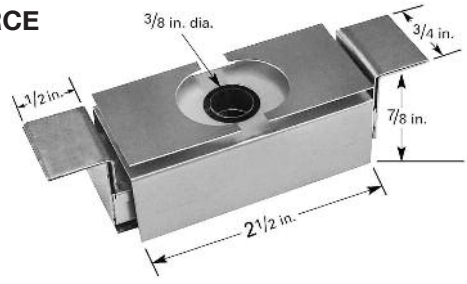
500 Watts




**BAFFLED BOX SILICON MONOXIDE SOURCE**

**5 GRAM**

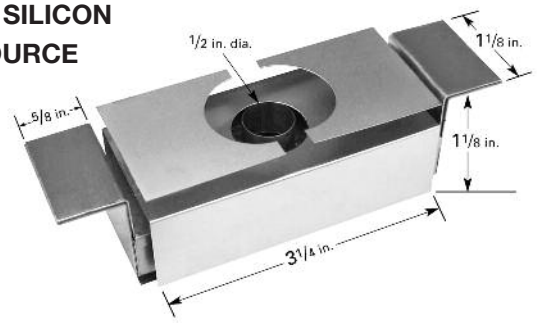
600 Watts




**BAFFLED BOX SILICON MONOXIDE SOURCE**

**10 GRAM**

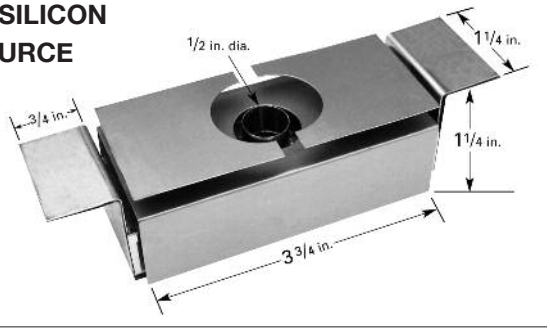
750 Watts




**BAFFLED BOX SILICON MONOXIDE SOURCE**

**20 GRAM**

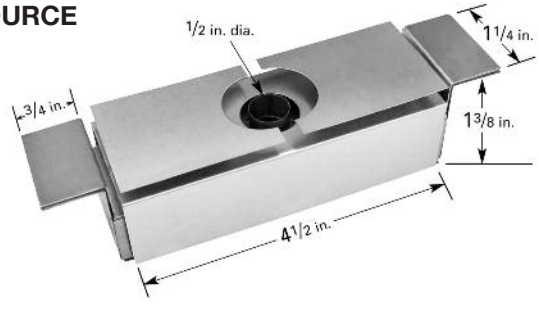
950 Watts




**BAFFLED BOX SILICON MONOXIDE SOURCE**

**40 GRAM**

1100 Watts

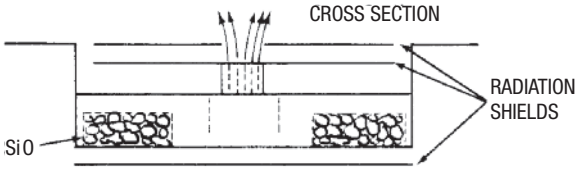



# "BAFFLED BOX" SILICON MONOXIDE SOURCES

The R.D. Mathis Company, "Baffled Box" Silicon Monoxide Source has proven to be an extremely successful method of depositing Silicon Monoxide.

Source material is positioned in the boat in two separate cavities, when heated it follows an indirect path through a series of baffles and then out the vertical chimney. The substrate cannot see the bulk source material at any time, this, essentially, eliminates any chance of spitting and streaming, which causes pinholes.

A paper describing the techniques of Silicon Monoxide deposition and the results of capacitor and resistor manufacturing utilizing the "Baffled Box" Source will be sent upon request...ask for "Silicon Monoxide Evaporation with "Multi-baffled Box Source" by Earl Olson of the Halex Corp. and R.D. Mathis.




| SOURCE | VERTICAL OR HORIZONTAL | INVERTED |
|---|---|---|
| 3.5 Gram | SM-8 | SM-9 |
| 5 Gram | SM-10 | SM-11 |
| 10 Gram | SM-12 | SM-13 |
| 20 Gram | SM-14 | SM-15 |
| 40 Gram | SM-16 | SM-17 |

Additional sizes are available upon request.

# NEW SILICON MONOXIDE SOURCES SO SERIES

This new silicon monoxide source design is an improved model of our very sucessful SM series. It incorporates the same type of baffling and shielding as the SM sources, insuring an indirect path from source material to substrate.

The new SO Series silicon monoxide source offers the following features: Longer life, eliminates leakage, loading without removal from system and "completely sealed" one unit construction.

