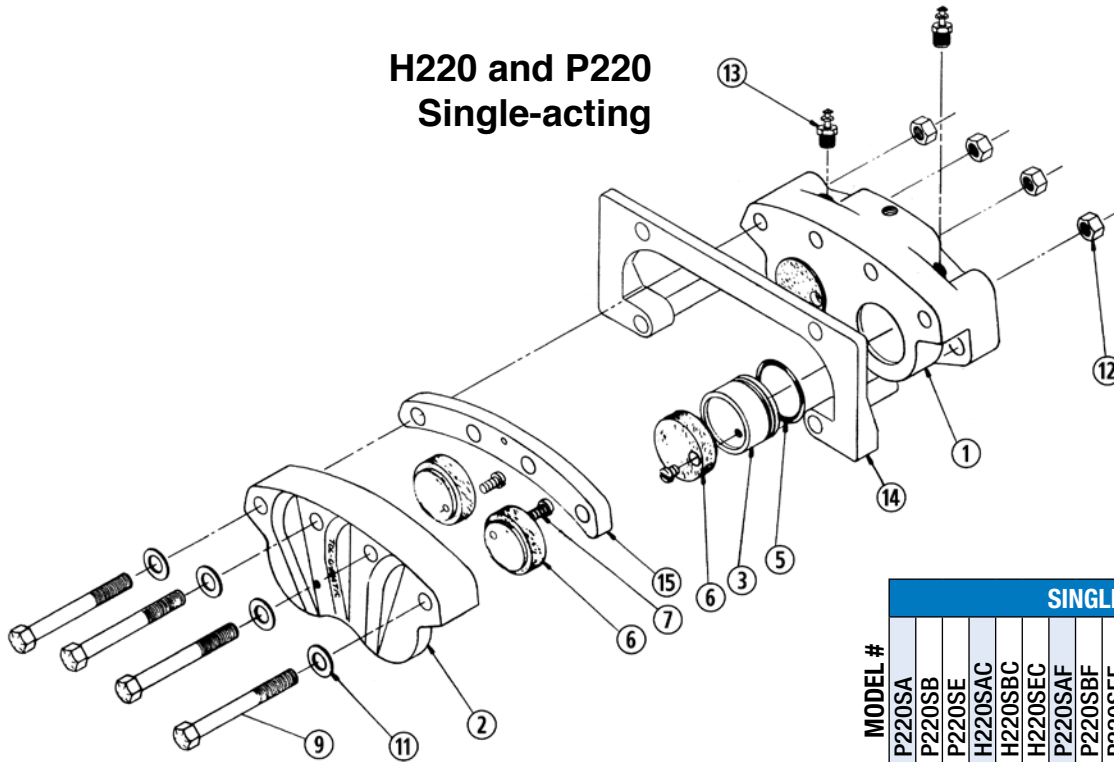


CALIPER DISC BRAKES

PNEUMATIC BRAKE P220 SERIES, HYDRAULIC BRAKE H220 SERIES

| | | | | | | | | | | | |
|---------|-----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|----------|-----------|
| MODEL # | ASSY. # | MODEL # | ASSY. # | MODEL # | ASSY. # | MODEL # | ASSY. # | MODEL # | ASSY. # | MODEL # | ASSY. # |
| P220SA | 0733-0000 | P220SAF | 0733-0020 | H220SBCG | 0733-0102 | H220DECG | 0735-0302 | H220DAC | 0735-0101 | H220DBRC | 0736-0211 |
| P220SB | 0733-0100 | P220SBF | 0733-0120 | H220SECG | 0733-0202 | H220DARCG | 0736-0112 | H220DBC | 0735-0201 | H220DERC | 0736-0311 |
| P220SE | 0733-0200 | P220SEF | 0733-0220 | H220SAFCG | 0733-0022 | H220DBRCG | 0736-0212 | H220DEC | 0735-0301 | | |
| H220SAC | 0733-0001 | H220SAFC | 0733-0021 | H220SBFCG | 0733-0122 | H220DERCG | 0736-0312 | P220DAR | 0736-0110 | | |
| H220SBC | 0733-0101 | H220SBFC | 0733-0121 | H220SEFCG | 0733-0222 | P220DA | 0735-0100 | P220DBR | 0736-0210 | | |
| H220SEC | 0733-0201 | H220SEFC | 0733-0221 | H220DACG | 0735-0103 | P220DB | 0735-0200 | P220DER | 0736-0310 | | |
| | | H220SACG | 0733-0006 | H220DBCG | 0735-0202 | P220DE | 0735-0300 | H220DARC | 0736-0111 | | |

