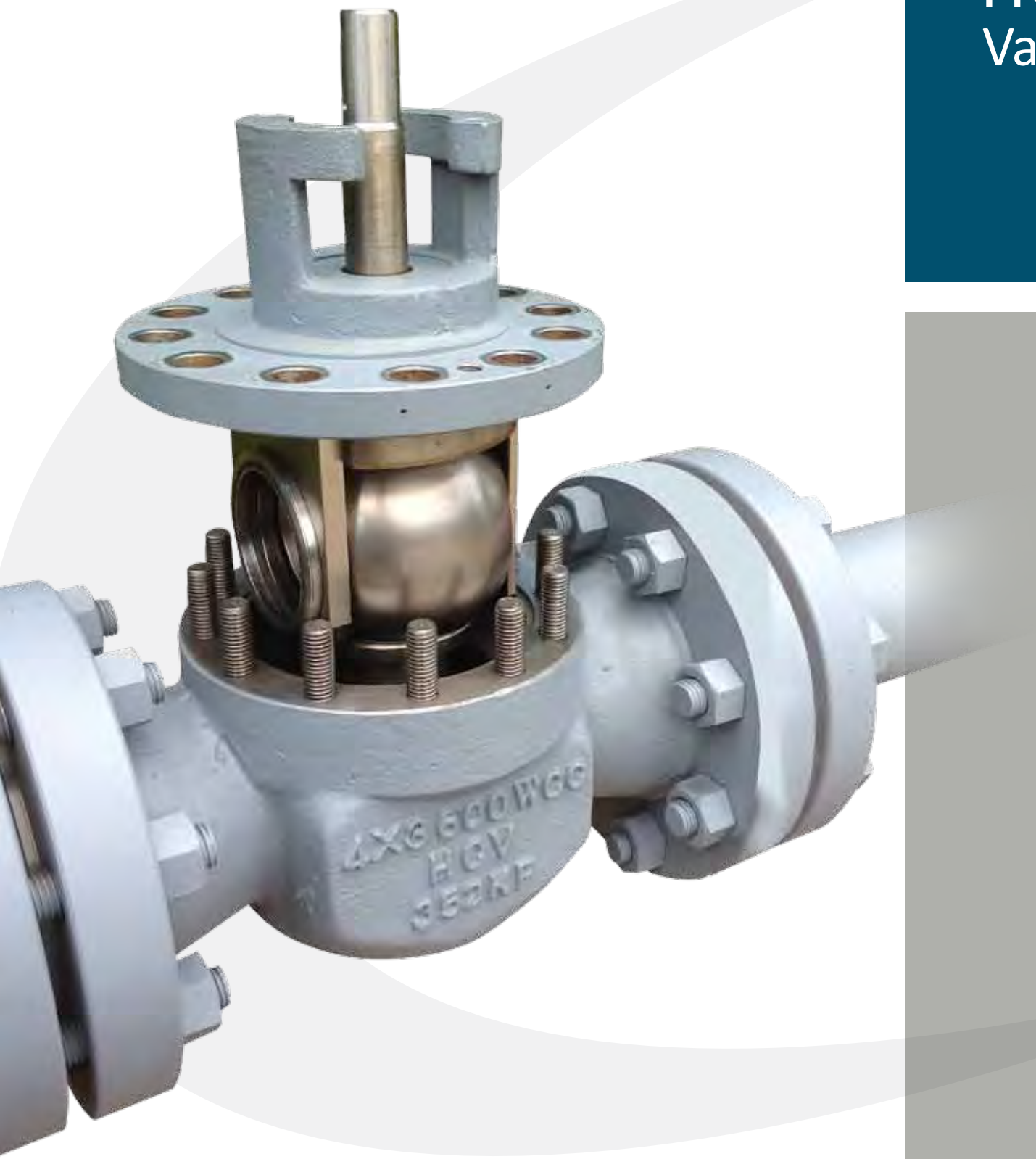


HCV Valve



CHROMATIC
INDUSTRIES LLC

INTRODUCTION

The HCV Valve is an innovative design that incorporates the positive features of ball, gate, plug and high performance valves resulting in a mechanically sealing, tight shutoff valve with a simple operation for a broad range of applications with virtually no maintenance.

The HCV valve is a thru-conduit, quarter-turn, mechanically sealing valve design providing low emissions and quick operation capabilities in critical shutoff applications. The product is available with either resilient seats for standard services or metal seating for severe services (with particulates or for high temperature applications). The metal seated version uses the same body and bonnet as the resilient seated version and is factory tested to the tightest leakage criteria in the industry (ISO 5208 Rate B).