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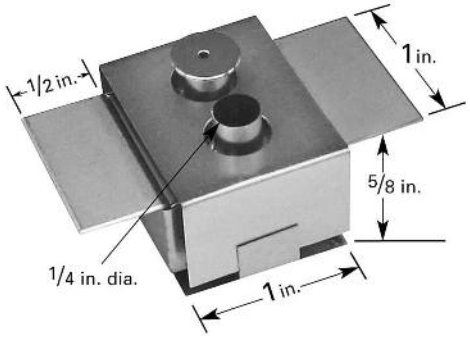
**SILICON MONOXIDE SOURCE SO SERIES**

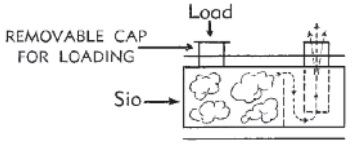
## SO-20

## 1.5 GRAM

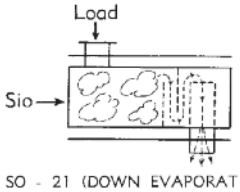
333 Amps
286 Watts

S0-20 Up Evaporation
S0-21 Down Evaporation




SO - 20 (UP EVAPORATION)




SO - 21 (DOWN EVAPORATION)

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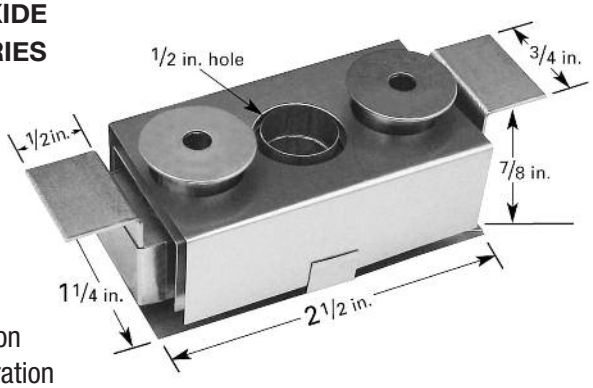
**SILICON MONOXIDE SOURCE SO SERIES**

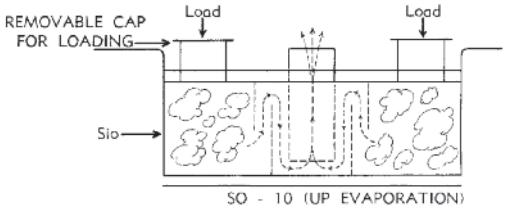
## SO-10

## 6.5 GRAM

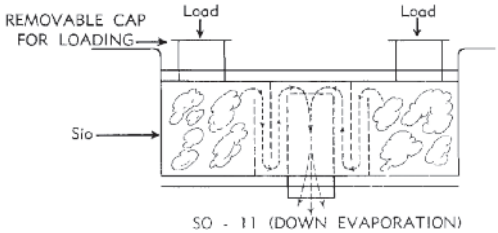
226 Amps
282 Watts

S0-10 Up Evaporation
S0-11 Down Evaporation




SO - 10 (UP EVAPORATION)




SO - 11 (DOWN EVAPORATION)

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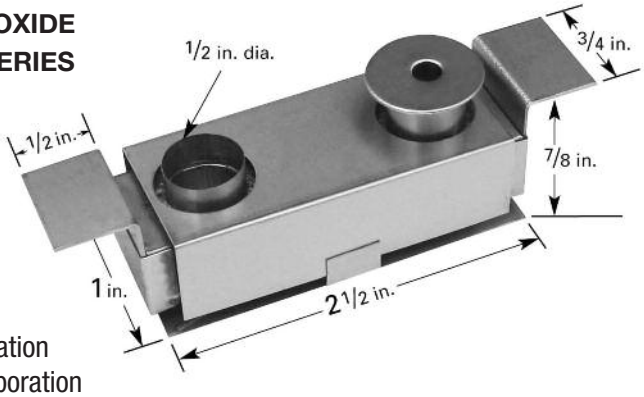
**SILICON MONOXIDE SOURCE SO SERIES**

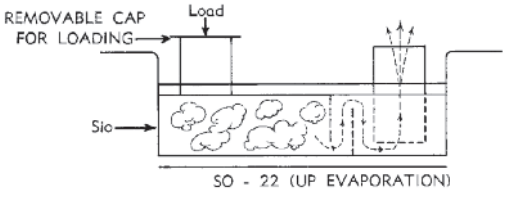
## SO-22

## 6.5 GRAM

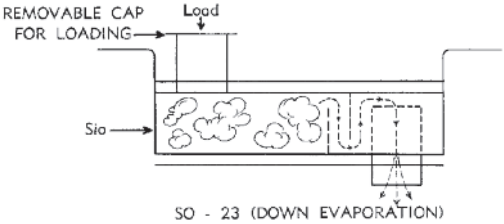
246 Amps
330 Watts

S0-22 Up Evaporation
S0-23 Down Evaporation




SO - 22 (UP EVAPORATION)




