



USER MANUAL

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Original Instructions



Introduction

This manual contains information for operating, maintaining, and storing the FROG-XT6E. Appropriate training and pre-operational briefings should be provided for all personnel involved in the use of this device.

Safe and proper use of the FROG-XT6E is the responsibility of the user, taking due consideration to the information provided in this document. The user should ensure compliance with all relevant legislation and good industry practice.

Key definitions

Personnel Transfer Carrier, also referred to as PTC, capsule, transfer device or carrier, is a piece of equipment designed for the purpose of transferring persons.

Lifting assembly, also commonly referred to as sling or forerunner, is the most critical component in the crane-carrier system. The lifting assembly is considered a lifting accessory, as it connects the load (capsule and passengers) to the lifting equipment.

Risk awareness and planning

Crane transfers (like other forms of marine transfer) are complex operations and operators must take account of a wide range of variables. By their nature, crane transfers require the management of an interface between two separate organisations, most commonly an installation and a vessel. It is essential that all the key risk factors are assessed, and proper planning and preparation are completed. All personnel involved should be aware of their roles and should have the necessary competence to perform them.

Best practice references

Offshore Personnel Transfer by Crane, Marine Transfer Forum.
<http://www.marinetransferforum.org/resources>

Offshore Personnel Transfer by Crane is comprehensive guidance and information on each element of operation. It is for those researching, planning, managing or carrying out the safest possible crane transfers.

10 Golden Rules: Personnel Transfer by Crane, Reflex Marine,
<http://www.marinetransferforum.org/resources>

10 Golden Rules: Personnel Transfer by Crane provides a useful overview of the key risks and considerations in planning crane transfer operations. Also available as video presentation at <https://youtu.be/JDljjCqr2Zw>

Control of manual

This manual is controlled by Reflex Marine and may be revised from time to time. The latest revision may be obtained by contacting RML or by downloading the latest version from www.reflexmarine.com/support.

Note: *For the purposes of this manual RML will be deemed to mean Reflex Marine Limited*

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1 Product Specifications

Table 1 Product Specifications

Model No.		XT6E
Dimensions (Nominal)	Width 1	2110 mm
	Width 2	2110 mm
	Height	2180 mm
Weight	Maximum Gross Mass	1240 kg
	Tare Weight	520 kg
	Payload	720 kg
Materials	Frame	316 Stainless steel, A4 stainless fixings
	Central Column / Load Plate	316 Stainless/ Duplex Stainless
	Steel Components	All stainless except for floor grating
	Buoyancy	PE moulded shell with Polyurethane (PU) closed-cell foam fill.
	Seat Base/ Seat Back	Polyolefin shell filled with polystyrene closed cell balls
	Landing Feet	EVA Foam
Operating Temperatures	Standard Model	-40°C to +50°C
Suspension	Gas spring-dampers	4 x Stainless steel, 360mm stroke
Seating	Seats	6 x Full height seats
	Harnesses	3-point quick-release buckle
	Grab Handles	4 handles
Lifting Points SWL	Main	1240 kg
	Backup	1240 kg
	Handling	1240 kg
Wire Rope Lifting Assembly	Safe Working Load	1240 kg
	Wire Rope	Anti-rotation, galvanised wire rope
Number of Passengers	Standard	6 passengers
	Medivac Mode	1 passenger + 1 stretcher
Luggage Capacity	Luggage basket	Accessory available on request
Impact Protection	Vertical impacts	4.5 m/s
	Lateral impacts	2 m/s
Stability	Horizontal	35°, for a load of 1-6 passengers.
	Self-Righting	Up to 180° inverted to the vertical position
Certification	CE Class	Attestation of Conformity Certificate No. DK-MAC000205 i01
	UKCA Class	Attestation of Conformity Certificate No. UK-MAC000206 i01
Quality	System	Manufactured to ISO 9001:2015
Standards	National Technical Standards	UK, BS EN 1993 series: The Use of Structural Steel in Building.
	Industry European Standards	EC Machinery Directive EN 14121-1, BS EN 12100-10 Load Test – ILO152 / LOLER
	National Regulations	UK, PUWER / LOLER

2 Operating Parameters

2.1 General

The FROG-XTE range has been designed to ensure passenger safety in the most demanding conditions.

There are a large number of factors that affect the safe conduct of marine personnel transfers. These include crew skill and experience, met-ocean conditions, landing areas, vessel station keeping capability and response to sea conditions, visibility and line of sight. A combination of many factors will determine the risk involved and careful planning is a prerequisite for safe operations.

2.1.1 Sea State

The FROG-XT6E has a suspension system which prevents passengers from experiencing shock loads up to relative landing of 4.5 m/s. The maximum recommended significant wave height is based on the maximum relative velocity between the load (or hook) and the deck.

The calculated operational sea states detailed below are based on vertical impact speeds and bio-mechanical considerations. They reflect the ability to withstand such impacts with minimal risk of injury to the human body. However, there are many additional factors that may affect the safety of crane transfer operations. These include vessel station-keeping, crew competence, wind and visibility. The operator should always refer to general guidelines on crane transfers operations to assess overall risks.

Technical note:

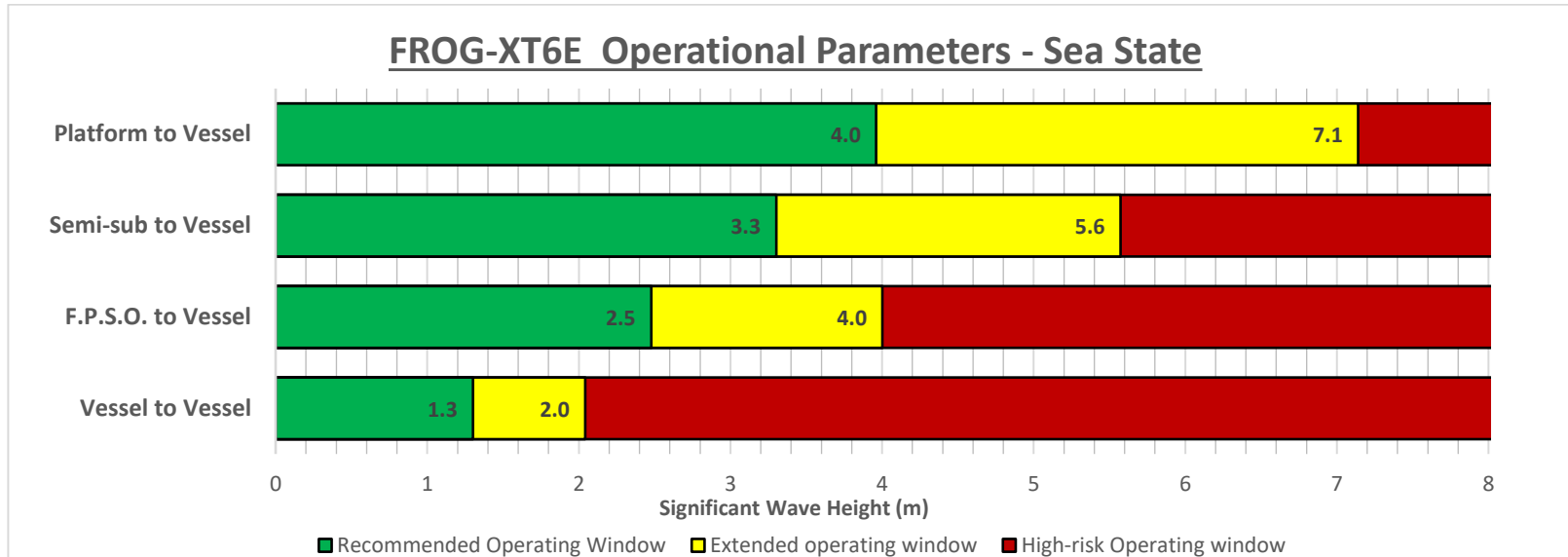
The calculation for relative velocity used here is based on the European offshore crane standard, BS EN 13852-1:2013. Whereby the maximum anticipated relative velocity between a load and a vessel deck, is given by the following:

$$\text{Relative velocity} = (0.5 * \text{Hook velocity})^1 + \sqrt{(\text{Vessel deck velocity}^2 + \text{Boom tip velocity}^2)}$$

¹ Equal to 1.67 m/s (100 m/min) for lifts below 5 tonnes. Higher crane hook speeds may be available, and it follows that the higher the available crane speed the higher the possibility of a heavy landing or take off. However, with a qualified Crane Operator, it is considered unlikely that the FROG-XTE will be landed at full hook speed on a deck rising at full speed.

If there are concerns about heavy landings, operators may wish to consider the following methods to reduce risks; dry runs without passengers, landing in centre of deck where there is less vessel movement, transferring fewer passengers to increase damping, using a hook speed indicator.

Table 2 FROG-XT6E Operating Parameters



Note:

- **Recommended Operating Window** – For an impact at worst case scenario* under these sea conditions, XT products are well within performance range. Consideration of all risk factors and pre-job planning are still requisite.
- **Extended Operating Window** - For an impact at worst case scenario* under these sea conditions, XT product performance has been designed, tested, and validated to provide complete passenger protection. In such elevated sea states other risk factors will increase. A thorough risk assessment and trials should be conducted to ensure. Contact Reflex Marine if you need assistance.
- **High Risk Operating Window** – Operating in this window presents risk of exceeding XT product safety performance. For any operations in this window, specific measurements of relative motion are recommended to ensure they are within safety margin. A thorough risk assessment and trials should be conducted to ensure. Please contact Reflex Marine for any guidance.

**Relative velocity between load and landing deck based on European offshore crane standard, BS EN 13852-1:2013*

2.2 Recommended Operating Parameters

Table 3 Recommended Operating Parameters

Parameter	Recommendation	
Vertical Impact Protection	4.5 m/s	14.8 ft/s
Lateral Impact Protection	2 m/s	6.6 ft/s
Wind Speed	20 m/s	40 knots
Visibility	Crane Operator should have a clear view of the pickup and set down areas.	
Vessel Motion	10° Pitch and Roll	
Vessel Station-Keeping Radius	5 m	16 ft
Landing Area	Must be clear of any obstructions or hazards	
Landing Area on Vessel	6 m x 6 m	20 ft x 20 ft
Landing Area on Installation	4 m x 4 m	13 ft x x13 ft
Crane Requirements	Crane must be rated for lifting personnel	

2.3 Crane Transfer Planning Tool

Reflex Marine has developed a **Crane Transfer Planning** tool that can be used to determine whether the conditions are suitable for transfers to take place. There are four main sections that need to be completed:

- i. Risk Assessment
- ii. Pre-Transfer Checklist
- iii. Passenger Log
- iv. Post Transfer Review

The Crane Transfer Planning Tool can be found on the flash drive contained in your user pack, or alternatively, you can download a copy from our website.

- **It is important that the conditions are assessed prior to every set of transfers as conditions are never the same.**
- **It is recommended that a trial run is always conducted as this provides real-time feedback on the conditions.**
- **The operator should always refer to general guidelines on crane transfers operations to assess overall risks.**
- **If there is ever any concern about the conditions or the safety of the operations transfers should be stopped.**

Key references

- i. Crane Transfer Planning tool:
[Download from Reflex Marine website](#)
- ii. Offshore Personnel Transfer by Crane, Marine Transfer Forum,
<http://www.marinetransferforum.org/resources>
- iii. 10 Golden Rules: Personnel Transfer by Crane, Reflex Marine,
<https://www.youtube.com/watch?v=JDljjCqr2Zw>

3 Using the FROG-XT6E

3.1 Safety Features

Protected Seating Position:

Seats are positioned directly behind the buoyancy panels providing maximum protection and minimised sense of exposure. The arrangement of the seats and individual entry / exit points allow rapid access and egress, allowing faster and more efficient transfers.

Fall Protection:

3-point harness system and grab handles protect from the risk of falling during transfer.

Vertical impact protection:

- i. Seats mounted on a suspension system which consists of coil springs and recoil dampers.
- ii. Semi-upright secure seat position, cushioned saddle seat.
- iii. Impact absorbing EVA foam feet.

Lateral impact protection:

- i. Stainless steel frame.
- ii. Buoyancy panels.
- iii. High backed headrest designed to reduce risk of whiplash.
- iv. Grab handles and pommel shaped seat cushion for secure seating position.

Flotation:

Buoyancy panels ensure the carrier floats with both passengers and stretcher above the water line. All Reflex Marine personnel transfer carriers are performance tested for the most extreme immersion scenarios and self-right. FROG-XTE carriers self-right from up to 180° inverted position to the upright vertical position in less than 10 seconds and will provide a stable floating platform in a wide range of conditions. FROG-XTE carriers also have a shape design that has been engineered to allow for a good response to free-falling into water.

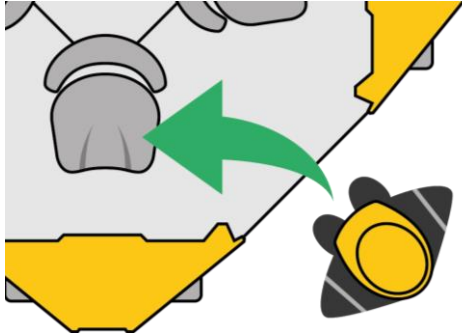
3.2 Passenger Instructions

- i. Enter carrier and take the seat to the left.
- ii. Fasten seat harness.
- iii. Keep hands and feet inside the carrier.
- iv. Hold the grab handles to keep body stabilised.
- v. Place feet onto the floor in front of the buoyancy panel.
- vi. Bear weight slightly onto feet in order to adopt a comfortable secure position especially during landing and take-off.

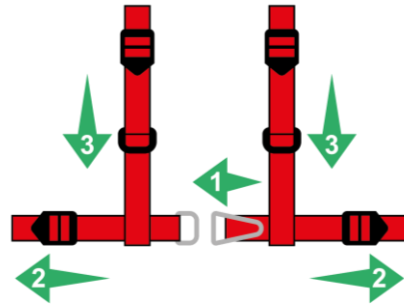
To make passenger entry more efficient, where possible, deck crew or passengers should loosen all harnesses prior to entering the carrier.

All passengers should be familiar with seating procedure and practice entry prior to operations.

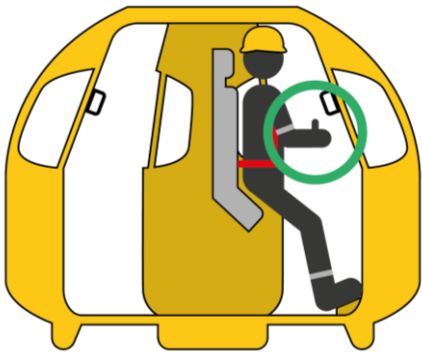
ENTRY



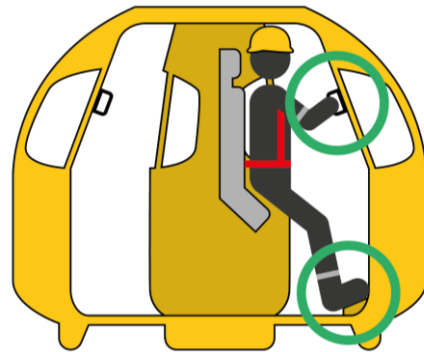
1 Take your allocated seat



2 Fasten buckle. Tightening lower straps, then upper straps



3 Give thumbs up when ready

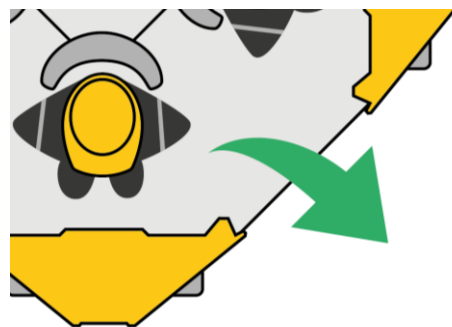


4 Use handholds and keep feet inside

EXIT



5 Wait for instructions



6 Exit and move to safe area

3.3 Deck Crew Instructions

Briefings

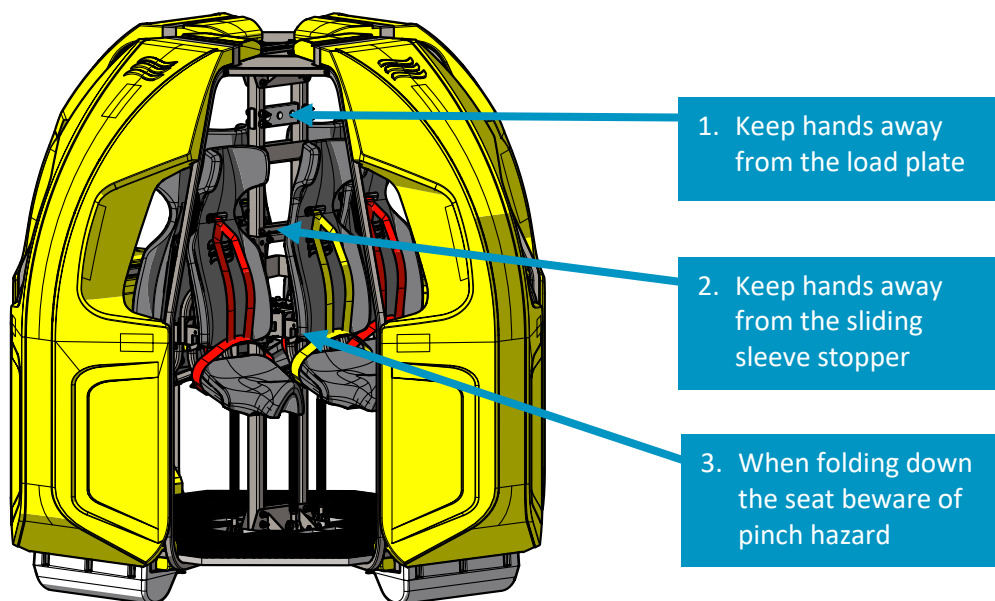
Deliver passenger briefings prior to every transfer lift. The briefing must cover the following information:

- i. Location specific instructions
- ii. Loading and unloading procedures
- iii. Emergency procedures
- iv. Potential hazards
- v. Seating position

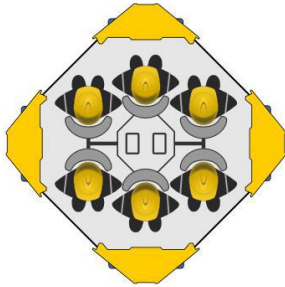
Other Responsibilities

- i. Highlight potential hazards to passengers, e.g., trip hazards during entry/exit.
- ii. Remain alert from any hazards as they arise and take appropriate action.
- iii. Check that passengers' harnesses are secure and correctly fitted.
- iv. When the carrier is in the static position on deck for passenger entry and exit, the wire rope lifting assembly will be in a static position and may obstruct one or more of the entry / exit points. Ensure passengers remain clear of the wire rope lifting assembly. Deck crew may need to hold the lifting assembly in a safe position from the carrier entrances.
- v. Ensure passengers keep hands clear of any pinch points, as illustrated below.

Figure 1. Pinch Points



3.4 Entry and Exit



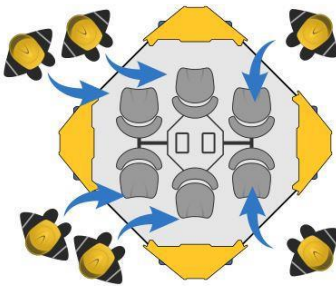
Passenger entry to and exit from should only be conducted with the carrier in a stable position on deck as advised by the crane operator to the deck crew member in charge of the transfer operation.

Note: All exiting passengers must be clear off the carrier before any new passengers attempt to board.

Each individual seat has a dedicated entry / exit point to prevent confusion and ensure an efficient operation. All passengers must enter and exit from the same direction. Chevrons on the buoyancy panels are present to indicate the direction of entry.

Entry

When advised to do so by the deck crew, passengers should proceed as directed to one of the four entrances (note trip hazard). When instructed, all passengers should enter the carrier and take the seat to their left.

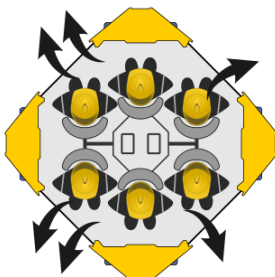


Passengers should ensure they are securely seated and ensure the seat harness is securely fastened. Grab handles are provided on the tubular upright members either side of the buoyancy panel and passengers should grip these firmly or the harness straps whenever seated. Passengers should never place their hands near the load plate.

Exit

Following landing and when advised to do so by the deck crew, passengers should unfasten the safety harness, stand and exit the carrier (note trip hazard) by the exit to their left.

Passengers should move clear of the carrier as directed by the deck crew, ensuring they remain clear of the lifting assembly.

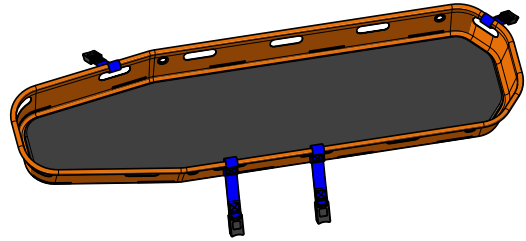
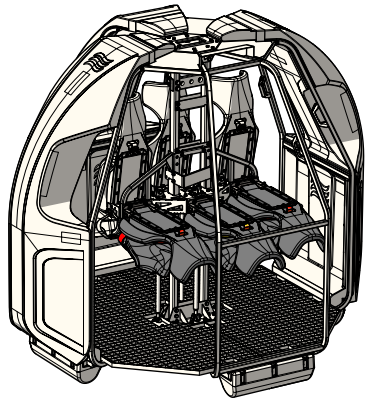


Passengers should remain alert to hazard posed by the sling (particularly in harsh weather with high deck motions). The sling position should be managed by the deck crew as required (see Deck Crew Instructions).

Note: It is recommended that when used to transfer only one passenger, passenger should be seated behind buoyancy panel A.

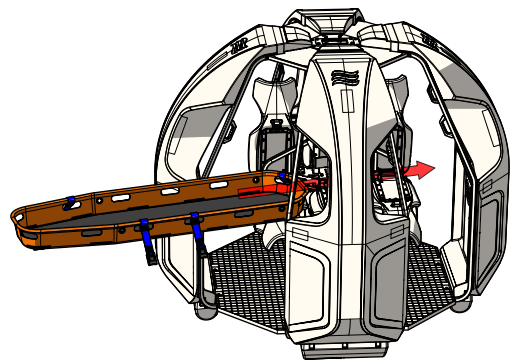
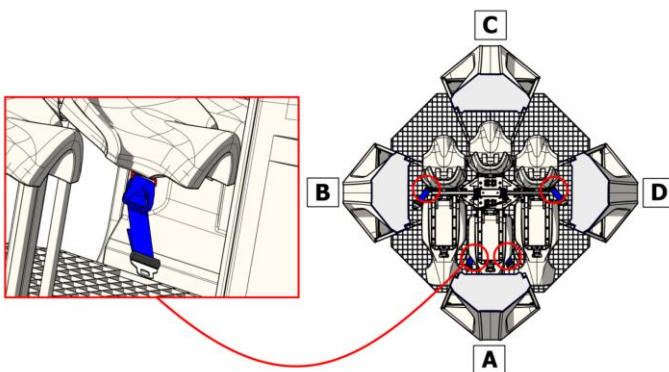
3.5 Medivac Mode

The following steps outline the procedure required to convert the FROG-XT6E into medivac mode.



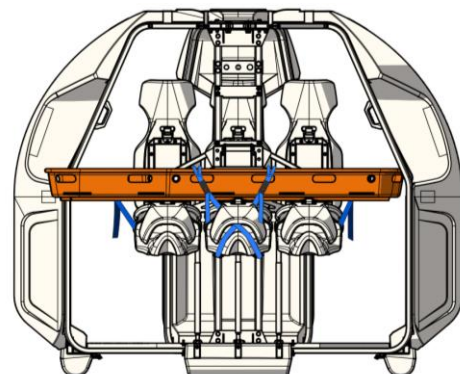
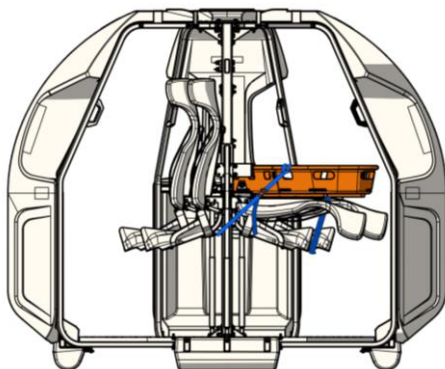
1 Remove wing nuts and fold down the three seats behind buoyancy panel A.

2 Attach one short end of the strap to each of the four indicated points on the stretcher



3 Attach one long end of the strap to each of the four free buckles indicated on the capsule.

4 Slide stretcher in



5 Connect the two rear straps with the closest ends and pull them tight

6 Connect the two front straps with the ends crossed and pull them tight

This fixing system has been designed to be compatible with any basket stretcher available in the market.

