

Service Manual: AUTOMATIC TRANSMISSION COOLING
SYSTEM

SPECIFICATIONS > FASTENER SPECIFICATIONS

Application	Specification	
	Metric	English
Range Selector Lever Cable Heat Shield Bolt (LT1 With M5U Only)	9 N.m	80 lb in
Side Underbody Front Air Deflector Bolt (Pipe Retaining Point) (LT1 With M5U or MM6 Only)	9 N.m	80 lb in
Transmission Fluid Auxiliary Cooler Bracket Bolt (LT1 With M5U or MM6 Only)	9 N.m	80 lb in
Transmission Fluid Auxiliary Cooler Bracket Nut (LT1 With M5U or MM6 Only)	9 N.m	80 lb in
Transmission Fluid Cooler Pipe Bracket Bolt (Rear Differential Hose Bracket Retaining Point) (LT1 With M5U or MM6 Only)	9 N.m	80 lb in
Transmission Fluid Cooler Pipe Clip Bolt (Pipe Retaining Points Along Vehicle) (LGX With M13, With 1LE Package) (LGX With M5T, With V03) (LGX With M5T, Without V03) (LT1 With M5U or MM6)	9 N.m	80 lb in
Transmission Fluid Cooler Pipe Clip Bolt (Transmission Connection Interface) (LGX With M5T, With V03) (LGX With M5T, With V03) (LT1 With M5U) (LTG With M5T)	22 N.m	16 lb ft
Transmission Fluid Cooler Pipe Clip Bolt (Transmission - Right Side) (LT1 With M5U Only)	22 N.m	16 lb ft
Transmission Fluid Cooler Pipe Fitting (Radiator Fitting) (All Models)	20 N.m	15 lb ft
Transmission Fluid Cooler Pipe Nut (Pipe Retaining Points Along Vehicle) (LTG With M5T)	9 N.m	80 lb in
Transmission Fluid Cooler Pipe Stud (Pipe Retaining Point) (LGX With M13, With 1LE Package) (LGX With M5T, Without V03) (LTG With M5T)	22 N.m	16 lb ft

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (TREMEC 6-SPEED)

GM studies indicate that plugged or restricted transmission oil coolers and pipes cause insufficient transmission lubrication and elevated operating temperatures which can lead to premature transmission failure. Many repeat repair cases could have been prevented by following published procedures for transmission oil cooler flushing and flow checking. This procedure includes flow checking and flushing the auxiliary transmission oil cooler, if equipped.



NOTE:

*Use the **DT-45096** transmission oil cooling system flush and flow test tool or equivalent to flush and flow test the transmission oil cooler and the oil cooler pipes after the transmission is removed for repairs.*

Only use the appropriate GM automatic transmission fluid when doing a repair on a GM transmission.

If the fluid in the **DT-45096** transmission oil cooling system flush and flow test tool is different than what is used in the transmission, after performing the flush and flow test, use compressed air to blow the residual transmission fluid out of the oil cooler and lines.

Time allowance for performing the cooler flow checking and flushing procedure has been included in the appropriate labor time guide operations since the 1987 model year. The service procedure steps for oil cooler flushing and flow testing are as follows:

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > COOLER FLOW CHECK AND FLUSHING STEPS

1. Machine Set-up
2. Determine Minimum Flow Rate
3. Back Flush
4. Forward Flush
5. Flow Test
6. Code Recording Procedure
7. Clean-up

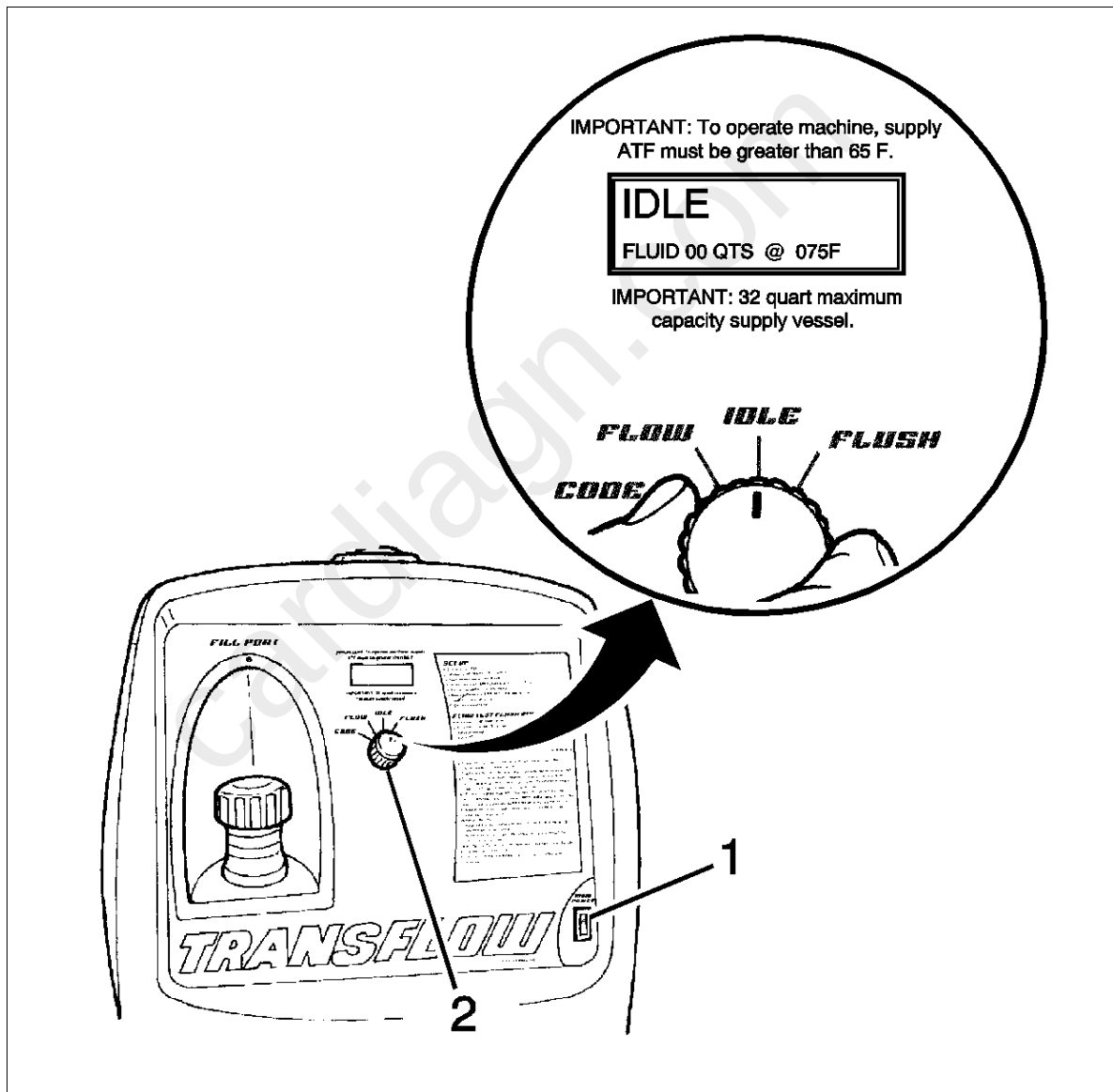
Special Tools

- **DT-45096** Transmission Oil Cooling System Flush and Flow Test Tool
- **J-35944-200** Transmission Cooler Flushing Adapter

- **J-35944-200A** Transmission Cooler Flushing Adapter
- Shop air supply with water/oil filters, regulator and pressure gauge-minimum 90 psi
- Eye protection
- Rubber gloves

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > MACHINE SET-UP

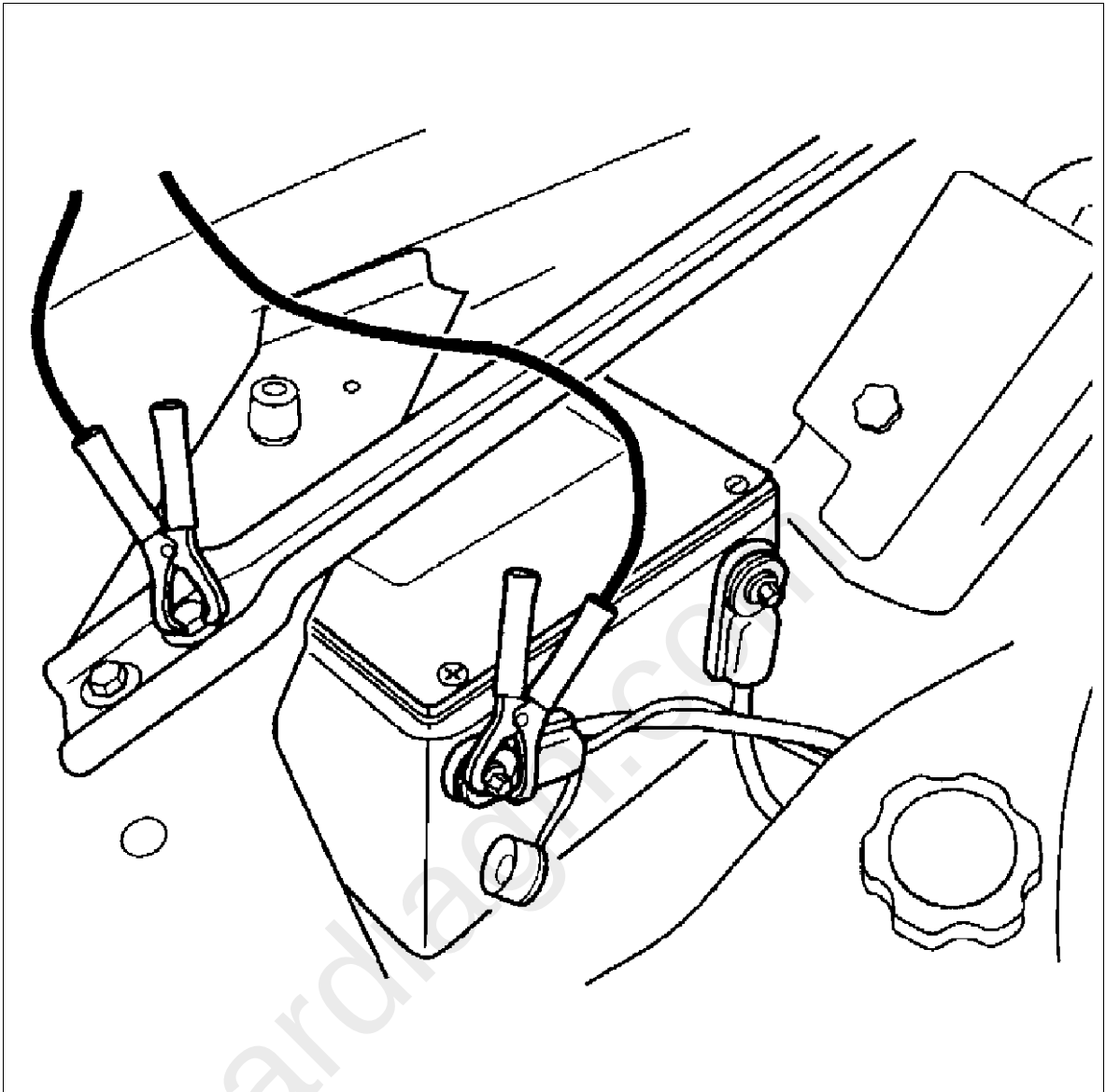
Fig 1: Main Power Switch & Main Function Switch



Courtesy of GENERAL MOTORS COMPANY

1. Verify that the main power switch (1) is in the OFF position.
2. Place the main function switch (2) in the IDLE position.

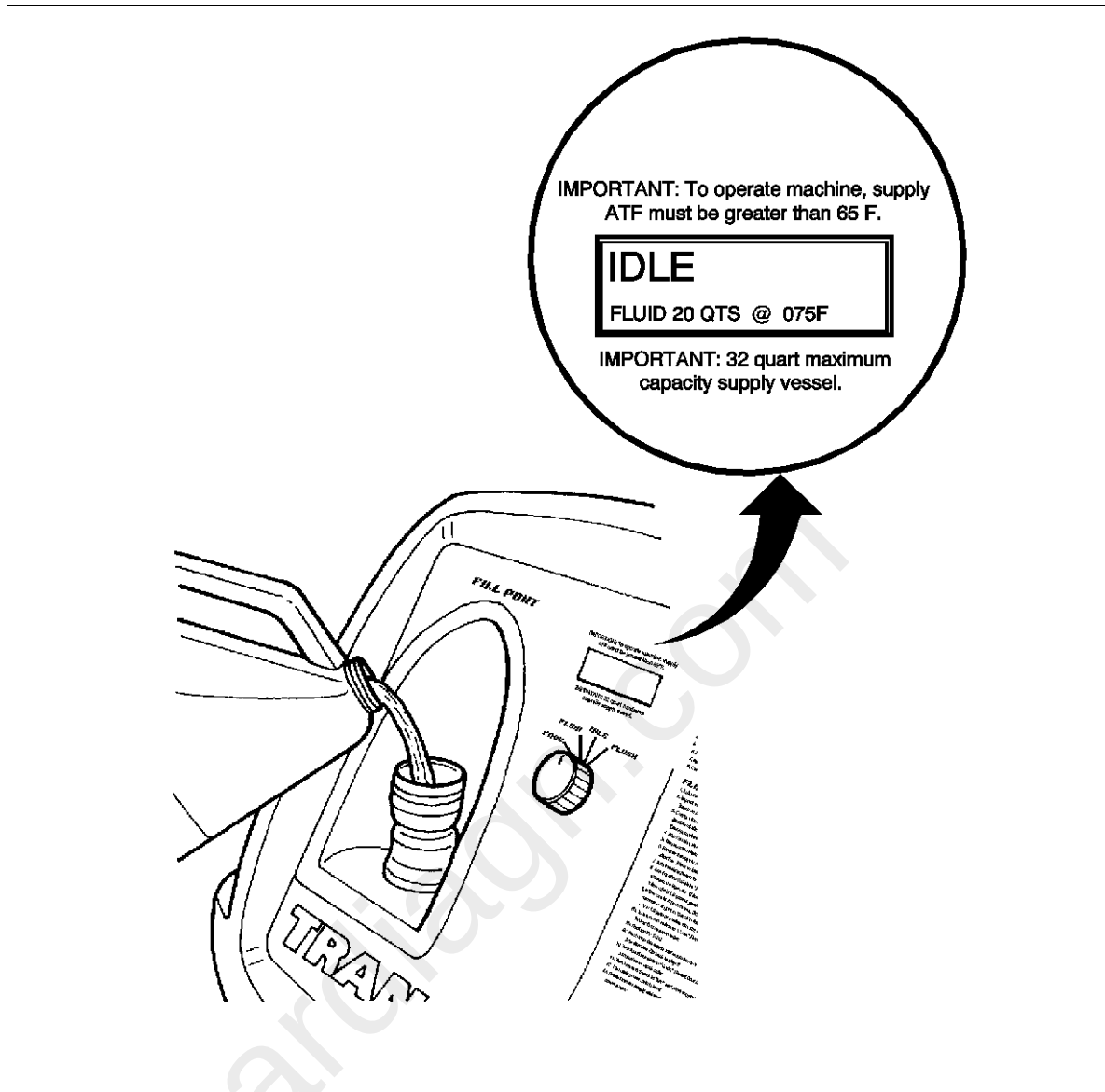
Fig 2: 12V DC Power Source



Courtesy of GENERAL MOTORS COMPANY

3. Connect **DT-45096** flow test tool to the vehicle 12-volt DC power source by connecting the red battery clip to the positive (+) battery post on the vehicle and connect the negative (-) lead to a known good chassis ground.
4. Turn the main power switch to the ON position.

Fig 3: Supply Tank With Transmission Fluid



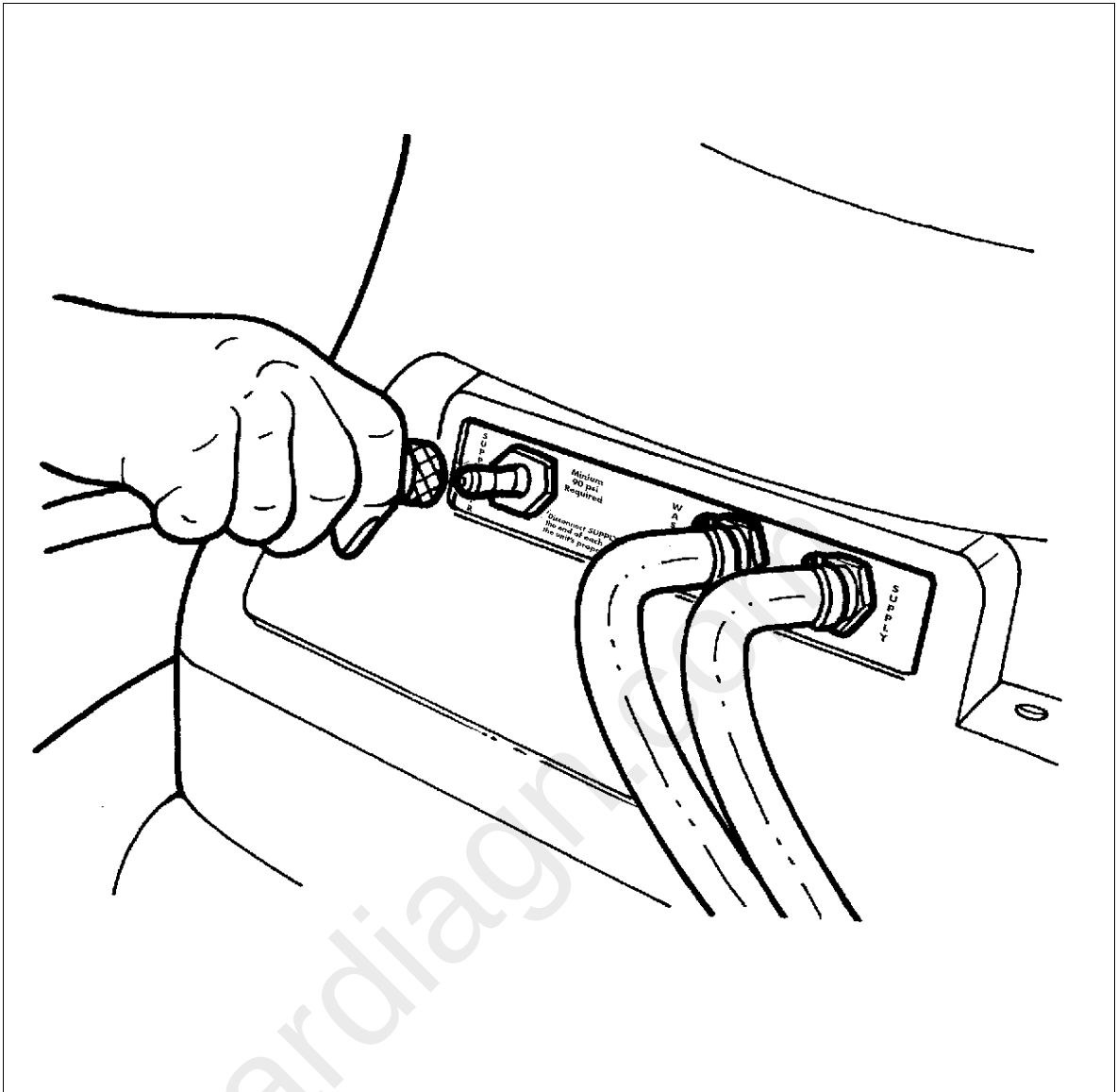
Courtesy of GENERAL MOTORS COMPANY

 CAUTION:

Do not overfill the supply vessel. Damage to the unit may result. To verify the fluid level, view the LCD screen display while filling the unit, to ensure the fluid level does not exceed 30 L (32 qt).

5. Fill the supply tank with the appropriate GM automatic transmission fluid through the fill port.
6. Install and tighten the fill cap.

Fig 4: Shop Air Supply Hose To Quick-Disconnect

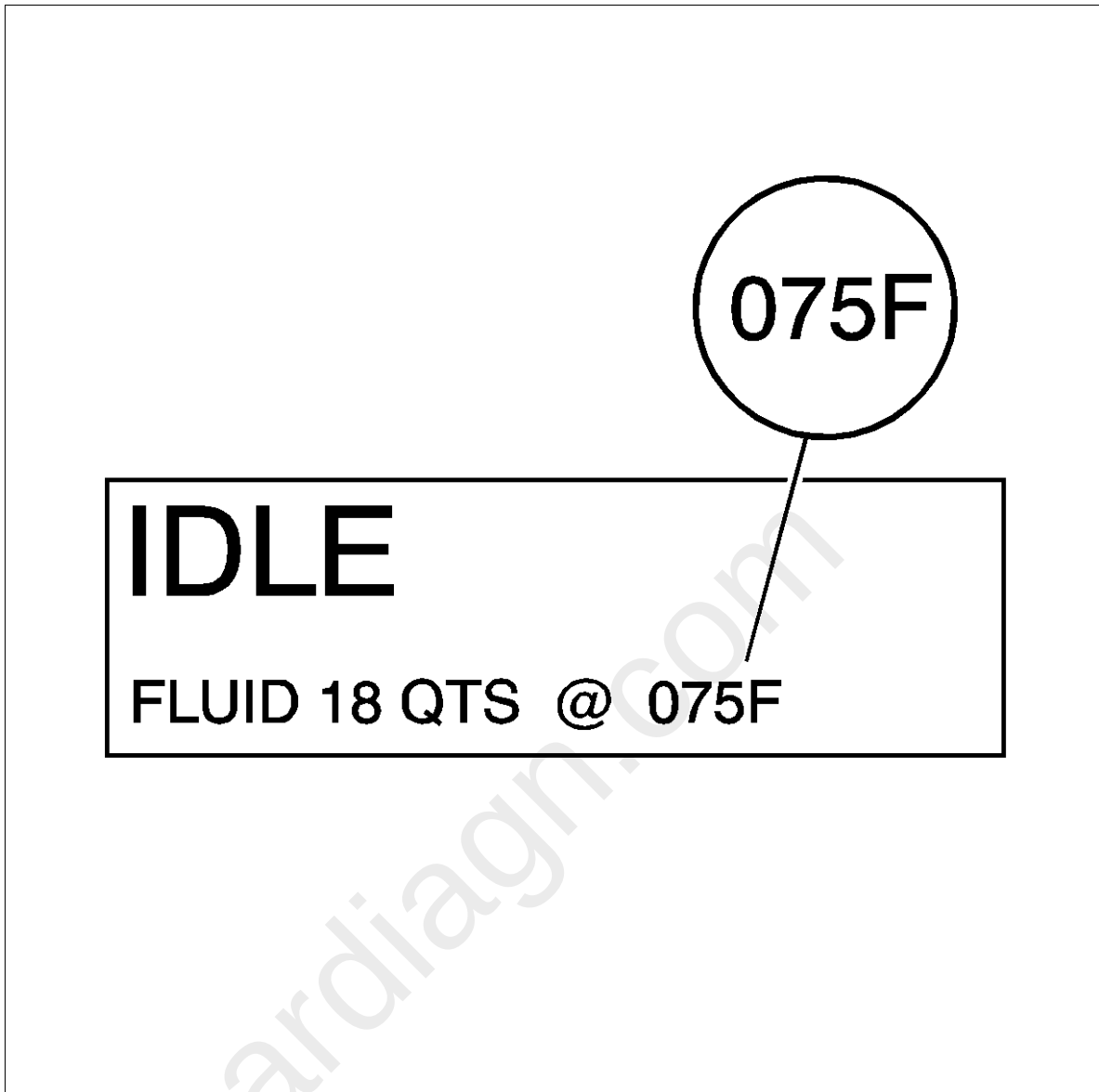


Courtesy of GENERAL MOTORS COMPANY

7. Connect a shop air supply hose to the quick-disconnect on the rear panel marked SUPPLY AIR.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > DETERMINE MINIMUM FLOW
RATE**

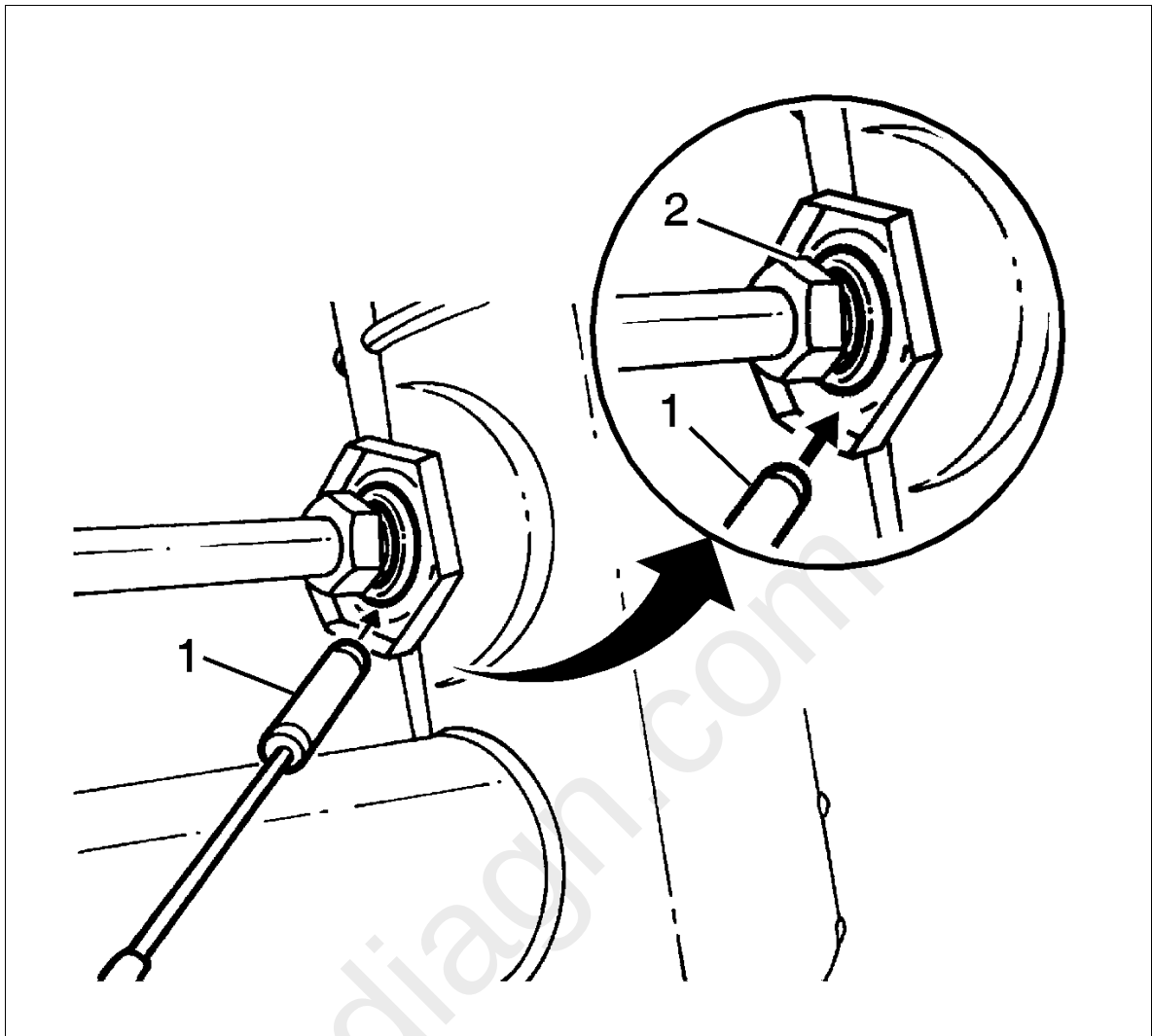
Fig 1: Machine Display Of Automatic Transmission Fluid Temperature



Courtesy of GENERAL MOTORS COMPANY

1. From the machine display, identify the temperature of the automatic transmission fluid that is stored in the supply vessel of **DT-45096** flow test tool.

Fig 2: Transmission Oil Cooler Metal Composition



Courtesy of GENERAL MOTORS COMPANY

2. Determine whether the transmission oil cooler is steel or aluminum by using a magnet (1) at the cooler flange (2) at the radiator.
3. Refer to the table below. Using the temperature from step 1, locate on either the Steel MINIMUM Flow Rate table or the Aluminum MINIMUM Flow Rate table the minimum flow rate in gallons per minutes (GPM). Record the minimum flow rate in GPMs and the supply fluid temperature for further reference.

Example:

1. Fluid temperature: 24°C (75°F)
2. Cooler type: Steel

The MINIMUM flow rate for this example would be 0.8 GPM.

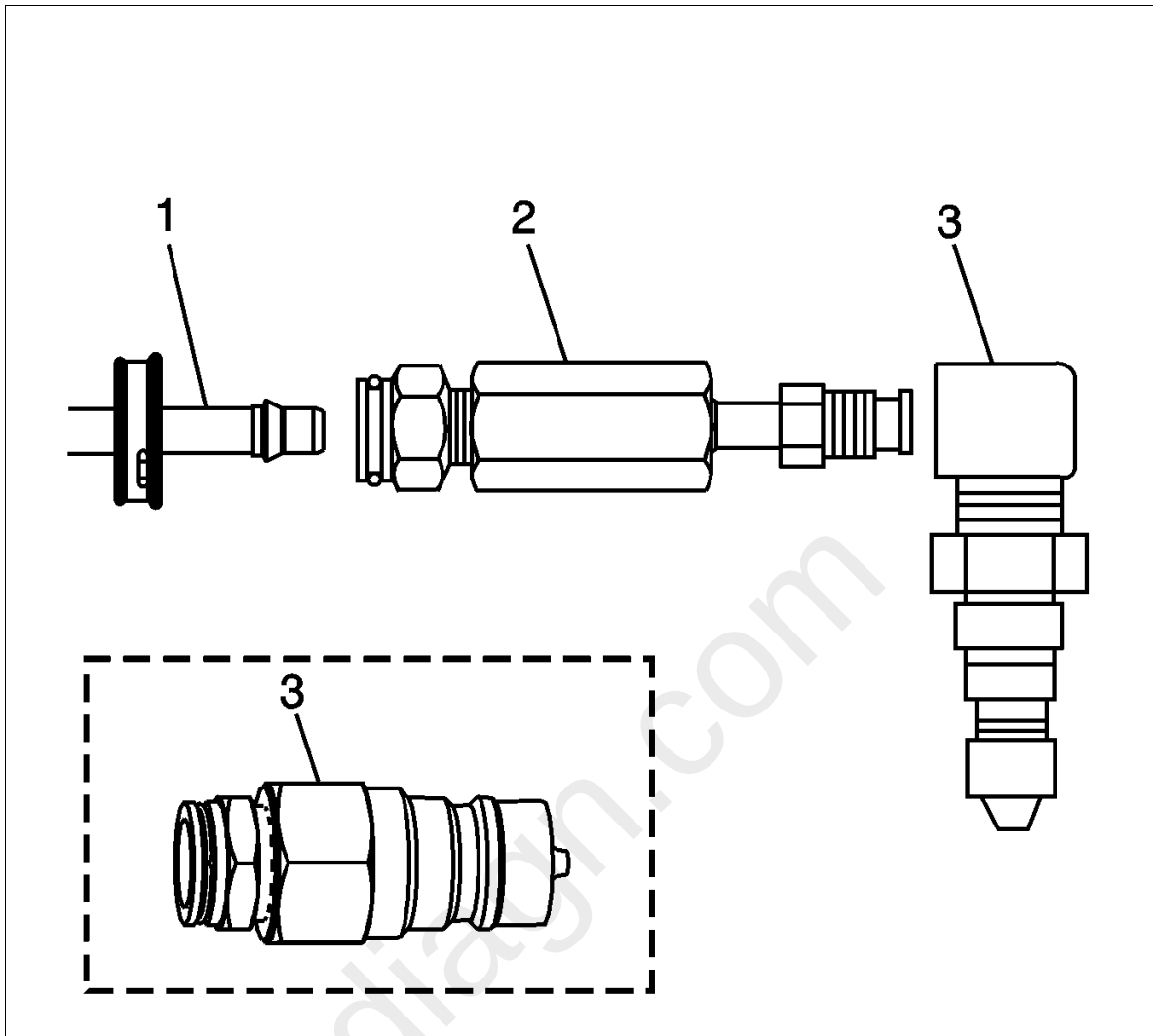
4. Inspect transmission oil cooler lines for damage or kinks that could cause restricted oil flow. Repair as needed and refer to the appropriate GM service manual procedures.

Minimum Flow Rate in Gallons Per Minute (GPM)

Temperature Range	Steel	Aluminum
65-66°F	0.6 gpm	0.5 gpm
67-70°F	0.7 gpm	0.6 gpm
71-75°F	0.8 gpm	0.7 gpm
76-80°F	0.9 gpm	0.8 gpm
81-84°F	1.0 gpm	0.9 gpm
85-89°F	1.1 gpm	1.0 gpm
90-94°F	1.2 gpm	1.1 gpm
95-98°F	1.3 gpm	1.2 gpm
99-103°F	1.4 gpm	1.3 gpm
104-108°F	1.5 gpm	1.4 gpm
109-112°F	1.6 gpm	1.5 gpm
113-117°F	1.7 gpm	1.6 gpm
118-120°F	1.8 gpm	1.7 gpm

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > BACK FLUSH PROCEDURE**

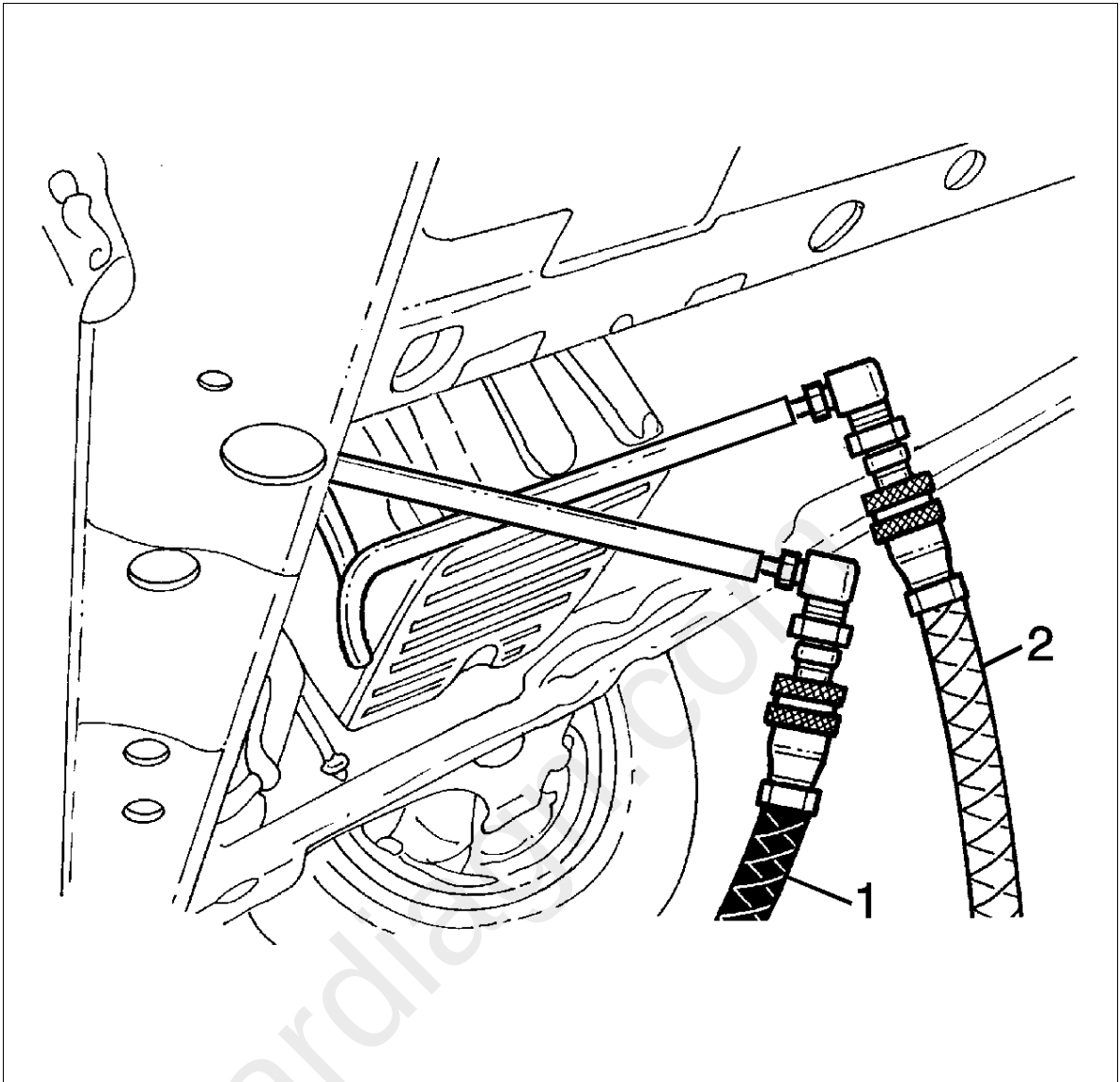
Fig 1: Adapters to Vehicle Transmission Oil Cooler Supply & Return Lines



Courtesy of GENERAL MOTORS COMPANY

1. Connect the **DT-45096** flow test tool adapters (3) and **J-35944-200 / J-35944-200A** adapter (2) to the vehicle transmission oil cooler supply and return lines (1) at the transmission.

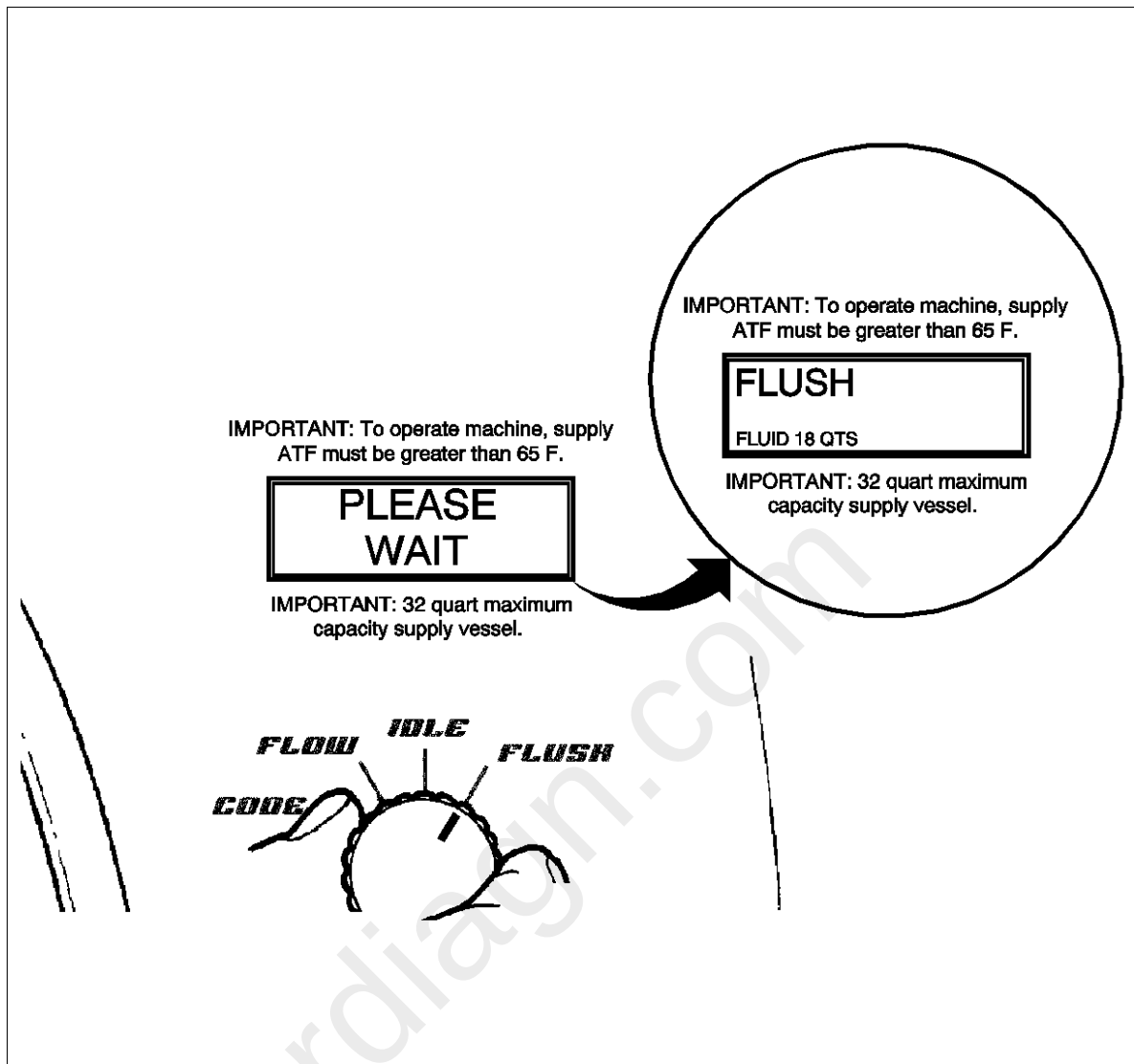
Fig 2: Black Supply Hose And Clear Waste Hose



Courtesy of GENERAL MOTORS COMPANY

2. Connect the black supply hose (1) to the return line, top connector of the transmission, and the clear waste hose (2) to the feed line, bottom connector of the transmission, to the vehicle cooler lines. This is the reverse flow backflush direction.

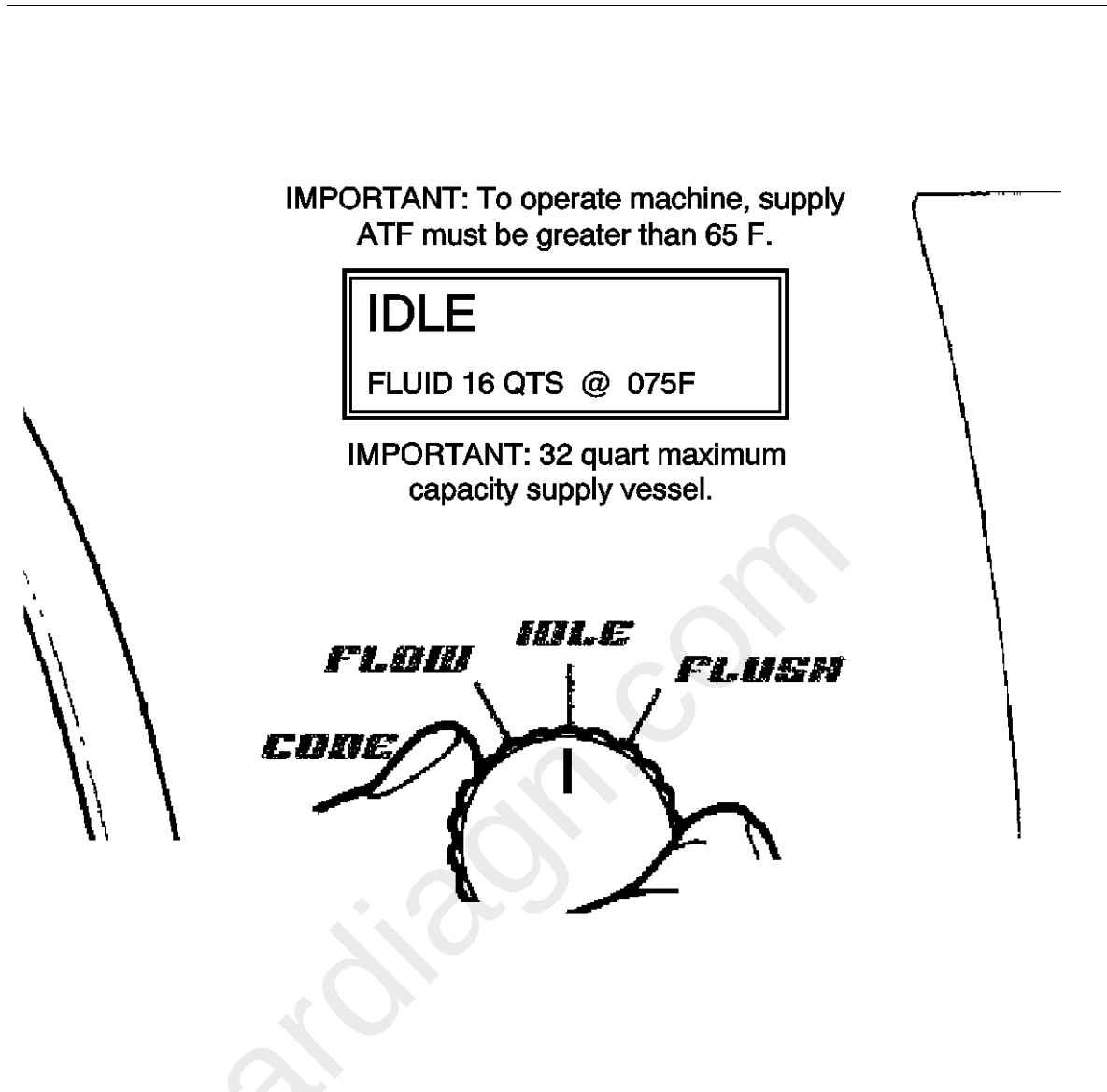
Fig 3: Main Function Switch FLUSH Position



Courtesy of GENERAL MOTORS COMPANY

3. Turn the main function switch to the FLUSH position. Allow the machine to operate for 30 seconds.

Fig 4: Main Function Switch IDLE Position

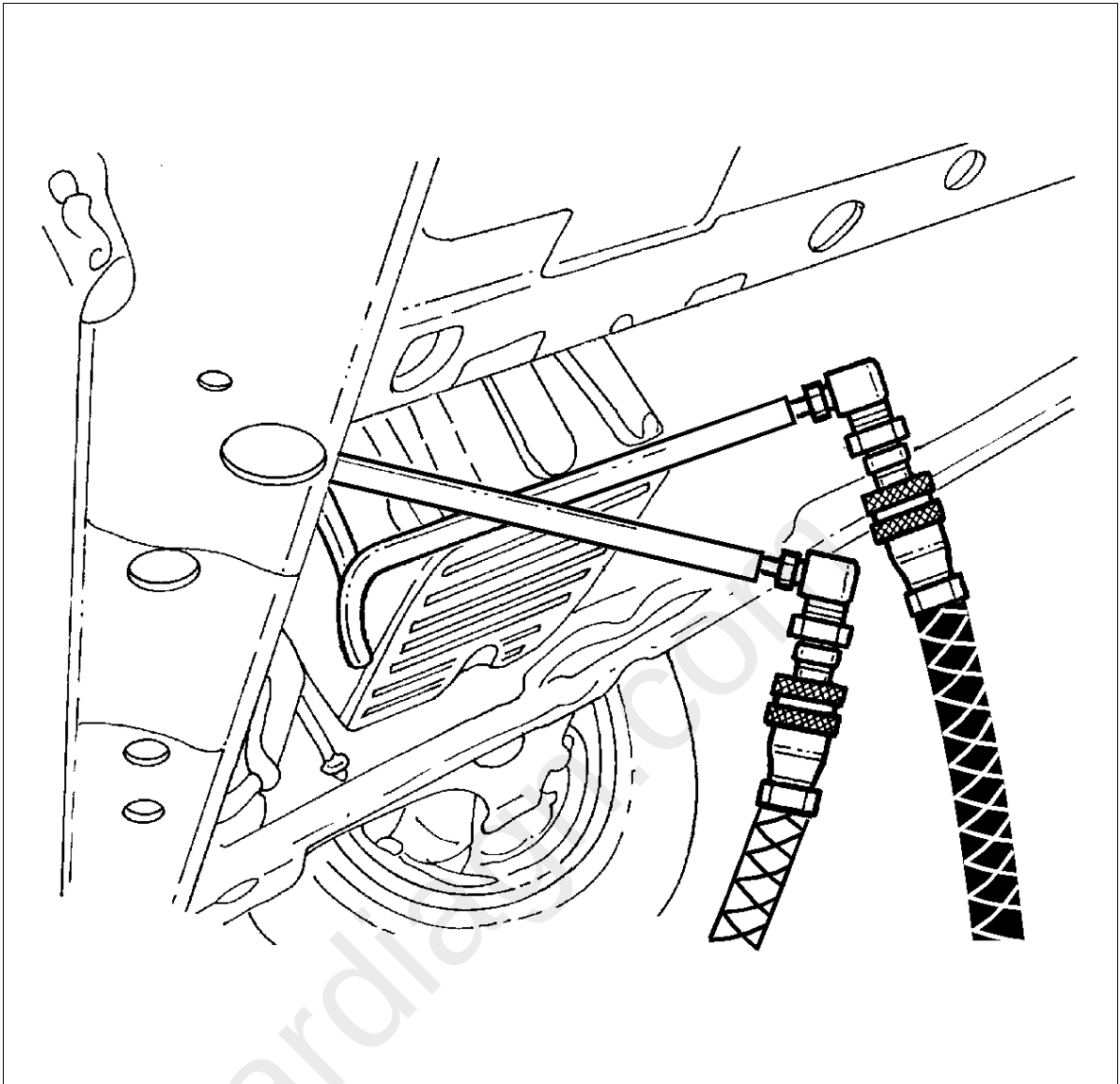


Courtesy of GENERAL MOTORS COMPANY

4. Turn the main function switch to the IDLE position and allow the supply vessel pressure to dissipate.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > FORWARD FLUSH**

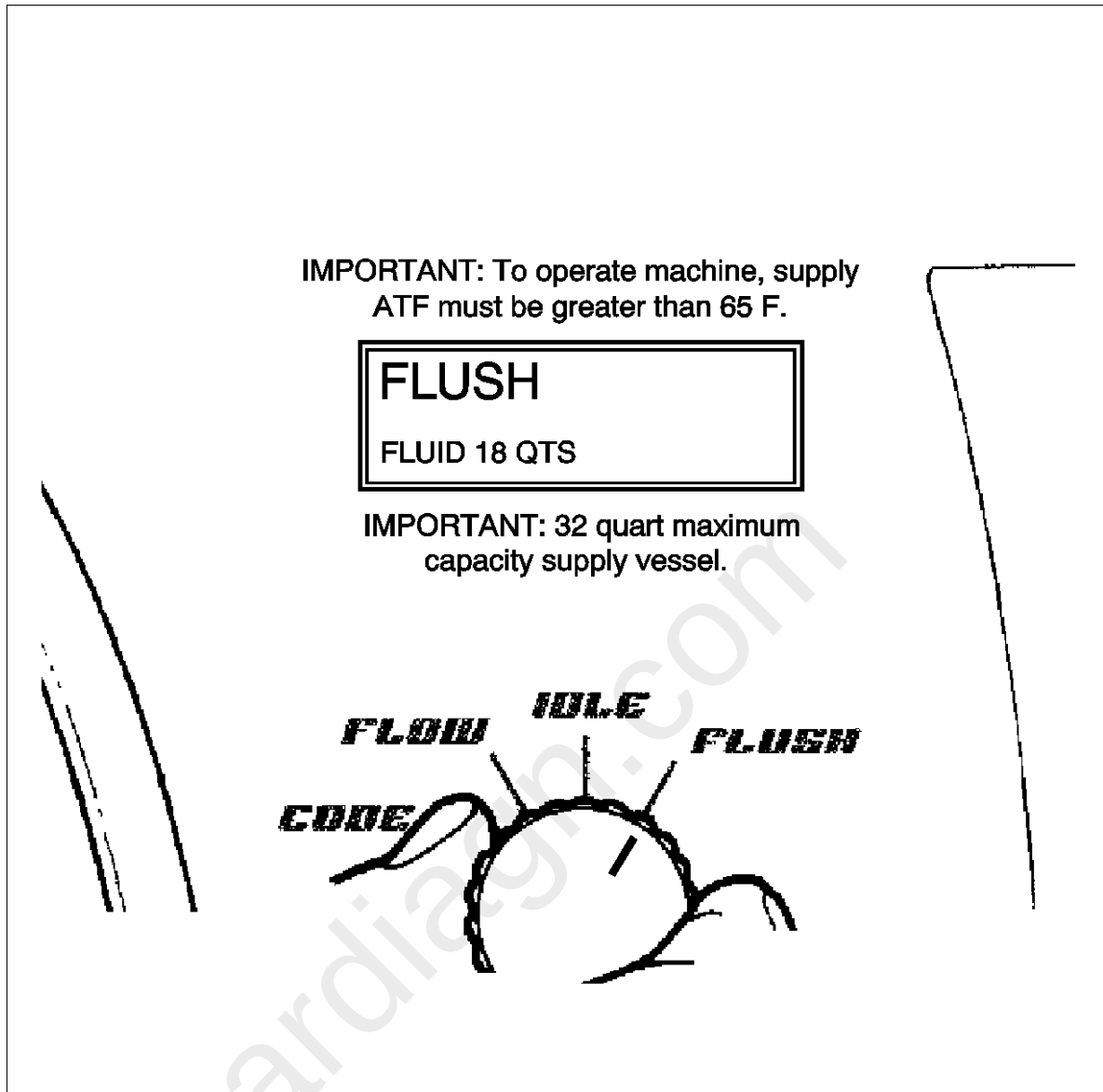
Fig 1: Black Supply Hose And Clear Waste Hose



Courtesy of GENERAL MOTORS COMPANY

1. Disconnect the supply and waste hoses from the vehicle cooler lines. Reverse the supply and waste hoses to provide a normal flow direction.

Fig 2: Main Function Switch FLUSH Position

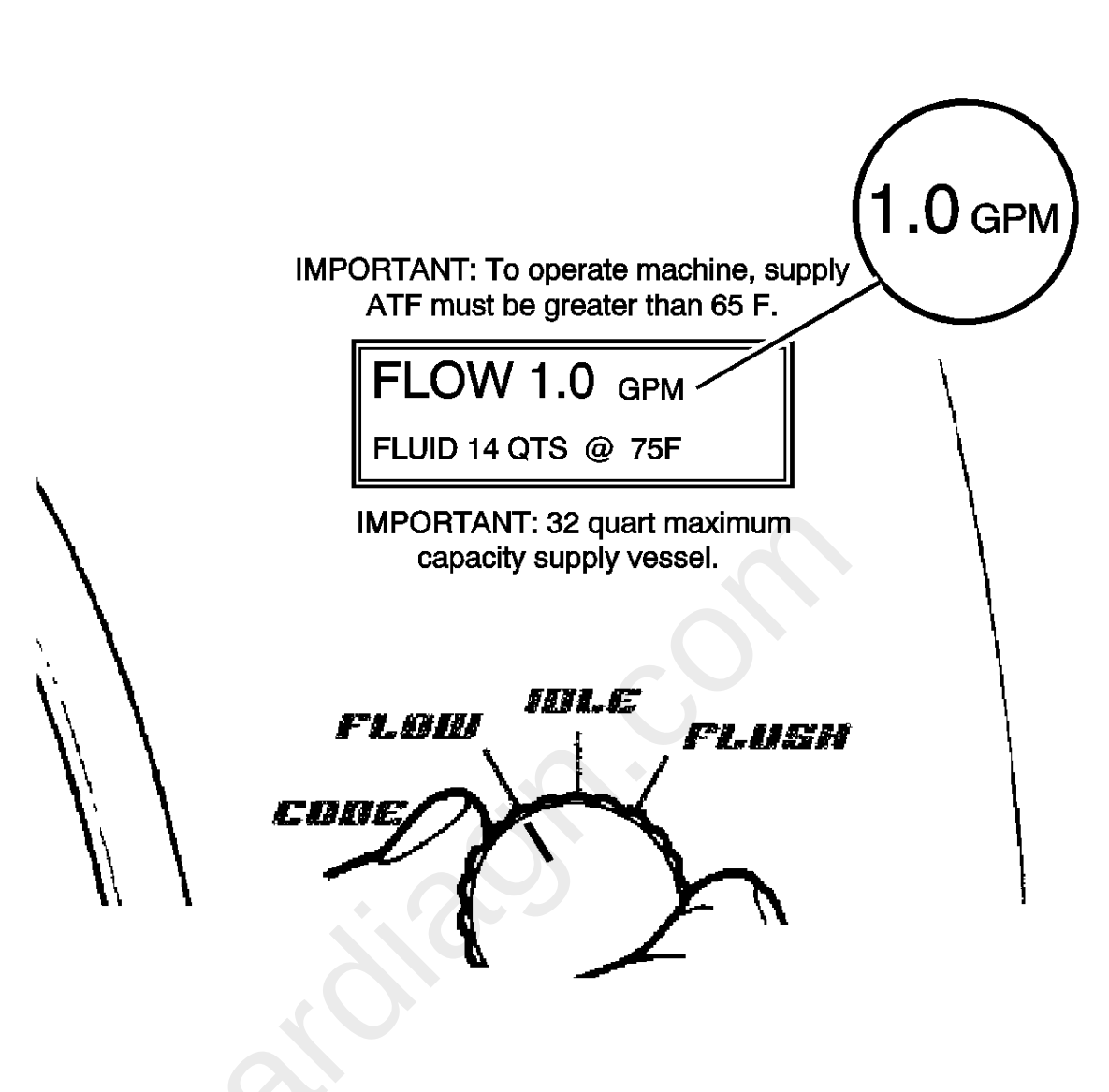


Courtesy of GENERAL MOTORS COMPANY

2. Turn the main function switch to the FLUSH position and allow the machine to operate for 30 seconds.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > FLOW TEST**

Fig 1: Main Function Switch FLOW Position



Courtesy of GENERAL MOTORS COMPANY

 NOTE:

If the flow rate is less than 0.5 gpm, the LCD displays an error message. Refer to the Troubleshooting section of the operation manual.

1. Turn the main function switch to the **FLOW** position and allow the oil to flow for 15 seconds. Observe and note the flow rate. This is the **TESTED** flow rate.
2. Compare the **TESTED** flow rate to the **MINIMUM** flow rate information previously recorded.
 1. If the **TESTED** flow rate is equal to or greater than the **MINIMUM** flow rate recorded, the oil cooling system is functioning properly. Perform Code Recording Procedure.
 2. If the **TESTED** flow rate is less than the **MINIMUM** flow rate previously recorded, repeat

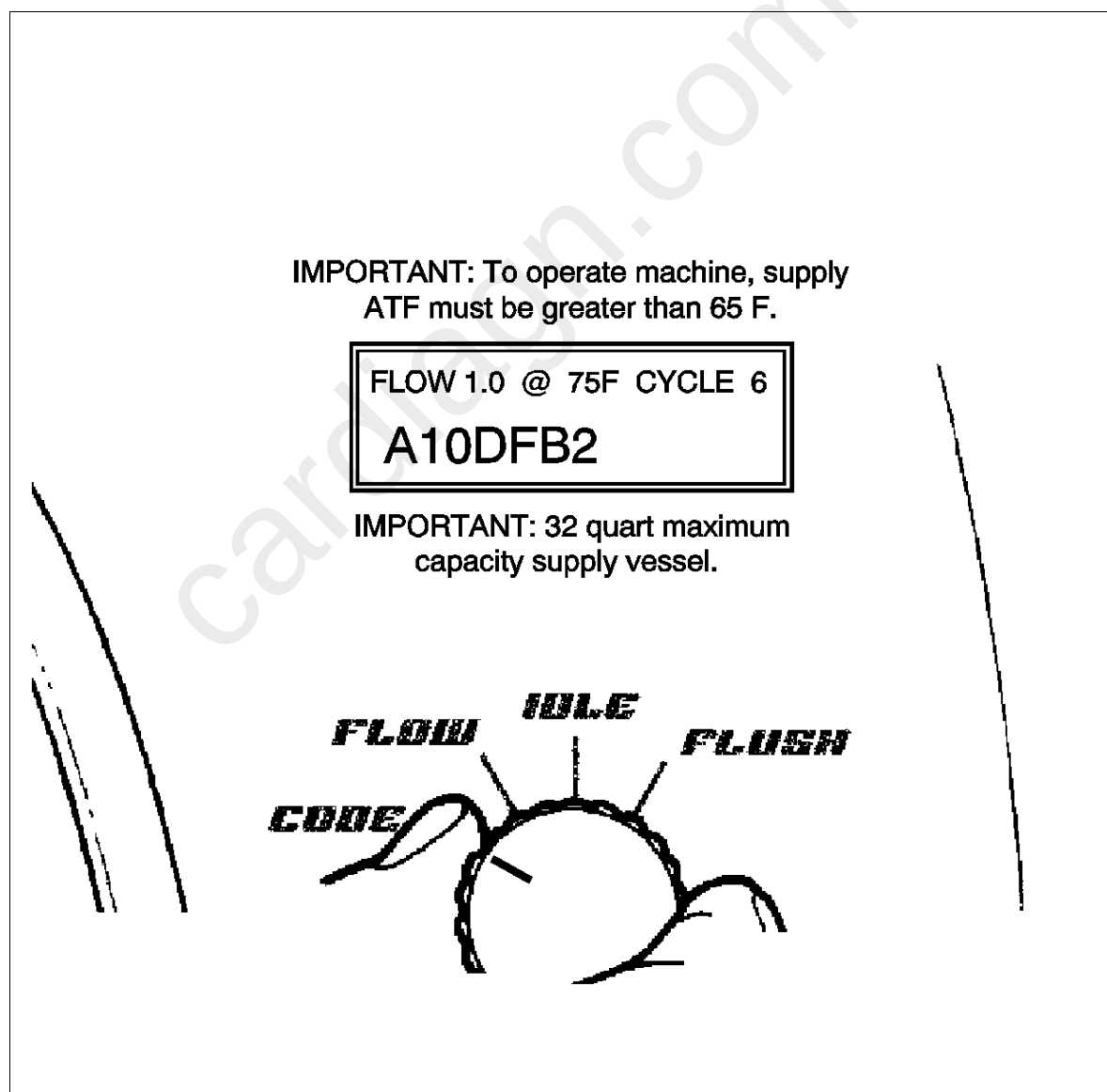
the back flush and forward flush procedures.

3. If the TESTED flow rate is less than the MINIMUM flow rate after the second test, perform the Code Recording Procedure.

1. Replace the transmission oil cooler.
2. Connect the supply and waste hoses to the cooler lines in the normal flow direction.
Perform the Flow Test.
3. Perform the Code Recording Procedure.

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > CODE RECORDING PROCEDURE

Fig 1: Main Function Switch CODE Position



1. Turn the main function switch to the CODE position.



NOTE:

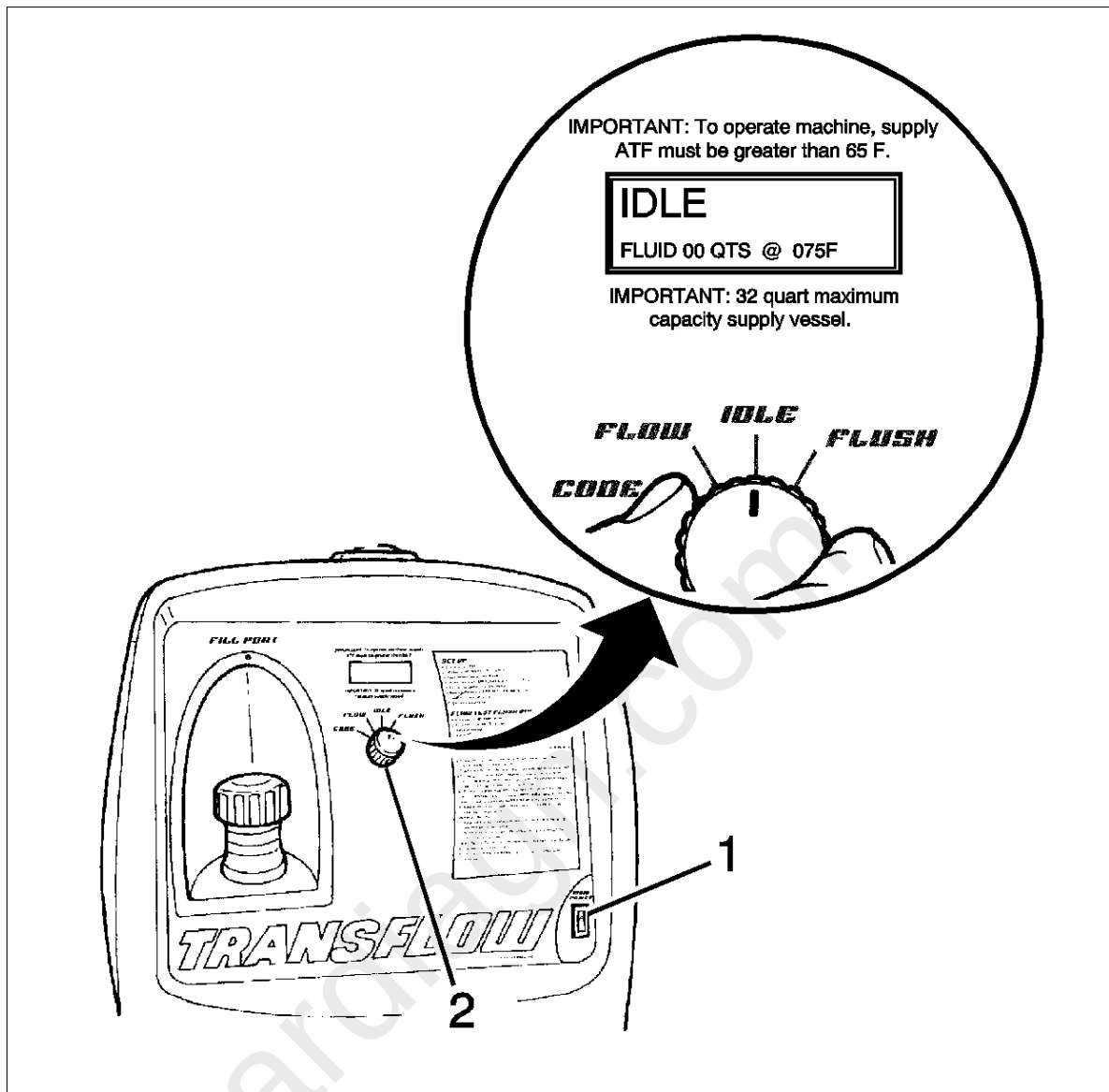
- 1. If power is interrupted prior to the recording of the 7-character code, the code will be lost and the flow rate test will need to be repeated.*
- 2. The flow test must run for a minimum of 8-10 seconds and be above 0.5 gpm for a code to be generated.*

2. Record TESTED flow rate, temperature, cycle and seven-character flow code information on the repair order.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (TREMEC 6-SPEED) > CLEAN-UP**

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Fig 1: Main Power Switch & Main Function Switch



Courtesy of GENERAL MOTORS COMPANY

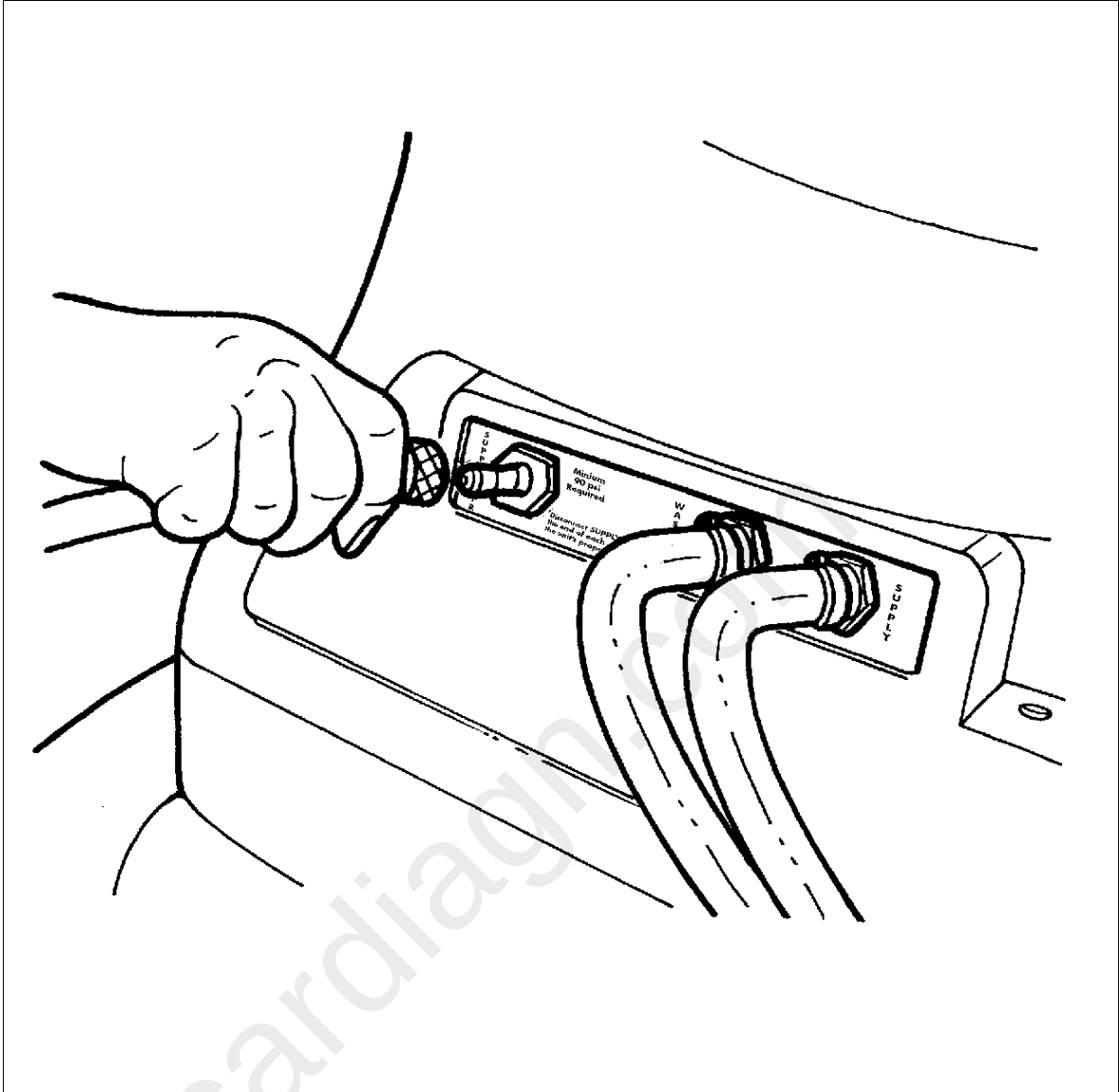
1. Turn the main function switch to the **IDLE** position and allow the supply vessel pressure to dissipate.
2. Turn the main power switch to the **OFF** position.

 NOTE:

1. A small amount of water may drain from the bottom of the unit when the air supply is disconnected. This is a normal operation of the built-in water separator.
2. If the fluid in the **DT-45096** transmission oil cooling system flush and flow test tool is different than what is used in the transmission, use compressed air to blow the residual transmission fluid out of the oil cooler and lines.

3. Disconnect the supply and waste hoses and the 12-volt power source from the vehicle.

Fig 2: Applying Shop Air Supply Hose To Quick-Disconnect



Courtesy of GENERAL MOTORS COMPANY

4. Disconnect the air supply hose from **DT-45096** transmission oil cooling system flush and flow test tool.
5. Remove the **J-35944-200 / J-35944-200A** adapters.
6. Dispose of the waste automatic transmission fluid in accordance with all applicable federal, state, and local requirements.

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (8L90)

GM studies indicate that plugged or restricted transmission oil coolers and pipes cause insufficient transmission lubrication and elevated operating temperatures which can lead to premature transmission

failure. Many repeat repair cases could have been prevented by following published procedures for transmission oil cooler flushing and flow checking. This procedure includes flow checking and flushing the auxiliary transmission oil cooler, if equipped.



NOTE:

*Use the **DT-45096** transmission oil cooling system flush and flow test tool or equivalent to flush and flow test the transmission oil cooler and the oil cooler pipes after the transmission is removed for repairs.*

Only use the appropriate GM automatic transmission fluid when doing a repair on a GM transmission.

If the fluid in the **DT-45096** transmission oil cooling system flush and flow test tool is different than what is used in the transmission, after performing the flush and flow test, use compressed air to blow the residual transmission fluid out of the oil cooler and lines.

Time allowance for performing the cooler flow checking and flushing procedure has been included in the appropriate labor time guide operations since the 1987 model year. The service procedure steps for oil cooler flushing and flow testing are as follows:

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (8L90) > COOLER FLOW CHECK AND FLUSHING STEPS

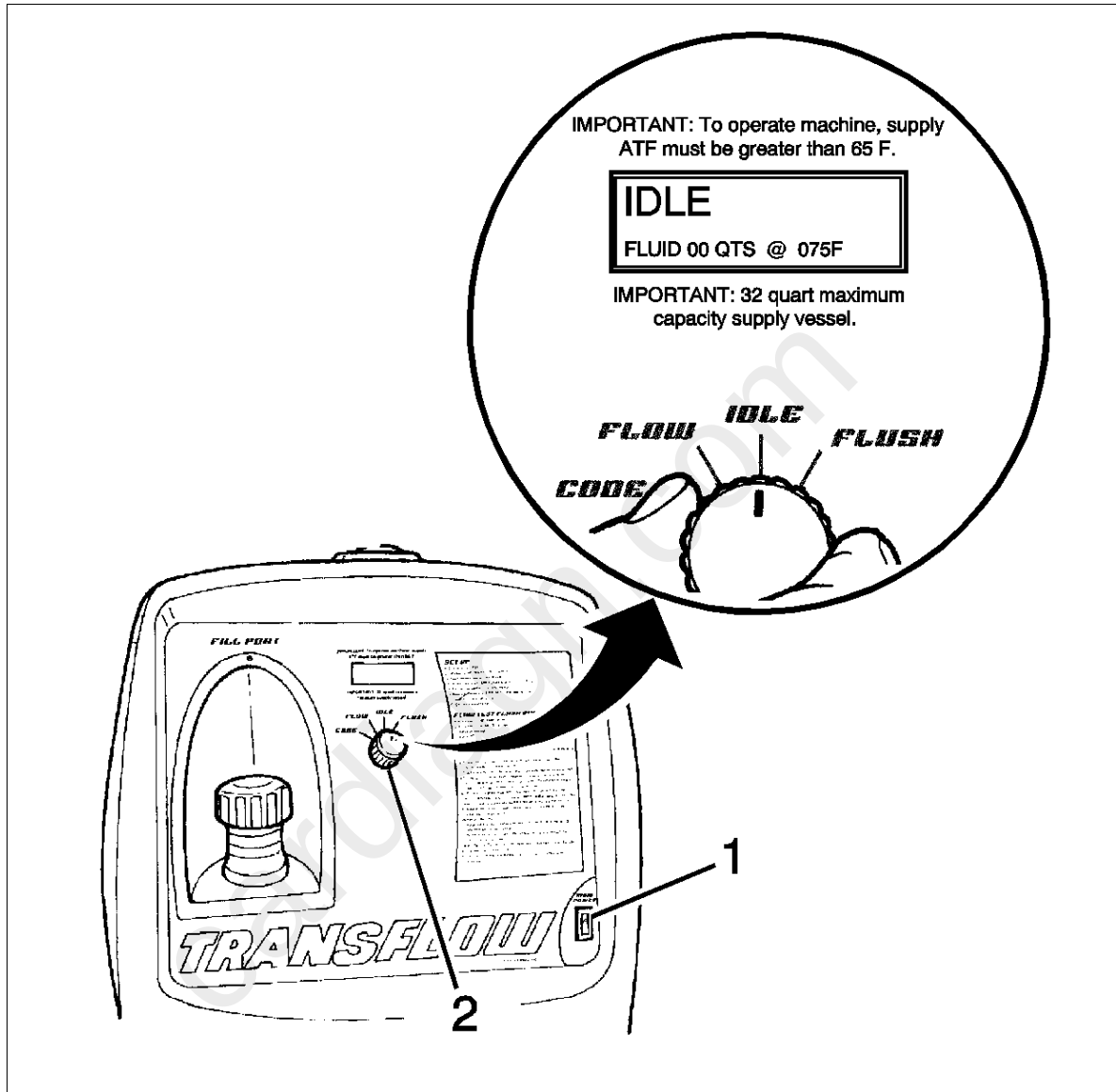
1. Machine Set-up
2. Determine Minimum Flow Rate
3. Back Flush
4. Forward Flush
5. Flow Test
6. Code Recording Procedure
7. Clean-up

Special Tools

- **DT-45096** Transmission Oil Cooling System Flush and Flow Test Tool
- **DT-45096-30** Transmission Cooler Flush Adapter
- **J-35944-200A** Cooler Flushing Adapter
- Shop air supply with water/oil filters, regulator and pressure gauge - minimum 90 psi
- Eye protection
- Rubber gloves

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (8L90) > MACHINE SET-UP

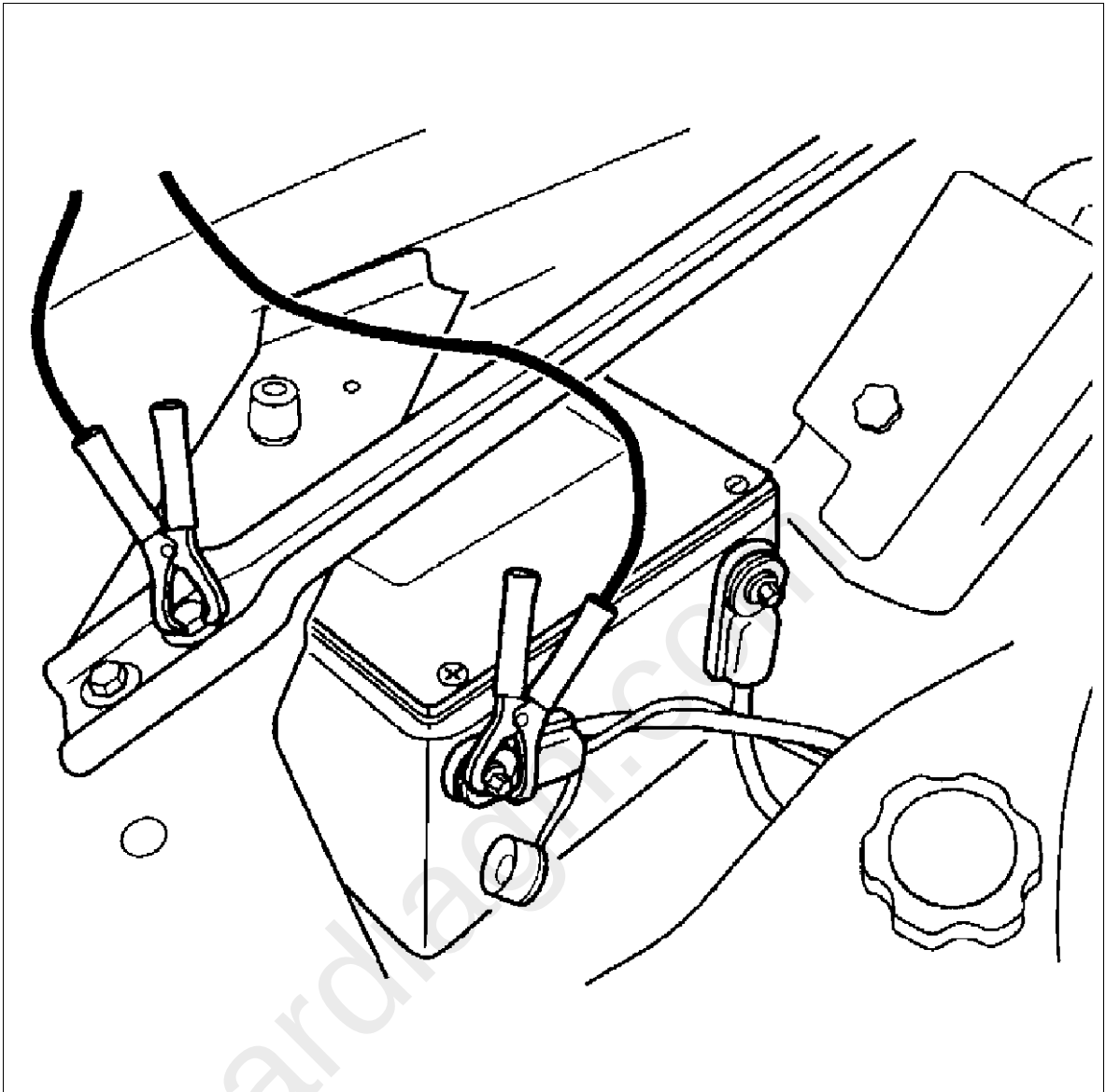
Fig 1: Main Power Switch & Main Function Switch



Courtesy of GENERAL MOTORS COMPANY

1. Verify that the main power switch (1) is in the OFF position.
2. Place the main function switch (2) in the IDLE position.

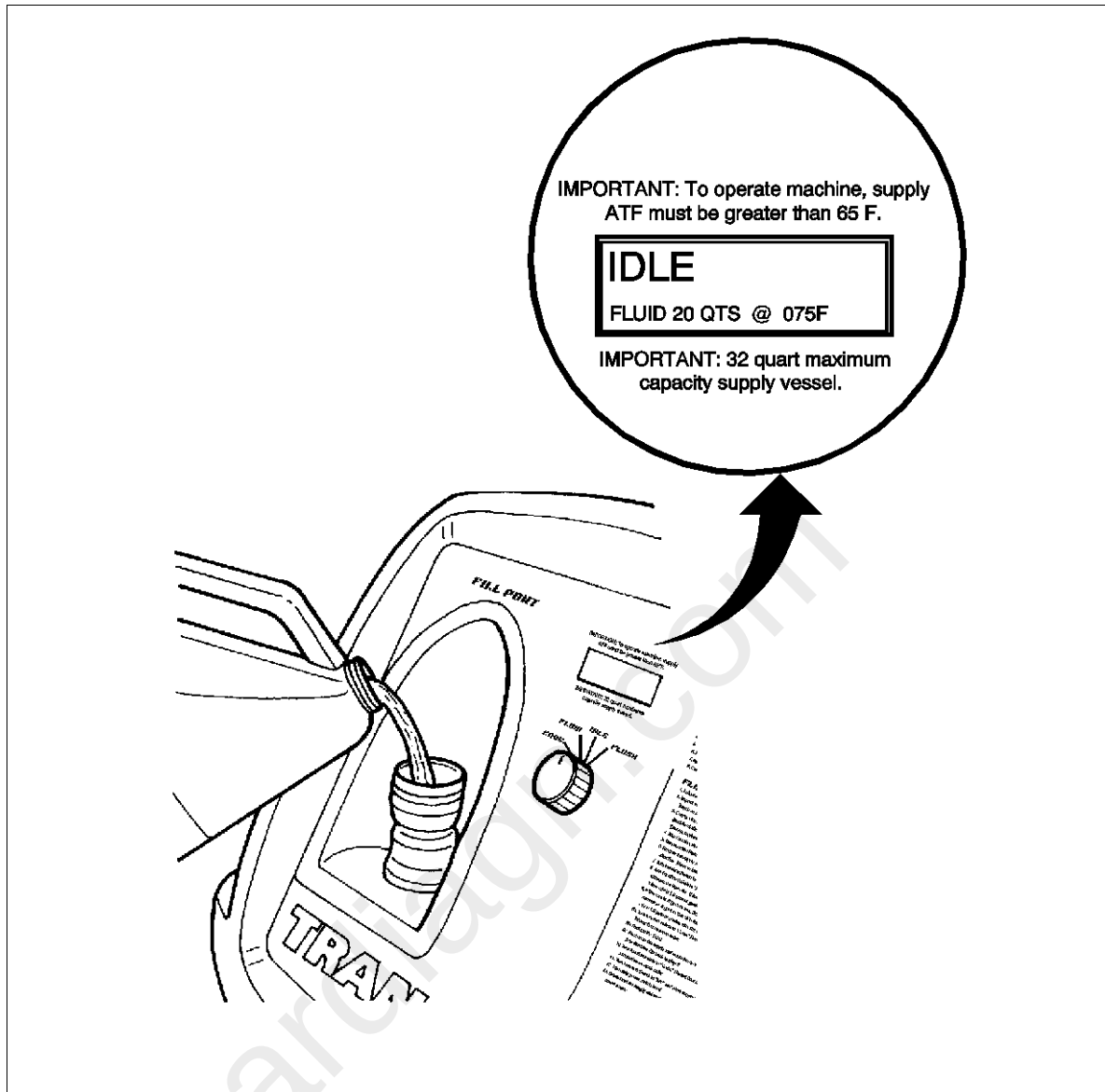
Fig 2: Connecting To 12V DC Power Source



Courtesy of GENERAL MOTORS COMPANY

3. Connect **DT-45096** transmission oil cooling system flush and flow test tool to the vehicle 12V DC power source by connecting the red battery clip to the positive, +, battery post on the vehicle and connect the negative lead to a known good chassis ground.
4. Turn the main power switch to the ON position.

Fig 3: Filling Supply Tank With Transmission Fluid



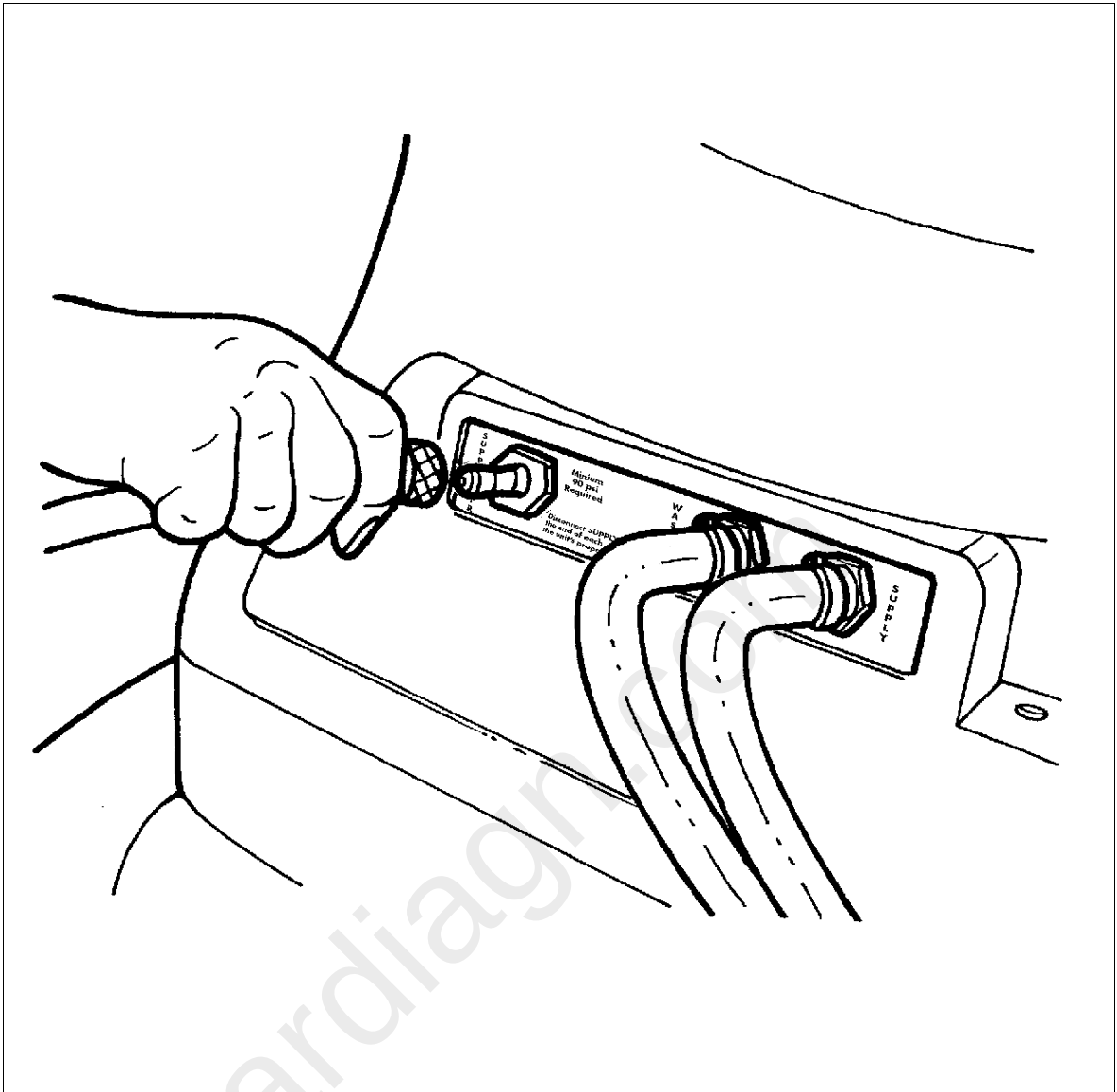
Courtesy of GENERAL MOTORS COMPANY

 CAUTION:

Do not overfill the supply vessel. Damage to the unit may result. To verify the fluid level, view the LCD screen display while filling the unit, to ensure the fluid level does not exceed 30 L (32 qt).

5. Fill the supply tank with the appropriate GM automatic transmission fluid through the fill port.
6. Reinstall and tighten the fill cap.

Fig 4: Applying Shop Air Supply Hose To Quick-Disconnect

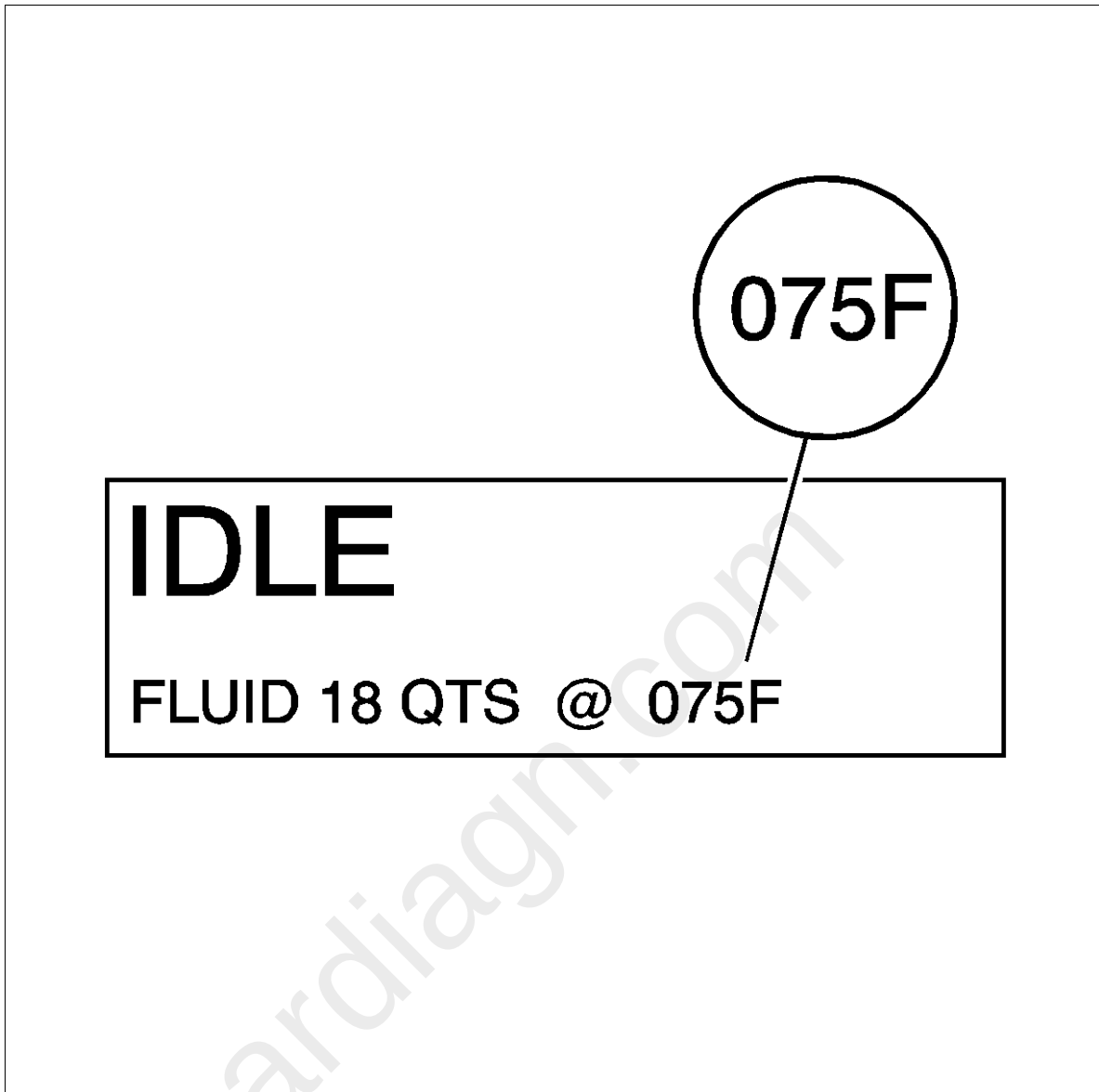


Courtesy of GENERAL MOTORS COMPANY

7. Connect a shop air supply hose to the quick-disconnect on the rear panel marked SUPPLY AIR.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (8L90) > DETERMINE MINIMUM FLOW RATE**

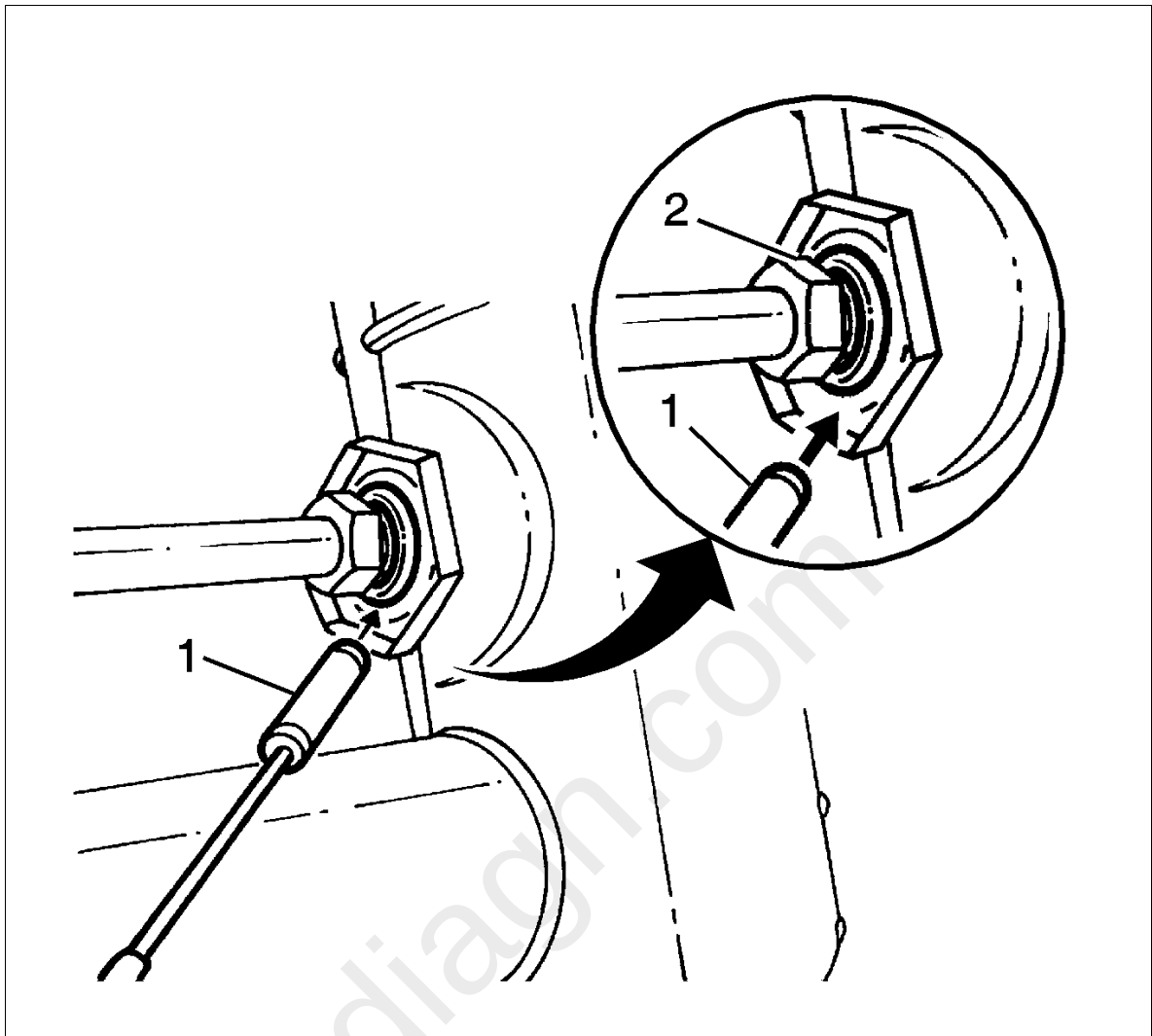
Fig 1: Machine Display Of Automatic Transmission Fluid Temperature



Courtesy of GENERAL MOTORS COMPANY

1. From the machine display, identify the temperature of the automatic transmission fluid that is stored in the supply vessel of **DT-45096** flush and flow test tool.

