Redcoil Mini Nozzle Band and Cartridge Heaters

INTRODUCTION AND TECHNICAL REFERENCE

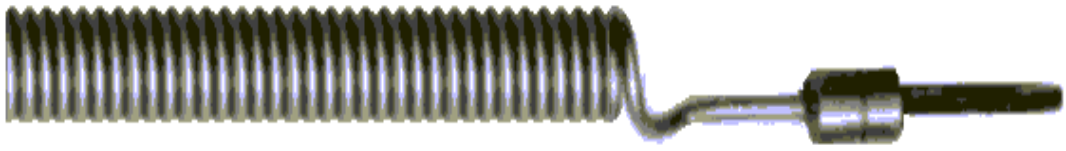
Prime consideration must be given to the selection of the heating element material and design since this is the limiting component in high performance coil heaters.

Major operational parameters involved include maximum temperature, time at maximum temperature, and both number and rate of temperature cycles. Chemical and metallurgical effects involved include grain growth, element evaporation (especially in grain boundaries), diffusion, ordering and creep.

AKINSUN application engineers are qualified to help in your selection and design. To minimize control problems and shifts in heat flux profiles with changing temperatures, heating element should have very low temperature coefficients of resistivity (0.0001 per °C).

They should be stabilized with appropriate chemical additives that inhibit grain growth. Conventional heating alloys such as the Nichromes, Tophets, Chromels and Kanthals (among others) have even lower coefficients and have stabilizing additives. Certain nickel base alloys such as some Inconels, some Hastelloys and some Cupro-Nickel alloys exhibit similar characteristics. Pure metals do not normally make good heating elements because they have high temperature coefficient of resistivity and are not stabilized. This would cause a large variation in resistance with a change in temperature and would interfere with the desired operation and heat flux profile of many types of heaters.

Coiled Cartridge Heater



"E" Style Termination

Features

- Withstands shock and vibration
- Good contact with walls of holes
- Fast time responds
- Suitable for temperatures up to 600°C (1115°F)
- High Watt density
- Sheath is welded closed at the end for a complete seal
- Can be supplied with or without thermocouple
- Gives good contact with walls of hole
- Easy to remove from blind hole - does not seize
- Flexible
- Inserted into rough drilled hole of curved hole

These heaters could be used as direct replacement for cartridge heaters. Especially where the holes have enlarged due to repetitive drilling during replacing cartridge heater.

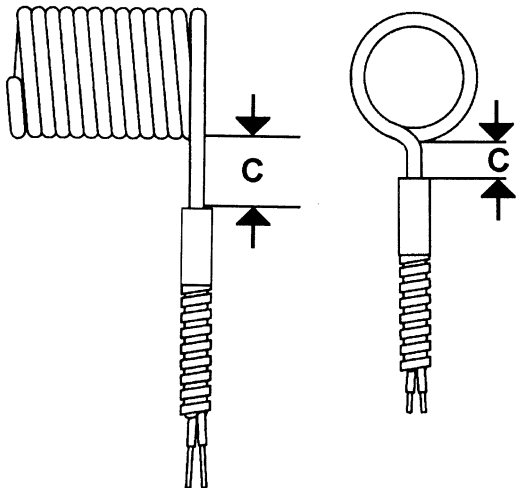
Specify exact outside diameter of the coil length, watts, volts and cold tail. Some of the readily available sizes are mentioned in the following table.

Sprue Bushing Redcoil Heaters

STYLES AND TERMINATIONS

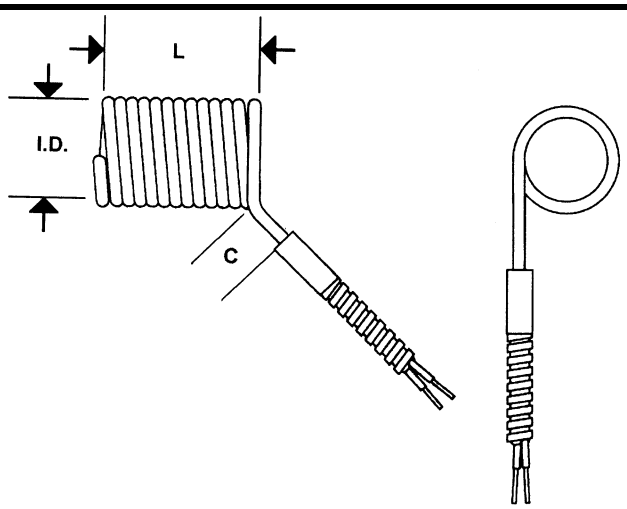
STYLE A

Leads exit 90° to axis of heater.



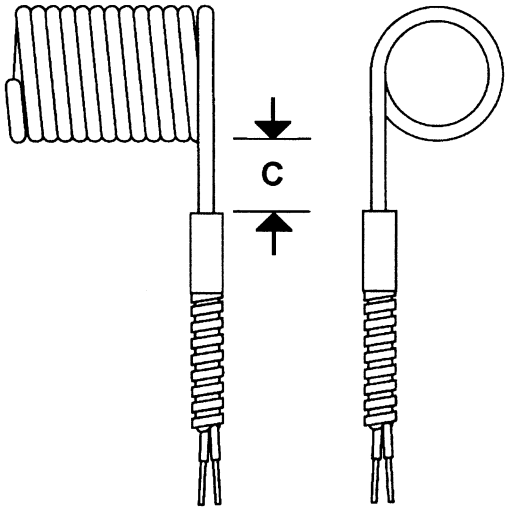
STYLE B

Leads exit @ 45° to axis of heater, tangent to outer circle.



STYLE C

Leads exit @ 90° to axis but tangent to the outer circle

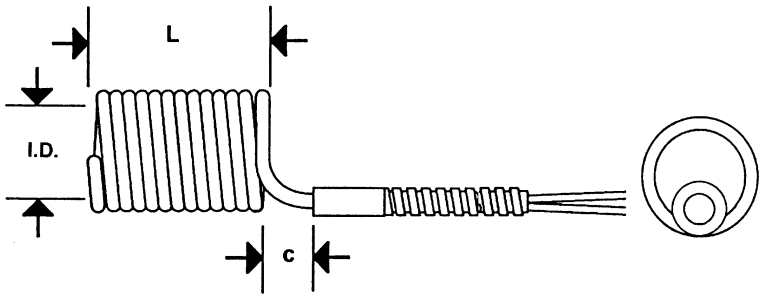


Sprue Bushing Redcoil Heaters

STYLES AND TERMINATIONS

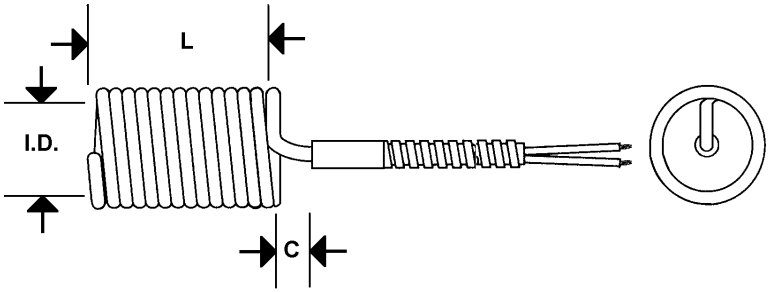
STYLE D

Leads exit parallel to axis from the center.



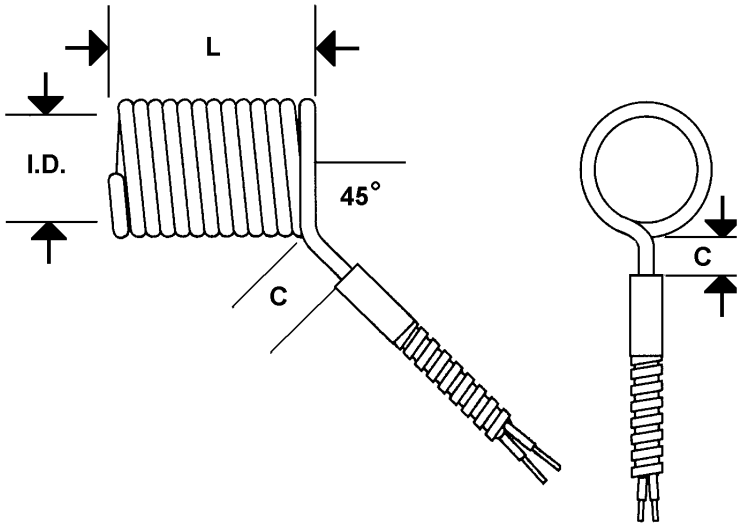
STYLE E

Leads exit parallel to axis from the center.



STYLE F

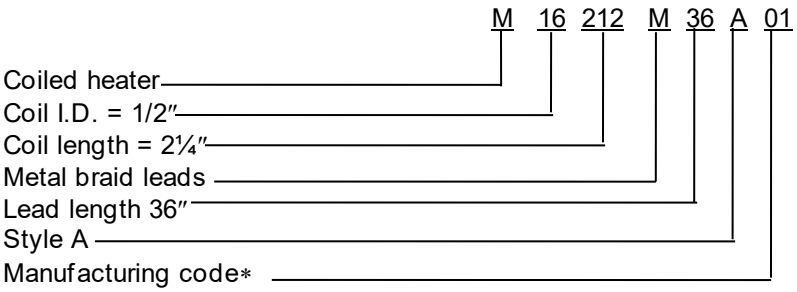
Leads exit 45° from axis off the side.



Sprue Heaters

ORDERING INFORMATION

Order code example: M16212M36A01



* Assigned at the time of manufacturing

FRACTION	CODE
1/32	01
1/16	02
1/8	04
1/4	08
1/2	16
5/8	20
3/4	24

Hot Sprue Bushing Redcoil Heaters

STANDARD SIZES AND RATINGS

CATALOG NUMBER	INSIDE DIA. ±.003 IN.	LENGTH IN.	WATTS	VOLTS	STYLE	LEADS	
						TYPE	LENGTH
M16420A48B01	.500	4.625	300	120	B	CABLE	48″
M16420A48C01	.500	4.625	300	120	C	CABLE	48″
M16212M36A01	.500	2.375	325	120	A	BRAID	36″
M16128M36A01	.500	1.875	340	120	A	BRAID	36″
M16228M36A01	.500	2.875	350	120	A	BRAID	36″
M16312M36A01	.500	3.375	400	120	A	BRAID	36″
M16216A48B01	.500	2.500	450	120	B	CABLE	48″
M16216A48C01	.500	2.500	450	120	C	CABLE	48″
M16412M36A01	.500	4.375	450	120	A	BRAID	36″
M16512M36A01	.500	5.375	550	120	A	BRAID	36″
M16612M36A01	.500	6.375	650	120	A	BRAID	36″
M16420A48B01	.500	4.625	300	240	B	CABLE	48″
M16420A48C01	.500	4.625	300	240	C	CABLE	48″
M16216A48B01	.500	2.500	450	240	B	CABLE	48″
M16216A48C01	.500	2.500	450	240	C	CABLE	48″
M16215M36A01	.500	2.460	760	240	A	BRAID	36″
M16415M36A01	.500	4.460	1250	240	A	BRAID	36″
M16615M36A01	.500	6.460	1800	240	A	BRAID	36″
M16815M36A01	.500	8.460	2335	240	A	BRAID	36″
M161015M36A01	.500	10.460	2500	240	A	BRAID	36″
M20200M36A01	.625	2.000	330	240	A	BRAID	36″
M20600M36A01	.625	6.000	360	240	A	BRAID	36″
M20400M36A01	.625	4.000	500	240	A	BRAID	36″
M28320A36A01	.875	3.625	630	240	A	CABLE	36″
M28304A36A01	.875	3.125	650	240	A	CABLE	36″
M28410A36A01	.875	4.315	760	240	A	CABLE	36″
M28220A36A01	.875	2.625	780	240	A	CABLE	36″
M28510A36A01	.875	5.315	950	240	A	CABLE	36″
M28606A36A01	.875	6.187	1120	240	A	CABLE	36″

Hot Sprue Bushing Redcoil Heaters

STANDARD SIZES AND RATINGS

CATALOG NUMBER	INSIDE DIA. ± .003	LENGTH	WATTS	VOLTS	STYLE	LEADS	
						TYPE	LENGTH
M28710A36A01	.875	7.315	1200	240	A	CABLE	36″
M28810A36A01	.875	8.315	1260	240	A	CABLE	36″
M28910A36A01	.875	9.315	1300	240	A	CABLE	36″
M281010A36A01	.875	10.315	1350	240	A	CABLE	36″
M281110A36A01	.875	11.315	1400	240	A	CABLE	36″
M281210A36A01	.875	12.315	1500	240	A	CABLE	36″
M281310A36A01	.875	13.315	1650	240	A	CABLE	36″
M281410A36A01	.875	14.315	1800	240	A	CABLE	36″
M108215A36A01	1.25	2.460	750	240	A	CABLE	36″
M108415A36A01	1.25	4.460	1250	240	A	CABLE	36″
M108615A36A01	1.25	6.460	1800	240	A	CABLE	36″
M108815A36A01	1.25	8.460	2335	240	A	CABLE	36″
M1081015A36A01	1.25	10.460	2500	240	A	CABLE	36″
M116400A36A01	1.50	4.000	1000	240	A	CABLE	36″
M116600A36A01	1.50	6.000	1200	240	A	CABLE	36″