



30 Series SAHR Calipers

Manual 107304

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Introduction:

This caliper is a spring applied, hydraulically released brake. Hydraulic pressure is required to release or “hold off” the brake. Normal operation is to have the brake pressurized in the released position with the vehicle hydraulic system running. Any function which reduces the hydraulic system below the release pressure of the brake will cause the brake to be applied.

CAUTION:

For correct operation, hydraulic pressure to the brake must fall to zero psi. Any residual back pressure applied to the brake will degrade function and may result in a hazardous condition.

CAUTION:

Use only petroleum based hydraulic fluid.

Design Safety Warnings:

1. This brake is not safe or legal for on-highway use.
2. This brake should only be used on vehicles whose maximum speed does not exceed 25 mph [40 kph].
3. This brake should only be used on vehicles driven in 4WD.
4. This brake should only be used with an Ausco pump kit. Use of this brake with a pump kit of any other manufacturer is not recommended.
5. Contact Ausco Products (www.auscoproducts.com) for technical assistance with application or design safety questions.

Installation Information:

1. Connect the inlet hydraulic line to the O-Ring boss port (SAE J1926 7/16"-20 UNF) in the brake.
2. Apply hydraulic pressure to the inlet to release the brake. Do not exceed 2000 psi [138 bar].
3. Install one clevis pin through housing and install rue clip through cross hole.
4. Place pads together, lined faces touching. Insert pads into housing, placing the notched ear on clevis pin. Install second clevis pin and rue clip to hold pads in place.
5. Separate the pads and slide the brake over the rotor with one pad on each side of the rotor. Lined side of pads must contact rotor.
6. Lubricate mounting sleeves and seals with system hydraulic fluid. Insert mounting sleeves into brake housing. Be careful not to invert or damage the lip of mounting sleeve seals during installation.
7. Mounting surfaces of mounting bracket must be clean, flat, and parallel for mounting sleeves to rest on. Misalignment will cause the mounting sleeves to be out of parallel and will prevent the brake from sliding freely.
8. Align the holes in the mounting sleeves of the brake to the holes on the customer-supplied mounting bracket. Place a hardened washer (supplied with the brake) on both sides of each mounting sleeve. Insert a ½"-13 UNC-2A Grade 8 hex bolt or socket head cap screw through each of the sleeves and washers and into the mounting bracket. Tighten bolts and torque to the following specification:
 - a. Lubricated bolts 80-90 ft·lb (108-122 Nm)
 - b. Unlubricated bolts 106-117 ft·lb (144-159 Nm)
9. With brake released, verify brake slides freely back and forth on mounting sleeves. If binding occurs, verify mounting bracket is clean, flat, and parallel. Remove any debris present between components.

CAUTION:

Brake adjustment procedure must be performed to calibrate brake for use. Brake will not generate specified torque until adjustment procedure is completed.

Brake adjustment procedure:

CAUTION: Prevent vehicle movement by blocking wheels.

1. Apply hydraulic pressure to the inlet to release the brake. Do not exceed 2000 psi [138 bar].
2. Remove the hex plug from the adjuster.
3. Insert a lubricated bolt (5/8-11 UNC-2A) between 2.25"-2.75" long and tighten until snug.
4. Release the pressure to the brake.
5. Place a 0.010" thick shim between the rotor and one pad.
 - a. If pad gap is too small for the shim, install bolts (3/8-16 UNC-2A) into tapped holes in the adjuster. Use a flat tool or bar between the bolts to rotate the adjuster counter-clockwise. A half rotation will increase the pad gap by approximately 0.030".
6. Use a wrench to rotate the 5/8" hex bolt clockwise (adjuster will rotate with the bolt) until it is just possible to remove the shim.
7. Apply hydraulic pressure to the inlet to release the brake. Do not exceed 2000 psi [138 bar].
8. Remove all bolts used during adjustment procedure. Replace protective plugs. Take care not to rotate the adjuster.
9. Thread the hex plug into the adjuster until snug. Take care not to rotate the adjuster.
10. Release the pressure to the brake. The brake is now applied. Attempt to rotate the rotor to verify brake is applied.