SO - 23 (DOWN EVAPORATION)

# NEW SILICON MONOXIDE SOURCES SO SERIES

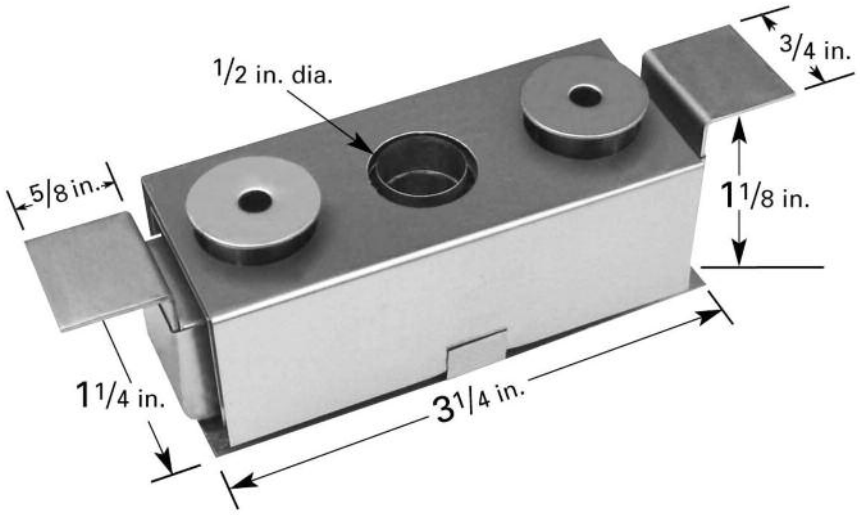
**SILICON MONOXIDE SOURCE SO SERIES**

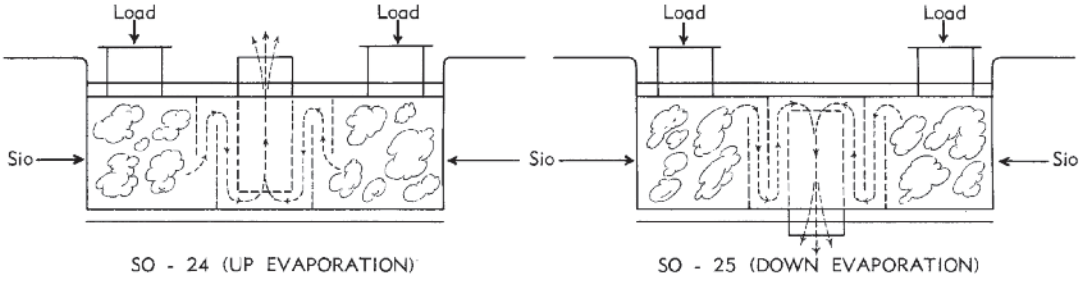
## SO-24

## 13 GRAM

264 Amps
441 Watts

S0-24 Up Evaporation
S0-25 Down Evaporation



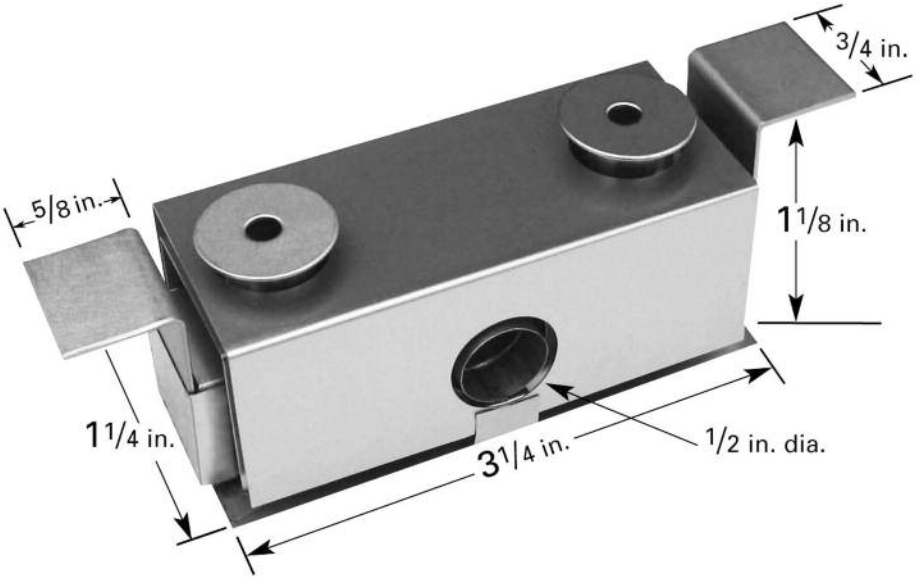

**SILICON MONOXIDE SOURCE SO SERIES**

## SO-26

## 13 GRAM

