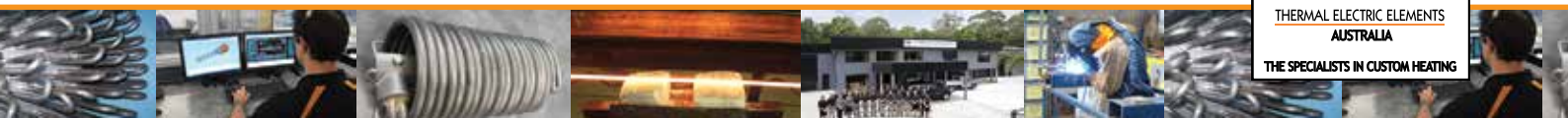


# Section 13

## Plastics Industry



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| Thermal Nozzle Heaters        | 13.1 |
| Thermalfold Cartridge Heaters | 13.4 |
| Thermal Band Heaters          | 13.5 |



## Thermal Nozzle Heaters for Injection Moulding

Thermal nozzle heaters have been designed to last and reduce down time with high watt density capabilities to allow maximum temperature ratings and faster heat penetration into the nozzle.

Thermal nozzle heaters are 6.35mm diameter stainless steel tubular roll formed, making them robust and eliminating the problems that normally occur with conventional mica nozzles.

Operating temperatures of up to 600°C are achieved with outstanding reliability and a long lasting life. With the multi-form construction, this heater can be opened and fitted easily without causing the damage that may normally occur with mica elements.

A Thermal Low Profile nozzle heater is also available with all of the above capabilities as well as elements of 4mm diameter stainless steel tubular roll formed. They are used in applications where there is limited space around the nozzle. The LP type is available with the same dimensions and wattages as the TS and SN type nozzle heaters.

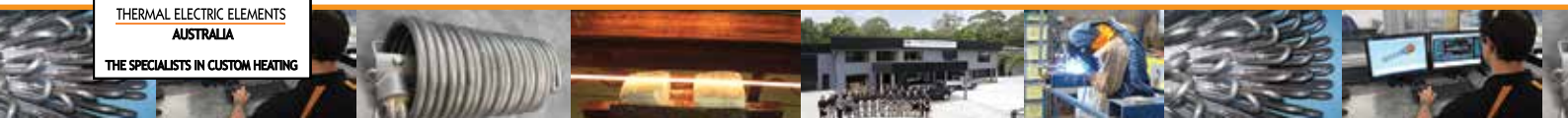
All Thermal nozzle heaters come with 1 metre double glass insulated leads and 300mm tinned copper braid as standard. Many other options are available.

The two basic designs available are:

