

When performance and reliability are essential, you need DeoxIT® products!

DeoxIT® Greases

Electrical/Mechanical for Consumer, Industrial & Marine !

Tech Info Guide



Performance Greases
for Improving and Protecting
Mechanical & Electrical
Parts & Equipment !

DeoxIT® Grease Type L260/L260D
DeoxIT® Grease Type SM22/SM22D
DeoxIT® Type L27 Marine Greases
DeoxIT® FaderGrease



CAIG®
1956 LABORATORIES, INC.



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TECHNICAL GUIDE

Introduction:

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

Why is it Unique:

Our technically advanced greases are formulated to last under the most demanding applications. Our L260D, SM22D and L27 Greases, with the infusion of DeoxIT® D-Series Dx100L into the formulation, provides an additional film on the metal surface to remove corrosion (without harming sensitive materials), improve conductivity and provide a moveable/flexible protective barrier. This is important when and if the grease is disturbed and separates from the metal surface. When the grease is first applied, the infused DeoxIT® Dx100L transfers to the metal and coats the entire surface; sealing and protecting the metal even, if the grease is separated from the surface (vibration or mechanical movement). *No other grease does this!*

Things to Remember:

- ✓ Greases are indispensable in providing good lubrication, wear resistance and protection from the environment.
- ✓ Greases can lose their effectiveness over time and separate from the surfaces,
- **Not DeoxIT® L260D, SM22D & L27 Greases**
- ✓ Infusion of the DeoxIT® D-Series (Dx100L) allows the fluid to mechanically bond to the metal surfaces. It coats and re-coats, even when surfaces are disturbed. It is a non-conductive fluid that enhances conductivity.
- ✓ DeoxIT® Greases not only lubricate and protect, they remove (without harming metal and plastics) oxidation & corrosion.
- ✓ **Mechanical applications;** DeoxIT® D-Series (Dx100L) fills in the microscopic gaps on the metal surfaces providing additional lubrication and protection.
- ✓ **Electrical applications;** DeoxIT® D-Series (Dx100L) fills in the microscopic gaps on metal surfaces on electrical contacts, providing lower contact resistance, increase contact surface area (conductivity), reliability & lower temperatures.
- ✓ Refer to DeoxIT® D-Series D100L technical bulletins for additional information, <https://caig.com/technical-data/>

DeoxIT® L260 and L260D Lithium-Based Greases

- ▶ **Precision Lubrication**
- ▶ **Oxidation and Corrosion Protection**
- ▶ **Wear & Pressure Resistance**
- ▶ **High Dripping Point**
- ▶ **Extreme Temperatures, -40 to 260°C**



Available With or Without Particles;
Copper, Aluminum, Quartz, Graphite, Teflon, Custom
(See page 16 for details)

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: L260: -40°C to 260°C.

DeoxIT® Grease Type L260D - Lithium-based preparation, infused with DeoxIT® D-Series Dx100L.

(WHY L260D is Different, Go to Pages 7-15)

Good lubrication, removes oxidation and corrosion, excellent wear resistance, excellent pressure resistance, excellent oxidation (galvanic corrosion) protection, high dripping-point characteristics.
Operating temperatures: L260D: -40°C to 260°C.

USES - Electrical:

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

USES - Mechanical:

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

DeoxIT® SM22 and SM22D High Performance Greases

- ▶ **High Stress/High Loads**
- ▶ **Shock Load Protection**
- ▶ **Low Wash Out & Oil Separation**
- ▶ **Corrosion, Wear & Water Resistant**
- ▶ **Extreme Temperatures, -40 to 240°C**

Available With or Without Particles;

Copper, Aluminum, Quartz, Graphite, Teflon, Custom
(See page 16 for details)

DeoxIT® SM22 Greases are used in the most demanding applications. Manufactured in semi-solid form for use as a combination cleaning, deoxidizing, protecting and lubricating preparation. These products contain a synthetic base oil in a lithium complex thickener system. Greases 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 precise lubrication.

DeoxIT® SM22D Greases also contain DeoxIT® Dx100L, The infused into the formulation providing an additional film on the metal surface to remove corrosion, improve conductivity and provides a moveable/flexible protective



barrier. This is important when and if the grease is disturbed and separates from the metal surface. When the grease is first applied, the infused DeoxIT® Dx100L transfers to the metal and coats the entire surface; sealing and protecting the metal even if the grease is separated from the surface (vibration or mechanical movement). **No other grease does this!**

DeoxIT® Grease Type SM22:

Lithium-based preparation, 5% molybdenum disulfide.
Operating temperatures: SM22: -40°C to 240°C.

