

# A-LINE™

Engineered. Tested. Chosen.



## AIR DISC COMPONENT CATALOGUE 2024

# HOW TO USE THIS CATALOGUE

This catalog has been divided into two basic sections.

Pages 4 - 10 include our Quick Reference Section.

Determine your caliper using the caliper ID tips on page 4.

Then use the associated caliper Quick Reference to determine the pads, rotors, calipers, chambers and accessories part numbers you will need.

For more information about any of those components, see the specific component section, complete with OE and aftermarket crossovers.

If you still need assistance, call the A-LINE® technical support hotline at:

**1-844-424-7347, Ext. 3**

or use our electronic cross-reference at:

[www.a-lineairdisc.com](http://www.a-lineairdisc.com)

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# IDENTIFY YOUR AIR DISC CALIPER IN 2 EASY STEPS

Modern air disc caliper designs use eccentric lever technology. For this reason, most manufacturers look alike. But there are some easy methods of distinguishing one from the other.

Use the guide below to identify the retainer bar mechanism, and the ID tag.

If you still have questions, call the A-LINE Technical hotline at **1-844-424-7347, Ext. 3.**

## 1. LOOK AT THE PAD RETAINER BAR

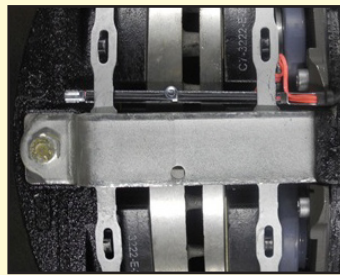
The main method is looking at the pad retainer bar. Each manufacturer uses a distinctly different style of retainer bar.

### Bendix



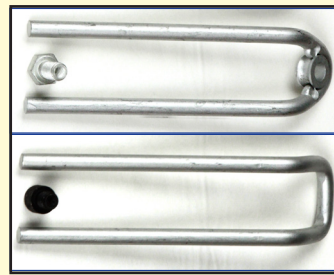
Bendix (Knorr Bremse) is the only manufacturer to use a solid retainer with a clevis pin. If you see this configuration, the caliper is Bendix. If found on a tractor or school bus it is an ADB22X. If on a trailer, it is an ADB22X, ADB22XLT, SK7 or ST7.

### Meritor



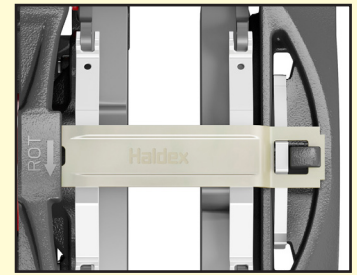
Meritor uses a solid retainer bar with a top-aligned bolt-down fastener. If you see this configuration on a tractor, it is an EX225 L2 or H2 (transit buses use H3). Trailers use L2 series calipers.

### WABCO



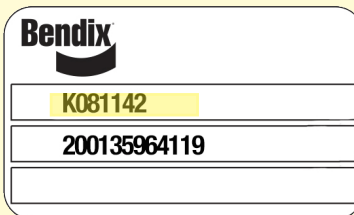
WABCO uses an open bar style retainer bar. If you see an open bar with an angled end and welded nut, this is a PAN 19 or PAN 22. If the open bar has a squared end and no welded nut, then this is a Maxx22-series caliper.

### Haldex



Haldex uses a snap-on solid bar as in the picture above. Older model calipers use a bolt on solid bar similar to Meritor. The Haldex caliper is easily distinguished by its guide pin covers on the outside of the caliper.

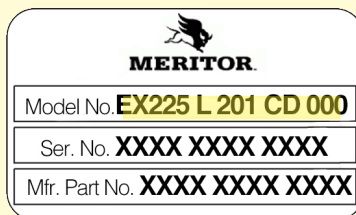
## 2. CHECK THE CALIPER TAG



A Bendix ADB22X tag will usually list the ADB22X or ADB22XLT on the tag.

If the caliper is from a transit bus or motorcoach it may be a SB7 or SN7 that use the same retainer bar.

Once you know the model, use the pad cross reference (page 14) to find your pad number.

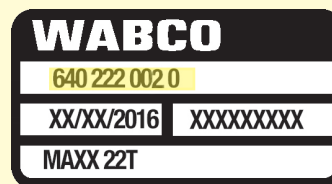


The Meritor tag will list one of three models:

EX225L 201 (or 202) L2  
EX225H 201 (or 202) H2  
EX225H 301 (or 302) H3

These are known as the L2, H2 and H3.

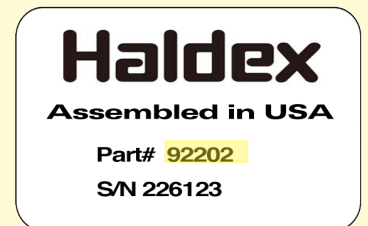
Use the pad cross reference (page 14) to find your pad number.



The WABCO tag will list one of several models and will start with 40, 040 or 640.

**PAN Series**  
40 175 092 (or 093) **PAN 17**  
40 195 038 (or 037) **PAN 19**  
40 225 036 (or 037) **PAN 22**

**Maxx 22 Series**  
640 322 050 (or 051) **MaxxUS 22**  
640 222 002 (or 001) **Maxx 22T**



The Haldex tag will list only a part number and serial number.

Please call your A-LINE representative with this information.

# QUICK REFERENCE: BENDIX-STYLE, KNORR BREMSE

## ADB22x, ADB22xLT, SK7

| COMPONENT  | DESCRIPTION   |  | REPLACES                   | A-LINE #   | TRUCK       | TRAILER | PAGE # |    |
|--|---|--|----------------------------|--|-------------|---------|--------|----|
| <b>Caliper</b>   | ADB22x<br>0-degree<br>Axial Mount   | SAF Holland<br>Axles 2009-<br>2017                         | 2 holes side mount RH      | 5400101100 /<br>03080005901Z / K012341<br>K012633K50 | ATC-AD2-001 |         | 26     |    |
|  |   |  | 2 holes side mount LH      | 5400101200 /<br>0308000601Z / K012342<br>K012633K51  | ATC-AD2-002 |         | 26     |    |
|  | ADB22x<br>0-degree<br>Axial Mount   | Hendrickson<br>Axles 2009-<br>2017                         | 3 holes side mount RH      | 802984 / K113887X /<br>S-29152-14                    | ATC-AD2-003 |         | 26     |    |
|  |   |  | 3 holes side mount LH      | 802985 / K113888X /<br>S-29152-15                    | ATC-AD2-004 |         | 26     |    |
|  | ADB22xLT<br>0-degree Axial<br>Mount   | Hendrickson<br>Axles 2018 -<br>Present                     | 3 holes side mount RH      | K149714 / K128828SC /<br>S-33647-3                   | ATC-AD2-011 |         | 26     |    |
|  |   |  | 3 holes side mount LH      | K149715 / K128829SC /<br>S-33647-2                   | ATC-AD2-012 |         | 26     |    |
|  | ADB22x 12-de-<br>gree Axial Mount   | All makes<br>(except<br>Freightliner /<br>Western Star)    | 3 holes side mount RH      | K081142 / K109961X                                   | ATC-AD2-005 | ✓       |        | 26 |
|  |   |  | 3 holes side mount LH      | K081143 / K109962X                                   | ATC-AD2-006 | ✓       |        | 26 |
|  | ADB22x<br>12-degree Radial<br>Mount   | Freightliner /<br>Western Star                             | 3 holes bottom mount<br>RH | K081256 / K109957X                                   | ATC-AD2-007 | ✓       |        | 26 |
|  |   |  | 3 holes bottom mount<br>LH | K081257 / K109958X                                   | ATC-AD2-008 | ✓       |        | 26 |
|  | <b>Brake Pad</b>  | Resilient Graphic Carbon 23K axle set 4 pads plus hardware |                            | K070796 / K129272 /<br>K129276                       | ALP1369-KZ3 | ✓       | ✓      | 14 |
|  |   | Resilient Graphic Carbon 26K axle set 4 pads plus hardware |                            | K109113  | ALP1369-KZ6 | ✓       | ✓      | 14 |
| Resilient Graphic Carbon 29K axle set 4 pads plus hardware |   |  | ALP1369-KZ9                | ✓  | ✓           | 14      |        |    |
| <b>Rotors</b>  | 430mm diameter, 138mm height, UL-style rotor with hardware  |  | 802081 / K038573           | ATR430138220   | ✓           | ✓       | 18     |    |
|  | 430mm diameter, 150mm height, UL-style rotor with hardware  |  | 802082 / K038574           | ATR430150220-2                                       | ✓           | ✓       | 18     |    |
|  | 430mm diameter, 160mm height, UL-style rotor with hardware  |  | 10020682 / 10020109        | ATR430160207   | ✓           |         | 18     |    |
|  | 432mm splined flat rotor with 40 piece hardware kit   |  | 802569 / 802083            | ATR432045000   | ✓           | ✓       | 18     |    |
|  | 432mm splined Precision-fit® flat rotor with dash ring bolt kit   |  | 802569 / 802083            | ATR432045000-1                                       | ✓           | ✓       | 18     |    |
| <b>Brake Chambers</b>                                      | Type 14 diaphragm service chamber   |  | K028039                    | ALSDT14  | ✓           |         | 22     |    |
|  | Type 16 diaphragm service chamber   |  | K028226                    | ALSDT16  | ✓           |         | 22     |    |
|  | Type 18 diaphragm service chamber   |  | K028022                    | ALSDT18  | ✓           |         | 22     |    |
|  | Type 24 diaphragm service chamber   |  | K028252                    | ALSDT24  | ✓           |         | 22     |    |
|  | 16/24 dual diaphragm emergency brake chamber  |  | K042457                    | ALSD1624   | ✓           | ✓       | 22     |    |
|  | 18/24 dual diaphragm emergency brake chamber  |  | K026451 / K043329          | ALSD1824   | ✓           | ✓       | 22     |    |
|  | 20/24 dual diaphragm emergency brake chamber  |  | K04196                     | ALSD2024   | ✓           | ✓       | 22     |    |
|  | 22/24 dual diaphragm emergency brake chamber  |  | K043148                    | ALSD2224   | ✓           | ✓       | 22     |    |
|  | 24/24 dual diaphragm emergency brake chamber  |  | K043270                    | ALSD2424   | ✓           | ✓       | 22     |    |
| <b>Accessories</b>   | Tappet and Boot Kit for ADB22x, ADB22xLT, SK7 caliper   |  | K092079                    | ALCK20076  |             |         | 35     |    |
|  | Guide pin replacement Kit for ADB22x, ADB22xLT, SK7 caliper   |  | K023768 / 803114           | ALCK20094  |             |         | 35     |    |
|  | Kit of 10 shear adjusting nuts and 10 rubber caps for ADB22x, ADB22xLT, SK7 caliper                         |  | K000029                    | ALCK1035   |             |         | 35     |    |
|  | A-Line CL-20 continuous lubrication guide pin kit for ADB22x, ADB22xLT, SK7 caliper (with bullet head zerk) |  | NA                         | ALCL20-200   |             |         | 35     |    |
|  | A-Line CL-20 continuous lubrication guide pin kit for ADB22x, ADB22xLT, SK7 caliper (with standard zerk)    |  | NA                         | ALCL20-201   |             |         | 35     |    |
|  | 14 oz tube of Max-A-Sil 998™ Silicon-PTFE lubricant for use with CL-20 Kits                                 |  | NA                         | ALCGMX998-14   |             |         | 35     |    |
|  | Bullet head zerk coupler for use with CL20-201  |  | NA                         | ALCK-BHZ11   |             |         | 35     |    |

# MERITOR-STYLE AIR DISC COMPONENTS

## EX225-H2, H3, ELSA 3

| COMPONENT   | DESCRIPTION  |   | REPLACES                                      | A-LINE #                                    | TRUCK        | TRAILER | PAGE # |
|---|--|---|---|---|--------------|---------|--------|
| Caliper   | EX225H2 ELSA3<br>0-degree<br>Axial Mount   | Mack / Volvo<br>steer axle                                  | 3 holes each side, 2 bar,<br>axial mount. RH  | EX225H218, EX225H228                        | ATC-AD32-035 | ✓       | 27     |
|   |  |   | 3 holes each side, 2 bar,<br>axial mount. LH  | EX225H217, EX225H227                        | ATC-AD32-036 | ✓       | 27     |
|   | EX225H2 ,<br>0-degree<br>Axial Mount   | PACCAR,<br>International<br>Steer, Drive<br>Axle            | 3 holes each side, 2 bar,<br>axial mount. RH  | EX225H201                                   | ATC-AD32-045 | ✓       | 27     |
|   |  |   | 3 holes each side, 2 bar,<br>axial mount. LH  | EX225H202                                   | ATC-AD32-046 | ✓       | 27     |
|   | EX225H2 ELSA3<br>12-degree<br>Radial Mount   | Mack / Volvo<br>drive axle                                  | 2 holes each side, 1 bar,<br>radial mount. RH | EX225H216, EX225H226                        | ATC-AD32-237 | ✓       | 27     |
|   |  |   | 2 holes each side, 1 bar,<br>radial mount. LH | EX225H215, EX225H225                        | ATC-AD32-238 | ✓       | 27     |
|   | EX225H3<br>0-degree<br>Axial Mount   | Transit Bus   | 3 holes each side, 2 bar,<br>axial mount. RH  | EX225H301                                   | ATC-AD33-041 | ✓       | 27     |
|   |  |   | 3 holes each side, 2 bar,<br>axial mount. LH  | EX225H302                                   | ATC-AD33-042 | ✓       | 27     |
|   | Brake Pad  | For ATC-AD32-045 and 046: 23K axle set 4 pads plus hardware |   | KIT2252H2DD /<br>KIT2252H2CG /<br>MMD1311AF | ALP1311-KZ3  | ✓       | 14     |
|   |  | For ATC-AD32-045 and 046: 26K axle set 4 pads plus hardware |   | KIT2252H2DD /<br>KIT2252H2CG /<br>MMD1311AF | ALP1311-KZ6  | ✓       | 14     |
| For ATC-AD33-041 and 042: 23K axle set 4 pads plus hardware |  | 2252H3BE / 2252H3CE /<br>MMD1323AF                          | ALP1323-KZ3                                   | ✓   | 14           |         |        |
| For ATC-AD33-041 and 042: 26K axle set 4 pads plus hardware |  | 2252H3BE / 2252H3CE /<br>MMD1323AF                          | ALP1323-KZ6                                   | ✓   | 14           |         |        |
| For ATC-AD32-035 and 036: 26K axle set 4 pads plus hardware |  | KIT2252HBMA9500;<br>KIT2252HBM7400                          | ALP1708-KZ6                                   | ✓   | 15           |         |        |
| For ATC-AD32-237 and 238: 26K axle set 4 pads plus hardware |  | KIT2252HBMA9500;<br>KIT2252HBM7400                          | ALP1708-KZ6                                   | ✓   | 15           |         |        |
| Rotors  | 430mm diameter, 160mm height, UL-style rotor with hardware   |   | 10020682 / 10020109                           | ATR430160207                                | ✓            | 18      |        |
|   | 433mm diameter, 131mm height, H-style rotor with hardware  |   | 68326014                                      | ATR433131217                                | ✓            | 18      |        |
|   | 433mm diameter, 143mm height, UL-style rotor with hardware   |   | 23.123642-002                                 | ATR434143216                                | ✓            | 18      |        |
|   | 434mm diameter, 143mm height, UL-style rotor with hardware   |   | 23.123647-015 /<br>23.123647-002              | ATR434143194                                | ✓            | 18      |        |
|   | 434mm diameter, 24-spline, F-style rotor with hardware   |   | 20428193 / 8513803 /<br>8510496               | ATR434045999                                | ✓            | 18      |        |
|   | 434mm diameter, 53mm height, F-style rotor with hardware   |   | 22024045 / 24121372 /<br>21856631 / 10041218  | ATR434053166                                | ✓            | 18      |        |
| Brake Chambers  | 18/24 dual diaphragm emergency brake chamber   |   | 1824HTND2-3628                                | ALSD1824                                    | ✓            | 22      |        |
|   | 20/24 dual diaphragm emergency brake chamber   |   | 2024HTND2-3626                                | ALSD2024                                    | ✓            | 22      |        |
|   | 24/24 dual diaphragm emergency brake chamber   |   | 2424HTND2-3629                                | ALSD2424                                    | ✓            | 22      |        |
| Accessories   | Boot kit for EX225 H2, H3 caliper  |   | KIT225201                                     | ALCK32501                                   |              | 35      |        |
|   | Guide pin and boot kit for EX225 H2, H3 caliper  |   | KIT225280                                     | ALCK60021                                   |              | 35      |        |
|   | A-Line CL-20 continuous lubrication guide pin kit for EX225 H2, H3 caliper (with bullet head zerk) |   | NA  | ALCL20-304                                  |              | 35      |        |
|   | A-Line CL-20 continuous lubrication guide pin kit for EX225 H2, H3 caliper (with standard zerk)    |   | NA  | ALCL20-305                                  |              | 35      |        |
|   | 14 oz tube of Max-A-Sil 998™ Silicon-PTFE lubricant for use with CL-20 Kits                        |   | NA  | ALCGMX998-14                                |              | 35      |        |
|   | Bullet head zerk coupler for use with CL20-304 kit   |   | NA  | ALCK-BHZ11                                  |              | 35      |        |

