

# Technical Bulletin

<b>Subject:</b>	<b>FROG-XT4 Spring Washers</b>
<b>Units:</b>	<b>FROG-XT4 units XT4-001 to 037</b>
<b>Issue Date (DD/MM/YYYY):</b>	<b>17/02/2016</b>
<b>Document Reference:</b>	<b>TB0164</b>
<b>Approved by:</b>	<b>James Cryan – Client Support Team</b>
<b>Approved by:</b>	<b>Paul Onions, Engineering Manager</b>

## 1. Scope

To provide detailed instructions for the fitting of spring washers to the seat back fixings and frame fixings.

## 2. Background

Some FROG-XT4 capsules (with serial numbers 001-037) were manufactured without the use of spring washers on some of the fasteners. The use of spring washers is recommended as this helps to prevent fittings from becoming loose between periodic inspections. The loosening of fittings is sometimes associated with vibration occurring during long distance shipments.

Although we recommend all units are visually checked prior to use, since this presents a potential dropped object risk we are recommending that the owners of the affected capsules check these immediately for loose fittings in the affected areas (see below). We are also shipping replacement components to all clients free of charge and these should be fitted as soon as possible after receipt. Meanwhile we apologise for any inconvenience caused and assure you of our complete commitment to providing the safest transfer products on the market.

## 3. Required Components

8 x 108-000-WS-4 for the seat pivot link

4 x 108-000-WS-4 for the seat harness top mounting point

4 x 108-030-SB-4 for the seat harness top mounting point

16 x 110-000-WS-4 for the folding seat support assembly

16 x 110-030-SC-4 for the folding seat support assembly

16 x 108-000-WS-4 for the overhead protection plate bolts

8 x 108-000-WS-4 for the buoyancy clamping plate bolts

16 x 108-000-WS-4 for the lower spaceframe cross brace

16 x 108-000-WS-4 for the grab handles

#### **4. Required Tools and References**

13 mm Spanner, 6mm Hex (Allen) Key, 8mm Hex (Allen) Key, Copper Grease spray (or equivalent anti-seize compound)

Safety glasses, gloves and other suitable PPE

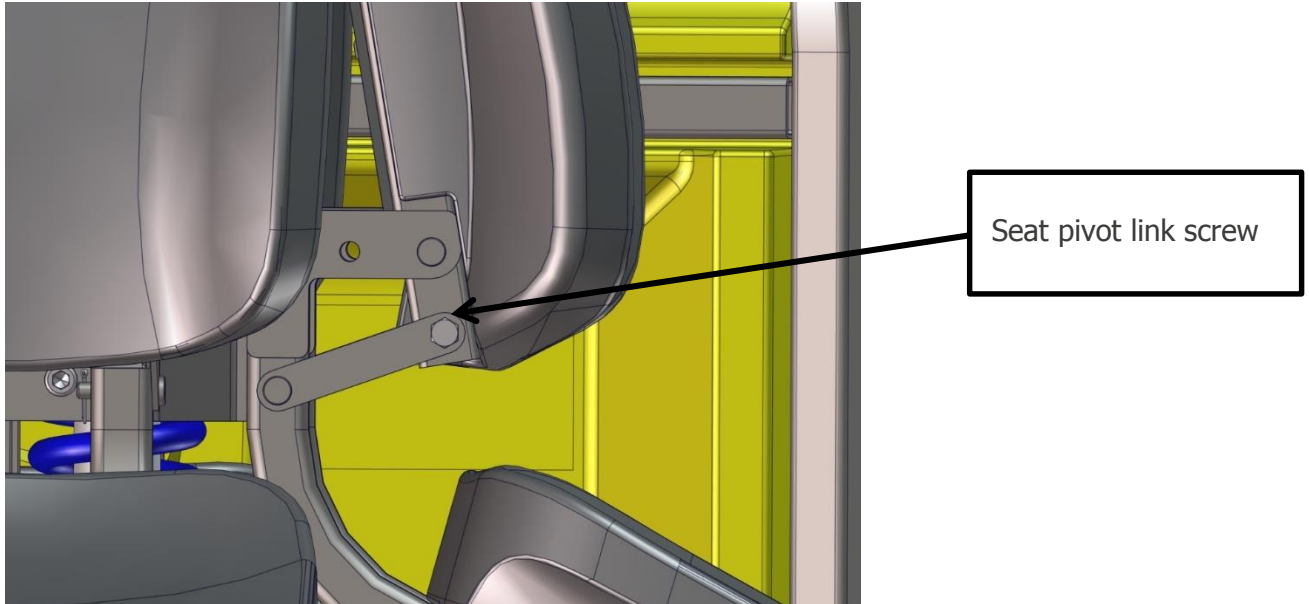
#### **5. When Does It Need To Be Done**

