Dealer's Manual

ROAD	MTB	Trekking
City Touring/ Comfort Bike	URBAN SPORT	E-BIKE

Hydraulic Disc Brake/ DUAL CONTROL LEVER

METREA

ST-U5060
BR-U5000
BR-RS785
BL-U5010
BL-U5000
SM-RT500-SS

Non-series

BR-UR300
BL-MT200
BL-MT201

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IMPORTANT NOTICE

- **This dealer's manual is intended primarily for use by professional bicycle mechanics.**
  Users who are not professionally trained for bicycle assembly should not attempt to install the components themselves using the dealer's manuals. If any part of the information on the manual is unclear to you, do not proceed with the installation. Instead, contact your place of purchase or a local bicycle dealer for their assistance.
- Make sure to read all instruction manuals included with the product.
- Do not disassemble or modify the product other than as stated in the information contained in this dealer's manual.
- All dealer's manuals and instruction manuals can be viewed on-line on our website (**https://si.shimano.com**).
- For consumers who do not have easy access to the internet, please contact a SHIMANO distributor or any of the SHIMANO offices to obtain a hardcopy of the User's Manual.
- Please observe the appropriate rules and regulations of the country, state or region in which you conduct your business as a dealer.

For safety, be sure to read this dealer's manual thoroughly before use, and follow it for correct use.

The following instructions must be observed at all times in order to prevent personal injury and physical damage to equipment and surroundings. The instructions are classified according to the degree of danger or damage which may occur if the product is used incorrectly.

⚠ DANGER

Failure to follow the instructions will result in death or serious injury.

⚠ WARNING

Failure to follow the instructions could result in death or serious injury.

⚠ CAUTION

Failure to follow the instructions could cause personal injury or physical damage to equipment and surroundings.

TO ENSURE SAFETY

⚠ WARNING

- **Be sure to follow the instructions provided in the manuals when installing the product.**
  It is recommended to use genuine Shimano parts only. If parts such as bolts and nuts become loose or damaged, the bicycle may suddenly fall over, which may cause serious injury.
  In addition, if adjustments are not carried out correctly, problems may occur, and the bicycle may suddenly fall over, which may cause serious injury.
-  Be sure to wear safety glasses or goggles to protect your eyes while performing maintenance tasks such as replacing parts.
- After reading the dealer's manual thoroughly, keep it in a safe place for later reference.

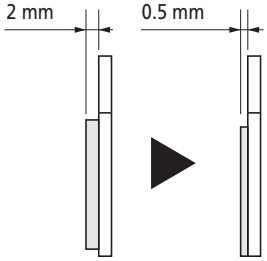
Be sure to also inform users of the following:

■ Brake

- Each bicycle may handle slightly differently depending on the model. Therefore, be sure to learn the proper braking technique (including brake lever pressure and bicycle control characteristics) and operation of your bicycle. Improper use of your bicycle's brake system may result in a loss of control or a fall, which could lead to severe injury. For proper operation, consult a professional bicycle dealer or the bicycle's owner's manual. It is also important to practice riding and braking, etc.
- Please make sure to keep your fingers away from the rotating disc brake rotor. The disc brake rotor is sharp enough to inflict severe injury to your fingers if caught in the openings of the disc brake rotor while it is moving.



- The calipers and disc brake rotor will become hot when the brakes are operated; do not touch them while riding or immediately after dismounting from the bicycle. Otherwise you may get burned.
- Be careful not to allow any oil or grease to get onto the disc brake rotor and brake pads. Otherwise the brakes may not work correctly.
- If any oil or grease does get on the brake pads, you should consult a dealer or an agency. Otherwise the brakes may not work correctly.
- If noise occurs during brake operation, the brake pads may have been worn down to the usable limit. Check that brake system temperature has cooled down sufficiently, check the thickness of the brake pad. If the thickness is 0.5 mm or less, the brake pad needs to be replaced with a new one. Consult a dealer or an agency.



- If the disc brake rotor is cracked or deformed, immediately stop using the brakes and consult a dealer or an agency.
- If the disc brake rotor becomes worn down to a thickness of 1.5 mm or less, or if the aluminum surface appears, immediately stop using the brakes and consult a dealer or an agency. The disc brake rotor may break, and you may fall off the bicycle.
- Vapor lock may occur if the brakes are applied continuously; therefore, please refrain from doing this.

Vapor lock occurs when the oil inside the brake system becomes heated, which causes the water or air bubbles inside the brake system to expand. This can then result in a sudden increase in the brake lever stroke.

- The disc brake is not designed to work when the bicycle is upside down. If the bicycle is turned upside down or on its side, the brake may not work correctly, and a serious accident could occur. Before riding the bicycle, be sure to operate the brake lever a few times to check that the brakes operate normally. If the brakes do not operate normally, stop using the brakes and consult a dealer or an agency.

■ SM-RT500-SS

- This disc brake rotor is designed for recreational use.
  If sudden braking is repeated while the disc brake rotors are hot, the brakes will generate noise, and there will be a reduction in braking force.
  If you sense that braking force has reduced, immediately stop riding and reduce the temperature of the disc brake rotors.
- If you feel no resistance when depressing the brake lever, immediately stop using the brakes and consult a dealer or an agency.
- If fluid leaks occur, immediately stop using the brakes and consult a dealer or an agency.
- If the front brake is applied too strongly, the wheel may lock and the bicycle may fall forward, and serious injury may result.
- Always make sure that the front and rear brakes are working correctly before riding the bicycle.
- The required braking distance will be longer during wet weather. Reduce your speed and apply the brakes early and gently.
- If the road surface is wet, the tires will skid more easily. If the tires skid, you may fall off the bicycle. Reduce your speed and apply the brakes early and gently.
- The lever should never be altered. Otherwise, the lever may break preventing braking operation.
- Check before riding that there is no damage such as carbon peeling or cracking. If there is any damage, stop using the bicycle and consult a dealer or an agency. Otherwise, the lever may break preventing braking operation.

For Installation to the Bicycle, and Maintenance:

- Please make sure to keep your fingers away from the rotating disc brake rotor during installation or maintenance of the wheel.
  The disc brake rotor is sharp enough to inflict severe injury to your fingers if caught in the openings of the disc brake rotor while it is moving.

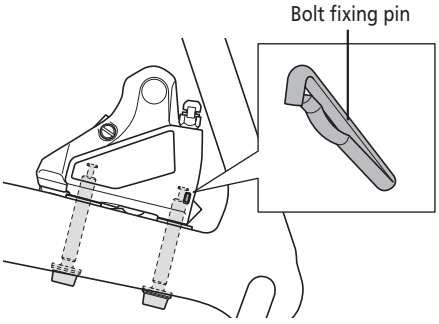


- If the disc brake rotor is worn, cracked or warped, it should be replaced.
- If the disc brake rotor becomes worn down to a thickness of 1.5 mm or so that the aluminum surface becomes visible, be sure to replace the disc brake rotor with a new one.
- Check that the brake components have cooled down sufficiently before attempting to adjust the brakes.
- Use only Shimano genuine mineral oil. If other types of oil are used, it may cause problems with brake operation, and cause the system to be unusable.
- Be sure to use only oil from a freshly-opened container, and do not re-use oil which has been drained from the bleed nipple. Old or reused oil may contain water, which could cause vapor lock in the brake system.
- Be careful not to let water or air bubbles get into the brake system. Otherwise, vapor lock may occur. Be particularly careful when removing the cover of the reservoir tank.
- If cutting the brake hose in order to adjust the length of the hose, or when changing over the brake hose from left to right or vice versa, be sure to bleed the air from the hose according to steps in "Adding Shimano genuine mineral oil and bleeding air".
- When turning the bicycle upside down or on its side, the brake system may have some air bubbles inside the reservoir tank which are still there when the bleed screw is closed, or which accumulate in various parts of the brake system when it is used for long periods. This disc brake system is not designed to work with the bicycle upside down. If the bicycle is turned upside down or on its side, any air bubbles inside the reservoir tank may move in the direction of the calipers and if the bicycle is ridden in this condition, there is a danger that the brakes may not operate and a serious accident could occur. If the bicycle has been turned upside down or on its side, be sure to operate the brake lever a few times to check that the brakes operate normally before riding the bicycle, and if the brakes do not operate normally, adjust them according to the following procedure.

If brake does not seem to work (feels sluggish) when the lever is depressed

Set the bleed section of the brake lever so that it is parallel to the ground, and then gently depress the brake lever several times and wait for the bubbles to return to the reservoir tank.
If the brakes still operate sluggishly, bleed the air from the brake system (refer to "Adding Shimano genuine mineral oil and bleeding air").

- If the quick release lever on the hub is on the same side as the disc brake rotor, they may interfere with each other, which is dangerous, so check that they do not.
- Shimano disc brake systems are not compatible with tandem bicycles. Because tandem bicycles are heavier, the stress on the brake system increases during brake operation. If hydraulic disc brakes are used with tandem bicycles, the oil temperature will become too high and vapor locks or ruptures in the brake hoses may occur, causing the brakes to fail.
- When installing the brake caliper using bolt fixing pins, be sure to use mounting bolts of the appropriate length.
  If not, the bolt fixing pins may not be securely fastened, and the bolts may fall out.

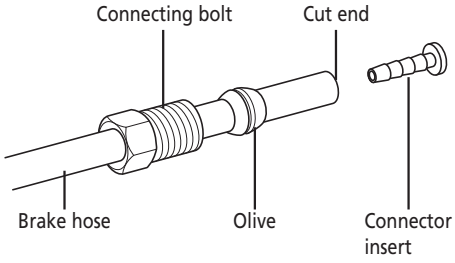


■Brake hose

- After installing the brake hose to the brake unit, adding Shimano genuine mineral oil and bleeding air bubbles, depress the lever again several times to check that the brakes are operating normally and there are no fluid leaks from the hose or the system.
- The connector insert is for this brake hose only. Use an appropriate connector insert according to the following table. Use of a connector insert incompatible with the brake hose may cause fluid leaks.

Model No.	Length	Color
SM-BH59-JK-SS	13.2 mm	Gold

- Do not reuse the olive piece or the connector insert when reinstalling. A damaged or reused olive, or connector insert, may not provide a secure brake hose connection, possibly causing the brake hose to disconnect from the calipers or brake lever.
  If the brake hose becomes disconnected, there is danger that the brakes may suddenly stop working.



- Cut the brake hose so that the cut end is perpendicular to the length of the hose. If the brake hose is cut at an angle, fluid leaks may result.



⚠ CAUTION

Be sure to also inform users of the following:

■ Cautions on Shimano genuine mineral oil

- Contact with eyes may result in irritation. In the event of contact with eye, wash with water and seek medical attention immediately.
- Contact with skin may cause a rash and discomfort. In the event of contact with skin, wash well with soap and water.
- Inhalation of Shimano genuine mineral oil mist or vapors may cause nausea. Cover nose and mouth with a respirator type mask and use in a well ventilated area. If Shimano genuine mineral oil vapor is inhaled, go immediately to an area with fresh air and cover up with a blanket. Stay warm and calm, and seek professional medical advice.

■ Burn-in period

- Disc brakes have a burn-in period, and the braking force will gradually increase as the burn-in period progresses. Make sure that you are aware of any such increases in braking force when using the brakes during the burn-in period.

For Installation to the Bicycle, and Maintenance:

■ Handling Shimano genuine mineral oil

- Contact with eyes may result in irritation. Use safety glasses when handling, and avoid contact with eyes.
  In the event of contact with eye, wash with water and seek medical attention immediately.
- Contact with skin may cause a rash and discomfort. Use gloves when handling.
  In the event of contact with skin, wash well with soap and water.
- Do not drink. May cause vomiting or diarrhea.
- Keep out of reach of children.
- Do not cut, let near heat, weld or pressurize the oil container, as this may cause explosion or fire.
- Disposal of Used Oil: Follow local county and/or state codes for disposal. Use caution when preparing the oil for disposal.
- Directions: Keep the container sealed to prevent foreign objects and moisture from getting inside, and store it in a cool, dark area away from direct sunlight or heat.
  Keep from heat or flame, Petroleum Class III, Danger level III

■ When cleaning with a compressor

- If disassembling the caliper body to clean the internal parts using a compressor, note that moisture from the compressed air may remain on the caliper components; therefore, let the caliper components dry sufficiently before reassembling the calipers.

■ Brake hose

- When cutting the brake hose, handle the knife carefully so as not to cause injury.
- Be careful to avoid injury from the olive.

NOTICE

Be sure to also inform users of the following:

- Be sure to keep turning the crank during gear shifting.
- Handle the product carefully, and avoid subjecting it to any strong shocks.
- Do not use thinners or similar substances to clean the products. Such substances may damage the surfaces.
- In the case of carbon levers, wash them with a soft cloth using a neutral detergent. Otherwise, the material may break down and be damaged.
- Avoid leaving the carbon levers in places where high temperatures are present. Also keep them well away from fire.
- If gear shifting operations do not feel smooth, wash the derailleur and lubricate all moving parts.
- When the bicycle wheel has been removed, it is recommended that pad spacers are installed. Do not depress the brake lever while the wheel is removed. If the brake lever is depressed without the pad spacers installed, the pistons will protrude further than normal. If that happens, consult a dealer.
- Use soapy water and a dry cloth when cleaning and carrying out maintenance of the brake system. Do not use commercially available brake cleaners or silencing agents, as they can cause damage to parts such as seals.
- Products are not guaranteed against natural wear and deterioration from normal use and aging.
- For maximum performance we highly recommend Shimano lubricants and maintenance products.

For Installation to the Bicycle, and Maintenance:

- Use a brake hose/outer casing which still has some length to spare even when the handlebars are turned all the way to both sides. Furthermore, check that the shifting lever does not touch the bicycle frame when the handlebars are turned all the way.
- Use an OT-SP sealed outer casing and cable guide for smooth operation.
- Grease the inner cable and the inside of the outer casing before use to ensure that they slide properly. Do not let dust adhere to the inner cable. If the grease on the inner cable is wiped off, the application of SIS SP41 grease (Y04180000) is recommended.
- A special grease is used for the gear shifting cable. Do not use premium grease or other types of grease, otherwise they may cause deterioration in gear shifting performance.
- If gear shifting adjustments cannot be carried out, check that the rear fork ends are aligned. Check whether the cable is lubricated and clean, and if the outer casing is too long or short.
- Do not remove the lever unit.

■ Disc brake

- If the brake caliper mounting boss and the fork end are not of standard dimensions, the disc brake rotor and caliper may touch.
- When the bicycle wheel has been removed, it is recommended that pad spacers are installed. The pad spacers will prevent the piston from coming out if the brake lever is depressed while the wheel is removed.
- If the brake lever is depressed without the pad spacers installed, the pistons will protrude further than is normal. Use a flat-tipped screwdriver or similar tool to push back the brake pads, while being careful not to damage the surfaces of the brake pads. (If the brake pads are not installed, use a flat-shaped tool to push the pistons straight back in, while being careful not to damage them.)
  If it is difficult to push the brake pads or pistons back, remove the bleed screws and then try again. (Note that some oil may overflow from the reservoir tank at this time.)
- Use isopropyl alcohol, soapy water or a dry cloth when cleaning and carrying out maintenance of the brake system. Do not use commercially available brake cleaners or silencing agents. Such substances can cause damage to parts such as seals.
- Do not remove the pistons when disassembling the calipers.
- If the disc brake rotor is worn, cracked or warped, it should be replaced.

The actual product may differ from the illustration because this manual is intended mainly to explain the procedures for using the product.

LIST OF TOOLS TO BE USED

LIST OF TOOLS TO BE USED

The following tools are needed for installation, adjustment, and maintenance purposes.

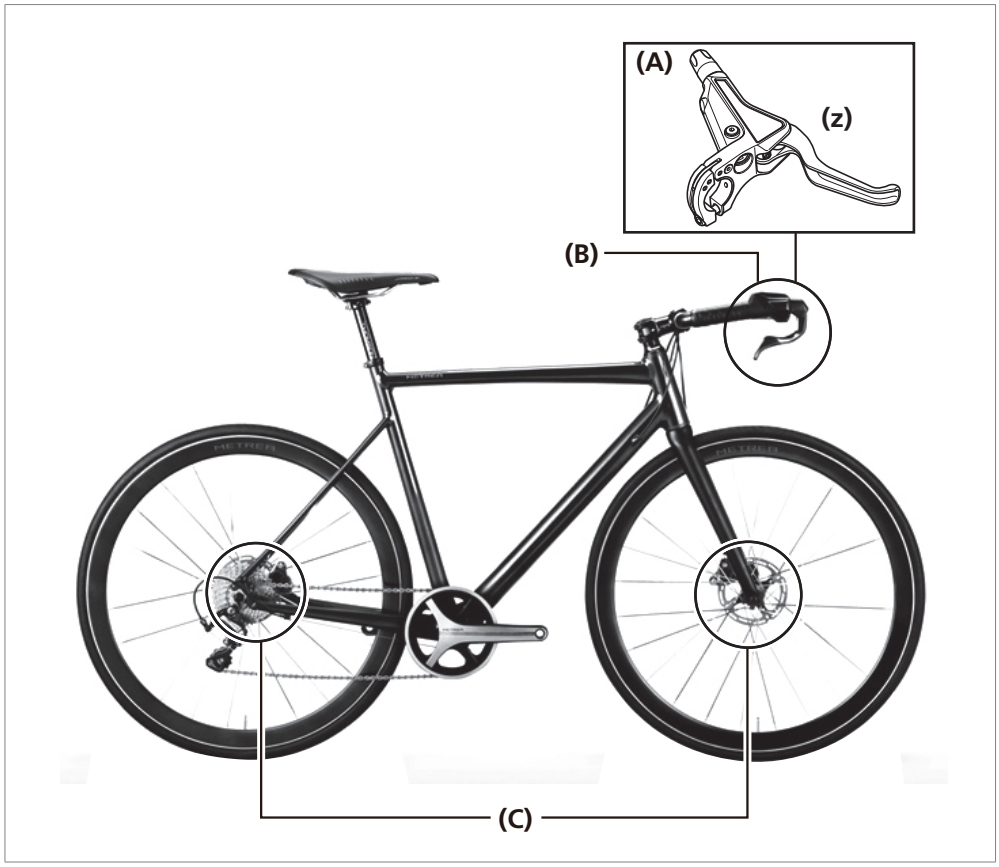
Tool		Tool		Tool	
	1.5 mm hexagon wrench		8 mm spanner		TL-LR15
	2 mm hexagon wrench		10 mm spanner		TL-BH61
	2.5 mm hexagon wrench		7 mm socket wrench		TL-CT12
	3 mm hexagon wrench		Screwdriver[#1]		SM-DISC (Oil funnel and oil stopper)
	4 mm hexagon wrench		Slotted screwdriver (nominal dia. 0.8 × 4)		BL-U5000 funnel adapter
	5 mm hexagon wrench		Utility knife		Needle-nose pliers

INSTALLATION

INSTALLATION

■ Names of parts

Model No.