# MERITOR-STYLE AIR DISC COMPONENTS





## EX225-L2

| COMPONENT | DESCRIPTION             |   | REPLACES   | A-LINE #                                      | TRUCK        | TRAILER | PAGE # |    |
|-----------|-------------------------|---|--|---|--------------|---------|--------|----|
| Caliper   | EX225L2<br>Axial Mount  | Hendrickson<br>Axles 2009-<br>2017        | 2 M20 1.5 holes each side,<br>2 bar, axial mount. RH    | EX225L201, EX225L203                          | ATC-AD30-015 | ✓       | ✓      | 26 |
|           |                         |   | 2 M20 1.5 holes each side,<br>2 bar, axial mount. LH    | EX225L202, EX225L204                          | ATC-AD30-016 | ✓       | ✓      | 26 |
|           | EX225L2<br>Radial Mount | Freightliner,<br>Western Star,<br>Trailer | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. RH    | EX225L205, EX225L207,<br>EX225L209, EX225L210 | ATC-AD30-027 | ✓       | ✓      | 26 |
|           |                         |   | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. LH    | EX225L206, EX225L208,<br>EX225L210, EX225L212 | ATC-AD30-028 | ✓       | ✓      | 26 |
|           | EX225L2<br>Axial Mount  | Freightliner<br>Cascadia                  | 3 M20 2.0 holes ea. side, 2<br>bars, axial mount. RH    | EX225L257                                     | ATC-AD30-205 | ✓       |        | 26 |
|           |                         |   | 3 M20 2.0 holes ea. side, 2<br>bars, axial mount. LH    | EX225L258                                     | ATC-AD30-206 | ✓       |        | 26 |
|           | EX225L2<br>Radial Mount | Freightliner,<br>Western Star,<br>Trailer | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. RH    | EX225L275                                     | ATC-AD30-227 | ✓       | ✓      | 26 |
|           |                         |   | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. LH    | EX225L276                                     | ATC-AD30-228 | ✓       | ✓      | 26 |
|           | EX225L2<br>Radial Mount | Volvo 410mm<br>rotor                      | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. RH    | EX225L244, EX225L248,<br>EX225L270            | ATC-AD30-237 | ✓       |        | 26 |
|           |                         |   | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. LH    | EX225L243, EX225L247,<br>EX225L269            | ATC-AD30-238 | ✓       |        | 26 |
|           | EX225L2<br>Radial Mount | Volvo 410mm<br>rotor                      | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. RH    | EX225L250                                     | ATC-AD30-247 | ✓       |        | 26 |
|           |                         |   | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. LH  | EX225L249                                     | ATC-AD30-248 | ✓       |        | 26 |
|           | EX225L2<br>Axial Mount  | Truck, Trailer                            | 3 M20 2.0 holes each side,<br>2 bar, axial mount. RH  | EX225L266                                     | ATC-AD30-255 | ✓       | ✓      | 26 |
|           |                         |   | 3 M20 2.0 holes each side,<br>2 bar, axial mount. LH  | EX225L265                                     | ATC-AD30-256 | ✓       | ✓      | 26 |
|           | EX225L2<br>Axial Mount  | Trailer                                   | 3 M20 2.0 holes each side,<br>2 bar, axial mount. RH  | EX225L272                                     | ATC-AD30-295 |         | ✓      | 26 |
|           |                         |   | 3 M20 2.0 holes each side,<br>2 bar, axial mount. LH  | EX225L271                                     | ATC-AD30-296 |         | ✓      | 26 |
|           | EX225L2<br>Radial Mount | Volvo, Mack                               | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. RH  | EX225L220, EX225L222                          | ATC-AD30-437 | ✓       |        | 26 |
|           |                         |   | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. LH  | EX225L219, EX225L221                          | ATC-AD30-438 | ✓       |        | 26 |
|           | EX225L2<br>Radial Mount | Volvo 410mm<br>rotor                      | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. RH  | EX225L224, EX225L226                          | ATC-AD30-447 | ✓       |        | 26 |
|           |                         |   | 2 M20 1.5 holes ea. side, 1<br>bar, radial mount. LH  | EX225L223, EX225L225                          | ATC-AD30-448 | ✓       |        | 26 |
|           | EX225L2<br>Axial Mount  | Truck, Trailer                            | 3 M20 2.0 holes each side,<br>2 bar, axial mount. RH  | EX225L238                                     | ATC-AD30-465 | ✓       | ✓      | 26 |
|           |                         |   | 3 M20 2.0 holes each side, 2<br>bar, axial mount. LH  | EX225L237                                     | ATC-AD30-466 | ✓       | ✓      | 26 |
|           | EX225L2<br>Axial Mount  | Truck, Trailer                            | 3 M20 2.0 holes ea. side, 2<br>bars, axial mount. RH  | EX225L240, EX225L268                          | ATC-AD30-475 | ✓       | ✓      | 26 |
|           |                         |   | 3 M20 2.0 holes ea. side, 2<br>bars, axial mount. LH  | EX225L239, EX225L267                          | ATC-AD30-476 | ✓       | ✓      | 26 |

Meritor EX225L2 Calipers and Components continues, page 8



# MERITOR-STYLE AIR DISC COMPONENTS

## EX225-L2 (CONTINUED)

| COMPONENT               | DESCRIPTION  |                |   | REPLACES                                  | A-LINE #     | TRUCK | TRAILER | PAGE # |
|-------------------------|--|----------------|---|---|--------------|-------|---------|--------|
| Calipers<br>(continued) | EX225L2<br>Axial Mount   | Truck, Trailer | 3 M20 1.5 holes each side, 2 bar, axial mount. RH  | EX225L252, EX225L256                      | ATC-AD30-485 | ✓     | ✓       | 26     |
|                         |  |                | 3 M20 1.5 holes each side, 2 bar, axial mount. LH  | EX225L251, EX225L255                      | ATC-AD30-486 | ✓     | ✓       | 26     |
|                         | EX225L2<br>Axial Mount   | Trailer        | 3 M20 2.0 holes ea. side, 2 bars, axial mount. RH  | EX225L258                                 | ATC-AD30-495 |       | ✓       | 26     |
|                         |  |                | 3 M20 2.0 holes ea. side, 2 bars, axial mount. LH  | EX225L257                                 | ATC-AD30-496 |       | ✓       | 26     |
| Brake Pad               | Resilient Graphic Carbon 23K axle set 4 pads plus hardware   |                |   | 2252L2DA / 2252L2CD / MMD1370AF           | ALP1370-KZ3  |       | ✓       | 14     |
|                         | Resilient Graphic Carbon 26K axle set 4 pads plus hardware   |                |   |   | ALP1370-KZ6  |       | ✓       | 14     |
| Rotors                  | 430mm diameter, 53mm height, F-style rotor with hardware   |                |   | 10016195                                  | ATR430053000 | ✓     | ✓       | 18     |
|                         | 430mm diameter, 160mm height, UL-style rotor with hardware   |                |   | 10020682 / M44D20682                      | ATR430160207 | ✓     |         | 18     |
|                         | 434mm diameter, 53mm height, F-style rotor with hardware   |                |   | 22024045 / 24121372 / 21856631 / 10041218 | ATR434053166 | ✓     |         | 18     |
| Brake Chambers          | 18/24 dual diaphragm emergency brake chamber   |                |   | 1824HTND2-3628                            | ALSD1824     |       | ✓       | 22     |
|                         | 20/24 dual diaphragm emergency brake chamber   |                |   | 2024HTND2-3626                            | ALSD2024     |       | ✓       | 22     |
|                         | 24/24 dual diaphragm emergency brake chamber   |                |   | 2424HTND2-3629                            | ALSD2424     |       | ✓       | 22     |
| Accessories             | Boot kit for EX225 L2 caliper  |                |   | KIT225201                                 | ALCK32501    |       |         | 35     |
|                         | A-Line CL-20 guide pin kit for EX225L2 0° and 4° caliper with 102mm long guide pin. (With bullet head zerk). |                |   | KIT225276                                 | ALCL20-300   |       |         | 35     |
|                         | A-Line CL-20 guide pin kit for EX225L2 0° and 4° caliper with 102mm long guide pin. (With standard zerk)     |                |   | KIT225276                                 | ALCL20-301   |       |         | 35     |
|                         | A-Line CL-20 guide pin kit for EX225L2 12° caliper with 117mm long guide pin. (With bullet head zerk).       |                |   | KIT225277                                 | ALCL20-302   |       |         | 35     |
|                         | A-Line CL-20 guide pin kit for EX225L2 12° caliper with 117mm long guide pin. (With standard zerk).          |                |   | KIT225277                                 | ALCL20-303   |       |         | 35     |
|                         | 14 oz tube of Max-A-Sil 998™ Silicon-PTFE lubricant for use with CL-20 Kits                                  |                |   | NA  | ALCGMX998-14 |       |         | 35     |
|                         | Bullet head zerk coupler for use with CL20-304 kit   |                |   | NA  | ALCK-BHZ11   |       |         | 35     |

# WABCO-STYLE AIR DISC COMPONENTS

## PAN 17

| COMPONENT      | DESCRIPTION  |                    |   | REPLACES              | A-LINE #     | TRUCK | TRAILER | PAGE # |
|----------------|--|--------------------|---|-----------------------|--------------|-------|---------|--------|
| Caliper        | PAN 17 Axial Mount   | Hendrickson, Cozad | 3 M14 1.5 holes ea. side, 2 bars, axial mount. RH  | 640175073 / S-39094-R | ATC-AD4-001  |       | ✓       | 28     |
|                |  |                    | 3 M14 1.5 holes ea. side, 2 bars, axial mount. LH  | 640175072 / S-39094-L | ATC-AD4-002  |       | ✓       | 28     |
| Brake Pad      | Resilient Graphic Carbon 23K axle set 4 pads plus hardware                                   |                    |   | 12182212              | ALP1518-KZ3  |       | ✓       | 14     |
| Rotors         | 325mm diameter, 148mm height, U-style rotor with hardware                                    |                    |   | G0795180000 / CT826   | ATR325148173 |       | ✓       | 18     |
| Brake Chambers | 16/24 dual diaphragm emergency brake chamber   |                    |   | 925384010             | ALSD1624     |       | ✓       | 22     |
|                | 18/24 dual diaphragm emergency brake chamber   |                    |   | 925380010             | ALSD1824     |       | ✓       | 22     |
| Accessories    | Guide pin and boot kit for PAN 17 caliper  |                    |   | 12999758              | ALCK40005    |       |         | 35     |
|                | A-Line CL-20 continuous lubrication guide pin kit for PAN 17 caliper (with bullet head zerk) |                    |   | NA                    | ALCL20-400   |       |         | 35     |
|                | A-Line CL-20 continuous lubrication guide pin kit for PAN 17 caliper (with standard zerk)    |                    |   | NA                    | ALCL20-401   |       |         | 35     |
|                | 14 oz tube of Max-A-Sil 998™ Silicon-PTFE lubricant for use with CL-20 Kits                  |                    |   | NA                    | ALCGMX998-14 |       |         | 35     |
|                | Bullet head zerk coupler for use with CL20-401   |                    |   | NA                    | ALCK-BHZ11   |       |         | 35     |



## WABCO-STYLE AIR DISC COMPONENTS PAN 19-1

QUICK REFERENCE





| COMPONENT      | DESCRIPTION  |                   | REPLACES  | A-LINE #               | TRUCK       | TRAILER | PAGE # |
|----------------|--|-------------------|---|------------------------|-------------|---------|--------|
| Caliper        | PAN 19-1 Axial Mount   | Hendrickson Axles | 3 M18 1.5 holes ea. side, 2 bars, axial mount. RH | 6401951020 / S-39093-R | ATC-AD4-003 | ✓       | 28     |
|                |  |                   | 3 M18 1.5 holes ea. side, 2 bars, axial mount. LH | 6401951010 / S-39093-L | ATC-AD4-004 | ✓       | 28     |
| Brake Pad      | Resilient Graphic Carbon 23K axle set 4 pads plus hardware   |                   | 6401959332  | ALP1438-KZ3            |             | ✓       | 14     |
| Rotors         | 377mm diameter, 163mm height, UL-style rotor with hardware   |                   | CT832   | ATR377163220           |             | ✓       | 18     |
|                | 430mm diameter, 53mm height, F-style rotor with hardware   |                   | 10016195 / M44D76801                              | ATR430053000           |             | ✓       | 18     |
| Brake Chambers | 16/24 dual diaphragm emergency brake chamber   |                   | 925384010   | ALSD1624               |             | ✓       | 22     |
|                | 18/24 dual diaphragm emergency brake chamber   |                   | 925380010   | ALSD1824               |             | ✓       | 22     |
|                | 20/24 dual diaphragm emergency brake chamber   |                   | 925380104   | ALSD2024               |             | ✓       | 22     |
|                | 24/24 dual diaphragm emergency brake chamber   |                   | 925481041   | ALSD2424               |             | ✓       | 22     |
| Accessories    | Guide pin and boot kit for PAN 19-1, PAN 22-1 caliper  |                   | 6402259212  | ALCK40015              |             |         | 35     |
|                | A-Line CL-20 continuous lubrication guide pin kit for PAN 19-1, PAN 22-1 caliper (with bullet head zerk) |                   | NA  | ALCL20-402             |             |         | 35     |
|                | A-Line CL-20 continuous lubrication guide pin kit for PAN 19-1, PAN 22-1 caliper (with standard zerk)    |                   | NA  | ALCL20-403             |             |         | 35     |
|                | 14 oz tube of Max-A-Sil 998™ Silicon-PTFE lubricant for use with CL-20 Kits                              |                   | NA  | ALCGMX998-14           |             |         | 35     |
|                | Bullet head zerk coupler for use with CL20-402   |                   | NA  | ALCK-BHZ11             |             |         | 35     |

## WABCO-STYLE AIR DISC COMPONENTS PAN 22-1

| COMPONENT      | DESCRIPTION  |                             | REPLACES  | A-LINE #                   | TRUCK        | TRAILER | PAGE # |    |
|----------------|--|-----------------------------|---|----------------------------|--------------|---------|--------|----|
| Caliper        | PAN 22-1 Axial Mount   | Hendrickson Axles 2009-2017 | 3 M20 holes ea. side, 2 bars, axial mount. RH     | 6402250810 / S-33648-1     | ATC-AD4-005A | ✓       | 28     |    |
|                |  |                             | 3 M20 holes ea. side, 2 bars, axial mount. LH     | 6402250800 / S-33648-2     | ATC-AD4-006A | ✓       | 28     |    |
|                | PAN 22-1 Axial Mount   | IMT, Dexter, Ridewell Axles | 3 M16 1.5 holes ea. side, 2 bars, axial mount. RH | 6402250800 / S-33648-2     | ATC-AD4-005B |         | ✓      | 28 |
|                |  |                             | 3 M16 1.5 holes ea. side, 2 bars, axial mount. LH | 40225012 / 40225016        | ATC-AD4-006B |         | ✓      | 28 |
|                | PAN 22-1 Axial Mount   | SAF Holland Axles           | 2 M18 1.5 holes ea. side, 2 bars, axial mount. RH | 6402250810 / 3080006820    | ATC-AD4-005C |         | ✓      | 28 |
|                |  |                             | 2 M18 1.5 holes ea. side, 2 bars, axial mount. LH | 640-225-080-0 / 3080006720 | ATC-AD4-006C |         | ✓      | 28 |
| Brake Pad      | Resilient Graphic Carbon 23K axle set 4 pads plus hardware   |                             | 12999796 / 40225011                               | ALP9007-KZ3                |              | ✓       | 15     |    |
|                | Resilient Graphic Carbon 26K axle set 4 pads plus hardware   |                             |   | ALP9007-KZ6                |              | ✓       | 15     |    |
| Rotors         | 430mm diameter, 150mm height, UL-style rotor with hardware   |                             | CT807 / M44D76613                                 | ATR430150220               |              | ✓       | 18     |    |
|                | 430mm diameter, 53mm height, F-style rotor with hardware   |                             | 10016195 / M44D76801                              | ATR430053000               |              | ✓       | 18     |    |
| Brake Chambers | 16/24 dual diaphragm emergency brake chamber   |                             | 925384010   | ALSD1624                   |              | ✓       | 22     |    |
|                | 18/24 dual diaphragm emergency brake chamber   |                             | 925380010   | ALSD1824                   |              | ✓       | 22     |    |
|                | 20/24 dual diaphragm emergency brake chamber   |                             | 925380104   | ALSD2024                   |              | ✓       | 22     |    |
|                | 24/24 dual diaphragm emergency brake chamber   |                             | 925481041   | ALSD2424                   |              | ✓       | 22     |    |
| Accessories    | Guide pin and boot kit for PAN 22-1 caliper  |                             | 6402259212  | ALCK40015                  |              |         | 35     |    |
|                | A-Line CL-20 continuous lubrication guide pin kit for PAN 19-1, PAN 22-1 caliper (with bullet head zerk) |                             | NA  | ALCL20-402                 |              |         | 35     |    |
|                | A-Line CL-20 continuous lubrication guide pin kit for PAN 19-1, PAN 22-1 caliper (with standard zerk)    |                             | NA  | ALCL20-403                 |              |         | 35     |    |
|                | 14 oz tube of Max-A-Sil 998™ Silicon-PTFE lubricant for use with CL-20 Kits                              |                             | NA  | ALCGMX998-14               |              |         | 35     |    |
|                | Bullet head zerk coupler for use with CL20-402   |                             | NA  | ALCK-BHZ11                 |              |         | 35     |    |

