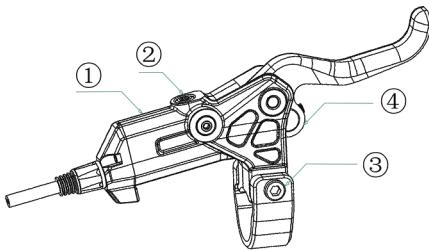


NUTT

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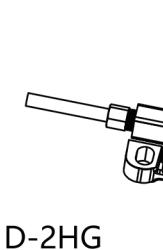
Installation Instructions for Bicycle Hydraulic Disc Brakes
(Recommended to be performed by professionals)



NY-3

COMPONENTS

Item	Name	Quantity
1	Brake Lever Assembly	1
2	Bleed Screw	1
3	Clamp Bolt	1
4	Push Rod	1



D-2HG

Item	Name	Quantity
5	Caliper Assembly	1
6	Split Pin	1
7	Brake Pad	2
8	Spring Clip	1
9	Bleed Screw	1

*Safety Precautions

To ensure the safe use of hydraulic disc brakes, please be sure to follow the guidelines below:

1. This hydraulic disc brake is a sealed system that has undergone high-pressure testing. It is strictly forbidden to loosen any screws on the system, as this may cause oil leakage and brake failure.
- ① If the brake rotor is worn, cracked, or deformed, please replace it.
- ② Do not forcibly pry the caliper pistons, as this may damage the pistons and could cause brake fluid to overflow from the master cylinder reservoir cap.

2. Any leakage of brake fluid is not permitted. If a leak occurs, stop riding immediately and return to an authorized dealer for professional service.

3. During normal riding, slight wear marks may appear on the rotor surface. As braking frequency increases, these marks may deepen. Therefore, regularly inspect the rotor's condition. If the rotor is warped or the wear marks are too deep (thickness < 1.5 mm), replace it with a new rotor.

4. After prolonged or heavy braking, the rotor surface temperature can become extremely high. Do not touch the rotor with bare hands to avoid burns. Before adjusting the brake, ensure all components have fully cooled down.

5. Always verify that the brake system is functioning properly before riding.

6. Brake rotors and brake pads must never be contaminated with oil or grease, as this can cause brake failure.

7. If the rotor becomes contaminated with oil, clean it thoroughly with alcohol. If the brake pads become contaminated, replace them immediately.

*Important Notes

1. Do not operate the brake lever before installation. This hydraulic disc brake features an automatic compensation mechanism. Actuating the lever will advance the caliper pistons and push the brake pads forward, reducing clearance and potentially preventing proper installation. Each lever pull further reduces the gap. If this occurs, use the included plastic spacer to carefully push the pads back to their original position by inserting it between them. (Avoid causing significant damage to the friction material when retracting the pads.)

2. Avoid touching the braking surface of the rotor with bare hands, as oils from your skin can reduce its braking performance.

3. This system is designed for use with original NUTT mineral oil or universal SHIMANO mineral oil only. Using other types of oil may cause brake malfunction and render the system inoperable.

4. Always use fresh oil from a newly opened container. Do not reuse oil drained from the bleed port. Used or reused oil may contain moisture, which can impair braking performance.

5. Braking distance increases in wet conditions. Please reduce your speed and apply brakes earlier and more gradually when necessary.

6. If braking is applied continuously, vapor lock (steam phenomenon) may occur. This happens when moisture or air bubbles in the system expand due to heat, causing a sudden increase in lever travel. If this occurs, release the lever temporarily.

7. If any oil leakage is detected, stop using the brakes immediately and contact your dealer or authorized service agent.

8. When cleaning or maintaining the hydraulic disc brake, use only alcohol, soapy water, or a neutral cleaner along with a soft cloth for wiping.

