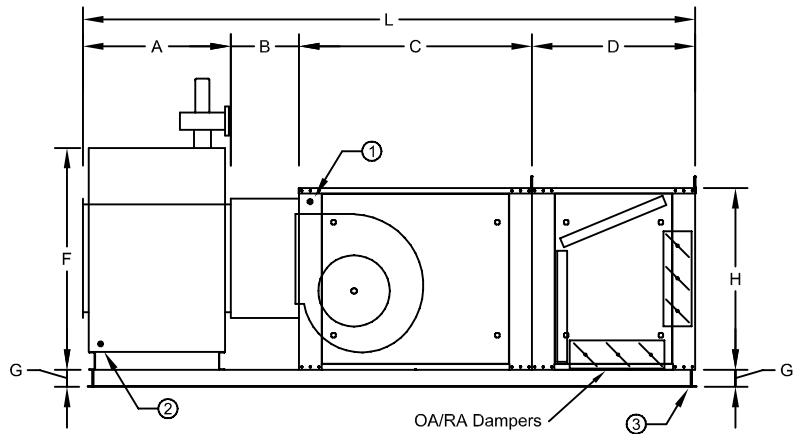
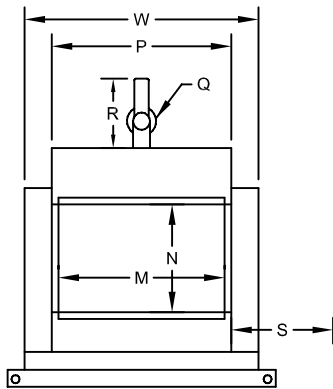


Model IFG Indirect Fired Make-Up Air Heater Indoor Unit with Mixing Box (Low CFM)



- ① Electrical connection
- ② Gas connection
- ③ Lifting lugs (4)

Notes:

1. Access doors typical on both sides.
2. Other drawings are available with a cooling coil section, an evaporative cooler and/or without the mixing box section.
3. Consult factory for any special construction applications.
4. Gas inlet size: 1/2" NPT for 200 MBH heaters and below; all others 3/4" NPT.
5. Temperature rise: 20 degree minimum, 90 degree maximum.
6. Dimensions "W" and "H" are the width and height of the air handler.
7. Dimensions "P" and "F" are the width and height of the heater section.
8. Dimensions "Q" and "R" are the flue opening diameter and height of the power venter.
9. Dimension "S" is the recommended clearance to service the burner drawer.
10. Dimension "L" is the overall length of the unit.
11. Dimension "G" is the height of the base rail that runs the full length and width of the unit: "L"x"W".
12. Overall weight of the unit must include both the air handler and heater weights.
13. CFM limits are shown for the air handler and heater; both must be satisfied.

Heater Information								CFM Limits	
MBH	M	N	P	Q	R	S	Wgt	Min.	Max.
100	15.50	19.0	17.88	4.0	12.0	23.88	220#	800	2600
150	18.25	19.0	20.63	4.0	12.0	26.63	250#	1200	2900*
200	23.75	19.0	26.13	5.0	12.0	32.13	300#	1600	4050*
250	29.25	19.0	31.63	5.0	12.0	37.63	330#	2000	4050*
300	34.75	19.0	37.13	6.0	12.0	43.13	380#	2400	7350*
350	40.25	19.0	42.63	6.0	12.0	48.63	410#	2800	7350*
400	45.75	19.0	48.13	6.0	12.0	54.13	460#	3200	7350*

Air Handler Information			CFM Limits	
MBH	Housing	Wgt	Min.	Max.
IFG-109	#1	400#	800	2600
IFG-110		420#	1200	2900*
IFG-110	#2	480#	1600	3600
IFG-112		490#	1800	4050*
IFG-115		530#	3000	4050*
IFG-209	#2W	670#	2400	5100*
IFG-210		710#	3000	5100*
IFG-115	#3	820#	3400	7000
IFG-118		860#	4000	7350*
IFG-120		960#	5000	7350*
IFG-120-HD		980#	5000	7350*