# WABCO-STYLE AIR DISC COMPONENTS

## MAXX 22T, MAXXUS 22

| COMPONENT      | DESCRIPTION  |                                      | REPLACES  | A-LINE #               | TRUCK                               | TRAILER                             | PAGE # |
|----------------|--|--------------------------------------|---|------------------------|-------------------------------------|-------------------------------------|--------|
| Caliper        | Maxx22T Axial Mount  | Hendrickson Axles 2018 - Present     | 3 M20 holes ea. side, 2 bars, axial mount. RH    | 6402220080 / S-35973-R | ATC-AD4-007                         | <input checked="" type="checkbox"/> | 28     |
|                |  |                                      | 3 M20 holes ea. side, 2 bars, axial mount. LH    | 6402220070 / S-35973-L | ATC-AD4-008                         | <input checked="" type="checkbox"/> | 28     |
|                | MaxxUS 22 Radial Mount   | Freightliner, Navistar 201 - Present | 2 M20 holes each side, 2 bars, radial mount. RH  | 640322050              | ATC-AD4-009                         | <input checked="" type="checkbox"/> | 28     |
|                |  |                                      | 2 M20 holes each side, 2 bars, radial mount. LH  | 640322051              | ATC-AD4-010                         | <input checked="" type="checkbox"/> | 28     |
| Brake Pad      | Resilient Graphic Carbon 23K axle set 4 pads plus hardware   |                                      | 6402229272 / 6403229392   | ALP9007A-KZ3           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 15     |
|                | Resilient Graphic Carbon 26K axle set 4 pads plus hardware   |                                      | 6402229272 / 6403229392   | ALP9007A-KZ6           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 15     |
| Rotors         | 415mm diameter, 150mm height, UL-style rotor with hardware   |                                      | 6629056112 /  | ATR415150219           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 18     |
|                | 415mm diameter, 175mm height, U-style stud-mounted rotor   |                                      | S-37009-2 / S-41533-2   | ATR415175250           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 18     |
|                | 430mm diameter, 53mm height, F-style rotor with hardware   |                                      | 10016195 / M44D76801  | ATR430053000           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 18     |
| Brake Chambers | Type 16 diaphragm service chamber  |                                      | 423104710   | ALSDT16                | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 22     |
|                | Type 20 diaphragm service chamber  |                                      | 423555000   | ALSDT20                | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 22     |
|                | Type 24 diaphragm service chamber  |                                      | 423506001   | ALSDT24                | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 22     |
|                | 16/24 dual diaphragm emergency brake chamber   |                                      | 925384010   | ALSD1624               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 22     |
|                | 18/24 dual diaphragm emergency brake chamber   |                                      | 925380010   | ALSD1824               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 22     |
|                | 20/24 dual diaphragm emergency brake chamber   |                                      | 925380104   | ALSD2024               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 22     |
|                | 24/24 dual diaphragm emergency brake chamber   |                                      | 925481041   | ALSD2424               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 22     |
| Accessories    | Guide pin and boot kit for Maxx 22 caliper   |                                      | 6403229262  | ALCK40054              | <input type="checkbox"/>            | <input type="checkbox"/>            | 35     |
|                | A-Line CL-20 continuous lubrication guide pin kit for Maxx22T, MaxxUS 22 caliper (with bullet head zerk) |                                      | NA  | ALCL20-404             | <input type="checkbox"/>            | <input type="checkbox"/>            | 35     |
|                | A-Line CL-20 continuous lubrication guide pin kit forMaxx22T, MaxxUS22 caliper (with standard zerk)      |                                      | NA  | ALCL20-405             | <input type="checkbox"/>            | <input type="checkbox"/>            | 35     |
|                | 14 oz tube of Max-A-Sil 998™ Silicon-PTFE lubricant for use with CL-20 Kits                              |                                      | NA  | ALCGMX998-14           | <input type="checkbox"/>            | <input type="checkbox"/>            | 35     |
|                | Bullet head zerk coupler for use with CL20-404   |                                      | NA  | ALCK-BHZ11             | <input type="checkbox"/>            | <input type="checkbox"/>            | 35     |

# A-LINE™

The Fleet's First Choice



## CANADIAN-MADE WITH USA INGREDIENTS

Manufactured in Canada with USA materials, our brake pads are manufactured to the highest standards.

## DIFFERENT LOADS REQUIRE DIFFERENT FORMULATIONS

Not all heavy duty vehicles, loads or drivers are the same. So A-Line created different frictions to meet your needs.

We started with High Torque Fibers (HTFs) and added Modified Crosslinking Resins (MXRs) to resist extreme heat. Chief among these ingredients are Resilient Graphite Carbon (RGC).

This fiber is selected because it has the ability to withstand torque and extreme temps — ideal for braking!

That means A-Line pads can continue to deliver higher torque when you need it.

## BURNISHING STRIPS PERFECT BRAKE GEOMETRY

Noise and vibration are some of the leading causes of premature pad replacement.

A-Line brake pads are positive moulded and finished with microabrasive burnishing strips to seat the pad to the rotor. This creates a perfected brake geometry that reduces noise and vibration, extending your brake life.

BRAKE PADS

### STRATABOND® FOR SUPERIOR SHEAR STRENGTH

A-Line pads are built with a proprietary StrataBond® shear strength technology.

The secret to improved shear strength lies with stratified layers of encapsulated mechanical retention systems (EMRS), phenolic resin-based adhesive, a 3mm deep high-resin stabilizing layer, topped with a high-torque, low noise friction layer.

This improves shear strength up to 240% for high torque applications.

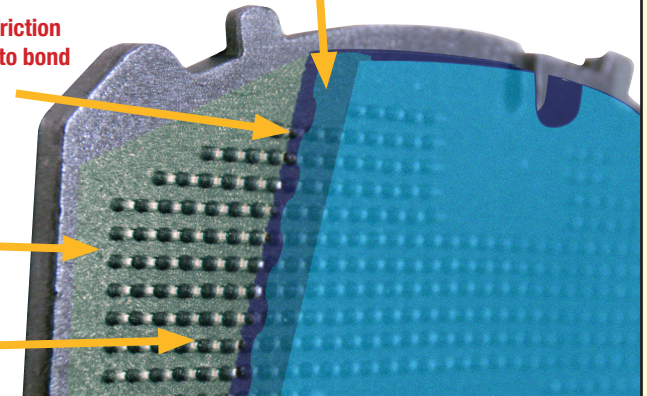
*\*The Mechanical Retention System may vary depending on pad style or friction grade.*

Low-noise, high-torque formulation cross links into Friction Stabilizing Layer.

Special high resin, high fiber Friction Stabilizer Layer is engineered to bond with the adhesive.

Phenolic resin-based thermal-set adhesive bonds the Retention System to the Friction Stabilizer Layer.

\*Encapsulated Mechanical Retention System (EMRS) provides anti-shear stability.



### A-Line Air Disc Hardware Meets OE Specifications Aftermarket Hardware Fails!

A-Line hardware is built to meet the rigors of high temperature and high torque.

The 10mm shear adjustment nut is engineered to shear off if it encounters more than 20 lb-ft of stress during caliper tappet adjustment.

A-Line shear nuts tested to within 1.24 lb-ft of OE samples, and were within OE specifications. Aftermarket shear nuts were nearly 10 lb-ft over the OE samples and out of spec by 38%.

Proper caliper diagnosis can only be conducted with A-Line or OE-grade shear nuts. Use of inferior shear nuts can result in brake failure!

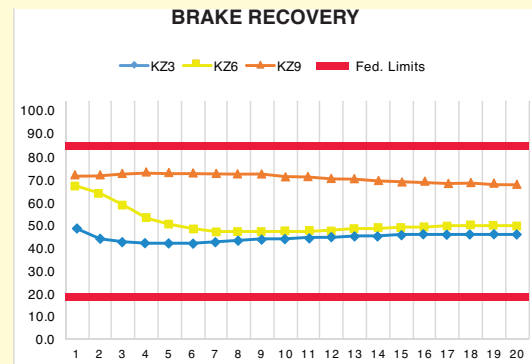
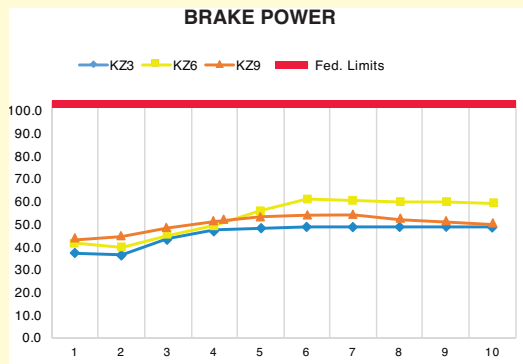


| Brand              | Test Spec (lb-ft) |
|--------------------|-------------------|
| OE Specifications  | 20 (-2)           |
| Original Equipment | 17.43             |
| A-Line             | 18.67             |
| Aftermarket        | 28.30             |

# A-LINE FRICTION TECHS AND SPECS

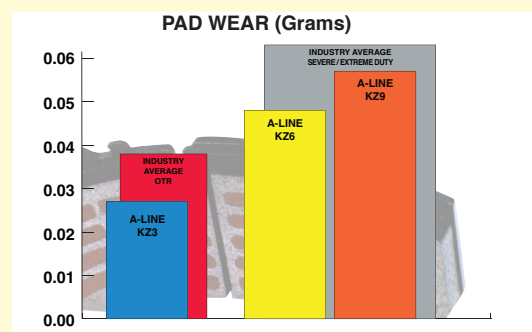
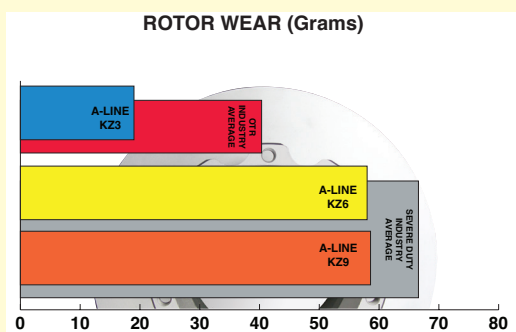
## Reduced Line Pressure for Increased Brake Safety

A-Line's formulations yield consistently low line pressures. This is ideal for stop-and-go, downhill or severe duty applications.



## Reduced Rotor and Pad Wear

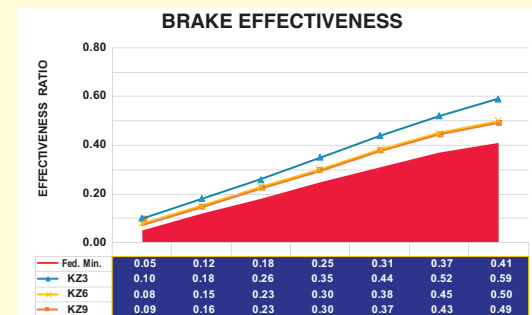
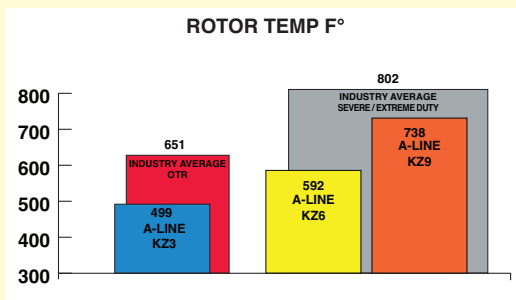
KZ series pads demonstrate significantly less rotor and pad wear. Rotor wear is reduced up to 68%, while pad wear is up to 33% less than industry average.



## Lower Wheel End Temps

FMVSS testing shows that A-Line's rotor temperatures are more than 150° F cooler than industry average.

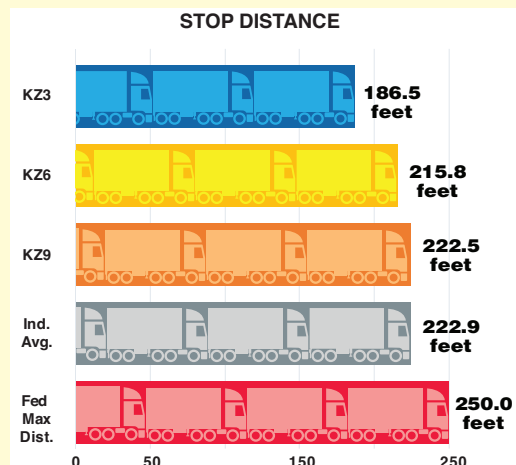
A-Line's air disc pads provide consistent brake effectiveness (BE) as shown in the graph to the right.



## KZ Series Air Disc Pads Provide Safer Braking

A-Line's KZ air disc pads have been formulated for safer stopping as shown in the graph to the right.

A-Line strives to achieve a BE rating that is well above Federal standards, while not over-torquing the friction.



| SPECS                | KZ3     | KZ6     | KZ9     |
|----------------------|---------|---------|---------|
| GAWR                 | 23,000  | 26,000  | 29,000  |
| Avg. Stroke          | 0.995"  | 1.573"  | 1.297"  |
| Brake Chamber        | T24     | T24     | T24     |
| Rolling Radius       | 19.6"   | 19.6"   | 19.6"   |
| Max. Torque          | 11,430  | 11,080  | 11,340  |
| Friction Coefficient | .465 FF | .472 FG | .485 FG |
| Hot Stop             | 744° F  | 800° F  | 942° F  |
| Temp. Range          | 667° F  | 716° F  | 743° F  |
| Specific Gravity     | 2.32    | 2.38    | 2.34    |

Testing: FMVSS 121(d) Approved  
SAEJ661 Chase

All A-Line product is independently tested by accredited testing facilities. FMVSS121 testing conducted by Greening Testing Laboratories, Detroit, MI, USA.

# A-LINE KZ SERIES AIR DISC PADS

## FORMULATED TO EXCEED OE SPECIFICATIONS

| Axle Load | 23,000 lb           |                     | 26,000 lb           |                     | 29,000 lb |     |
|-----------|---------------------|---------------------|---------------------|---------------------|-----------|-----|
| Terrain   |                     |                     |                     |                     |           |     |
|           | KZ3                 | KZ3                 | KZ6                 | KZ6                 |           |     |
|           | KZ3                 | KZ3                 | KZ6<br>(drive only) | KZ6<br>(drive only) |           |     |
|           | KZ3                 | KZ3                 | KZ6<br>(drive only) | KZ6<br>(drive only) |           |     |
|           | KZ3                 | KZ3                 | KZ6<br>(drive only) | KZ6<br>(drive only) |           |     |
|           | KZ3<br>(steer only) | KZ3<br>(steer only) | KZ6                 | KZ6                 |           |     |
|           | KZ3<br>(steer only) | KZ3<br>(steer only) | KZ6                 | KZ6                 |           |     |
|           | KZ3<br>(steer only) | KZ3<br>(steer only) | KZ6                 | KZ6                 |           |     |
|           |                     |                     | KZ6                 | KZ6                 |           |     |
|           |                     |                     | KZ6                 | KZ6                 |           |     |
|           |                     |                     | KZ6                 | KZ6                 | KZ9       | KZ9 |

BRAKE PADS

### BALANCE YOUR BRAKING

Use the above chart to balance your braking. Most steer axles are a lighter axle load rating than drive axles. Placing too high a friction rating on the steer axle will overwork the drive brakes.

A-LINE recommends using our premium-duty 23k for all axles rated up to 23k.

FOR SEVERE DUTY APPLICATIONS know your steer axle rating, if it is not

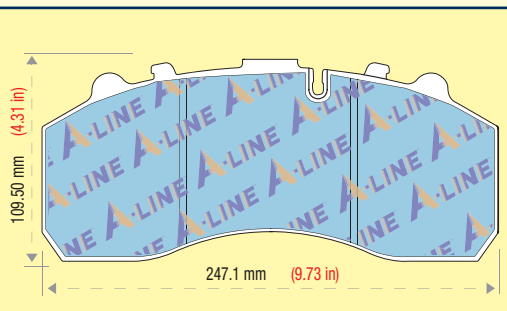
higher than 23,000, then **do not use a grade higher than KZ3 on the steer.** Best performance will come from balancing your severe service KZ6 on drive axles with KZ3 on steer axles.

**ALP1203-KZ**

Knorr Bremse  
SB7, SN7

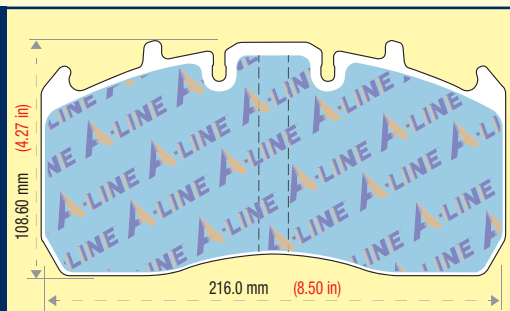
WVA: 29087, 29105,  
29106, 29108,  
29109, 29163,  
29179, 29201,  
29202, 29275

APS: Neoplan, Nova  
Prevost, Setra  
Van Hool

**ALP1370-KZ**

Meritor EX225 L2  
WVA: 29189

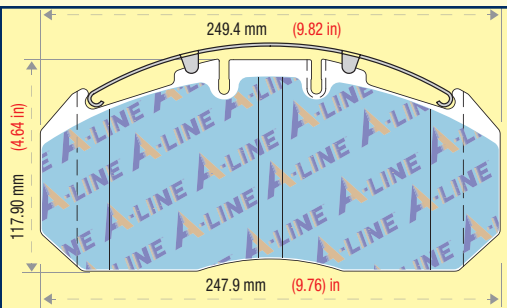
APS: Tractor, Trailer

**ALP1310-KZ**

Meritor D ELSA-2

WVA: 29131, 29156

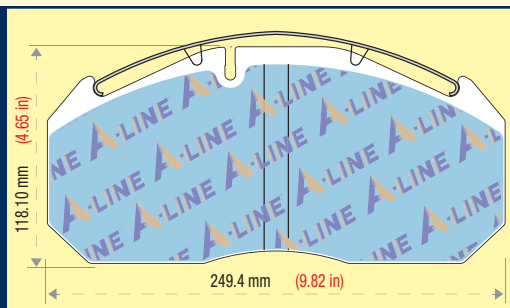
APS: MAN, Van Hool

**ALP1407-KZ**

Meritor D ELSA-1

WVA: 29030

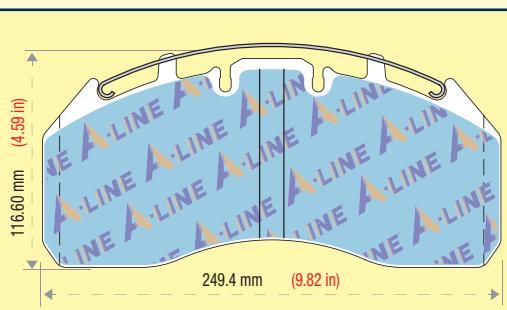
APS: MAN, Setra,  
VanHool

**ALP1311-KZ**

Meritor EX225 H2,  
EX+

WVA: 29187

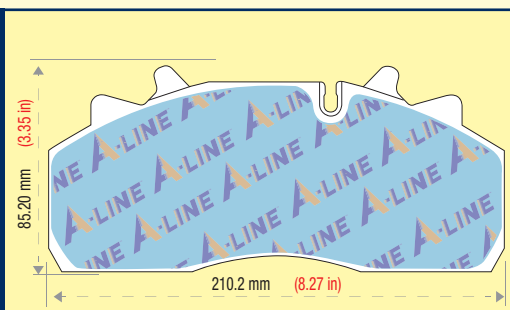
APS: MCI

**ALP1438-KZ**

WABCO PAN 19-1

WVA: 29126, 29159

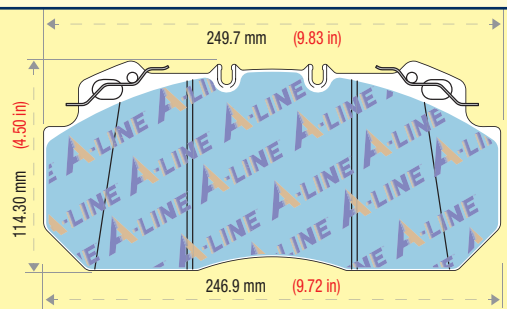
APS: Trailer Axles

**ALP1312-KZ**

Meritor D LISA

WVA: 29090

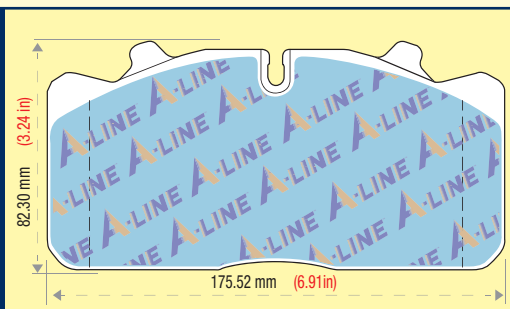
APS: MCI, Neoplan  
Prevost, Volvo

**ALP1518-KZ**

WABCO PAN 17

WVA: 29088

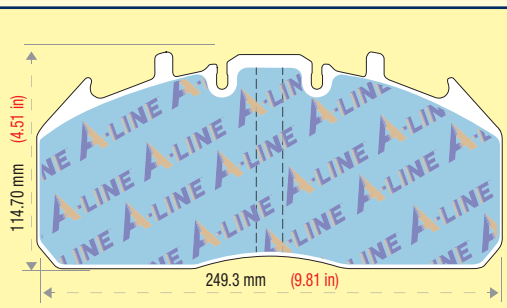
APS: Cozad Trailers,  
Mack Freedom 17"  
Axles

**ALP1323-KZ**

Meritor EX225 H3

WVA: 29188

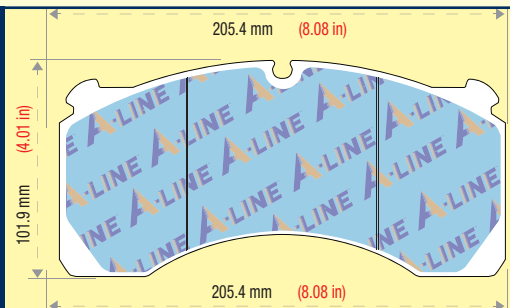
APS: Transit Bus

**ALP1525-KZ**

Meritor DX195

WVA: 29124

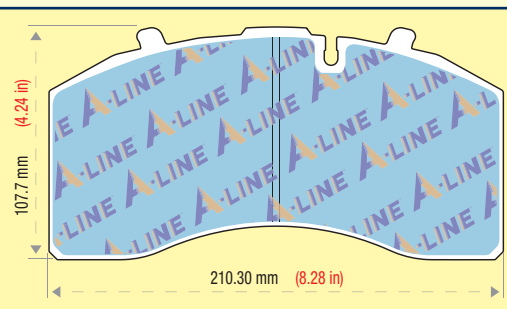
APS: Volvo

**ALP1369-KZ**

Bendix, Knorr  
ADB22X (LT), SK7

WVA: 29158

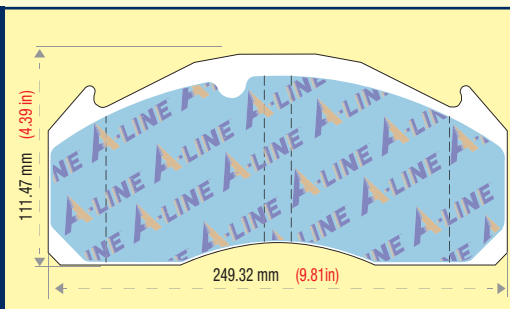
APS: Freightliner,  
Hendrickson, KW,  
Mack, Navistar,  
Peterbilt, Spartan,  
Sterling, Thomas,  
Volvo

**ALP1560-KZ**

Meritor D DUCO

WVA: 29125

APS: Volvo

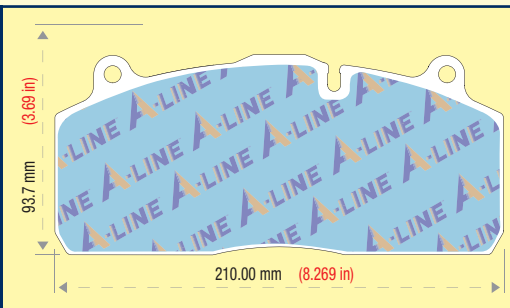


**ALP1583-KZ**

Haldex DB22LT

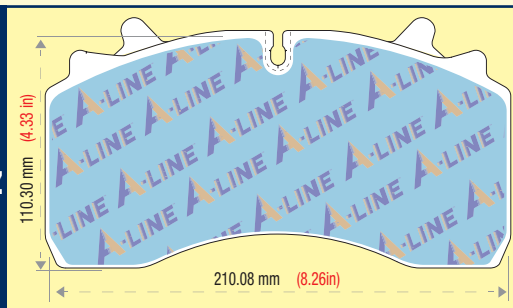
WVA: 29175, 29195,  
29198, 29274

APS: Hendrickson

**ALP9007-KZ**

WABCO PAN 22-1

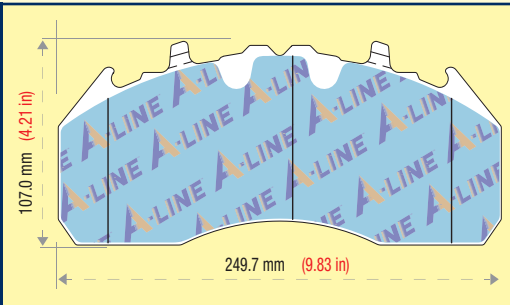
WVA: 29162

APS: Hendrickson  
Trailer Axles**ALP9007A-KZ**WABCO MaxxUS  
22, Maxx 22LTAPS: Freightliner,  
Hendrickson Axles**ALP1708-KZ**

Meritor ELSA-3

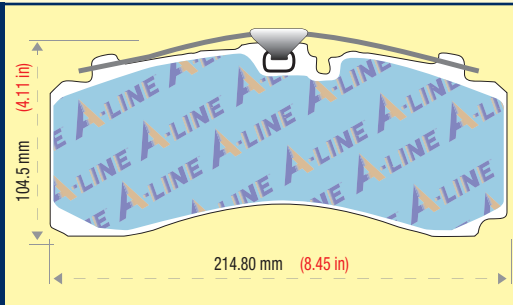
WVA: 29729

APS: Volvo, Mack

**ALP2927-KZ**

Knorr Bremse ST7

WVA: 29328, 29329

APS: SAF holland  
P89 Axles

| A-Line #     | Available Friction                  | FMSI# | WVA#   | Abex                    | Bendix / Knorr Bremse                    | Meritor  | Fras-Le | CALIPER MFR. / MODEL                       |
|--------------|-------------------------------------|-------|--|-------------------------|--|--|---------|--|
| ALP1203-KZx  | KZ3 = 23k<br>KZ6 = 26K<br>KZ9 = 29K | D1203 | 29087, 29105, 29106,<br>29108, 29109, 29163,<br>19179, 29201, 29202, | ADB1203FE<br>ADB1203AFE | 5013257<br>K006060                       | MMD1203AF  | ESD1203 | Knorr Bremse<br>SB7, SN7                   |
| ALP1310-KZx  | KZ3 = 23k<br>KZ6 = 26K<br>KZ9 = 29K | D1310 | 29131, 29156   | ADB1310FE<br>ADB1310AFE |  | MDP5060 / MMD1310AF  | ESD1310 | Meritor<br>Elsa 2                          |
| ALP1311-KZx  | KZ3 = 23k<br>KZ6 = 26K<br>KZ9 = 29K | D1311 | 29187  | ADB1311                 |  | 2252H2BA / 2252H2DA /<br>2252H2CD /<br>2252H2CE / MMD1311AF  | ESD1311 | Meritor<br>EX225 H2                        |
| ALP1312-KZx  | KZ3 = 23k<br>KZ6 = 26K<br>KZ9 = 29K | D1312 | 29090  | ADB1312                 |  | 68932068NZP /<br>MMD1312AF                                   | ESD1312 | Meritor<br>D-Lisa                          |
| ALP1323-KZx  | KZ3 = 23k<br>KZ6 = 26K<br>KZ9 = 29K | D1323 | 29188  |                         |  | 2252H3CE / MMD1323AF   | ESD1323 | Meritor<br>EX225 H3 Transit                |
| ALP1369-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1369 | 29158  | ADB1369                 | K070796<br>K129272<br>K129274<br>K109113 | MMD1369AF  | ESD1369 | Bendix, Knorr<br>ADB22X,<br>ADB22X-LT, SK7 |
| ALP1370-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1370 | 29189  |                         |  | 2252L2DA / 2252L2CD /<br>MMD1370AF                           | ESD1370 | Meritor<br>EX225 L2                        |
| ALP1407-KZx  | KZ3 = 23k<br>KZ6 = 26K<br>KZ9 = 29K | D1407 | 29030, 29083, 29084  | ADB1407FE<br>ADB1407AFE |  | MDP5110 / MMD1407AF  | ESD1407 | Meritor<br>D-Elsa 1                        |
| ALP1438-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1438 | 29126, 29159   | ADB1438                 |  | 12-999-737VT /<br>MMD1438AF                                  |         | WABCO<br>Pan 19-1                          |
| ALP1518-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1518 | 29088  | ADB1518                 |  | 12-999-703VT /<br>MMD1518AF                                  | ESD1518 | WABCO<br>Pan 17                            |
| ALP1525-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1525 | 29124, 29155   | ADB1525FE               |  | MD1314 / MD5076 /<br>MMD1525AF                               | ESD1525 | Meritor<br>DX195                           |
| ALP1560-KZx  | KZ6 = 26K                           | D1560 | 29125  |                         |  | MDP5057 / MMD1560AF  |         | D DUCO                                     |
| ALP1583-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1583 | 29175, 29195, 29198,<br>29274  | ADB1583                 |  | MMD1583AF  | ESD1583 | Haldex DB22 LT                             |
| ALP1708-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1708 | 29174, 29219, 29204,<br>29218, 2922                                  | ADB1708                 |  | 22120795, 2252HBMA703<br>KIT2252HBMA9500 /<br>KIT2252HBM7400 | ESD1708 | Meritor<br>ELSA 225-3                      |
| ALP9007-KZx  | KZ3 = 23k<br>KZ6 = 26K              | D1777 | 29162  |                         |  | 12-999-796 / MMDW-<br>P22AF                                  |         | WABCO<br>Pan 22-1                          |
| ALP9007A-KZx | KZ3 = 23k<br>KZ6 = 26K              | D1777 | 29162  |                         |  | 6402229272 /<br>6403229392                                   |         | WABCO<br>MaxxUS 22, Maxx<br>22T            |
| ALP2927-KZx  | KZ3 = 23k<br>KZ6 = 26K              |       | 29328, 29329   |                         | K097533K50<br>03057000603                |  |         | Knorr Bremse ST7                           |



## 4 Features Engineered For a Better Air Disc Rotor

1. OE-grade high tensile ASTM G3500b grey iron for high torque durability.
2. Balanced carbon and hardening alloys for thermal elasticity and noise dampening.
3. Parallel mill balancing to reduce disc thickness variation.
4. GeoMet 360 corrosion-resistance coating to extend vent and ABS ring life.

## DURABLE ENGINEERING FOR SAFER BRAKING

A-Line air disc rotors are engineered to meet the highest OE standards for durability and dependability under the most demanding conditions on the road.

Every rotor is built with proprietary alloys that exceed the OE standard of ASTM G3500b grey iron for the precise balance of tensile strength, heat dissipation characteristics and thermal wicking.

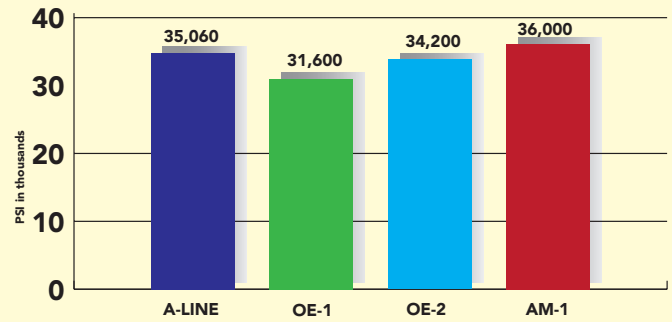
Inferior rotors are made with porous low grey iron that can trap heat and shorten rotor and pad life. Excessive density in the grey iron can also lead to noise, vibration and harshness during driving.

A-Line uses precise OE specifications to give you the best performance for durability, thermal reduction and ride stability.

### PROPRIETARY METALLURGY

Creating a long-lasting rotor starts with a precision blend of metallurgy. A-Line's metallurgical engineers consult with OE teams to determine the best grade of iron alloys for rugged air disc braking applications.

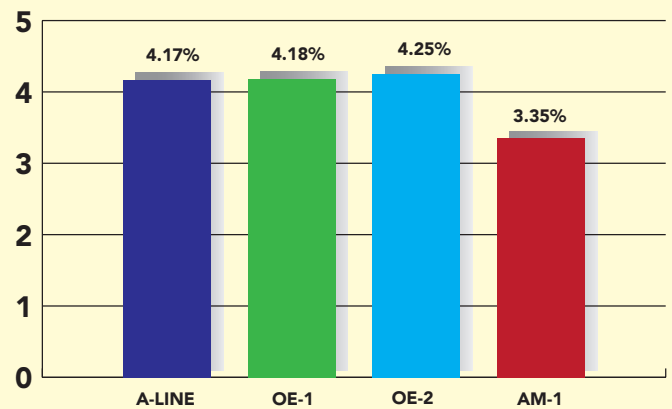
### TENSILE STRENGTH (PSI)



*TOP: Industry comparison shows A-Line rotors have among the highest tensile strength in the industry. But rotors need more than tensile strength for long life and durability.*

*BOTTOM: A-Line rotors score among the highest Carbon Alloy Equivalents. This shows the rotor's mix of total Carbon for thermal elasticity, and alloys for tensile hardening. Only OE-Grade rotors have both, making them superior for OTR or sever service.*

### CARBON ALLOY EQUIVALENT



High torque and high-heat applications like those in the air disc environment will create more than 15,000 foot pounds of torque and temperatures that exceed 1,500 degrees F.