Fig 2: Transmission Oil Cooler Metal Composition



Courtesy of GENERAL MOTORS COMPANY

2. Determine whether the transmission oil cooler is steel or aluminum by using a magnet (1) at the cooler flange (2) at the radiator.
3. Refer to the table below. Using the temperature from step 1, locate on either the Steel MINIMUM Flow Rate table or the Aluminum MINIMUM Flow Rate table the minimum flow rate in gallons per minutes (GPM). Record the minimum flow rate in GPMs and the supply fluid temperature for further reference.

Example

1. Fluid temperature: 75°F
2. Cooler type: Steel

The MINIMUM flow rate for this example would be 0.8 GPM.

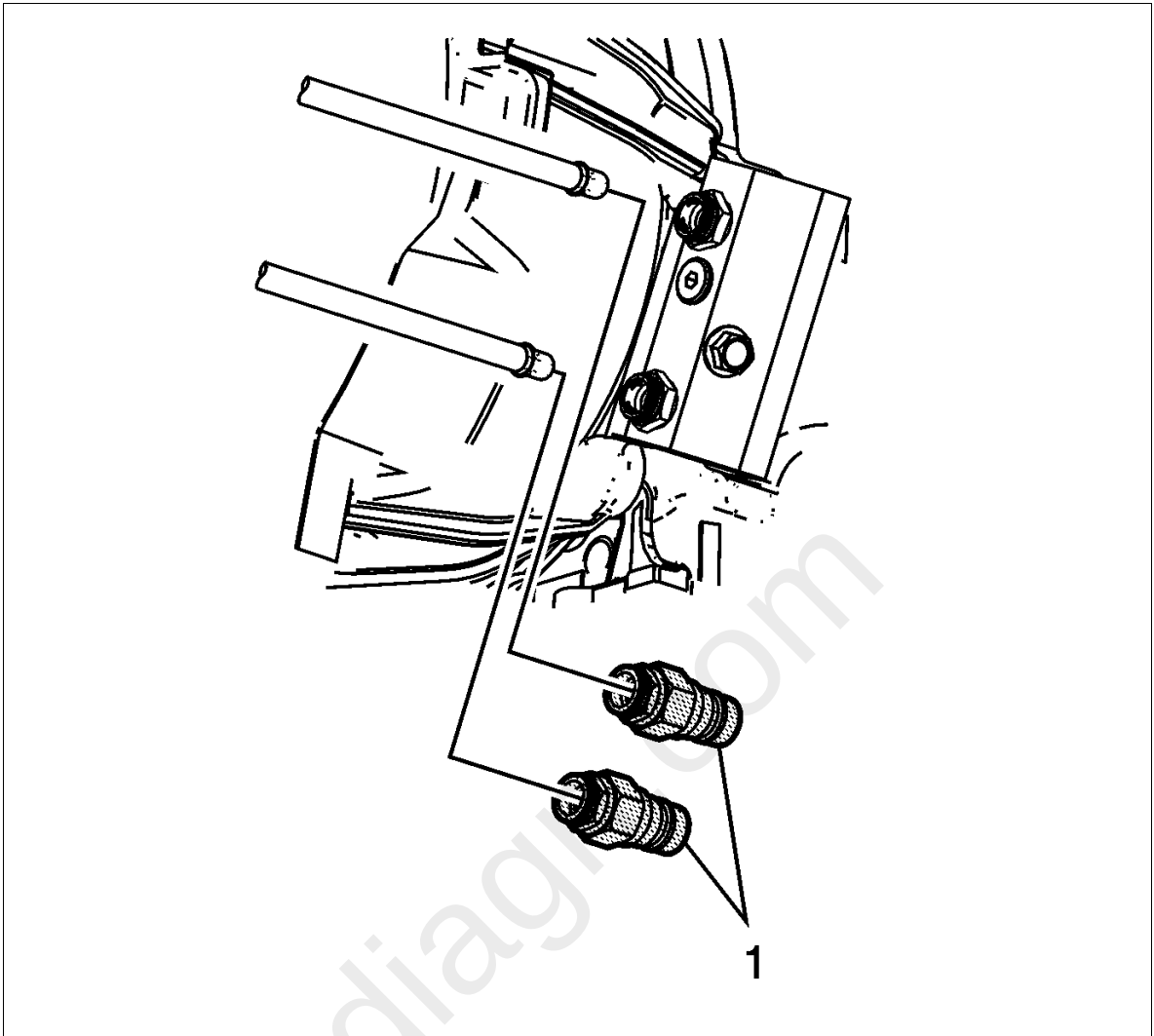
4. Inspect transmission oil cooler lines for damage or kinks that could cause restricted oil flow. Repair as needed and refer to the appropriate GM service manual procedures.

Minimum Flow Rate in Gallons Per Minute (gpm)

Temperature Range	Steel	Aluminum
65 - 66°F	0.6 gpm	0.5 gpm
67 - 70°F	0.7 gpm	0.6 gpm
71 - 75°F	0.8 gpm	0.7 gpm
76 - 80°F	0.9 gpm	0.8 gpm
81 - 84°F	1.0 gpm	0.9 gpm
85 - 89°F	1.1 gpm	1.0 gpm
90 - 94°F	1.2 gpm	1.1 gpm
95 - 98°F	1.3 gpm	1.2 gpm
99 - 103°F	1.4 gpm	1.3 gpm
104 - 108°F	1.5 gpm	1.4 gpm
109 - 112°F	1.6 gpm	1.5 gpm
113 - 117°F	1.7 gpm	1.6 gpm
118 - 120°F	1.8 gpm	1.7 gpm

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (8L90) > BACK FLUSH PROCEDURE**

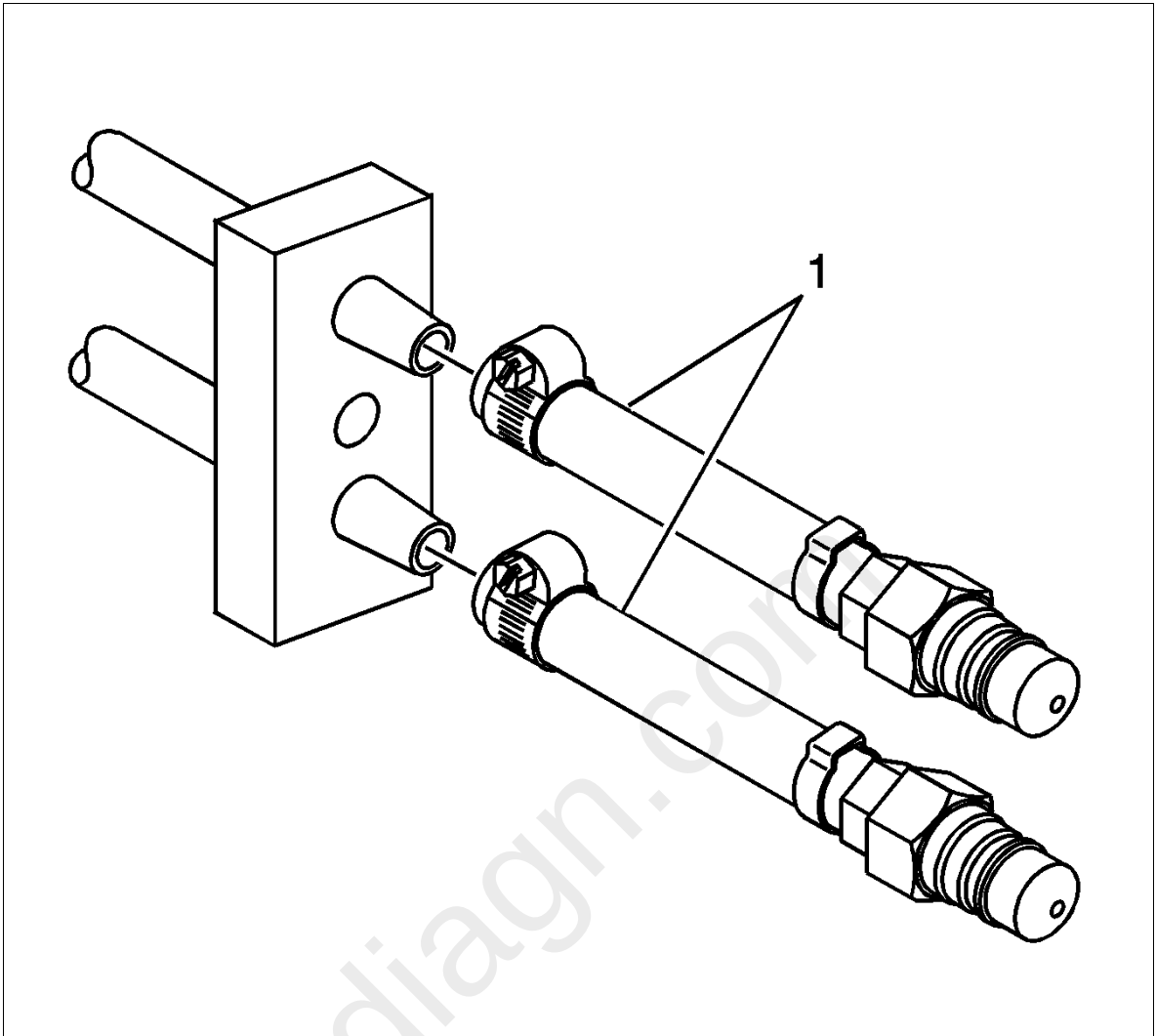
Fig 1: Cooler Flushing Adapters



Courtesy of GENERAL MOTORS COMPANY

1. If equipped with bypass valve, disconnect the oil cooler lines from the bypass valve.
2. If equipped with bypass valve, connect the **J-35944-200A** cooler flushing adapter (1) to the vehicle transmission oil cooler supply and return lines at the transmission.

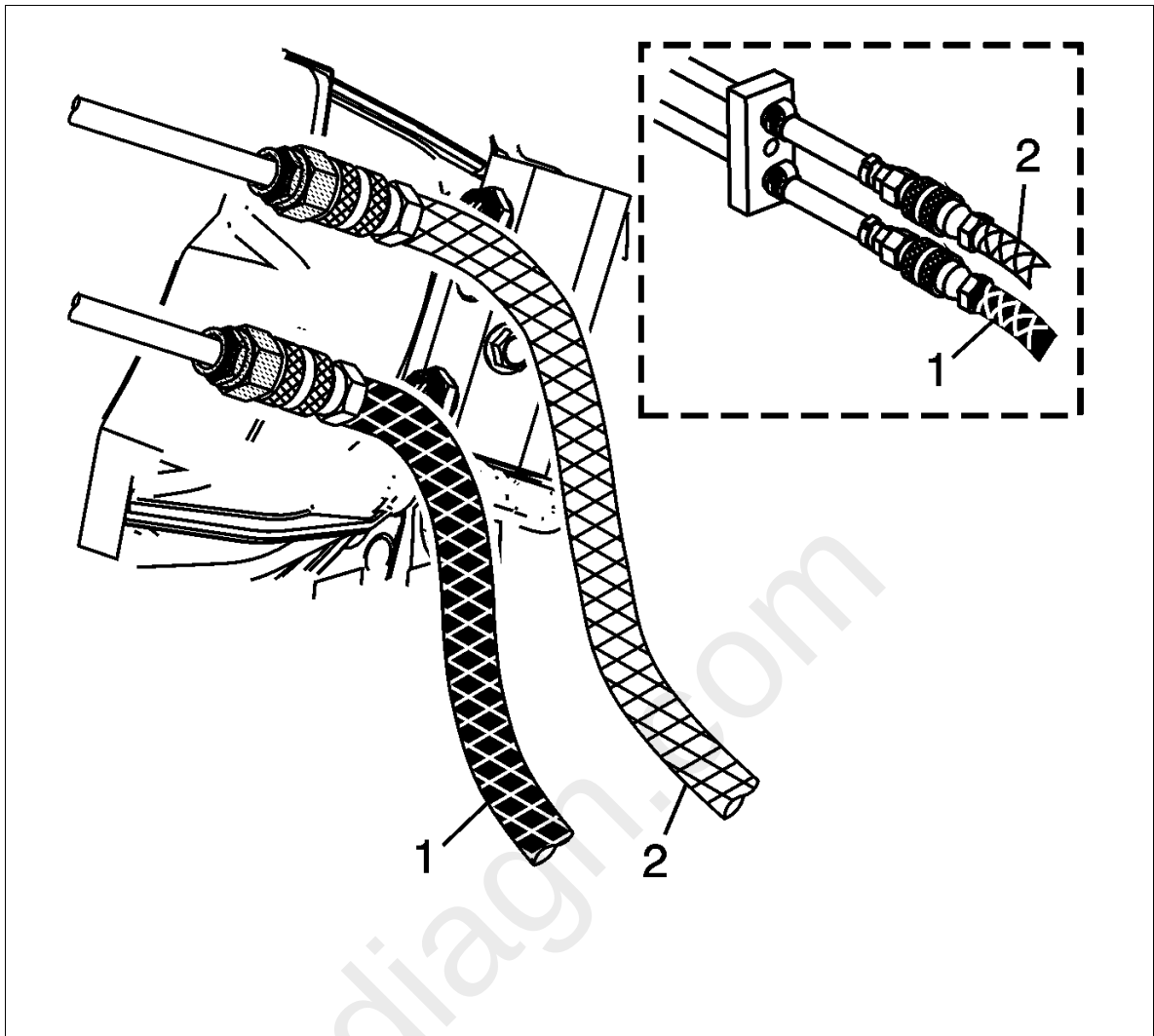
Fig 2: Cooler Flush Adapters



Courtesy of GENERAL MOTORS COMPANY

3. If not equipped with the bypass valve, connect the **DT-45096-30** cooler flush adapter (1) to the vehicle transmission oil cooler supply and return lines at the transmission.

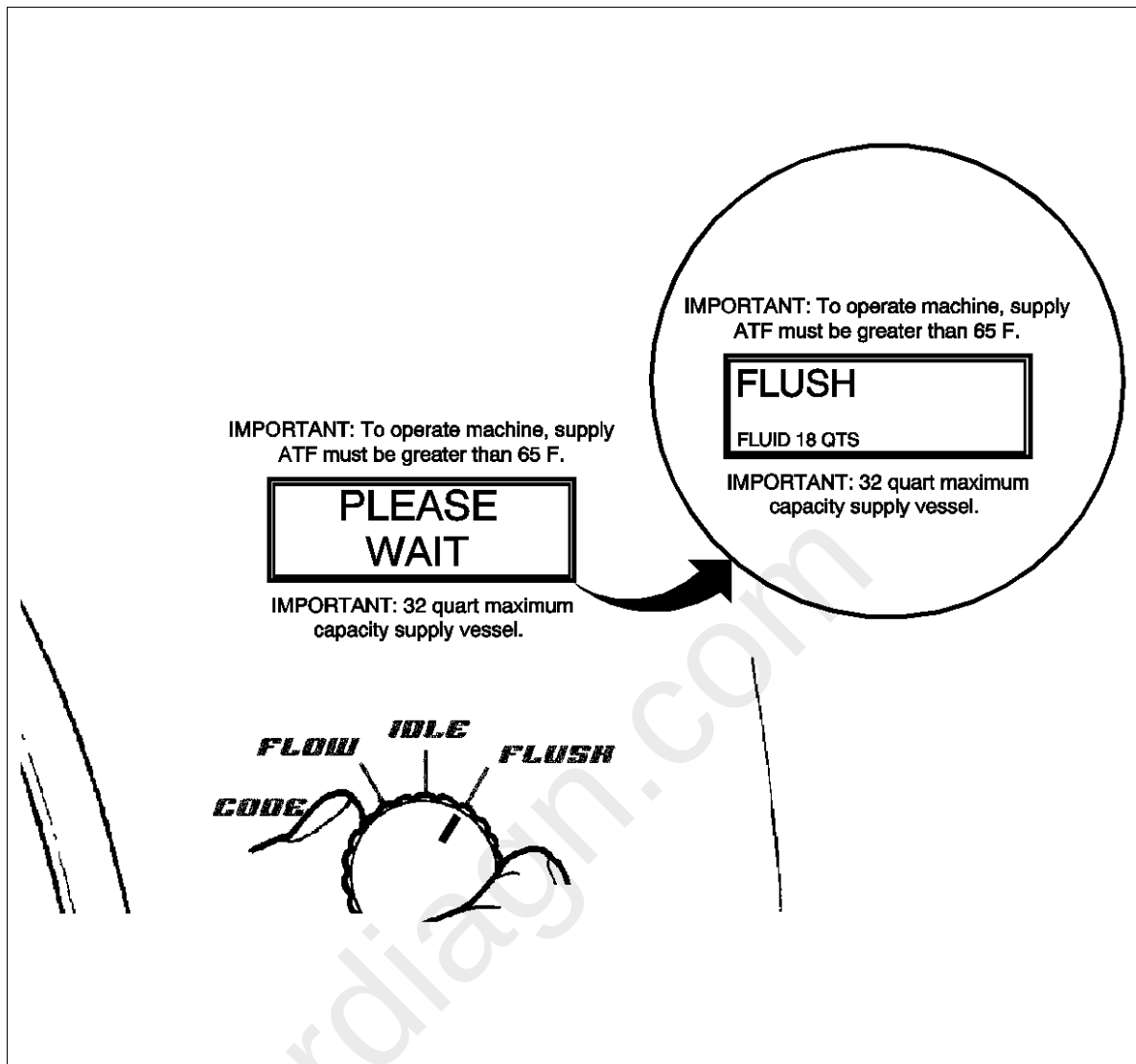
Fig 3: Black Supply Hose



Courtesy of GENERAL MOTORS COMPANY

4. Connect the black supply hose (1) to the return line, bottom connector of the transmission, and the clear waste hose (2) to the feed line, top connector of the transmission, to the vehicle cooler lines. This is the reverse flow - backflush direction.

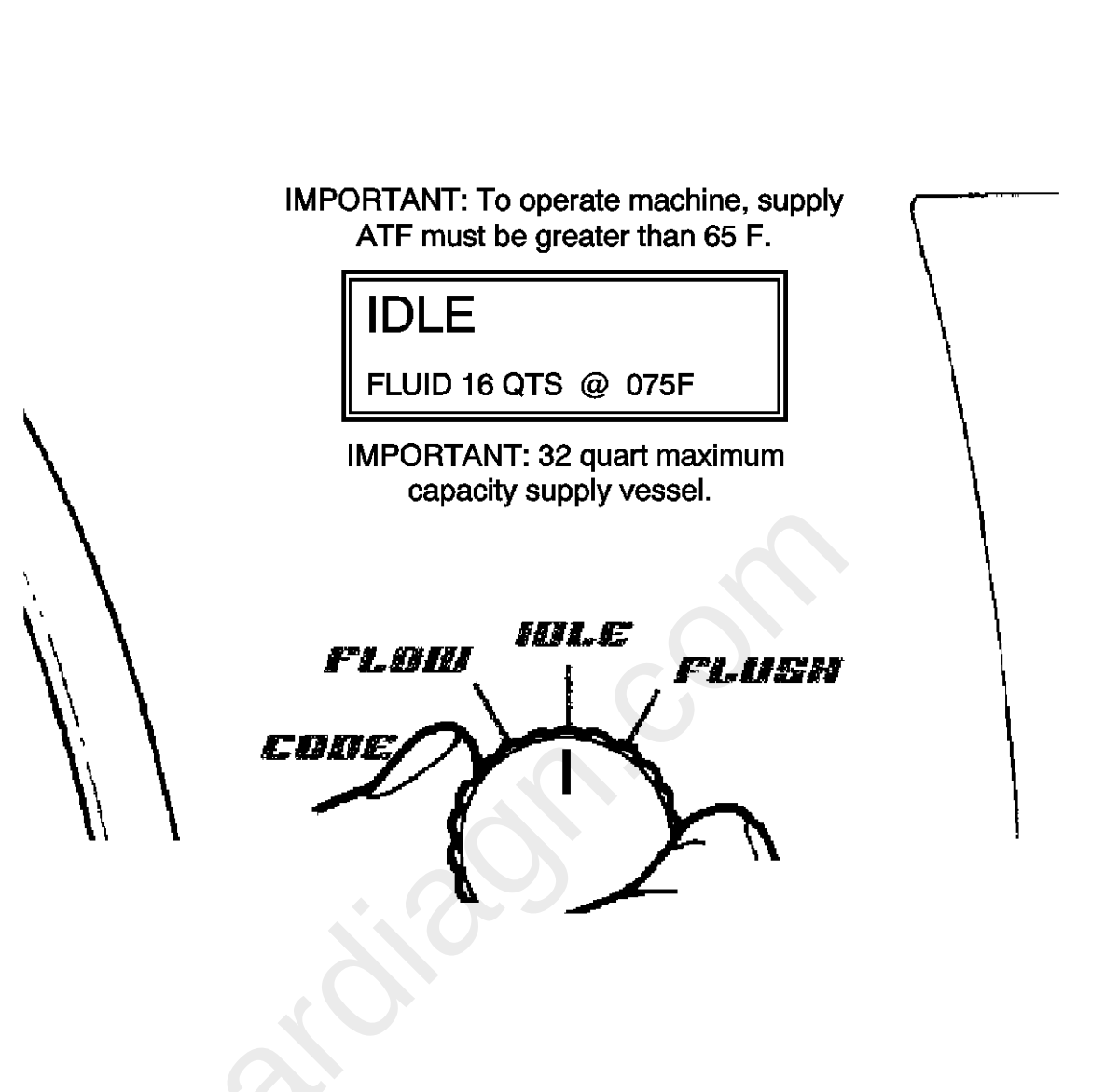
Fig 4: Main Function Switch FLUSH Position



Courtesy of GENERAL MOTORS COMPANY

5. Turn the main function switch to the FLUSH position. Allow the machine to operate for 30 seconds.

Fig 5: Main Function Switch IDLE Position

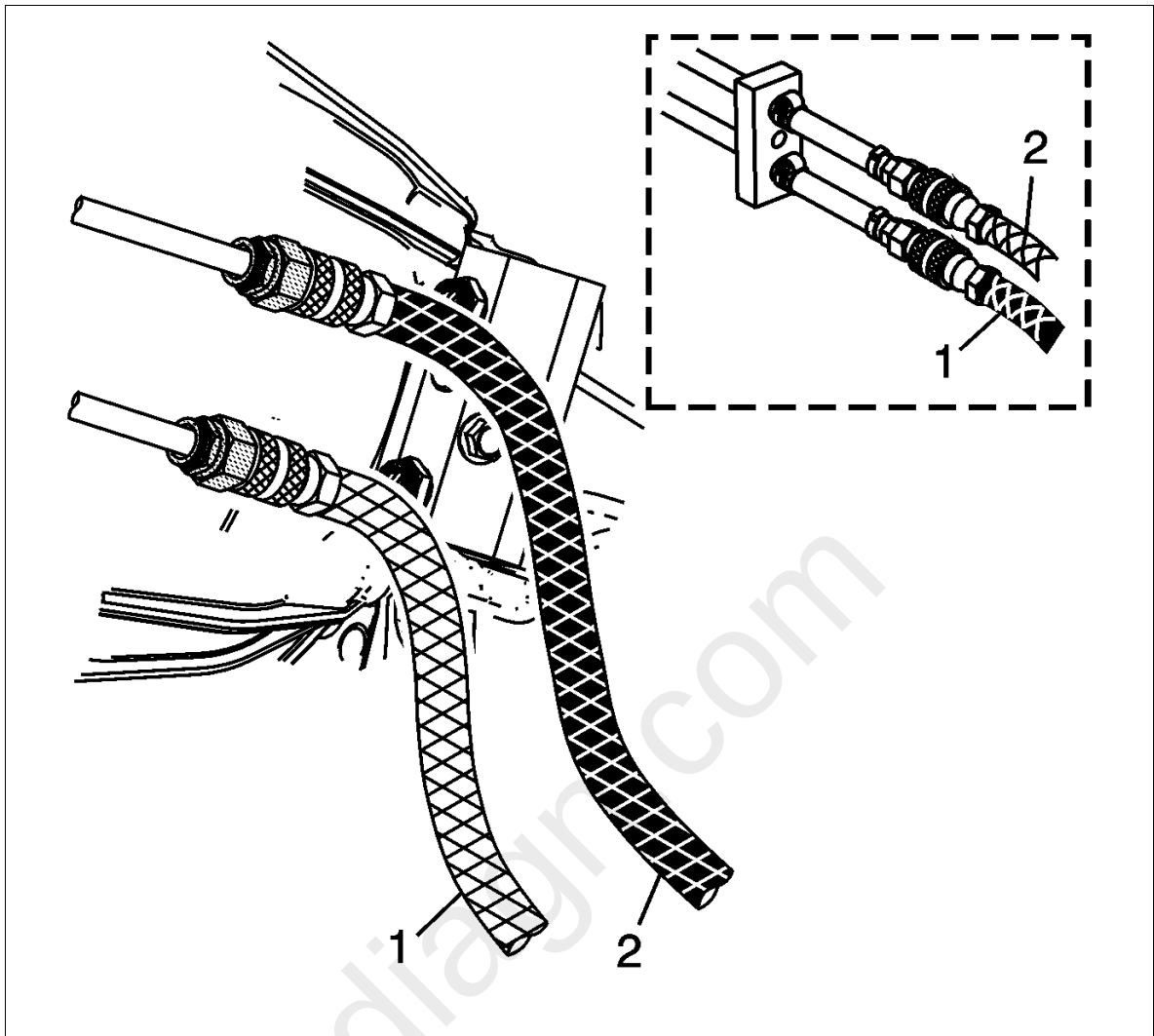


Courtesy of GENERAL MOTORS COMPANY

6. Turn the main function switch to the IDLE position and allow the supply vessel pressure to dissipate.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (8L90) > FORWARD FLUSH**

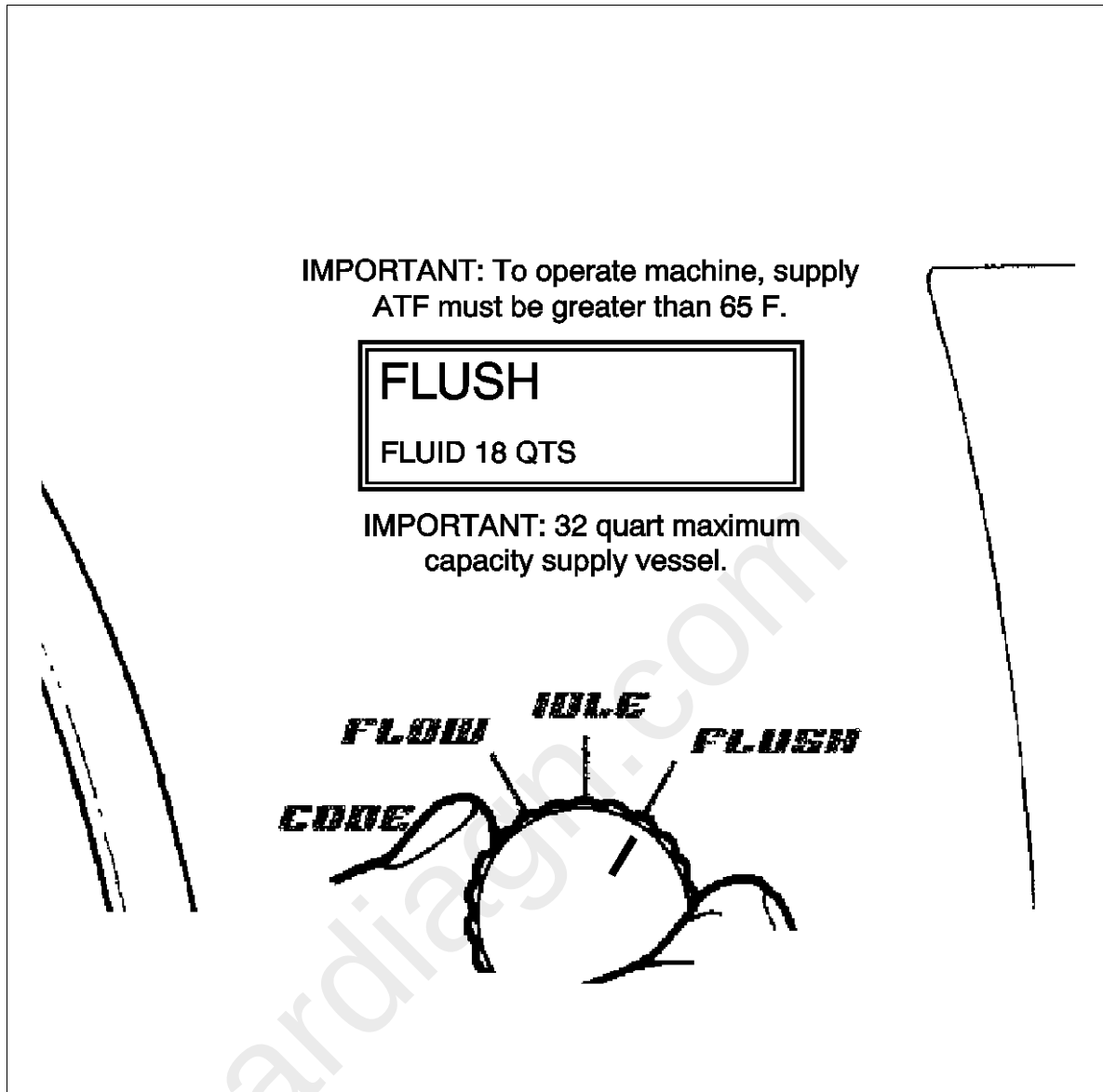
Fig 1: Supply And Waste Hoses



Courtesy of GENERAL MOTORS COMPANY

1. Disconnect the supply and waste hoses from the vehicle cooler lines. Reverse the supply hose (2) and waste hose (1) to provide a normal flow direction.

Fig 2: Main Function Switch FLUSH Position

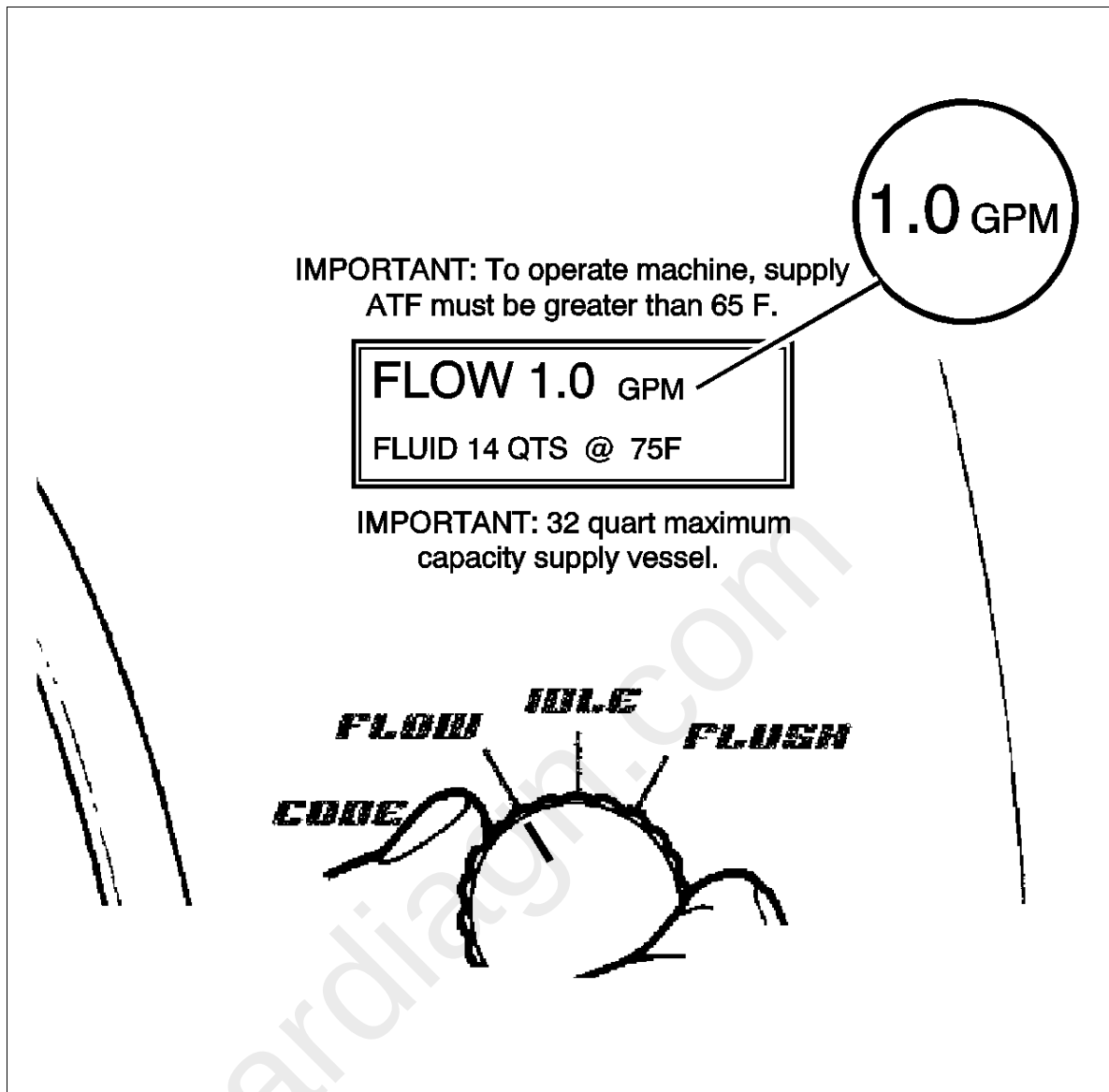


Courtesy of GENERAL MOTORS COMPANY

2. Turn the main function switch to the FLUSH position and allow machine to operate for 30 seconds.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (8L90) > FLOW TEST**

Fig 1: Main Function Switch FLOW Position



Courtesy of GENERAL MOTORS COMPANY

 NOTE:

If the flow rate is less than 0.5 gpm, the LCD displays an error message. Refer to the Troubleshooting section of the operation manual.

1. Turn the main function switch to the **FLOW** position and allow the oil to flow for 15 seconds. Observe and note the flow rate; this is the **TESTED** flow rate.
2. Compare the **TESTED** flow rate to the **MINIMUM** flow rate information previously recorded.
 1. If the **TESTED** flow rate is equal to or greater than the **MINIMUM** flow rate recorded, the oil cooling system is functioning properly. Perform Code Recording Procedure.
 2. If the **TESTED** flow rate is less than the **MINIMUM** flow rate previously recorded, repeat

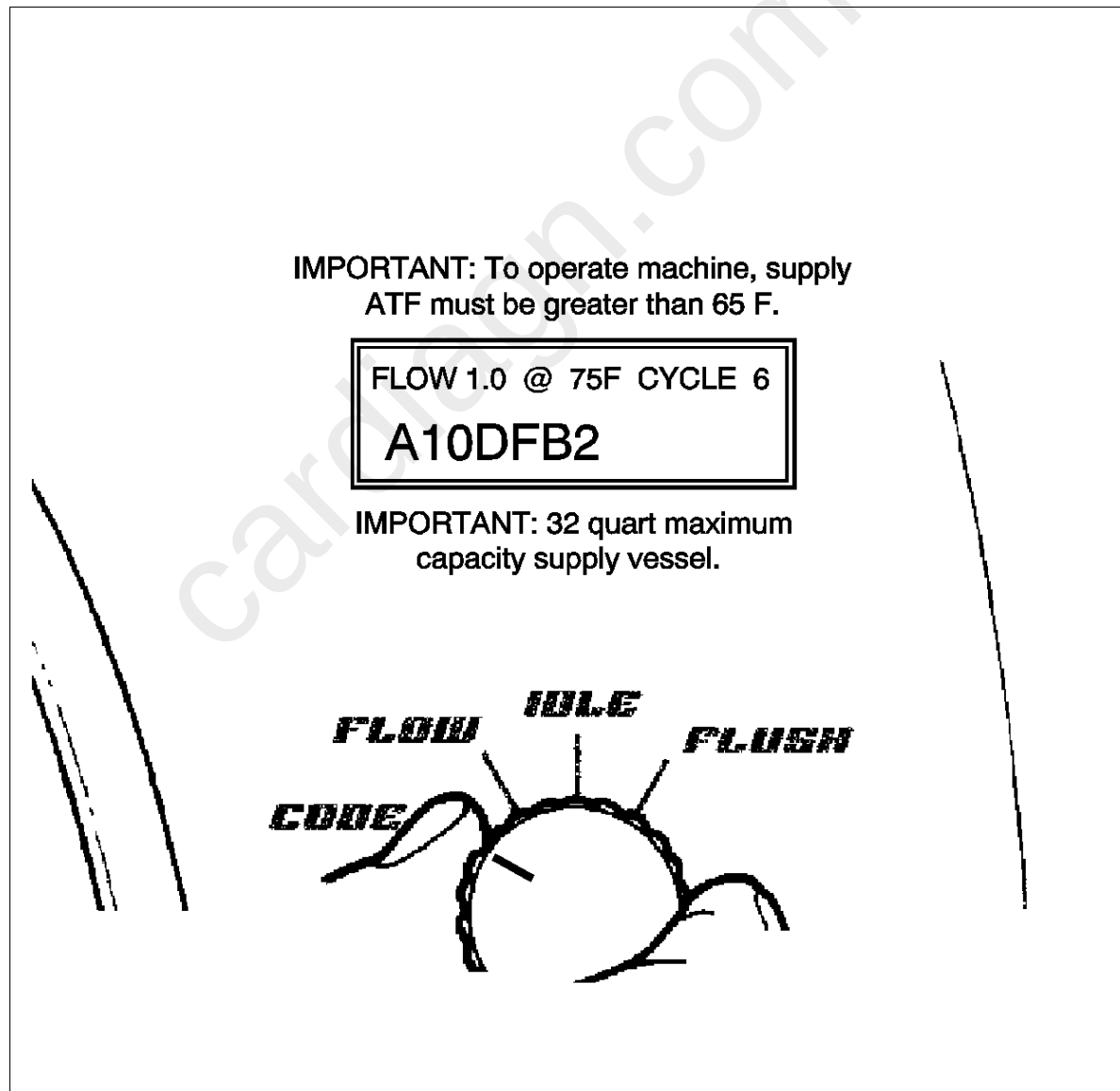
the back flush and forward flush procedures.

3. If the TESTED flow rate is less than the MINIMUM flow rate after the second test, perform Code Recording Procedure.

1. Replace the transmission oil cooler.
2. Reconnect supply and waste hoses to the cooler lines in the normal flow direction.
Perform Flow Test.
3. Perform Code Recording Procedure.

DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER FLUSHING AND FLOW TEST (8L90) > CODE RECORDING PROCEDURE

Fig 1: Main Function Switch CODE Position



1. Turn the main function switch to the CODE position.



NOTE:

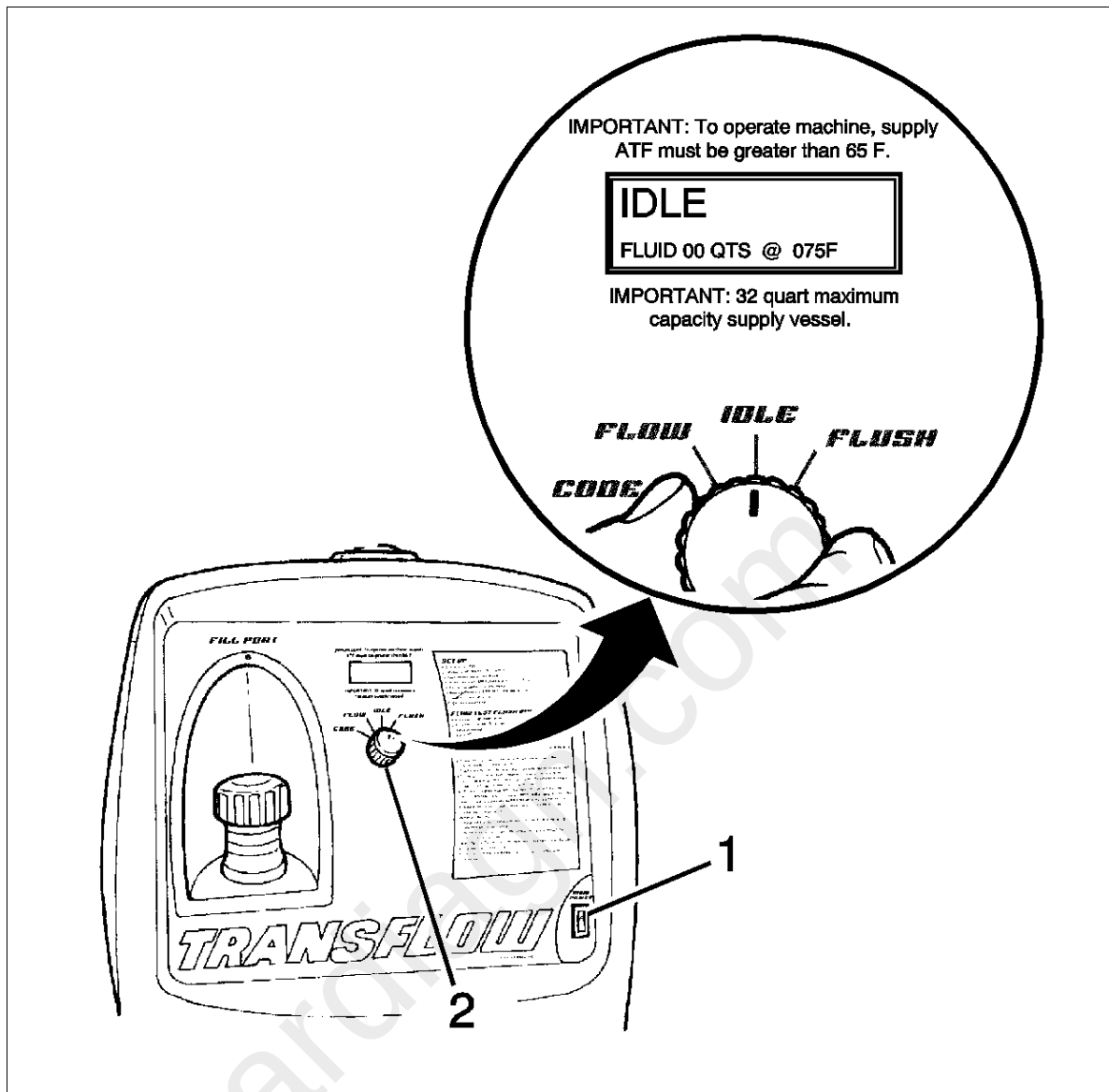
- 1. If power is interrupted prior to the recording of the seven-character code, the code will be lost and the flow rate test will need to be repeated.*
- 2. The flow test must run for a minimum of 8-10 seconds and be above 0.5 GPM for a code to be generated.*

2. Record TESTED flow rate, temperature, cycle and seven-character flow code information on repair order.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRANSMISSION FLUID COOLER
FLUSHING AND FLOW TEST (8L90) > CLEAN-UP**

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Fig 1: Main Power Switch & Main Function Switch



Courtesy of GENERAL MOTORS COMPANY

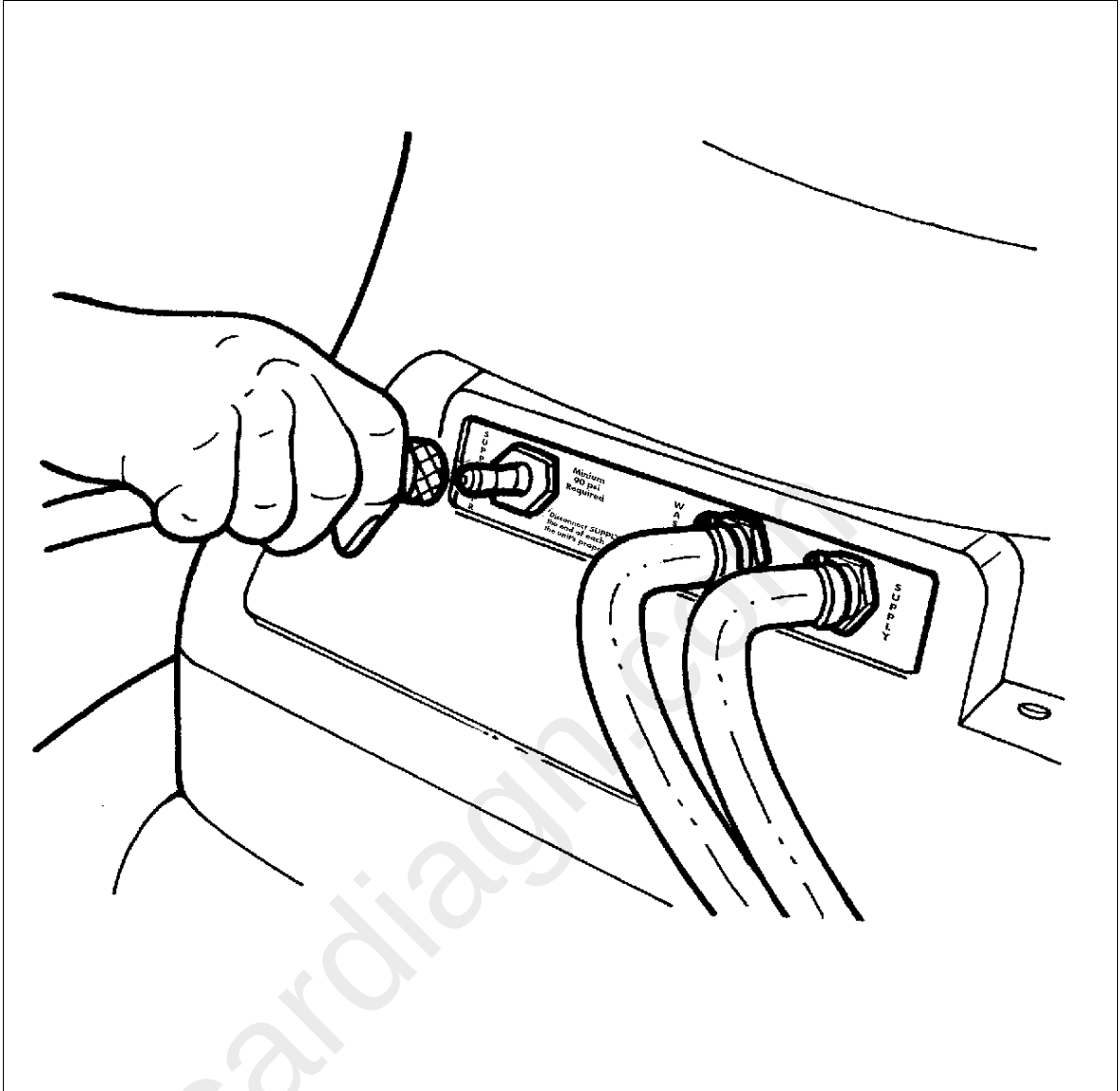
1. Turn the main function switch (2) to the IDLE position and allow the supply vessel pressure to dissipate.
2. Turn the main power switch (1) to the OFF position.

 NOTE:

1. A small amount of water may drain from the bottom of the unit when the air supply is disconnected. This is a normal operation of the built-in water separator.
2. If the fluid in the **DT-45096** transmission oil cooling system flush and flow test tool is different than what is used in the transmission, use compressed air to blow the residual transmission fluid out of the oil cooler and lines.

3. Disconnect the supply and waste hoses and the 12-volt power source from the vehicle.

Fig 2: Applying Shop Air Supply Hose To Quick-Disconnect



Courtesy of GENERAL MOTORS COMPANY

4. Disconnect the air supply hose from **DT-45096** flush and flow test tool.
5. Remove the **DT-45096-30** or the **J-35944-200A** adapters.
6. Dispose of the waste automatic transmission fluid in accordance with all applicable federal, state, and local requirements.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE SEAL REPLACEMENT (WITH V03)

Special Tools

- **DT-45201** Cooler Line Seal Remover

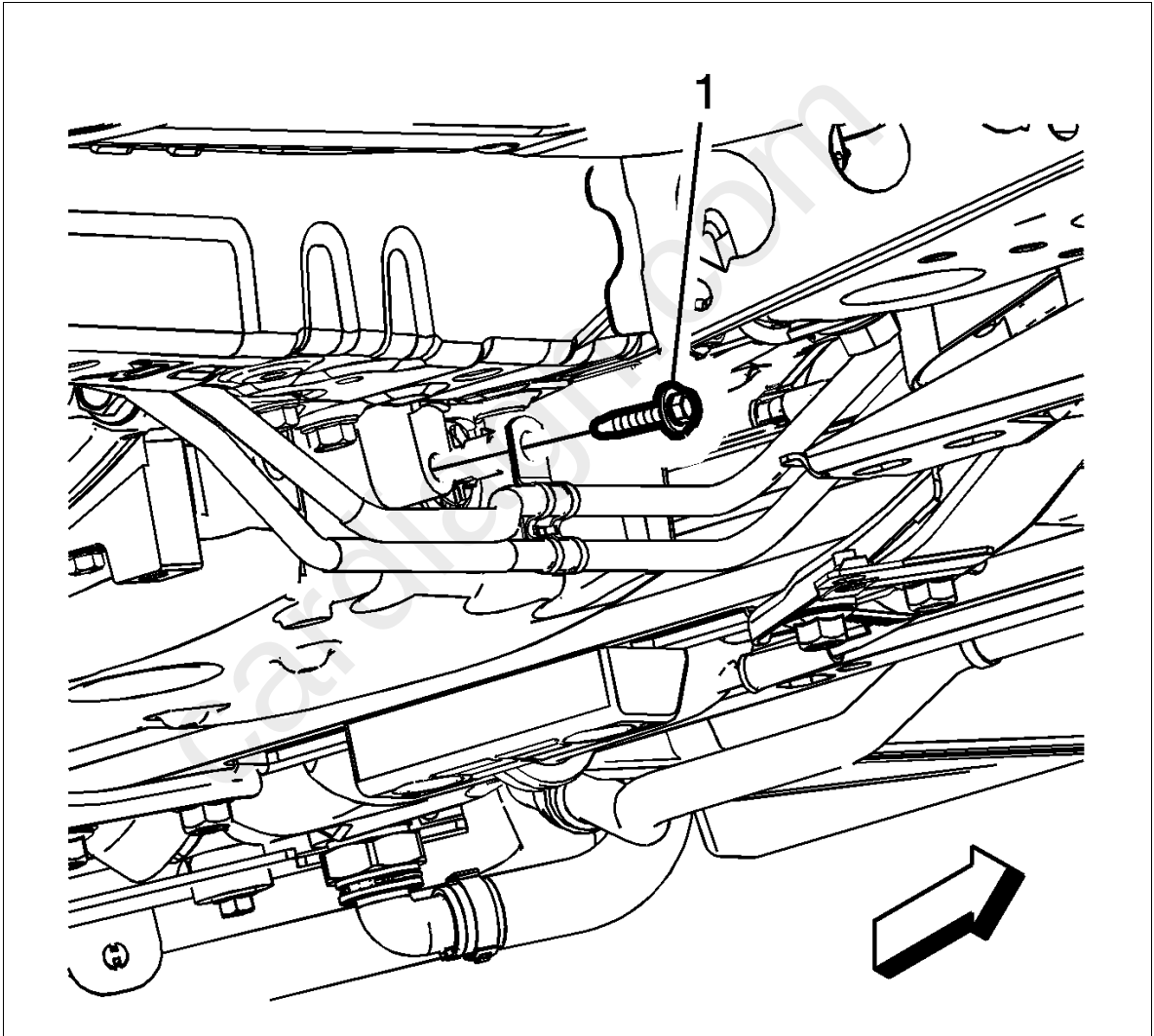
- **DT-47770** Cooler Line Seal Installer

For equivalent regional tools, refer to Special Tools .

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE SEAL REPLACEMENT (WITH V03) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP) .
2. Place a drain pan under the transmission.

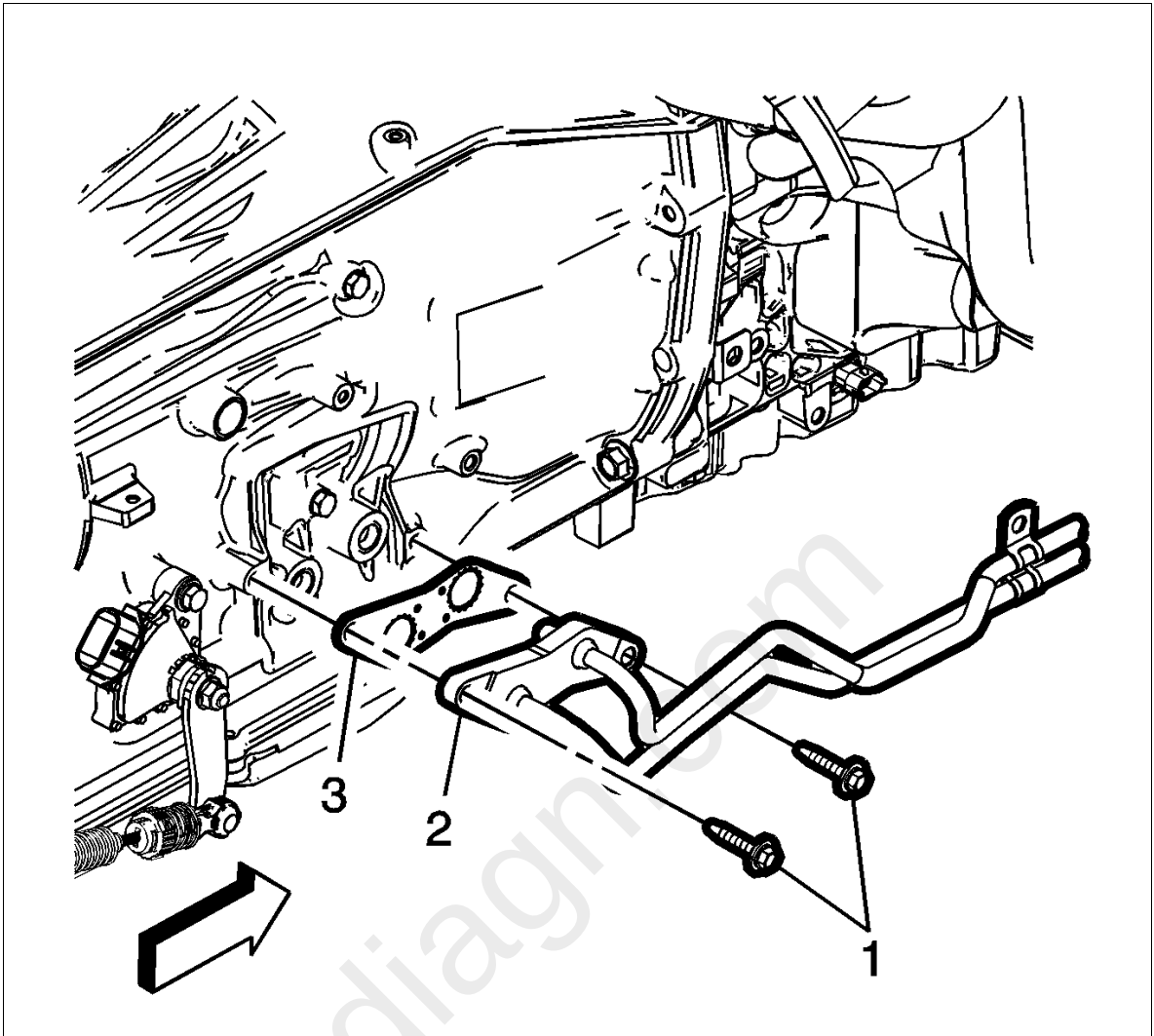
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe Bolt



Courtesy of GENERAL MOTORS COMPANY

3. Remove the transmission fluid cooler inlet and outlet pipe bolt (1).

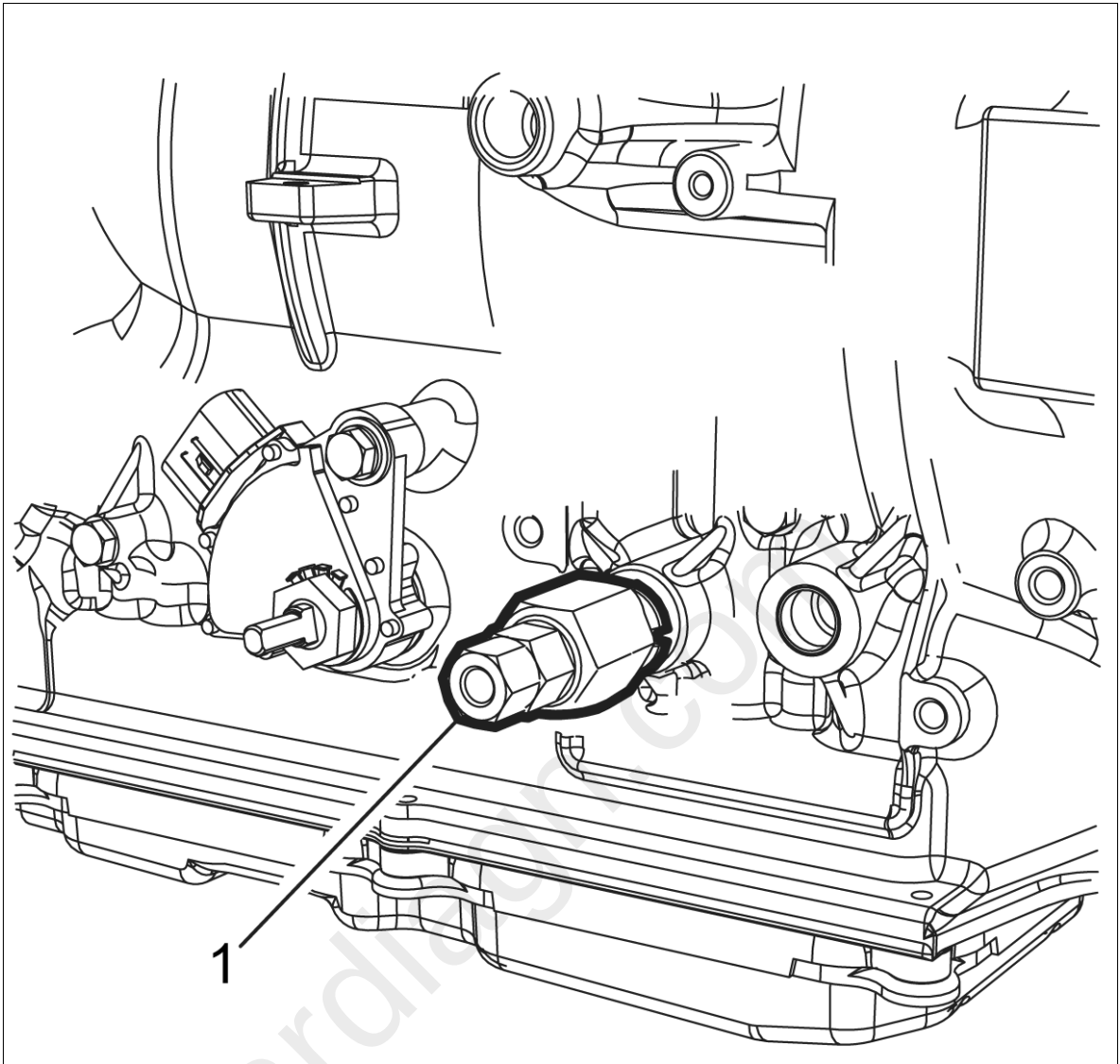
Fig 2: Transmission Fluid Cooler Inlet And Outlet Pipes



Courtesy of GENERAL MOTORS COMPANY

4. Remove the transmission fluid cooler inlet and outlet pipe bolts (1) from the transmission.
5. Remove the transmission fluid cooler inlet and outlet pipe (2) from the transmission.
6. Remove and discard the transmission fluid cooler inlet and outlet pipe fitting seal (3).
7. Remove the transmission support and lower the transmission to provide tool access. Refer to Transmission Support Replacement (MM6 Manual Transmission) Transmission Support Replacement (M13 Manual Transmission) Transmission Support Replacement (Automatic Transmission) .

Fig 3: Transmission Oil Cooler Line Seal Remover

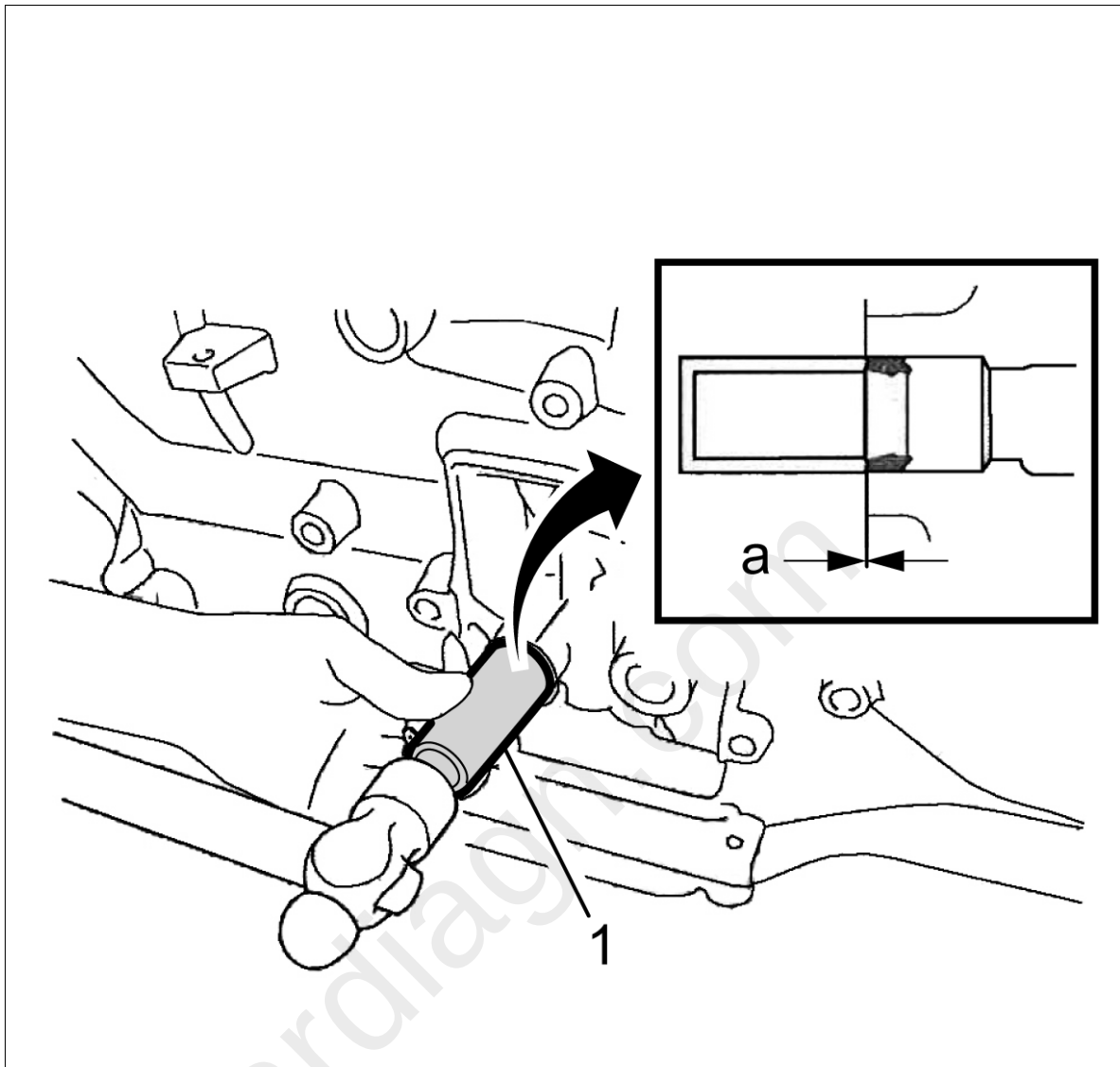


Courtesy of GENERAL MOTORS COMPANY

8. Use **DT-45201** remover (1) to remove the transmission oil cooler line seals from the transmission.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE SEAL REPLACEMENT (WITH V03) > INSTALLATION PROCEDURE

Fig 1: Installing Transmission Oil Cooler Line Seal



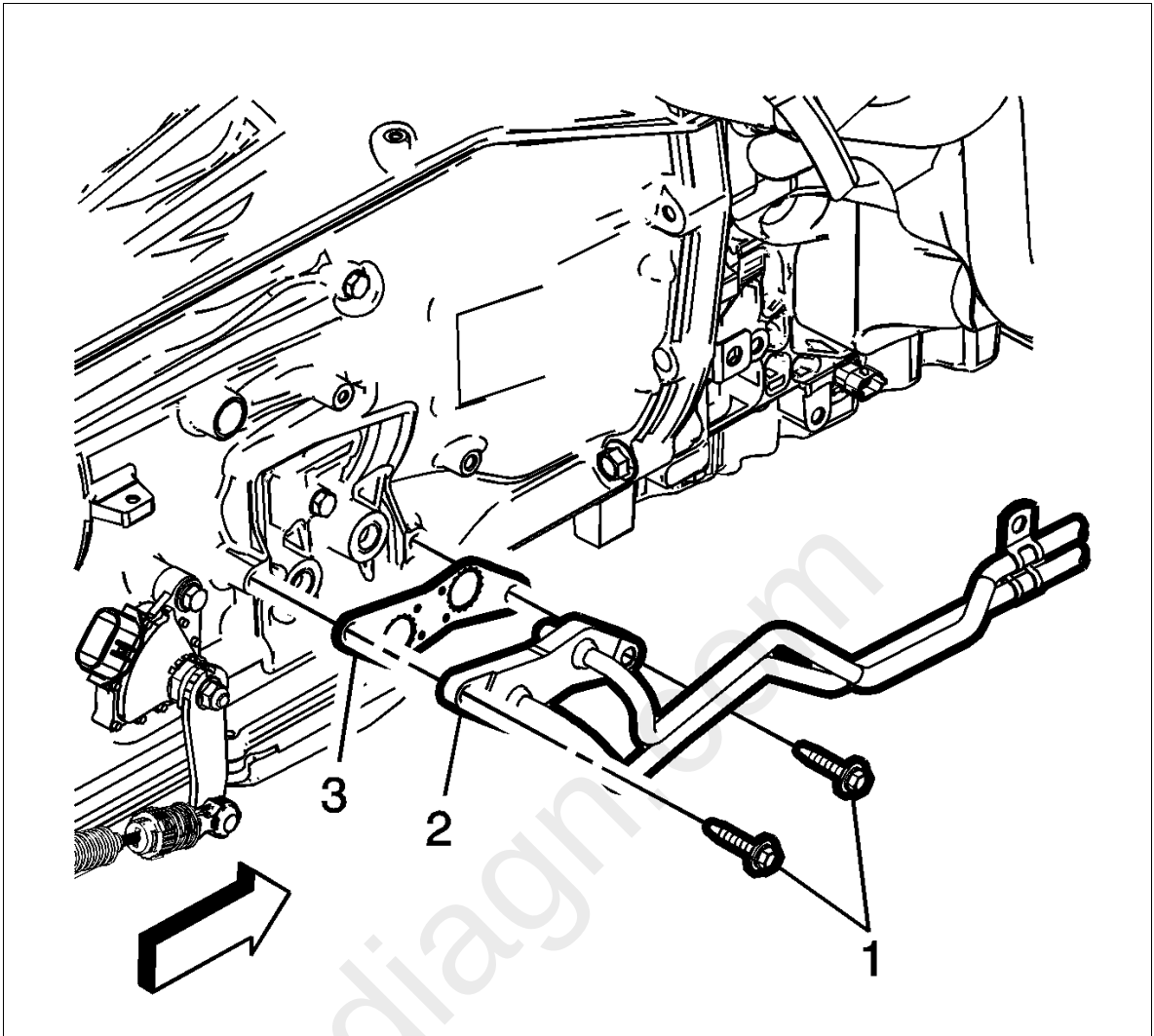
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Dimension a is 0-0.3 mm (0-0.0118 in) to the surface of the transmission case.

1. Use **DT-47770** installer (1) to install the cooler plug seal.
2. Install the transmission support and lower the transmission. Refer to Transmission Support Replacement (MM6 Manual Transmission)Transmission Support Replacement (M13 Manual Transmission)Transmission Support Replacement (Automatic Transmission) .

Fig 2: Transmission Fluid Cooler Inlet And Outlet Pipes



Courtesy of GENERAL MOTORS COMPANY

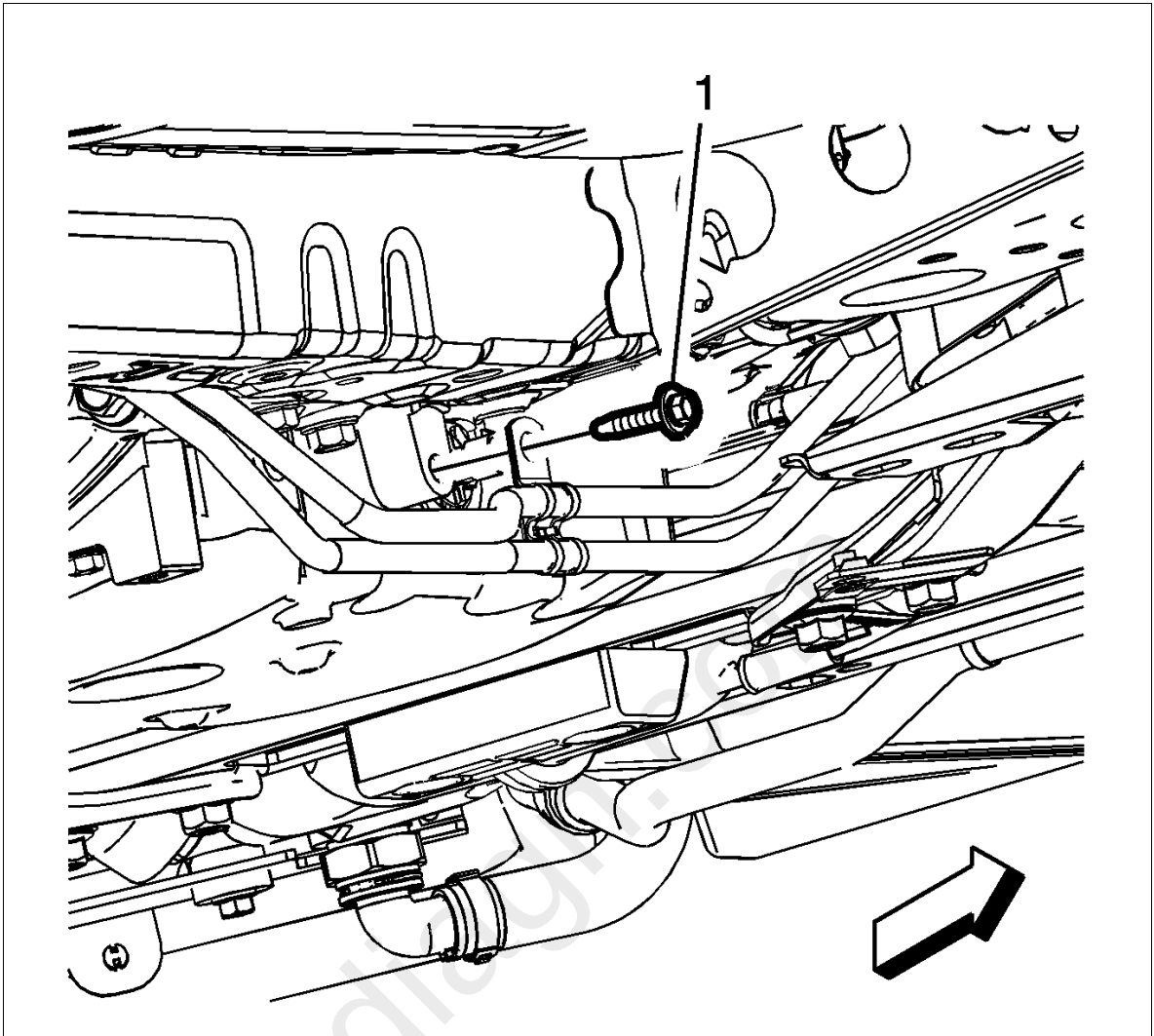
3. Install a NEW transmission fluid cooler inlet and outlet pipe fitting seal (3).

 **CAUTION:**

Refer to Fastener Caution .

4. Install the transmission fluid cooler inlet and outlet pipe bolts (1) and tighten to 22 N.m (16 lb ft).

Fig 3: Transmission Fluid Cooler Inlet And Outlet Pipe Bolt



Courtesy of GENERAL MOTORS COMPANY

5. Install the transmission fluid cooler inlet and outlet pipe bolt (1) to the oil pan and tighten to 22 N.m (16 lb ft).
6. Remove the drain pan.
7. Fill the transmission to the proper level with transmission fluid. Refer to .

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE SEAL REPLACEMENT (WITHOUT V03)

Special Tools

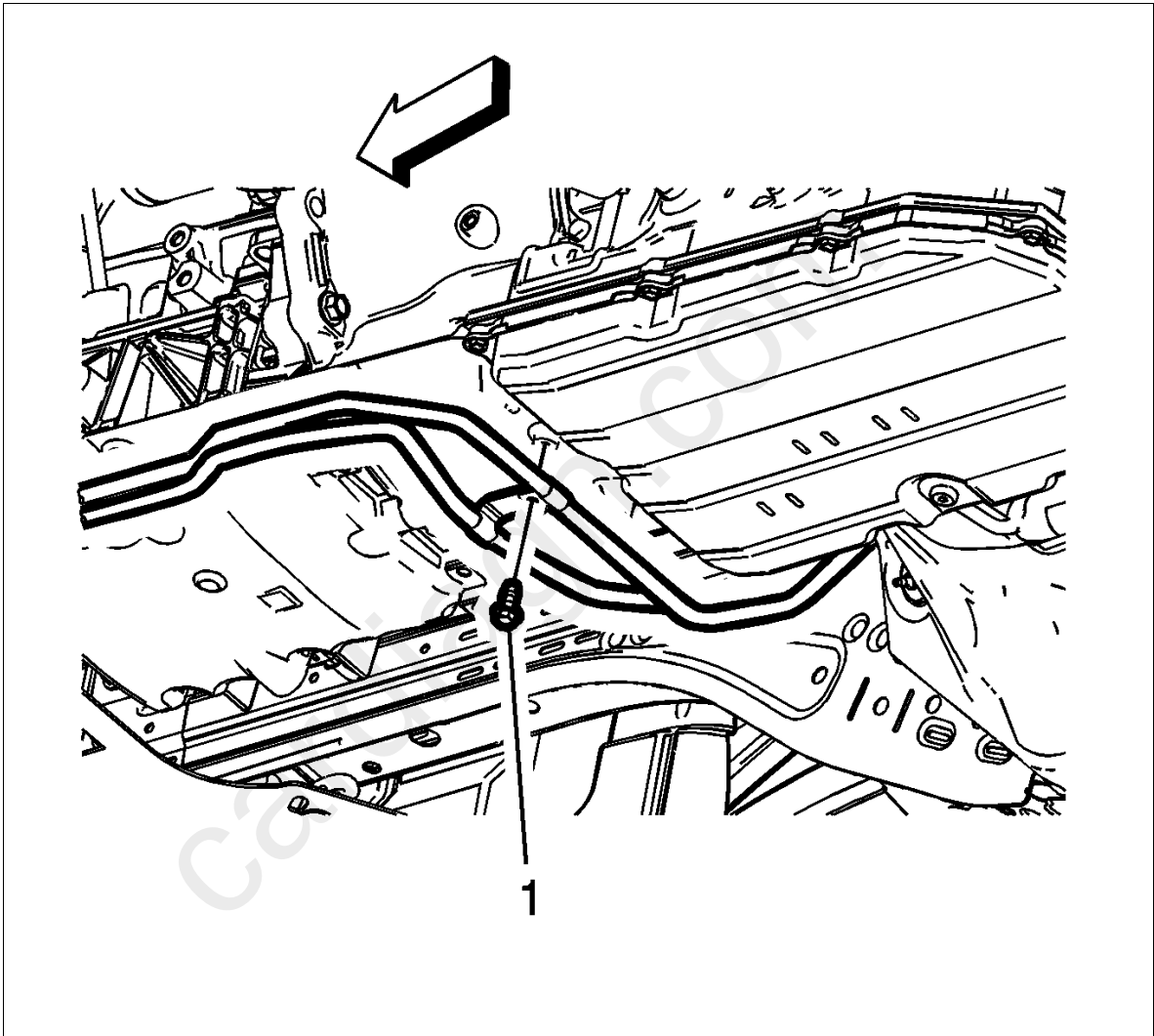
- **DT-45201** Cooler Line Seal Remover
- **DT-47770** Cooler Line Seal Installer

For equivalent regional tools, refer to Special Tools .

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE SEAL REPLACEMENT (WITHOUT V03) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP) .
2. Place a drain pan under the transmission.

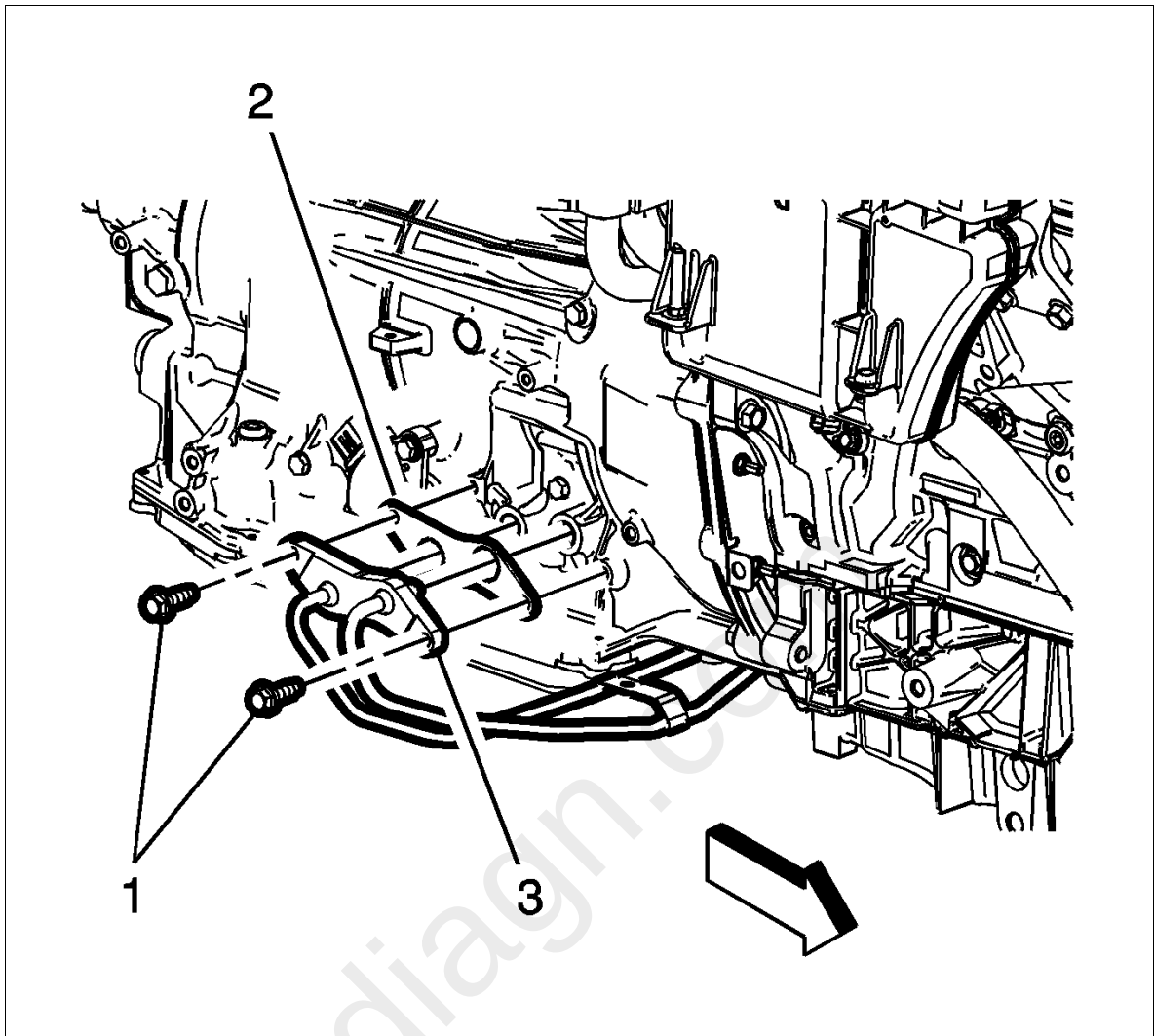
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe Bolt



Courtesy of GENERAL MOTORS COMPANY

3. Remove the transmission fluid cooler inlet and outlet pipe bolt (1).

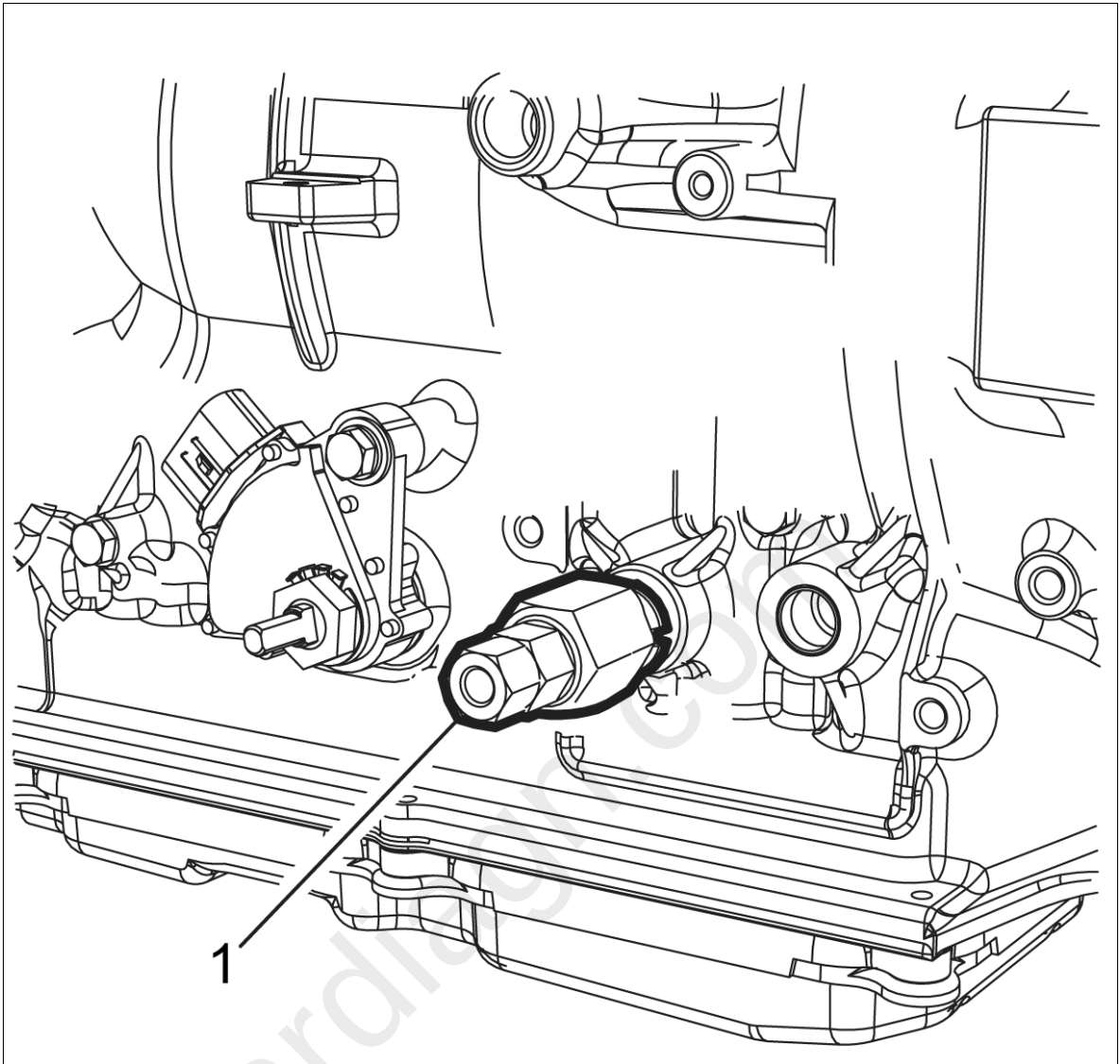
Fig 2: Transmission Fluid Cooler Inlet And Outlet Pipes



Courtesy of GENERAL MOTORS COMPANY

4. Remove the transmission fluid cooler inlet and outlet pipe bolts (1) from the transmission.
5. Remove the transmission fluid cooler inlet and outlet pipe (2) from the transmission.
6. Remove and discard the transmission fluid cooler inlet and outlet pipe fitting seal (3).
7. Remove the transmission support and lower the transmission to provide tool access. Refer to Transmission Support Replacement (MM6 Manual Transmission) Transmission Support Replacement (M13 Manual Transmission) Transmission Support Replacement (Automatic Transmission) .

Fig 3: Transmission Oil Cooler Line Seal Remover

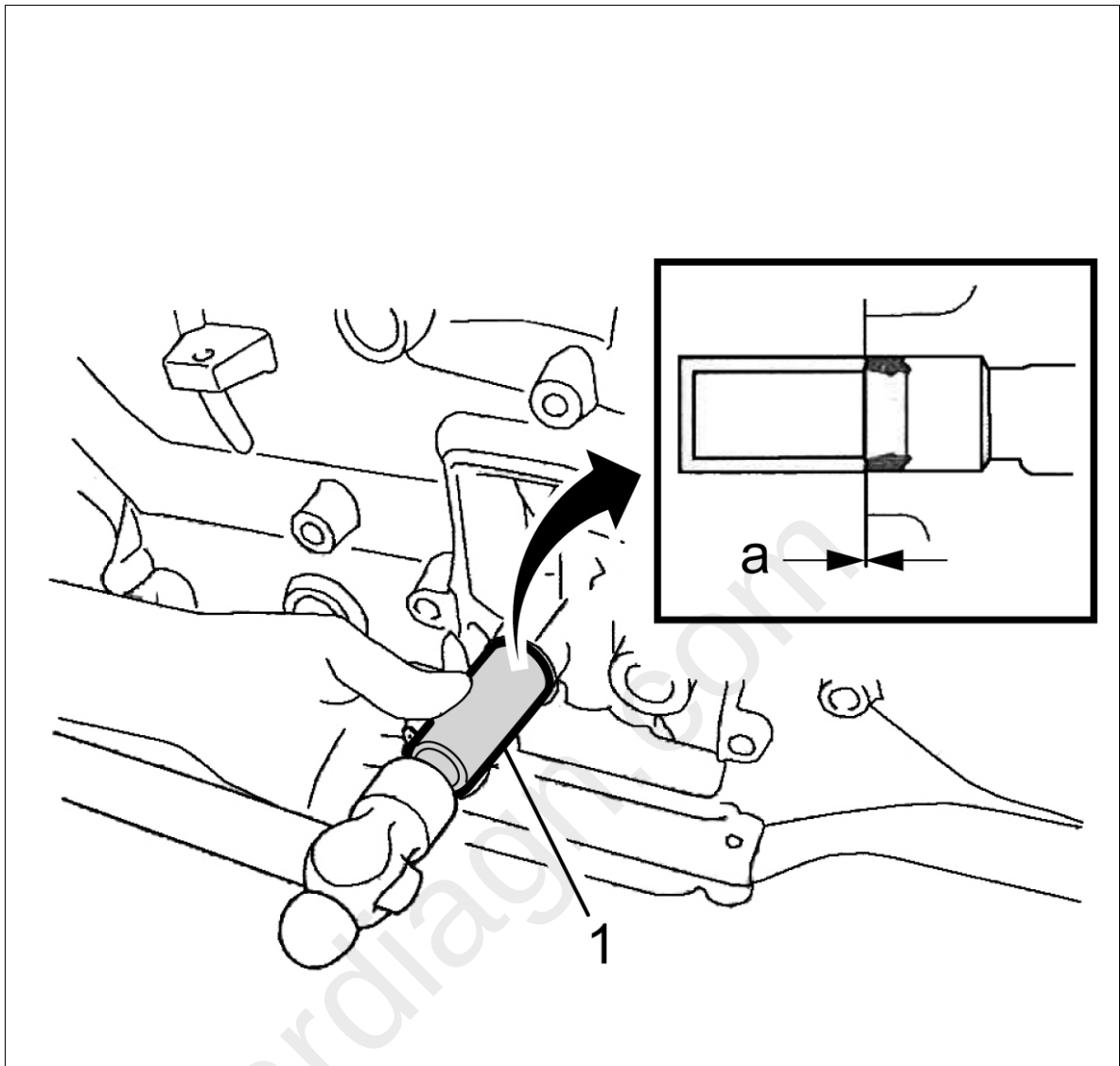


Courtesy of GENERAL MOTORS COMPANY

8. Use **DT-45201** remover (1) to remove the transmission oil cooler line seals from the transmission.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE SEAL REPLACEMENT (WITHOUT V03) > INSTALLATION PROCEDURE

Fig 1: Installing Transmission Oil Cooler Line Seal



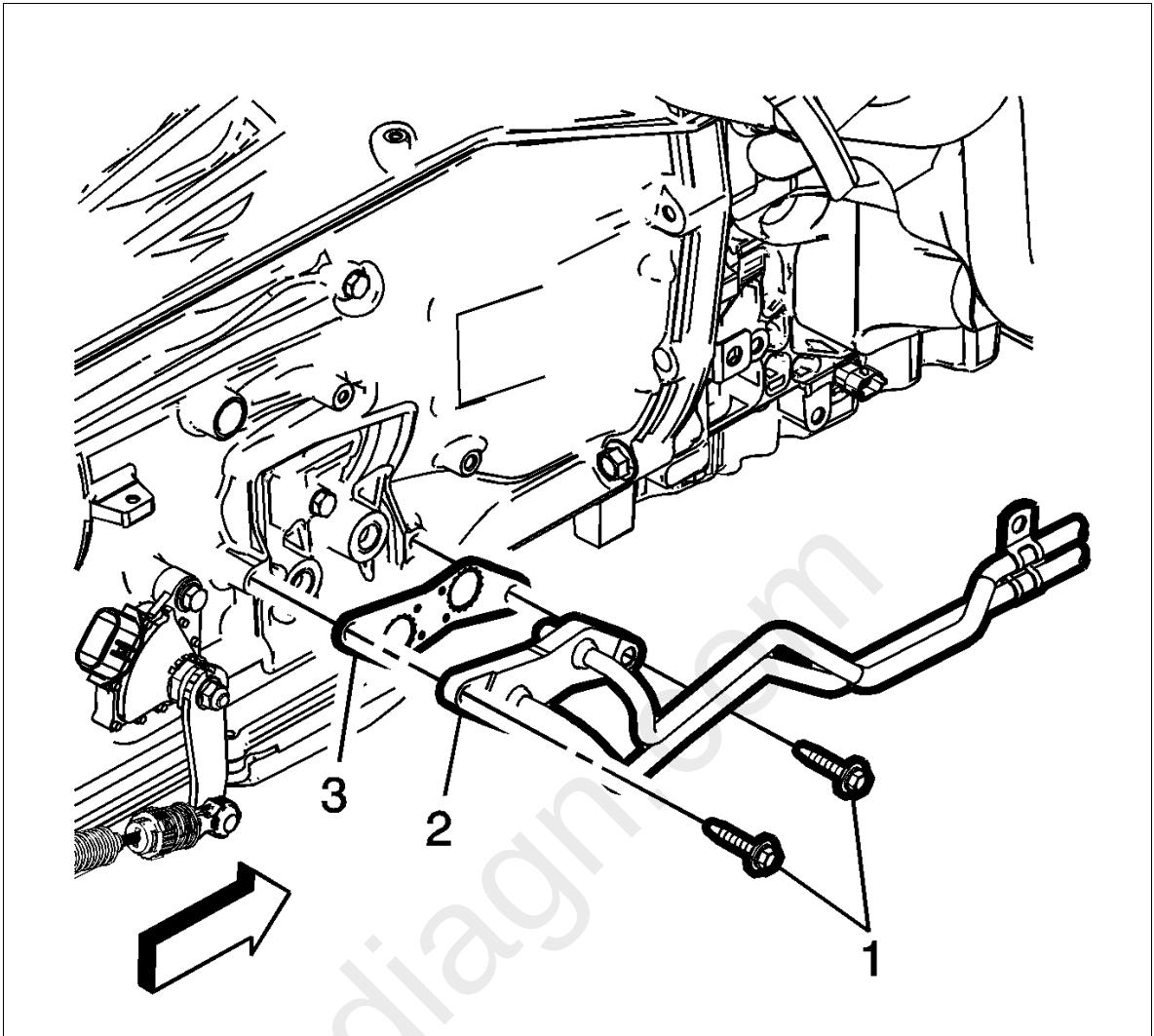
Courtesy of GENERAL MOTORS COMPANY

 NOTE:

Dimension a is 0-0.3 mm (0-0.0118 in) to the surface of the transmission case.

1. Use **DT-47770** installer (1) to install the cooler plug seal.
2. Install the transmission support and lower the transmission. Refer to Transmission Support Replacement (MM6 Manual Transmission)Transmission Support Replacement (M13 Manual Transmission)Transmission Support Replacement (Automatic Transmission) .

Fig 2: Transmission Fluid Cooler Inlet And Outlet Pipes



Courtesy of GENERAL MOTORS COMPANY

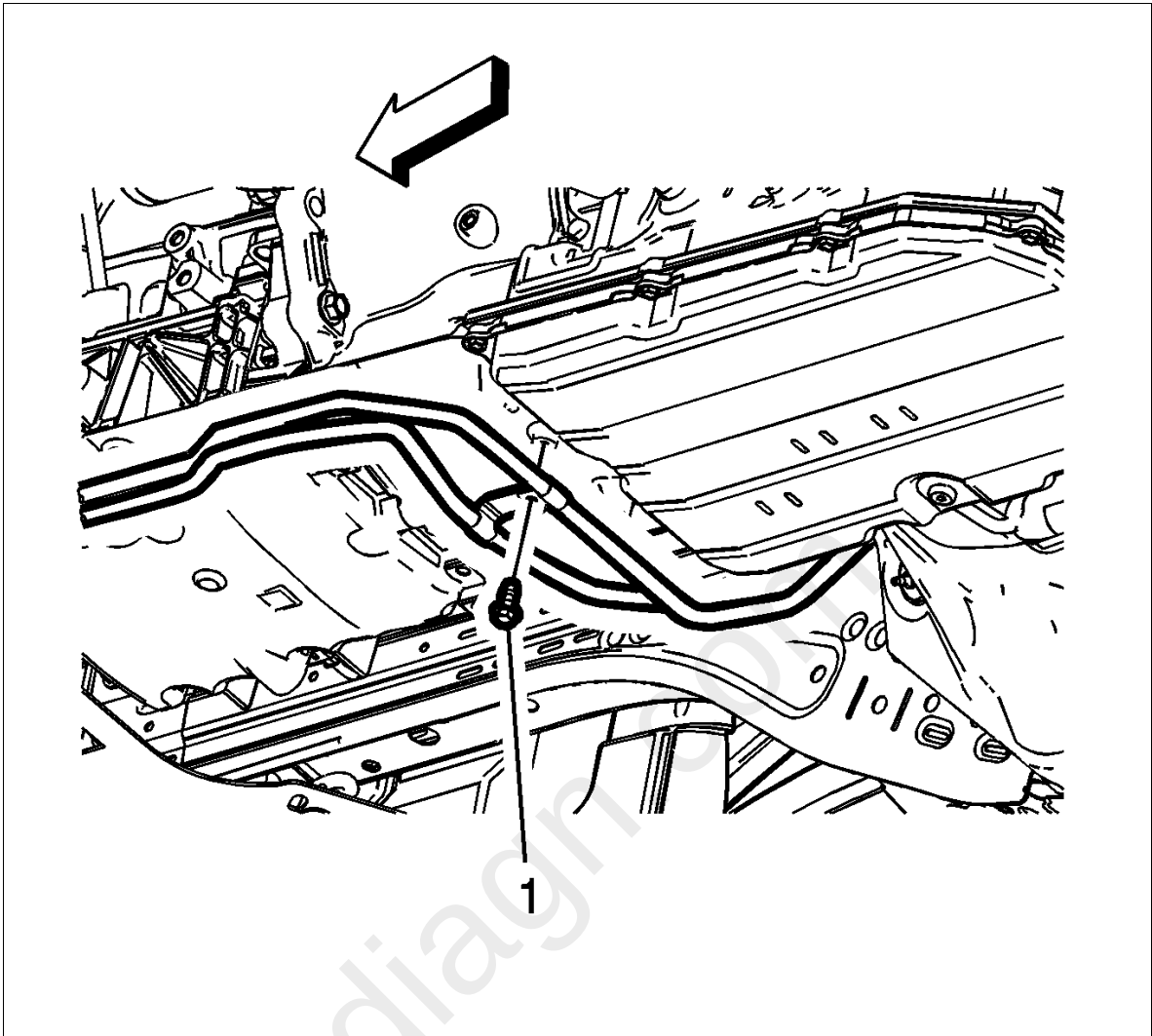
3. Install a NEW transmission fluid cooler inlet and outlet pipe fitting seal (3).

