

HEATING EQUIPMENT

QH-1000 HEATING MANTLE

Heat and observe the contents of spherical flasks. The series TM spherical flask covers only the flask's bottom half, letting you see its full contents. Larger sizes have multiple circuits for ease of temperature control when a flask is less than half full. Series TM mantles are available with a bottom hole for flask drain.

Flask Capacity, ML	Flask Diameter, MM	Watts	115 Volt Code	230 Volt Code
50	48	60	-110	---
100	60	80	-111	-224
125	70	80	-112	-225
200	76	100	-113	-226
250	83	180	-114	-227
300	86	180	-115	-228
500	101	270	-116	-229
1000	137	380	-117	-230
2000	170	500	-118	-231
3000	183	500	-119	-232
5000	220	600	-120	-233
12000	293	2 @ 650	-121	-234
22000	347	2 @ 770	-122	-235
50000	456	3 @ 1000	-123	-236
72000	522	2 @ 2000	---	-237



QH-1020 HEATING MANTLE

Evenly heat resin reaction flasks. The series TM resin reaction flask provides even heat distribution to prevent scorching of clear resinous material. One-circuit heat input simplifies temperature control. Certification: 115-volt items Code 110 through 114 are CSA certified. Electrical connections: Detachable 4 ft., 3-wire cord and locking connector. Options: Series TM mantles are available with a bottom hole for flask drain.

Flask Capacity, ML	Flask Diameter, In.	Mantle Depth, In.	Watts	115 Volt Code	230 Volt Code
500	3 3/4	4 1/2	270	-110	-215
1000	4 1/4	5 1/4	335	-111	-216
2000	5 1/2	6	470	-112	-217
3000	5 1/2	9	550	-113	-218
4000	5 1/2	11	750	-114	-219



HEATING EQUIPMENT

QH-1030 HEATING MANTLE

Heat and protect fragile Griffin beakers. The series™ Griffin beaker mantle has a resilient and pliable interior to cradle fragile beakers. Heat is concentrated at the bottom so even small liquid volumes can be heated.

All 115-volt items are CSA certified. Electrical connections: Detachable 4 ft., 3 wire cord and locking connector.

Beaker Capacity, ML	Beaker Diameter, In.	Mantle Depth, In.	Watts	115 Volt Code	230 Volt Code
600	3 9/16	3 3/4	325	-110	-216
800	3 7/8	4 1/4	350	-111	-217
1000	4 1/4	4 1/2	430	-112	-218
2000	5 1/8	6	550	-113	-219
3000	5 3/4	6 1/2	630	-114	-220
4000	6 3/8	8	710	-115	-221



QH-1040 HEATING MANTLE

Heat 60° funnels while transferring solutions. The 60° funnel mantle reduces viscosity and prevents precipitation of solutions that must be kept warm during transfer. It also provides convenient support and protection for fragile glass funnels. Electrical connections: Detachable 4 ft., 3-wire cord and locking connector.

Top Diameter, In.	Watts	115 Volt Code	230 Volt Code
2 1/2	40	-110	---
3	40	-111	---
4	60	-112	---
5	90	-113	-218
6	120	-114	-219
8	210	-115	-220
10	400	-116	-221
12	400	-117	-222



QH-1070 HEATING MANTLE

Heat Buchner funnel while transferring solutions. The Buchner funnel mantle provides convenient support for funnel and gentle heat for solutions that must be kept warm during transfer. Durable support bracket slides over mast of ring stand, enabling mantle to be positioned at any convenient height above receiver. Accepts rod up to 1/2" diameter. All 115-volt items are CSA certified. Electrical connections: Detachable 4 ft., 3-wire cord and locking connector.

Top Diameter, In.	Plate Diameter, MM	Watts	115 Volt Code	230 Volt Code
2 3/4	56	50	-110	---
3 1/2	75	50	-111	---
4 1/4	91	70	-112	---
5	111	70	-113	---
5 5/8	126	100	-114	-218
6 3/4	151	220	-115	-219
8 3/8	186	300	-116	-220
10 5/8	241	350	-117	-221



HEATING EQUIPMENT

QH-1080 HEATING MANTLE

Heat Buchner funnel while transferring solutions. The Buchner funnel mantle provides convenient support for funnel and gentle heat for solutions that must be kept warm during transfer. Durable support bracket slides over mast of ring stand, enabling mantle to be positioned at any convenient height above receiver. Accepts rod up to 1/2" diameter. All 115-volt items are CSA certified. Electrical connections: Detachable 4 ft., 3-wire cord and locking connector.



<u>Capacity, ML</u>	<u>Disc Diameter, MM</u>	<u>Watts</u>	<u>115 Volt Code</u>	<u>230 Volt Code</u>
150	60	60	-110	-216
350	80	90	-111	-217
600	90	170	-112	-218
2000	125	250	-113	-219
3000	150	300	-114	-220

QH-1090 HEATING MANTLE

Evenly heat glass bottles and jars. This mantle provides uniform heat to help prevent cracking thick-walled glass bottles and jars that are unusually susceptible to thermal strain. All 115-volt items are CSA certified. Electrical connections: Detachable 4 ft., 3-wire cord and locking connector.



<u>Capacity, ML</u>	<u>Mantle inside Diameter, In.</u>	<u>Mantle Depth, In.</u>	<u>Watts</u>	<u>115 Volt Code</u>	<u>230 Volt Code</u>
For Corning 6942 Jars					
2 1/2 gal.	10 1/8	8	2 @ 500	-110	-220
3 1/2 gal.	8 3/4	14	2 @ 600	-111	-221
4 1/2 gal.	12	10	2 @ 700	-112	-222
4 3/4 gal.	10 1/8	14	2 @ 700	-113	-223
7 gal.	12	14	2 @ 800	-114	-224
9 1/2 gal.	12	20	3 @ 800	-115	-225
For Glass Bottles					
9 liters	8	12	2 @ 500	-116	-226
2 1/2 gal.	7 9/16	13 1/2	2 @ 500	-117	-227
3 1/2 gal.	9 1/2	11 1/2	2 @ 600	-118	-228
5 gal.	11 1/2	10 3/4	2 @ 900	-119	-229

REMEMBER

"Q" Glass has been working with customers to design and build custom glass apparatus and component parts since 1946. We can do the same for you. Please write or call us with your special requirements.

HEATING EQUIPMENT

QH-2000 HEATING MANTLE

The series STM mantles perform the same function as series TM heating mantles, plus operations requiring more heat. These mantles are useful in distillation and fractionation processes, especially when time is important. The higher temperature range enables operations to be performed that require more heat, such as rapid distillation of water and liquid-phase cracking in a flask, where the products are taken out of the flask through a column. Withstanding an upper internal operating temperature 650° C, the STM mantle is very resistant to burnout. Like series TM, the series STM mantles also have a durable aluminum exterior and resilient and pliable interior to cradle glassware. Splash guards and Poncho Safety Shields can be used to prevent damage from accidental spills. All 115-volt items are CSA certified except Code 110 through 114. Sizes smaller than 12-liter also available sealed with inert gas purge fittings. Sizes 12-liter and larger are available with switches and pilot lights. Caution: Series STM mantles are recommended for use with flammable solvents only when used with Poncho Safety Shield. Also, in this application sizes 12-liter and larger must be purged with an inert gas.

