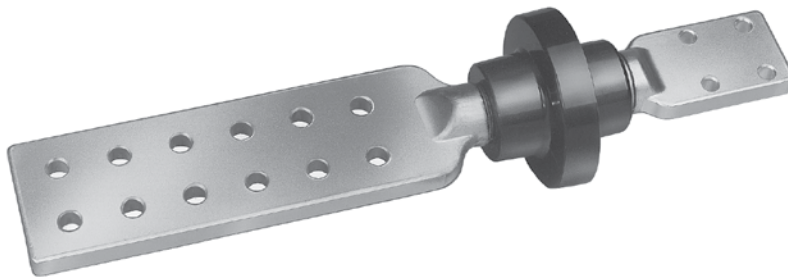


3010-4515 A 1.2 kV class externally removable secondary bushing



General

Eaton's Cooper Power™ series 3010-4515 A externally removable secondary bushings are used for connecting cables outside of pad-mounted transformer tanks to the secondary coil winding leads inside the tanks. The 3010 A secondary bushings are offered as inline and 90° internal spade versions, 4515 A secondary bushings are offered as inline only. They are designed for use in transformer oil, Envirotemp™ FR3™ fluid, or an approved equivalent. They are externally clamped for sidewall mounting through a 3.06-inch diameter hole. The bushings are designed for use inside cubicles only.

All metallic parts of the bushings are tin plated for more efficient current interchange. The sealing gasket is contained by the molded body for controlled compression, ensuring an effective seal. The bushing clamp is made of an aluminum alloy to provide strength for maintaining even gasket pressure under heavy loads. All bushings are supplied with a threaded support bracket hole on the end of the external spade.

Installation

Four clamp studs must be welded around the bushing hole. Install the gasket over the bushing shank onto the gasket surface. Insert the bushing through the tank hole and place the bushing clamp over the welded tank studs. Install a plated lock washer and nut onto each stud and tighten. Connect the internal secondary transformer leads to the internal spade. Refer to Service Catalog Section S800-16-1 for installation instructions.

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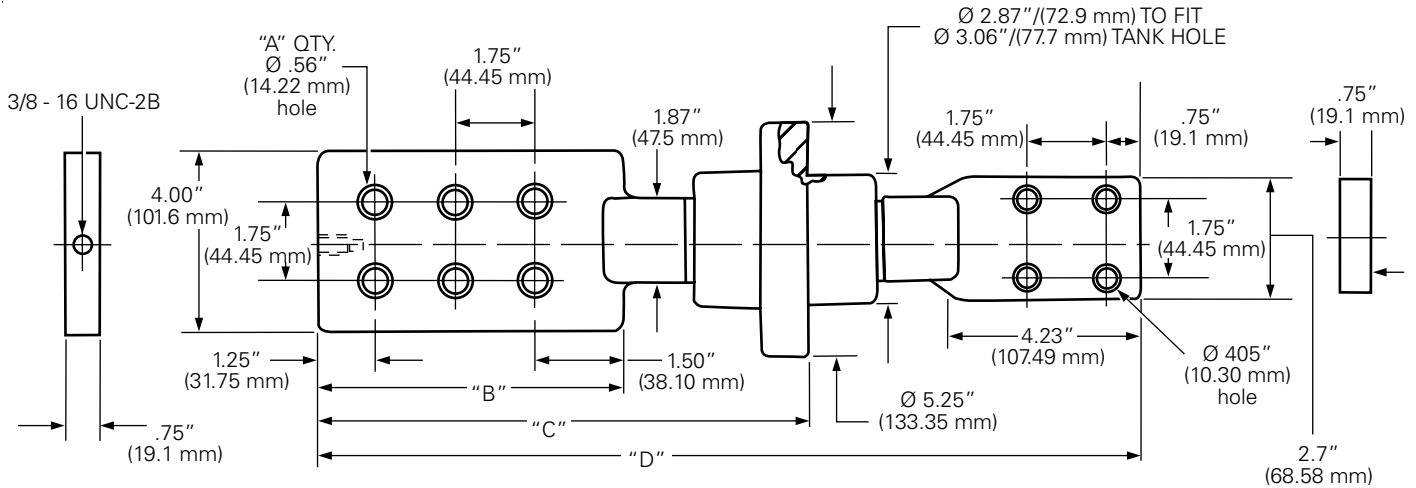


Figure 1. Line illustration of a 3010 A secondary bushing (inline) with dimensional information.

Note: Dimensions given are for reference only.

