

# X-MET Series



## OBJECTIVES

- | Ensure product meets specification
- | Demonstrate high quality materials
- | Streamline PMI of global supply chain

## RESULTS

- | Over \$10,000 savings annually
- | Instrument cost recouped in less than two years
- | Reliable and effective quality control process
- | “Peace of mind”

## Powell Valves streamlines PMI and quality assurance while saving money

To introduce high-end valves into critical performance situations, it's critical to follow a comprehensive quality assurance programme. To ensure complete confidence that their high quality valves meet specification, Powell Valves implemented testing with Hitachi High-Tech's handheld X-MET X-ray fluorescence (XRF) analyser into their quality control program for the positive material identification (PMI) of both incoming and outgoing products.

Powell Valves, established in 1846, is a global supplier of high-performance valves used in piping systems for industrial manufacturing throughout the country and the world, spanning multiple industries such as chemical, petrochemical, and pharmaceutical to name a few. These valves are used in the most challenging applications: high pressure, high-temperature, and highly corrosive environments where dependable performance is critical.

Jim Hengehold, VP of Engineering/Quality, said: “PMI is a necessary part of our business. Today our customers just expect that we test materials from our suppliers to ensure specifications are met and it's very important for us, and extremely important for our customers that we provide valves that are high quality with the correct material composition.”

“ We deal with numerous different alloys, so the X-MET has become a valued and important part of our quality control program. ”

## X-MET ALLOWS VERIFICATION OF GRADES AND CHEMICAL COMPOSITION OF ALLOYS

For PMI, the X-MET analyser can be used to quickly verify grades as well as the chemical composition of each alloy. This task has become necessary for many manufacturers with global supply chains because although alloys are purchased to given specifications, it has become common to find that the chemistry may not to match the grade stamped on a supplier's alloy.

Powell Valves uses the X-MET to screen incoming shipments of raw material, castings and in some cases even the finished products to ensure that Powell Valves is delivering products to spec. Once the analyses of the valves are completed, results are displayed clearly on the X-MET's large touch screen display, showing the alloy grade at the top of the display followed by a list of the actual chemistry below. The AISI specification (or other specification table of choice) for the grade is also displayed in order to easily see if the alloying elements are within the grade tolerances.

In addition, the analyser is used to screen the final product to ensure that it's comprised of the correct grade of alloys, so that it will be able to withstand the pressure test that all valves are subject to before shipping to customers.

Powell Valves has found the X-MET to be a great tool for making their quality control process much more refined and less complicated. Because these valves are used for such quality-critical applications, many of Powell Valves' customers demand proof of a PMI inspection prior product purchase.

Jim said, "On critical orders we have a certain number of customers that require us to do a PMI inspection and supply them with a materials report. If we had to send this work out, or bring a consultant to do this inspection it would add a minimum of \$10,000 USD dollars annually."

Having the ability to identify the valves' alloy grade in a matter of seconds eliminates the need for costly, time consuming third party testing. With the X-MET, operators can create customised reports that they can use as certificates of inspection. These reports can be printed, saved to a network location or downloaded onto a USB drive directly from the analyser.

The built-in grade library includes over 600 alloys, and if using AISI the grade library includes 600 alloys, such as many Aluminum alloys, Copper alloys, Nickel alloys, Stainless Steels, Low Alloy Steels and others, and adding to a grade library can be easily performed by its operators. The battery life for the X-MET is approximately 10-12 hours which allows for a full day of work in the field without ever swapping batteries.

## MAKING SAVINGS AND POSITIVE EXPERIENCE

Recouping the cost of the X-MET is very often less than two years under normal use, and can be immediate when a single out-of-spec material batch is identified. If the wrong material were to slip through the manufacturing process and end up with a customer, it could cause devastating and irreparable harm to their reputation, and could potentially lead to the loss of a major customer. With the stakes being that high, the X-MET allows Powell Valves to guarantee that their product's material composition is accurate.

Powell Valves has been a customer of Hitachi High-Tech, (formerly Oxford Instruments), for eight years, and they now own their fourth X-MET XRF analyser which is used on a regular basis and in most cases, daily.

They have remained a customer through the years largely due to the reliability of their first machine along with the support they have received. In addition to the great support, the X-MET met and exceeded all of Powell Valves' technical requirements at a lower cost than the competition.

Power Valves compared features of a couple of different instruments and the support available, including instruments belonging to competitors of the X-MET. What influenced their decision to purchase an X-MET was their previous positive experience and the overall price for the X-MET compared to other similar instruments available on the market. They were also really impressed by their sales representative and his helpfulness. Unlike other sales pitches, they believe that the sales representative went well over and above the call of duty to meet their needs.

According to Dickie Thompson, Quality Director at Powell Valves, "We like the speed of the analyser, and the interface. The data output capabilities are also great...the ability to create a report directly from the system is perfect for when we need to generate certification reports for our customers."



## CONCLUSION

Powell Valves has found the X-MET simple to use but its real value is in its ability to quickly and accurately determine the composition of incoming alloys in order to be fully confident that they are supplying the quality products that their customers have become accustomed to.

Jim Hengehold, summarised, "Hitachi High-Tech has a good combination of an excellent product, a good price, and an excellent support group, and for us that is the bottom line. We would definitely recommend the X-MET to anyone in the industry."

**If you would like to see the X-MET analyser in action visit [www.hitachi-hightech.com/x-met](http://www.hitachi-hightech.com/x-met) or email [contact@hitachi-hightech-as.com](mailto:contact@hitachi-hightech-as.com) to book a demo.**

### **Hitachi High-Tech Analytical Science**

This publication is the copyright of Hitachi High-Tech Analytical Science and provides outline information only, which (unless agreed by the company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or regarded as the representation relating to the products or services concerned. Hitachi High-Tech Analytical Science's policy is one of continued improvement. The company reserves the right to alter, without notice the specification, design or conditions of supply of any product or service.

Hitachi High-Tech Analytical Science acknowledges all trademarks and registrations.

© Hitachi High-Tech Analytical Science, 2018. All rights reserved.

### **X-MET8000 RANGE**

Our range of handheld XRF analysers, the X-MET8000 series, delivers the speed and performance required even in the most demanding applications. Suitable for all analysis needs from scrap metal analysis, precious metals and jewellery analysis to positive material identification (PMI) for inspection and manufacturing applications, and regulatory compliance screening.

If you would like to see the X-MET8000 analyser in action visit [www.hitachi-hightech.com/hha](http://www.hitachi-hightech.com/hha) or book a demo.