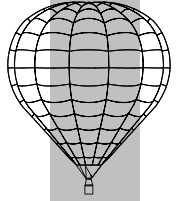


MAINTENANCE MANUAL SUPPLEMENT NUMBER 5 – DISABLED PAX BASKET**Section 1****1.0 Introduction****1.1 General**

This supplement defines the maintenance and inspection requirements for the Ultramagic Disabled Passenger Carrying Equipment. Sections 1 to 5 detail the maintenance procedures and the parts used. Section 6 details the annual / 100 hour inspection and test requirements.

1.2 Equipment Description

The Disabled Passenger Carrying Equipment is designed to enable disabled passengers to be carried in a range of Ultramagic baskets using the passenger's wheelchair or a special removable seat. Baskets capable of carrying disabled passengers are modified to incorporate a passenger access door and special floor mounted rails. The rails enable rapid installation and removal of the removable seat and all restraint equipment required when using a wheelchair. The design is such that either system may be used depending upon passenger preference. Baskets fitted with more than one installation may carry any combination of wheelchair and removable seat.

1.3 Applicability

The information contained in this supplement applies to the Ultramagic Disabled Passenger Carrying Equipment as defined by the following drawing numbers:

Removable Chair Assembly:	5003-0000
Wheelchair Installation	5004-0000
Disabled Basket Modifications	5005-0000

1.4 Replacement Parts and Procedures

See Maintenance Manual.

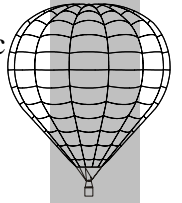
1.5 Approved Maintenance and Inspection Personnel

See Maintenance Manual.

1.6 Welding and Welders

See Maintenance Manual.

In the event that any repairs are required involving the use of welding, contact Ultramagic for a repair scheme.



1.7 Maintenance Records

See Maintenance Manual

1.8 Technical Support

See Maintenance Manual.

1.9 Safety

See Maintenance Manual.

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Section 2**2.0 Airworthiness Limitations****2.1 Approval Statement**

This supplement provides the maintenance information for the Ultramagic Disabled Passenger Carrying Equipment, as required by BCAR 31 section 31.82, EASA CS 31 HB.82 and FAR 31 section 31.82.

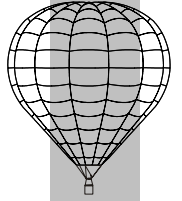
2.2 Mandatory Replacement Time

See Maintenance Manual.

2.3 Inspection Interval

See Maintenance Manual.

Any additional inspection requirements for the Disabled Passenger Carrying Equipment are defined in Sections 4 and 6 of this Supplement.

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Section 3

3.0 Technical Description

3.1 Removable Seat Assembly

3.1.1 General

The removable seat consists of a car rally seat mounted on a stainless steel frame, which may be fitted to the basket floor mounted rails when required. The equipment is provided with a swivel mechanism allowing the seat to rotate to ease the loading and unloading of the passenger in to the seat. The Removable Seat Assembly may be seen in Figure 3.1.1.

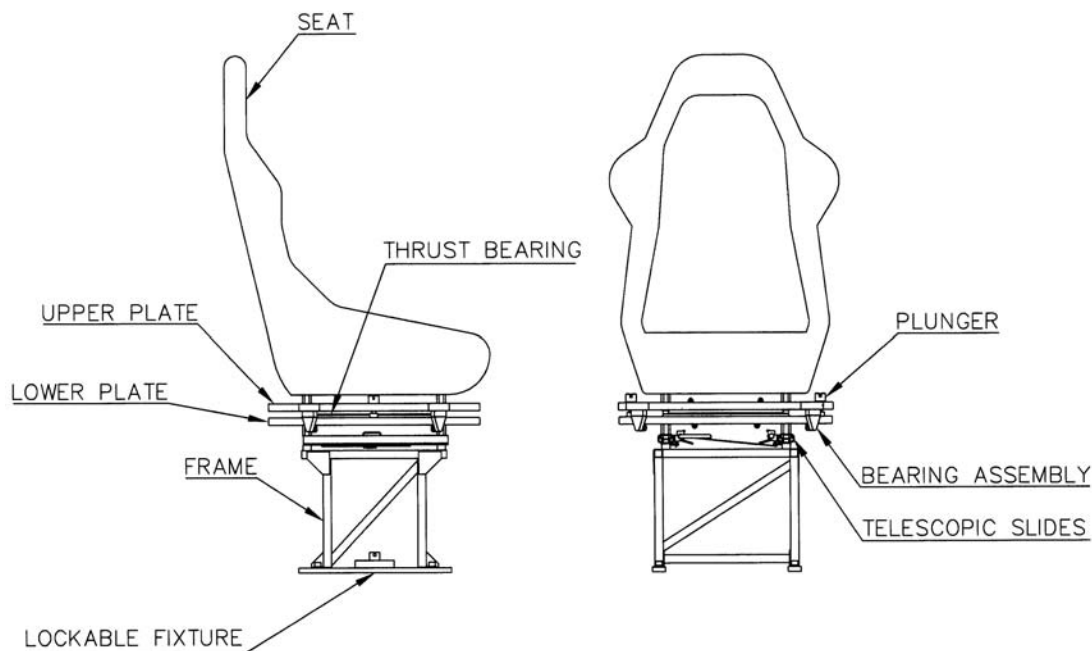


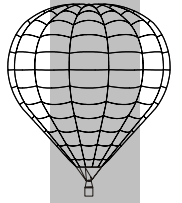
Figure 3.1.1
Removable Seat Assembly

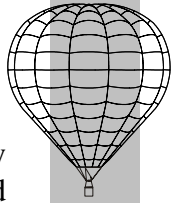
3.1.2 Seat

The removable seat utilises a car rally seat mounted on a welded stainless steel frame. The seat is a proprietary unit designed for rally cars and as such is a very robust construction. Four M8 threaded holes fitted in the underside are used to secure the seat to the remainder of the assembly.