*Precautions for Using Mineral Oil

--- Usage Instructions for Mineral Oil

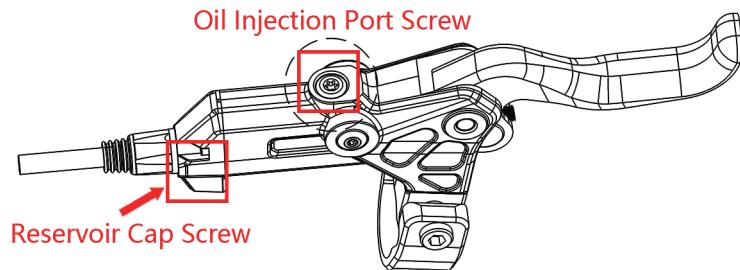
- 1.If mineral oil enters the eyes, it may cause inflammation. Always wear protective eyewear during use to avoid contact with the eyes.
- 2.If mineral oil comes into contact with the skin, it may cause irritation. Always wear protective gloves during use.
- 3.Inhaling mineral oil vapors may cause physical discomfort. Ensure adequate ventilation during use.
- 4.Do not ingest mineral oil, as it may cause diarrhea and vomiting.
- 5.Store mineral oil in a location inaccessible to children.
- 5.Do not cut, heat, weld, or pressurize mineral oil containers, as this may lead to explosion or fire.

--- Emergency Procedures

- 1.If mineral oil enters the eyes, rinse immediately with plenty of water and seek medical attention promptly.
- 2.If mineral oil comes into contact with the skin, wash thoroughly with soap and water.
- 3.If mineral oil vapors are accidentally inhaled, move the affected person to a well-ventilated area, keep them warm with a blanket, ensure they remain calm, and seek medical assistance immediately.

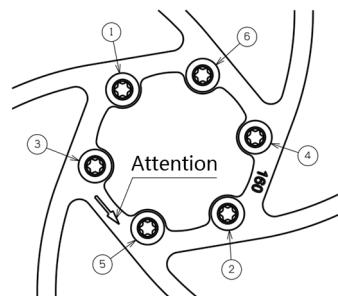
*Attention!

- 1.Do not press the master cylinder lever before the system is fully installed, as this may cause fluid leakage from the unit and lead to system failure.
- 2.Do not loosen or remove the oil injection port screw or the reservoir cap screw (as indicated in the square markings) on this master cylinder, to prevent fluid leakage and system malfunction.
- 3.Do not insert tools into or press the piston inside the air vent (as indicated by the arrow) of the oil reservoir, to avoid oil leakage and system failure.



*Rotor Installation (Refer to the Diagram Below)

1. Important! The arrow direction on the rotor must match the direction of wheel rotation.
2. Using a T25 Torx wrench or a 4mm hex wrench, secure the rotor to the hub's rotor mount using the 6 rotor bolts.
3. To ensure the rotor remains flat, tighten the bolts in a diagonal sequence (1, 2, 3, 4, 5, 6). Tighten alternately and gradually to a torque of 50–60 kgf·cm.
4. If the rotor bolts have been removed and reinstalled 3–4 times, the thread-locking adhesive may lose effectiveness. Replace the bolts to ensure safety.



*Hose Assembly

1. Tools Required:

1.5mm hex wrench

M6 hex wrench

2. Use the guide head to thread the hose through the internal routing of the frame. (Refer to Figure 1)

3. After routing the hose through the frame, use the 1.5mm hex wrench to remove the quick-release nut, and the M6 hex wrench to remove the banjo bolt from the master cylinder. (Refer to Figure 2)
[Important!] Do not shake the hose after removing the guide head, as this may cause significant mineral oil leakage.

When removing the banjo bolt, ensure the hose end of the brake lever is facing upward. After removal, keep the hose end upward at all times and do not press the brake lever, to prevent excessive oil loss.

4. Slide the hose fitting and Olive F-type ferrule onto the hose in order. When fitting the ferrule onto the hose end (pay attention to the orientation: the larger opening of the Olive F-type ferrule goes onto the hose end), you should feel a slight click when it is fully seated. Try pulling the ferrule outward—if it does not come off, it is properly installed. (Refer to Figure 3)

[Note: If resistance is high during ferrule installation, gently rotate and press simultaneously for easier seating.]

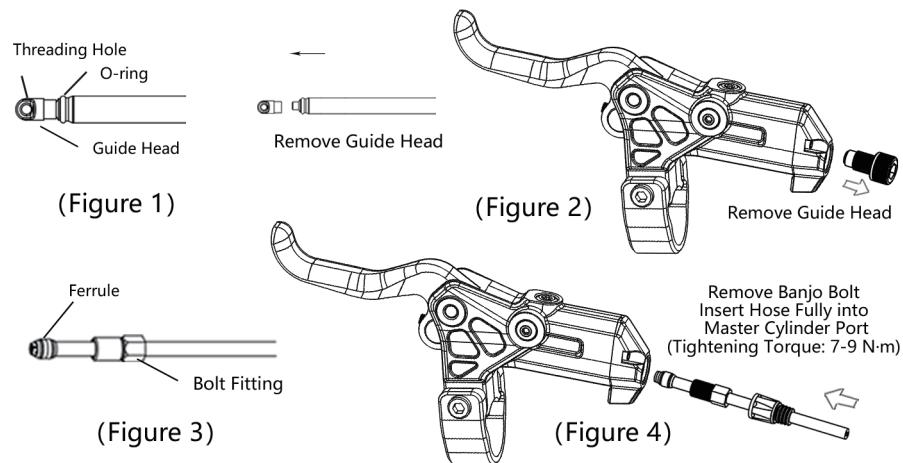
5. Mount the lever clamp onto the handlebar.

