

# MBBRd

## Applications

Orenco's Moving Bed Biofilm Reactor - Denitrifying (MBBRd) provides treated effluent with pre-anoxic denitrification, post-anoxic denitrification, or both in residential, municipal, commercial, and industrial wastewater treatment systems that are required to meet stringent discharge limits of up to 10mg/L Total Nitrogen, depending on system configuration.

The MBBRd is suitable for the following:

- Pre- and post-anoxic denitrification
- Flows to 100,000gpd (378.5m³/day)
- Permanent and mobile locations
- Above-grade or at-grade installation
- A wide range of climates
- Existing systems requiring stringent nitrogen limits

## General

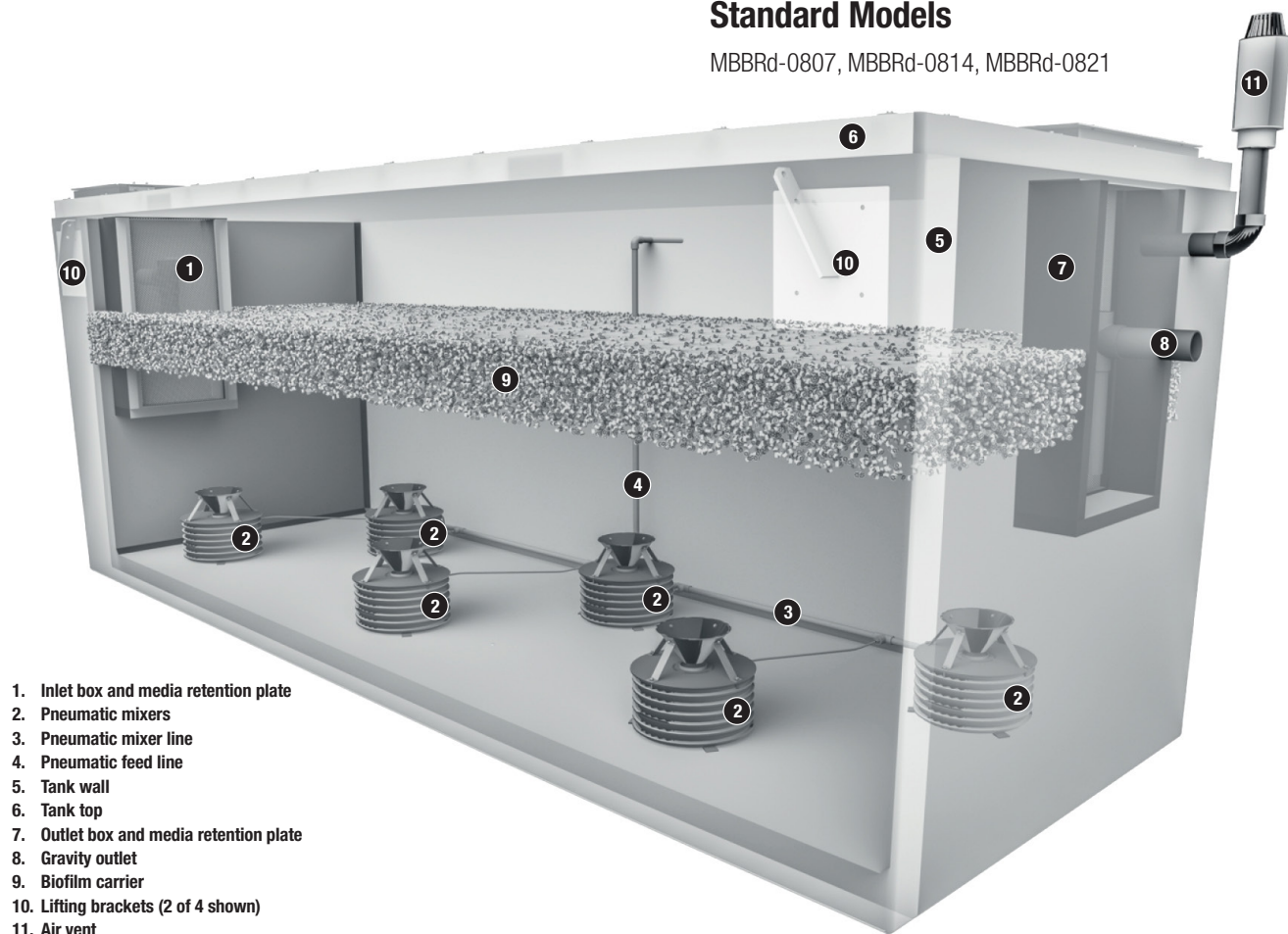
Orenco's MBBRd provides denitrification in conjunction with a secondary treatment system. Its modular design and accessibility make it both easy and simple to install, operate, and maintain.

