



# MAINTENANCE MANUAL

 **MULTINA**

**ALLEGRO MAINTENANCE MANUAL VERSION 1**

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## HOW TO USE THIS MANUAL

The maintenance manual has been prepared to serve as a guide to personnel involved in the maintenance of the Multina Interurban Seat. The manual includes all maintenance tasks of the seats.

The maintenance manual is divided as follows:

1. **FRONT MATTER** - This section includes an explanation of How to Use the Manual, Table of Contents, and List of Effective Pages. When we send a new version of the manual to a customer, each modification will be described in the List of Effective Pages. The revision status is indicated on the previous page.

2. **CHAPTER 1 INTRODUCTION** - This chapter is divided into the following three sections:

**SECTION I. GENERAL INFORMATION** - This section explains the scope of the manual, and provides a list of abbreviations.

**SECTION II. SEATING DESCRIPTION** - This section describes and illustrates the seat components, the seat characteristics, and models.

**SECTION III. PRINCIPLES AND OPERATION** - This section describes and illustrates how to operate the seat, such as tray table, footrest, etc.

3. **CHAPTER 2 MAINTENANCE** - This chapter is divided into the following three sections:

**SECTION I. PREVENTIVE MAINTENANCE INSPECTION SCHEDULE** - This section provides preventive maintenance schedule inspection of every spare part of the seat. Also, the section provides the maintenance tasks for preventive cleaning of seat fabrics.

**SECTION II. MAINTENANCE PROCEDURES** - This section provides information on both removal and installation of line replaceable components. This section also provides a table of the parts and hardware needed to perform the task. The table of parts and hardware is composed as follows:

**Item:** The item indicates the callout on the illustration.

**QTY:** The Qty indicates how many parts are needed to perform the task.

**Inspection:** The inspection indicates the period of time (in months) Multina recommends for inspecting parts.

**Description:** The description contains the name of each assembly or component. Refer to IPC for more information about hardware.

**Multina #:** The Multina number indicates our identification number.

NOTE: Refer to Illustrated Parts Catalog for all part numbers.

**SECTION III. ADJUSTMENT PROCEDURES** - This section provides information on adjustment procedures.

**3 CHAPTER 3 TROUBLESHOOTING** - This chapter provides all the troubleshooting procedures for seat. The information is presented in a four column table, such as symptoms, possible causes, corrective actions, and references.

## LIST OF EFFECTIVE PAGES

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## CHAPTER 1 INTRODUCTION

### SECTION I GENERAL INFORMATION

#### 1.1.1 Scope

The maintenance manual contains all information needed to perform the overhaul of the seat, as well inside as outside the car.

NOTE: Refer to Illustrated Parts Catalog for all part numbers.

#### 1.1.2 Abbreviations List

ADA	Americans with Disabilities Act	hdns	hardness
al	aluminum	hex	hexagonal
aly	alloy	hgt	height
anod	anodize	hlcl	helical
blk	black	id	inside diameter
brs	brass	in	inch
Brz	bronze	insr	insert
btnhd	button head	intl	internal
Cd	cadmium	IPC	Illustrated Parts Catalog
cle	closed end	knrld	knurled
conl	conical	l	long
cp	cone point	lb	pound
cptv	captive	lb	pound
Crm	chrome	lb ft	pound-force foot
cs	carbon steel	lb in	pound-force inch
cskh	countersunk head	lg	length
ctsk	countersunk	lh	left-hand
Cu	copper	lkg	locking
dia	diameter	mach	machine
duro	durometer	matl	material
ext	exterior	max	maximum
extl	external	min	minimum
filh	fillister head	nar	narrow
fl	flat	nat	natural
flg	flanged	Ni	Nickel
flh	flat head	no	number
fp	flat point	nom	nominal
ft	foot	np	nickel plated
ga	gauge	nprn	neoprene
gr	grade	nr	non rotative
grv	groove	nyl	nylon
hd	head	od	outside diameter

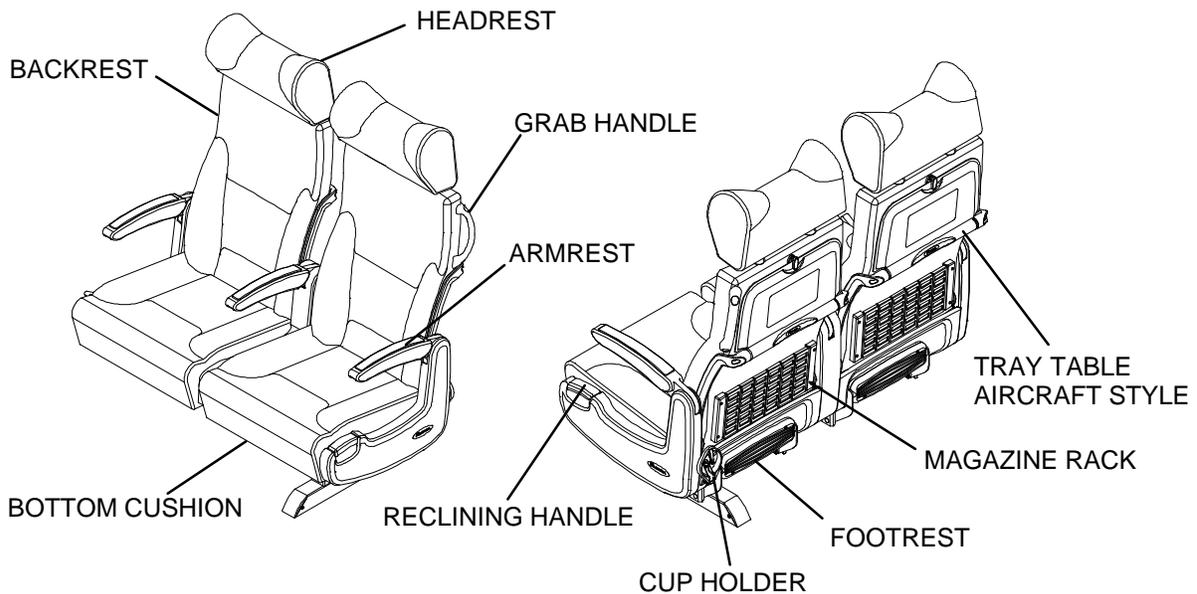
oe	open end	Zn	Zinc
ovh	oval head		
ovp	oval point		
phh	phillips head		
phpnh	phillips pan head		
pld	plated		
plstc	plastic		
pt	point		
qik-opng	quick-opening		
rad	radius		
rbr	rubber		
rd	round		
rdh	round head		
rh	right-hand		
rng	range		
rtng	retaining		
sch	socket head		
scr	screw		
sft	shaft		
shldr	shoulder		
skt	socket		
slflkg	self-locking		
slftpg	self tapping		
sld	slotted		
spr	spring		
sq	square		
sqh	square head		
sst	stainless steel		
stl	steel		
thd	thread (ed)		
thk(ns)	thick(ness)		
tnsn	tension		
tr	truss		
trh	truss head		
trsn	torsion		
tth	tooth		
ty	type		
typ	typical		
UNC	Unified Coarse Thread		
UNF	Unified Fine Thread		
w	wide		
w/	with		
wd	width		
wht	white		
wr	wire		
x-mas	christmas		
yel	yellow (chromated coated)		

## SECTION II SEATING DESCRIPTION

### 1.2.1 Seats Description

There are three different types of intercity bus seats; a two-passenger seat, a two-passenger swivel seat, and a three-passenger bench seat.

#### 1.2.1.1 Two-Passenger Seat



**Figure 1-1 Two-Passenger Seat**

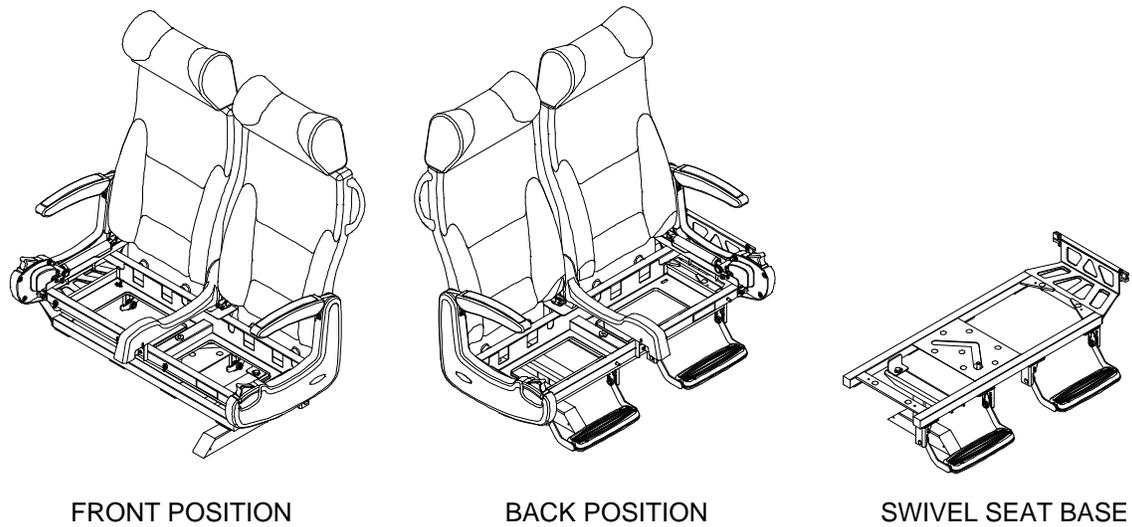
(See figure 1-1). Each seat frame is made of steel tubing and aluminum casting. All shrouds are made of ABS.

The cushions are made of a metal frame (seat pan), a suspension system (bottom cushion only), and polyurethane foam. The cover can be of leather, vinyl or fabric. The headrest is located on the backrest and can be adjusted to the desired height. The hydraulic reclining mechanism is composed of the reclining handle and the gas cylinder. The backrest reclines up to 25°. Three armrests are provided; the aisle side down armrest, the center folds up armrest and on the side of the wall a fixed armrest.

The seat can be provided with different accessories; an automatic return footrest, a magazine rack (plastic or mesh), a grab handle, a tray table, and a cup holder. The cup holder can be used with plastic or foam cup and soda bin. The maximum diameter is 2 5/8 in.

Two models of tray tables are available with the seat; an aircraft style tray table and a fixed tray table installed directly to the back of the backrest. The fixed tray table is provided with a safety collapse at 25 lb to prevent breaking. The aircraft style is provided with an advertising window and this table is freelance of the backrest.

### 1.2.1.2 Two-Passenger Swivel Seat

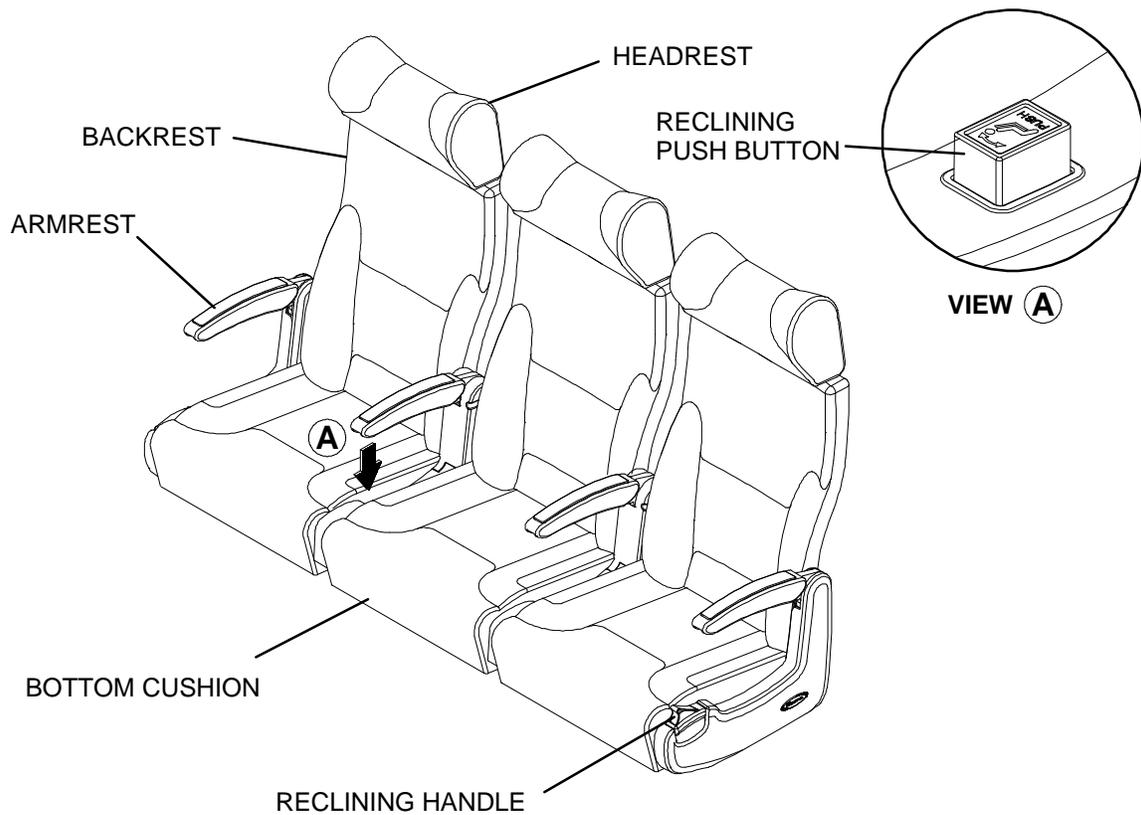


**Figure 1-2 Two-Passenger Swivel Seat**

(See figure 1-2). The swivel seat is similar to the fixed seat but it can be rotated in a reversed position.

A special rotating base is provided with the swivel seat. Four wing studs fasten the seat frame to special rotating base.

### 1.2.1.3 Three-Passenger Bench Seat

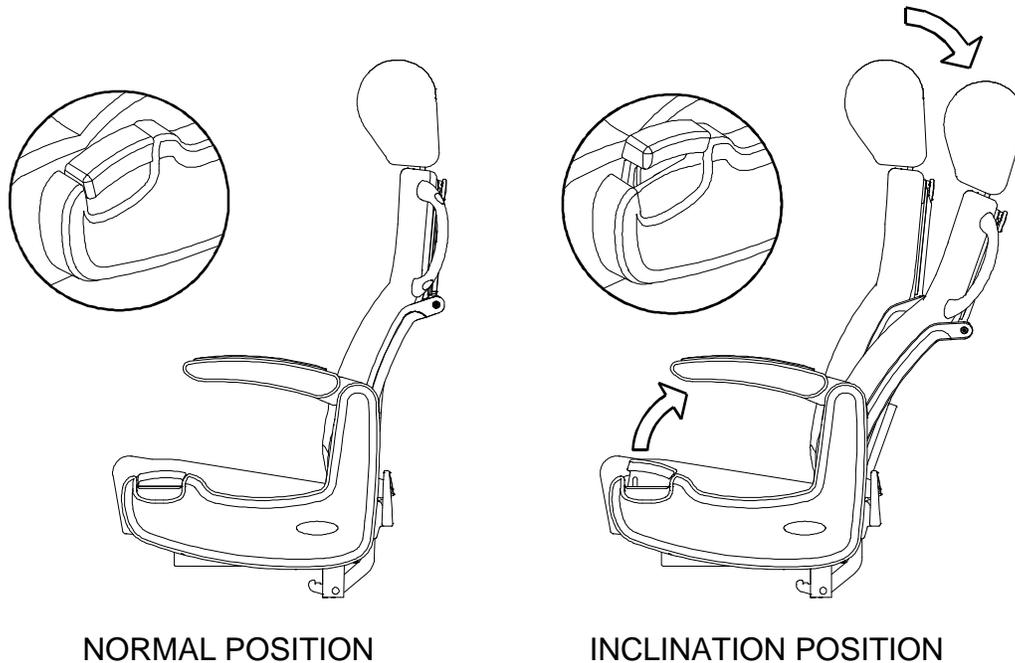


**Figure 1-3 Three-Passenger Bench Seat**

(See figure 1-3). The three-passenger bench seat is installed without pedestal. There are neither pedestal nor accessories (tray table, magazine net, and cup holder) installed on it. The middle backrest reclining is activated with the push button located on the front center shroud (view A).

## SECTION III PRINCIPLE OF OPERATION

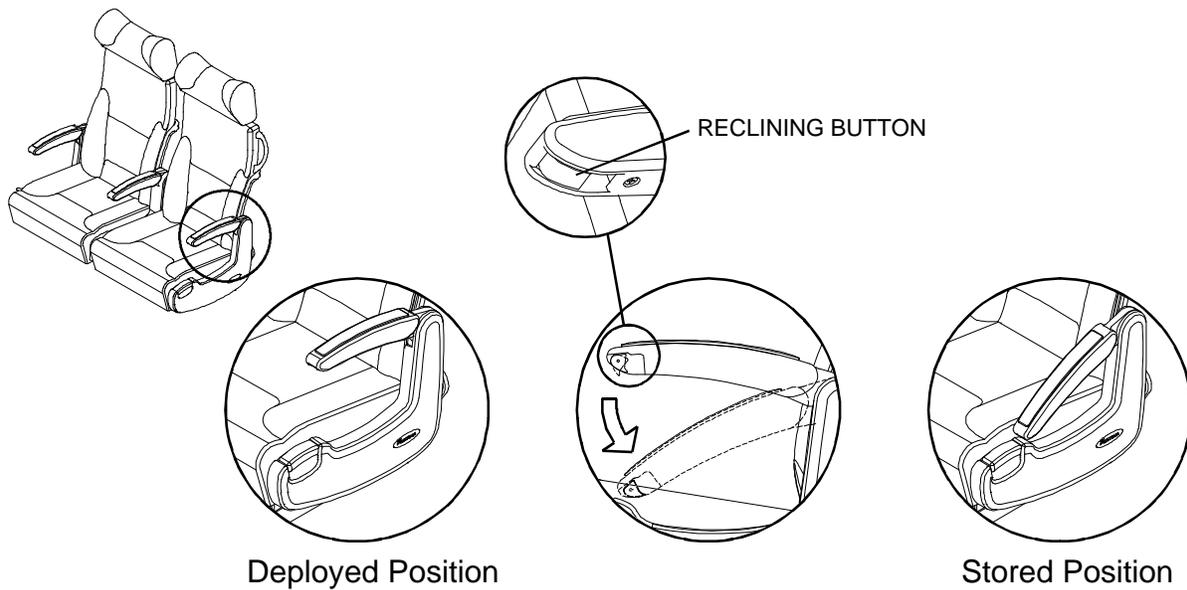
### 1.3.1 Backrest Reclining



**Figure 1-4 Backrest Reclining**

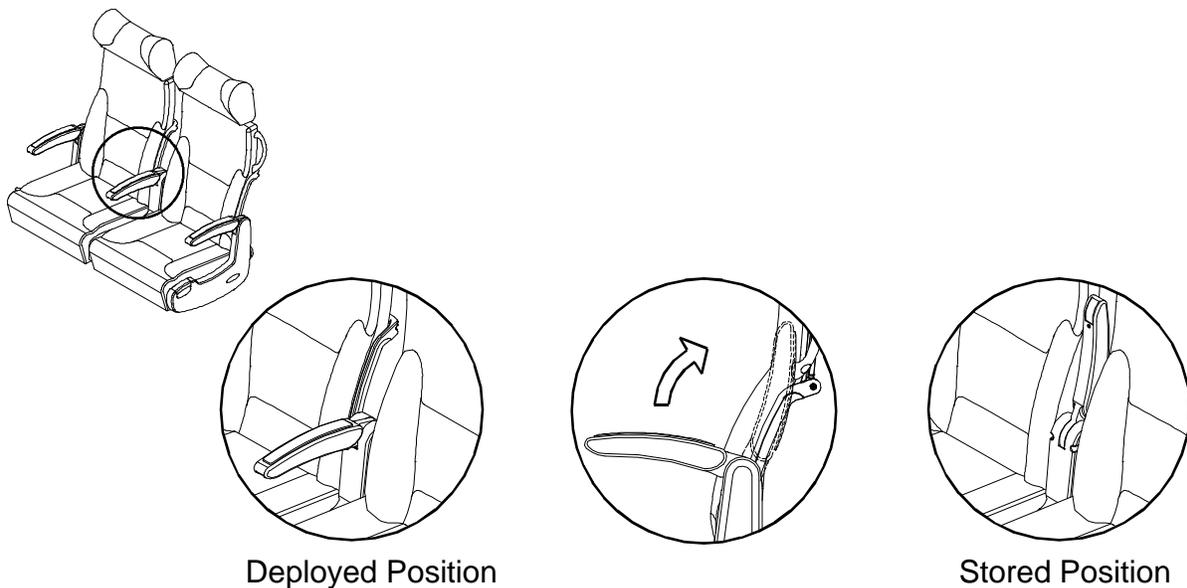
The backrest of the seats can recline up to 25°. The reclining device is activated by a reclining handle located at the aisle side and at the wall side of each seat. At the pull of the handle, the gas cylinder is released and the passenger then presses down the backrest to the desired position.