3.6 Carrying Luggage

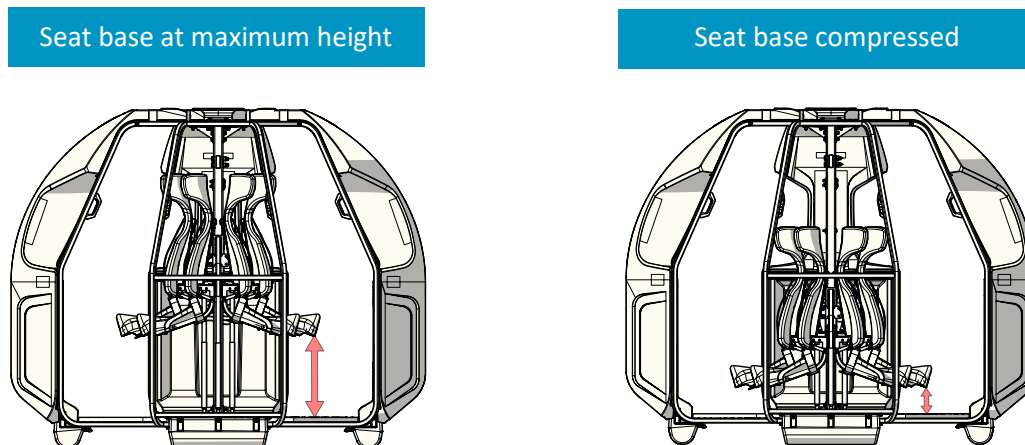
Floor mounted luggage baskets are available as an accessory, however, where practical, passenger luggage should be transferred separately in a cargo box or basket. This will minimise distraction and the risks from carrying out additional procedures whilst transferring personnel.

Two types of luggage containers are available as accessories: an under-seat light luggage box for small handheld items or under-seat floor containers for larger kit bags.

The following recommendations should be considered when transferring luggage:

- i. The weight of the passengers plus the luggage should not exceed the SWL.
- ii. All luggage items should be handled by deck-crew, not passengers, to minimise the time passengers spend in the hazardous zone.
- iii. Luggage items should be secured prior to passenger boarding and removed after passenger exit.
- iv. For luggage secured in floor-mounted basket it is recommended no more than 15 kg per person is loaded. Luggage should fit comfortably in the basket and remain secure. Height of luggage placed underneath seat should be restricted to 18 cm (7") so that it will not impede the damping system. See Figure 2.

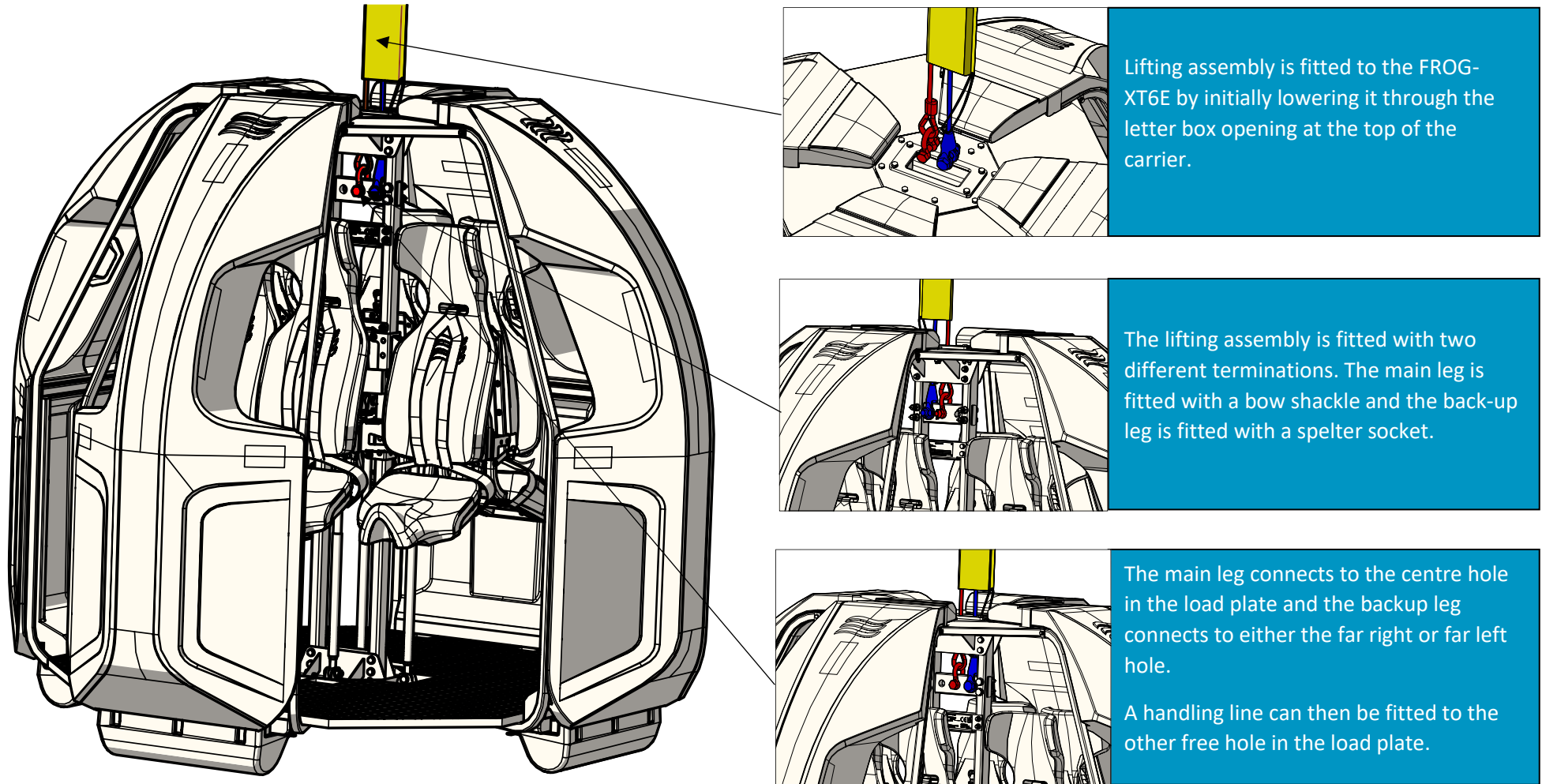
Figure 2. Floor-Mounted Luggage Basket - Height Clearance



- v. Heavy or large materials such as tools, boxes, or equipment should be transferred separately in suitable cargo box or basket.

3.7 Lifting Assembly Connection and Control

Figure 3. Lifting Assembly



3.7.1 Control of Lifting Assembly

The FROG-XT6E is designed to stay firmly on the deck of the vessel whilst passengers are entering or leaving the capsule. To do so, the Crane Operator must maintain slack in the lifting assembly upon landing to allow for the vessel movement.

A designated deck crew member should be responsible for managing the position of the lifting assembly to ensure it remains clear of potential snagging points and that it does not endanger passengers entering or exiting the capsule. When lifting the capsule deck crew should ensure the lifting assembly remains safely routed. Only the designated deck crew, wearing appropriate PPE (i.e. gloves) should manage the position of the lifting assembly. Using a shorter lifting assembly also increases risks associated with the hook block being in close proximity to the capsule.

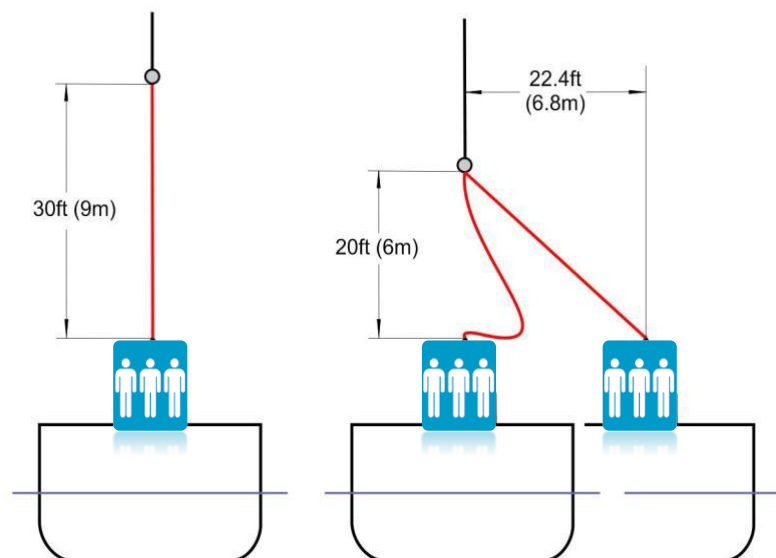
The recommended limits below are based on the use of the standard FROG-XT6E lifting assembly length of 30 ft (9 m).

For the use of shorter lifting assemblies, an additional risk assessment combined with dry runs should be performed to establish safe operational routines and weather conditions.

Table 4. Sling Lengths

Sling Length	Recommended Slack	Allowable Drift	Distance to the Crane Hook
30 ft	10 ft	22.4 ft	20 ft
20 ft	10 ft	17.3 ft	10 ft
10 ft	8 ft	9.8 ft	2 ft

Figure 4. Lifting assembly slack



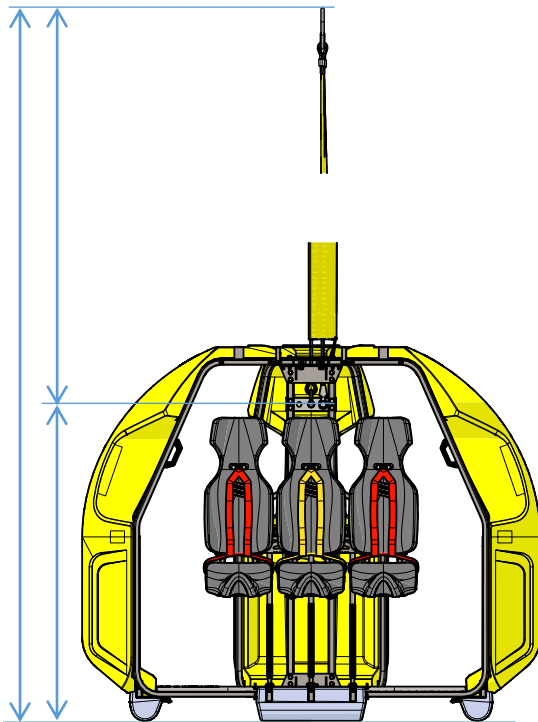


3.7.2 Lifting Assembly – Height Clearance

When selecting Lifting Assembly length, **please thoroughly evaluate the height clearances of obstacles during the lift to be conducted:** taking into account the maximum hook height; wire travel (such as limit switches); and the effect the sling length will have on the lift.

The clearance heights – deck to hook are shown in the table below.

Figure 5. Lifting assembly clearance heights



XT6E	Sling Length**		
	30 ft	20ft	10ft
Maximum Overall Height	11.84m 38' 10"	8.76m 28' 9"	5.59m 18' 4"
Maximum Sling Length	9.82m 32' 3"	6.74m 22' 1"	3.72m 12' 2"
Lifting Points Height*	1.88m 6' 2"	1.88m 6' 2"	1.88m 6' 2"

* XT6E Height is 2.18m.
Lifting points are 0.34m below.

** NOTE: Values are based on maximum manufacturing tolerances of lifting assembly which can vary +/- 10%.

3.8 Pre-Use Check

PRE-OPERATIONAL VISUAL CHECK

1	Check LOAD PLATE is fully engaged and secure.
2	Check the LOAD PLATE SAFETY BOLTS are secure and nuts, split pins and tamper-proof seals are in position.
3	Check the NODE PLATE SAFETY BOLTS are secure and nuts, split pins and tamper-proof seals are in position.
4	Check all FITTINGS, FRAME, and BUOYANCY are in good order.
5	Check SEAT HARNESSES operate properly and attachment points are secure.
6	Check SUSPENSION SYSTEM operates properly and springs are pre-compressed. SLIDING SLEEVES must be in contact with the stoppers at the top.
7	Check INSPECTION DATA PLATE and all CERTIFICATION are in order.
8	Check WIRE ROPE LIFTING ASSEMBLY is correctly attached and in good order. Check SHACKLE and SPELTER SOCKET safety bolts are fitted with SPLIT PINS . Lifting Assembly should be in the HIGH VISIBILITY COVER .

AW-0032-REV.02
DWG:
RA0105 Rev B

Original Instructions

Drawing No: RP0108

Revision: C

ECN 186

Issued: 07/08/2014

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4 Inspection & Maintenance

4.1 Definitions

Critical Parts

Key structural (loadbearing) components which keep the FROG-XT6E suspended.

Competent Person

A person with appropriate practical and theoretical knowledge and experience of the equipment. This shall enable them to detect defects and weaknesses and to assess their importance in relation to the safety and continued use of the equipment. A competent person must be sufficiently independent and impartial to allow objective decisions to be made.

Usage Category

The usage category dictates the frequency of inspection and maintenance. The number (or estimated number) of transfer lifts per year for a specific FROG-XT6E unit defines its usage category.



4.2 Sourcing of Safety-Critical Parts

Control of Safety-Critical Rigging: Reflex Marine's lifting assembly is an integral part of the FROG-XT6E certification to Machinery Directive 2006/42/EC and the Supply of machinery (safety) regulations 2008. It comprises carefully selected and quality-controlled components for use with the anti-rotation wire rope. The design is fully documented in the product technical construction file, including the the evaluation and testing programmes used to verify all key components, exceeding the requirements of BS EN 13414-1. This provides our customers with the confidence they demand for the safety-critical activity of lifting people.

Non-OEM parts do not meet the same level of high safety standards. To avoid the risk of compromising the device safety or certification of the product, contact Reflex Marine to ensure that correct OEM critical parts are sourced.

4.3 Supporting Documentation

Identification drawings

Every FROG-XT6E is provided with an Identification drawing pack that contains all relevant drawings to aid in its maintenance, including:

- Assembly drawings
- Replacement parts kit drawings
- Torque settings
- Operational stickers
- Bill of materials

Certification pack

Every FROG-XT6E comes with a certification package, which includes, but not limited to, manufacturer's declaration of conformity, certificates for all critical parts, load test certificates, release note, and checklist. RML retains copies of the certification for all units and components involved in their manufacture. Copies are available on request.

Inspection and Maintenance Manual

Provides detailed instructions for inspection and maintenance activities unique to FROG-XT6E range products.

4.4 Care in use / Preventative maintenance

All components in the FROG-XT6E are designed for purpose and selected to be as durable as possible for their specific function. However, operational and storage environments can propagate deterioration if the equipment is not kept in good condition. Factors causing deterioration can include:

- UV
- Sea Spray
- Dirt/ Grease and chemical
- Humidity/
- Radiated heat
- Wind
- Handling and operational damage.
- Seawater with high chlorine content
- High/ Excessive vibration
- Mould growth

Components that may specifically be affected by one or a combination of these factors are:

Wire rope lifting assembly. The wire rope lifting assembly 'sling' is the **most safety critical** and vulnerable component in the whole FROG-XT6E assembly. It is vulnerable to damage from handling and operations and susceptible to corrosion from sea spray and moisture build-up. The lifting assembly should be inspected by a competent person prior to every use. To prevent damage or corrosion the following is advised:

- When not in use, the lifting assembly is coiled and stored on the floor grating of the FROG-XT6E;
- When not in use for long periods, the lifting assembly should be removed from the FROG-XT6E, the cover removed, and stored in a secure, dry place;
- If the FROG-XT6E is kept on an open vessel deck and subject to sea spray, where possible, keep equipment covered or keep in a deck area sheltered from sea spray. Note: for high-speed craft, wind effects may cause covers to fray.

Seat damping springs. Sea spray, particularly on equipment that is kept on vessel open deck, can propagate corrosion and cracking in the springs therefore the following is advised in such situations:

- Where possible equipment is covered or kept in a deck area sheltered from sea spray. Note: for high-speed craft, wind effects may cause covers to fray;
- Springs are washed down with fresh water at regular intervals, i.e. after each voyage;
- Springs are inspected regularly. Specific inspection recommendations for springs can be found in the inspection checklist.
- Protection grease may be used to coat springs to reduce onset of corrosion.

Seat harnesses. A combination of the factors listed above can cause deterioration of the seat harnesses. These should be cleaned regularly with fresh water and mild detergent. When stored the harnesses should be fastened so that they do not flap in the wind. For longer durations of storage, it is recommended that the equipment is covered, or the harnesses are secured with cable ties. Signs of damage will be fraying and brittle webbing weave.

Landing feet. Heat radiated from deck can cause accelerated compression in the shock mitigation foam landing feet. For periods where the FROG-XT6E is stored for long periods it is recommended that the unit is chocked (raised) from the deck.

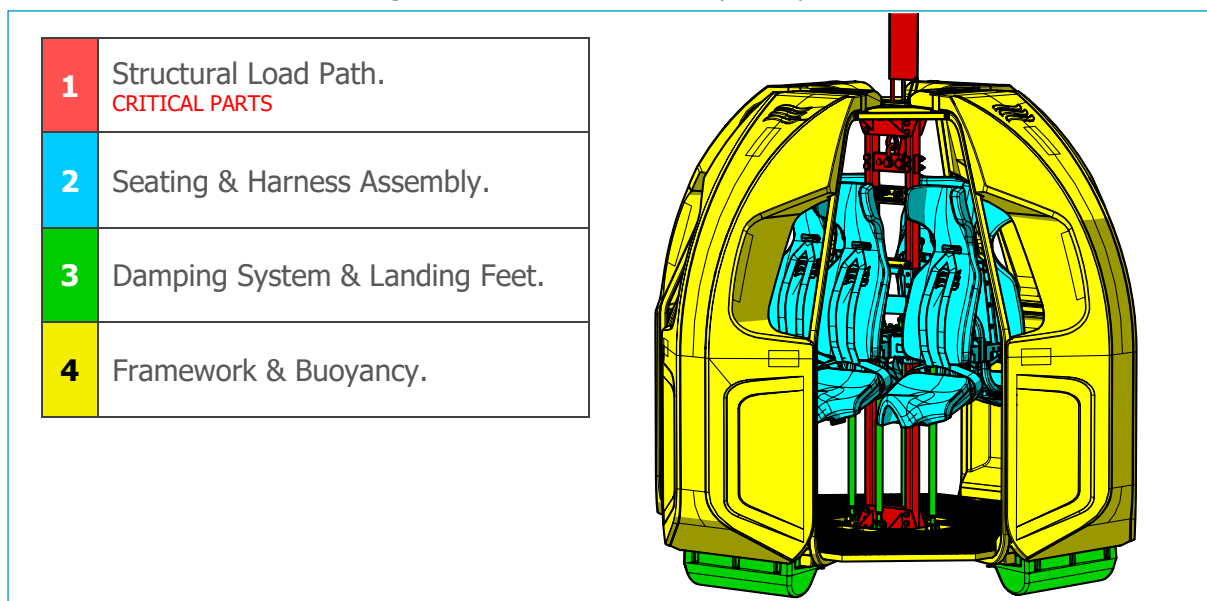
Transport and vibration. For longer periods of storage in environment with vibration, and when equipment is transported, the threaded fixings on the unit should be inspected to ensure no slackening has occurred.

General. The FROG-XT6E should be washed with fresh water regularly to prevent build-up of salt, dirt, and any contaminants.

4.5 FROG-XT6E Inspection

For inspection, the FROG-XT6E can be grouped into four assemblies, colour-coded below:

Figure 6. FROG-XT6E Assembly Groups



Parts on the Structural Load Path, including Wire Rope Lifting Assembly, are deemed **Critical Parts**. Any damage or deformation to these parts may constitute a high safety risk, hence these parts should be under high scrutiny during inspection. Some of these parts are subject to regular recommended replacement and testing within the assembly.

The Wire Rope Lifting Assembly is the most safety-critical and vulnerable component in the whole FROG-XT6E assembly. It is vulnerable to damage from handling and operations and susceptible to corrosion from sea spray and moisture build-up. The lifting assembly should be inspected by a competent person prior to every use.

The inspection checklist (See Appendix B on page 35) is set out in the order defined above.

Reference should be made to relevant **Identification Drawings** and **Inspection and Maintenance Manuals** for the specific product, provided with the product, or available on request at info@reflexmarine.com

4.6 Inspection Types

Table 5 Inspection Types

Inspection Type	Description
Pre-use Check	A check of key areas prior to each use without dismantling the assembly. Carried out by a competent person. (Section 3.8)
Visual	A careful and critical assessment of the components, carried out by a competent person without dismantling the assembly. (See Appendix B on page 35).
Examination	A careful and critical assessment of the components, carried out by a competent person. This should include dismantling the assembly and performing a visual assessment of the condition of each component, supplemented by other means such as measurement and non-destructive testing as considered necessary. For lifting assemblies this should include a visual inspection of the condition of each leg. (Check Appendix B for inspection checklist form).
Post Load Test Inspection	A careful and critical assessment of the components following a proof load test. Carried out by a competent person without dismantling the assembly. (Check Appendix A for Load Test Procedure).

All inspections should be:

- i. Performed by a competent person.
- ii. Carried out as per the frequency indicated in the usage table.
- iii. Formally recorded.

4.7 Frequency

Reflex Marine's Inspection & Maintenance Schedules (Examination Scheme) provides a recommended frequency for inspection, maintenance, and testing. The schedule follows a risk-based approach, where inspection and maintenance frequency will increase with the usage of the equipment.

Personnel transfer carriers are safety-critical pieces of lifting equipment, therefore Reflex Marine guidance is conservative and has stringent requirements to ensure that the equipment is always in a suitable condition for safe use.

Additional to the inspection and maintenance schedule for in-service units, a thorough examination should be conducted:

- i. before lifting equipment is put into service for the first time.
- ii. if there is any concern over heavy impacts, overloads, or if lifting equipment is exposed to conditions causing deterioration liable to jeopardise the safety of the equipment.
- iii. if the equipment, in whole or in part, has been disassembled and reassembled.

Details of all repairs or modifications carried out should be recorded and copies of damage and repair/modifications reports should be sent to the party controlling the use of the equipment.

If damage to the frame has occurred, welds, mechanical fasteners, and structural sections should be examined for cracks using the dye penetrant method.

Contact REFLEX MARINE or one of our Approved Service Centres for technical advice on inspection, testing or maintenance.

4.8 FROG-XT6E Inspection and Maintenance Schedules

From issuing of this manual, all critical parts supplied by Reflex Marine will be provided with load test certification. This means load test is not required on replacement of critical parts. Load test should be completed at a minimum of every 5 years. For any stock parts bought prior to issuing of this manual without load test certification, the load test and post-test inspection should be conducted after critical parts replacement.

Table 6. FROG-XT6E Inspection and Maintenance Recommendation

Usage Category No of Transfer Lifts per year	Pre-Use Check	Visual Inspection	Examination	Lifting Assembly Replacement	Critical Parts Replacement	Suspension System Replacement	Load Test and Post Load Test Inspection	Unit Replacement
Low <100	Prior To Every Use	6 months	12 months	12 months	36 months	4 Years	5 Years	12 years
Medium 100 - 500	Prior To Every Use	6 months	12 months	12 months	24 months	3 Years	5 Years	8 years
High 500 - 2000	Prior To Every Use	3 months	12 months	6 months	12 months	2 Years	5 Years	6 years
Very High 2000 – 5000 ¹	Prior To Every Use	3 months	6 months	3 months	6 months	1 year	5 Years	4 years
Notes:	¹ When exceeding 5000 lifts per year please contact Reflex Marine for further inspection guidance. These schedules should be maintained over the service-life of the equipment. However, given operational and logistical constraints of scheduling inspection, Reflex Marine acknowledge it may be acceptable to advance or delay an individual inspection by +/- four weeks - subject to agreement by a competent person.							

4.9 Data Plates

An Inspection data plate and Marker Plate will be issued and attached to the FROG-XT6E located between the columns on the mounting plate under the lifting points. Each plate will show the following information:

Inspection Data Plate

- | | |
|---|---|
| i. Equipment Owner; | iv. Tare Weight (kg); |
| ii. Serial number: XT6E-###:
where ### is a unique unit I.D. No; | v. Test Mass (kg); |
| iii. Maximum Gross Mass (kg); | vi. Inspection Date:
<i>Date format: DD-MM-YYYY.</i> |

Figure 7. Inspection Data Plate

INSPECTION PLATE

OWNER :
SERIAL NUMBER :
MAXIMUM GROSS MASS :
TARE :
TEST MASS :
INSPECTION DATES

WWW.REFLEXMARINE.COM +441872 321155

Data Marking Plate

- | | |
|--|---|
| i. Model number: XT6E; | v. Tare Weight (kg) |
| ii. Serial number: XT6E-###:
<i>Where ### is unique unit I.D. No;</i> | vi. Maximum Gross Mass (kg) |
| iii. Date of manufacture:
<i>Date format: DD-MMM-YYYY;</i> | vii. Payload / SWL (kg) |
| iv. In Service Date; | viii. Maximum number of passengers
(Standard & stretcher mode) |

Figure 8. FROG-XT6E Data Marking Plate

FROGXT6E PERSONNEL TRANSFER CAPSULE

MODEL: _____ **SERIAL No.** _____

MANUFACTURED BY REFLEX MARINE LTD, ABERDEEN UK

DATE OF MANUFACTURE _____ **IN SERVICE** _____

TARE: 520 kg (1146 lbs) SWL: 720 kg (1587 lbs)

MGM: 1240 kg (2734 lbs)

MAXIMUM No. OF PASSENGERS:

1. 6 SEATED OR 720 kg (1587 lbs) (WHICHEVER IS THE LESSER)

2. STRETCHER PLUS 1 SEATED UP TO 720 kg (1587 lbs)

US PATENT NOS.:
10,118,675 8,591,162
10,099,757 8,439,622

5 Handling & Storage

5.1 Stock Inspections

These guidelines are for the stocking of new units and parts before they are put into service. They are not applicable to units and parts that have already been put into service.