The new replacement spring washers should be fitted as soon as possible.

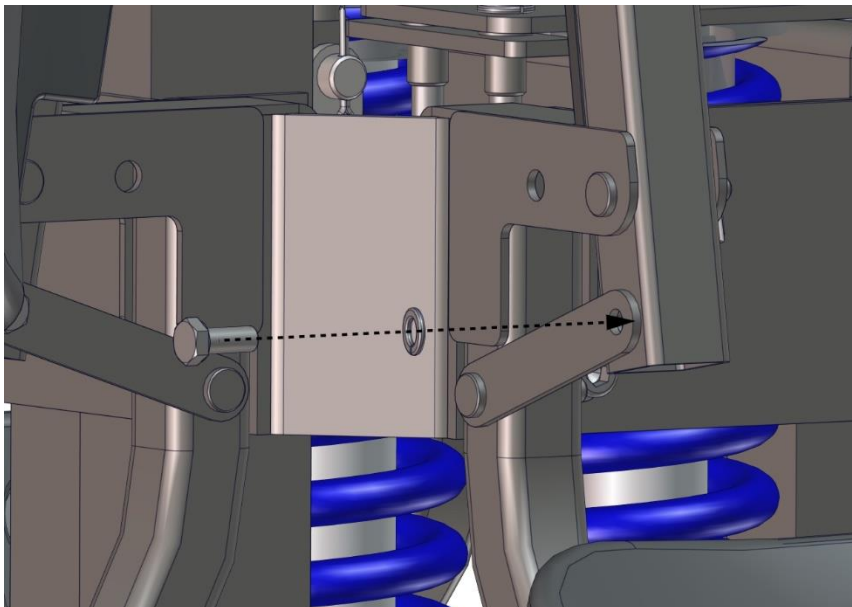
## 6. Fitting Instructions

### Seat pivot link bolt

The seat pivot link bolt is identified below. There is one bolt on each side of every seat.

