

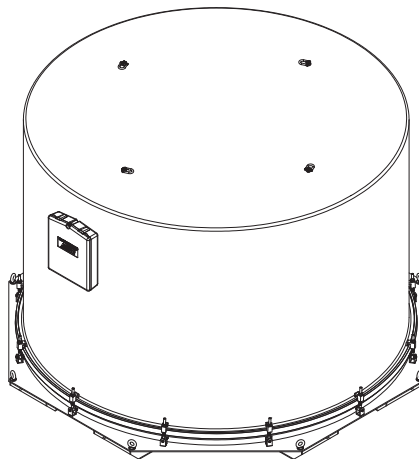


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AGSE-C009-G01

MODULE 1 FAN & BOOSTER SHIPPING CONTAINER

For CFM56-5B Engines



ORIGINAL MANUAL DATED..... 9/28/2023
LATEST MANUAL REVISION LEVEL..... 9/28/2023 (REV NC)

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NOTICE

1. Alteration, Modification, Reengineering, or Reproduction of Equipment

The alteration, modification, reengineering, or reproduction of AGSE equipment and/or parts is not permitted without prior written authorization from AGSE.

These modifications include but are not limited to:

- Structural changes to AGSE-supplied parts
- Substitution of AGSE-supplied parts, including hardware, with an alternate source or supplier
- Reverse engineering of AGSE equipment and parts.

Requests for modifications should be submitted to AGSE for review – please send modification requests to support@agsecorp.com.

Once reviewed by our Engineering team, a Customer Support Letter (Subject: No Technical Objection) will be issued for any approved modifications.

NOTE

Modifications executed without prior authorization by AGSE may result in a non-compliant product that is unsafe for operation.

Unauthorized modifications void AGSE's and the OEM's (Engine and/or Airframer) approval and authority to use the product for its intended application.

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1.0 – Revisions

The following is an itemized record of all changes from previous revision.