The HCV valve is manufactured by Chromatic Industries LLC. in a 28,000 square foot, climate controlled facility in Conroe, Texas, USA. The HCV is available in a range of materials of construction including various carbon and alloy steels, as well as high grade stainless steels, duplex stainless steels, and high nickel/ chrome alloys for various services in critical oil and gas applications.



HCV VALVE

The HCV valve represents the newest, most innovative combination of the best characteristics of the major valve designs (Ball, Gate, and Triple Offset/Butterfly valves) with superior advantages of access and reparability of sealing components.

BUBBLE TIGHT – DROP TIGHT SEALING

The HCV valve can be supplied with either resilient seating or metal seating to hold to the tightest of industries standards. The resilient seated valves are tested to bubble tight requirements (API 6D -with no visible leakage allowed) and the metal seated valves are tested to drop tight standards (ISO 5208 Rate B).

BALL VALVE CHARACTERISTICS

The HCV valve is manufactured to ASME B16.34 ball valve face to face dimensions. It is a direct replacement - flange to flange - of most standard ball valves. It is easily actuated with a simple, quarter-turn operation.

GATE VALVE CHARACTERISTICS

The closing member (Hemi) cuts through the media stream similar to a gate valve, reducing turbulence/cavitation normally experienced in ball valve designs, providing a more uniform/fluid flow of media.

TRIPLE-OFFSET VALVE CHARACTERISTICS

Mechanical - Dynamic Seating: As the HCV valve closes the Hemi provides mechanical sealing as a result of implementing a wedge in the hemispherical closure member. As the Hemi rotates from open position to closed position, an increased offset applies its own force - independent of line pressure - to affect a positive seal.

Modulating Flow: The Hemi can be supplied with a characterized orifice (V-notch) to provide flow control. The combination of a stationary core maintaining linear flow through the valve and the modified Hemi can provide repeatable throttling without damaging the seats.

FIRE-SAFE

The HCV valve is inherently fire-safe and has been tested and passed the latest ISO 10497 and API 607 requirements.

TOP ENTRY – CARTRIDGE VALVE

The HCV valve's cartridge feature provides ease of access to internals for simple, quick repair or re-trim. All internal parts are attached to the bonnet allowing quick exchange when required, minimizing downtime.



FEATURES

CARTRIDGE DESIGN

- Top Entry
- Ease of Repair
- Reduced Downtime
- Serialized Cartridges
- Interchangeability

MECHANICALLY SEATED

- HEMI - Mechanical Wedge
- Bubble Tight Seating
- Bi-Directional Sealing
- Reduced Load During Operation

STATIONARY CORE

- Seat Constantly Protected From Product Flow
- Linear Flow Characteristic
- Reduced Turbulence

QUARTER TURN OPERATION

- Easily Automated
- Quick / Reliable Operation
- Low Dimensional Profile

HCV CARTRIDGE VALVE

CARTRIDGE DESIGN

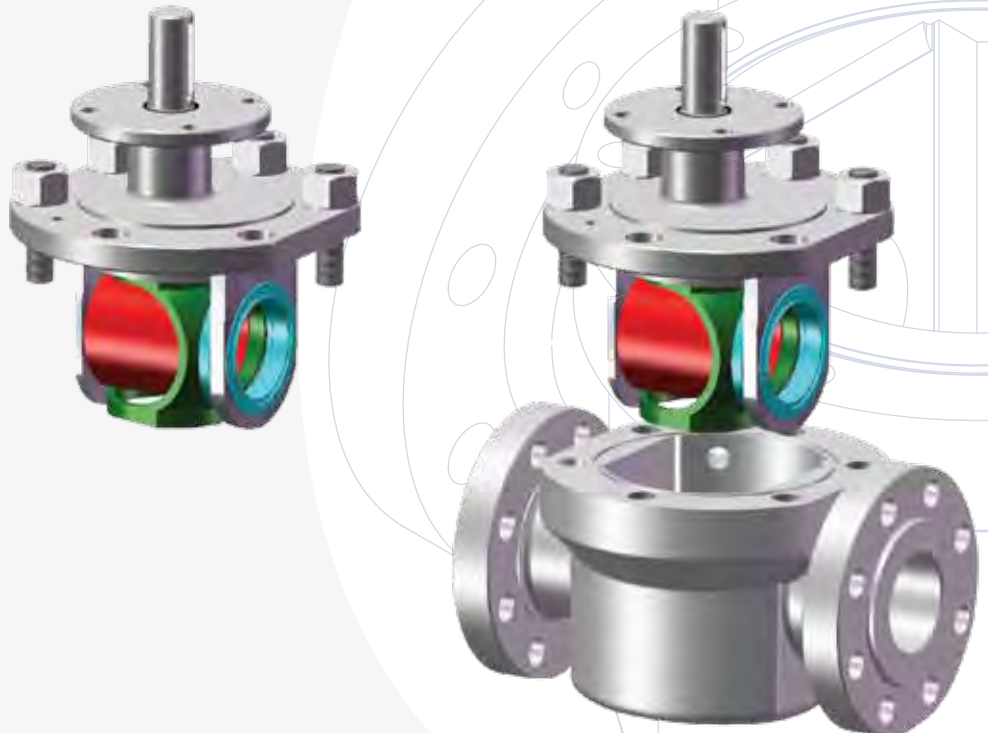
The HCV's defining feature is its 'cartridge design' whereby all the valve's internal sealing parts are affixed to the bonnet allowing quick and easy serviceability and reducing expensive downtime during maintenance.

