

national
2000
SERIES
AIR SUSPENSION SEAT

Service Manual for All
National 2000 Series Seats




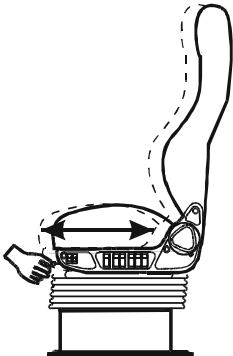
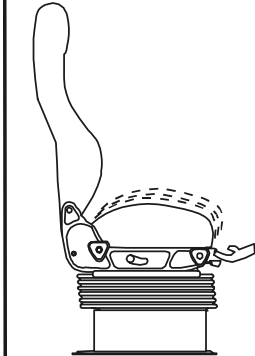
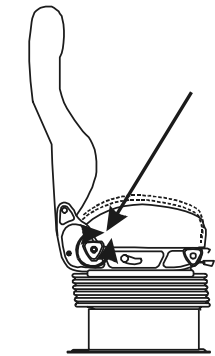
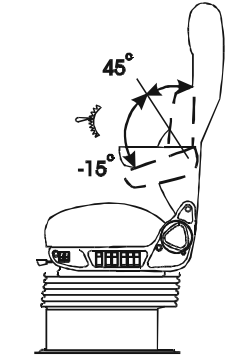
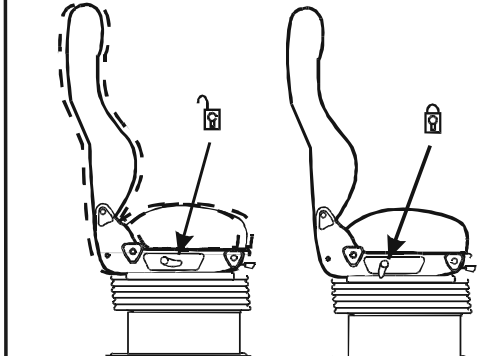
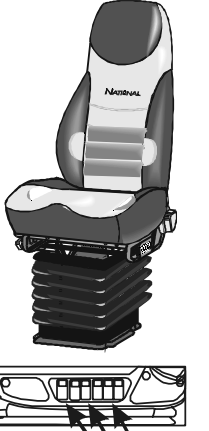
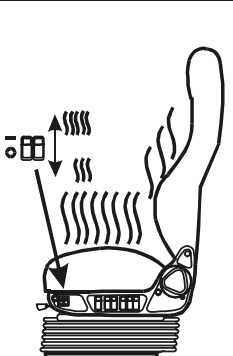


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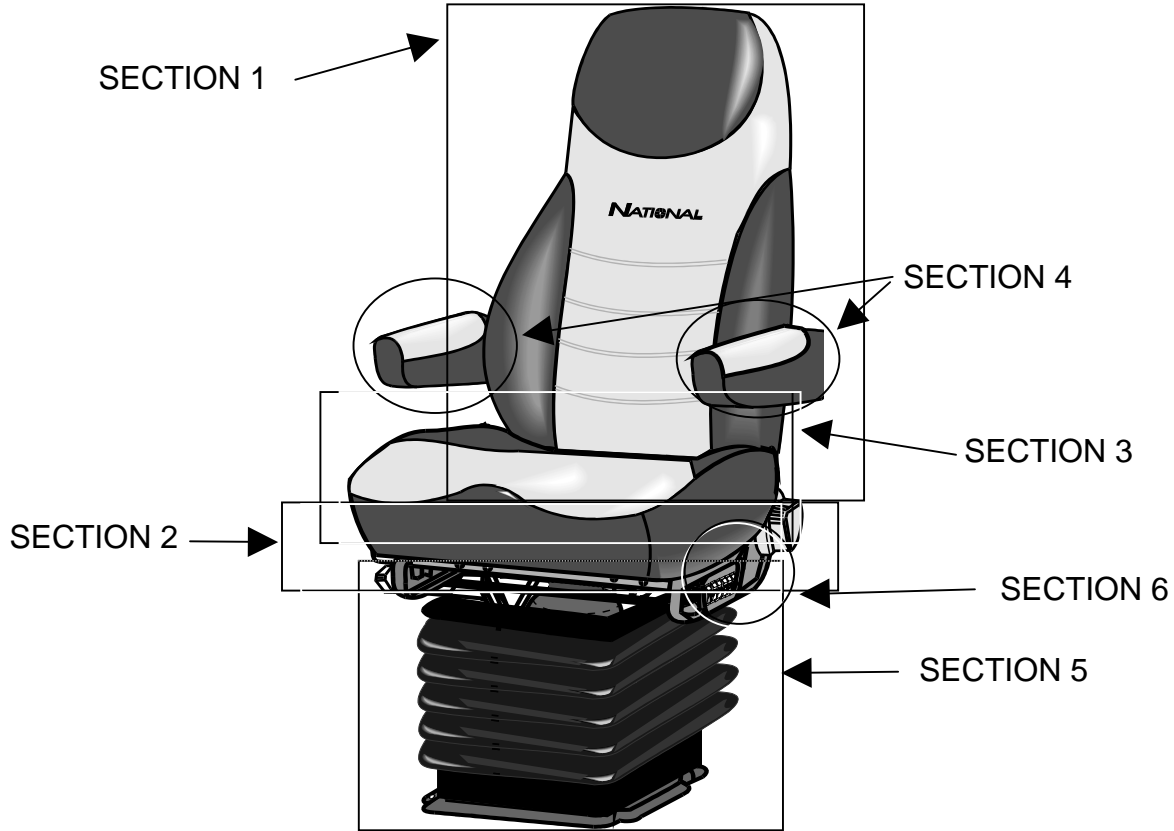
COMFORT ADJUSTMENTS

The National 2000 Air Suspension Seat is equipped with features that adjust for maximum comfort and safety. Not all of these features are available on each model.

STANDARD FEATURES	 <p>Seat Height & Single Lumbar</p>	 <p>Seat Track</p>	 <p>Front Cushion Standard Adjuster</p>	 <p>Rear Cushion Adjuster</p>	
	<p>Seat height valve is red. Comfort control valves are grey.</p>	 <p>Armrest Adjustment</p>	 <p>Chugger Lockout: Handle up, unlocked</p>		
	PREMIUM FEATURES	 <p>Seat Height, Back & Seat Bolsters, Triple Lumbar</p>	 <p>Cushion and Back Heater</p>	 <p>Seat Height Triple Lumbar</p>	 <p>Seat Swivel: Release lock, turns inward</p>

REPLACEMENT PARTS LIST NATIONAL 2000

The Replacement Parts are separated into sections of the seat to ease identification and selection.



