

IPB-WW
80-6000-10

An ISO 9001 company

BECK[®] ELECTRIC ACTUATORS

FOR INDUSTRIAL PROCESS CONTROL



WATER AND WASTEWATER TREATMENT PLANTS



BECK
VIDEO
Scan w/
Smartphone

Beck actuators are durable and dependable

- Over 75 years of proven performance
- No burn-out motor
- Unlimited modulation
- No torque switches
- No thermal overloads
- No worm gears
- No lithium batteries for electronics
- Positioning steps as small as 0.10 degrees
- No recommended periodic maintenance



Beck Model 11-200/300 installed on a rotating scum pipe

Plant-wide solution for modulating and open/close applications

Beck actuator applications in water and waste-water treatment plants include:

- Filter flow control valves (effluent)
- Filter backwash valves
- Wash water return valves
- Aeration blower inlet vanes
- Air distribution header valves
- Return activated sludge valves (RAS)
- Waste activated sludge valves (WAS)
- Incinerator natural gas valves
- Incinerator Venturi scrubber valves/dampers
- Incinerator combustion air dampers
- Incinerator exhaust gas dampers
- Incinerator fan dampers
- Fluid and magnetic pump and fan adjustable speed couplings
- Variable pump control on MagnaDrive installations
- Ozone control valves (ozone destruct, oxygen control, ozone generator cooling water, etc.)
- Rotating scum pipes
- Reverse osmosis and membrane valves
- Interconnect valves & Well Station valves



Beck Model 11-200/300 installed on a MagnaDrive Vertical ASD

The Beck motor

No Burnout, Continuous Duty

The unique motor is one of the features that sets Beck actuators apart from other typical electric actuators. Beck's no burnout motor ensures that the actuator is available 100% of the time. There are no duty cycle limitations typical of most electric actuators, so the Beck actuator tracks the control signal perfectly, greatly simplifying loop tuning.



The Beck motor:

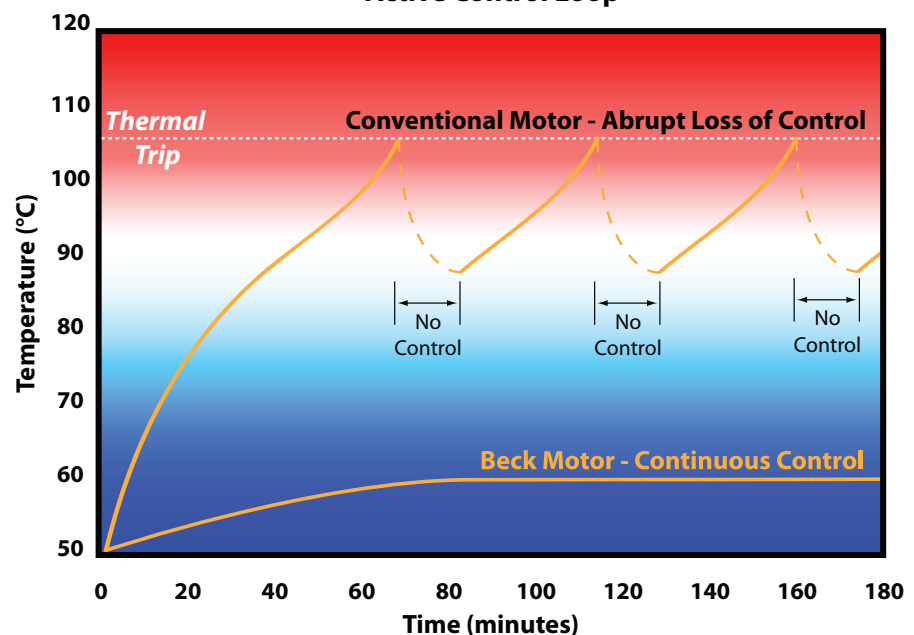
- Never overheats or burns-out—even under demanding modulating control or stalled conditions. Thermal overloads and torque switches are not required in Beck actuators.
- Reaches full speed and torque in milliseconds and stops in milliseconds, eliminating dead time.
- Provides extremely accurate and repeatable positioning for modulating applications.
- Does not coast or overshoot the desired position.
- Draws low current (0.16 A to 3.0 A).
- Uses double-lipped, grease-sealed bearings for maintenance-free operation and meets IP68 (submerged in 3 meters of water for 48 hours).



