



SCUBA®

Self-Contained Universal Bi-Directional Actuators





A Proud Tradition

Since 1840, the team at Rodney Hunt has pioneered safe and reliable flow control systems to help communities and owners control the transmission, distribution, and reclamation of water and wastewater.

Superior Quality

We offer one of the most flexible and comprehensive metal fabrication, machining, and testing operations in North America. This allows us to monitor and ensure quality in all aspects of production. We are ISO-9001:2008 certified.

Experience

Our total product offering is unrivaled in the flow control marketplace, and this enables us to bring an impressive range of expertise to your planning and decision-making process. We're specialists in flow control. Our products make it easier for municipalities, engineering firms, and contractors to bring their water management projects in on-time, on-budget, and trouble-free.

Responsive Service

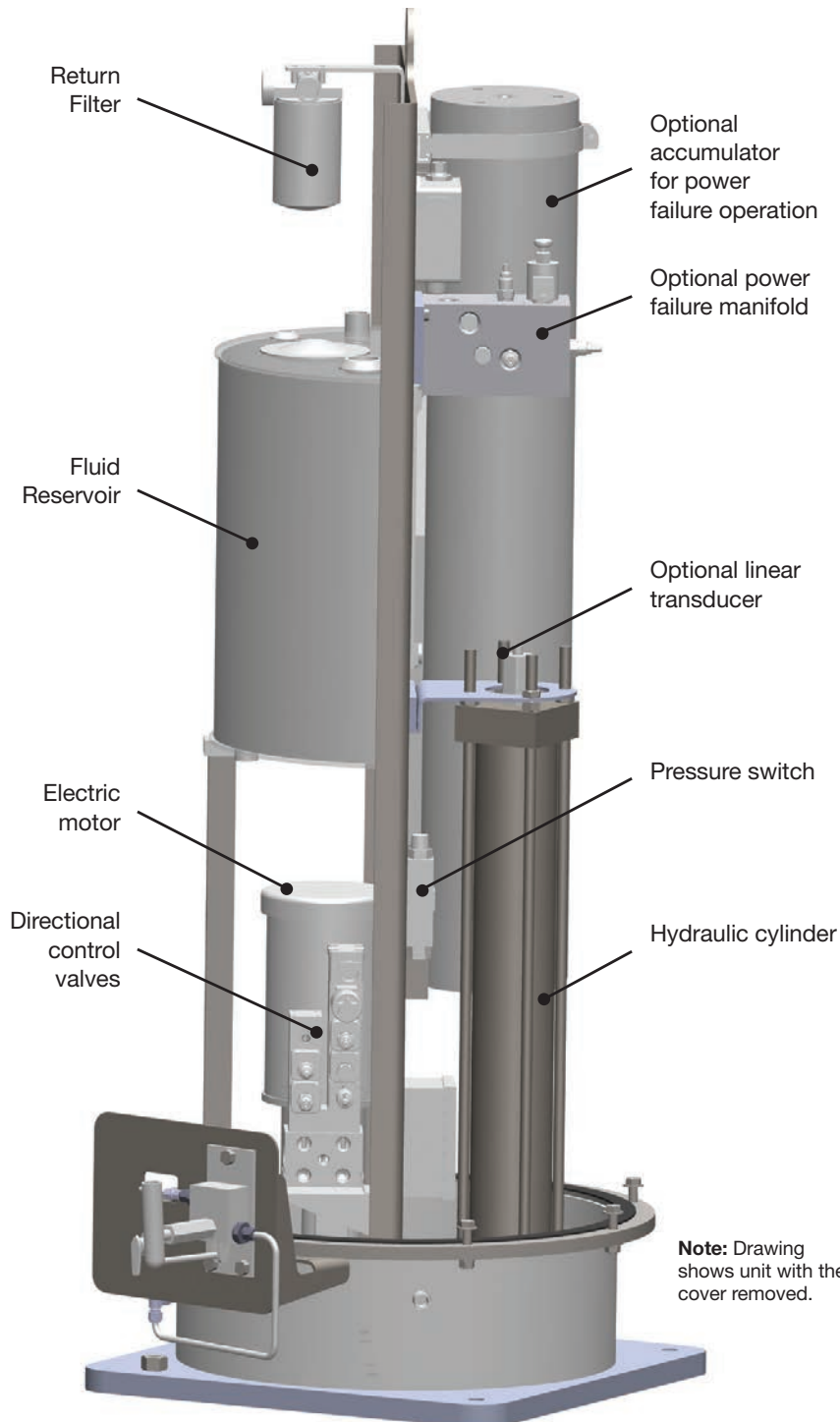
We pride ourselves on responding to your needs throughout the design, manufacturing, and installation processes. Our engineering team is available for consultation during all phases of your project. Dedicated project managers serve as a single point of contact once the order is in-house, and our knowledgeable field service team is always ready to provide on-site support.



