DUAL BANGER MECHANICAL BRAKES: 160mm rotor model

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This IRD Mech Dual Banger represents an evolutionary step in mechanical disc brakes. Whereas most mechanical disc brakes stop with only one pad moving – pushing the disc rotor into the other pad, the Mech Dual Banger works like a dual piston hydraulic where both pads sandwich the rotor simultaneously. Performance output actually rivals some hydraulic systems. The technology in this brake is protected by a worldwide patent.

Other specs:

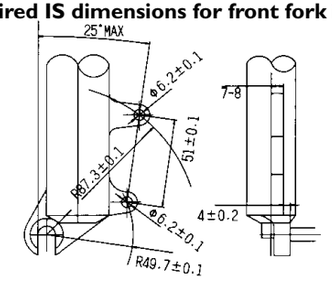
• Compatible with linear pull brake levers

• Non-asbestos metal compound pads. Compatible with those used on Shimano's Deore Mechanical Disc Brake

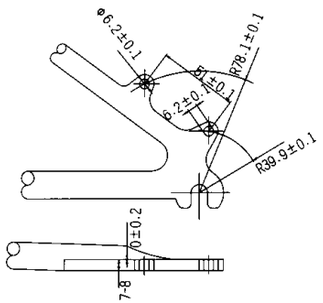
• Front brake has Manitou-style Post Mount w/ adaptor for International Standard Mount. Rear brake is IS only.

Note: If your frame has International mounts, make sure both front fork and seatstay follow International Standard methods. The required tolerances are listed on the drawings below.

• Required IS dimensions for front fork installation:

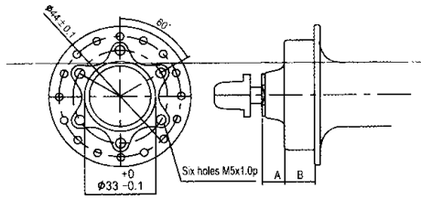


• Required IS dimensions for frame mounting



• Required hub dimensions for disc rotor installation

	A	B
Front	10.5±0.2	14.1
Rear	15.25±0.2	16.2



Required tools: (1) 3mm Allen Wrench, (1) 5mm Allen Wrench, (1) Cable cutter

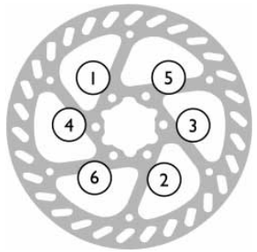
Note: The installation processes listed below assume the rotors will fit the hub properly. If your hub is not to spec, brake caliper may rub against spokes. Please check for this after caliper installation.

Note on housing:
Though the IRD Mech Dual Banger will work well with any standard mountain brake housing, we highly recommend "compressionless" brake housing for best performance.

INSTALLATION PROCESS:

Disc Rotor Installation:

Install rotor to hub with markings facing out. Tighten screws in the order shown (at right) a little at a time until all are evenly tight (about 30 inch lbs or 3.4 Nm).



International Standard Adapters:
The front brake comes with an adaptor (MT-1614) for installation onto forks with International Standard disc tabs. (See picture for proper orientation for the adapters.) Tighten alternately until both screws are evenly tight. If your fork utilizes the Post-Mount standard (Manitous), then you won't need the adaptor.

Installing Front Caliper:

1) Loosen black barrel nut. Tighten (turn clockwise) the cable-adjusting barrel fully. It will make it easier for you to get rid of cable slack afterwards.

2) Front brake is post-mount style with an adapter for International Standard. Mount the adaptor if needed to the fork. Load 2 M6 bolts onto the Post Mount holes on the caliper. Position the caliper so its bolt holes are matched with the bolt holes of the adapter and the rotor is between the brake pads of the caliper. Study Fig. 5 for exact orientation. Fasten the caliper loosely to the adapter.

3) Lining up the caliper with the rotor on front brake:

Pull on the brake actuating arm so the pads squeeze the rotor tightly. (It's like giving the brake a handshake.) While keeping the pads squeezed against the rotor, tighten the bolts to the adapter(a little at a time alternately until tight). *If caliper is not perfectly lined up with the rotor braking performance will suffer.* The oval bolt holes on the caliper help with finding the caliper's vertical center line to the rotor. Let go of brake arm after bolts are tight. Inspect that the pads are parallel to the rotor and neither pad is touching the rotor. Spin wheel lightly to see if pad and rotor ever touch. Readjust if it doesn't look like the caliper is perfectly lined up with the rotor. If caliper is not lining up it could mean your frame's disc mount is not straight and needs to be faced. Also double-check that the wheel is on straight.