PAGE	REV	DESCRIPTION OF CHANGE	DATE
	NC	NEW	9/28/2023

2.0 – Illustration

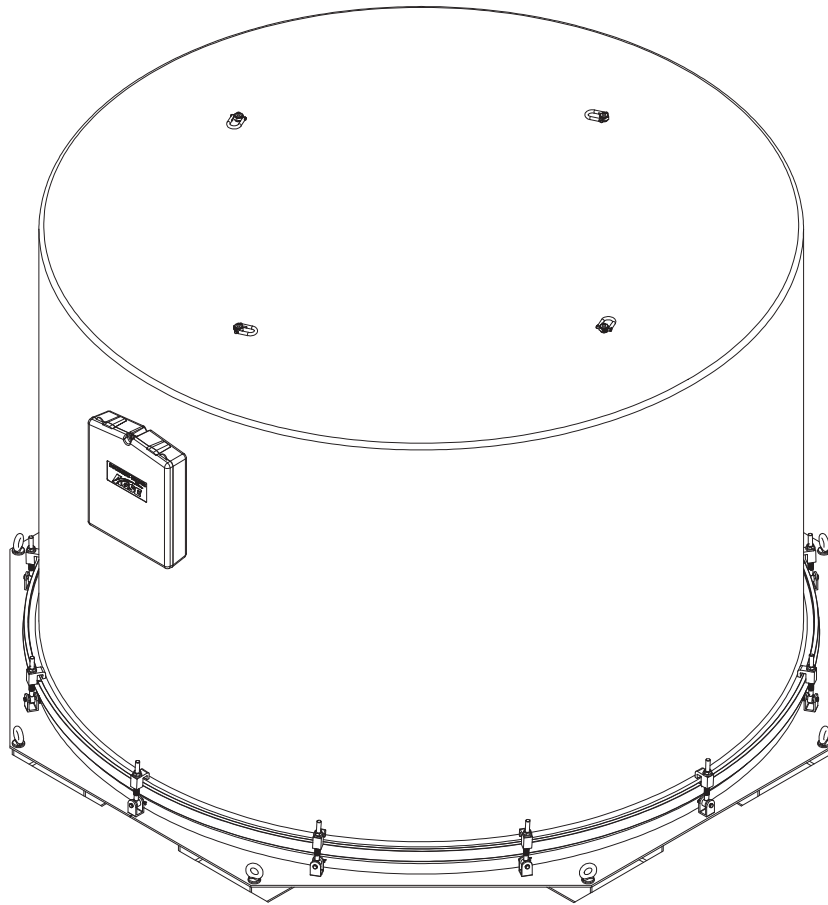


Figure 2.0-1 AGSE-C009-G01 Fan and Booster Container Assembly

AGSE-C009 - Module 1 Fan & Booster Shipping Container

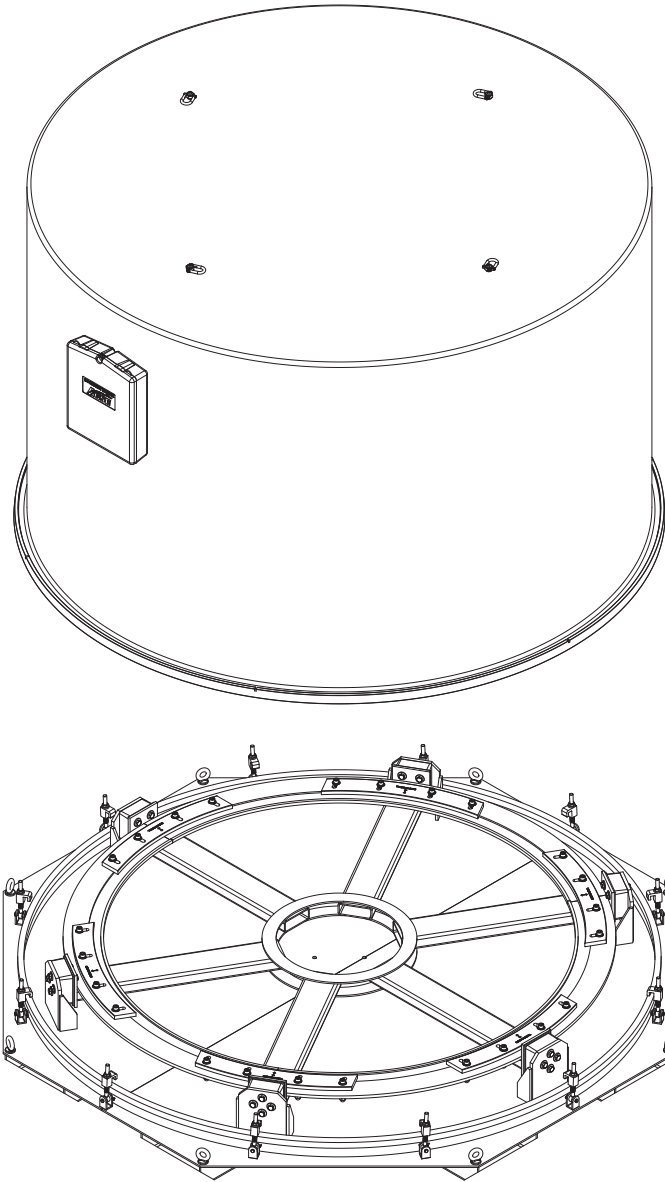


Figure 2.0-2 AGSE-C009-G01 Fan and Booster Container Assembly

AGSE-C009 - Module 1 Fan & Booster Shipping Container

3.0 – Specification

3.1 General

The AGSE-C009 Major Module 1 Fan & Booster Shipping Container is designed to transport and/or store the CFM International CFM56-5B Engine Fan & Booster. The cover is made of fiberglass and fastens to the welded steel base with standard clamp assemblies. The container has integral shock mounts to protect the Fan & Booster from shipping vibrations and rough handling. The Fan & Booster is shipped with the axis vertical and the forward end down. A document container is provided on the outside of the cover.

3.2 Mobility

The shipping container is skid mounted and can be lifted by a forklift from all four sides at the base. The fork pockets are 3.75 x 11.5 (inside dimensions).

3.3 Design

The shipping container consists of a welded steel shock mounted support base with a mounting plate that centers the fan & booster. The fan & booster is supported and centered on a restraint bracket. The cover is fiberglass. A rubber gasket on the base and rain lip on the cover protects the interior from moisture. A storage box is attached to the base and is used to store the various fasteners.

3.4 Fabrication and Finish

The system is fabricated from structural steel shapes conforming to ASTM A500, A513, and A36 materials. All bolted connections use A325 structural bolts or SAE Grade 5 commercial hardware. Unit is primed and painted with high-grade, Skydrol resistant enamel, with color optional. Pins and miscellaneous hardware are manufactured from corrosion resistant materials, or plated as required.

