



ROBERTS GORDON®

DualAir®



Heating and Cooling Units

- *Economic alternative to traditional heating and cooling systems with gas-fired, warm air heating and "comfort cooling" from one compact unit*
- *Design flexibility with free blowing or ducted installation*
- *System can be tailored for 100% outside air volume to meet ventilation requirements in cold weather*
- *Ability to customise with room sealed or open flue installation*
- *Provides energy savings from a wide range of control options, including dedicated electronic controls and BMS integrated trend systems*
- *Provides ventilation for improved indoor air quality and reduces energy costs with "free cooling" option connected to outside air*
- *Matches existing cooling system with DX (R407C refrigerant) and R410A cooling coils*
- *Models over 91.5% net efficiency meet ECA efficiency requirements*

+44 (0)121 506 7700
www.rg-inc.com
www.combat.co.uk



Authorised User No. 00184



0063

Technical Data

Model		75	90	100	115
Maximum Heat Input - Gross	[kW] [Btu/h] x [1000]	95 324	111 379	119 406	134 457
Maximum Heat Output	[kW] [Btu/h] x [1000]	78 266	91 311	98 334	111 379
Maximum Gas Rate Natural [G20]	[m ³ /h] [ft ³ /h]	9 319	10.5 371	11.3 398	12.8 451
Maximum Gas Rate Natural [G25]	[m ³ /h]	9.5	11.1	11.9	13.4
Maximum Gas Rate LPG Propane [G31]	[m ³ /h] [kg/h]*	3.5 6.5	4.1 7.6	4.4 8.1	5.0 9.2
Maximum Gas Rate LPG Butane [G30]	[m ³ /h] [kg/h]	2.7 6.5	3.1 7.6	3.3 8.1	3.8 9.2
Inlet Pressure Natural Gas [G20]	[mbar]	20	20	20	20
			[Minimum 17 - Maximum 25]		
Inlet Pressure Natural Gas [G25]	[mbar]	25	25	25	25
			[Minimum 20 - Maximum 30]		
Inlet Pressure LPG Propane Gas [G31]	[mbar]	37	37	37	37
			Alternative where permitted 50		
			[Minimum 25 - Maximum 57.5]		
Inlet Pressure LPG Butane Gas [G30]	[mbar]	28	28	28	28
			[Minimum 20 - Maximum 35]		
Gas Connection	[ISO 7-R]	¾	¾	¾	¾
Fan Section					
Designed Air Flow [Clean Filters]	[m ³ /sec]	2.9	2.9	3.7	3.7
Minimum Accepted Air Flow	[m ³ /sec]	1.7	1.7	2.6	2.6
Maximum Accepted Air Flow	[m ³ /sec]	3.7	3.7	5.3	5.3
Motor-Fan Pulley Option	[mm]	100x200/95x180	100x200/95x180	112x180/118x180	112x180/118x180
Electrical Data					
Electrical Supply		400 V, 50 Hz, 3 Ø & neutral			
Total Electrical Load	[kW]	3.3	3.3	5.4	5.4
Motor Size	[kW]	2.2	2.2	4.0	4.0
Full Load Current	[A]	4.5	4.5	7.5	7.5
Start Current	[A]	23	23	24	24

