



WARNING

- It is important to completely understand the operation of your bicycle's brake system. Improper use of your bicycle's brake system may result in a loss of control or an accident, which could lead to severe injury. Because each bicycle may handle differently, be sure to learn the proper braking technique (including brake lever pressure and bicycle control characteristics) and operation of your bicycle. This can be done by consulting your professional bicycle dealer and the bicycle's owners manual, and by practicing your riding and braking technique.
- When securing the brake arm to the frame, be sure to securely tighten the clip screw and clip nut to the specified tightening torque. Use lock nuts with nylon inserts (self-locking nuts) for the clip nut. It is recommended that standard Shimano parts be used for the clip screw, clip nut and brake arm clip. If the clip nut comes off the brake arm, or if the clip screw or brake arm clip becomes damaged, the brake arm may rotate on the chainstay and cause the handlebars to jerk suddenly, or the bicycle wheel may lock and the bicycle may fall over, causing serious injury.
- Obtain and read the service instructions carefully prior to installing the parts. Loose, worn, or damaged parts may cause serious injury to the rider. We strongly recommend only using genuine Shimano replacement parts.

2. If any of the following occur while using the brakes, stop riding immediately and ask the place of purchase to carry out inspection and repairs.
 - 1) If abnormal noise is heard when the brakes are applied
 - 2) If braking force is abnormally strong
 - 3) If braking force is abnormally weakIn the case of 1) and 2), the cause might be not enough brake grease, so ask the place of purchase to grease the mechanism with special roller brake grease.
3. In order to get the best performance from the Shimano Inter-M brake, be sure to use Shimano brakes cables and brake levers as a set.

The amount of movement of the inner cable must be 14.5 mm or more when the brake lever is depressed. If it is less than 14.5 mm, braking performance will suffer, and the brakes may fail to work.
4. If the brakes are used frequently, the brake drum may become hot. Do not touch the brake drum for at least 30 minutes after you finish riding the bicycle.
5. If the brake cable becomes rusted, braking performance will suffer. If this happens, replace the brake cable with a genuine Shimano brake cable and re-check the braking performance.
6. The BR-IM41-R brake unit should never be disassembled. If it is disassembled, it will no longer work properly.

SERVICE INSTRUCTIONS

SI-7R45D

SG-7R46
SG-7R45
BR-IM41-R
CJ-7S40

Inter-7 Hub
Inter-M Brake
Cassette joint

Before use, read these instructions carefully, and follow them for correct use.

CAUTION

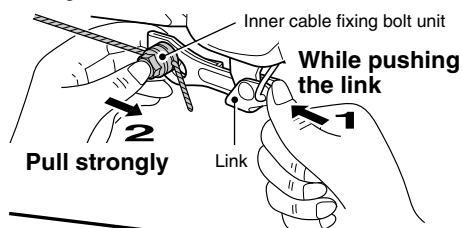
1. The Shimano Inter-M brake system cannot be used with mountain bikes. Furthermore, when using this brake system with other kinds of bikes, avoid continuous application of the brakes when riding down long slopes, as this will cause the internal brake parts to become very hot, and this may weaken braking performance. It may also cause a reduction in the amount of brake grease inside the brake, and this can lead to problems such as abnormally sudden braking. The design of the Shimano Inter-M brake system has been carried out based on standards such as ISO 4210 and DIN 79100-2. These standards specify the performance for an overall weight of 100 kg. If the overall weight exceeds 100 kg, the braking force provided by the system may be insufficient for correct braking, and durability of the system may also be reduced.

