



Caliper Disc Brakes

Model P 20 Series

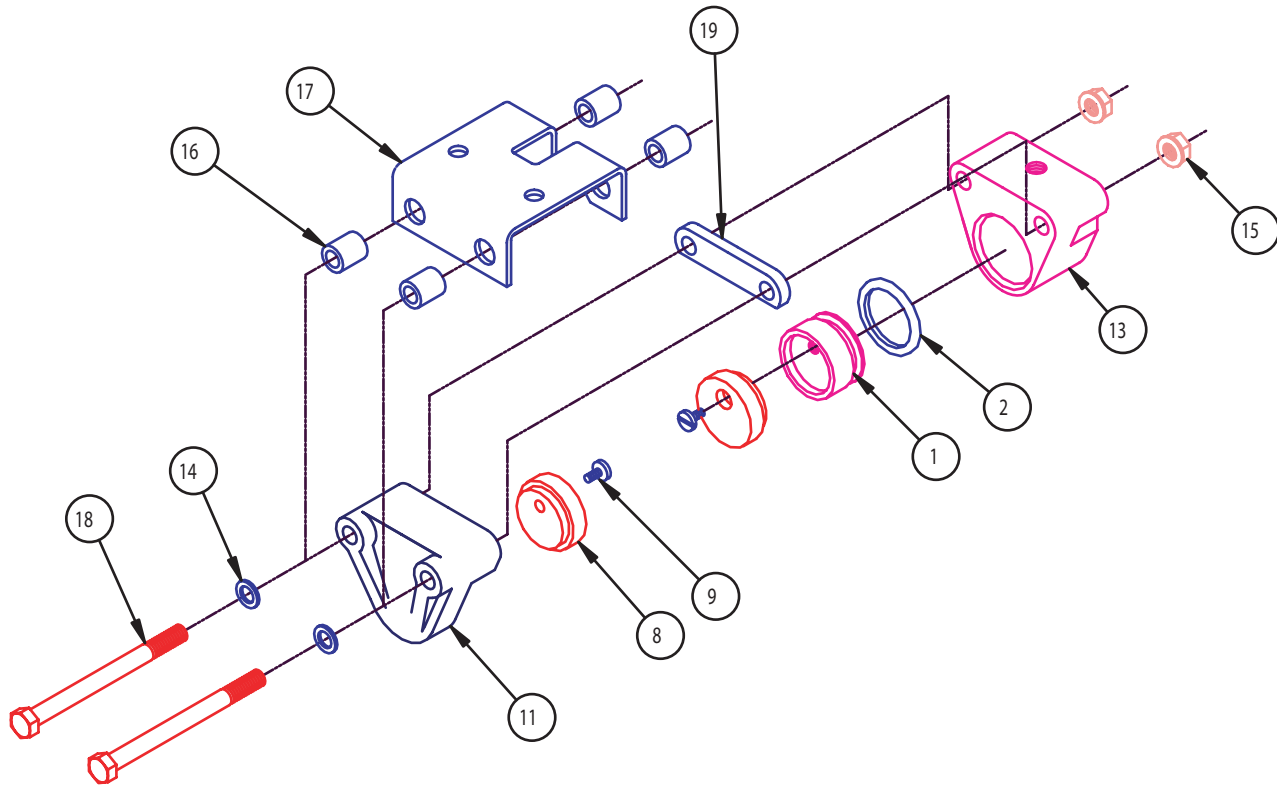
Model H 20 Series

List of Parts

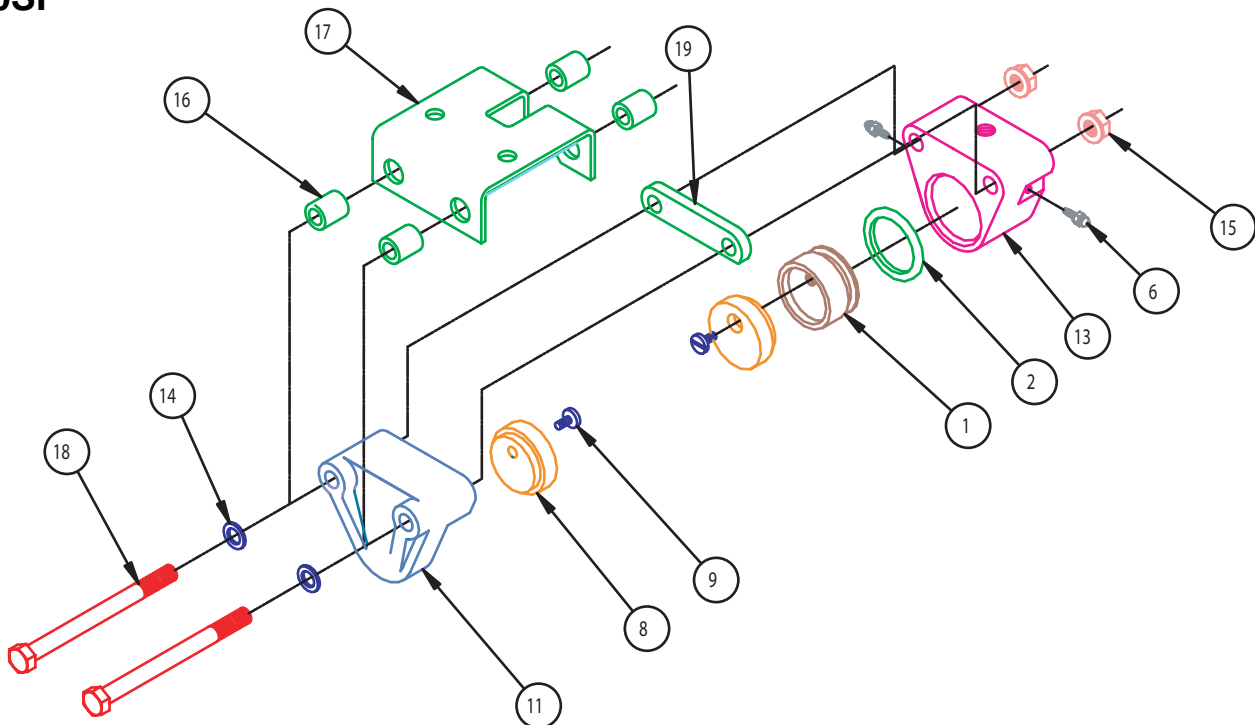
Item	Part No.	Description	Single-Acting											Double -Acting						Double-Acting Retractable										
			Model No.	Assy. No.		Assy. No.		Assy. No.		Assy. No.		Assy. No.		Assy. No.		Assy. No.		Assy. No.		Assy. No.		Assy. No.								
			P 20 SA	P 20 SB	H 20 SAC	H 20 SBC	H 20 SA CG	H 20 SBCG	P 20 SAF	P 20 SBF	H 20 SAFC	H 20 SBFC	H 20 SAFCG	H 20 SBFCG	P 20 DA	P 20 DB	P 20 DE	H 20 DAC	H 20 DBC	H 20 DEC	H 20 DACG	H 20 DBCG	H 20 DECG	P 20 DAR	P 20 DBR	P 20 DER	H 20 DARC	H 20 DBRC	H 20 DERC	
1.	0720-1027	Non-Retractable Piston	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2						
2.	0720-1004	O-Ring, Buna-N, -220	1	1	1	1			1	1	1	1			2	2	2	2	2	2				2	2	2	2	2	2	
	0760-1009	O-Ring, EPR, -220					1	1					1	1							2	2	2							
3.	0728-1030	Retractable Piston																						2	2	2	2	2	2	
4.	0728-1008	Compression Spring																						2	2	2	2	2	2	
5.	0728-1029	Shoulder Screw																						2	2	2	2	2	2	
6.	0720-1099	Bleeder Screw			2	2	2	2			2	2	2	2				4	4	4	4	4	4				4	4	4	
8.	0720-1024	Puck	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9.	0720-1026	Pan Head Screw, 3/8" Long	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10.	1014-1065	Pipe Plug, 1/8-27 NPT													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
