



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

USE CAUTION WHEN INSTALLING & PERFORMING ALL MAINTENANCE PROCEDURES.

INSTALLATION/MAINTENANCE GUIDE

PFS400 Series Spring Applied Caliper Disc Brakes



FEATURES:

- Hard-coat Anodized Aluminum Construction.
- Dual Belleville Disc Spring Stacks
- Fits on Brake Discs with Unlimited Disc Diameter.
- Available Branham Brake Discs: 8", 10", 12"
- Non-Asbestos .45 Coefficient of Friction Material
- Spring Stacks in Parallel
- 4130 lb Clamping Force
- 1859 lb. Maximum Tangential Force
- 35,568 in-lbs force using 40 inch Disc Diameter
- 100 PSI Release Pressure

ATTRIBUTES:

Description	Single Acting, Floating Mount, Use Fixed Disc
Disc Thickness (inches)	5/32", 1/4", 3/8", 1/2", 5/8", 3/4", 1"
Fluid Type(s)	Air
Max Pressure	150 PSI
Seals	Buna-N
Wearable Friction Material	1.82 cubic inches
Piston Diameter	1.625 inches
Total Friction Pad Area	8.19 square inches
Displacement & Type	25.2 cubic inches / Air

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 PFS400 caliper disc brakes is 100 PSI. DO NOT EXCEED 150 PSI MAX. If the brake was shipped with a temporary spacer between the friction pads, it may be discarded.

PFS400 Series Installation / Mounting Instructions

1. When mounting your caliper, align the friction pad and brake disc/rotor surfaces so they are parallel. Make sure that disc/rotor will not come in contact with pads when brake is fully released. The clearance between disc and friction pad surface is .015" to .030" per side of brake disc.
2. Mount with two S.A.E. Grade 8 bolts, tighten to 30 ft-lbs torque.
3. The rotor/disc should be aligned between friction pads.
4. The brake disc should have less than .010" runout, ground to 80-120 RMS finish, flat within +/- .010" and be clean and dry.
5. Supply clean, dry air to brake. Install air fittings in brake port. Minimum release pressure 100 PSI. Do NOT exceed 150 PSI.
6. Inspect the brake pads frequently for signs of wear. The brake tangential force directly diminishes with friction pad wear. Refer to pad wear vs. tangential force in the attached dimensional drawing.

(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 100 psi prior to dismantling.
2. Remove the dead side (#10) by removing the (4) bolts (#14).
3. Remove friction pads from the live side pad holders (#8) by removing the screw (#28). 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 (#11). Use removeable thread locker on all brass 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.

PFS400 CALIPER MAINTENANCE

PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	4004-4329	HOUSING, SECONDARY
2	1	4004-4069	HOUSING, SECONDARY ALPHA
3	1	4004-4330	HOUSING, PRIMARY
4	1	4004-4067	PISTON, PRIMARY
5	2	4004-4496	PISTON, SECONDARY
6	3	1300-1009	O-RING, PISTON
7	2	4000-1553	SEAL, PISTON ROD
8	2	4004-4416	PAD HOLDER
9	1	SEE TABLE A	SPACER
10	1	4004-4460	HOUSING, DEAD SIDE
11	4	4000-1556	FRICTION PAD
12	2	4000-1118	SCREW, FRICTION PAD (DEADSIDE)
13	4	4000-1192	WASHER
14	4	SEE TABLE A	BOLT, DEADSIDE HOUSING
15	3	4000-1126	O-RING, HOUSING
16	4	4004-1311	BOLT, HOUSING
17	4	4004-1312	WASHER
18	1	4004-4312	BACKING PLATE
19	2	4000-1520	SCREW, BACKING PLATE
20	1	4004-4500	CONNECTOR, PISTON 2ND STAGE
21	3	1880-1020	O-RING, CONNECTOR ROD
22	3	4000-1115	FLUSH SEAL
23	1	4004-4501	CONNECTOR, PISTON 3RD STAGE
24	2	4000-1192	WASHER, THRUST
25	48	4000-1195	DISC SPRING
26	2	4000-1309	WASHER, BACKING
27	2	4004-4-4457	CONNECTOR RODS, PAD
28	2	4000-1225	SCREW, FRICTION PAD (PAD HOLDER)

TABLE A

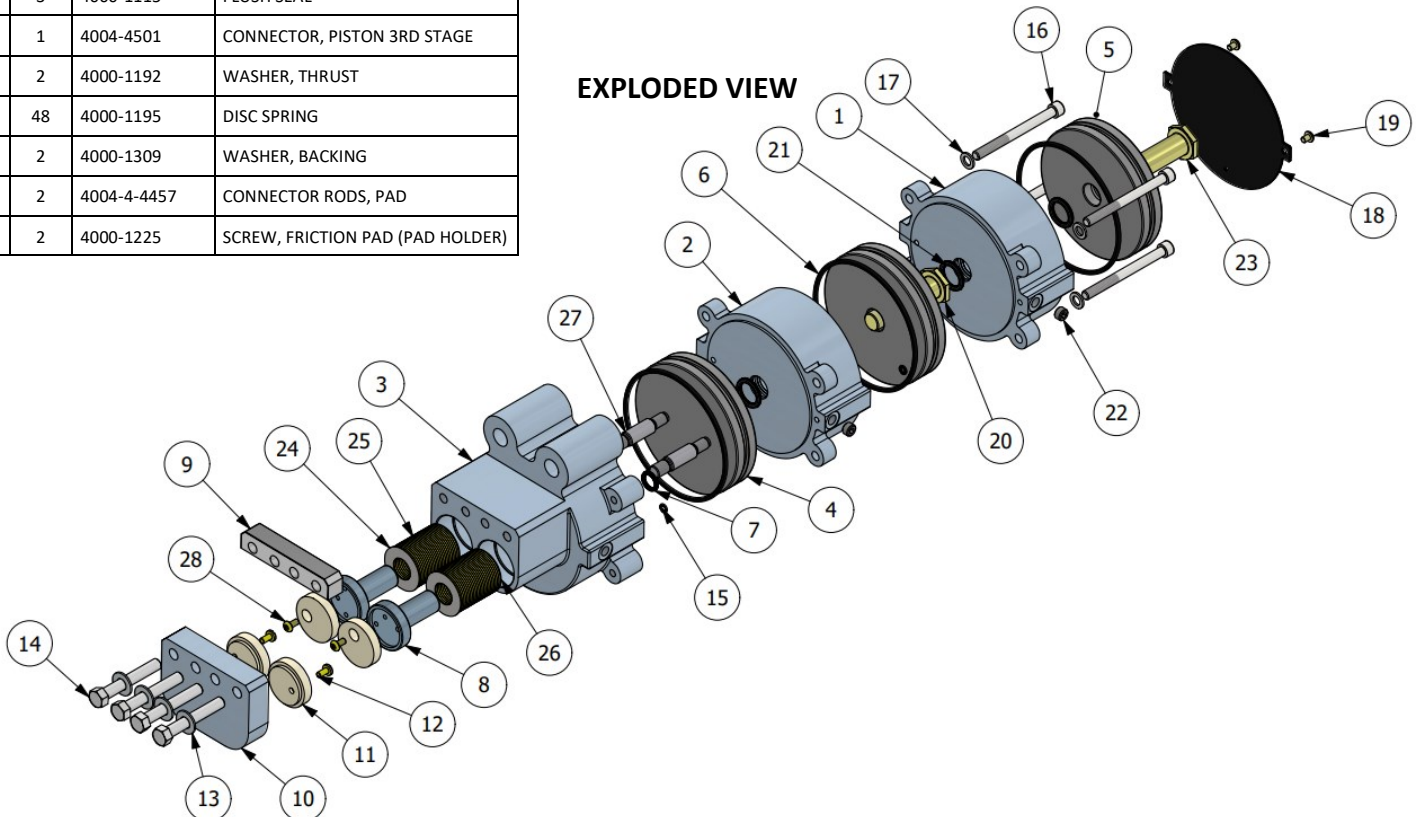
DESIGNATOR	ROTOR/DISC WIDTH	SPACER PART #	BOLT PART #	BOLT LENGTH	BRAKE MODEL	BRAKE PART #
A	5/32"	4004-4462	4000-1627	2 1/2"	PFS400AF	4004-0771
B	1/4"	4004-4463	4000-1627	2 1/2"	PFS400BF	4004-0772
L	3/8"	4004-4464	4000-1627	2 1/2"	PFS400LF	4004-0773
E	1/2"	4004-4465	4004-1521	2 3/4"	PFS400EF	4004-0774
T	3/4"	4004-4479	4004-1516	3"	PFS400TF	4004-0776
O	1"	4004-4480	4000-1516	3"	PFS400OF	4004-0777

REPAIR KITS, SEAL KITS, AND FRICTION PADS

(QUANTITY OF PARTS SHOWN INCLUDED IN EACH KIT)

SEAL KIT	4004-9169						3	2	3	3
REPAIR KIT	4004-9247		4	2	2	48	3	2	3	3
SPRING WASHER KIT	4004-9170					48				
FRICTION PAD KIT	4004-9160		4	2	2					

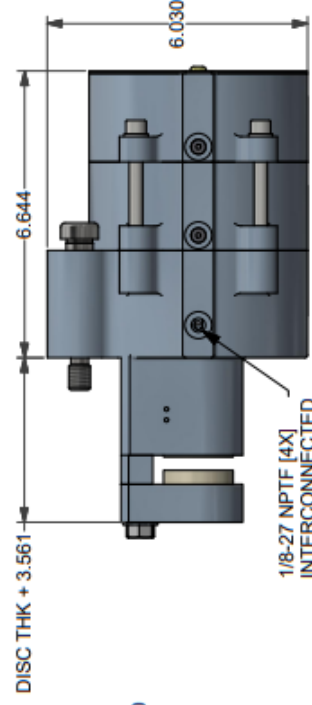
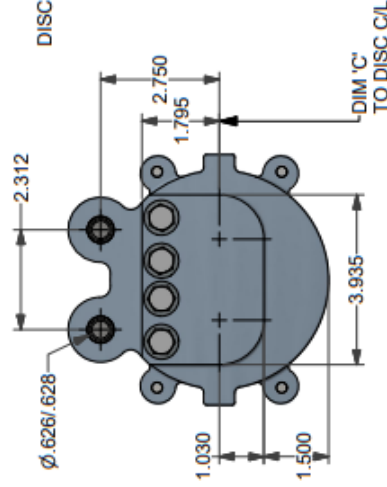
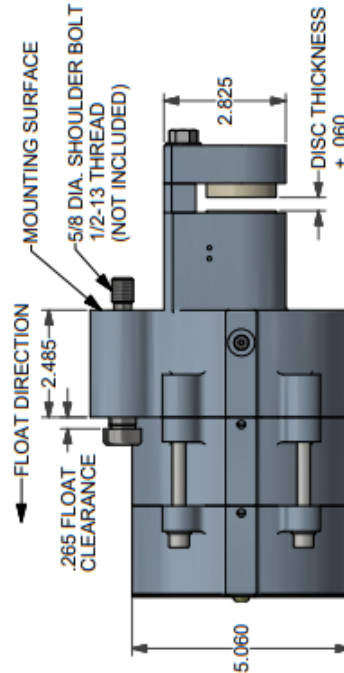
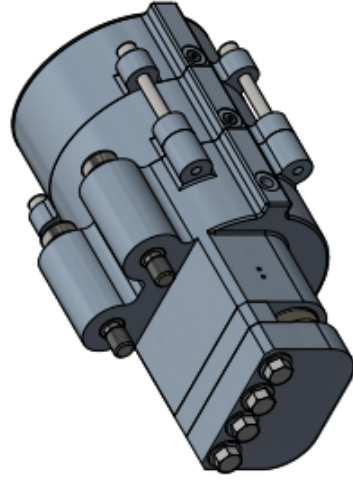
EXPLODED VIEW



ASSY. NO.	MODEL	DISC THK.
4004-0771	PFS400AF	.156
4004-0772	PFS400BF	.250
4004-0773	PFS400LF	.375
4004-0774	PFS400EF	.500
4004-0775	PFS400JF	.625
4004-0776	PFS400TF	.750
4004-0777	PFS400OF	1.0
4004-0778	PFS400QF	1.125

TOTAL PAD WEAR, INCHES	TANGENTIAL FORCE, LBS.
0	1,859
.06	1,549
.12	1,239
.18	929
.24	619
.30	309
.36	0

- * PFS400 SERIES BRAKES ARE FOR EMERGENCY STOP & HOLD APPLICATIONS ONLY
- * TORQUE = TANGENTIAL FORCE X BRAKING RADIUS, INCHES
- * 100 PSI RELEASE PRESSURE
- * UNLIMITED DISC DIAMETER
- * 4,130 LBS. OF CLAMPING FORCE
- * .45 COFF. OF FRICTION, PAD #951023
- * 8.19 SQ. INCHES OF FRICTION PAD AREA
- * 1.52 CUBIC INCHES OF WEARABLE PAD VOLUME
- * CAST ALUM. CONSTRUCTION
- * HARD COATED HOUSINGS
- * (2) SPRING STACKS IN PARALLEL 24 EA.
- * BUNA N SEALS, VITON OPTIONAL



BRAKING RADIUS (IN) = SQ. ROOT OF (DIM 'C' SQUARED + .8789)

DISC DIA. DIM. 'C' BRAKING RADIUS

DISC DIA.	DIM. 'C'	BRAKING RADIUS
8.0	3.030	3.17
10.0	4.030	4.14
12.0	5.030	5.11
16.0	7.030	7.09
18.0	8.030	8.08
20.0	9.030	9.08
22.0	10.030	10.07
30.0	14.030	14.06



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TAP DEPTHS FULL THIRD DRILL DEPTHS FULL DIA.		THIRD ANGLE PROJECTION	DATE 1/12/2014
TOLERANCES: XXX ± .005 XXX ± .005		DESIGNER CA	DATE
FINISHES: XXX ± .005 XXX ± .005		REVISION #1	DATE
MATERIAL		TITLE	PFS400 SERIES BRAKING APPLIED/AIR RELEASE
WEIGHT N/A		SCALE	1 of 1
DRAWING NO.		SIZE	D
REV		DATE	