## Horizontal Source

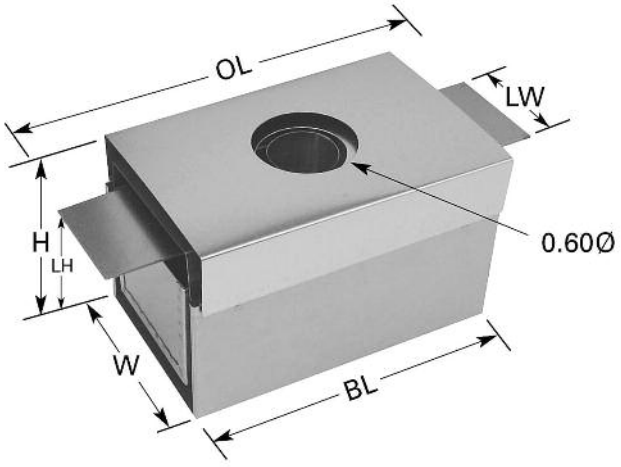
271 Amps
439 Watts



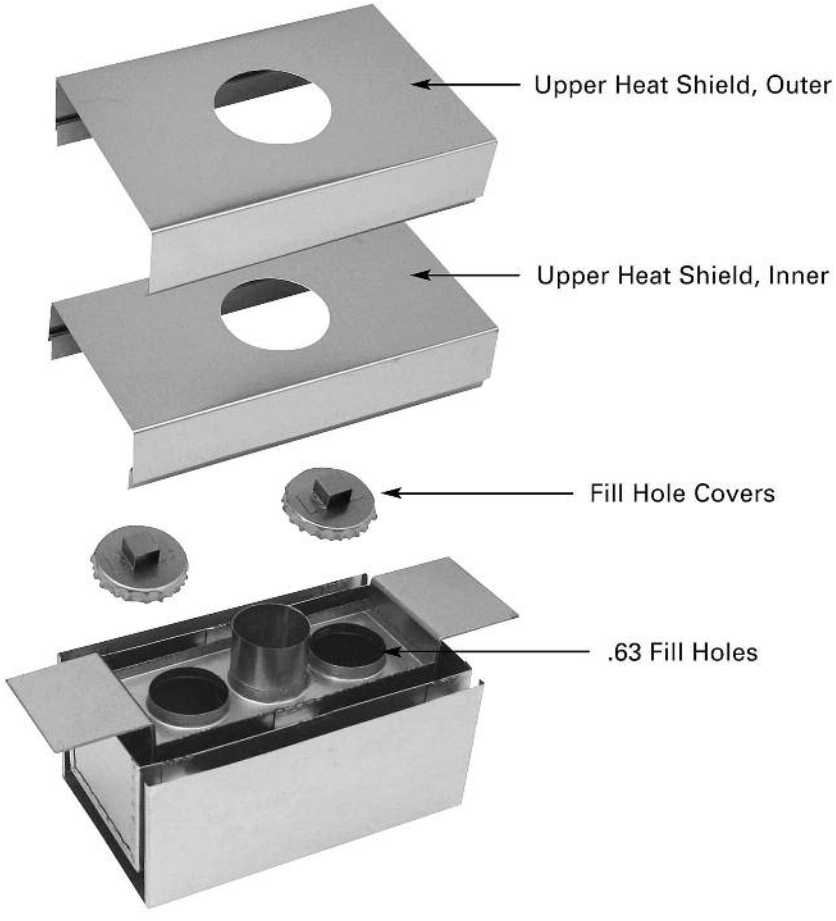

A technical bulletin is available upon request – “Silicon Monoxide – Properties and Evaporation Techniques” by R.D. Mathis

(Larger SO Series Sources available on request)

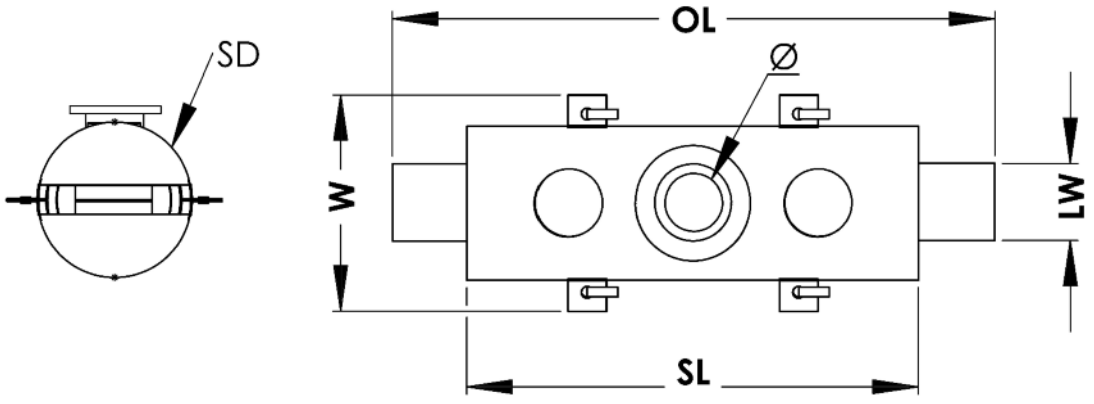
# DOUBLE SHIELDED SiO / ZnS EVAPORATION SOURCE



