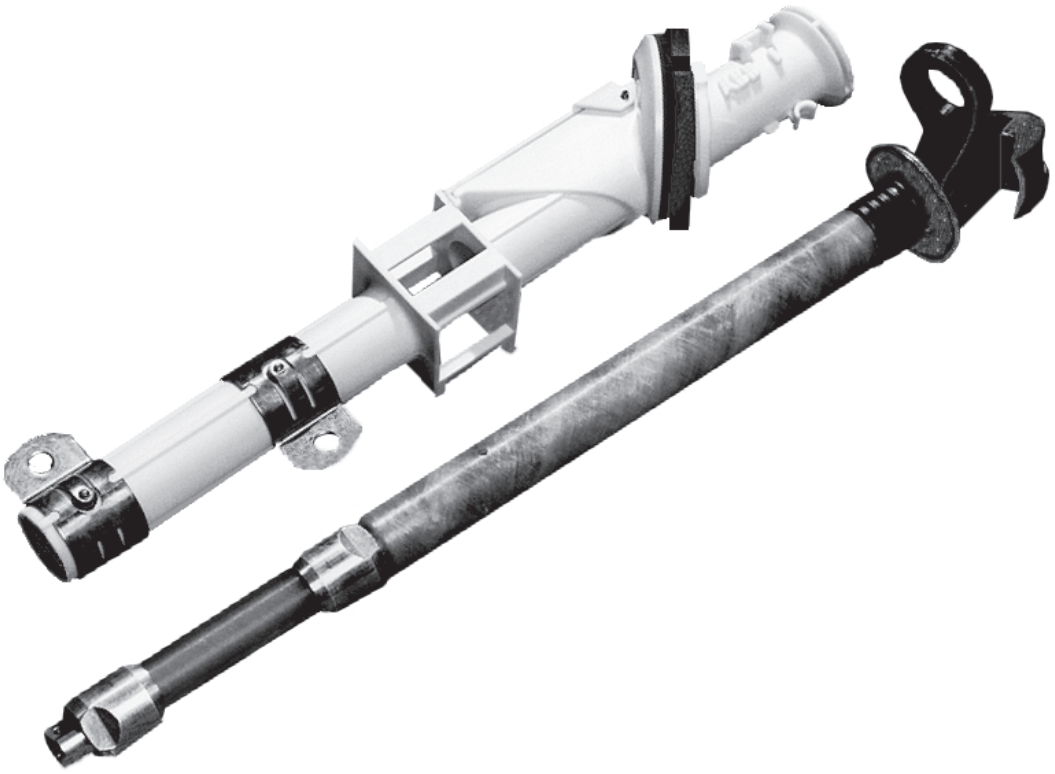
Expulsion Fuse Holder
Type DO-III, Oil Immersed Drawout
PTAP-AFH927

Technical Guide
34.5 kV, 150 kV BIL



General Description

The ABB "DO-III" fuse holder is a draw out load break expulsion fuse holder designed for use with pad-mounted transformers filled with transformer oil or other approved fluid. It is designed to protect the distribution system in the event of an internal transformer fault, secondary fault, or severe overload when used with properly coordinated series fuses. Following industry safety practices, the "DO-III" fuse holder can be used to break load.

Features & Advantages

Applications

Ratings		
BIL	150 kV	
60 Hz, 1 minute Withstand	50 kV	
Interrupting Rating		
kV L-G	Available Current Symmetrical rms (Amperes)	
2.4	4000	
8.3	3500	
15.5	2500	
23	1000	
Load Make/Break Ratings at 80% Power Factor		
kV L-G	kV L-L	Current (Amperes)
5.8	10	160
8.9	15.5	150
15.4	26.7	80
19.9	34.5	50
Maximum Transformer Wall Thickness		
0.25 inches (6.4 mm)		

Ordering Information

Complete Fuse Holder Assembly with Mounting Hardware	
1C10775G01	Assembly Includes: Vent Hole Only
1C10775G02	Assembly Includes: Check Valve Only
1C10775G03	Assembly Includes: Vent Hole & Check Valve
Options with Silver Plated Contacts for High Current Applications	
1C10775G04	Assembly Includes: Vent Hole Only - Cartridge not included
1C10775G06	Assembly Includes: Vent Hole Only
1C10775G07	Assembly Includes: Check Valve Only
1C10775G08	Asssembly Includes: Check Valve Only - Cartridge not included
Spare Parts	
1C10775G05	Mounting Nut & Gasket
1C10765G01	Puller Assembly, Fuse Cartridge & End Plug
1C10765G02	Puller Assembly Only
1B11120G01	Fuse Cartridge, & End Plug
3A33981H01	End Plug Only
1C10765G03	Puller Assembly, Silver Plated Fuse Cartridge, & End Plug
1B11120G02	End Plug & Silver Plated Cartridge

