The Fleet's First Choice

CL-20 Guide Pin Kits Double Guide Pin Life

A-Line has re-engineered air disc caliper guide pin kits for continuous lubrication, higher thermal resistance, longer life and cost savings.

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Seized guide pins that cause caliper failure can now be a thing of the past.

The CL-20 guide pin kit is a systematic approach to optimizing air disc guide pin kit components so they can receive continuous lubrication during preventive maintenance intervals.

This patent-pending process withstands higher heat, more abrasive environments, and provides up to 20 times the volume of original lubrication during the caliper's lifetime.

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• DOUBLES PIN LIFE

- UP TO 20 X GREASE
- 50% SAVINGS

• MADE IN USA

CONTINUOUS LUBRICATION GUIDE PIN KITS

CL-20 GUIDE PIN KITS SOLVE RUSTED, SEIZED GUIDE PIN PROBLEMS, INCREASE CALIPER LIFE

THE PIN FAILURE PROBLEM

Air disc caliper guide pins become "tarred" when an air disc caliper's high heat of 1,000° F (540° C) and torque of 15,000 lb-ft. cause lubrication starvation that results in restriction of the caliper's sliding motion on the caliper bracket.

This "tarring" is also known as polymerization of the grease, and happens when the grease breaks down under high heat and begins to crystallize.

If the caliper cannot slide, it cannot provide clamping force. This results in catastrophic failure of the brake system.



WHY GUIDE PINS FAIL

Guide pins fail because of three main factors:

- 1. OE-designed guide pin kits are designed for only one lubrication until caliper failure.
- OE grease is prone to polymerize (turn to tar) at 292° C or 557° F. The OE grease will have zero mass and lubricity remaining when heated to 473°C for 45 minutes.
- 3. The loss of lubrication and/ or penetration of the pin boot creates moisture in the pin cavity and rusts the guide pin.

FEATURES CUMPARISUN				
Component	A-LINE [®]	OE Kit	Aftermarket Kit	
Guide Pin Kit	CL-20 Kit provides continuous lubrication at preventative maintenance (PM) cycles with up to 20 times the grease volume over the life of the guide pin.	Designed for one time lubrication only.	Designed for one time lubrication only.	
Sealing Cap	Engineered with integrated hydraulic stop valve to allow continuous lubrication during PM cycles.	Designed to prevent continuous lubrication.	Designed to prevent continuous lubrica- tion.	
Guide Pins	Engineered with three radial grease supply grooves to efficiently supply grease across the face of the pin and bushing assembly.	No supply grooves. Inefficient lubrication supply to pin and bushing assembly.	No supply grooves. Inefficient lu- brication supply to pin and bushing assembly.	
Lubrication Directional Plug	Engineered to direct lubrication to the pin's radial supply grooves, while filling cavity and preventing gaseous lock out.	None included	None included.	
Rubber Pin Boots	Engineered to withstand temperatures of 300° C (572°F) to withstand high temp failure.	Engineered to 150° to 200°C. Prone to high temp failure.	Engineered to 150°C. Prone to high temp failure.	
Guide Pin Grease	A-LINE MAX-A-SIL 998 high temp Silicon/ PTFE synthetic designed specifically for air disc caliper pins.	PAO/lithium soap hydrocarbon grease designed for low to medium temps.	Clay/hydrocarbon grease designed for low to medium temps.	
	A-LINE MAX-A-SIL 998 engineered to with- stand mass loss onset at temperatures of 537°C (998°F).	Tested to mass loss onset at 339°C (642°F).	Tested to mass loss onset at 283°C (542°F).	
	A-LINE MAX-A-SIL 998 engineered to initiate thermal event onset at temperatures exceeding 300°C (572°F).	Tested to thermal event onset at 239°C (462°F).	Tested to thermal event onset at 207°C (405°F).	

FEATURES COMPARISON

WHICH OF THESE SEIZED CALIPERS WAS THE LEAST COSTLY?

A seized caliper causes the pad to continuously ride against the rotor generating heat in excess of 2,000° F.

A talented driver knows the feel of a dragging wheel, and knows its time to pull over. But what then?