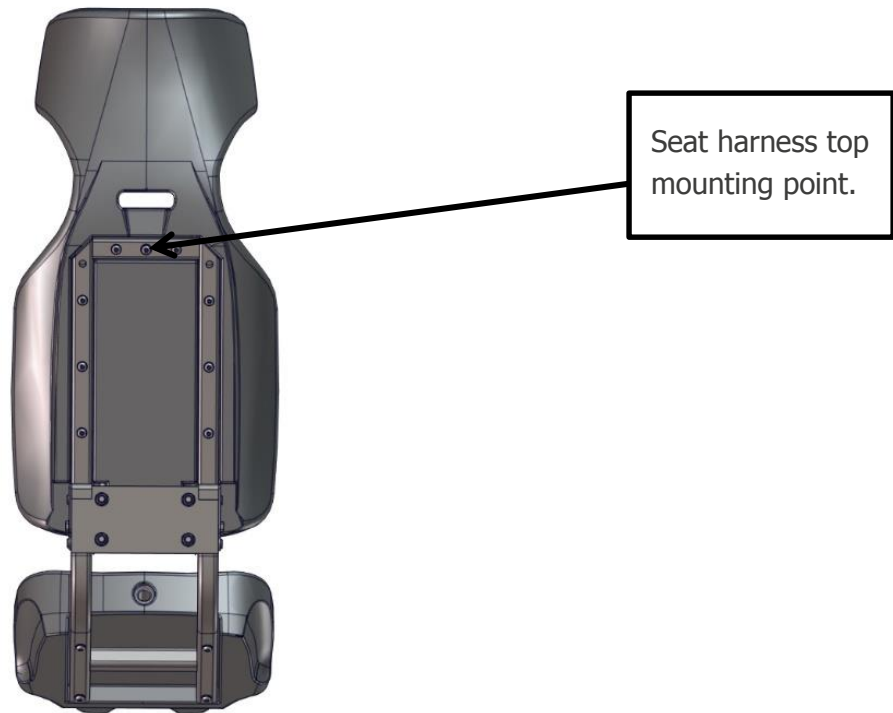


In order to fit the spring washer, remove the bolt as shown and refit the bolt with the spring washer in place. Take care not to cross thread the bolt.



## Seat harness top mounting

The seat harness top mounting point is located at the top of the back of the seat and identified below.

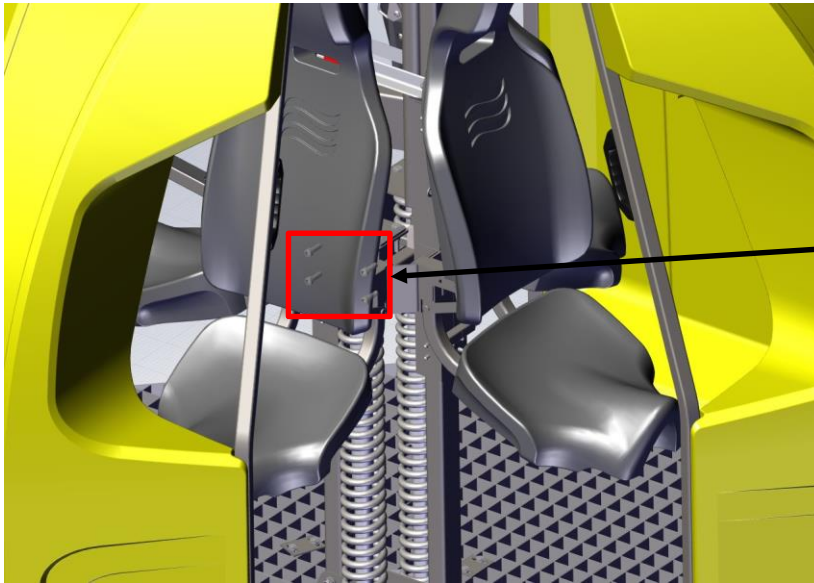


Remove the fitting as shown and refit using the spring washer and the new socket button head screw. Take care not to cross thread the screw.



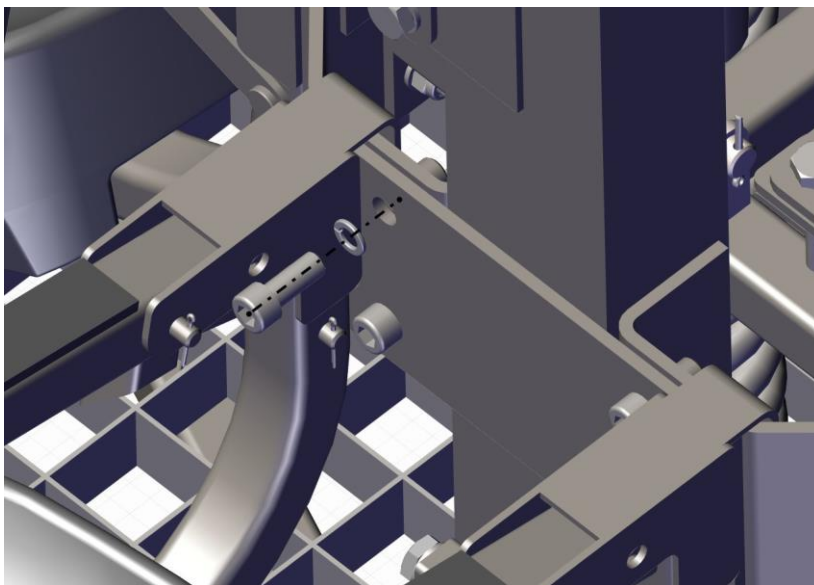
## Folding seat support assembly

The folding seat support assembly is secured in place with 4 screws. There are 4 folding seat support assemblies on each unit. To allow access to the screws the seat should be folded down, this can be done by removing the screw shown in the seat pivot link section above and allowing the seat to fall forward.



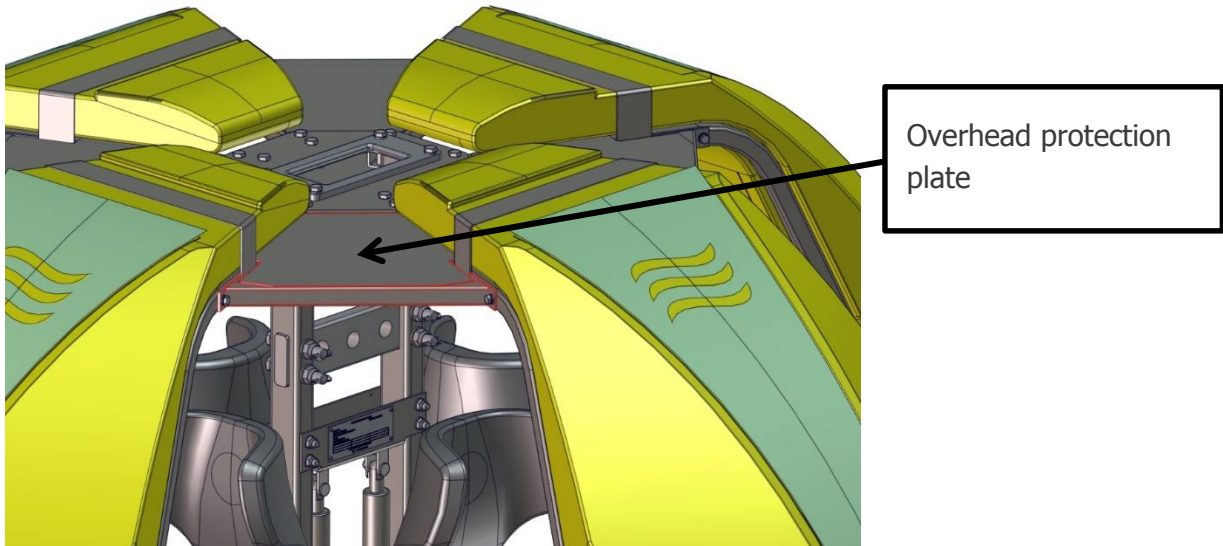
Folding seat  
assembly screws  
located behind  
seat backs

Remove the screws one at a time and replace with the longer M10 socket head screw and spring washer. Take care not to cross thread the screw.

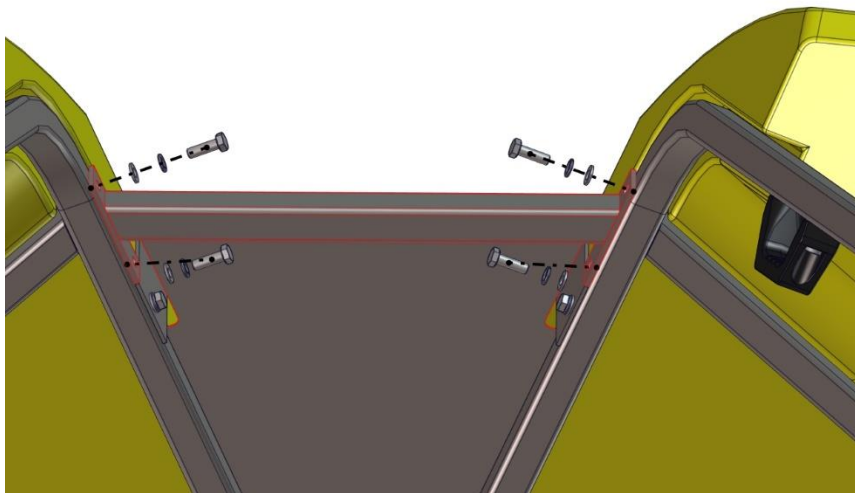


## Overhead protection plate bolts

The overhead protection plate is secured in place with 4 bolts, 2 on each side. There are 4 overhead protection plates on each unit.

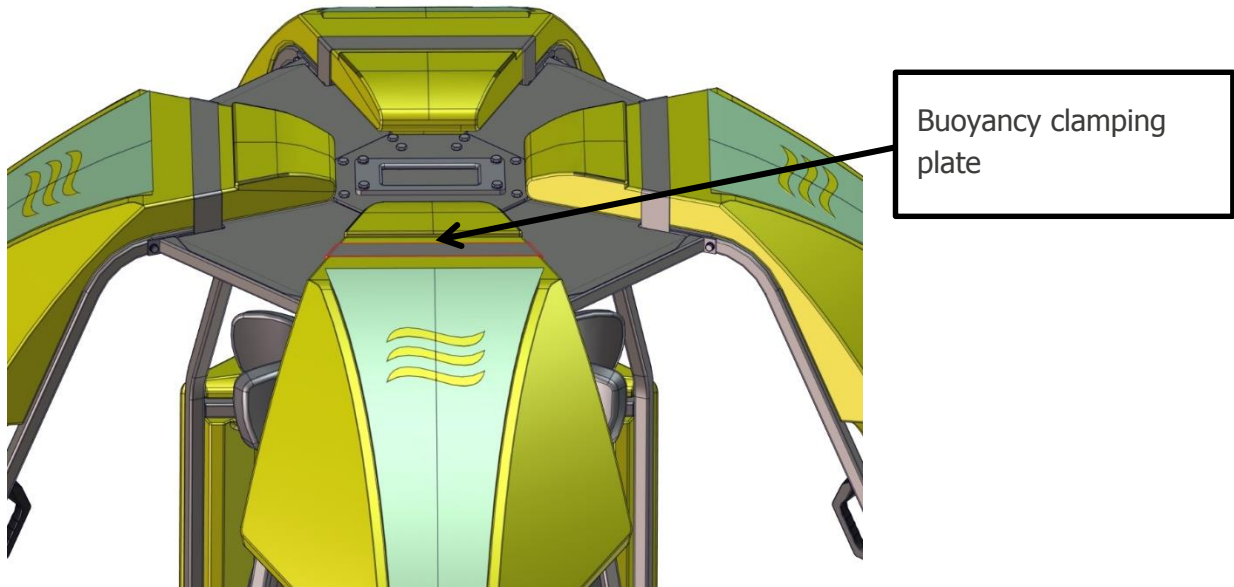


Remove the bolt and plain washer one at a time and then refit including the spring washer. Take care not to cross thread the bolt.

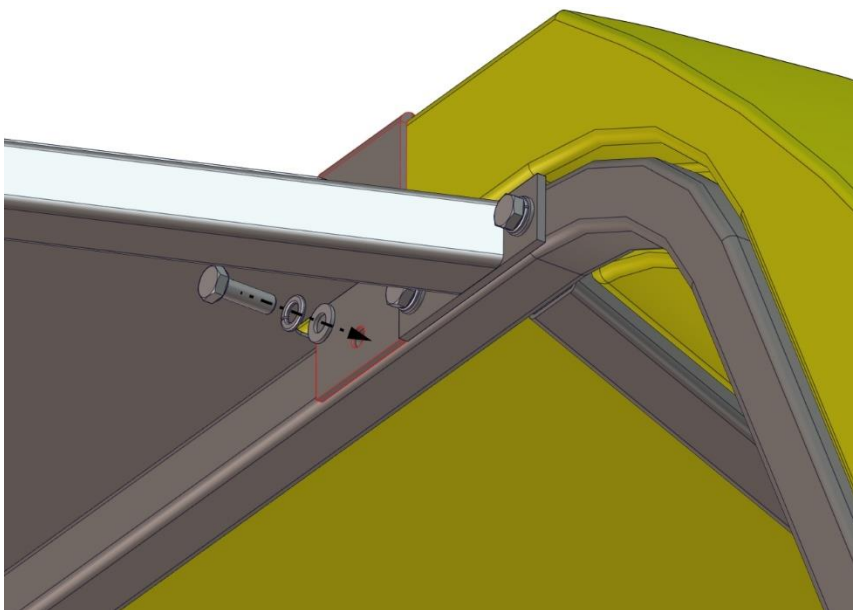


## Buoyancy Clamping Plate bolts

The buoyancy clamping plate secures each buoyancy panel in place. There are 4 clamping plates on each unit.

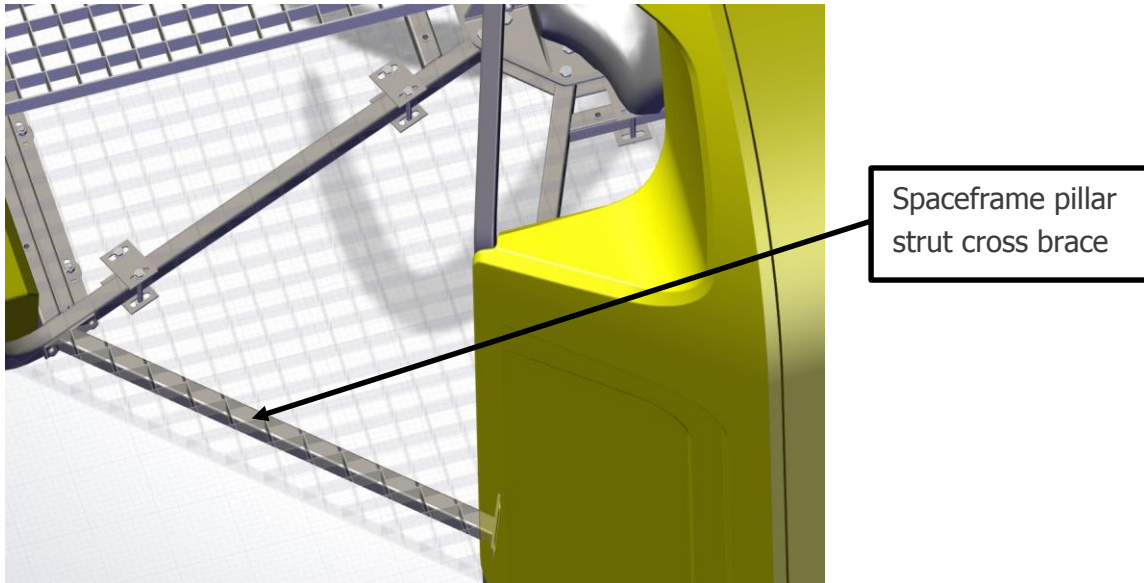


Each clamping plate is secured in place with two screws and two plain washers. Remove each one, one at a time, then refit including the spring washer. Take care not to cross thread the screw.

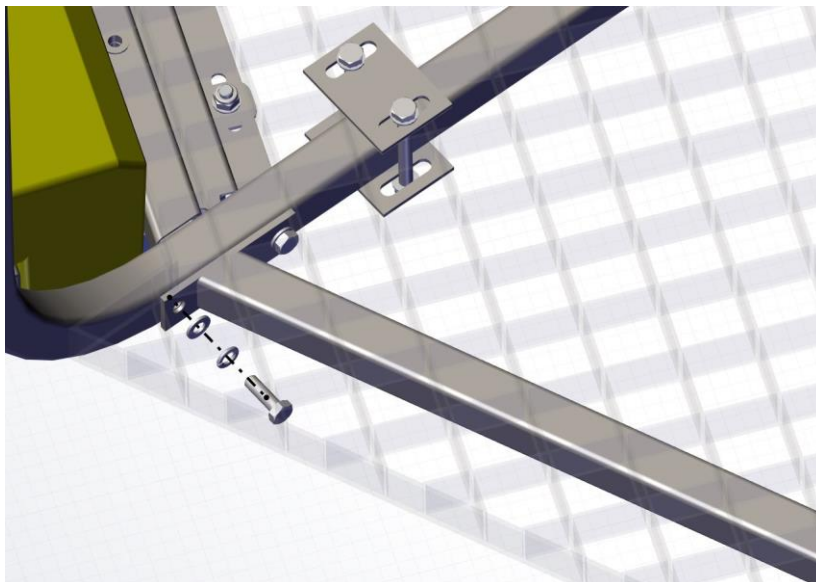


## Spaceframe pillar strut cross brace

The spaceframe pillar strut cross brace is secured in place with 4 screws, 2 on each end. There are 4 spaceframe pillar strut cross braces on each unit.



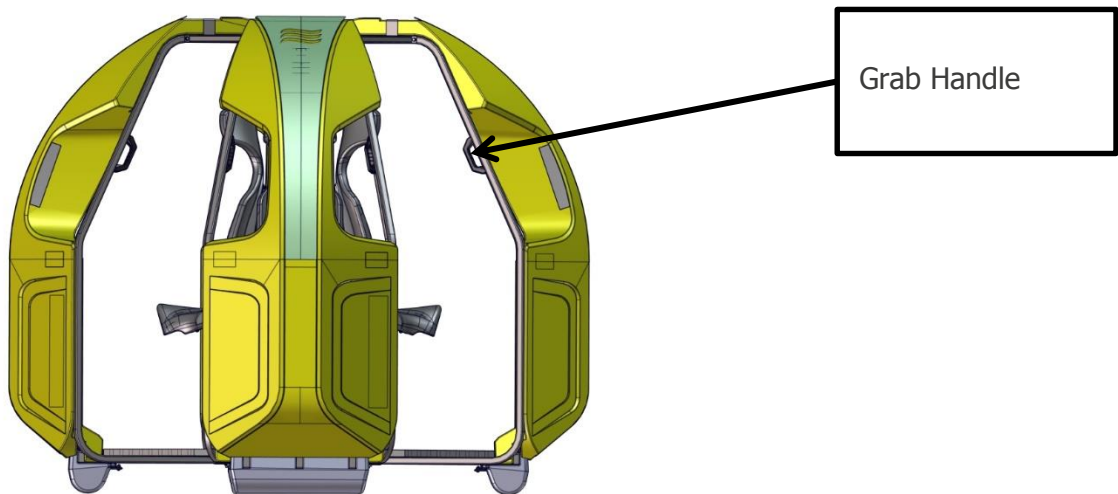
Remove the screw and plain washer one at a time and then refit including the spring washer. Take care not to cross thread the screw.



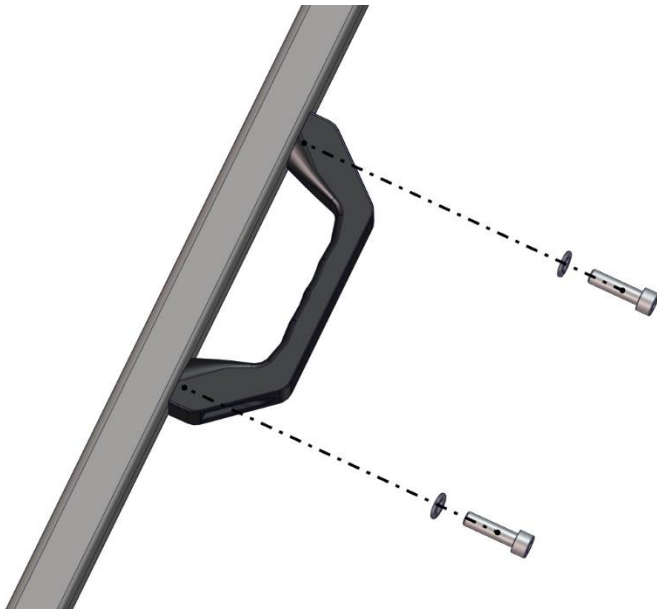


## Grab handles

There are 8 grab handles on each unit and they are attached to the pillar struts. Each grab handle is secured in place with 2 fixings.



Remove the two screws securing the grab handles and refit securely including a spring washer. Take care not to cross thread the screws.





**For any further information or support please contact Reflex Marine**

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