

Functionality by Design

BAFCO

Dependability by Experience



**Electro-Hydraulic
Actuating Systems
in
POWER-GENERATION
APPLICATIONS**

Bulletin PG

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TYPICAL POWER-GEN APPLICATIONS



Model 775 - Rotary Actuator for butterfly valves:

- Gas Turbine Power Generation - bleed air control valve
- Includes a BAFCO 852-1RT Redundant Servo-amplifier
- Includes a field manifold with filtration and redundant accumulators
- Triple redundant feedbacks
- Triple redundant servo coils
- Failsafe trip override

Model 707-72K - Globe Valve Actuator:

- Steam Turbine - High Pressure Steam Control Valve
- Steam Letdown Control
- Steam Bypass Control
- Model 759 Fail In Position Module
- Model 708 Failsafe available



Model 761 - Rotary Actuator for butterfly valves:

- Hot gas expander connected to generator in Power Recovery Trains - inlet and bypass valves
- Pressure and surge control
- Use with Model 790/794/796 HP/CU or 722 Field Manifold

BAFCO can supply the
COMPLETE VALVE/ACTUATOR PACKAGE
or
you can supply the valve for BAFCO to automate

Model 701 - Steam Throttle Valve Control:

- For speed control of steam turbines
- Available in low pressure (90-300 psi lube oil) and high pressure hydraulic (3,000 psi)
- Accepts 4-20 ma signal from any electronic governor
- 2 or 3 stage servo valve with trip manifold
- Duplex filter for sensitive components
- Outputs for monitor and alarm
- Adaptors for turbine shell or floor mounting



Model 761 - Rotary Actuator for Louver Control:

- Gas Turbine Generator Air Control
- Gas Turbine Bypass Air Control
- Inlet and Outlet Air Control
- ID/OD Fans
- Divertors
- Reliefs

WHY HYDRAULICS?

In any process control, the valve actuating systems must operate faster than the process. In difficult and volatile processes, only hydraulics provide the basic high stiffness necessary to allow for ultra high speed modulation with high resolution, accuracy and repeatability. The better these characteristics, the faster and more precise the return to control after upset.

WHY BAFCO?

- BAFCO Actuator and Positioning Systems will provide < 0.1% resolution, < 0.1% repeatability, < 0.3% linearity and < 0.5% hysteresis.
- Frequency Response to 30 Hz. (higher if needed)
- Proprietary Deceleration Feature that rapidly decelerates the end of stroke opening and closing speed.
- Plant safety is enhanced due to a more stable process and ultra high reliability of BAFCO systems.
- For almost 50 years, BAFCO has provided ultra high reliability equipment to the power generation and refining industry the world over and has achieved a reputation as LEADER in PROCESS CONTROL.
- The reliability BAFCO builds into each system requires minimum maintenance, practically eliminating equipment failures, thus achieves lower operating costs and improves product quality.
- Easy to retrofit - customers have reported rapid payback of within 6 months

What this means to you is GREATER PROFITS through state of the art technology, long term increase in product conversion, increased plant safety and proven worldwide installations.

WHAT CUSTOMERS SAY!

From one of the largest refiners in the world and one of the world's most prestigious engineering and construction companies, a 2007 specification for hot gas expander control valves states: "The function of this valve is now deemed critical and will therefore be operated with a BAFCO hydraulic actuator."

ANCILLIARY EQUIPMENT

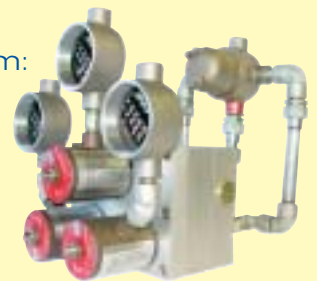


Model 842RD - Redundant Controller:

- Redundant servo-amplifier and integral power supply
- Receives 4-20 ma signal from an external control system
- Receives & conditions output signal from a redundant LVDT feedback device in the BAFCO actuator

Model 767 - Triple Redundant Trip System:

- 2 out of 3 solenoid tripping logic
- 24 vdc or 110/220 vac
- 50 to 300 psi operating pressure



Model 713 - Field Manifold:

- With single or dual high pressure filters
- With pressure and return accumulators
- Leakproof SAE code 61, 4-bolt hydraulic connections
- Available with pressure indicators and transmitters

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BAFCO HYDRAULIC POWER/CONTROL UNITS and CENTRAL HYDRAULIC SYSTEMS



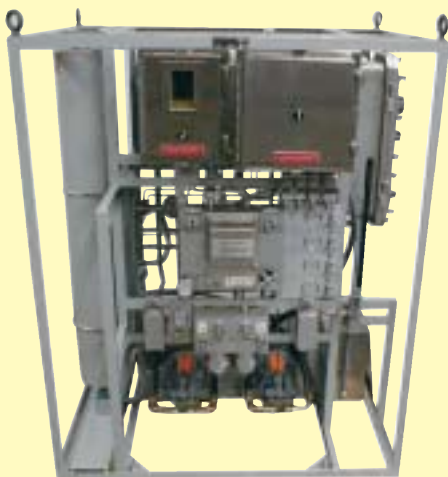
Model 717 - CENTRAL HYDRAULIC SYSTEM - STANDARD:

- Includes components required for basic applications
- Single or dual hydraulic pumping systems
- Available in sizes capable of providing 2 to 500 gpm at 3,000 psi
- Standard filtration - 3 or 10 micron - element capable of 3,000 psi dp
- Manifolds utilized to simplify the system & eliminate possible leak points
- Aircraft grade aluminum manifolds for cleanliness
- Stainless steel piping and reservoir
- BAFCO synthetic fire resistant hydraulic fluids
- Leakproof hydraulic connectors - stainless steel SAE code 61, 4-bolt
- TEFC electric motors - Cl. 1, Div. 2, Grp. C & D - others available
- Stainless steel heat exchanger
- Heavy structural steel frame with industrial alkyd resin coating
- Industry standard hydraulic accumulators for reserve strokes
- Instrumentation available per customer specification
- Many optional designs and components available



Model 717 - CENTRAL HYDRAULIC SYSTEM - DELUXE:

- Includes all components listed under the unit above and:
- Available in sizes capable of providing 5 to over 500 gpm at 3,000 psi
- Capable of providing hydraulic power to multiple actuating systems
- Redundant 3 micron fluid polishing & pre-filtration system - optional
- Duplex pressure filters rated at 3,000 psi differential
- Multiple pressure compensated, variable volume piston pumps
- Pulsation dampeners on pump discharge
- Alarms for various systems functions - pressure, temperature, etc.
- Pump Auto Start controls - various designs available



Model 790 - HYDRAULIC POWER/CONTROL UNIT:

- Same components as the Model 717 Standard & Deluxe units above
- Includes electronic positioning control (servo valve & amplifier - see 842RD on page 3) for one BAFCO actuator
- Larger units available for multiple actuators
Models 794/798/796 for two/three/or four actuators
- Electronics can be field or control room mounted
- Failsafe systems available - single, double or triple redundant
- Local manual and manual hydraulic controls available
- Redundant PLC positioning controls available
- Single or redundant analog positioning controls available

For additional information on any
of the above products, please contact
BAFCO at:

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