3.1.3 Seat Frame Assembly

A welded stainless steel frame is used to support the seat. Two lockable seat fixtures are fitted on the underside of the frame and these provide the interface to the basket mounted floor rails





3.1.4 Seat Slides

A pair of telescopic seat slides is fitted to the top of the frame. The slides are proprietary item designed specifically for use with the seat. The slides allow the seat to be moved backwards and forwards to enable seat rotation for passenger loading (see below) and to enable the seat back to be supported by the basket wall.

3.1.5 Thrust Bearing

A thrust bearing is fitted between two plywood plates. The lower plate is attached to the slides and the upper plate is attached to the underside of the seat. The thrust bearing allows the seat to rotate for the purposes of easing passenger loading into the seat. A ring spacer is fitted directly above the thrust bearing to provide sufficient space to fit the necessary fixings.

3.1.6 Bearing Assemblies

The thrust bearing is very strong in compression but relatively weak in tension. A series of small bearing assemblies attached to the upper plate are therefore used to “sandwich” the thrust bearing and plywood plates and thus prevent excessive tensile loads being placed upon the thrust bearing.

3.1.7 Plungers

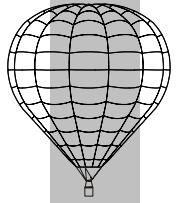
Two spring-loaded plungers are fitted to the upper plywood plate, one each side of the seat. The plungers automatically engage in mating holes in the lower plywood plate when the seat is in the loading and flight positions and prevent further rotation. The plungers may be manually raised to allow seat rotation.

3.1.8 Passenger Harness

A passenger harness is provided. The harness is a four point webbing construction and is provided with a car seat belt style buckle. The shoulder straps have a common anchor karabiner and this is attached to a small strap woven in to the basket wall. The waist straps are secured to the basket mounted floor rails using special quick release castings. The Passenger Harness may be seen in Figure 5.1.9.

3.1.9 Passenger Footrest

A footrest is provided to accommodate different passenger leg lengths. The footrest consists of a horizontal stainless steel tube supported on each side by a stanchion mount. The stanchion mounts are provided with a series of holes to allow the footrest height to be adjusted by inserting shaft-locking pins through the holes. The stanchion mounts are used to secure the footrest assembly to the basket floor mounted rails and allow for quick and easy attachment and removal as required. The footrest may be seen in Figure 5.1.8.



3.2 Wheelchair Equipment

3.2.1 General

The equipment as standard does not include a wheelchair but provides a means of securing the passenger's own wheelchair in to the basket. The following therefore describes the ancillary equipment required to secure the wheelchair to the basket and the additional equipment required to restrain the passenger and ensure his safety and comfort.

3.2.2 Wheelchair Four Point Webbing Restraint

The restraint system consists of four webbing straps securely fitted to each corner of the wheelchair and clipped in to the basket mounted floor rails. The front straps are non-adjustable. The rear straps are fully adjustable and are tensioned to hold the wheelchair in place. Attachment of the rear straps is by karabiner. The karabiner attachment has been designed to accommodate the majority of wheelchair designs and this is supplied as standard. However, certain wheelchair designs may require the use of different attachment methods or the use of ancillary equipment. For further information, contact Ultramagic.

The Four Point Webbing Restraint may be seen in Figure 3.2.2.

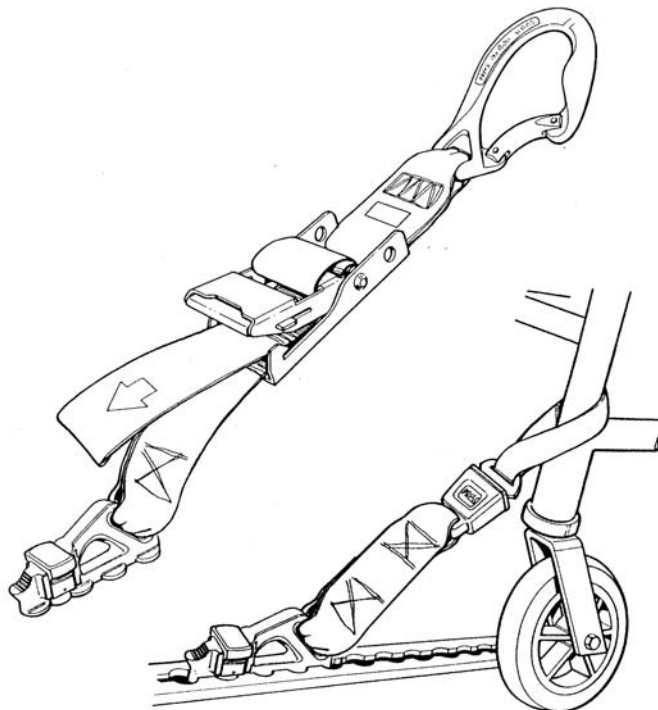


Figure 3.2.2
Four Point Restraint Harness

3.2.3 Passenger Double Inertia Full Harness

The harness is an inertia reel equipment designed specifically for disabled passengers. The inertia reel units are secured behind the wheelchair by clipping in to the basket floor mounted rails. The passenger is secured by passing the straps over the shoulders and around the waist. The harness may be seen in Figure 3.2.3.