Oil Containment

The "DO-III" fuse holder's housing has been redesigned to improve safety and minimize environmental concerns. It features a vent hole located within the gas space of pad mounted transformers. This vent hole reduces the risk of oil spillage resulting from line personnel inadvertently removing the puller assembly without first venting the transformer. The redesigned housing also incorporates an optional check valve as another method to reduce the risk of injury or cleanup caused by excessive oil spillage. There are two methods for applying the check valve. First, it can be used in conjunction with the vent hole to limit the amount of spillage produced if the oil level rises above the vent hole. Secondly, the check valve can serve as the sole protection by sealing the vent hole. In this configuration the amount of oil released is dependent on the speed at which the puller assembly is withdrawn. As shown in Figure 1, the check valve actuates as the puller assembly is withdrawn and seals the transformer.

Interchangeable

The "DO-III" fuse holder is generally interchangeable with competitive designs. The housing, fuse cartridge, and puller are individually interchangeable with competitive counterparts.

Tapered Flange

The "DO-III" fuse holder's designed housing incorporates a 7° tapered flange. The tapered gasket seat holds the tank gasket in place during installation and retains the gasket in service.

High Impact Strength Operating Handle

The operating handle is constructed of a special impact resistant, glass reinforced polymer to prevent breakage during hot stick operations and accidental dropping on hard surfaces.

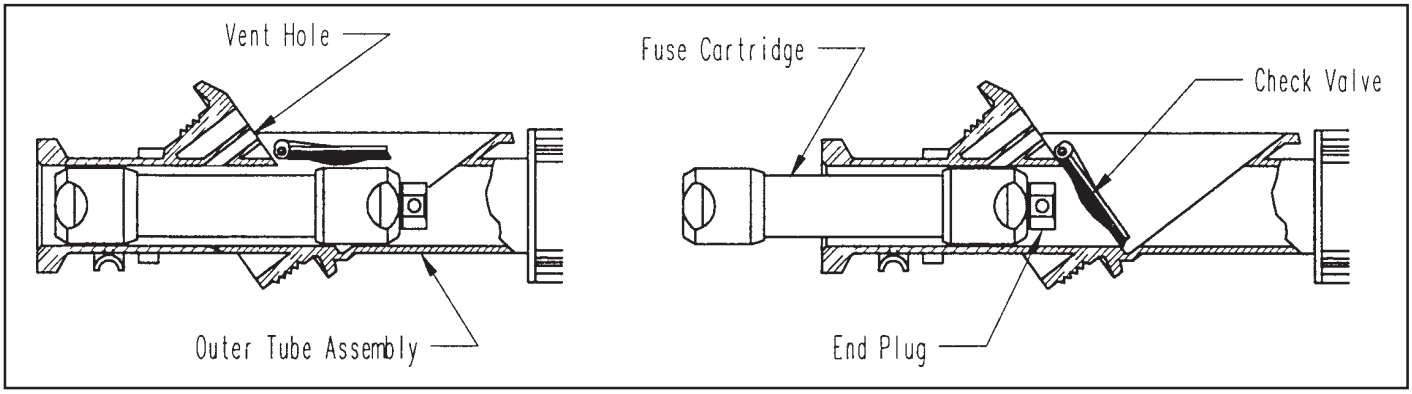


Figure 1: Fuse cartridge withdrawn closing check valve.

Positive Latching Handle

The handle is designed with sufficient clearance between the handle clamp and the lip of the outer tube in order to provide smoother operation and to ensure positive latching for greater safety .

Hot Oil Resistant Housing

The “DO-III” fuse holder’s outer tube is constructed of a high temperature, high dielectric strength, arc resistant, glass reinforced, polyester material. This material has proven itself over many years of use in these types of distribution transformer applications.

Large Contact Surface

The “DO-III” fuse holder has a large contact surface area to minimize heating of the contacts and provide positive contact alignment.

Installation

The “DO-III” fuse holder is inserted through the transformer tank wall. The mounting nut should be tightened between 100 and 120 in-lbs (11.3 to 13.6 N-m). The assembly must be used in series with a current limiting fuse or isolation link. Connect the high voltage bushing lead to either the isolation link or the current limiting fuse, and attach the link or fuse to the lower contact in accordance with supplier’s recommendations. Next, connect the transformer’s primary winding to the upper contact. Refer to Figure 2 for illustration of proper connections. Remove puller assembly and install fuse element in accordance with supplier’s recommendations.

Design Tests

The ABB Type “DO-III” fuse holder successfully passed a battery of tests including:

- Dielectric tests
- Load switching tests
- Fault interruption tests
- Mechanical strength tests
- Seal integrity tests
- Contact temperature rise tests

Production Tests

In addition to the design testing, the following routine production tests are done on an audit basis to ensure compliance to requirements:

- Dimension check on critical dimensions.
- Insertion force test to verify contact pressure.
- Visual inspection to verify molding and assembly process.

