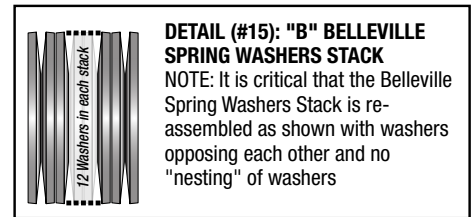
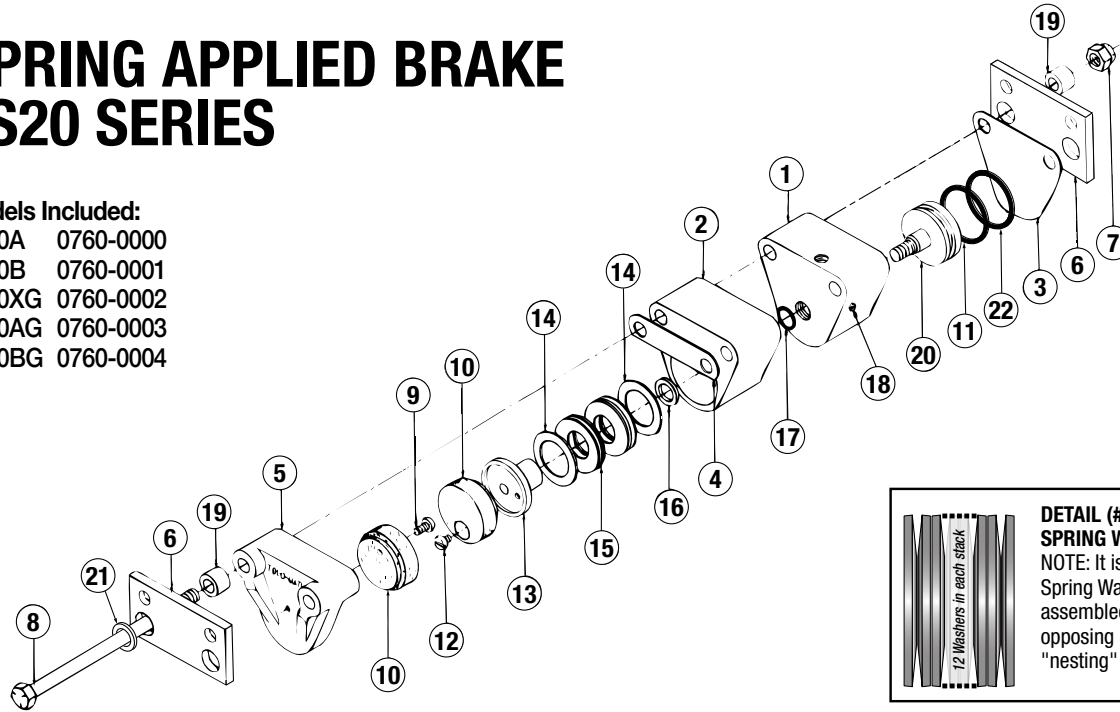


