INSTALLATION/MAINTENANCE GUIDE

H491DR Series Hydraulic Double Acting Caliper Disc Brakes

with Spring Retractable Pistons

FEATURES:

- Hard-coat Anodized Aluminum Construction.
- Fits on Brake Discs greater than 12” Diameter.
- Internal crossover porting
- Replaceable friction pads (WCB p/n 4251-1030 for retractable)
- Dynamic torque (inch/lb): 353.5 lbf per 100 psi x brake radius.

ATTRIBUTES:

Description	Double Acting calipers
Disc Thick. (inches)	5/32”, 1/4”, 3/8”, 1/2”, 5/8”, 3/4”, 1”
Fluid Type(s)	Hydraulic Oil, DOT 3 ABF
Max Pressure	Hyd. = 1500 PSI
Seals	Buna-N Standard, EPR for DOT 3
Wearable Friction Material	1.90 cubic inches
Bore Diameter	2.5 inches
Total Friction Pad Area	9.14 square inches
Fluid Displacement	0.52 cubic inches

491 Series Installation Instructions

1- For double-acting models (H491DR) mount brake using the additional length in the two housing bolts.

2- During installation mount the brake with the disc centered between the friction pads. There should be approximately .060” gap on each side of disc. Verify that the friction pad faces are mounted parallel to the disc surface. Use shims if required. Tighten nuts and bolts to 40 ft-lbs.

3- The disc should be made out of mild steel, stress relieved and ground to a 50-80 RMS finish and be flat within .020” for dynamic applications. The disc surfaces should be clean and free of oils for maximum braking performance.

4- Standard Hydraulic Brakes, use only mineral based hydraulic oils compatible with Buna-N seals. For Brakes with EPR seals, use only DOT 3 brake fluid.

5- Back pressure in the fluid system should be prevented when the brake is not engaged. Back pressure in the system will result in constant contact of the friction pads to the disc and will lead to excessive heat and wear of the friction pads.

6- Hydraulic brakes are provided with bleeder screws to bleed air from the system. With the brake pressurized to 5 psi or less loosen the upper most bleeder screw enough to allow hydraulic oil to bleed out then re-tighten bleeder screw.

Friction Pad Replacement

1. Be sure that hydraulic lines are not pressurized during friction pad replacement. It is not necessary to remove hydraulic lines when replacing brake pads.

2. Gain access to the caliper friction pads by loosening Bolts (#10) and removing nuts (#14). Note: This will separate the caliper housings, exposing pads. Be aware not to lose the cross-over O-rings (#2).

3. Remove worn brake pads by loosening (#8) pad screws on both housings. Once pads have been removed inspect pad mounting surface and clean to free any debris prior to seating new pads.

4. Use Blue Loctite 242 on piston/pad mounting hole. Place new friction pads (#6) onto pistons and tighten with pad screws (#8).

5. Re-assemble the caliper with bolts and fasteners as orientated prior to pad replacement.

Pad Wear Inspection:

Friction pads can be visually inspected for wear by inspecting the (2) friction pads mounted on the dead side housing.

In new condition the pad thickness will measure .323" which results in a 0.060" gap between the pad face and surface of the disc.

Friction pads have a maximum allowable wear of .218" which will result in a gap of .278" between the pad face and surface of the disc.

These dimensions may be inspected to monitor pad wear and determine pad replacement as necessary.