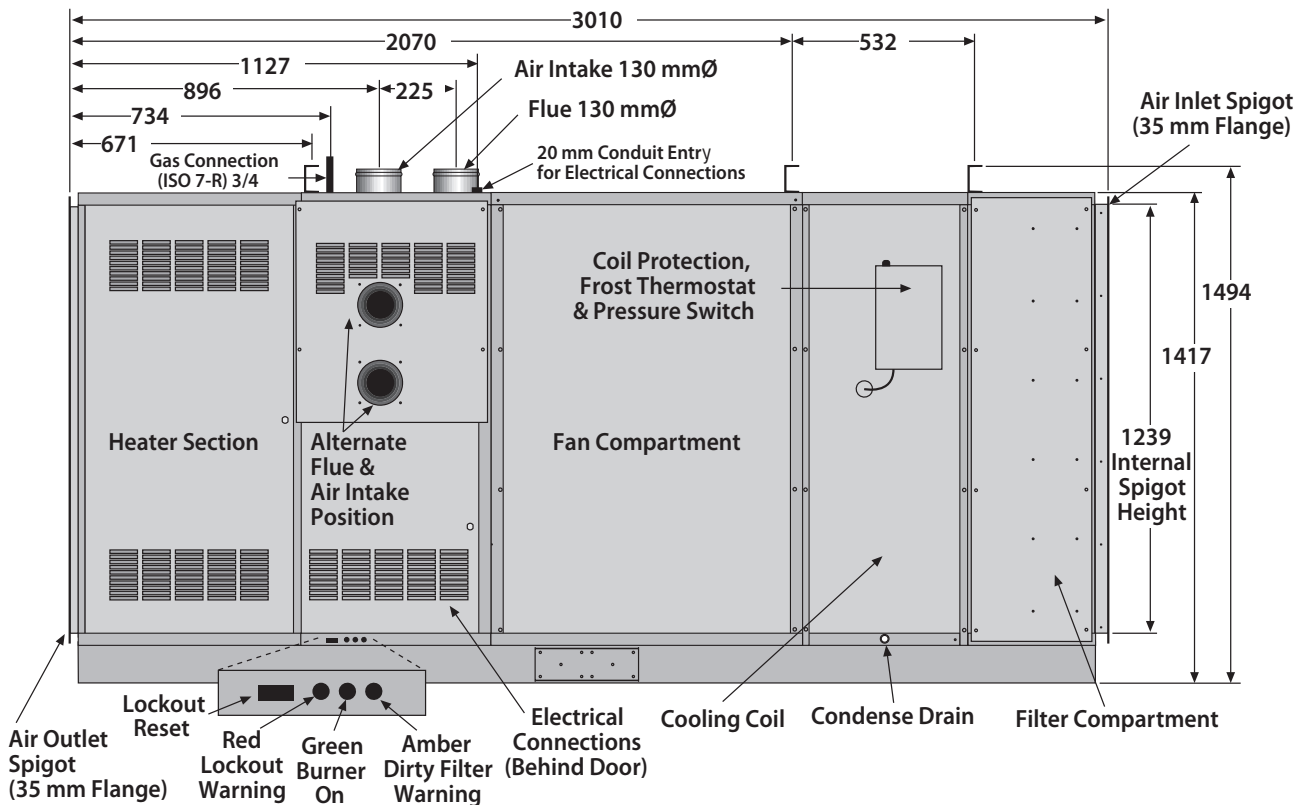
*For litres per hour, multiply: [kg/h] x 1.97
Gas rates corrected to standard conditions 1013.25 mbar 15° C.

Model		75	90	100	115
Cooling Coil - DX					
Maximum Cooling Load [Split Over Two Equal Circuits]	[kW]	57.7	57.7	71.5	71.5
Inlet Connection	[in]	7/8 copper			
Outlet Connection	[in]	1-3/8 copper	1-3/8 copper	1-5/8 copper	1-5/8 copper
Refrigerant		R407C			
Design Temp. ON	°C Dry Bulb	27		25	
	°C Wet Bulb	19.4		18.1	
Design Temp. OFF	°C Dry Bulb	14.7		13	
	°C Wet Bulb	13.7		12.3	
Filter Section					
Filters Fitted	[mm]	Qty 6 -Farr 30/30 grade G4 100 x 635 x 406			
Initial Pressure Loss	[mbar]	0.4			
Maximum Recommended Pressure Loss	[mbar]	1.5			
Physical Data					
Weight	[kg]	612	621	638	647
Noise Rating from Cabinet at 1 m	dB [A]	65		72	
	dB [A]	68		68	
Noise Rating from Air Inlet at 1 m	dB [A]	68		77	
	dB [A]	73		75	
Noise Rating from Air Outlet at 1 m	dB [A]	75		81	
	dB [A]	76		77	