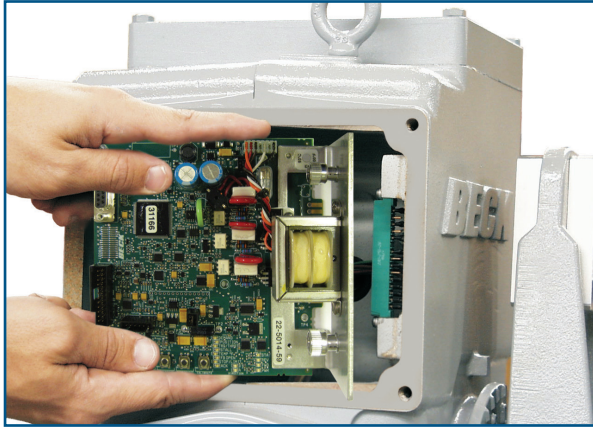
Beck Model 11-160s mounted on sludge valve extension bonnets

Motor Temperature Rise Active Control Loop

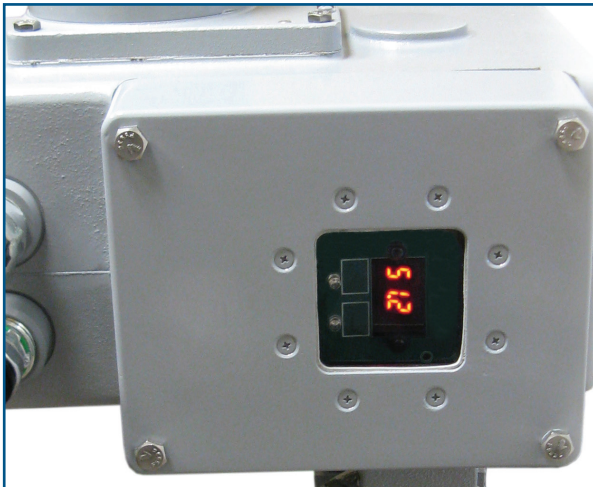
Tested in an active modulating loop, conventional motors rose rapidly in temperature, tripping thermal overload devices and becoming unavailable for extended time intervals. Only the Beck motor remained stable for continuous operation.



Digital Electronics



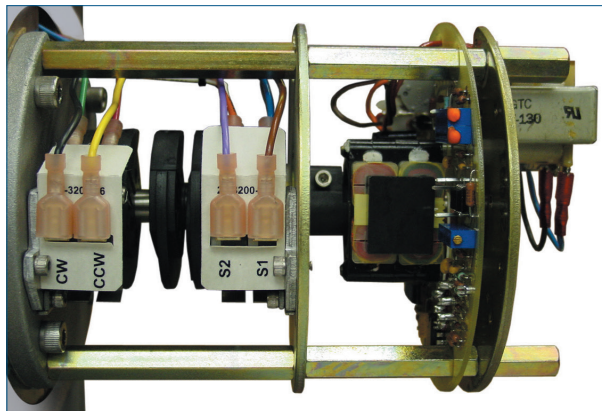
Digital Control Module (DCM)



DCM Equipped with Feedback Display

Contactless Position Feedback

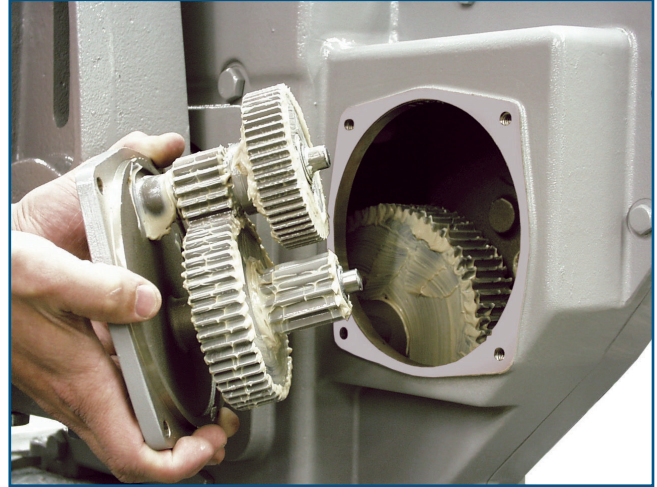
With Over-travel Limit and Auxiliary Switches