Some manufacturers focus on creating high tensile strength rotors that do not wick heat away from the pads. This results in noisy rotors that can trap heat against the pads, shorten pad life and crack the rotor.

Others focus on adding Carbon to the rotor to wick heat away. This eliminates noise by softening the rotor, but results in increased rotor wear.

### BALANCING CARBON AND TENSILE STRENGTH

Creating an OE-grade rotor requires a precise mix of carbon and hardening alloys so the rotor can be hard enough to withstand high torque, and have thermal elasticity properties for high heat applications.



**PARALLEL MILLING AND BALANCING**

Every A-Line rotor is finished with computer controlled parallel milling and balancing. Parallel milling cuts both faces of the rotor simultaneously to a tolerance of 20 microns or .00078". This precision milling eliminates disc thickness variation (DTV) that can cause brake judder.

ISO 1940/1 balancing standards are used to ensure that A-Line rotors are balanced to OE specifications.

**GEOMET CORROSION PROTECTION**

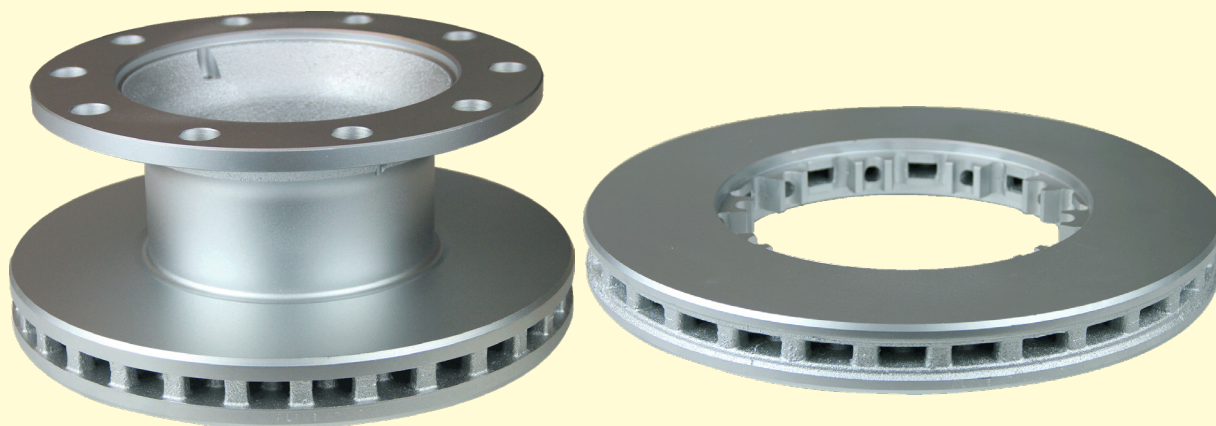
To extend rotor life and prevent corrosion, A-Line rotors are coated with GeoMet® 360 protection.

This blend of zinc and aluminum oxides interlace and bind to the metal surface so that they are four times more corrosion resistant than zinc-only coatings.

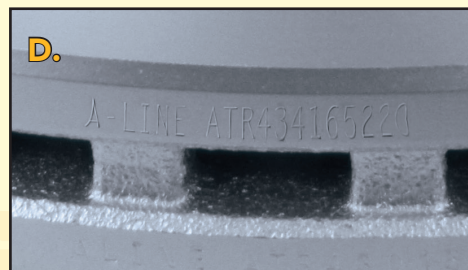
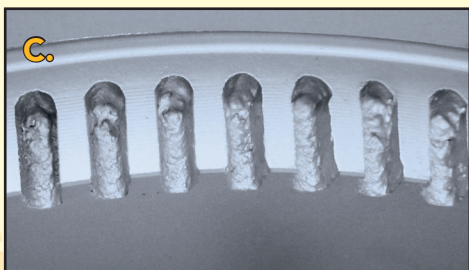
Applied in layers of eight to 10 microns thick, the

corrosion-resistant coating resists more than 30 natural and synthetic corrosives, including:

- Acid Wash
- Alcohol
- Ammonia
- Antifreeze
- Brake Clean
- Brake Fluid
- Calcium Chloride
- Diesel
- Gasoline
- Kerosene
- Magnesium Chloride
- Road Salt



**TOP: (A & B) Uncoated rotors leave the ABS ring and vents vulnerable to rusting. This results in ABS sensor faults, and clogged vents that overheat rotors. Such corrosion causes premature replacement of the rotor, and increases maintenance costs.**



**BOTTOM: (C & D) A-LINE GeoMet coated rotors protect the ABS ring and vents. ABS rings will not fault due to corrosion and vents will remain unclogged from rust and run cooler. This extends rotor and pad life and reduces maintenance costs.**

*This corrosion protection is guaranteed to prevent debilitating rust for two years.*

## SEVEN EASY STEPS TO ROTOR IDENTIFICATION

Rotor manufacturers use different part numbers, and vehicle manufacturers may use several different rotors for one application. So the easiest way to find your rotor is to find these measurements:

- A:** Outside Diameter across the face of the disc
- B:** Rotor Thickness. Minimum is stamped on rotor.
- C:** Overall Rotor Depth.
- D:** Pilot Diameter
- E:** Bolt Circle Diameter measured from center of bolt holes.

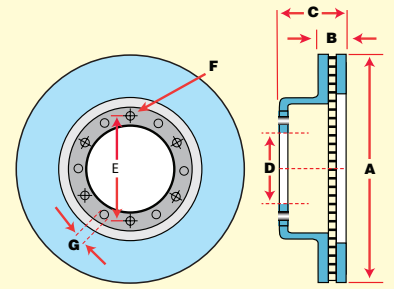
| A-Line Part#   | A                 |                     | B     |                     | C               | D                | E            | F         |       | G       |       | WEIGHT | OE#                            | Bendix           |     |
|----------------|-------------------|---------------------|-------|---------------------|-----------------|------------------|--------------|-----------|-------|---------|-------|--------|--------------------------------|------------------|-----|
|                | OUTSIDE DIA. (mm) | DISC THICKNESS (mm) |       | OA ROTOR DEPTH (mm) | PILOT DIA. (mm) | BOLT CIRCLE (mm) | BOLT HOLES   |           | STYLE | ABS     | Kg    |        |                                |                  | LBS |
|                |                   | New                 | Min.  |                     |                 |                  | SIZE         | NUMBER    |       |         |       |        |                                |                  |     |
| ATR325148173   | 325.12            | 34                  | 28.25 | 148.59              | 173             | 196.09           | M14 - 2      | 8         | U     | Cast    | 19.05 | 42     | G0795180000 / CT826            |                  |     |
| ATR377163220   | 376.94            | 45                  | 39    | 163.58              | 220             | 249.43           | M16 - 2      | 10        | UL    | Cast    | 27.67 | 61     | CT832                          |                  |     |
| ATR415150219   | 415               | 43                  | 40    | 150                 | 219             | 249.5            | M16 - 2      | 10        | UL    | Bolt on | 32    | 70.55  | 6629056112                     |                  |     |
| ATR415175250   | 415               | 43                  | 40    | 175                 | 250             | 285.7            | stud mounted | 10        | U     | No      | 31.8  | 70.1   | 17-0018                        |                  |     |
| ATR430053000   | 430               | 45                  | 37    | 53                  | 220             | 199.64           | 0.625 - 18   | 10        | F     | Bolt on | 27    | 59.5   | 10084701 / 10016195            |                  |     |
| ATR430105135   | 430               | 45                  | 37    | 104.7               | 135             | 165              | 14.75mm      | 14        | H     | No      | 33.9  | 75     | Z000557                        | K034497          |     |
| ATR430057178   | 430               | 45                  | 37    | 57.4                | 178.1           | 205              | .58 in       | 10        | F     | Bolt on | 32    | 72     | HOL51830036                    |                  |     |
| ATR430131203   | 430               | 45                  | 39    | 131                 | 203             | 235              | M16 - 1.5    | 10        | U     | No      | 34.47 | 76     | K021958                        | K021958          |     |
| ATR430138220   | 430               | 45                  | 37    | 138.3               | 220             | 250              | 0.625 - 11   | 10        | UL    | No      | 33.8  | 74.5   | 802081 / K038573               | 802081 / K038573 |     |
| ATR430150207   | 430               | 45                  | 37    | 150                 | 207             | 248.5            | 0.625 - 11   | 10        | U     | No      | 33.8  | 74.5   | HOL51830049                    |                  |     |
| ATR430150220   | 430               | 45                  | 39    | 150                 | 220             | 249.5            | M16 - 2      | 10        | UL    | Cast    | 32.2  | 71     | CT807                          |                  |     |
| ATR430150220-1 | 430               | 45                  | 41.4  | 150                 | 219.71          | 249.5            | 0.625 - 11   | 10        | UL    | Cast    | 33.8  | 74.5   | R6206M                         |                  |     |
| ATR430150220-2 | 430               | 45                  | 37    | 150                 | 220             | 250              | 0.625 - 11   | 10        | UL    | No      | 39.1  | 86.2   | 802082 / K038574 / K110358     | 802082 K038574   |     |
| ATR430160207   | 430               | 45                  | 39    | 160                 | 207             | 286              | M16 - 1.5    | 10        | UL    | Cast    | 40.66 | 89.65  | 10020682 / 10020109            |                  |     |
| ATR431115135   | 431.29            | 45                  | 39    | 115.3               | 135             | 165              | 15mm         | 14        | H     | No      | 35.38 | 78     | 611300                         | 802669           |     |
| ATR432045000   | 432               | 45                  | 37    | 45                  | 220             | N/A              | N/A          | 10        | F     | No      | 27    | 59.5   | 802569                         | 802569 802083    |     |
| ATR432045000-1 | 432               | 45                  | 37    | 45                  | 220             | N/A              | N/A          | 10        | F     | No      | 27    | 59.5   | 802569                         | 802569 802083    |     |
| ATR433131217   | 433.83            | 45                  | 37    | 131.06              | 217             | 168              | .75 in       | 12        | H     | No      | 36.31 | 80     | 68326014                       |                  |     |
| ATR433143216   | 433.57            | 45                  | 37    | 143.51              | 216             | 266.7            | .58 in       | 10        | UL    | No      | 36.31 | 80     | 23.123642-002                  |                  |     |
| ATR434045999   | 434               | 45                  | 37    | 45                  | 249.23          | 274.63           | 24 Spline    | 24 Spline | F     | No      | 25    | 55     | 20428193 / 8513803 / 8510496   |                  |     |
| ATR434045999-1 | 434               | 45                  | 37    | 45                  | 249.23          | 274.63           | 24 Spline    | 24 Spline | F     | No      | 34.4  | 75.7   | 398839 / 3092710 / 8551042     |                  |     |
| ATR434053166   | 434               | 45                  | 37    | 53                  | 166             | 200              | 0.625        | 10        | F     | Bolt on | 27    | 59.5   | 24121372 / 21856631 / 22024045 |                  |     |
| ATR434130130   | 434.34            | 45                  | 39    | 130.05              | 130.81          | 167.89           | 0.75 in      | 12        | H     | No      | 34.92 | 77     | N508030038 / N508030040        |                  |     |
| ATR434135194   | 434.34            | 45                  | 37    | 135.9               | 194             | 220              | M16 - 1.5    | 10        | U     | No      | 35.83 | 79     | I137415N                       | I137415N 802062  |     |
| ATR434143194   | 433.83            | 45                  | 37    | 143.51              | 194.05          | 249.42           | M16 - 2      | 10        | UL    | Bolt on | 37.02 | 81.63  | 23-123647-002 / 23-123647-015  |                  |     |
| ATR434180194   | 434.34            | 45                  | 37    | 179.9               | 194             | 250              | 0.625 - 18   | 10        | U     | Cast    | 43.54 | 96     | K021959                        | K021959          |     |

**F:** Bolt Hole Size and Count

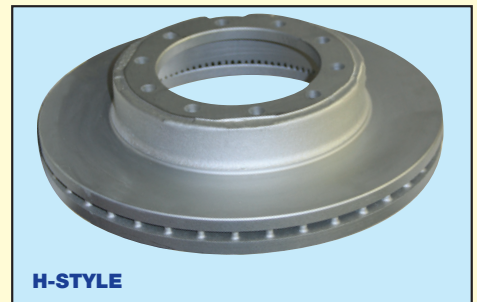
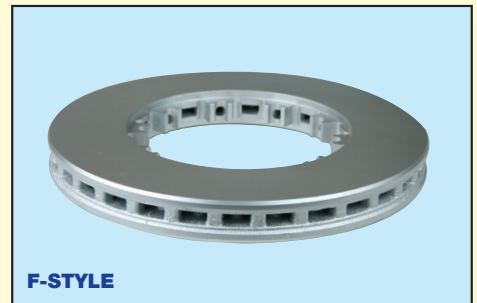
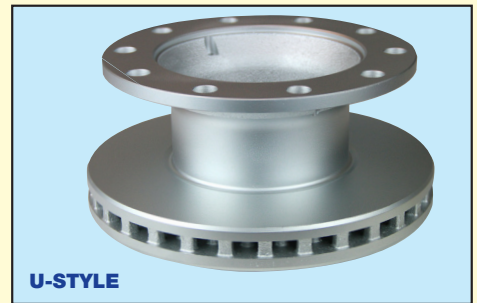
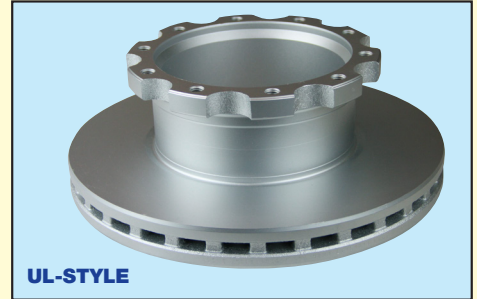
**G:** Note rotor style and ABS ring configuration. Some rotors will have same measurements but different style.

**ROTOR STYLES:**

- UL-STYLE:** U-style with bolt lobes.
- U-STYLE:** U-style with round bolt flange.
- F-STYLE:** Flat splined rotor.
- H-STYLE:** Hat style rotor.



| Dura-brake | Meritor       | Webb         | Wabco      | Conmet<br>(All prefix 100)      | Hendrickson           | ADB MODEL / APPLICATION                                |
|------------|---------------|--------------|------------|---------------------------------|-----------------------|--|
| 75180      | M44AD75180    | 55030PK-65   | CT826      |                                 | S-33391               | Wabco Pan 17   |
| 71601      | M44D71601     | 55031PK-65   | CT832      |                                 | S-33389-1             | Wabco Pan 19   |
| 76901      | M44D76901     | 55035P       | 6629056112 |                                 | S-34471               | Wabco Maxx22T  |
| 76902      |               |              |            |                                 | S-37009-2 / S-41533-2 | Maxx22T DuraLite replacement                           |
| 76801      | M44D76801     | 56092PK      |            | 84701 / 85621 / 16195 / 18609 / | S-36661-1             | Meritor EX225L2 Wabco Pan 22                           |
| 76642      | M44D76642     |              |            |                                 |                       | Bendix Knorr SN-7                                      |
| 76626      |               |              |            |                                 |                       | P89 Integral, P89 Plus. SK-7                           |
| 76612      | M44D76612     | 56042P (-99) |            |                                 |                       | NOVA Bus/BCI Drive Axle Bendix Knorr SB-7/SN-7         |
| 76618      | M44D76618     | 56096P       |            |                                 |                       | Bendix/Knorr ADB22X/                                   |
|            |               |              |            | 10082074                        |                       | SAF Holland Model 89 Taper and Parallel Spindle axles. |
| 76613      | M44D76613     | 55032PK-65   | CT807      |                                 |                       | Wabco Pan 22   |
| 76810      | R44D6206      |              |            |                                 |                       | Haldex DB22 and DB22LT                                 |
| 76617      | M44D76617     | 56095P       |            | 41006 / 82074                   | S-32193               | Bendix/Knorr ADB22X                                    |
| 76620      | M44DH20682    |              |            | 20682 / 20109                   |                       | EX225L2  |
| 76641      | M44D76641     | 55080P (-99) |            |                                 |                       | Prevost Front and Tag Bendix Knorr SB-7/SN7            |
| 76692      | M44D76692     | 56094PK      |            | 25445                           | S29152-17             | ABB22X (40 pc hardware)                                |
| 76692      | M44D76692     |              |            |                                 |                       | ABB22X (Dash attachment, ring/bolts. Easier to mount.) |
| 56641      | 68326014      | 54220P       |            |                                 |                       | EX225 H2   |
| 56642      | 23.123642-002 | 55060P       |            | 80753 / 82181                   |                       | EX225, MCI 15-03-1012                                  |
| 76990      | M44D76690     |              |            |                                 |                       | Volvo 9700 Vented with Hardware ELSA225-3              |
| 76991      |               |              |            |                                 |                       | Volvo 9700 Solid with Hardware ELSA225-3               |
| 76624      |               |              |            | 10041218                        |                       | Mack Volvo Steer, Drive                                |
| 76621      | M44D76621     | 55040P (-99) |            |                                 |                       | Vanhoof Front and Tag                                  |
| 76603      | M44D76603     | 56022P (-99) |            |                                 |                       | Prevost Front and Tag Bendix Knorr SB-7/SN7            |
| 76606      | 23-123647-002 | 55070P       |            |                                 |                       | ELSA, EX225  |
| 76604      | M44D76604     | 56050F       |            |                                 |                       | Prevost Drive Bendix Knorr SB-7/SN-7                   |



**BRAKE ROTORS**

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## CHAMBERS: ENGINEERED FOR HIGH TORQUE, LONG LIFE

A-Line service chambers and spring brakes are engineered for the rugged high heat and high torque environment found in air disc braking applications.