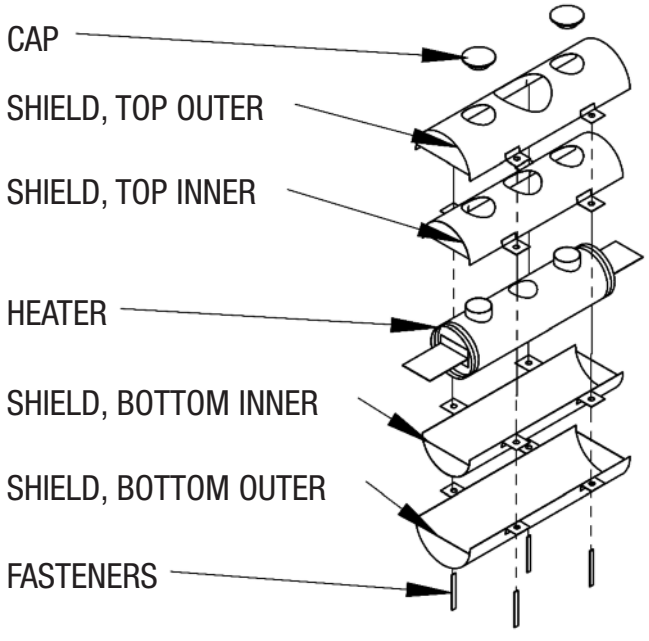

| BASIC PART NUMBER | LH | BL | W | H | OL | LW | VOL | MATERIAL |
|---|---|---|---|---|---|---|---|---|
| S0-32 | 1 1/4" | 2.88 | 1.80 | 1.79 | 4.0 | 1.0 | 20 cc | Ta – Heater & Fill Hole Covers |
| S0-34 | 2" | 2.88 | 1.80 | 2.42 | 4.0 | 1.0 | 40 cc | Nb – Lower Heat Shields |
| S0-36 | 2" | 2.88 | 2.30 | 2.42 | 4.0 | 1.5 | 60 cc | Mo – Upper Heat Shields |
| S0-38 | 3" | 2.88 | 2.30 | 3.42 | 4.0 | 1.5 | 90 cc | |
| AVAILABLE ON REQUEST: DOWN OR SIDE EVAPORATION SOURCE | | | | | | | | |



