Applications:

Seals:

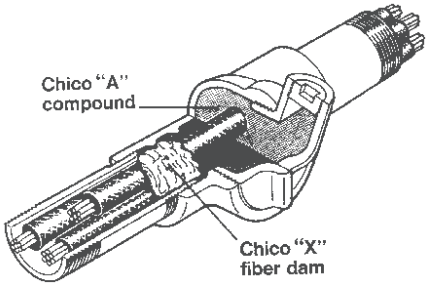
- Seals are installed in conduit runs to prevent the passage of gases, vapors or flames from one portion of the electrical installation to another through the conduit, limiting any explosion to the enclosure and preventing precompression or "pressure piling."
- While not a National Electrical Code requirement, many engineers consider it good practice to sectionalize long conduit runs by inserting seals not more than 50' to 100' apart, depending on the conduit size, to minimize the effects of "pressure piling."

Breathers:

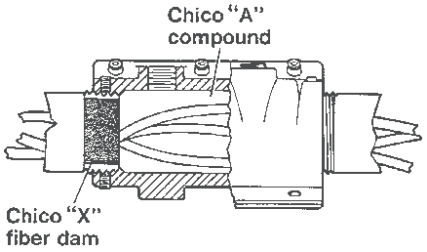
- Breathers (vents), are installed in the top of enclosures to provide ventilation to minimize condensation in enclosures.

Drains:

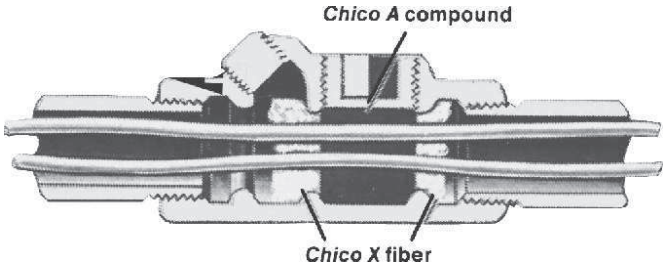
- Drains are used in humid atmospheres or in wet locations where it is likely that water can gain entrance to the interiors of enclosures or raceways. The raceways should be inclined so that water will not collect in enclosures or on seals, but will be led to low points where it may pass out through ECD drains.
- Frequently the arrangement of raceway runs makes this method impractical if not impossible. In such instances, EZD or EYD drain seal fittings should be used. These fittings prevent harmful accumulations of water above the seal.



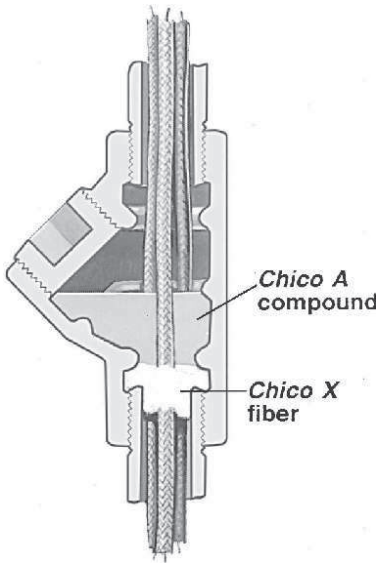
EZS Horizontal seal



EYSR Retrofit seal



EYS Horizontal seal



EYS 1 Vertical sealing

Considerations for Selection:

Seals:

- Select the proper sealing fitting for the hazardous vapor involved; i.e., Class I, Division 1 & 2, Groups A, B, C or D.
- Select the appropriate seal for new or retrofit installations.
- Select a sealing fitting for the proper use in respect to mounting position. This is particularly critical when the conduit runs between hazardous and non-hazardous areas. Improper positioning of a seal may permit hazardous gases or vapors to enter the system beyond the seal and permit them to escape into another portion of the hazardous area or to enter a non-hazardous area. Some seals are designed to be mounted in any position; others are restricted to vertical mounting.

The amount of *Chico*® fiber and compound required for any seal is determined by volume, hub size and mounting position of the seal.

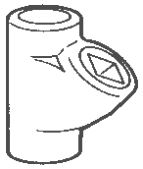
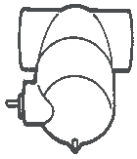
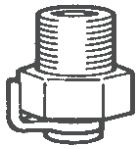
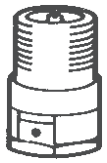
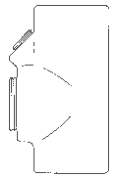
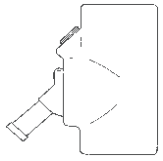
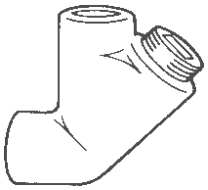
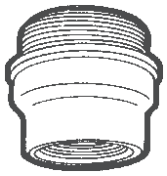
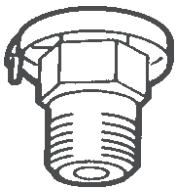
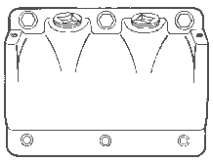
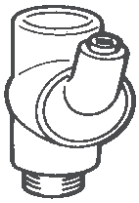
Drains:

- In locations which are usually considered dry, surprising amounts of water frequently collect in conduit systems. No conduit system is airtight, therefore, it may "breathe". Alternate increases and decreases in temperature and/or in barometric pressure, due to weather changes or due to the nature of the process carried on in the location where the conduit is installed, will cause "breathing," resulting in condensation and water accumulation.
- In view of this likelihood, it is therefore good practice to insure against such water accumulations and probable subsequent insulation failures by installing breathers, drain seals, or inspection seals, even though conditions prevailing at the time of planning or installing do not indicate their need.

Options:

Description	Suffix
Corro-free™ epoxy powder coat	**S752**

Shape Selector Chart
Quick Selector Chart

Series	Page	Series	Page	Series	Page	Series	Page	Series	Page	Series	Page
EYS / EYSA	see page 146	EZD	see page 151	ECD Standard	see page 164	ECD Universal	see page 164	EYSX	see page 152	EYDX	see page 153
											
EYS Elbow Seal	see page 146	ES	see page 155			EYD	see page 150	EYSR	see page 150	EZS	see page 147
											

Quick Selector Chart

Series	Description	NEC Hazardous Group	For Conduit Angle
EYS	Seal	Class I, Groups A, B, C, D Class II, Groups E, F, G	Vertical and Horizontal
EYS ATEX	Seal	Ex II 2 G EEx d IIC	Vertical and Horizontal
EYSA	Seal	Flameproof, Exd, IIC	Vertical and Horizontal
EYS 29	Elbow Seal	Class I, Groups C, D Class II, Groups E, F, G	90° turn
EYSR	Retrofit Seal/Drain Seal*	Class I, Div. 2, Groups C, D Class II, Div. 2, Groups E, F, G Class III	Vertical and Horizontal
EYSX	Expanded Fill Sealing Fittings	Class I, Groups B, C, D Class II, Groups E, F, G	Vertical and Horizontal
EZS	Seal	Class I, Groups C, D Class II, Groups E, F, G	All
EZS ATEX	Seal	Ex II 2 G EEx d IIC	All
ES	Sealing Hub	Class I, Groups C, D	Vertical
EYD	Seal and Drain	Class I, Groups B, C, D Class II, Groups F, G	Vertical
EYDX	Expanded Fill Sealing Fittings and Drain	Class I, Groups B, C, D Class II, Groups F, G	Vertical
EZD	Inspection Seal and Drain – Inspection Seal only	Class I, Groups C, D Class II, Groups E, F, G	Vertical
ECD	Standard Breather only Drain only	Class I, Groups B, C, D Class II, Groups E, F, G Class III	
ECD	Universal Drain – Breather	Class I, Groups C, D Class II, Groups F, G	
CD	Non-hazardous Drain		
UHPS	Ultra High Pressure Seal	Class I, Div. 1, Groups B, C, D Certified to CSA Standards through QPS	
SPSR	Secondary Process Seal with Rupture Sensor	Cl. I, Div. 1 & 2, Groups B, C, D Cl. I, Zone 1 & 2 IIB + H_2 Cl. II, Div. 1 & 2, Groups E, F, G	

*Drain purchased separately.

6F Conduit Sealing Fittings

Chico Sealing Compound and Fiber see pages 161–162

Cl. I, Div. 1 & 2, Groups A, B, C, D Explosionproof
Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof
Cl. II, Div. 2, Groups F, G
Cl. III

Applications:

EYS and EZS sealing fittings:
- Restrict the passage of gases, vapors or flames from one portion of the electrical installation to another at atmospheric pressure and normal ambient temperatures
- Limit explosions to the sealed off enclosure
- Limit precompression or pressure "piling" in conduit systems

Sealing fittings are required:
- At each entrance to an enclosure housing an arcing or sparking device when used in Class I, Division 1 and 2 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- At each conduit entrance of 2" size or larger to an enclosure or fitting housing terminals, splices or taps when used in Class I, Division 1 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- In conduit systems when leaving Class I, Division 1 or Division 2 hazardous locations
- In cable systems when the cables either do not have a gas/vaportight continuous sheath or are capable of transmitting gases or vapors through the cable core when those cables leave the Class I, Division 1 or Division 2 hazardous locations

Features:

EYS and EZS sealing fittings include:
- Minimum turning radius
- Large openings with threaded closures to provide easy access to conduit hubs for making dams
- Integral bushings in conduit hubs to protect conductor insulation from damage
- Taper-tapped hubs to ensure ground continuity

EYS sealing fittings are available for installation in either vertical only or in both horizontal or vertical positions.

