

Gatorbrake

Deadly Braking Force



Six Piston Hydraulic System

Disc Brake Installation and Service Manual



Tools Required
T-10 & T-25 Torx Driver
2mm, 4mm & 5mm Allen Wrench
8mm Open - end Wrench
Torque Wrench
Long-nosed Pliers

Introduction

Six Piston brake system:

Alligator's new Gatorbrake Six Piston Disc brake system is the first and original full hydraulic disc brake with a distinctive six-piston configuration. This six-piston design allows three opposing pairs of different diameter pistons to work in sequence, therefore stabilizing the rotor and eliminating wobble. Our six-piston configuration also allows for a wider brake pad surface to be used. This improves longevity while greatly increasing stopping power.

The Gatorbrake Six Piston Disc brake system utilizes all cold forged alloys that provide a durable and lightweight lever system.

Brake hose used in this system utilizes an original Dupont Teflon P.T.F.E. underlay with reinforced braided Kevlar brand fiber and strengthened with AISI 304 stainless steel wire mesh for minimal expansion and maximum burst strength. This is the same hose structure used in Formula One road racing.

Safety Information

Before each ride, always check your brakes for proper function, the brake pads for wear and inspect for damage resulting in fluid leaks. Proper service and maintenance, as well as safe riding practices are needed in all aspects of sports.

Read this service and installation manual carefully. It is important to completely understand the operation of your brake system. Improper use of your brake system may result in a lost of control or an accident, which could lead to severe injury. Always wear protective clothing, eyewear and gloves when servicing your brake system.

Emergency Care

In the event that you accidentally swallow any hydraulic fluid, please seek immediate medical attention and take the fluid container with you. If hydraulic fluid comes in contact with eyes or skin, flush with fresh water. If irritation persists, seek medical attention.

Warnings

The caliper and rotor will become hot when the brakes are operated. Do not touch them while riding or immediately after dismounting from the bicycle. Check that the brake components have been cooled down before attempting to adjust the brakes.

DO NOT USE D.O.T. 3 or 4 brake fluid in this system. Doing so may result in damaging the seals and cause the brakes to fail.

Check for brake pad wear and fluid contamination. New brake pads must be used before using the system the first time. Inspect for any fluid leaks in the hose or system. For safety reasons, don't use the system if any leaks have been detected. Consult an experienced mechanic for advice.

We strongly recommend that only competent cycle mechanics install and service your disc brake system and only original Gatorbrake replacement parts be used. Incorrect installation and or substandard parts could result in brake failure and cause personal injuries.

***** Use Only Mineral Oil *****

Installation Instructions

The disc brake system is supplied fully assembled and bled. It is strongly recommended that you install the brakes supplied without disconnecting any hoses or attempting to shorten the hose.

A. Fitting the Disc Rotor

Place the disc rotor on the hub mounting surface. Be sure that the arrow on the disc is pointing in the same direction of the forward wheel rotation. (Fig.1). Using a Torx T25 driver, install, tighten the bolts to a torque of 6-7 Nm (53 – 63 in. lbs.)

This disc brake system has two disc rotors:

6 Piston brake systems:

170mm rotor is for front brake

150mm is for rear brake.



Fig.1

Only hubs with 6 bolts international standard can be fitted.

B. Mounting Front and Rear Caliper

New brakes are supplied fully retracted. Before mounting the caliper, ensure that the brake pads are fully retracted in the caliper. If you need to perform this operation yourself, remove the brake pads to avoid damaging them and gently pry the piston back with a plastic tire lever or similar.



Fig. 2

Position the caliper between the rotor and the fork or frame. (Fig.2) Align mounting holes with those on the caliper and fix with caliper bolts. It is important to center the caliper over the disc rotor using some of the supplied caliper shim washers between the caliper and disc mount. This is a trial and error until the correct position is achieved. (FIG.3).

Once the caliper has been centered and wheels spin freely (without drag), tighten caliper bolts with a 5mm Allen wrench to a torque of 11 – 13 Nm (97 to 114 in. lbs.) (Fig.4A/B) Check that central positioning has been maintained.



Fig. 3



Fig. 4A



Fig. 4B

C. **Mounting Brake Lever**

Loosen and remove the bolt of the master cylinder clamp with a 4mm Allen wrench, (Fig. 5) place lever / clamp assembly onto the handle bars and position brake lever in your desired riding position and tighten the bolt 1.7 ~ 2.26 Nm (15 ~ 20 In. lbs). (Fig. 6)

Route the hose down to the fork disc mount or along the frame to the rear disc mount. Take care to avoid a situation that can damage or pinch the brake hose. For example, trapping the hose within suspension fork or rear suspension linkage movement. Also avoid chaffing the hose on the tire.



