



CALGON CARBON CORPORATION



# PHOENIX<sup>®</sup> Odor Control System

**Making Water and Air Safer and Cleaner**

## The PHOENIX® Advantage

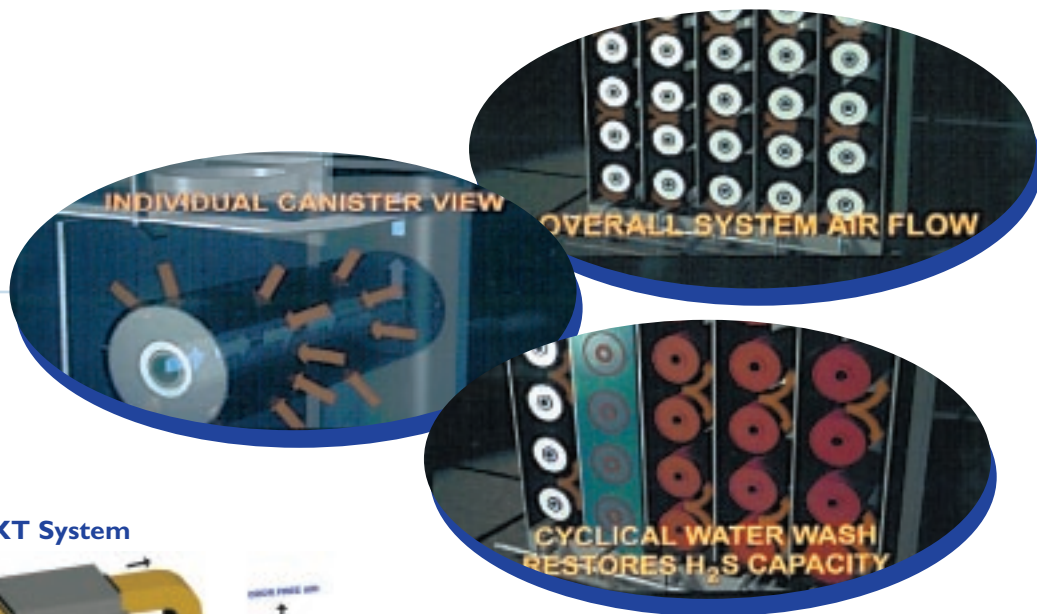
### The Hydrogen Sulfide Eliminator!

Calgon Carbon Corporation's PHOENIX® is a state-of-the-art hydrogen sulfide odor control system. PHOENIX® is simply the most effective means of treating airborne hydrogen sulfide, the most prevalent odorous compound present in wastewater treatment. PHOENIX® provides unlimited flexibility as it can be provided in a number of ways to solve many odor problems. PHOENIX® solutions range from single stage stand-alone systems, to treat primarily hydrogen sulfide odor streams to multi-stage integrated systems, using both carbon and non-carbon technologies to treat complex odor streams that include high levels of both H<sub>2</sub>S and other odorous compounds. PHOENIX's® radial flow canisters, using our CENTAUR® HP carbon and combined with our patented segmented reactor design, produce a system that can continuously remove up to 50 ppm of hydrogen sulfide at 99% efficiency.

The PHOENIX® system works by directing the foul air down through a series of chambers containing the radial flow carbon canisters. As the air passes through the radial carbon beds, the H<sub>2</sub>S is catalytically converted to H<sub>2</sub>SO<sub>4</sub>. The loosely adsorbed and highly water soluble H<sub>2</sub>SO<sub>4</sub> is then washed off with water during the water regeneration process, thereby restoring the carbon's capacity for H<sub>2</sub>S. The system's segmented design allows one chamber to be water regenerated while the rest of the system continues to treat odors. This delivers a system that has virtually no treatment downtime!

### Flexibility

PHOENIX® can be applied to odor challenges in a number of ways. In most cases a single stage PHOENIX® system adequately solves the odor problem. For those applications where H<sub>2</sub>S is accompanied by elevated levels of odorous organic compounds a PHOENIX® first stage system is combined with a Titan second stage carbon system to create the PHOENIX® XT system, the ultimate in activated carbon odor control. Finally, PHOENIX® can be augmented by a number of other Calgon Carbon odor control technologies, such as our biofilters and chemical scrubbers to form integrated odor control systems. These systems are tailored to meet any odor control challenge.



### Phoenix™ XT System



## Applications

PHOENIX® is ideally suited for municipal wastewater collection system applications such as pump stations and lift stations as well as wastewater treatment plant processes such as headworks, sludge thickeners, and belt press rooms.

