



## **Novo Cube and Freestander gas fireplaces** Specification guide

**Rinnai**

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# Important

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Rinnai is constantly improving its products, and as such, information and specifications are subject to change without notice. For the most up-to-date information, go to [www.rinnai.co.nz](http://www.rinnai.co.nz).

## **Help is here**

For more information about buying, using, and servicing of Rinnai appliances call 0800 RINNAI (0800 746 624).

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# Contents

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Novo Freestanding specification .....	4
Novo Freestanding unit dimensions (mm).....	5
Novo Freestanding positioning .....	6
Novo Freestanding accessories .....	8
Novo Freestanding flueing options .....	9
Novo Freestanding flue kits and components .....	10
Novo Freestanding ordering guide .....	12

## **Appendix 1**

Flooring and hearth material selection .....	13
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## **Appendix 2**

Running costs.....	14
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# Novo Freestanding specification

A direct vent (room sealed) freestanding gas fireplace with a glass front and convection fan, pushing warm air from the top of the appliance. Operated using a simple IR remote to control flame height and fan speed, or by the Rinnai Wi-Fi app (optional accessory) that allows full thermostatic control, as well as other features such as timers.



Input: 14-30 MJ/h  
 Output: 3.6-6.6 kW\*  
 Efficiency: 80%  
 Heating area: 65-112 m<sup>2</sup>\*\*  
 Gas type: NG or ULPG

\* Will vary according to gas type and flue configuration

\*\* Will vary depending on location in NZ

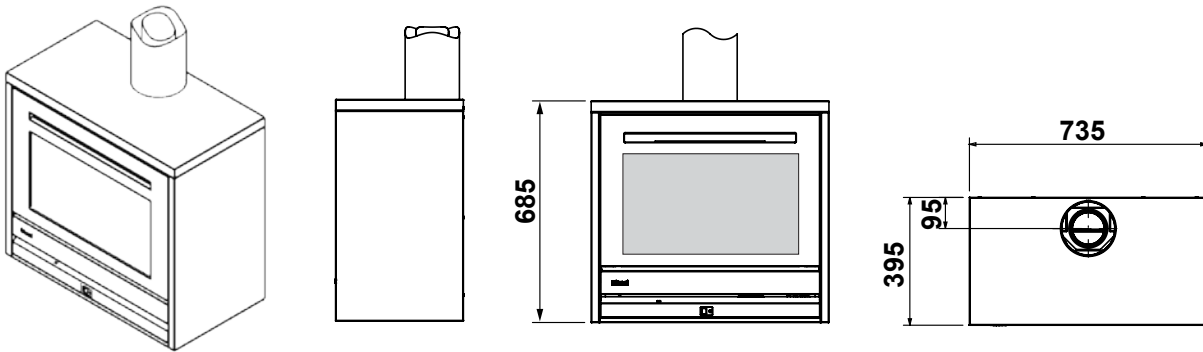
<b>Suitability</b>	Suitable for freestanding installations, in open plan areas and living rooms. As a room sealed appliance it can also be installed in larger bedrooms if this meets 6.10.6.1 requirements of AS/NZS 5601.1.
<b>Installation considerations</b>	Consider the room size. Smaller rooms will heat up quickly, and due to the heat of the appliance, the fire will reduce to a low flame setting once the set temperature has been reached.
<b>Data plate position</b>	Lower RHS of the base panel
<b>Convection fan</b>	120 V AC 50 Hz 2-speed centrifugal blower
<b>Gas connection</b>	Brass ½ " BSPT male fitting. The gas supply terminates inside the unit—lower RHS of the appliance.
<b>Ignition</b>	230-240 V AC 50 Hz high voltage electronic spark generation.
<b>Flueing</b>	Direct vent coaxial <sup>1</sup> flue. Draws air for combustion from the outside and expels combusted gases to the outside. Appliance must be installed with a Rinnai flue system.  Inner Ø100 mm, outer Ø170 mm
<b>Noise level</b>	37 - 45 dB(A)
<b>Electrical</b>	1.5 m power cord with a 3-pin plug is supplied. The standard electrical connection passes through the rear panel. The power cord can be drawn back inside the outer panel and brought into the fire from below if preferred.  High - 50 W, standby - <3 W
<b>Safety devices</b>	Flame failure sensing system, pressure relief, overheat safety switch, air temperature sensor, thermal fuse, overcurrent fuse, and spark detection.
<b>Weight</b>	Novo Cube = 75 kg Novo Freestander cabinet base = 14 kg Novo Freestander plinth base = 10 kg