MBBRd units feature vessels with single-piece, vacuum-molded construction designed for watertightness. The standard size is 8ft × 8ft (2.4m × 2.4m) height and width, with 10ft (3m) and 12ft (3.7m) widths optional. Standard walls are 4in (102mm) foam-core fiberglass with an R-26 (RSI 5) insulation value to maintain interior temperatures in climatic conditions of -60° to 125°F (-50° to 50°C) and provide consistent treatment in a variety of environments. Orenco MBBRd units use durable and corrosion-resistant pneumatic mixers to mix the biofilm carrier, which is made of a durable plastic material for effective treatment and longevity.

All MBBRd units require a carbon feed system. Safety railings and integrated operator control rooms are available options for units installed above grade.

## Standard Models

MBBRd-0807, MBBRd-0814, MBBRd-0821



1. Inlet box and media retention plate
2. Pneumatic mixers
3. Pneumatic mixer line
4. Pneumatic feed line
5. Tank wall
6. Tank top
7. Outlet box and media retention plate
8. Gravity outlet
9. Biofilm carrier
10. Lifting brackets (2 of 4 shown)
11. Air vent

## Materials of Construction

Walls/floor/tank top	Infused foam core, fiberglass laminate
Access lids	PET foam core, fiberglass laminate
Access lid gaskets	Neoprene, EPDM, SBR
Lifting brackets	Steel
Exterior coating	Tuff Coat®* UT-200
Mixing device	PVC, fiberglass
Biofilm carrier	HDPE

