SCHROTH®		No: CMM 25-04-01 Issue: 03 Date: Sep 06th, 2016

Title
Abbreviated Component Maintenance Manual with Illustrated Parts List for 4-point/3-point Static Harness Restraint System w/ optional crotch strap Model 4-()-()

Project

Subject
Component Maintenance Manual

Part Number
Model 4-()-()

A ACCEPTANCE PAGE

Release latest Issue

	Company	Name	Function	Date	Signature
compiled	SSPG	Brüggemann, Janina	Application Engineer - Aviation	Sep 06th, 2016	
released	SSPG	Meier-Arndt, Stefan	Head of Engineering	06.09.2016	

B LIST OF REVISIONS

Issue	Date	Effect on page(s)	Reason for Revision
Basic	Oct., 1995	All	First Issue
01	Jan, 2009	1,3,12,19,25,27,29, 31	
02	Aug, 2012	5,10-11,13-14, 18, 20,22-23,26,28	Add WAB / webbing pictures, extended buckle type / webbing color list
03	Sep, 2016	All	Template update, added life time restriction for acrobatic use

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ABBREVIATED COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

4-Point/3-Point Static Harness Restraint System w/ Optional Crotch Strap

Model 4-()-()

Vendor Code: C1624

Issue Basic: Oct, 1995
Issue 01: Jan, 2009
Issue 02: Aug, 2012
Issue 03: Sep, 2016

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TABLE OF CONTENTS

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A List of Illustrations

B List of Tables

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1 Description and Operation

1.1 General

The type designations of the restraint systems are:

4-()-()

The restraint systems can be supplied with different end fittings and in various lengths to suit the prevailing installation conditions in the aircraft.
The restraint systems are designed to keep crew members and/or passengers safely in their seats during take-off, landing and in flight.

1.2 Description

The restraint systems consist of a lap belt portion, shoulder straps and optional of a crotch strap. The lap belt portion consists of two lap belt halves which are connected by the insertion of a latch into the buckle. The lap belt halves terminate in an end fitting.
The shoulder belts of model 4-01-() and model 4-02-() consists of two single shoulder straps, while the shoulder belts of model 4-03-() and model 4-04-() have two single straps which are connected to the buckle, but converge into a Y junction prior to terminating in an end fitting.
The crotch strap is connected by the insertion of a latch into the buckle (model 4-02-() and model 4-04-()).
The buckle is fixed to one half of the lap belt (for double latch configuration the buckle is fixed to one half of the lap belt and additionally to one shoulder belt half) or in case of model 4-02-() and 4-04-() it can be fixed to the crotch strap as well. The buckle is installed by the manufacturer and remains in this position.
All belt portions are provided with an identification label indicating all relevant data.
The restraint system can be supplied with different buckles which are listed under chapter 1.4. Specifically, the buckle BK SL 55 is a Water-Activated Buckle (WAB). Beside the manual release function the buckle provides an automatic release function if the buckle is drowned under water for 6-10 seconds. A battery powered electronic logic monitors the buckle environment continuously. Once the controller detects sufficient quantity of water intrusion into the buckle, a circuit is closed and a propellant charge is ignited pushing the retainer in the buckle to open position and by that releasing the latches. The buckle remains open and must be replaced.

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1.3 Model Identification (Drawing)

Part Number System

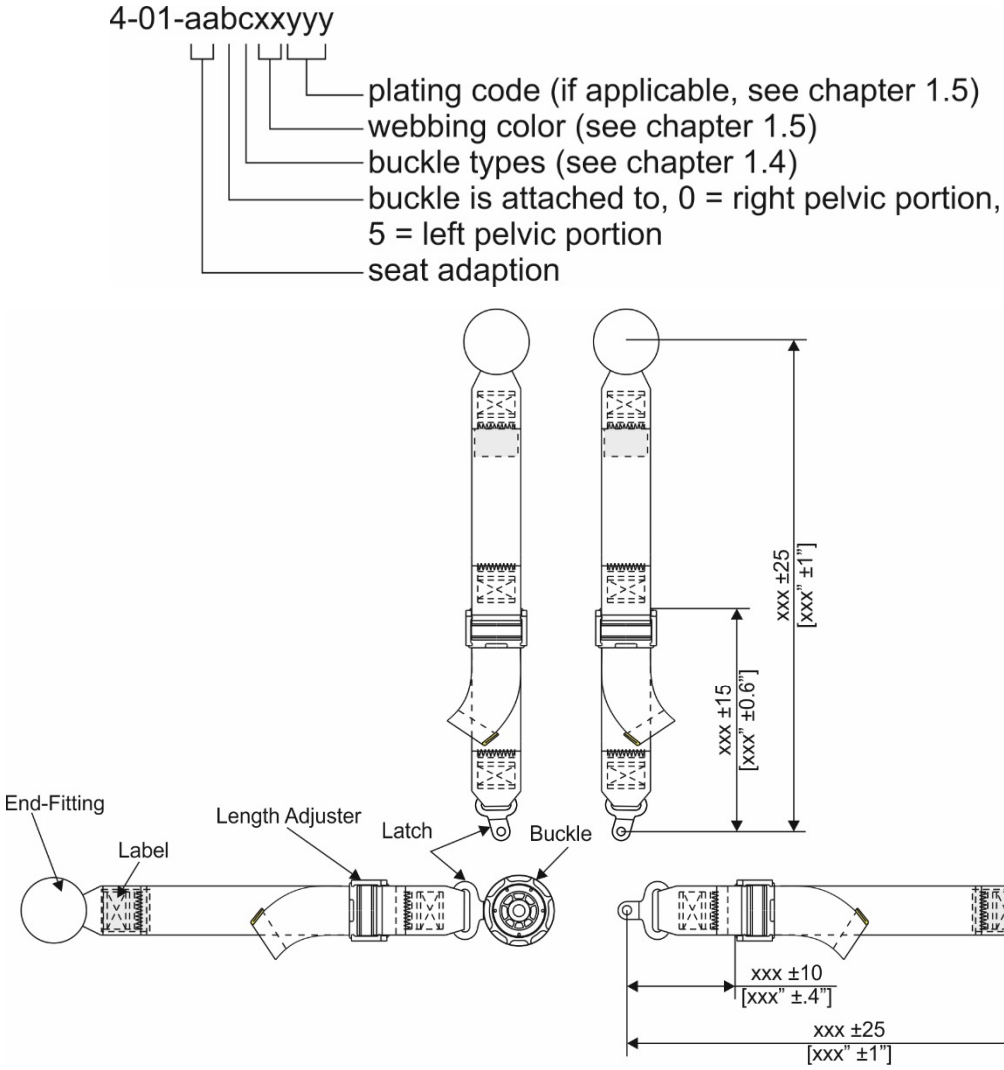

Illustration 1-1: Drawing of Model 4-01-()

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Model Identification (Drawings) – continued

Part Number System

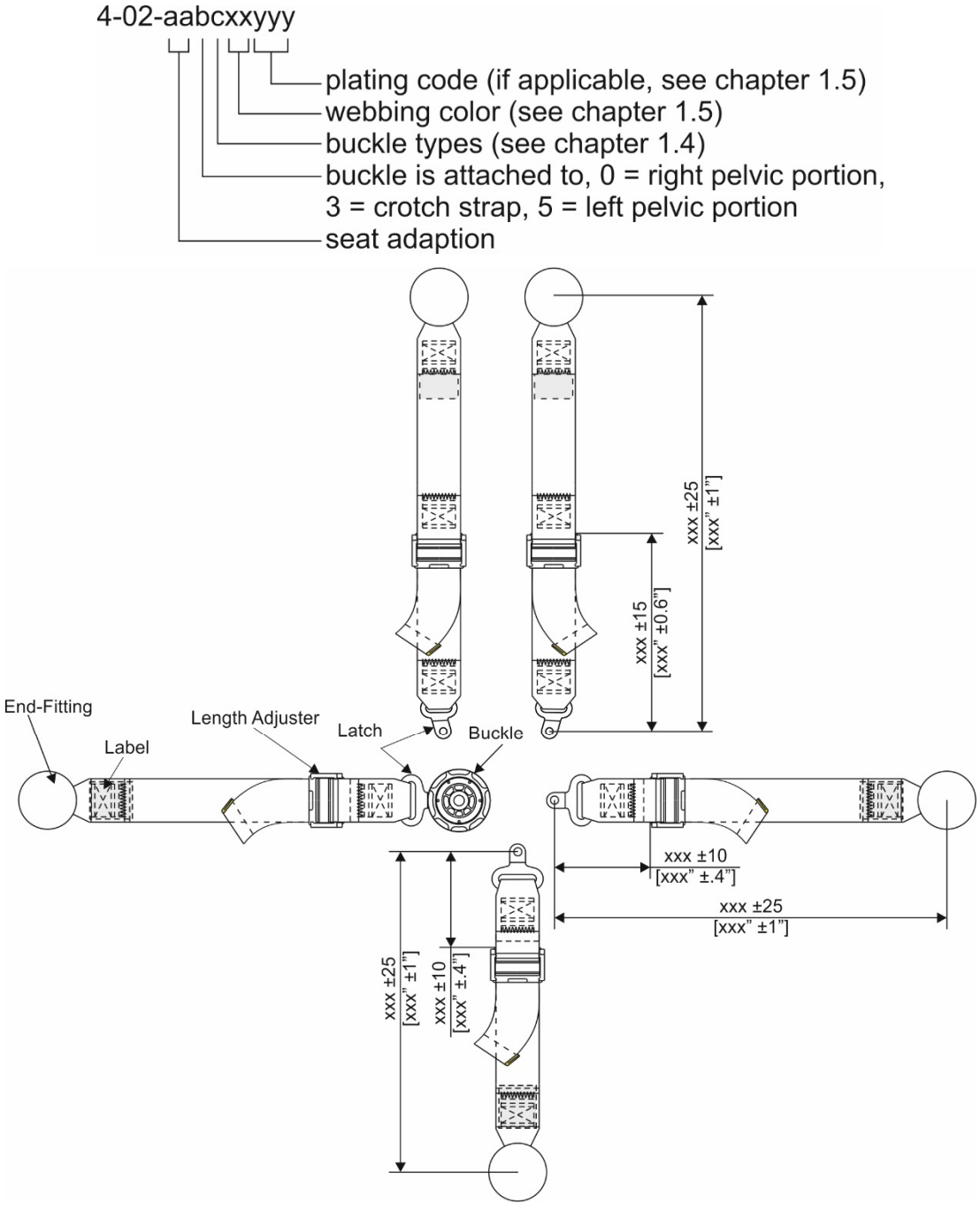

Illustration 1-2: Drawing of Model 4-02-()