HOW TO USE THIS MANUAL.

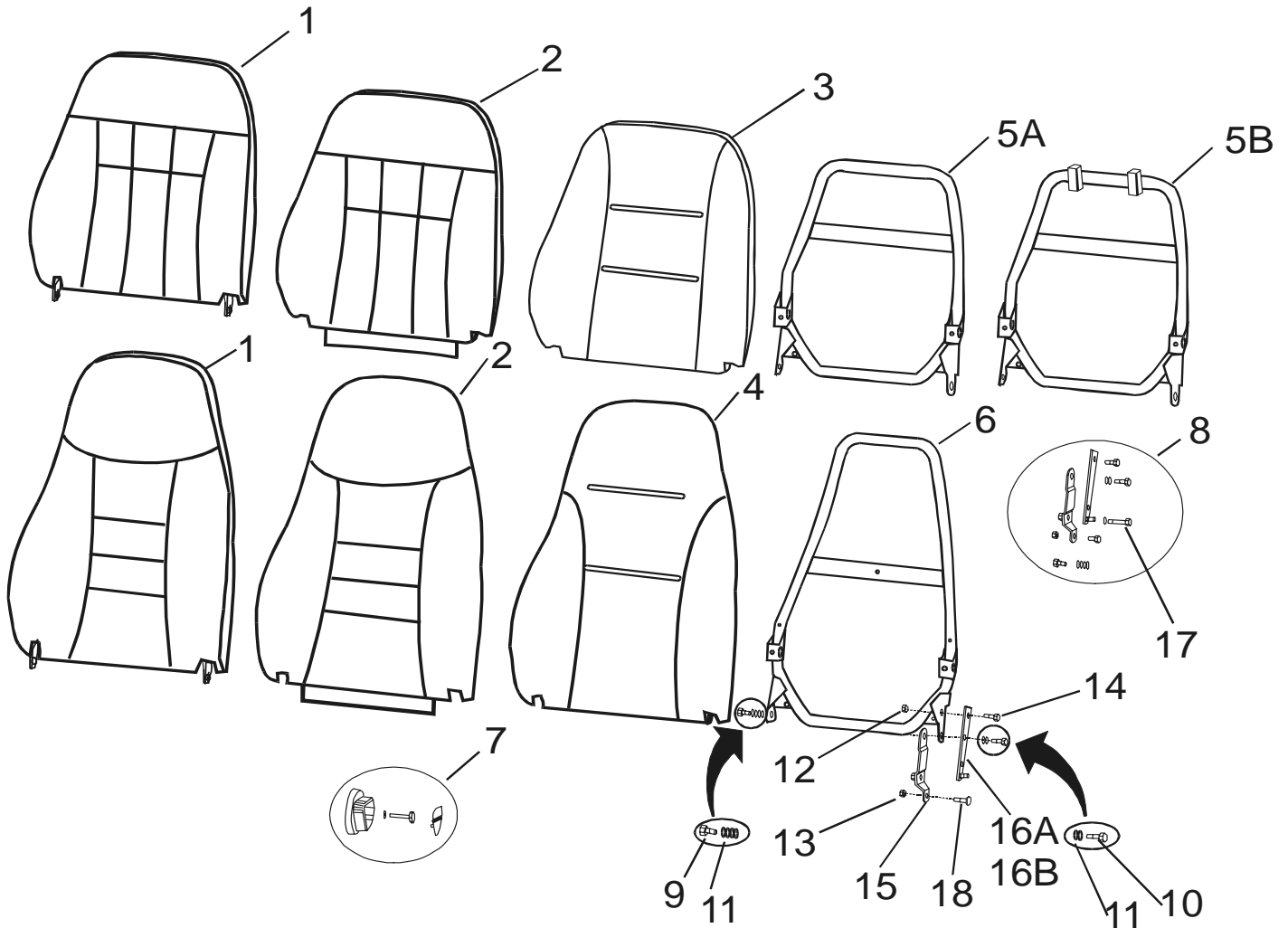
Parts are identified by Item No on the illustration. Quantities for seat models are in the table application blocks (columns ABC). Special requirements or instructions are identified in the Description section as footnotes. Seat Model Applications are below..

ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	1234567-08	1			Part with one model application
2	24567-556		1	1	Part with use on models B & C
3	678456-02	1	2	2	Part with different quantities on models
4	Seat specific	1	1	1	Unique part number: call National Seating

