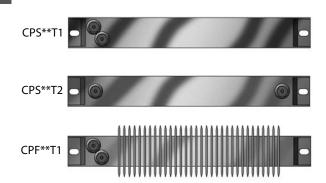
component parts



STRIP AND FINNED STRIP HEATERS

WATTCO™ strip heaters are composed of a heating element, a protective sleeve or sheath, and mounting hardware. Used as radiant heaters, they have finned strips to maximize surface area and heat transfer to the air. They are clamped or bolted onto objects or solid surfaces in several heating applications.

Our strip heaters are the best versatile choice to provide good surface contact heating over large areas.



KEY FEATURES

- · Equipped with insulation to reduce heat loss
 - o Insulation materials:

Magnesium oxide

Mica

Fiberglass

Minerals

Ceramic materials

- Available mounting styles for strip heaters:
 - o Mounting tabs with holes
 - o Mounting tabs with slots
 - o Slots or holes without tabs
- · Special sizes, wattages, and materials available upon request
 - o Available sheath materials:

Aluminum

Iron

Steel

Stainless steel

Aluminized steel

Zinc-coated steel

- Compressed under high pressure
- Available in a wide range of wattages
- · Custom-designed to meet your specifications

· Easy and economical to install

- Easy to control
- Designed with first-class quality materials (high temperature alloy resistance wire)
- Uniform heat distribution
- Corrosion resistant and attractive (with aluminized steel strip heaters and a stainless steel sheath)
- · Suitable for higher temperatures
- · Vibration resistant (with compacted semi-vitrified refractory material and rigid sheathed construction)
- **Built solid**
- Durable
- Versatile

Surface heating:

o Dies

APPLICATIONS

- o Molds
- o Tanks

· Process air heating:

- o Ovens
- o Drying cabinets
- o Baking ovens
- o Vacuum dehydrating ovens
- o Moisture protection for motors

· Dropping resistors:

- o Line applications in railroads and load banks
- Winterizing:
 - o Hoppers
 - o Conveyors
 - o Ducts
 - o Car heating systems
 - o Thawing
 - o Control Panels
- Dehumidifiers
- Space heating
- · Packaging and sealing equipment
- Food warming equipment
- Vulcanizing presses
- · Drying equipment
- Laboratory equipment
- · Air conditioning

The following sections will help you select a strip or finned strip heater that meets the requirements of your application. Please call us at 1.800.4WATTCO (1.800.492.8826) for further assistance.

WATTCO™ STRIP and FINNED STRIP HEATER

FACTORS TO BE CONSIDERED

Please consider the following factors in order to select the proper strip heater:

Operating temperature

ECTIN

- Heating element watt density (consult our factory)
- Sheath material (corrosive or non corrosive)
 - o Temperature of the corrodent
 - o Degree of aeration of exposed corrodent
 - o Velocity of the corrodent

CONSTRUCTION - CPST1 STRIP HEATERS**

CPS**T1 strip heaters are made of two offset bolt type terminals at one end. Refer to Table 1 for a list of heaters with an aluminized steel sheath.

NEED ASSISTANCE?

Please call us at 1.800.4WATTCO (1.800.492.8826) for further information or for assistance.



component parts

CPOT1 STRIP HEATERS**

CPO**T1 strip heaters are made of two offset bolt type terminals at one end. Refer to Table 1 for a list of heaters with an aluminized steel sheath.

APPLICATIONS

Surface heating Process air heating Resistors Winterizing Food warming equipment Packaging and sealing equipment

SHEATH MATERIAL HE

Aluminized Steel (Maximum sheath temperature of 1000°F)

Stainless Steel (Maximum sheath temperature of 1200°F)

HEATER TYPE

СРО

CPS

Note:

- Listed standard strip heaters ratings: 120V and 240V.
- Heaters with 287V are also available.
- You can also use the following strip heaters listed below with lower voltages.
- You can also use higher voltages with some strip heaters.
- For higher temperatures, use stainless steel heaters as referred in Table 2.
- Use additional insulators when voltage to ground is over 300V. Refer to page 6.7

NEED ASSISTANCE?