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Model Identification (Drawings) – continued

Part Number System

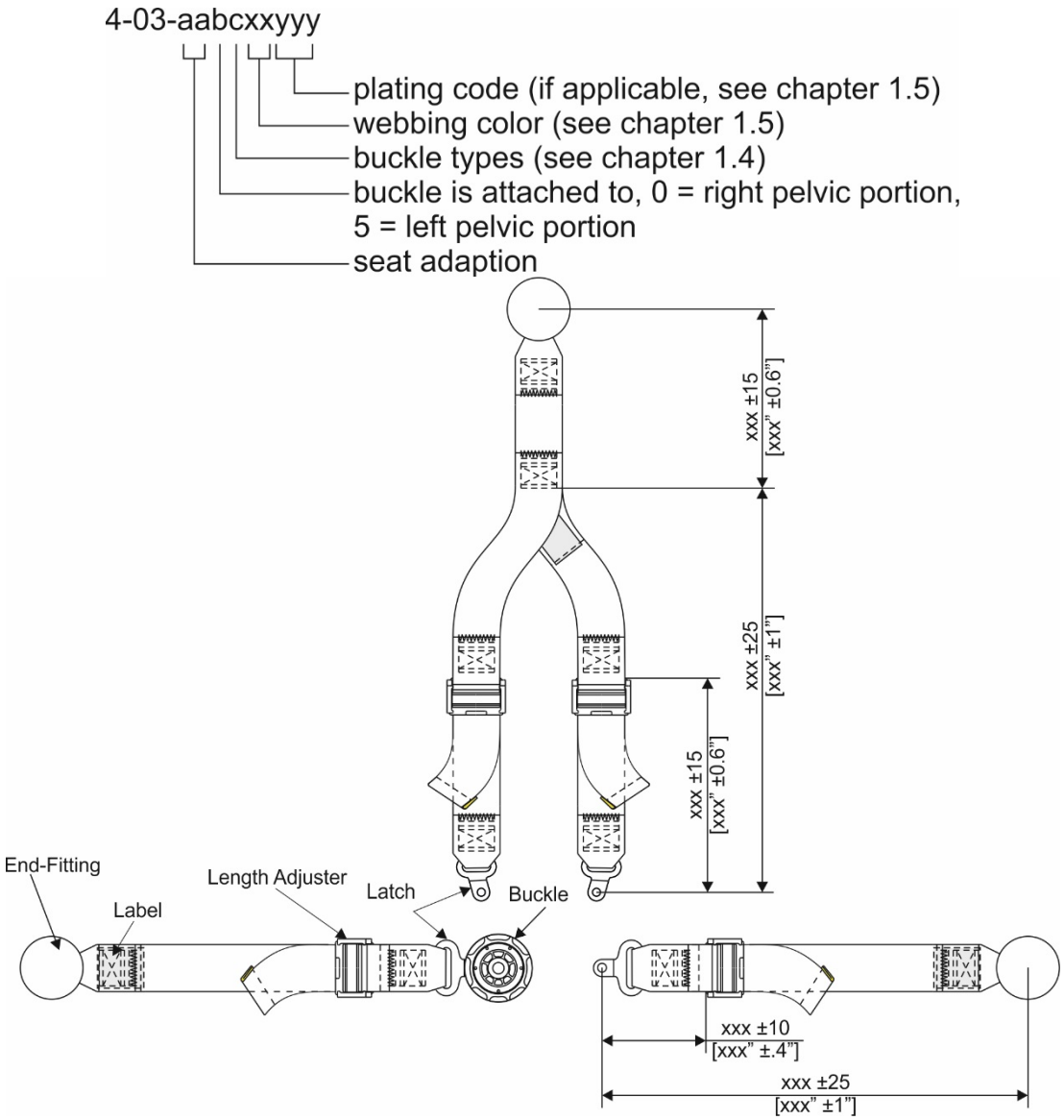

Illustration 1-3: Drawing of Model 4-03-()

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Model Identification (Drawings) – continued

Part Number System

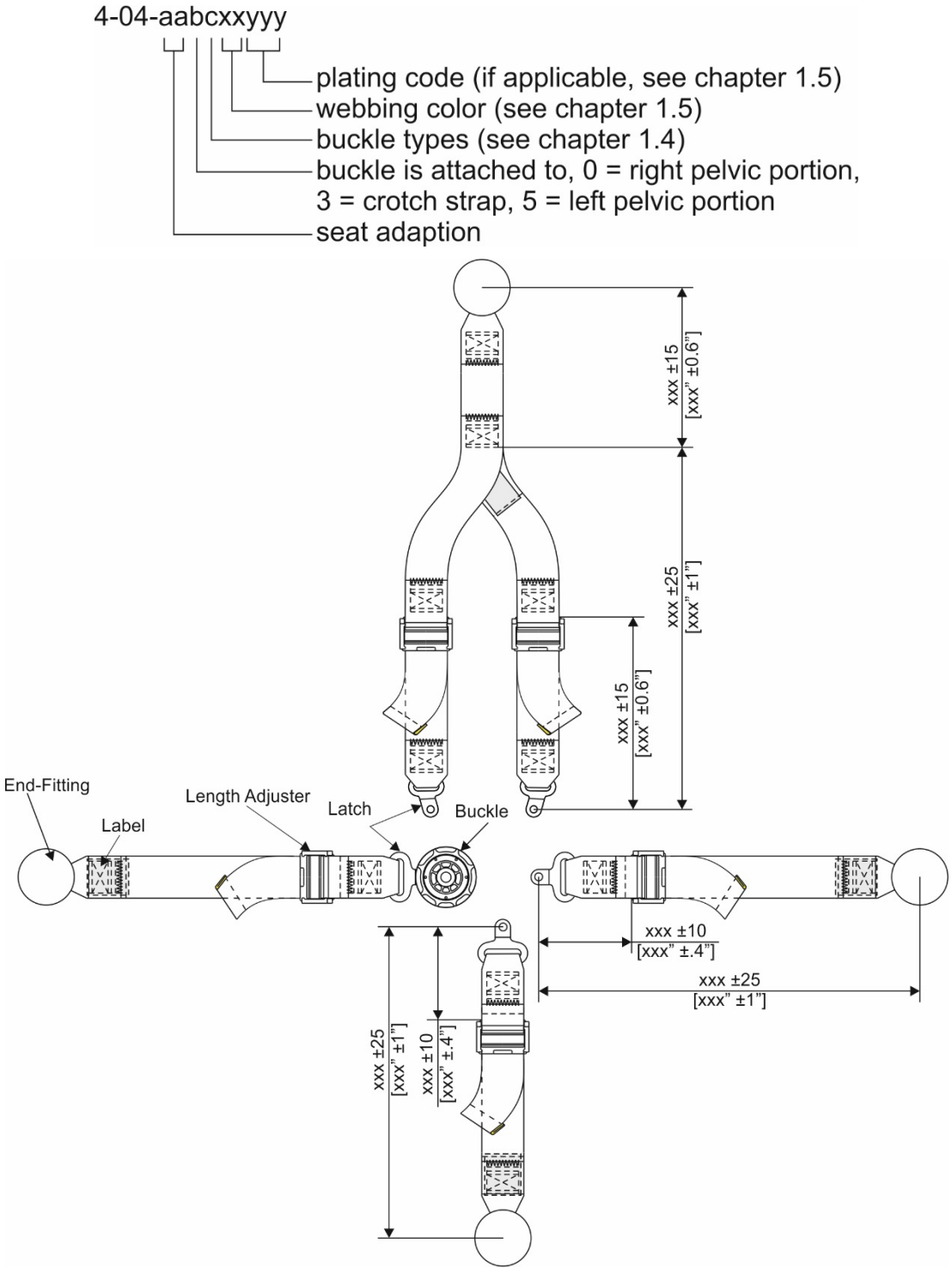

Illustration 1-4: Drawing of Model 4-04-()

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1.4 Buckle Types

Code	Buckle Type
2	BK SL 10 - lost motion
3	BK SL 11 - without lost motion
4	BK SL 12 - lost motion
5	BK SL 15 - without lost motion
6	BK SL 10 - without lost motion
8	BK SL 12 - without lost motion
9	BK SL 14 - without lost motion
A	BK SL 11 - lost motion
B	BK SL 14 - lost motion
C	BK SL 41 - dual motion
D	BK SL 40 - dual motion
F	BK SL 16 - lost motion
G	BK SL 16 - without lost motion
L	BK SL 17 - without lost motion
P	BK SL 55 - lost motion
T	BK SL 55 - without lost motion