Seat model Application Letter

Seat Model	Letter
High Back	A
Mid Back	B
Mid Back w/HR	C

ILLUSTRATED PARTS BREAKDOWN: Section 1

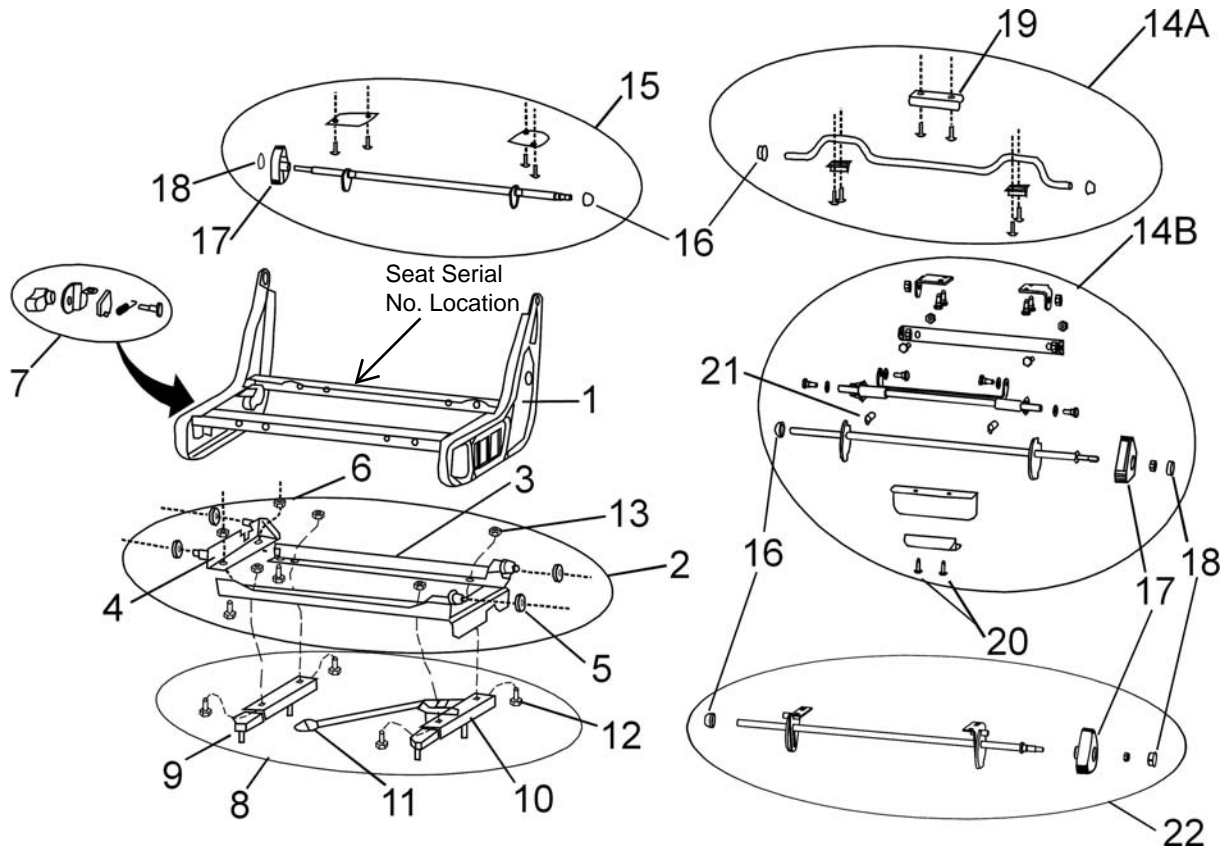


Please be sure to include part number of the seat when ordering parts.

ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	Seat specific	-	-	-	Upholstered Back Assembly
2	Seat specific	-	-	-	Back Cover
3	Seat specific	-	1	1	Intermediate Back Poly-20"
4	Seat specific	1	-	-	High Back Poly-20"
5A	230203-01	-	1	-	Int. Back Frame Assembly
5B	230203-03	-	-	1	Int. Back Frame Assembly for Headrest
6	230203-05	-	1	1	High Back Frame Assembly
7	SK-1025-07	1	1	1	Knob Kit - Back Recline
8	SK-1192-07	1	1	1	Install Back to Lower Frame
9	224371-05	1	1	1	Bolt, Shoulder
10	224371-03	1	1	1	Bolt, Shoulder
11	177058-25	6	6	6	Washer, Wave
12	177060-49	1	1	1	Nut, Self Locking, 5/16-18
13	177060-71	1	1	1	Nut, 5/16 - 18, locking
14	230684-01	1	1	1	Bolt, Shoulder 3/8-16x1"
15	230679-01	1	1	1	Back Plate Assy
16A	230667-03	1	1	1	Recline Limiting Bracket, 6 to 23 deg
16B	230667-01	1	1	1	Recline Limiting Bracket, 2 to 15 deg
17	224378-01	1	1	1	Bolt,
18	224377-09	1	1	1	Bolt, 5/16 - 18 x .68"
ITEM	PART NO	APPLICATION			DESCRIPTION

NO		A	B	C	
19	230659-01	1	-	-	High Back Crash Pad
20	230660-01	-	1	1	Lo-Mid Back Crash Pad

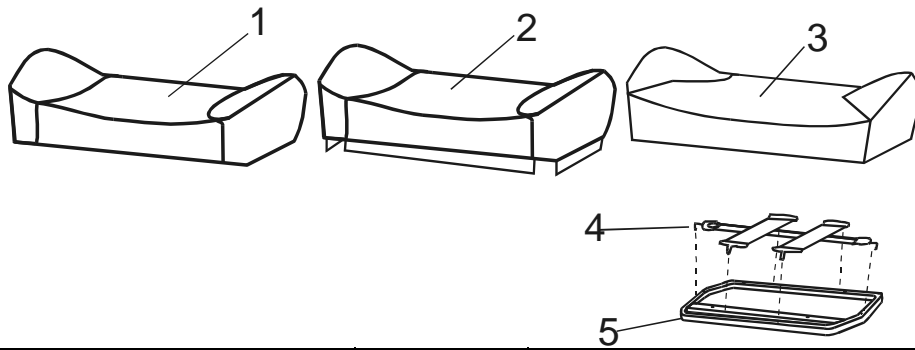
ILLUSTRATED PARTS BREAKDOWN: Section 2



ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	Seat specific	1	1	1	Lower Frame Assy
2	SK-965-05	1	1	1	Chugger Kit
3	229723-01	1	1	1	Chugger Support
4	224357-01	1	1	1	Chugger Support Frame
5	226635-01	4	4	4	Roller Bearing
6	228152-01	2	2	2	5/16 - 18 Nut & Washer Assy
7	SK-1193-07	1	1	1	Chugger Lockout Kit
8	P229-7	1	1	1	Track Kit
9	324686-03	1	1	1	Track, Slave
10	321740-05	1	1	1	Track, Locking
11	221192-05	1	1	1	Knob, Track
12	224377-07	4	4	4	Bolt, Square neck
13	177060-49	4	4	4	Nut, Track Attachment
14A	SK-1035-07	1	1	1	Front Cushion Adjuster Kit, 2 position
14B	231037-11 LH/-12 RH	1	1	1	Front Cushion Adjuster Kit, 6 position
15	231037-13	1	1	1	Rear Cushion Adjuster
16	177063-39	*	*	*	Cap, Cushion Adjuster Rod
17	230228-03	*	*	*	Knob, Rear/Front Cushion Adjuster
18	230393-03	*	*	*	Cover, Knob Cushion Adjuster
19	227546-05	*	*	*	Handle, Front Cushion Adjuster
20	177001-17	*	*	*	Screw #10 X ¾
21	SK-1289	*	*	*	Spring
22	231037-09 LH/-10 RH	1	1	1	Front Cushion Adjuster Kit, 3 position