H220 and P220 Single-acting



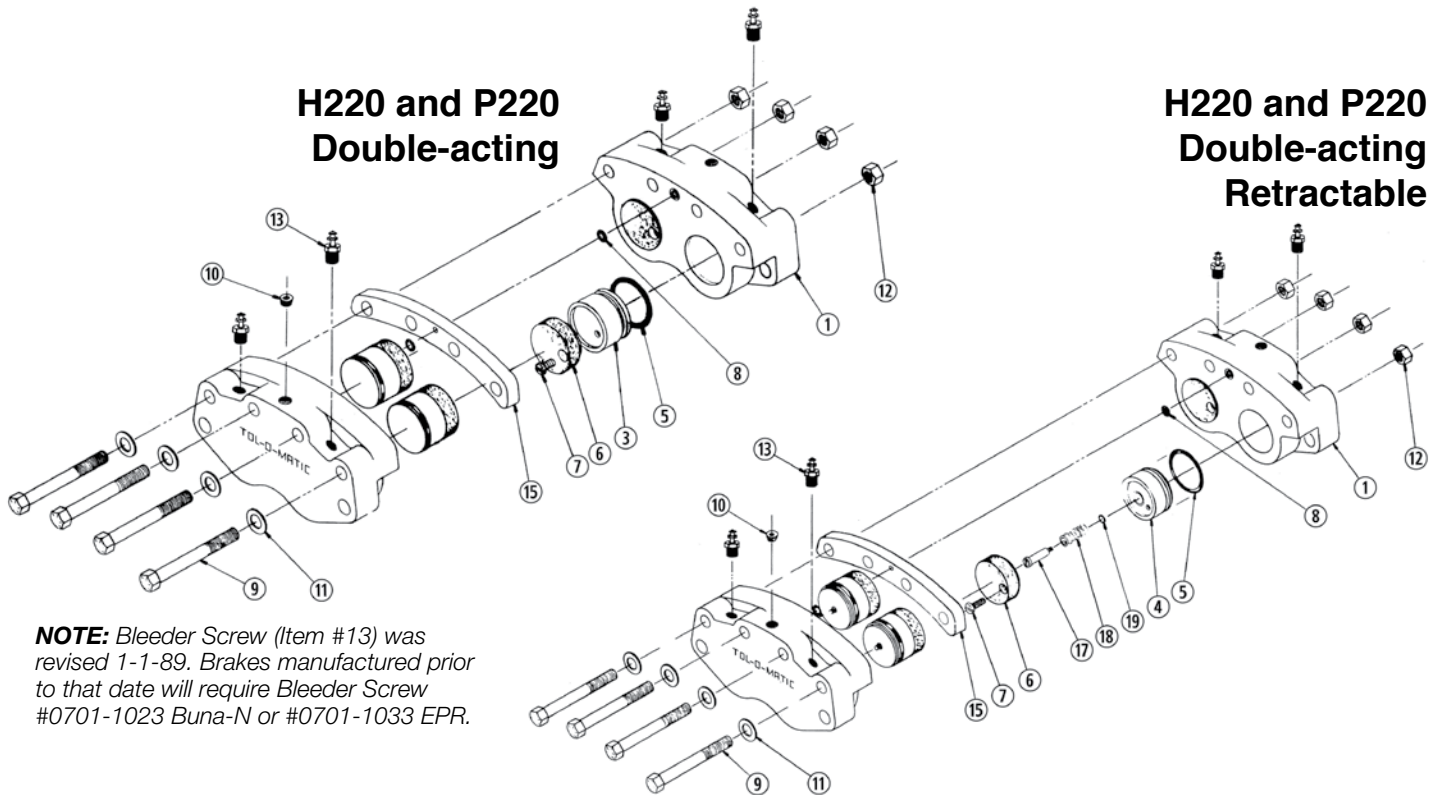
SINGLE ACTING

| ASSY. # | MODEL # | P220SA | P220SB | P220SE | H220SAC | H220SBC | H220SEC | P220SAF | P220SBF | P220SEF | H220SAFC | H220SBFC | H220SEFC | H220SACG | H220SBCG | H220SECG | H220SAFCG | H220SBFCG | H220SEFCG | |
|-----------|-----------|--------|--------|--------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|---|
| 0733-0000 | P220SA | 1 | | | | | | 1 | 1 | 1 | | | | | | | | | | |
| 0733-0100 | P220SB | | 1 | | | | | | | | | | | | | | | | | |
| 0733-0200 | P220SE | | | 1 | | | | | | | | | | | | | | | | |
| 0733-0001 | H220SAC | | | | 1 | | | | | | | | | | | | | | | |
| 0733-0101 | H220SBC | | | | | 1 | | | | | | | | | | | | | | |
| 0733-0201 | H220SEC | | | | | | 1 | | | | | | | | | | | | | |
| 0733-0020 | P220SAF | | | | | | | 1 | 1 | 1 | | | | | | | | | | |
| 0733-0120 | P220SBF | | | | | | | | | | 1 | 1 | 1 | | | | | | | |
| 0733-0220 | P220SEF | | | | | | | | | | | | | 1 | 1 | 1 | | | | |
| 0733-0021 | H220SAFC | | | | | | | | | | | | | | | | 1 | 1 | 1 | |
| 0733-0121 | H220SBFC | | | | | | | | | | | | | | | | | | | 1 |
| 0733-0221 | H220SEFC | | | | | | | | | | | | | | | | | | | 1 |
| 0733-0006 | H220SACG | | | | | | | | | | | | | | | | | | | 1 |
| 0733-0102 | H220SBCG | | | | | | | | | | | | | | | | | | | 1 |
| 0733-0202 | H220SECG | | | | | | | | | | | | | | | | | | | 1 |
| 0733-0022 | H220SAFCG | | | | | | | | | | | | | | | | | | | 1 |
| 0733-0122 | H220SBFCG | | | | | | | | | | | | | | | | | | | 1 |
| 0733-0222 | H220SEFCG | | | | | | | | | | | | | | | | | | | 1 |

ITEM PART NO. DESCRIPTION

| ITEM | PART NO. | DESCRIPTION | P220SA | P220SB | P220SE | H220SAC | H220SBC | H220SEC | P220SAF | P220SBF | P220SEF | H220SAFC | H220SBFC | H220SEFC | H220SACG | H220SBCG | H220SECG | H220SAFCG | H220SBFCG | H220SEFCG | |
|------|-----------|-------------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|---|
| 1. | 0733-1033 | Housing, P220SR | 1 | 1 | 1 | | | | 1 | 1 | 1 | | | | | | | | | | |