EZS sealing fittings for installation at any angle; the covers with opening for sealing compound can be properly positioned to accept the compound.

Certifications and Compliances:

- NEC/CEC:
  EYS1-3, 11-31, 16-36, 116-316
  Class I, Division 1 & 2, Groups A, B, C, D
  Class II, Division 1, Groups E, F, G
  Class II, Division 2, Groups F, G
  Class III
  EYS41-101, 416-1016
  Class I, Division 1 & 2, Groups B, C, D
  Class II, Division 1, Groups E, F, G
  Class II, Division 2, Groups F, G
  Class III
  EYS29, 4-014, 46-0146
  EZS1-8, 16-86
  Class I, Division 1 & 2, Groups C, D
  Class II, Division 1, Groups F, G
  Class II, Division 2, Groups F, G
  Class III
- UL Standard: 886
- CSA Standard: C22.2

Sealing fittings are approved for use in hazardous locations only when *Chico® X* fiber and *Chico A* sealing compound or Chico SpeedSeal are used to make the seal.

Standard Materials:

- Bodies – *Feraloy®* iron alloy and/or ductile iron
- Plugs – *Feraloy* iron alloy and/or steel
- Removable nipples – steel

Standard Finishes:

- *Feraloy* iron alloy and ductile iron – electrogalvanized and aluminum acrylic paint
- Steel – electrogalvanized

Options:

Description	Suffix
Copper-free aluminum bodies, nipples and enclosures	SA

Size Ranges:

- ½" – 6"

Ordering Information - EYS


Vertical female


Vertical male & female


Vertical or horizontal female


Vertical or horizontal male & female

For Sealing in Vertical Positions Only

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches
½	**EYS1***	**EYS16***	1
¾	**EYS2***	**EYS26***	2
1	**EYS3***	**EYS36***	3¾

For Sealing in Vertical or Horizontal Positions

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches	
			Vertical	Horizontal
½	**EYS11***	**EYS116***	1	1
¾	**EYS21***	**EYS216***	2	2
1	**EYS31***	**EYS316***	3	3¾
1¼	**EYS41**	**EYS416**	6	8
1½	**EYS51**	**EYS516**	10¾	12¼
2	**EYS61**	**EYS616**	19	22¾
2½	**EYS71**	**EYS716**	25½	30
3	**EYS81**	**EYS816**	56	64½
3½	**EYS91**	**EYS916**	72	82
4	**EYS101**	**EYS1016**	95	110

*Available in copper-free aluminum – to order, add suffix SA to Cat. No.

Dimensions (In Inches)

EYS 16 Series

Size	a	b	Turning Radius
½	3 9/32	1 1/4	1 5/8
¾	3 12/16	1 1/2	1 29/32
1	4 5/16	1 3/4	2 3/8

EYS 116 Series

a	b	Turning Radius
3 11/16	1 1/4	1 5/32
3 11/16	1 1/2	1 1/4
4 5/16	1 3/4	1 3/8

EYS 46 Series

1 1/4	5 1/16	2 3/16	1 23/32
1 1/2	5 1/2	2 7/16	2 1/16
2	6 1/4	3	2 5/16
2 1/2	7 1/2	3 1/2	2 11/16
3	8 1/2	4 1/4	3 5/16
3 1/2	9 3/16	4 3/4	3 7/16‡
4	9 3/4	5 1/4	3 11/16‡
5	11 1/16	6 1/2	4 19/32‡
6	12 1/8	7 5/8	5 11/32‡

EYS 116 Series

5 1/16	2 3/16	1 23/32
5 1/2	2 7/16	2 1/16
6 1/4	3	2 5/16
7 1/2	3 1/2	2 11/16
8 1/2	4 1/4	3 5/16
9 3/16	4 3/4	3 7/16‡
9 3/4	5 1/4	3 11/16‡

‡With cover removed.

COOPER Crouse-Hinds

Ordering Information - EYS

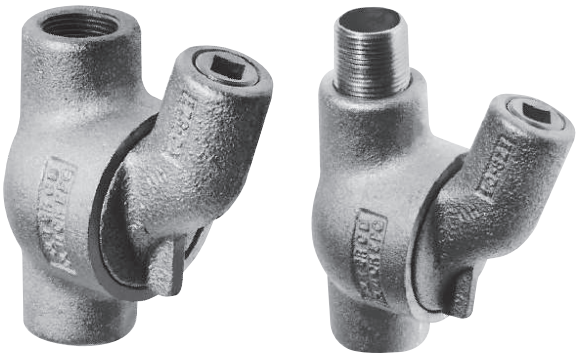
Vertical or horizontal male & female

For Sealing in Vertical or Horizontal Positions

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches Vert.	Horiz.
1¼	**EYS4***	**EYS46***	6	8
1½	**EYS5***	**EYS56***	10¾	12¼
2	**EYS6***	**EYS66***	19	22¾
2½	**EYS7***	**EYS76***	25½	30
3	**EYS8***	**EYS86***	56	64½
3½	**EYS9***	**EYS96***	72	82
4	**EYS10***	**EYS106***	95	110
5	**EYS012**	**EYS0126**	200	222
6	**EYS014**	**EYS0146**	290	315

*Available in copper-free aluminum – to order, add suffix SA to Cat. No.

Ordering Information - EZS



Male & female hub

For Sealing at Any Angle

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches Vert.	Horiz.
½	**EZS1**	**EZS16**	6¼	6¼
¾	**EZS2**	**EZS26**	6½	6½
1	**EZS3**	**EZS36**	10¼	10¼
1¼	**EZS4**	**EZS46**	12½	12½
1½	**EZS5**	**EZS56**	14½	14½
2	**EZS6**	**EZS66**	46	46
2½	**EZS7**	**EZS76**	55	55
3	**EZS8**	**EZS86**	90	90

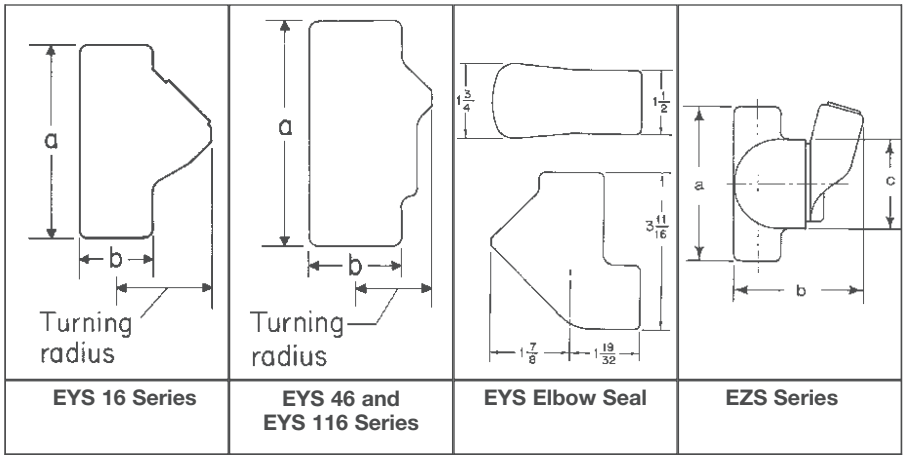
EYS

Elbow seal

For Sealing in Vertical Positions

Hub Size	Cat. #	Approximate Internal Volume in Cubic Inches
¾	**EYS29**	1¾

Dimensions
In Inches



EYS 16 Series | **EYS 46 and EYS 116 Series** | **EYS Elbow Seal** | **EZS Series**

EYS Elbow Seal

Size	a	b	Turning Radius (Vertical)
¾	3 11/16	1¾	1⅞

EZS Series

Size	a	b	c	Turning Radius†
½	4 3/16	3⅝	2½	1⅞
¾	4 3/16	3⅝	2½	1⅞
1	4 15/16	3 31/32	3	2⅛
1¼	5 1/16	4 13/32	3	2 5/16
1½	5 3/16	4 9/16	3¼	2 11/32
2	7 1/16	5 13/32	5 9/16	3 9/32
2½	7 15/16	5 27/32	5 3/16	3⅜
3	8⅝	6½	5⅞	3⅞

†With cover removed.

for IEC Applications

Applications:

EYS and EZS sealing fittings:

- Restrict the passage of gases, vapors or flames from one portion of the electrical installation to another at atmospheric pressure and normal ambient temperatures
- Limit explosions to the sealed off enclosure
- Limit precompression or pressure "piling" in conduit systems