Please call us at 1.800.4WATTCO (1.800.492.8826) for further information or for assistance.

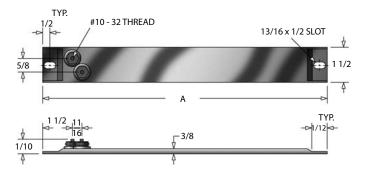




TABLE 1

Type CPO Strip Heaters - Terminals at One End / Aluminized Steel Sheath

	A. DIM.		WATTS	PER	C A	TALOG NUMBE	R
(in.)	(mm)	WATTS	(in. ²)	(cm ²)	120V	240V	287V
5 1/2	140	125	15.7	2.4	CPO051251-T1	CPO051252-T1	
6	152	150	15.2	2.4	CPO061501-T1	CPO061502-T1	
7 1/4	184	100	8.2	1.3	CPO071001-T1	CPO071002-T1	
7 1/4	184	150	12.3	1.9	CPO074501-T1	CPO074502-T1	
8	203	150	10.0	1.6	CPO081501-T1	CPO081502-T1	
8	203	175	11.7	1.8	CPO081751-T1	CPO081752-T1	
10 1/2	267	250	10.3	1.6	CPO102501-T1	CPO102502-T1	
11 3/4	298	250	8.6	1.3	CPO112501-T1	CPO112502-T1	
14	356	300	8.0	1.2	CPO143001-T1	CPO143002-T1	
15	381	325	7.9	1.2	CPO153251-T1	CPO153252-T1	
17 3/4	451	350	6.8	1.1	CPO173501-T1	CPO173502-T1	
17 3/4	451	375	7.3	1.1	CPO173751-T1	CPO173752-T1	
17 3/4	451	500	9.7	1.5	CPO175001-T1	CPO175002-T1	
17 3/4	451	250	4.8	0.7	CPO172501-T1	CPO172502-T1	
19 1/2	495	350	6.0	0.9	CPO193501-T1	CPO193502-T1	
19 1/2	495	500	8.6	1.3	CPO195001-T1	CPO195002-T1	
21	533	500	7.8	1.2	CPO215001-T1	CPO215002-T1	
23 1/2	597	500	6.8	1.1	CPO235001-T1	CPO235002-T1	CP1235003-T1
23 1/2	597	750	10.3	1.6	CPO237501-T1	CPO237502-T1	
25 1/2	648	500	6.2	1.0	CPO255001-T1	CPO255002-T1	
25 1/2	648	750	9.3	1.4	CPO257501-T1	CPO257502-T1	
26 3/4	679	700	8.2	1.3	CPO267001-T1	CPO267002-T1	
30 1/4	768	750	7.6	1.2	CPO307501-T1	CPO307502-T1	CP1307503-T1
33 1/2	851	750	6.8	1.1	CPO337501-T1	CPO337502-T1	
35 3/4	908	1000	8.4	1.3	CPO351001-T1	CPO351002-T1	CP1351003-T1
38 1/2	978	800	6.2	1.0	CPO388001-T1	CPO388002-T1	
38 1/2	978	1000	7.7	1.2	CPO391001-T1	CPO391002-T1	
42 1/4	1073	1250	8.7	1.3	CPO421251-T1	CPO421252-T1	
42 1/4	1073	1500	10.5	1.6	CPO421501-T1	CPO421502-T1	



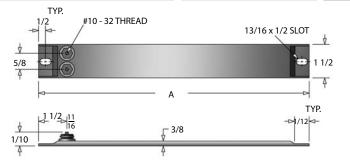


STRIP AND FINNED STRIP HEATERS

CPST1 STRIP HEATERS**

TYPE CPS**T1 strip heaters are made of two bolt type terminals at one end. Refer to Table 2 below for a list of heaters with high temperature stainless steel sheath.