| | 0733-1054 | Housing, H220SR | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2. | 0733-1068 | Housing, Dead Side | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3. | 0720-1027 | Piston | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 5. | 0720-1004 | O-Ring, Buna-N | 2 | 2 | 2 | | | | 2 | 2 | 2 | | | | | | | | | | |
| | 0720-1155 | O-Ring, Buna-N | | | | 2 | 2 | 2 | | | | 2 | 2 | 2 | | | | | | | |
| | 0720-1157 | O-Ring, EPR | | | | | | | | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 6. | 0720-1024 | Puck | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 7. | 0720-1026 | Screw, Pan Head | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 9. | 0724-1105 | Bolt, Hex 3.75" | | | | 4 | | | | | 4 | | | | | | | | | | 4 |
| | 0720-1105 | Bolt, Hex 4.50" | | | | | | | | | | | | | | | | | | | |
| | 0732-1106 | Bolt, Hex 3.50" | 4 | 4 | | 4 | 4 | | 4 | 4 | | 4 | 4 | | 4 | 4 | | 4 | 4 | | 4 |
| 11. | 0720-1007 | Washer | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 12. | 0720-1008 | Lock Nut, flanged | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 13. | 0740-1002 | Screw, Bleeder | | | | 2 | 2 | 2 | | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 14. | 0734-9001 | Bracket | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | 1 | 1 | 1 |
| 15. | 0733-1022 | Spacer, B, Single-actg. | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 |
| | 0733-1023 | Spacer, E, Single-actg. | | 1 | | | 1 | | | 1 | | | 1 | | | | 1 | | | | 1 |
| *17. | 0728-1029 | Screw, Shoulder | | | | | | | | | | | | | | | | | | | |

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.
"C" indicates the brake has bleeder fittings.
"D" indicates the brake has double live sides.
"E" indicates the brake is designed to work with a 1/2" (12.7mm) thick disc.
"F" indicates floating mount bracket.
"G" indicates the brake is built with EPR Seals and is DESIGNED TO BE OPERATED WITH AUTOMOTIVE BRAKE FLUID ONLY. (In brakes without the "G" suffix, most petroleum-based, hydraulic fluids may be used).
"R" indicates the brake has retractable piston(s).



