



**Be certain of success  
with an expert by your side.**

## **Mining and Mineral Processing**

Leveraging Emerson's breadth and depth of final control products and services.



# There has to be a better way to take the complexity out of final control assets

Safety has long been a critical issue in the mining and mineral processing industry. In more recent times, producers have faced increasing pressures to better manage costs, improve productivity, extend maintenance cycles, and squeeze more life out of every asset with improved reliability.

Final control assets, which include valves and actuators, are an integral part of any reliability project. Inferior or poorly maintained valves are one of the leading causes of reduced production capacity on mining sites. However final control asset challenges are often some of the most complex and time consuming to overcome. But what if there was someone who could take care of that for you?

How much of your maintenance budget is being wasted on valves and actuators that **don't need repair or replacement?** It's costly and adds to lost production.

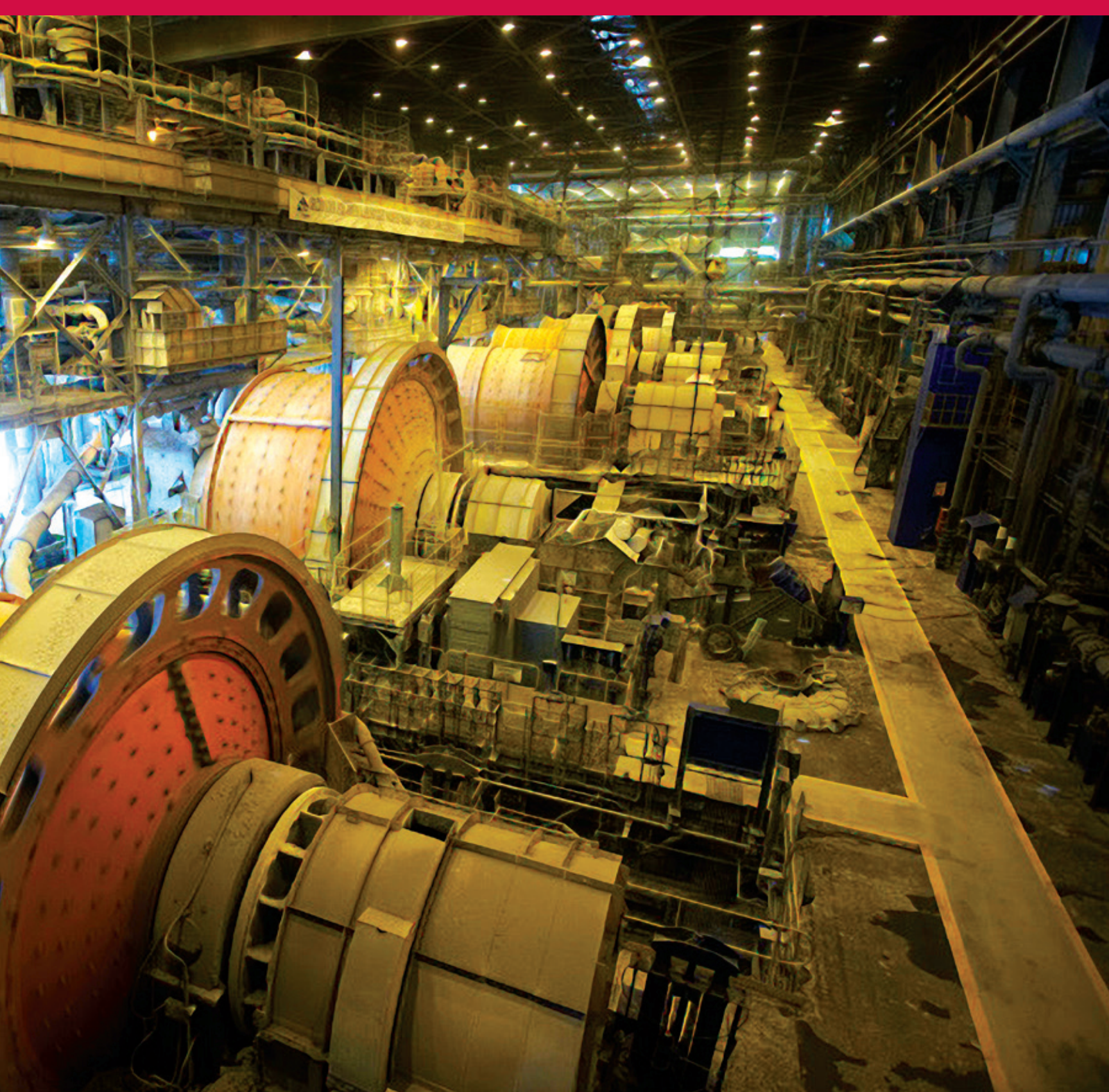


**Unplanned downtime** can cripple a mining business. Operating in remote locations and using specialized slurry equipment only adds to extended downtime and **loss of production.**



Every day, your people face any number of **risks** - hazardous high pressure and temperature caustics, and heavy equipment accidents. So one of your top priorities is **minimizing these threats.** You want to be confident that your **equipment is reliable**, your people have the **latest training**, and your operators can respond quickly to the site's constantly changing conditions.





