



**WARNING: SPRING-APPLIED CALIPER DISC BRAKES ARE UNDER SPRING TENSION.**

**USE CAUTION WHEN INSTALLING & PERFORMING ALL MAINTENANCE PROCEDURES.**

## INSTALLATION/MAINTENANCE GUIDE

# FS200 Series Spring Applied Caliper Disc Brakes



## FEATURES:

- Hard-coat Anodized Aluminum Construction.
- Dual Belleville Disc Spring Stacks
- Fits on Brake Discs with Disc Diameter up to 16 inches
- Available Branham Brake Discs: 8", 10", 12", 16"
- Non-Asbestos .45 Coefficient of Friction Material
- Spring Stacks in Parallel
- 2065 lb Clamping Force
- 929 lb. Maximum Tangential Force
- 6626 in-lbs force using 16 inch Disc Diameter
- 750 PSI Release Pressure

## ATTRIBUTES:

| Description                | Single Acting, Floating Mount, Use Fixed Disc |
|----------------------------|-----------------------------------------------|
| Disc Thickness             | 5/32", 1/4", 3/8", 1/2", 5/8", 3/4", 1"       |
| Fluid Type(s)              | Hydraulic Fluid                               |
| Max Pressure               | 1500 PSI                                      |
| Seals                      | Buna-N (EPR Seals for DOT 3 available)        |
| Wearable Friction Material | 1.82 cubic inches                             |
| Piston Diameter            | 1.625 inches                                  |
| Total Friction Pad Area    | 8.19 square inches                            |
| Displacement & Type        | .22 cubic inches / Hydraulic                  |

Do **NOT** attempt to mount/dismount, remove and/or fasten caliper assembly bolts without first retracting the caliper pistons. Pressure can be released once the caliper has been dismantled, assembly bolts have been removed and the caliper housings separated. Release pressure for FS200 caliper disc brakes is 750 PSI. DO NOT EXCEED 1500 PSI MAX. If the brake was shipped with a temporary spacer between the friction pads, it may be discarded.

## FS200 Series Installation / Mounting Instructions

1. Prior to mounting your caliper, first connect your hydraulic system to the caliper. Bleeding is the process of removing any present air within your hydraulic system. In order to 'bleed,' locate the bleeder screws (#15). Choose one bleeder screw and loosen, but do not remove.
2. Next, elevate the loosened bleeder screw to the highest point in the system by rotating the caliper and proceed to pump hydraulic fluid into the caliper at no more than 5 PSI. Once hydraulic fluid begins to steadily flow from elevated bleeder screw, tighten bleeder screw.
3. You may then proceed to pressurize the brake to 750 PSI. At 750 PSI your caliper pistons will be fully retracted, opening the gap for your brake disc.
4. Mount your caliper by aligning the friction pad and brake disc surfaces so they are parallel. Clearance between disc and friction pad surface is .015" to .030" per side of brake disc.

(See Attached Drawing for Additional Dimensional Mounting Detail.)

## MAINTENANCE INFORMATION

### Maximizing Pad Life & Braking Torque

In order to obtain maximum pad life and braking torque, make sure the disc remains free of contaminants like: oils and other forms of debris. If your application exists within a harsh environment, protecting your caliper from the elements is highly advised when possible. When caliper pistons are retracted check to make sure brake pads are not in contact with disc surface. Any rubbing between the two surfaces can cause excessive friction leading to premature pad wear.

### Friction Pad Replacement

1. To replace friction pads, pressurize the brake to 750 psi prior to dismounting.
2. Remove the dead side (#2) by removing the (4) bolts (#11).
3. Remove friction pads from the live side pad holders (#5) by removing the screw (#3). Note: these screws are different than the screws used on the dead side friction pads and must be reinstalled in the live side pad holders only.
4. Remove remaining (2) pads from the dead side using the same process.
5. Install new friction pads (#18). Use removeable thread locker on all screws when reinstalling.
6. Reassemble the dead side and spacer to the live side by installing the (4) bolts and tighten to 30 ft-lbs.
7. Remount brake. Refer to installation instructions.