NOTE:

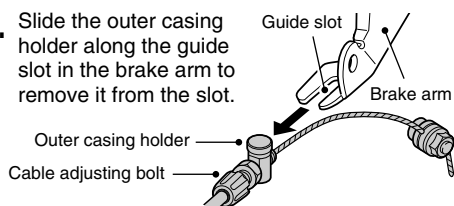
- You can shift gears while pedaling, but on rare occasions the pawls and ratchet inside the hub may produce some noise afterwards as part of normal gear shifting operation.
- The CJ-7S40 cassette joint should only be used with sprockets from 16T to 23T.
- When installing the sprocket to the hub, first install right hand dust cap C to the driver, and then install the sprocket.
- The Inter-M brake is different from conventional brakes in that the inside of the brake drum is filled with grease. This may cause the turning of the wheel to be slightly heavier than usual, particularly in cold weather.
- For maximum performance we highly recommend Shimano lubricants and maintenance products.
- For any questions regarding methods of handling or adjustment, please contact the place of purchase.

Disconnecting the brake cable from the brake unit

1. Push the link back until it stops. Then slide the inner cable fixing bolt unit along the guide hole and remove it from the hole. If the inner cable fixing bolt unit is difficult to remove, turn the cable adjusting bolt clockwise to loosen the cable tension and then remove the inner cable fixing bolt unit.



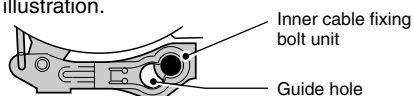
2. Slide the outer casing holder along the guide slot in the brake arm to remove it from the slot.



To install the brake cable again, carry out the above procedure in reverse.

Note:

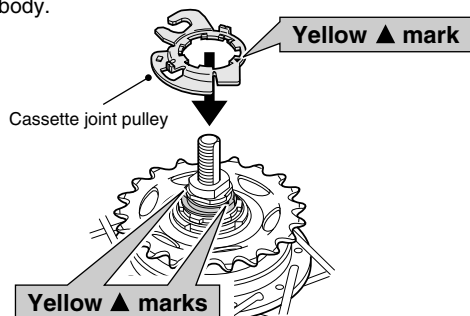
- While looking from the rear of the link, check that the inner cable fixing bolt unit is firmly seated in the position shown in the above illustration.



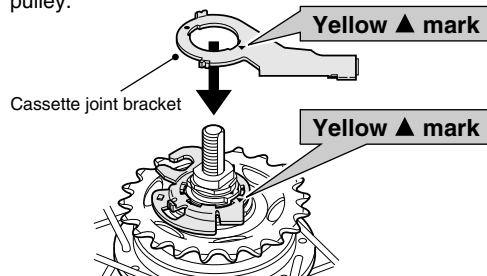
- Depress the brake lever to check the braking performance. If the braking performance is poor, adjust the brake cable once more while referring to "Adjusting the brake cable".

Installation of the cassette joint to the hub

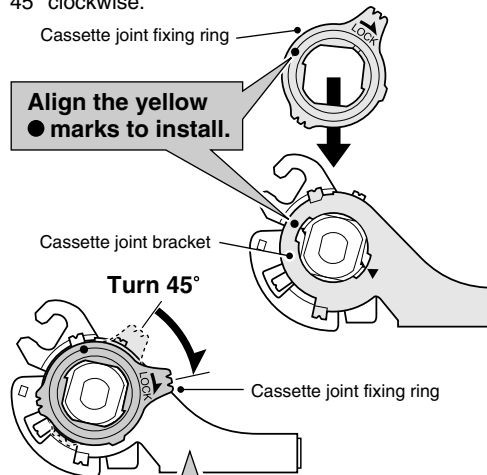
1. Align the yellow ▲ mark on the cassette joint pulley with the yellow ▲ marks on the right side of the hub body.



2. Align the yellow ▲ mark on the cassette joint bracket with the yellow ▲ mark on the cassette joint pulley.



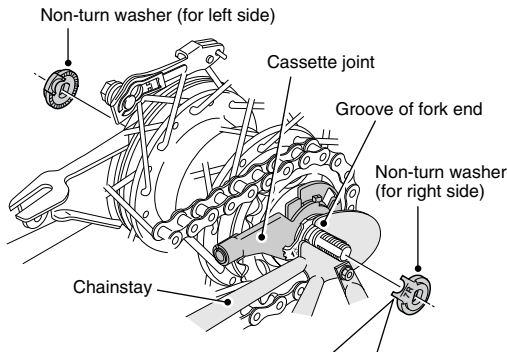
3. Secure the cassette joint to the hub with the cassette joint fixing ring. When installing the cassette joint fixing ring, align the yellow ● mark with the yellow ● mark on the cassette joint bracket. After installing the cassette joint fixing ring, turn it 45° clockwise.



