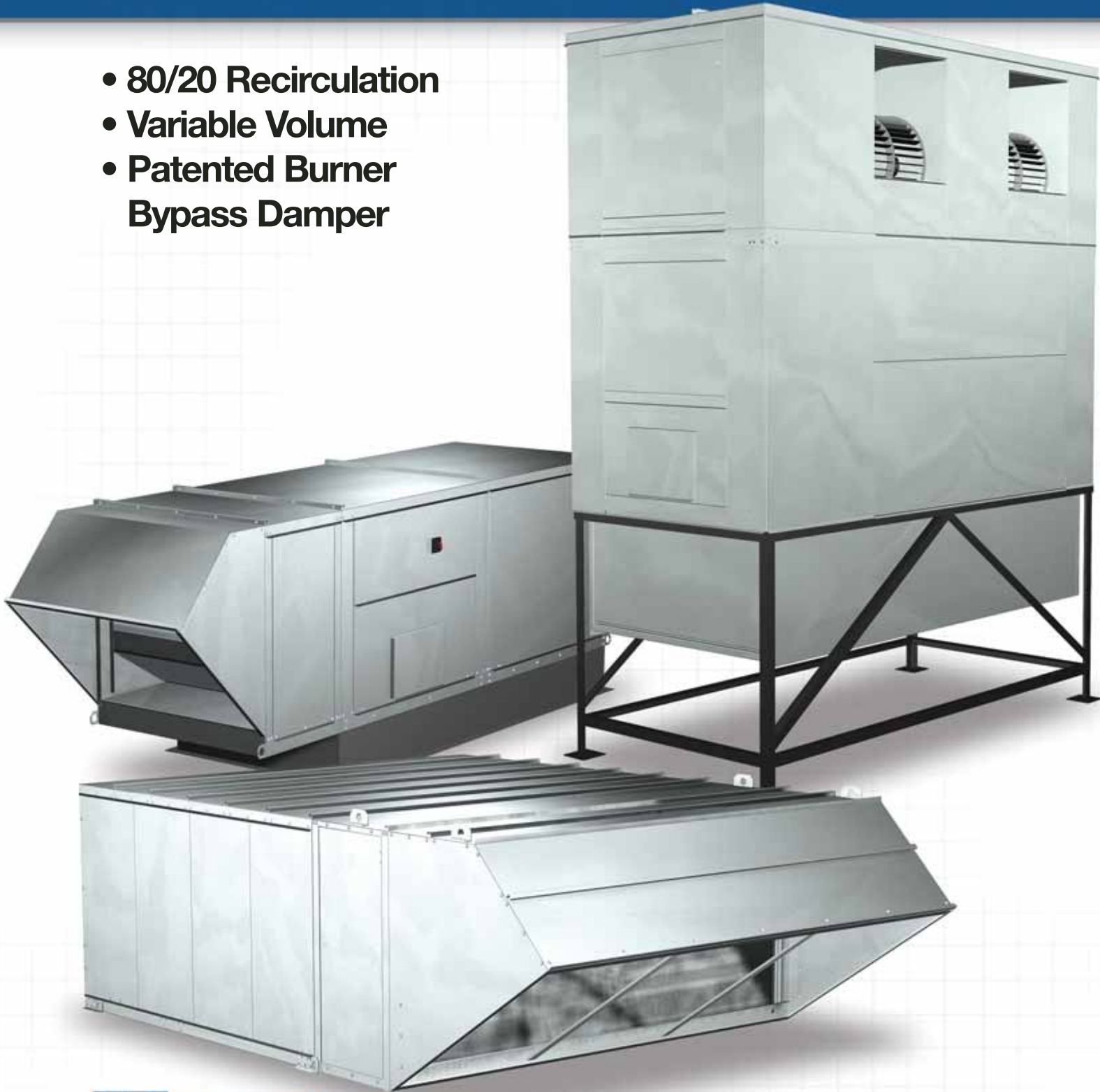
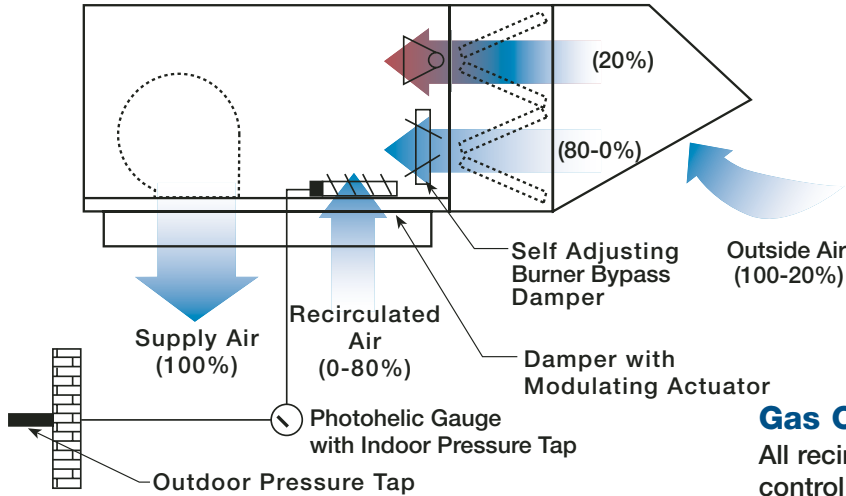


