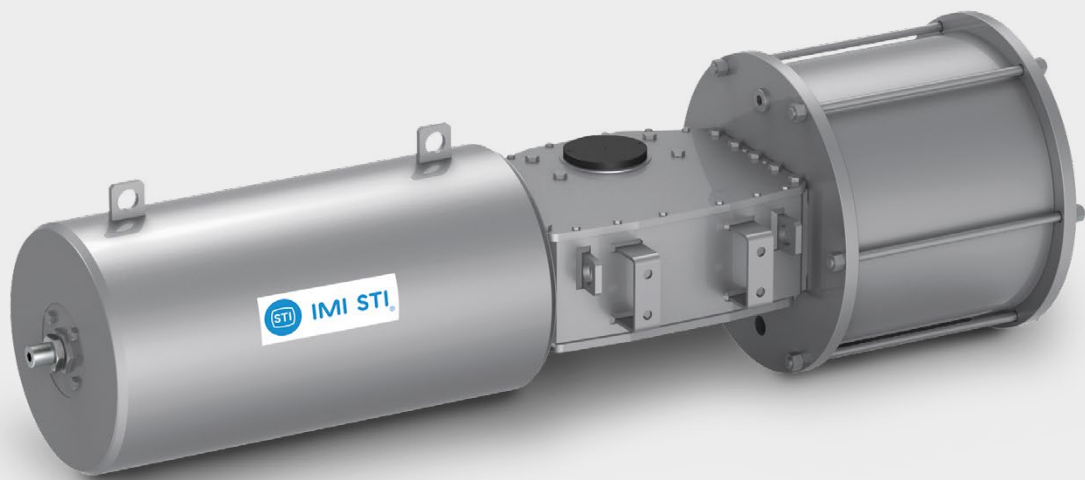


# RTQ

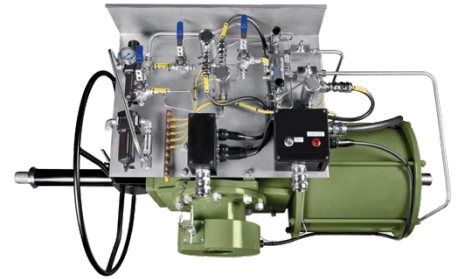


Engineering  
*GREAT* Solutions

## Scotch Yoke Pneumatic Actuators

# RTQ - Scotch Yoke Pneumatic Actuators

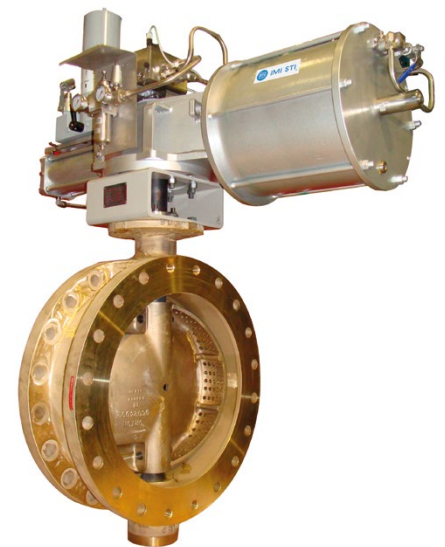
The RTQ actuator belongs to the RT Series and it is a complete range of high torque pneumatic quarter turn actuators with materials selected to withstand the most hostile environmental conditions, suitable for all onshore and offshore applications, covering general on/off and modulating valves. The RTQ Series is designed to provide maximum reliability and flexibility to cover a wide range of valves in all pressure classes.



