

# POWRMATIC®

Delivering complete climate control solutions worldwide

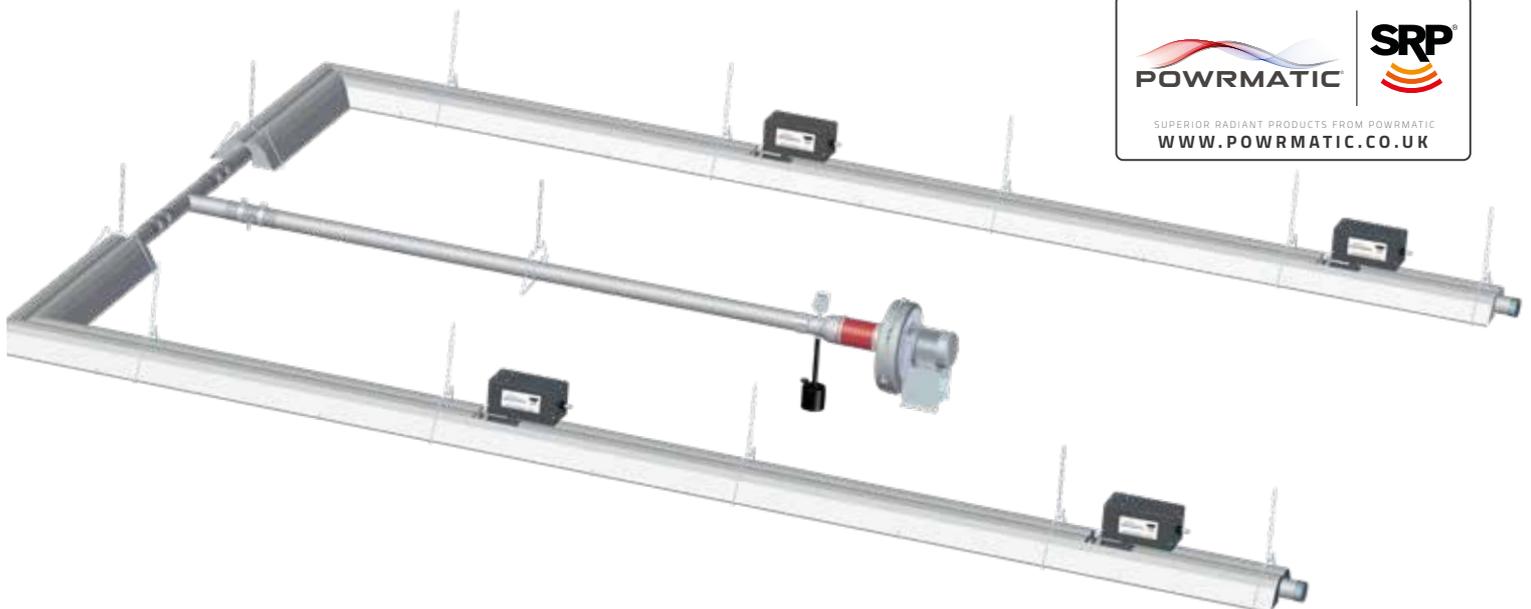


Highly efficient Premier Vacuum systems custom engineered to provide the unsurpassed efficiency, comfort and control demand for every application.

**In partnership with SRP.**

## Continuous Radiant Heating Systems

- PCV & PCV+ Range  
Natural Gas & LPG Fired Options



# Continuous Radiant Tube He

## ErP Compliance

From the 1st January 2018 all radiant heaters used to provide comfort for the occupants of a heated space are required to meet the minimum standards of 'seasonal' efficiency as determined by the Ecodesign regulation (EU) 2015/1188, Directive 2009/125/EC - Lot 20. Compliance to the standard is mandatory.

Radiant heaters placed on the market after 1st January 2018 comply with the requirements of the standard.



## Product Benefits



LOW NOx  
TECHNOLOGY



INCREASED  
THERMAL COMFORT



INSTANT HEAT  
UP TIME



INCREASE BUILDING  
PERFORMANCE



FUEL SAVING  
TECHNOLOGY

100%

EFFICIENT REFLECTOR  
PROFILE

# Efficient Comfort Control

Continuous Radiant Tube  
Systems from Powrmatic in  
partnership with SRP.

The new continuous radiant tube system from Powrmatic & SRP continues to lead the industry with its innovative, patented, value added and feature rich, position tuned, high efficiency continuous Premier Vacuum radiant systems.