Working hand-in-hand with mining companies to address the big issues of plant reliability and extending maintenance cycles.

## Imagine a business partner that could take on all of your final control asset challenges



Imagine how smoothly your mining operation would run and how your productivity would soar if you could delegate all of your final control asset challenges to an expert you trust. No more chasing multiple vendors, worrying about compatibility, assembly, testing, or delivery. Is that possible?

With Emerson, that's possible. We now have an extensive portfolio of valves, actuators, regulators, controllers and instruments, with a service network to match. Our global scale means we leverage our world-class technology and mobilize our deep supply chain to deliver solutions, wherever your operations are. And yet despite this scale, Emerson's local experts work with you to understand your unique challenges, and solve them.



### Reliability Spotlight

**2.5 x More reliable**

KEYSTONE BUTTERFLY VALVES LAST 2.5 X LONGER

Independent, third party lifecycle testing has shown that Keystone resilient seated butterfly valves, used to control and isolate process flow, last 2.5 times longer than competitors' comparable butterfly valves.



Every site has its own challenges, different issues. It makes sense to lean on a trusted partner to drive down costs and increase productivity.

## It's Our Life's Work

This is what we do at Emerson. Customers trust us every day to manage their complex final control asset challenges. As your Main Valve Partner we:

- Improve operational efficiency
- Improve project execution
- Drive consistency and reliability
- Lower procurement costs
- Realize optimal design

## Operational Certainty

Build and continuously improve an informed maintenance and operational strategy with Emerson that maximizes your plant uptime and minimizes spend.

With products proven to extend maintenance intervals and services to support your assets over their lifecycle, trust Emerson to optimize your productivity, reliability, emissions, and safety performance.

► p8 - 9

## Project Certainty

Begin your **Brownfield MRO** project by speaking to a final control expert. Early engagement can produce tangible benefits for your project.

As your Main Valve Partner, Emerson helps customers perform strongly against their project execution strategy.

► p6 - 7

## An Extensive Portfolio Backed by Global Resources

Emerson can design, manufacture, deliver, install, and service everything related to final control - heavy duty slurry valves, control valves, pressure relief valves, automated valves, isolation valves, actuators, and regulators.

► p10 - 11



## Partner with an expert for Project Certainty

Starting any new or **Brownfield** optimization project can be a daunting task. But when you partner with Emerson, you can rest assured as you benefit from the experience of hundreds of successfully completed projects. And it's more than just confidence. When you get Emerson's experts involved at the beginning of a project as the Main Valve Partner, you gain tangible benefits that go a long way towards ensuring the success of your project.

You get:

- Minimized project risk
- User and management support
- Lower costs
- Faster implementation
- Reduced attrition

### What's your challenge?

You need to improve process performance and you're not sure where to begin?

Need some guidance or some additional resources to help shoulder the load?

Give Emerson a call.

### Emerson can help

Getting a valve automation expert involved at an early stage is a proven strategy to deliver project success.

- ✓ Capacity increase
- ✓ Lower costs
- ✓ Schedule reduction

## Engage early with your Main Valve Partner

### FEED Engineering

Involving an expert valve partner like Emerson at FEED allows early design collaboration and optimizes execution strategy. We leverage industry best practices to provide:

- Single point of accountability
- OEM engineering expertise
- Entire automation system
- Project management experience

### Start Up & Commissioning

Looking to get to production faster? Deploy Emerson's resources:

- Local technicians available to facilitate vital start up tasks associated with new or reconstructed plants
- Careful measures taken to help meet your requirements for quality control
- One call for final control support

### Optimized Procurement

Selecting Emerson as your Main Valve Partner reduces procurement complexity, lowers costs, and gives you access to OEM expertise. Fulfilling your requirements also becomes more flexible:

- Easy purchasing
- Simple change orders
- Easy sub-contractor management
- Standardized products & processes

## Get Project Certainty with your Main Valve Partner

### Eliminate Cost

- Providing product fit that is optimized for processing conditions.
- Implementing streamlined repeatable processes designed to eliminate waste in execution.

