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ODOR CONTROL SYSTEMS

BIOLOGICAL, CHEMICAL SCRUBBERS, & CARBON ADSORBERS

I-BOx® Biological Odor Control System

Chemical Scrubber Odor Control Systems

Modular Carbon Odor Control Systems (MCS)

Bulk Carbon Adsorber Odor Control Systems (BCS)

CLEAN WATER, CLEAR CHOICE

Odor Control Systems

IMS has developed a line of standardized, pre-engineered, factory assembled odor control systems for treating odors at sewage pump stations and wastewater treatment plants. Pre-engineered systems are simple to install, reducing the overall installed cost and delivery time.

Biological Odor Control Systems

The I-BOx® Biological Odor Control System (patent pending) uses a two-stage process with a biological stage to remove 99% of the hydrogen sulfide (H2S), followed by an activated carbon polishing stage to remove residual H2S and organic odors. Standard models are available to treat up to 5,000 cfm (8500 m3/h) of odorous air.

I-BOx®
350 - 5,000 cfm
(600 - 8,500 m³/h)

I-BOx® 350 - 5,000 cfm Biological Odor Control System Standard Model Design Data

Model	Airflow Rate CFM (m_3/h)	Overall Dimension (without stack) L x W x H ft (mm)	Inlet Connection Inches (mm)	Shipping Weight lbs (kg)	Operating Weight lbs (kg)	Fan Motor HP (kw)
I-BOx® 4000	Up to 350 (Up to 600)	6.5 x 4.0 x 9.5 (1980 x 1220 x 2900)	6.0 (150)	5,600 (2540)	6,000 (2700)	5.0 (3.7)
I-BOx® 5000	350-580 (600-1000)	7.5 x 5.0 x 9.5 (2285 x 1525 x 2900)	6.0 (150)	8,000 (3600)	8,500 (3850)	5.0 (3.7)
I-BOx® 6000	580-850 (1000-1450)	8.5 x 6.0 x 9.5 (2590 x 1830 x 2900)	7.0 (180)	9,000 (4082)	10,000 (4500)	5.0 (3.7)
I-BOx® 7000	850-1200 (1450-2100)	9.5 x 6.8 x 9.5 (2895 x 2083 x 2900)	7.0 (180)	11,500 (5216)	12,700 (5760)	5.0 (3.7)
I-BOx® 7010*	1200-1700 (2100-2900)	14 x 6.8 x 9.5 (4265 x 2083 x 2900)	12.0 (300)	19,500 (8845)	21,000 (9500)	5.0 (3.7)
I-BOx® 7015*	1700-2590 (2900-4400)	19.25 x 6.8 x 9.5 (5865 x 2083 x 2900)	16.0 (400)	28,500 (12927)	31,000 (14061)	5.0 (3.7)
I-BOx® 7020*	2590-3500 (4400-6000)	25.00 x 6.8 x 9.5 (7620 x 2083 x 2900)	16.0 (400)	37,500 (17010)	41,000 (18600)	7.5 (5.5)
I-BOx® 8000	1200-1500 (2100-2550)	12.00 x 8.0 x 9.5 (3658 x 2439 x 2900)	12 (300)	14,500 (6577)	16,000 (7257)	5.0 (3.7)
I-BOx® 8010	1500-2000 (2550-3400)	14.00 x 8.0 x 9.5 (4265 x 2439 x 2900)	16 (400)	19,000 (8618)	21,000 (9525)	5.0 (3.7)
I-BOx® 8015	2000-3000 (3400-5100)	19.25 x 8.0 x 9.5 (5865 x 2439 x 2900)	16 (400)	28,000 (12700)	31,000 (14061)	5.0 (3.7)
I-BOx® 8020	3000-4000 (5100-6800)	25.00 x 8.0 x 9.5 (7620 x 2439 x 2900)	16 (400)	37,000 (16783)	41,000 (18600)	7.5 (5.5)
I-BOx® 8025	4000-5000 (6800-8500)	29.75 x 8.0 x 9.5 (9068 x 2439 x 2900)	18 (457)	47,000 (21319)	52,000 (23587)	7.5 (5.5)