* CFM limited by the filter bank area

Model	Housing	Heater Sizes	A	B	C	D	F	G	H	L	W	Filters
IFG-109-SM	#1	100,150,200,250	26.00	12.00	33.00	28.00	50.75	3.00	32.00	99.00	33.20	(4) 16x16
IFG-109												
IFG-110												
IFG-110	#2	200,250,300	26.00	12.00	41.00	28.75	50.75	3.00	32.00	107.75	41.20	(2) 16x20 (2) 20x20
IFG-112												
IFG-115												
IFG-209-SM	#2W	300,350,400	26.00	12.00	41.00	28.75	49.75	3.00	32.00	107.75	52.70	(2) 16x25 (2) 20x25
IFG-209												
IFG-210												
IFG-115	#3	300,350,400	26.00	12.00	57.23	28.25	59.31	3.00	46.00	123.48	52.70	(4) 16x25 (2) 20x25
IFG-118												
IFG-120												
IFG-120-HD												

To maintain KEES' policy of continuous product development, we reserve the right to change prices, specifications, ratings and dimensions without notice or obligation.

Project	Location		
Engineer			
Architect	Dwg. No.	SD-IFG-1 w/MB low CFM	
Contractor	Date	08/09	



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MODEL IFG INDOOR INDIRECT FIRED MAKE-UP AIR HEATER

Qty.	Model	CFM	S.P.	BHP	RPM	HP	Volts	Ph.	BTU (Input/Output)	Tag

General Construction

Housing

- Galvanized steel
- 1" fiberglass insulation
- Weatherproof construction
- Large access panels

Housing Options

- ☐ Painted housing - machinery grey
- ☐ Painted housing - special color: _____
- ☐ Double wall insulation
- ☐ Foil faced insulation
- ☐ Hinged access doors

Blower Section

- Forward curved, DWDI blower
- Precision machined steel shaft
- Blower wheels statically and dynamically balanced
- Adjustable V-belt drives
- Pulleys and belts selected for not less than 165% of driven HP
- Fan and motor mounted on vibration isolators
- Self-aligning pre-lubricated bearings
- EPACT rated motor

☐ ODP (standard)

☐ TEFC

☐ VFD

☐ Other _____

Electrical

- Unit is field wired (standard)
- Optional
 - ☐ Disconnect switch only (mounted and wired to motor)
 - _____ NEMA1
 - _____ NEMA3R
 - ☐ Motor control center with disconnect switch, one motor starter, fuse blocks and control transformer; single point wiring.
 - ☐ Extra motor starters:
 - _____ HP
 - _____ HP
 - ☐ Other _____

Heater Section

- AGA and CGA certified heater
- Indirect fired gas burner
 - ☐ Natural gas (standard)
 - ☐ Propane fuel
- 80% combustion efficiency
- Power vented
- Heat exchanger
 - ☐ 409 SS (standard)
 - ☐ 321 SS
 - ☐ Aluminized steel
- Burners
 - ☐ Aluminized steel (standard)
 - ☐ 409 SS
- Gas valve
 - ☐ One stage gas valve _____ with ductstat _____ with room stat
 - ☐ Two stage gas valve _____ with ductstat _____ with room stat
 - ☐ Electronic modulating _____ with ductstat _____ with ductstat and room override stat
 - _____ with room stat
 - _____ with DDC controls by others
 - ☐ Other _____
- High temperature limit switch
- Electric spark intermittent pilot
- All components UL recognized and wired to terminal strip

Optional Accessories

OA/RA Damper Options

- ☐ None (provided by others)
- ☐ Dampers with manual quadrants
- ☐ Dampers with modulating actuator
- ☐ Dampers with modulating actuator and pressure controller
- ☐ Dampers with modulating actuator and potentiometer

Filter Options _____ Thickness

- ☐ Aluminum cleanable
- ☐ Fiberglass throw-away
- ☐ 30% efficient pleated
- ☐ Other _____

Cooling Options (requires drawing from factory)

- ☐ Chilled water
- ☐ Dx direct expansion
- ☐ Evaporative

Other Options

- ☐ Remote control panel
- Enclosure - surface mounted
 - ☐ NEMA12 plastic enclosure (standard)
 - ☐ Metal enclosure (NEMA rating: _____)
- 2-Position switches
 - ☐ Fan ☐ Heat ☐ Cool ☐ Hood lights
- Indicator lights
 - ☐ Fan ☐ Heat ☐ Cool ☐ Hood lights
 - ☐ Alarm ☐ Filter ☐ Other _____
- 3-Position switches
 - ☐ Heat-Off-Cool ☐ Summer-Off-Winter
 - ☐ Fan-Off-Auto ☐ Other _____
- ☐ Mild weather thermostat (inlet air sensor)
- ☐ Low temperature limit (freezestat)
- ☐ Clogged filter switch
- ☐ Gas pressure safety switch (high, low or both)
- ☐ Convenience outlet (115V service receptacle)
- ☐ High gas pressure regulator
- ☐ Time clock
- ☐ Occupied/Unoccupied (Night setback)
- ☐ Discharge diffuser (3-way or 4-way)
- ☐ Wall mounted intake hood
- ☐ Elevation (over 2,000'): _____
- ☐ Other _____

