

Document Title:	Double Arming Bolt, Stainless Steel or Thermal Diffuse Galvanized	
Document Type:	50 - MATERIAL SPECIFICATION	Document No.: 4300.50.103
Department: Distribution Engineering		

Department: **Distribution Engineering** Version: **07** Effective Date: **Dec 2, 2025**

For others, specify here

Shared document with: N/A

*Select the Departments impacted by the document (If apply)

For others, specify here

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Dec 2, 2025

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Related/Referenced Documents

N/A

Version History

Version	Date	Revision
01	Feb. 23, 2022	Item 002-13603 converted from PREPA to LUMA format. Items 002-82663, 82664, 82665 & 82666 created.
02	Apr. 13, 2022	Section 2, 3, 4, and 7 modified. TOC added.
03	Dec. 16, 2022	Cover Page added.
04	Mar. 20, 2023	Item 002-13603 length modified, and its Coastal Line model changed. General format modifications (Sections 5, 9.4, 9.6, and TOC Lines 7, 8, and 9).
05	Sep. 06, 2024	General format modifications, TOC updated, Section 4 modified, and sections order rearranged.
06	Dec. 17, 2024	General format modifications, TOC updated, Sections 3, 7 & 9 modified. New Items added (002-86774, 002-86775, 002-86776, 002-86777, and 002-86778).

Version History

Version	Date	Revision
07	Dec. 02, 2025	General format modification. Changed Document Number (Legacy Number: 4350.103) to new Engineering Records nomenclature number 4300.50.103.

Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
002-13603	57694	8	12/02/2025
002-82663	82663	7	12/02/2025
002-82664	82664	7	12/02/2025
002-82665	82665	7	12/02/2025
002-82666	82666	7	12/02/2025
002-86774	86774	2	12/02/2025
002-86775	86775	2	12/02/2025
002-86776	86776	2	12/02/2025
002-86777	86777	2	12/02/2025
002-86778	86778	2	12/02/2025

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1. Introduction

This is a general specification that covers the minimum requirements for stainless steel or thermal diffusion galvanized (TDG) double arming bolts used in the distribution and transmission system in Puerto Rico. Further information will be provided by LUMA Energy at the time of order placement and will provide information on site specific conditions, quantity, and other requirements. This document includes the general characteristics of the product.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this product to LUMA on previous orders, will not have to furnish samples at bid opening. The product will be received at LUMA's general warehouse (011) at Palo Seco, Puerto Rico. Shipping will include transportation and unloading at the indicated warehouse.

3. Literature

- 3.1. Descriptive and technical literature must be supplied by the vendor at time of bidding. This literature must include, but is not limited to, details of material, drawings, documented testing, and instructions for use and installation. **The literature must be an official document from and certified by the manufacturer.** Failure to submit documents on time and duly certified by the manufacturer will cause bidder disqualification.
- 3.2. If required by LUMA, final drawings and documentation shall be submitted by the vendor before the manufacturing and shipping process for approval.

4. Compatible with

For compatible manufacturer and model see Table 1. These models are examples of the product described in this document and do not represent a preference. LUMA will evaluate equally any model not listed here during any acquisition event

5. Markings

- 5.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.
- 5.2. Individual package(s) shall be clearly marked with manufacturer name and item information (part number, serial number, quantity, etc.).
- 5.3. Packaging labels and tags shall be waterproof.

6. Packaging

- 6.1. All products shall be packaged and marked in such a way as to facilitate handling and protection from damage and that the receiving warehouse can readily identify it and send it, in one complete unit, to a field location without opening crates or boxes to sort items and/or parts.
- 6.2. A list of all parts included in the container and/or package must be provided at delivery time so the receiving personnel can verify that everything requested is present, avoiding any delay in the receiving process.

7. Number Per Package (Logistics)

Standard package: Twenty-five (25) units per box or as requested by LUMA Energy. Each unit consists of one (1) bolt with four (4) nuts assembled.

8. Acceptance Criteria

- 8.1. Test required: certified by external qualified laboratories.
- 8.2. Product shall be manufactured in accordance with the latest issue below (section 8.3). When conflicts occur between purchaser's specifications and the latest issue below, the purchaser's specification shall prevail.
- 8.3. Latest applicable codes, standards, and other regulations:
 - a. ASME B1.1: For the thread form, series, class, allowance, tolerance, and designation for unified screw threads.
 - b. ASME B18.2.2: For the complete general and dimensional data for the various types of inch series square and hex nuts, including machine screw nuts and coupling nuts.
 - c. ASTM A380/A380M: Standard practice for cleaning, descaling, and passivation of stainless-steel parts, equipment, and systems.

- d. ASTM A1059: For zinc alloy thermo-diffusion coatings on steel fasteners, hardware, and other products.
- e. ASTM F593: For stainless-steel bolts, hex cap screws, and studs.
- f. ASTM F594-09: For stainless-steel nuts.
- g. IEEE C135.1: For zinc-coated steel bolts and nuts for overhead line construction.
- h. ISO 3506-1: Mechanical properties of corrosion-resistant stainless-steel fasteners.

8.4. If any other standard different from the ones indicated in this document is used, the supplier must provide information showing compatibility with the required ones.

9. Description

- 9.1. Used in highly corrosive environments for double crossarm construction to secure and lock in the spacing between the crossarms.
- 9.2. Shall be full thread bolts with semi-cone type point at both ends.
- 9.3. Each bolt shall be furnished with four (4) standard square nuts assembled.
- 9.4. Bolts and Nuts Material: All of them shall be made of stainless-steel (SS) 316 or thermal diffusion galvanized (TDG) low carbon steel.
- 9.5. The nuts shall be flat at one end and chamfered at the other end.
- 9.6. The bolt should be grade A with minimum tensile strength as per Table 1.
- 9.7. Bolts and nuts dimensions as per Table 1.

