Emerson offers a variety of mechanical and manual overrides for G-Series models. The M11 hydraulic override can be used with either spring-return pneumatic or hydraulic models. The M3 jackscrew manual override for G1, G2 and G3 models is available with or without handwheel. The G-Ride is an economical external non-declutchable mechanical override for G4 and G5 spring-return models available with standard hex nut or handwheel.

Overrides
Emerson offers a variety of mechanical and manual overrides for G-Series models. The M11 hydraulic override can be used with either spring-return pneumatic or hydraulic models. The M3 jackscrew manual override for G1, G2 and G3 models is available with or without handwheel. The G-Ride (shown) is an economical external non-declutchable mechanical override for G4 and G5 spring-return models available with standard hex nut or handwheel.

Automated Valve Packages
Emerson offers complete valve operating systems for final valve control. At our World Area Configuration Centers (WACC), we combine the G-Series actuator, controls and a valve in a single system. We can integrate a complete controls offering including world-class PlantWeb® digital plant architecture. We also supply BettisSystems™, pre-engineered and documented controls packages, available at our WACC reducing lead times, simplifying purchasing and installation.

Options
Emerson offers a variety of mechanical and manual overrides for G-Series models. The M11 hydraulic override can be used with either spring-return pneumatic or hydraulic models. The M3 jackscrew manual override for G1, G2 and G3 models is available with or without handwheel. The G-Ride (shown) is an economical external non-declutchable mechanical override for G4 and G5 spring-return models available with standard hex nut or handwheel.

Modular Versatility
Emerson offers a variety of mechanical and manual overrides for G-Series models. The M11 hydraulic override can be used with either spring-return pneumatic or hydraulic models. The M3 jackscrew manual override for G1, G2 and G3 models is available with or without handwheel. The G-Ride (shown) is an economical external non-declutchable mechanical override for G4 and G5 spring-return models available with standard hex nut or handwheel.

Standards and Certifications
G-Series actuators are manufactured to meet the following worldwide quality and safety standards:

- PED/97/23/EC – Pressure Equipment Directive
- ISO-9001
- ABS

Shell DEP 2016 Compliance
World's very first complete actuator product line that successfully passed stringent "Shell Endurance Test" per Shell DEP 2016 and EN15714-3 Standard. The test was supervised and monitored by Shell and Lloyd agency throughout and the final result was certified by Shell Projects & Technology PACO Principal Technical Expert. Download Shell DEP Acceptance of Endurance Testing on Bettis G-Series webpage.

G-Series Pneumatic and Hydraulic Actuators
Next Generation Actuation Technologies Solutions

©2019 Emerson. All rights reserved.
The Emerson logo is a trademark and service mark of Emerson Electric Co. Bettis™ is a mark of the Emerson family of companies. All other marks are property of their respective owners.
Emerson, a leader in valve automation and control technology for over 70 years, has developed numerous innovations that have become industry standards. With continued focus on innovation, reliability, quality and product safety, our latest product offerings continue to be the gold standard for automating valves in all of gas, power generation, pup, petrochemical, chemical, wastewater, and numerous other process industries. Performance has become the main differentiator. Emerson is recognized for effectiveness and reliability in some of the world’s most difficult operating environments.

G-Series pneumatic and hydraulic actuators provide the latest in valve actuation design. A highly unique and reliable means for operating ball, butterfly or plug valves, along with slivers and other 90 degree rotating mechanisms, the G-Series carries an industry leading five-year warranty on materials and workmanship.

