

## TL094 – Motorsport Caliper Service Instruction (Klüber Installation Only)

As brake calipers are a safety critical part of the braking system, Alcon recommends that they are inspected and serviced regularly to ensure consistent performance. The main service item within the caliper assembly is the caliper pressure seal, although the pistons and their coating should also be inspected during a service.

### Stage 1 – Secure Hydraulic Ports

Ensure that all hydraulic entry points, bleed nipples and feed ports, are blanked securely to prevent contamination whilst performing the next stage.

### Stage 2 – Exterior Clean

The exterior of the brake caliper should be clean before attempting the removal of the caliper pistons. The exterior can be cleaned using warm soapy water, and the caliper should be dried off prior to disassembly. Performing an exterior clean will reduce the risk of dirt and other contaminants entering the hydraulic system. It is acceptable to omit this process if a post strip down wash of all components is going to be performed prior to rebuild.

### Stage 3 – Piston Removal

To ease removal of the caliper pistons, a self-centring block can be used. Alcon recommend using a suitably sized block between the pistons which centres itself within the caliper using the disc pathway (see image below). An ideal width for this block would be the nominal disc thickness plus the thickness of both pad back plates. So if you have a nominal disc width of 32mm and your pad back plates are 5mm thick, a block 42mm wide would be ideal.

With the block inserted, the caliper pistons can be moved forward under pressure (hydraulic or air). **Hands and other body parts must be kept well clear of the caliper pistons to avoid injury. In the case of using air pressure to drive the pistons forward, hands and other body parts should be kept away from escaping air.**

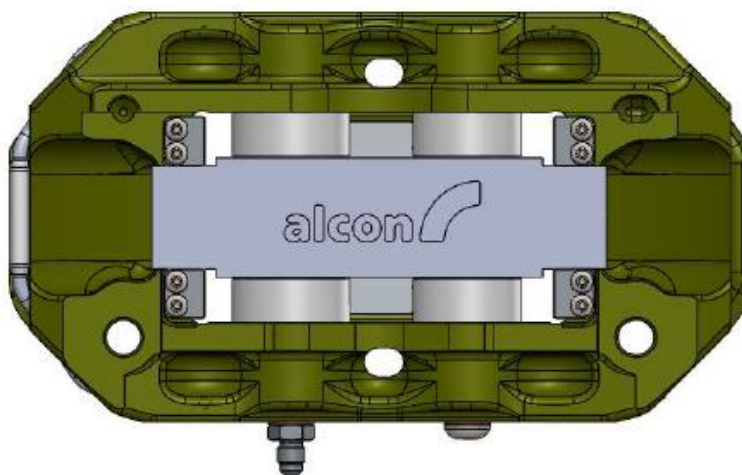


Fig 1 – Caliper pistons moved forward to facilitate removal

Once pistons are protruding from the caliper bores, a piston removal tool can be used to remove the pistons from the caliper (see images below).

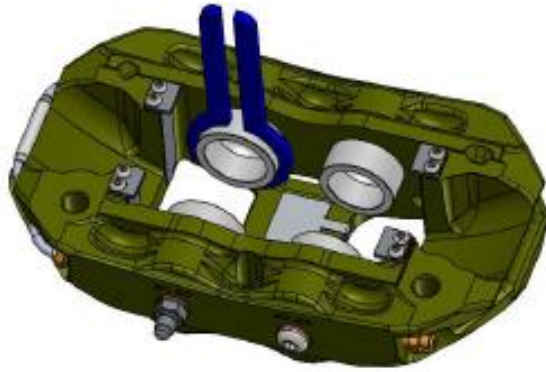


Fig 2 – Removing piston with removal tool

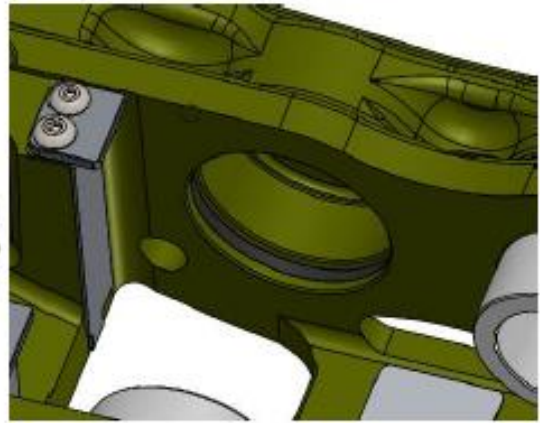


Fig 3 – Piston removed from bore

#### **Stage 4 - Seal removal**

Carefully remove old pressure seals from the groove using a thin, blunt edged tool to prise the seal from the groove.