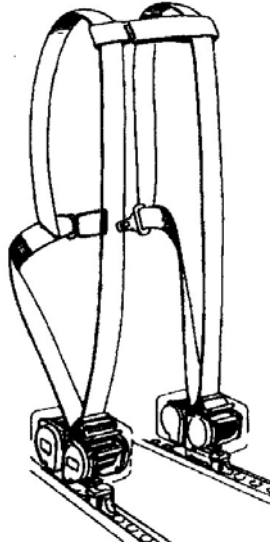
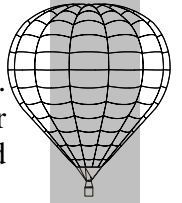


Figure 3.2.3
Double Inertia Passenger Harness

3.2.4 Passenger Headrest

A special headrest is supplied for passenger comfort and safety. The headrest is a universal device designed specifically for wheelchair use. The headrest fits over the wheelchair handles using adjustable pitch tubes and secured using thumbscrews. The headrest may be adjusted to suit the passenger. The headrest may be seen in Figure 3.2.4.



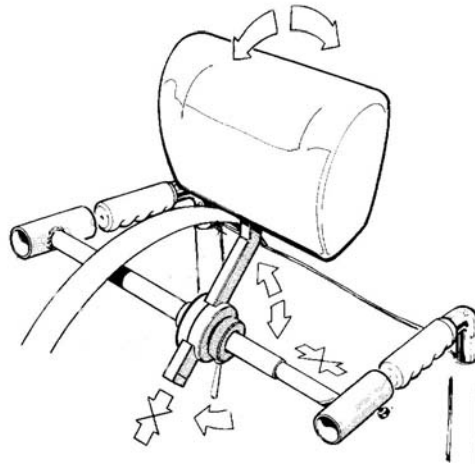
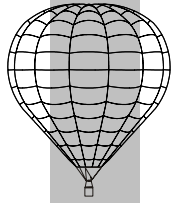


Figure 3.2.4
Passenger Headrest

3.3 Basket Mounted Equipment

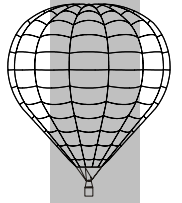
3.3.1 General

Baskets capable of carrying disabled passengers are modified to incorporate a passenger access door and Floor Mounted Rails. The door design is not specific to disabled passenger carrying baskets and is used in other baskets for various reasons. The maintenance requirements for the door are therefore not covered in this supplement.

The Floor-Mounted Rails provide a quick, convenient and robust method of attaching and securing the Disabled Passenger Carrying Equipment to the basket. A universal attachment design enables all the equipment to be secured to the rails whilst allowing a degree of positional flexibility.

3.3.2 Basket Floor Mounted Rails

The Floor Mounted Rails are secured to the basket plywood floor using countersink screws, nuts and washers. The rail is a machined aluminium extrusion, which may be cut to length to accommodate different basket sizes.



Section 4

4 Preventative Maintenance

4.1 Basket Floor Mounted Rails

After each flight, check for any dirt or grit in the floor mounted runners. Remove using a brush or vacuum cleaner as appropriate.

4.2 Wheelchair Four Point Webbing Restraint

Regularly inspect each restraint for wear or malfunction. If any problems are identified, the item must be replaced.

Clean the restraint equipment as for the Passenger Double Inertia Full Harness (see section 4.3).

Take care to prevent dirt or grit contaminating the buckles as this may cause wear.

4.3 Passenger Double Inertia Full Harness

Regularly inspect the harness for damage, wear or malfunction. If any problems are identified, the harness must be replaced.

When necessary, clean the harness using soapy water and a clean soft cloth. Rinse with clean water and allow to air dry. Care must be taken to prevent contamination of the webbing with polish, oils and chemicals.

IMPORTANT: When cleaning or disinfecting, do not immerse buckles or reels in disinfectant or water.

Take care to prevent dirt or grit contaminating the mechanisms as this may cause wear.

4.4 Storage

Store all equipment in a clean dry environment. Wrest the Removable Seat Assembly on a soft surface such as a plywood sheet to prevent damage to the lockable seat fixtures.

Section 5

5 Repair and Maintenance

5.1 Removable Seat Assembly

5.1.1 Seat

To remove the seat, refer to Figure 5.1.1 and proceed as follows:

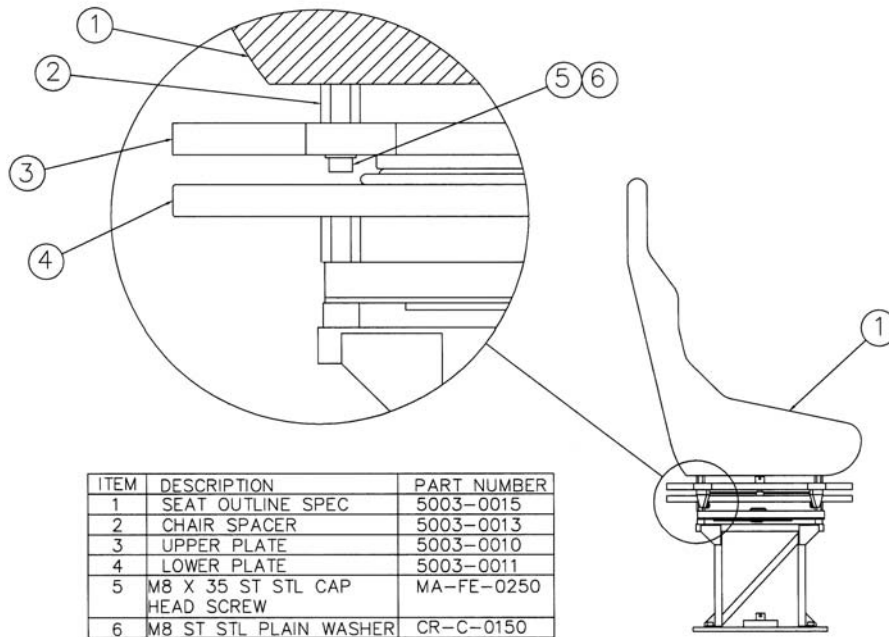
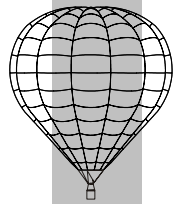
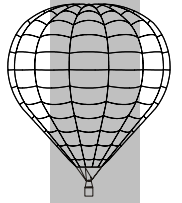


