



# Technical Journal

TITLE:

**I-TPMS Low tire pressure warning**

<b>REF NO:</b> TJ 29818.9.0	<b>ISSUING DEPARTMENT:</b> Technical Service	<b>CAR MARKET:</b> United States and Canada	
<b>PARTNER:</b> 3 US 7510 Volvo Car USA		<b>ISSUE DATE:</b> 2019-08-20	<b>STATUS DATE:</b> 2019-08-27
<b>FUNC GROUP:</b> 7761	<b>FUNC DESC:</b> Pressure control	<b>Page 1 of 15</b>	

“Right first time in Time”

## Attachment

File Name	File Size
TJI-490092-1_1_0_en-US.pdf	2.1230 MB

## Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
124							2015-2016		0188517-0200260	201439-201614
134							2015-9999		0346169-9999999	201439-999952
135							2015-2016		0321938-0377263	201439-201616
136							2015-2016		0213266-0274097	201439-201619
137							2016-9999		0000001-9999999	201524-999952
138							2015-9999		0024847-9999999	201448-999952
155							2015-9999		0239301-9999999	201439-999952
156							2015-2016		0676154-0928332	201439-201616
156							2017-2017		0000001-0240387	201617-201744
157							2015-9999		0000001-9999999	201450-999952

## CSC Customer Symptom Codes

Code	Description
21	Warning lights and chimes/Tire pressure monitoring, Low tire pressure warning



## VST Operation Number

VST Operation Number	Description
98620-2	Only use when remove metal particle on encoder ring
96585-2	Troubleshooting wheels/tires/hubs

## DTC Diagnostic Trouble Codes

Control Module	Code	Fault Type
BCM	C007768	Intermittent

Rows beginning with \* are modified

Note! If using a printed copy of this Technical Journal, first check for the latest online version.

## Text

### DESCRIPTION:

If the vehicle is equipped with indirect tire pressure monitoring sensors (I-TPMS) (VDN codes: PU02, PU03, PU04), and there is a warning message in the DIM about Low tire pressure and DTC BCM-C007768, follow advice under Service.

Note: I-TPMS use the rotational speed of the tires in combination with signal analysis of the ABS sensor signals to determine if tires are properly inflated.

For VIDA "Design and Function", search for VCC-ID: VCC-473572-1

I-TPMS=Indirect

Tire Pressure Monitoring Sensors

DIM= Driver Information Module

DTC= Diagnostic Trouble Code

BCM= Brake control Module

VIDA=Vehicle Information and Diagnostics for Aftersales

ABS=Anti- Lock Brake System

RCP=Recommended Cold Tire Pressure

AWD=All Wheel Drive

### SERVICE:

Check tire condition, tire pressure and initiate a TPMS calibration according to the following method:

1. First check tire condition and that there are no visible damages or screws / nails in the tire that are causing an air leak.  
Note: The maximum difference between the tires' rolling circumference must not exceed 5%..  
Note: Defective or worn out tires should be replaced.
2. Locate the Tire label on the B-pillar and to check the recommended cold tire pressure (RCP) for the vehicle.
3. Using cold tires, check and if needed correct the tire pressure accordingly.



4. Initiate a TPMS calibration from the MY CAR menu and drive the car, the calibration is done in the background and take usually 12-15 minutes. In case the driving cycle is shorter the calibration will restart at next driving cycle, there is no confirmation when it is completed.
5. I-TPMS needs to be calibrated after every time the tire pressure has been corrected or after shifting wheels.  
Note: In case the wheels are never shifted, then it is still advisable to calibrate TPMS system at least once every 15.000 km (10.000 miles) to allow TPMS compensate for the normal tire wear.

If the problem can not be solved, then it is advisable to continue the fault tracing:

1. Check that tires and tire pressure are good.
2. \* Check if there are any unusual vibrations in the vehicle, since this could cause disturbances in the wheel speed sensor (include a function check of the concerned shock absorber).

\* If the TPMS Low tire pressure message continues:

*For wheels including a wheel hub (not AWD rear wheel):*

1. Remove the wheel and disconnect the wheel speed sensor from the knuckle.
2. Use a flashlight and look inside if any metal particle is trapped on the wheel hub encoder ring (rotate the wheel to see all area of the encoder ring).
3. If a metal particle could be found on the wheel hub encoder ring, then remove it using the attached TJ instruction.  
Note: Do not use any metal instrument that can damage the magnetic encoder ring when removing eventual metal particles.

*For AWD rear wheel:*

1. Clean and check wheel speed sensor and tooth wheel on the rear drive shaft.
2. If problems cannot be solved, replace the concerned drive shaft since it could be a deviation with the tooth wheel.

### **VEHICLE REPORT:**

Yes, please submit a Vehicle Report if the service solution described in this TJ has no effect. Use concern area "Vehicle Report" and sub concern area "Support not needed", use function group 7761.

And for our quality follow up purposes, please also report all cases where:

- tire air valves are leaking due to improper installation in the rim (only original rim from factory).
- AWD drive shafts needs to be replaced.
- metal particles are found on the wheel hub encoder ring.