3.5 Characteristics

Empty Container

Height (IN.).....	65.25
Diameter (IN.).....	95.5
Weight (Lbs.).....	1,617

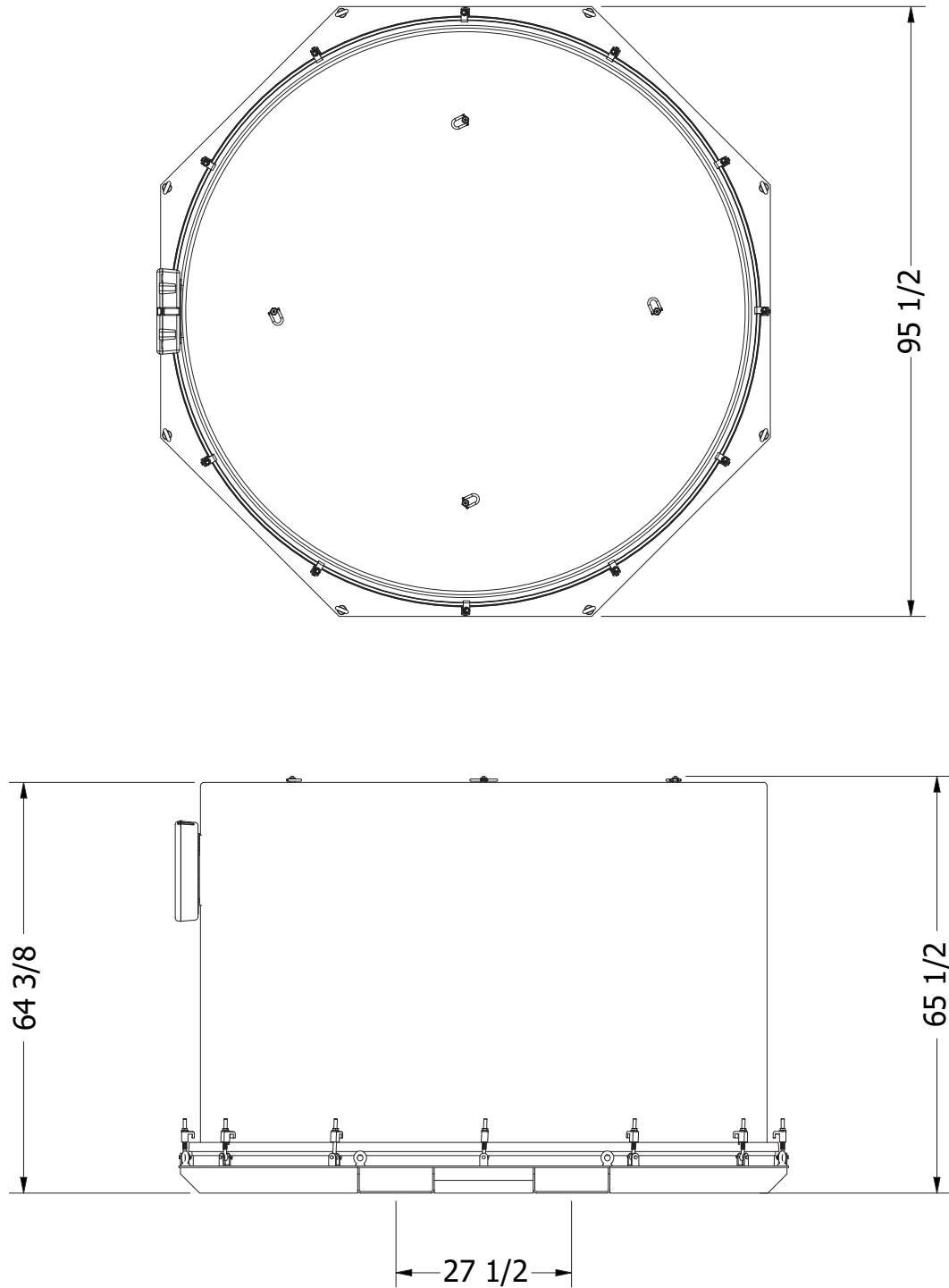


Figure 3.5-1. AGSE-C009-G01- Dimensions

4.0 – Maintenance and Inspection

4.1 General

Life expectancy of this equipment can be extended if it is properly maintained. By design, there is only minimal periodic servicing required. Annual inspections for damage, weld cracks, or corrosion are recommended. Prior to each use, this equipment should be inspected for obvious signs of abuse or shipping damage. Observed damage should require complete inspection of the affected area to ensure structural integrity is not compromised.

4.2 Cleaning and Painting

This equipment should be cleaned periodically with a soap and water solution and rinsed thoroughly. Damaged paint should be touched-up with Skydrol resistant high-grade enamel paint. Superficial scratches are expected during normal usage and will not affect function.

4.3 Scheduled Service

All non-painted machined surfaces should be coated with a light grade oil spray every 90 days. Spray with rust inhibitor LPS-3 (MIL-C-16173D, Gr. 2) or equivalent.

4.4 Scheduled Inspection

CAUTION

Prior to each use, the stand should be inspected for obvious signs of abuse or shipping damage. Observed damage should require complete inspection of the affected area to ensure stand integrity is not compromised.

Annual inspections of machined surfaces, pins, fasteners structure and shock mounts are recommended. The machined surfaces (pivot, axles, mounts) are to be visually inspected for signs of wear or corrosion. Action is to be taken immediately if areas are determined to be potentially dangerous to operating personnel, or a detriment to the equipment. Pins and fasteners are to be visually inspected for cracks, damage, or corrosion. Loose fasteners must be tightened. The structure is to be visually inspected for damage, weld cracks, or corrosion.

Regular inspection of the Shipping Container should also specifically include:

- a check of pins and latches
- a check of cushion material for tears
- a check of cover seal for damage
- a check of all fiberglass areas for cracks, tears, chips

CAUTION

AGSE recommends that shock mounts be replaced every five (5) years. Additionally, periodic inspections should be performed and any of the following conditions are proper cause for replacement of the shock mounts prior to their expiration:

- 1. Visible evidence of cracks.**
- 2. Discoloration: visible damage caused by solvents.**
- 3. Permanent deformation.**
- 4. Mount does not flex during engine loading/unloading.**
- 5. Significant corrosion on shock attach-plate.**

The following exposures can reduce the life of shock mounts and it is recommended to avoid them where possible.

- High humidity and/or salty air
- Direct sunlight
- Solvent, corrosive liquids, and fumes
- Oils, jet fuel, or Skydrol hydraulic fluid
- Extreme temperatures
- Ozone or engine exhaust

5.0 – Operation

WARNING

Care must be taken when working near suspended loads. Personnel should never stand beneath the suspended load.

CAUTION

Remove all pooling water on cover before lifting cover. Excess weight can cause bowing and may damage cover.

5.1 Positioning and Set - Up

1. Position the AGSE-C009-G01 shipping container close to the fan frame and booster to minimize moving between engine and container.
2. Release the cover clamps (12), remove cover (approx. 363 lbs.) using hoisting system by the four (4) designated hoist rings on the top of the cover. (Figure 5.1-1)

5.2 Removal of Engine Parts

Removal sequence of engine parts should be done in accordance with CFM International engine maintenance manual, lift tool 856A2779, Fixture, Lift & Turn, Fan Frame Major/Module, or equal may be used during installation of the fan and booster.

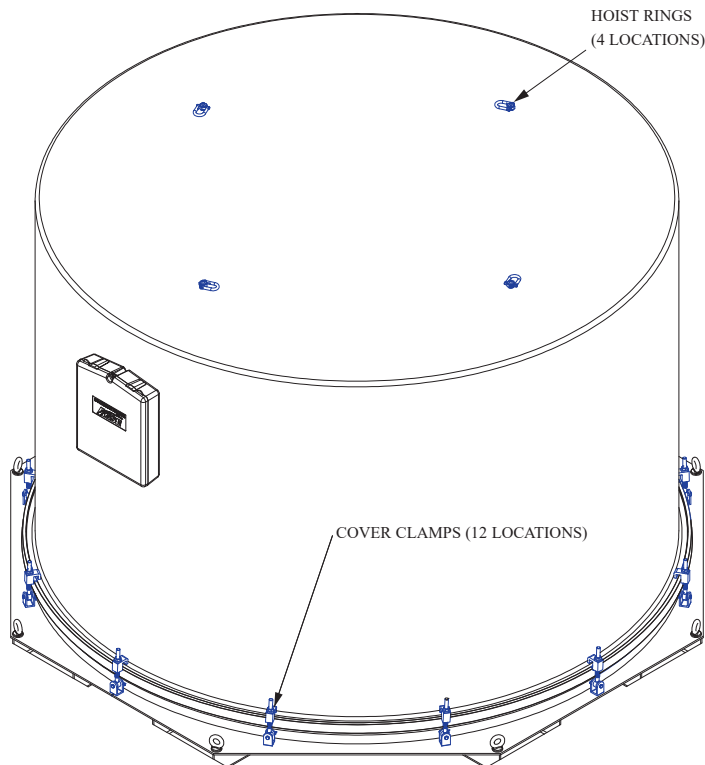


Figure 5.1-1. AGSE-C009-G01- FAN AND BOOSTER CONTAINER

5.3 Fan & Booster Container Install

1. Losen four (4) socket head screws with washer and lock washer located on each of the six (6) clamps on the fan & booster support ring (Figure 5.3-1) slide clamp outward (Figure 5.3-2). Using overhead hoist center and align fan & booster with base support ring groove (Figure 5.3-3).
2. Slide clamps back in to position and tighten down four (4) socket head screws for six (6) clamps to secure fan & booster to container base (Figure 5.3-4).