Direct Gas-Fired Make-Up Air Airflow Control Options

- 80/20 Recirculation
- Variable Volume
- Patented Burner Bypass Damper





Variable Airflow Capacities

Model	Airflow (CFM)
DGX	2,000 - 48,000
VSU	2,000 - 64,000
TSU	20,000 - 64,000

For more detailed information on performance data, use Greenheck's CAPS software.

Control Operation

A **damper with a modulating actuator** is controlled by output from a **photohelic gauge** that compares the indoor and outdoor air pressures. As exhaust air volumes vary, the outside air volumes are adjusted to maintain the desired building pressure. A slight positive pressure is a normal setting. Outside air and recirculated air volumes combine to provide the supply air.

Advantages

1. Compared to 100% Make-up Air Units:
 - Energy savings from reducing heating loads.
 - Can reduce or eliminate space heating equipment.
 - Eliminates air stratification.
2. Compared to other recirculation controls:
 - Flexible controls.
 - Enables optional night set-back or manual override.
 - Will automatically adjust to different exhaust conditions.
 - Provides positive building pressure for improved IAQ.

Self-Adjusting Burner By-Pass Damper

As the amount of recirculated air varies, Greenheck's patented self-adjusting burner by-pass damper maintains constant air flow across the burner. This ensures proper combustion as the outside air and recirculation volumes vary. Proper combustion is also ensured as filters become dirty or system static pressures change. The self-adjusting damper is superior to existing technology in performance and less complicated in operation.

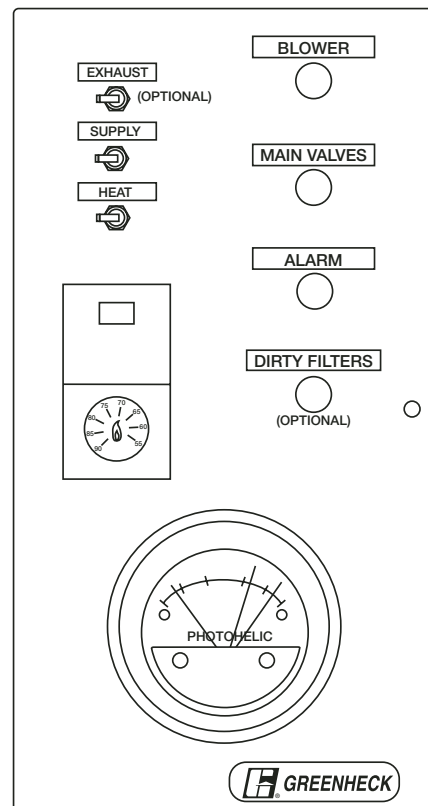
Gas Controls

All recirculation units use Maxitrol 44 gas control systems. These controls modulate the gas burner in order to maintain a desired room setting. A room thermostat is provided on a remote control panel as shown below. DDC interface compatibility is available (consult factory).