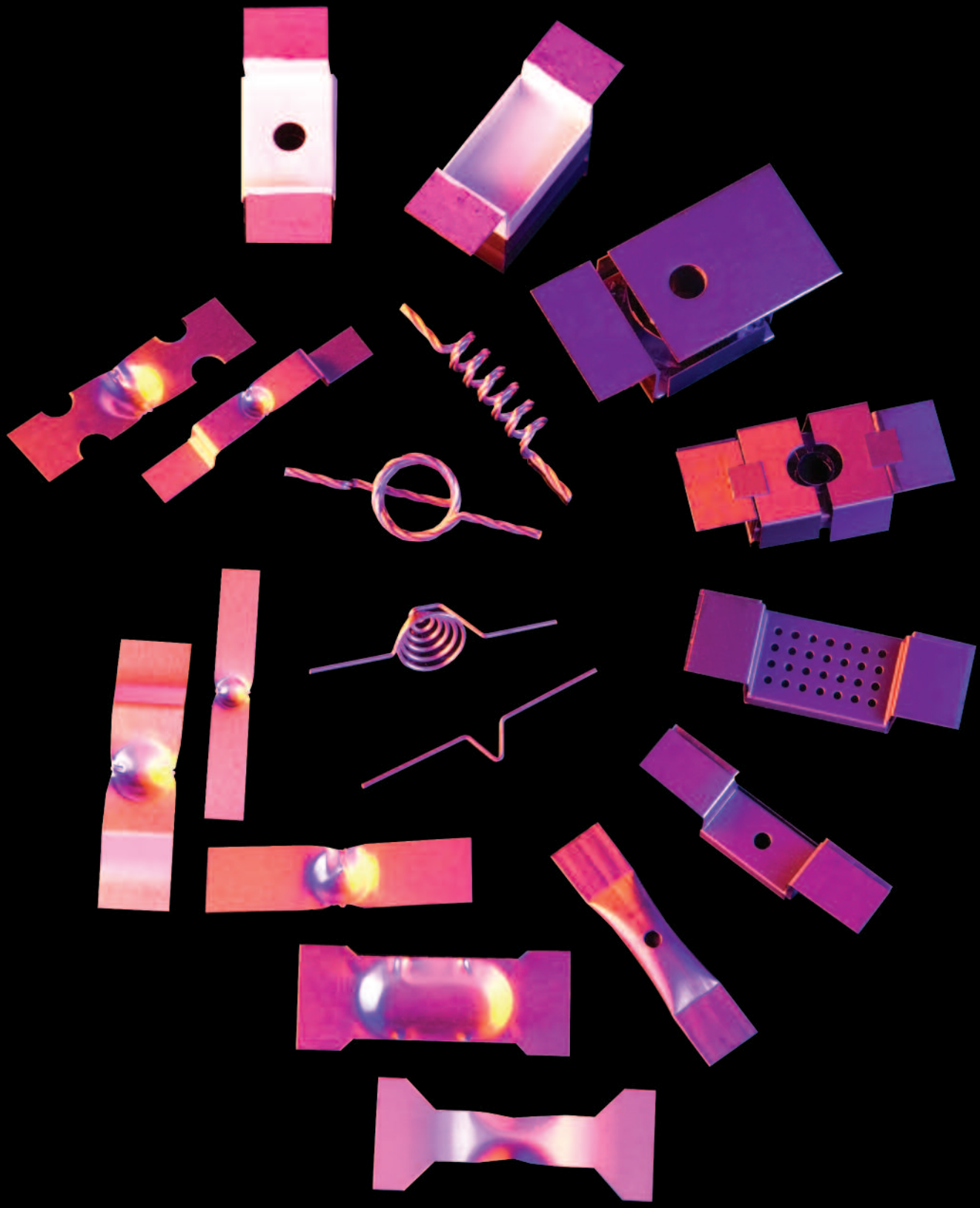
# HIGH VOLUME SiO/ZnS SOURCES




| PART NUMBER | SL | W | SD | LW | OL | Ø | VOL* |
|---|---|---|---|---|---|---|---|
| SO-100 | 5.875” | 3.250” | 2.000” | 0.750” | 7.625” | 0.750” | 100 cc |
| SO-150 | 5.875” | 3.500” | 2.250” | 0.750” | 7.625” | 0.750” | 150 cc |
| SO-200 | 5.875” | 3.750” | 2.500” | 1.500” | 8.125” | 0.750” | 200 cc |
| SO-250 | 5.875” | 4.250” | 3.000” | 2.250” | 7.250” | 0.750” | 250 cc |
| SO-300 | 5.875” | 4.250” | 3.000” | 1.000” | 8.125” | 0.750” | 300 cc |
| SO-500 | 8.625” | 4.250” | 3.000” | 2.250” | 11.000” | 0.750” | 500 cc |
| SO-800 | 8.625” | 6.000” | 4.800” | 2.000” | 10.150” | 1.000” | 800 cc |
| SO-1000 | 7.875” | 6.000” | 4.800” | 2.000” | 11.000” | 1.000” | 1000 cc |
| SO-1500 | 8.250” | 6.375” | 5.188” | 2.000” | 12.000” | 1.000” | 1500 cc |
| SO-2000 | 8.375” | 7.188” | 5.938” | 2.500” | 11.500” | 1.000” | 2000 cc |



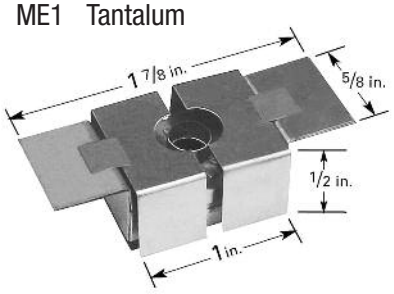

*Volumes shown are maximums. Recommended usage is 50% of volumes indicated



Our Micro-Electronic sources represent a full line of smaller size sources that are similar to the standard size sources in our catalog. The overall length on these sources is slightly less than 2 inches, in most cases. The smaller sources are ideal for lower power systems or processes that require small amounts of evaporants. Custom sizes and modifications of these sources are available on request.

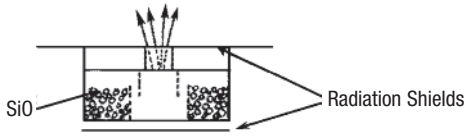
TYPE MATERIAL

ME1 Tantalum



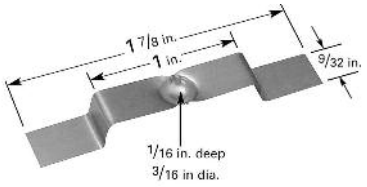

Silicon Monoxide and Cadmium Sulfide Source. This source is similar to the SM 10 Baffled Box. The capacity is approximately 2 grams.

