



Frequently Asked Questions (FAQs) for Parker Hydraulic Cartridge Systems Division

[Are you the same company as “Integrated Hydraulics”?](#)

[I was a Sterling distributor – can I still buy products?](#)

[Where can I buy HCS products?](#)

[What is the response time on valves?](#)

[Where do I find the seal kits?](#)

[How do I get information on old product lines/legacy parts?](#)

[How do I set a pressure control valve to a specific PSI value for my application?](#)

[How do I hook up a DIN coil?](#)

[What is cracking pressure?](#)

[What is holding pressure versus thermal on counterbalance valves?](#)

[When should I use a backup ring?](#)

[Unicoil vs. Supercoil – What are the differences and why is there no more Unicoil?](#)

[Can I take the valve apart to service it? Can your valves be repaired?](#)

[How do I get a paper copy of the current catalog?](#)

[How do I get an electronic version of the current catalog?](#)

[When do I use a Steel body and when do I use an Aluminum body?](#)

[Torque specs for catalog valves](#)

[What are your corrosion resistance procedures?](#)

[Why should I use SAE ports over NPT?](#)

[Are your valves tested?](#)

[Explain the evolution of the Solenoid Valve Part Numbers](#)

[What are the part numbers for repair kit items like coil spacers, knob kits, relief valve adjustments, etc.?](#)

[What PWM controller do I use with a proportional valve?](#)

[When do I use Nitrile seals? When do I use Fluorocarbon seals?](#)

[Using low wattage vs. high wattage coils](#)

[3D CAD drawings](#)

[General mounting guidelines for cartridge valves](#)

[Who do I contact to design & quote an Integrated Hydraulic Circuit?](#)

[What is the shelf life for valves?](#)

[What is your standard warranty?](#)



Are you the same company as “Integrated Hydraulics”? [\(Return to Top\)](#)

No, we are not. Integrated Hydraulics is now owned by Eaton Corporation.

I was a Sterling distributor – can I still buy products? [\(Return to Top\)](#)

Yes, you can. As long as you are a Parker distributor in good standing and you were a contracted Sterling distributor, you can buy from HCS at the “General Distributor Discount” Schedules.

Where can I buy HCS products? [\(Return to Top\)](#)

You can purchase HCS products from an Authorized Parker Distributor: [Where to Buy](#)

What is the response time on valves? [\(Return to Top\)](#)

The response times on solenoid valves related to the time for the armature to completely pull-in or drop-out. These data points are listed on the individual valve pages in the SV section. (See example below)

Specifications

Rated Flow (At 70 PSI ΔP)	60 LPM (15 GPM)												
Maximum Inlet Pressure	350 Bar (5000 PSI)												
Leakage at 150 SSU (32 cSt)	5 drops/min. (.33 cc/min.)												
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F)												
Response Time	<table border="1"> <tr> <td></td> <td>Energized</td> <td>De-Energized</td> </tr> <tr> <td>C, CR</td> <td>80 ms</td> <td>150 ms</td> </tr> <tr> <td>CH, CHR</td> <td>50 ms</td> <td>50 ms</td> </tr> <tr> <td>N, NR</td> <td>70 ms</td> <td>35 ms</td> </tr> </table>		Energized	De-Energized	C, CR	80 ms	150 ms	CH, CHR	50 ms	50 ms	N, NR	70 ms	35 ms
	Energized	De-Energized											
C, CR	80 ms	150 ms											
CH, CHR	50 ms	50 ms											
N, NR	70 ms	35 ms											
Cartridge Material	All parts steel. All operating parts hardened steel.												
Operating Temp. Range/Seals	-45°C to +93.3°C (D-Ring) (-50°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)												
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)												
Filtration	ISO Code 16/13, SAE Class 4 or better												
Approx. Weight	.20 kg (0.41 lbs.)												
Cavity	C10-2 (See BC Section for more details)												
Form Tool	Rougher None Finisher NFT10-2F												

Where do I find the seal kits? [\(Return to Top\)](#)

Seal kits for individual valves are listed on the valve model code pages, and show seal kits with the standard and optional seal materials.

