

**INSTALLATION INSTRUCTIONS
TULMAR BABY BASSINET
P/N: NNAL141-1C**

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REVISIONS REGISTER

Revision	Date	Description	Approved
A	2019-07-03	Initial Release, replaces Norduyn INST04167-002 Rev B	Robin Hunzinger <small>Digitally signed by Robin Hunzinger DN: cn=Robin Hunzinger Date: 2019.08.22 10:43:50 +04'00'</small>
B	2022-10-28	Reviewed, Small addition on Page 3, Section 2. <i>Limitations</i>	

1. GENERAL DESCRIPTION

The purpose of the NNAL141-1C Tulmar Baby Bassinet is to provide a comfortable and safe cradle for a baby weighing up to 25 lbs (11.3 kg) aboard all commercial aircraft. The bassinet is not intended to be used during taxi, take-off, landing, or turbulent weather.

The Tulmar Baby Bassinet is typically installed on the aft face of class divider in front of the front row seats or the side face of the fwd-aft partition. Typical materials used in construction of the interior partitions are honeycomb or balsa core sandwich panels with fiberglass/phenolic, fiberglass/epoxy or aluminum faces. Due to the large variation of sandwich panels used in construction of the aircraft interiors, the bulkhead fitting installation requires a separate approval. Minimum required allowable tension and shear loads of each fitting are provided in section 2.0 of this report.

2. LIMITATIONS

This section specifies limitations applicable to the installation of the Baby Bassinet, P/N NNAL141-1C in the aircraft.

1. A Baby Bassinet can only be installed in the location identified on approved Layout of Passenger Accommodation (LOPA) to ensure that installation of the unit has no negative impact on the compliance with cabin safety regulations and standards.
2. The installer must obtain an approval for the installation of bulkhead fittings. The strength requirement for these fittings and fittings support structure is specified in line 7 below.
3. The bassinet can only be installed on a vertical, aft or side facing surface. To ensure optimal safety and parent / guardian accessibility to the bassinet, there must be no other equipment or interior items encroaching into the space around the unit, identified by hatched volume in Figure 1 of this document.
4. Any part of the installed bassinet must not encroach into the passenger aisle or cross aisle.
5. The upper bulkhead fittings shall be installed at a horizontal distance of at least 10 inches (254 mm) from the partition edge and between 33.5 and 37.5 inches (851- 953 mm) from the aircraft floor.
6. It is the installer's responsibility to ensure that loading restrictions of the unit to which the bassinet is attached, such as cabin dividers, galleys, washroom walls, or other interior monuments, are respected. To do this evaluation, a maximum design weight of 32.2 lbs (14.6 kg) should be used.
7. It is the installer's responsibility to ensure that each installed bulkhead fitting, specified on drawing NNAL526-111, can support the following loads:

490 lbs* (222 kg) in Tension (Fwd-Aft Direction)

430 lbs* (195 kg) in Shear (Up, Down and Sideways)

* Fitting Factor of 1.15 is included.

Ability for the fitting installed in the Baby Bassinet support structure to support these loads can be determined by test, analysis or a combination of both.

8. The bassinet must be stowed during taxi, takeoff and landing and must not be occupied during turbulent conditions.
9. The safety net must always be closed and buckled when the bassinet is occupied.
10. The maximum weight that can be placed in the Baby Bassinet is 25 lbs (11.3 kg).

3. INSTALLATION INSTRUCTIONS

3.1. Installation of bulkhead fittings.

To be able to use the Tulmar Baby Bassinet in flight, one of the fittings specified on drawing NNAL526-111, included in Appendix A, must be permanently installed in the supporting structure, such as on the aft or side face of a partition or other interior monument (galley, washroom, etc.). The installation geometry is shown in Figure 1.