11.	0724-1011	Dead Side Housing	1	1	1	1	1	1	1	1	1	1	1	1																
12.	0720-1003	O-Ring, Buna-N, -010													2	2	2	2	2	2				4	4	4	4	4	4	
	3025-1015	O-Ring, EPR, -010																			2	2	2							
13.	0728-1057	Housing P20S	1	1					1	1																				
	0728-1001	Housing P20DR																						2	2	2				
	0728-1055	Housing H20S			1	1	1	1			1	1	1	1																
	0720-1052	Housing H20D																2	2	2	2	2	2							
	0720-1001	Housing P20D													2	2	2													
	0720-1089	Housing H20DR																									2	2	2	
14.	0720-1007	Washer	2	2	2	2	2	2							2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
15.	0720-1008	Nut, Hex, Flanged	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16.	0743-1071	Spacer Ring							4	4	4	4	4	4																
17.	0724-1016	Bracket							1	1	1	1	1	1																
18.	0724-1105	Hex. Hd. Bolt, Grade 8, 3-3/4"	2	2	2	2	2	2							2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	0720-1105	Hex. Hd. Bolt, Grade 8, 4-1/2"													2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
19.	0720-1031	Double-Acting "A" Spacer													1			1			1			1			1			
	0721-1032	Double-Acting "B" Spacer														1			1			1			1			1		
	0721-1034	Double-Acting "E" Spacer															1		1			1			1			1		
	0743-1004	Single-Acting "B" Spacer	1		1		1		1		1		1																	

