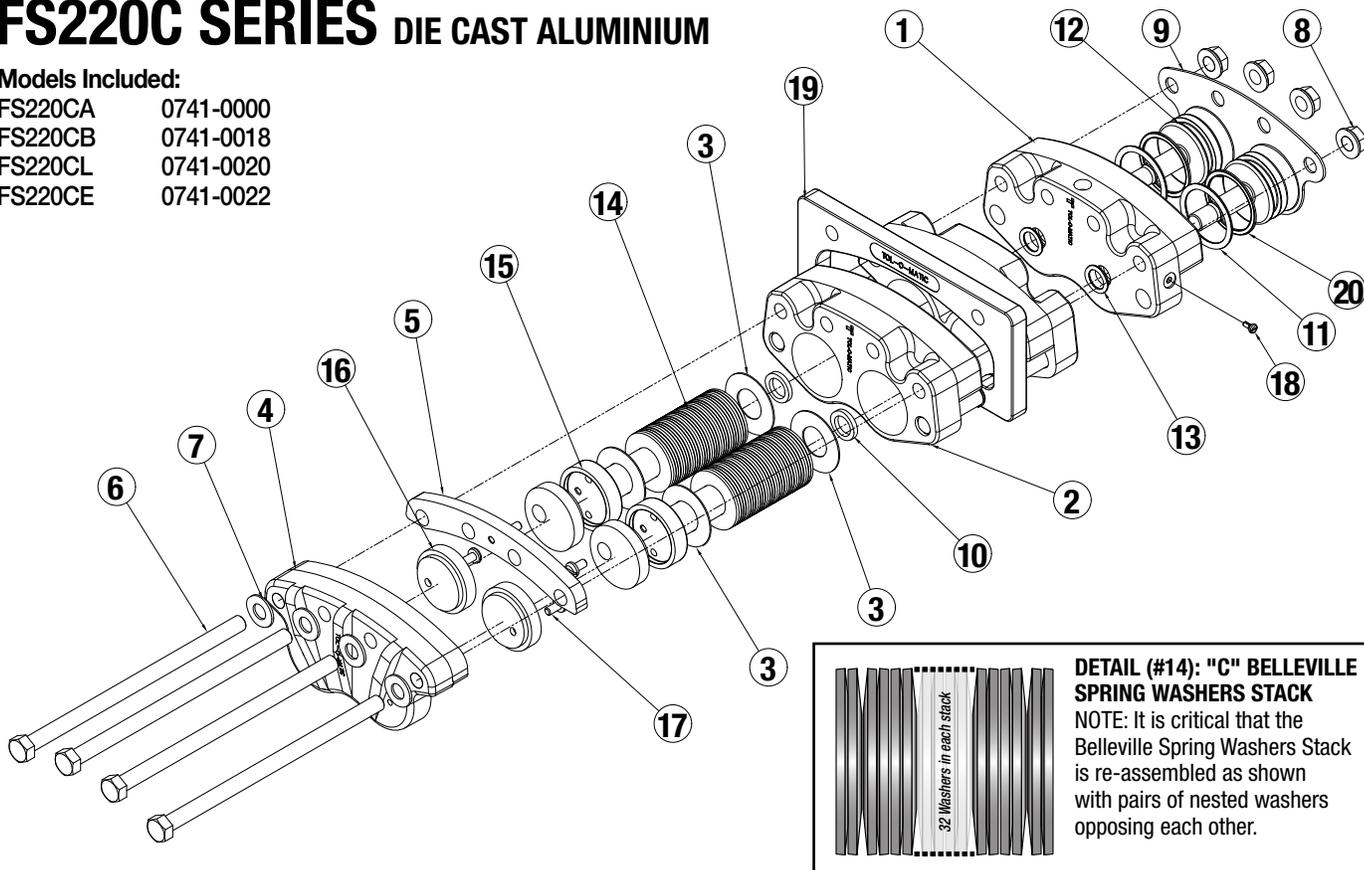


SPRING-APPLIED BRAKE FS220C SERIES DIE CAST ALUMINIUM

Models Included:

FS220CA	0741-0000
FS220CB	0741-0018
FS220CL	0741-0020
FS220CE	0741-0022



Item	Part No.	Description	Quantity			
			0741-0000	0741-0018	0741-0020	0741-0022
1.	0741-1001	Live Side Housing	1	1	1	1
2.	0738-1001	Housing Spacer	2	2	2	2
3.	0740-1007	Thrust Washer	4	4	4	4
4.	0733-1068	Dead Side Housing	1	1	1	1
5.	0733-1022	"B" Spacer		1		
	0733-1023	"E" Spacer				1
	0733-1042	"L" Spacer			1	
6.	0739-1006	Hex Head Bolt, Grade 8	4	4		
	0741-1009	Hex Head Bolt, Grade 8			4	4
7.	0720-1011	Washer, Flat	4	4	4	4
8.	0720-1008	Spirallock Flange Hex Nut	4	4	4	4

Item	Part No.	Description	Quantity			
			0741-0000	0741-0018	0741-0020	0741-0022
9.	0737-1022	Cover Plate	1	1	1	1
10.	0740-1014	Spacer Ring	2	2	2	2
11.	0720-1004	O-Ring, Buna-N	2	2	2	2
12.*	0740-1062	Piston	2	2	2	2
13.	0741-1035	O-Ring, Buna-N	2	2	2	2
14.	0740-9032	Belleville Spring Washers Stack	2	2	2	2
15.*	0741-1036	Spring Holder	2	2	2	2
16.	0720-1024	Puck, Friction	4	4	4	4
17.	0720-1026	Pan Head Screw, Brass	4	4	4	4
18.	0701-1023	Bleeder Screw, Buna-N	2	2	2	2
19.	0739-9002	Mounting Bracket Assy.	1	1	1	1
20.	0740-1050	Back-up Ring, Buna-N	2	2	2	2

*Items #12 and #15 must be replaced in pairs on calipers manufactured prior to 12-1-1991

NOTE: 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.

"C" indicates the brake has a release pressure of 1,500 PSI (103.4 bar).

"E" indicates the brake is designed to work with a 1/2" (12.7mm) thick disc.

"L" indicates the brake is designed to work with a 3/8" (9.53mm) thick disc.

MAXIMUM OPERATING PRESSURE 2,000 PSI (137.9 BAR).

INSTALLATION

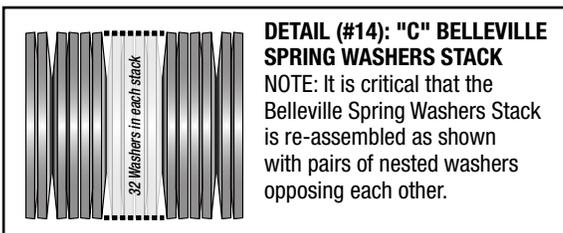
WARNING: This caliper disc brake housing is under spring tension. DO NOT REMOVE bolts without first pressurizing the cylinders to retract the pistons. After disassembly, release pressure slowly.

1. When mounting the brake caliper, connect the fluid pressure source to the External Fluid Port on the Live Side Housing (#1). Bleed the brake by loosening the Bleeder Screws. DO NOT PRESSURE BLEED AT MORE THAN 5 PSI (0.34 bar) to prevent O-Ring extrusion. Then gradually increase the brake pressure up to 1500 PSI (103.4 bar). At this pressure, the brake pucks retract into the Brake Housing creating the correct gap for the brake disc.
2. Slip the brake over the disc and align it so that the puck faces are parallel with the disc. The correct clearance between the disc and pucks is 0.005 inch to 0.010 inch when the pucks are new. Then, fasten the Mounting Bracket Assembly with 3/8-inch diameter screws to a fixed member. See the diagram below for dimensions.
3. To prevent excessive wear, be certain the disc does not rub against the pucks or housing when the brake is not actuated.
4. For maximum life and brake performance make certain the disc is free of dirt and grease.
5. When plumbing the fluid system, use a minimum amount of pipe thread sealant on joints to prevent sealant from entering the system.

WARNING: DO NOT PRESSURIZE THE UNIT OVER 2,000 PSI (137.9 bar).