6. Insert the hose fully into the M8 port at the bottom of the lever. (Refer to Figure 4)

7. Use an 8mm open-end torque wrench to tighten the hose fitting into the master cylinder (tightening torque: 70–90 kgf·cm). Assembly is now complete.

[Important!]

During disassembly and reassembly of the split-style hose, some brake fluid may be lost, especially if the operator is inexperienced. This can result in a softer brake lever feel. If this occurs, refer to the manual for instructions on adding brake fluid to restore proper firmness, or follow the bleeding procedure as outlined in the Shimano dealer manual.



*Installation and Adjustment of Hydraulic Brakes

Warning: Before removing the plastic spacer and completing installation, do not operate the brake lever. The caliper features an automatic compensation mechanism, which means actuating the lever will advance the pistons and push the brake pads forward, reducing the clearance and potentially preventing proper installation. Each lever pull further decreases the gap. If this occurs, use the included plastic spacer reversed (insert it between the brake pads) to carefully push the pads back to their original position. (Avoid causing significant damage to the friction material while retracting the pads.)

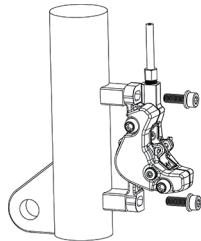
Mounting the Caliper to the Fork or Frame:

(1) Absolutely do not add any shims. The caliper adapter is designed to meet international standard specifications. Please select the appropriate adapter for the front (F) or rear (R) wheel based on the rotor size, and use the correct tools for installation. If the fork/rear frame uses a post mount, no adapter is needed—mount the caliper directly.

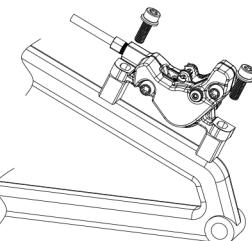
① Based on the rotor size, select the corresponding adapter. Secure the caliper to the adapter using the included two M6x18 hex bolts and flat washers (the adapter is pre-installed before shipment).

② Attach the caliper (with adapter mounted) to the fork or rear frame's disc brake mounting holes using two M6xL hex bolts (L length varies depending on the bike model and front/rear position) and flat washers. Do not fully tighten at this stage—keep the caliper movable for adjustment.

③ If the fork/rear frame uses a post mount, no adapter is required. Mount the caliper directly to the fork or frame using two M6xL hex bolts and flat washers. Do not fully tighten yet, ensuring the caliper remains adjustable.



(Figure 5) Front Fork Installation



(Figure 6) Rear Frame Installation

2. Mount the master cylinder onto the handlebar. Adjust the master cylinder to a comfortable angle, then tighten the clamp bolt (torque: 40–60 kgf·cm). (See Figures 5 and 6)

3. Pump the brake lever 5–8 times and hold it pressed (or secure it with a rubber band or cable tie) so that the caliper clamps onto the rotor (the caliper will self-align). Then, alternately tighten the two M6 bolts (torque: 90 ± 5 kgf·cm). (See Figure 7)

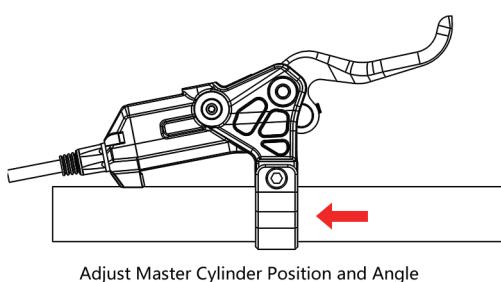
4. Release the brake lever and spin the wheel to confirm that the rotor does not rub against the brake pads. If rubbing occurs, loosen the M6 mounting bolts on the caliper and repeat the previous step.