**To view TJ attachment continue to next page. This TJ has one attachment.**



## Volvo Car Customer Service

TJ Instruction VCC-490092-1

<b>Title</b>	Wheel hub splash shield	<b>Page</b>	1 ( 12 )
<b>Action</b>	Replacement	<b>Operation number:</b>	98620-2

<b>Issue</b>	<b>Date</b>	<b>Reason</b>
1	2015-12	First issue

### Affected vehicles

<b>Model year</b>	<b>Model</b>
2011, 2012, 2013, 2014, 2015, 2016, 2017	S60 (11-)
2016, 2017	S60 Cross Country
2014, 2015, 2016, 2017	S60L
2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016	S80 (07-)
2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015	S80L
2011, 2012, 2013, 2014, 2015, 2016, 2017	V60
2015, 2016, 2017	V60 Cross Country
2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016	V70 (08-)
2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017	XC60
2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016	XC70 (08-)

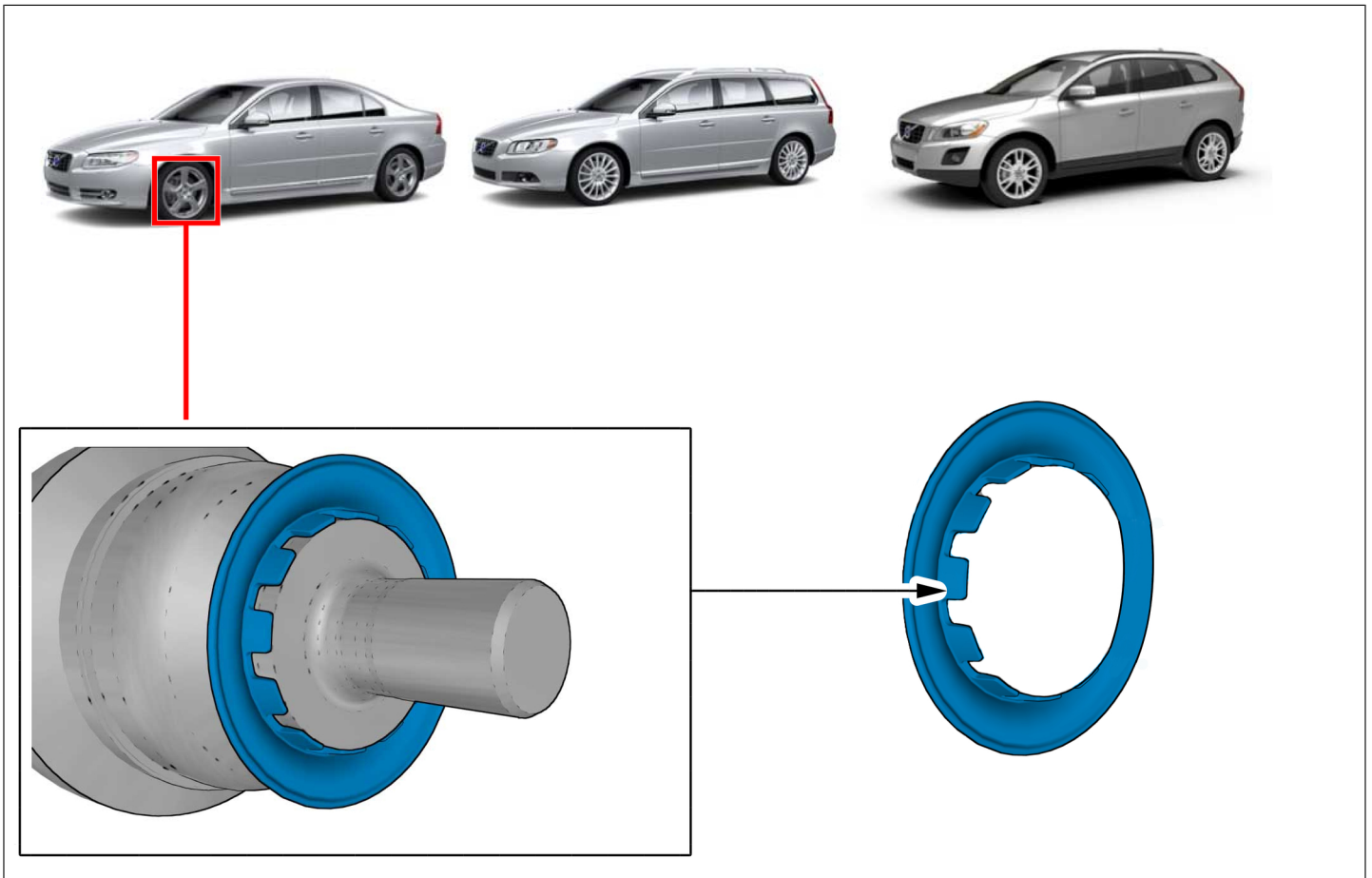
**Materials**

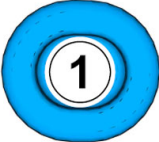



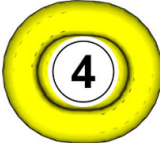
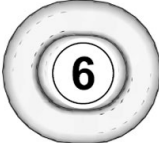

