

BIO Series | Biological Recycle/Discharge Systems

Our biodigester series utilizes thousands of square feet of fixed film media, providing a perfect environment for the bacterial population. These systems can process high flow rates of process wastewater digesting organics, oil, grease, soap and other contaminants.

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This system offers models available for either recycle or discharge operations. Each unit offers added benefits, such as:

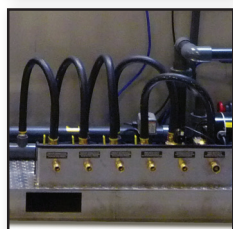
- Lower maintenance than any recycle system on the market today
- Low operating costs
- Simple equipment operation
- CSA approved control panel which meets the requirements of the US and Canadian standards for an Industrial Control Panel



BIO-25R-1M30



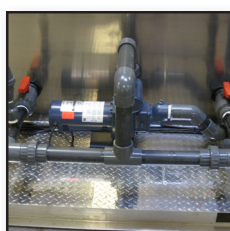
CSA listed NEMA-4 rated corrosion-proof control panel for safe and reliable operation



Hose connectors are designed for easy accessibility and quick installation; the connectors are clearly marked



New, more durable "True Union" fitting



Mazzei® venturi air injection system sustains beneficial aerobic microbes while preventing bacteria from turning odorous and anaerobic



Pressure manifold set-up option for BIO-20R-0M11 and BIO-20R-1M11 is standard



Slope bottom tanks allow for any accumulated sludge to be drained from the system, decreasing maintenance costs.



Transfer pump (Part #3-0399)



Aeration pump (Part #3-0397)

