

SHIMANO HYDRAULIC DISC BRAKES

This section covers the following Shimano hydraulic-disc models:

Deore models BR-M485, BR-M525, BR-M535, and BR-M555

Deore LX model BR-M585

Deore XT models BR-M755*, BR-M765, and BR-M775

Hone model BR-M601

Nexave model BR-C901

Saint model BR-M800

XTR models BR-M965, BR-M966, BR-M975, and BR-M975P

Calipers for these brake models are made in two configurations: post-mount type and I.S.-mount type. The post-mount type can also be mounted to I.S. mounts by means of an adapter bracket.

Brake levers for these models are made as stand-alone brake levers and as Dual-Control levers (integrated with the shift controls). With these variations in levers, small differences exist with reservoir location and method of hose attachment.

Hoses for these models are made in three styles: double in-line fittings, double banjo fittings, and in-line-fitting/banjo-fitting combination.

Rotors for these models are made in two configurations: 6-bolt I.S. standard and Shimano CenterLock.

After familiarizing yourself with the **TOOLS AND SUPPLIES** section and ascertaining the caliper type, lever type, rotor type, and hose type, use the appropriate links on the right side of the screen to navigate through a complete brake service.

*** The quad-piston Deore XT BR-M755 has a unique stainless-steel, woven-wire covered hose that cannot be sized (banjo fittings at both ends are pre-attached to hose). Use the double-banjo-fitting hose procedure, but ignore steps about cutting the hose and attaching the hose to the banjo fitting.**

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TOOLS AND SUPPLIES

TOOLS:

CenterLock rotor, all except Saint hub: Shimano TL-LR10 or TL-LR15

CenterLock rotor, only for Saint hub: Shimano TL-LR20 or TL-LR25

I.S. 6-bolt rotor, only: T25 Torx bit

#1 Phillips screwdriver

2mm, 3mm, 4mm, & 5mm hex keys

3mm, 4mm, & 5mm bit sockets

6mm, 7mm, & 8mm combination wrenches and sockets

8mm crowfoot wrench (not common—comes with Avid Juicy Bleed Kit)

Torque screwdriver (at least 0–10in-lb range, in 1in-lb increments)

Torque wrench (at least 35–70in-lb range, in 5in-lb increments)

Torque wrench (at least 350–500in-lb range, in 25in-lb increments)

Measuring caliper

Feeler gauge set

Hydraulic hose cutter (sharp razor knife or Jagwire WST010)

Shimano Hose Clamp (pair of plastic blocks that comes with new hose)

Shimano TL-BT02 Bleed Tool

Shimano Piston Block (yellow insert that comes installed in new caliper)

Toe strap (holds brake lever to grip during caliper alignment)

Plastic tire lever

SUPPLIES:

Denatured alcohol

Grease (or antiseize)

Brake-pad set (used equipment service, only)

Loctite 242 (all services except when replacing pads only)

Shimano Mineral Oil #Y-839 98010 (installation and/or bleeding)

Shimano Disc Brake Parts Kit (useful for repairs, not needed for new brakes)

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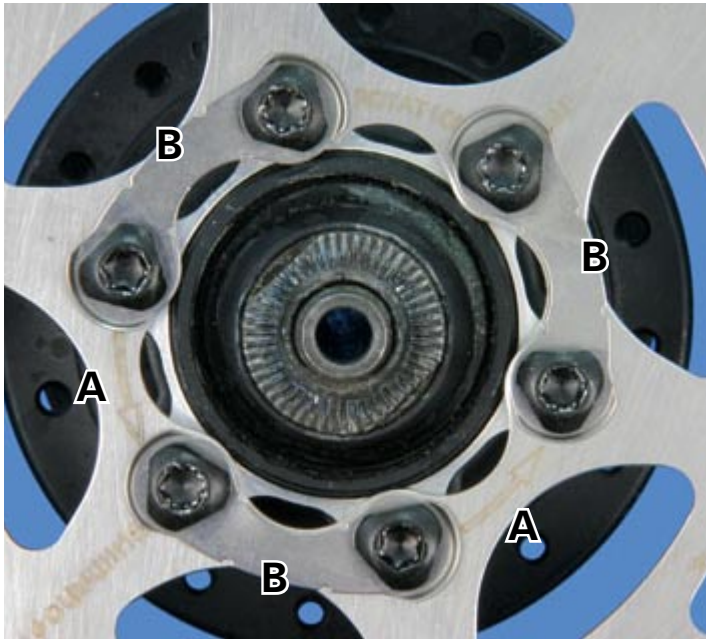
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ROTOR INSTALLATION

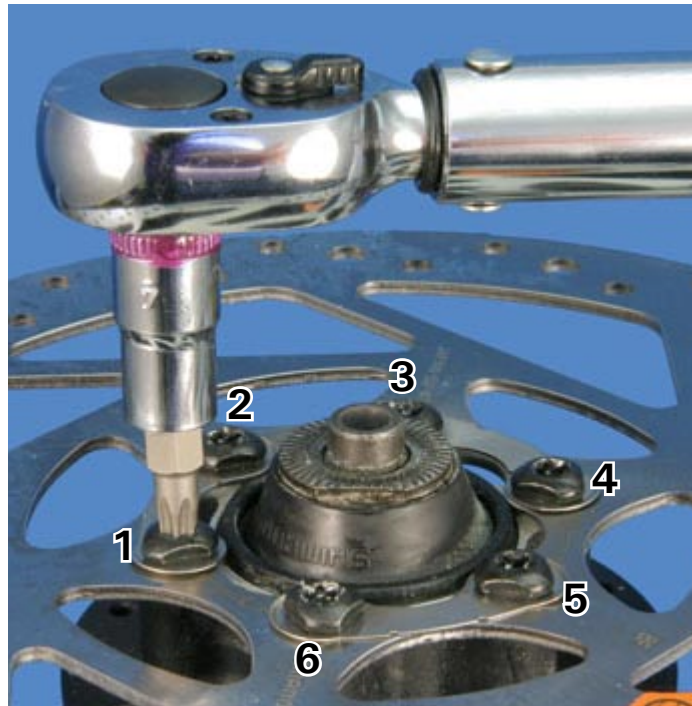
I.S. 6-BOLT ROTOR INSTALLATION

Go to [CENTERLOCK ROTOR INSTALLATION](#) instead.