Optional Control Features

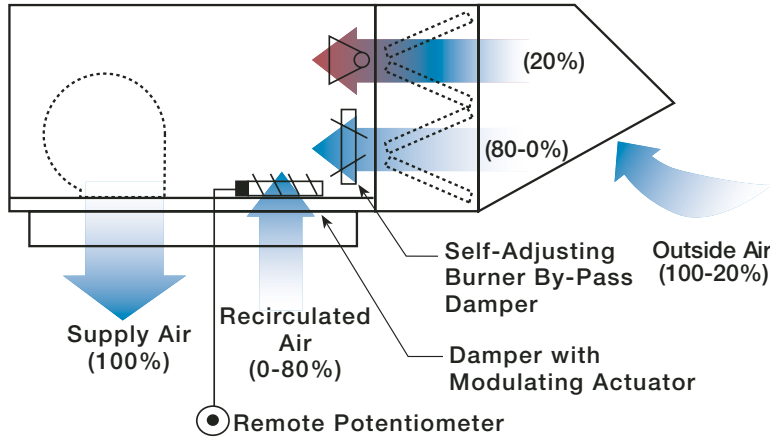
1. Night Set-Back with 7-day time-clock:
 - Timers are available to set the unit to energy saving modes during unoccupied hours.
2. Manual Override Switch:
 - The building pressure controls can be overridden by a manual switch. This switch allows for 100% outside air or maximum recirculated air.

Remote Control Panel



With Maxitrol 44 Room Thermostat




Variable Airflow Capacities

Model	Airflow (CFM)
DGX	2,000 - 48,000
VSU	2,000 - 64,000
TSU	20,000 - 64,000

For more detailed information on performance data, use Greenheck's CAPS software.

Control Operation

A damper with a modulating actuator is controlled by a remote potentiometer. As the potentiometer is adjusted, the position of the recirculation air damper is varied. The damper may be positioned from 80% recirculated air (open) to 0% recirculated air (closed). Outside air and recirculated air volumes combine to provide the supply air.

Advantages

- Compared to 100% Make-up Air Units:
 - Energy savings from reducing heating loads.
 - Can reduce or eliminate space heating equipment.
 - Eliminates air stratification.
- Compared to other recirculation controls:
 - Inexpensive control system.
 - Enables optional night set-back.
 - Easy manual change of recirculation amounts.

Self-Adjusting Burner By-Pass Damper

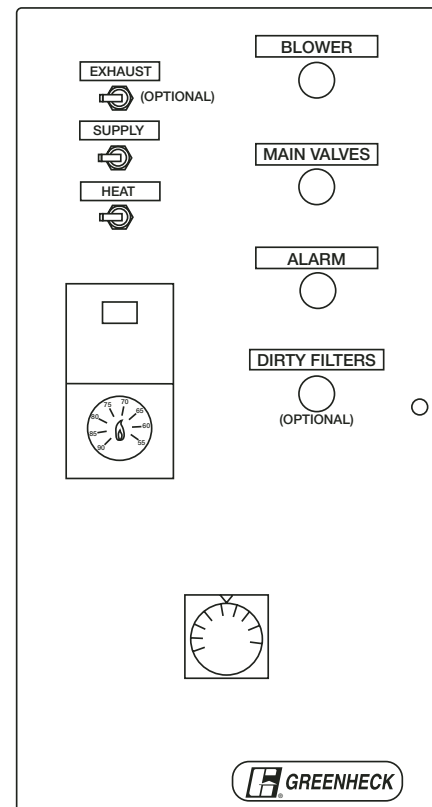
As the amount of recirculated air varies, Greenheck's patented self-adjusting burner by-pass damper maintains constant air flow across the burner. This ensures proper combustion as the outside air and recirculation volumes vary. Proper combustion is also ensured as filters become dirty or system static pressures change. The self-adjusting damper is superior to existing technology in performance and less complicated in operation.