This 'cartridge design' provides the ability to repair the valve with relative ease in a minimum amount of time without any special training or special tools.

When the valve is isolated (de-pressured), simply remove the bonnet fasteners, slide the cartridge out of the body, insert the new cartridge into the body, and retighten the bonnet fasteners.

Patents: 4,962,911; 5,333,834; 7,357,145; 7,484,523; 5,507,469; 7,836,909; 8,308,132.

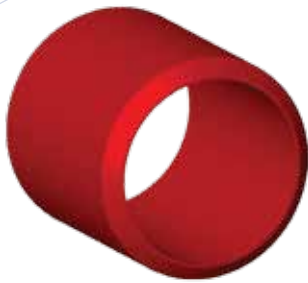
Numerous patents pending in USA and worldwide.



MECHANICAL WEDGE SEATING

The mechanical seal is achieved by rotating the Hemi around a central fixed point (stem). The increased offset of the external sealing surface of the Hemi creates a positive mechanical load on the seat at the full closed position. The positive mechanical load provides a tight seal at both low and high pressures irrespective of direction of differential pressure.

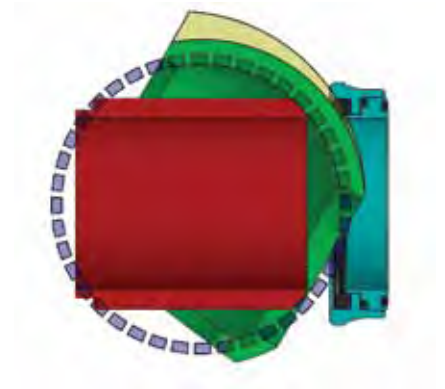
CORE



HEMI



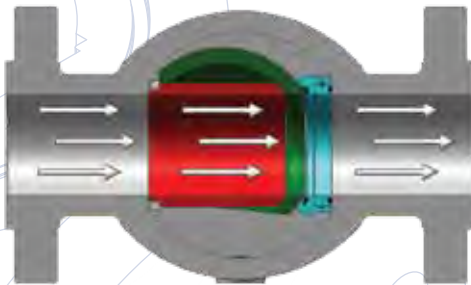
CORE / HEMI / SEAT



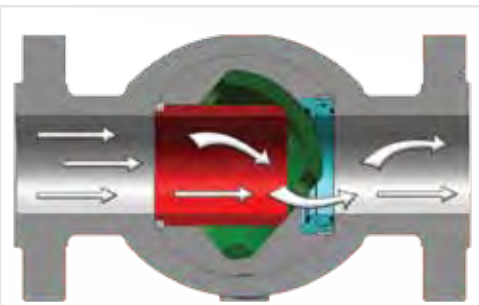
STATIONARY CORE

Throughout the opening and closing of the valve, the core (red) maintains its stationary position within the Hemi (green), which directs fluid flow straight through the valve with minimal impingement of the seat ring or side of the body. This results in less erosion in the valve body and longer seat life compared to conventional ball valves, particularly with flow streams containing scale, sand, and other particulates.

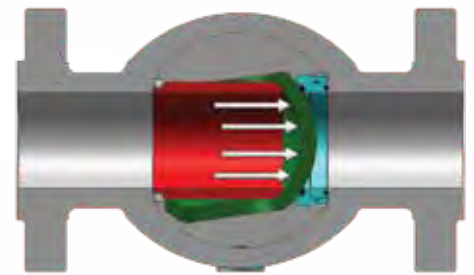
FULL OPEN



HALF OPEN

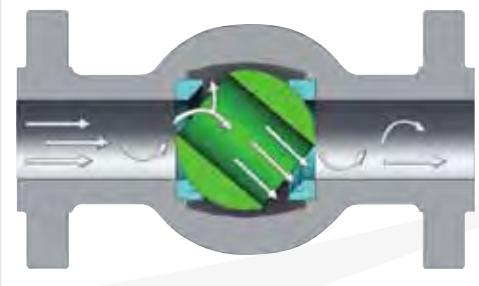


FULL CLOSED



BALL VALVE FLOW COMPARISON

The ball valve below in the half open position directing damaging flow at the seat sealing surface.