APPLICATIONS Surface heating Process air heating Resistors Winterizing Food warming equipment Packaging and sealing equipment Packaging and sealing equipment SHEATH MATERIAL Aluminized Steel (Maximum sheath temperature of 1000°F) Stainless Steel (Maximum sheath temperature of 1200°F)



Note:

CPO

CPS

- Listed standard strip heaters ratings: 120V and 240V.
- · Heaters with 287V are also available.
- You can also use the following strip heaters listed below with lower voltages.
- You can also use higher voltages with some strip heaters.
- For higher temperatures, use stainless steel heaters as referred in Table 2.
- Use additional insulators when voltage to ground is over 300V. Refer to page 6.7

NEED ASSISTANCE?

Please call us at 1.800.4WATTCO (1.800.492.8826) for further information or for assistance.



TABLE 2

Type CPS Strip Heaters - Terminals at One End / Stainless Steel Sheath

	A. DIM.		W	ATTS PER		CATALOG NUMB	 E R
(in.)	(mm)	WATTS	(in. ²)	(cm ²)	120V	240V	287V
5 1/2	140	250	31.4	4.9	CPS052501-T1	CPS052502-T1	
6	152	300	30.5	4.7	CPS063001-T1	CPS063002-T1	
7 1/4	184	100	8.2	1.3	CPS071001-T1	CPS071002-T1	
7 1/4	184	200	16.4	2.5	CPS072001-T1	CPS072002-T1	
8	203	250	16.7	2.6	CPS082501-T1	CPS082502-T1	
8	203	400	26.7	4.1	CPS084001-T1	CPS084002-T1	
10 1/2	267	350	14.4	2.2	CPS103501-T1	CPS103502-T1	
10 1/2	267	400	16.4	2.5	CPS104001-T1	CPS104002-T1	
11 3/4	298	350	12.0	1.9	CPS113501-T1	CPS113502-T1	
11 3/4	298	500	17.2	2.7	CPS115001-T1	CPS115002-T1	
14	356	500	13.3	2.1	CPS145001-T1	CPS145002-T1	
15	381	500	12.1	1.9	CPS155001-T1	CPS155002-T1	
17 3/4	451	350	6.8	1.1	CPS173501-T1	CPS173502-T1	
17 3/4	451	500	9.7	1.5	CPS175001-T1	CPS175002-T1	CPS175003-T1
17 3/4	451	750	14.5	2.2	CPS177501-T1	CPS177502-T1	
17 3/4	451	1000	19.4	3.0	CPS181001-T1	CPS181002-T1	
19 1/2	495	500	8.6	1.3	CPS195001-T1	CPS195002-T1	
19 1/2	495	1000	17.2	2.7	CPS201001-T1	CPS201002-T1	
21	533	750	11.8	1.8	CPS217501-T1	CPS217502-T1	
23 1/2	597	500	6.8	1.1	CPS235001-T1	CPS235002-T1	
23 1/2	597	750	10.3	1.6	CPS237501-T1	CPS237502-T1	CPS237503-T1
23 1/2	597	1000	13.7	2.1	CPS241001-T1	CPS241002-T1	
25 1/2	648	750	9.3	1.4	CPS257501-T1	CPS257502-T1	
25 1/2	648	1000	12.4	1.9	CPS261001-T1	CPS261002-T1	
26 3/4	679	1000	11.7	1.8	CPS261001-T1	CPS261002-T1	
30 1/4	768	750	7.6	1.2	CPS307501-T1	CPS307502-T1	
30 1/4	768	1000	10.2	1.6	CPS311001-T1	CPS311002-T1	CPS311003-T1
30 1/2	851	750	6.8	1.1	CPS337501-T1	CPS337502-T1	
35 3/4	908	1000	8.4	1.3	CPS351001-T1	CPS351002-T1	
35 3/4	908	1500	12.6	2.0	CPS351501-T1	CPS351502-T1	CPS351503-T1
38 1/2	978	1000	7.7	1.2	CPS381001-T1	CPS381002-T1	
42 1/4	1073	1250	8.7	1.3	CPS421251-T1	CPS421252-T1	
42 1/4	1073	1500	10.5	1.6	CPS421501-T1	CPS421502-T1	