.7 VOLTS 129 AMPS 95 WATTS



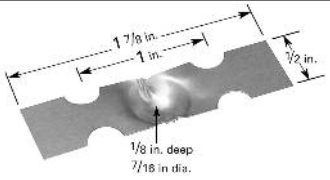

TYPE MATERIAL

ME7- .005W
ME7- .005Ta
ME7- .005Mo



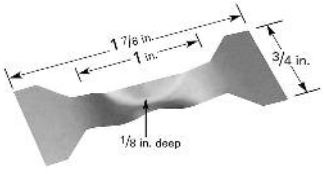

TYPE MATERIAL

ME8- .005W
ME8- .005Ta
ME8- .005Mo

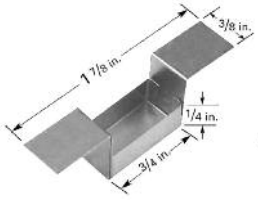



TYPE MATERIAL

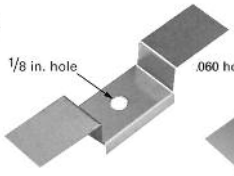
ME9- .005W
ME9- .005Ta
ME9- .005Mo



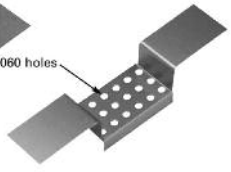

ME 2
(.005 Ta)




ME 2A
Cover
(.005 Ta)

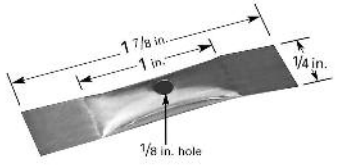



ME 2B
Cover
(.005 Ta)