Sealing fittings are required:

- At each entrance to an enclosure housing an arcing or sparking device when used in Class I, Division 1 and 2 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- At each conduit entrance of 2" size or larger to an enclosure or fitting housing terminals, splices or taps when used in Class I, Division 1 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- In conduit systems when leaving Class I, Division 1 or Division 2 hazardous locations
- In cable systems when the cables either do not have a gas/vaportight continuous sheath or are capable of transmitting gases or vapors through the cable core when those cables leave the Class I, Division 1 or Division 2 hazardous locations

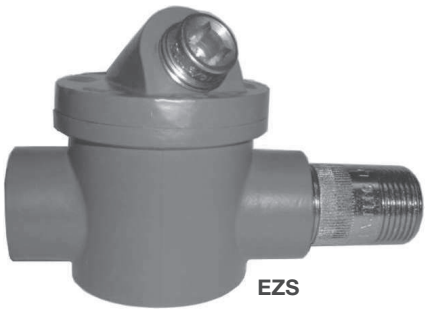
Features:

EYS and EZS sealing fittings include:

- Minimum turning radius
- Large openings with threaded closures to provide easy access to conduit hubs for making dams
- Integral bushings in conduit hubs to protect conductor insulation from damage
- Taper-tapped hubs to ensure ground continuity

EYS sealing fittings are available for installation in either vertical only or in both horizontal or vertical positions.

EZS sealing fittings for installation at any angle; the covers with opening for sealing compound can be properly positioned to accept the compound.



EZS

EYS

Certifications and Compliances:

- IEC:
  Ex II 2 G EEx d IIC
  EC-Type examination certificate LOM 03 ATEX 2108
- IP67 according to EN 60529

Standard Materials:

- Bodies – Light alloy, natural finish
- Plugs – Light alloy, natural finish
- Removable nipples – Light alloy, natural finish

Size Ranges:

- EYS - ½" – 4"
- EZS - ½" – 1"

Ordering Information

Series	Mounting Direction	Hub Size	Cat. #
EYS	Vertical	½" NPT	**NOR 000 002 220 117**
EYS	Vertical	¾" NPT	**NOR 000 002 220 125**
EYS	Vertical	1" NPT	**NOR 000 002 220 133**
EYS	Vertical	1" NPT	**NOR 000 002 220 620**
EYS	Horizontal	1½" NPT	**NOR 000 002 220 160**
EYS	Horizontal	2" NPT	**NOR 000 002 220 168**
EZS	Horizontal	½" NPT	**NOR 000 002 220 216**
EZS	Horizontal	¾"NPT	**NOR 000 002 220 224**
EZS	Horizontal	1" NPT	**NOR 000 002 220 232**
EZS	Horizontal	1" NPT	**NOR 000 002 220 729**

EYSA Flameproof Sealing Fitting

Applications:

EYSA sealing fittings:

- Restrict the passage of gases, vapors, or flames from one portion of the electrical installation to another at atmospheric pressure and normal ambient temperatures
- Limit explosions to the sealed off enclosure
- Prevent pre-compression or "pressure piling" in conduit systems

Sealing fittings are required:

- At each entrance to an enclosure housing an arcing or sparking device when used in Zone 1, hazardous locations to be located as close as practicable and in no case more than 450mm from such enclosures
- In conduit systems when leaving the Zone 1 area and entering an area of lesser hazard

Features:

- Minimum turning radius
- Large openings with threaded closures to provide easy access to conduit hubs for making dams
- Integral bushings to protect conductor insulation from damage
- Removable male nipple supplied when male and female hub style is ordered

Certifications and Compliances:

- Type of Protection: Ex d, DIP A21, T60ºC, IP66
- Degree of Protection: IP66
- Gas Group: IIC

Approvals: IEC Ex TSA07.0015-1

Standard Materials:

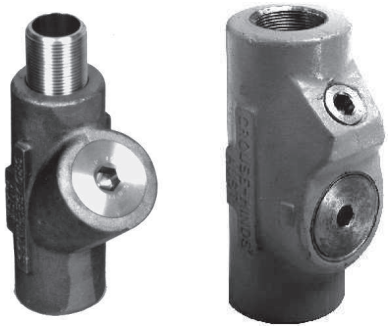
- Bodies - copper-free aluminum
- Removable nipples and plugs - brass

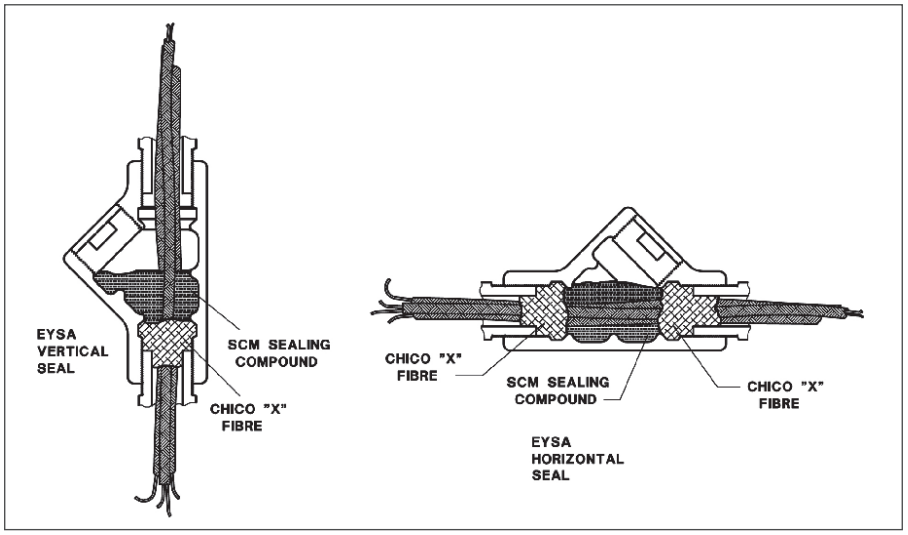
Standard Finishes:

- Body - polyurethane gray
- Nipples and plugs - natural

Options:

- Stainless steel body - add suffix "SS" to catalog number





Ordering Information:

Entry Size	Female	Male & Female	Weight of Sealing Compound per Seal (g)	Weight of Chico X Fiber per Seal (g)
20mm/20mm	**EYSA1M**	**EYSA16M**	50	1
25mm/25mm	**EYSA2M**	**EYSA26M**	100	2
32mm/32mm	**EYSA3M**	**EYSA36M**	188	3.5
40mm/40mm	**EYSA4M**	**EYSA46M**	406	7
50mm/50mm	**EYSA5M**	**EYSA56M**	550	14
¾" BSP/3/4" BSP	**EYSA2B**	**EYSA26B**	100	2
20mm/1/2" BSP	**EYSA11MB**	-	50	1
20mm/3/4" BSP	**EYSA12MB**	-	50	1
25mm/1/2" BSP	**EYSA21MB**	-	100	2
25mm/3/4" BSP	**EYSA22MB**	-	100	2

6F Conduit Sealing Fittings With Drains

Cl. I, Div. 1 & 2, Groups B, C, D§ Explosionproof
Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof
Cl. II, Div. 2, Groups F, G
Cl. III

Chico Sealing Compound and Fiber see pages 161–162

Applications:

EYD drain and EZD drain and inspection sealing fittings:

- Restrict the passage of gases, vapors or flames from one portion of the electrical installation to another at atmospheric pressure and normal ambient temperatures
- Limit explosions to the sealed-off enclosure
- Prevent precompression or "pressure piling" in conduit systems

Drain sealing fittings are installed in vertical conduit runs and at low points in conduit systems to prevent accumulation of condensate above seal.

For sealing fitting requirements see page 145.

Features:

EYD and EZD drain sealing fittings include:

- Drain to provide continuous, automatic drainage of condensate
- Large openings with threaded closures to provide easy access to conduit hubs for making dams
- Integral bushings to protect conductor insulation from damage
- Taper-tapped hubs to ensure ground continuity

EZD drain and inspection sealing fittings also include:

- Removable covers for periodic inspection of seals
- Barrier for sealing compound easily installed after dams are made and before compound is poured.