component parts

CPOT2 STRIP HEATERS**

Type CPO**T2 strip heaters are made of two bolt type terminals at opposite ends. Refer to Table 3 for a list of heaters with an aluminized steel sheath.

Surface heating
Process air heating
Resistors
Winterizing
Food warming equipment
Packaging and sealing equipment

APPLICATIONS

SHEATH MATERIAL	HEATER TYPE
Aluminized Steel (Maximum sheath temperature of 1000°F)	СРО
Stainless Steel (Maximum sheath temperature of 1200°F)	CPS

Note:

- Listed standard strip heaters ratings: 120V and 240V.
- Heaters with 287V are also available.
- You can also use the following strip heaters listed below with lower voltages.
- You can also use higher voltages with some strip heaters.
- If higher temperatures are reached, use stainless steel heaters as referred in Table 4.
- Use additional insulators when voltage to ground is over 300V. Refer to page 6.7

NEED ASSISTANCE?

Please call us at 1.800.4WATTCO (1.800.492.8826) for further information or for assistance.

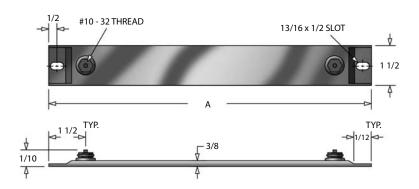




TABLE 3

Type CPO Strip Heaters - Terminals at Each End / Aluminized Steel Sheath

	A. DIM.		WATTS P		CATALOG	
(in.)	(mm)	WATTS	(in. ²)	(cm ²)	120V	240V
7 1/4	184	100	8.2	1.3	CPO071001-T2	CPO071002-T2
7 1/4	184	150	12.3	1.9	CPO071501-T2	CPO071502-T2
8	203	150	10.0	1.6	CPO081501-T2	CPO081502-T2
9 1/2	241	200	9.7	1.5	CPO092001-T2	CPO092002-T2
11 3/4	298	250	8.6	1.3	CPO112501-T2	CPO112502-T2
14	356	300	8.0	1.2	CPO143001-T2	CPO143002-T2
15	381	325	7.9	1.2	CPO153251-T2	CPO153252-T2
17 3/4	451	350	6.8	1.1	CPO173501-T2	CPO173502-T2
17 3/4	451	375	7.3	1.1	CPO173751-T2	CPO173752-T2
17 3/4	451	500	9.7	1.5	CPO175001-T2	CPO175002-T2
19 1/2	495	500	8.6	1.3	CPO195001-T2	CPO195002-T2
21	533	500	7.8	1.2	CPO215001-T2	CPO215002-T2
23 1/2	597	250	3.4	0.5	CPO232501-T2	CPO232502-T2
23 1/2	597	500	6.8	1.1	CPO235001-T2	CPO235002-T2
25 1/2	648	750	9.3	1.4	CPO257501-T2	CPO257502-T2
26 3/4	679	700	8.2	1.3	CPO267001-T2	CPO267002-T2
30 1/4	768	750	7.6	1.2	CPO307501-T2	CPO307502-T2
33 1/2	851	750	6.8	1.1	CPO337501-T2	CPO337502-T2
35 3/4	908	1000	8.4	1.3	CPO351001-T2	CPO351002-T2
38 1/2	978	1000	7.7	1.2	CPO381001-T2	CPO381002-T2
42 1/4	1073	1250	8.7	1.3	CPO421251-T2	CPO421252-T2

STRIP AND FINNED STRIP HEATERS

CPST2 STRIP HEATERS WITH STAINLESS STEEL SHEATH**

Refer to Table 4 below for a list of heaters with high temperature stainless steel sheath.