GET TO KNOW YOUR BRAKE

FIG 1: FRONT DISC BRAKE

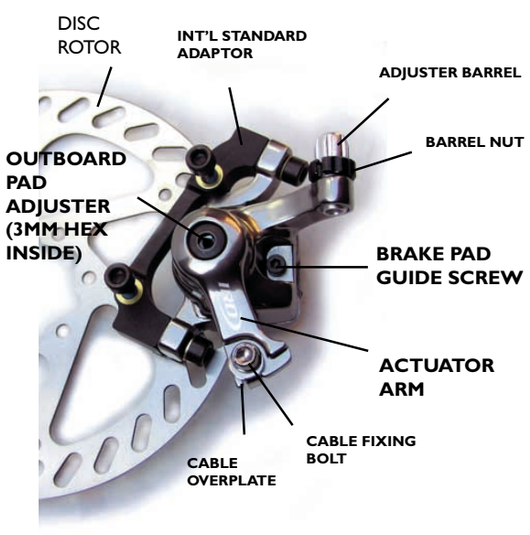


FIG. 2: REAR DISC BRAKE
DOES NOT NEED THE INT'L STANDARD ADAPTOR. IT BOLTS RIGHT ONTO FRAME

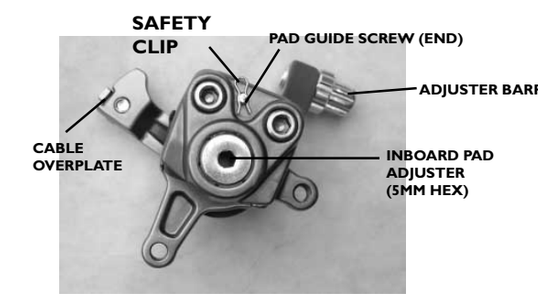


FIG. 3: BACK VIEW OF REAR DISC BRAKE

Installing the Rear Caliper:

1) Loosen black barrel nut. Tighten (turn clockwise) the cable-adjuster fully. It will make it easier for you to get rid of cable slack afterwards.

2) Rear brake is only compatible with International Standard. Position the caliper so its bolt holes are matched with the bolt holes of the frame and the rotor is between the brake pads of the caliper. Study Fig. 2 for exact orientation. Fasten the caliper loosely to the frame.

3) Lining up the caliper with the rotor on rear brake:

Pull on the brake actuating arm so the pads squeeze the rotor tightly. (Put your thumb on the adjuster barrel. Wrap your fingers around the actuator arm. Then squeeze.) While keeping the pads squeezed against the rotor, tighten the bolts to the adapter(a little at a time alternately until tight). *If caliper is not perfectly lined up with the rotor, braking performance will suffer.* Adding and subtracting open washers on the bolts help with finding the caliper's vertical center line to the rotor. (See Fig. 4) Let go of brake arm after bolts are tight. Inspect that the pads are parallel to the rotor and neither pad is touching the rotor. Spin wheel lightly to see if pad and rotor touch. Readjust if it doesn't look like the caliper is perfectly lined up with the rotor. If caliper is just not lining up, it could mean your frame's disc mount is not straight and needs to be faced.

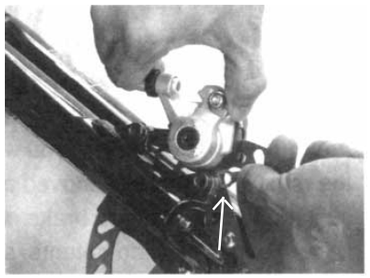


FIG. 4: Squeezing the actuator arm while inserting a washer to achieve alignment

Cables:

Cut the cable housing and brake wire (not included) to correct length, thread the wire through the adjusting barrel. Housing should stop at the barrel. The wire continues through the adjusting barrel. Fasten the wire onto the end of the actuating arm with the bolt and cable overplate. Turn the cable adjuster barrel counter-clockwise to take out the slack in the wire. When you see the cable just begin to pull the actuating arm towards the adjuster stop. Lock the adjuster with the barrel nut. *Use the adjuster barrels on your caliper and brake lever only to take up cable slack. DO NOT use them to adjust lever throw or compensate for pad wear.*

FIG. 5: Brake installed on frame using IS adaptor. Note how cable is installed. When brake is actuated, the arm is not supposed to go beyond dotted line (about 30° of motion) If it does, your pads have worn and you need to move pads closer to the rotor.