Flask Capacity	Flask Diameter	Watts	115 Volt Code	230 Volt Code
<u>ML</u>	<u>MM</u>		<u>Code</u>	<u>Code</u>
100	60	230	-110	-222
125	70	230	-111	-223
200	76	300	-112	-224
250	83	470	-113	-225
300	86	470	-114	-226
500	101	470	-115	-227
1000	137	600	-116	-228
2000	170	870	-117	-229
3000	183	970	-118	-230
5000	220	2 @ 700	-119	-231
12000	293	2 @ 1000	-120	-232
22000	347	3 @ 1000	-121	-233



QH-2020 HEATING MANTLE PONCHO SHIELD

Promotes maximum safety during heating. The Poncho Safety Shield covers a flask in a series TM or STM mantle, greatly improving operating safety. Flammable liquids should be processed in series STM mantles only if a Poncho Safety Shield is used and, in sizes 12-liter and larger, the mantle and Poncho are purged with an inert gas such as argon. (Nitrogen is not recommended because of possible damage to mantle heating elements.) In addition to reducing fire hazard, the Poncho Shield also protects flasks from falling objects such as screwdrivers and pliers, protects personnel from flying glass and liquid if flask implodes under high vacuum distillation or explodes, and serves as an efficient insulator. The Poncho has two glass observation ports, allowing the material being heated to be seen while still affording protection. The shield is furnished with a sealer ring and a NPT purge relief port (1/8" for Code 113 and smaller and 3/4" for the others). Ponchos shown in chart are for single-neck flasks and are shipped ready for use. Ponchos for multiple neck flasks may require filling in lab. Code 118 installation kit includes necessary materials and instructions. Note: When using flasks with additional or modified necks, neck location and tubulation length are important. To reduce fitting problems, side necks should not be lower than halfway between equator and top center neck. Side necks should be nearly vertical, if possible, and necks must project through Poncho far enough to allow makeup of taper or ball joints.

<u>Fits Catalog Numbers</u>	Minimum Neck Length	<u>In.</u>	<u>Code</u>
QH-1000-116,230, QH-2000-115,227		1.5	-110
QH-1000-117,231, QH-2000-116,228		1.5	-111
QH-1000-118,232, QH-2000-117,229		1.75	-112
QH-1000-119,233, QH-2000-118,230		2.0	-113
QH-1000-120,234, QH-2000-119,231		2.5	-114
QH-1000-121,235, QH-2000-120,232		3.0	-115
QH-1000-122,236, QH-2000-121,233		4.0	-116
QH-1000-123,237		5.0	-117
QH-1000-238			



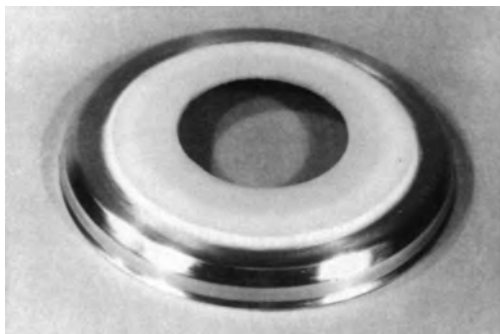
Poncho installation kit with seals, adhesive, tools and instructions -118

HEATING EQUIPMENT

QH-2040 SPLASH GUARDS

Splash guards can help prevent mantle damage from chemical spillage and improve operating safety when heating flammable liquids. The shield is appropriate for use with low wattage mantles-Series M and TM-for flasks, glass beakers, steel beakers, resin flasks and buchner funnels. A rugged silicone pad grips outer circumference of vessel, holding shield securely in place.

<u>Fits Catalog Numbers</u>	<u>Code</u>
QH-3000-110, QH-2050-114, 225, 115, 226, 116, 227, QH-1000-114, 228, 115, 229, 116, 230, QH-1030-110, 216, QH-1070-112, QH-1080-111, 217, 112, 218	-110
QH-1020-110, 215, QH-1030-111, 217	-111
QH-2050-117, 228, QH-1000-117, 231, QH-1070-113	-112
QH-3000-111, QH-1020-111, 216, QH-1030-112, 218	-113
QH-1030-113, 219	-114
QH-1020-112, 217, 113, 218, 114, 219	
QH-1030-114, 220, 115, 221, QH-1070-114, 218, QH-1080-114, 218	-115
QH-2050-118, 229, QH-1000-118, 232	-116
QH-3000-112, QH-2050-119, 230, QH-1000-119, 232, QH-1070-115, 219	-117
QH-2050-120, 231, QH-1000-120, 234	
QH-1070-116, 220	-118
QH-1000-121, 235	-119



QH-2050 HEATING MANTLE

Compact series M takes less space on the lab bench. The series M mantle is the most compact mantle with an aluminum shell that can heat flasks up to 72 liters. Like the series TM, this mantle has a durable aluminum housing outside and resilient glass fabric inside to support flasks and protect flask walls from thermal strain. Only the bottom of the flask is covered so the contents being heated are fully visible. The mantle is grounded through the aluminum housing and requires a support. Withstands internal operating temperature of 450° C. Electrical connections: Detachable 4-ft., 3 wire cord and locking connector.

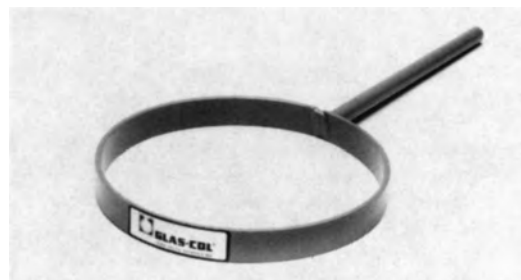
Flask Capacity	Flask Diameter	Watts	115 Volt Code	230 Volt Code
<u>ML</u>	<u>MM</u>	<u>Watts</u>	<u>Code</u>	<u>Code</u>
50	48	60	-110	---
100	60	80	-111	---
125	70	80	-112	---
200	76	100	-113	-224
250	83	180	-114	-225
300	86	180	-115	-226
500	101	270	-116	-227
1000	137	380	-117	-228
2000	170	500	-118	-229
3000	183	500	-119	-230
5000	220	600	-120	-231
12000	293	2 @ 650	-121	-232
22000	347	2 @ 700	-122	-233
50000	456	3 @ 1000	-123	-234
72000	522	2 @ 2000	---	-235



QH-2060 SERIES M EXTENSION SUPPORT

Hold mantles up to 5-liter with extension supports. Extension supports should be used for smaller mantles. Attached to a stable ring stand or distillation rack, the support can be adjusted to any convenient height. Finish: Gray. Construction: Steel ring with 6" shank. Steel ring extension support attaches easily to ring stand or distillation rack.

<u>Mantle Size</u>	<u>Inside Diam. In.</u>	<u>Inside Diam. MM</u>	<u>Code</u>
50-200, ML	5 3/16	132	-110
250-500, ML	6 3/8	162	-111
1 Liter	7 5/8	194	-112
2-3 Liter	10 3/16	259	-113
5 Liter	12 1/4	311	-114



HEATING EQUIPMENT

QH-2070 SERIES M TILTING SUPPORT

Tilting supports allow fingertip control for emptying flasks. The heating mantle support ring is adjustable and locks at any convenient height. The base is compact and extremely stable. The upper cross member strengthens the assembly and serves as a stop for the tilted mantle. Specifications: Rings: One set included. Order extra sets from chart below. Base Size: 36" x 38 1/2" Height: 48" Finish: Gray. Support is shipped unassembled. The tilting support holds mantle and flask for easy, reliable pouring. Extra support rings make tilting support adaptable to various sizes.