SCUBA®

Self-Contained Universal Bi-Directional Actuators

SCUBA units are dedicated compact, self-contained electro-hydraulic actuators that are typically used for gate and valve actuation, but can be easily configured for almost any device requiring linear actuation. SCUBA is ideal for a wide variety of applications where accessibility may be difficult, where modulating service is required, or anywhere a low maintenance linear actuator is required. With many standard options, an economical SCUBA unit can be configured for long, dependable service in hazardous, submersible, and corrosive environments.



Rugged, Corrosion Resistant

High strength steel or stainless steel construction ensures long life in the harshest of environments.

Leak-Free Piping System

JIC 37° flared steel or stainless steel tubing with double ferrule fittings provides a leak-free system.

Speed and Thrust Control

Independent, dual speed and thrust adjustments permit the speed and thrust of the extension and retraction stroke of the actuator to be independently adjusted.

Remote Control Capability

Optional continuous position feedback allows for remote position indication and control of the actuator throughout its entire stroke.

Power Failure Operation

SCUBA can be configured to fully retract or extend upon the loss of electrical power using an accumulator. There is also a manual hand pump option.

Easy Installation and Maintenance

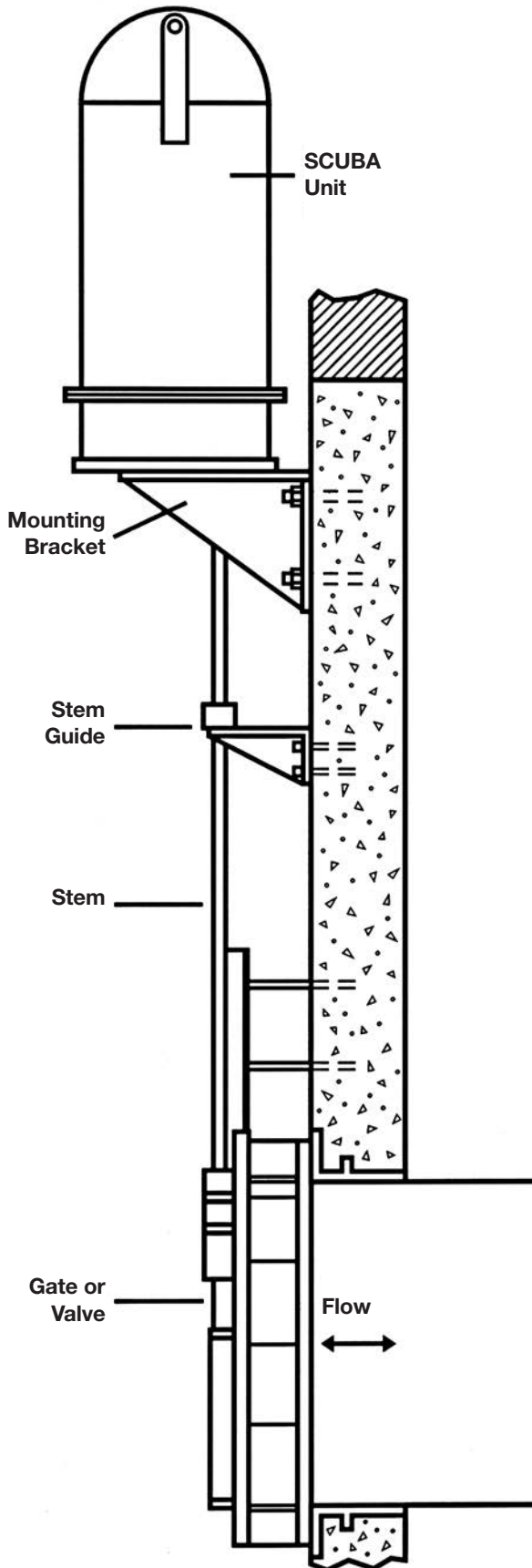
Installation is quick and easy with a simple mechanical connection to the device being operated and electrical connection to the control panel. Only minimal regular maintenance is required.