### Reduce Complexity

- Optimization of products, technology and execution selections.
- Leveraging the Emerson subject matter experts.

### Accommodate Change

- Developing the right solution and providing a robust documentation management process.





## Partner with an expert for Operational Certainty

Operations that perform in the top quartile have a few things in common. They have a strategy to maintain critical assets, they monitor the health of those assets and they analyze the data to take actions where required. This translates into benefits for your operations:

- Increased reliability and uptime – run assets at optimal efficiency and immediately recognize drops in performance for corrective maintenance.
- Reduced maintenance costs – know which valves require repair and when to deploy the right resources and accurately estimate planned outages.
- Improved safety quality yield – 60% of accidents occur during reactive maintenance. Lower your risk by planning ahead.

After all, who better to service and maintain your process equipment than the very people to design and manufacture it.

### OUR SERVICES

- Installation & Commissioning
- Valve Automation & Actuation
- Service & Application Training
- Parts Replacement & Management
- Product Upgrades & Modifications
- Maintenance & Repair
- Inspection, Testing & Certification
- Turnarounds, Revisions & Shutdowns
- End of Life Support
- Asset Management



## Enjoy Operational Certainty with lifecycle services

### Reliability

- Access to skilled valve experts
- Predict potential failure conditions
- Greater insight into the health of your valves

### Performance

- Reliability improvements drive valve performance improvements
- Reduced loop variability
- Energy savings

### Maintenance

- Streamline maintenance activities
- Improve spare parts process
- Shutdown, turnaround or outage planning improvements

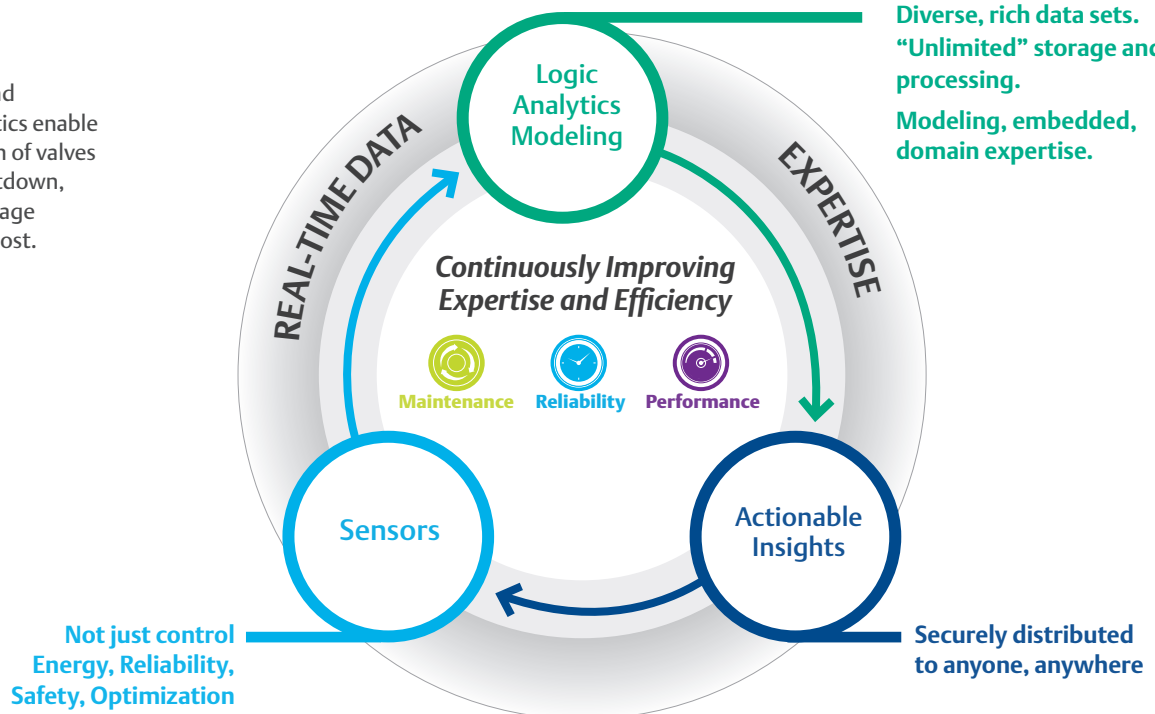


## Enhance the benefits with connected services

### Data Driven Decision Making

Properly acquired and interpreted diagnostics enable data-driven selection of valves to repair during Shutdown, Turnaround and Outage Events, minimizing cost.

Diverse, rich data sets. "Unlimited" storage and processing. Modeling, embedded, domain expertise.