**TS TYPE**



**SN TYPE**



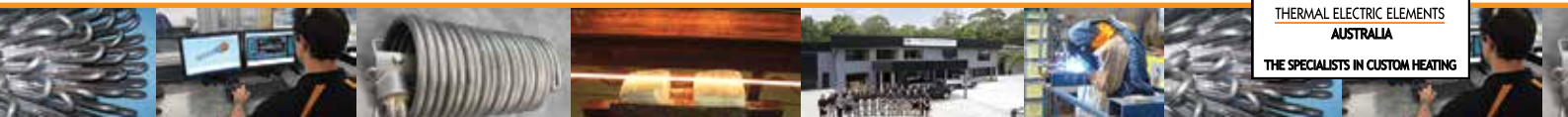
## Thermal Nozzle Heaters - TS



| Part #        | Diameter | Width | Watts |
|---------------|----------|-------|-------|
| <b>TS2512</b> | 25       | 12    | 125   |
| <b>TS2522</b> | 25       | 22    | 150   |
| <b>TS2530</b> | 25       | 30    | 200   |
| <b>TS2538</b> | 25       | 38    | 250   |
| <b>TS2546</b> | 25       | 46    | 275   |
| <b>TS3512</b> | 35       | 12    | 200   |
| <b>TS3522</b> | 35       | 22    | 250   |
| <b>TS3530</b> | 35       | 30    | 300   |
| <b>TS3538</b> | 35       | 38    | 350   |
| <b>TS3546</b> | 35       | 46    | 400   |
| <b>TS4512</b> | 45       | 12    | 225   |
| <b>TS4522</b> | 45       | 22    | 250   |
| <b>TS4530</b> | 45       | 30    | 300   |
| <b>TS4538</b> | 45       | 38    | 350   |
| <b>TS4546</b> | 45       | 46    | 400   |
| <b>TS5512</b> | 55       | 12    | 250   |
| <b>TS5522</b> | 55       | 22    | 300   |
| <b>TS5530</b> | 55       | 30    | 350   |
| <b>TS5538</b> | 55       | 38    | 400   |
| <b>TS5546</b> | 55       | 46    | 450   |
| <b>TS7012</b> | 70       | 12    | 300   |
| <b>TS7022</b> | 70       | 22    | 350   |
| <b>TS7030</b> | 70       | 30    | 400   |
| <b>TS7038</b> | 70       | 38    | 450   |
| <b>TS7046</b> | 70       | 46    | 500   |

| Part #        | Diameter | Width | Watts |
|---------------|----------|-------|-------|
| <b>TS3212</b> | 32       | 12    | 200   |
| <b>TS3222</b> | 32       | 22    | 250   |
| <b>TS3230</b> | 32       | 30    | 300   |
| <b>TS3238</b> | 32       | 38    | 350   |
| <b>TS3246</b> | 32       | 46    | 400   |
| <b>TS3812</b> | 38       | 12    | 200   |
| <b>TS3822</b> | 38       | 22    | 250   |
| <b>TS3830</b> | 38       | 30    | 300   |
| <b>TS3838</b> | 38       | 38    | 350   |
| <b>TS3846</b> | 38       | 46    | 400   |
| <b>TS5012</b> | 50       | 12    | 200   |
| <b>TS5022</b> | 50       | 22    | 300   |
| <b>TS5030</b> | 50       | 30    | 350   |
| <b>TS5038</b> | 50       | 38    | 400   |
| <b>TS5046</b> | 50       | 46    | 450   |
| <b>TS6212</b> | 62       | 12    | 250   |
| <b>TS6222</b> | 62       | 22    | 300   |
| <b>TS6230</b> | 62       | 30    | 350   |
| <b>TS6238</b> | 62       | 38    | 400   |
| <b>TS6246</b> | 62       | 46    | 450   |
| <b>TS7512</b> | 75       | 12    | 300   |
| <b>TS7522</b> | 75       | 22    | 350   |
| <b>TS7530</b> | 75       | 30    | 400   |
| <b>TS7538</b> | 75       | 38    | 450   |
| <b>TS7546</b> | 75       | 46    | 500   |

All dimensions are given in millimetres and elements are rated at 240V. Special sizes, voltages and wattages manufactured to suit your requirements.



