



Industrial Loadbreak Bushing Insert

200 A

15 kV Class

5810-BI-15

Data Sheet

1.0 Product Description

1.1 General

The 3M™ Industrial Loadbreak 15 kV Bushing Insert threads into a universal bushing well to provide the same function as an integral loadbreak bushing. Using bushing inserts makes field installation and replacement possible and efficient. Bushing inserts and elbow connectors comprise the essential components of all loadbreak connections.

The Bushing Insert uses a patented “ALL COPPER CURRENT PATH,” containing only one current transfer point, within the insert itself. The uncomplicated nature of the current path design delivers superior, reliable performance.

An internal hex broach allows for positive torque controlled installation. Using a torque tool, the bushing insert can be properly tightened into the bushing well without the fear of accidentally breaking the bushing well stud.

The exclusive latch indicator ring, located on the circumference of the bushing’s collar, eliminates the guesswork of loadbreak elbow installation on the bushing insert. The bright yellow ring provides immediate feedback to determine if the elbow is properly installed on the insert. If the yellow ring is completely covered by the loadbreak elbow, it is fully “latched.” If the ring is visible, the elbow can be installed correctly before any problems can occur.

The bushing insert meets all the requirements of ANSI/IEEE Standard 386 and is completely interchangeable with mating products that also meet ANSI/IEEE Standard 386. When mated with a comparably rated component, the bushing insert provides a fully shielded and submersible connection for loadbreak operation.

1.2 Installation

No special tools are necessary.

The insert can be installed by hand or with the assistance of a torque tool. Using the hex-broached base (see Figure 2) and a torque tool, consistent installation can be easily achieved. Refer to Installation Instruction Sheet for details.



Figure 1. Loadbreak Bushing Insert with latch indicator ring and “All Copper Current Path” for application in transformers, switches and other apparatus.

1.3 Production Tests

Tests conducted in accordance with ANSI/IEEE Standard 386:

- ac 60 Hz 1 Minute Withstand 34 kV
- Minimum Corona Voltage Level 11 kV

Tests conducted in accordance with manufacturer’s requirements:

- Physical Inspection
- Periodic Dissection
- Periodic Fluoroscopic Analysis

TABLE 1
Voltage Ratings and Characteristics

Description	kV
Standard Voltage Class	15
Maximum Rating Phase-to-Phase	14.4
Maximum Rating Phase-to-Ground	8.3
ac 60 Hz 1 Minute Withstand	34
dc 15 Minute Withstand	53
BIL and Full Wave Crest	95
Minimum Corona Voltage Level	11

Voltage ratings and characteristics are in accordance with ANSI/IEEE Standard 386.

TABLE 2
Current Ratings and Characteristics

Description	Amperes
Continuous	200 A rms
Switching	10 operations at 200 A rms at 14.4 kV
Fault Closure	10,000 A rms symmetrical at 14.4 kV after 10 switching operations for 0.17 s
Short Time	10,000 A rms symmetrical for 0.17 s 3,500 A rms symmetrical for 3.0 s

Current ratings and characteristics are in accordance with ANSI/IEEE Standard 386.

