

Dry-Well Fuseholder for Current Limiting Fuses



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The growth in dead-front pad-mount transformers requires a method of placing dead-front type current-limiting fuses within the transformer. ERMCO Components' dry-well fuseholder design is suited to both single and three phase pad-mount applications.

BEYOND THE STANDARD

The trend towards higher system voltage, increased load density, and larger substations has caused higher fault current potentials on the distribution system and the need to interrupt those higher currents when a fault exists. Current-limiting fusing provides both a high interrupting current rating and limits the peak value of current and the amount of energy to within acceptable levels for protection of the transformer.

Improved Design

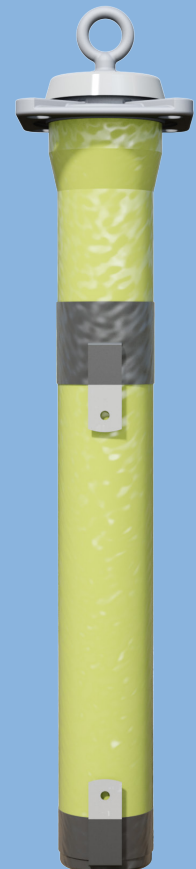
Housing - The dry-well housing consists of filament-wound glass tubing with a resin-rich outer surface. This outer surface serves as the barrier against oil permeation through the tubing wall. (See Figures 2-4 on page 2).

Dry-well fuseholder location - In padmounted transformer applications, the dry-well fuseholder is mounted on the transformer front plate, below the oil level. Because the current-limiting fuses that these fuse-holders are designed to accept will not function properly if exposed to transformer oil, the interior of the fuseholder must remain oil tight.

Non-loadbreak fuseholders

Non-loadbreak fuseholders for padmounted transformer applications are available at 8.3, 15.2, and 21.1 kV (125 kV BIL), both standard and submersible construction. The 21.1 kV (150 kV BIL) rating is available in standard construction only. The applicable device ratings are listed in [Table 1](#).

For those applications where an interlocked loadbreak switch is not used in conjunction with the non-loadbreak fuseholder, an important feature of the non-loadbreak fuseholder is an integral warning nameplate to warn against operation while energized, and safety support that must be moved to gain access to the fuse (see Figure 6 on page 4). This optional warning nameplate assembly is available from ERMCO Components, Inc.



[Dry-well Fuseholder Test Report](#)

For more information about the Dry-well Fuseholder, contact your Ermco Components representative or call (877) 267-1855

Dry-well Fuseholder for Current-limiting Fuse Details

Table 1 Non-Loadbreak - Standard and Submersible				
Line to Ground	8.3 kV	15.2 kV	21.1 kV	21.1 kV**
Impulse Withstand	95 kV	125 kV BIL	125 kV BIL	150 kV BIL
Corona Extinction	11 kV	19 kV	26 kV	26 kV
Momentary Current (without fuse)	10,000 Amps*	10,000 Amps*	10,000 Amps*	10,000 Amps*
Continuous Current (without fuse)	160 Amps*	160 Amps*	160 Amps*	160 Amps*
Max Fault Current	EQUAL TO FUSE RATING			
Interrupting Ability				

*rms Symmetrical ** Not available in submersible design



Figure 1 (8.3, 15.2, or 21.1 kV)
Typical non-loadbreak fuseholder warning nameplate assembly.
[\(See page 4 for details\)](#)

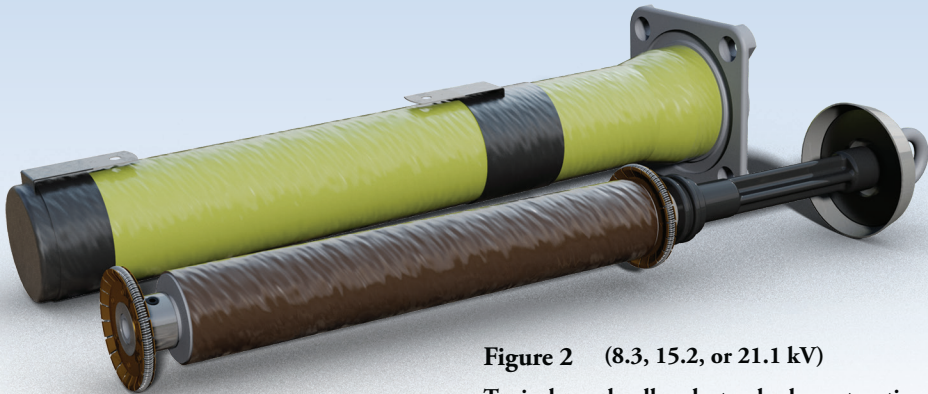


Figure 2 (8.3, 15.2, or 21.1 kV)
Typical non-loadbreak standard construction fuseholder and current-limiting fuse assembly.
- Fuse not included
[\(See pages 6-7 for details\)](#)

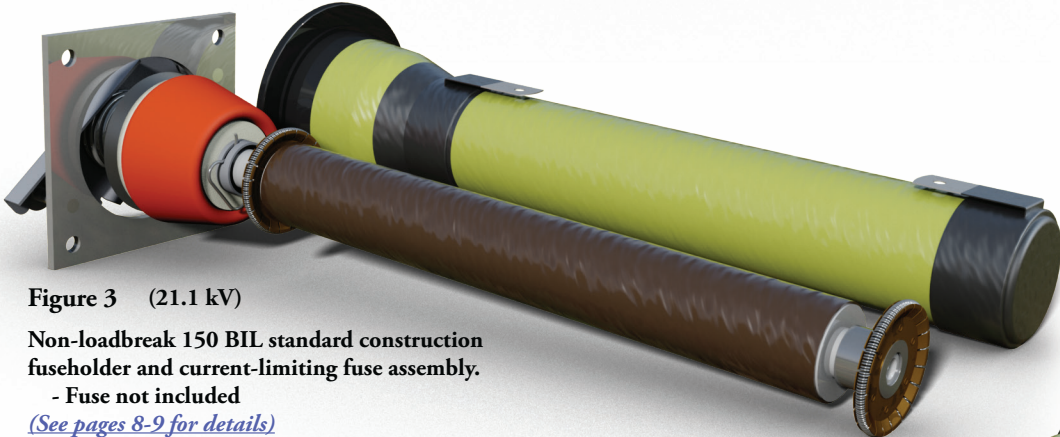


Figure 3 (21.1 kV)
Non-loadbreak 150 BIL standard construction fuseholder and current-limiting fuse assembly.
- Fuse not included
[\(See pages 8-9 for details\)](#)

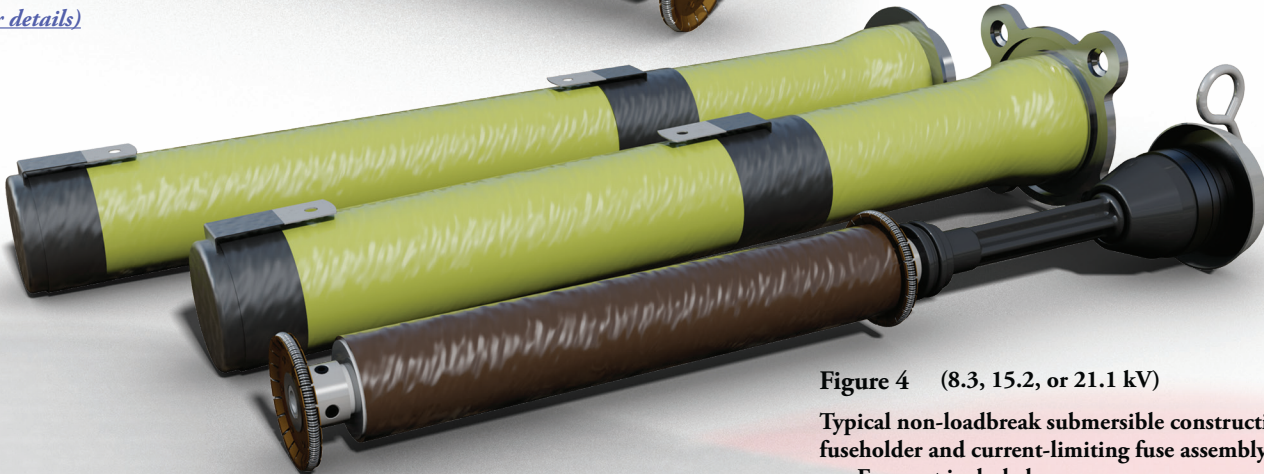


Figure 4 (8.3, 15.2, or 21.1 kV)
Typical non-loadbreak submersible construction fuseholder and current-limiting fuse assembly.
- Fuse not included
[\(See pages 10-13 for details\)](#)

Ordering Information and Details

Non-Loadbreak					
Aluminum Flange Canister Assembly Drawout Rod Assembly with Plated or Stainless Steel Cap					
Catalog Number	kV	BIL	Fuseholder Cap	Description	<i>For more information see pages 6 and 7</i>
7559ZC8399	21.1	125 kV	Plated Steel	Typical non-loadbreak standard construction fuseholder and current limiting fuse assembly	
7559ZG8399	21.1	125 kV	Stainless Steel		
7559ZC8499	15.2	125 kV	Plated Steel		
7559ZG8499	15.2	125 kV	Stainless Steel		
7559ZC8599	8.3	95 kV	Plated Steel		
7559ZG8599	8.3	95 kV	Stainless Steel		

Note: Aluminum flange canister units listed above replaced the plastic flange canister units effective approximately April 1, 1988.