<b>Materials</b>	<b>Qty.</b>	<b>Part No.</b>	<b>Notes</b>
Flange screw	1.0	999251	Only XC60/70,S/V60 CC;
Flange lock nut	1.0	999475	Only S/V60,S80,V70;
Sems screw	1.0	30640878	ALL;
Flange screw	1.0	30741260	Only S/V60,S80,V70;

**Special tools**

<b>Description</b>	<b>Part No.</b>
Press tool	999 7251
Hydraulic hole cylinder	951 2923
Lever	999 7076
Press tool	999 7310

Orientation view



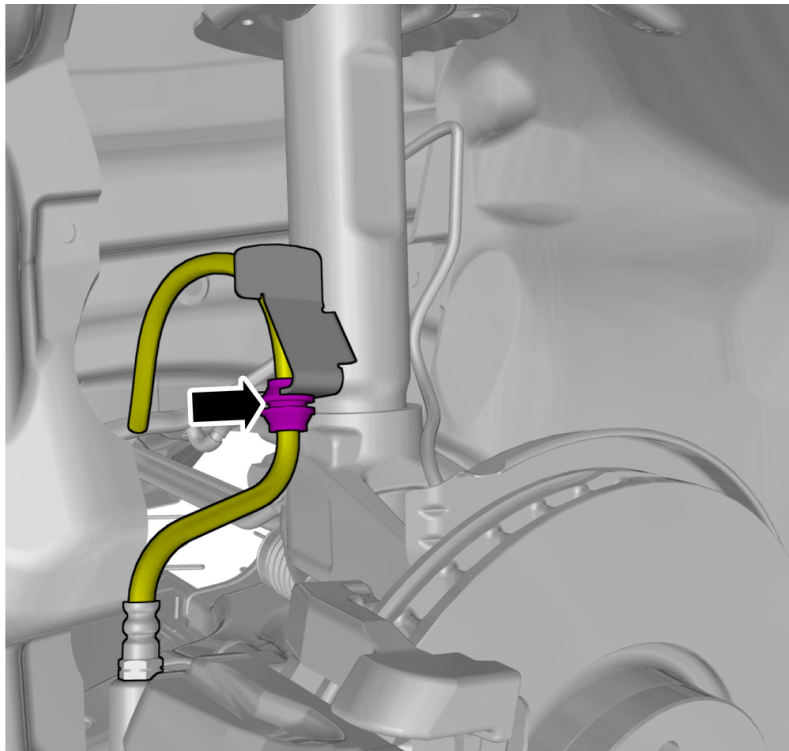
		
		
		

**Note! This colour chart displays (in colour print and electronic version) the importance of the different colours used in the images of the method steps.**

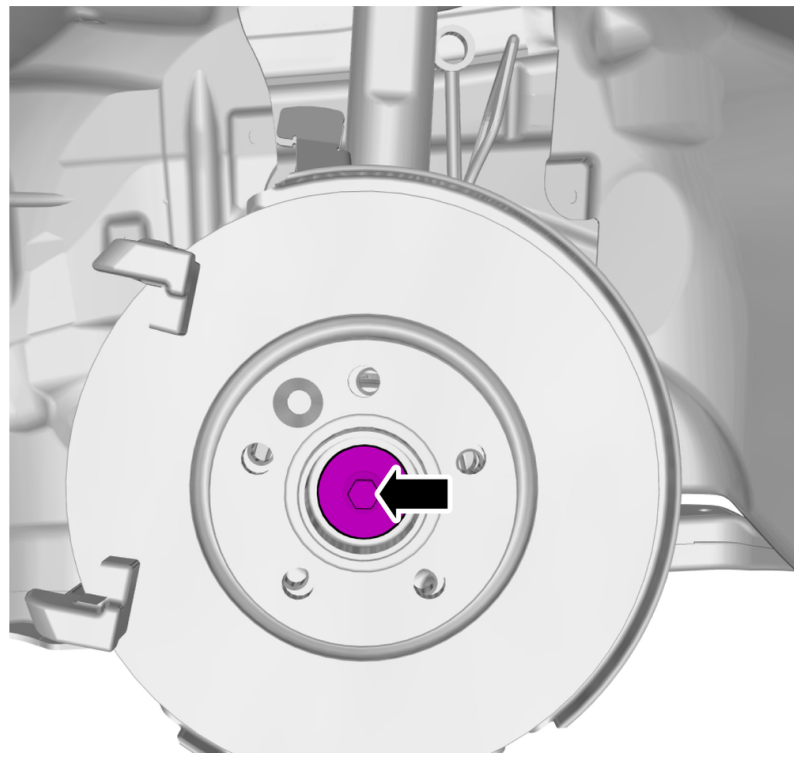
- 1 . Used for focused component, the component with which you will do something.
- 2 . Used as extra colors when you need to show or differentiate additional parts.
- 3 . Used for attachments that are to be removed/installed. May be screws, clips, connectors, etc.
- 4 . Used when the component is not fully removed from the vehicle but only hung to the side.
- 5 . Used for standard tools and special tools.
- 6 . Used as background color for vehicle components.