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BIO-20R-0M11

| Model Number | Flow Rate | Biological Media | Tank Capacity | Material of Construction | Sump Pump (Included) | Transfer Pump | Power Requirements | Dimensions (LxWxH) | Ship Wt. |
|--------------|-----------|------------------|---------------|--------------------------|----------------------|---------------|--------------------|---------------------------|----------|
| BIO-20D-0M10 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Marine aluminum | 1/2 HP | - | 230V, 1Ø, 15.0A | 8x4x4ft. | 950 lb. |
| BIO-20D-1M10 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Stainless-steel | 1/2 HP | - | 230V, 1Ø, 15.0A | 8x4x4ft. | 950 lb. |
| BIO-20D-0M30 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Marine aluminum | 1/2 HP | - | 230V, 3Ø, 10.0A | 8x4x4ft. | 950 lb. |
| BIO-20D-1M30 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Stainless-steel | 1/2 HP | - | 230V, 3Ø, 10.0A | 8x4x4ft. | 950 lb. |
| BIO-20R-0M10 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Marine aluminum | 1/2 HP | 2.0 HP | 230V, 1Ø, 25.0A | 8x4x4ft. with 3x3ft. skid | 1092 lb. |
| BIO-20R-1M10 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Stainless-steel | 1/2 HP | 2.0 HP | 230V, 1Ø, 25.0A | 8x4x4ft. with 3x3ft. skid | 1092 lb. |
| BIO-20R-0M30 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Marine aluminum | 1/2 HP | 2.0 HP | 230V, 3Ø, 15.0A | 8x4x4ft. with 3x3ft. skid | 1092 lb. |
| BIO-20R-1M30 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Stainless-steel | 1/2 HP | 2.0 HP | 230V, 3Ø, 15.0A | 8x4x4ft. with 3x3ft. skid | 1092 lb. |
| BIO-20R-0M11 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Marine aluminum | 1/2 HP | 1.5 HP | 230V, 1Ø, 25.0A | 8x6x4ft. | 1092 lb. |
| BIO-20R-1M11 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Stainless-steel | 1/2 HP | 1.5 HP | 230V, 1Ø, 25.0A | 8x6x4ft. | 1092 lb. |
| BIO-20R-0M31 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Marine aluminum | 1/2 HP | 1.5 HP | 230V, 3Ø, 15.0A | 8x6x4ft. | 1092 lb. |
| BIO-20R-1M31 | 0-20 GPM | 2,304 sq. ft. | 890 gallons | Stainless-steel | 1/2 HP | 1.5 HP | 230V, 3Ø, 15.0A | 8x6x4ft. | 1092 lb. |
| BIO-25R-0M10 | 0-25 GPM | 3,456 sq. ft. | 1,434 gallons | Marine aluminum | 1/2 HP | 2.0 HP | 230V, 1Ø, 25.0A | 12x6x4ft. | 1680 lb. |
| BIO-25R-1M10 | 0-25 GPM | 3,456 sq. ft. | 1,434 gallons | Stainless-steel | 1/2 HP | 2.0 HP | 230V, 1Ø, 25.0A | 12x6x4ft. | 1680 lb. |
| BIO-25R-0M30 | 0-25 GPM | 3,456 sq. ft. | 1,434 gallons | Marine aluminum | 1/2 HP | 2.0 HP | 230V, 3Ø, 15.0A | 12x6x4ft. | 1680 lb. |
| BIO-25R-1M30 | 0-25 GPM | 3,456 sq. ft. | 1,434 gallons | Stainless-steel | 1/2 HP | 2.0 HP | 230V, 3Ø, 15.0A | 12x6x4ft. | 1680 lb. |
| BIO-35R-0M10 | 0-35 GPM | 6,480 sq. ft. | 2,244 gallons | Marine aluminum | 1/2 HP | 2.0 HP | 230V, 1Ø, 25.0A | 12x7x5ft. | 1900 lb. |
| BIO-35R-1M10 | 0-35 GPM | 6,480 sq. ft. | 2,244 gallons | Stainless-steel | 1/2 HP | 2.0 HP | 230V, 1Ø, 25.0A | 12x7x5ft. | 1900 lb. |
| BIO-35R-0M30 | 0-35 GPM | 6,480 sq. ft. | 2,244 gallons | Marine aluminum | 1/2 HP | 2.0 HP | 230V, 3Ø, 15.0A | 12x7x5ft. | 1900 lb. |
| BIO-35R-1M30 | 0-35 GPM | 6,480 sq. ft. | 2,244 gallons | Stainless-steel | 1/2 HP | 2.0 HP | 230V, 3Ø, 15.0A | 12x7x5ft. | 1900 lb. |
| BIO-60R-0M10 | 0-60 GPM | 8,640 sq. ft. | 2,244 gallons | Marine aluminum | 3/4 HP | 2.0 HP | 230V, 1Ø, 30.0A | 12x7x5ft. | 1900 lb. |
| BIO-60R-1M10 | 0-60 GPM | 8,640 sq. ft. | 2,244 gallons | Stainless-steel | 3/4 HP | 2.0 HP | 230V, 1Ø, 30.0A | 12x7x5ft. | 1900 lb. |
| BIO-60R-0M30 | 0-60 GPM | 8,640 sq. ft. | 2,244 gallons | Marine aluminum | 3/4 HP | 2.0 HP | 230V, 3Ø, 20.0A | 12x7x5ft. | 1900 lb. |
| BIO-60R-1M30 | 0-60 GPM | 8,640 sq. ft. | 2,244 gallons | Stainless-steel | 3/4 HP | 2.0 HP | 230V, 3Ø, 20.0A | 12x7x5ft. | 1900 lb. |
| BIO-90R-0M10 | 0-90 GPM | 14,322 sq. ft. | 4,032 gallons | Marine aluminum | 3/4 HP | 2.0 HP | 230V, 1Ø, 50.0A | 12x7x7ft.10in. | 2463 lb. |
| BIO-90R-1M10 | 0-90 GPM | 14,322 sq. ft. | 4,032 gallons | Stainless-steel | 3/4 HP | 2.0 HP | 230V, 1Ø, 50.0A | 12x7x7ft.10in. | 2463 lb. |
| BIO-90R-0M30 | 0-90 GPM | 14,322 sq. ft. | 4,032 gallons | Marine aluminum | 3/4 HP | 2.0 HP | 230V, 3Ø, 30.0A | 12x7x7ft.10in. | 2463 lb. |
| BIO-90R-1M30 | 0-90 GPM | 14,322 sq. ft. | 4,032 gallons | Stainless-steel | 3/4 HP | 2.0 HP | 230V, 3Ø, 30.0A | 12x7x7ft.10in. | 2463 lb. |