# SPRING APPLIED BRAKE FS20 SERIES

**Models Included:**

- FS20A 0760-0000
- FS20B 0760-0001
- FS20XG 0760-0002
- FS20AG 0760-0003
- FS20BG 0760-0004



| ITEM | PART NO.  | DESCRIPTION                         | FS20A | FS20B | FS20XG | FS20AG | FS20BG |
|------|-----------|-------------------------------------|-------|-------|--------|--------|--------|
| 1.   | 0760-1004 | Live Side Housing                   | 1     | 1     | 1      | 1      | 1      |
| 2.   | 0760-1022 | Housing Spacer                      | 1     | 1     | 1      | 1      | 1      |
| 3.   | 0760-1002 | Cover Plate                         | 1     | 1     | 1      | 1      | 1      |
| 4.   | 0743-1004 | Spacer, .094" thick                 |       | 1     |        |        | 1      |
|      | 0743-1025 | Spacer, .225" thick                 |       |       | 1      |        |        |
| 5.*  | 0724-1011 | Dead Side Housing                   | 1     | 1     | 1      | 1      | 1      |
| 6.   | 0760-1016 | Floating Mounting Bracket           | 2     | 2     | 2      | 2      | 2      |
| 7.   | 0720-1008 | Lock Nut                            | 2     | 2     | 2      | 2      | 2      |
| 8.   | 0739-1006 | Hex Head Bolt, Grade 8, 3/8-24x6.5" | 2     | 2     | 2      | 2      | 2      |
| 9.   | 0720-1026 | Pan Head Screw, 10-24x3/8           | 1     | 1     | 1      | 1      | 1      |
| 10.  | 0720-1024 | Puck, Friction                      | 2     | 2     | 2      | 2      | 2      |
|      | 0720-1004 | O-Ring, Buna-N                      | 1     | 1     |        |        |        |
| 11.  | 0760-1009 | O-Ring, EPR                         |       |       | 1      | 1      | 1      |
|      | 0737-1024 | Pan Head Screw, 10-24x1/4           | 1     | 1     | 1      | 1      | 1      |
| 12.  | 0740-1065 | Spring Holder                       | 1     | 1     | 1      | 1      | 1      |
| 13.  | 0740-1065 | Spring Holder                       | 1     | 1     | 1      | 1      | 1      |
| 14.  | 0740-1007 | Thrust Washer                       | 2     | 2     | 2      | 2      | 2      |
| 15.  | 0740-9012 | Belleville Spring Washers           | 1     | 1     | 1      | 1      | 1      |
| 16.  | 0740-1014 | Spacer Ring                         | 1     | 1     | 1      | 1      | 1      |
| 17.  | 0741-1035 | O-Ring, Buna-N,                     | 1     | 1     |        |        |        |
|      | 0740-1069 | O-Ring, EPR                         |       |       | 1      | 1      | 1      |
| 18.  | 0720-1099 | Bleeder Screw                       | 2     | 2     | 2      | 2      | 2      |
| 19.  | 0743-1071 | Spacer, Ring                        | 4     | 4     | 4      | 4      | 4      |
| 20.  | 0740-1062 | Piston                              | 1     | 1     | 1      | 1      | 1      |
| 21.  | 0720-1011 | Washer                              | 2     | 2     | 2      | 2      | 2      |
| 22.  | 0740-1050 | Back-Up Ring, Buna-N                | 1     | 1     |        |        |        |
|      | 0784-1008 | Back-Up Ring, EPR                   |       |       | 1      | 1      | 1      |

\*Dead Side Housing is available only as Dead Side Housing Assembly 0724-9000. This sub-assembly also includes one Puck (0720-1024) and one Pan Head Screw (0720-1026).

**NOTE:** Items marked with capital letters are used only in models with those letter suffixes. Model number letter suffixes have the following meanings:

"A" indicates the brake is designed to work with a 5/32" (3.97mm) thick disc.

"B" indicates the brake is designed to work with a 1/4" (6.35mm) thick disc.

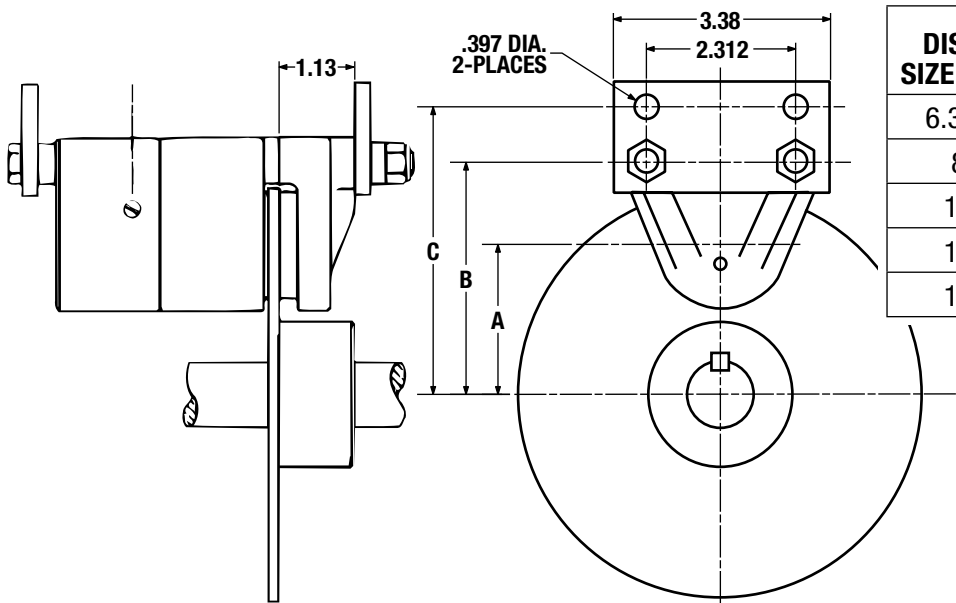
"FS" indicates spring applied brake.

"G" indicates the brake is built with EPR Seals and is DESIGNED TO BE OPERATED WITH AUTOMOTVE BRAKE FLUID ONLY. (In brakes without the "G" suffix, most petroleum-based, hydraulic fluids may be used).

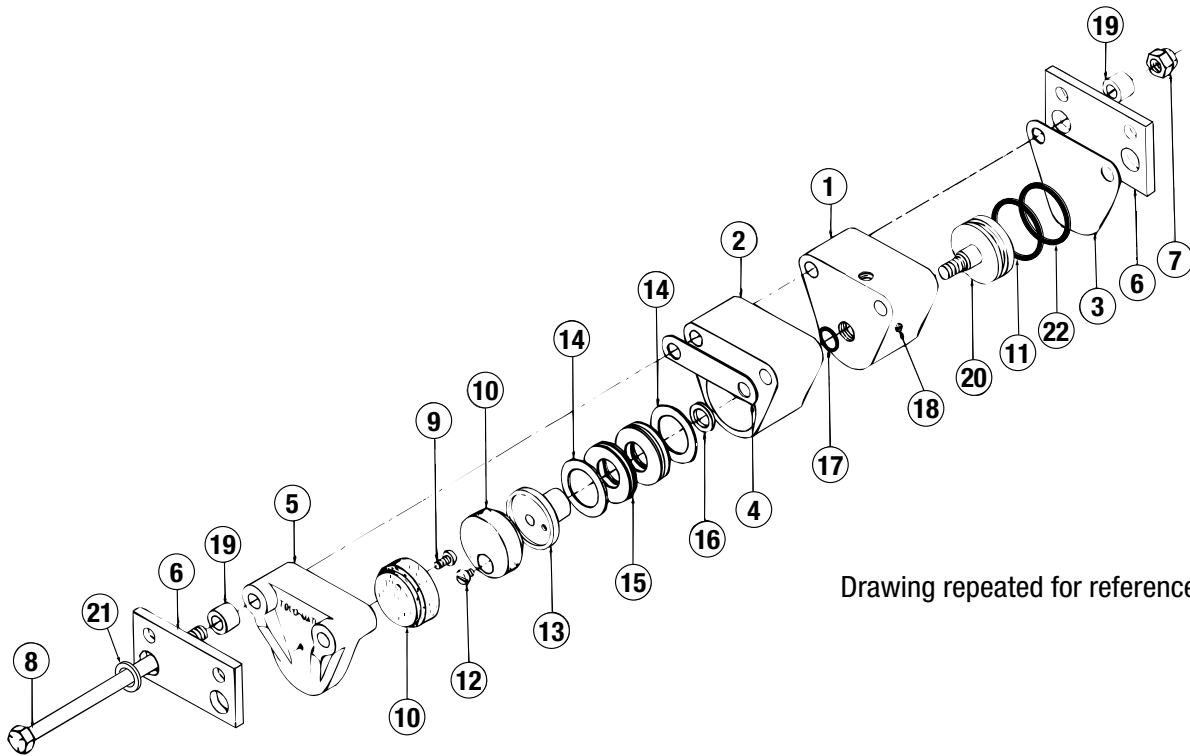
**WARNING:** This caliper disc brake is under spring tension. Do not remove bolts without FIRST pressurizing cylinder to retract pistons. After disassembly, release pressure slowly. Do not attempt to retract the pistons by tightening the bolts on reassembly. USE HYDRAULIC PRESSURE INSTEAD.