Certifications and Compliances:

- NEC/CEC:
  EYD11-101, 116-1016
  Class I, Division 1 & 2, Groups B, C, D
  Class II, Division 1, Groups E, F, G
  Class II, Division 2, Groups F, G
  Class III
  EYD1-10, 16-106, EZD10-60, 111-611
  Class I, Division 1 & 2, Groups C, D
  Class II, Division 1, Groups F, G
  Class II, Division 2, Groups F, G
  Class III
- UL Standard: 886
- CSA Standard: C22.2

Standard Materials:

- Bodies, and inspection or drain covers – *Feraloy*® iron alloy and/or ductile iron
- Closure for drain – copper-free aluminum or ductile iron
- Small closure plug – *Feraloy* iron alloy and/or steel
- Drain – stainless steel
- Removable nipples – steel

Standard Finishes:

- *Feraloy* iron alloy and ductile iron – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural
- Steel – electrogalvanized

Options:

Description	Suffix
Copper-free aluminum bodies, nipples and enclosures	SA

Size Ranges:

- EYD – ½" – 4"
- EZD – ½" – 2"

Ordering Information - EYD

½" – 1" Female hub

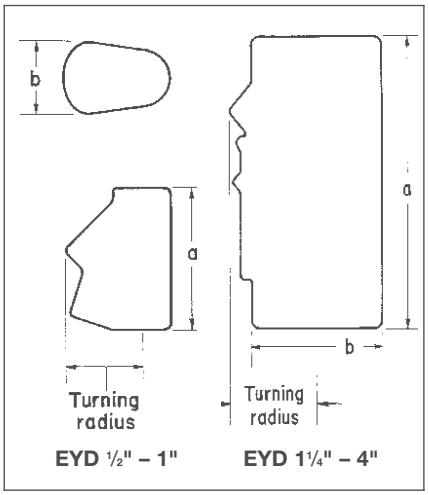
½" – 1" Male & female hub

1¼" – 4" Female hub

1¼" – 4" Male & female hub

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches
½	**EYD1***	**EYD16***	**EYD11**	**EYD116**	1
¾	**EYD2***	**EYD26***	**EYD21**	**EYD216**	2
1	**EYD3***	**EYD36***	**EYD31**	**EYD316**	3¾
1¼	**EYD4***	**EYD46***	**EYD41**	**EYD416**	8
1½	**EYD5***	**EYD56***	**EYD51**	**EYD516**	10¾
2	**EYD6***	**EYD66***	**EYD61**	**EYD616**	20
2½	**EYD7***	**EYD76***	**EYD71**	**EYD716**	35
3	**EYD8***	**EYD86***	**EYD81**	**EYD816**	57
3½	**EYD9***	**EYD96***	**EYD91**	**EYD916**	75
4	**EYD10***	**EYD106***	**EYD101**	**EYD1016**	105

Dimensions
In Inches



EYD ½" – 1" **EYD 1¼" – 4"**

EYD Drain Seal

Size	a	b	Turning Radius
½	3 9/32	1 1/4	1 5/8
¾	3 11/16	1 1/2	1 29/32
1	4 5/16	2 3/16	2 3/8
1¼	5 1/16	2 3/16	1 27/32†
1½	5 1/2	2 7/16	2 1/16†
2	6 1/4	3	2 5/16†
2½	7 1/2	3 1/2	2 11/16†
3	8 1/2	4 1/4	3 5/16†
3½	9 9/16	4 3/4	3 7/16‡
4	9 3/4	5 1/4	3 1/2†

†With cover removed.
*Available in copper-free aluminum – to order, add suffix SA to Cat. No.
Sealing Fittings are approved for use in hazardous locations only when *Chico*® *X* fiber and *Chico A* sealing compound or Chico SpeedSeal are used to make the seal.
§See Certifications and Compliances for classification of each product.

COOPER Crouse-Hinds

Conduit Sealing Fittings with Drain and Inspection Cover

Cl. I, Div. 1 & 2, Groups C, D Explosionproof
Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof
Cl. II, Div. 2, Groups F, G
Cl. III

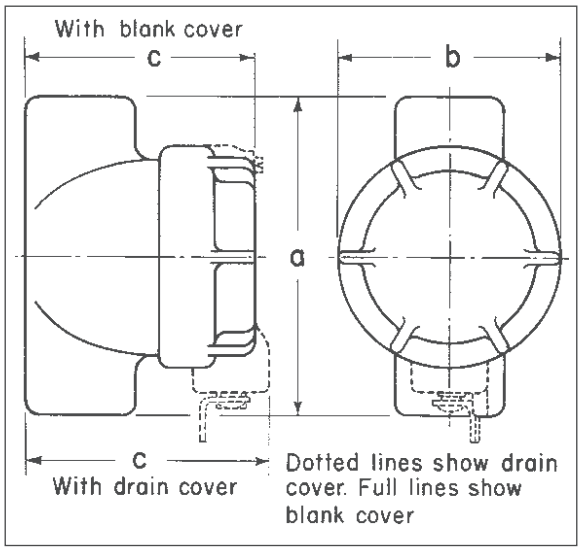
Chico Sealing Compound and Fiber see pages 161–162

EZD With Drain Cover

Hub Size	Cat. #	Approximate Internal Volume in Cubic Inches
½	**EZD111**	5
¾	**EZD211**	6
1	**EZD311**	10
1¼	**EZD411**	11
1½	**EZD511**	13
2	**EZD611**	40

Dimensions

In Inches:



EZD Drain and Inspection Seals

Size	a	b	Drain Cover c	Turning Radius†
½	4 3/16	3	3 3/8	2 1/16
¾	4 3/16	3	3 5/8	2 3/16
1	4 15/16	3 1/2	3 7/8	2 7/16
1¼	4 15/16	3 1/2	4 5/16	2 5/8
1½	5 3/16	3 1/2	4 9/16	2 11/16
2	7 1/8	5 9/16	5 1/4	3 11/16

†With cover removed.

6F EYSX Expanded Fill Sealing Fittings

Cl. I, Div. 1 & 2, Groups B, C, D§
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

Chico Sealing Compound and Fiber see pages 161–162

Applications:

EYSX Expanded Fill Sealing Fittings:

- Restrict the passage of gases, vapors or flames from one portion of the electrical installation to another at atmospheric pressure and normal ambient temperatures
- Limit explosions to the sealed-off enclosure
- Limit precompression or "pressure piling" in conduit systems
- Provide 40% wire fill capacity to allow uninterrupted runs in a conduit system

Sealing fittings are required:

- At each entrance to an enclosure housing an arcing or sparking device when used in Class I, Division 1 and 2 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- At each entrance of 2" size or larger to an enclosure or fitting housing terminals, splices or taps when used in Class I, Division 1 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- In conduit systems when leaving Class I, Division 1 or 2 hazardous locations
- In cable systems when the cables either do not have a gas/vaportight continuous sheath or are capable of transmitting gases or vapors through the cable core when those cables leave the Class I, Division 1 or 2 hazardous locations

Features:

EYSX Expanded Fill Sealing Fittings provide:

- A 40% wire fill capacity for expanded fill sealing
- Large openings with threaded closures to provide easy access to conduit hubs for making dams
- Integral bushings in conduit hubs to protect conductor insulation from damage
- Taper-tapped hubs to ensure ground continuity
- Minimum turning radius

EYSX Expanded Fill Sealing Fittings are available for installation in both horizontal or vertical positions.

Certifications and Compliances:

- NEC/CEC:
  EYSX11 – EYSX81
  Class I, Division 1 and 2, Groups B, C, D
  Class II, Division 1, Groups E, F, G
  Class II, Division 2, Groups F, G
  Class III
  EYSX9, EYSX10, EYSX1 SA – EYSX10 SA
  Class I, Division 1 and 2, Groups C, D
  Class II, Division 1, Groups E, F, G
  Class II, Division 2, Groups F, G
  Class III
- UL Standard: 886
- CSA Standard: C22.2 No. 30

Standard Materials:

- Bodies – *Feraloy*® iron alloy and/or ductile iron or copper-free aluminum (SA Suffix)
- Closures – *Feraloy* iron alloy and/or steel or copper-free aluminum (SA Suffix)

Standard Finishes:

- *Feraloy* iron alloy and ductile iron – electrogalvanized and aluminum acrylic paint
- Steel – electrogalvanized
- Copper-free aluminum – natural

Options:

Description	Suffix
Copper-free aluminum bodies and enclosures	SA

Size Ranges:

- ½" – 4"

Ordering Information

For Sealing in Vertical or Horizontal Positions

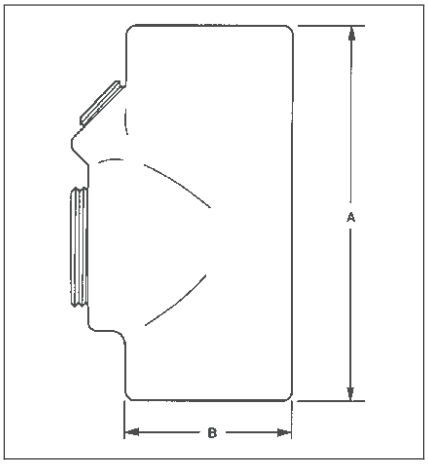
Hub Size	Female Hub Cat. #	Internal Volume in Cubic Inches Vertical	Horizontal
½	**EYSX11***	2	2
½	**EYSX1 SA**	2	2
¾	**EYSX21***	3	3¾
¾	**EYSX2 SA**	3	3¾
1	**EYSX31**	6	8
1	**EYSX3 SA**	6	8
1¼	**EYSX41**	19	22¾
1¼	**EYSX4 SA**	19	22¾
1½	**EYSX51**	19	22¾
1½	**EYSX5 SA**	19	22¾
2	**EYSX61**	56	64½
2	**EYSX6 SA**	56	64½
2½	**EYSX71**	72	82
2½	**EYSX7 SA**	72	82
3	**EYSX81**	95	110
3	**EYSX8 SA**	95	110
3½	**EYSX9***	200	222
3½	**EYSX9 SA**	200	222
4	**EYSX10***	200	222
4	**EYSX10 SA**	200	222

Vertical or horizontal female

Sealing fittings are approved for use in hazardous locations only when *Chico*® *X* fiber and *Chico A* sealing compound or Chico SpeedSeal are used to make the seal.

