



CSH Series

Cold Shrink
Hammerhead
2015 PRODUCT GUIDE

15/25/28kV Class

CSH Series

INTRODUCTION & PRODUCT RATINGS

A proven design. A game-changing transformation.

For over 70 years, Richards has remained dedicated to manufacturing high-quality, innovative products for electrical distribution systems. The Cold Shrink Hammerhead epitomizes this legacy by introducing a truly unique, robust solution for terminating and splicing medium voltage power cable. We've taken our industry-leading 600/900A Deadbreak Elbow design and given it a cutting-edge transformation.

- **All-In-One Solution:** The CSH is range-taking and includes an integral jacket seal, providing a complete solution in a simple package. Three separate components have been elegantly combined into a single design.
- **100% EPDM:** Richards Cold Shrink Products are molded from 100% EPDM, a proven material in underground electrical applications for decades. This proprietary formulation of Cold Shrink EPDM is produced in-house. To achieve maximum durability in underground environments, the CSH features a fully-integrated, oil-resistant EPDM jacket that provides outstanding mechanical impact/tear resistance.
- **Easy Installation:** We've optimized our design to minimize installation time, complexity, and overall cost. No more cable adapter and no more separate jacket seal kit. The cold shrink Cable Entrance eliminates problems that arise when sliding traditional interference-fit Deadbreak elbows into position. This ergonomic improvement substantially simplifies positioning/aligning the lug in the CSH housing.
- **Made in the USA:** From EPDM rubber to finished molded product, the Richards Cold Shrink Hammerhead is designed, tested, and manufactured in the USA.

Product Ratings

Voltage Class, Phase-to-Phase	15kV • 25kV • 28kV
Maximum Voltage Rating – (phase to ground)	16.2kV
Corona Voltage Level – (CEV)	22kV ^R
AC Withstand, 1 minute	42kV ^R
Impulse-Withstand Voltage – (BIL)	162kV BIL ^R

Continuous Current

Aluminum	600A
Copper	900A

Short-Time Current

Aluminum	40kA, 10c. and 10kA, 3s
Copper	

Production Testing

IEEE requires a Partial Discharge test and choice between AC and Impulse Withstand. Richards runs 3/3 tests on ***all*** Medium Voltage products governed by IEEE 386. ^R

100% Routine Electrical Test:

- Partial Discharge
- AC Withstand
- Impulse Withstand

^R Exceeds IEEE 386 required minimum test level

CSH Series

DESIGN & FEATURES

To Schedule a Demonstration
Contact your local Sales Rep



IEEE 386 Interface 11



Conductor Lugs

EPDM Jacket

Greaseless Core

Capacitive Test Point

Cable Entrance

Integral Jacket Seal



1. Conductor Lugs

The CSH Series is available with a variety of conductor lugs. We offer a range-taking shear bolt option as well as the traditional 600 or 900A compression connector. One of the most impressive improvements of the CSH is the ease with which the housing can be installed onto the prepared cable/installed lug. Without having to overcome any interference-fit (remember, we've obsoleted the cable adapter!), positioning the lug properly is incredibly easy.

2. IEEE 386 Interface 11

This industry-standard 600/900A 15/25/28kV Deadbreak interface is compatible with a variety of components including Apparatus Bushings, Elbow Tap Plugs, Hammerhead Insulating Plugs (HIPs) and more.

3. Capacitive Test Point

The CSH Series is available with an optional capacitive test point. This enables system operators to utilize suitable equipment to test for voltage, or install a faulted circuit indicator (FCI).

4. EPDM Jacket

The entire CSH Series is molded from a proprietary EPDM formulation. This material has excellent mechanical impact/tear resistance—an important trait given the often harsh conditions of the underground environment. The bonded outer jacket is semi-conductive, making the CSH fully-shielded.

5. Cable Entrance

The Cable Entrance of the CSH is shrinkable, obsoleting the cable adapter. This eliminates the performance risk associated with cable adapter positioning and makes installation markedly more ergonomic. This cold shrink Cable Entrance also allows the CSH to cover a range of cable sizes, as laid out in our Use Range Chart. With fewer components and range-taking capabilities, customers are able to reduce inventory.

6. Greaseless Core

Hold-out cores that rely on grease or a ribbon/spiral design can be unreliable and messy. Richards' product development engineers created a short, Greaseless Core design that is easy to eject and consistent across our Cold Shrink Family. Once ejected, the Core separates into halves which can be recycled. Our simple yet effective design was engineered to perform consistently across a variety of installation environments.

7. Integral Jacket Seal

Once the core is removed, a jacket seal is deployed over sealing mastic, completing the jacket restoration without the need for a separate component.