Fit the cassette joint bracket securely.

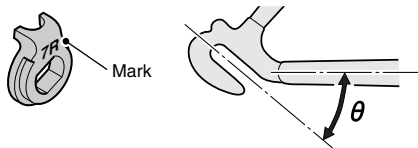
Installation of the hub to the frame

1. Mount the chain on the sprocket, and then set the hub axle into the fork ends. Place the non-turn washers onto the right side and left side of the hub axle. At this time, turn the cassette joint so that the projecting parts of the non-turn washers fit into the grooves of the fork ends. If this is done, the cassette joint can be installed so that it is almost parallel to the chainstay.



- Different types of left and right non-turn washers are available for use with standard and reversed fork ends. Use whichever non-turn washers are suitable.

Fork end	Non-turn washer		
	Mark/Color		Size
	Right	Left	
Standard	7R/Black	7L/Gray	$20^{\circ} \leq \theta \leq 38^{\circ}$
Reversed	6R/Silver	6L/White	$\theta = 0^{\circ}$
Reversed (full chain case)	5R/Yellow	5L/Brown	$\theta = 0^{\circ}$

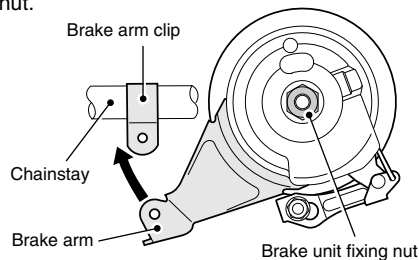


- The projecting parts should be on the fork end side.
- Install the non-turn washers so that the projecting parts are securely in the fork end grooves on either side of the hub axle.

2. Install the brake arm of the Inter-M brake to the chainstay with the brake arm clip, provisionally tighten the clip screw and clip nut, and then tighten the brake unit fixing nut.

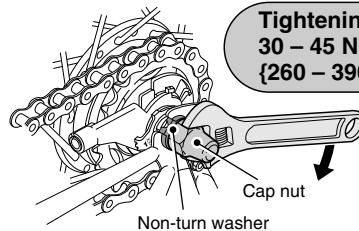
Note:

If the brake arm is in the incorrect position as shown in the illustration so that it cannot be provisionally installed to the chainstay, loosen the brake unit fixing nut and turn the brake arm. Then, after provisionally securing the brake arm to the chainstay, tighten the brake unit fixing nut.



Tightening torque:
20 – 25 Nm {174 – 217 in. lbs.}

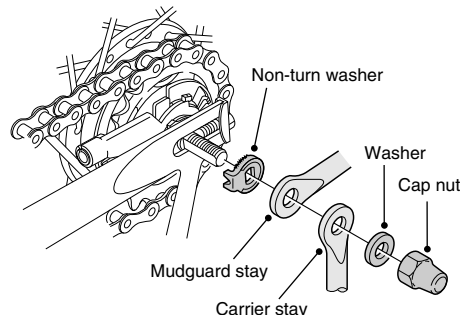
3. Take up the slack in the chain and secure the wheel to the frame with the cap nuts.



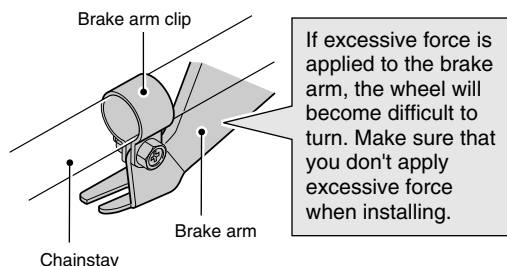
Tightening torque:
30 – 45 Nm
{260 – 390 in. lbs.}

Note:

When installing a part such as a mudguard stay to the hub axle, install in the order shown in the illustration below.