Stock Part	Recommended Storage actions	In Stock Inspection	Stock Release Inspection	Certification/ Marking
Personnel Transfer Carriers	<ul style="list-style-type: none"> ▪ Remove lifting assembly. ▪ Place lifting assembly into clean, dry storage. ▪ Chock unit off feet. ▪ Store in a secure area away from the risk of damage. ▪ Cover and protected from exposure to environment elements. 	<p>Thorough examination (Visual Inspection): Every 12 months</p>	<p>Thorough examination (Examination)</p> <p><i>Greater than 5 years in storage: Load test and Thorough examination (Examination)</i></p>	<ul style="list-style-type: none"> ▪ Thorough examination date to be stamped on inspection plate. ▪ Thorough examination checklist to be completed. ▪ Report of Thorough Examination to be issued.
Wire rope lifting assembly	<p>Store off the ground in clean, dry, and ventilated storage area with any lifting assembly cover removed.</p>	<p>Thorough examination (Visual Inspection): Every 6 months</p>	<p>Thorough examination</p> <p><i>Greater than 2 years in storage: Discard.</i></p>	<p>Report of Thorough Examination to be issued.</p>
Other stock parts	<p>Store in clean, dry storage.</p>	<p>None</p>	<p>Thorough examination</p>	<p>Not required.</p>
<p>Note: When a carrier first enters service, the “In-service date” should be stamped onto the unit’s Data Marking Plate. (see section 4.9 for location) At this date the examination and service-life for XT6E begins.</p>				

5.2 Handling

Transit inspections

Before and after transportation FROG-XT6E should be inspected to check for damage sustained in transit. If any damage has been observed unit must not be used and a thorough examination should be conducted by a competent person.

Preparation for road transport

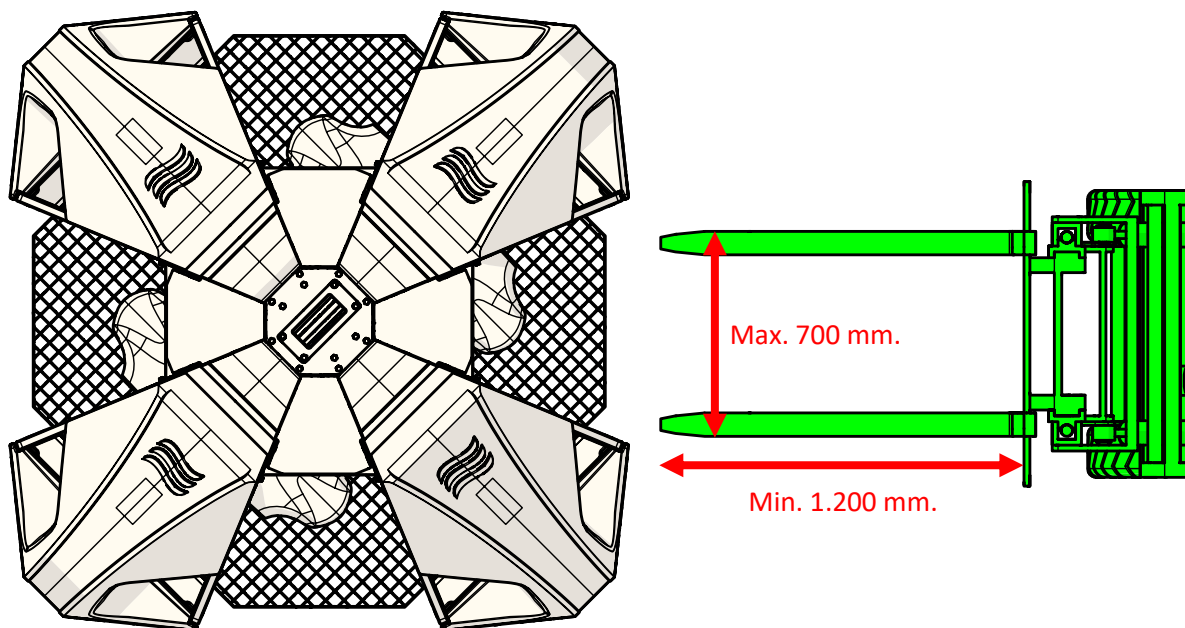
Prior to shipping, the seat harnesses must be secured by securing the buckle together and then tightening the harness straps. This will prevent seat harnesses flapping and damaging the seating area. It is recommended that the unit is covered for shipping either with a FROG-XT6E weatherproof protective cover or other heavy-duty tarpaulin material.

Lifting assembly

Special care should be taken to ensure that the wire rope lifting assembly is protected from damage and degradation during transit and storage. It is recommended that it is secured by plastic tie wraps in a protected position on the floor grating inside the unit.

Forklift handling

Care should be taken when handling FROG-XT6E with a forklift truck to avoid damage to the underside (landing feet, cross braces or cap plates). Alternatively, the unit may be secured to a pallet specifically designed for use with forks.



Crane handling

When handling by crane with a short chain or strop a temporary shackle should be fixed to the handling lifting point. Care must be taken not to damage the lifting assembly. To avoid damage to lifting assembly **shackle should not be fitted through the thimble of the lifting assembly eyes.**

Marine deck fastening

For deck fastening, straps can be secured to or placed across the floor grating. To prevent over compression of landing feet and floor structure care should be taken not to over tighten and cause damage. It is recommended to chock the unit off the floor before strapping down.

Capsule Packaging

Standard packing of the FROG-XT6E comprises a wooden skid pallet to which the capsule is secured, with cardboard protection on the sides and shrink-wrap around the unit.

A fully crated packing option is also available under request.



Shipping containers and racks

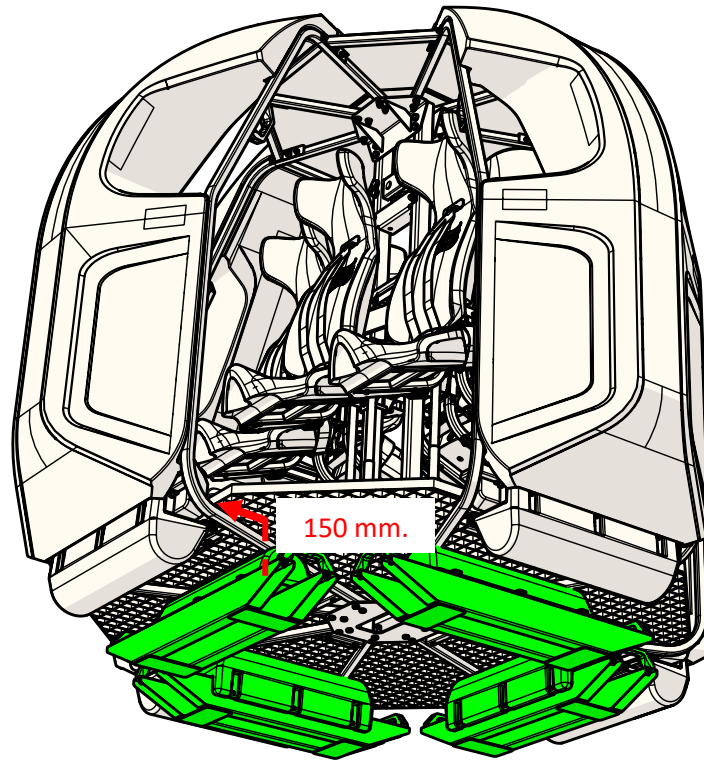
The FROG-XT6E fits in a standard or high-cube container.

If transported on a flat rack, the carrier must be secured. Recommended securing points are the radial / peripheral floor braces and the handling eye. The main lift-eye should not be used as a securing point. Feet should be supported to prevent compression; this can be done by placing suitable chocks or props under the unit.



Use of chocks in storage

Prolonged periods of exposure to hot decks and the weight of the capsule can cause permanent deformation of the elastomeric feet. If the carrier is to remain in storage for prolonged periods of time, a set of chocks should be used to keep the feet off the deck. Any chocks used should fit properly underneath the main base frame, with soft contact to avoid damage to bolt heads under the carrier.



Storage

The FROG-XT6E has been designed to cope with the harsh conditions on an offshore installation or vessel; however, it is recommended to protect the unit as much as possible from any hazardous elements such as excessive sea-spray, contaminants, and UV degradation. The FROG-XT6E should be stored under a FROG-XT6E weatherproof cover whilst not in use.



Storage of Replacement Parts

Replacement parts should be stored in dry, clean environments and be suitably labelled and tagged.

6 Replacement parts and accessories

6.1 Introduction



FROG-XT6E is a **safety-critical** item and only genuine Original Equipment Manufacturer (OEM) parts should be used. This is of particular importance for the wire rope lifting assembly due to its very specific bespoke design for this application.

Replacement parts can be supplied as individual items or as appropriate kits. Prior to ordering any replacement parts or kits, establish the serial number which is stamped on the data plate. The serial number is, for example, XT6E- ### where ### is a three-digit number.

RML holds replacement parts and accessories in stock. We are able to supply most individual components. A full list of parts is contained in the identification drawing pack issued with every unit.

It may be advisable to hold an inventory of frequently replaced parts. This will help to ensure the continued safe operation of the carrier. Minimum stock quantities will be influenced by:

- Remoteness of location
- Downtime implications
- Usage
- Customs processing time
- Delivery cost for small parts

Contact Reflex Marine for recommended stock items and quantities for your operation.

6.2 Parts identification

Each assembly or part is assigned a part number which provides the identification.

Where material grades and material traceability are deemed to be safety-critical these components will be allocated unique component numbers which will be stamped or etched as required.

For bolts, where etching is impractical, batches will be colour coded and a note added to the certificate to identify the colour used.

Components that require unique identification are referenced in the parts list.

6.3 Kits

Kits are available for routine and non-routine maintenance. Ordering an appropriate kit is more economical than replacing individual parts.

Appendix D on page 39 provides a full catalogue of kits and spare parts available for the FROG-XT6E carrier.

6.4 Accessories

The following accessories are available from RML to maximise operational effectiveness. These can be supplied with the carrier or ordered separately.

	<p>Strobe Light</p> <p>Provides greater visibility at night and in poor weather conditions. High-intensity: lightweight, waterproof to 300 m, Flash Rate 50 per min and provides 6-mile visibility. Battery-powered fitted to the overhead protection plate in the FROG-XT6E.</p> <div style="background-color: #FFD700; padding: 5px; border: 1px solid black;">  <p>This strobe is not certified for use in hazardous areas. Please request Zoned Lights if ATEX certification is required.</p> </div>
	<p>Zoned Strobe Lights</p> <p>Equipment intended for use in potentially explosive atmospheres (ATEX zone certified). The 4.7 lumens LED lighting gives a bright light for 25 hours (constant) or 65 hours (blinking). The lights are powered by 2-off CR2032 button cells. Supplied with a reusable mounting strap and ATEX certification.</p>
	<p>Basket Stretcher</p> <p>Essential for conducting emergency medical transfers, RML supply a rigid stretcher that is compatible with the FROG-XT6E.</p>
	<p>Protective Cover</p> <p>A silver reflective protective cover which is made of flame-resistant fabric (BS7837) and protects against degradation from UV light and the weather.</p>
	<p>Luggage Basket</p> <p>Luggage basket is attached to the floor grating underneath the passenger seat.</p>

For a complete list of accessories please contact RML

7 Certificates

7.1 EC Attestation of Conformity



Machinery Directive - Attestation of Conformity

Certificate number:	DK-MAC000205 i01
Certificate Holder and Manufacturer	Reflex Marine Old School House. School Hill, Shortlanesend, Truro, Cornwall, TR4 9DU
EC Representative	Reflex Marine SL Carrer de Ramon Turro, 100 08005 Barcelona Spain
Product(s)	Frog XT6E
Product Type	XT6E Personnel Transfer Carrier
Apparatus (inc Variants)	Standard (-40°C to +50 °C) RA 1459, RA 1460, RA 1461, RA 1462, RA 1463, RA1464
Standards	BS EN ISO 12100:2010 Safety of machinery. General principles for design. Risk assessment and risk reduction
Test/Assessment Reports	See Technical File for tests and calculation reports.
Technical Documentation File Identity	TF-XT6E-0008

This Attestation of Conformity is issued on a voluntary basis according to Council Directives 2006/42/EC related to Machinery. It confirms that the listed equipment complies with the essential Health and Safety requirements of the listed Directive. It refers to the sample submitted for testing and Inspection and only relates to this sample in the build state and configuration at the time of test/inspection.

Valid from: 08/07/2024



Ian Wright – TÜV SÜD

TÜV SÜD Denmark is an accredited Certification Body of TÜV SÜD.

This Attestation has been issued in accordance with the TÜV SÜD Testing, Certification, Validation and Verification Regulations.

The CE marking may be used on the equipment described above, subject to the equipment meeting the requirements of all applicable EU directives.

For further details related to this Attestation please contact babt@tuvsud.com

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TÜV SÜD Denmark Aps • Strandvejen 125 • 2900 Hellerup • Denmark

7.2 UKCA Attestation of Conformity



Supply of Machinery (Safety) Regulations 2008 - Attestation of Conformity

Certificate number:	UK-MAC000206 i01
Certificate Holder and Manufacturer	Reflex Marine Old School House. School Hill, Shortlanesend, Truro, Cornwall, TR4 9DU
Relevant Representative	N/A
Product(s)	Frog XT6E
Product Type	XT6E Personnel Transfer Carrier
Apparatus (inc Variants)	Standard (-40°C to +50 °C) RA 1459, RA 1460, RA 1461, RA 1462, RA 1463, RA1464
Standards	BS EN ISO 12100:2010 Safety of machinery. General principles for design. Risk assessment and risk reduction
Test/Assessment Reports	See Technical File for tests and calculation reports.
Technical Documentation File Identity	TF-XT6E-0008

This Attestation of Conformity is issued on a voluntary basis according to Statutory Instrument 2008 No. 1597 related to Machinery. It confirms that the listed equipment complies with the essential Health and Safety requirements of the listed Regulation. It refers to the sample submitted for testing and inspection and only relates to this sample in the build state and configuration at the time of test/inspection

Valid from: 08/07/2024



Ian Wright – TÜV SÜD

TUV SUD BABT is an accredited Certification Body of TÜV SÜD.

This Attestation has been issued in accordance with the TÜV SÜD Testing, Certification, Validation and Verification Regulations.

The UKCA marking may be used on the equipment described above, subject to the equipment meeting the requirements of all applicable UK regulations.

For further details related to this Attestation please contact babt@tuvsud.com

Page 1 of 1

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Telephone:

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Email Addresses:

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Order enquiries – support@reflexmarine.com

Operational enquiries, service, and spare parts – operations@reflexmarine.com

Accounts Department – accounts@reflexmarine.com

Appendix A – Load Test Procedure

Table 7. Load Test Requirements

Question	Response
When should a Proof Load Test be conducted?	<ul style="list-style-type: none"> At least every 5 years. After replacement of critical parts that are not provided with load test certificate. After any suspected damage arising from overloading or impact. If the history of the unit is uncertain. If the inspection data plate is missing, illegible or out of date.
Who should conduct this test?	A Competent Person (See 4.1 Definitions)
Does the test require a formal record?	Yes.
What equipment is required to perform this test?	<ul style="list-style-type: none"> Loading weights or sandbags. Certified weighing scale or load cell. Lifting equipment certified for > 5 Tonnes SWL.

Table 8. Load Test Instructions

Item	Instruction
Components Under Test	<ul style="list-style-type: none"> Main Lift Point / Backup Lift Point / Handling Point Central Column Load Bearing Assembly. Seats and Floor Structure.
Test Method	Lift the unit and hold static for 3 minutes.
Order	1 st - Main Lift Point; 2 nd - Backup Lift Point; 3 rd - Handling Point.
Basis of Load Test	Twice Maximum Gross Weight
Basis of Proof Load Applied	Twice Maximum Gross Weight, minus Tare Weight*
Unit Type	FROG-XT6E
Max. Gross Mass	1240 kg
Tare Weight*	520 kg
SWL (Payload)	720 kg
Crane Hook Load	2480 kg (5468 lbs)
Proof Load (Applied)	1960 kg (4321 lbs)
Test Proof Load Distribution	<p>At the discretion of Competent Person: the proof load may be applied to FROG-XT6E either solely on the floor or, split between the floor and seats. For the latter the recommended distribution is;</p> <ul style="list-style-type: none"> SWL (payload) spread equally on seats. Harnesses should be protected prior to loading with weight. If solid test weights are used the seats may be folded down to create a flat platform. Wooden boards placed on folded seatbacks will increase the area for test weights. The test load should be concentrated towards the centre of the unit to prevent damage to the seats. Remaining mass placed on the floor and distributed evenly.
Seat Distribution	720 kg
Floor Distribution	1240 kg

* Note: The tare weight of FROG-XT6E may vary slightly. Each FROG-XT6E should be weighed prior to the load test.

Appendix B - FROG-XT6E Inspection Checklist Form

FROG-XT6E Inspection Checklist Form (Page 1/3)							
Unit Serial Number		Inspection date		Inspection Type (tick one)			
Installation / Vessel		Inspected by		Visual Inspection (V)			
No of Transfers / Year		Company		Examination (E)			
Usage Category		Job/ Ref Number		Post Load Test Inspection (P)			
No.	Part / Assembly	V	E	P	Action	Action / Condition	Information / Measurement
1	Structural Load Path						
1.1	Lifting Assembly Critical Part Periodic Replacement*	✓	✓	-	Record unique ID number and any colour code. Confirm date installed: Lifting Assembly should not be used for more than 12 months.		ID No:
		✓	✓	-	Inspect master link and upper terminations; Remove cover, inspect the full length of wires and lower terminations; Inspect shackle and socket, ensure safety bolt and pins are secure.		Colour Code:
1.2	Load Plate(s) Critical Part	✓	-	✓	Visually inspect in-situ for signs of wear, cracks, or other damage. Record ID No.		ID No:
		-	✓	-	Remove and visually inspect for signs of wear, cracks, or other damage.		
1.3	Load Plate Safety Bolts Critical Part Periodic Replacement*	✓	-	✓	Visually inspect in-situ Load Plate Safety Bolts, nuts, split pins and seals that connect the load plate to the central columns for wear or damage. Record colour code.		Colour Code:
		-	✓	-	Remove and visually inspect for any signs of damage or strain. Visually inspect the holes in the central columns for signs of damage or strain. Ensure correct bolt torque 140 Nm for re-installation**		Bolt Torque:
1.4	Columns Critical Part	✓	✓	✓	Visually inspect in-situ for any signs of wear, cracks, or other damage.		-
1.5	Node Plates Critical Part	✓	✓	✓	Visually inspect in-situ for signs of wear, cracks, or other damage. Record ID No.		ID Nos:
1.6	Node Plate Safety Bolts Critical Part Periodic Replacement*	✓	-	✓	Visually inspect in-situ bolts, nuts, split pins and seals that connect the Node plate to the central columns for wear or damage. Record colour code.		Colour Code:
		-	✓	-	Remove and visually inspect for any signs of damage or strain. Visually inspect the holes in the node plate for signs of damage or strain. Ensure correct bolt torque 50 Nm for re-installation** It is recommended to remove, inspect, and replace one bolt at a time.		Bolt Torque:
-	*Periodic Replacement Parts: Replace according to usage per Examination Schedule section in this user manual, or on the recommendation of Competent Person. ** Bolt torques - Check RP0122 in Product Identification Drawings for most up-to-date torque settings.						

FROG-XT6E Inspection Checklist Form (Page 2/3)											
Unit Serial Number					Inspection date			Inspected by			
No.	Part / Assembly	V	E	P	Action			Action / Condition	Information / Measurement		
2 Seat & Harness Assembly											
2.1	Seat Support Assembly	✓	✓	✓	Check signs of damage. Ensure all fittings are secure.				-		
2.2	Seats	✓	✓	✓	Check signs of damage. Ensure all fittings are secure.				-		
2.3	Seat Harnesses	✓	✓	-	Inspect Harnesses for signs of wear, fraying, or damage. Check attachment points are secure.				-		
		✓	✓	-	Sit in each seat and check fastening of each harness operates correctly.				-		
2.4	Stretcher Fittings	✓	✓	-	Visually inspect the stretcher fittings to ensure that they are all present, in good condition, and operational.				-		
3 Damping System and Landing Feet											
3.1	Gas springs Periodic Replacement*	✓	✓	-	Check condition and operation of gas springs. If gas springs show excessive corrosion or have started to compress, then they should be replaced. This can be verified by measuring the deflection of the seat base. The top of the sliding sleeve should rest against the sliding sleeve stopper. If the gap is greater than 10 mm, then the gas springs should be replaced.				Gap Height:		
		✓	✓	-	Ensure that threads of gas spring rod-end are not visible between the main body and rod ends at both ends. Ensure that there is no sign of fluid leaking out of the gas springs. Check mounting brackets to ensure they present no deformation.						
3.2	Landing Feet	✓	✓	✓	Examine Landing feet to ensure good condition and properly secured. <u>Do not go underneath an active lift.</u>				Heights:		
		✓	✓	-	When unit is on floor. Measure height of each foot. Replace if under 100 mm in height						
		✓	✓	-	Small cuts and damage are acceptable. The foot should be replaced when damage larger than 50 mm is present.						

FROG-XT6E Inspection Checklist Form (Page 3/3)										
Unit Serial Number					Inspection date			Inspected by		
No.	Part / Assembly	V	E	P	Action	Comment on Action / Condition		Information / Measurement		
4	Framework & Buoyancy									
4.1	Framework / Floor grating	✓	✓	✓	Check for signs of damage. Ensure all parts, bolts, and fasteners are tight and fully secure.			-		
4.2	Buoyancy	✓	✓	✓	Check for signs of damage. Ensure all parts, bolts, and fasteners are tight and fully secure. If buoyancy shell is breached, then it should be replaced.			-		
4.3	Inspection Data Plate	✓	✓	✓	Record Previous (Last) Inspection Date			<i>Last Inspection Date:</i> <i>New Plate Marking:</i>		
					Update (Stamp/ Etch) data plate to show date and completed works: Date in Format: DD-MM-YYYY ; Visual Inspection, stamp: V ; Examination: E ; Load Test: T					
4.4	Stickers / Instructions	✓	✓	✓	Check that all stickers on the unit are in good condition and none are missing. Sticker location drawing can be found in the drawing pack.			-		
Notes - Comments - Actions										
Other Documentation and References										
Document					Document Number / Location					
Report of Thorough Examination / Certificate for this Inspection										
Certificate for Load Test										
Photographic Report/ Archived Photograph Folder										
Certification for Critical Parts Installed										

Appendix C - Report of Thorough Examination

A Report of Thorough Examination should be completed and issued on completion of service work (see example below). This certificate format is based on UK LOLER 1998 SI 2307 requirements and LEEA guidance. Other certification standards may take precedence in different regions.

Report of Thorough Examination (TE) / Certificate of Test								
Name and Address of Employer for whom the Test/Thorough Examination is made (Client)		Location of Equipment Tested/Examined			Report No:		Date of Report	
					PO No:		Date of Test/ Exam	
					Job No:		Revision	
Unique ID No.	Equipment Description/ Scope of Works/	SWL (Payload)	Proof Load Applied or Date/ Cert No. previous test	Date/ Cert No. previous TE	Manufacture date / Manufacturer	Safe for Use/ Limitations / Comments	Date/ Type Next TE	
Attached NDE Report No.		New Installation or Assembly						
Basis of Examination (tick one)	6 monthly under SI 1998 No 2307 Reg 9(3)(a)(i)* <input type="checkbox"/>	12 monthly under SI 1998 No 2307 Reg 9(3)(a)(ii)* <input type="checkbox"/>	Examination Scheme under SI 1998 No 2307Reg 9(3)(a)(iii)* <input type="checkbox"/>	Exceptional Circumstance under SI 1998 No 2307 Reg 9(3)(a) (iv)* <input type="checkbox"/>				
<p>* SI 1998 No 2307 Lifting Operations and Lifting Equipment Regulations Or equivalent part of Regulation 12 of the Merchant Shipping Vessels (Lifting Operations and Lifting Equipment) Regulations</p> <p>I hereby declare that, on the date above, the item(s) of equipment listed above was/were tested and/or thoroughly examined and that the particulars stated above are correct. Any qualification due to access limitation is described in Comments column above. If appropriate, an NDE Report will be issued simultaneously.</p>								
Company Appointed Examiner Name in Capitals, Employer, Qualification, Signature.				OR	Person signing on behalf of or authenticating the Report Name in Capitals, Employer, Qualification, Signature.			

Note: Items that can be disassembled should be identified on separate lines. For example: XT6E unit, Wire Rope Lifting Assembly, and Shackles.