### 1.3.2 Upward and Downward Armrest



**Figure 1-5 Downward Armrest**

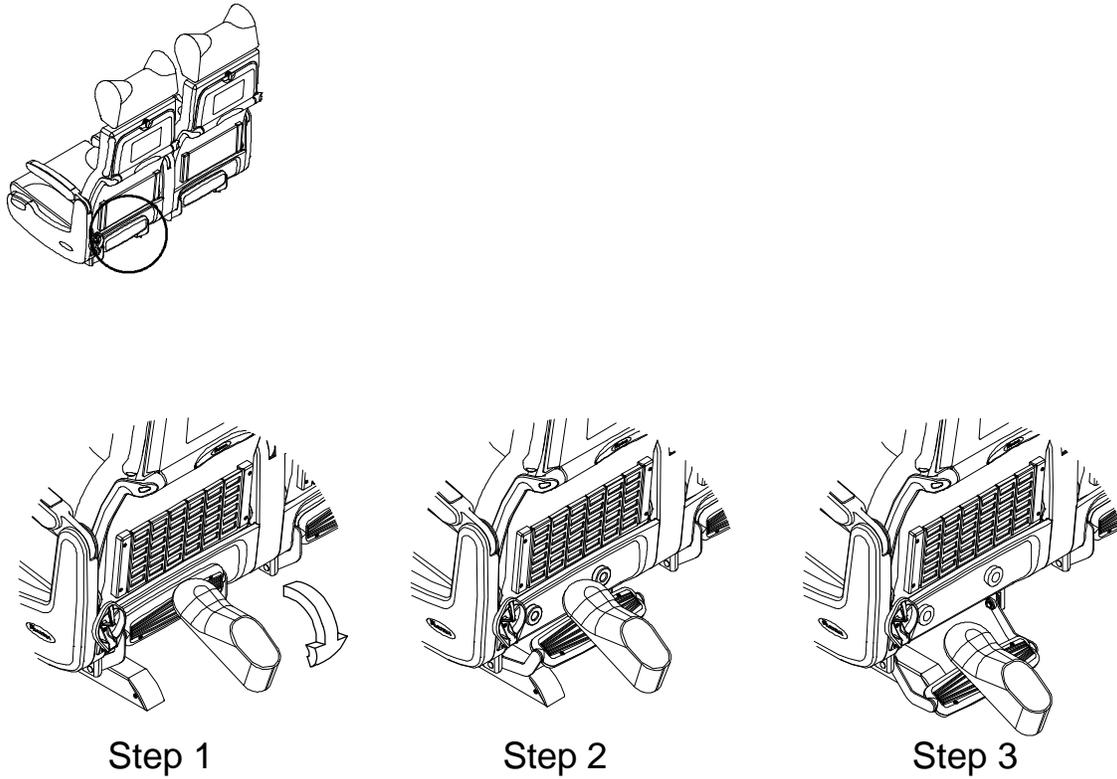
Each seat features a pivoting downward armrest and upward armrest. To stow the downward armrest, pull reclining button to unlock armrest (do not apply pressure on the armrest) and then, the armrest will be free for movement. To deploy armrest, pull upward on it until the armrests locking interlocks correctly.



**Figure 1-6 Fold-up Armrest**

To deploy or to stow the fold-up armrest, press downward or pull upward on it.

### 1.3.3 Footrest

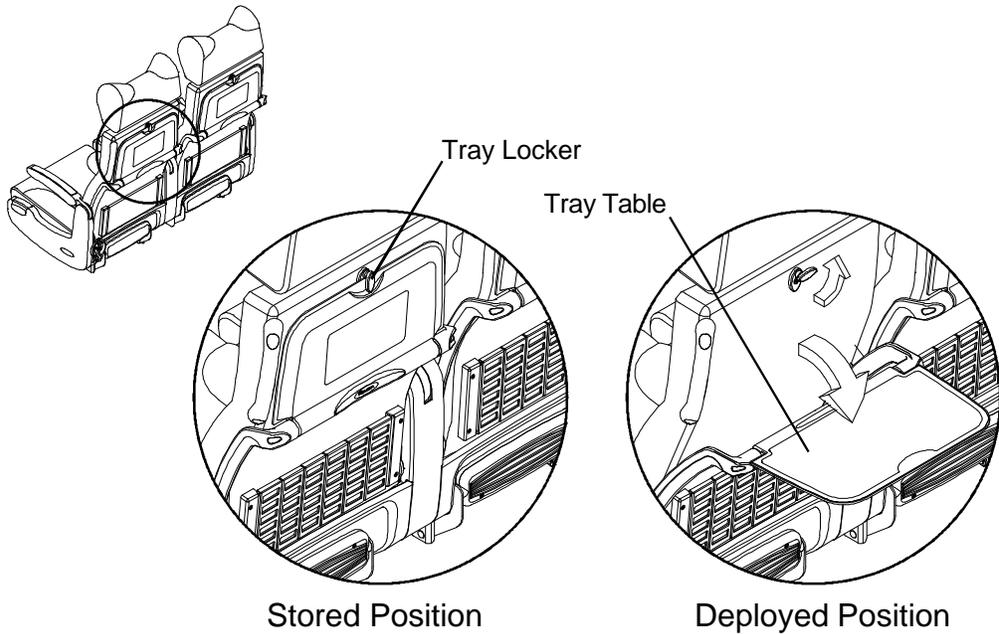


**Figure 1-7 Footrest**

Each seat is provided with two footrests which can be stored or deployed.

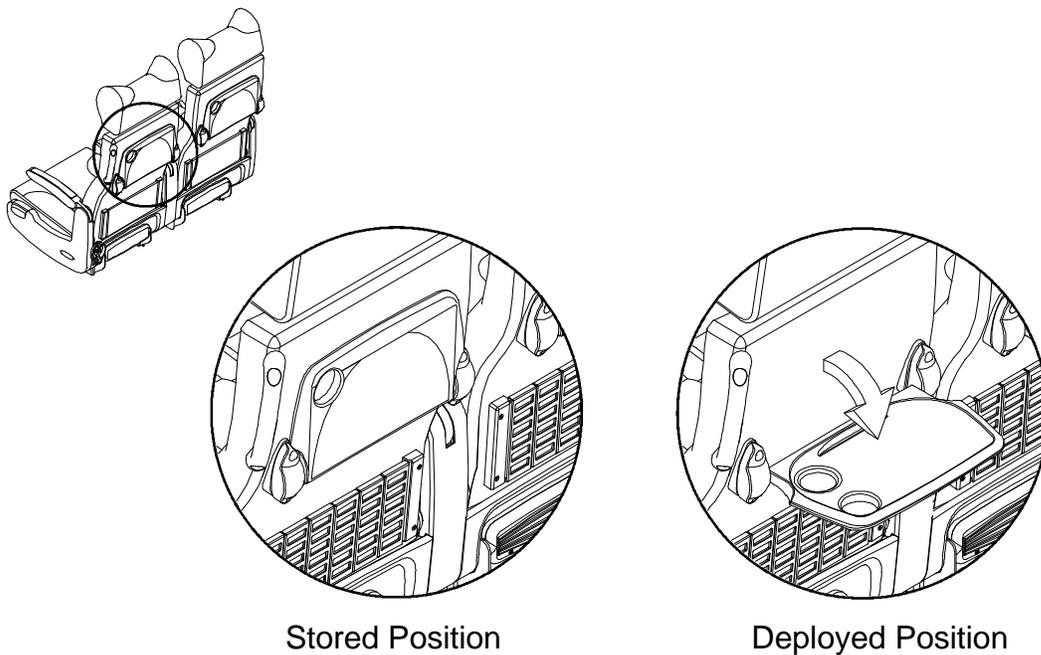
To use the footrest in the deployed position, press downward with the foot on the top of it. The footrest is self storing when feet are removed.

### 1.3.4 Tray Tables



**Figure 1-8 Aircraft Style Tray Table**

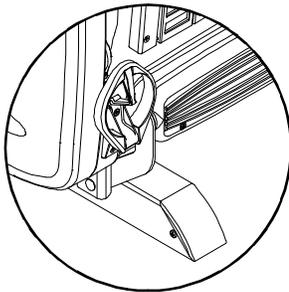
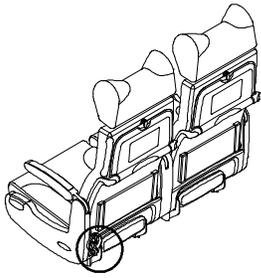
To use the tray table, rotate the tray locker counterclockwise, and then, the tray table will be free to deploy to horizontal position. Do not exceed the 150-lbs maximum load.



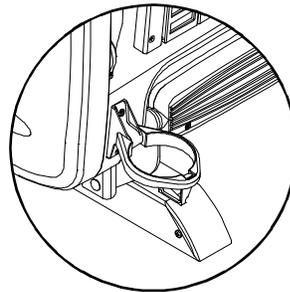
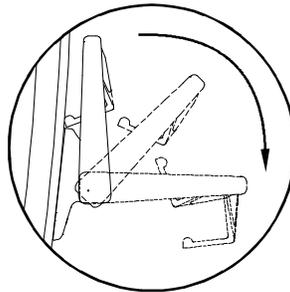
**Figure 1-9 Fixed Tray Table**

To use the fixed tray table, pull it and take it down to its horizontal position. When an excess load is applied to it, table stands down automatically to prevent breaking.

### 1.3.5 Cup Holder



Stored Position

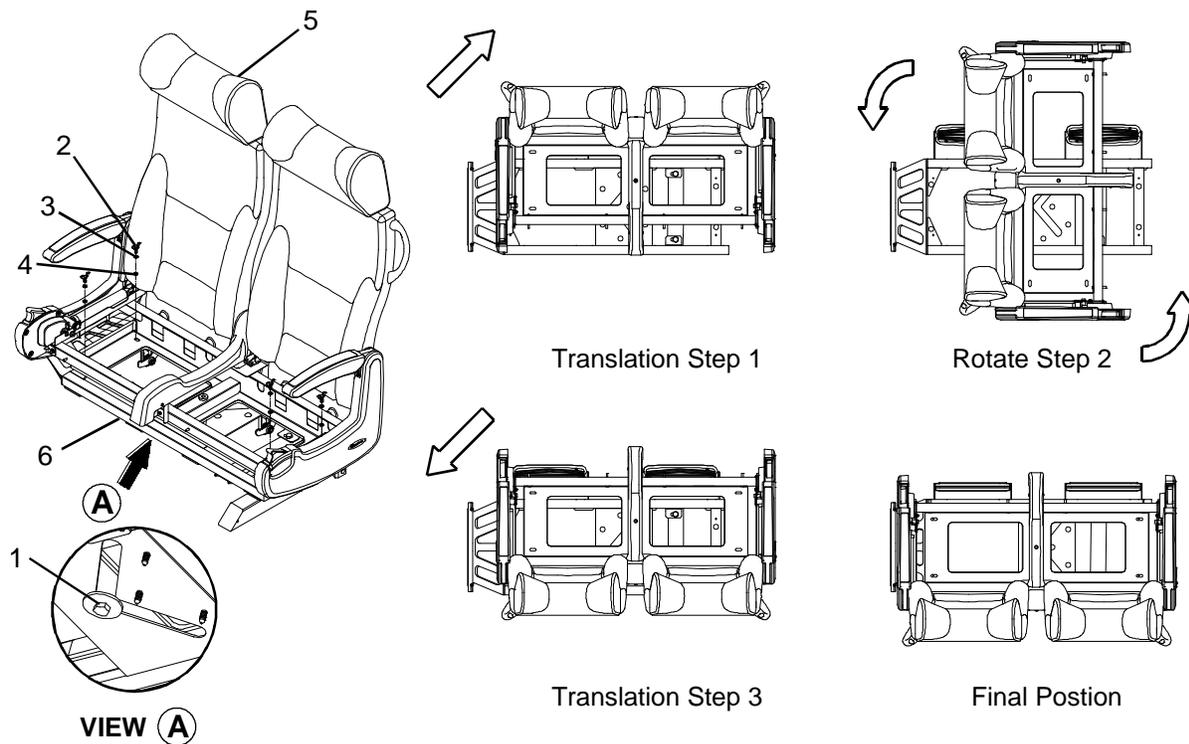


Deployed Position

**Figure 1-10 Cup Holder**

To deploy the cup holder pull it and take it down to its horizontal position, then deploy cup support. Note that the maximum cup diameter is 2 5/8 in.

### 1.3.6 Swivel Seat Rotation



**Figure 1-11 Swivel Seat**

To reverse seat:

- A. Remove both bottom cushions (See [2.2.2.1.1](#) Removal).
- B. Loosen screw (1).
- C. Remove four wing studs (2), lockwashers (3), and washers (4) fastening seat frame (5) to seat base (6).
  - 1) Deploy both footrests in down position.
  - 2) Slide seat frame (5) from wall to aisle side.
  - 3) Rotate seat frame (5) 180°.
  - 4) Slide seat frame (5) from aisle side to wall.
- D. Position seat frame (5) correctly to seat base (6) and fasten with four washers (4), lockwashers (3), and wing studs (2).
- E. Tighten screw (1).
- F. Install both bottom cushions (See [2.2.2.1.2](#) Installation).

## CHAPTER 2 MAINTENANCES

### SECTION I PREVENTIVE MAINTENANCE INSPECTION SCHEDULE

#### 2.1.1 Seat Inspection Schedule

COMPONENTS	TASK
Maintenance schedule, daily inspection	
Passenger Seats	Visual inspection and cleaning of cushions, tray tables and footrests to remove dust and grime. (See <a href="#">2.1.2.</a> )
Maintenance schedule, 184-day inspection (6 months)	
Cushions	Wash fabric cover.
Passenger Seats	Inspect seat reclining, armrest, tray table, and footrest mechanisms for proper operation and loose hardware.

**Table 2-1      Seat Inspection Schedule**

## 2.1.2 Leather, Vinyl, and Fabric Cover Maintenance

### 2.1.2.1 Leather Maintenance

Sponge the stain with a solution of soft soap (ex: Ivory) and lukewarm water. DO NOT SOAK. Follow this by rubbing with a damp cloth.

#### **WARNING**

**DO NOT USE WASHING POWDER, AMMONIA, SODA, BLEACH OR ANY PRODUCTS WHICH CONTAIN THEM. Do not product such as Armor All because this kind of product will dry up and cracks could appear.**

### 2.1.2.2 Vinyl Maintenance

Sponge the stain with a solution of soft soap (ex: Ivory) and lukewarm water. DO NOT SOAK. Follow this by rubbing with a damp cloth.

#### **WARNING**

**DO NOT USE WASHING POWDER, AMMONIA, SODA, BLEACH OR ANY PRODUCTS WHICH CONTAIN THEM.**

### 2.1.2.3 Fabric Maintenance

With proper care your upholstery will provide years of beautiful service. To help keep your upholstery looking new, certain precautions and cleaning instructions should be followed. By giving your upholstery a little extra attention, it will stay looking great for years!

According to the Environmental Protection Agency your upholstery serves as a magnet that collects a variety of pollutants and contaminants from various sources. Internal sources include air conditioners, heaters, and tobacco smoke and food particles. Outdoor sources include pollen and spores from trees, plants and other vegetation as well as exhaust fumes from cars, fireplaces and other form of pollution.

Satisfactory results are usually achieved by cleaning with non-water-based foam cleaner, provided that manufacturer's directions are carefully adhered to. Any product or technique should always be tested on an inconspicuous area before attempting overall cleaning.

#### 2.1.2.3.1 Cleaning of Upholstery

The seat cushion and back covering may be fabricated of different materials, consisting of both synthetic and natural fabrics. Vinyl coated fabrics cannot be machine washed (laundered). For cleaning of the seat upholstery in view of the above limitations, the following procedure is suggested:

##### **Woven Fabrics**

1. Frequent and thorough vacuum cleaning.
2. Occasional steam cleaning.
3. To the cover (not removed) apply a thick layer of soap (non-alkaline) or approved foam type cleaner. Suds are to be scrubbed into fabric using a stiff bristle brush or a sponge.
4. After scrubbing sponge the suds from the fabric with a clean sponge or cloth dampened with water. Rinse sponge or cloth frequently with clean water.

5. Do not water soak fabric, as this will cause shrinkage.

Considerable thought and development work has gone into the production of our fabrics to enable them to withstand the rigorous use on public transport vehicles. We felt therefore, a few hints on the care and cleaning would help you to obtain the best possible life from your fabric.

One of the main advantages of these fabrics is their construction which allows dirt to fall to the base of the pile. This presents a relatively clean surface to your passenger which is obviously very important.

**Routine Cleaning.** All that is required to remove the dirt is gentle beating with the hand or the back of a brush. This will bring the dirt to the surface where it is easily removed by a vacuum cleaner or a soft brush. It is preferable to vacuum or brush in the direction of the pile which can easily be recognized by running a hand lightly over the pile. Cleaning should be carried out as often as possible. If the fabric becomes excessively dirty, then particles of grit will cause gradual wear to take place, thus reducing the life of the moquette.

**Steam Cleaning.** Occasional steam cleaning will breathe new life into tired upholstery. Portable steam cleaners are readily available from hire shops to rent or buy, and we have many examples showing how a vacuum and steam clean can rejuvenate a drab interior. *(The need to follow safe operating procedures when steam cleaning is vital to prevent risk of scalding.)*

#### **METHOD 1**

Apply a non-inflammable solvent (trichlorethylene) with a clean, white, absorbent material, treating small areas working from the outer edge towards the center of the stain. Blot frequently with a dry cloth to avoid rings.  
OPEN WINDOWS AND DOORS TO ALLOW FUMES TO DISPERSE.

#### **METHOD 2**

Sponge the stain with a solution of household detergent and lukewarm water. DO NOT SOAK. Follow this by rubbing with a damp cloth, rinsing cloth between each treatment.

### **WARNING**

**DO NOT USE SOAP, WASHING POWDER, AMMONIA, SODA, BLEACH OR ANY PRODUCTS WHICH CONTAIN THEM.**

#### **ALCOHOLIC LIQUIDS**

Sponge with water followed by Method 2.

#### **BATTERY ACID**

Saturate with a solution of sodium bicarbonate, leave for several minutes before drying out. It is important for the above treatment to be carried out immediately to avoid serious damage to the moquette.

#### **BEVERAGE STAINS**

Use Method 1. If stain persists, try methylated spirits.

#### **BLOOD STAINS**

Use Method 2.

## **BURNS**

Scrape blackened area with a knife and treat with Method 2. Extensive burns require expert attention.

## **CHEWING GUM**

Soften with cyclohexanone and scrape off carefully with a knife.

## **COSMETICS**

Use Method 1, followed by Method 2.

## **WRITING INK**

Use Method 2. If brown stain remains, treat as for rust.

## **COPYING INK**

Treat with methylated spirits, blotting frequently to avoid ink spreading. Use cleaning Method 2 to complete the treatment.

## **BALLPEN INK**

Treat as copying ink.

## **MARKING INK**

(Felt-tipped pens). Treat with Methyl Ethyl Ketone (M.E.K.), followed by Method 2.

## **OIL, GREASE AND PAINT MARKS**

Remove surplus substance with a knife or spoon, and then treat with Method 1, followed by Method 2. Should stains reappear, repeat cleaning process.

## **RUST**

Use Method 2, followed by a warm solution of oxalic acid. Complete treatment by sponging with water.

## **TAR**

Soften with benzene and then treat with Method 1, followed by Method 2.

## **URINE**

Use Method 2.

## **VOMIT**

Use Method 2.

NOTE Prompt and correct cleaning will remove most stains. Wrong treatment will only increase the damage. In cases where there is doubt, always seek expert advice. Information is to the best of our knowledge true and accurate, but all recommendations or suggestions are made without guarantee since the conditions of use are beyond our control.

## **TRIM MAINTENANCE**

### **CLEANING OF TRIM PARTS**

#### **Aisle End Panel & Rear Shell**

Minor stains may be removed from trim parts with good quality toilet soap. More severe cleaning problems require the use of diverse cleaning agents and polishes. Most household cleaners, automotive waxes, and polishes can be adapted to this job. Solvents and spray type household cleaners containing hydrocarbons will attack A.B.S. materials and should be used sparingly, if at all.

A cleaning solution should be applied sparingly with a clean, relatively dry cloth and wiped over the material gently. It is recommended that the cleaning be accomplished by repeated applications of the cleaner rather than one heavy application. All normal soaps and detergents may be considered safe for removing dirt and grease from A.B.S. materials.