4. Fix the brake arm of the Inter-M brake securely to the chainstay with the brake arm clip.

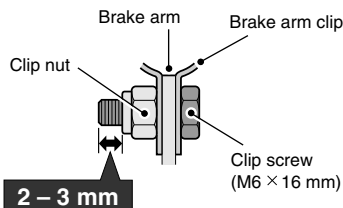


Note:

- When installing the brake arm clip, securely tighten the clip screw while holding the clip nut with a 10 mm spanner.

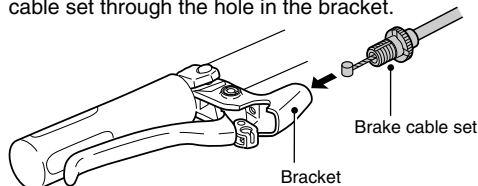
Tightening torque:
2 – 3 Nm {17 – 26 in. lbs.}

- After installing the brake arm clip, check that the clip screw protrudes about 2 – 3 mm from the surface of the clip nut.

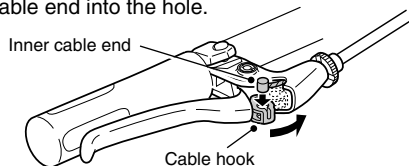


Installing the brake cable

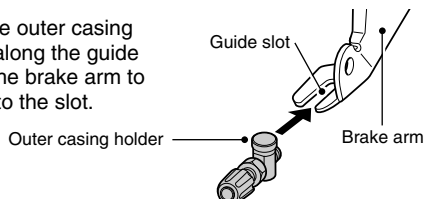
1. While depressing the brake lever, pass the brake cable set through the hole in the bracket.



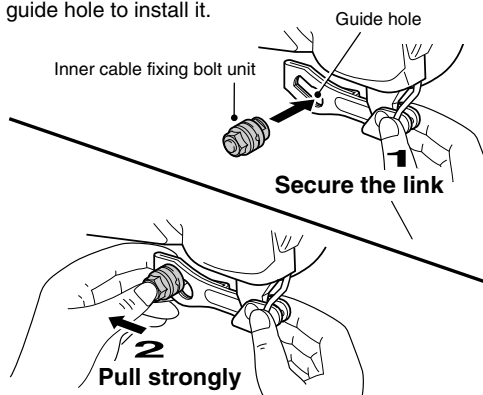
2. Align the inner cable end in the same direction as the hole in the cable hook, and then turn the cable hook as shown in the illustration and insert the inner cable end into the hole.



3. Slide the outer casing holder along the guide slot in the brake arm to set it into the slot.

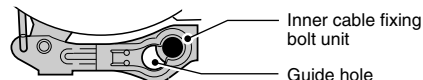


4. While holding the link to secure it so that it does not move, slide the inner cable fixing bolt unit along the guide hole to install it.

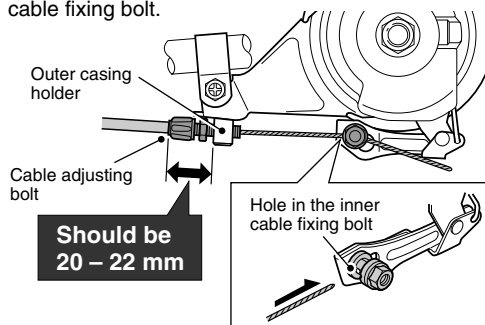


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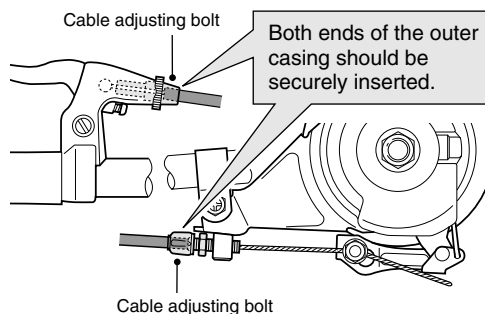
While looking from the rear of the link, check that the inner cable fixing bolt unit is firmly seated in the position shown in the above illustration.