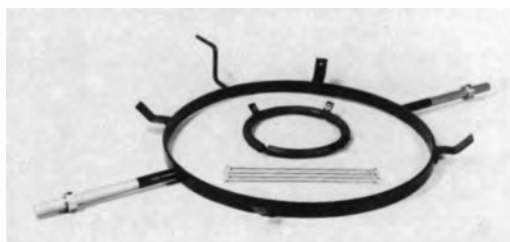


Complete Tilting Supports

Size, ML	Inside Diam. In.	Inside Diam. MM	Code
12000	16 3/4	425	-110
22000	19 1/4	489	-111
50000	24 1/4	616	-112
72000	27	686	-113

Rings Only

Size, ML	Inside Diam. In.	Inside Diam. MM	Code
12000	16 3/4	425	-114
22000	19 1/4	489	-115
50000	24 1/4	616	-116
72000	27	686	-117



QH-2080 SERIES M TRIPOD SUPPORT

The tripod support sits on the floor or a bench to hold series M ranging in size from 3 to 72 liters. Mounting holes are in the foot of each leg for securing to floor or bench. Construction: Steel rings and legs. Finish: Gray. Support is shipped unassembled. Assembles in minutes with three bolts.

Mantle Size, Liters	Height In.	Inside Diam. In.	Code
3	14	10 3/16	-110
5	14	12 1/4	-111
12	14	16 3/4	-112
22	14	19 1/4	-113
50	16	24 1/4	-114
72	18	27	-115



QH-2090 SERIES M ADJUSTABLE SUPPORT

Adjustable support matches specific height needs. These supports are adjustable in height to provide convenient locations of series M mantles. If a drain container is necessary, one side of the leg brace may be easily removed to accommodate it. The adjustable legs are self-storing when not in use. Construction: Steel. Finish: Gray. Height: Adjustable from 24" to 36" in 3" increments. Mounting: Holes in foot of each leg. Support is shipped unassembled.

Mantle Size, Liters	Inside Diam. In.	Code
12	16 3/4	-110
22	19 1/4	-111
50	24 1/4	-112
72	27	-113



HEATING EQUIPMENT

QH-3000 HEATING MANTLE

Heat a variety of metal cans. Heat fire debris with metal can mantle. These arson detection mantles are specified by the Bureau of Alcohol, Tobacco and Firearms for use in arson investigations and fit the three sizes of paint cans in which evidence is most often collected. The recommended procedure heats fire debris to vaporize suspected accelerants, which, if present, are collected in a charcoal tube for analysis. According to the *Arson Resource Directory* of the U.S. Fire Administration (p.91), Even though fire may destroy 99 percent of incendiary evidence, properly equipped and staffed laboratories can often determine the type of accelerant, incendiary device, or explosives used by analyzing the most minute particles of submitted evidence. "Q" Glass provides three sizes of mantles to accommodate the three sizes of cans. ATF (paragraph 3.4): To minimize need for evidence repackaging, suggest buying two or more different sizes to fit paint cans most often received.

These mantles are also useful for work done in metal cans with resin and adhesives.

The mantles are built for long life with a durable aluminum exterior and come equipped with compact power controls that have solid circuitry, positive-off switches, and pilot lights. the control may be positioned on or beside the mantle.

Capacity	Wattage	Voltage	Code
Pint	225W	115V	-110
Quart	325W	115V	-111
Gallon	590W	115V	-112

Heat 1 gallon cans. These mantles heat 1 gallon metal cans quickly to speed the removal of viscous materials,

tars, plastics, shortening. The temperature can be controlled by a separate control device.

Mantle Inside Diameter, In.	Mantle Depth, In.	Wattage Voltage	Code
6 3/4	5 1/4	750W 115V	-113
6 3/4	5 1/4	750W 230V	-114

Quickly heat 5-gallon cans. These mantles allow fast heating of 5-gallon metal cans with or without bail. Have pilot light. "hurry-up" switch, and integral thermostatic control. Temperature ranges: 60-250° F or 200-550° F. Electrical connections: Attached 8 ft., 3 wire cord. Electrical rating: 1450W Depth: 9 3/4" for can with bail, 14" without bail. Inside diameter: 12"

Volts	Mantle Depth, In.	Temp. Range	Code
115V	9 3/4	200-550° F	-115
115V	9 3/4	60-250° F	-116
115V	14	200-550° F	-117
115V	14	60-250° F	-118
230V	9 3/4	200-550° F	-119
230V	9 3/4	60-250° F	-120
230V	14	200-500° F	-121
230V	14	60- 250° F	-122



QH-3010 HEATING MANTLE

Heat Spherical flasks with hemispherical style mantles. This series 0 mantle is a hemispherical style, meaning it covers only the bottom half of the flask. This allows full view of contents. The mantle accommodates single and multi neck flasks. It should be used with series 0 supports. All 115 volt items are CSA certified. Electrical connections: separable 4 ft., 2 wire cord and locking connector.

Flask Capacity, ML	Flask Diam. MM	Watts	115V Code	230V Code
50	48	60	-110	---
100	60	80	-111	---
125	70	80	-112	---
200	76	100	-113	-222
250	83	180	-114	-223
300	86	180	-115	-224
500	101	270	-116	-225
1000	137	380	-117	-226
2000	170	500	-118	-227
3000	183	500	-119	-228
5000	220	600	-120	-229
12000	293	2 @ 650	-121	-230

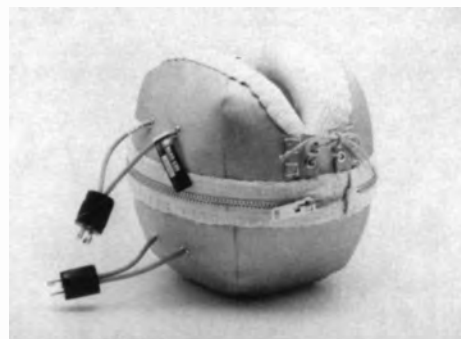


HEATING EQUIPMENT

QH-3020 HEATING MANTLE

Spherical mantles improve safety and efficiency. This spherical mantle covers both top and bottom of 1, 2, or 3 neck spherical flasks for improved safety and efficiency. The circumferential zipper holds the halves snugly together to prevent heat loss, and the side split in top allows removal without disturbing the flask. All 115 volt items are CSA certified. Electrical connections: separable 4 ft., 2 wire cord and locking connector.

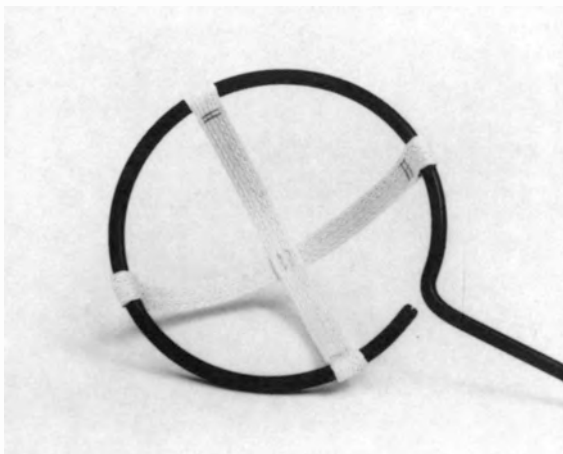
Flask Capacity, ML	Distribution of Wattage		115V Code	230V Code
	Lower Half	Upper Half		
50	60	none	-110	---
100	80	none	-111	---
125	80	none	-112	---
200	100	none	-113	-222
250	180	none	-114	-223
300	180	none	-115	-224
500	270	none	-116	-225
1000	380	140	-117	-226
2000	500	200	-118	-227
3000	500	200	-119	-228
5000	600	300	-120	-229
12000	2 @ 650	590	-121	-230



QH-3030 SERIES 0 EXTENSION SUPPORT

Hold mantles with handy supports. This table top support holds spherical and hemispherical series 0 mantles up to 5 liter capacity. The steel support, with its fabric strap basket, is strong, handy and durable. Attaches easily to stable ring stands or distillation racks. Steel ring: 3/8" diameter Code -110 to -115, 1/2" diameter Code -116 & -117. Finish: Gray.