(A) BL-U5000/MT200/MT201
(B) BL-U5010
ST-U5060
(C) BR-U5000/RS785/UR300
SM-RT500-SS/RT10-S
SM-BH59-JK-SS

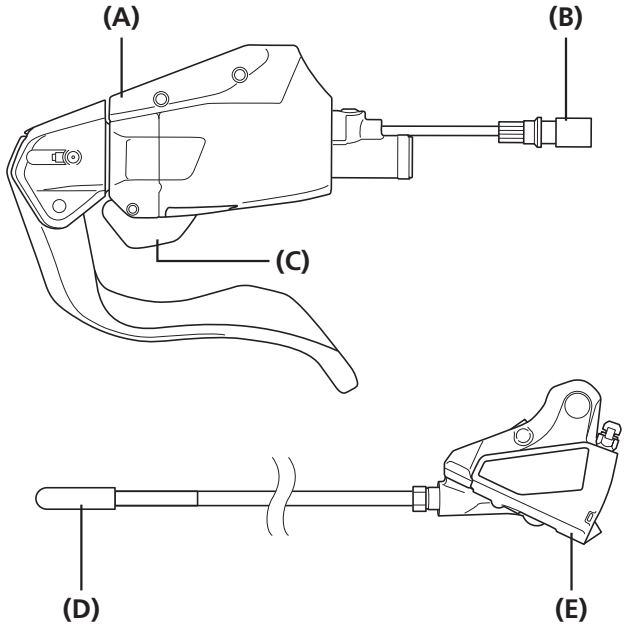
(z) For flat handlebars

TECH TIPS

This manual covers the disc brake system. For the specifications of individual components, refer to the following website.
(https://productinfo.shimano.com/#/spec/)

■ Installation of the brake hose (easy hose joint system)

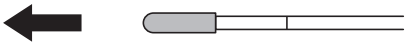
ST-U5060/BL-U5010



(A) Dual control lever or Brake lever
(B) Joint sleeve
(C) Lever stopper
(D) Hose cap
(E) Brake caliper

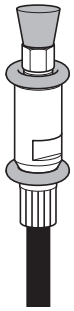
1 Route the brake hose through the holes in the built-in frame and the handlebar.

2



Remove the hose cap.

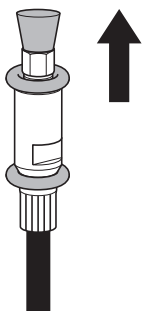
3



Secure the joint component in a vise or other similar device.

Face the hose connection port upward as shown in the illustration.

4



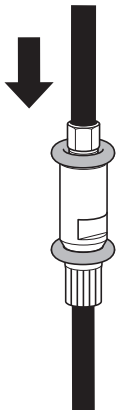
Remove the seal plug.

Cover the seal plug with a waste cloth as the oil applied to the seal plug may leak.

To be continued on next page

Installation of the brake hose (easy hose joint system)

5



Insert the brake hose on the brake caliper side into the joint component.

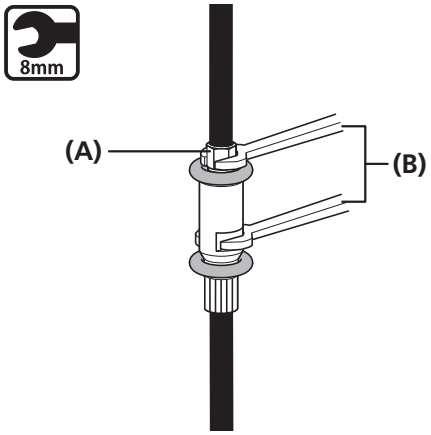
It comes with a built-in olive. Insert it while making sure that it will not get snagged on the olive.

Check that the brake hose is inserted up to the line printed on the hose.

TECH TIPS

Use a waste cloth when inserting the brake hose as some oil inside may leak.

6

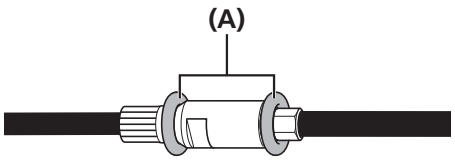


Tighten the connecting bolt with two 8 mm spanners.

(A) Connecting bolt
(B) 8 mm spanner

Tightening torque	
8mm	5 - 7 N·m

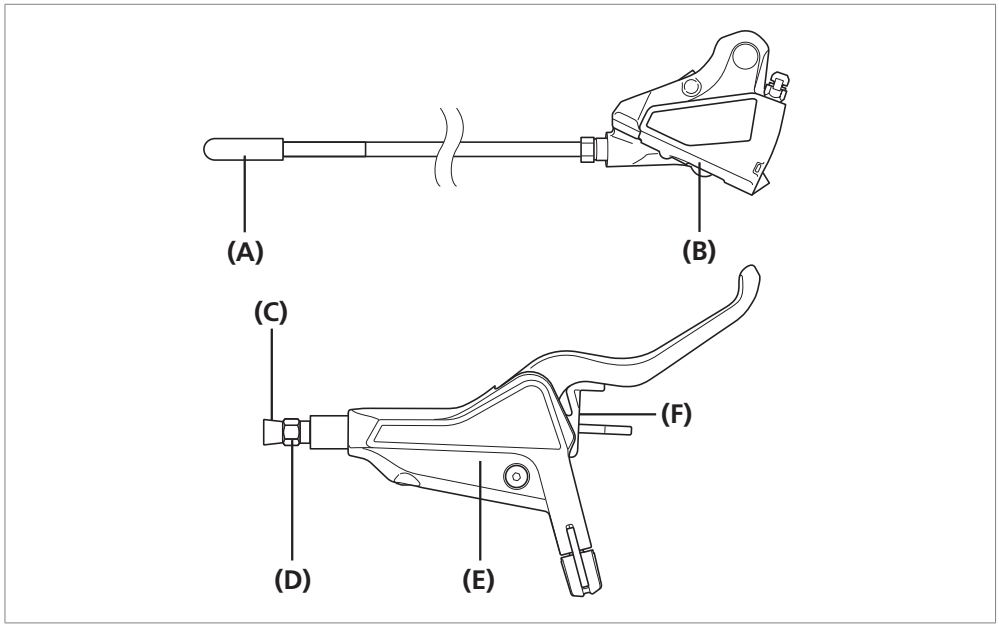
7



Wipe away any oil and make sure that the O-rings are attached as in the illustration.

(A) O-ring

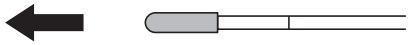
BL-U5000/MT200/MT201



(A) Hose cap
(B) Brake caliper
(C) Seal plug
(D) Hose connection port
(E) Brake lever
(F) Stopper

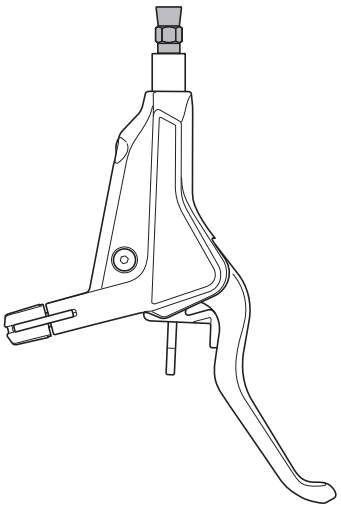
1 Pass the brake hose through each hole in the built-in frame.

2



Remove the hose cap.

3



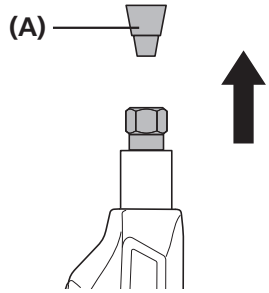
Secure the brake lever in a vise or another similar device.

Face the hose connection port upward when securing the brake lever.

To be continued on next page

Installation of the brake hose (easy hose joint system)

4

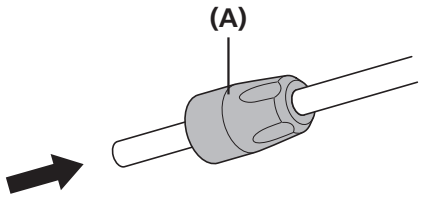


Remove the seal plug.

Cover the seal plug with a waste cloth as the oil applied to the seal plug may leak.

(A) Seal plug

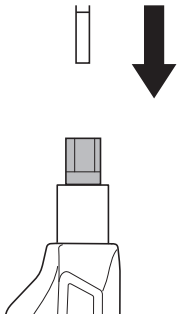
5



Pass the brake hose through the hose cover.

(A) Hose cover

6



Insert the brake hose into the joint component.

It comes with a built-in olive.

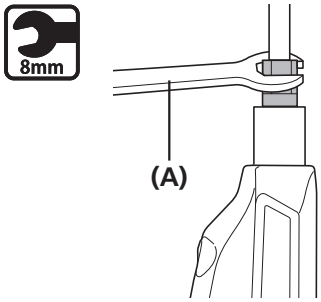
Insert it while making sure that it will not get snagged on the olive.

Check that the brake hose is inserted up to the line printed on the hose.

TECH TIPS

Use a waste cloth when inserting the brake hose as some oil inside may leak.

7



Tighten the connecting bolt with an 8 mm spanner.

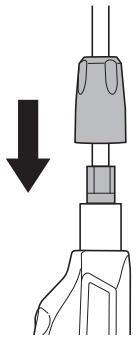
(A) 8 mm spanner

Tightening torque	
8mm	5 - 7 N·m

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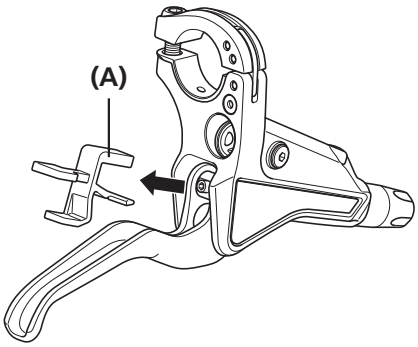
Installation of the brake hose (easy hose joint system)

8



Clean any oil residue and attach the hose cover.

9



Remove the brake lever stopper.

(A) Lever stopper

NOTICE

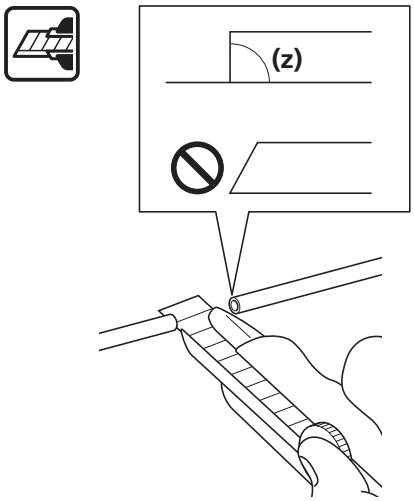
After removing the lever stopper, check that the pad spacer is installed on the caliper side or that the caliper is installed to the bicycle and the disc brake rotor is between the two sides of the caliper, before depressing the lever.
After installation to the bicycle, make sure to check that the lever stopper is removed.

TECH TIPS

Move and pull on the lever stopper to remove it while being careful not to depress the lever.

■ Installation of the brake hose

1



Use a utility knife or other cutting tool to cut the brake hose.

(z) 90°

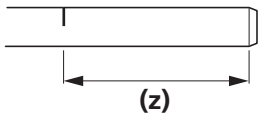
NOTICE

Use the utility knife safely and correctly in accordance with its instruction manual.

TECH TIPS

If you are using TL-BH62, refer to the manual accompanying the product.

2

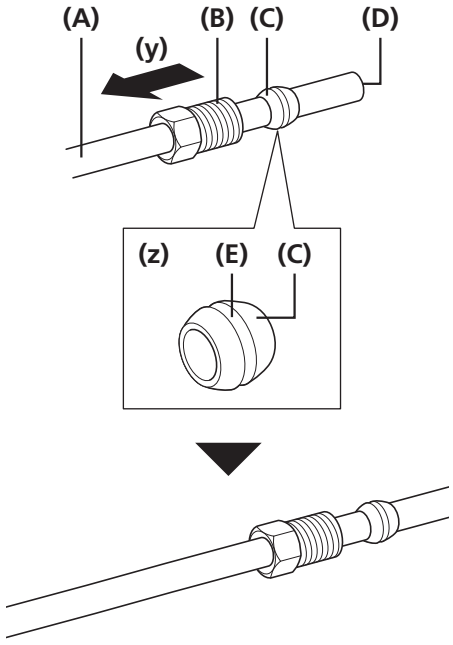


Put a mark on the brake hose beforehand as shown in the illustration so that you can check if the ends of the brake hose are secured to the hose mounts of the brake caliper and the dual control lever/brake lever.

(As a guide, the length of the portion of the brake hose that is inside the mount is approximately 11 mm.)

(z) 11 mm

3



Pass the brake hose through the connecting bolt and olive.

(y) Direction of insertion

(z) Grease the outside of the olive.

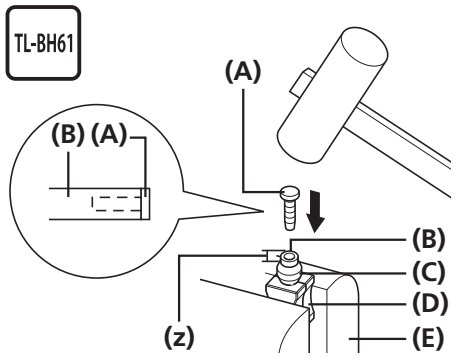
(A) Brake hose
(B) Connecting bolt
(C) Olive
(D) Cut end
(E) Grease

NOTICE

When installing to a built-in type frame, make sure to first pass the lever end of the brake hose through the caliper end of the frame.

To be continued on next page

4



Use a tapered tool to smooth out the inside of the cut end of the brake hose, and mount the connector insert.

Connect the brake hose to TL-BH61 and secure TL-BH61 in a vise.

Then, hammer down the connector insert until the connector insert mount comes into contact with the end of the brake hose.

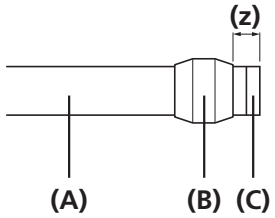
(z) SM-BH59-JK-SS: 1 mm

(A) Connector insert
(B) Brake hose
(C) Olive
(D) TL-BH61
(E) Vise

NOTICE

If the end of the brake hose is not in contact with the connector insert mount, the brake hose may be disconnected or cause fluid leaks.

5



After checking that the olive is positioned as shown in the illustration, grease the threads of the connecting bolt.

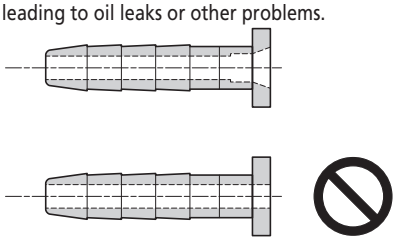
(z) 2 mm

Model No.	Length	Color
SM-BH59-JK-SS	13.2 mm	Gold

(A) Brake hose
(B) Olive
(C) Connector insert

NOTICE

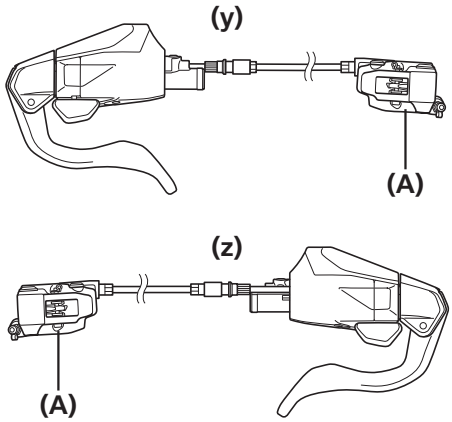
Use the dedicated connector insert supplied with SM-BH59-JK-SS.
Use of any connector insert other than the one supplied may produce a loose assembly, leading to oil leaks or other problems.



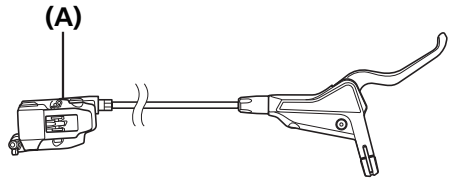
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6

ST-U5060/BL-U5010, BR-U5000



BL-U5000, BR-U5000/RS785
BL-MT200/MT201, BR-UR300



Make sure that the brake hose is not twisted.

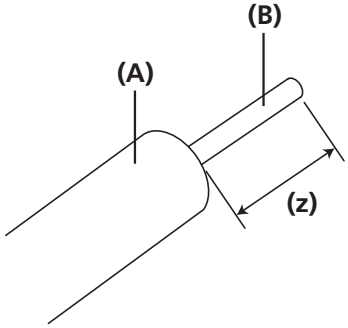
Make sure that the brake calipers and dual control levers/brake levers are in the positions shown in the illustrations.

(y) Left lever
(z) Right lever

(A) Brake caliper

7

ST-U5060/BL-U5010



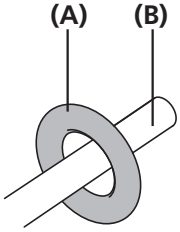
Pass the brake hose through the handlebar.

(z) 60 mm

(A) Handlebar
(B) Brake hose

8

ST-U5060/BL-U5010



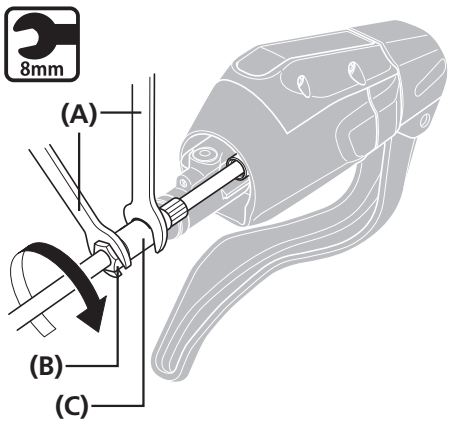
Attach an O-ring to the brake hose.

(A) O-ring
(B) Brake hose

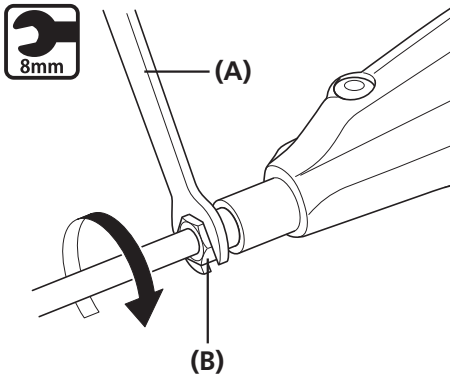
To be continued on next page

9

ST-U5060/BL-U5010



BL-U5000/MT200/MT201



Secure the dual control lever/brake lever to the handlebar or in a vise and insert the brake hose straight.

Tighten the connecting bolt with a spanner while pushing the brake hose.

ST-U5060/BL-U5010
Keep the joint sleeve held in place with a spanner when carrying out the procedure.

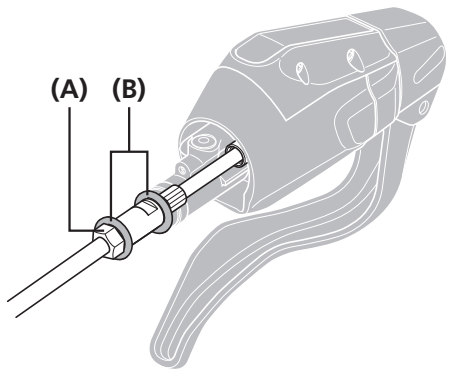
(A) 8 mm spanner
(B) Connecting bolt
(C) Joint sleeve

Tightening torque	
8mm	5 - 7 N·m

NOTICE

At this point, make sure the brake hose is straight when pushing.