Figure 5.1.1
Seat Removal

- Withdraw the plungers and lock in the retracted position.
- Rotate the seat until the access hole in the lower plate (item 4) is aligned with any of the four seat fixings situated on the underside of the upper plate.
- Using a 6mm across flats Allen key, undo and remove the M8 cap head screw and plain washer.
- Repeat for the remaining three seat fixings.
- Withdraw the seat.
- Using a 19mm AF open-ended spanner, undo and remove the four seat spacers fitted to the seat underside.

Replacement is generally the reverse procedure of removal. Prior to re-fitting the seat, make sure that the seat spacers, item 2, are placed in the counter-bored holes in the upper plate. Apply Loctite 222 to all the screw threads before replacing.





5.1.2 Plungers

To remove the plungers, refer to Figure 5.1.2 and proceed as follows:

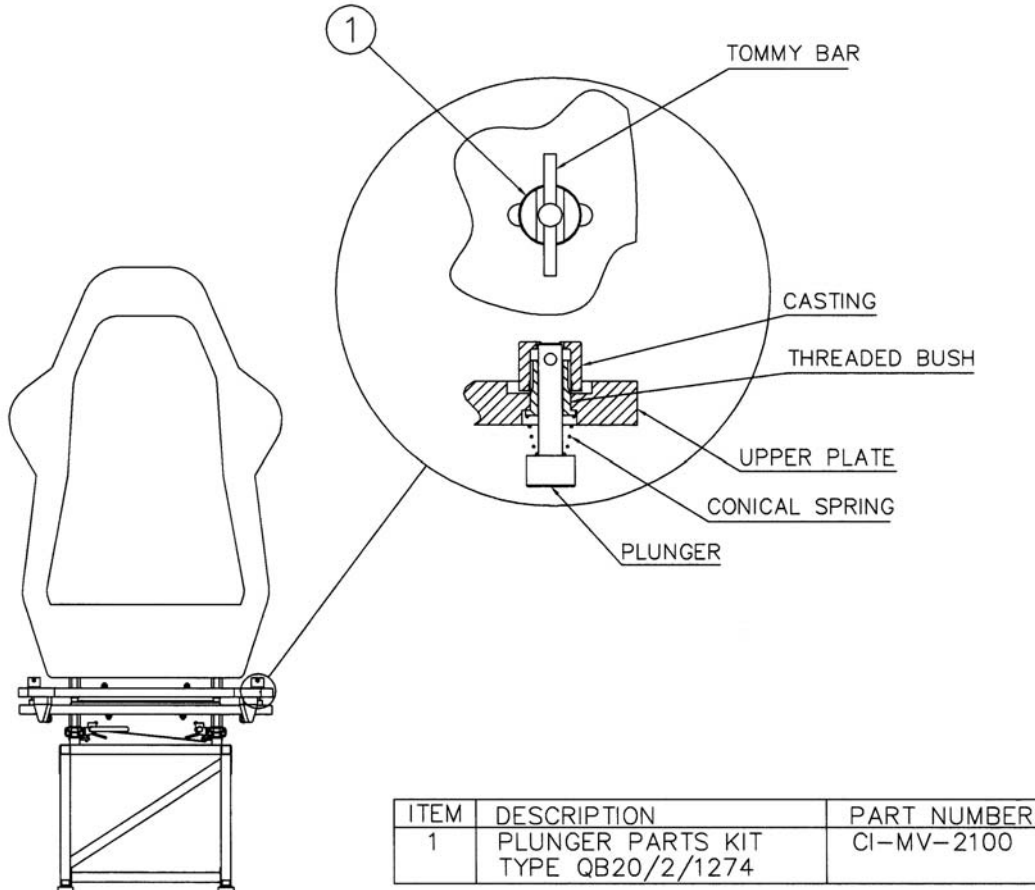
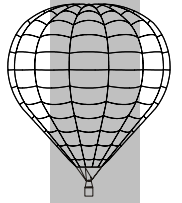


Figure 5.1.2
Plunger Removal

- Raise the plungers and rotate the seat such that plungers rest on the upper surface of the lower plate.
- Using a small hammer, remove the Tommie bar from the plunger stem.
- Rotate the seat until the plungers engage in the lower plate. Withdraw the plunger through the holes in the lower plate.
- Remove the conical spring.
- Undo and remove the threaded bush.
- Remove the upper casting.

Replacement is generally the reverse procedure of removal. Prior to replacing the threaded bush, apply Loctite 222 to the thread.



5.1.3 Bearing Assembly

To remove the Bearing Assemblies, refer to Figure 5.1.3 and proceed as follows:

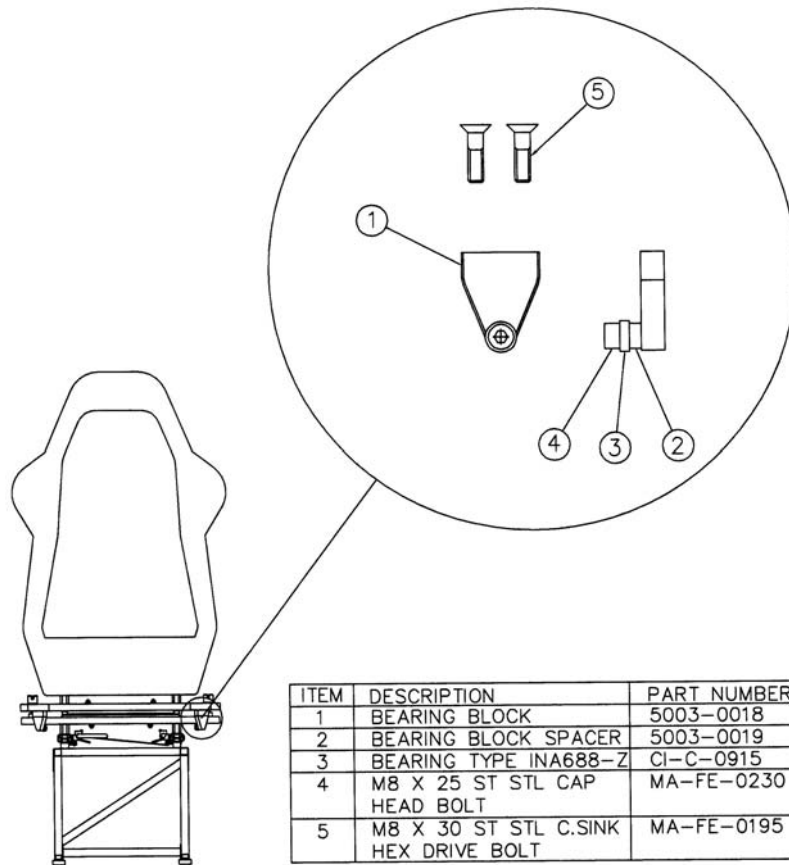


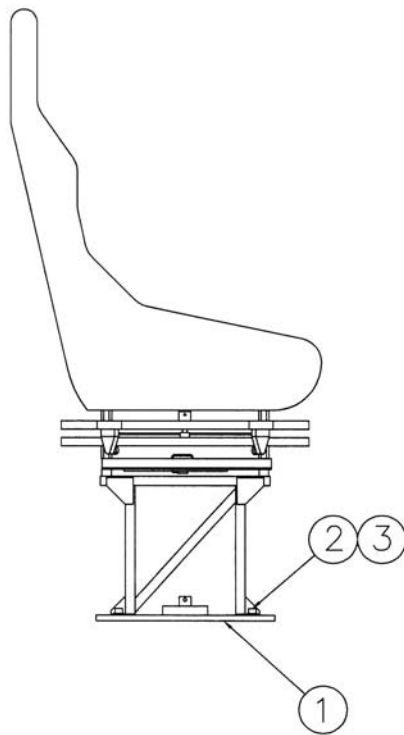
Figure 5.1.3
Bearing Assembly Removal

- Using a 5mm AF Allen key, undo and remove the two M8 x 30 countersink screws (item 5) securing the bearing block to the upper plate. Withdraw the bearing assembly.
- Using a 6mm AF Allen key, undo and remove the M8 x 25 cap head screw (item 4) securing the bearing to the bearing block.
- Withdraw the bearing (item 3) and the bearing block spacer (item 2).

Replacement is generally the reverse procedure of removal. Prior to replacing the screws, apply Loctite 222 to the threads. Take care not to allow the Loctite to contaminate the bearing.

5.1.4 Lockable Seat Fixture

To remove a Lockable Seat Fixture, refer to Figure 5.1.4 and proceed as follows:

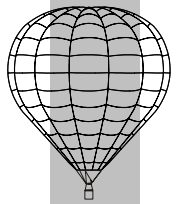


ITEM	DESCRIPTION	PART NUMBER
1	LOCKABLE SEAT FIXTURE SL/STD	CI-MV-0819
2	M10 X 12 ST STL CAP HEAD SCREW	MA-FE-0310
3	M10 ST STL PLAIN WASHER	CR-C-0160

Figure 5.1.4
Lockable Seat Fixture Removal

- Using an 8mm AF Allen key, undo and remove the two cap head bolts and plain washers (items 2 and 3). Withdraw the Lockable Seat fixture from the frame.

Replacement is generally the reverse procedure to removal. Prior to replacing the bolts, apply Loctite 222 to the threads.



5.1.5 Support Frame Assembly

To remove the Support Frame Assembly, refer to Figure 5.1.5 and proceed as follows:

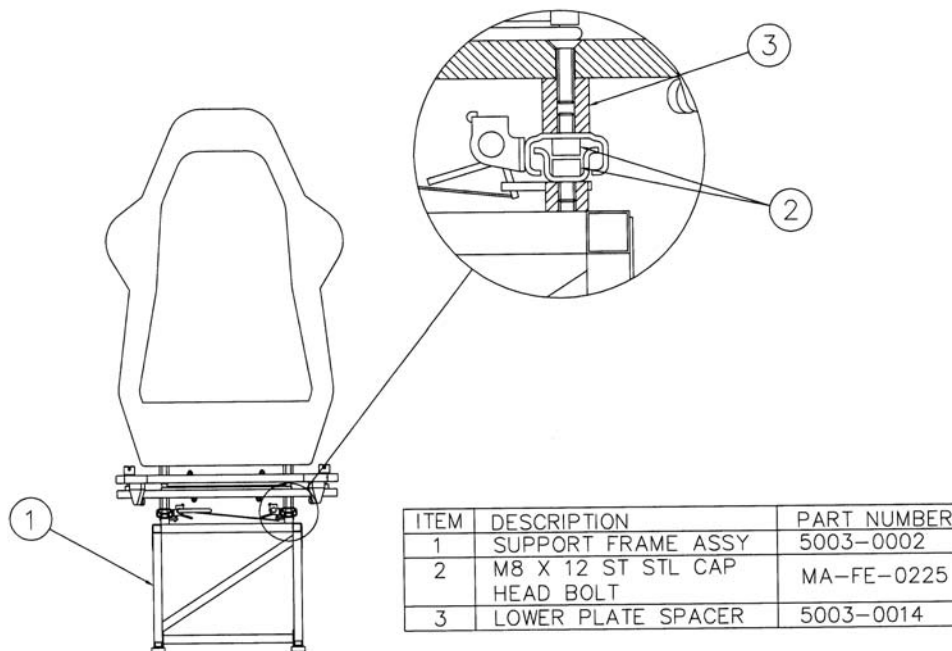


Figure 5.1.5
Support Frame Assembly Removal

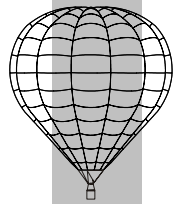
- Carefully move the seat backwards using the seat slides until the lower fixing securing the slide to the frame is exposed.
- Using a 6mm AF Allen key, undo and remove the two fixings (item 2) securing the front of the slides to the frame.
- Operate the slides and expose the rear fixings. Remove the two rear fixings. Lift the seat away from the frame and place carefully on a soft surface such as plywood.
- Remove the two Lockable Seat Fixtures as described in section 5.1.4.

Replacement is generally the reverse procedure to removal. Prior to replacing the fixings, apply Loctite 222 to the threads.

5.1.6 Seat Slides

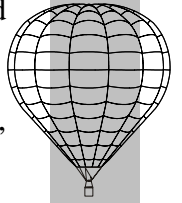
To remove the seat slides, refer to Figure 5.1.5 and proceed as follows:

- Remove the Support Frame Assembly as described in section 5.1.5.
- Operate the slides and move the position such as to expose the upper fixings securing the front of the slides to the Lower Plate Spacer (item 3).
- Using a 6mm AF Allen key, undo and remove the two front fixings (item 2).
- Operate the slides and move the position such as to expose the upper fixings securing the rear of the slides to the Lower Plate Spacer (item 3). Remove the fixings.



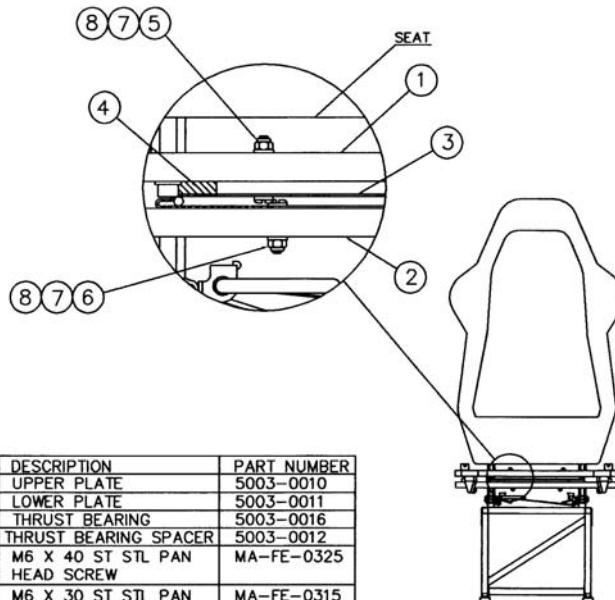
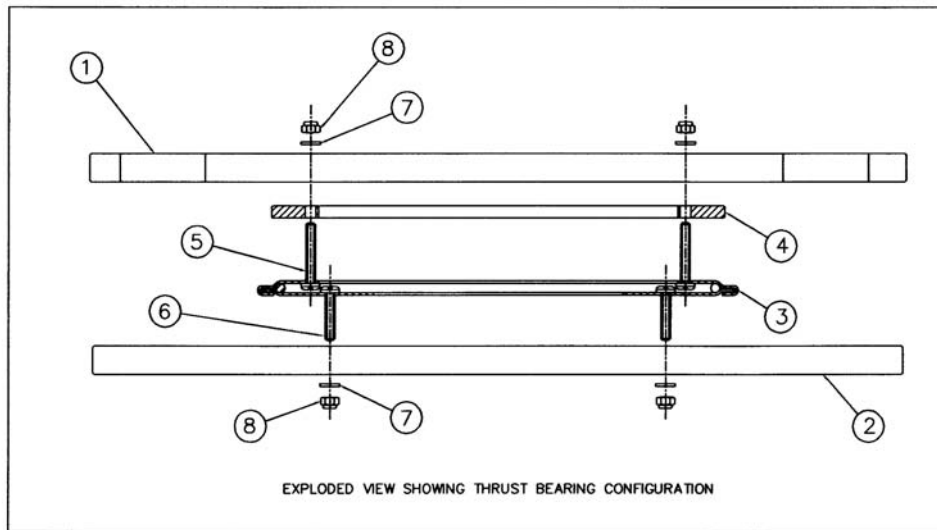
- Withdraw the slides taking care not to bend the wire link between the left and right slides.

Replacement is generally the reverse procedure to removal. Prior to replacing the fixings, apply Loctite 222 to the threads.



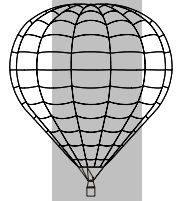
5.1.7 Thrust Bearing, Upper and lower Plates, Bearing Spacer

To remove the Thrust Bearing, refer to Figure 5.1.7 and proceed as follows:



ITEM	DESCRIPTION	PART NUMBER
1	UPPER PLATE	5003-0010
2	LOWER PLATE	5003-0011
3	THRUST BEARING	5003-0016
4	THRUST BEARING SPACER	5003-0012
5	M6 X 40 ST STL PAN HEAD SCREW	MA-FE-0325
6	M6 X 30 ST STL PAN HEAD SCREW	MA-FE-0315
7	M6 ST STL PLAIN WASHER	CR-C-0140
8	M6 NYLOC NUT	VE-C-0250

Figure 5.1.7
Thrust Bearing Removal

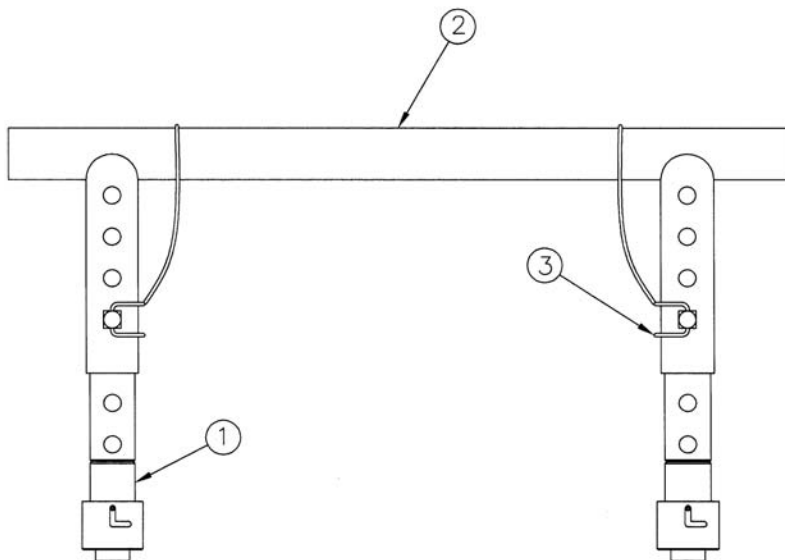


- Remove the Seat as described in section 5.1.1.
- Remove the Support Fane Assembly as described in section 5.1.5.
- Remove the Seat Slides as described in section 5.1.6.
- Remove the Plungers as described in section 5.1.2.
- Remove the Bearing Assemblies as described in section 5.1.3.
- Rotate the Lower Plate until the access hole in the lower plate is aligned with one of the fixings securing the top of the Thrust Bearing to the Upper Plate. Using a flat bladed screwdriver and a 10mm open-ended spanner, undo and remove the fixings (items 5, 7 and 8). Remove the remaining three sets of upper fixings in a similar fashion.
- Remove the Upper Plate and Bearing Spacer.
- Using a flat bladed screwdriver and a 10mm open-ended spanner, undo and remove the four sets of fixings (items 6, 7 and 8) securing the bottom of the Thrust Bearing to the Lower Plate.

Replacement is generally the reverse procedure to removal. When fitting the Thrust Bearing to the Lower Plate, make sure that the access holes in the Lower Plate and Thrust Bearing are aligned.

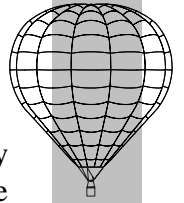
5.1.8 Footrest Assembly

Replaceable parts associated with the Footrest Assembly are shown in Figure 5.1.8 below.



ITEM	DESCRIPTION	PART NUMBER
1	STANCHION ASSY	5003-0101
2	CROSSBAR ASSY	5003-0102
3	∅8 X 36 SHAFT LOCKING PIN	SL-C-0050

Figure 5.1.8
Footrest Assembly

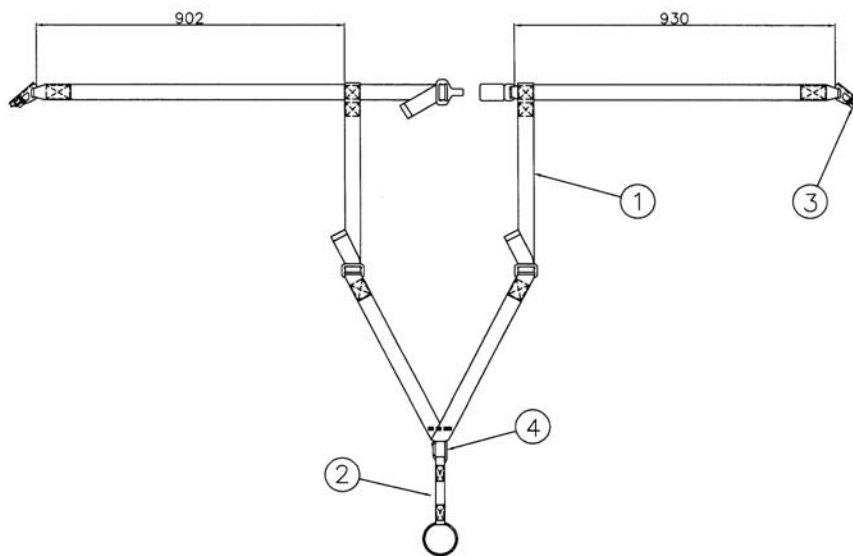


5.1.9 Passenger Harness

The Passenger Harness used in conjunction with the Removable Seat Assembly is a rally car harness modified to attach to the Basket Floor Mounted Rails. Consequently, the replaceable items are limited to the harness, the Rail Attachment Clips and the Harness Attachment Loop Assembly.

In the event that the Attachment Clips are replaced, all sewing must be carried out in accordance with the requirements of the Ultramagic Maintenance Manual.

