

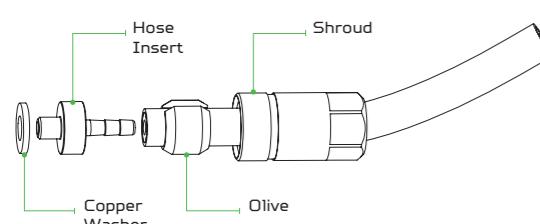
## CUTTING AND SHORTENING A HOSE

All brakes are now supplied with 2m hose length. This means most brake hoses, front or rear, will need cutting to length. We recommend leaving brake hoses uncut for initial fitting and set-up. Once the brake has been set-up and good function confirmed then proceed to cutting and shortening the hose. Shortening the hose once the brake is installed also helps to determine the correct length and minimises fluid loss. Cut and shorten at the **lever end** of the brake.

Make sure to assemble the hose fittings in the correct order, the shroud needs fitting over the hose before the insert is fitted.

We always recommend a **full brake bleed** after shortening the hose.

## HOSE FITTING ASSEMBLY



## BRAKE BLEED

Any newly installed brake that required hose shortening will require bleeding. We recommend using our Easy Bleed kit funnel, the bleed process can be completed without, but you must pay attention to the fluid level in the master cylinder reservoir; don't let it drop too low or air will be drawn into the system.

**Videos:** For the Tech 4 master cylinder <https://vimeo.com/834698535>

Same basic procedure can be followed for any Hope Tech master cylinder.

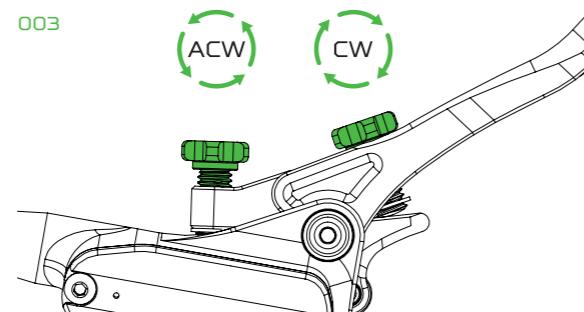
## BLEED SET-UP:

001 Hold the bike in a bike stand and remove the wheels.

002 Rotate the master cylinder (M/C) so that the reservoir sits in a level position

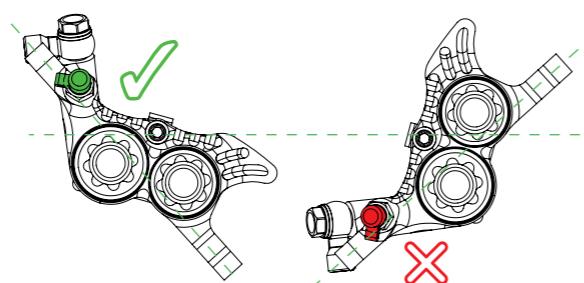
**TIP:** It can help to rotate the handlebars in a bike stand and strap them to the top tube of the bike.

003



003 Position the lever adjustments so both reach and bite point are fully out (reach adjuster turned fully clockwise and bite point adjuster turned fully anti-clockwise).

004

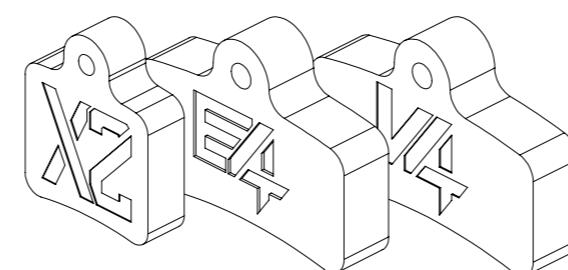


004 Make sure the caliper bleed nipple is positioned on the top of the caliper. Usually front calipers can remain attached to the bike while rear calipers should be removed and dropped below the bike. This is especially important where rear hose routings create a dip around the bottom bracket area; try to position the caliper so it sits at the lowest part of the system to avoid creating an air trap.

005 Install the relevant bleed block for the caliper or an old set of brake pads. Don't attempt to bleed the brake with **no pads or bleed block** as you risk the pistons coming out of the caliper.

**NOTE:** Do not use third party bleed blocks that fill the pad slot in the caliper and keep the pistons pushed back in the caliper housing.