Dimensions

In Inches:



NPT Size	A	B	Turning Radius
½	3 11/16	1½	1¼
¾	4 5/16	1¾	1⅜
1	5 1/16	2 3/16	1 23/32
1¼	6¼	3	2 5/16
1½	6¼	3	2 5/16
2	8½	4¼	3 5/16
2½	9 3/16	4¾	3-7/16‡
3	9¾	5¼	3-11/16‡
3½	11 1/16	6½	4-19/32‡
4	11 1/16	6½	4-19/32‡

§ See Certifications and Compliances for classsification of each product.
‡With plug cover removed.
*Feraloy®

COOPER Crouse-Hinds

EYDX Expanded Fill Sealing Fittings With Drains

Cl. I, Div. 1 & 2, Groups B, C, D§
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

Chico Sealing Compound and Fiber see pages 161–162

Applications:

EYDX Expanded Fill Sealing Fittings with drains:

- Restrict the passage of gases, vapors or flames from one portion of the electrical installation to another at atmospheric pressure and normal ambient temperatures
- Limit explosions to the sealed-off enclosure
- Prevent precompression or "pressure piling" in conduit systems
- Provide 40% wire fill capacity to allow uninterrupted runs in a conduit system

Drain sealing fittings are installed in vertical conduit runs and at low points in conduit systems to prevent accumulation of condensate above seal.

For sealing fitting requirements see page 145.

Features:

EYDX Expanded Fill drain sealing fittings provide:

- A 40% wire fill capacity for expanded fill sealing
- Drain to provide continuous, automatic drainage of condensate
- Large openings with threaded closures to provide easy access to conduit hubs for making dams
- Integral bushings to protect conductor insulation from damage
- Taper-tapped hubs to ensure ground continuity

Certifications and Compliances:

- NEC/CEC:
  EYDX11 – EYDX81
  Class I, Division 1 and 2, Groups B, C, D
  Class II, Division 1, Groups E, F, G
  Class II, Division 2, Groups F, G
  Class III
  EYDX1 SA – EYDX8 SA
  Class I, Division 1 and 2, Groups C, D
  Class II, Division 1, Groups F, G
  Class II, Division 2, Groups F, G
  Class III
- UL Standard: 886
- CSA Standard: C22.2 No. 30

Standard Materials:

- Bodies and drain covers – *Feraloy*® iron alloy, and ductile iron or copper-free aluminum (SA Suffix)
- Closure for drain – copper-free aluminum or malleable iron
- Small closure plug – *Feraloy* iron alloy and/or steel or copper-free aluminum (SA Suffix)
- Drain – stainless steel

Standard Finishes:

- *Feraloy* iron alloy and ductile iron – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- Stainless steel – natural
- Steel – electrogalvanized

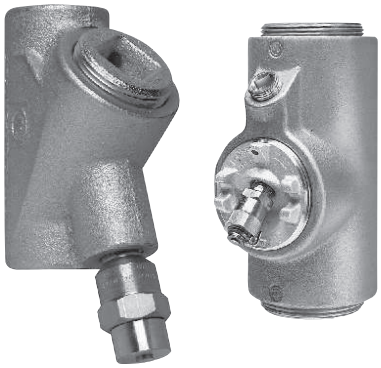
Options:

Description	Suffix
Copper-free aluminum bodies and enclosures	SA

Size Ranges:

- EYDX – ½" – 3"

Sealing Fittings are approved for use in hazardous locations only when *Chico*® *X* fiber and *Chico A* sealing compound or Chico SpeedSeal are used to make the seal.



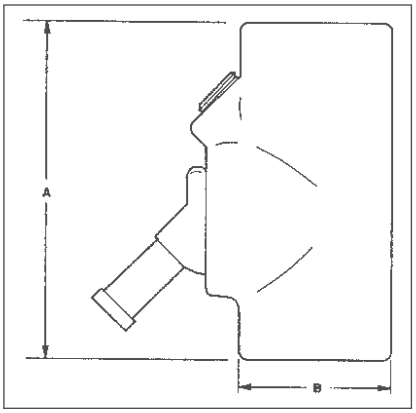
½" – ¾" 1" – 3"

Ordering Information

Hub Size	Female Hub Cat #	Internal Volume in Cubic Inches
½	**EYDX11***	2
½	**EYDX1 SA**	2
¾	**EYDX21***	3¾
¾	**EYDX2 SA**	3¾
1	**EYDX31**	8
1	**EYDX3 SA**	8
1¼	**EYDX41**	20
1¼	**EYDX4 SA**	20
1½	**EYDX51**	20
1½	**EYDX5 SA**	20
2	**EYDX61**	57
2	**EYDX6 SA**	57
2½	**EYDX71**	75
2½	**EYDX7 SA**	75
3	**EYDX81**	105
3	**EYDX8 SA**	105

§ See Certifications and Compliances for classification of each product.
* Feraloy®

Dimensions
In Inches:



EYDX NPT

Size	A	B	Turning Radius
½	3 11/16	13/4	1 29/32
¾	4 5/16	2 3/16	2 3/8
1	5 1/16	2 3/16	1-27/32†
1¼	6 1/4	3	2-5/16†
1½	6 1/4	3	2-5/16†
2	8 1/2	4 1/4	3-5/16†
21/2	9 3/16	4 3/4	3-7/16†
3	9 3/4	5 1/4	3-1/2†

†With drain cover removed.

6F EYSR Retrofit Sealing Fitting

Chico Sealing Compound and Fiber see pages 161–162

Cl. I, Div. 2, Groups C, D
Cl. II, Div. 2, Groups E, F, G
Explosionproof
Dust-Ignitionproof

Applications:

EYSR retrofit sealing fittings are installed:

- In rigid metal conduit systems in Class I, Division 2 hazardous locations
- To replace installed Cooper Crouse-Hinds type EYS or EYD sealing fittings
- Without disassembly of the conduit system
- In vertical or horizontal positions, indoors or outdoors
- To restrict the passage of gases, vapors, or flames from one portion of the electrical system to another at atmospheric pressures and normal ambient temperatures
- To limit explosions to the sealed-off enclosure
- To limit precompression or "pressure piling" in the conduit system
- To prevent accumulation of water in the conduit system when installed with an ECD15 drain

Features:

- Seal may be installed in the existing conduit run without disassembly of the conduit system saving time and labor
- Overall length and spacing requirements do not exceed those of standard EYS seals; permits close nesting of seals
- Pipe plugs permit the installation of a standard ECD15 drain fitting (order separately) for use in vertical conduit runs to drain any water that might accumulate in the conduit system
- Steel set screws provide grounding continuity
- Suitable for vertical and horizontal installations for indoor and outdoor applications
- Available in ¾" to 4" NPT sizes

Certifications and Compliances:

- NEC:
  - Class I, Division 2, Groups C, D
  - Class II, Division 2, Groups E, F, G
- UL Standard: 886, 1203
- CEC:
  - Class I, Division 1, Groups C, D
  - Class II, Division 1, Groups E, F, G
- CSA Standard: C22.2 No. 30

EYSR sealing fittings are approved for use in hazardous locations only when *Chico® A* sealing compound and *Chico X* fiber are used to make the seal.

