



## CAUTION: READ THIS BEFORE INSTALLING YOUR BRAKES!

Riding bicycles can be dangerous. These instructions should be read thoroughly before installation. Failure to follow these instructions before installing and using Hope Technology components can result in severe injury or death.

This RX2 or RX4+ caliper will solely work using **Mineral Oil**, the use of any other brake fluid will result in brake failure. Please check our website for the list of master cylinders compatible with this RX caliper.

'**MINERAL OIL ONLY**' etched on a bore cap indicates this caliper is compatible with MINERAL brake oil **only**.

- Don't overestimate your technical capacities. This brake system must be fitted by a competent cycle mechanic using the correct tools.
- Incorrect installation could result in brake failure that could cause serious or fatal injuries.
- Wear suitable protective equipment, nitrile glove and safety glasses.



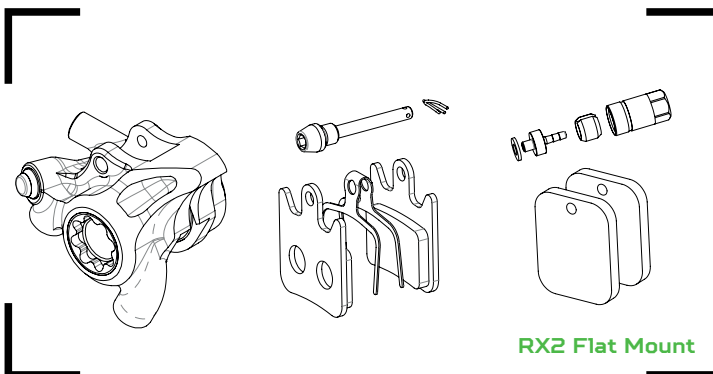
- Please refer to the website videos and technical documents for more information including servicing and maintenance - [www.hopetech.com](http://www.hopetech.com) / **Tech Support** section.
- This brake system has been designed to be used only on two-wheel vehicles with human propulsion or pedelec. Any other application is not advisable and could result in the failure of this product.
- Your brake system will generate heat during braking. Never touch



- either the disc or caliper after long braking period as this could cause severe burns.
- Before each ride always check the brake for proper function, the brake pad for wear and that there is no system damage resulting in fluid leaks.
- It's common sense to also check that your wheel's quick release systems are securely installed and tightened.
- Your braking performance will improve in almost all conditions. Please take time to become familiar with your new brake. Always ride within your own ability.
- Brake pads contaminated with brake fluid, chain lubricant or unsuitable bike cleaner will need replacing because the overall brake performance will be greatly diminished.
- If you have any doubts or questions please contact your dealer or the appropriate distributor for your country.
- If you decide to ignore these important safety warnings and instructions, you are doing so at your own risk and Hope Technology cannot be held responsible for any consequences resulting of the misuse of the brake system.

## BOX CONTENTS

- 001:** Brake Caliper: RX2 FM
- 002:** Caliper bolts (size and length may vary)
- 003:** Hydraulic fittings: copper washer, brass insert, brass olive and shroud
- 004:** Brake pads sets: **Blue** Road, **Red** CX/Gravel
- 005:** Brake bleed spacers - caliper specific



## ONLY USE MINERAL OIL WITH THIS CALIPER

- » Compatible supplied piston seals must be **RED**
- » Compatible supplied bore cap O'Ring must have a **RED** distinctive mark on them

## TOOLS REQUIRED

- 2.5mm Hex • 4mm Hex • 5mm Hex • 8mm Spanner
- T10 torx driver • Flat blade screwdriver • Pick / awl tool
- Appropriate bleed kit for master cylinder end (SRAM syringe)
- Appropriate Bleed Kit for caliper end (RX DOT fluid bleed syringe **HTTBLRXDOT** or SRAM bleeding edge)