Aluminum flange units are direct replacements for plastic flange units.

Non-Loadbreak				
Plastic Flange Canister Assembly Drawout Rod Assembly with Plated Steel Cap				
Catalog Number	kV	BIL	Description	For more information see pages 8 and 9
7559ZC2599	21.1	150 kV	Typical non-loadbreak standard construction fuseholder and current limiting fuse assembly	

Submersible-Non-Loadbreak					
4 Bolt Stainless Steel Flange Canister Assembly Drawout Rod/Plug Assembly with Stainless Steel Cap					
Catalog Number	kV	BIL	End Cap Stud 0.250-20-2B	Description	For more information see pages 10 and 11
7509ZE0199	8.3	95 kV	No	Typical non-loadbreak submersible construction fuseholder and current limiting fuse assembly	
7509ZE3199	8.3	95 kV	Yes		
7509ZE0299	15.2	125 kV	No		
7509ZE3299	15.2	125 kV	Yes		
7509ZE0399	21.1	125 kV	No		
7509ZE3399	21.1	125 kV	Yes		

Submersible-Non-Loadbreak					
Stainless Steel Flange Canister Assembly (Welded to Tank) Drawout Rod/Plug Assembly with Stainless Steel Cap					
Catalog Number	kV	BIL	End Cap Stud 0.250-20-2B	Description	<i>For more information see pages 12 and 13</i>
7559ZE1199	8.3	95 kV	No	Typical non-loadbreak standard construction fuseholder and current limiting fuse assembly	
7559ZE2199	8.3	95 kV	Yes		
7559ZE1299	15.2	125 kV	No		
7559ZE2299	15.2	125 kV	Yes		
7559ZE1399	21.1	125 kV	No		
7559ZE2399	21.1	125 kV	Yes		

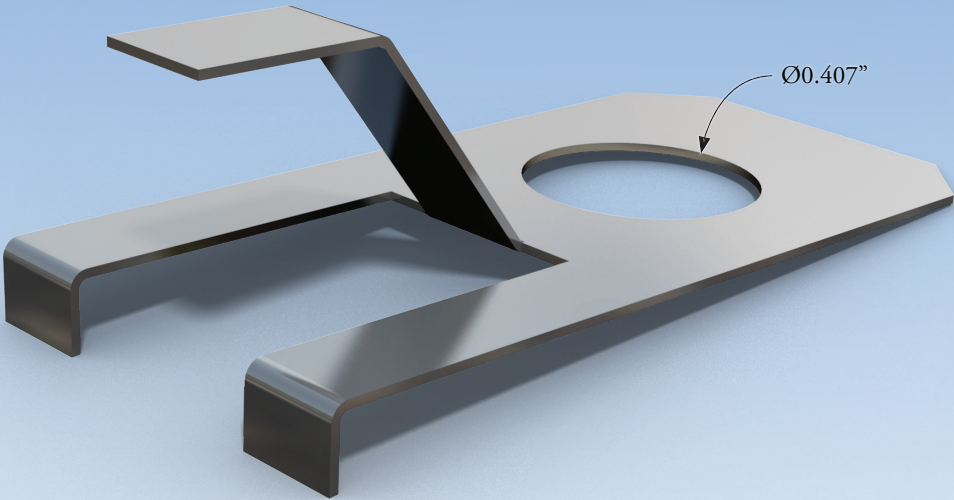


Figure 5
Grounding Spring

Replacement Part		
Catalog Number	Description	Material
7285ZA1499	Grounding Spring	Stainless Steel

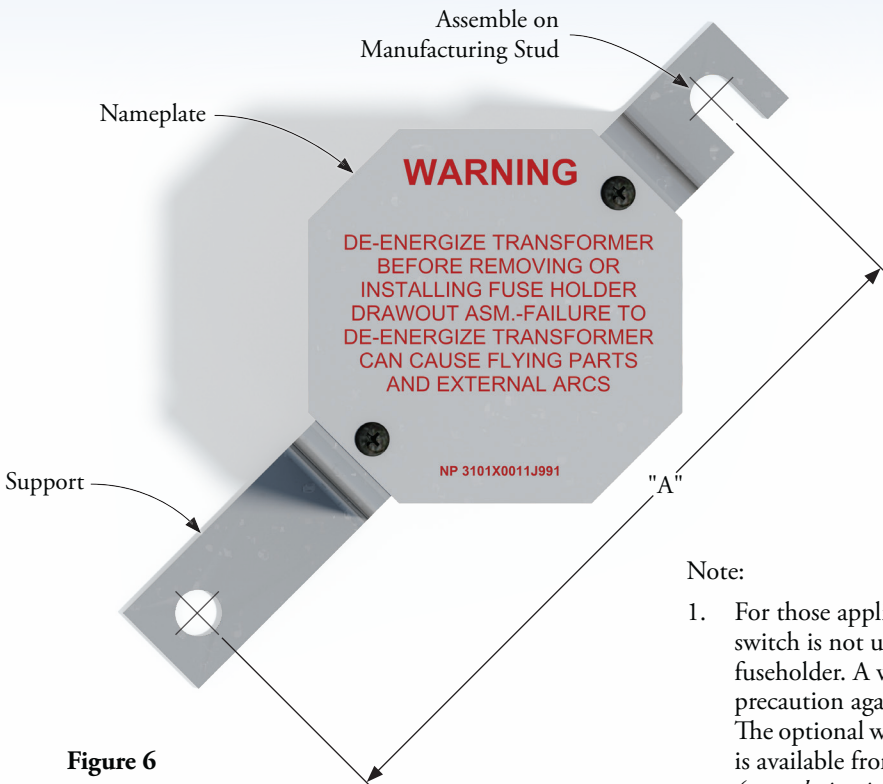


Figure 6
Warning Nameplate

- Note:
- For those applications where an interlocked loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate should be used as a precaution against energized operation of the fuseholder. The optional warning nameplate (w/bracket) shown above is available from ERMCO Components, Inc. (see ordering information below).

Accessories		
Catalog Number	"A"	Description
7559ZC2099	5.48"	Warning Nameplate
7559ZC2199	6.79"	

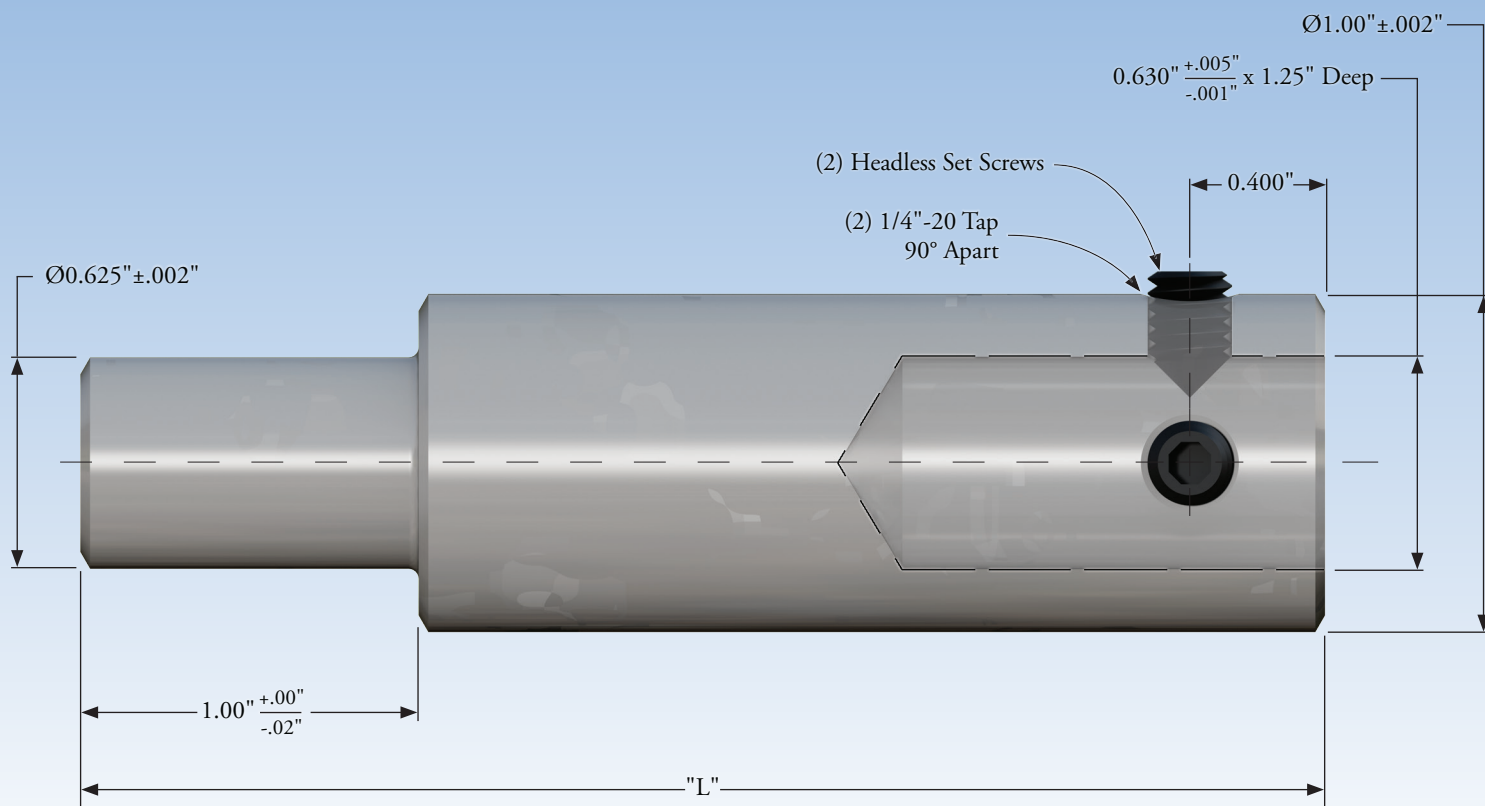
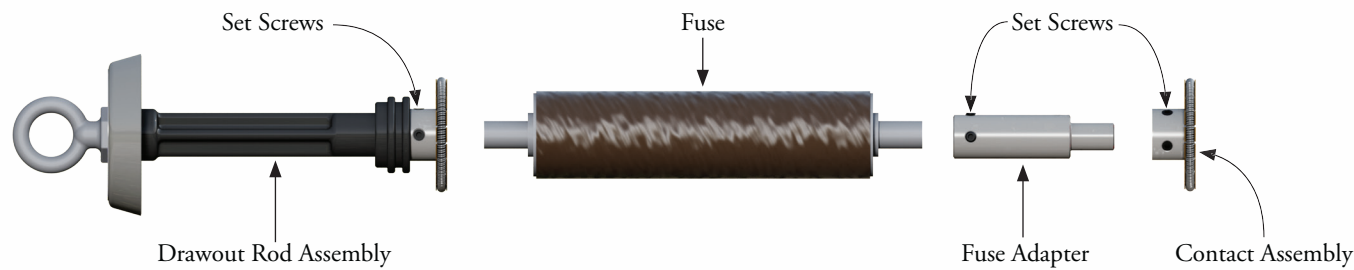