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H491DR CALIPER MAINTENANCE

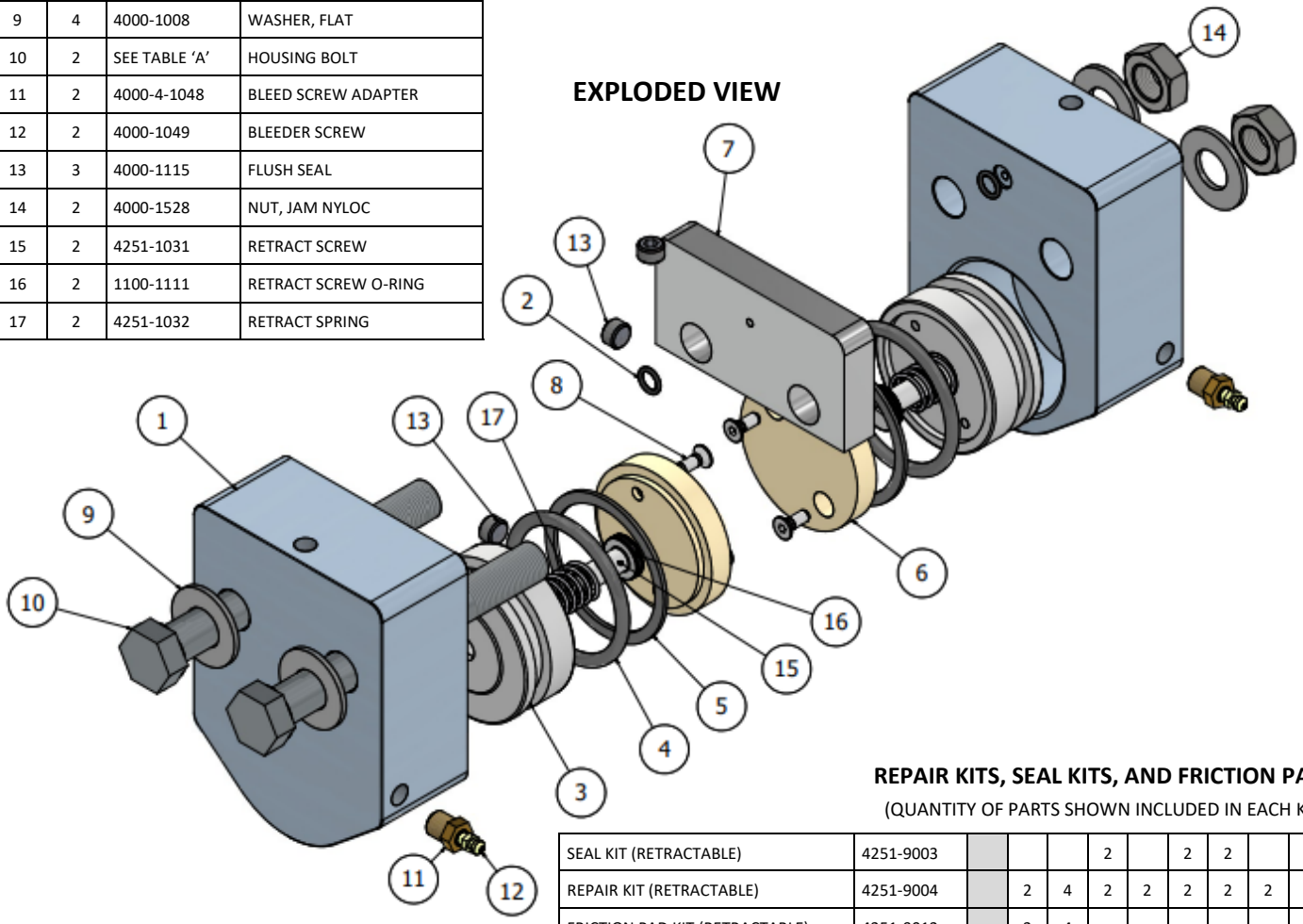
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	4255-4051	HOUSING
2	2	4000-1003	CROSS-OVER O-RING
3	2	4251-4012	PISTON, RETRACT
4	2	4000-1009	PISTON O-RING
5	2	4000-1112	BACK-UP RING
6	2	4251-1030	FRICTION PAD
7	1	SEE TABLE 'A'	SPACER
8	4	1601-1016	FRICTION PAD SCREW
9	4	4000-1008	WASHER, FLAT
10	2	SEE TABLE 'A'	HOUSING BOLT
11	2	4000-4-1048	BLEED SCREW ADAPTER
12	2	4000-1049	BLEEDER SCREW
13	3	4000-1115	FLUSH SEAL
14	2	4000-1528	NUT, JAM NYLOC
15	2	4251-1031	RETRACT SCREW
16	2	1100-1111	RETRACT SCREW O-RING
17	2	4251-1032	RETRACT SPRING

TABLE A

DESIGNATOR	ROTOR/DISC WIDTH	SPACER PART #	BOLT PART #	BOLT LENGTH	BRAKE MODEL	BRAKE PART #
A	5/32"	4251-4062	4251-1026	5 1/2"	H491DAR	4251-0067
B	1/4"	4251-4052	4251-1026	5 1/2"	H491DBR	4251-0060
L	3/8"	4251-4065	4251-1026	5 1/2"	H491DLR	4251-0061
E	1/2"	4251-4050	4251-1026	5 1/2"	H491DER	4251-0062
T	3/4"	4251-4053	4251-1024	6"	H491DTR	4251-0063
O	1"	4251-4054	4251-1024	6"	H491DOR	4251-0064

EXPLODED VIEW



REPAIR KITS, SEAL KITS, AND FRICTION PADS

(QUANTITY OF PARTS SHOWN INCLUDED IN EACH KIT)

SEAL KIT (RETRACTABLE)	4251-9003				2		2	2			2
REPAIR KIT (RETRACTABLE)	4251-9004		2	4	2	2	2	2	2	2	2
FRICTION PAD KIT (RETRACTABLE)	4251-9012		2	4							
		DESCRIPTION	FRICTION PAD	FRICTION PAD SCREW	CROSS-OVER O-RING	PISTON	PISTON O-RING	BACK-UP RING	RETRACT SCREW	COMPRESSION SPRING	RETRACT SCREW O-RING
		ITEM#	6	8	2	3	4	5	15	17	16

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