NOTE: Bleeder Screw (Item #13) was revised 1-1-89. Brakes manufactured prior to that date will require Bleeder Screw #0701-1023 Buna-N or #0701-1033 EPR.

* For Brakes manufactured after 6/1/94. For Brakes manufactured prior to 6/1/94 part number is 0910-1493.

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.
"C" indicates the brake has bleeder fittings.
"D" indicates the brake has double live sides.
"E" indicates the brake is designed to work with a 1/2" (12.7mm) thick disc.
"F" indicates floating mount bracket.
"G" indicates the brake is built with EPR Seals and is DESIGNED TO BE OPERATED WITH AUTOMOTIVE BRAKE FLUID ONLY. (In brakes without the "G" suffix, most petroleum-based, hydraulic fluids may be used).
"R" indicates the brake has retractable piston(s).

DOUBLE ACTING/DOUBLE ACTING RETRACTABLE

| ITEM | PART NO. | DESCRIPTION | MODEL # | | | | | | | | | | | | | | | | | | | |
|------|-----------|-------------------------|---------|----------|----------|----------|-----------|-----------|-----------|--------|--------|--------|---------|---------|---------|---------|---------|---------|----------|----------|----------|---|
| | | | ASSY. # | H220DAGG | H220DBCG | H220DECG | H220DARCG | H220DBRCG | H220DERCG | P220DA | P220DB | P220DE | H220DAC | H220DBC | H220DEC | P220DAR | P220DBR | P220DER | H220DARC | H220DBRC | H220DERC | |
| 1. | 0733-1037 | Housing, P220DR | | | | | | 2 | 2 | 2 | | | | | | | | | | | | |
| | 0733-1058 | Housing, H220DR | 2 | 2 | 2 | 2 | 2 | | | | 2 | 2 | 2 | | | | | | 2 | 2 | 2 | |
| 2. | 0733-1068 | Housing, Dead Side | | | | | | | | | | | | | | | | | | | | |
| 3. | 0720-1027 | Piston | 4 | 4 | 4 | | | 4 | 4 | 4 | 4 | 4 | 4 | | | | | | | | | |
| 4. | 0728-1030 | Piston, Retractable | | | | 4 | 4 | 4 | | | | | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5. | 0720-1004 | O-Ring, Buna-N | | | | | | 4 | 4 | 4 | | | | 4 | 4 | 4 | | | | | | |
| | 0720-1155 | O-Ring, Buna-N | | | | | | | | | 4 | 4 | 4 | | | | | 4 | 4 | 4 | | |
| | 0720-1157 | O-Ring, EPR | 4 | 4 | 4 | 4 | 4 | 4 | | | | | | | | | | | | 4 | 4 | 4 |
| 6. | 0720-1024 | Puck | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 7. | 0720-1026 | Screw, Pan Head | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 8. | 0720-1003 | O-Ring, Buna-N | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 3025-1015 | O-Ring, EPR | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | |
| 9. | 0720-1105 | Bolt, Hex 4.50" | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 10. | 1014-1065 | Plug, Pipe | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11. | 0720-1011 | Washer | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 12. | 0720-1008 | Lock Nut, flanged | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 13. | 0740-1002 | Screw, Bleeder | 4 | 4 | 4 | 4 | 4 | 4 | | | | | 4 | 4 | 4 | | | | | 4 | 4 | 4 |
| 15. | 0733-1024 | Spacer, A, Double-actg. | 1 | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | | | |
| | 0733-1025 | Spacer, B, Double-actg. | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | | |
| | 0733-1027 | Spacer, E, Double-actg. | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 |
| *17. | 0728-1029 | Screw, Shoulder | | | | 4 | 4 | 4 | | | | | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 18. | 0728-1008 | Spring, Compression | | | | 4 | 4 | 4 | | | | | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 19. | 0720-1154 | O-Ring, .010, Buna-N | | | | | | | | | | | | | | | | 4 | 4 | 4 | 4 | 4 |
| | 0720-1156 | O-Ring, .010, EPR | | | | 4 | 4 | 4 | | | | | | | | | | | | | | |

INSTALLATION

FLOATING BRACKET MOUNT

If your caliper includes the floating bracket use Grade 5 Bolts for Pneumatic Calipers and Grade 8 Bolts for Hydraulic Calipers.