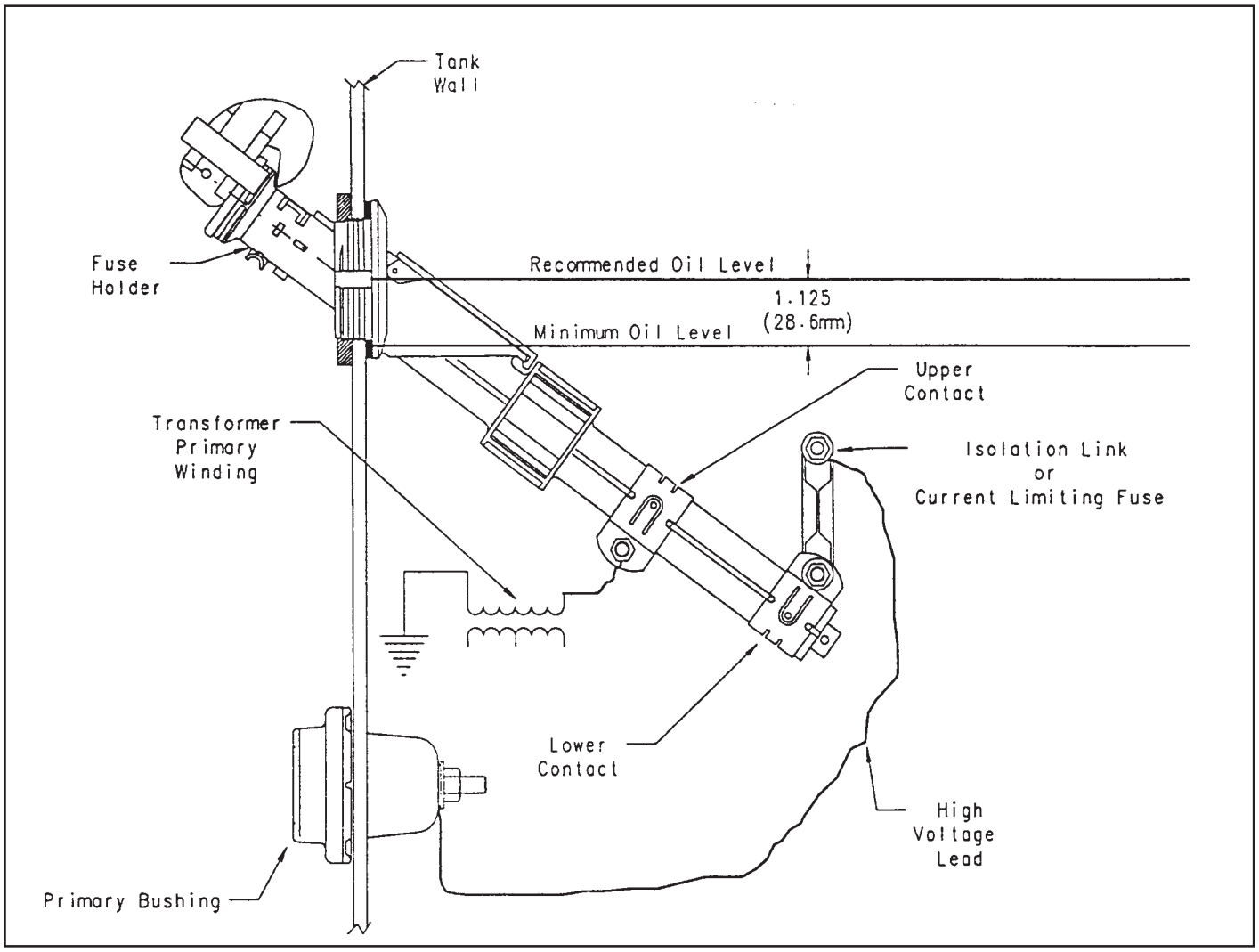


Figure 2: Illustration of DO-III fuse holder connections

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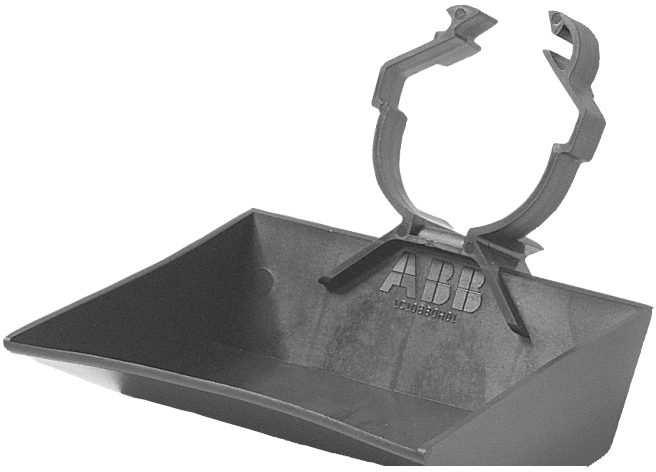
Printed in USA by Tennessee Industrial Printing Services, Inc.