# FS200 CALIPER MAINTENANCE

## PARTS LIST

| ITEM | QTY | PART NUMBER | DESCRIPTION                      |
|------|-----|-------------|----------------------------------|
| 1    | 4   | 4000-1061   | NUT, JAM NYLOC                   |
| 2    | 1   | 4004-4002   | HOUSING, DEADSIDE                |
| 3    | 2   | 4000-1118   | SCREW, FRICTION PAD (DEADSIDE)   |
| 4    | 2   | 4000-1225   | SCREW, FRICTION PAD (PAD HOLDER) |
| 5    | 2   | 4004-4339   | HOLDER, PAD                      |
| 6    | 24  | 4000-1195   | SPRINGS, BELLEVILLE              |
| 7    | 1   | 4004-4415   | HOUSING, MAIN                    |
| 8    | 2   | 4000-1557   | SEAL, PADHOLDER                  |
| 9    | 2   | 4000-1275   | SEAL, PISTON                     |
| 10   | 1   | 4000-1204   | PLATE, BACKING                   |
| 11   | 4   | SEE TABLE A | BOLT, CALIPER                    |
| 12   | 8   | 4000-1042   | WASHER                           |
| 13   | 2   | 4000-1274   | O-RING, BACKUP                   |
| 14   | 2   | 4004-4417   | PISTON                           |
| 15   | 2   | 4000-1049   | SCREW, BLEEDER                   |
| 16   | 2   | 4000-1309   | WASHER, PROTECTIVE               |
| 17   | 2   | 4000-1192   | WASHER, THRUST                   |
| 18   | 4   | 4000-1556   | PAD, FRICTION                    |
| 19   | 1   | SEE TABLE A | SPACER                           |

**TABLE A**

| DESIGNATOR | ROTOR/DISC WIDTH | SPACER PART # | BOLT PART # | BOLT LENGTH | BRAKE MODEL | BRAKE PART # |
|------------|------------------|---------------|-------------|-------------|-------------|--------------|
| A          | 5/32"            | 4000-4-1064   | 4000-1103   | 5"          | FS200A      | 4004-0167    |
| B          | 1/4"             | 4000-4-1065   | 4000-1103   | 5"          | FS200B      | 4004-0168    |
| L          | 3/8"             | 4000-4-1092   | 4000-1207   | 5 1/2"      | FS200L      | 4004-0260    |
| E          | 1/2"             | 4000-4-1081   | 4000-1207   | 5 1/2"      | FS200E      | 4004-0180    |

## REPAIR KITS, SEAL KITS, AND FRICTION PADS

(QUANTITY OF PARTS SHOWN INCLUDED IN EACH KIT)

| SEAL KIT          | 4004-9193           |  |   |   |   |    | 2 | 2 | 2 |   |
|-------------------|---------------------|--|---|---|---|----|---|---|---|---|
| REPAIR KIT        | 4004-9196           |  | 4 | 2 | 2 |    | 2 | 2 | 2 | 2 |
| SPRING WASHER KIT | 4004-9189           |  |   |   |   | 24 |   |   |   |   |
| FRICTION PAD KIT  | 4004-9160           |  | 4 | 2 | 2 |    |   |   |   |   |
| ITEM#             | DESCRIPTION         |  |   |   |   |    |   |   |   |   |
| 18                | FRICTION PAD        |  |   |   |   |    |   |   |   |   |
| 3                 | SCREW, FRICTION PAD |  |   |   |   |    |   |   |   |   |
| 4                 | SCREW, FRICTION PAD |  |   |   |   |    |   |   |   |   |
| 6                 | DISC SPRING         |  |   |   |   |    |   |   |   |   |
| 9                 | SEAL, PISTON        |  |   |   |   |    |   |   |   |   |
| 13                | O-RING, BACKUP      |  |   |   |   |    |   |   |   |   |
| 8                 | SEAL, PADHOLDER     |  |   |   |   |    |   |   |   |   |
| 14                | PISTON              |  |   |   |   |    |   |   |   |   |

## EXPLODED VIEW