Appendix D - FROG-XT6E Spare parts and kits catalogue

Category	Description	Part Number	Contents detail
Lifting Assembly	Lifting assembly. 30-foot, operating temperature -40 °C to +50 °C, Aluminium ferrules. Master link minimum dimensions: 270 x 140 x 28 mm.	RA0291	<p>Wire rope lifting assembly, with certification.</p> <p>Does not include high visibility cover.</p> <p>This is the recommended replacement part if existing lifting assembly cover is in good condition.</p>
	Lifting assembly. 20-foot, operating temperature -40 °C to +50 °C, Aluminium ferrules. Master link minimum dimensions: 270 x 140 x 28 mm.	RA1472	
	Lifting assembly. 10-foot, operating temperature -40 °C to +50 °C, Aluminium ferrules. Master link minimum dimensions: 270 x 140 x 28 mm.	RA1473	
	Lifting assembly. 30-foot, operating temperature -40 °C to +50 °C, Steel ferrules. Master link minimum dimensions: 270 x 140 x 28 mm.	RA1474	
	Lifting assembly. 20-foot, operating temperature -40 °C to +50 °C, Steel ferrules. Master link minimum dimensions: 270 x 140 x 28 mm.	RA1475	
	Lifting assembly. 10-foot, operating temperature -40 °C to +50 °C, Steel ferrules. Master link minimum dimensions: 270 x 140 x 28 mm.	RA1476	
	Lifting assembly. 30-foot, operating temperature -40 °C to +50 °C, Aluminium ferrules. Master link minimum dimensions: 320 x 175 x 28 mm.	RA1477	
	Lifting assembly. 20-foot, operating temperature -40 °C to +50 °C, Aluminium ferrules. Master link minimum dimensions: 320 x 175 x 28 mm.	RA1478	

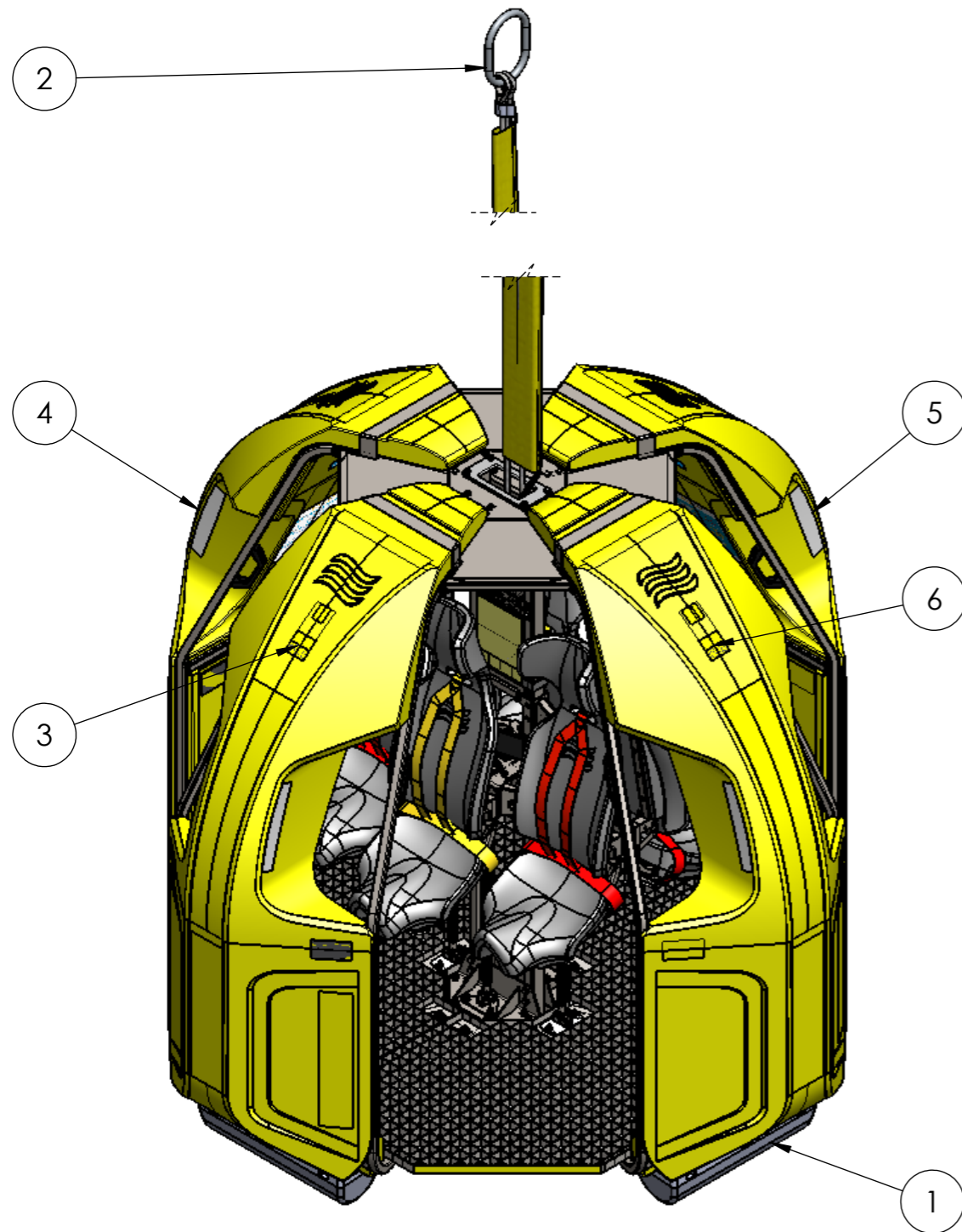
	Lifting assembly kit, 30-foot, -40 °C to +50 °C, Aluminium ferrules	RA1572	Wire Rope Lifting Assembly [includes certification] + Lifting Assembly Cover and fixings.
	Lifting assembly kit, 20-foot, -40 °C to +50 °C, Aluminium ferrules	RA1573	
	Lifting assembly kit, 10-foot, -40 °C to +50 °C, Aluminium ferrules	RA1574	
	Lifting assembly kit, 30-foot, -40 °C to +50 °C, Steel ferrules	RA1575	
	Lifting assembly kit, 20-foot, -40 °C to +50 °C, Steel ferrules	RA1576	
	Lifting assembly kit, 10-foot, -40 °C to +50 °C, Steel ferrules	RA1577	
	Lifting assembly kit, 30-foot, -40 °C to +50 °C, Aluminium ferrules, Large master link	RA1578	
	Lifting assembly kit, 20-foot, -40 °C to +50 °C, Aluminium ferrules, Large master link	RA1579	
Replacement Parts	FROG-XT Replacement Parts kit	RA0117	4x Load Plate Bolts [includes certification] + 4x Node Plate Bolts [includes certification] + Nuts, Washers, Pins and Tamper-proof seals
Critical Parts	FROG-XT Critical Parts kit, with 30-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit	RA1693	Wire Rope Lifting Assembly [includes certification] + Replacement Parts Kit [includes certification] + Lifting Assembly Cover + Required fixings
	FROG-XT Critical Parts kit, with 20-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit	RA1694	
	FROG-XT Critical Parts kit, with 10-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit	RA1695	
	FROG-XT Critical Parts kit, with 30-ft, -40 °C to +50 °C, Steel-ferrule lifting assembly kit	RA1696	
	FROG-XT Critical Parts kit, with 20-ft, -40 °C to +50 °C, Steel-ferrule lifting assembly	RA1697	
	FROG-XT Critical Parts kit, with 10-ft, -40 °C to +50 °C, Steel-ferrule lifting assembly	RA1698	
	FROG-XT Critical Parts kit, with 30-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit and Large Master link	RA1699	
	FROG-XT Critical Parts kit, with 20-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit and Large Master link	RA1700	

Landing Foot	Full landing foot kit with mounting brackets	RA0303	4x Landing feet, fitted with mounting brackets. + Replacement fixings
	Single foot kit, with mounting bracket	RA1570	1x Landing feet, fitted with mounting bracket. + Replacement fixings
Suspension	FROG-XT6E Suspension kit	RA1467	4x Gas Springs + Fixings
	Gas spring top bracket	RP1518	-
	Gas spring bottom bracket, node plate side	RP1512	-
	Gas spring bottom bracket, grating side	RP1513	-
Harness	FROG-XT6E Full harness kit	RA0295	6x Harnesses (4x Red, 2x Yellow) + Fixings
	Red seat harness	RP0095	-
	Yellow seat harness	RP0242	-
Full-service kit	FROG-XT6E Full-service kit, with 30-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit	RA1705	1x Lifting Assembly Kit [includes certification] 1x Replacement Parts Kit [includes certification] 1x Harness Kit 1x Landing Foot Kit 1 x Suspension Kit
	FROG-XT6E Full-service kit, with 20-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit	RA1706	
	FROG-XT6E Full-service kit, with 10-ft, -40 °C to +50 °C, Aluminium-ferrule lifting assembly kit	RA1707	
	FROG-XT6E Full-service kit, with 30-ft, -40 °C to +50 °C, Steel-ferrule lifting assembly kit	RA1708	
	FROG-XT6E Full-service kit, with 20-ft, -40 °C to +50 °C, Steel-ferrule lifting assembly kit	RA1709	
	FROG-XT6E Full-service kit, with 10-ft, -40 °C to +50 °C, Steel-ferrule lifting assembly kit	RA1710	

	FROG-XT6E Full-service kit, with 30-ft, -40 °C to +50 °C, Aluminium-ferrule, Large Master link lifting assembly kit	RA1711	
	FROG-XT6E Full-service kit, with 20-ft, -40 °C to +50 °C, Aluminium-ferrule, Large Master link lifting assembly kit	RA1712	
Buoyancy panel	FROG-XT6E Buoyancy panel "A", English language	RA1480	FROG-XT6E buoyancy panel with stickers for selected letter configuration.
	FROG-XT6E Buoyancy panel "B", English language	RA1481	
	FROG-XT6E Buoyancy panel "C", English language	RA1482	
	FROG-XT6E Buoyancy panel "D", English language	RA1483	
Accessories	Strobe light kit	RA0170	-
	Zoned strobe light	RA0640	4x Lights with mounting bracket 4x cable ties 2x ATEX "Ex" stickers
	Basket stretcher	300-01-01	-
	Orange stretcher straps	301-01-02	-
	Black stretcher straps	RA1571	-
	Luggage basket kit	RA0316	-
	FROG-XT6E Weather-proof cover	RP0136	-
	Chocks kit (Set of 4)	RA1759	4x Aluminium chocks
	Accessories Package 1	RA1731	1x FROG-XT6E Weather-proof cover 1x Strobe light kit 2x Luggage basket kit
	Accessories Package 2	RA1730	1x FROG-XT6E Weather-proof cover 1x Strobe light kit 2x Luggage basket kit 1x Basket stretcher

	Accessories Package 3	RA1761	1x FROG-XT6E Weather-proof cover 1x Zoned strobe light kit (inc. 4-off lights) 2x Luggage basket kit
	Accessories Package 4	RA1762	1x FROG-XT6E Weather-proof cover 1x Zoned strobe light kit (inc. 4-off lights) 2x Luggage basket kit 1x Basket stretcher

Appendix E - FROG-XT6E Drawings



REF. ISO VIEW

REVISIONS				
ECN No.	REV.	DESCRIPTION	DATE	MODIFIED BY
ECN-00893	B	Update model after manufacturing of capsule number XT6-001	16-Apr-2024	M.G.
-	-	-	-	-
-	-	-	-	-

THIS DRAWING IS ONLY FOR REFERENCE OF TOP-LEVEL PRODUCT ASSEMBLY THAT APPLIES TO ALL VARIANTS OF THE PRODUCT.

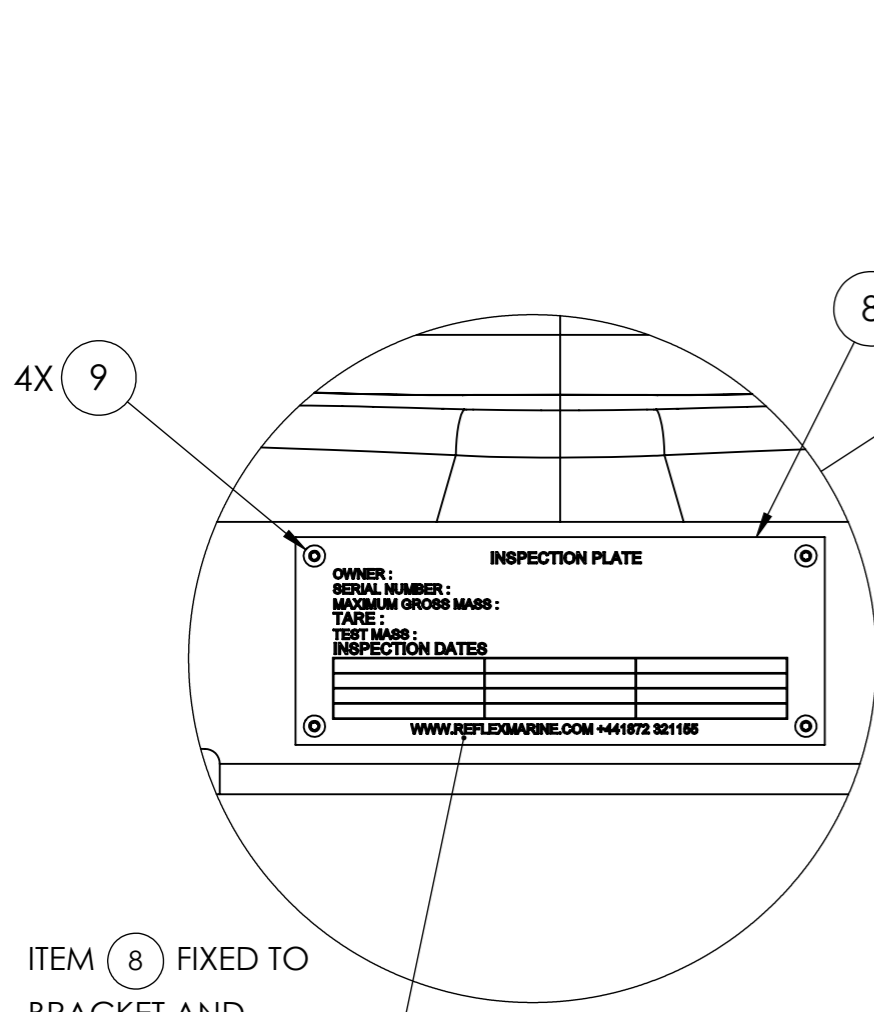
THE TABLE BELOW IS INTENDED TO SERVE AS A REFERENCE BILL OF MATERIALS (BOM), SHOWING THE COMPONENTS THAT CONFORM THE FINISHED PRODUCT, AND SERVES AS REFERENCE FOR BALLOON ITEMS.

EACH PRODUCT VARIANT HAS A CONTROLLED TOP-LEVEL MANUFACTURING BOM (**M-BOM**) THAT PROVIDES THE ACTUAL PART NUMBERS REQUIRED FOR ITS BUILD. EACH PRODUCT VARIANT M-BOM WILL USE SAME LINE ITEM REFERENCE NUMBERS AS SHOWN IN THIS DRAWING.

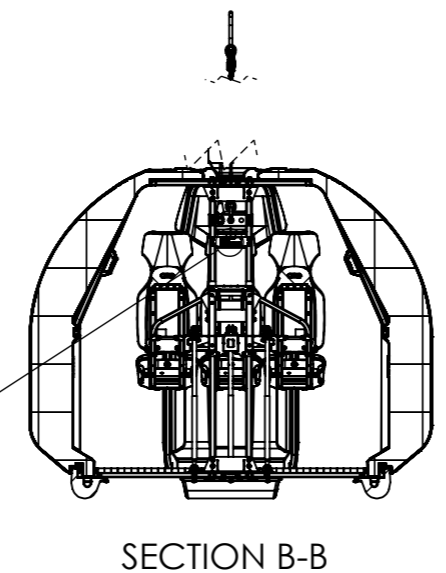
COMPILE AND ARCHIVE CERTIFICATION DOSSIER. USE CERTIFICATION TEMPLATE **DOC-000970**

BOM TABLE		
ITEM NO.	DESCRIPTION	QTY.
1	FROG-XT6E CAPSULE	1
2	LIFTING ASSEMBLY	1
3	FROG-XT6E, BUOYANCY "A" STICKER KIT	1
4	FROG-XT6E, BUOYANCY "B" STICKER KIT	1
5	FROG-XT6E, BUOYANCY "C" STICKER KIT	1
6	FROG-XT6E, BUOYANCY "D" STICKER KIT	1
7	XT6E DATA MARKING PLATE	1
8	INSPECTION PLATE	1
9	M3X6 SOCKET BUTTON HD SCREW	8
10	FROG-XT6E USER PACK	1

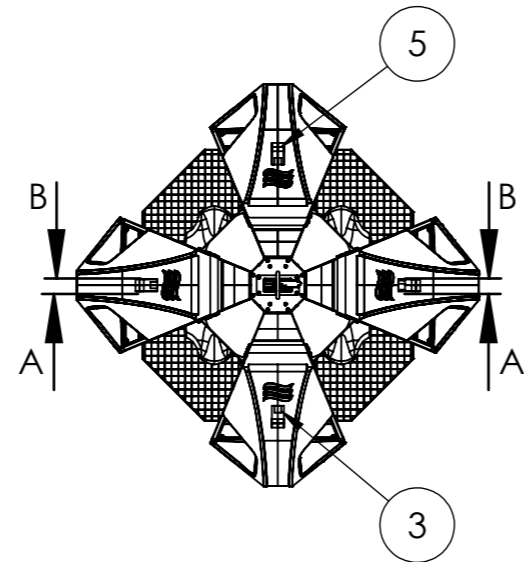
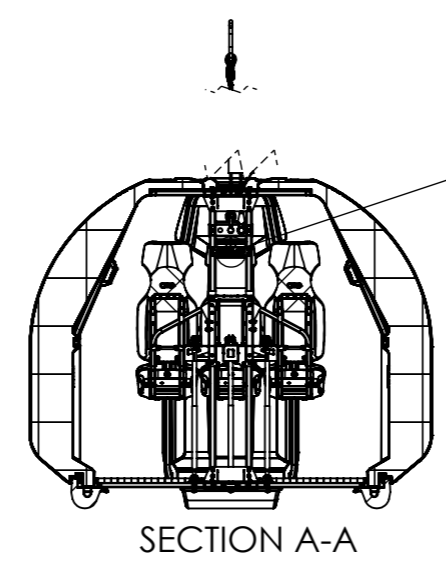
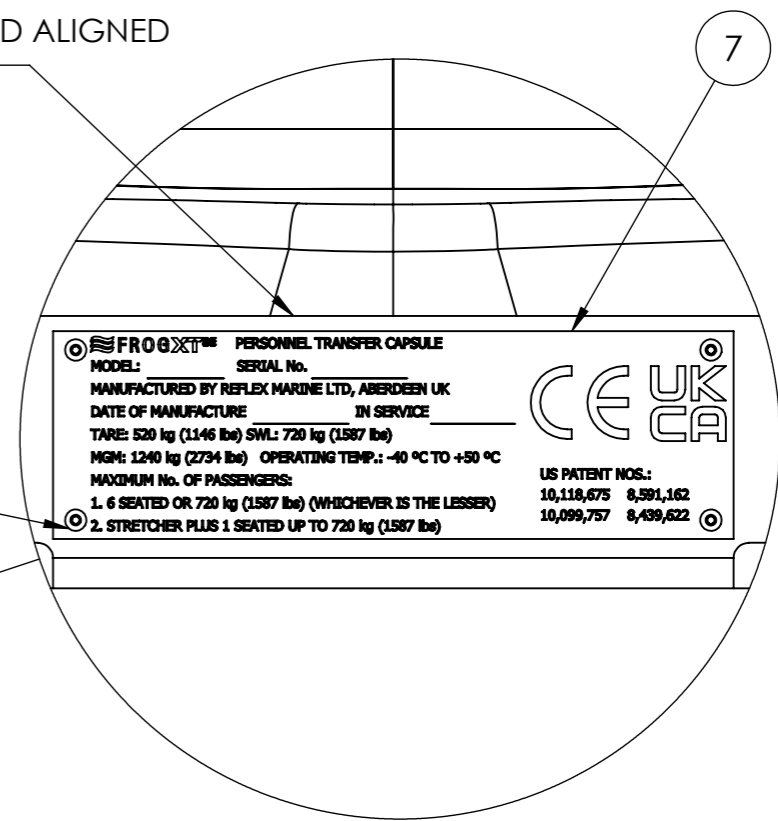
 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by M.G. on 24-Jul-2023	Approved by D.M. on 18-Dec-2023
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass 520.00 kg	Title FROG-XT6E FINISHED PRODUCT GENERAL ASSEMBLY REFERENCE	
All diameters concentric 0.05 T.I.R.	Surface finish $\sqrt{3.2}$ μm all over U.O.S.	Finish N/A	Material specification SEE PIECE PARTS		
 www.reflexmarine.com		Drawing No. RA1458			
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DETAIL D
SCALE 1 : 2
SEE NOTE 1



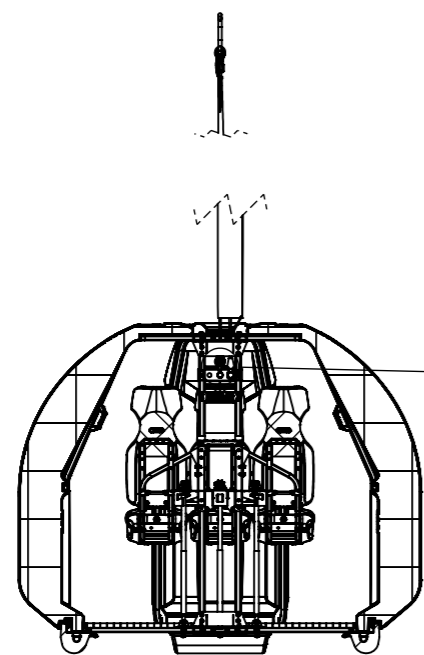
ITEM 7 FIXED TO BRACKET AND ALIGNED CENTRALLY



NOTE:

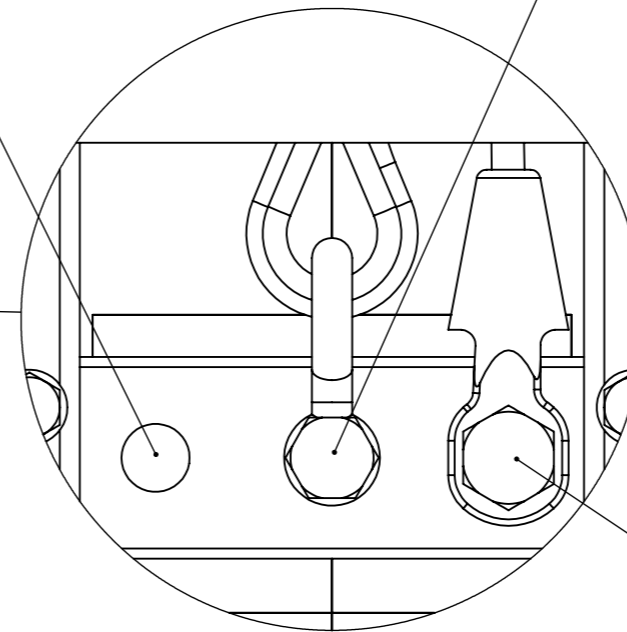
- USE ITEMS 7 AND 8 AS A TEMPLATE TO DRILL AND TAP M3 THROUGH. FILL SOCKET HEAD WITH EPOXY ADHESIVE TO TAMPER PROOF ITEMS 9.
- ITEM 7 (DATA MARKING PLATE) IS OPPOSITE TO ITEM 3 (BUOYANCY PANEL "A")
- ITEM 8 (INSPECTION PLATE) IS OPPOSITE TO ITEM 5 (BUOYANCY PANEL "B")

<p>3rd Angle Projection</p>	<p>All dimensions in millimetres unless otherwise stated</p>	<p>Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com</p>		<p>Created by M.G. on 24-Jul-2023</p>		<p>Approved by D.M. on 18-Dec-2023</p>		
		<p>Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°</p>		<p>Estimated mass 520.00 kg</p>		<p>Title FROG-XT6E FINISHED PRODUCT GENERAL ASSEMBLY REFERENCE</p>		
<p>All diameters concentric 0.05 T.I.R.</p>		<p>Finish N/A</p>		<p>Material specification SEE PIECE PARTS</p>		<p>Drawing No. RA1458</p>		
<p>Surface finish $\sqrt{3.2}$ μm all over U.O.S.</p>		<p>Surface treatment N/A</p>		<p>Rev. B</p>	<p>Critical Component NO</p>	<p>Sheet 2 OF 3</p>	<p>Scale 1:50</p>	<p>Size A3</p>
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SECTION O-O

THE SMALLER HOLE TO ONE SIDE OF THE LOAD PLATE CAN BE USED AS HANDLING EYE



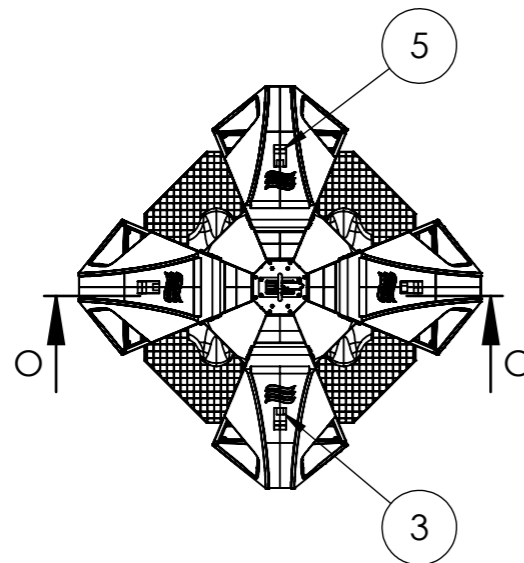
DETAIL S
SCALE 1 : 3

MAIN LEG OF ITEM (2) CONNECTED TO CENTRAL HOLE OF LIFT PLATE.

SEE NOTE 5

BACKUP LEG OF ITEM (2) WITH SPELTER SOCKET TERMINATION CONNECTED TO THE LARGER OF THE TWO OUTER HOLES ON THE LOAD PLATE.