Table 1-1: Buckle Types

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1.5 Color and Plating Codes

Code	Webbing color	Code	Webbing color	Code	Webbing color	Code	Webbing color
01	black	46	beige	88	asphalt	D3	rust
02	darkgrey	47	forest green	89	blue ice	D4	shell
03	lightblue	48	grey	90	cool green	D5	black olive
04	brown	49	midnight blue	91	azure	D6	royal blue
05	tan	50	ochre brown	92	red	D7	caramel
06	blue	51	Abilene	93	yellow	D8	vineyard
08	maron/wine	52	royal lt.blue	95	purple	D9	beige #5012
10	pepperdust	53	carribean sand	98	gold mist	D0	brandy
12	medium blue	54	medium fawn	99	camel	E1	clay brown
14	cruiser grey	55	Timken	A0	rubythroat	E2	green olive
15	moon valley	56	dolphin grey	A1	green pearl	E3	blue steel
16	champagne	57	green mist	A2	lantal lila	E4	café latte
17	light taupe	58	flat green mist	A3	cloud	E5	mellow yellow
18	cappuccino	59	cream	A4	muted green	E6	mocca
19	dove grey	60	shark grey	A5	red brown	E7	greenish bronze
20	tan	61	chaps	A6	grey brown	E8	chocolate brown
21	beige	62	mortar	A7	slate grey	E9	royal blue
22	tan	63	base grey	A8	clay	E0	nut brown
23	silver	64	lunar	A9	cream white	F0	safran
24	beige	65	pampas	B1	chestnut brown	F1	reinweiss
25	light bronze	66	dragon red	B2	plum pearl	F2	aubergine
26	medium jade	67	pigeon	B3	light plum	F3	frankincense
27	magnolia	68	desert	B4	burgundy plum	F4	tyler
28	grey 1	69	light mauve	B5	equator	F5	darkchocolate
29	light grey	70	deep turquoise	B6	roadrunner	F6	desertdawn
30	moondust	71	GAC SA 834	B7	prickly pearl	F7	yellow
31	charcoal	73	crimson red	B8	lt. mauve	F8	tan 686A
32	light brown	74	adobe	B9	sea green	F9	vintage tan
33	bronze	75	saddle	B0	flat purple	G0	ivory
34	grey	76	port	C1	dark cocoa	G1	green
35	beige	77	foliage	C2	nutmeg	G2	latte
36	beige	78	steel	C3	almond	G3	reserved
37	shadow	79	tuscan	C4	blue jay	G4	reserved
38	light grey	80	dark green	C5	powder	G5	reserved
39	silver grey	81	light green	C6	bordeau	G6	reserved
40	llama	82	midnight	C7	pebble	G7	reserved
41	finch	83	dark chocolate	C8	hazelnut tweed	G8	glamour bronze
42	chamois	84	sky blue	C9	puerta vallarta	G9	vintage brown
43	pinto	85	dark charcoal	C0	blue pearl	H0	taupe
44	brown	86	greenwood	D1	Indian red	H1	grau
45	white	87	heron	D2	purple sparkle		

Table 1-2: Webbing Color List

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PLATING:

Code	Plating Code	Plating Color	Code	Plating Code	Plating Color
None	None	SCHROTH Standard	DAZ	HT 105	Medium Aged Gold 24k
BCR	SSP Black Chrome	SCHROTH Black Chrome	PCU	HT 301	Polished Bright Copper
BPY	Black Pearl	Schroth Black Pearl	SCU	HT 302	Satin Brushed Copper
CHR	CHR - Polished Chrome	SCHROTH Polished Chrome	DCU	HT 305	Medium Aged Copper
GSZ	SSP Satin Gold	Schroth Satin Gold 24K	PNI	HT 401	Polished Nickel
GTF	SSPC	Gold Tone Finish	SNI	HT 402	Satin Nickel
PGZ	SSP Polished Gold 24k	SCHROTH Polished Gold 24k	FNI	HT 403	Frosted Nickel
PTM	SSP Plate to Match	SCHROTH Plate to Match Sample	MNI	HT 404	Matte Nickel
SMC	SSP Matt Chrome	SCHROTH Standard Matt Chrome	HNL	HT 405	Nickel Light Aged (Antique)
SSP	SSP Standard Hardware	SCHROTH Brushed Alum./ Chrome Base	MNA	HT 406	Antique Medium Nickel
			RNP	HT 409	Smoked Nickel Polished Bright
ANG	CPC-007	Antique Gold	HSN	HT 410	Smoked Satin Nickel
CPE	CPC-008	Polished Peach Gold	PNR	HT 412	Nickel Pearlite
PCC	CPC-1	Polished Chrome	PBR	HT 501	Polished Bright Brass
ACU	CPC-10	Antique Cooper	SBR	HT 502	Satin Brushed Brass
SGC	CPC-101	Satin Almond Gold	BLA	HT 504	Brass Light Aged
SCH	CPC-103	Satin Champagne Gold	WBR	HT 508	Medium Aged Walnut Brass
CBP	CPC-11	Polished Brass	MBS	HT 513	Matte Brass
CBC	CPC-13	Satin Brass	PCR	HT 601	Polished Bright Chrome
SSV	CPC-16	Satin Silver	SCR	HT 602	Satin Brushed Chrome
PPB	CPC-17	Perma Brass Polished	FCR	HT 603	Chrome Frosted
SPB	CPC-18	Satin Perma Brass	PLR	HT 609	Chrome Pearlite
CSB	CPC-19	Sating Black	PBZ	HT 701	Polished Bright Bronze
SCC	CPC-2	Satin Chrome	SBZ	HT 702	Satin Brushed Bronze
BLC	CPC-20	Black Chrome	BMA	HT 705	Bronze Medium Aged
MAN	CPC-3	Polished Nickel	PAG	HT 801	Polished Bright Silver
SAN	CPC-4	Satin Nickel	SAL	HT 802	Satin Brushed Silver
SBC	CPC-402	Satin Bronze	SLA	HT 804	Silver Light Antique
ANN	CPC-5	Antique Nickel	SAA	HT 805	Silver Medium Aged Antique
PGC	CPC-6	Polished Gold	DAS	HT 806	Dark Aged Silver - Ant.
DFG	CPC-660	Deep Frost Gold	HGP	HT 820	High Gloss Pewter
SGZ	CPC-7	Satin Gold	OSN	HT 821	Old Aged Pewter
CPC	CPC-8	City Polished Copper	PPT	HT 901	Polished Platinum
			SMB	HT 92675V2	Satin Matte Brass
PBV	HT 101	Polished Bright Gold 24k	SBQ	HT107-100	Slate Black QC900
SAZ	HT 102	Satin Brushed Gold 24k	PGV	HT114791	Peach Gold Brushed Variation
LAG	HT 104	24ct Gold Light Aged Antique	PGS	HT-162	Satin Peach Gold
WLA	HT 104	24ct Gold Light Aged Antique, LV9D	SPL	HT-809	Silver Pearlite
GAA	HT 106	24ct Gold Aged Antique			

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Code	Plating Code	Plating Color	Code	Plating Code	Plating Color
HAZ	HT 108	Hammertone Gold 24k	BGS	TC-11/15(S)	Techno Satin Blush White Gld
GPH	HT 109	24ct Gold Pearlite	CPG	TC-10/16(P)	Champagne Polished Gold
PBE	HT 110	18 k Polished Bright Gold	CSG	TC-10/16(S)	Champagne Satin Gold
GSB	HT 111	18ct Gold Satin Brushed	DPG	TC-053	Polished Gold DAW026903
GLA	HT 113	Gold Light Aged Antique	MGZ	TC-10/24(M)	Matte Gold 24k
PGX	HT 120	Polished Bright Gold 14k	PBG	TC-11/15(P)	Techno Polished Blush White Gld
SAX	HT 121	Satin Brushed Gold 14k	SAC	TC-70(SA)	Satin Antqiue Copper
FAX	HT 122	Frosted Gold 14k	SGT	TC-10/14(S)	Techno Satin 14K Gold
VRG	HT 140	24k Rose Gold Polished	SNP	TC-062402(S)/ TC-10/24(P)	Satin Silver Nickel w/ Polished Gold emblem
SRG	HT 141	Satin Brushed Rose Gold	SNS	TC-062402(S)	Satin Silver Nickel
LCP	HT 151	Champagne Gold – Polished Bright	SPG	TC-10/12(S)	Satin Peach Gold
LCG	HT 157	Light Champagne Satin Gold	SPN	TC-45(P)	Smoked Polished Nickel
PPG	HT 161	Polished Peach Gold	STB	TC-56(S)	Satin Techno Brass
HAG	HT 171	Polished Almond Gold	TAC	TC-011303	Custom Match Satin Almond Gold w/ clear coat
SAG	HT 172	Satin Almond Gold	TAG	TC-042902	Antique Gold
AGP	HT 179	Almond Gold Pearlite	TAN	TC-010903	Satin Antique Nickel
PBP	HT 201	Polished Bright Black Pearl	TCB	TC-27(P)	Black Chrome Polished
SBP	HT 202	Satin Brushed Black Pearl	TCC	TC–25(S)	Techno Satin Chrome
FBP	HT 203	Black Pearl Frosted	TCG	TC-10/14(p)	TCI 14K Polished Gold
MBL	HT 204	Matt Black	TCH	TC-011003	Satin Champagne Gold
HBP	HT 208	Hammertone Black Pearl	TCS	TC-70(s)	Satin Copper Clear Coat
BPP	HT 209	Pearllite - Black Pearl	TDG	TC- Custom plating	Degussa Gold 529 – Custom plating
NAS	HT 484	Nickel Antique SWIRL (Clear Coating required)			
TGP	TC-104	Custom Polished Gold	ZES	TI-802	Bronze Satin
TMN	TC-40(M)	Matte Nickel	ZTB	TI-803	Bronze Sandblast
TNS	TC-40(s)	Satin Nickel	ZMB	TI-804	Medium Bronze
TNY	TC-40(S)	Satin Nickel (includes rotary back cover)	ZOA	TI-821	Old Aged Pewter
TPA	TC-10/17(P)	Polished Almond Gold	ZBC	TI-900	Black Chrome
TPB	TC-56(P)	Polished Brass	ZPN	TI-901	Pewter Satin
TPC	TC-25 (P)	Polished Chrome	ZPG	TI-100	Gold Polished/Durabrass 24K
TPG	TC-10/24(P)	24ct Polished Gold	ZZG	TI-1000	Zirconium Gold PVD Finish
TPL	TC-07G(P)	Techno Polished Platinum	ZGD	TI-1001	Pale Gold PVD Finish
TPN	TC-40P	Polished Nickel	ZOM	TI-1003	Matt Copper PVD Finish
TPP	TC-10/12(P)	Polished Peach Gold	ZGF	TI-1004	Satin Gold PVD Finish
TPR	TC-10/15(P)	Polished Rose Gold	ZOD	TI-1005	Satin Copper PVD Finish
TRN	TC-35(S)	Rose Nickel Satin	ZOF	TI-1006	Copper PVD Finish
TSA	TC-10/17(S)	Satin Almond Gold	ZSG	TI-1007	Satin Pale Gold
TSC	TC-25(SC)	Satin Chrome	ZGM	TI-1008	Matt Gold PVD Finish
TSG	TC-10/24(S)	Techno Satin Gold 24K	ZGH	TI-101	Gold Satin 24K
TSN	TC-40(SA)	Satin Antique Nickel	ZCP	TI-102	Champagne Gold Polished