5.4 Shipping Preparation of the AGSE-C009-G01 container:

1. Check and tighten all socket head screws on the six (6) clamps on the fan & booster support ring.
2. Install cover using a hoisting system by the four (4) hoist rings on top of the cover and secure by tightening the hex nuts on the twelve (12) container clamps. (Figure 5.1-1)
3. The fan & booster container is now ready for shipping.

CAUTION

Do not over tighten the clamps - May damage cover sealing edge.

5.5 Fan & Booster Removal From Container

- 1) Remove container cover assembly by loosening eight (12) hex nuts of the container clamps. The cover can be lifted using a hoisting system by the four (4) hoist rings on top of the cover. (See Fig. 5.1-1).Set the cover aside.
- 2) losen four (4) socket head screws with washer and lock washer (Figure 5.3-1) located on each of the six (6) clamps on the fan & booster support ring slide clamps outward (Figure 5.3-2).
- 3) Using a hoisting system remove fan & booster from container.
- 4) Slide clamps back in to position and tighten down four (4) socket head screws for six (6) clamps to secure on to fan & booster container base (Figure 5.3-4).
- 5) Install the container cover and secure by tightening the hex nuts on the twelve (12) container clamps. (Figure 5.1-1)
- 6) The fan booster container is now ready for storage.

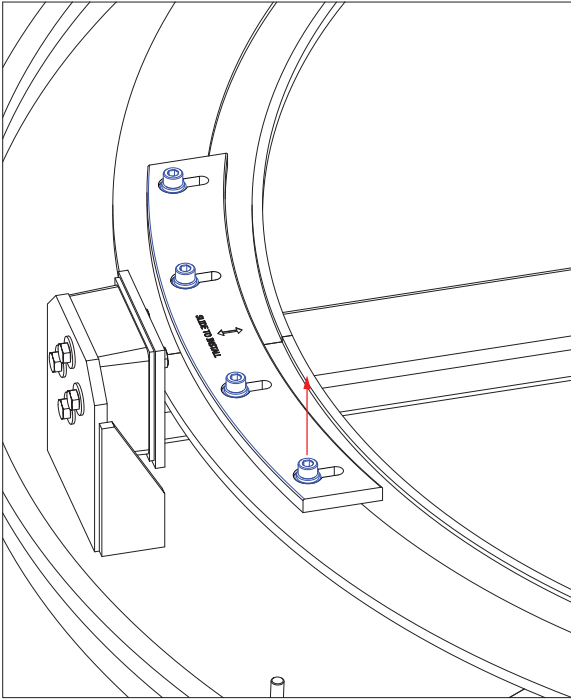


Figure 5.3-1 Screw & Clamp

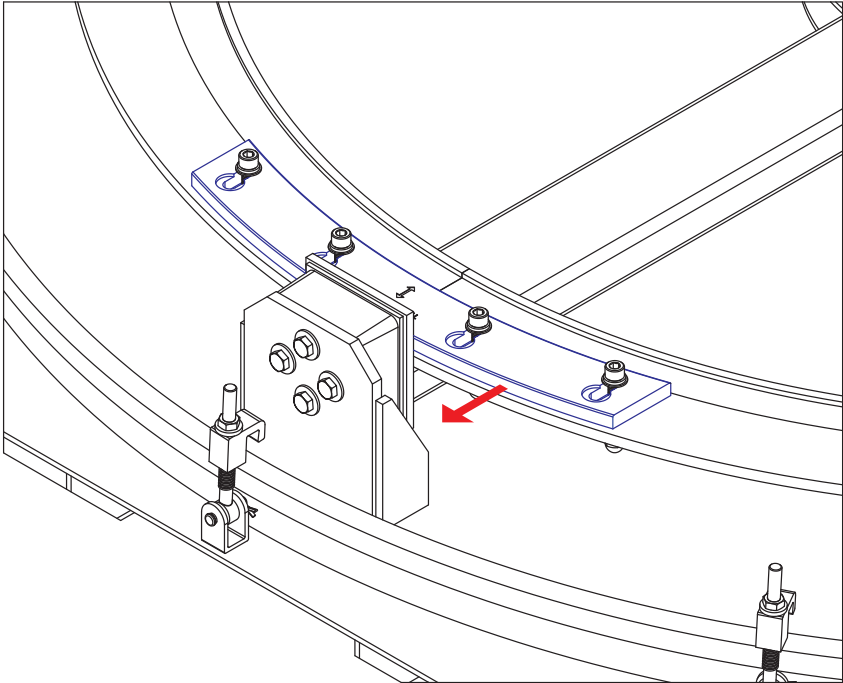


Figure 5.3-2 Clamp Slide

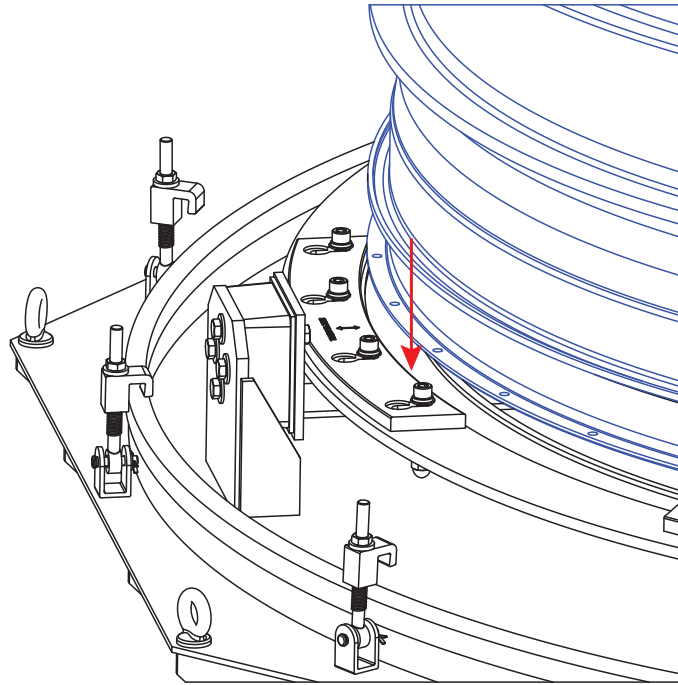


Figure 5.3-3 Fan & Booster Positioning

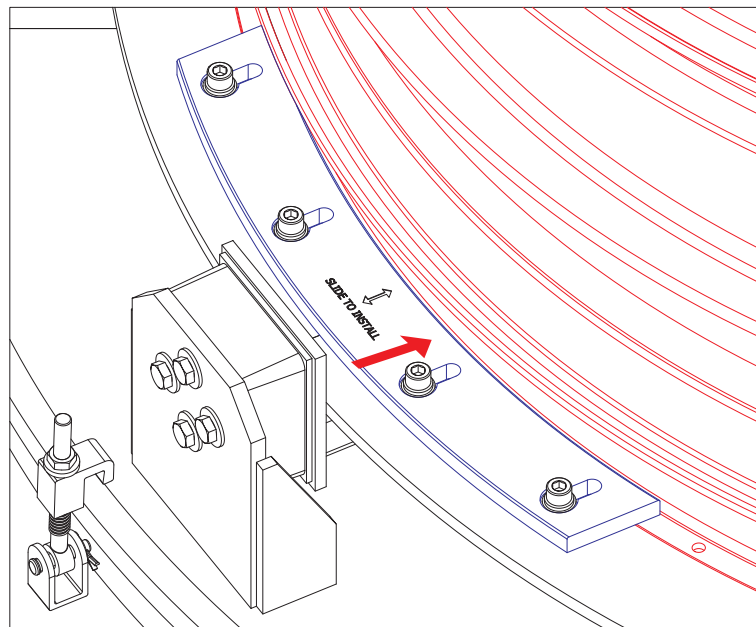


Figure 5.3-4 Fan & Booster Positioning

6.0 – SAFETY

6.1 Stress

Design stress safety factors are compliant with industry standards.

6.2 General

Most accidents are the result of violating standard safety rules in operation or improper servicing and maintenance of equipment.

Many safety features have been incorporated into the design to assist in safe operation of this equipment. These items do not fool-proof the equipment nor do they replace the operator's responsibility to operate the equipment in a safe manner.

CAUTION

Any deficiency revealed through inspection must be reported to supervisory personnel. A determination must be made prior to resuming operation, as to whether the deficiency constitutes a safety hazard to personnel or equipment.

It is the operator's responsibility to report any deficiencies, unusual noises, or operating conditions to supervisory personnel. It is also the responsibility of the user of this equipment to discontinue use until they are assured that the deficiency has been corrected.

6.3 Prevention

A good preventative maintenance program should include periodic lubrication, adjustment, and immediate correction of defects revealed through inspections. Preventive maintenance will not only contribute to safe operation, but will also extend useful service life as well.

7.0 – Warranty

7.1 Statement of Warranty

Advanced Ground Systems Engineering LLC (AGSE) warrants to original purchasers that its products will be free of defects in material and workmanship under normal use and conditions for claims received within a period of one year from date of purchase (final billing date), and to the extent that if any AGSE product fails in operation because of such defect, the company will replace or repair, at its option, the defective article. Prior to the repair or replacement of any defective product, the company shall be notified in writing as to the nature of the defect. The company shall assume no liability for freight, disassembly, removal, refitting and installation charges on any article returned unless such charge(s) is approved by AGSE in writing prior to the return. On component items purchased by AGSE for incorporation into an AGSE manufactured product, only the component manufacturer's warranty (if any) shall apply to that component. Said manufacturer's warranty shall be passed on to AGSE's customer to the extent permitted. This warranty is applicable only when AGSE products are operated for intended purposes within the recommended procedures, load limits, properly maintained, not damaged or abused, etc., including as indicated in company manuals, catalogs, and drawings. All warranty claims must be applied for within sixty days from when the defect becomes known. The foregoing warranty is in lieu of all other warranties, or liabilities, either expressed or implied, and AGSE expressly excludes all implied warranties of merchantability and fitness for a particular purpose and all non-infringement warranties as well as disclaims all liabilities to third parties. In no event shall AGSE be liable for any amounts in excess of the purchase price of the product.

NOTICE

Failure to conduct periodic inspections, routine maintenance, or improper operation will result in the voiding of the warranty.

8.0 – Parts Breakdown

8.1 General

The following pages can be used in the identification of components used in the product described in this manual. Parts Lists are broken down by “ITEM,” “PART NUMBER,” “QTY,” and “DESCRIPTION.”

NOTICE

“ITEM” numbers are for reference to the Illustrated Parts Breakdown (IPB) only. Do not order replacement parts by “ITEM” number. Order parts by “PART NUMBER” only.