Standard Materials:

- Body – *Feraloy®* iron alloy
- Pipe plugs, bolts and set screws – steel
- Gasket – neoprene

Standard Finishes:

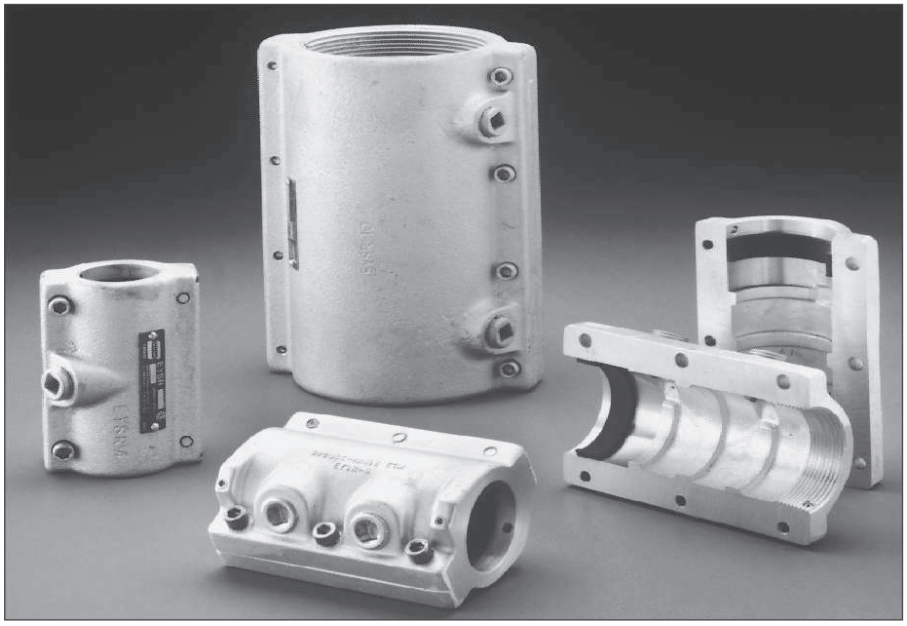
- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Steel – electrogalvanized
- Gasket – natural

Options:

Description	Suffix
Copper-free aluminum	SA

Size Ranges:

- ¾" – 4"



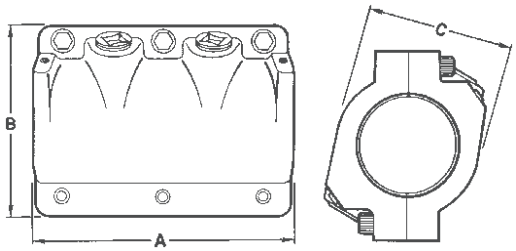
Ordering Information

Hub Size	Cat. #	Approximate Internal Volume in Cubic Inches* Vert.	Horiz.	Approximate Amount (oz.) of Fiber per Hub Vert.	Horiz.
¾	**EYSR2**	3½	5¾	1/16	⅛
1	**EYSR3**	4¾	9½	⅛	¼
1¼	**EYSR4**	7	13½	¼	½
1½	**EYSR5**	12¼	24¼	½	1
2	**EYSR6**	25¾	40½	1	2
2½	**EYSR7**	48	75½	1½	3
3	**EYSR8**	86½	126	2	4
3½	**EYSR9**	147	210	4½	9
4	**EYSR10**	186	252	4½	9

*Use the approximate internal volume in cubic inches to determine how much Chico A sealing compound is required.

Dimensions

In Inches:



Cat. #	A	B	C
EYSR2	3 11/16	2½	1½
EYSR3	4⅜	3⅛	3⅛
EYSR4	5	3⅜	3
EYSR5	5¼	3⅝	3
EYSR6	6¼	4	3

Cat. #	A	B	C
EYSR7	7½	5	3⅞
EYSR8	8½	5½	4¼
EYSR9	9 13/64	6 1/16	4¾
EYSR10	9¾	6⅝	5¼

COOPER Crouse-Hinds

ES Sealing Hubs

Cl. I, Div. 1 & 2, Groups C, D
Explosionproof
Watertight

Chico Sealing Compound and Fiber
see pages 161–162

Applications:

ES sealing hubs are used to:

- Seal vertical conduit risers at switchgear and motor control centers, sheet metal structures or cast boxes and enclosures
- Seal horizontal conduit runs at enclosures when used with TSC sealing compound

Certifications and Compliances:

- Class I, Division 1 & 2, Groups C & D
- UL Standard: 886
- CSA Standard: C22.2 No. 30

Standard Materials:

- *Feraloy*® iron alloy

Standard Finishes:

- Electrogalvanized and aluminum acrylic paint

Options:

ES sealing hubs, when used with SG armored gaskets and locknuts, provide a water and oiltight connection

Description	Suffix
Sealing gaskets and locknuts	SG

Ordering Information

Female Hub Size	Male Hub Size	Cat. #	Approximate Internal Volume in Cubic Inches
½	1	**ES31**	.65
¾	1	**ES32**	.65
1	1½	**ES53**	3.2
1¼	2	**ES64**	4.9
1½	2	**ES65**	4.7
2	2½	**ES76**	9.1
3	4	**ES108**	36.0
4	5	**ES01210**	95.0
5	6	**ES014012**	155.0

Note: Sealing hubs are approved for use in hazardous locations when *Chico*® *X* fiber and *Chico A* sealing compound are used to make the seal. Sealing hubs are approved for horizontal conduit runs for use in hazardous locations when used with TSC sealing compound, order 1 oz. tube as TSC1.

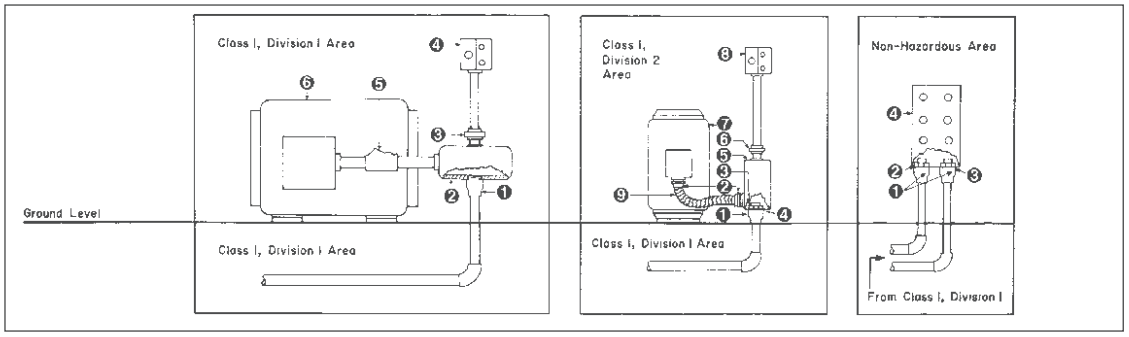
TSC Epoxy Sealing Compound

A two part epoxy sealing compound may be used to seal ES sealing hubs. It is quick and easy to measure, mix and install. The compound is kneaded until a uniform color is obtained. It is then packed around the conductors to effectively seal the cable.

Std. Ctn. Qty.	Tube Size	Cat. #†
10	0.5 oz	**TSC05**
10	1.0 oz	**TSC1**
5	4.0 oz	**TSC4**

†Order quantity of one (1) TSC05 or TSC1 equals 10 tubes; one (1) TSC4 equals 5 4.0 oz tubes.

Typical Installations

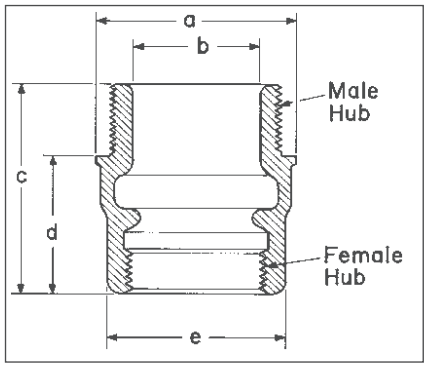


1. ES Sealing Hub
2. EJB Junction Box
3. UNY Union
4. EDS Factory Sealed Control Station
5. EYS Horizontal Seal
6. Explosion-Proof Motor

1. ES Sealing Hub
2. LT Connector
3. Locknut
4. Sealing Gasket
5. Junction Box
6. UNY Union
7. Synchronous Motor
8. EDS Factory Sealed Control Station
9. LT Conduit

1. ES Sealing Hub
2. Locknut
3. Sealing Gasket
4. Sheet Metal Structure, Motor Control Center, Panelboard, Unit Substation, Etc.

Dimensions
In Inches:



Cat. #	a	b	c	d	e
ES31	1 9/16	7/8	2	2 5/32	1 1/4
ES32	1 13/16	7/8	2	25/32	1 1/2
ES53	2 1/4	1 3/8	2 3/4	1 15/16	1 3/4
ES64	2 3/4	1 3/4	2 3/4	1 15/16	2 3/16
ES65	2 3/4	1 5/8	3 1/16	2	2 7/16
ES76	3 1/2	2 1/16	3 9/16	2	3
ES108	5 1/4	3 5/8	4 3/4	2 31/32	4 1/4
ES01210	6 5/8	4 5/8	6 3/4	4 27/32	5 1/4
ES014012	7 1/4	5 25/32	7 1/4	5 11/32	6 1/2