The PCV and PCV+ range is custom engineered to provide the unsurpassed efficiency, comfort and control demand in each application.

The PCV & PCV+ have been validated following review against government approved high performing energy efficiency criteria, with a Seasonal Space Heating Energy Efficiency of greater than 90%, thus allowing inclusion onto the ETL (Energy Technology List). This high efficiency reduces energy usage, operational costs and carbon emissions.

The Premier Vacuum Series takes full advantage of the performance synergies that only an engineered system can provide. Unlike other "systems" which merely connect multiple unitary style heaters, this maximum design flexibility ensures that all the performance and energy savings requirements of the application can be realized. Designs are further enhanced by a full complement of additional features, including aluminised heat treated tube, reflector shielding, reflector shielding configurations, multiple vacuum pump sizes and advanced control options.

### Models Available

- PCV Powrmatic Continuous Vacuum
- PCV+ Powrmatic Continuous Vacuum Plus



## Product Features

### Trusted Partnership

Superior Radiant Products (SRP®) is an industry leader in the design and manufacture of energy efficient infrared heating solutions and is dedicated to providing superior technology and performance.



### Stoichiometric Combustion

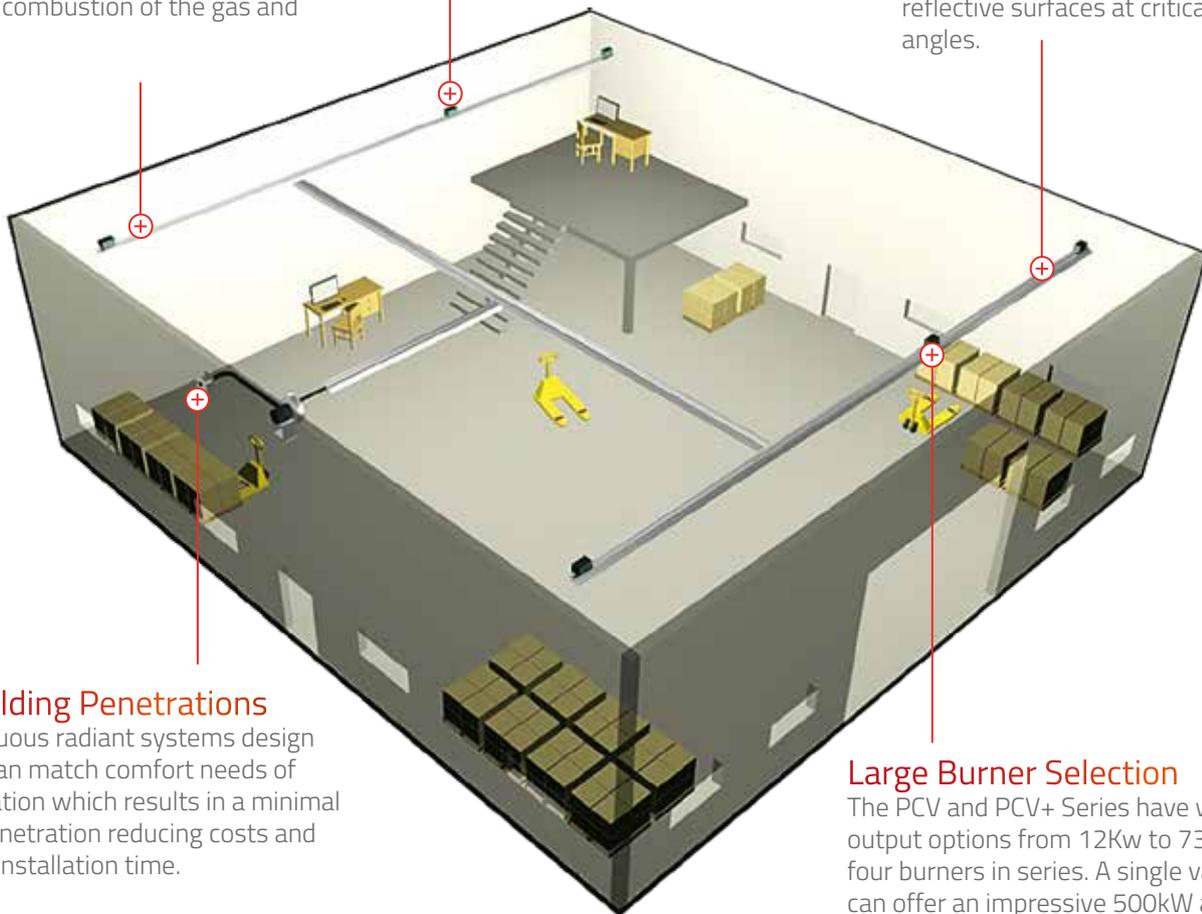
The combustion process gives thermal efficiencies of up to 95% (depending on configuration) which are combined with the well known benefits of radiant heat to maximise fuel savings. This gives safe and reliable operation with zero governor burner technology ensuring the stoichiometric gas/air ratio results in a perfect combustion of the gas and air.