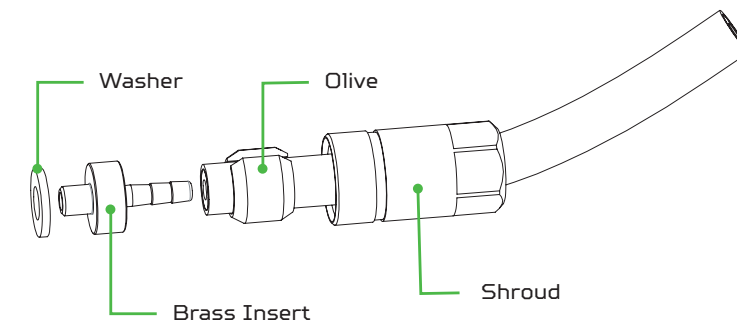
## ATTACHING THE CALIPER TO THE BRAKE HOSE

Always use the provided Hope hydraulic fittings on the caliper end and original manufacturers fittings at the lever end.

**001\_**Remove the third party caliper if present and disconnect the brake hose.

**002\_**Install the hydraulic fittings provided onto the brake hose (see figure below) Shroud and olive over the hose, brass insert pushed in the hose, small copper washer.

**003\_**Connect the brake hose to the Hope caliper



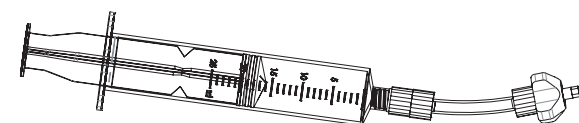
## BLEED THE BRAKE SYSTEM: MINERAL ONLY!

### PRELIMINARY CHECKS:

- Adjust lever reach to achieve maximum lever travel
- Position the caliper at the lowest point of the system; this will usually mean removing the caliper from the frame, especially on rear brakes
- Internal hose routing around the bottom bracket can cause an air trap in the hose as the caliper is often positioned higher than the bottom bracket
- Make sure to use both of the two provided brake bleed blocks in the caliper. Using only one spacer will allow too much piston travel and lead to loss of brake fluid
- At the caliper end, make sure to use a **Mineral oil** type syringe with the RX Mineral bleed fitting at the end of it (SRAM bleeding edge fitting is also compatible)

### BLEEDING PROCEDURE:

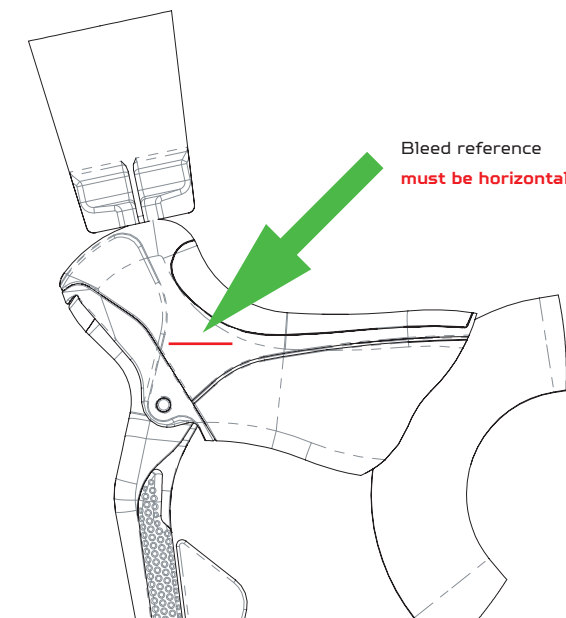
- Fill a full syringe of mineral oil and burp any air out of the top. **Fig\_1**



