



# G621 Gas Safestart



- Weep proving system for kitchens and laboratories
- IGE/UP/2 Edition 2 compliant
- Simple to install and easy to operate
- Available from 1/2" BSP to 4" flanged
- Valve assembly is pre-wired, pressure tested and certified
- 230 Volt supply
- Up to 50 mbar inlet pressure
- Suitable for natural gas or LPG
- Union or compression connections
- Compatible with KS21, KS22 and KS23

## Application

The G621 Safestart is a weep proving system for kitchens and laboratories that checks all downstream pipework is secure before initiating the gas supply.

### IGEM/UP/2 Edition 2 Installation pipework on industrial and commercial premises.

"Prior to light-up of manually operated plant, it is essential to ensure that all manual valves on burners or appliances are in the closed position. This can be performed by permitting a small, and controlled, flow of gas through a limiting orifice to by-pass the SSOVs. If any of the downstream valves are not closed, the pipework will not pressurise and, thus, the circuitry will prohibit the opening of the SSOVs."

"Systems that do not use a controlled by-pass are not considered to comply with this Appendix as the control of entry/leakage of gas into downstream plant may not be sufficient to ensure safety. The use of systems relying on the opening of a large SSOV to pressurise the downstream system may lead to excessive release of gas."

### BS6173:2009 Installation of gas fired catering appliances for use in all types of catering establishments.

"Whenever an automatic electric isolation valve system is used, an automatic system for proving that all downstream gas supplies to the burners and pilots have been turned off shall be employed prior to the valve being re-energized to open."

In accordance with these requirements, the Duomo Safestart weep bypass system securely isolates and safely re-establishes the gas supply to any area which relies on manual isolation of gas outlets (e.g. in hotels, fast food restaurants, schools, colleges and canteens).

The Duomo Safestart protects personnel and property from damage caused by gas leaks. Inadvertently or intentionally leaving manual gas taps open is dangerous, even when the gas supply is turned off.

If the supply is reinstated with taps open an undetected gas leak will exist. The Duomo Safestart prevents this by checking the integrity of the downstream pipe work before allowing the main gas to be opened.

The control panel (KS21, KS22 or KS23) ensures that only authorized, competent personnel are able to initiate gas supply, thus preventing vandalism and misuse of gas equipments.

If the supply gas pressure drops below a preset threshold the system will automatically operate the low pressure cut off and the gas will be safely isolated.



# Control panels



KS21 Keyswitch



KS22 Trio Safestart



KS23 Trio Labstart

The G621 is supplied as a complete kit with a control panel; either the KS21, KS22 or KS23. It is important to recognise the differences between these when ordering a G621, to get the most appropriate control panel for your application.

The KS21 Keyswitch controller features key operation, built-in emergency stop button, simple relay logic and power on indication. Easy to use, with operating instructions on the fascia, the KS21 is designed for use in kitchens to prove downstream pipework integrity and ventilation.

