



SERVICE BULLETIN

RECOMMENDED

TECH. DOC.

SIRS Navigation: SIRS/SB/01 Rev.04

Mod. : None

No: CE2-A26-34-001

NAVIGATION - STANDBY NAVIGATION SYSTEMS –STANDBY

COMPASS - ELECTRICAL LEAD AND SOCKET ASSEMBLY -

POSSIBLE INSULATION RESISTANCE FAILURE

1.0 Planning Information

A. Effectivity

This Service Bulletin is applicable to the 'Electrical Lead and Socket Assemblies' PNRs CE2-A26, CE2-A26E, CE2-A26L, CE2-A52-2, and CE2-A52-3, known to be installed on aircraft with the Magnetic Standby Compass types listed in table 1.0.

SERVICE BULLETIN

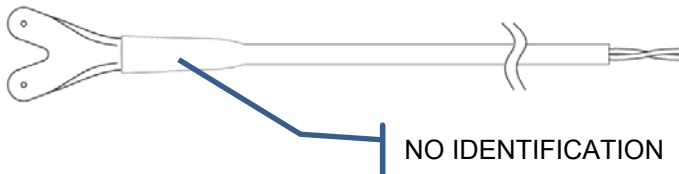
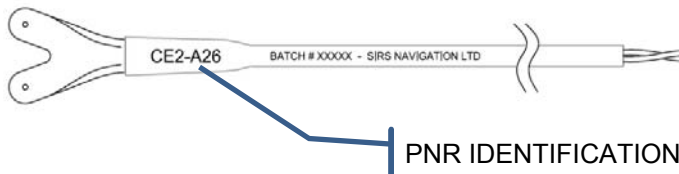
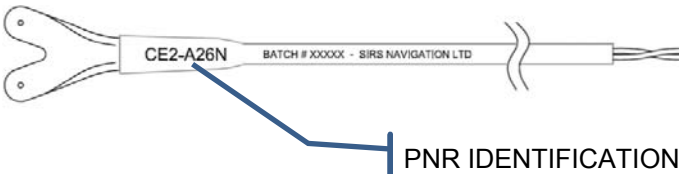
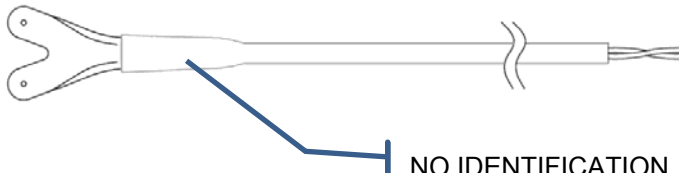

Table 1.0 – Affected Compasses, Aircraft and Replacement Parts

Magnetic Standby Compass PNR	Affected Part	Replacement Part	Aircraft Manufactured by Not Exhaustive	Aircraft Type
KCA0104W	CE2-A26 (unmarked)	CE2-A26 (marked) or CE2-A26N	Beechcraft Corporation (formerly Hawker Beechcraft, Raytheon Aircraft Company, Beech Aircraft Corporation)	Various A/C
KCA0105W			De-Havilland	Twin Otter
			Airbus Helicopters (formerly Eurocopter, Eurocopter -France, Aerospatiale)	Various
			Airbus	A300/310, A330/340, A350, A380
			ATR	42/72.
			Bombardier	Q400.
			British Aerospace	Various
			Dassault	Various
			Gulfstream	Various
			Sukhoi Civil Aircraft	SuperJet 100
			Fokker Aircraft B.V. –	Various
KCA0106W			Airbus Helicopters (formerly Eurocopter, Eurocopter- France, Aerospatiale)	Various
KCA0112W			BAE Systems (Operations) Ltd (formerly British Aerospace)	Various
KCA0113W				
KCA0113FY				
KCA0114W				
KCA0116W	CE2-A26L (unmarked)	CE2-A26L (marked) or CE2-A26LN	Bell Helicopters Textron, Inc	Various
KCA0120W	CE2-A26E (unmarked)	CE2-A26E (marked) or CE2-A26EN	Embraer S.A	Phenom
WL1001KCA1	CE2-A26 (unmarked)	CE2-A26 (marked) or CE2-A26N	Bombardier (formerly De Havilland Canada, Canadair)	Various
			Dassault Aviation (formerly Avions Marcel Dassault – Breguet Aviation)	Various
			328 Support Services (formerly Dornier)	Various
			RUAG Aerospace Services (formerly Dornier)	Various
			Pilatus Aircraft Ltd	Various
			Beechcraft Corporation (formerly Hawker Beechcraft, Raytheon Aircraft Company, Beech Aircraft Corporation)	Various
			SAAB	340 / 2000
1007KCA1			Airbus Helicopters (formerly Eurocopter, Eurocopter France, Aerospatiale)	Various