 **CAUTION:**

Refer to Fastener Caution .

4. Install the transmission fluid cooler inlet and outlet pipe bolts (1) and tighten to 22 N.m (16 lb ft).

Fig 3: Transmission Fluid Cooler Inlet And Outlet Pipe Clip Bolt

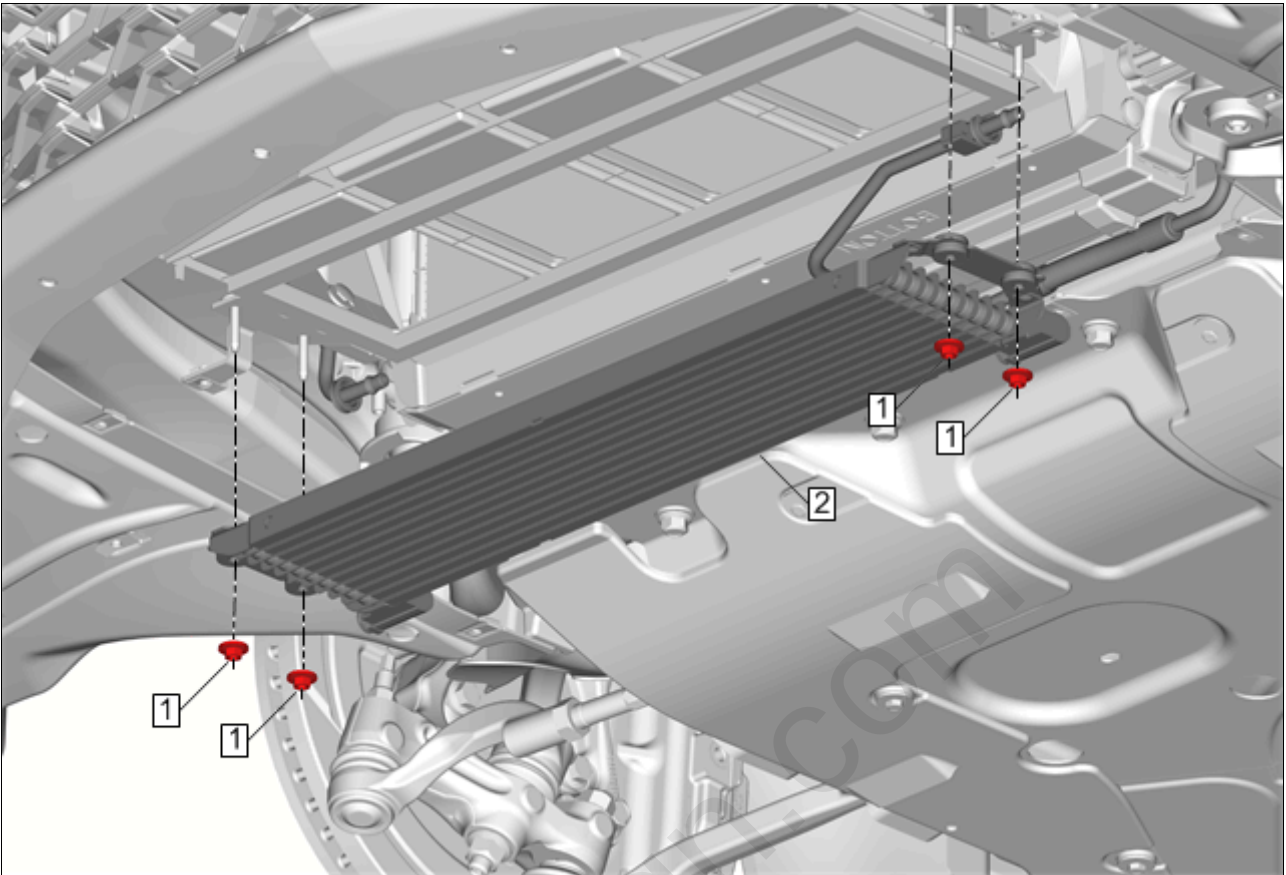


Courtesy of GENERAL MOTORS COMPANY

5. Install the transmission fluid cooler inlet and outlet pipe clip bolt (1) to the transmission and tighten to 9 N.m (80 lb in).
6. Remove the drain pan.
7. Fill the transmission to the proper level with transmission fluid. Refer to .

REPAIR INSTRUCTIONS > TRANSMISSION FLUID AUXILIARY COOLER REPLACEMENT (LT1 WITH M5U OR MM6)

Fig 1: Transmission Fluid Auxiliary Cooler (LT1 With M5U or MM6)

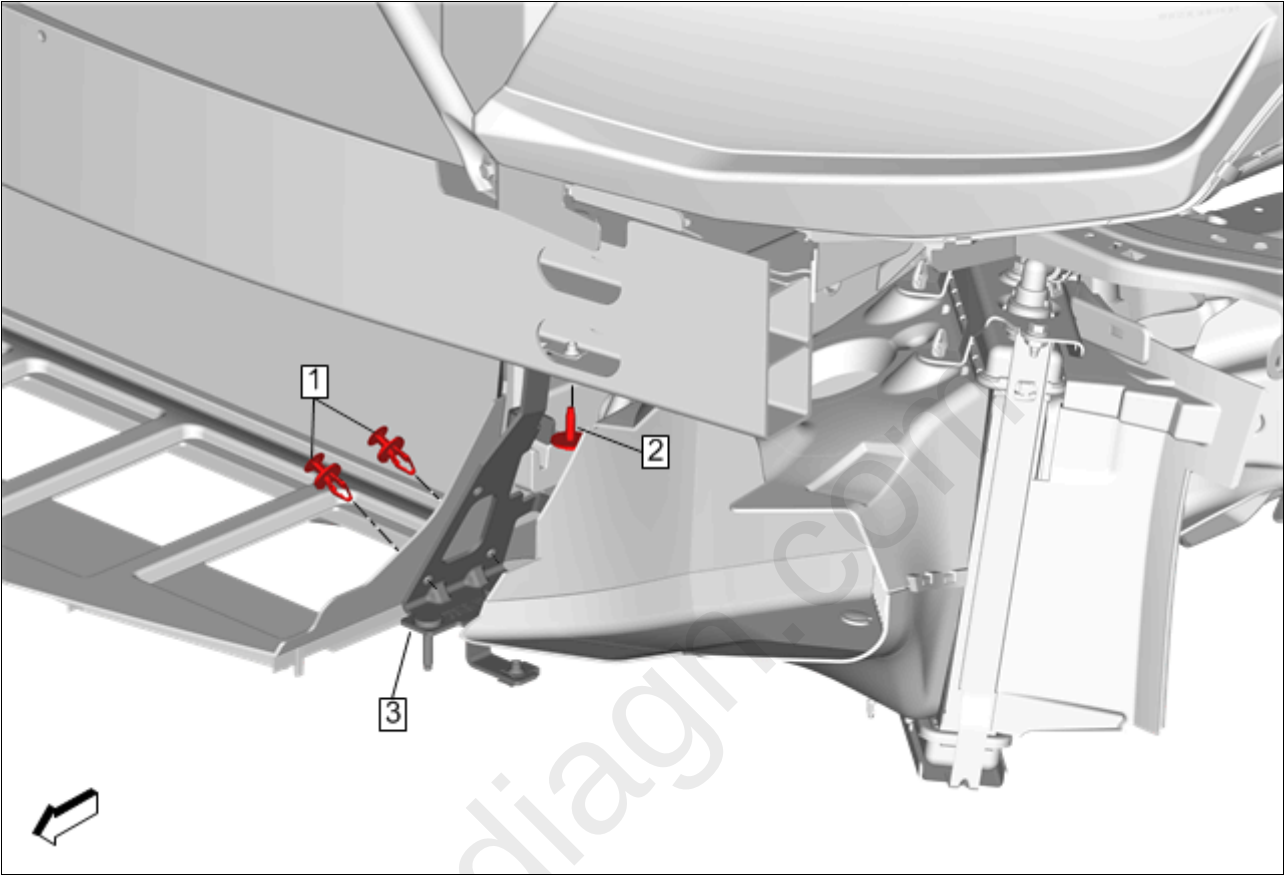


Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures	
1. Front Compartment Air Deflector Replacement (Coupe - LT1) 2. Separate Transmission Fluid Cooler Pipe(ATOC Jumper) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Pipe Replacement (LT1 With M5U or MM6, With KNR, ATOC Jumper) Transmission Fluid Cooler Pipe Replacement (LT1 With MM6, With KNR, Front Jumper Left) Transmission Fluid Cooler Pipe Replacement (LT1 With MM6, With KNR, Mid Line Left) Transmission Fluid Cooler Pipe Replacement (LT1 With MM6, With KNR, Mid Line Right) Transmission Fluid Cooler Pipe Replacement (LT1 With M5U or MM6, With KNR, Rear Differential Inlet Hose) Transmission Fluid Cooler Pipe Replacement (LT1 With M5U or MM6, With KNR, Rear Differential Outlet Hose) Transmission Fluid Cooler Pipe Replacement (LT1 With M5U, With KNR, Mid Line Left) Transmission Fluid Cooler Pipe Replacement (LT1 With M5U, With KNR, Mid Line Right) 3. Separate Transmission Fluid Cooler Inlet and Outlet Pipe at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Inlet and Outlet Pipe Replacement (LT1 With MM6, With KNR) Transmission Fluid Cooler Inlet and Outlet Pipe Replacement (LT1 With M5U, With KNR) Transmission Fluid Cooler Inlet and Outlet Pipe Replacement (LT1 With M5U, Without KNR) Transmission Fluid Cooler Inlet and Outlet Pipe Replacement (LT1 With MM6, Without KNR)	

REPAIR INSTRUCTIONS > TRANSMISSION FLUID AUXILIARY COOLER BRACKET REPLACEMENT (LT1 WITH M5U OR MM)

Fig 1: Transmission Fluid Auxiliary Cooler Bracket (LT1 With M5U or MM)



Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures	
1. Transmission Fluid Auxiliary Cooler Replacement (LT1 With M5U or MM6)	
2. Front Brake Rotor Cooling Duct Replacement (J6G)	
1	Push Pin Retainer (Qty: 3)
2	Transmission Fluid Auxiliary Cooler Bracket Bolt
	CAUTION: Refer to Fastener Caution .

	Tighten 9 N.m (80 lb in)
3	Transmission Fluid Auxiliary Cooler Bracket

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER HOSE/PIPE QUICK-CONNECT FITTING DISCONNECTION AND CONNECTION

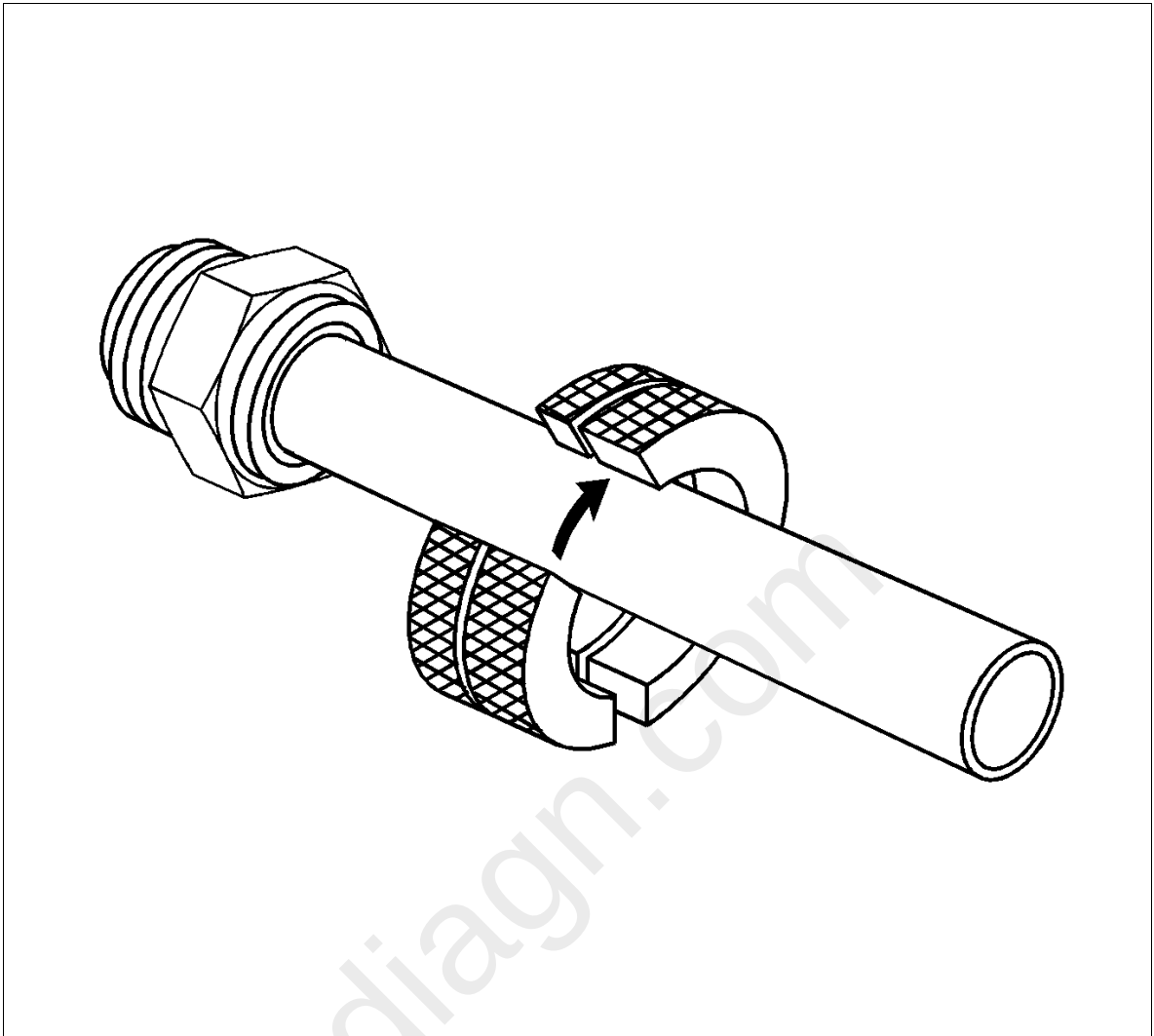
Special Tools

- **DT-28585** Universal Snap Ring Remover for the 5/8 inch Line
- **DT-41623-B** 3/8 inch Line Quick Release Tool

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER HOSE/PIPE QUICK-CONNECT FITTING DISCONNECTION AND CONNECTION > REMOVAL PROCEDURE

1. Remove the plastic cap from the quick connect fitting by pulling the cap back along the pipe.

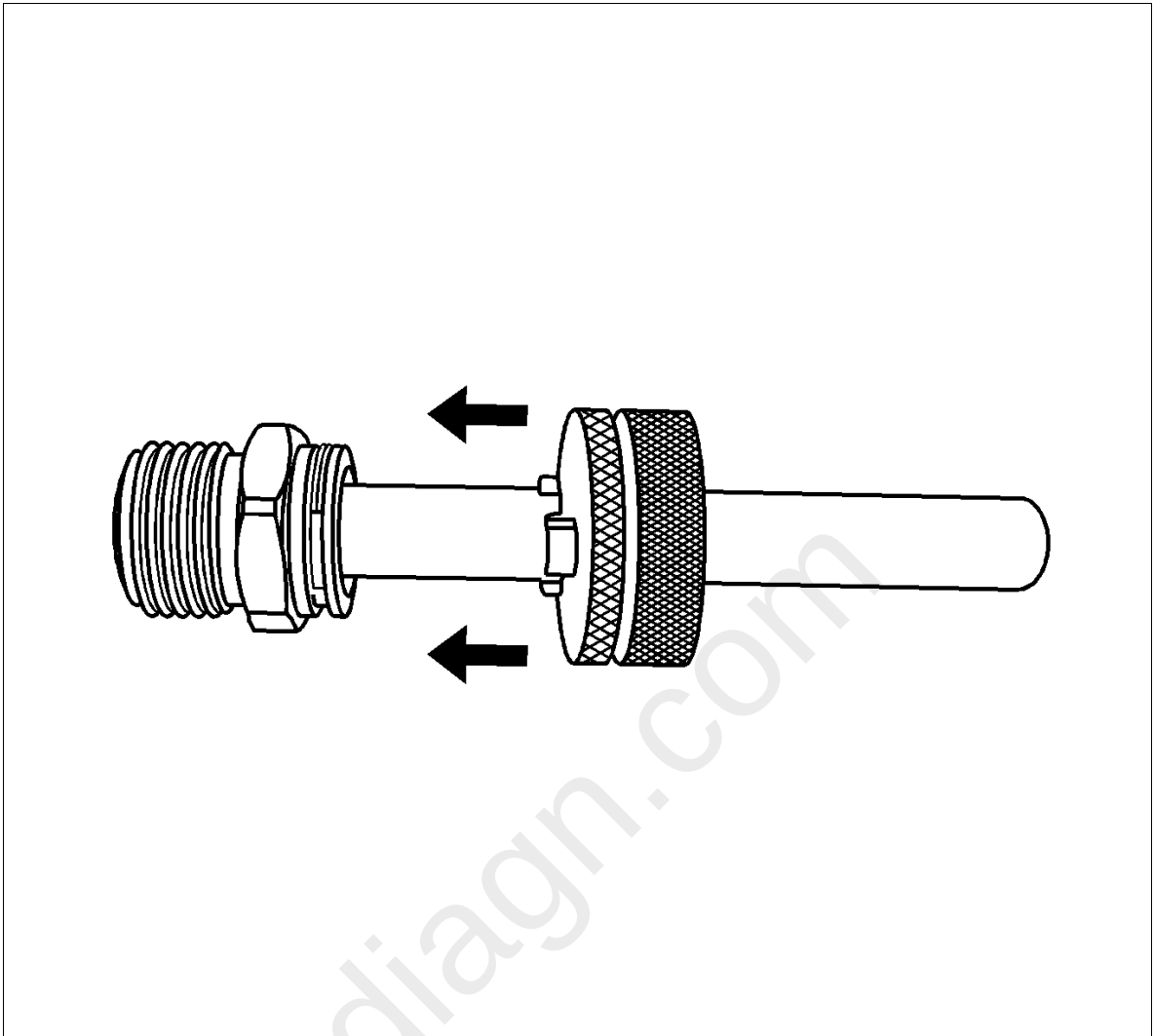
Fig 1: Generator Cooling Inlet Pipe



Courtesy of GENERAL MOTORS COMPANY

2. Install the **DT-41623-B** 3/8 inch line quick release tool onto the transmission oil cooler (TOC) pipe, or use the **DT-28585** universal snap ring remover for the 5/8 inch line.

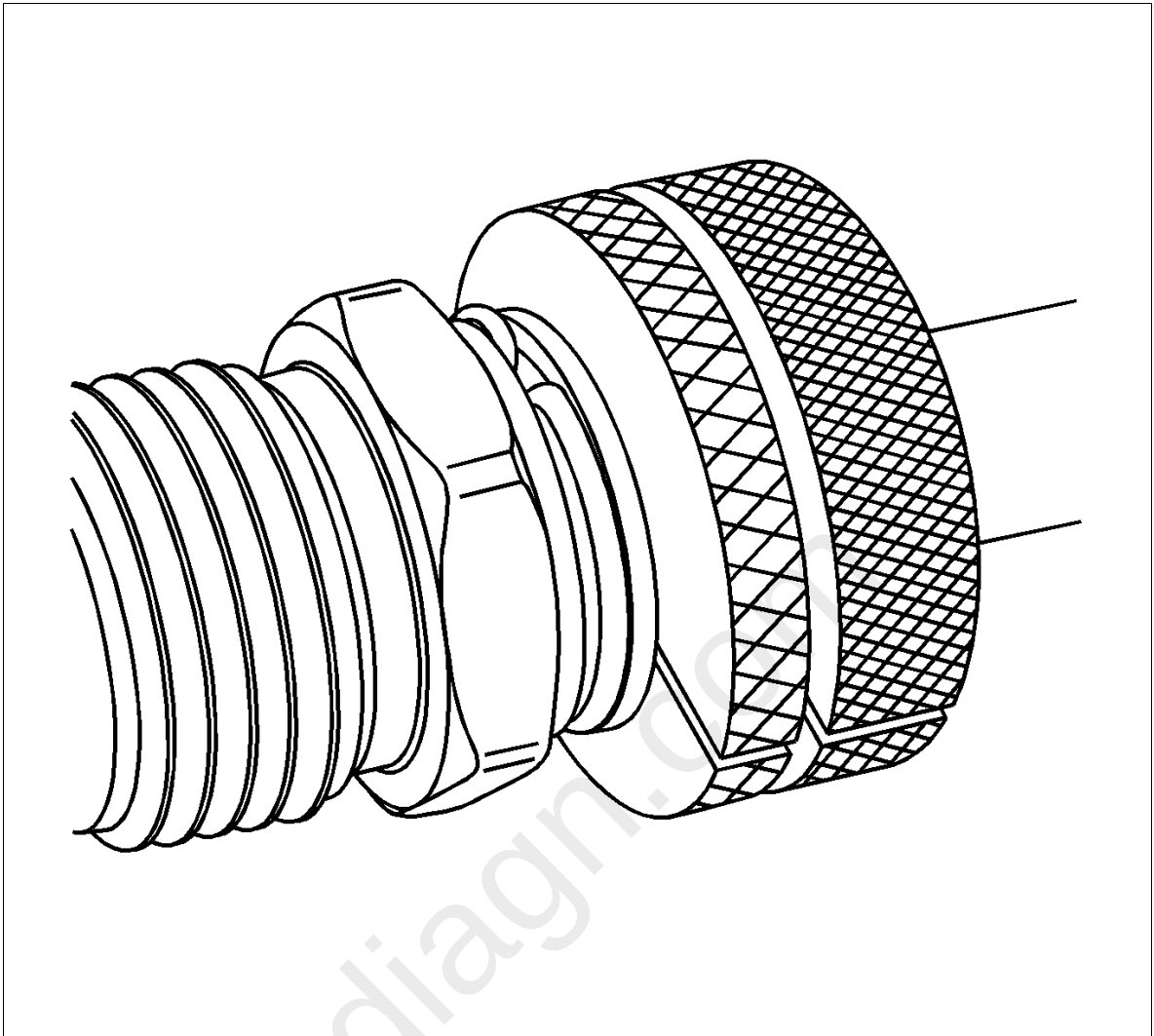
Fig 2: Sliding J 41623-B Toward Generator Cooling Inlet Pipe Fitting



Courtesy of GENERAL MOTORS COMPANY

3. Slide the **DT-41623-B** 3/8 inch line quick release tool toward the TOC pipe fitting, or use the **DT-28585** universal snap ring remover for the 5/8 inch line.

Fig 3: Rotating J 41623-B On Coolant Pipe



Courtesy of GENERAL MOTORS COMPANY

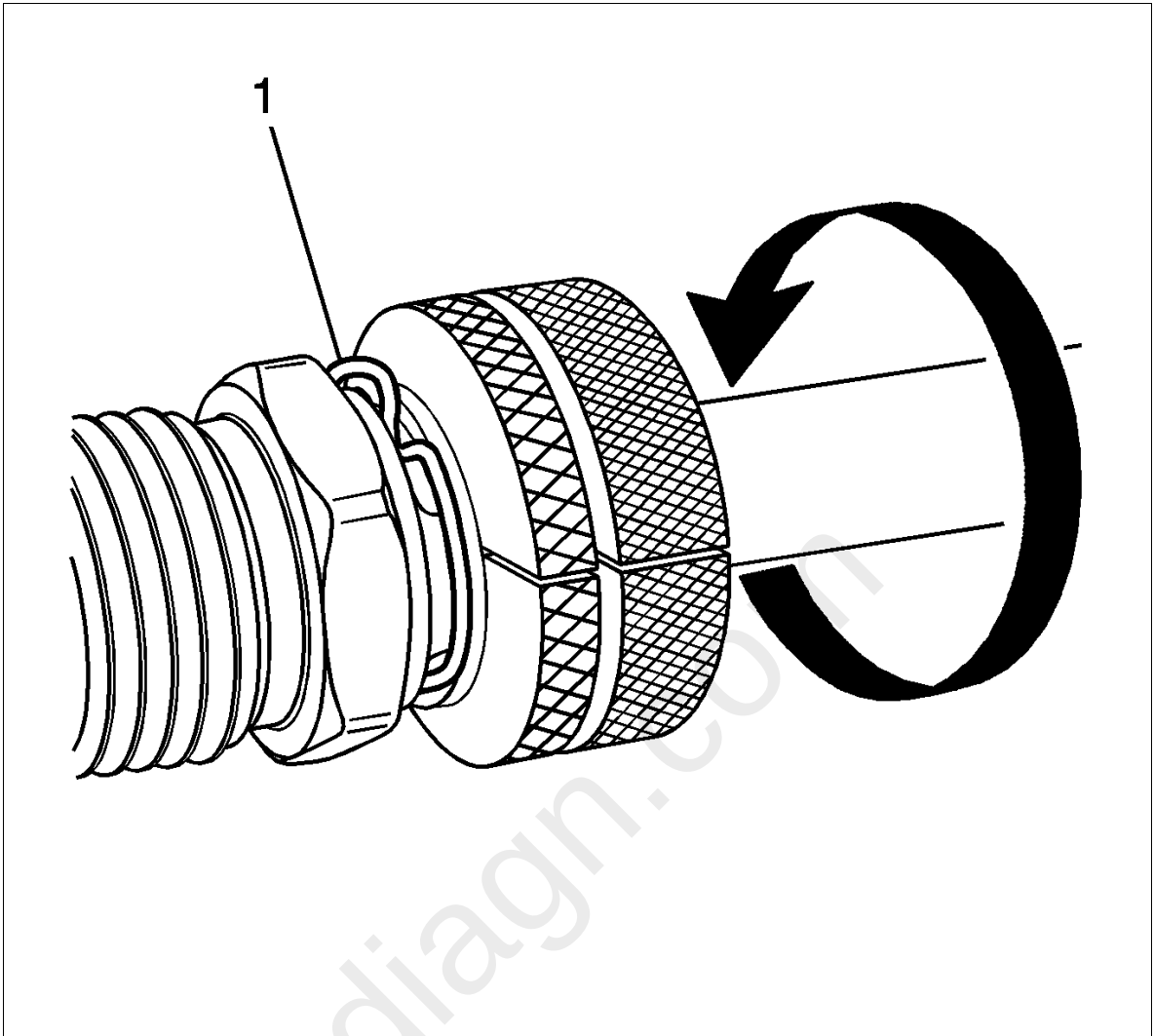
 NOTE:

*Rotate the **DT-41623-B** 3/8 inch line quick release tool to engage the TOC pipe fitting's retainer slots.*

*The **DT-41623-B** 3/8 inch line quick release tool should be nearly flush with the fitting.*

4. Connect the **DT-41623-B** 3/8 inch line quick release tool onto the TOC pipe fitting.

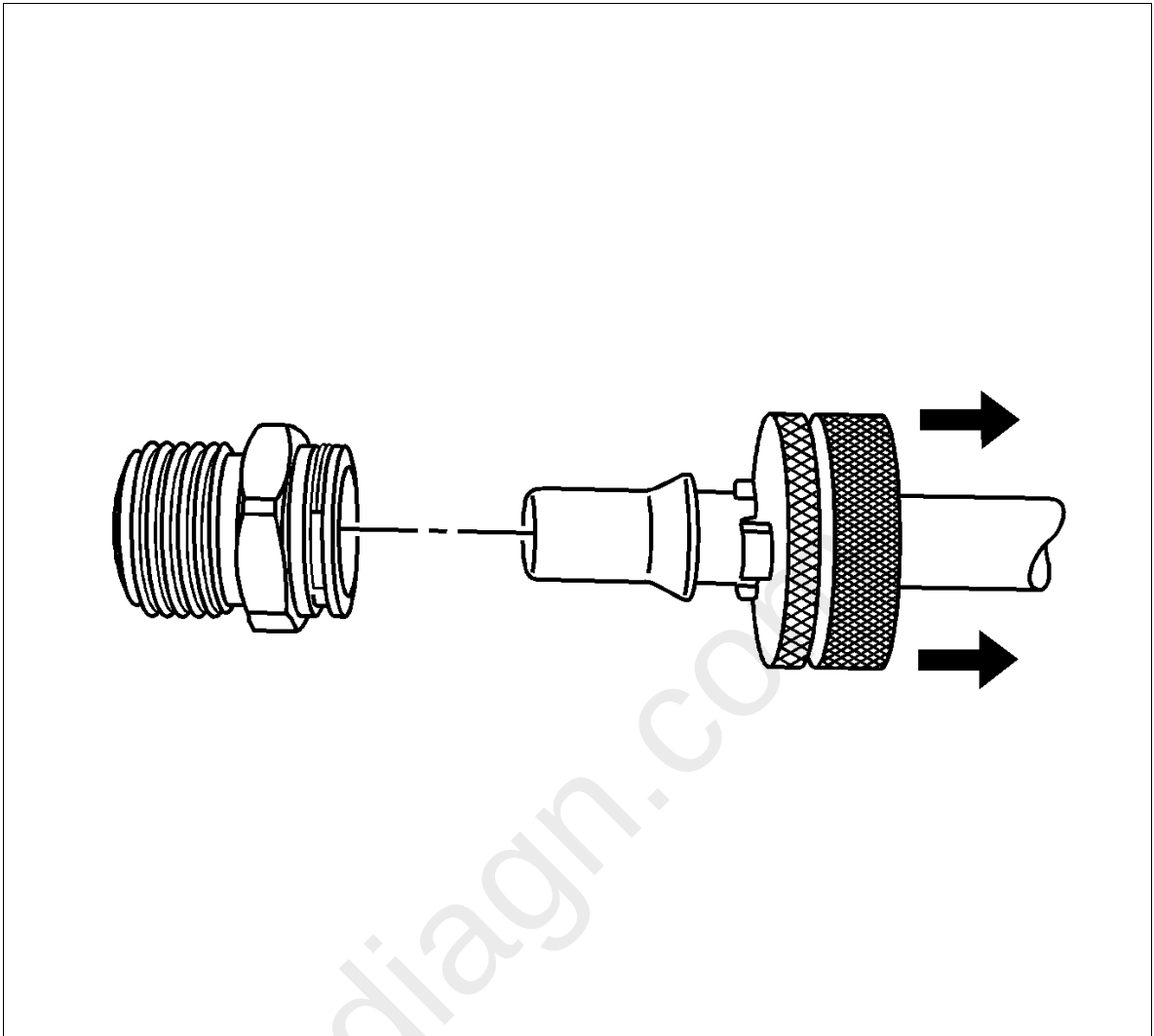
Fig 4: Retainer Clip



Courtesy of GENERAL MOTORS COMPANY

5. Rotate the **DT-41623-B** 3/8 inch line quick release tool or use the **DT-28585** universal snap ring remover for the 5/8 inch line until the retainer clip (1) rises above the fitting retainer seat.

Fig 5: Generator Cooling Inlet Pipe

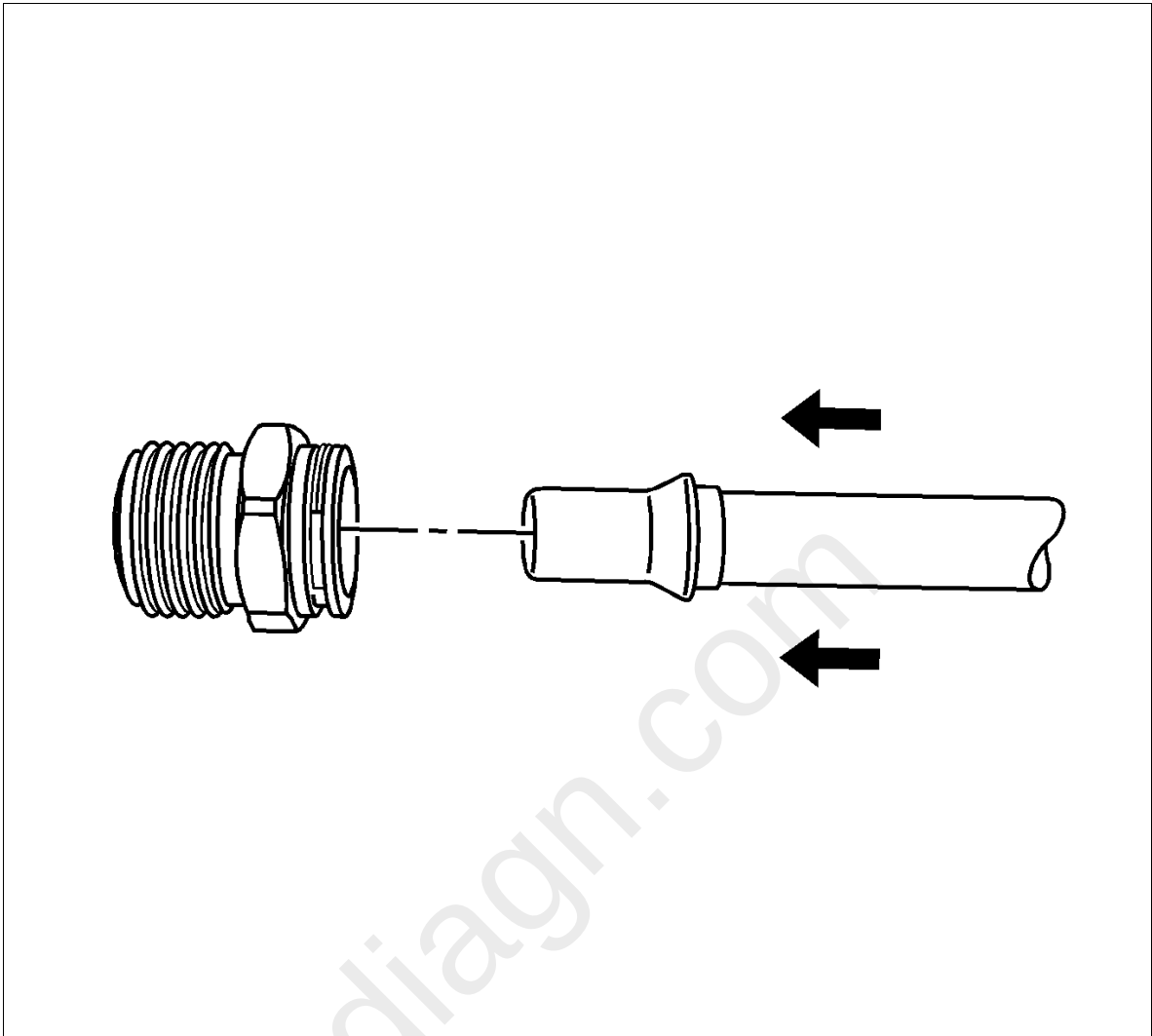


Courtesy of GENERAL MOTORS COMPANY

6. Pull back on the TOC pipe to disengage the pipe from the TOC pipe fitting.
7. Remove the **DT-41623-B** 3/8 inch line quick release tool or the **DT-28585** universal snap ring remover for the 5/8 inch line from the TOC pipe.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER HOSE/PIPE QUICK-CONNECT FITTING DISCONNECTION AND CONNECTION > INSTALLATION PROCEDURE

Fig 1: Generator Cooling Inlet Pipe & Generator Cooling Inlet Pipe Fitting



Courtesy of GENERAL MOTORS COMPANY



NOTE:

Discard the TOC retaining clip and install a new retaining clip.

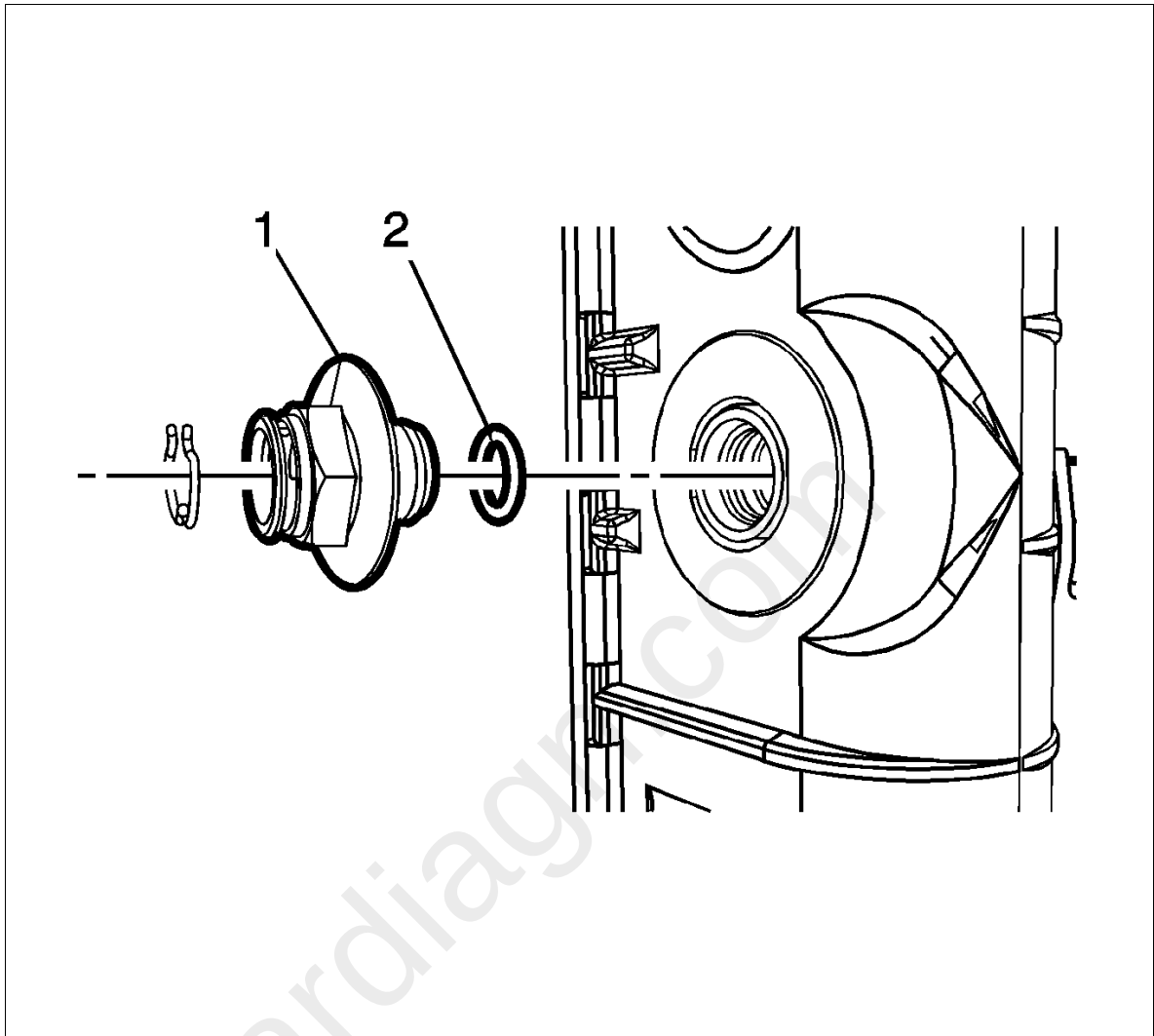
1. Install the TOC pipe into the TOC pipe fitting.

A distinct snap should be heard or felt when assembling the TOC pipe to the fitting.

2. Install the plastic cap onto the quick connect fitting. The plastic cap should snap onto fitting and spin freely by hand.
3. To ensure the cooler line is properly installed, give the cooler pipe a gentle pull.

REPLACEMENT > REMOVAL PROCEDURE

Fig 1: Transmission Fluid Cooler Pipe Fitting



Courtesy of GENERAL MOTORS COMPANY

1. Remove the transmission fluid cooler pipe/hose from the oil cooler fittings (1) on the radiator. Refer to Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection .



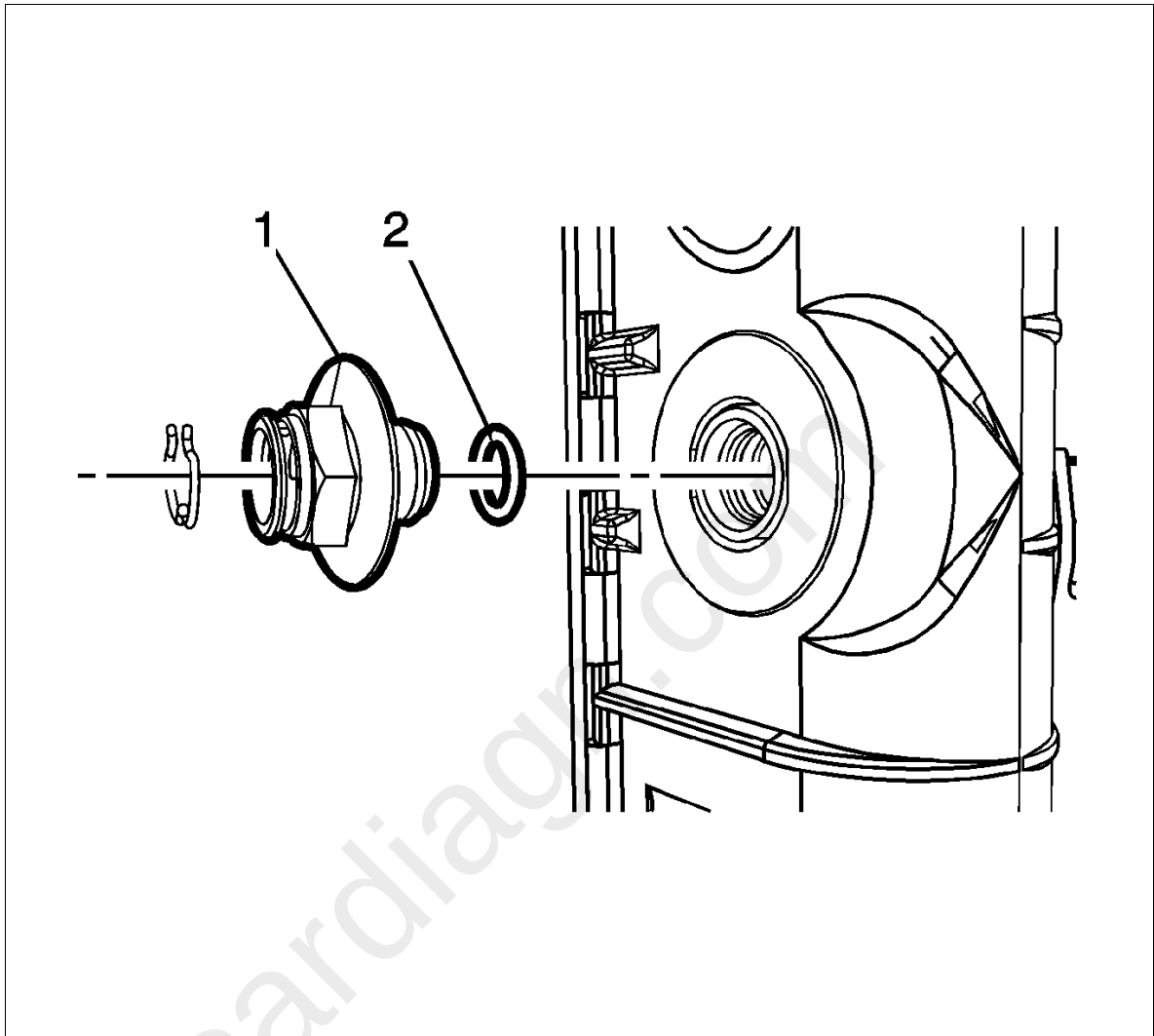
NOTE:

Do not remove the upper and lower transmission oil cooler fittings from the radiator at the same time otherwise the transmission fluid oil cooler will fall inside the radiator end tank.

2. Remove the oil cooler fitting (1) from the radiator.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE FITTING REPLACEMENT > INSTALLATION PROCEDURE

Fig 1: Transmission Fluid Cooler Pipe Fitting



Courtesy of GENERAL MOTORS COMPANY

1. Remove and discard the old O-ring seals (2) and replace with NEW O-ring seals.

 CAUTION:

Refer to Fastener Caution

 NOTE:

The correct thread engagement is critical. Cross-threaded fittings can achieve proper tightness and still leak.

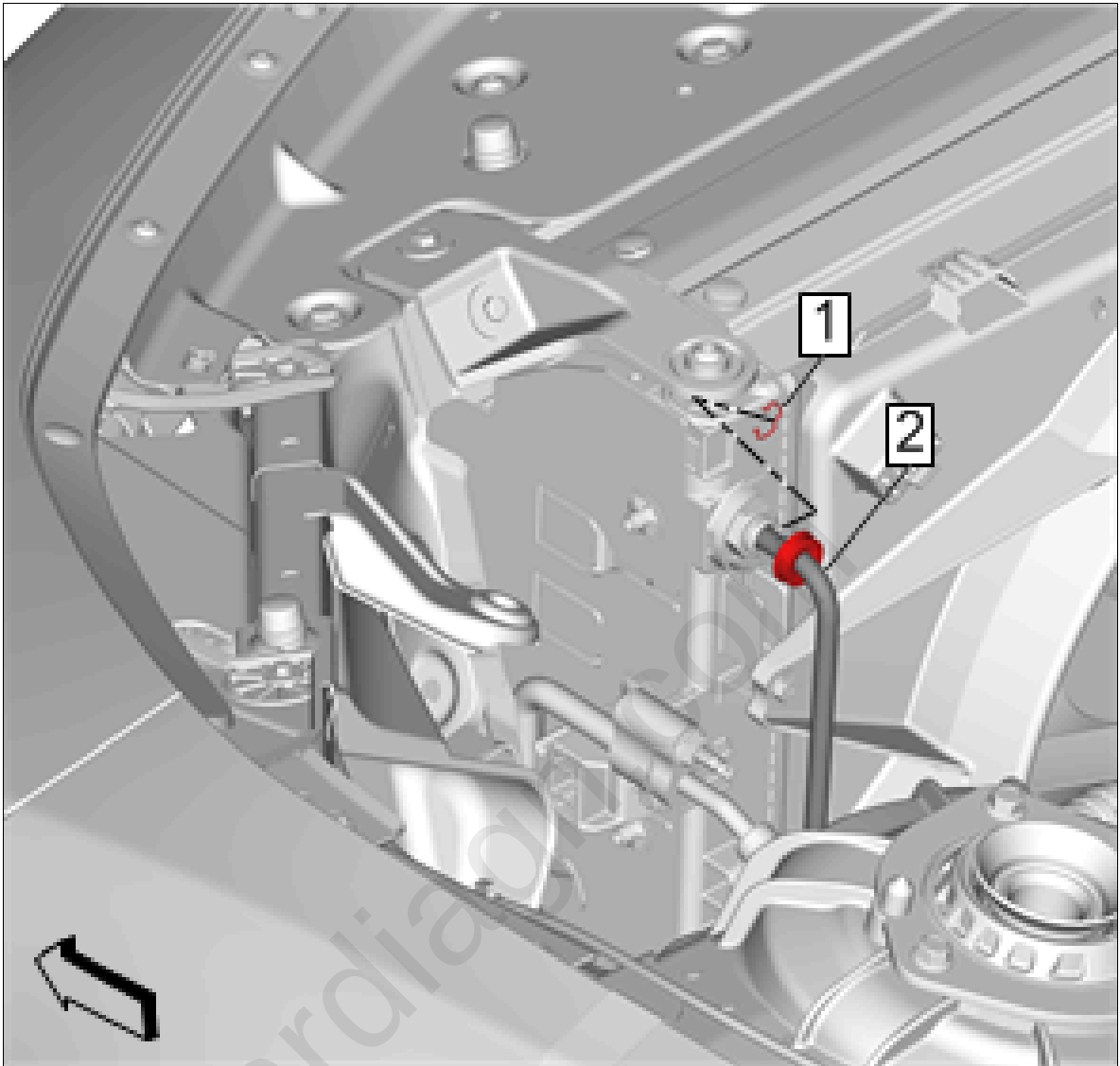
2. Install the oil cooler fitting (1) to the radiator and tighten to 20 N.m (15 lb ft).
3. Install the transmission fluid cooler pipe(s)/hose(s) to the oil cooler fittings (1) on the radiator.
Refer to Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection .
4. Fill the transmission fluid to the proper level. Refer to Transmission Fluid Fill Procedure .
5. Inspect for fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET PIPE REPLACEMENT (LGX WITH M13, WITH 1LE PACKAGE) > REMOVAL PROCEDURE

1. Remove Front Cradle Shear Plate Replacement
2. Remove Air Cleaner Assembly Replacement

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Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

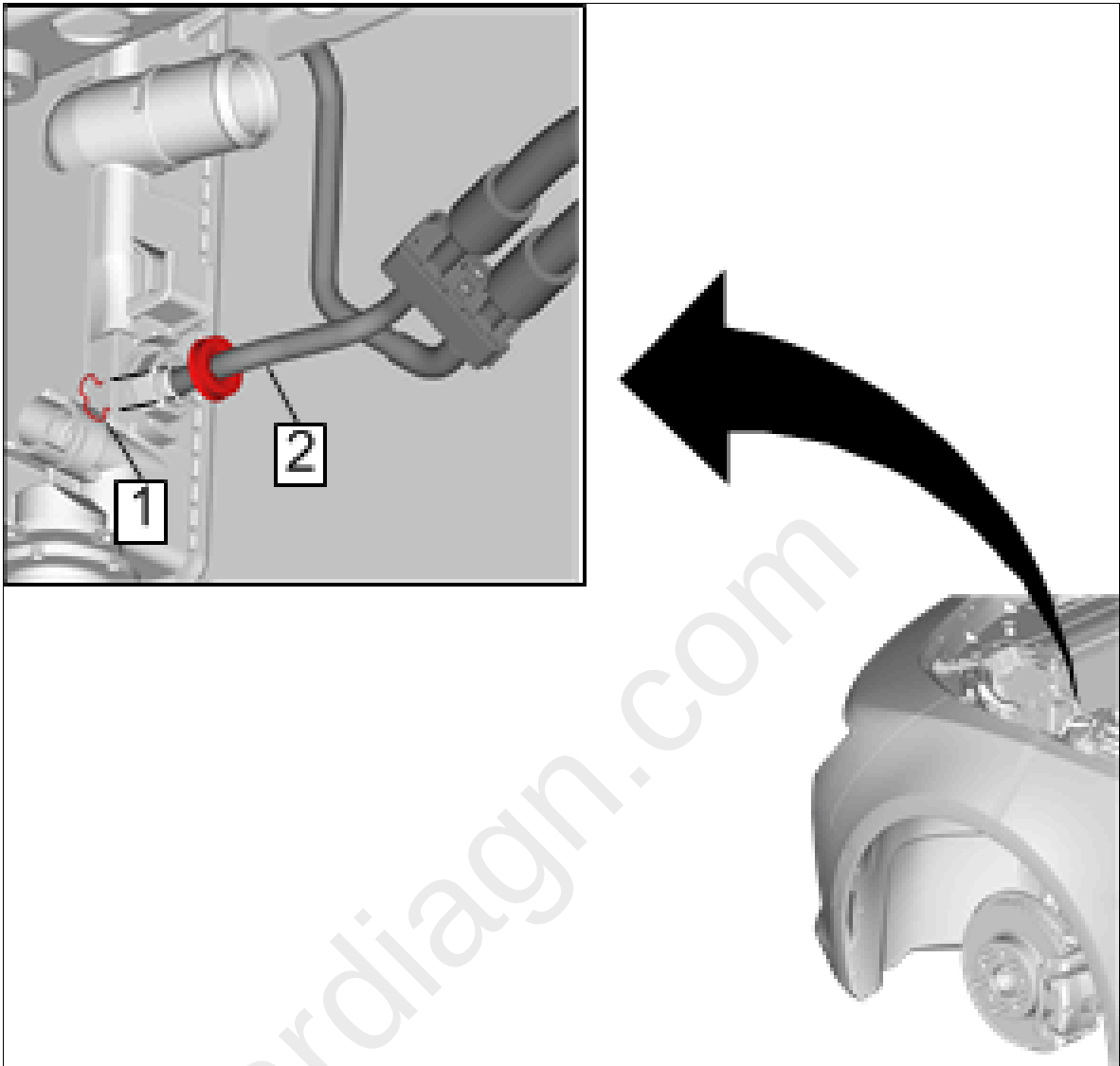
3. Remove Transmission Fluid Cooler Pipe Fitting Retainer (2) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator
5. Remove Engine Coolant Fan Replacement (LGX Without V03)Engine Coolant Fan Replacement (LGX With V03)

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

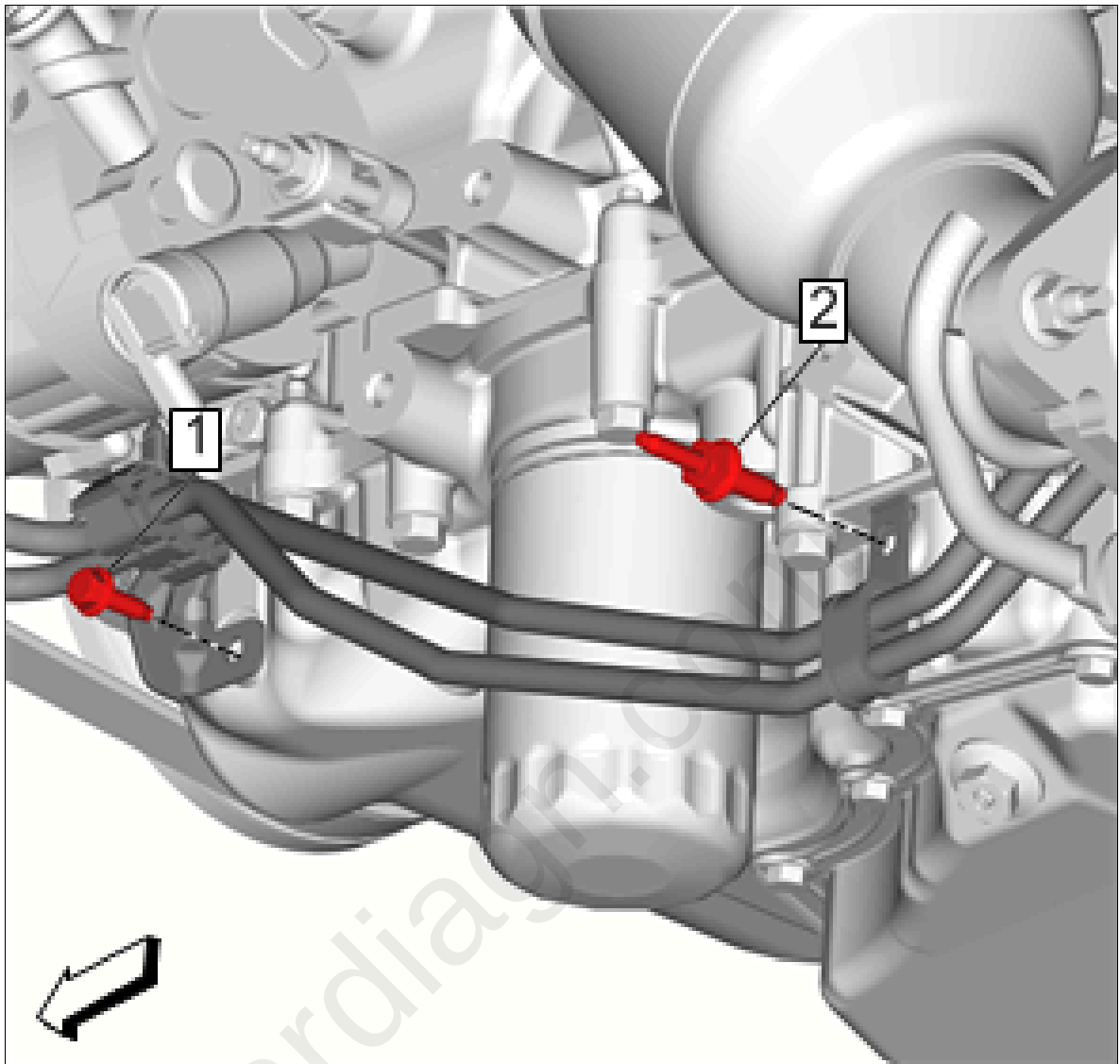
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator

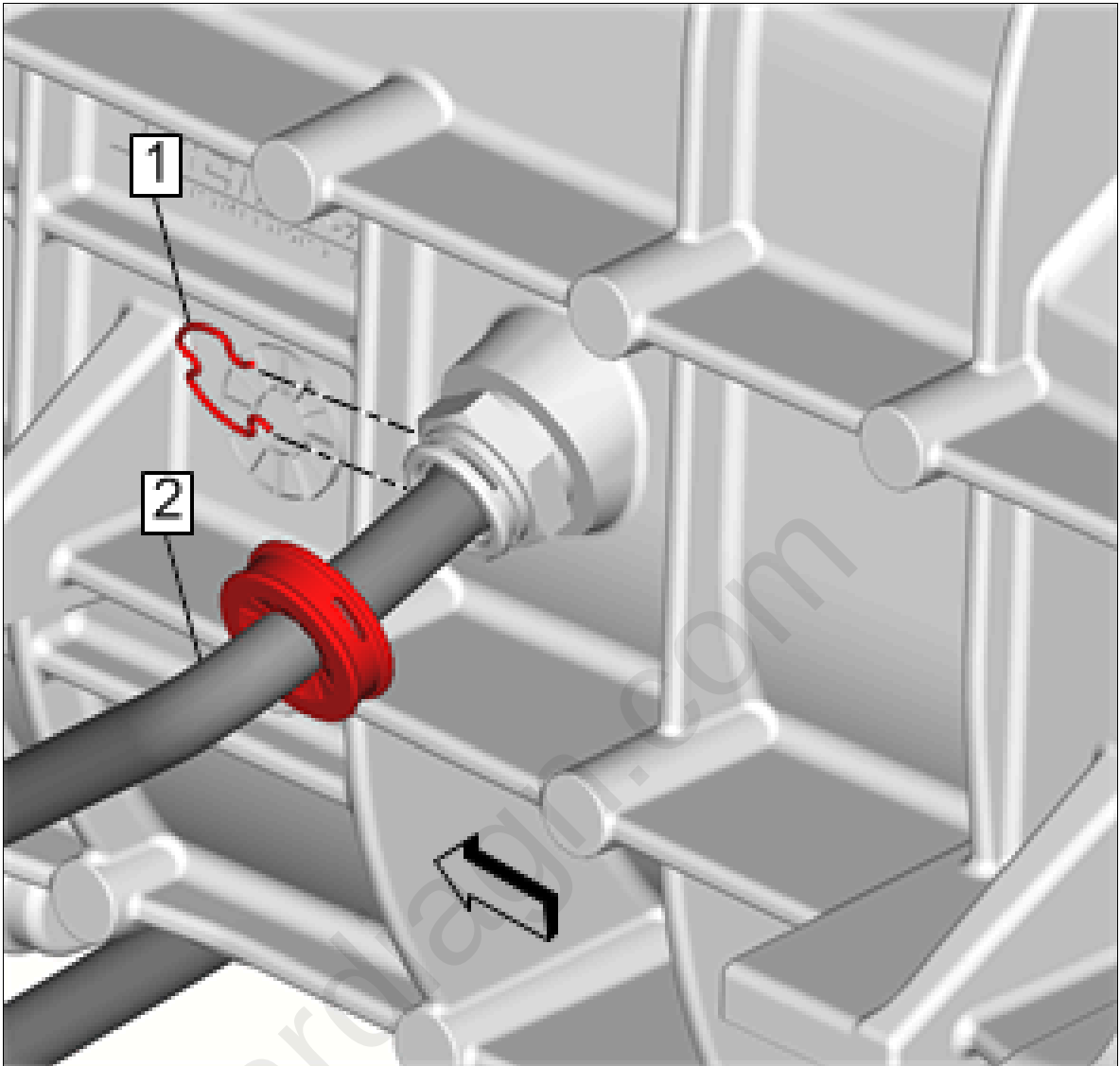
Fig 3: Transmission Fluid Cooler Pipe Clip Bolt



Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe Clip Bolt (1)
9. Remove Transmission Fluid Cooler Pipe Stud (2)

Fig 4: Transmission Fluid Cooler Pipe Fitting Retainer (Left Side)



Courtesy of GENERAL MOTORS COMPANY

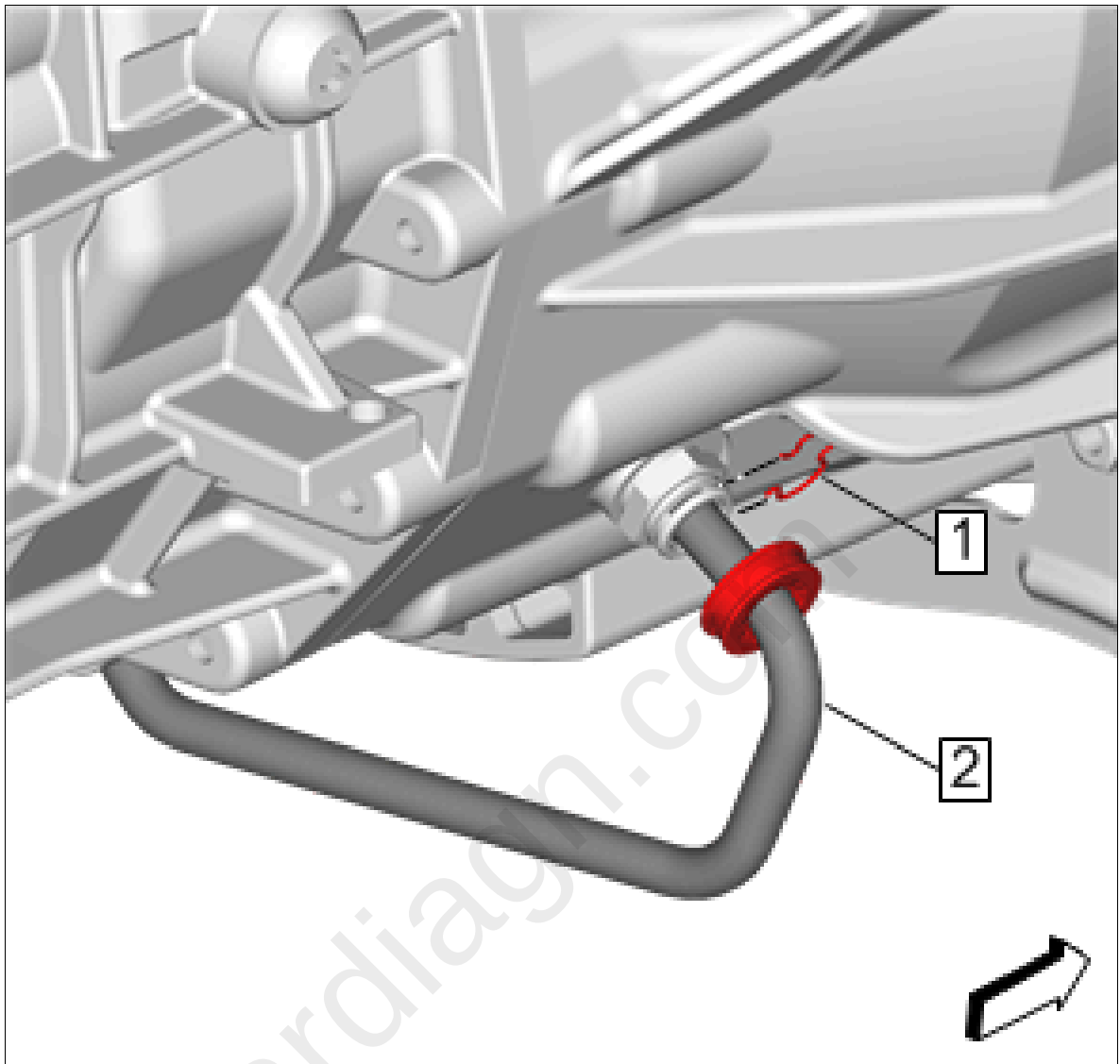
10. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Left Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

11. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Left Side

Fig 5: Transmission Fluid Cooler Pipe Fitting Retainer (Right Side)



Courtesy of GENERAL MOTORS COMPANY

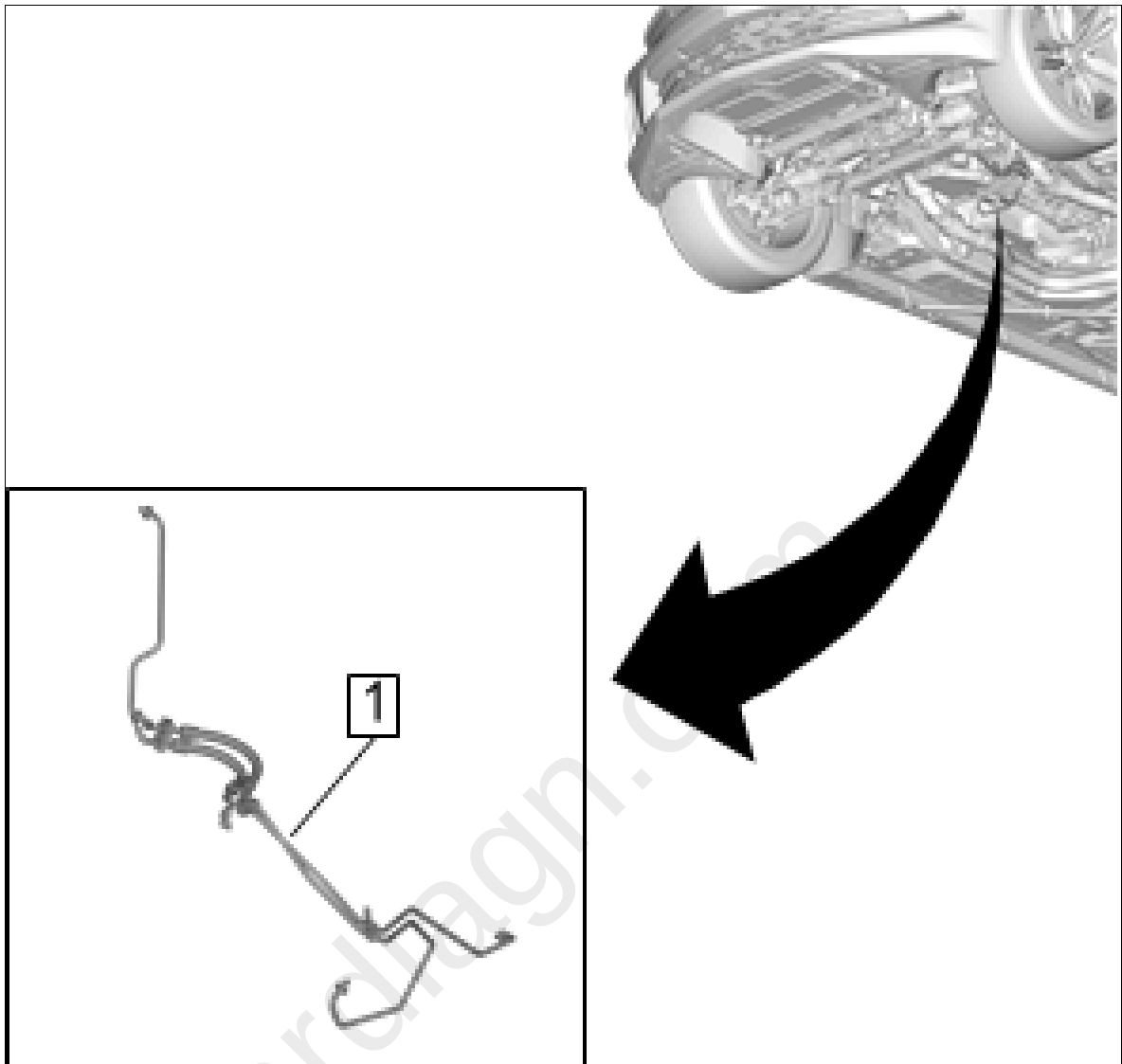
12. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Right Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

13. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Right Side

Fig 6: Transmission Fluid Cooler Inlet And Outlet Pipe

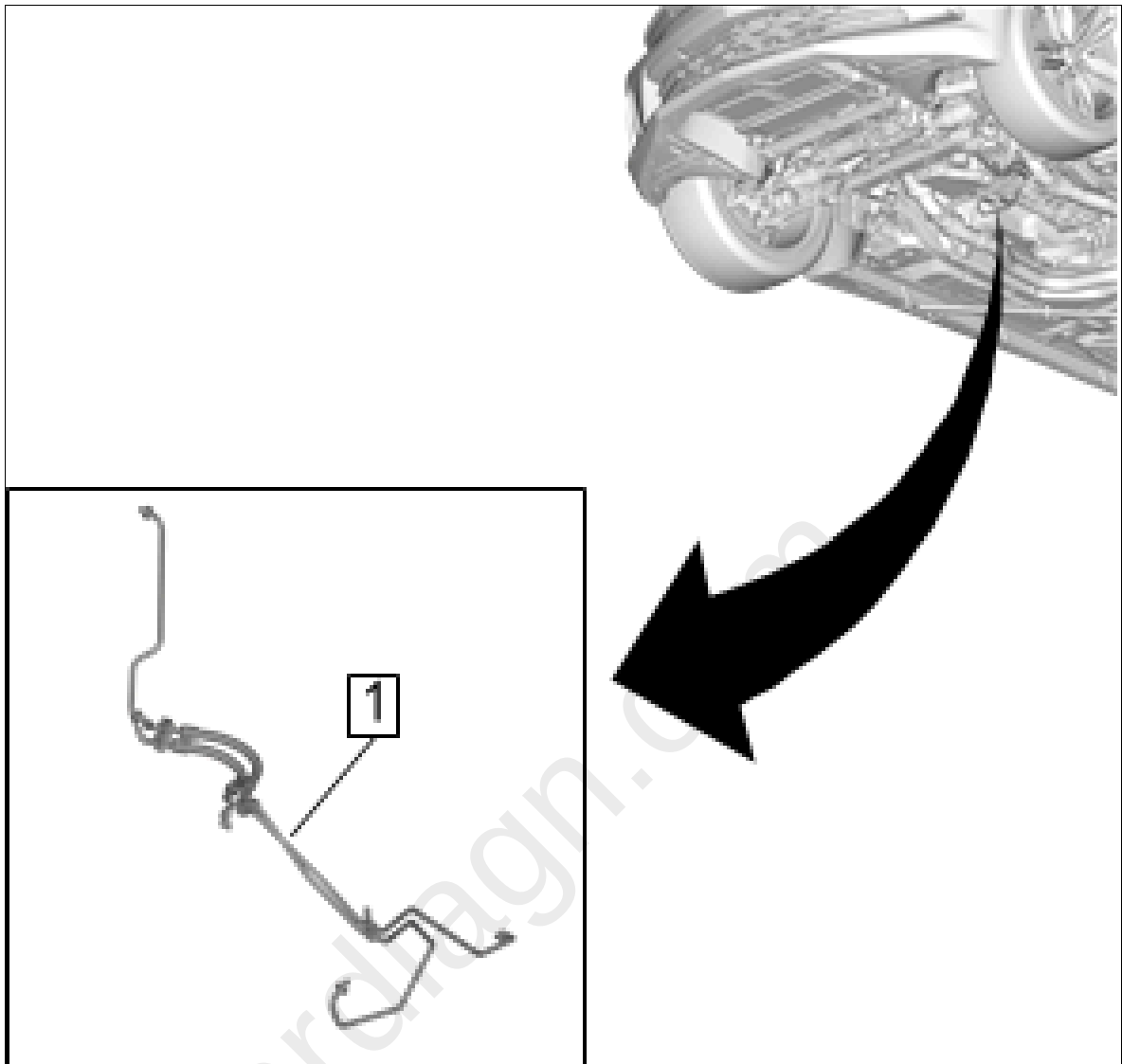


Courtesy of GENERAL MOTORS COMPANY

14. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
15. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LGX WITH M13, WITH 1LE PACKAGE) > INSTALLATION
PROCEDURE**

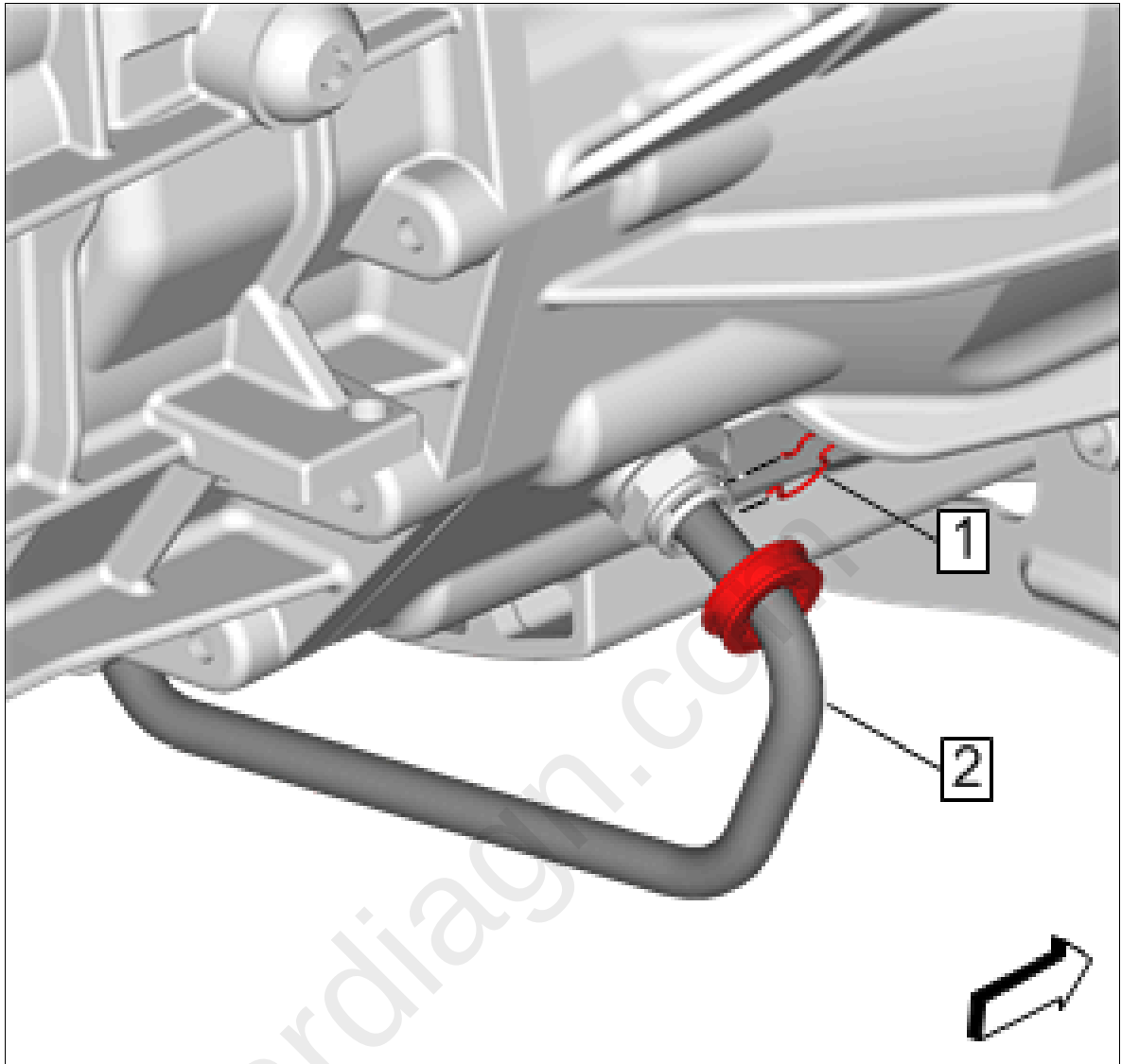
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

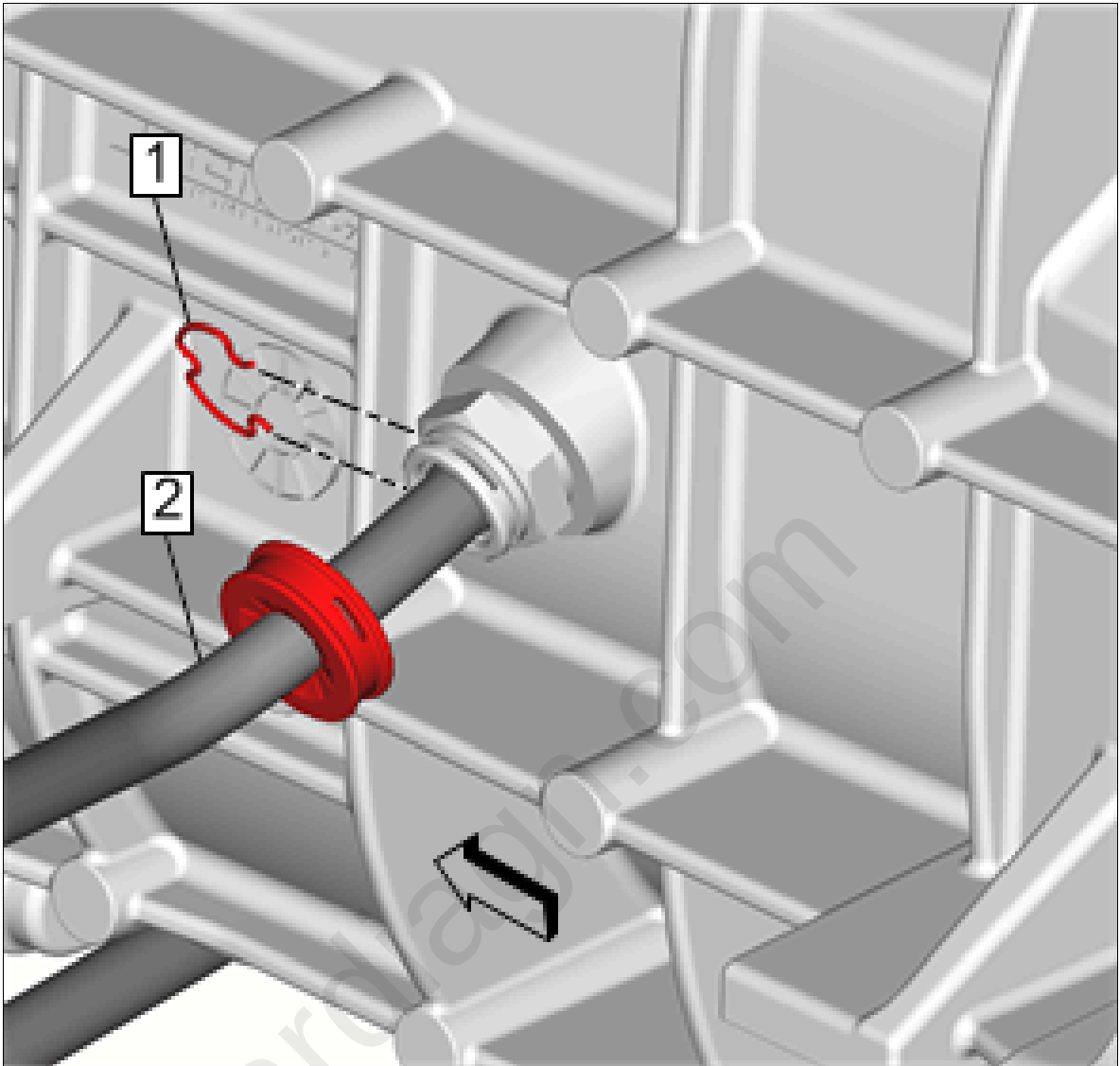
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer (Right Side)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Right Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Right Side

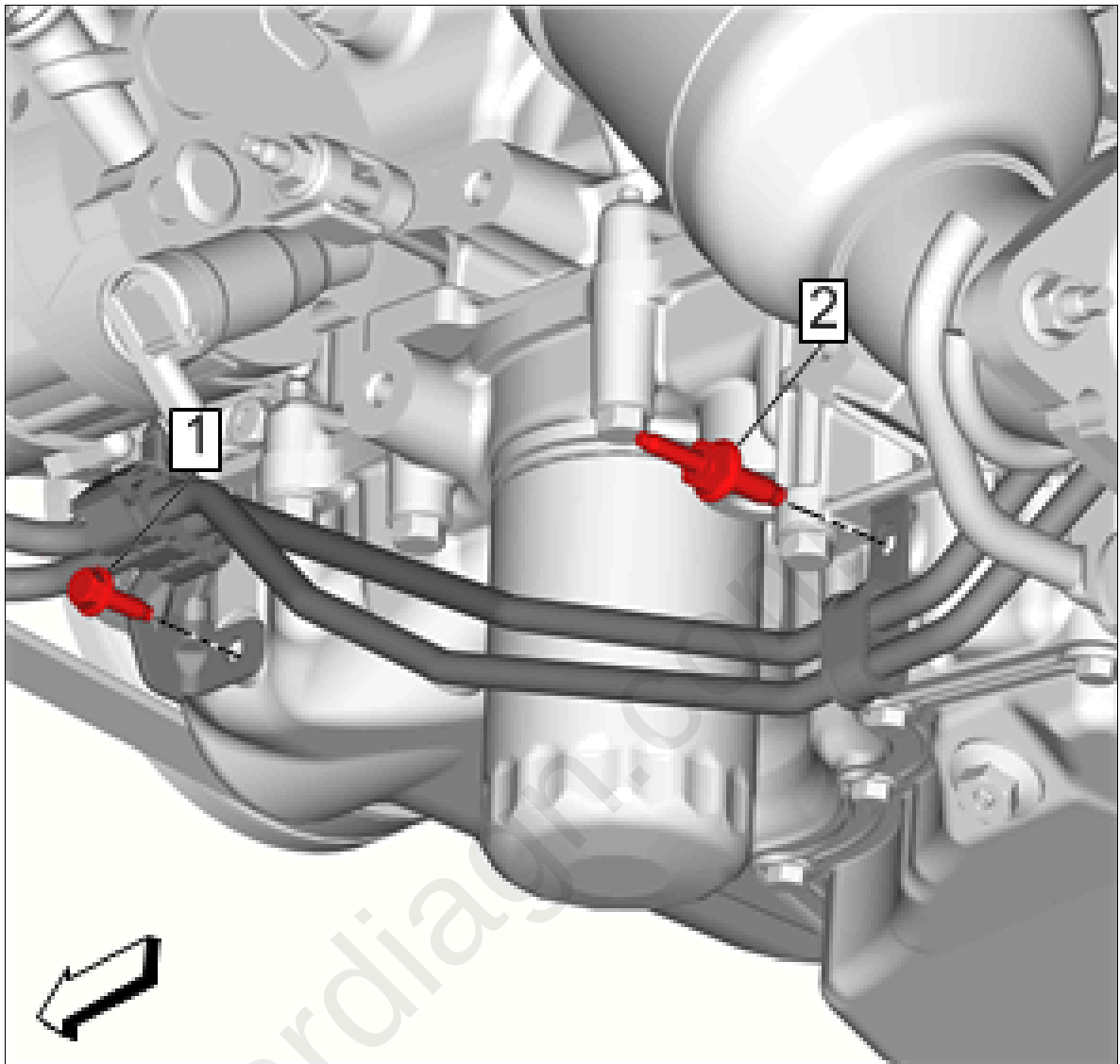
Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer (Left Side)



Courtesy of GENERAL MOTORS COMPANY

4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Left Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Left Side

Fig 4: Transmission Fluid Cooler Pipe Clip Bolt



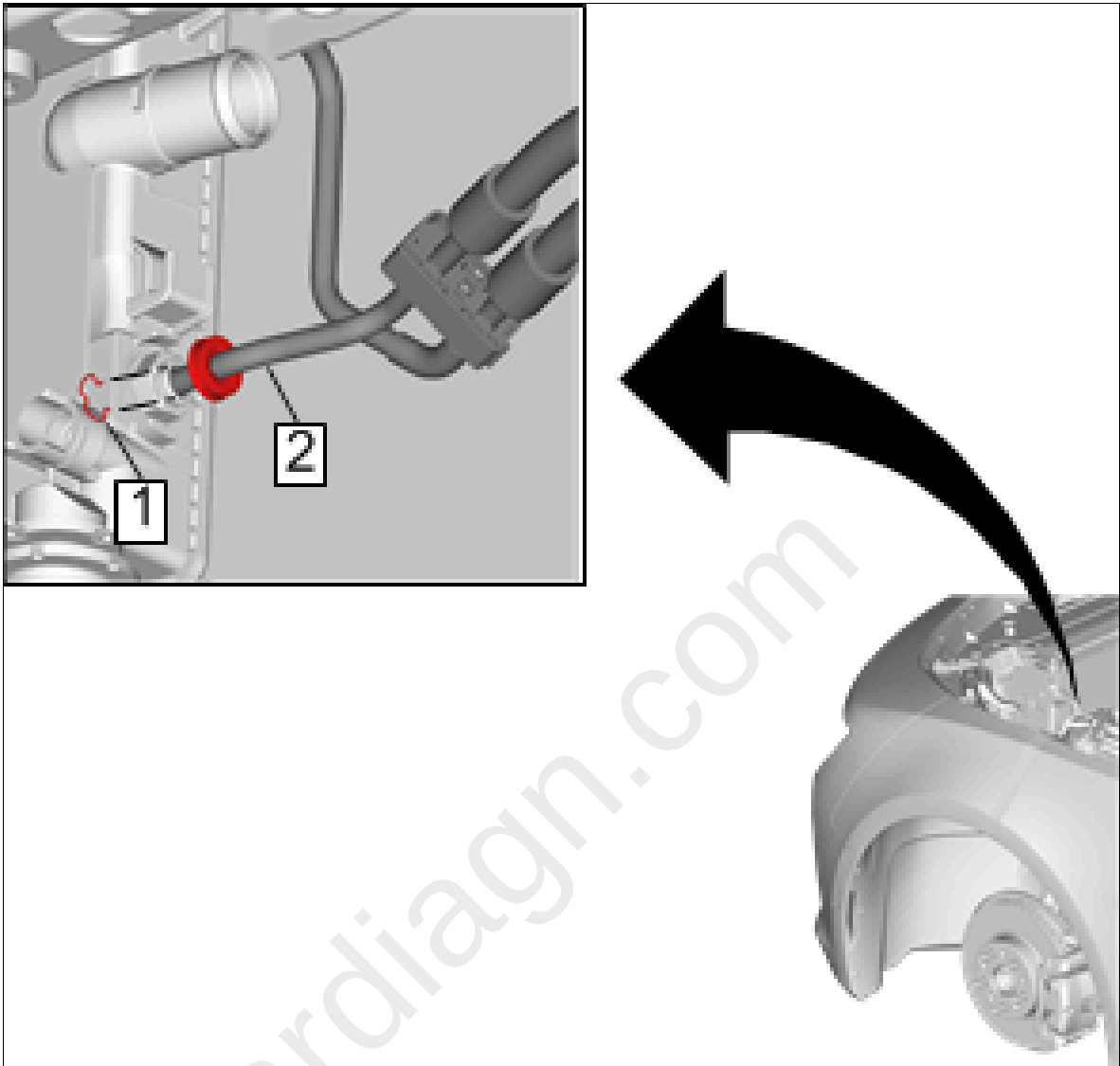
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

6. Install Transmission Fluid Cooler Pipe Clip Bolt (1) and tighten to 9 N.m (80 lb in)
7. Install Transmission Fluid Cooler Pipe Stud (2) and tighten to 22 N.m (16 lb ft)

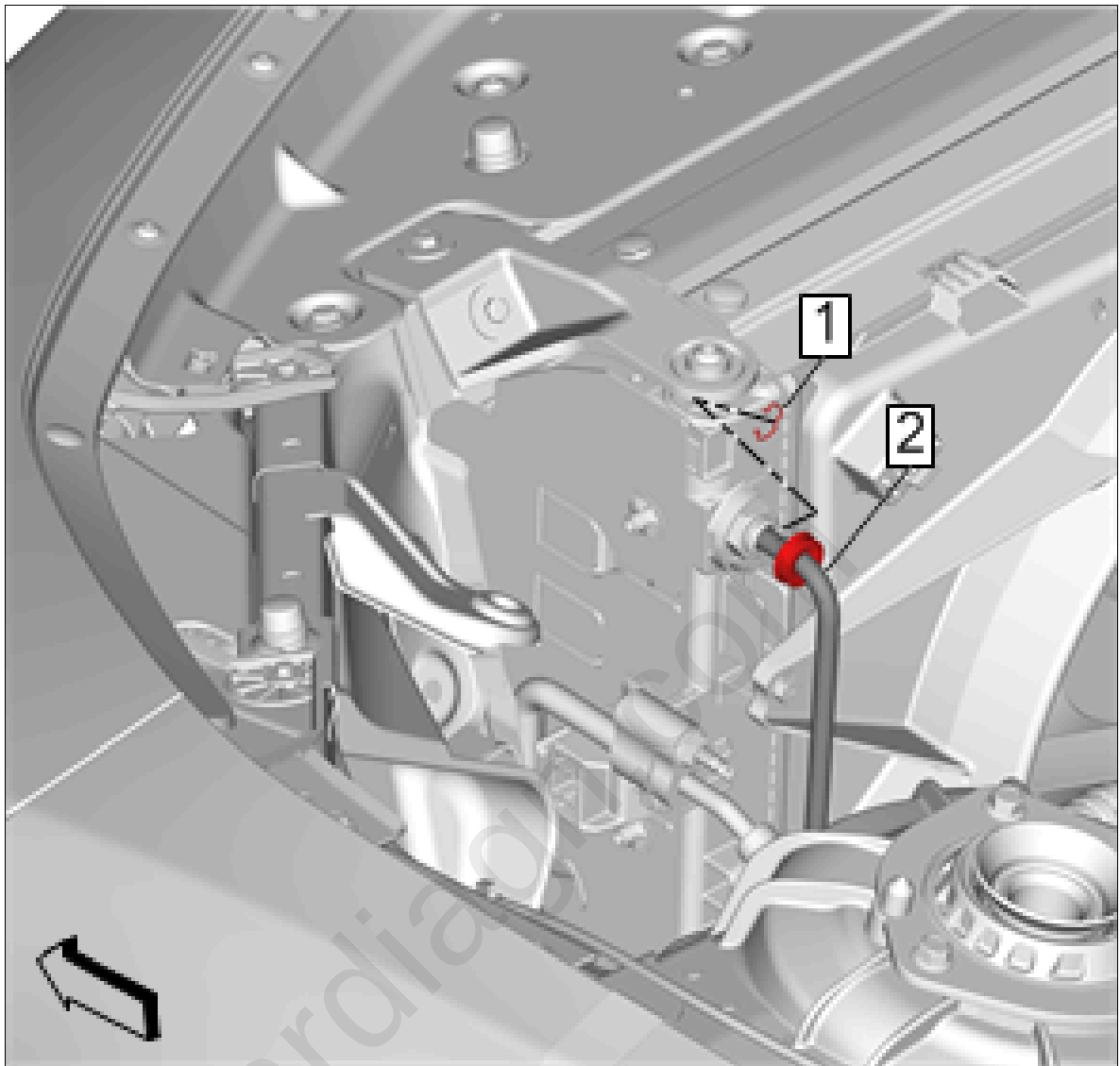
Fig 5: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

8. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
9. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator
10. Install Engine Coolant Fan Replacement (LGX Without V03)Engine Coolant Fan Replacement (LGX With V03)

Fig 6: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



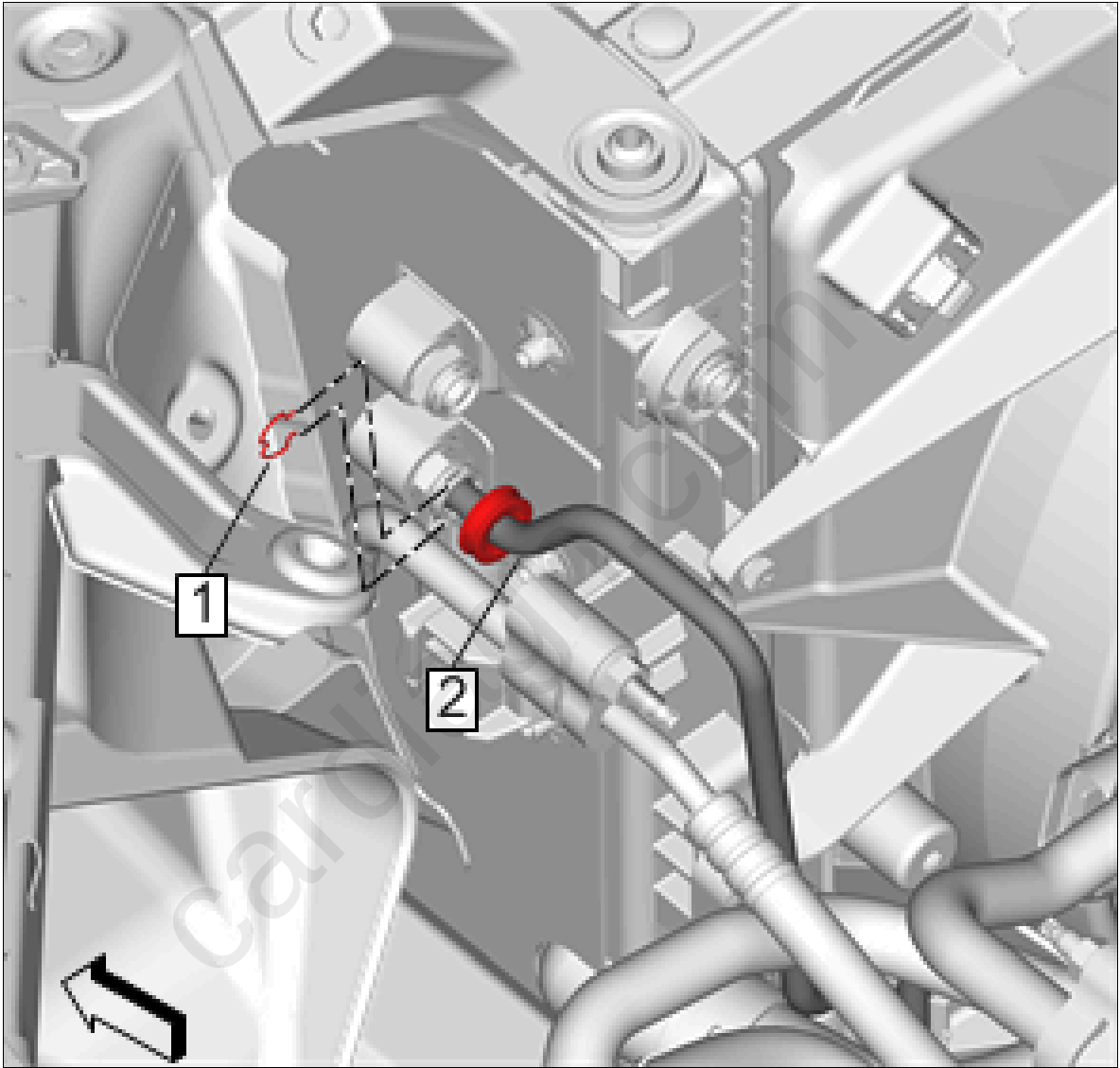
Courtesy of GENERAL MOTORS COMPANY

11. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
12. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator
13. Install Air Cleaner Assembly Replacement
14. Install Front Cradle Shear Plate Replacement
15. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)
16. Inspect for transmission fluid leaks.

