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FIELD SERVICE 9-1-1

Field Service Application Guide for the DeoxIT® Essentials

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(Includes DeoxIT® D-Series Contact Cleaner, DeoxIT® Gold G-Series, DeoxIT® Shield S-Series and DeoxIT® M260 & L260 Grease products)

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THINGS TO REMEMBER:

Wouldn't it be great if you could not only rely on all your electrical connections, but they would be your strongest link? DeoxIT® is a unique connection treatment that rejuvenates electrical connections and actually improves their performance.

There are literally thousands of connections in electronic devices and equipment these days. From internal connections, to the interconnecting cables from one piece of equipment to another, and over a short period of time, oxidation, corrosion, pollution, humidity and other contaminants attack the metal surfaces of these connectors. This gradually decreases performance causing intermittents (data errors), reduced performance (dull lights, power reduction, potential communication and security problems) or complete failure.

This also causes increased unnecessary service calls for covered warranty repairs that could have been prevented, translating into millions of dollars of lost revenue for service organizations. The smaller the

signal transmitted through the connection, the more susceptible that connection is to failure. DeoxIT® products chemically dissolve these contaminants, without harm to the metal surfaces. The products also enhance the flow of electricity on metal and leave a long-lasting protective barrier. The result is clearer and more accurate audio, video, and data signals with improved equipment performance and reliability.

The DeoxIT® Products, 1-2-3:

- 1 - Apply **DeoxIT® D-Series, contact cleaner** to clean/rejuvenate metal surfaces,
- 2 - Apply **DeoxIT® Gold G-Series**, for maximum performance & protection - indoor applications,
- 3 - Apply **DeoxIT® Shield S-Series**, for maximum protection - outdoor or severe environments.
- 4 - Apply **DeoxIT® Fader F-Series**, for conductive plastics and carbon-based controls, only.

NOTE: If the part is used or is in service, assume it's oxidized.

There are virtually unlimited uses for DeoxIT® products. We have included general information for using the products and the applicators best suited to applications after the products are manufactured. We have also included general information about the use of our products within the manufacturing process.

For unique and special circumstances, please contact CAIG Technical Support, tech@caig.com to determine the best product, applicator and procedure.

1. APPLICATOR NOTES: Which Applicators should I use?

SPRAYS:

1. Use when the part is hard to reach (inside a potentiometer) or easy to reach and overspray is not a concern (wire with connector at end - RCA, XLR, etc.). You can always spray DeoxIT® onto a lint-free swab or cloth and then apply to connection.

WHICH SPRAY DO I USE: Visit <http://store.caig.com/s.nl/it.l/id.66/f>

2. Two types of sprays are available, "*flushing action*" (flammable - slow evaporating solvent) and "*quick dry*" (non-flammable - fast dry solvent). Use the flushing action sprays when there is other surface contamination on the connections (dust, dirt, grease) and plastic compatibility is critical. Use the "*quick dry*" sprays when non-flammability is important and no dripping is required.
 - a) *Flushing action* Part Nos.: D5S-6, G5S-6, S5S-6, F5S-H6
 - b) *Quick Dry* Part Nos.: DN5S-6N, DN5MS-15, GN5S-6N, GN5MS-15, SN5S-6N, SN5MS-15, FN5MS-H15.

LIQUIDS:

1. Use DeoxIT® liquids (100% and 5%) when precise application of products are to be used.
2. Use the 5% liquids when wiping off excess is NOT an option.
3. Pick the best applicator for your application. Brush applicators are good for most audio/video connections. Pens are recommended for connectors that require a bit of scrubbing or open contacts. Wipes are recommended for edge connectors and audio/video connections. Needle applicators are recommended for accessing hard to reach areas.
4. Reminder: when using 100% solutions, wipe off excess after applying final coating.
5. Applicators will be recommended at the end of each section. Others can be viewed and selected at www.caig.com

2. General Maintenance (Metal electrical connectors & connections)

2a. Metal surfaces:

1. Turn off, unplug¹ the device.
2. Apply DeoxIT® D-Series contact cleaner to contact/connector surface. If surface contains particles (dust, dirt, etc.) along with oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). If the surface is free from most particles, use DeoxIT® without a flushing solvent (#DN5MS-15 and DN5S-6N) or small amount of DeoxIT® liquid (wipe off excess).
3. In extreme cases, connectors with severe oxidation, you may need to leave DeoxIT® D-Series on overnight. If that is necessary, remove any contaminants lifted by DeoxIT® the following day, with lint free swab, cloth on accessible surfaces. When surface is clean (no residue on the cloth), finish with a couple short bursts of DeoxIT® D-Series spray or small amount of DeoxIT® liquid (wipe off excess).
4. **For extended protection:** After surface is clean, WITH THE EXCEPTION OF potentiometers, apply DeoxIT® Gold G-Series for indoor applications or DeoxIT® Shield S-Series for outdoor and severe environment applications.