Dimension Data - Version 1

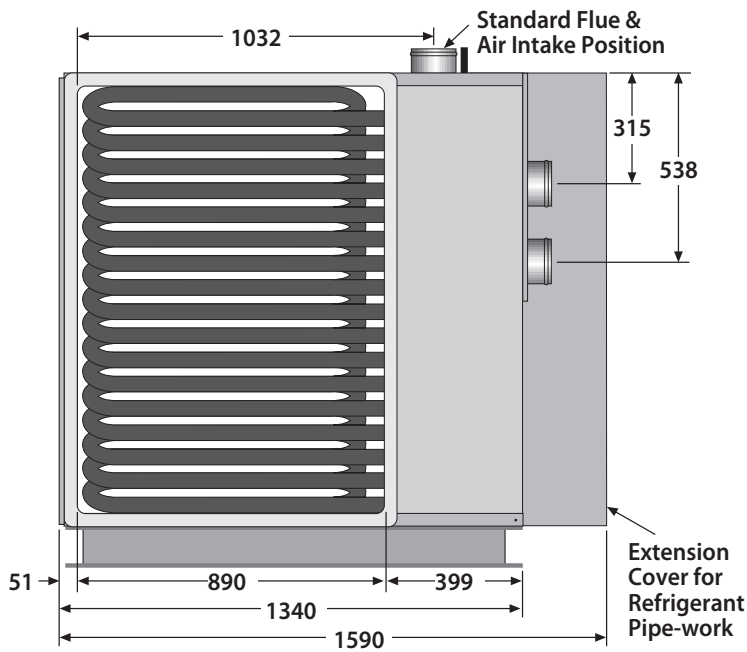
Side View

All dimensions shown in mm.

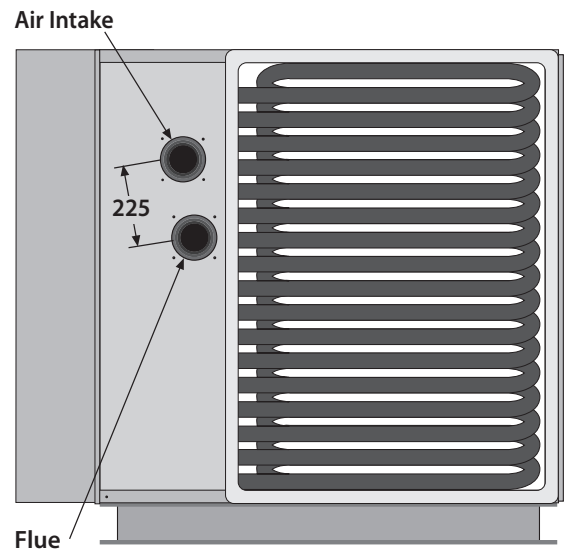


Front View - (Standard Models)

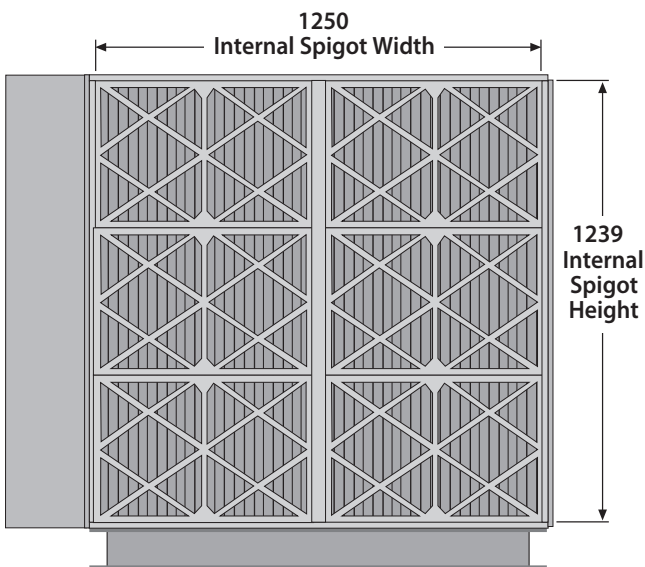
All dimensions shown in mm.



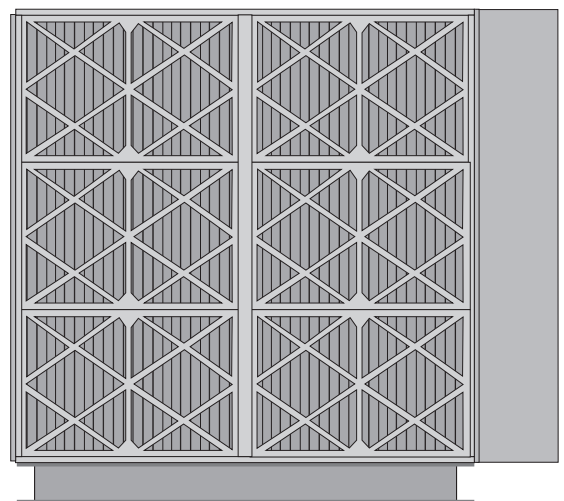
Front View - (Left Version)



Rear View - (Standard Models)



Rear View - (Left Version)





Orientation

DAT units are provided standard with the air flow from right to left when viewed from the access side. In this orientation, the flue and air intake for combustion air are supplied at the top of the appliance. DAT units may also be supplied or converted to side outlet on the control side or supplied as a "left unit" with the air flow from left to right, when viewed from the control side. As such, the flue and air intake for combustion air will be at the front of the unit adjacent to the outlet duct spigot.