1. Mount the Caliper Unit with the four SAE hex head bolts. See diagram for dimensions. Tighten nuts to 30 Ft.-Lbs. on Grade 5 bolts and 40 Ft.-Lbs. on Grade 8 bolts. 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 in the "Off" position, or against the housing.

FLOATING DISC MOUNT

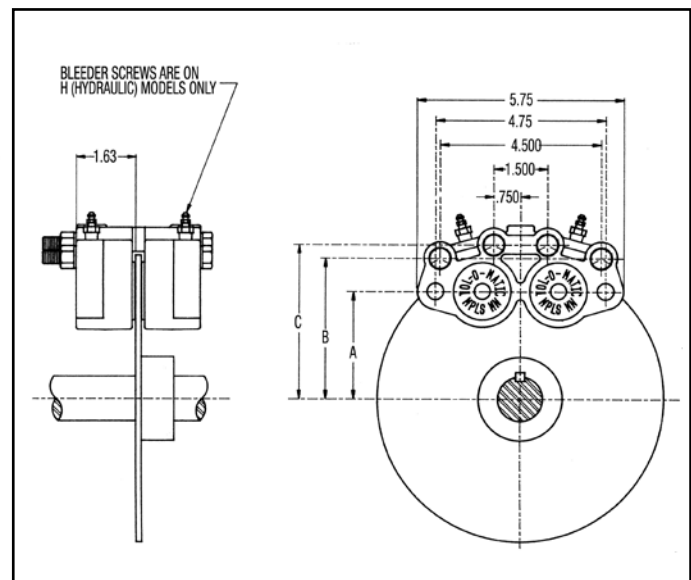
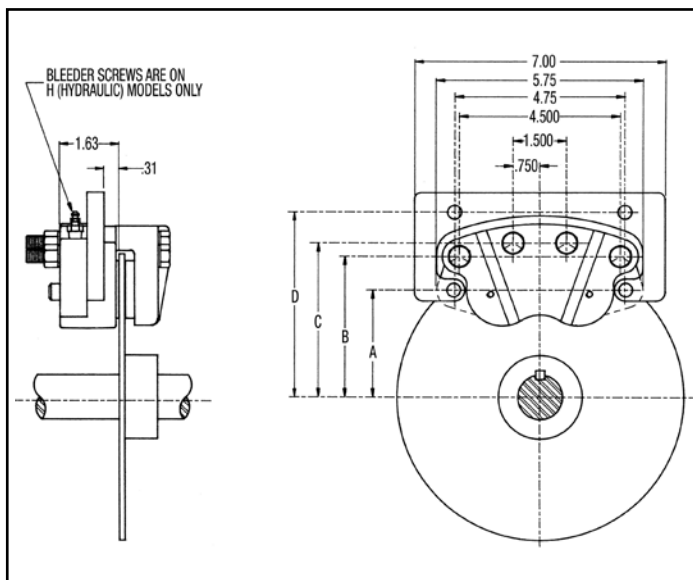
If using a floating disc mount.

2. The floating type disc must be free to move axially so that the moveable pucks will push in against the fixed pucks, otherwise unequal wear or bending of the disc will result. Proper clearance between the puck and disc is .010" min. per side to a max. of .031" per side when new.
3. Discs must be free of dirt and grease for maximum life and braking action.
4. (H)(P)220D and (H)(P)220DR 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 1500 PSI using a mineral base hydraulic fluid compatible with Buna-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.

MOUNTING DIMENSIONS



H 220 AND P220 SF, SRF

H 220 AND P220 D, DR

| DISC DIA. (IN.) | A | B | C | D |
|-----------------|------|------|------|------|
| 6-5/16 | 2.13 | 3.07 | 3.45 | 4.30 |
| 8 | 3.00 | 3.94 | 4.32 | 5.17 |
| 10 | 4.00 | 4.94 | 5.32 | 6.17 |
| 12 | 5.00 | 5.94 | 6.32 | 7.17 |
| 16 | 7.09 | 8.03 | 8.41 | 9.26 |



COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =

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