ESTEBAN

WORKSHOP MANUAL

COURIER SEATS

GUIA I

INDEX

ALPHABETIC INDEX

1.- INTRODUCTION

1.1 - PRESENTATION

This manual has been designed to render user-friendly data and maintenance and repair instructions for ESTEBAN seats. In order to become acquainted with the different parts of the seat, with its assembly and disassembly, the service technician should carefully study the instructions contained in this manual, in order to use it as an element of reference when undertaking maintenance and repair work.

This manual has been designed into modules, including the following sections:

- General Data
- Troubleshooting
- Repair modules
- Tightening torque
- Recommended lubrication
- Placement in service
- Maintenance intervals
- Maintenance instructions
- Table of repair times

General Data
The main components of the seat are described.

Troubleshooting
A table-guide is included for troubleshooting, indicating the solution guidelines. The information contained in the table serves as a guideline to locate and diagnose the most common breakdowns. Some of the breakdowns described under this table may not apply to your specific seat, but may apply to the same models in previous versions.

Repair modules
Disassembly operations are described for the various elements that make up the seat.

Tightening torque
The tightening torque to be applied on the bolted joints of the various elements of the seat is described, as well as joining of the latter to the bus' anchoring.

Recommended lubrication
The lubrication points, together with the adequate type of lubrication, are indicated for correct lubrication.
The minimum specification to be fulfilled by the lubrication is also indicated and the products manufactured by commercial brands that comply with the requirements posed by the standard are proposed, which, in principle, can be easily found in the market.

Placement in service
The guidelines to be followed after any important repair has been undertaken on the seats are indicated, as well as those applicable prior to delivery of the equipment, after first assembly of the same.

Maintenance intervals
The seat parts requiring regular maintenance or periodic inspections are indicated, with the time intervals to be applied. The information is presented as a table with two entries. All the components are listed vertically, indicating the operation to be undertaken, and regular maintenance operations are grouped horizontally, in such a way that a scheduled maintenance may be undertaken with minimum effort and with the guarantee of knowing that all points requiring regular attention will be revised.

Maintenance instructions
Guidelines to be followed for the correct maintenance of upholstery and leather are indicated, as well as the instructions to follow to get rid of stains. Instructions for cleaning of plastics, ashtrays and paint protection are also given.

Table of repair times
Average unit times employed for change operations for the most common components are indicated. These are the times to be used in order to invoice guarantee repair services.

2.- GENERAL INFORMATION

2.1- MAIN CHARACTERISTICS

TYPE: Passenger seat for buses
MODEL: *GUIA I*

MATERIALS:

- Structure: *Made of steel.*
- Paint: *Electrostatic-*
- Filling: *Injected with polyurethane foam*.
- Sides: *Made of aluminium.*
- Upholstery: *Made of wool pile and mixtures or synthetic pile.*

CONTROL ELEMENTS AND COMPONENTS

Control elements *Components*

2.2.- DESCRIPTION OF COMPONENTS

The seat comprises the following elements: frame, sides, seat, backrest and headrest

2.2.1. TRESTLE

- A structure comprising two sections and two squares. These squares act as the support to which the sides are screwed. There is a curved tube in the centre where the backrests pivot.
- It is painted in black epoxy powder.

2.2.2. SIDE

- The function is aesthetical and structural. The seat reclining system is on the inside and the reclining pushbutton on the outside. It also holds the armrest pivoting rivet plus that on which the backrest pivots. It is made of aluminium.

2.2.3. SEAT

- Made up of a painted plate platform acting as seat cushion base. The platform is screwed to the frame. The cushion is made of polyurethane foam and enclosed in a cushion cover. The cover encloses the cushion with rigid cardboard sections housed in slots on the base. The cover bands are the ends of a “hem rod” hooked into the foam inserts.

2.2.5. BACKREST

- A steel plate tubular structure painted in epoxy powder. As with the cushion, this structure acts as support for the polyurethane foam, and joined to the backrest with adhesive. The cover is also fitted with rigid cardboard sections housed in the two slots at the bottom of the backrest. The bands are two “hem rods”.

2.2.6. HEADREST

- It is a structure comprising two rods and a billet over which the foam is secured. The cover of the headrest is closed by means of two plastic sections. The headrest could include comfort cushions secured by means of Velcro tape.

3.- TROUBLESHOOTING

TABLE FOR TROUBLESHOOTING

Description of the problem	Nº	Inspection	Cause	Solution	Note
Noises stemming from the backrest	1	Noise comes from backrest housing.	Clearance between backrest tube and internal reinforcement tube.	Insert 4 mm diameter spring bolt into backrest tube 8 cm from pivoting axle and facing direction of traffic.	
	2			Make a small pressing in the housing tube with a bumping press 8 cm from the pivoting bushing axle and facing backwards.	Consult manufacturer.
The backrest does not recline.	3	Reclining lever does not function	Reclining sector bolts are broken or bent	Change bolts	
	4	Actioning lever does not activate gas spring.	Lever bolt is broken or bent.	Change lever bolt.	
	5	The backrest does not return to vertical position when aided, or else has problems when doing so.	Excessive tightening of the rotational axis of the backrest due to tolerances.	Ease the tightening by repeatedly moving and lubricate.	
	6		Dirt / oxide on the rotational axis and bushings of the backrest.	Remove the backrest. Clean and sand pivoting bushings and axles. Grease them.	
Backrest returns without activating lever	7	Backrest cannot be secured in folding position	Reclining sector teeth are worn	Change reclining sector teeth.	
Fitted carpet loses its colour.	8	When pressing the pile with the finger and displacing it in the inverse direction to the pile, inner colour is deeper.	The fitted carpet is dirty.	Clean the fitted carpet.	Please go to specialised companies.
	9	The most protected parts of the fitted carpet have more vivid colours.	The fitted carpet is dirty.	Clean the fitted carpet.	Please go to specialised companies.
	10	The colour of the fitted carpet changes depending on the angle from which it is observed.	The pile is flat due to incorrect maintenance.	Undertake correct maintenance.	See instructions for maintenance and conservation of fitted carpets.
Small balls appear on the back part of the upholstery of the backrest.	11		Resin has not been applied on the back.	Change upholstery on the back of the backrest.	
Safety belt is loose.	12	Securing of the buckle / belt bobbin is loose.	The securing device is lacking a grooved washer.	Mount toothed washer, ref.: 06.257.01and tighten.	

4.- REPAIR MODULES

The instructions for the repair of seats as described under this section, are grouped under repair modules. The first part covers the whole seat and the rest describe the variations that apply to specific modules.

Modules are structured into layers, in such a way that modules describing disassembly of external parts are incorporated as such under the modules describing disassembly of internal parts.

Each module gives a detailed description of the disassembly operation for a specific element.
Assembly operations are the exact steps, but in reverse, hence they are not described except for those cases where assembly requires special care, in which case, a detailed description of the assembly is included.

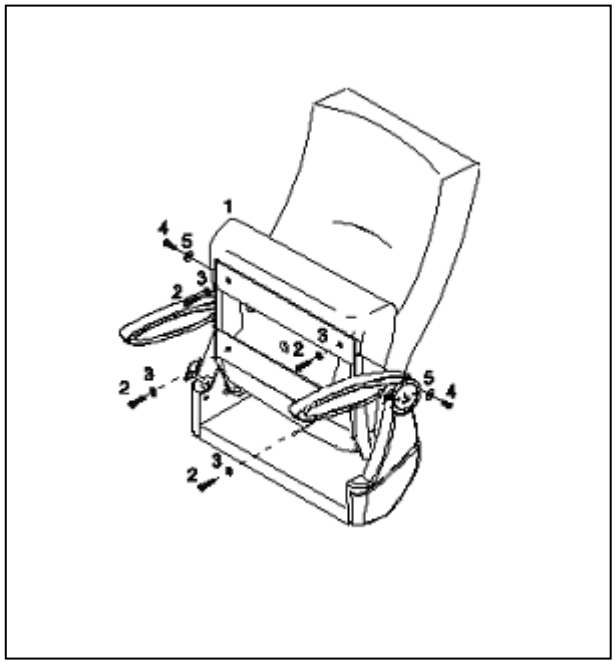
The figures in this manual usually represent the double righthand side seat in bus direction. The figures corresponding to side panel diagrams usually represent right aisle or window side panel Repair of the other seats is undertaken in the same manner.