Controls

Gas-Fired Heater Section

DAT units use the CTU automatic ignition high efficiency warm air heater as the heart of the equipment. Four heat outputs are available and may be supplied to operate on natural gas or LPG.

Cooling Section

DAT units are available fitted with DX cooling coils, which require connection to suitable condensing units. Condensing units and all associated pipe work are not supplied by Roberts-Gordon. DX coils are split into two equal sections and are supplied with the two refrigerant circuits sealed, ready for on-site connection. DX coils are designed for operation at an ambient temperature of 28°C using R407C refrigerant evaporating at 6° C.

Note: A condense drain is provided with the coil, which must be connected to a suitable trap using copper or plastic tube.

Filter Section

DAT units are fitted with a filter to protect the cooling coil from airborne particles and a warning light to indicate filter replacement.

Operation and Control

To maximise the efficiency of operation of the DAT units, Roberts-Gordon supplies a range of fully integrated control packages to suit each application.

A comprehensive Trend BMS ethernet (web based) system control is available fully wired and ready to integrate with a single ethernet cable connection. With optimum start / stop technology in both heating and cooling, intelligent damper control for "free cooling" and "free heating", this control provides high energy savings with the DAT unit.

For smaller systems, a dedicated DAT electronic control panel with optimum start / stop technology and control of dampers for "free cooling" may be used instead of the Trend control to provide a low cost control without communication ability.

Alternative controls can be fitted by the installer by utilising the relays built into the unit. For other options, please contact Roberts-Gordon.

Versions

DAT units are available in two versions:

Version 1 - Fitted with heater and DX refrigerant cooling coil

Version 2 - Fitted with heater only [no cooling coil]



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COMBAT® DUALAIR® Heating and Cooling Units are high efficiency units and are listed on the Enhanced Capital Allowance Scheme 'Energy Technology Product List'.

The ETL symbol is a UK registered certification mark of the Carbon Trust.

Important Notice

The equipment described in this Data Sheet is suitable for most commercial and industrial heating applications. However, in certain environments, particularly where there is a chlorinated atmosphere (e.g. near degreasing plant or other solvent processes), or a particularly dusty atmosphere, specialist advice should be sought at the design stage. Please consult Roberts-Gordon. Roberts-Gordon reserves the right to alter product specification details without notice.

Installation Code and Annual Inspections:

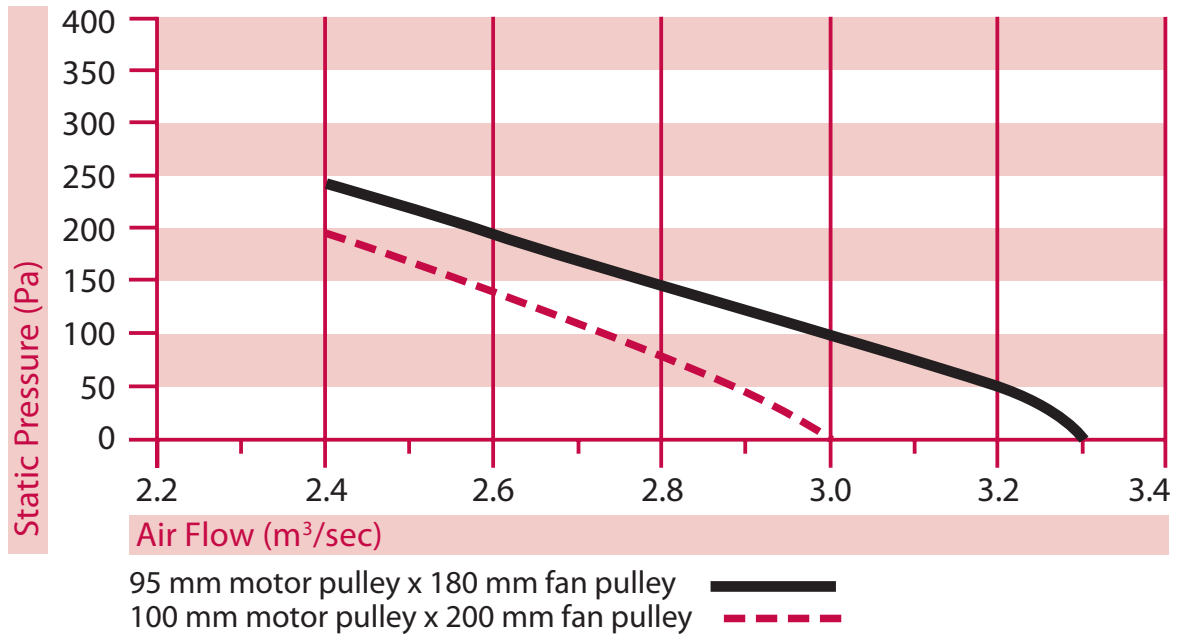
All installation and service of ROBERTS GORDON® equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Roberts-Gordon Europe Limited and conform to all requirements set forth in the ROBERTS GORDON® manuals and all applicable governmental authorities pertaining to the installation, service and operation of the equipment. To help facilitate optimum performance and safety, Roberts-Gordon Europe Limited recommends that a qualified contractor conduct, at a minimum, annual inspections of your ROBERTS GORDON® equipment and perform service where necessary, using only replacement parts sold and supplied by Roberts-Gordon Europe Limited.