Contactless Position Sensor (CPS)

High Efficiency Spur Gear Train

Permanently Lubricated, Heat Treated Alloy Steels and Ductile Iron



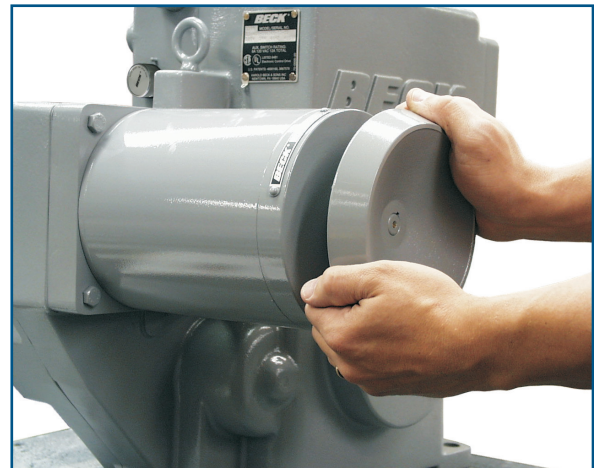
Electric Handswitch

Local Operation, Auxiliary Handswitch Contact

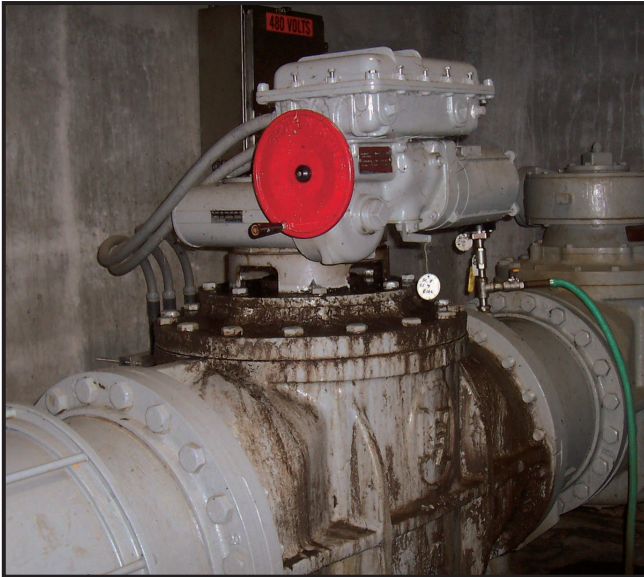


Manual Handwheel

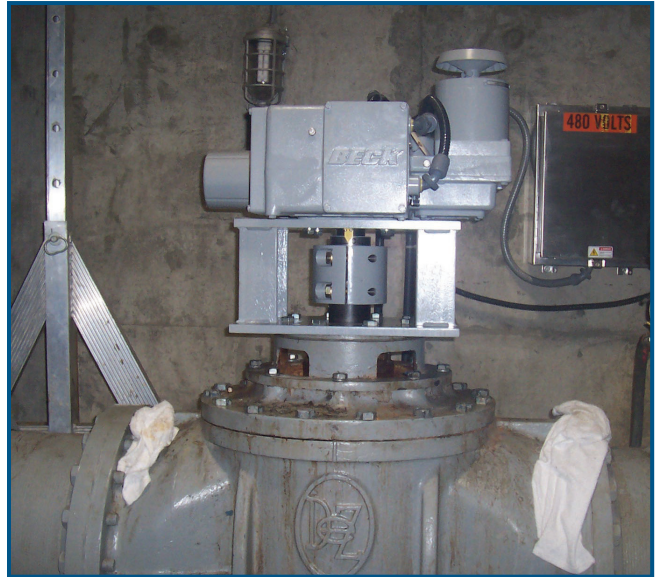
Without Declutch



BEFORE & AFTER PHOTOS OF A BECK 11-469 REPLACING AN UNRELIABLE ELECTRIC ACTUATOR ON A RETURN ACTIVATED SLUDGE VALVE

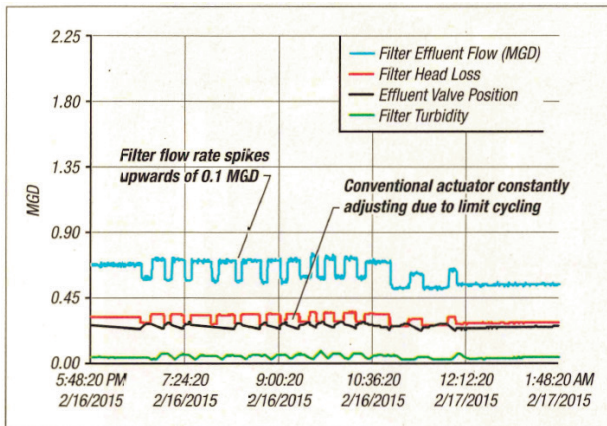


BEFORE REPLACEMENT

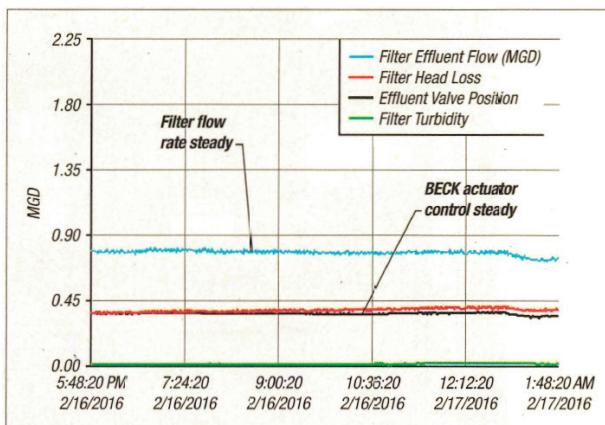


AFTER REPLACEMENT

BEFORE & AFTER TREND DATA OF A BECK ACTUATOR REPLACING AN UNRELIABLE ELECTRIC ACTUATOR ON A FILTER EFFLUENT VALVE (City of East Moline Water Treatment Plant, IL)