D - Designates Discharge

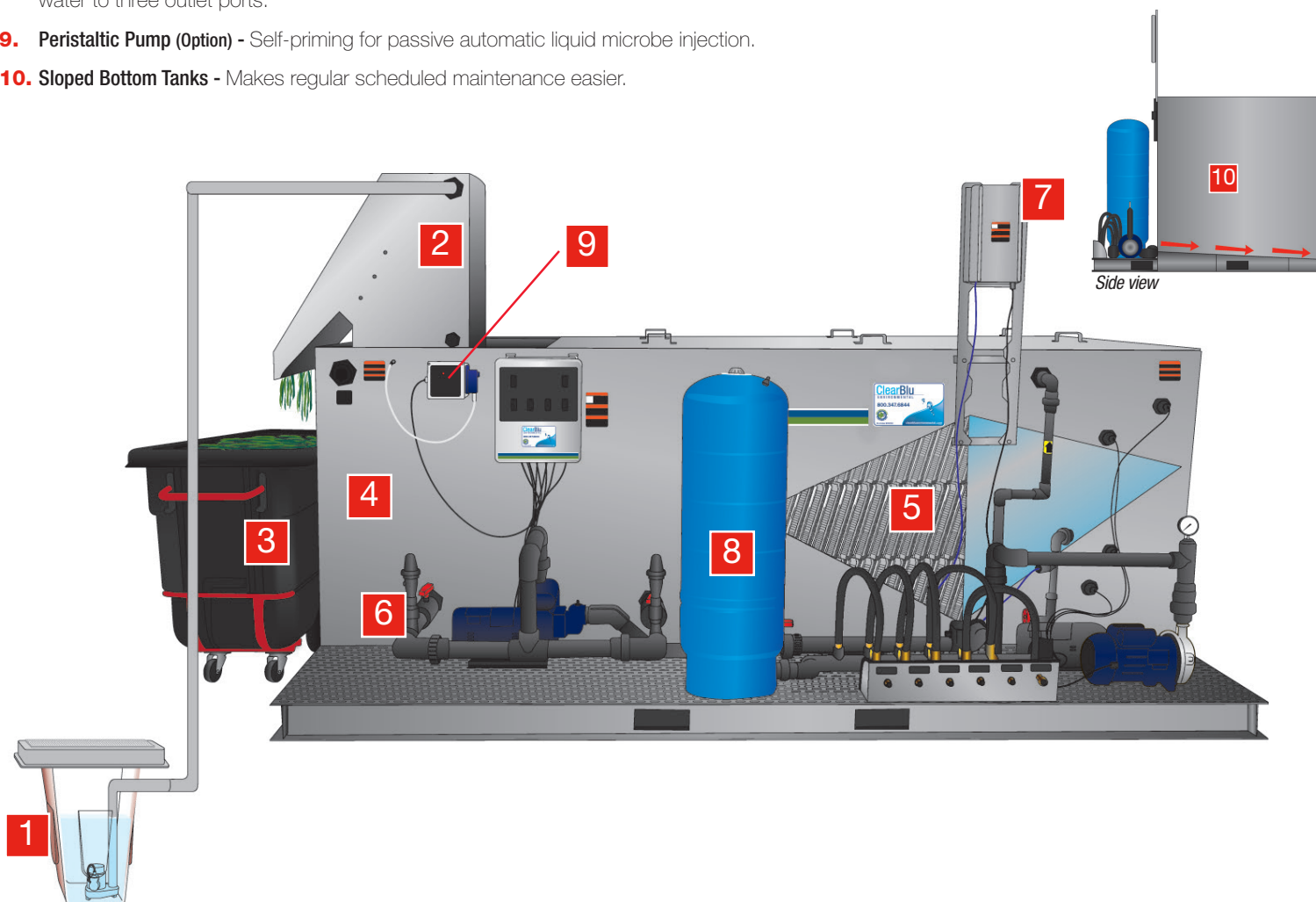
R - Designates Recycle

230/208/460V 3-phase available.