Figure 7
Fuse Adapter

Accessories			
Catalog Number	"L"	Application	Finish
7559ZB6099	8.00"	8.3 to 23 kV	None
7559ZB6199	3.68"	15.2 to 23 kV	
7559ZB6299	5.18"	8.3 to 15.2 kV	



- Note:
- 1. Assemble fuse adapter (when required) to bottom of fuse as shown above.
 - 2. A vent hole on centerline and perpendicular to the long axis may be added at vendor's option
 - 3. Apply Loctite to set screws as necessary.

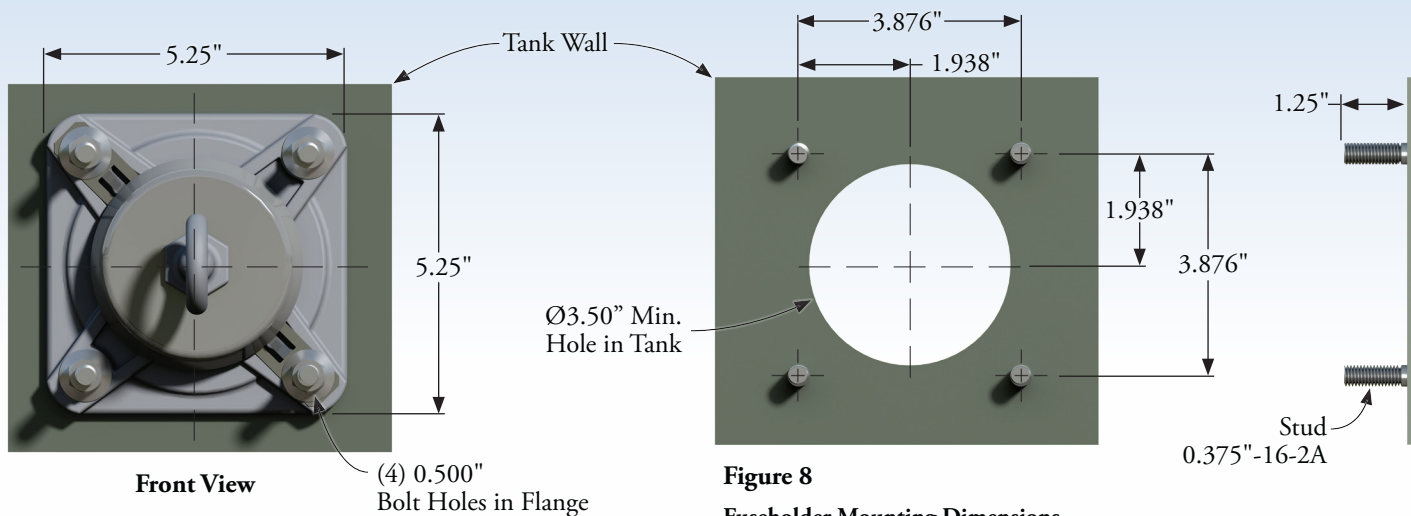
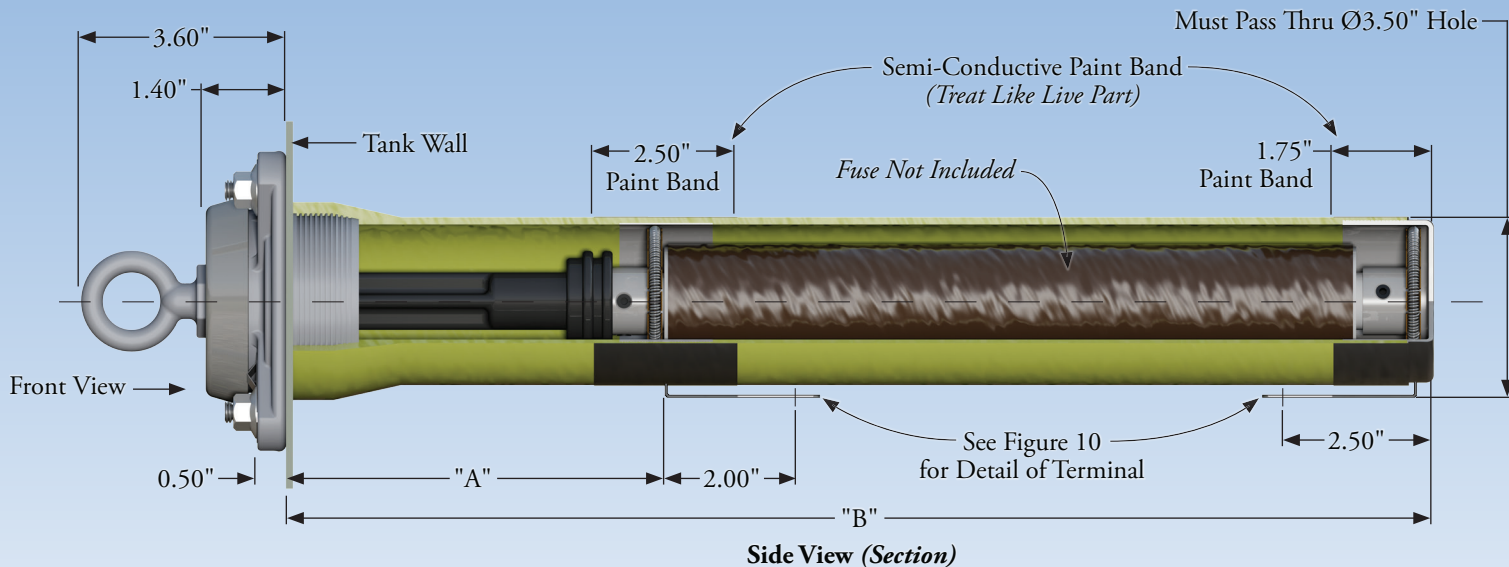


Figure 8
Fuseholder Mounting Dimensions

Engineering Data			
Fuseholder Cap	Catalog Number		
Plated Steel	7559ZC8399	7559ZC8499	7559ZC8599
Stainless Steel	7559ZG8399	7559ZG8499	7559ZG8599
"A"	6.68"	6.68"	5.58"
"B"	22.84"	20.04"	14.44"
Max Voltage Rating	21.1 kV	15.2 kV	8.3 kV
BIL	125 kV	125 kV	95 kV
HIPOT	50 kV	40 kV	34 kV
Corona Extinction	26 kV	19 kV	11 kV
Continuous Current Rating (Unfused)	160 A	160 A	160 A
Momentary Current Rating (Unfused)	10,000 A RMS SYM (10 Cycles)	10,000 A RMS SYM (10 Cycles)	10,000 A RMS SYM (10 Cycles)
Acceptable Fuses (Cooper or HiTech) (Must Be Ordered Separately)	23 kV - All Sizes Thru 25 A	15.5 kV - All Sizes Thru 40 A	2.8 & 4.3 kV - All Sizes Thru 100 A 5.5 kV - All Sizes Thru 75 A 8.3 kV - All Sizes Thru 40 A