Here's the real costs of a seized caliper:

- **Delayed delivery:** Your customer satisfaction suffers right along with your ability to make money while your vehicle is stuck roadside.
- **Roadside Service:** It's the quickest way to get you on your way, but you need some-one who knows air disc brakes, has the equipment, and it is extremely costly.
- **Towing:** Towing your vehicle to a repair facility that has the parts and equipment for the job will get you on your way, but it will cost a lot of time and money.
- **Ignore it:** Ignore the problem while the caliper causes padto-rotor contact to generate up to 2,000° of heat. Then you can really watch profits go up in smoke.









B. The guide pins have been engineered with three radial grease grooves to provide grease along the full face of the bushing and pin.

The entry ends of the pin have also been grooved to direct grease into the radial channels. A grease dam has been engineered at the boot end. This grease dam creates the back pressure necessary to operate the hydraulic stop valve.

E. A-LINE MAX-A-SIL 998[™] is a Silicon/Teflon synthetic grease specifically designed for air disc caliper guide pin applications.

A. The guide pin sealing cap has an integrated hydraulic stop valve that allows grease to be introduced into the guide pins during Preventive Maintenance (PM) cycles, while avoiding over-greasing. C. A-LINE engineered an aluminum Lubrication Directional Plug to fill the deep cavities in the long guide pins. Without these plugs, the cavities would fill with excessive grease that could result in gas-locks in the caliper boots.

THE A-LINE CL-20 GUIDE PIN KIT SOLUTION

A-LINE has engineered the solution to premature guide pin failure. CL-20 uses a system of lubrication components that are designed to work with our new MAX-A-SIL 998 synthetic high temp grease specifically designed for air disc calipers.

D. A-LINE High Temp Guide

peratures of 300°C (572°F)

- double the temperature

pin boots withstand tem-

of some OE boots.

THE CL-20 system consists of

these components:

- A. Sealing cap with integrated hydraulic stop valve.
- B. Radial grooved guide pins to provide full-face lubrication
- C. A Lubrication Directional Plug
- D. High thermal resistant silicon

rubber guide pin boots.

E. A-LINE's MAX-A-SIL 998 air disc caliper pin grease.

These components are included in a full OE-grade guide pin kit that includes long and short guide pin bushing (pictured above) and long short guide pin bolts and 10 grams of grease (not pictured).

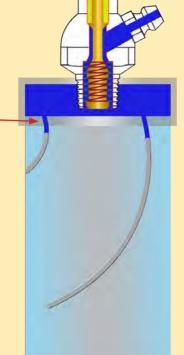
HOW THE CL-20 KITS WORK TO CONTINUOUSLY LUBRICATE YOUR CALIPERS

1. Grease is introduced into the grease zerk.

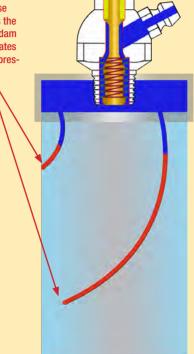


2. Grease fills the guide pin cavity and enters the spiral grooves in the guide

pins.



3. Grease reaches the grease dam and creates a back pressure

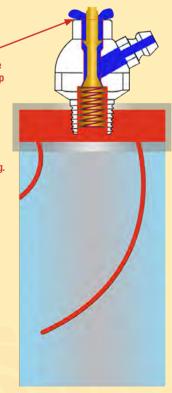


When used with A-LINE MAX-A-SIL 998™ Silicon/Teflon air disc grease, the CL-20 kit provides long-lasting lubrication across the face of the guide pin bushing repeatedly throughout the life of the caliper.

This engineered system is designed to provide up to 20 times more lubricatin than OE-designed kits throughout the life of the caliper. 4. Back pressure activates hydraulic stop valve. — A pop-up valve notifies the tech to cease adding grease.

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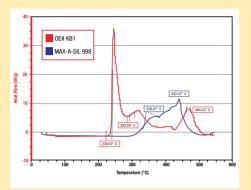
5. Once activated, the hydraulic stop valve causes grease to be redirected through the pop-up valve to prevent over-greasing.