10



Attach the O-rings to the connecting bolt.

(A) Connecting bolt
(B) O-ring

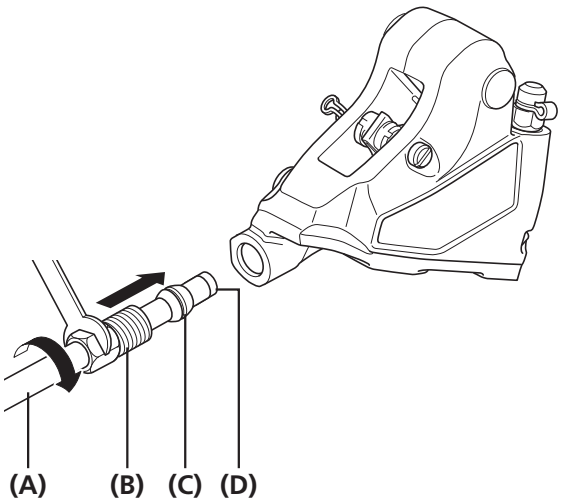
Installation of the brake hose

End of the brake hose on the brake caliper side

1 Attach the connector insert to the brake hose.

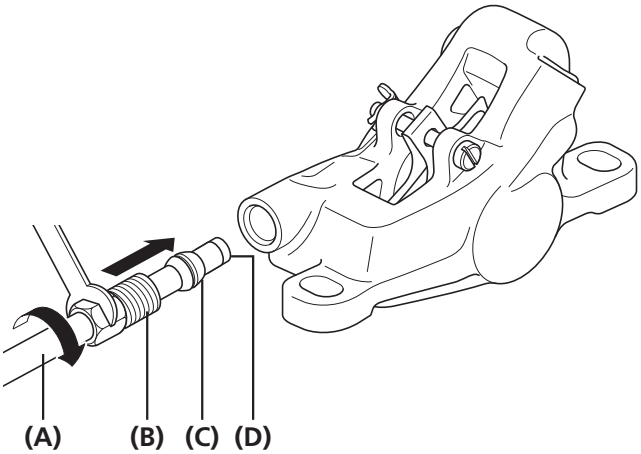
BR-U5000/UR300

8mm



BR-RS785

8mm



2 While pushing the brake hose, tighten the connecting bolt.

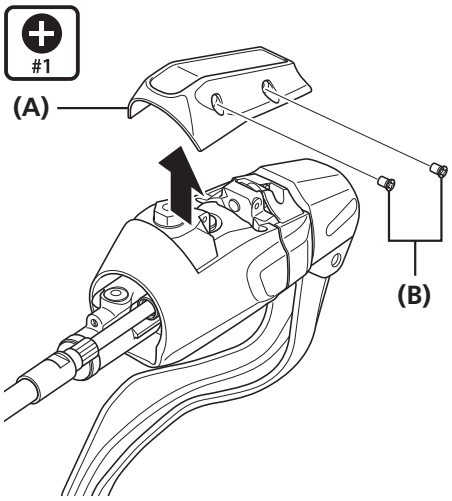
(A) Brake hose
(B) Connecting bolt
(C) Olive
(D) Connector insert

Tightening torque	
8mm	5 - 7 N·m

■ Installation to the handlebar

ST-U5060/BL-U5010

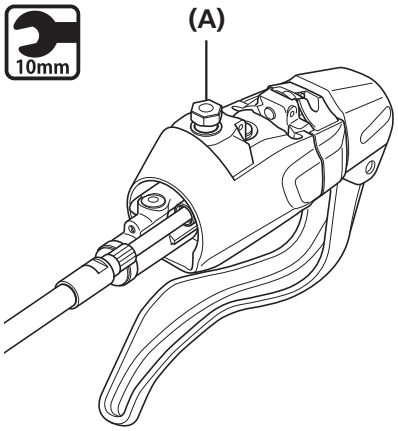
1



Remove the 2 mounting bolts and then remove the upper cover.

(A) Cover
(B) Mounting bolt

2



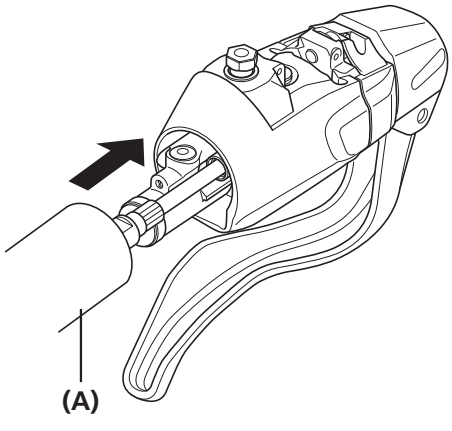
Loosen the clamp bolt with a 10 mm spanner.

(A) Clamp bolt

TECH TIPS

The clamp bolt is loose at the time of purchase so this step is unnecessary when first installing.

3

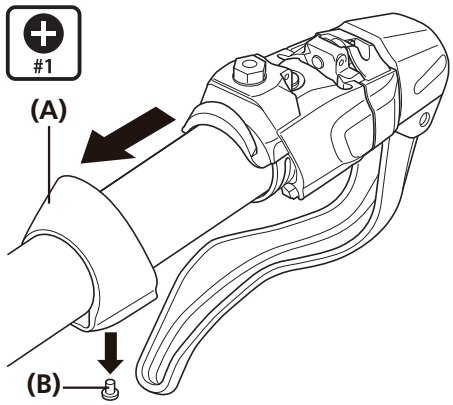


Insert the handlebar into the lever body.

(A) Handlebar

To be continued on next page

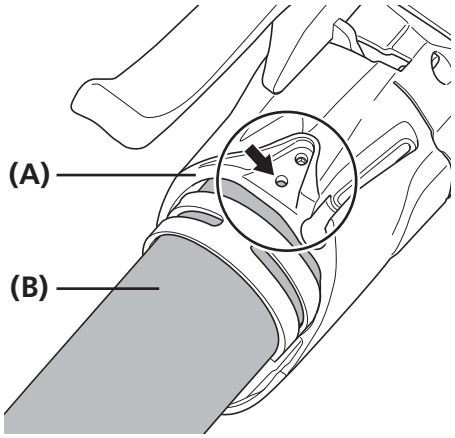
4



Remove the mounting bolt on the underside and then remove the band cover.

(A) Band cover
(B) Mounting bolt

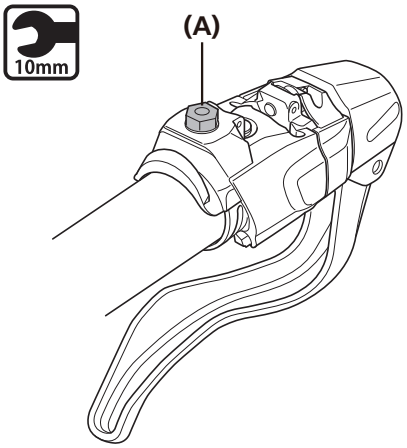
5



Check that the handlebar has been inserted as far as it will go by peering through the band cover mounting hole.

(A) Dual control lever or Brake lever
(B) Handlebar

6



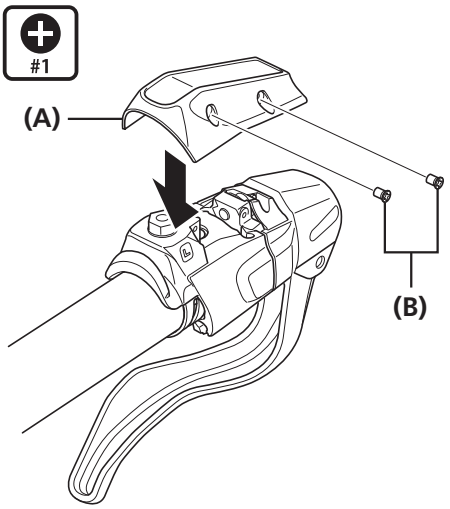
Tighten the clamp bolt.

(A) Clamp bolt

Tightening torque	
10mm	4 - 6 N·m

To be continued on next page

7

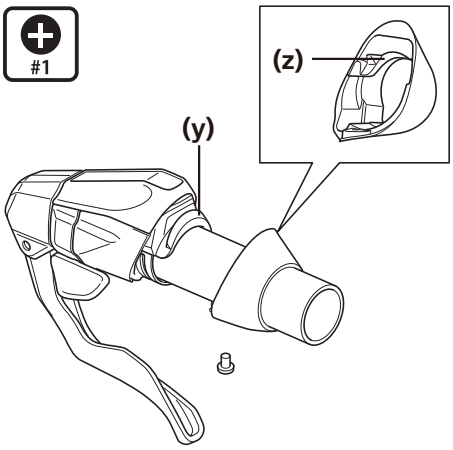


Attach the upper cover and the 2 mounting bolts.

(A) Cover
(B) Mounting bolt

Tightening torque	
#1	0.15 - 0.25 N·m

8

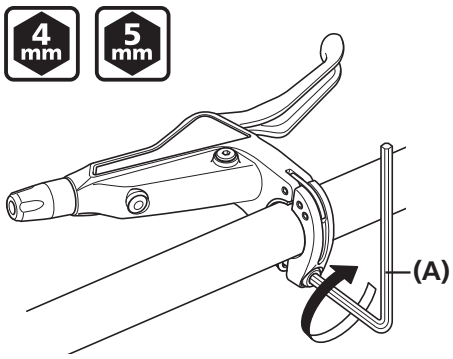


Engage the catch on the band cover and secure in place with the mounting bolt.

(y) Catch (main body side)
(z) Catch (band cover side)

Tightening torque	
#1	0.15 - 0.25 N·m

BL-U5000/MT200/MT201



Secure the brake lever as shown in the illustration.

(A) **BL-U5000:**
4 mm hexagon wrench
BL-MT200/MT201:
5 mm hexagon wrench

BL-U5000

Tightening torque
4 mm	6 - 8 N·m

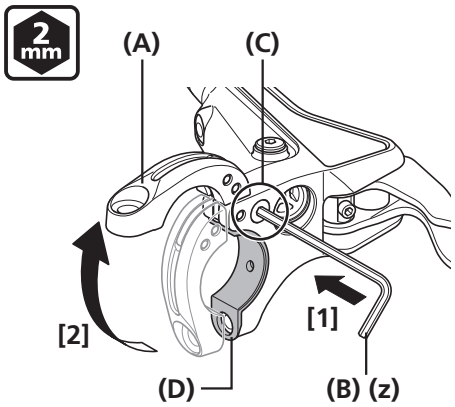
BL-MT200/MT201

Tightening torque
5 mm	4 - 6 N·m

NOTICE

Check that the brake lever does not interfere with the shifting lever during operation. Some types might require the shifting lever to be installed first, due to the position of the shifting lever fixing bolts.

For open clamp band type



Use a 2 mm hexagon wrench to open the clamp band of the brake lever as shown in the illustration.

(z) Push

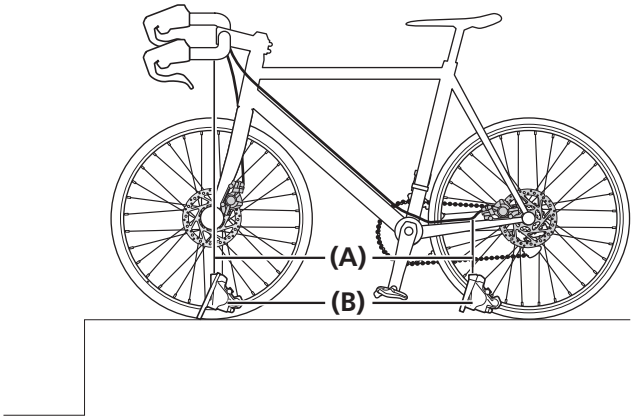
(A) Clamp band
(B) 2 mm hexagon wrench
(C) Lock release hole
(D) Spacer

NOTICE

- When installing the brake lever, be sure to use a spacer.
- The spacer should only be removed when combining with an I-Spec II type shifting lever. For information on the combining procedure, refer to the dealer's manual for the "RAPIDFIRE Plus 11-speed shifting lever".

■ Adding Shimano genuine mineral oil and bleeding air

With the bleed spacer (yellow) attached to the brake caliper, place the bicycle in the work stand as shown in the illustration.



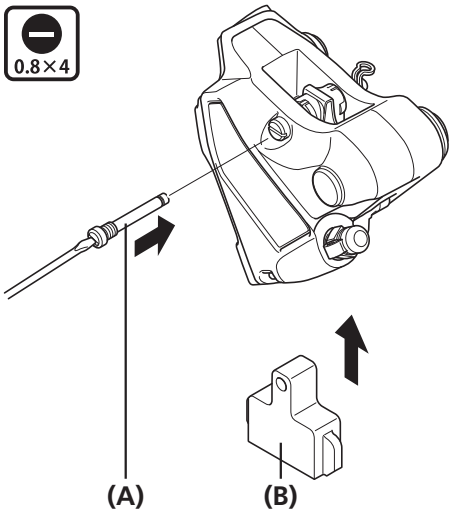
(A) Brake hose
(B) Brake caliper

NOTICE

When bleeding the brake caliper, you need SM-DISC (oil funnel and oil stopper).

ST-U5060/BL-U5010, BR-U5000

1

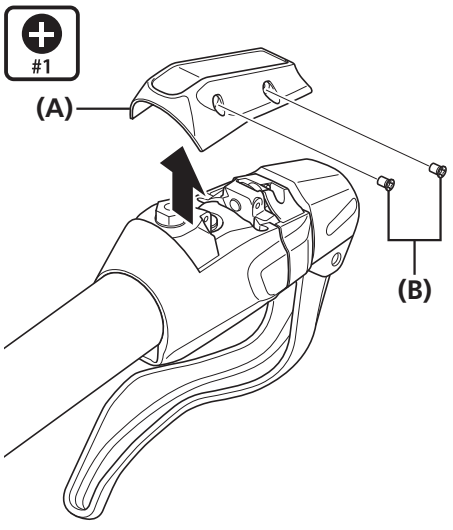


Mount the bleed spacer (yellow).

(A) Pad axle
(B) Bleed spacer

Tightening torque	
0.8×4	0.1 - 0.3 N·m

2

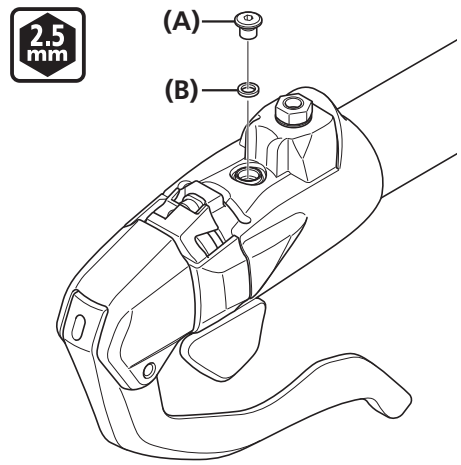


Remove the 2 mounting bolts and then remove the upper cover.

(A) Cover
(B) Mounting bolt

To be continued on next page

3



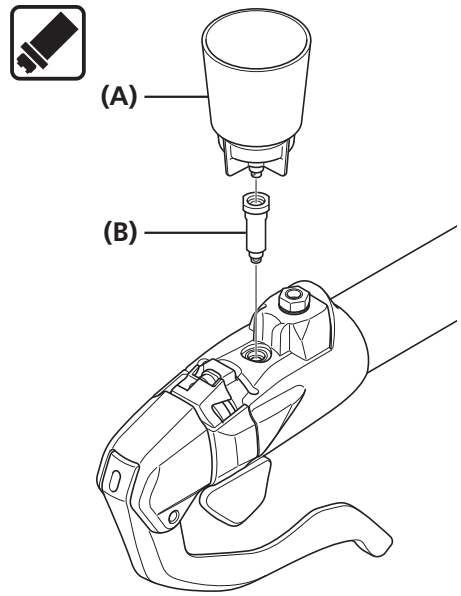
Remove the bleed screw and O-ring.

(A) Bleed screw
(B) O-ring

TECH TIPS

Be careful not to drop the bleed screw or O-ring.

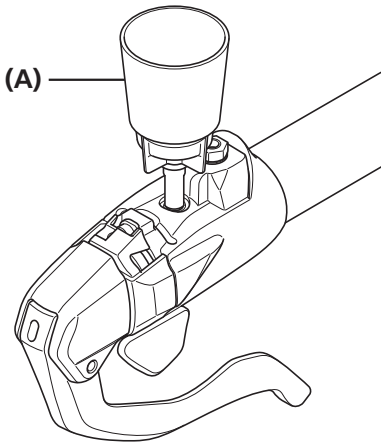
4



Attach the BL-U5000 funnel adapter to the oil funnel.

(A) Oil funnel (TL-BT03/TL-BT03-S)
(B) BL-U5000 funnel adapter

5



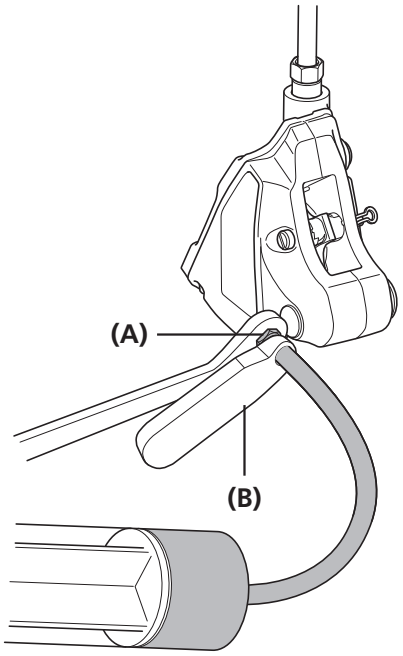
Mount the oil funnel.

(A) Oil funnel (TL-BT03/TL-BT03-S)

6 Secure the brake caliper in a vise while bleeding.

To be continued on next page

7



Set a 7 mm socket wrench in place.

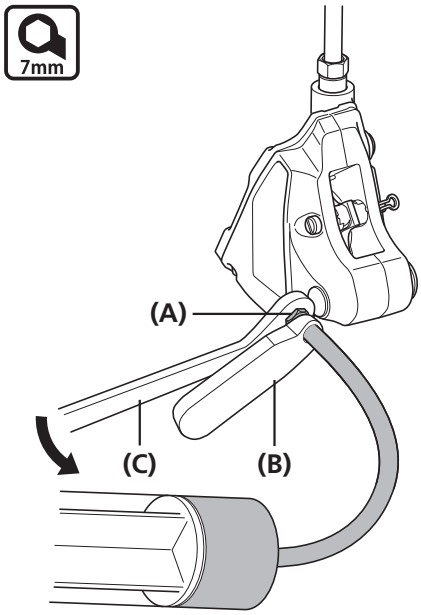
Fill the syringe with sufficient oil, connect the syringe tube to the bleed nipple, and fasten it with the tube holder so that the tube will not be disconnected.