<sup>1</sup> Coaxial: One flue, the exhaust flue is nested inside the air intake flue—these are rigid flues

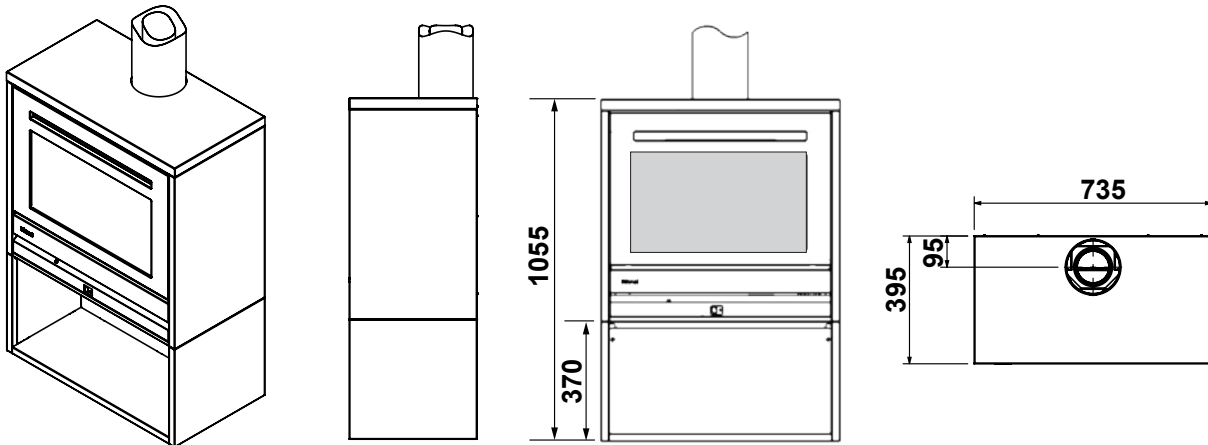


Coaxial

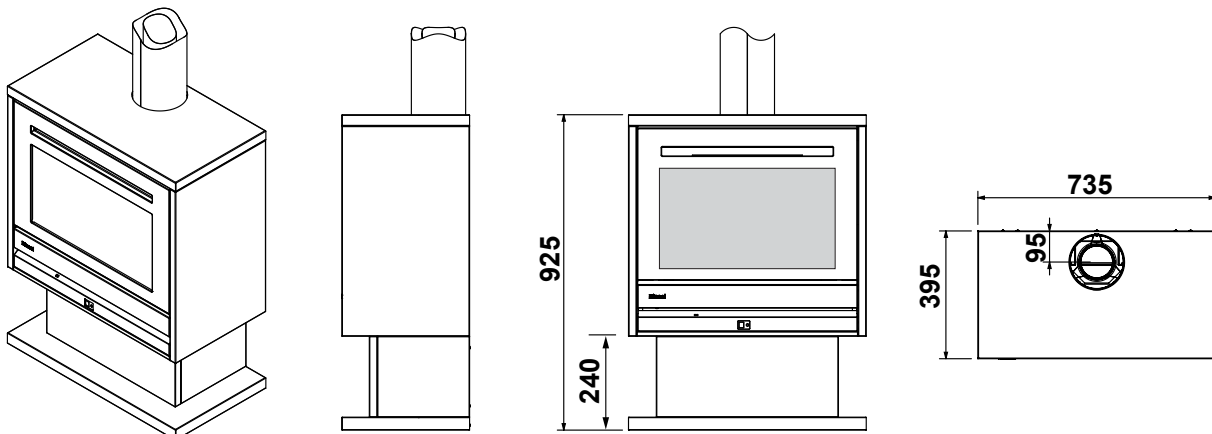
## Novo Cube



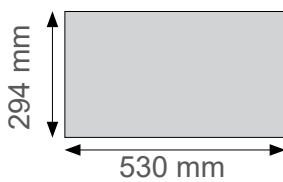
## Novo Freestander - cabinet base



## Novo Freestander - plinth base



## Viewable glass dimensions



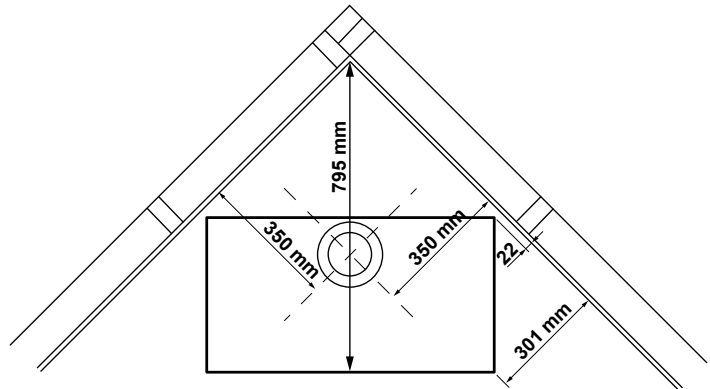
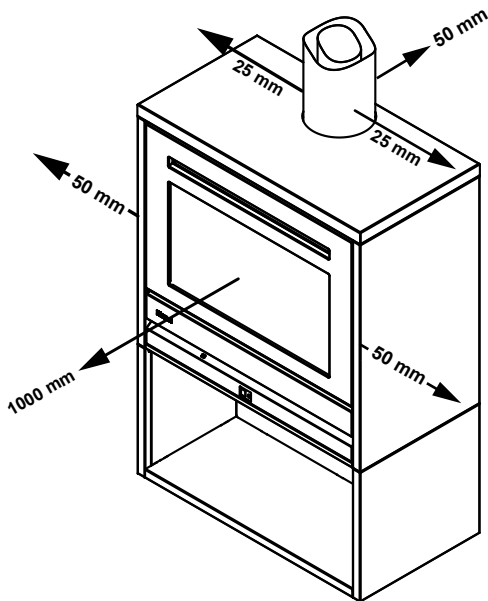
# Novo Freestanding general clearances

The Novo freestanding models have an additional metal wrap which significantly reduces heat transfer. This means the unit can be installed into tight spaces, can be built-in, and can be positioned close to walls if the building materials are suitable. For further information on material selection refer p.12.