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ORDERING INFORMATION

Sample Part Number

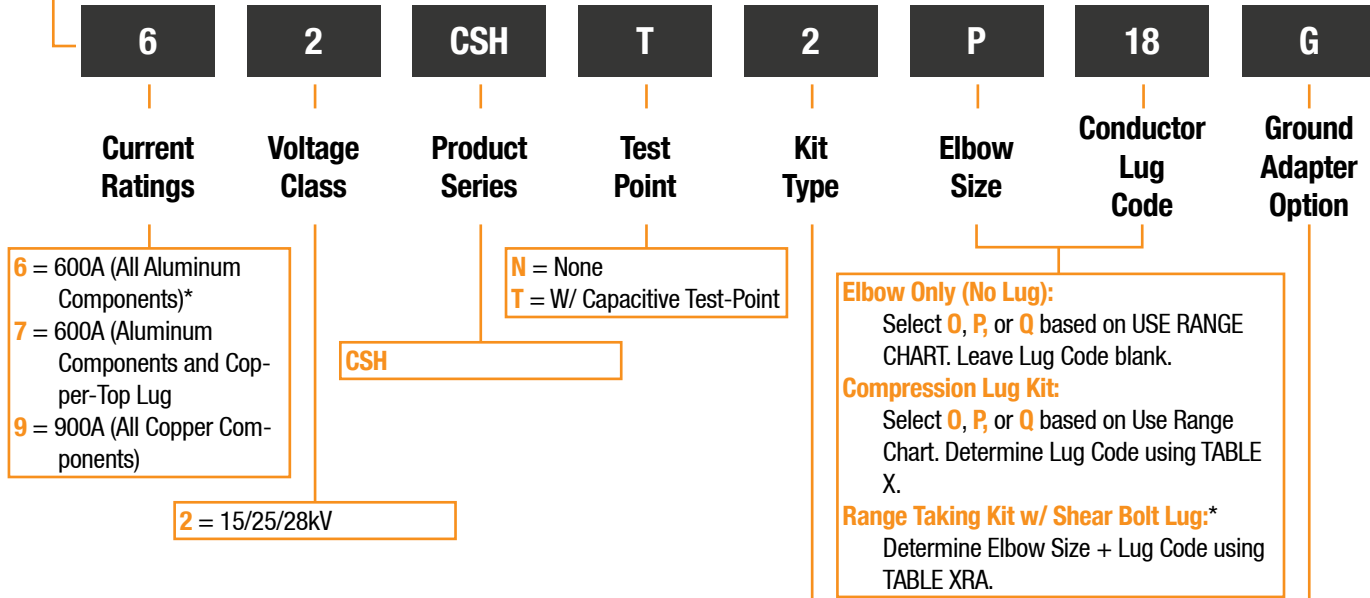


Table X - Compression Lug Selection

Cable Size	Strd/Compr	Cmpt/Sol
	"X"	"X"
#2	7	6
#1	8	7
1/0 AWG	9	8
2/0 AWG	10	9
3/0 AWG	11	10
4/0 AWG	12	11
250 kcmil	13	12
300 kcmil	14	13
350 kcmil	15	14
400 kcmil	16	15
450 kcmil	17	16
500 kcmil	18	17
550 kcmil	20	18
600 kcmil	20	18
650 kcmil	211**	20
700 kcmil	22	20
750 kcmil	23	211**
800 kcmil	24	22
900 kcmil	26	23
1000 kcmil	28	26
1100 kcmil	285	26
1250 kcmil	29	contact factory

1 = CSH Housing and Stud
2 = CSH Housing, Stud, Insulating Plug & Cap

Note: Leave blank if Ground Adapter is not needed
G = Tinned Copper Braid w/ Solder Block and Constant Force Spring
 Braid Size is #6 for housing size "O" and #4 for housing sizes "P" and "Q"

Table XRA - Range Taking Lug Selection

Elbow Size + Lug Code	Voltage	Nominal Conductor Range	
		Min.	Max.
PR2	15kV	350 kcmil***	500 kcmil Cmpt.
	25kV	4/0 AWG	
PR4	15kV	400 kcmil Compr.	750 kcmil
	25kV		

***May not fit some 350kcmil compact 100% (175 mil) insulated power cables

* Shear Bolt Lugs are only available in aluminum
 ** For copper, use code 21 instead

Sample Part Number is a "P" size CSH with Capacitive Test Point, complete with Aluminum Stud, Aluminum Insulating Plug & Cap, Aluminum Compression Lug for 500 kcmil Strd/Compr, #4 Tinned Copper Ground Braid (with solder block) and Constant Force Spring.

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USE RANGE INFORMATION

The following product sizing information is based on AEIC/ICEA dimensional ranges. The true range of the CSH Series on a particular cable construction may vary. To confirm sizing on non-standard cables, or to check sizing on cables that fall just outside our min or max, contact the factory.

Nominal Use Range - Size "O"

COMING SOON!

Nominal Use Range - Size "P"

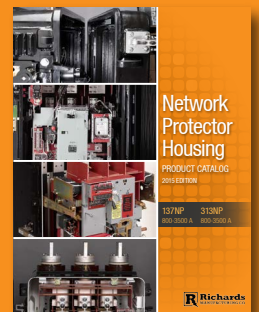
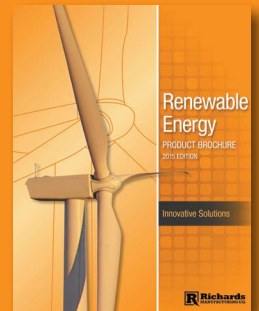
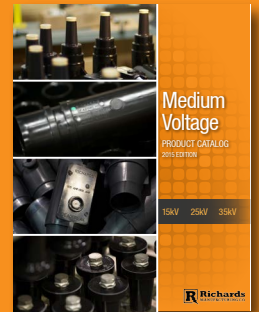
Voltage Class	Conductor Size	
	Minimum	Maximum
15kV	350 kcmil*	750 kcmil
25kV	4/0 AWG	750 kcmil

Minimum Insulation Diameter = 0.990"

* May not fit some 350kcmil compact 100% (175 mil) insulated power cables. Check minimum insulation diameter to confirm.

Nominal Use Range - Size "Q"

COMING SOON!



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