

AIREDALE

air conditioning for every environment

QDB and QRB Direct Gas-Fired Heating and Make-Up Air Units

74,000 - 7,862,000 BTU/h

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**> QDB and QRB Direct Gas-Fired Heating and Make-Up Air Units**

Airedale direct gas-fired heating and make-up air units provide maximum temperature control and unparalleled thermal efficiency for make-up air applications. Make-up air is heated directly by the gas flame, eliminating the need for a heat exchanger and associated efficiency losses of indirect-fired equipment, producing a thermal fuel efficiency of 100% (92% sensible gain). With a maximum turndown of 25:1 (firing rate can be modulated down as low as 4% of maximum rating), direct-fired units provide excellent temperature control over a wide range of inlet air temperatures. A wide variety of single and twin blower wheel configurations provide maximum application flexibility with input ratings up to 7,862,000 Btu/hr and maximum airflow capability of 60,000CFM.

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Efficient and Cost Effective Solution for Make-Up Air

Any process that exhausts air from a building is a candidate for the application of a direct-fired make-up air unit to replace the exhausted air. Direct-fired make-up air units have a thermal fuel efficiency of 100% (92% sensible gain), providing an economical and efficient means of supplying tempered make-up air to a space or building. With a maximum turndown of 25:1 (firing rate can be modulated down as low as of 4% of maximum rating), direct-fired units provide excellent temperature control over a wide range of inlet air temperatures.

Model QDB units provide maximum application flexibility with input ratings up to 7,862,000 Btu/hr and maximum airflow capability of 60,000CFM. Model QDB units are available with a single speed motor as standard for constant volume applications or with a two-speed motor (50% CFM reduction) or energy saving variable frequency drive control (up to 70% CFM reduction) for maximum make-up air volume application flexibility.

Model QRB units can be used as combination make-up air and recirculating heating units, up to a maximum of 75% return air. Model QRB units provide maximum application flexibility with input ratings up to 5,472,000 Btu/hr and maximum airflow capability of 41,900CFM at 75% return air (50,300CFM at 60% return air). Model QRB units are available with two types of return air controls. Two-position fixed return air units operate either in maximum return air mode (75%, 70%, 60%, or 50%) or 100% outside air mode. Floating position return air units operate by automatically and continually varying the percentage of return air and outside air (from 0% return air to a maximum of 75% return air) to provide makeup air for a varying exhaust fan load.



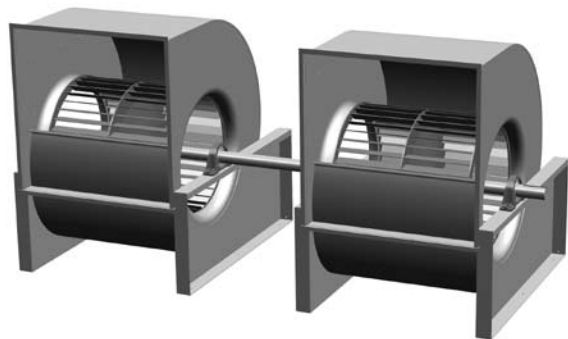
Standard Features

- > ETL Certification
- > GAP/IRI Compliant Manifold Assemblies (FM Available)
- > 100% Thermal Efficiency (92% Sensible)
- > Natural or Propane Manifolds
- > 18 Gauge Unpainted G90 Galvanized Steel Casing
- > Four (4) Full Access Service Doors
- > Separate Manifold and Electrical Controls Compartments
- > Terminal Strip, Color Coded Wiring, and Job Specific Wiring Diagrams for Ease of Field Wiring
- > Double-Width, Double-Inlet (DWDI) Blower Wheels
- > Motor Ratings to 50HP
- > Motors 10HP and Below Include Adjustable Motor Sheaves
- > Maxitrol 14 or 44 Modulating Temperature Controls
- > Flame Rod Flame Supervision (UV Supervision Optional)
- > High and Low Airflow Proving Switches
- > High Limit Switch
- > Flame Safeguard Controls
- > 25:1 Burner Turndown Ratio at Full Burner Rating
- > Cast Iron Burner with Stainless Steel Mixing Plates

Optional Features – Factory Installed

- > Painted Unit Casing and Inlet/Discharge Accessories
- > Inlet Hood, with or without Filters*
- > V-Bank 2" Filters (Permanent, Throwaway, or Farr 30/30)*
- > Inlet Damper*
- > Insulation for Burner, Blower and/or V-Bank Filter Section
- > Pillow block bearings on Model sizes 110 through 118
- > Internal Blower and Motor Spring Vibration Isolation
- > Extended Grease Lines
- > Two Speed Motors
- > Dead-Front Fused Disconnect Switch
- > High and/or Low Gas Pressure Switches
- > Proof of Valve Closure Switch
- > Building Management System Compatible Controls
- > Control Power Transformer
- > Timed Freeze Protection
- > Mild Temperature Inlet On/Off Duct Stat
- > Motor Starter Auxiliary Contacts for Starting an Exhaust Fan
- > Double Pole Double Throw (DPDT) Control Relays
- > Circuit Analyzer for 10, 12, or 14 Points

