# TOPPER Q&A

### What is TOPPER?

First, TOPPER is the next generation of Point Of Use Reverse Osmosis devices. It is a synergy of engineering innovations and refinements that, for the first time in 30 years, optimize the application of RO for POU. Gone are the limitations, inefficiencies and problems the POU industry has lived with for the past three decades using conventional air-on-water and prior water-on-water POU RO designs.

Second, TOPPER represents a new concept in the way POU RO appliances are brought to market. This is the result of its overwhelming advantages in virtually every category from performance to reliability to price. The creators are introducing TOPPER as an "engine" that can be housed in a wide variety of proprietary appliance designs and serve a wide variety of distribution channels

### Why develop TOPPER?

Part of the answer is the proverbial mountain to climb - a quest left undone by some of the most recognized people in the POU RO industry. It is an opportunity to make the ultimate product in its category. More significantly, there is the practical side - to offer a POU RO product to the industry that overcomes the shortcomings and dark little secrets of current POU RO devices - especially the uneven dispensing flow of the processed water (which creates problems with other kitchen and office appliances) and the high water waste factor common to air-on-water designs).

From a purely business perspective, this new marriage of technical designs affords the lowest manufacturing costs of any respectable POU RO design on the market, allowing it to be a viable participant in the most aggressive high return mass marketing programs. High-tech at a low price! Even the Chinese POU RO copycats will not be able to compete.

### Who is responsible for TOPPER?

Tim Beall and Robert Slovak first established the motivation necessary to proceed with this project and soon thereafter a design and business team was assembled.

This team encompasses well over 100 years of accomplishment in the POU water treatment industry.

*Tim Beall*- One of the preeminent early developers of water-on-water POU RO devices with over 28 years of experience in every aspect of POU RO water treatment design, installation,
marketing and sales. Tim's water-on-water sys- tem concept is the basis of TOPPER configuration and he leads TOPPER development.

*Robert Slovak* - Co-founder of Water Factory Systems in 1975, one of the earliest POU RO design, manufacturing and marketing companies. The company was purchased and became part of Cuno Corporation in 1990. In the late 1990's Robert authored the definitive text of
POU RO devices which is used by the Water Quality Association in its training programs.

*Michael Baird* - Co-founder of Hydro-Flow in 1986, a major manufacturer of conventional and innovative POU filters. The company was purchased by WICOR in 1996. Soon thereafter Michael branched off on his own and is currently a recognized authority and consultant on filter and POU device design, manufacturing and assembly.

*Jack Slovak* - Co-founder of Water Factory Systems with his brother Robert in 1975. Jack is a recognized authority on POU RO design and well versed in business planning and operations.

*David Spears* - Founder of Spears Design with 18 years experience in membrane water treatment system design, product design and development of electronic monitoring devices.

### What difference will TOPPER really make?

It will make a big difference in almost every aspect of the worldwide industry that uses these products. Let's take a look at the advantages TOPPER brings to water treatment providers (traditional dealers, DIY channel, and utilities), installation and service technicians and consumers. If you do not

want to labor through the following detailed comparison of TOPPER to what is currently available, this can be summed up as follows:

> TOPPER *offers the* most *features, highest performance, lowest maintenance, longest life, greatest versatility,* most *user-friendli*ness *and lowest cost* of *any under-sink POU* RO *appliance* on *the market, now and for many years* to *come!*

What are the TOPPER Performance Advantages? With the TOPPER RO control valve there is "no back-pressure" on the membrane during water production. Just this one superior design feature results in a cascade of other practical advantages which include:

- TOPPER produces higher quality water under a wider range of water conditions, such as higher Total Dissolved Solids and lower operating pressure (as low as 25 psi.)
- TOPPER produces more water in a shorter period of time, yet offers both a lower cost membrane and a storage tank that takes up less space under the homeowners sink.
- TOPPER produces water with astonishing efficiency compared to conventional designs - up to 500 less water waste! Conventional air-on-water devices must force water into the storage tank against increasing air pressure and this is its Achilles Heel. During this process water is wasted unnecessarily. The opposite is true with TOPPER which provides the ultimate in water conservation.
- Putting its performance together in a chart tells the performance story:

| | TOPPER | Conventional RO |
|---|---|---|
| Water Production | 1.9 gal. | 2.4 gal. |
| Time to processs | 4 Hours | 14 Hours |
| Waste Water | 5 gallons | 15 gallons |
| Efficiency | 38 | 16 |

What are the TOPPER Operation Advantages? TOPPER is designed to deliver treated water to the customer at full flow all the time. There is no decline of flow and pressure as with conventional air-on-water designs. This feature also creates a plethora of advantages for both sellers and users of the product.