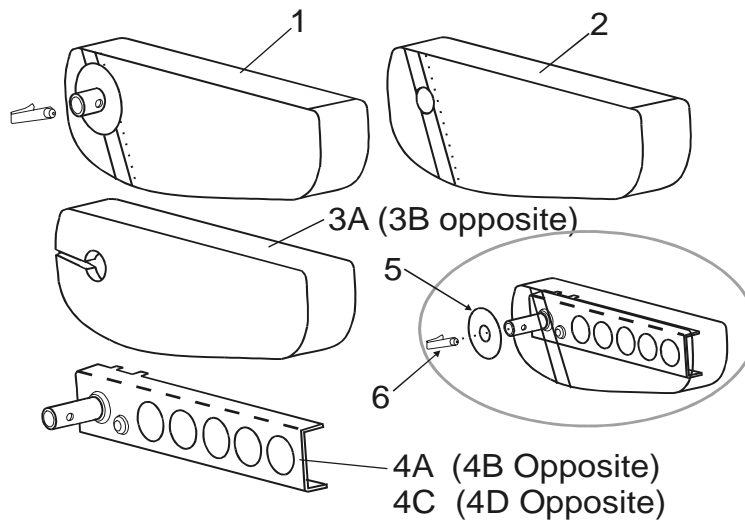
*Quantity seat specific

ILLUSTRATED PARTS BREAKDOWN: Section 3



ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	Seat specific	1	1	1	Upholstered Cushion Assembly
2	Seat specific	1	1	1	Cushion Cover
3	Seat specific	1	1	1	Poly, Cushion
4	227488-01	3	3	3	Webbing
5	427482-01	1	1	1	Cushion Frame

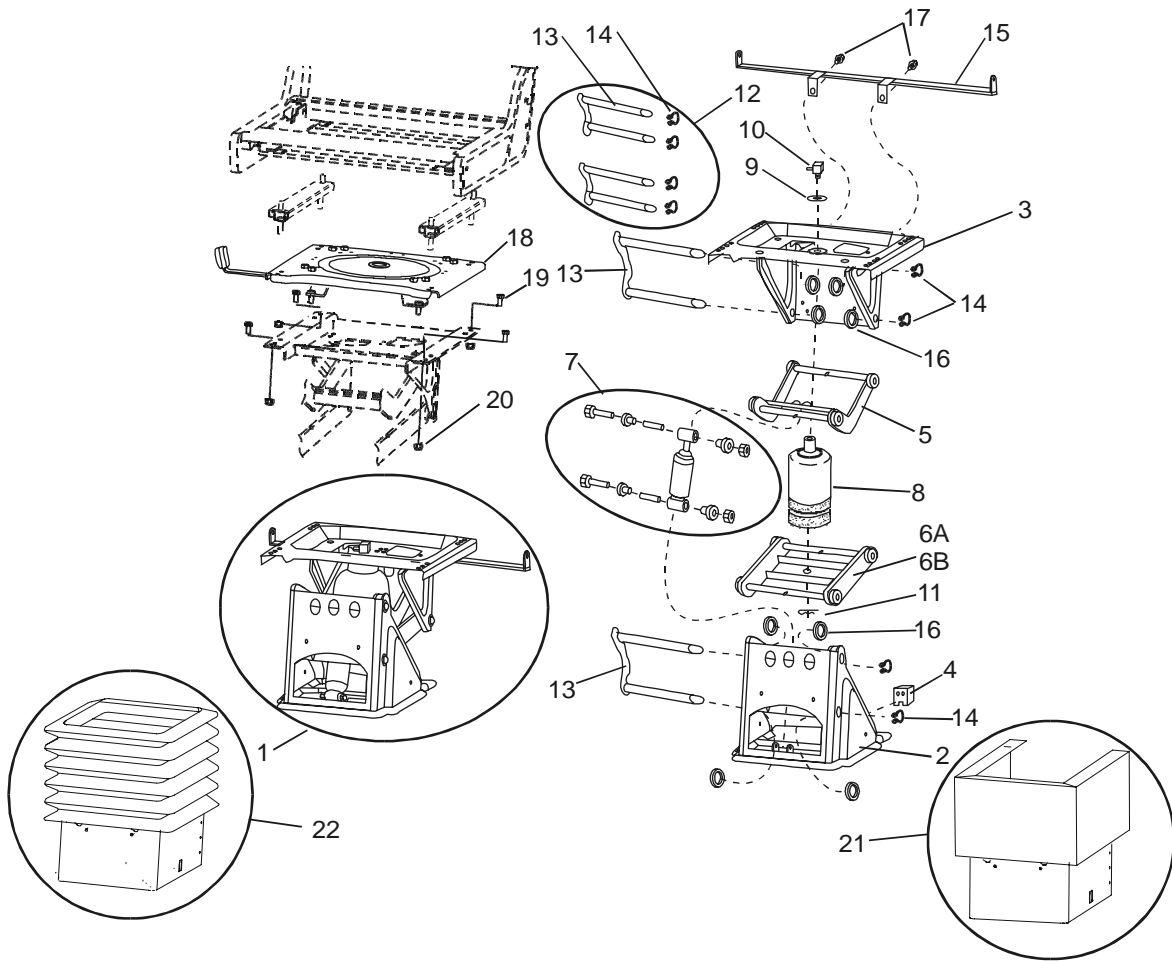
ILLUSTRATED PARTS BREAKDOWN: Section 4



ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	Seat specific				Upholstered Arm Assembly
2	Seat specific				Armrest Cover
3A	230661-01	1	1	1	Poly, Armrest, Left
3B	230661-02	1	1	1	Poly, Armrest, Right
4A	229981-01	1	1	1	Armrest Mechanical Assembly LH - 20"
4B	229981-02	1	1	1	Armrest Mechanical Assembly RH - 20"
4C	229981-03	1	1	1	Armrest Mechanical Assembly LH - 18"
4D	229981-04	1	1	1	Armrest Mechanical Assembly RH - 18"
5	229728-01	1	1	1	Disk, Nylon, Armrest Pivot (1 per arm)
6	222976-01	1	1	1	Clip, Spring, Armrest (1 per arm)

Note: Armrests are an optional feature for some seats. Contact NSC for more information.