- Note:
- For those applications where an interlocked loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate should be used as a precaution against energized operation of the fuseholder. The optional warning nameplate (w/bracket), shown on [page 4, Figure 6](#), is available from ERMCO Components Inc. (7559ZC2099)

Replacement Parts				
Catalog Number	Drawout Rod	Contact Assembly	Gasket	Grounding Spring
7559ZC8399	7559ZC1199	7559ZB3999	7559ZB4099	7285ZA1499*
7559ZG8399	7559ZE4299			
7559ZC8499	7559ZC1199			
7559ZG8499	7559ZE4299			
7559ZC8599	7559ZC1299			
7559ZG8599	7559ZC2699			

*See page 4 for more information

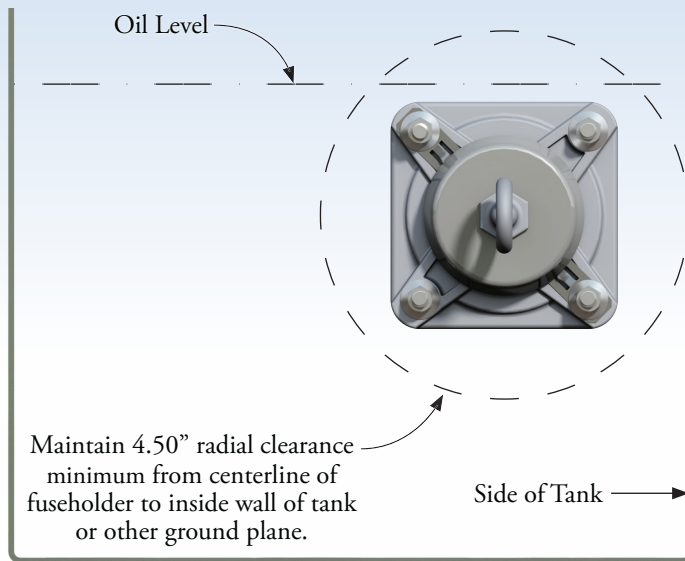
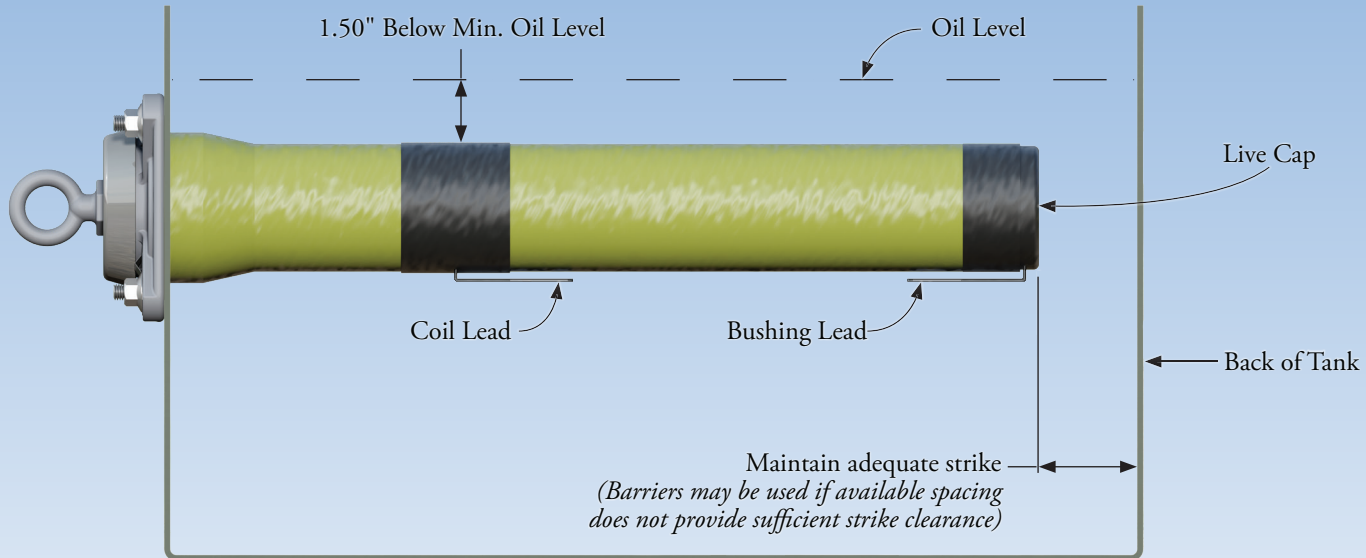


Figure 9
General Fuseholder Application

Notes:

1. Pockets up to 1.50" in depth can be used without adversely affecting impulse withstand.
2. If application requires pocket depth in excess of 1.50" care should be taken to avoid adversely affecting impulse withstand.

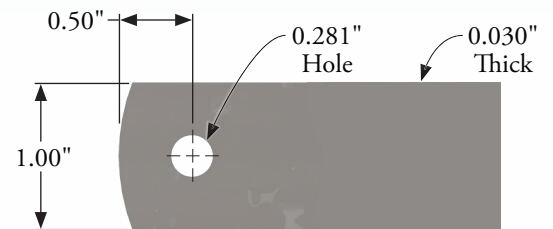


Figure 10
Detail of Terminal

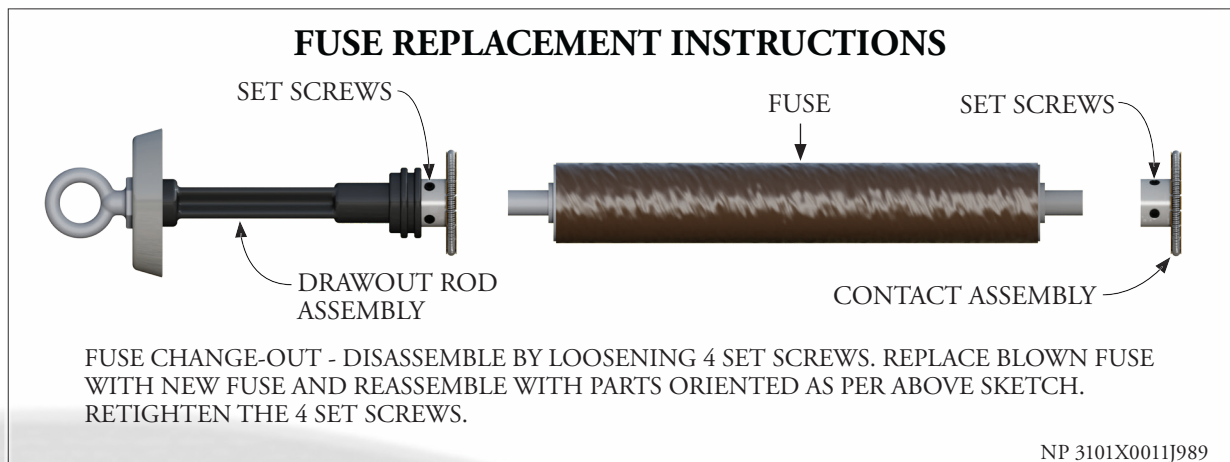
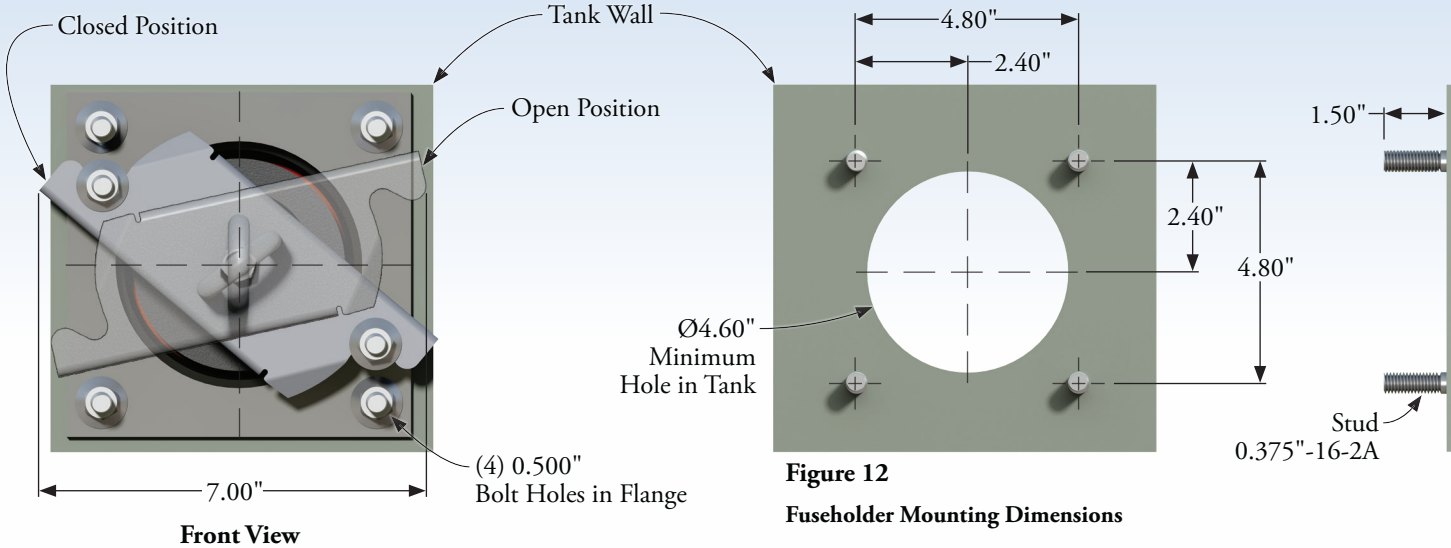
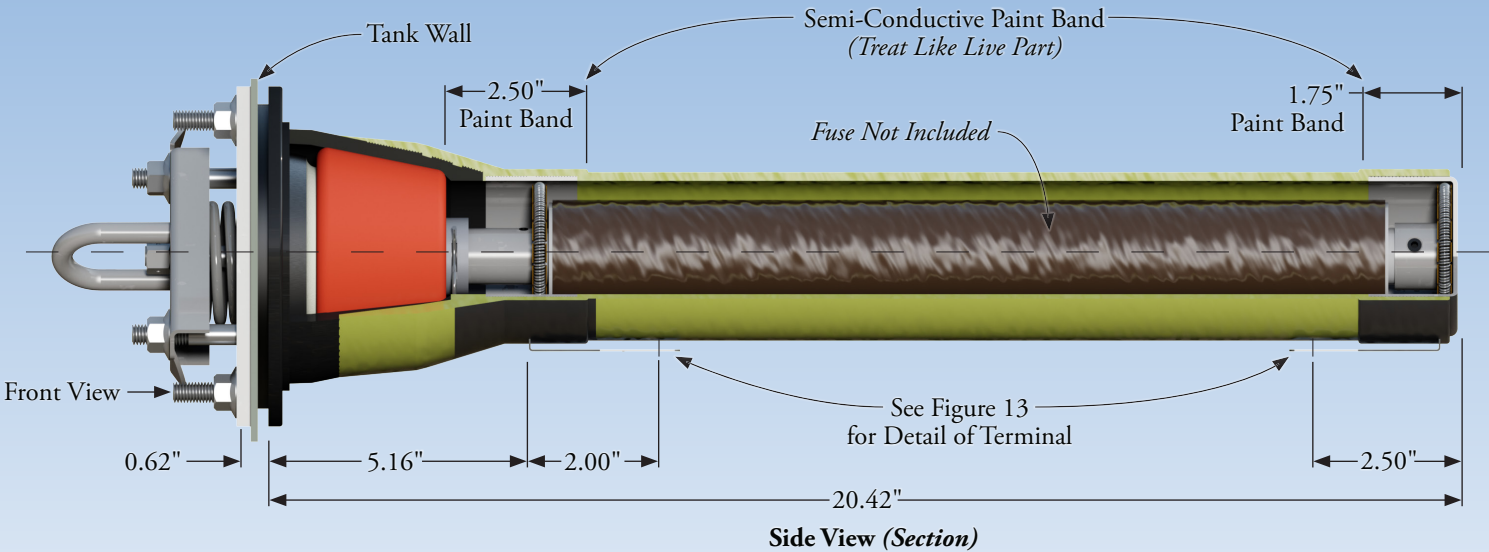