8.2 Illustrated Parts Breakdown

IPB Figure 1 – AGSE-C009-G01 Fan & Booster Container

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-C009-G01	-	Fan & Booster Container (Figure 8.1-1 - 8.1-3)
1	AGSE-C00901-P01	1	Fan & Booster Support Ring
2	AGSE-C00903-P01	6	Clamp
3	AGSE-C02605-S01	1	Container Cover
4	1809A	1	Edge Bumper
5	AGSE-C00902-P01	1	Base Weldment
6	J-5130-1	6	Shock Mount
7	AM-2177-600	12	Clamp Assembly
8	AGSE-S00132-08F016A01	24	Washer
9	AGSE-S00105-08F016A01	48	Screw, Hex Head
10	AGSE-S00132-08RA17	48	Washer
11	AGSE-S00135-08A17	24	Washer, Locking
12	AGSE-S00156-08CA29	24	Nut, Cap
13	AGSE-S00118-08C044A28	24	Screw, Socket Head

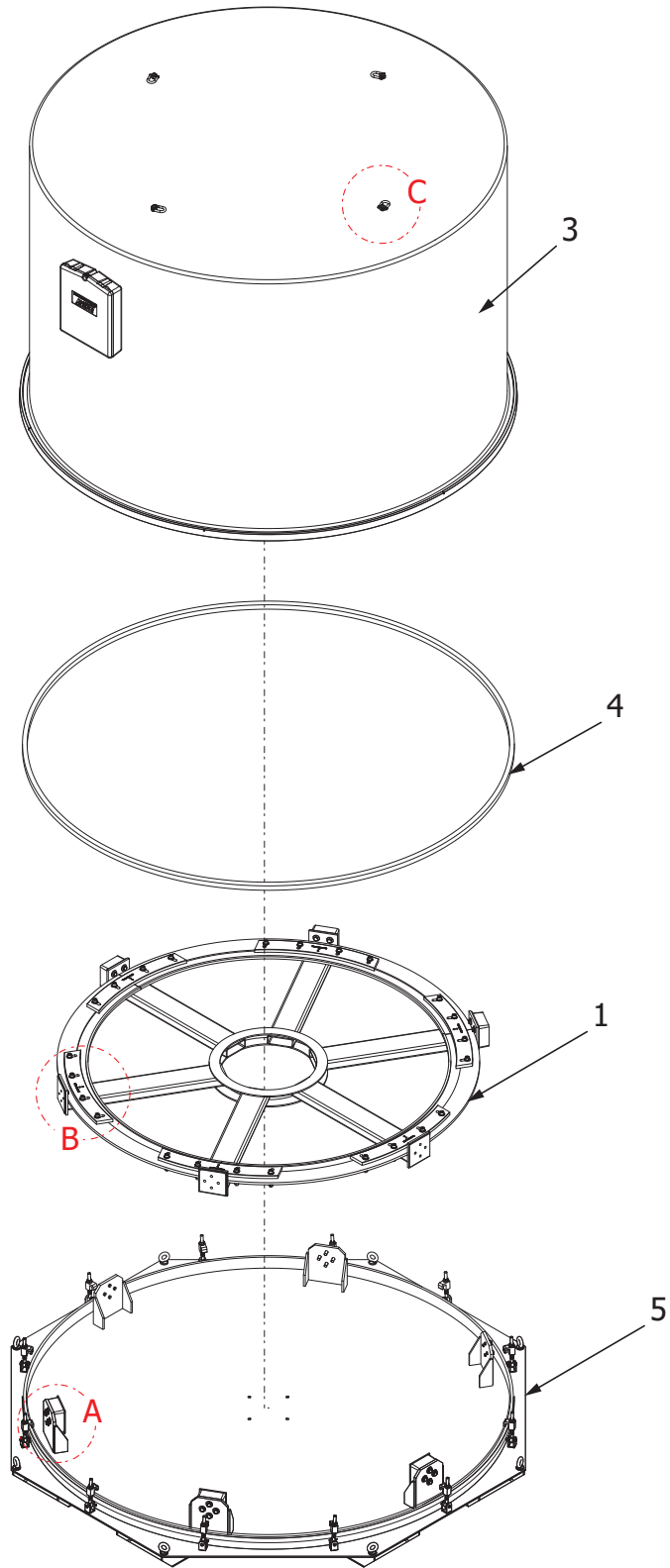
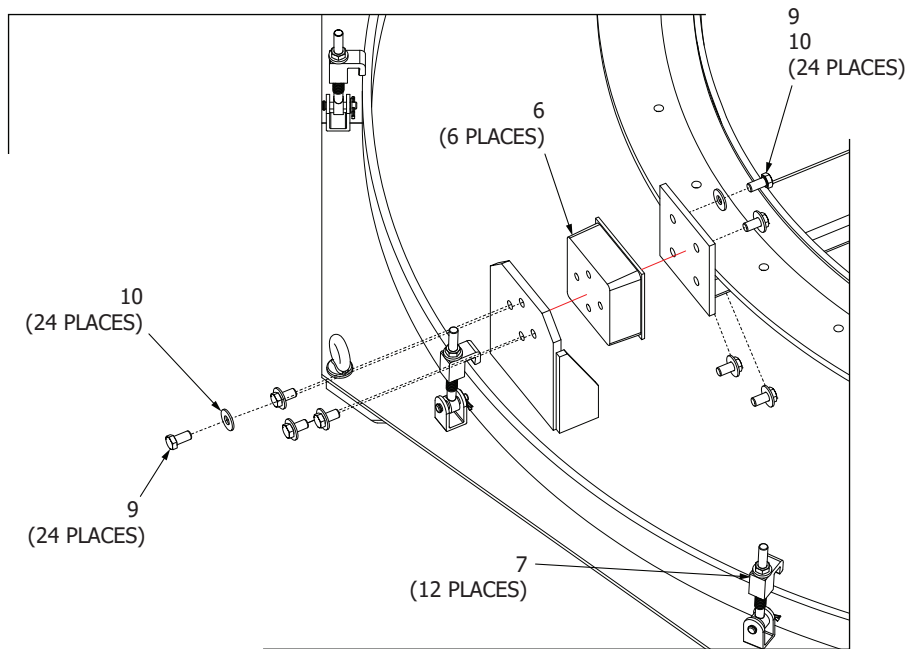
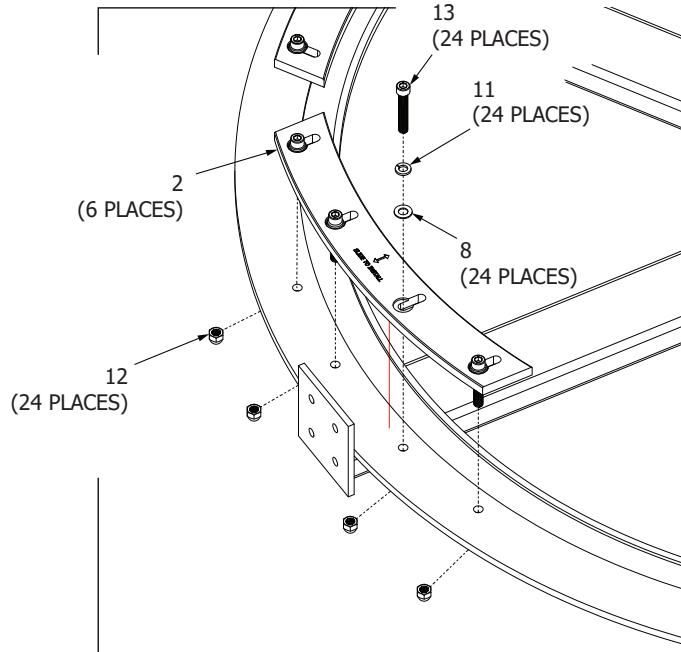


