

EG Valves Advances Metal-Seated and Low-Emission Valve Technology for Severe-Service Industrial Duty

Integrating hardfacing alloys and low-leakage packing systems for critical processes

CALIFORNIA, CA, UNITED STATES, August 21, 2026 /EINPresswire.com/ -- WENZHOU, China — [EG Valves](#) Manufacturing Co., Ltd, a China-based industrial valve manufacturer supplying gate, globe, ball, butterfly and check valves to energy and process industries, is extending its engineering focus to severe-service applications through metal hard-seating, low-emission stem sealing and actuated control integration. The company reports that its products are used in power station, oil and gas, chemical, water treatment, wastewater treatment and mining applications, with around 80% of output shipped to the EU, North America, Latin America and the Middle East.

Industrial valve demand is being shaped by larger capital projects and tightening environmental requirements. Grand View Research estimated the global industrial valves market at approximately USD 80.4 billion in 2025, with Asia Pacific holding the largest regional revenue share. The oil and gas sector remains the largest application segment, a pattern that pushes manufacturers to demonstrate compliance with standards such as API 6D, API 600 and the European Pressure Equipment Directive.

EG Valves operates a 27,500 m² facility, employs about 300 people including 30 engineers, and reports an annual output of roughly 90,000 pieces. The company holds ISO 9001, ISO 45001, API 6D, API 600, CE and PED certifications. Its product lines include cast steel gate valves, pressure seal gate valves, forged steel globe valves, trunnion-mounted ball valves, high-performance



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butterfly valves and plug valves.

Why hard metal sealing matters in high-temperature and high-pressure service

In power generation, refining and petrochemical plants, valves must remain operable when soft seats are not viable. Elastomer and PTFE seats begin to lose dimensional stability under sustained high temperature and can be damaged by flashing, cavitation or abrasive particulates. Metal-seated valves are the alternative when the process demands extended cycle life and resistance to erosion and thermal cycling.

EG Valves builds several product lines with hard-seating capability. The Pressure Seal Gate Valve (GTP002) and Pressure Seal Globe Valve (GLP107) use a self-sealing bonnet and a Stellite overlay on the sealing surface. The Triple Offset Butterfly Valve (BOV303) provides an optional Stellite seat for erosion resistance and a stainless steel-plus-graphite seat option for fire-safe and high-temperature isolation. The High Performance Butterfly Valve (BPV302) offers PTFE/RTFE, stainless steel/Monel, or combined PTFE-plus-stainless steel seating.

Body materials commonly used in EG Valves' severe-service products include WCB carbon steel, WC6 and WC9 alloy steel, C5 chrome-moly steel, CF8M stainless steel, A105 forged carbon steel, and duplex stainless steel grades such as 2205 and 2507. In projects for refining and oil and gas customers, the company has supplied valves in WCB, WC6, WC9, C5 and A105, in sizes from 1/2" to 36" and pressure classes from 150 to 1500.

Stellite overlay and the pressure seal bonnet

Stellite is a cobalt-based hard-facing alloy family commonly applied to valve seating surfaces to improve wear resistance. The pressure seal bonnet is a different design element: instead of a bolted flange gasket, a pressure-energized seal inside the bonnet is loaded by internal pressure. EG Valves applies a full Stellite overlay to the wedge sealing surface of its pressure seal gate valve, and a full Stellite overlay to the seat surface of its pressure seal globe valve. The stated design intention is to achieve joint leak-proofness and extend service life beyond what a conventional soft-seated design can provide.

This combination — hard-facing overlay plus pressure-energized bonnet — is common in high-pressure steam and hydrocarbon isolation services where leakage through the bonnet joint is not acceptable.

Low-emission packing and fire-safe design for fugitive-emission control

Fugitive emissions are the primary source of valve-related leakage in volatile organic compound (VOC) and hazardous air pollutant service. In modern environmental compliance, the supplier's ability to demonstrate low-leakage stem sealing is a selection criterion before a valve is installed.

EG Valves designs its steel ball valves and plug valves with low-emission packing and anti-static features. Floating ball valves, trunnion ball valves, top entry ball valves and fully welded ball

valves are supplied with blow-out-proof stems, fire-safe design and low-emission packing systems. The Fully Welded Ball Valve (BVF210) uses a welded body intended for gas transmission and underground installation, where external leakage paths must be minimized.

In applications required to meet low-leakage performance, the packing system must resist both stem rotation and thermal cycling. The design principle is to maintain axial compression on the packing stack while keeping breakaway torque low enough for actuators to operate reliably. EG Valves' low-emission packing designs are intended to provide predictable stem sealing performance while maintaining the blow-out protection required by API 6D.

Intelligent control integration: limit switches, actuators and DCS communication
Process automation requires the valve to be treated as part of the control loop, not a standalone mechanical product. EG Valves manufactures electric and pneumatic actuated valves, including Electric Butterfly Valves and pneumatic configurations across its gate, globe, ball and butterfly product families.

In automated systems, valve positioners receive control signals from a distributed control system (DCS). Common fieldbus protocols in power and process plants include HART and Profibus, both of which transmit position feedback and diagnostic data to the control room. For actuator sizing, the key engineering inputs are breakaway torque, running torque and seating torque under the specified differential pressure. When a valve fails, the fail-safe position — either fail-open or fail-closed — is fixed by the actuator's spring or air supply logic to avoid damage to downstream equipment or to maintain safe isolation.