DeoxIT® Grease Type SM22D:

Lithium-based preparation, 5% molybdenum disulfide, infused with DeoxIT® D-Series Dx100L.

Operating temperatures: SM22D: -40°C to 240°C.
(WHY SM22D is Different, Go to Pages 7-15)

DeoxIT® L27 Marine Greases

UNIQUE Marine Grease
for Improving and Protecting
Mechanical & Electrical Performance!

- ▶ Superior Lubrication
- ▶ Remove/Displace Corrosion
- ▶ Moveable/Flexible Protective Barrier
- ▶ Extreme Pressure/Waterproof
- ▶ Temperatures, -40 to 260°C

Available With or Without Particles;
Copper, Aluminum, Quartz, Graphite, Teflon, Custom
(See page 16 for details)

Ideal for high humidity, high salt atmospheres. Manufactured in semi-solid form for use as a combination cleaning, deoxidizing, protecting and lubricating preparation. DeoxIT® Greases are infused with DeoxiIT® D-Series Dx100L into the formulation providing an additional film on the metal surface to remove corrosion (without harming sensitive materials), improve conductivity and provides a moveable/flexible protective barrier. This is important when and if the grease is disturbed and separates from the metal surface. When the grease is first applied, the infused



DeoxIT® Dx100L transfers to the metal and coats the entire surface; sealing and protecting the metal even if the grease is separated from the surface (vibration or mechanical movement).
No other grease does this!

DeoxIT® L27-MM Greases improve performance of **mechanical** components that require precise cleaning, lubrication & protection.
Operating temperatures: L27-MM: -40°C to 260°C.

DeoxIT® L27-ME Greases improve performance of **electrical** contacts and connections subject to severe moisture, corrosion and contamination. Operating temperatures: L27-ME: -40°C to 260°C.

(WHY L27-MM & L27-ME are Different, Go to Pages 7-15)

DeoxIT® FaderGrease™

Lubricates and Protects
Conductive Plastic Faders & Controls

- ▶ *Formulated for Conductive Plastics*
- ▶ *Provides Additional Tactile Feel*
- ▶ *Maintains Optimum Signal Quality*
- ▶ *Replenishes Lubrication Lost*
- ▶ *Temperatures, -26 to 150°C*

DeoxIT® FaderGrease™ is a precision lubricating grease for moving contact surfaces (faders, switches, potentiometers and other mechanisms with sliding surfaces).

It replenishes lubrication lost on surfaces that have been cleaned with solvents or other cleaning solutions.

Over time these conductive plastic components lose their original lubrication from wear and/or repeated cleaning. Applying DeoxIT® FaderGrease will provide a long-lasting barrier against these types of contamination. The oil,



grease and acids will be displaced above the DeoxIT® Fader layer preventing contact with the plastic membrane.

Notes:

Use when you need more tactile feel, use the DeoxIT® FaderGrease after cleaning with DeoxIT® Fader F-Series.

Metal and/or Plastic?

Not sure if faders have plastic and/or metal components, we recommend first using DeoxIT® D-Series, Part No. D100S-2 (100% DeoxIT® spray), then DeoxIT® FaderGrease.

DeoxIT® L260D, SM22D and L27 Marine Grease - Electrical Application Example:

WHEN YOU NEED;

- ✓ **Oxidation and Corrosion Removal**
- ✓ **An Extra Layer of Protection!**

Our technically advanced DeoxIT® L260D, SM22D and L27 Marine greases are formulated to last under the most demanding applications.

With the infusion of DeoxIT® D-Series Dx100L into the formulation they provide an additional film on the metal surface to remove corrosion (without harming sensitive materials), improve conductivity and provides a moveable/flexible protective barrier.

This is important when and if the grease is disturbed and separates from the metal surface. When the grease is first applied, the infused DeoxIT® Dx100L transfers to the metal and coats the entire surface; sealing and protecting the metal even if the grease is separated from the surface (vibration or mechanical movement).

No other grease does this!