Further Information: Applications, engineering and detailed guidance on systems design, installation and equipment performance is available through ROBERTS GORDON® representatives. Please contact us for any further information you may require, including the Installation, Commissioning, Operation and Service Manual.

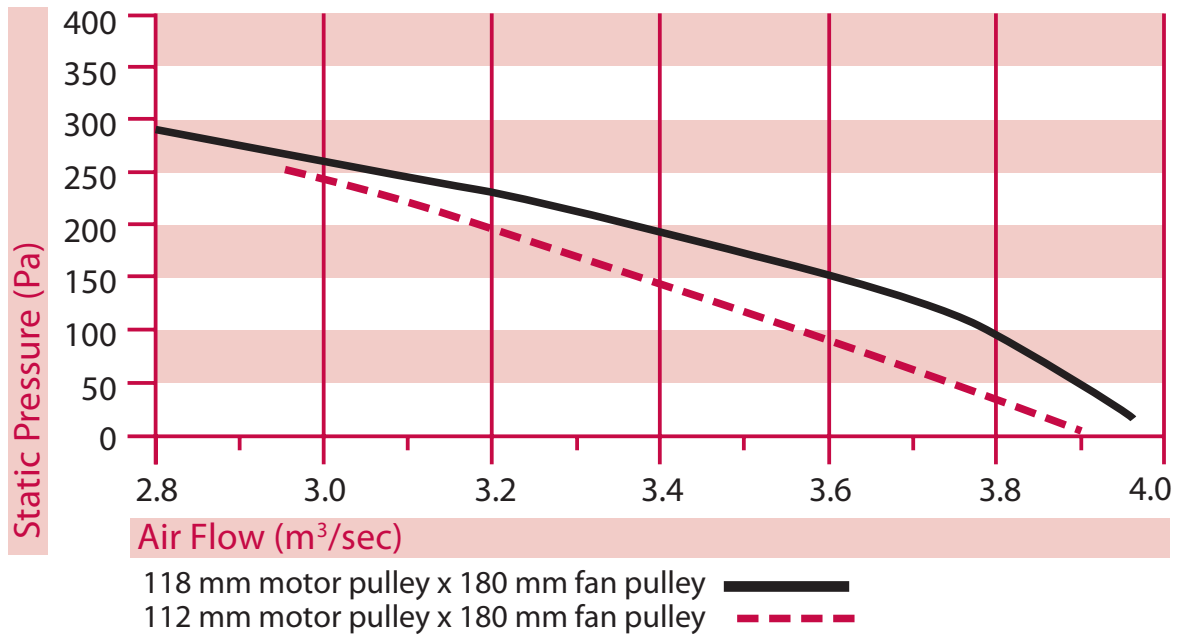
This product is not for residential use.

This document is intended to assist licensed professionals in the exercise of their professional judgment.

Performance Data
Graph of Air Flows versus Static Pressure
DUALAIR[®] 75 and 90 (2.2 kW Motor)



DUALAIR[®] 100 and 115 (4 kW Motor)



Roberts-Gordon Europe Limited

Unit A, Kings Hill Business Park
 Darlaston Road, Wednesbury
 West Midlands, WS10 7SH UK
 Telephone: +44 (0)121 506 7700
 Fax: +44 (0)121 506 7701
 Service Telephone: +44 (0)121 506 7709
 Service Fax: +44 (0)121 506 7702
 E-mail: uksales@rg-inc.com
 E-mail: export@rg-inc.com
www.rog-inc.com