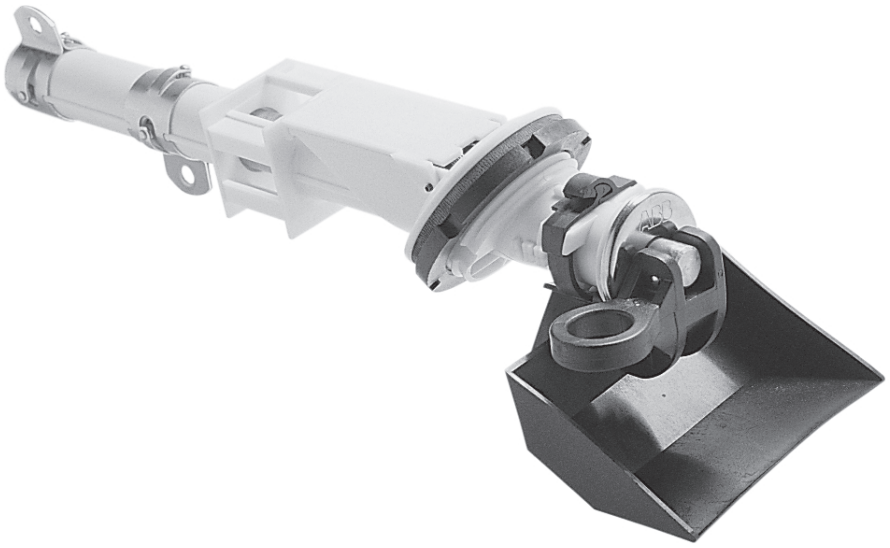
IZUA 5670-200 en Replaces TPL 44-835, February 2003

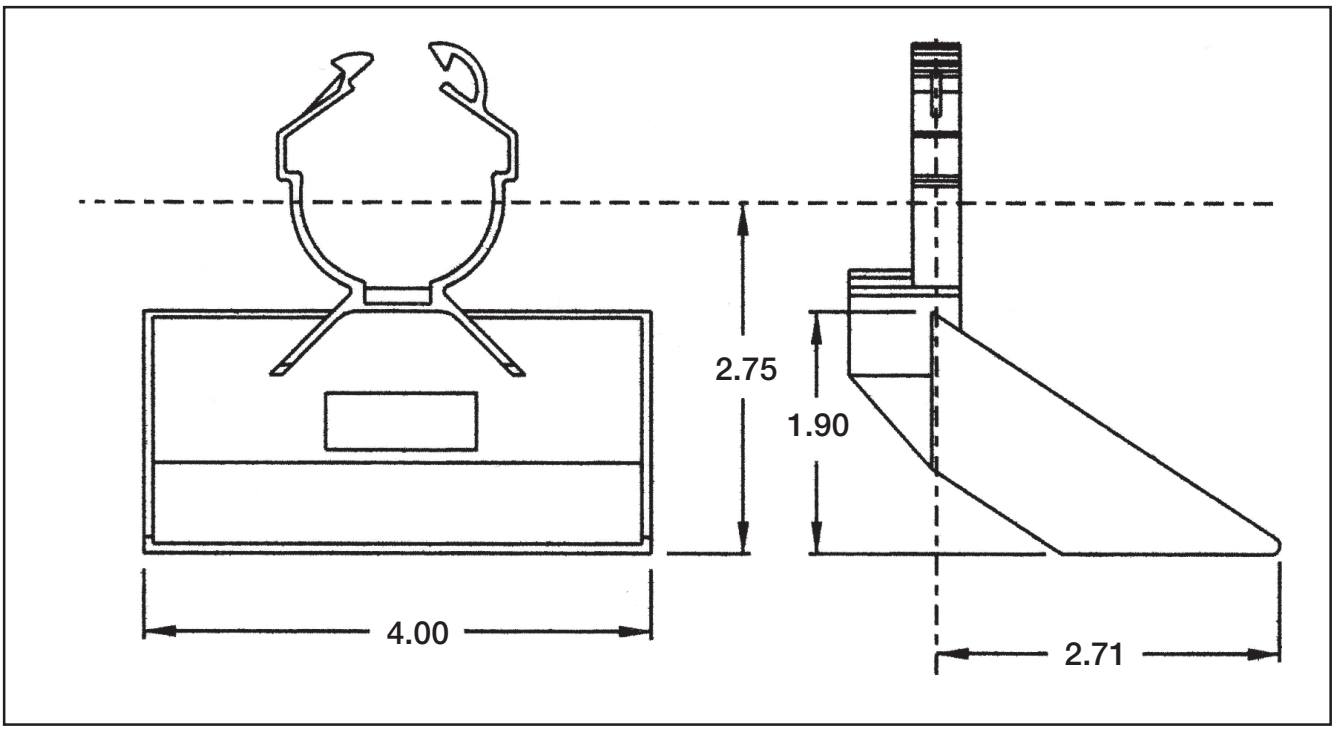
Type DO-III Drip Tray Drawout Expulsion Fuse Holder Drip Tray