*Field Installed for Sizes 125 and Above and Vertical Units



Units with twin blower wheels provide airflow capability of up to 60,000CFM

Accessory – Field Installed

- > Variable Frequency Drive Motor Control
- > NEMA 1 or NEMA12 Remote Control Panels
- > Discharge Dampers
- > Discharge Louvers (3 or 4 Way)
- > Evaporative Cooler with 2" Pre-Filters (Optional Rainhood) with 12" Celdek or Glasdek Media and 304SS Construction
- > Evaporative Cooler Fill & Drain Kits
- > Inlet Stands for Vertical Units
- > Service Platforms for Unit and V-Bank Filter Section
- > Vibration Hangers or Feet
- > 1-5 PSIG High Gas Pressure Regulators
- > Indoor or Outdoor Box Style Disconnect Switch

Typical Applications



Performance Data

Model Size	QDB Units			Configured Temp Rise Range (°F)	QRB Units, by RA/OA Ratio				All Units	
	Min CFM (All Units)	Max CFM	Max Input BTU ①		Max CFM (75/25)	Max CFM (70/30)	Max CFM (60/40)	Max CFM (50/50)	Max Temp Rise (°F) Natural/LP ④	Total Static Pressure Range ("W.C.) ②③
110	1,600	3,300	432,400	Up to 115	3,000	3,000	3,000	3,000	115/100	0-2.8
112	2,000	4,700	615,800	Up to 105	4,380	4,500	4,500	4,500	115/100	0-3.0
				106 to 115	4,190	4,190	4,190	4,190		
115	3,000	6,500	851,700	Up to 115	6,000	6,000	6,000	6,000	115/100	0-2.6
				Up to 90	6,190	6,630	7,740	7,600		
118	3,500	10,000	1,310,300	91 to 100	6,190	6,630	7,360	7,100	115/100	0-3.0
				101 to 110	6,190	6,630	7,360	6,520		
				111 to 115	6,190	6,630	7,360	6,290		
120	6,000	13,500	1,769,000	Up to 115	12,000	12,000	12,000	12,000	115/100	0-3.0
122	8,000	16,500	2,162,100	Up to 115	12,980	13,900	16,000	16,000	115/100	0-3.0
125	10,000	21,500	2,817,300	Up to 95	20,000	20,000	20,000	19,950	115/100	0-3.0
				96 to 110	20,000	20,000	20,000	19,500		
				111 to 115	20,000	20,000	20,000	18,850		
				Up to 85	23,260	24,000	24,000	20,000	115/100	0-2.5
				86 to 90	23,260	24,000	23,500	20,000		
				91 to 95	23,260	24,000	22,600	19,950		
127	12,000	26,000	3,406,900	96 to 105	23,260	24,000	22,500	19,800		
				106 to 110	23,260	24,000	21,700	19,500		
				111 to 115	23,260	24,000	20,980	18,850		
130	14,000	30,000	3,931,100	Up to 85	23,260	24,920	24,700	21,500	115/100	0-2.7
				86 to 90	23,260	24,920	23,600	19,950		
				91 to 105	23,260	24,920	22,500	19,800		
215	9,000	13,000	1,703,400	106 to 115	23,260	24,920	20,980	18,850	115/100	0-2.3
218	12,500	18,500	2,424,200	Up to 115	12,000	12,000	12,000	12,000	115/100	0-3.0
				Up to 80	13,340	14,300	16,680	17,000		
				81 to 100	13,340	14,300	16,680	16,000		
				101 to 115	13,340	14,300	16,680	14,690		
220	18,000	27,000	3,538,000	Up to 80	26,000	26,000	26,000	26,000	115/100	0-3.0
				81 to 95	26,000	26,000	26,000	24,500		
				96 to 110	26,000	26,000	26,000	22,830		
				111 to 115	26,000	26,000	25,180	22,830		
222	25,000	33,000	4,324,200	Up to 80	27,470	29,380	29,600	26,250	115/100	0-3.0
				81 to 95	27,470	29,380	27,400	N/A		
				96 to 110	27,470	29,380	26,000	N/A		
				111 to 115	27,470	29,380	25,180	N/A		
				Up to 80	41,930	44,930	46,000	43,800	115/100	0-3.0
				81 to 90	41,930	44,930	46,000	42,000		
225	30,000	46,000	6,027,700	91 to 95	41,930	44,930	46,000	40,300		
				96 to 100	41,930	44,930	45,000	40,200		
				101 to 105	41,930	44,930	44,000	38,600		
				106 to 115	41,930	41,970	41,970	37,700		
230	36,000	60,000	7,862,200	Up to 80	41,930	44,930	50,300	43,800	115/100	0-2.7
				81 to 90	41,930	44,930	47,300	42,000		
				91 to 100	41,930	44,930	45,000	40,200		
				101 to 105	41,930	44,930	44,000	38,600		
				106 to 115	41,930	41,970	41,970	37,700		

① Maximum Btu/Hr based on maximum unit CFM @ max air temp rise and -30°F entering air. Actual max Btu/Hr may be lower depending on job conditions.

② Total Static Pressure Range = Internal Static Pressure for accessory items + External Static Pressure for ductwork.

③ Maximum Static Pressure not available at all CFM's. See Breeze Selection Software for available static.

④ ETL Certified Max Allowable Discharge Air = 105°F.



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