fantech®
a systemair company

Ventilation Solutions

Kitchens

MUAS 750
Makeup Air System

Automatically compensates an exhaust system with fan-powered, proportionally-varying makeup air.

Read more on page 8 ››

Silencer
LD 10

Sound attenuation silencer for circular ducts. The silencer effectively reduces noise in the duct.

prioAir® 8
Exhaust Inline Fan

Powerful and speed-controllable, the prioAir® series is popular for remotely located kitchen exhaust system fans.

Remote mounted inline ventilation fan is a quiet and efficient solution for your kitchen exhaust.

The concept is simple: No fan motor in kitchen hood makes for a silent yet powerful kitchen exhaust system. Enjoy entertaining a little more by not having to yell over the drone of a noisy kitchen exhaust hood. Mount the inline fan in an out-of-the-way location such as the attic or the crawlspace to take advantage of all that power with very little exhaust noise. Add an LD Engineered silencer for even better sound performance.

REMOTE MOUNT FAN STORY
FOR CUSTOM KITCHENS

Exhaust Fans for Internal Installations

INLINE DUCT FAN • FG Series

The most versatile inline duct fan on the market. The FG Series models can be used for exhaust, residential and commercial applications, crawl space venting or make-up air exhaust.

- Airflow up to 868* cfm
- Built-in thermal overload protection
- Air stream temperatures up to 140 °F

INLINE DUCT FAN • prioAir®

This multi-purpose, high-efficiency inline duct fan moves high volumes of air with low energy. Ideal for long ventilation ducts in low static pressure settings.

- Airflow up to 646 cfm
- Built-in thermal overload protection
- Air stream temperatures up to 131 °F

Specification data

Model	Rated power	Voltage / phase	Max amps	RPM	0.0" P_s	0.5" P_s	0.75" P_s	1.0" P_s	1.5" P_s	Max Ps	Shipping weight	Item #
	W	V / ~	A	min^{-1}	cfm					in.wg.	lbs	
FG 8	119	120 / 1	1.14	2,550	461	323	250	191	97	2.11	12	40408
FG 8XL	142	120 / 1	1.45	2,950	502	410	365	313	218	2.40	13	40409
FG 10	138	120 / 1	1.43	3,000	513	433	380	324	216	2.36	12	40410
FG 10XL	196	120 / 1	1.96	3,100	589	525	490	441	355	3.02	14	40411
FG 12XL	301	120 / 1	3.01	2,900	954	868	796	717	545	3.40	21	40413

Performance shown is for installation type D - Ducted intlet, Ducted outlet. RPM shown nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances.

Model	Rated power	Voltage / phase	Max amps	RPM	0.0" P_s	0.2" P_s	0.4" P_s	0.6" P_s	0.8" P_s	1.0" P_s	Shipping weight	Item #
	W	V / ~	A	min^{-1}	cfm						lbs	
prioAir 8	96	120 / 1	0.801	2,899	646	606	553	487	300	160	7.5	49312

Performance shown is for installation type D - Ducted intlet, Ducted outlet. RPM shown nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances.

Silencers LD for circular ducts are fitted with a gasket collar and are compatible with most hard duct. Verify fit and use transitions as necessary.

Visit us at **fantech.net** to find the full selection of this product.

Mounting clamps FC help facilitate the installation and removal of fans for service and cleaning.
Dia.: 8" thru 12".

Visit us at **fantech.net** to find the full selection of this product.

Exhaust Fans for External Installations

ROOF / WALL MOUNT FAN • RE Series

These multi-purpose roof fans can be used to move air from one or more venting points. Interior noise is not an issue because the fan is located outside the building envelope. The RE Series can also be mounted on an exterior wall when roof access is not suitable.

- Airflow up to 920* cfm
- Built-in thermal overload protection
- Air stream temperatures up to 140 °F

WALL MOUNT FAN • RVF Series

These exhaust fan models are commonly used for bathrooms, kitchens, utility rooms, garages, and numerous other applications where installation convenience and quiet operation of a remote-mounted fan are desirable.