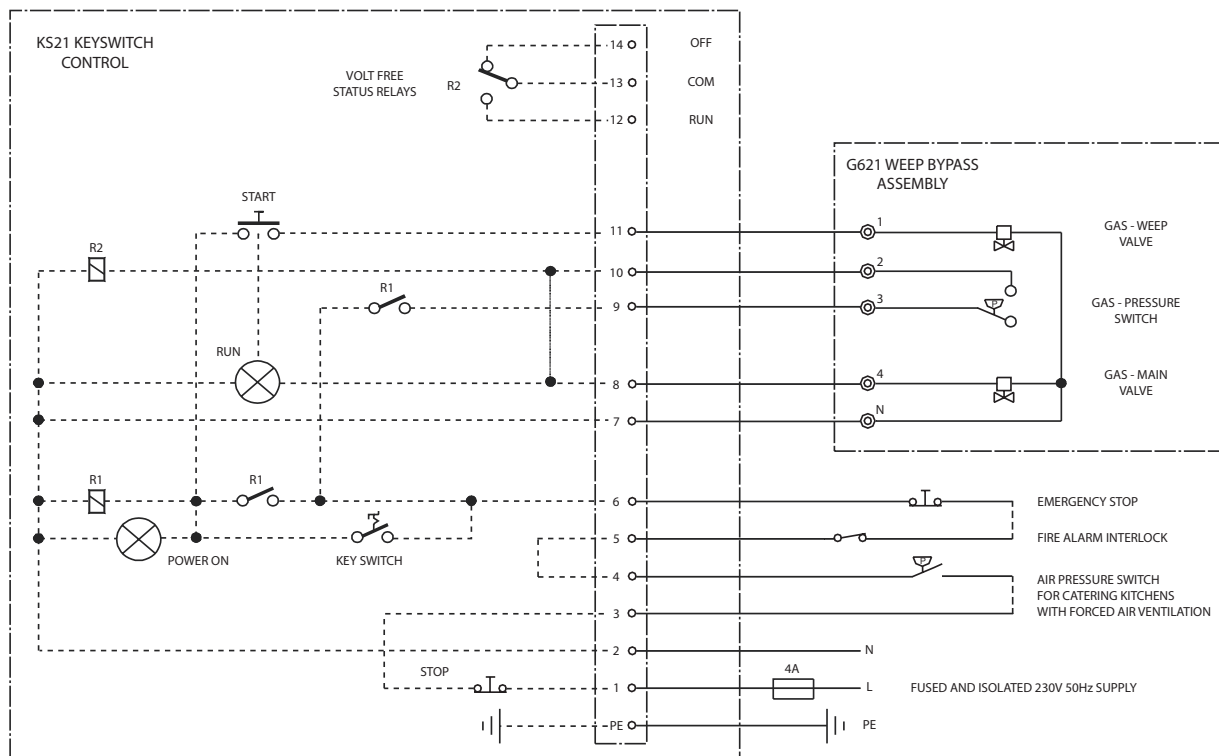
The KS22 Trio Safestart controller is also for use in kitchens. It has a unique touch control pad which is backlit for operation in dark environments. To start the proving system, the user must enter a password, programmable by the user at the time of set up. The proving sequence will then begin, and should it fail, the KS22 will display the type of failure (either air or gas) visually.