Service Kit Information:

DESCRIPTION	KIT NUMBER	FOR BRAKE(S)	CONTENTS
ORGANIC PAD KIT	PK-2656	105771 106468	PADS, CLEVIS PINS, RUE CLIPS
METALLIC PAD KIT	PK-2659	107270 107275	PADS, CLEVIS PINS, RUE CLIPS
SPRING & O-RING KIT	PK-2655	105771 107275	DISC SPRINGS, O-RINGS, PISTON BOOT, WEAR RING
SPRING & O-RING KIT	PK.2661	106468 107270	DISC SPRINGS, O-RINGS, PISTON BOOT, WEAR RING
MOUNTING KIT	PK-2654	ALL BRAKES	MOUNTING SLEEVES, SEALS, WASHERS

Pad Replacement:

1. Apply hydraulic pressure to the inlet to release the brake. Do not exceed 2000 psi [138 bar].
2. With brake released, unbolt the caliper from the mounting bracket.

Note: Pads may be removed without removing the brake from mount if space allows. Installing new pads in place will require the adjuster to be backed off to accommodate new pad thickness. Refer to Brake Adjustment Procedure for detailed instructions.

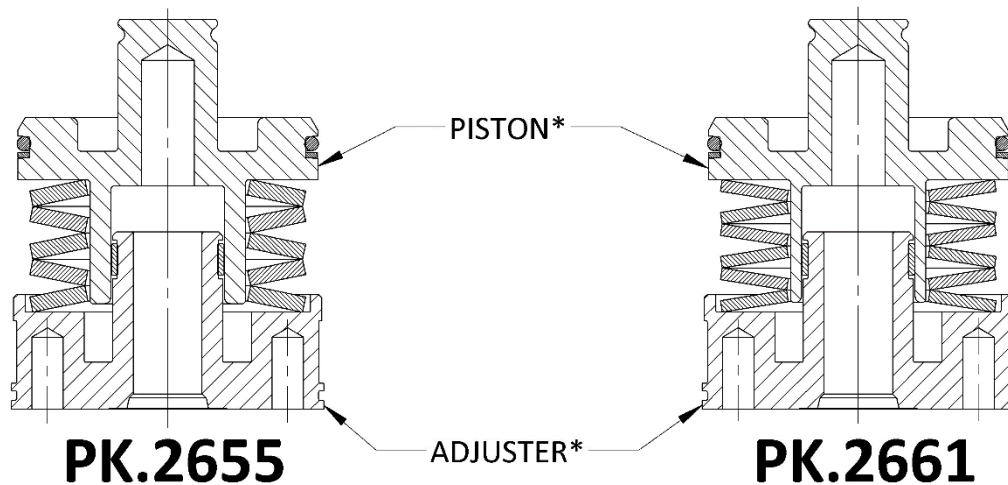
3. Remove a rue clip and clevis pin from the brake to release pads.
4. Remove and discard worn pads.
5. Slide new pads into the caliper housing. Align slots in pads with the mating pins in the housing.
6. Verify that the stator spring plate is in position on top of pads.
7. Install clevis pin and rue clip into housing and thru slot in pad.
8. If brake was removed from mount, refer to Installation Instructions for mounting information.
9. Brake adjustment procedure must be performed to complete pad replacement.

CAUTION:

Brake adjustment procedure must be performed to calibrate brake for use. Brake will not generate specified torque until adjustment procedure is completed.

Spring & O-Ring Replacement:

1. Apply hydraulic pressure to the inlet to release the brake. Do not exceed 2000 psi [138 bar].
2. With brake released, unbolt the caliper from the mounting bracket.
3. Release pressure and remove hydraulic line.
4. Remove protective plugs from adjuster.
5. Install two 3/8-16 UNC-2A bolts at least 2.00 inches long in opposing threaded holes.
6. Place an appropriate bar or tool between the two 3/8" bolts and rotate the adjuster counter-clockwise until it can be removed.
7. Tip adjuster side of brake downwards and remove adjuster with disc springs. This preserves disc spring stack orientation for reference during re-assembly. Set adjuster and disc springs aside.
8. Remove piston boot from nose of piston and push piston inward to remove it from housing.
9. Pry the piston boot out of housing. Be careful not to damage bore.
10. Rebuild piston:
 - a. Remove O-ring and backup ring from piston grooves. Note location of backup ring.
 - b. Remove O-ring and backup ring from small piston bore in housing. Note location of backup ring.
 - c. Install new O-rings and backup rings. Lubricate with system hydraulic fluid.
 - d. Backup ring in piston groove will be closest to disc springs.
 - e. Backup ring in housing groove will be closest to pads.
11. Press new piston boot into housing. Make sure piston boot is fully seated in bore.
12. Rebuild adjuster:
 - a. Remove disc springs and set aside. Note disc spring orientation. Stacking direction and order is critical for torque rating.
 - b. Remove wear ring from adjuster. Install new wear ring and lubricate with system hydraulic fluid.
 - c. Remove O-ring from large end of adjuster. Install new O-ring and lubricate with system hydraulic fluid.
 - d. Grease disc springs with NLGI grade 2 Magnalube high temperature grease with PTFE.
 - e. Disc springs have a cupped side. The direction of the cup is critical to brake function. This side must face the adjuster. Assemble new disc springs on adjuster as shown below.



* PISTON & ADJUSTER ARE NOT INCLUDED IN SERVICE KIT.
PARTS ARE SHOWN FOR ORIENTATION OF DISC SPRINGS.

13. Lubricate largest diameter bore of housing with system hydraulic fluid.
14. Lubricate small diameter of piston at groove with system hydraulic fluid.
 - a. Transfer disc spring stack to piston by temporarily assembling adjuster and piston.
 - b. Slide disc springs onto piston and remove adjuster.
15. Insert piston into housing, grooved nose first. Press piston in until it stops. Piston nose should be visible through piston boot.
16. Install adjuster into housing bore, aligning wear ring with inner piston bore. A light press may be required to seat adjuster O-ring into housing far enough to engage the threads.
17. Thread adjuster in (clockwise) while gently pushing the adjuster into the bore. Once the adjuster threads engage the housing, continue to thread adjuster in until adjuster is flush with end of housing.
18. Carefully transfer boot lip onto piston and set in groove.

CAUTION:

Brake adjustment procedure must be performed to calibrate brake for use. Brake will not generate specified torque until adjustment procedure is completed.

Mounting Sleeve Replacement:

1. Apply hydraulic pressure to the inlet to release the brake. Do not exceed 2000 psi [138 bar].
2. With brake released, unbolt the caliper from the mounting bracket.
3. Release pressure and remove hydraulic line.
4. Slide mounting sleeves out of bushings.
5. Pry seals out of mounting sleeve bores.
6. Examine bushings. It is recommended to replace brake if bushings appear worn.
7. Install new seals. Seal lip faces outward.
8. Lubricate mounting sleeves and seals with system hydraulic fluid.
9. Insert mounting sleeves into brake housing. Be careful not to invert or damage the lip of mounting sleeve seals during installation.

Manual Release Feature:

Brake is equipped with a manual release. If vehicle hydraulic system becomes inoperable, brake can be disabled with a bolt and wrench.

CAUTION:

This procedure **completely disables the brake**. Brake will remain disabled until this procedure is manually reversed and the brake adjustment procedure is performed.

Vehicle must be secured before brake is disabled.

Manual Release instructions:

1. Remove the hex plug from the adjuster.
2. Insert a lubricated hex bolt 5/8-11 UNC-2A between 2.25-2.75 inches long.
3. Tighten the bolt until the adjuster begins to rotate with the bolt.
4. Remove protective plugs from two opposing threaded holes in adjuster.
5. Install two 3/8-16 UNC-2A bolts at least 2.00 inches long.
6. Place an appropriate bar or tool between the two 3/8" bolts and rotate the adjuster counterclockwise at least ½ turn.
7. Brakes are completely disabled. The vehicle is free to be moved.

CAUTION:

It is critical to remove the manual release bolt once the vehicle hydraulic system is operational. Normal brake function is disabled until the bolt has been removed and the adjustment procedure has been performed.

