

► **TECH TALK 106** *biofilter performance standards*

"AES/B" stands for absolute efficiency standard for biofilters. AES/B numbers indicate how many pounds of fish a biological filter can support in an exemplary recirculating system. **They are only a quick reference for comparing our biological filters.** Note that as much as 50 percent additional ammonia conversion occurs on other wetted surfaces like tank walls and pipes but, since these nitrification surfaces are often eliminated by cleaning and chemical therapeutants, it is unwise to count on them (see Tech Talk 95—biofilter sizing).

AES/B numbers take into account the bio-film diffusion and oxygen availability characteristics specific to the biofilter type (bead filter vs rotating biological contactor, for example). Be aware that feed rate, feed protein content, pH, ammonia concentration, temperature, solids pre-filtration and other variables have a pronounced effect on biofilter performance. Actual field performance can stray from the AES/B number by a factor of 3 or more, based on these factors alone. Management skill and even timing are other variables, particularly for bead filters utilized for nitrification rather than solids removal.

AES/B numbers hold for the following conditions only:

- Half-pound tilapia or catfish in indoor tanks.
- Nonsoil bottoms, low algae concentrations.
- Warm water (80°F, 27°C).
- Recirculation rate of at least one system volume per hour.
- 7.2 pH.
- 3 mg/l total ammonia-nitrogen (TAN) concentration.
- Two percent body weight per day feed rate, pelleted feed at 40 percent protein.
- Effective solids pre-filtration (except for bead filters).

Commercial Filtration Packages

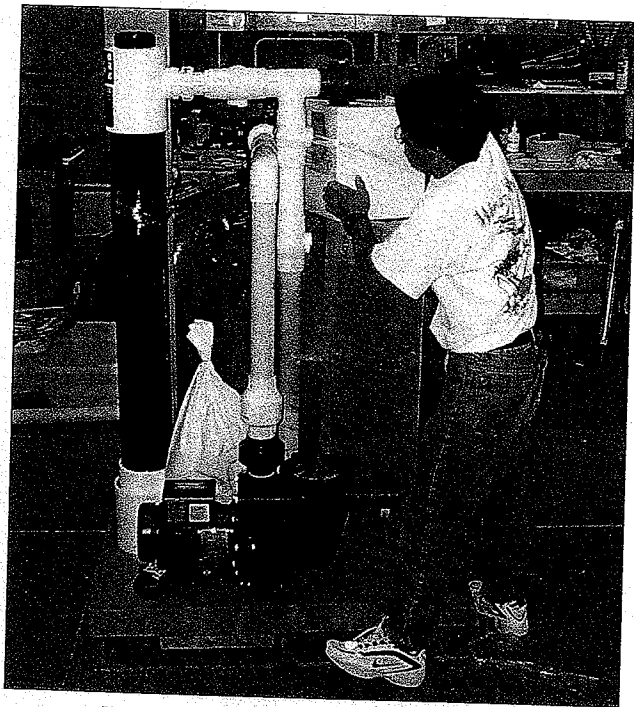
These prepackaged filtration systems are perfect for koi ponds, water gardens and multitank fish culture systems. They are self-contained filtration units that provide everything needed for a complete life support system. Each provides mechanical and biological filtration as well as UV sterilization for crystal clear water. Made in USA.

Details:

- Every component is salt water compatible.
- No hassle installation; simply plumb the inlet, outlet and backwash.
- AquaDyne® bead filter provides mechanical and biological filtration.
- Emperor Aquatics UV sterilizer. Mounted vertically for easy lamp replacement.
- Energy-efficient centrifugal pump with strainer basket.
- Each component is properly sized, eliminating guesswork.
- All equipment is premounted on a plastic base plate.
- Fits in a small footprint.