10. Inspection

- 10.1. Upon inspection of incoming product, the purchaser reserves the right to refuse product shipments and to determine the acceptability or rejection of the product received. The supplier shall be liable for all costs incurred for a product that is rejected.
- 10.2. The acceptance of any product shall in no way relieve the vendor from his responsibility to meet all the requirements of this specification, and it would not prevent subsequent rejection if such products were found later to be defective.

11. Proposal Information

- 11.1. Submitted proposals must include:
 - a. Technical information, drawings, and tests.

b. Table of Compliance completed by the bidder with reference (see Appendix 1).

12. Table 1: Warehouse and Asset Suite Identification Number

Warehouse Catalog #	Asset Suite #	Bolt & Nut Diameter	Treads Per Inch (TPI)	Bolt Length	Min. Tensile Strength	* Compatible Manufacturer & Model
002-13603	57694	5/8" (1.59 cm)	11	18" (45.72 cm)	12,400 lbf (55 kN)	MacLean (J8868T) Coastal Line Products (60620180)
002-82663	82663	5/8" (1.59 cm)	11	20" (50.80 cm)	12,400 lbf (55 kN)	MacLean (J8870T) Coastal Line Products (60620200)
002-82664	82664	5/8" (1.59 cm)	11	22" (55.88 cm)	12,400 lbf (55 kN)	MacLean (J8872T) Coastal Line Products (60620220)
002-82665	82665	5/8" (1.59 cm)	11	26" (66.04 cm)	12,400 lbf (55 kN)	MacLean (J8876T) Coastal Line Products (60620260)
002-82666	82666	5/8" (1.59 cm)	11	30" (76.2 cm)	12,400 lbf (55 kN)	MacLean (J8878T) Coastal Line Products (60620300)
002-86774	86774	3/4" (1.9 cm)	10	18" (45.72 cm)	18,350 lbf (81.6 kN)	MacLean / Hubbell Coastal Line Products (60621180)
002-86775	86775	3/4" (1.9 cm)	10	20" (50.80 cm)	18,350 lbf (81.6 kN)	MacLean / Hubbell Coastal Line Products (60621200)
002-86776	86776	3/4" (1.9 cm)	10	22" (55.88 cm)	18,350 lbf (81.6 kN)	MacLean / Hubbell Coastal Line Products (60621220)
002-86777	86777	3/4" (1.9 cm)	10	26" (66.04 cm)	18,350 lbf (81.6 kN)	MacLean / Hubbell Coastal Line Products (60621260)
002-86778	86778	3/4" (1.9 cm)	10	30" (76.2 cm)	18,350 lbf (81.6 kN)	MacLean / Hubbell Coastal Line Products (60621300)

* Models from MacLean and Hubbell correspond to TDG products. Models from Coastal Line Products correspond to SS 316 products.

Appendix

Appendix 1: Table of Compliance

Line	Description		Pass/Fail (P/F)	Comments
1	Complies with the specification document 4300.50.103.			
2	Industry Standards: ASME (B1.1, B18.2.2), ASTM (A380, A1059, F593, F594), IEEE C135.1, ISO 3506-1.			
3	Tech. info. and drawings provided.			
4	SS 316 or TDG low carbon steel.			
5	Full thread bolt with semi-cone type point at both ends.			
6	Four (4) square nuts included and assembled on each bolt.			
7	Bolt: Grade A			
8	Nuts: Flat at one end and chamfered at the other end.			
9	Bolts and Nuts dimensions as per Table 1.			
10	TPI	5/8: 11 TPI		
		3/4: 10 TPI		
11	Min. Tensile Strength	5/8: 12,400 lbf		
		3/4: 18,350 lbf		

NOTE: This table is only a checklist for reference. The compliance must be with the complete document. Filling out the table with "PASS" won't be accepted as a compliance without the technical information required to certify it.

4300.50.103 Double Arming Bolt, SS-TDG (12-02-25)

Final Audit Report

2025-12-02

Created:	2025-12-02
By:	Rodolfo Flores (rodolfo.floresortiz@lumapr.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAQMaG7YonTUV9WyoaKaMUVtV357wh3Kna

"4300.50.103 Double Arming Bolt, SS-TDG (12-02-25)" History

-  Document created by Rodolfo Flores (rodolfo.floresortiz@lumapr.com)
2025-12-02 - 2:13:43 PM GMT
-  Document emailed to Rodolfo Flores (rodolfo.floresortiz@lumapr.com) for signature
2025-12-02 - 2:13:47 PM GMT
-  Document e-signed by Rodolfo Flores (rodolfo.floresortiz@lumapr.com)
Signature Date: 2025-12-02 - 2:17:10 PM GMT - Time Source: server
-  Document emailed to Miguel Rios (miguel.rioslopez@lumapr.com) for signature
2025-12-02 - 2:17:11 PM GMT
-  Email viewed by Miguel Rios (miguel.rioslopez@lumapr.com)
2025-12-02 - 2:17:47 PM GMT
-  Document e-signed by Miguel Rios (miguel.rioslopez@lumapr.com)
Signature Date: 2025-12-02 - 2:18:22 PM GMT - Time Source: server
-  Document emailed to Ricardo Castro (ricardo.castro@lumapr.com) for signature
2025-12-02 - 2:18:24 PM GMT
-  Email viewed by Ricardo Castro (ricardo.castro@lumapr.com)
2025-12-02 - 2:47:06 PM GMT
-  Document e-signed by Ricardo Castro (ricardo.castro@lumapr.com)
Signature Date: 2025-12-02 - 2:47:42 PM GMT - Time Source: server
-  Agreement completed.
2025-12-02 - 2:47:42 PM GMT



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