1. Place rotor on hub with rotation arrow (A) facing out from hub. If rotor has no rotation arrow, convention is that arms spiral outward in counterclockwise direction.
2. If rotor-mounting bolts are being reused, lightly treat threads with Loctite 242 or 290 (not needed for first-time installation unless bolt threads are uncoated from manufacturer).

3. Place one tightening plate (B) over each pair of holes with flat side of each plate against rotor.



4. Thread in all six rotor bolts until heads just contact rotor.
5. Use marker to mark bolts clockwise 1–6.
6. Tighten bolts in 1, 3, 5, 2, 4, 6 sequence to 18–35in-lbs.

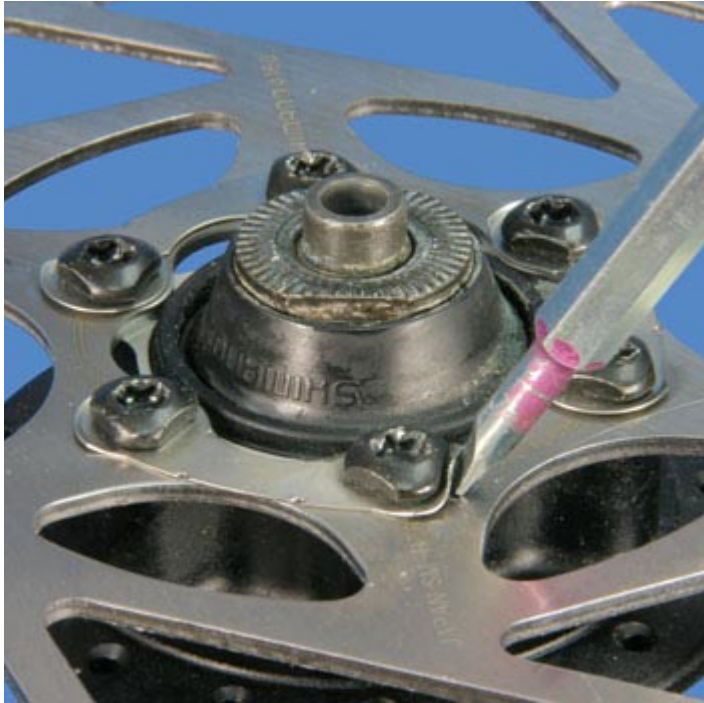
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7. Pry under raised edge of each tightening plate to fold plate up against one flat of each triangular bolt head.
8. Inspect closely for Loctite on rotor and clean thoroughly.

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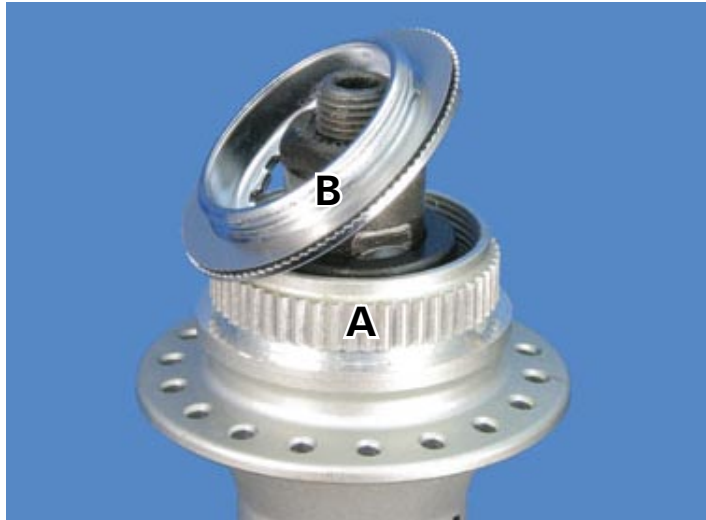
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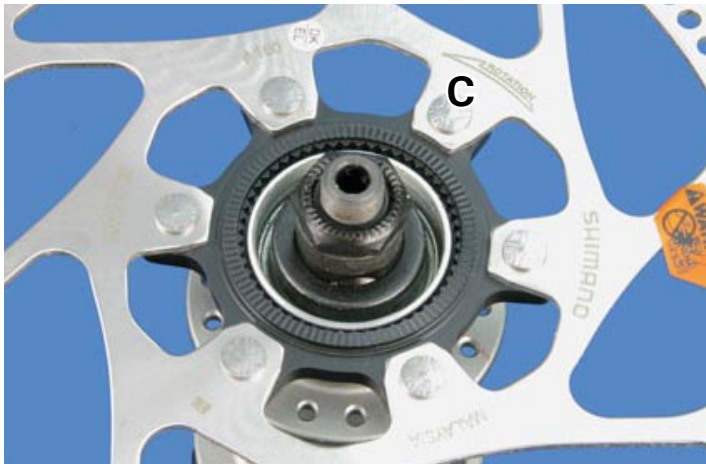
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CENTERLOCK ROTOR INSTALLATION

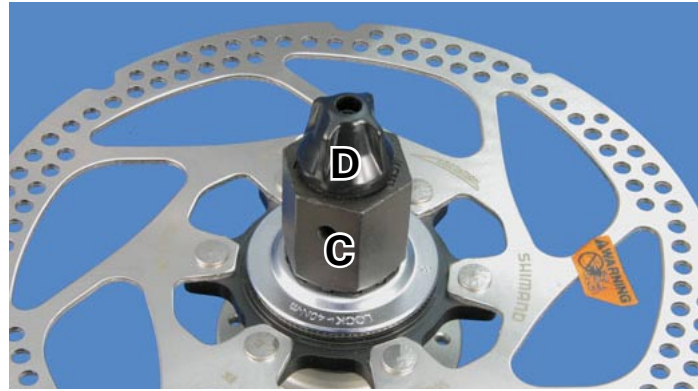
Go to **I.S. 6-BOLT ROTOR INSTALLATION** instead.