5. If needed, use a 2mm hex wrench to adjust the reach adjustment screw to modify the lever distance. (Clockwise increases lever distance; counterclockwise decreases it.) (See Figure 8)

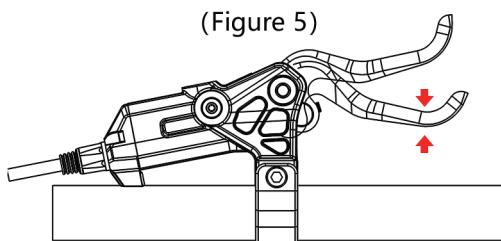
6. Road Test:

Braking power may be weaker during the first 10–30 brake applications (as new brake pads require bedding-in to achieve full contact with the rotor).

[Warning: During testing, do not ride at high speeds. Maintain a safe braking distance.]

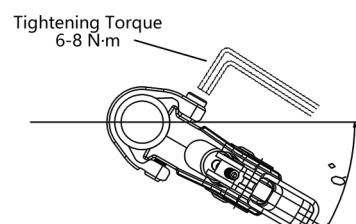


Adjust Master Cylinder Position and Angle

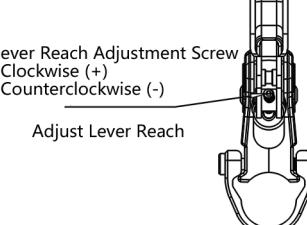


Adjust Master Cylinder Position and Angle

(Figure 5)



Clamp Bolt Tightening Torque



ever Reach Adjustment Screw
Clockwise (+)
Counterclockwise (-)

Adjust Lever Reach

(Figure 8)

*Oil Filling Procedure

When to Perform Oil Filling

- (1) When the oil level in the reservoir is visibly low, or after brake pad wear, when pumping the brake lever no longer provides a firm feel.
- (2) When the mineral oil in the reservoir changes color, it is recommended to replace the mineral oil.
- (3) Choosing Between Syringe and Oil Injection Machine Methods:
 - ① If the brake lever feels spongy or braking power is insufficient, use the syringe method for oil filling and air bleeding.
 - ② If the syringe method is ineffective, or if the oil is contaminated and needs replacement, use the oil injection machine.

Warning: Regardless of which oil filling method is used for bleeding, the brake pads must be removed from the caliper, and a 10.8mm bleeding spacer must be installed before proceeding. Filling oil without using the spacer can oversaturate the hydraulic system. When continuous braking raises the caliper temperature significantly, the expanding oil may autonomously push the pistons and brake pads, creating a risk of brake lock-up and rotor seizure!

Important Notes:

- (1) Do not add any brake fluid containing DOT series components or other non-hydraulic disc brake mineral oils. Doing so may damage the seals in the hydraulic system, leading to brake failure.
- (2) This hydraulic disc brake system uses Mineral Oil (MINERAL OIL). When refilling, it is recommended to use mineral oil from the NUTT or Shimano (SHIMANO). The use of other mineral oils available on the market may reduce braking performance.
- (3) If the brake hose is internally routed within the frame and requires the use of the (NUTT) Quick-Release Hose Patent, do not disassemble the hose fitting arbitrarily, as this may cause oil loss and insufficient fluid levels, resulting in brake failure. If the hose must be replaced, please have it serviced by the bicycle shop where the bike was purchased.

Important Notes:

- (1) Do not add any brake fluid containing DOT series components or other non-hydraulic disc brake mineral oils. Doing so may damage the seals in the hydraulic system, leading to brake failure.
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*Syringe Oil Filling Procedure

I. Tool Preparation, New mineral oil (approx. 30cc), Alcohol and cleaning cloth

T10 Torx wrench, Oil filling tool set

1. Loosen the two M5 mounting bolts on the caliper and remove the caliper from the fork or frame.

2. Remove the split pin and take out the brake pads from the caliper. (See Figure 9, steps ① and ②)

3. Insert the 10.8mm bleeding spacer into the caliper and reinstall the split pin. (See Figure 9, steps ③ and ④)

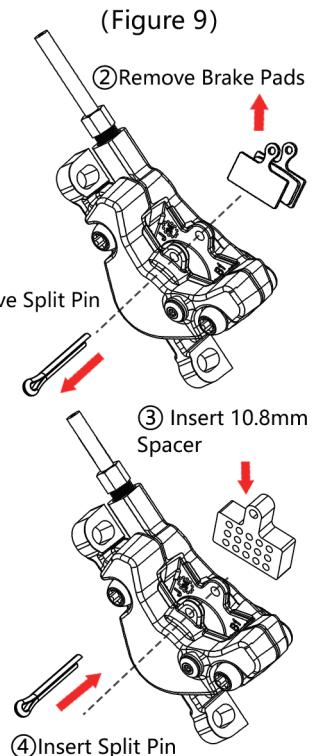
4. Connect the fitting to the plastic tube, and attach the other end of the tube to the syringe.