Both the KS21 and KS22 can be interlocked with extract and/or supply fans to prove ventilation before initiating the gas supply.

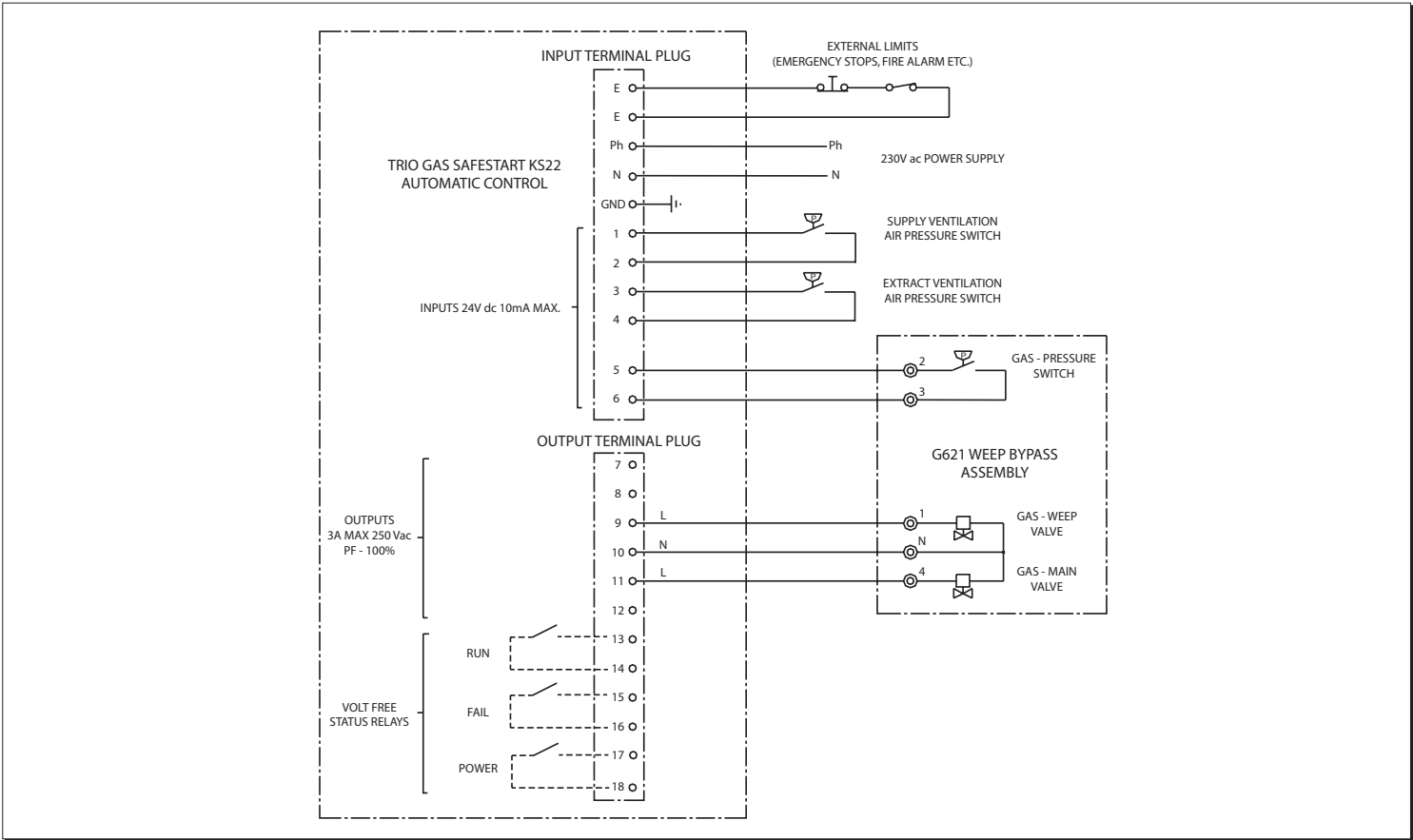
The KS23 Trio Labstart controller is for use in science laboratories, to control the flow of both gas and water. As with the KS22, it features a unique touch control pad. It also allows the isolation of individual services (i.e. power, water and gas) therefore allowing the user to initiate only those services required into the laboratory.