(A) Bleed nipple
(B) Tube holder

NOTICE

Secure the brake caliper in a vise to prevent the tube from being accidentally disconnected.

8



Loosen the bleed nipple by a 1/8 of a turn to open it.

Push the piston of the syringe to add oil.

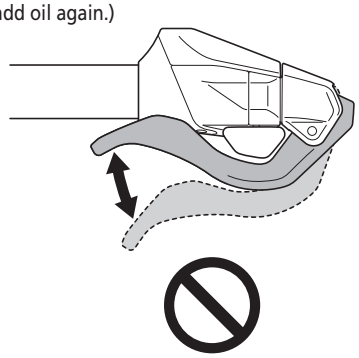
The oil then starts coming out from the oil funnel.

Continue adding oil until there are no more air bubbles mixed in with the oil that is coming out.

(A) Bleed nipple
(B) Tube holder
(C) 7 mm socket wrench

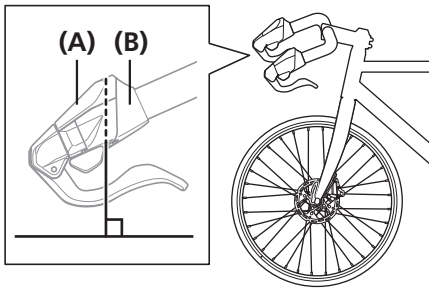
NOTICE

Do not depress and release the lever repeatedly.
Oil without air bubbles may come out as a result of such operation, but air bubbles may remain in the oil inside the brake caliper, and it will take longer to bleed the air. (If you have depressed and released the lever repeatedly, drain out all of the oil and then add oil again.)



To be continued on next page

9



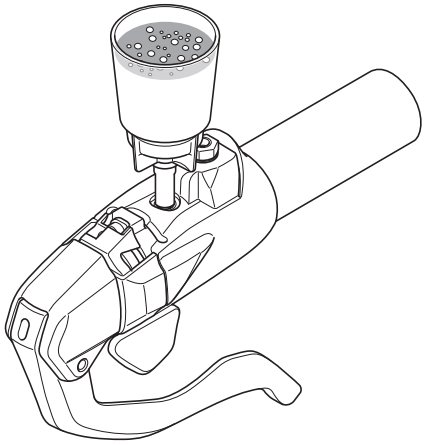
Once there are no more air bubbles in the oil in the funnel, angle the handles downward until the boundary between the band cover and bracket is perpendicular to the ground.

(A) Bracket
(B) Band cover

⚠ WARNING

Make sure to set the lever to the specified position before bleeding air. If you bleed air without setting the lever to the specified position, air bubbles may remain in the brake system. Air bubbles remaining in the brake system may prevent the brakes from operating and result in serious injury due to a fall or collision.

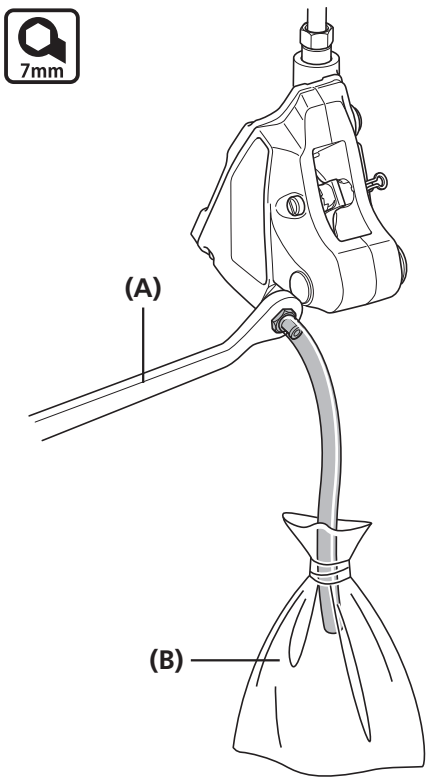
10



Push the piston of the syringe again to add oil, and once there are no more air bubbles in the oil in the funnel, angle the handles up to their previous position and temporarily close the bleed nipple.

Remove the syringe while covering the end of the syringe tube with a waste cloth to prevent oil from spattering.

11



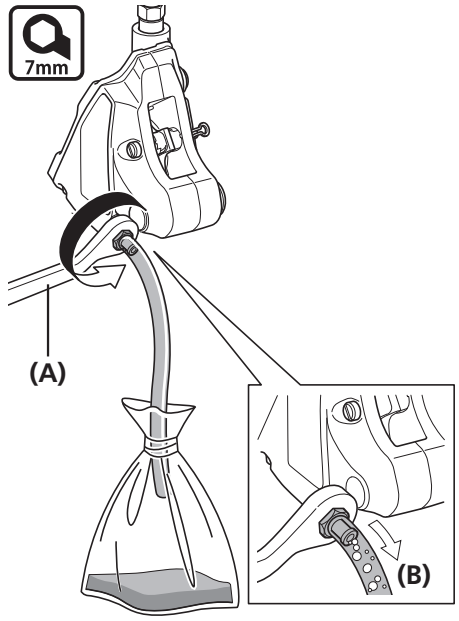
Tie the supplied tube and bag with rubber bands.

Set a 7 mm socket wrench as shown in the illustration, and connect the tube to the bleed nipple.

(A) 7 mm socket wrench
(B) Bag

To be continued on next page

12



Loosen the bleed nipple.

At this point, make sure that the tube is secured to the bleed nipple.

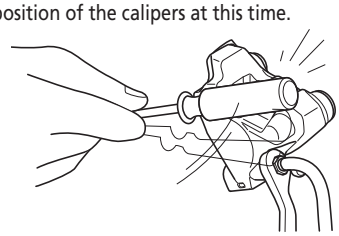
After a little while, the oil and air bubbles will flow naturally from the bleed nipple into the tube.

This way it will be possible to easily extract the greater part of the air bubbles remaining inside the brake system.

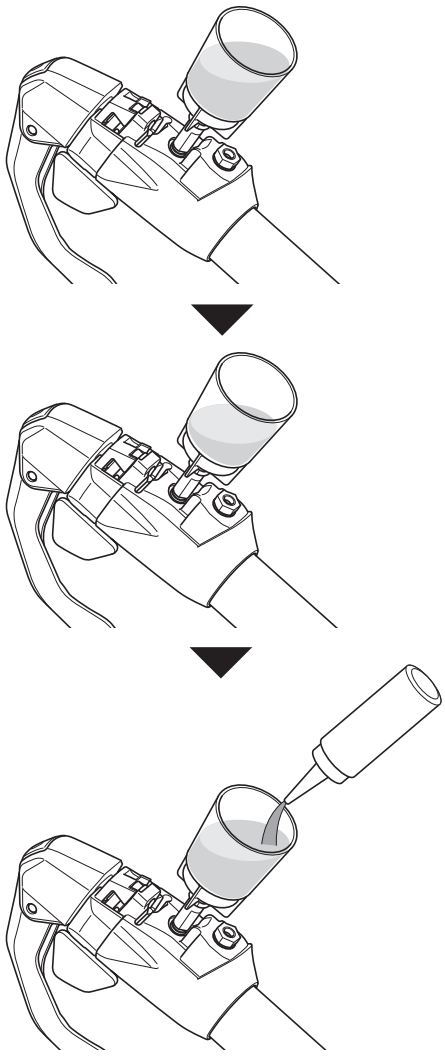
(A) 7 mm socket wrench
(B) Air bubbles

TECH TIPS

It may be effective to shake the brake hose gently, tap the lever bracket or brake calipers gently with a screwdriver, or move the position of the calipers at this time.



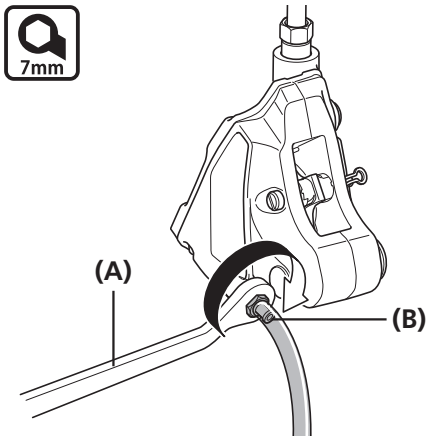
13



The level of liquid inside the oil funnel drops at this time, so keep filling the funnel with oil to maintain the level of liquid so that air is not drawn in.

To be continued on next page

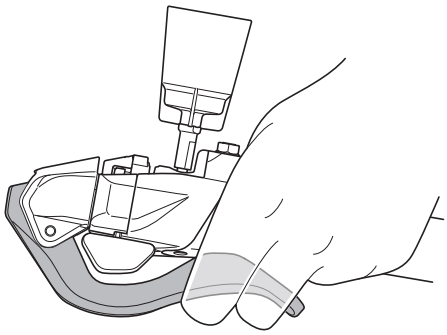
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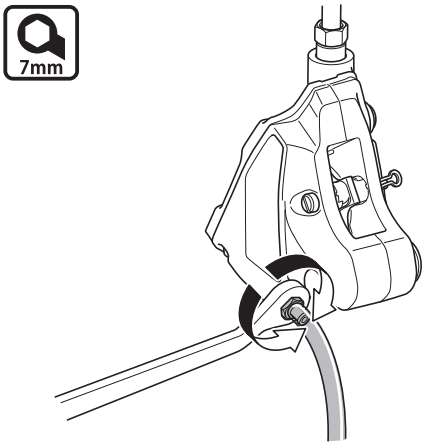


Once no more air bubbles come from the bleed nipple, temporarily close the bleed nipple.

(A) 7 mm socket wrench
(B) Bleed nipple

15





With the brake lever depressed, open and close the bleed nipple in rapid succession (for approximately 0.5 seconds each time) to release any air bubbles which may be in the brake calipers.

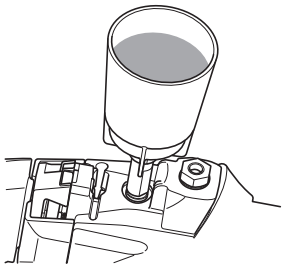
Repeat this procedure about 2 to 3 times.

Then tighten the bleed nipple.

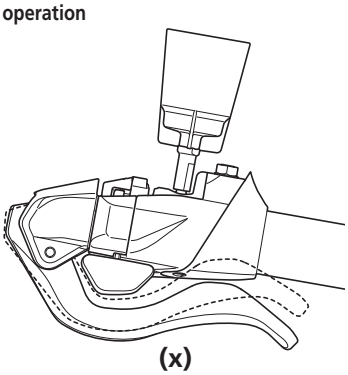
Tightening torque	
7mm	4 - 7 N·m

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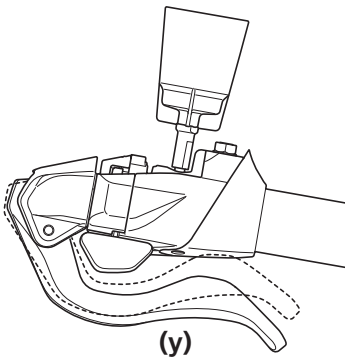
16



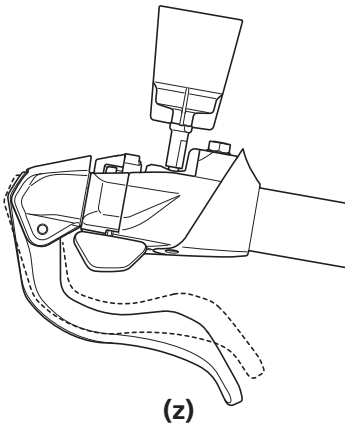
Lever operation



(x)



(y)



(z)

If the brake lever is then operated, air bubbles in the system will rise up through the port into the oil funnel.

Once the bubbles stop appearing, depress the brake lever as far as it will go.

Under normal conditions, lever action should feel stiff at this point.

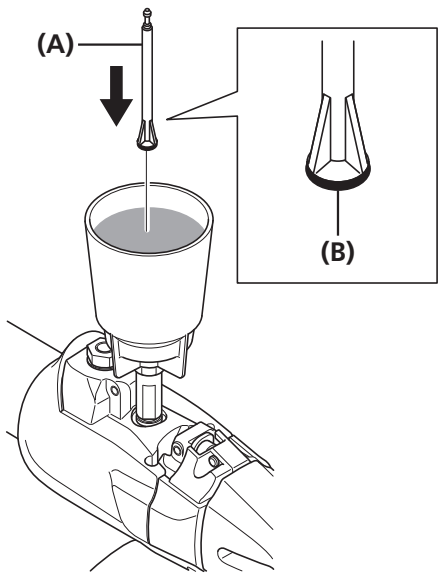
(x) Loose

(y) Slightly stiff

(z) Stiff

To be continued on next page

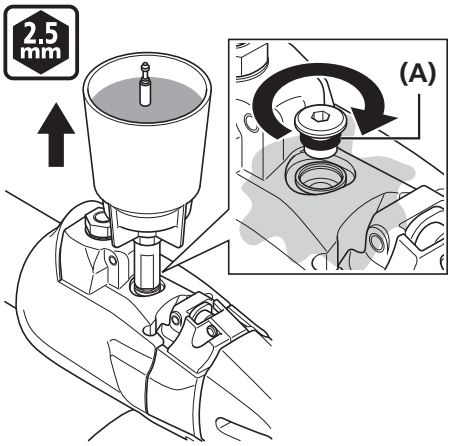
17



Plug the oil funnel with the oil stopper so that the O-ring mounted side is facing downward.

(A) Oil stopper
(B) O-ring

18



Remove the oil funnel together with the BL-U5000 funnel adapter while it is still plugged with the oil stopper, and then attach the O-ring to the bleed screw and tighten it while letting oil flow out to make sure that there are no air bubbles remaining inside the reservoir tank.

At this point, use a waste cloth to prevent oil from flowing out to the surrounding areas.

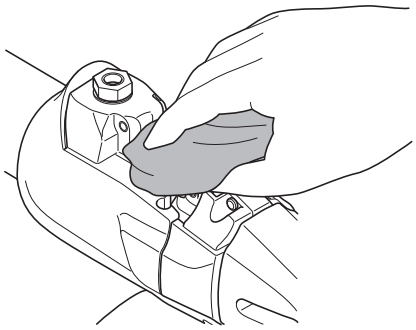
(A) O-ring

Tightening torque	
2.5 mm	0.5 - 1 N·m

NOTICE

Do not operate the brake lever. If operated, there is a risk of air bubbles entering the cylinder.

19



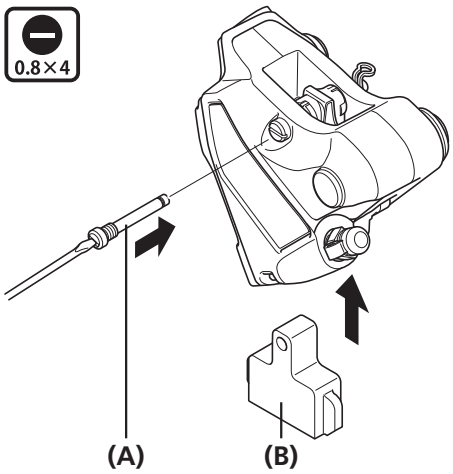
Wipe away any oil which may have leaked out.

Adding Shimano genuine mineral oil and bleeding air

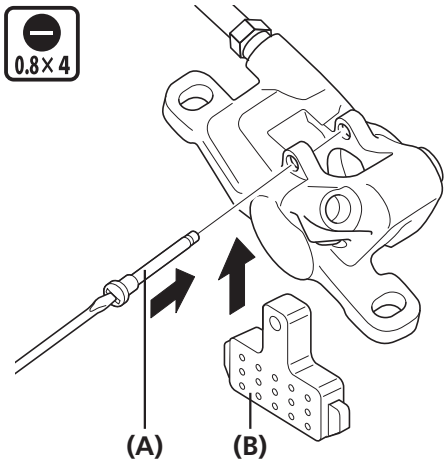
BL-U5000, BR-U5000/RS785 BL-MT200/MT201, BR-UR300

1

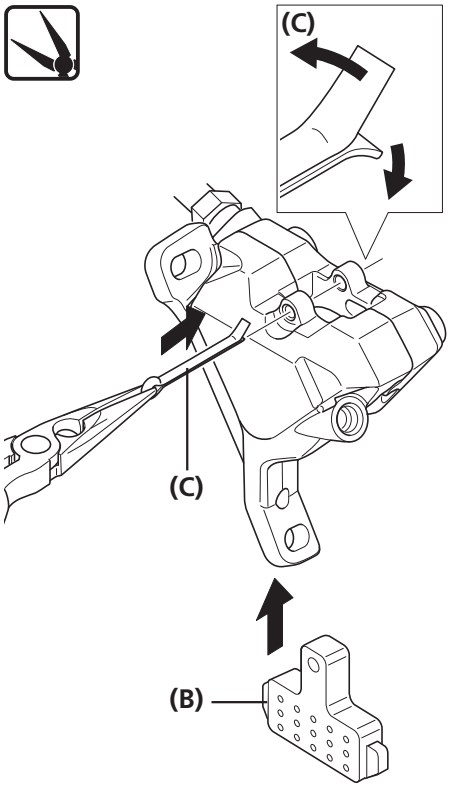
BR-U5000



BR-RS785



BR-UR300



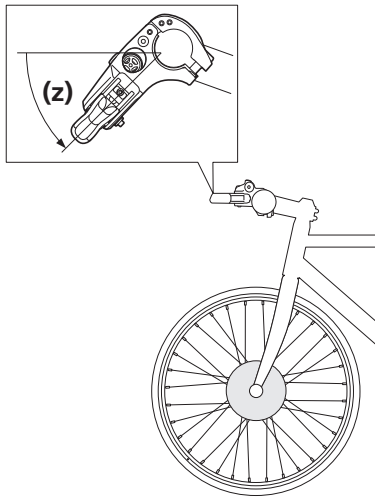
Mount the bleed spacer (yellow).

(A) Pad axle
(B) Bleed spacer
(C) Split pin

Tightening torque	
0.8×4	0.1 - 0.3 N·m

To be continued on next page

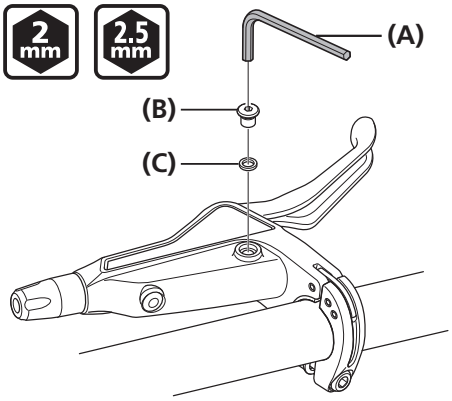
2



Set the brake lever so that it is in riding position at 45° to the horizontal.

(z) 45°

3



Remove the bleed screw and O-ring.