PTAP-AFH927

Technical Information







General Description

The ABB drip tray is designed for application on side wall mounted, draw out fuse holder assemblies. It prevents the transformer insulating fluid from dripping onto the molded rubber primary terminators and cables as the expulsion fuse is extracted from the transformer. The purpose of the drip tray is to protect these rubber encapsulated components, which may not be compatible with certain transformer insulating fluids, by capturing the insulating fluid released as the puller assembly is extracted.

Features and Advantages

Durability

The ABB drip tray incorporates a unique latch design which prevents the transverse and cantilever loads applied during hook stick fuse insertion and extraction from detaching it. It is virtually impossible to inadvertantly dislodge the drip tray. The tray remains attached with 25 pound weight attached to its lip.

Interchangeability

The ABB drip tray can be applied to all draw out fuse holders currently avilable.

Ordering Information

Style Number	Description
1C10880H01	Drip Tray

ABB Inc.
1128 S. Cavalier Drive
Alamo, TN 38001, USA
Telephone: 731-696-5561
Fax: 731-696-5362
www.abb.com

Printed in USA by Tennessee Industrial Printing Services, Inc.

IZUA 5670-200a en replaces TPL 44-835 dated July 99.

Style Number	Description
1C10775G01	DO-III Fuse Holder - Vent Hole Only
1C10775G02	DO-III Fuse Holder - Check Valve Only
1C10775G03	DO-III Fuse Holder - Vent Hole & Check Valve
1C10775G04	DO-III Fuse Holder - Silver Plated Contacts - Vent Hole Only - No Cartridge
1C10775G06	DO-III Fuse Holder - Silver Plated Contacts - Vent Hole Only
1C10775G07	DO-III Fuse Holder - Silver Plated Contacts - Check Valve Only
1C10775G08	DO-III Fuse Holder - Silver Plated Contacts - Check Valve Only - No Cartridge

