

Anoxic Moving Bed Biofilm Reactor (MBBRd)

Applications

Orenco®'s 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 10 mg/L or less for Total Nitrogen.

Suitable for ...

- Post- and pre-anoxic denitrification
- Tertiary treatment
- Flows to 100,000 gpd (378.5 m³/day)
- Permanent and mobile locations
- Above-grade or at-grade installation
- Wide range of climates
- Existing systems requiring stringent nitrogen limits

General

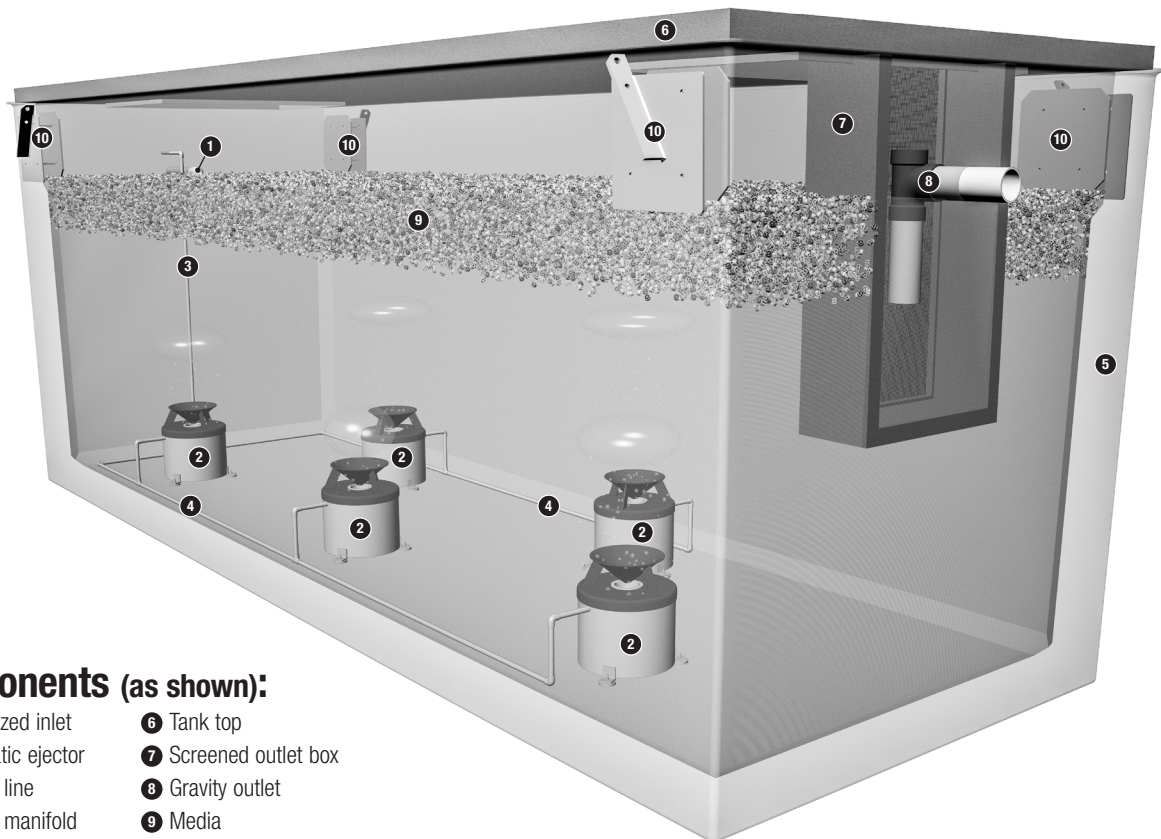
Orenco's MBBRd provides denitrification in conjunction with a secondary treatment system. Its modular design and accessibility make it easy and simple to install, operate, and maintain.

MBBRd units feature single-piece, vacuum-molded, fiberglass construction designed for watertightness, in 8×8 ft or 11×10 ft height and width (2.4×2.4 m or 3.4×3 m) configurations. Standard walls are 4-in. (100-mm) foam-core fiberglass with an R-26 insulation value (R-5 SI), 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 MBBR units use durable and corrosion-resistant pneumatic ejectors for media mixing. Bioreactor media is made of a durable plastic material for effective treatment and longevity.

Optional carbon injection is available for Orenco MBBRd models. Safety railings and integrated operator control rooms are options for Orenco MBBRd units that are installed above-grade.

Standard Models

MBBRd-0814, MBBRd-0821, MBBRd-1016, MBBRd-1020, MBBRd-1024, MBBRd-1028



Components (as shown):

- | | |
|---------------------|---------------------------|
| ① Pressurized inlet | ⑥ Tank top |
| ② Pneumatic ejector | ⑦ Screened outlet box |
| ③ Air feed line | ⑧ Gravity outlet |
| ④ Air feed manifold | ⑨ Media |
| ⑤ Tank wall | ⑩ Lifting bracket (4 ea.) |

Materials of Construction

Walls/floor/tank top	Infused foam core/fiberglass laminate
Access lids	Fiberglass reinforced polyester
Access lid gaskets	Polyurethane
Lifting brackets	Steel
Exterior coating	UV-resistant gel coat
Mixing device	PVC, fiberglass
Media	Proprietary plastic blend