Inferior chamber design will result in premature failure of the chamber, inefficient braking performance, or complete loss of braking when you need it most.

So A-Line chamber products are built with seven critical features to ensure consistent braking and long life.



## 7 FEATURES ENGINEERED FOR A BETTER CHAMBER

Air disc braking applications produce up to 15,000 ft-lbs of pressure with temperatures up to 1,500° F.

To ensure optimum performance, every chamber is built from OE-grade 11 gauge steel. Tempered grade 8 bolts are then welded with reinforcements into the casing. Inferior chambers use thinner steels that disfigure under pressure. They also only press in

low-yield bolts that shear under stress.

After coating each unit with a salt spray resistant e-coating, every chamber and spring brake is then sealed with a dust boot to prevent foreign matter from entering the caliper. A plastic boot guard ring reinforces the dust boot for longer life.

High tensile plungers are zinc

coated for corrosion resistance and paired with polycarbonate spring stabilizers.

Thermal-resistant epoxy-coated springs and web-reinforced diaphragms are used to withstand extreme temperatures.

Finally, every A-Line service chamber and spring brake comes with a two-year full replacement guarantee.

3.



4.



5.

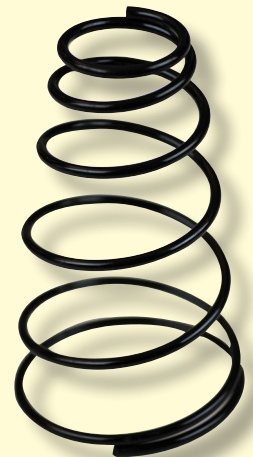


1. Weld-reinforced tempered grade 8 bolts
2. Heavy duty 11-gauge casing
3. Sealed Hi-Temp TPR dust boots for maximum caliper protection
4. Protective ring guard for plunger piloting and boot protection
5. Zinc coated plungers with polycarbonate
6. OE-grade coated springs for longer life.
7. Fiber reinforced diaphragms for high thermal applications

2.



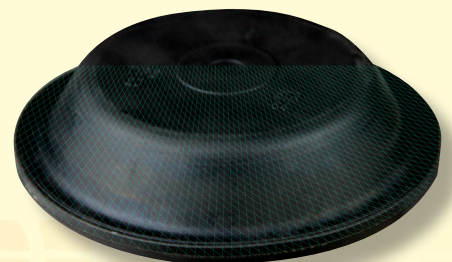
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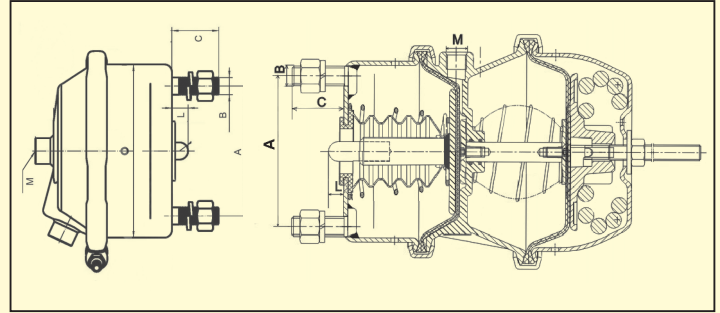


**BRAKE CHAMBERS**

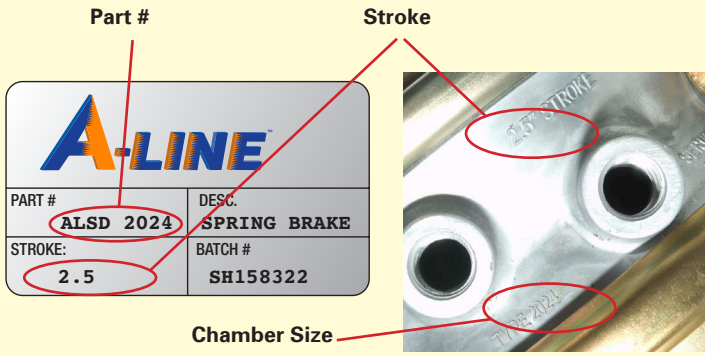
## HOW TO IDENTIFY YOUR AIR DISC BRAKE CHAMBER

Unlike drum brake chambers, an air disc brake chamber cannot be determined by measuring the diameter of the chamber. This is because the Type 14, 16 and 18 chambers all use the same sized canister, as do Type 20 and 22. But you can use the measurements on the chart below.

Another method is to find the chamber reference on the OE tag or casting markings as shown in the images, at right.



| A-Line Part# | Industry Ref.          | Description                         | A<br>BOLT DISTANCE CENTER (mm) | B<br>BOLT THREAD | C<br>BOLT LENGTH (mm) | L<br>STROKE LENGTH FROM COVER |          | M<br>PORT THREAD                  | N<br>FULL STROKE |           | ADB MODEL / APPLICATION  |
|--------------|------------------------|-------------------------------------|--------------------------------|------------------|-----------------------|-------------------------------|----------|-----------------------------------|------------------|-----------|--|
|              |                        |                                     |                                |                  |                       | in.                           | mm       |                                   | in.              | mm        |  |
|              |                        |                                     |                                |                  |                       | ALSDT14                       | T14 DISC | Type 14 Diaphragm Service Chamber | 120.70           | M16 x 1.5 |  |
| ALSDT16      | T16 DISC               | Type 16 Diaphragm Service Chamber   | 120.70                         | M16 x 1.5        | 37                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.25             | 60        | Service chamber for Bendix, Meritor, WABCO applications  |
| ALSDT18      | T18 DISC               | Type 18 Diaphragm Service Chamber   | 120.70                         | M16 x 1.5        | 37                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Steer service chamber for Bendix, Knorr, WABCO applications  |
| ALSDT20      | T20 DISC               | Type 20 Diaphragm Service Chamber   | 120.70                         | M16 x 1.5        | 37                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Service chamber for Bendix, Knorr, Meritor, WABCO applications   |
| ALSDT24      | T24 DISC               | Type 24 Diaphragm Service Chamber   | 120.70                         | M16 x 1.5        | 37                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Service chamber for Bendix, Knorr, Meritor, WABCO applications   |
| ALSD1624     | 16/24 DISC             | 16/24 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 38                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.25             | 60        | Dual diaphragm emergency spring brake for Bendix, Haldex, Knorr, Meritor and Wabco trailer and drive axles |
| ALSD1824     | 18/24 DISC             | 18/24 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 38                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Dual diaphragm emergency spring brake for Bendix, Haldex, Knorr, Meritor and Wabco trailer and drive axles |
| ALSD2024     | 20/24 DISC             | 20/24 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 38                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Dual diaphragm emergency spring brake for Bendix, Haldex, Knorr, Meritor and Wabco trailer and drive axles |
| ALSD2030     | 20/30 DISC             | 20/30 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 37                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Combination spring brake for severe duty trailer axles   |
| ALSD2224     | 22/24 DISC             | 22/24 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 43                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Dual diaphragm emergency spring brake for Bendix, Haldex, Knorr, Meritor and Wabco trailer and drive axles |
| ALSD2424     | 24/24 DISC             | 24/24 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 43                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Combination spring brake for severe duty trailer axles   |
| ALSD2430     | 24/30 DISC             | 24/30 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 45                    | .60                           | 15       | NPTF 3/8" - 18                    | 2.5              | 64        | Combination spring brake for severe duty trailer axles   |
| ALSD2430LS   | 24/30 DISC LONG STROKE | 24/30 Double Diaphragm Spring Brake | 120.70                         | M16 x 1.5        | 45                    | .60                           | 15       | NPTF 3/8" - 18                    | 3.0              | 76        | Combination spring brake for severe duty trailer axles   |



## FREQUENTLY ASKED QUESTIONS

### CHAMBER MARKINGS AND PART NUMBERS

- Q: How can I tell which chamber I have from the tag or casting markings?
- A: A-LINE brake chamber part numbers are created to represent the actual area of the brake chamber. So you can determine your A-LINE number by locating the brake chamber number either on the OE tag or in the casting. This will also tell you your stroke length (ie 2.25", 2.5" or 3.0"). You can also find this info on the casting markings (see photo at left).

### LONG STROKE CHAMBERS

- Q: My chamber has a square port which means long stroke. Does A-LINE offer long stroke chambers?
- A: The square port traditionally signifies a stroke length of 3.0". Air disc chambers have a fixed stroke length and do not use a 3.0" long stroke on chambers less than 24/30. Still, some manufacturers have used square ports with a 2.5" stroke. If your chamber has a square port, check the stroke length cast into the chamber (see above), and be sure to match that stroke length.

### PISTON CHAMBERS

- Q: I have a piston styled chamber. Can it be replaced with a dual diaphragm chamber?
- A: Yes. A piston-styled chamber is used for high-torque output and uses a piston technology that can produce more torque than a dual diaphragm in the same area. When changing from piston to diaphragm follow these three steps:
1. Know your Piston to Diaphragm equivalent as shown in the chart below:

| Convert Piston >>> Diaphragm Chambers |                                      |
|---------------------------------------|--------------------------------------|
| Piston-styled Chamber                 | Dual Diaphragm Chamber               |
| 18/16<br>(18 service / 16 emergency)  | 18/24<br>(18 service / 24 emergency) |
| 20/16<br>(20 service / 16 emergency)  | 20/24<br>(20 service / 24 emergency) |
| 24/24<br>(24 service / 24 emergency)  | 24/30<br>(24 service / 30 emergency) |

2. If converting your chambers, replace BOTH. DO NOT MIX piston and diaphragm chambers on the same axle.

### CLOCKING

- Q: Do I have to clock my chamber to match the OE chamber I removed from the vehicle?
- A: Yes. If you do not clock your chamber, you can put too much strain on the hose. This could prevent the caliper from a full range of motion.

| COMPETITIVE CROSS REFERENCE |         |                            |               |
|-----------------------------|---------|----------------------------|---------------|
| Bendix / Knorr              | Haldex  | Meritor                    | Wabco         |
| K028039                     |         |                            |               |
| K028226                     | SC16D   | A5 3376P16                 |               |
| K028022                     | SC18D   | A2 3376R18                 | 400 512 003 0 |
| K028225                     | SC20D   | 20HSCND2-3630              | 423 505 152 0 |
| K028252                     | SC24D   | 24HSCND2-3632              | 423 506 065 0 |
| K042457                     | GC1624D | 1616HTLD2-3627             |               |
| K043329                     | GC1824D | A1 3376R18                 | 925 347 006 0 |
| K041960                     | GC2024D | D3 3376T20                 | 925 380 002 0 |
| K028810                     | GC2030D | 2024HTND2-3626             |               |
| K043148                     | GC2224D |                            |               |
| K043270                     | GC2424D | D3 3376X24 /<br>D3 3376X24 |               |
| K016488                     | GC2430D | 2430TND2H-3570             |               |
| K016488                     | GC2430D | 2430TND2H-3570             |               |

BRAKE CHAMBERS

# QUALITY IS INTEGRAL IN EVERY A-LINE® AIR DISC CALIPER

**W**e pride ourselves on the high quality manufacturing processes used to produce the industry's best new and remanufactured air disc calipers.

Our manufacturing plant operates an ISO-observant, Quality Systems approach to every aspect of the process.

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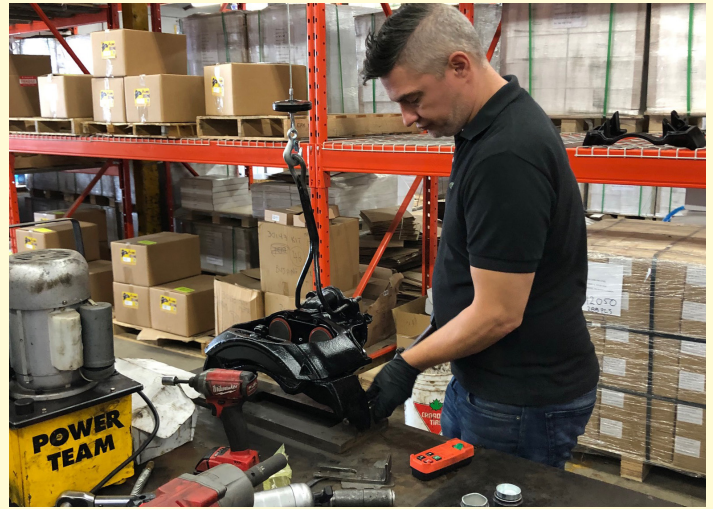
***"Quality is not what we 'add' to the product. It is what we start with."***

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Whether it is properly receiving cores, checking component specifications, or performing our 30-point quality function test on each caliper, A-LINE staff is continually engaged in an ongoing quality system where customer satisfaction is our primary goal.

- ISO-observant processes
- 30-point quality function tested
- North American-made
- Expertly-trained manufacturing staff

That means end users receive the highest quality air disc calipers, designed to keep their fleets on the road and free from unnecessary downtime.



*A-LINE® Caliper technicians use ISO-observant processes to remanufacture quality components to meet the most rigid demands of the North American transportation industry.*





All A-LINE caliper components are manufactured to meet or exceed OE standards.

More than four dozen individual parts are weighed, measured and specified to proprietary standards for metal hardness, temperature thresholds, and flexibility.

Only A-LINE offers calipers with continuous lubrication (see CL-20 kits on page 29).

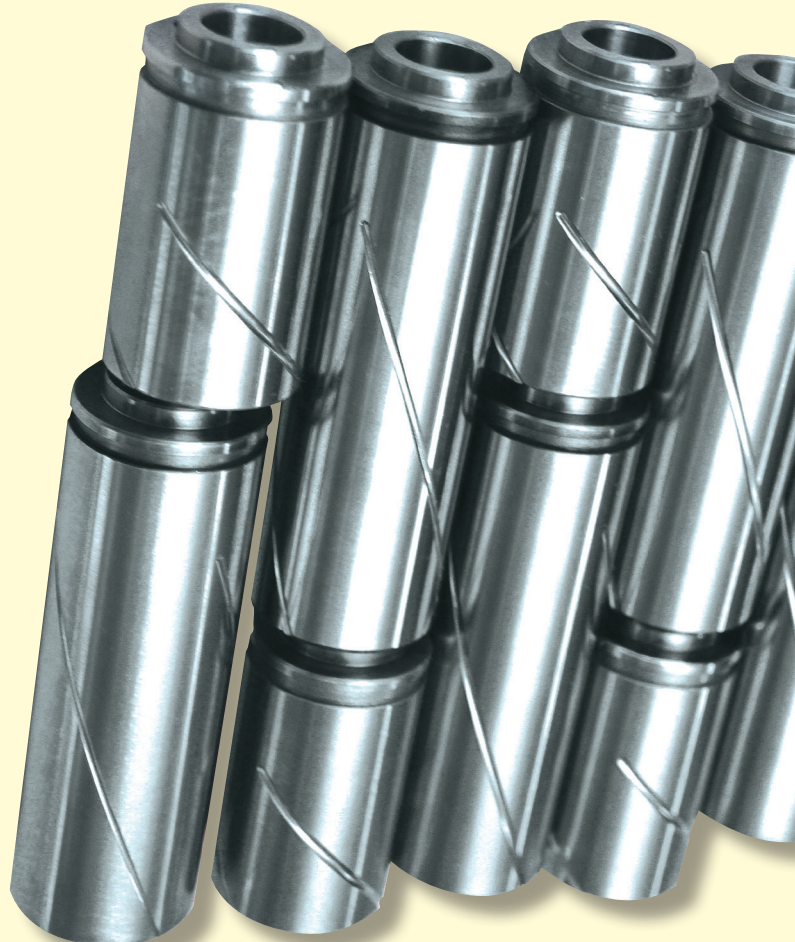
Only A-LINE offers calipers lubricated with Max-A-Sil 998 silicon/PTFE lubricants that can withstand temperatures of 998° F — double the OEM grease.

That attention to detail means A-LINE calipers last longer.