SEE NOTE 5



NOTE:

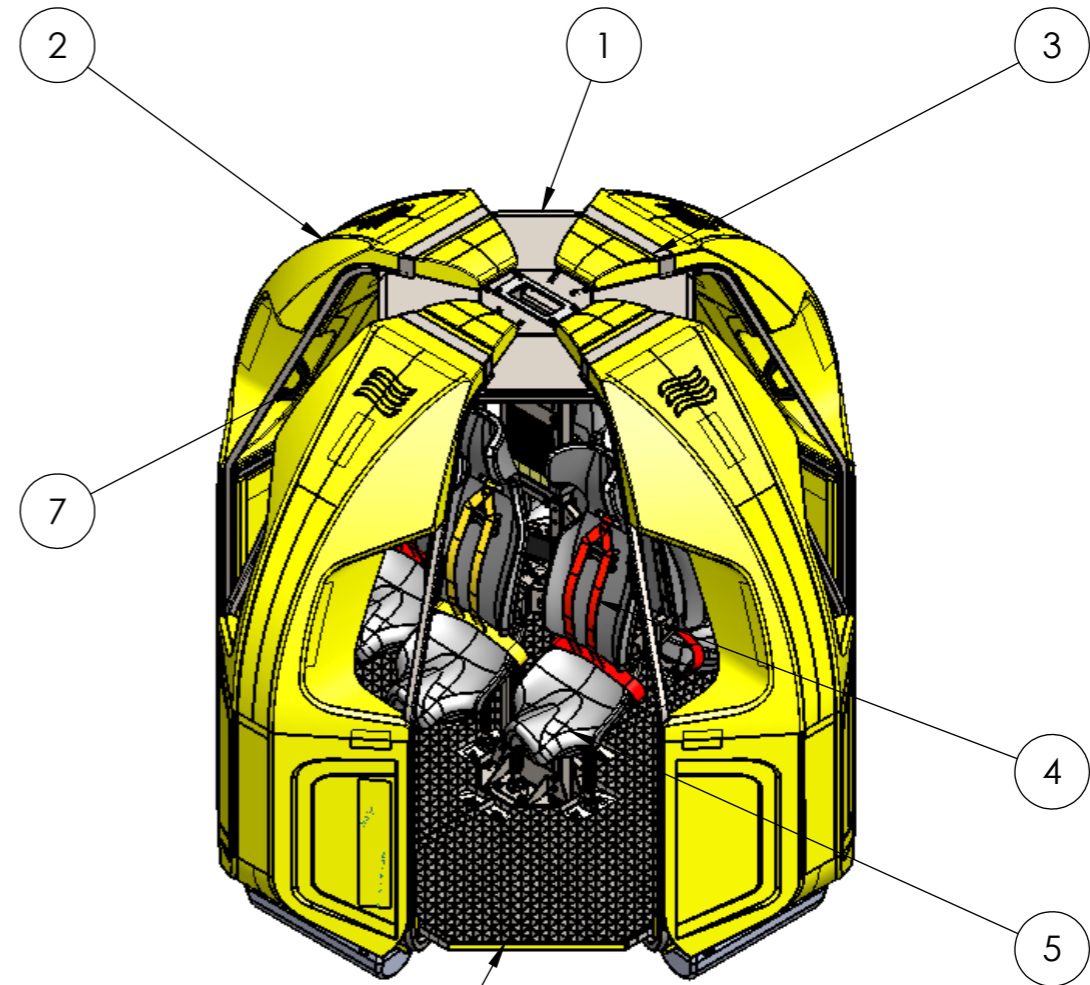
4. LIFTING ASSEMBLY NUTS SHOULD BE HAND TIGHT.

 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by M.G. on 24-Jul-2023	Approved by D.M. on 18-Dec-2023
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass 520.00 kg	Title FROG-XT6E FINISHED PRODUCT GENERAL ASSEMBLY REFERENCE	
	All diameters concentric 0.05 T.I.R.	Finish N/A	Material specification SEE PIECE PARTS		
Surface finish $\sqrt{3.2}$ μm all over U.O.S.	Surface treatment N/A	Drawing No. RA1458			
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	RA1456	XT6E SPACE FRAME WITH SLIDING SLEEVE, SEAT STRUCTURES AND SUSPENSION SYSTEM	1
2	RP0036	XT BUOYANCY WITH ROTOMOULDED GRAPHICS	4
3	RP0027	BUOYANCY CLAMPING PLATE	4
4	RP0070	ROTOMOULDED SEAT BACK	6
5	RP0071	ROTOMOULDED SEAT BASE	6
6	RP1752	RUBBER THICK STRIP, SEAT BACK	6
7	RP0314	XT GRAB HANDLE	8
8	RP1541	XTE, STRETCHER D-RING SPACER	2
9	RP0242	YELLOW SEAT HARNESS	2
10	RP0095	RED SEAT HARNESS	4
11	RP1690	XT6E STICKER, STRETCHER SECURING D-RINGS LOCATION	1
12	620-07-13	STRETCHER MOUNTING 'D' RING	4
13	108-000-WA-4	M8 FLAT WASHER FORM A	80
14	108-000-WS-4	M8 SPRING WASHER RECTANGULAR TYPE B	116
15	108-000-NF-4	M8 NYLOC FLANGE NUT	2
16	108-025-HS-4	M8x25 HEX HD SCREW	8
17	108-030-SC-4	M8x30 SOCKET HEAD SCREW	16
18	108-030-SB-4	M8x30 SOCKET BUTTON HD SCREW	20
19	108-045-SB-4	M8x45 SOCKET BUTTON HD SCREW	72
20	RA1754	XT6E, RESTRAIN STRAPS STORAGE BAG KIT	1
21	110-000-WA-4	M10 FLAT WASHER FORM A	2
22	110-030-SC-4	M10x30 SOCKET HEAD SCREW	2
23	110-000-NF-4	M10 NYLOC FLANGE NUT	2



REVISIONS				
ECN No.	REV.	DESCRIPTION	DATE	MODIFIED BY
ECN-00896	C	Space frame assembly RA1456 upissued to rev.C	22-May-2024	M.G.
ECN-00886	B	Several BOM items raised in issue after first unit build. New accessory added.	16-Apr-2024	M.G.
-	-	-	-	-

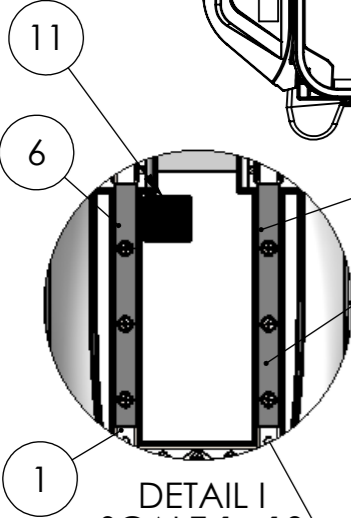
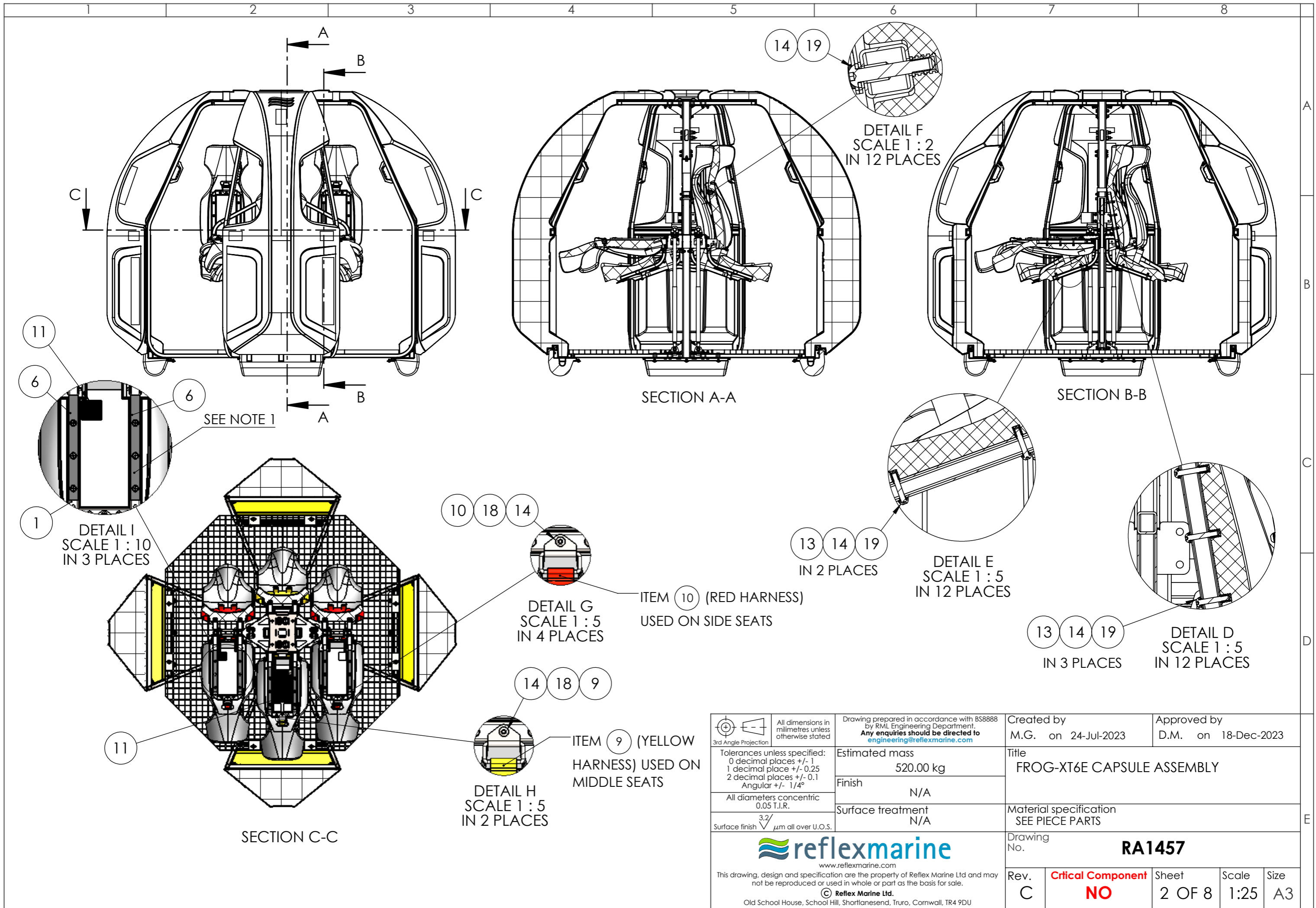


EDGE OF GRATING AT THE ENTRY TO BE PAINTED IN YELLOW. IN 4 PLACES.

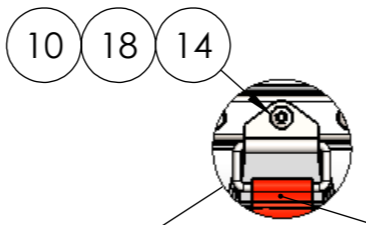
NOTE:

- ITEM (6) BONDED TO SEAT FRAME USING SIKAFLEX 292/252 AS PER MANUFACTURER'S RECOMMENDED PROCEDURE.

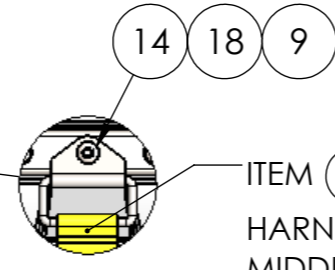
 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by M.G. on 24-Jul-2023	Approved by D.M. on 18-Dec-2023	
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass 520.00 kg	Title FROG-XT6E CAPSULE ASSEMBLY		
All diameters concentric 0.05 T.I.R.		Finish N/A	Material specification SEE PIECE PARTS			
Surface finish $\sqrt{3.2}$ μm all over U.O.S.		Surface treatment N/A	Drawing No. RA1457			
 www.reflexmarine.com		Rev. C	Critical Component NO	Sheet 1 OF 8	Scale 1:25 Size A3	
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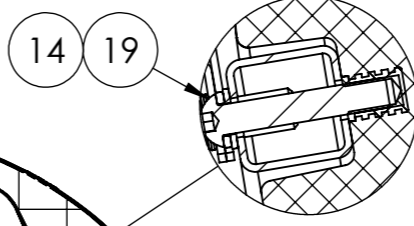
DETAIL I
SCALE 1 : 10
IN 3 PLACES



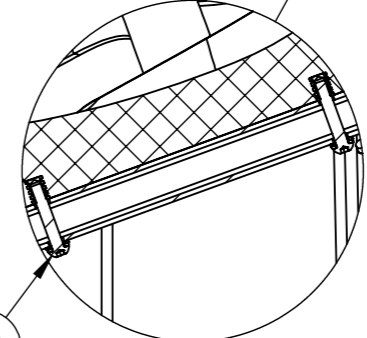
DETAIL G
SCALE 1 : 5
IN 4 PLACES
ITEM 10 (RED HARNESS)
USED ON SIDE SEATS



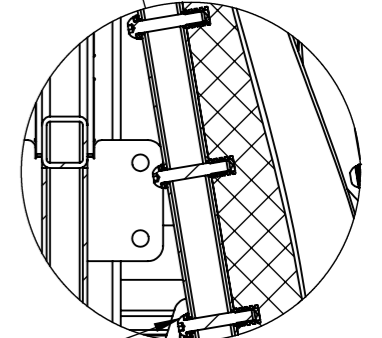
DETAIL H
SCALE 1 : 5
IN 2 PLACES
ITEM 9 (YELLOW HARNESS) USED ON MIDDLE SEATS



DETAIL F
SCALE 1 : 2
IN 12 PLACES



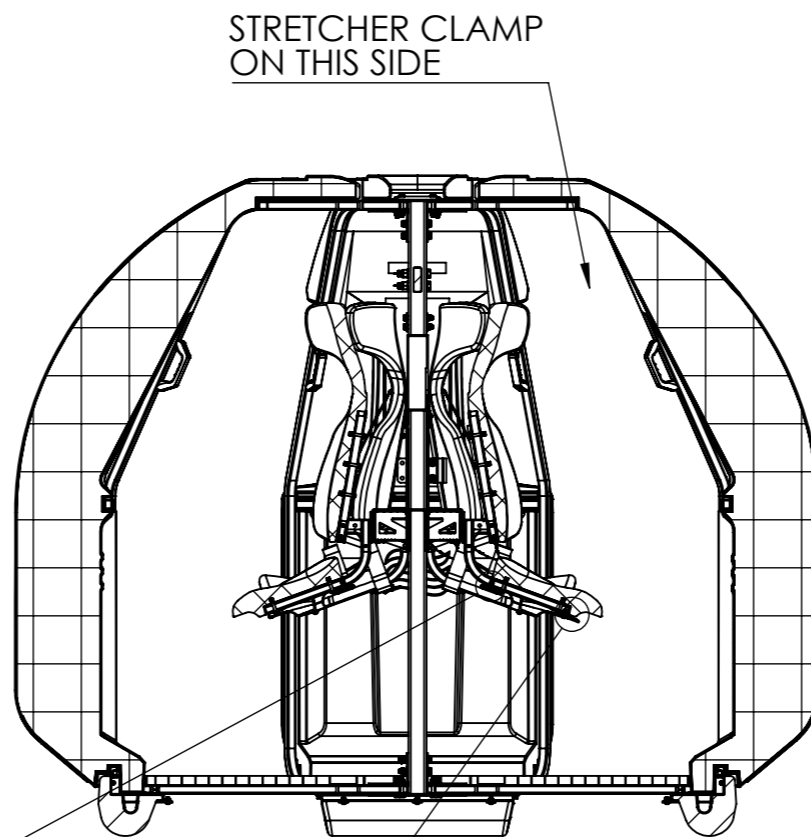
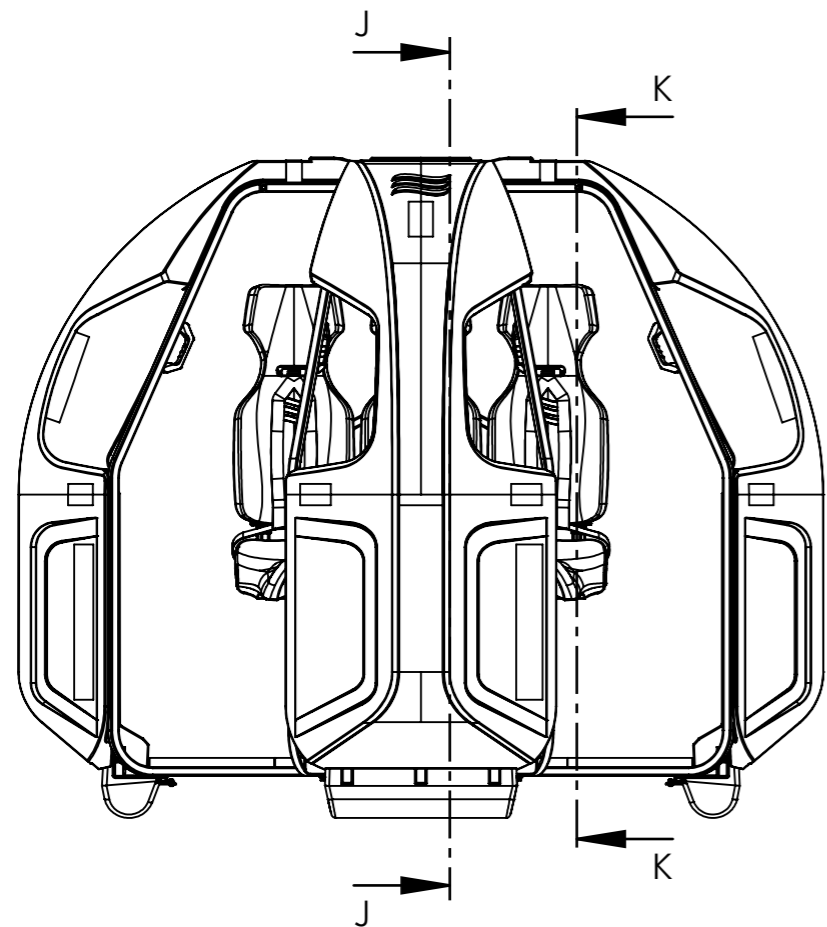
DETAIL E
SCALE 1 : 5
IN 12 PLACES



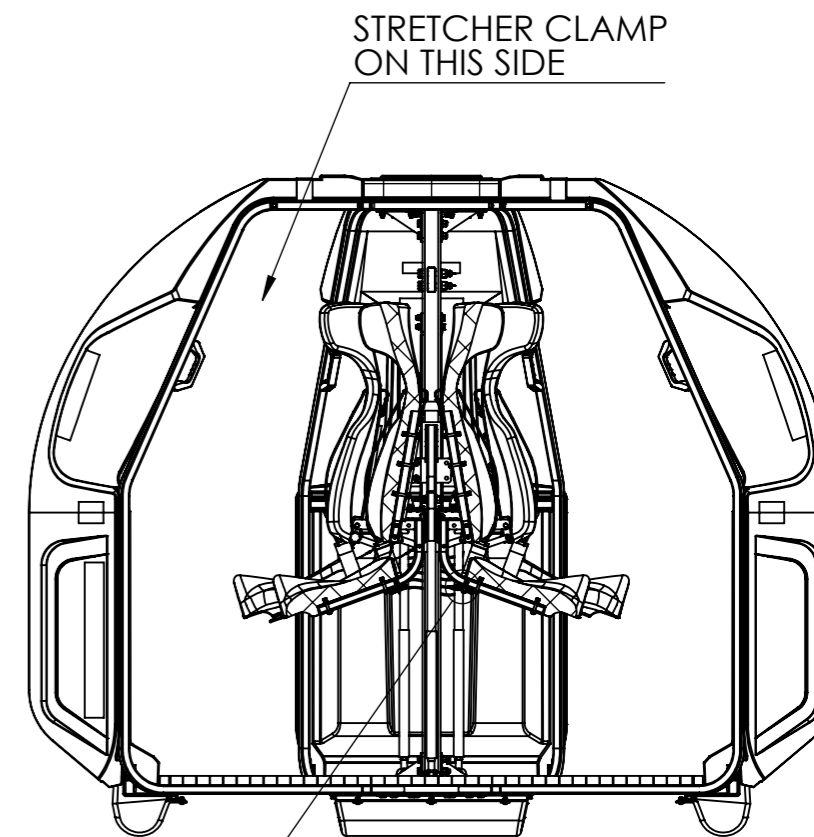
DETAIL D
SCALE 1 : 5
IN 12 PLACES

3rd Angle Projection Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4° All diameters concentric 0.05 T.I.R. Surface finish $\sqrt{3.2}$ μm all over U.O.S.	All dimensions in millimetres unless otherwise stated Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com	Created by M.G. on 24-Jul-2023 Approved by D.M. on 18-Dec-2023
	Estimated mass 520.00 kg Finish N/A Surface treatment N/A	Title FROG-XT6E CAPSULE ASSEMBLY Material specification SEE PIECE PARTS
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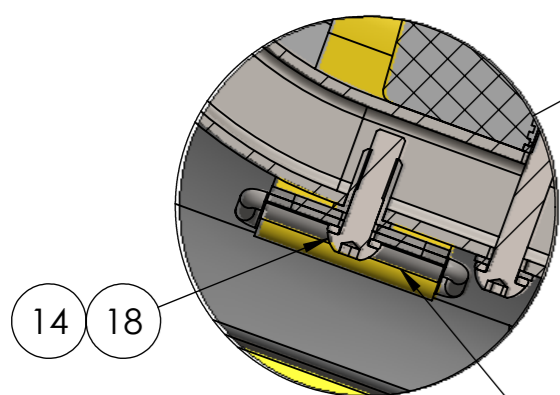
CONNECTION OF D-RINGS UNDER SEAT FRAME



SECTION J-J

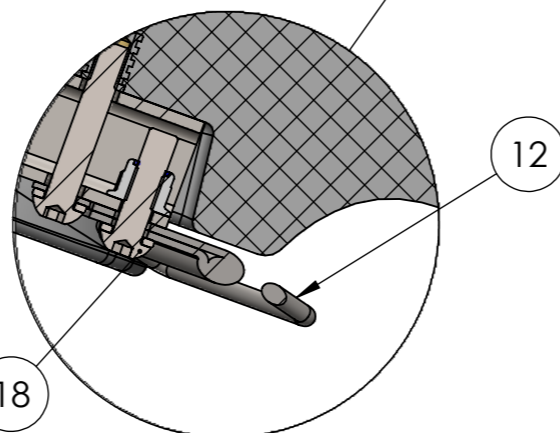


SECTION K-K

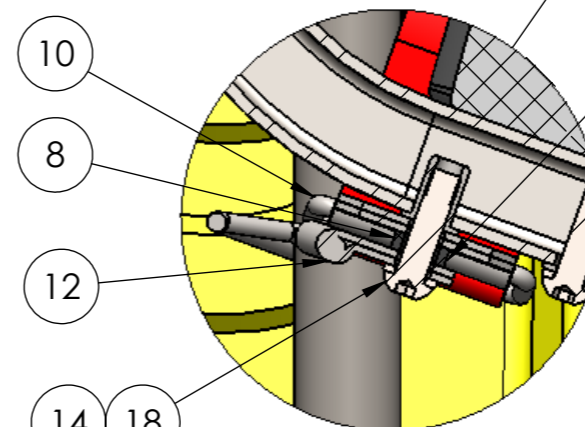


DETAIL M
SCALE 1 : 2
IN 10 PLACES

HARNESS BOTTOM
D-RING



DETAIL N
SCALE 1 : 2
IN 2 PLACES

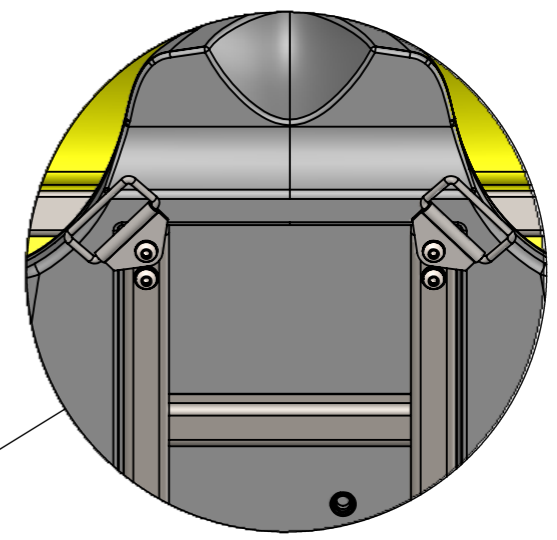
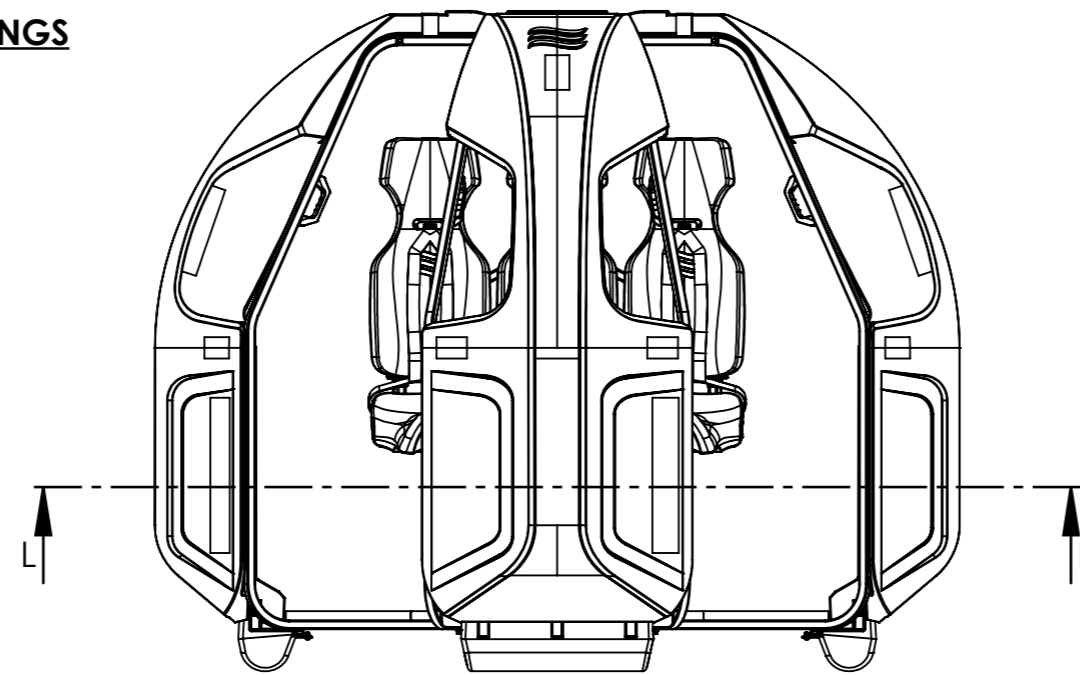