How do I get information on old product lines/legacy parts? [\(Return to Top\)](#)

Currently, to obtain specific information about our legacy product lines (old Parker, Waterman, CEC, FPS, Sterling, and Gresen) we suggest you call us. However, in the future, we have plans to create a legacy reference guide which we will post on the www.parker.com/hcs website.

How do I set a pressure control valve to a specific PSI value for my application? [\(Return to Top\)](#)

There is a Technical Brief under the “Support” tab that explains this topic in detail: [PH HCS TB-0003 “PSI per Turn for Pressure Controls”](#).

How do I hook up a DIN coil? [\(Return to Top\)](#)

DIN connectors, sometimes referred to as “Hirshman” or ISO-43650 connectors are an industry standard connector method. It consists of a plastic plug that mates to two or three blades molded into the coil. On Supercoils, the DC coils have two blades while the AC coils have three blades. These connectors can be purchased with two different sizes of cable gland, or with a ½” conduit thread. You can also purchase DIN connectors with built-in rectifiers and light kits.



What is cracking pressure? [\(Return to Top\)](#)

Cracking pressure, as defined in our test procedures, is the flow at which a relief valve or other pressure control is said to have initially opened. Typically this is seen as a small stream of fluid, with a flow rate not more than ¼ GPM.

What is holding pressure versus thermal on counterbalance valves? [\(Return to Top\)](#)

Different brands of holding valves define settings differently. The Parker and FPS holding valves are set at a crack setting, and the holding pressure is 70% less. For the Gresen holding valves, the setting as shown in the catalog is the HOLDING setting and the crack or thermal setting is 800-1000psi higher.

When should I use a backup ring? [\(Return to Top\)](#)

Backup rings come in different configurations and materials. As a rule, you should always place the backup ring on the low pressure side of the o-ring so it supports the o-ring when high pressure is applied to the opposite side. This supports the o-ring and prevents seal extrusion. Some applications will require a back-up ring on both sides of the o-ring. If you need additional help with this question, please contact Parker HCS Technical Support at 847-955-5000 or via email HCSTechnical@parker.com.

Unicoil vs. Supercoil – What are the differences and why is there no more Unicoil? [\(Return to Top\)](#)

The Unicoil is a design from the early 90's. It is not rated for any weather resistant/robust applications, although it has been used successfully there for years. When Parker acquired the Sterling product line it was agreed by all that the Supercoil was a much better and more contemporary design. It has been proven in the field and more importantly, in very severe OEM tests. As far as interchangeability, one can replace the other with no problem. The Unicoil will slowly be phased out over time. We will still be selling this coil 5 years from now, but in service quantities and with service pricing. The best coil solution for DC applications is the molded Deutsch connector. It's the number one choice of OEM's. That said, if you need a Unicoil on any particular valve, let us know. There may be a Supercoil substitute we can look at.

Can I take the valve apart to service it? Can your valves be repaired? [\(Return to Top\)](#)

Heck NO! Typically, the only service you can perform on a cartridge valve is to replace external seals, or install a new solenoid coil. In some cases, a knob kit can be added to pressure controls, or even a tamperproof cap, but there are no internal user serviceable parts.

How do I get a paper copy of the current catalog? [\(Return to Top\)](#)

If you want to order Parker materials, contact the Parker Help Desk either by phone (1-800-C-Parker (1-800-272-7537)) or email (c-parker@parker.com).

How do I get an electronic version of the current catalog? [\(Return to Top\)](#)

Simply go to www.Parker.com/HCS/Catalog and follow the download instructions to save to your Desktop.

When do I use a Steel body and when do I use an Aluminum body? [\(Return to Top\)](#)

Most cartridge valves are available with either an Aluminum body or a Steel body. Common practice is to use Aluminum (6061) for pressure up to 3600psi. For pressure to 6000 psi or applications that are high duty cycle, we recommend that you use the Steel body option. Remember the rating of the valve will dictate the material used.



Torque specs for catalog valves [\(Return to Top\)](#)

If the table below does not answer your question, please contact Parker HCS Technical Support at 847-955-5000 or via email HCSTechnical@parker.com.