ISO 9001:2008

Typical Installation

Gate actuation with SCUBA.



Key Benefits

Rugged Self-Contained Design

All actuator components installed on 1-1/4" common base plate. Steel or stainless steel construction with optional cover.

High Efficiency

Negligible mechanical losses and no screw stem friction or wear.

Easy Installation and Maintenance

One mechanical connection. No field piping. Uncomplicated wiring.

Electric Motor Options

A wide variety of electric motors are available for use with either single or three phase power.

Safety Options

Explosion-proof options and intrinsically safe components permit installation in hazardous environments.



Specifications

SCUBA Linear Actuator

The following is a sample specification which is divided into distinct sections, each dealing with a particular feature of the SCUBA unit. The specifier is encouraged to read each section carefully and choose the appropriate subsection that best meets the application. Please contact Rodney Hunt at 978-633-4362 for additional design assistance.

General: A complete electrohydraulic actuator system shall be furnished to operate the equipment specified. The design shall be directed, reviewed and approved by a Professional Engineer registered in the state of manufacture of the actuator system. It shall be equivalent in design and workmanship to the SCUBA unit, as manufactured by the Rodney Hunt Company of Orange, Massachusetts.

It is the intent of this specification to encourage the use of the latest technological advances both in component selection and in system design concepts.

Actuator Construction: Each actuator shall be designed to be a single self-contained unit, requiring only electrical connections. The actuator shall be completely factory wired, assembled and tested.

The operating rod and any required operating stem shall be sized to safely withstand 1.25 times the actuator output at maximum system pressure and shall be sized so that L/r is less than 200; where "L" is the unsupported length and "r" is the radius of gyration. The operating rod shall be hard chrome plated. Any additional stem required shall be stainless steel.

All hydraulic tubing shall be 300 series stainless steel with double ferrule compression type fittings (Swagelok or equal) or O-ring face seal, sil-brazed fittings meeting the requirements of SAE J1453 (Parker Seal-Lok or equal).

All electrical connections shall be made within conduit enclosures or junctions boxes and be properly labeled. No live connections shall be exposed what the unit cover is removed. If analog signal wiring is required, it should be shielded and separated from the control and power wiring.

Actuator Cover – Select one:

Drip-Proof Cover: The actuator cover shall be manufactured so that it protects the actuator from the entrance of rain.

Weather-Tight Cover: The actuator cover shall be manufactured so that it protects the actuator from windblown rain, splashing water, or hose-directed water.

Submersible Cover: The actuator cover shall be manufactured so that it will exclude water in a submerged condition.

Without Cover: The actuator shall be provided without a cover.

Cover Material – Select one:

Steel: The actuator cover material shall be steel.

Stainless Steel: The actuator cover material shall be stainless steel.

Nominal Speed – Select one:

12"/min: The actuator shall extend and retract at a nominal speed of 12" per minute.