## Standard Features

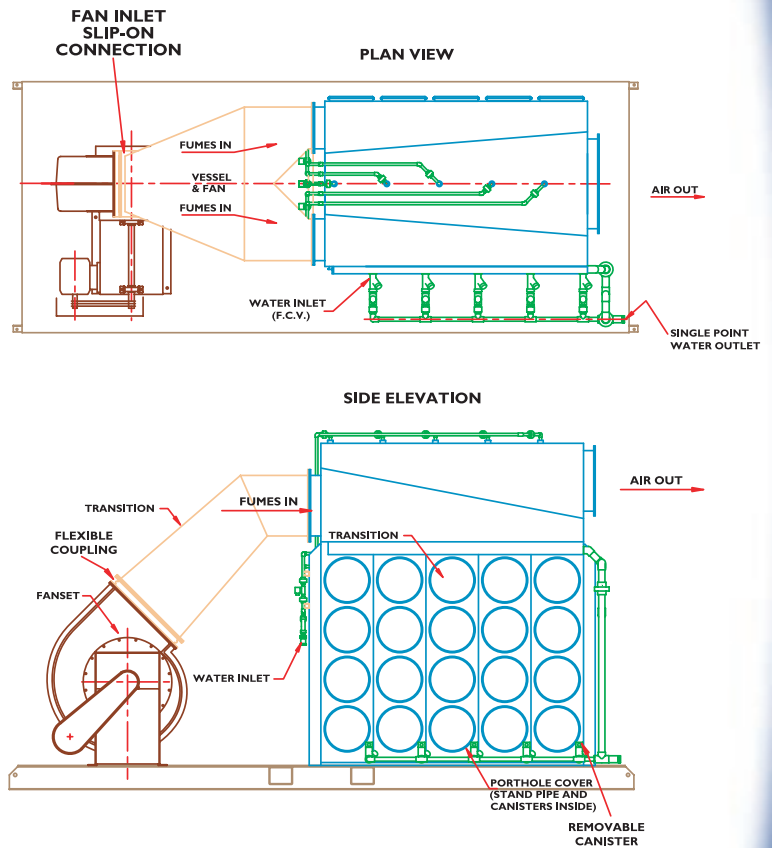
The standard PHOENIX® system comes complete with:

- One (1) PHOENIX® reactor vessel, polypropylene construction (w/ UV inhibitor)
- One set (1) radial carbon canisters
- One (1) automatic water regeneration package - non explosion-proof
- One (1) fume exhauster (fan) - non explosion-proof
- One set (1) transition duct and flow control damper
- One (1) particulate filter assembly (shipped loose)
- One (1) pressure differential indicator

## Optional Features

Among the various options available on PHOENIX® are:

- Sound attenuation package for fume exhauster
- Explosion-proof electrical package
- Fume exhauster motor starter / control panel, with mounting stand
- Skid mounting (up to P-10000 model)



## Calgon Carbon Corporation has a full line of odor control products

- **APOLLO™** biofilters
- **HERCULES®** chemical scrubbers
- **PHOENIX®** catalytic carbon reactors
- **GEMINI™** bio-scrubbers
- **TITAN™** carbon adsorbers
- **High Flow HF** carbon adsorbers
- **VENTSORB®** PE carbon adsorbers

Calgon Carbon's odor control solutions include more than just products and systems. Our solutions also include service. Calgon Carbon can provide an array of services covering such areas as

- **Odor evaluations**
- **Custom odor control system design and consulting**
- **Operator training, including refresher courses**
- **Carbon/media replacement, including labor, supervision, and materials**
- **PHOENIX® canister exchange program, including labor and maintenance**
- **Centaur® carbon water washing service**
- **Performance testing**
- **Extended system warranties**
- **Spare parts**

These products can be provided as individual single stage treatment systems or combined into a variety of multi-stage integrated odor control systems that can be tailored to solve virtually any odor control problem. In addition, Calgon Carbon supplies unique point source odor control products

- **SweetVent vent stack adsorber modules**
- **SweetStreet™ manhole adsorber inserts**

We can also offer one of our total service packages. These packages include one to three year renewable contract covering such services as

- **24 to 48 hour response times**
- **Regular site visits**
- **Remote monitoring**
- **Media replacement**
- **Odor/performance testing**
- **Operator training courses**
- **Equipment upgrades**