ELECTRICAL APPLICATION Heavy Duty Power Switch (no grease applied)

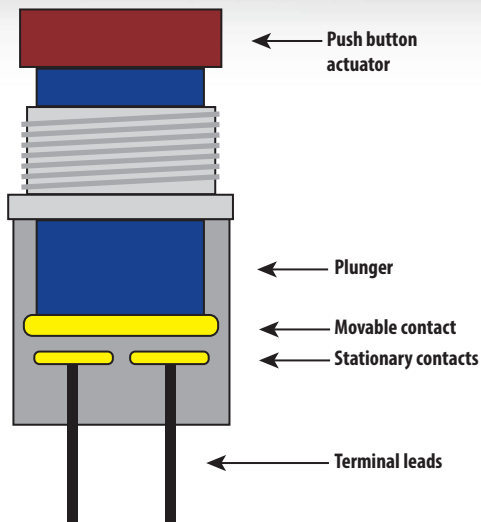
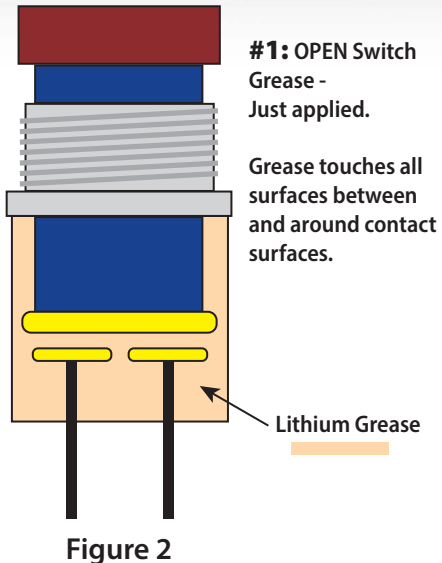


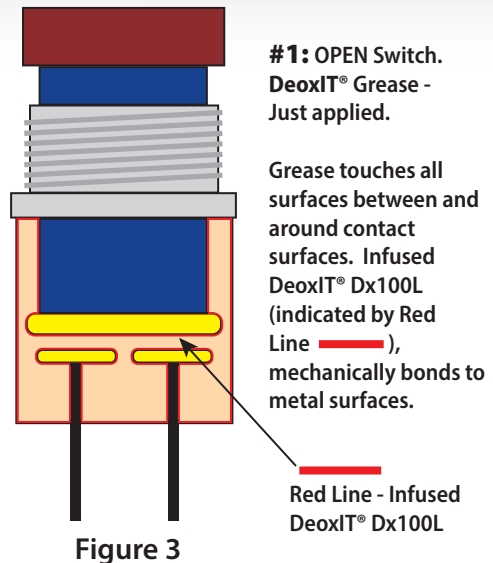
Figure 1

DeoxIT® L260D, SM22D and L27 Marine Grease - Electrical Application Example:

Heavy Duty Power Switch (lithium grease applied)



Heavy Duty Power Switch (DeoxIT® L260D, SM22D or L27 lithium grease *infused* with DeoxIT® D-Series Dx100L applied)



DeoxIT® L260D, SM22D and L27 Marine Grease - Electrical Application Example:

Heavy Duty Power Switch (lithium grease applied)

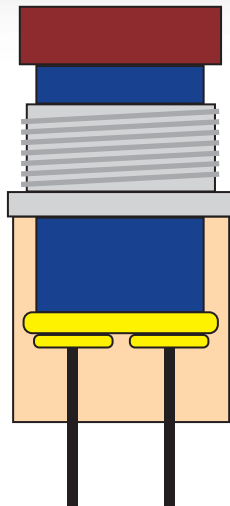


Figure 4

#1: CLOSED Switch
Grease -
Just applied.

Grease touches all
surfaces between
and around contact
surfaces.

Heavy Duty Power Switch (DeoxIT® L260D, SM22D or L27 lithium grease *infused* with DeoxIT® D-Series Dx100L applied)

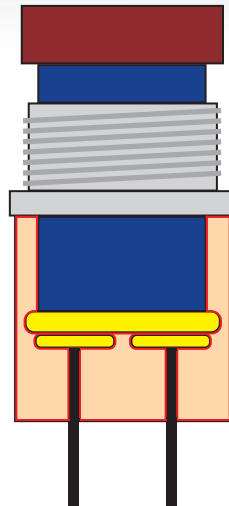



Figure 5

#1: CLOSED Switch.
DeoxIT® Grease -
Just applied.