24"/min: The actuator shall extend and retract at a nominal speed of 24" per minute.

Power Failure Operation – Select one:

Automatic Extension: Upon a loss of electrical power, the actuator shall immediately and automatically fully extend at the normal operating speed.

Automatic Retraction: Upon a loss of electrical power, the actuator shall immediately and automatically fully retract at the normal operating speed.

Manual: Manual operation shall be provided, at a reduced speed, in the event that there is no electrical power available. All manual operation shall be possible without opening the actuator cover.

None Required: No power failure operation is required.

Actuator Environment – Select one:

Non-Hazardous: The actuator shall be designed to be installed in a non-hazardous environment. All electrical components shall be rated NEMA 12 or better.

Hazardous: The actuator shall be designed to be installed in a Class I, Division 1 hazardous area. All components of the actuator shall be NEMA 7, Class I, Division 1 rated or wired for intrinsic safety. The Class I, Division 1 rating shall not rely on the actuator cover and shall not be compromised by the cover's removal.

Electrical Control Enclosure – Select one:

NEMA 12: The separate electrical enclosure and all components mounted on its exterior shall be NEMA 12 rated.

NEMA 4X: The separate electrical enclosure shall be corrosion resistant and NEMA 4X rated. All components mounted on the exterior of the enclosure shall be NEMA 4 rated.

NEMA 7: The separate electrical enclosure and all components mounted on the exterior shall be NEMA 7 rated and designed for installation in a Class I, Division 1 hazardous environment.

Controls – Select all that apply:

Local Extend/Retract: It shall be possible to extend, retract and position the actuator using manually activated pushbuttons located on the control enclosure. It shall be possible to position the gate at any intermediate position.

Remote Extend/Retract: It shall be possible to position the actuator using two sets of normally open dry contacts provided from devices by others. Motion occurs while these contacts are closed and ceases when they are open.

Modulating: It shall be possible to position the actuator automatically using a programmable controller in order to match a variable 4-20 mA process signal. The controller shall be capable of proportional-integral-derivative (PID) control. The analog process variable signal to be monitored shall be provided from devices furnished by others.

Special Controls: Specify as required.

Position Indication – Select One:

End of Travel: End of travel indicating lights, mounted on the control enclosure, shall be provided using proximity switches integrally mounted in the actuator.

Continuous Position Indication: The actuator shall be supplied with a 4-20 mA continuous position transducer. The actuator's position shall be displayed on an LED meter, mounted on the control enclosure.

End of travel and Continuous Position Indication: The actuator shall be supplied with both a 4-20 mA continuous position transducer and end of travel proximity switches. The control enclosure shall be provided with an LED meter and indicating lights.

None Required: No position indication is required.

Electrical Power: The main electrical power source shall be:

[120-1Ø] [208-1Ø] [208-3Ø] [230-1Ø] [230-3Ø] [480-3Ø]

Testing: The actuator shall be thoroughly shop tested to verify that all modes of operation perform as required. Testing shall include verification of motor operating running amps and voltage; actuator operating speed and stroke; and verification of the extension and retraction thrust adjustments.

Painting: The actuator shall be painted with one coat of medium gray high-solids epoxy (5 mils), followed by one coat of medium gray aliphatic polyurethane.



**RODNEY
HUNT**

®

Engineered Flow Control Products

Gates

- Sluice Gates
- Bonneted Gates
- Channel Gates
- Weir Gates
- Crest Gates (including Bascule® and Pelican® designs)
- Tainter Gates
- Slide Gates
- Roller Gates
- Hinged Crest Gates
- Bulkhead Gates
- Velocity Control Gates
- Stop Logs
- Flap Gates

Actuation

Manual, electric, and hydraulic actuation systems are available.

For more information about Rodney Hunt products or to contact a sales representative, visit the Rodney Hunt website (www.rodneyhunt.com) or call 978-633-4362