[Link to 3D printable tools.](#)



006 Remove the M/C reservoir cap, if using the easy bleed funnel attach it to the M/C following the instructions provided with the easy bleed kit. Fill the funnel with DOT5.1 brake fluid.

007 Fit an 8mm spanner over the caliper bleed nipple and then push on either the bleed kit nipple adapter/hose or any piece of appropriate diameter clear hose. Route the other end of the hose into a waste container.

## BLEED PROCEDURE:

001 Remove the easy bleed kit reservoir plunger if using or make sure the M/C reservoir is full of fluid.

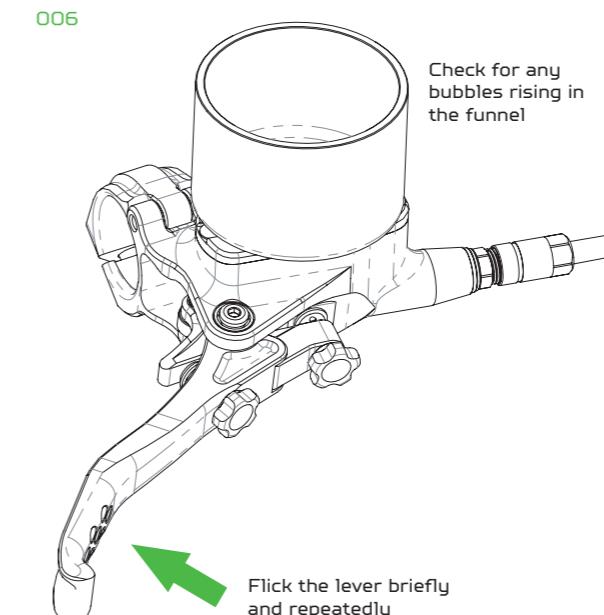
002 Pull the brake lever until you can feel resistance, or it pulls in fully to the bars.

003 Keeping the brake lever pulled in, open the caliper bleed nipple (a quarter of a turn is usually enough). On a totally dry system no fluid will flow initially until steps 002 to 004 are repeated several times.

004 Close the bleed nipple and then release the brake lever.

005 Repeat steps 002 to 004 until clean oil flows out of the waste pipe with **no air bubbles**.

006

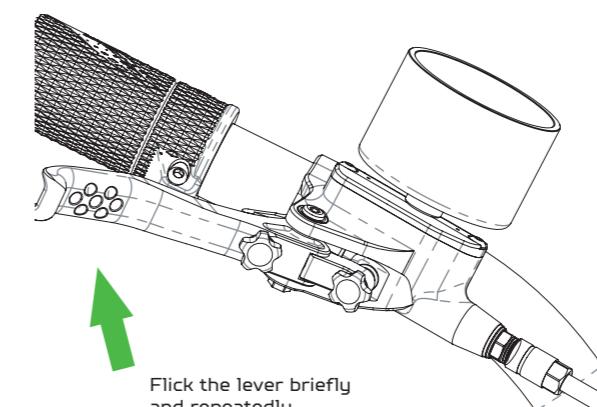


006 With the bleed funnel around half full, repeatedly flick the brake lever. You may see air bubbles rise up in the funnel, continue until no more bubbles rise up.

**NOTE:** It may be necessary to flick the lever for a minute or two to bring all the bubbles to the surface.

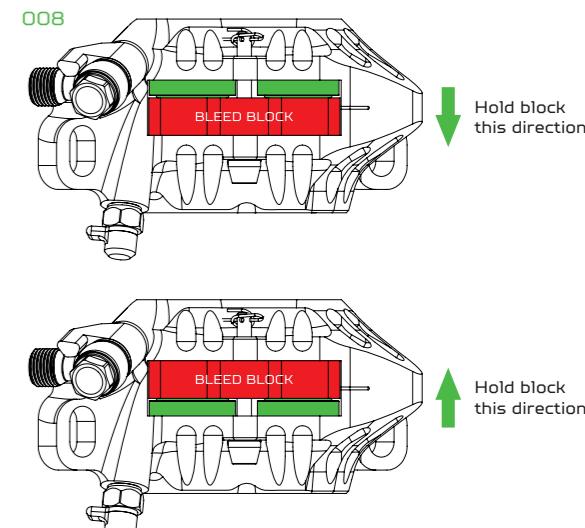
007

Tilt the lever UP at 45-60° AND Tilt the lever DOWN at 45-60°



007 To force any last bubbles towards the reservoir, tilt the master cylinder to the left and then the right while flicking the brake lever. Continue until there are no more bubbles rising in the reservoir and funnel.