### Even Heat Distribution

Even heat is distributed for optimal thermal comfort with the in-series position-tuned burners. Zoned modulation provides heat where it is needed most.

### 100% Efficient Reflector Profile

The PCV and PCV+ 100% efficient reflectors ensures all the infrared heat is directed into the space where it is needed, and is the most efficient reflector in the industry. They incorporate materials that have high emissivity and utilize 10 reflective surfaces at critically controlled angles.



### Less Building Penetrations

The continuous radiant systems design flexibility can match comfort needs of any application which results in a minimal building penetration reducing costs and improving installation time.

### Large Burner Selection

The PCV and PCV+ Series have wide range of output options from 12kW to 73kW with up to four burners in series. A single vacuum pump can offer an impressive 500kW allowing large system layout design configurations.

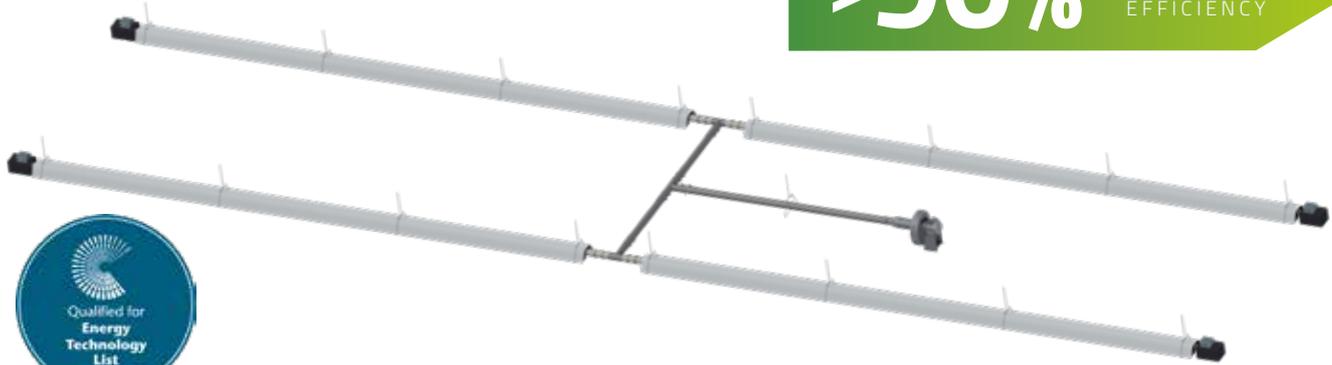
### Approvals

 Radiant heaters are type tested and CE approved. In addition heaters placed on the market subsequent to 1st January 2018 meet the seasonal efficiency requirements of ErP Lot 20.

# Technical Specification

## PCV & PCV+

| Model                                    |                       |            | PCV          |      |      |      |      |      |
|--|-----------------------|------------|--------------|------|------|------|------|------|
|  |                       |            | 12           | 18   | 23   | 29   | 32   | 35   |
| Heat Input (Natural Gas G20)             | High Fire (100% rate) | kW (gross) | 12           | 18   | 23   | 29   | 32   | 35   |
|  | Low Fire (60% rate)   | kW (gross) | 7.2          | 10.8 | 13.8 | 17.4 | 19.2 | 21   |
| Seasonal Space Heating Energy Efficiency |                       | %          | 90.1         |      |      |      |      |      |
| NOx Seasonal (Gross)                     |                       | mg/kW      | 65           |      |      |      |      |      |
| Gas Connection                           | BSP/Rc                |            | ½"           |      |      |      |      |      |
| Supply Pressure                          | mbar                  |            | Nat Gas - 20 |      |      |      |      |      |
| Electrics                                | V/ph/Hz               |            | 230/1/50     |      |      |      |      |      |
| Burner Current                           | amp                   |            | 0.1          |      |      |      |      |      |
| Gas Consumption Natural Gas G20          | m³/h                  | 100% Rate  | 1.14         | 1.70 | 2.18 | 2.75 | 3.03 | 3.32 |
|  |                       | 60% Rate   | 0.68         | 1.02 | 1.31 | 1.65 | 1.82 | 1.99 |
| Air Inlet Connection                     | mm                    |            | 100          |      |      |      |      |      |
| Burner Weight (single)                   | kg                    |            | 11.4         |      |      |      |      |      |



