

Bettis Product Selection Guide

A Complete Offering of Valve Automation Solutions



BETTIS™


EMERSON™
Process Management



Bettis actuators and controls have been global leaders in their industry applications for more than 55 years.

Bettis' broad range includes quarter-turn scotch yoke, rack and pinion, electric, linear and helical spline options.

Bettis actuators can be powered by compressed gas, hydraulics or electricity to satisfy a vast range of automation requirements.



Bettis is a leading brand in the broad offering of Emerson Process Management – Valve Automation. The actuators and controls are used in almost every energy-related industry, including oil and gas transmission, petrochemical and petroleum refining. Other significant markets include chemical; power industry including nuclear; pulp and paper; food and beverage; pharmaceutical; HVAC and water systems. To serve its customers with the latest technology and complete valve operating systems, Emerson has established a global presence for its Bettis products with strategically located World Area Configuration Centers and a knowledgeable worldwide sales force that is unmatched in the industry. Bettis products are specifically engineered for their intended application, are guaranteed for minimum torque and thrust values, and undergo thorough testing and quality checks before being shipped.

G-Series (Robotarm II™) Pneumatic & Hydraulic Scotch-Yoke

- PED 97/23/EC compliant.
- Five year standard warranty.
- Compact, optimum center of gravity, shorter and lighter than models of equal torque output.
- Meets IP66 and IP67M for water ingress protection and corrosion resistance.
- Powr-Swivl™ — compensates for side load deflection, reducing wear and increasing cycle life.
- Tension-Lok™ — a safety feature that positively locks the spring module in place under load.
- Acculine™ Shaft Drive — eliminates misalignment damage, helping to ensure classification integrity.
- Shaft driven accessory interface conforms to NAMUR standard. One size fits all.
- Interchangeable modules - an advantage for inventory and service.
- Available with either symmetric or canted yokes to suit your requirements.
- Modular construction for online maintenance without valve removal.
- Output torques (guaranteed minimum):
 - Double-acting models — to 6,000,000 lb-in (678,000 Nm)
 - Spring-return models — to 3,000,000 lb-in (339,000 Nm) End
- Standard operating pressure:
 - Pneumatic: 40 to 200 PSIG (3 to 14 BAR)
 - Hydraulic: 500 to 5,000 PSIG (34 to 345 BAR)
- Standard operating temperature is -20°F to +200°F (-29°C to +93°C) with high and low temperature optional trims available.



CBB and CBA-300 Series Pneumatic Scotch-Yoke

- PED 97/23/EC compliant.
- Five year standard warranty.
- IP66 and IP67M for water ingress protection as per IEC 60529.
- Pneumatic output torques:
CBB Double-acting models
— to 11,515 lb-in (1,301 Nm) Break
CBB Spring-return models
— to 4,269 lb-in (482 Nm) Spring End
CBA-300 Double-acting models
— to 20,337 lb-in (2,333 Nm)
CBA-300 Spring-return models
— to 10,457 lb-in (1,182 Nm) Spring End
- Standard pneumatic operating pressures to 150 PSIG (10 BAR).
- Standard operating temperature is -20°F to +200°F (-29°C to +93°C) with optional high and low temperature trims available.
- Economical jackscrew manual override available to ensure reliable valve control in the event of the power loss.
- CBB symmetrical mounting pads allows field reversal of spring return actuator failure mode with no disassembly required (CW or CCW.)
- CBA-300 standardizations
— ISO/DIN bottom mounting for close or direct coupling to the valve topworks.
— NAMUR standardization allows direct or close coupling of accessory hardware.



D-Series Pneumatic Rack and Pinion

- Unique three-point suspension system to counteract side-loading forces.
- Dual stroke adjustment range from 65 to 96 degrees.
- Exclusive two-component coating, standard for corrosion resistance.
- Modular spring design to facilitate 40 to 120 PSIG supply air (3 to 8 BAR).
- Output torques
Spring-return 7,939 lb-in (897 Nm)
Double-acting 14,874 lb-in (1,676 Nm)
- Standard operating temperatures
-4°F to +176°F (-20°C to +80°C)



Gas/Hydraulic Series Scotch-Yoke and Linear

- Sour gas trim optional.
- Quarter-turn output torques to 6,000,000 lb-in (678,000 Nm).
- Standard operating pressure to 1,440 PSIG (100 BAR).
- Standard operating temperature is -50°F to +150°F (-46°C to +66°C).
- Features include: zero-leakage piston and rod seals; manual pump for emergency operation.
- Many control system options are available including remote control, high/low shutoff and linebreak.