(A) **BL-U5000:**
2.5 mm hexagon wrench
BL-MT200/MT201:
2 mm hexagon wrench

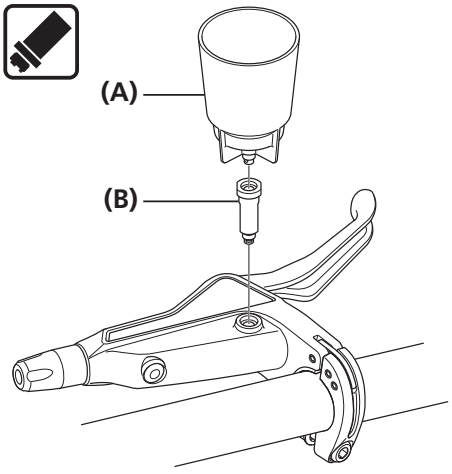
(B) Bleed screw

(C) O-ring

TECH TIPS

Be careful not to drop the bleed screw or O-ring.

4



Attach the BL-U5000 funnel adapter to the oil funnel.

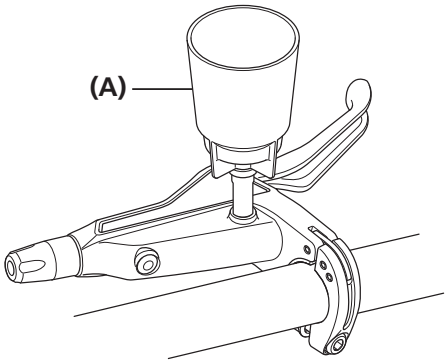
*The funnel adapter does not need to be installed for BL-MT200/MT201.

(A) Oil funnel
(TL-BT03/TL-BT03-S)

(B) BL-U5000 funnel adapter

To be continued on next page

5



Mount the oil funnel.

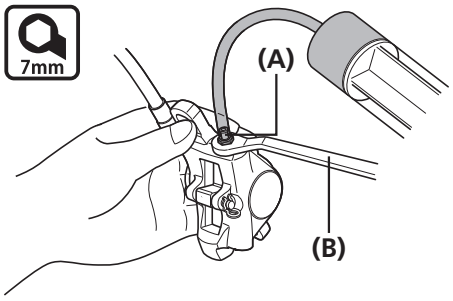
(A) Oil funnel (TL-BT03/TL-BT03-S)

6

Secure the brake caliper in a vise while bleeding.

7

BR-U5000/UR300



Set a 7 mm socket wrench in place, fill the syringe with oil, connect a tube to the bleed nipple, and then loosen the bleed nipple by 1/8 of a turn to open it.

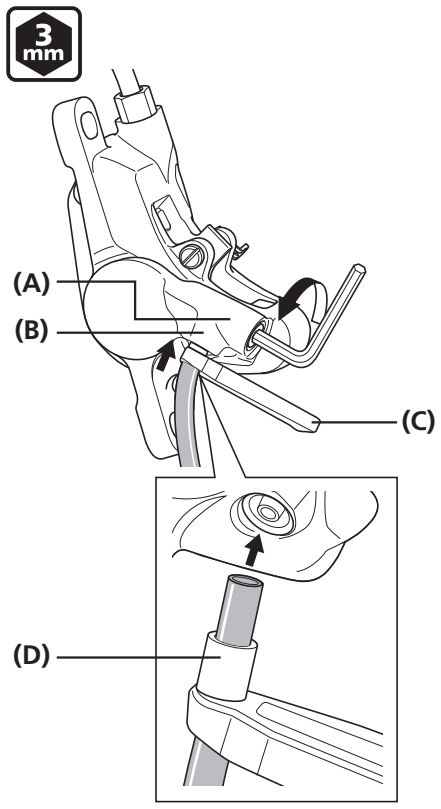
Push the piston of the syringe to add oil.

The oil will start coming out from the oil funnel.

Continue adding oil until there are no more air bubbles in the oil that is coming out.

(A) Bleed nipple
(B) 7 mm socket wrench

BR-RS785



Fill the syringe with sufficient oil.

Attach the adapter provided with this product or Shimano original tool to the end of the tube, connect the tube to the bleed boss, and fasten it with the tube holder so that the tube will not be disconnected.

Loosen the bleed screw by 1/8 of a turn to open it.

Push the piston of the syringe to add oil.

The oil then starts coming out from the oil funnel.

Continue adding oil until there are no more air bubbles mixed in with the oil that is coming out.

(A) Bleed screw
(B) Bleed boss
(C) Tube holder
(D) Adapter

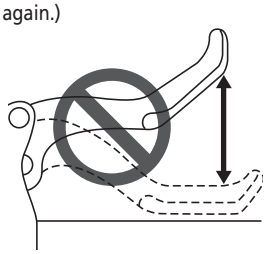
To be continued on next page

8

Once there are no more air bubbles mixed in with the oil, temporarily close the bleed nipple.

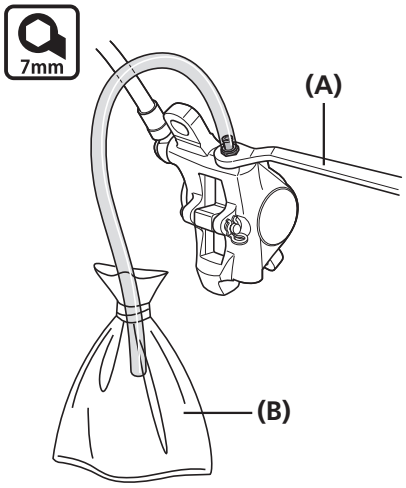
NOTICE

Secure the brake caliper in a vise to prevent the tube from being accidentally disconnected.
Do not depress and release the lever repeatedly.
Oil without air bubbles may come out as a result of such operation, but air bubbles may remain in the oil inside the brake caliper, and it will take longer to bleed the air. (If you have depressed and released the lever repeatedly, drain out all of the oil and then add oil again.)



9

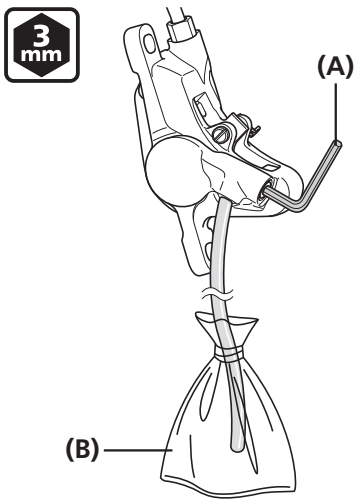
BR-U5000/UR300



Set a 7 mm socket wrench in place as shown in the illustration, and then attach the bag to the tube.

(A) 7 mm socket wrench
(B) Bag

BR-RS785



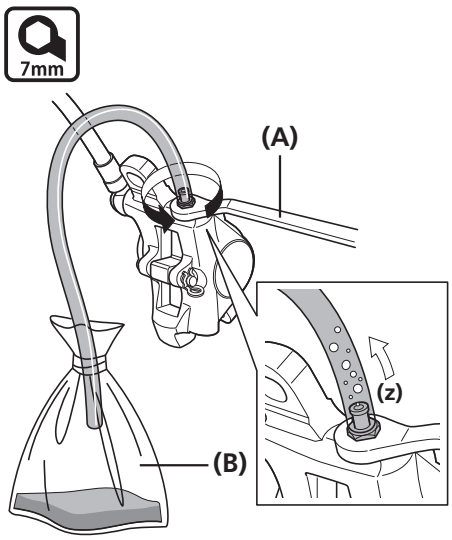
Tie the supplied tube and bag with rubber bands, set a 3 mm hexagon wrench as shown in the illustration, and connect the tube to the bleed boss.

(A) 3 mm hexagon wrench
(B) Bag

To be continued on next page

10

BR-U5000/UR300



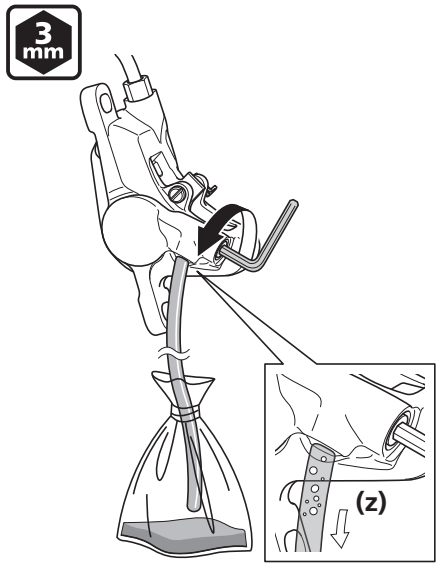
Connect the tube to the bleed nipple and loosen the bleed nipple.

After a little while, the oil and air bubbles will flow naturally from the bleed nipple into the tube.

This way it will be possible to easily extract the greater part of the air bubbles remaining inside the brake system.

(z) Air bubbles

BR-RS785



Loosen the bleed screw.

At this point, make sure that the tube is secured to the bleed boss.

After a little while, the oil and air bubbles will flow naturally from the bleed boss into the tube.

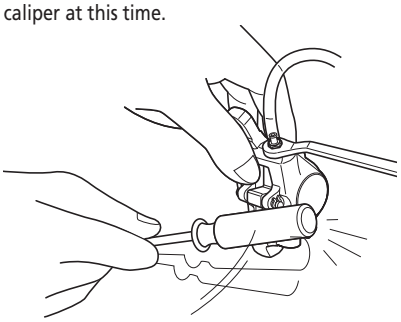
In this way it will be possible to easily extract the greater part of the air bubbles remaining inside the brake system.

(z) Air bubbles

(A) 7 mm socket wrench
(B) Bag

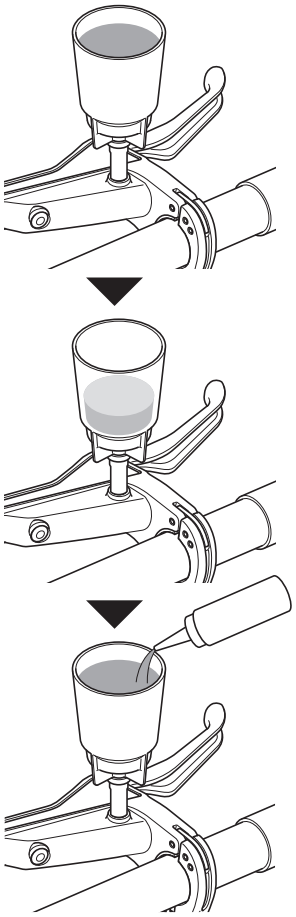
TECH TIPS

It may help to shake the hose gently or to tap the reservoir tank or caliper gently with a screwdriver or move the position of the caliper at this time.



To be continued on next page

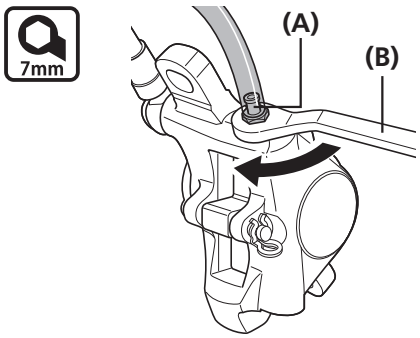
11



The level of liquid inside the funnel will drop at this time, so keep filling the funnel with oil to maintain the level of liquid so that air is not drawn in (air does not get inside).

12

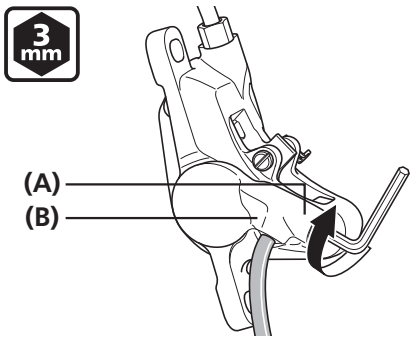
BR-U5000/UR300



Once no more air bubbles come from the bleed nipple, temporarily close the bleed nipple.

(A) Bleed nipple
(B) 7 mm socket wrench

BR-RS785



Once no more air bubbles come from the bleed boss, temporarily close the bleed screw.

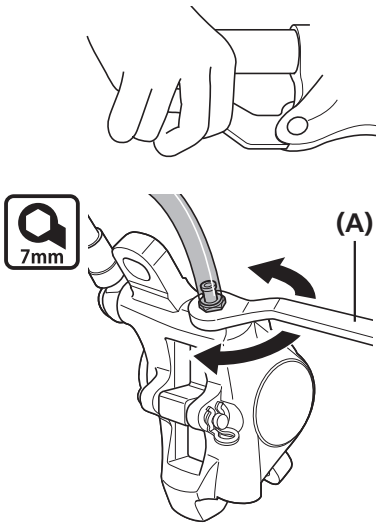
(A) Bleed screw
(B) Bleed boss

To be continued on next page

Adding Shimano genuine mineral oil and bleeding air

13

BR-U5000/UR300



With the brake lever depressed, open and close the bleed nipple in rapid succession (for approximately 0.5 seconds each time) to release any air bubbles which may be in the calipers.

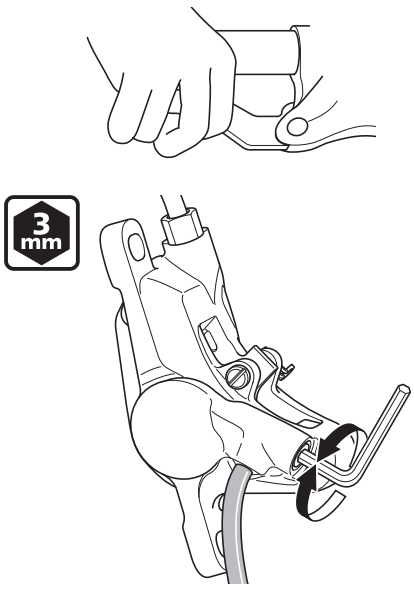
Repeat this procedure about 2 to 3 times.

Then tighten the bleed nipple.

(A) 7 mm socket wrench

Tightening torque	
7mm	4 - 6 N·m

BR-RS785



With the brake lever depressed, open and close the bleed screw in rapid succession (for approximately 0.5 seconds each time) to release any air bubbles which may be in the brake calipers.

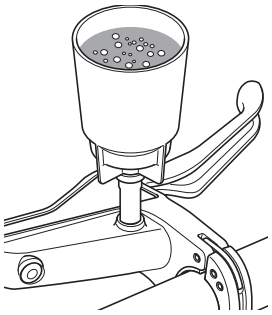
Repeat this procedure about 2 to 3 times.

Then tighten the bleed screw again.

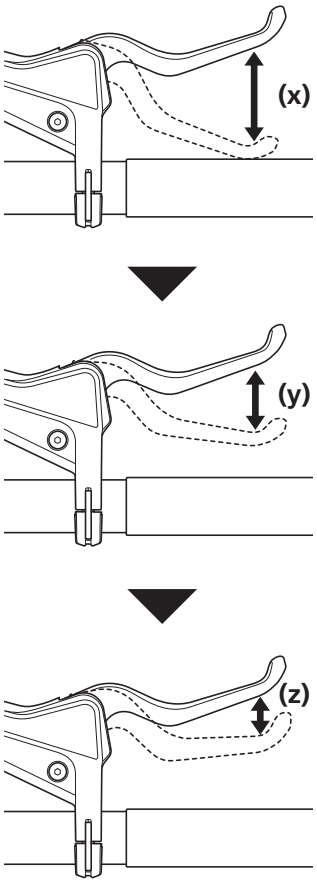
Tightening torque	
3 mm	4 - 7 N·m

To be continued on next page

14



Lever operation



If the brake lever is then operated, air bubbles in the system will rise up through the port into the oil funnel.

Once the bubbles stop appearing, depress the brake lever as far as it will go.

It is normal for the lever to be stiff at this point.

(x) Loose

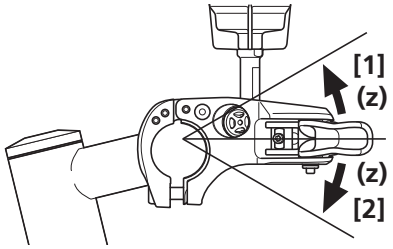
(y) Slightly stiff

(z) Stiff

NOTICE

If the lever does not become stiff, repeat the procedures from step 9.

15



Set the lever unit to the horizontal position as shown in the illustration and tilt it in the direction of **[1]** by 30°, and then carry out step 9 to check that there is no air remaining.

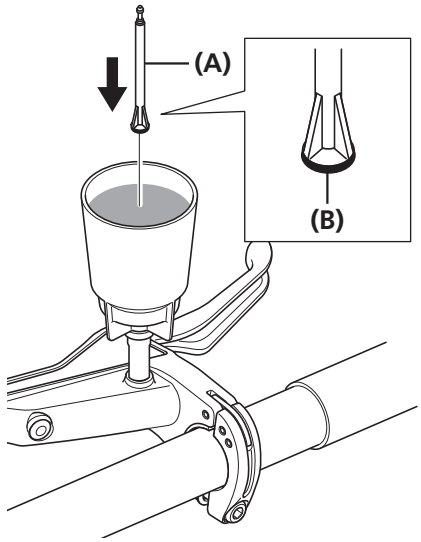
Next, tilt the lever unit 30° in the direction of **[2]**, and carry out step 9 again to check that there is no air remaining.

If any air bubbles appear, repeat the above procedure until they stop appearing.

(z) 30°

To be continued on next page

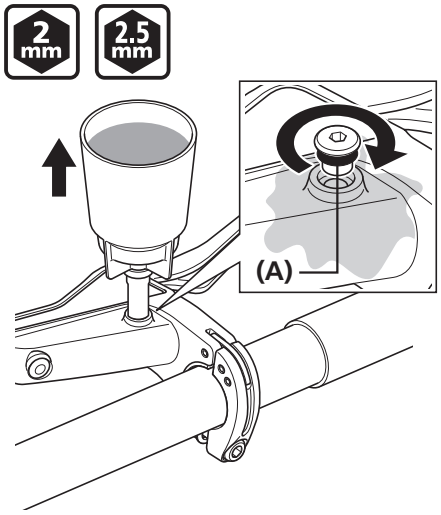
16



Plug the oil funnel with the oil stopper so that the side with the O-ring attached is facing downward.

(A) Oil stopper
(B) O-ring

17



Remove the oil funnel together with the BL-U5000 funnel adapter while it is still plugged with the oil stopper, and then attach the O-ring to the bleed screw and tighten it while letting oil flow out to make sure that there are no air bubbles remaining inside the reservoir tank.

(A) O-ring

BL-MT200/MT201

Tightening torque
2 mm: 0.5 - 1 N·m

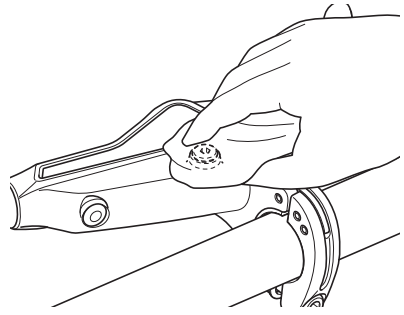
BL-U5000

Tightening torque
2.5 mm: 0.5 - 1 N·m

NOTICE

Do not operate the brake lever. If operated, there is a risk of air bubbles entering the cylinder.