PIPE REPLACEMENT (LGX WITH M5T, WITH V03) > REMOVAL PROCEDURE

1. Remove Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
2. Remove Air Cleaner Assembly Replacement
3. Remove Transmission Fluid Cooler Pipe Replacement (LGX With M5T, With V03)

Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer at Air Conditioning Condenser



Courtesy of GENERAL MOTORS COMPANY

4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

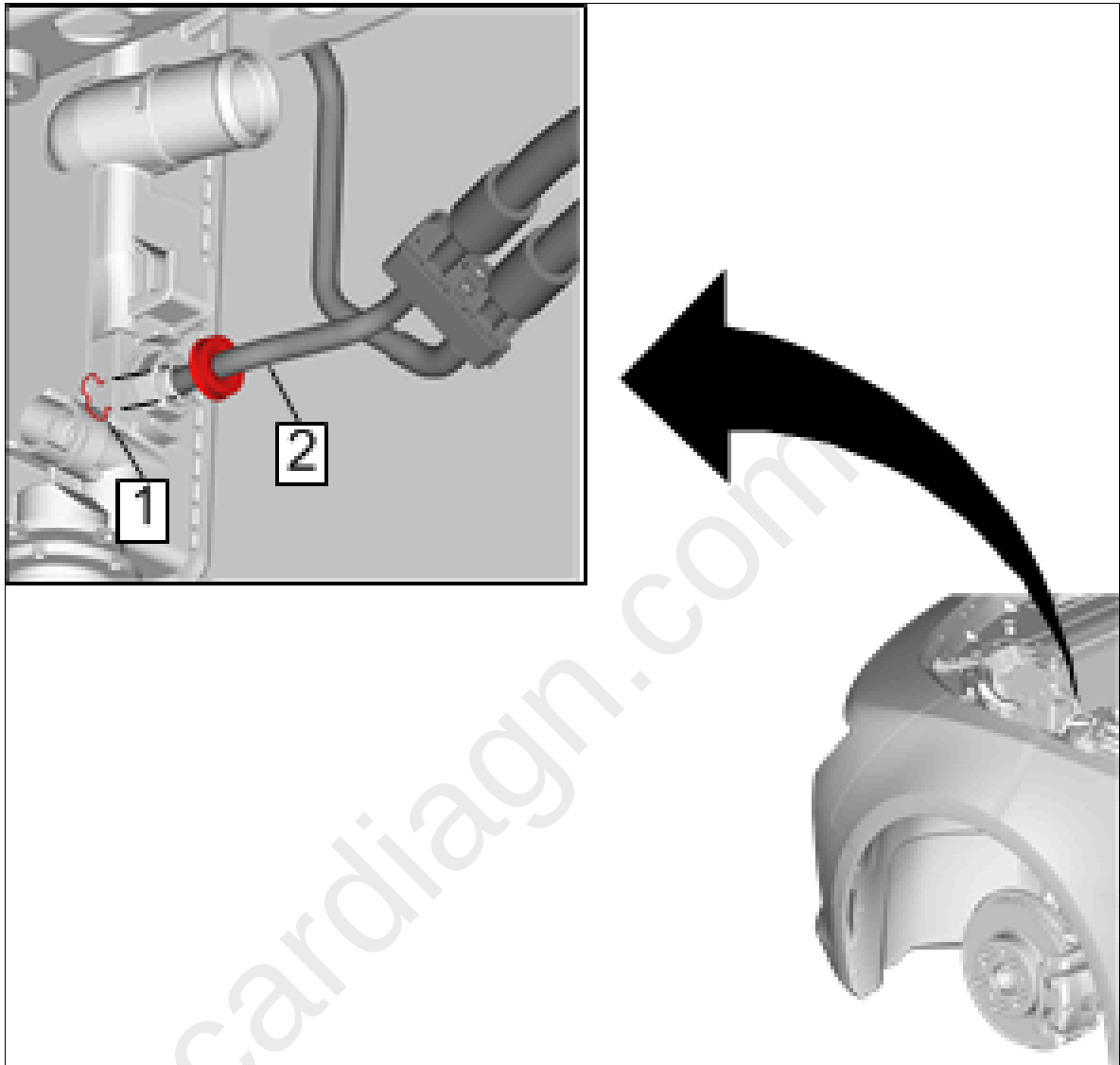
 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Air Conditioning Condenser

6. Remove Engine Coolant Fan Replacement (LGX With V03)

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

7. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

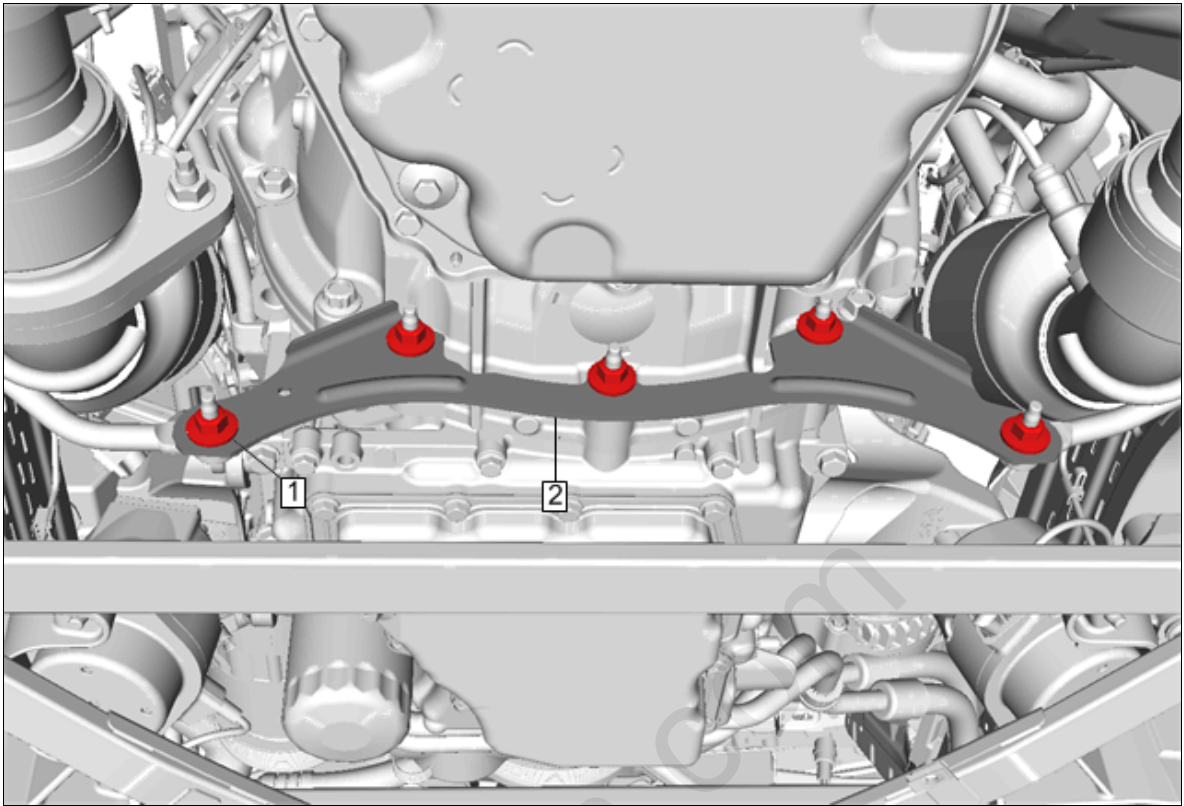
 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

8. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator

9. { If equipped } Separate Engine Oil Cooler Inlet Pipe at Engine - Engine Oil Cooler Pipe Replacement (LGX, Inlet)

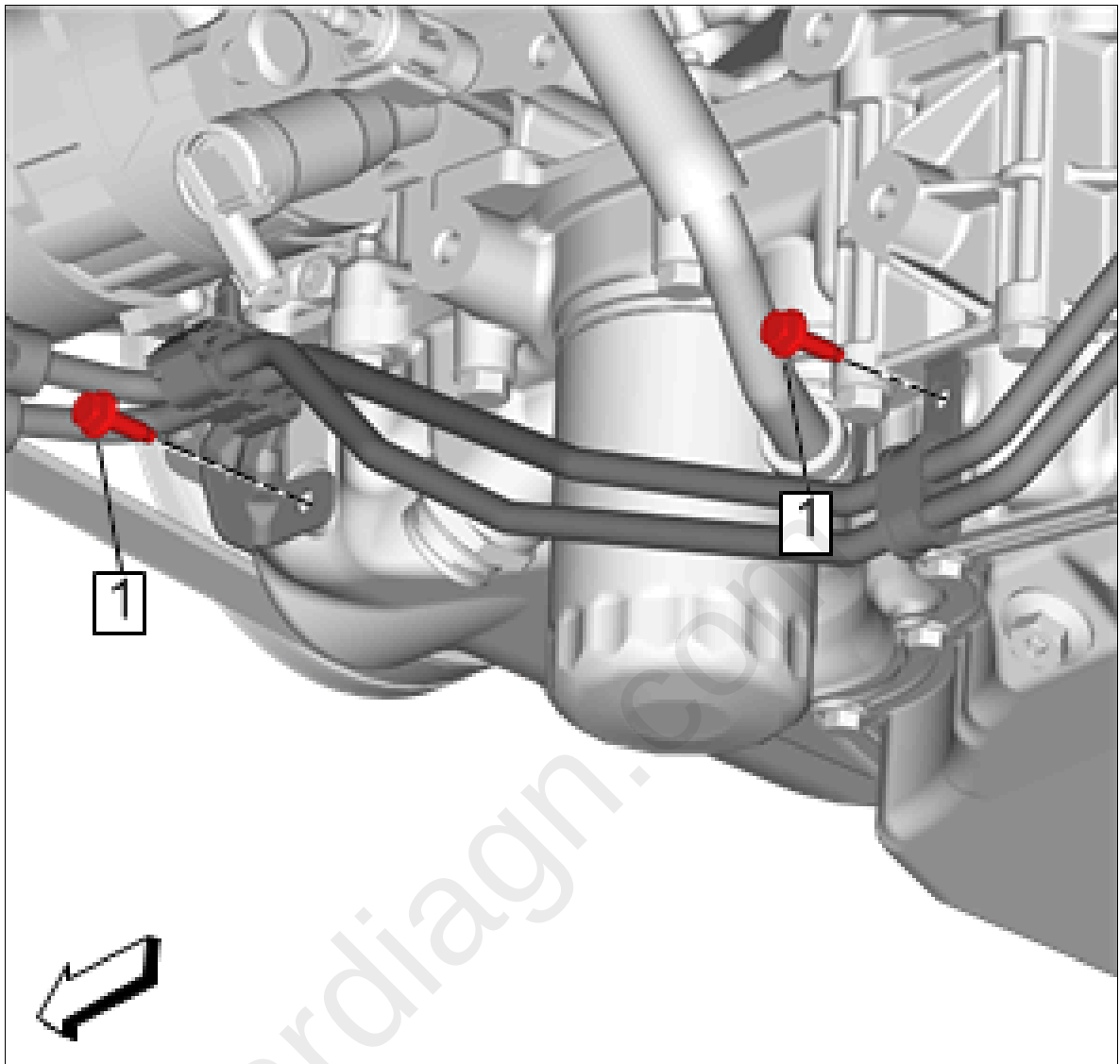
Fig 3: Catalytic Converter Brace Bracket (LGX)



Courtesy of GENERAL MOTORS COMPANY

10. Remove Catalytic Converter Brace Bracket (2) - Catalytic Converter Brace Bracket Replacement (LGX)

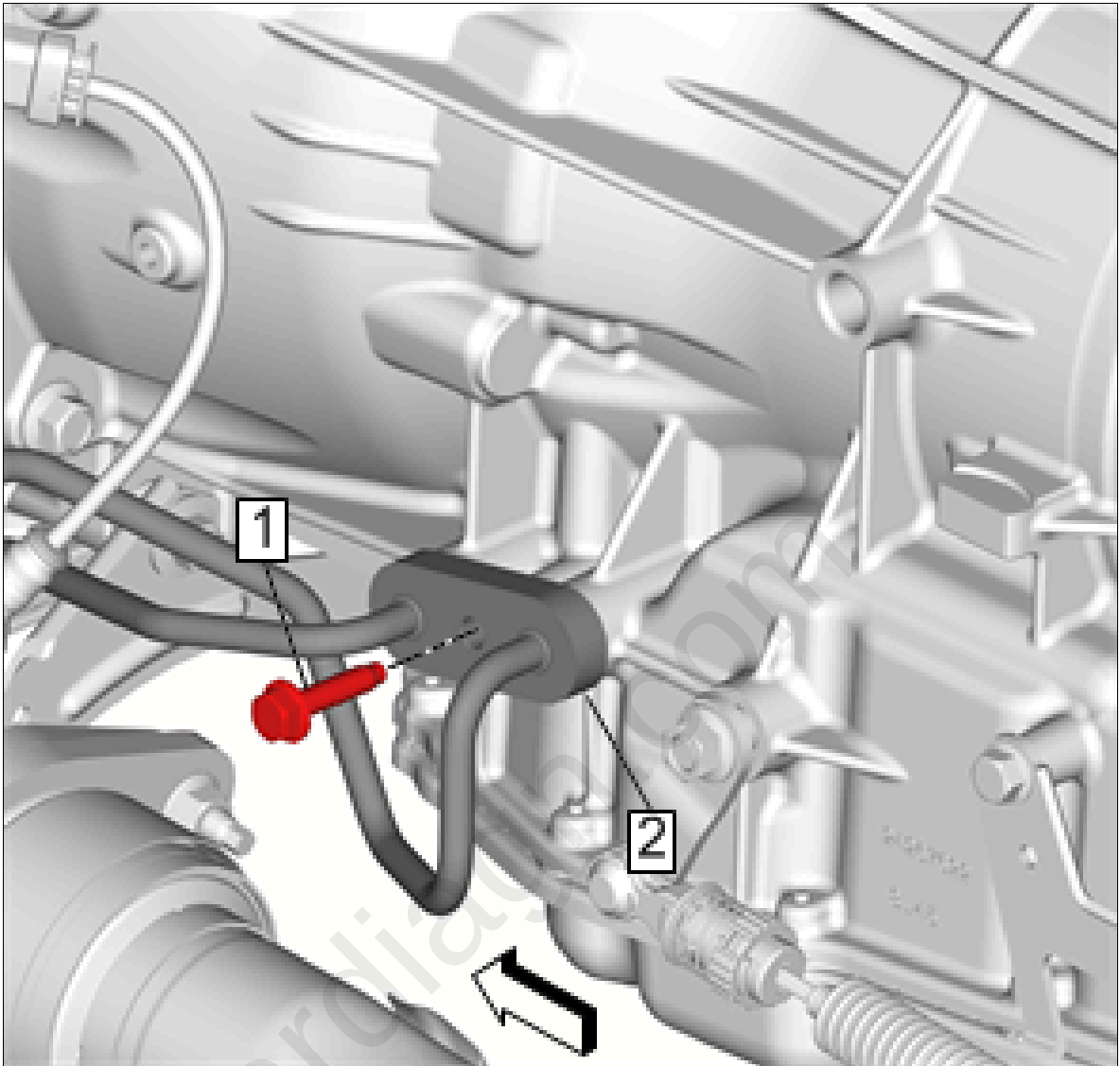
Fig 4: Transmission Fluid Cooler Pipe Clip Bolt



Courtesy of GENERAL MOTORS COMPANY

11. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) (Qty: 2)

Fig 5: Transmission Fluid Cooler Pipe Clip Bolt



Courtesy of GENERAL MOTORS COMPANY

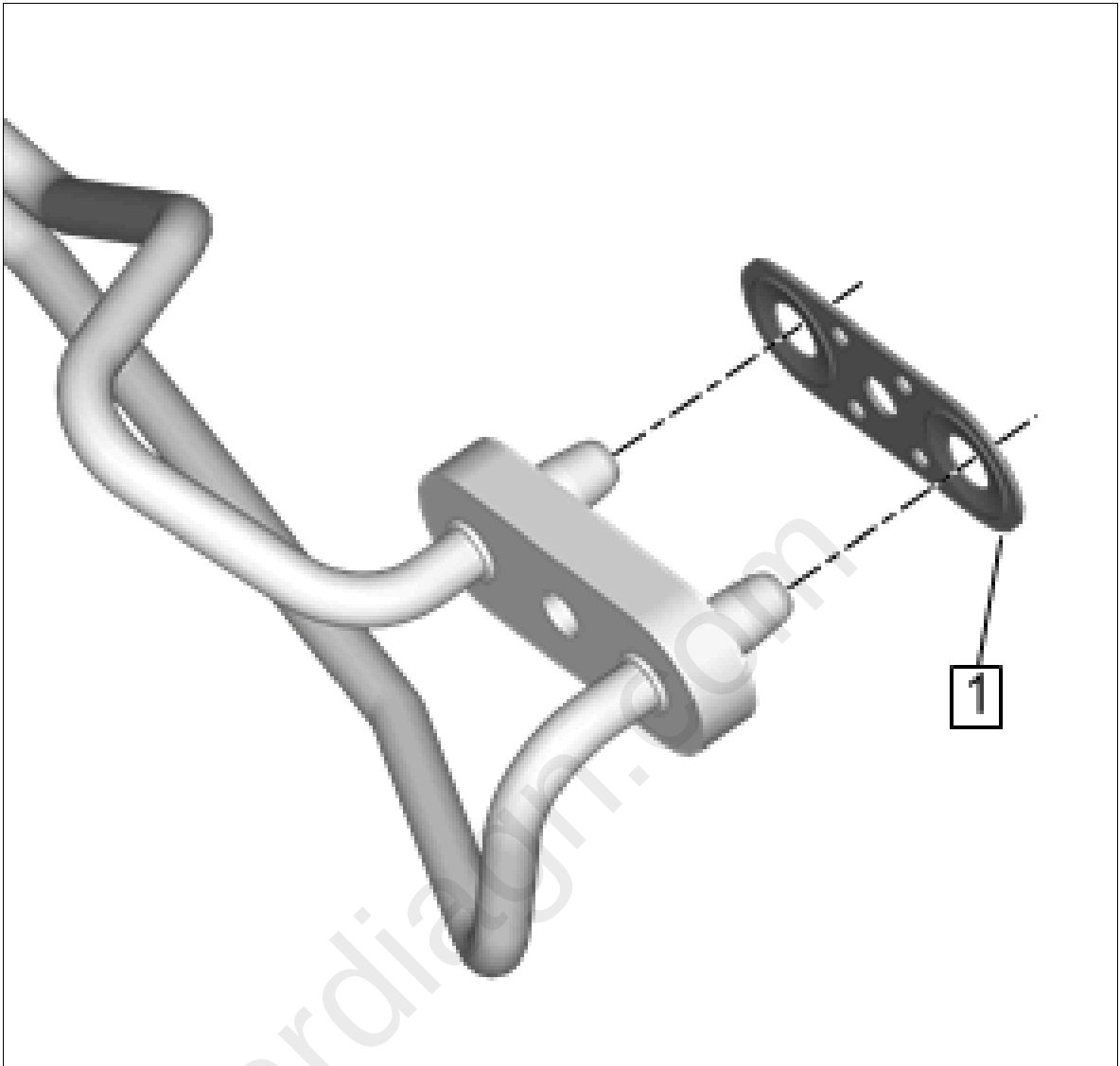
12. Remove Transmission Fluid Cooler Pipe Clip Bolt (1)

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

13. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission

Fig 6: Transmission Fluid Cooler Pipe Fitting Seal

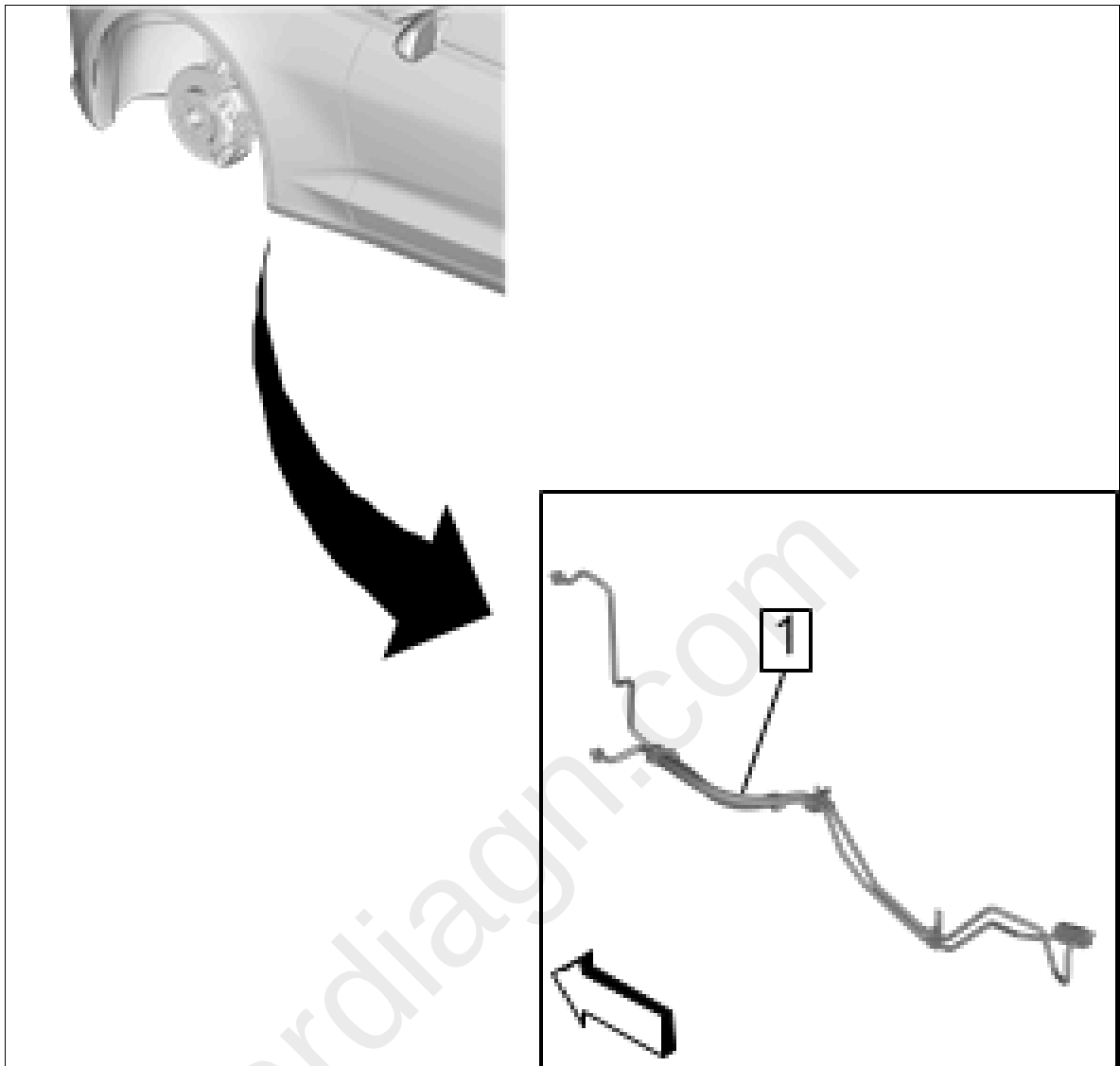


Courtesy of GENERAL MOTORS COMPANY

14. Remove Transmission Fluid Cooler Pipe Fitting Seal (1)

DISCARD the seal.

Fig 7: Transmission Fluid Cooler Inlet And Outlet Pipe

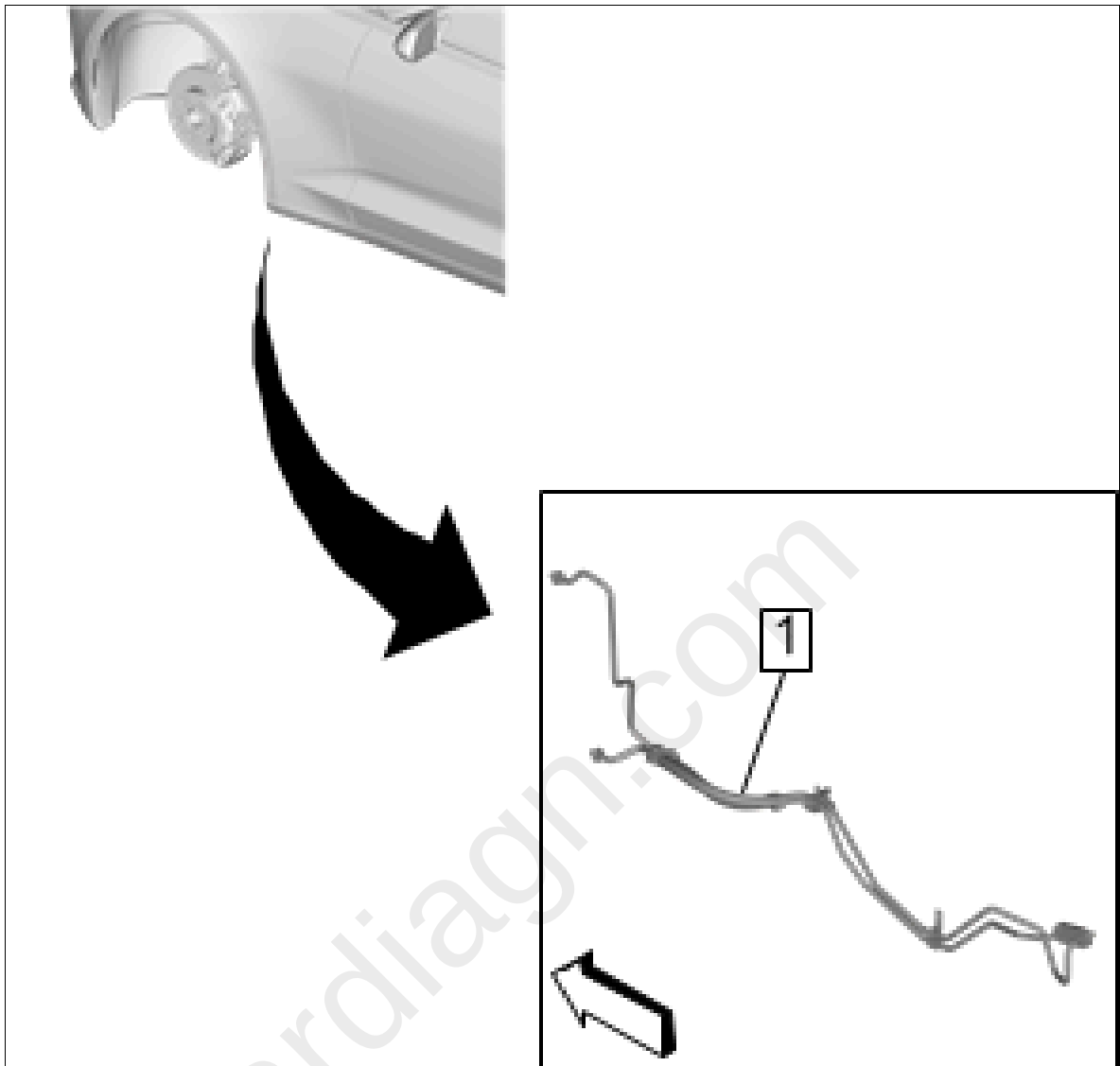


Courtesy of GENERAL MOTORS COMPANY

15. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
16. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LGX WITH M5T, WITH V03) > INSTALLATION PROCEDURE**

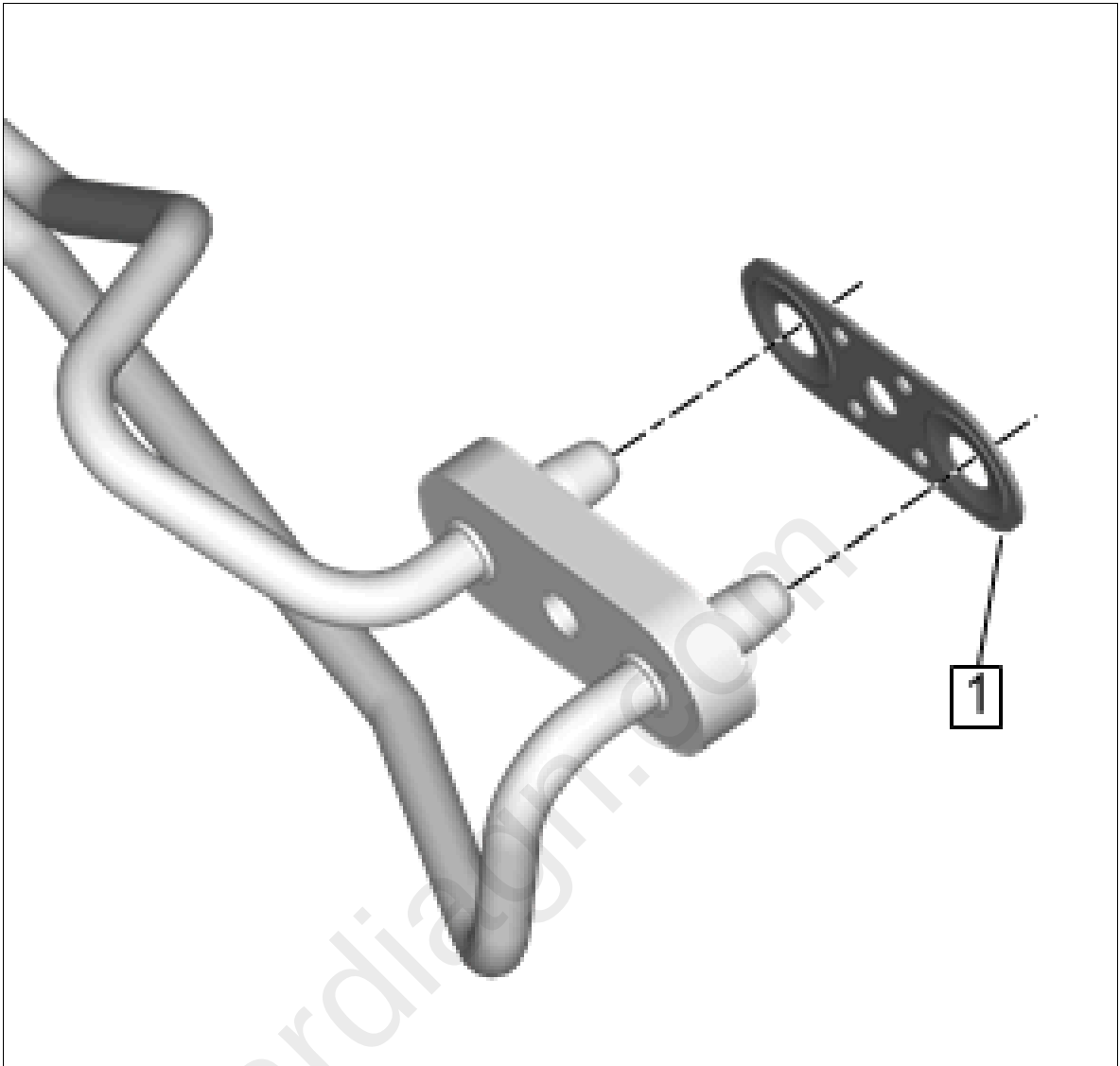
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

Fig 2: Transmission Fluid Cooler Pipe Fitting Seal

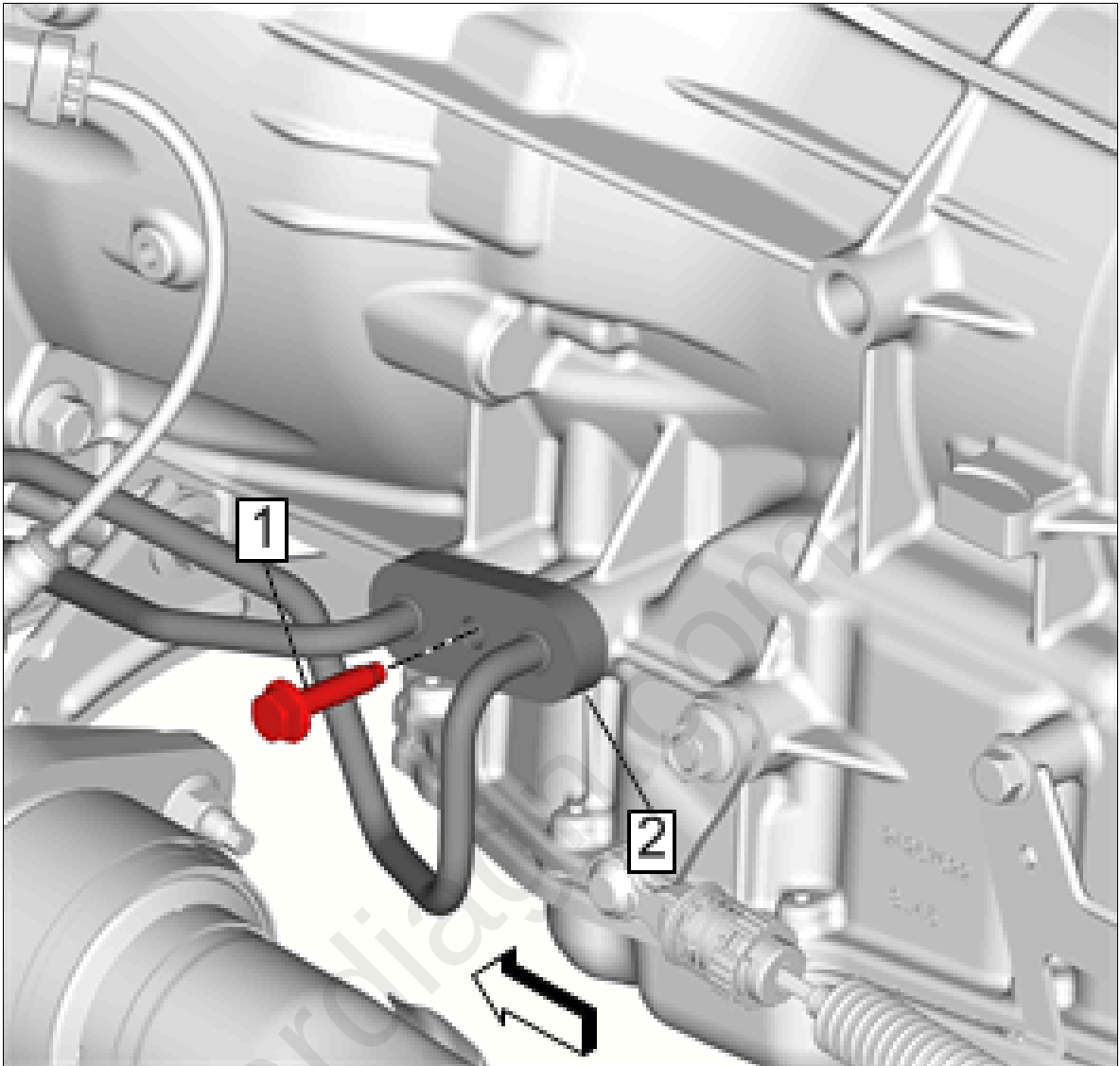


Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Seal (1)

Use a NEW seal.

Fig 3: Transmission Fluid Cooler Inlet and Outlet Pipe at Transmission



Courtesy of GENERAL MOTORS COMPANY

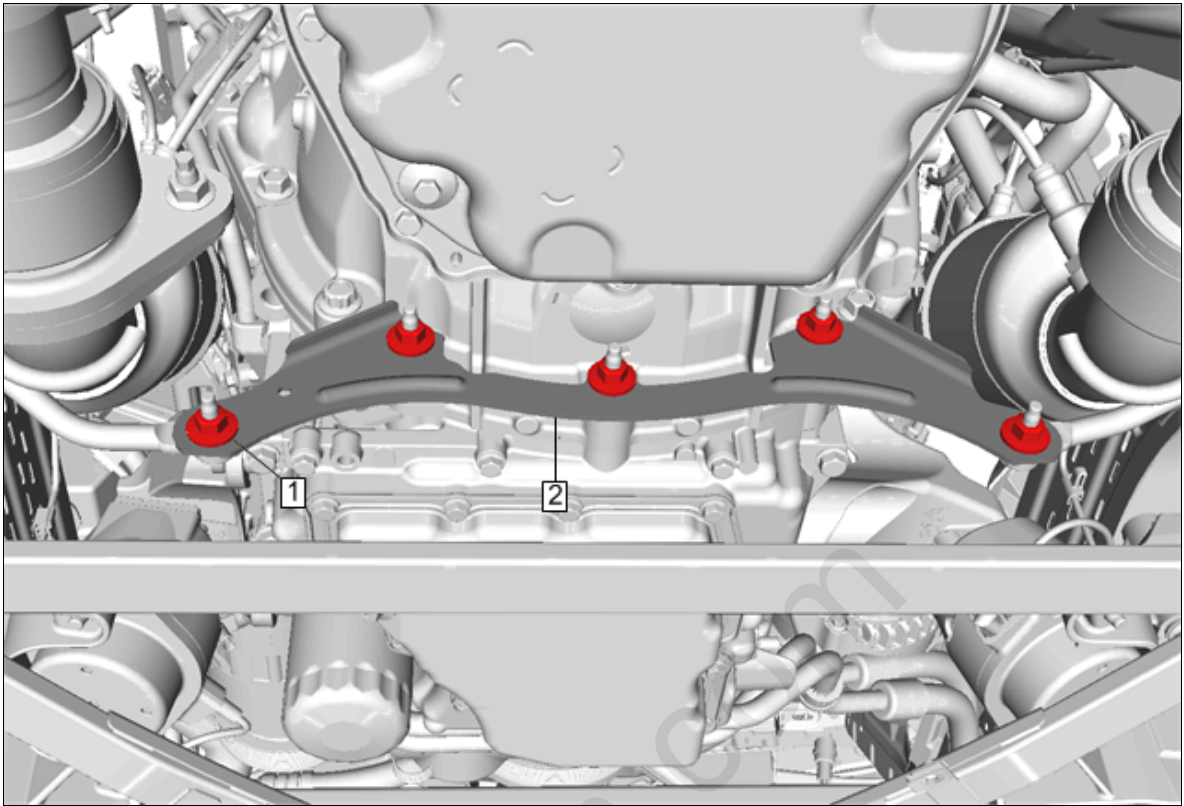
3. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission

 **CAUTION:**

Refer to Fastener Caution .

4. Install Transmission Fluid Cooler Pipe Clip Bolt (1) and tighten to 22 N.m (16 lb ft)

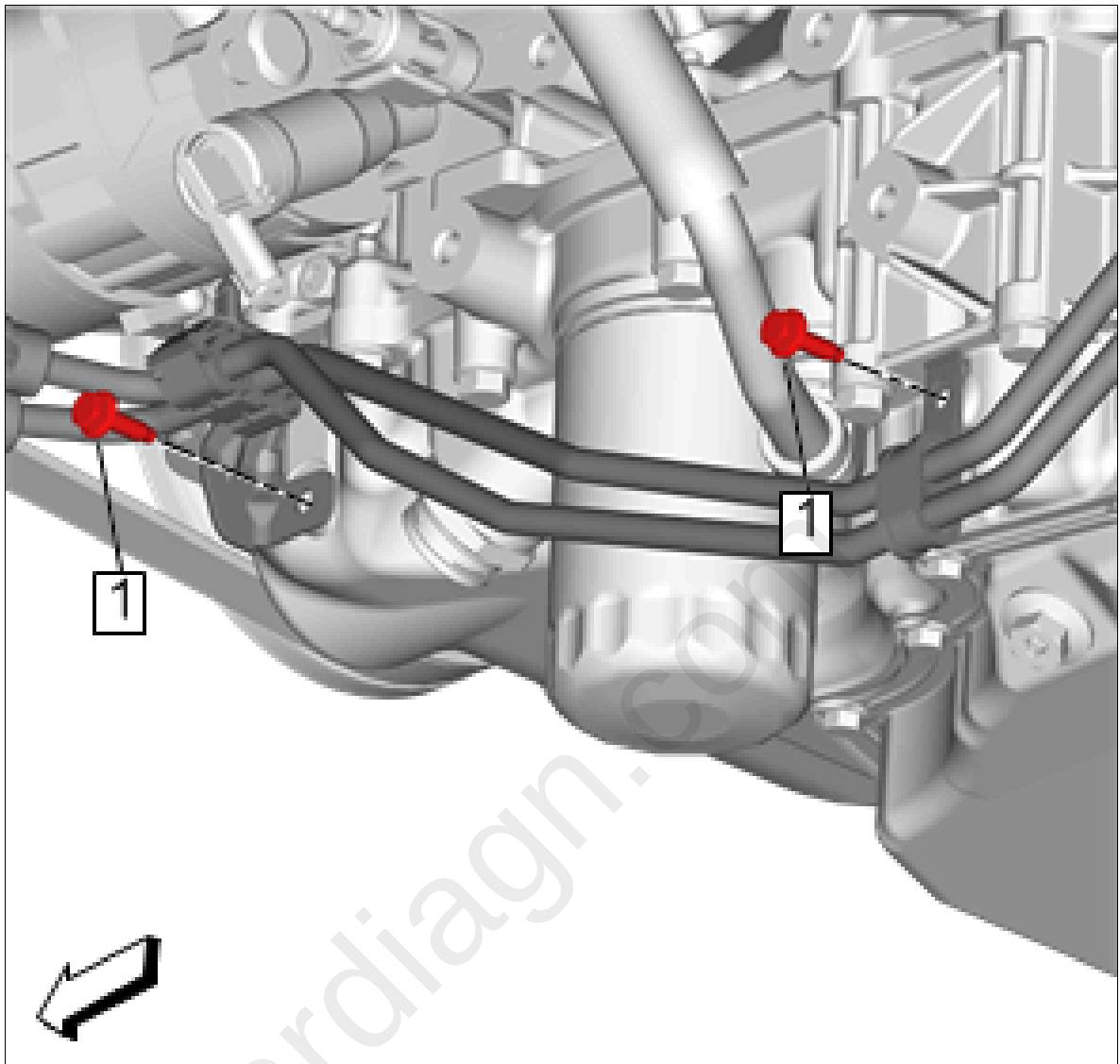
Fig 4: Catalytic Converter Brace Bracket (LGX)



Courtesy of GENERAL MOTORS COMPANY

5. Install Catalytic Converter Brace Bracket (2) - Catalytic Converter Brace Bracket Replacement (LGX)

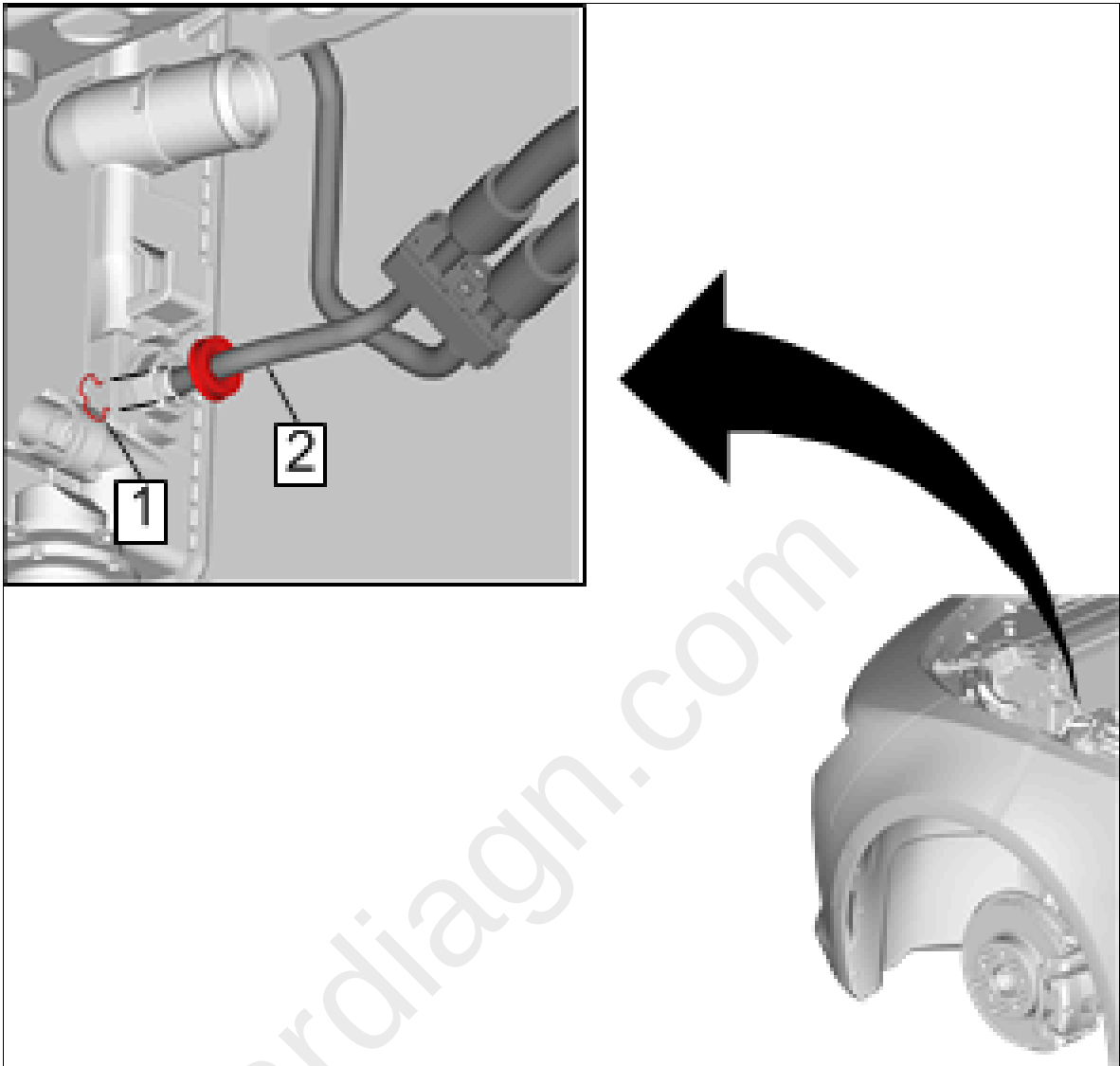
Fig 5: Transmission Fluid Cooler Pipe Clip Bolt



Courtesy of GENERAL MOTORS COMPANY

6. Install Transmission Fluid Cooler Pipe Clip Bolt (1) (Qty: 2) and tighten to 9 N.m (80 lb in)
7. { If equipped } Install Engine Oil Cooler Inlet Pipe at Engine - Engine Oil Cooler Pipe Replacement (LGX, Inlet)

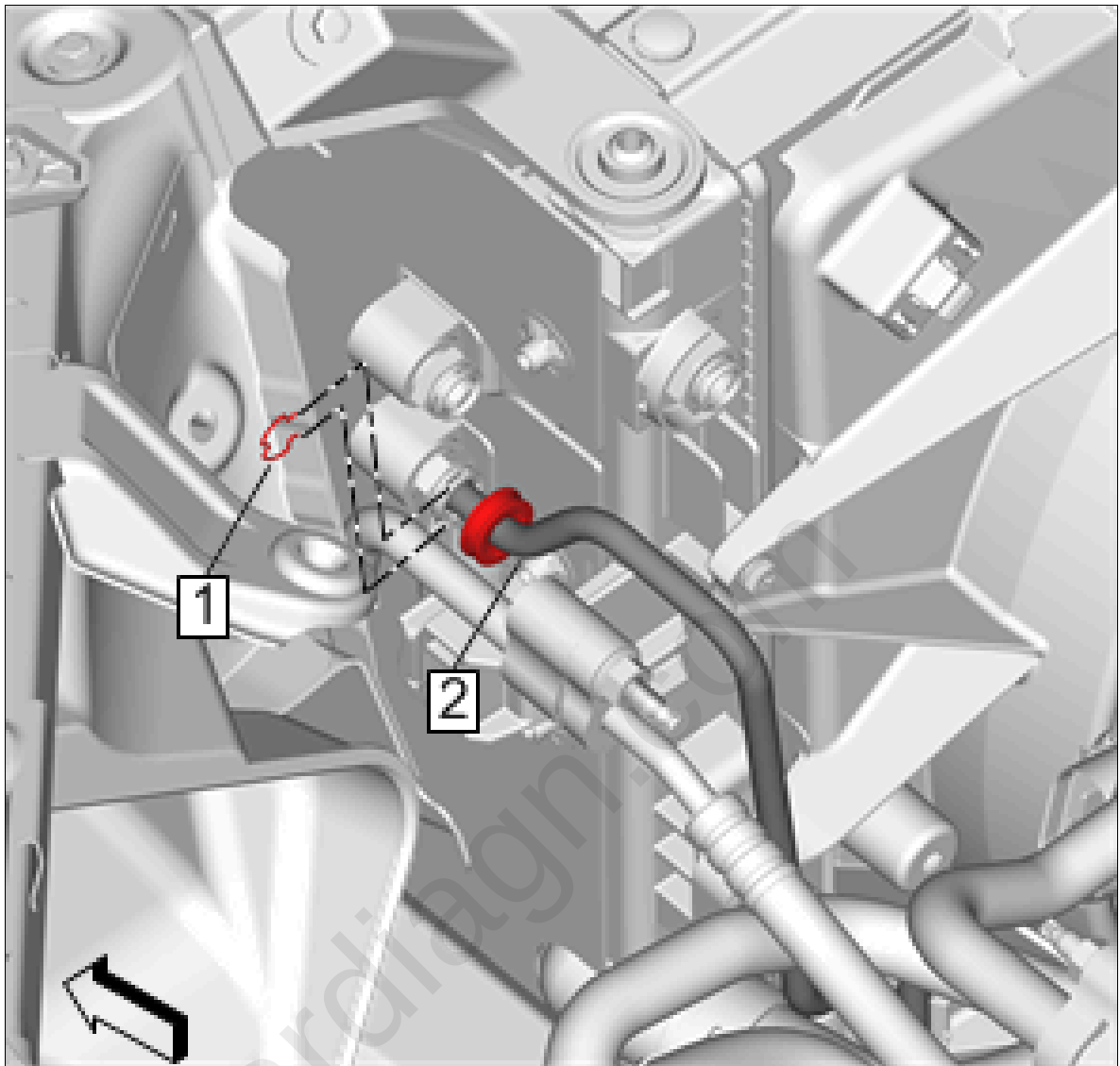
Fig 6: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

8. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
9. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator
10. Install Engine Coolant Fan Replacement (LGX With V03)

Fig 7: Transmission Fluid Cooler Pipe Fitting Retainer At Air Conditioning Condenser



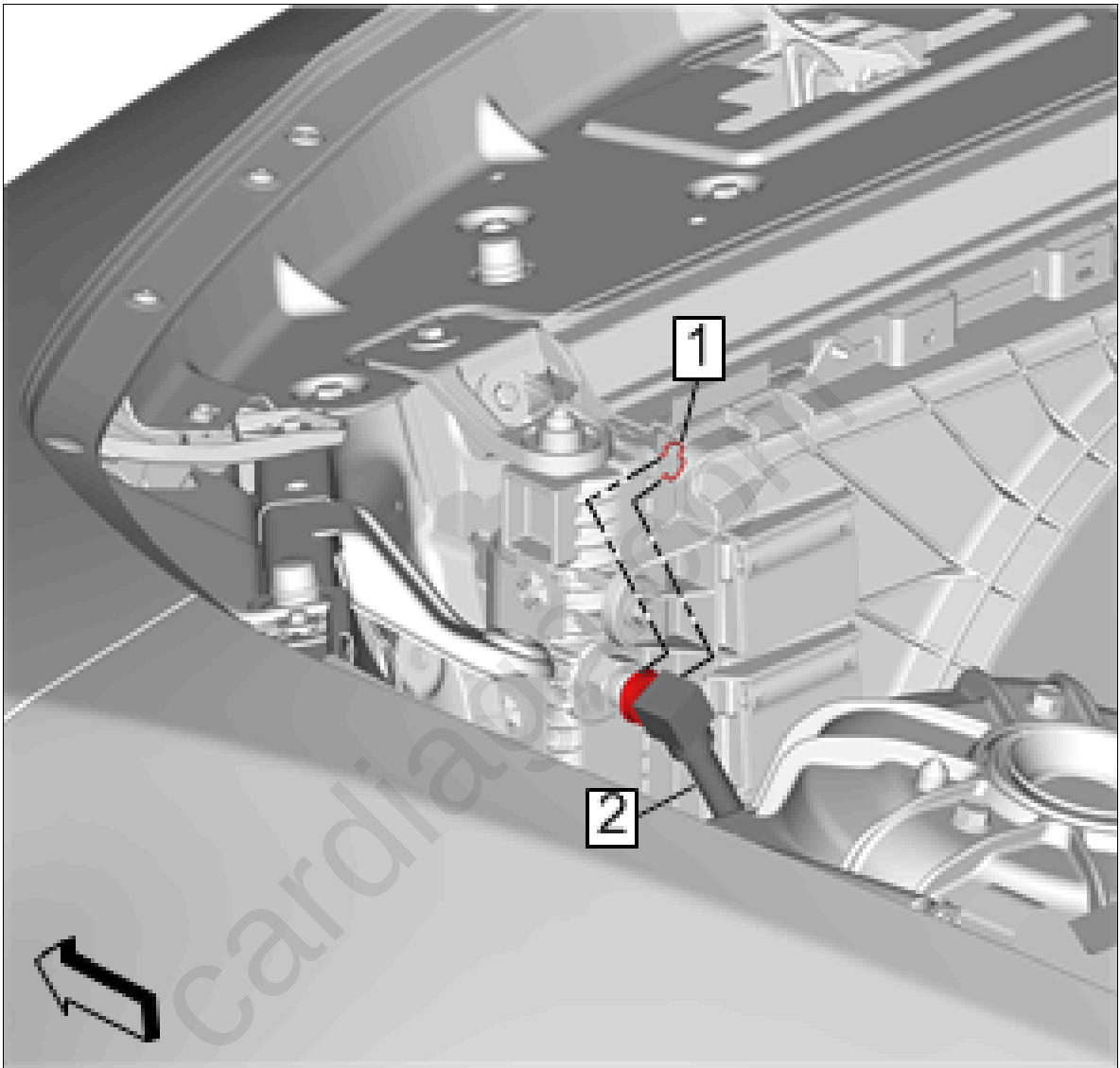
Courtesy of GENERAL MOTORS COMPANY

11. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
12. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Air Conditioning Condenser
13. Install Transmission Fluid Cooler Pipe Replacement (LGX With M5T, With V03)
14. Install Air Cleaner Assembly Replacement
15. Install Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
16. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
17. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET PIPE REPLACEMENT (LT1 WITH MM6, WITH KNR) > REMOVAL PROCEDURE

1. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Retaining Clip At Radiator



Courtesy of GENERAL MOTORS COMPANY

2. Remove Transmission Fluid Cooler Pipe Retaining Clip (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

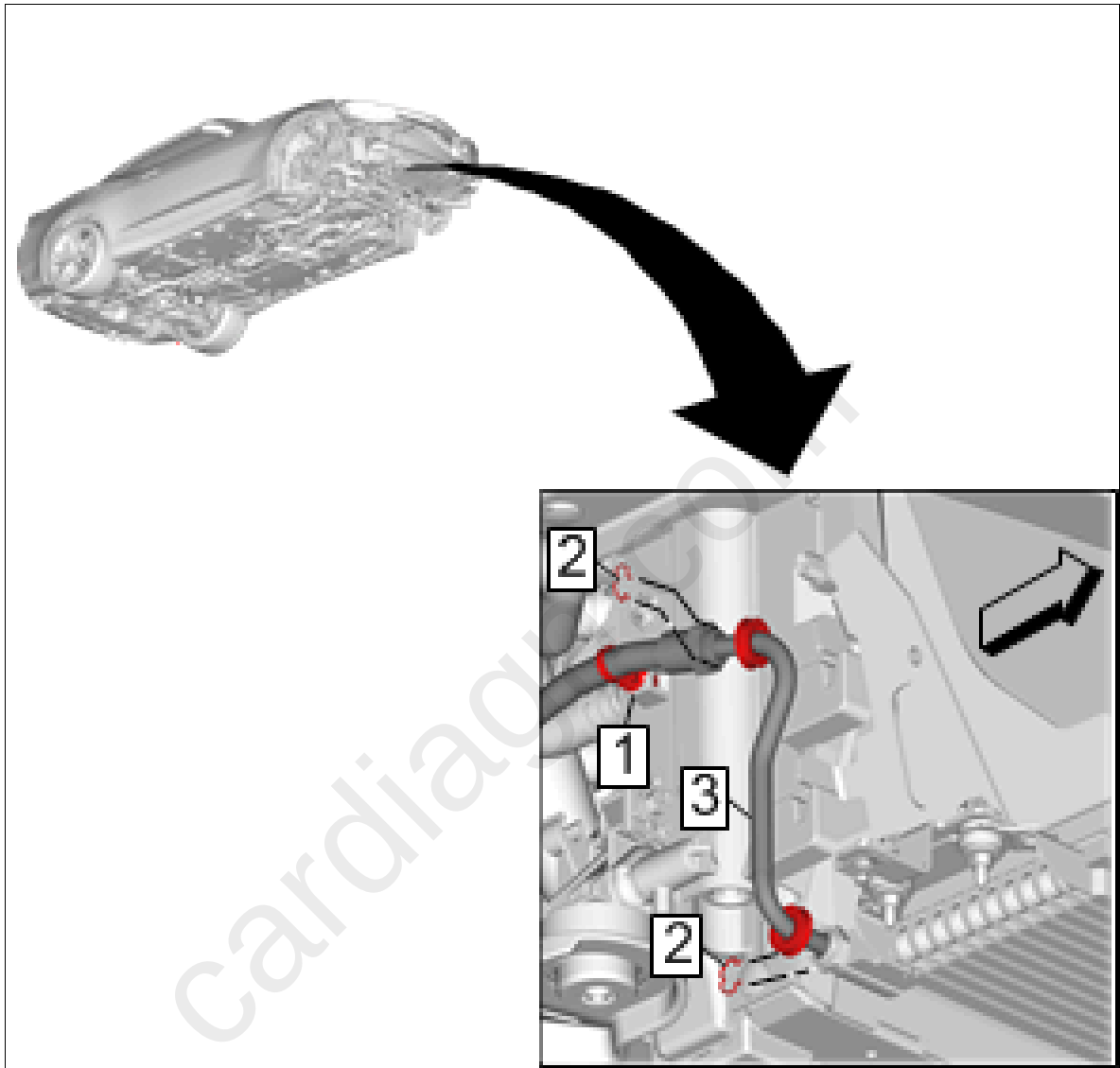
 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

3. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator

4. Remove Front Bumper Fascia Replacement
5. Remove Front Brake Rotor Cooling Duct Replacement (J6G) - Right Side
6. Remove Front Cradle Shear Plate Replacement

Fig 2: Transmission Fluid Cooler Pipe Plastic Retainer



Courtesy of GENERAL MOTORS COMPANY

7. Remove the transmission fluid cooler pipe plastic retainer (1) from the fan shroud.
8. Remove Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
9. Remove Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Cooler Inlet and Outlet Pipe - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

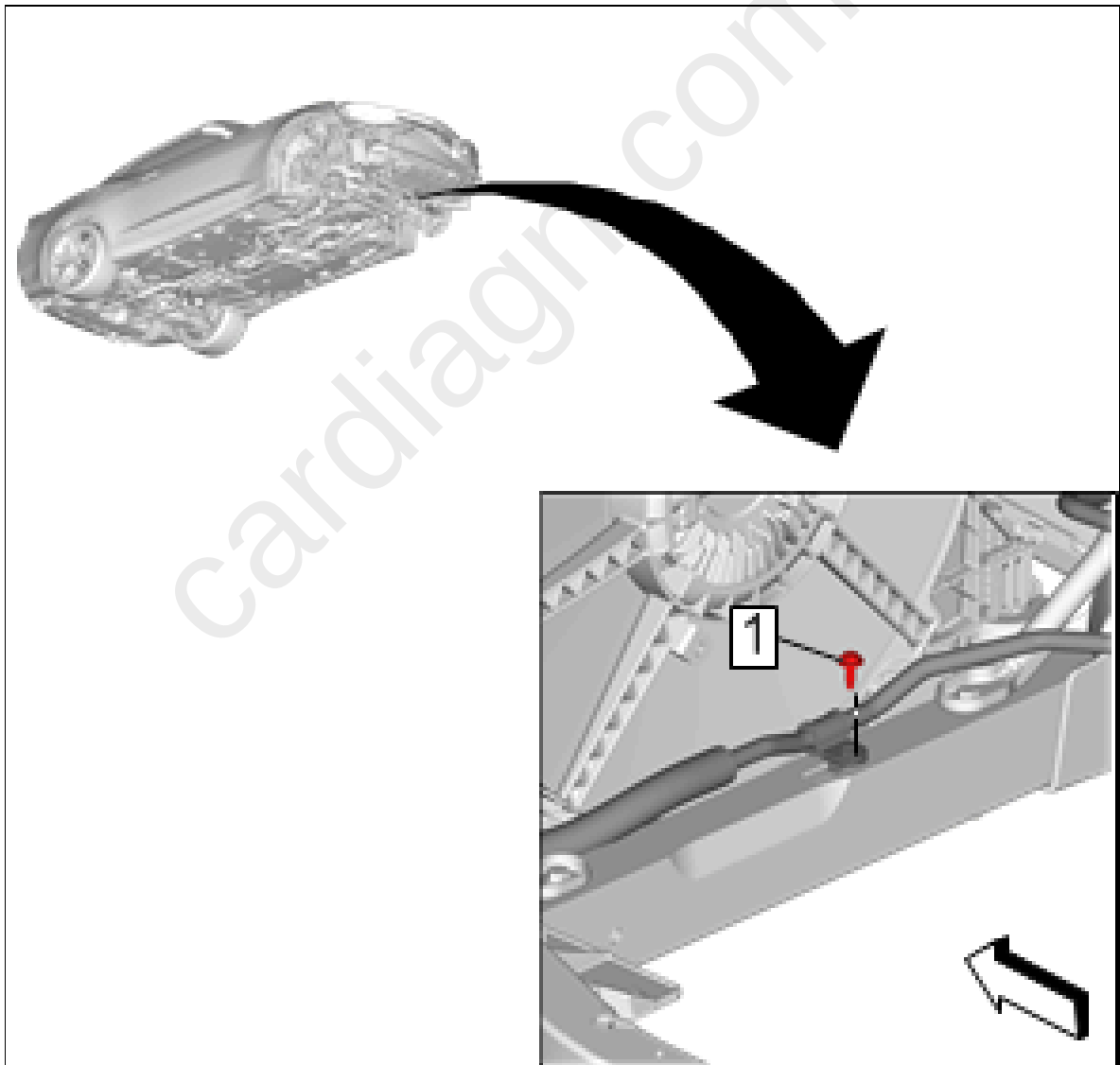
10. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Auxiliary Cooler.

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

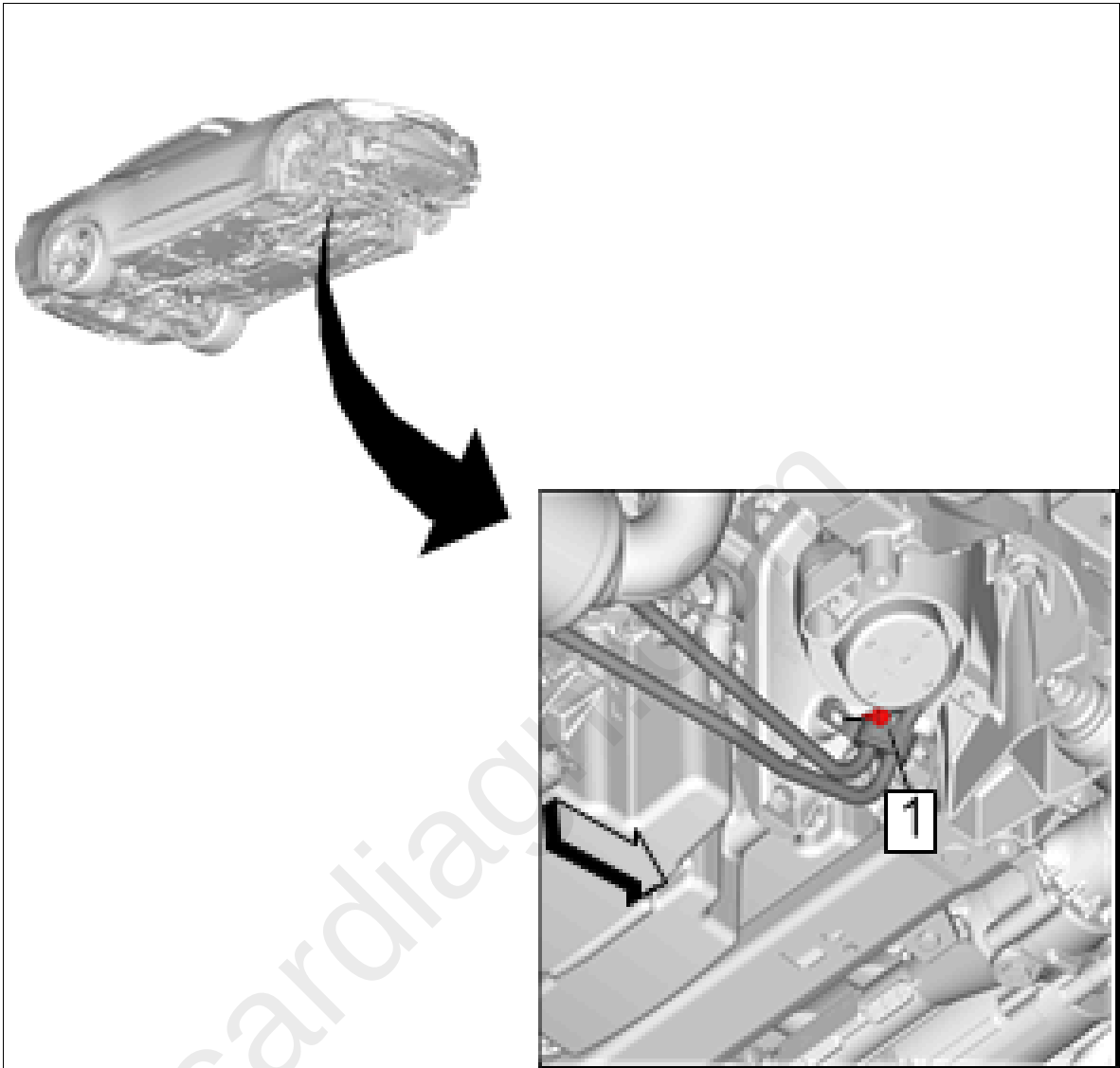
11. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 3: Transmission Fluid Cooler Pipe Clip Bolt



12. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle.

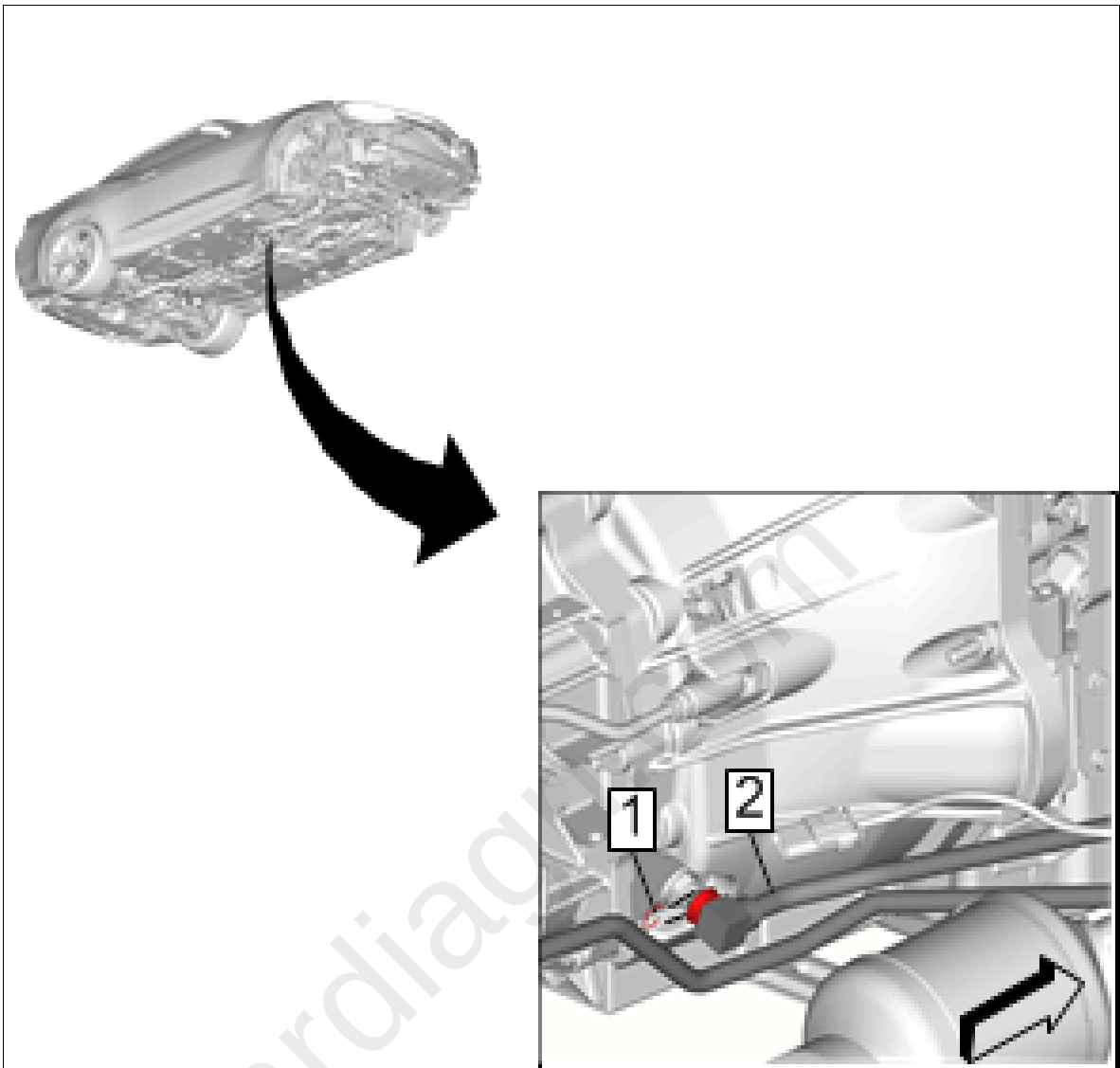
Fig 4: Transmission Fluid Cooler Pipe Clip Bolt At Engine Mount - Right Side



Courtesy of GENERAL MOTORS COMPANY

13. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Engine Mount - Right Side.

Fig 5: Transmission Fluid Cooler Pipe Retaining Clip At Transmission



Courtesy of GENERAL MOTORS COMPANY

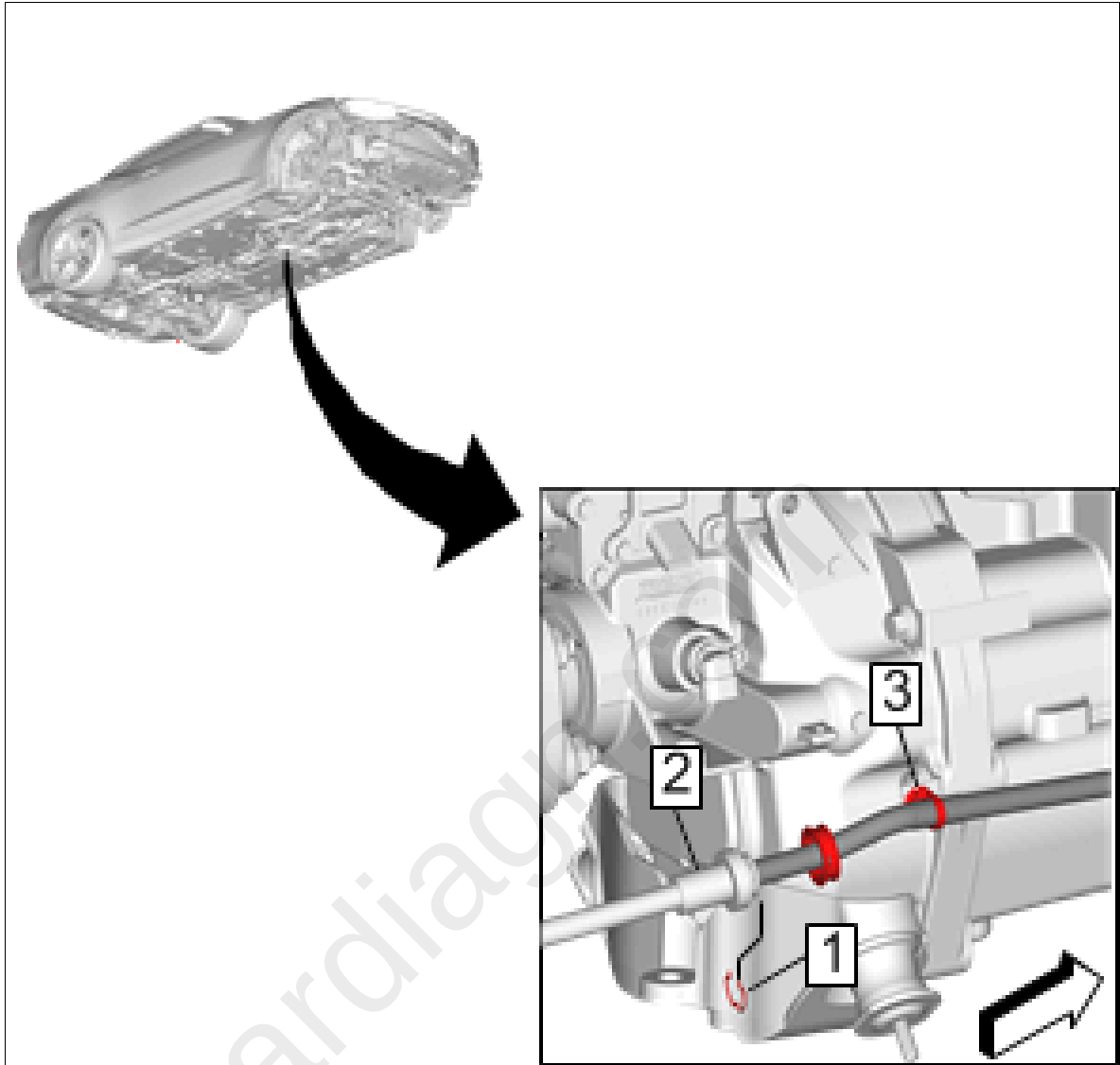
14. Remove Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

15. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

Fig 6: Transmission Fluid Cooler Pipe Retaining Clip at Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

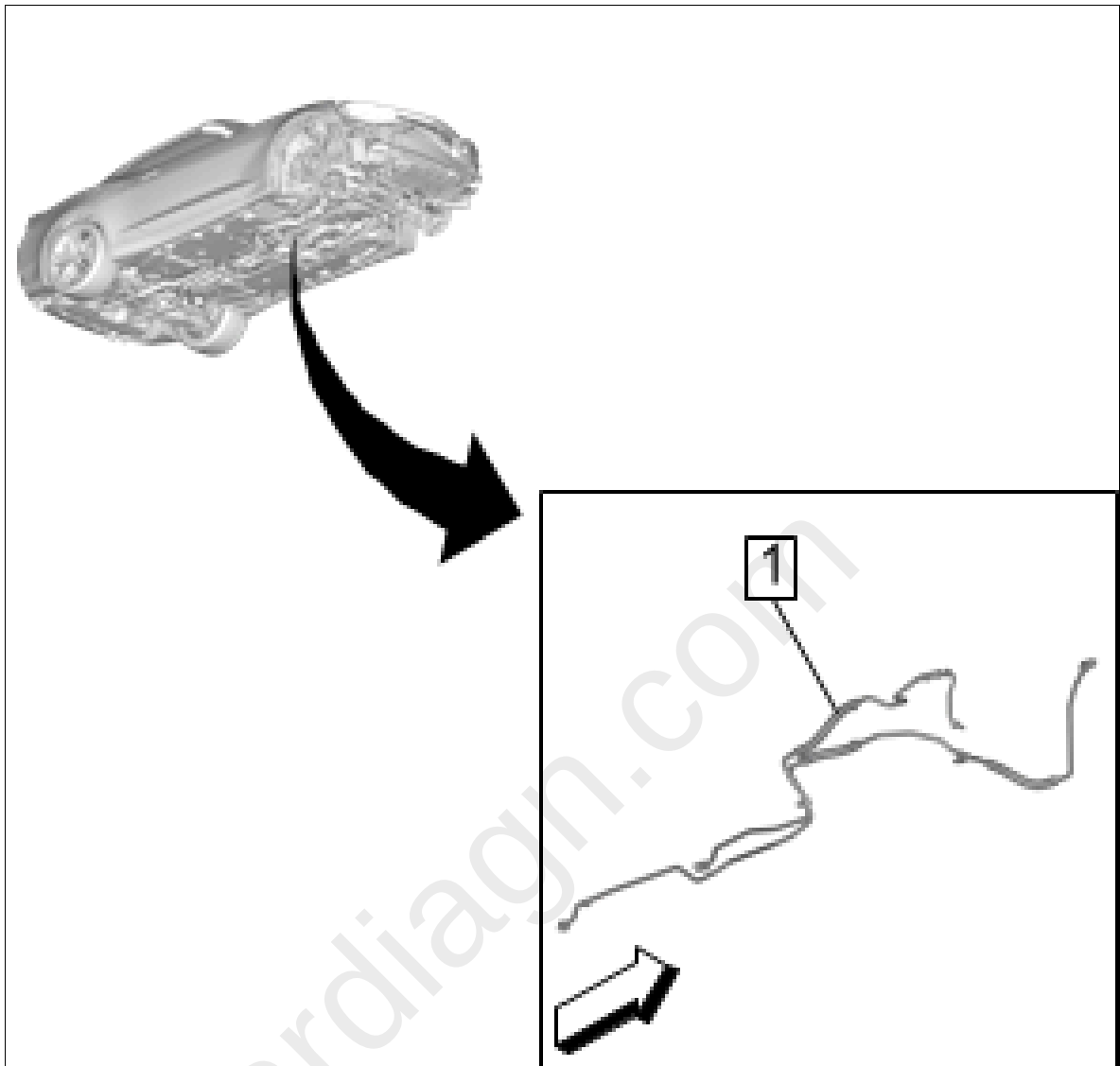
16. Remove Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

17. Remove Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.
18. Remove the transmission fluid cooler pipe plastic retainer (3) from the transmission bracket.

Fig 7: Transmission Fluid Cooler Inlet And Outlet Pipe

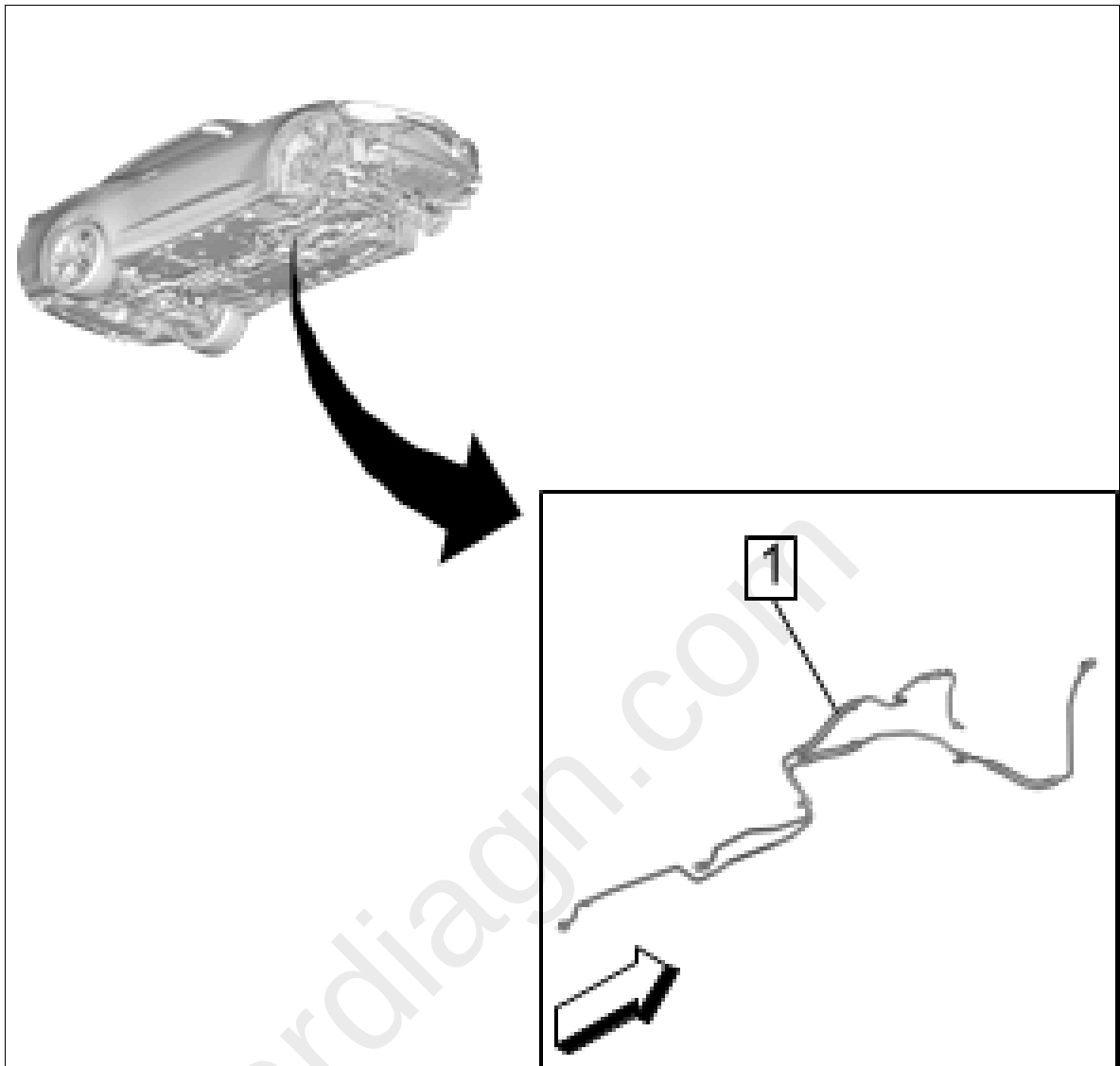


Courtesy of GENERAL MOTORS COMPANY

19. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
20. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LT1 WITH MM6, WITH KNR) > INSTALLATION PROCEDURE**

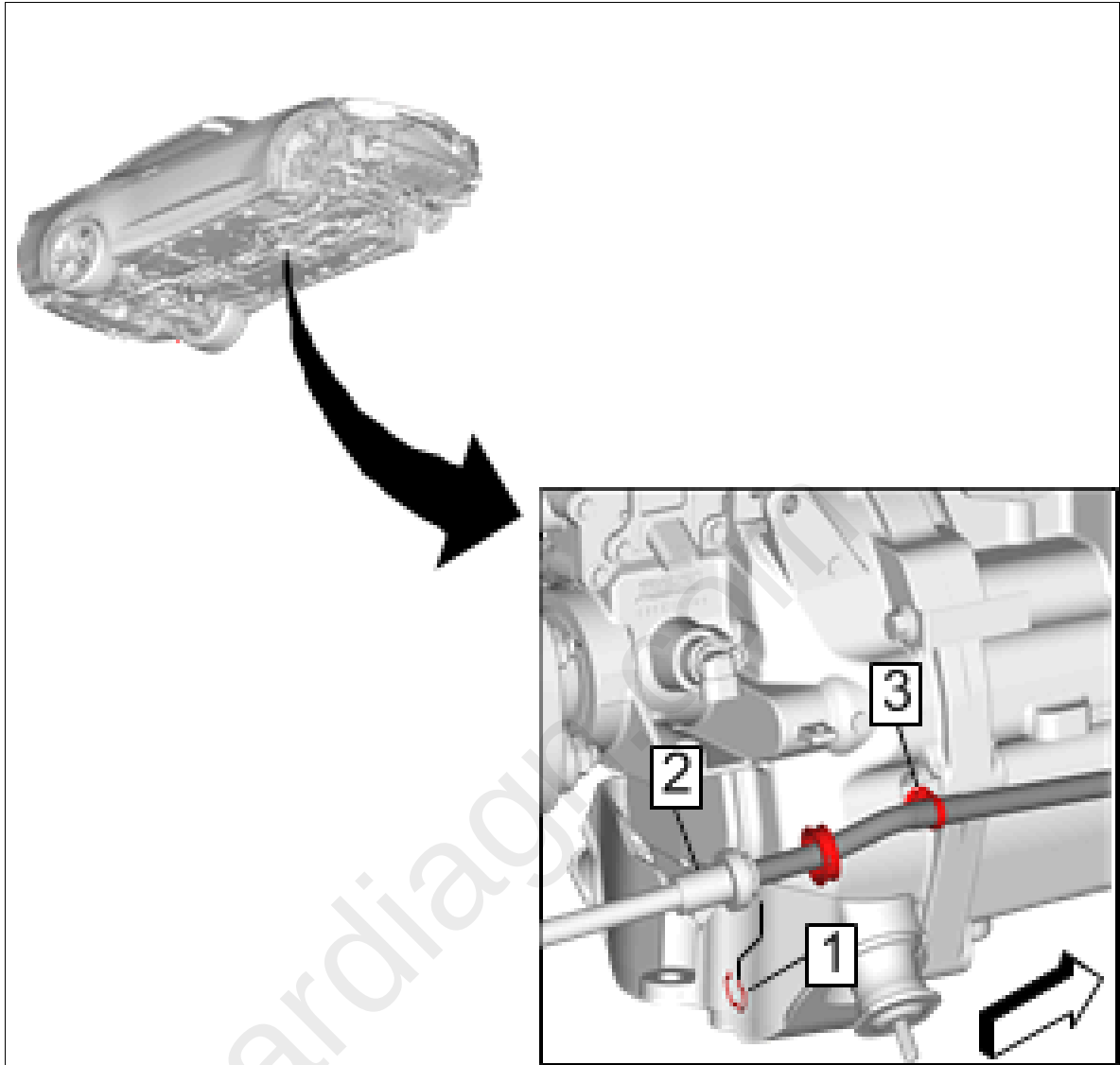
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

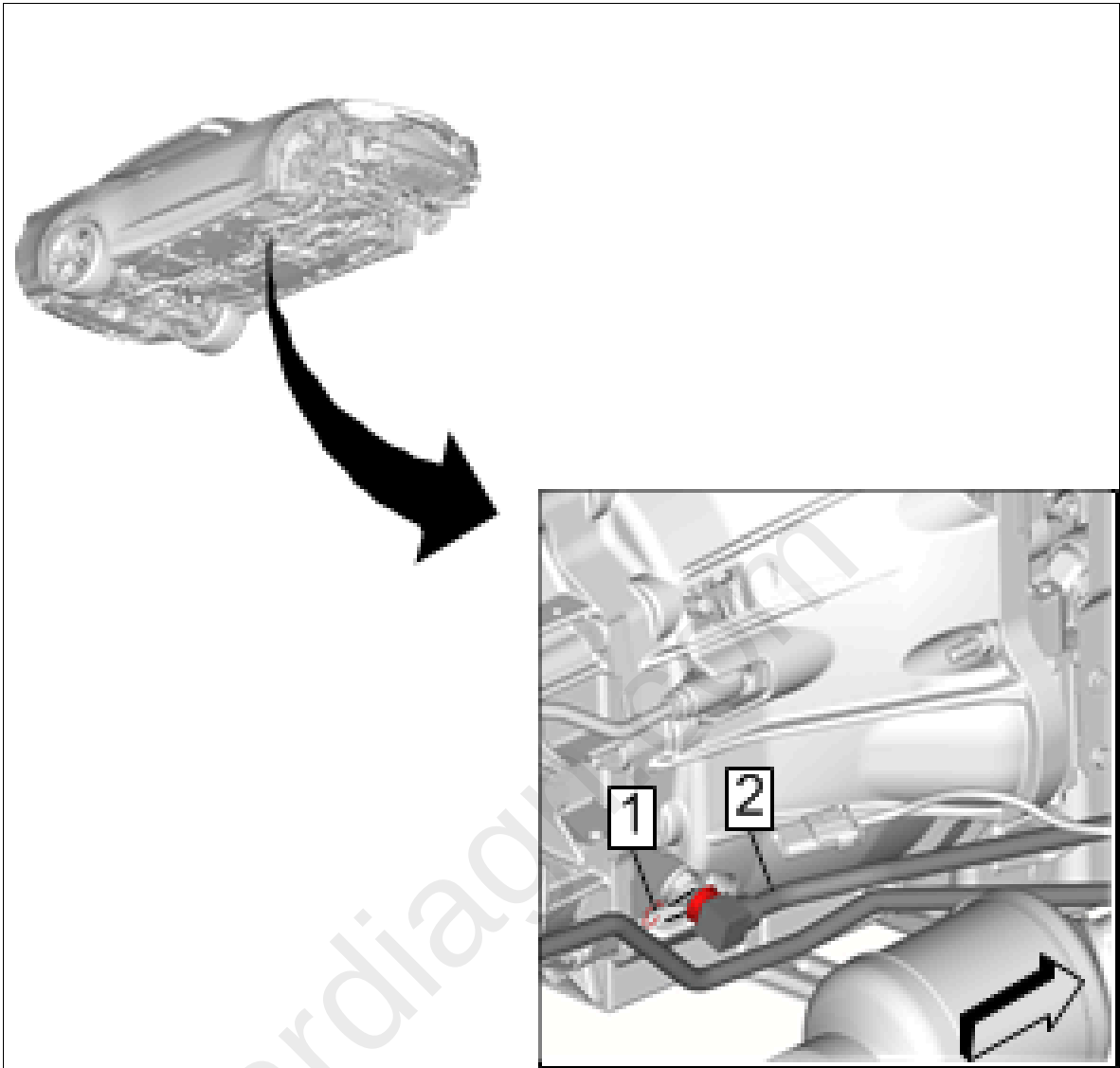
Fig 2: Transmission Fluid Cooler Pipe Retaining Clip at Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.
4. Install the transmission fluid cooler pipe plastic retainer (3) in the transmission bracket.