HCV valves are available in a variety of sizes, pressure classes, materials, and trims. The basic design is easily scalable. Additional sizes, pressures classes and features are continually under development to meet industry needs.

MATERIAL AVAILABILITY

Carbon steel (A216 Grade WCC), impact-tested carbon steel (A352 Grade LCC), stainless steel (A351 Grade CF8M) are the most typical alloys offered, but other alloys are available for body/ bonnet or internals depending on service conditions. Trim materials are available in a variety of alloys to meet NACE requirements and other corrosive environments.

SEATS/SEALS

The selection of seat/seal material is dependent on the service fluid and temperature, and includes various common elastomers such as Viton® and HNBR, or synthetic materials such as Teflon®, Tefzel®, PEEK, or all-metal. The HCV core design provides protection of the seat face resulting in longer sealing capability.

PRODUCT AVAILABILITY

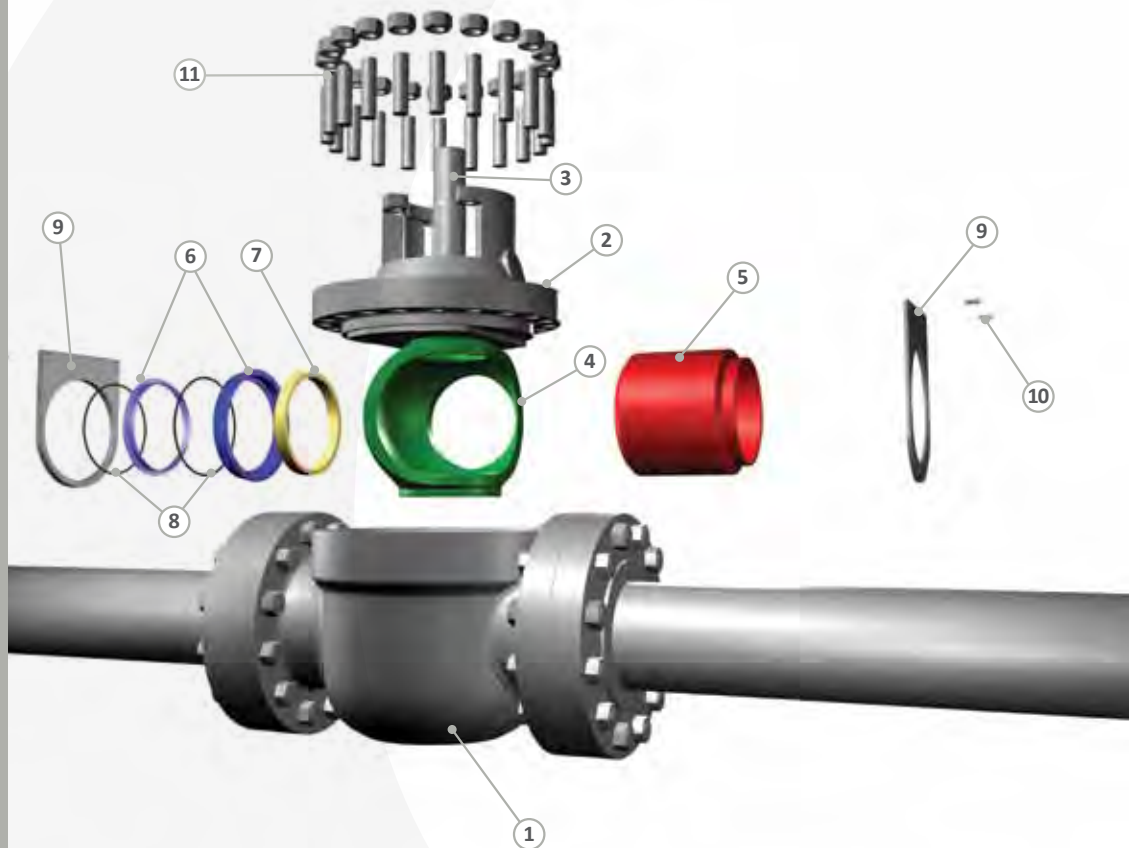
HCV valves are available in either Full or Reduced Port configurations with most common end connections including; raised face, ring type joint, butt-weld, threaded. Special sizes and design modifications can be discussed for special applications.