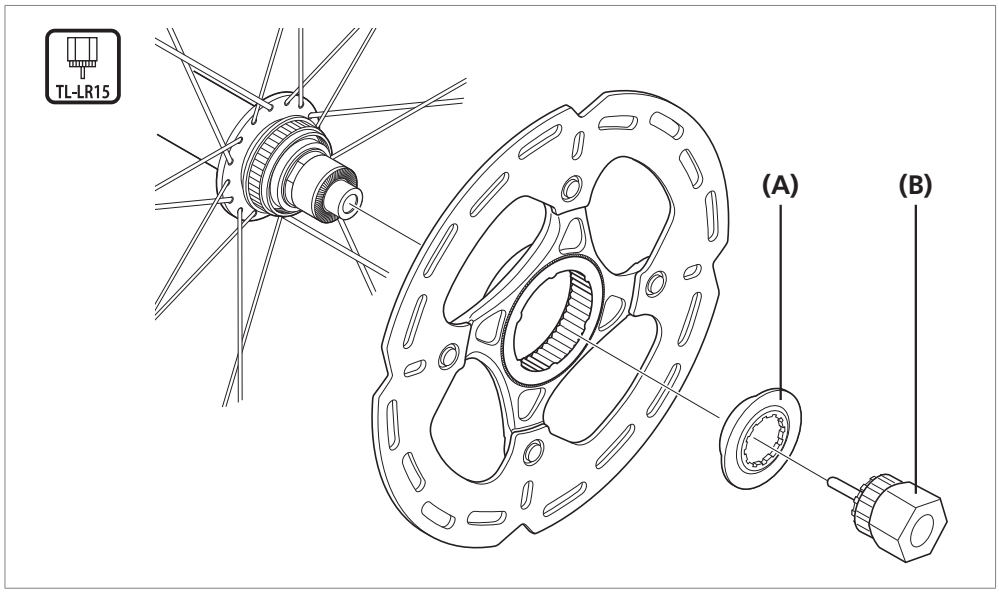
18



Wipe away any oil that has overflowed.

■ Installation of the disc brake rotor

Center lock type



(A) Disc brake rotor fixing lock ring
(B) TL-LR15

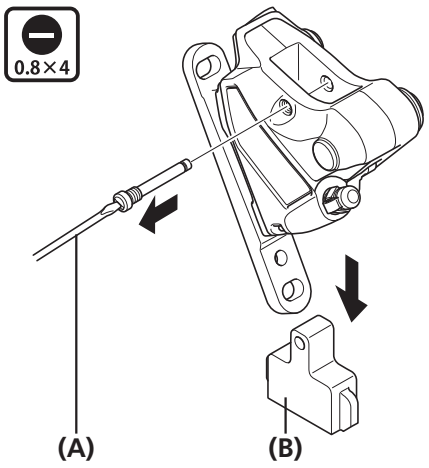
Tightening torque	
TL-LR15	40 - 50 N·m

■ Installation of brake calipers

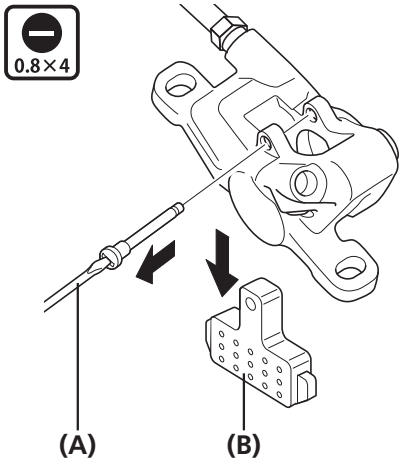
Installing the brake pads

1

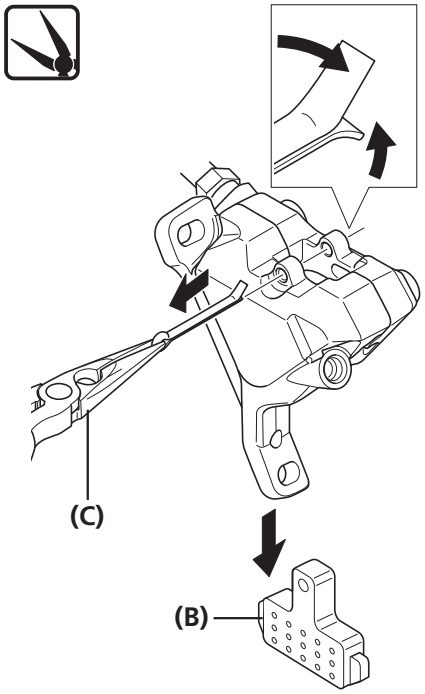
BR-U5000



BR-RS785



BR-UR300

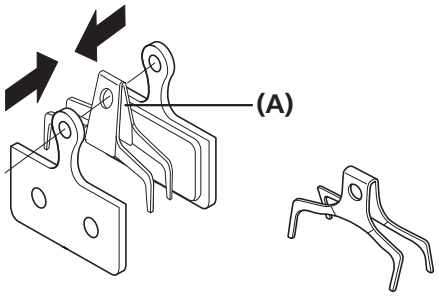


Remove the bleed spacer (yellow).

(A) Slotted screwdriver (nominal dia. 0.8 × 4)
(B) Bleed spacer
(C) Needle-nose pliers

To be continued on next page

2



Set the pad fixing spring as shown in the illustration. (The spring for BR-RS785 has markings on the left side (L) and the right side (R).)

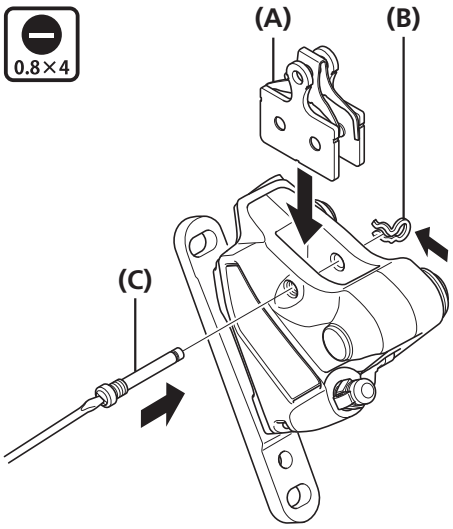
(A) Pad fixing spring

To be continued on next page

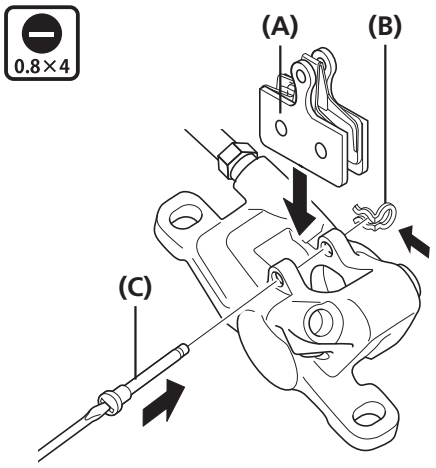
Installation of brake calipers

3

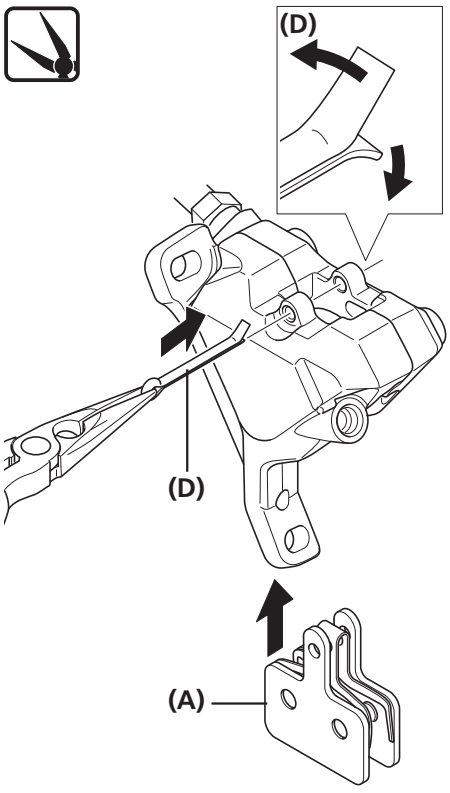
BR-U5000



BR-RS785



BR-UR300



Install the new brake pads and bolts.

Make sure to use a snap retainer at this time.

Install the pads as shown in the illustration.

(A) Brake pads
(B) Snap retainer
(C) Pad axle
(D) Split pin

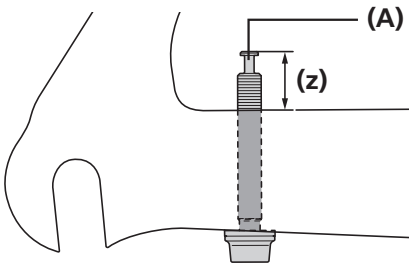
Tightening torque	
0.8×4	0.1 - 0.3 N·m

NOTICE

BR-RS785
When using a pad with fins, take note of the left (L) and right (R) markings to set it.

Checking the length of brake caliper mounting bolts C (BR-U5000/UR300)

Same for both 140 mm and 160 mm



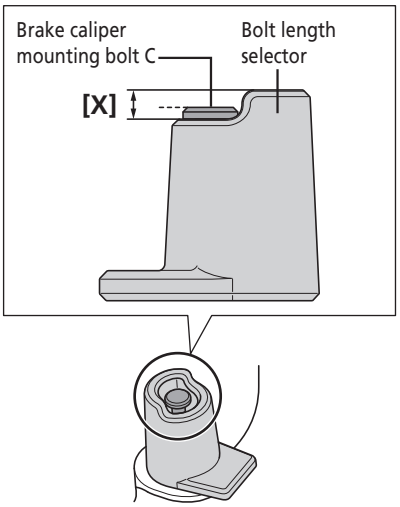
Insert brake caliper mounting bolts C into the frame mount area, and check that the length of the protruding portion of each brake caliper mounting bolt C is 13 mm.

(z) 13 mm

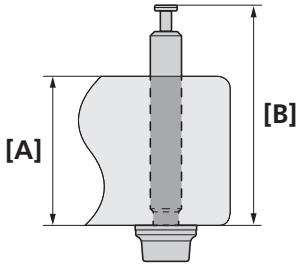
(A) Brake caliper mounting bolt C

NOTICE

- When using a bolt length selector, check whether the tip of the brake caliper mounting bolt C is within the range **[X]**.



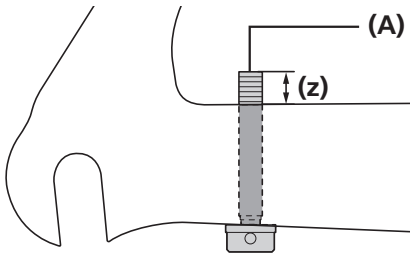
- Do not use a washer when checking the length of brake caliper mounting bolt C.
- The length of brake caliper mounting bolts C to be used vary depending on the thickness of the frame.
  Use brake caliper mounting bolts C that are appropriate for the thickness of the frame.



[A] Thickness of frame	[B] Length of brake caliper mounting bolt C	Y-part
10 mm	23 mm	Y8N208000
15 mm	28 mm	Y8N208050
20 mm	33 mm	Y8N208010
25 mm	38 mm	Y8N208020
30 mm	43 mm	Y8N208030
35 mm	48 mm	Y8N208040

Converter fixing bolt length confirmation (BR-RS785)

Same for both 140 mm and 160 mm



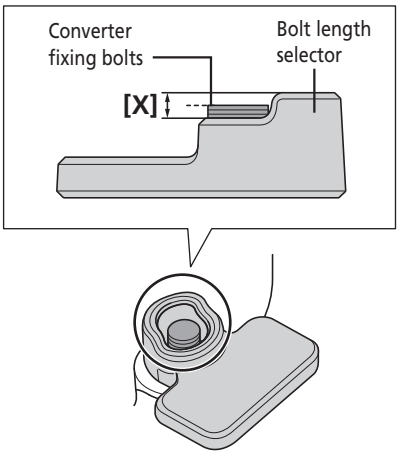
Insert the converter fixing bolts into the frame mount area, and make sure that the lengths of the protruding sections of the bolts are 6.8 mm.

(z) 6.8 mm

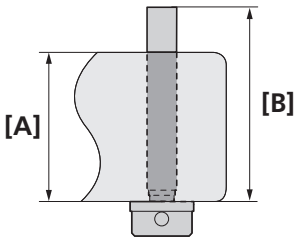
(A) Converter fixing bolts

NOTICE

- When using a bolt length selector, make sure the tip of the converter fixing bolt is within the range **[X]**.



- Do not use a washer when checking the length of the converter fixing bolt.
- The length of the converter fixing bolts used varies depending on thickness of the frame.
  Use converter fixing bolts that are suitable for the thickness of the frame.

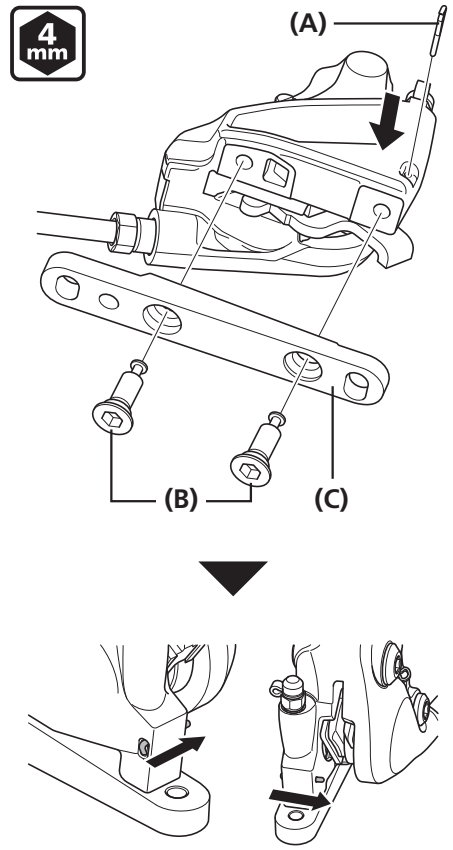


[A] Frame thickness	[B] Converter fixing bolt length	Y-part
10 mm	16.8 mm	Y81743100
15 mm	21.8 mm	Y81743150
20 mm	26.8 mm	Y81743200
25 mm	31.8 mm	Y81743250
30 mm	36.8 mm	Y81743300
35 mm	41.8 mm	Y81743350

Installation to the frame (BR-U5000/UR300)

When using a mount bracket (140 mm disc brake rotor (BR-U5000))

1



Attach the mount bracket to the brake caliper.

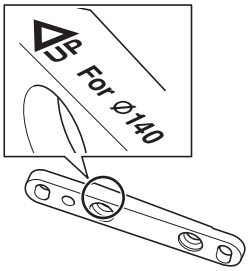
Install the bolt fixing pin.
Check that the bolt fixing pin is fully inserted all the way to the back.

(A) Bolt fixing pin
(B) Brake caliper mounting bolt B
(C) Mount bracket

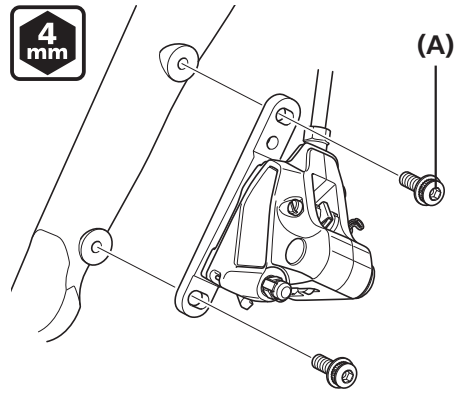
Tightening torque	
4 mm	6 - 8 N·m

NOTICE

Pay attention to the marking on the mount bracket when attaching it.



2



Attach the mount bracket to the frame provisionally.

Depress the brake lever, and tighten the brake caliper mounting bolts A while the brake pads are pressed against the disc brake rotor.

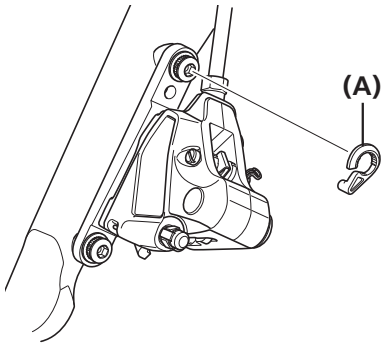
(A) Brake caliper mounting bolt A

Tightening torque	
4 mm	6 - 8 N·m

To be continued on next page

Installation of brake calipers

3

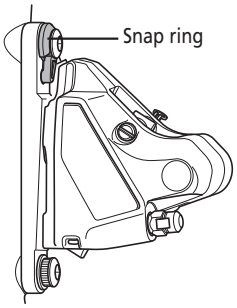


Install the snap ring.

(A) Snap ring

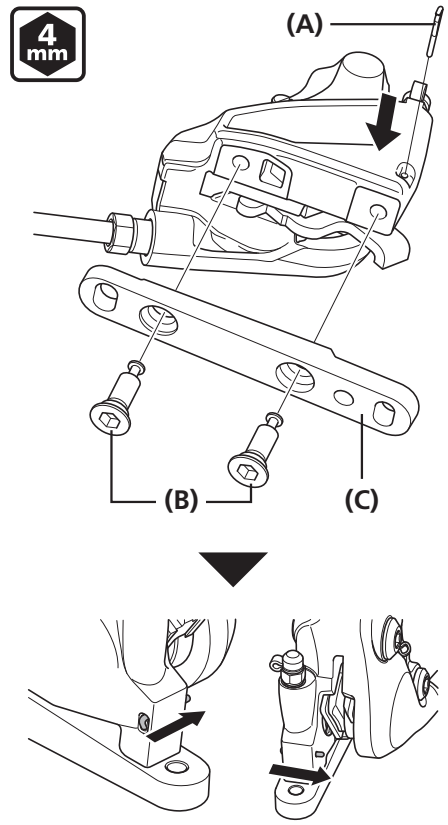
NOTICE

Positions for attaching snap rings are different for 140 mm and 160 mm. (Illustration shows 140 mm)



When using a mount bracket (160 mm disc brake rotor (BR-U5000))

1



Attach the mount bracket to the brake caliper.

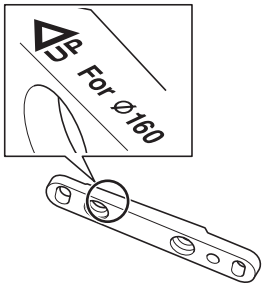
Install the bolt fixing pin.
Check that the bolt fixing pin is fully inserted all the way to the back.

(A) Bolt fixing pin
(B) Brake caliper mounting bolt B
(C) Mount bracket

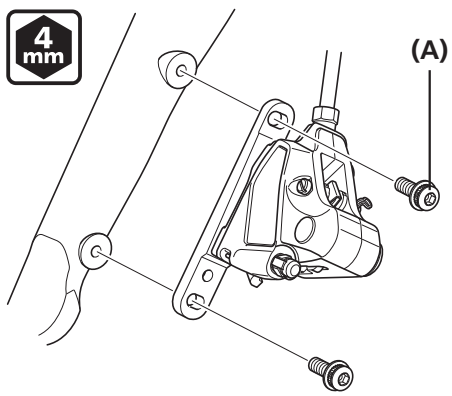
Tightening torque	
4 mm	6 - 8 N·m

NOTICE

Pay attention to the marking on the mount bracket when attaching it.



2



Attach the mount bracket to the frame provisionally.