Moving Switches (i.e., potentiometers):

1. Turn off, unplug¹ the device.
2. Apply DeoxIT® D-Series contact cleaner (#D100S-2 or #D100L-25C) to contact/connector surface.
3. Manually operate device, to help displace contaminants from contact surface, and distribute lubrication.
4. Repeat Steps 2 and 3, if necessary.
5. In extreme cases, you may need to leave DeoxIT® D-Series on overnight. If that happens, the following day, remove any contaminants lifted by DeoxIT® and finish with a couple short bursts of DeoxIT®.

2b. Plated metal surfaces and gold surfaces - used or in service (i.e. gold or other precious metal):

1. Follow the "Metal surfaces" procedure noted above. Finish with DeoxIT® Gold G-Series to protect surfaces. Maintain thereafter with DeoxIT® Gold.
2. If connector surfaces have particles (dust, dirt, etc.) along with oxidation, use DeoxIT® Gold spray with flushing solvent (#G5S-6). If the surface is free from most surface particles, use DeoxIT® GOLD spray without flushing solvent (#GN5MS-15 and GN5S-6N).

1c. Plated metal and gold surfaces - new or with no visible oxidation on the surface:

Apply DeoxIT® Gold G-Series to the contact/connector surface. When using 100% solution, wipe off any excess. Maintain thereafter with DeoxIT® Gold.

NOTE:

After applying DeoxIT® D-Series and DeoxIT® Gold G-Series, you may notice either immediately or over the next several days, a green or black discoloration on connector surface. This represents dissolved oxides. Repeat cleaning process above, then apply DeoxIT® Gold G-Series OR DeoxIT® Shield S-Series, as necessary.

Recommended Applicators:

Spray Part No.'s:

(Nonflammable, non drip - quick dry, safe on plastics)

DeoxIT® D-Series, Part No. DN5MS-15 (14 g), Part No. DN5S-6N (163 g)
DeoxIT® Gold G-Series, Part No. GN5MS-15 (14 g), Part No. GN5S-6N (163 g).

(Briefly flammable, until solvent evaporates, flushing action - slow dry.)

DeoxIT® D-Series, Part No. D5S-6, 142 g.
DeoxIT® Gold G-Series, Part No. G5S-6, 142 g.

Non spray applicators

DeoxIT® D-Series, precision needle, 25 ml. Part No. D100L-25C
DeoxIT® Gold G-Series, precision needle, 25 ml. Part No. G100L-25C
DeoxIT® D-Series, brush bottle, 7.4 ml. Part No. D100L-2DB
DeoxIT® Gold G-Series, brush bottle, 7.4 ml. Part No. G100L-2DB

Other applicators available, visit; <http://www.caig.com>

Lint free Accessories:

Lint free cotton cloth Part Nos. LFC-C/50, LFC-C/100
Lint free foam swabs, 1/4 x 3/4 x 4-1/2" Part Nos. SWP-12, SWP-50, SWP-100
Lint free foam swabs, 1/8 x 1/2 x 2-3/4" Part Nos. SWPX-12, SWPX-50, SWPX-100
Pointer swabs, 3 inch, .5 mm to 2.3 mm Head Part Nos. SWPP-12, SWPP-50, SWPP-100
Nylon cleaning brush, 3-6 mm x 20 mm Part Nos. AB-12, AB-50, AB-100

3. Relays and contactors (low, medium & high voltage/amperage)

3a. Low voltage/amperage relays:

1. Turn off, unplug¹ device.
2. Apply DeoxIT® contact cleaner to metal contact/connector surface. If connector surfaces contain particles (dust, dirt, etc.) along with oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). If the surface is free from most surface particles, use DeoxIT® spray without a flushing solvent (#DN5MS-15), or small amount of DeoxIT® liquid (wipe off excess).
3. Operate the relay to help displace contaminants from contact surface.
4. Repeat Step 2.
5. In extreme cases, you may need to leave DeoxIT® on overnight. If that happens, remove any contaminants lifted by DeoxIT® the following day, with lint free swab, cloth on accessible surfaces. When surface is clean (no residue on the cloth), apply a couple short bursts of DeoxIT®, or small amount of DeoxIT® liquid (wipe off excess).
6. After surface is clean, apply DeoxIT® GOLD for indoor applications or DeoxIT® Shield for outdoor applications.

Recommended Applicators:

Spray Part No.'s:

(Nonflammable, non drip - quick dry, safe on plastics)

DeoxIT® D-Series, Part No. DN5MS-15 (14 g), Part No. DN5S-6N (163 g)

DeoxIT® Gold G-Series, Part No. GN5MS-15 (14 g), Part No. GN5S-6N (163 g).
DeoxIT® Shield S-Series, Part No. SN5MS-15 (14 g), Part No. SN5S-6N (163 g).

(Briefly flammable, until solvent evaporates, flushing action - slow dry.)

DeoxIT® D-Series, Part No. D5S-6, 142 g.
DeoxIT® Gold G-Series, Part No. G5S-6, 142 g.
DeoxIT® Shield S-Series, Part No. S5S-6, 142 g.