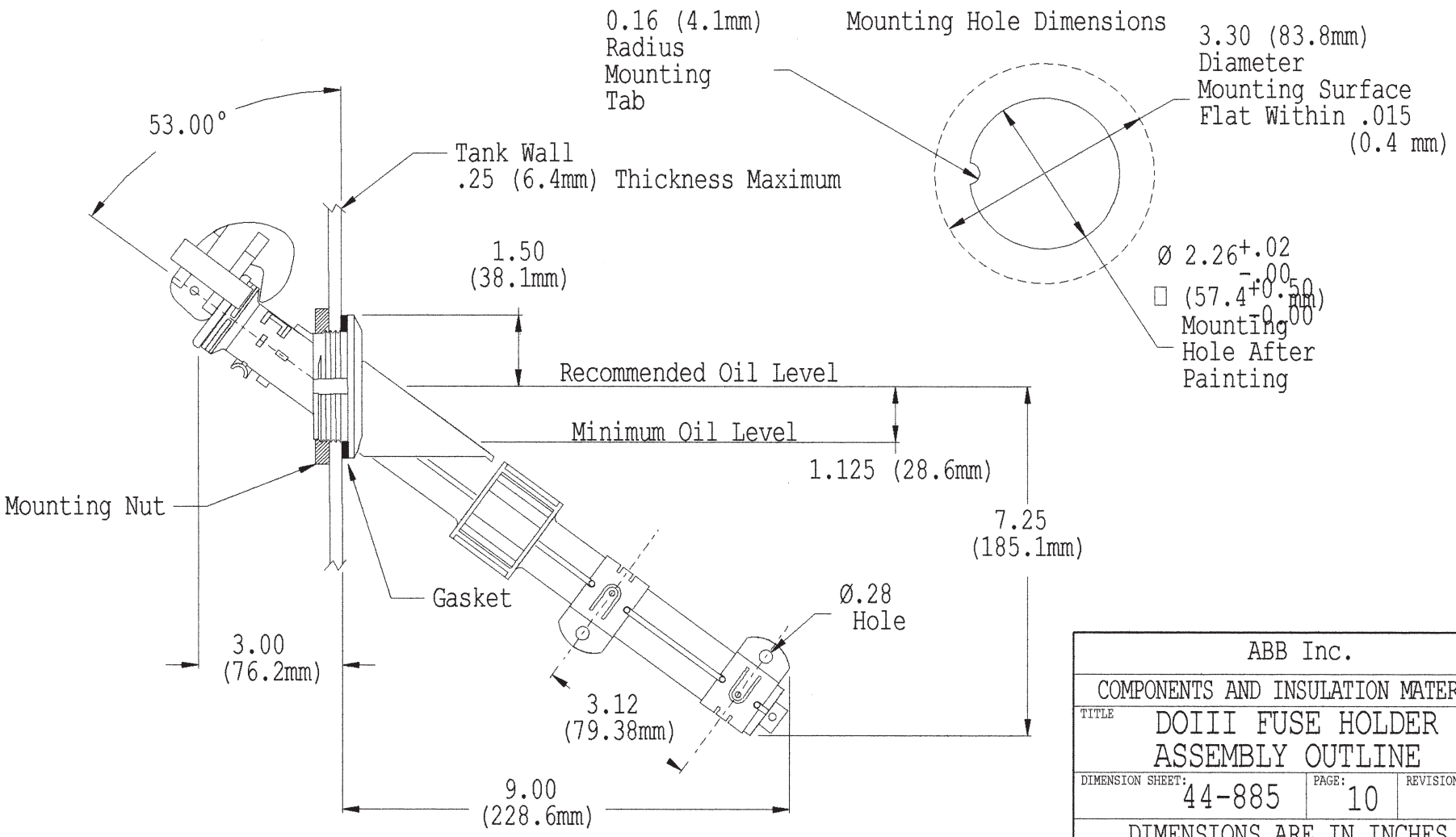


ABB Inc.

COMPONENTS AND INSULATION MATERIAL

TITLE: DOIII FUSE HOLDER ASSEMBLY OUTLINE

DIMENSION SHEET:	PAGE:	REVISION:
44-885	10	05

DIMENSIONS ARE IN INCHES.