Figure 11
Decal (Standard-Non-Loadbreak)



Engineering Data	
Plastic Flange Canister	
Catalog Number	7559ZC2599
Max Voltage Rating	21.1 kV (LN/GND)
Max Voltage Rating	36.6 kV (LN/LN)
BIL	150 kV
HIPOT	50 kV
Corona Extinction	26 kV
Continuous Current Rating (Unfused)	160 A
Momentary Current Rating (Unfused)	10,000 A RMS SYM (10 Cycles)
Acceptable Fuses (Cooper or HiTech) (Must Be Ordered Separately)	23 kV - All Sizes Thru 25 A

- Note:
- For those applications where an interlock loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate should be used as a precaution against energized operation of the fuseholder. The optional warning nameplate (w/bracket), shown on [page 4, Figure 6](#), is available from ERMCO Components Inc. (7559ZC2199).
 - Silicon grease should be applied to the drawout rod assembly gasket before installing in the drywell tube.

Catalog Number	Replacement Parts
7539ZB3999	Contact Assembly
7559ZB5399	Plug & Channel Assembly (w/Gasket)
7559ZB5499	Gasket
7559ZB5699	Piston Assembly (w/Spiral & Retaining Springs)
7559ZB5799	Plug, Channel, Gasket, & Flange

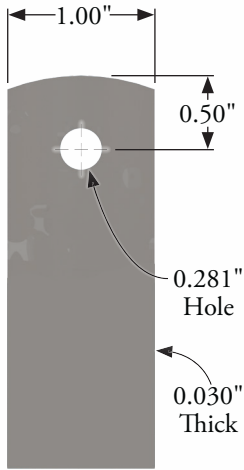
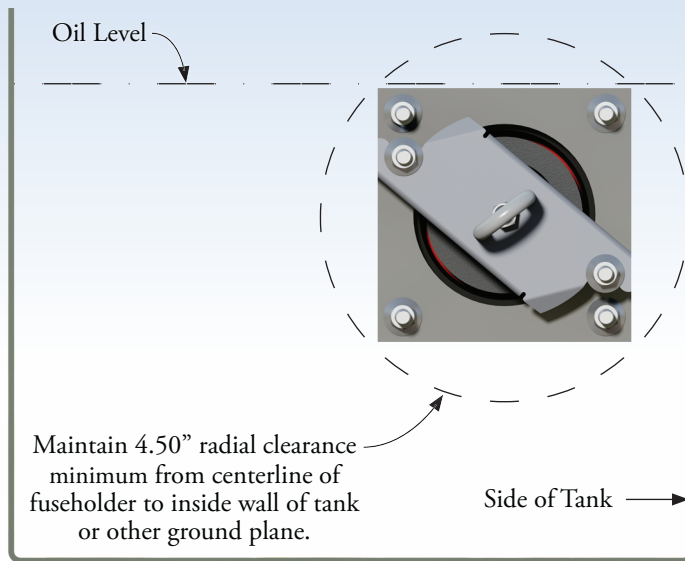
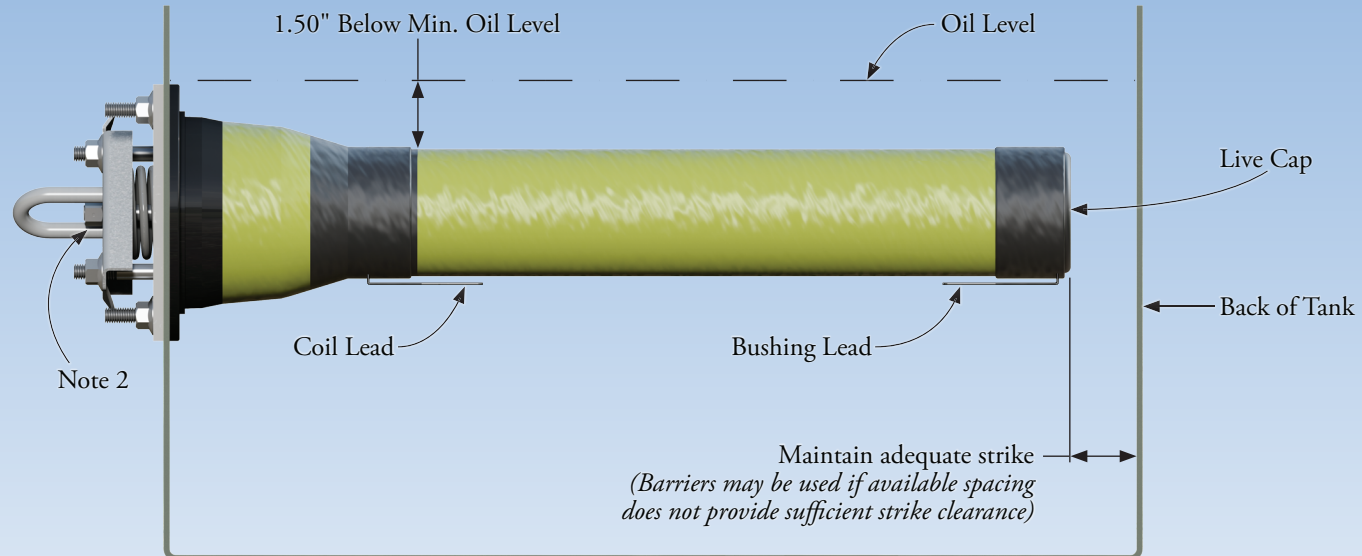


Figure 13
Detail of Terminal



Notes:

1. If application requires pocket depth in excess of 1.50" care should be taken to avoid adversely affecting impulse withstand.
2. With fuseholder fully assembled check for approx. 0.10" clearance between locknut and channel to adjust, tighten, or loosen two locknuts of flange studs.