RX DOT Fluid Bleed syringe with bleed fitting **HTTBLRXMIN**

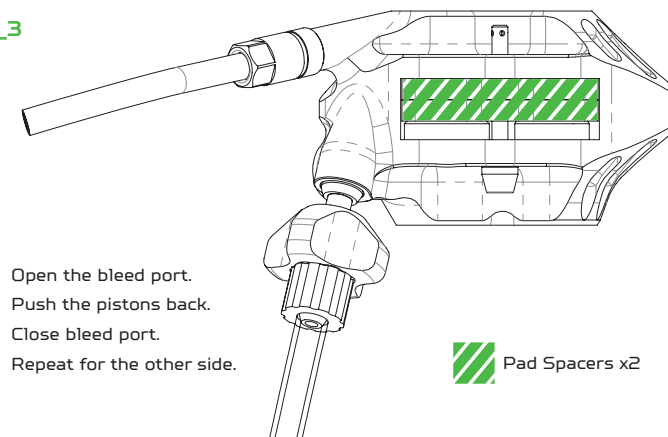
- Loosen the bleed nipple using a 4mm hex.
- Install syringe into caliper bleed nipple while keeping the bleed nipple in the closed position.
- Install bleed funnel into the top of the lever master cylinder, rotate the bars so the manufacturer bleeding reference mark (if present) on their lever is horizontal. that it won't necessarily mean that the bleed funnel will be vertical. **Fig\_2**
- Open the caliper bleed nipple and slowly push **80%** of the fluid up through the system so it comes up through into the bleed funnel.

**Fig\_2**



- Hold the brake lever back to the bar and pull a gentle vacuum on the syringe dragging air bubbles out of the brake system and into the syringe.
  - When there is no more air bubbles coming through to the syringe you can then slowly push back on the syringe while slowly releasing the brake lever and allow a small amount of fluid to come up into the bleed funnel.
  - Close off the bleed nipple at the caliper end and hold the bleed blocks to one side while pumping the brake lever to allow the two pistons to come out and meet the bleed block face.
  - Open the bleed port on the caliper and push the pistons back so they are back flush with the inside of the caliper body (this will push any possible air trapped behind the pistons into the syringe)
- Repeat process for the pistons on the opposite side. **Fig\_3**

**Fig\_3**



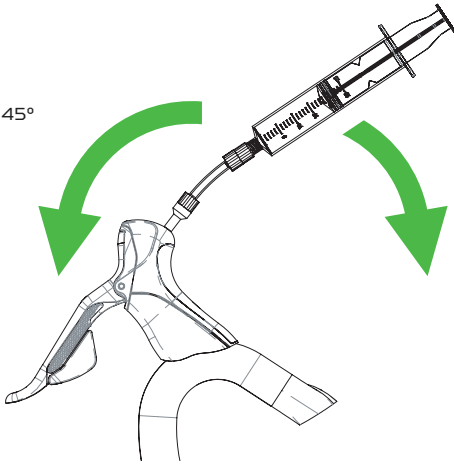
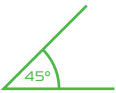
1. Open the bleed port.
2. Push the pistons back.
3. Close bleed port.
4. Repeat for the other side.

- Close off the caliper nipple and remove syringe. With the hex key fully tighten the bleed nipple.
- **Recommended tightening torque 7-8Nm**
- Loosen the stem and rotate the handlebar back so the bleed funnel is 45° from its vertical position and start pumping the lever looking for any possible air bubbles appearing at the top of the fluid in the bleed funnel. **Fig\_4**
- Move the bars forward and down so the funnel is again 45° from its original vertical position and pulling the brake lever while looking for more possible trapped air bubbles coming through to the top of the bleed funnel, rotate the bars back up so the funnel is facing straight and vertical. **Fig\_4**
- Reset the pistons back flush with the inside of the caliper body.

- plug the funnel and unscrew the bleed bucket adaptor from the main lever body.
- Reinstall the reservoir bleed screw on the lever body, tighten by manufacturer specifications.

Fig\_4

Tilt master cylinder 45° back then 45° front whilst applying gentle vacuum.



#### Typical recommended tightening torque 2-3Nm

- Remove the bleed blocks from the caliper.
- Clean in and around the lever body and caliper to neutralize any possible mineral fluid with an alcohol spray.
- Supplied brake pad kit can be installed later after centralising the caliper over the disc.