- Airflow up to 1,068* cfm
- Ambient noise is kept outside
- Air stream temperatures up to 140 °F

Specification data

Model	Rated power	Voltage / phase	Max amps	RPM	0.0" P_s	0.5" P_s	0.75" P_s	1.0" P_s	1.5" P_s	Max Ps	Shipping weight	Item #
	W	V / ~	A	min^{-1}	cfm					in.wg.	lbs	
RE 10XL REC 10XL	394	120 / 1	3.60[1]	3250	753	690	656	622	548	4.03	31	40215 40099
RE 10XLT REC 10XLT	531	120 / 1	4.86[1]	2950	1008	890	831	766	609	3.17	33	40230 40231

Performance certified is for installation type D-Ducted inlet, Ducted outlet. Speed (RPM) shown is nominal.Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances (accessories). Values shown are installation Type D: Ducted inlet hemispherical sone levels. Ratings do not include the effect of duct end correction. [1]Recommended speed control rating 5A

Model	Rated power	Voltage / phase	Max amps	RPM	0.0" P_s	0.5" P_s	0.75" P_s	1.0" P_s	1.5" P_s	Max Ps	Shipping weight	Item #
	W	V / ~	A	min^{-1}	cfm					in.wg.	lbs	
RVF 10	112	120 / 1	0.94	1,458	783	550	390	270	-	1.27	31	44864
RVF 10	211	120 / 1	2.10	3,250	1,020	865	760	670	269	1.68	36	44865
RVF 10XL	312	120 / 1	2.61	2,950	1,222	1,021	896	800	485	1.95	36	44866

Performance is shown with ducted inlet. Performance certified is for installation type C - Ducted inlet, Free outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of accessories.

* Performance shown at 0.4" Ps

Roof cap RC.. P with damper flap closure, duct connection and screened exhaust opening.
Dia.: 8" thru 12".

Visit us at **fantech.net** to find the full selection of this product.

Backdraft dampers RSK for circular ducts prevent the infiltration of outside air when system not operating.
Dia.: 8" thru 12".

Visit us at **fantech.net** to find the full selection of this product.

Choose a Hood Liner

HOOD LINER • HL Series

HL Series Hood Liners are compatible with most custom cabinet hood designs (as depicted in the cover photo of this brochure). HL Series hood liners feature an attractive stainless steel fascia supported by a sturdy, galvanized steel housing. Once surrounded by a hood, only the stainless steel fascia and baffle filters are visible. The stainless steel baffle filters are easily removed for cleaning. The liners feature high quality machined aluminum knobs for lighting and fan controls. The dimmable halogen lights illuminate the cooking area with a spectrum of light that meets the expectations of even the most discriminating chefs.

- Residential kitchen hood liners for use with remote-located exhaust fans
- Sturdy, galvanized steel structure with elegant stainless steel fascia
- Stainless steel baffle filters can be easily removed for cleaning

Specification data

Model	Outlet Duct Dia.	Typical Air Flow Rate*	Lighting			Speed control	Shipping weight	Item #
	inch	cfm	W	Bulb Type	Quantity		lbs	
HL 30	8	Refer to next page	50	MR16 Halogen, GU10 Base	2 pcs	Infinite	36	56048
HL 36	8	Refer to next page	50	MR16 Halogen, GU10 Base	2 pcs	Infinite	42	56047
HL 42	10	Refer to next page	50	MR16 Halogen, GU10 Base	2 pcs	Infinite	55	56046
HL 48	10	Refer to next page	50	MR16 Halogen, GU10 Base	3 pcs	Infinite	66	56045

* Installer should employ an exhaust air flow rate appropriate for the dimensions and heating capacity of the cooking equipment served by the exhaust hood system and as required by the local building code. Larger air flow rates can result in greater noise as air enters the baffle filters.

Stainless steel baffle filter replacement
14"x12". ***Note:*** Hood liner models require multiple baffle filters: order the quantity appropriate for the HL model. #484139. 3 lbs.

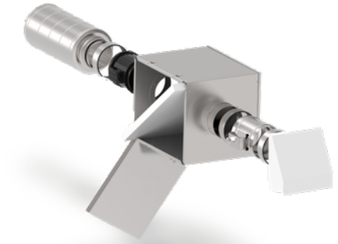
Metal control knob replaces the light dimmer switch knob and the fan speed control switch knob on HL series kitchen hood liners.
Quantity two knobs included. 484136, 1 lbs.

HL36 Hood Liner shown at our booth in Orlando, FL during the International Builders' Show 2018.

Compatible exhaust fan models

Fan location	Compatible Fan model	Air Flow Rate (cfm) at 0.0" Ps	Hood Liner Model Application Air Flow Rate* (cfm)				
			Duct Size** (in)	HL 30	HL 36	HL 42	HL 48
Remote Interior	FG 8 / FG 8XL	461 / 502	8	359 / 427	359 / 427	359 / 427	-
	FG 10 / FG 10XL	513 / 589	10	-	494 / 570	494 / 570	494 / 570
	FG 12XL	940	12	-	-	-	806
Remote Interior	FKD 8XL	836	8	-	440	440	440
	FKD 10 / FKD 10XL	910 / 1,226	10	-	-	772 / 973	772 / 973
	FKD 12XL	1,863	12	-	-	-	1295
Remote Exterior Roof or Wall	RE/REC 10XL	753	10	-	-	715	715
	RE/REC 10XLT	1,008	10	-	-	-	883
	RVF 10	790	10	-	-	646	646
	RVF 10L / RVF 10XL	1,060 / 1,245	10	-	-	-	842 / 880

* Hood liner model application air flow rates estimated for system with 20 feet of duct, two 90 deg. elbows, a backdraft damper, roof cap and hood filters.
** Duct size is recommended for the fan's air flow rate. Size transitions may be necessary for duct connection to hood liner and fan. Other duct-mounted accessories, such as backdraft dampers, silencers, and roof caps, are recommended to be same size as duct diameter..



Flip the page to learn more about **our Makeup Air Systems ››**

True Makeup Air System for a Single Family Home

Ducted Components

DUCT SILENCER

Provides ducted sound attenuation between makeup air fan and the location of makeup air delivery to the home.

DUCT HEATER (optional)

Controlled via discharge air temperature, the heater automatically varies its modulating heat output to deliver air at the temperature set point, even as the air flow rate and outdoor air temperature vary.

MAKEUP AIR FAN

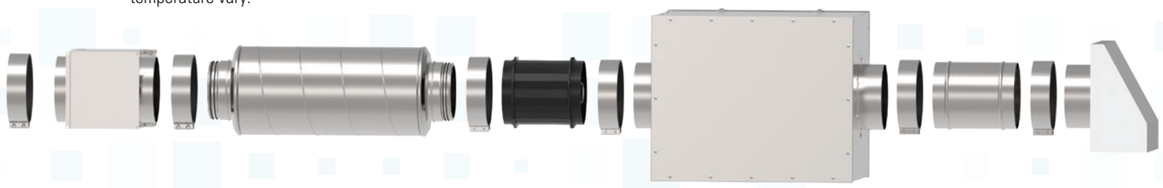
ECM fan is automatically speed-controlled by the makeup air system controller.

FAST CLAMP

Lined with neoprene to give a vibration-absorbing, tight fit.

FILTER CASSETTE

MERV 8 filter for removing dust and pollen before air is delivered to the home.



SHUT-OFF DAMPER

Normally closed, motorized damper is open only when makeup air system is operating.

WALL INTAKE HOOD

Air inlet to makeup air system; includes bug screen.

ANYTHING ELSE IS CHEATING THE CODE.

fantech®

> "My greatest concern as a builder was to avoid any potential for carbon monoxide poisoning. And of course, we have to be able to meet code within the budget constraints of the project."
>
> - Bruce Fraser, Fraser Construction LLC

Beginning in 2009 the International Residential Code® (IRC®) has included a kitchen makeup air requirement. A paragraph in chapter 15 of both the 2009 and the 2012 IRC® reads:

M1503.4 Makeup air required:
Exhaust hood systems capable of exhausting in excess of 400 cfm shall be provided with makeup air at a rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

Makeup Air System (MUAS)

Why do we need makeup air?

In a nutshell - we would otherwise have problems. Today's homes are built to be more energy-efficient. "Tighter" construction resists the infiltration of outdoor air through the home's exterior, which limits the amount of makeup air the home will permit.

Of course, you can only exhaust out from the home as much air as is able to come back in. Without makeup air, even a powerful exhaust fan can only remove as much air from the home as is permitted via infiltration.

When an exhaust fan operates without sufficient makeup air, some undesirable results can occur:

The exhaust system will not work to its intended capacity

Kitchen hood exhaust systems are sized to remove cooking-generated heat, odors and contaminants based on the cooking equipment's dimensions and heat rating. Inadequate makeup air can prevent a kitchen hood exhaust system from adequately removing contaminants.

Backdrafting of chimneys and appliance vents

Insufficient makeup air will result in depressurization in the home. Depressurization works to halt the flow of hearth and appliance combustion products from exiting the home. This "backdrafting" can result in a dangerous accumulation of harmful gases in the home. Studies by the Building Performance Institute (BPI) and Residential Energy Services Network (RESNET) have shown that as little as **5 Pa (0.02" w.g.)** depressurization can cause backdrafting.

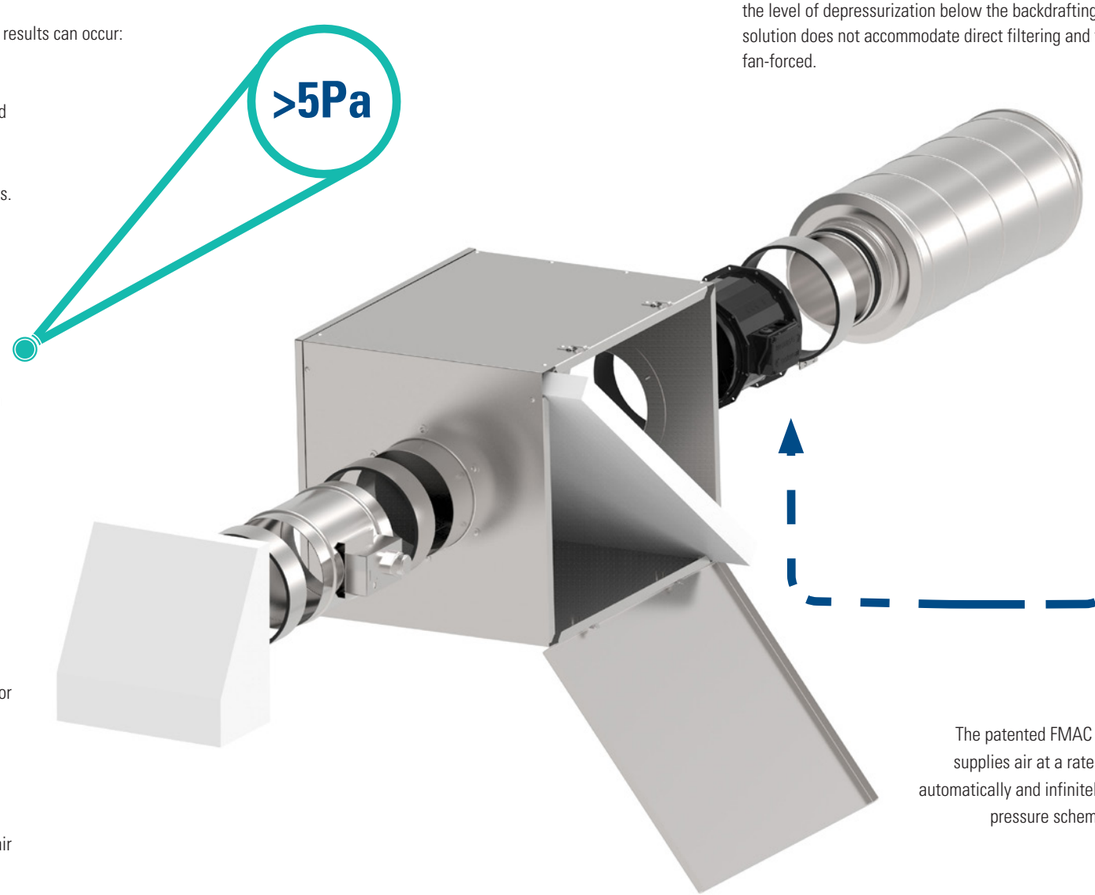
Non-compliance with the US and Canadian building codes

In the US, the construction industry has long recognized the need for adequate makeup air for exhaust systems. Beginning in 2009 and in every version since, the International Residential Code (IRC) has required that makeup air be provided for kitchen hood exhaust systems with capacity of 400 cfm or greater.

Canada's National Building Code has a section entitled, Protection Against Depressurization. Essentially, any exhaust device operating at a higher airflow rate than the normal operating exhaust capacity for the dwelling shall have provision for make-up air.

White paper available

SPECIFIERS: please visit our website at **fantech.net** to view our Independent Engineering White Paper, Residential Exhaust Makeup Air: Explanations and Solutions, which explains why active makeup air is the only proper solution for your customers.



The Fantech Makeup Air System is the only solution

A home builder could actually satisfy a home's makeup air requirement by leaving a relatively large hole (or several) in the exterior wall. Although, a hole in the wall might satisfy the makeup air requirement in the code, most would agree that such a solution is hardly ideal, especially during peak seasonal weather conditions.

The "passive" solution is similar to the hole in the wall. This solution has no fan supplying air into the home, so the home MUST be depressurized for air to flow in. This results in a very large opening (or multiple ones) in order to keep the level of depressurization below the backdrafting threshold. The passive solution does not accommodate direct filtering and tempering, since it is not fan-forced.

The Fantech's Makeup Air System (MUAS) is a "powered" or "fan-forced" system. The MUAS is triggered when the compensated exhaust system is energized. The MUAS damper opens and the MUAS fan is powered on. The fan is speed-controlled relative to the speed of the compensated exhaust system's fan speed. In other words, as you speed up the exhaust fan, the MUAS fan speeds up too, and vice versa.