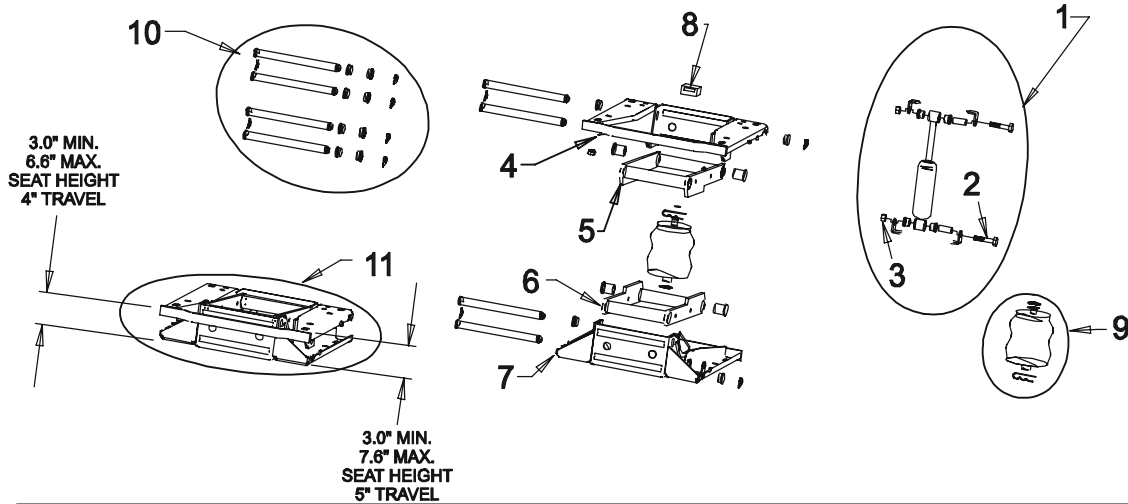
ILLUSTRATED PARTS BREAKDOWN: Section 5



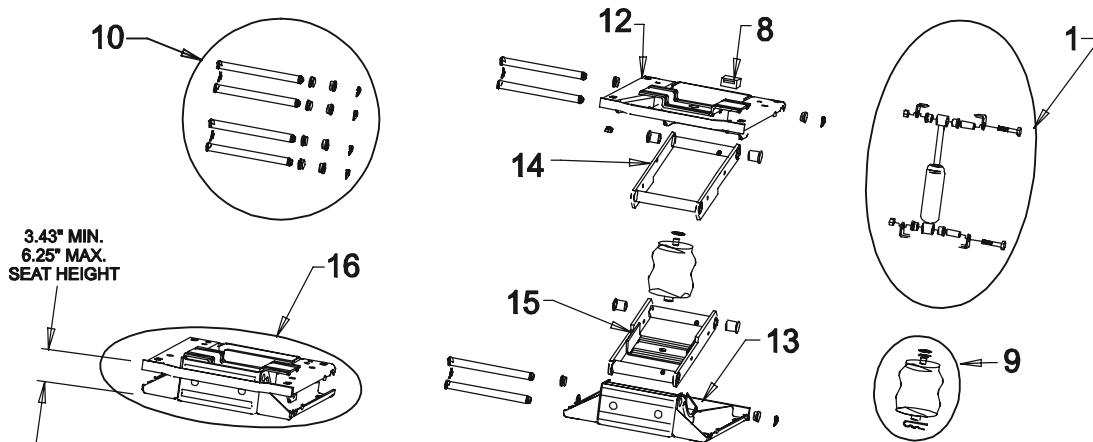
ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	Seat Specific	1	1	1	Base Assembly
2	230574-01	1	1	1	Lower Base Assembly
3	230241-01	1	1	1	Upper Base Assembly
4	230691-01	1	1	1	Bumper Stop - STD
5	230385-01	1	1	1	Upper Arm Assy, w/bushings
6A	317107-01	1	1	1	Lower Arm Assy, w/bushings
6B	317107-07	1	1	1	Lower Arm Assy, F/LTD Up-Stop
7	SK-582-2	1	1	1	Shock Kit, Heavy Duty
8	SK-1277	1	1	1	Air Spring Kit
9	177070-28	1	1	1	Lock Washer
10	180027-03	1	1	1	Air Fitting, 90 Degree
11	180021-37	1	1	1	Lock clip
12	SK-735	1	1	1	Shaft Kit
13	221599-01	2	2	2	Shaft
14	177070-07	4	4	4	Snap Ring
15	Seat specific	1	1	1	Belt Bar
16	230386-01	8	8	8	Bushings, Arm Spacer
17	177095-03	2	2	2	Bolt, Self Tapping
18	Seat specific	1	1	1	Swivel
19	177032-63	4	4	4	Bolt
20	177060-49	4	4	4	Nut, Locking
21	Seat specific	1	1	1	Skirt Kit
22	422696-29	1	1	1	Bellows Kit

ILLUSTRATED PARTS BREAKDOWN: Section 5 (cont'd)