#### **CAUTION:**

1. Never soak panels in cleaning solution or allow them to remain wet with solution for any length of time.
2. Do not use waxes which dry with a bloom as they are extremely difficult to remove after application:



## SECTION II MAINTENANCE PROCEDURES

### 2.2.1 Seat Frame

#### 2.2.1.1 Two-Passenger Seat Frame Removal / Installation

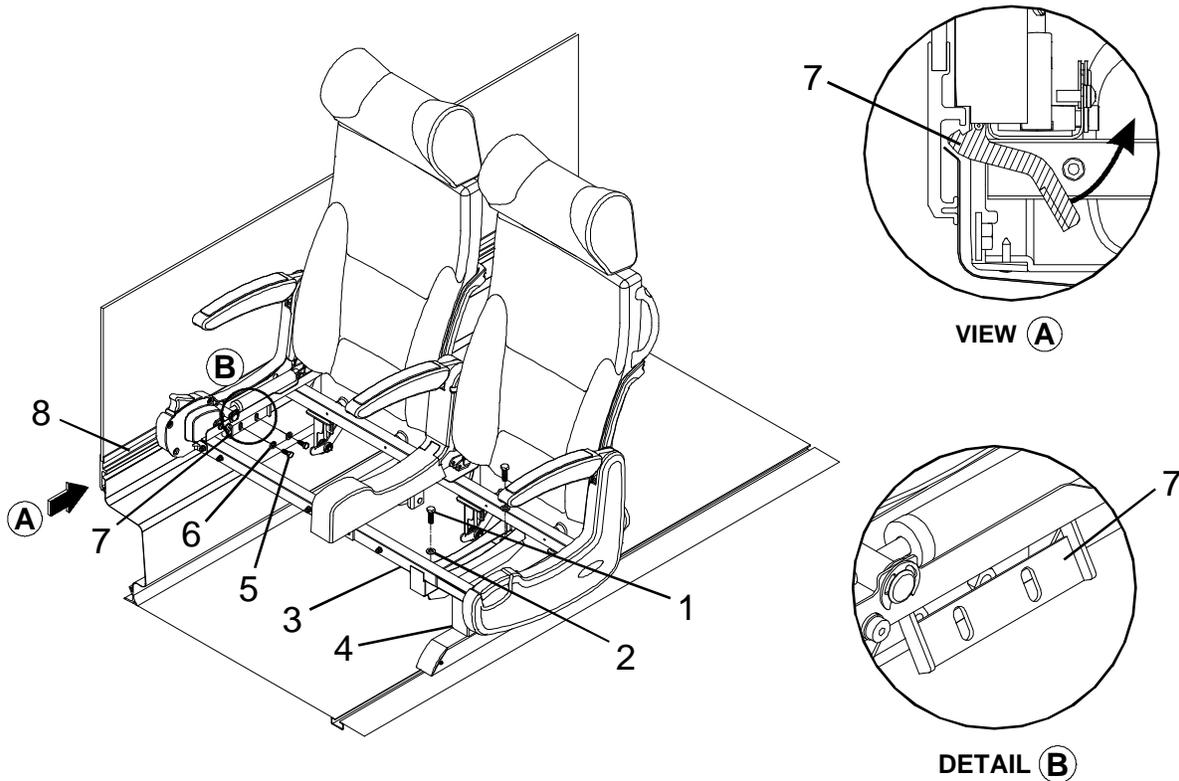


Figure 2-1 Two-Passenger Seat Frame Removal

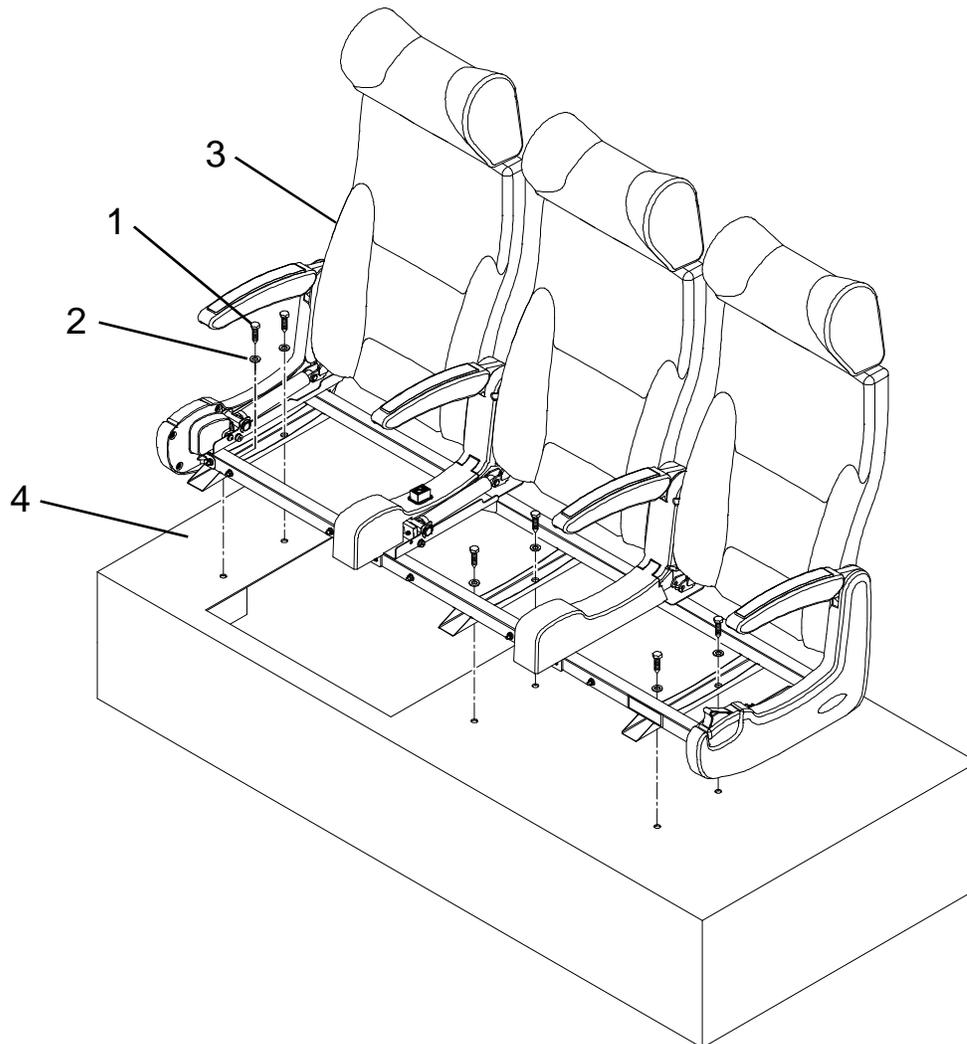
##### 2.2.1.1.1 Removal

1. Remove bottom cushions (See [2.2.2.1.1](#) Removal).
2. Remove two screws (1) and washers (2) fastening seat frame (3) to pedestal (4).
3. Remove two screws (5) and washers (6) fastening seat bracket clamp (7) to wall bracket (8).
4. Pull seat bracket clamp (7) to disengage it.
5. Remove seat frame (3).

### 2.2.1.1.2 Installation

1. Engage seat bracket clamp (7) to wall bracket (8). Push seat bracket clamp (7) to lock correctly.
2. Install two screws (5) and washers (6) to fasten seat bracket clamp (7) to wall bracket (8). Torque to 25 Nm.
3. Install two screws (1) with Loctite and washers (2) to fasten seat frame (3) to pedestal (4). Torque to 40 Nm.
4. Install bottom cushions (See [2.2.2.1.2](#) Installation).

## 2.2.1.2 Three-Passenger Seat Frame Removal / Installation



**Figure 2-2 Three-Passenger Seat Frame Removal / Installation**

### 2.2.1.2.1 Removal

1. Remove all bottom cushions (See [2.2.2.1.1](#) Removal).
2. Remove six screws (1) and washers (2) fastening seat frame (3) to base (4).
3. Remove seat frame (3).

### 2.2.1.2.2 Installation

1. Position seat frame (3) on base (6) and fasten with six screws (1) and washers (2).
2. Install bottom cushion (See [2.2.2.1.2](#) Installation).

### 2.2.1.3 Two-Passenger Swivel Seat Removal / Installation

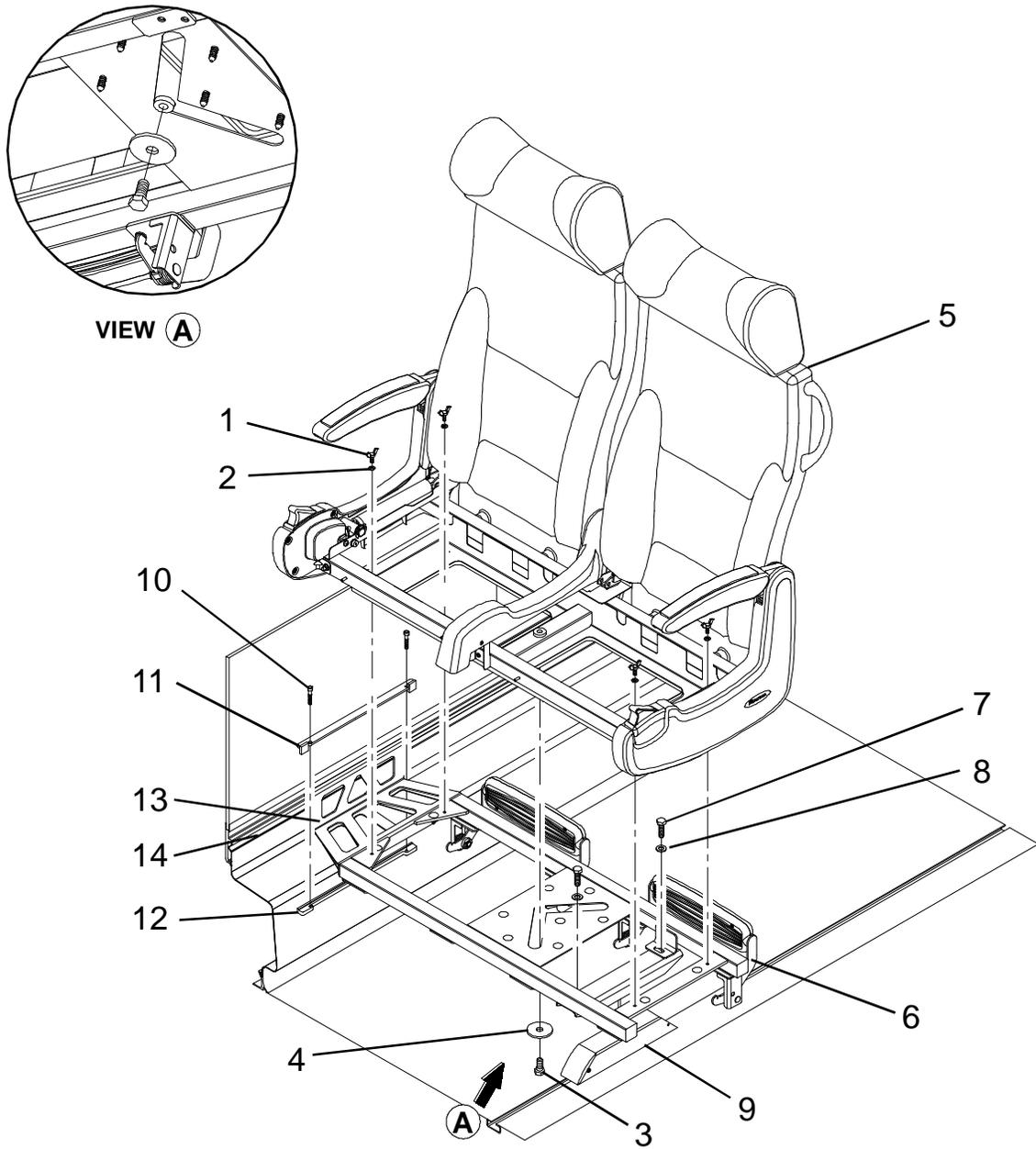


Figure 2-3 Two-Passenger Swivel Seat Removal / Installation

### **2.2.1.3.1 Removal**

1. Remove bottom cushions (See [2.2.2.1.1 Removal](#)).
2. Remove four wing studs (1) and washers (2).
3. Remove screw (3) and washer (4) locking seat frame (5) to seat base (6).
4. Remove seat frame (5).
5. Remove two screws (7) and washers (8) fastening seat base (6) to pedestal (9).
6. Remove two screws (10) fastening upper clamps (11) and lower clamp (12) to wall bracket (13).
7. Remove seat base (6).

### **2.2.1.3.2 Installation**

1. Position seat base (6) to pedestal (9) and to wall rail (14).
2. Install two screws (7) with Loctite and washers (8) to fasten seat base (6) to pedestal (9). Torque to 40 Nm.
3. Position upper clamps (11) and lower clamps (12) to wall bracket (13) and fasten with two screws (10). Torque to 10 Nm.
4. Position seat frame (5) to seat base (6) and fasten with four wing studs (1) and washers (2). Hand tight only.
5. Install screw (3) with Loctite and washer (4) to lock seat frame (5) to seat base (6). Torque to 40 Nm.
6. Install bottom cushions (See [2.2.2.1.2 Installation](#)).

## 2.2.2 Cushions

### 2.2.2.1 Bottom Cushion Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Bottom Cushion (without cover)	63208001

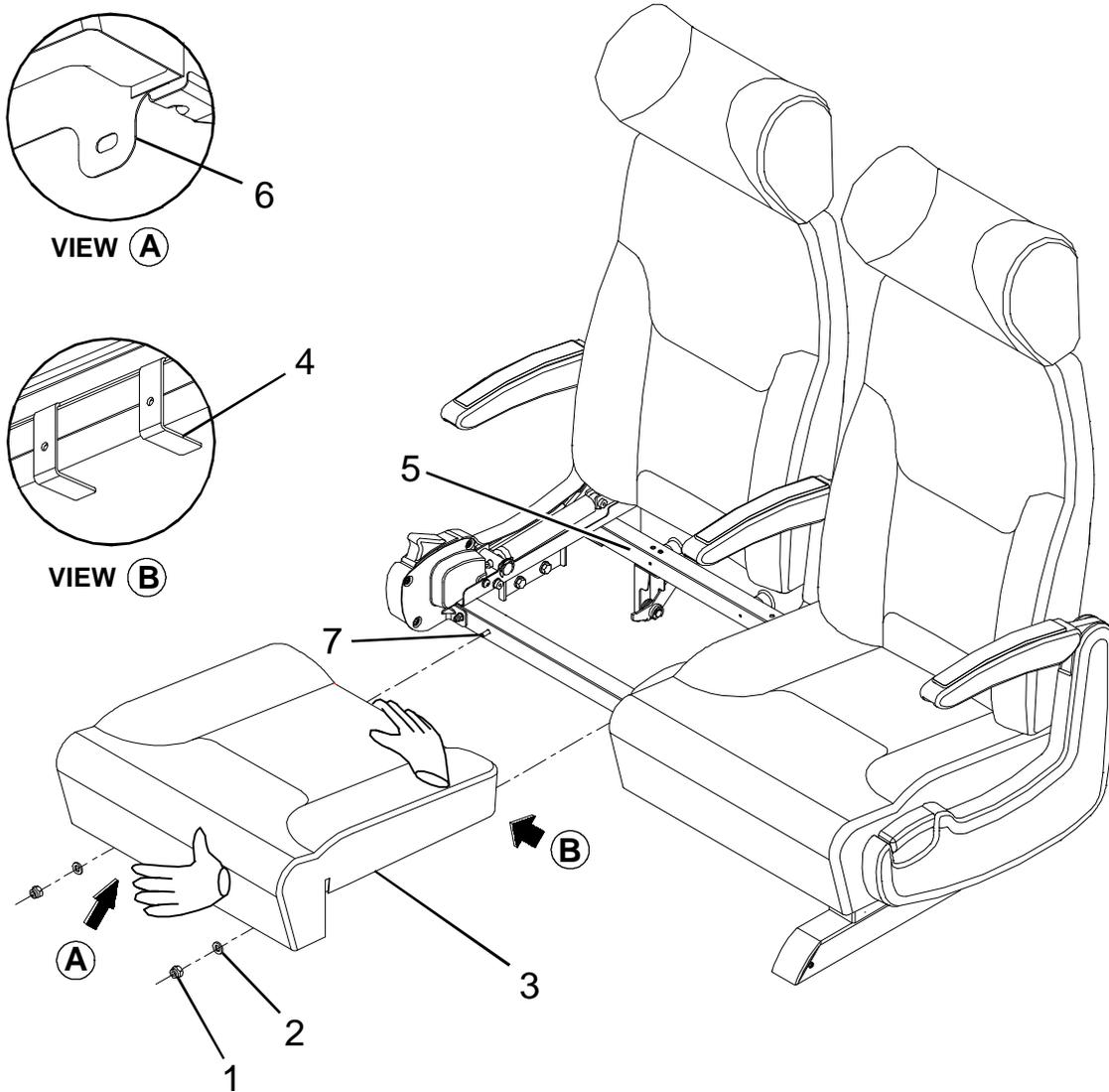


Figure 2-4 Bottom Cushion Replacement

### **2.2.2.1.1 Removal**

1. Remove two nuts (1) and washers (2) fastening bottom cushion (3).
2. Remove and discard bottom cushion (3).

### **2.2.2.1.2 Installation**

1. Align bottom cushion bracket (4) to seat frame rear tube (5) and bottom cushion pan hole (6) to seat frame stud (7).
2. Install two nuts (1) and washers (2) to fastening new bottom cushion (3). Torque to 10 Nm.

## 2.2.2.2 Bottom Cushion Cover Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
9	1	Bottom Cushion Cover	Refer to Illustrated Parts Catalog

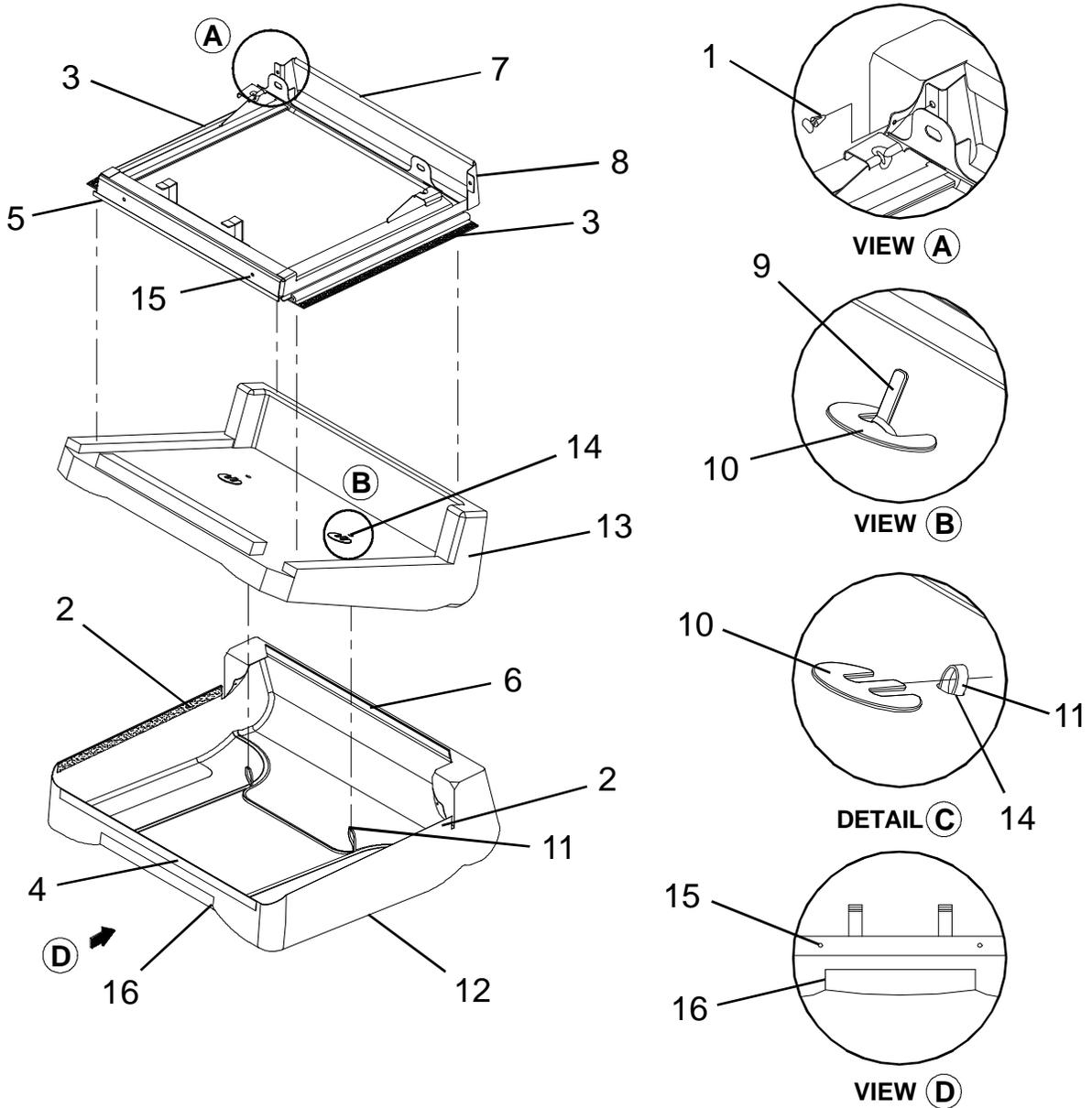


Figure 2-5 Bottom Cushion Cover Replacement

### **2.2.2.2.1 Removal**

1. Remove bottom cushion (See [2.2.2.1.1 Removal](#)).
2. Remove two nylon darts (1).
3. Remove bottom cushion cover Velcro (2) from both sides of pan Velcro (3).
4. Remove rear plastic tongue (4) from bottom cushion pan J-hook (5).
5. Remove front plastic tongue (6) from bottom cushion pan J-hook (7).
6. Remove bottom cushion pan (8).
7. Pull up center pin (9) of ``E`` round clip (10) to release pull tab (11).
8. Remove ``E`` round clip (10).
9. Remove and discard bottom cushion cover (12) from bottom cushion foam (13).

### **2.2.2.2.2 Installation**

1. Insert two pull tabs (11) into bottom cushion foam holes (14). Use a J-hook.
2. Install ``E`` round clip (10) to fix pull tabs (11). Fold 180° center pin (9) of ``E`` round clip to lock pull tabs.
3. Position bottom cushion foam (13) correctly into new bottom cushion cover (12).
4. Position bottom cushion pan (8) to foam and cover assembly.
5. Insert front plastic tongue (6) into bottom cushion pan J-hook (7).
6. Align two bottom cushion pan holes (15) with both cover seams (16) and insert rear cover plastic tongue (4) into bottom cushion pan J-hook (5).
7. Press both sides of bottom cushion cover Velcro (2) onto both sides of pan Velcro (3).
8. Install bottom cushion (See [2.2.2.1.2 Installation](#)).

### 2.2.2.3 Backrest Cushion Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
2,9	1	Backrest Cushion (without cover)	63207001
2	1	Backrest Cushion (with Handle), Right-Hand (without cover)	63207005
9	1	Backrest Cushion (with Handle), Left-Hand (without cover)	63207004

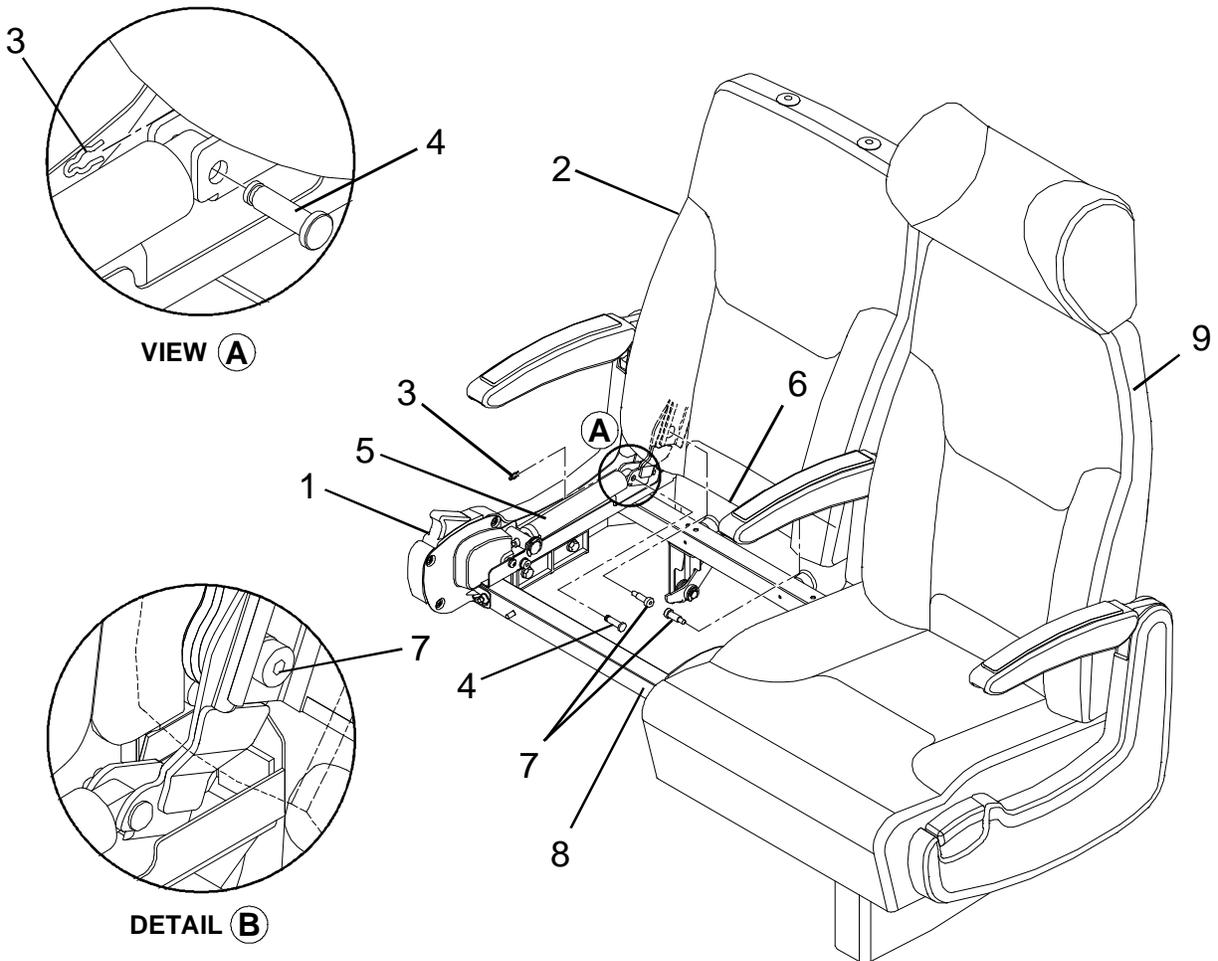


Figure 2-6 Backrest Cushion Replacement

### 2.2.2.3.1 Removal

1. Remove bottom cushion (See [2.2.2.1.1](#) Removal).
2. Remove aisle shroud (See [2.2.3.1.2](#) Removal).

#### **NOTE**

Multina suggests removing of the center upper and rear shrouds to prevent damaging shroud.