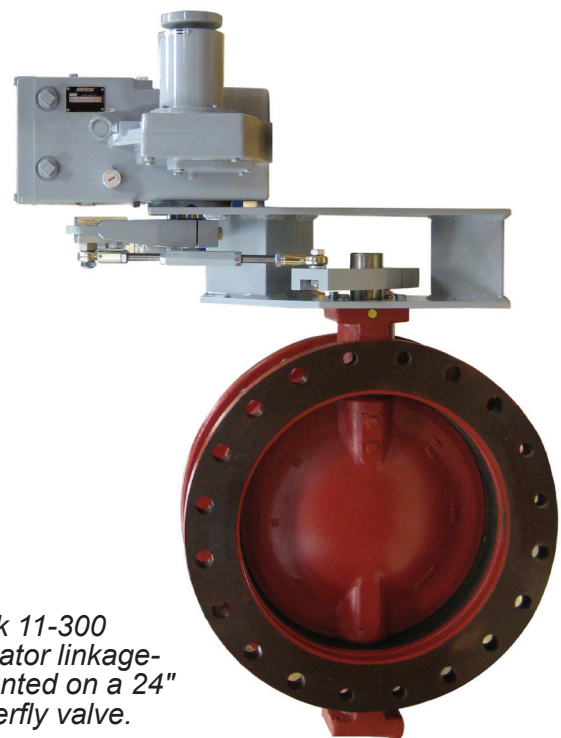
FILTER PERFORMANCE BEFORE



FILTER PERFORMANCE AFTER

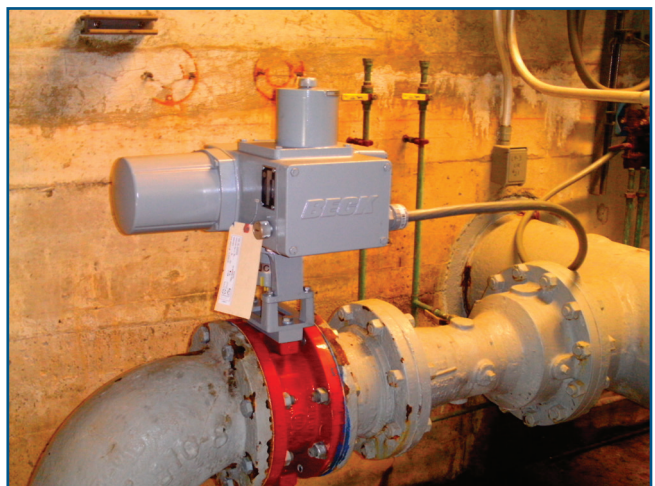
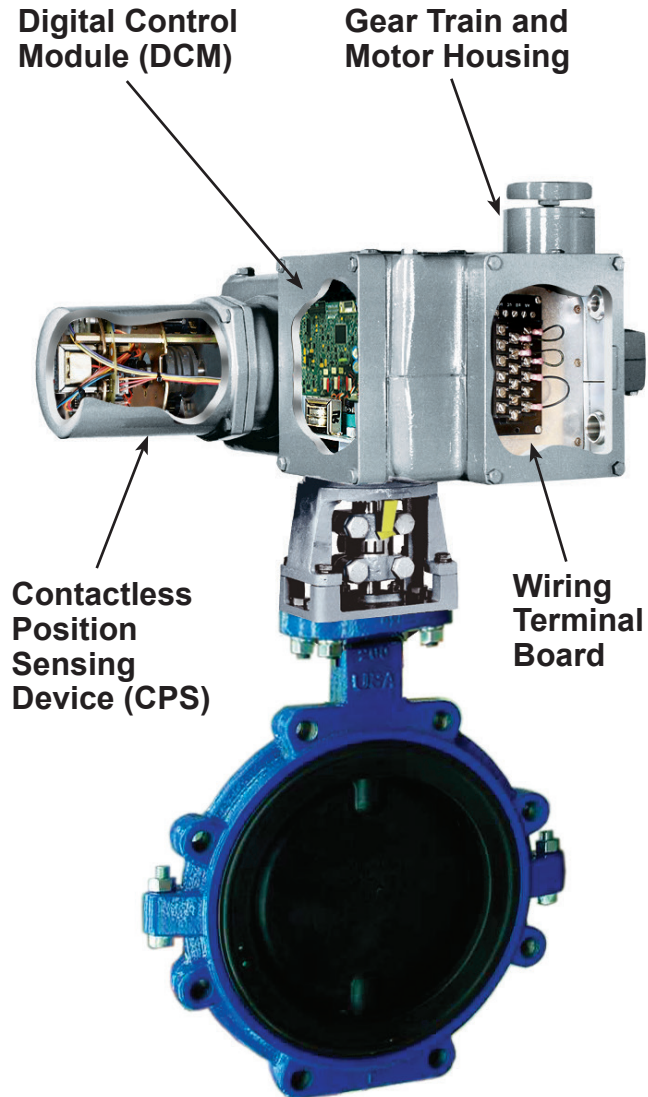


Beck 11-300 actuator mounted on a filter effluent valve.



Beck 11-300 actuator linkage-mounted on a 24" butterfly valve.

Separate Compartments Type 4X Housings for Major Components, IP68 (3 meters / 48 hours)



Services

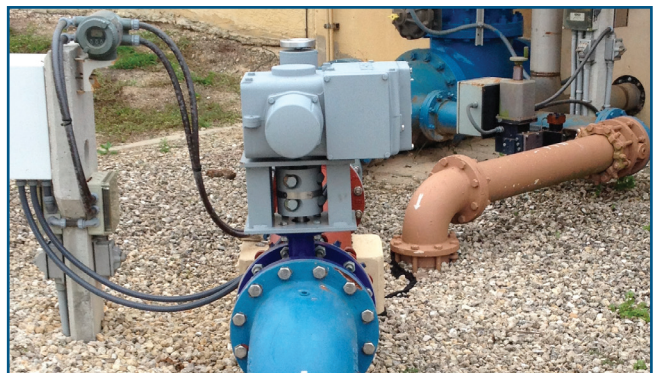
- Product demonstrations
- Site surveys
- Application reviews
- Specification writing
- Customer support (24/7)
- Repair service
- Field service
- Stocked spare parts

and ...