MODEL 96 BASE



MODEL 97 BASE

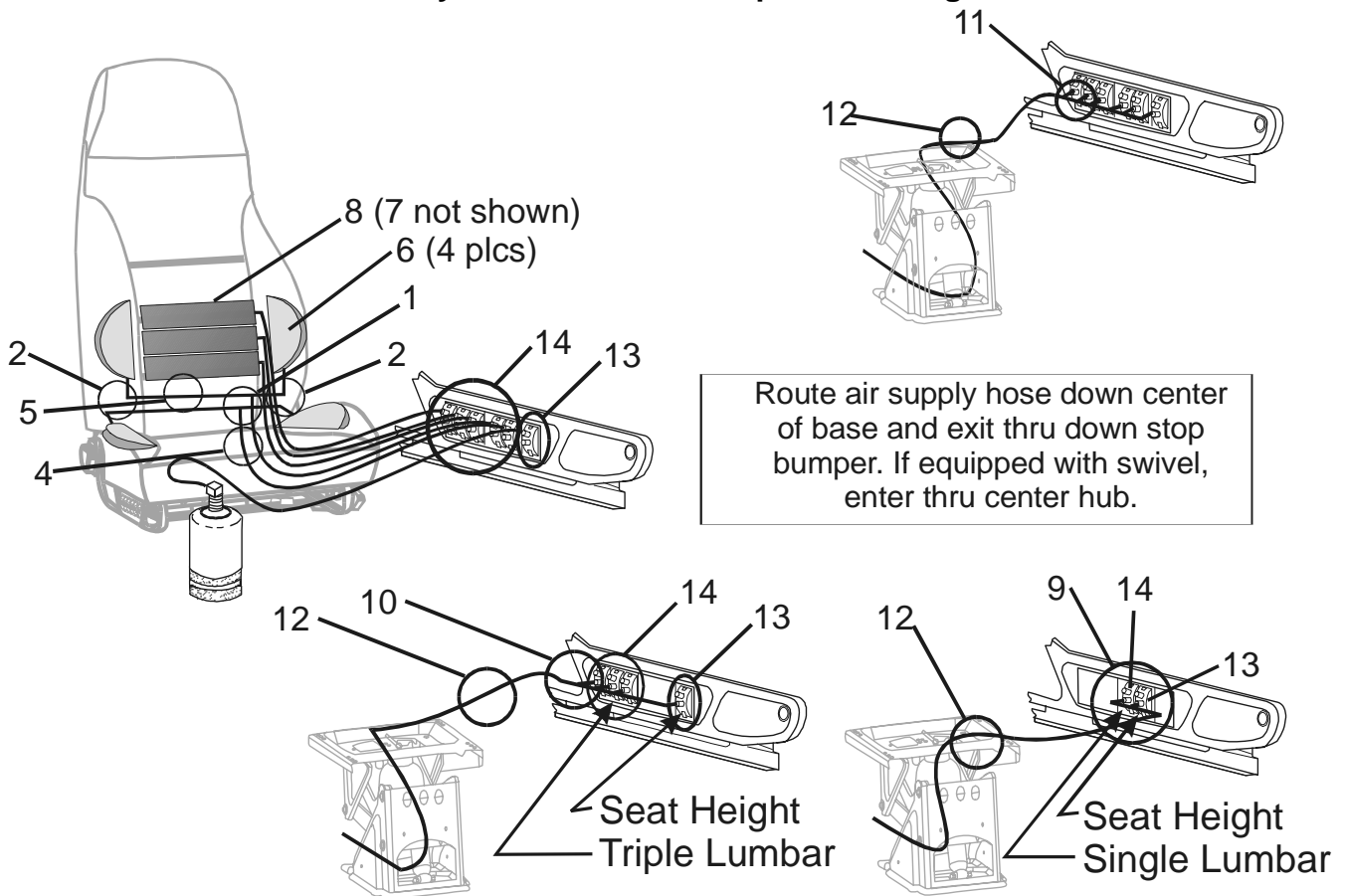


ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	SK-582-2	1	1	1	Shock Kit (Service Kit)
2	177032-09	1	1	1	3/8-24 X 1 3/4 Hex Head Bolt
3	177060-05	1	1	1	3/8-24 Thin Locknut
4	230032-01*	1	1	1	Upper 96 Base Assembly
5	225890-01*	1	1	1	Upper Arm Assembly with Bushing - 96
6	317125-01*	2	2	2	Arm Assembly with Bushings - 4" Travel - 96
7	230033-01*	1	1	1	Lower 96 Base Assembly
8	212342-03	1	1	1	Bumper - Down Stop
9	SK-777	1	1	1	Air Spring Kit for 96 & 97 Bases
10	SK-639	1	1	1	96 & 97 Shaft Kit
11	427114-07*	1	1	1	96 Base Assembly
12	422518-01*	1	1	1	Upper 97 Base Assembly
13	422517-01*	1	1	1	Lower 97 Base Assembly
14	317128-01*	1	1	1	Upper Arm Assembly with Bushings - 97
15	317125-01*	1	1	1	Lower Arm Assembly with Bushings - 97
16	422487-13*	1	1	1	97 Base Assembly

*These base components are for aftermarket series seats only.
For all others, the seat serial number is required.

ILLUSTRATED PARTS BREAKDOWN: Section 6

This section uses the number of air valves instead of seat style to determine components usage.



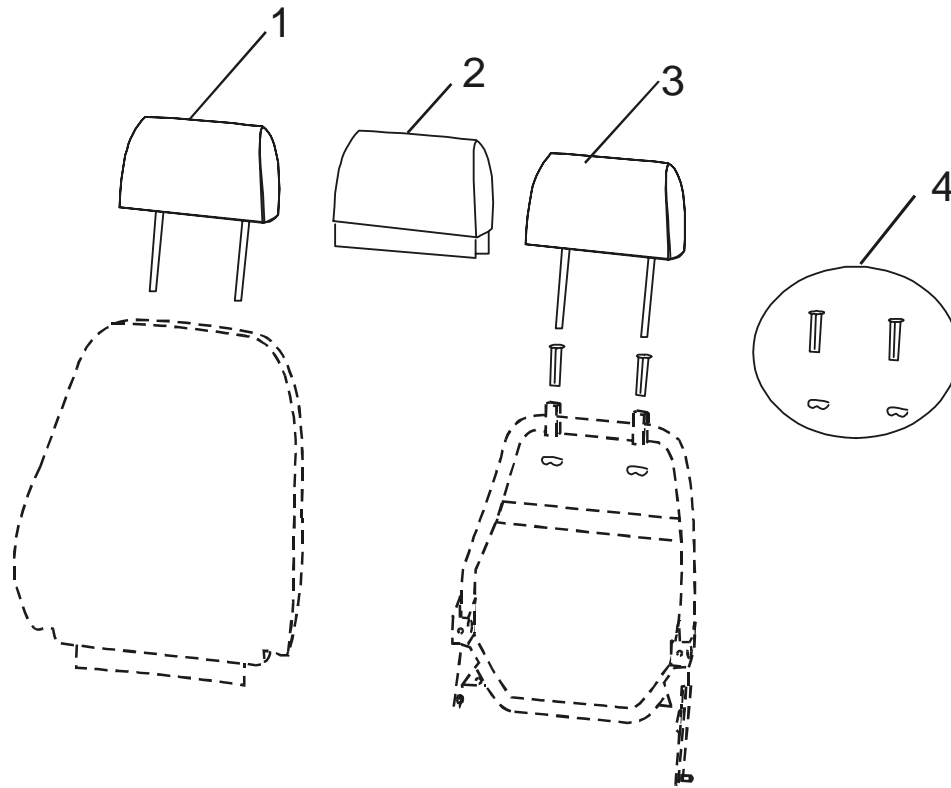
Route air supply hose down center of base and exit thru down stop bumper. If equipped with swivel, enter thru center hub.