***The I-BOx® 7010, I-BOx® 7015 and I-BOx® 7020 are for use outside the USA.**

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I-BOx® Biological Odor Control System Benefits

- Two-stage, non-hazardous odor control process for H2S and organic odor removal
- Airflow rate up to 5,000 CFM
- Compact footprint design
- "Plug & Play" installation
- Quiet & easy operation
- Single-piece construction
- Inert, non-hazardous media
- Superior non-corrosive materials
- Pre-assembled & factory tested
- Suitable for outdoor installation - optional weather enclosure

I-BOx® 75 - 250 cfm (125 - 425 m³/h)

I-BOx® 75 - 250 cfm Biological Odor Control System Standard Model Design Data

Model	Airflow Rate CFM (m_3/h)	Overall Dimension (without stack) Φ xH ft (mm)	Inlet Connection Inches (mm)	Shipping Weight lbs (kg)	Operating Weight lbs (kg)	Fan Motor HP (kw)
I-BOx® 30	Up to 75 (Up to 125)	2.5 x 7.6 (762 x 2316)	4.0 (100)	1,600 (726)	1,900 (862)	0.5 (.37)
I-BOx® 42	75-150 (125-255)	3.5 x 7.6 (1067 x 2316)	4.0 (100)	2,400 (1089)	2,700 (1226)	0.5 (.37)
I-BOx® 54	150-250 (255-245)	4.5 x 8.0 (1067 x 2438)	6.0 (150)	3,400 (1542)	4,100 (1860)	1.0 (.75)

Carbon Adsorber Odor Control Systems

The IMS carbon adsorber odor control systems are designed to work with a wide selection of media: virgin activated carbon media for low odor level, and high-capacity carbon for higher H2S concentrations.

The MCS carbon adsorber odor control systems are single bed, skid-mounted, dry media systems, designed for relatively lower odor levels. The media may be virgin activated carbon or any of a number of specialty catalytic carbon media. Standard models are available to treat up to 1,250 cfm (2,120 (m3/h)) of odorous air.

MCS Benefits

- Superior non-corrosive material
- Easy to operate
- Suitable for outdoor installation
- Fan sound enclosure available
- Compact, skid-mounted design
- Pre-assembled and factory tested

MCS Activated Carbon Odor Control System Standard Model Design Data

Model	Airflow Rate CFM (m^3/h)	Vessel Dimensions I.D. x SSH ft (mm)	Overall Dimension L x W x H ft (mm)	Inlet Connection inches (mm)	Approx. Weight* lbs (kg)	Carbon Weight lbs (kg)	Fan Motor HP (kw)
MCS-018	100 (190)	18 x 54 (460 x 1370)	6.0 x 3.11 x 6.0 (1830 x 1190 x 1830)	4 (100)	100 (450)	160 (70)	1 (.75)
MCS-024	200 (340)	24 x 56 (610 x 1420)	6.0 x 3.11 x 6.2 (1830 x 1190 x 1880)	6 (150)	1200 (550)	280 (130)	1 (.75)
MCS-030	300 (510)	30 x 56 (760 x 1420)	7.0 x 4.5 x 6.2 (2130 x 1350 x 1880)	6 (150)	1500 (680)	440 (200)	2 (1.5)
MCS-036	425 (720)	36 x 58 (910 x 1470)	7.0 x 4.5 x 6.5 (2130 x 1350 x 1960)	8 (200)	1700 (770)	640 (290)	2 (1.5)
MCS-042	600 (1020)	42 x 58 (1070 x 1470)	9.1 x 5.3 x 6.5 (2770 x 1600 x 1960)	8 (200)	2300 (1040)	870 (390)	2 (1.5)
MCS-048	750 (1270)	48 x 60 (1220 x 1520)	9.1 x 3.11 x 6.11 (2770 x 1600 x 2110)	10 (250)	2600 (1180)	1130 (510)	2 (1.5)
MCS-054	1000 (1700)	54 x 60 (1370 x 1520)	10.1 x 6.1 x 6.11 (3070 x 1850 x 2110)	10 (250)	3200 (1450)	1430 (650)	3 (2.25)
MCS-060	1250 (2120)	60 x 62 (1525 x 1570)	10.1 x 6.1 x 7.1 (3070 x 1850 x 2160)	12 (300)	3600 (1630)	1770 (800)	3 (2.25)

*Approximate weight is an estimate.