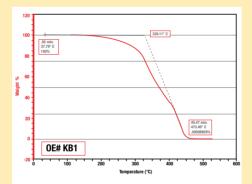


MAX-A-SIL 998[™] OUTPERFORMS OE CALIPER GREASES IN TEMPERATURES UP TO 998• F

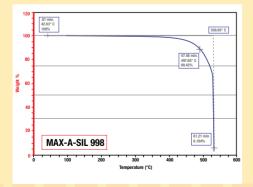
nlike OE hydrocarbon greases that liquify, polymerize and turn to tar in low temperatures, A-LINE® MAX-A-SIL 998™ Silicon/Teflon grease maintains its lubricity long after



OE grease (red) reaches its first exothermic peak for tarring at 237°C (458°F), compared to A-LINE MAX-A-SIL 998 (blue) that doesn't begin tarring until 432°C (810°F).



OE grease loses all mass after 45 minutes of exposure to temperatures reaching 473°C (883° F). Under high temp exposure no lubrications remains.



A-LINE MAX-A-SIL 998 maintains almost 90% of mass after 47 minutes of exposure to temps reaching 498°C (928°F). This is ideal for longer life and continuous lubrication during PMs.

the competition will cause caliper guide pins to seize.

The photos below show the OE Sample and MAX-A-SIL 998™ in a side-by-side comparison in tem-



539° C 998°F MAX-A-SIL outperforms OE sample

peratures from 150°C to 539°C (or 998°F). Notice that the MAX-A-SIL 998™ maintains is lubricity through the highest wheel end temps.

This Silicon/Teflon formulation is specifically designed for air disc caliper guide pin applications.

Used in conjunction with the A-LINE[®] CL-20 continuous lubrication guide pin kit, MAX-A-SIL 998™ doubles guide pin life.

See the comparison video at **www.a-lineairdisc.com**.



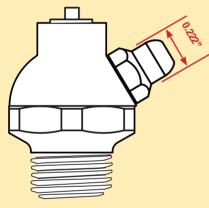
KEEP YOUR CL-20 KITS PERFORMING THEIR BEST WITH THESE TOOLS AND TIPS

DON'T MIX LUBRICANTS

Mixing lubricants with your new CL-20 continuous lubrication kit can cause premature failure of your air disc caliper guide pins.

Even though MAX-A-SIL 998™ is engineered to withstand temperatures up to 539°C (998°F), if it is mixed with a hydrocarbon petroleum-based grease, or other incompatible lubricants, it can have undesirable effects.

Make sure you have a dedicated grease gun. For vehicles traveling



ALCL20-200 comes with Bullet head grease fitting

to other maintenance facilities, use the A-LINE® ALCL20-200 kit that comes with a bullet head grease fitting. This fitting will not receive grease from standard grease zerk couplings.

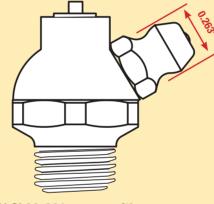
The bullet head fitting is uniquely matched to A-LINE's ALCK-BZH11 bullet head coupling which will not deliver grease into a standard grease fitting.

To maximize the life of your CL-20 kit, order the ALCL20-200 kit with ALCK-BHZ11 coupler.

Standard grease zerk fittings are available in the ALCL20-201 kit to be compatible with standard grease couplers. This



is only recommended for maintenance facilities that can insure lubricants won't be mixed.



ALCL20-201 comes with Standard head grease fitting



ALCK-BHZ11 bullet head coupler delivers only to bullet head fittings

Part #	Description	Comments	
ALCL20-200	CL-20 continuous lubrication guide pin kit for Bendix ADB22x and Knorr Bremse SK7 calipers. (Bullet head zerk)	Bullet head zerk prevents mixed lubrication from standard grease guns.	
ALCL20-201	CL-20 continuous lubrication guide pin kit for Bendix ADB22x and Knorr Bremse SK7 calipers. (Standard grease zerk)	Standard zerk allows grease from any grease gun.	
ALCK-BHZ11	Female grease coupling for standard grease gun. Fits bullet head grease zerks.	Will only supply grease to bullet head fittings.	
ALCG-MX998-14	14.1oz (410 gram) tube of A-LINE Max-A-Sil 998™ Silicon/Teflon grease for air disc caliper guide pin as- semblies.	For use with A-LINE CL-20 continuous lubrication guide pin kit (Part #ALCL20-200 ALCL20-201).	

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5620 West 51st Street Forest View, IL 60638

225 Sheldon Drive, Unit 13 Cambridge, Ontario N1T 1A1

Toll Free 844-4AIR DISC (424-7347)



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