Figure 14
General Fuseholder Application

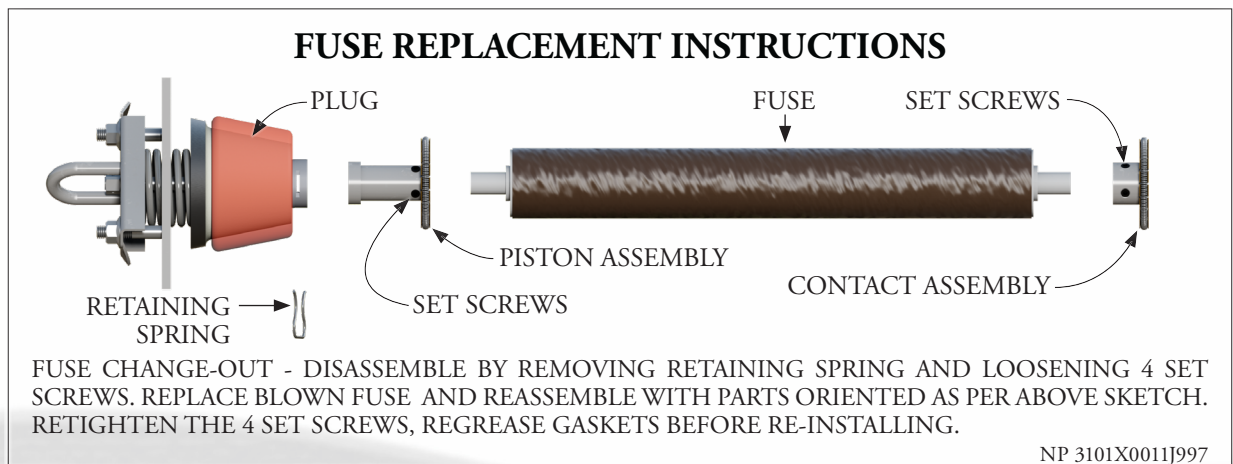


Figure 15
Decal (Dielectric Plug)

Submersible-Non-Loadbreak Details and Ordering Information

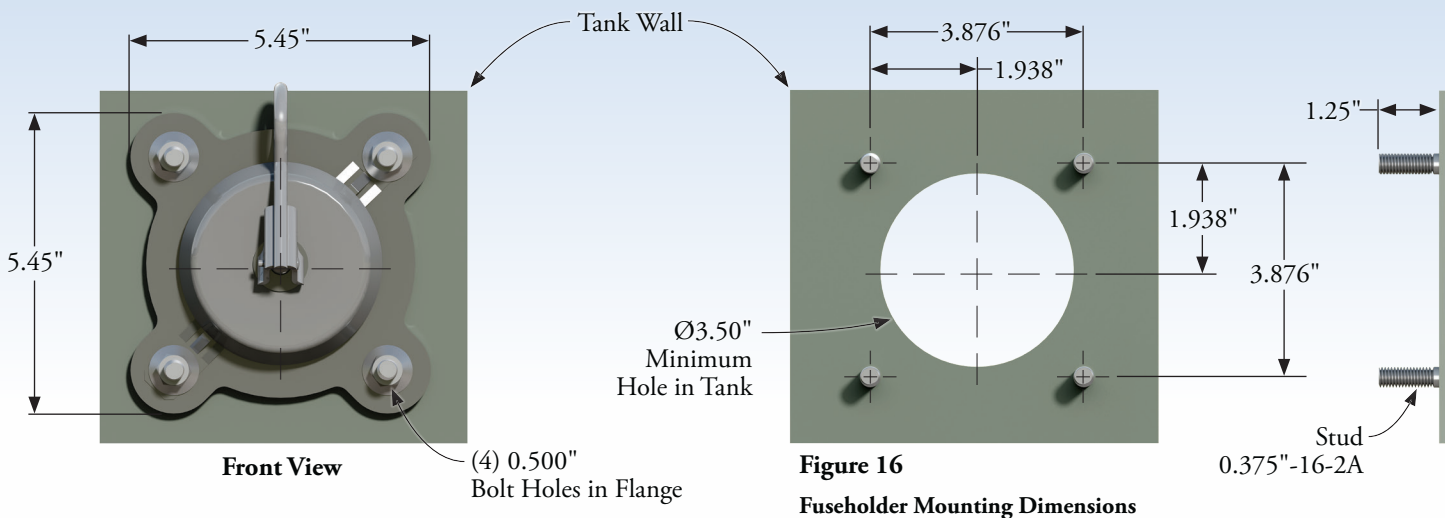
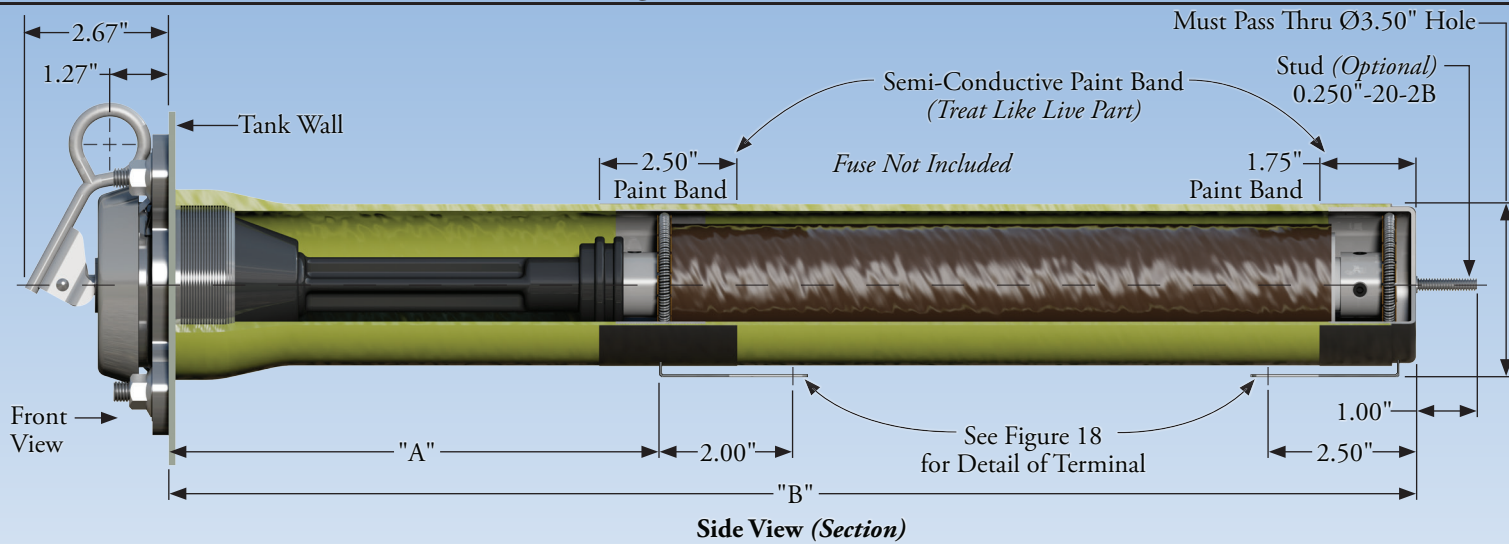


Figure 16 Fuseholder Mounting Dimensions

Engineering Data			
All Flanges Stainless Steel	Catalog Number		
W/O Stud	7509ZE0199	7509ZE0299	7509ZE0399
With Stud (0.250-20-2B)	7509ZE3199	7509ZE3299	7509ZE3399
"A"	8.91"	8.91"	8.91"
"B"	18.27"	22.57"	25.53"
Max Voltage Rating	8.3 kV	15.2 kV	21.1 kV
BIL	95 kV	125 kV	125 kV
HIPOT	34 kV	40 kV	50 kV
Corona Extinction	11 kV	19 kV	26 kV
Continuous Current Rating (Unfused)	160 A	160 A	160 A
Momentary Current Rating (Unfused)	10,000 A RMS SYM (10 Cycles)	10,000 A RMS SYM (10 Cycles)	10,000 A RMS SYM (10 Cycles)
Acceptable Fuses (Cooper or HiTech) (Must Be Ordered Separately)	2.8 & 4.3 kV - All Sizes Thru 100 A 5.5 kV - All Sizes Thru 75 A 8.3 kV - All Sizes Thru 40 A	15.5 kV - All Sizes Thru 40 A	23 kV - All Sizes Thru 25 A

Note:

- For those applications where an interlock loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate, shown on [page 4, Figure 6](#), should be used as a precaution against energized operation of the fuseholder.