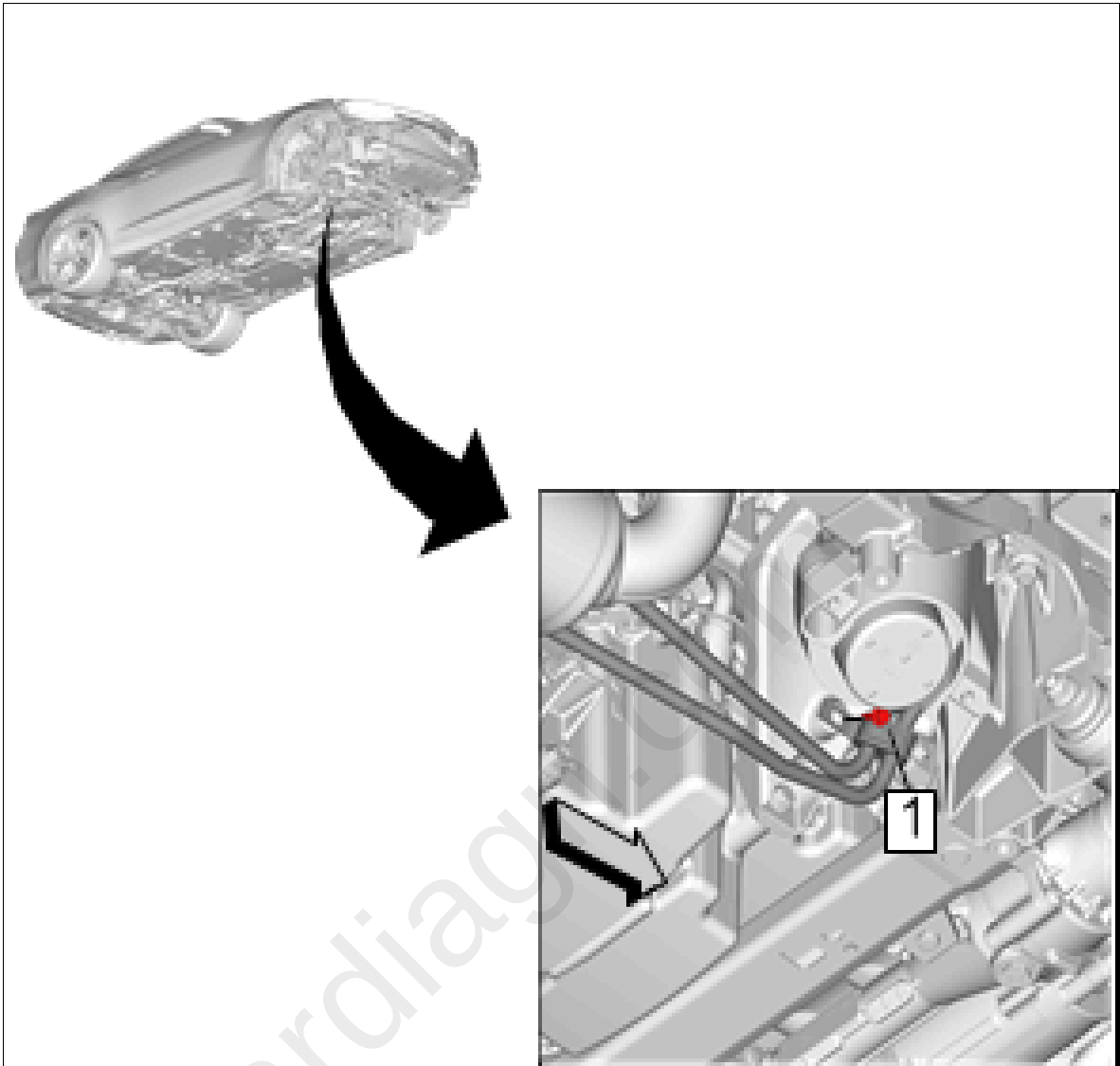
Fig 3: Transmission Fluid Cooler Pipe Retaining Clip At Transmission



Courtesy of GENERAL MOTORS COMPANY

5. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
6. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

Fig 4: Transmission Fluid Cooler Pipe Clip Bolt At Engine Mount - Right Side



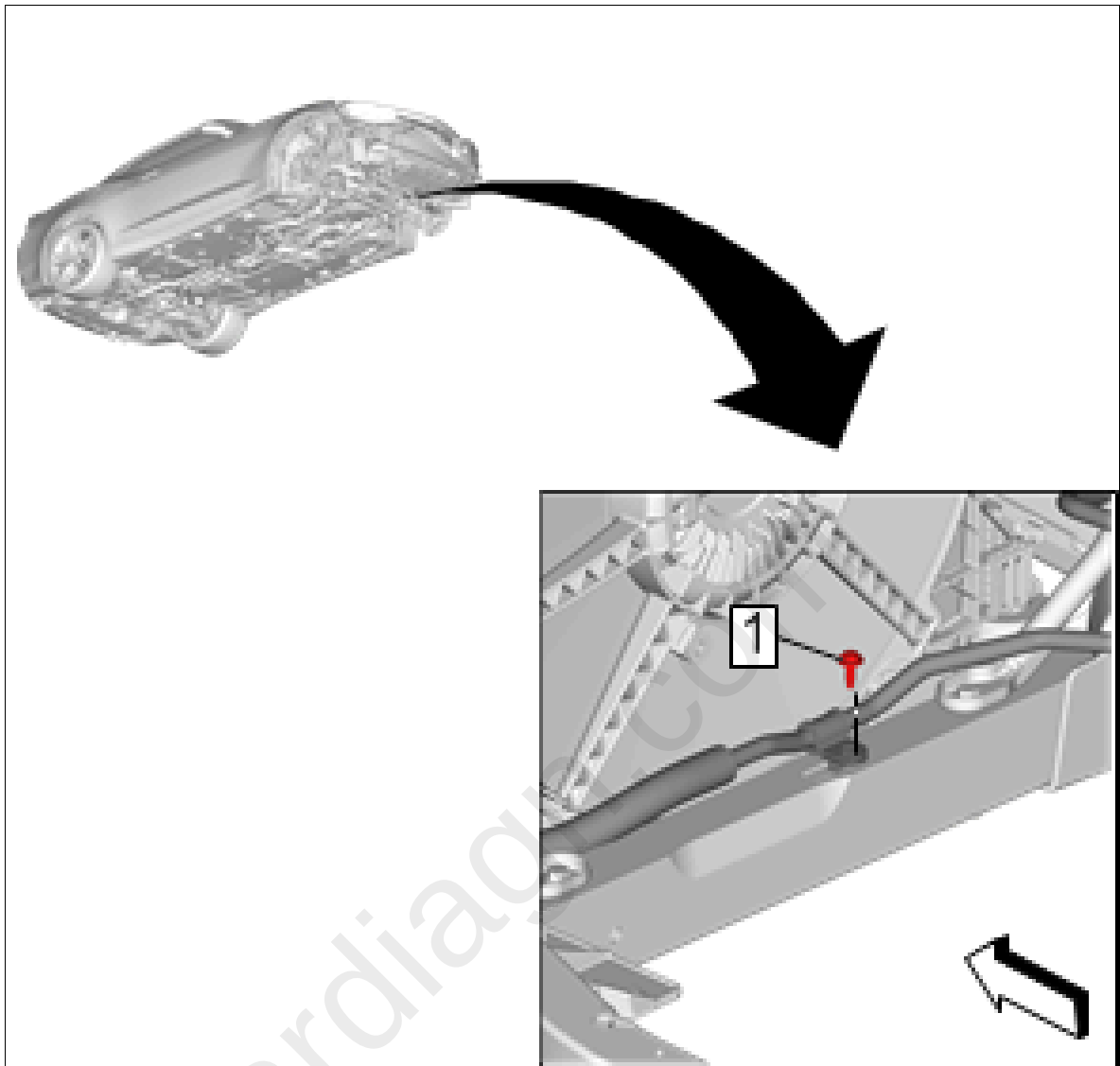
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

7. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Engine Mount - Right Side and tighten to 9 N.m (80 lb in)

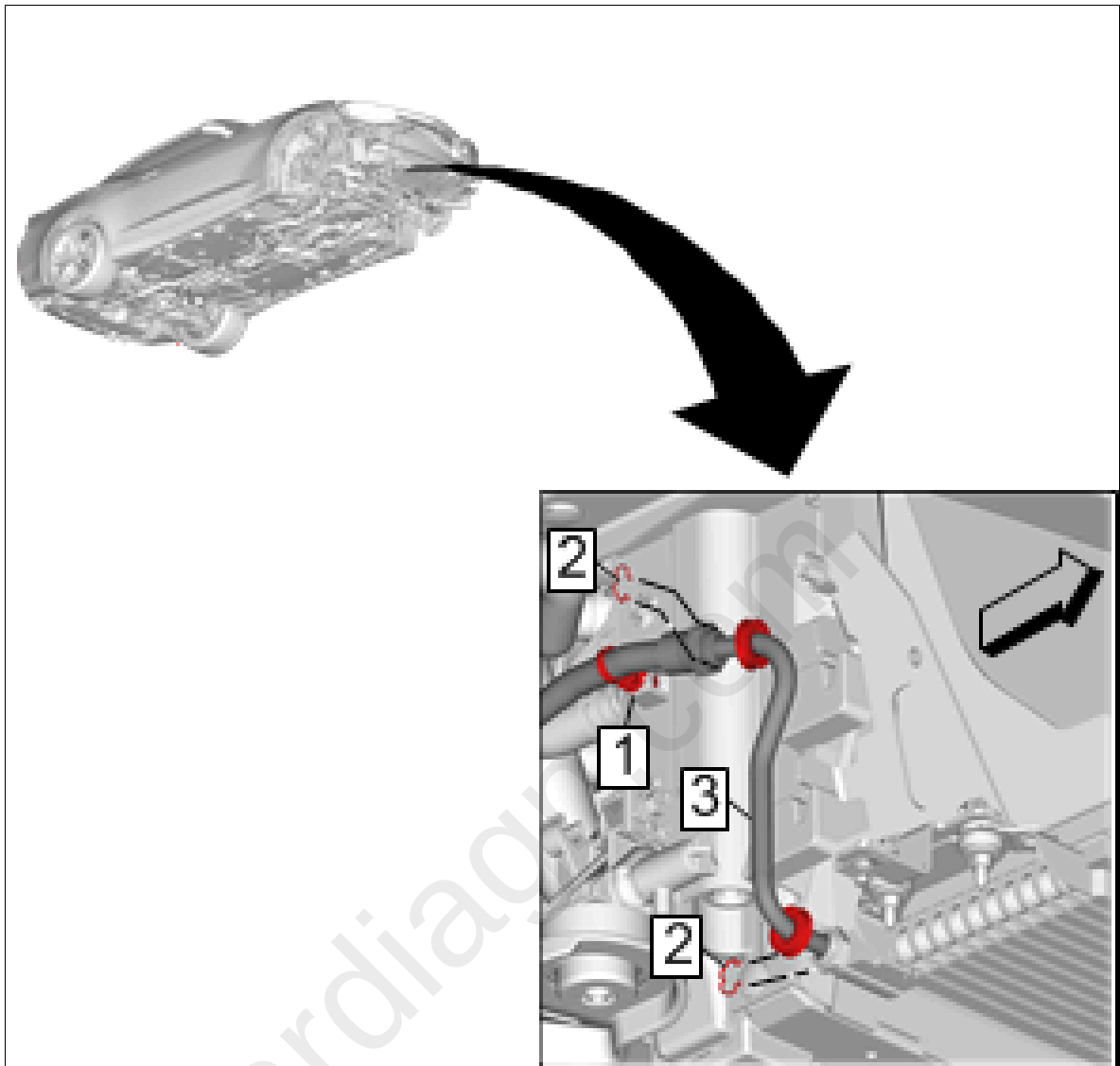
Fig 5: Transmission Fluid Cooler Pipe Clip Bolt



Courtesy of GENERAL MOTORS COMPANY

8. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle and tighten to 9 N.m (80 lb in)

Fig 6: Transmission Fluid Cooler Pipe Plastic Retainer

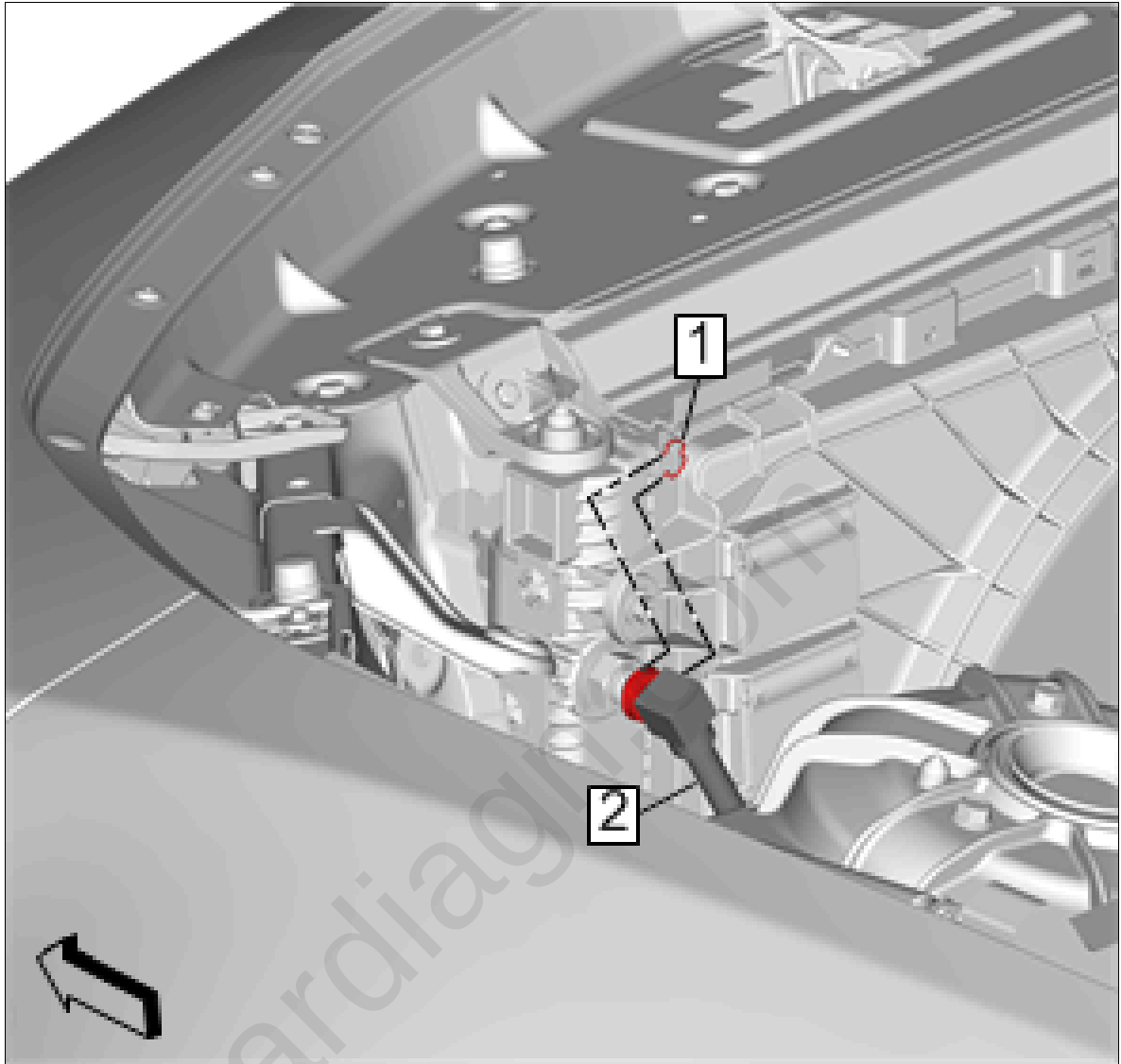


Courtesy of GENERAL MOTORS COMPANY

9. Install the transmission fluid cooler pipe plastic retainer (1) in the fan shroud.
10. Install Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Cooler Inlet and Outlet Pipe - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
11. Install Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
12. Install Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Auxiliary Cooler.
13. Install Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Cooler Inlet and Outlet Pipe.
14. Install Front Cradle Shear Plate Replacement
15. Install Front Brake Rotor Cooling Duct Replacement (J6G) - Right Side

16. Install Front Bumper Fascia Replacement

Fig 7: Transmission Fluid Cooler Pipe Retaining Clip At Radiator



Courtesy of GENERAL MOTORS COMPANY

17. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

18. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.

19. Install Air Cleaner Assembly Replacement

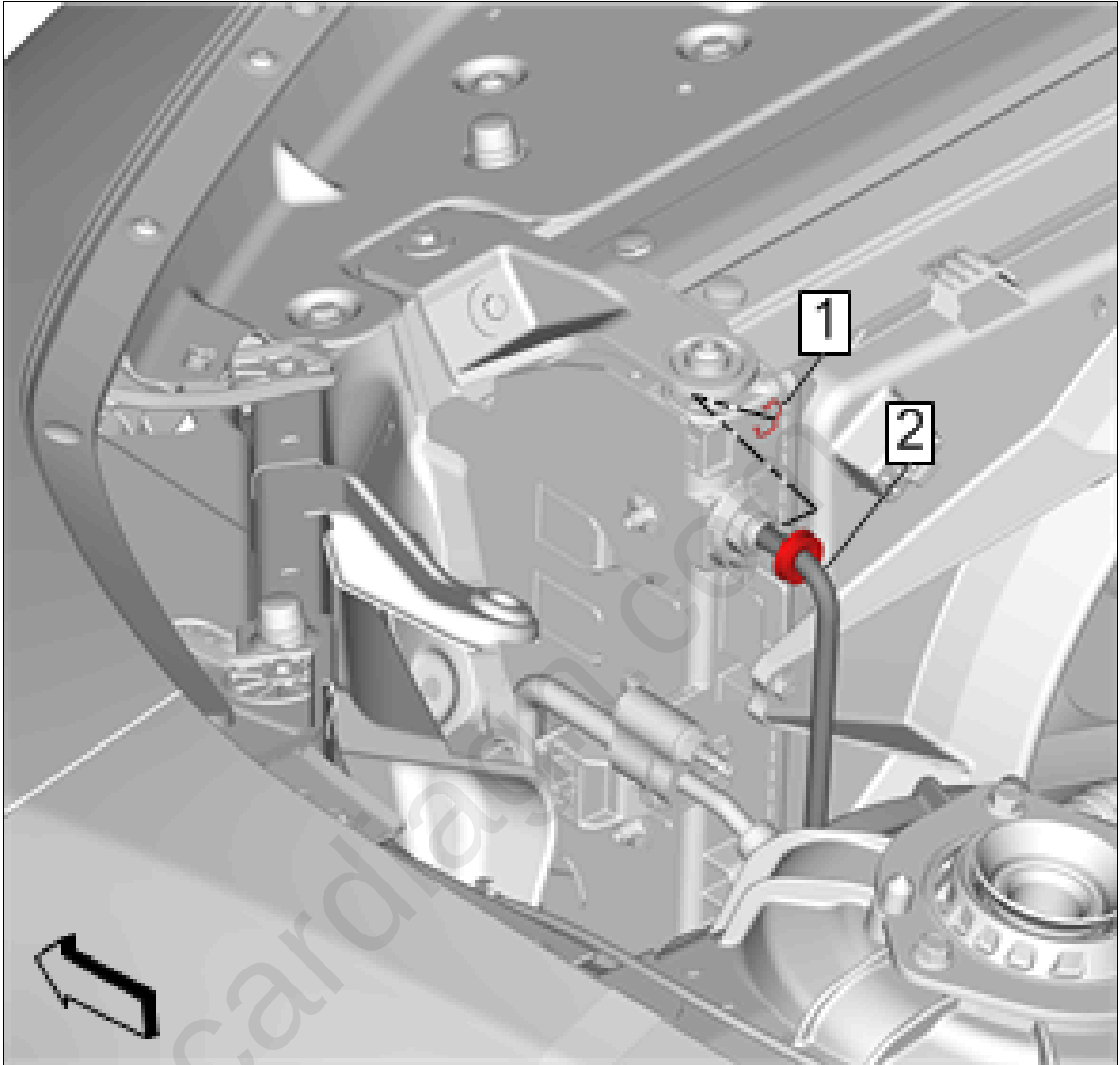
20. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)

21. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET PIPE REPLACEMENT (LGX WITH M5T, WITHOUT V03) > REMOVAL PROCEDURE

1. Remove Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
2. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

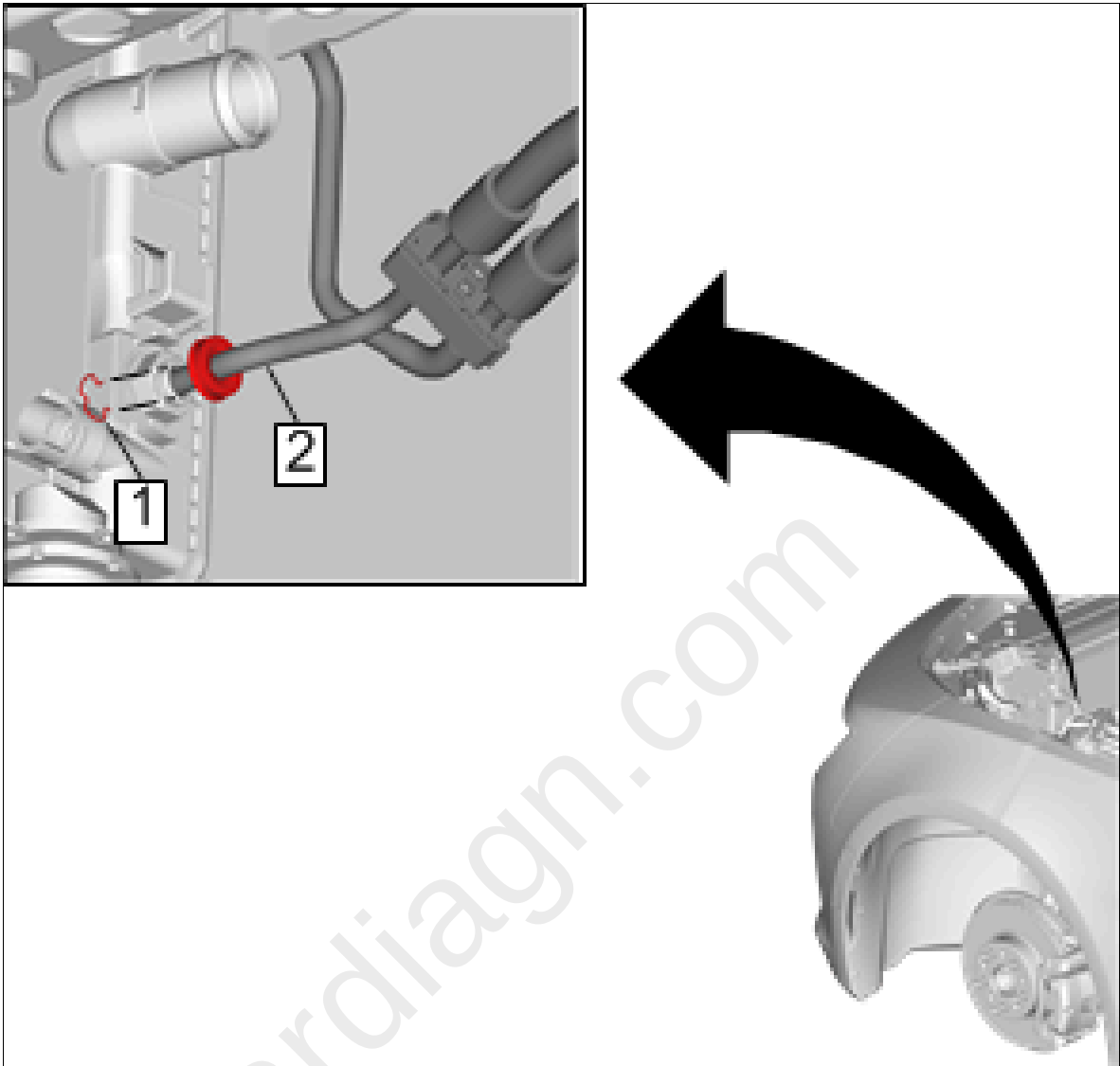
3. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
5. Remove Engine Coolant Fan Replacement (LGX Without V03)

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

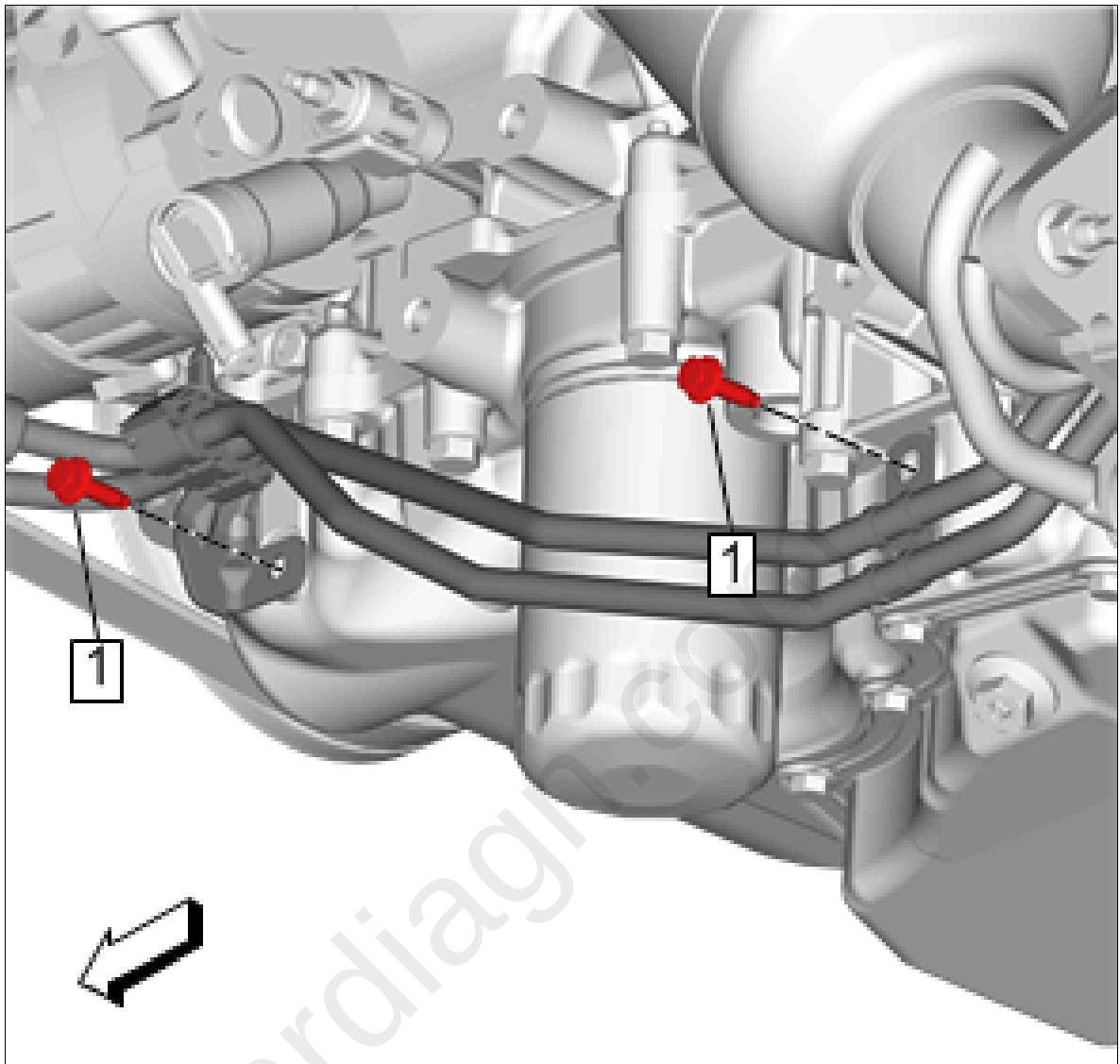
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.

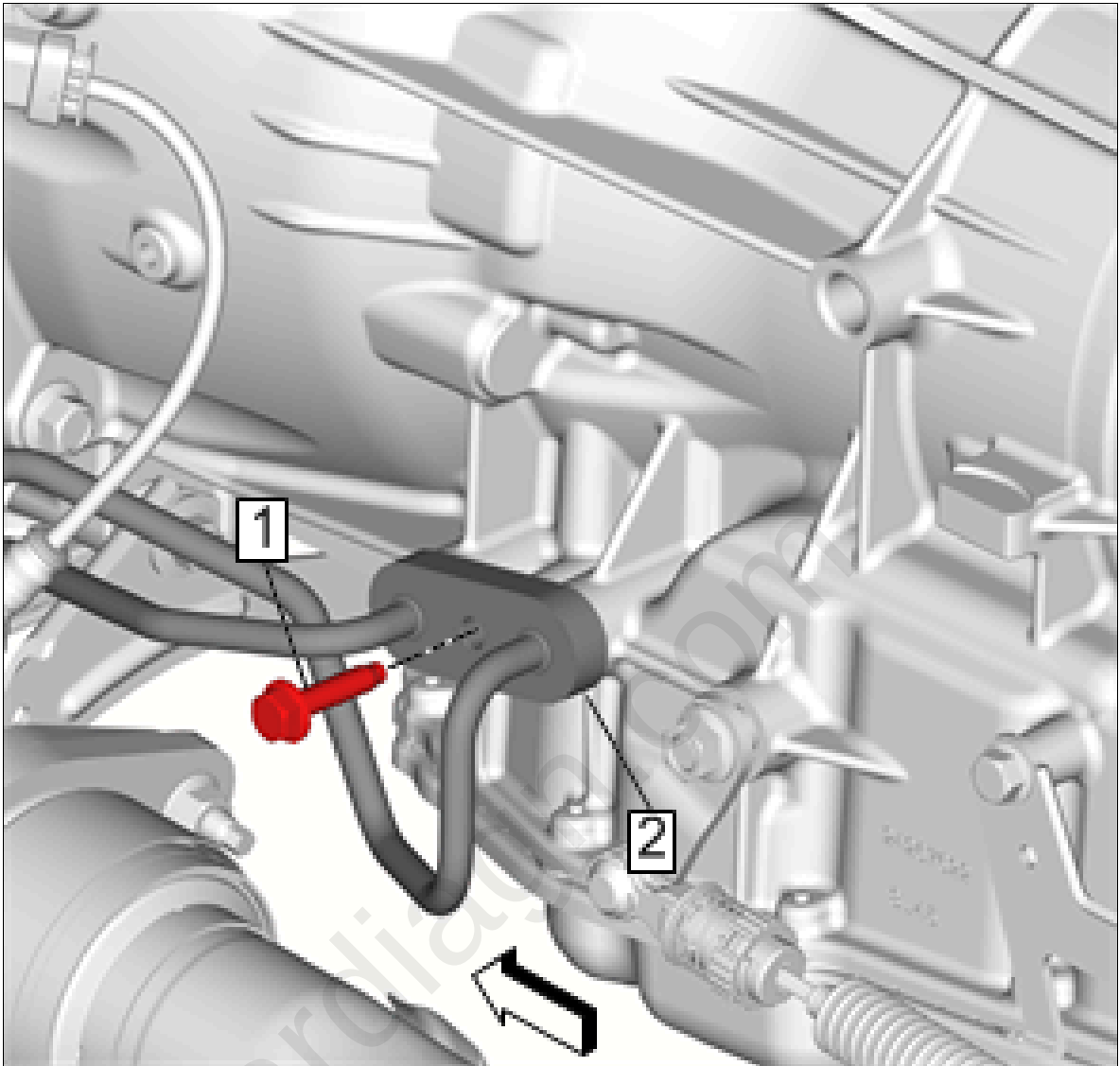
Fig 3: Transmission Fluid Cooler Inlet And Outlet Pipe Clip Bolts At Engine Oil Pan



Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) (Qty: 2)

Fig 4: Transmission Fluid Cooler Inlet And Outlet Pipe Bolt At Transmission



Courtesy of GENERAL MOTORS COMPANY

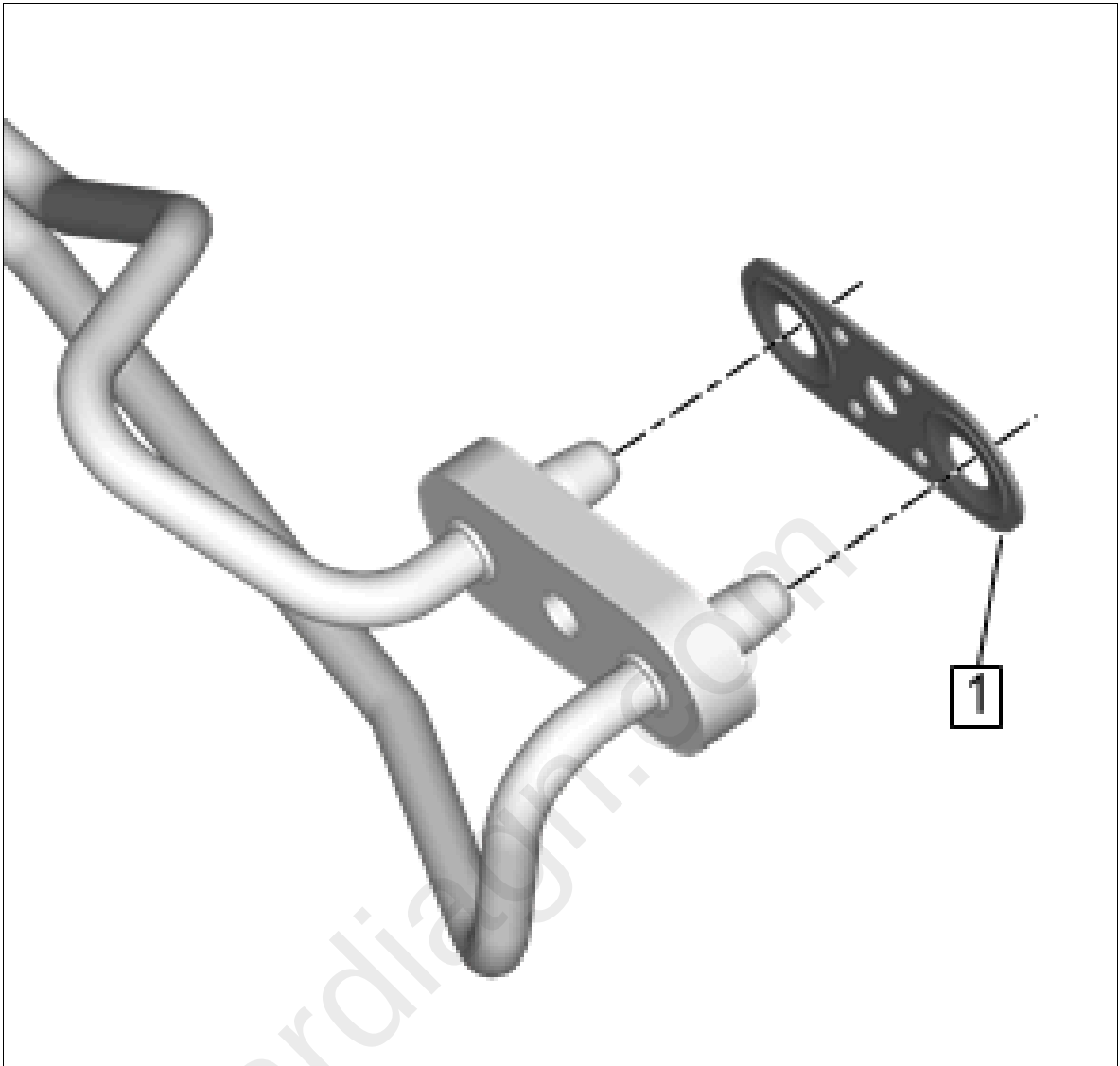
9. Remove Transmission Fluid Cooler Pipe Clip Bolt (1)

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

10. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

Fig 5: Transmission Fluid Cooler Inlet And Outlet Pipe Fitting Seal

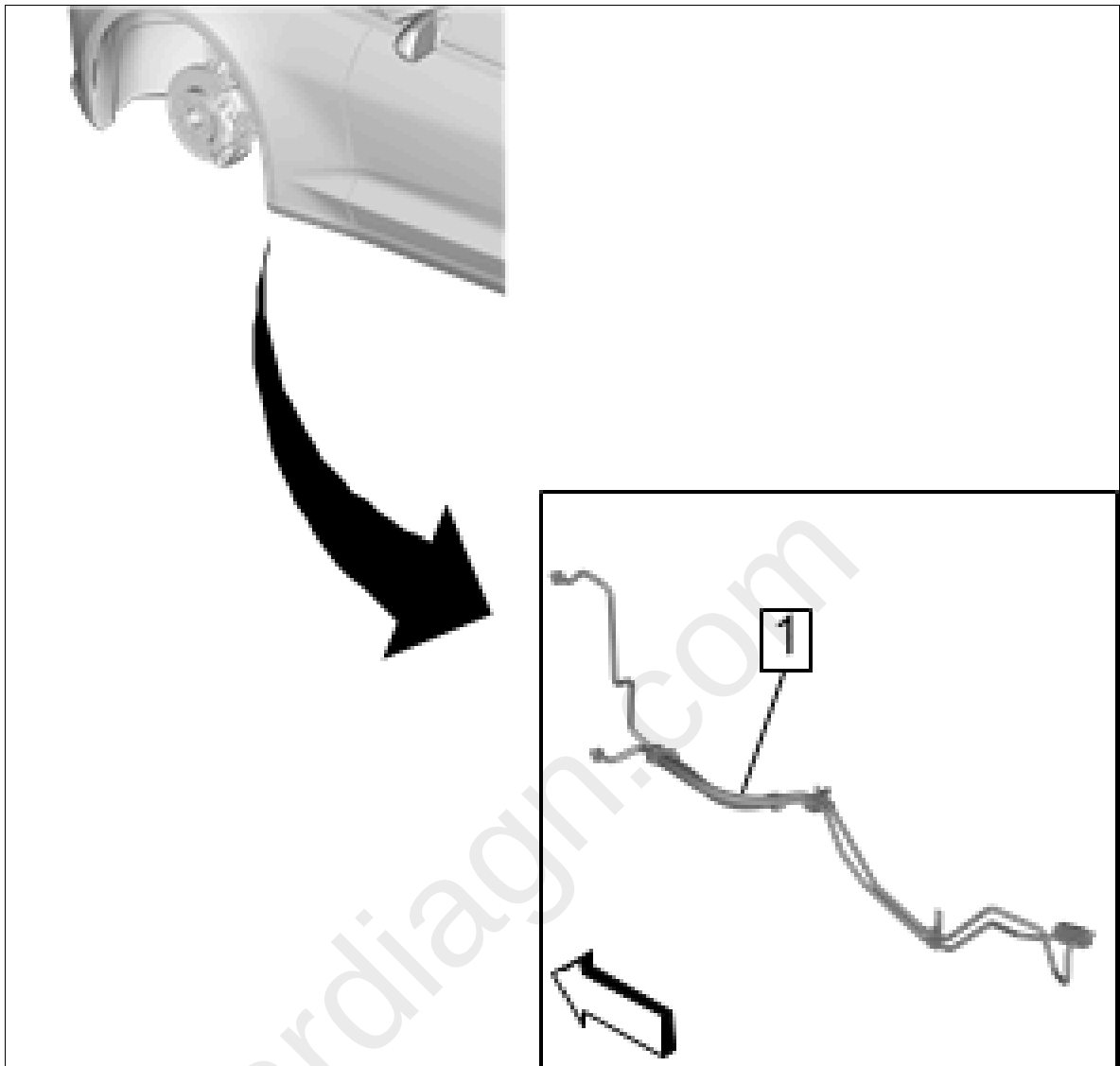


Courtesy of GENERAL MOTORS COMPANY

11. Remove Transmission Fluid Cooler Pipe Fitting Seal (1)

DISCARD the seal.

Fig 6: Transmission Fluid Cooler Inlet And Outlet Pipe

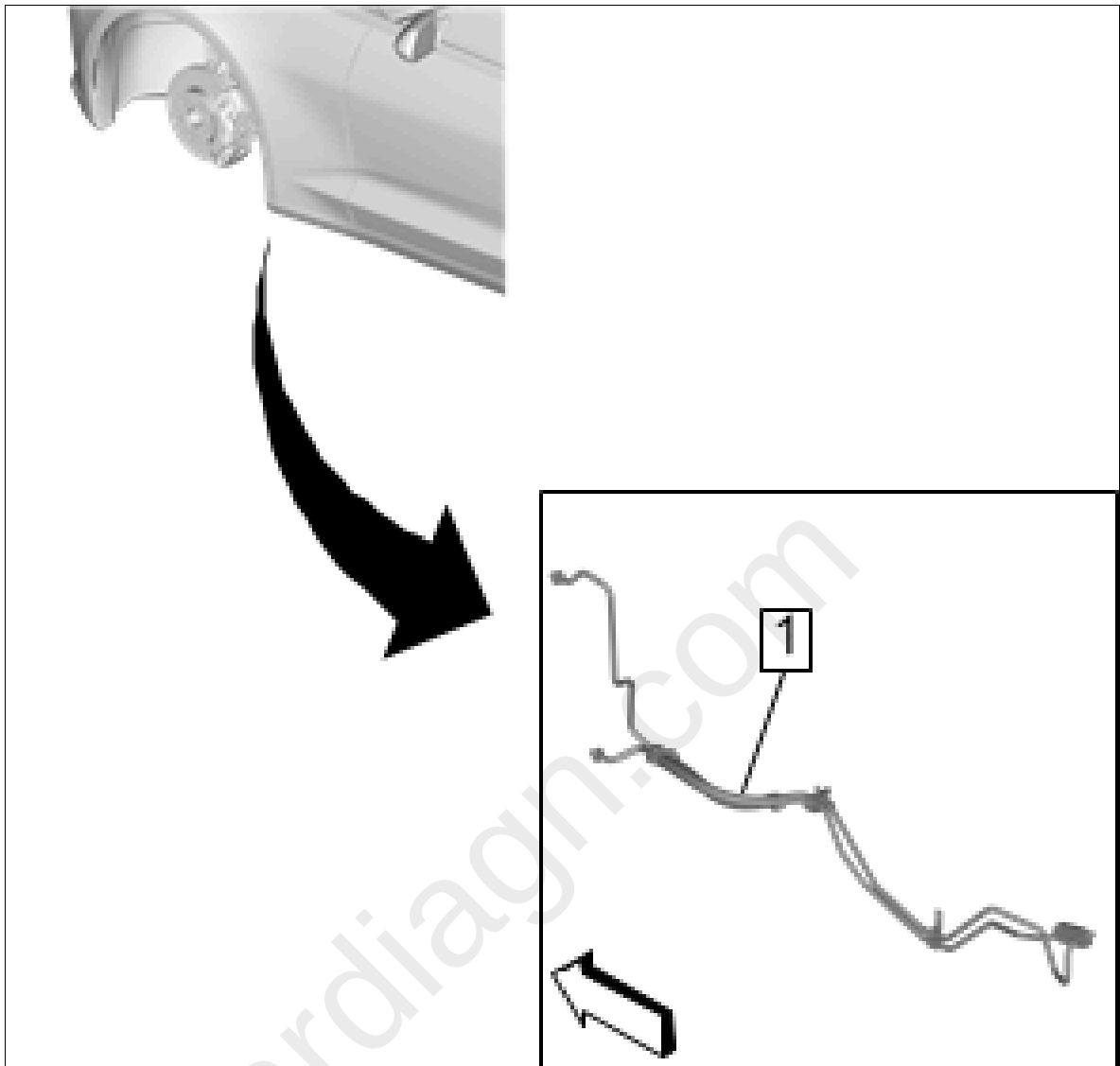


Courtesy of GENERAL MOTORS COMPANY

12. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
13. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LGX WITH M5T, WITHOUT V03) > INSTALLATION
PROCEDURE**

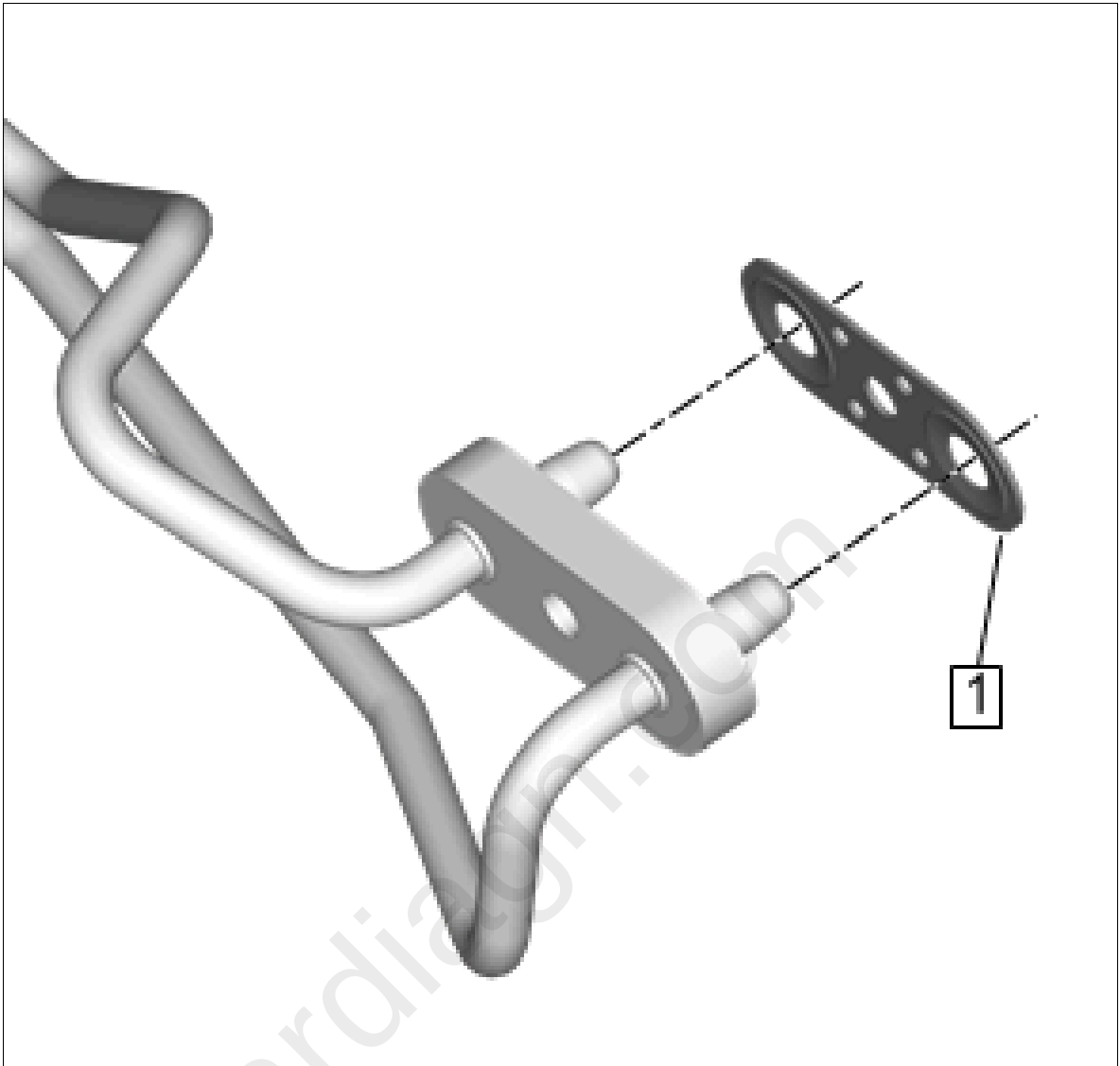
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

Fig 2: Transmission Fluid Cooler Inlet And Outlet Pipe Fitting Seal

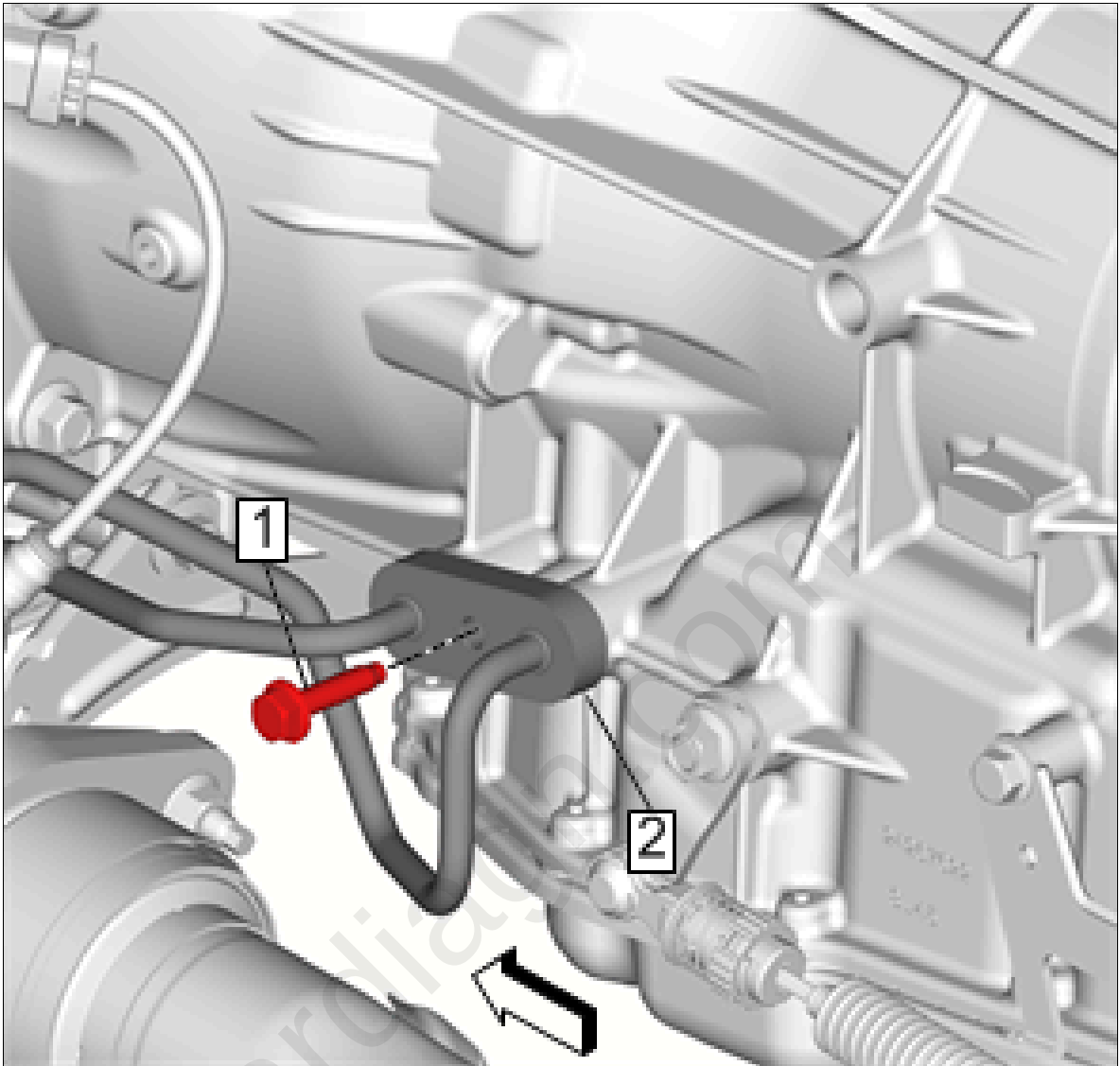


Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Seal (1)

Use a NEW seal.

Fig 3: Transmission Fluid Cooler Inlet And Outlet Pipe Bolt At Transmission



Courtesy of GENERAL MOTORS COMPANY

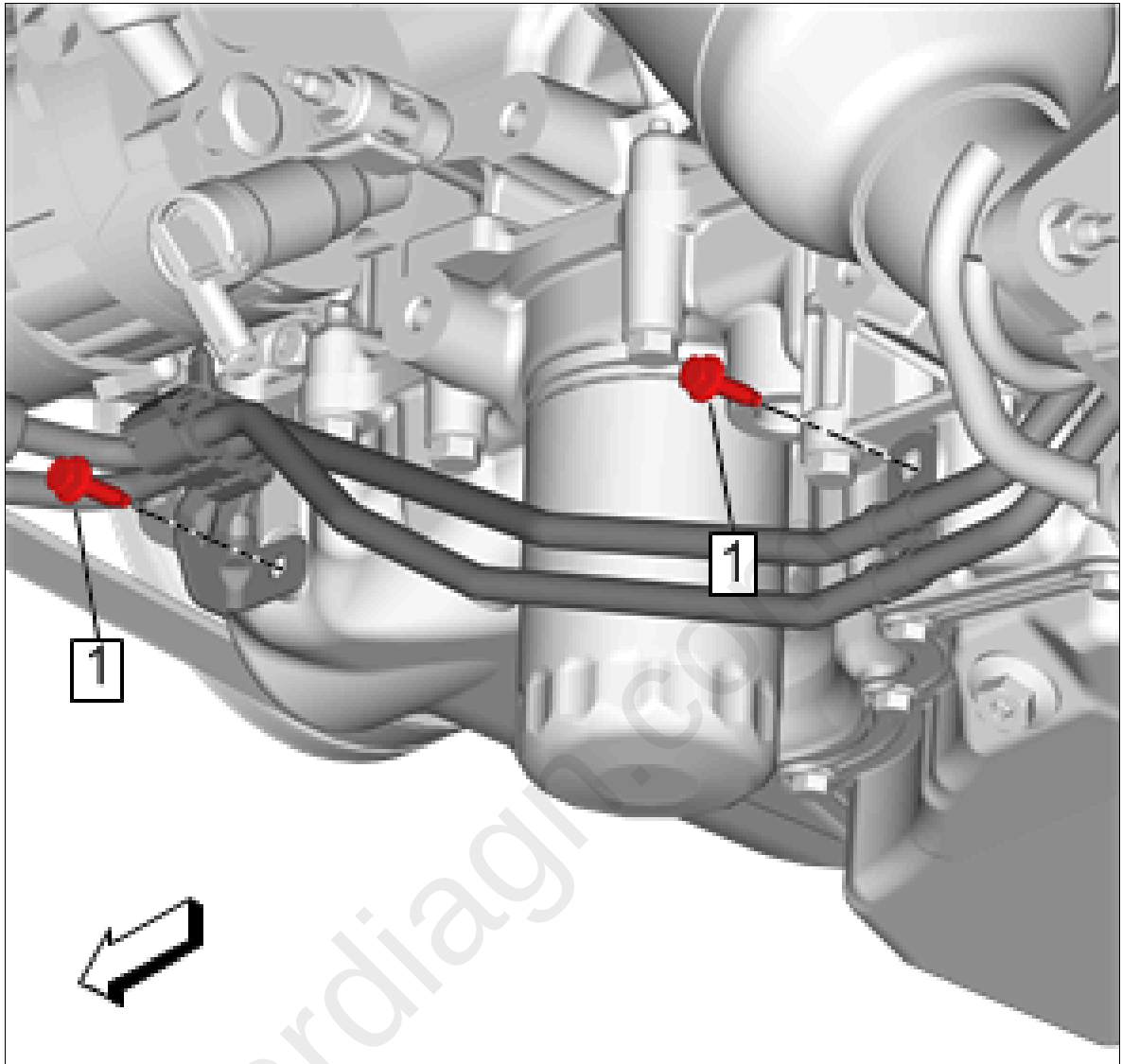
3. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

 **CAUTION:**

Refer to Fastener Caution .

4. Install Transmission Fluid Cooler Pipe Clip Bolt (1) and tighten to 22 N.m (16 lb ft)

Fig 4: Transmission Fluid Cooler Inlet And Outlet Pipe Clip Bolts At Engine Oil Pan



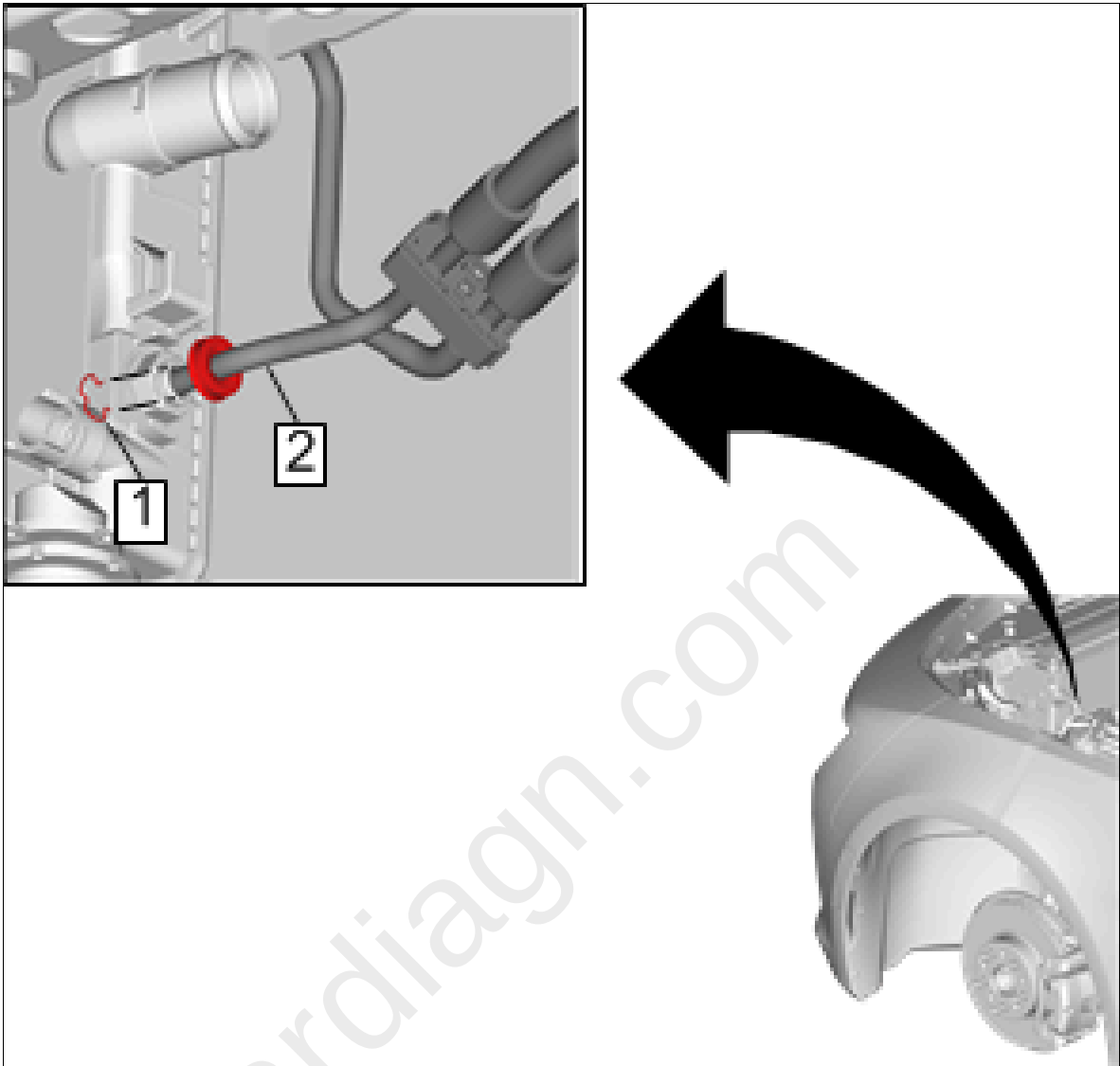
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

5. Install Transmission Fluid Cooler Pipe Clip Bolt (1) (Qty: 2) and tighten to 9 N.m (80 lb in)

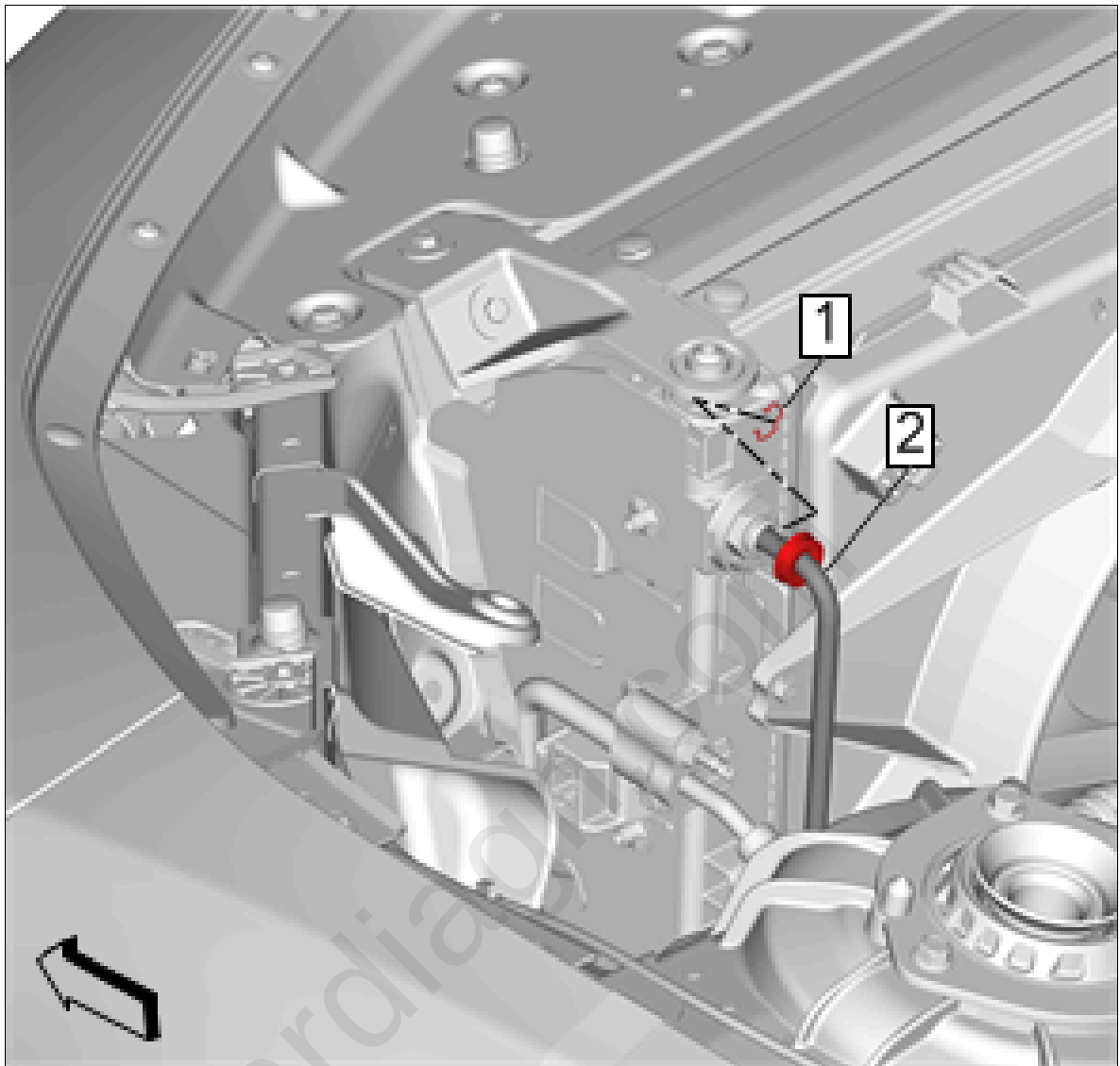
Fig 5: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

6. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
7. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
8. Install Engine Coolant Fan Replacement (LGX Without V03)

Fig 6: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



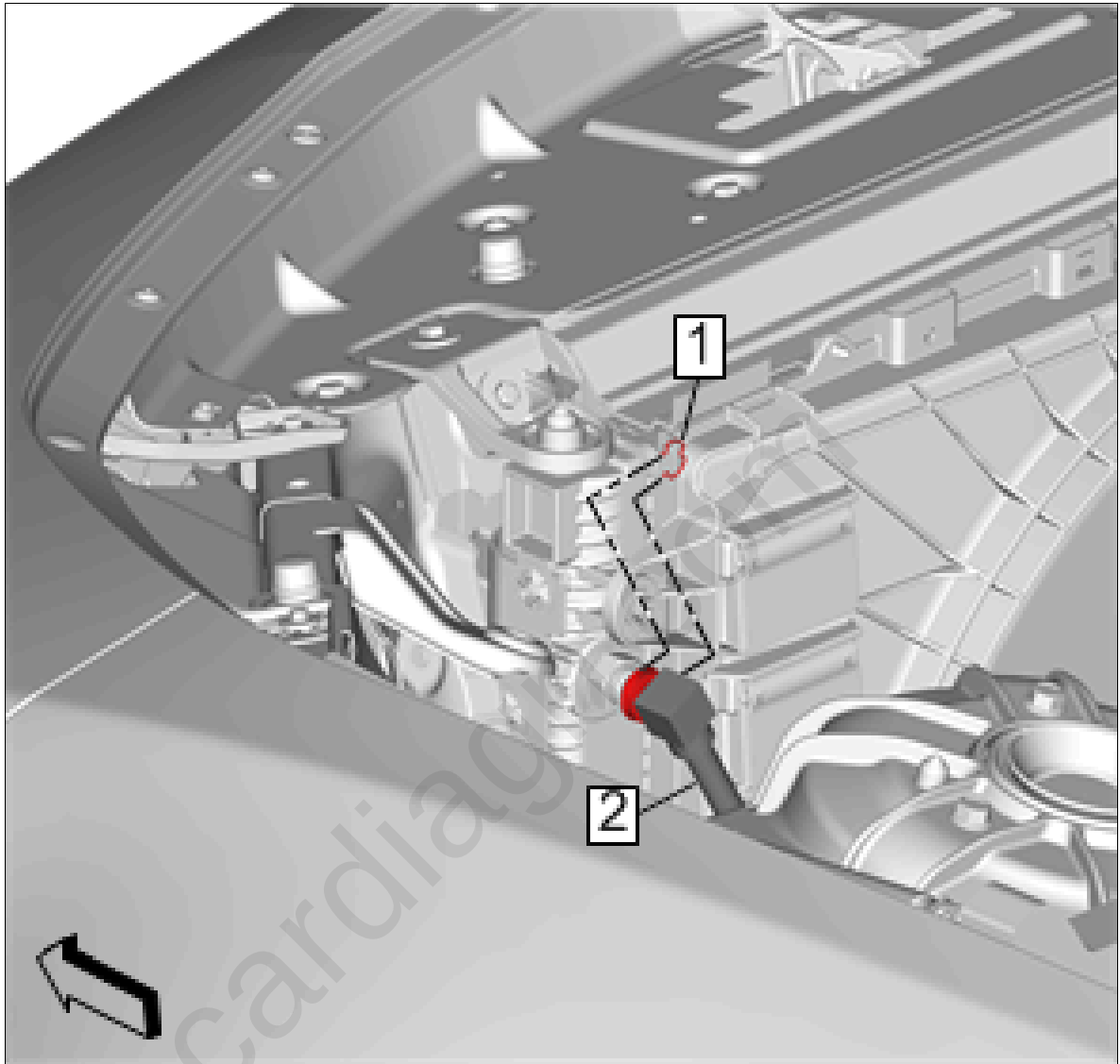
Courtesy of GENERAL MOTORS COMPANY

9. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
10. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
11. Install Air Cleaner Assembly Replacement
12. Install Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
13. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
14. Inspect for transmission fluid leaks.

PIPE REPLACEMENT (LT1 WITH M5U, WITH KNR) > REMOVAL PROCEDURE

1. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Retaining Clip At Radiator



Courtesy of GENERAL MOTORS COMPANY

2. Remove Transmission Fluid Cooler Pipe Retaining Clip (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

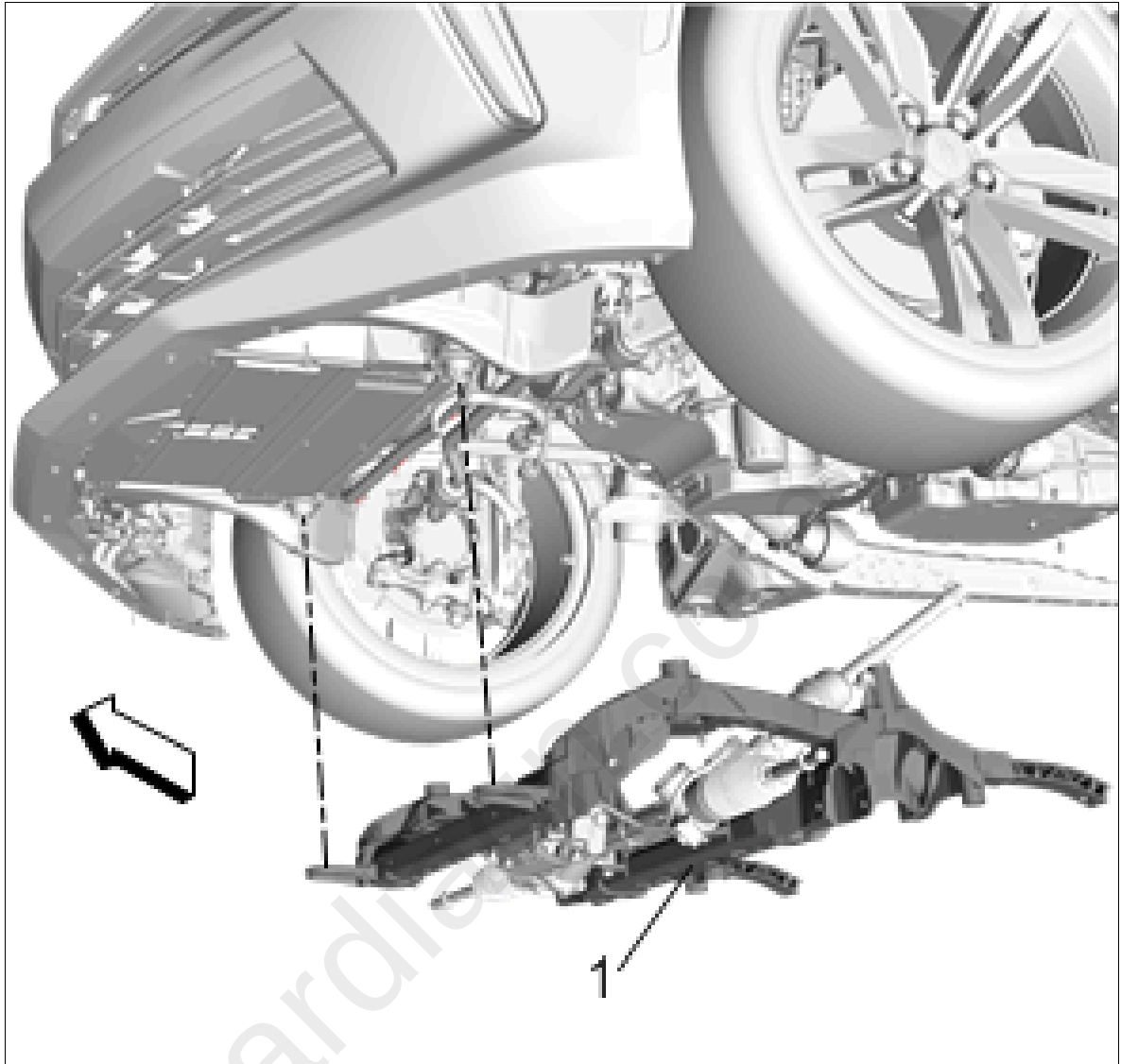
Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

3. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.

4. Remove Front Bumper Fascia Replacement

5. Remove Front Brake Rotor Cooling Duct Replacement (J6G) - Right Side

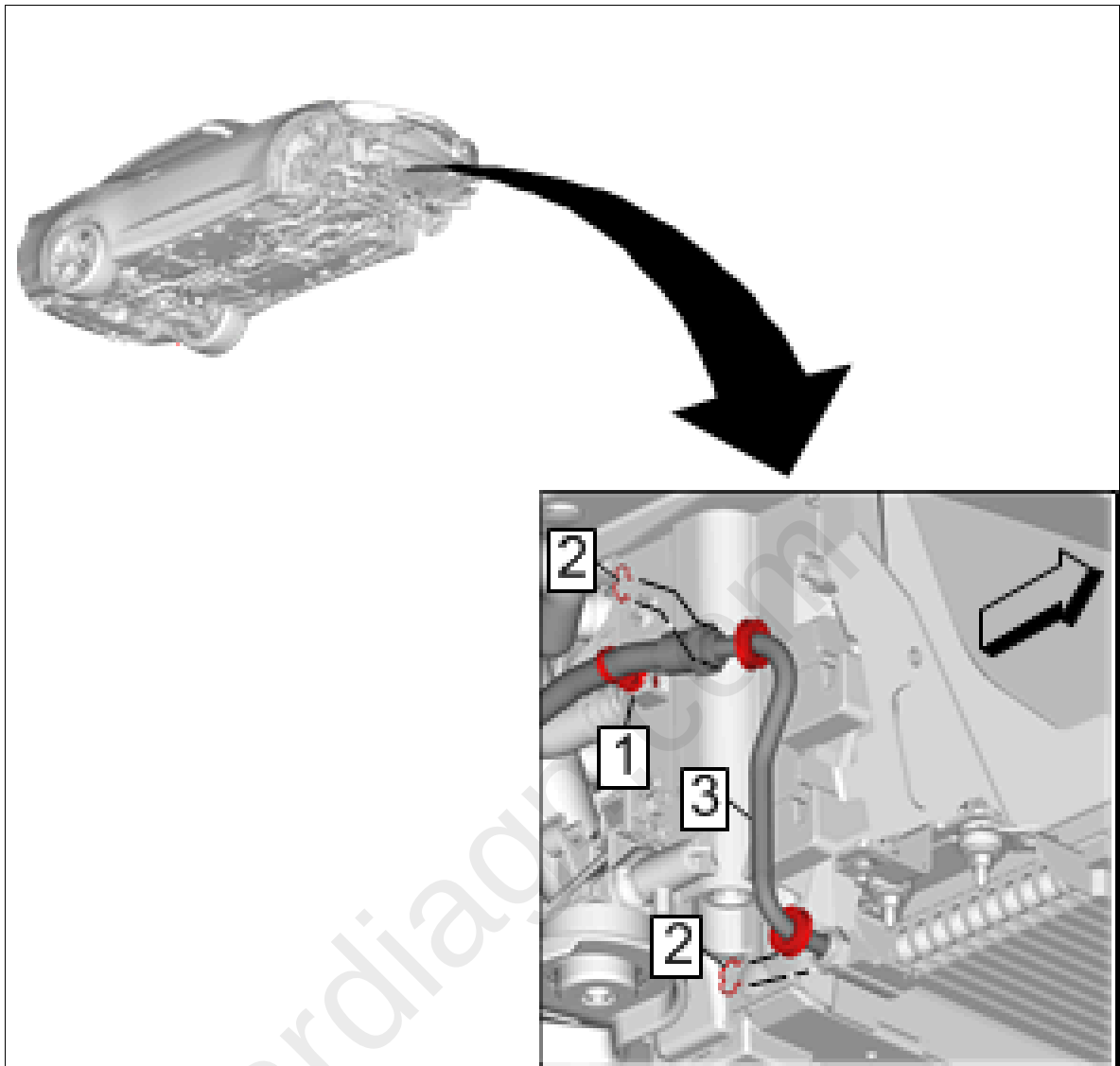
Fig 2: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

6. Remove Drivetrain and Front Suspension Cradle (1) - Drivetrain and Front Suspension Cradle Replacement (LT1)

Fig 3: Transmission Fluid Cooler Pipe Plastic Retainer



Courtesy of GENERAL MOTORS COMPANY

7. Remove the transmission fluid cooler pipe plastic retainer (1) from the fan shroud.
8. Remove Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
9. Remove Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Cooler Inlet and Outlet Pipe - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

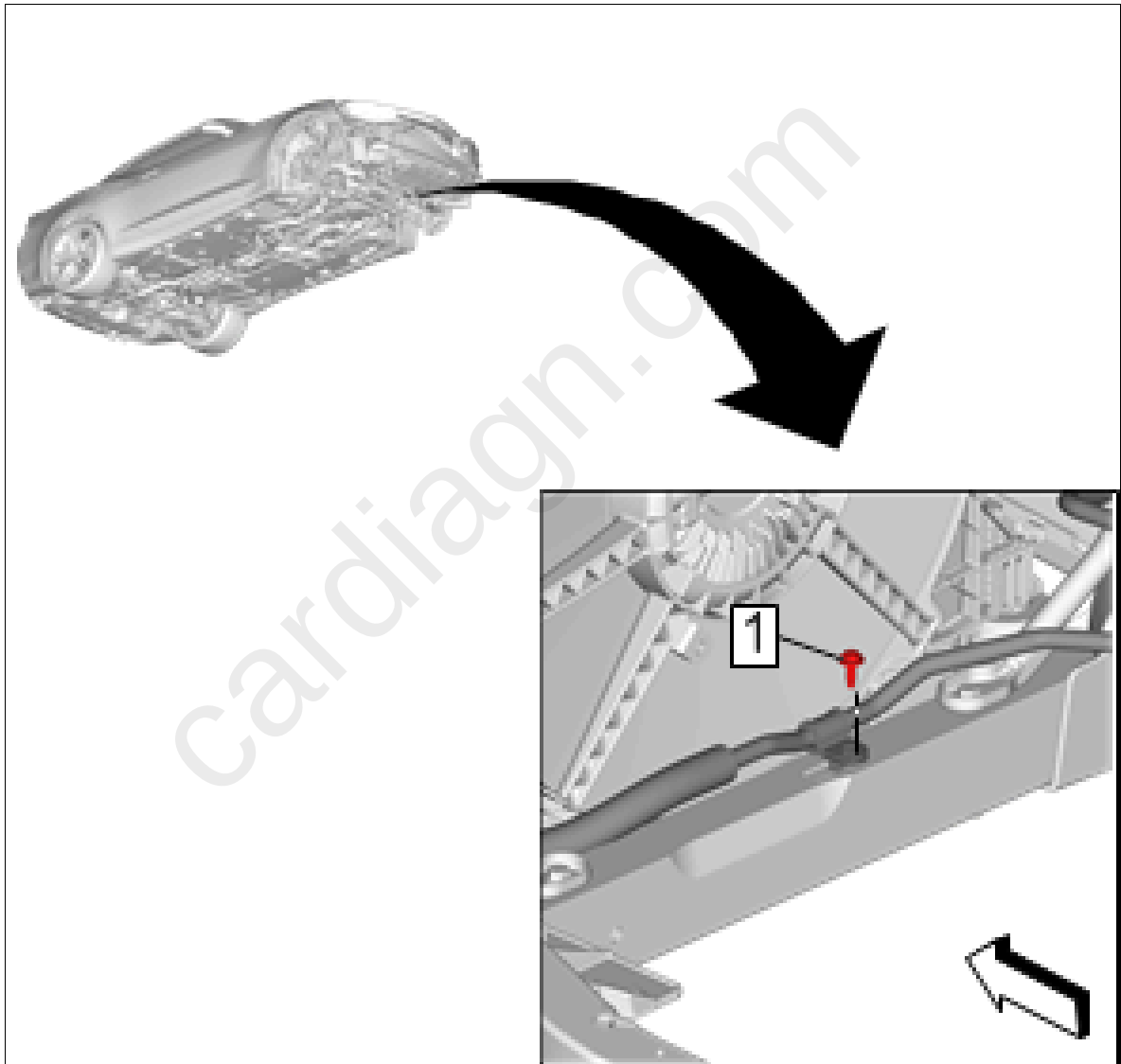
10. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Auxiliary Cooler.

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

11. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Cooler Inlet and Outlet Pipe.

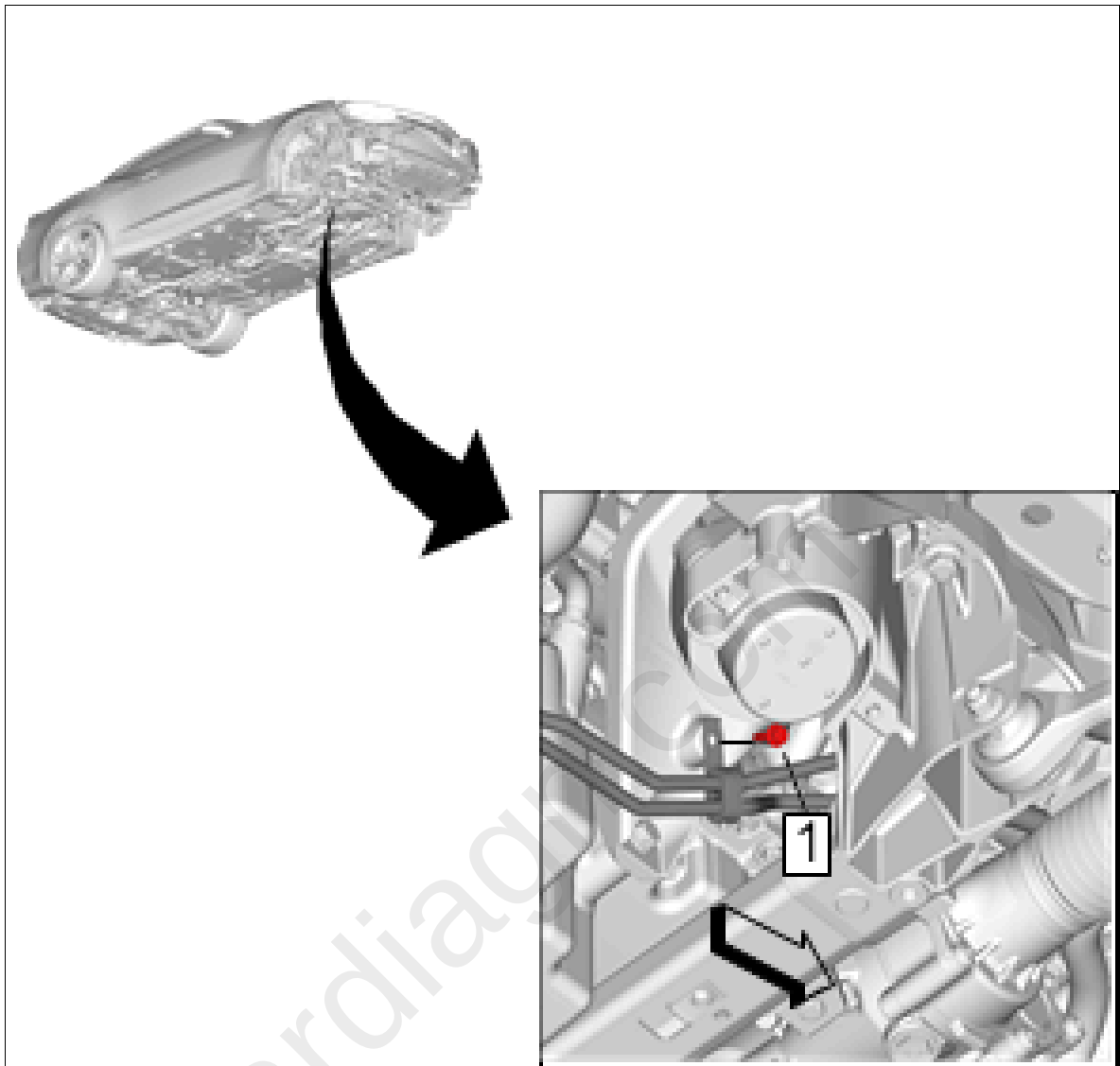
Fig 4: Transmission Fluid Cooler Pipe Clip Bolt



Courtesy of GENERAL MOTORS COMPANY

12. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle.

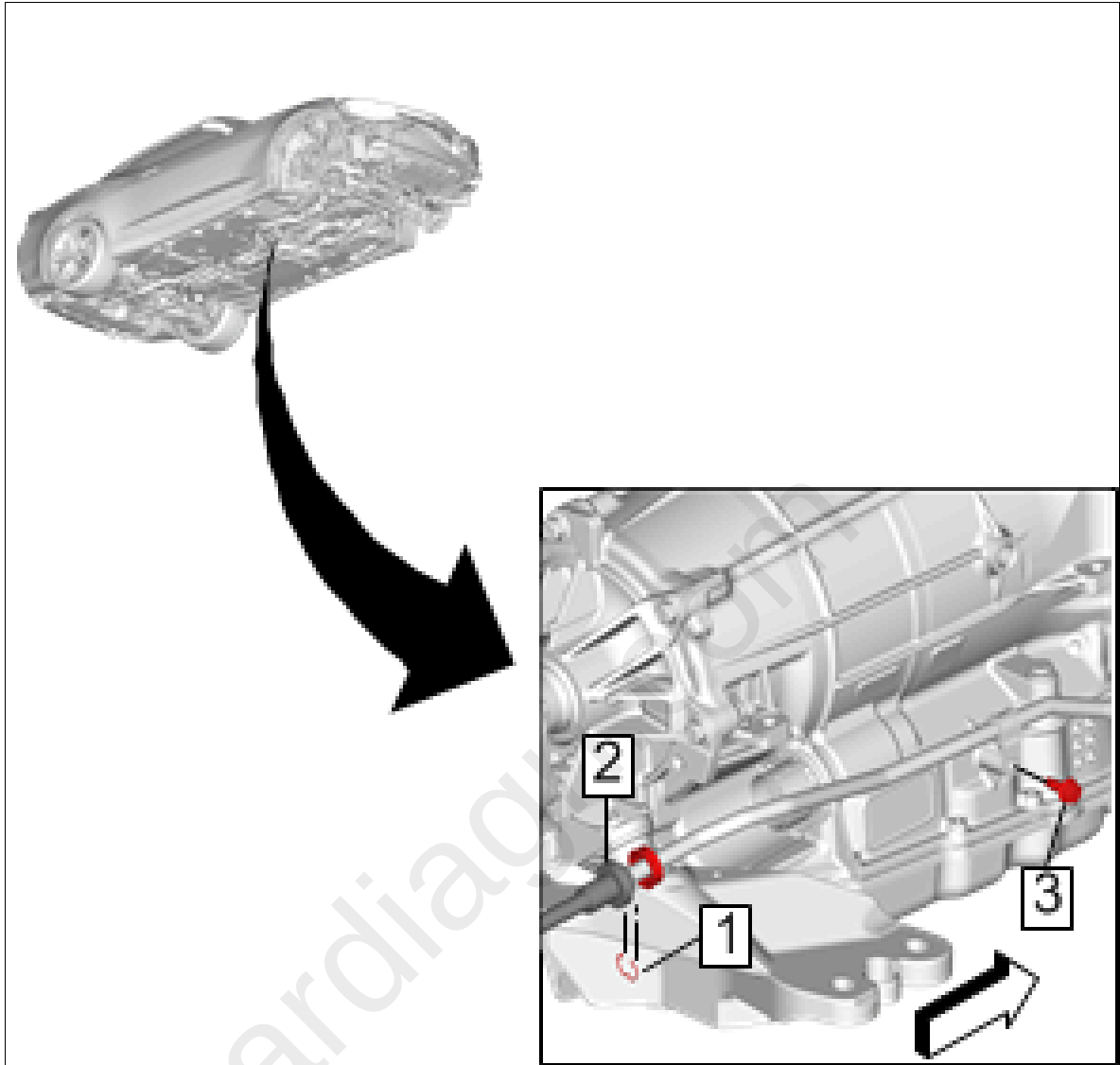
Fig 5: Transmission Fluid Cooler Pipe Clip Bolt At Engine Mount - Right Side



Courtesy of GENERAL MOTORS COMPANY

13. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Engine Mount - Right Side.

Fig 6: Transmission Fluid Cooler Pipe Retaining Clip At Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

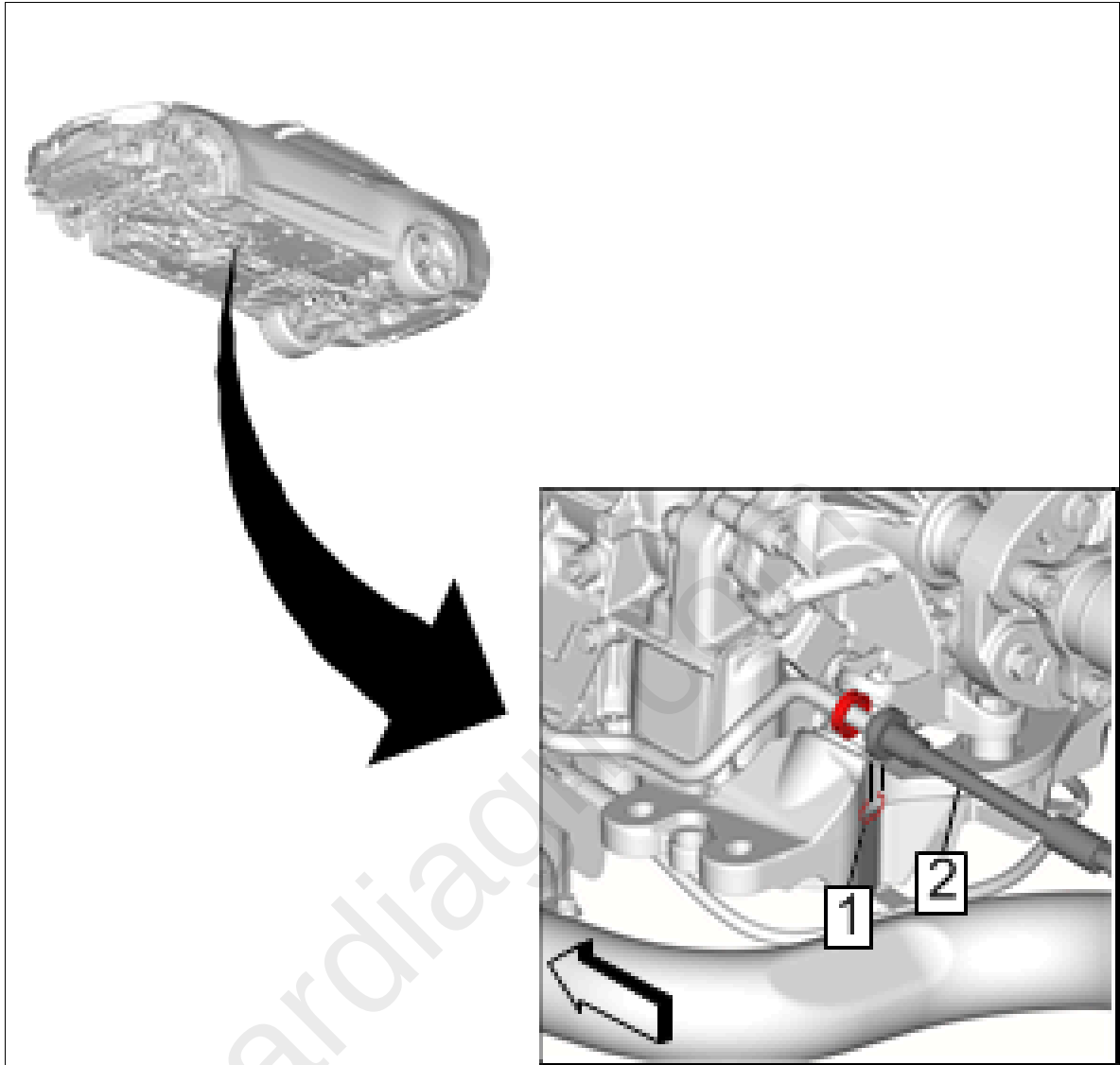
14. Remove Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

15. Remove Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.
16. Remove Transmission Fluid Cooler Pipe Clip Bolt (3) at Transmission.

Fig 7: Transmission Fluid Cooler Pipe Retaining Clip At Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

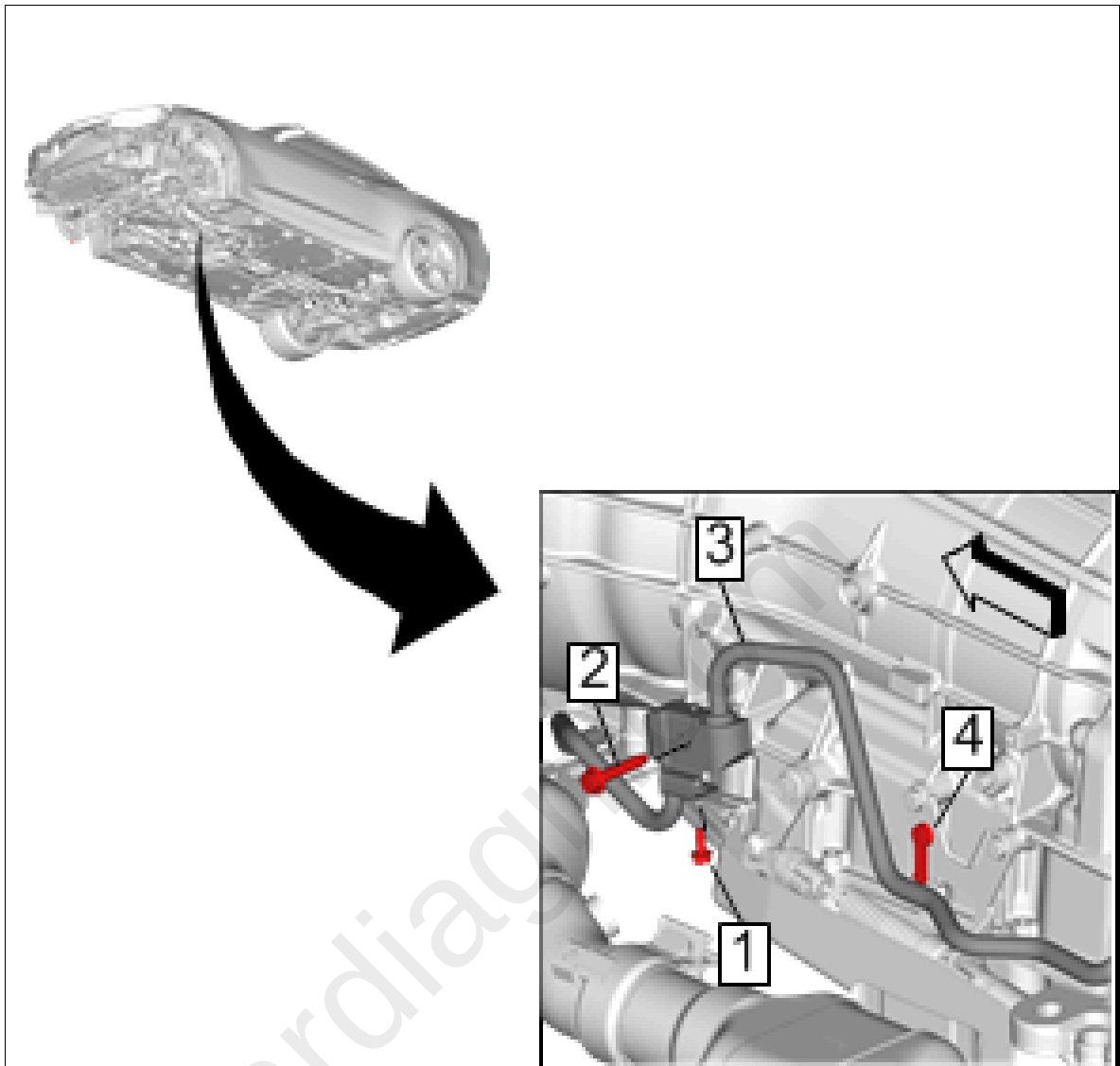
17. Remove Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

18. Remove Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 8: Range Selector Lever Cable Heat Shield Bolt



Courtesy of GENERAL MOTORS COMPANY

19. Remove Range Selector Lever Cable Heat Shield Bolt (1)

20. Remove Transmission Fluid Cooler Pipe Clip Bolt (2)

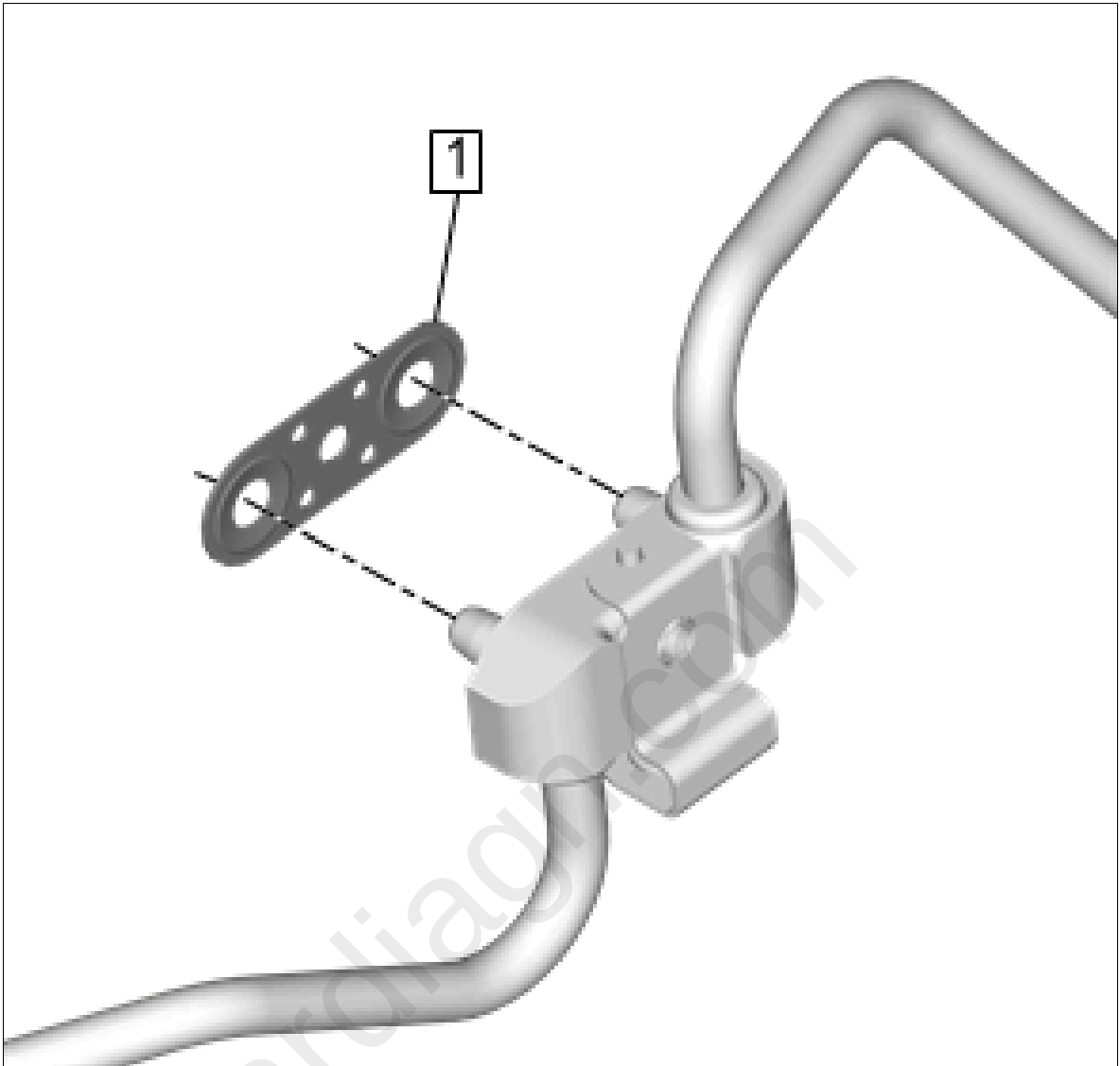
 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

21. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (3) at Transmission.

22. Remove the transmission fluid cooler pipe plastic retainer (4) from the range selector lever cable bracket.

Fig 9: Transmission Fluid Cooler Pipe Fitting Seal

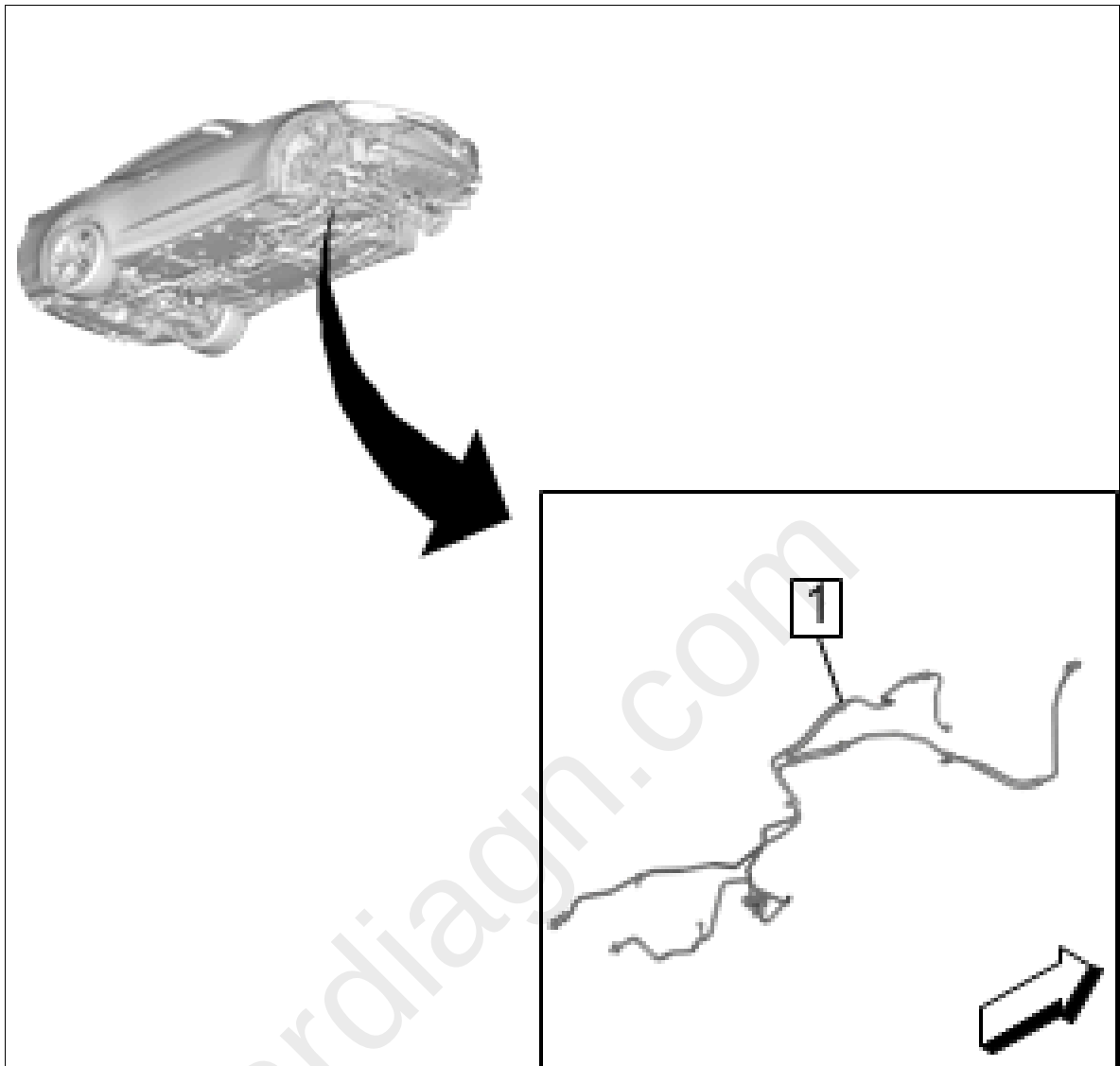


Courtesy of GENERAL MOTORS COMPANY

23. Remove Transmission Fluid Cooler Pipe Fitting Seal (1)

DISCARD the seal.