Gas Controls

All recirculation units use Maxitrol 44 gas control systems. These controls modulate the gas burner in order to maintain a desired room setting. A room thermostat is provided on a remote control panel as shown to the right. DDC interface compatibility is available (consult factory).

Optional Control Features

- Night Set-Back with 7-day time-clock: Timers are available to set the unit to energy saving modes during unoccupied hours.

Remote Control Panel


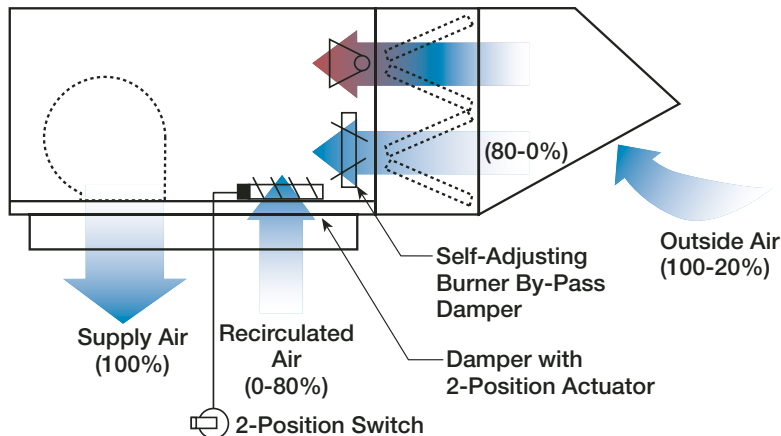
With Maxitrol 44 Room Thermostat



Variable Airflow Capacities

Model	Airflow (CFM)
DGX	2,000 - 48,000
VSU	2,000 - 64,000
TSU	20,000 - 64,000

For more detailed information on performance data, use Greenheck's CAPS software.



Control Operation

A damper with a 2-position actuator sets the unit for either 100% outside air mode or recirculation air mode. The recirculation volume is pre-set at the factory. Ventilation modes are activated by a two-position switch on the remote control panel. Outside air and recirculated air volumes combine to provide the supply air in the recirculation mode.

Advantages

- Compared to 100% Make-up Air Units:
 - Energy savings from reducing heating loads.
 - Can reduce or eliminate space heating equipment.
 - Eliminates air stratification.
- Compared to other recirculation controls:
 - Inexpensive control system.
 - Enables optional night set-back and exhaust interlock.

Self-Adjusting Burner By-Pass Damper

As the amount of recirculated air varies, Greenheck's patented self-adjusting burner by-pass damper maintains constant air flow across the burner. This ensures proper combustion as the outside air and recirculation volumes vary. Proper combustion is also ensured as filters become dirty or system static pressures change. The self-adjusting damper is superior to existing technology in performance and less complicated in operation.

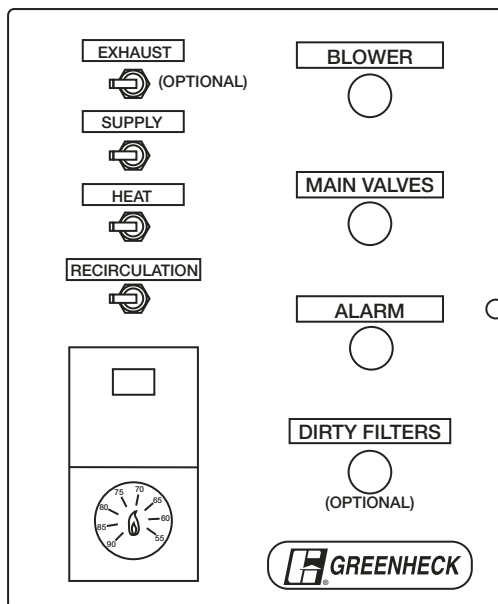
Gas Controls

All recirculation units use Maxitrol 44 gas control systems. These controls modulate the gas burner in order to maintain a desired room setting. A room thermostat is provided on a remote control panel as shown to the right. DDC interface compatibility is available (consult factory).