Winner's Circle

Cavity Size	Aluminum Body (3600psi)	Steel Body (5000psi)
-08	23-27 ft-lb (31-37 Nm)	32-36 ft-lb (43-49 Nm)
-10	37-41 ft-lb (50-56 Nm)	51-55 ft-lb (69-75 Nm)
-12	66-70 ft-lb (90-95 Nm)	92-96 ft-lb (125-131 Nm)
-16	121-125 ft-lb (164-170 Nm)	169-173 ft-lb (230-235 Nm)
-20	225-229 ft-lb (305-311 Nm)	250-275 ft-lb (339-373 Nm)
	Coil Nuts & Adj cap/nut	
Coil Nuts	5-7 ft-lb (7-9.5 Nm)	
-08 & -10 S,F,T adj cap, jam nut	10-14 ft-lb (13.5-19 Nm)	
-08 & -10 K adj lock nut	Fingertight (5-10 in-lb, 0.6-1.1 Nm)	
-10 N & A adj	27-32 ft-lb (37-44 Nm)	
-10 cap S,F,K,T,& B adj	38-42 ft-lb (52-57 Nm)	

Non-Winner's Circle

Cavity Size	Aluminum Body (3000psi)	Steel Body (5000psi)
-08	180 in-lb (20 Nm)	275 in-lb (31 Nm)
-10	190 in-lb (22 Nm)	575 in-lb (65 Nm)
-12	250 in-lb (28 Nm)	672 in-lb (76 Nm)
-16	475 in-lb (54 Nm)	876 in-lb (99 Nm)
-20	1000 in-lb (113 Nm)	1176 in-lb (133 Nm)
	Coil Nuts & Adj cap/nut	
Coil Nuts	27-33 in-lb (3.1-3.7 Nm)	
-08 & -10 S adj	36-60 in-lb (4.1-6.8 Nm)	
-10 F adj	16-20 ft-lb (22-27 Nm)	

What are your corrosion resistance procedures? [\(Return to Top\)](#)

External parts (i.e. tube, adaptor, etc) seen outside the block are zinc plated for resistance to corrosion. Steel line bodies are coated with clear zinc for corrosion resistance.

Why should I use SAE ports over NPT? [\(Return to Top\)](#)

SAE ports and fittings provide a more secure connection than pipe ports and are less prone to leakage.

Are your valves tested? [\(Return to Top\)](#)

All HCS cartridge valves are 100% tested for functionality prior to shipment. If the valve does not pass testing, it is removed and either replaced or repaired. If repaired, the valve is tested again to ensure functionality.

All HCS cartridge valves have been performance tested and the results are shown on the individual catalog pages, showing typical operation characteristics of the product. In addition, our valves are endurance tested. Validation is conducted by testing or similarity in design.



Explain the evolution of the Solenoid Valve Part Numbers (DSL081CA120LD-A6T to DSL081CSPA120LD-A6T to something with a U). [\(Return to Top\)](#)

There is a Technical Brief under the “Support” tab that explains this topic in detail: [PH HCS TB-0001 “Parker Solenoid Evolution”](#).

What are the part numbers for repair kit items like coil spacers, knob kits, relief valve adjustments, etc.? [\(Return to Top\)](#)

There is a Technical Brief under the “Support” tab that explains this topic in detail: [PH HCS TB-0002 “Repair Kits”](#).

What PWM controller do I use with a proportional valve? [\(Return to Top\)](#)

HCS offers different options of PWM drivers (XPRO series) for use with our Proportional Valve series. The driver you should use would be based on the application, type of control you need, and power source. Please call us at 847-955-5000 and we will gladly assist in helping select the best driver for your application.

When do I use Nitrile seals? When do I use Fluorocarbon seals? [\(Return to Top\)](#)

Nitrile – compatible with most water-glycol, water/oil emulsions, and high grade petroleum based hydraulic fluids. Parker recommends Nitrile o-rings for temperatures between -40°C and +93°C (-40°F and +200°F). Nitrile o-rings require a full back-up ring or two half back-up rings.

Fluorocarbon – compatible with most phosphate ester fluids and phosphate ester blends. Parker only recommends Fluorocarbon seals for temperatures between -32°C and +121°C (-25°F and +250°F). Fluorocarbon o-rings require a full back-up ring or two half back-up rings.