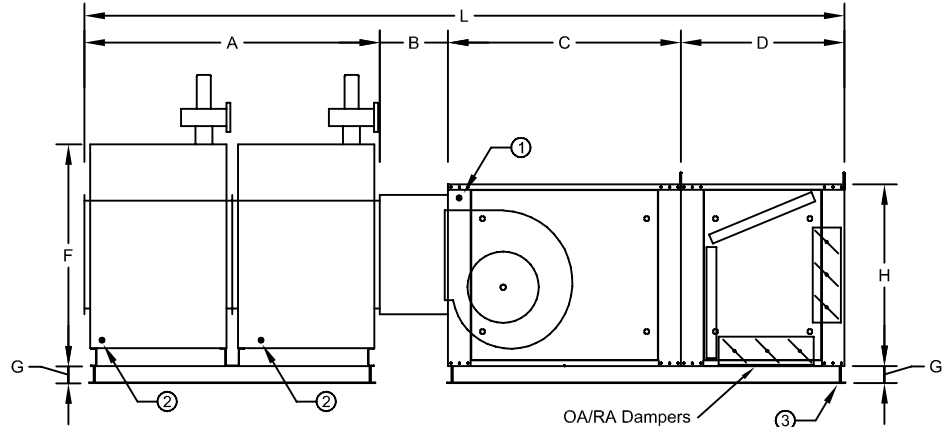
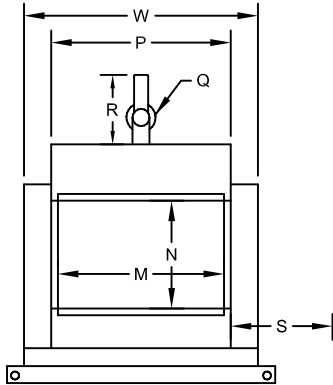
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Project		Location	
Engineer			
Architect		Dwg. No.	SD-IFG-1 w/MB low CFM
Contractor		Date	08/09



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Model IFG Indirect Fired Make-Up Air Heater Indoor Unit with Mixing Box (Low CFM)



Heater Information								CFM Limits	
MBH	M	N	P	Q	R	S	Wgt	Min.	Max.
500	29.25	19.0	31.63	5.0	12.0	37.63	660#	3000	4050*
600	34.75	19.0	37.13	6.0	12.0	43.13	760#	3700	7350*
700	40.25	19.0	42.63	6.0	12.0	48.63	820#	4500	7350*
800	45.75	19.0	48.13	6.0	12.0	54.13	920#	5000	7350*

- ① Electrical connection
- ② Gas connection
- ③ Lifting lugs (4 on each section)

Notes:

- Access doors typical on both sides.
- Other drawings are available with a cooling coil section, an evaporative cooler and/or without the mixing box section.
- Consult factory for any special construction applications.
- Gas inlet size: 3/4" NPT.
- Temperature rise: 40 degree minimum, 120 degree maximum.
- Dimensions "W" and "H" are the width and height of the air handler.
- Dimensions "P" and "F" are the width and height of the heater section.
- Dimensions "Q" and "R" are the flue opening diameter and height of the power venter.
- Dimension "S" is the recommended clearance to service the burner drawer.
- Dimension "L" is the overall length of the unit.
- Dimension "G" is the height of the base rails that run the full length and width of the two sections. These base rails are "A"x"W" and "C+D"x"W" with a canvas connection "B" between them.
- Overall weight of the unit must include both the air handler and heater weights.
- CFM limits are shown for the air handler and heater; both must be satisfied.