Both the KS22 and KS23 have a power saving function to reduce energy costs. The timed power-off can be selected at setup during the programming stage. All features (including password selection) for setup are detailed step-by-step in the datasheets supplied with these controllers.

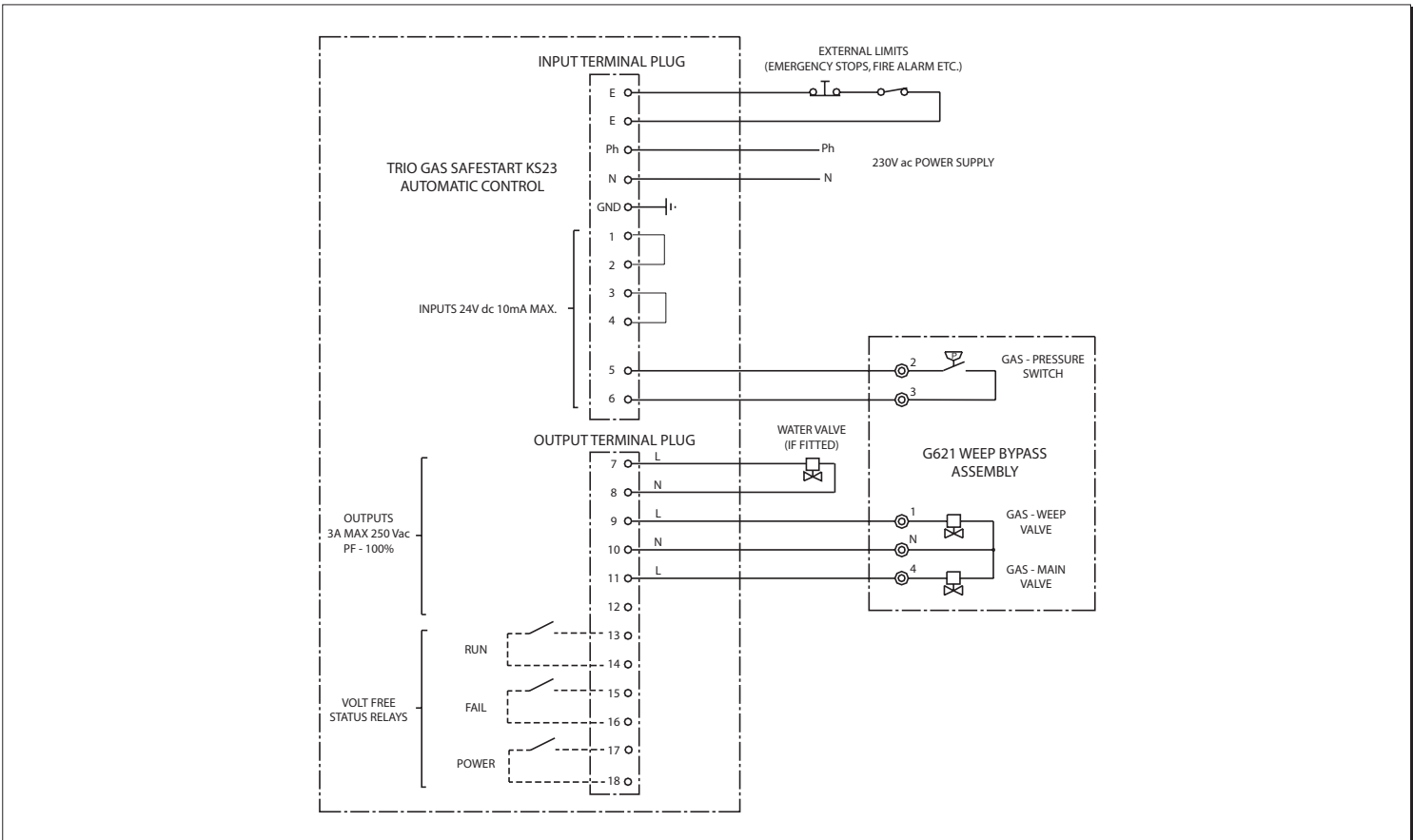
## Wiring diagram of KS21 Keyswitch Control Panel



