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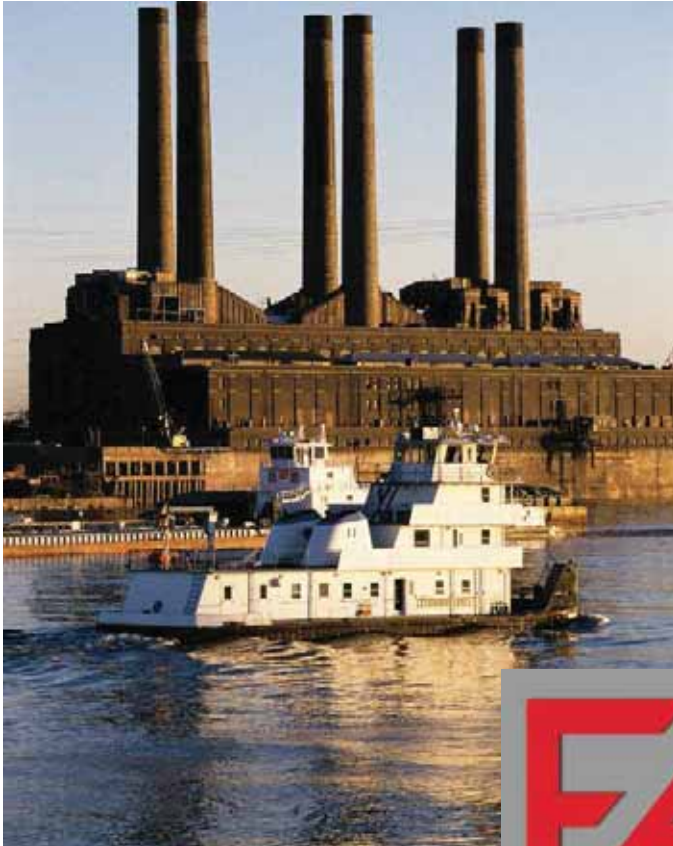
# HUMCO SANITATION

Fast® LX-Series Marine Sanitation Device

# LX-Series

Ideal for harbor tugs and small commercial vessels.

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Harbor Tugs

Fish Boats

Pilot Boats

Fireboats

Towboats

Small Vessels



## Features

- Modular Systems for Marine and Offshore Applications
- USCG/IMO Certified
- Self cleaning
- Lightweight DOT certified tanks
- Easy low cost operation that does not require special training or expensive spare parts
- Economical
- Reliable





## Fast® LX-Series Marine Sanitation Device

# LX-Series

These four components make up the modular LX-Series FAST® System. The interconnecting piping can be easily installed to meet your vessel's requirements.



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## Standard Specifications

### Complete System.

Assembled and tested at the factory; the FAST® LX-Series System includes blower, pump, chlorinator, valves and controls required for automatic operation.

### Process.

Fixed Activated Sludge Treatment (FAST®) employs fixed media as the site for microbial growth.

### Certification.

Certified by USCG under 33 CFR Part 159 and IMO rules for both inspected and uninspected vessels.

### Sewage Treated.

Any combination of standard & vacuum toilets, fresh & salt water, showers, laundry, galley.

### Rated Capacity.

Any population from zero to max on-board persons.

### Operating Conditions.

Max air temperature 50° C., min water temperature 10° C., max roll ±45°.

### Overload Capacity.

Up to 150% rated capacity for up to 24 hours.

### Machinery.

Regenerative turbine blower, stainless steel submersible effluent pump, tablet chlorinator.

### Electric Service Required.

115 VAC 1 phase 60 Hz power.

### Construction.

Heavy duty salvage drums meet DOT 49 CFR Part 173.3.

### Consumables.

Chlorine tablet consumption is only 1.9 lb. per year, per person with standard toilets, 0.2 lb. per year, per person with vacuum toilets, add 2.5 lb. per year, per person for gray water.

### Options.

**Secondary Treatment** - tank modified to produce effluent containing less than 30 mg/l BOD5, 30 mg/l SS.

**Electric Service** - 208-230/460 VAC 3 phase 60 Hz blower motor, 50 Hz power.

**Chlorine Pump** - use laundry bleach instead of chlorine tablets.



## Fast® LX-Series Sizing and Selecting Units

### Sizing and Selecting Units

Rated capacity is shown for treatment of black water and hand sinks from persons working and living aboard the vessel. If persons work but do not live aboard, count each of these persons as one-half a person to obtain the equivalent number of live-on persons.

If other types of sewage are added to black water, add applicable factors from table

below to obtain the service factor, multiply crew size by the service factor to get equivalent black water crew size and use this figure to select a unit from the table.

**Example:** Harbor tug manned around the clock by 3 shifts of 3 men each shift. The load is equivalent to  $3 \times 3 \div 2 = 5$  persons (rounded up). Use **FAST®** Model L-1X, which is rated up to 6 persons.

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FAST® LX-Series Design Data				
Model	L-1X	L-2X	L-3X	L-4X
Max Live-On Persons	6	8	12	17
Number of Media Tanks	1	1	2	2
Media Tank Diameter (in)	28	31	28	31
Height	38	42	38	42
Wet Well Diameter (in)	21	21	21	21
Height	24	24	24	31
Estimated Weights (lb)				
Shipping	300	300	400	400
Operating	900	1,100	1,400	1,800
Pipe Sizes				
Sewage Inlet	4	4	4	4
Pump Discharge	1 1/2	1 1/2	1 1/2	1 1/2
Vent	2	2 1/2	3	3
Effluent Pump TDH (ft)	20	20	20	20
Motor Horsepowers				
Effluent Pump	1/3	1/3	1/3	1/3
Turbine Blower	1/3	1/3	1/3	1/2

Type of Sewage	Service Factor
Toilets, urinals, lavatories	1.00
Showers	0.42
Laundry	0.31
Galley sink, dishwasher	0.33
Ground food waste	1.21
<b>Total all domestic sewage</b>	<b>3.27</b>



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## Fast® LX-Series

### Have It Your Way . . . FAST®

**FAST®** LX-Series Systems are economical, lightweight modular systems for small vessels. **FAST®** Systems are also available in epoxy coated steel, stainless steel and aluminum tank designs for all crew sizes, from the very smallest to the very largest vessels.



From the very smallest to the very largest vessels, **FAST®** Systems has a sewage system to meet your vessel's requirements.

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### Exclusive Benefits of FAST®

**Natural Process.**

**FAST®** is a biological process, the most widely used method of sewage treatment in the world. It is economical, reliable and effective.

**Superior Technology.**

**FAST®** process technology is literally state-of-the-art. Approved for both marine and land use, **FAST®** Systems can meet the most stringent standards worldwide.

**No Adjustments.**

**FAST®** is self-regulating. It handles surges, overloads and light loads without problems.

**Flexible.**

**FAST®** Systems can handle any combination of fresh water or seawater sewage.

**Compact.**

Operating weight is typically half that of competing biological units.

**Operator Friendly.**

The equipment is simple and rugged. Operation does not depend upon the skill of the operator.

**Maintenance.**

The only maintenance is adding chlorine tablets.

**Reliable and Durable.**

**FAST®** LX-Series Systems will not corrode in seawater. They won't rust, clog or smell.

**Proven.**

Since 1969, approximately 4,500 **FAST®** Systems have been delivered. Virtually all remain in everyday operation.



Smith & Loveless, Inc. Commercial Division