Clamping devices (such as clamps and staples) are not mentioned in detail, nevertheless, these devices must be secured in their original position after the repair.

As regards transport and storage, care must be taken to ensure that the seat is placed so that it rests on the metal structure, and never on the cushion or foam of the backrest, and it must be conveniently protected so that the painted parts do not scratch and that components do not bang against anything.

When substituting parts, only original spares will be used, according to indications contained in the corresponding manual for spare parts. Utilisation of spares that are either not original, or else not approved by ESTEBAN, can result in incorrect performance of the equipment, or else a premature deterioration of the same.

Utilisation of spares that are not original, may entail the loss of guarantee of the seat and ESTEBAN shall decline any responsibility for the damages that may arise due to such a use.



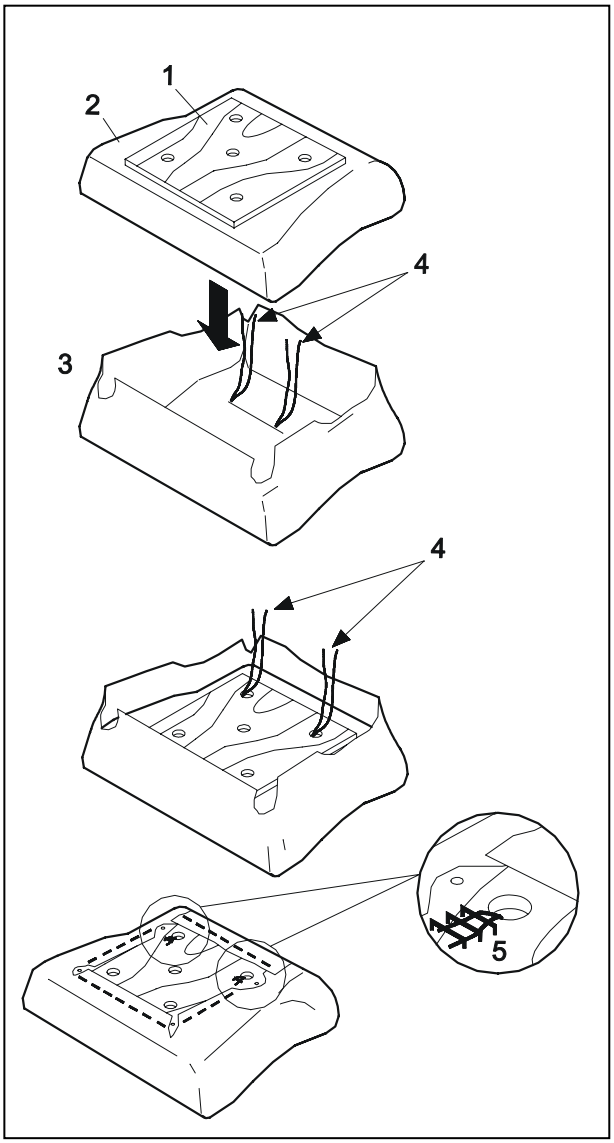
4.01 Upholstered cushion.

Disassembly:

1.-Remove lower cushion frame (see module)
2.-From underneath unscrew the four screws (2) and their washers (3), securing the upholstered cushion (1) to the cushion housing, likewise the two side screws (4) and their washers (5).
3.-Remove upholstered cushion (1)

Assembly:

Proceed in inverse manner.



4.02 Cushion cover.

Disassembly:

1.-Dismantle upholstered cushion (See module 4.01).
2.-Unstaple cover edges from the wood, plus the threads acting as hem rods.
3.-Remove upholstered cushion cover.
4.-Remove materials.

Assembly:

Reverse process, making sure threads acting as hem rods and cover edges are fully taut prior to stapling.

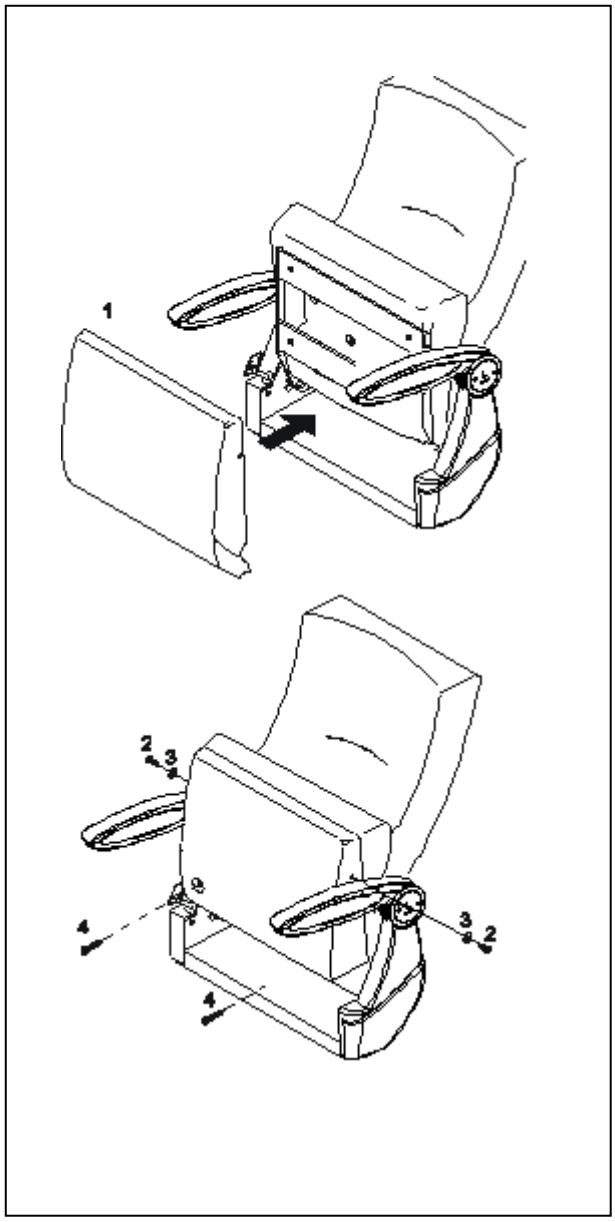
4.03 Cushion wood / foam.

Disassembly:

1.-Remove cushion cover (See module 4.02).
2.-Unstick wood from foam.

Assembly:

1.-Stick cushion foam to wood.
2.-Assemble cushion cover (see module 4.02).



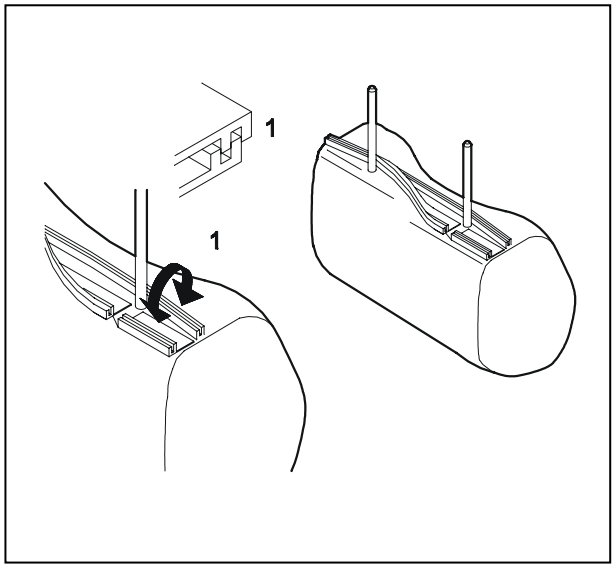
4.04 Lower cushion cover

Disassembly:

1.-Unscrew the two bottom screws (4) and two side ones (2) with their washers (3).
2.-Push cushion frame outwards until it comes off.

