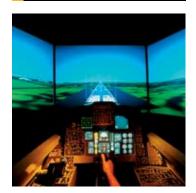




aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding





Hydraulic Cartridge Systems

Threaded Cartridge Valves and Integrated Hydraulic Products





Presenting...

We would like to take this opportunity to welcome you to the new Hydraulic Cartridge Systems catalog. Catalog HY15-3501 represents our entire published product offering. This catalog is intended to replace all previous Hydraulic Cartridge Systems (HCS) catalogs. You will find many changes to this catalog in content and format. Here are a few highlights of what you will find:

□ Complete Product Offering Including:

- Check Valves
- Shuttle Valves
- Load/Motor Controls
- Flow Controls
- Pressure Controls
- Logic Elements
- Directional Controls
- Manual Valves
- Solenoid Valves
- Proportional Valves



We at the Hydraulic Cartridge Systems Division hope you find this catalog useful and want to thank you for turning to Parker Hannifin for your integrated hydraulic needs.





WARNING - USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

OFFER OF SALE

The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributor. This offer and its accepteance are governed by the provisions stated in the detailed "Offer of Sale" elsewhere in this document.

PLEASE READ

How to use this catalog...

Product Index

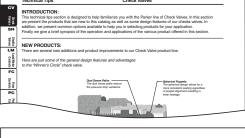
Each product tab has it's own product index for that particular section. Basic product specifications are shown along with catalog page numbers and product symbols. Further detail can be found on the specific catalog pages.

Technical Tips

At the beginning of each product section, we have a series of **Technical Tip** pages. These pages describe, in detail, the application and operational parameters of our cartridge valves. If you have any application or specification questions that cannot be answered by this section, please contact your local Parker representative or give us a call.

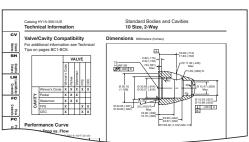


The individual product catalog pages detail fully the product specifications and operating parameters of each valve. Additionally, dimensional information, as well as a complete model code for ordering product is shown.



Creates HY15 2001/LIS Technical Information Check Visive Series CVH103P Certifical Series CVH103P Carridge Style Check Visive For additional lef ormation Carridge Style Check Visive For additional left ormation For Performance Curve Personnel Dopper for the leadage **Check Visive For additional left ormation Carridge Style Check Visive For additional left ormation **Check Visive For additional left ormation Carridge Style Check Visive For additional left ormation **Check Visive For additional left ormation Carridge Style Check Visive For additional left ormation **Check Visive For additional left ormation Carridge Style Check Visive For additional left ormation **Check Visive For additional left ormation Carridge Style Check Visive For additional left ormation **Check Visive For addition





Coil and Body

There are 2 sections in this catalog that assist you in selecting the proper valve body or solenoid coil for your particular application. Also, the cavity details are shown for all Parker and Sterling cavities currently in use.

Technical Data

The Technical Data section outlines various hydraulic guidelines such as ratings, torques, limitations in use, seals, and hydraulic fluid/filtration information.

Phase-Out/Legacy Products

See www.parker.com/hcs/legacy.pdf



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	Flow Control, N.C.	
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CV

Check Valves

DC

CE

BC

TD

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Threaded Cartridge Valves and Integrated Hydraulic Products

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Logic Element Valves	LE1-LE31	Logic F Elements FI
Directional Control Valves	DC1-DC20	Directional Controls
Manual Valves	MV1-MV16	Manual M Valves A
Solenoid Valves	SV1-SV112	Solenoid (S Valves <
Proportional Valves	PV1-PV64	Proportional T Valves
Coils and Electronics	CE1-CE25	Coils & O
Bodies and Cavities	BC1-BC68	Bodies & BCCavities
Technical Data	TD1-TD4	Technical A Data Q



The HCSD Story . . .

The Hydraulic Cartridge Systems Division (HCSD), headquartered in Lincolnshire, Illinois, was "born" as a Parker manufacturing division on July 1st, 2000. Through several acquisitions, Parker has assembled a line-up of respected cartridge valve manufacturers, including; Sterling Hydraulics, Waterman Hydraulics, Fluid Power Systems (FPS), Gresen, and CEC. Through this assembly of products, Parker's product offering is now one of the most extensive in the industry.

The objective and mission of HCSD:

"The Hydraulic Cartridge Systems Division of Parker Hannifin is a world leader in the manufacture of hydraulic cartridge products and integrated systems. We will provide the best quality and value to our Customers by delivering Premier Customer Service, rapid application support, advanced technology products, and value-based engineering solutions."

The division currently has four locations, each providing various aspects of cartridge valve manufacturing, assembly, test, as well as manifold machining and other secondary operations. Each location is supported by a local management team, along with an experienced and well-trained work force. Parker believes the best in efficient manufacturing and Premier Customer Service cannot be achieved unless the process of continuous improvement is in place. We are continuously measuring our progress to exceed the expectation of the market through Kaizen events, Lean initiatives, 5 "S" quality programs, and other continuous improvement programs.

Lincolnshire operations . . .