| Model                                    |                       |            | PCV+                        |      |      |      |      |      |      |      |
|--|-----------------------|------------|-----------------------------|------|------|------|------|------|------|------|
|  |                       |            | 23                          | 29   | 35   | 44   | 51   | 59   | 66   | 73   |
| Heat Input (Natural Gas G20)             | High Fire (100% rate) | kW (gross) | 23                          | 29   | 35   | 44   | 51   | 59   | 66   | 73   |
|  | Low Fire (60% rate)   | kW (gross) | 13.8                        | 17.4 | 21   | 26.4 | 30.6 | 35.4 | 39.6 | 43.8 |
| Heat Input (Propane LPG G30)             | High Fire (100% rate) | kW (gross) | 23                          | 29   | 35   | 44   | 51   | 59   | 66   | 73   |
|  | Low Fire (60% rate)   | kW (gross) | 13.8                        | 17.4 | 21   | 26.4 | 30.6 | 35.4 | 39.6 | 43.8 |
| Seasonal Space Heating Energy Efficiency |                       | %          | 92.1                        |      |      |      |      |      |      |      |
| NOx Seasonal (Gross)                     |                       | mg/kW      | 98                          | 98   | 98   | 98   | 105  | 115  | 115  | 115  |
| Gas Connection                           | BSP/Rc                |            | ½"                          |      |      |      | ¾"   |      |      |      |
| Supply Pressure                          | mbar                  |            | Nat Gas - 20 / Propane - 37 |      |      |      |      |      |      |      |
| Electrics                                | V/ph/Hz               |            | 230/1/50                    |      |      |      |      |      |      |      |
| Burner Current                           | amp                   |            | 0.1                         |      |      |      |      |      |      |      |
| Gas Consumption Natural Gas G20          | m³/h                  | 100% Rate  | 2.18                        | 2.75 | 3.32 | 4.17 | 4.83 | 5.59 | 6.25 | 6.93 |
|  |                       | 60% Rate   | 1.31                        | 1.65 | 1.99 | 2.50 | 2.90 | 3.35 | 3.76 | 4.15 |
| Gas Consumption Propane LPG G30          | m³/h                  | 100% Rate  | 0.87                        | 1.09 | 1.32 | 1.65 | 1.92 | 2.22 | 2.49 | 2.75 |
|  |                       | 60% Rate   | 0.52                        | 0.65 | 0.79 | 0.99 | 1.15 | 1.33 | 1.49 | 1.65 |
| Air Inlet Connection                     | mm                    |            | 100                         |      |      |      |      |      |      |      |
| Burner Weight (single)                   | kg                    |            | 11.4                        |      |      |      |      |      |      |      |