Table 1. Voltage Ratings and Characteristics

Description	kV
Standard Voltage Class	1.2-2.5
AC 60 Hz 1 Minute Withstand	15
BL and Full Wave Crest	45

Table 2. Current Ratings and Characteristics

Description	Amperes Continuous
Aluminum Bushing	2780-3010 A rms
Copper Bushing	3610-4515 A rms

Current ratings and characteristics are in accordance with IEEE Std C57.12™-1993 standard.

Ordering information - 3010 A secondary bushing - inline

To order a 3010 A secondary bushing, specify the catalog number as listed in Table 3. (Gasket and clamp must be ordered separately, see Table 6.)

Table 3. Secondary Bushing Dimensional Information - Inline

Catalog Number	External * Quantity of Holes	Dimensions in. /(mm)		
		A	B	C
2690131D01	6	6.28	10.76	17.30
		(159.51)	(273.30)	(439.42)
2690131D04	12	11.53	16.01	22.55
		(292.86)	(406.65)	(572.77)
2690131D06	16	15.03	19.51	26.05
		(381.76)	(495.55)	(661.61)
2690131D07	20	18.53	23.01	29.55
		(470.66)	(584.45)	(750.57)

*Internal hole quantity remains constant at 4 holes for all external hole configurations.

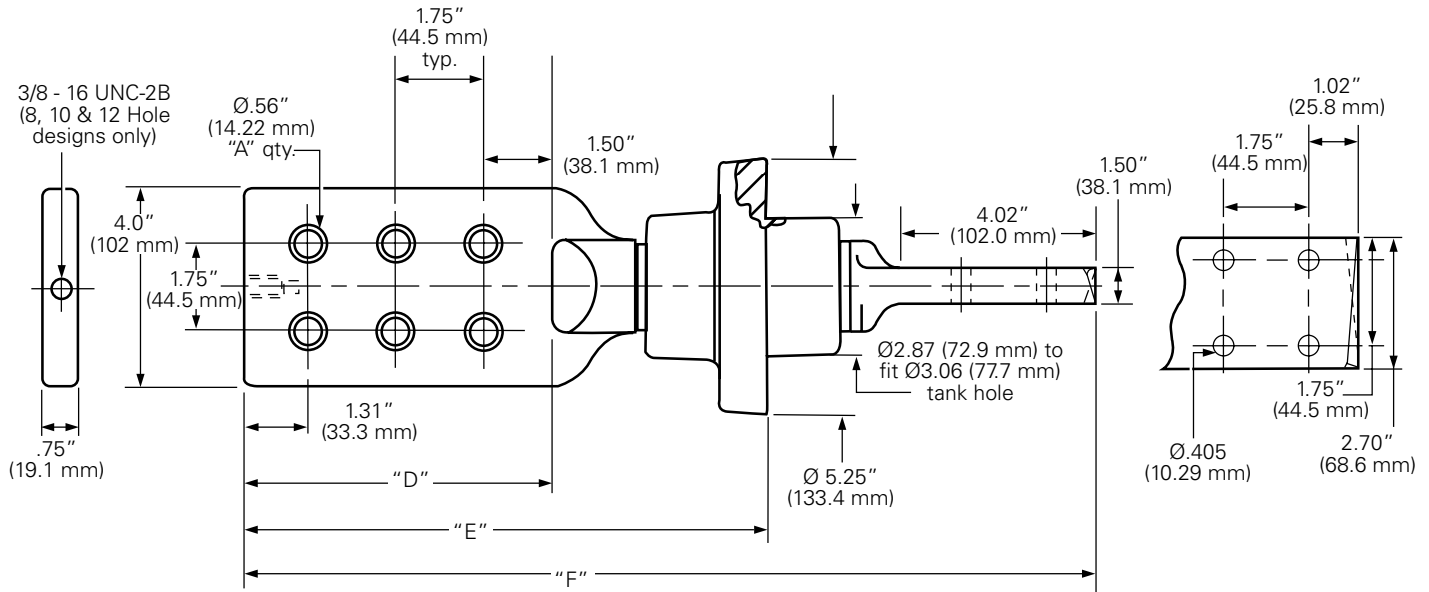


Figure 2. Line Illustration of 3010 A secondary bushing (90° internal spade) with dimensional information.

Note: Dimensions given are for reference only.

Ordering information - 3010 A secondary bushing-90° internal spade

To order a 3010 A secondary bushing, specify the catalog number as listed in Table 4. (Gasket and clamp must be ordered separately, see Table 6.)