Mantle Sizes	Inside Diameter, In.	Code
50 ML	3 3/4	-110
100-200 ML	4 7/8	-111
250-300 ML	5 1/2	-112
500 ML	5 7/8	-113
1 Liter	7 1/2	-114
2 Liter	9 1/4	-115
3 Liter	9 3/8	-116
5 Liter	11 1/8	-117



QH-3040 SERIES 0 TRIPOD SUPPORT

This support sits on the floor or a bench to accommodate larger series 0 mantles. Also made of steel, the tripod support has an aluminum basket strap. Mounting holes in the foot of each leg permit securing to the floor or bench.

Mantle Sizes	Height, In.	Inside Diameter, In.	Code
5 Liters	12	11 1/8	-110
12 Liters	14	15	-111



HEATING EQUIPMENT

QH-3050 HEATING MANTLE

Prevent scorching of resin reaction flask materials. This mantle's even heat distribution prevents scorching of clear resinous materials. Its one circuit heat input simplifies temperature control. All 115 volt items are CSA certified. Electrical connections: Separable 4 ft., 2 wire cord and locking connector.

Flask Capacity, ML	Flask Diameter, In..	Mantle Depth, In.	Watts	115V Code	230V Code
500	3 3/4	4 1/2	270	-110	-225
1000	4 1/4	5 1/4	335	-111	-226
2000	5 1/2	6	470	-112	-227
3000	5 1/2	9	550	-113	-228
4000	5 1/2	11	750	-114	-229



QH-3070 HEATING MANTLE

Protect and heat Griffin beakers. A resilient and pliable interior cradles fragile beakers. Even small liquid volumes may be heated in this mantle because its heat is concentrated at the bottom. All 115 volt items are CSA certified. Electrical connections: Separable 4 ft., 2 wire cord and locking connector.

Beaker Capacity, ML	Beaker Diameter, In..	Mantle Depth, In.	Watts	115V Code	230V Code
50	1 5/8	1 5/8	40	-110	---
100	2	2	100	-111	-221
150	2 1/4	2 3/8	100	-112	-222
250	2 11/16	2 1/2	140	-113	-223
400	3	3 1/4	240	-114	-224
600	3 9/16	3 3/4	325	-115	-225
800	3 7/8	4 1/4	350	-116	-226
1000	4 1/4	4 1/2	430	-117	-227
2000	5 1/8	6	550	-118	-228
3000	5 3/4	6 1/2	630	-119	-229
4000	6 3/8	8	710	-120	-230



QH-3080 HEATING MANTLE

Heat solutions in 60° funnels. The funnels mantle reduces viscosity and prevents precipitation of solutions that must be kept warm during transfer. Electrical connections: Separable 4 ft., 2 wire cord and locking connector.

Top Diameter, In.	Watts	115V Code	230V Code
2 1/2	40	-110	---
3	40	-111	---
4	60	-112	---
5	90	-113	-221
6	120	-114	-222
8	210	-115	-223
10	400	-116	-224
12	400	-117	-225



HEATING EQUIPMENT

QH-3090 HEATING MANTLE

Gently heat fixed plate buchner funnels. The series 0 buchner funnel mantle provides gentle heat for solutions that must be filtered while warm. Electrical connections: Separable 4 ft., 2 wire cord and locking connector.

Top Diameter, In.	Plate Diameter, MM	Watts	115V Code	230V Code
2 3/4	56	50	-110	---
3 1/2	75	75	-111	---
4 1/4	91	70	-112	---
5	111	70	-113	---
5 5/8	126	100	-114	-218
6 3/4	151	220	-115	-219
8 3/8	186	300	-116	-220
10 5/8	241	350	-117	-221



QH-4000 HEATING MANTLE

Keep solutions warm during extractions. Solidification of viscous layers in cold stopcock is prevented because solutions may be extracted while hot. The thickness of the glass fabric between heating elements and soft glass of the separatory funnel prevents thermal strain and the resultant cracking. Viewing is possible in 1 liter and larger through opposite slots near the mantle bottom. Electrical connections: Separable 4 ft., 2 wire cord and locking connector.

Funnel/Type	Funnel/Capacity, ML	Watts	115V Code	230V Code
Squibb	250	140	-110	-219
Squibb	500	180	-111	-220
Squibb	1000	190	-112	-221
Squibb	2000	280	-113	-222
Globe	500	180	-114	-223
Globe	1000	190	-115	-224
Globe	2000	250	-116	-225
Globe	4000	340	-117	-226
Globe	6000	400	-118	-227



QH-4010 HEATING MANTLE

Heat and protect erlenmeyer and filter flasks. This series 0 erlenmeyer and filter flask mantles help prevent thermal strain of unusually susceptible heavy walled vessels. It uses glass fabric between the heating elements and glass wall of the vessel to prevent severe temperature gradients. Electrical connections: Separable 2 wire cord and locking connector.

Capacity, ML	Watts	115V Code	230V Code
50	50W	-110	---
125	95W	-111	-224
200	110W	-112	-225
250	150W	-113	-226
300	150W	-114	-227
500	200W	-115	-228
750	260W	-116	-229
1000	300W	-117	-230
1150	350W	-118	-231
2000	400W	-119	-232
3000	260W Bottom		
	260W Top	-120	-233
4000	330W Bottom		
	330W Top	-121	-234
6000	390W Bottom		
	390W Top	-122	-235



HEATING EQUIPMENT

QH-4020 HEATING MANTLE

Heat and insulate flask tops. This mantle helps prevent vapor condensation in the upper half of the flask during distillation of high boiling materials. Designed for use with series M, TM or STM mantles. It protects the flask, the solutions, and the laboratory in these ways: 1) from stray drafts, which would disturb the reflux ratio during fractionation; 2) from flying glass of flask implosions in high vacuum distillations; 3) from falling objects; and 4) from thermal strain between top and lower half of flask during high temperature operations. With a glass-fabric construction and laced-side opening, its elliptical hole accommodates 1, 2, and 3 neck flasks. All 115 volt items are CSA certified. Electrical connections: Separable 4 ft., 2 wire cord and locking connector.

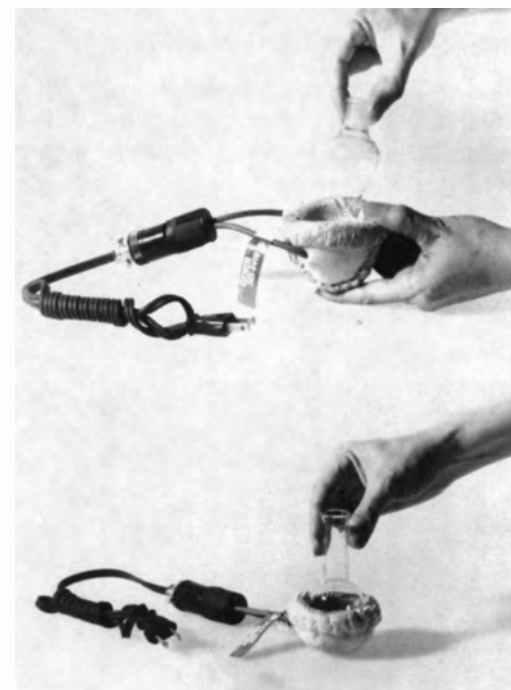
Flask Capacity, ML	Flask Diameter, MM	Heating Top Wattage	115V Code	230V Code
250	83	140	-110	-220
300	86	140	-111	-221
500	101	140	-112	-222
1000	137	140	-113	-223
2000	170	200	-114	-224
3000	183	200	-115	-225
5000	220	300	-116	-226
12000	293	590	-117	-227
22000	347	650	-118	-228
50000	456	1000	-119	-229
72000	522	1000	- - -	-230



QH-4030 HEATING MANTLE

Heat in micro mantles and insulate with ease. Micro mantles provide precise heat control for small flasks. The mantle is used extensively in analytical work and in purification of research products with only small samples available. Available for spherical flasks from 5 to 35 ml and pear shaped flasks from 5 to 250 ml. Fits multiple neck flasks. Micro mantles help in analytical work involving small amounts of material in spherical containers or pear shaped flasks. Electrical connections: Separable 2 wire cord and locking connector. Note: Most micro mantles are rated at less than 115 volts and must be operated through a variable transformer.