APPLICATIONS SHEATH MATERIAL HEATER TYPE Aluminized Steel Surface heating (Maximum sheath Process air heating temperature of 1000°F) Resistors Winterizing Stainless Steel Food warming equipment (Maximum sheath Packaging and sealing equipment temperature of 1200°F)

Note:

CPO

CPS

- · Listed standard strip heaters ratings: 120V and 240V.
- Heaters with 287V are also available.
- You can also use the following strip heaters listed below with lower voltages.
- You can also use higher voltages with some strip heaters.
- If higher temperatures are reached, use stainless steel heaters as referred in Table 4.
- · Use additional insulators when voltage to ground is over 300V. Refer to page 6.7

NEED ASSISTANCE?

Please call us at 1.800.4WATTCO (1.800.492.8826) for further information or for assistance.

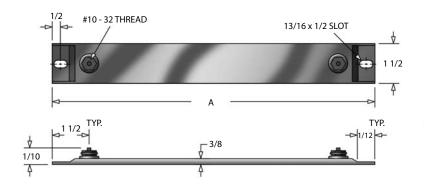




TABLE 4 Type CPS Strip Heaters - Terminals at Each End / Stainless Steel Sheath

	A. DIM.		WATTS F	PER	CATALOG NUMBER	
(in.)	(mm)	WATTS	(in. ²)	(cm ²)	120V 240V	
7 1/4	184	100	8.2	1.3	CPS071001-T2 CPS071002-T	T2
7 1/4	184	200	16.4	2.5	CPS072001-T2 CPS072002-T	T2
8	203	250	16.7	2.6	CPS082501-T2 CPS082502-T	T2
9 1/2	241	300	14.5	2.2	CPS093001-T2 CPS093002-T	T2
11 3/4	298	100	3.4	0.5	CPS111001-T2 CPS111002-T	T2
11 3/4	298	250	8.6	1.3	CPS112501-T2 CPS112502-T	T2
11 3/4	298	350	12.0	1.9	CPS113501-T2 CPS113502-T	T2
11 3/4	298	500	17.2	2.7	CPS115001-T2 CPS115002-T	T2
14	356	500	13.3	2.1	CPS145001-T2 CPS145002-T	T2
15	381	500	12.1	1.9	CPS155001-T2 CPS155002-T	T2
17 3/4	451	500	9.7	1.5	CPS175001-T2 CPS175002-T	T2
17 3/4	451	750	14.5	2.2	CPS177501-T2 CPS177502-T	T2
17 3/4	451	1000	19.4	3.0	CPS181001-T2 CPS181002-T	T2
19 1/2	495	500	8.6	1.3	CPS195001-T2 CPS195002-T	T2
19 1/2	495	750	12.9	2.0	CPS197501-T2 CPS197502-T	T2
19 1/2	495	1000	17.2	2.7	CPS201001-T2 CPS201002-T	T2
21	533	500	7.8	1.2	CPS215001-T2 CPS215002-T	T2
23 1/2	597	500	6.8	1.1	CPS235001-T2 CPS235002-T	T2
23 1/2	597	750	10.3	1.6	CPS237501-T2 CPS237502-T	T2
23 1/2	597	1000	13.7	2.1	CPS241001-T2 CPS241002-T	T2
23 1/2	597	1500	20.5	3.2	CPS241501-T2 CPS241502-T	T2
25 1/2	648	1000	12.4	1.9	CPS251001-T2 CPS251002-T	T2
26 3/4	679	750	8.8	1.4	CPS267501-T2 CPS267502-T	T2
30 1/4	768	750	7.6	1.2	CPS307501-T2 CPS307502-T	T2
33 1/2	851	1000	9.0	1.4	CPS331001-T2 CPS331002-T	T2
25 3/4	908	1000	8.4	1.3	CPS351001-T2 CPS351002-T	T2
38 1/2	978	1000	7.7	1.2	CPS381001-T2 CPS381002-T	T2
42 1/4	1073	1500	10.5	1.6	CPS421501-T2 CPS421502-T	T2