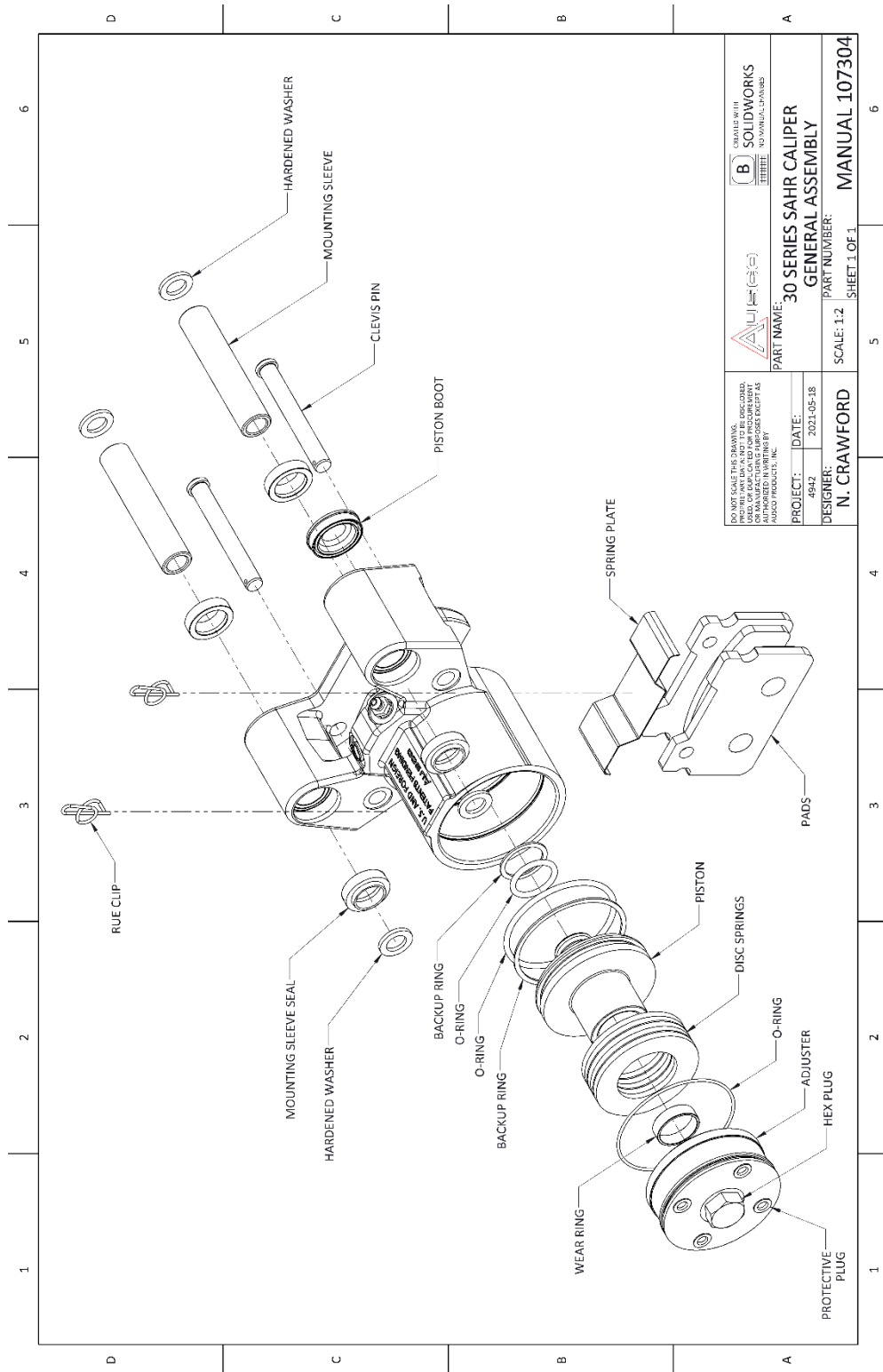
Recommended Disc Material:

Low to medium carbon steel is recommended.

Fabrication procedures are as follows:

1. Flame cut or machined to required outside diameter with inside diameter machine to size.
2. Stress relieve after all machined operations.
3. Blanchard grind to a surface finish of 54 Ra-72Ra with visible cross-hatch pattern.
4. Surface to be parallel within 0.002 in.
5. Surfaces to be flat within 0.005 in.

General Assembly:



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