Flask Capacity, ML	Approx. Diameter, MM	Wattage Voltage	Code
<i>For Spherical Flasks</i>			
5	27	12W-30V-max.	-110
10	32	20W-30V-max.	-111
20	41	27W-60V-max.	-112
25	43	30W-60V-max.	-113
35	46	35W-60V-max.	-114
<i>For Pear Shaped Flasks</i>			
5	25	12W-30V-max.	-115
10	31	15W-30V-max.	-116
25	45	25W-60V-max.	-117
50	51	35W-60V-max.	-118
65	55	40W-60V-max.	-119
100	59	70W-115V	-120
150	68	90W-115V	-121
250	81	135W-115V	-122



HEATING EQUIPMENT

QH-4035 HEATING MANTLE, COMBO

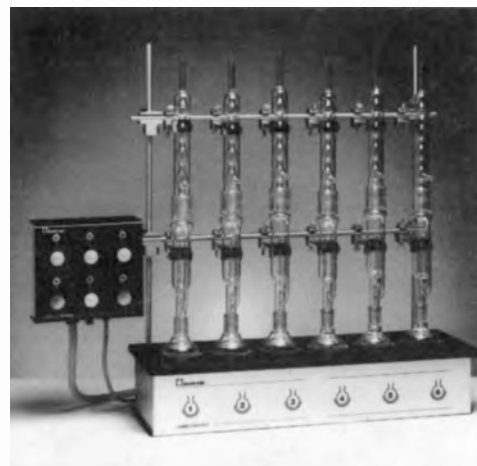
"Q" Glass now offers a safer, more convenient model of its popular spacesaving combination heating mantles. The new combo series features six position heating mantles with a new remote power control. It is an excellent choice for repetitive extracting, refluxing, and distilling procedures. Typical applications are found in labs of the food, textile, fiber, water and waste water, petroleum, and many other industries. Remote control adds convenience and safety. The remote power control allows placement at a convenient location for the operator. With its quick-attach mounting brackets, it easily attaches to any 1/2" diameter rod, including the glassware support structure of the combo mantle, or is self supporting on the bench top. This allows the control to be located outside a hood and permits the operator to change and observe control settings without opening the hood. It also keeps electronics away from high temperatures and other hostile environments. The combo mantles are offered in two ranges: Code 110-120 for low temperature applications and Code 121-133 for use with aqueous solutions. Two series PL remote control choices are available: percentage timer or proportional voltage. The percentage timer version pulses full line voltage, the proportional voltage version supplies a constant, steady voltage to each heating position. Power control specifications: Size 9" wide x 8" high x 4" deep. Equipped with two quick-attach GripRight brackets for 1/2" diameter rod. Electrical connections: Multi-conductor interconnect cord to combo mantle is 6' (1.8m) long. Three wire power cord with grounding plug is 4' (1.2m) long. Finish: black and silver. Mantle specifications: All combo mantles have a clear anodized aluminum cabinet. The top surface is black teflon coated stainless steel. The glassware support super structure consists of two upright rods, two horizontal rods, and four of Glas-Col's new, unique GripRight lab clamps. Assembly is quick and easy by merely tightening the thumbscrews of the GripRight clamps. The clamps ensure that the support rods are assembled at right angles and that the resulting super structure will provide a sturdy frame for glassware to be attached. A 9" long control support extension rod attaches to either end of one of the horizontal rods so the control may be mounted on either the left or right side of the super structure if space permits. Each combo unit is furnished with six spring type glassware clamps that attach to one of the horizontal support rods.

Combo Mantles

Flask Specifications

Cabinet Dimensions (In.)

Size, ML	Max. Diam. In.	Bottom	Rating Per Position	Length	Depth	Height	Code
100/125	2.75	flat	75W,120V	28	8	5	-110
100/125	2.75	round	75W,120V	28	8	5	-111
250/300	3.41	flat	140W,120V	28	8	5	-112
250/300	3.41	flat	140W,230V	28	8	5	-113
250/300	3.39	round	140W,120V	28	8	5	-114
250/300	3.39	round	140W,230V	28	8	5	-115
500	4.06	flat	250W,120V	38	9	6	-116
500	4.06	flat	250W,230V	38	9	6	-117
500	3.98	round	250W,120V	38	9	6	-118
500	3.98	round	250W,230V	38	9	6	-119
1000	5.12	round	325W,230V	38	9	6	-120
100/125	2.75	flat	140W,120V	28	8	5	-121
100/125	2.75	flat	140W,230V	28	8	5	-122
100/125	2.75	round	140W,120V	28	8	5	-123
100/125	2.75	round	140W,230V	28	8	5	-124
250/300	3.41	flat	210W,120V	28	8	5	-125
250/300	3.41	flat	210W,230V	28	8	5	-126
250/300	3.39	round	210W,120V	28	8	5	-127
250/300	3.39	round	210W,230V	28	8	5	-128
500	4.06	flat	325W,230V	38	9	6	-129
500	3.98	round	325W,230V	38	9	6	-130
650	4.25	round	380W,230V	38	9	6	-131
800	4.56	round	440W,230V	38	9	6	-132
1000	5.12	round	500W,230V	38	9	6	-133



Select the heating mantle based on the flask being used, the power needed for the application, and the operating voltage. Generally, Code 110-120 units are used with solvents common to Soxhlet extractions, and Code 121-133 units are used for refluxing aqueous solutions. Select the control based on whether pulsing on-off or constant input voltage is desired.

Combo Power Control

Control Type	For Use With	Amps	Volts	Code
Percentage timer	Any 120V mantle	15	120	-234
Percentage timer	Any 230V mantle	15	240	-235
Proportional voltage	Any 120V mantle	15	120	-236

HEATING EQUIPMENT

QH-4040 HEATING KITS

Attractive, easy to use insulation for the laboratory. InsulEze insulating kits make insulating in the laboratory an easy neat job. InsulEze insulating comes in three different kits that can be used alone or combined for different insulating jobs. The kits contain everything necessary to insulate virtually any application you have against heat transfer, while protecting your personnel the same time. InsulEze insulation can be used as a heat shield, as a cold shield, for insulating over heaters, as a shock absorber, as a light shield, to protect personnel, as a shatter shield, or for protecting sensitive surfaces. The kits come with insulating materials that can be cut and shaped to almost any size, with minimum fraying of the insulation edges. The fasteners provided make InsulEze insulation quick and easy to apply to and remove from your application, and its easy to clean. Glas-Col manufactures InsulEze insulation using materials that are non-hazardous, non-flammable and inert to most chemicals. That makes this insulating product ideal for the safety conscious lab.

Descriptions:

1. InsulEze Insulating Kit
Contains three choices of 400° C fiberglass tape 1/32" thick in these lengths and widths: 10' x 1", 10' x 3", and 5' x 6". Also includes 60" of 1" and 40" of 1" velcro hook and loop fasteners.