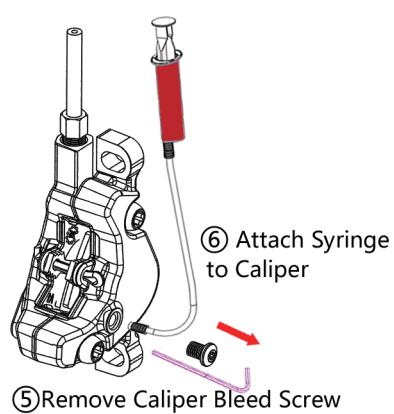
5. Use the T10 Torx wrench to remove the bleed screw from the caliper. (See Figure 10, step ⑤)

6. Fill another syringe with mineral oil, ensuring no air bubbles are present, then attach it to the caliper. (See Figure 10, step ⑥)

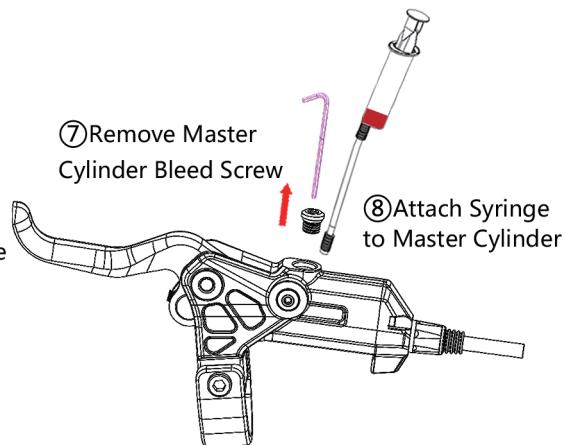
7. Remove the bleed screw from the master cylinder end. (See Figure 11, step ⑦)
Note: Dispose of used oil according to local regulations to prevent environmental pollution.

8. Attach the other syringe to the master cylinder. (See Figure 11, step ⑧)





(Figure 10)



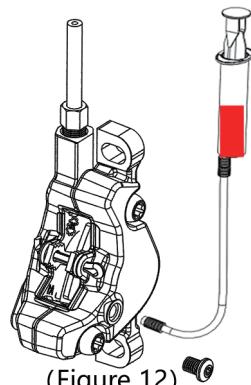
(Figure 11)

II. Begin Oil Filling:

1. Slowly inject the mineral oil from the caliper-end syringe into the caliper until the master cylinder-end syringe is half full.
2. Then slowly push the mineral oil from the master cylinder-end syringe back toward the caliper until very little oil remains in the syringe. Repeat steps 1 and 2 until no air bubbles are visible in either syringe during the process. (Refer to Figures 12 and 13)

Note: Throughout the process, push the syringes slowly. Moving too quickly may cause leaks and complicate the bleeding procedure.

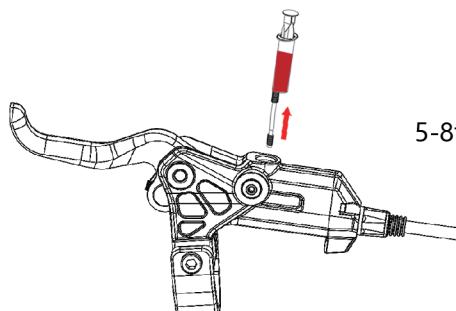
3. Remove the syringe from the caliper end and reinstall the bleed screw. (Tightening torque: 8–12 kgf·cm)



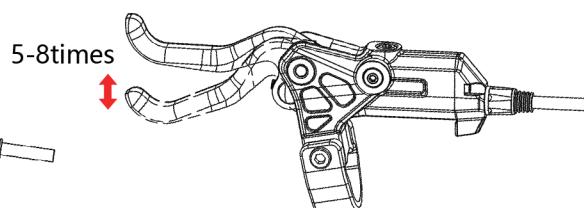
(Figure 12)