3. Remove rear and center upper shrouds (See [2.2.3.2.1](#) and [2.2.3.3.1](#) Removal).
4. Pull reclining handle (1) to recline backrest (2) to maximum position.
5. Remove hair pin clip (3) and clevis pin (4) fastening backrest (2) to gas cylinder (5). Discard hair pin clip.
6. Pull cover Velcro (6) from backrest (2) lower part to access to shoulder screws (7).
7. Remove two shoulder screws (7) fastening backrest to seat frame (8).
8. Remove and discard backrest cushion (2).

### 2.2.2.3.2 Installation

1. Position new backrest (2) to seat frame (4) and fasten with two shoulder screws (7). Torque to 40 Nm
2. Replace backrest foam and cover Velcro (6) in place.
3. Position backrest (2) and fasten with clevis pin (4) to gas cylinder (5).
4. Install new hair pin clip (3) to clevis pin (4).
5. Pull reclining handle (1) to recline backrest (2) to normal position.
6. Install rear and center upper shrouds (See [2.2.3.2.1](#) and [2.2.3.3.1](#) Installation).
7. Install aisle shroud (See [2.2.3.1.2](#) Installation).
8. Install bottom cushion (See [2.2.2.1.2](#) Installation).

## 2.2.2.4 Backrest Cushion Cover Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
5	1	Backrest Cushion Cover	Refer to Illustrated Parts Catalog

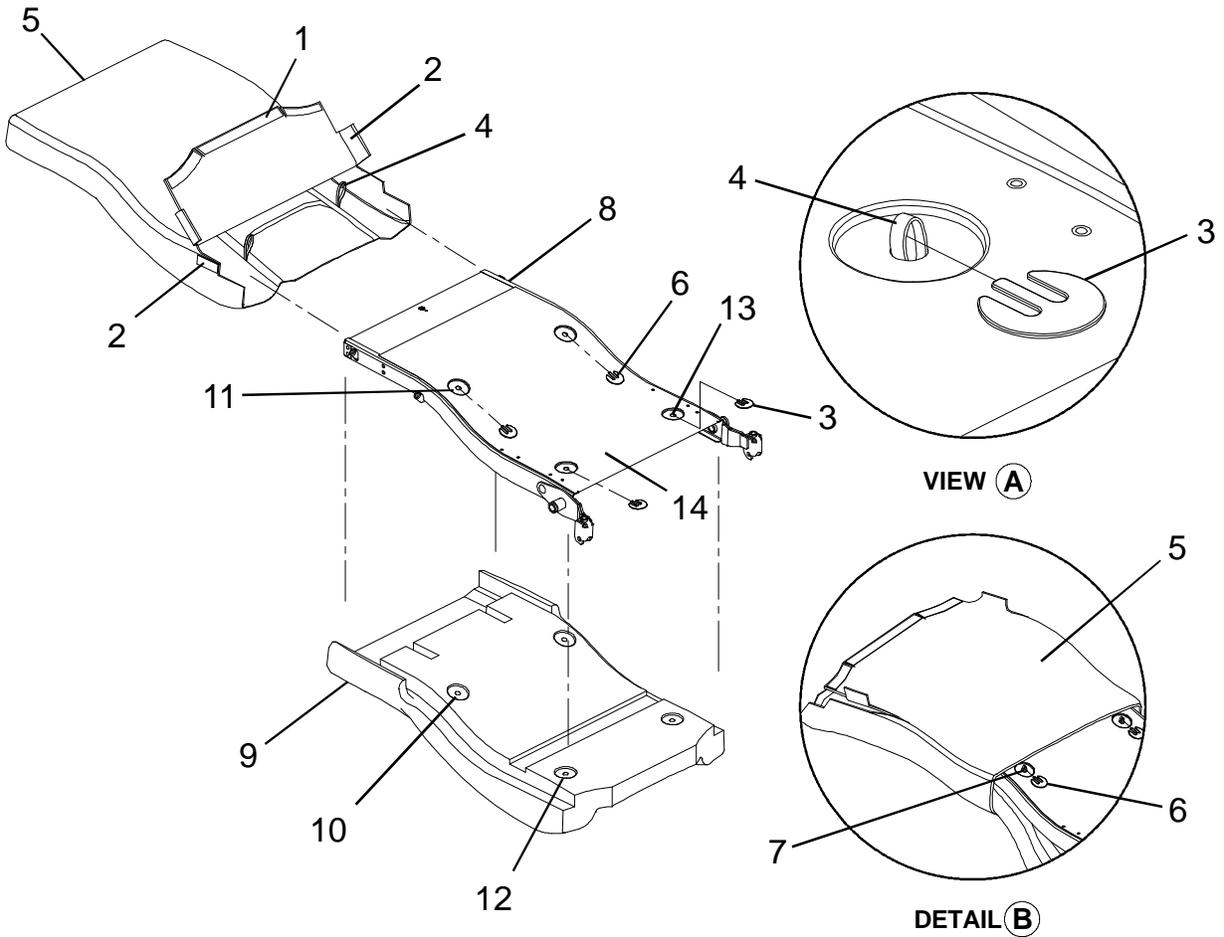


Figure 2-7 Backrest Cushion Cover Replacement

### 2.2.2.4.1 Removal

1. Remove bottom cushion (see [2.2.2.1.1](#)).
2. Remove backrest cushion (see [2.2.2.3.1](#)).
3. Remove headrest cushion and sliding guide (see [2.2.2.5.1](#)).
4. Remove center backrest cover Velcro (1).
5. Remove side backrest cover Velcro (2).
6. Remove two ``E`` round clips (3) to release lower pull tabs (4).
7. Turn backrest cover (5) over until upper ``E`` round clips (6) are accessible. See detail B.
8. Remove two ``E`` round clips (6) to release upper pull tabs (7).
9. Remove backrest cover (5) from backrest pan (8) and backrest foam (9). Discard backrest cover.

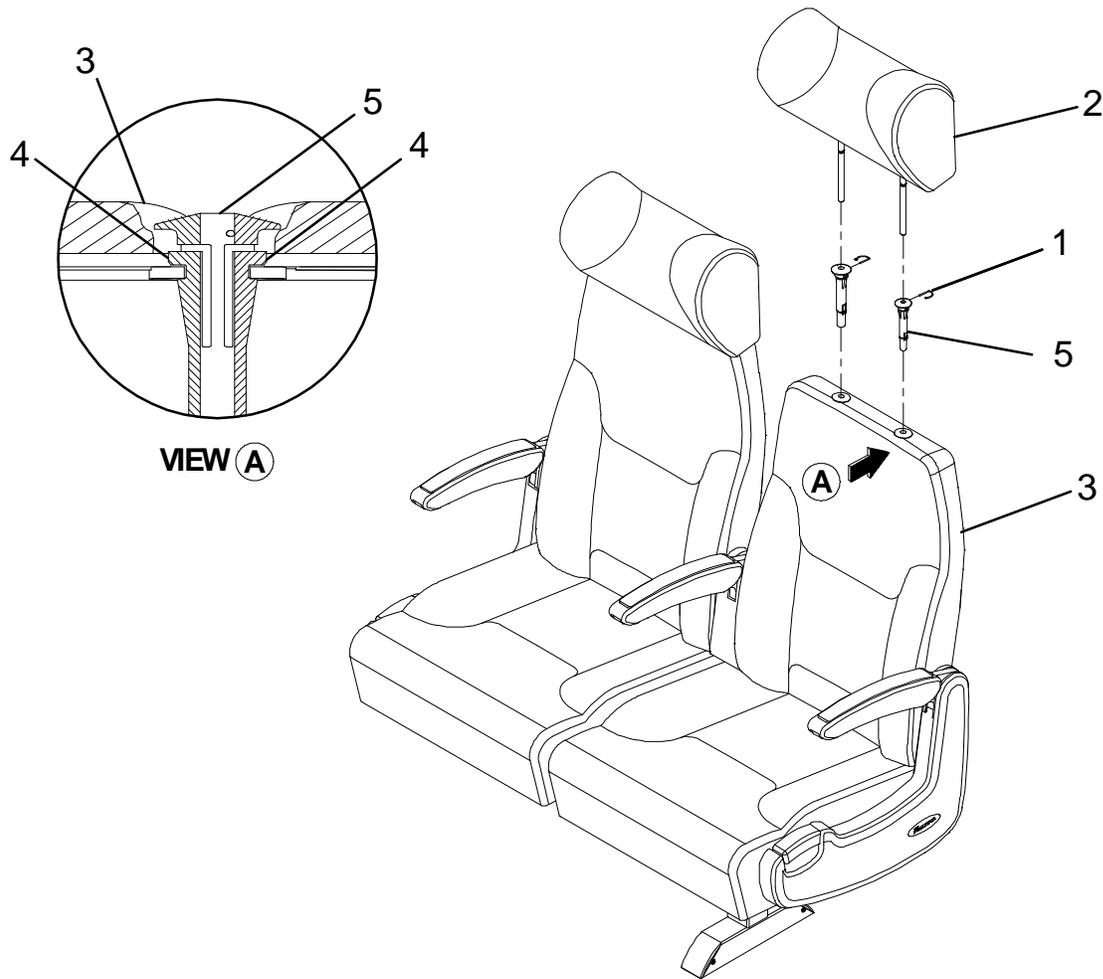
### 2.2.2.4.2 Installation

1. Position backrest foam (9) to backrest pan (8).
2. Turn new backrest cover (5) over to back until upper pull tabs (7) are accessible.
3. Position new backrest cover (5) to foam and pan assembly. See detail B.
4. Insert two upper pull tabs (7) through backrest cushion foam upper holes (10) and through backrest pan upper holes (11). Use a J-hook.
5. Install ``E`` round clip (6) to fix upper pull tabs (7).
6. Fold down backrest cover (5) and insert two lower pull tabs (4) through backrest cushion foam lower holes (12) and through backrest pan lower holes (13). Use a J-hook.
7. Install ``E`` round clip (3) to fix lower pull tabs (4).
8. Position backrest piping and backrest seams correctly.
9. Apply pink adhesive to backrest pan lower part (14) in order to stick carpet onto it.
10. Press side backrest cover Velcro (2) into place.
11. Attach center backrest cover Velcro (1) with front one.
12. Install headrest cushion and sliding guide (see [2.2.2.5.2](#)).
13. Install backrest cushion (see [2.2.2.3.2](#)).
14. Install bottom cushion (see [2.2.2.1.2](#)).

## 2.2.2.5 Headrest and Sliding Guide Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Headrest Cushion (without cover)*	63204001
5	2	Sliding Guide	197704



**Figure 2-8 Headrest and Sliding Guide Replacement**

#### **NOTE**

\* Refer to illustrated Parts Catalog to get the appropriate cover part number.

#### **NOTE**

Multina suggests the replacement of entire headrest (with cover).

### **2.2.2.5.1 Removal**

1. Remove hitch pin clip (1) with flat tip screwdriver.
2. Remove headrest (2) from backrest (3).
3. With two flat tip screwdrivers, press each sliding guide clip (4) of sliding guide (5) to unlock it.
4. Pull and discard sliding guide (5).

### **2.2.2.5.2 Installation**

1. Position sliding guide (5). Push on sliding guide head (5) until sliding guide clip (4) interlocks correctly.
2. Position hitch pin clip (1) in sliding guide.
3. Install new headrest (2) to backrest (3).
4. Push hitch pin clip (1) to interlock correctly.

## 2.2.3 Shrouds

### 2.2.3.1 Aisle Side Shroud Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Aisle Side Shroud, Left-Hand	210518
2	1	Aisle Side Shroud, Right-Hand	211764
5	1	Multina Label	279646

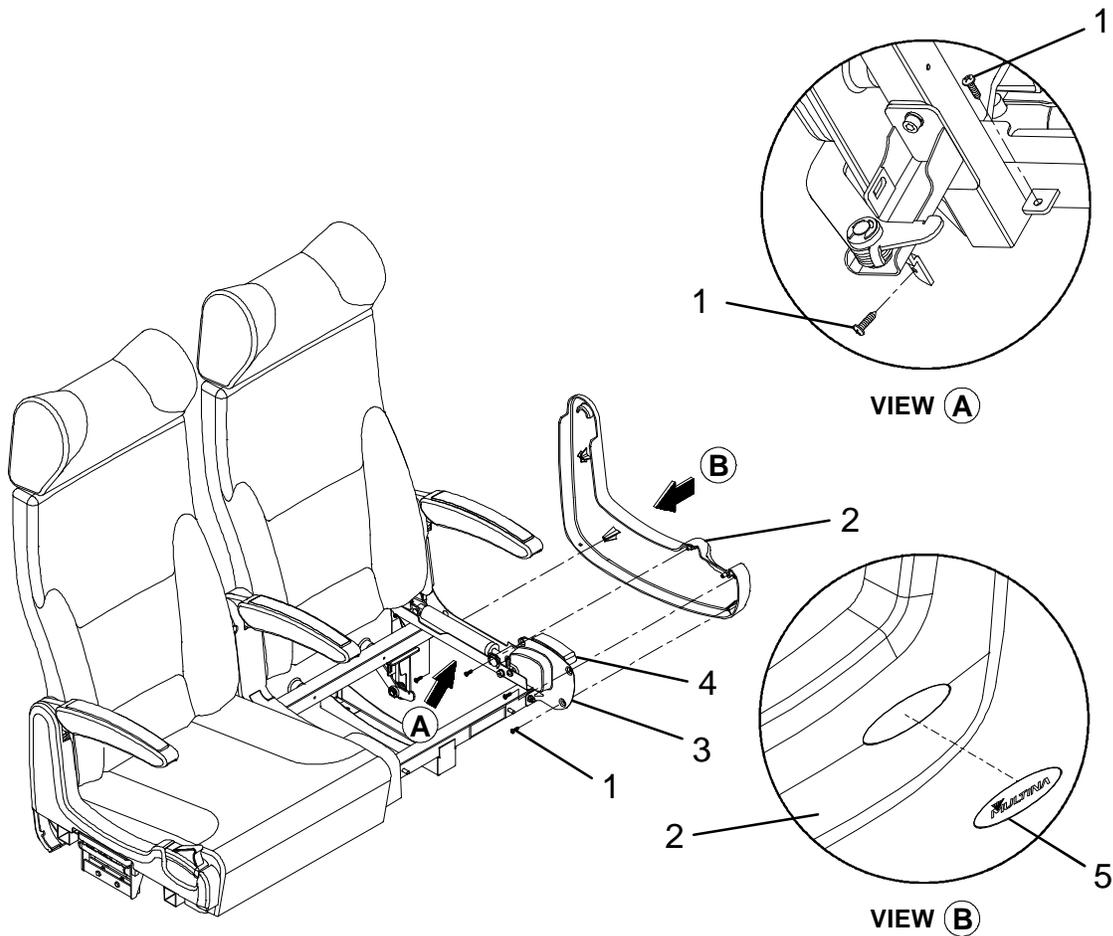


Figure 2-9 Aisle Side Shroud Replacement

### **2.2.3.1.1 Removal**

1. Remove bottom cushion (See [2.2.2.1.1](#) Removal).
2. Remove five screws (1) fastening aisle side shroud (2) to seat frame (3).
3. Remove and discard aisle side shroud (2).

### **2.2.3.1.2 Installation**

1. Position new aisle side shroud (2) to seat frame (3).
2. Align screw (1) with reclining handle (4) and screw it. Torque to 0.3 Nm.
3. Install four screws (1) to fastening aisle side shroud (2) Torque to 0.3 Nm.
4. Install new label (5) to aisle side shroud (2).
5. Install bottom cushions (See [2.2.2.1.2](#) Installation).

### 2.2.3.2 Center Rear Shroud Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Center Rear Shroud	226608

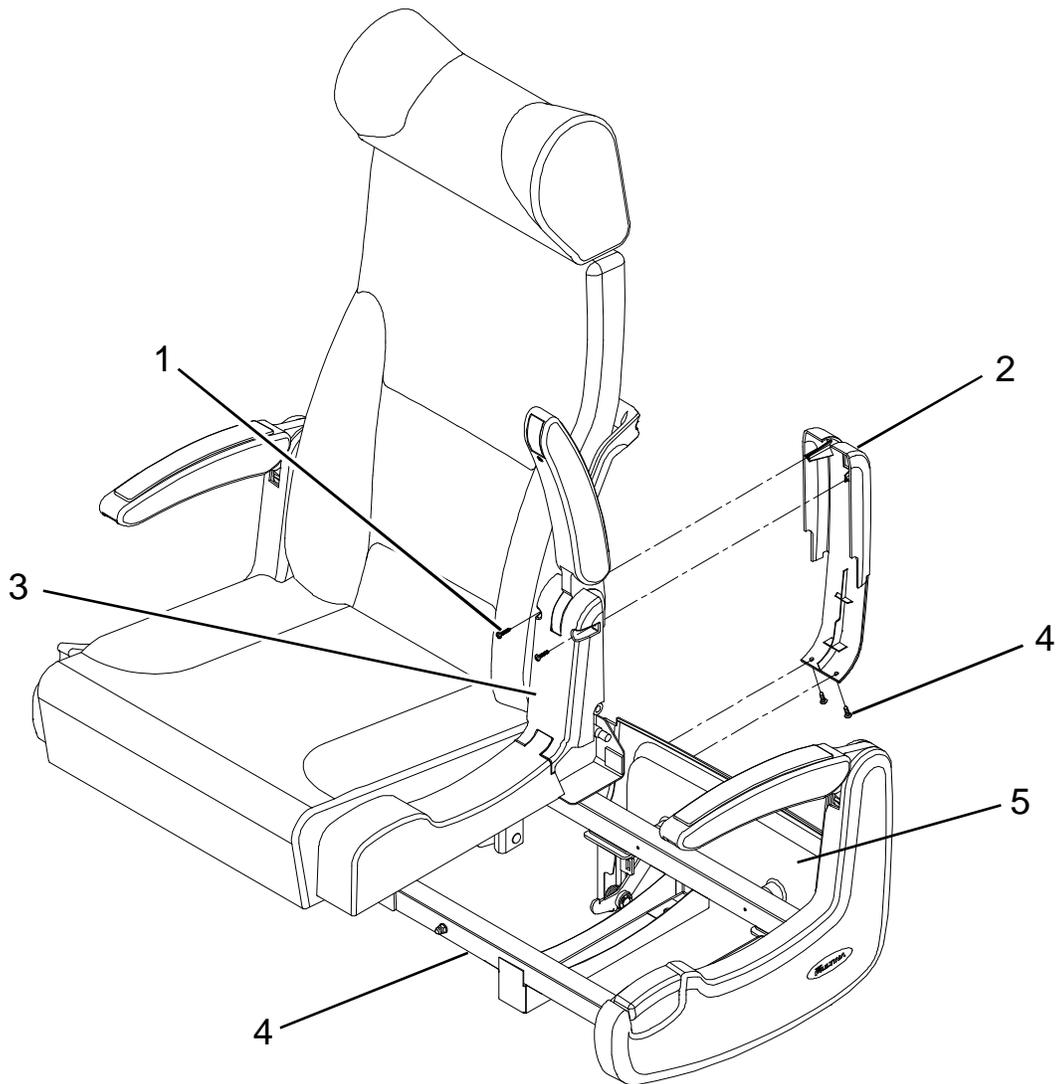


Figure 2-10 Center Rear Shroud Replacement

**NOTE**

Bottom cushion and backrest was removed for clarity.

### **2.2.3.2.1 Removal**

1. Remove two screws  $\frac{3}{4}$  in lg (1) fastening center rear shroud (2) to center upper shroud (3).
2. Remove two screws  $\frac{5}{8}$  in lg (4) fastening center rear shroud (2) to footrest shroud (5).
3. Remove and discard center rear shroud (2).

### **2.2.3.2.2 Installation**

1. Position new center rear shroud (2) and fasten with two screws  $\frac{5}{8}$  in lg (4) to footrest shroud (5). Torque to 0.3 Nm.
2. Install two screws  $\frac{3}{4}$  in lg (1) to fasten new center rear shroud (2) to center upper shroud (3). Torque to 0.3 Nm.