Power requirements reflect pump change.

BIO Series | Process & Flow Description

- 1. Submersible Sump Pump** - Untreated water is introduced into the BIO system via a 1/2 to 3/4 HP submersible sump pump.
- 2. Waterfall Filter (Accessory #RC-0008-0001)** - The waterfall wedgewire filter is essential for removing solids from wastestreams including grains, fruits or grape solids, or grass. It is effective at removing solids down to .5mm and is available with self-cleaning spraybars.
- 3. Grass Cart (Accessory #RC-0004-0001)** - Grass from the waterfall filter is collected in the grass cart. Grass is dewatered through a specially designed stainless-steel screen in the grass cart that allows the cart to be filled with grass and debris without plugging the screen. Water drains back into the pit and the grass can be easily transported for disposal.
- 4. Bioreaction Tank** - Untreated wastewater is pumped into the first chamber of the stainless-steel tank where solids are precipitated and the microbes begin their work. The tank has up to 3,230 gallons of holding capacity to provide maximum treatment time for the biological microbes.
- 5. Biofilm Generative Media** - The bioreaction portion of the system houses thousands of square feet of biological media surface area where the microbe growth is maximized. Water flows through the media and around a series of baffles, changing direction countless times, and maximizing contact with "hungry" microbes. The microbes then treat the water by consuming a broad range of organic constituents (such as herbicides, pesticides, oils, grease, etc.) turning them into carbon dioxide and water. To ensure proper and continued colonization, microbes are added periodically - a process called inoculation.
- 6. Aeration System** - A unique aeration system quietly injects large amounts of oxygen into the wastewater. Generating dissolved oxygen is critical for maximizing the health and activity level of microbes and the size of the colony.
- 7. Ozone (Option)** - An ozone generator is an option for specialized applications where sterilization of the waste stream is desired.
- 8. Pressurized Tank (Option)** - Once water is biologically treated, a pressurized tank and pump deliver up to 90 GPM of recycled water to three outlet ports.
- 9. Peristaltic Pump (Option)** - Self-priming for passive automatic liquid microbe injection.
- 10. Sloped Bottom Tanks** - Makes regular scheduled maintenance easier.



BIO-90 Series

The BIO-90 is a full self-contained aerobic digester capable of treating and recycling wastewater at a rate of up to 90 GPM. The microbes will colonize on 14,322 square feet of fixed film media. Treatment tank capacity is 4,032 gallons.

This system offers added benefits, such as:

- Air Distribution System: Six venturi air injection units driven by industrial centrifugal pumps with silicon carbide Viton seals for wastewater services. Optional microbubble aeration for high BOD wastewater.
- Aeration from 10 to 360 pounds of oxygen per day (up to 20,000 cubic feet of air per day).
- Optional defoaming spraybar for foam prone waste streams
- Sloped bottom tanks for easy desludging
- Automatic pinch valve and timer for discharging settled solids



The BIO Series is perfect for the following applications:

- | | |
|----------------------------|--------------------------------------|
| - Wineries | - Forklift Washing Operations |
| - Breweries | - Aircraft Maintenance & Restoration |
| - Heavy Equipment Dealers | - Shipyards |
| - Trucking Facilities | - Municipalities/State DOTs |
| - Military Bases | - Oil Fields |
| - Truck Rental Fleets | - Engine Rebuilders & Manufacturers |
| - Diesel Repair Facilities | - Transit & Car Wash Facilities |