NO	PART NO	AIRVALVES			DESCRIPTION
		2	4	6	
1	180027-49	-	-	2	1/8" T Fitting
2	180027-53	-	-	3	elbow, Plastic Fitting
3	180027-07	1	5	5	Tie Strap
4	180027-55	-	-	1	Tubing, Clear, 2.83 Feet
5	180027-57	-	-	1	Tubing, Green, 2.67 Feet
6	229800-01	-	-	4	Air Bolster
7	230202-01	1	-	-	Single Chamber Lumbar Bag
8	230662-01	-	1	1	Triple Chamber Lumbar Bag
9	230766-03	1	-	-	Manifold Assy. 2 Button
10	230767-03	-	1	-	Manifold Assy. 4 Button
11	230768-03	-	-	1	Manifold Assy. 6 Button
12	180027-09	1	1	1	Tubing, Black, 1.5 Feet
13	230914-07	1	1	1	Air Valve, High Pressure, Red Handle
14	230914-09	1	3	5	Air Valve, Low Pressure, Grey Handle
15	231016-07	1	-	-	Single Chamber Installation including items 7 & 12
16	231016-09	-	1	-	Triple Chamber Installation including items 8 & 12
17	231016-11	-	-	1	Triple Chamber Installation w/bolsters including items 1,2,4,5,6,8,& 12

Note: Seat configuration determines which components are installed and the quantities. A visual inspection of your seat should provide most information using the above illustration as a guideline. National Seating can provide information specifically for your seat, based on the seat part number, if you are not able to determine which components are installed.

- 1) Bolsters are secured with glue. Removal can damage the poly. Damaged or worn poly should be replaced.
- 2) Comfort valves (gray handle) are low pressure and interchangeable between locations. Seat height valve (red handle) is high pressure can cause damage to comfort components. Do not switch red and gray valves.
- 3) Item 13 & 14 contain air valve use decals. Apply after installing the valve and before use.

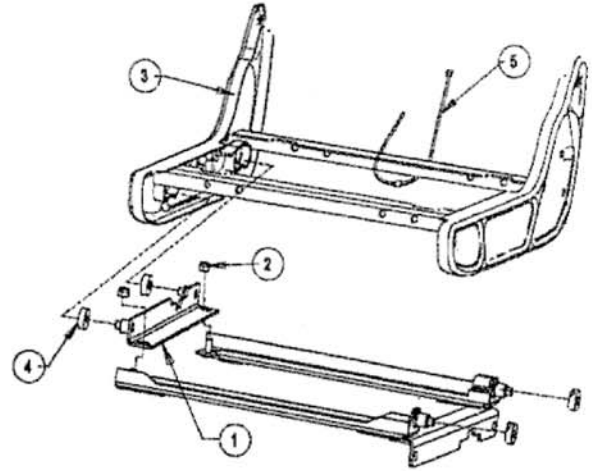
ILLUSTRATED PARTS BREAKDOWN: Section 7



ITEM NO	PART NO	APPLICATION			DESCRIPTION
		A	B	C	
1	Seat specific	-	-	1	Headrest Assembly
2	Seat specific	-	-	1	Cover, headrest
3	428450-01	-	-	1	Poly and Frame Assembly
4	325043-01	-	-	1	Bushing Kit

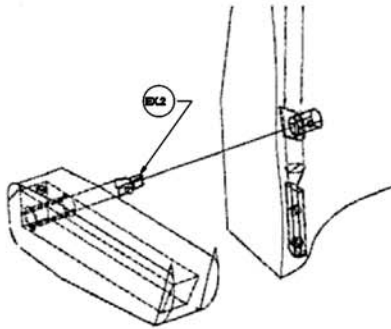
ADJUSTMENT INSTRUCTIONS

- 1) TO GAIN ACCESS TO ADJUSTMENT AREA, MOVE SEAT BOTTOM CUSHION TO FORWARD MOST POSITION; THEN ROTATE REAR OF CUSHION UPWARD. NOTE: IT WILL BE NECESSARY TO REMOVE REAR CUSHION TIE DOWN STRAP (IT. 5). SEAT SHOULD MOVE FREELY FORE AND AFT. SIDE TO SIDE MOVEMENT SHOULD BE MINIMAL.
- 2) IF SEAT HAS EXCESSIVE SIDE TO SIDE MOVEMENT, LOOSEN LOCKNUT (ITEM 2). ADJUST BEARING SUPPORT ANGLE (ITEM 1) TOWARD RIGHT HAND SIDE OF LOWER FRAME (ITEM 3), AND RE-TIGHTEN LOCKNUTS (ITEM 2).
- 3) IF SEAT MOVEMENT IS RESTRICTED OR MAKES EXCESSIVE NOISE FROM BEARINGS (ITEM 4) RUBBING AGAINST INSIDE OF CHUGGER CUPS, LOOSEN LOCKNUTS (ITEM 2), ADJUST BEARING SUPPORT ANGLE (ITEM 1) TOWARD CENTER OF SEAT AND RE-TIGHTEN LOCKNUTS (ITEM 2). TIP: IN "FINE-TUNING" THIS ADJUSTMENT WHEN MOVEMENT IS RESTRICTED, IT MAY ONLY BE NECESSARY TO SLIGHTLY LOOSEN LOCKNUTS (ITEM 2) AND MOVE SEAT FORE/AFT A FEW TIMES WITHOUT ACTUALLY ADJUSTING BEARING SUPPORT ANGLE (ITEM 1).
- 4) WHEN ADJUSTMENT IS SATISFACTORY, TIGHTEN LOCKNUTS (ITEM 2) TO 14 TO 17 FT. LBS. TORQUE.
- 5) REPLACE SEAT CUSHION AND TIE DOWN STRIP (ITEM 5) AT REAR OF CUSHION.



ARMREST REMOVAL NOTES

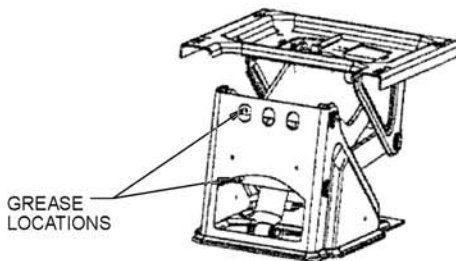
- 1) PUSH BACK FOAM AWAY FROM THE ARMREST AS SHOWN TO EXPOSE THE ARMREST SUPPORT TUBE WELDED TO THE FRONT OF THE BACKFRAME.
- 2) DEPRESS SPRING CLIP (EX.2) AND PULL ARMREST AWAY FROM SEAT.