Grease touches all surfaces
between and around contact
surfaces. Notice, infused
DeoxIT® Dx100L (indicated by
Red Line ),
mechanically bonds to metal
surfaces, *except* where
stationary and moving
contacts connect. DeoxIT®
D-Series Dx100L, moves away
from metal-to-metal contact,
then once switch **OPENS**,
DeoxIT® Dx100L re-coats
surfaces. DeoxIT® Dx100L also
fills in any gaps between the
irregular microscopic surfaces.

DeoxIT® L260D, SM22D and L27 Marine Grease - Electrical Application Example:

Heavy Duty Power Switch (lithium grease applied)

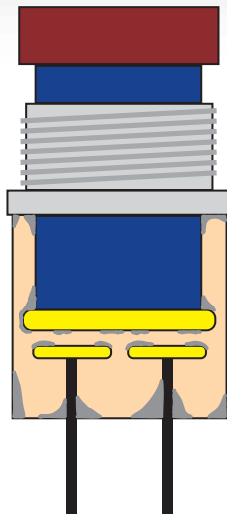


Figure 6

#2: OPEN Switch Grease -
Over short period of time.

Grease touches most
surfaces. Over time gets
pushed away from
contact surfaces.

Heavy Duty Power Switch (DeoxIT® L260D, SM22D or L27 lithium grease *infused* with DeoxIT® D-Series Dx100L applied)

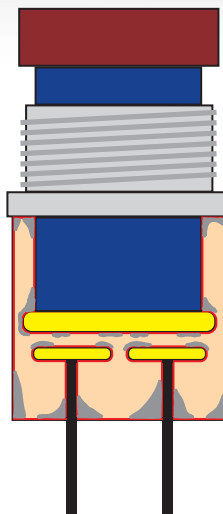


Figure 7

#2: OPEN Switch.
DeoxIT® Grease -
Over short period of time.

Grease touches most
surfaces. Over time gets
pushed away from contact
surfaces. Infused DeoxIT®
Dx100L still protecting
ALL metal surfaces.

DeoxIT® L260D, SM22D and L27 Marine Grease - Electrical Application Example:

Heavy Duty Power Switch (lithium grease applied)

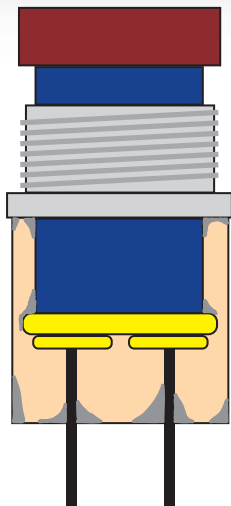


Figure 8

#2a: CLOSED Switch
Grease -
Over short period of
time.

Grease touches most
surfaces. Over time
gets pushed away from
contact surfaces.

Heavy Duty Power Switch (DeoxIT® L260D, SM22D or L27 lithium grease *infused* with DeoxIT® D-Series Dx100L applied)

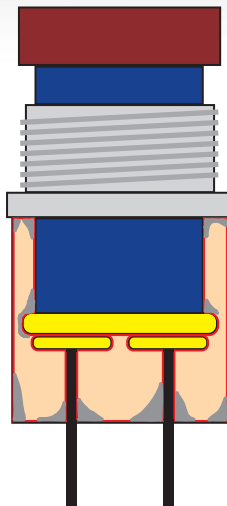


Figure 9

#2a: CLOSED Switch.
DeoxIT® Grease - Over
short period of time.

Grease touches most
surfaces. Over time gets
pushed away from
contact surfaces.
Infused DeoxIT® Dx100L
still protecting ALL
metal surfaces.

DeoxIT® L260D, SM22D and L27 Marine Grease - Electrical Application Example:

Heavy Duty Power Switch (lithium grease applied)

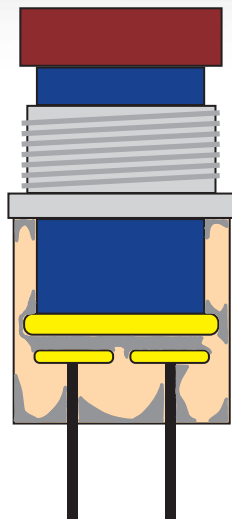


Figure 10

#3: OPEN Switch Grease -
Over long period of time.