Non-spray Applicators (100% liquid):

DeoxIT® D-Series, precision needle, 25 ml	Part No. D100L-25C
DeoxIT® Gold G-Series, precision needle, 25 ml	Part No. G100L-25C
DeoxIT® Shield S-Series, precision needle, 25 ml	Part No. S100L-25C
DeoxIT® D-Series, pen, 6.0 ml	Part No. D100P
DeoxIT® Gold G-Series, pen, 6.0 ml	Part No. G100P
DeoxIT® Shield S-Series, pen, 6.0 ml	Part No. S100P

Lint free Accessories:

Lint free cotton cloth	Part Nos. LFC-C/50
Lint free foam swabs, 1/4 x 3/4 x 4-1/2"	Part Nos. SWP-25, SWP-100
Lint free foam swabs, 1/8 x 1/2 x 2-3/4"	Part Nos. SWPX-25, SWPX-100
Pointer swabs, 3 inch, .5 mm to 2.3 mm Head	Part Nos. SWPP-25, SWPP-100
Nylon cleaning brush, 3-6 mm x 20 mm	Part Nos. AB-25, AB-100

3b. Medium voltage/amperage relays/contactors:

1. Turn off, unplug¹ device.
2. Apply DeoxIT® D-Series contact cleaner to metal contact/connector surface. If connector surfaces contain particles (dust, dirt, etc.) alongwith oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). If the surface is free from most surface particles, use DeoxIT® spray without a flushing solvent (#DN5MS-15, DN5S-6N), or small amount of DeoxIT® liquid (wipe off excess).
3. Operate the relay to help displace contaminants from contact surface.
4. Repeat Step 2.

Recommended Applicators:

Spray Part No.'s:

(Nonflammable, non drip - quick dry, safe on plastics)

DeoxIT® D-Series, Part No. DN5MS-15 (14 g), Part No. DN5S-6N (163 g)
DeoxIT® Gold G-Series, Part No. GN5MS-15 (14 g), Part No. GN5S-6N (163 g).
DeoxIT® Shield S-Series, Part No. SN5MS-15 (14 g), Part No. SN5S-6N (163 g).

(Briefly flammable, until solvent evaporates, flushing action - slow dry.)

DeoxIT® D-Series, Part No. D5S-6, 142 g.
DeoxIT® Gold G-Series, Part No. G5S-6, 142 g.
DeoxIT® Shield S-Series, Part No. S5S-6, 142 g.

Non-spray Applicators (100% liquid):

DeoxIT® D-Series, precision needle, 25 ml	Part No. D100L-25C
DeoxIT® Gold G-Series, precision needle, 25 ml	Part No. G100L-25C
DeoxIT® Shield S-Series, precision needle, 25 ml	Part No. S100L-25C

DeoxIT® D-Series, pen, 6.0 ml
DeoxIT® Gold G-Series, pen, 6.0 ml
DeoxIT® Shield S-Series, pen, 6.0 ml
DeoxIT® D-Series, wipes
DeoxIT® Gold G-Series, wipes
DeoxIT® Shield S-Series, wipes

Part No. D100P
Part No. G100P
Part No. S100P
Part No. D50W
Part No. G50W
Part No. S50W

Lint free Accessories:

Lint free cotton cloth
Lint free foam swabs, 1/4 x 3/4 x 4-1/2"
Lint free foam swabs, 1/8 x 1/2 x 2-3/4"
Pointer swabs, 3 inch, .5 mm to 2.3 mm Head
Nylon cleaning brush, 3-6 mm x 20 mm

Part Nos. LFC-C/50
Part Nos. SWP-25, SWP-100
Part Nos. SWPX-25, SWPX-100
Part Nos. SWPP-25, SWPP-100
Part Nos. AB-25, AB-100

3c. High voltage/amperage relays/contactors - normally oxidized/corroded:

1. Turn off, unplug¹ the device.
2. Apply DeoxIT® D-Series contact cleaner to contact/connector surface. If surface contains particles (dust,dirt, etc.) along with oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). If the surface is free from most particles, use DeoxIT® without a flushing solvent (#DN5MS-15, DN5S-6N), or small amount of DeoxIT® liquid (wipe off excess).
3. Operate relay to help displace contaminants from contact surface.
4. Repeat Step 2.
5. If surface is severely oxidized, leave DeoxIT® D-Series contact cleaner on the surface overnight, The following day, remove contaminants lifted by DeoxIT® with lint free applicator. Apply two short burst of DeoxIT®.
6. When surface is clean (no residue on the cloth), finish with a couple short bursts of DeoxIT® Shield S-Series (#S5S-6, SN5MS-15, SN5S-6N or 100% liquid).

Recommended Applicators:

Same as 2b.

3d. High voltage/amperage relays/contactors - severely oxidized/corroded:

1. Turn off, unplug¹ the device.
2. Apply DeoxIT® D-Series contact cleaner to metal contact/connector surface. If connectors contain surface particles (dust, dirt, etc.) along with oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). If the surface is free from most surface particles, use DeoxIT® without a flushing solvent (#DN5MS-15, DN5S-6N), or small amount of DeoxIT® liquid (wipe off excess).
3. Operate the relay/contactator to help displace contaminants from contact surface.
4. Use a non-abrasive nylon brush to assist in removing the loose contamination on the surface. Never use an abrasive brush or other harsh abrasive materials (i.e., sandpaper, metal brush, etc.), this will change the design characteristics of the relay/contactator/switch.
5. If the surface is still oxidized, apply DeoxIT® Grease L260Cp or L260Qp to the contact surface.

