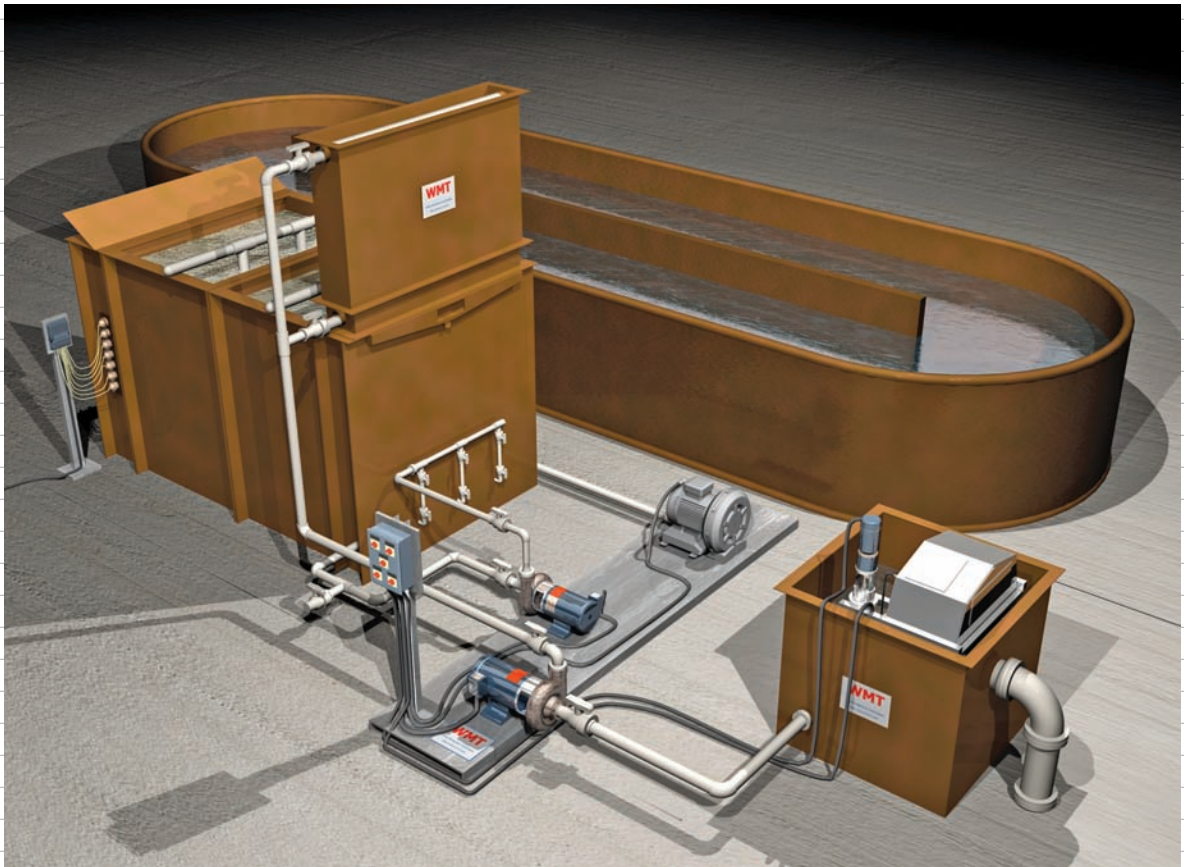




# Water Management Technologies

System Design, Integration and Equipment Supply

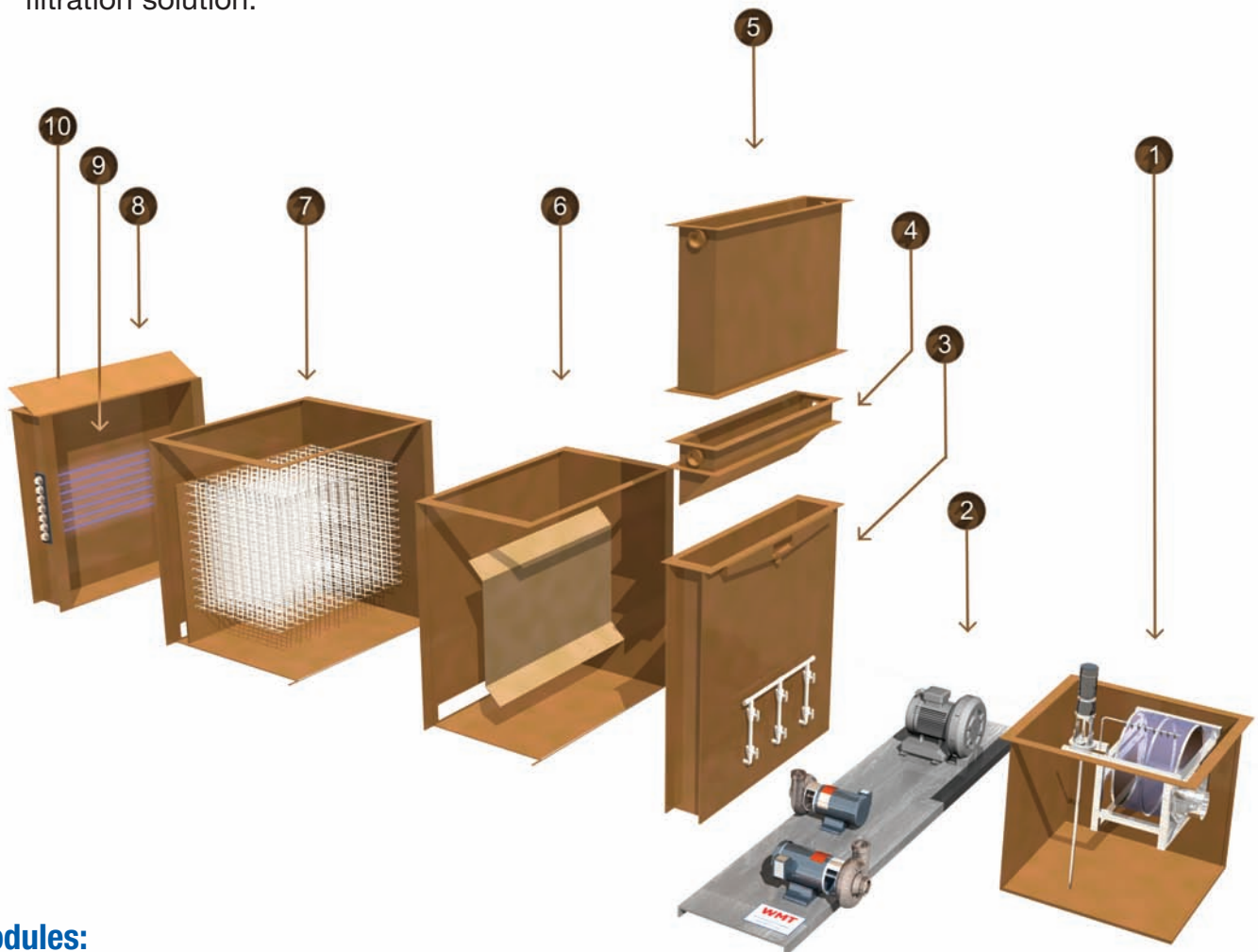
MODULAR SYSTEMS



**Integrated Modular Filtration System**

## IMF Philosophy

Integrated Modular Filtration (IMF) provides a departure from the component system philosophy so prevalent in Aquaculture today. Unlike traditional component style systems, that provide treatment processes in individual vessels, the IMF “stacks” unit processes together to form a “single vessel.” All IMF filter modules treat the full flow of the system. Inherent in IMF designs is the ability to create systems that meet specific applications utilizing standard IMF modules. The IMF system delivers an efficient, low head filtration solution.