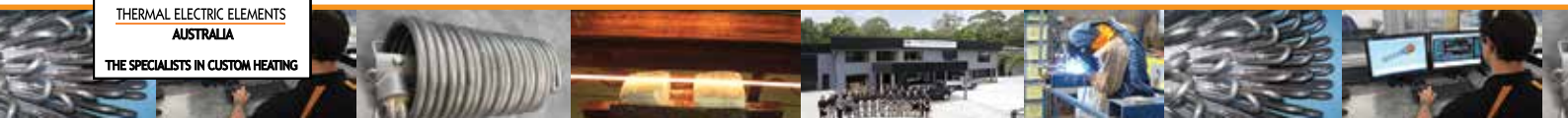


## Thermal Nozzle Heaters - SN

| Part #  | Diameter | Width | Watts |
|---------|----------|-------|-------|
| SN2550  | 25       | 50    | 200   |
| SN2560  | 25       | 60    | 250   |
| SN2580  | 25       | 80    | 300   |
| SN25100 | 25       | 100   | 450   |
| SN25150 | 25       | 150   | 600   |
| SN25200 | 25       | 200   | 800   |
| SN25250 | 25       | 250   | 1200  |
| SN25300 | 25       | 300   | 1500  |
| SN3550  | 35       | 50    | 300   |
| SN3560  | 35       | 60    | 350   |
| SN3580  | 35       | 80    | 400   |
| SN35100 | 35       | 100   | 550   |
| SN35150 | 35       | 150   | 700   |
| SN35200 | 35       | 200   | 900   |
| SN35250 | 35       | 250   | 1300  |
| SN35300 | 35       | 300   | 1650  |
| SN4550  | 45       | 50    | 350   |
| SN4560  | 45       | 60    | 400   |
| SN4580  | 45       | 80    | 450   |
| SN45100 | 45       | 100   | 650   |
| SN45150 | 45       | 150   | 800   |
| SN45200 | 45       | 200   | 1000  |
| SN45250 | 45       | 250   | 1400  |
| SN45300 | 45       | 300   | 1800  |
| SN5550  | 55       | 50    | 400   |
| SN5560  | 55       | 60    | 450   |
| SN5580  | 55       | 80    | 500   |
| SN55100 | 55       | 100   | 700   |
| SN55150 | 55       | 150   | 900   |
| SN55200 | 55       | 200   | 1200  |
| SN55250 | 55       | 250   | 1600  |
| SN55300 | 55       | 300   | 2000  |
| SN7050  | 70       | 50    | 450   |
| SN7060  | 70       | 60    | 500   |
| SN7080  | 70       | 80    | 550   |
| SN70100 | 70       | 100   | 750   |
| SN70150 | 70       | 150   | 1100  |
| SN70200 | 70       | 200   | 1300  |
| SN70250 | 70       | 250   | 1800  |
| SN70300 | 70       | 300   | 2200  |

| Part #  | Diameter | Width | Watts |
|---------|----------|-------|-------|
| SN3250  | 32       | 50    | 300   |
| SN3260  | 32       | 60    | 350   |
| SN3280  | 32       | 80    | 400   |
| SN32100 | 32       | 100   | 500   |
| SN32150 | 32       | 150   | 650   |
| SN32200 | 32       | 200   | 850   |
| SN32250 | 32       | 250   | 1250  |
| SN32300 | 32       | 300   | 1600  |
| SN3850  | 38       | 50    | 300   |
| SN3860  | 38       | 60    | 350   |
| SN3880  | 38       | 80    | 400   |
| SN38100 | 38       | 100   | 550   |
| SN38150 | 38       | 150   | 700   |
| SN38200 | 38       | 200   | 900   |
| SN38250 | 38       | 250   | 1300  |
| SN38300 | 38       | 300   | 1650  |
| SN5050  | 50       | 50    | 350   |
| SN5060  | 50       | 60    | 400   |
| SN5080  | 50       | 80    | 450   |
| SN50100 | 50       | 100   | 650   |
| SN50150 | 50       | 150   | 800   |
| SN50200 | 50       | 200   | 1000  |
| SN50250 | 50       | 250   | 1500  |
| SN50300 | 50       | 300   | 1800  |
| SN6250  | 62       | 50    | 400   |
| SN6260  | 62       | 60    | 450   |
| SN6280  | 62       | 80    | 500   |
| SN62100 | 62       | 100   | 700   |
| SN62150 | 62       | 150   | 1000  |
| SN62200 | 62       | 200   | 1250  |
| SN62250 | 62       | 250   | 1650  |
| SN62300 | 62       | 300   | 2000  |
| SN7550  | 75       | 50    | 500   |
| SN7560  | 75       | 60    | 600   |
| SN7580  | 75       | 80    | 650   |
| SN75100 | 75       | 100   | 850   |
| SN75150 | 75       | 150   | 1200  |
| SN75200 | 75       | 200   | 1500  |
| SN75250 | 75       | 250   | 2000  |
| SN75300 | 75       | 300   | 2400  |

All dimensions are given in millimetres and elements are rated at 240V.  
Special sizes, voltages and wattages manufactured to suit your requirements.