# Wiring diagram of KS22 Trio Safestart Control Panel



# Wiring diagram of KS23 Trio Labstart Control Panel

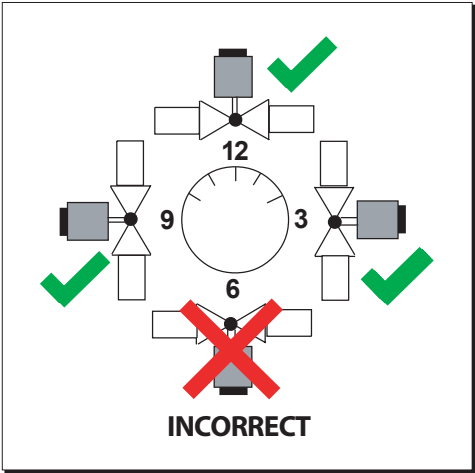


# Installation

The gas valve component of this system must only be installed by a person or persons having a full Gas Safe Register installation certification.

When installing in gas line note flow direction as indicated by an arrow on the valve body and install in approved position. Do not use the solenoid as a lever when fitting.

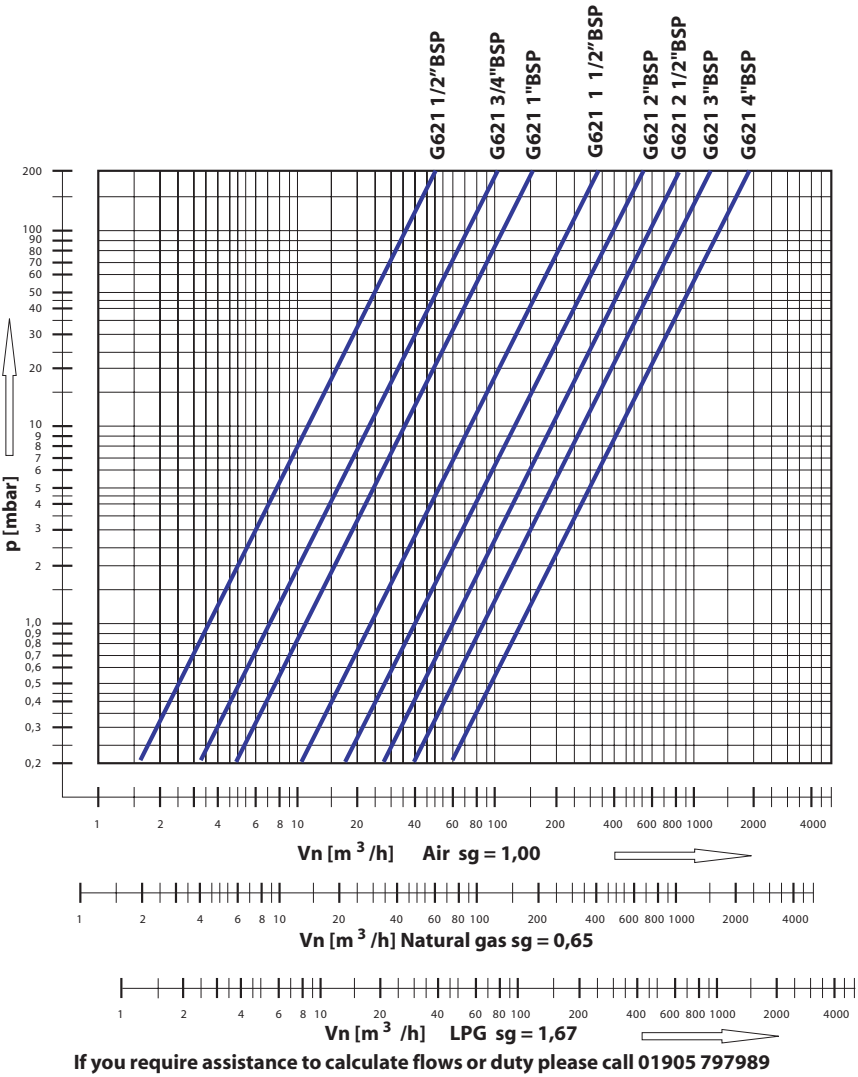
The pressure switch on this unit is set to 16 mbar as a factory default and should be set to 80% of running pressure upon installation. Maximum inlet pressure 50 mbar. After installation test for leaks and proper function.



# Electrical Connection

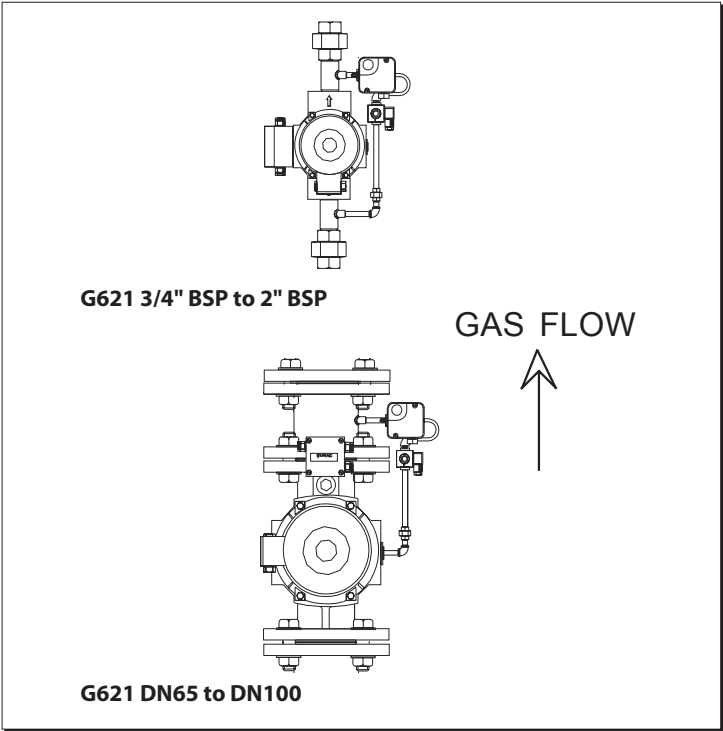
This must only be performed by a qualified responsible person. The control panel should be protected by an external 4A fuse and isolator. Connect the G621 to the control panel as shown by the wiring diagrams using 1mm2 csa cable. Upon completion test function of the system.

# G621 Valve Sizing Table



**NOTE:** The flow tables shown are indicative of the flow/pressure drops across the valve with natural gas of 0.65SG. When integrating gas valves into any system the user is responsible for ensuring that the overall pipework system pressure loss remains as specified with BS6891 or IGEM/UP/2.