Air Handler Information			CFM Limits	
MBH	Housing	Wgt	Min.	Max.
IFG-112	#2	490#	3000	4050*
IFG-115		530#	3000	4050*
IFG-209	#2W	670#	3000	5100*
IFG-210		710#	3000	5100*
IFG-115	#3	820#	3400	7000
IFG-118		860#	4000	7350*
IFG-120		960#	5000	7350*
IFG-120-HD		980#	5000	7350*

* CFM limited by the filter bank area

Model	Housing	Heater Sizes	A	B	C	D	F	G	H	L	W	Filters
IFG-112	#2	500, 600	52.00	12.00	41.00	28.75	50.75	3.00	32.00	133.75	41.20	(2) 16x20
IFG-115												(2) 20x20
IFG-209-SM	#2W	600,700,800	52.00	12.00	41.00	28.75	49.75	3.00	32.00	133.75	52.70	(2) 16x25
IFG-209												(2) 20x25
IFG-210												
IFG-115	#3	600,700,800	52.00	12.00	57.23	28.25	59.31	3.00	46.00	149.48	52.70	(4) 16x25
IFG-118												(2) 20x25
IFG-120												
IFG-120-HD												

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Project	Location			
Engineer				
Architect	Dwg. No.		SD-IFG-2 w/MB low CFM	
Contractor	Date		08/09	



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MODEL IFG INDOOR INDIRECT FIRED MAKE-UP AIR HEATER

Qty.	Model	CFM	S.P.	BHP	RPM	HP	Volts	Ph.	BTU (Input/Output)	Tag

General Construction

Housing

- Galvanized steel
- 1" fiberglass insulation
- Weatherproof construction
- Large access panels

Housing Options

- ☐ Painted housing - machinery grey
- ☐ Painted housing - special color: _____
- ☐ Double wall insulation
- ☐ Foil faced insulation
- ☐ Hinged access doors

Blower Section

- Forward curved, DWDI blower
- Precision machined steel shaft
- Blower wheels statically and dynamically balanced
- Adjustable V-belt drives
- Pulleys and belts selected for not less than 165% of driven HP
- Fan and motor mounted on vibration isolators
- Self-aligning pre-lubricated bearings
- EPACT rated motor

☐ ODP (standard)

☐ TEFC

☐ VFD

☐ Other _____

Electrical

- Unit is field wired (standard)
- Optional
 - ☐ Disconnect switch only (mounted and wired to motor)
 - _____ NEMA1
 - _____ NEMA3R
 - ☐ Motor control center with disconnect switch, one motor starter, fuse blocks and control transformer; single point wiring.
 - ☐ Extra motor starters:
 - _____ HP
 - _____ HP
 - ☐ Other _____

Heater Section

- AGA and CGA certified heater
- Indirect fired gas burner
 - ☐ Natural gas (standard)
 - ☐ Propane fuel
- 80% combustion efficiency
- Power vented
- Heat exchanger
 - ☐ 409 SS (standard)
 - ☐ 321 SS
 - ☐ Aluminized steel
- Burners
 - ☐ Aluminized steel (standard)
 - ☐ 409 SS
- Gas valve
 - ☐ Two stage gas valve _____ with ductstat _____ with room stat
 - ☐ Three stage gas valve _____ with ductstat _____ with room stat
 - ☐ Four stage gas valve _____ with ductstat _____ with room stat
 - ☐ Electronic modulating _____ with ductstat _____ with ductstat and room override stat _____ with room stat _____ with DDC controls by others
 - ☐ Other _____
- High temperature limit switch
- Electric spark intermittent pilot
- All components UL recognized and wired to terminal strip

Optional Accessories

OA/RA Damper Options

- ☐ None (provided by others)
- ☐ Dampers with manual quadrants
- ☐ Dampers with modulating actuator
- ☐ Dampers with modulating actuator and pressure controller
- ☐ Dampers with modulating actuator and potentiometer

Filter Options _____ Thickness

- ☐ Aluminum cleanable
- ☐ Fiberglass throw-away
- ☐ 30% efficient pleated
- ☐ Other _____

Cooling Options (requires drawing from factory)

- ☐ Chilled water
- ☐ Dx direct expansion
- ☐ Evaporative

Other Options

- ☐ Remote control panel
- Enclosure - surface mounted
 - ☐ NEMA12 plastic enclosure (standard)
 - ☐ Metal enclosure (NEMA rating: _____)
- 2-Position switches
 - ☐ Fan ☐ Heat ☐ Cool ☐ Hood lights
- Indicator lights
 - ☐ Fan ☐ Heat ☐ Cool ☐ Hood lights
 - ☐ Alarm ☐ Filter ☐ Other _____
- 3-Position switches
 - ☐ Heat-Off-Cool ☐ Summer-Off-Winter
 - ☐ Fan-Off-Auto ☐ Other _____
- ☐ Mild weather thermostat (inlet air sensor)
- ☐ Low temperature limit (freezestat)
- ☐ Clogged filter switch
- ☐ Gas pressure safety switch (high, low or both)
- ☐ Convenience outlet (115V service receptacle)
- ☐ High gas pressure regulator
- ☐ Time clock
- ☐ Occupied/Unoccupied (Night setback)
- ☐ Discharge diffuser (3-way or 4-way)
- ☐ Wall mounted intake hood
- ☐ Elevation (over 2,000'): _____
- ☐ Other _____