Fantech Makeup Air System advantages at glance:

- Automatic, infinitely modulating air flow in proportion to the exhaust
- Particulate matter is filtered from the outdoor air before it is delivered to the home
- Since it is fan-forced, makeup air can be ducted to where it can be most suitably delivered to the home
- Cold outdoor air can be tempered with optional MUAH heater kits
- MUAS can be set up by the installer for a variety of pressure schemes: slightly negative, slightly positive, or balanced
- MUAS provides the EXACT amount of air needed - no more, no less
- Complies with the building code

Fantech Makeup Air Controller (FMAC)

The patented FMAC is the brains of the makeup air system. While the compensated exhaust system is operating, the makeup air fan supplies air at a rate necessary to maintain the desired building pressure scheme as set up by the installer. The makeup air flow rate automatically and infinitely varies proportionally with the speed at which the exhaust is operated by the homeowner. A neutral (balanced) pressure scheme is common, but the installer can also employ a slightly positive or negative pressure scheme should he desire.

The FMAC includes a current transducer, system controller, transformer, and a NEMA electrical enclosure.

Frequently Asked Questions

Q: Why do I need Makeup Air for kitchen exhaust over 400 cfm?

A: Todays' homes are built tight. A large exhaust hood range will depressurize the home causing all sorts of nasty stuff to happen, such as:

- Back drafting of fossil fuel appliance or open fires
- The exhaust fan won't work well without the makeup air
- Drafts under doors and around windows
- Soil gases pulled into the home via negative pressure
- Untreated air affects your indoor air quality

Q: I have a 600 cfm kitchen exhaust fan, do I need Makeup Air?

A: Yes. The Code mandates that Makeup Air be supplied for kitchen exhaust hood fans over 400 cfm and that the MUA be approximately equal.

Think balanced ventilation always, i.e. 600 cfm out – 600 cfm in. That's easy!

Q: Will the Fantech MUAS work with my hood?

A: The Fantech makeup Air System will work with any other manufacturer's hood exhaust systems.

- So long as the hood exhaust is 120/240V, 60 Hz.
- Size the MUAS for the same airflow (CFM) as the hood exhaust

Q: Why can't I just open an outside window or door?

A: Technically this would work, however, your weather outside better be mild and dry. Winter and summer seasons will prove taxing on your heating or cooling bill by just leaving doors or windows open. If that's the solution, then why build efficient in the first place?

Controlling what comes through that opening isn't feasible. Contaminants of all types can breeze in for a visit.

Q: Where does kitchen MUA have to be supplied to?

A:

- The Code says you have to supply the MUA into the space that it is exhausted from (kitchen), or to a space or duct system that connects to the kitchen through permanent openings (no closed doors). Such permanent openings shall be the same or greater than the openings that supply the MUA.
- Fantech recommends that the MUA be supplied directly into the kitchen either through grilles in the ceiling wall, under floor cabinetry, or even behind the stove or refrigerator. Wherever it is supplied, the MUA should not directly impact the capture air plume of exhaust hood. (Don't direct MUA onto the stove/cooking surface).
- The ducting supplying the space can even be split into equal legs to accommodate the volume while slowing the velocity of the air to ensure comfort as well.

Q: Can I install a MUAS in an uninsulated attic/basement?

A: Yes! Simply insulate the ductwork to the R value required for your area.

Q: My contractor just wants to use a passive damper. Will that work?

A: In most cases, ONE single damper is not sufficient. To pull air through a hole it has to be sucked by depressurizing the inside space. The amount of air through the hole depends on the size of the hole and the amount of negative pressure inside to pull it in. The smaller the hole the greater depressurization required.

You contractor may suggest multiple dampers which means multiple openings in your home. This concept leads to energy inefficiencies, or a "Swiss cheese building envelope".

Q: Can I connect a MUA system to my existing forced air system to bring in makeup air to my kitchen?

A: Fantech does not recommend this for several reasons:

- Most forced air systems will not handle more than 10% of their air volume in additional Outside Air.
- In cold climates most furnace manufacturers have a lower temperature limit of 51°F to 53°F for air into the furnace. Supplying air below this number most likely damage the furnace heater and void the warranty.
- In humid climates bringing in saturated air to an undersized A/C (dehumidification) system would drive up the humidity in the home, it could cause condensation in the ducts which could cause mold growth.

Q: In cold climates do I have to have a heater?

A: A heater is recommended to condition the MUA into the home so that the cold raw outside air is tempered before entering the space.