NOTE: For hydraulic brakes manufactured prior to September 1, 1989, consult factory for correct bleeders.

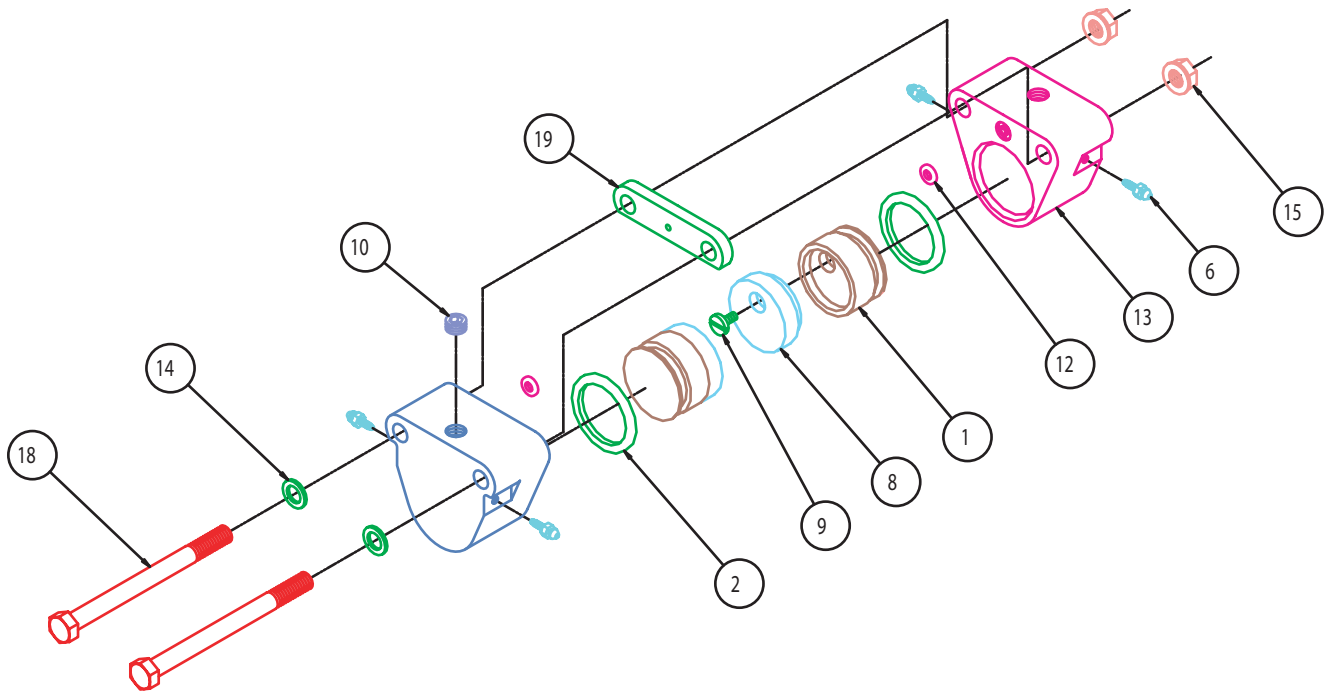
P 20SF



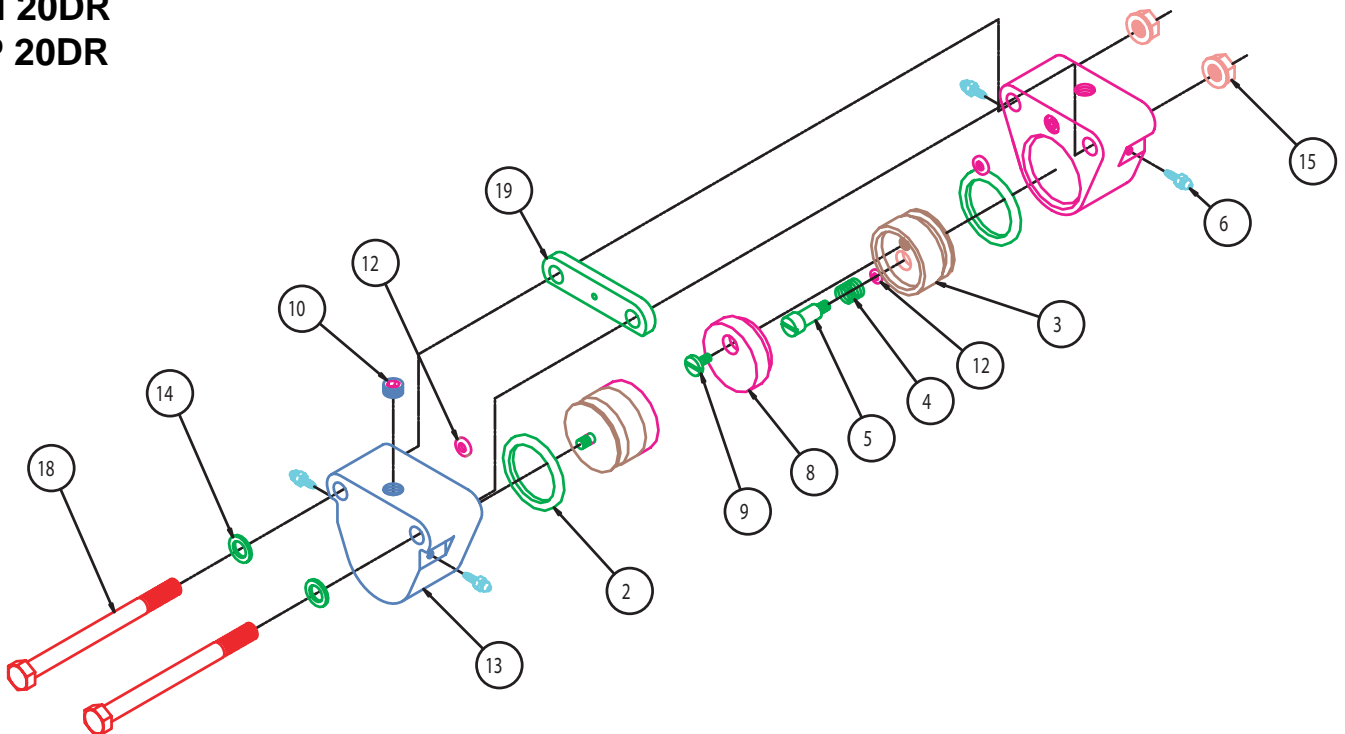
**H 20S
H 20SF**



H 20D
P 20D



H 20DR
P 20DR



NOTE: Hydraulic calipers purchased after September 1, 1989, utilize automotive style bleeders. If your caliper has a screw type bleeder, please consult factory for correct part number.