## Thermalfold Cartridge Heaters

Thermalfold high watt density cartridge heaters are of a unique design and are the latest in electric heating technology.

Thermalfold Cartridge elements are manufactured 0.1mm to 0.5mm under-size to slide easily into the hole size specified. When energised, they heat up and spring open due to their folded construction. While in the heated condition, they are a snug fit and impossible to remove. On cooling, they contract back to their original diameter and become easy to remove again. Conventional cartridge heaters would normally fail under these conditions.

The maximum element temperature is 800°C. Work temperatures of up to 600°C are therefore achievable, depending on the application.

Thermalfold cartridge heaters range in size from 6mm to 25mm diameter, with various lengths available on request.

Thermalfold cartridge heaters are specially manufactured to suit your requirements. When ordering, please specify the following dimensions (as per diagram below):

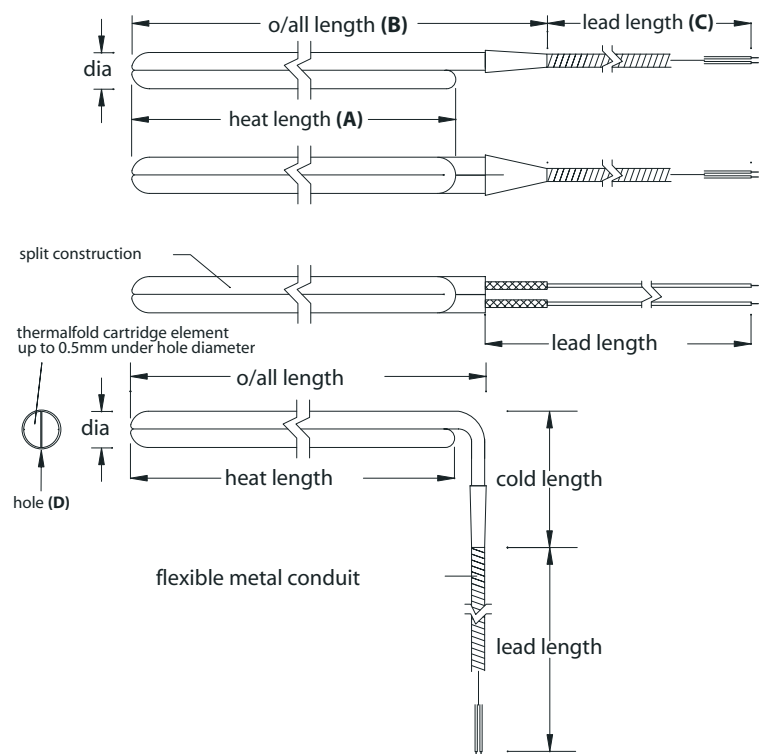
**A** - Heating length.

**B** - Overall length of Thermalfold.

**C** - Length of terminating leads with or without metal flexible conduit.

**D** - Hole size in which Thermalfold is to fit.

**E** - Voltage and wattage.



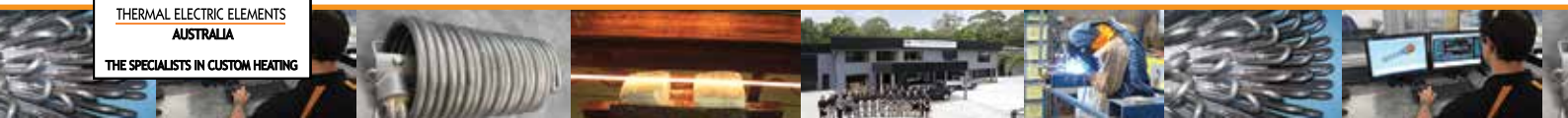
## Thermal Band Heaters

Thermal Band Heaters have been designed to last and reduce down time. Band Heaters have high watt density capabilities which allow maximum temperature ratings and faster heat penetration into the barrel.

