

# Wallace & Tiernan® Gas Feed Systems

## Kent V2000™ Chlorinator

The Kent V2000™ wall-mounted chlorinator is the product of extensive research which focused on our customers' need for easy access, simple maintenance, and compact, economical construction. The Kent V2000™ wall-mounted chlorinator has a capacity of up to 60kg/h and its pre-mounted backboard can be conveniently sited, making it ideal for applications where space is at a premium but higher feed rates are required. In addition to chlorine feed, the Kent V2000™ chlorinator can also be used as a sulphur dioxide, ammonia, or carbon dioxide gas feeder.

### Features

#### Component assembly designed for maximum serviceability

In the Kent V2000™ wall-mounted chlorinator, valve housings employ a well proven fastening; no unnecessary nuts, bolts or washers are used, enabling quick disassembly for fast and easy maintenance of valve components. The system's innovative cartridge-mounted flowmeter snaps in and out quickly and easily for cleaning, and a perspex cover provides added protection against accidental damage.

#### V-notch gas flow control

The unique 'V-notch' orifice consists of a precisely grooved plug sliding in an orifice. Changing the position of the plug in the orifice results in an alteration to the corresponding chlorine feed rate. The 'V-notch' is made of chemical-resistant, self-lubricating plastic to prevent sticking and corrosion.

#### Front-Panel indicators

- A gauge showing the system vacuum (a high reading on this gauge indicates interrupted or exhausted chlorine supply)
- A large, 250mm scale flowmeter indicating the gas feed rate
- A gauge indicating the injector vacuum (optional)

#### Reliable all-vacuum operation

The gas leaving the vacuum regulator moves under vacuum throughout the rest of the system and as there are no lines or components carrying gas under pressure, risk of gas leakage is virtually eliminated.

#### Check valve to minimise gas venting

With a built-in check valve, the Kent V2000™ wall-mounted chlorinator is engineered to minimise venting of gas to the atmosphere. Loss of vacuum causes the vacuum regulating valve to shut the gas supply; the spring diaphragm unit built into the valve is designed to withstand gas under full container pressure.

### Key Benefits

- High capacity chlorinator in a space saving, wall-mounted configuration (floor-standing cabinet option also available)
- Integrally mounted automatic control valve option
- All-vacuum operation using reliable V-notch gas flow control
- Check device for backflow protection upon injector shutdown
- Large 250mm scale flowmeter for optimum accuracy
- Also available for feeding ammonia, sulphur dioxide, or carbon dioxide



## Product Sheet

## Operation

### Operation is as follows:

1. Gas under pressure enters the vacuum regulator. A vacuum regulating valve positioned near the gas supply reduces gas pressure to a vacuum at once. The vacuum regulating valve assembly is equipped with a spring diaphragm pressure relief valve designed to safely vent the gas, should the regulating valve stick because of dirt build-up on the seat.
2. Dry gas moves under vacuum from the vacuum regulator through connecting pipes to the control unit.
3. In the control unit, the vacuum differential regulating valve throttles the injector vacuum to maintain a constant differential pressure drop, at less than atmospheric pressure, across the 'V-notch' variable orifice.
4. The feed rate of gas through the orifice is a function of the size of the orifice as determined by the position of the V-notch plug. Actuator position can be adjusted manually (standard) or automatically (option).
5. To adjust feed rate to the desired level automatically, an electric actuator moves the plug in response to a signal from the automatic controller. The controller adjusts actuator position based on plant flow rate, measurement of residual, or both, depending on the mode of control.
6. Gas moving through the control unit causes the flowmeter's float to rise; the level of the float indicates the gas feed rate in kg/h.
7. From the control unit, gas passes to the injector. The injector produces a vacuum to draw gas through the system and mix the gas with water flowing through the injector.
8. For the injector to operate properly, the inlet pressure must be higher than the discharge pressure. The injector has a check device that prevents back-flow of water into the control unit when the injector water supply is shut off or the injector discharge line becomes restricted.
9. Chlorination water is discharged to the point of application.

## Technical Data

### Accuracy:

±4% of indicated flow

### Maximum Capacity:

60kg/h chlorine

### Weight:

13kg (complete, manual system)

### Operating range:

Manual, 20:1. Automatic, 10:1

### Flowmeters available:

Chlorine - 5kg/h, 10kg/h, 20kg/h, 40kg/h, 60kg/h. (with equivalents for sulphur dioxide, ammonia and carbon dioxide.)

### Control:

Manual, start-stop and program. Also the following optional automatic modes: flow proportional with manual dosage control, direct residual and compound-loop.

### Distance from gas supply to chlorinator:

Gas supply and vacuum regulating valve may be located up to several hundred meters away from the control unit, depending on the diameter of the connecting piping or tubing and the maximum gas feed rate required. Consult your local sales office for sizing advice.

### Injector operating water:

Operating water must be reasonably clean. Pressure and flow depend on injector size and back-pressure at application point. For ammonia service, operating water with a hardness higher than 35mg/l may require a softener.

### Control Unit connections:

1" inlet and ¾" outlet - 1" socket connection

### Electrical, control unit:

120 volts ±10%, 0.3 amp or 240 volts ±10%, 0.15 amp

### Recommended Scope of Supply:

Kent V2000™ Control Unit Assembly, Wall-Mounted (Floor Standing Option) Control Unit fitted with 250mm Flowmeter, V-Notch Gas Rate Control Valve, Manual Positioner (Automatic Positioner Option), Differential Regulating Valve and System Vacuum Gauge. (Options of High/Low Vacuum Switch and/or Injector Vacuum Gauge), Remote Vacuum Regulating Valve / Pressure Relief Valve Assembly, Remote Injector Unit, Instruction Book (English Language).

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