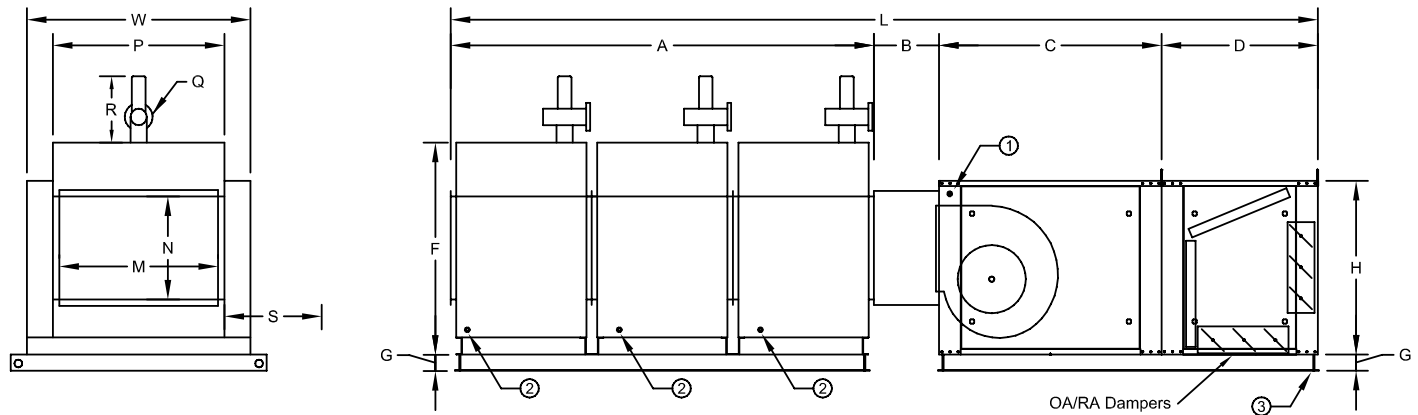
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Project		Location	
Engineer			
Architect		Dwg. No.	SD-IFG-2 w/MB low CFM
Contractor		Date	08/09



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Model IFG Indirect Fired Make-Up Air Heater Indoor Unit with Mixing Box (Low CFM)



Heater Information								CFM Limits	
MBH	M	N	P	Q	R	S	Wgt	Min.	Max.
900	34.75	19.0	37.13	6.0	12.0	43.13	1140#	4000	7350*
1050	40.25	19.0	42.63	6.0	12.0	48.63	1230#	4500	7350*
1200	45.75	19.0	48.13	6.0	12.0	54.13	1380#	5000	7350*

- ① Electrical connection
- ② Gas connection
- ③ Lifting lugs (4 on each section)

Notes:

1. Access doors typical on both sides.
2. Other drawings are available with a cooling coil section, an evaporative cooler and/or without the mixing box section.
3. Consult factory for any special construction applications.
4. Gas inlet size: 3/4" NPT.
5. Temperature rise: 60 degree minimum, 180 degree maximum.
6. Dimensions "W" and "H" are the width and height of the air handler.
7. Dimensions "P" and "F" are the width and height of the heater section.
8. Dimensions "Q" and "R" are the flue opening diameter and height of the power venter.
9. Dimension "S" is the recommended clearance to service the burner drawer.
10. Dimension "L" is the overall length of the unit.
11. Dimension "G" is the height of the base rails that run the full length and width of the two sections. These base rails are "A"x"W" and "C+D"x"W" with a canvas connection "B" between them.
12. Overall weight of the unit must include both the air handler and heater weights.
13. CFM limits are shown for the air handler and heater; both must be satisfied.