Thermal Band Heaters are manufactured in 6.35mm and 7.9mm diameter stainless steel tubular roll formed construction, making them robust and eliminating the problems that normally occur with conventional mica band heaters.

Operating temperatures of up to 600°C are achieved with outstanding reliability and a long lasting life. With the multi-form design, these heaters can be opened and fitted easily without causing damage to them that may normally occur with mica elements. A uniform and greater heating area around the barrel is made possible due to this construction, whereas a mica band heater for applications with thermocouple holes and cut outs may, in many cases, heat only half of the area that the element has been designed for.

Thermal Band Heaters come standard with 2 metre flexible lead and plug. If desired, a plug assembly or terminal enclosure can also be fitted. The two designs available are BH type and DBH type.

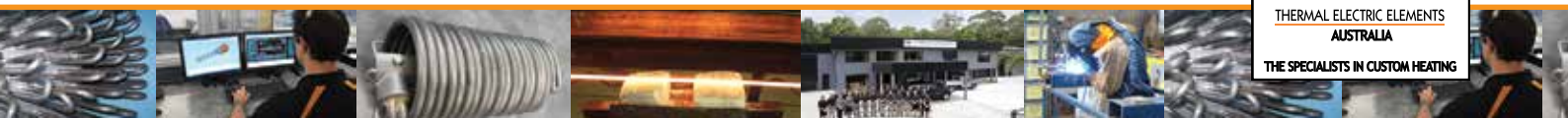


## Thermal Band Heaters - BH

| Part #  | Diameter | Width | Watts |
|---------|----------|-------|-------|
| BH9045  | 90       | 45    | 500   |
| BH9050  | 90       | 50    | 550   |
| BH9055  | 90       | 55    | 600   |
| BH9060  | 90       | 60    | 650   |
| BH9065  | 90       | 65    | 700   |
| BH9070  | 90       | 70    | 750   |
| BH10045 | 100      | 45    | 500   |
| BH10050 | 100      | 50    | 550   |
| BH10055 | 100      | 55    | 600   |
| BH10060 | 100      | 60    | 650   |
| BH10065 | 100      | 65    | 700   |
| BH10070 | 100      | 70    | 750   |
| BH12545 | 125      | 45    | 600   |
| BH12550 | 125      | 50    | 650   |
| BH12555 | 125      | 55    | 700   |
| BH12560 | 125      | 60    | 750   |
| BH12565 | 125      | 65    | 800   |
| BH12570 | 125      | 70    | 850   |
| BH15045 | 150      | 45    | 700   |
| BH15050 | 150      | 50    | 750   |
| BH15055 | 150      | 55    | 800   |
| BH15060 | 150      | 60    | 850   |
| BH15065 | 150      | 65    | 900   |
| BH15070 | 150      | 70    | 950   |
| BH17545 | 175      | 45    | 1200  |
| BH17550 | 175      | 50    | 1250  |
| BH17555 | 175      | 55    | 1300  |
| BH17560 | 175      | 60    | 1350  |
| BH17565 | 175      | 65    | 1400  |
| BH17570 | 175      | 70    | 1450  |

| Part #  | Diameter | Width | Watts |
|---------|----------|-------|-------|
| BH20045 | 200      | 45    | 1600  |
| BH20050 | 200      | 50    | 1650  |
| BH20055 | 200      | 55    | 1700  |
| BH20060 | 200      | 60    | 1750  |
| BH20065 | 200      | 65    | 1800  |
| BH20070 | 200      | 70    | 2000  |
| BH22545 | 225      | 45    | 1650  |
| BH22550 | 225      | 50    | 1700  |
| BH22555 | 225      | 55    | 1750  |
| BH22560 | 225      | 60    | 1800  |
| BH22565 | 225      | 65    | 2000  |
| BH22570 | 225      | 70    | 2200  |
| BH25045 | 250      | 45    | 1700  |
| BH25050 | 250      | 50    | 1800  |
| BH25055 | 250      | 55    | 2000  |
| BH25060 | 250      | 60    | 2100  |
| BH25065 | 250      | 65    | 2250  |
| BH25070 | 250      | 70    | 2500  |
| BH30045 | 300      | 45    | 1850  |
| BH30050 | 300      | 50    | 2000  |
| BH30055 | 300      | 55    | 2100  |
| BH30060 | 300      | 60    | 2250  |
| BH30065 | 300      | 65    | 2500  |
| BH30070 | 300      | 70    | 2750  |
| BH32545 | 325      | 45    | 2000  |
| BH32550 | 325      | 50    | 2100  |
| BH32555 | 325      | 55    | 2250  |
| BH32560 | 325      | 60    | 2500  |
| BH32565 | 325      | 65    | 2750  |
| BH32570 | 325      | 70    | 3000  |