*Total capability in valve actuation*

## Key features

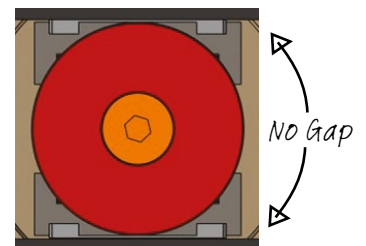
- > Double acting or spring return modular design
- > Totally sealed weatherproof housing provides complete protection for all moving parts
- > Housing is manufactured in carbon steel material without any cast/grey/ductile iron or aluminum parts
- > Scotch yoke mechanism available in both canted or symmetrical executions
- > Chromium plated guide bar to absorb transversel forces
- > Bushings are made of high-strength bronze alloy (other materials on application)
- > Electroless nickel plated cylinder to minimise friction and prevent corrosion.
- > Multiple lifting lugs ideally located to balance center of gravity for safe lifting
- > Position indicator provided with VDI/VDE 3845 NAMUR drive slot
- > ISO 5211 flange connection
- > An integral or declutchable manual hand-wheel or hydraulic hand pump available on request
- > Full stainless steel cylinder, index and valve adaptation available on request



Materials selected to withstand the most hostile environmental conditions.

## Benefits

- > **Reliable**  
Welded carbon steel housing and high-strength scotch-yoke mechanism ensure safe and reliable operation. Low friction heavy-duty nickel plated cylinders allows high performance and long life of the pneumatic cylinder
- > **Safety**  
Inherently safe design of spring pack ensures proper and high efficiency functionality and safe maintenance, preventing any accidental hazards due to corrosion of boltings
- > **Versatility**  
Lightweight but rugged actuator series with both symmetrical or canted scotch-yoke mechanism for ideal torque distribution Interchangeable power and spring modules for easy and quick reversal of the fail-safe mode without any danger. Cylinder design allows easy replacement of all pneumatic seals in the field
- > **Efficiency**  
Internally coated waterproof housing, for long-lasting corrosion resistance. Selected material and surface treatments for best-in-class performance, reducing wear and power loss during life cycle. Controlled tightening torque for all threaded coupling and zero-clearance between mechanical components. Stainless steel travel stops allow fine angular stroke adjustments between 82° and 98°



Our innovative Zero Backlash mechanism improves performance and solves the wearing-related gap issues between the sliding block and the scotch yoke slot, maintaining friction at similar levels to even the most established technology. It is available on request, please contact us for more information.

## Technical specifications

### Operating pressure

Up to 12 Bar

### Standard supply medium

Air, nitrogen or sweet gas (special version for sour gas on request)

### Standard operating temperature

-30°C to 100°C (high/low temperature design available on request)