Figure 8.1-1 Fan & Booster Container



DETAIL A



DETAIL B

Figure 8.1-2 Fan & Booster Container

IPB Figure 2 – AGSE-C02605 Cover Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-C02605	-	Cover Assembly Fan & Booster Container (Figure 8.2-1)
1	AM-2179-104	1	Cover
2	AGSE-S00211-P05	4	Hoist Ring
3	AGSE-S00118-04C028A06	4	Screw, Socket Head
4	AGSE-C00905-P04	4	Lift Stiffener
5	AGSE-S00131-04A17	8	Washer
6	AGSE-S00153-04CA01	8	Nut, Locking
7	AGSE-V16402-P01	1	Bracket Adapter, Document Holder
8	AGSE-V164-S01	1	Document Box
9	AGSE-C00905-P03	1	Document Box Pad
10	AGSE-S00368-P01	4	Washer, Sealing
11	AGSE-S00114-04C020A07	4	Screw, Flat Head
12	AGSE-S00135-04A17	4	Washer, Locking
13	AGSE-S00104-04F012A01	4	Screw, Hex Head

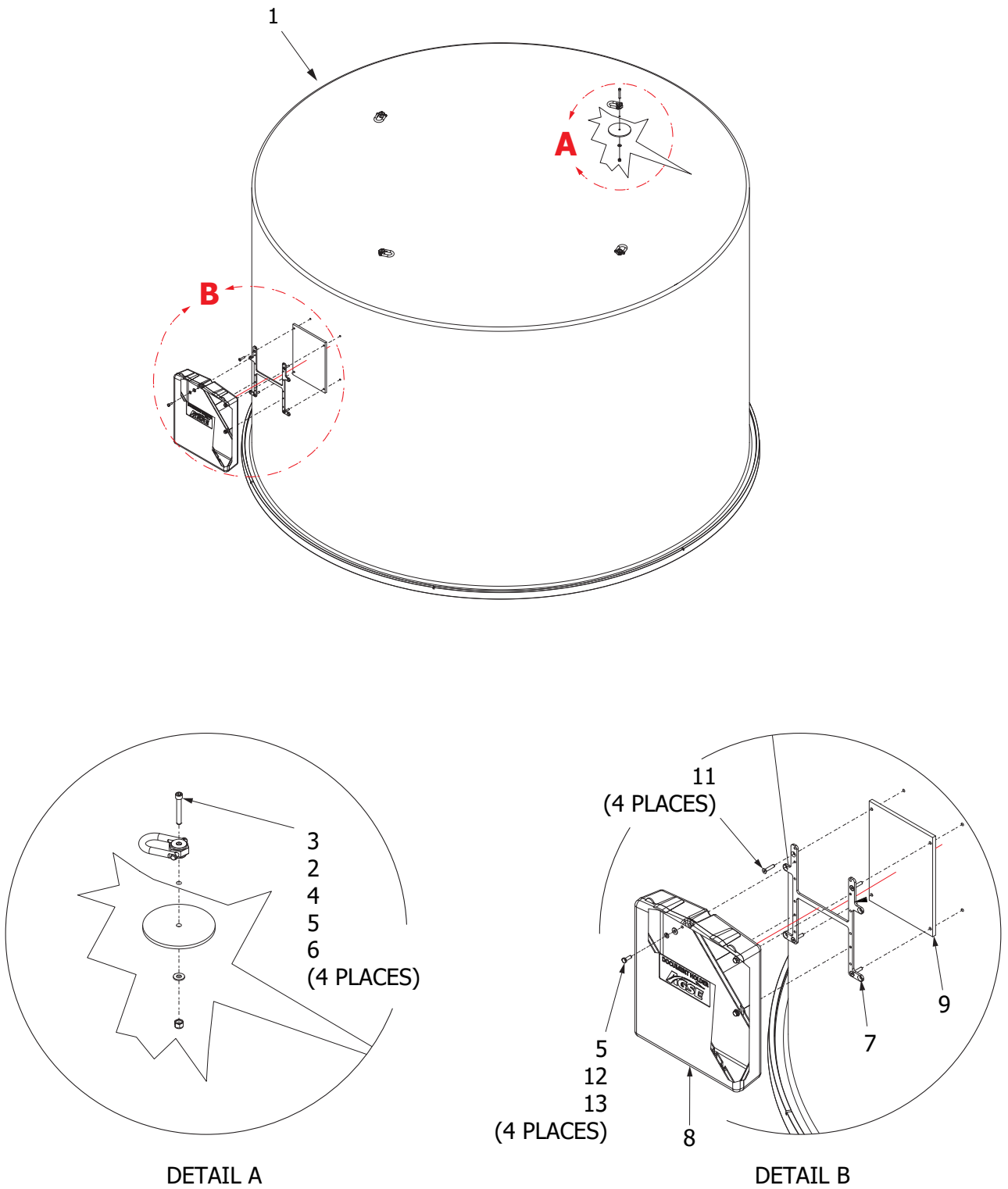


Figure 8.2-1 Cover Assembly

9.0 – Stencils, Decals and Placards

9.1 General

Various stencils, decals, and placards are added to the equipment to provide warnings, cautions, and general information. These items should be reviewed and understood by maintenance and user personnel.