***“A-LINE® caliper components are manufactured to meet or exceed OE standards.”***

Compare A-LINE component specifications to OE component specifications in the chart below.

|                        | A-LINE   | OE   |
|------------------------|--|--|
| Long Guide Pin         | HRC 50   | HRC 50   |
| Short Guide Pin        | HRC 50   | HRC 35   |
| Long Guide Pin Bushing | High strength bronze alloy with Teflon coating | Bronze alloy. No coating                       |
| Adjuster Mechanism     | Tested to 14Nm                                 | Tested to 14Nm                                 |
| Caliper Casting        | High Strength Pearlite Ferrite Ductile Iron    | High Strength Pearlite Ferrite Ductile Iron    |
| Caliper Bracket        | High Strength Pearlite Ferrite Ductile Iron    | High Strength Pearlite Ferrite Ductile Iron    |
| Lubricant              | Max-A-Sil 998 (Withstands temps to 998°F)      | Carbon-based grease (Fails at temps of 420+°F) |



# Build Your Part Number

**Base Caliper Number + New or Reman + Upgrade = Part Number**

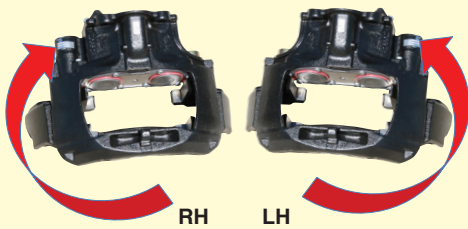
|                                    |             |   |   |               |
|------------------------------------|-------------|---|---|---------------|
| <b>Caliper (Reman, No upgrade)</b> | ATC-AD2-002 |   |   | ATC-AD2-002   |
| <b>Caliper (Reman, Upgrade)</b>    | ATC-AD2-002 |   | U | ATC-AD2-002U  |
| <b>Caliper (New, No Upgrade)</b>   | ATC-AD2-002 | N |   | ATC-AD2-002N  |
| <b>Caliper (New, Upgrade)</b>      | ATC-AD2-002 | N | U | ATC-AD2-002NU |

| BENDIX/KNORR   | Caliper Style                | Application                                    | OE Number                                      | Bracket Description                    | ParaMaxx Upgrade | New / Reman Options |
|----------------|------------------------------|--|--|--|------------------|---------------------|
| ATC-AD2-001    | Knorr SK7 RH 0 degree        | SAF Holland 2009-2017                          | 5400101100 / 03080005901Z / K012341 K012633K50 | 2 holes each side, 2 bars, axial mount | Y                | N, R                |
| ATC-AD2-002    | Knorr SK7 LH 0 degree        | SAF Holland 2009-2017                          | 5400101200 / 03080006001Z K012342 K012634K50   | 2 holes each side, 2 bars, axial mount | Y                | N, R                |
| ATC-AD2-003    | Bendix ADB22x RH 0 degree    | Hendrickson Axles 2009 - 2017                  | 802984 / K113887X S-29152-14                   | 3 holes each side, 2 bars, axial mount | Y                | N, R                |
| ATC-AD2-004    | Bendix ADB22x LH 0 degree    | Hendrickson Axles 2009 - 2017                  | 802985 / K113888X S-29152-15                   | 3 holes each side, 2 bar, axial mount  | Y                | N, R                |
| ATC-AD2-005    | Bendix ADB22x RH 12 degree   | All tractors except Freightliner, Western Star | K081142 / K109961X                             | 3 holes each side, 1 bar, axial mount  | Y                | N, R                |
| ATC-AD2-006    | Bendix ADB22x LH 12 degree   | All tractors except Freightliner, Western Star | K081143 / K109962X                             | 3 holes each side, 1 bar, axial mount  | Y                | N, R                |
| ATC-AD2-007    | Bendix ADB22x RH 12 degree   | Freightliner, Western Star                     | K081256 / K109957X                             | 3 holes each side, 1 bar, radial mount | Y                | N, R                |
| ATC-AD2-008    | Bendix ADB22x LH 12 degree   | Freightliner, Western Star                     | K081257 / K109958X                             | 3 holes each side, 1 bar, radial mount | Y                | N, R                |
| ATC-AD2-009    | Bendix ADB22x RH 0 degree    | Trailmobile Axles                              | K098278  | 3 holes each side, 1 bar, axial mount  | Y                | N, R                |
| ATC-AD2-010    | Bendix ADB22x LH 0 degree    | Trailmobile Axles                              | K098279  | 3 holes each side, 1 bar, axial mount  | Y                | N, R                |
| ATC-AD2-011    | Bendix ADB22xLT RH 0 degree  | Hendrickson Axles 2018 - Present               | K149714 / K128828SC S-33647-3                  | 3 holes each side, 2 bars, axial mount | Y                | N, R                |
| ATC-AD2-012    | Bendix ADB22xLT LH 0 degree  | Hendrickson Axles 2018 - Present               | K149715 / K128829SC S033647-2                  | 3 holes each side, 2 bars, axial mount | Y                | N, R                |
| ATC-AD2-013    | Knorr ST7 RH 0 degree        | SAF Holland 2017 - Present                     | 03080009800 / K097529K50                       | 2 holes each side, 2 bars, axial mount | Y                | N, R                |
| ATC-AD2-014    | Knorr ST7 LH 0 degree        | SAF Holland 2017 - Present                     | 03080009700 / K097530K50                       | 2 holes each side, 2 bars, axial mount | Y                | N, R                |
| <b>MERITOR</b> |                              |  |  |  |                  |                     |
| ATC-AD30-015   | MERITOR EX225L2 RH 0 degree  | Trailer  | EX225L201, EX225L203                           | 3 holes each side, 1 bar, axial mount  | Y                | R                   |
| ATC-AD30-016   | MERITOR EX225L2 LH 0 degree  | Trailer  | EX225L202, EX225L204                           | 3 holes each side, 1 bar, axial mount  | Y                | R                   |
| ATC-AD30-027   | MERITOR EX225L2 RH 0 degree  | Trailer  | EX225L205, EX225L207, EX225L209, EX225L211     | 3 holes each side, 1 bar, radial mount | Y                | R                   |
| ATC-AD30-028   | MERITOR EX225L2 LH 0 degree  | Trailer  | EX225L206, EX225L208, EX225L210, EX225L212     | 3 holes each side, 1 bar, radial mount | Y                | R                   |
| ATC-AD30-205   | MERITOR EX225L2 RH 12 degree | Freightliner Cascadia                          | EX225L262, EX225L274                           | 2 holes each side, 1 bar, radial mount | Y                | R                   |
| ATC-AD30-206   | MERITOR EX225L2 LH 12 degree | Freightliner Cascadia                          | EX225L261, EX225L273                           | 2 holes each side, 1 bar, radial mount | Y                | R                   |
| ATC-AD30-227   | MERITOR EX225L2 RH 12 degree | Truck Trailer                                  | EX225L275                                      | 2 holes each side, 1 bar, radial mount | Y                | R                   |
| ATC-AD30-228   | MERITOR EX225L2 LH 12 degree | Truck Trailer                                  | EX225L276                                      | 2 holes each side, 1 bar, radial mount | Y                | R                   |
| ATC-AD30-237   | MERITOR EX225L2 RH 12 degree | Volvo 410mm rotor                              | EX225L244, EX225L248, EX225L270                | 2 holes each side, 1 bar, radial mount | Y                | R                   |
| ATC-AD30-238   | MERITOR EX225L2 LH 12 degree | Volvo 410mm rotor                              | EX225L243, EX225L247, EX225L269                | 2 holes each side, 1 bar, radial mount | Y                | R                   |

| MERITOR<br>continued | Caliper Style                   | Application                   | OE Number            | Bracket Description                       | ParaMaxx<br>Upgrade | New /<br>Reman<br>Options |
|----------------------|---------------------------------|-------------------------------|----------------------|---|---------------------|---------------------------|
| ATC-AD30-247         | MERITOR EX225L2 RH<br>12 degree | Volvo 410mm rotor             | EX225L250            | 2 holes each side, 1<br>bar, radial mount | Y                   | R                         |
| ATC-AD30-248         | MERITOR EX225L2 LH<br>12 degree | Volvo 410mm rotor             | EX225L249            | 2 holes each side, 1<br>bar, radial mount | Y                   | R                         |
| ATC-AD30-255         | MERITOR EX225L2 RH<br>12 degree | Truck Trailer                 | EX225L266            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-256         | MERITOR EX225L2 LH<br>12 degree | Truck Trailer                 | EX225L265            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-295         | MERITOR EX225L2 RH<br>12 degree | Trailer                       | EX225L272            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-296         | MERITOR EX225L2 LH<br>12 degree | Trailer                       | EX225L271            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-437         | MERITOR EX225L2 RH<br>4 degree  | Volvo 410mm rotor, Volvo Mack | EX225L220, EX225L222 | 2 holes each side, 1<br>bar, radial mount | Y                   | R                         |
| ATC-AD30-438         | MERITOR EX225L2 LH<br>4 degree  | Volvo 410mm rotor, Volvo Mack | EX225L219, EX225L221 | 2 holes each side, 1<br>bar, radial mount | Y                   | R                         |
| ATC-AD30-447         | MERITOR EX225L2 RH<br>4 degree  | Volvo 410mm rotor             | EX225L224, EX225L226 | 2 holes each side, 1<br>bar, radial mount | Y                   | R                         |
| ATC-AD30-448         | MERITOR EX225L2 LH<br>4 degree  | Volvo 410mm rotor             | EX225L223, EX225L225 | 2 holes each side, 1<br>bar, radial mount | Y                   | R                         |
| ATC-AD30-455         | MERITOR EX225L2 RH<br>4 degree  | Truck Trailer                 | EX225L236            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-456         | MERITOR EX225L2 LH<br>4 degree  | Truck Trailer                 | EX225L235            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-465         | MERITOR EX225L2 RH<br>4 degree  | Truck Trailer                 | EX225L238            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-466         | MERITOR EX225L2 LH<br>4 degree  | Truck Trailer                 | EX225L237            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-475         | MERITOR EX225L2 RH<br>4 degree  | Volvo 410mm rotor             | EX225L240, EX225L268 | 3 holes each side, 1<br>bar, axial mount  | Y                   | R                         |
| ATC-AD30-476         | MERITOR EX225L2 LH<br>4 degree  | Truck Trailer                 | EX225L239, EX225L267 | 3 holes each side, 1<br>bar, axial mount  | Y                   | R                         |
| ATC-AD30-485         | MERITOR EX225L2 RH<br>4 degree  | Truck Trailer                 | EX225L252, EX225L256 | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-486         | MERITOR EX225L2 LH<br>4 degree  | Truck Trailer                 | EX225L251, EX225L255 | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-495         | MERITOR EX225L2 RH<br>4 degree  | Trailer                       | EX225L258            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD30-496         | MERITOR EX225L2 LH<br>4 degree  | Trailer                       | EX225L257            | 3 holes each side, 2<br>bars, axial mount | Y                   | R                         |
| ATC-AD32-035         | MERITOR EX225H2 RH<br>0 degree  | Mack, Volvo                   | EX225H218, EX225H228 | 2 holes each side, 1<br>bar, axial mount  | Y                   | N, R                      |
| ATC-AD32-036         | MERITOR EX225H2 LH<br>0 degree  | Mack, Volvo                   | EX225H217, EX225H227 | 2 holes each side, 1<br>bar, axial mount  | Y                   | N, R                      |
| ATC-AD32-045         | MERITOR EX225H2 RH<br>0 degree  | Peterbilt, International      | EX225H201            | 3 holes each side, 1<br>bar, axial mount  | Y                   | N, R                      |
| ATC-AD32-046         | MERITOR EX225H2 LH<br>0 degree  | Peterbilt, International      | EX225H202            | 3 holes each side, 1<br>bar, axial mount  | Y                   | N, R                      |
| ATC-AD32-237         | MERITOR EX225H2 RH<br>12 degree | Mack, Volvo                   | EX225H216, EX225H226 | 2 holes each side,<br>1 bar, radial mount | Y                   | N, R                      |
| ATC-AD32-238         | MERITOR EX225H2 LH<br>12 degree | Mack, Volvo                   | EX225H215, EX225H225 | 2 holes each side,<br>1 bar, radial mount | Y                   | N, R                      |
| ATC-AD33-041         | MERITOR EX225H3 RH<br>0 degree  | Transit                       | EX225H301            | 3 holes each side, 1<br>bar, axial mount  | Y                   | N, R                      |
| ATC-AD33-042         | MERITOR EX225H3 LH<br>0 degree  | Transit                       | EX225H302            | 3 holes each side, 1<br>bar, axial mount  | Y                   | N, R                      |

| WABCO        | Caliper Style        | Application                 | OE Number                  | Bracket Description                           | ParaMaxx Upgrade | New / Reman Options |
|--------------|----------------------|-----------------------------|----------------------------|---|------------------|---------------------|
| ATC-AD4-001  | WABCO PAN 17 RH ↻    | Hendrickson, Cozad Axles    | 640175073 / S-39094-R      | 3 M14 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-002  | WABCO PAN 17 LH ↻    | Hendrickson, Cozad Axles    | 640175072 / S-39094-L      | 3 M14 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-003  | WABCO PAN 19-1 RH ↻  | Hendrickson Axles           | 6401951020 / S-39093-R     | 3 M18 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-004  | WABCO PAN 19-1 LH ↻  | Hendrickson Axles           | 6401951010 / S-39093-L     | 3 M18 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-005A | WABCO PAN 22-1 RH ↻  | Hendrickson Axles           | 6402250810 / S-33648-1     | 3 M20 holes ea. side, 2 bars, axial mount     | Y                | R                   |
| ATC-AD4-006A | WABCO PAN 22-1 LH ↻  | Hendrickson Axles           | 6402250800 / S-33648-2     | 3 M20 holes ea. side, 2 bars, axial mount     | Y                | R                   |
| ATC-AD4-005B | WABCO PAN 22-1 RH ↻  | IMT, Dexter, Ridewell Axles | 40225012 / 40225016        | 3 M16 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-006B | WABCO PAN 22-1 LH ↻  | IMT, Dexter, Ridewell Axles | 40225011 40225015          | 3 M16 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-005C | WABCO PAN 22-1 RH ↻  | SAF Holland Axles           | 6402250810 / 3080006820    | 2 M18 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-006C | WABCO PAN 22-1 LH ↻  | SAF Holland Axles           | 640-225-080-0 / 3080006720 | 2 M18 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-007  | WABCO MAXX 22T RH ↻  | Hendrickson Axles           | 6402220080 / S-35973-R     | 3 M18 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-008  | WABCO MAXX 22T LH ↻  | Hendrickson Axles           | 6402220070 / S-35973-L     | 3 M18 1.5 holes ea. side, 2 bars, axial mount | Y                | R                   |
| ATC-AD4-009  | WABCO MAXXUS 22 RH ↻ | Freightliner, Western Star  | 640322050                  | 2 holes each side, 2 bars, radial mount       | Y                | R                   |
| ATC-AD4-010  | WABCO MAXXUS 22 LH ↻ | Freightliner, Western Star  | 640322051                  | 2 holes each side, 2 bars, radial mount       | Y                | R                   |

## Right or Left Handed?



To determine the wheel rotation and “handed” designation for Knorr, Bendix and Meritor calipers, note that the wheel rotates toward the fixed long guide pin first.

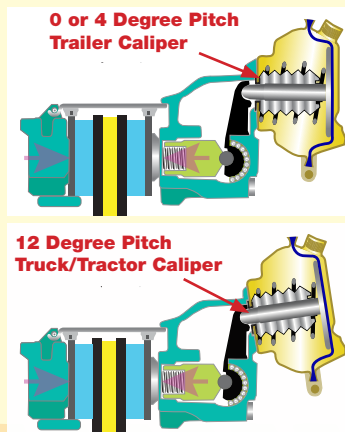
As shown in the above photo at left, starting from the bottom of the caliper, the clockwise wheel rotation reaches the Long Guide Pin first, designating this as right handed. The photo on the above right shows counter-clockwise rotation reaching the Long Guide Pin first, making it left-handed.

## For Truck or Trailer?

Knorr, Bendix, Meritor and WABCO calipers will have a different pitch for truck and trailer calipers.

The pitch is the angle at which the spring brake attaches to the caliper.

A 0 or 4-degree pitch is generally found on trailer calipers. An angled pitch of 12 degrees is found on power units.



## Axial or Radial Mount?

Calipers have different styles of brackets. The method in which they attach to the torque plate is either from the side (Figure A), or from the bottom (Figure B).

From the side is called Axial. From the bottom is called Radial.

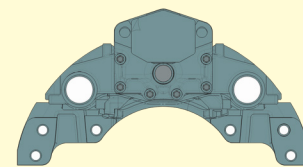


Figure A. The axial caliper bracket bolts on from the side.

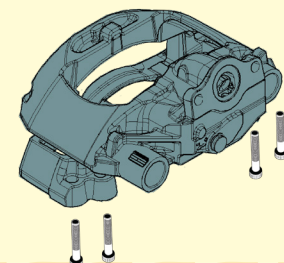


Figure B. The radial caliper bracket bolts on from the bottom.

# 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.
2. 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 COMPARISON

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

CL-20 PIN KITS

## 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 someone 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 pad-to-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.*

*D. A-LINE High Temp Guide pin boots withstand temperatures of 300°C (572°F) — double the temperature of some OE boots.*

*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.