Eventually grease is not
lubricating and protect-
ing surfaces.

Heavy Duty Power Switch (DeoxIT® L260D, SM22D or L27 lithium grease *infused* with DeoxIT® D-Series Dx100L applied)

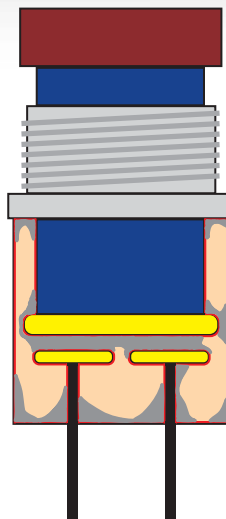
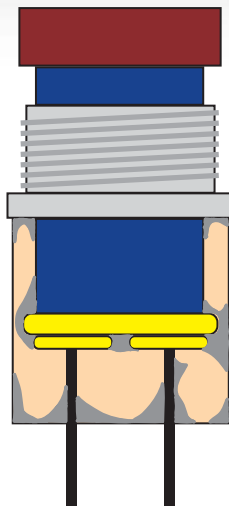


Figure 11

#3: OPEN Switch.
DeoxIT® Grease -
Over long period of time.

Eventually grease is not
lubricating and
protecting surfaces.
However, infused
DeoxIT® Dx100L still
protecting ALL metal
surfaces.

Heavy Duty Power Switch
(lithium grease applied)

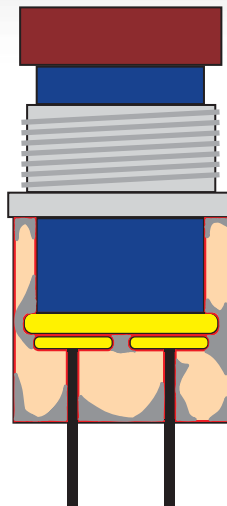


#3a: CLOSED
Switch Grease -
Over long period of
time.

Eventually grease is
not lubricating and
protecting surfaces.

Figure 12

Heavy Duty Power Switch
(DeoxIT® L260D, SM22D or L27 lithium grease
infused with DeoxIT® D-Series Dx100L applied)



#3a: CLOSED Switch.
DeoxIT® Grease - Over
long period of time.

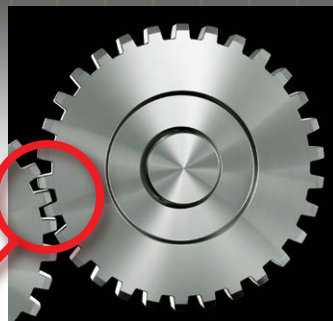
Eventually grease is not
lubricating and
protecting surfaces.
However, infused
DeoxIT® Dx100L still
protecting ALL metal
surfaces.

Figure 13

MECHANICAL APPLICATION

DeoxIT® L260D, SM22D
and L27 Marine Grease

- Grease applied to a Gear -



Standard grease applied

#1: Grease -
Just applied.

Grease touches ALL
surfaces.



DeoxIT® Grease Infused with
DeoxIT® D-Series Dx100L

#1: DeoxIT® Grease -
Just applied.

Grease touches all surfaces.
Infused DeoxIT® Dx100L
mechanically bonds with
metal surfaces.



Figure 14

DeoxIT® L260D, SM22D and L27 Marine Grease - Mechanical Application Example:

#2: Grease -
Over short period of time.

Grease touches
MOST surfaces.



#2: L260D Grease -
Over short period of time.

Grease touches most
surfaces. Infused DeoxIT®
Dx100L still protecting
ALL metal surfaces.

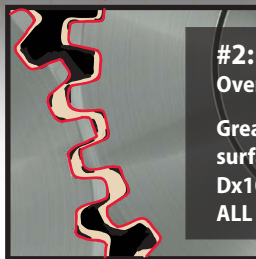


Figure 2

#3: Grease -
Over long periods of time.

Eventually grease is not
lubricating and protect-
ing surfaces.



#3: L260D Grease -
Over long period of time.

Grease touches some
surfaces. Infused DeoxIT®
Dx100L still protecting
ALL metal surfaces.



Figure 3

DeoxIT® Greases - Available with or without particles:

GREASE PARTICLE DESCRIPTIONS:

No particles: Maximum lubrication for relatively clean surfaces.

Copper particles: Copper particles assist in breaking up oxidation and corrosion. *Copper is conductive.*

Aluminum particles: Use when aluminum metals are involved. Use in areas that two contacts will not touch and possibly short. *Aluminum is conductive.*

Quartz particles: Quartz particles assist in breaking up oxidation and corrosion. *Quartz is nonconductive.*

Graphite particles: Graphite particles assist in heat stability and lubrication. *Graphite is excellent for heat transfer.*

Graphite and Quartz particles: Use when heat transfer, lubrication and assistance is needed in breaking up oxides and corrosion.

Teflon: For superior lubrication & protection of parts.

Custom formulation: Contact CAIG Team Member at info@caig.com

Link to Product Descriptions and Particles:

<https://caig.com/deoxit-grease-landing/>

<https://caig.com/new-marine-grease/>

<https://caig.com/fader-f-series/>

DeoxIT® Grease Product Sizes:

- ✓ **Squeeze Tube (sample/kit size), 2 grams**
- ✓ **Small Jar, 28/453 grams**
- ✓ **Squeeze Tube, 170/225 grams**
- ✓ **Caulking Tube, 225/396 grams**
- ✓ **Small Pail, 3.6 Kg**
- ✓ **Pail, 15.9 Kg**

MANUFACTURER DISCLAIMER:

To the best of our knowledge, the information contained herein is accurate. However, neither CAIG Laboratories, Inc., or any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist. All service performed on internal parts and equipment should be provided by qualified technicians.

COMPARISON CHART

Product	Heat Resistance	Wear Resistance	Water Resistance	Oxidation Resistance**	Oxidation Dissolving	High Stress High Loads	LWO & LOS*
DeoxIT® L260	VG	VG	VG	VG	G	G	G
DeoxIT® L260D	E	VG	E	E	VG	G	G
DeoxIT® SM22	E	VG	E	VG	G	E	E
DeoxIT® SM22D	E	VG	E	E	VG	E	VG
DeoxIT® L27-MM	E	VG	E	E	VG	G	G
DeoxIT® L27-ME	E	VG	E	E	VG	G	G
DeoxIT® FaderGrease	G	VG	G	VG	G	F	F
Lithium	G	G	G	F	P	F	F
Lithium Complex	VG	G	E	F	P	F	F
Complex	VG	G	E	F	P	F	F
Bentone Clay	VG	VG	G	G	P	F	G
Polyurea	VG	G	E	G	P	G	G
Polyrex™	E	VG	G	G	P	G	G