Fig 10: Transmission Fluid Cooler Inlet And Outlet Pipe

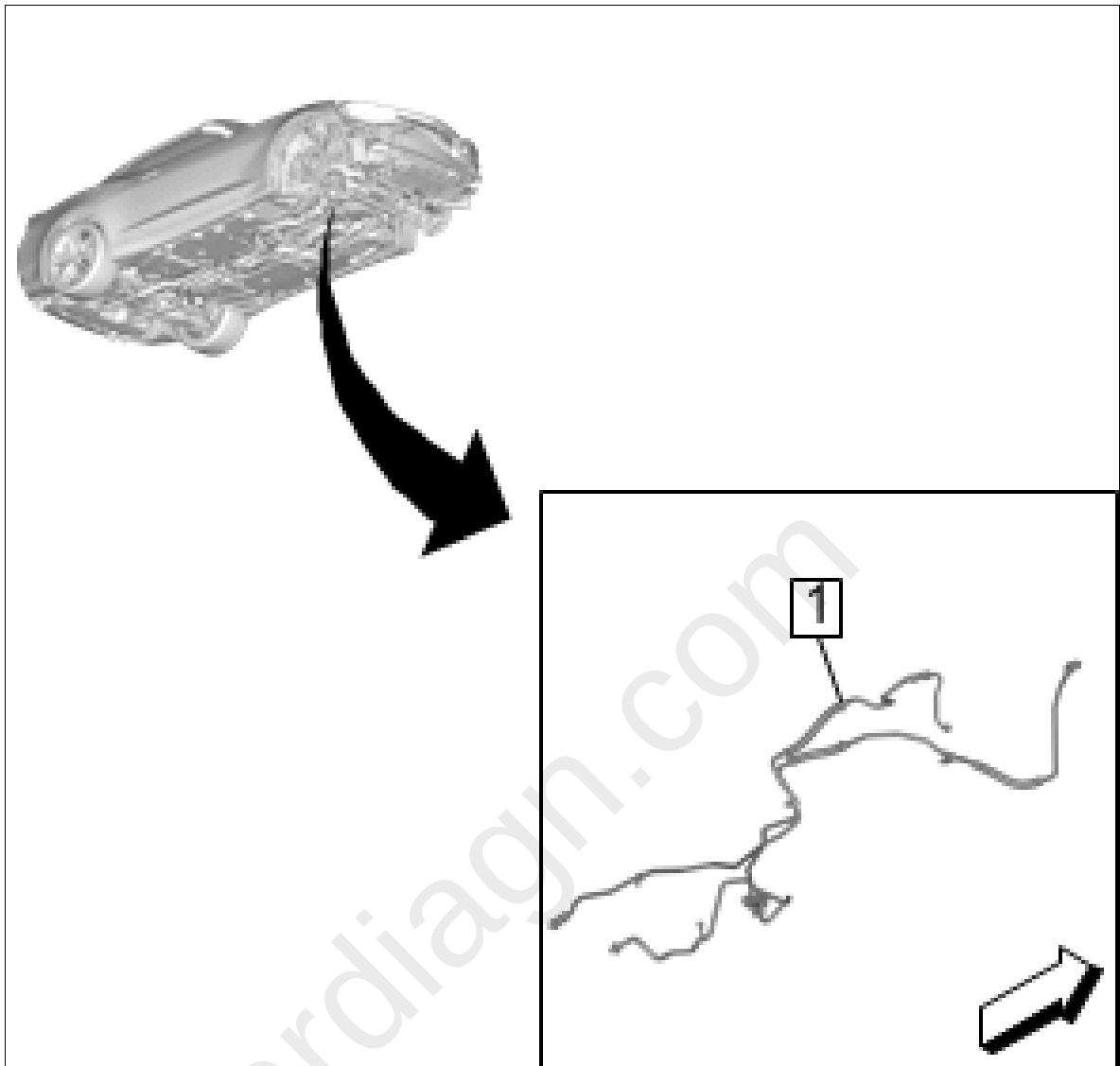


Courtesy of GENERAL MOTORS COMPANY

24. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
25. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LT1 WITH M5U, WITH KNR) > INSTALLATION PROCEDURE**

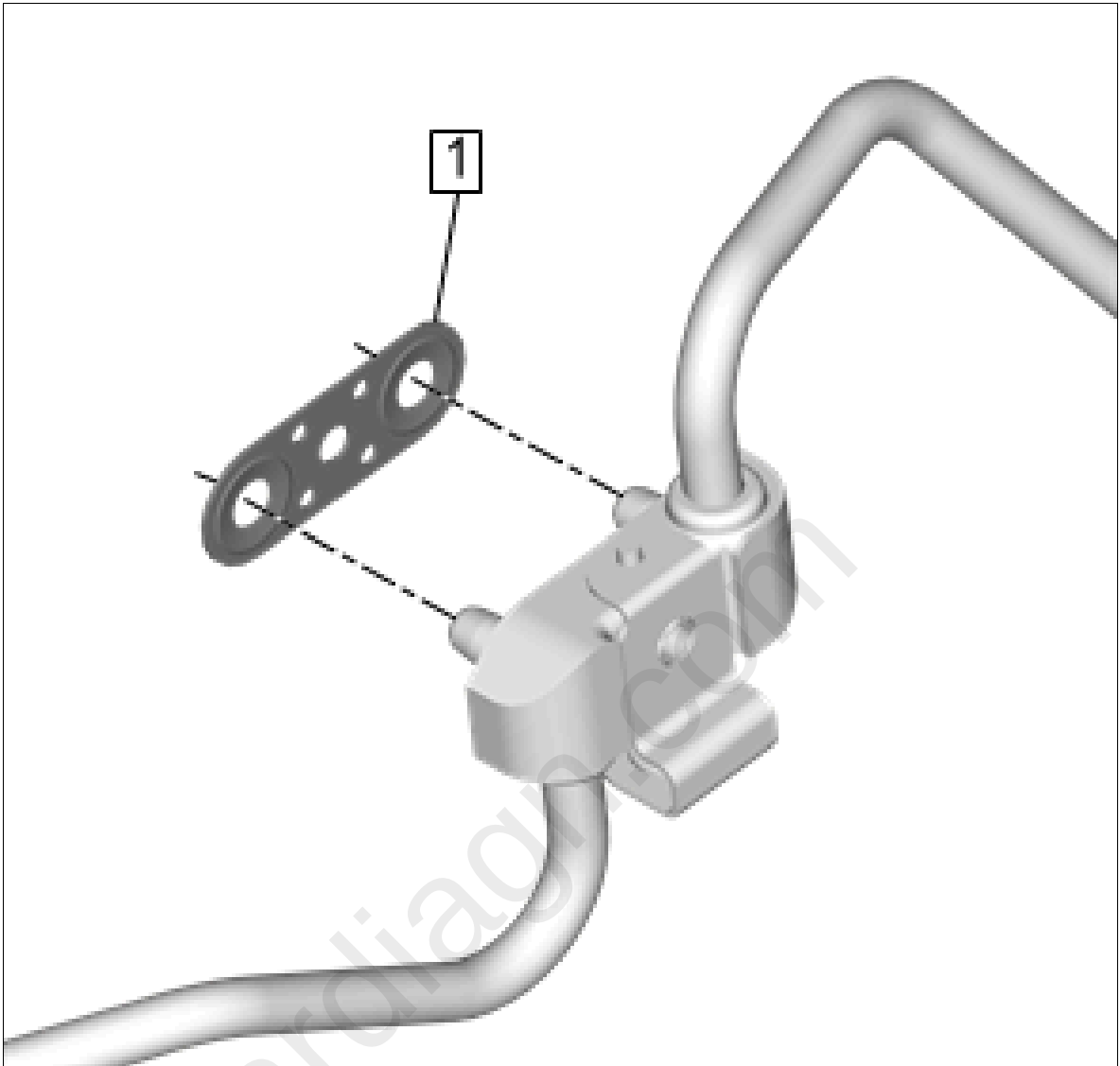
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

Fig 2: Transmission Fluid Cooler Pipe Fitting Seal

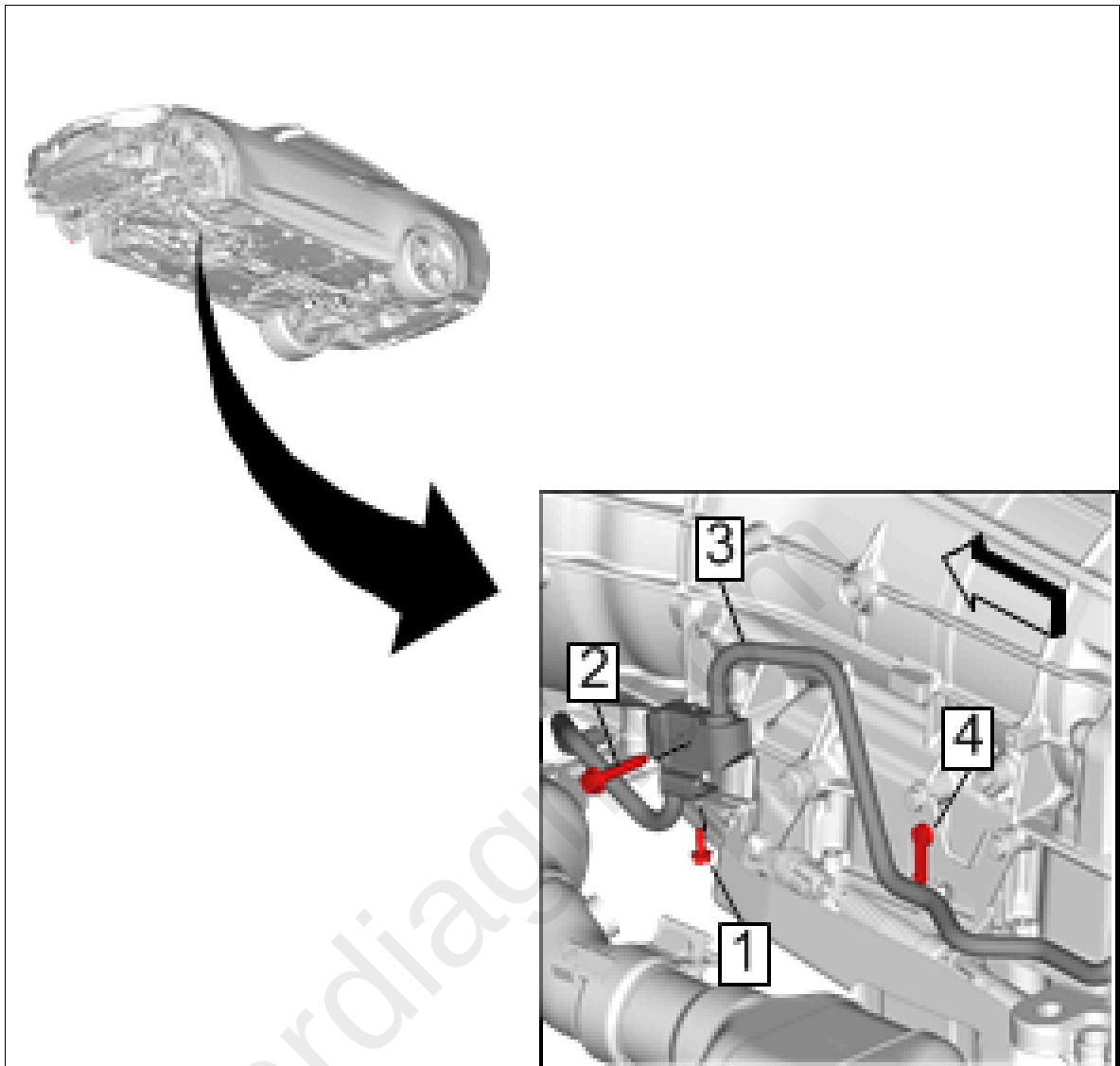


Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Seal (1)

Use a NEW seal.

Fig 3: Transmission Fluid Cooler Pipe Plastic Retainer



Courtesy of GENERAL MOTORS COMPANY

3. Install the transmission fluid cooler pipe plastic retainer (4) in the range selector lever cable bracket.
4. Install Transmission Fluid Cooler Inlet and Outlet Pipe (3) at Transmission.

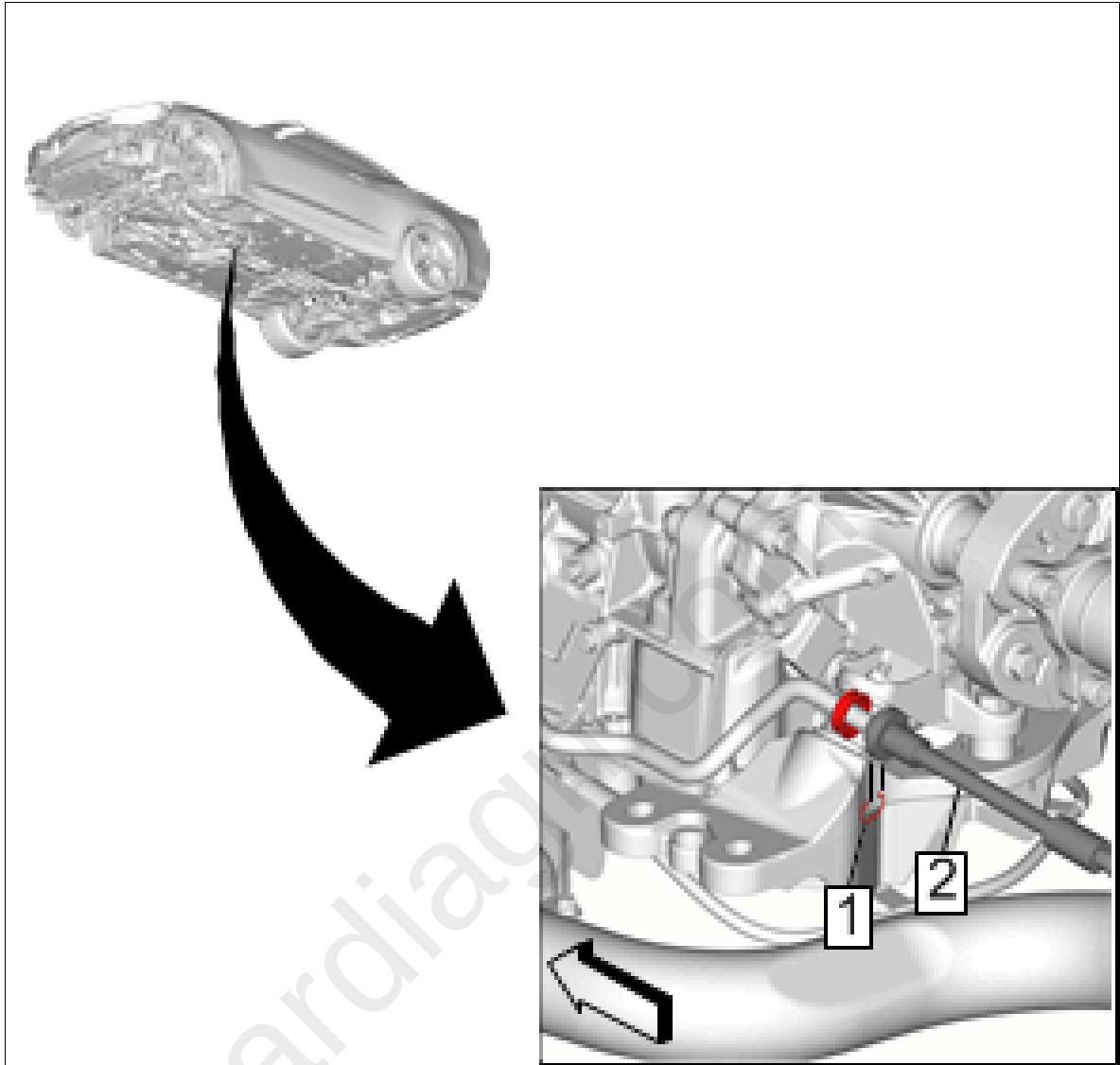


CAUTION:

Refer to Fastener Caution .

5. Install Transmission Fluid Cooler Pipe Clip Bolt (2) and tighten to 22 N.m (16 lb ft)
6. Install Range Selector Lever Cable Heat Shield Bolt (1) and tighten to 9 N.m (80 lb in)

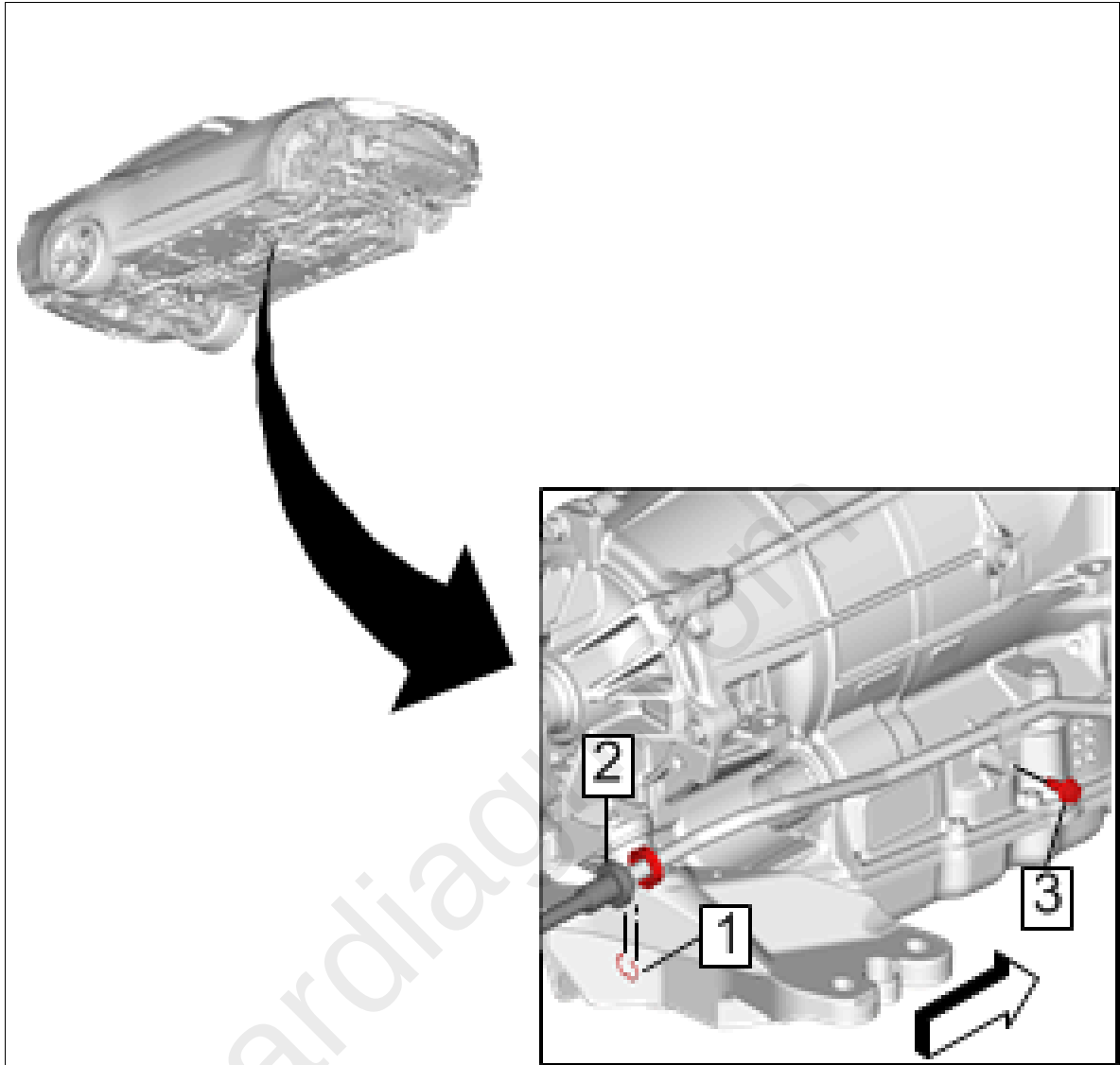
Fig 4: Transmission Fluid Cooler Pipe Retaining Clip At Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

7. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
8. Install Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

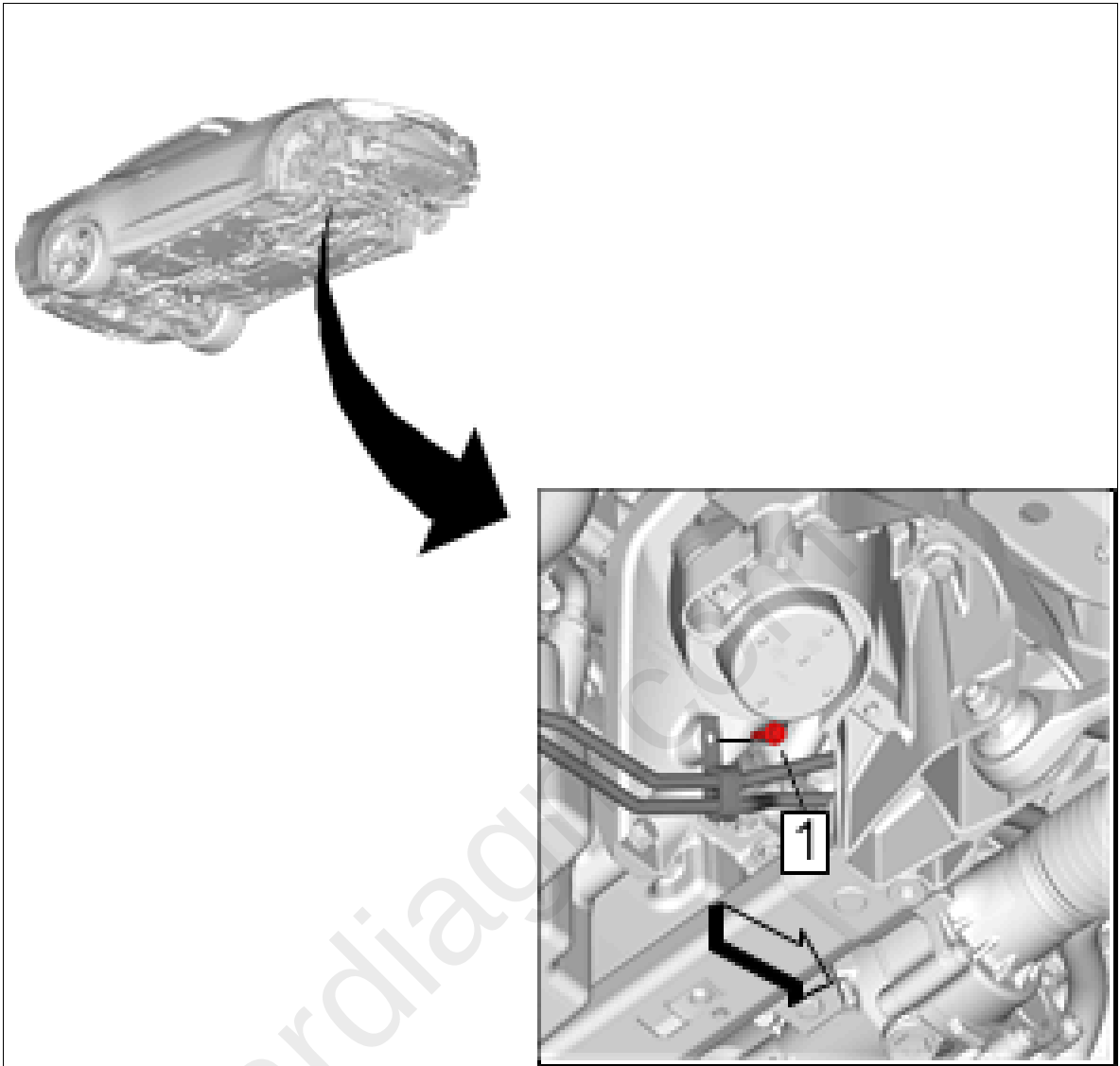
Fig 5: Transmission Fluid Cooler Pipe Retaining Clip At Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

9. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
10. Install Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.
11. Install Transmission Fluid Cooler Pipe Clip Bolt (3) at Transmission and tighten to 22 N.m (16 lb ft)

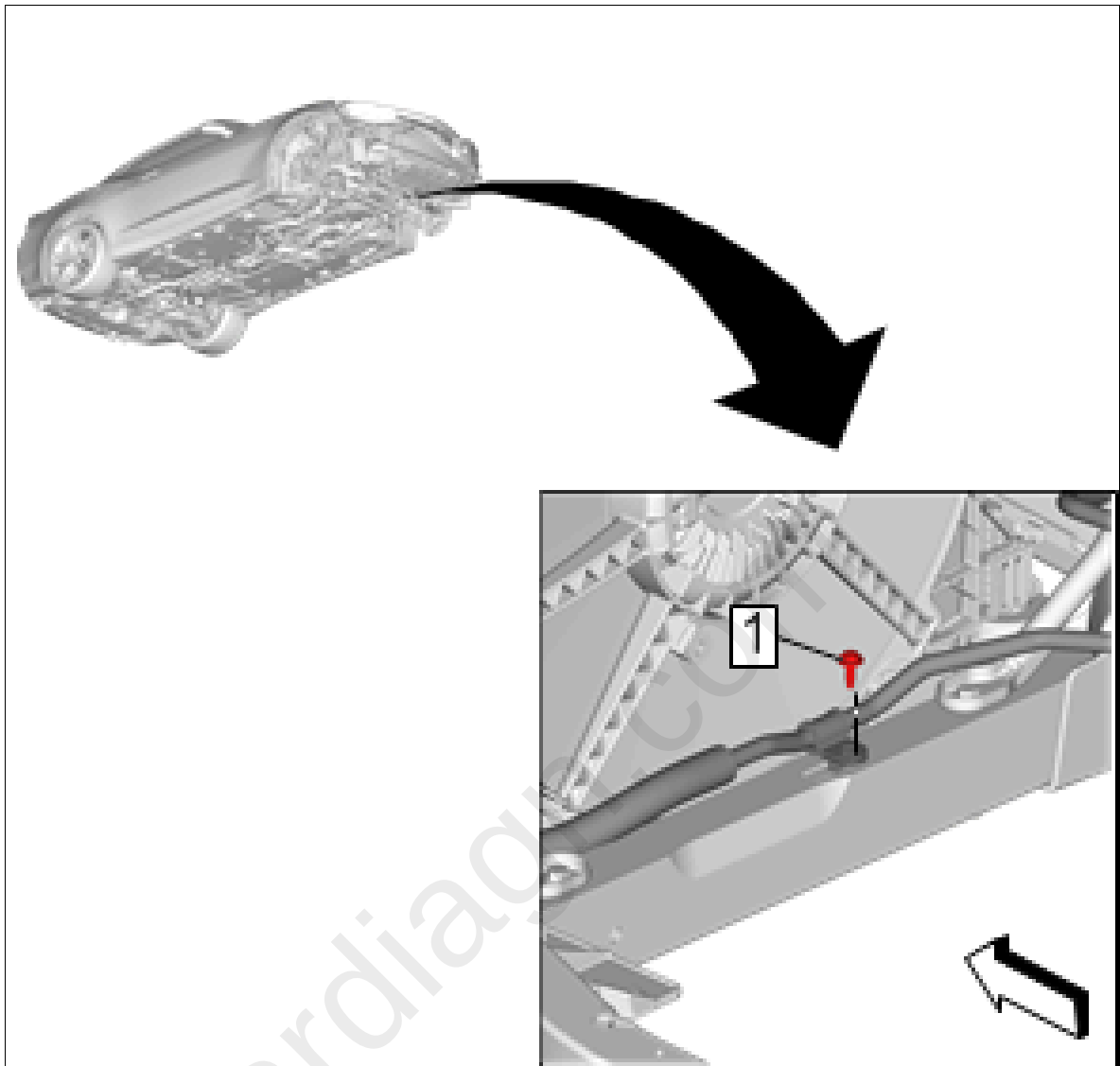
Fig 6: Transmission Fluid Cooler Pipe Clip Bolt At Engine Mount - Right Side



Courtesy of GENERAL MOTORS COMPANY

12. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Engine Mount - Right Side and tighten to 9 N.m (80 lb in)

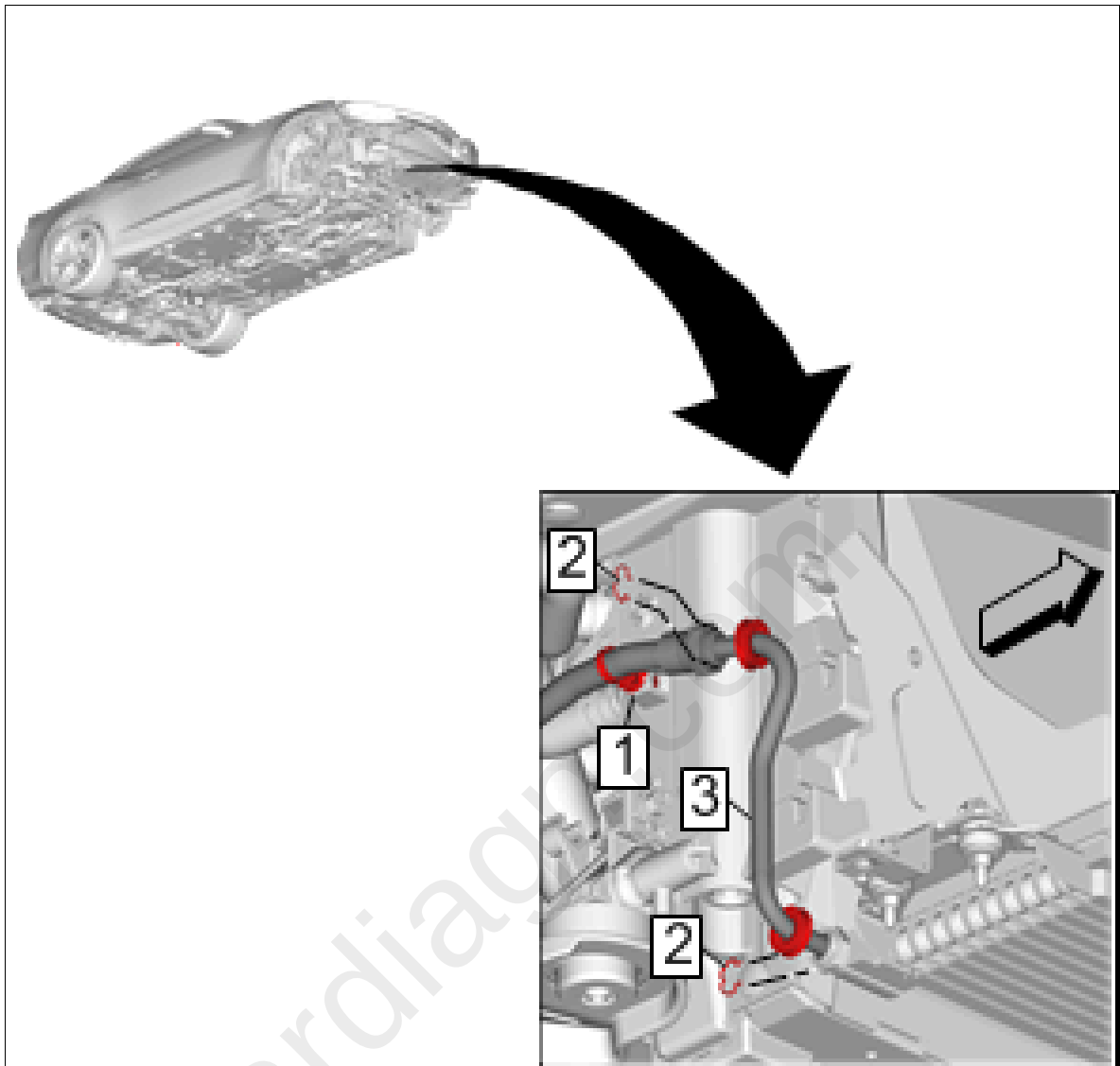
Fig 7: Transmission Fluid Cooler Pipe Clip Bolt



Courtesy of GENERAL MOTORS COMPANY

13. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle and tighten to 9 N.m (80 lb in)

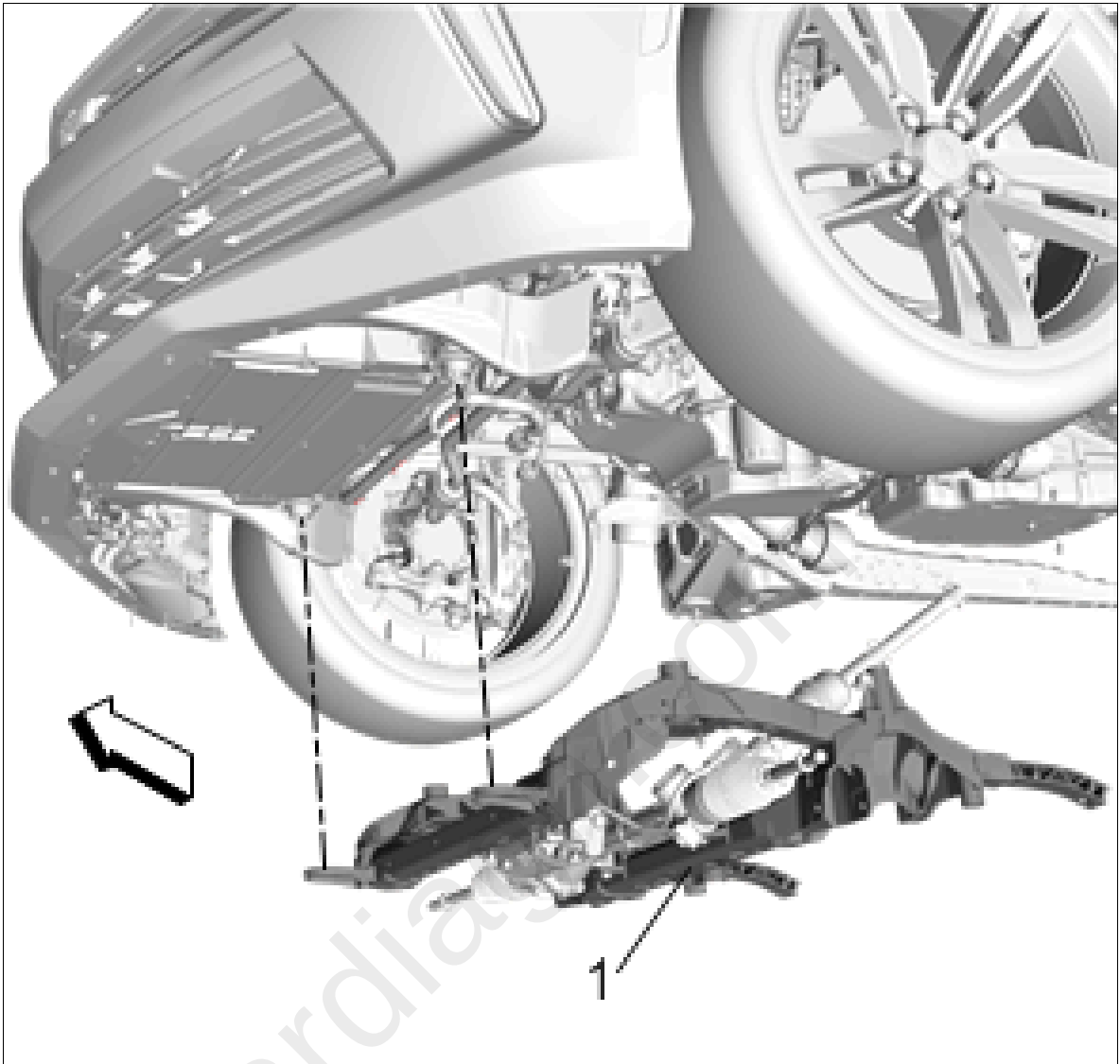
Fig 8: Transmission Fluid Cooler Pipe Plastic Retainer



Courtesy of GENERAL MOTORS COMPANY

14. Install the transmission fluid cooler pipe plastic retainer (1) in the fan shroud.
15. Install Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Cooler Inlet and Outlet Pipe - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
16. Install Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
17. Install Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Auxiliary Cooler.
18. Install Transmission Fluid Cooler Inlet and Outlet Pipe (Jumper) (3) at Transmission Fluid Cooler Inlet and Outlet Pipe.

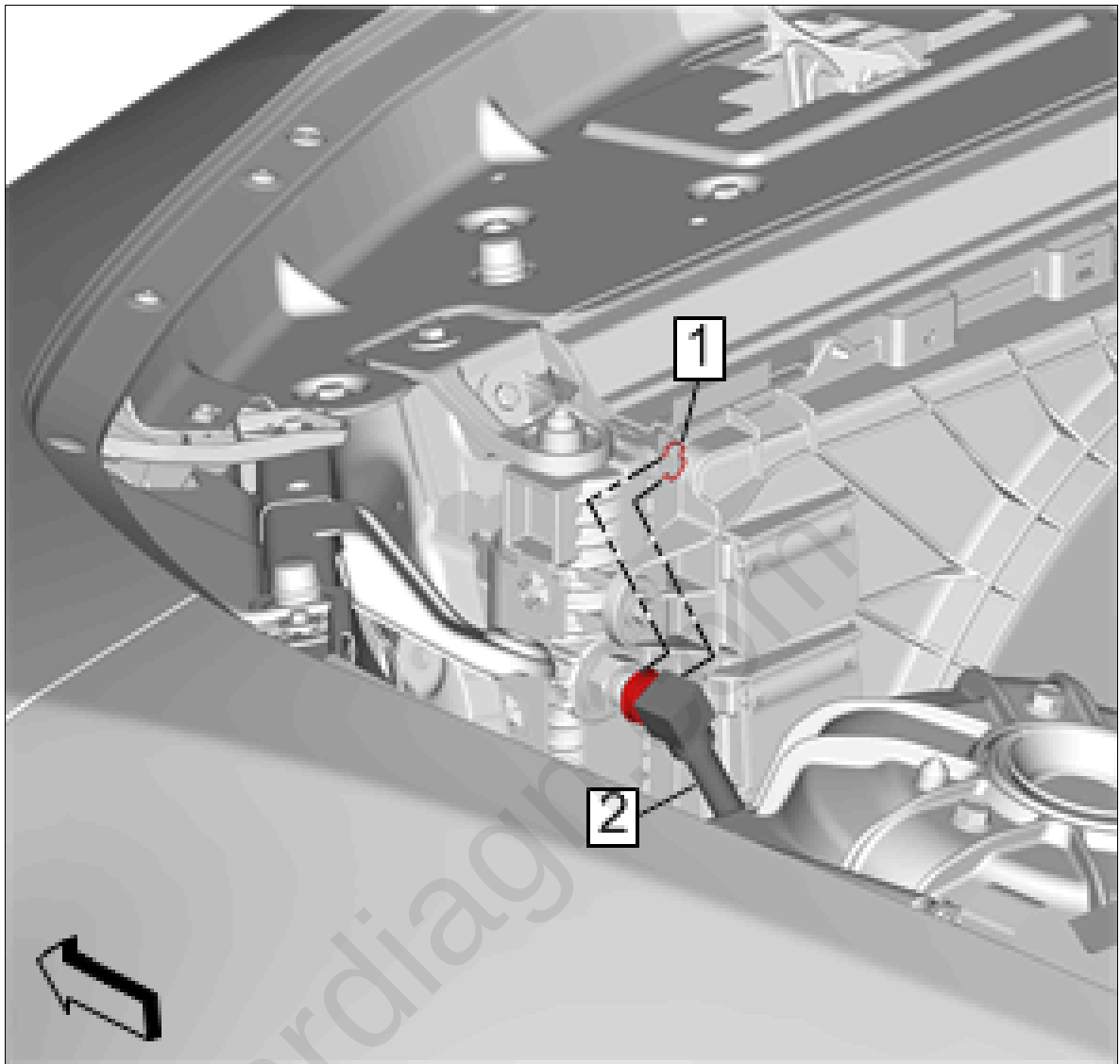
Fig 9: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

19. Install Drivetrain and Front Suspension Cradle (1) - Drivetrain and Front Suspension Cradle Replacement (LT1)
20. Install Front Brake Rotor Cooling Duct Replacement (J6G) - Right Side
21. Install Front Bumper Fascia Replacement

Fig 10: Transmission Fluid Cooler Pipe Retaining Clip At Radiator



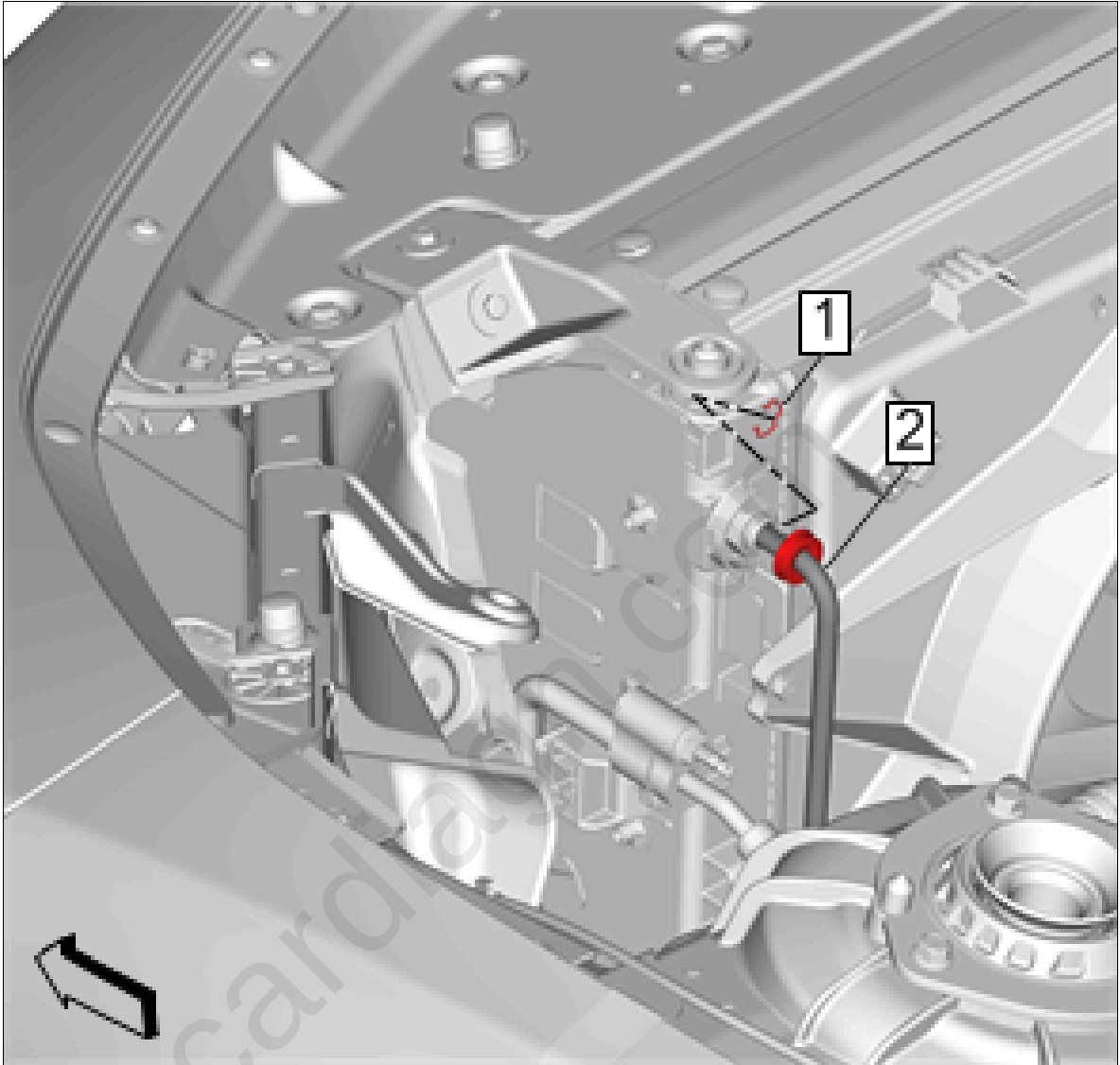
Courtesy of GENERAL MOTORS COMPANY

22. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
23. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
24. Install Air Cleaner Assembly Replacement
25. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
26. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET PIPE REPLACEMENT (LTG WITH M5T, WITHOUT V03) > REMOVAL PROCEDURE

1. Remove Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
2. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



Courtesy of GENERAL MOTORS COMPANY

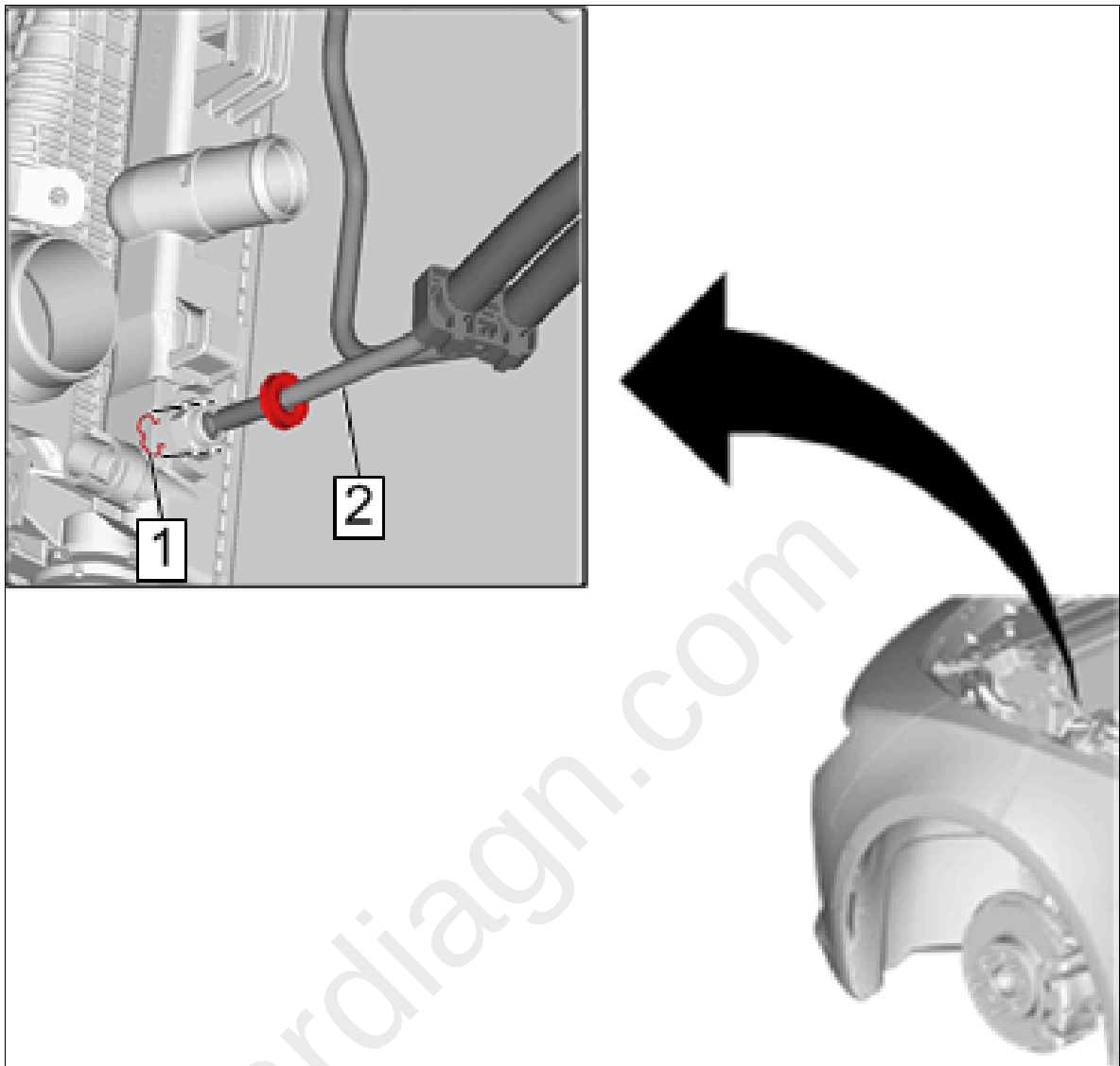
3. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
5. Remove Engine Coolant Fan Replacement (LTG without V18)Engine Coolant Fan Replacement (LTG with V18)

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

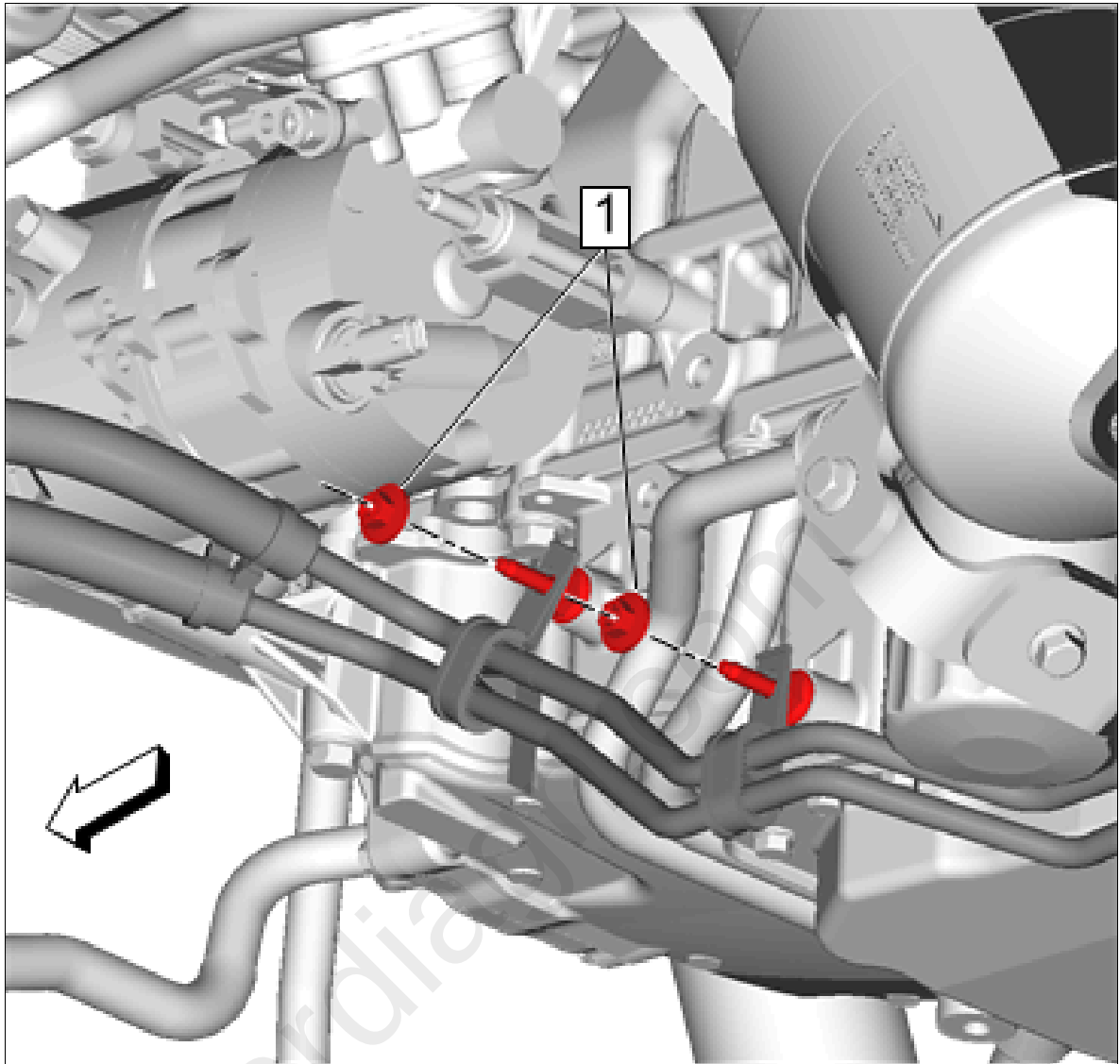
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.

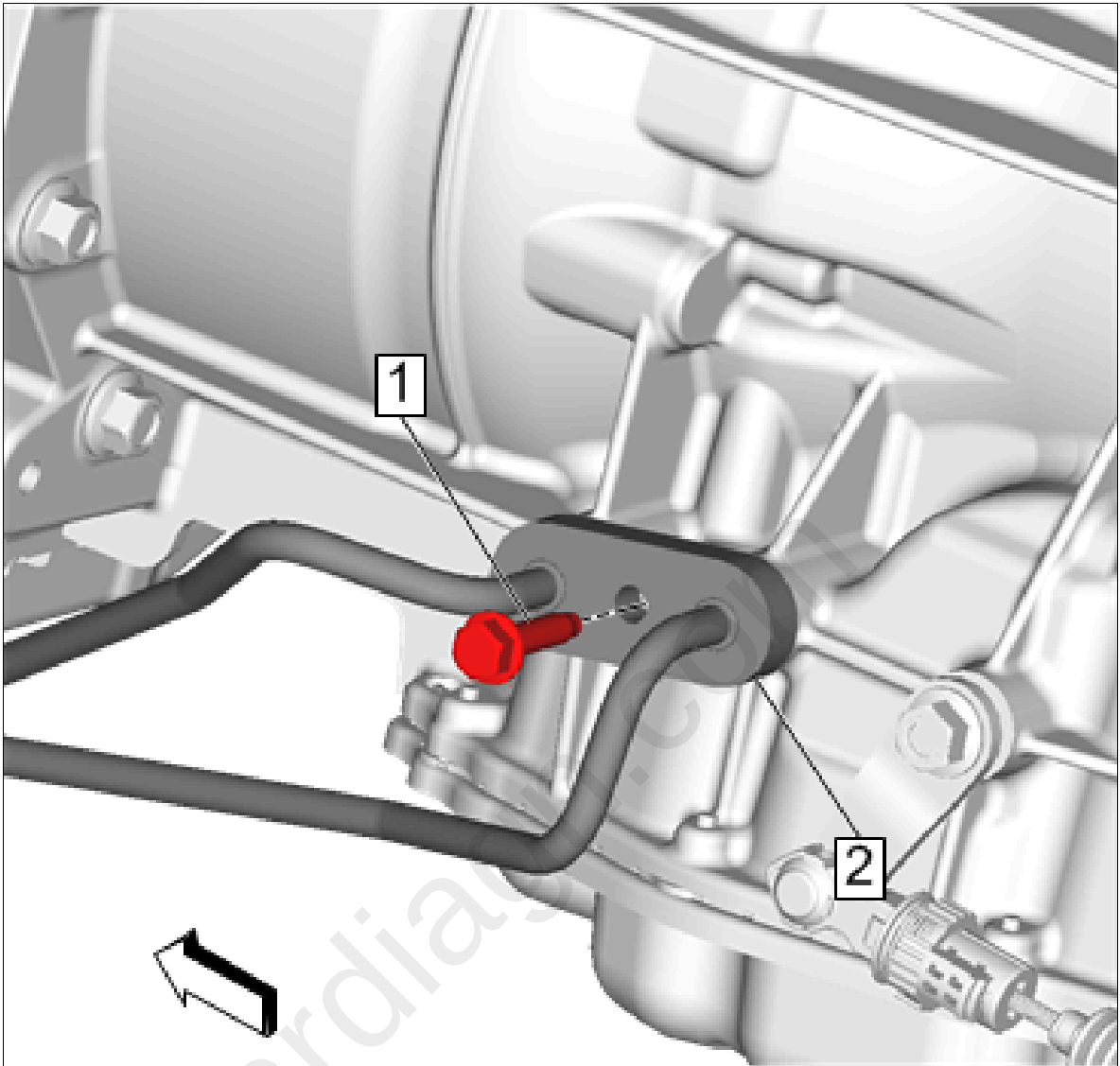
Fig 3: Transmission Fluid Cooler Pipe Bracket Nut



Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe Bracket Nut (1)

Fig 4: Transmission Fluid Cooler Pipe Clip Bolt At Transmission



Courtesy of GENERAL MOTORS COMPANY

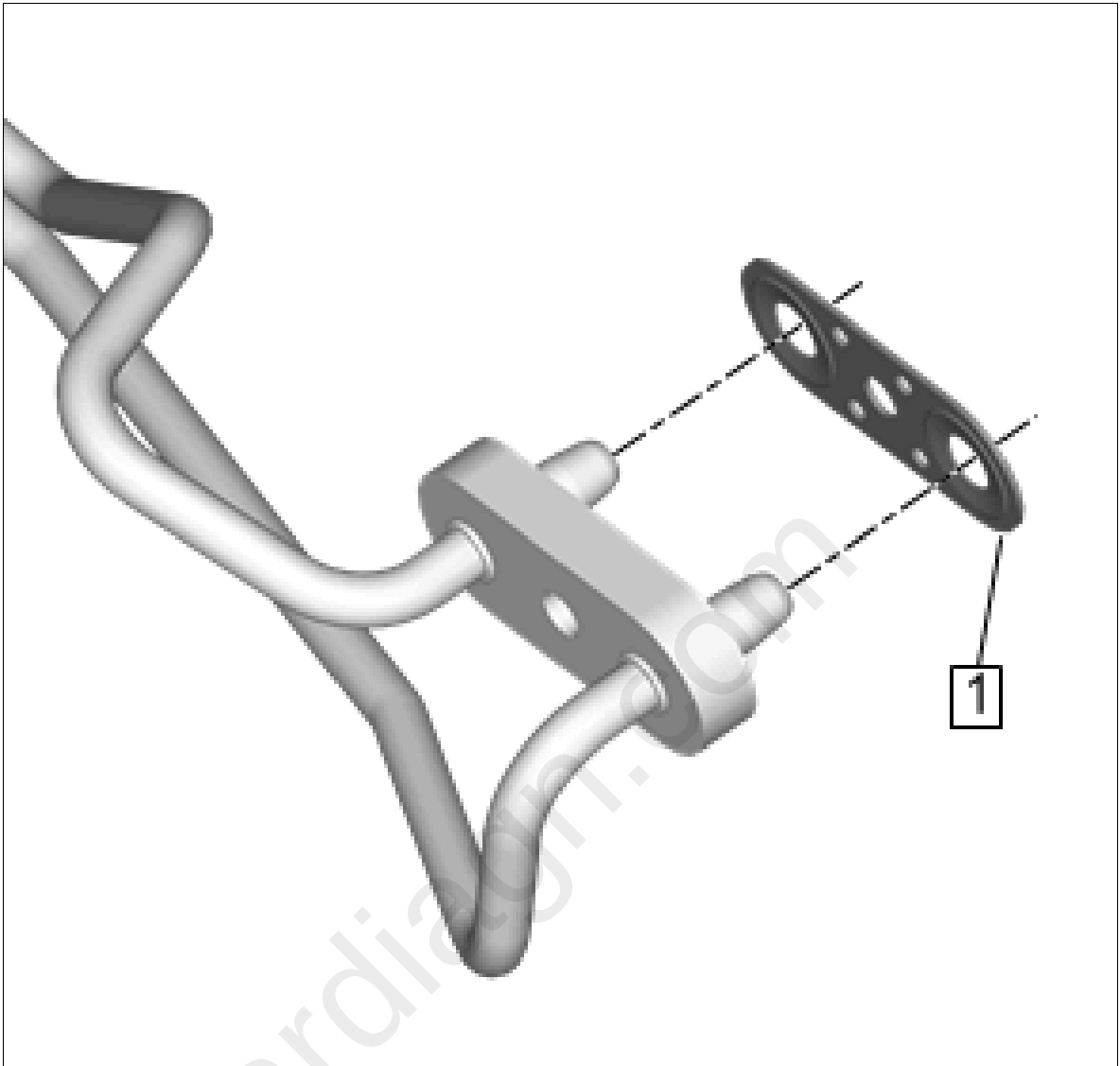
9. Remove Transmission Fluid Cooler Pipe Clip Bolt (1)

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

10. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

Fig 5: Transmission Fluid Cooler Inlet And Outlet Pipe Fitting Seal

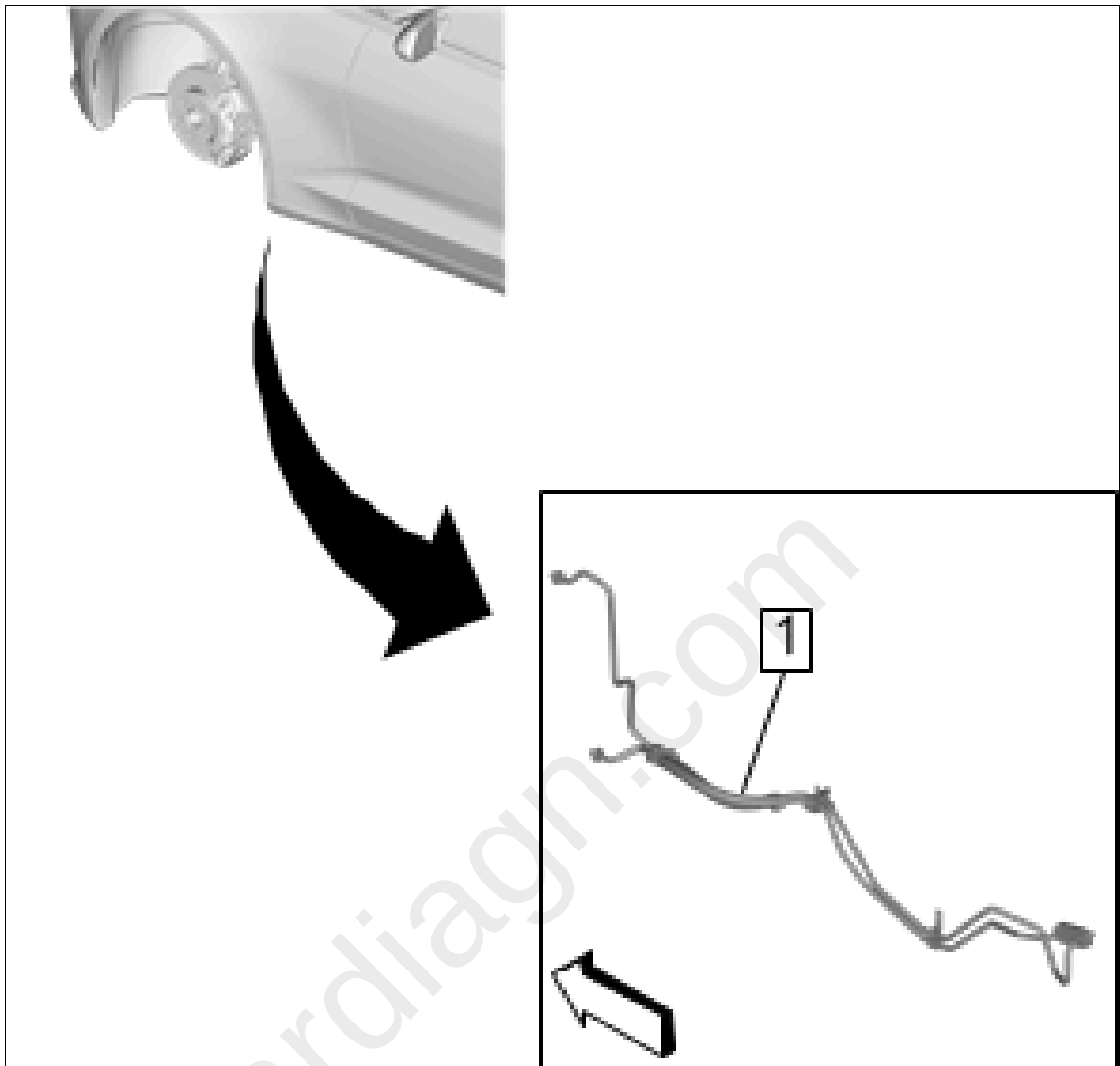


Courtesy of GENERAL MOTORS COMPANY

11. Remove Transmission Fluid Cooler Pipe Fitting Seal (1)

DISCARD the seal.

Fig 6: Transmission Fluid Cooler Inlet And Outlet Pipe

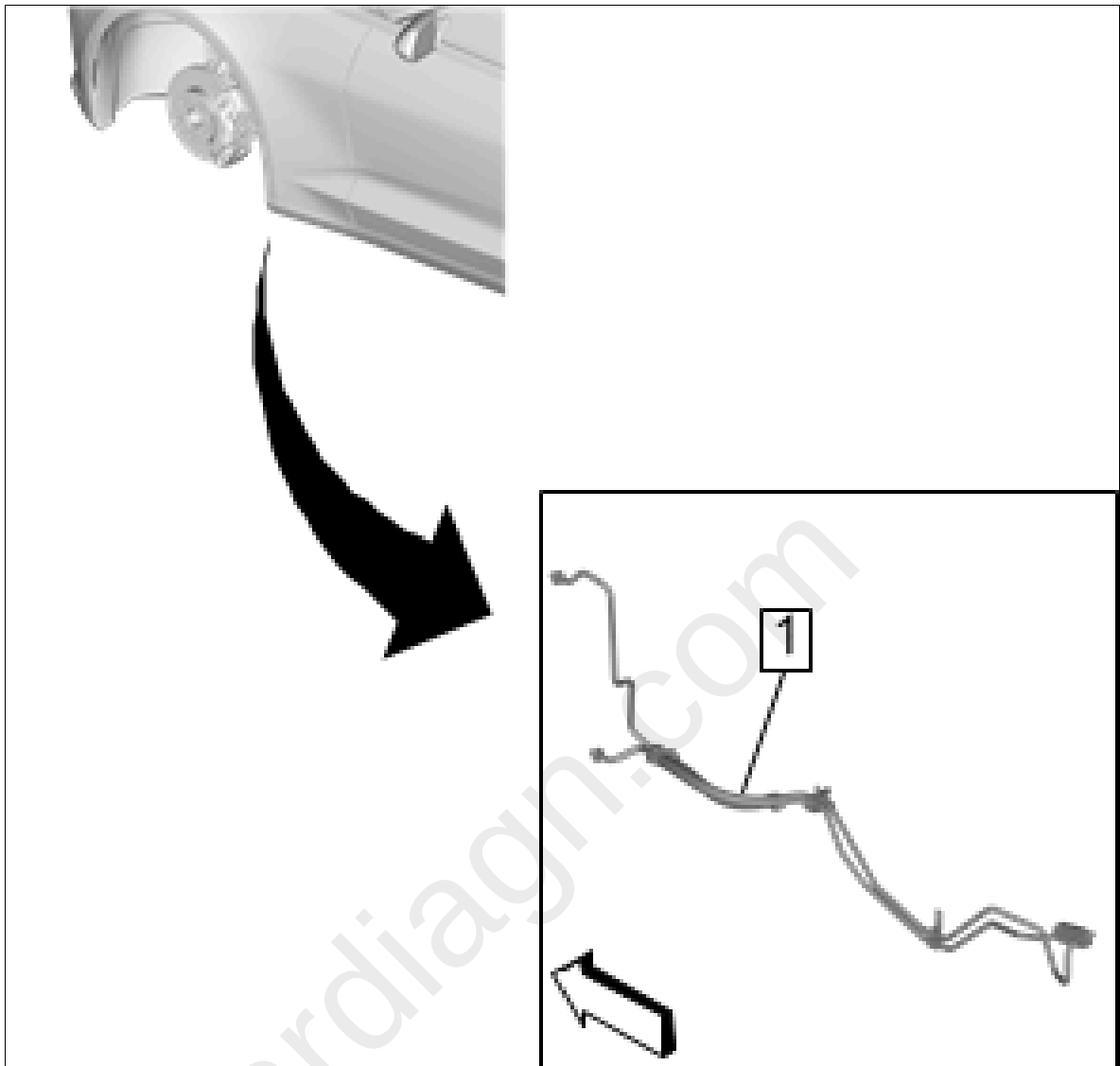


Courtesy of GENERAL MOTORS COMPANY

12. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
13. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LTG WITH M5T, WITHOUT V03) > INSTALLATION PROCEDURE**

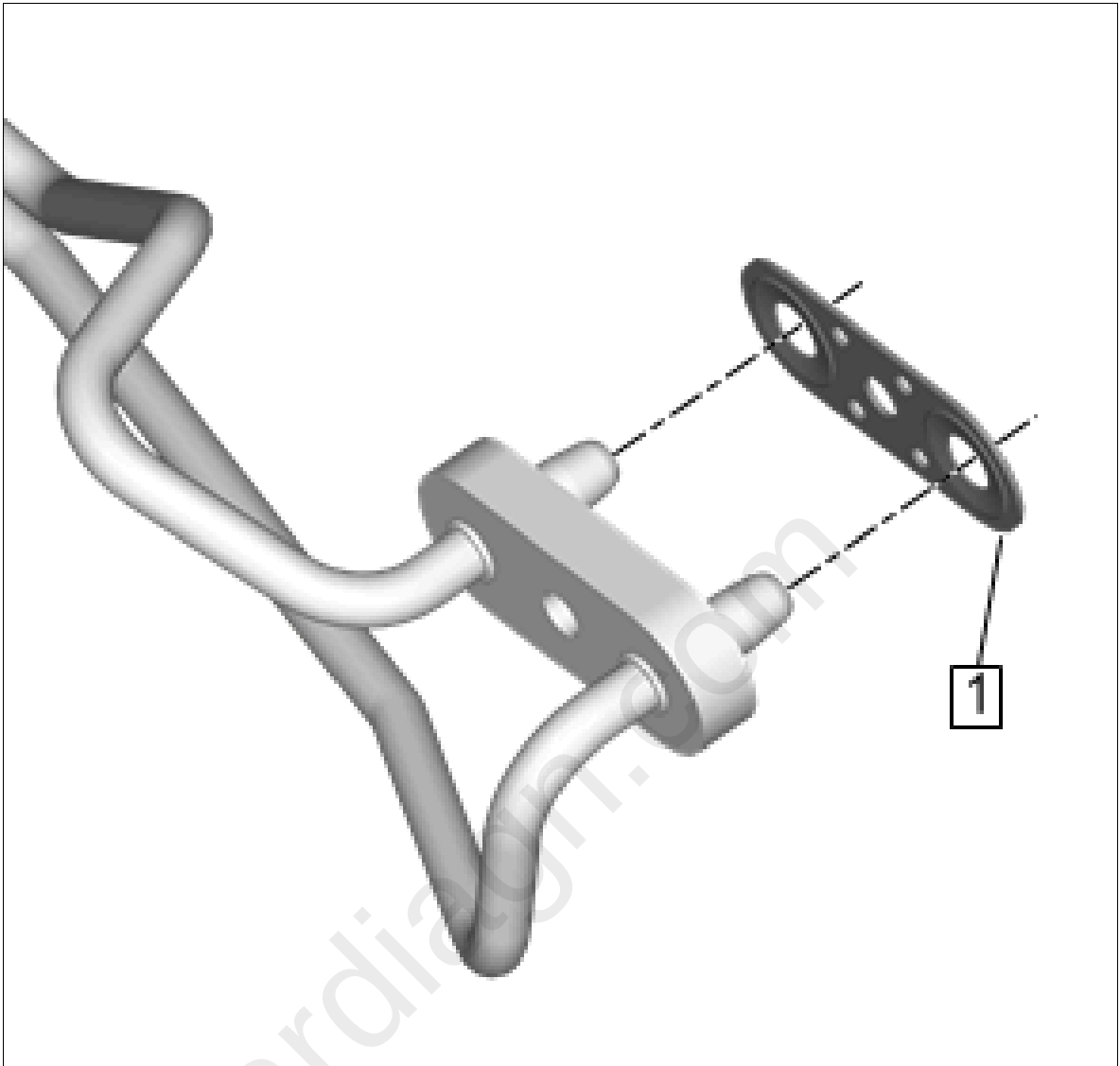
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

Fig 2: Transmission Fluid Cooler Inlet And Outlet Pipe Fitting Seal

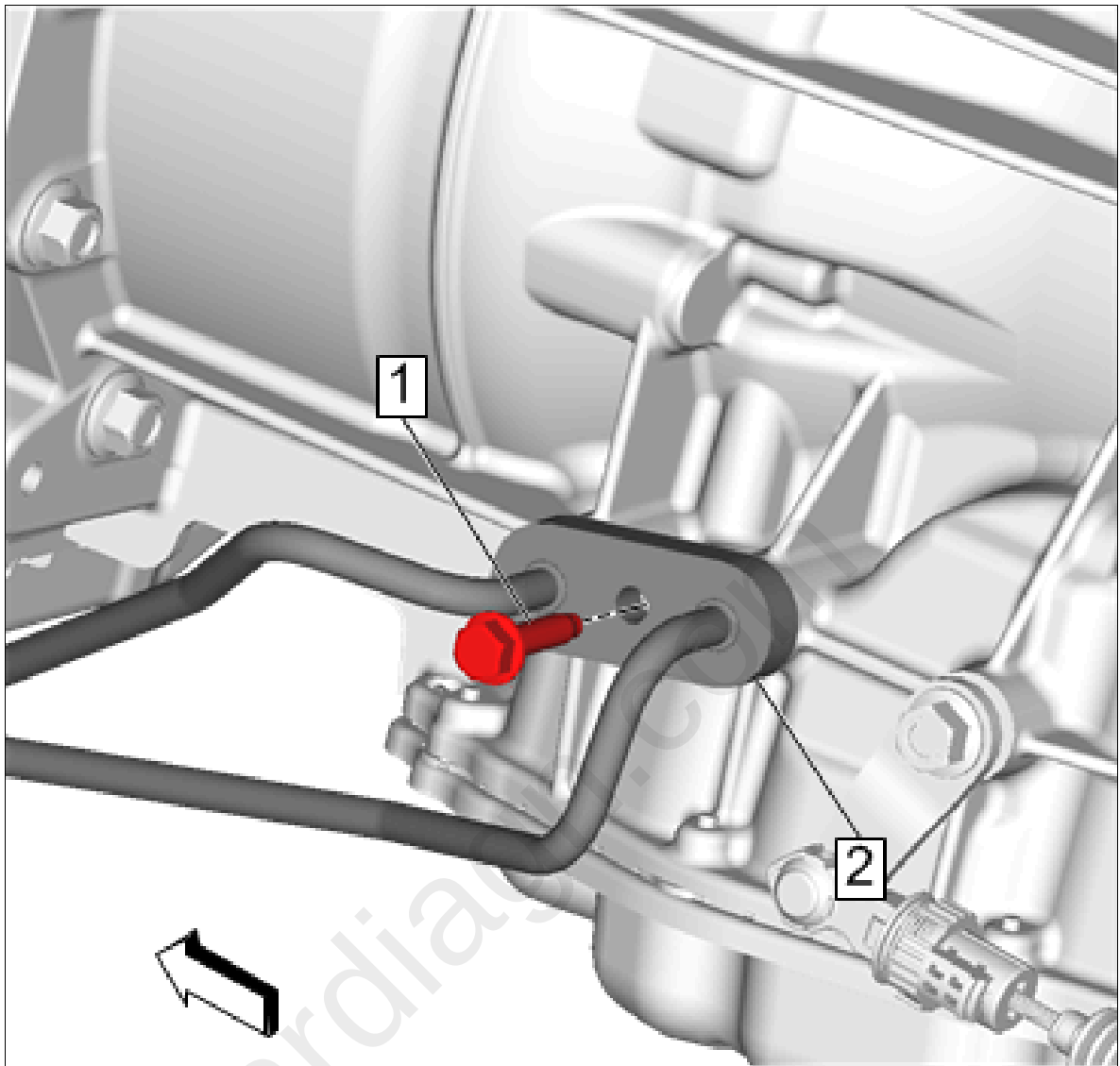


Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Seal (1)

Use a NEW seal.

Fig 3: Transmission Fluid Cooler Pipe Clip Bolt At Transmission



Courtesy of GENERAL MOTORS COMPANY

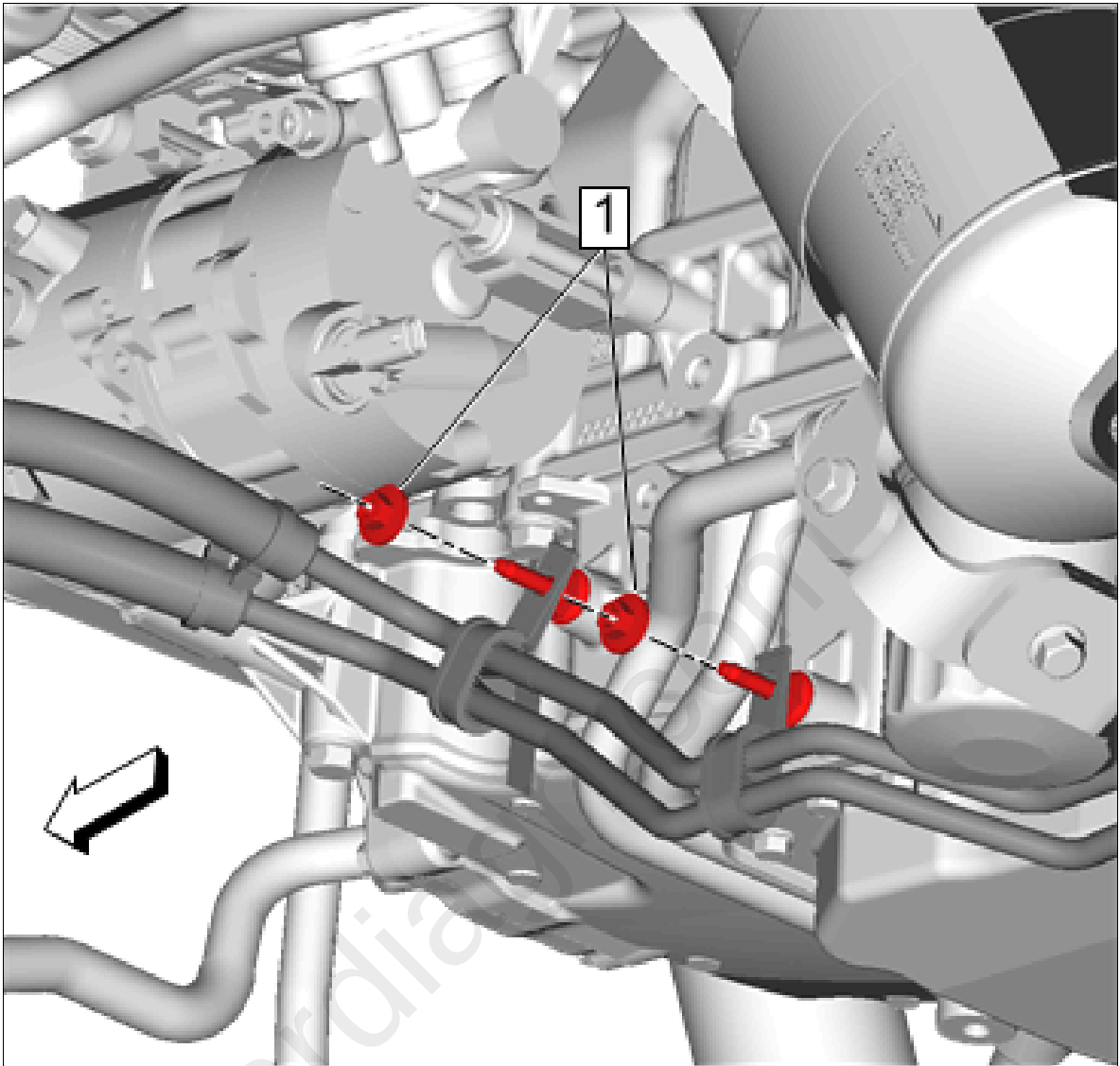
3. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

 **CAUTION:**

Refer to Fastener Caution .

4. Install Transmission Fluid Cooler Pipe Clip Bolt (1) and tighten to 22 N.m (16 lb ft)

Fig 4: Transmission Fluid Cooler Pipe Bracket Nut



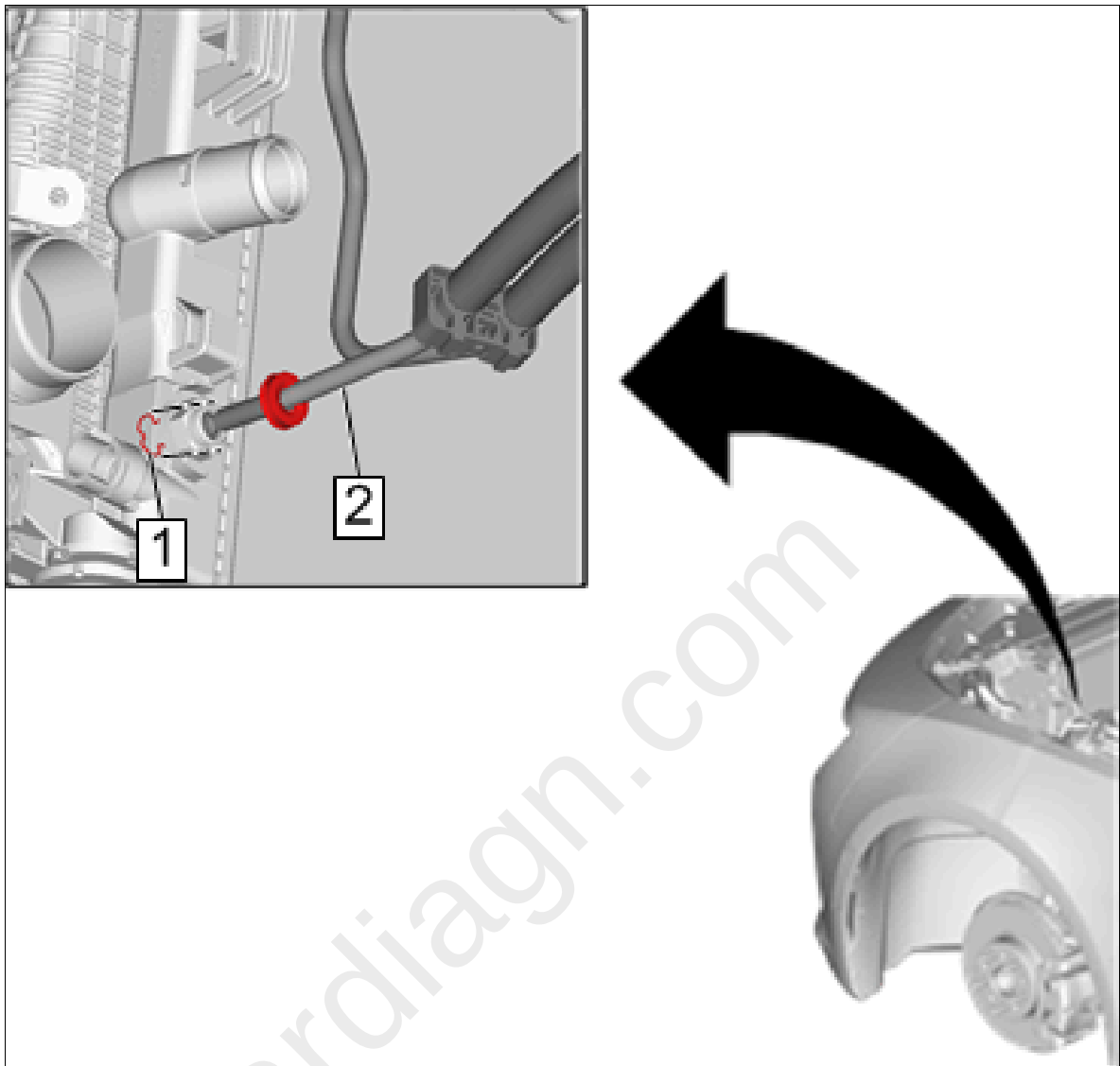
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

5. Install Transmission Fluid Cooler Pipe Bracket Nut (1) and tighten to 9 N.m (80 lb in)

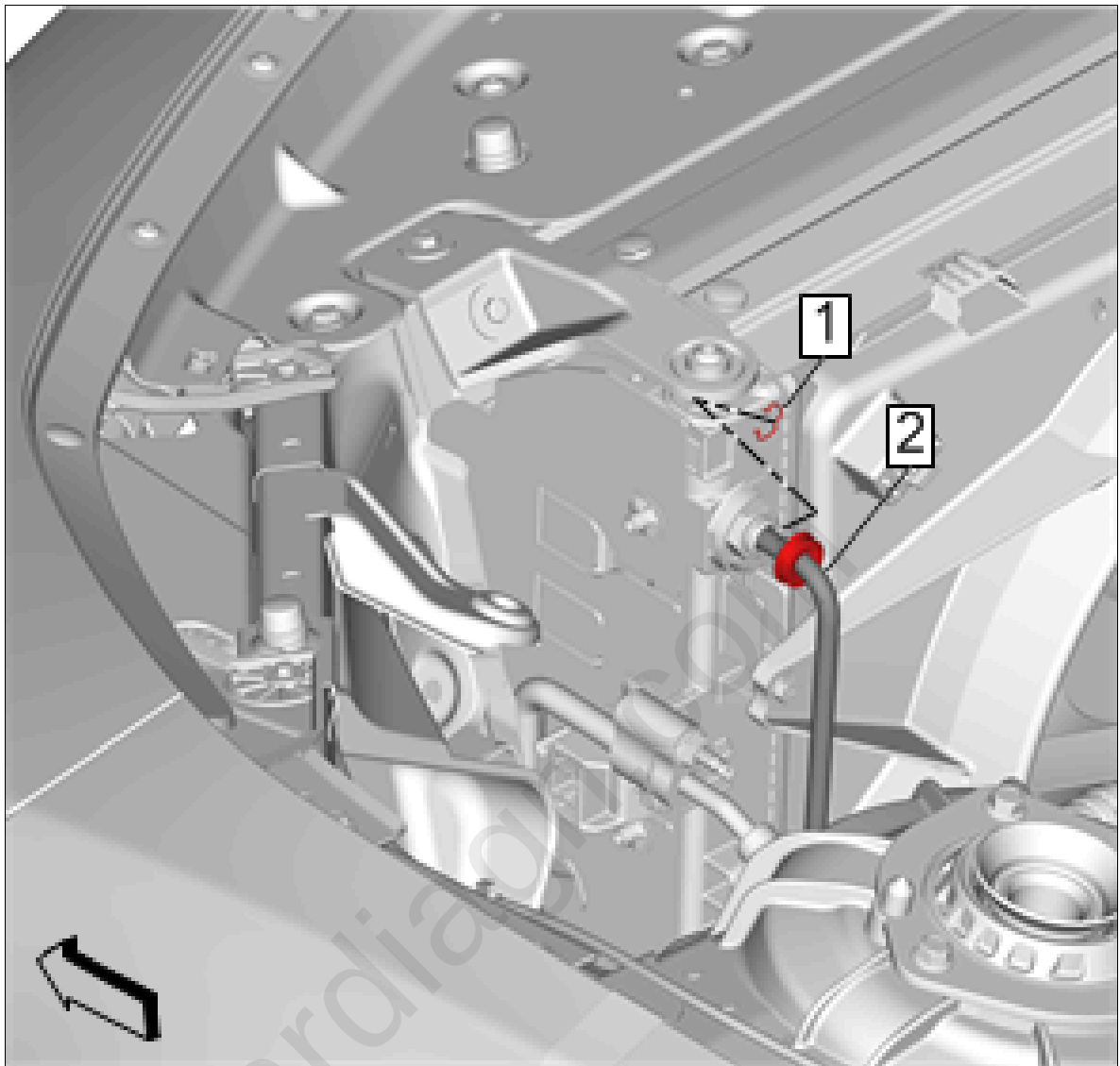
Fig 5: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

6. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
7. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
8. Install Engine Coolant Fan Replacement (LTG without V18)Engine Coolant Fan Replacement (LTG with V18)

Fig 6: Transmission Fluid Cooler Pipe Fitting Retainer at Radiator



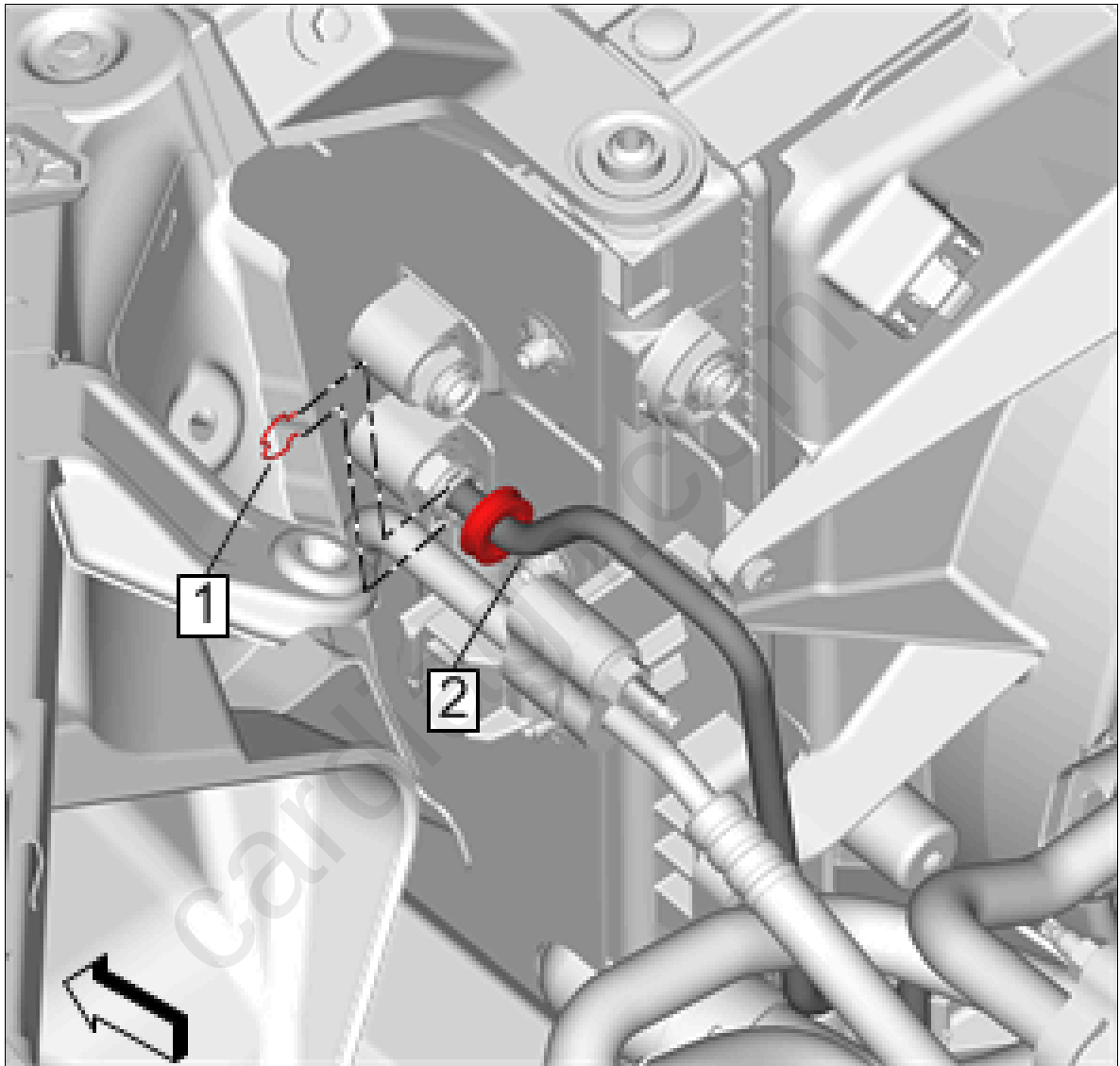
Courtesy of GENERAL MOTORS COMPANY

9. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
10. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
11. Install Air Cleaner Assembly Replacement
12. Install Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
13. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
14. Inspect for transmission fluid leaks.

PIPE REPLACEMENT (LTG WITH M5T, WITH V03) > REMOVAL PROCEDURE

1. Remove Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
2. Remove Air Cleaner Assembly Replacement
3. Remove Transmission Fluid Cooler Pipe Replacement (LTG With M5T, With V03)

Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer At Air Conditioning Condenser



Courtesy of GENERAL MOTORS COMPANY

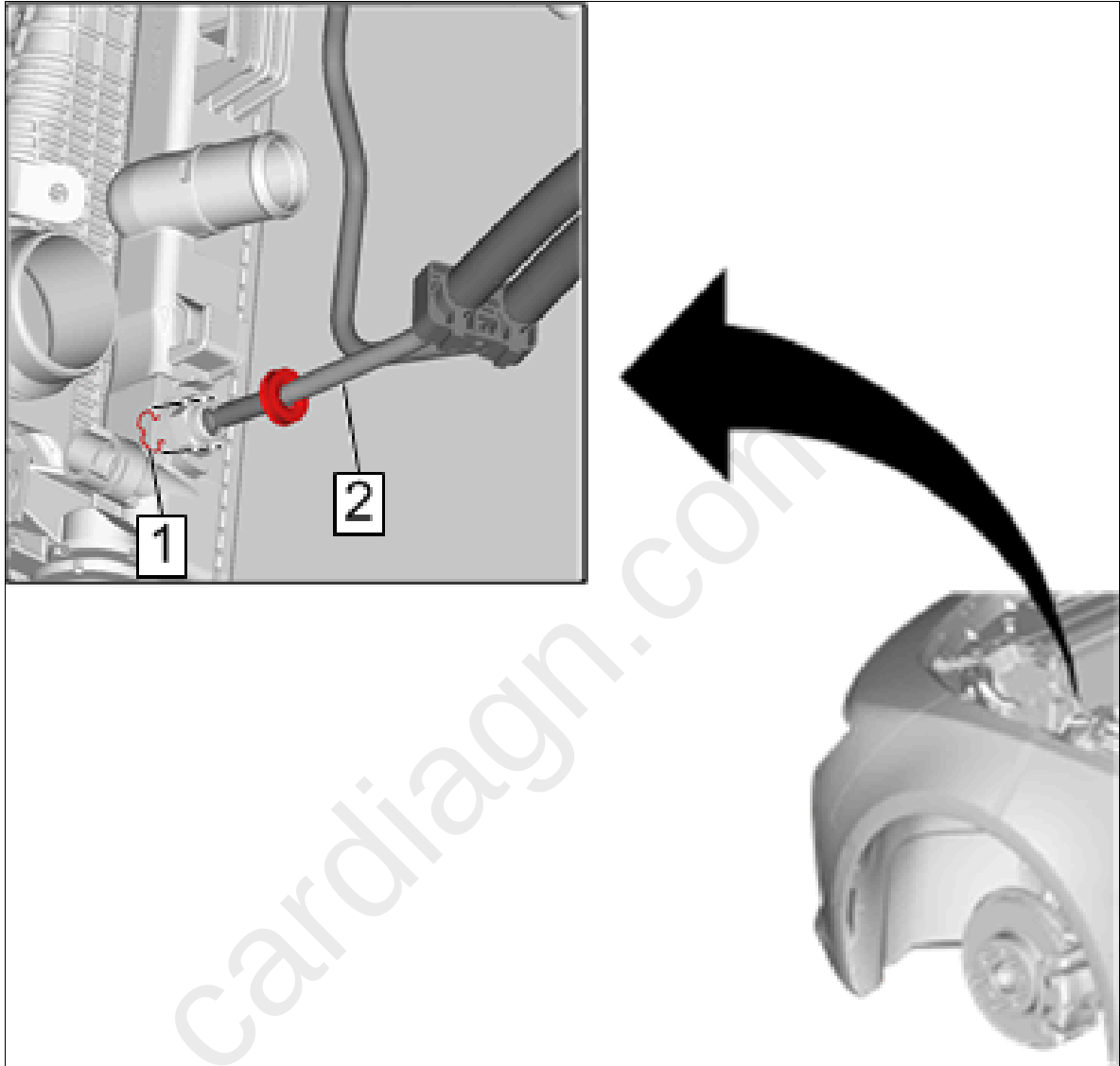
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Air Conditioning Condenser.
6. Remove Engine Coolant Fan Replacement (LTG without V18)Engine Coolant Fan Replacement (LTG with V18)

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

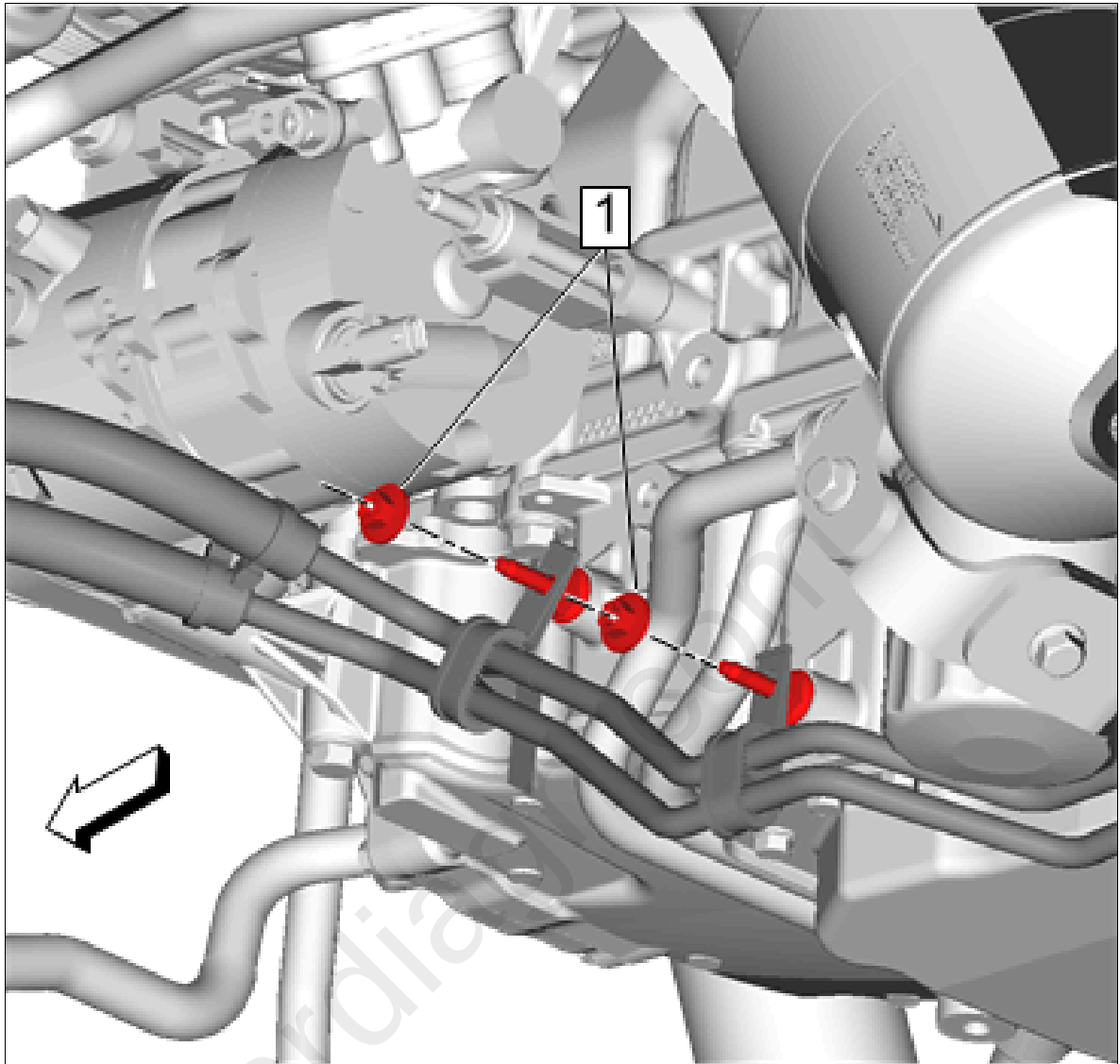
7. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

8. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.