### 2.2.3.3 Center Front and Upper Shroud Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
3	1	Center Upper Shroud	227088
7	1	Center Front Shroud	226587

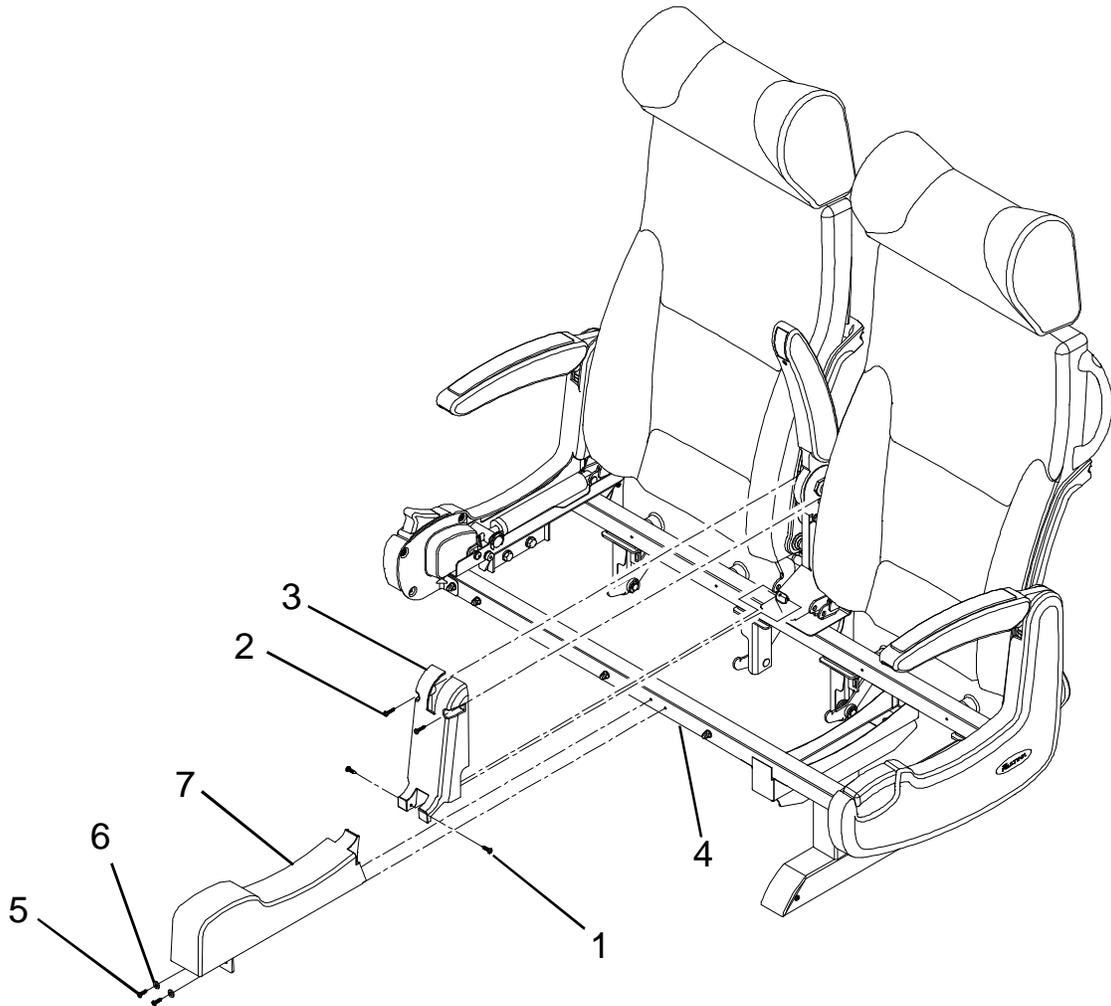


Figure 2-11 Center Front and Upper Shroud Replacement

### **2.2.3.3.1 Removal**

1. Remove two bottom cushions (See [2.2.2.1.1](#) Removal).
2. Remove two 3/8 in lg screws (1) and two 3/4 in lg screws (2) fastening center upper shroud (3) to seat frame (4).
3. Remove and discard center upper shroud (3).
4. Remove two screws (5) and washers (6) fastening center front shroud (7) to seat frame (4).
5. Remove and discard center front shroud (7).

### **2.2.3.3.2 Installation**

1. Position new center front shroud (7) and fasten with two screws (5) and washers (6). Torque to 0.3 Nm.
2. Position new center upper shroud (2) and fasten with two 3/4 in lg screws (2) and two 3/8 in lg screws (1). Torque to 0.3 Nm.
3. Install two bottom cushions (See [2.2.2.1.2](#) Installation).



## 2.2.3.4 Inside Shroud Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Inside Shroud, Left-Hand	210526
2	1	Inside Shroud, Right-Hand	211377

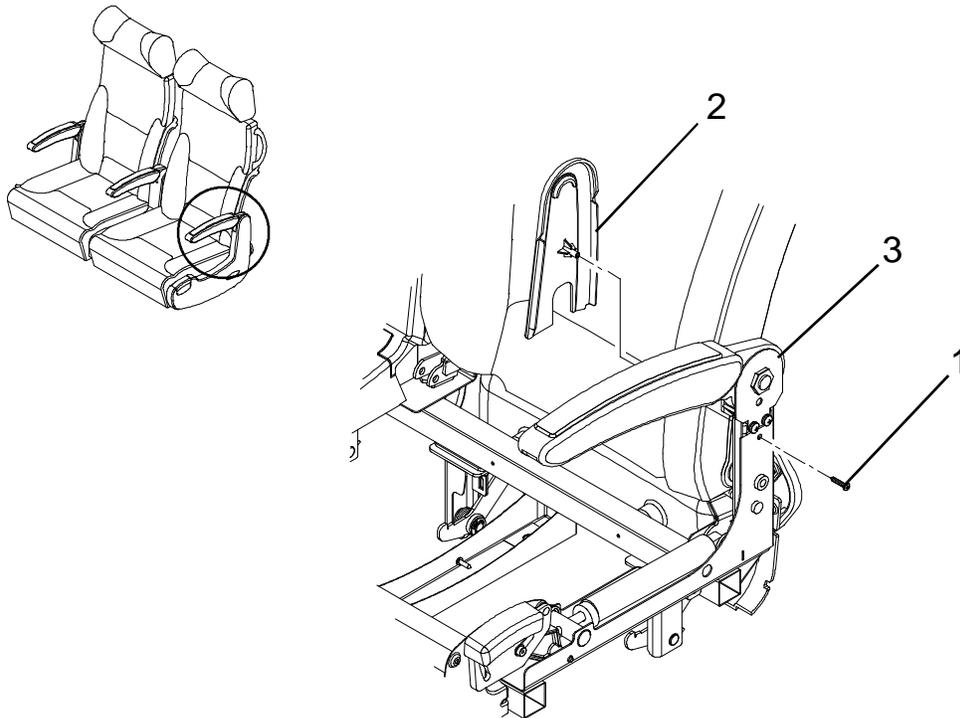


Figure 2-12 Inside Shroud Replacement

### 2.2.3.4.1 Removal

1. Remove bottom cushion (See [2.2.2.1.1](#) Removal).
2. Remove aisle side shroud (See [2.2.3.1.1](#) Removal).
3. Remove screw (1) fastening aisle side shroud (2) to seat frame (3).
4. Remove and discard aisle side shroud (2).

### 2.2.3.4.2 Installation

1. Position new aisle side shroud (2) to seat frame (3) and fasten with screw (1). Torque to 0.3 Nm.
2. Install aisle side shroud (See [2.2.3.1.2](#) Installation).
3. Install bottom cushion (See [2.2.2.1.2](#) Installation).

### 2.2.3.5 Footrest Bumper and Footrest Shroud Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
3	1	Footrest Shroud	197579
4	2	Footrest Bumper	231634

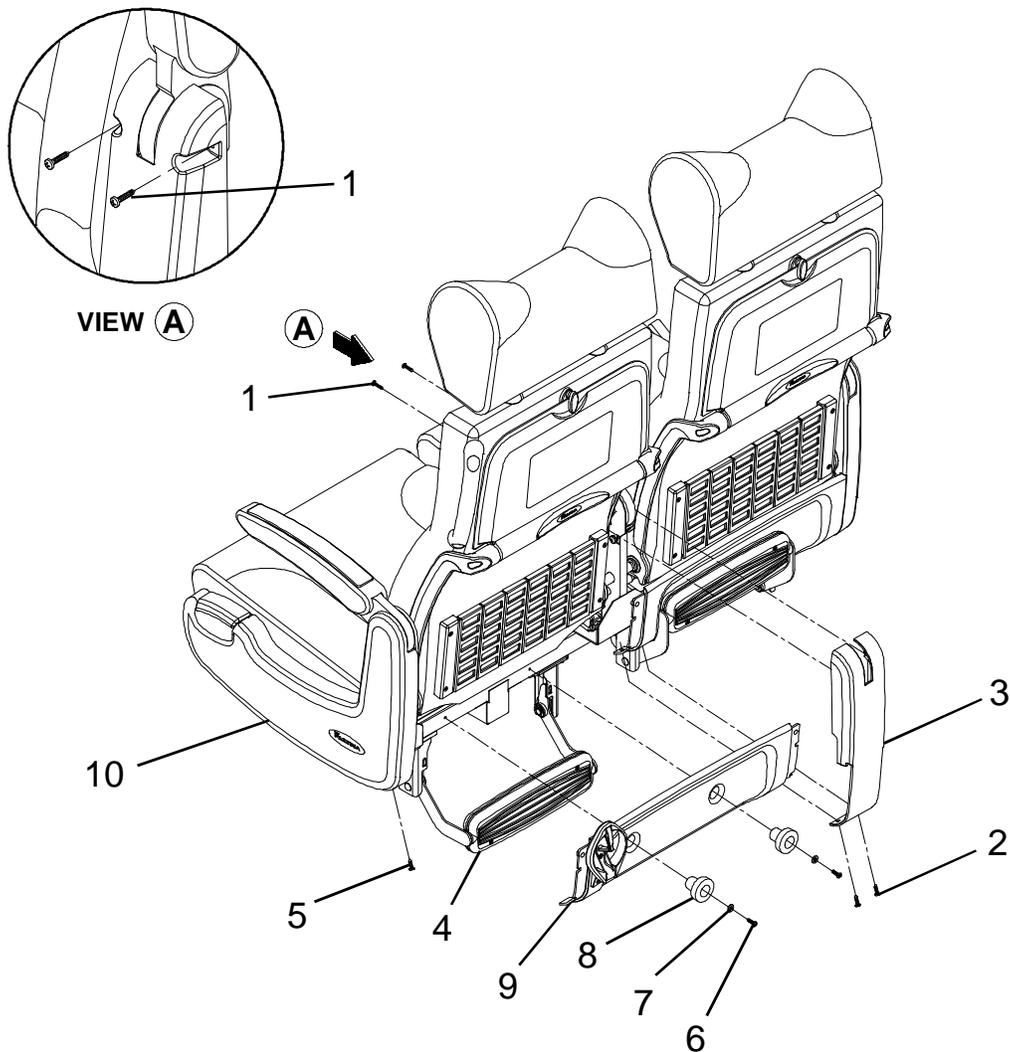


Figure 2-13 Footrest Bumper and Footrest Shroud Replacement

**WARNING**  
**BEWARE OF THE AUTOMATIC FOOTREST RAPID UPRIGHT INCLINATION.  
RISK OF INJURY! MAKE SURE ALL LIMBS ARE AWAY FROM MOVING  
PARTS.**

#### **2.2.3.5.1 Removal**

**NOTE**

**Keep footrest down to get access to shroud screws.**

1. Remove cup holder (See [2.2.5.4.1](#) Removal) from aisle side only.
2. Remove two screws  $\frac{3}{4}$  in lg (1) two screws  $\frac{5}{8}$  in lg (2) fastening center rear shroud (3). Remove shroud.
3. Remove screw (5).
4. Place footrest (4) downward.
5. Remove two screws (6) and washers (7) fastening bumper (8) and footrest shroud (9).
6. Remove and discard footrest bumper (8) and footrest shroud (9).

#### **2.2.3.5.2 Installation**

1. Position new footrest shroud (9), new footrest bumper (8) and fasten with two screws (6) and washers (7). Torque to 0.3 Nm.
2. Release footrest (4).
3. Install screw (5).
4. Position center rear shroud (3) and fasten with two screws  $\frac{3}{4}$  in lg (1) and two screws  $\frac{5}{8}$  in lg (2). Torque to 0.3 Nm.
5. Install cup holder (See [2.2.5.4.2](#) Installation) to aisle side only.

## 2.2.4 Mechanism

### 2.2.4.1 Reclining Gas Cylinder Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
5	1	Reclining Gas Cylinder	214332
3	1	Hair Pin Clip	287646

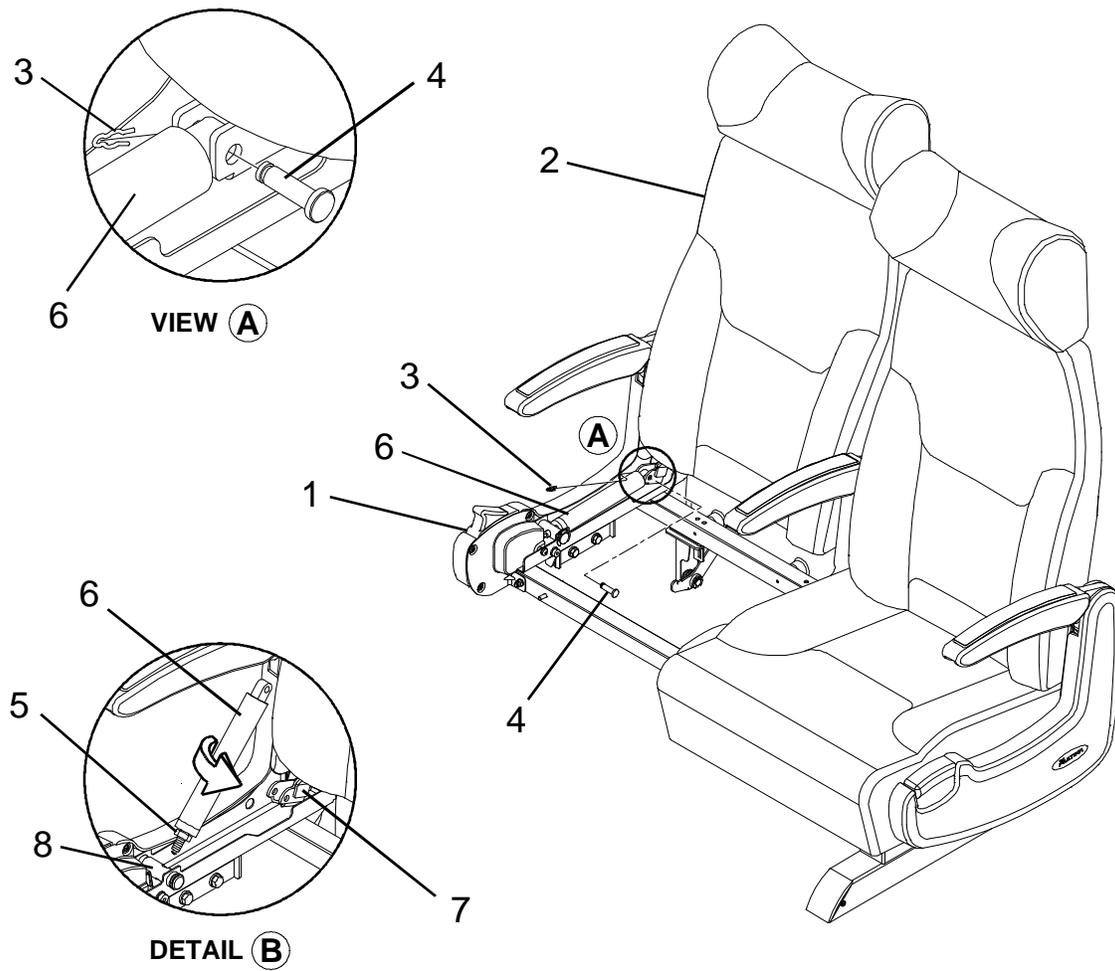


Figure 2-14 Reclining Gas Cylinder Replacement

### **WARNING**

**BEWARE OF THE AUTOMATIC BACKREST RAPID UPRIGHT INCLINATION WHEN RECLINING HANDLE IS PRESSED. RISK OF INJURY! MAKE SURE ALL LIMBS ARE AWAY FROM MOVING PARTS.**

#### **2.2.4.1.1 Removal**

### **NOTE**

- The aisle side shroud should be removed when the maintenance is done on the aisle side of the seat.
1. Remove bottom cushion (See [2.2.2.1.1](#) Removal).
  2. Remove aisle shroud (See [2.2.3.1.1](#) Removal). Aisle side maintenance task only.
  3. Pull reclining handle (1) to recline backrest (2) to maximum position.
  4. Remove hair pin clip (3) and clevis pin (4) fastening gas cylinder (5) to backrest (2). Discard hair pin clip.
  5. Swivel backrest (2) slightly to front.
  6. Loosen jam nut (5).
  7. Unscrew gas cylinder (6) from pivot cylinder (8) (See Detail B). Discard gas cylinder.

### **WARNING**

**BEWARE OF THE AUTOMATIC BACKREST RAPID UPRIGHT INCLINATION WHEN RECLINING HANDLE IS PRESSED. RISK OF INJURY! MAKE SURE ALL LIMBS ARE AWAY FROM MOVING PARTS.**

#### **2.2.4.1.2 Installation**

### **NOTE**

- Do not activate gas cylinder until installation is completed.
1. Align and screw new gas cylinder (6) thread side with pivot cylinder (8). Hand tight only.
  2. Tighten jam nut (5).
  3. Align new gas cylinder (6) whole side with backrest receptacle (7).
  4. Install clevis pin (4) and hair pin clip (3).
  5. Pull reclining handle (1) to recline backrest (2) to normal position.
  6. Install aisle shroud (See [2.2.3.1.2](#) Installation). Aisle side maintenance task only.
  7. Install bottom cushion (See [2.2.2.1.2](#) Installation).

### **NOTE**

- Verify that the reclining system is functional by pressing the reclining handle.

## 2.2.4.2 Reclining Handle and Lever Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
3	1	Reclining Handle, Aisle Side, Left-Hand	210534
3	1	Reclining Handle, Aisle Side, Right-Hand	211385
	1	Reclining Handle, Wall Side, Left-Hand	231458
	1	Reclining Handle, Wall Side, Right-Hand	231466
6	1	Reclining Lever	210905

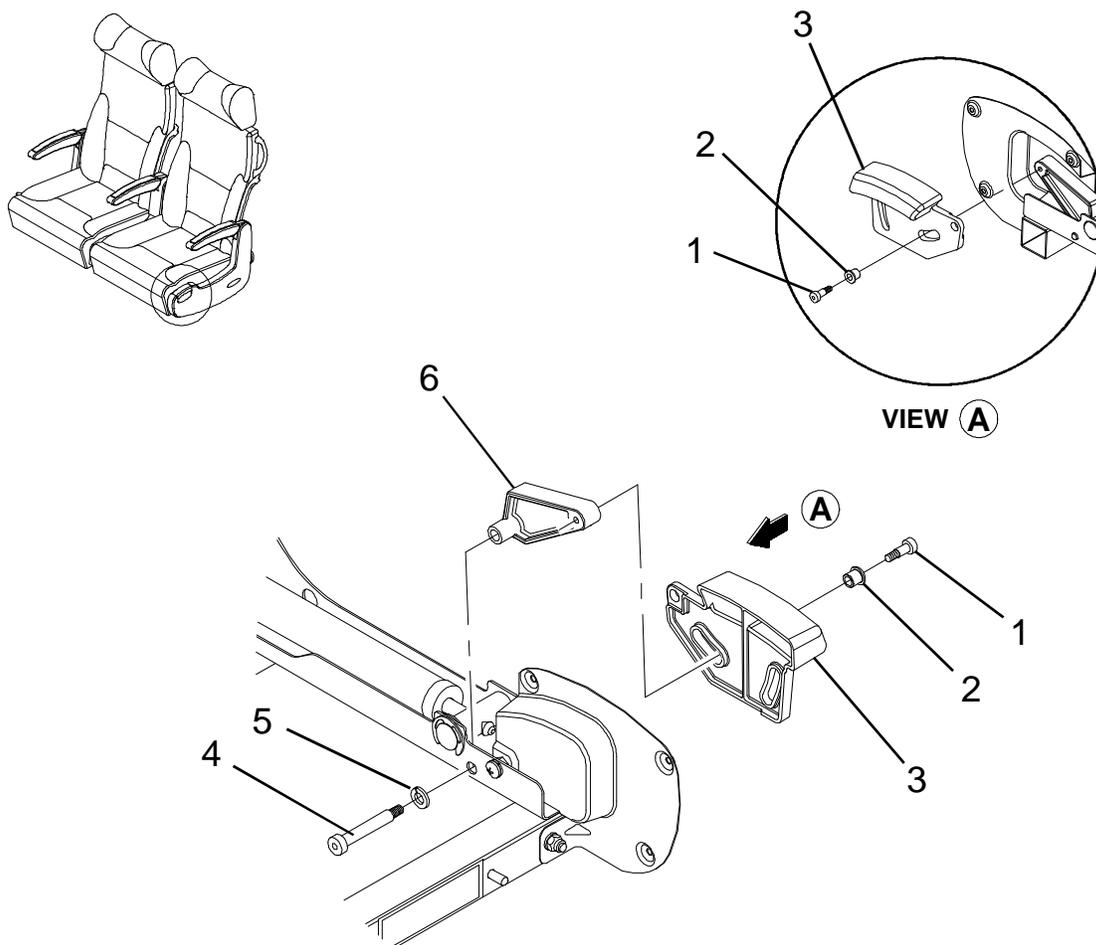


Figure 2-15 Reclining Handle and Lever Replacement

### 2.2.4.2.1 Removal

#### **NOTE**

- The seat should be removed when the maintenance is done on the wall side for the replacement of the wall side reclining handle.
1. Remove bottom cushion from aisle side (See [2.2.2.1.1](#) Removal).
  2. Remove aisle side shroud (See [2.2.3.4.1](#) Removal).
  3. Remove screw (1) and flanged bearing (2) fastening reclining handle (3).
  4. Remove and discard reclining handle (3).
  5. Remove screw (4) and washer (5) fastening reclining lever (6).
  6. Remove and discard reclining lever (6).

### 2.2.4.2.2 Installation

1. Position new reclining lever (6) and fasten with screw (4) and washer (5). Torque to 5.5 Nm.
2. Position new reclining handle (3) and flanged bearing (2) and fasten with screw (1). Torque to 0.75 Nm.
3. Install aisle side shroud (See [2.2.3.4.2](#) Installation).
4. Install bottom cushion from aisle side (See [2.2.2.1.2](#) Installation).