THE CL-20 system consists of

these components:

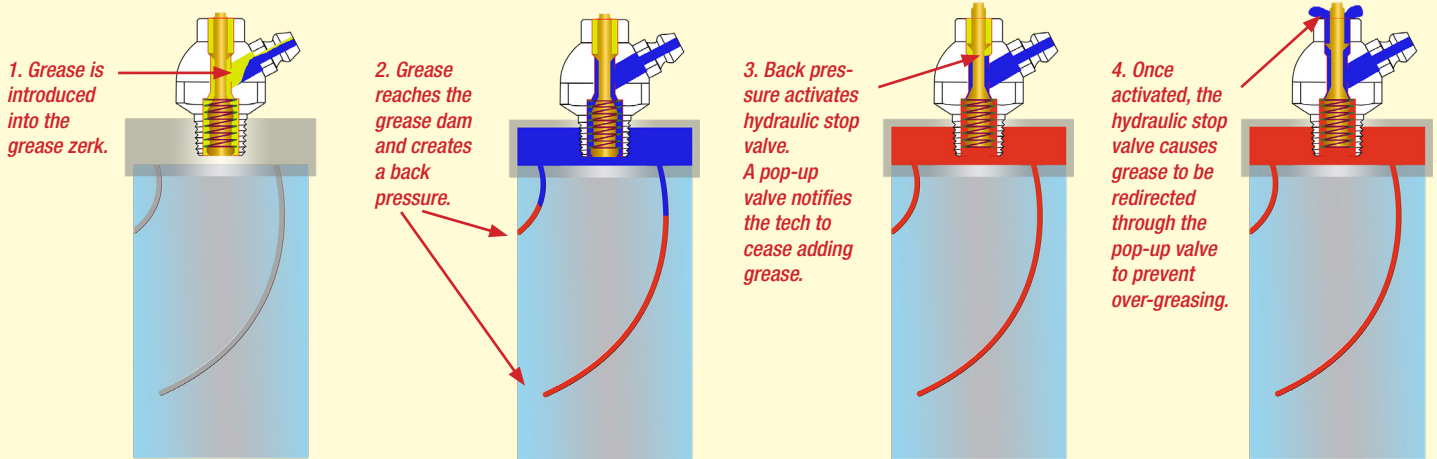
- A. Sealing cap with integrated hydraulic stop valve.
- B. Radial grooved guide pins to provide full-face lubrication
- C. A Lubrication Directional Plug
- D. High thermal resistant silicon rubber guide pin boots.

- 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).

CL-20 PIN KITS

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



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 de-

signed to provide up to 20 times more lubrication than OE-designed kits throughout the life of the caliper.

## 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 537°C (998°F), if it is mixed with a hydrocarbon petroleum-based grease, or other incompatible lubricants, it can have undesirable effects.

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

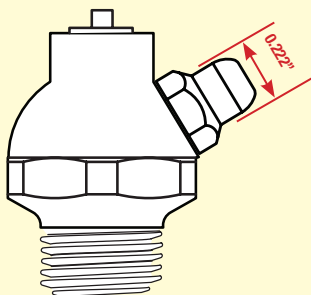
The bullet head fitting is uniquely matched to A-LINE's ALCK-BZH11 bullet head coupling which will not deliver grease into a standard grease fitting.

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

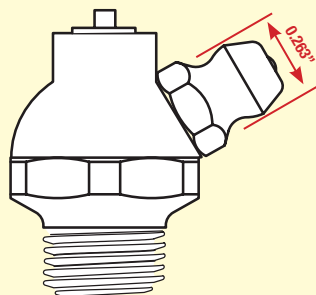
### INSTALLATION INSTRUCTIONS

For more information about the CL-20 kit and its installation, see the online installation video or download the step-by-step installation instructions at:

<https://www.ACRairdisc.com/install/cl-20>



ALCL20-200 comes with Bullet head grease fitting



ALCL20-201 comes with Standard head grease fitting



ALCK-BZH11 bullet head coupler delivers only to bullet head fittings





# MAX-A-SIL 998™ OUTPERFORMS OE CALIPER GREASES IN TEMPERATURES UP TO 998° F

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

the competition will cause caliper guide pins to seize.

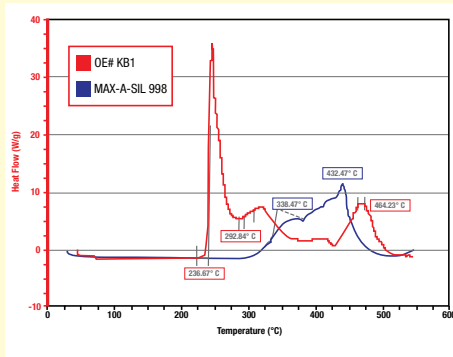
The photos below show the OE Sample and MAX-A-SIL 998™ in a side-by-side comparison in tem-

peratures from 150°C to 537°C (or 998°F). Notice that the MAX-A-SIL 998™ maintains its lubricity through the highest wheel end temps.

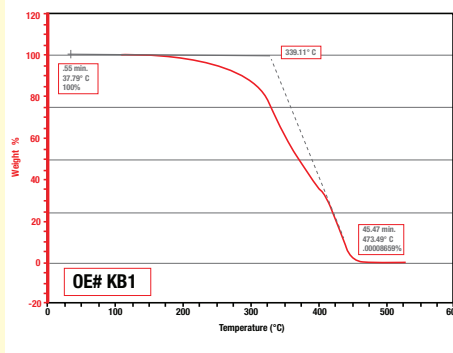
This Silicon/Teflon formulation is specifically designed for air disc caliper guide pin applications.

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

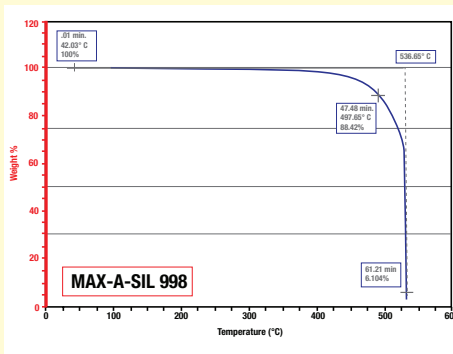
See the comparison video at [www.a-lineairdisc.com](http://www.a-lineairdisc.com).



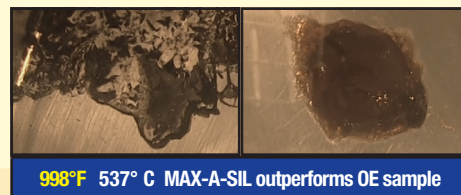
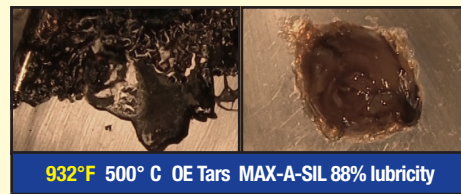
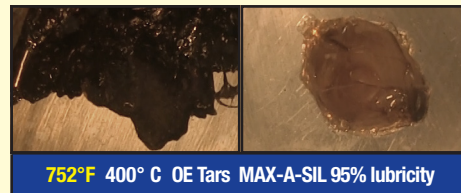
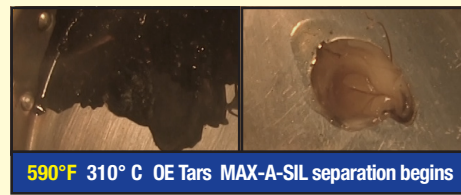
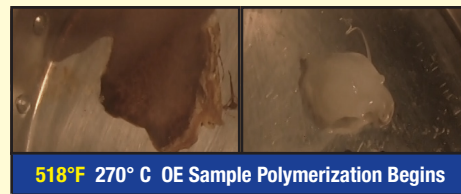
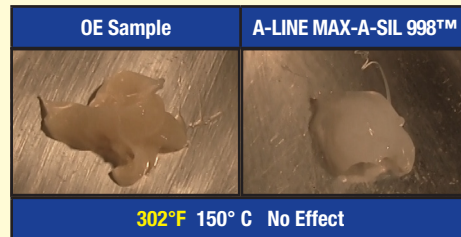
OE grease (red) reaches its first exothermic peak for tarring at 237°C (458°F), compared to A-LINE MAX-A-SIL 998 (blue) that doesn't begin tarring until 432°C (810°F).



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



**CL-20 PIN KITS**

# FIND THE ACCESSORY KIT TO MATCH YOUR AIR DISC CALIPER

| Part #       | Caliper                     | OE #             | Description   |
|--------------|-----------------------------|------------------|---|
| ALCK1035     | ADB22x, LT, SK7, ST7        | K000029          | Kit of 10 shear adjusting nuts and 10 rubber caps for ADB22x, ADB22xLT, SK7 caliper |
| ALCK20076    | ADB22x, LT, SK7, ST7        | K092079          | Tappet and Boot Kit for ADB22x, ADB22xLT, SK7 caliper                               |
| ALCK20094    | ADB22x, LT, SK7, ST7        | K023768 / 803114 | Guide pin replacement Kit for ADB22x, ADB22xLT, SK7 caliper                         |
| ALCK21078    | ADB22x radial mount         |                  | M16-2.0 x 110mm grade 10.9 Mounting Bolts Qty 6                                     |
| ALCK21556    | ADB22x axial mount          |                  | M20-2.5 x 55mm grade 10.9 Mounting Bolts Qty 6                                      |
| ALCK21656    | ADB22x axial mount          |                  | M20-2.5 x 60mm grade 10.9 Mounting Bolts Qty 6                                      |
| ALCK22056W   | ADB22x axial mount          |                  | 3mm hardened washers for axial Mounting Bolts Qty 6                                 |
| ALCK320356   | EX225H201 / 202 EX227 / 228 | 41X1621V         | Hardened 3mm thick Washers for Mounting Bolts                                       |
| ALCK322378   | EX225H225 / 226             | 41X1801          | 55mm Allen Head Caliper Mounting Bolts. Qty 4                                       |
| ALCK320456   | EX225H201 / 202 EX227 / 228 | 41X1484V         | 60mm Caliper Mounting bolts. Qty 6  |
| ALCK320556   | EX225H201 / 202 EX227 / 228 | 41X1622V         | 75mm Caliper Mounting bolts. Qty 6  |
| ALCK320056W  | EX225H201 / 202 EX227 / 228 | MWA520P          | Washers for Mounting bolts. Qty 6   |
| ALCK322264-4 | EX225 H2, H3                | KIT225224        | Qty (4) Metal Wear Indicators / Qty (4) Indicator Springs                           |
| ALCK320501   | EX225 H2, H3                | KIT225201        | Boot Kit for EX225 H2, H3 calipers  |
| ALCK40005    | WABCO PAN 17                | 12999758         | Guide pin and boot kit for PAN 17 caliper   |
| ALCK40015    | WABCO PAN 19-1, 22-1        | 6402259212       | Guide pin and boot kit for PAN 19-1, PAN 22-1 caliper                               |
| ALCK40054    | WABCO Maxx22T, MaxxUS       | 6403229262       | Guide pin and boot kit for Maxx22T and MaxxUS calipers                              |
| ALCK60021    | EX225 L2, H2, H3            | KIT225226        | Guide pin and boot kit for EX225L2, H2, H3 caliper                                  |

## TECHNICAL TRAINING

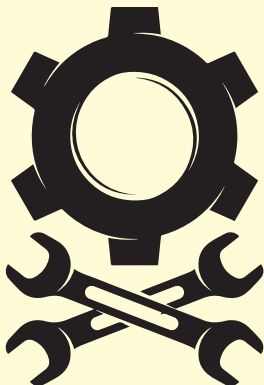
Ask your A-Line representative about our on-site technical training classes. Attend our cross-platform educational sessions and learn hands-on how to keep your air disc systems functioning longer. Or contact us at:  
[sales@ACRairdisc.com](mailto:sales@ACRairdisc.com)



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# FIND THE CL-20 KIT TO MATCH YOUR AIR DISC CALIPER

| Part #        |                       | Description   | Comments   |
|---------------|-----------------------|---|--|
| ALCL20-200    | ADB22x, LT, SK7, ST7  | 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    | ADB22x, LT, SK7, ST7  | 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.                       |
| ALCL20-300    | EX225 L2 0°, 4°       | A-Line CL-20 guide pin kit for EX225L2 0° and 4° caliper with 102mm long guide pin. (With bullet head zerk). Replaces KIT225276 | Bullet head zerk prevents mixed lubrication from standard grease guns. |
| ALCL20-301    | EX225 L2 0°, 4°       | A-Line CL-20 guide pin kit for EX225L2 0° and 4° caliper with 102mm long guide pin. (With standard zerk). Replaces KIT225276    | Standard zerk allows grease from any grease gun.                       |
| ALCL20-302    | EX225L2 12°           | A-Line CL-20 guide pin kit for EX225L2 12° caliper with 117mm long guide pin. (With bullet head zerk). Replaces KIT225277       | Bullet head zerk prevents mixed lubrication from standard grease guns. |
| ALCL20-303    | EX225L2 12°           | A-Line CL-20 guide pin kit for EX225L2 12° caliper with 117mm long guide pin. (With standard zerk). Replaces KIT225277          | Standard zerk allows grease from any grease gun.                       |
| ALCL20-304    | EX225H2, H3           | A-Line CL-20 guide pin kit for EX225H2, H3 caliper. (With bullet head zerk). Replaces KIT225280                                 | Bullet head zerk prevents mixed lubrication from standard grease guns. |
| ALCL20-305    | EX225H2, H3           | A-Line CL-20 guide pin kit for EX225H2, H3 caliper. (With standard zerk). Replaces KIT225280                                    | Standard zerk allows grease from any grease gun.                       |
| ALCL20-400    | WABCO PAN 17          | A-Line CL-20 continuous lubrication guide pin kit for PAN 17 caliper (with bullet head zerk)                                    | Bullet head zerk prevents mixed lubrication from standard grease guns. |
| ALCL20-401    | WABCO PAN 17          | A-Line CL-20 continuous lubrication guide pin kit for PAN 17 caliper (with standard zerk)                                       | Standard zerk allows grease from any grease gun.                       |
| ALCL20-402    | WABCO PAN 19-1, 22-1  | A-Line CL-20 continuous lubrication guide pin kit for PAN 19-1, PAN 22-1 caliper (with bullet head zerk)                        | Bullet head zerk prevents mixed lubrication from standard grease guns. |
| ALCL20-403    | WABCO PAN 19-1, 22-1  | A-Line CL-20 continuous lubrication guide pin kit for PAN 19-1, PAN 22-1 caliper (with standard zerk)                           | Standard zerk allows grease from any grease gun.                       |
| ALCL20-404    | WABCO Maxx22T, MaxxUS | A-Line CL-20 continuous lubrication guide pin kit for Maxx22T, MaxxUS 22 caliper (with bullet head zerk)                        | Bullet head zerk prevents mixed lubrication from standard grease guns. |
| ALCL20-405    | WABCO Maxx22T, MaxxUS | A-Line CL-20 continuous lubrication guide pin kit for Maxx22T, MaxxUS caliper (with standard zerk)                              | Standard zerk allows grease from any grease gun.                       |
| ALCK-BHZ11    | ALL                   | Female grease coupling for standard grease gun. Fits bullet head grease zerks.  | Will only supply grease to bullet head fittings.                       |
| ALCG-MX998-14 | ALL                   | 14.1oz (410 gram) tube of A-LINE Max-A-Sil 998™ Silicon/Teflon grease for air disc caliper guide pin assemblies.                | For use with A-LINE CL-20 guide pin kits.                              |



## INSTALLATION INSTRUCTIONS

For more information about the CL-20 kit and its installation, see the online installation video or download the step-by step installation instructions at

<https://www.ACRairdisc.com/install/cl-20>



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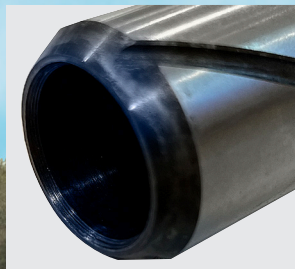
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Reorder Part No. ALCT36.D



# PARAMAXX™ Solution: The Road Ahead

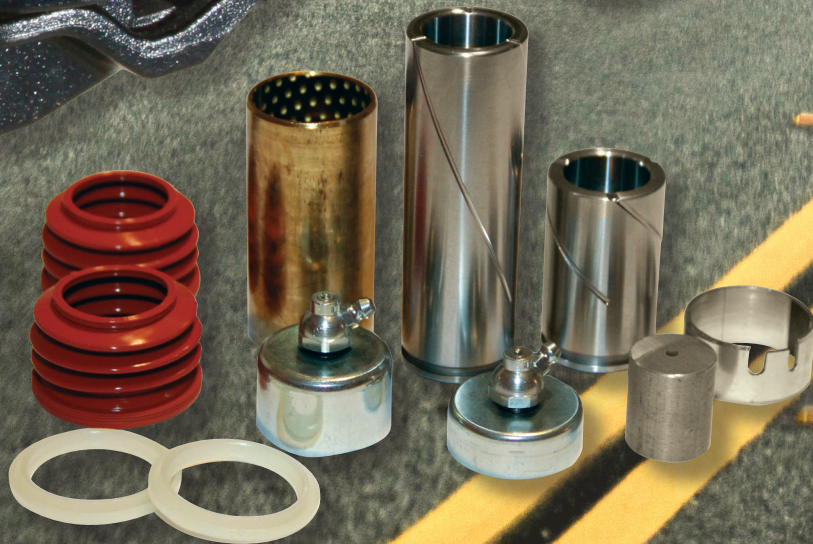
- **Lubricate Your Calipers Within Seconds**
- **Reduce Seizing Due to Lubrication Starvation**
- **Increase Caliper Life**
- **Uses Max-A-Sil 998™ Silicon/PTFE Lubricant to Withstand 998° Temps**
- **Patented by A-Line®**



Lubricating guide pins is easy with A-Line's CL-20 guide pin kit. Grooved guide pins (left) receive grease from a specialized hydraulic stop valve built into the cap (right).



Available in most caliper styles



For More Information contact your A-LINE representative at  
Toll Free 844-424-7347 [sales@ACRairdisc.com](mailto:sales@ACRairdisc.com)  
[www.ACRairdisc.com](http://www.ACRairdisc.com)