1. Lightly grease rotor splines (A) on left side of hub and threads of rotor lockring (B).



2. Engage rotor to hub splines so rotational-direction arrow (C) is on outer face of rotor.



3. Thread rotor lockring into hub with Shimano rotor-lockring tool (C), then retain tool with QR skewer (D).



4. Torque lockring to 350in-lbs.

ROTOR PREPARATION

1. Align rotor using **Roc-Tech tool**.
2. Clean rotor with isopropyl or denatured alcohol. **NOTE: Avoid touching rotor after cleaning!**

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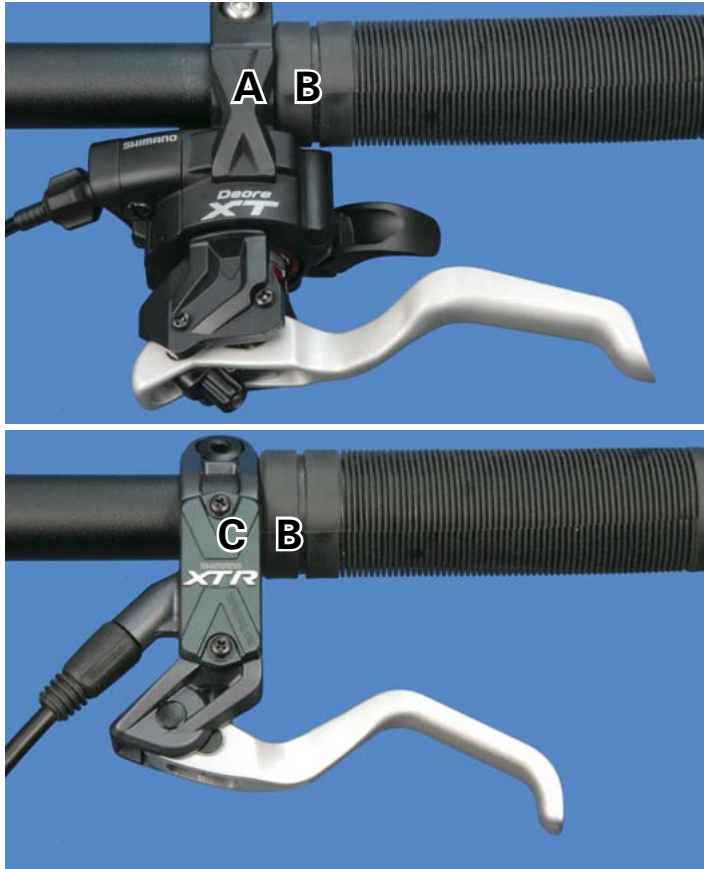
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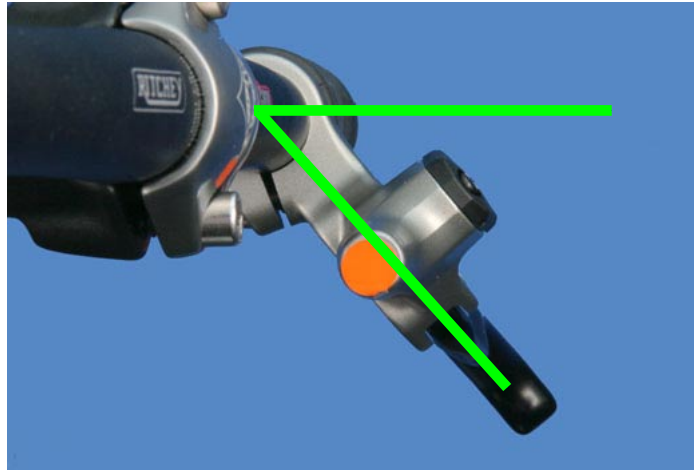
LEVER INSTALLATION

1. Remove existing brake lever and grip (if any) from handlebar.



2. **Dual-control lever:** Install dual-control lever (A) and grip (B) to end of handlebar.
Non-dual-control lever: Install shift control (if not installed), brake lever (C), and grip to end of handlebar.

3. Position lever clamp immediately adjacent to grip.
4. Gently secure mounting bolt (bolt will be torqued after bleeding). **NOTE: Brake lever should be loose enough to rotate around bar, but secure enough to hold its position.**



5. Rotate brake lever to approximately 45° down from parallel-to-ground position.

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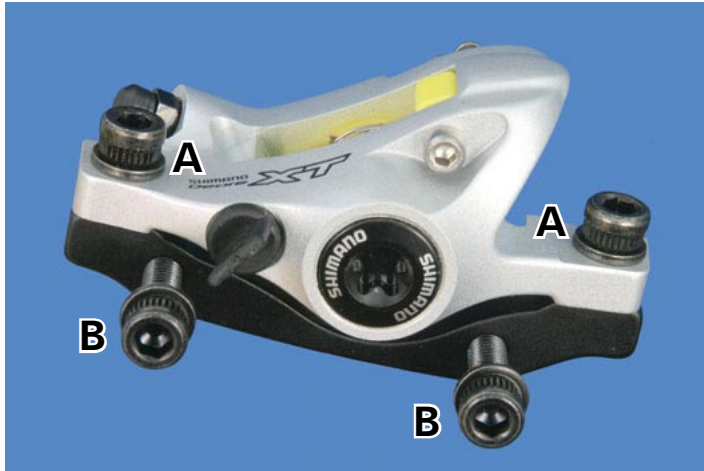
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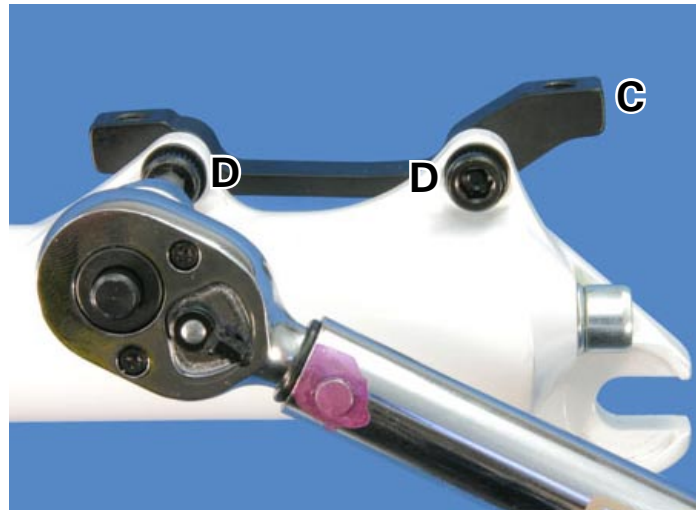
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ADAPTER-BRACKET INSTALLATION



1. Remove caliper bolts (A) and bracket bolts (B) from bracket (if any).
2. Treat bracket-bolt threads (I.S. mount only) and caliper-bolt threads with Loctite 242.



5. *I.S. mounts only:* Install bracket behind I.S. mounts, with tall end of bracket (C) closer to axle, then install bracket bolts (D) and torque both to 53–69in-lbs.

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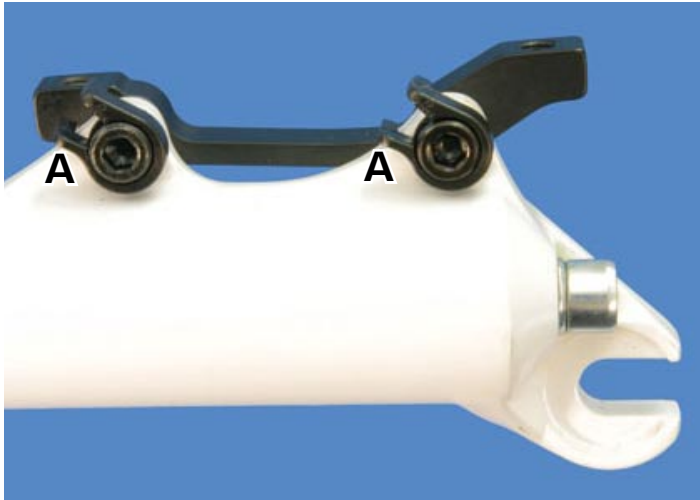
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6. ***If bracket-bolt heads are splined:*** Snap safety clips (A) onto both bracket bolts, with safety-clip tabs in most counterclockwise-possible position. ***NOTE: On some forks there is not enough clearance between lower bolt head and fork leg to fit clip.*** ***If bracket-bolt heads have holes for safety wire:*** Install safety wire now (see ***SAFETY-WIRE INSTALLATION***).

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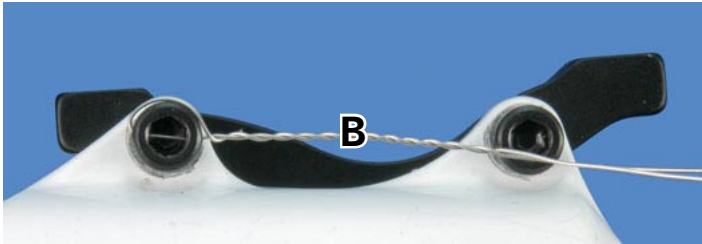
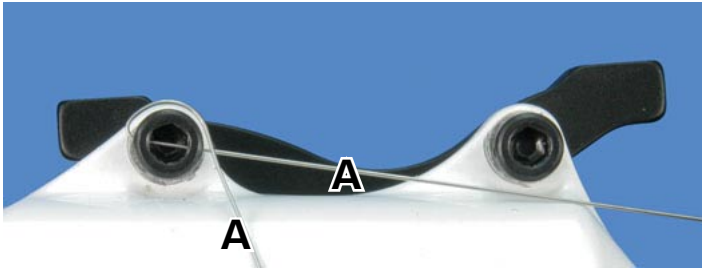
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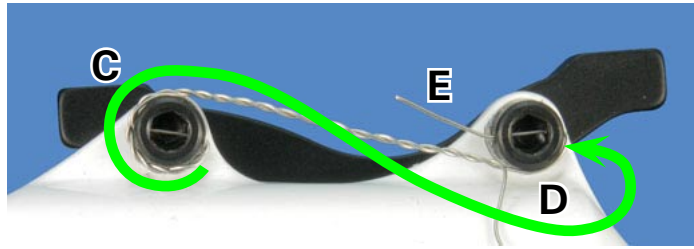
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SAFETY-WIRE INSTALLATION



1. Feed 6" safety wire (A) half-way through upper mounting-bolt head, wrap one end clockwise around bolt head to meet other end, then twist ends together tightly with pliers until twisted section (B) is approximately 50mm long.



2. Wrap twisted pair clockwise around bolt head less than one full turn (C), then pull twisted section to second bolt head (D) so that twist approaches second bolt on opposite side from where it left first bolt (twist goes diagonally from first to second bolt).
3. Insert one wire end through first wire hole in bolt head, then out second wire hole (E).



4. Wrap remaining wire end counterclockwise around second bolt until it reaches point first wire end comes out of second bolt, then tightly twist ends together (F).

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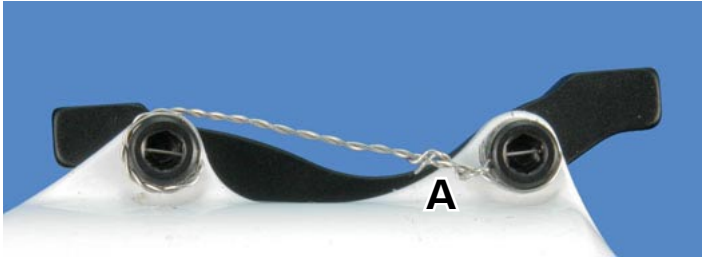
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5. Hook second twist (A) around first twist so that loose end cannot get tangled in brake mechanism.

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POST-MOUNT CALIPER INSTALLATION

1. Treat caliper bolts with Loctite 242



2. Place caliper over adapter bracket or fork posts so that oval holes line up with bracket/post holes.
3. Install caliper bolts (A) fully, then back bolts out about 1/4 to 1/2 turn. Bolts should be just loose enough to allow caliper to move freely side to side (see arrows).

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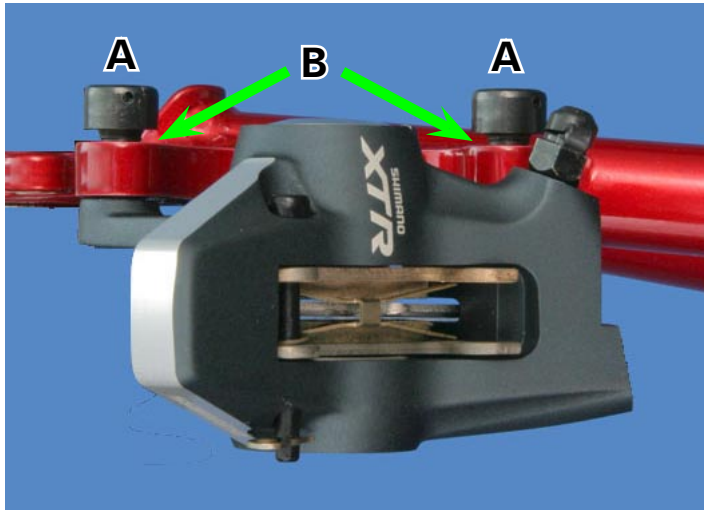
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I.S.-DIRECT CALIPER INSTALLATION

1. Treat caliper bolts (A) with Loctite 242



2. Place caliper against inside faces of I.S. mounts so that threaded holes in caliper line up with holes in I.S. mounts.
3. Install caliper bolts (A) fully, then back both bolts out about 1–2 full turns each (B).

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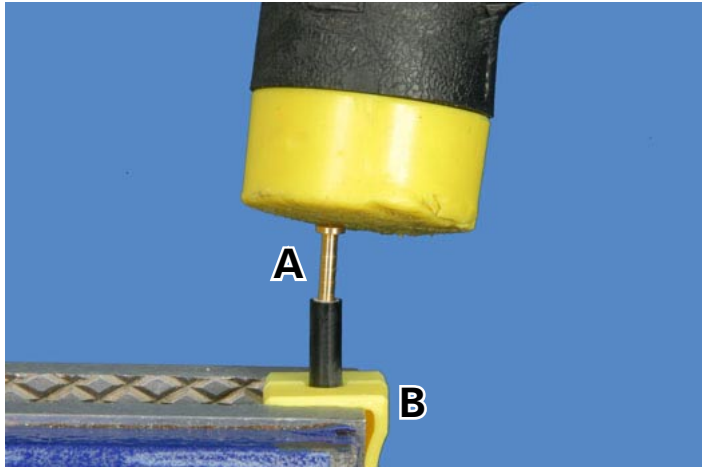
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HOSE INSTALLATION

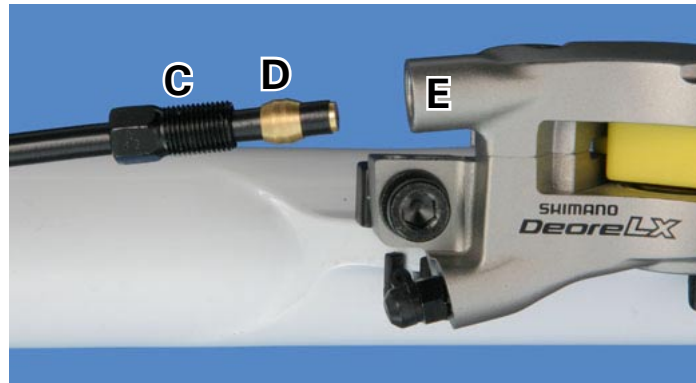
Go to *DOUBLE-BANJO TYPE* instead.

Go to *IN-LINE/BANJO COMBINATION TYPE* instead.

DOUBLE IN-LINE TYPE



1. Insert brass barbed fitting (A) into end of hose, clamp hose in clamp blocks (B) in vise, then tap barbed fitting fully in with plastic mallet.