NOTE: N Version leads will not be available until 1st March 2016


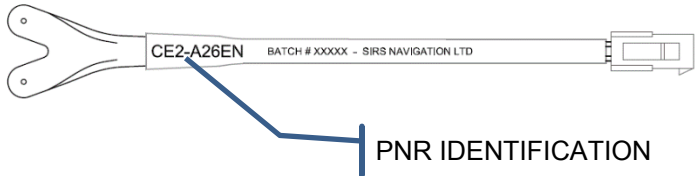

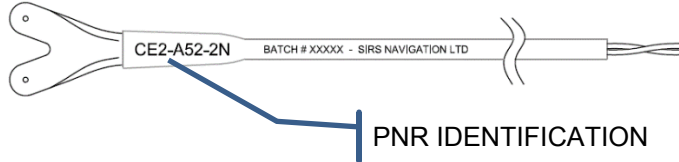


SERVICE BULLETIN

Table 2.0 - VISUAL IDENTIFICATION OF LEAD ASSEMBLY TYPES

Code	Visual Identification	Description	Examination Required
CE2-A26	 NO IDENTIFICATION	Lead Length supplied = 2.0M Conductor Colours: Black Lead marked with PNR: No	YES
CE2-A26	 PNR IDENTIFICATION	Lead Length supplied = 2.0M Conductor Colours: Black Lead marked with PNR: Yes	NO
CE2-A26N	 PNR IDENTIFICATION	Lead Length supplied = 2.0M Conductor Colours: Black Lead marked with PNR: Yes	NO
CE2-A26L	 NO IDENTIFICATION	Lead Length supplied = 2.0M Conductor Colours: Red/Black Lead marked with PNR: No	YES
CE2-A26LN	 PNR IDENTIFICATION	Lead Length supplied = 2.0M Conductor Colours: Red/Black Lead marked with PNR: Yes	NO

SERVICE BULLETIN

Table 2.0 Continued - VISUAL IDENTIFICATION OF LEAD ASSEMBLY TYPES

Code	Visual Identification	Description	Examination Required
CE2-A26E	 NO IDENTIFICATION	Lead Length: 0.3M Conductor Colours: Red/Black Lead marked with PNR: No	YES
CE2-A26EN	 PNR IDENTIFICATION	Lead Length: 0.3M Conductor Colours: Red/Black Lead marked with PNR: Yes	NO
CE2-A52-2	 NO IDENTIFICATION	Lead Length: 2.5M Conductor Colours: Black Lead marked with PNR: No (Special Orders Only)	YES
CE2-A52-2N	 PNR IDENTIFICATION	Lead Length: 2.5M Conductor Colours: Black Lead marked with PNR: Yes (Special Orders Only)	NO
CE2-A52-3	 NO IDENTIFICATION	Lead Length: 11 FT Conductor Colours: Black Lead marked with PNR: No (Special Orders Only)	YES
CE2-A52-3N	 PNR IDENTIFICATION	Lead Length: 11 FT Conductor Colours: Black Lead marked with PNR: Yes (Special Orders Only)	NO