Fig. 5

D. **Lever Reach Adjustment**

This refers to the position of the lever blade relative to the handlebars. Adjust the position of the lever using the adjuster screw to the desired lever reach. (Fig. 7)



Fig. 6

Maintenance

A. **Cleaning**

The braking performance will be severely reduced if the system is contaminated. Clean with water and clean cloth. If the disc rotor becomes contaminated it can be cleaned by wiping with a cloth with isopropyl alcohol or disc brake cleaning products designed specifically for bicycle disc brakes.

B. **Checking for System Leaks**

Check the caliper and lever for any signs of fluid leaks and the hose for any damage such as chaffing against the bike or whenever the bike has been rough handled or dropped.

A damaged hose could cause a system leak, which will severely impair braking performance or cause the brakes to fail.



Fig. 7

C. **Checking for Brake Pad Wear**

Brake pads need replacing when the friction material is worn, contaminated or damaged. Don't wait until the friction material is worn through to the backing plate to replace the pads. To maintain safe and efficient braking, the pads need to be replaced if the material is worn down to 0.5mm.

D. **Replacing Brake Pads**

Pull out the spring clip and pin with a pair of long nosed pliers (Fig.8). Remove the old brake pads and forcibly push the piston back with a plastic tire lever or similar until the pistons bottom out. This is necessary to give you more room to fit the new pads.

Replace the new brake pads with the backing plate facing the piston and replace the pin and spring clip back into position.



Fig. 8



Fig. 9



Fig. 10



Fig. 11

E. Bleeding the Brake System

Bleeding the brake system is a procedure whereby new hydraulic fluid is introduced into the system either as a replacement or to flush out any trapped air. Air in the system will reduce the braking performance and the feel of the brake.

Position the lever assembly where it is horizontal to the ground. Unscrew the cap screw to remove the reservoir cap with a T10 wrench (Fig. 9) and remove the reservoir seal. (Fig. 10).

Remove the rubber cap and attach a clear tube onto the bleed nipple of the caliper on one end and the other end in a container. (Fig.11)

Fill the reservoir tank with fresh mineral oil until it fills to the top (Fig.12). Pump the lever two to three times and hold against the handlebar then loosen the bleed screw $\frac{1}{4}$ turn with a 8mm open end wrench (Fig.13). The oil will have traveled along the clear tube (Fig.14). Tighten the bleed screw and release the lever.

Repeat the procedure until no air or bubbles are seen coming out of the clear hose. This procedure (Pump - Open – Close – Release) will need to be repeated several times in order to properly clear and flush the system.

Check the reservoir tank and be sure to continue adding oil to maintain the oil level so that air is not drawn in through the port. Once the bubbles stop appearing, depress the brake lever as far as it will go. The normal condition is for the lever to be stiff at this point. Tighten the bleed screw to a torque of 3 – 5 Nm (27 – 44 in. lbs.) and replace the rubber cap. Dispose of drained oil properly.

Fill the reservoir tank with mineral oil until it fills to the top. Replace the reservoir seal and cap while the oil overflows to ensure that no air remains inside the reservoir tank but be sure that no oil is on the top of the reservoir seal. Replace back the screw and tighten. Wipe clean any oil residue on the master cylinder lever, caliper or rotor with a clean, dry cloth.

Operate the brake lever several times and check whether the brake system is operating normally. Double check that there are no oil leaks visible.



Fig. 12



Fig. 13



Fig. 14

Troubleshooting

Symptoms	Possible Cause	Corrective Action
Lever goes to the handlebar	System leak Air in the System Brake pads worn out	Re-bleed the system Re-bleed the system Replace pads
Spongy Lever	Air in the system	Re-bleed the system
Disc Rotor rubbing on the Pads	Caliper not centered over disc Inadequate clearance Bent rotor	Re-center the caliper Push piston back Replace new rotor
No braking power	Contaminated pads Worn out pads Contaminated disc	Replace new pads Replace new pads Clean disc with alcohol
Pads fall out	Missing pin	Replace pin
Fluid loss	Hose leaking Banjo leaking Caliper bleeding	Tighten hose nut Replace new hose Replace banjo O-ring Tighten or replace bleeder

Warning: We strongly recommended that only competent cycle mechanics install and service your disc brake system. Always wear protective clothing, safety glasses and gloves when servicing this system.

Torque Chart		
	Nm	in. lbs
Disc Screws	6 -7	53 - 63
Master Cylinder Clamp Screw	1.7 - 2.26	15 - 20
Caliper Bleeder	3 - 5	27 - 44
Caliper Mounting Bolts	11 - 13	97 - 114

Warranty

Gatorbrake Six Piston disc brakes are warranted for a period of one full year from the original purchase against defects in material and workmanship. The warranty only applies to original owner, cannot be transferred and proof of purchase is required. No warranty claim can be processed until the product has been returned to the factory.

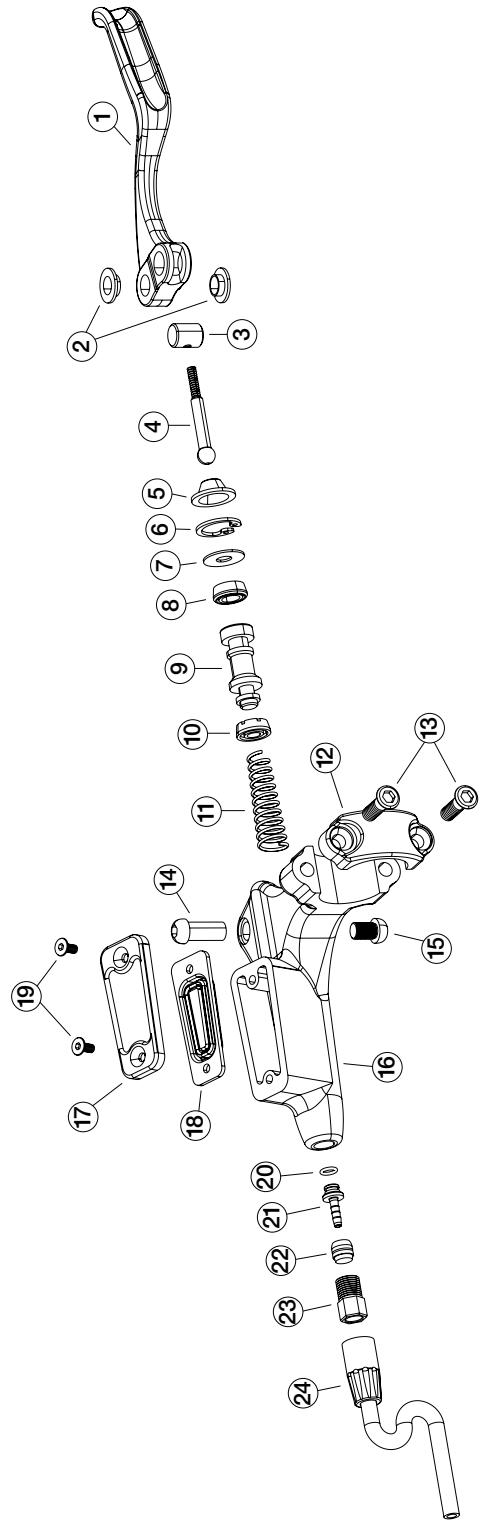
Any Gatorbrake products that are returned to the factory and are found to be defective in materials or workmanship will be replaced or repaired at its option. This warranty does not cover damage caused through misuse, incorrect assembly, modifying the system or failure to follow this manual or service instructions.

Gatorbrake or Alligator shall not be held liable for any indirect, special or consequential damages.

- Exploded Lever / Master Cylinder Diagram
- Eclaté du levier du frein / Diagramme du cylindre principal
- Explosionszeichnung des Hauptzylinders mit Bremshebel
- Despiece de la palanca del freno / Diagrama del cilindro principal
- Esploso della leva del freno / Diagramma del cilindro principale
- 利車握把内部分解圖
- レバー/マスターシリンダーの細部図解

Item	Parts No.	Description	Qty
1	MCF01	Master Lever	1
2	MCF02	Lever Washer	2
3	MCF03	Barrel Adjuster	1
4	MCF04	Push Rod Adjuster	1
5	MCF05	Rubber Boot	1
6	MCF06	Retaining Ring	1
7	MCF07	Retaining Washer	1
8	MCF08	Secondary Piston Seal	1
9	MCF09	Master Piston	1
10	MCF10	Primary Piston Seal	1
11	MCF11	Return Spring	1
12	MCF12	Clamp	1

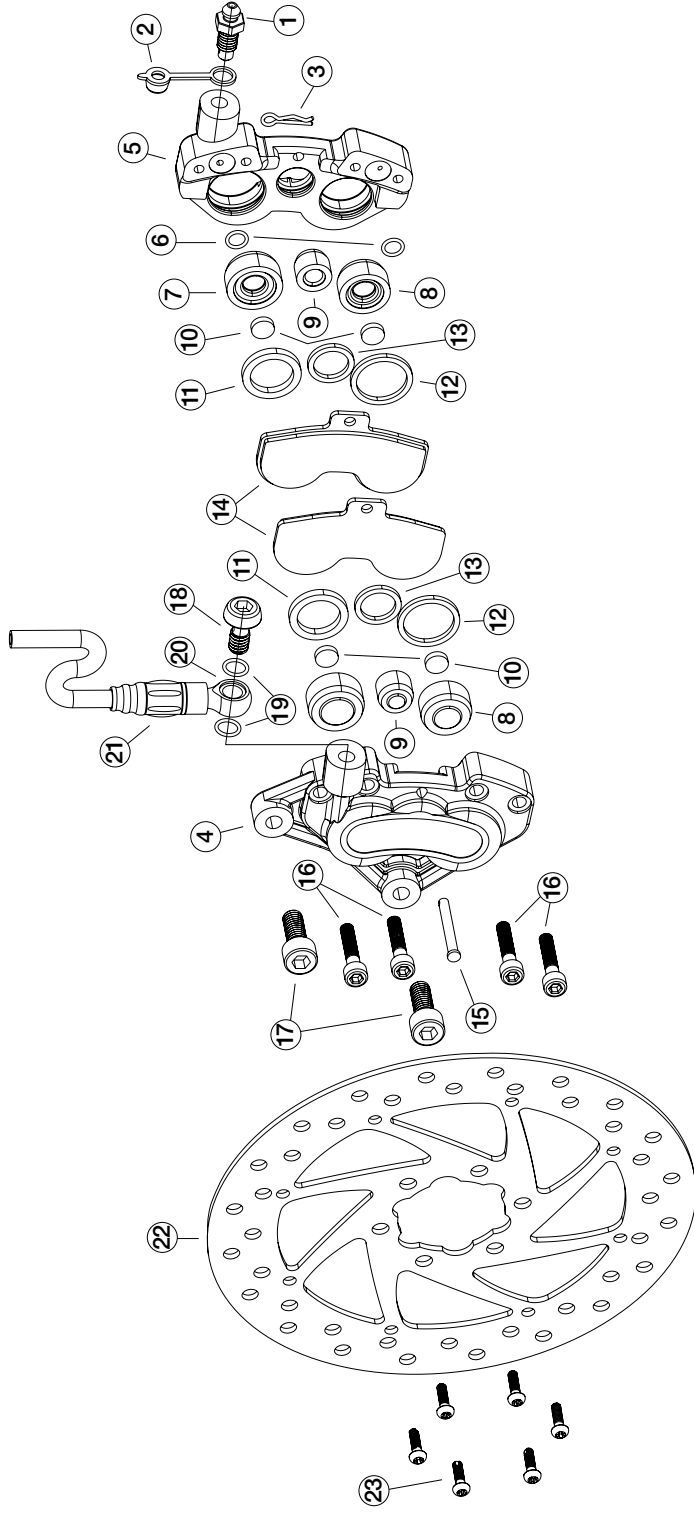
Item	Parts No.	Description	Qty
13	MCF13	Clamp Screw	2
14	MCF14	Lever Screw F	1
15	MCF15	Lever Screw M	1
16	MCF16	Master Cylinder Housing	1
17	MCF17	Reservoir Cap	1
18	MCF18	Reservoir Seal	1
19	MCF19	Reservoir Cap Screw	2
20	MCF20	Insert O-Ring	2
21	MCF21	Insert	1
22	MCF22	Compression Bushing	1
23	MCF23	Compression Nut	1
24	MCF24	Nut Cover	1



- Exploded Caliper / Rotor Diagram
- Eclaté de la mâchoire / Diagramme du rotor
- Explosionszeichnung des Bremszylinders mit Rotor
- Esploso della pinza / Diagramma del rotore
- Despiece de la zapata / Diagrama del rotor
- 卡鉗安裝分解圖
- カリパー/ローターの細部図解

Item	Parts No.	Description	Qty
1	FCA01	Caliper Bleed Screw	1
2	FCA02	Bleed Screw Cover	1
3	FCA03	Spring Pin	1
4	FCA04	Caliper A	1
5	FCA05	Caliper B	1
6	FCA06	Caliper O-Ring	2
7	FCA07	Piston 17mm	2
8	FCA08	Piston 15mm	2
9	FCA09	Piston 11mm	2
10	FCA10	Magnet	4
11	FCA11	Piston Seal 17mm	2
12	FCA12	Piston Seal 15mm	2

Item	Parts No.	Description	Qty
13	FCA13	Piston Seal 11mm	2
14	FCA14	Pads	2
15	FCA15	Pad Retension Pin	1
16	FCA16	Caliper Screw	4
17	FCA17	Mounting Bolt	2
18	FCA18	Banjo Bolt	1
19	FCA19	Banjo O-Ring	2
20	FCA20	Banjo	1
21	FCA21	Banjo Cover	1
22	FCA22	Disc Rotor 170mm	1
23	FCA23	Disc Rotor 150mm	1
24	FCA24	Rotor Screw	6



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