### IMF Modules:

1. **Mechanical Filtration** – Integrated drum filter / pump sump
2. **Pumping** – Pump Skid / Motor Control
3. **Fine Solids Filtration - DAF** – Foam Fractionation Module
4. **Fine Solids Filtration - DAF** – Foam Fractionation Insert
5. **Gas Management** – CO2 stripping / forced draft or natural
6. **Biofiltration** – Moving Bed Biofilter
7. **Mechanical Filtration** – Fixed Media Chamber
8. **Disinfection & Oxygenation** – Ultraviolet (UV) / Low Head Oxygenation (LHO)
9. **Disinfection** – UV Insert
10. **Gas Management** – LHO Insert (oxygen / ozone contact)

## Applications • Recycle / Reuse Systems

### MICRO-IMF

- The Micro-IMF is targeted for small scale systems with maximum flows of 120 gpm (27m<sup>3</sup>/hr)
- Micro-IMF systems are suitable for:
  - Small-scale university research systems
  - High school and trade school training systems
  - Ornamental and Koi systems
  - Small shellfish depuration systems
  - Small-scale waste treatment systems

Shown with a Hydrotech filter model 501 1P



### STANDARD-IMF



- The standard IMF System is designed for systems with larger flows up to 900 gpm (205m<sup>3</sup>/hr)
- 3 standard sizes rated at 300, 600 and 900 gpm
- Standard IMF systems are suitable for:
  - Large-scale university research systems
  - Commercial Aquaculture Systems (shown)
  - Influent and Effluent water treatment systems
  - Large-scale seafood holding systems

### HYBRID-IMF

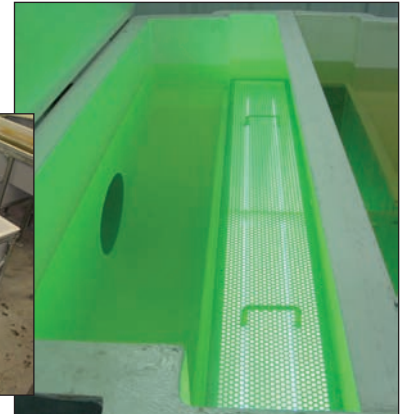
- The Concrete-FPR Hybrid IMF system is targeted towards very large systems where total FRP IMF systems are not suitable.
- Hybrid IMF systems are suitable for large scale water treatment applications.



**OPEN CHANNEL UV**

Open Channel Gravity UV for Intake, Recycle / Reuse Applications

Photo: Lahonton National Fish Hatchery  
 5,000 gpm (315 L/S)  
 UV Dose Rate = 35,000 uw.



**DRUM FILTER + UV**



Hydrotech Drum Filter + IMF Open Channel Gravity UV for Intake, Reuse + Effluent Treatment, Hydrotech Microscreens enhance UV Treatment.

Photo: Looking Glass State Fish Hatchery:  
 Intake 1,500 gpm (95 L/S) 40 um filter elements  
 <25 MG/L Suspended Solids,  
 UV Dose Rate = 42,000 uw  
 Expandable: to 84,000 uw.

**DRUM FILTER + UV + PUMP SUMP**

WMT's IMF delivers Mechanical Filtration, UV disinfection and Integral Pump Sump in a single tank.

Applications include intake, recycle, reuse and effluent treatment. Modular, compact, low head, and energy efficient, the Combi IMF reduces footprint, plumbing and operating costs associated with pressurized systems.

Photo: Combi IMF = Hydrotech Drum Filter Model HDF 801 A, 30 um filter elements rated for < 300 gpm (18 l/s) <10 mg/l SS. UV Dose rate = 35,000 uw expandable to 70,000 uw, with integral pump sump.



**Other Treatment Combinations Available Upon Request.**

**IMF REFERENCES - North America**

**Commercial References**

Aquabounty, PEI Canada  
 Circling Waters, Wisconsin  
 Great Bay Aquaculture, New Hampshire  
 Hanover Koi, CT  
 Ocean Ventures, Dominican Republic

**Government References**

Lahonton NFH, NV  
 Lookingglass SFH Oregon  
 Ft. Peck SFH, Montana

**Research References**

Ft. Valley State University, GA  
 Ireland University, Carna  
 University of Maryland - COMB