Specifications

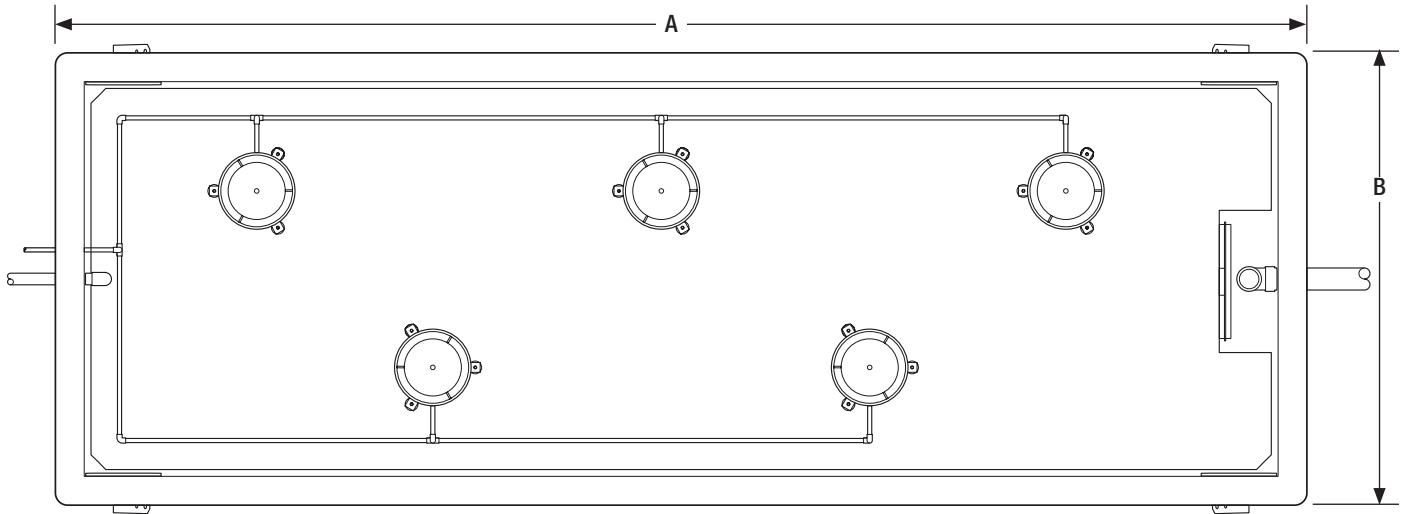
Nominal Dimensions in ft (m) and Volume in gal. (m³)*

Model	A	B	C	Volume
MBBRd-0814	14 (4.2)	8 (2.4)	8 (2.4)	5000 (18.9)
MBBRd-0821	21 (6.4)	8 (2.4)	8 (2.4)	7500 (28.4)
MBBRd-1016	16 (4.9)	10 (3.0)	11 (3.4)	10,000 (37.9)
MBBRd-1020	20 (6.1)	10 (3.0)	11 (3.4)	12,500 (47.3)
MBBRd-1024	24 (7.3)	10 (3.0)	11 (3.4)	15,000 (56.8)
MBBRd-1028	28 (8.5)	10 (3.0)	11 (3.4)	17,500 (66.2)

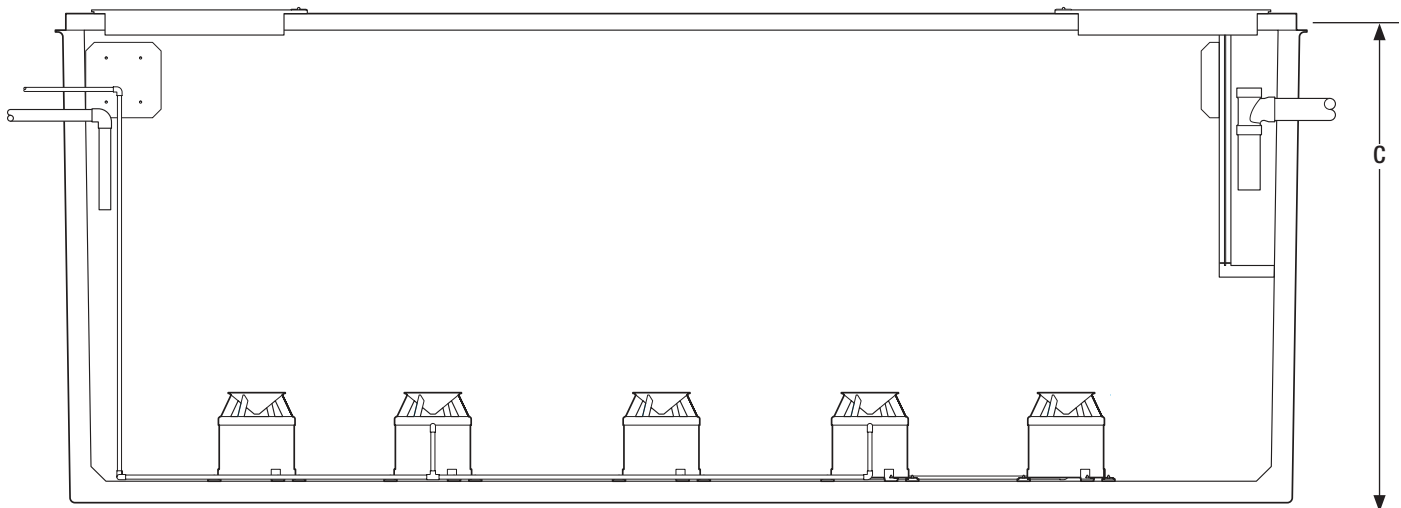
Mixer Performance

CFM required per pneumatic ejector 3 ft³ (0.085 m³) per bubble

* See Orenco® MBBR drawings for exact dimensions and specific unit configurations.



MBBRd-0821, top cutaway view



MBBRd-0821, side cutaway view