component parts

CPFT1 STRIP HEATERS**

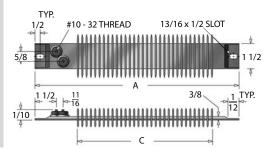
Type CPF**T2 strip heaters are made of two offset bolt type terminals at one end. Refer to Table 5 for a list of heaters with aluminized steel sheath.

APPLICATIONS

SHEATH MATERIAL HEATER TYPE

Aluminized Steel (Maximum sheath temperature of 1000°F)

CPF



Note:

- Listed standard strip heaters ratings: 120V and 240V.
- · Heaters with 287V are also available.
- You can also use the following strip heaters listed below with lower voltages.
- You can also use higher voltages with some strip heaters.
- Use additional insulators when voltage to ground is over 300V. Refer to Page 6.7
- Fins dimensions:
 - o 0.022" thick cadmium plated steel with a nominal four fins per inch
 - o Approximately 2" x 1 3/8"

NEED ASSISTANCE?

Please call us at 1.800.4WATTCO (1.800.492.8826) for further information or for assistance.



TABLE 5

Type CPF Finned Strip Heaters - Terminals at One End / Aluminized Steel Sheath

A DI	M.	C DI	М.		WAT	TS PER	CATALOG	NUMBER
(in.)	(mm)	(in.)	(mm)	WATTS	(in. ²)	(cm ²)	120V	240V
HIGH WATT I	DENSITY							
10 1/2	267	6 1/4	159	725	29.7	4.6	CPF107251-T1	CPF107252-T1
11 3/4	298	7 1/2	191	900	31.0	4.8	CPF119001-T1	CPF119002-T1
14	356	9 3/4	248	1100	29.3	4.5	CPF141101-T1	CPF141102-T1
15	381	10 3/4	273	1250	30.3	4.7	CPF151251-T1	CPF151252-T1
17 3/4	451	13 1/2	343	1550	30.1	4.7	CPF171551-T1	CPF171552-T1
19 1/2	495	15 1/4	387	1700	29.2	4.5	CPF191701-T1	CPF191702-T1
21	533	16 3/4	425	1900	29.8	4.6	CPF211901-T1	CPF211902-T1
23 1/2	597	19 1/4	489	2200	30.1	4.7	CPF232201-T1	CPF232202-T1
25 1/2	648	21 1/4	540	2400	29.8	4.6	CPF252401-T1	CPF252402-T1
26 3/4	679	22 1/2	572	2500	30.1	4.7	CPF262501-T1	CPF262502-T1
30 1/4	768	26	660	2800	28.4	4.4	CPF302801-T1	CPF302802-T1
33 1/2	851	29 1/4	743	3150	28.5	4.4	CPF333151-T1	CPF333152-T1
35 3/4	908	31 1/2	800	3450	29.0	4.5	CPF353451-T1	CPF353452-T1
38 1/2	978	34 1/4	870	3700	28.6	4.4	CPF383701-T1	CPF383702-T1
42 1/4	1073	38	965	4150	28.9	4.5	CPF424151-T1	CPF424152-T1
LOW WATT	SENCITY							
LOW WATT L	DENSITY							
7 1/4	184	3	76	150	12.3	1.9	CPF071501-T1	CPF071502-T1
8	203	3 3/4	95	175	11.7	1.8	CPF081751-T1	CPF081752-T1
10 1/2	267	6 1/4	159	350	14.4	2.2	CPF103501-T1	CPF103502-T1
11 3/4	298	7 1/2	191	500	17.2	2.7	CPF115001-T1	CPF115002-T1
14	356	9 3/4	248	500	13.3	2.1	CPF145001-T1	CPF145002-T1
15	381	10 3/4	273	500	12.1	1.9	CPF155001-T1	CPF155002-T1
17 3/4	451	13 1/2	343	1000	19.4	3.0	CPF171001-T1	CPF171002-T1
19 1/2	495	15 1/4	387	1000	17.2	2.7	CPF191001-T1	CPF191002-T1
21	533	16 3/4	425	1000	15.7	2.4	CPF211001-T1	CPF211002-T1
23 1/2	597	19 1/4	489	1000	13.7	2.1	CPF231001-T1	CPF231002-T1
25 1/2	648	21 1/4	540	1250	15.5	2.4	CPF251251-T1	CPF251252-T1
26 3/4	679	22 1/2	572	1350	15.8	2.4	CPF261351-T1	CPF261352-T1
30 1/4	768	26	660	1500	15.2	2.4	CPF301501-T1	CPF301502-T1
33 1/2	851	29 1/4	743	1700	15.4	2.4	CPF331701-T1	CPF331702-T1
35 3/4	908	31 1/2	800	1800	15.1	2.3	CPF351801-T1	CPF351802-T1
38 1/2	978	34 1/4	870	2000	15.5	2.4	CPF382001-T1	CPF382002-T1
42 1/4	1073	38	965	2100	14.6	2.3	CPF422101-T1	CPF422102-T1