Table 4. Secondary Bushing Dimensional Information

Catalog Number	External* Quantity of Holes	Dimensions in. /(mm)		
		A	B	C
2690476D21	6	6.30	10.80	17.57
		(160.02)	(274.32)	(446.28)
2690476D22	8	8.05	12.55	19.32
		(204.47)	(318.77)	(490.73)
2690476D23	10	9.80	14.30	21.07
		(248.92)	(363.22)	(535.18)
2690476D24	12	11.55	16.05	22.82
		(293.37)	(407.67)	(579.62)

*Internal hole quantity remains constant at 4 holes for all external hole configurations.

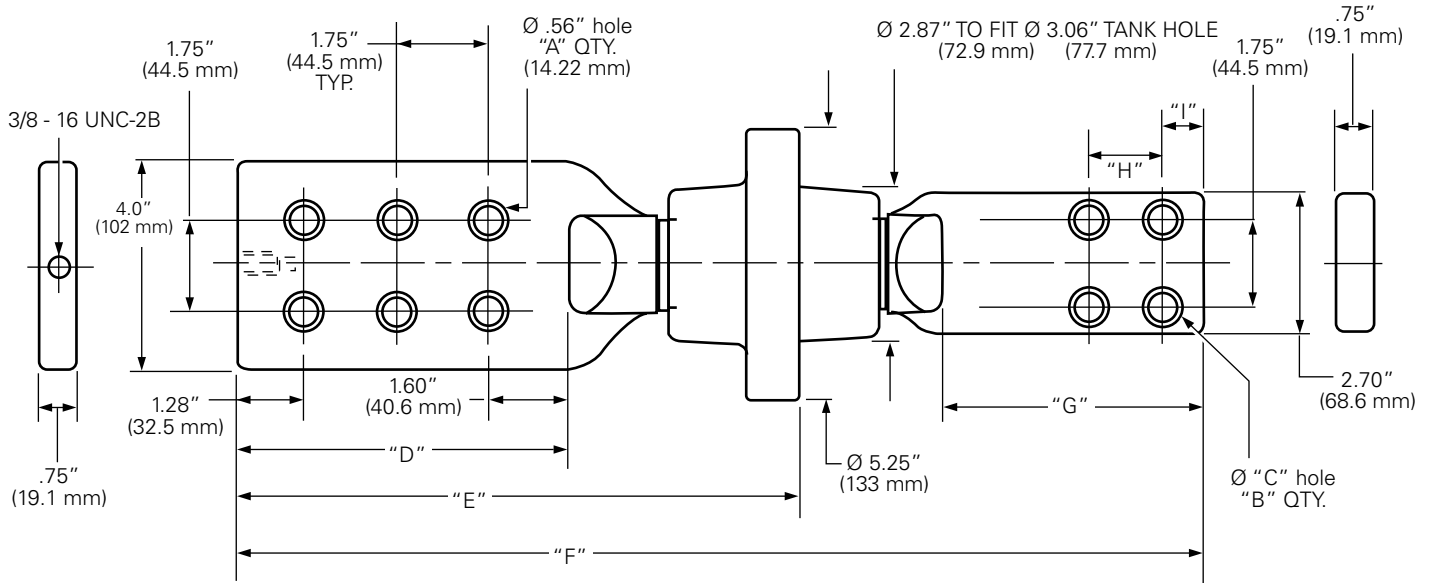


Figure 3. Line Illustration of 4515 A secondary bushing (inline) with dimensional information.

Note: Dimensions given are for reference only.

Ordering information – 4515 A secondary bushing – inline

To order a 4515 A secondary bushing, specify the catalog number as listed in Table 5. (Gasket and clamp must be ordered separately, see Table 6.)

Table 5. Secondary Bushing Dimensional Information (Refer to Figure 3)

Catalog Number	Qty. of Holes		Dimensions in./ (mm)						
	A	B	C	D	E	F	G	H	I
2690130D19	4	4	.405 (10.29)	4.63 (117.60)	9.02 (229.11)	15.80 (401.32)	4.05 (102.87)	1.750 (44.45)	1.00 (25.4)
2690130D01	6	4	.405 (10.29)	6.38 (162.05)	10.77 (273.56)	17.55 (445.77)	4.05 (102.87)	1.750 (44.45)	1.00 (25.4)
2690130D10	12	4	.405 (10.29)	11.63 (295.40)	16.02 (406.91)	22.80 (579.12)	4.05 (102.87)	1.750 (44.45)	1.00 (25.4)
2690130D13	16	4	.405 (10.29)	15.13 (384.30)	19.52 (495.80)	26.30 (668)	4.05 (102.87)	1.750 (44.45)	1.00 (25.40)
2690130D16	20	4	.405 (10.29)	18.63 (473.20)	23.02 (584.71)	29.80 (757)	4.05 (102.87)	1.750 (44.45)	1.00 (25.40)