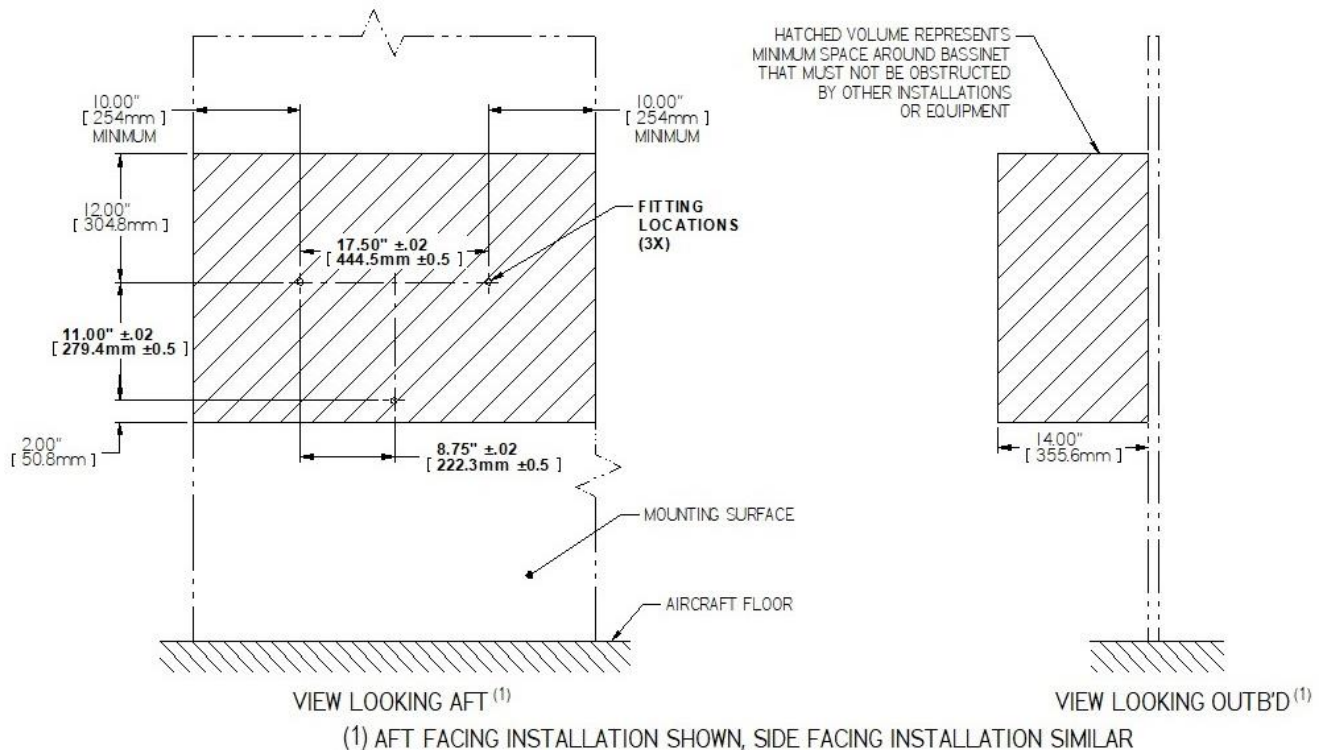


Figure 1: Installation Geometry

The installation procedure of the fitting, P/N NNAL526-111-X, is outlined in section 3.2.

Due to the large variation of sandwich panels used in the aircraft interiors, the bulkhead fitting installation requires a separate approval. Minimum required allowable tension and shear loads of each fitting are provided in section 2 of this document.

3.2. Bulkhead Attachment Socket NNAL526-111-X Installation Procedures

THIS SECTION MUST BE READ IN CONJUNCTION WITH ATTACHED DRAWING NNAL526-111.

3.2.1. Installation procedure for screw in type sockets. This procedure covers the installation of the following socket assemblies; B, C, D, E, F, G, H, J, K, L, M.

- 1) Locate and mark positions of sockets using Figure 1 in section 3.1.
- 2) Drill a 0.625" (15.9 mm) diameter hole through the panel in each marked position. Ensure holes are clean and free of particles.
- 3) Insert the female portion of socket assembly from the rear of the panel.
- 4) Coat the threads of the male portion with Loctite 242 or equivalent.
- 5) Screw the male portion into the female portion and secure.

3.2.2. Installation procedure for potted type socket. This procedure covers the installation of socket assembly A.

- 1) Locate and mark positions of sockets using Figure 1 in section 3.1.
- 2) Drill a 0.630" (16.0 mm) diameter hole 0.790" (20.0 mm) deep in each marked position. Ensure holes are clean and free of particles.
- 3) To allow better penetration by the adhesive into the panel, insert a pointy ended tool (awl) into the hole and gouge the material at least .375" (9.5 mm) around the edge of the hole. Clean hole; remove dust and particles.
- 4) Apply 3M® epoxy 2216 B/A grey or equivalent inside hole, making sure the epoxy penetrates the panel well.
- 5) Insert the socket until it rests flush on the outer panel.

Note: Care should be taken that the epoxy does not fill the socket hole when installing the socket.

- 6) Allow 24 hours to cure.

3.3. Installation Instructions of the Tulmar Baby Bassinet

The Tulmar Baby Bassinet must be mounted and removed by a trained member of the cabin crew only. The Baby Bassinet must be removed and stowed for taxi, take-off and landing. The guardian of the baby must be instructed to remove the baby from the bassinet during turbulent conditions.

To install the bassinet in the existing provisions, use the following procedure:

1. Remove the Tulmar Baby Bassinet from the stowage compartment.
2. Remove the Bassinet from the carrying case.
3. Unfold the Baby Bassinet then swing out and lower the support arm so that all three (3) quick release pins are parallel and pointing in the same direction.
4. Inspect the Bassinet for loose fasteners or damage. If nothing is found, proceed to step (5). If any evidence of damage is found, the unit must not be installed. This should be reported, and the Baby Bassinet must be sent for maintenance service.
5. Line up the two top quick release pins with the top fittings on the bulkhead; insert them by depressing the button on the head of each pin simultaneously and engaging the pins into the bulkhead fittings until they reach bottom. Release the buttons and the Bassinet should lock into place.
6. Repeat operation (5) with the third pin on the end of the arm.
7. Verify the pins are properly engaged by pulling the Baby Bassinet away from the bulkhead at each pick-up point. If a pin releases, repeat operations (5) and (6) once more.
8. If one or more pins do not engage, no further attempts should be made to install the Bassinet. The Baby Bassinet must be sent for maintenance service.

CAUTION

AN IMPROPERLY INSTALLED QUICK RELEASE PIN COULD CAUSE THE BASSINET TO DISENGAGE DURING FLIGHT, RESULTING IN INJURY TO THE INFANT OCCUPANT OR A SEATED PASSENGER, OR BOTH.

9. To remove the Bassinet, perform operations (3) to (6) in reverse order.

Note: When in doubt concerning the serviceability of a part or the whole bassinet, the Tulmar Baby Bassinet must not be installed, but sent for repair. Contact Tulmar's Customer Support at mro@tulmar.com or 613.632-1282

4. INSTALLATION KIT

The Tulmar Baby Bassinet installation kit, includes the following items:

Part or Document Number	Description	Quantity required for each installation.
NNAL141-1C	Tulmar Baby Bassinet Assembly	1
NNAL141-1E	Carrying Case (Bag Assy)	1
53044-001	Tulmar Baby Bassinet User Reference Card	1

Associated and/or Optional items:

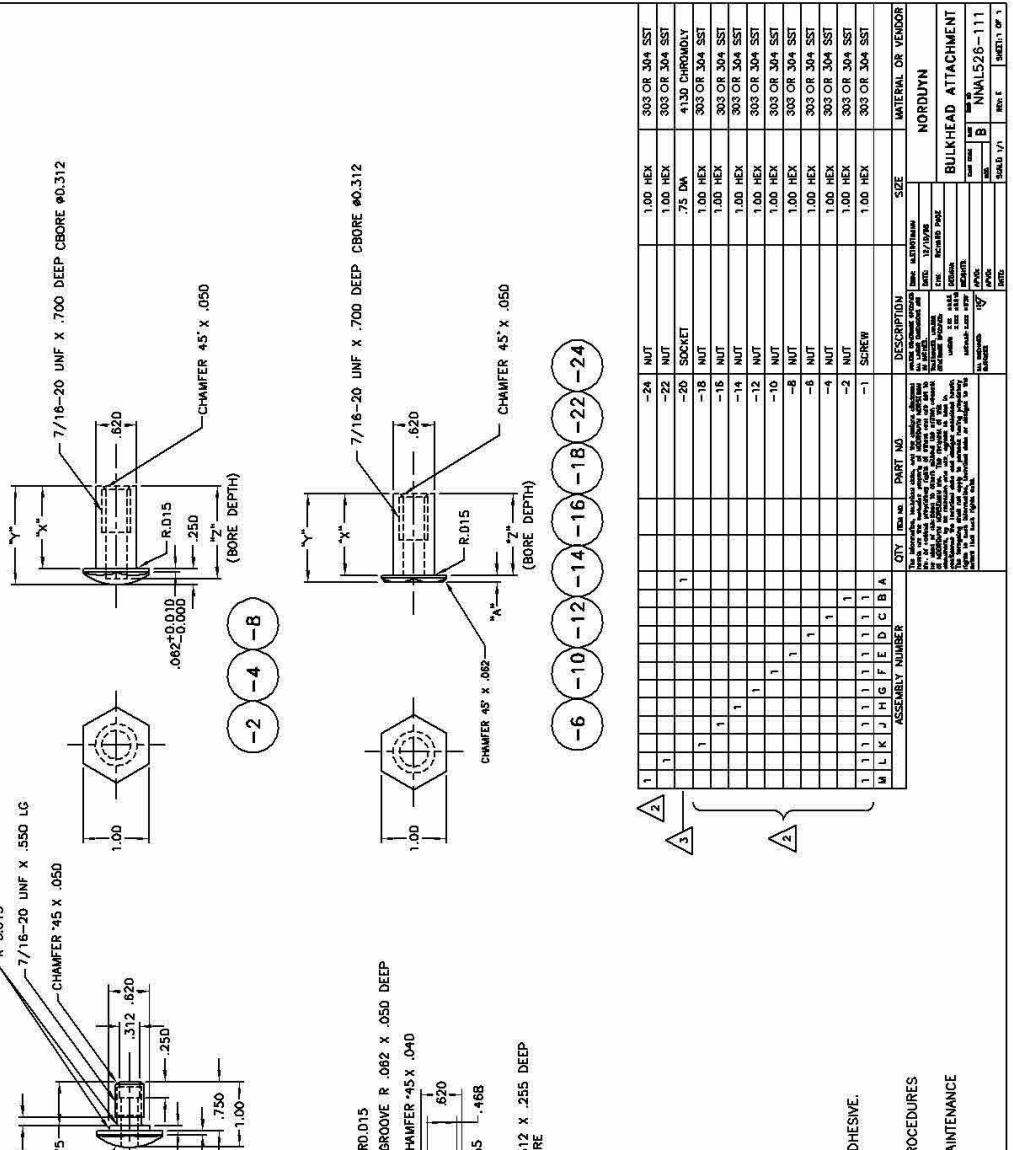
Part or Document Number	Description	Quantity required for each installation.
53042-001	Tulmar Safety Systems Inc. Installation Instruction – Tulmar Baby Bassinet, P/N NNAL141-1C, Rev B, dated 2022-10-28 or later approved revision.	1
25-20-04 (53043-001)	Tulmar Safety Systems Inc. Component Maintenance Manual (CMM) with Illustrated Parts List, Baby Bassinet, NNAL141-1C, Rev B, dated July 3, 2019 or later approved revision.	1
NNAL526-111-X	Bulkhead Attachment. Refer to drawing; Bulkhead Attachment, NNAL526-111, Rev E, dated 30 August, 2018 or later approved revision.	3

Appendix A

- Bulkhead Fitting drawing NNAL526-111
(This document is provided for reference only. Revision E is shown, contact Tulmar Safety Systems to receive the latest revision of drawing)

ZONE	LTR	DESCRIPTION	APP.	DATE
-	A	ADDED ASSY WEIGHT COLUMN IN TABULATION. ADD NOTES 6, 7, 8, 9 & 10.	M.S.	01/07/99
-	B	ADDED ASSY WEIGHT COLUMN IN TABULATION.	M.P.	03/11/99
-	C	DRAWING NOT RELEASED. NO MODIFICATION DONE.	M.M.	07/02/11
-	D	DIMENSION & COLUMN A ADDED "Z" ADJUSTED FOR -22 CONFIGURATION	M.M.	07/02/11
-	E	DIMENSION ADJUSTED FOR HOLE SIZE 303SS ALLOY ADDED.	A.D.	10/09/20