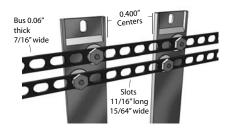


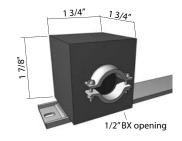
STRIP AND FINNED STRIP HEATERS

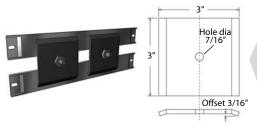
EXTRA FEATURESDESCRIPTIONSPECIAL WATTAGE, VOLTAGE, AND LENGTHSCall us at 1.800.4WATTCO if you need a custom designed heater for your application.LENGTHWISE BENDINGCall us at 1.800.4WATTCO (1.800.492.8826) if you need lengthwise bending for your application.FINNED STRIP HEATERSWATTCO™ CPF strip heaters can be supplied with offset terminals and can also be made of fins upon request.ADDITIONAL INSULATORSUse additional insulators when voltage to ground is over 300V.











EXTRA FEATURES / DESCRIPTION

FIGURE 1 - CAT. NO. P1231

Use the following insulator if a limited mounting space is ½" longer than the strip heater. WATTCO™ strip heater mounting tabs are punched prior to insulator installation.

FIGURE 2 - CAT. NO. P1235

Use the following insulator for stock strip heaters.

Make sure that the mounting space is 3" longer than the strip heater.

FIGURE 3 - CERAMIC POST TERMINAL COVERS

Use ceramic post terminal covers for:

- Heaters with standard 10-32 threaded terminals at both ends
 - · Heaters with offset terminals at one end

Also use ceramic post terminal with insulated wiring in order to be electrical shock proof.

FIGURE 4 - BRASS BUS BAR

WATTCO™ perforated brass bus bar are solid conductors to connect several strip heaters in series or parallel.

For higher current-carrying capacities, all WATTCO™ bus bars can be specially configured to meet your requirements.

FIGURE 5 - TERMINAL BOX

For CPS strip heaters:

- Terminal box is supplied with BX cable fitting
- Terminal box is mounted in any of the four directions according to your requirements.

FIGURE 6 - SURFACE CLAMP

Use heavy-gauge, nickel-plated steel clamps for mounting WATTCO $^{\text{TM}}$ strip heaters to large surfaces (tank walls, platens, dies).

Weld, braze or thread threaded 3/8" diameter studs into the work areas.