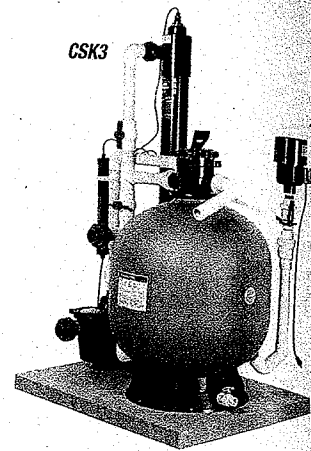
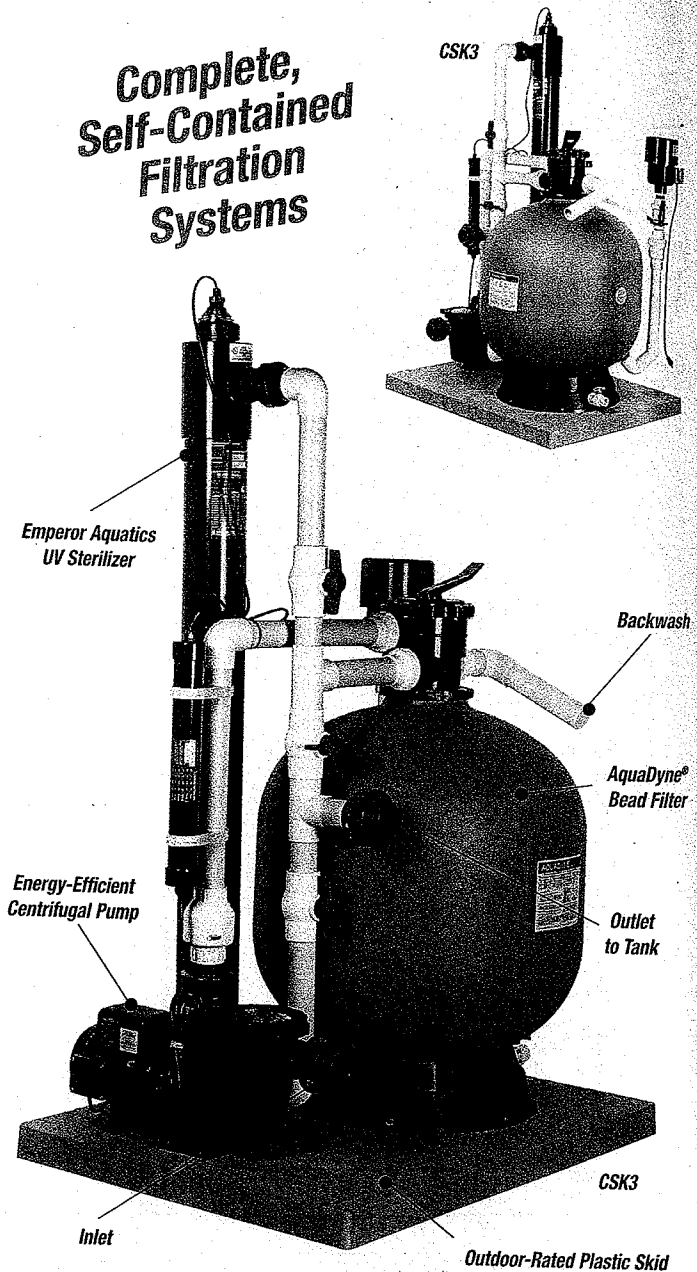
All are 115V/60 Hz, with UL-listed components, and ship via motor freight (crating charge not included). One-year warranty.

MECHANICAL FILTRATION commercial filtration packages



Phets, a 19-year AES staff member, packs a CSK3 for shipment.

Complete, Self-Contained Filtration Systems



	Flowrate	Filter Size (ft ²)	UV (watts)	Pond Size (gal)	Lbs of Fish	Inlet	Outlet	Ship Wt.	L x W x H	
CSK1	30 gpm	.6	50	1,200	30	1.5"	1.5"	80 lbs	36" x 24" x 35"	\$ 2,815
CSK2	60 gpm	2.2	120	5,000	120	1.5"	1.5"	265 lbs	48" x 36" x 56"	4,227
CSK3	90 gpm	4.4	150	10,000	240	2.0"	2.0"	420 lbs	48" x 36" x 70"	5,082

Vortex Mic.
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WLF36F
WLS2