#### **NOTE**

- Verify that the reclining system is functional by pulling the reclining handle.

### 2.2.4.3 Downward Armrest Assembly Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
4	1	Downward Armrest Assembly	63203005
6	2	Nylon Washer	237770

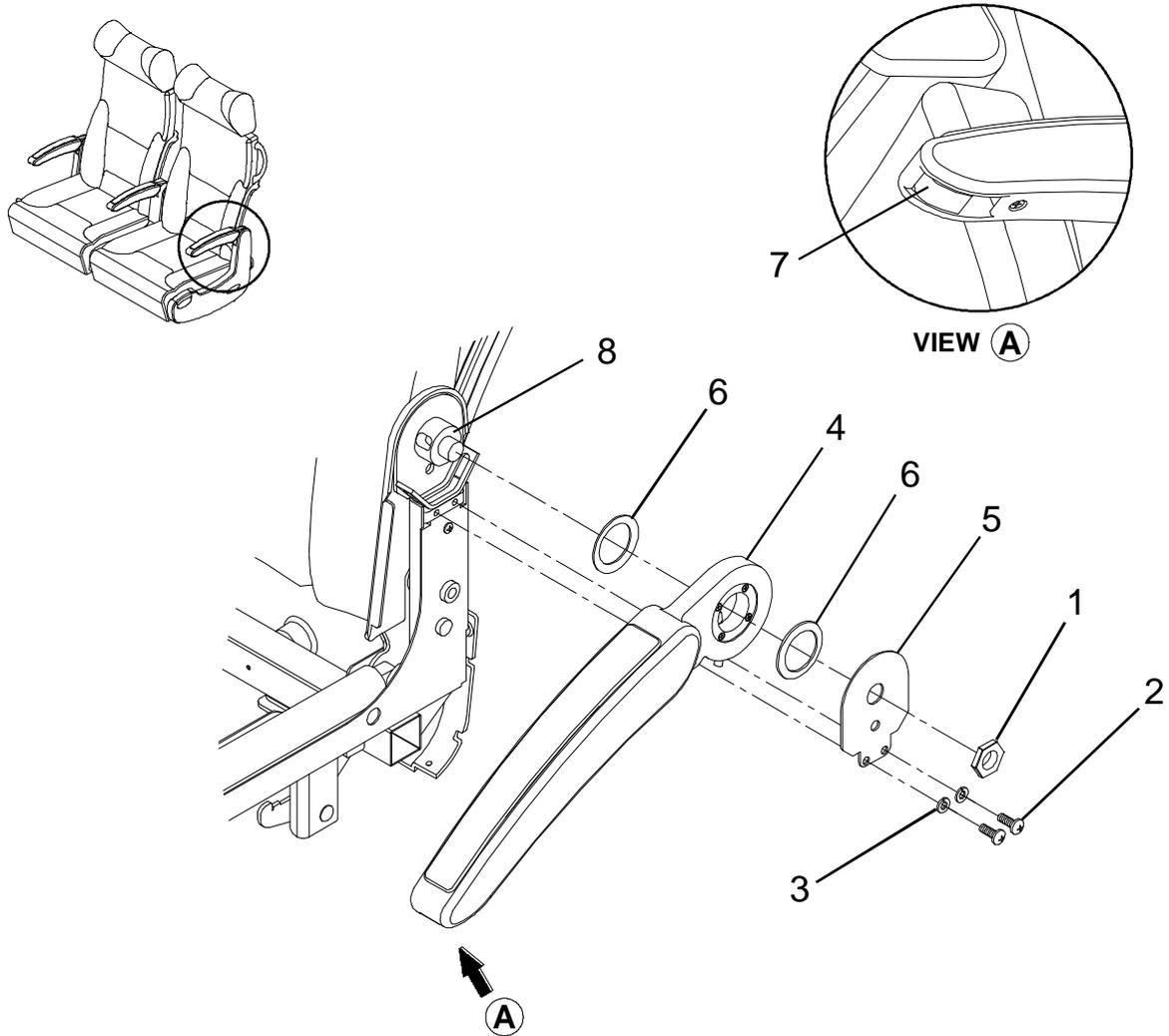


Figure 2-16 Downward Armrest Assembly Replacement

### 2.2.4.3.1 Removal

1. Remove bottom cushion (See [2.2.2.1.1](#) Removal).
2. Remove aisle side shroud (See [2.2.3.4.1](#) Removal)
3. Remove one nut (1), two screws (2) and washers (3) fastening armrest assembly (4).
4. Remove cover plate (5) and nylon washers (6). Discard nylon washers.
5. Press armrest button (7) to release armrest assembly to downward position.
6. Press armrest button (7) again to remove armrest assembly (8). Discard Armrest assembly.

### 2.2.4.3.2 Installation

1. Position new nylon washer (6).
2. Press armrest button (7) to positioning armrest assembly (8).
3. Install nylon washer (6) and cover plate (5) and fasten with two screws (2) and washers (3). Torque to 10 Nm.
4. Install nut (1). Torque to 40 Nm.
5. Install aisle shroud (See [2.2.3.4.2](#) Installation).
6. Install bottom cushion (See [2.2.2.1.2](#) Installation).

#### **NOTE**

- Verify that the reclining system is functional by pressing armrest button.

## 2.2.4.4 Center Upward Armrest Assembly Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
8	1	Upward Armrest Assembly	63203002
9	2	Nylon Washer	237770

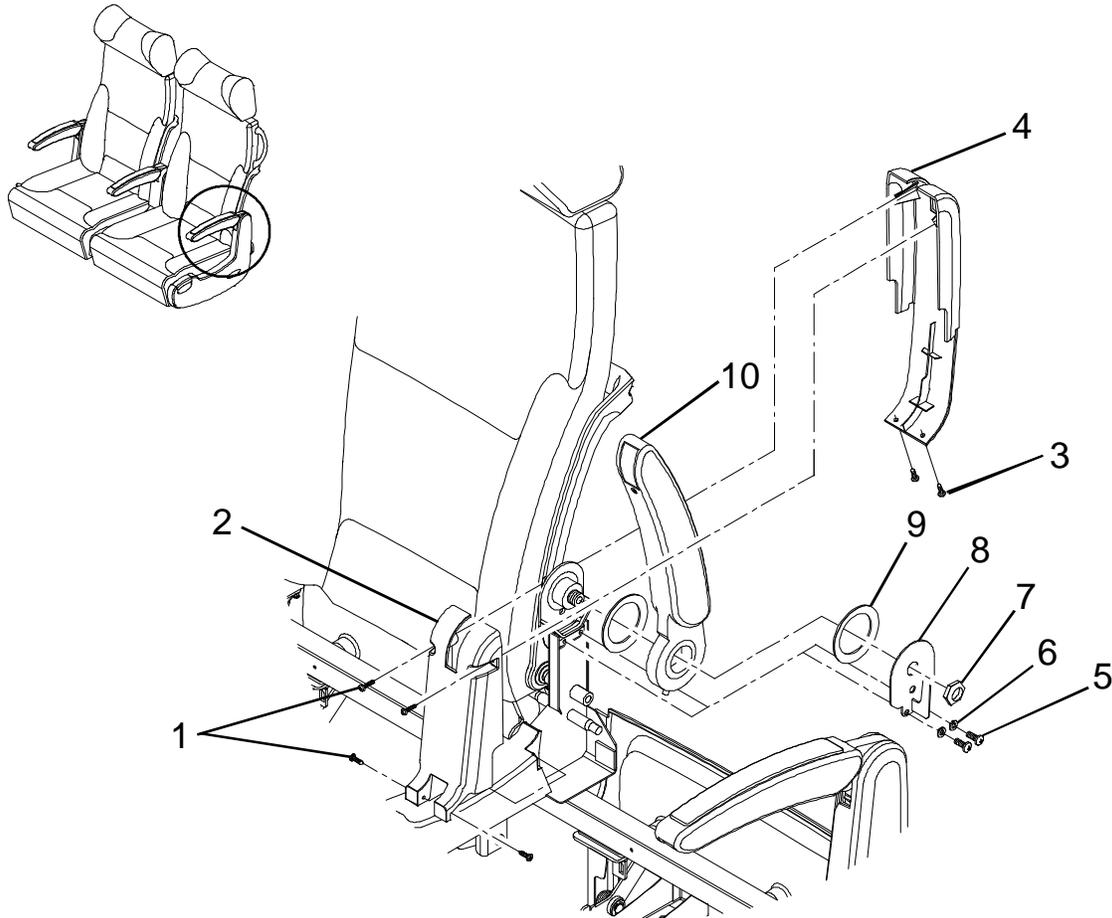


Figure 2-17 Center Upward Armrest Assembly Replacement

#### **2.2.4.4.1 Removal**

1. Remove aisle side bottom cushion (See [2.2.2.1.1](#) Removal).
2. Remove aisle side backrest cushion (See [2.2.2.3.1](#) Removal).
3. Remove four screws (1) fastening center upper shroud (2).
4. Remove center upper shroud (2).
5. Remove two screws (3) fastening center rear shroud (4).
6. Remove two screws (5), washers (6), and nut (7).
7. Remove cover plate (8) and nylon washers (9). Discard nylon washers.
8. Remove and discard center armrest (10).

#### **2.2.4.4.2 Installation**

1. Position two new nylon washers (9) and new center armrest (10).
2. Install cover plate (8) and fasten with two screws (5) and washers (6). Torque to 10 Nm.
3. Install nut (7). Torque to 40 Nm.
4. Position center rear shroud (4) and fasten with two screws (3).
5. Position center upper shroud (2) and fasten with four screws (1) Torque to 0.3 Nm.
6. Install aisle side backrest cushion (See [2.2.2.3.2](#) Installation).
7. Install aisle side bottom cushion (See [2.2.2.1.2](#) Installation).

## 2.2.4.5 Fixed Armrest Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
11	1	Fixed Armrest Assembly	63203004
9	2	Nylon Washer	237770

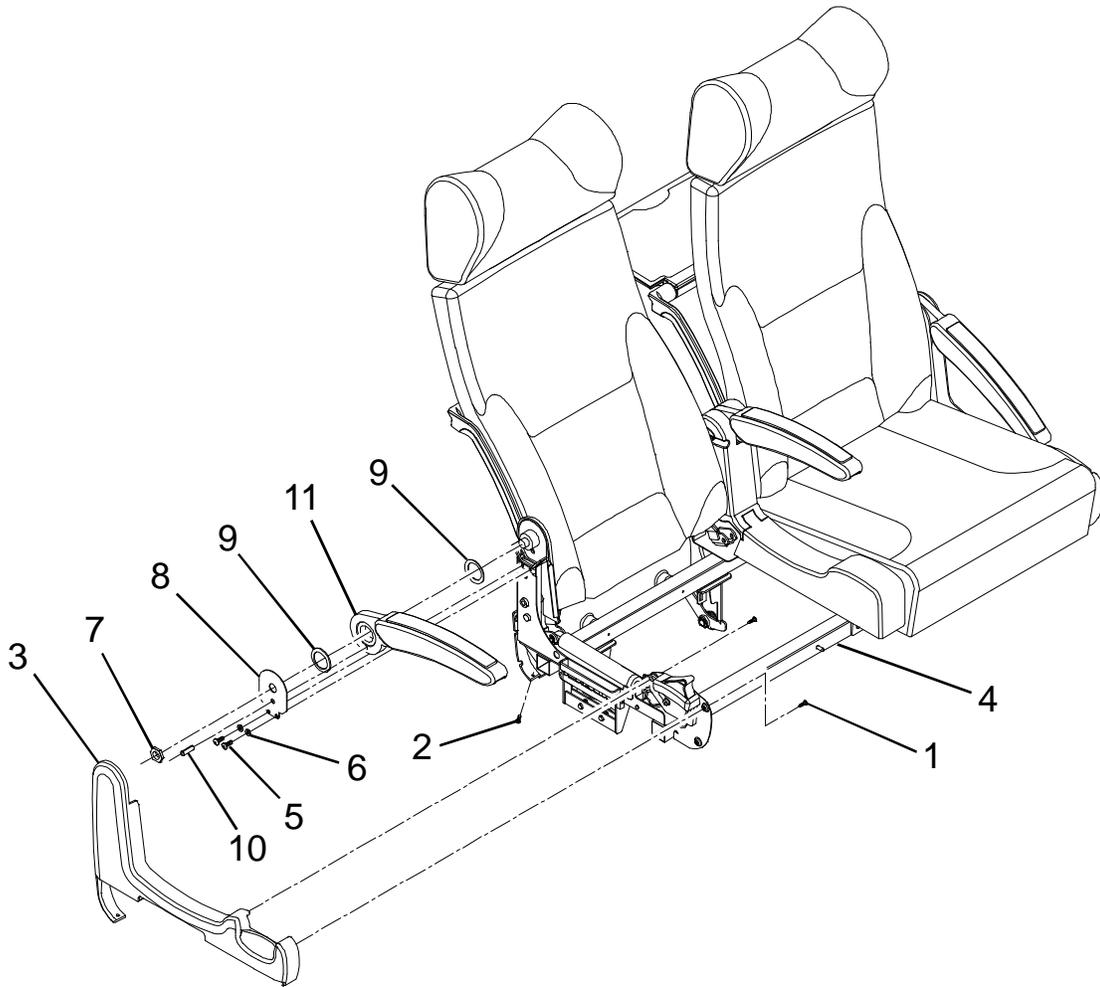


Figure 2-18 Fixed Armrest Replacement

### **NOTE**

- The seat should be removed for this maintenance task.

### **2.2.4.5.1 Removal**

1. Remove wall side bottom cushion (See [2.2.2.1.1](#) Removal).
2. Remove two screws (1) and one screw (2) fastening wall side shroud (3) to seat frame (4).
3. Remove two screws (5) and washers (6).
4. Remove nut (7).
5. Remove tension spring pin (10).
6. Remove cover plate (8).
7. Remove two nylon washers (9) and fixed armrest assembly (11). Discard armrest.

### **2.2.4.5.2 Installation**

1. Position new fixed armrest assembly (11) with two new nylon washers (9).
2. Install cover plate (8).
3. Install tension spring pin (10).
4. Install nut (7). Torque to 40 Nm.
5. Install two screws (5) and washers (6). Torque to 10 Nm.
6. Position wall side shroud (3) and fasten with two screws (1) and one screw (2). Torque to 0.3 Nm.
7. Install wall side bottom cushion (See [2.2.2.1.2](#) Installation).



## 2.2.4.6 Armrest Cover and Foam Insert Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
3	1	Armrest Cover	225824
4	1	Armrest Foam Insert	225710

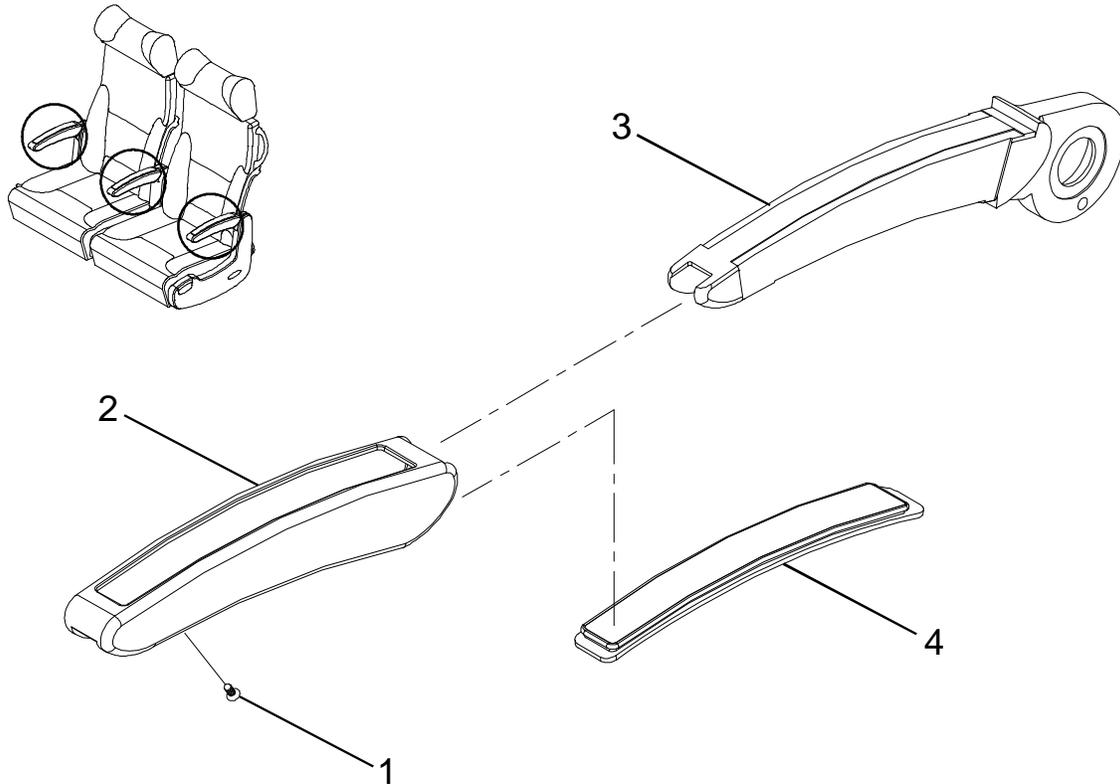


Figure 2-19 Armrest Cover and Foam Insert Replacement

### 2.2.4.6.1 Removal

1. Remove screw (1) fastening armrest cover assembly (2).
2. Remove and discard armrest cover (3) and/or armrest foam insert (4).

### 2.2.4.6.2 Installation

1. Position new armrest foam insert (4) into new armrest cover (3).
2. Position armrest cover assembly (2) to armrest frame (4) and fasten with screw (1). Torque to 1.5 Nm.

## 2.2.4.7 Bench Seat Reclining Button Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
5,6, 7,8	1	Reclining Button Kit	280524
8	1	Reclining Label	229649

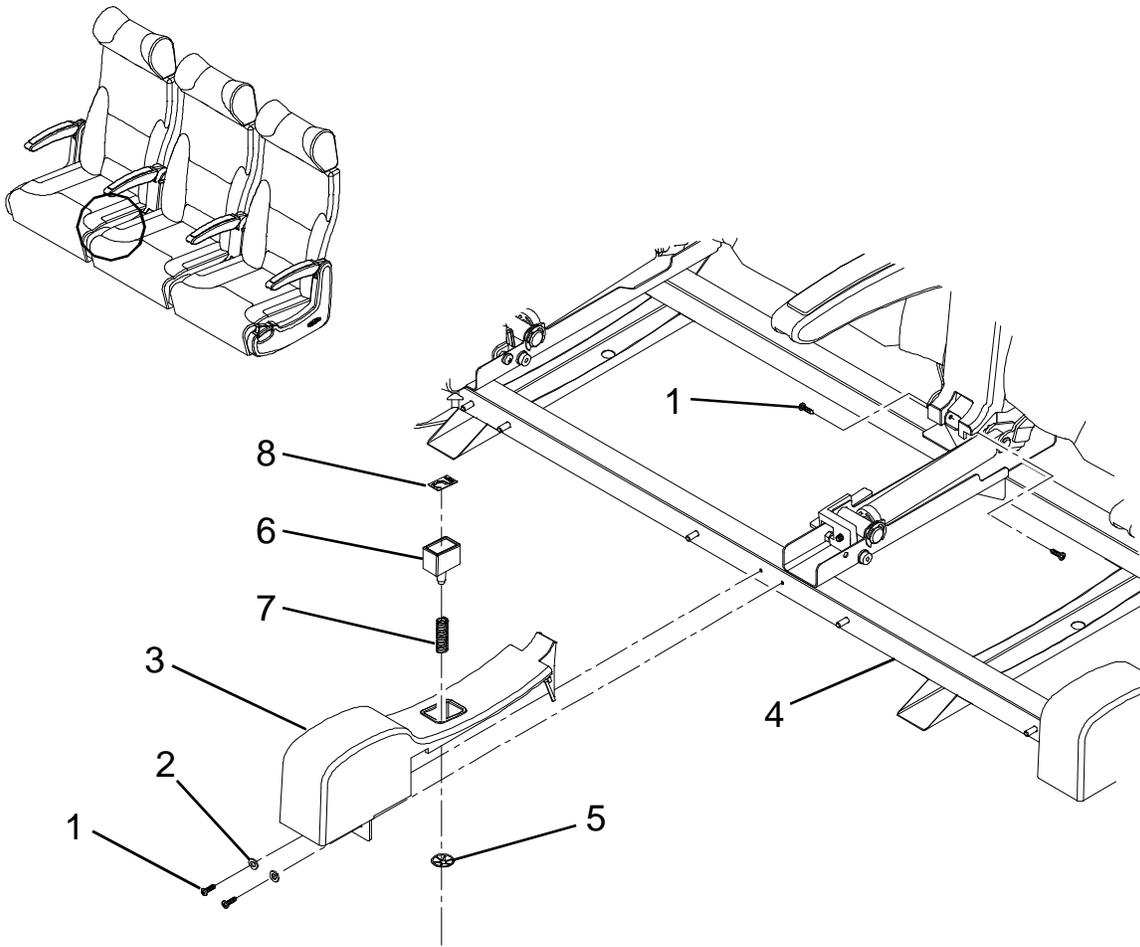


Figure 2-20 Bench Seat Reclining Button Replacement

**WARNING**

**BEWARE OF THE AUTOMATIC BACKREST RAPID UPRIGHT INCLINATION WHEN RECLINING BUTTON IS PRESSED. RISK OF INJURY! MAKE SURE ALL LIMBS ARE AWAY FROM MOVING PARTS.**

**WARNING**

**SPRINGS ARE UNDER TENSION AND CAN BE EXPELLED AT GREAT SPEED. REPLACE WITH CARE AND WEAR PROPER EYE PROTECTION. FAILURE TO DO SO MAY LEAD TO INJURY.**

**2.2.4.7.1 Removal**

1. Remove bottom cushion (See [2.2.2.1.1](#) Removal).
2. Remove four screws (1) and two washers (2) fastening center shroud (3) to seat frame (4).
3. Remove retaining ring (5) fastening reclining button assembly (6).
4. Remove reclining button spring (7). Discard spring.
5. Remove and discard reclining button assembly (6).