DETAIL O
SCALE 1 : 2
IN 2 PLACES

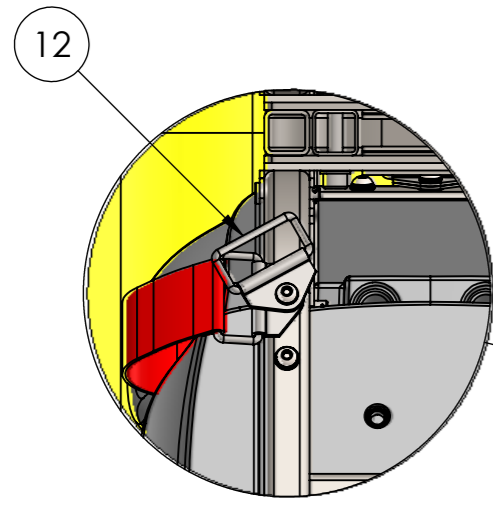
ITEM 8 (BUCKLE SPACER) RESTS
ON TOP OF ITEM 10 (HARNESS
BOTTOM D-RING)

<p>3rd Angle Projection</p>	<p>All dimensions in millimetres unless otherwise stated</p>	<p>Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com</p>	<p>Created by M.G. on 24-Jul-2023</p>	<p>Approved by D.M. on 18-Dec-2023</p>
	<p>Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°</p>	<p>Estimated mass 520.00 kg</p>	<p>Title FROG-XT6E CAPSULE ASSEMBLY</p>	
<p>All diameters concentric 0.05 T.I.R.</p>	<p>Finish N/A</p>	<p>Material specification SEE PIECE PARTS</p>		
<p>Surface finish $\sqrt{3.2}$ μm all over U.O.S.</p>	<p>Surface treatment N/A</p>	<p>Drawing No. RA1457</p>		
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DETAIL ON ORIENTATION OF STRETCHER D-RINGS

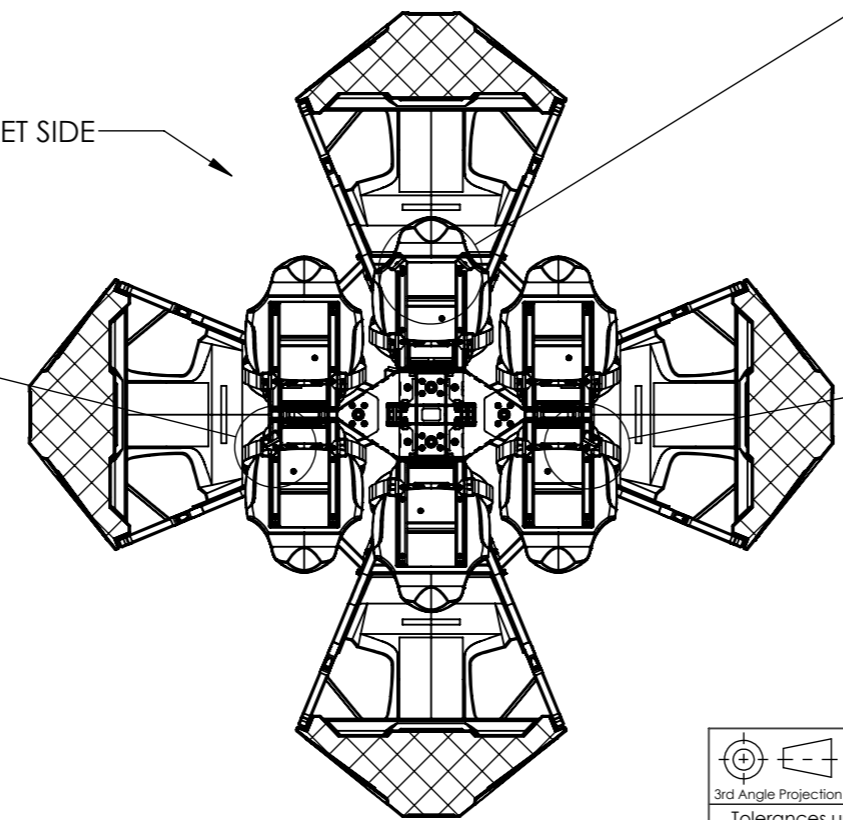


DETAIL P
SCALE 1 : 5

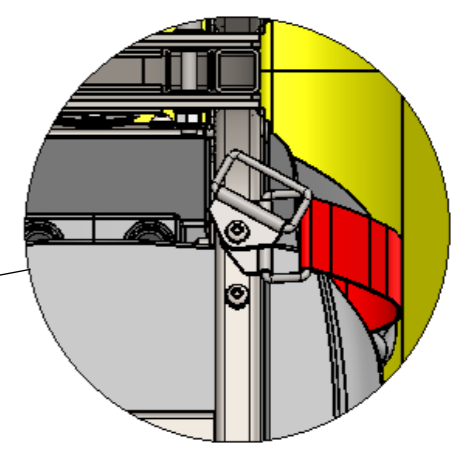


DETAIL R
SCALE 1 : 5

STRETCHER BRACKET SIDE

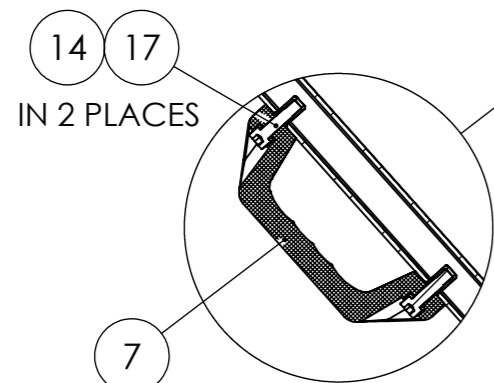
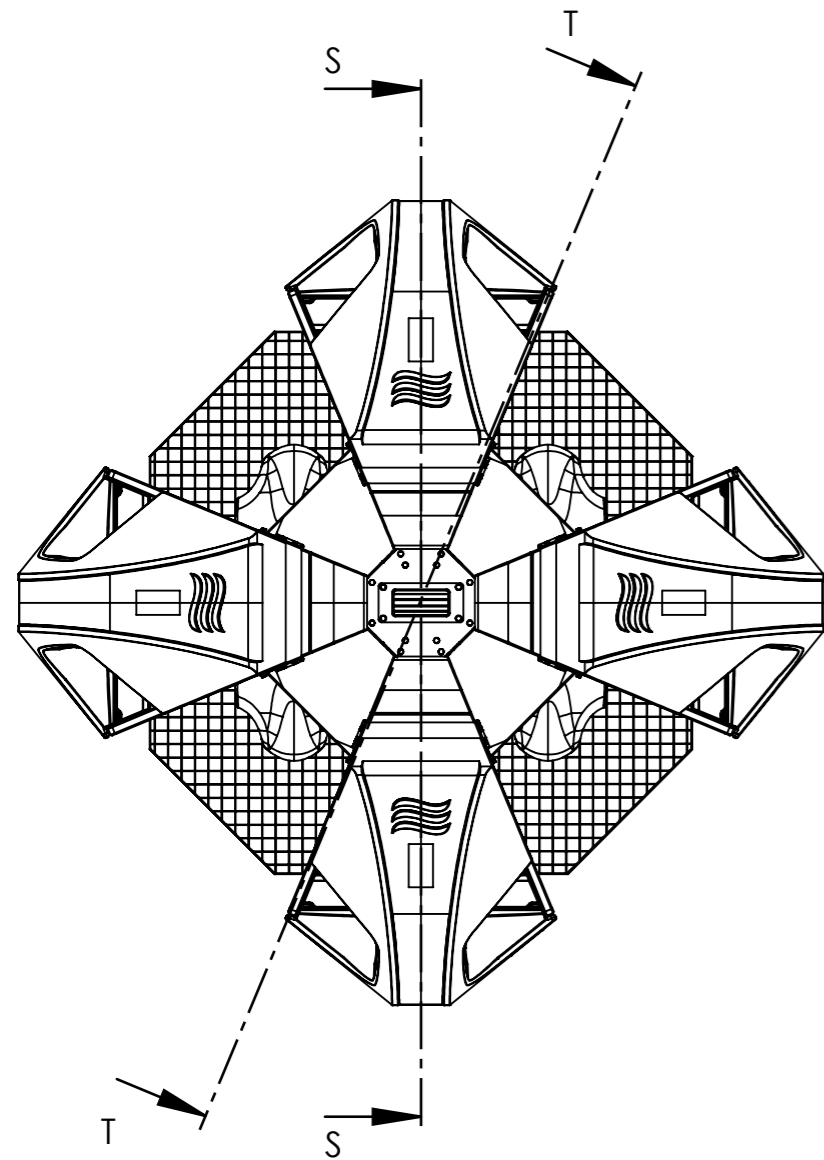


SECTION L-L



DETAIL Q
SCALE 1 : 5

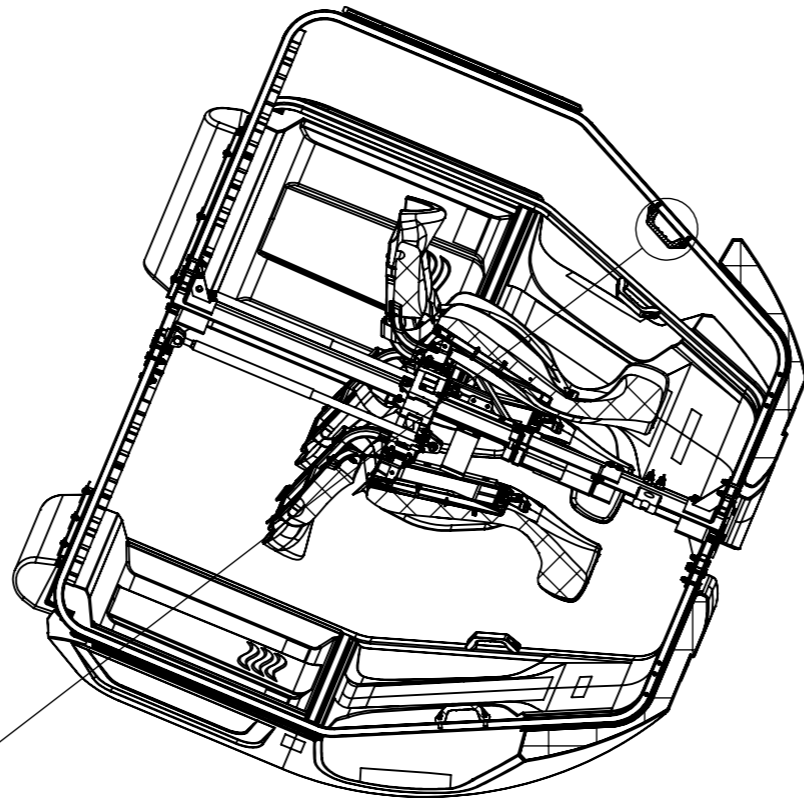
3rd Angle Projection All dimensions in millimetres unless otherwise stated Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4° All diameters concentric 0.05 T.I.R. Surface finish $\sqrt{3.2}$ μm all over U.O.S.	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com	Created by M.G. on 24-Jul-2023 Approved by D.M. on 18-Dec-2023
	Estimated mass 520.00 kg Finish N/A Surface treatment N/A	Title FROG-XT6E CAPSULE ASSEMBLY Material specification SEE PIECE PARTS
reflexmarine www.reflexmarine.com This drawing, design and specification are the property of Reflex Marine Ltd and may not be reproduced or used in whole or part as the basis for sale. © Reflex Marine Ltd. Old School House, School Hill, Shortlanesend, Truro, Cornwall, TR4 9DU		Drawing No. RA1457 Rev. C Critical Component NO Sheet 4 OF 8 Scale 1:25 Size A3



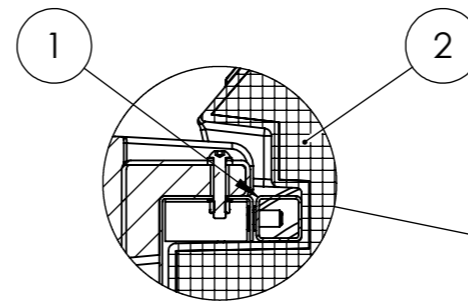
14 17
IN 2 PLACES

7

DETAIL X
SCALE 1 : 5
IN 8 PLACES

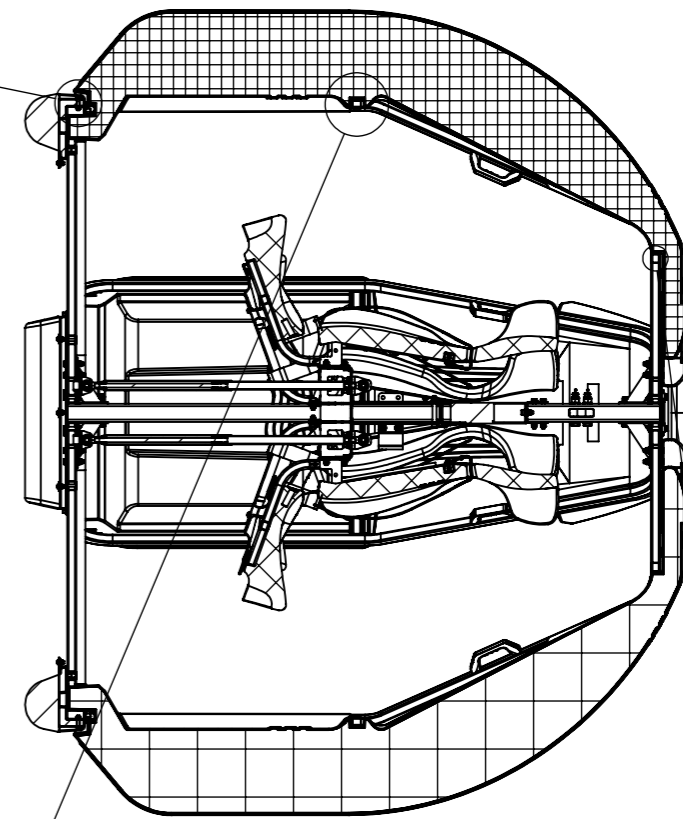


SECTION T-T

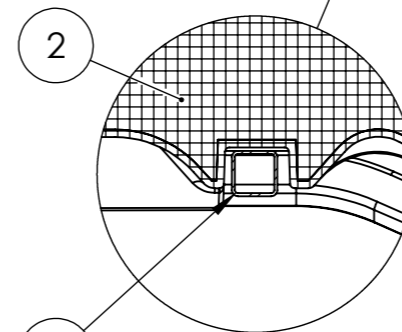


1 2

DETAIL U
SCALE 1 : 5
IN 4 PLACES



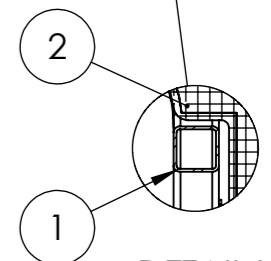
SECTION S-S



2

1

DETAIL W
SCALE 1 : 5
IN 4 PLACES



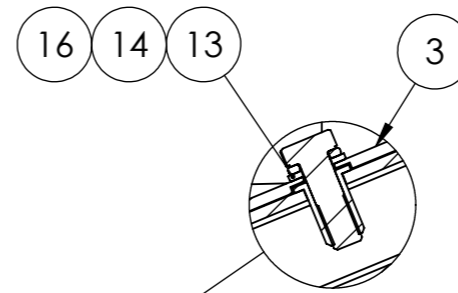
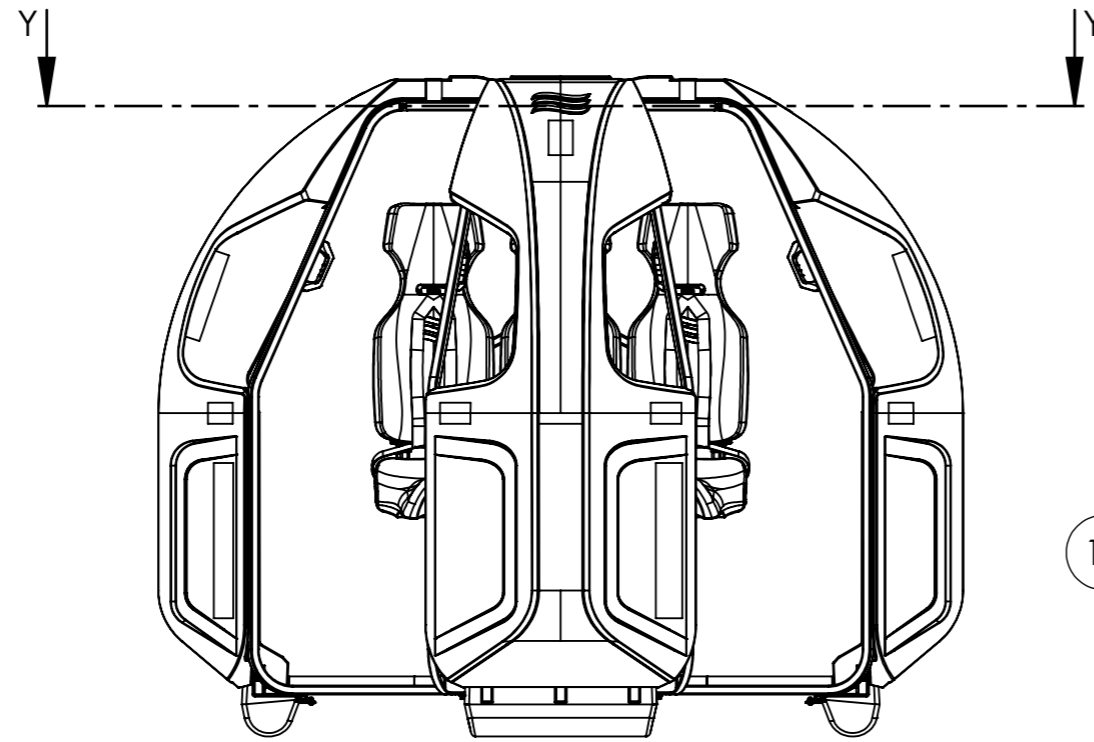
2

1

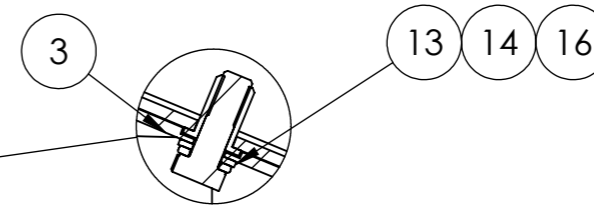
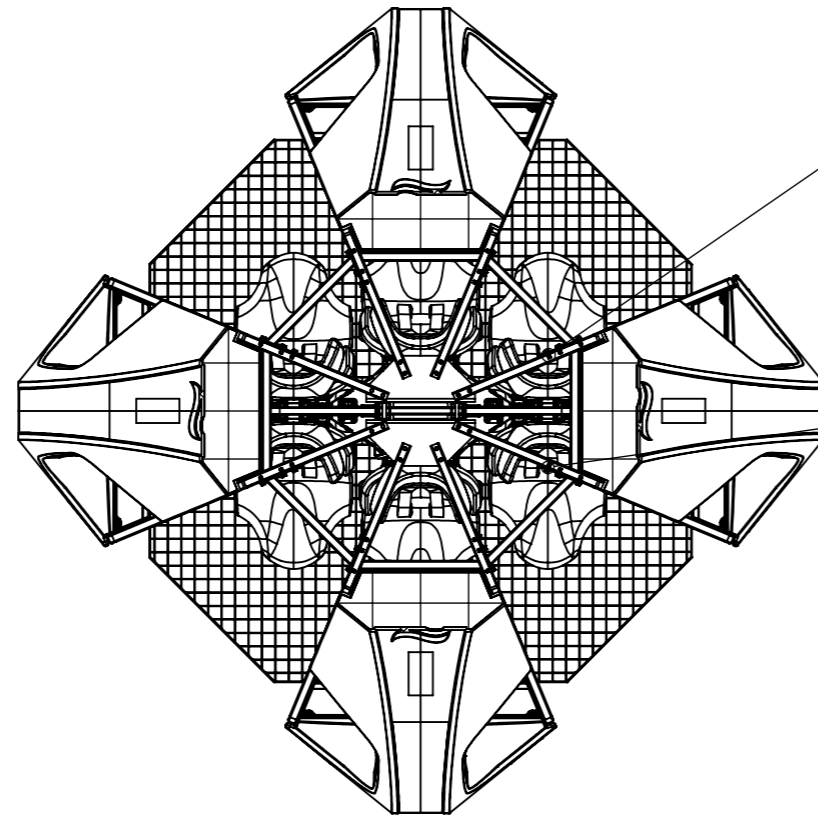
DETAIL V
SCALE 1 : 5
IN 4 PLACES

<p>3rd Angle Projection</p>	<p>All dimensions in millimetres unless otherwise stated</p>	<p>Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com</p>		<p>Created by M.G. on 24-Jul-2023</p>	<p>Approved by D.M. on 18-Dec-2023</p>		
		<p>Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°</p>	<p>Estimated mass 520.00 kg</p>	<p>Title FROG-XT6E CAPSULE ASSEMBLY</p>			
<p>All diameters concentric 0.05 T.I.R.</p>	<p>Surface finish 3.2/ μm all over U.O.S.</p>	<p>Finish N/A</p>	<p>Surface treatment N/A</p>	<p>Material specification SEE PIECE PARTS</p>			
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BUOYANCY TOP CLAMP

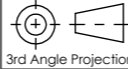



DETAIL Z
SCALE 1 : 2
IN 4 PLACES

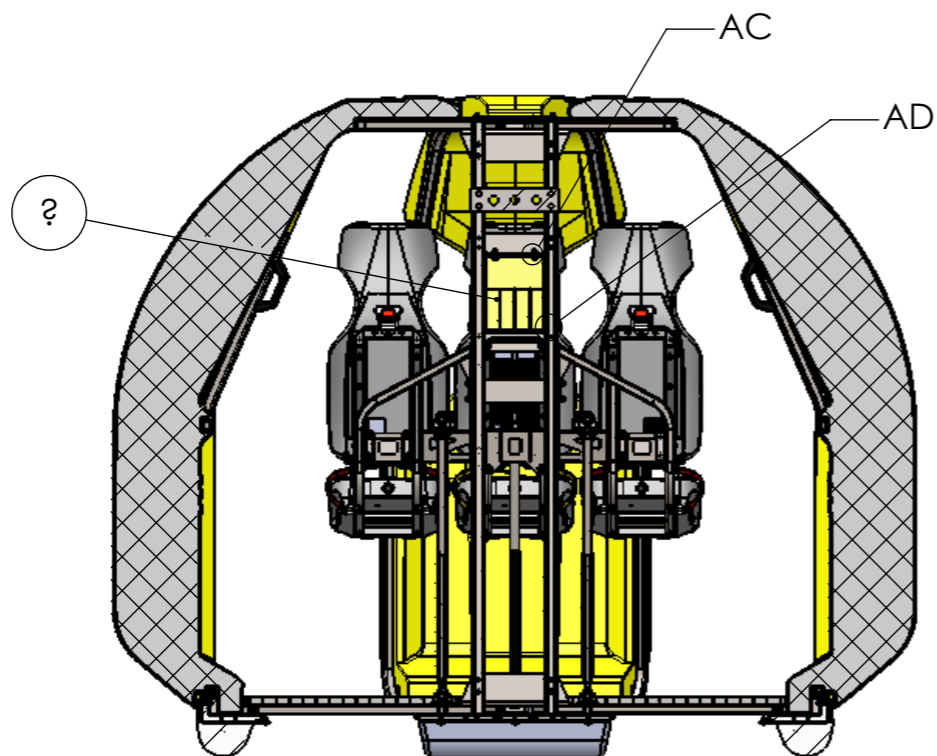


DETAIL AA
SCALE 1 : 2
IN 4 PLACES

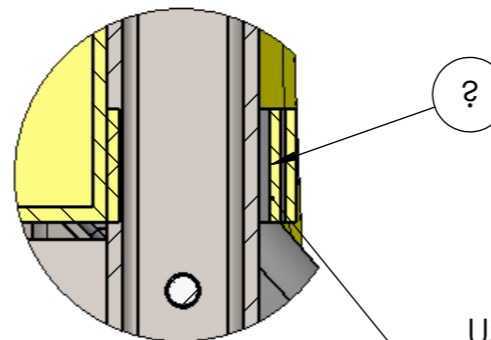
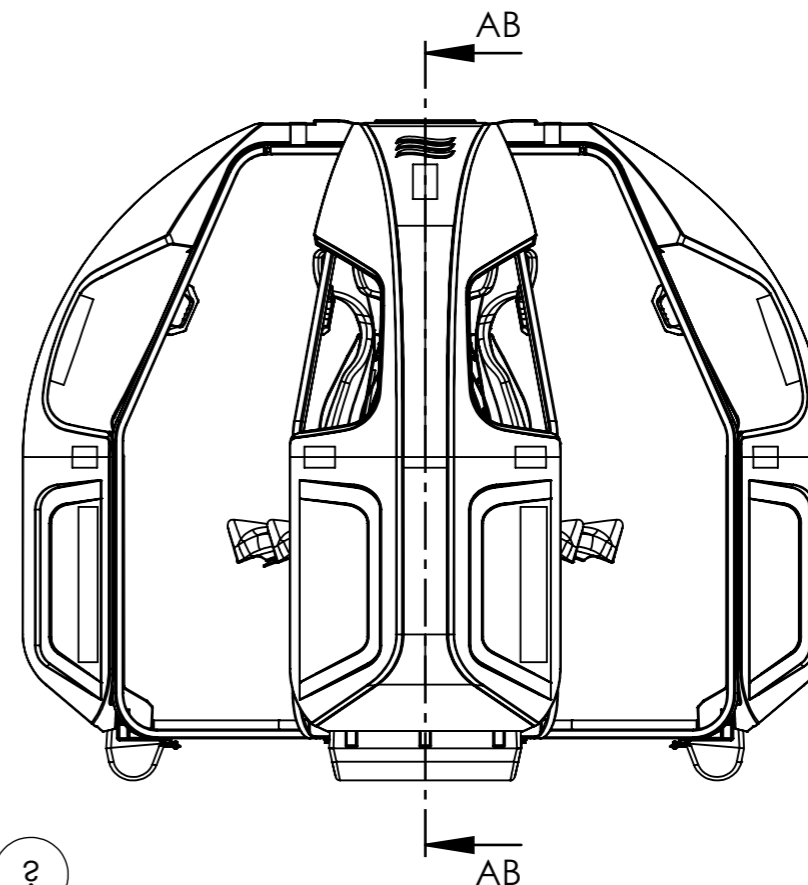
SECTION Y-Y

 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by M.G. on 24-Jul-2023	Approved by D.M. on 18-Dec-2023		
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass 520.00 kg	Title FROG-XT6E CAPSULE ASSEMBLY			
All diameters concentric 0.05 T.I.R.	Surface finish $3.2/\mu\text{m}$ all over U.O.S.	Finish N/A	Surface treatment N/A	Material specification SEE PIECE PARTS			
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STRETCHER STRAPS BAG KIT

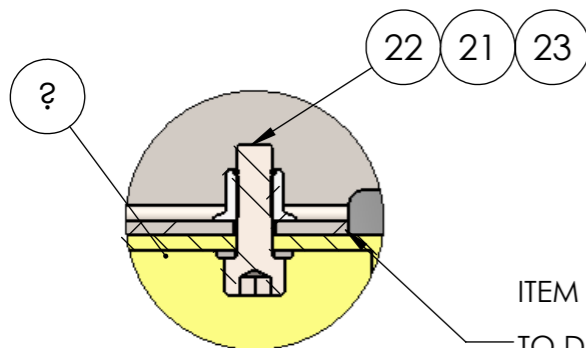


SECTION AB-AB



DETAIL AD
SCALE 1 : 2
IN 2 PLACES

USE BOTTOM VELCRO STRAPS
OF ITEM (?) TO SECURE TO
THE COLUMN.