## General clearances from combustibles

The clearances in this diagram are minimum clearances. The Novo must not be installed where curtains, furniture, or other combustible materials could come into contact with the fire while it is operating. The 1000 mm clearance is in front of the fire.

The general clearances shown below on the Novo Freestander (with cabinet base) apply to all the Novo freestanding models.



## Floor protection

Heat radiating from this fire may over time affect the appearance of some materials used for flooring, such as carpet, vinyl, cork, or timber. We don't recommend installing the Novo Cube directly on the floor if sensitive or unrated materials are used unless there is some protection placed in front of the appliance, such as a mat.

# Novo Freestanding accessories

## Novo Freestander - cabinet base

R2362GL

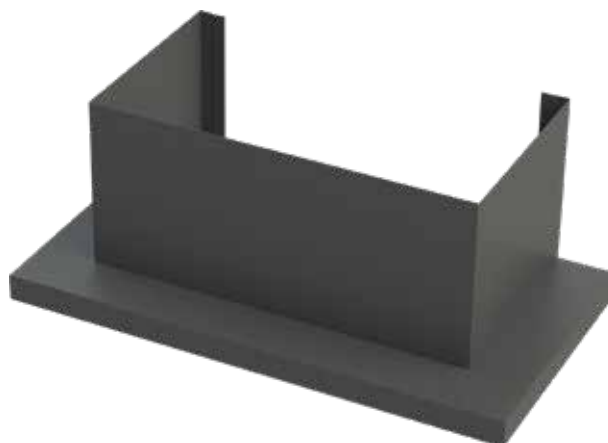
The cabinet comes as a flat pack. An additional flexi and connector is also provided as a longer gas connection is needed.