SERVICE BULLETIN

Table 3.0 – Priority ‘Lead Assembly’ Replacement List

SIRS Invoice Ref	SIRS Invoice Date	Part Number	Compass Serial #s	Qty	Lead Type	Aircraft Type	Customer	Customer PO	Customer Type
83006	14/10/2011	WL1001KCA1	BG 582 09 11	1	CE2-A26	Unknown	328 Support Services	4571016118/130	Manufacturer
83185	29/11/2011	KCA0104W	BG 560 09 11 BG 561 09 11	2	CE2-A26	Unknown	Airbus Helicopters	K06/69943945	Manufacturer
83009	17/10/2011	1007KCA1	BG 602 10 11 BG 603 10 11 BG 604 10 11 BG 605 10 11 BG 606 10 11 BG 607 10 11 BG 608 10 11 BG 609 10 11 BG 610 10 11 BG 611 10 11 BG 612 10 11 BG 613 10 11 BG 614 10 11 BG 615 10 11	14	CE2-A26	Unknown	Airbus Helicopters	W01/69914247	Manufacturer
83089	03/11/2011	1007KCA1	BG 616 10 11 BG 617 10 11 BG 618 10 11 BG 619 10 11 BG 620 10 11 BG 621 10 11 BG 622 10 11 BG 623 10 11 BG 624 10 11 BG 625 10 11 BG 626 10 11	11	CE2-A26	Unknown	Airbus Helicopters	W01/69919828	Manufacturer
83009	17/10/2011	1007KCA1	BG 453 09 11 BG 454 09 11 BG 455 09 11 BG 456 09 11 BG 457 09 11 BG 458 09 11 BG 459 09 11 BG 460 09 11 BG 461 09 11	9	CE2-A26	Unknown	Airbus Helicopters	W01/69914247	Manufacturer
82912	20/09/2011	KCA0113W	BG 500 09 11 BG 501 09 11	2	CE2-A26	Unknown	Airbus Helicopters	W01/69908656	Manufacturer
82904	15/09/2011	KCA0113W	BG 483 09 11 BG 484 09 11 BG 485 09 11	3	CE2-A26	Unknown	Airbus Helicopters	W01/69912590	Manufacturer
83108	08/11/2011	KCA0113W	BG 482 09 11 BG 486 09 11	2	CE2-A26	Unknown	Airbus Helicopters	W01/69924189	Manufacturer
83184	29/11/2011	KCA0113W	BG 496 09 11 BG 497 09 11 BG 498 09 11 BG 499 09 11	4	CE2-A26	Unknown	Airbus Helicopters	W01/69945096	Manufacturer



SERVICE BULLETIN

Table 3.0 – Priority ‘Lead Assembly’ Replacement List – Continued

SIRS Invoice Ref	SIRS Invoice Date	Part Number	Compass Serial #s	Qty	Lead Type	Aircraft Type	Customer	Customer PO	Customer Type
82953	28/09/2011	1007KCA1	BG 522 09 11 BG 523 09 11 BG 524 09 11 BG 525 09 11 BG 526 09 11 BG 527 09 11 BG 528 09 11 BG 529 09 11 BG 530 09 11 BG 531 09 11 BG 532 09 11 BG 533 09 11 BG 534 09 11 BG 535 09 11 BG 536 09 11 BG 537 09 11 BG 538 09 11 BG 539 09 11 BG 540 09 11 BG 541 09 11	20	CE2-A26	Unknown	Airbus Helicopters	W01/69910676	Manufacturer
82911	20/09/2011	1007KCA1	BG 261 07 11 BG 262 07 11 BG 263 07 11 BG 264 07 11 BG 266 07 11 BG 267 07 11 BG 268 07 11 BG 269 07 11 BG 270 07 11 BG 271 07 11 BG 272 07 11 BG 273 07 11 BG 274 07 11 BG 275 07 11 BG 276 07 11 BG 277 07 11 BG 278 07 11 BG 279 07 11 BG 280 07 11 BG 452 09 11	20	CE2-A26	Unknown	Airbus Helicopters GmbH	2U1/3500135484	Manufacturer
82888	13/09/2011	KCA0105W	BG 472 09 11 BG 473 09 11 BG 474 09 11 BG 475 09 11 BG 476 09 11 BG 477 09 11 BG 478 09 11 BG 479 09 11 BG 480 09 11 BG 481 09 11	10	CE2-A26	A330/340	Airbus SAS	FR_0002829377	Manufacturer