Using low wattage vs. high wattage coils [\(Return to Top\)](#)

The use of a low wattage or high wattage coil would be determined by the application. The critical factor would be heat generated when the coil is energized. The higher the wattage, the more heat that is generated, the more heat, the resistance is degraded and the magnetic force generated is degraded, which can result in improper operation of the valve.

If the valve is to be used intermittently, the higher wattage coil is preferred since heat is not a critical factor and the higher wattage allows for better performance of the valve. If the valve is used in a continuous manner (left energized for long time periods), the lower wattage coil would generate less heat and therefore the degradation of the coil and valve operation would be minimal.

As always, if you have questions, you can contact Parker HCS Technical for assistance.

3D CAD drawings [\(Return to Top\)](#)

Currently, 3D CAD drawings are available by emailing a request to HCSTechnical@parker.com. These drawings are usually available within 1-2 days after receiving your request. However, we are working to put more of our valves on the www.parker.com/hcs website.

General mounting guidelines for cartridge valves [\(Return to Top\)](#)

There are no mounting restrictions for the valves. The valves will function in any mounting position. However, there are certain performance differences attached to each position:

Horizontal (PREFERRED METHOD FOR PROPORTIONAL) - Minimizes the trapping of air and contaminates inside the valve. For longer tube valves (i.e.: 3 position/4 way spool valves), vibrations in the application can be more readily seen (tubes bounce more). Excessive vibration can result in shock damage to the tubes.

Upright – can result in air being trapped in the upper portion of the valve when not in use. This can cause chattering, squealing, of degradation in operation.



Upside down – can allow contamination in the system to get inside the valve. This can result in leakage, sticking, or failure to function

Who do I contact to design and quote an Integrated Hydraulic Circuit? [\(Return to Top\)](#)

Please contact one of our Applications Engineers at 847-955-5000 or HCSInfo@parker.com.

What is the shelf life for valves? [\(Return to Top\)](#)

Shelf life for cartridge valves is dependent on the condition the valve is stored in. If in the original, unopened packaging, the life of the valve would be longer than if not in the packaging where it is exposed to environmental conditions, moisture, contamination, etc.

There is no specific period of time that is given to shelf life. Before use, visually verify the condition of the valve (damage, contamination, corrosion, etc). If there are any questions, please call Parker HCS Technical Support to assist in determining if valve is still able to be used.

What is your standard warranty? [\(Return to Top\)](#)

Parker HCS standard warranty is 18 months from the date of delivery or 3,000 hours, whichever comes first.

What are the different connector styles that HCS offers?

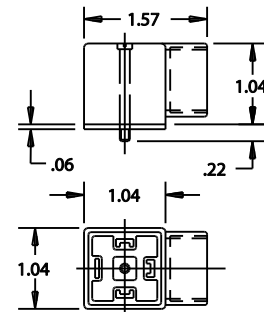
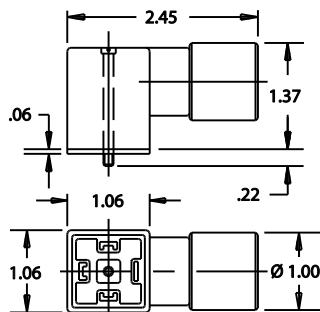
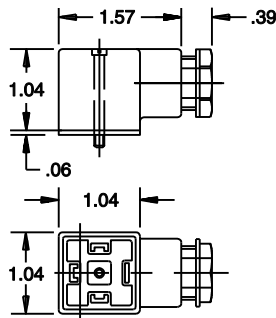
Parker-HCS offers the following mating connectors for our coils:

Din – Coil accessories for DIN Connector 43650

Cable Gland		
Type	Non-Rectified	Rectified
PG9	710549-00	712126-01
PG11	710549-01	712126-00

Conduit
Rectified
712704-00

Conduit
Non-Rectified
710649-01



Integral Deutsch

Wire connector assembly with 36" leads for Super Coils with Integral Deutsch connectors - Part # 718164





Weather Pack

Weather Pack Shroud – Part # 12010973

Mating connector – Part # 12015792

Please call us if there are questions or you require a connector not listed. Most connectors can be obtained through a local Electrical Supply store (i.e.: Grainger, Canfield Connectors, etc).

If you need additional help with any of these topics, please contact Parker HCS Technical Support at 847-955-5000 or via email HCSTechnical@parker.com.