Air Handler Information			CFM Limits	
MBH	Housing	Wgt	Min.	Max.
IFG-118	#3	860#	4000	7350*
IFG-120		960#	5000	7350*

* CFM limited by the filter bank area

Model	Housing	Heater Sizes	A	B	C	D	F	G	H	L	W	Filters
IFG-118	#3	900, 1050, 1200	78.00	12.00	57.23	28.25	59.31	3.00	46.00	175.48	52.70	(4) 16x25 (2) 20x25
IFG-120												
IFG-120-HD												

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Project	Location			
Engineer				
Architect	Dwg. No.		SD-IFG-3 w/MB low CFM	
Contractor	Date		08/09	



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MODEL IFG INDOOR INDIRECT FIRED MAKE-UP AIR HEATER

Qty.	Model	CFM	S.P.	BHP	RPM	HP	Volts	Ph.	BTU (Input/Output)	Tag

General Construction

Housing

- Galvanized steel
- 1" fiberglass insulation
- Weatherproof construction
- Large access panels

Housing Options

- ☐ Painted housing - machinery grey
- ☐ Painted housing - special color: _____
- ☐ Double wall insulation
- ☐ Foil faced insulation
- ☐ Hinged access doors

Blower Section

- Forward curved, DWDI blower
- Precision machined steel shaft
- Blower wheels statically and dynamically balanced
- Adjustable V-belt drives
- Pulleys and belts selected for not less than 165% of driven HP
- Fan and motor mounted on vibration isolators
- Self-aligning pre-lubricated bearings
- EPACT rated motor

☐ ODP (standard)

☐ TEFC

☐ VFD

☐ Other _____

Electrical

- Unit is field wired (standard)
- Optional
 - ☐ Disconnect switch only (mounted and wired to motor)
 - _____ NEMA1
 - _____ NEMA3R
 - ☐ Motor control center with disconnect switch, one motor starter, fuse blocks and control transformer; single point wiring.
 - ☐ Extra motor starters:
 - _____ HP
 - _____ HP
 - ☐ Other _____

Heater Section

- AGA and CGA certified heater
- Indirect fired gas burner
 - ☐ Natural gas (standard)
 - ☐ Propane fuel
- 80% combustion efficiency
- Power vented
- Heat exchanger
 - ☐ 409 SS (standard)
 - ☐ 321 SS
 - ☐ Aluminized steel
- Burners
 - ☐ Aluminized steel (standard)
 - ☐ 409 SS
- Gas valve
 - ☐ Three stage gas valve _____ with ductstat _____ with room stat
 - ☐ Four stage gas valve _____ with ductstat _____ with room stat
 - ☐ Six stage gas valve _____ with ductstat _____ with room stat
 - ☐ Electronic modulating _____ with ductstat _____ with ductstat and room override stat
 - _____ with room stat
 - _____ with DDC controls by others
 - ☐ Other _____
- High temperature limit switch
- Electric spark intermittent pilot

Optional Accessories

OA/RA Damper Options

- ☐ None (provided by others)
- ☐ Dampers with manual quadrants
- ☐ Dampers with modulating actuator
- ☐ Dampers with modulating actuator and pressure controller
- ☐ Dampers with modulating actuator and potentiometer

Filter Options _____ Thickness

- ☐ Aluminum cleanable
- ☐ Fiberglass throw-away
- ☐ 30% efficient pleated
- ☐ Other _____

Cooling Options (requires drawing from factory)

- ☐ Chilled water
- ☐ Dx direct expansion
- ☐ Evaporative

Other Options

- ☐ Remote control panel
- Enclosure - surface mounted
 - ☐ NEMA12 plastic enclosure (standard)
 - ☐ Metal enclosure (NEMA rating: _____)
- 2-Position switches
 - ☐ Fan ☐ Heat ☐ Cool ☐ Hood lights
- Indicator lights
 - ☐ Fan ☐ Heat ☐ Cool ☐ Hood lights
 - ☐ Alarm ☐ Filter ☐ Other _____
- 3-Position switches
 - ☐ Heat-Off-Cool ☐ Summer-Off-Winter
 - ☐ Fan-Off-Auto ☐ Other _____
- ☐ Mild weather thermostat (inlet air sensor)
- ☐ Low temperature limit (freezestat)
- ☐ Clogged filter switch
- ☐ Gas pressure safety switch (high, low or both)
- ☐ Convenience outlet (115V service receptacle)
- ☐ High gas pressure regulator
- ☐ Time clock
- ☐ Occupied/Unoccupied (Night setback)
- ☐ Discharge diffuser (3-way or 4-way)
- ☐ Wall mounted intake hood
- ☐ Elevation (over 2,000'): _____
- ☐ Other _____

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Project		Location	
Engineer			
Architect		Dwg. No.	SD-IFG-3 w/MB low CFM
Contractor		Date	08/09



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