SERVICE BULLETIN

Table 3.0 – Priority ‘Lead Assembly’ Replacement List – Continued

SIRS Invoice Ref	SIRS Invoice Date	Part Number	Compass Serial #s	Qty	Lead Type	Aircraft Type	Customer	Customer PO	Customer Type
83015	18/10/2011	KCA0105W	BG 510 09 11 BG 511 09 11 BG 512 09 11 BG 513 09 11 BG 514 09 11 BG 515 09 11 BG 516 09 11 BG 517 09 11 BG 518 09 11 BG 519 09 11	10	CE2-A26	A330/340	Airbus SAS	FR_0002857746	Manufacturer
83064	31/10/2011	KCA0105W	BG 545 09 11 BG 546 09 11	2	CE2-A26	A380	Airbus SAS	FR_0002893699	Manufacturer
83063	28/10/2011	KCA0105W	BG 627 10 11 BG 628 10 11 BG 629 10 11 BG 630 10 11 BG 631 10 11 BG 632 10 11 BG 633 10 11 BG 634 10 11 BG 635 10 11 BG 636 10 11	10	CE2-A26	A330/340	Airbus SAS	FR_0002890133	Manufacturer
83088	03/11/2011	KCA0105W	BG 646 10 11	1	CE2-A26	A380	Airbus SAS	FR_0002892196	Manufacturer
83107	08/11/2011	KCA0105W	BG 678 10 11	1	CE2-A26	A380	Airbus SAS	FR_0002869833	Manufacturer
82966	04/10/2011	KCA0105W	BG 502 09 11	1	CE2-A26	Unknown	Airinmar Ltd	RO3181382	Distributor
82999	13/10/2011	KCA0105W	BG 503 09 11 BG 504 09 11 BG 505 09 11 BG 506 09 11 BG 507 09 11 BG 508 09 11 BG 509 09 11	7	CE2-A26	ATR 42/72	ATR	28638080010	Manufacturer
83066	25/10/2011	KCA0113W	BG 493 09 11	1	CE2-A26	Unknown	Avant Aerospace	P52908	Distributor
83013	17/10/2011	WL1001KCA1	BG 586 09 11 BG 587 09 11 BG 588 09 11 BG 589 09 11 BG 590 09 11	5	CE2-A26	Unknown	Bombardier Inc	9000067388	Manufacturer
83158	22/11/2011	WL1001KCA1	BG 653 10 11 BG 654 10 11 BG 655 10 11 BG 656 10 11 BG 657 10 11	5	CE2-A26	Unknown	Bombardier Inc	9000068773	Manufacturer
82810	24/08/2011	1007KCA1	BG 265 07 11	1	CE2-A26	Unknown	Bond Aircraft Services	HP13692	Operator

SERVICE BULLETIN

Table 3.0 – Priority ‘Lead Assembly’ Replacement List – Continued

SIRS Invoice Ref	SIRS Invoice Date	Part Number	Compass Serial #s	Qty	Lead Type	Aircraft Type	Customer	Customer PO	Customer Type
83084	02/11/2011	KCA0105W	BG 520 09 11 BG 521 09 11	2	CE2-A26	Unknown	Dassault Aviation	90T25267	Manufacturer
83084	02/11/2011	KCA0105W	BG 637 10 11 BG 638 10 11 BG 639 10 11 BG 640 10 11 BG 641 10 11 BG 642 10 11 BG 643 10 11 BG 644 10 11 BG 645 10 11	9	CE2-A26	Unknown	Dassault Aviation	90T25267	Manufacturer
82943	26/09/2011	KCA0113W	BG 487 09 11	1	CE2-A26	Unknown	E Electronics	11092301PC	Distributor
82983	07/10/2011	KCA0105W	BG 469 09 11	1	CE2-A26	Unknown	Emirates	RO2259548	Operator
83018	18/10/2011	WL1001KCA1	BG 591 09 11 BG 592 09 11 BG 593 09 11 BG 594 09 11 BG 595 09 11 BG 596 09 11 BG 597 09 11 BG 598 09 11 BG 599 09 11 BG 600 09 11	10	CE2-A26	Unknown	GE Aviation	991904	System Integrator
83182	29/11/2011	WL1001KCA1	BG 658 10 11 BG 659 10 11 BG 660 10 11 BG 661 10 11 BG 662 10 11 BG 663 10 11	6	CE2-A26	Unknown	GE Aviation Ltd	1005000	System Integrator
83280	03/01/2012	WL1001KCA1	BG 664 10 11 BG 665 10 11 BG 666 10 11	3	CE2-A26	Unknown	GE Aviation Ltd	1005000	System Integrator
83022	19/10/2011	KCA0104W	BG 552 09 11 BG 553 09 11	2	CE2-A26	Unknown	Hawker Beechcraft	4503711597	Manufacturer
83048	26/10/2011	WL1001KCA1	BG 647 10 11 BG 648 10 11	2	CE2-A26	Unknown	Hawker Beechcraft	4503692503	Manufacturer
83047	26/10/2011	KCA0104W	BG 556 09 11 BG 557 09 11 BG 558 09 11 BG 559 09 11	4	CE2-A26	Unknown	JAS Aviation	49244	Distributor
83100	07/11/2011	WL1001KCA1	BG 601 09 11	1	CE2-A26	Unknown	Learjet Inc	5000581346	Manufacturer
83100	07/11/2011	WL1001KCA1	BG 649 10 11 BG 650 10 11 BG 651 10 11 BG 652 10 11	4	CE2-A26	Unknown	Learjet Inc	5000581346	Manufacturer
82970	04/10/2011	KCA0113W	BG 491 09 11	1	CE2-A26	Unknown	London Helicopters	5037231	Operator
82996	12/10/2011	KCA0105W	BG 470 09 11	1	CE2-A26	Unknown	Lufthansa	250788916	Operator
83039	24/10/2011	KCA0104W	BG 554 09 11 BG 555 09 11	2	CE2-A26	Unknown	Metro Aircraft Instruments Inc	12013204	Distributor

SERVICE BULLETIN

Table 3.0 – Priority ‘Lead Assembly’ Replacement List – Continued

SIRS Invoice Ref	SIRS Invoice Date	Part Number	Compass Serial #s	Qty	Lead Type	Aircraft Type	Customer	Customer PO	Customer Type
83007	14/10/2011	WL1001KCA1	BG 583 09 11 BG 584 09 11 BG 585 09 11	3	CE2-A26	Unknown	Pilatus Aircraft Ltd	4500155954	Manufacturer
82973	05/10/2011	KCA0105W	BG 467 09 11 BG 468 09 11	2	CE2-A26	Unknown	Satair	4500096323	Distributor
83031	20/10/2011	KCA0105W	BG 471 09 11	1	CE2-A26	Unknown	Satori	R113232STT	Distributor
83072	01/11/2011	KCA0105W	BG 547 09 11 BG 548 09 11 BG 549 09 11	3	CE2-A26	Unknown	Saywell	127855SM	Distributor
82971	05/10/2011	KCA0105W	BG 462 09 11 BG 463 09 11 BG 464 09 11 BG 465 09 11 BG 466 09 11	5	CE2-A26	Dash-8 400	Thales	11392510010	System Integrator
83103	07/11/2011	KCA0105W	BG 550 09 11 BG 551 09 11	2	CE2-A26	Dash-8 400	Thales	53186704	System Integrator
83051	26/10/2011	KCA0105W	BG 542 09 11 BG 543 09 11 BG 544 09 11	3	CE2-A26	Unknown	Thales	53220677	System Integrator
Lead Assemblies – Sold as Spares									
SIRS Invoice Ref	SIRS Invoice Date	Part Number	Batch #	Qty	Aircraft Type	Customer	Customer PO	Customer Type	
82963	03/10/2011	CE2-A26	30146	1	N/A	Airbus SAS	IFD/26017135	Manufacturer	
82921	21/09/2011	CE2-A26	30146	5	N/A	Hawker Beechcraft	4504018779	Manufacturer	



SERVICE BULLETIN

B. Concurrent Requirements

Not applicable

C. Reason

In 2014, an overheating condition was reported against 'lead assembly' type CE2-A26 on 2 separate aircraft, leading to smoke emission and in one case a small fire. Both 'lead assemblies' were manufactured from the same batch of rubber material. A third 'lead assembly' from the same batch has been identified as non-conforming with surface cracks and rubber degradation. The batch reference for these parts is 30146 of total quantity 216, manufactured in July 2011.

Analysis has identified:

- i. The rubber material used within batch 30146 is non-conforming and failure is most likely due to material degradation and low electrical insulation resistance.
- ii. Some 'lead assemblies' manufactured between October 2005 and September 2012, have non-conforming insulation resistance values. There have been no reported failures and long term 'in-service' experience indicates these should not present an operational risk.

Prior to March 2015, 'Lead assemblies' did not have any batch or code identification marking once removed from their primary packing. Due to traceability problems, all 'lead assemblies' absent of any visual identification listed within Table 2.0 and supplied with compasses listed in Table 1.0, will require examination as per section 3.0.

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Compass Configuration Diagram

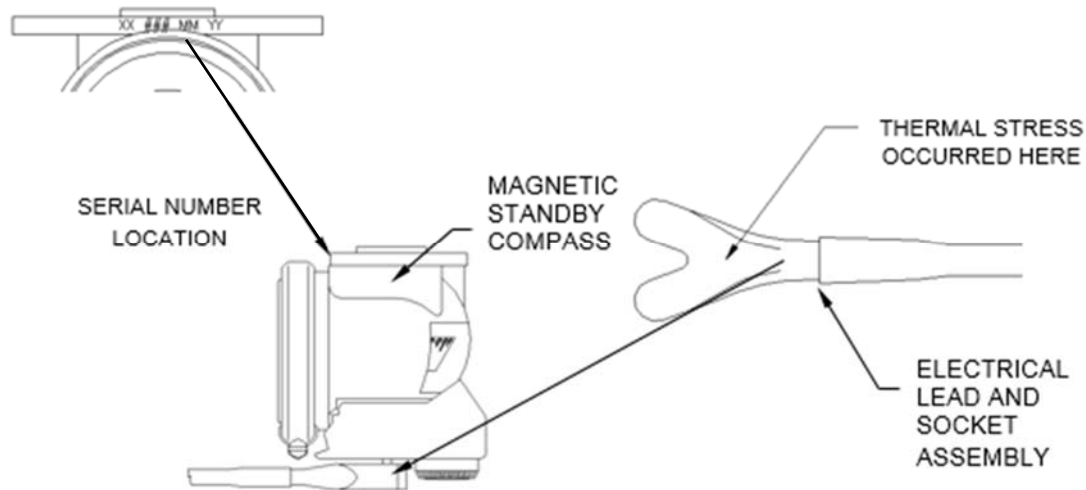


Fig. 1.0

D. Description

This Service Bulletin details the recommended action to:

- i) Remove and replace all 'lead assemblies' manufactured within batch 30146 and referenced within Table 3.0
- ii) Examine all other 'lead assemblies' where required within Table 2.0 and follow the recommended actions within section 3.0 of this document.

E. Compliance

Compasses listed in Table 3 – within 30 days from receipt of this document.

All other compasses listed in Table 1.0 – within 365 days from receipt of this document.



SERVICE BULLETIN

F. Approval

The test procedures described in this SB have been reviewed and technically approved by SIRS.

The standby compasses and lead assemblies are subject of ETSO Approval Ref: EASA.210.1008 rev A.

G. Manpower

Not applicable

H. Weight and Balance

None

I. Electrical Load Data

Not Changed

J. Software Accomplishment Summary

Not applicable

K. References

Not applicable

L. Other References Affected

Not applicable

M. Interchangeability or Intermixability of parts

Fully interchangeable.

2.0 Material Information

A. Material – Price and Availability

Material: See Table 1.0

Price: \$165.00 each* (price based upon year 2015 economic conditions).

* *unless within warranty period.*



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Availability:

SIRS Navigation Ltd
Compass House – Bowes Estate
Wrotham Road, Meopham
Kent. DA13 0QB. England

Attn: Product Support

Tel: +44 (0) 1474-816320
Fax: +44 (0) 1474-816321
email: support@sirs.co.uk

B. Industry Support Information

This procedure must be completed by the airline or its designated repair station.

Refer to para 3.5 for reporting information

C. Material Necessary for Each Spare

Not Applicable

D. Re-identified Parts

SIRS recommend that 'lead assemblies' accepted for use – after examination, should be 'permanently marked' to identify compliance with the requirements of document SB CE2-A26-34-001.

A marking method is not specified by SIRS, but should follow safe industry standard practices.

E. Tooling – Price and Availability

Insulation Test Meter capable for 50 to 500 VDC supply with range $\geq 20\text{M}\Omega$

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3.0 Accomplishment Instructions

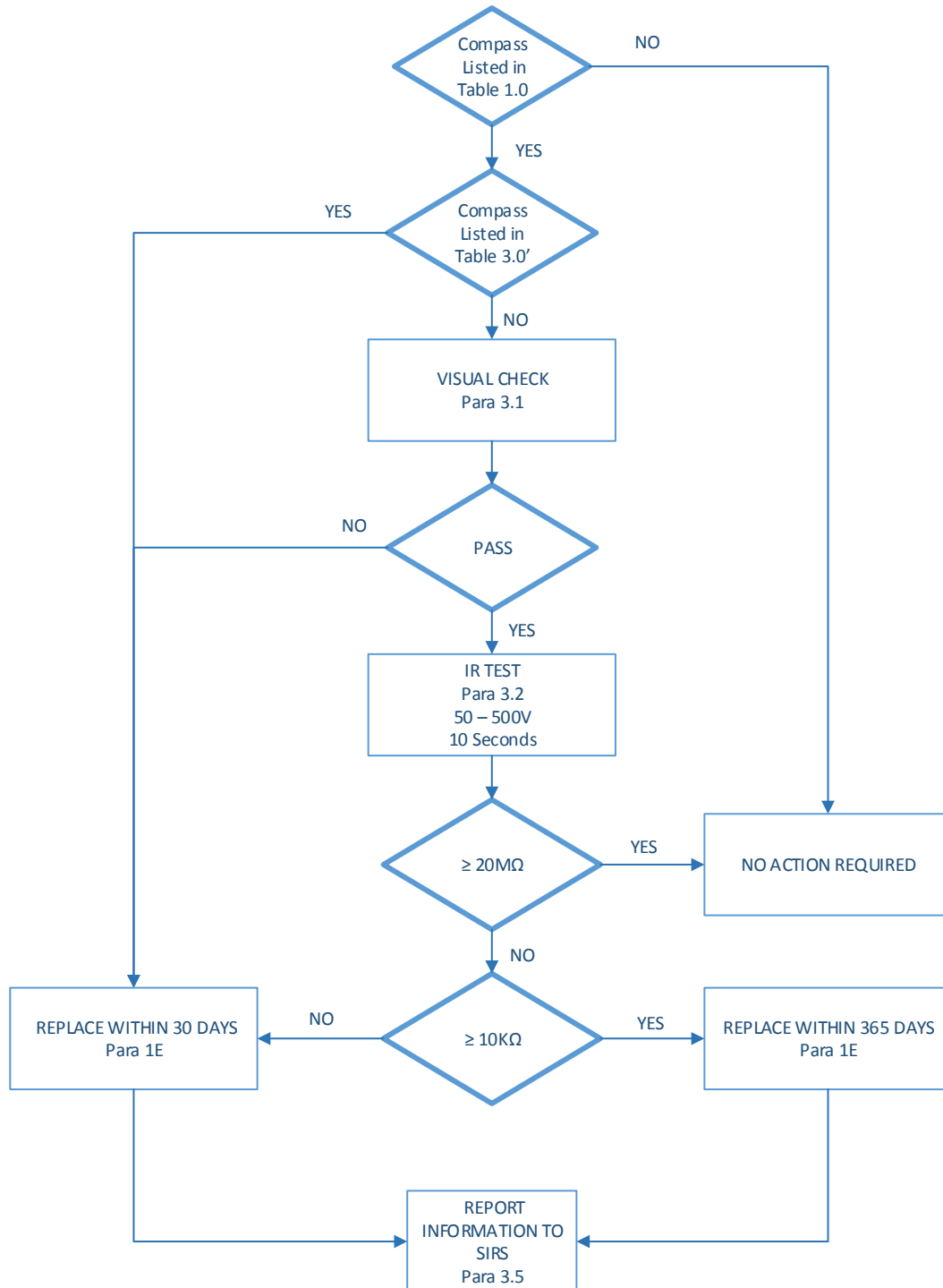


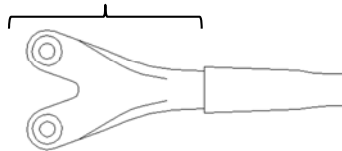
Fig. 2.0

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3.1. Visual Check:

3.1.1 The rubber connector shall not show signs of cracking or splitting.

This Area – All Surfaces



3.1.2 The rubber connector surface shall not show signs of overheating, deformation or decomposition.

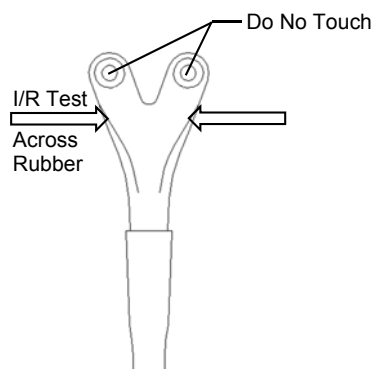
The electrical lead assembly must be replaced if a condition, shown listed in para ref. 3.1.1 or 3.1.2 is observed.

3.2 Insulation Resistance Test:

NOTE: Refer to Aircraft Maintenance Manual (AMM) to disconnect or Isolate power supply to the standby compass to prevent damage to other connected devices during the Insulation resistance test.

3.2.1 Disconnect the 'Y' shaped socket from the Standby Compass

3.2.2 Complete the insulation resistance test across the rubber material as shown below. DO NOT touch the electrical sockets.



3.2.3 Check insulation resistance across the rubber material with SIRS recommended parameters:

Applied Voltage: 50-500V DC Duration: 10 seconds

Requirement: As specified within Fig 2.0



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3.2.4 Refer to AMM for re-certification and lighting check of the standby compass.

3.3 Contact: SIRS Navigation – Product Support

3.4 Replacement Codes: See Table 1.0

3.5 Requested information: See Appendix A. Send a copy of the examination results and actions taken to SIRS Navigation Ltd for record, evaluation and further actions (if required).

Form to be emailed to: support@sirs.co.uk

Please retain removed 'Lead Assemblies'

SIRS may request they are returned to our facility for analysis.



SERVICE BULLETIN

Appendix A

Lead Assembly – Investigation Report Form			
Airline / User / Customer			
Tel #		Email:	
Aircraft Location (Country)			
Aircraft Type		A/C TailRef:	
Airline		Aircraft D.O.M	
Compass Type		Compass Serial #	
Compass Listed in SB Table 3.0	Yes / No		
Lead Assy Code. (If Known)		Lead Assy Batch ref. (If Known)	
Visual examination result			
Insulation resistance value result			
Tested by:		Date:	
Contact Person		Email:	
<p>Please retain removed 'Lead Assemblies' and advise SIRS of the action – SIRS may request they are returned to our facility for analysis.</p> <p>Upon completion please email this form to: support@sirs.co.uk</p>			