## Novo Freestander - plinth base

R2363GL

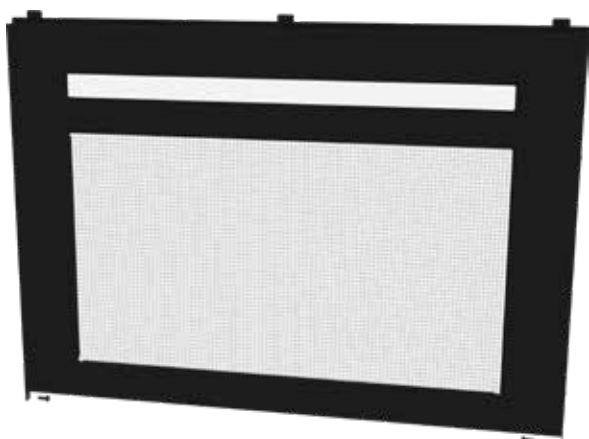
The plinth comes as a flat pack. An additional flexi and connector is also provided as a longer gas connection is needed.



## Novo freestanding mesh frame

R2371

Black integrated mesh guard, can be easily installed, no fixing required. Design to protect against touching the hot surface of the glass<sup>1</sup>.



## Wi-Fi module retrofit kit

R7000

The Rinnai R7000 Wi-Fi board retrofit kit enables the fire to be connected to the Rinnai Fire Wi-Fi App for full thermostatic control, as well as other features such as timers. Ideally fitted at the time of installation.



<sup>1</sup> The mesh will still get very hot—it is not a fire guard

# Novo Freestanding flueing options

Every gas fire requires a flue system that will draw effectively and clear flue products safely under all potential wind and climatic conditions. It is the responsibility of the installer to ensure the appliance is provided with an effective flue.

The Novo MUST BE installed with a Rinnai approved flue system, approved components are shown in this guide.

## Minimum flue length

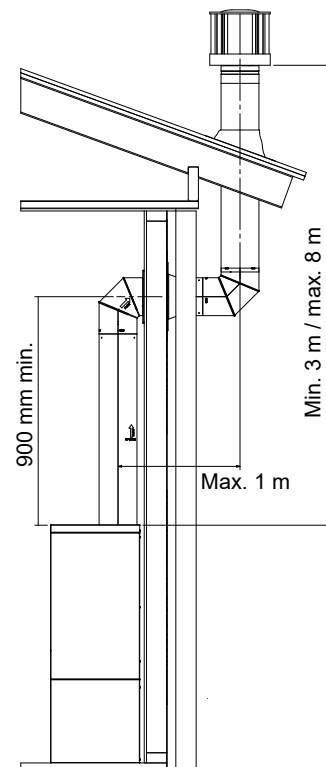
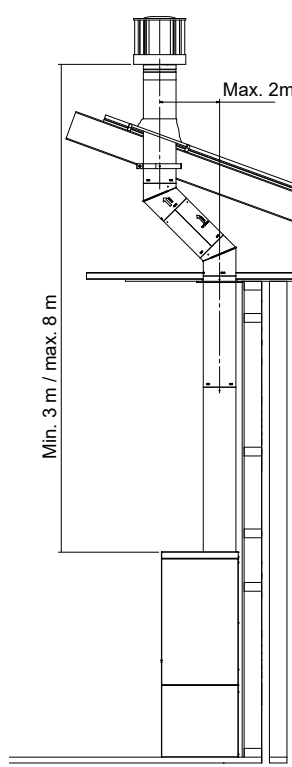
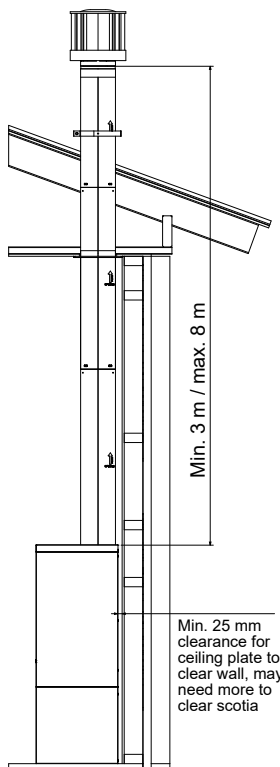
This is required to ensure adequate draw and to prevent spill-back of combustion products, which can cause the safety sensors to shut down the fire.

- Min. vertical length: 3 m
- Min. flue length before any bends or offsets: 900 mm (or one length of flue)

## Maximum flue length

The maximum flue length is determined by what the product has been tested, verified, and certified to.

- Max. flue length: 8 m
- Max. number of bends: 2 x 45°, or 2 x 90°



## Freestanding straight vertical

For this option we have a standard single storey vertical flue kit 3.6 m, refer next page. If flueing is longer individual flue components can be purchased.

Visible flue sections are powder coated in galaxy black.

## Freestanding vertical offset

This option uses 45° bends to offset obstructions in the roof space.

Individual flue components need to be purchased for this option.

## Freestanding vertical with a 90° offset wall penetration

For instances where there may be another room above or vertical obstructions. There is also an option to penetrate the wall with 45° bends.

Individual flue components need to be purchased for this option.

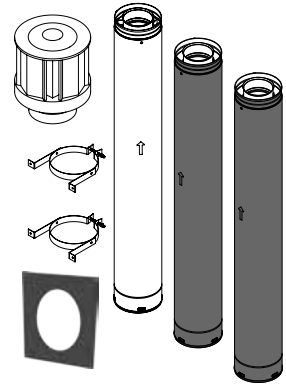


# Novo Freestanding flue components

## R3706: Novo freestanding flue kit DV black 3.6 m

Galaxy black powder coated freestanding flue kit. Contains:

- R3636: 1 x 1200 mm flue pipe unpainted
- R3636GL: 2 x 1200 mm flue pipe black
- R3651: Coaxial flue cowl
- R3609GL: Cover plate black 90°
- R3647: 2 x wall straps



Flue pipes cannot be cut to size. Once joined the nominal length reduces approximately 35 mm.

Inner: Aluminium (Ø100 mm)

Outer: Galvanised steel (Ø170 mm)

## DV coaxial flue pipes unpainted, and painted

Interlocking pipe used to construct vertical flueing. CANNOT be cut to size. Once joined nominal length reduces approximately 35 mm. Painted variants are powder coated black.

Inner: Aluminium (Ø100 mm)

Outer: Galvanised steel (Ø170 mm)

Pipe	Installed length	Code Unpainted	Code Painted
150 mm	114 mm	R3630	R3630GL
230 mm	191 mm	R3631	R3631GL
300 mm	267 mm	R3632	R3632GL
450 mm	419 mm	R3633	R3633GL
600 mm	572 mm	R3634	R3634GL
900 mm	876 mm	R3635	R3635GL
1200 mm	1181 mm	R3636	R3636GL



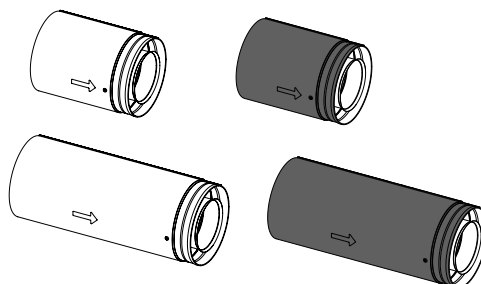
## DV flue pipe extensions unpainted, and painted

Used for extended straight lengths of flue. Available in two lengths, extending to 175 mm or 360 mm. Painted variants are powder coated black.

Inner: Aluminium (Ø100 mm)

Outer: Galvanised steel (Ø170 mm)

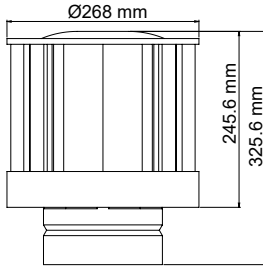
Pipe	Code Unpainted	Code Painted
75-175 mm	R3638	R3638GL
75-360 mm	R3639	R3639GL



# Novo Freestanding flue components

**Coaxial vertical flue cowl**  
Code: R3651

Aluminium flue terminal required for all coaxial vertical flue installations—part of all vertical flue kits.



**Flue DV plate 45°**  
Code: R3608GL

Galaxy black 45° plate to cover/tidy hole where flue pipe penetrates, used in offset installations



**Flue DV plate 90°**  
Code: R3609GL

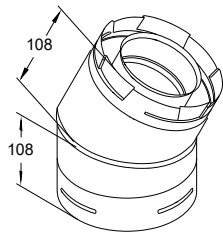
Galaxy black ceiling/wall plate to cover/tidy hole where flue pipe penetrates.



**Coaxial 45° flue elbows (two bends in a kit)**  
R3642 (unpainted)      R3642GL (powder coated black)

Offsets obstructions. Elbow swivels 360° at base. Angle not adjustable. Once joined effective length reduces 35 mm to approx. 73 mm.