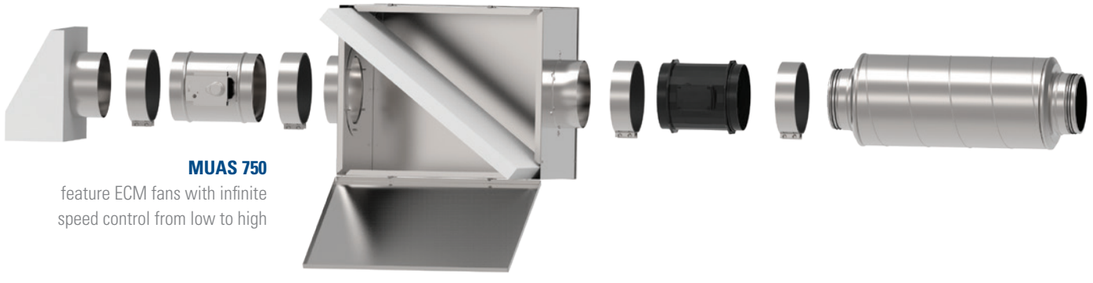
Size your Makeup Air System

Select the Makeup Air System with capacity to compensate for the maximum air flow rate of the exhaust system being served. The MUAS includes all system component items except a heater (optional accessory), wiring, duct work, insulation and electrical disconnect.

Specification data

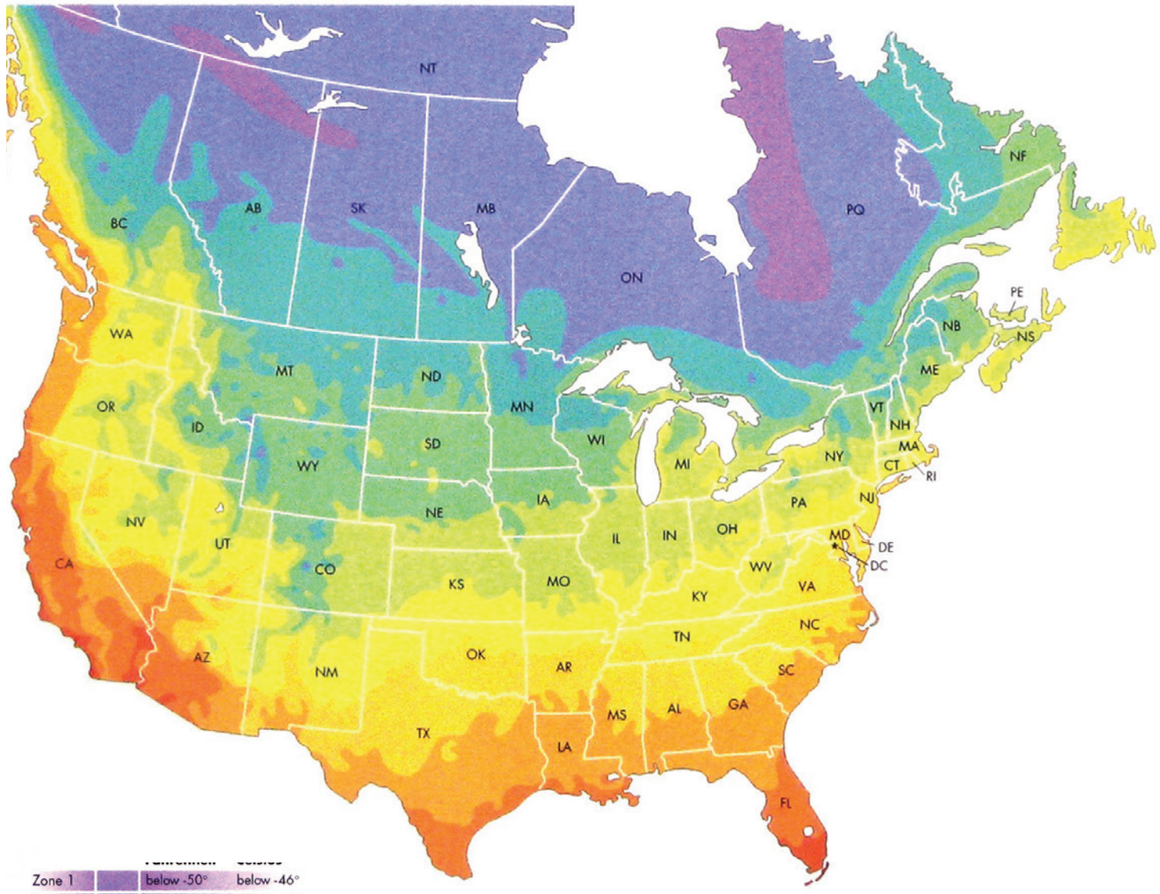
Model			MUAS 750
Included components	Maximum Airflow Rate	cfm	750[1]
	FMAC Makeup Air Control[3]		(1) FMAC
	Metal Wall Intake Hood		(1) FML 8
	Motorized Shut-off Damper		(1) ADC 8
	Filter Cabinet w/ Pleated Filter		(1) FGR 8HV
	Fan with EC-motor		(1) PrioAir 8 EC
	Duct Silencer		(1) LD 8
	Mounting Clamp (in pairs)		(2) FC 8
	Item #		K46013
Shipping Weight		lbs	121