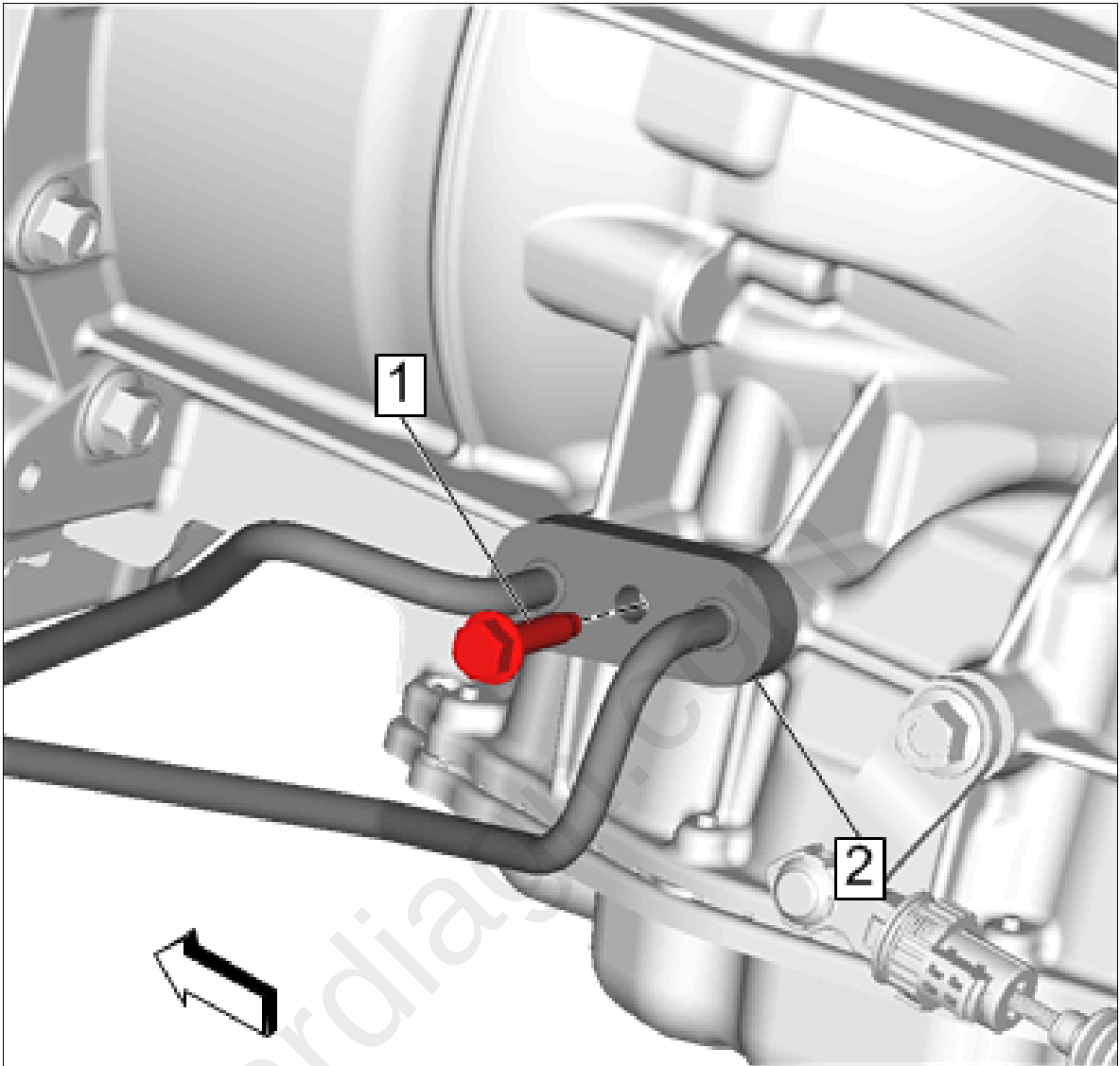
Fig 3: Transmission Fluid Cooler Pipe Bracket Nut



Courtesy of GENERAL MOTORS COMPANY

9. Remove Transmission Fluid Cooler Pipe Bracket Nut (1)

Fig 4: Transmission Fluid Cooler Pipe Clip Bolt At Transmission



Courtesy of GENERAL MOTORS COMPANY

10. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Transmission.

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

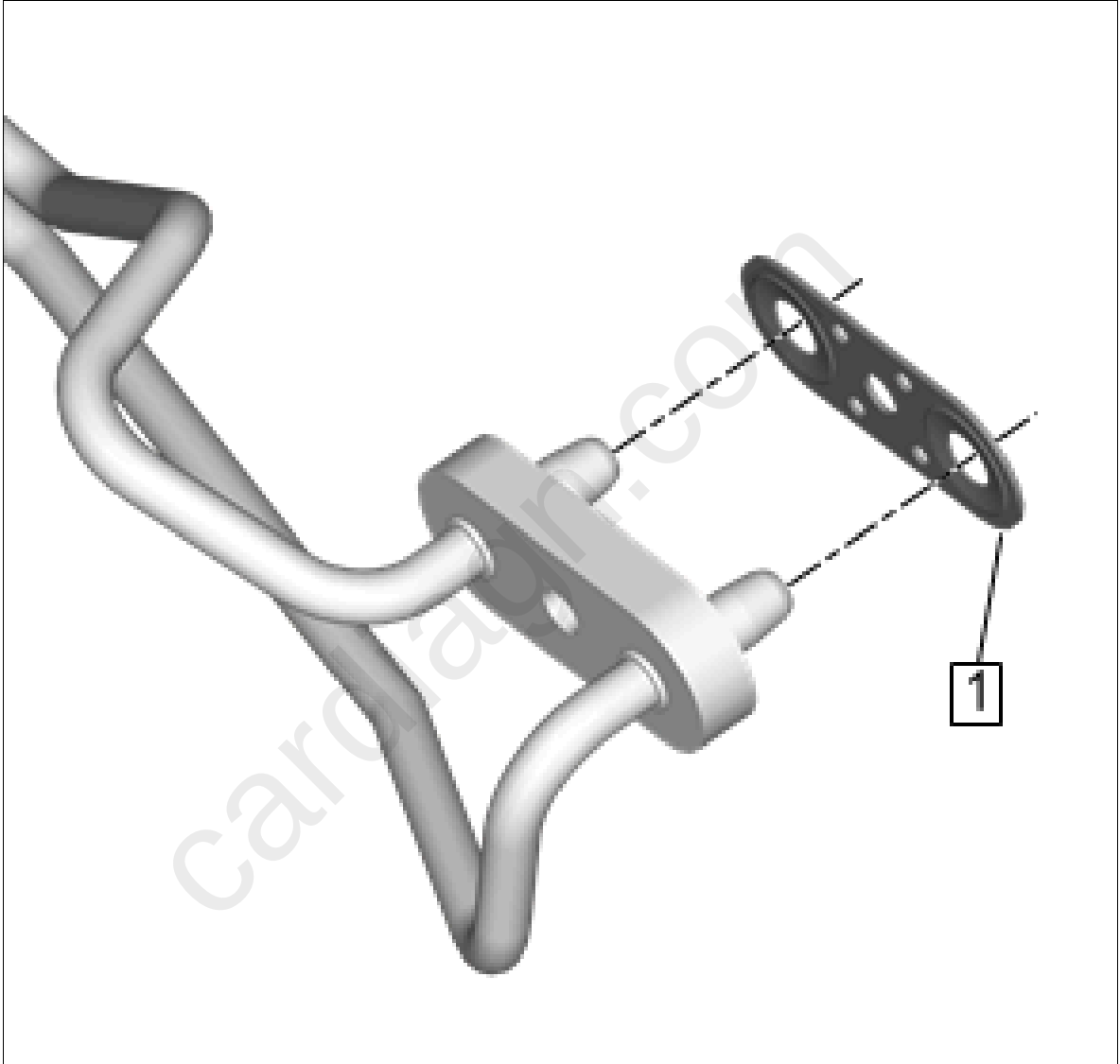
- 11.

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

12. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

Fig 5: Transmission Fluid Cooler Inlet And Outlet Pipe Fitting Seal

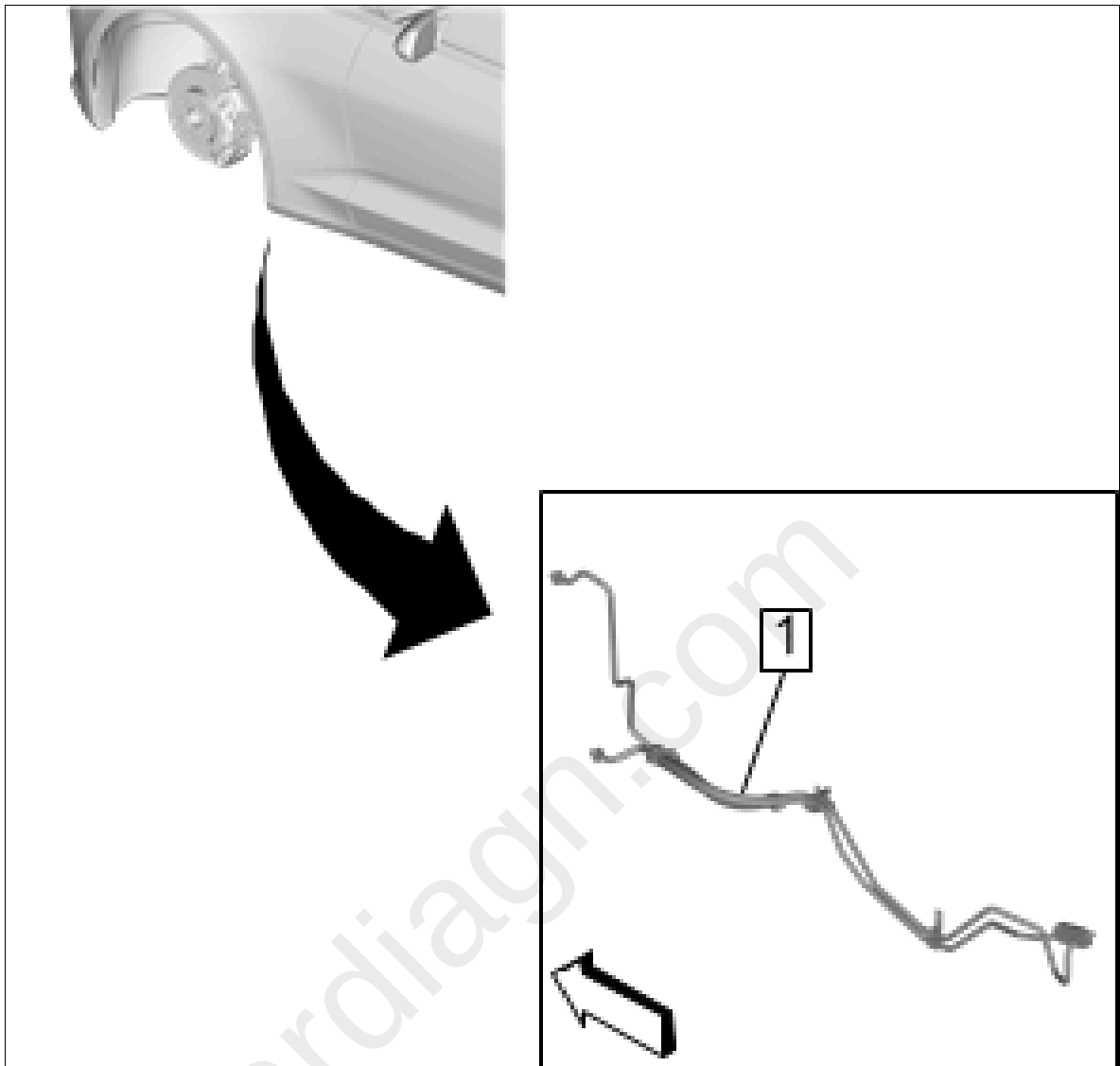


Courtesy of GENERAL MOTORS COMPANY

13. Remove Transmission Fluid Cooler Pipe Fitting Seal (1)

DISCARD the seal.

Fig 6: Transmission Fluid Cooler Inlet And Outlet Pipe

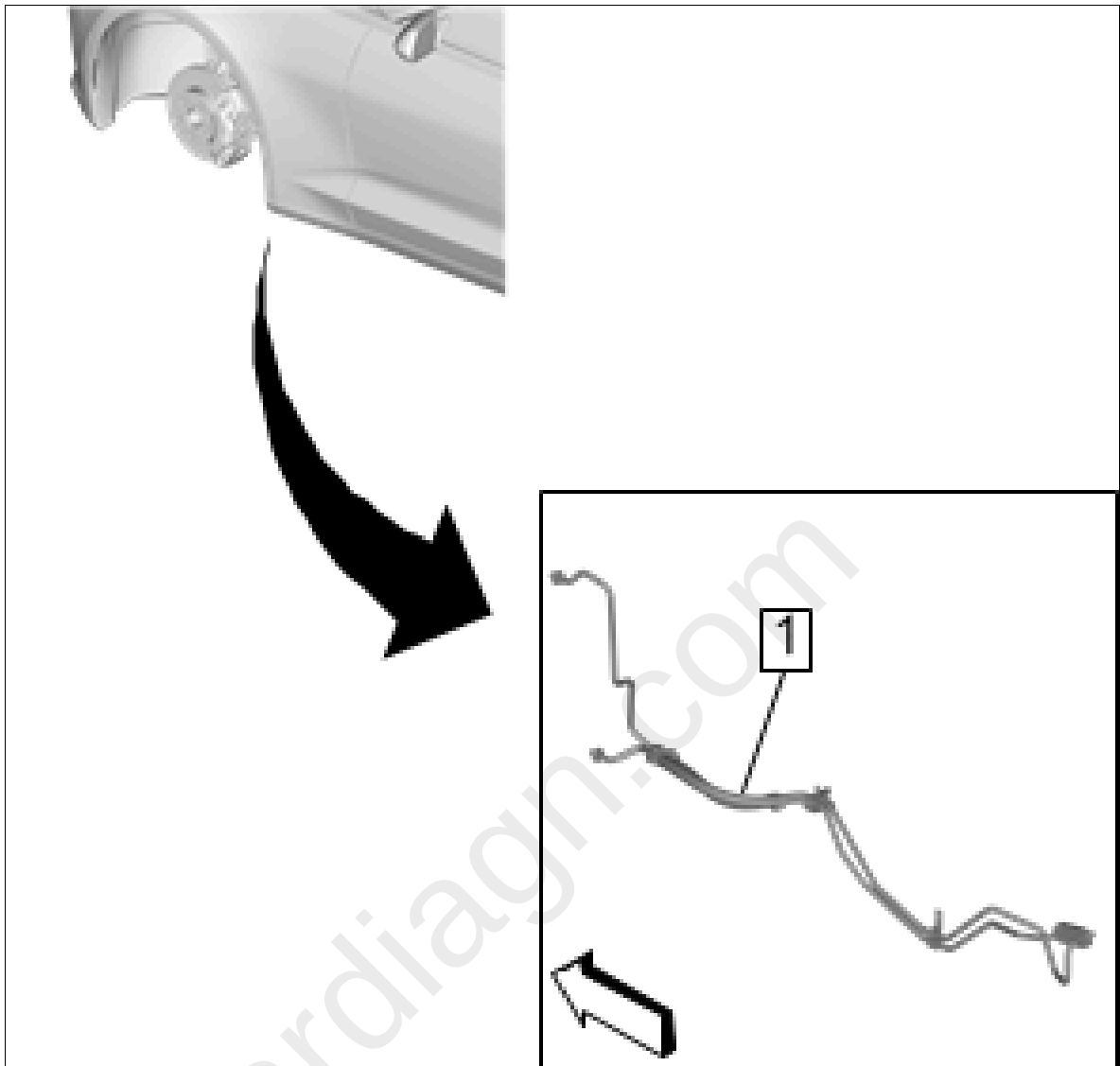


Courtesy of GENERAL MOTORS COMPANY

14. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
15. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LTG WITH M5T, WITH V03) > INSTALLATION PROCEDURE**

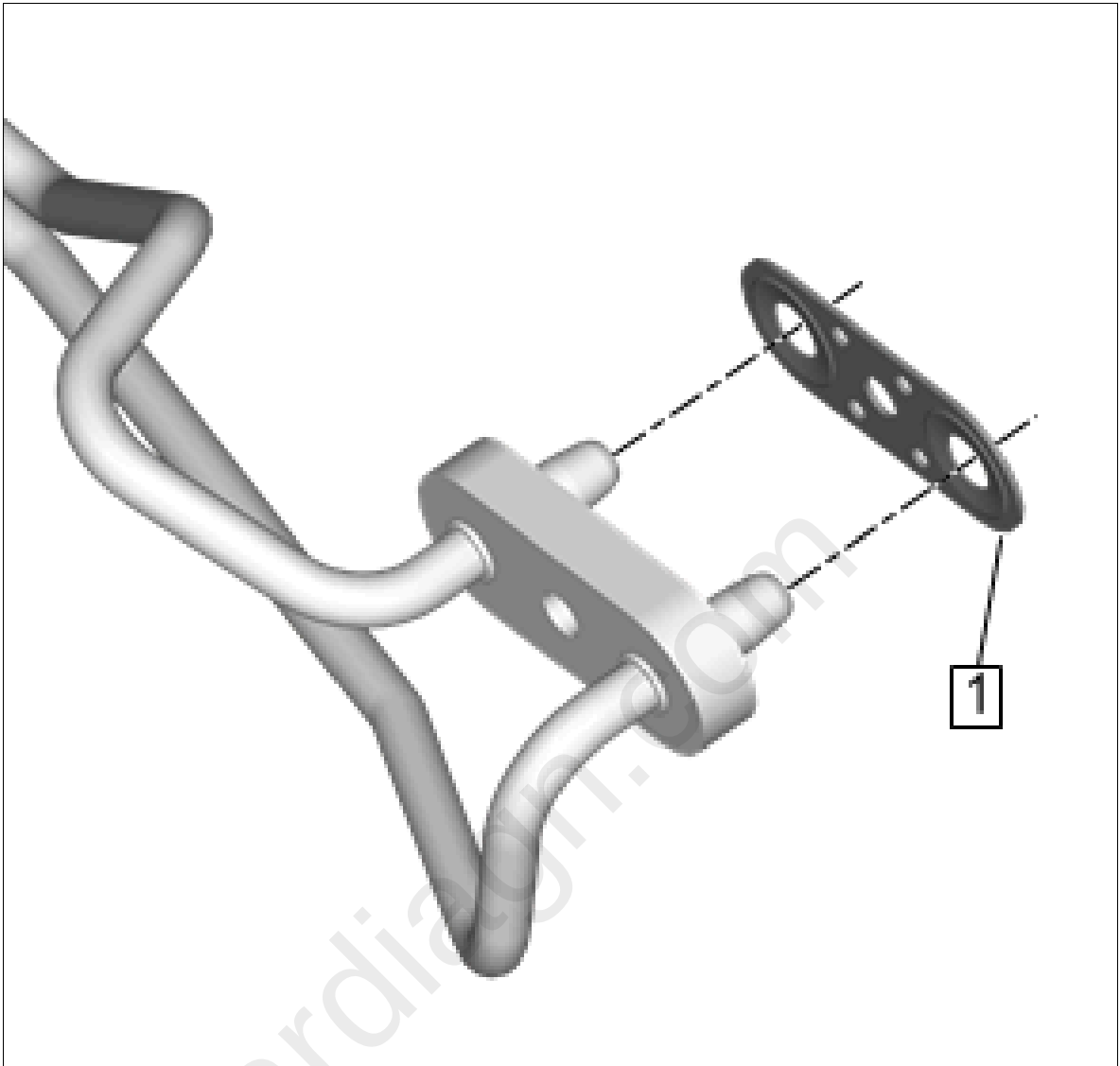
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

Fig 2: Transmission Fluid Cooler Inlet And Outlet Pipe Fitting Seal

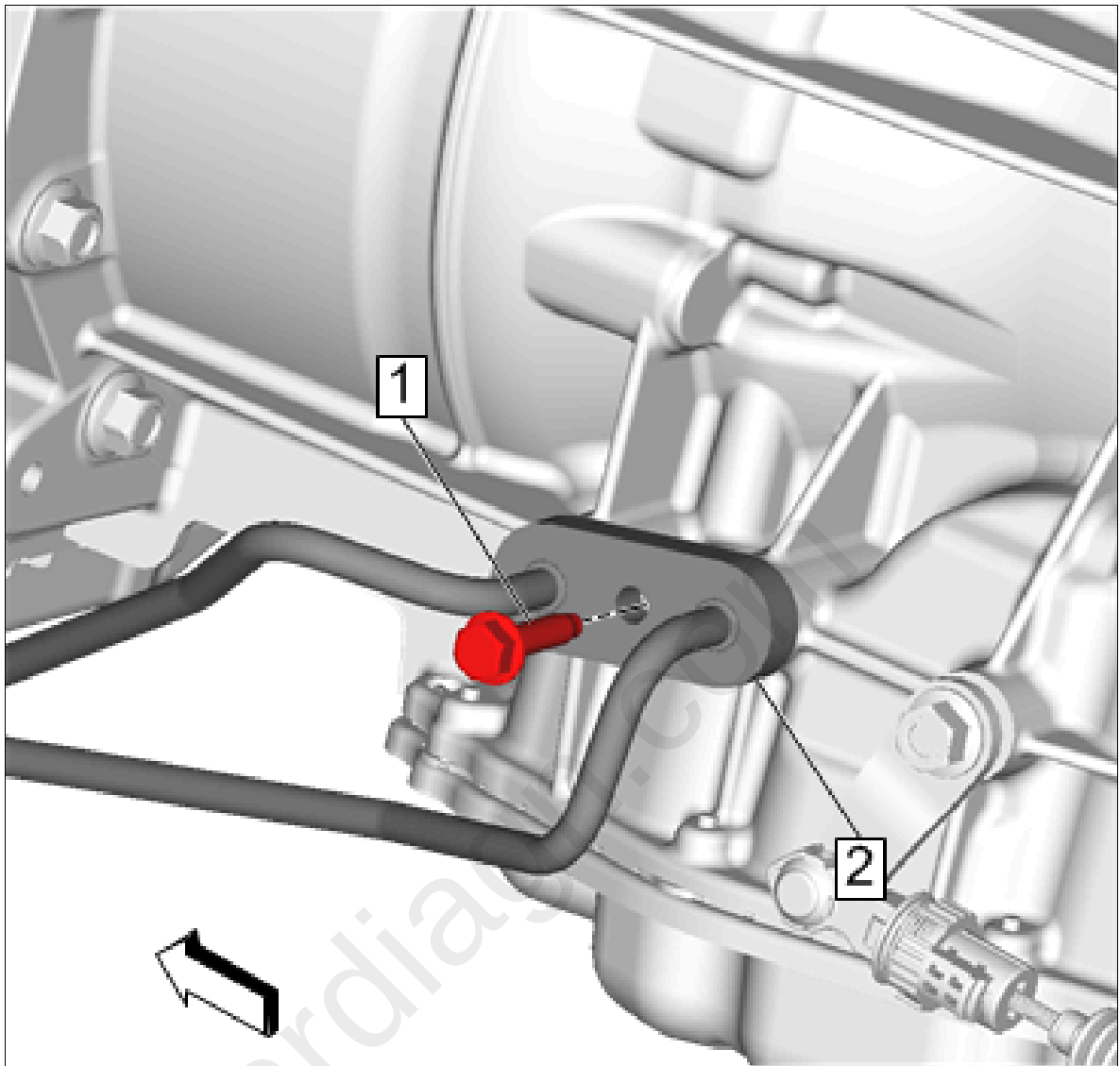


Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Seal (1)

Use a NEW seal.

Fig 3: Transmission Fluid Cooler Pipe Clip Bolt At Transmission



Courtesy of GENERAL MOTORS COMPANY

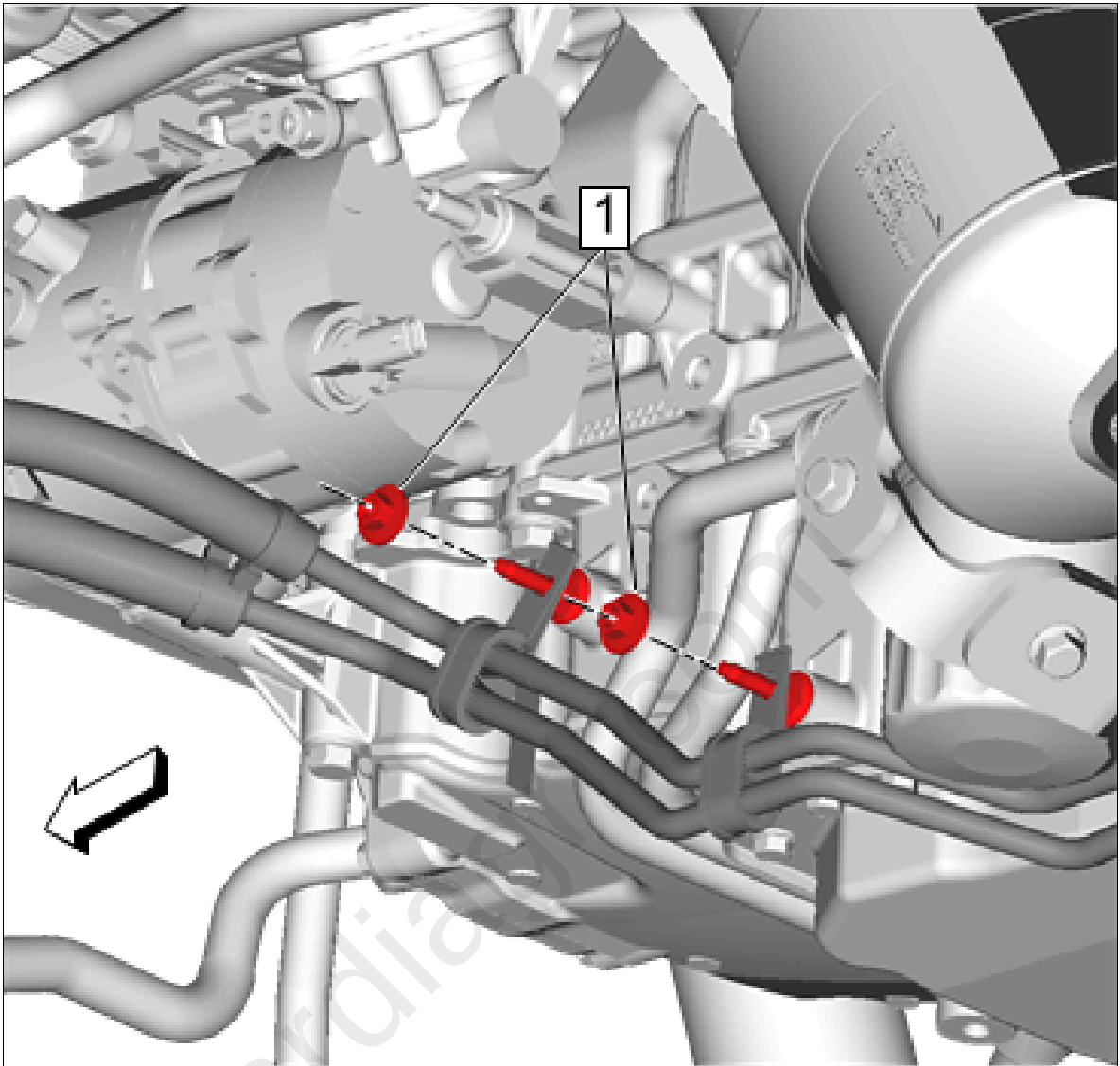
 **CAUTION:**

Refer to Fastener Caution .

3. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission.

Install Transmission Fluid Cooler Pipe Clip Bolt (1) and tighten to 22 N.m (16 lb ft)

Fig 4: Transmission Fluid Cooler Pipe Bracket Nut



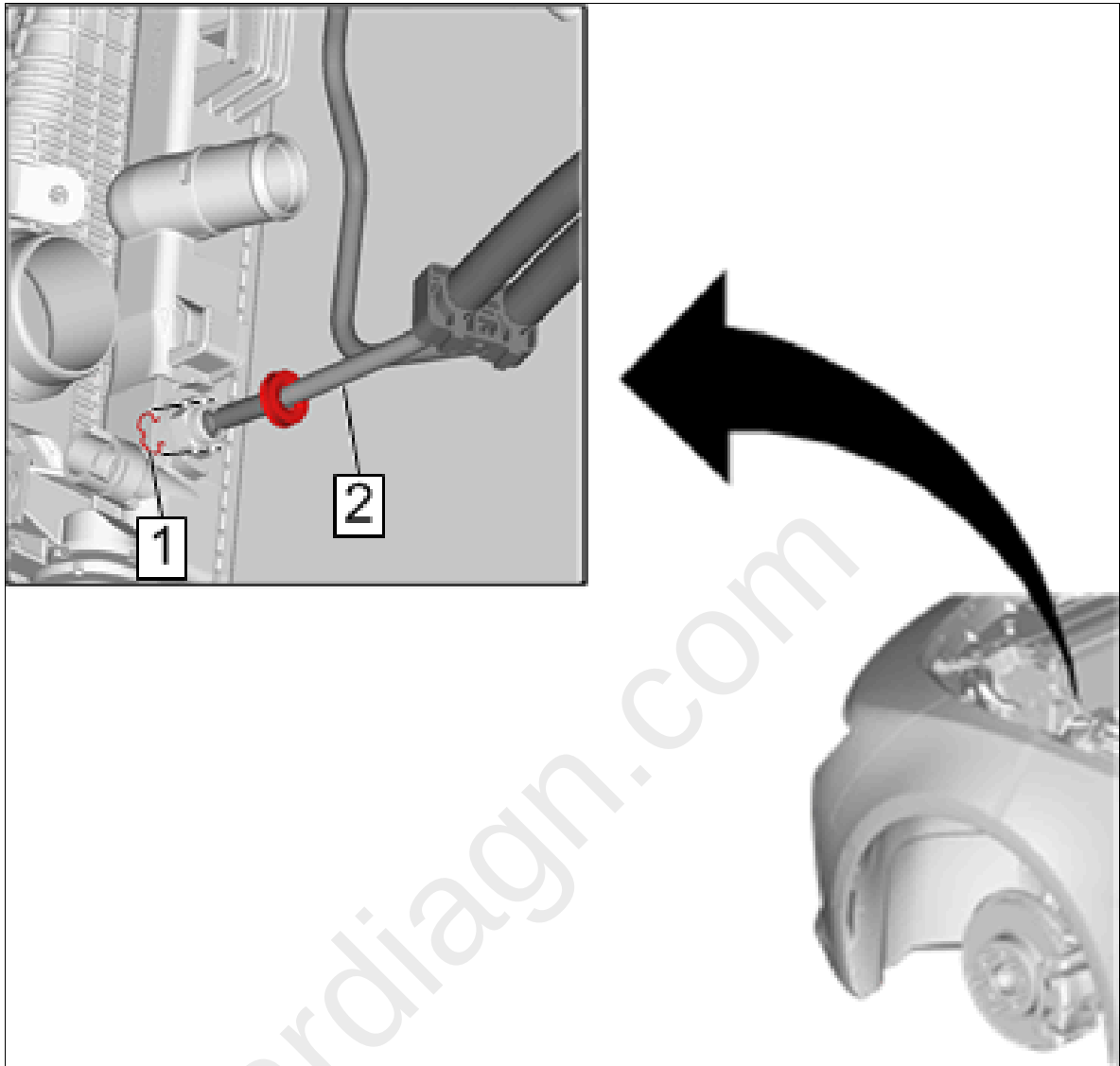
Courtesy of GENERAL MOTORS COMPANY

 **CAUTION:**

Refer to Fastener Caution .

4. Install Transmission Fluid Cooler Pipe Bracket Nut (1) and tighten to 9 N.m (80 lb in)

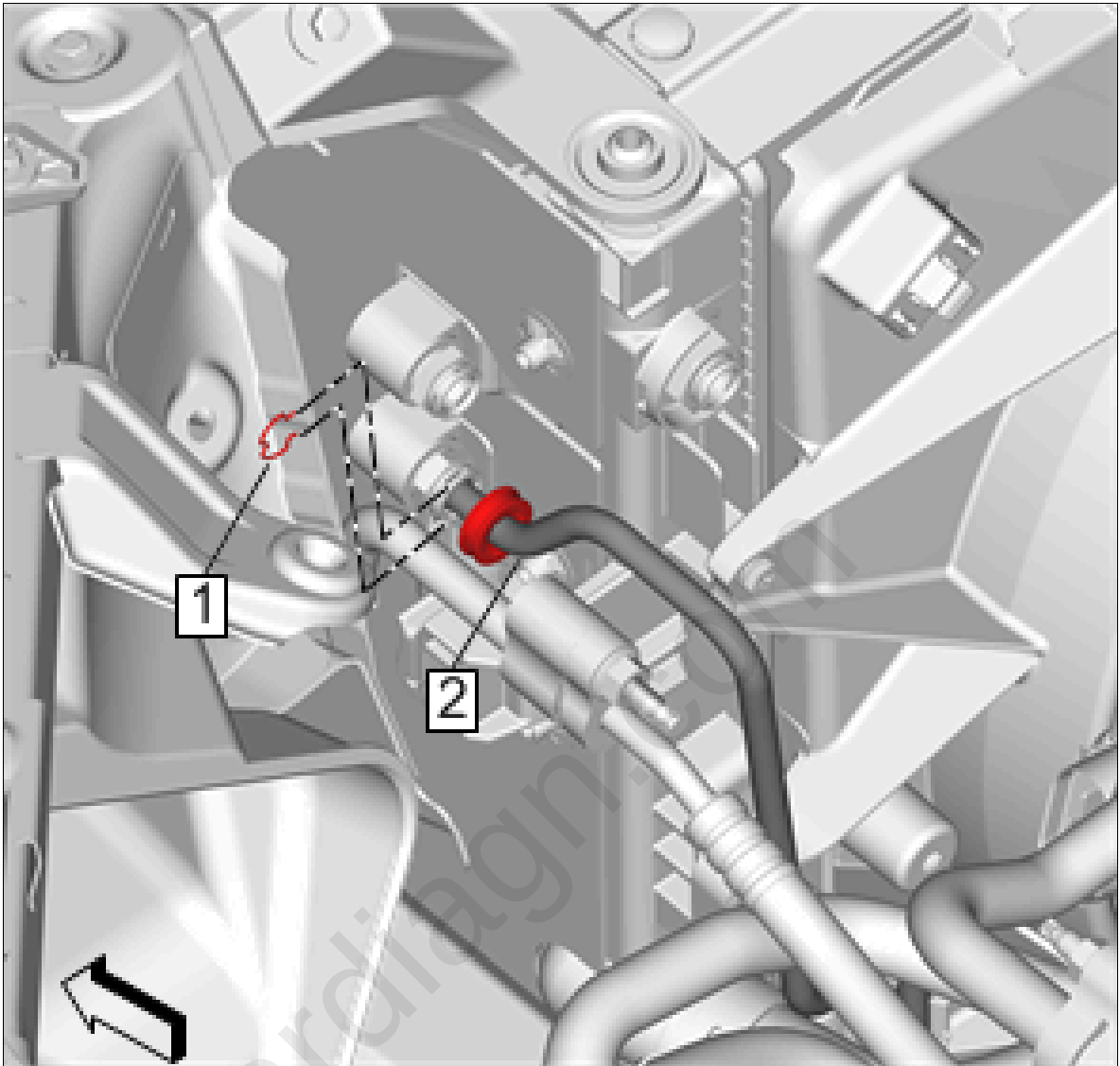
Fig 5: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

5. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
6. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
7. Install Engine Coolant Fan Replacement (LTG without V18)Engine Coolant Fan Replacement (LTG with V18)

Fig 6: Transmission Fluid Cooler Pipe Fitting Retainer At Air Conditioning Condenser



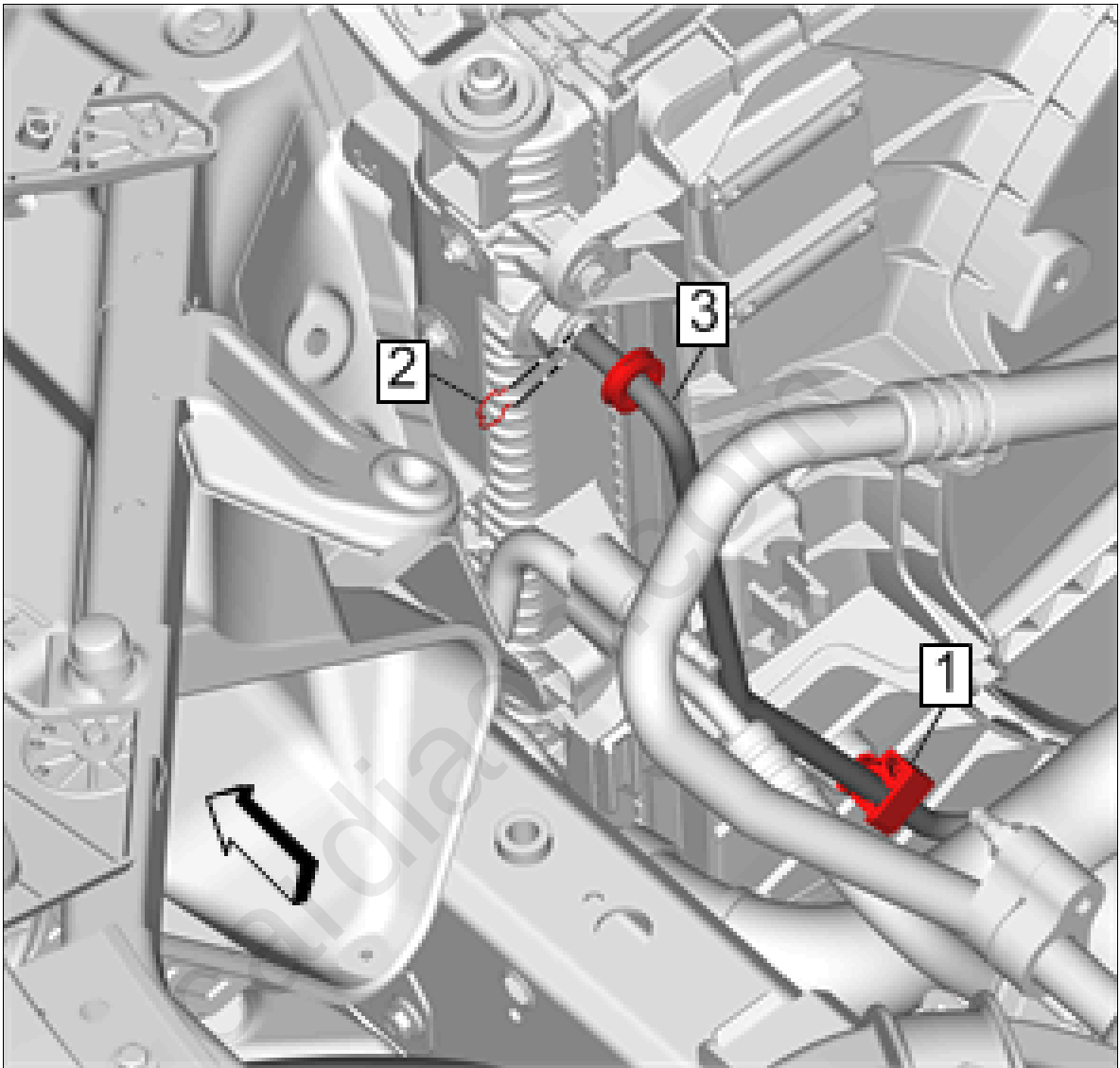
Courtesy of GENERAL MOTORS COMPANY

8. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
9. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Air Conditioning Condenser.
10. Install Transmission Fluid Cooler Pipe Replacement (LTG With M5T, With V03)
11. Install Air Cleaner Assembly Replacement
12. Install Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
13. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
14. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET PIPE REPLACEMENT (LT1 WITH M5U, WITHOUT KNR) > REMOVAL PROCEDURE

1. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Clip



Courtesy of GENERAL MOTORS COMPANY

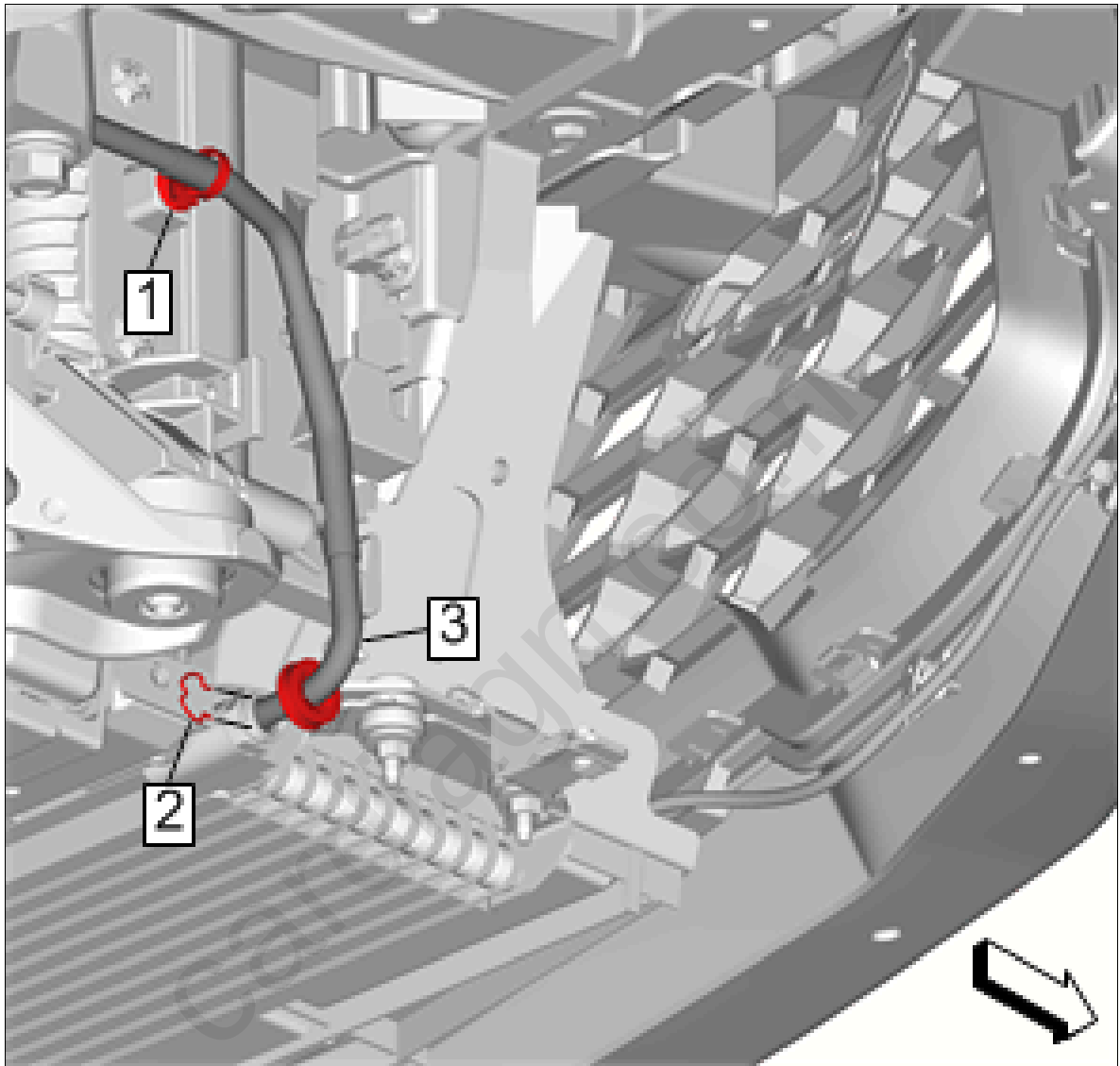
2. Open the transmission fluid cooler pipe clip (1).
3. Remove Transmission Fluid Cooler Pipe Retaining Clip (2) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (3) at Radiator.
5. Remove Front Compartment Air Deflector Replacement (Coupe - LT1)
6. Remove Front Brake Rotor Cooling Duct Replacement (J6G) - Right Side

Fig 2: Transmission Fluid Cooler Pipe Plastic Retainer



Courtesy of GENERAL MOTORS COMPANY

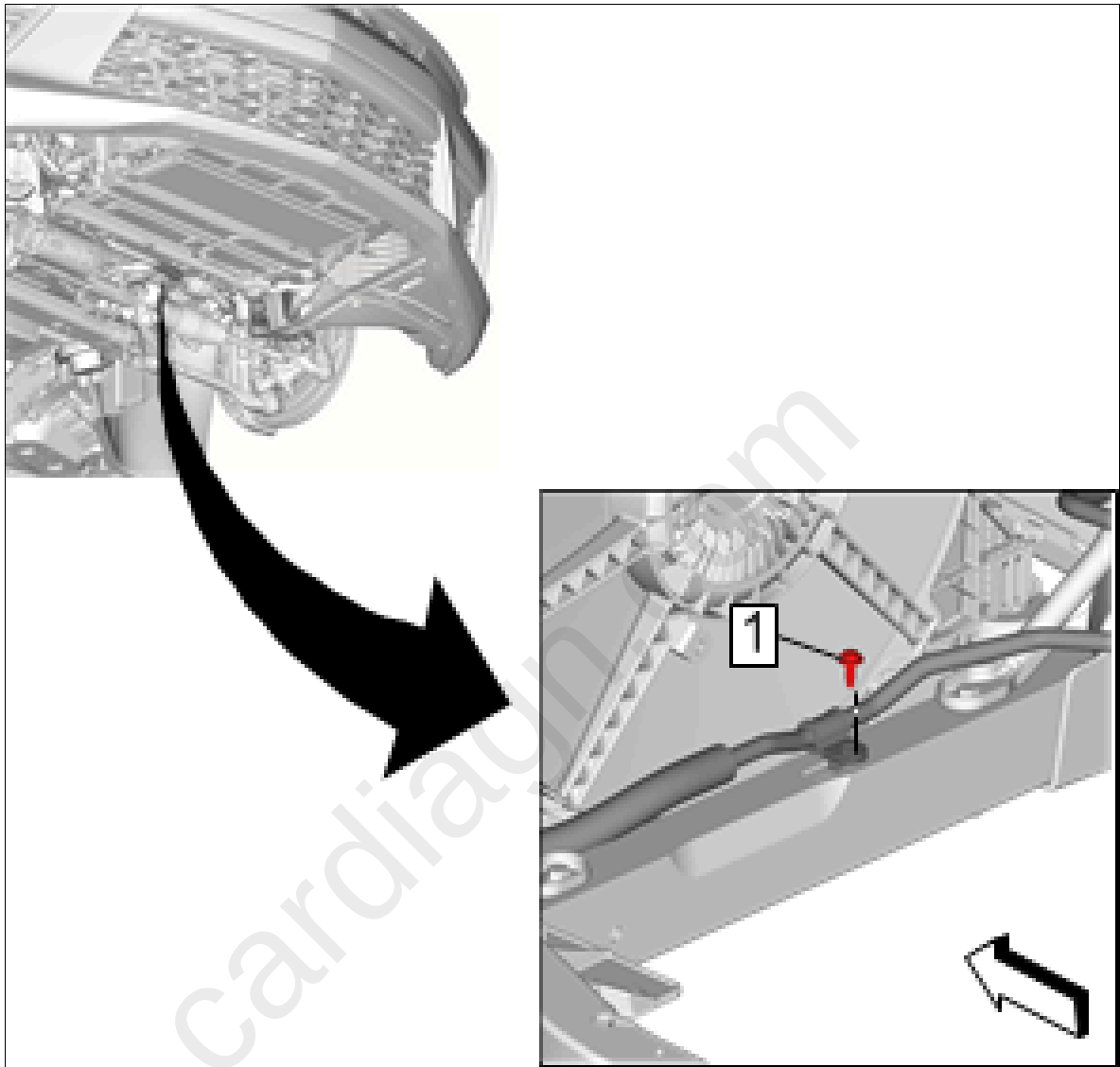
7. Remove the transmission fluid cooler pipe plastic retainer (1) from the fan shroud.
8. Remove Transmission Fluid Cooler Pipe Retaining Clip (2) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

9. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (3) at Transmission Fluid Auxiliary Cooler.
10. Remove Front Cradle Shear Plate Replacement

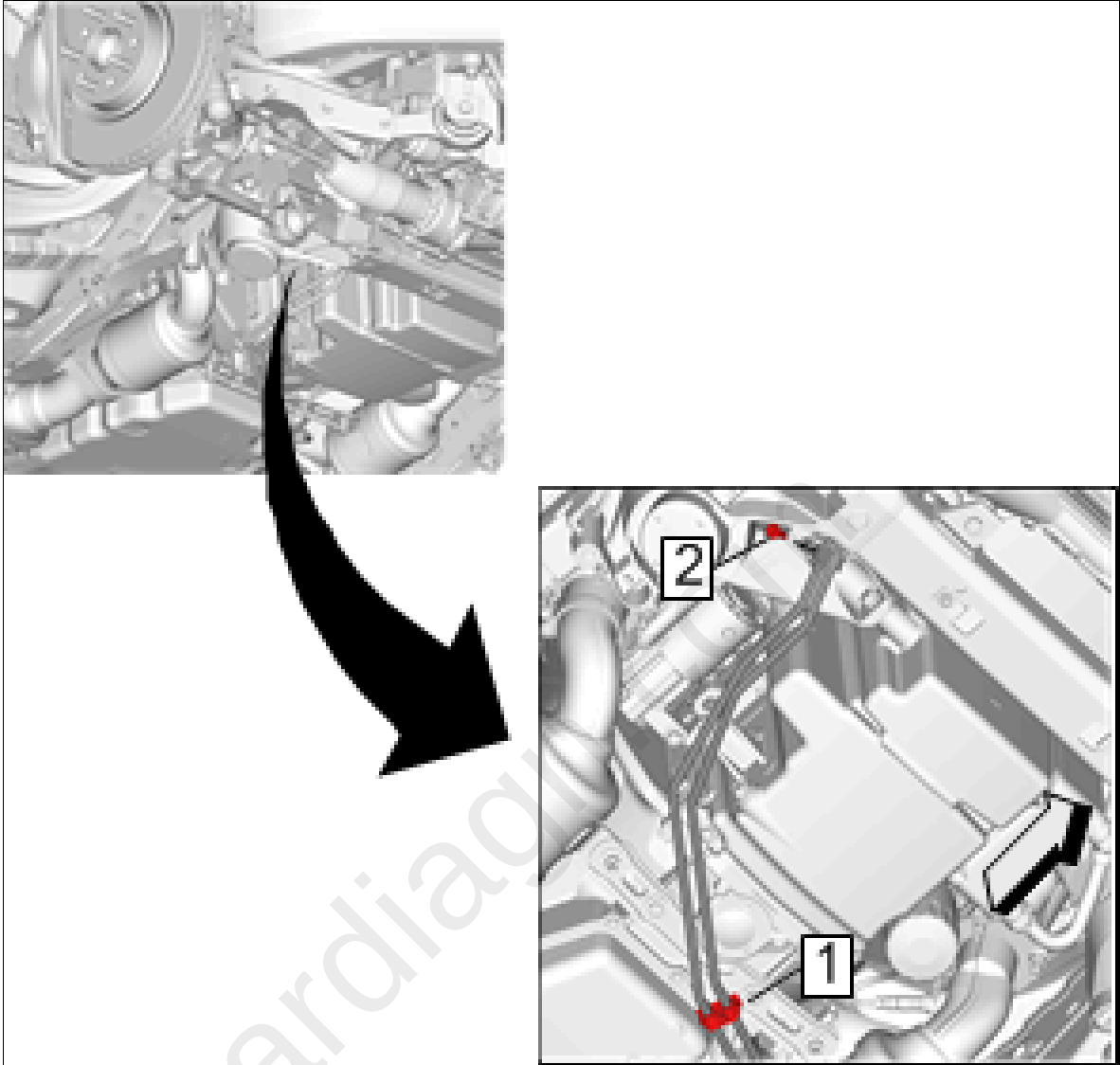
Fig 3: Transmission Fluid Cooler Pipe Clip Bolt At Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

11. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle.

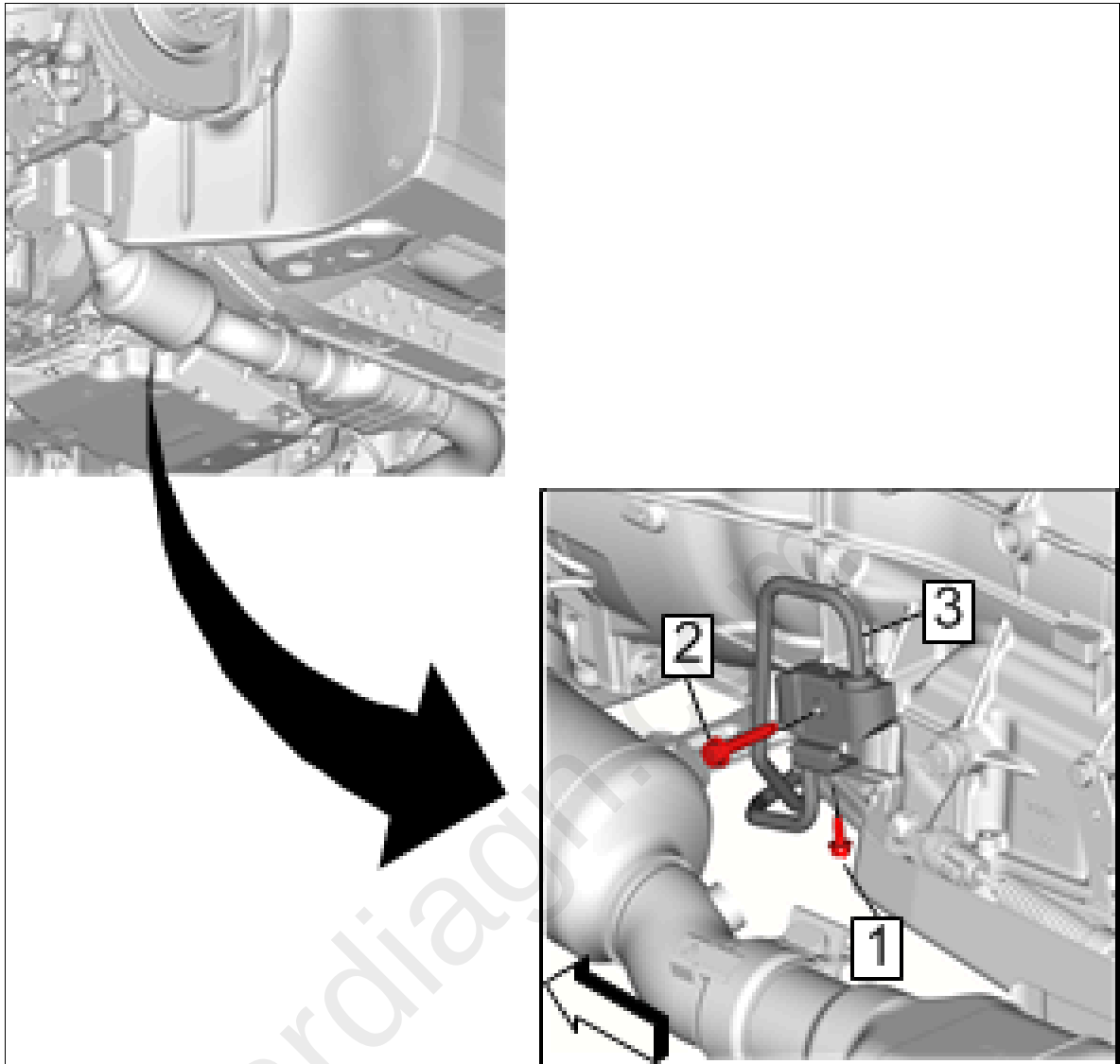
Fig 4: Transmission Fluid Cooler Pipe Plastic Retainer From Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

12. Remove the transmission fluid cooler pipe plastic retainer (1) from the transmission fluid cooler inlet and outlet pipe.
13. Remove Transmission Fluid Cooler Pipe Clip Bolt (2) at Engine Mount - Right Side.

Fig 5: Range Selector Lever Cable Heat Shield Bolt



Courtesy of GENERAL MOTORS COMPANY

14. Remove Range Selector Lever Cable Heat Shield Bolt (1)

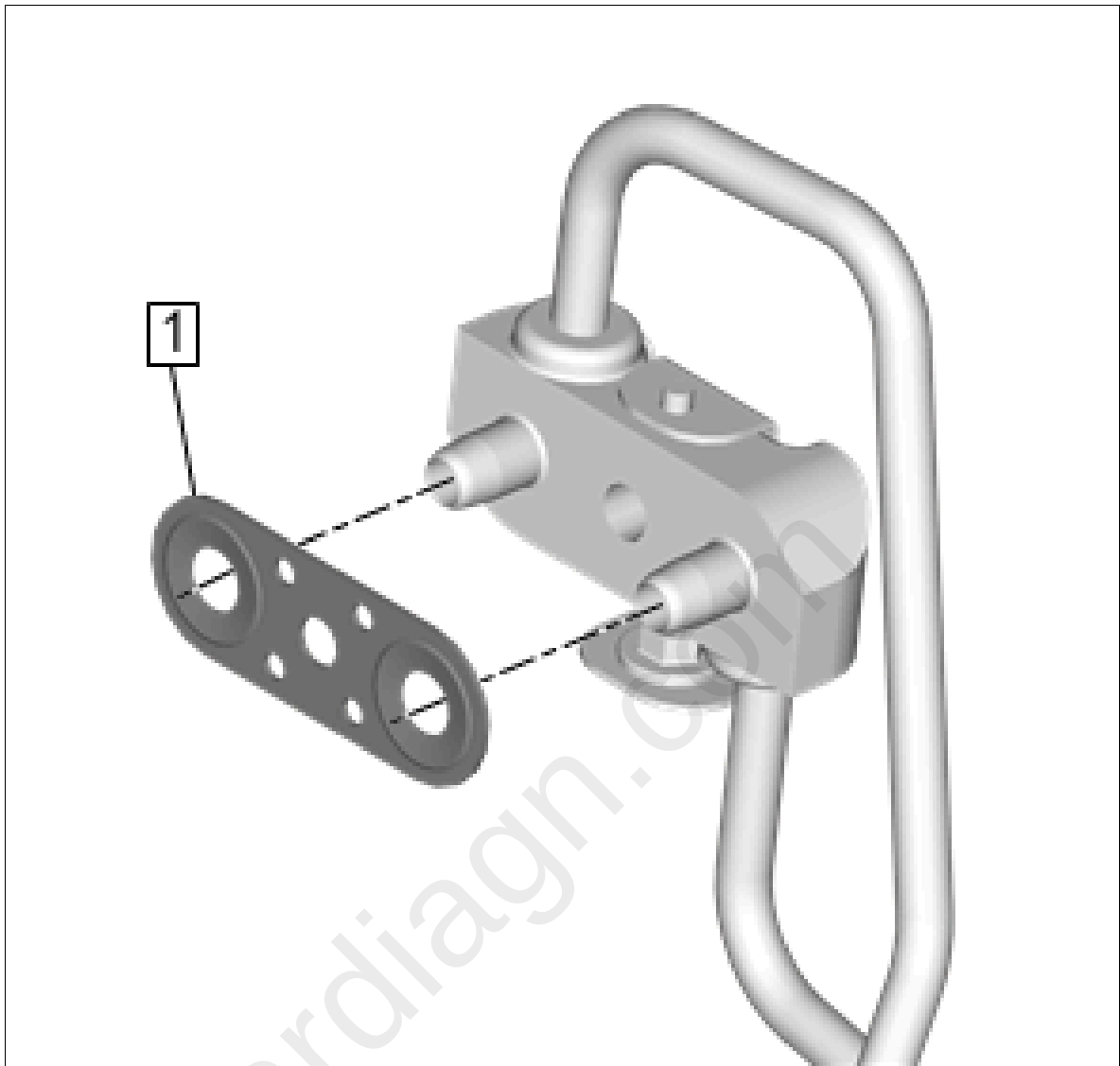
15. Remove Transmission Fluid Cooler Pipe Clip Bolt (2)

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

16. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (3) at Transmission.

Fig 6: Transmission Fluid Cooler Pipe Fitting Seal

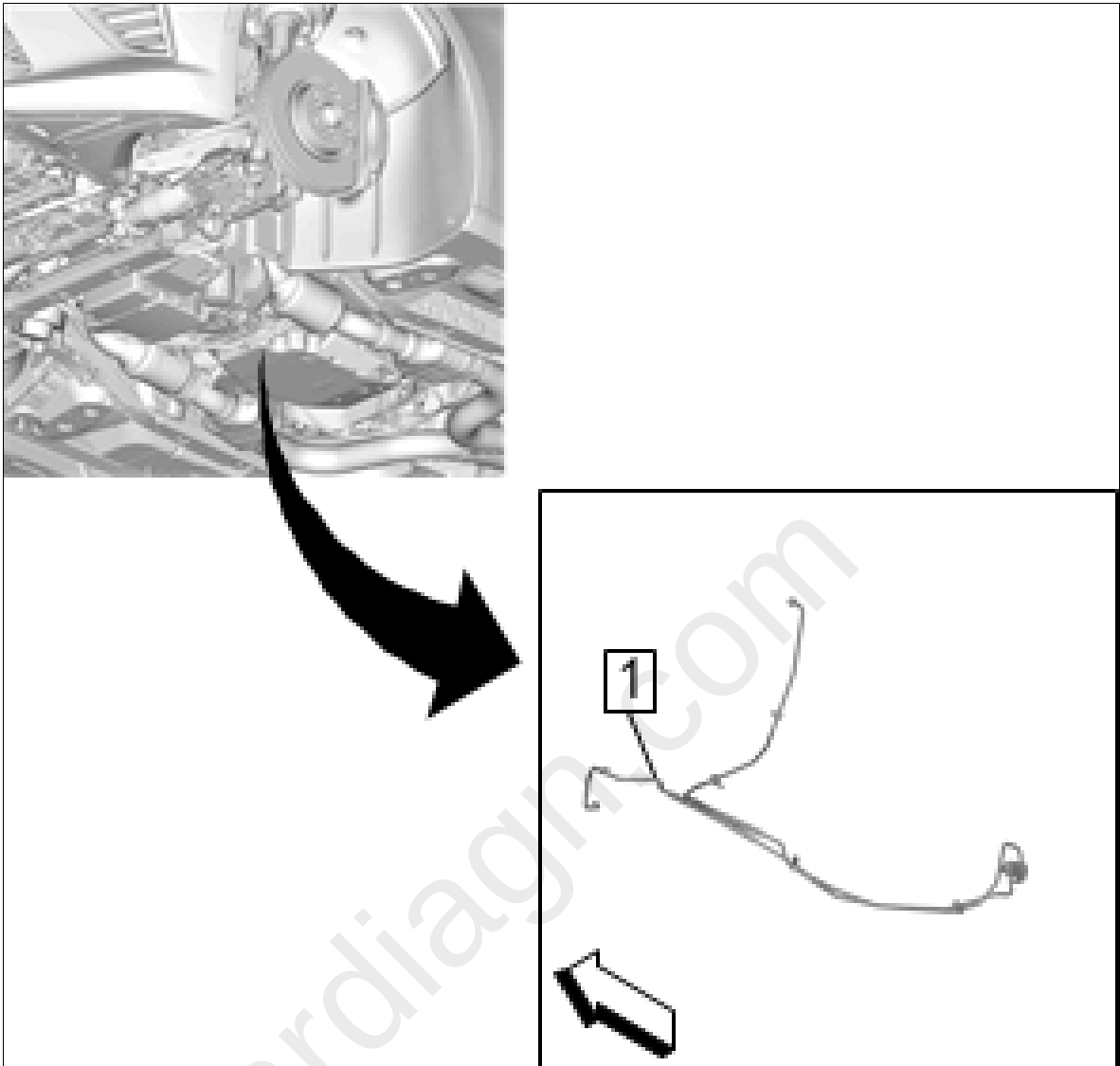


Courtesy of GENERAL MOTORS COMPANY

17. Remove Transmission Fluid Cooler Pipe Fitting Seal (1)

DISCARD the seal.

Fig 7: Transmission Fluid Cooler Inlet And Outlet Pipe

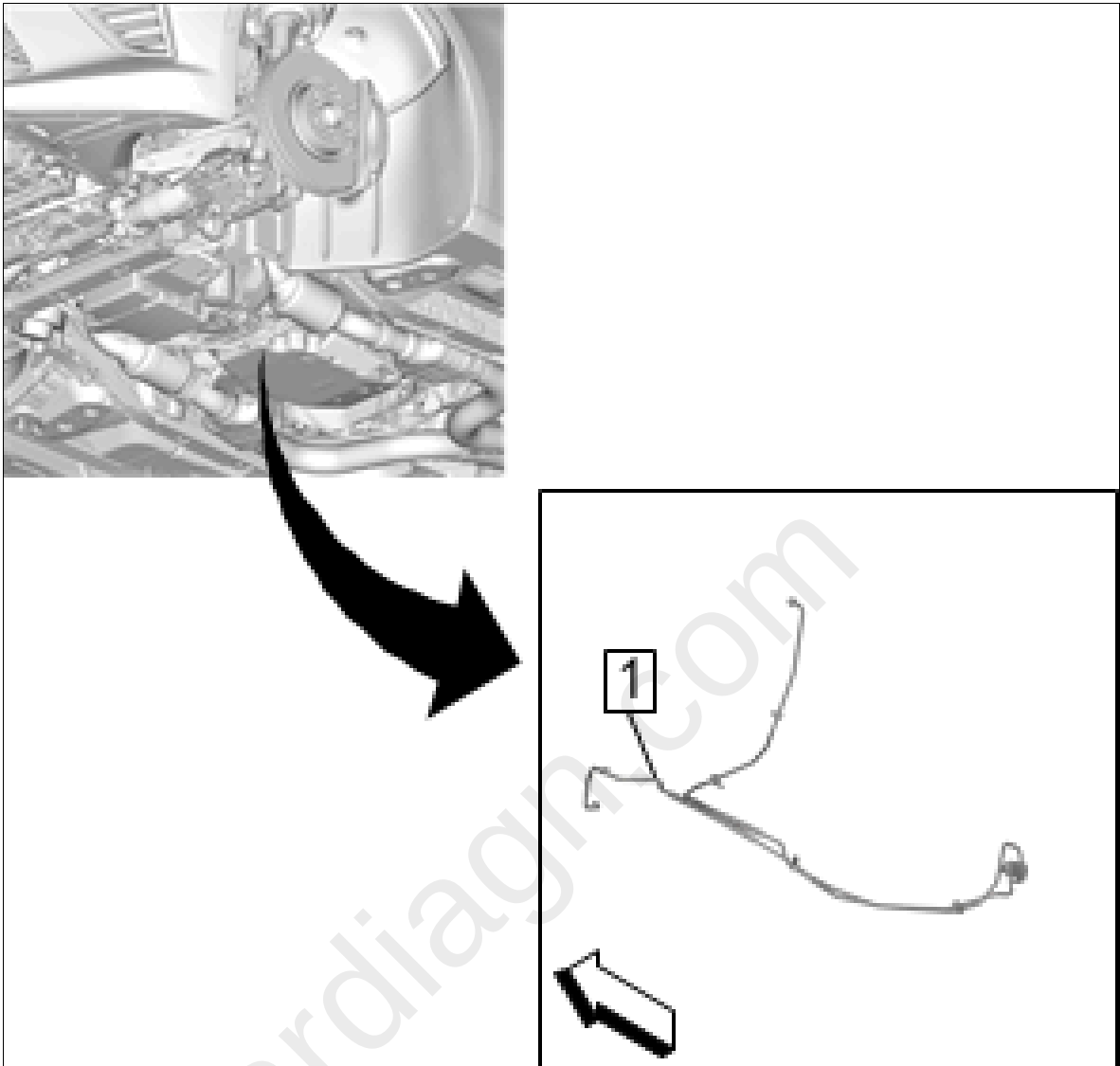


Courtesy of GENERAL MOTORS COMPANY

18. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
19. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LT1 WITH M5U, WITHOUT KNR) > INSTALLATION
PROCEDURE**

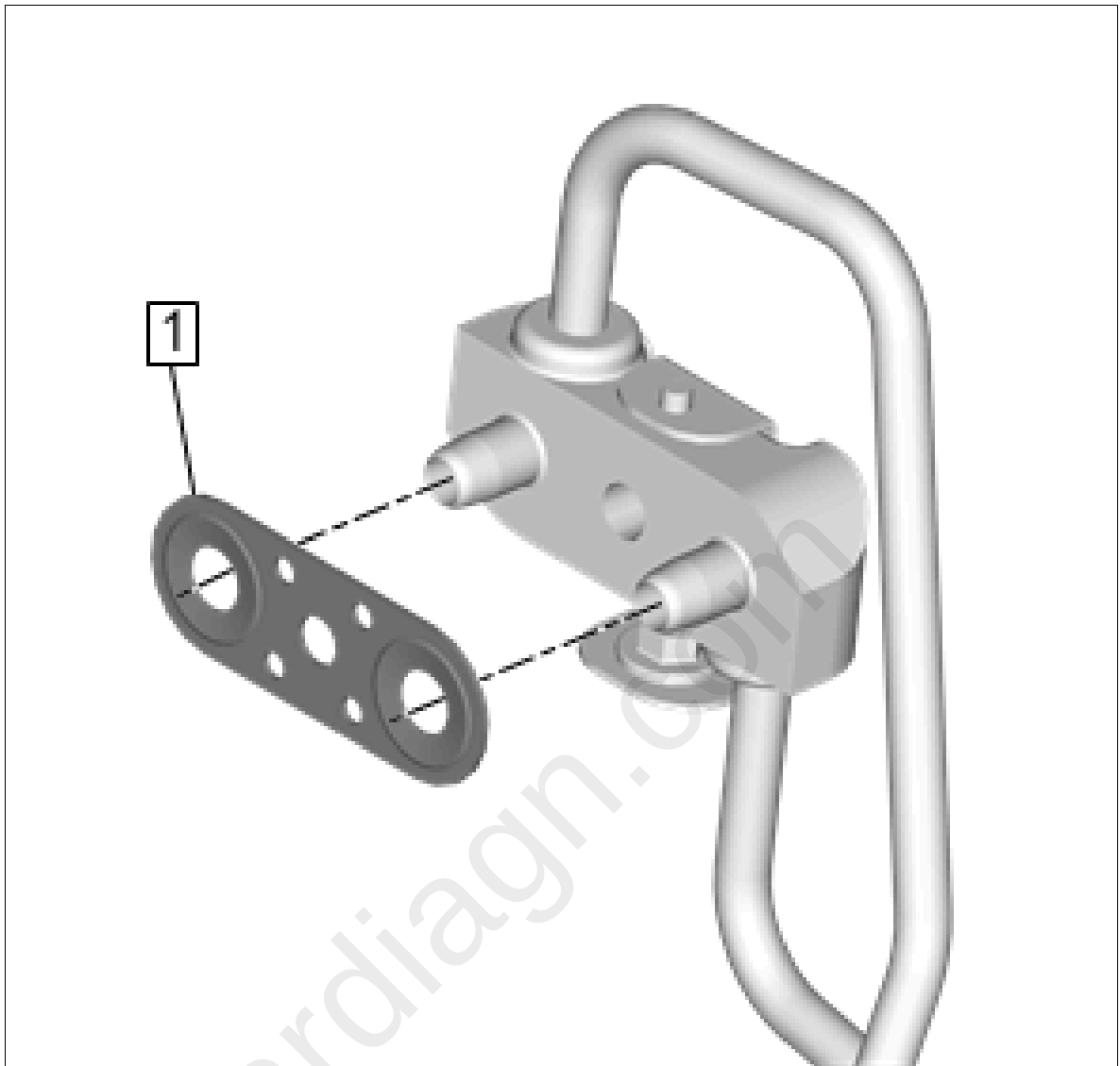
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

Fig 2: Transmission Fluid Cooler Pipe Fitting Seal

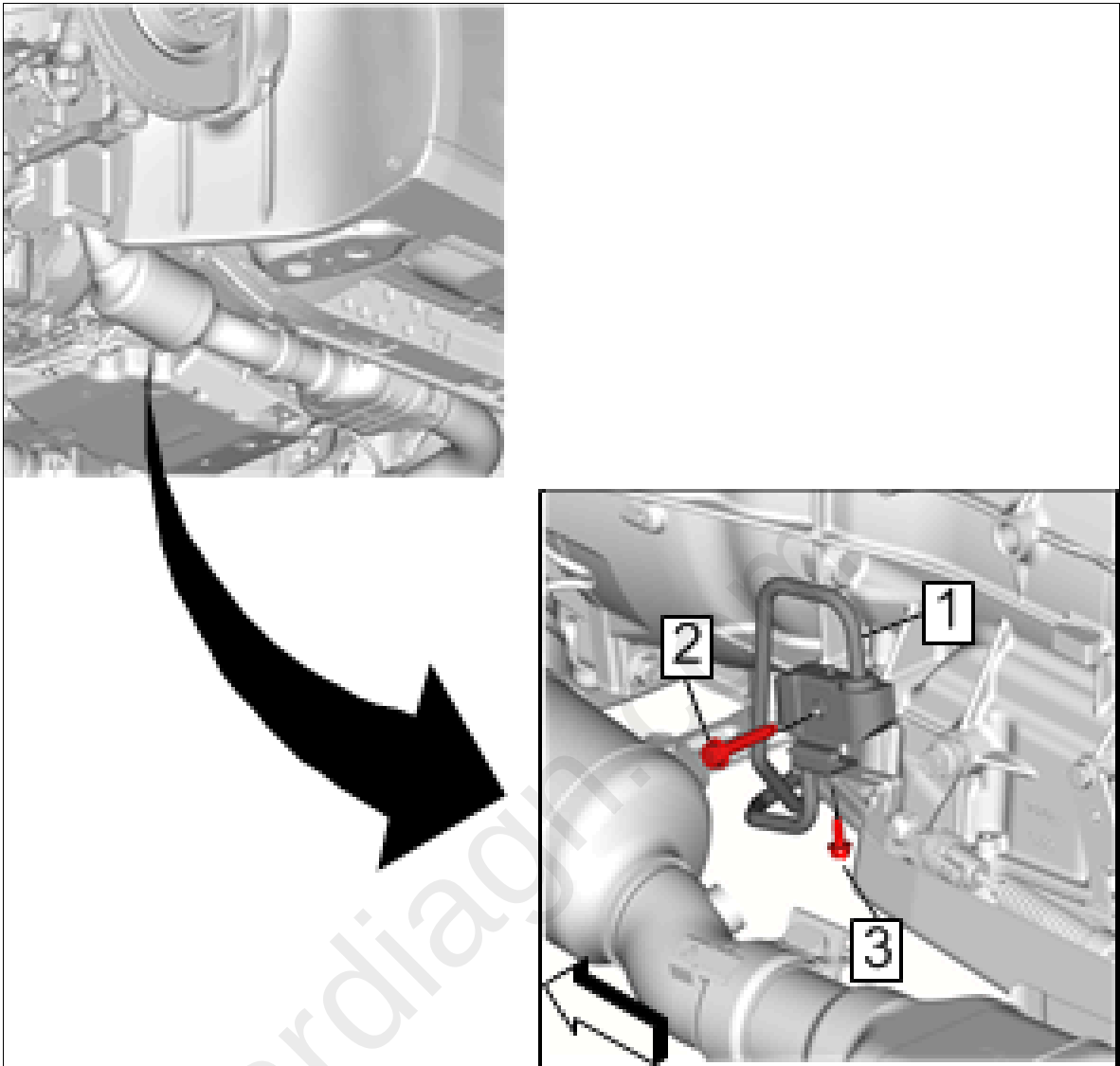


Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Seal (1)

Use a NEW seal.

Fig 3: Transmission Fluid Cooler Inlet and Outlet Pipe At Transmission



Courtesy of GENERAL MOTORS COMPANY

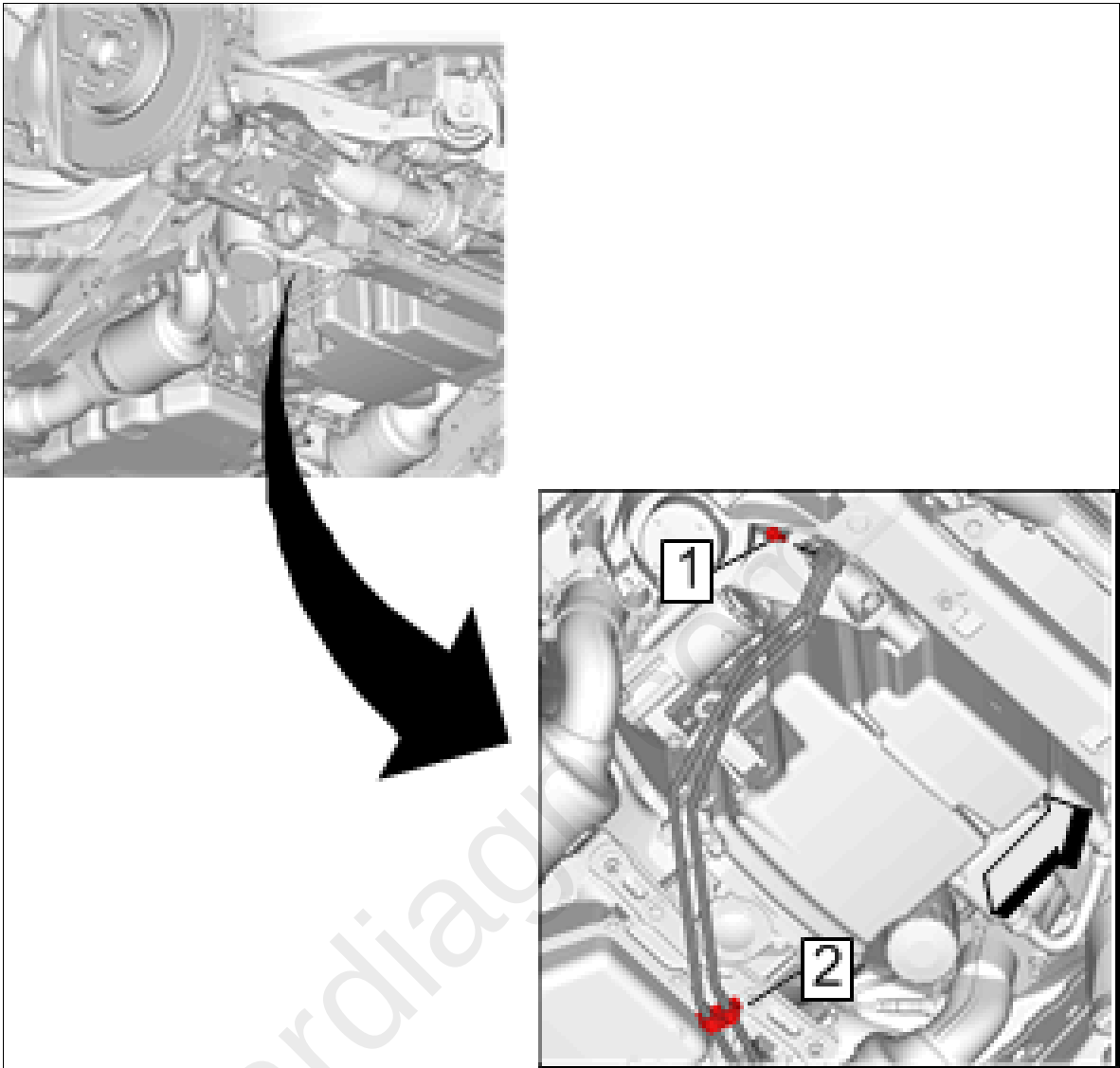
3. Install Transmission Fluid Cooler Inlet and Outlet Pipe (1) at Transmission.

 **CAUTION:**

Refer to Fastener Caution .

4. Install Transmission Fluid Cooler Pipe Clip Bolt (2) and tighten to 22 N.m (16 lb ft)
5. Install Range Selector Lever Cable Heat Shield Bolt (3) and tighten to 9 N.m (80 lb in)

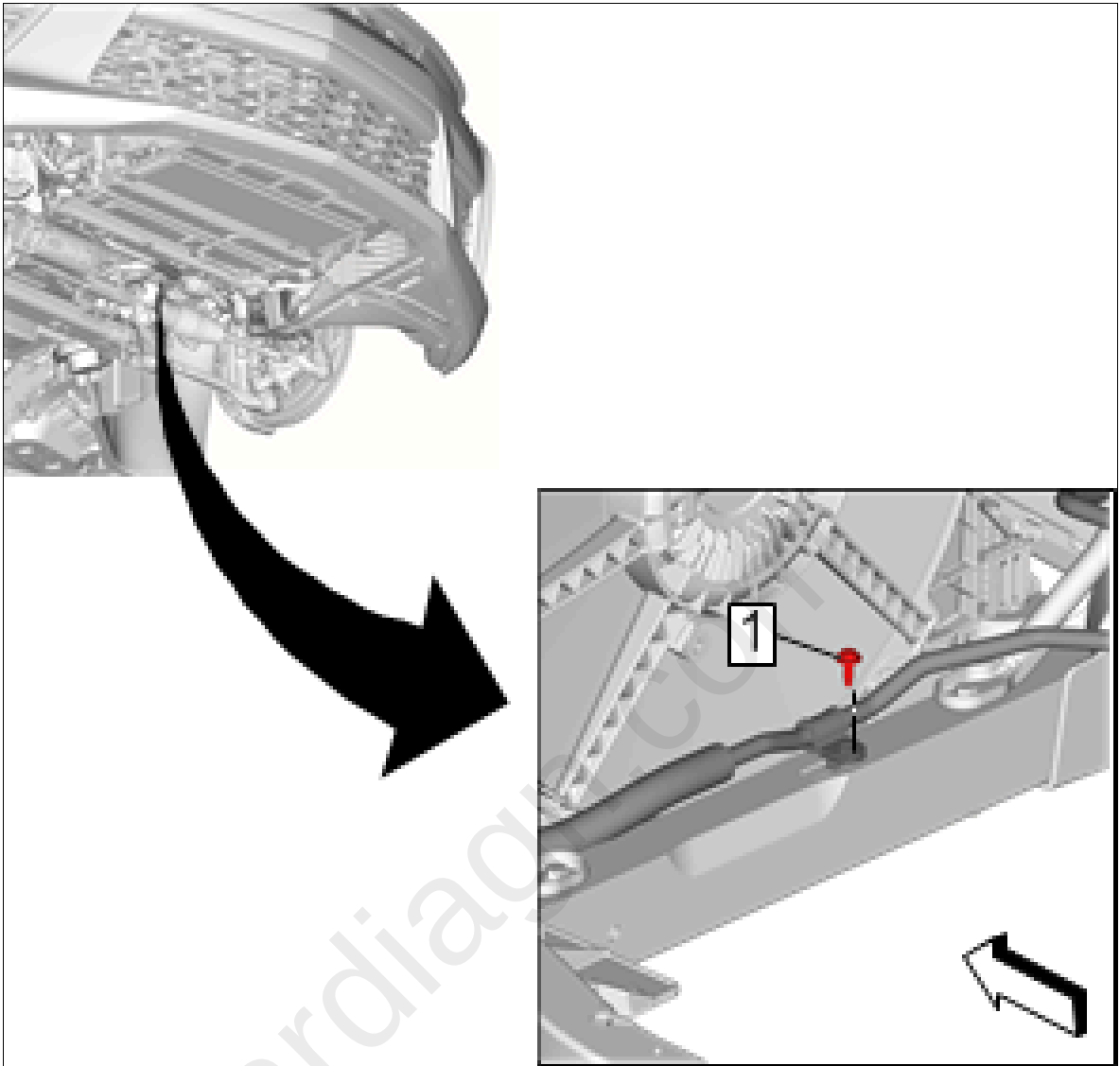
Fig 4: Transmission Fluid Cooler Pipe Clip Bolt At Engine Mount - Right Side



Courtesy of GENERAL MOTORS COMPANY

6. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Engine Mount - Right Side and tighten to 9 (80 lb in)
7. Install the transmission fluid cooler pipe plastic retainer (2) on the transmission fluid cooler inlet and outlet pipe.

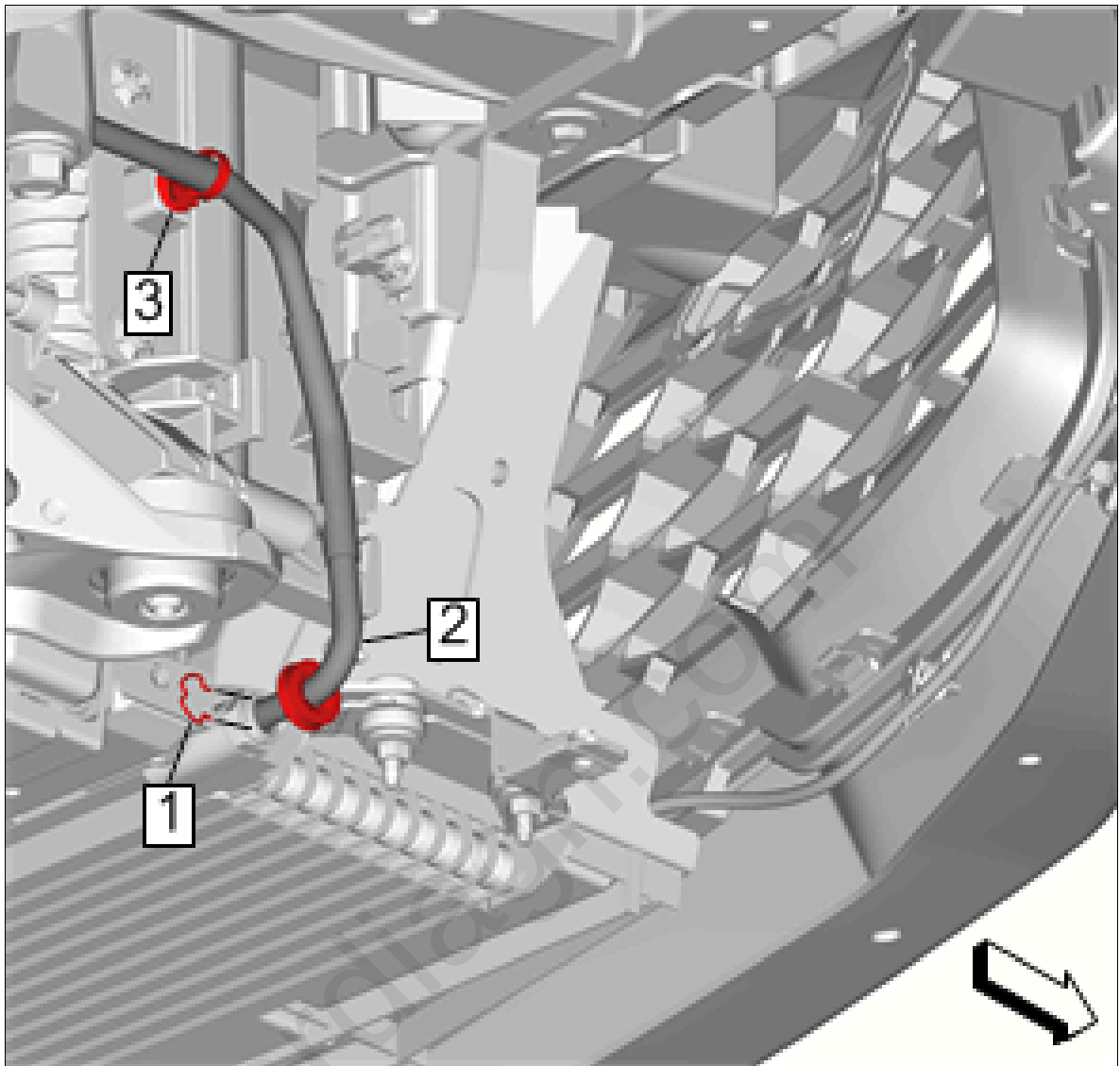
Fig 5: Transmission Fluid Cooler Pipe Clip Bolt At Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

8. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle and tighten to 9 N.m (80 lb in)
9. Install Front Cradle Shear Plate Replacement

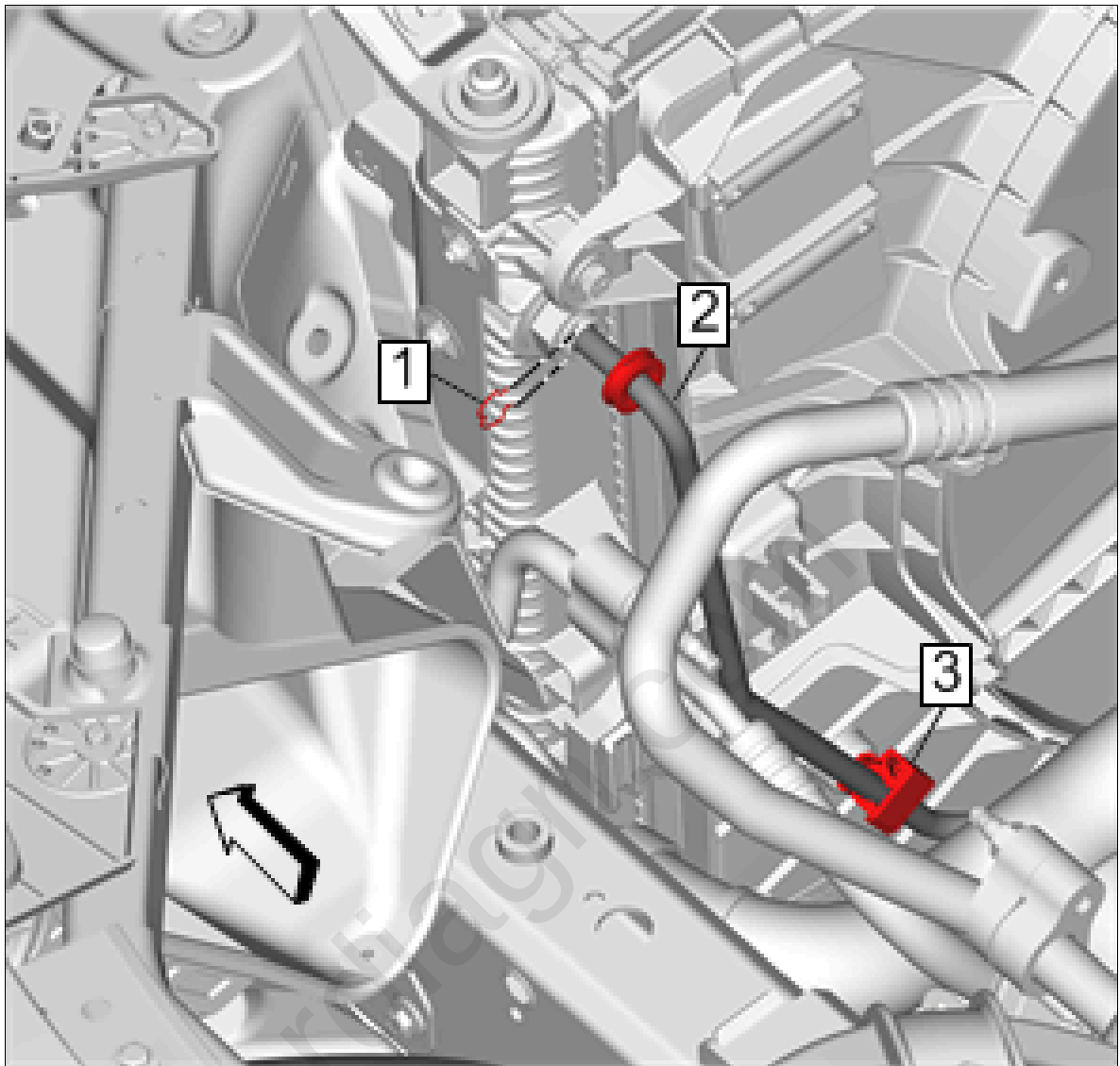
Fig 6: Transmission Fluid Cooler Pipe Retaining Clip At Transmission Fluid Auxiliary Cooler



Courtesy of GENERAL MOTORS COMPANY

10. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
11. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission Fluid Auxiliary Cooler.
12. Install the transmission fluid cooler pipe plastic retainer (3) in the fan shroud.
13. Install Front Brake Rotor Cooling Duct Replacement (J6G) - Right Side
14. Install Front Compartment Air Deflector Replacement (Coupe - LT1)

Fig 7: Transmission Fluid Cooler Pipe Retaining Clip At Radiator



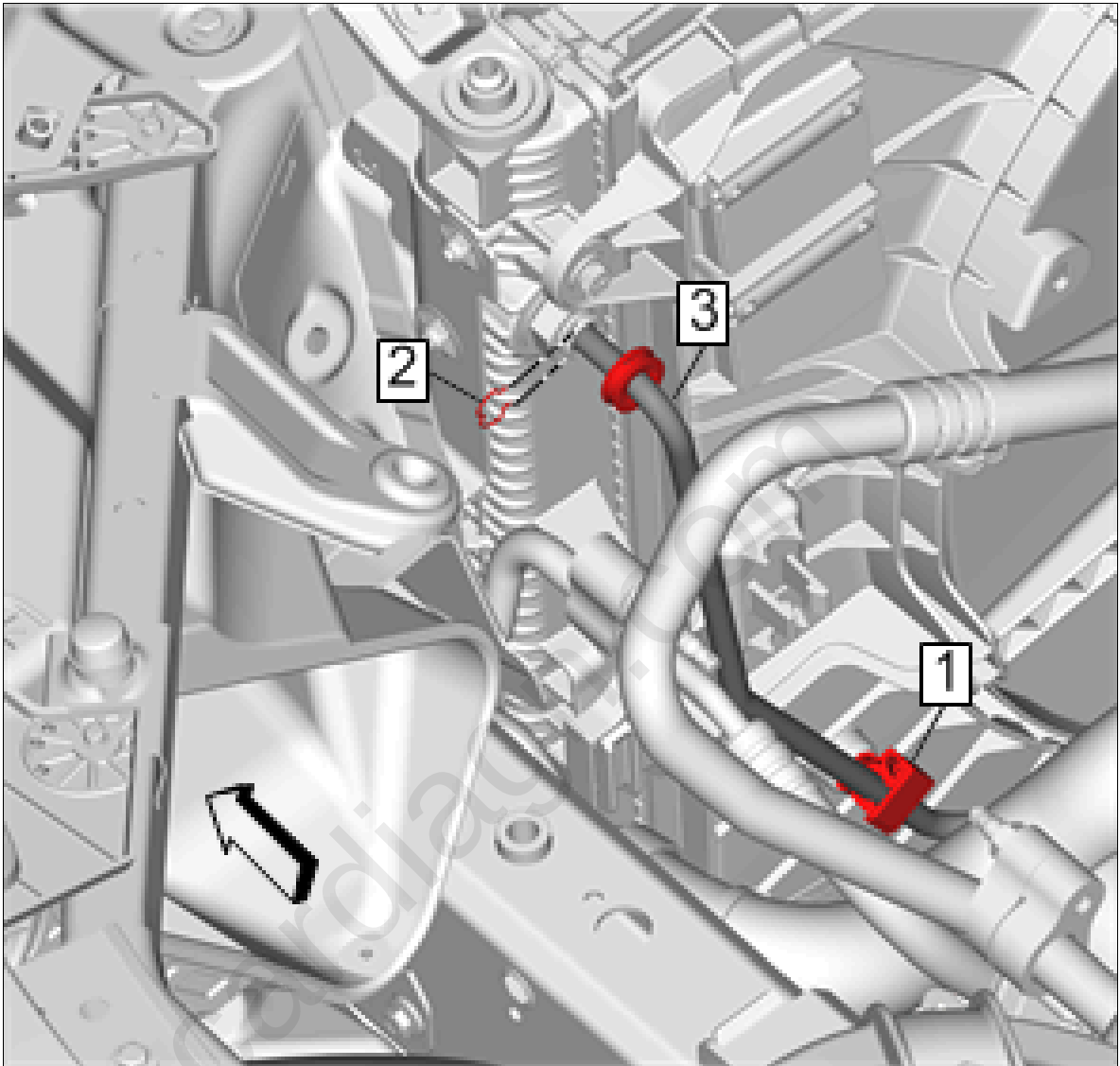
Courtesy of GENERAL MOTORS COMPANY

15. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
16. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
17. Close the transmission fluid cooler pipe clip (3).
18. Install Air Cleaner Assembly Replacement
19. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
20. Inspect for transmission fluid leaks.