Optional Control Features

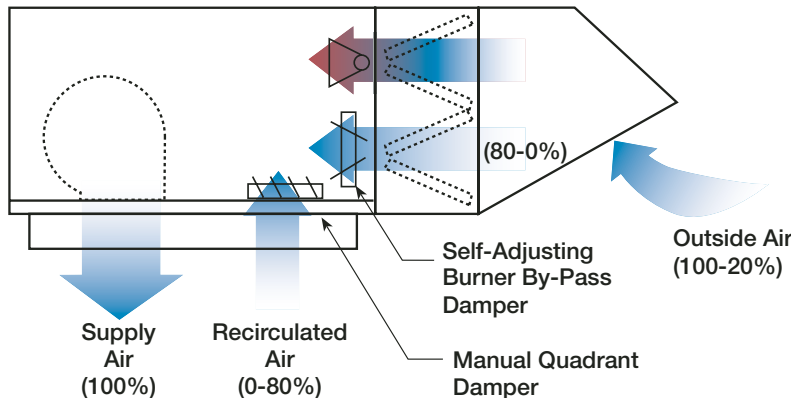
- Night Set-Back with 7-day time-clock: Timers are available to set the unit in energy saving modes during unoccupied hours.
- Exhaust Interlock: Ventilation modes are controlled according to exhaust fan status.

Remote Control Panel



With Maxitrol 44 Room Thermostat




Variable Airflow Capacities

Model	Airflow (CFM)
DGX	2,000 - 48,000
VSU	2,000 - 64,000
TSU	20,000 - 64,000

For more detailed information on performance data, use Greenheck's CAPS software.

Control Operation

A **manual quadrant damper** controls the amount of recirculation air. To vary the amount of recirculation air, the manual quadrant damper must be adjusted. Outside air and recirculated air volumes combine to provide the supply air.

Advantages

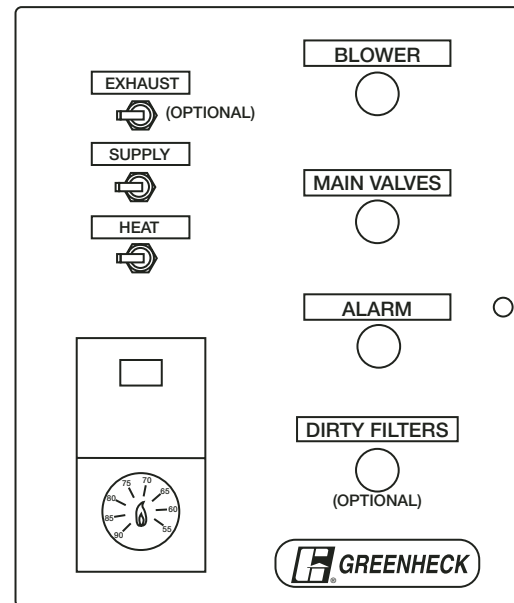
- Compared to 100% Make-up Air Units:
 - Energy savings from reducing heating loads.
 - Can reduce or eliminate space heating equipment.
 - Eliminates air stratification.
- Compared to other recirculation controls:
 - Eliminates expensive control systems.
 - Reduces tampering with recirculation volumes.