All dimensions are given in millimetres and elements are rated at 240V.  
Special sizes, voltages and wattages manufactured to suit your requirements.

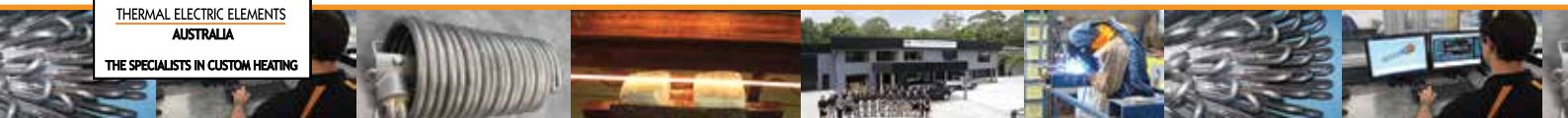


## Thermal Band Heaters - DBH

| Part #    | Diameter | Width | Watts |
|-----------|----------|-------|-------|
| DBH9060   | 90       | 60    | 700   |
| DBH9075   | 90       | 75    | 800   |
| DBH90100  | 90       | 100   | 1000  |
| DBH90125  | 90       | 125   | 1250  |
| DBH90150  | 90       | 150   | 1500  |
| DBH90175  | 90       | 175   | 1750  |
| DBH90200  | 90       | 200   | 2000  |
| DBH90225  | 90       | 225   | 2250  |
| DBH90250  | 90       | 250   | 2500  |
| DBH90300  | 90       | 300   | 3000  |
| DBH10060  | 100      | 60    | 700   |
| DBH10075  | 100      | 75    | 800   |
| DBH100100 | 100      | 100   | 1000  |
| DBH100125 | 100      | 125   | 1250  |
| DBH100150 | 100      | 150   | 1500  |
| DBH100175 | 100      | 175   | 1750  |
| DBH100200 | 100      | 200   | 2000  |
| DBH100225 | 100      | 225   | 2250  |
| DBH100250 | 100      | 250   | 2500  |
| DBH100300 | 100      | 300   | 3000  |
| DBH12560  | 125      | 60    | 1000  |
| DBH12575  | 125      | 75    | 1250  |
| DBH125100 | 125      | 100   | 1500  |
| DBH125125 | 125      | 125   | 1750  |
| DBH125150 | 125      | 150   | 2000  |
| DBH125175 | 125      | 175   | 2250  |
| DBH125200 | 125      | 200   | 2500  |
| DBH125225 | 125      | 225   | 2750  |
| DBH125250 | 125      | 250   | 3000  |
| DBH125300 | 125      | 300   | 3250  |

