LEMO FIBRE OPTIC CONTACT – CLEANING PROCEDURE				SQL-04-B106E
				Version: 01
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Author : AB	QA approved : PL	DT released :		Date: 10/06/2004

1. Scope

This procedure, and its Appendices, describes the operation for cleaning the ferrule end faces of LEMO contacts, when fitted into a connector.

2. Definition

It is essential for the ferrule endfaces of the LEMO contact to be clean and free from any kind of debris so as to ensure the correct performance and operation of the contact. If, after mating a connector pair, an unexpectedly high insertion loss is encountered which results in the system not operating, then all fibre optic ferrule endfaces should be cleaned using 'S' grade Isopropyl Alcohol (IPA) and the ferrules thoroughly dried before re-trying the system.

3. Purpose

Cleaning should be performed by users of the LEMO fibre optic product (using the relevant cleaning procedure selected from the Appendices) to ensure the connector pair performs to the specified ratings.

4. Consumables

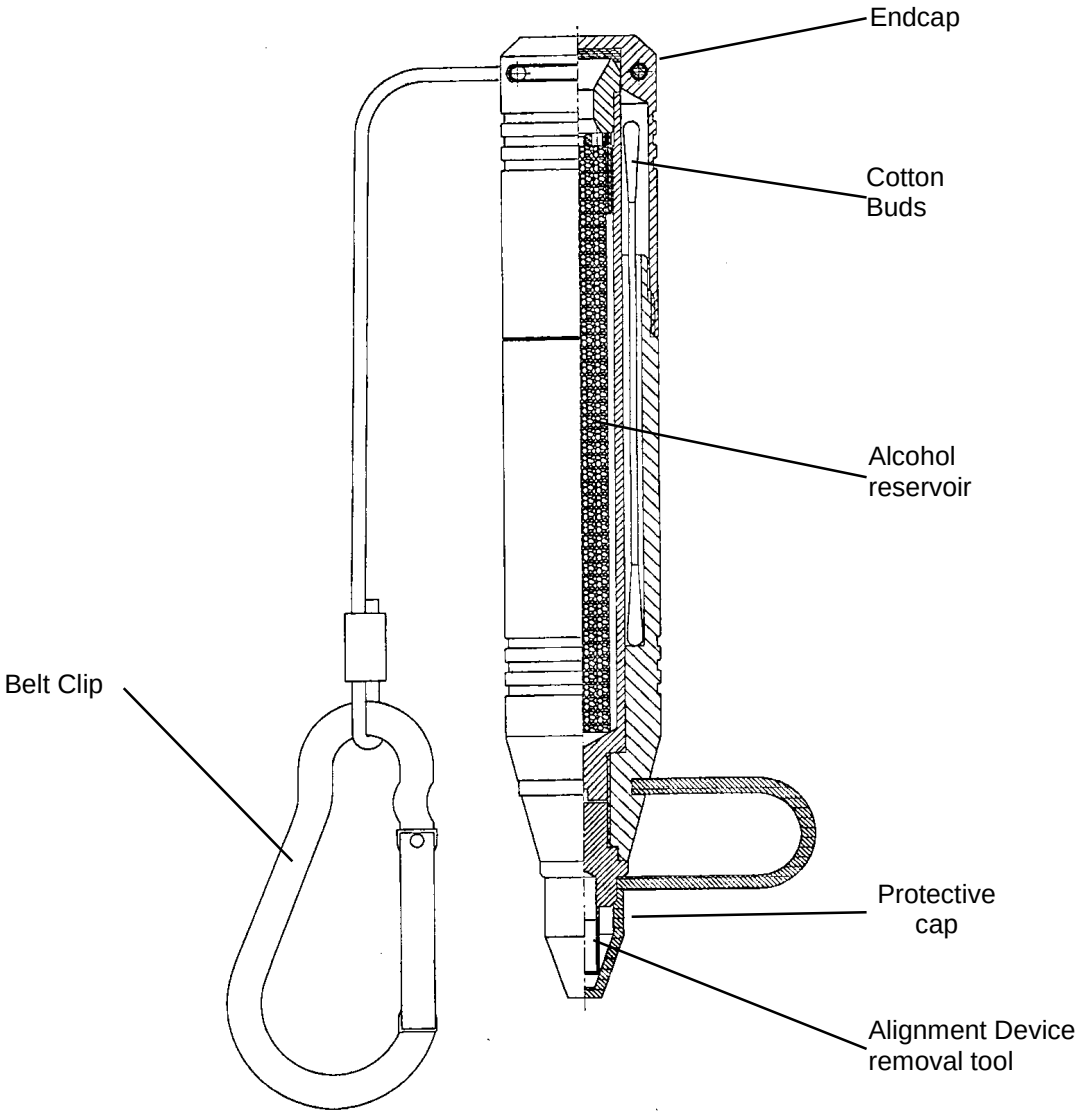
To perform the various cleaning procedures on LEMO contacts, some special LEMO tools are available (see relevant Appendices for details). Details of the lint free cotton buds, and 'S' grade Isopropyl Alcohol (IPA) are also found in the relevant Appendix.