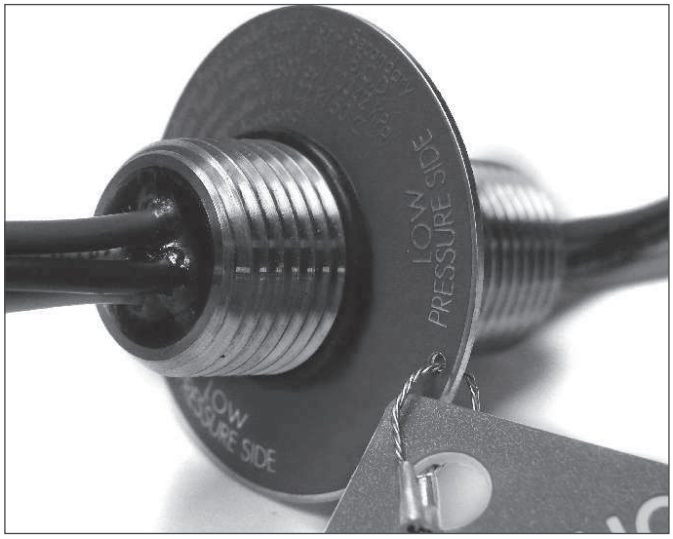
6F Ultra High Pressure Seal

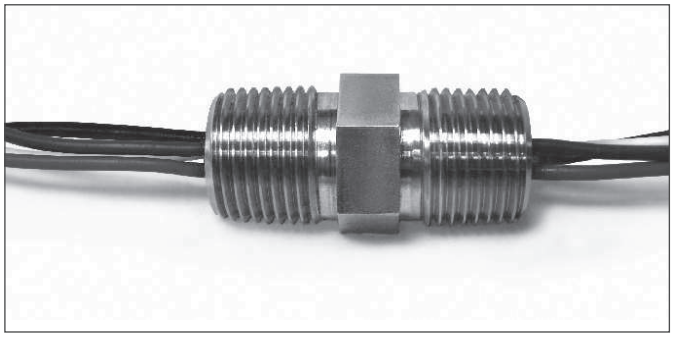
Cl. I, Div. 1, Groups B, C, D
Certified to CSA Standards through QPS

Rated to 1500 PSI

Applications:

- If the primary seal in an instrument should fail, the Cooper Crouse-Hinds Ultra High Pressure Seal (UHPS) will prevent gases from migrating through the electrical system into a non-classified location.
- Are designed to prevent the passage of gases under pressure through conduits, cables and conductors.
- Are ideal where volatile liquids or gases are stored, processed or transported under pressure.





Certifications & Compliances:

- Class I, Division 1, Groups B, C, D
- Certified to CSA Standards through QPS
- 24 Volt DC - 120 Volt AC
- Wire grade is rated to a 600 Volt safety factor
- ½" MNPT x ½" NPT
- Conforms to Section 18-108 and 18-158 of the CEC® for The Requirements of a Secondary Seal.

Standard Materials & Finishes:

- Stainless steel body - natural finish

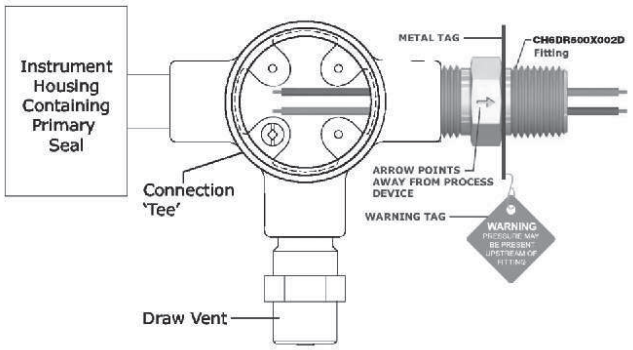
Quality Assurance:

Each fitting is tested at 1.5 times working pressure (max. working pressure 1500 PSI) as a gas and liquidtight explosionproof fitting. Each seal is also di-electric and resistance tested.

Ordering Information:

Catalog Number	Description
CH6DR500X002D14G	UHPS, 2 wire, 14 gauge
CH6DR500X002D16G	UHPS, 2 wire, 16 gauge
CH6DR500X002D18G	UHPS, 2 wire, 18 gauge
CH6DR500X002D22G	UHPS, 2 wire, 22 gauge
CH6DR500X004D14G	UHPS, 4 wire, 14 gauge
CH6DR500X004D16G	UHPS, 4 wire, 16 gauge
CH6DR500X004D18G	UHPS, 4 wire, 18 gauge
CH6DR500X004D22G	UHPS, 4 wire, 22 gauge
CH6DR500X234D14G	UHPS, 4 wire, 14G, 2' input, 3' output
CH6DR500X264D16G	UHPS, 4 wire, 16G, 2' input, 6' output
CH6DR500X294D16G	UHPS, 4 wire, 16G, 2' input, 9' output
CH6DR500X2D2D16G	UHPS, 2 wire, 16G, 2' input, CF output

INSTALLATION EXAMPLE:



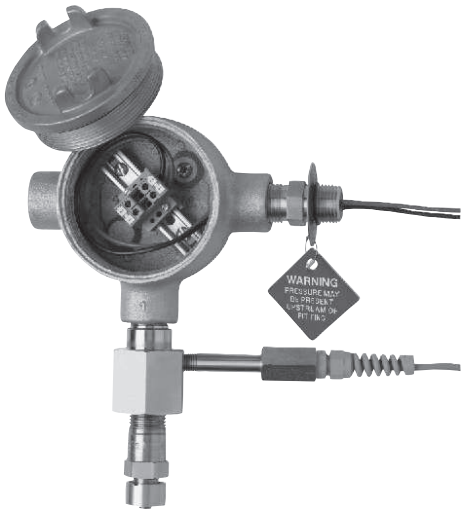
Applications:

Cooper Crouse-Hinds Secondary Process Seal Assembly with Rupture Indication Sensor is designed to prevent the passage of gases under pressure through conduit, cables and conductors while providing immediate notification of a dangerous, potentially explosive seal rupture. These assemblies are ideal where volatile liquids or gases are stored, processed or transported under pressure. If the primary seal in an instrument should fail, the Cooper Crouse-Hinds Secondary Process Seal will prevent gases, vapors and liquids from migrating into the non-classified location through the electrical system.

Rupture Indication Sensor:

The Secondary Process Seal features a rupture indication sensor that opens safely at 60 psi minimum and activates a circuit to a control system or alarm, which immediately alerts maintenance personnel that the primary seal has ruptured. The location of the problem can be pinpointed so the problem can be quickly addressed.

Innovative, intelligent technology combined with easy installation and low maintenance cost provides a safe and reliable solution for detection of a process seal rupture within your facility.



Features and Benefits:

Secondary Process Seal

- CSA and CSAus certified
- Meets or exceeds ANSI / ISA / CSA / CEC / NEC / API requirements for a secondary process seal and explosionproof conduit seal
- Sealed to 1500 psi, operates in any position
- Simplified design allows for easier installation in new and existing applications
- Integrated packaging contains all necessary components for installation
- The explosionproof drain allows for the safe release of gas, vapor or liquid from the electrical system to meet required codes
- Explosionproof terminal box features a simple design to provide access for quick connection of circuits
- Assembly with drain provides local "make obvious" indication of primary seal failure

Rupture Indication Sensor

- Rupture detection and indication at 60 psi
- Provides remote, immediate notification of a seal rupture, allowing for maintenance to quickly address the problem and isolate safety concerns
- Stainless steel construction provides superior corrosion resistance and durability

Ordering Information

	Assembly with Vent/Drain	Assembly with Rupture Indication Sensor and Vent/Drain
2 wire, 14 gauge	**SPS214**	**SPS214R**
2 wire, 16 gauge	**SPS216**	**SPS216R**
2 wire, 18 gauge	**SPS218**	**SPS218R**
2 wire, 22 gauge	**SPS222**	**SPS222R**
4 wire, 14 gauge	**SPS414**	**SPS414R**
4 wire, 16 gauge	**SPS416**	**SPS416R**
4 wire, 18 gauge	**SPS418**	**SPS418R**
4 wire, 22 gauge	**SPS422**	**SPS422R**

For Process Seal Rupture Indication Sensor replacement, order catalog #PSRIS.

Options:

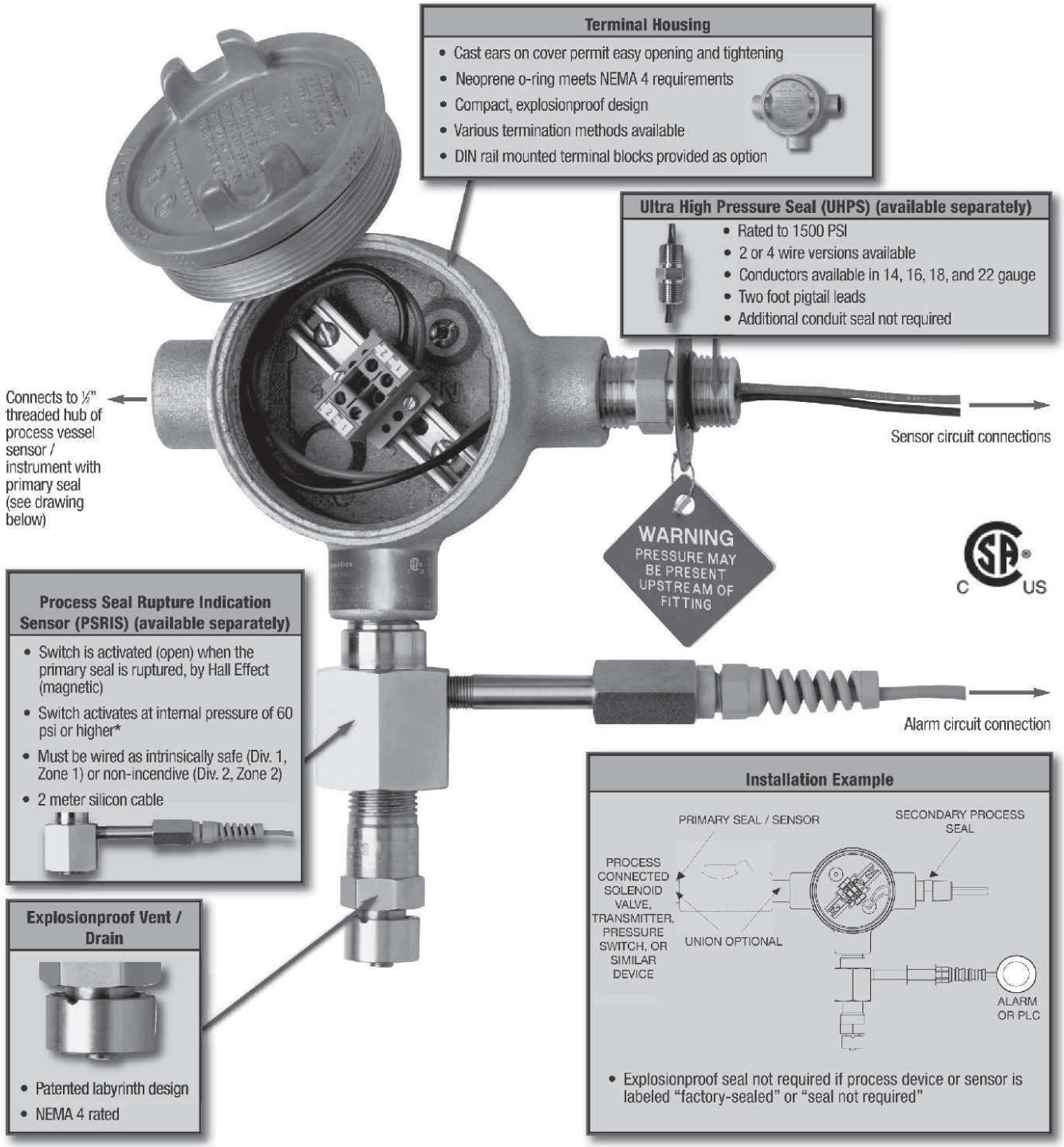
Description	Suffix
No terminal blocks	(leave option blank)
2 terminal blocks	DIN12
4 terminal blocks	DIN14

6F Secondary Process Seal Assemblies

Cl. I, Div. 1 & 2, Groups B, C, D NEMA 3, 4, 7BCD, 9
Cl. I, Zone 1 & 2 IIB + H_2
Cl. II, Div. 1 & 2, Groups E, F, G

Assembly Information

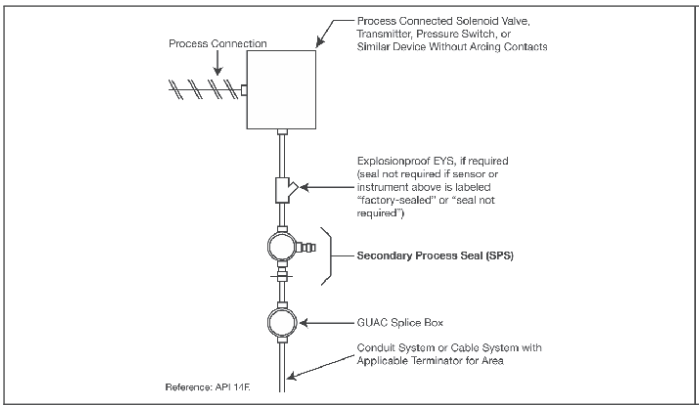
Assembly with process seal rupture indication sensor



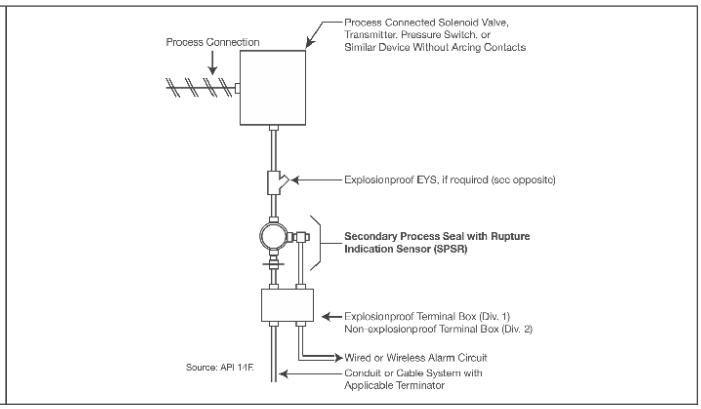
*60 psi internal pressure rating at 25°C ambient. Activation pressure may vary +/ - 10% depending on ambient variation.

Installation Examples

Secondary Process Seal with local "make obvious" indication using an ECD explosionproof drain



Secondary Process Seal with Rupture Indication Sensor for remote indication, and ECD explosionproof drain for local "make obvious" indication



Technical Data - Assembly

Product Certification

The Secondary Process Seal and Assemblies are CSA certified (Canada, U.S.)

Operating Pressure Rating

Rupture protection to 1500 psi

Rupture indication at 60 psi minimum

Operating Temperature Range

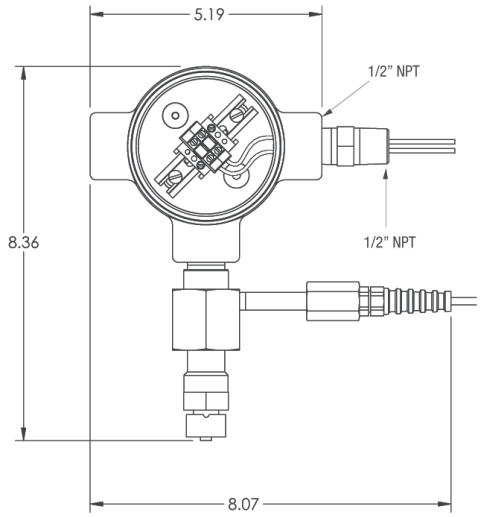
-25ºC to +50ºC

Note: For more extreme temperature and/or pressure requirements, please consult factory.

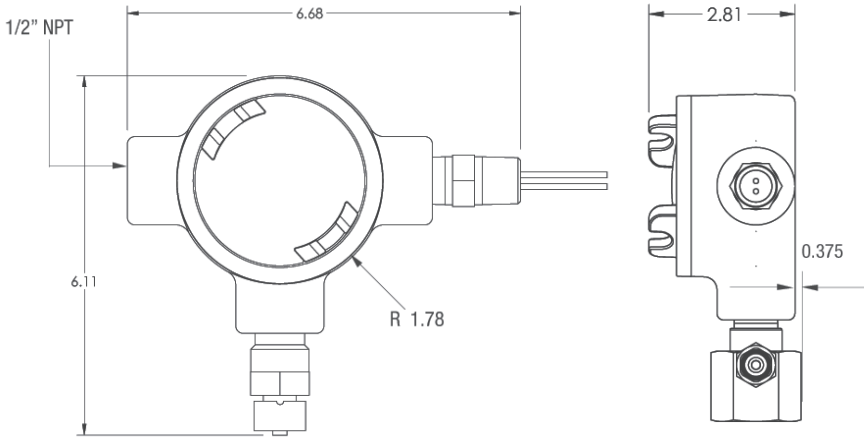
Technical Data - Components

Components	Construction	Certifications and Compliances	Rating	Area Suitability
Process Seal Rupture Indication Sensor	**Hub** - 316 stainless steel	ANSI / ISA 12.27.01 - 2003 CEC 18 - 108, 158 NEC 501.15(F)(3)	–	Cl. I, Div. 1 & 2, Groups B, C, D Cl. II, Div. 1 & 2, Groups E, F, G Zone 1 IIB+H_2 and Zone 2 IIB+H_2 NEMA 3, 4, 7BCD, 9
	Switch Assembly - hermetically sealed, nickeled brass, with silicon cable	(Div. 1, Zone 1) intrinsically safe (Div. 2, Zone 2) non-incendive Simple apparatus (NEC 504.4)	174 mA 24VDC T6 (Tamb ≤ 40°C) T5 (40°C < Tamb ≤ 55°C) T4 (55°C < Tamb ≤ 80°C)	
Ultra High Pressure Seal	Stainless steel	CSA 22.2 No. 30 - 03 CSA 22.2 No. 14 - 2005 ANSI / ISA 12.27.01 - 2003 CEC 18 - 108, 158 NEC 501.15(F)(3)	24VDC 120VAC	
Terminal Housing	Copper-free aluminum	UL886 CSA C22.2 No. 30	–	
Drain / Vent	Stainless steel	UL886 CSA C22.2 No. 30	–	

Dimensions (Inches):



Assembly with rupture sensor and vent/drain



Assembly with vent/drain

Note: Assemblies shown with DIN12 terminal blocks (optional)