2. Slide compression fitting (C, hex-end first) onto end of hose to be attached to caliper.
3. Slide olive fitting (D) over end of hose.
4. Grease threads on compression fitting, then insert hose fully into hole (E) in caliper.
5. Push olive down hose until it is inside caliper, then thread compression fitting into brake lever. **NOTE: Compression fitting will be removed again — do not torque!**

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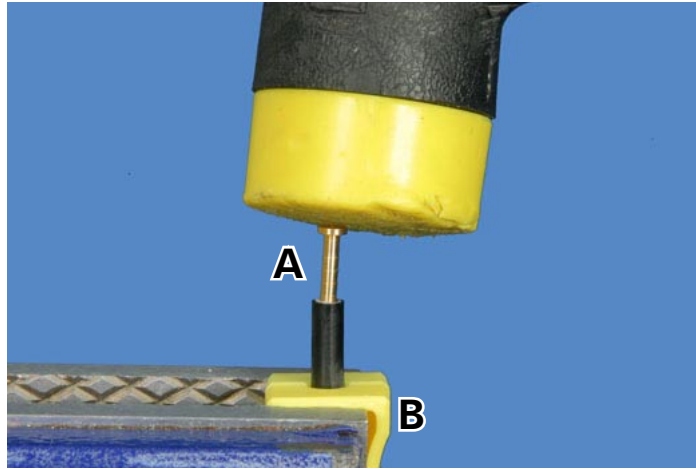
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6. **Rear brake only:** Route hose along frame or fork and temporarily secure in position. Make sure all free loops are just long enough to accommodate suspension travel without becoming hyper-extended or kinked at limits of travel. Adjust length of housing between frame and brake lever to be just long enough to accommodate 180° of handlebar rotation, then mark hose where it reaches inside tip of brake-lever body.
- Front brake only:** Route hose along fork tube and temporarily secure hose at point it departs lower tube. Adjust loop of hose to shortest possible length that allows hose to approach brake lever without an abrupt bend, then mark hose where it reaches inside tip of brake-lever body.

7. Remove hose from frame/fork and caliper, then use hose cutter to cut hose to length at mark (cut must be square and clean).



8. Insert brass barbed fitting (A) into cut end of hose, clamp hose in clamp blocks (B) in vise, then tap barbed fitting fully in with plastic mallet.

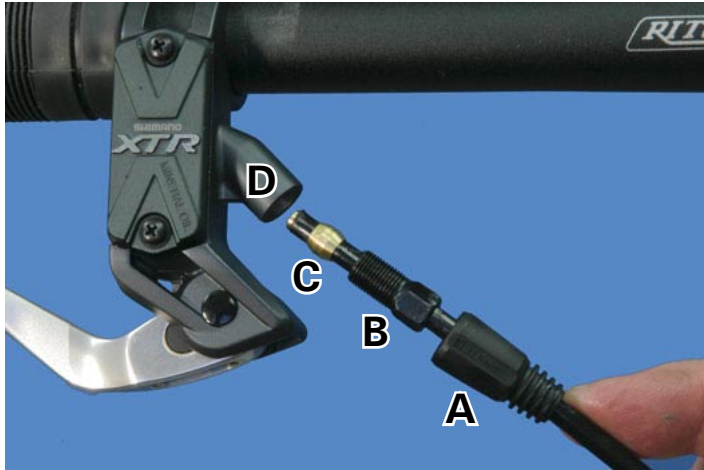
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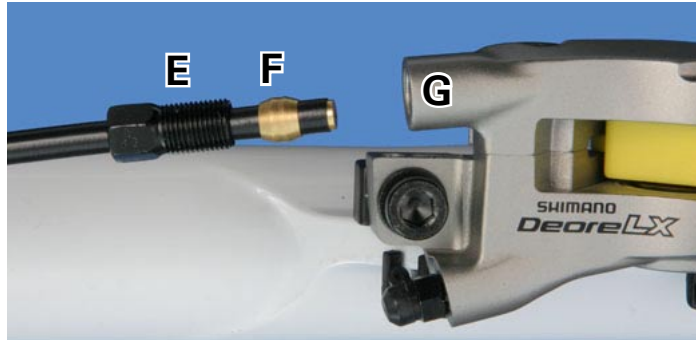
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9. Slide rubber hose protector (A, small-end first) and compression fitting (B, hex-end first) onto cut end of hose.
10. Slide olive fitting (C) over cut end of hose.
11. Grease threads on compression fitting, then insert hose fully into hole (D) in brake lever.
12. Push olive up hose until it is inside brake lever, then thread compression fitting into brake lever.
13. Reattach hose to frame or fork as necessary and secure hose in final position.



14. Install compression fitting (E, hex-end first) and olive (F) onto caliper end of hose.
15. Insert hose and olive into hole (G) in caliper, then thread compression fitting into caliper.

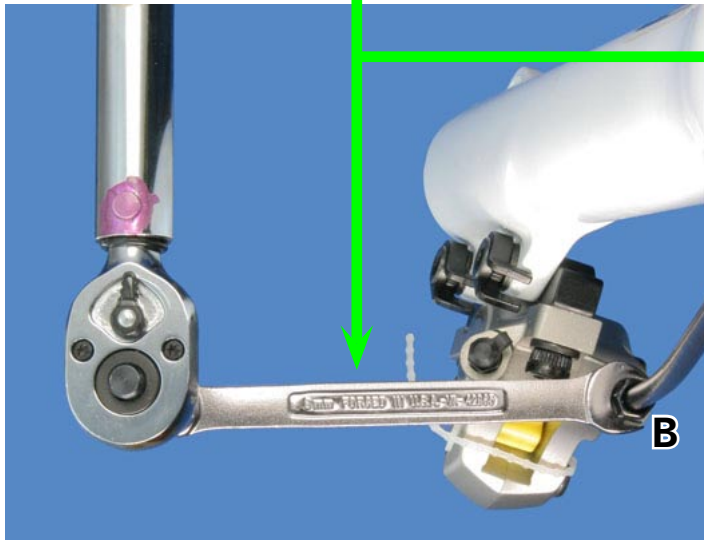
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Use an 8mm bit socket and 8mm combination wrench (at 90° to torque wrench) as a crowfoot.