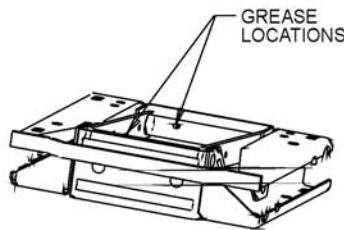
ARMREST INSTALLATION NOTES

- 1) LOCATE ARMREST SUPPORT TUBE ON FRAME OF SEAT. CUT COVERING OF SEAT AND EXPOSE TUBE. WHEN RETROFITTING OLDER MODEL SEATS BE SURE YOUR FRAME HAS THIS FEATURE BEFORE CUTTING UPHOLSTERY.
- 2) HOLDING ARMREST PARALLEL TO GROUND ON PROPER SIDE OF SEAT, ROTATE PIVOT TUBE SO THAT ONE HOLE IS ON TOP AND ONE HOLE IN FRONT OF SEAT.
- 3) INSERT SPRING CLIP (EX. 2) INTO PIVOT TUBE AND SNAP INTO FORWARD FACING HOLE. TOP HOLE TO BE LEFT OPEN.
- 4) INSERT ARMREST ASS'Y INTO ARMREST SUPPORT TUBE WHICH IS WELDED TO BACKFRAME.

MODEL 95 BASE



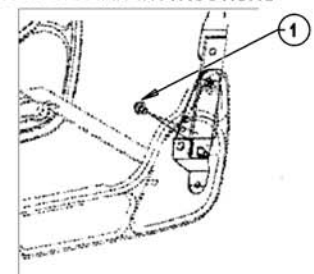
MODEL 96 OR 97 BASE



GREASE INSTRUCTIONS

BOTH THE UPPER AND LOWER ARM ASSEMBLIES (LOCATED INSIDE THE BASE) COME EQUIPPED WITH PRESSED-IN GREASE FITTINGS TO FACILITATE SERVICING WITH GREASE. ASSEMBLIES ARE PREGREASED AT THE FACTORY. RECOMMENDED GREASE INTERVALS ARE 150,000 MILES. RECOMMENDED GREASE IS BAUMS CASTORINE 2500-25T OR EQUIVALENT.

BACK RECLINE LIMIT INSTRUCTIONS



- 1) MAKE SURE BACKREST IS IN FULL FORWARD POSITION.
- 2) INSTALL RECLINE LIMIT BOLT (ITEM 1) IN BACKPLATE AS SHOWN.

INSTALLING RECLINE LIMIT BOLT (ITEM 1) IN TOP HOLE WILL LIMIT RECLINE BY 6 DEGREES.

INSTALLING RECLINE LIMIT BOLT (ITEM 1) IN BOTTOM HOLE WILL LIMIT RECLINE BY 3 DEGREES.

ITEM	PART NO.	DESCRIPTION
1	177101-01	RECLINE LIMIT BOLT



COMMERCIAL VEHICLE GROUP (CVG) MILLION MILE LIMITED WARRANTY FOR NATIONAL SEATING SEATS

Commercial Vehicle Group (CVG) warrants that each new National Seating seat and all National Seating accessories and equipment (except upholstery covering and cushioning materials) supplied by CVG is free from breakage or excessive wear (to be determined exclusively by CVG) due to defect in material or workmanship for a period of the first one million (1,000,000) miles or seven (7) years of operation, whichever comes first, to the original purchaser.

CVG will replace from its factory, or at its option, repair any parts which, in the opinion of the manufacturer have failed or worn as stated previously. Further, during the first (1) year or one hundred thousand (100,000) miles, whichever occurs first, the manufacturer will reimburse the purchaser for costs incurred in the removal and replacement of defective parts, based on the number of man hours designated by the manufacturer to be required for such work at the base rate for mechanical labor prevailing in the purchaser's garage at the time of such repairs.

THIS WARRANTY SHALL BE CONSIDERED VOID IF, IN THE OPINION OF CVG, ONE OR MORE OF THE FOLLOWING CONDITIONS ARE PRESENT:

- (1) THE SEAT OR ANY ACCESSORY/EQUIPMENT HAS BEEN ALTERED, MODIFIED, CHANGED OR REWORKED IN A MANNER NOT PREVIOUSLY AUTHORIZED BY CVG.
- (2) THE SEAT HAS BEEN SUBJECT TO ABUSE, NEGLIGENCE OR ACCIDENT.
- (3) THE SEAT IS INSTALLED IN A MANNER THAT WOULD SUBJECT THE SEAT TO ABNORMAL USE.
- (4) WARRANTY DOES NOT APPLY TO BROKEN AIR VALVE STEMS OR AIR SYSTEM COMPONENT LEAKAGE DUE TO FOREIGN PARTICLES LODGED WITHIN, OR TO AN AIR SUPPLY CONTAMINATED WITH OIL OR WATER. ALSO NOT COVERED ARE AIR SPRINGS WITH CUTS OR PUNCTURES DUE TO NEGLIGENCE OR IMPROPER INFLATION.
- (5) NON-GENUINE REPLACEMENT PARTS HAVE BEEN SUBSTITUTED IN SUCH A WAY AS TO AFFECT THE SERVICEABILITY OF THE SEAT OR ANY PART THEREOF.

CVG MAKES NO OTHER EXPRESS WARRANTY AND OFFERS NO REMEDY EXCEPT AS HEREIN DESCRIBED. CVG DISCLAIMS ANY LIABILITIES FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE NATIONAL SEATING PRODUCT COVERED BY THIS WARRANTY. ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND OF MERCHANTABILITY ARE LIMITED TO THE PERIOD OF THIS WARRANTY.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

FAILURE TO GIVE PROMPT WRITTEN NOTICE WITHIN THIRTY (30) DAYS OF THE DISCOVERY OF ANY DEFECT IN MATERIAL OR WORKMANSHIP WHICH OCCURS WITHIN THE WARRANTY PERIOD WILL VOID THIS WARRANTY. SEND SUCH NOTIFICATION TO:

CVG - National Seating
200 National Drive; Vonore, TN 37885-9631
800-222-7328 / 615-884-6651

FEDERAL MOTOR VEHICLE SAFETY STANDARD

This seat conforms to Federal Motor Vehicle Safety Standards (FMVSS) 207 and 302 in effect on the date of manufacture. It is the responsibility of the installer to ensure that proper seat fastening hardware and seat belt anchorage (seat belt and tether belt system) are used in accordance with FMVSS 207 and 210. To achieve compliance with FMVSS 207 use only high strength fasteners and heavy-duty washers when installing seat assembly.

SEAT BELTS ARE TO BE WORN AT ALL TIMES WHEN USING THIS SEAT