

GH BETTIS
GENERAL
OPERATING & MAINTENANCE INSTRUCTIONS
FOR
-12 TRIM SERIES ACTUATORS

PART NUMBER 71584

REVISION "A"

DATE: JULY 1987

ECN	DATE	REV LTR		By *	Date
A9280	07/15/87	A	Compiled	BSC	07-16-87
			Checked	BC	07-20-87
			Approved	RTU	08-07-87
			Approved	AJP	08-07-87

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1.0 GENERAL

GH Bettis rotary actuators are designed for use with rotary valves of a broad range of sizes and types, and are applicable over a wide range of pressures, temperatures and environments.

2.0 STORAGE

For applications where the actuator is not put into immediate service it is recommended that the actuator be cycled by clean dry air or nitrogen pressure at least once per month. Indoor storage, if available, is recommended for all actuators. Care should be taken to plug the cylinder ports, control valves ports and body parts to keep out foreign particles and moisture. Also, actuators should not be stored in an atmosphere harmful to resilient seals. For extended storage, contact factory.

3.0 INSTALLATION

3.1 Since there are many valves and actuator combinations, it is not practical to include detailed instructions for each type. Mountings are designed to be as simple as possible to keep guess work out of installation. Actuators are shipped from the factory with the travel stops adjusted for approximately ninety degree rotation. Generally it is necessary to make slight stop adjustments once the actuator is installed on the valve. Refer to the valve manufacturer's recommendations for specific requirements. When the valve has internal stops, the actuator should be adjusted at the same points.

NOTE: The actual "stopping" should be done by the actuator. If the valve does not have internal stops, adjust the actuator to the full open position. Using this as a reference point, rotate the valve closed and adjust to the valve manufacturer's specifications for total rotation.

3.2 Good instrument practices are also recommended. Clean, dry air or gas is essential for long service life and satisfactory operation. It should be noted that new air lines often have scale and other debris in them. This debris can damage control valves, solenoids, seals, etc..

4.0 START-UP

4.1 When actuator is first put into service it should be stroked with pneumatic pressure. This is necessary because the seals and packings have been stationary, causing them to take a "set". Therefore, the actuator should be operated through several cycles, exercising the seals and packings, resulting in a service ready condition.

- 4.2 The actuator speed of operation will be determined by a number of factors including:
- 4.2.1 Power supply line length.
 - 4.2.2 Power supply line size.
 - 4.2.3 Power supply line pressure.
 - 4.2.4 Control valve and fitting orifice size.
 - 4.2.5 Torque requirements of the valve.
 - 4.2.6 Size of the actuator.
 - 4.2.7 Setting of speed controls.
 - 4.2.8 Pressure of hydraulic manual override with internal adjustable speed controls.
- 4.3 Due to the interaction of these variables it is difficult to specify a "normal" operating time. Faster operating times may be obtained by using one or more of the following:
- 4.3.1 Larger supply lines.
 - 4.3.2 Larger control valve.
 - 4.3.3 Higher supply pressure (not to exceed minimum operating pressure of actuator or control components).
 - 4.3.4 Quick exhaust valves.
- 4.4 Slower operating times may be obtained by using flow control valves to meter the exhaust. Excessive exhaust flow metering may cause erratic operation. Normally, incoming supply should not be metered.

5.0 OPERATION OF GH BETTIS ACTUATORS

5.1 Controlled Operation:

Controlled operation is accomplished by pressurizing and/or depressurizing the appropriate cylinder inlet(s) of a double acting or spring return unit by means of an appropriate control valve. Do not exceed pressures indicated on actuator nameplate.

5.2 Manual Operation:

All pressure must be vented or equalized on both sides of the power piston prior to manual operation.

5.2.1 Double Acting Actuator - Hydraulic Manual Override

Rotate the handwheel in the appropriate direction to operate actuator and valve. Release of the hand-wheel automatically returns the actuator to controlled operation from pressure source.

6.0 **MAINTENANCE**

6.1 Service Interval

Routine maintenance is generally unnecessary. Every 625 cycles or five (5) years the actuator should be disassembled, cleaned, relubricated and all seals and gaskets replaced. It is recommended that seal kits be ordered approximately three (3) months prior to scheduled maintenance to assure availability. NOTE: Storage time is considered as service time.

6.2 Lubrication Requirements - Use Dow Corning Molykote 44 Medium Grade.

6.3 Hydraulic Override Or Power Cylinder Fluid Requirements

6.3.1 Standard and high temperature service (-20 degrees F to 350 degrees F) use Exxon Dexron II Automatic Transmission Fluid.

6.3.2 Low temperature service (-50 degrees F to 150 degrees F) Univis J13 Hydraulic Fluid.

7.0 **SPARE PARTS**

7.1 For availability of replacement parts, contact GH Bettis or nearest Bettis authorized representative. Assembly drawings are available that identify each individual part by a generic number applicable to each actuator series. It should be remembered when ordering spare seal kits for shelf storage that the seals are made of resilient material and have a limited shelf life.

7.2 When ordering replacement parts, it is important to include the complete actuator model number, part number and serial number. This information is on the actuator name tag.

7.3 More detailed information concerning your particular application may be obtained by writing GH Bettis,
P.O. Box 508, Waller, Texas U.S.A. 77484,
Telephone: 713/463-5100, Telex: 6868048.