16. Secure both compression fittings (A & B) to 45–60in-lbs, then slide hose protector (C) over fitting at brake lever.

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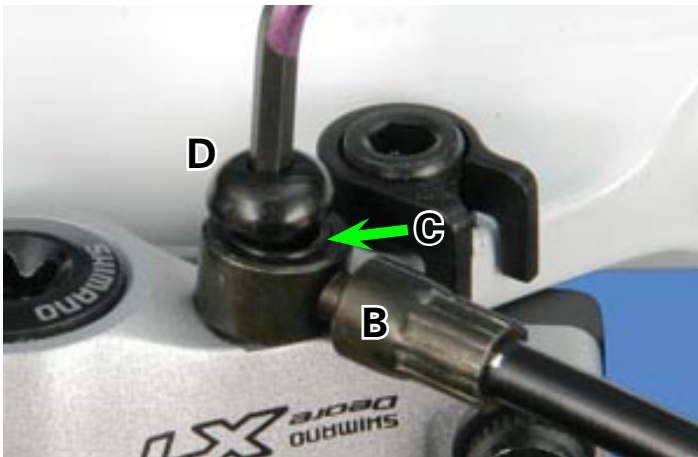
Go to **DOUBLE IN-LINE TYPE** instead.

Go to **IN-LINE/BANJO COMBINATION TYPE** instead.

DOUBLE-BANJO TYPE



1. Install O-ring (A) against face of caliper where banjo-fitting attaches.



2. Place pre-attached banjo fitting (B) over O-ring.
3. Install O-ring (C) into face of banjo fitting.

4. Install banjo-fitting bolt (D) through banjo fitting (do not secure bolt).
5. **Rear brake only:** Route hose along frame or fork and temporarily secure in position. Make sure all free loops are just long enough to accommodate suspension travel without becoming hyper-extended or kinked at limits of travel. Adjust length of housing between frame and brake lever to be just long enough to accommodate 180° of handlebar rotation, then mark hose where it reaches inside tip of brake-lever body. **Front brake only:** Route hose along fork tube and temporarily secure hose at point it departs lower tube. Adjust loop of hose to shortest possible length that allows hose to approach brake lever without an abrupt bend, then mark hose where it reaches inside tip of brake-lever body.

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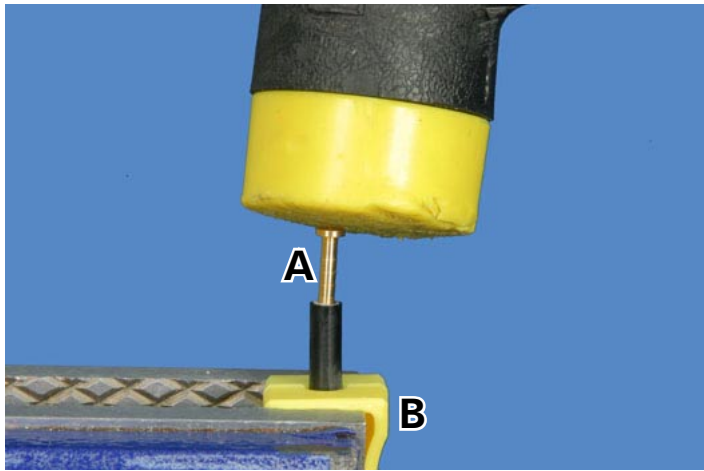
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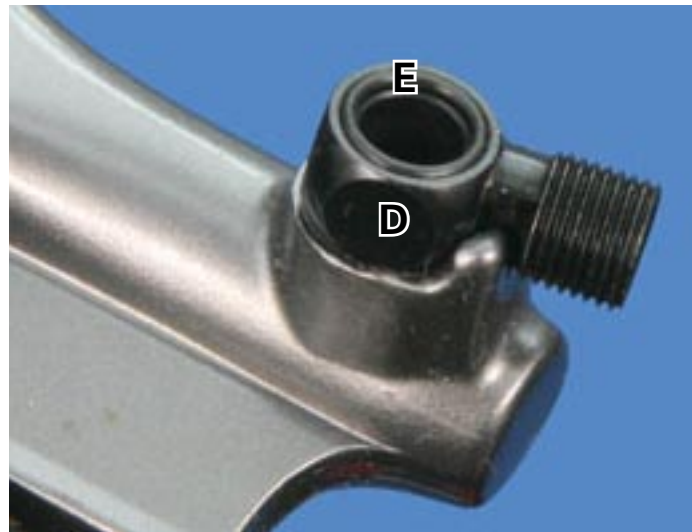
6. Remove hose from frame/fork and caliper, then use hose cutter to cut hose to length at mark (cut must be square and clean).



7. Insert brass barbed fitting (A) into cut end of hose, clamp hose in clamp blocks (B) in vise, then tap barbed fitting fully in with plastic mallet.



8. Install O-ring (C) against face of lever where banjo-fitting attaches.



9. Place non-attached banjo fitting (D) over O-ring. **NOTE: Deore XT BR-M755 hose has fitting pre-attached to hose.**
10. Install O-ring (E) into face of banjo fitting.