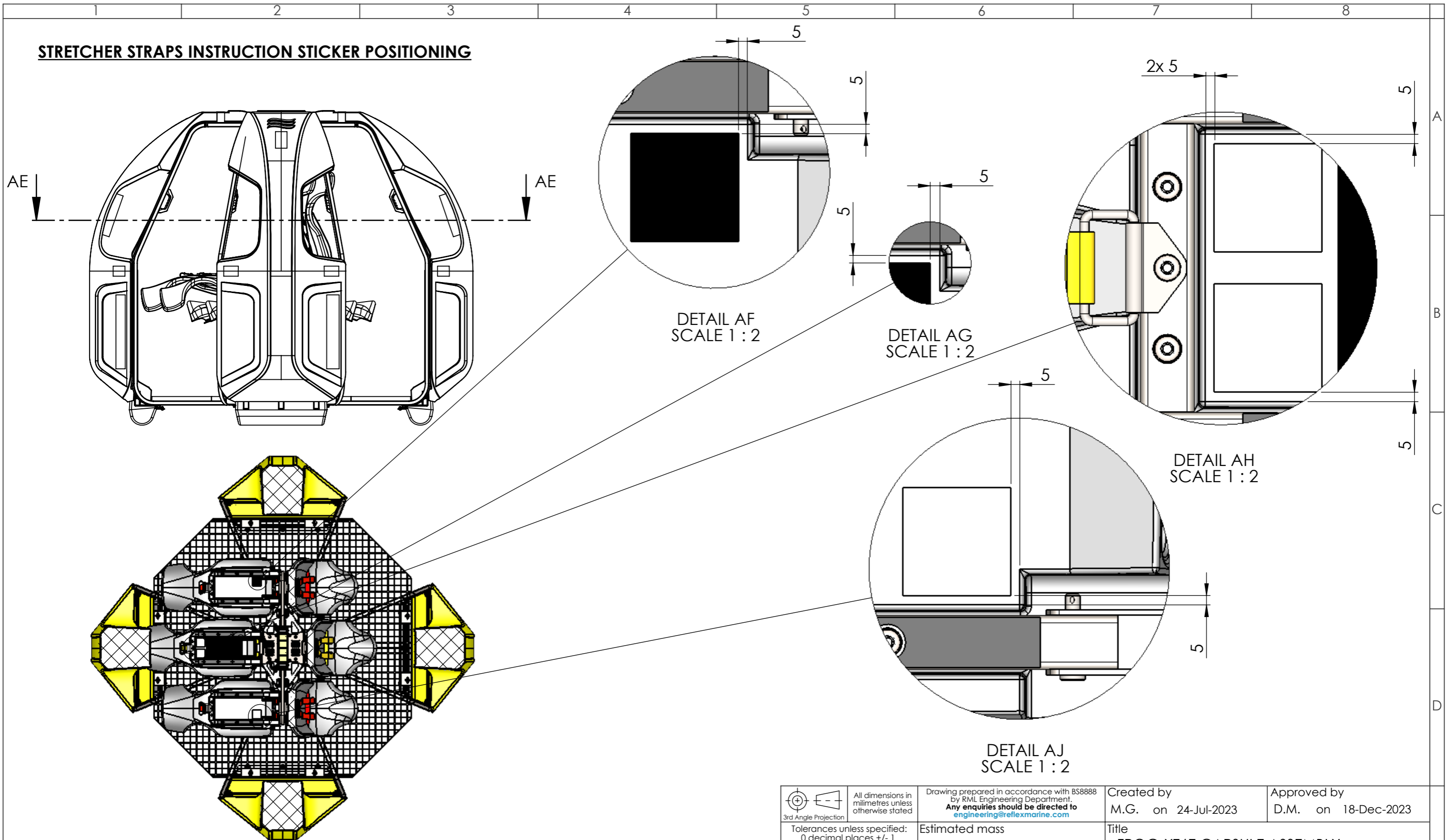


DETAIL AC
SCALE 1 : 2
IN 2 PLACES

ITEM (?) (STRAPS STORAGE BAG KIT) IS SECURED
TO DATA MARKING PLATES BRACKET USING
THREADED CONNECTION

 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by M.G. on 24-Jul-2023	Approved by D.M. on 18-Dec-2023
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass 520.00 kg	Title FROG-XT6E CAPSULE ASSEMBLY	
All diameters concentric 0.05 T.I.R.	Finish N/A	Material specification SEE PIECE PARTS			
Surface finish $\sqrt{3.2}$ μm all over U.O.S.	Surface treatment N/A	Drawing No. RA1457			
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STRETCHER STRAPS INSTRUCTION STICKER POSITIONING



SECTION AE-AE

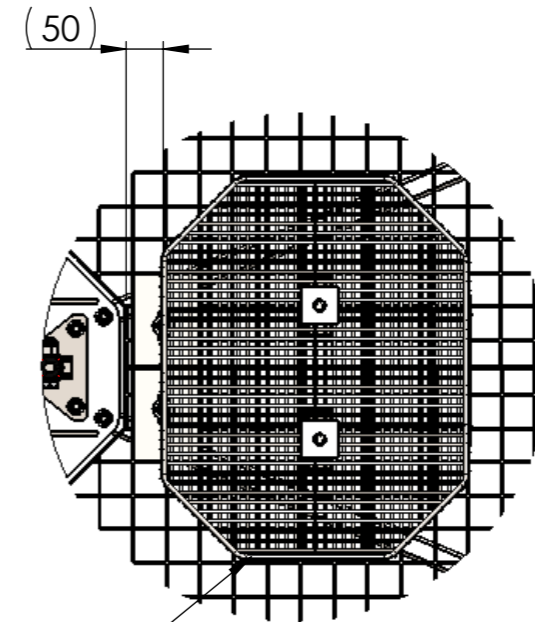
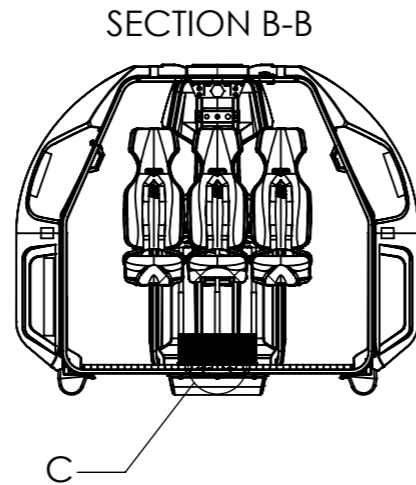
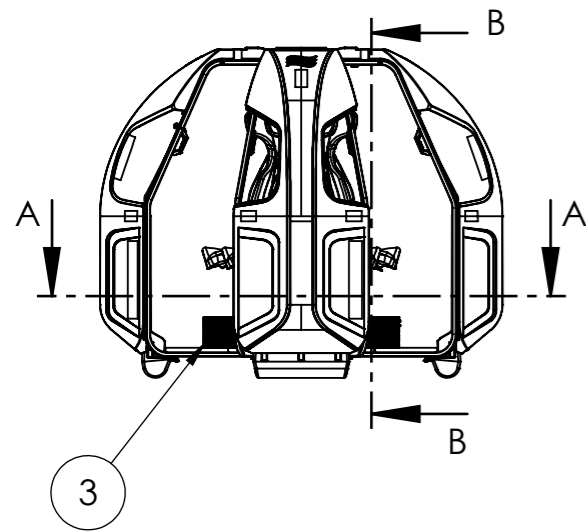
NOTE:

2. DIMENSIONS FOR POSITIONING OF STICKERS ARE NOT CRITICAL AND ONLY INTENDED FOR CONSISTENCY, NOT ACCURACY.
3. ENSURE SURFACES TO WHICH THE VINYL STICKERS ARE LOCATED ARE CLEAN AND DUST FREE BEFORE APPLYING LOCTITE 770 OR SIKA PRIMER 210 (OR EQUIVALENT).

<p>3rd Angle Projection</p>	<p>All dimensions in millimetres unless otherwise stated</p>	<p>Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com</p>		<p>Created by M.G. on 24-Jul-2023</p>	<p>Approved by D.M. on 18-Dec-2023</p>	
		<p>Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°</p>	<p>Estimated mass 520.00 kg</p>	<p>Title FROG-XT6E CAPSULE ASSEMBLY</p>		
<p>All diameters concentric 0.05 T.I.R.</p>		<p>Finish N/A</p>	<p>Material specification SEE PIECE PARTS</p>			
<p>Surface finish $\sqrt{3.2}$ μm all over U.O.S.</p>		<p>Surface treatment N/A</p>	<p>Drawing No. RA1457</p>			
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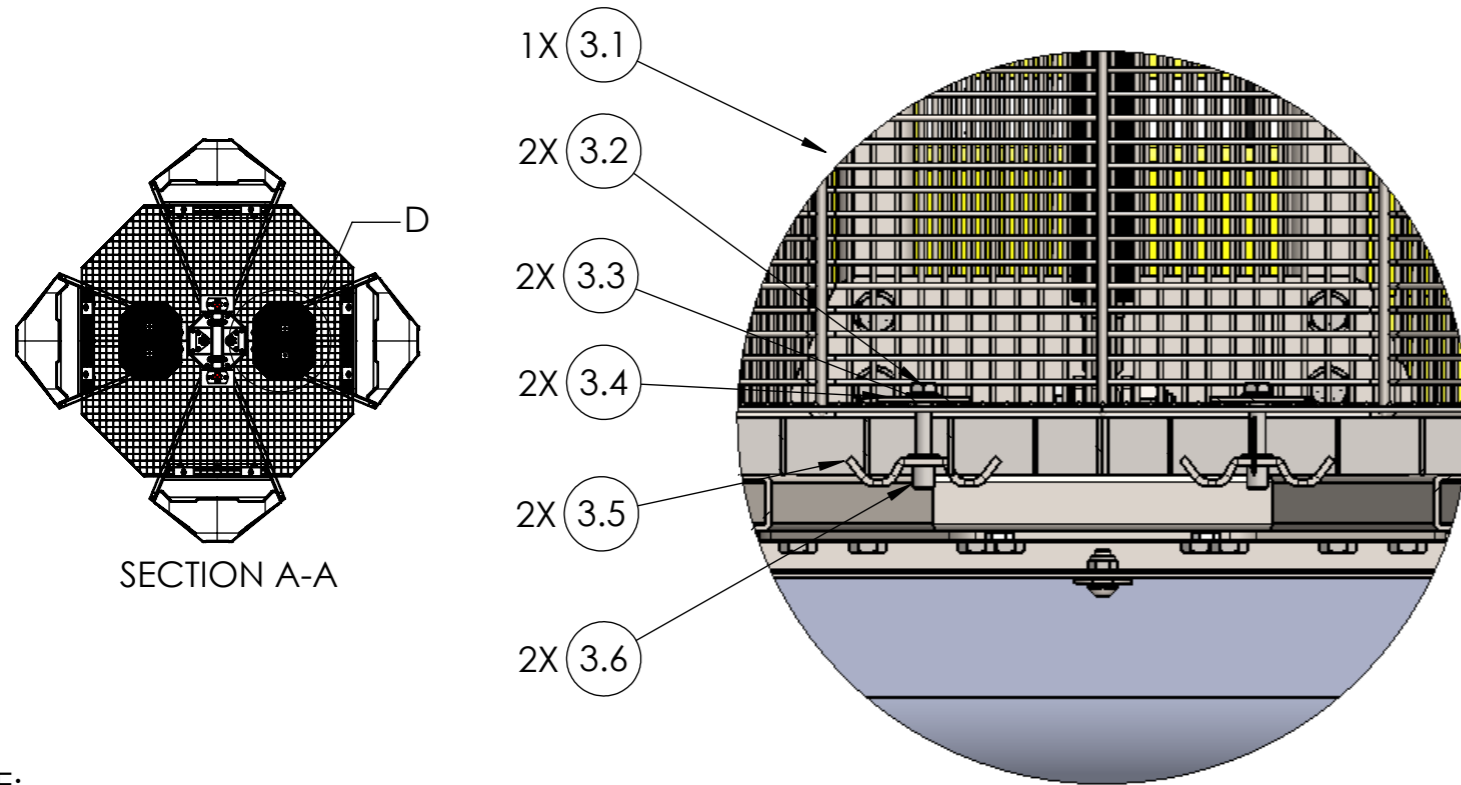
ITEM NO.	PART NUMBER	DESCRIPTION	RA1731 ACCESSORIES PACKAGE 1 QTY	RA1730 ACCESSORIES PACKAGE 2 QTY	RA1761 ACCESSORIES PACKAGE 3 QTY	RA1762 ACCESSORIES PACKAGE 4 QTY
1	RP0136	XT4/XT6 UNIT COVER	1	1	1	1
2	RA0170	STROBE LIGHT KIT	1	1	-	-
3	RA0316	LUGGAGE BASKET KIT	2	2	2	2
4	RA0640	ZONED STROBE LIGHT KIT	-	-	1	1
5	300-01-01	BASKET STRETCHER (-40°C TO +60°C)	-	1	-	1

REVISIONS				
ECN No.	REV.	DESCRIPTION	DATE	MODIFIED BY
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-



ITEM 3 ALIGNED WITH CENTRE BETWEEN COLUMNS

DETAIL D SCALE 1 : 10 IN 2 PLACES



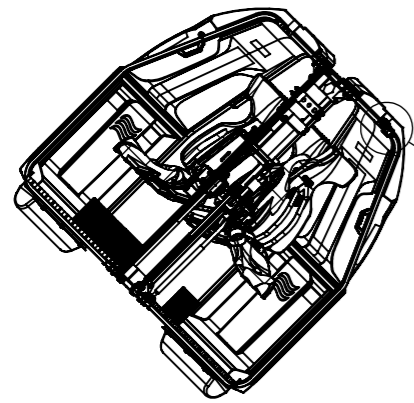
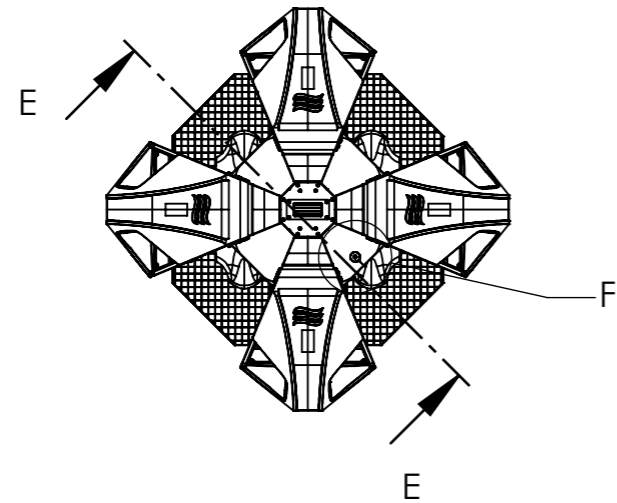
DETAIL C SCALE 1 : 4 IN 2 PLACES

RA0316 SUB-BOM			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	RA0316	LUGGAGE BASKET KIT	2
3.1	RA0322	LUGGAGE BASKET WITH SIGN	1
3.2	108-050-HS-4	M8x50 HEX HD SCREW	2
3.3	108-000-WA-4	M8 FLAT WASHER FORM A	2
3.4	RP0318	GRATING FASTENER, PLATE	2
3.5	RP0319	44mm TOP CLIP	2
3.6	108-017-NR-2	M8 RIVET NUT, GROOVED LARGE HEAD	2

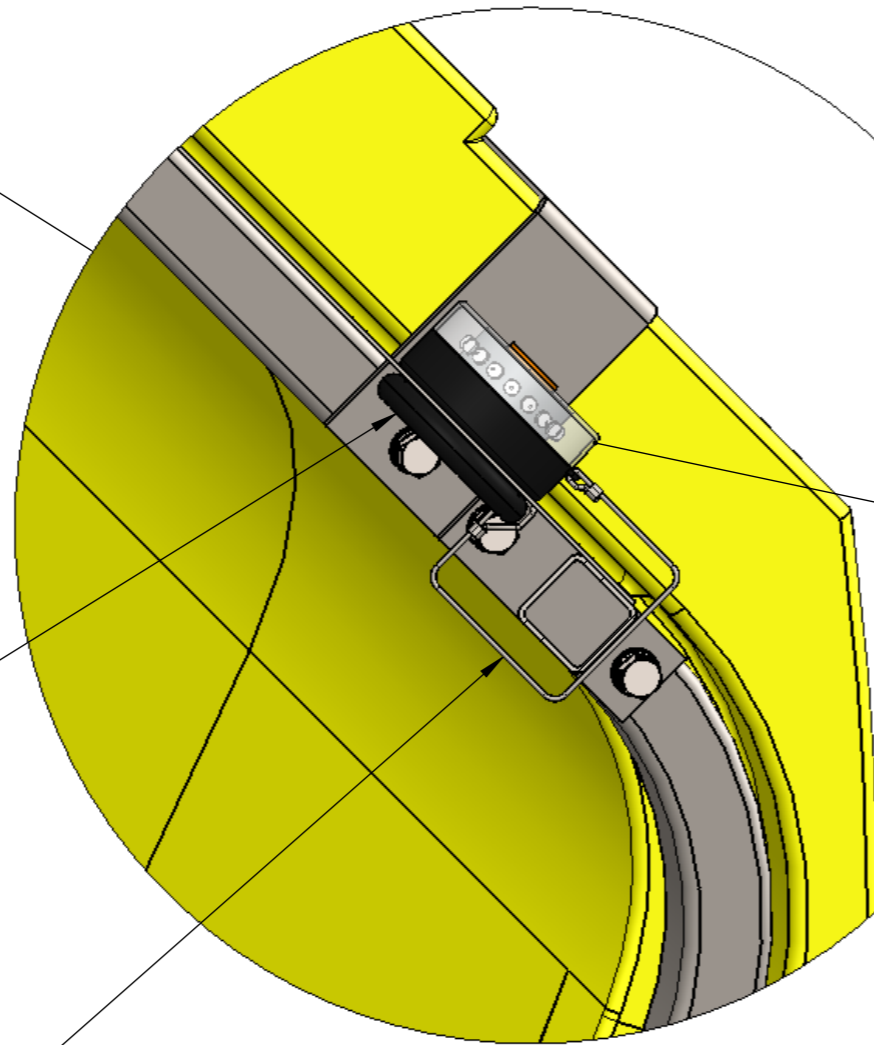
	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by C.H. on 19-Jan-2024	Approved by M.G. on 13-Jun-2024
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass SEE DETAILS	Title FROG-XTE ACCESSORIES LOCATION REFERENCE	
All diameters concentric 0.05 T.I.R.		Finish N/A	Material specification SEE PIECE PARTS		
Surface finish 3.2/μm all over U.O.S.		Surface treatment N/A	Drawing No. RA1485		
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Rev. A	Critical Component NO	Sheet 1 OF 4	Scale 1:50	Size A3	

NOTE:
1. DIMENSIONS PROVIDED IN THIS DRAWING ARE NOT CRITICAL AND INTENDED FOR REFERENCE ONLY.

STROBE LIGHT KIT INSTALLATION



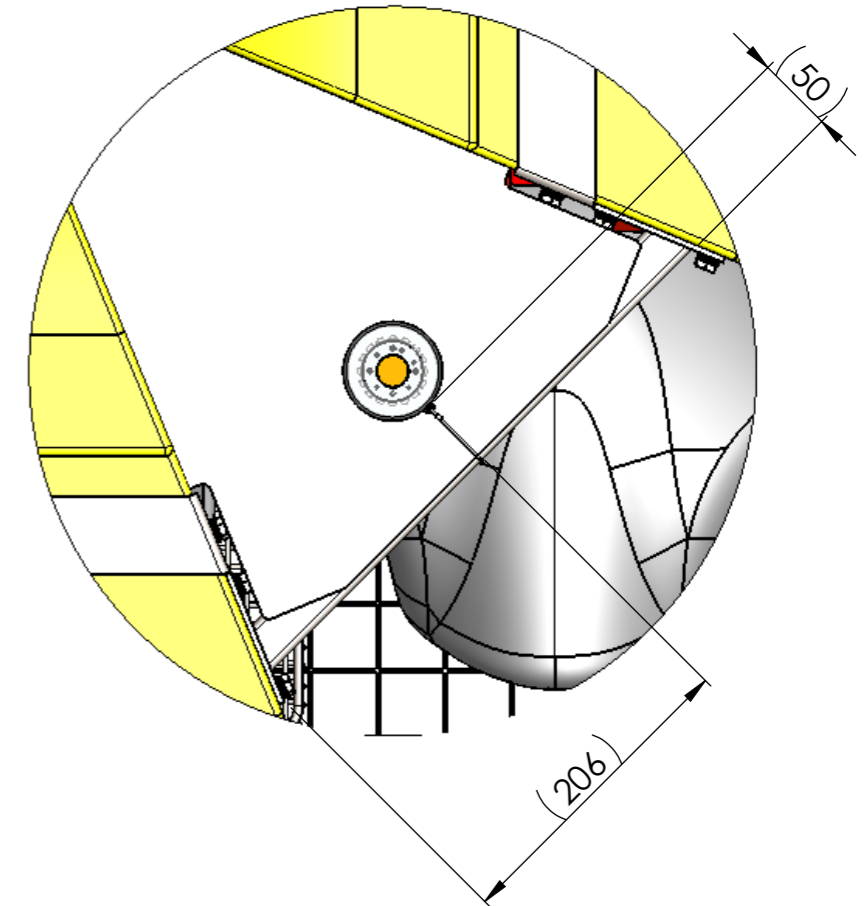
SECTION E-E



STROBE LIGHT BRACKET BONDED TO UNDERSIDE OF OVERHEAD PROTECTION PLATE AT POSITION INDICATED WITH SIKAFLEX 292/252 (OR EQUIVALENT) AS PER ADHESIVE MANUFACTURER'S APPLICATION SPECIFICATION

STROBE LIGHT TETHER IN PLACE. WIRE IS SECURED WITH ALUMINIUM FERRULES.