Catalog Number	Replacement Parts
7559ZB3999	Contact Assembly
7559ZB4099	Gasket
7559ZE4099	Drawout Rod Assembly
7559ZE4199	Drawout Rod and Contact Assembly
7285ZA1499*	Grounding Spring

*See page 4 for more information

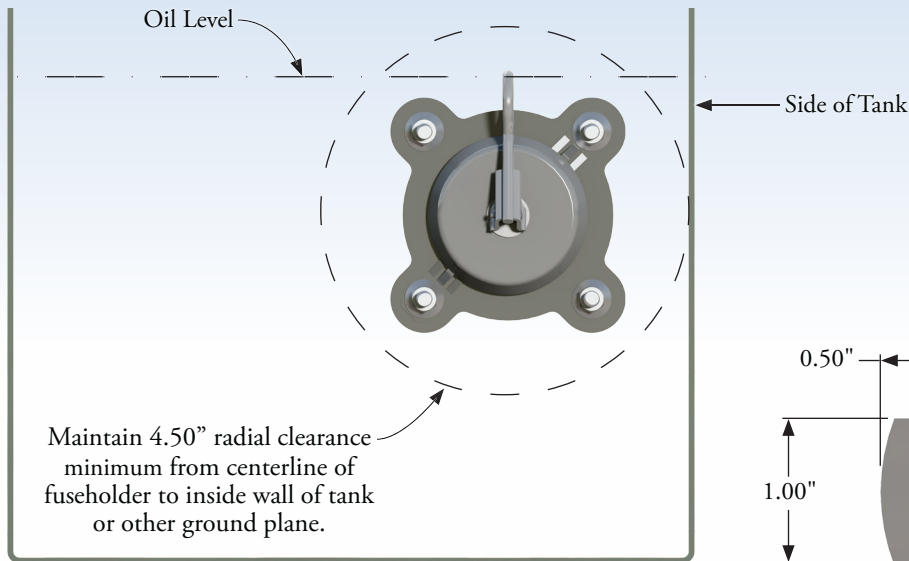
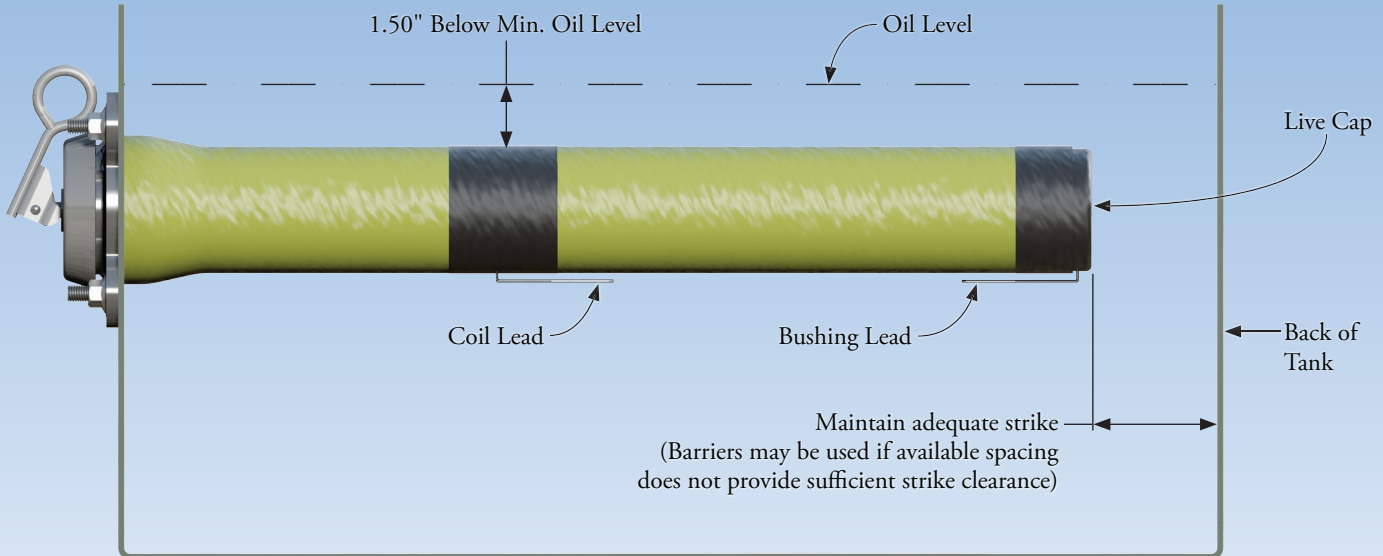


Figure 17

General Fuseholder Application
(See Figure 21 for Vertical Mounting)

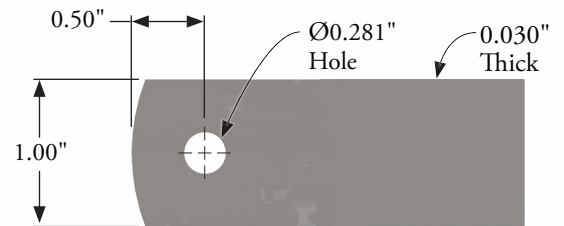


Figure 18

Detail of Terminal

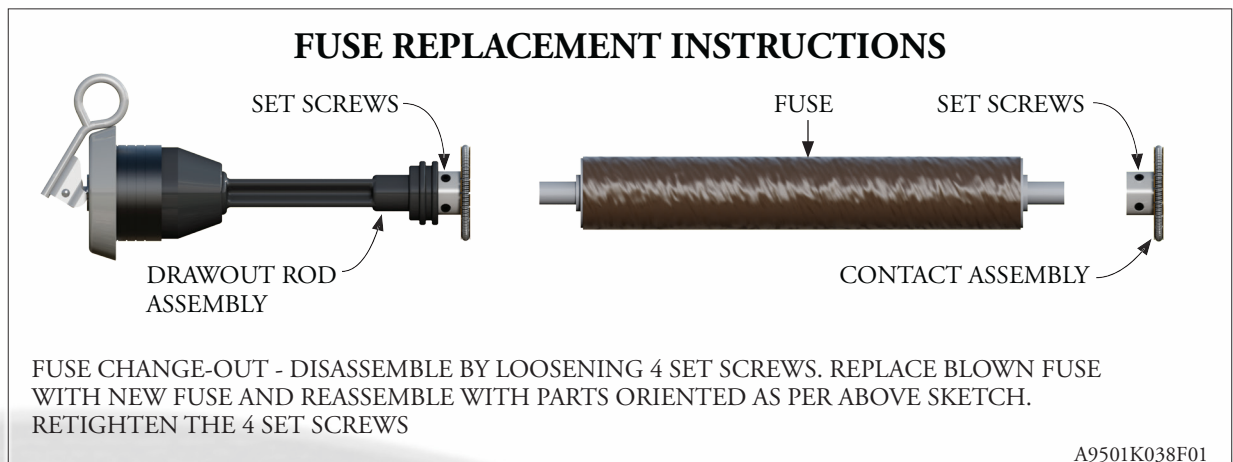


Figure 19

Decal (Submersible-Non-Loadbreak)

Submersible-Non-Loadbreak Details and Ordering Information

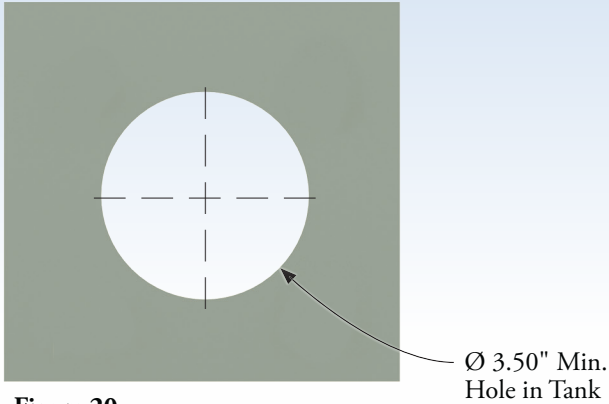
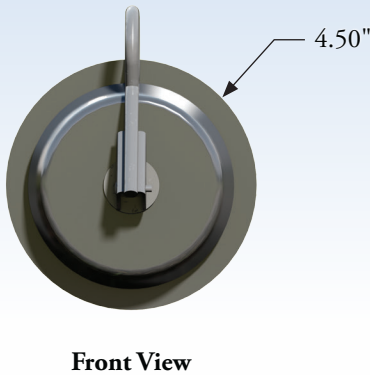
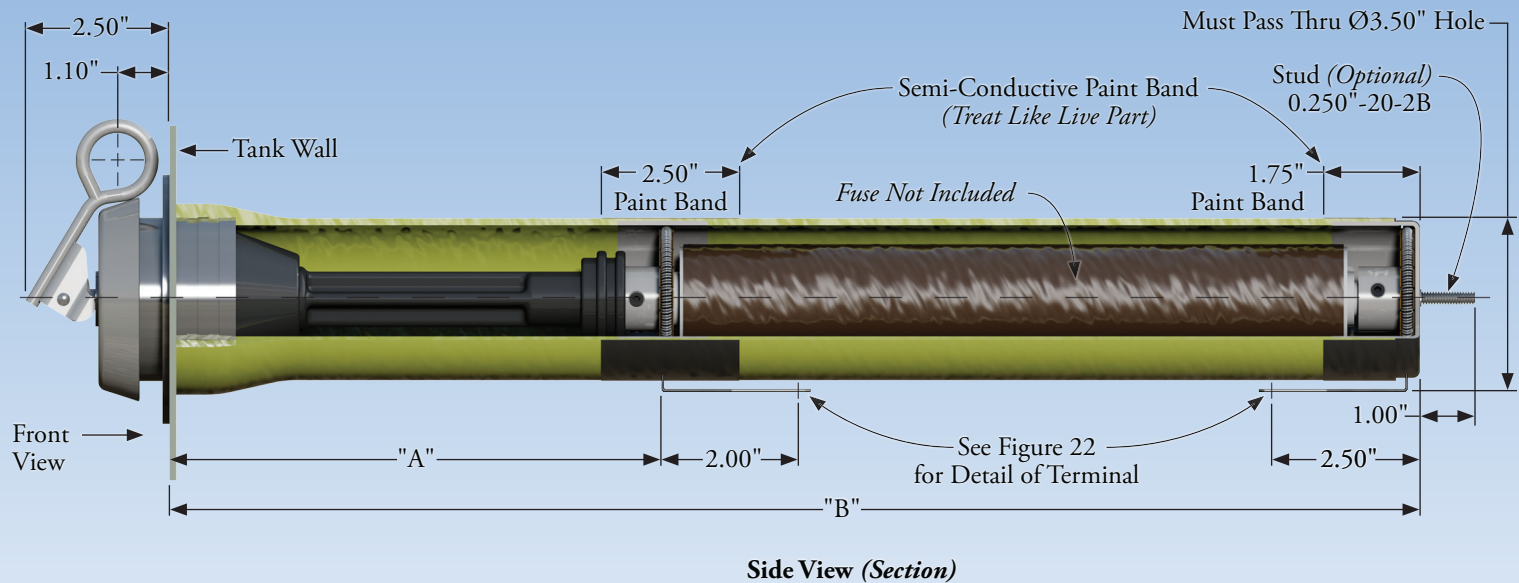