| Part #    | Diameter | Width | Watts |
|-----------|----------|-------|-------|
| DBH15060  | 150      | 60    | 1000  |
| DBH15075  | 150      | 75    | 1250  |
| DBH150100 | 150      | 100   | 1500  |
| DBH150125 | 150      | 125   | 1750  |
| DBH150150 | 150      | 150   | 2000  |
| DBH150175 | 150      | 175   | 2250  |
| DBH150200 | 150      | 200   | 2500  |
| DBH150225 | 150      | 225   | 2750  |
| DBH150250 | 150      | 250   | 3000  |
| DBH150300 | 150      | 300   | 3500  |
| DBH17560  | 175      | 60    | 1500  |
| DBH17575  | 175      | 75    | 1750  |
| DBH175100 | 175      | 100   | 2000  |
| DBH175125 | 175      | 125   | 2250  |
| DBH175150 | 175      | 150   | 2500  |
| DBH175175 | 175      | 175   | 2750  |
| DBH175200 | 175      | 200   | 3000  |
| DBH175225 | 175      | 225   | 3250  |
| DBH175250 | 175      | 250   | 3500  |
| DBH175300 | 175      | 300   | 3750  |
| DBH20060  | 200      | 60    | 1500  |
| DBH20075  | 200      | 75    | 1750  |
| DBH200100 | 200      | 100   | 2000  |
| DBH200125 | 200      | 125   | 2250  |
| DBH200150 | 200      | 150   | 2500  |
| DBH200175 | 200      | 175   | 2750  |
| DBH200200 | 200      | 200   | 3000  |
| DBH200225 | 200      | 225   | 3250  |
| DBH200250 | 200      | 250   | 3500  |
| DBH200300 | 200      | 300   | 3750  |

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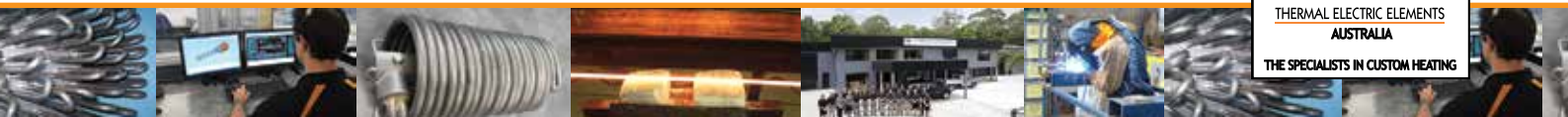


## Thermal Band Heaters - DBH - continued

| Part #           | Diameter | Width | Watts |
|------------------|----------|-------|-------|
| <b>DBH22560</b>  | 225      | 60    | 1750  |
| <b>DBH22575</b>  | 225      | 75    | 2000  |
| <b>DBH225100</b> | 225      | 100   | 2500  |
| <b>DBH225125</b> | 225      | 125   | 2750  |
| <b>DBH225150</b> | 225      | 150   | 3000  |
| <b>DBH225175</b> | 225      | 175   | 3250  |
| <b>DBH225200</b> | 225      | 200   | 3500  |
| <b>DBH225225</b> | 225      | 225   | 3750  |
| <b>DBH225250</b> | 225      | 250   | 4000  |
| <b>DBH225300</b> | 225      | 300   | 4500  |
| <b>DBH25060</b>  | 250      | 60    | 1750  |
| <b>DBH25075</b>  | 250      | 75    | 2000  |
| <b>DBH250100</b> | 250      | 100   | 2500  |
| <b>DBH250125</b> | 250      | 125   | 2750  |
| <b>DBH250150</b> | 250      | 150   | 3000  |
| <b>DBH250175</b> | 250      | 175   | 3250  |
| <b>DBH250200</b> | 250      | 200   | 3500  |
| <b>DBH250225</b> | 250      | 225   | 3750  |
| <b>DBH250250</b> | 250      | 250   | 4000  |
| <b>DBH250300</b> | 250      | 300   | 4500  |
| <b>DBH27560</b>  | 275      | 60    | 1750  |
| <b>DBH27575</b>  | 275      | 75    | 2000  |
| <b>DBH275100</b> | 275      | 100   | 2500  |
| <b>DBH275125</b> | 275      | 125   | 2750  |
| <b>DBH275150</b> | 275      | 150   | 3000  |
| <b>DBH275175</b> | 275      | 175   | 3250  |
| <b>DBH275200</b> | 275      | 200   | 3500  |
| <b>DBH275225</b> | 275      | 225   | 3750  |
| <b>DBH275250</b> | 275      | 250   | 4000  |
| <b>DBH275300</b> | 275      | 300   | 4500  |