Self-Adjusting Burner By-Pass Damper

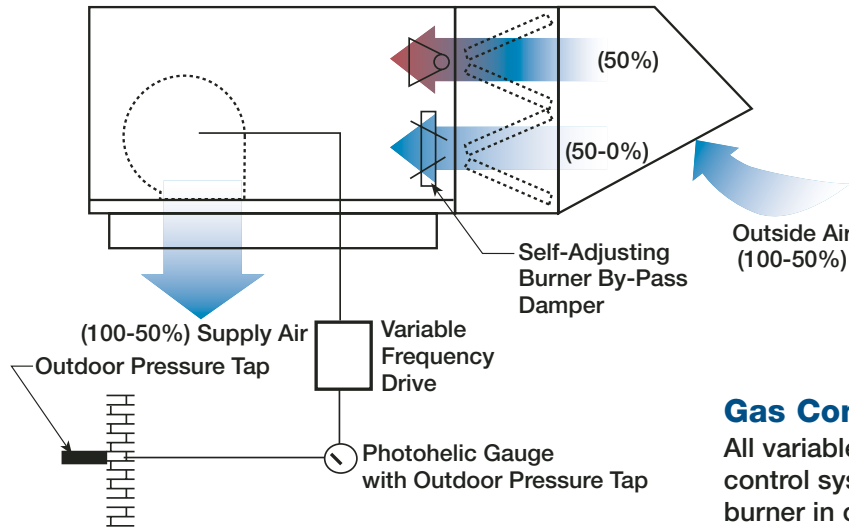
As the amount of recirculated air varies, Greenheck's patented self-adjusting burner by-pass damper maintains constant air flow across the burner. This ensures proper combustion as the outside air and recirculation volumes vary. Proper combustion is also ensured as filters become dirty or system static pressures change. The self-adjusting damper is superior to existing technology in performance and less complicated in operation.

Gas Controls

All recirculation units use Maxitrol 44 gas control systems. These controls modulate the gas burner in order to maintain a desired room setting. A room thermostat is provided on a remote control panel as shown below. DDC interface compatibility is available (consult factory).

Remote Control Panel


With Maxitrol 44 Room Thermostat



Variable Airflow Capacities

Model	Airflow (CFM)
DGX	2,000 - 48,000
VSU	2,000 - 64,000
TSU	20,000 - 64,000

For more detailed information on performance data, use Greenheck's CAPS software.

Control Operation

A **variable frequency drive** controls the motor speed based on the output from a **photohelic gauge** that compares the indoor and outdoor air pressures. As exhaust volumes vary, the make-up air volumes are adjusted to maintain the desired building pressure. A slight positive building pressure is a normal setting.

Advantages

1. Energy savings when outdoor air volumes are reduced:
 - Reduced heating loads.
 - Reduced fan loads.
2. Compared to other variable controls:
 - Enables optional night set-back and manual override.
 - Will automatically adjust to different exhaust conditions.
 - Provides positive building pressure for improved IAQ.

Self-Adjusting Burner By-Pass Damper

As the amount of recirculated air varies, Greenheck's patented self-adjusting burner by-pass damper maintains constant air flow across the burner. This ensures proper combustion as the outside air volumes change. Proper combustion is also ensured as filters become dirty or system static pressures change. The self-adjusting damper is superior to existing technology in performance and less complicated in operation.

Gas Controls

All variable air volume units use Maxitrol 44 gas control systems. These controls modulate the gas burner in order to maintain a desired room setting. A room thermostat is provided on a remote control panel as shown below. DDC interface compatibility is available (consult factory).

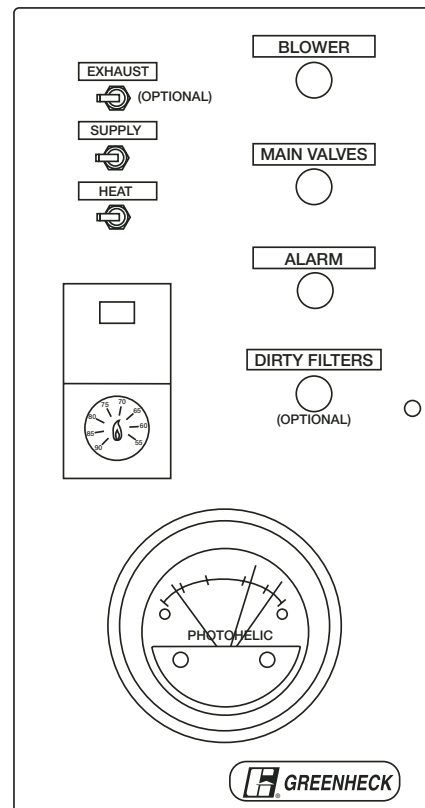
Optional Controls

1. Night Set-Back with 7-day time-clock:

Timers are available to set the unit in energy saving modes during unoccupied hours.
2. Manual Override Switch:

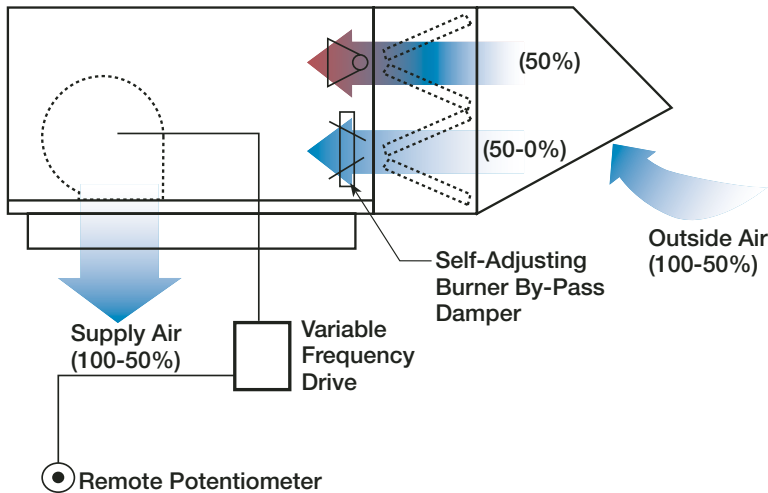
The building pressure controls can be overridden by a manual switch. This switch allows for either maximum air flow or 50% of maximum air flow.

Remote Control Panel



With Maxitrol 44 Room Thermostat





Variable Airflow Capacities

Model	Airflow (CFM)
DGX	2,000 - 48,000
VSU	2,000 - 64,000
TSU	20,000 - 64,000

For more detailed information on performance data, use Greenheck's CAPS software.

Control Operation

A **variable frequency drive** controls the motor speed according to the output from a **potentiometer**. The fan speed can be adjusted to provide air volumes ranging from design down to 50% of the design air volume.

Advantages

1. Energy savings when outdoor air volumes are reduced:
 - Reduced heating loads.
 - Reduced fan loads.
2. Compared to other variable controls:
 - Allows for easy manual adjustment of air flow.

Self-Adjusting Burner By-Pass Damper

As the amount of recirculated air varies, Greenheck's patented self-adjusting burner by-pass damper maintains constant air flow across the burner. This ensures proper combustion as the outside air volumes vary. Proper combustion is also ensured as filters become dirty or system static pressures change. The self-adjusting damper is superior to existing technology in performance and less complicated in operation.

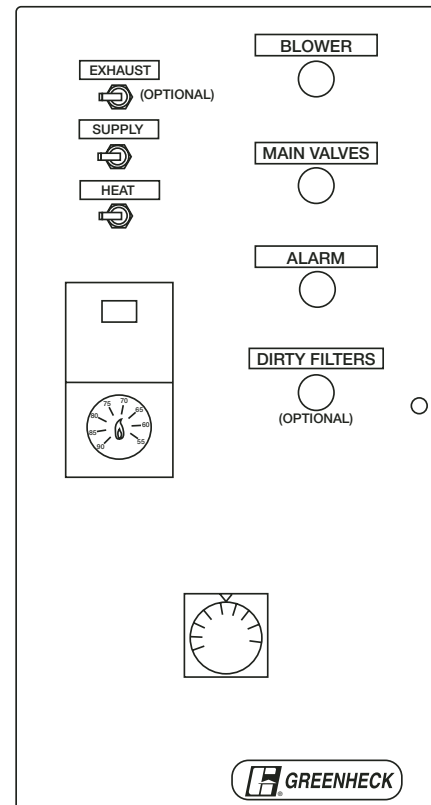
Gas Controls

All variable air volume units use Maxitrol 44 gas control systems. These controls modulate the gas burner in order to maintain a desired room setting. A room thermostat is provided on a remote control panel as shown to the right. DDC interface compatibility is available (consult factory).