### PCV Vacuum System

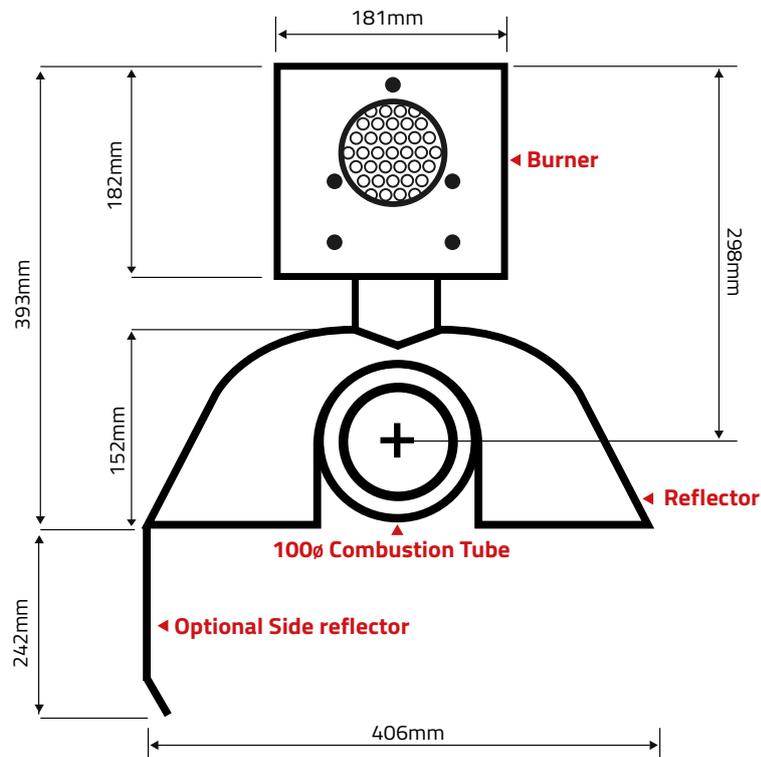
|                      |           | PVC   |       |       |       |       |       |
|----------------------|-----------|-------|-------|-------|-------|-------|-------|
| Model                |           | PCV12 | PCV18 | PCV23 | PCV29 | PCV32 | PCV35 |
| Input Rate (kW)      |           | 12    | 18    | 23    | 29    | 32    | 35    |
| Radiant Tube Lengths | Min (mm)  | 4600  | 6100  | 6100  | 9200  | 12200 | 12200 |
|                      | Norm (mm) | 6100  | 7600  | 9200  | 12200 | 15300 | 15300 |
|                      | Max. (mm) | 7600  | 10700 | 13800 | 18300 | 21400 | 21400 |

### PCV+ Vacuum System

|                      |           | PVC+   |        |        |        |        |        |        |        |
|----------------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Model                |           | PCV+23 | PCV+29 | PCV+35 | PCV+44 | PCV+51 | PCV+59 | PCV+66 | PCV+73 |
| Input Rate (kW)      |           | 23     | 29     | 35     | 44     | 51     | 59     | 66     | 73     |
| Radiant Tube Lengths | Min (mm)  | 7600   | 9200   | 9200   | 12200  | 13700  | 15300  | 15300  | 16800  |
|                      | Norm (mm) | 9200   | 12200  | 12200  | 15300  | 15300  | 18300  | 18300  | 21400  |
|                      | Max. (mm) | 12200  | 13800  | 13800  | 18300  | 19900  | 21400  | 21400  | 22900  |

#### Notes

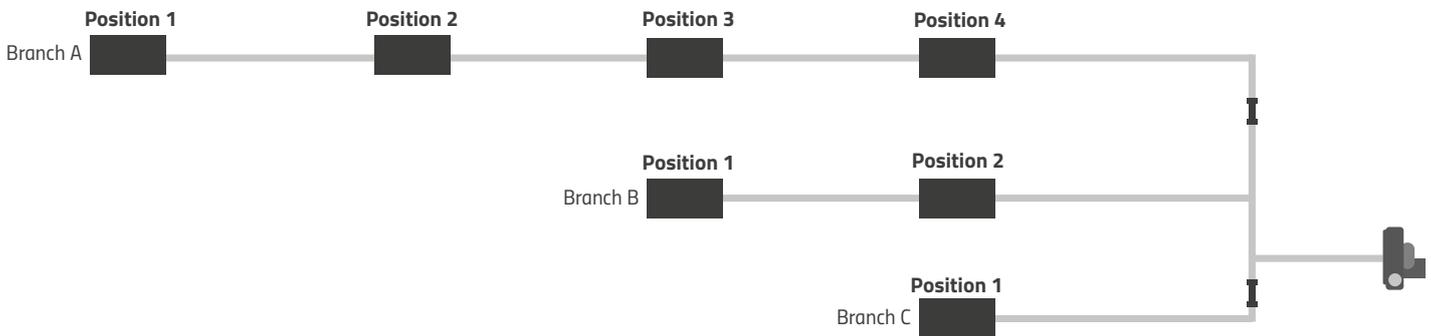
- Fuel Consumption and output figures based upon nett calorific values as follows:
  - Natural Gas (G20) nett CV 34.02 MJ/m<sup>3</sup>
  - LPG Propane (G31) nett CV 88.00 MJ/m<sup>3</sup>
- Powrmatic radiant heaters have efficiency levels which comply with the requirements of United Kingdom Part L Building Regulations and the seasonal efficiency requirements of the Ecodesign regulation (EU) 2015/1188, Directive 2009/125/EC – Lot 20 (Known as ErP and mandatory as from 1st January 2018)