[1] Air flow rate for fan operating at full speed against 0.2" w.g. static pressure
[2] Air flow rate for fan operating at full speed against 0.5" w.g. static pressure
[3] FMAC includes a current transducer, a control transformer, a system control board and an electrical enclosure



MUAS 750
feature ECM fans with infinite speed control from low to high

Outside average air temperature by zone*



Zone 1	below -50°	below -46°
Zone 2	-50° to -40°	-46° to -40°
Zone 3	-40° to -30°	-40° to -34°
Zone 4	-30° to -20°	-34° to -29°
Zone 5	-20° to -10°	-29° to -23°
Zone 6	-10° to 0°	-23° to -18°
Zone 7	0° to 10°	-18° to -12°
Zone 8	10° to 20°	-12° to -7°
Zone 9	20° to 30°	-7° to -1°
Zone 10	30° to 40°	-1° to 4°
Zone 11	above 40°	above 4°

*** NOTE:**
Some areas, particularly those at high elevation, might experience colder average temperatures than the map suggests.

Choose your heat (optional)

Select the appropriate Makeup Air Heater (if any). Select heat capacity as desired or as suggested by map zone. Each Makeup Air Heater includes an electric heater and a set of mounting clamps.

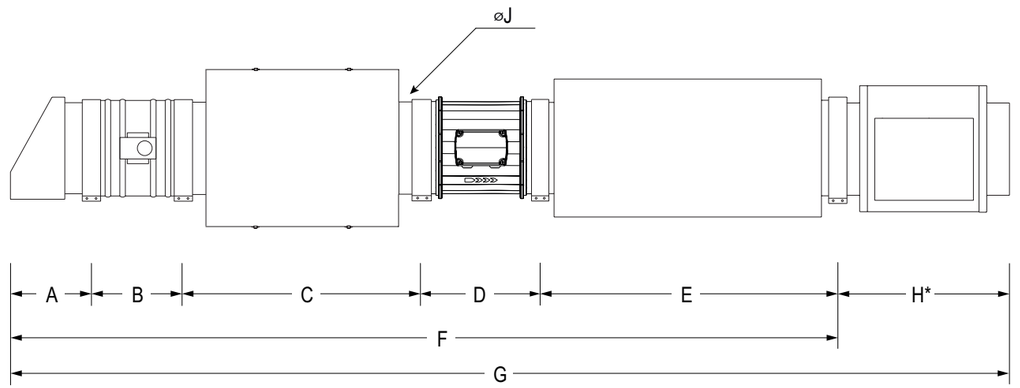
Specification data

Model			MUAH 6 / 8	
Maximum Allowable Airflow Rate		cfm	750	
May be used with MUAS model			MUAS 750	
Maximum Heat Output		kW / BTUh	6 / 20,490	
Heater Duct Connection Diameter		inch	8	

Electric Heater Application Table			Zones	Temp Rise (°F)
Suggested Heater Selection for Map Zones[4,5]	400	cfm	7 - 11	47
	500	cfm	7 - 11	38
	600	cfm	8 - 11	32
	700	cfm	8 - 11	27
	800	cfm	9 - 11	24
	900	cfm	n/a	
	1,000	cfm		
	1,100	cfm		
	1,200	cfm		
	1,300	cfm		
	1,400	cfm		
	1,500	cfm		
	1,600	cfm		
	1,700	cfm		
	1,800	cfm		
	1,900	cfm		
	2,000	cfm		

Included components	Electric Heater		SDHR 8-6K	
	Mounting Clamp (in pairs)		(1) FC 8	
Item #			K46015	
Shipping Weight		lbs	70	

[4] Map zones 9 -11 have a climate that does not necessarily require a heater for makeup air. Heat may be included, if desired.
[5] MUAH models can only provide the temperature rise as indicated. During very cold conditions heaters might not deliver air at the temperature set point.



Model	A	B	C	D	E	F	H*	G	J
MUAS 750	10	10	30 1/2	7 7/8	26 5/8	85	14	99	8

All dimensions are in inches.
*Optional

Fantech Solution for Meeting IRC M1503.4

Earns Favor in Pacific Northwest

Some mechanical contractors are willing to sidestep a few building codes in order to keep a builder happy and on budget.

Bob's Heating and Air Conditioning is not one of them, especially when the code impacts homeowner safety. That's why the Washington state contractor has made meeting the newly adopted IRC M1503.4 a priority, even though it has not always been easy.