Figure 20
Fuseholder Mounting Dimensions

Engineering Data			
	Catalog Number		
W/O Stud	7559ZE1199	7559ZE1299	7559ZE1399
With Stud (0.250-20-2B)	7559ZE2199	7559ZE2299	7559ZE2399
"A"	8.91"	8.91"	8.91"
"B"	18.27"	22.57"	25.53"
Max Voltage Rating	8.3 kV	15.2 kV	21.1 kV
BIL	95 kV	125 kV	125 kV
HIPOT	34 kV	40 kV	50 kV
Corona Extinction	11 kV	19 kV	26 kV
Continuous Current Rating (Unfused)	160 A	160 A	160 A
Momentary Current Rating (Unfused)	10,000 A RMS SYM (10 Cycles)	10,000 A RMS SYM (10 Cycles)	10,000 A RMS SYM (10 Cycles)
Acceptable Fuses (Cooper or HiTech) (Must Be Ordered Seperately)	2.8 & 4.3 kV - All Sizes Thru 100 A 5.5 kV - All Sizes Thur 75 A 8.3 kV - All Sizes Thru 40 A	15.5 kV - All Sizes Thru 40 A	23 kV - All Sizes Thru 25 A

- Note:
- For those applications where an interlock loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate, shown on [page 4, Figure 6](#), should be used as a precaution against energized operation of the fuseholder.
 - Use adequate heat sinks when welding to prevent localized hot spots and resulting stress in the drywell.

Catalog Number	Replacement Parts
7559ZB3999	Contact Assembly
7559ZE4099	Drawout Rod Assembly
7559ZE4199	Drawout Rod and Contact Assembly

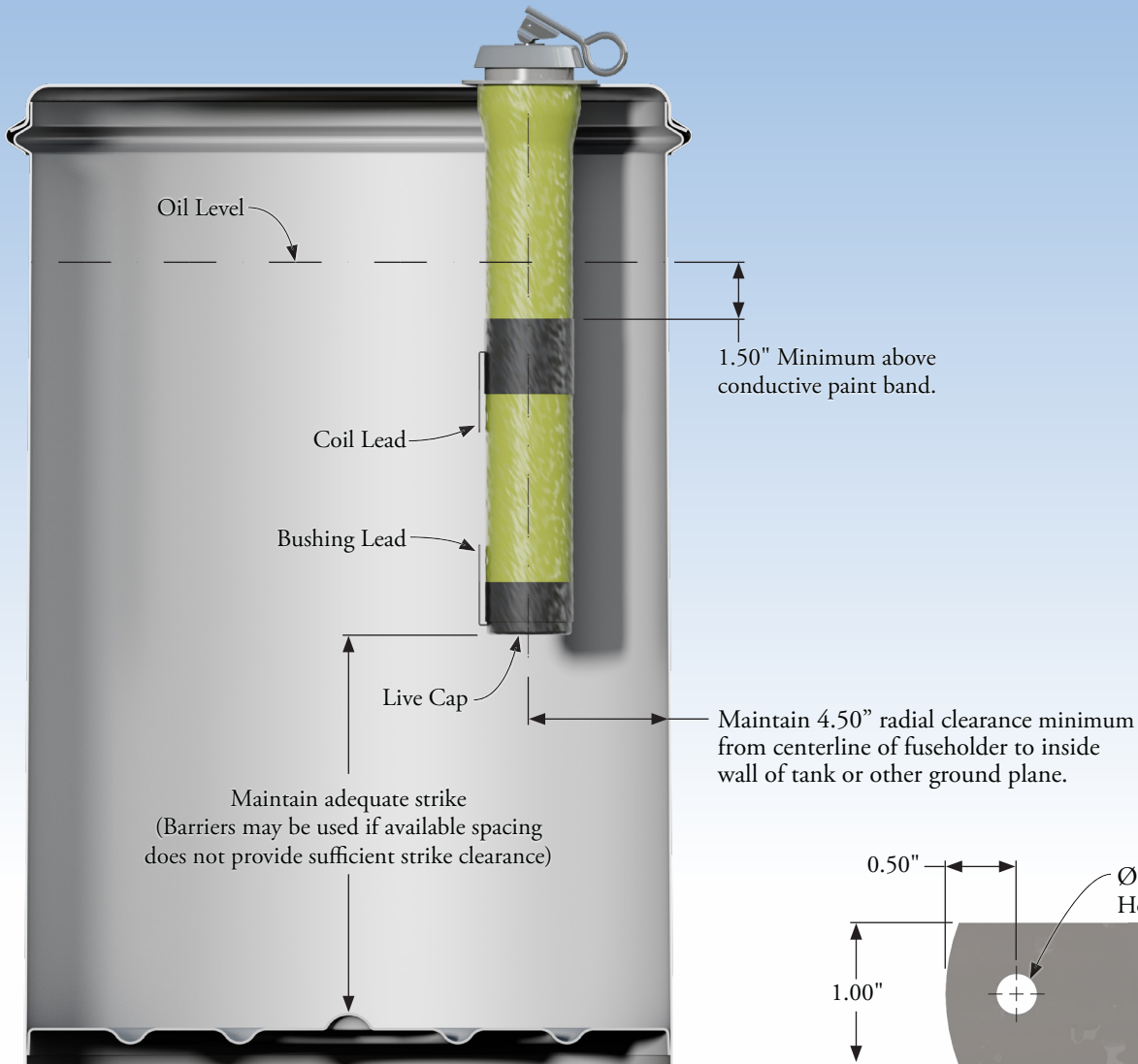


Figure 21
General Fuseholder Application
(See Figure 17 for Horizontal Mounting)

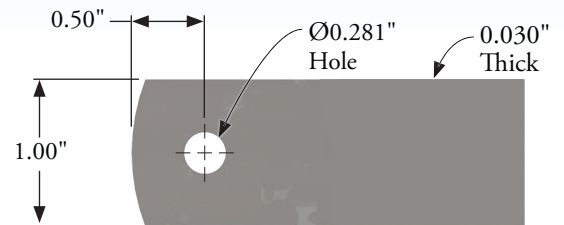


Figure 22
Detail of Terminal

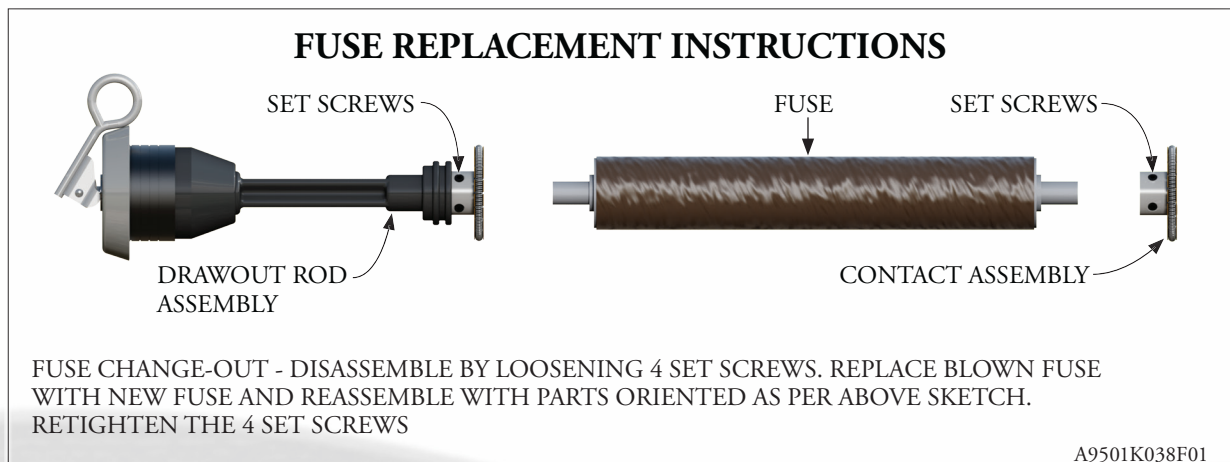


Figure 23
Decal (Submersible-Non-Loadbreak)

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