

Bulk distribution

Maximising TCO with new Worthington bundles

Industrial gas bundles have been around for decades, with relatively few changes to standard design. Until now, says Worthington Industries, who decided it was time to break the mould.

The new Max9 Bundle from the Columbus, Ohio-based company features a distinctive steel frame, as well as a new cylinder configuration that boosts storage capacity by nearly a quarter, while maintaining the traditional bundle footprint.

The result is a lower total cost of ownership (TCO), increased uptime on the factory floor, and simplified supply-chain logistics for end-users, according to Mark Jackson, Worthington's Director of Technology, Innovation and Digitalisation for Europe. Other design improvements, he said, have also made the packs easier to use, more ergonomic and the lighter-weight, finished bundle more sustainable.

Worthington has partnered with Wystrach GmbH of Weeze, Germany, on this project, bringing together

two experienced leaders in their respective spaces of cylinder design and manufacture, and gas-bundle system design and production.

Same footprint, more gas

Gabriele Zeilerbauer, Worthington Industries European Sales Director – Industrial Products, said, “Wystrach was the partner for our Worthington-designed bundle. With their design insights and manufacturing experience, they helped us make a more sophisticated product that allows customers to pack more gas into the same amount of space.”

The Max9 does more with less. By replacing the traditional bundle's 12 x 50 litre, Type 1 steel cylinder configuration with a 9 x 82 litre cylinder design, it boosts volume without claiming more space on the facility floor. This yields a total capacity of 738 litres, or 23% more than standard bundles.

With just two vertical posts instead

of the usual four, the new bundle features an ergonomic, lightweight ‘open architecture’ frame. This yields a distinctive, more aesthetically pleasing look, while maintaining strength and rigidity.

Worthington sees the user-friendly, high-volume bundle as a game-changer for those doing welding and cutting, packaging food, or manufacturing in controlled atmospheres, such as electronics. From a user perspective, this means reduced changeover time, since one needs to stop less often to switch out bundles. The pay-off is more output per worker while welding, for example, and more uptime for automated processes.

The greater storage capacity also translates into fewer trips back and forth to return empty bundles and pick up new ones, thereby lowering operational costs. In addition, trucks making fewer delivery rounds – transporting lighter weight bundles that use less steel in the frame and cylinders – translates into a reduction of the product's overall carbon footprint. This gives gas users another tool for realising their environmental governance commitments.

Calculating your TCO

Regardless of the type of compressed gas or bundle that you use, or the end market you serve, a key metric is always total cost of ownership.

If your ultimate goal is cost savings, it's shortsighted to focus solely on purchase price when acquiring high-pressure gas cylinders, notes Zeilerbauer. Because a typical cylinder

will be in service for decades, it will incur substantial operational costs over its lifetime. Being aware of these expenses – and weighing them against short-term cost savings – is crucial for making a wise purchasing decision that will minimise TCO.

Worthington conducted a 15-year study to calculate overall ownership costs, and concluded that TCO for industrial gas cylinders is based on three main factors: cylinder weight, logistics, and maintenance.

- **Cylinder weight:** Worthington produces the lightest-weight cylinders on the market, with its empty 50 litre, 200 bar steel cylinder weighing just 41kg, which is at least 5kg lighter than the rest of the market. Based on a projected 120 fillings over the 15-year period, 800km round trips from filling centre to delivery sites, and a fuel cost of €1.5 per km, the added cost per cylinder can be as high as €38.05.
- **Logistics:** As for logistics, having to schedule more trips to deliver the same number of cylinders not only incurs the direct costs of fuel and wages, it also contributes to the deterioration of the trucks, pallets, and other ancillary equipment used for loading and offloading. These indirect costs are difficult to calculate, so Worthington used a conservative projection of the additional cost per cylinder, based on cylinder weight, in its model for calculating TCO – €2.20 for cylinders in the 50kg range and €11 for cylinders that weigh 60kg.
- **Maintenance:** The last significant factor to consider when evaluating gas cylinder TCO is how well they will stand up over time. Those that aren't built to last will require periodic refurbishing to keep them operational. One feature that has a significant effect on minimising the need for maintenance is the



© Worthington Industries | The Max9 Bundle



type of finish used on a cylinder. Worthington offers high-quality powder coating with corrosion protection that will last the entire 15-year period in question as a standard for an appealing, representative look.

If a cylinder does not have a durable finish – and most on the market do not – it will have to be painted an average of two times over 15 years. This process costs roughly €12 each time. Plus, whenever cylinders are refinished, they are taken out of circulation for four weeks, leading to lost rental income during that period. Assuming a rental rate of €0.50 per day and €1.72 transport costs to get the cylinders to and from the finishing facility, there is a total debit of €16.79 per cylinder for these non-operational periods.

“Anyone considering buying gas cylinders based on purchase price savings of €5, €10, or €20 per unit, should think about the total cost of this decision,” explained Zeilerbauer, “A

short-term gross savings of hundreds of thousands could cost millions in the long run.”

Safer & more user friendly

Finally, beyond the strong TCO argument, stressed Jackson, the restyled Max9 Bundle delivers new user-friendly design features. By moving the outlet valves from head-high to waist-high, it removes the risk of a careless user getting a high-pressure gas stream to the face. It is also simply easier to use the controls as they have been repositioned.

In addition, Worthington offers TPED dual-outlet cylinders that, for example, can handle different bar pressures in the same canister. And the company says it is able and willing to customise any cylinders to suit specific customer needs.

“We offer a turnkey solution,” Jackson said, “and we see a quick payback on the investment in our new, higher-capacity and higher-pressure cylinders.” **EW**



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