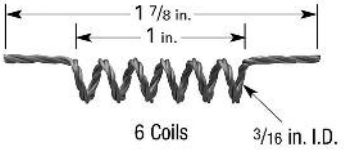

TYPE MATERIAL

ME10- .005Ta



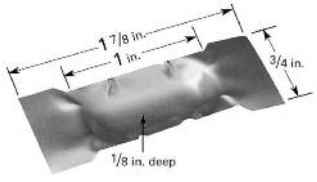

TYPE MATERIAL

ME11- .030W
ME11- 3x.025W



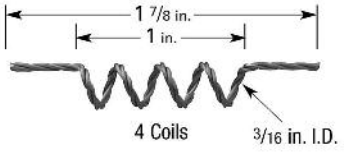

TYPE MATERIAL

ME3- .005W
ME3- .005Ta
ME3- .005Mo



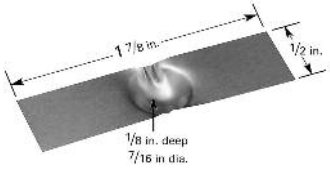

TYPE MATERIAL

ME12- .030W
ME12- 3x.025W



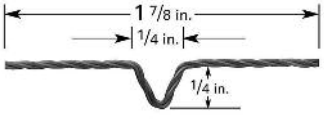

TYPE MATERIAL

ME4- .005W
ME4- .005Ta
ME4- .005Mo



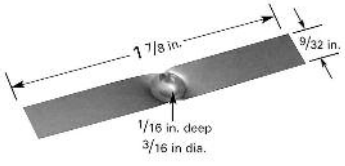

TYPE MATERIAL

ME13A- .030W
ME13A- 3x.025W



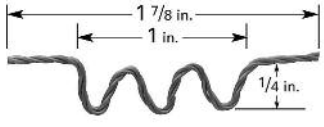

TYPE MATERIAL

ME5- .005W
ME5- .005Ta
ME5- .005Mo



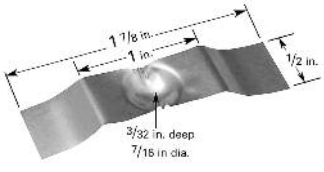

TYPE MATERIAL

ME13B- .030W
ME13B- 3x.025W



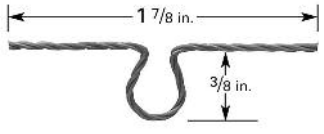

TYPE MATERIAL

ME6A- .005W
ME6A- .005Ta
ME6A- .005Mo



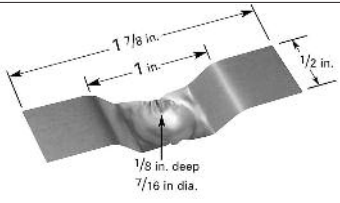

TYPE MATERIAL

ME13C- .030W
ME13C- 3x.025W



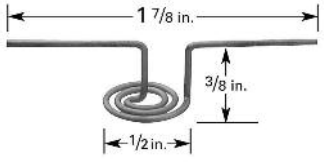

TYPE MATERIAL

ME6B- .005W
ME6B- .005Ta
ME6B- .005Mo

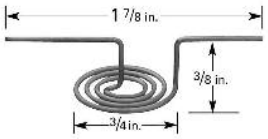



TYPE MATERIAL

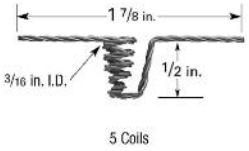
ME14- .030W
ME14- .040W



TYPE MATERIAL
ME15- .030W
ME15- .040W

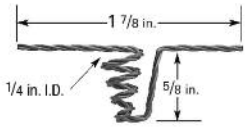



TYPE MATERIAL
ME16A- .030W
ME16A- 3x.025W



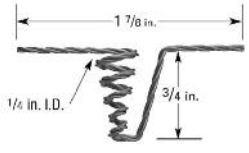

5 Coils

TYPE MATERIAL
ME16B- .030W
ME16B- 3x.025W



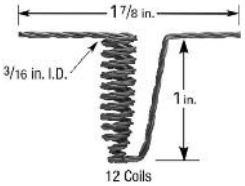

4 Coils

TYPE MATERIAL
ME16C- .030W
ME16C- 3x.025W



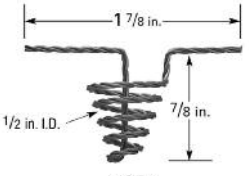

5 Coils

TYPE MATERIAL
ME16D- .030W
ME16D- 3x.025W



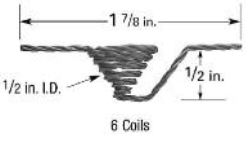

12 Coils

TYPE MATERIAL
ME16E- .030W
ME16E- 3x.025W



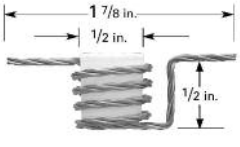

5 Coils

TYPE MATERIAL
ME17- .030W
ME17- 3x.025W

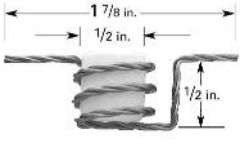



6 Coils

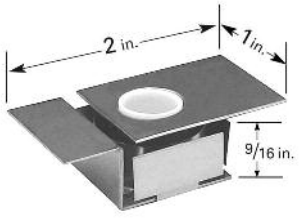
TYPE MATERIAL
ME18A- 3x.025W
ME18A- 3x.030W
Use with C1 Crucible



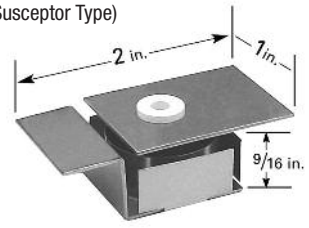

TYPE MATERIAL
ME18B- 3x.025W
ME18B- 3x.030W
Use with C9 Crucible



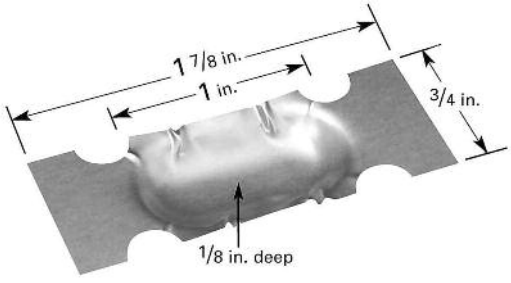

TYPE
ME19
Use with C1 and C9 Crucible
Crucible size 1/2 in. x 1/2 in.



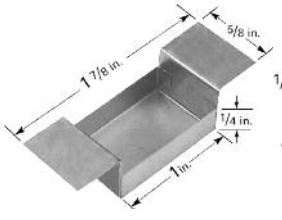

TYPE
ME20
Use with C10 Crucible
Crucible size 1/2 in. x 1/4 in.
(Susceptor Type)



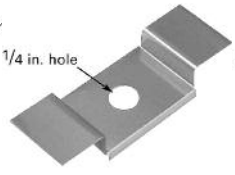

TYPE MATERIAL
ME21- .005W
ME21- .005Ta
ME21- .005Mo



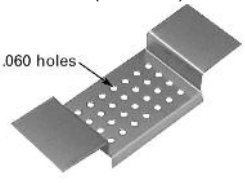

ME 22
(.005 Ta)




ME 22A
Cover
(.005 Ta)

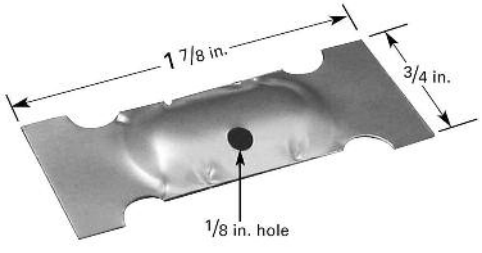



ME 22B
Cover
(.005 Ta)




TYPE MATERIAL
ME23- .005W
ME23- .005Ta
ME23- .005Mo

(Covered
Boat Source)




TYPE MATERIAL
ME24- .005W
ME24- .005Ta
ME24- .005Mo

(Covered
Boat Source)