- TOPPER fills the customer's water glass or coffee pot in less time than conventional POU RO devices. The flow and pressure are the same to the very last drop. This is especially important when the POU RO is connected to a refrigerator water dispenser located across the room.
- TOPPER allows ice-makers to make consistently-sized ice cubes and eliminate icemaker freeze-ups.
- TOPPER is compatible with office automatic coffee-makers that require constant flow and pressure to make consistently good pots of coffee. As an added benefit, TOPPER easily provides water to multiple bottle-free coolers in an office environment.
- TOPPER offers additional "plug and play" storage capacity to satisfy high-volume home and office requirements.
- TOPPER is very compact yet provides a variety of operational advantages.
- TOPPER can be sold or rented as an above the counter type system that can later be easily converted to an under the counter configuration with just a change in the connection interface.
- TOPPER will also offer this industry "first" - the option of re-mineralizing RO product water. Our objective is to address any market concern that drinking water should be a source of certain beneficial minerals.

What Maintenance Advantages does it offer? TOPPER design offers greater simplicity - only a few moving parts - which translates to greater reliability, less maintenance and longer system life.

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- TOPPER automatically "flushes" the membrane clean each time the user dispenses water. This feature extends membrane life, reduces biological activity and may eliminate the traditional prefilter on municipal water supplies.
- TOPPER incorporates geometry-coded, quick-connect filter elements and membrane. All can easily be replaced in minutes by technician and child alike.
- TOPPER is compact - taking up about 1/3 less space than conventional undersink units.
- TOPPER includes a proprietary easy-to-sanitize feature that will that make this often forgotten maintenance step effortless.
- TOPPER is manufactured using all high-tech injection molded plastic. Nothing to rust or corrode.
- TOPPER is extremely easy to install and service. All connections are easily accessible in one location.
- TOPPER eliminates most of the connections found on conventional system designs, requiring only three. This dramatically reduces the potential liability of leaking.

**What are the Manufacturing Cost Advantages?**
TOPPER provides a novel configuration, primarily the result of its compact water-on-water operation. It combines all the essential components into asingle integrated unit that fits so neatly together that there is an immediate payoff in terms of economy of material and assembly.

- The TOPPER tank, with a 100 draw-down capacity of 1.5 gallons, is only 9 inches in diameter. It is comprised of two plastic molded halves that create the lowest cost tank in the industry. TOPPER water make-up is so much faster than conventional air-on-water systems that its smaller tank will easily keep up with the customer's water needs.
- TOPPER allows the use of a smaller membrane for the same production rate offered by conventional systems.
- TOPPER eliminates internal tubing and connections, saving parts and assembly time.
- TOPPER is optimized for high volume production and will allow a variety of enclosure styles to be added to conform to the objectives of your marketing efforts.

**What are the Marketing Advantages?**
TOPPER offers so many advantages over conventional POU RO devices that it will be difficult to justify using anything else. We think of it as an "engine" that is able to "power" any and all sales organizations considering this product category. This engine is conceived to be shrouded in proprietary designer covers and incorporates special features that express each client's market strategy.

- TOPPER marketers will be able to claim superior water using efficiency compared to conventional POU RO devices - a recognized benefit in the eyes of the consumer.
- TOPPER 's most novel feature is the re-mineralization cartridge that will add select minerals known to be beneficial to health.
- TOPPER offers several monitoring/display scenarios including: Water quality, cartridge change and service notification using easy-to-understand visual and audible indicators.
- TOPPER replaceable cartridges will be available in a variety of geometry-coded configurations that are proprietary to each marketing program.