**WARNING**

**BEWARE OF THE AUTOMATIC BACKREST RAPID UPRIGHT INCLINATION WHEN RECLINING BUTTON IS PRESSED. RISK OF INJURY! MAKE SURE ALL LIMBS ARE AWAY FROM MOVING PARTS.**

**WARNING**

**SPRINGS ARE UNDER TENSION AND CAN BE EXPELLED AT GREAT SPEED. REPLACE WITH CARE AND WEAR PROPER EYE PROTECTION. FAILURE TO DO SO MAY LEAD TO INJURY.**

**2.2.4.7.2 Installation**

1. Position new ``PUSH`` sticker (8) to reclining button (6).
2. Position reclining button (6) and spring (7) to center shroud (3).
3. Install retaining ring (5) to fastening reclining button assembly (6).
4. Position center shroud (3) to seat frame (4) and fasten with four screws (1) and two washers (2). Torque to 0.3 Nm.
5. Install bottom cushion (See [2.2.2.1.2](#) Installation).

**NOTE**

- Verify that the reclining system is functional by pressing the reclining button handle.

## 2.2.5 Accessories

### 2.2.5.1 Footrest Assembly Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
3	1	Footrest Assembly	63209002

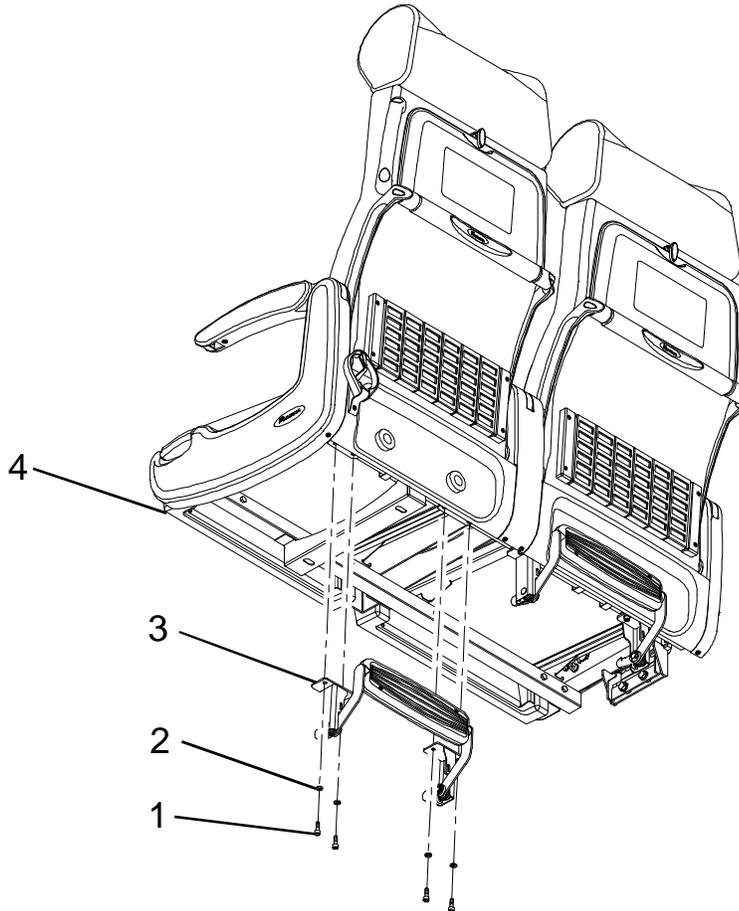


Figure 2-21 Footrest Assembly Replacement

#### 2.2.5.1.1 Removal

1. Remove four screws (1) and washers (2) fastening footrest assembly (3) to seat frame (4).
2. Remove and discard footrest assembly (3).

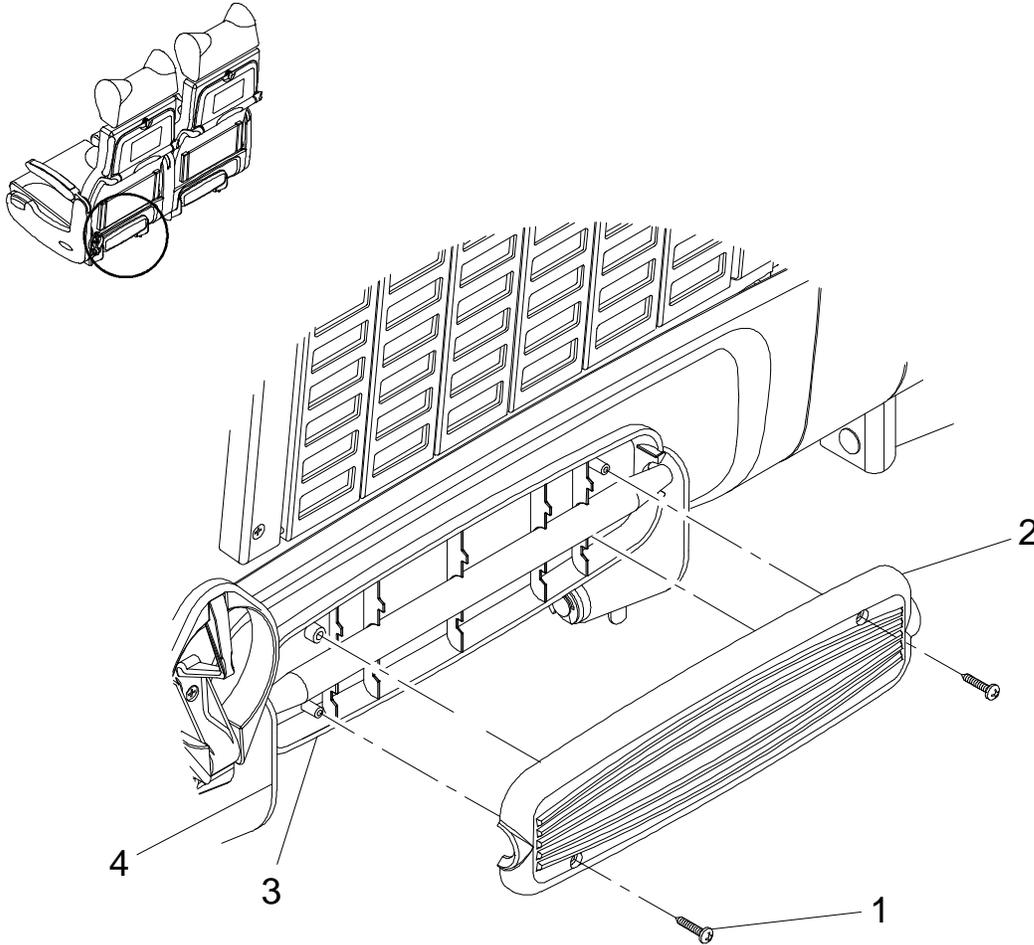
#### 2.2.5.1.2 Installation

1. Position new footrest assembly (3) and fasten with four screws (1) with Loctite and washers (2). Torque to 10 Nm.

## 2.2.5.2 Footrest Plastic Cap Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
2	2	Footrest Plastic Cap	214754



**Figure 2-22 Footrest Plastic Cap Replacement**

### 2.2.5.2.1 Removal

1. Remove four screws (1) fastening both footrest caps (2, 3).
2. Remove and discard both footrest caps (2, 3).

### 2.2.5.2.2 Installation

1. Position two new footrest caps (2, 3) to footrest frame (4) and fasten with four screws (1). Torque to 0.3 Nm.

### 2.2.5.3 Footrest Springs and/or Flanged Bearings Replacement

#### Parts & Hardware

Item	QTY	Description	MULTINA #
3	2	Footrest Spring	217630
5	4	Flanged Bearing	279726

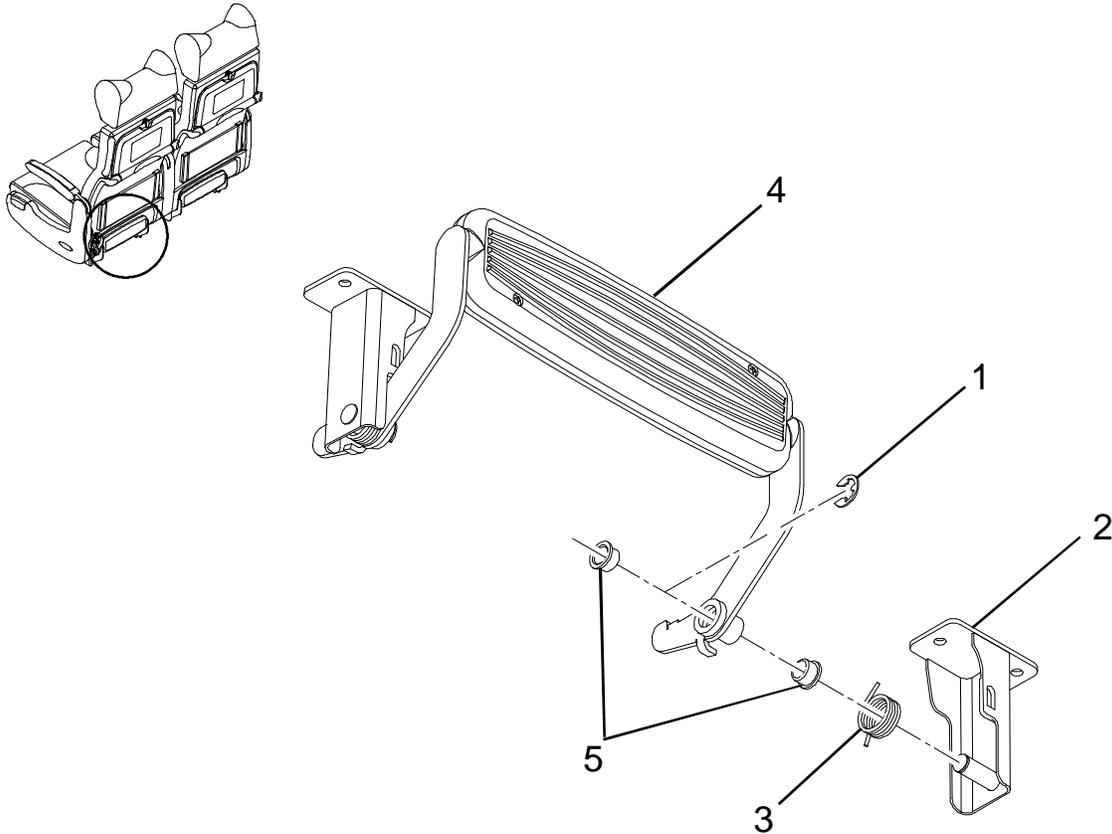


Figure 2-23 Footrest Torsion Springs and/or Flanged Bearings Replacement

#### **WARNING**

**SPRINGS ARE UNDER TENSION AND CAN BE EXPELLED AT GREAT SPEED. REPLACE WITH CARE AND WEAR PROPER EYE PROTECTION. FAILURE TO DO SO MAY LEAD TO INJURY.**

#### **NOTE**

- Maintenance task should be done on both sides.

### **2.2.5.3.1 Removal**

1. Remove retaining ring (1).
2. Remove footrest bracket (2) and footrest spring (3). Discard footrest spring.
3. Remove and discard both flanged bearings (5) from footrest assembly (4).

#### **WARNING**

**SPRINGS ARE UNDER TENSION AND CAN BE EXPELLED AT GREAT SPEED. REPLACE WITH CARE AND WEAR PROPER EYE PROTECTION. FAILURE TO DO SO MAY LEAD TO INJURY.**

### **2.2.5.3.2 Installation**

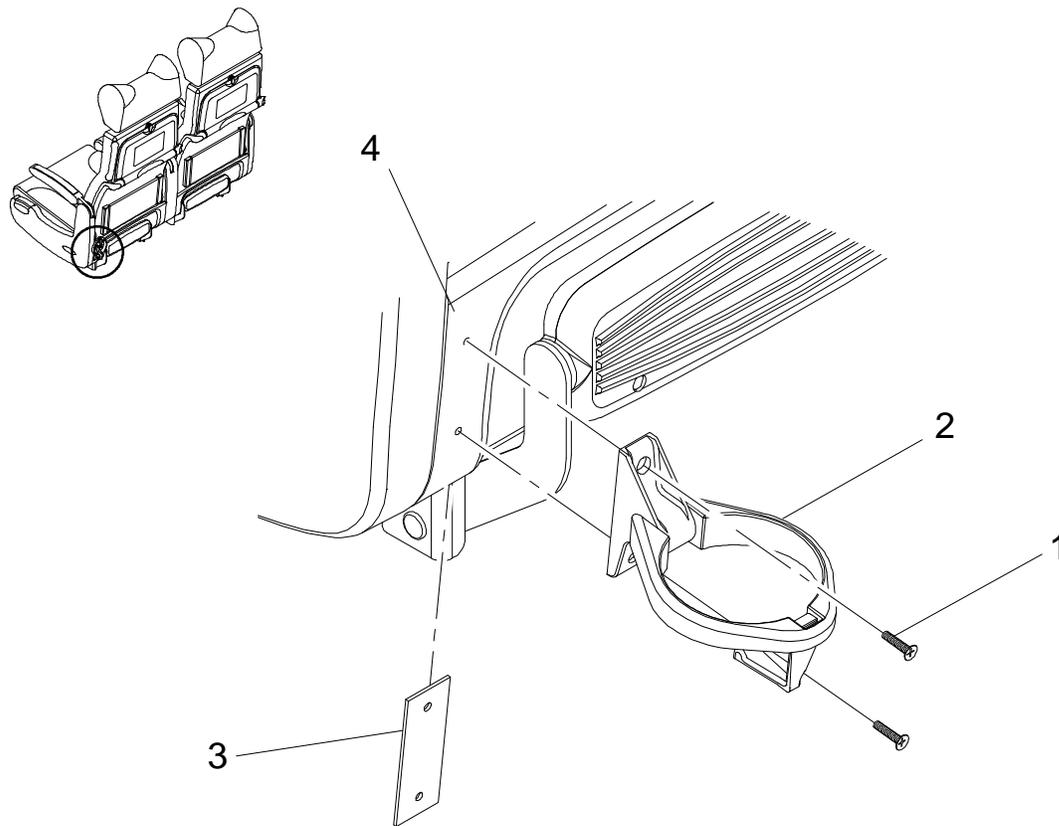
1. Press fit two new flanged bearings (5) to footrest assembly (4).
2. Engage new footrest spring (3) to footrest bracket (2) and install to footrest assembly (4).
3. Install retaining ring (1).



## 2.2.5.4 Cup Holder Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
1,2,3	1	Cup Holder Kit	63209009



**Figure 2-24 Cup Holder Replacement**

### 2.2.5.4.1 Removal

1. Remove two screws (1) and metal plate (3) fastening cup holder (2).
2. Remove and discard cup holder (2).

### 2.2.5.4.2 Installation

1. Position metal plate (3) and cup holder (2) and fasten with two screws (1). Torque to 1.5 Nm.

## 2.2.5.5 Tray Table Aircraft Style Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
1,2, 3,4, 6	1	Tray Table Aircraft Style	63209011

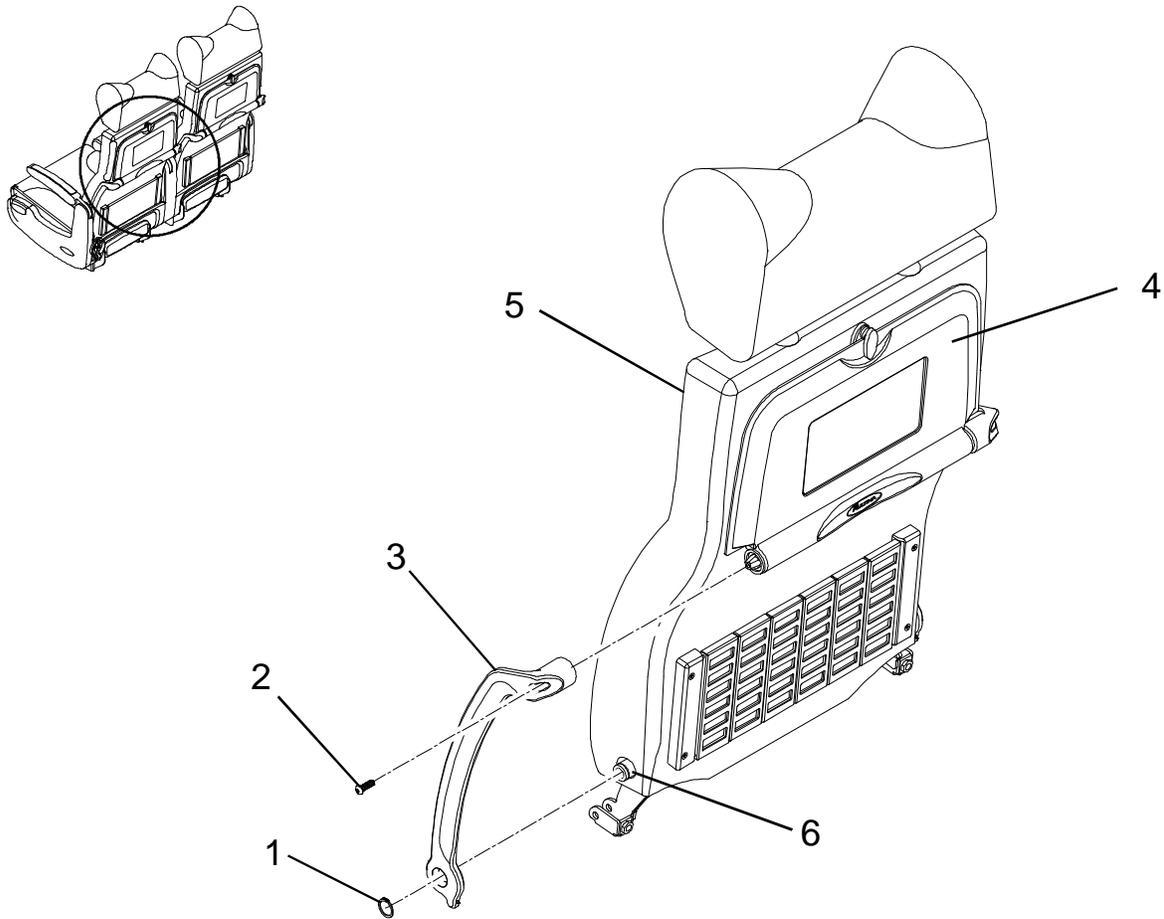


Figure 2-25 Tray Table Aircraft Style Replacement

### **2.2.5.5.1 Removal**

1. Remove backrest cushion assembly (See [2.2.2.3.1](#) Removal).
2. Remove two retaining rings (1) from each side.
3. Remove screw (2) fastening tray table arm (3) to tray table assembly (4).
4. Remove both tray table arms (3).
5. Remove and discard tray table assembly (4) from backrest (5).

### **2.2.5.5.2 Installation**

1. Position two new tray table arms (3) to both backrest shafts (6).
2. Position new tray table assembly (4).
3. Install two screws (2) to fastening tray table arm (3) to tray table assembly (4). Torque to 10 Nm.
4. Install two retaining rings (1) on each side to fasten assembly to backrest shafts (6).
5. Install backrest cushion assembly (See [2.2.2.3.2](#) Installation).

## 2.2.5.6 Tray Table Aircraft Style Top and/or Stopper Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Tray Table Aircraft Style Top	279401
5	2	Stopper	274263

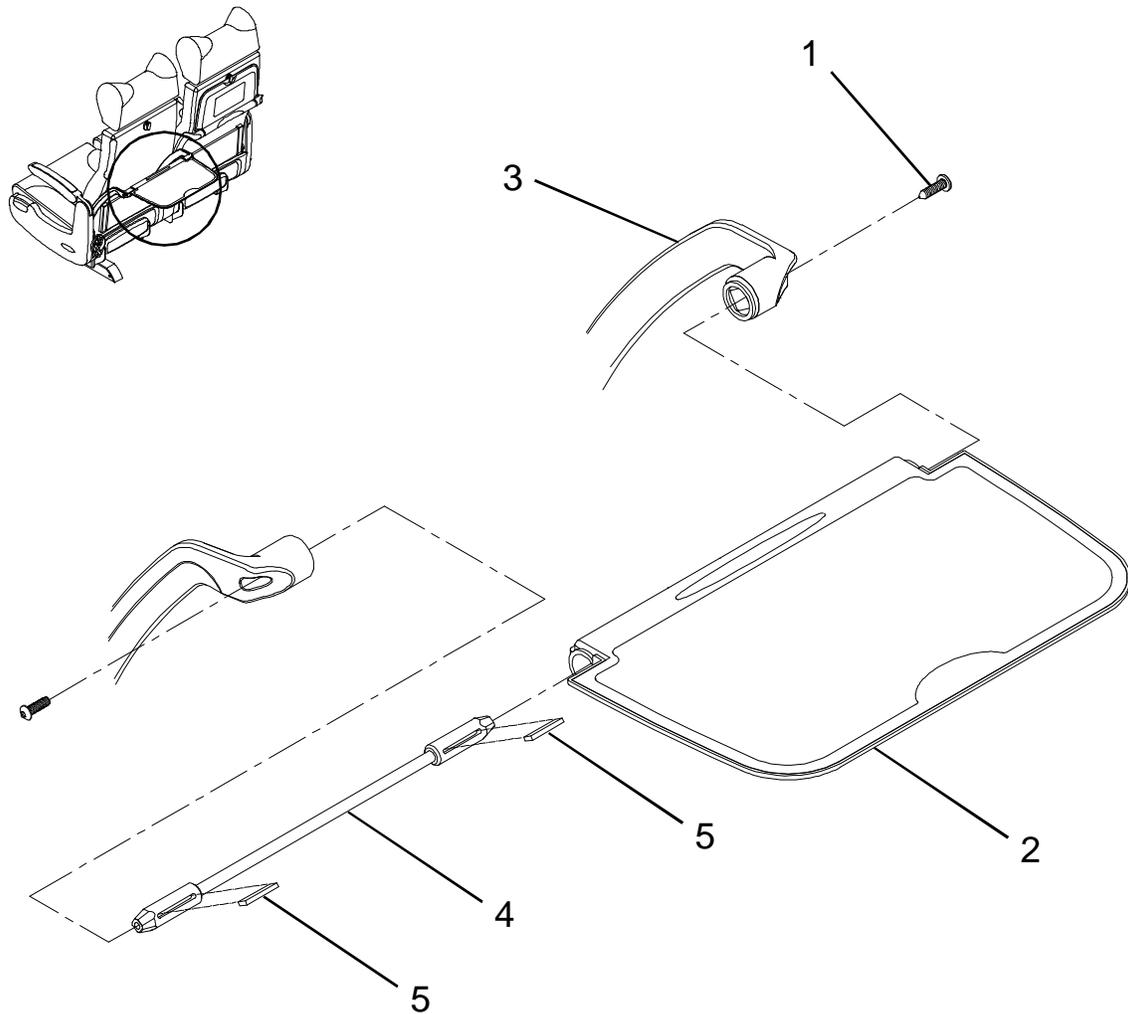


Figure 2-26 Tray Table Aircraft Style Top and/or Stopper Replacement

### **2.2.5.6.1 Removal**

1. Remove two screws (1) fastening tray table top (2) to tray table arms (3).
2. Remove pivot shaft (4) from tray table top (2).
3. Remove and discard tray table top (2).
4. Remove and discard two stoppers (5) from pivot shaft (4).