PRODUCT AVAILABILITY

Standard Materials of Construction

1	Body	ASTM A216-WCC; ASTM A351-CF8M
2	Bonnet	ASTM A216-WCC; ASTM A351-CF8M
3	Stem	ASTM 4140 CS ENP; 17-4 SS or Nitronic 50 SS
4	Hemi	Carbon Steel ENP or QPQ; Stainless Steel
5	Core	Carbon Steel ENP or QPQ; Stainless Steel
6	Seat	Carbon Steel ENP; Stainless Steel
7	Seat Insert	Teflon; Nylon
8	Seals	Viton; HNBR
9	Retaining Plates	Carbon Steel ENP; Stainless Steel
10	Screws	ASTM A573
11	Bonnet Fasteners	ASTM A193-B7 / A194-2H

HCV Valves can be trimmed to meet a range of applications including sour corrosive services requiring NACE compliant materials.



APPLICATIONS

Proven Successes and Creative Solutions

ISOLATION / BLOCK VALVE

For critical isolation requirements demanding bubble tight shut-off.

DOUBLE BLOCK AND BLEED BLOCK VALVE (DBB)

To provide verification of valve sealing and ensure seat integrity.

ESD (EMERGENCY SHUT DOWN) VALVE

In the case of an emergency, the HCV valve can provide a reliable quarter-turn operation with a repeatable, mechanical “zero leakage” shut-off.

BRINE / STORAGE BLOCK VALVE

For applications requiring repeatable seating in demanding, erosive service with damaging flow.

MOLECULAR SIEVE SWITCHING / BLOCK VALVE

For frequent cycling in high temperature cyclical environments involving potential damaging solids (molecular dust).

MODULATION / THROTTLING VALVES

The combination of a characterized Hemi (reducing turbulence) and the stationary core (straightening vein) the HCV can provide dependable modulating service.

EXTENDED BODY (FOR BURIED SERVICE) VALVE

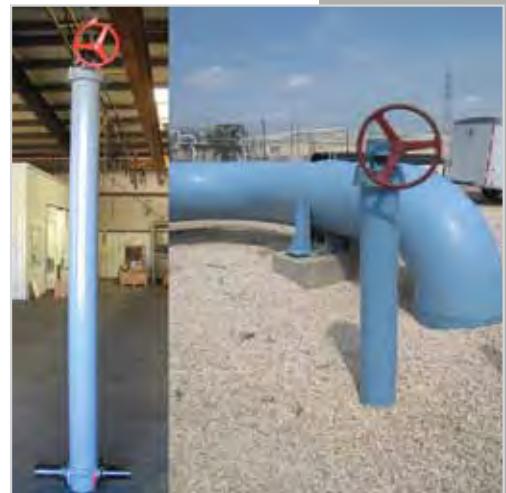
The body can be extended for buried service so the internals can be accessed from the surface eliminating the requirement to excavate buried valves.

NACE SOUR CORROSIVE BLOCK VALVES

The HCV valve is easily trimmed for services requiring metallurgy and seals suitable for NACE services.

OTHER POSSIBILITIES INCLUDE:

- Blow-Down Valves
- Meter / Prover (DBB) Block Valve
- Kicker Valves
- Pig Launcher / Receiver Valves



Let Us Help You in Your Demanding Applications

ABOUT US

Chromatic Industries, LLC is an engineered valve manufacturer based in a 32,000-square foot facility located north of Houston in Conroe, Texas, USA. Our leadership team consists of top valve-industry professionals and creative designers, dedicated to bringing our patented technologies to a variety of applications across multiple markets. With our mechanical sealing, stationary core, and top-entry cartridge designs we can provide solutions for demanding applications and services.

Our quality system is certified to ISO 9001, and our product qualification testing includes independent fire-testing to ISO 10497 and API 607 standards. In addition, we have independent flow testing to determine C_v and C_t values, as well as numerous trials in severe service applications. Our product complies with ASME B16.34. The HCV valve is registered in most Canadian provinces and has ABS Type Designation Assessment (Coast Guard) for marine applications.



CHROMATIC
INDUSTRIES LLC

15B S Trade Center Pkwy
Conroe, Texas 77385
Phone: 936-539-5770
Fax: 936-539-2990

www.chromaticindustries.com

For more information, email us at
sales@chromaticindustries.com.

Patents: 4,962,911; 5,333,834; 7,357,145; 7,484,523;
5,507,469; 7,836,9097,836,909; 8,308,132; 8,960,643;
9,446,485

Numerous patents pending in USA and worldwide.

API Registration
Number 6D-1657



ISO 9001 Certification
Number US 007050-1