Style Number	Description
1C10775G01	DO-III Fuse Holder - Vent Hole Only

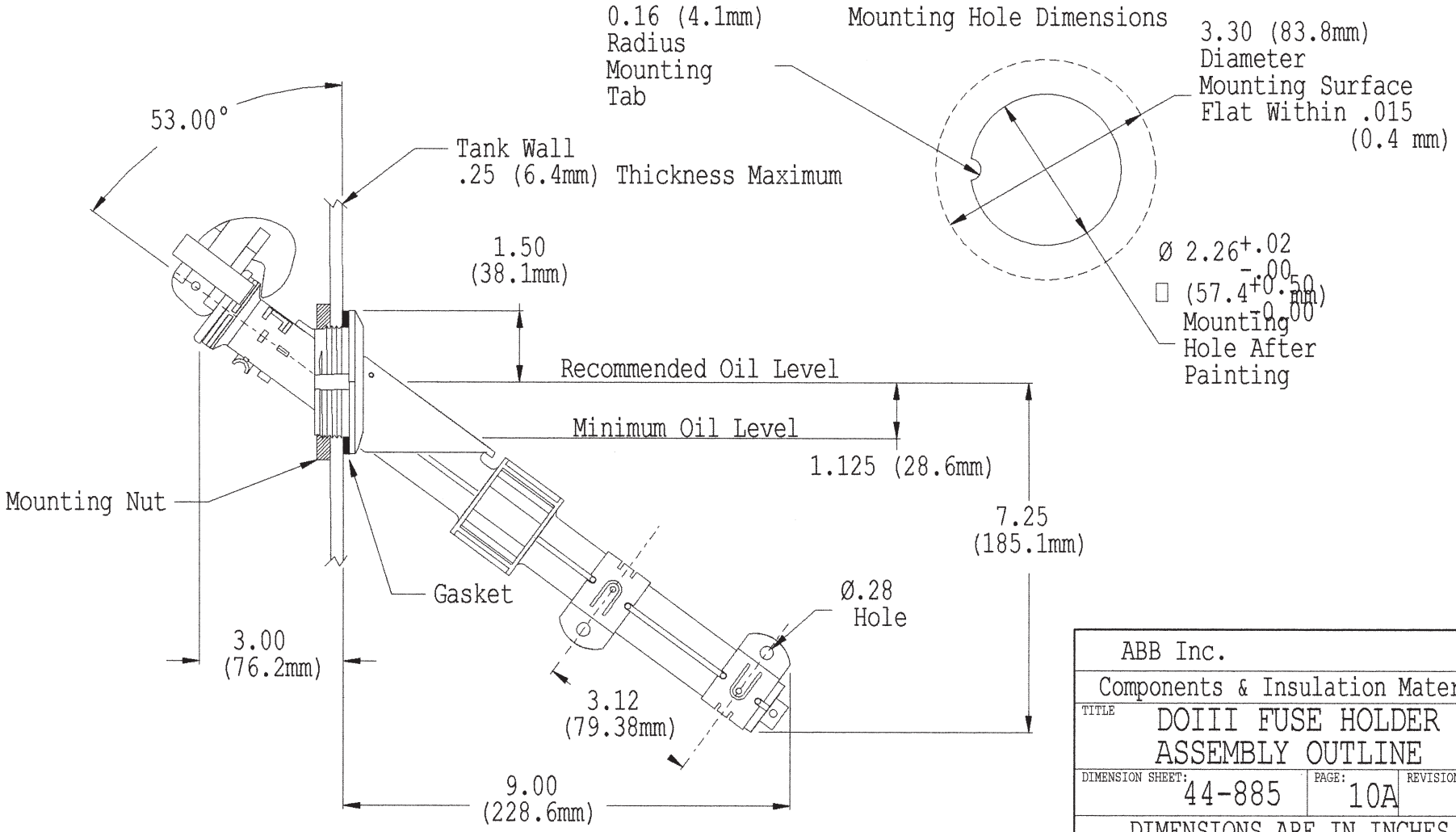


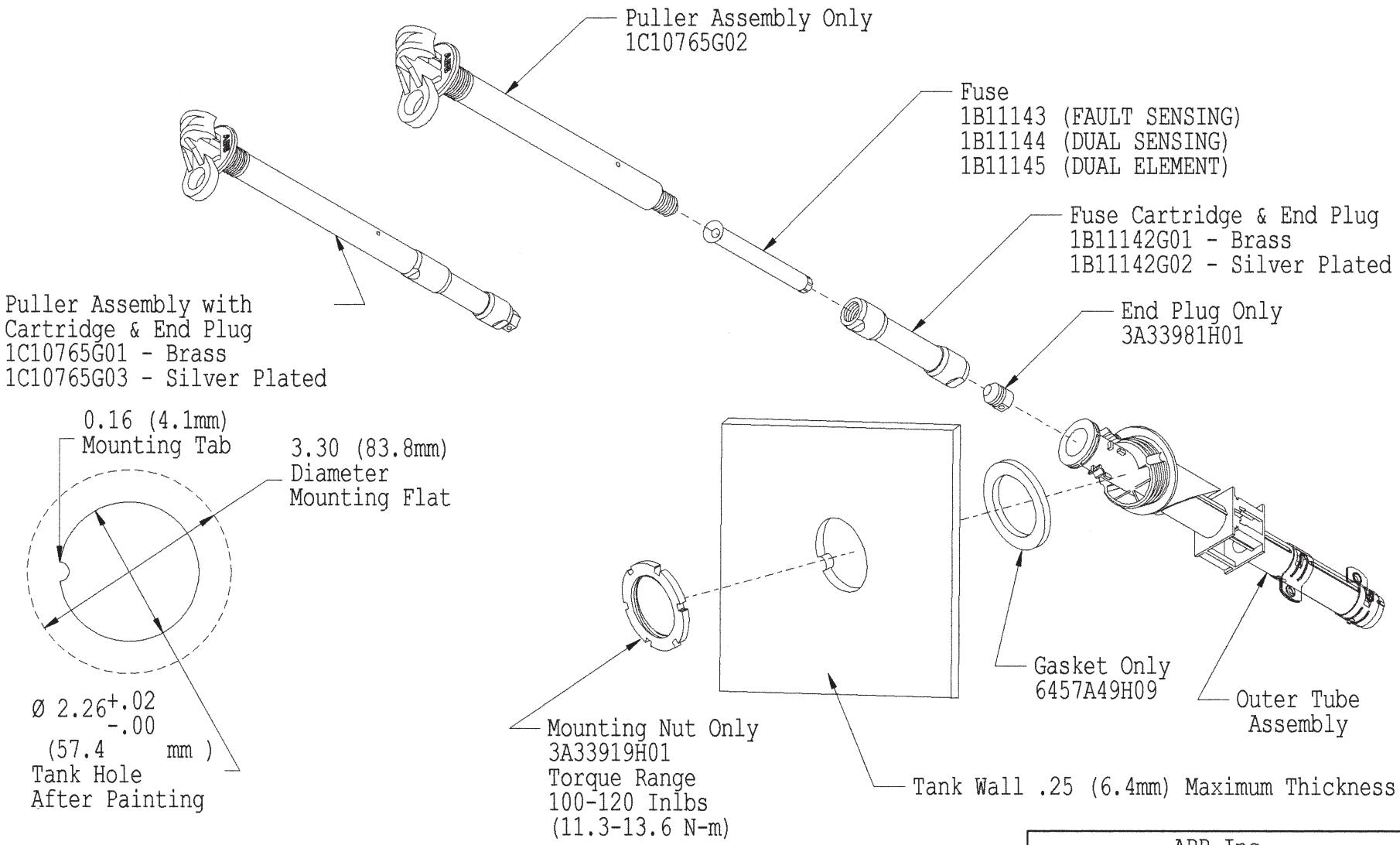
ABB Inc.

