

INNOVATION IN THE PIPELINE

AXIAL  
**CHOKES**  
VALVES  
CT SERIES

**GOODWIN**<sup>®</sup>  
INTERNATIONAL LTD

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# TAKING FLOW control TO THE NEXT LEVEL

## SEVERE SERVICE CHOKES VALVES

Choke valves are severe service valves designed primarily for oil and gas wellhead applications but used in a multitude of other applications such as to regulate downstream pressure in flowlines. They are critical elements in production facilities. Failure or malfunction of a choke valve can seriously affect safety, the environment and production rates.

In today's oil and gas field environment with high wellhead pressures, high pressure differentials, and aggressive fluids with entrained sand and other solids, choke valves are subject to the most arduous, most severe services. These extreme conditions can cause erosion, corrosion and other damage. If not mitigated by valve design, high internal velocities exacerbate the erosive damage effect of the entrained sand on the valve trim and possibly even the valve body. Erosion will occur irrespective of materials used for the valve construction. The initial consequence of erosion of the valve trim is increased vibration and high noise levels which ultimately lead to total valve failure.

**Avoiding erosion and achieving longevity of operation of choke valves is twofold:**

### EFFECTIVE CONTROL OF FLUID VELOCITIES

Goodwin utilise "torturous path" technology to dissipate and control the high energy, velocity and turbulence within its trim. Consisting of one or more concentric sleeves with specifically aligned holes in each, the trim provides controlled staged pressure reduction. Depending on the specific application and service conditions, single or multiple stages can be used.

### SUPERIOR WEAR RESISTANT MATERIALS OF CONSTRUCTION

Goodwin choke valves utilise solid tungsten carbide trim minimising the erosion of critical components, thereby providing long term reliability of performance in severe service.

The Goodwin Axial Choke Valve offers key features which make it a preferential choice for severe service choke applications:

**AXIAL FLOW:** Streamlined annular flow path avoids turbulence and prevents rapid erosion of body and trim parts. The tungsten carbide trim is inherently protected against direct impacts by entrained foreign objects.

**LARGE FLOW AREA:** Enables easy handling of solids contributing to reliable performance.

**ACCURATE CONTROL:** Made feasible by the fully pressure balanced trim.

**HIGH TURNDOWN:** Extensive rangeability provided by the accurate control and inherent high capacity features of the valve.

**MULTI-STAGE:** Employing labyrinth design, bespoke multi-stage trims designed and manufactured according to each application. Each trim optimised for safe and reliable control of pressure, velocity, erosion, noise and vibration.

**TRIM CHANGE-OUT:** One choke valve body can accommodate changing wellhead conditions by changing the trim. However, with its high rangeability trim, the Goodwin Axial Choke Valve could cover from start to end of life well production scenarios.

**BODY MATERIALS:** The 3 piece body permits either cast or forged construction or a combination.

**COMPACT INSTALLATION:** low actuation forces results in smaller actuators.

**ACTUATOR OPTIONS:** manual, pneumatic, hydraulic, electric, electro hydraulic.



**DEMONSTRATING THE LEVELS OF TECHNICAL EXCELLENCE AND RELIABILITY OUR CUSTOMERS EXPECT**

## current scope of choke (control) valve manufacture

- 1"-20" valve size range
- ASME Class 150-2500lb, 4500lb, API 3000 – 15000 pressure rating
- Designs to API 6A, ISO 10423 or ASME B16.34
- Carbon, Low Temperature Carbon, Stainless, Duplex, Super Duplex Steels, Low-High Alloy, Nickel Alloy and Titanium Alloy.
- 60k and 75k materials for API 6A and ISO10423
- All levels of PSL available for API 6A design (PSL1, PSL 2, PSL 3, PSL 3G, PSL4)
- Pressure testing to API 598, API 6A, FCI 70-2, ASME B16.37
- Choke Valve sizing in compliance with IEC 60534
- Face-to-face dimensions generally in accordance with ASME B16.10, interchangeable with ball and globe valves. (Customer specific face-to-face available upon request)
- Choke Valve single and multi stage trims designed for compressible and incompressible fluids, anti-cavitation, noise attenuation and high pressure drop.
- Linear, equal percentage and fast opening cage trim characteristics available. Customised bespoke trim designs to meet process requirements are also available.



**Single Stage Slots**



**Single Stage Holes**



**Multi Stage Holes**



For further information on features of the Goodwin Choke (Control) Valve please refer to brochure titled Axial Control Valves / CB series.

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**AXIAL HIPPS VALVE**



**AXIAL ISOLATION VALVE**



**AXIAL CONTROL VALVE**



**AXIAL CHOKE VALVE**



**DUAL PLATE CHECK VALVE**



**AXIAL NON-SLAM CHECK VALVE**



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