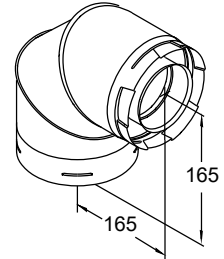
Inner: Aluminium Ø100 mm      Outer: Galv. steel Ø170 mm



**Coaxial 90° flue elbow**  
R3643 (unpainted)      R3643GL (powder coated black)

Used to facilitate between vertical and horizontal flueing. Elbow swivels at base. Angle not adjustable. Once joined effective length reduces 35 mm to approx. 130 mm


Inner: Aluminium Ø100 mm      Outer: Galv. steel Ø170 mm



**High wind vertical cowl protection kit**  
Code: R3655

For windy areas such as Wellington, coastal properties, and elevated properties on hills. Designed to wrap around the vertical cowl (as pictured) to reduce wind entering the flue and causing disturbances. It is fitted to the cowl, and can be retrofitted.

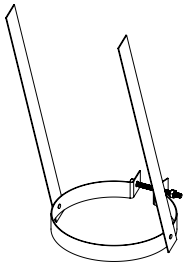
Construction - stainless steel



**Elbow flue strap DV**  
Code: R3644

Flue supports for elbows and offsets.

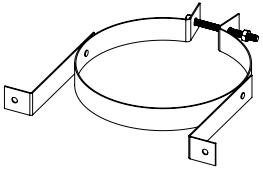
Strap length approximately 432 mm.



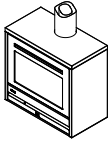
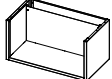
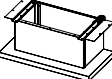

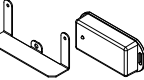
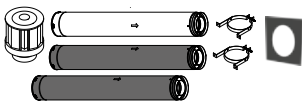
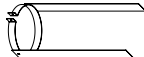



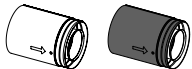

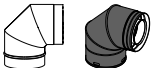


**Wall strap DV**  
Code: R3647

Adjustable strap used in installations to add lateral support to the flue.

Provides a 50-200 mm clearance to combustibles.