P = Poor F = Fair, G = Good, VG = Very Good, E = Excellent

* Low Wash Out and Low Oil Separation

** Oxidation of lubricants can produce sludge, varnish, gum and acid.

™ Polyrex is a trademark of Exxon/Mobil Corporation

SPECIFICATIONS

Product:	L260	L260D	SM22	SM22D	L27-MM	L27-ME	FaderGrease™
Oil Type	Synthetic Blend		Synthetic Blend		Synthetic Blend		Synthetic Blend
Thickener Type	Lithium	Lithium	Lithium Complex		Lithium	Lithium	Silicone
Thickener %	9.52	9.52	13.0	13.0	9.52	9.52	N/A
Molybdenum Disulfide	N/A	N/A	5%	5%	N/A	N/A	N/A
Flow Point, min.	-30°C	-30°C	-40°C	-40°C	-30°C	-30°C	-57°C
Viscosity, Kinematic, cSt @40°C	173	170	200	200	170	170	100
Viscosity Index	90	90	140	139	90	90	N/D
ASTM Dropping Point	260°C	285°C	265°C	260°C	260°C	285°C	240°C
Load Wear Index, kg (Timken OK load)	(40)	(40)	130	130	(40)	(40)	(18)
Bearing Water Washout, wt loss at 175°F	ND	ND	1.5%	1.5%	ND	ND	ND
Emcor Dynamic Bearing Rust, ASTM D6138	0,0	0,0	0,1	0,1	0,0	0,0	ND
DIN 51805 psi at 68°F and -22°F	ND	ND	0.9/3.0	0.9/3.0	ND	ND	ND
Copper Corrosion	1b	1b	1b	1b	1b	1b	N/A
Oil separation, wt	4.5%	4.5%	1.6%	1.8%	4.5%	4.5%	3.1
Flash Point	300°C	300°C	239°C	240°C	300°C	300°C	102°C
¹ Lowest/Best Operating Temperature (general)	-30°C	-30°C	-40°C	-40°C	-30°C	-30°C	-50°C
¹ Highest Operating Temperature (continuous duty)	200°C	200°C	240°C	242°C	200°C	200°C	200°C
Acid & Neutralization No. (mg KOH/g)	1.15	1.17	1.15	1.17	1.15	1.17	ND
Saponification No. (mg KOH/g)	2.79	2.81	2.79	2.81	2.79	2.81	ND
Electrical Conductivity (27°C)(10 ⁻¹² ohm ⁻¹ cm ⁻¹)	0.17	0.17	0.17	0.17	0.17	0.17	ND
² Dielectric Constant E _r -Tan δ (10 ⁻⁴)	2.75	2.81	2.75	2.81	2.75	2.81	ND
² Dielectric Strength E _d (kV/cm)	45.9	45.9	54.6	45.9	45.9	45.9	.45
² Insulation Resistance D (10 ⁻¹² ohm-cm)	5.9	5.9	5.5	5.5	5.9	5.9	217
Penetration, at 25°C	+ .50/- .03	+ .50/- .03	+ .50/- .03	+ .50/- .03	+ .50/- .03	+ .50/- .03	+ .50/- .03
NLGI	295	295	325	330	295	295	310
NLGI	2	2	1	1	2	2	2
Deoxidizer	No	Yes	No	Yes	Yes	Yes	No
Oxidation Inhibitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Corrosion Inhibitor	Yes	Yes	Yes	Yes	Yes	Yes	No
Texture	Short Fiber	Short Fiber	Stringy	Stringy	Short Fiber	Short Fiber	Greasy
Color	Amber	Amber/Red	Gray	Gray/Red	Amber	Amber/Red	White/Grey

¹ Temperatures are conservative values for reference only.

² NOTE: All values are relative to an ambient temperature of 26 to 28°C (approx. 80°F). Dielectric strength value is a statistical average taken from 10 measurements. Voltage measurement taken with 0.5% accuracy. Tests conducted on base material only. Greases with particles may have different measurements.

• *Our Customers are Our Best Advocates!*

Bose Corporation

DeoxIT® D-Series is an excellent product for removing oxidation and contamination from dirty switches & controls and reducing intermittent contact problems. We have been using CAIG products with great success for over 40 years.

Diebold, Incorporated

We have been using CAIG products since 1980 on our automated teller machines to help ensure reliable performance.

General Electric

We were having trouble with edge connectors in our manufacturing environment until we tried DeoxIT® Gold Wipes great product.

Honeywell Inc.

CAIG's DeoxIT® D-Series is great stuff. We use it on feedback slidewires, edge connectors, & relay contacts in industrial process controls.

Rane Corporation

People call me daily asking for recommendations for cleaners and lubricants. Most everyone has tried something less than DeoxIT®, and after using what we authorize, the results are always positive, sometimes bordering on miraculous.

Tektronix

We use DeoxIT® Gold Wipes to protect virgin edge connectors, DeoxIT® D-Series contact cleaner to eliminate intermittent problems on primitive tin-to-tin connectors (which tend to vibrate) and will be using DeoxIT® Gold in the field for gold connectors excellent products.

Xerox Corporation

Corrosion problems on very sensitive connectors have been an annoying problem for us. We have tried many products without success until we tried CAIG's DeoxIT® D-Series and DeoxIT® Gold. They are the only products that have worked perfectly. We highly recommend them.

American Airlines

Amtrak

Black & Decker

BMW

Boeing

Bombardier

Bose

Caterpillar

Crown Lift Trucks

Daktronics

Defense General

Delta Airlines

Diebold

Emerson Electric

FAA

Federal Express

Ford

Foxconn

General Dynamics

General Atomics

Google

Harley Davidson

Harman Kardon

Hewlett-Packard

Honda

Honeywell

Ingersoll Rand

Intel

Inventec Corp.

Jet Propulsion Labs

John Deere

Johnson Controls

L-3 Communications

Logitech

McIntosh Labs

Medtronic

Microsoft

NASA

Northrop Grumman

Peavey Electronics

Philips Medical

Pratt & Whitney

Rane Corporation

Raytheon

Roland

Schindler Elevator

Switchcraft

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CAIG Bulletin: C-CDG-24, rev. 3.0

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