Components & Insulation Material

TITLE: DOIII FUSE HOLDER ASSEMBLY OUTLINE

DIMENSION SHEET:	PAGE:	REVISION:
44-885	10A	02

DIMENSIONS ARE IN INCHES.



The misapplication of the DO-III constitues a potential hazard to life and property. Accordingly, the user must exercise due care in utilizing this information to assure that the DO-III fuse holder is properly applied.

All energized parts of the DO-III fuse holder must be under oil and spaced away from other energized parts or ground with sufficient distance to withstand all operating and test voltages.

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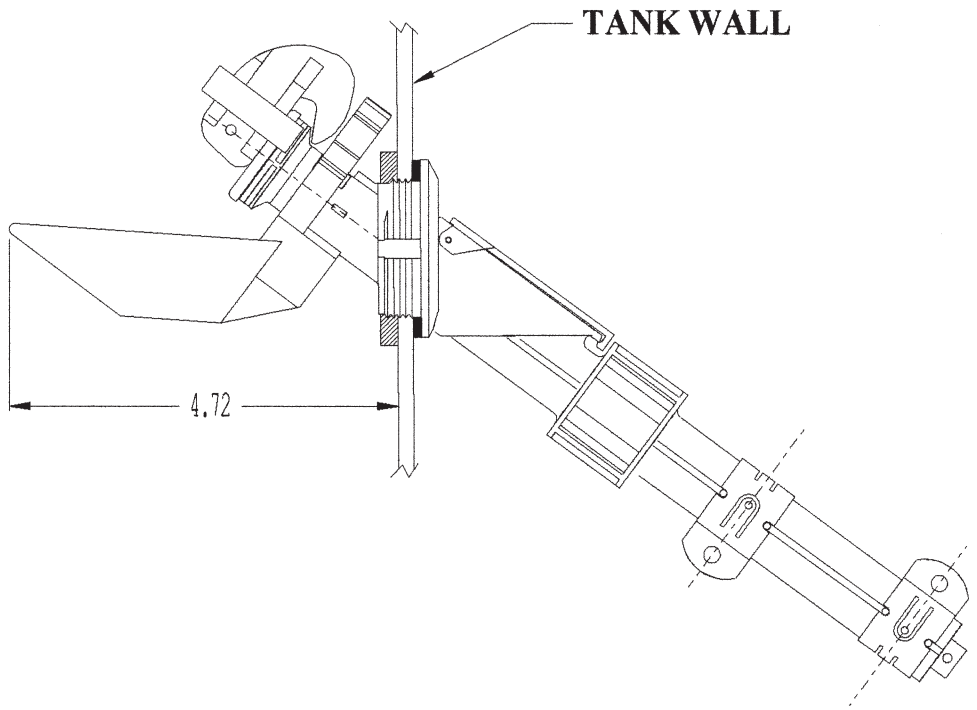
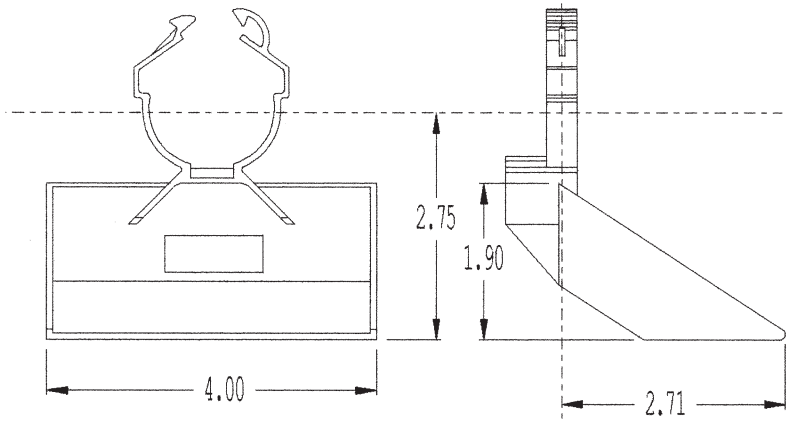
ABB Inc.			
Components & Insulation Material			
TITLE: DOIII FUSE HOLDER INSTALLATION INSTRUCTIONS			
DIMENSION SHEET: 44-885	PAGE: 11	REVISION: 05	
DIMENSIONS ARE IN INCHES.			

STYLE NUMBER	DESCRIPTION	VOLUME
1C10880H01	DO-III FUSE HOLDER - DRIP SHIELD	4.28 cu in (70.1 cc)





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Components & Insulation Material		
TITLE: DO-III FUSE HOLDER DRIP SHIELD OUTLINE		
DIMENSION SHEET: 44-885	PAGE: 12	REVISION: 02
DIMENSIONS ARE IN INCHES.		