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Code	Plating Code	Plating Color	Code	Plating Code	Plating Color
TSP	TC-07G(S)	Techno Satin Platinum	ZCS	TI-103	Champagne Gold Satin
TSR	TC-10/15(S)	Satin Rose Gold	ZRP	TI-104	Rose Gold Polished Bright
TSS	TC-45(S)	Satin Smoked Nickel	ZRS	TI-105	Rose Gold Satin
			ZPX	TI-106	Gold Polished Bright 18K
ZHS	TI-204	Chrome Satin	ZGG	TI-107	Gold Satin 18K
ZPC	TI-205	Polished Chrome	ZGE	TI-108	Gold Sandblast 24k
ZNA	TI-206	Nickel Antique	ZGA	TI-109	Gold Antique 24K
ZTO	TI-206	Chrome Sandblast	ZAS	TI-111	Almond Gold Satin 24K
ZNT	TI-207	Nickel Sandblast	ZGK	TI-112	Gold Sandblast 14K
ZNS	TI-208	Nickel Satin	ZGT	TI-112	Gold Sandblast 18K
ZSN	TI-210	Smoked Satin Nickel	ZGC	TI-113	Gold Antique 18K
ZSP	TI-300	Silver Polished	ZPY	TI-114	Gold Polished Bright 14K
YSS	TI-301	Silver Satin (SL 10.8 Top and Back Cover)	YGS	TI-115	Gold Satin 14K (SL 10.8 Top and Back Cover)
ZSS	TI-301	Silver Satin	ZGS	TI-115	Gold Satin 14K
ZST	TI-302	Silver Sandblast	ZGB	TI-117	Gold Antique 14K
ZDD	TI-4000	Deep Blue PVD Finsh	ZRT	TI-118	Rose Gold Sandblast
ZDF	TI-4001	Blue PVD Finish	ZRA	TI-119	Rose Gold Antique
ZED	TI-4002	Bronze PVD Finish	ZCT	TI-120	Champagne Gold Sandblast
ZFP	TI-4003	Purple PVD Finish	ZAP	TI-121	Almond Gold Polished 24K
ZKP	TI-401	Black Nickel Polished	ZCA	TI-121	Champagne Gold Antique
ZKS	TI-402	Black Nickel Satin	ZPT	TI-198	Platinum Sandblast
ZKT	TI-403	Black Sandblast	ZPS	TI-199	Platinum Satin
ZKY	TI-405	Black (Baked Epoxy Paint)	ZPP	TI-200	Platinum Polished
ZSY	TI-451	Silver (Baked Epoxy Paint)	ZBN	TI-2000	Polished Black Nickel
ZWY	TI-452	White (Baked Epoxy Paint)	ZDT	TI-2001	Ticn Matt PVD Finish
ZOP	TI-500	Copper Polished	ZTM	TI-2002	Titanium Matt PVD Finish
ZOS	TI-501	Copper Satin	ZTD	TI-2003	Titanium Pearl PVD Finish
ZOT	TI-502	Copper Sandblast	ZDS	TI-2004	Ticn Satin PVD Finish
ZAC	TI-503	Copper Antique	ZNM	TI-201	Nickel Smoked Polished
ZSB	TI-551	Black Sandblast	ZNP	TI-202	Nickel Polished
ZSA	TI-601	Silver Antique			
ZAB	TI-602	Bronze Antique			
ZBA	TI-605	Brass Antique	**Engrav-ings**		
ZPK	TI-608	Pewter (nickel / black / satin)	XDU	TI-100	Gold Polished/Durabrass 24K-Dncn Eng
ZBP	TI-701	Brass Polished	XEM	TI-100	Gold Polished/Durabrass 24K-Emirat Eng
ZBS	TI-702	Brass Satin	XMA	TI-100	Gold Polished/Durabrass 2 4K-Maly Eng
ZBT	TI-703	Brass Sandblast	XMC	TI-100	Gold Polished/Durabrass 24K-Mdcst Eng
ZDB	TI-706	Bronze Dark Aged Antique.	XZR	TI-100	Gold Polished/Durabrass 24K-Engv SRD
ZEP	TI-801	Bronze Polished			
ABQ	QCP 040	Antique Brass	SGQ	QCP 570	Satin Gold 18K
SAB	QCP 081	Satin Brass (endura)	RGQ	QCP 581	Satin Rose Gold

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Code	Plating Code	Plating Color	Code	Plating Code	Plating Color
CEB	QCP 085	Crystallite Endura Brass	SBG	QCP 588	Satin Blushed White Gold
BPC	QCP 100	Bright Polished Chrome	BSG	QCP 590	Bright Satin Gold 24K
CCR	QCP 105	Crystallite Chrome	CAG	QCP 606	Silver Cloud
FSC	QCP 120	Fine Satin Chrome	SSQ	QCP 610	Satin Silver
QAC	QCP 150	Antique Chrome	OAG	QCP 620	Antique Silver
WAC	QCP 150	Antique Chrome, LV9D	AAG	QCP 650	Fine Antique Silver
QPC	QCP 200	Bright Polished Copper	CBZ	QCP 705	Crystallite Bronze
OCU	QCP 220	Antique Copper	SBO	QCP 710	Satin Bronze
RSC	QCP 290	Rose Satin Copper	ATB	QCP 720	Antique Bronze
BNC	QCP 300	Bright Nickel Chrome	ABZ	QCP 730	Fine Antique Bronze
CNI	QCP 305	Crystallite Nickel	DBZ	QCP 750	Medium Aged Bronze
CNS	QCP 305A	Chrystellite Nickel Semi-Gloss	LBZ	QCP 760	Light Coffee Bronze
QSN	QCP 309	Smoked Nickel	PBC	QCP 800	Polished Black Chrome
SNQ	QCP 310	Satin Nickel	PBN	QCP 800	Polished Black Nickel
SMN	QCP 311	Smoked Nickel Satin	SNB	QCP 820	Satin Black Nickel
BFN	QCP 355	Bead Frost Nickel	PSB	QCP 900	Polished Slate Black
SSN	QCP 410	Standard Pewter	CRB	QCP 905	Crystallite Black
WGQ	QCP 500	Polished Gold 24K, LV9D	SLB	QCP 910	Slate Black Flat
PGQ	QCP 500	Polished Gold 24K	TSB	QCP 991	Twilight Satin Black
PGW	QCP 5005	Polished Gold 24K	WSB	QCP 991	Twilight Satin Black
CCG	QCP 505	Crystallite Gold 24kt	TBC	QCP 995	Twilight Black Crystalite
APG	QCP 506C	Polished Almond Gold (no clear coat)	FSH	QCP HC2	Fine Satin HexChrome
BGQ	QCP 510	Satin Brushed Gold, 24K	SPT	QCP P51	Satin Platinium
ALG	QCP 514	Almond Gold Polished	CCP	QCP P55	Crystallite Platinum
AGS	QCP 515	Satin Almond Gold	FAB	QCP050	Fine Antique Brass
WGS	QCP 515	Satin Almond Gold, LV9.D, NO K5.5	RGB	QCP580	Bright Rose Gold
CGP	QCP 516	Champange Gold Polished	GDF	QCP-660	Deep Frost Gold
CGS	QCP 518	Champagne Gold Satin			
LSG	QCP 519	Light Satin Champagne Gold	JAG	R&H	Almond Gold
OEG	QCP 520	Old English Gold 24K	JBC	R&H	Black Polished Chrome
BHG	QCP 530	Bright Honey Gold	JBN	R&H	Black Nickel
WHG	QCP 530	Bright Honey Gold, LV 9D, No K5.5	JPG	R&H	Polished Gold
SHG	QCP 531	Satin Honey Gold	JRG	R&H	Rose Gold
CHG	QCP 535	Crystallite Honey Gold	JSG	R&H	Satin Gold
ANC	QCP 550	Antique Gold 24K	JSP	R&H	Satin Platinum
AAU	QCP 551	Satin Antique Gold 24K	JWG	R&H	Satin Lush White Gold
WAU	QCP 551	Satin Antique Gold 24K, LV9D	JBG	RH 2144	Satin Black Gold
BAU	QCP 560	Bright Gold 18ct.			
CGQ	QCP 565	Crystallite Gold			
ASG	AP24	Satin Gold			

Table 1-3: Plating Codes

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1.6 Documents

Release Note (EASA Form One) or Certificate of Conformance
Following individual testing or inspection, a release note or inspection certificate, respectively, is to be made out in duplicate. One copy is destined for the owner of the equipment and one copy is to remain with the manufacturer.