\* Tuff Coat is a registered trademark of Modern Recreational Technologies, LLC

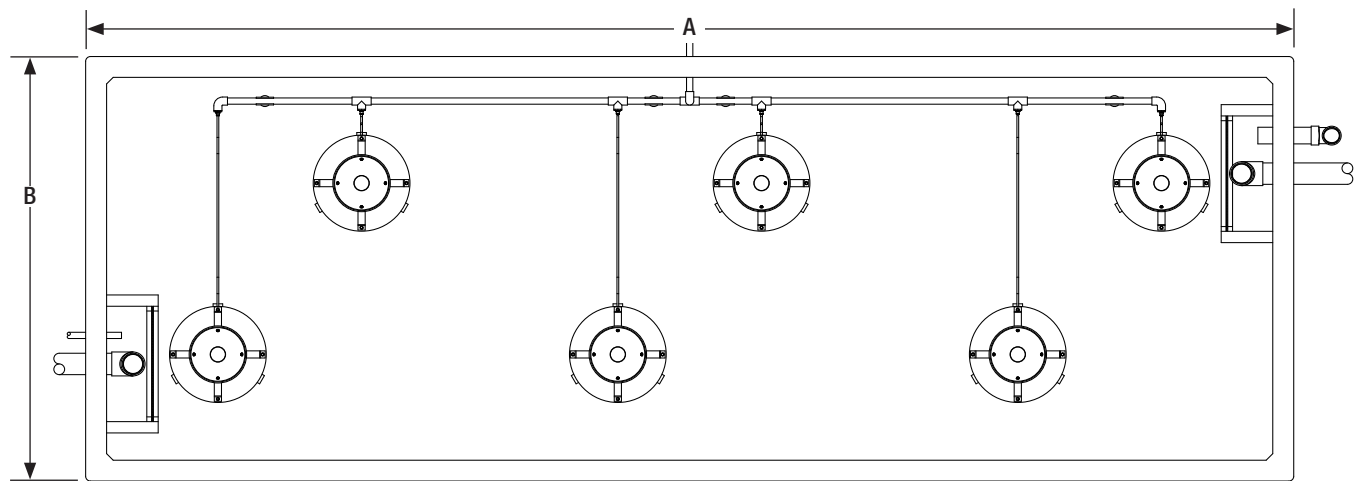
## Specifications

	MBBRd-0807	MBBRd-0814	MBBRd-0821
<b>Nominal Dimensions, ft (m)*</b>			
<b>A</b>	7 (2.1)	14 (4.2)	21 (6.4)
<b>B</b>	8 (2.4)	8 (2.4)	8 (2.4)
<b>C</b>	8 (2.4)	8 (2.4)	8 (2.4)
<b>Volume, gal (m³)*</b>			
	2500 (9.5)	5000 (18.9)	7500 (28.4)

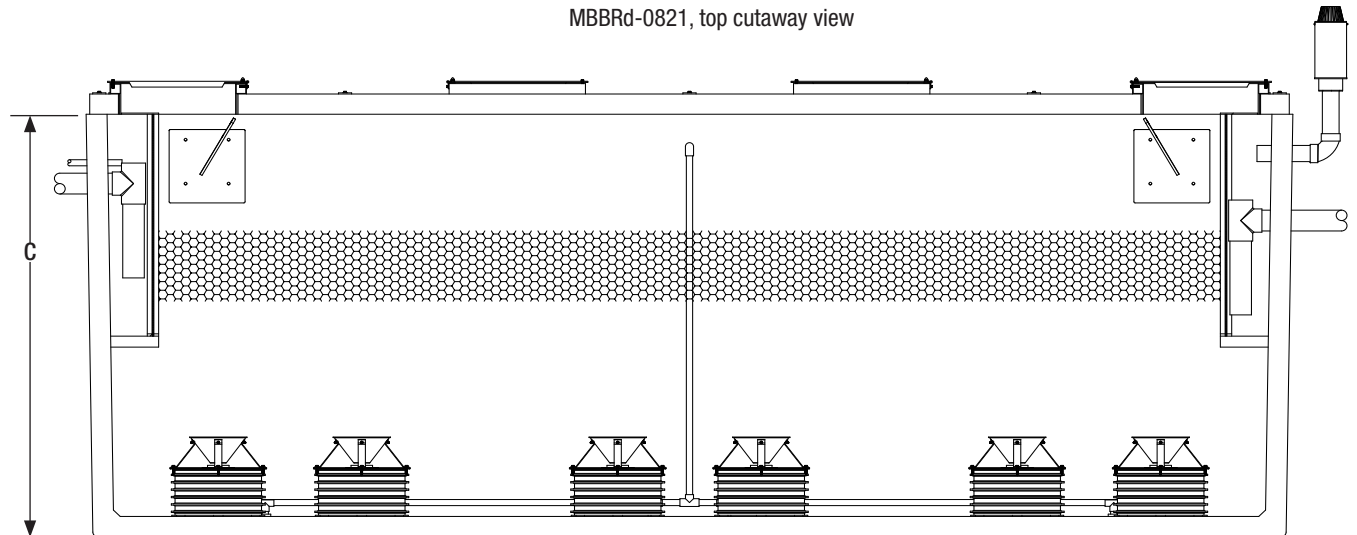
### Required Flow (per pneumatic mixer)

5 CFM (0.14 m³/min) per bubble

\* See Orenco MBBRd drawings for exact dimensions and specific unit configurations



MBBRd-0821, top cutaway view



MBBRd-0821, side cutaway view