Assembly:

1.-Reverse process



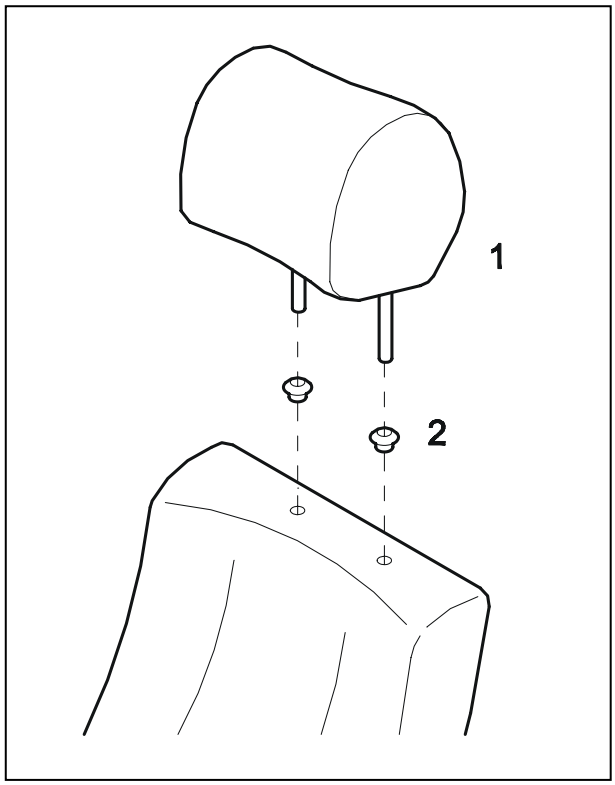
4.05 Headrest cover

Disassembly:

1.-Remove headrest from backrest.
2.-Separate plastic sections with a screwdriver.
3.-Remove the cover.

Assembly:

1.-Fit new cover inside out over the foam and turn right side out as it is fitted onto the headrest foam.
2.-Close plastic sections.
3.-Fit headrest onto backrest.
4.-Pass vaporetta over fabric to eliminate creases.



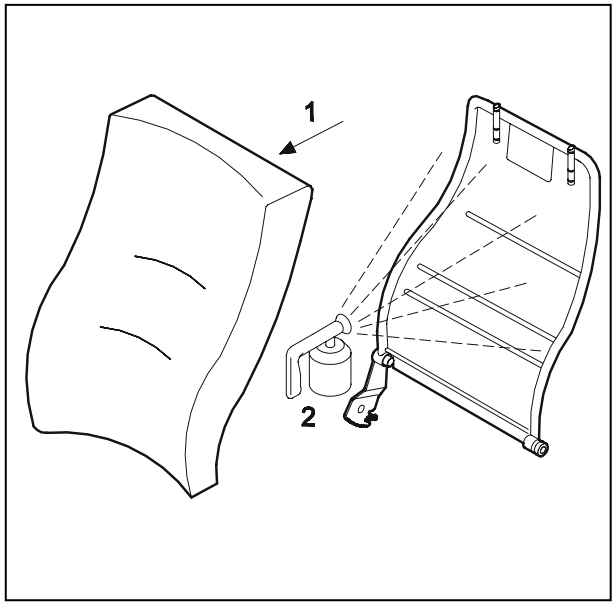
4.06 Headrest

Disassembly:

1.-Remove headrest from backrest pulling upwards.

Assembly:

1.-Insert new headrest into backrest.



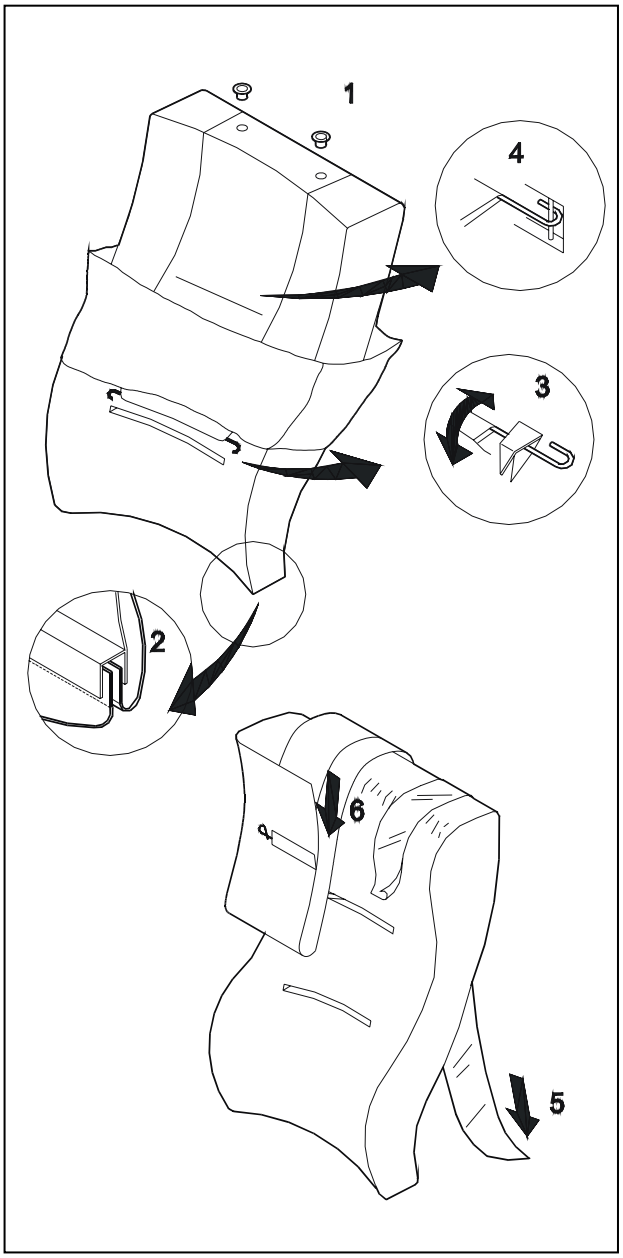
4.07 Backrest housing

Disassembly:

1.-Remove headrest. (See module 4,06).
2.-Dismantle backrest. (See module 4,08).
3.-Remove cover. (See module 4,07).

Assemble (New housing):

1.-Apply glue (2) to back of backrest foam (1).
2.-Apply glue (2) to backrest housing plate opposite the foam.
3.-Stick both surfaces together and leave a few minutes to drive.
4.-Assemble cover



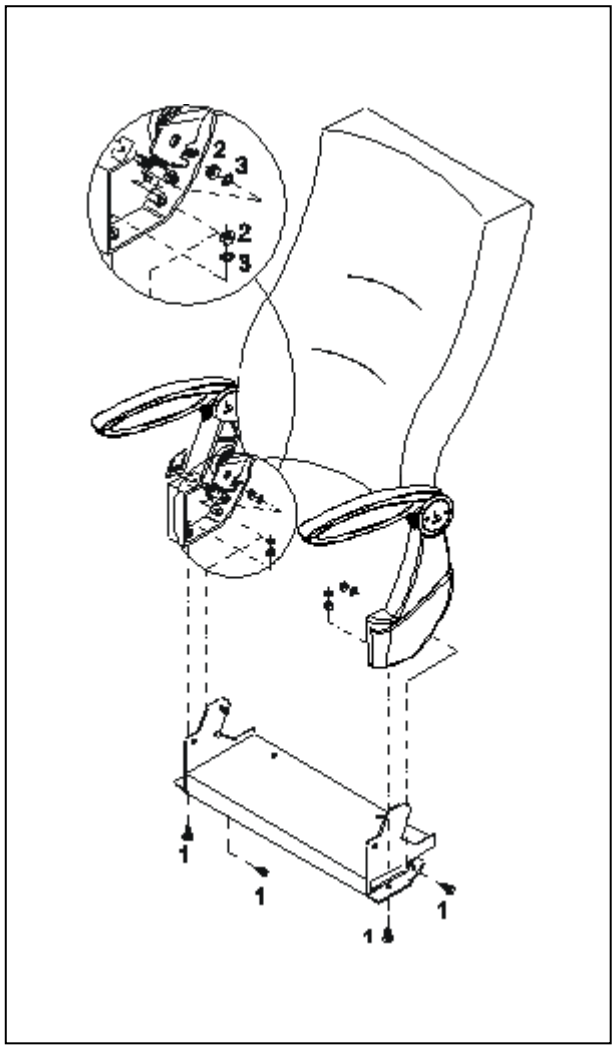
4.08 Backrest cover

Disassembly:

1.-Dismantle backrest. (See module 4,09).
2.-Remove headrest (See module 4.06) and headrest guide bushings (1).
3.-Pull out lower cover flaps (2) securing it to the backrest.
4.-Uncover until first hem rod is reached. Lift lugs securing same (3). Remove hem rod and continue uncovering fabric until next hem rod.
5.-Using a screwdriver as a lever, remove the hem from the inserts (4).
6.-Completely remove cover.

Assembly:

1.-Put backrest in upright position.
2.-Place two plastic strips over foam (5) to help fabric slide.
3.-Fit the previously turned inside out cover to approximately half way and start covering the backrest pushing cover downwards with hands, from within the bag created on turning the cover inside out (6). It is important to fit it centred
4.-On reaching hem hook it onto backrest insert external rods.
5.-Continue fitting cover until next hem.
6.-Locate the two hem anchoring lugs in the hollow in the foam and fold them to secure the hem rod.
7.- Remove the plastic strips (5) pulling them downwards.
8.-Complete covering and insert lower cover flaps into the backrest metal slots. Secure flaps with a few knocks.
9.-Fit the two headrest guide bushings and securing buttons.
10.-Check fitted carpet for creases and where necessary apply steam with a “vaporetta” to eliminate.
11.-Assemble backrest.



4.09 Backrest / side panel assembly

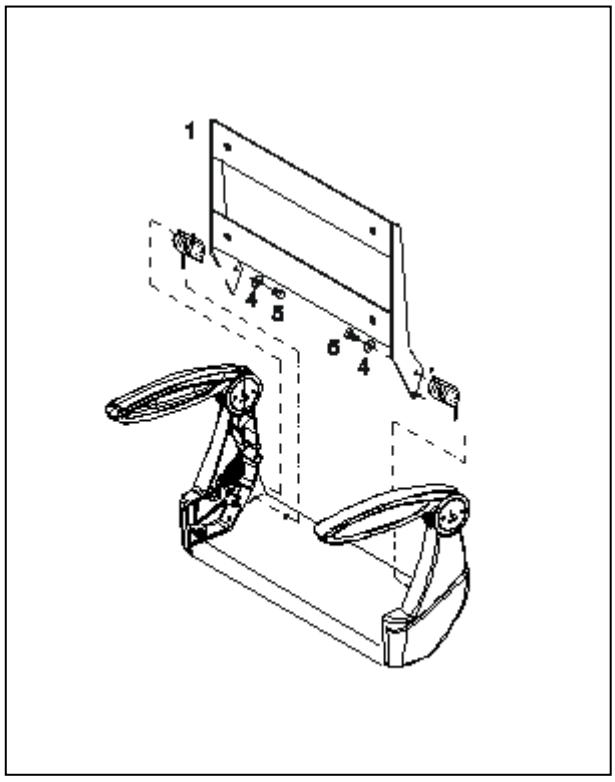
Disassembly:

1.-Remove the cushion. (See module 4,01).
2.-Remove cushion housing. (See module 4,10).
3.-Loosen the two screws (1) and pick up their nuts (2) and washers (3).
4.-Release side panel (see module 4.11)
5.-Release upholstered backrest

Assembly:

Proceed in inverse manner.

Important warning:
Pivoting axle (4) and pivoting bushing (5) on backrest must be clean. Otherwise, clean and sand them if necessary. Slightly grease prior to assembly. Do not grease excessively since excess will come through and stain back of cushion.



4.10 Cushion housing

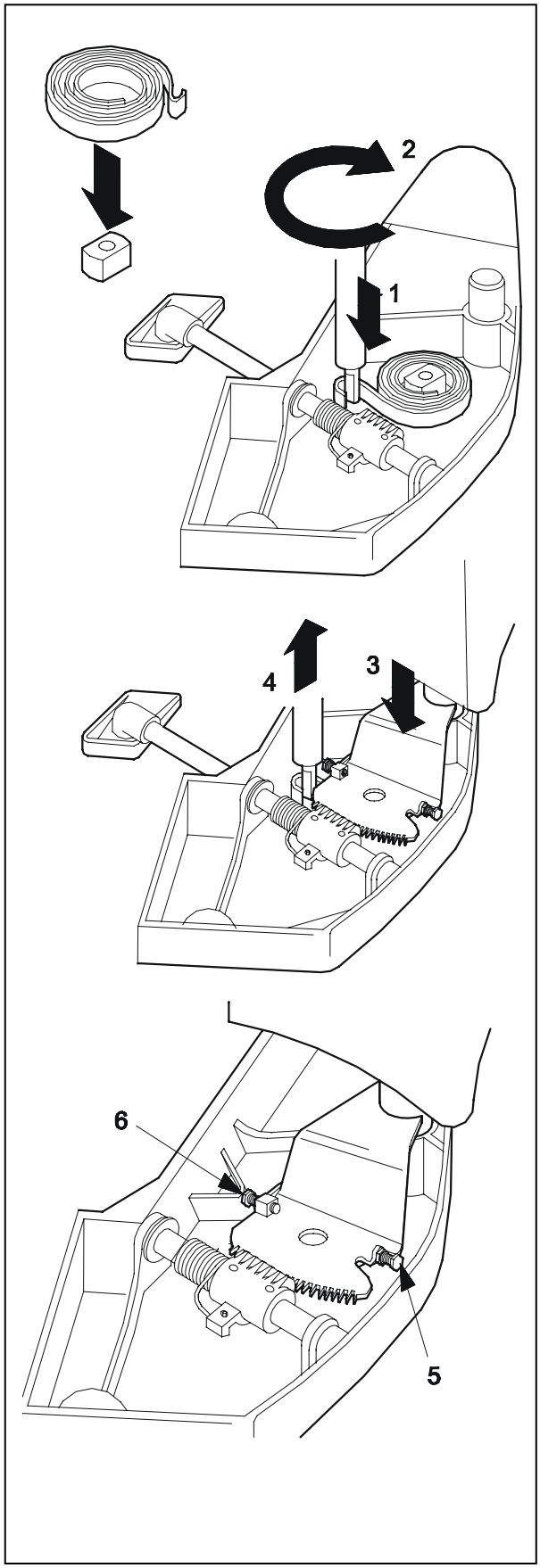
Disassembly:

1.-Dismantle lower cushion frame. (See module 4,07).
2.-Loosen the two screws (5) and their washers (4) securing housing to side panel.
3.-Remove cir-clip securing cushion pivoting spring to cushion housing.

Assembly:

1.-Reverse procedure taking care spring is correctly hooked up.

Check performance.