5. Appendices

- A1 Maintenance of F2 contacts in 3K.93C Camera Connectors.
- A2 Maintenence of F2 contacts in standard 'B' or 'K' Series Connectors.
- A3 Maintenence of F2 contacts in SH or MH Hermaphroditic Connectors.

Special Note when using F2 Cleaning Tool DCS.91.F23.LA

Note: The cleaning tool is supplied dry, so to prepare the tool for use, remove the Endcap and slowly inject 3ml of 'S' grade Isopropyl Alcohol (IPA) into the sponge contained in the Alcohol reservoir. Do not overfill. The sponge only needs to be moistened with Alcohol.



Appendix A1

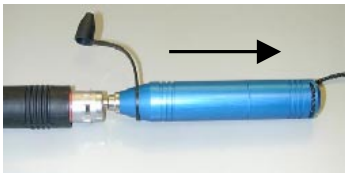
Maintenance of F2 contacts in 3K.93C Connectors

It is essential for the ferrule endfaces of the LEMO F2 contacts to be clean and free from any kind of debris in order to ensure the correct performance and operation of the system. It is strongly recommended that the ferrule endfaces are regularly inspected in situ using a commercially available video inspection microscope (e.g. Noyes, Aerotech, Westover, Exfo, Lightel, Diamond or similar) fitted with a 2mm ferrule adaptor suitable for the LEMO F2 fibre optic contact. Photographs of what constitutes a clean, undamaged endface can be found in the LEMO General and Guidance document SQL-04-025E.
In general use, if after mating a connector pair an unexpectedly high insertion loss is encountered which results in the system not operating, then all suspect fibre optic ferrule endfaces should be cleaned using 'S' grade Isopropyl Alcohol (IPA) and the ferrules thoroughly dried before re-trying the system.

Two methods are shown below which detail the cleaning procedure for contacts in 3K.93C plug style connectors (types FGW, FUW, FXW and FMW).
Inspection and cleaning the ferrules in 3K.93C socket connectors (types EDW, EBW, ENW, PHW. PUW, PEW and PBW) is simpler as the contact endfaces are clearly visible from the front of the connector. In this case follow the instructions for a plug style connector but omit the alignment sleeve removal and replacement steps.
Method A utilises the robust LEMO cleaning tool DCS.91.F23.LA which is designed more for the regular/routine maintenance operative.
Method B is designed more for the occasional "trouble shooting" field operator as the tools used are smaller, lighter and therefore easier to carry.

Method A

Working from the front of the connector, screw the internally threaded end of the LEMO cleaning tool DCS.91.F23.LA onto one of the F2 alignment devices and, with a firm pulling action, remove it from the contact.



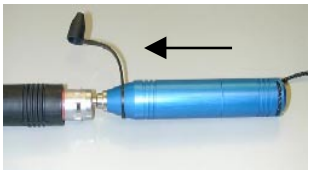

Unscrew the endcap from the tool, and remove a new cotton bud

Moisten one end of the cotton bud by pressing it into the sponge containing S grade Isopropyl Alcohol.

Clean the ceramic ferrule by applying the alcohol damped end of the cotton bud to the ferrule end face and gently wiping it across the endface.

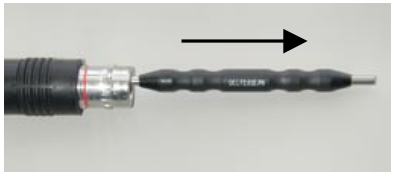
Using the dry end of the lint free cotton bud, apply to the ferrule face and gently wipe across it. This will thoroughly dry the ferrule.
Use a cotton bud end once only as they quickly become contaminated.

Refit the alignment device by positioning it over the ferrule and with a firm push engage it onto the ferrule body with an audible "click", then unscrew the tool.

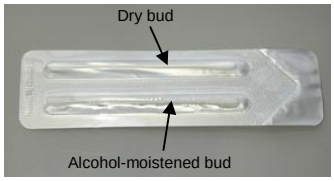


Method B

Working from the front of the connector, screw one of the internally threaded ends of the LEMO cleaning tool DCS.F2.035.PN onto one of the F2 alignment devices and, with a firm pulling action, remove it from the contact.




Get ready a LEMO WST.KI.125.34 Cleaning Kit of two cotton buds



Peel open the backing foil from the blister pack to release the two cotton buds inside. Select the alcohol-moistened bud.

Clean the ceramic ferrule by applying the alcohol damped end of the cotton bud to the ferrule end face and gently wiping it across the endface.

Select the dry cotton bud and using one end of it, apply to the ferrule face and gently wipe across it. This will thoroughly dry the ferrule.
Use a cotton bud end once only as they quickly become contaminated.

Refit the alignment device by positioning it over the ferrule and with a firm push engage it onto the ferrule body with an audible "click", then unscrew the tool.

If, after successfully cleaning and inspecting all ferrules, the system still exhibits high insertion loss this may be due to a damaged or contaminated alignment sleeve. Try replacing this part (LEMO Part no PSS.F2.290.NZZ) and check the system again.
If the problem persists the most likely cause is a damaged, stressed or broken fibre within the cable assembly.

Appendix A2

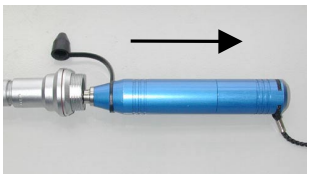
Maintenance of F2 contacts in ‘B’ or ‘K’ Series Connectors

It is essential for the ferrule endfaces of the LEMO F2 contacts to be clean and free from any kind of debris in order to ensure the correct performance and operation of the system. It is strongly recommended that the ferrule endfaces are regularly inspected in situ using a commercially available video inspection microscope (e.g. Noyes, Aerotech, Westover, Exfo, Lightel, Diamond or similar) fitted with a 2mm ferrule adaptor suitable for the LEMO F2 fibre optic contact. Photographs of what constitutes a clean, undamaged endface can be found in the LEMO General and Guidance document SQL-04-025E.
In general use, if after mating a connector pair an unexpectedly high insertion loss is encountered which results in the system not operating, then all suspect fibre optic ferrule endfaces should be cleaned using ‘S’ grade Isopropyl Alcohol (IPA) and the ferrules thoroughly dried before re-trying the system.

Two methods are shown below which detail the cleaning procedure for contacts in B or K series socket style connectors. Inspection and cleaning of the ferrules in B or K series plug connectors is simpler as the contact endfaces are clearly visible from the front of the connector. In this case follow the instructions for a socket style connector but omit the alignment sleeve removal and replacement steps.
Method A utilises the robust LEMO cleaning tool DCS.91.F23.LA which is designed more for the regular/routine maintenance operative.
Method B is designed more for the occasional “trouble shooting” field operator as the tools used are smaller, lighter and therefore easier to carry.

Method A

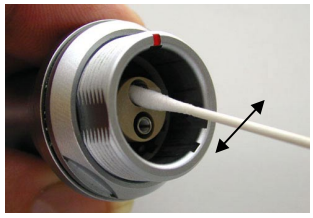
Working from the front of the connector, screw the internally threaded end of the LEMO cleaning tool DCS.91.F23.LA onto one of the F2 alignment devices and, with a firm pulling action, remove it from the contact.




Unscrew the endcap from the tool, and remove a new cotton bud

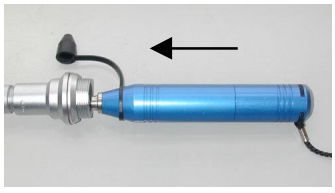
Moisten one end of the cotton bud by pressing it into the sponge containing S grade Isopropyl Alcohol.

Clean the ceramic ferrule by applying the alcohol damped end of the cotton bud to the ferrule end face and gently wiping it across the endface.



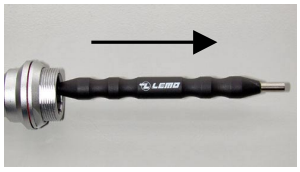
Using the dry end of the lint free cotton bud, apply to the ferrule face and gently wipe across it. This will thoroughly dry the ferrule.
Use a cotton bud end once only as they quickly become contaminated.

Refit the alignment device by positioning it over the ferrule and with a firm push engage it onto the ferrule body with an audible “click”, then unscrew the tool.

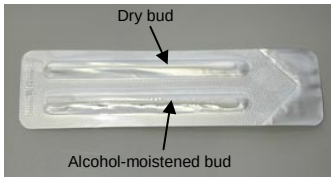


Method B

Working from the front of the connector, screw one of the internally threaded ends of the LEMO cleaning tool DCS.F2.035.PN onto one of the F2 alignment devices and, with a firm pulling action, remove it from the contact.

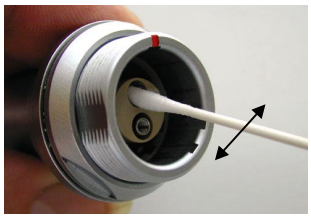



Get ready a LEMO WST.KI.125.34 Cleaning Kit of two cotton buds



Peel open the backing foil from the blister pack to release the two cotton buds inside. Select the alcohol-moistened bud.

Clean the ceramic ferrule by applying the alcohol damped end of the cotton bud to the ferrule end face and gently wiping it across the endface.



Select the dry cotton bud and using one end of it, apply to the ferrule face and gently wipe across it. This will thoroughly dry the ferrule.
Use a cotton bud end once only as they quickly become contaminated.

Refit the alignment device by positioning it over the ferrule and with a firm push engage it onto the ferrule body with an audible “click”, then unscrew the tool.

If, after successfully cleaning and inspecting all ferrules, the system still exhibits high insertion loss this may be due to a damaged or contaminated alignment sleeve. Try replacing this part (LEMO Part no PSS.F2.290.NZZ) and check the system again.
If the problem persists the most likely cause is a damaged, stressed or broken fibre within the cable assembly.

Appendix A3

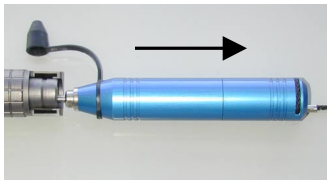
Maintenance of F2 contacts in SH or MH Hermaphroditic Connectors

It is essential for the ferrule endfaces of the LEMO F2 contacts to be clean and free from any kind of debris in order to ensure the correct performance and operation of the system. It is strongly recommended that the ferrule endfaces are regularly inspected in situ using a commercially available video inspection microscope (e.g. Noyes, Aerotech, Westover, Exfo, Lightel, Diamond or similar) fitted with a 2mm ferrule adaptor suitable for the LEMO F2 fibre optic contact. Photographs of what constitutes a clean, undamaged endface can be found in the LEMO General and Guidance document SQL-04-025E.
In general use, if after mating a connector pair an unexpectedly high insertion loss is encountered which results in the system not operating, then all suspect fibre optic ferrule endfaces should be cleaned using 'S' grade Isopropyl Alcohol (IPA) and the ferrules thoroughly dried before re-trying the system.

Two methods are shown below which detail the cleaning procedure for female F2 contacts in SH or MH hermaphroditic connectors. Inspection and cleaning of male F2 contacts is simpler as the contact endfaces are clearly visible from the front of the connector. In this case follow the instructions for female contacts but omit the alignment sleeve removal and replacement steps.
Method A utilises the robust LEMO cleaning tool DCS.91.F23.LA which is designed more for the regular/routine maintenance operative.
Method B is designed more for the occasional "trouble shooting" field operator as the tools used are smaller, lighter and therefore easier to carry.

Method A

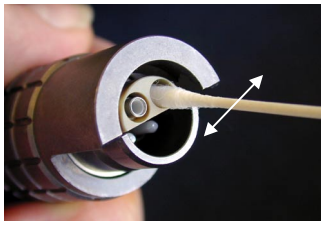
Working from the front of the connector, screw the internally threaded end of the LEMO cleaning tool DCS.91.F23.LA onto one of the F2 alignment devices and, with a firm pulling action, remove it from the contact.




Unscrew the endcap from the tool, and remove a new cotton bud

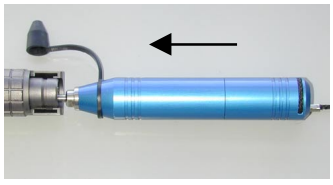
Moisten one end of the cotton bud by pressing it into the sponge containing S grade Isopropyl Alcohol.

Clean the ceramic ferrule by applying the alcohol damped end of the cotton bud to the ferrule end face and gently wiping it across the endface.



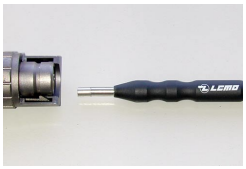
Using the dry end of the lint free cotton bud, apply to the ferrule face and gently wipe across it. This will thoroughly dry the ferrule.
Use a cotton bud end once only as they quickly become contaminated.

Refit the alignment device by positioning it over the ferrule and with a firm push engage it onto the ferrule body with an audible "click", then unscrew the tool.

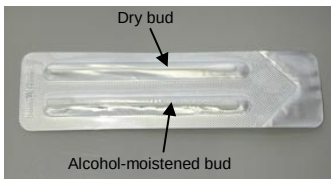


Method B

Working from the front of the connector, screw one of the internally threaded ends of the LEMO cleaning tool DCS.F2.035.PN onto one of the F2 alignment devices and, with a firm pulling action, remove it from the contact.

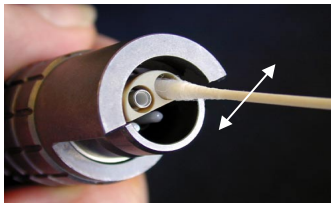



Get ready a LEMO WST.KI.125.34 Cleaning Kit of two cotton buds



Peel open the backing foil from the blister pack to release the two cotton buds inside. Select the alcohol-moistened bud.

Clean the ceramic ferrule by applying the alcohol damped end of the cotton bud to the ferrule end face and gently wiping it across the endface.



Select the dry cotton bud and using one end of it, apply to the ferrule face and gently wipe across it. This will thoroughly dry the ferrule.
Use a cotton bud end once only as they quickly become contaminated.

Refit the alignment device by positioning it over the ferrule and with a firm push engage it onto the ferrule body with an audible "click", then unscrew the tool.

If, after successfully cleaning and inspecting all ferrules, the system still exhibits high insertion loss this may be due to a damaged or contaminated alignment sleeve. Try replacing this part (LEMO Part no PSS.F2.290.NZZ) and check the system again.
If the problem persists the most likely cause is a damaged, stressed or broken fibre within the cable assembly.