

## 9100 Series Variable Air Volume Ceiling Diffusers

Young 9100 series (Model 9100-E) VAV ceiling diffusers are used to vary air volume from thermostatic control. Diffusers are designed to maintain coanda effect of discharge air along the ceiling, providing a sustained discharge velocity throughout the volume range. *Operating diffusers from individual wall thermostats enables users to choose their own desired comfort level. This eliminates the problem of having to rely on inaccurate and slow acting wax-type thermally powered actuators.*

### FEATURES

- **Wall mounted thermostatic control**  
Temperature is sensed and adjusted within the personal comfort zone with a variety of floating control and proportional + integral thermostats.
- **A variety of powerful, low amp actuators located outside the air stream**  
Actuators by a variety of manufacturers are available with signal inputs of 24V or 2 – 10V DC or 4 – 20 mA.
- **True Variable Air Volume in heating and cooling modes**  
Diffusers effectively induce room air and uses a wall thermostat to achieve true VAV in heating mode as well as cooling mode.
- Maximum Air Volume Range from 118 to 900 CFM
- Suitable for lay-in ceilings
- Standard factory setting of 20% minimum air
- Unitary stamped seamless back cone with removable face plate
- Steel construction with baked white enamel finish
- 4-way discharge pattern

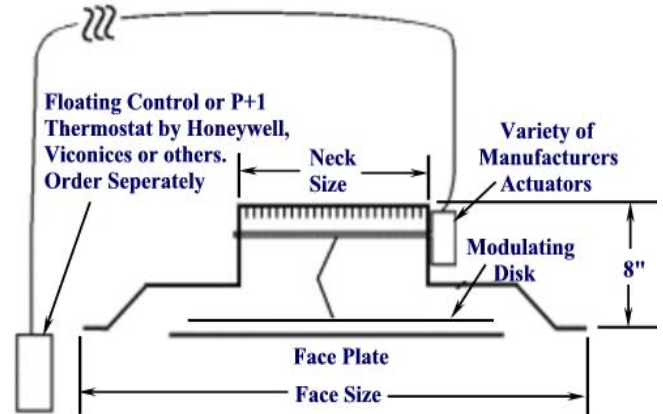
### OPERATION

Diffusers incorporate an integral modulating disk that continually regulates the volume of supply air in response to a wall-mounted thermostat (Model T-312, T641, T422 or T322 ).

Each master can control up to 5 drones – very low current draw (example – Honeywell ML Series – 2.0 VA per unit)

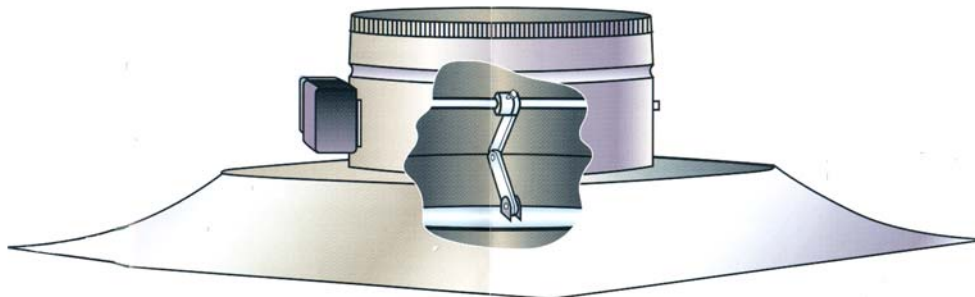
### AVAILABLE SIZES

- 6” - 14 Neck Sizes for nominal 24” x 24” Face Size.
- 6” and 8” only for nominal 12” x 12” Face Size.



### OPTIONS

- Pneumatic Actuator with 5 - 10 pound spring range, direct-acting, normally closed (Model 9100-P).
- Automatic changeover (Model 9100-AC).
  - 9100AC w/floating control thermostat.
  - 9100E w/ electronic thermostat (T-422 , T-322) and supply air duct sensor.
  - 9100E also serves as drones.
- Manually adjustable volume controller (Model 9100-C).
- Surface mount or architectural frames.
- See thermostat accessories page for options (T312, T641, T422, T322).



## PERFORMANCE DATA - SERIES 9100

NECK SIZE	PERFORMANCE	STATIC PRESSURE AT DIFFUSER INLET (INCHES WG)				
		0.1	0.15	0.20	0.25	0.30
6	MAX CFM	118	135	160	170	180
	MAX NC	20	20	24	27	31
	THROW (FT.)	2.5/4.5	3/5	4/6	5/7.5	6.5/8.5
8	MAX CFM	220	260	280	310	340
	MAX NC	21	24	27	30	33
	THROW (FT.)	4/6	4.5/7	5.5/8	6.5/8.5	8/10
10	MAX CFM	350	420	470	520	570
	MAX NC	20	20	23	27	31
	THROW (FT.)	5/8.5	6.5/9.5	7/10.5	8/11.5	9.5/12.5
12	MAX CFM	480	550	610	660	710
	MAX NC	20	20	23	27	31
	THROW (FT.)	6/10	6.5/11	8.5/12	10/13	11/13.5
14	MAX CFM	600	690	760	830	900
	MAX NC	20	22	24	27	31
	THROW (FT.)	8.5/12.5	10/14	11.5/15.5	12.5/16.5	13.5/17.5

**DATA BASE:** Sea level conditions and 54F supply air temperature. **NC:** Based on ISO test procedures re  $10^{-12}$  watt minus 8 db from each octave band. **THROW:** Values shown indicate maximum throw at maximum volume. Throw is the maximum distance from the unit to a point where the airstream is reduced to 100 FPM and 50 FPM. **HEATING:** Air Discharge temperatures in excess of 86°F may cause unacceptable stratification.

### SUGGESTED SPECIFICATIONS

Series 9100 pneumatically or electrically driven thermostatically controlled variable air volume square faced diffusers shall be as manufactured by Young Regulator Company. Removable face plate shall be constructed of a minimum 18 gauge steel and attached to a unitary stamped seamless backcone. The face plate and backcone shall be coated with corrosion resistant baked enamel white paint. Diffusers shall incorporate an integral modulating disk that continually regulates the volume of supply air in response to a wall-mounted thermostat. Diffusers relying on integral induction air ceiling-located sensors or methods of set point adjustment other than from wall-mounted thermostats, shall not be acceptable.

On electrically-driven units, electric 24 VAC actuators shall be drive-open, drive-closed synchronous-type motors to ensure finite control of temperature by modulation. Actuators that incorporate an expanding substance which only drives the unit open when subjected to heat-causing electrical current, necessitating a spring return mechanism to force the diffuser to a closed position, shall not be acceptable.

Electric modulating wall-mounted thermostatic control shall be either a proportional integral differential stat or the floating-point type as detailed in the optional accessories section of this specification. All power wiring, labor and materials including 115 to 24 VAC transformers shall be furnished and installed by others.

Pneumatically-driven diffusers shall be direct-acting and normally closed. Pneumatic thermostatic control shall be furnished and installed by others.