2.0 Features and Detailed Description

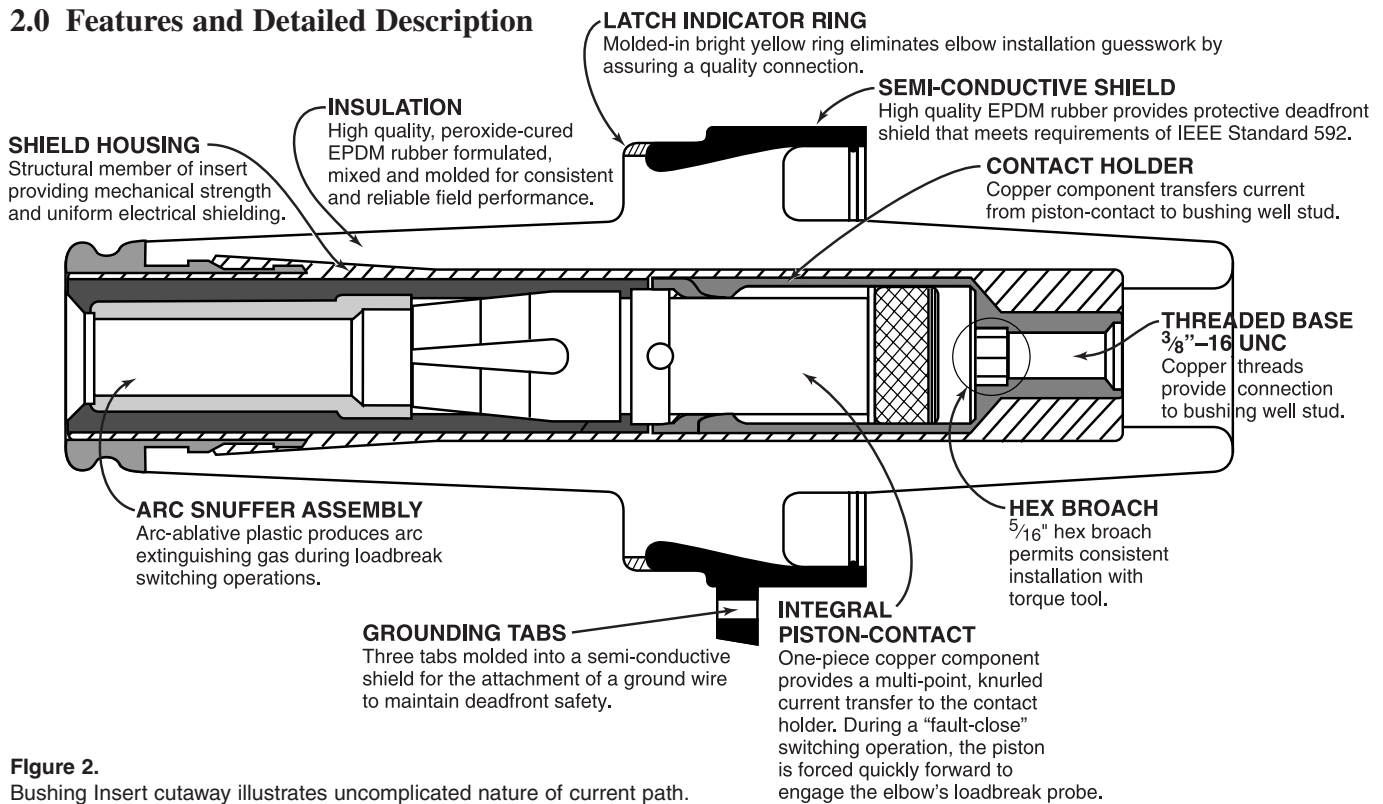


Figure 2. Bushing Insert cutaway illustrates uncomplicated nature of current path.

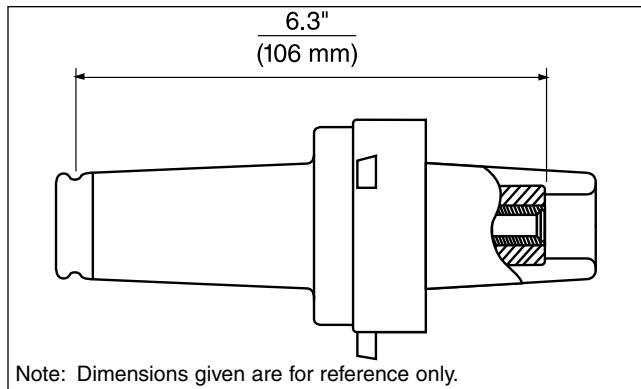


Figure 3. Bushing Insert profile and stacking dimensions.

TABLE 3
Loadbreak Bushing Insert Kit

Description	Catalog Number
Loadbreak Bushing Insert	5810-BI-15

Each kit contains:

- Loadbreak Bushing Insert
- Shipping Cap (not for energized operation)
- Silicone Lubricant
- Installation Instruction Sheet

3.0 Availability

The 3M™ 5810-BI-15 Industrial Loadbreak Bushing Insert is available for use with ANSI/IEEE Standard 386 universal bushing wells, for making loadbreak connections with 15 kV ANSI/IEEE Standard 386 loadbreak elbow connectors.

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IMPORTANT NOTICE

Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

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