The division headquarters is located in Lincolnshire, Illinois, which is approximately 15 miles north of



Chicago, and a 20 minute drive north of O'Hare airport. This location houses many of the primary division functions such as Marketing, Product Management, Engineering, Customer Service, Accounting, Quality Engineering, and Research & Development. In addition to the office headquarters, the 85,000 sq. ft. building features a newly remodeled plant space for the assembly and test of cartridge valves and manifold products. With its experienced, dedicated work force, Parker is proud to present Lincolnshire as the assembly and test home for the new Winner's Circle product line. This location serves as the primary contact point for customers, distributors, and Parker sales representatives.





Chanhassen operations . . .

The Chanhassen operation is housed in a new state-of-the-art, 32,000 sq. ft. facility, located 10 miles west of Minneapolis. This facility demonstrates Parker's commitment to growth, as it is equipped with many new machining centers for the production of manifolds, line bodies, and cartridge components. Many of the new machines

are connected by a common pallet system allowing for nearly unlimited machine runs, reduced set-up time, and flexible scheduling. We machine most of our own manifolds!

Chanhassen is also the home of the Parker-HCSD "Speed Shop" as well as the IHC application specialist team. The "Speed Shop" is our resource to assist customers and distributors in the initial development of manifold and system solutions. A team of experienced application specialists dedicated to the specification and design of steel and aluminum Integrated Hydraulic Circuit systems (IHC's) lead this process. At the heart of the "Speed Shop" is the machining center, assembly area, and test bench, all dedicated solely to the production of prototype manifolds.

Elk Grove Village operations . . .

The Elk Grove Village location is just minutes from Chicago's O'Hare airport. This location has assembly and test operations for CMB's (Customer Manifold Blocks) as well as solenoid and proportional valves in a 43,000 sq. ft. facility. Formerly, the Sterling Hydraulics USA headquarters, it boasts horizontally



integrated manufacturing, including solenoid tube welding, and aluminum manifold machining. Additionally, a very qualified staff handles the warehousing and distribution of U.K. manufactured pressure and flow control cartridges.



Monterrey operations . . .

The Monterrey cartridge valve assembly and test operations are housed in a well-equipped modern manufacturing facility, just 2 hours west of McAllen, Texas. Parker began operations in this new facility in 1998. This location focuses primarily on the assembly and test of cartridge valves.

IHD actually shares this facility with other Parker divisions in order to maximize the efficiency of the assembly and support processes.

All Parker facilities are ISO 9000 registered, ensuring complete customer satisfaction.



The HCSDE Story . . .

With its developments in integrated hydraulic products, Parker has decided to penetrate the expanding European market by creating a focused resource with engineering and manufacturing capability for both cartridge valves and manifold systems. This division is named Hydraulic Cartridge Systems Division-Europe based in Crewkerne - England.

This allows Parker to take advantage of its strengths in product offerings and truly provide OEM's with "one stop shopping". With the vast resources of its many divisions available, Parker has the unique ability to adapt other Parker products within speciality manifolds, beyond just the integration of valve products.

Our objectives and development are linked directly with HCSD and are in line with our Global Hydraulics Group goals. HCSDE have three locations, with its headquarters in Crewkerne, a manifold production facility in Boras - Sweden, and the volume cartridge production facility in Chomutov. - Czech Republic. The following is a brief review of each location:

Crewkerne operations . . .

The Crewkerne operation is the headquarters for Hydraulic Cartridge Systems Division-Europe. This facility houses a complete machine shop well equipped to accommodate a large variety of turning, grinding, and milling operations to support complete cartridge valve manufacturing. Also, the Crewkerne facility has a complete Assembly and Test operation with automated assembly and testing in selected cells. Recent investments have improved efficiency



which has allowed capacity to grow to over 1,500,000 valves per year. The following activities are supported from this location:

Customer Service
Product and Technical Support
Manifold Systems
Quality Assurance Systems
Manufacturing Support
Finance
Purchasing
Marketing
Engineering Support for Cartridge Valves



Boras operations . . .

The manifold systems "team" is located in Boras Sweden, 30 miles East of Gothenburg. This "team" focuses on the production on integrated hydraulic circuits which are incorporated into mobile systems. By working closely with the Mobile Controls Division (M.C.D.) we are also able to take full advantage of Parker's unique spool valve product offering, and systems engineering expertise. Boras also has a prototype Speed Shop capability, and



provides local manifold design and production support for the Nordic region. Manifold system application engineering and manufacturing capability is also available at several other Parker Sales locations throughout Europe. Parker can provide both standard circuit and customengineered hydraulic solutions. Each facility uses compatible CAD / CAM packages to enable the resource to be shared whilst keeping the application engineering close to our customers.



Chomutov operations . . .

The Chomutov cartridge valve and simple Manifold system assembly and test operation is located in a brand new manufacturing facility, 50 miles north of Prague in the city of Chomutov - Czech Republic. The facility is based on LEAN manufacturing techniques Such as Value Stream Mapping, "Point-of-Use" Inventory, Kanban controls, 5S, Visual

factory, Small batch flow, Balanced work flow etc. and is operated using fully equipped "cells" which are dedicated to specific product "families" with each one having a "state-of-the-art" test stand with manual or automated electronic controls and quick change-over fixtures.

Products are distributed to customers' throughout Europe via the Cartridge Valve Distribution Center (C.V.D.C) in conjunction with the United Parcel Service (U.P.S.)

All Parker facilities are ISO 9000 registered, ensuring complete customer satisfaction.



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