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BCS System

The BCS activated carbon odor control systems are larger bulk media systems, designed for higher air flow rates. The media may be virgin activated carbon or any of a number of specialty catalytic carbon media. Standard models are available to treat up to 6,800 cfm (11600 m3/h) in a single carbon bed system and up to 20,000 cfm (34000 m3/h) in a dual bed system.

BCS Benefits

- Superior non-corrosive material
- Easy to operate
- Suitable for outdoor installation

BCS Activated Carbon Odor Control System Standard Model Design Data

Model	Carbon Bed(s)	Airflow Rate CFM (m^3/h)	Overall Dimension L x W x H ft (mm)	Vessel Dimensions ft (mm)	Shipping Weight lbs (kg)	Carbon Weight lbs (kg)	Fan Motor HP (kw)
BCS-600	Single	1000-1700 (1700-2900)	11 x 8 x 8 (3300 x 2400 x 2400)	6 (1800)	3500 (1600)	2600 (1200)	5 (3.7)
BCS-800	Single	1700-3000 (2900-5100)	15 x 10 x 8 (4500 x 3000 x 2400)	8 (2400)	6000 (2700)	4600 (2100)	7.5 (5.6)
BCS-1000	Single	3000-4700 (5100-8000)	17 x 12 x 8 (5100 x 3600 x 2400)	10 (3000)	9000 (4100)	7100 (3200)	10 (7.5)
BCS-1200	Single	4700-6800 (8000-11600)	20 x 14 x 8 (6000 x 4200 x 2400)	12 (3600)	13000 (5800)	10200 (4600)	15 (11.2)
BCS-1000D	Dual	6800-9400 (11600-16000)	19 x 12 x 13 (5700 x 3600 x 3900)	10 (3000)	17000 (7700)	14200 (6500)	20 (15)
BCS-1100D	Dual	9400-11400 (16000-19400)	20 x 13 x 13 (6000 x 3900 x 3900)	11 (3300)	20000 (9100)	17200 (7800)	20 (15)
BCS-1200D	Dual	11400-13600 (19400-23000)	21 x 14 x 13 (6300 x 4200 x 3900)	12 (3600)	24000 (10900)	20400 (9300)	25 (18.6)
BCS-1400D	Dual	13600-20000 (23000-34000)	23 x 16 x 13 (6900 x 4800 x 3900)	14 (4200)	32000 (14500)	27700 (12600)	40 (29.8)

Chemical Scrubber Odor Control Systems

IMS' Packaged Chemical Scrubber is a multi-stage high efficiency scrubber capable of promoting different chemical reactions in each stage and targeting a range of different compounds found in municipal Wastewater Treatment Plants and Pump Stations. The system is designed to be compact and low profile, enabling indoor or outdoor installation. IMS' chemical scrubber system is completely factory assembled for ease of installation treating airflow capacities up to 40,000 m3/h in a single system.

IMS' Packaged Chemical Scrubber is a "once-through", two-stage absorption system consisting of two vertical counter-current gas absorption sections.

Chemical Scrubber System Benefits

- Reliable in the long term with robust design
- Minimized footprint and height required for the scrubber system and associated pumps and piping ductwork.
- Provides flexibility to customize the chemistry of each stage, to optimize the operating chemistry for actual plant odors, and to respond to process variations.
- Will make optimum use of chemical and minimize chemical costs.
- Will be delivered and installed quickly and smoothly, with minimum construction and installation cost and time.
- Will not require downtime for routine calibration and maintenance.
- Provides maximum value measured by effective odor control with minimum problems, maintenance and operating cost.