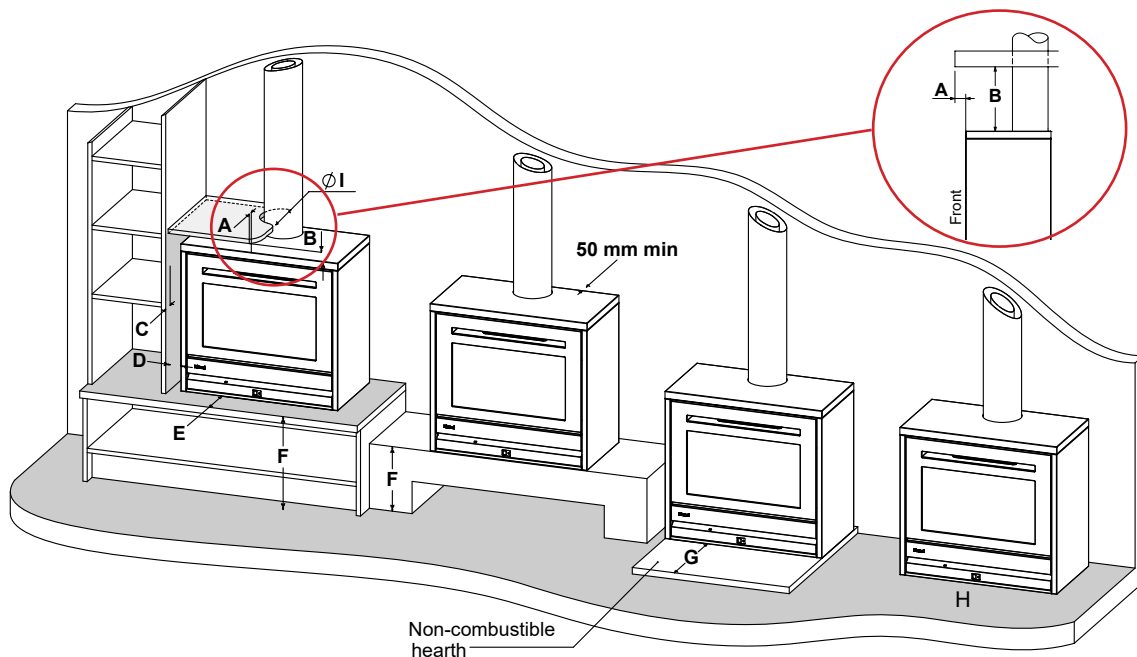
# Novo Freestanding ordering guide

1. Select gas type		Code	
	Novo Cube <b>NG</b>	RDV2320FN	
	Novo Cube <b>LPG</b>	RDV2320FL	
2. Select optional accessories			
	Novo Freestander Cabinet Base	R2362GL	
	Novo Freestander Plinth Base	R2363GL	
	Novo Freestander Mesh Frame	R2373	
	Wi-Fi module control kit	R7000	
3. Select flue components			
	Novo Freestanding flue kit DV black 3.6 m	R3706	
	Elbow flue strap	R3644	
	Wall flue strap	R3647	
	High wind vertical cowl protection kit	R3655	
3. Select flue components unpainted, or painted		Unpainted	Painted
	Flue pipe 150 mm	R3630	R3630GL
	Flue pipe 230 mm	R3631	R3631GL
	Flue pipe 300 mm	R3632	R3632GL
	Flue pipe 450 mm	R3633	R3633GL
	Flue pipe 600 mm	R3634	R3634GL
	Flue pipe 900 mm	R3635	R3635GL
	Flue pipe 1200 mm	R3636	R3636GL
	Flue pipe extension 75-175 mm	R3638	R3638GL
	Flue pipe extension 75-360 mm	R3639	R3639GL
	Coaxial 45° flue elbows (two bends in a kit)	R3642	R3642GL
	Coaxial 90° flue elbow	R3643	R3643GL
	Flue DV plate 45°		R3608GL
	Flue DV plate 90°		R3609GL

# Appendix 1: Material selection

The temperature in front of the fire (approximately 200-350 mm x 400 mm wide) can reach up to 40 °C above ambient, which is why material selection is important. For example, vinyl planks are a popular option for flooring, however vinyl is only rated for ambient temperatures. In this example it would not be recommended that the fire is installed directly on the floor unless there was some form of floor protection in front of the fire.

Some material selection guidelines, depending on the material rating, are shown below.



Dim.	Description	Material temperature rated above ambient		
		Non-combustible materials or materials rated 60 °C or higher	Materials rated to a maximum of 50 °C	Unrated materials, rated to a maximum of 20 °C
A	Overhang	No restriction as long as materials within 400 mm to the side (D) are of the same rating	<ul style="list-style-type: none"> <li>Not suitable if B is under 250 mm</li> <li>No restrictions if B is greater than 1000 mm</li> <li>If B is 300-1000, refer p.34</li> </ul>	
B	Clearance above	50 mm min.	100 mm min.	200 mm min
C	Side overhang	No restrictions	No restrictions if D is greater than 400 mm	
D	Side clearance	50 mm min.	50 mm min.	100 mm min.
E	In front	No restrictions	150 mm max.	100 mm max.
F	Clearance to floor	No restrictions	150 mm min.	240 mm min.
G	Hearth depth	No restrictions	400 mm min. of non-combustible material	450 mm min. of non-combustible material
H	Directly on floor	No restrictions	Not suitable for heat sensitive materials	
I	Flue clearance	25 mm min.	50 mm min.	

The shaded cells denote measurements A, B, C, and D. These figures are dependent on each other and the type of installation. There is some wiggle room to these dimensions if they follow some specific calculations. These calculations are based on figures obtained during in-house temperature testing.

Just because a material is rated to higher than 60 °C does not mean it will not deteriorate when exposed to heat cycles. Always refer to the material supplier for suitability. The temperatures given are assuming the fire is operating in a room temperature of no more than 25 °C. Operation in higher ambient temperatures may result in higher surface temperatures. Non-combustible materials should be made of heat resistant material.

## Installation examples

### Cube installed on a combustible platform

Depending on material, refer table on previous page. The platform could extend 150 mm or 100 mm maximum in front of the fire. This is dimension E in the table.

The height of the platform would need to be at least 150 mm or 300 mm. This is dimension F in the table.



### Cube installed on a non-combustible floating hearth

Only requirement for non-combustible material is a 50 mm clearance from the back of the fire to the wall.