## Removal

Remove relevant side front wheel , refer to:  
Removal, replacement and installation  
7 - Springs and wheels  
77 - Wheels, tyres, hubs  
771 - wheel and wheel trim



Fold marked part to one side.

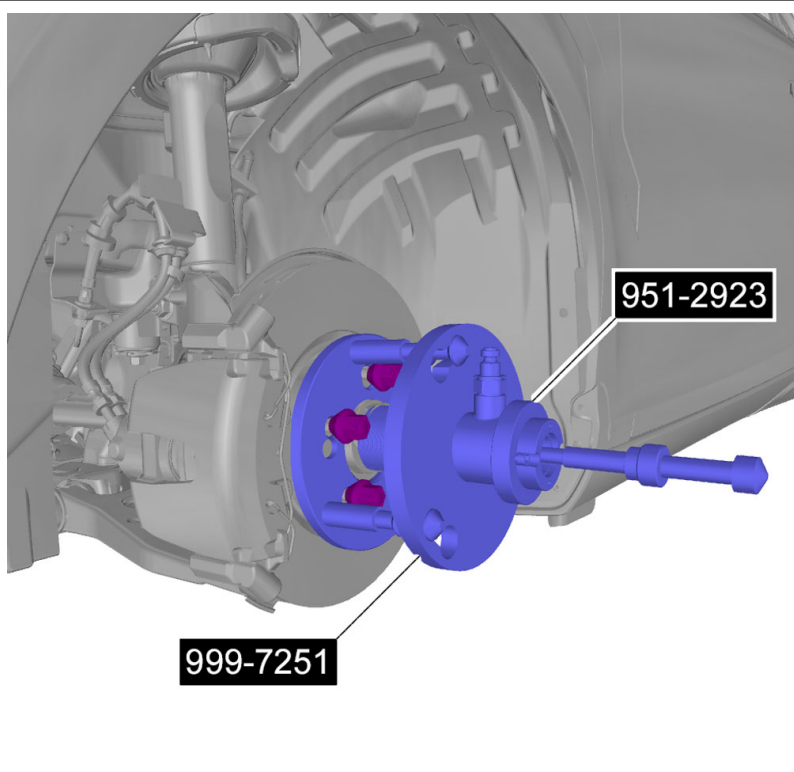


**Caution! Make sure that a new bolt is installed.**

Remove the screw.

**Torque:**

- Stage 1 : Driveshaft to wheel hub (front) , 35 Nm
- Stage 2 : Driveshaft to wheel hub (front) , 90°

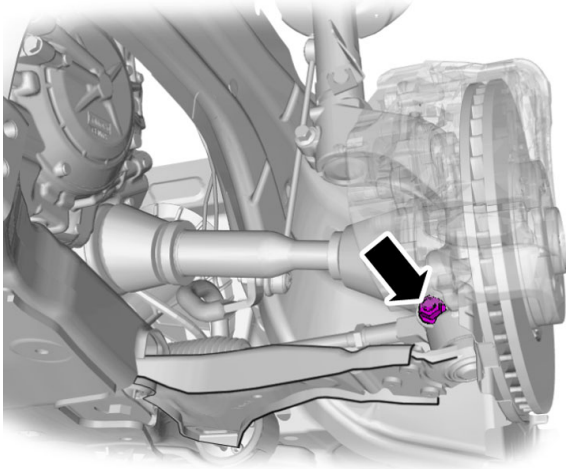


Special Tool: T9997251, Press tool

Special Tool: T9512923, Hydraulic hole cylinder



Concerns models XC60, XC70, V60CC, S60CC



**Caution! Make sure that a new bolt is installed.**

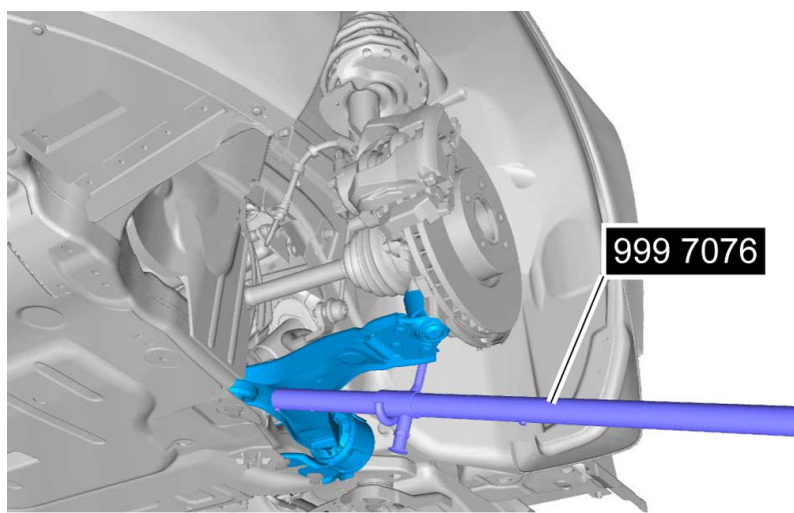
Remove the screw.