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1.7 Applicable Specifications

Technical Standard Order:	JTSO-C114 / TSO-C114
Federal Aviation Regulations:	FAR 25.853, Appendix F, Part I (a) (1) (iv)

1.8 Technical Data

Type:	4-Point / 3-Point Static Harness Restraint System w/ optional crotch strap
Model:	4-01-(), 4-02-(), 4-03-(), 4-04-()
Approval No.:	EASA.40.073/11 FAA letter dd. September 26th, 1995
Design and Manufacture:	SCHROTH Safety Products GmbH Im Ohl 14 59757 Arnsberg Germany
Technical Data:	Supplied with length per customer specification. Length adjustment by means of a manual adjuster at each lap and shoulder belt portion respectively crotch strap. Webbing according to TSO-C114, JTSO-C114, color optional. End-Fittings in accordance with prevailing conditions in aircraft.
Operating Limits:	Single occupancy
Application:	Restraint System for Crew Members and Passengers during normal flight and acrobatic flight (aerobatics)
Range of Application Durability:	Normal flight: 12 years (for webbing only) Acrobatic flight (aerobatics): 5 years (complete system)
Temperature Range:	BK SL 55: Storage and operation -20°C up to 80°C Harness operating temperature -40°C up to +80°C
Life Limit:	Batteries in buckle BK SL 55 for 5 years

Flammability according to FAR 25.853, Appendix F Part I (a) (1) (iv)

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1.9 Operation

A. Installation

The end fittings of the restraint system are secured to the anchorage points provided in the aircraft or on the seat.

B. How to release the buckle

Buckling up:
Insert all latches into the release box until you can hear a distinct clicking sound.

To release the buckle:
To release the mechanism twist the actuator in either direction until the latches are released and ejected from the box. To release the mechanism of the dual motion buckle (BK SL 40 + BK SL 41) push the yellow button and then twist the lever in either direction until the latches are released and ejected from the box.

C. How to adjust the pelvic portions and the crotch strap

To lengthen the restraint:
Hold the adjuster at right angles to the belt and pull in direction of the arrow (see Illustration 1-2), for length adjusters with webbing straps pull on the webbing strap in direction of the arrow shown in Illustration 1-2.

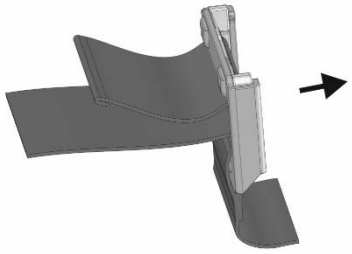

Illustration 1-5: Lengthen the Restraint

To shorten the restraint:
Pull the end of the webbing strap in direction of the arrow (see Illustration 1-3).

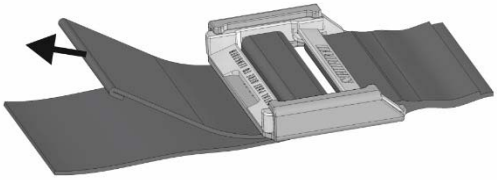

Illustration 1-6: Shorten the Restraint

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D. Usage

WARNING

Improper use of any seatbelt can cause serious personal injury or death.
To help reduce the risk of serious injury in an accident:

- Never use one or two portions of the restraint system alone, always use the lap portion, crotch portion and shoulder portion together.
- Always make sure that the lap belt, the crotch belt or the shoulder belt is not twisted when worn.
- Always wear the lap belt portion of the harness system low and tight across the pelvis.
- Never wear the belts over heavy clothing as it can interfere with proper positioning and adjustment of the belts, reducing the overall effectiveness of the system.
- Never wear the belts over rigid or breakable objects in or on your clothing, such as eye glasses, pens, jewelry, keys etc. as they may cause injury.
- Never allow lap belts, crotch belt or shoulder belts to rub again sharp objects.
- Never allow the belts to be damaged by becoming caught in seat hardware.

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2 Testing and Trouble Shooting

2.1 General

No testing, proof loading and/or trouble shooting are required when the restraint system is installed or removed in accordance with the instructions given under section "OPERATION".

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3 Disassembly

3.1 General

The restraint system cannot be disassembled.
Repair / overhaul of the restraint systems must only be carried out by the manufacturer or an authorized maintenance contractor.

3.2 Exception

For spare parts the installation instructions including disassembly procedures must be followed strictly.

The installation instructions are part of each spare part kit.

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4 Cleaning

4.1 General

To clean the Restraint System use soap and warm water. The temperature of the soapy solution used for cleaning of the restraints must not exceed 100°F (38 C). Do not use any solvents! Do not dry the belt in the sun or near a radiator.

WARNING

Do not clean the buckle BK SL 55 with water or other fluids. The buckle includes a sensor which is sensitive to water and fluids. Do not drown the buckle into water or other fluids. Actions described above may activate the automatic buckle release and by that making the device unserviceable.

Improper cleaning or drying of the restraints can weaken them, reduce their effectiveness and can result in serious personal injury or death.

For the cleaning process:

The buckle can be separated from the pelvic/crotch/shoulder restraint by pushing the pin which secures the permanent fixed latch. Use a needle with a diameter of 2mm and push the pins through the hole at the activator of the buckle. Pull out the latch (see illustration 4-1 (buckle BK SL 10 shown)). To insert the latch follow the same procedure.

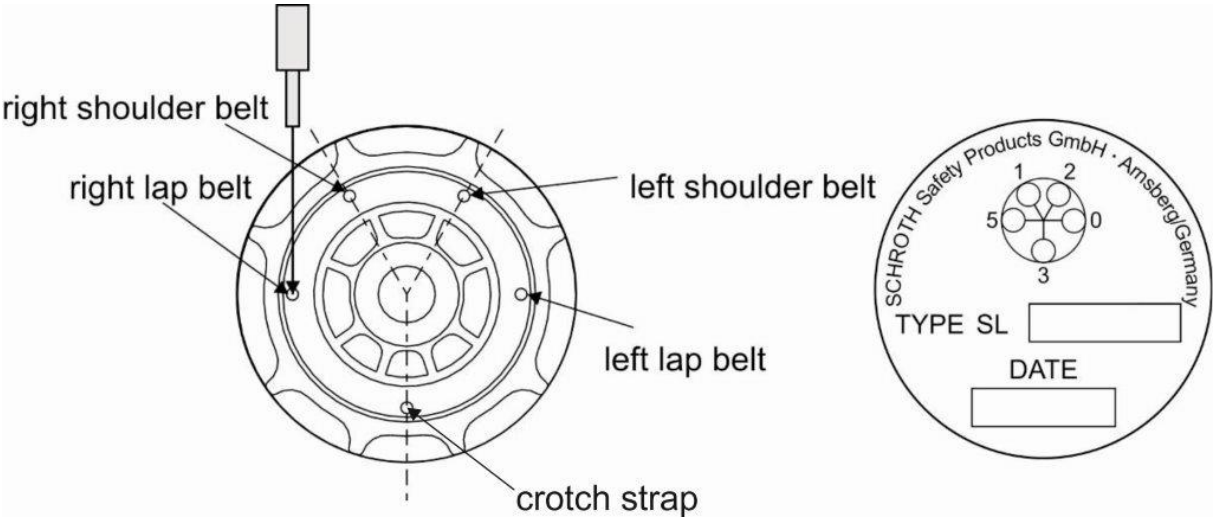

Illustration 4-1: Separation of Fixed Latch

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5 Inspection / Check

5.1 Servicing

5.1.1 General

Servicing of the restraint system is in accordance with the "on-condition" principle and is governed by an inspection and servicing schedule. The restraint system will remain in service until defects are noticed on the occasion of inspections or in use. The servicing of the restraint system comprises checks for contamination, dampness, abrasion damage, corrosion, serviceability and legibility of the inscriptions.

Servicing Responsibility

Servicing of the restraint system is to be performed by qualified aircraft ground personnel or by inspector of the respective aviation authority.

Procedure

Buckle and Latch

As a functional check insert the latch into the buckle until you can hear a distinct clicking sound and apply tension to the latch ensuring that the latch is securely held by the buckle. Hold the buckle, latch inserted in the vertical position with the latch pointing downwards. Rotate the activator and allow the latch to fall clear. The latch shall release.

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Snap-Hook End Fitting

As a functional check, open the snap-hook by pressing down the catch. Release the catch, which must switch back into closed position.

Illustration 5-1: Snap Hook – Closed Position

If any portion of the restraint system is found defective or if the strength or serviceability of the restraint system appears suspect, it is to be replaced by a functional one. The defective restraint system is to be passed on for repair/overhaul.

