

How STARD GEARS, a Global Advanced Scotch Yoke Actuator Supplier, Supports Ball, Butterfly, and Plug Valves



Suzhou, Jiangsu Aug 28, 2026 ([Issuewire.com](https://www.issuewire.com)) - When industrial procurement focuses on 90-degree valve automation, STARD GEARS acts as a [Scotch Yoke Actuator Supplier](#) that aligns precise torque curves with the distinct operational requirements of ball, butterfly, and plug valves through the YP Series. By offering both Symmetrical Yoke mechanisms for the balanced torque demands of ball and plug valves, and Canted Yoke mechanisms featuring high starting torque and lower running torque for butterfly valve selection, the manufacturer ensures that actuation matches fluid resistance perfectly. This mechanical distinction replaces generic actuator sizing with specific torque geometry.

Quarter-Turn Motion Sets the Application Boundary

The application boundary of the YP Series is established primarily by its 90-degree quarter-turn motion, making it exceptionally suited for switching and regulating ball valves, butterfly valves, plug valves, and similar quarter-turn devices. The Scotch yoke mechanism internally converts the linear motion of the

pneumatic piston into a precise rotational output, creating an actuation method inherently designed for quarter-turn valve geometries. For this reason, identifying the specific valve motion must always precede decisions regarding brand selection or overall actuator dimensions.

Because ball, butterfly, and plug valves all fall clearly within the operational scope of the YP Series, procurement teams can confidently establish the valve motion and process conditions as their baseline. Once the 90-degree motion requirement is confirmed, engineers can then proceed to the more detailed aspects of project matching, including evaluating exact torque curves, available air supply, and mechanical interfaces. This structured approach ensures that the fundamental mechanical action is correct before advancing to finer engineering details.

Symmetrical Yoke Matches Ball and Plug Valve Torque Demand

The Symmetrical Yoke configuration delivers a more balanced torque curve that primarily matches the resistance characteristics of ball valves and plug valves, making it ideal for verifying torque against opening, running, and reseating phases. Selecting an actuator for a ball or plug valve should never rely solely on comparing a single maximum torque value from a catalog. Instead, the more uniform output curve of the symmetrical design allows the actuator to consistently align with the actual friction and resistance changes experienced by the valve throughout its entire 90-degree stroke.

Engineering teams must overlay the torque curve provided by the valve manufacturer under differential pressure conditions with the output curve of the actuator itself. This detailed comparison confirms that the opening, closing, and sealing actions all remain safely within the available output range of the equipment. Ball and plug valve projects require complete torque curve evaluation rather than peak value estimation, and the Symmetrical Yoke provides the exact mechanical output path necessary to fulfill this engineering requirement.

Canted Yoke Targets Butterfly Valve Breakaway Behavior

The Canted Yoke configuration is specifically targeted at butterfly valves by delivering high starting torque combined with low running torque, providing necessary force at the breakaway stage while reducing unnecessary torque bias during the running phase. Butterfly valves inherently demand entirely different torque levels during their initial breakaway action compared to their mid-travel running phase. The unique mechanical output profile of the canted yoke ensures that actuator selection directly addresses this distinct difference between breakaway requirements and dynamic running torque.

When high differential pressure, challenging media characteristics, or aggressive seating conditions significantly increase the initial breakaway resistance, procurement teams must secure actual butterfly valve torque data to calibrate against the Canted Yoke output. They must avoid relying merely on nominal valve sizes as a substitute for rigorous operational calculations. The execution of butterfly valve automation must begin by acknowledging the disparity between breakaway and running forces, a demand seamlessly met by the canted torque curve.

Interfaces, Travel Adjustment, and Manual Options Complete Valve Integration

Once the valve type and required torque curve are confirmed, the YP Series achieves full mechanical and accessory integration through ISO connecting dimensions, NAMUR standard mounting holes, ± 5 -degree travel adjustment, and three manual operation options. The inclusion of ISO connecting dimensions and NAMUR standard mounting holes provides a universally recognized interface for valve coupling and accessory attachment. This standardization eliminates interface uncertainty during the

project integration phase involving the actuator, the valve body, and the associated control accessories.

The ± 5 -degree adjustable travel feature allows for precise end-point tuning, ensuring exact valve seating. Furthermore, manual operation choices include a screw rod, a mechanical handwheel gearbox, or a hydraulic manual override, giving maintenance teams and operators varied paths for manual intervention during maintenance or specific operational scenarios. [STARD GEARS](#) extends valve torque matching to encompass physical interfaces, end-point calibration, and manual control, ensuring the equipment transitions smoothly into actual installation and maintenance environments.

International Supply Context Extends Beyond the Actuator Specification

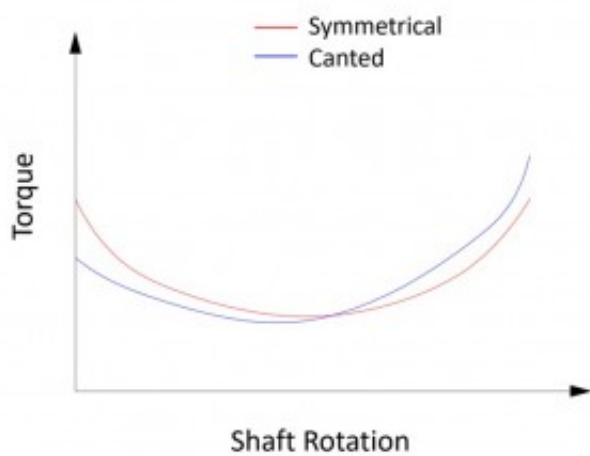
The role of a reliable supplier involves more than just the technical compatibility of the YP Series; it also relies on established multi-country export experience, appropriate export packaging, and transparent shipping coordination. Over the past decade, the manufacturer's products have been successfully exported to the United States, Italy, Germany, Mexico, Singapore, Japan, and numerous other countries. This history establishes a continuous international supply background that greatly facilitates cross-border project communication and reliable delivery execution.

Standard fulfillment utilizes high-quality export packaging, while special or non-standard packaging configurations can be arranged according to specific project demands. Shipping logistics and associated costs vary based on whether the project utilizes express or sea freight, as well as the quantity, weight, and selected transportation method. Procurement teams evaluating cross-border suppliers must incorporate valve technical alignment alongside packaging, shipping, and market experience to prevent product specification and delivery execution from becoming disconnected.

Valve Torque Data Should Drive the Final Supplier Decision

After confirming the appropriate yoke type and integration conditions, procurement teams must use the valve's actual torque curve at the specified differential pressure as the final basis for actuator matching. The torque data provided by the valve manufacturer must be meticulously checked point-by-point against the actuator's output curve to guarantee sufficient power is available during the open, close, and seat actions. This process prohibits the use of generic labels like "ball valve" or "butterfly valve" as acceptable substitutes for proper engineering calculations.

A comprehensive Request for Quotation should clearly state the valve type, the operational torque curve, the required yoke geometry, the connection interfaces, and the manual override necessities. This ensures that the technical response from the supplier is firmly grounded in calculable inputs. Procurement teams seeking to base their supplier selection on rigorous engineering inputs rather than mere promotional claims can directly contact the manufacturer at <https://www.stard-gears.com/> to obtain precise YP project selection support.



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