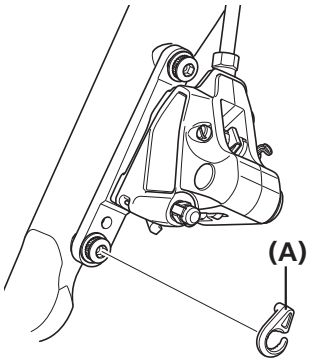
Depress the brake lever, and tighten the brake caliper mounting bolts A while the brake pads are pressed against the disc brake rotor.

(A) Brake caliper mounting bolt A

Tightening torque	
4 mm	6 - 8 N·m

To be continued on next page

3

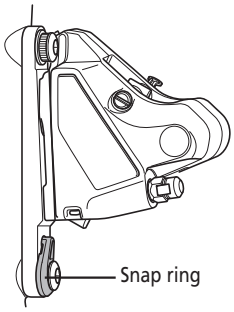


Install the snap ring.

(A) Snap ring

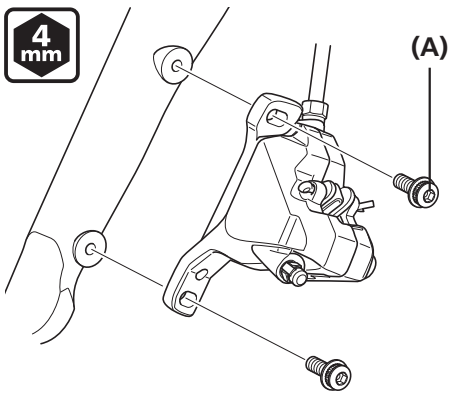
NOTICE

Positions for attaching snap rings are different for 140 mm and 160 mm. (Illustration shows 160 mm)



When using a brake caliper mounting bolt A (160 mm disc brake rotor (BR-UR300))

1

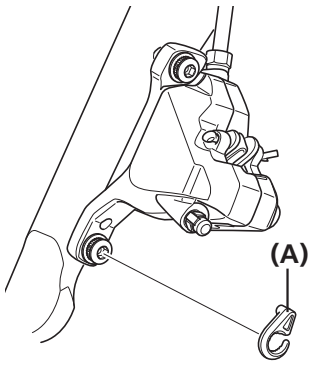


Depress the brake lever, and tighten the brake caliper mounting bolts A while the brake pads are pressed against the disc brake rotor.

(A) Brake caliper mounting bolt A

Tightening torque	
4 mm	6 - 8 N·m

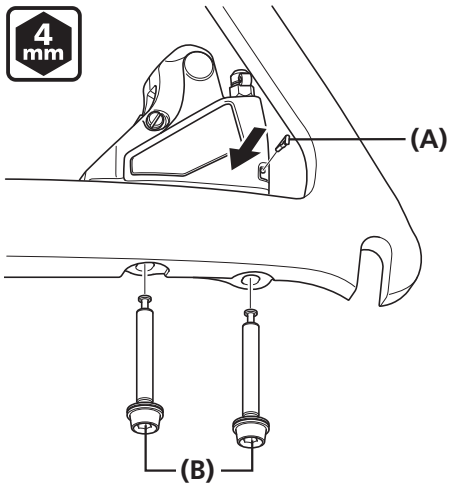
2



Install the snap ring.

(A) Snap ring

When using a brake caliper mounting bolt C (140 mm disc brake rotor (BR-U5000)/160 mm disc brake rotor (BR-UR300))



Attach the brake caliper to the frame.

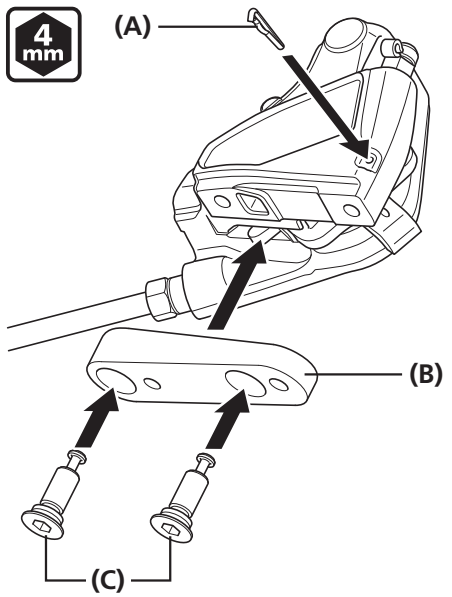
Install the bolt fixing pin.

(A) Bolt fixing pin
(B) Brake caliper mounting bolt C

Tightening torque	
4 mm	6 - 8 N·m

When using a brake caliper mounting bolt C (160 mm disc brake rotor (BR-UR5000))

1



Attach the mount bracket to the brake caliper.

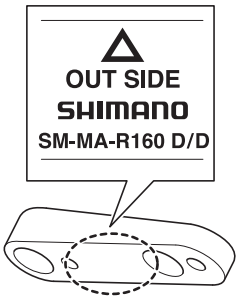
Install the bolt fixing pin.

(A) Bolt fixing pin
(B) Mount bracket
(C) Brake caliper mounting bolt B

Tightening torque	
4 mm	6 - 8 N·m

NOTICE

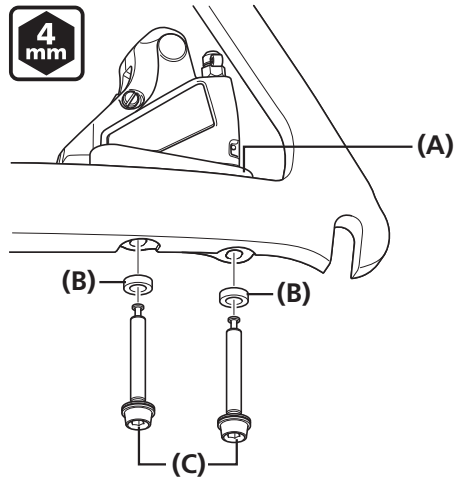
Pay attention to the marking on the mount bracket when attaching it.



To be continued on next page

Installation of brake calipers

2

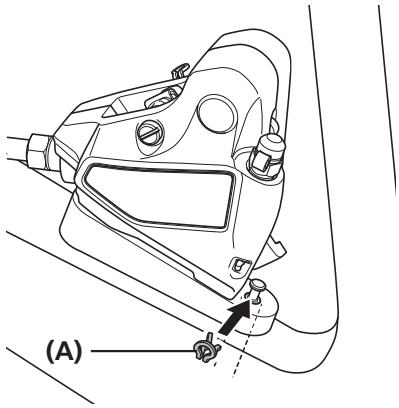


Use brake caliper fixing bolt C and a washer to secure the mount bracket to the frame.

(A) Mount bracket
(B) Washers
(C) Brake caliper mounting bolt C

Tightening torque	
4 mm	6 - 8 N·m

3

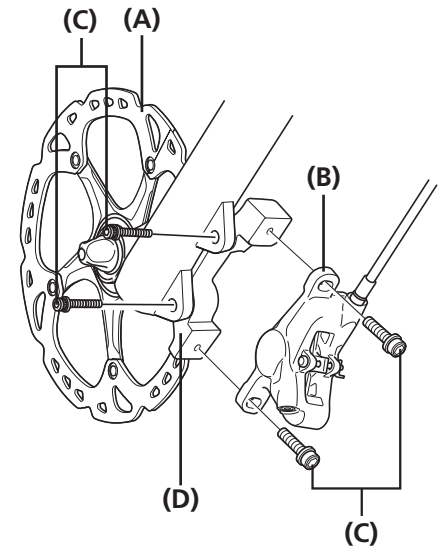


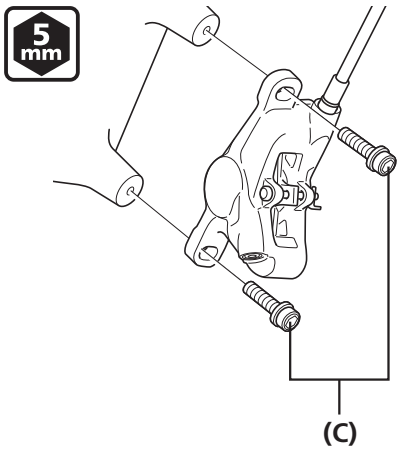
Install the snap retainer.

(A) Snap Retainer

Installation to the frame (BR-RS785)

Front/Rear





Temporarily install the brake caliper to the frame.

Depress the brake lever, and tighten the brake caliper fixing bolts while pressing the brake pads against the disc brake rotor.

(A) Disc brake rotor
(B) Brake caliper
(C) Brake caliper fixing bolts
(D) Mount bracket

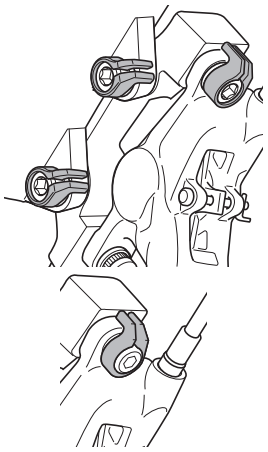
Tightening torque	
5 mm	6 - 8 N·m

TECH TIPS

Make sure that the brake caliper can move sideways before installing it.

NOTICE

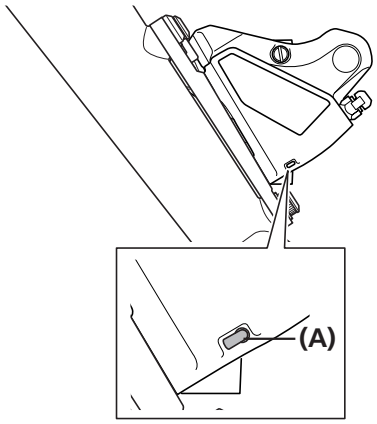
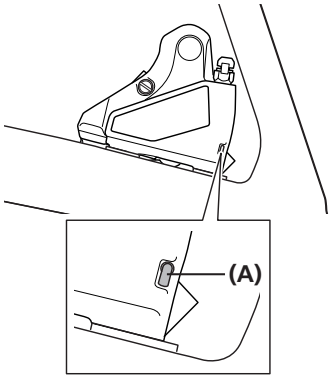
Be sure to attach snap rings when attaching the brake caliper fixing bolts.



■ Preventing loosening of frame fixing bolts

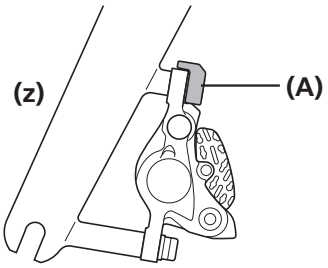
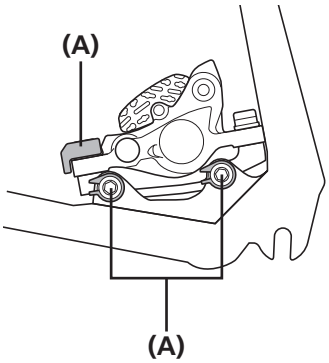
The snap ring method, the fixing pin insertion method, or the wiring method can be used to prevent loosening of the bolts.
Choose whichever method is suitable for the model, front fork and frame.

Fixing pin insertion method

Front	Rear
	

(A) Bolt fixing pin

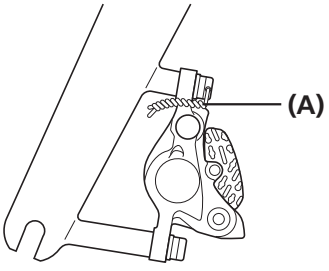
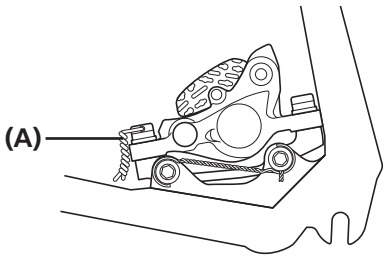
Snap ring method

Front	Rear
	

(A) Snap ring

(z) Post type

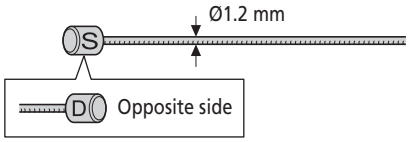
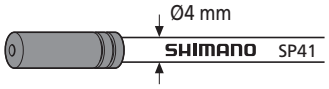
Wiring method

Front	Rear
	

(A) Wire

■ Installing the shifting cable

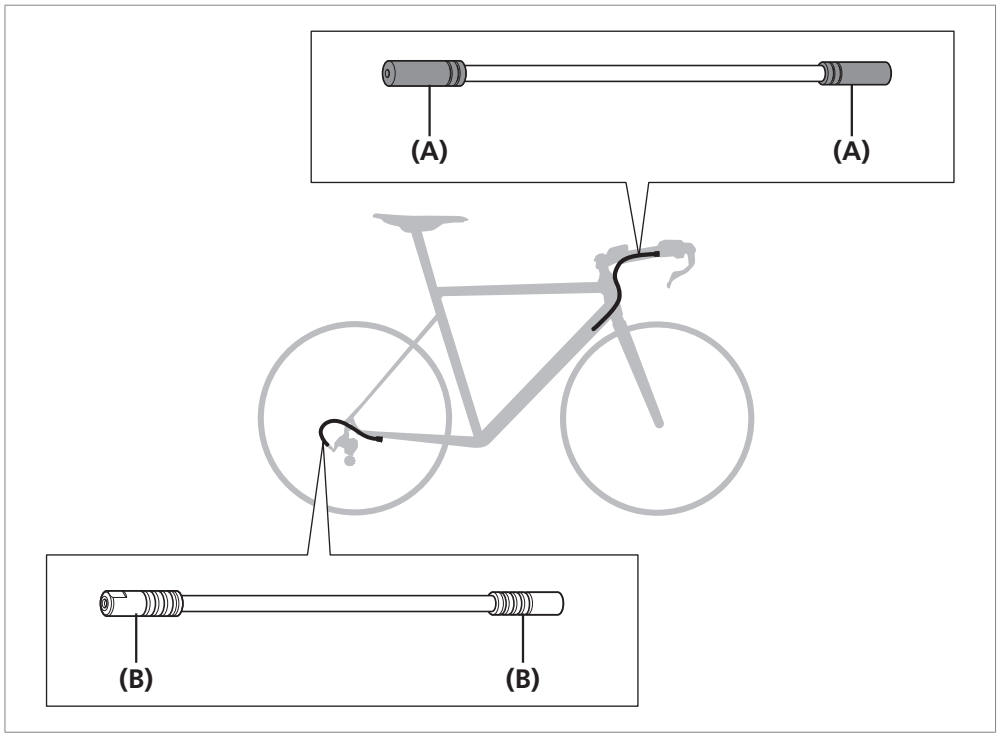
Cable used

Designated inner cable	Normal outer cap/ SP41 outer casing
	

NOTICE

Do not let dust adhere on the inner cable.

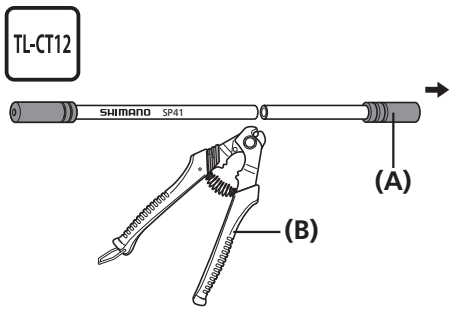
Normal outer cap installation position



(A) Normal outer cap
(B) Sealed outer cap (resin type)

Cutting the outer casing

1



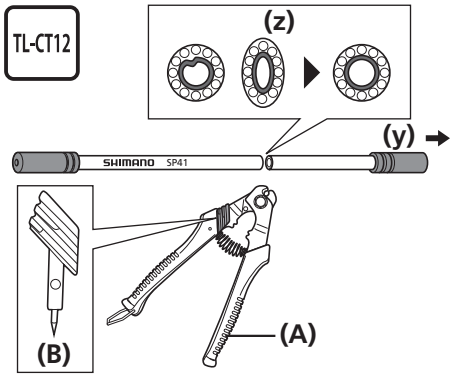
Use the cable cutter (TL-CT12) or an equivalent tool to cut the side opposite of the inscription.

(A) Normal outer cap
(B) TL-CT12

NOTICE

- Use a cable which still has some length to spare even when the handlebars are turned all the way to both sides.
- Be careful not to injure your hand with the TL-CT12 needle section.

2

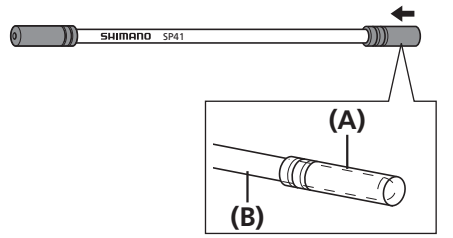


After cutting, expand the tip of the liner (Ø2.2 mm or more) with TL-CT12 or another narrow tool.

(y) Remove normal outer cap
(z) Arrange the cut end into a perfect circle

(A) TL-CT12
(B) TL-CT12 needle

3



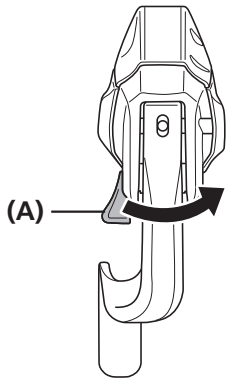
Insert the outer casing until it is in close contact with the seating surface of the normal outer cap.

(A) Normal outer cap
(B) Outer casing

Passing through the shifting inner cable

The illustration is of the rear lever.

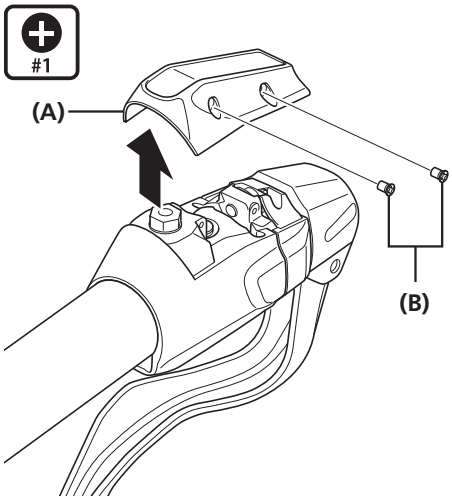
1



Operate the release lever 10 or more times and set the lever to the top position.

(A) Release lever

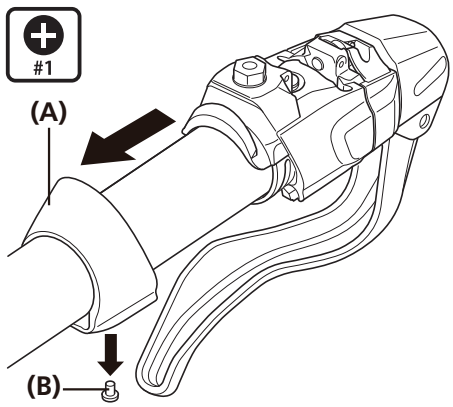
2



Remove the 2 mounting bolts and then remove the upper cover.