If the material is rated 50 °C or below (above ambient) then:

- 50 mm clearance from the back of the fire to the wall
- In front, hearth could extend 100 mm or 150 mm maximum, this is dimension E in the table.



### Freestander with plinth base installed on a wooden floor

Using the table on the previous page there would be no restrictions except a 50 mm clearance from the back of the fire to the wall. The plinth automatically gives the 240 mm minimum clearance from the bottom of the fire to the wooden flooring—this is dimension F in the table.



### Cube installed in an alcove

If all materials are non-combustible then the only restrictions are a 50 mm clearance from the back of the fire to the wall, and that the material above the fire is the same as the material to the side of the fire. The flue requires a 25 mm clearance.

If the material is rated 50 °C or below then the following applies:

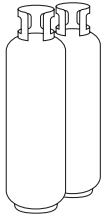
- It cannot be installed directly on the floor unless there is some form of protection directly in front of the unit.
- Side clearance needs to be at least 50 mm minimum.
- Side overhang (C) can only be 100 mm max. (D + 50 mm).
- Overhang (A) is B-250 mm. B in this example is 500 mm, so the overhang can be 500-250 mm, (A) can be 250 mm maximum.



# Appendix 2:

## Running costs

### 45 kg LPG gas bottle energy calculation



1 kg of LPG gas contains 50.4 MJ of energy  
1 kW = 3.6 MJ

This means that a 45 kg LPG bottle has approximately 2268 MJ (45 kg x 50.4 MJ)

### Natural Gas: Calculating your own running costs

- 1 Calculate the MJ input of the appliance to kW, for example 14 MJ/h = 3.89 kW/h
- 2 Calculate the approximate running cost per hour, for example  $\$0.1414 \times 3.89 \text{ kW/h} = \$0.56/\text{hr}$

### LPG: Calculating your own running costs

- 1 Calculate the cost of gas per MJ/h, for example;  $\$115 \div 2268 \text{ MJ} = \$0.051 \text{ per MJ/h}$
- 2 Calculate the approximate running cost per hour, for example  $\$0.051 \times 15 \text{ MJ/h} = \$0.76/\text{hr}$

### LPG and Natural Gas costs

#### Natural gas

It's become a competitive market out there and we're noticing that plans and pricing are more difficult to access without actually switching providers. Natural Gas costs are based on the latest MBIE<sup>1</sup> natural gas residential cost as at 2021, which includes GST and a daily fixed line charge. It doesn't include any prompt payment discount.

- MBIE residential - 0.1441 cents/kWh

<sup>1</sup> [www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/energy-prices/](http://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/energy-prices/)

#### LPG (as at May 2022)

To fill a 45 kg gas bottle we found the below numbers, we have averaged this at \$109 and used this number to calculate running costs.

- frank energy - \$104 Dual Fuel Plan or \$120 Single Fuel Plan
- Vector Onga - \$110.46 (range on website \$110.46-\$180.82)
- Trustpower - \$102

Above figures exclude LPG bottle rental.

The cost of LPG and Natural Gas will differ in each area, please check with your local supplier. The cost of the cylinder rental, line charges and other variables are not included in the running costs.

### Novo hourly running costs

LPG running costs per hr.		NG running costs per hr.	
on low	on high	on low	on high
\$0.67	\$1.30	\$0.56	\$1.20

### Novo 45 kg LPG bottle run hours and weekly running costs

Gas input				45 kg bottle will last (hours)		Weekly running costs (\$)			
Low		High				LPG		Natural Gas	
MJ/h	kW	MJ/h	kW	Low	High	Low	High	Low	High
14	3.89	30	8.33	162	76	\$23.45	\$50.40	\$19.62	\$42.01

This table is meant as a guide only. Please refer to the notes regarding running cost assumptions and how values have been calculated on the previous page. Always double check figures based on your own use.

The weekly running costs are calculated based on the gas fire, during cooler months, operating two hours in the morning and three hours in the evening—a total of five hours use each day.



#### Please note

All Rinnai gas fires require electricity to run—electricity costs have not been factored into the running costs.

The 45 kg LPG bottle hours do not include running times of other gas appliances in use, for example a gas water heater or a gas hob.

**Rinnai.co.nz**

Tel: 0800 746 624

<http://www.youtube.com/rinnainz>

<http://facebook.com/rinnainz>