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CAUTION

Electrical Check

For the electrical check

- Set the metering equipment to 0-10VDC metering range. Any other setting may activate the automatic release function.
- Locate one probe tip onto the metal cover screw (A)
- Locate the other probe tip onto the golden ring (visible through the apertures of the plastic probe cover (B)

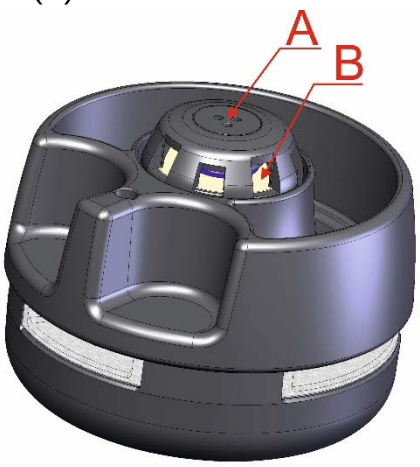

Illustration 5-2: Measuring Points for WAB

The measured values may vary depending on the time since new (Date of Manufacturing (DOM) is identified on the bottom of the buckle housing)

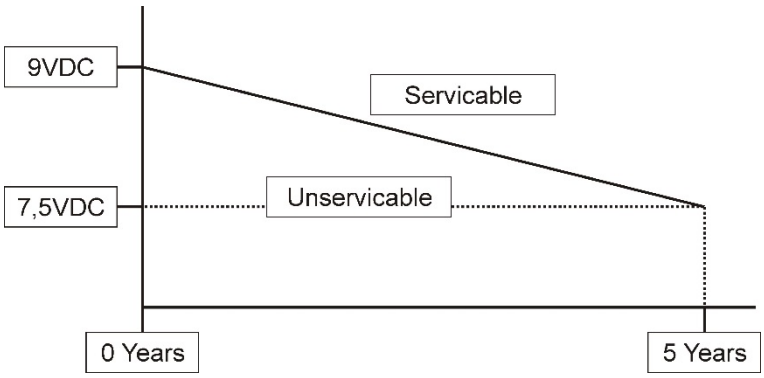

Illustration 5-3: Battery Lifetime – Servicing

If any portion of the restraint system is found defective or if the strength or serviceability of the restraint system appears suspect, it is to be replaced by a functional one. The defective restraint system is to be passed on for repair/overhaul.

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5.2 Inspection for Continued or Renewed Airworthiness

5.2.1 General

Continued or renewed airworthiness of the restraint system is to be determined by means of an inspection.

Inspection Intervals

a) When the equipment has sustained damage or whenever malfunction occurs.

b) After repairs/overhauls, when the equipment, due to damaged subassemblies, was not in a serviceable condition.

c) After modifications requiring qualification testing.

d) When the equipment is transferred to another owner.

e) Whenever the equipment was overstressed or if overstress is suspected.

f) Concurrently with the aircraft inspection.

5.2.2 Procedure

Inspection of the Complete Assembly

a) Inspect the individual components of the restraint system for completeness of the label, deformation, cracks, fractures, functioning of moveable parts, corrosion and surface finish condition.

b) Textile components are to be checked for damaged stitching, injurious marks, broken fabric threads, chafe marks and fusing's. Slight wear and roughening of the webbing caused by the operation of the length adjuster or by the jamming action of the buckle may be ignored. Cut or worn edges, however, make the strap unserviceable.
Illustration 5-4 show acceptable wear of the webbing.

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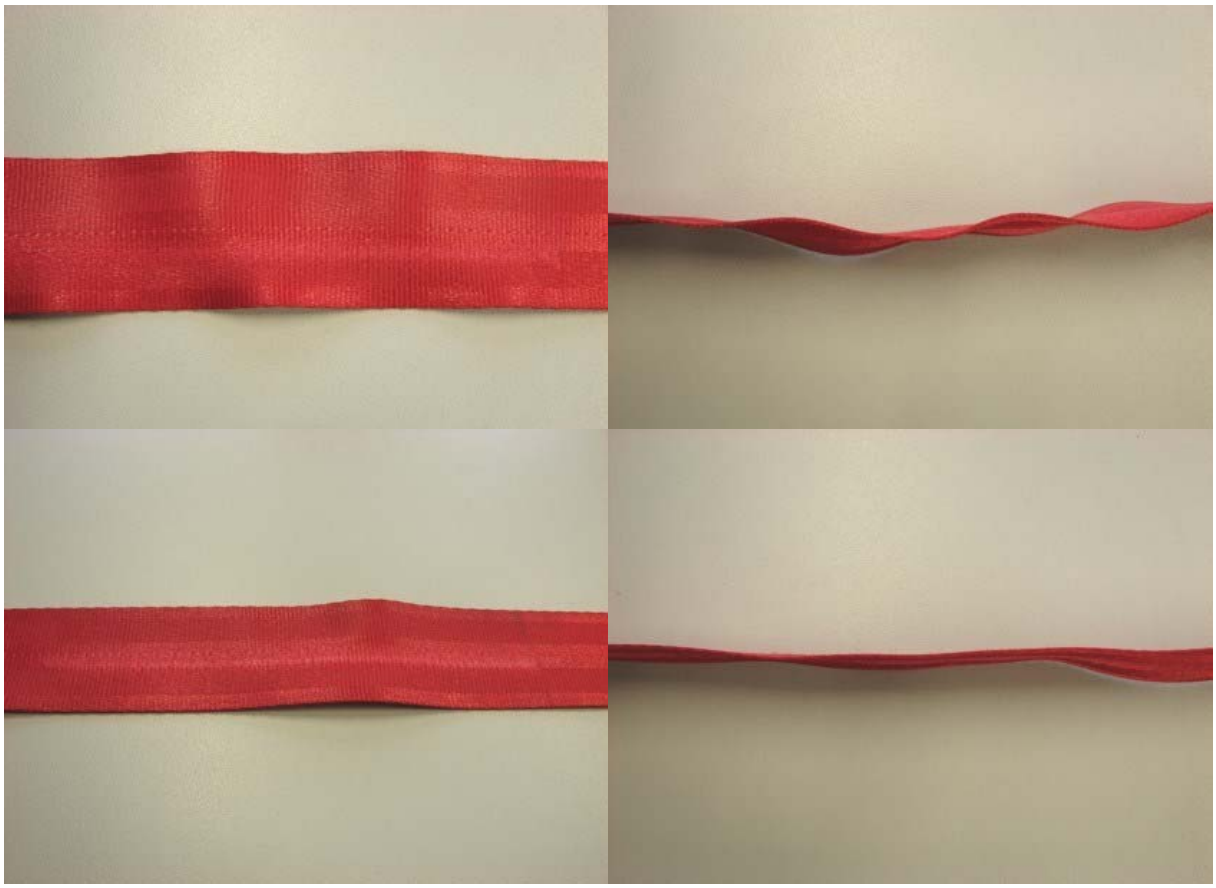

Illustration 5-4: Acceptable Webbing Wear

Illustrations 5-4 show unacceptable worn webbing. Webbing which is frayed respectively worn like shown on illustrations 5-4 make the strap unserviceable.

Illustration 5-5: Unacceptable Webbing Wear

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Functional Test of the Buckle

As a functional check insert the latch into the buckle until you can hear a distinct clicking sound and apply tension to the latch ensuring that the latch is securely held by the buckle. Hold the buckle, latch inserted in the vertical position with the latch pointing downwards. Rotate the lever and allow the latch to fall clear. The latch shall release.

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CAUTION

Electrical Check

For the electrical check

- Set the metering equipment to 0-10VDC metering range. Any other setting may activate the automatic release function.
- Locate one probe tip onto the metal cover screw (A)
- Locate the other probe tip onto the golden ring (visible through the apertures of the plastic probe cover (B)

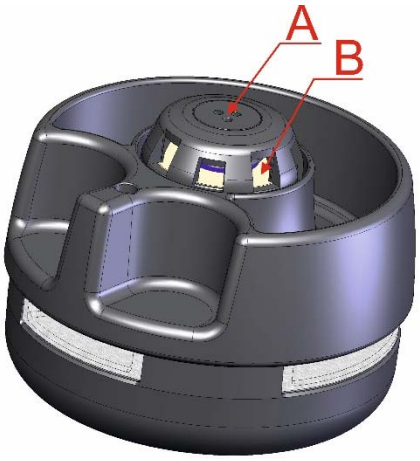

Illustration 5-6: Measuring Points for WAB

The measured values may vary depending on the time since new (Date of Manufacturing (DOM) is identified on the bottom of the buckle housing)

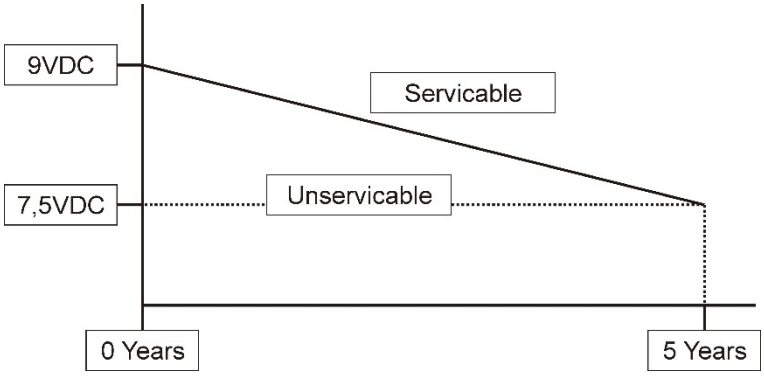

Illustration 5-7: Battery Lifetime – Servicing

If any portion of the restraint system is found defective or if the strength or serviceability of the restraint system appears suspect, it is to be replaced by a functional one. The defective restraint system is to be passed on for repair/overhaul.