4. Remove the syringe from the master cylinder end and reinstall the bleed screw. (Tightening torque: 8–12 kgf·cm)
5. Pump the brake lever 5–8 times and check the lever travel. If the lever feels spongy or bottoms out (excessive travel with no firmness), repeat the oil filling process. (Refer to Figure 14)
6. If the lever travel is normal and firm, the oil filling is complete. (Refer to Figure 15)
7. Clean any spilled mineral oil from the master cylinder and caliper using alcohol and a cloth.
8. Remove the bleeding spacer from the caliper. (Figure 16)
9. Reinstall the brake pads into the caliper. (Figure 17)

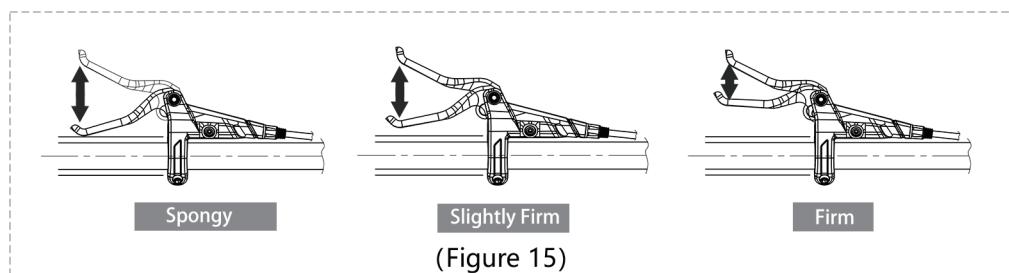
10. Following the caliper installation steps outlined in "Hydraulic Brake Installation and Adjustment", mount the caliper to the fork or frame and adjust it so that it does not rub against the rotor.



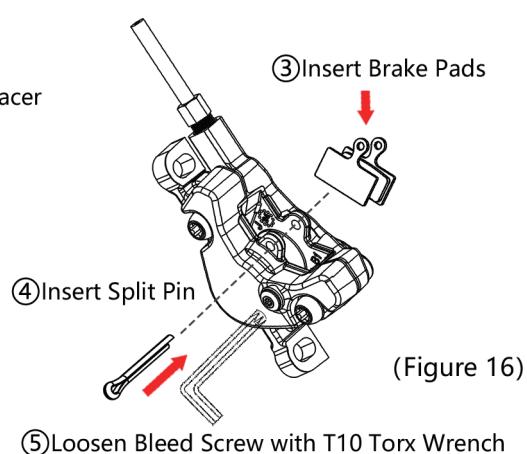
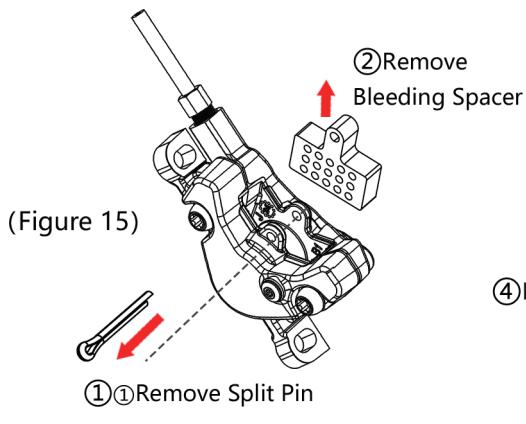
(Figure 13)



(Figure 14)



(Figure 15)



*Minor Oil Bleeding Procedure

After oil filling, if the brake lever feels excessively stiff or the brake pads rub against the rotor (disc brake drag), it indicates overfilling of the hydraulic system. In this case, perform the following minor oil bleeding steps:

1. Use a T10 Torx wrench to loosen the bleed screw on the caliper by about 2 turns (do not remove it completely). (Refer to Figure 17, step ⑤)
2. Place a clean tissue or cloth under the bleed screw to catch any dripping mineral oil.
3. Gently and slowly press the brake lever to allow 1–2 drops of mineral oil to escape from the bleed screw. (Do not press too forcefully or release excessive oil.)
4. Tighten the caliper bleed screw back to the specified torque (8–12 kgf·cm).
5. Pump the brake lever 5–8 times and verify that the lever travel feels normal.
6. Wipe off any spilled mineral oil from the caliper using alcohol and a cloth.