**Torque:** 2008 XC70 (08-), 2008 XC70 (08-), 2009 XC70 (08-), 2009 XC70 (08-), 2009 XC60, 2009 XC60, 2010 XC70 (08-), 2010 XC70 (08-), 2010 XC60, 2010 XC60, 2011 XC70 (08-), 2011 XC70 (08-), 2011 XC60, 2011 XC60, 2012 V70 (08-), 2012 V70 (08-), 2012 XC70 (08-), 2012 XC70 (08-), 2012 XC60, 2012 XC60, 2013 V70 (08-), 2013 V70 (08-), 2013 XC70 (08-), 2013 XC70 (08-), 2013 XC60, 2013 XC60, 2014 V70 (08-), 2014 V70 (08-), 2014 XC70 (08-), 2014 XC70 (08-), 2014 XC60, 2014 XC60, 2015 V70 (08-), 2015 V70 (08-), 2015 XC70 (08-), 2015 XC70 (08-), 2015 XC60, 2015 XC60, 2016 XC60, 2016 XC60, 2015 V60 Cross Country, 2015 V60 Cross Country, 2016 V70 (08-), 2016 V70 (08-), 2016 XC70 (08-), 2016 XC70 (08-), 2016 V60 Cross Country, 2016 V60 Cross Country, 2016 S60 Cross Country, 2016 S60 Cross Country, 2017 S60 Cross Country, 2017 S60 Cross Country, 2017 V60 Cross Country, 2017 V60 Cross Country, 2017 XC60, 2017 XC60

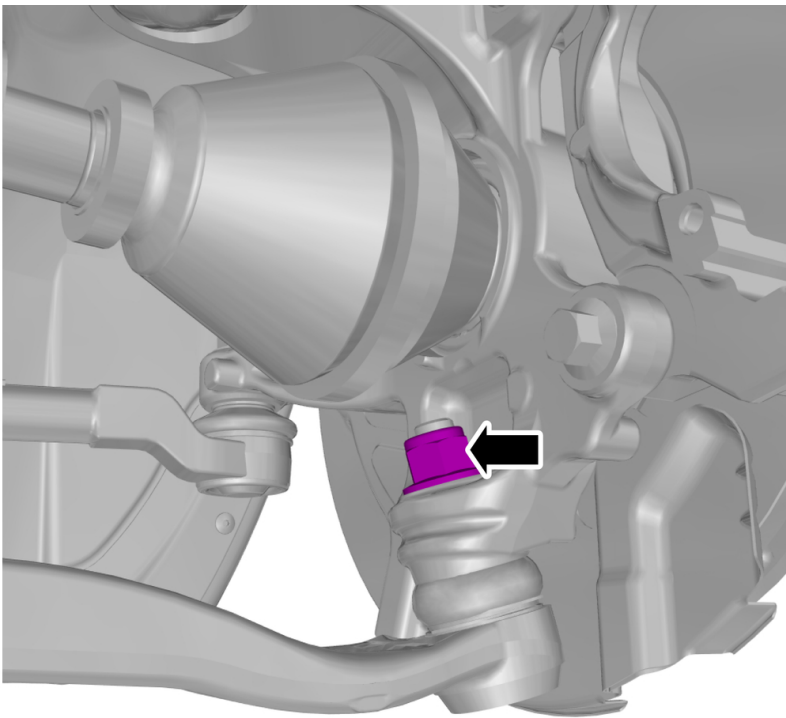
Ball joint to wheel knuckle , 110 Nm

**Torque:** 2007 S80 (07-), 2007 S80 (07-), 2008 S80 (07-), 2008 S80 (07-), 2008 V70 (08-), 2008 V70 (08-), 2009 S80 (07-), 2009 S80 (07-), 2009 V70 (08-), 2009 V70 (08-), 2009 S80L, 2009 S80L, 2010 V70 (08-), 2010 V70 (08-), 2010 S80 (07-), 2010 S80 (07-), 2010 S80L, 2010 S80L, 2011 S60 (11-), 2011 S60 (11-), 2011 V60, 2011 V60, 2011 S80 (07-), 2011 S80 (07-), 2011 V70 (08-), 2011 V70 (08-), 2011 S80L, 2011 S80L, 2012 S80 (07-), 2012 S80 (07-), 2012 S60 (11-), 2012 S60 (11-), 2012 S80L, 2012 S80L, 2012 V60, 2012 V60, 2013 S80 (07-), 2013 S80 (07-), 2013 S80L, 2013 S80L, 2013 S60 (11-), 2013 S60 (11-), 2013 V60, 2013 V60, 2008 S80L, 2008 S80L, 2014 S80 (07-), 2014 S80 (07-), 2014 S80L, 2014 S80L, 2014 S60 (11-), 2014 S60 (11-), 2014 S60L, 2014 S60L, 2014 V60, 2014 V60, 2015 S80 (07-), 2015 S80 (07-), 2015 S60 (11-), 2015 S60 (11-), 2015 V60, 2015 V60, 2015 S60L, 2015 S60L, 2016 S60 (11-), 2016 S60 (11-), 2016 V60, 2016 V60, 2016 S80 (07-), 2016 S80 (07-), 2016 S60L, 2016 S60L, 2015 S80L, 2015 S80L, 2017 S60 (11-), 2017 S60 (11-), 2017 S80 (07-), 2017 S80 (07-), 2017 S60L, 2017 S60L

Special Tool: T9997076, Lever



Applies to all other vehicles



**Caution! Make sure that a new nut is installed.**

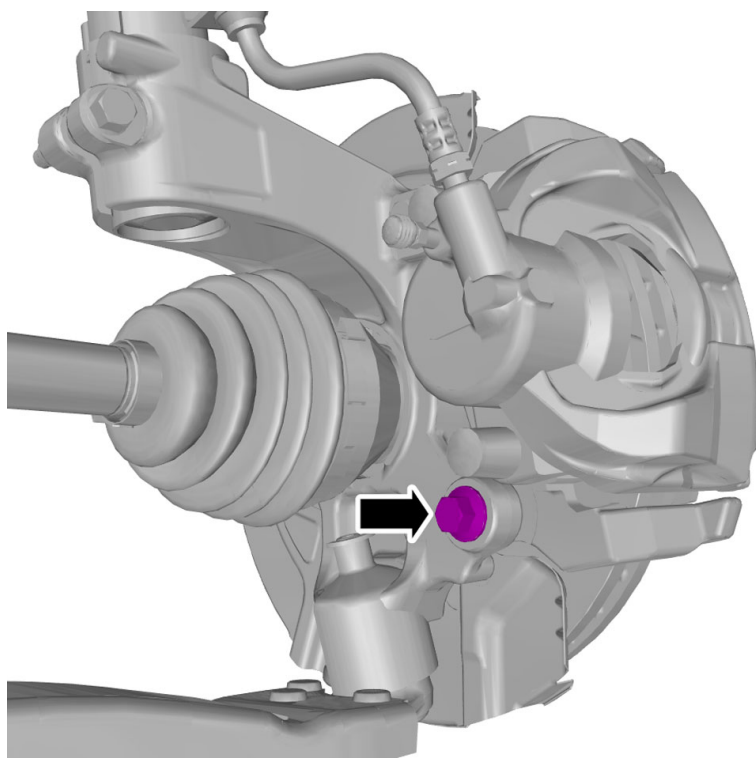
**Caution! Make sure that the ball joint ball does not rotate.**

Remove the nut.

**Torque:** 2008 XC70 (08-), 2008 XC70 (08-), 2009 XC70 (08-), 2009 XC70 (08-), 2009 XC60, 2009 XC60, 2010 XC70 (08-), 2010 XC70 (08-), 2010 XC60, 2010 XC60, 2011 XC70 (08-), 2011 XC70 (08-), 2011 XC60, 2011 XC60, 2012 V70 (08-), 2012 V70 (08-), 2012 XC70 (08-), 2012 XC70 (08-), 2012 XC60, 2012 XC60, 2013 V70 (08-), 2013 V70 (08-), 2013 XC70 (08-), 2013 XC70 (08-), 2013 XC60, 2013 XC60, 2014 V70 (08-), 2014 V70 (08-), 2014 XC70 (08-), 2014 XC70 (08-), 2014 XC60, 2014 XC60, 2015 V70 (08-), 2015 V70 (08-), 2015 XC70 (08-), 2015 XC70 (08-), 2015 XC60, 2015 XC60, 2016 XC60, 2016 XC60, 2015 V60 Cross Country, 2015 V60 Cross Country, 2016 V70 (08-), 2016 V70 (08-), 2016 XC70 (08-), 2016 XC70 (08-), 2016 V60 Cross Country, 2016 V60 Cross Country, 2016 S60 Cross Country, 2016 S60 Cross Country, 2017 S60 Cross Country, 2017 S60 Cross Country, 2017 V60 Cross Country, 2017 V60 Cross Country, 2017 XC60, 2017 XC60

Ball joint to wheel knuckle , 110 Nm

**Torque:** 2007 S80 (07-), 2007 S80 (07-), 2008 S80 (07-), 2008 S80 (07-), 2008 V70 (08-), 2008 V70 (08-), 2009 S80 (07-), 2009 S80 (07-), 2009 V70 (08-), 2009 V70 (08-), 2009 S80L, 2009 S80L, 2010 V70 (08-), 2010 V70 (08-), 2010 S80 (07-), 2010 S80 (07-), 2010 S80L, 2010 S80L, 2011 S60 (11-), 2011 S60 (11-), 2011 V60, 2011 V60, 2011 S80 (07-), 2011 S80 (07-), 2011 V70 (08-), 2011 V70 (08-), 2011 S80L, 2011 S80L, 2012 S80 (07-), 2012 S80 (07-), 2012 S60 (11-), 2012 S60 (11-), 2012 S80L, 2012 S80L, 2012 V60, 2012 V60, 2013 S80 (07-), 2013 S80 (07-), 2013 S80L, 2013 S80L, 2013 S60 (11-), 2013 S60 (11-), 2013 V60, 2013 V60, 2008 S80L, 2008 S80L, 2014 S80 (07-), 2014 S80 (07-), 2014 S80L, 2014 S80L, 2014 S60 (11-), 2014 S60 (11-), 2014 S60L, 2014 S60L, 2014 V60, 2014 V60, 2015 S80 (07-), 2015 S80 (07-), 2015 S60 (11-), 2015 S60 (11-), 2015 V60, 2015 V60, 2015 S60L, 2015 S60L, 2016 S60 (11-), 2016 S60 (11-), 2016 V60, 2016 V60, 2016 S80

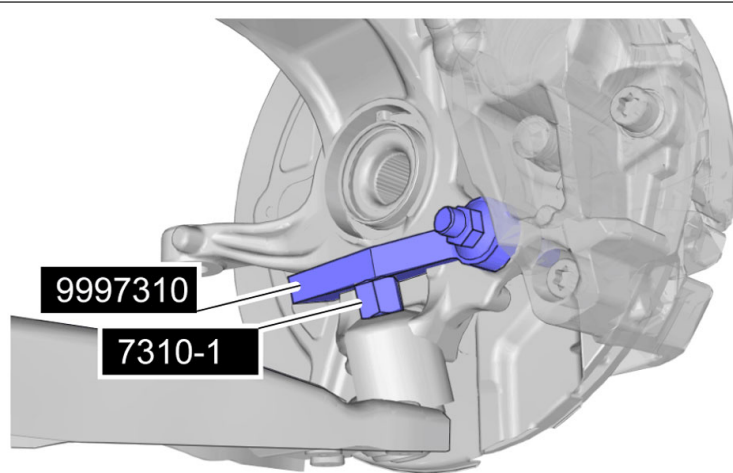


**Caution! Make sure that a new bolt is installed.**

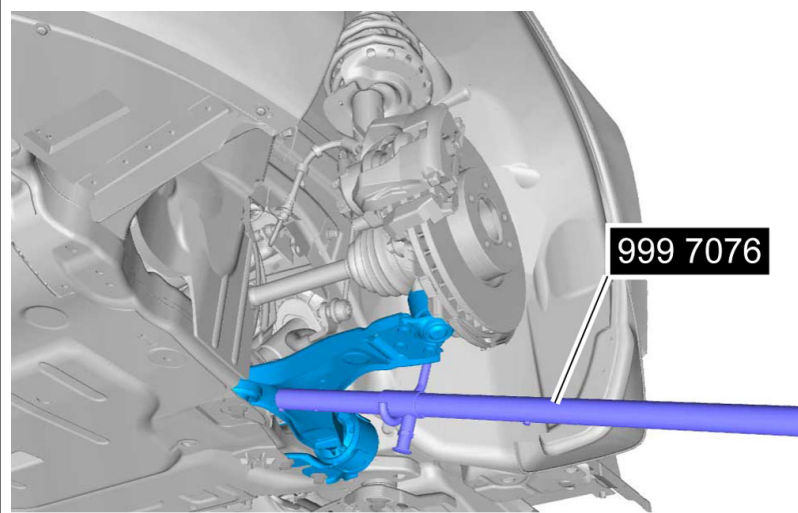
Remove the screw.

**Torque:**

Mount front brake caliper , 200 Nm

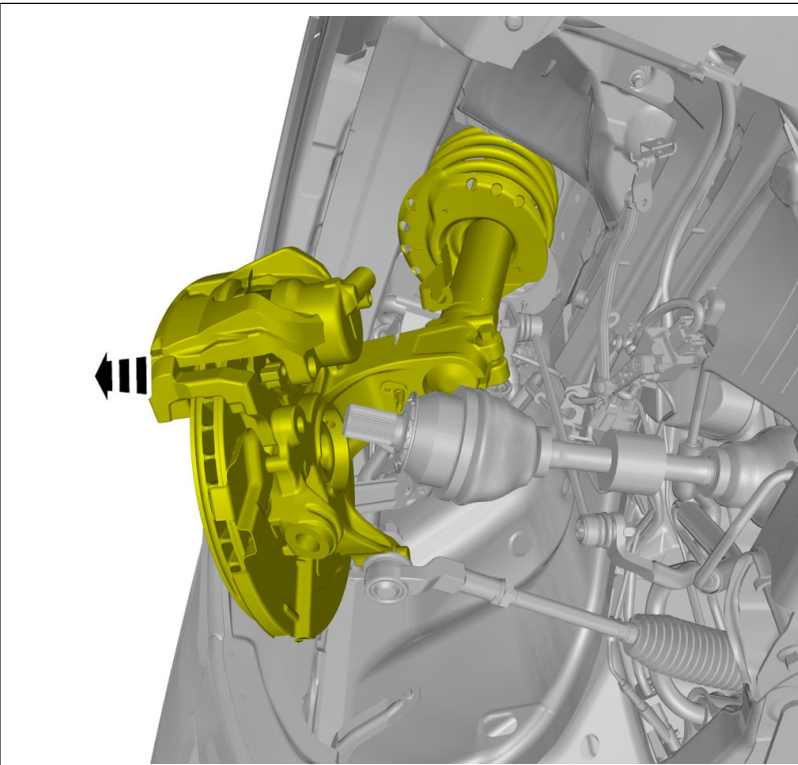


Special Tool: T9997310, Press tool

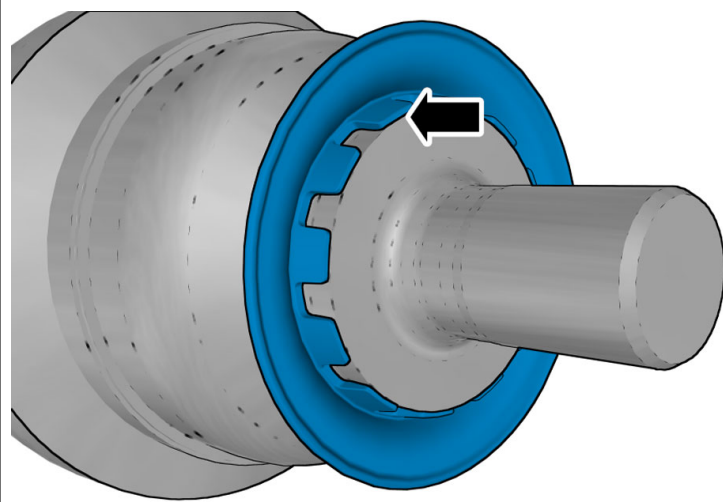


Special Tool: T9997076, Lever

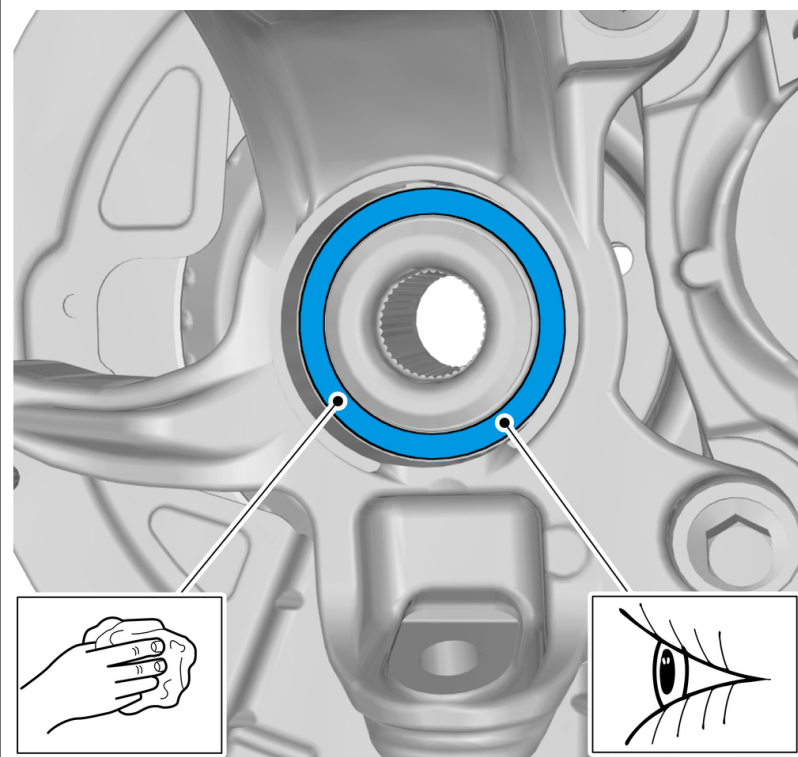
All vehicles



Fold marked part to one side.



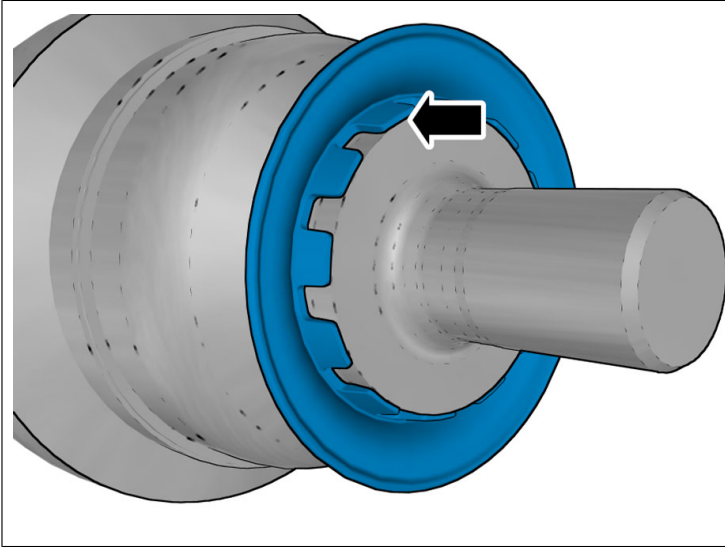
Remove the marked part.



**Caution! Make sure that the surface is clean and free of foreign material.**

Clean the marked area.

**Installation**



**Caution!** Make sure that the surface is clean and free of foreign material.

**Note!** Make sure that a new component is installed.

**Note!** Make sure that the component is installed.

To install, reverse the removal procedure.