DETAIL G
SCALE 1 : 2.5



DETAIL F
SCALE 1 : 5

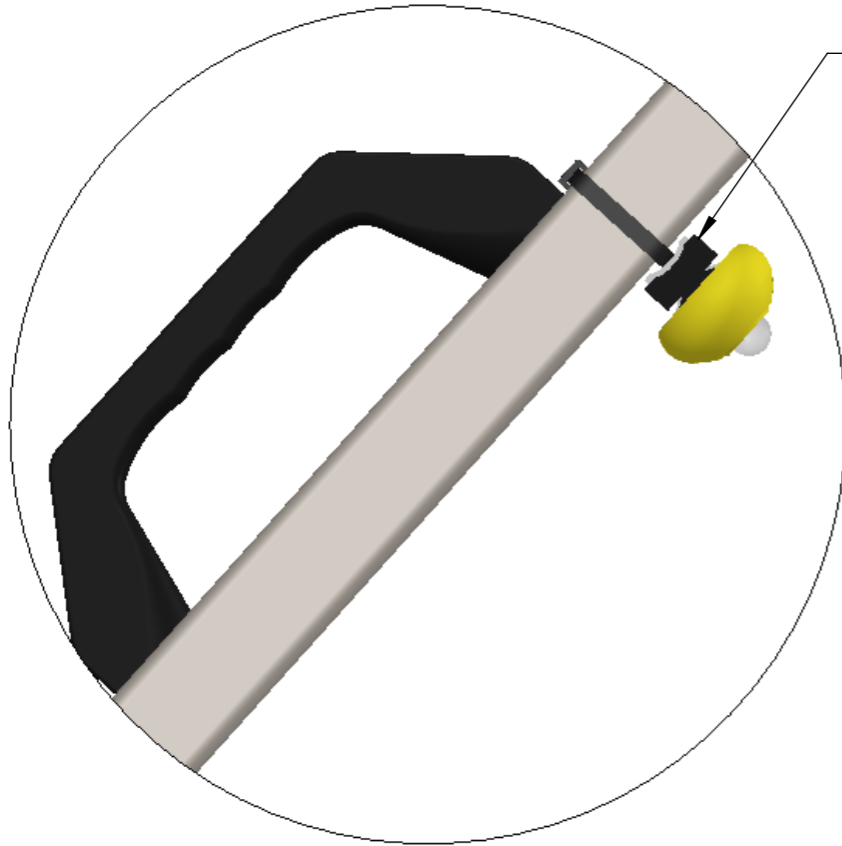
STROBE LIGHT SHOWN IN DEPLOYED POSITION ON TOP OF OVERHEAD PROTECTION PLATE, ATTACHED VIA MAGNETIC FIELD PRODUCED BY STROBE AND BRACKET.

WHEN NOT IN USE, THE STROBE SHOULD BE STORED ON ITS MAGNETIC BRACKET INSIDE THE CAPSULE

<p>3rd Angle Projection</p>	<p>All dimensions in millimetres unless otherwise stated</p>	<p>Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com</p>		<p>Created by C.H. on 19-Jan-2024</p>	<p>Approved by M.G. on 13-Jun-2024</p>
		<p>Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°</p>	<p>Estimated mass SEE DETAILS</p>	<p>Title FROG-XTE ACCESSORIES LOCATION REFERENCE</p>	
<p>All diameters concentric 0.05 T.I.R.</p>	<p>Surface finish 3.2/μm all over U.O.S.</p>	<p>Finish N/A</p>	<p>Surface treatment N/A</p>	<p>Material specification SEE PIECE PARTS</p>	
<p> reflexmarine www.reflexmarine.com</p>		<p>Drawing No. RA1485</p>		<p>Rev. A Critical Component NO Sheet 2 OF 4 Scale 1:50 Size A3</p>	
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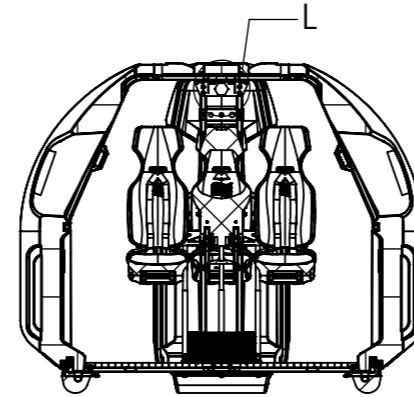
ZONED STROBE LIGHT KIT INSTALLATION

PLACE Ex/ATEX STICKER CENTERED ON THE TOP NODE PLATE. APPROXIMATELY 5 mm FROM THE BOTTOM EDGE (REFERENCE ONLY)

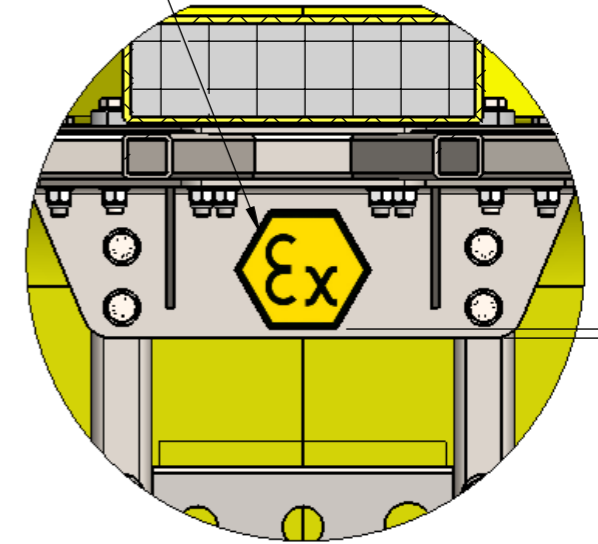


DETAIL K
SCALE 1 : 2
IN 4 PLACES

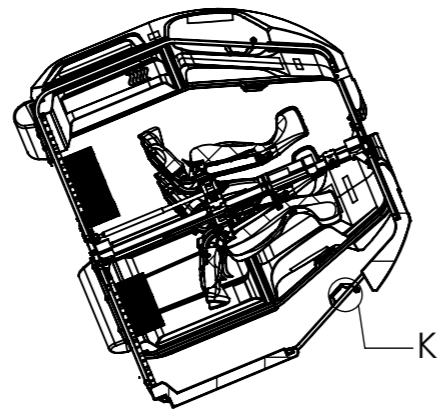
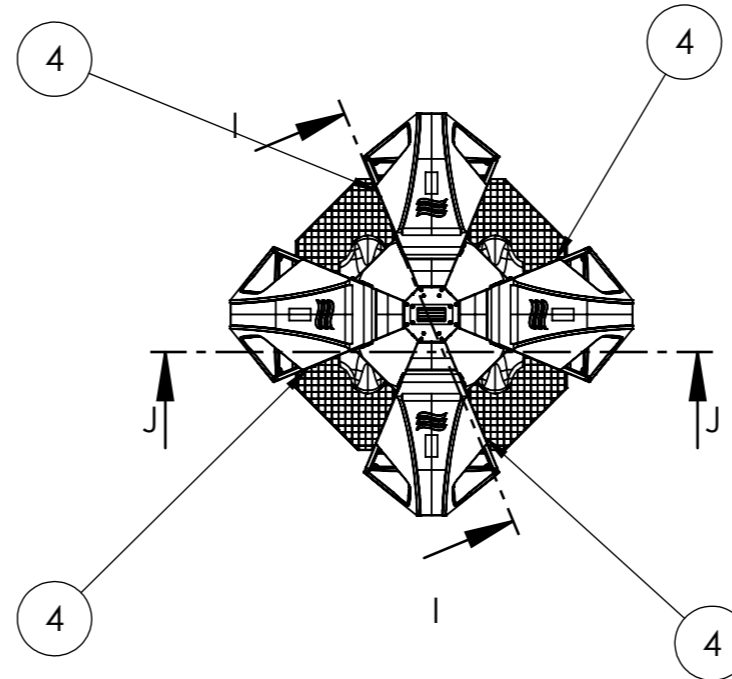
SECURE STROBE LIGHT MOUNTING BRACKET TO CAPSULE RIB USING CABLE TIES



SECTION J-J



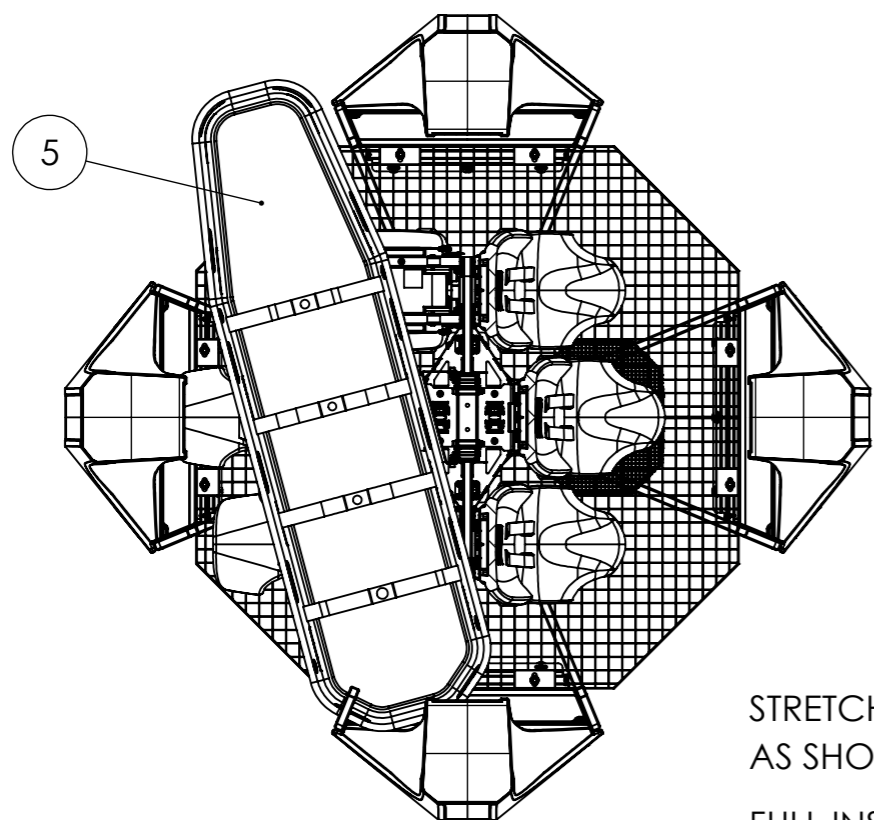
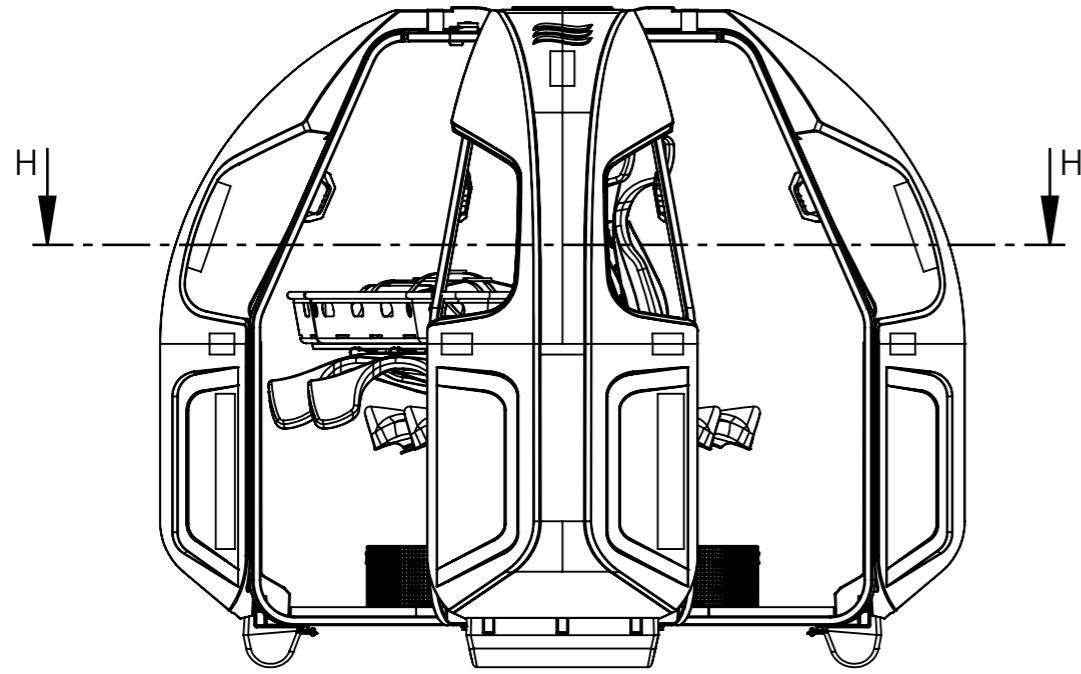
DETAIL L
SCALE 1 : 5
IN 2 PLACES



SECTION I-I

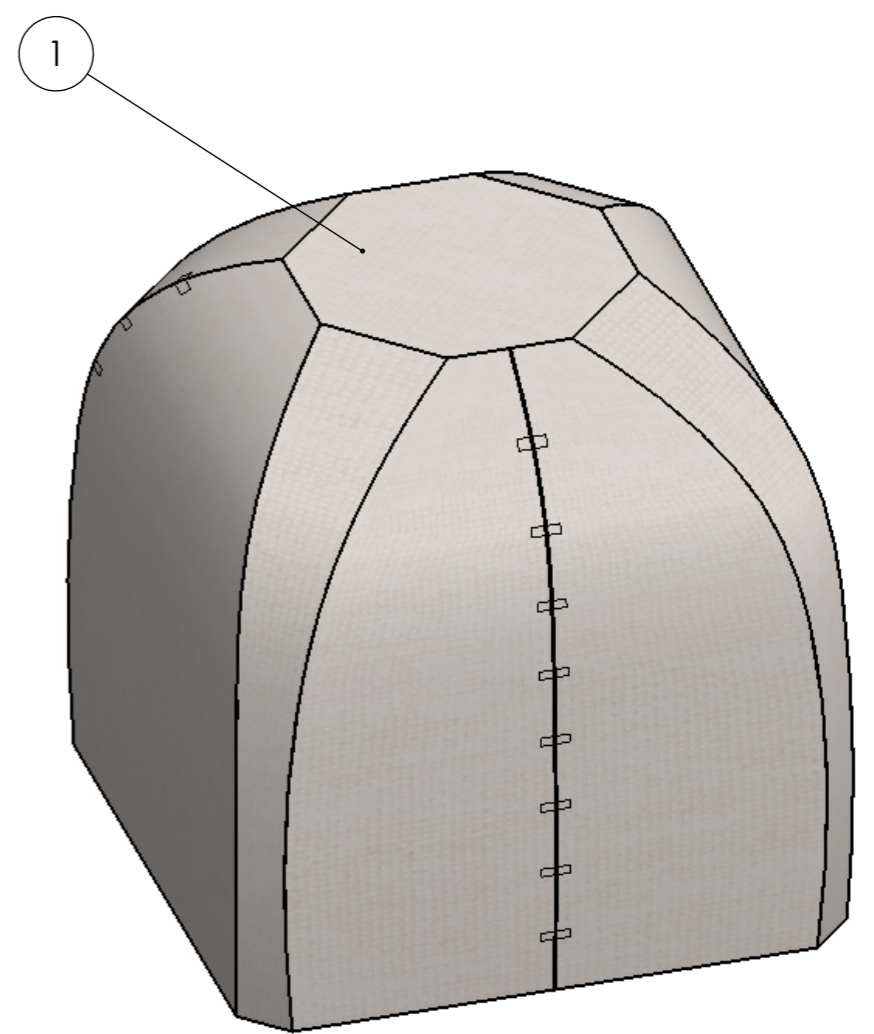
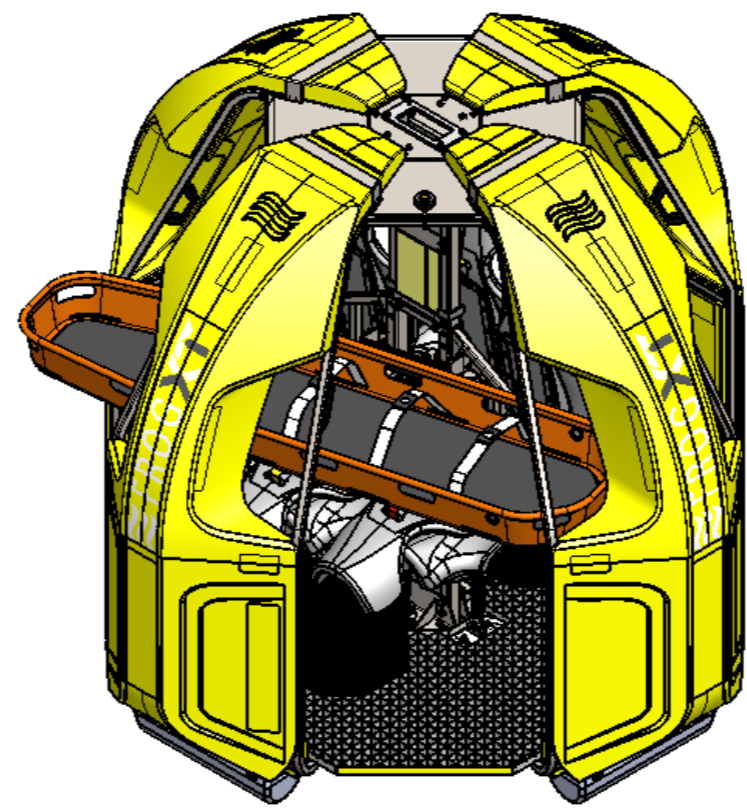
NOTE:
2. STROBE LIGHT LOCATED ON THE RIGHT HAND SIDE RIB OF EACH BUOYANCY AS SEEN FROM THE OUTSIDE

 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by C.H. on 19-Jan-2024	Approved by M.G. on 13-Jun-2024	
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass SEE DETAILS	Title FROG-XTE ACCESSORIES LOCATION REFERENCE		
All diameters concentric 0.05 T.I.R.		Finish N/A	Material specification SEE PIECE PARTS			
Surface finish $\sqrt{3.2}$ μm all over U.O.S.		Surface treatment N/A	Drawing No. RA1485			
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SECTION H-H

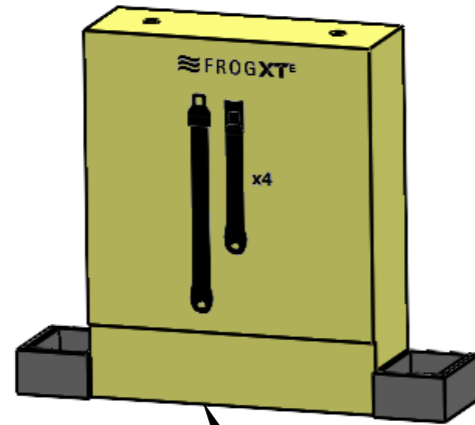
STRETCHER (5) LAYOUT POSITIONING AS SHOWN.
 FULL INSTALLATION AND SECURING INSTRUCTIONS CAN BE FOUND IN THE USER MANUAL.



 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by C.H. on 19-Jan-2024	Approved by M.G. on 13-Jun-2024	
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass SEE DETAILS	Title FROG-XTE ACCESSORIES LOCATION REFERENCE		
All diameters concentric 0.05 T.I.R.	Surface finish $3.2/\mu\text{m}$ all over U.O.S.	Finish N/A	Surface treatment N/A	Material specification SEE PIECE PARTS		
 www.reflexmarine.com		Drawing No. RA1485		Rev. A	Critical Component NO	
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	RP1729	XTE, RESTRAIN STRAPS STORAGE BAG	1
2	RP1691	RESTRAIN STRAPS SET, 2 PIECES (MALE/FEMALE BUCKLE), 5 FT, BLACK COLOUR	4

REVISIONS				
ECN No.	REV.	DESCRIPTION	DATE	MODIFIED BY
ECN-00910	B	Update Restraining Straps and Storage Bag Models	16-Jul-2024	M.G.
-	-	-	-	-
-	-	-	-	-



1 B

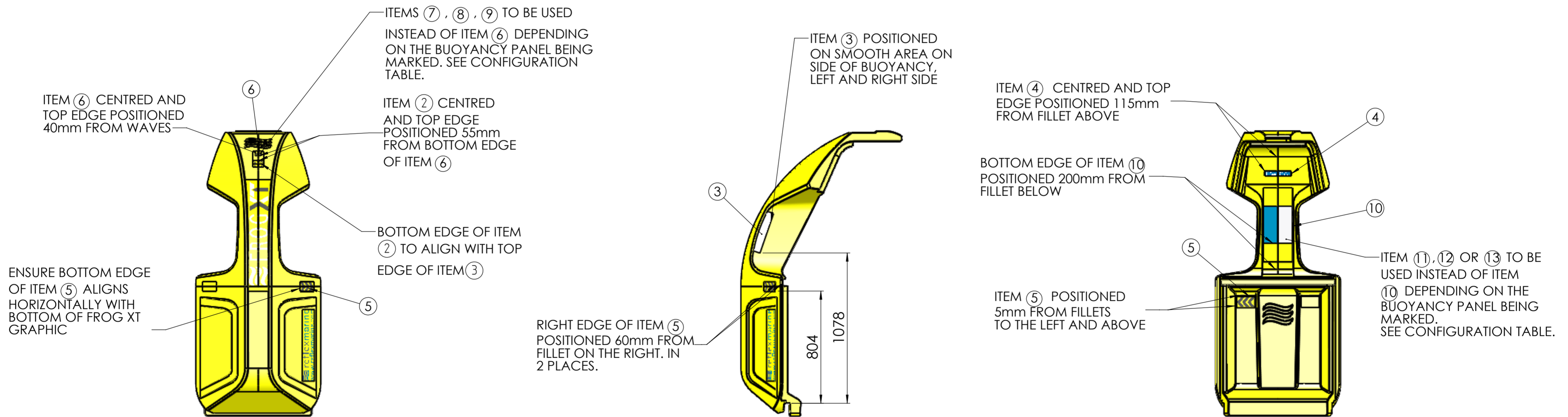


4X 2 B

 3rd Angle Projection	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com		Created by M.G. on 27-May-2024	Approved by M.G. on 30-May-2024	
		Tolerances unless specified: 0 decimal places +/- 1 1 decimal place +/- 0.25 2 decimal places +/- 0.1 Angular +/- 1/4°	Estimated mass 2.23 kg	Title XTE, RESTRAIN STRAPS STORAGE BAG KIT		
All diameters concentric 0.05 T.I.R.		Finish NONE	Material specification SEE PIECE PARTS			
Surface finish $\sqrt{3.2}$ μm all over U.O.S.		Surface treatment N/A	Drawing No. RA1754			
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ITEM NO.	PART NUMBER	REVISION	DESCRIPTION	BUOYANCY "A" RA1480	BUOYANCY "B" RA1481	BUOYANCY "C" RA1482	BUOYANCY "D" RA1483
1	RP1491	A	XT6E, BUOYANCY GRAPHIC, UNIT TYPE	1	1	1	1
2	RP0101	B	BUOYANCY GRAPHIC, UNIT NUMBER	1	1	1	1
3	RP0079	A	BUOYANCY GRAPHIC, REFLECTIVE STRIP	2	2	2	2
4	RP0080	C	BUOYANCY GRAPHIC, SEAT BELT WARNING	1	1	1	1
5	RP0076	C	BUOYANCY GRAPHIC, CHEVRON	2	2	2	2
6	RP0077	C	BUOYANCY GRAPHIC, BUOYANCY LETTER A	1	-	-	-
7	RP0098	C	BUOYANCY GRAPHIC, BUOYANCY LETTER B	-	1	-	1
8	RP0099	C	BUOYANCY GRAPHIC, BUOYANCY LETTER C	-	-	1	1
9	RP0100	C	BUOYANCY GRAPHIC, BUOYANCY LETTER D	-	-	-	1
10	RP1488	A	XT6E, STRETCHER INSTRUCTIONS	1	-	-	-
11	RP0525	A	CREW INSTRUCTIONS	-	1	-	-
12	RP0524	B	PASSENGER INSTRUCTIONS	-	-	1	-
13	RP1540	A	XTE, PRE-OPERATIONAL VISUAL CHECK INSTRUCTIONS	-	-	-	1

REVISIONS				
ECN NO.	REV.	DESCRIPTION	DATE	MODIFIED BY
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-



NOTE:

1. BUOYANCY PANEL (RP0036) SHOWN FOR REFERENCE ONLY.
2. VINYL GRAPHICS TO BE APPLIED TO SMOOTH FINISH AREAS AS SPECIFIED ON DRAWING RP0001 SHT 4.
3. ENSURE SURFACES TO WHICH THE VINYL STICKERS ARE LOCATED ARE CLEAN AND DUST FREE BEFORE APPLYING LOCTITE 770 (OR EQUIVALENT) AS PER MANUFACTURERS INSTRUCTIONS.

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	All dimensions in millimetres unless otherwise stated	Drawing prepared in accordance with BS8888 by RML Engineering Department. Any enquiries should be directed to engineering@reflexmarine.com	Created by M.G. on 12-Jul-2023	Approved by D.M. on 30-Sep-2023
	Tolerances unless specified: 0 decimal places +/- 1 decimal place +/- 2 decimal places +/- Angular +/- °	Estimated mass 0.30 kg	Title FROG-XT6E, BUOYANCY STICKERS POSITIONING REFERENCE, ENGLISH	
All diameters concentric 0.05 T.I.R.	Finish N/A	Material specification SEE DETAILS		
Surface finish $\sqrt{3.2}$ μm all over U.O.S.	Surface treatment SEE NOTE 2	Drawing No. RA1479		
		Rev. A	Critical Component No	Sheet 1 OF 1
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