ASSEMBLY NUMBER	ASSEMBLY WEIGHT	WGT	WGT	P/N	QTY	DIM	DIM	DIM	DIM	A
						REF	REF	REF	REF	
A	1.74 oz	1.000	-20	M/A	M/A	M/A	M/A	M/A	M/A	M/A
B	1.89 oz	.700	-2	825	875	800	M/A	M/A	M/A	M/A
C	2.11 oz	1.000	-4	925	1.175	1.075	M/A	M/A	M/A	M/A
D	1.48 oz	.750	-6	875	.760	.720	.100			
E	2.43 oz	1.500	-8	1.425	1.675	1.575	M/A	M/A	M/A	M/A
F	2.59 oz	1.825	-10	1.750	1.850	1.750	.100			
G	2.50 oz	1.837	-12	1.852	1.642	1.852	.100			
H	2.11 oz	1.166	-14	1.093	1.193	1.093	.100			
I	2.40 oz	1.580	-16	1.625	1.535	1.625	.100			
J	1.92 oz	1.000	-18	1.825	1.025	1.825	.100			
K	1.79 oz	.898	-22	.985	.775	.9720	.100			
L	1.95 oz	.868	-24	.765	.865	.765	.100			



QTY	SYM	PART NO	DESCRIPTION	SIZE	INTERNAL OR VENDOR
1				1.00 HEX	303 OR 304 SST
2			-24 NUT	1.00 HEX	303 OR 304 SST
3			-22 NUT	1.00 HEX	303 OR 304 SST
4			-20 SOCKET	.75 DIA	4130 CHROMIUM
5			-18 NUT	1.00 HEX	303 OR 304 SST
6			-16 NUT	1.00 HEX	303 OR 304 SST
7			-12 NUT	1.00 HEX	303 OR 304 SST
8			-10 NUT	1.00 HEX	303 OR 304 SST
9			-8 NUT	1.00 HEX	303 OR 304 SST
10			-6 NUT	1.00 HEX	303 OR 304 SST
11			-4 NUT	1.00 HEX	303 OR 304 SST
12			-2 NUT	1.00 HEX	303 OR 304 SST
13			-1 SCREW	1.00 HEX	303 OR 304 SST

NOTES:

- 1 - REMOVE ALL BURRS AND SHARP EDGES.
- 2 - FINISH: 2P BRIGHT STAINLESS STEEL.
- 3 - HEAT TREAT TO RC40-43, MIL-H-6875 (LATEST REV) FINISH: GRIT BLAST AND ELECTROLESS NICKEL PER MIL-C-26074 CLASS 1, .0003 THICK ENBRITTLEMENT BAKE PER PARA 3.4.1 (LATEST REV)
- 4 - CONSULT DIM TABLE FOR PROPER GRIP LENGTH OF EACH ASSY.
- 5 - IDENTIFICATION: PARTS ARE TO BE INDIVIDUALLY WRAPPED.
- 6 - THIS ITEM TO BE INSTALLED USING AN APPROVED STRUCTURAL ADHESIVE.
- 7 - LOCK THERMITS WITH LOCITE 262 OR EQUIVALENT THREAD LOCKING COMPOUND PRIOR TO INSTALLATION.
- 8 - INSTALL THESE COMPONENTS IN ACCORDANCE WITH APPROVED PROCEDURES AS CERTIFIED BY THE LOCAL AIRWORTHINESS AUTHORITY.
- 9 - AMEND THE AIRCRAFT MAINTENANCE MANUAL TO INCLUDE THE MAINTENANCE MANUAL SUPPLEMENT FOR THE MMAL SKYCOIT INSTALLATION.

REV	DATE	BY	CHKD	APP	DESCRIPTION
1					BULKHEAD ATTACHMENT

REV	DATE	BY	CHKD	APP	DESCRIPTION
1					BULKHEAD ATTACHMENT

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 SHEET 1 OF 1