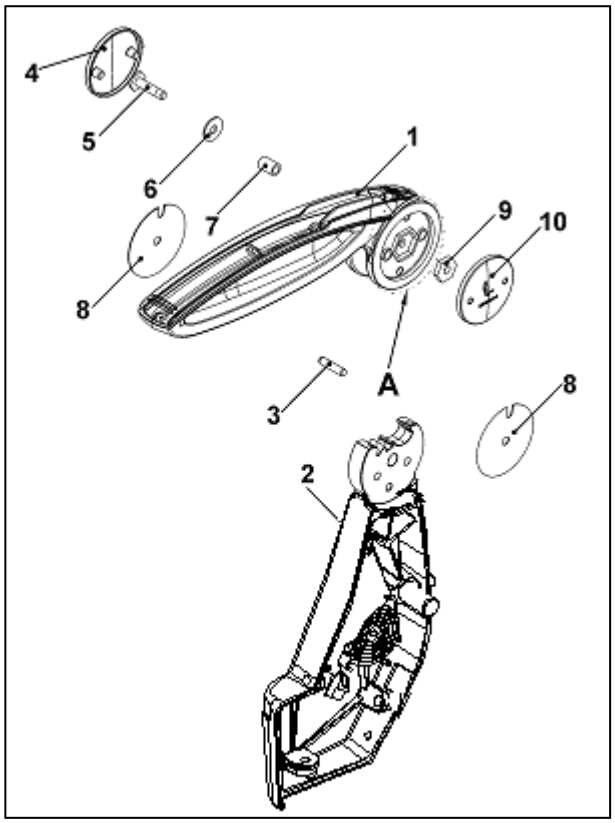
4.11 Backrest / side panel

Disassembly:

1.-Remove the cushion. (See module 4,01).
2.-Remove cushion housing. (See module 4,10).
3.-Unscrew frame side panel (see module 4.09) and separate side panel from backrest lightly knocking on side panel interior.
Warning: Do with care since spring could fly off.

Assembly:

1.- Place side panel horizontally on workbench.
2.-Insert spring. Check spring is in position.
3.-Lower axle (1) from tool and fit it in the spring “U”.
4.-Rotate lever (2) tensing spring securing with safety catch.
5.-Apply grease to reclining sector and backrest teeth. Fit backrest pivoting bushing in side panel pivot, backrest teeth must gear with those of the reclining sector.
6.- Calibrate stop screws at correct distance for reclining. Release spring from safety catch.
7.-Check correct pivoting mechanism functioning.
8.- Assemble assembly.



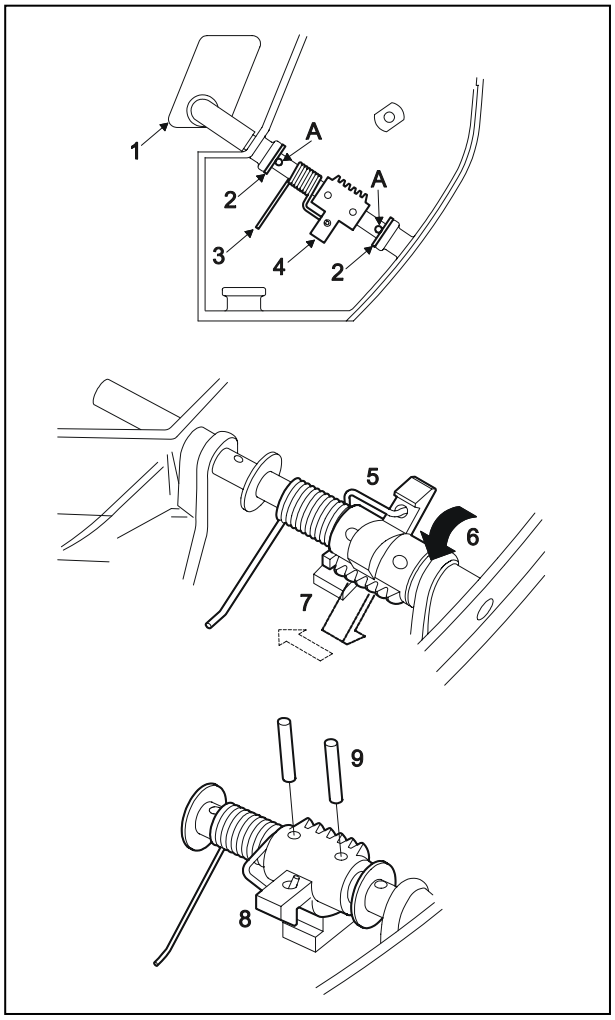
4.12 Arm

Disassembly:

1.- Remove the side panel. See module 85.01.01.
2.- Use a screwdriver to remove the plastic covers on the arm rest, interior (10) and exterior (4).
3.- Unscrew and remove the screw (5), the washer (6) and the hexagonal nut (9).
4.- Remove the arm rest (1) upwards.
5.- Remove the friction discs (8) and the bush (7).

Assembly:

Proceed in inverse manner.



4.13 Reclining lever

Disassembly:

1.-Dismantle side panel from backrest (See module 4.04)
2.-Remove actioning spring (3) from reclining sector (4).
3.-Remove lever bolts (A) and bolts securing reclining sector.(9)
4.-Remove lever at the same time as the other components come out.

Assembly:

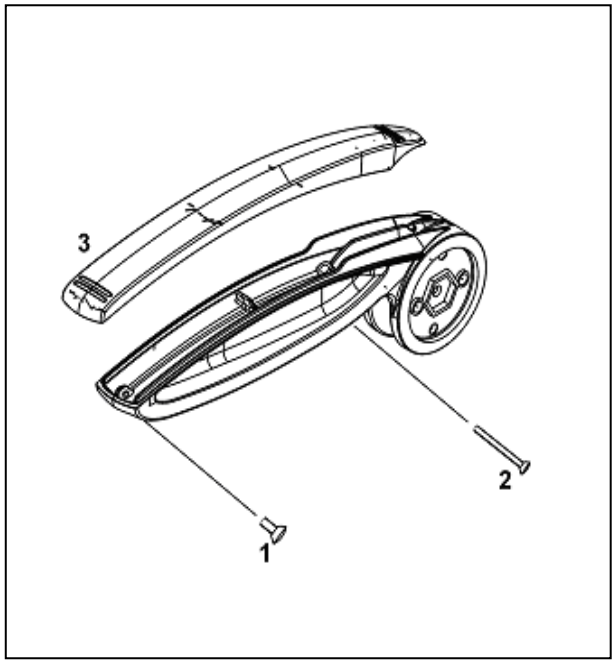
1.-Insert lever through side (1)
2.-Introduce in the lever (in this order): a flat washer (2), actioning spring (3), reclining sector (4), flat washer (2).
3.-Insert short end of spring through the bottom of the reclining sector, whilst the other end presses on the side (5).
4.-Rotate sector (6) and displace towards spring (7) until it fits in the side stud (8)
5.-Insert reclining sector bolts (9)
6.-Adjust flat washers (2) and insert the two bolts A.

4.14 Actioning spring

1.-See module 4,13.

4.15 Reclining sector

1.-See module 4,13.