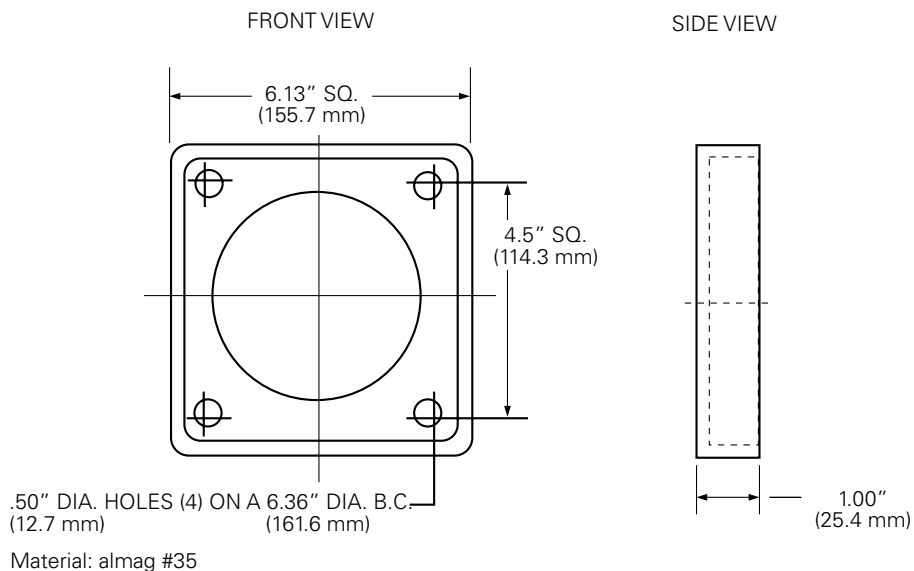


Figure 4. Clamp front and side views with dimensions.

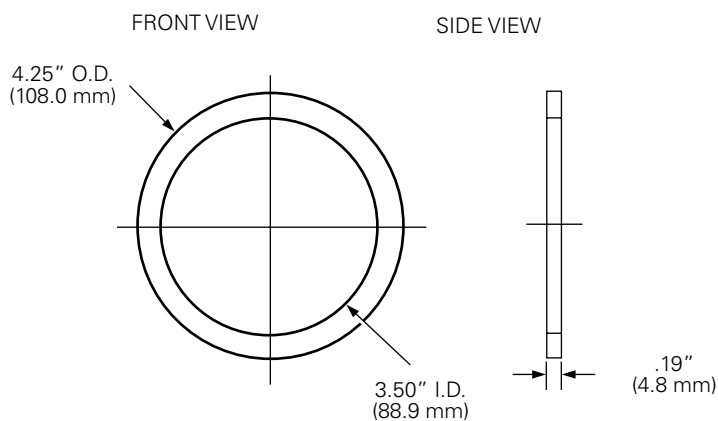


Figure 5. Gasket.

Note: Dimensions given are for reference only.

Table 6. Accessories

Description	Catalog Number
Clamp	2625031B01
Gasket	0537980C13

Table 7. Recommended Internal (Oil Side) Connections

Nominal Rating	Maximum Current	Number of Holes	Sides of Spade
3010 A	2780 A	4	1
	3010 A	4	2
4515 A	3610 A	4	1
	4515 A	4	2

Note:

1. Ratings are the maximum current level that can be used with a particular configuration.
2. Ratings are based on maintaining a bushing temperature rise that is no more than 15 degrees above 85 degree top oil temperature (20 degree ambient) when the bushings are conducting rated current (IEEE Std C57.12.00™-1993 standard, Section 5.11)
3. Ratings are based on maintaining a bushing absolute temperature below the level that would damage the insulation system or seal integrity (with top oil temperature in the range of 113-114 degrees absolute) when the bushing is conducting 150% peak load for 24 hours and 191% peak load for 2 hours. Reference ANSI/IEEE Std C57.92™-1981 standard, Table 3(d).
 (All temperature references are in degrees Celsius.)

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Cooper Power Systems Division
2300 Badger Drive
Waukesha, WI 53188
United States
Eaton.com/cooperpowerseries

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