1. When mounting the brake, connect the fluid pressure source to the brake. Bleed the brake by loosening the screws on the Bleeder Valves (#18). Then, pressurize the brake gradually up to 750 PSI. At this pressure, the pucks retract into the housing, creating the correct gap for the disc.
2. Slip the brake over the disc and align it so the puck faces are parallel with the disc. Proper clearance between the pucks and disc is .010" when new. Then, fasten the Mounting Brackets (#6) with 3/8" diameter screws to any fixed member. (See the mounting diagram below for dimensions).
3. To prevent excessive wear, be sure the disc does not rub against the pucks or housing when the piston is retracted.
4. The disc must be free of dirt and grease for maximum life and braking action.

5. **DO NOT PRESSURIZE THIS UNIT ABOVE 1,500 PSI.**
6. Inspect the brake pucks frequently for signs of wear. The torque output will diminish over time with wear. Tolomatic recommends replacement of puck after 0.281" (7.14 mm) of total wear is observed.
7. **WARNING:** Make certain that the hydraulic fluid being used is compatible with the seals in the brake. Brake models with a suffix "G" are provided with EPR seals for use with automotive brake fluid **ONLY**. All other models are equipped with Buna-N seals for use with mineral-base hydraulic fluids.
8. When plumbing the fluid system, use a minimum amount of pipe thread sealant on joints to prevent sealant contamination entering the system.
9. **Do not pressure bleed the brake with more than 5 PSI. Excessive pressure will cause the O-Ring on the bleeder to extrude, causing the possibility of the O-Ring being sheared off when tightened. Take care to see that the O-Ring is properly seated before tightening.**



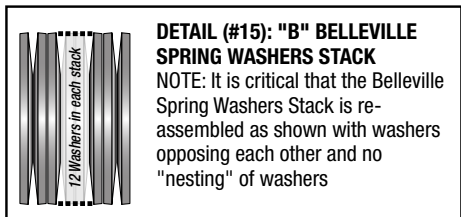
| DISC SIZE (in) | FS 20 SERIES |       |       |
|----------------|--------------|-------|-------|
|                | A            | B     | C     |
| 6.313          | 2.281        | 3.531 | 4.344 |
| 8              | 3.125        | 4.375 | 5.188 |
| 10             | 4.125        | 5.375 | 6.188 |
| 12             | 5.125        | 6.375 | 7.188 |
| 16             | 7.125        | 8.375 | 9.188 |



Drawing repeated for reference

**FS20 ASSEMBLY**

1. Install Brake Puck (#10) onto Dead Side Housing (#5) using a Pan Head Screw (#9) and tighten.
2. Lubricate and install Large O-Ring (#11) and Back-Up Ring (#22) on Piston (#20).
3. Lubricate and install Small O-Ring (#17) into the Live Side Housing (#1).
4. Slide the Live Side Housing (#1) with the flat side upward over the top of the piston threads. Be careful not to damage small O-Ring (#17) with threads when installing.
5. Slide the Spacer Ring (#16), Thrust Washer (#14), Belleville Spring Washers (#15) and a second Thrust Washer (#14) over the piston threads.



6. Using Loctite® 242 thread locker, screw Spring Holder (#13)

onto piston threads and tighten.

7. Install Brake Puck (#10) onto the Spring Holder (#13) with the Pan Head Screw (#12).
8. Slide Housing Spacer (#2) over the spring stack assembly.
9. Place Washers (#21) onto the Hex Head Bolts (#8). Over this, install the Floating Mounting Bracket Spacer Rings (#19), the Floating Mount Bracket (#6), Dead Side Housing (#5), Spacer (#4), Live Side Housing Assembly (#1), Cover Plate (#3), secondary Floating Mounting Bracket (#6) and Spacer Rings (#19). Tighten the whole assembly together with the Lock Nuts (#7).
10. Apply small amount of Loctite® 242 thread locker into the threads of the Live Side Housing (#1) and not on the threads of the brass portion of Bleeder (#18). Install bleeders into the housing. Do not apply any Thread Locker to the small steel portion of the bleeder.
11. Test for release pressure. Release pressure is the lowest pressure at which the test spacer can be removed from the brake pads without interference. While unit is at the nominal release pressure, check for visible fluid leaks and/or pressure loss.

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