NOTE:

The L260**Cp** contains copper particles and the L260**Qp** contains quartz particles, which assist with breaking up the oxidation or corrosion. Use the copper if you need conductive particles and the quartz if conductive particles are not required.

Recommended Applicators:

Spray Applicators:

(Nonflammable, non drip - quick dry, safe on plastics)

DeoxIT® D-Series, Part No. DN5MS-15 (14 g), Part No. DN5S-6N (163 g)

(Briefly flammable, until solvent evaporates, flushing action - slow dry)

DeoxIT® D-Series, spray Part No. D5S-6, 142 g

Grease Jar Applicators:

DeoxIT® Grease, copper particles, jar	Part No. L260-C1, 28 g
DeoxIT® Grease, copper particles, jar	Part No. L260-C8, 226 g
DeoxIT® Grease, copper particles, cartridge	Part No. L260-C2C, 50 g
DeoxIT® Grease, copper particles, tube	Part No. L260-C8TP, 226 g
DeoxIT® Grease, quartz particles, jar	Part No. L260-Q1, 28 g
DeoxIT® Grease, quartz particles, jar	Part No. L260-Q8, 226 g
DeoxIT® Grease, quartz particles, cartridge	Part No. L260-Q2C, 50 g
DeoxIT® Grease, quartz particles, tube	Part No. L260-Q8TP, 226 g
DeoxIT® Grease, no particles, jar	Part No. L260-N1, 28 g
DeoxIT® Grease, no particles, jar	Part No. L260-N8, 226 g
DeoxIT® Grease, no particles, cartridge	Part No. L260-N2C, 50 g
DeoxIT® Grease, no particles, tube	Part No. L260-N8TP, 226 g
DeoxIT® Grease, copper particles, jar	Part No. L260-C1, 28 g
DeoxIT® Grease, copper particles, jar	Part No. L260-C8, 226 g
DeoxIT® Grease, copper particles, cartridge	Part No. L260-C2C, 50 g
DeoxIT® Grease, copper particles, tube	Part No. L260-C8TP, 226 g

4. Maintenance - Disconnects

1. Turn off the device.
2. Apply DeoxIT® contact cleaner to metal contact/connector surface. If connectors contain surface particles (dust, dirt, etc.) along with oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). If the surface is free from most surface particles, use DeoxIT® without a flushing solvent (#DN5MS-15, DN5S-6N), or small amount of DeoxIT® liquid (wipe off excess).
3. Operate the *disconnect* to help displace contaminants from contact surface.
4. Use a non-abrasive nylon brush to assist in removing the loose contamination on the surface. Never use an abrasive brush or other harsh abrasive materials (i.e., sandpaper, metal brush, etc.), because this may change the design characteristics of the relay/contactors/switch.
5. Apply DeoxIT® Grease L260Cp, L260Ap or L260Qp onto the contact surface.

NOTE:

The L260**Cp** contains copper particles, the L260**Ap** contains aluminum particles and L260**Qp** contains quartz particles. Use the particles to assist breaking up the oxidation or corrosion. Use the copper or aluminum if you need conductive particles and the quartz if conductive particles are not required.

Recommended Applicators:

Spray Applicators:

(Nonflammable, non drip - quick dry, safe on plastics)

DeoxIT® D-Series, Part No. DN5MS-15 (14 g), Part No. DN5S-6N (163 g)

(Briefly flammable, until solvent evaporates, flushing action - slow dry)

DeoxIT® D-Series, spray Part No. D5S-6, 142 g

Grease Jar Applicators:

DeoxIT® Grease, copper particles, jar	Part No. L260-C1, 28 g
DeoxIT® Grease, copper particles, jar	Part No. L260-C8, 226 g
DeoxIT® Grease, copper particles, cartridge	Part No. L260-C2C, 50 g
DeoxIT® Grease, copper particles, tube	Part No. L260-C8TP, 226 g
DeoxIT® Grease, aluminum particles, jar	Part No. L260-A1, 28 g
DeoxIT® Grease, aluminum particles, jar	Part No. L260-A8, 226 g
DeoxIT® Grease, aluminum particles, cartridge	Part No. L260-A2C, 50 g
DeoxIT® Grease, aluminum particles, tube	Part No. L260-A8TP, 226 g
DeoxIT® Grease, quartz particles, jar	Part No. L260-Q1, 28 g
DeoxIT® Grease, quartz particles, jar	Part No. L260-Q8, 226 g
DeoxIT® Grease, quartz particles, cartridge	Part No. L260-Q2C, 50 g
DeoxIT® Grease, quartz particles, tube	Part No. L260-Q8TP, 226 g