#### **Stage 5 – Internal Clean**

The caliper bores, seal grooves and pistons should all be cleaned prior to re-assembly. Alcohol based cleaning agents may be used.

#### **DO NOT USE ANY MINERAL OIL BASED CLEANING AGENTS.**

Ensure that bores, seal grooves and pistons are completely clean and free from contamination and moisture.

Care should be taken when cleaning the caliper pistons so that no damage is caused to the piston coating. If the piston coating appears to be excessively worn, then the pistons should be replaced with new or reconditioned pistons.

#### **Stage 6 – Rebuild**

Smear Klüber grease around the piston seals and locate in the caliper body piston grooves ensuring that they are correctly seated. Seals should sit smoothly in the grooves and have no kinks or twists visible.

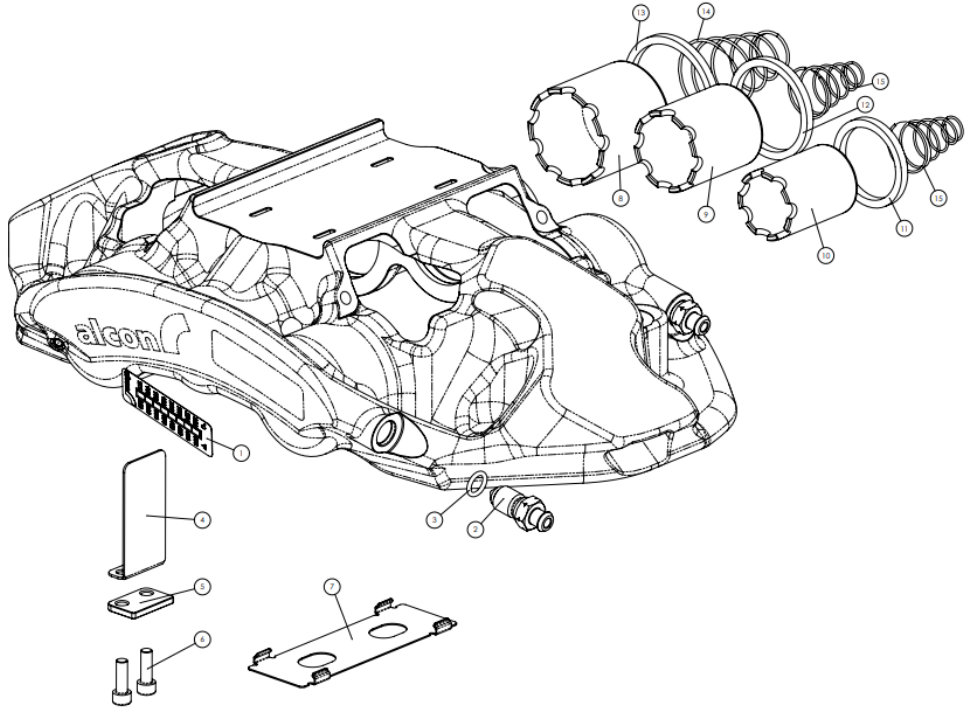
Apply a small amount of Klüber grease around the corner radius of the piston at the base, as this will help with re-assembly. Carefully engage the piston in its bore and apply even pressure to guide it through the pressure seal. Once fully engaged with the seal, the piston should be pushed to the bottom of its bore.

**DO NOT USE EXCESSIVE FORCE TO INSERT THE PISTON THROUGH THE PRESSURE SEAL.** If piston does not slide through the seal, remove the piston and check seal is correctly seated, re-apply lubrication to both the seal and piston corner radius and re-insert. Where possible, calipers should be pressure tested prior to use on the car.

IF IN DOUBT - ASK!

### SPARE PARTS

ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	THS0080X087	1	THERMAL STRIP - ALCON 121°C - 280°C
2	F3B3430X689	2	BLEED SCREW 3/8"UNF
3	SER0080X176	2	7.1x1.6mm EPDM O-SEAL
4	PSC4489X775	4	WEAR PLATE
5	SSC4489X776	4	PAD SUPPORT
6	BSS0080X666	8	8-32 UNC x 1/2" SOCKET HEAD
7	PSC4489X774	1	UPPER WEAR PLATE
8	PSV3837X280E	2	Ø38.1 STAINLESS PISTON
9	PSV3237X280E	2	Ø31.8 STAINLESS PISTON
10	PSV2737X280E	2	Ø27.0 STAINLESS PISTON
11	SES2700X751	2	Ø27 PISTON SEAL
12	SES3200X751	2	Ø31.8 PISTON SEAL
13	SES3800X751	2	Ø38.1 PISTON SEAL
14	SSC3435X609	2	2Kg ANTI-KNOCKBACK SPRING
15	SSC3435X616	4	2Kg ANTI-KNOCKBACK SPRING



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