EG Valves states that its team provides technical guidance and support during integration to ensure valves work with existing systems. The capability to mount positioners and actuators is supported by integrally cast mounting pads on high-performance butterfly valves and adaptable top flanges on other product lines.

Selection parameters for severe-service industrial valves

When evaluating severe-service industrial valves, buyers typically use the following parameters as baseline acceptance criteria:

Nominal bore: DN15 to DN1000 for trunnion ball valves; DN40 to DN1200 for cast steel gate valves; DN50 to DN1500 for triple offset butterfly valves.

Pressure class: Class 150 to Class 1500 for cast steel gate and globe valves; Class 150 to Class 2500 for forged steel gate, globe and trunnion ball valves; Class 600 to Class 2500 for pressure seal gate valves.

Temperature range: Carbon steel body with Stellite overlay is typically applied in high-temperature steam and hydrocarbon service; cryogenic and low-temperature applications require materials such as LCB or austenitic stainless steel.

Leakage rating: Metal-seated valves are commonly supplied to FCI 70-2 Class IV or better when the process requires hard sealing; soft-seated valves can achieve Class VI.

Explosion-proof class: Electric actuated packages for hazardous areas are generally specified as Ex db (flameproof) in Zone 1 or Zone 2 gas atmospheres.

Field evidence: refining, offshore and oil and gas installations

EG Valves reports multiple overseas supply cases in severe-service segments. In the UAE, the company supplied 915 gate valves, globe valves, check valves, ball valves and butterfly valves in pressure classes from 150 to 1500, in WCB, WC6, WC9 and C5 materials, from 2" to 36", for petroleum refining projects. The project duration was 8–10 years, with the company reporting that its valves operated safely and steadily and contributed to smooth operation of the client's refining projects.

In Mexico, EG supplied 290 gate valves, ball valves, check valves and plug valves in classes 150–1500 using WCB, WC6, WC9, C5 and A105 materials. In the US, 1,438 gate, globe, check and ball valves were delivered in classes 150–1500. In Russia and Uzbekistan, 650 gate, check and ball valves were supplied in PN16–PN100 and DN40–DN2000 for high-pressure and low-temperature environments. In Malaysia, 120 ball valves and gate valves were supplied for offshore service in bronze, WCB, A105, SS316, 2205 and 2507 materials.

These cases illustrate the material combinations and pressure ratings that EG Valves has shipped to energy and process customers. The company also reports that its valves are used in water treatment projects. One Brazilian client received 326 gate valves, butterfly valves and check valves with PN16 and DN40–DN2000 ratings for water storage and treatment flow management.

Market context and competitive position

The global industrial valve market reflects both scale and intensity of competition. Emerson Electric and Flowserve are major market participants, with one industry report attributing roughly 11% global market share to Emerson. For a manufacturer at EG Valves' scale, the credible path is not price competition against global majors, but engineering-based selection into applications where material specification, emission compliance and delivery reliability are decisive.

China's valve export position is substantial. Tendata and China Customs data estimate China's valve exports at approximately USD 54.32 billion in 2025. This places Chinese manufacturers at the center of global valve supply chains, but also subjects them to documentation and quality-system scrutiny from international buyers.

EG Valves reports that all valves are manufactured under ISO 9001-certified processes and that the factory holds API 600 and API 6D certificates. The company also states that every order is accompanied by EN 10204 3.1 Material Test Certificates, a document frequently required by European and North American engineering contractors to verify material traceability.

Production capability and quality control

EG Valves operates a 27,500 m² production facility with around 300 employees. Its stated annual

capacity is 90,000 valves. The company has 30 engineers in its R&D team and sets a monthly production capacity of 8,000 pieces for OEM/ODM orders. Lead time is quoted as 25–35 days, with a minimum order quantity of one piece for large valves and ten pieces for small valves.

The company's quality control procedure includes 100% inspection of every valve, rather than batch sampling. It offers EN 10204 3.1 Material Test Certificates with every order, which requires the manufacturer to provide traceable material documentation, including chemical composition and mechanical properties, for each melt.

Manufacturing standards and certification

EG Valves' certifications cover management systems, product standards and pressure equipment regulations:

ISO 9001:2015 — quality management system for gate, globe, ball, butterfly and check valves, pipe filters and flanges; certificate valid through May 2028.

ISO 45001:2018 — occupational health and safety management system, valid through May 2026.

API 6D — pipeline valve standard for check valves, ball valves and gate valves, valid through March 2027.

API 600 — bolted bonnet steel gate valve standard, valid through March 2027.

CE / PED 2014/68/EU — pressure equipment directive for gate, ball, globe, check and butterfly valves and strainers, issued by TUV SUD, valid through May 2027.

For oil and gas critical applications, API 6D and API 600 are the primary product standards. ASME B16.34 remains the universal reference for pressure-temperature ratings and dimensional requirements for flanged, threaded and welding-end valves. EG Valves produces its steel valves in accordance with ANSI, DIN, BS and JIS dimensional standards.

Outlook

The direction of demand in industrial valves is toward documented performance rather than generic specifications. In high-pressure steam, hydrocarbon and chemical services, buyers are increasingly defining acceptance by material traceability, low-emission stem sealing and proven installation references. EG Valves' continued focus on metal hard-seating, Stellite overlay, pressure seal bonnets and actuated control integration positions it for projects where process safety and environmental compliance are the primary constraints.

Manufacturers that can document both certification and field performance are more likely to be included in global contractors' approved vendor lists. The company's export footprint, production documentation and material certification program support that objective.

For more information about EG Valves' products and services, visit www.egvalves.com

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