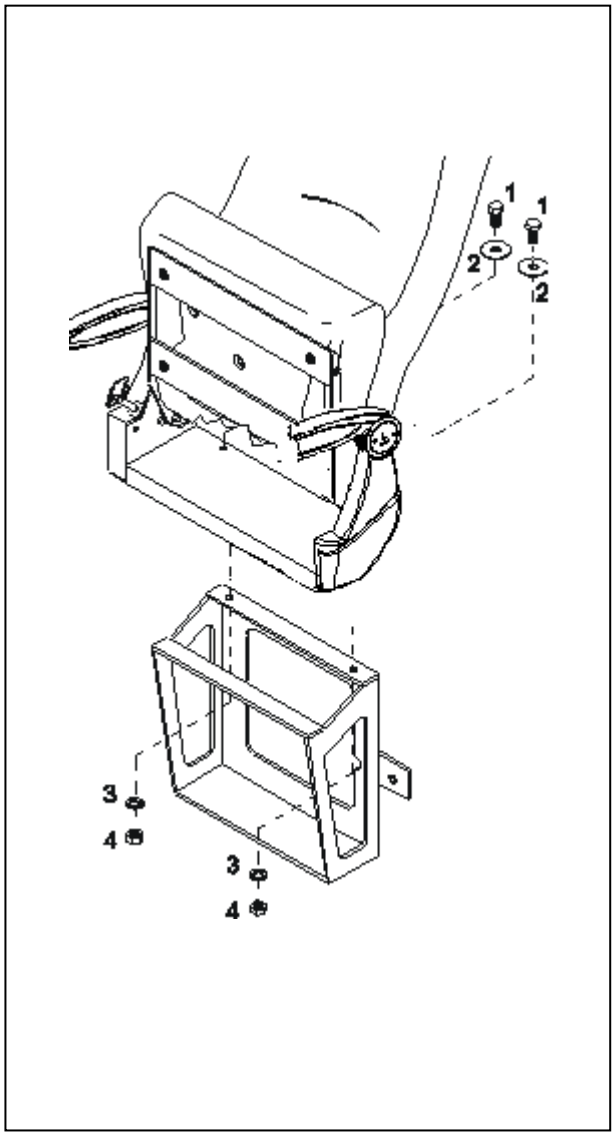
4.16 Armrest

Disassembly:

1.-Put arm in raised position.
2.-Unscrew the two screws (1) and (2) securing armrest (3) and remove.

Assembly:

1.-Fit new armrest on arm chassis.
2 –Screw the two screws (1) and (2), taking care to place in the correct position, (they are not identical). The shortest screw (1) goes into the hole closest to the arm end.



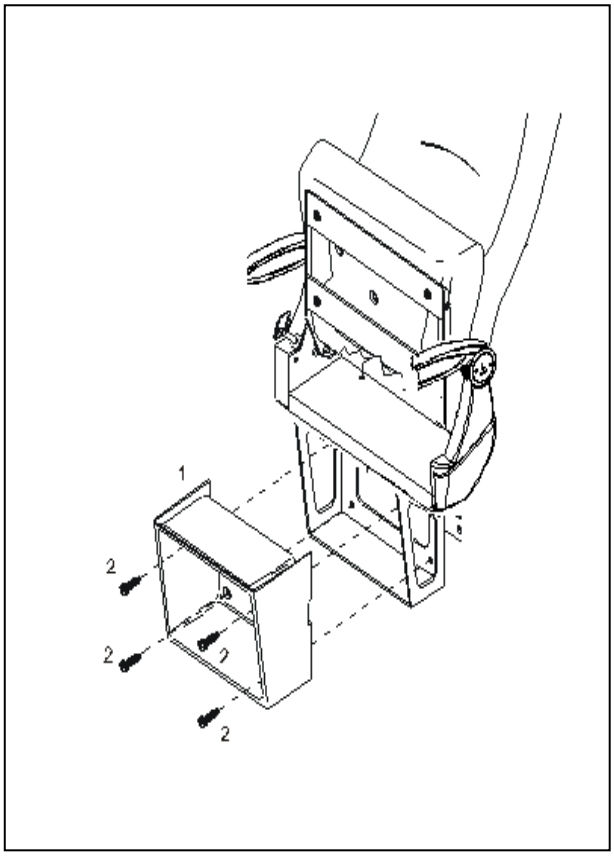
4.17 Frame.

Disassembly:

1.-Loosen the two screws (1) joining frame to seat assembly, together with their respective nuts (4) and washers (2) and (3).
2.-Remove materials

Assembly:

Proceed in inverse manner.



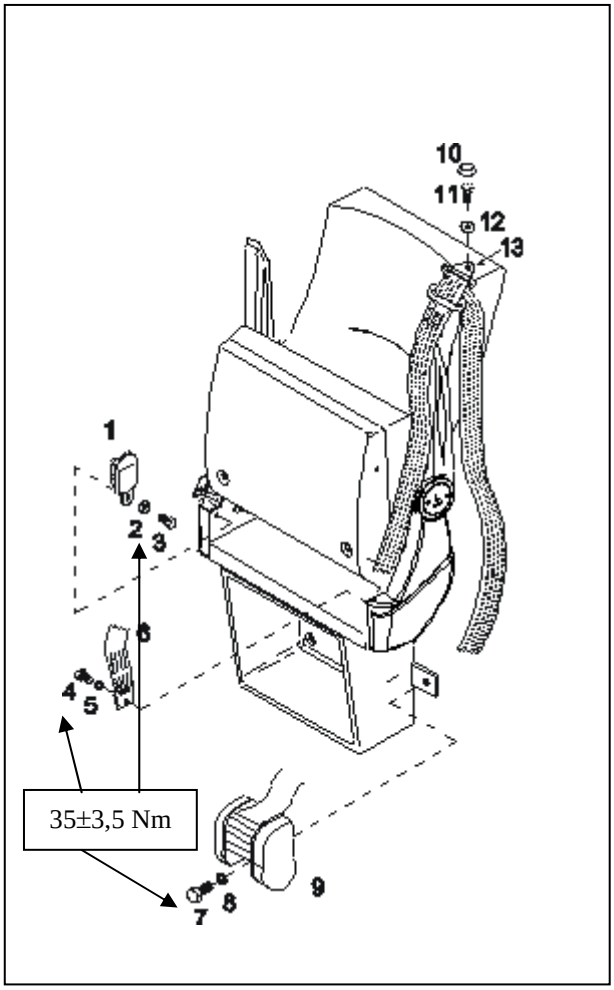
4.18 Frame housing

Disassembly:

1.- Loosen the four screws (2) securing housing to frame.
2.-Remove the housing.

Assembly:

1.- Reverse process



4.19 Safety belt

Bobbin

Disassembly:

1.-Remove plug (1), screw (2) and washer (3) securing guide triangle to backrest
2.-Loosen the screw (7) and washer (8) securing belt end (9) to cushion side.
3.-Loosen screw (4) and washer (5) securing bobbin to (6) frame

Assembly:

1.-Reverse process

Buckle

Disassembly:

1.-Loosen screw (10) and washer (11) securing buckle (12) to cushion side.

Assembly:

1.-Reverse process

N.B.: check belt functioning to prevent re-dispatch problem

5.- TIGHTENING TORQUE

The bolted joints shall be tightened according to the tightening torque indicated in the following table, unless there is a special specification.

This specification for tightening torque is applicable to joints with hexagonal or cylindrical bolts, and steel nuts where the friction coefficient between contact surfaces is 0.12 to 0.14.

Tightening torque based on diameter, pitch and quality of the screw

Nominal diameter	Pitch	Quality	
		Tightening torque (Nm)	
		5.6	8.8
M4	0.7	1.5 +/- 0.3	2.9 +/- 0.5
M5	0.8	3.0 +/- 0.5	6.0 +/- 0.9
M6	1	5.0 +/- 0.7	10 +/- 1.5
M8	1.25	12.5 +/- 2	25 +/- 3.8
M10	1.5	24.5 +/- 4	49 +/- 7.4
SAE 7/16”	20threads/inch		35 +/- 5.3

The quality of the bolt is indicated on the head of the same. If in doubt when using a new screw, use quality 8.8.

For M4 bolts for securing backrest accessories, which do not indicate quality on the head, the tightening torque corresponding to 5.6 quality will be applied.

Joints bolted on the seat	Nominal diameter	Quality	Observations
Billet securing to platform	M8	8.8	
Leg securing to platform	M8	8.8	
Leg securing to floor	M8	8.8	
Armrest pivoting screw			Tightening torque: 13.75±1,25 Nm
Plastic armrest securing lag bolt	M4		Tightening torque: 3 Nm
Safety belt securing	SAE 7/16”		35 Nm +/- 3.5 Nm

N.B.: For bolt – plastic, bolt – aluminium, bolt – strip joints, lubricated joints and other situations that may be deemed different to those indicated under Tightening Torque, Esteban’s specifications will be applied.

6.- RECOMMENDED LUBRICATION

For the correct performance of the seat, we recommend the use of the lubrication indicated, or equivalent products.

Points of lubrication	**Temperature range**	**Type of lubrication**	**Specification**	**KLÜBER**	**MOLYKOTE KRAFFT**
- Friction discs on arm	-40ºC to +90ºC	Base oil + lithium soap + solid lubricants	USDA-H2 Certification. Also complies with Volkswagen's VWTL751 certification.	DOUTEMPY PMY 45	
- Backrest pivoting axles on sides and backrest pivoting bushings. - Backrest arm axle to spring.	-30ºC to +110ºC	Base mineral oil + lithium soap + Solid lubricants	KPF2K Standard (-30ºC) In accordance with DIN 51502 Standard		MOLYKOTE LONGTERM W-2 (This is manufactured by Dow Corning)

7.-START-UP

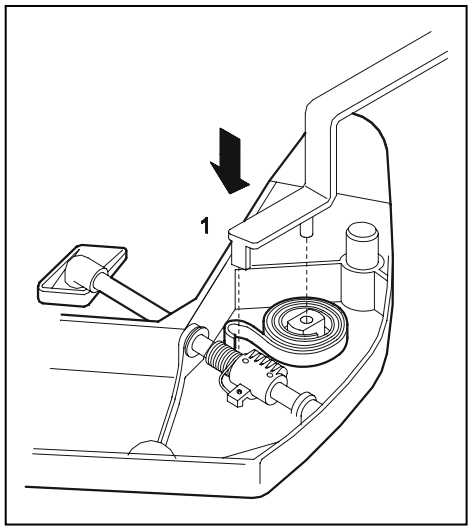
7.1 START-UP

Before initial use of the seats is made, and after any important repairs have been undertaken, a series of checks must be effected in order to verify the correct condition of components, both as regards its aesthetic appearance and its performance .

These checks are visual for external components and manually driven for elements that incorporate mechanisms.

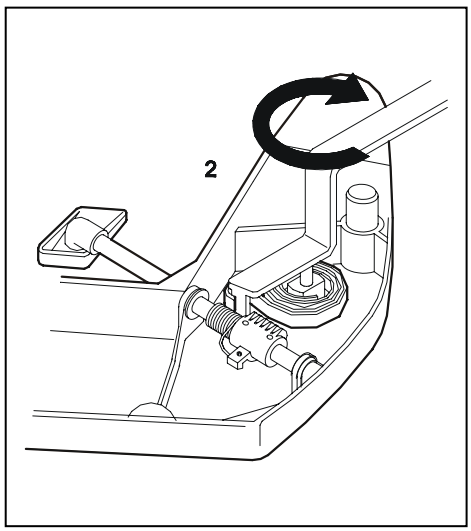
The total list of checks to be undertaken is indicated under the “Maintenance Intervals” section, under the heading “Checks”.

7.2 TOOL HANDLING FOR FITTING BACKREST RECLINING SPRING



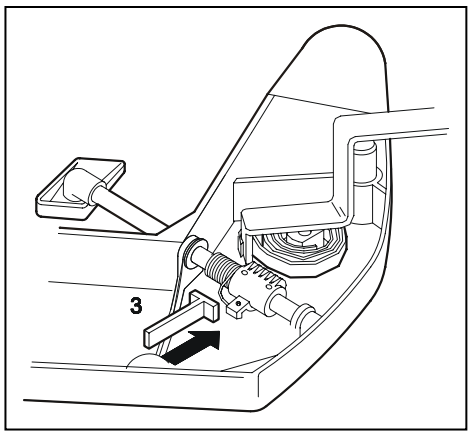
STEP 1

Place tool so hook end lug on tool and pivot in orifice holding part securing spring to backrest



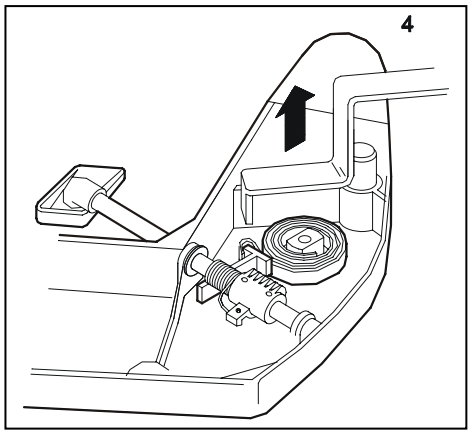
STEP 2

Rotate lever in direction indicated by arrow



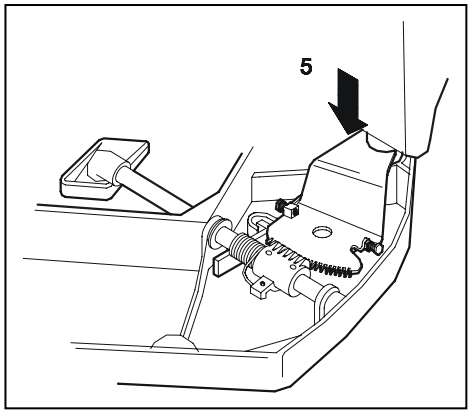
STEP 3

Keeping the lever rotated, insert a T between the side and reclining lever so the spring hook is secured and taut



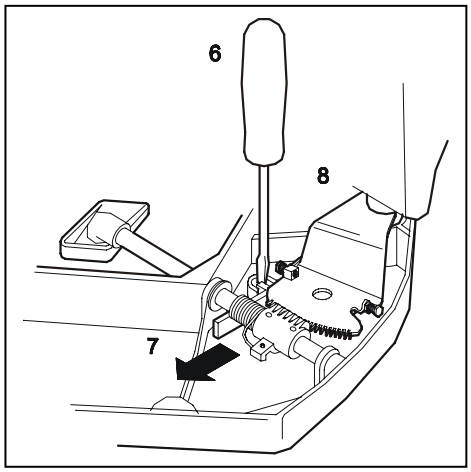
STEP 4

Remove lever once spring is secured with the T



STEP 5

Place backrest positioning the housing teeth with those of reclining sector as per reclining distance established for this seat



STEP 6

Using a screwdriver secure the spring hook and remove T from its housing. Once ejected remove screwdriver.

8.- MAINTENANCE INTERVALS

Maintenance intervals	Regular maintenance					Checks	
	Every week	Every 6 months	Every 12 months	Every2 years	Every 3 years	Weekly	Half-yearly
Fitted carpets							
• Gentle vacuum cleaning to absorb the dust	**X**						
• Humid cleaning by the "spray-extraction" procedure (wool pile fitted carpets and other mixes). Alternatively cleaning with dry foam. Please refer to instructions on Maintenance and Upkeep of fitted carpets.		**X**					**X**
• Dry-cleaning with adequate solvents (synthetic pile fitted carpets: acrylic, polyester, etc.). Alternatively cleaning with dry foam. Please refer to instructions on Maintenance and Upkeep of fitted carpets.		**X**					**X**
• Check that there are no problems such as eroding or bare patches due to lack of tissue or decolouring.							**X**
• Check that there are no stains and that the pile is not flattened.							**X**
• Check that seams are not frayed, or that there are no loose threads.							**X**
• Check that lining has no creases or bags.							**X**
• Check that the direction of the pile is uniform.							**X**
Backrest							
• heck backrest can be kept in any intermediate position provided reclining control is not activated.						**X**	
• Check that backrest folds gently under the weight of the passenger when the reclining control is actuated.						**X**	
• Check that the backrest recuperates its vertical position when freeing it of load, actuating the reclining control.						**X**	
• Check that there is no clearance in the backrests.							**X**
• Check that vibrations do not cause any noise. This check can be made with the vehicle in motion, when it is running empty, or when it is at a standstill, by hitting the backrest with the hand with a dry blow from behind.							**X**
• Grease and clean backrest pivoting bushings and rivets					**X**		
Cushions							
• Check cushion and frame are well secured.							**X**
• Re-tighten cushion anchoring to platform.					**X**		
Headrests							
• Check that headrests are secured and that they can be taken out and inserted correctly.							**X**
Foam							
• Check that foam is not flattened, or deformed							**X**

Maintenance intervals	Regular maintenance					Checks	
	Every week	Every 6 months	Every 12 months	Every 2 years	Every 3 years	Weekly	Half-yearly
Reclining mechanism							
• Check that reclining actuating levers work gently.						**X**	
• Check reclining levers are correctly assembled and without either transversal or longitudinal clearance.							**X**
Arms / Sides							
• Check that arms do not have clearance and change friction discs if necessary.				**X**			**X**
• Re-tighten armrest rotating nut.			**X**				
• Re-tighten plastic arm support securing bolts.			**X**				

9.- MAINTENANCE INSTRUCTIONS

9.1.- MAINTENANCE AND UPKEEP OF FITTED CARPETS

9.1.1 REGULAR CLEANING

A gentle vacuum cleaning, on a weekly basis, will clean and lengthen the life of the fitted carpet. Take care not to apply too much friction with the vacuum cleaner nozzles and vacuum up and down (with and against the pile), in an even and gentle manner.