# Global Strength Local Expertise

Emerson is committed to delivering world-class technology products to its customers. We have a global footprint of Engineering Centers of Excellence and Manufacturing Facilities, so help is never too far away.

With dedicated Sales, Application and Service teams close to you, we are committed to problem-solving and addressing your business, process, and application challenges.

We offer a full range of in-house and on-site technical training - tailor made to help you choose the right solution for your application.

Global Headquarters  
World Area Headquarters  
US Final Control Offices  
Country Head Offices



## Global Resources

54,000+



Employees

250+



Sales Offices

200+



Service Centers

220+



Manufacturing Facilities



### QuickShip Program

To keep your operations running in an emergency, we have distribution centers with millions of dollars in inventory for shipping within 24 hours.

- Single point of contact
- Management oversight
- Rapid delivery
- Product quality guaranteed
- Genuine OEM parts and valves
- Dedicated QuickShip team
- Located near you
- Prompt delivery for turnarounds
- Stocked parts, specials assembled

# Product Portfolio

## Control Valves

**FISHER™**



- Ball Valves
- Globe Valves
- Angle Valves
- Eccentric Plug Valves
- Choke Valves
- Pump Protection

## Isolation Valves

**LUNKENHEIMER™  
CLARKSON™  
KEYSTONE™**



- Knife Gate Valves
- Butterfly Valves
- Angle Valves
- Ball Valves
- Gate, Globe & Check Valves
- Triple Offset Valves

## Pressure & Safety Relief Valves

**ANDERSON  
GREENWOOD™  
CROSBY™**



- Spring Operated
- Pilot Operated
- Backpressure Relief
- Conservation Vents
- Steam Safety & Nuclear

## Regulators

**FISHER™**



- Direct Operated
- Pilot Operated
- Airsets
- Cryogenic
- Industrial Regulators
- Manifolds

## Actuators

**BETTIS™**



- Pneumatic
- Hydraulic
- Electric
- Gearboxes & Overrides
- Controllers & Instruments
- Pipeline Systems

## Automated Valve Solutions



- Complete Solution
- Fully Integrated
- Tested and Certified
- Compatibility Guaranteed
- Reduced Complexity
- One Call for Support

# Increase productivity, extend maintenance cycles with improved reliability, and reduce costs.

**Emerson Electric Co.  
Global Headquarters**  
8000 West Florissant Avenue  
St. Louis, Missouri, 63136  
United States  
T +1 314 679 8984  
ContactUs@Emerson.com  
Emerson.com/FinalControl

**Emerson Automation Solutions  
Final Control  
North America**

**Marshalltown**  
301 South 1st Avenue  
Marshalltown, Iowa, 50158  
United States  
T +1 641 754 3011

**McKinney**  
3200 Emerson Way  
McKinney, Texas 75070  
United States  
T +1 800 558 5853

**Houston**  
10707 Clay Road  
Houston, Texas 77041  
United States  
T +1 713 986 6361

**Houston**  
19200 Northwest Freeway  
Houston, Texas 77065  
United States  
T +1 281 477 4100

**Stafford**  
3950 Greenbriar Drive  
Stafford, Texas 77477  
United States  
T +1 281 274 4400

**Emerson Automation Solutions  
World Area Headquarters**

**Asia Pacific**  
1 Pandan Crescent  
Singapore 128461  
T +65 6777 8211

**Europe**  
Neuhofstrasse 19a P.O. Box  
1046 CH 6340 Baar,  
Switzerland  
T +41 41 768 6111

**Latin America**  
1300 Concord Terrace Suite 400  
Sunrise, Florida 33323,  
United States  
T +1 954 846 5030

**Middle East & Africa**  
Emerson FZE P.O. Box 17033,  
Jebel Ali Free Zone - South 2,  
Dubai, United Arab Emirates  
T +971 4 8118100

 Emerson.com

 Facebook.com/EmersonAutomationSolutions

 LinkedIn.com/company/Emerson-Automation-Solutions

 Twitter.com/EMR-Automation

© 2017 Emerson Electric Co. All rights reserved.

Anderson Greenwood, Bettis, Clarkson, Crosby, Fisher, Keystone, Lunkenheimer, and Vanessa are marks owned by one of the companies in the Emerson Automation Solutions business unit of Emerson Electric Co. The Emerson logo is a trade mark and service mark of Emerson Electric Co. All other marks are property of their respective owners.

The contents of this publication are presented for information purposes only, and while effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice. Responsibility for proper selection, use and maintenance of any product or service remains solely with the purchaser and end user.

VCIBR-07226-EN 18/03



**EMERSON™**

**CONSIDER IT SOLVED™**