5. Place the cable adjusting bolt so that it is 20 – 22 mm from the end of the outer casing holder, and then pass the inner cable through the cable adjusting bolt and then through the hole in the inner cable fixing bolt.

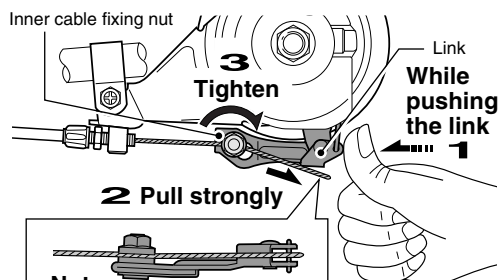


6. Check that both ends of the outer casing are securely inserted into the cable adjusting bolts of both the brake lever and brake arm.



7. Push the link back until it stops. Then, while pulling the inner cable to apply the full amount of tension to the cable, tighten the inner cable fixing nut.

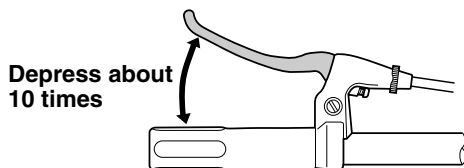
Tightening torque:
6 – 8 Nm {52 – 69 in. lbs.}



Note:
Set the inner cable so that it passes below the link.

Adjusting the brake cable

1. After checking that the wheel does not easily turn while the brake cable is being pulled, depress the brake lever about 10 times as far as the grip in order to run in the brake cable.

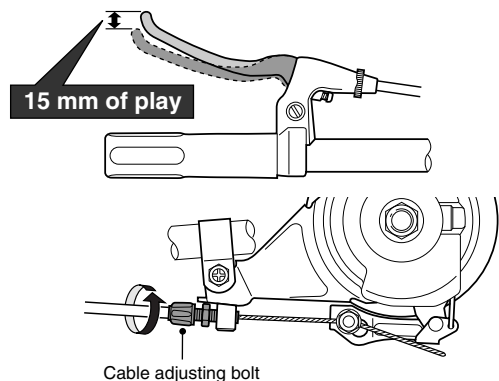


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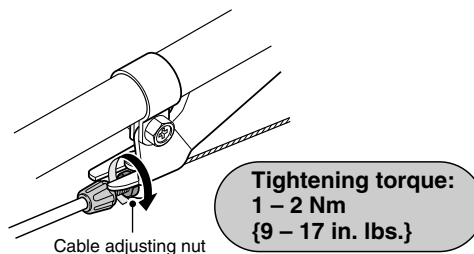
If the brake cable is not run in, it will need to be adjusted again after only a short period of use.

2. Turn the cable adjusting bolt so that there is about 15 mm of play in the brake lever.

(The amount of brake lever play is the distance from the position where the brake lever is not operated to the position where a force is felt suddenly when the brake lever is pulled.)



3. After depressing the brake lever to check the braking performance, secure the cable adjusting bolt with the cable adjusting nut.



Tightening torque:
1 – 2 Nm
{9 – 17 in. lbs.}

These service instructions explain how to use and maintain the Shimano bicycle parts which have been used on your new bicycle. For any questions regarding your bicycle or other matters which are not related to Shimano parts, please contact the place of purchase or the bicycle manufacturer.

These service instructions are printed on recycled paper.

Please note: Specifications are subject to change for improvement without notice.
(English)

SHIMANO®

SHIMANO AMERICAN CORPORATION
One Holland Irvine CA 92618 U.S.A. Phone 949-951-5003

SHIMANO EUROPA
Industrieweg 24 NL-8071 CT Nunspeet, Holland Phone 31-341-272222

SHIMANO INC.
3-77 Oimatsucho, Sakai, Osaka, Japan Phone 072-223-3243

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