9.1.2 PERIODIC THOROUGH CLEANING

A thorough cleaning is recommended every six months, depending on the dirt accumulated, and to this avail we recommend the following:

a) For pile and wool fitted carpets and mixtures, we recommend a humid cleaning operation, according to “spray-extraction” procedures, to be preferably undertaken by a professional company, using the most appropriate method in each case (shampoo for wool or similar type of upholstery).

b) For synthetic pile fitted carpets (acrylic, polyester, etc.), dry cleaning can be used, using the appropriate solvents to this avail. We also recommend that you consult a professional for this type of cleaning.

c) Dry foam can also be used as another alternative both for natural fibre and synthetic fitted carpets, taking care to ensure they are of good quality and following the pertinent instructions for use. Once again, we recommend that you consult a professional.

d) In the event that you use “vaporetta” (steam appliance) cleaning methods, or similar, take care that no drops of water, which form by the condensation of steam in the nozzle of the cleaning device, are deposited, as they would provoke stains on the fitted carpet. The best thing is to consult a professional company for this type of cleaning.

9.1.3 TREATMENT OF STAINS

In the event that a stain is present, it is very important to act as quickly as possible and before it dries, since otherwise, it shall be very difficult to remove.

If the stain is liquid or greasy, it must be quickly absorbed using a clean cloth, or a sponge. In the event of solid or semi-solid spots, eliminate the excess in the first place, with a spatula or similar appliance.

If the stain has already dried, gently brush it in order to eliminate the waste matter, and afterwards absorb it with a humid cloth or sponge.

In any case, always act starting from the periphery and then continuing with the internal part of the stain, in order to reduce the size.

The following is a list of treatments to be undertaken on the most usual stains after having applied the above-mentioned cleaning operations:

Oil. Cover the fresh stain with talcum powder or special ointment for stains. Leave to stand for some hours. Brush. If the stain is dry, use stain remover.

Tar. Use benzol, or stain removing solvent.

Ballpoint pen. Clean locally with alcohol.

Shoe polish. Dissolve with ethyl alcohol, rub with clean cloth and wash with neutral soap.

Coffee/Cocoa. Apply benzene or stain removing solvent.

Cola. Wipe with acetone or nail varnish remover and wash immediately after.

Grease. Use alcohol for burning, turpentine or similar product. If this persists, use stain remover.

Glue. Compounds, once dried, are hard to eliminate, and therefore must be treated immediately with acetone, when possible.

Lipstick. Clean locally with alcohol.

Perfume / Makeup. Clean locally with hot glycerine and rinse with water and neutral detergent.

Paint. Clean immediately with cotton cloth immersed in solvent; if the stain is due to oil paint, clean with trementine or similar; for synthetic paint: clean with appropriate solvent. Sprinkle with talcum and brush when dry.

Chewing gum. Treat with ethyl alcohol and carefully remove traces of chewing gum.

Chocolate. Use tepid water and soap or neutral shampoo and rinse afterwards.
For difficult stains, use benzene or stain remover.

Nail varnish. Clean with acetone or nail varnish remover. After this, wash and rinse.

Fruit. Wash with neutral detergent solution. If stains persist, use dry foam.

Milk. Use detergent or neutral shampoo for upholstery.

Ice cream. Wash with tepid water and treat, if necessary, with stain remover.

Rust. Remove with anti-rust stain remover or lemon juice alternatively.

Grass. Dampen with alcohol and wash.

Urine. Use neutral detergent for upholstery. If this persists, consult a professional.

Resin. Eliminate the solid parts and after this treat with solvent (gum spirit) and wash.

Blood. Clean immediately with tepid water and neutral detergent. If the blood has dried, repeat the operation various times.

Sweat. Brush with vinegar or diluted alcohol.

Tea. Act as per tea and coffee instructions.

Ink. Dampen with alcohol and wash with neutral detergent solution.

White wine. Rinse with cold water immediately and wash after this.

Red wine. Wash immediately after treating the stain locally with lemon juice.

Vomit. Wash with detergent or shampoo for upholstery and rinse.

9.2.- MAINTENANCE OF LEATHER

Periodic cleaning with a white clean cloth, dampened in distilled water, is essential to prevent dirt. If any solution is spilled, immediately absorb it with the cloth, without applying pressure on the leather. We recommend use of professional products, such as alcohol-free leather cleaning products.

9.3.- CLEANING OF PLASTICS

For seats with plastic housings. First clean with a sponge dipped in soapy water. Once it has dried, spray the surface to be treated with a high pH alkaline detergent, for plastic surfaces, giving it a strong rub with a dry clean cloth. For particularly rugged surfaces, combine with brushing to remove the adhered dirt. Periodically apply a plastic regenerator in order to make them shinier.

9.4.- PAINT PROTECTION

When cleaning the inside of the vehicle, use water on its own, or mixed with a neutral home cleaning product, with a very low concentration. The use of acid or strong bases, such as bleach or hydrocloric acid must be avoided. Do not treat with abrasive or caustic products, nor organic solvents.

10.- TABLE OF REPAIR TIMES

Nº		MODULE	OPERATION	TIEMPO(min.)
1		4.01	Change upholstered cushion	8,00
2	*	4.02	Change cushion cover	19,50
3		4.03	Change cushion wood / foam	24,70
4		4.04	Change lower cushion frame	8,00
5		4.05	Change headrest	0,75
6	+	4.07	Change backrest housing	23,90
7	*	4.08	Change backrest cover	21,40
8	*	4.06	Change headrest cover	2,80
9		4.09	Change non-reclining side panel	12,00
10		4.10	Change cushion housing	15,00
11		4.11	Change reclining side panel	16,30
12		4.12, 4.18	Change arm	20,40
13		4.13	Change reclining lever	19,90
14		4.15	Change reclining sector	19,90
15		4.14	Change actioning spring	19,90
16		4.16	Change armrest	2,50
17		4.19	Change three-point belt	6,33
18		4.18	Change frame housing	3,00
19		4.17	Change frame	10,20

Caption:

* Add 2.5 minutes per seat to the unit repair time, to cover displacement outside the bus.

+ Add 15 minutes per seat to cover extraction of the seats outside the bus.

Only add the minutes allocated to removal of one seat from the bus when undertaking various operations on the type of seats that are indicated above.

The times indicated on the table have been established for repair operations in the shop, stemming from a situation in which the seat is mounted on the bus.

Each of the times allocated corresponds to a complete assembly and disassembly operation of the part in question.

Certain operations include undertaking of other operations in its process, whose times are separately indicated in this table; nevertheless, the total time involved is not the arithmetic addition of individual times for the same, since, in order to undertake the more complex operations, one must go through the elementary operations, in such a way that the timing it takes to undertake the same, is already included in the others.

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