# General arrangement of G621 valve assembly



The G621 valve assemblies are pre-wired to a terminal box which is mounted on the assembly. The unit pipework and fittings are finished with yellow ochre 08C35 gloss paint.

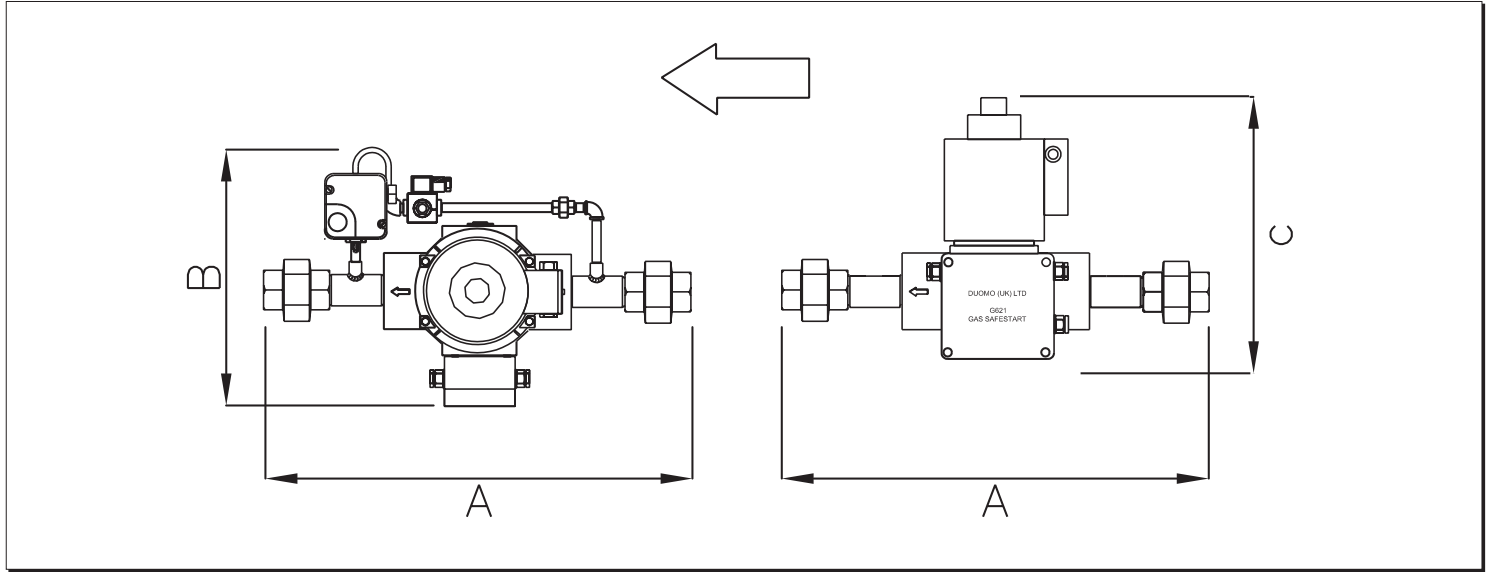
From 1/2" up to 2" BSP the G621 comes complete with BSP union connections or compression fittings. Please specify your preference when ordering.

The G621 flanged assemblies (from 2 1/2" DN65 to 4" DN100) are supplied complete with mating flanges, nuts, bolts, washers and gaskets.

Each unit is pressure tested and a certificate is placed in the unit terminal box.

If you have dimensional constraints which do not allow the units as shown to be fitted, we are able to make special assemblies to suit your requirements.

## G621 Dimensions



Size of G621	Dimensions A	Dimensions B	Dimensions C
1/2"	380mm*	245mm*	140mm*
3/4"	345mm*	250mm*	175mm*
1"	360mm*	250mm*	180mm*
1 1/4"***	420mm*	270mm*	220mm*
1 1/2"	430mm*	280mm*	220mm*
2"	460mm*	280mm*	230mm*
2 1/2"***	410mm*	280mm*	325mm*
3"***	480mm*	305mm*	345mm*

\* All sizes are approximate and can vary by +/- 10mm

\*\* Provided with 1 1/2" to 1 1/4" reducers

\*\*\* Valves are supplied flanged

