Corix Water Systems’ (CWS) Rotating Biological Contactor-Moving Bed (RBC-MB) uses a unique “high-rate” attached growth moving bed media, which provides near saturation levels of oxygen in the first stage without supplemental blowers. This translates to more than two times the capacity of conventional RBCs. RBC-MB systems are particularly suited for communities and businesses where ease of operation and low power consumption are paramount or where an existing RBC requires more capacity. Typical applications are towns, resorts, subdivisions or construction camps. It’s ability to efficiently oxidize BOD also gives it unparalleled performance for high-strength wastes from food processing and other applications. A Corix RBC-MB packaged plant has the advantage of being self-contained with primary and final clarifiers integrated into the treatment train.

**Advantages And Key Features**
- Capacities up to 76,000 gpd (288 m³/d) in one, 4-rotor train with the MB60 (5') dia. rotor
- Capacities of up to 468,000 gpd (1,777 m³/d) per rotor with the MB144 (12') dia. rotor
- New FRP composite monocoque rotor design provides reliable long term operations
- Corrosion-free marine grade aluminum tankage, or site constructed concrete tanks
- Low power use, ¾ hp (0.56 kW) per MB60 rotor and 15 hp (11.25 kW) per MB144 rotor
- Ideal for remote work camps and resorts with high, off-grid power costs or green operations
- Low maintenance requirements with minimal operator involvement
- Self-cleaning, moving bed media minimizes odor

**Benefits of CWS’ RBC-MB Technology**
- Custom designed, self-contained packaged systems or modular systems
- Extremely low power consumption
- High aeration performance (2x conventional RBCs) without blowers
- Uncomplicated system with fewer pumps and controls
- Retrofit existing, conventional RBCs with increased capacity

**How It Works**
Incoming sewage first flows into a primary clarifier or mechanical primary screen to reduce fats, oils, greases and plastics that generally float, and the heavier organic and inorganic solids (sand and grit) that sink. Clarified sewage then flows into the “biozone” with one or more reactors in series. Naturally occurring bacteria develop biofilm on the media and digest the organic nutrients in the wastewater. By consuming the organics, these bacteria reduce the (BOD) and the ammonia in the wastewater. The design of the media and the tumbling action in the rotor assures a thin, optimal biofilm is formed.
The performance is enhanced compared to MBBR media systems due to the unique shape of the media and the low power rotor. Each cupped shape media provides 0.5 ft$^2$ of surface area for attached biomass growth. It also lifts sewage up and during rotation releases sewage forming a “trickling effect” for enhanced aeration. On the opposite side of the rotor it also carries air down and releases it creating an aeration bubble effect. The treated wastewater then flows into the secondary clarifier where the sloughed biomass settles out as sludge and clear effluent is removed from the surface. Generally no return activated sludge pumping is required reducing plant complexity and power consumption. If required, biological denitrification can be provided and the effluent can be further polished by filtration and disinfected using UV and/or chlorine.

The design of the media and the tumbling action in the rotor also creates a self cleaning effect developing optimal biomass thickness. This prevents build-up of anaerobic sections which causes odor in conventional rotating systems. Importantly the attached growth process also achieves a significant reduction in waste sludge compared to suspended growth treatment systems helping to reduce sludge disposal costs. In part by achieving the equivalent of 20,000 mg/l MLSS and by not requiring blowers and RAS pumps the RBC-MB greatly reduces tank sizes and plant footprint. The net effect is a compact, very efficient wastewater treatment system.

Larger capacity plants utilize the MB144 rotor, a 12ft (3.66m) diameter rotor, available in both 15ft (4.6m) and 25ft (7.6m) lengths. The rotors are designed to replace standard 12’ diameter RBC-MB systems while achieving increased treatment capacity. The additional performance can result in much reduced costs for upgrading existing plants as only the rotor system needs changing. The complete packaged or modular system includes options for, effluent discharge pumps, flow meters, turbidity monitors, control panels and other supplemental equipment as well as complete skid mounted systems with modular building enclosures.

RBC-MB60 Typical Plant Dimensions
Each plant is custom designed to suit the specific application. The following table is based on an incoming sewage strength of 240 mg/L BOD5 and 240mg/l TSS, 35 mg/l NH3-N and a minimum temperature of 55° F (13° C).

<table>
<thead>
<tr>
<th>MB Model</th>
<th>Plant Dimensions, Metric (Imperial)</th>
<th>Capacity, m$^3$/d (gpd)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>MB60-1R</td>
<td>5.8 (19')</td>
<td>3.7 (12')</td>
</tr>
<tr>
<td>MB60-2R</td>
<td>7.2 (24’)</td>
<td>3.7 (12’)</td>
</tr>
<tr>
<td>MB60-3R</td>
<td>9.8 (32’)</td>
<td>3.7 (12’)</td>
</tr>
<tr>
<td>MB60-4R</td>
<td>11.7 (39’)</td>
<td>3.7 (12’)</td>
</tr>
</tbody>
</table>

* Effluent Standard 20 / 20 BOD / TSS without filtration
** Effluent Standard 20 / 20 /10 BOD / TSS / NH3-N

Also available in fully enclosed modular buildings.