**PHOENIX® Design Data**

Model	Air Flow Capacity Range <i>CFM (M3/hr)</i>	Carbon Capacity (Number of Canisters)	System Dimensions (LxWxH) <sup>3</sup> <i>Feet (Meters)</i>	System Weight (Operating) <sup>1</sup> <i>Pounds (Kg)</i>	System Weight (Maximum) <sup>2</sup> <i>Pounds (Kg)</i>	System Pressure Drop <sup>4</sup> <i>Inches W.C.(N/m<sup>2</sup>)</i>	Fan Horsepower <i>HP</i>
<b>P-1000</b>	800-1,000 (1,360-1,700)	5	11.2 x 4.4 x 5.3 (3.4 x 1.34 x 1.6)	1,750 (790)	4,000 (1,800)	14.0 (3,490)	7.5
<b>P-2000</b>	1,000-2,000 (1,700-3,400)	10	12.0 x 4.4 x 6.7 (3.7 x 1.34 x 2.0)	2,120 (960)	6,550 (2,970)	14.0 (3,490)	15
<b>P-3000</b>	2,000-3,000 (3,400-5,100)	15	12.4 x 4.4 x 8.3 (3.8 x 1.34 x 2.5)	2,670 (1,210)	9,780 (4,430)	14.0 (3,490)	20
<b>P-4000</b>	2,000-4,000 (3,400-6,800)	20	14.2 x 6.6 x 6.8 (4.3 x 2.01 x 2.1)	3,400 (1,540)	8,200 (3,720)	14.0 (3,490)	15
<b>P-6000</b>	4,000-6,000 (6,800 - 10,200)	30	15.0 x 6.6 x 8.2 (4.6 x 2.01 x 2.5)	4,310 (1,960)	12,680 (5,750)	14.0 (3,490)	20
<b>P-8000</b>	6,000-8,000 (10,200 - 13,600)	40	16.4 x 6.6 x 9.6 (5.0 x 2.01 x 2.9)	5,500 (2,500)	16,460 (7,470)	14.0 (3,490)	25
<b>P-10000</b>	8,000-10,000 (13,600-16,700)	50	18.3 x 6.6 x 11.0 (5.6 x 2.01 x 3.4)	6,830 (3,100)	20,500 (9,300)	14.0 (3,490)	40
<b>P-12000</b>	10,000-12,000 (17,000-20,400)	60	18.9 x 6.6 x 11.0 (5.8 x 2.01 x 3.4)	7,450 (3,380)	24,750 (11,230)	14.0 (3,490)	40
<b>P-14000</b>	12,000-14,000 (20,400-23,800)	70	20.4 x 6.6 x 11.4 (6.2 x 2.01 x 3.5)	8,100 (3,680)	28,830 (13,080)	14.0 (3,490)	50
<b>P-16000</b>	14,000-16,000 (23,800-27,200)	80	22.8 x 6.6 x 12.0 (6.9 x 2.01 x 3.7)	8,820 (4,000)	32,970 (14,960)	14.0 (3,490)	50
<b>P-18000</b>	16,000-18,000 (27,200-30,600)	90	23.8 x 6.6 x 12.0 (7.3 x 2.01 x 3.7)	9,580 (4,340)	37,180 (16,870)	14.0 (3,490)	60
<b>P-20000</b>	18,000-20,000 (30,600-34,000)	100	25.5 x 6.6 x 12.4 (7.8 x 2.01 x 3.8)	10,430 (4,730)	41,500 (18,830)	14.0 (3,490)	60
<b>P-22000</b>	20,000-22,000 (34,000-37,400)	110	27.2 x 6.6 x 13.0 (8.3 x 2.01 x 4.0)	11,360 (5,160)	45,390 (20,590)	14.0 (3,490)	75
<b>P-24000</b>	22,000-24,000 (37,400-40,800)	120	31.5 x 7.1 x 13.3 (9.6 x 2.16 x 4.1)	12,390 (5,620)	49,490 (22,450)	14.0 (3,490)	75
<b>P-26000</b>	24,000-26,000 (40,800-44,200)	130	31.5 x 7.1 x 13.7 (9.6 x 2.16 x 4.2)	13,520 (6,130)	53,600 (24,310)	14.0 (3,490)	75
<b>P-28000</b>	26,000-28,000 (44,200-47,600)	140	32.2 x 7.1 x 13.7 (9.8 x 2.16 x 4.2)	14,770 (6,700)	57,700 (26,170)	14.0 (3,490)	100
<b>P-30000</b>	28,000-30,000 (47,600-51,000)	150	34.3 x 7.1 x 13.7 (10.5 x 2.16 x 4.2)	16,140 (7,320)	61,740 (28,000)	14.0 (3,490)	100

**Notes:**

1. Operating weight is PHOENIX® reactor with one bank filled with water. Fan and transition ductwork not included.
2. Maximum weight is PHOENIX® reactor with all banks filled with water. Fan and transition ductwork not included.
3. Dimensions are for PHOENIX® reactor with fan and transition ductwork, does not include particulate filter.
4. System pressure drop = reactor drop + 1" w.c. grease filter + 1" customer ductwork.

[www.calgoncarbon.com](http://www.calgoncarbon.com)



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