### **2.2.5.6.2 Installation**

1. Install two new stoppers (5) to pivot shaft (4).
2. Position pivot shaft (4) in new tray table top (2).
3. Position tray table top (2) between tray table arms (3) and fasten with two screws (1) with Loctite. Torque to 10 Nm.



## 2.2.5.7 Tray Table Pivoting Hook Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Tray Table Pivoting Hook	279267

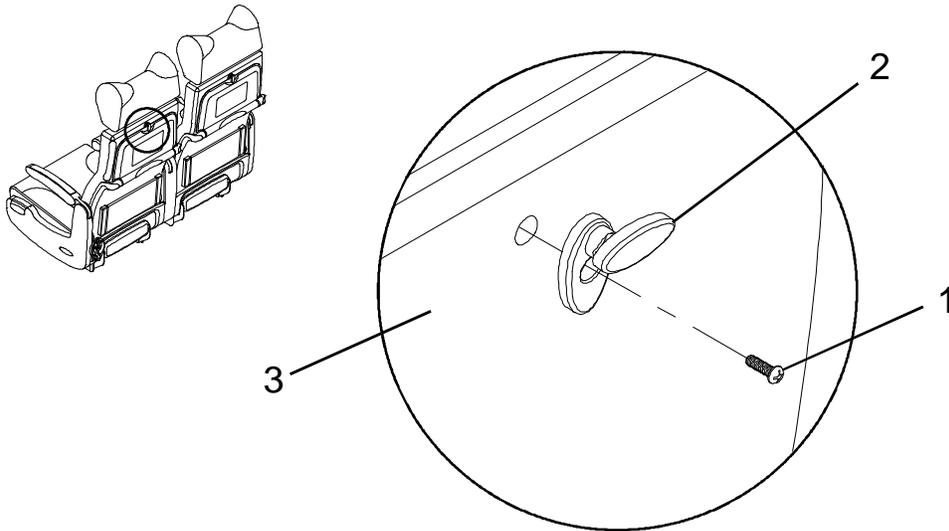


Figure 2-27 Tray Table Pivoting Hook Replacement

### 2.2.5.7.1 Removal

1. Rotate counterclockwise tray table pivoting hook (2).
2. Remove screw (1) fastening tray table pivoting hook (2) to backrest (3).
3. Remove and discard tray table pivoting hook (2).

### 2.2.5.7.2 Installation

1. Position new tray table pivoting hook (2) and fasten with screw (1) with Loctite. Torque to 4 Nm.

## 2.2.5.8 Fixed Tray Table Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
4	1	Fixed Tray Table	231546

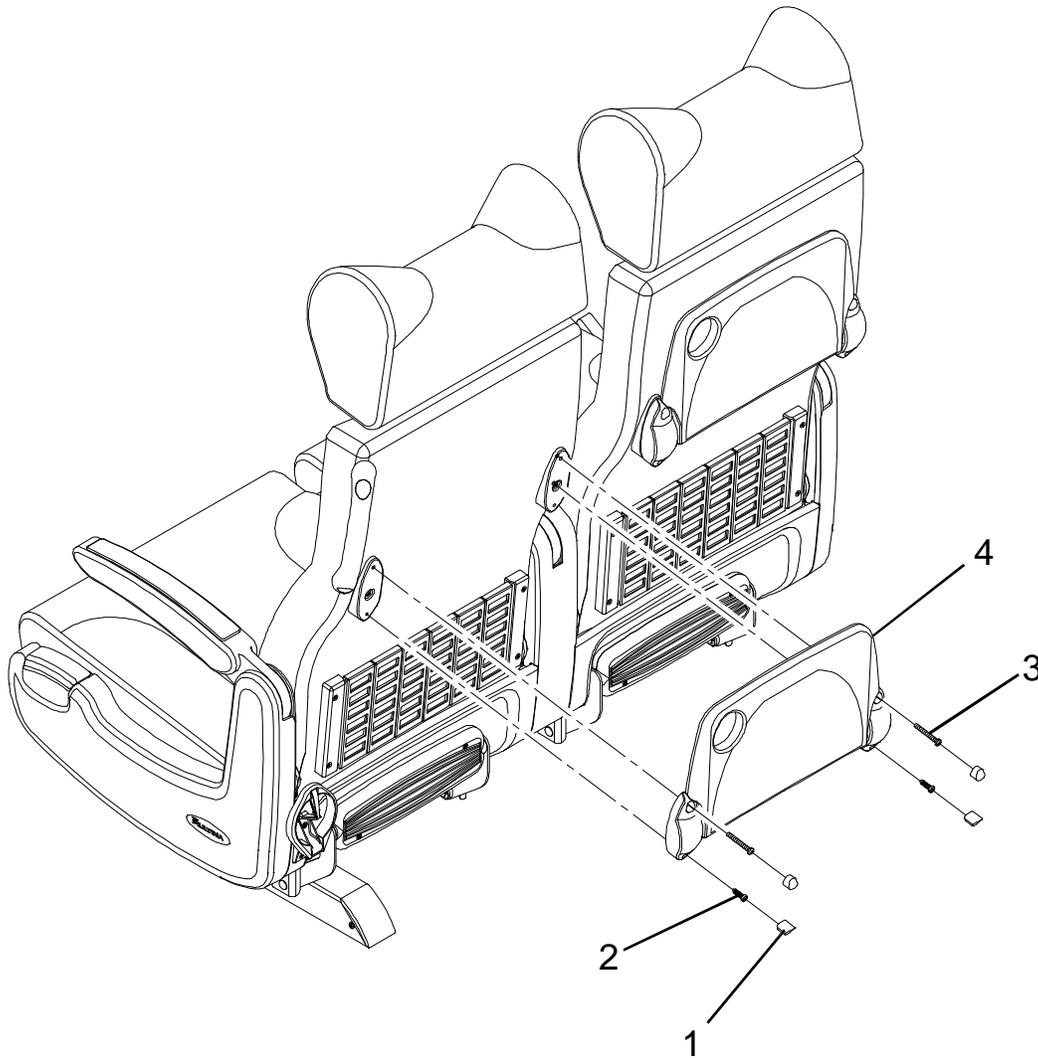


Figure 2-28 Fixed Tray Table Replacement

### **2.2.5.8.1 Removal**

1. Remove four nylon caps (1).
2. Remove two screws  $\frac{3}{4}$  in long (2) and two screws 40 mm long (3) fastening tray table (4).
3. Remove and discard tray table (4).

### **2.2.5.8.2 Installation**

1. Position new fixed tray table (4) and fasten with two screws  $\frac{3}{4}$  in long (2) with Loctite. Torque to 1 Nm.
2. Install two screws 40 mm long (3) with Loctite. Torque to 4 Nm.
3. Install four nylon caps (1).

## 2.2.5.9 Grab Handle Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
4	1	Grab Handle Lateral Kit	63203001

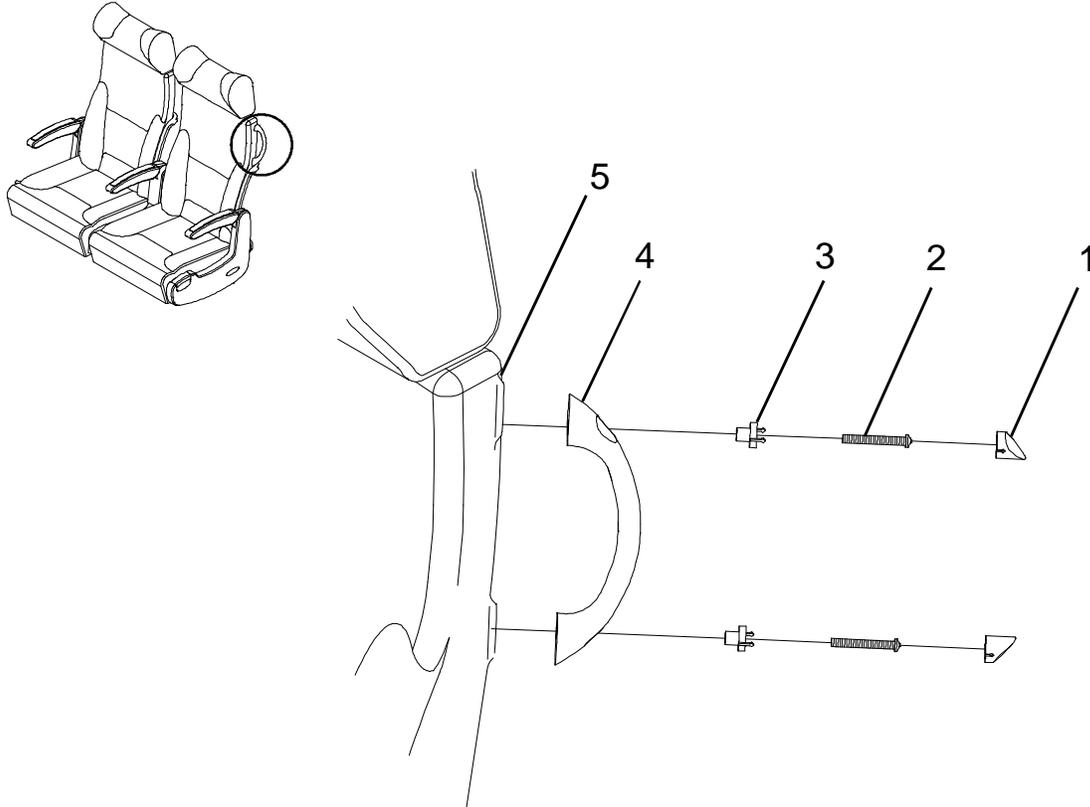


Figure 2-29 Grab Handle Replacement

### 2.2.5.9.1 Removal

1. Remove two grab handle caps (1) with flat tip screwdriver.
2. Remove two screws (2) fastening grab handle (4) to seat frame (5).
3. Remove and discard grab handle (4).

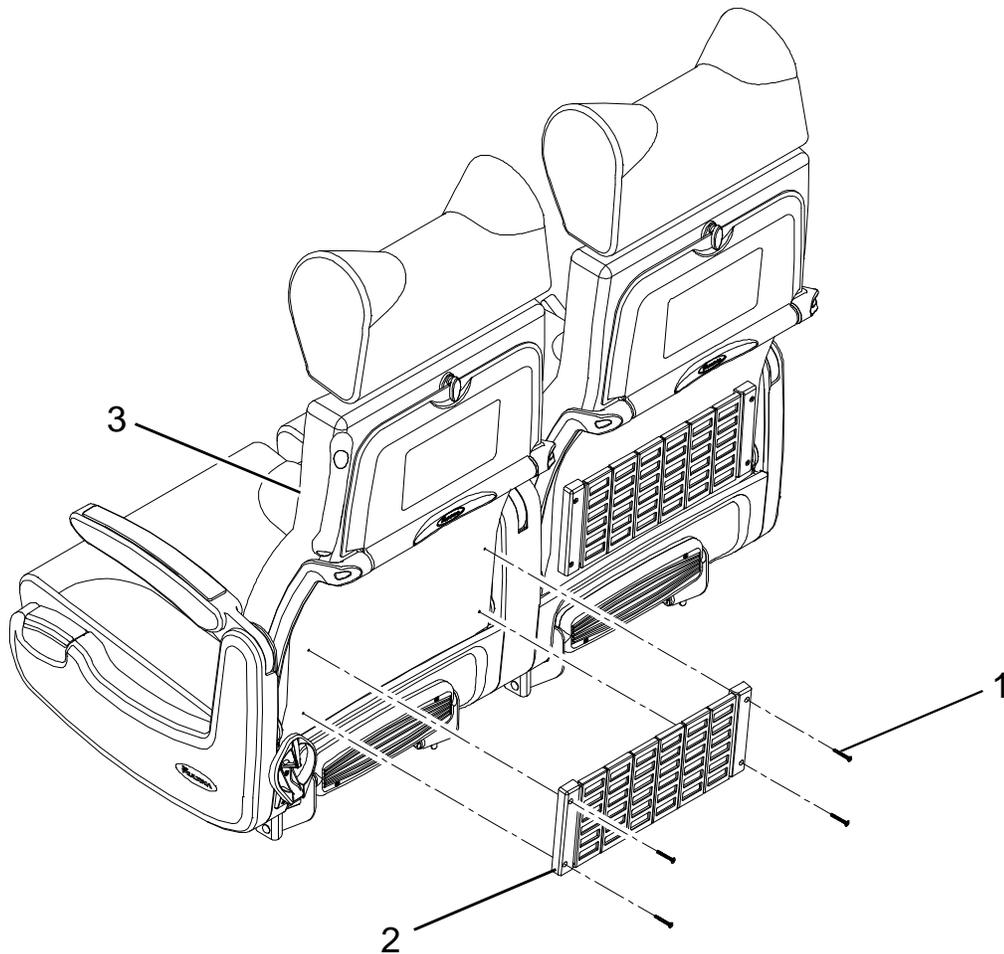
### 2.2.5.9.2 Installation

1. Position new grab handle (4) and insert cap (3) and fasten with two screws (2) with Loctite. Torque to 4 Nm.
2. Install two grab handle caps (1). Push on caps until caps interlock correctly.

## 2.2.5.10 Magazine Net Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
2	1	Magazine Net Kit	63209007



**Figure 2-30 Magazine Net Replacement**

### 2.2.5.10.1 Removal

1. Remove four screws (1) fastening magazine net (2) to backrest (3).
2. Remove and discard magazine net (2).

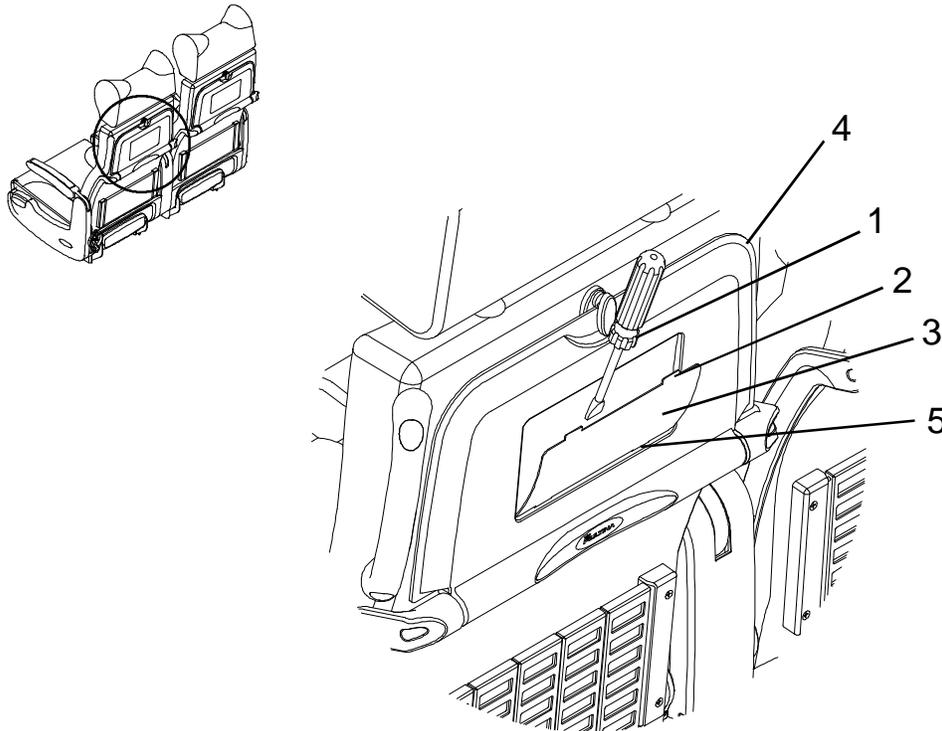
### 2.2.5.10.2 Installation

1. Position new magazine net (2) and fasten to backrest (3) with four screws (1) with Loctite. Torque 1.5 Nm.

## 2.2.5.11 Tray Table Advertising Window and/or Advertising Label Replacement

### Parts & Hardware

Item	QTY	Description	MULTINA #
1	1	Tray Table Advertising Window	279849



**Figure 2-31 Tray Table Advertising Window and/or Advertising Label Replacement**

### 2.2.5.11.1 Removal

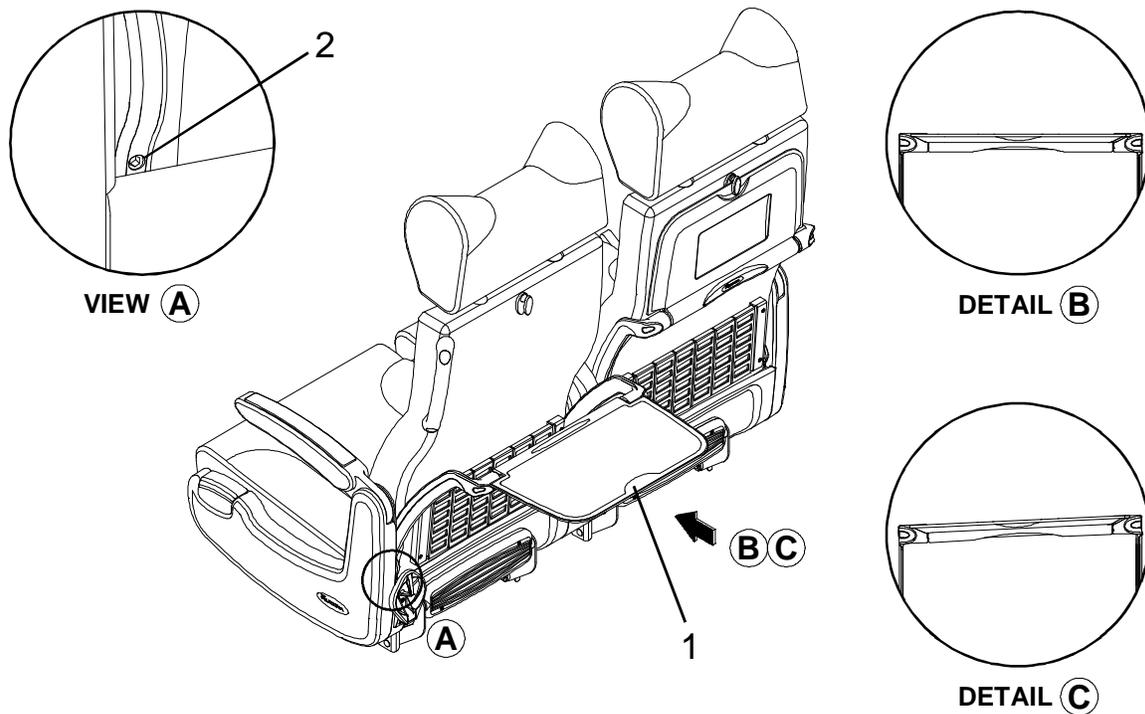
1. Use a flat tip screwdriver (1) to disengage advertising plastic window upper strip (2).
2. Remove and discard advertising plastic window (3) from tray table (4).

### 2.2.5.11.2 Installation

1. Align advertising plastic window lower strip (5) to tray table (4).
2. Bend plastic window slightly (3) to engage upper strip (2) in tray table (4).

## SECTION III ADJUSTMENT PROCEDURES

### 2.3.1 Tray Table Adjustment



**Figure 2-32 Tray Table Slant Adjustment**

#### **NOTE**

- Adjust both screws at the same time.
- The adjustment angle of the tray table should be 0° to 5° max.

1. Deploy tray table (1) to its horizontal position.
2. Tighten adjustment screw (2) to reduce angle on tray table (1) to get horizontal position (detail (B)). If position is like detail (C), loosen adjustment screws (2) to increase angle on tray table (2) to get horizontal position (detail (B)).

## CHAPTER 3 TROUBLESHOOTING

### 3.1.1 Seat Troubleshooting Table

Symptom	Reason	Corrective Action	Reference
1. Backrest reclining movement is stiff or impossible to recline.	a) Gas Cylinder is defective. b) Reclining Handle is defective.	a) Replace Gas Cylinder. b) Replace reclining handle and/or reclining lever.	a) <a href="#">2.2.4.1</a> b) <a href="#">2.2.4.2</a>
2. Headrest height adjustment is stiff or impossible to do.	a) Headrest sliding guides are broken. b) Headrest sliding guides are dirty.	a) Replace sliding guide. b) Clean headrest rod.	a) <a href="#">2.2.2.5</a>
3. Footrest does not return automatically	a) Footrest springs are broken.	a) Replace footrest spring	a) <a href="#">2.2.5.3</a>
4. Footrest assembly is loose.	a) Flanged bearings are used.	a) Replace flanged bearings.	a) <a href="#">2.2.5.3</a>
5. Footrest is noisy when it returns automatically.	a) Footrest bumper is missing.	a) Replace footrest bumper.	a) <a href="#">2.2.3.5</a>
6. Tray table is not completely horizontal.	a) Tray table adjustment is not adequate. b) Tray table is broken.	a) Adjust tray table. b) Replace tray table.	a) <a href="#">2.3.1</a> b) <a href="#">2.2.5.5</a>
7. Tray table doesn't stay in place.	a) Tray table pivoting hook is broken.	a) Replace pivoting hook.	a) <a href="#">2.2.5.7</a>
8. Downward Armrest doesn't work.	a) Downward Armrest mechanism is broken.	a) Downward Armrest.	a) <a href="#">2.2.4.3</a> ,
9. Armrest is stiff or loose.	a) Nylon washers are broken or used. b) Armrest nut is loose	a) Replace nylon washers and /or add shim. b) Tighten nut.	a) <a href="#">2.2.4.3</a> , <a href="#">2.2.4.4</a> , <a href="#">2.2.4.5</a>

**Table 3-1      Seats Troubleshooting Table**