The Passenger Harness may be seen in Figure 5.1.9



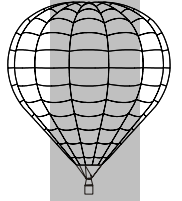
ITEM	DESCRIPTION	PART NUMBER
1	RALLY HARNESS	CI-C-0900
2	HARNESS ATTACHMENT LOOP ASSY	5003-0201
3	RINGLESS ATF CASTING SUB ASSY	CI-MV-0990
4	12kN ALUMINIUM KARABINER 400/8-3	EM-01-0130

Figure 5.1.9
Passenger Harness (Removable Seat)

5.2 Wheelchair equipment

5.2.1 General

There are no serviceable items contained in the wheelchair related equipment and as such, repair is by replacement only.



Section 6

6 Annual / 100 Hour Inspection

6.1 General

The Disabled Passenger Carrying Equipment must be subjected to an inspection by an inspector approved by the National Airworthiness Authority in the state of registration. The inspection must be carried out every 12 months or 100 hours use, whichever is the sooner.

6.2 Removable Seat Assembly

6.2.1 Seat

Refer to Figure 1 and visually check the following:

- The seat padding remains in good condition.
- The seat fixings are secure.

6.2.2 Seat Frame

Refer to Figure 1 and check the following:

- The frame is in good condition.
- There are no signs of serious distortion to the frame structure.
- The lockable seat fixtures are functioning correctly and the fixings are secure.

6.2.3 Seat Slides

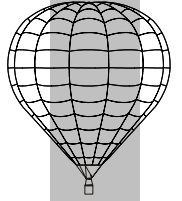
Refer to Figure 1 and check the following:

- The slides extend, contract and lock in position correctly.
- The wire link between the two slides is in good condition and secure.
- There is adequate lubrication. Apply grease to the slide runners if necessary.
- All slide fixings are secure.

6.2.4 Thrust Bearing

Refer to Figure 1 and check the following:

- The seat is free to rotate and that the action is smooth.
- All fixings securing the bearing are secure.



6.2.5 Bearing Assemblies

Refer to Figure 1 and check the following:

- The bearings are free to rotate and that the fixings securing the bearing and the bearing block are secure.

6.2.6 Upper and Lower Plates

Refer to Figure 1 and check the following:

- Both plates are in good condition and there are no cracks or splinters.

6.2.7 Passenger Harness

Refer to Figure 5.1.9 and check the following:

- All harness webbing is in good condition and all sewn joints are sound.
- The rail clip function is correct.
- The harness buckle function is correct.
- The adjuster buckle function is correct.
- The attachment loop is in good condition.
- The basket wicker where the attachment loop is secured is in good condition and provides a good anchor for the loop.

6.2.8 Footrest Assembly

Refer to Figure 5.1.8 and check the following:

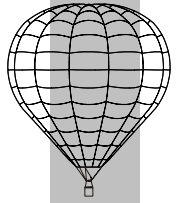
- The stanchion mounts function correctly.
- Both shaft-locking pins are present and function correctly.

6.3 Wheelchair Equipment

6.3.1 Wheelchair Four Point Webbing Restraint

Refer to Figure 3.2.2 and check the following:

- The webbing and all sewn joints are in good condition.
- The rear strap adjustment buckles are in good condition and function correctly.
- The front strap buckles function correctly.



6.3.2 Passenger Double Inertia Full Harness

Refer to Figure 3.2.3 and check the following:

- The webbing and all sewn joints are in good condition.
- The waist buckle functions correctly.
- The inertia locking mechanisms lock when the webbing is pulled and when the units are tilted.

6.3.3 Passenger Headrest

Refer to Figure 3.2.4 and check the following:

- All adjustment joints function correctly and may be made secure.
- The headrest padding is in good condition.
- The fixings securing the headrest to the wheelchair handles are present and function correctly.

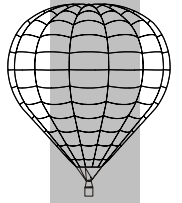
6.4 Basket Floor Mounted Rails

Check the following:

- All fixings securing the rails to the floor are secure.
- The rails are in good condition with no sharp edges, which could cause injury to passengers.

APPENDIX 1

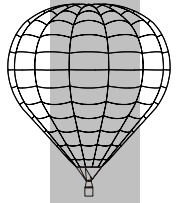
Annual / 100 Hour Inspection Checklist



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REQUIREMENT	REFERENCE	OKAY	COMMENTS
<u>Seat</u>			
Padding condition	6.2.1		
Fixings secure	6.2.1		
Seat Frame			
Frame condition	6.2.2		
Distortion	6.2.2		
Seat fixture function	6.2.2		
Seat Slides			
Slide function	6.2.3		
Wire link	6.2.3		
Lubrication	6.2.3		
Fixings secure	6.2.3		
Thrust bearing			
Rotation	6.2.4		
Fixings secure	6.2.4		
Bearing Assemblies			
Bearing rotation	6.2.5		
Fixings secure	6.2.5		
Upper and Lower Plates			
Plate condition	6.2.6		
Passenger Harness			
Webbing condition	6.2.7		
Clip function	6.2.7		
Buckle function	6.2.7		
Adjuster buckle function	6.2.7		
Attachment loop	6.2.7		
Basket wicker	6.2.7		
Footrest Assembly			
Stanchion function	6.2.8		

REQUIREMENT	REFERENCE	OKAY	COMMENTS
Shaft-Locking Pins	6.2.8		
Four Point Webbing Restraint			
Webbing condition	6.3.1		
Rear Buckle function	6.3.1		
Front Buckle function	6.3.1		
Passenger Double Inertia Full Harness			
Webbing function	6.3.2		
Buckle function	6.3.2		
Lock mechanism function	6.3.2		
Passenger Headrest			
Adjustment function	6.3.3		
Padding	6.3.3		
Fixings secure	6.3.3		
Basket Floor Mounted Rails			
Fixings secure	6.3.4		
Rail condition	6.3.4		



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