Major Components

- FRP Air Supply Fan
- FRP Vessel Inlet Transition Piece
- FRP Two-Stage Scrubber System
- Two Counter-Current Stage Gas Absorption System
- Two Integral Chemical Sumps
- Packing Media, Nozzles and Mist Eliminator
- Internal Piping and Access Doors
- Exhaust Stack
- PP Chemical Recirculation Pumps (vertical seal-less pumps)
- NaOH and NaOCl Metering Pumps
- Control Panel with Motor Starters
- pH, ORP and Level Controls
- Pressure & Differential Pressure Gauges

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How It Works

The system utilizes Sodium Hydroxide (NaOH) and Sodium Hypochlorite (NaOCl) to react with and remove the odorous compounds present in the airstream. The foul air first enters a pre-conditioning stage (Stage 1) where it is contacted with liquid from the Stage 1 sump in a counter-current arrangement. The Stage 1 sump consists of a solution of fresh Sodium Hydroxide (NaOH) used to maintain the set pH. In the first stage, approximately 70 to 80% of the inlet hydrogen sulfide (H2S) is removed. This configuration minimizes chemical costs by significantly reducing the amount of Hydrogen Sulfide that reacts with Sodium Hypochlorite.

After treatment in the first stage, the air travels through an integral baffle and enters the second counter-current scrubbing stage. In the second stage, the air is contacted with a water solution supplemented with a controlled amount of injected NaOH and NaOCl. This final stage assures the remaining odorous compounds are oxidized. Finally the "scrubbed" air is discharged from the system through a mist eliminator and into the atmosphere.

BCS Activated Carbon Odor Control System Standard Model Design Data

Model	Airflow Rate CFM (m^3/h)	Dimensions L x W x H ft (mm)	Overall Length (Including fan) ft (mm)	Shipping Weight lbs (kg)	Operating Weight lbs (kg)	Fan Motor HP (kw)	Recirc Pump Motors HP (kw)
CPS-2250	2200 (3700)	6.75 x 4.75 x 9.25 (2060 x 1450 x 2820)	12.5 (3810)	2500 (1100)	7000 (3200)	7.5 (5.6)	8.0 (6.0)
CPS-2500	2700 (4600)	7.50 x 5.00 x 9.50 (2290 x 1520 x 2900)	13.0 (3960)	3100 (1400)	8000 (3600)	7.5 (5.6)	8.0 (6.0)
CPS-2750	3300 (5600)	8.25 x 5.25 x 9.50 (2520 x 1600 x 2900)	15.0 (4570)	3700 (1700)	9500 (3200)	7.5 (5.6)	10.0 (7.5)
CPS-3000	4000 (6800)	9.00 x 5.50 x 10.50 (2740 x 1680 x 3200)	15.5 (4720)	4400 (2000)	11000 (5000)	10.0 (7.5)	10.0 (7.5)
CPS-3500	5500 (9300)	8.75 x 6.00 x 11.00 (2670 x 1830 x 3350)	16.0 (4880)	5000 (2300)	12000 (5500)	15.0 (11.0)	10.0 (7.5)
CPS-4000	7100 (12100)	10.00 x 6.50 x 11.00 (3050 x 1980 x 3350)	17.5 (5330)	5600 (2500)	14500 (6600)	16.0 (12.0)	12.5 (9.3)
CPS-4500	9100 (11500)	11.25 x 7.00 x 11.25 (3430 x 2130 x 3430)	19.5 (5940)	6200 (2800)	17000 (7700)	20.0 (15.0)	12.5 (9.3)
CPS-5000	11200 (19000)	12.50 x 7.50 x 11.50 (3810 x 2290 x 3500)	20.5 (6250)	6800 (3100)	19500 (8900)	25.0 (18.5)	15.0 (11.0)
CPS-5500	13600 (23100)	13.75 x 8.00 x 11.75 (4190 x 2440 x 3580)	22.0 (6700)	7500 (3400)	22000 (10000)	30.0 (22.0)	17.5 (13.0)
CPS-6000	16200 (27500)	15.00 x 8.50 x 12.00 (4570 x 2590 x 3660)	24.0 (7320)	8300 (3800)	22500 (11600)	40.0 (30.0)	17.5 (13.0)
CPS-6500	20000 (34000)	16.25 x 9.00 x 12.25 (49.50 x 2740 x 3730)	26.0 (7930)	9100 (4100)	28500 (13000)	50.0 (37.3)	25.0 (18.6)
CPS-7000	24500 (41600)	17.50 x 9.50 x 12.50 (5330 x 2900 x 3810)	27.0 (8230)	1000 (4500)	32000 (14500)	60.0 (44.7)	35.0 (26.0)

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