### Output torque

From 2.000 Nm up to 600.000 Nm for double acting version

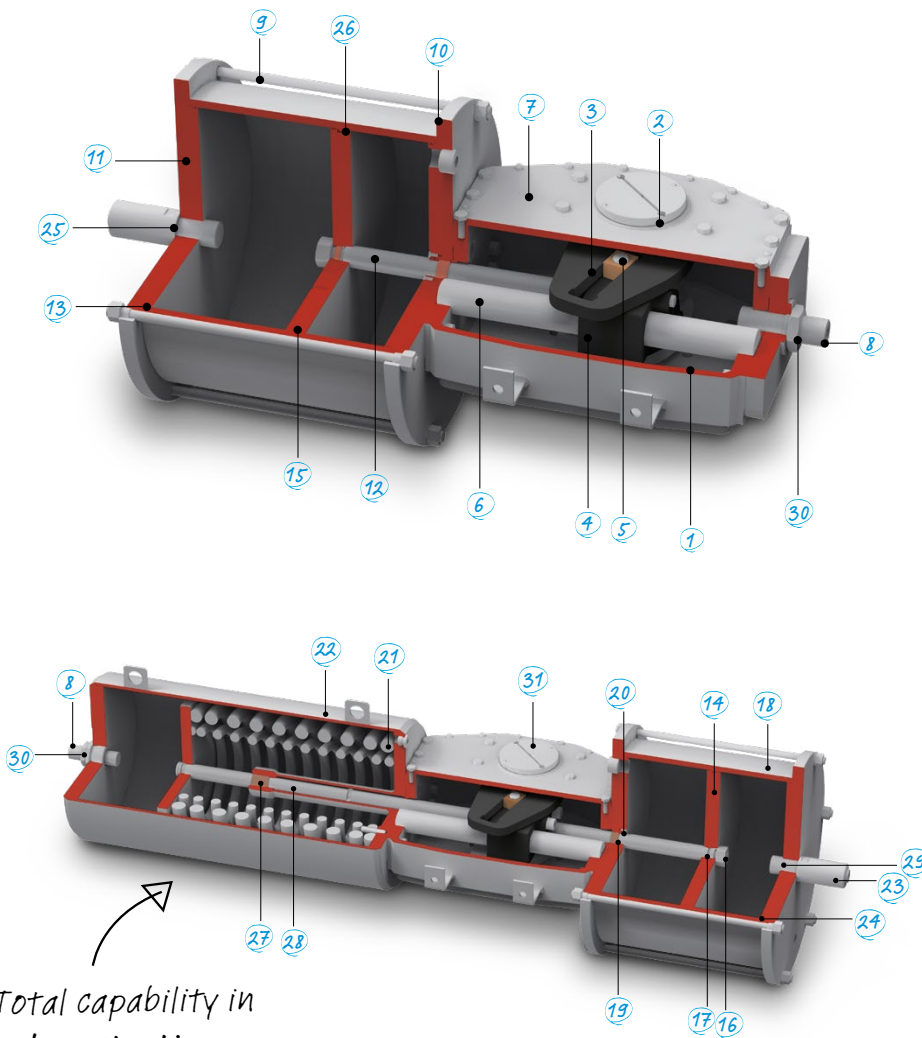
### Spring Ending Torque

From 1.650 Nm up to 165.000 Nm for single acting version (higher values on request)

### Certifications / approvals

PED 2014/68/EU  
 ATEX 2014/34/EU  
 EAC TR TS 012/2011  
 MACHINERY DIRECTIVE 2006/42/EC  
 IP66/67M according to IEC/EN 60529  
 SIL3 certified (IEC 61508)  
 as a "single device"  
 Designed and tested in accordance with EN 15714-3  
 Further certifications are available please contact IMI STI for updated list.

## Product breakdown



Total capability in valve actuation

| Description               | Material                      |
|---------------------------|-------------------------------|
| 1. Housing                | Carbon steel                  |
| 2. Yoke bushing           | Bronze alloy                  |
| 3. Scotch yoke            | Carbon steel                  |
| 4. Guiding block          | Carbon steel                  |
| 5. Sliding block          | Bronze alloy                  |
| 6. Guide bar              | Alloy steel (chromium plated) |
| 7. Cover                  | Carbon steel                  |
| 8. Stop screw             | Stainless steel               |
| 9. Tie rod                | Alloy steel                   |
| 10. Head flange           | Carbon steel                  |
| 11. End flange            | Carbon steel                  |
| 12. Piston rod            | Alloy steel (chromium plated) |
| 13. O-ring                | NBR                           |
| 14. Piston                | Carbon steel                  |
| 15. O-ring                | NBR                           |
| 16. Nut                   | Alloy steel                   |
| 17. O-ring                | NBR                           |
| 18. Cylinder tube         | Carbon steel                  |
| 19. Piston rod bushing    | Steel/bronze/PTFE             |
| 20. O-ring                | NBR                           |
| 21. Spring                | Spring steel                  |
| 22. Spring container      | Carbon steel                  |
| 23. Stop screw protection | Stainless steel               |
| 24. O-ring                | NBR                           |
| 25. O-ring                | NBR                           |
| 26. Sliding ring          | PTFE/bronze                   |
| 27. Spring rod bushing    | Steel/bronze/PTFE             |
| 28. Spring rod            | Alloy steel (chromium plated) |
| 29. Stop Screw            | Alloy steel                   |
| 30. Lock nut c/w gasket   | Stainless steel/PTFE          |
| 31. Position indicator    | Aluminium                     |

## Optional accessories

IMI STI designs and produces a wide range of accessories and control systems to ensure superior performances and satisfy the most demanding requirements in modulating, on/off and heavy duty service. Control systems panels/cabinets can be installed on the actuators or supplied loose for remote mounting i.e. for easy access and limit exposure to excess heat and vibrations. For more information, see dedicated brochure of accessories

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