Adjusting Pad-to-Rotor Gap:

There is 3mm Allen head adjuster within the head of the larger 5mm Allen bolt in the center of the caliper. **DON'T EVER turn the head of this exterior 5mm Allen bolt.**

The 3mm bolt adjusts the OUTBOARD pad. Turn the adjuster clockwise to move the pad closer to the rotor. Turn it counter clockwise to move the pad further away from the rotor.

Adjust the gap between rotor and INBOARD pad with a 5mm hex key on the other side of the brake. Turn the bolt clockwise to move the pad closer to the rotor. Turn it counter clockwise to move the pad away from the rotor. Inside and outside pads should both be **about 1mm** from the rotor (EQUIDISTANT— this is different from other cable disc brakes). Excessive pad distance to the rotor will affect brake lever throw (how far it needs to be pulled to engage the brake) and also how far the brake actuating arm moves. You don't want the arm moving too far. (See Fig. 5)

Note: There is a "breaking-in" period for new brake pads. Performance will be slightly subpar for the first 5 to 10 miles, so ride with extra care until brake performance gets better. We strongly advise all riders to examine all parts of the brake system each time they ride.

ADJUSTMENT AND MAINTENANCE:

Periodic adjustment to compensate for brake pad wear:

When pads get thinner with use, the pad-to-rotor distance increases. Check for wear periodically and readjust pad to rotor distance to the recommended distance when needed. This will help to maintain consistent braking performance. Use previous directions for readjusting pad gap.

FIG. 6 Brake pads shown with spring plate. Pads pull out of caliper in the direction of the arrow.

Replacing Worn Pads:

When the pad material is less than 0.9mm thick, it is time to replace them. The Mech Dual Banger uses pads with the same size and shape as Shimano's Deore Mechanical brake (M515), so compatible replacements should be readily available if you cannot find IRD brand replacements pads. We suggest non-asbestos containing metallic compound pads. DO NOT use IRD brake pads meant for the Hydraulic Dual Banger Disc Brake.

1) Remove the caliper from the frame or fork (or from the adaptor, if you are using the IS adapter) using a 5mm Allen wrench. (The brake wire can left installed on the caliper during this process, but both adjusting barrels on the caliper should be turned clockwise fully.

2) Pull out the Safety Clip (on back of caliper) from the pad guide screw by using needle nose pliers or a small screwdriver. (See Fig. 3 for location)

3) Loosen the Pad Guide Screw (in front of the caliper) with a 3mm Allen wrench. (See Fig. 1 for location)

4) Push at the pad from the square hole at the top and then pull out the complete pad assembly together with the inner plate spring from the bottom. (Use care and a suitable tool, if the plate spring jams into the inner gap. Do not bend or twist it.

5) Take out old pads. Fit new pads onto the spring plate.

6) Insert the pad/spring combination into the pad slot. Position it so the Pad Guide Screw can be inserted again.

7) Fasten the Pad Guide Screw with the 3mm Allen Wrench. Push the Safety Clip back into the Pad Guide Screw. It should lock on with a click.

8) Refer to "Adjusting Pad-to-Rotor Gap" to set proper pad distance.

Maintenance of the caliper:

1) Keep all surface clean and ensure no debris is allowed onto friction areas. **DO NOT ALLOW OIL OR GREASE TO COME IN CONTACT WITH FRICTION SURFACES** (including the natural oil from your fingers). This can make your bike DANGEROUS to ride.

2) If you find it necessary to lubricate any part of this brake, be careful. Heat from brake use may cause lubes to run on to brake pads and rotors and ruin brake's performance.

3) Always clean and service the calipers before putting bike into storage for any period of time.

WARNINGS:

The calipers and rotors will become HOT when the brakes are operated. Check that the brake components have cooled down before attempting to adjust the brakes.

Before riding the bicycle, be sure to operate the brake levers to check that the brakes are working normally. You DON'T have to squeeze hard.

Before riding the bicycle, check that the pad thicknesses are 0.9mm or more.

If noise occurs during braking, it may indicate that the brake pads have worn down to their usage limit. Let the brake system cool down then check the pad thicknesses.

Get used to how your brakes function in safe controllable riding conditions before going off-road.