| Part #           | Diameter | Width | Watts |
|------------------|----------|-------|-------|
| <b>DBH30060</b>  | 300      | 60    | 2500  |
| <b>DBH30075</b>  | 300      | 75    | 2750  |
| <b>DBH300100</b> | 300      | 100   | 3000  |
| <b>DBH300125</b> | 300      | 125   | 3250  |
| <b>DBH300150</b> | 300      | 150   | 3500  |
| <b>DBH300175</b> | 300      | 175   | 3750  |
| <b>DBH300200</b> | 300      | 200   | 4000  |
| <b>DBH300225</b> | 300      | 225   | 4250  |
| <b>DBH300250</b> | 300      | 250   | 4500  |
| <b>DBH300300</b> | 300      | 300   | 5000  |
| <b>DBH32560</b>  | 325      | 60    | 2500  |
| <b>DBH32575</b>  | 325      | 75    | 2750  |
| <b>DBH325100</b> | 325      | 100   | 3000  |
| <b>DBH325125</b> | 325      | 125   | 3250  |
| <b>DBH325150</b> | 325      | 150   | 3500  |
| <b>DBH325175</b> | 325      | 175   | 3750  |
| <b>DBH325200</b> | 325      | 200   | 4000  |
| <b>DBH325225</b> | 325      | 225   | 4250  |
| <b>DBH325250</b> | 325      | 250   | 4500  |
| <b>DBH325300</b> | 325      | 300   | 5000  |
| <b>DBH35060</b>  | 350      | 60    | 2500  |
| <b>DBH35075</b>  | 350      | 75    | 2750  |
| <b>DBH350100</b> | 350      | 100   | 3000  |
| <b>DBH350125</b> | 350      | 125   | 3250  |
| <b>DBH350150</b> | 350      | 150   | 3500  |
| <b>DBH350175</b> | 350      | 175   | 3750  |
| <b>DBH350200</b> | 350      | 200   | 4000  |
| <b>DBH350225</b> | 350      | 225   | 4250  |
| <b>DBH350250</b> | 350      | 250   | 4500  |
| <b>DBH350300</b> | 350      | 300   | 5000  |

All dimensions are given in millimetres and elements are rated at 240V.  
Special sizes, voltages and wattages manufactured to suit your requirements.



### **HEAD OFFICE**

7 Buckman Cl, Toormina NSW 2452  
**Ph:** 02 6659 6200 **Fax:** 02 6653 3839  
**Email:** sales@thermalelectric.com.au

### **SYDNEY**

Unit 19/45 Powers Rd, Seven Hills NSW 2147  
**Ph:** 02 8814 2500 **Fax:** 02 9620 9121  
**Email:** sydney@thermalelectric.com.au

### **MELBOURNE**

Unit 4/257 Governor Rd, Braeside VIC 3195  
**Ph:** 03 8587 6600 **Fax:** 03 9580 6333  
**Email:** melbourne@thermalelectric.com.au

### **BRISBANE**

Unit 1/8 Hopper Ave, Yatala QLD 4207  
**Ph:** 07 5547 3300 **Fax:** 07 5540 7194  
**Email:** brisbane@thermalelectric.com.au

### **PERTH**

Office 9, Level 1, 17 Prowse St, West Perth WA 6005  
**Ph:** 08 9363 8700 **Fax:** 08 9467 1465  
**Email:** perth@thermalelectric.com.au

### **MALAYSIA**

Enhance Track Sdn Bhd  
9, Jalan Meranti 12, Meranti Jaya Industrial Park  
47120 Puchong, Selangor  
**Ph:** +603 8063 2281 **Fax:** +603 8063 2282  
**Email:** enquiry@enhancetrack.com

**Free Phone 1800 025 287 Free Fax 1800 631 235**

**[www.thermalelectric.com.au](http://www.thermalelectric.com.au)**

ABN 59 001 255 492