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5.2.3 Certification

If the equipment fails the inspection, the inspector has to prepare a repair/overhaul order, sign it and pass the aircraft seat belt on for repair/overhaul.

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6 Repair/Overhaul

6.1 General

The repair/overhaul of the restraint system becomes necessary,

- when the equipment has become defective, or if the strength and serviceability of the equipment appears suspect.
- in the event of defects found when using the restraint system in accordance with section "DESCRIPTION AND OPERATION".
- in the event of defects found when inspection the restraint system in accordance with section "INSPECTION / CHECK".

6.2 Repair/Overhaul Responsibility

6.2.1 General

Repair/overhaul of the aircraft restraint system must only be carried out by the manufacturer or by qualified agencies specially approved by the aviation authorities.

6.2.2 Exception

Replacing of subassemblies offered from the manufacturer as original spare parts is to be performed by qualified aircraft ground personnel.

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7 Assembly (Including Storage)

7.1 Assembly

7.1.1 General

Not Applicable

7.1.2 Exception

For spare parts installation instructions including assembly procedure must be followed strictly. The installation instructions are part of each spare part kit.

7.2 Storage

- Restraint systems are to be protected from dampness, direct sunlight, contamination and chemicals. Sealing of the seat belts in plastic foil etc., must be carried out under low humidity conditions.
- New restraint systems that have been stored for more than 4 years are subjected to an inspection prior to their installation in an aircraft.
- If the buckle BK SL 55 is used it must not be stored at temperatures below -20°C (-4°F).
- If stored for more than 1 year perform function check as described under INSPECTION / CHECK 5.1.1 Procedure / Electrical Check

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8 Fits and Clearances

8.1 General

Mounting points and attachment bolts should be used in compliance with respective aviation authority regulations for the strength.

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9 Special Tools Fixtures and Equipment

9.1 General

No special tools, fixtures or specific equipment are required for maintenance to be carried out on the restraint systems. Standard tools suffice for these operations.

Use a volt-meter with +/- 0,15V (class 1,5) accuracy for a 0-10VDC metering range for the electrical check of the Water Activated Buckle.

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10 Illustrated Parts List

Model 4-01-()

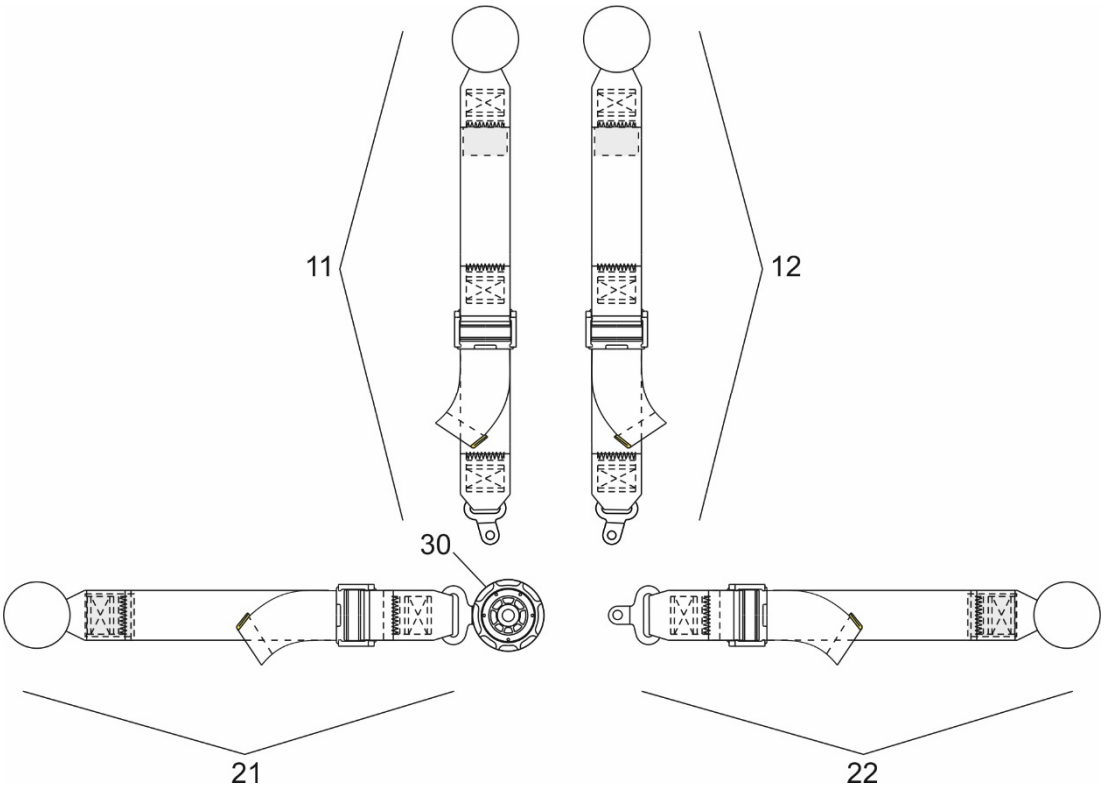

Illustration 10-1: Illustrated Parts List – 4-01-()

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Item	Part Number	Airline Stock Number	Nomenclature	Eff Code	Unit Per Assy
-1	4-01-()		4-Point Static Restraint System	A	RF
10	S/4-01-()		Shoulder Harness	A	1
11	SR/4-01-()		Shoulder Harness Right Side	A	1
12	SL/4-01-()		Shoulder Harness Left Side	A	1
20	B/4-01-()		Pelvic Restraint	A	1
21	BR/4-01-()		Pelvic Portion Right Side	A	1
22	BL/4-01-()		Pelvic Portion Left Side	A	1
30	BK SL xx		Buckle	A	1

Table 10-1: Parts List – 4-01-()

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Illustrated Parts List - continued

Model 4-02-()

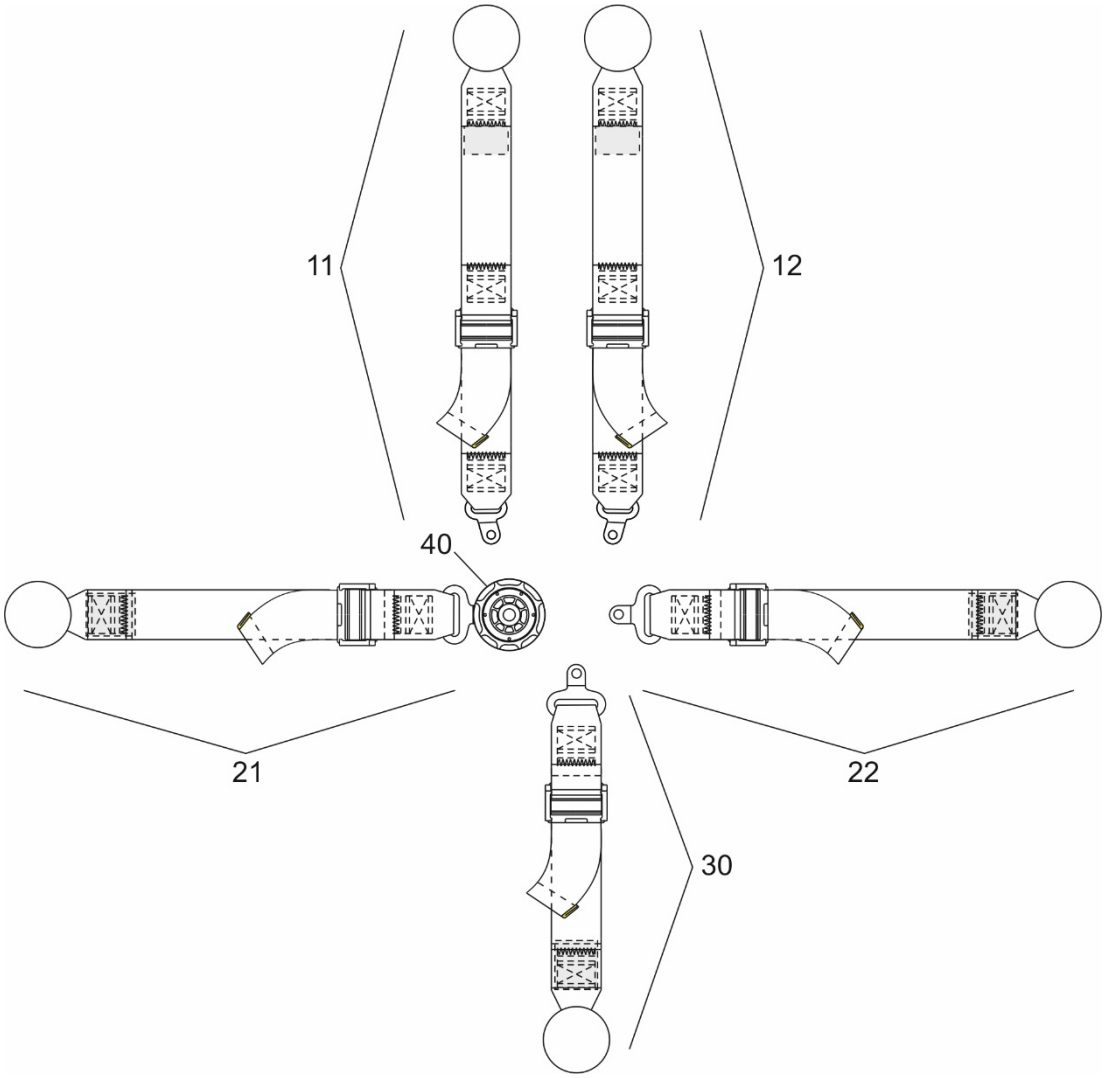

Illustration 10-2: Illustrated Parts List – 4-02-()