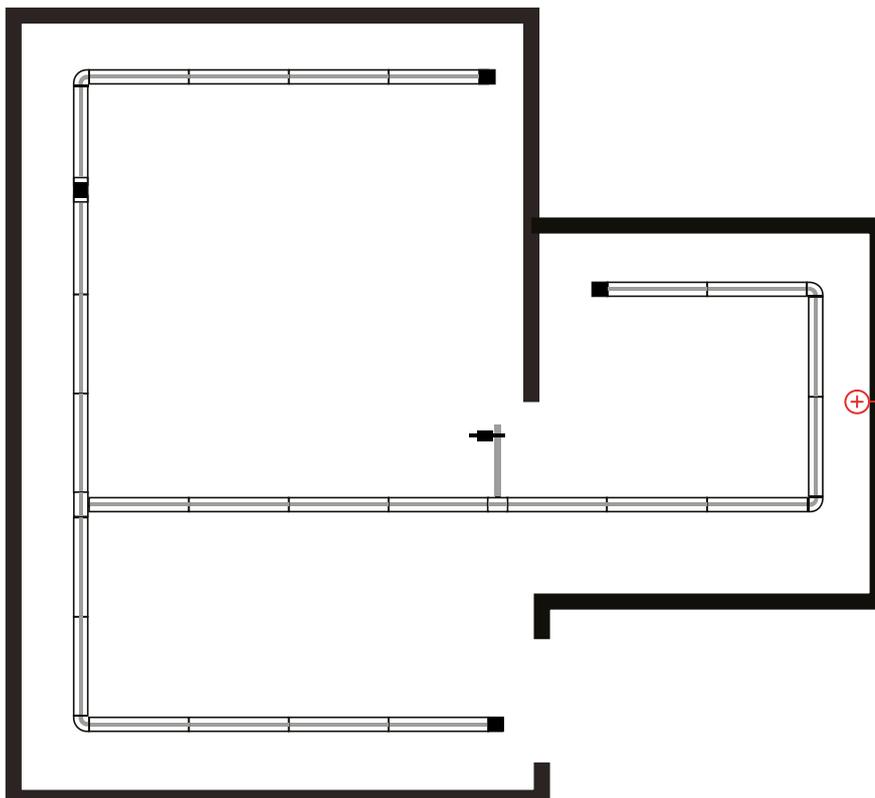
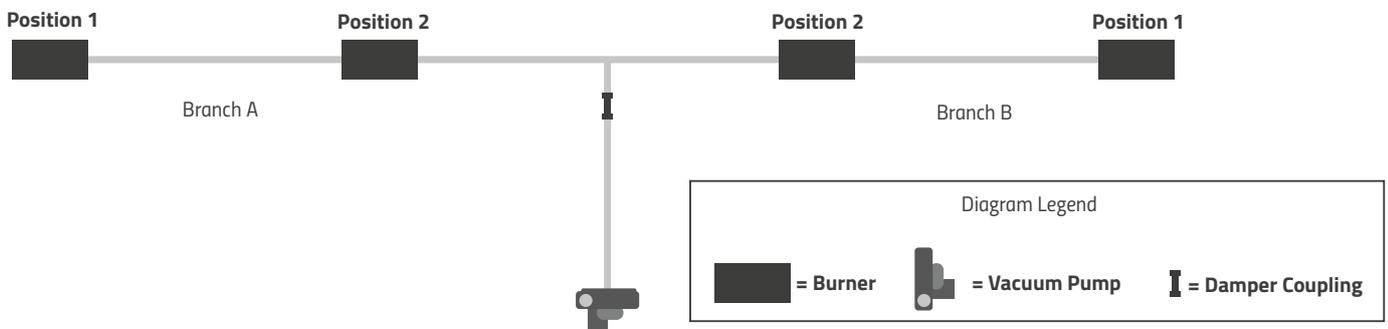
# Typical Continuous Layouts