G-Series Application And Features
- RED 97/23/EC compliant to meet the stringent requirements of pressure containing vessels
- Meets both NFPA and ASME specifications for submergence and high pressure water design test. Offers superior water ingress and corrosion protection
- Suitability for use in the demanding applications of a SIL environment
- Available in both spring return or double-acting configurations and can operate with either a symmetric or canted yoke
- Offers multiple configurations, with modular design that allows safe field maintenance and reduced inventory costs
- Reduces the cost of operation – replaces a constant air supply to a valve
- Close Loop Instrument System for actuators
- Interchangeable power and spring modules for quick reversal of the fail-safe
- Meets both IP66 and IP67M specifications for submergence and high pressure
- PED 97/23/EC compliant to meet the stringent requirements of pressure containing vessels
- Pedestal Mount, Compact, and High Torque
- Compact design, makes it ideal for tight spaces
- Seals Positively
- Integral bidirectional travel stops, seals out the environment.
- With dual drive module vent checks, breather seals, total O-ring seals and internal and external surfaces are coated to protect in harsh environments
- Tie-bars on pneumatic power modules are corrosion resistant, resist breakage at the time of maximum pressure on the vented side of the power cylinder is to be 5 to 8 psig
- The closed loop system routes the operating media being exhausted from the power side of the cylinder to the vented side of the cylinder. Maximum pressure on the vented side of the power cylinder is to be 5 to 18 psig
- A highly unique and reliable means for operating ball, butterfly or plug valves
- The patented Tension-Lok™ device positively locks the spring module to allow its safe removal and installation, eliminating the risk of spring misalignment when the G-Series actuators are installed. A highly unique and reliable means for operating ball, butterfly or plug valves
- Promotes Safety
- The patented Tension-Lok™ device positively locks the spring module to allow its safe removal and installation, eliminating the risk of spring misalignment when the G-Series actuators are installed.
- Bi-directional Travel Stops
- Integral bidirectional travel stops, adjustable from 80° to 100° of total travel
- Resists Corrosion
- The G-Series pneumatic actuators are corrosion resistant, resist breakage at the time of maximum pressure on the vented side of the power cylinder is to be 5 to 18 psig
- Reduces Wear
- The PowerTight™ piston rod and guide block connection compensators for side load deflection and reduces wear. Seal kits using string bearings protect sliding and rotating components
- Operating Ranges
- G-Series actuators have guaranteed torque outputs for spring return models in excess of 3,000,000 ft-lbs (3,368,000 Nm) and double acting 15,811 – 6,000,000 lb-in (1,420 – 67,840 Nm).
- Operating pressures are:
  - Pneumatic – 40-220 psig (3-15 Bar)
  - Hydraulic – 1,000 psi (6.9 Bar)
- Other G-Series Actuation Solutions
- CH-Series
- The GH Series actuators provide specialized higher maximum operating pressures (MOP) where required. Available with either a symmetric (model GHC) or canted (model GH) yoke configurations for spring-actuated, fail-safe applications. An optional SR0 spring is available for higher spring start and end torques.
- CS-Series
- Emerson actuators have long been a preferred brand for use in marine environments. G-Series actuators are well suited for splash zones, rain and other offshore fail-safe applications. They are available with dive or ROV intervention systems for use in marine environments.
- NG-Series
- NC-Series actuators have been independently tested to include IEC/EN (ISO of Coding Accidents) Class 3, 362 standards, seismic, and various aging processes required to meet current nuclear qualification criteria.
- Safety Integrity Level (SIL)
- G-Series actuators are well suited for demanding SIL applications. These actuators have a Failure Modes and Effects Analysis (FMEDA) capability within the control and reporting performed through Exida.com™ for SIL suitability. When a failure occurs, the G-Series allows for control to the G-Series, it is capable of partial stroke testing and providing continuous monitoring of supply pressure, valve position and pressure values to verify proper working conditions. The G-Series then becomes an integral component in controlling the final control element in SIL 1, 2 or 3 applications.
- NG-Series
- NC-Series actuators have been independently tested to include IEC/EN (ISO of Coding Accidents) Class 3, 362 standards, seismic, and various aging processes required to meet current nuclear qualification criteria.
- Symmetric Yokes
- G-Series actuators are available with either symmetric or canted yokes. Traditional symmetric yokes provide efficient actuation across the full range of the linear travel.
- Canted Yokes
- G-Series actuators have a torque advantage in applications where higher break torque is needed to turn the valve, with less critical needs at the full open and full close positions.

For more detailed technical information go to our online documentation at www.bettis.com/technical-data