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Item	Part Number	Airline Stock Number	Nomenclature	Eff Code	Unit Per Assy
-1	4-02-()		4-Point Static Restraint System w/ crotch strap	A	RF
10	S/4-02-()		Shoulder Harness	A	1
11	SR/4-02-()		Shoulder Harness Right Side	A	1
12	SL/4-02-()		Shoulder Harness Left Side	A	1
20	B/4-02-()		Pelvic Restraint	A	1
21	BR/4-02-()		Pelvic Portion Right Side	A	1
22	BL/4-02-()		Pelvic Portion Left Side	A	1
30	C/4-02-()		Crotch Strap	A	1
40	BK SL xx		Buckle	A	1

Table 10-2: Parts List – 4-02-()

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Illustrated Parts List - continued

Model 4-03-()

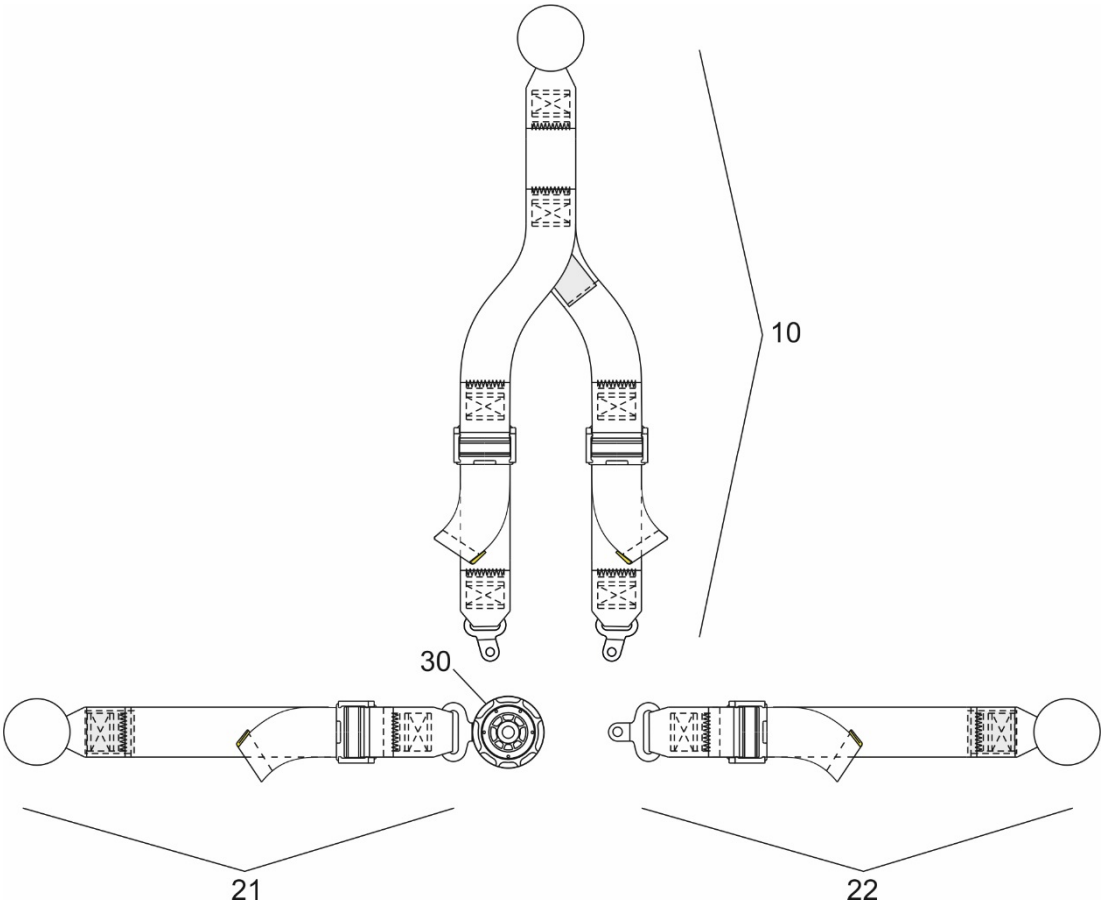

Illustration 10-3: Illustrated Parts List – 4-03-()

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Item	Part Number	Airline Stock Number	Nomenclature	Eff Code	Unit Per Assy
-1	4-03-()		3-Point Static Restraint System	A	RF
10	S/4-03-()		Shoulder Harness	A	1
20	B/4-03-()		Pelvic Restraint	A	1
21	BR/4-03-()		Pelvic Portion Right Side	A	1
22	BL/4-03-()		Pelvic Portion Left Side	A	1
30	BK SL xx		Buckle	A	1

Table 10-3: Parts List – 4-03-()

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Illustrated Parts List - continued

Model 4-04-()

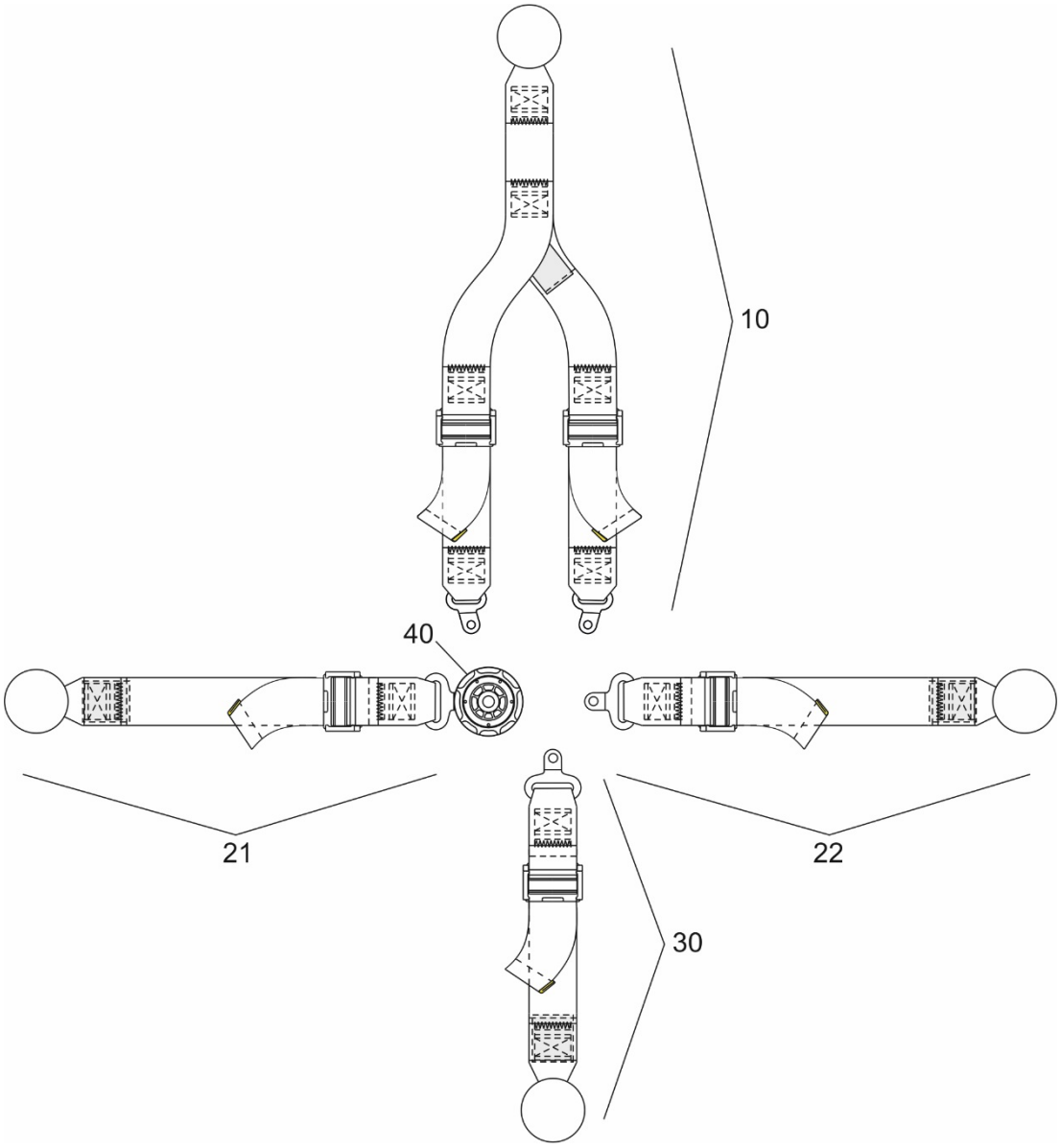

Illustration 10-4: Illustrated Parts List – 4-04-()

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Item	Part Number	Airline Stock Number	Nomenclature	Eff Code	Unit Per Assy
-1	4-04-()		3-Point Static Restraint System w/ crotch strap	A	RF
10	S/4-04-()		Shoulder Harness	A	1
20	B/4-04-()		Pelvic Restraint	A	1
21	BR/4-04-()		Pelvic Portion Right Side	A	1
22	BL/4-04-()		Pelvic Portion Left Side	A	1
30	C/4-04-()		Crotch Strap	A	1
40	BK SL xx		Buckle	A	1

Table 10-4: Parts List – 4-04-()

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