1. Mount the Double-Acting Caliper Unit with the two SAE Grade 5 hex head bolts. See diagram for dimensions. Tighten nuts to 30 Ft.-Lbs. on 20 series brakes. Care must be taken in mounting the calipers to be sure puck faces are parallel with the disc. Use shims if required. To prevent excessive wear, be sure disc does not rub against the pucks when they are retracted, or against the housing.
2. The floating, single-acting calipers must float freely on their brackets. Puck face should be parallel with disc faces. New calipers should be mounted with a .030-inch clearance between the floating bracket and the Dead Side Housing. Failure to do so will result in uneven puck wear and reduced torque output.
3. Discs must be free of dirt and grease for maximum life and braking action.
4. (H)(P)20D and (H)(P)20DR double-acting brakes have internal porting between the two cylinder housings making it necessary to run only one fluid line to the caliper assembly.
5. Pneumatically operated brakes must be connected to a source of clean, dry, filtered air at a pressure not to exceed 150 PSI. The use of an in-line mist lubricator is recommended to provide a very slight amount of lubrication. Any mineral base lubricating oil compatible with Buna-N Seals may be used.
6. Hydraulically operated brakes may be operated at pressures up to 1000 PSI using a mineral base hydraulic fluid compatible with Buna-N Seals. **If caliper has a suffix "G", use automotive brake fluid only.** Also, when replacing seals, if automotive brake fluid is being used order EPR seals.
7. When plumbing the fluid system, use a minimum amount of pipe thread sealant on joints to prevent the sealant from entering the system.

8. Pressure in the brake cylinder must be relieved when the brake is off. This can be accomplished by using a three-way control valve. Any back pressure in the cylinder will cause drag and excess heat which will result in reduced puck life. If used with master cylinders, residual pressure checks must be removed.
9. Hydraulically operated brakes are provided with bleeder valves. Bleeding is done by loosening one valve screw at high point of brake cylinder. Incomplete bleeding results in sluggish braking action.

NOTE: Do not pressure bleed with more than 5 PSI.

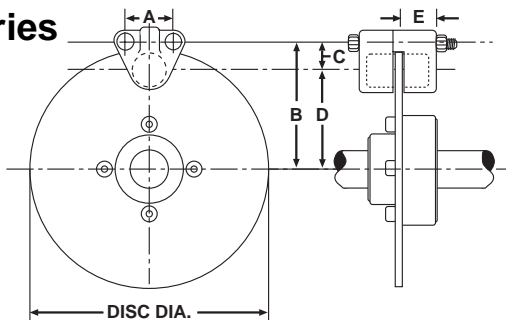
Use of a master cylinder with retractable brake models is not recommended.

Maintenance - Puck Replacement

1. Be sure no pressure is applied to the caliper during puck replacement.
2. Hydraulic lines do NOT need to be removed. (This will eliminate the need to bleed the lines after reinstallation for all models except double acting calipers.)
3. Remove the two SAE Grade 8 Hex Head Bolts (#18). This will dismount and disassemble the caliper, exposing the Pucks for replacement. Note the positioning of any Spacers (#19) and Floating Mount Bracket Components (#16 & #17), if any, for later reassembly.
4. Remove the Pan Head Screws (#9) that hold the Pucks (#8) in place on each side of caliper. Remove Pucks from Housing (#13) and Dead Side Housing (#11).
5. Place new Pucks (#8) into Housings. Replace Pan Head Screws (#9), tighten to hold Pucks in place. (Note: Screw head will fit into recessed area of Puck. Be sure only friction material will contact disc when reassembled.)
6. Reassemble caliper (see drawings on pages 2 & 3 if needed) and mount caliper according to installation instructions above.

Mounting Dimensions

HP 20 Series



DISC DIA. (IN.)	20 SERIES CALIPER DISC BRAKES				
	A	B	C	D	E*
6-5/16	2-5/16	3-17/32	1-1/4	2-9/32	1-5/8
8	2-5/16	4-3/8	1-1/4	3-1/8	1-5/8
10	2-5/16	5-3/8	1-1/4	4-1/8	1-5/8
12	2-5/16	6-3/8	1-1/4	5-1/8	1-5/8
16	2-5/16	8-3/8	1-1/4	7-1/8	1-1/8

*Caliper mounting surface nearest to surface of disc.



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