

New water filters for low-income households

October 2011 preview // user-centered design, standardization, and affordability

INTRODUCTION

In October 2011, PATH and four partner companies— Cascade Designs, Inc.; Dukang, Inc.; Ningbo Clean, Inc.; and PureEasy, Inc.—announced the development of new water filters for low-income households in developing countries. This fact sheet previews advanced prototypes, the products' unique consumer benefits, and next steps.

KEY BENEFITS

- User-centered design—applying the lessons from more than 600 hours of careful in-home observation in the field and sophisticated industrial design.
- Standardization—all products are standardized on the new C1 Common Interface, which enhances safety and usability and enables water filters to accept any filter element that is also C1-compatible.
- Affordability—value-engineered to minimize production cost, nested in compact packaging to reduce shipping cost, and compatible with a range of filter technologies that support low operating costs.

USER-CENTERED DESIGN

User-centered design considerations run deep through the new products, based on PATH's Household Water Treatment and Storage Design Guidelines (available at: www.path.org/hwts-design-guidelines/index.php). Selected user-inspired design choices are listed below:

- Aesthetics blend modern and traditional themes to evoke both aspiration and the comfort of familiarity.
- Intuitive assembly builds user confidence.
- Wide mouth and the right height to ease filling.
- Holds enough water so users only need to fill devices two or three times per day.
- Stand enables easy cup-filling from tap.
- Round corners allow fingers to easily remove grime; many households hand scrub kitchenware daily.
- Use of textured surface finishes helps units continue to look attractive despite scrubbing and other wear.

PROTOTYPES



Prototypes from Dukang, Ningbo Clean, PureEasy (L to R).

APPROXIMATE SPECIFICATIONS

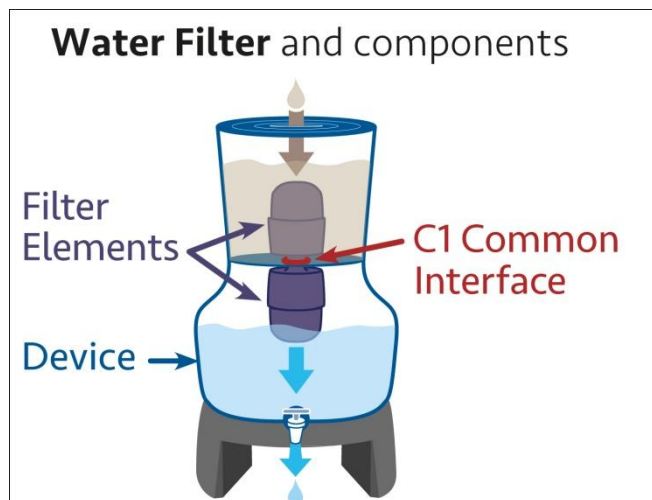
- Dimensions, assembled: 58 cm H, 27cm L, 27 cm W.
- Capacity: 15L total, with 8L/7L upper/lower chambers.
- Models' capacities differ +/- 1L, dimensions +/- 1cm.
- Package dimensions: about one cubic foot, even.
- Materials: safe plastics, BPA- and phthalate-free.
- Country of origin: China.
- C1 Common Interface for compatible filter elements.
- Filter elements: multiple options under development.

COMMERCIAL LAUNCH: FIRST QUARTER 2012

The companies plan to launch their products commercially during the first quarter of 2012. They will be able to respond to queries and quote prices after launch. PATH will send out email updates when the partners launch their products, including company contact information, and will update information on the PATH website. Please email newwaterfilters@path.org to sign up for key updates.

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KEY TO TERMINOLOGY USED BY PATH AND PARTNERS



STANDARDIZATION

The partners' forthcoming products are standardized on the new C1 Common Interface, which enhances safety and usability, and enables water filters (specifically, "devices") to accept any filter element that is also C1-compatible.

The C1 Common Interface is a design specification for the common connection point between a water filter (specifically, the "device") and the filter elements that go inside of it that require periodic replacement, creating a classic "light bulbs and sockets" scenario so different brands' products can work together. Features include:

- Built-in safeguards to prevent upside-down installation of filter elements and leak-through of contaminated water around filter elements—even at the tricky moment when a user removes a filter element for cleaning and residual untreated water is present.
- Simple to use, for easy cleaning and replacement.
- Upper-chamber height to support adequate flow rates.
- Flexible device styling and capacities, from 12L up.
- Attachment of up to two filter elements (upper/lower).

The C1 Common Interface improves choice for consumers and brands. Consumers can always choose the best available filter elements, without replacing their whole filter. Filter element makers can more easily partner with water filter brands to reach developing-country consumers. Water filter

brands can take advantage of more sourcing and technology options. Proliferation will support high-volume production, lowering prices. PATH will make the C1 Common Interface specification freely available for license in January 2012.

AFFORDABILITY

The partners estimate pricing from \$12 or less for a water filter—including from \$10 or less for devices and from \$2 or less for a basic filter element. Advanced performance filter elements may cost more. Estimates are for factory-gate wholesale orders of at least 800 units. Prices will vary by model, quantities, the cost of plastic, and exchange rates.

PARTNERS, PRODUCTS, AND DISTRIBUTION

Each of PATH's China-based partners—Dukang, Ningbo Clean, and PureEasy—are developing new devices that will accept a range of filter elements. Dukang and PureEasy are also developing filter elements, as is Cascade Designs.

In addition to selling their own devices and/or filter elements, the companies are likely to arrange to offer combinations (e.g., filter elements from one company with a device from another). The China-based partners already export 200,000 water filters and millions of filter elements annually, selling to overseas distributors and brands from Southeast Asia to Africa and beyond. Partners are likely to make their new products available along similar lines.

FIELD EVALUATION INVITED

PATH welcomes interest in field evaluation and use of the forthcoming products and may be able to facilitate related communications; write to newwaterfilters@path.org.

FOLLOW THE PROGRESS

- Sign up for updates; email newwaterfilters@path.org.
- <http://www.path.org/projects/safe-water-filter-resources.php>

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PATH is an international nonprofit organization that creates sustainable, culturally relevant solutions, enabling communities worldwide to break longstanding cycles of poor health. By collaborating with diverse public- and private-sector partners, PATH helps provide appropriate health technologies and vital strategies that change the way people think and act. PATH's work improves global health and well-being.

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