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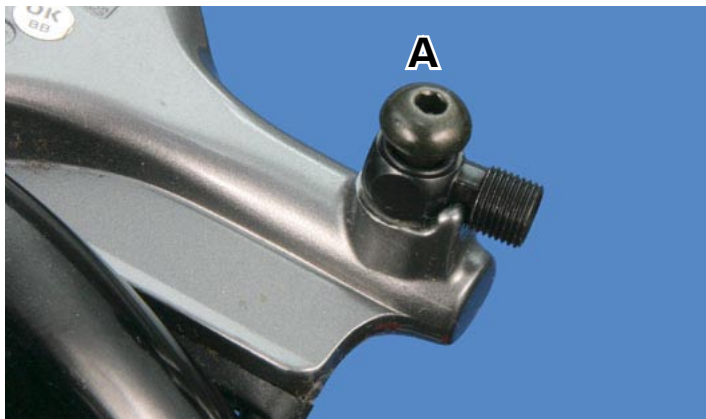
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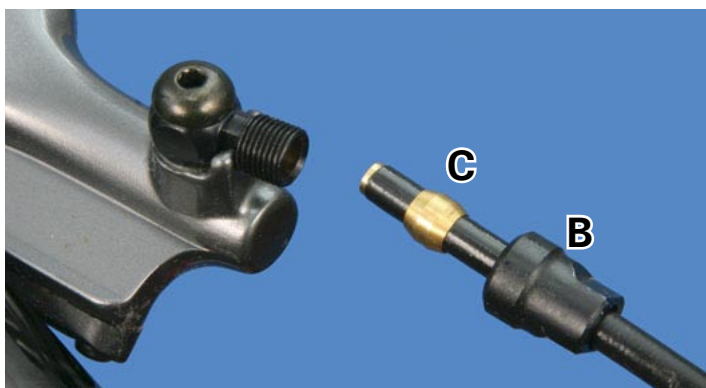
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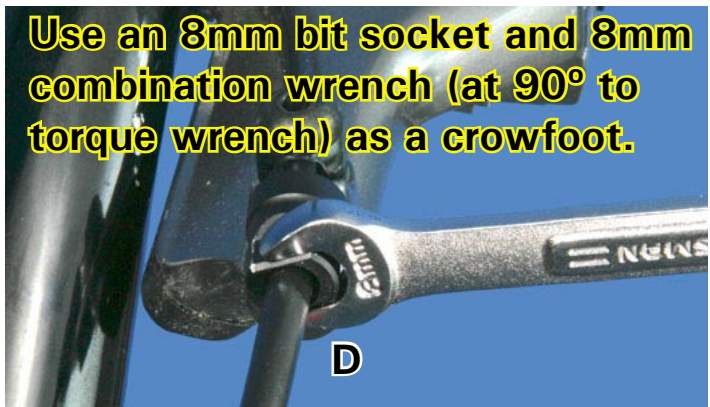


11. Install banjo-fitting bolt (A) through banjo fitting. **NOTE:** For Deore XT BR-M755, skip to step 17.

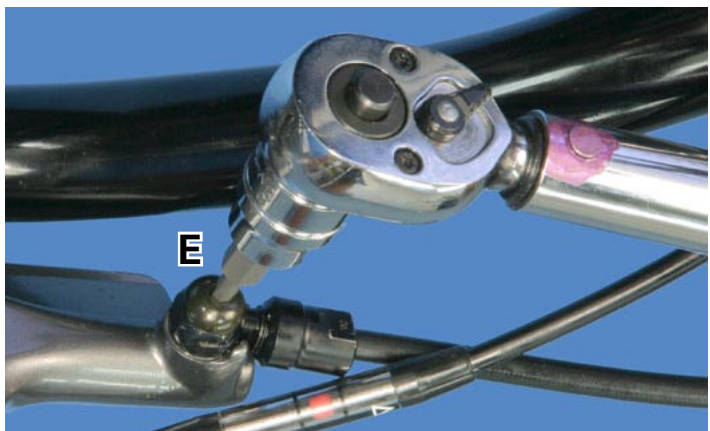


12. Slide compression fitting (B, flatted-end first) onto cut end of hose.
13. Slide olive fitting (C) over cut end of hose.
14. Grease threads on banjo fitting, then insert hose fully into end of banjo fitting.

15. Push olive up hose until it is inside banjo fitting, then thread compression fitting onto banjo fitting.



16. Secure compression fitting (D) to 45–60in-lbs.



17. Secure banjo-fitting bolt (E) to 45–60in-lbs
18. Re-attach hose to frame or fork as necessary and secure hose in final position.

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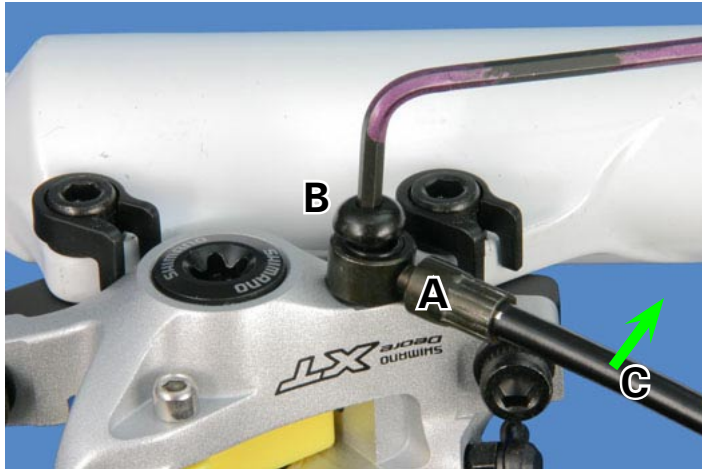
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19. Install banjo fitting (A), O-rings, and banjo-fitting bolt (B) to caliper.
20. Align hose (C) so that hose has no unnecessary bends between caliper and point hose is attached to frame or fork.



21. Secure caliper banjo-fitting bolt to 45–60in-lbs.

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