- All Beck actuators include a 3 year limited warranty.



Beck actuator equipped with Remote Indication



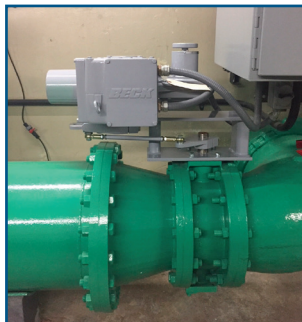
GENERAL SPECIFICATIONS

<u>Drive Power</u>	
Model 11	120 V ac, single-phase, 60 Hz (50 Hz Optional) (208, 240, 380, 415, 480 & 575 V ac, 60 or 50 Hz Optional)
Model 14 & 29	120 V ac, single-phase, 60 Hz (50 Hz Optional) (240 V ac, single-phase, 60 or 50 Hz Optional)
<u>Output Torque/Thrust</u>	
Model 11	Up to 1,800 lb-ft (2 440 N•m)
Model 14	Up to 4,000 lbs of thrust (17 800 N)
Model 29	Up to 6,100 lbs of thrust (27 134 N)
Operating Conditions	–40° to 185° F (–40° to 85° C) 0 to 100% relative humidity, non-condensing
Input Signal Options	4–20 mA or 1–5 V dc for digital control
Communication Interface Options	HART, Modbus RTU, Modbus TCP (Ethernet), Foundation Fieldbus, Profibus PA, local pushbutton/LEDs and DB9 Serial Commands
Position Feedback Signal	4–20 mA
Action on Loss of Input Signal	Stays in place (all models) or moves to a preset position (configurable with some models)
Action on Loss of Power	Stays in place, manual Handwheel operation
Enclosure	Type 4 or 4X (depending on specific model). Models approved for use in Hazardous classified locations are also available—contact a Beck Sales or Application Engineer for details.

DIRECT-COUPLED



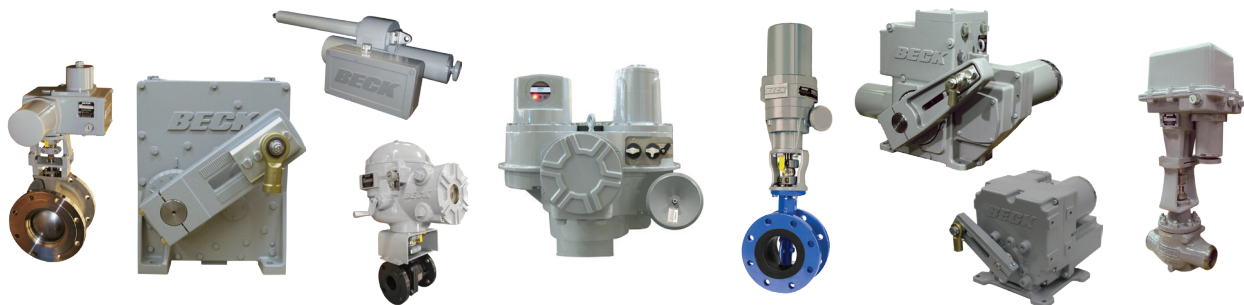
J-BRACKET



REVERSE LINKAGE



L-BRACKET



HART
COMMUNICATION PROTOCOL



BECK®

HAROLD BECK & SONS, INC.

11 TERRY DRIVE • NEWTOWN, PENNSYLVANIA 18940 • USA

PHONE: 215-968-4600 • FAX: 215-860-6383 • E-MAIL: sales@haroldbeck.com

www.haroldbeck.com

Made in USA 

5/21
Rev. 7.8