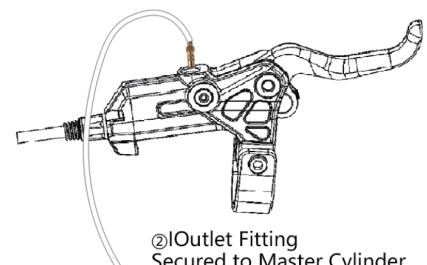
*Portable Oil Injection Machine Procedure

Tool Preparation, Portable oil injection machine, Alcohol and cloth, T10/T12 Torx wrench

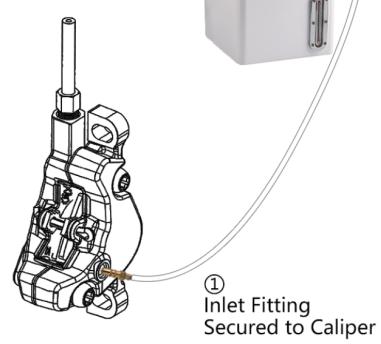
1. Loosen the two M5 mounting bolts on the caliper and remove the caliper from the fork or frame.
2. Remove the split pin and take out the brake pads from the caliper. (Refer to Figure 9)
3. Insert the 10.8mm bleeding spacer into the caliper and reinstall the split pin. (Refer to Figure 9)
4. Use the T10 Torx wrench to remove the bleed screw from the caliper.
5. Attach the inlet fitting to the caliper and ensure it is sealed properly to prevent leaks. (Refer to Figure 18, step ①)
6. Remove the bleed screw from the master cylinder, then attach and securely tighten the outlet fitting, ensuring a sealed connection without leaks. (Refer to Figure 18, step ②)

II. Begin Oil Filling

1. Turn on the power switch of the portable oil injection machine. (Refer to Figure 18, step ③)
2. Allow the machine to operate until the old mineral oil is completely purged from the hydraulic system and new mineral oil is injected, continuing until no air bubbles are visible in the outlet tube and the flow appears clear.
3. Turn off the machine, detach the inlet fitting from the caliper end, and reinstall the bleed screw (tightening torque: 35–40 kgf·cm).
4. Remove the outlet fitting from the master cylinder end. Repeatedly pump the brake lever to expel any remaining air bubbles. If bubbles continue to appear, perform a supplementary oil fill using an oil bottle until no bubbles emerge, then tighten the bleed screw (tightening torque: 8–12 kgf·cm).
5. Pump the brake lever 5–8 times and check the lever travel (refer to the lever travel confirmation diagram). If the lever has excessive travel (feels spongy or bottoms out), the oil filling process must be repeated. (Refer to Figure 19)
6. Once the lever travel is confirmed to be normal, the oil filling process is complete.
7. Wipe off any spilled mineral oil from the master cylinder and caliper using alcohol and a cloth.
8. Remove the bleeding spacer from the caliper. (Refer to Figure 16)
9. Reinstall the brake pads into the caliper. (Refer to Figure 17)
10. Following the caliper installation steps outlined in “*Hydraulic Brake Installation and Adjustment”, mount the caliper to the fork or frame and adjust it so that it does not rub against the rotor.



(Figure 18)



(Figure 19)

*Brake Pad Precautions (Refer to the Diagram Below)

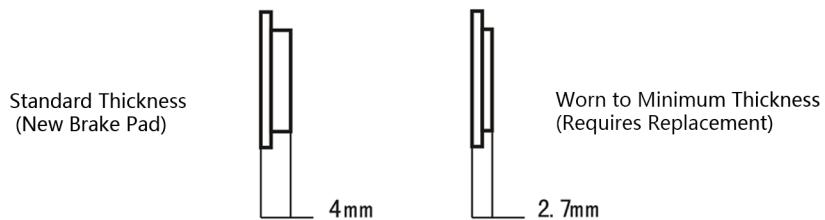
1. New brake pads require a break-in period of approximately 10–30 braking applications before optimal braking performance is achieved. This is because new pads need to wear in and establish full contact with the rotor. Therefore, initial braking power may be weaker, which is normal. There is no need for concern—this condition will gradually improve as you ride. During this period, avoid riding at high speeds and maintain a safe braking distance.

2. In wet conditions, brake pads may produce some noise when dampened (this does not affect braking performance). This is a normal phenomenon and the noise will disappear once the pads have dried.

3. Before riding, always check the thickness of the brake pads.

It is recommended to replace the brake pads when wear exceeds 0.8 mm (pad thickness \leq 3.2 mm).

If the pad thickness is less than 2.7 mm, replace the brake pads immediately to ensure riding safety.