Lint free Accessories:

Lint free cotton cloth	Part Nos. LFC-C/50
Lint free foam swabs, 1/4 x 3/4 x 4-1/2"	Part Nos. SWP-25, SWP-100
Lint free foam swabs, 1/8 x 1/2 x 2-3/4"	Part Nos. SWPX-25, SWPX-100
Pointer swabs, 3 inch, .5 mm to 2.3 mm Head	Part Nos. SWPP-25, SWPP-100
Nylon cleaning brush, 3-6 mm x 20 mm	Part Nos. AB-25, AB-100

5. Maintenance - Indoor vs Outdoor Use

Following the DeoxIT® 1-2-3 instructions, will solve 99% of your application problems with the addition of using the DeoxIT® Greases (refer to sections 2 and 10) for certain outdoor uses. For other applications, contact CAIG Technical Support, tech@caig.com.

PRODUCT NOTE: If the part is used or in service, assume it's oxidized. Always, first use DeoxIT® D-Series. Outdoor connections and ones exposed to sever enviroments require additional protection.

Metal surfaces:

1. Apply DeoxIT® D-Series contact cleaner to metal contact/connector surface. When connectors contain surface particles (dust, dirt, etc.) along with oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). When the surface is free from most surface particles, use DeoxIT® without a flushing solvent (#DN5S-6N, #DN5MS-15), or small amount of DeoxIT® liquid (wipe off excess).
2. Operate device to help displace contaminants from contact surface.
3. Repeat Step "1".
4. If surface is heavily oxidized, leaving DeoxIT® D-Series contact cleaner on overnight is recommended.

5. The next day remove the contaminants lifted by DeoxIT® with lint free swab or cloth on accessible surfaces or repeat Step 1 to displace contaminants from contact surface. Process may need to be repeated if surface is heavily oxidized. When surface is clean, no residue on the cloth, finish with a couple short bursts of DeoxIT® Shield S-Series.
6. **For extended protection:** After surface is clean, applying DeoxIT® Shield S-Series will provide long lasting protection on the metal surfaces.

Metal surfaces subject to severe weathering (i.e. wind, rain, etc.):

7. Under exposure to the elements a physical barrier may also be required to protect the metal connections.
8. After the surfaces have been treated with DeoxIT® Shield S-Series, an application of a grease maybe required. Select one of the DeoxIT® Grease if a longer lasting treatment is required. Visit for more information: <http://store.caig.com/s.nl/sc.2/category.185/f>

Recommended Applicators:

Spray Part No.'s:

(Nonflammable, non drip - quick dry, safe on plastics. Over 150 sprays per can)

DeoxIT® D-Series, **Part No. DN5MS-15 (14 g), Part No. DN5S-6N (163 g)**
 DeoxIT® Shield S-Series, **Part No. SN5MS-15 (14 g), Part No. SN5S-6N (163 g).**

(Briefly flammable, until solvent evaporates, flushing action - slow dry.

DeoxIT® D-Series, **Part No. D5S-6, 142 g.**
 DeoxIT® Shield S-Series, **Part No. S5S-6, 142 g.**

Non spray applicators

DeoxIT® D-Series, precision needle, 25 ml.	Part No. D100L-25C
DeoxIT® Shield S-Series, precision needle, 25 ml.	Part No. S100L-25C
DeoxIT® D-Series, brush bottle, 7.4 ml.	Part No. D100L-2DB
DeoxIT® Shield S-Series, brush bottle, 7.4 ml.	Part No. S100L-2DB

Other applicators available, visit; <http://www.caig.com>

6. Maintenance - Severe Environments

There are two circumstance discussed in this section, temperature variations and environmental contaminants. There are many other possible circumstances, but we are unable to cover all of them here, so this section will provide general guidance and information.

6a) Temperature:

As a general rule, the closer the operating temperature gets to the maximum operating temperature of the coating, the shorter the life for the protection and performance. If your part will be operating close to that temperature, we recommend doing life-cycle testing. Eventually, the DeoxIT® coating will evaporate/vaporize. The same rule applies to maximum low temperatures, and the coating will also get thicker. If the device is moving (relays, for example), the maximum operating temperature may be greater. Therefore, testing should be done when operating close to the maximum low temperatures.

DeoxIT® D-Series, D100L	-34°C (-29° F) to +200° C (400° F)
DeoxIT® Gold G-Series, G100L	-45° C (-49° F) to +240° C (464° F)

DeoxIT® Gold GxL, GX100L	-45°C (-49° F) to +310° C (590° F)
DeoxIT® Gold Gx2, GX2	-45°C (-49° F) to +500° C (932° F)
DeoxIT® Shield S-Series, S100L	-34°C (-29° F) to +210° C (410° F)
DeoxIT® M260 Grease	-40° C (-40° F) to +260° C (500° F)
DeoxIT® L260 Grease	-40° C (-40° F) to +260° C (500° F)

6b) Contaminants: Even brief periods of exposure to pollution, humidity, salts and other contaminants causes oxidation and corrosion on connectors, compromising their performance and reliability. The severity of the atmosphere will dictate the procedure for using DeoxIT® products. Following the DeoxIT® 1-2-3, with the addition of using the DeoxIT® Greases, will cover most applications.