9.1 Stencils and Placards

ITEM	PART NUMBER	PART DESCRIPTION
	AGSE-C00904	Stencil Kit (Figure 9.1-1 - 9.1-3)
1	AGSE-C02606-P03	MADE IN THE USA
2	AGSE-C02606-P01	NO STEP
3	AGSE-C00904-01	MADE IN THE USA
4	AGSE-C00904-02	THIS END UP
5	AGSE-C00904-03	ARROW
6	AGSE-C00904-04	FOR REMOVING COVER ONLY
7	AGSE-C00904-05	CUSTOMER'S NAME/LOGO
8	AGSE-C00904-06	SERIAL NUMBER
9	AGSE-C00904-07	CONTAINER INFORMATION
10	AGSE-C00904-08	HANDLE WITH CARE REUSABLE CONTAINER
11	AGSE-C00904-09	CUP AND UMBRELLA
12	AM-2207	AGSE PLACARD
13	AGSE-S00302-P01	CE PLACARD
14	AGSE-S00125-P01	Screw, Drive

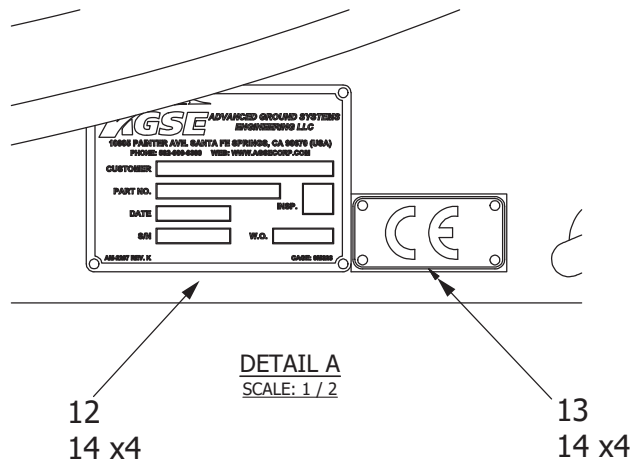
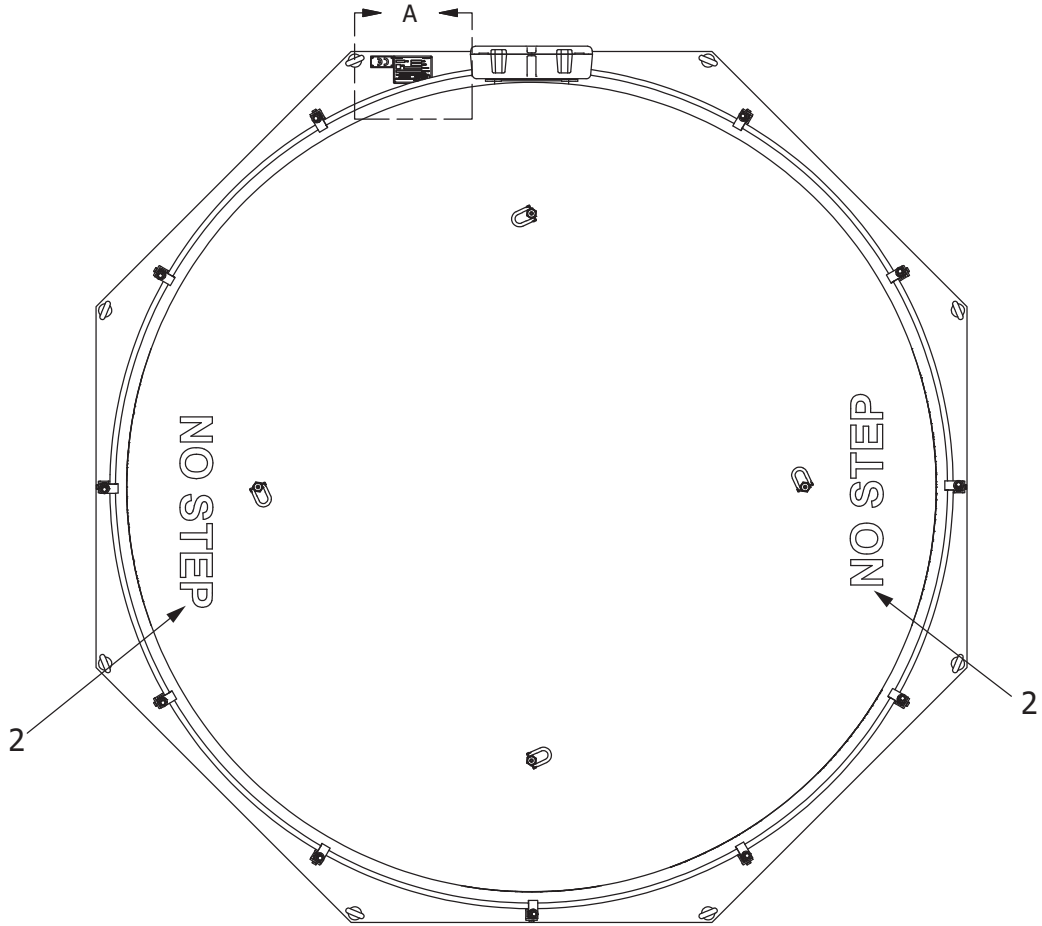


Figure 9.1-1 Fan Blade Platform Storage Box