## Example System Installation

### Example System 1 (Non symmetrical)



### Example System 2 (Symmetrical)



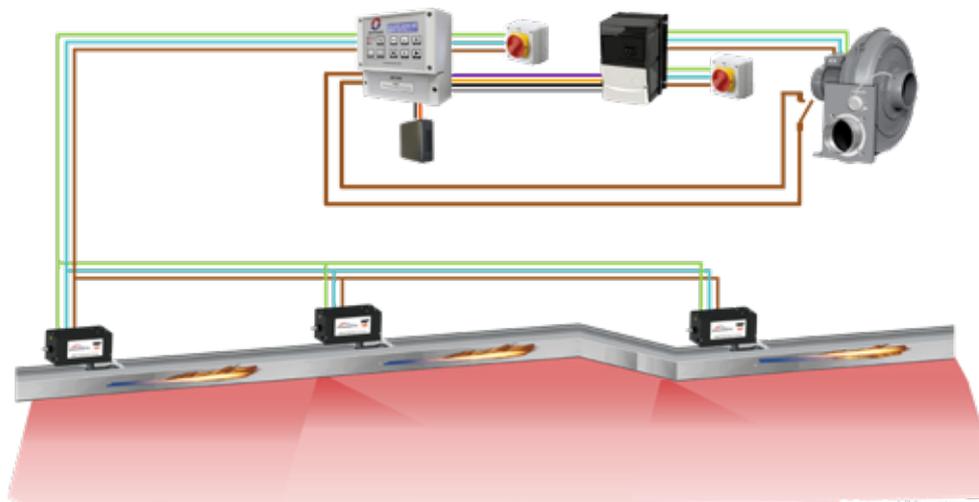
### Custom Configuration

The PCV and PCV+ range is flexible to fit your heating and space requirements. The high efficiency infrared heating system can be designed in almost endless configurations to put heat where you need it most through your entire building.

# System Characteristics

PCV & PCV+

| Feature  | Benefits  | PCV            | PCV+             |
|--|---|----------------|------------------|
| Vacuum operated, in-series burners, continuous heat exchanger                                  | Even heat distribution, maximum comfort possible              | ✓              | ✓                |
| Modulating to 60% of burner input rates  | Fuel savings without sacrificing design energy requirements   | ✓              | ✓                |
| Stoichiometric balanced air/gas ratios for all burner rates                                    | Maximum fuel efficiency                                       | ✓              | ✓                |
| Position specific burners  | Full firing rate and maximum radiant output in radiant tubing | ✓              | ✓                |
| Burner firing range (95% burner efficiency)  | Even heat distribution, maximum comfort possible              | Rate is burner | Operating vacuum |
| Direct spark, multi-try ignition   | Reliability and low maintenance                               | ✓              | ✓                |
| Operation indicator lights   | Maintenance aid   | ✓              | ✓                |
| Dual, easily changed filters   | Ease of maintenance to sustain system efficiency              | ✓              | ✓                |
| System modulation  | Fuel savings and design flexibility                           | ✓              | ✓                |
| Single vacuum fan per radiant system   | Limited building penetrations                                 | >400 kW        | >500 kW          |
| Multiple sizes/voltages, heavy duty vacuum pump  | Design flexibility, operational savings                       | ✓              | ✓                |
| Ducted outside air for combustion  | Operation in adverse environments                             | ✓              | ✓                |
| Reflectors – 100% efficiency   | Maximum radiant energy directed to the space                  | ✓              | ✓                |
| Reflector Full End Caps  | Minimize convective heat loss                                 | ✓              | ✓                |
| Heat treated aluminised calorised tube   | Flake free / clean environment / superior emissivity          | ✓              | ✓                |
| Rigid Couplings 305mm long   | Ease of installation & reliability                            | ✓              | ✓                |
| Reflector Accessories — 45° Tilt Option(side and below shields, extensions, decorative grille) | Maximum radiant energy directed to the space                  | ✓              | ✓                |



# About Us

Powrmatic design, develop and deliver HVAC solutions worldwide across a wide range of commercial and industrial applications creating comfortable and safe environments, differentiated through innovation, integrity, compliance and service.

Our specialised HVAC divisions:

## Heating

Industrial and commercial warm air and radiant space heating solutions manufactured to achieve efficient performance, compliance and reliability for every application in partnership with the HVAC trade.

## Ventilation

Custom designed highly efficient, cost-effective smoke, natural and powered ventilators manufactured to meet project requirements of building operators, architects, specifiers and contractors.

## Air Conditioning

Worldwide distributors of innovative wall mounted heat pumps air conditioner technology providing efficient comfort cooling and heating all year round.

## Engineered Products

Bespoke heating and ventilation solutions designed to serve individual customers specific project requirements. In addition our OEM products provide partner AHU manufacturers with high quality energy efficient gas fired heat exchangers.

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#keepingthenationwarm



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