Location: Mercer Island, Washington
Contractor: Bob's Heating and Air Conditioning Inc.
Installed products: MUAS 650*

IRC M1503.4 makes it imperative that homes with kitchen exhaust fans capable of exhausting 400 CFM or more be equipped with make-up air systems that replace the exhausted air. Specifically the Code states:

> Exhaust hood systems capable of exhausting in excess of 400 cfm shall be provided with makeup air at a rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

It's an extra expense, which homebuilders regretfully have to pass onto homeowners, but it's one that could also save lives. Without a make-up air system, operation of high volume kitchen fans (common in homes today) can create a negative pressure and cause "back-drafting" of hazardous combustion products from vent/chimney systems, including carbon monoxide into the living spaces.

Doug Quinn, General Manager of Bob's Heating, is well aware of the fact that not all jurisdictions in Washington state are up-to-speed on the code and the absence of a make-up air systems often gets overlooked by the code official – either knowingly or unknowingly. According to Quinn, that's no excuse for the omission.

> "We do work in just about every jurisdiction up and down the Puget sound region. Just because one jurisdiction is overlooking the requirements doesn't give us the right to overlook it. The whole idea of that code requirement is health and safety," said Quinn.

It's a point that that Bob's Heating and JayMarc Homes, a builder of fine homes in the greater Seattle area agree on.

> "Not many homeowners understand what [the Code] is for, but as the builder we understand and we try to explain the purpose and the benefits to the homeowners," said Jeremy DeBoer, site supervisor for JayMarc Homes.

* The MUAS 650 has now been replaced with the MUAS 750.

DeBoer worked with Bob's Heating on the mechanical HVAC installation at a new spec home on 90th Ave in Mercer Island. Like many homes on the island, the home had a commercial-sized range and exhaust fan. In the past, Bob's Heating had always designed and built the make-up air system from individual sourced components. It was tedious and time consuming. But the contractor and the builder decided to try something new on this Mercer Island home: a fully packaged exhaust makeup air system by Fantech.

> We do work in just about every jurisdiction up and down the Puget sound region. Just because one jurisdiction is overlooking the requirements doesn't give us the right to overlook it. The whole idea of that code requirement is health and safety.
>
> **Doug Quinn, Bob's Heating and Air Conditioning**

A Truly Balanced Make-up Air Solution

Bob's Heating had been searching for an alternative solution for meeting IRC M1503.4. Sourcing the components (fan, heating coil, controls, sensors, etc.) needed to build a makeup air system was tiresome. Both the contractor and the builder were ready to give Fantech's solution a try by installing it at the Mercer Island home.

How the Fantech Makeup Air System works

Fantech's makeup air system goes into action as soon as the kitchen exhaust fan is activated and is only energized during fan operation. The control package includes a transducer that measures the current that the exhaust fan is drawing and uses that information to regulate the volume of make-up air. So no matter how much air the kitchen hood is exhausting, the makeup air system is bringing in the exact same amount of fresh air.

This air can be delivered into the kitchen near the exhaust appliance or it can be ducted into the return air duct of a forced air/ heating system located elsewhere in the home. The inline duct heater and shut-off damper are also controlled by the Fantech control. The heater tempers the make-up air as needed during the heating season.

During the set-up procedure, the installing contractor follows a few simple steps that "teach" the control system what current is associated with the minimum and maximum exhaust speed on the kitchen fan. Once the controller has this information, all future operation will be based on some percentage of that range, but always in exact concert with the exhaust fan itself.

This set-up provides for a completely balanced air pressure inside the home during operation of the exhaust fan. This is the recommended mode of operation. However, some builders may prefer a slightly positive or slightly negative pressure inside the home – sometimes as a means to minimize migration of moisture through the walls of a home. The Fantech make-up air solution can accommodate these operational preferences as well.

The Fantech system is modular, so it can easily be easily configured to fit the layout of any home. In the case of Mercer Island, the primary components (makeup air fan, duct silencer, inline duct heater, etc.) were located in the garage. The supply air duct was installed above the ceiling so that makeup air would be supplied into a large 3 story-foyer where the grill would be obscure. The system is quiet and it's automatic, operating only as needed whenever the variable speed kitchen fan is exhausting air.

Countrywide Game Changer for Meeting Code

HVAC contractors across the country have been on the lookout for a solution like the Fantech air system, according to Curt Kanemasu of Cascade Products, Inc., a HVAC/R manufacturers representative in Washington and several other northwestern states.

> "Contractors have been asking us for something that would help them meet the make-up air code ever since it started being enforced in the Seattle area," said Kanemasu, who helped coordinate the first applications of the Fantech system. "Now contractors all across the country are in the same position because the code is starting to take hold every where."

Doug Quinn, who would rather his firm spend its time installing equipment rather than sourcing components, was impressed with the product's overall capability and how easy it was to install at the Mercer Island home.

> "I'm not aware of any other exhaust make-up air solution that allows the flexibility to automatically adjust the makeup air CFM and preheat the incoming air. The installation went pretty darn well so we are encouraged."

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