Multiport Flow Selector

- Allows diversion of fluids from a single flow line to a test outlet or sampling device.
- Can manifold as many as seven simultaneous flow lines.
- Can be operated manually or electrically.
- Microprocessor-based EIM actuator controls and monitors status of Multiport.
- Economical and compact compared to 2-way and 3-way valve manifolds.
- Constructed to applicable parts of API 599.
- Optional sour trim.
- Available in various line flange sizes and ANSI ratings.
- Available with a variety of materials to protect in adverse conditions.



GVO Linear Series Pneumatic and Hydraulic

- Automates most types of rising stem valves- slab, wedge, knife and expanding gate, globe, rising stem ball and dampers.
- Extended stroke for each model, +/- 2”.
- External tie bars allow contained energy release in event of over-pressure.
- Optional materials of construction for sour service.
- Adjustable travel stop for the rod retract position.
- Options include limit switches, relays, solenoids, pressure pilots, dampeners and manual overrides.



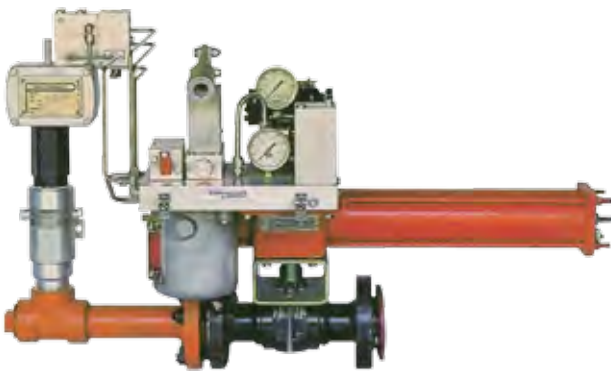
BHH/BL Helical Spline Hydraulic

- Smallest footprint-to-torque ratio.
- High water ingress protection IP-68.
- Quarter-turn and linear, double-acting and spring-return configurations.
- Balanced design eliminates side loading on valve assembly and stem.
- Compact and concentric design.
- Integrated crossover valve (double-acting).
- Standard operating pressure to 3,000 PSIG (207 BAR).



PressureGuard™

- Self-contained remote hydraulic emergency shutdown system for wellheads and pipelines.
- Adaptable to quarter-turn or linear operated valves.
- Provides reliable valve operation when external power source is undependable or unavailable.
- Modular design for easy maintenance.
- Adaptable for use with SCADA systems.
- Field proven in extreme climates.



TorqPlus™ Quarter-Turn Electric

- Five models with Guaranteed output torques from 100 lb-in to 20,000 lb-in (11 Nm to 2,260Nm).
- Maximum duty cycle — standard for torques as low as 350 lb-in through 10,000 lb-in torques is 100%. None less than 50% in all available motor voltages.
- Spring-return units with torque outputs between 300 and 1,400 lb-in for fail-safe applications.
- Compact design in weatherproof and explosion-proof housings.
- Modular design readily accommodates controls and accessories such as heaters, motor brakes, positioners, transmitters and control stations.
- Permanent lubrication reduces the need for scheduled maintenance.
- High strength gearing run in needle bearings for smooth energy transfer and long service life.





Bettis actuators are supported by ISO9001 designations, indicating full compliance with global quality and documentation standards.

Bettis quarter-turn actuators reliably operate ball, butterfly and plug valves and other 90° rotating mechanisms.

Many Bettis products are suited for operation in demanding SIL environments.



LineGuard™ Electronic Linebreak Detection System

- Self-contained monitoring and linebreak detection device providing SCADA of a single actuator.
- Continuous pressure monitoring to record rate of pressure drop, low pressure and high pressure.
- Four types of archival logs are stored in battery-backed memory.
- Has a combination of fixed and configurable I/O to best fit the application.
- Two-line or four-line x 20 character per line LCD display (depending on base model).
- Compact, NEMA 4x weatherproof and corrosion proof enclosure.
- Deltamatic™ pneumatic linebreak detection system also available.



Valve Operating Systems

Emerson Valve Automation offers complete valve operating systems for final valve control solutions. Emerson has the capability to combine Bettis actuators with controls and a selected valve into an integrated system, designed for a specific application and through a single source. The systems can be pre-engineered and documented using approved, standard components and uniformly assembled at any of Emerson's World Area Configuration Centers (WACC). The valve operating systems reduce lead times and simplify purchasing, installation, startup and field service.



Safety Integrated Systems

- Valve Automation solution for safety systems.
- Integrates G, CBB, D or CBA-300 actuators with Fisher® FIELDVUE® digital controller and valve in a single package.
- Failure Modes and Effects Diagnostics Analysis (FMEDA) report performed for SIL1, 2 and 3 suitability.
- PED 97/23/EC compliant.
- Allows on-line partial stroke testing and diagnostics.



ACCESSORIES

Bettis provides a complete offering of controls and accessories for its actuators. They provide increased functionality to the actuators for positional control, speed control and fail-safe operation. Included are pneumatic positioners, high/low pressure pilots, gear operators, partial stroke test devices and overrides.



Contact Us: Emerson Process Management, Valve Automation facilities at your nearest location:

NORTH & SOUTH AMERICA

18703 GH Circle
PO Box 508
Waller, TX 77484
USA
T +1 281 727 5300
F +1 281 727 5353

2500 Park Avenue West
Mansfield, OH 44906
USA
T +1 419 529 4311
F +1 419 529 3688

9009 King Palm Drive
Tampa, FL 33619
USA
T +1 813 630 2255
F +1 813 630 9449

13840 Pike Road
Missouri City, Texas 77489
USA
T +1 281 499 1561
F +1 281 499 8445

Av. Hollingsworth,
325, Iporanga Sorocaba,
SP 18087-105
Brazil
T +55 15 3238 3788
F +55 15 3228 3300

MIDDLE EAST & AFRICA

P. O. Box 17033
Dubai
United Arab Emirates
T +971 4 811 8100
F +971 4 886 5465

P. O. Box 105958
Abu Dhabi
United Arab Emirates
T +971 2 697 2000
F +971 2 555 0364

P. O. Box 3911
Al Khobar 31952
Saudi Arabia
T +966 3 814 7560
F +966 3 814 7570

P. O. Box 10305
Jubail 31961
Saudi Arabia
T +966 3 340 8650
F +966 3 340 8790

P. O. Box 32281
Doha
Qatar
T +974 4 576777
F +974 4 315448

2 Monteer Road, Isando
Kempton Park, 1600
South Africa
T +27 11 974 3336
F +27 11 974 7005

EUROPE

Asveldweg 11
7556 BR Hengelo (O)
The Netherlands
T +31 74 256 1010
F +31 74 291 0938

Siemensring 112
47877 Willich
Germany
T +49 2154 499 660
F +49 2154 499 6613

25, Rue de Villeneuve
Silic – BP 40434
94583 Rungis
France
T +33 1 49 79 73 00
F +33 1 49 79 73 99

Via Montello 71/73
20038 Seregno (Milan)
Italy
T +39 0362 2285 207
F +39 0362 2436 55

6 Bracken Hill
South West Industrial Estate
Peterlee SR8 2LS
United Kingdom
T +44 191 518 0020
F +44 191 518 0032

2A Szturmowa Str
02-678 Warsaw
Poland
T +48 22 4589237
F +48 22 45 89 231

C/ Francisco Gervás, 1
28108 Alcobendas – Madrid
Spain
T +34 0913 586 000
F +34 0913 589 145

Letnikovskaya Str. 10-2
115114 Moscow
Russia and FSU
T +7 495 981 98 11
F +7 495 981 98 10

ASIA PACIFIC

No. 9 Gul Road
#01-02 Singapore 629361
T +65 6501 4600
F +65 6268 0028

9/F Gateway Building
No. 10 Ya Bao Road
Chaoyang District
Beijing 100020
P.R.China
T +86 10 5821 1188
F +86 10 5821 1100

No.15 Xing Wang Road
Wuqing Development Area
Tianjin 301700
P.R.China
T +86 22 8212 3300
F +86 22 8212 3308

Lot 13112, Mukim Labu
Kawasan Perindustrian Nilai
71807 Nilai, Negeri Sembilan
Malaysia
T +60 6 799 2323
F +60 6 799 9942

471 Mountain Highway
Bayswater, Victoria 3153
Australia
T +61 3 9721 0200
F +61 3 9720 0588

Delphi B Wing, 601 & 602
6th Floor, Central Avenue
Powai, Mumbai – 400 076
India
T +91 22 6662 0566
F +91 22 6662 0500

NOF, Shinagawa Konan Bldg
1-2-5, Higashi-shinagawa
Shinagawa-ku, Tokyo
140-0002 Japan
T +81 3 5769 6873
F +81 3 5769 6902

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