(A) Cover
(B) Mounting bolt

3

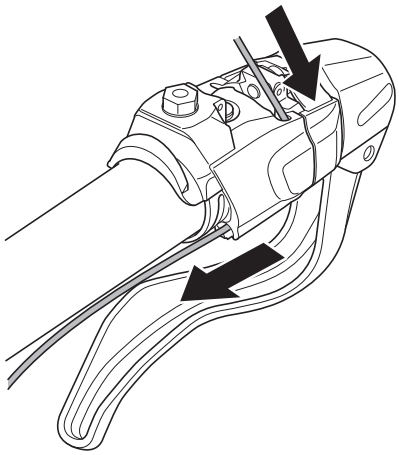


Remove the mounting bolt on the underside and then remove the band cover.

(A) Band cover
(B) Mounting bolt

To be continued on next page

4

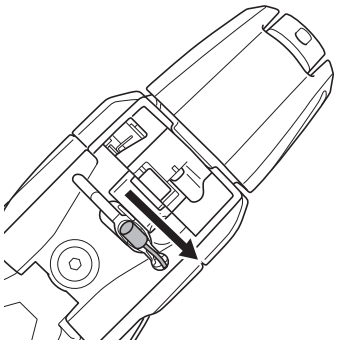


Insert the inner cable vertically from above.

NOTICE

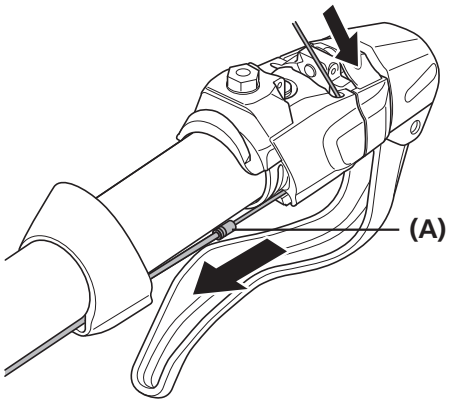
Insert the cable while being careful not to damage the coating.

5



Insert the cable in such a manner that the inner end is attached to the unit.

6



Put the inner cable through as shown in illustration.

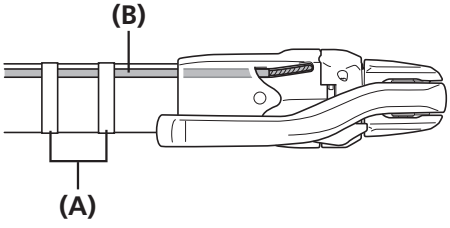
(A) Normal outer cap

7

Attach the upper cover.

Tightening torque	
#1	0.15 - 0.25 N·m

8

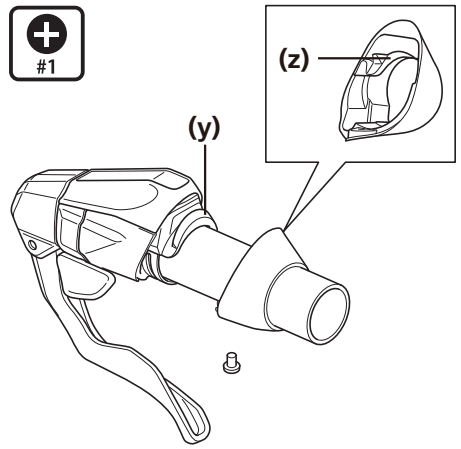


Temporarily secure the outer casing to the handlebar (by using tape or a similar material).

(A) Tape
(B) Outer casing

To be continued on next page

9



Engage the catch on the band cover and secure in place with the mounting bolt.

(y) Catch (main body side)

(z) Catch (band cover side)

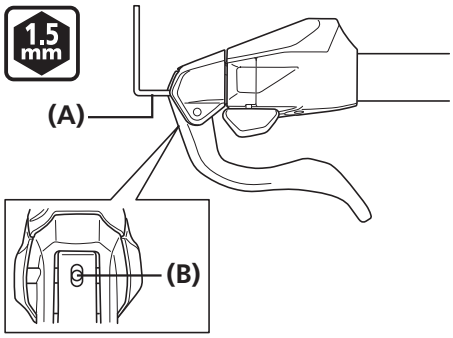
Tightening torque	
#1	0.15 - 0.25 N·m

ADJUSTMENT

ADJUSTMENT

■ Reach adjustment

ST-U5060/BL-U5010



Turn the reach adjustment screw to position the lever unit.

Insert a 1.5 mm hexagon wrench into the end of the ST and turn it.

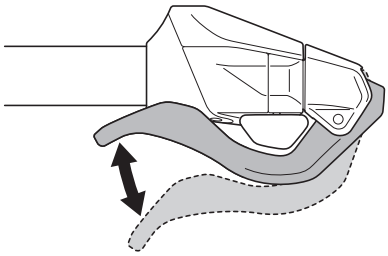
(A) 1.5 mm hexagon wrench
(B) Reach adjustment screw

NOTICE

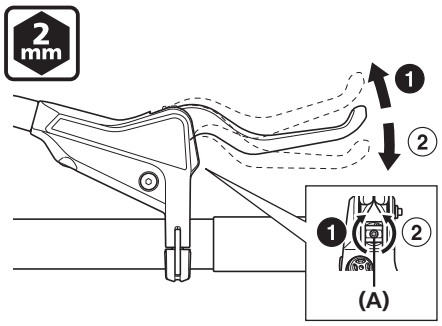
Make sure that braking operates properly after the adjustment.

TECH TIPS

Clockwise: Decreases the lever stroke
Counterclockwise: Increases the lever stroke



BL-U5000/MT200/MT201

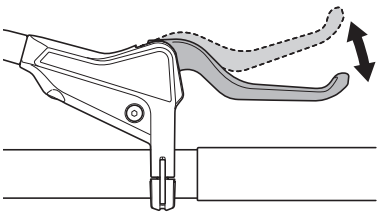


Turn the reach adjustment screw to position the lever unit.

(A) Reach adjustment screw

TECH TIPS

Clockwise: Increases the lever stroke
Counterclockwise: Decreases the lever stroke



MAINTENANCE

MAINTENANCE

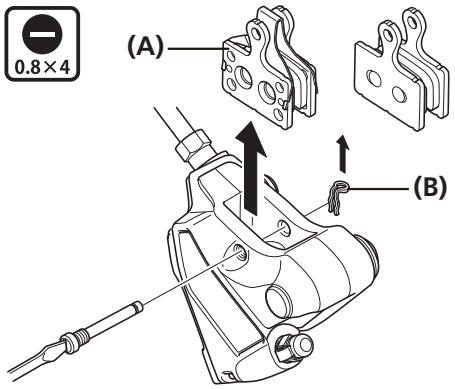
■ Replacing Shimano genuine mineral oil

It is recommended that you replace the oil inside the reservoir tank if it becomes severely discolored.
Attach a tube with a bag to the bleed nipple, and then open the bleed nipple to drain out the oil. The dual control lever/brake lever can be operated at this time to help the oil drain out. After draining the oil, pour in fresh brake oil in accordance with the "Adding Shimano genuine mineral oil and bleeding air" section. Use only Shimano genuine mineral oil.
Dispose of the waste oil according to proper country and/or state disposal regulations.

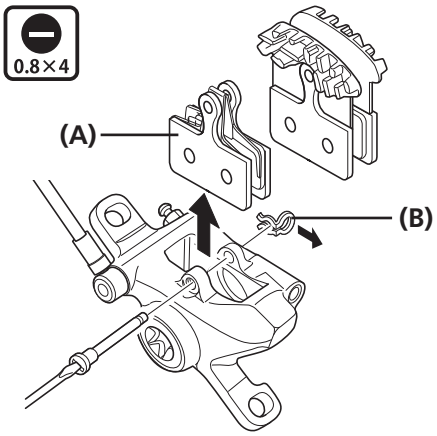
■ Replacement of brake pads

1

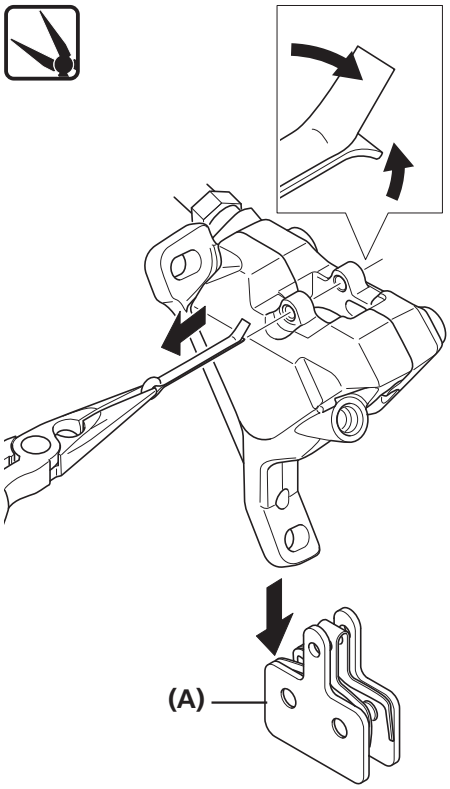
BR-U5000



BR-RS785



BR-UR300



Remove the wheel from the frame, and remove the brake pads as shown in the illustration.

(A) Brake pads
(B) Snap retainer

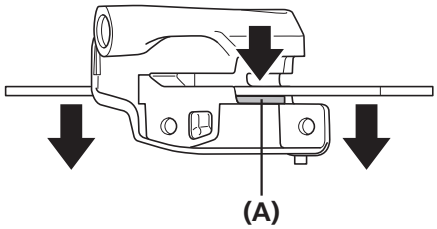
NOTICE

- This brake system is designed to automatically adjust the clearance between the disc brake rotor and the brake pads by the piston gradually protruding according to the wear of the brake pads; therefore, when you replace the brake pads, you need to push back the piston.
- If oil adheres to the brake pads, if the brake pads are worn down to a thickness of 0.5 mm, or if the brake pad presser springs are interfering with the disc brake rotor, replace the brake pads.
- BR-U5000/BR-RS785/BR-UR300 brake pads are not compatible.
  Use a compatible brake pad when replacing.
- When using a pad with fins, take note of the left (L) and right (R) markings to set it.

To be continued on next page

2 Clean the pistons and surrounding area.

3



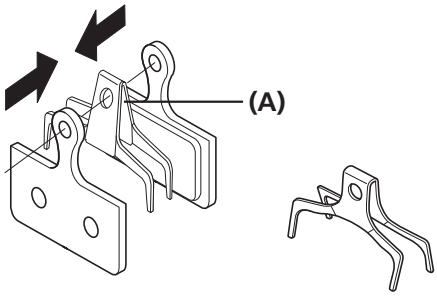
Use a flat-shaped tool to push the pistons straight back in as far as they will go, while being careful not to twist the pistons.

Do not push the pistons with a sharp tool.

The pistons may be damaged.

(A) Piston

4



Set the pad fixing spring as shown in the illustration. (The spring for BR-RS785 has markings on the left side (L) and the right side (R).)

(A) Pad fixing spring

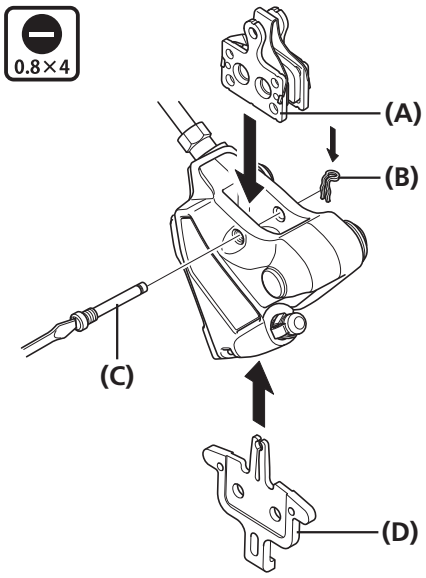
To be continued on next page

5

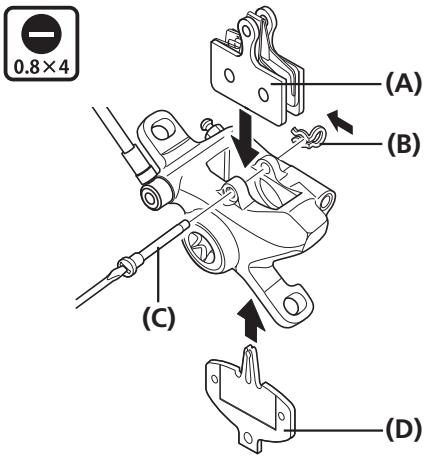
Install the new brake pads, the bolt, and the pad spacer (red).

Make sure to use a snap retainer at this time.

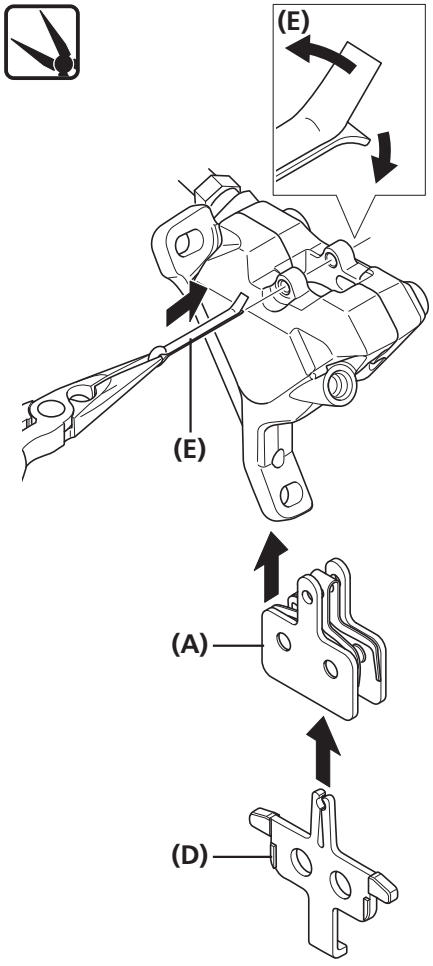
BR-U5000



BR-RS785



BR-UR300



(A) Brake pads
(B) Snap retainer
(C) Pad axle
(D) Pad spacer (red)
(E) Split pin

Tightening torque	
0.8×4	0.1 - 0.3 N·m

To be continued on next page

6 Depress the brake lever several times to check that the operation becomes stiff.

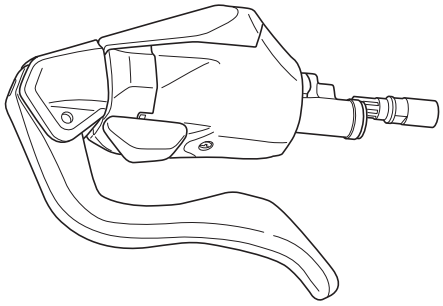
7 Remove the pad spacer, install the wheel, and then check that there is no interference between the disc brake rotor and caliper.

If they are touching, adjust in accordance with the section "Installation of brake calipers".

■ Replacing the cover

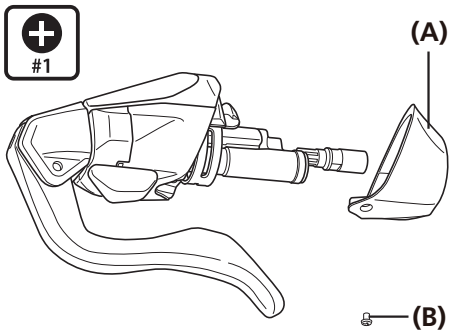
Replacing the band cover

1



Remove the main body from the handlebar.

2



Remove the mounting bolt and then remove the band cover.

(A) Band cover
(B) Mounting bolt

NOTICE

Note the markings
R: for right
L: for left

- The markings are engraved inside the band cover.
- Replace the band cover with the dual control lever/brake lever and brake hose removed from the bicycle, as shown in the illustration, or, alternatively, perform the replacement by removing the brake caliper from the frame and passing the band cover from the caliper side.
- Perform bleeding after removing the brake hose.

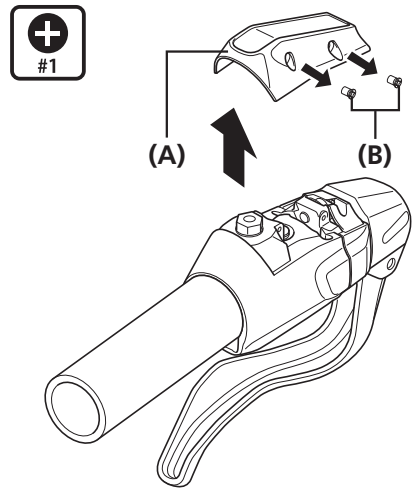
TECH TIPS

The tabs on the band cover each fit a slot in the bracket body.

■ Pulling out a disconnected inner end (shifting cable)

If it is hard to pull out the inner end, follow the procedure below.

1



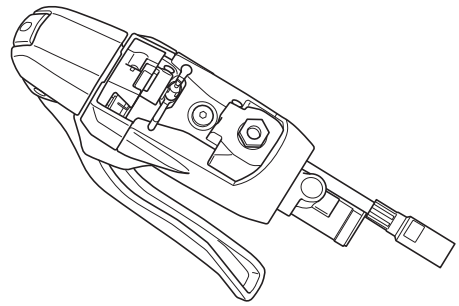
Remove the 2 mounting bolts and then remove the upper cover.

(A) Cover
(B) Mounting bolt

TECH TIPS

Should the inner cable break, it is recommended that you also replace the cable guide together with the inner cable in order to maintain smooth shifting.

2



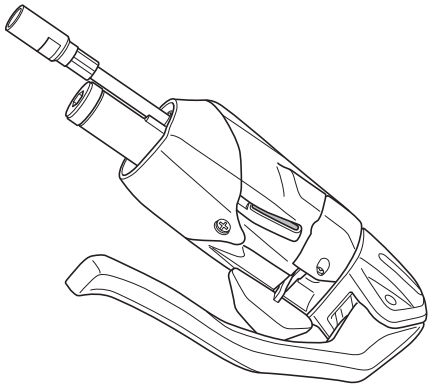
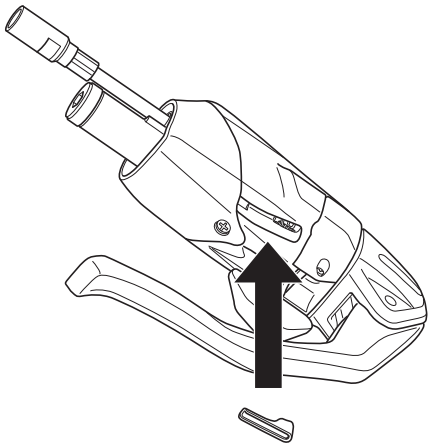
Pull out the inner end on the cable hook of the winding body.

3

Re-attach the cover and then tighten the screws.

Tightening torque	
#1	0.15 - 0.25 N·m

■ Replacement of the SL cable guide

1	Remove the lever from the handle.
2	 Use a pointed tool to pry out the SL cable guide.
3	 Push in the new cable guide with hands.

SHIMANO

SHIMANO NORTH AMERICA BICYCLE, INC.
One Holland, Irvine, California 92618, U.S.A. Phone: +1-949-951-5003

SHIMANO EUROPE B.V.
High Tech Campus 92, 5656 AG Eindhoven, The Netherlands Phone: +31-402-612222
Only EU General Contact : contactshimano@shimano-eu.com

SHIMANO INC.
3-77 Oimatsu-cho, Sakai-ku, Sakai City, Osaka 590-8577, Japan

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