Code
-110

2. InsulEze Insulating Kit
Insulating pad 15" wide x 30" long x 1/2" thick for use to 250° C. Unimpregnated fiberglass fabric one side, moisture resistant and cleanable silicone impregnated fiberglass fabric on the other. With 72" lengths of high temp tying cord.



Code
-111

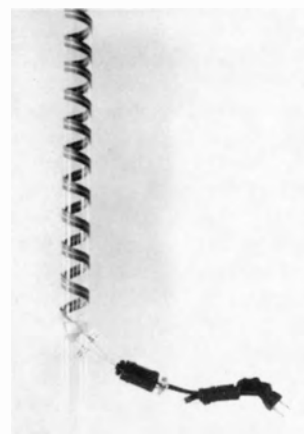
3. InsulEze Insulation Kit
400° C insulating tape 3" wide x 10' long x 1/2" thick. High temp fiberglass both sides. Dual attachment eyelets each end. With two 60" lengths of high temp tying cord.



Code
-112

QH-4050 HEATING TAPE

Get wrap around convenience with heating tape. In both permanent and temporary applications, this tape heats odd lengths of glass tubes and metal pipes. Ribbon type heating elements running lengthwise in the tape are encased in durable glass braid and are impregnated and covered with tough silicone rubber. The silicone rubber insulates stranded terminal leads at one end and waterproofs fittings at both ends. It also permits use in high moisture areas and helps to make the tapes resistant to most laboratory environmental conditions. Easily passing a 1000 volt test for electric insulation, the tapes are resistant to burnout even when overloaded beyond power rating. Tapes as short as 3 feet may be used at 115 volts without a reducing voltage transformer. Electrical connections: Attached cord with 2 blade plug. Temperature limit: 480° F.



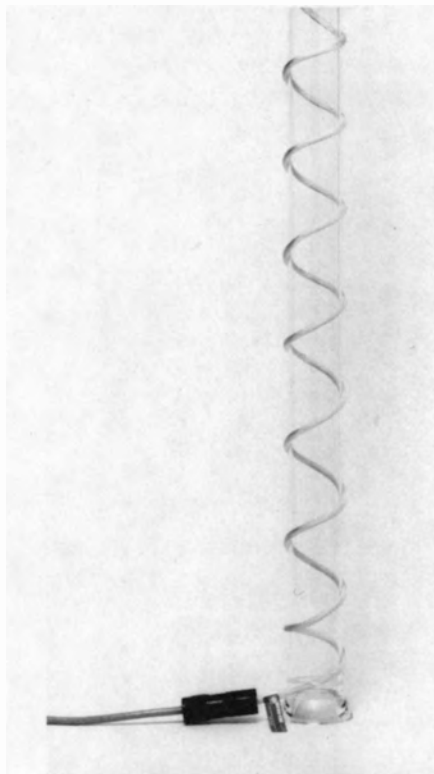
<u>Width,</u> <u>Length</u>	<u>Wattage,</u> <u>Voltage</u>	<u>Ohms</u> <u>Per Foot</u>	<u>Code</u>
1/4" x 4'	60W-45V	9.08	-110
1/4" x 6'	90W-70V	9.08	-111
1/4" x 8'	120W-95V	9.08	-112
1/4" x 10'	150W-120V	9.08	-113
1/2" x 4'	140W-45V	3.77	-114
1/2" x 6'	210W-70V	3.77	-115
1/2" x 8'	280W-95V	3.77	-116
1/2" x 10'	340W-115V	3.77	-117
1/2" x 20'	680W-230V	3.77	-118
1" x 10'	700W-155V	1.88	-119
1" x 20'	1400W-230V	1.88	-120
5/8" x 5'	145W-115V	18.15	-121
5/8" x 6'	120W-115V	18.15	-122
5/8" x 7'	105W-115V	18.15	-123
5/8" x 8'	90W-115V	18.15	-124
5/8" x 9'	80W-115V	18.15	-125
5/8" x 10'	300W-230V	18.15	-126
1" x 3'	150W-115V	27.25	-127
1" x 4'	120W-115V	27.25	-128
1" x 5'	100W-115V	27.25	-129
1" x 6'	300W-230V	27.25	-130
1" x 7"	275W-230V	27.25	-131
1" x 8'	240W-230V	27.25	-132
1" x 9'	215W-230V	27.25	-133

HEATING EQUIPMENT

QH-4060 HEATING COIL

High temperature heating available with heating cords. The high temperature, wrap-around Cal-Cord wraps and heats tubes as small as 1/2". It should be used only in dry or low moisture areas because of the insulation's high temperature capabilities. Installation and removal are both quick and easy. Electrical connections: 2 wire locking plug on one end of cord. All heating cords have separable extension cord with 2 blade plug. Size: 1/4" diameter, varying lengths.

Length, Ft.	Wattage, Voltage 400° C Cal-Cord	Code
2	80W-115V	-110
3	120W-115V	-111
4	160W-115V	-112
6	240W-115V	-113
8	340W-115V	-114
10	400W-115V	-115
12	480W-230V	-116
14	560W-230V	-117
16	640W-230V	-118
	<u>600° C Super Cal-Cord</u>	
2	200W-115V	-119
3	300W-115V	-120
4	400W-115V	-121
6	500W-115V	-122
8	700W-230V	-123



QH-4065 CONTROLLERS, POWRTWIN AND POWRTROL

Three new power controllers have been added to "Q" Glass's line of high quality products. The powrTwin and PowrTrol (120 V and 240 V) are solid state proportional voltage power controllers that provide precise manual control of heating mantles, heating tapes and cords, and other resistive loads. The output range is conveniently adjustable from 0-100% of rated voltage and the dial controller is nearly linear from 2-100% of rated voltage.

The new controllers are equipped with an on/off power switch, circuit breaker protection, 3 wire load receptables and 3 wire line cords with molded plug.

Description

PowrTrol I is enclosed in a modular, low profile housing. Rated at 10 amps, 120 volts. Dimensions: 4"W x 4"D x 3 3/8"H.

Code

-110

Description

PowrTrol II is enclosed in a modular, low profile housing. Rated at 10 amps, 240 volts. Dimensions: 4"W x 4"D x 3 3/8"H.

Code

-111

Description

PowrTwin is capable of controlling 2 separate circuits independently. Enclosed in a modular, low profile housing, and is rated at 7 amps, 120 volts per circuit. Dimensions: 8"W x 6"D x 3 3/8"H.

Code

-112



HEATING EQUIPMENT

QH-4070 DIGITROL POWER AND TEMPERATURE CONTROLLER

Control heating process with panel mounted control. By maintaining control over the heating process, this automatic control ensures more safety and efficiency of procedures, as well as precise results. It has a digital display and push-to-set dial with one degree calibration accuracy. Following are other important features:

- 1) band width adjustment on front panel
 - 2) automatic reset, rate and cycle time
 - 3) LED indicator of power to load
 - 4) automatic cold junction compensation
 - 5) thermocouple break protection and open sensor display.;
- The thermocouple and power circuits are isolated, so both grounded and ungrounded thermocouples may be used. Finally, the control has an internal solid state relay for loads up to 25 amps. Control type: time proportioning. Accuracy + or -.25% of scale with proper thermal system design. Display: three digit, 1/2", LED. Band width: 10-100°C. Range: 0-850°C. Thermocouple: Cat. No. QH-5060-112 included. Connections: Terminal strip included for line and load connections. Operating ambient temperatures: 0-55°C (30-130°F). Power consumption: 4 watts plus load.



<u>Description</u>	<u>Electrical Rating</u>	<u>Range</u>	<u>Thermocouple Type</u>	<u>Code</u>
Time proportional control with zero voltage switching	25A @ 120V 3000W 25A @ 240V 6000W	0-850° C 0-850° C	Iron-Constantan Iron-Constantan	-110 -111

QH-4080 DIGITROL II POWER AND TEMPERATURE CONTROLLER

Get automatic tuning and compact size with Digitrol II. The Digitrol II is a micro-processor based temperature control in a compact 1/16 Din case. The Digitrol II can be used with heating mantles, tapes, cords, small ovens and other resistive heating loads. The control features a digital dual output display for set point and process temperature indication. The automatic tuning feature ensures increased temperature accuracy with minimum over-shoot.

Easy set up and simple input commands make this control very "user friendly". The load and the thermocouple receptacles are located on the front panel for accessibility. Features automatic cold junction compensation and thermocouple break protection. Furnished with a type J immersion thermocouple with 6" long stainless steel probe. Electrical connections: 3 wire line cord with molded plug. Fuse: 15 amp @ 120 volts; 10 amp @ 240 volts. Power: on/off switch located on front panel; LED indication. Control type: PID parameters with auto/manual mode option. Accuracy: 0.1% of span. Range: 32-999° F/0-750° C. Ambient temperature range: 30-130° F. Display: dual, 3 digit LED. Set point: up/down keys. Degrees F or degrees C display user selectable. Lab bench case: low profile, modular housing 8"W x 6"D x 3 3/8"H. Mounting clamp on rear of case allows for stacking of two or more controls using 1/2" diameter rod. Finish: gray and charcoal.



<u>Description</u>	<u>Electrical Rating</u>	<u>Range</u>	<u>Thermocouple Type</u>	<u>Code</u>
Microprocessor based user selectable control modes	15A @ 120V 1800W 10A @ 240V 2400W	0-750° C 0-750° C	Iron-Constantan Iron-Constantan	-110 -111

HEATING EQUIPMENT

QH-4090 MANTLE MINDER II

The Mantle-Minder II is an automatic, time proportion control used with heating mantles, tapes, cords, small ovens and other resistive heating loads up to 1200 watts. Very small loads may be easily protected by changing the fuse. The set point dial is calibrated in degrees F and degrees C. The load and the thermocouple receptacles are located on the front panel for easy accessibility. A separate pilot light is provided for output indication. Furnished with a type J immersion thermocouple with 6" long stainless steel probe. (Cat. No. QH-5060-110). Electrical connections: 3 wire line cord with molded plug. Fuse: 10 amp @ 120 volts; 5 amp @ 240 volts. Power: on/off switch located on front panel. Control type: time proportioning. Accuracy: + or -1.5% of full scale. Range: 0-1000°F/500°C. Ambient temperature range: 30-130° F. Power consumption: 3.5 watts plus load. Set point dial: calibrated in 20 degrees C increments. Lab bench case: low profile, modular housing 8"W x 6"D x 3 3/8" H. Mounting clamp on rear of case allows for stacking of two or more controls using 1/2" diameter rod. Finish: gray and charcoal.



<u>Description</u>	<u>Electrical Rating</u>	<u>Range</u>	<u>Thermocouple Type</u>	<u>Code</u>
Time proportioning automatic temperature control	10A @ 120V 1200W 5A @ 240V 1200W	0-500° C	Iron-Constantan	-110
		0-500° C	Iron-Constantan	-111

QH-5000 DIAL-A-SINE II POWER CONTROL

Control a variety of heaters with Dial-A-Sine II. The Dial-A-Sine II solid state power control provides precise control of heating mantles, tapes, cords and other resistive circuits. The circuitry is encased in a low profile, modular housing with no-mar rubber feet. The 3 wire receptacle and on/off power switch are located on the front panel for easy accessibility. Furnished with separate pilot lights for input and output indication. Small loads may be easily protected by changing the fuse. Electrical connections: 3 wire line cord with molded plug. Fuse: 12 amp. Power: on/off switch located on front panel. Output range: adjustable from 0 to 100% of rated voltage. Dial control: completely linear from 2 to 100% of rated voltage. Lab bench case: low profile, modular housing 8"W x 6"D x 3 3/8"H. Mounting clamp on rear of case allows for stacking of two or more controls using 1/2" diameter rod. Finish: gray and charcoal.

<u>Volts</u>	<u>Amps</u>	<u>Wattage Capacity</u>	<u>Code</u>
120	12	1440	-110
240	10	2400	-111



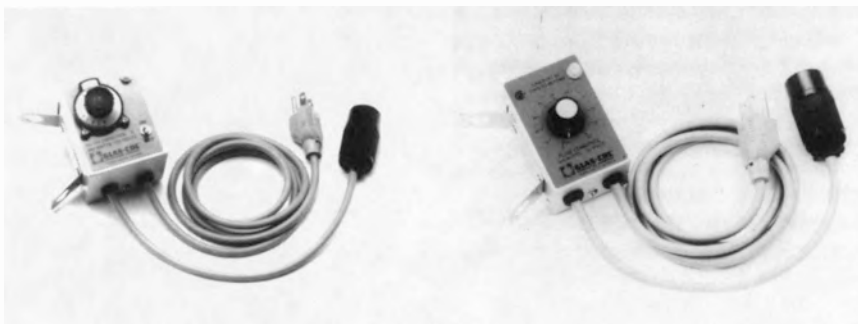
HEATING EQUIPMENT

QH-5010 HEATING MANTLE/CONTROL PACKAGE

Economical packages-mantles and controls: "Q" Glass now offers its popular series TM and series STM heating mantles for laboratory vessels with a matched power control for special convenience and price. The power control can be mounted on the mantle with the side mounted spring clip. Or it is detached easily for placement on the lab bench, inside or outside a fume hood, or on a distillation rack. Any way to mount it, it's conveniently located but away from excessive heat and much less likely to be damaged by chemical spills than built in controls. The electrical connection between the mantle and the control is made with a plug in, 1/8 turn locking device. This allows the control to be quickly attached and detached as desired. The heating mantles have provision for grounding through the exterior metal housing. They may be place directly on lab benches or other surfaces without requiring additional support or stabilization. The 120 volt power control has solid state, non jarring circuitry, which allows the operator to select a constant output voltage between 15 and 120 volts. The 240 volt power control is of percentage timer design and proportions the full operating voltage to the mantle from 5 1/2% to 100% of the time according to dial position. Specifications for 120 volt power control: Furnished with: pilot light. Electrical connection: 5 ft. (1.5m), 3 wire power supply cord with NEMA 5-15P 3 wire, 120 volt plug. Receptacle matches heating mantle plug. Case construction: anodized aluminum with no-mar polyurethane feet. Side mounted spring clip for 1/2" rod.

120 Volt Cordtrol Control
(separate use with existing mantles)

Volts	Amps	Code
120	5	-110
120	8	-111



Specifications for 240 volt power control: Furnished with: fuse, pilot light. Electrical connections: 4 ft.

(1.2M) 3 wire power supply cord with NEMA 6-15P 3 wire, 240 volt plug. Receptacle matches heating mantle plug. Case construction: anodized aluminum with no-mar polyurethane feet. Side mounted spring clip for 1/2" rod.

240 Volt Minitrol Control: (separate use with existing mantles)

Volts	Amps	Code
240	10	-112

QH-5020 MINITROL/MAINTAIN POWER CONTROL

The operator manually adjusts the Minitrol, which has a percentage timer design and no sensing element. It regulates mantles, tapes, and cords, as well as small furnaces, ovens, hot plates, dies, and other applications requiring stepless control. Minitrol may also be used on any non inductive loads to its rated capacity. It proportions the operating voltage to the load from 5-1/2% to 100% of the time according to the preset dial position. When turned off, it effects a positive break. For very small loads, smaller fuses may be used. Code -111 Minitwin handles two separate circuits. A pilot light is connected across the output side of the control, indicating power to load. With the desired temperature determined on the initial run, a simple dial setting controls repeat operation. CSA certified. Electrical connections: 6 ft., 3 wire receptacle.

Case construction: anodized aluminum with no-mar rubber feet.

Number	Amps Per	Wattage	Case		
Circuits	Volts	Circuit	Capacity	Dimendions	Code
1	120	12	1440	2 1/2"x4 1/4"x2"	-110
2	120	7.5	900 per Circuit	5"x4 1/4"x2"	-111
1	240	10	2400	2 1/2"x4 1/4"x2"	-112

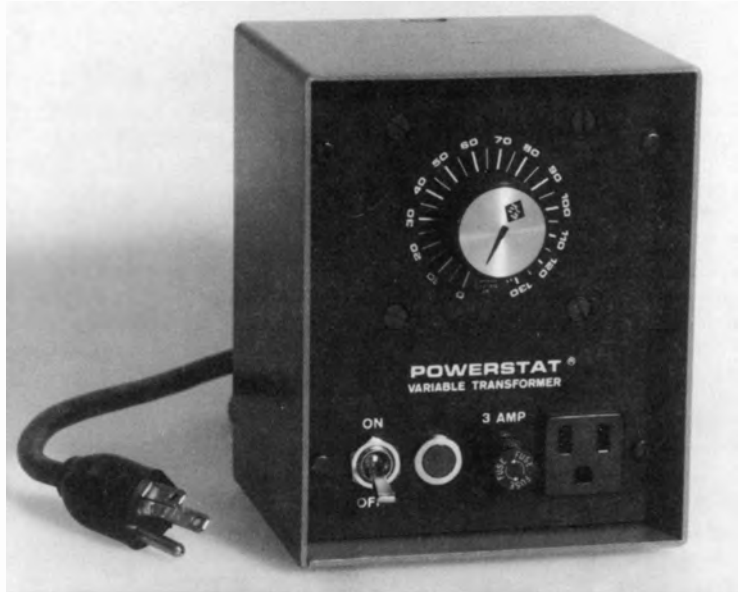


HEATING EQUIPMENT

QH-5030 POWERSTAT TRANSFORMER

Maximize safety with series L transformers. For added safety, the series L transformer enclosure is designed to minimize the possibility of shock hazard, and the panel controls are recessed to avoid accidental bumping. A slot on the back of the transformer allows the transformer to be mounted surface. Code -111 has a recessed handle. Electrical connections: grounded 3 wire cord, plug, and receptacle. Power: on/off switch, pilot light. Dial: graduated in output volts. Fused.

<u>Input</u>	<u>Output Capacity</u>	<u>Suitable For</u>	<u>Code</u>
120 VAC 60 Hz, single phase	0-132 volts 1.75 amps 230 watts	115 volt circuits of less than 230 watts	-110
120 VAC 50/60 Hz, single phase	0-140 volts 10 amps 1400 watts	115 volt circuits to 1000 watts	-111



QH-5040 POWERSTAT TRANSFORMER

Use series 3PN transformers for quick setup. This series comes in the popular radiator case, which has easily accessible controls. The sturdy base has holes for mounting to a bench, panel or wall. Electrical connections: grounded 3 wire cord, plug, and receptacle. Power: on/off switch on Code -110. Dial: graduated in output volts on Code -110. Graduated 0-100 on codes -111 and -112.

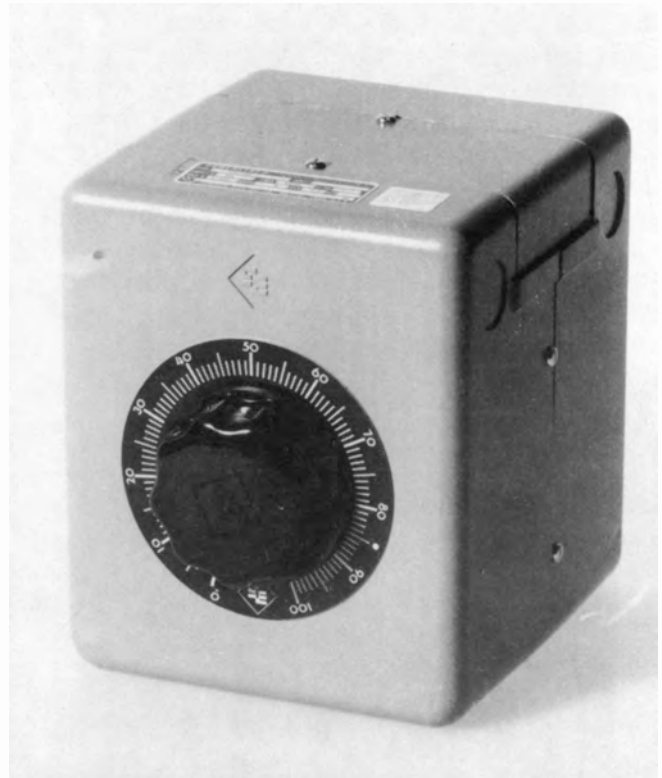
<u>Input</u>	<u>Output Capacity</u>	<u>Suitable For</u>	<u>Code</u>
120 VAC 50/60 Hz, single phase	0-140 volts 10 amps 1400 watts	115 volt circuits to 1000 watts	-110
120 VAC 50/60 Hz, single phase	0-120 volts 22 amps 2600 watts	115 volt circuits to 2500 watts	-111
240 VAC 50/60 Hz, single phase	0-240 volts 10 amps 2400 watts	QH-2050-235	-112



HEATING EQUIPMENT

QH-5050 SERIES EN TRANSFORMER

Use series EN for permanent connection. Series EN is the one to use for connecting to a heating mantle with a terminal box. Its dust resistant steel housing offers protection for both the operator and the transformer itself. Series EN is convenient: the single cover section gives access to the interior components. Series EN is also easy to install: the unit may be mounted on a bench, wall, floor, back of panel, or front of panel, and it is easy to connect a conduit or cable. Dial: graduated 0-100. Connections: four 7/8" diameter knockouts for field wiring connections.



<u>Input</u>	<u>Output Capacity</u>	<u>Suitable For</u>	<u>Code</u>
120V	0-120 volts	QH-1000-123	-110
50/60 Hz, single phase	13 amps 1600 watts	QH-2000-120 QH-2000-121	
240V	0-240 volts	QH-1000-229	-111
50/60 Hz, single phase	13 amps 3100 watts		

QH-5060 THERMOCOUPLES

Use thermocouples in a variety of temperature ranges. Choose features to match application. These thermocouples, available in a variety of sizes and constructions, are for use with temperature controls and a digital thermometer.

Recommended

<u>Range</u>	<u>Description</u>	<u>Code</u>
0-370°C 0-700°F	24 gauge. 1/8" dia. x 6" long stainless steel probe. 48" long fiberglass insulated duplex lead with stainless steel overbraid. With miniature plug. For liquid Immersion.	-110
0-260°C 0-500°F	24 gauge. 1/8" dia. x 6" long Teflon coated stainless steel probe. 48" long, Teflon insulated duplex lead. With miniature plug. For liquid Immersion.	-111
0-480°C 0-900°F	20 gauge. 72" long fiberglass insulated duplex lead wire with welded tip. With miniature plug. Not for liquid Immersion.	-112
0-370°C 0-700°F	24 gauge. 36" long fiberglass insulated duplex lead wire with welded tip. With miniature plug. Not for liquid Immersion.	-113