## ATTACHING THE CALIPER TO THE FORK OR FRAME

To ensure that the caliper is properly aligned and to help avoid squealing, bad lever feel or brake pad rub – prior to fitting the brake, it is important that the tabs of your fork or frame are clear of any paint or burrs.

Depending on the type of mount on your frame or forks, you may need to use an adaptor bracket so the caliper fits properly with the selected disc size. Please refer to the “RX4+/RX2 Flat Mount fitment chart” for all Flat Mount calipers

Refer to the “Brake Mount chart” for all Post Mount calipers.

**IMPORTANT WARNING:** Full thread engagement is required when installing the caliper on the forks or frame rear flat mount.

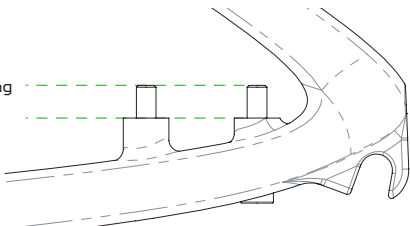
- **Post Mount type caliper:** 9 to 10mm of the 2x M6 screw must be engaged in the forks
- **Front Direct Flat Mount caliper:** 8 to 9mm of the 2x M5 screw must be engaged in the forks
- **Flat Mount caliper (std or +20):** 7 to 8mm of the 2x M5 screw must be engaged in the caliper body. Beware of this type of fitting as tab thickness can vary from one frame to another. [see figure below]

Also pay attention not to bottom out the screw in case they were too long. We recommend the use of a mild engineering thread lock on caliper bolts to prevent them unscrewing.

**Do not use permanent thread lock!**



7 to 8mm of thread showing above rear flat mount tabs



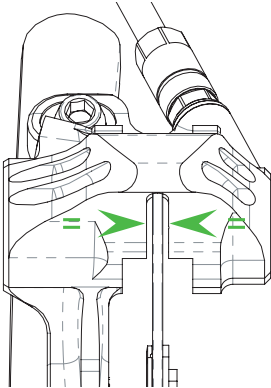
## MOUNTING THE CALIPER

- Before attaching the caliper ensure that the brake pads or pad spacers are removed, and the pistons are fully retracted. This is to facilitate the caliper alignment.
- Mount the wheel fitted with the rotor, ensuring correct fitment in dropouts.
- Position the caliper on the brake mount and slightly tighten the two bolts.
- At both front and rear of the caliper, adjust its position so it is central over the rotor [see arrows on figure below] then tighten the two bolts using a 4mm or 5mm hex.

#### Recommended tightening torques:

M6 bolts: **8-9Nm** M5 bolts: **8Nm**

- Install the pads in the caliper, secure them with pad pin and retaining clip.

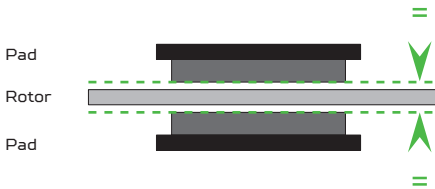


**NOTE:** We **do not** recommend pumping the lever to push pads out to align caliper at this point. See the next section regarding the alignment of pistons.

## CENTRALISE THE PADS OVER THE DISC

**THIS STEP IS VERY IMPORTANT. DO NOT IGNORE!**

Gently pump the lever to bring the pads closer to the disc. One pad might enter in contact with the disc before the other. If this happens, hold the disc against the pad that is already in contact with the disc to allow the other one to move. For an optimised lever feel, both pads must enter in contact with the disc at the same time and allow the same clearance [see arrows] when retracted. The disc should not be flexing at any time.