7. Maintenance - Special Circumstances

For unique and special circumstances, please contact CAIG Technical Support, tech@caig.com to determine the best product, applicator and procedure.

8. The Difference Between the 5% and 100% Products

The following excerpt from the [Tech Info Questions and Answers](#) sheet addresses the differences quite well:

“Use the 5% spray or liquid to apply a thin coating of our products. Remember only a small amount is required on the surface for maximum performance. The 5% solutions will ensure that only small amounts remain on the surface. The solvent will also assist in flushing away loose dust, dirt, grease and other contamination.”

To summarize:

1. The 5% solution has a carrier solvent, but after the solvent evaporates, what remains is 100% product.
2. The original 5% formula provides flushing action, but the 100% does not.
3. Two 5% spray versions and one 100% spray version are available.
 - a) **5% original, flammable** spray has: Flushing action, slow drying, flammable until solvent evaporates. Evaporation rate depends on ambient temperature, approx. 5 to 60 minutes for complete evaporation. 100% solution remains on surface.
Example: Part No.'s D5S-6, G5S-6 and F5S-H6
 - b) **5% nonflammable spray** has: No flushing action, quick drying, non-flammable. Solvent evaporates almost immediately. 100% solution remains on surface.
Example: Part No.'s DN5MS-15, DN5S-6N, GN5MS-15, and GN5S-6N
 - c) **100% nonflammable spray has:** No flushing action, provides 100% application of concentrate (DeoxIT® or DeoxIT® GOLD) with a metered one-shot valve.
Example: Part No.'s D100S-2, G100S-2

4. Always wipe any excess 100% solution with clean lint-free cloth or swab. Please refer to **Fader Maintenance and Potentiometer Maintenance** instructions for the exception to this advisory.

9. When do I use flammable vs. nonflammable applicators?

There are two formulations for DeoxIT® products, sprays and liquids - 5% and 100%. As mentioned previously, sprays are offered in three versions: 5% flammable, 5% nonflammable and 100% nonflammable (See description in section 7). The liquids are offered in two variations, 5% and 100%.

Please contact CAIG Technical Support, tech@caig.com for the availability of custom formulations.

KEY NOTE:

The most important thing to keep in mind when applying DeoxIT® products (i.e., DeoxIT®, DeoxIT® GOLD and DeoxIT® SHIELD) is that only a small amount should be left on the metal surface.

When using the 5% solution (i.e., #D5L-25C, etc.), only a small amount will be left on the surface. When using the 100% products (i.e., #'s D100S-2, G100S-2, D100L-25C, G100P, etc.), it is important to wipe off any excess, leaving a small amount on the surface. If the connector is subjected to outdoor weathering, as with antenna connections, for example, applying DeoxIT® Grease as a topical barrier is recommended, following a thorough cleaning of the contact connector surface with DeoxIT®.

Please go to the next section for information on applicator selection.

10. Additional applicator information?

Since many applications require a different means of applying a treatment to contacts and connectors, we offer our products in a wide variety of delivery systems for ease of use. You may choose from nonflammable sprays, mini-sprays, pens, wipes, needle dispensers or OEM squeeze tubes, if applicable.

When deciding whether to choose the 5% or 100% formulation, one only needs to consider three things:

- 1)** Do I have an issue using a flammable product (safety)?
- 2)** Do I have access to the metal surface (ability to wipe off excess)?
- 3)** Do I need to be able to flush the surface to remove surface dirt, grease and particles?

Number one above is self-explanatory. If using a flammable solvent will present any issues, choose a non-flammable version. Bear in mind that only the solvent is flammable, the DeoxIT® concentrates are not.

If the device can be turned off and the product applied and allowed to fully evaporate, your choice is clear. Certain specifications or circumstances in an industrial environment require that no flammable products or compressed containers be used, as in aviation applications. In this case, the nonflammable (100%) products are recommended; or a dilution of our product with a compatible nonflammable solvent. Small scale testing for compatibility is recommended.

Number two above requires physical accessibility to the contact/connector. If you have the ability to wipe off excess product with a lint-free accessory, you may choose to use one of these versions; pens, wipes, needle dispenser, squeeze tube, etc. The advantage of using these applicators is economy and ease of use. These precision applicators allow you to put the concentrate exactly where you want it, without over-spray concerns. Also, these particular applicators are small and fit into tool cases or your pocket easily.

Number three above was explained in previous sections. Applicators that provide flushing have slow evaporating solvents. Use part numbers D5L-25CA, G5L-25CA, etc., when you need to remove surface contaminants, dirt, dust, and grease. If the surface is free from these contaminants, choosing fast evaporating solvent products as in part numbers DN5MS-15, DN5S-6N, GN5MS-15 and GN5S-6N or the 100% concentrate products are a good choice.