TO REASSEMBLE:

1. Place two (2) new O-Rings (#13) into the grooves in the Live Side Housing (#1).
2. Place new O-Rings (#11) and Back-up Rings (#20) onto Pistons (#12). ***NOTE the Back-up Ring must be on the non-pressure side of the piston with the concave surface of the Back-up Ring mating with the O-Ring.***
3. Lubricate O-Rings (#11 and #13) along with the internal diameters of the bores on the Live Side Housing (#1), with a good O-Ring grease such as Lubriplate® 105.
4. Insert Pistons (#12) into the piston bores, being careful not to damage O-Rings (#11 and #13).
5. Place Spacer Rings (#10) over the stems of the Pistons (#12).
6. Place the Thrust Washers (#3) over the Piston Stems extending from the Live Side Housing (#1).
7. Place a stack of 32 Belleville Spring Washer (#14) over each Piston Stem, making certain that the stack follows the diagram.

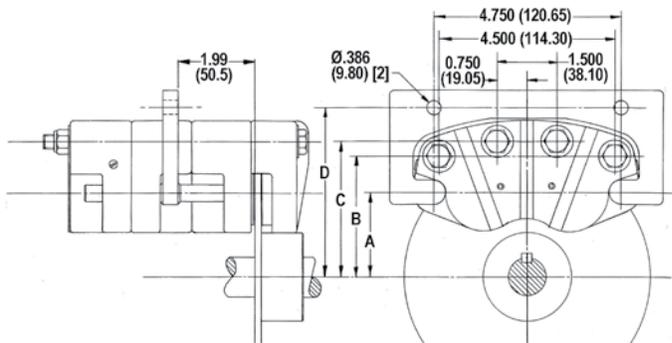


DETAIL (#14): "C" BELLEVILLE SPRING WASHERS STACK
 NOTE: It is critical that the Belleville Spring Washers Stack is re-assembled as shown with pairs of nested washers opposing each other.

8. Place another Thrust Washer (#3) on top of each spring stack.
9. Apply Loctite® 242 to the threads of the Piston Stems (#12).

10. Thread the Spring Holders (#15) onto each Piston Stem (#12) and torque to 20 in-lbs (2.26 Nm).
 11. Mount Friction Pucks (#16) onto the Spring Holders (#15) with the Pan Head Screws (#17), applying Loctite® 242 to the Pan Head Screws and torque to 20 in-lbs (2.26 Nm).
 12. Mount two Friction Pucks (#16) to the Dead Side Housing (#4) with the Pan Head Screws (#17) and torque to 20 in-lbs (2.26 Nm).
 13. Align the Spring Stacks.
 14. Open the Bleeder Screws (#18) on the Live Side Housing.
 15. Apply low pressure [no more than 5 PSI (0.34 bar)] to the Hydraulic Fluid Port on the Live Side Housing (#1) to bleed the brake. Tighten the Bleeder Screws, being careful not to damage the O-Rings in the bleeder seats.
- NOTE:** Do not pressure bleed with more than 5 PSI (0.34 bar). Excessive pressure will cause the O-Rings on the bleeders to extrude and when tightened they may be sheared. Make certain the O-Rings are properly seated before tightening the bleeder valves.
16. Pressurize the brake to 1,500 PSI (103.4 Bar). At this pressure, the spring stacks will fully retract.
 17. While the brake is pressurized, place a Housing Spacer (#2) over the spring stacks.
 18. Place the Mounting Bracket Assembly (#19) into the pin holes on the Live Side Housing (#1) and the Housing Spacer (#2).
 19. Place a second Housing Spacer (#2), Spacer (#5) and the Dead Side Housing (#4) on the first Housing Spacer (#2) and fasten together with Bolts (#6), Washers (#7) and Spirallock Flange Nuts (#8) and torque to 480 in-lbs (54.2 Nm).
 20. Place the brake over the disc, or insert a spacer between the Friction Pucks (#16) before releasing the pressure. DO NOT RELEASE THE PRESSURE WITHOUT A DISC OR SPACER IN PLACE. If the pressure is released without a disc or spacer, the spring stacks may need to be realigned.

MOUNTING DIMENSIONS: FS220C



Disc Dia.	A		B		C		D		
	in	mm	in	mm	in	mm	in	mm	
6.313	160.4	2.13	54.1	3.07	78.0	3.45	87.6	4.30	109.2
8	203.2	3.00	76.2	3.94	100.1	4.32	109.7	5.17	131.3
10	254.0	4.00	101.6	4.94	125.5	5.32	135.1	6.17	156.7
12	304.8	5.00	127.0	5.94	150.9	6.32	160.5	7.17	182.1
16	406.4	7.09	180.1	8.03	204.0	8.41	213.6	9.26	235.2

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