*Brake Pad Precautions (Refer to the Diagram Below)

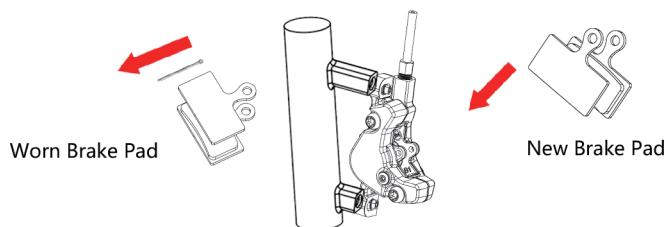
1. New brake pads require a break-in period of approximately 10–30 braking applications before optimal braking performance is achieved. This is because new pads need to wear in and establish full contact with the rotor. Therefore, initial braking power may be weaker, which is normal. There is no need for concern—this condition will gradually improve as you ride. During this period, avoid riding at high speeds and maintain a safe braking distance.

2. In wet conditions, brake pads may produce some noise when dampened (this does not affect braking performance). This is a normal phenomenon and the noise will disappear once the pads have dried.

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If the pad thickness is less than 2.7 mm, replace the brake pads immediately to ensure riding safety.



Additional Notes

Brake pads rubbing against the disc	
Possible reasons	Solution
Incorrect adjustment of brake pad or disc brake caliper body	Readjust the brake pads or disc brake caliper body
Disk deformation or bending	Replace the disc
Poor grip	
Possible reasons	Solution
There is air in the system	Loosen the sealing screw of the oil tank and press the handle several times to release the air
The system needs to replenish mineral oil	Reference oil replenishment operation
The adapter is loose	Lock the parrot, chat with the wren, and count the hard numbers. The bolt is fixed to the adapter seat
The oil brake lever can be pressed down to the driver's handle	
Possible reasons	Solution
The system needs to replenish mineral oil	Reference oil replenishment operation
System oil leakage	Check the oil leakage part and repair or replace it
Insufficient or no braking force	
Possible reasons	Solution
The brake pads are contaminated or have oil stains	Thoroughly clean and dry the disc with a clean cloth dipped in alcohol, replace the brake pads
The disc is contaminated or has oil stains	Thoroughly clean and dry the disc with a clean cloth dipped in alcohol, replace the brake pads

Important Reminders:

1. After placing the bicycle upside down or on its side, always test the brakes by squeezing the brake levers before riding to ensure they are functioning properly. If abnormal operation is detected, proceed as follows:

(1) Oil Leakage: If oil leakage is observed, stop using the bicycle immediately and take it to a professional bicycle service center for repair. Continuing to ride with a leaking brake system may result in sudden brake failure.

(2) Soft Brake Lever Feel: If the lever feels spongy or soft, try repeatedly pumping the lever to restore a firm feel.

(3) Persistent Soft Feel: If pumping the lever does not restore proper lever feel, follow the oil filling instructions in this manual to perform bleeding—either with a syringe or using an oil injection machine—to restore normal brake function.

3. Different bicycle models may have variations in brake system operation. It is essential to thoroughly understand the braking characteristics of your specific bicycle—including lever pressure and braking response—and adapt your riding accordingly. Improper use of the brake system may result in loss of control, accidents, or serious injury. For proper operation, consult your bicycle retailer and carefully read the bicycle owner's manual.

Important Reminders:

1. After placing the bicycle upside down or on its side, always test the brakes by squeezing the brake levers before riding to ensure they are functioning properly. If abnormal operation is detected, proceed as follows:

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System Maintenance:

To ensure long-term optimal performance of the hydraulic disc brake system, perform the following checks regularly:

1. Before Riding:

Always verify that the brake system is functioning correctly.

(1) Brake Pad Inspection and Replacement:

Check the brake pad thickness. If it is near or below the recommended minimum, remove the pads and measure their thickness. Replace the pads if thickness is below 2.7mm.

2. After Riding:

(1) Rotor Cleaning:

If mud or debris accumulates between the caliper and the rotor, clean the rotor thoroughly after riding. Ensure the rotor and brake pads remain free of oil or grease.

(2) Bolt Tightening:

Check all bolts for looseness and ensure they are tightened to the specified torque values.

Under normal usage conditions, natural wear and aging of the product are not covered by warranty. Additionally, the company reserves the right to modify product specifications as part of ongoing improvements, without prior notice.

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