11. DeoxIT® Greases - Electrical & Mechanical uses and procedures

11a) DeoxIT® Grease products are manufactured in semi-solid form for use as a combination cleaning, deoxidizing, protection and lubrication preparation. They protect against oxidation (galvanic corrosion) and are free of mineral acids, sulphurs, alkalis and other noxious components aggressive to metals. DeoxIT® Greases improve performance of electrical contacts and mechanical components that require lubrication.

1. Turn off the device.
2. Apply DeoxIT® D-Series contact cleaner to metal contact/connector surface. If connectors contain surface particles (dust, dirt, etc.) along with oxidation, use DeoxIT® spray with flushing solvent (#D5S-6). If the surface is free from most surface particles, use DeoxIT® without a flushing solvent (#DN5MS-15, #DN5S-6N).
3. Manually operate the disconnect to help displace contaminants from contact surface.
4. Use a non-abrasive nylon brush to assist in removing any loose contamination on the surface. Never use an abrasive brush or other harsh abrasive materials (i.e., sandpaper, metal brush) because this may change the design characteristics of the relay/contact/switch.
5. Apply DeoxIT® Grease L260Cp, L260Ap or L260Qp onto contact surface.

NOTE:

The L260**Cp** contains copper particles, the L260**Ap** contains aluminum particles and L260**Qp** contains quartz particles. Use the particles to assist breaking up the oxidation or corrosion. Use the copper or aluminum if you need conductive particles and the quartz if conductive particles are not required.

11b) DeoxIT® Grease Description

DeoxIT® Grease Type M260 - Mineral-based preparation.

Excellent lubrication, good wear resistance, excellent oxidation (galvanic corrosion) protection and good dripping-point characteristics.

Operating temperatures: -40°C to 260°C

DeoxIT® Grease Type L260 - Lithium-based preparation.

Good lubrication, excellent wear resistance, excellent pressure resistance, excellent oxidation (galvanic corrosion) protection, high dripping-point characteristics.

Operating temperatures: -40°C to 260°C.

11c) DeoxIT® Grease with and without particles

Copper particles - Use where conductive particles are needed to assist in oxide breakup and where good lubrication and abrasion are required.

Example: disconnect switches or large connectors and relays.

Aluminum particles - Use where aluminum metals are involved; or in areas that two contacts will not touch and possibly short.

Example: aluminum rails, bolts, connectors.

No particles – Use where lubrication and protection of surfaces is important; soft, thixotropic grease.

Graphite particles – Use where excellent lubrication and heat transfer characteristics are vital; and heat absorption and dissipation is important.

Graphite/quartz – Use where good heat conduction is needed. Again, the particles will assist in oxide breakup and where good lubrication and abrasion are required. Same purpose as copper particles, but graphite/quartz particles will not conduct electricity, and the particles are finer than the copper particles.

Quartz - Use where nonconductive particles are required to assist with oxide breakup; and good lubrication and abrasion are required.

11d) DeoxIT® Grease electrical and mechanical uses

Electrical Applications: Antenna connections, battery terminals, buss bars, commutators, conductor rails, conductors, contactors, disconnects, drying and processing equipment, high amperage/high voltage applications, industrial electrical equipment (lifts, cranes, robotics, etc.), power tools, relays and switches (all heavy duty, knife, step, rotary, etc.), etc.

Electrical Example:

Applying the grease to an outdoor antenna contacts/connectors makes the connection electrically better (improved conductivity) and also if the connection needs to be maintained, mechanically it is much easier to un-screw and replace.

Mechanical Applications: Bearings (all types), doors (closures), drives (chain/sprockets), hatch closures, linear motion systems, plugs (threaded holes), rack & pinion assemblies, screw devices (jacks, etc.), slide bushings, sliding parts, tracks/guides/rails, threaded closures, worm gears, etc.

Mechanical Example:

If a threaded screw cover, say with a large diameter on equipment is oxidized or lightly corroded as to permit the cover to go on with difficulty, applying our grease will clean (deoxidize - chemically and with particles - physically) the connection and allow the cover to go on and off smoothly. This is especially important in areas with high humidity and salt air - big with the marine, coast guard and navy.

Recommended Applicators:

Spray Applicators:

(Nonflammable, non drip - quick dry, safe on plastics)

DeoxIT® D-Series **Part No. DN5MS-15** (14 g), **Part No. DN5S-6N** (163 g)

(Briefly flammable, until solvent evaporates, flushing action - slow dry)

DeoxIT® D-Series **Part No. D5S-6**, (142 g)

DeoxIT® L260 (Lithium-based) Grease Jar Applicators:

DeoxIT® Grease, no particles, jar	Part No. L260-N1 , 28 g
DeoxIT® Grease, no particles, jar	Part No. L260-N8 , 226 g
DeoxIT® Grease, no particles, cartridge	Part No. L260-N2C , 50 g
DeoxIT® Grease, no particles, tube	Part No. L260-N8TP , 226 g
DeoxIT® Grease, copper particles, jar	Part No. L260-C1 , 28 g
DeoxIT® Grease, copper particles, jar	Part No. L260-C8 , 226 g
DeoxIT® Grease, copper particles, cartridge	Part No. L260-C2C , 50 g
DeoxIT® Grease, copper particles, tube	Part No. L260-C8TP , 226 g
DeoxIT® Grease, aluminum particles, jar	Part No. L260-A1 , 28 g
DeoxIT® Grease, aluminum particles, jar	Part No. L260-A8 , 226 g
DeoxIT® Grease, aluminum particles, cartridge	Part No. L260-A2C , 50 g
DeoxIT® Grease, aluminum particles, tube	Part No. L260-A8TP , 226 g
DeoxIT® Grease, quartz particles, jar	Part No. L260-Q1 , 28 g
DeoxIT® Grease, quartz particles, jar	Part No. L260-Q8 , 226 g
DeoxIT® Grease, quartz particles, cartridge	Part No. L260-Q2C , 50 g
DeoxIT® Grease, quartz particles, tube	Part No. L260-Q8TP , 226 g
DeoxIT® Grease, graphite particles, jar	Part No. L260-G1 , 28 g
DeoxIT® Grease, graphite particles, jar	Part No. L260-G8 , 226 g
DeoxIT® Grease, graphite particles, cartridge	Part No. L260-G2C , 50 g
DeoxIT® Grease, graphite particles, tube	Part No. L260-G8TP , 226 g
DeoxIT® Grease, graphite/quartz particles, jar	Part No. L260-GQ1 , 28 g
DeoxIT® Grease, graphite/quartz particles, jar	Part No. L260-GQ8 , 226 g
DeoxIT® Grease, graphite/quartz particles, cartridge	Part No. L260-GQ2C , 50 g
DeoxIT® Grease, graphite/quartz particles, tube	Part No. L260-GQ8TP , 226 g

DeoxIT® M260 (Mineral-based) Grease Jar Applicators:

DeoxIT® Grease, no particles, jar	Part No. M260-N1 , 28 g
DeoxIT® Grease, no particles, jar	Part No. M260-N8 , 226 g
DeoxIT® Grease, no particles, cartridge	Part No. M260-N2C , 50 g
DeoxIT® Grease, no particles, tube	Part No. M260-N8TP , 226 g
DeoxIT® Grease, copper particles, jar	Part No. M260-C1 , 28 g
DeoxIT® Grease, copper particles, jar	Part No. M260-C8 , 226 g
DeoxIT® Grease, copper particles, cartridge	Part No. M260-C2C , 50 g
DeoxIT® Grease, copper particles, tube	Part No. M260-C8TP , 226 g

Lint free Accessories:

Lint free cotton cloth	Part Nos. LFC-C/50
Lint free foam swabs, 1/4 x 3/4 x 4-1/2"	Part Nos. SWP-25, SWP-100

Lint free foam swabs, 1/8 x 1/2 x 2-3/4"
Pointer swabs, 3 inch, .5 mm to 2.3 mm Head
Nylon cleaning brush, 3-6 mm x 20 mm

Part Nos. SWPX-25, SWPX-100
Part Nos. SWPP-25, SWPP-100
Part Nos. AB-25, AB-100

12. Notes and additional information

Materials Compatibility: The key to the success of DeoxIT® products

CAIG is committed to insuring product compatibility with new and existing materials and products. To accomplish this, we invest considerable resources and time working with hundreds of companies in many industries to insure that our products perform exactly as promised. Small scale evaluation is always recommended for large scale applications, and we will be happy to assist you in working out the details of the process your company will ultimately use for optimum success and performance. Should you require help with this, contact CAIG Technical Support, tech@caig.com.

DATA SHEETS:

Most products on our website include DATA SHEETS (PDF) files for information on the products . They include; *Product Description, Features/Benefits, Formulation, Applicators, Product Selection Guide, Materials Compatibility, Shipping and other information.*

Examples:

1. DeoxIT® D5 D-Series Spray, Part No. D5S-6, **Data Sheet:** <http://store.caig.com/s.nl/it.A/id.1602/f>
2. DeoxIT® Gold G-Series Pen, Part No. G100P,
Data Sheet: <http://store.caig.com/s.nl/it.A/id.1554/f?sc=2&category=292>

NOTE:

1 Turn off, unplug¹ the device: Under certain circumstances (elevator controls, medical equipment, etc.), turning off the equipment is not possible. In these instances, use our nonflammable applicators.

13. CAIG INFORMATION PAGES:

1. DeoxIT® Mentor Cards
<http://store.caig.com/s.nl/it.l/id.73/f>
2. Audio/Video 9-1-1
<http://store.caig.com/s.nl/sc.17/category.-117/it.l/id.52/f>
3. Manufacturing/OEM 9-1-1
<http://store.caig.com/s.nl/sc.17/category.-117/it.l/id.61/f>
4. Why DeoxIT® Products are Different
<http://store.caig.com/s.nl/sc.17/category.-117/it.l/id.22/f>
5. Technical Info
<http://store.caig.com/s.nl/sc.18/f>
6. Knowledgebase, Forum and Feedback
<http://store.caig.com/s.nl/sc.12/f>

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