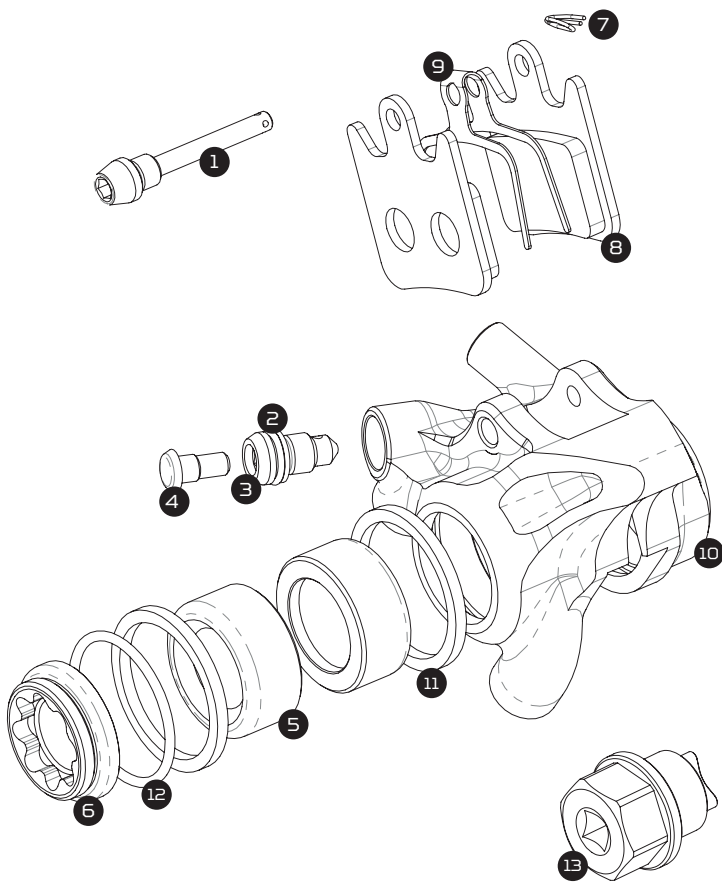


## BREAK IN PERIOD AND MAINTENANCE

Before riding and before every ride, check the correct action of the brake and that braking effort is applied as the lever is pulled. To achieve the maximum braking performance, the new pads will need bedding in.

**NOTE:** Sintered pads take longer to bed in than organic pads. To bed in the pads, ride a short distance whilst alternatively gently applying the brake on and off without attempting to stop. This procedure will achieve good braking performance but will reach its full potential after a few rides.

About maintenance tips refers to our “How to” videos on the website. To optimise the performance of the brake it is important to keep the caliper pistons lubricated using silicon lubricant only. We advice doing this at least at every pad replacement. For brake bleeds use only **Minerail Oil** fluid from a clean container.



## RX2 FLAT MOUNT: MIN ASSEMBLY

	Description	Part no	Tightening Torque
1:	Pad Pin	HBSP204	<b>4Nm</b>
2:	Bleed Nipple O'ring	OR6.5x1N	
3:	Bleed Nipple	HBSP451	<b>8Nm</b>
4:	RX Rubber Nipple Cap	HBSP453	
5:	Piston x2	HBSP235	
6:	Bore Cap	HBSP243:MIN	<b>10Nm</b>
7:	Pad Pin R Clip	HBSP171	
8:	Brake Pad	HBSP237	
9:	Brake Pad Spring	HBSP202	
10:	RX2 Caliper Body	HBSP450	
11:	Piston Seal x2 <b>RED</b>	HBSP446	
12:	Bore Cap O'ring <b>RED</b>	HBSP464	
13:	Bore Cap Tool	HTTC-TC	

## HOPE WARRANTY

All Hope Technology disc brake systems are covered for two years from original date of purchase against manufacturer defects in material and workmanship. Proof of purchase is required. Products must be returned to the original place of purchase or to Hope Technology to process any warranty claim. This warranty does not cover any damage caused through misuse or failing to comply by the recommendations given in this manual. To fight against planned obsolescence of products we endeavour to supply spare parts for at least **10 years** after final production. This warranty does not affect your statutory rights.

## NOTES:



INST023\_EN: Instruction – RX Brakes: MIN – V1