Optional Controls

1. Night Set-Back with 7-day time-clock:
Timers can be supplied to set the unit in energy saving modes during unoccupied hours.

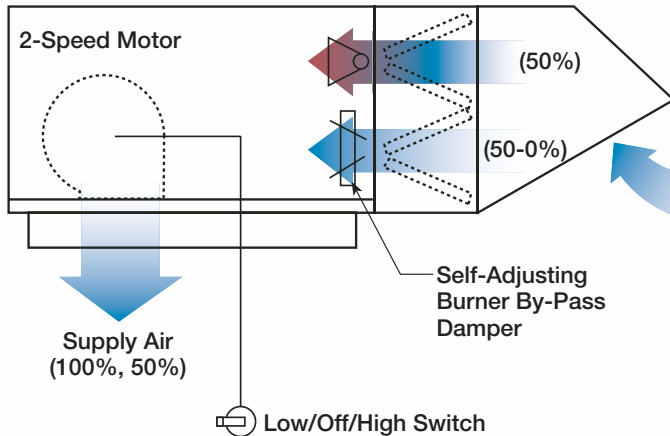
Remote Control Panel



With Maxitrol 44 Room Thermostat



Variable Air Volume Option with 2-Speed Motor Control



Variable Airflow Capacities

Model	Airflow (CFM)
DGX	2,000 - 48,000
VSU	2,000 - 64,000
TSU	20,000 - 64,000

For more detailed information on performance data, use Greenheck's CAPS software.

Outside Air
(100%, 50%)



Control Operation

A **2-speed motor** allows the unit to run at either maximum air flow or a reduced speed. The motor speed is controlled by a Low/Off/High switch mounted on a remote control panel (lower right).

Note: The burner and by-pass damper configuration provides 50% air flow on low speed with a 1/3 reduction motor.

Advantages

- Energy savings when outdoor air volumes are reduced:
 - Reduced heating loads.
 - Reduced fan loads.
- Compared to other variable controls:
 - Inexpensive control system.

Self-Adjusting Burner By-Pass Damper

As the volume of air is varied, Greenheck's patented self-adjusting burner by-pass damper maintains constant air flow across the burner. This ensures proper combustion with changing volumes of air flow. Proper combustion is also ensured as filters become dirty or system static pressures change. The self-adjusting damper is superior to existing technology in performance and less complicated in operation.

Our Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

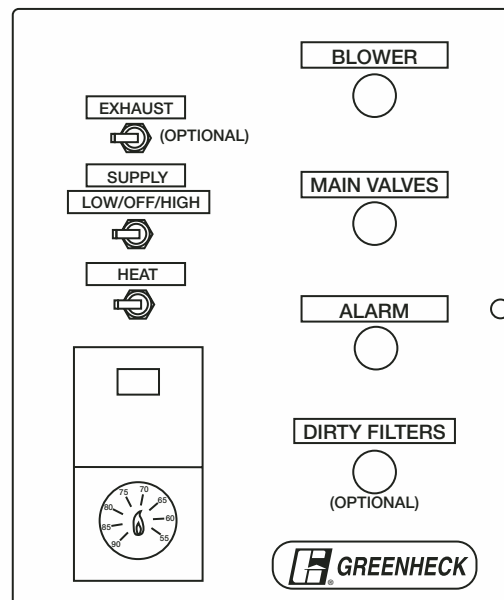
Gas Controls

All variable air volume units use Maxitrol 44 gas control systems. These controls modulate the gas burner in order to maintain a desired room setting. A room thermostat is provided on a remote control panel as shown below. DDC interface compatibility is available (consult factory).

Optional Controls

- Exhaust Fan Interlock:
High speed and low speed can be controlled according to exhaust fan status.
- Night set back with 7-day time-clock.
Timers are available to set the unit to energy saving modes during unoccupied hours.

Remote Control Panel



With Maxitrol 44 Room Thermostat