008



008 With the bleed nipple closed, pump the brake lever to move the pistons out of the caliper. Hold the piston/pistons on one side of the caliper back in the housing, using a flat blade screwdriver against the bleed block or pads, so that the opposite pistons come all the way out to contact the bleed block.

**NOTE:** Make sure there is enough fluid in the M/C reservoir before pumping out the pistons.

009 Open the bleed nipple and push the exposed pistons all the way back into the housing, forcing any trapped air out from behind the caliper pistons.

010 Repeat step 007 and 008 for the pistons on the other side of the caliper.

011 With the bleed nipple closed, pull the brake lever and check for a solid lever feel. If a good lever feel isn't achieved repeat steps 002 through 010.

## FINISHING PROCEDURE:

001 Close the bleed nipple, taking care not to overtighten it – 8 N.m. Remove the drain hose and adapter from the bleed nipple.

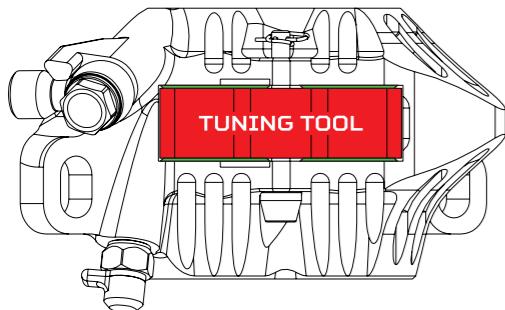
002 Push the pistons all the way into the caliper body. Keep an eye on the fluid level in the funnel, as pushing the caliper pistons back will force the fluid up into the funnel and may cause it to overflow.

**NOTE:** Watch the liquid in the funnel as it rises, there should be **no air bubbles**.

003 Put the plunger back into the funnel to close it. Remove the funnel and bleed lid, if applicable.

 [Link to 3D printable tools.](#)

004



004 If you are using a V4 caliper with 1.8 or 2.3 mm thick discs, i.e. non-ventilated discs, you have an additional adjustment tool. After pushing back the caliper pistons, replace the bleed block with this piston spacer block, then pump the pistons until they come into contact with the block. This increases the volume of fluid in the brakes when using thinner discs and maintains consistent performance during intensive use.

005 Fill the M/C reservoir with DOT4 or 5.1 brake fluid until the level reaches the top of the reservoir.

006 Replace the rubber diaphragm in the reservoir. Gently place the diaphragm in position to avoid trapping air underneath it. A small amount of liquid will spill out, so have a paper rag ready to catch it.

007 Reinstall the master cylinder lid. Be careful not to overtighten the M3 screws.

**Recommended tightening torque:** 1 N.m

008 Clean up any brake fluid residue using warm soapy water or brake cleaner.

009 Remove the bleed block or old caliper pads.

010 Refit the brake calipers to the bike if they were removed for bleeding and install the wheels.

011 Install new brake pads. This will eliminate any unpleasant spongy feeling caused by worn pads.

012 The calipers that have been removed must be realigned (see brake installation and adjustment in brake tech book, section 002).

013 Align and centre the pads, (see brake installation and adjustment in Brake Tech Book, Section 003).

## GENERAL ADVICE

- » Use only DOT5.1 (or DOT4 brake fluid)
- » It is highly recommended to use latex gloves and protective glasses when bleeding brakes.
- » You shouldn't need to bleed your brake more than once a year.
- » Always bleed the brake after shortening the hose.
- » Pay particular attention to rear brakes, we always advise removing the caliper from the frame for bleeding.
- » Always work caliper pistons to remove air from the caliper with bleed nipple pointing upwards.
- » Be careful that the hose isn't creating a loop, especially inside the frame or around a motor if on an E-bike.
- » At the end of brake bleed, make sure to fully push all caliper pistons back.
- » If left on painted surfaces brake fluid can be corrosive.
- » Always clean up thoroughly after bleeding.
- » Dispose old brake fluid at a recycling centre, be responsible.

## NOTES: