

## MODEL SC VENTING REQUIREMENTS

Vent terminals are required as illustrated in Figure A or B. No other venting arrangements are approved or certified for use on SC Models.

All pipes are field-supplied and should be either 26 gauge or heavier galvanized steel or a material of equivalent durability and corrosion resistance or vent pipe approved for a Category III appliance. Single wall pipe is also recommended for combustion air pipes.

All joints of the 5" flue exhaust pipe within the confines of the 8" combustion air pipe must be sealed with the high temperature silicone rubber sealant included with the kit. Some connections require taper-type pipe connectors. When the diameter change is at the heater, install the connection within six inches (152mm) of the heater. When the diameter change is at the adapter box, install the connection within six inches (152mm) of the box.

VENT LENGTHS FOR SC SERIES 6 HEATERS		
SIZE	PIPE DIAMETER	MAXIMUM LENGTH
100	6 inch	40 feet
125-300	6 inch	50 feet
200-400	7 inch	70 feet
350-400	6 inch	30 feet
90° elbow equals 8 feet of pipe. 45° elbow equals 4 feet of pipe. Minimum vent length is 5 feet.		

**NOTE: Thimble, flashing, flue pipe, combustion air pipe and taper-type connectors are field supplied. (A thimble is not required if wall or roof penetration is of noncombustible construction.)**

## PILOT AND GAS CONTROL DESCRIPTIONS

### PILOT IGNITION SYSTEMS

#### MANUAL PILOT

Manual match-lit pilot. Pilot remains on 100% of time until pilot gas flow is shut off. Not recommended for makeup air applications or downstream from an air conditioning coil. Certified for use with natural and propane gas.

#### INTERMITTENT SPARK PILOT

Automatic lighting of pilot with an electronic spark on a call for heat. Pilot gas flow is shut off between heat cycles. Certified for use with natural and propane gas for outdoor units in the United States. Certified for use with natural gas only on indoor units installed in the United States. Certified for use with natural gas only for installation of indoor and outdoor units in Canada.

#### INTERMITTENT SPARK PILOT WITH 100% SHUT-OFF

Automatic lighting of pilot with an electronic spark on a call for heat. Pilot gas flow is shut off between heat cycles. This system also incorporates a lockout device which stops gas flow to the pilot if the pilot fails to light in 120 seconds. Reset of lockout requires manual interruption of thermostat cycle. Certified for use with natural or propane gas.

### GAS CONTROL SYSTEMS

(Available with either natural or propane gas unless noted otherwise.)

#### HEATING APPLICATION OPTIONS

##### AG1 - ONE-STAGE CONTROL

Single-stage gas valve which cycles on at 100% fire on a call for heat. Thermostat is not included.

##### AG2 - TWO-STAGE CONTROL

Two-stage gas valve which fires at 100% or 50%, as required, on call by a remote two-stage thermostat. Thermostat not included.

##### AG7 - ELECTRONIC MODULATION (55°-90°F)

Solid state control system, providing close temperature control through related manifold pressure. On a call for heat from a remote electronic thermostat, controls modulate between 50% and 100%. Remote thermostat not included.

### MAKEUP AIR APPLICATION OPTIONS

(Require Fan Control - page 19)

##### AG3 - TWO-STAGE CONTROL FROM DUCTSTAT (60°-110°F)

Two-stage gas valve which fires at 100% or 50% as required, on call from a unit-mounted, two-stage ductstat.

##### AG15 - TWO-STAGE CONTROL USING ELECTRONIC DUCTSTAT WITH REMOTE TEMPERATURE ADJUSTMENT (50°-130°F)

Same type of control as Option AG3, but the setpoint of the ductstat is adjustable from a remote temperature-selector. Includes factory-installed sensor and field-installed temperature-selector module with an adjustable stage-adapter module.

##### AG16 - TWO-STAGE CONTROL USING ELECTRONIC DUCTSTAT WITH REMOTE TEMPERATURE ADJUSTMENT (50°-130°F) AND TEMPERATURE DISPLAY

Same as Option AG15, plus a digital (liquid crystal) temperature-display module that provides continuous display of sensor reading.

##### AG6 - MECHANICAL MODULATION (50°-100°F)

Nonelectric control system, hydraulic capillary-actuated. Upon sensing a requirement for heat, control modulate between 50% and 100%.

# GAS CONTROL, AND FAN CONTROL DESCRIPTIONS (cont'd.)

## MAKEUP AIR APPLICATION OPTIONS

(Require Fan Control - below)

### AG13 - MECHANICAL MODULATION (50°-100°F) WITH FULL FIRE BYPASS

Mechanical modulation control is the same as Option AG6, except that the unit is also equipped with a parallel single-stage valve and relay. On call from a remote override thermostat, the single-stage gas valve cycles on at 100% fire. Override thermostat is not included; thermostat Option CL3 may be used. (Available only on all sizes of Model Series RG and RP.)

### AG8 - ELECTRONIC MODULATION (55°-90°F) WITH DUCTSTAT

Solid stage control system, providing close temperature control through regulated manifold pressure. On a call for heat from a unit-mounted ductstat, controls modulate between 50% and 100%, as required. A room override thermostat (Option CL9) is available for use with this system.

### AG9 - ELECTRONIC MODULATION WITH DUCTSTAT AND REMOTE TEMPERATURE SELECTION

Control is the same as Option AG8 except that the duct sensor set-point may be reset from a remote selector. Remote temperature selector is included. A room override thermostat (Option CL9) is available for use with this system.

### AG21 - ELECTRONIC MODULATION WITH DDC CONTROL

Control is the same as AG8 except that it includes a signal conditioner for use with customer-supplied 4-20MA or 0-10V input signal. Includes Maxitrol A200 signal conditioner and special modulating gas regulator. Available on all duct furnace models.

### AG39 - ELECTRONIC MODULATION BETWEEN 20%-28% AND 100% FIRING RATE (RP/HRP/SC Models Only)

Reznor ® Option AG39 (patent pending) is an electronic modulation gas control that will provide precise control of discharge air temperature over an increased range of outside air conditions. It is available on selected sizes of Model Series SC and RP.

This option allows the furnace input ratio to be fully modulated between 100% and 28 to 20%.

The part-load thermal efficiency of this system complies with and exceeds the current seventy-five percent minimum requirement of ASHRAE standard 90.1 for part-load efficiencies. This system offers an average thermal efficiency over the range of modulation that is equal to or exceeds the full input rate thermal efficiency.

### AG39 - (cont'd)

Furnaces with Option AG39 require stainless steel burners, a stainless steel heat exchanger, and a stainless steel bottom pan. The gas train includes a single-stage gas valve, a modulating valve, and two gas pressure switches. The burner rack is equipped with one flash carry-over and a regulated gas lighter tube system. The carry-over lighter tube receives its gas supply through the regulator, simultaneously with the gas to the burner. Control of the system is through a Maxitrol #A1092 amplifier with a corresponding remote temperature dial (Maxitrol ® #TD92-0509).

### Sensor Location

The duct temperature sensor is factory installed in the cabinet leg. Although the sensor has a mixing tube, at this distance from the discharge it does not receive a true mix, so the temperature read by the sensor will be slightly higher than the actual air entering the ductwork. The system will provide comfort level heat if the selector is set slightly lower to compensate for this reading. The offset temperature will vary with the application. If a direct correlation of these two temperatures is required, move the duct sensor to a location in the ductwork about 10-12 feet from the furnace discharge.

Model	Size	Maximum Turndown Percent	MBH Input Range	Gas Supply Pressure Required
SC	100	20%	20 - 100	5" w.c.
RP/SC	125	20%	25 - 125	5" w.c.
RP/SC	150	27%	40.3 - 150	5" w.c.
RP/SC	175	23%	40.3 - 175	5" w.c.
RP/SC	200	26%	51.8 - 200	5" w.c.
RP/SC	225	23%	51.8 - 225	5" w.c.
RP/SC	250	28%	69 - 250	5" w.c.
RP/SC	300	23%	69 - 300	5" w.c.
RP/SC	400	25%	100 - 400	6" w.c.

### AG40 - ELECTRONIC MODULATION BETWEEN 20/28% AND 100% FIRING RATE WITH DDC CONTROL (RP/HRP/SC Models Only)

Same system as AG39 but includes signal conditioner for use with customer-supplied 4-20MA or 0-10V input signal. Available on selected sizes of Model Series SC and RP.

## OPTIONAL FAN CONTROL

### FAN CONTROL

The fan control is a heat-sensitive device which operates a remote blower whenever the heat exchanger temperature is above approximately 125°F. This control provides a 45-second fan delay on start-up to prevent circulation of cold air and a delay of fan shutdown for heat dissipation. The fan control provides a safety backup by providing fan operation in case of gas valve malfunctioning in the open position.

A fan control is required with all Makeup Air Gas Control Systems described above. The fan control is factory installed and included with all makeup air gas controls except on Model EEDU. On Model EEDU, the fan control must be ordered separately and field installed.