PIPE REPLACEMENT (LT1 WITH MM6, WITHOUT KNR) > REMOVAL PROCEDURE

1. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Clip



Courtesy of GENERAL MOTORS COMPANY

2. Open the transmission fluid cooler pipe clip (1).
3. Remove Transmission Fluid Cooler Pipe Retaining Clip (2) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

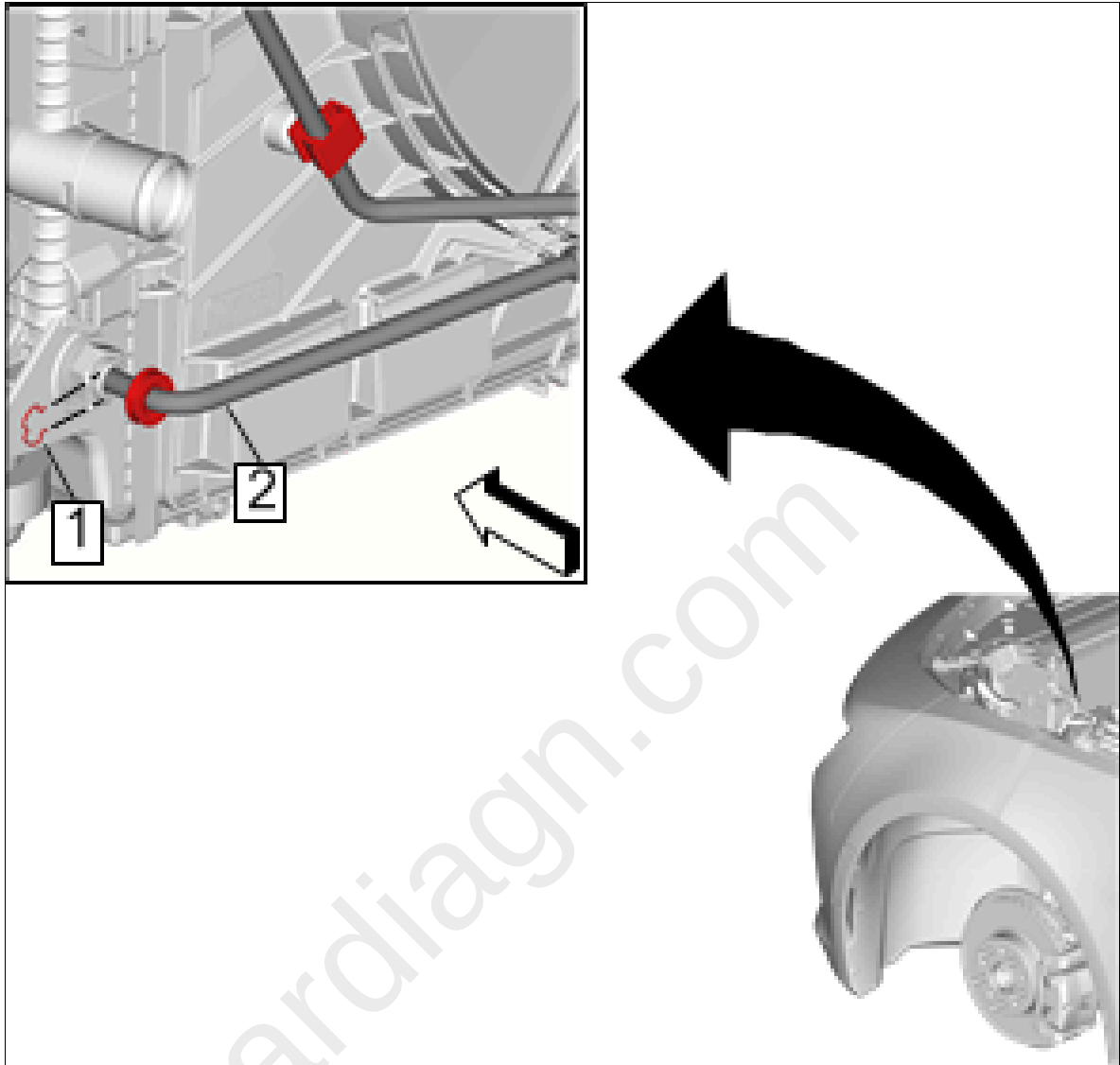
 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (3) at Radiator.

5. Remove Engine Coolant Fan Replacement (LT1 V18)

Fig 2: Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

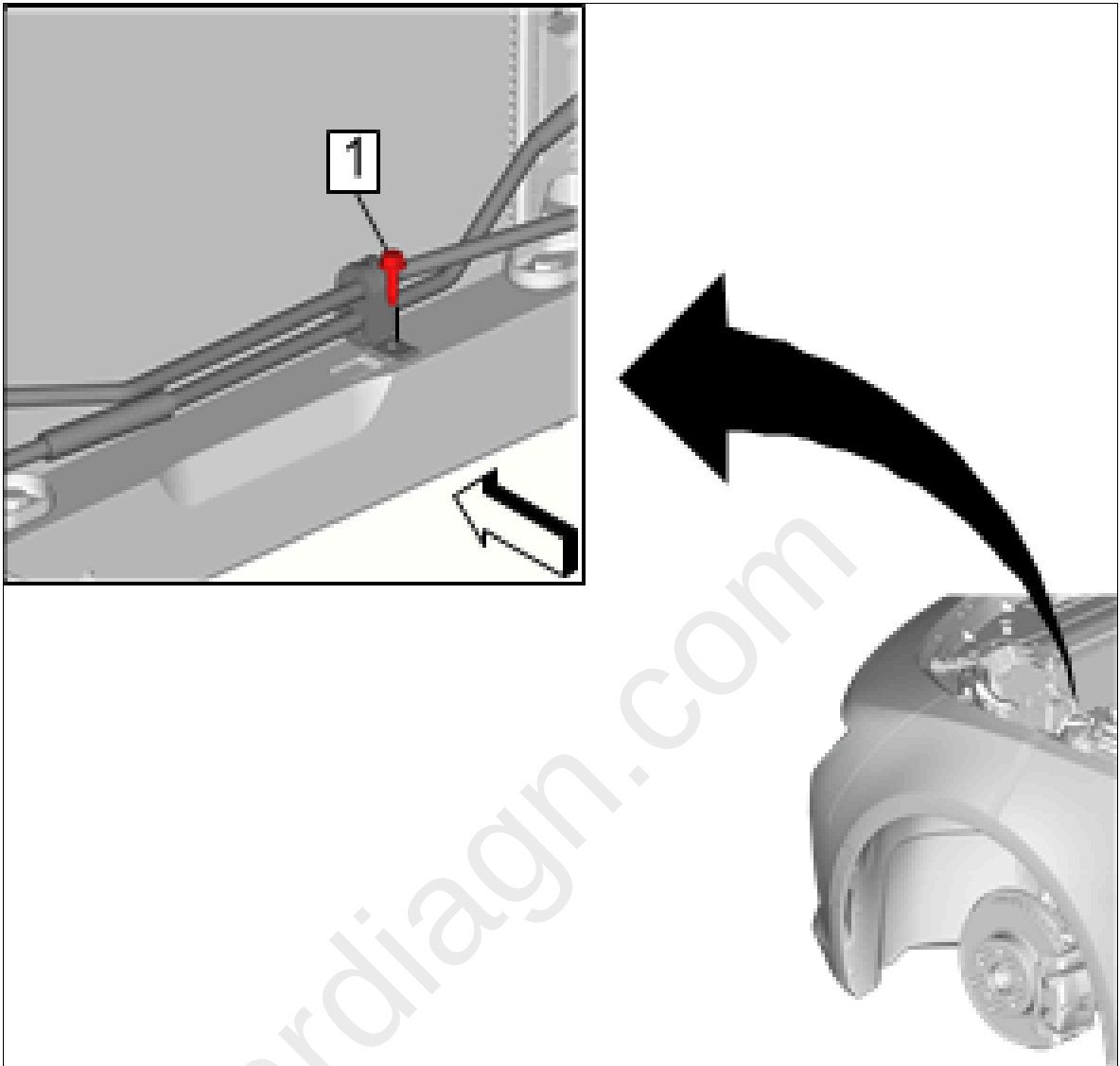
6. Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.

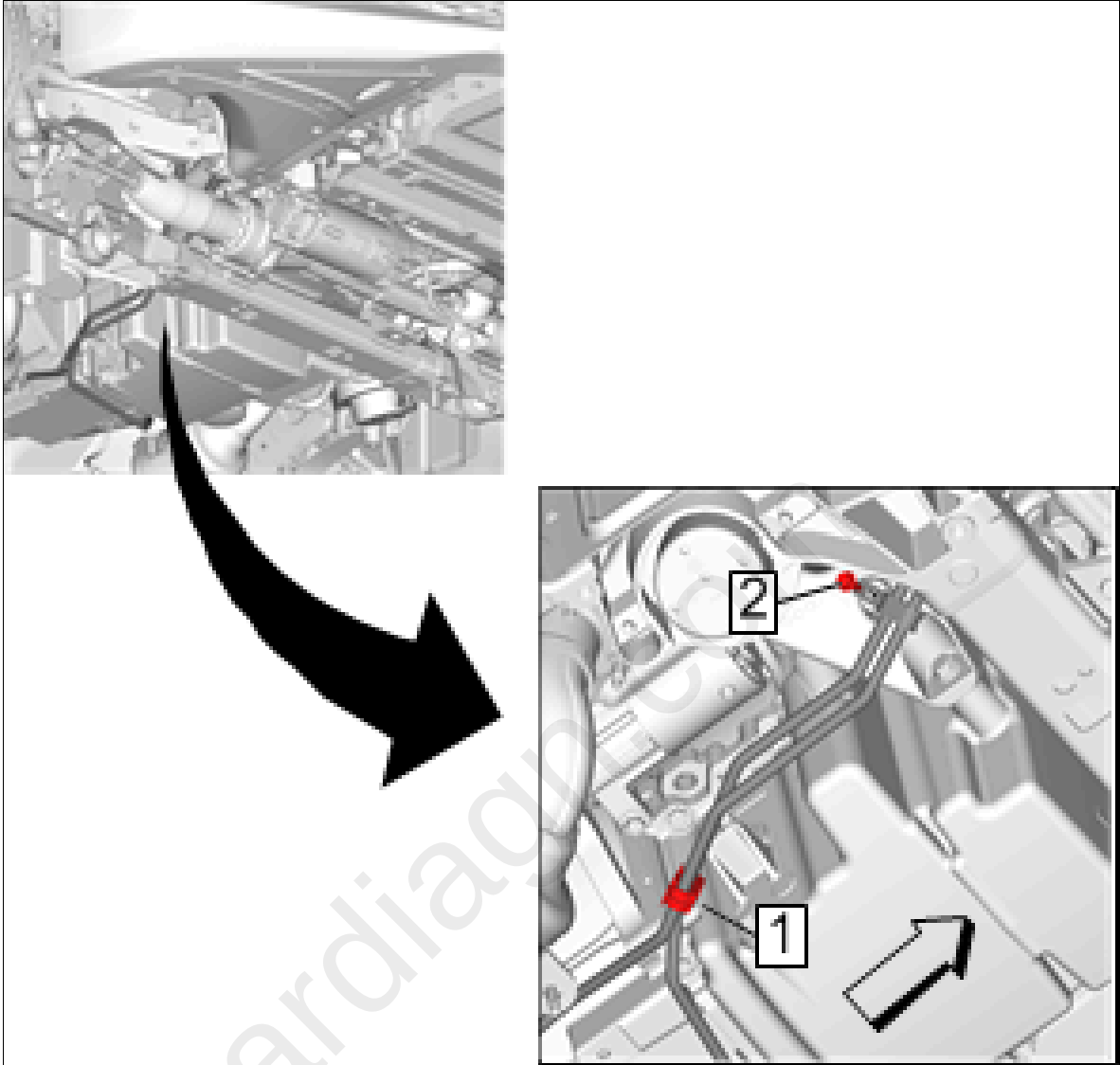
Fig 3: Transmission Fluid Cooler Pipe Clip Bolt At Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle.
9. Remove Front Cradle Shear Plate Replacement
10. Remove Catalytic Converter Brace Bracket Replacement (LT1)

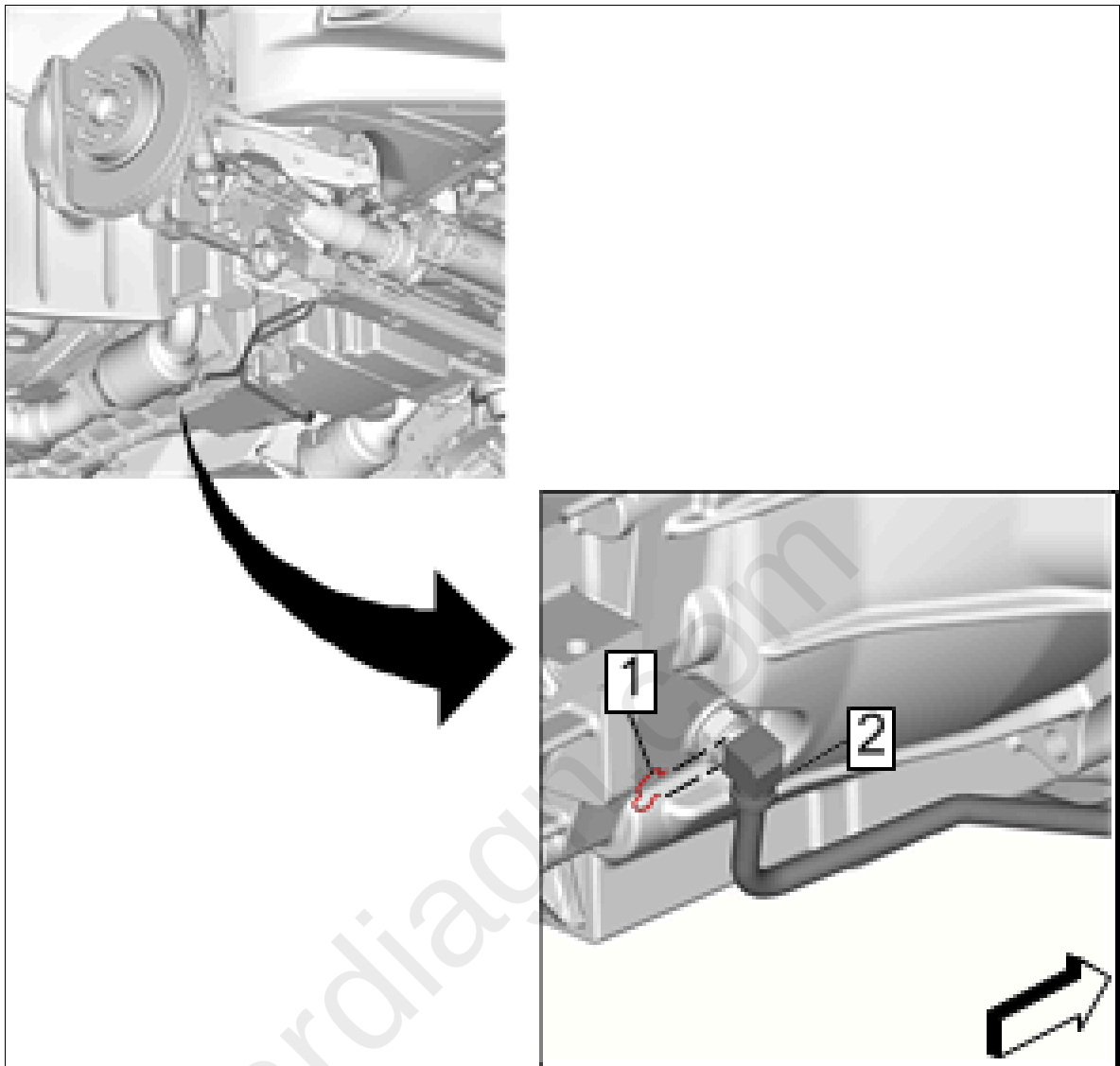
Fig 4: Transmission Fluid Cooler Pipe Plastic Retainer From Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

11. Remove the transmission fluid cooler pipe plastic retainer (1) from the transmission fluid cooler inlet and outlet pipe.
12. Remove Transmission Fluid Cooler Pipe Clip Bolt (2) at Engine Mount - Right Side.

Fig 5: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission - Right Side



Courtesy of GENERAL MOTORS COMPANY

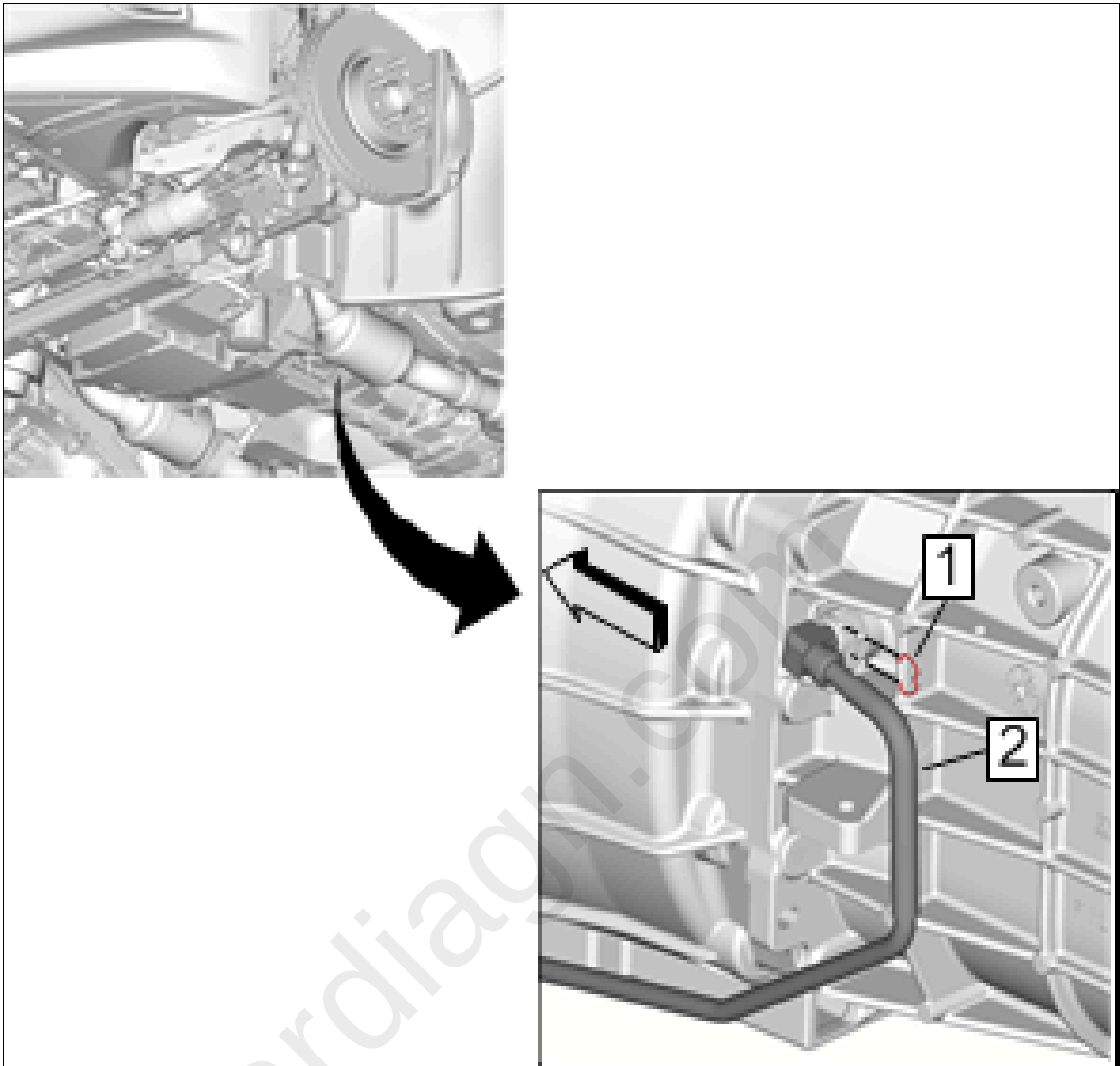
13. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Right Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

14. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Right Side.

Fig 6: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission - Left Side



Courtesy of GENERAL MOTORS COMPANY

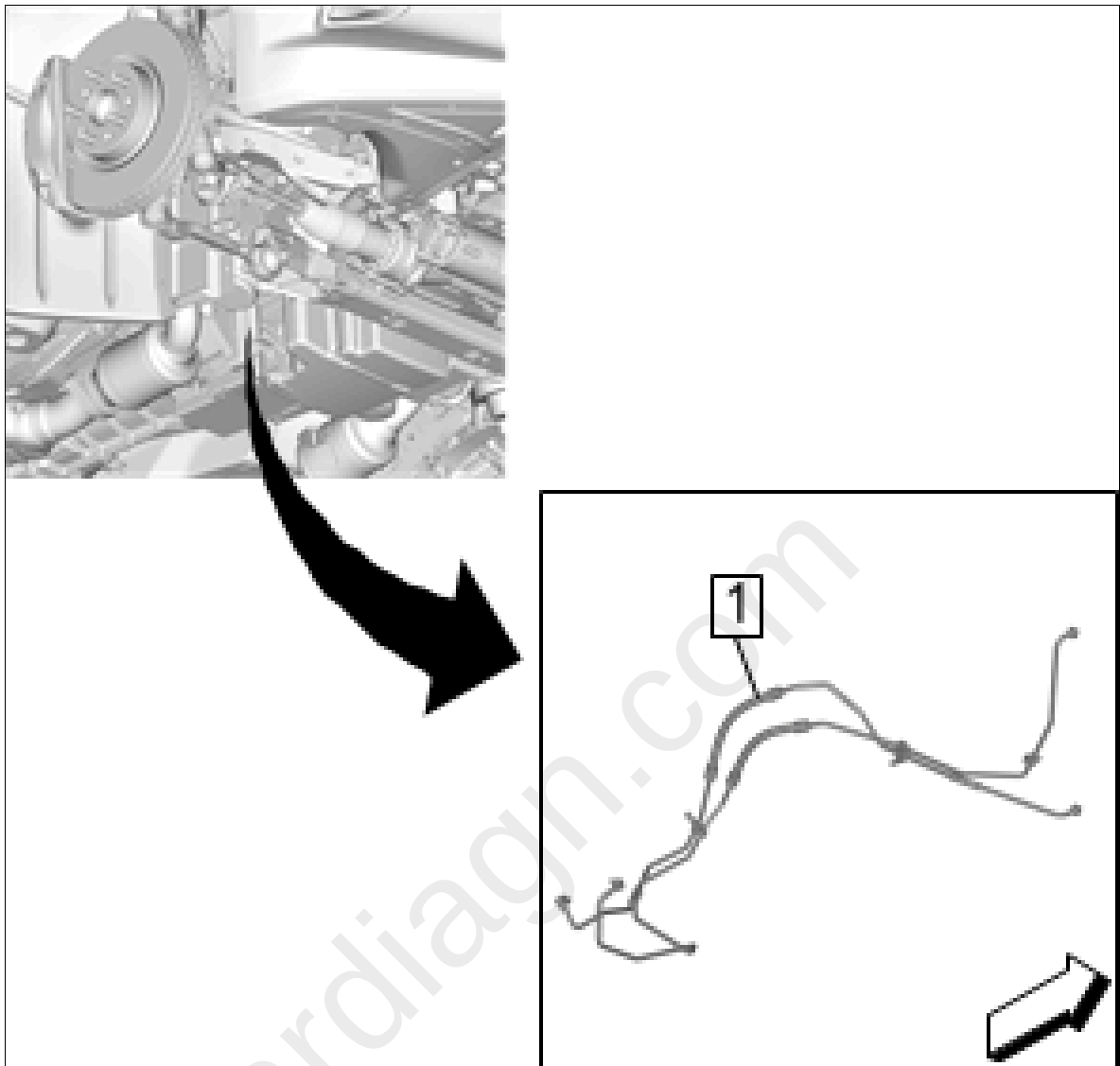
15. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Left Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

16. Remove Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Left Side<.

Fig 7: Transmission Fluid Cooler Inlet And Outlet Pipe

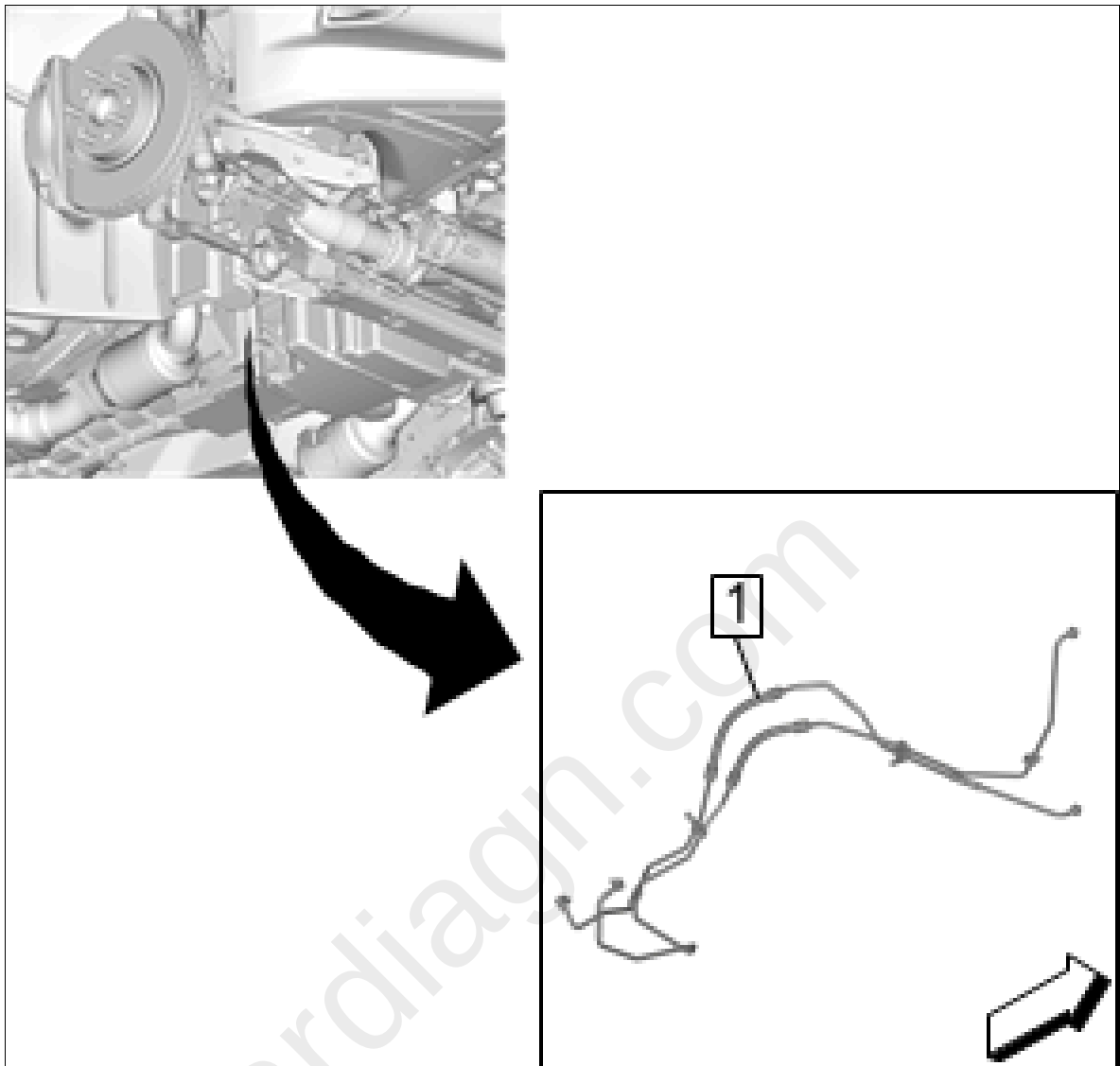


Courtesy of GENERAL MOTORS COMPANY

17. Remove the transmission fluid cooler inlet and outlet pipe (1) from the vehicle.
18. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER INLET AND OUTLET
PIPE REPLACEMENT (LT1 WITH MM6, WITHOUT KNR) > INSTALLATION
PROCEDURE**

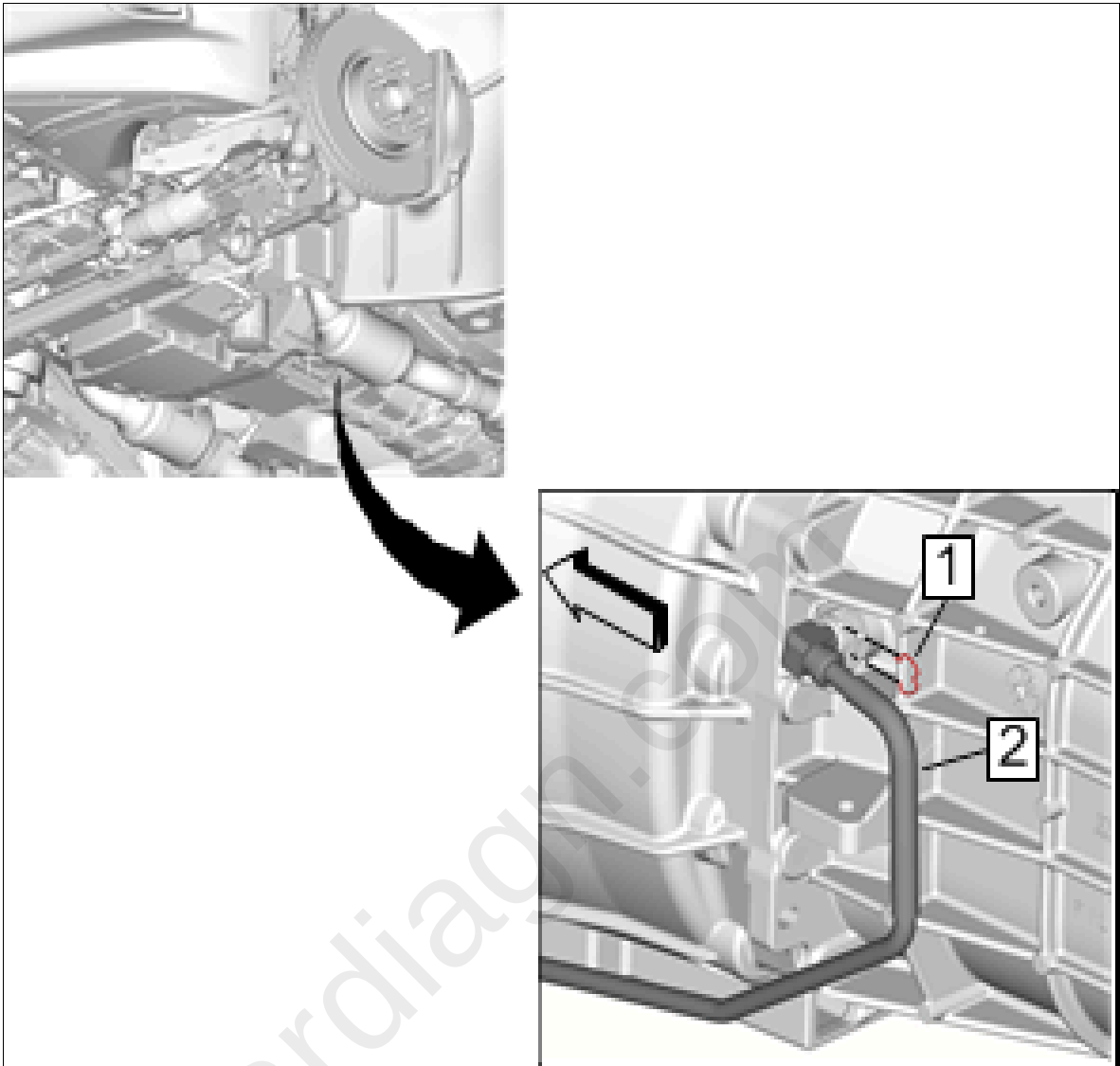
Fig 1: Transmission Fluid Cooler Inlet And Outlet Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Position the transmission fluid cooler inlet and outlet pipe (1) on the vehicle.

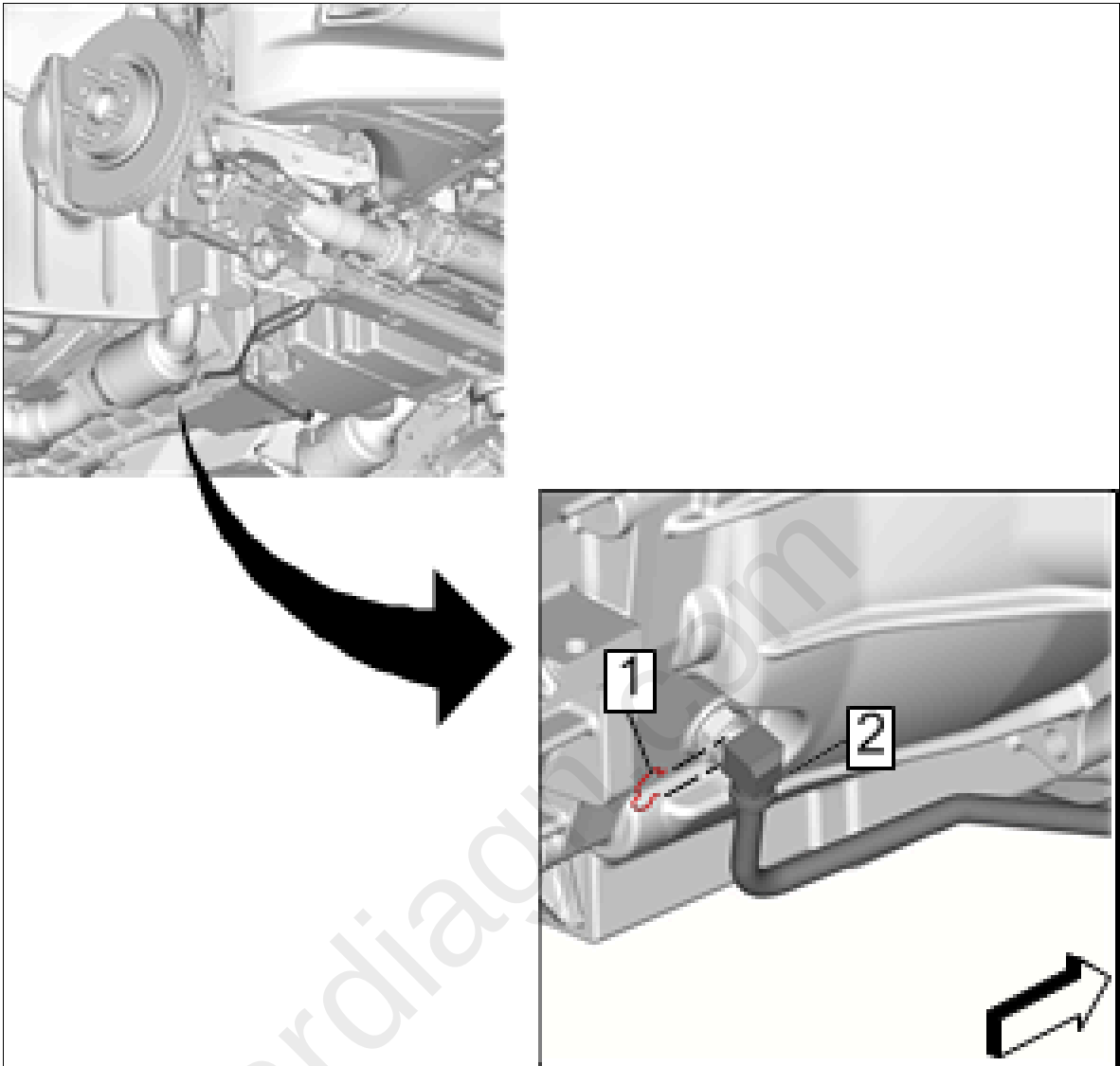
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission - Left Side



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Left Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Left Side.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission - Right Side



Courtesy of GENERAL MOTORS COMPANY

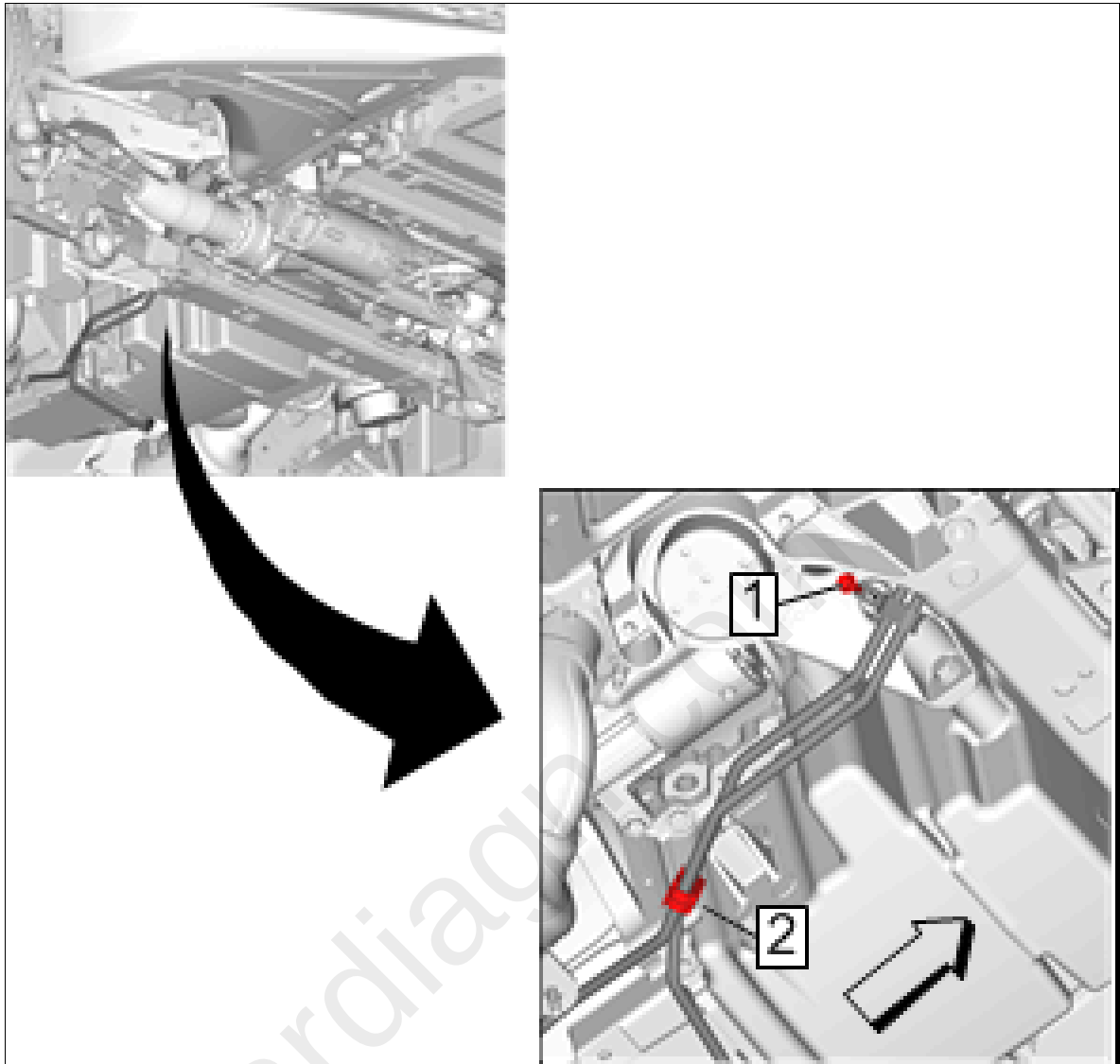
4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission-Right Side - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Transmission-Right Side.

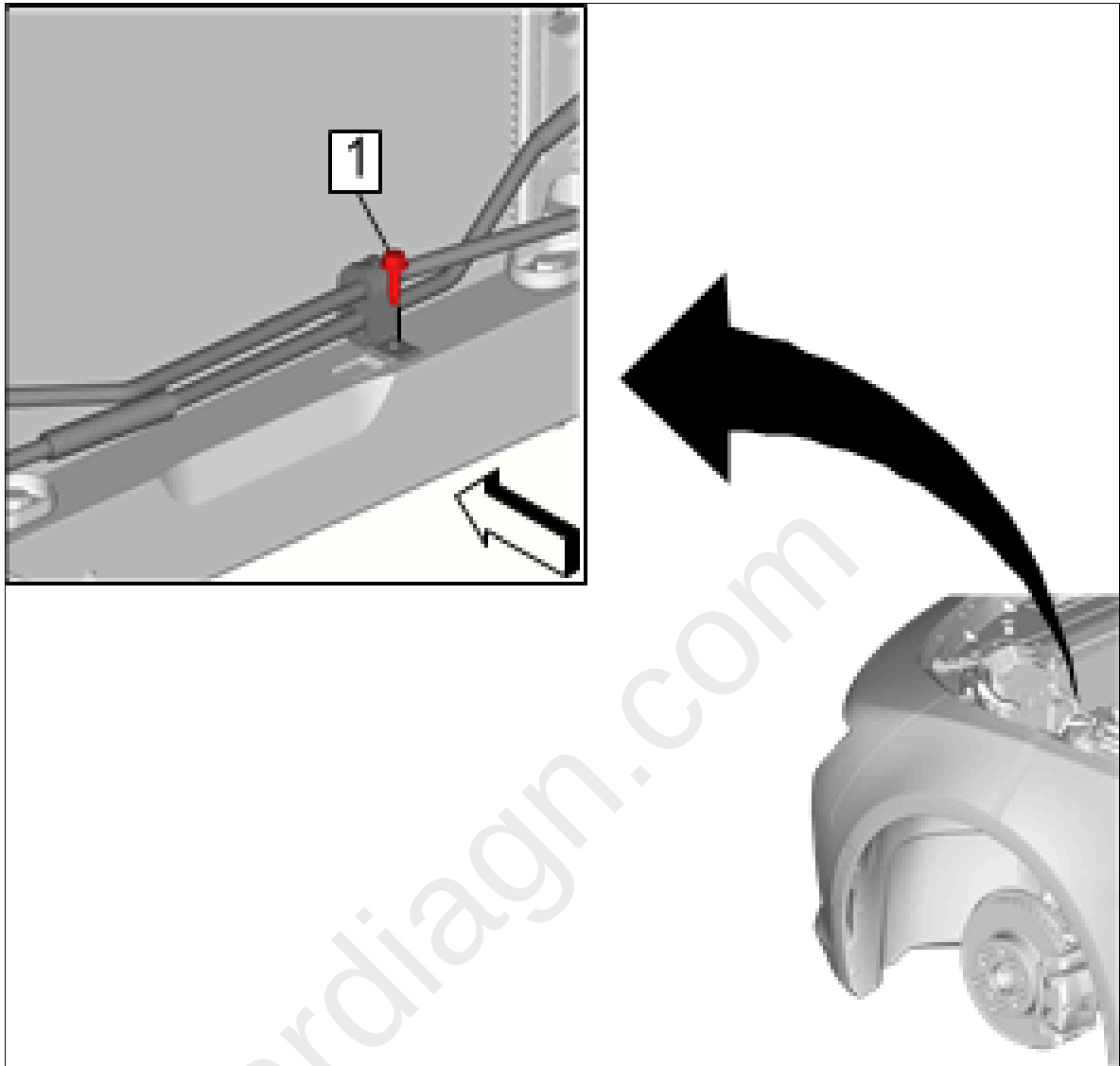
Fig 4: Transmission Fluid Cooler Pipe Clip Bolt At Engine Mount - Right Side



Courtesy of GENERAL MOTORS COMPANY

6. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Engine Mount-Right Side and tighten to 9 N.m (80 lb in)
7. Install the transmission fluid cooler pipe plastic retainer (2) on the transmission fluid cooler inlet and outlet pipe.
8. Install Catalytic Converter Brace Bracket Replacement (LT1)
9. Install Front Cradle Shear Plate Replacement

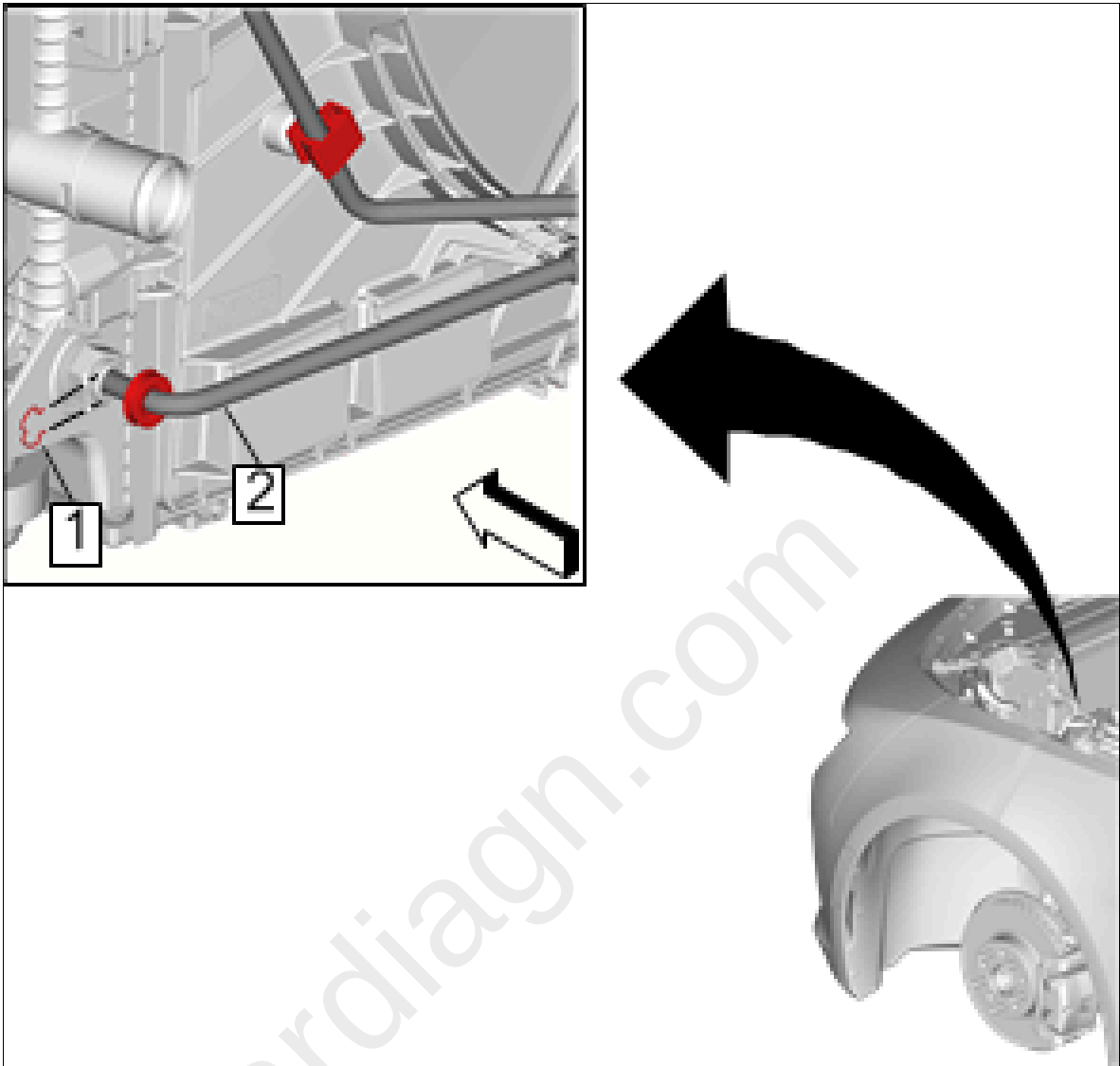
Fig 5: Transmission Fluid Cooler Pipe Clip Bolt At Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

10. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle and tighten to 9 N.m (80 lb in)
11. Install Front Cradle Shear Plate Replacement

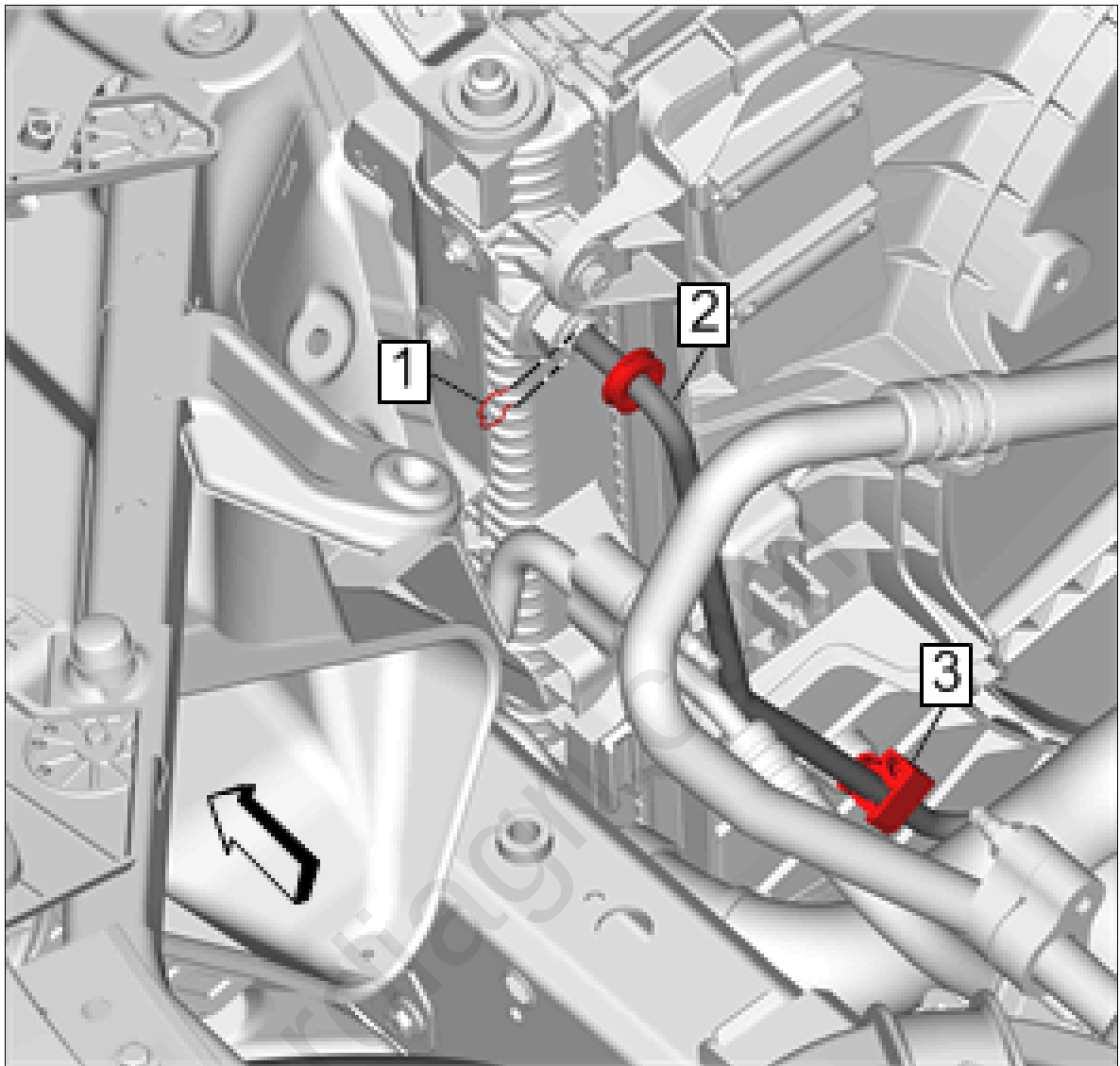
Fig 6: Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

12. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
13. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
14. Install Engine Coolant Fan Replacement (LT1 V18)

Fig 7: Transmission Fluid Cooler Pipe Retaining Clip At Radiator



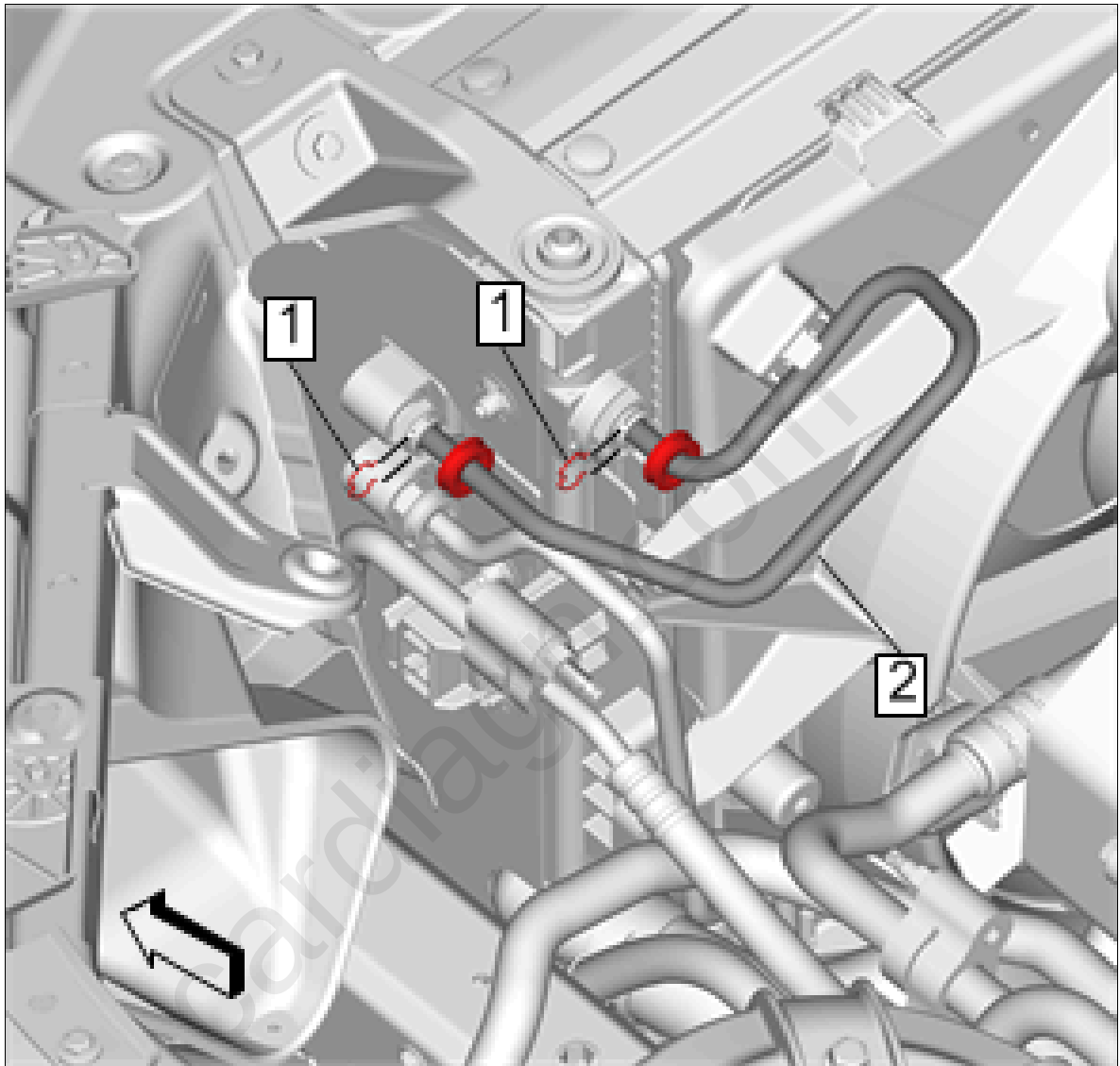
Courtesy of GENERAL MOTORS COMPANY

15. Install Transmission Fluid Cooler Pipe Retaining Clip (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
16. Install Transmission Fluid Cooler Inlet and Outlet Pipe (2) at Radiator.
17. Engine Coolant Fan Replacement (LT1 V18)
18. Close the transmission fluid cooler pipe clip (3).
19. Install Air Cleaner Assembly Replacement
20. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)
21. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LGX WITH M5T, WITH V03) > REMOVAL PROCEDURE

1. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

2. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Pipe (2) at Radiator.

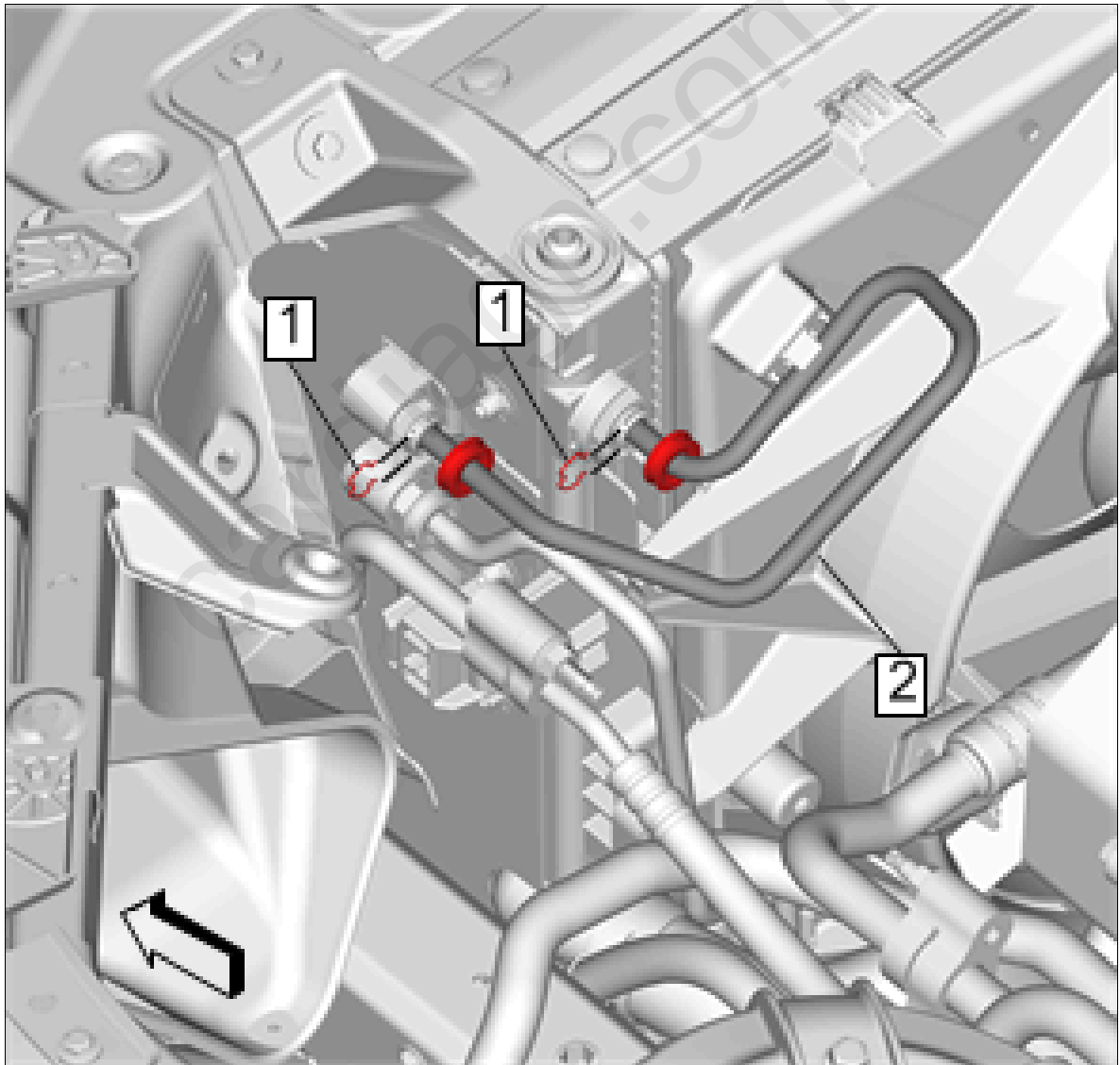
 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (2) at Air Conditioning Condenser.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LGX WITH M5T, WITH V03) > INSTALLATION PROCEDURE

Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



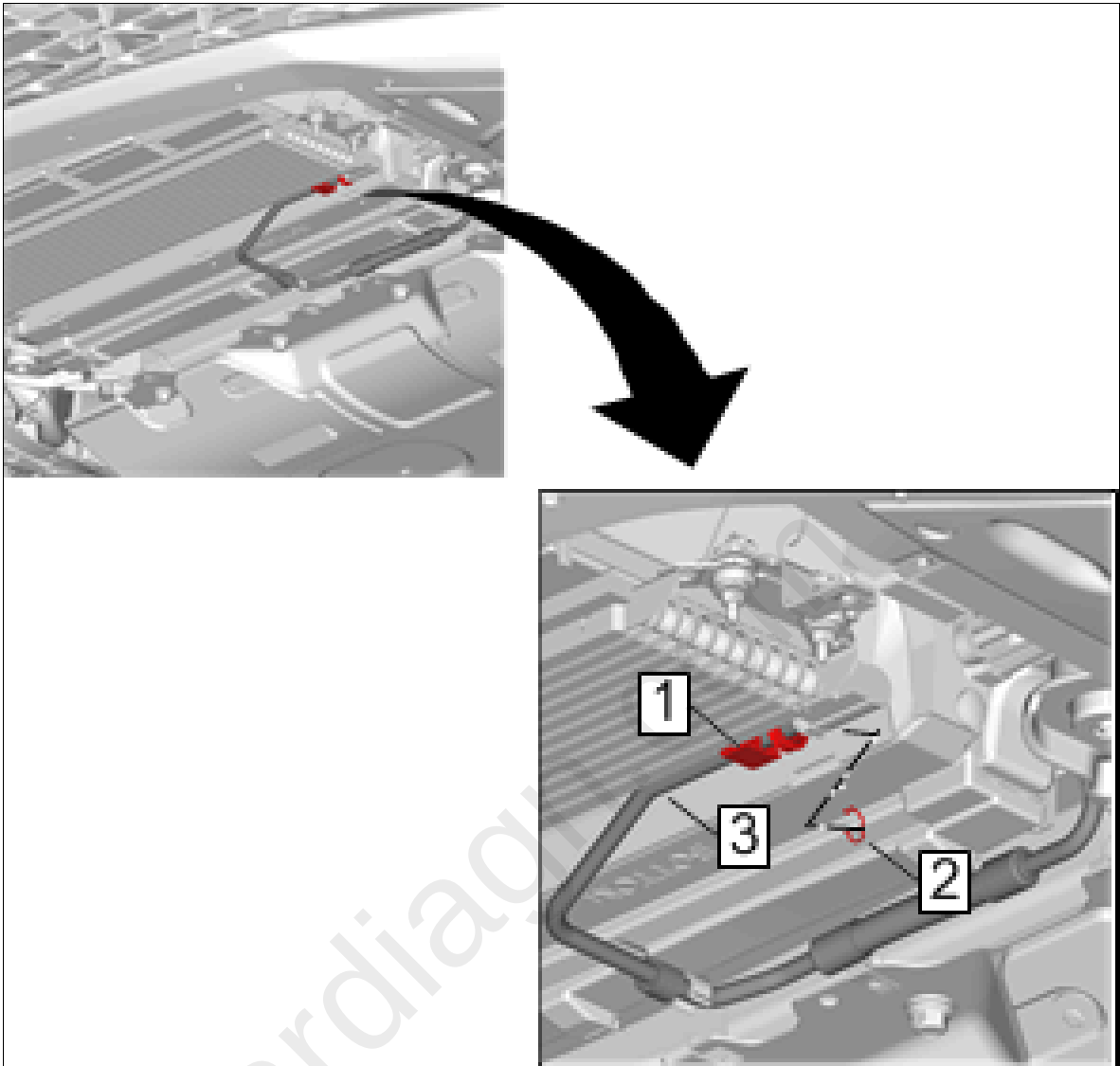
Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (2) at Radiator.
4. Install Transmission Fluid Cooler Pipe (2) at Air Conditioning Condenser.
5. Install Air Cleaner Assembly Replacement
6. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
7. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LT1 WITH M5U OR MM6, WITH KNR, ATOC JUMPER) > REMOVAL PROCEDURE

1. Remove Engine Coolant Fan Replacement (LT1 V18)
2. Remove Front Compartment Air Deflector Replacement (Coupe - LT1)

Fig 1: Transmission Fluid Cooler Pipe Clip



Courtesy of GENERAL MOTORS COMPANY

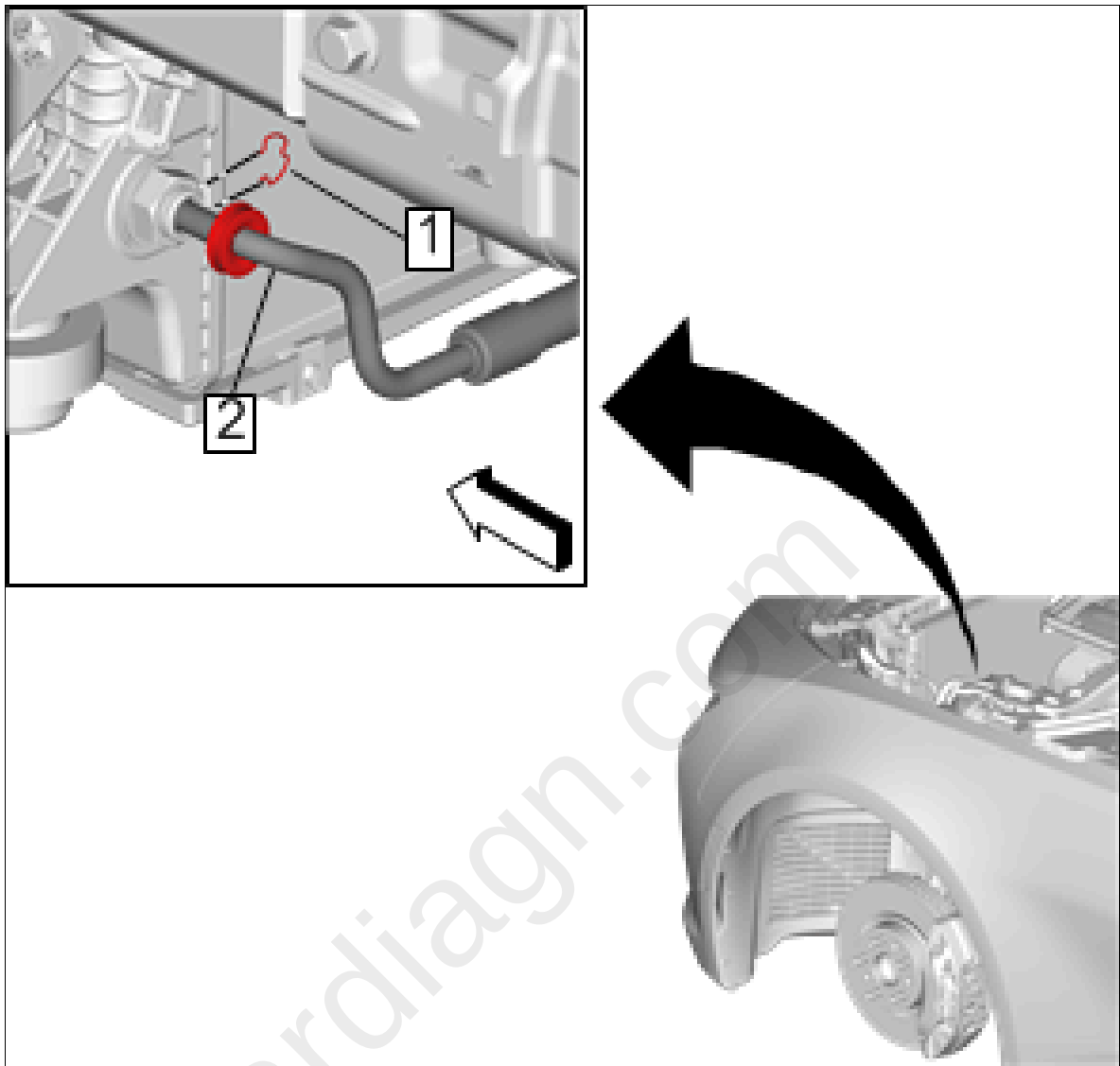
3. Open the transmission fluid cooler pipe clip (1).
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (2) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (ATOC Jumper) (3) at Transmission Fluid Auxiliary Cooler.

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

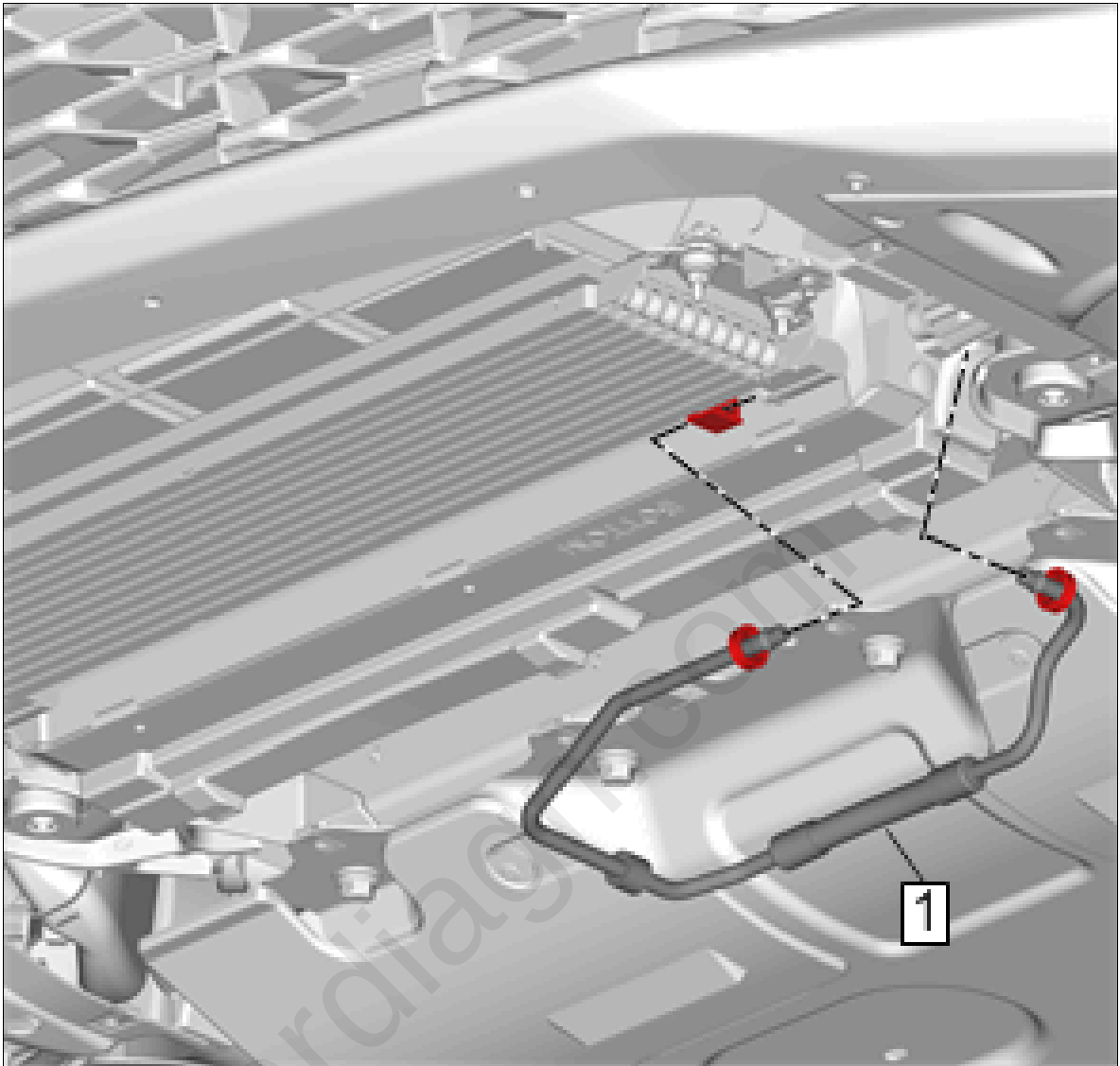
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Pipe (ATOC Jumper) (2) at Radiator.

Fig 3: Transmission Fluid Cooler Pipe

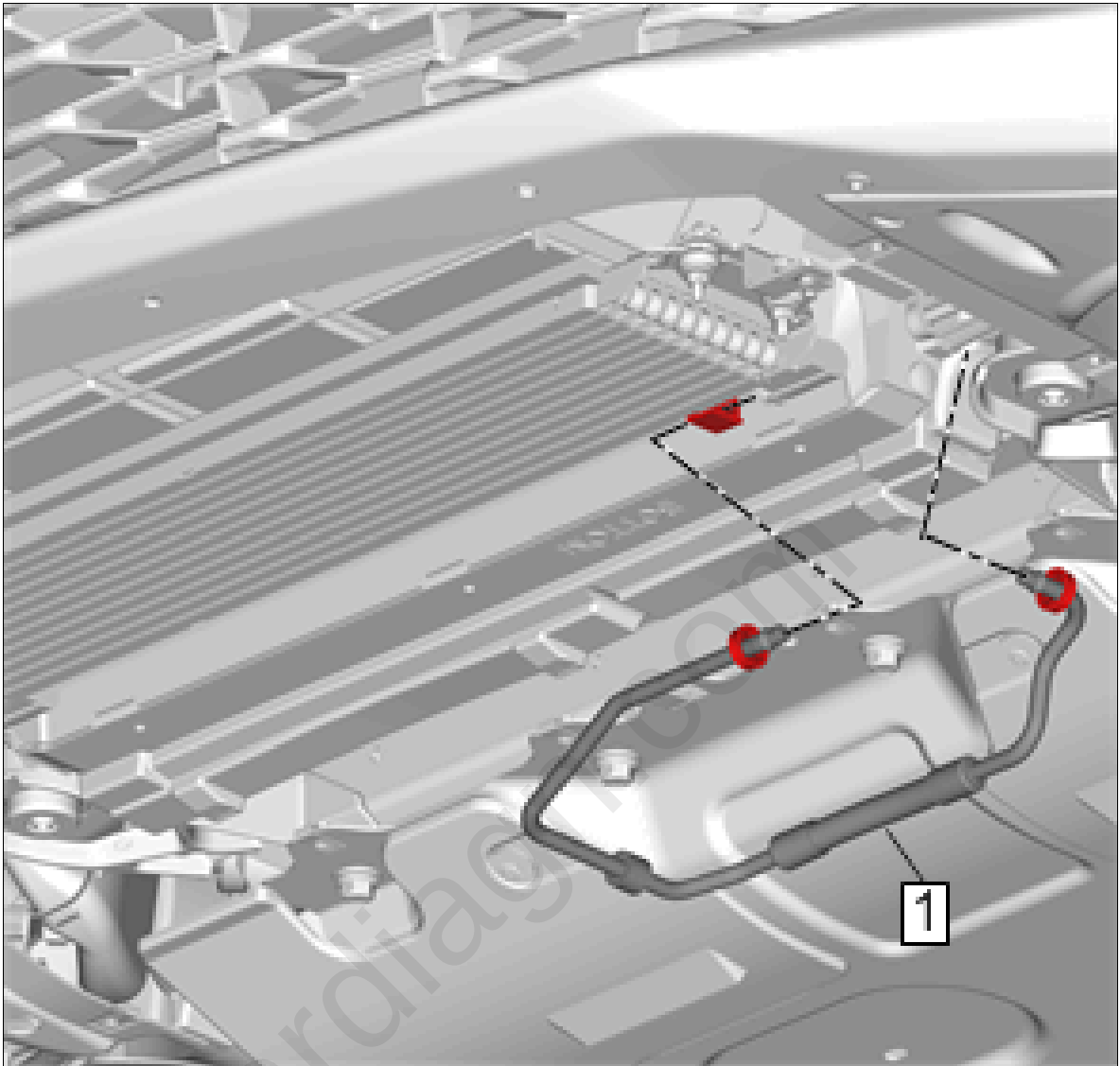


Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe (ATOC Jumper) (1)

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH M5U OR MM6, WITH KNR, ATOC JUMPER) > INSTALLATION PROCEDURE**

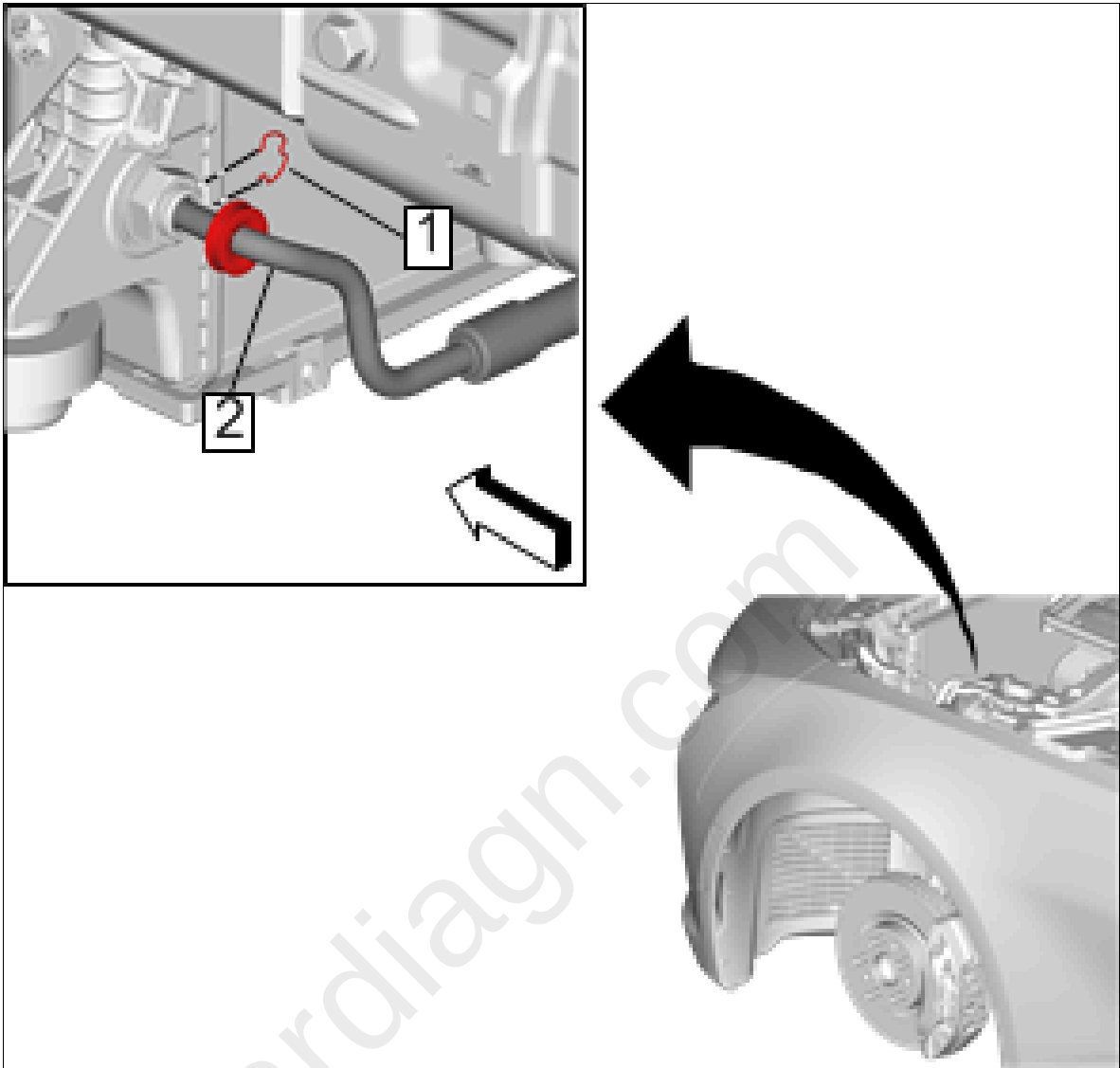
Fig 1: Transmission Fluid Cooler Pipe



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (ATOC Jumper) (1)

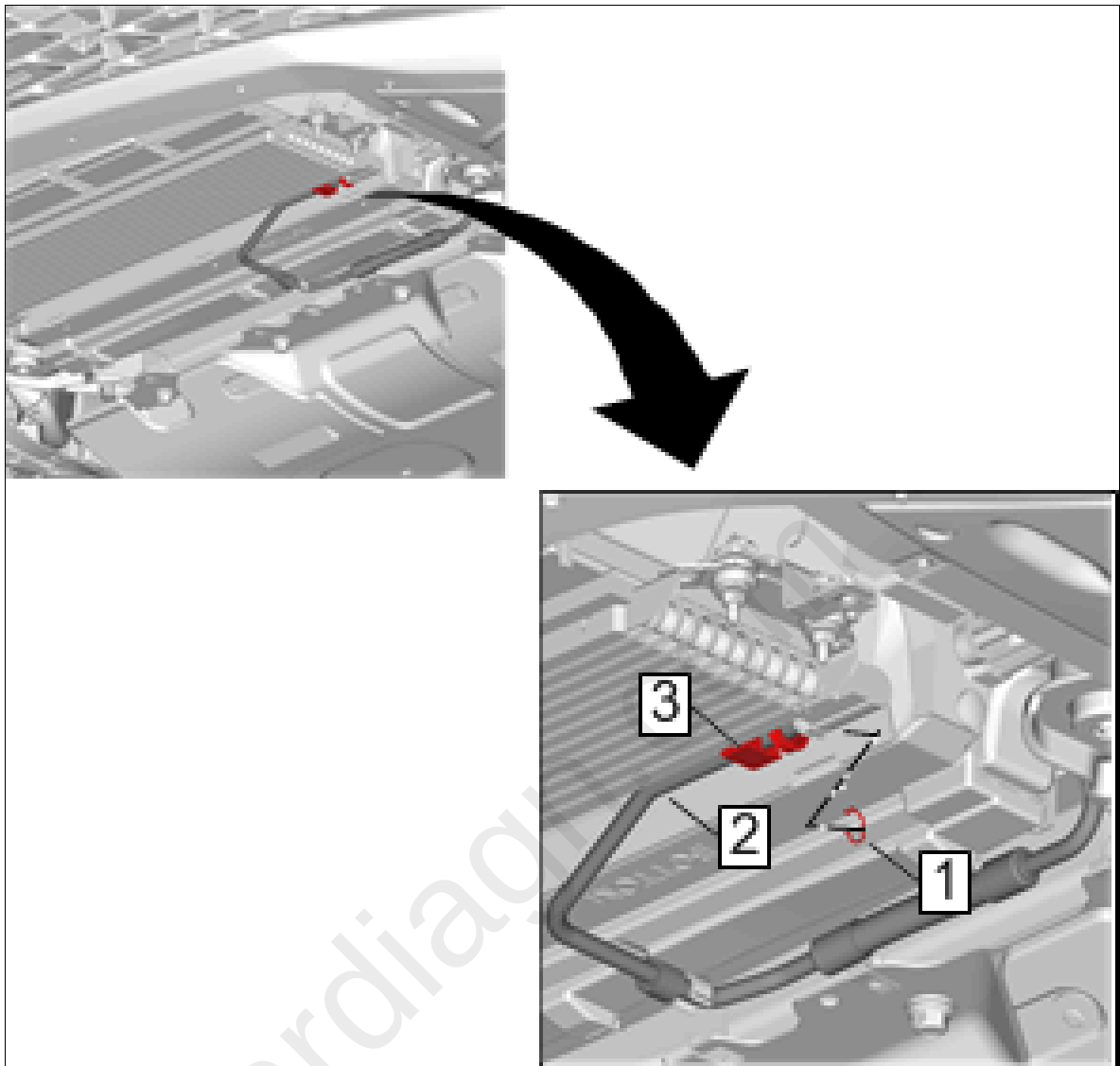
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (ATOC Jumper) (2) at Radiator.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Auxiliary Cooler



Courtesy of GENERAL MOTORS COMPANY

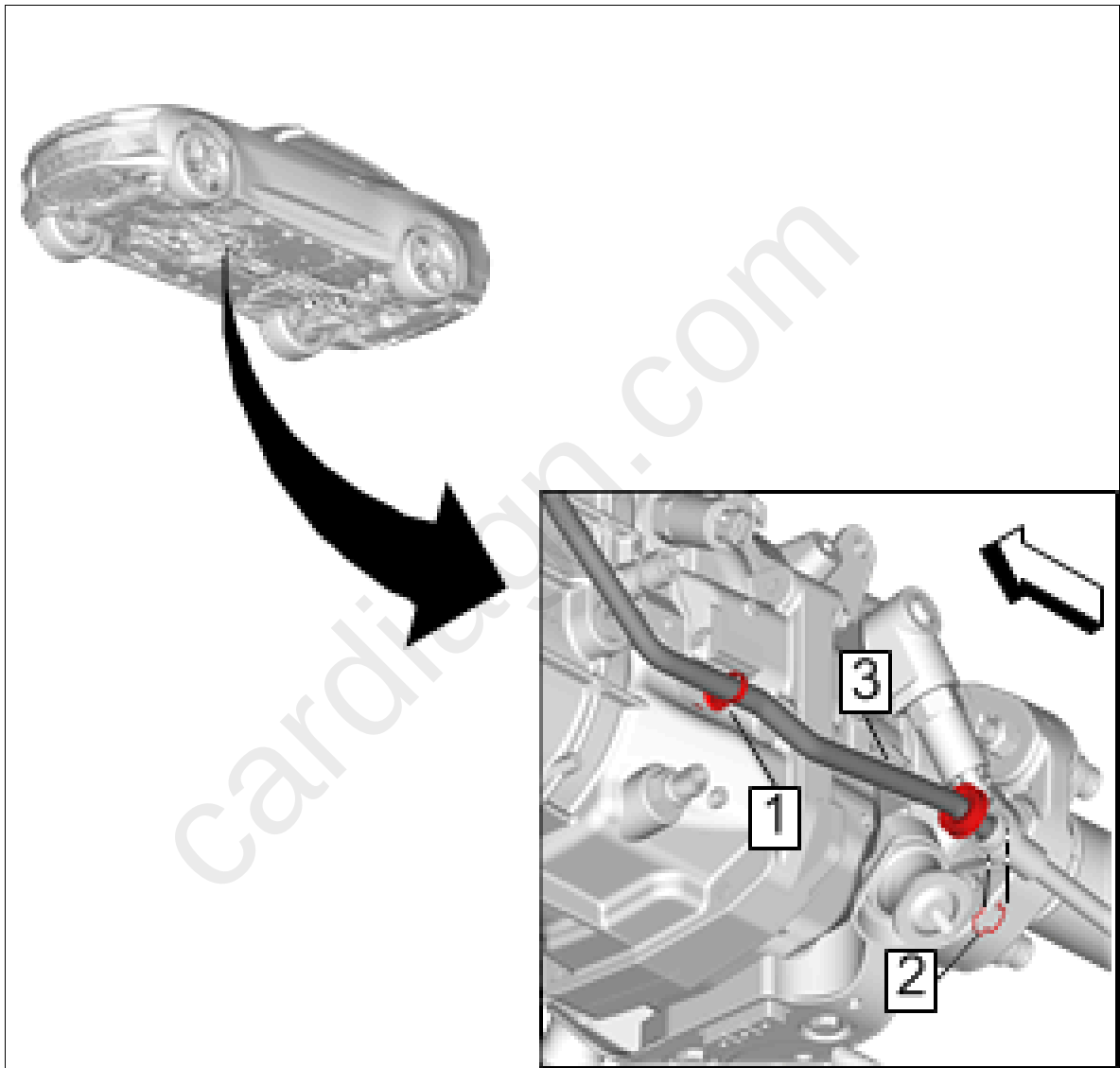
4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Auxiliary Cooler - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Pipe (ATOC Jumper) (2) at Transmission Fluid Auxiliary Cooler.
6. Close the transmission fluid cooler pipe clip (3)
7. Install Front Compartment Air Deflector Replacement (Coupe - LT1)
8. Install Engine Coolant Fan Replacement (LT1 V18)
9. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
10. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6) Transmission Fluid Level Inspection (M13 Without Y4Q)

11. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LT1 WITH MM6, WITH KNR, FRONT JUMPER LEFT) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

Fig 1: Transmission Fluid Cooler Pipe Clip From Transmission Bracket



Courtesy of GENERAL MOTORS COMPANY

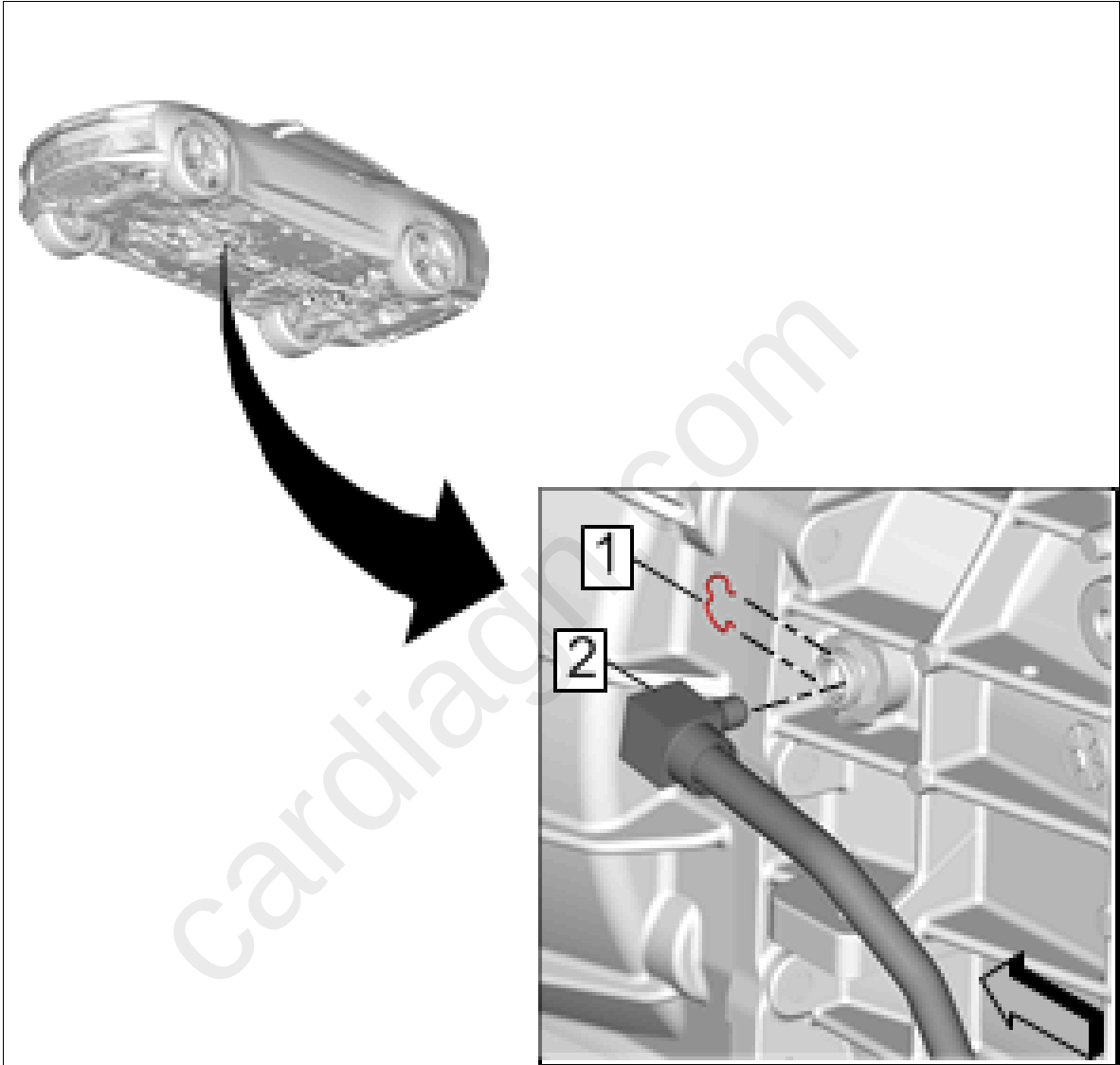
2. Remove the transmission fluid cooler pipe clip (1) from the transmission bracket.
3. Remove Transmission Fluid Cooler Pipe Fitting Retainer (2) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Pipe (Front Jumper Left) (3) at Transmission Fluid Cooler Pipe (Mid Line Left).

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission



Courtesy of GENERAL MOTORS COMPANY

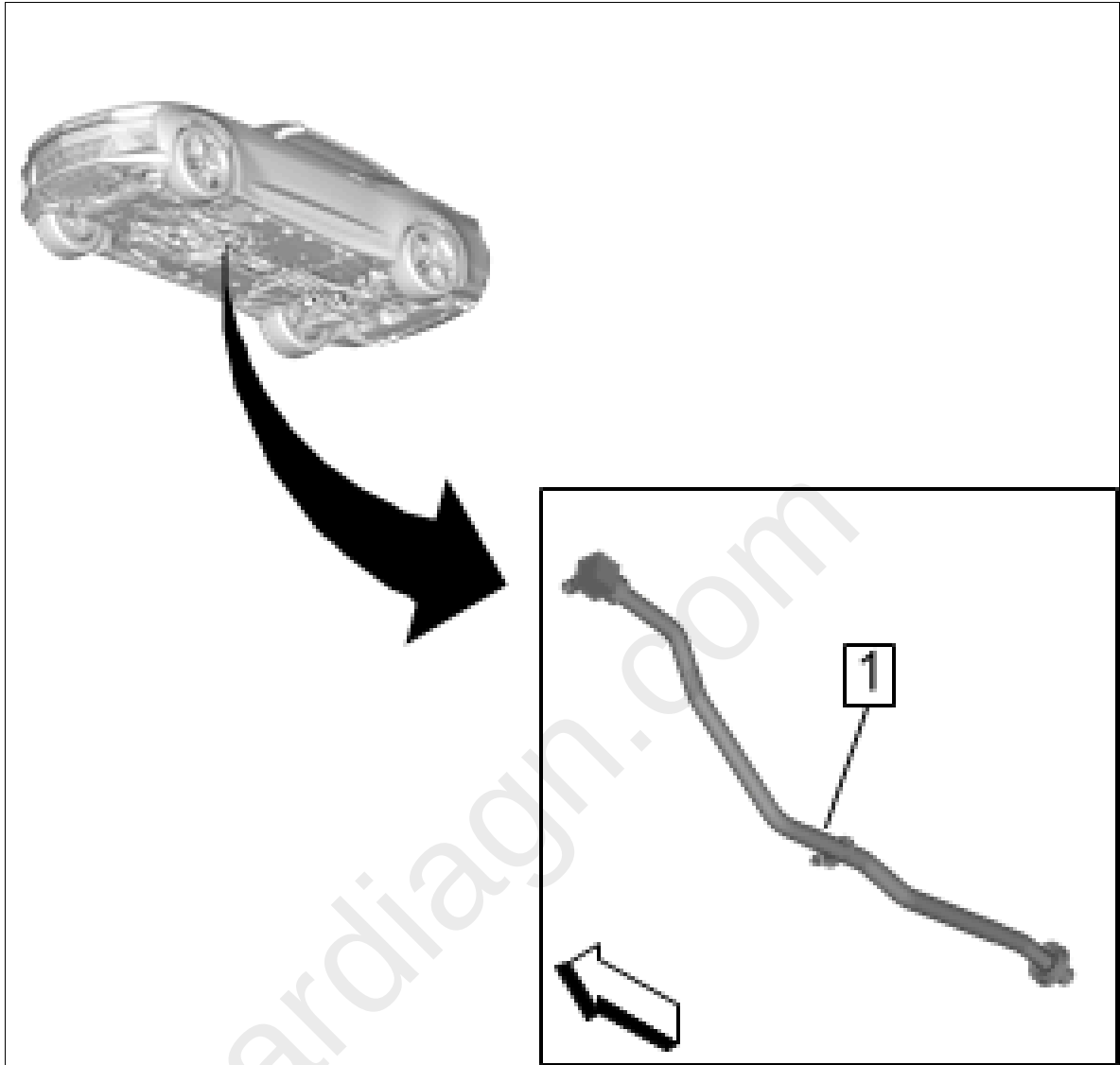
5. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

6. Remove Transmission Fluid Cooler Pipe (Front Jumper Left) (2) at Transmission.

Fig 3: Transmission Fluid Cooler Pipe (Front Jumper Left)



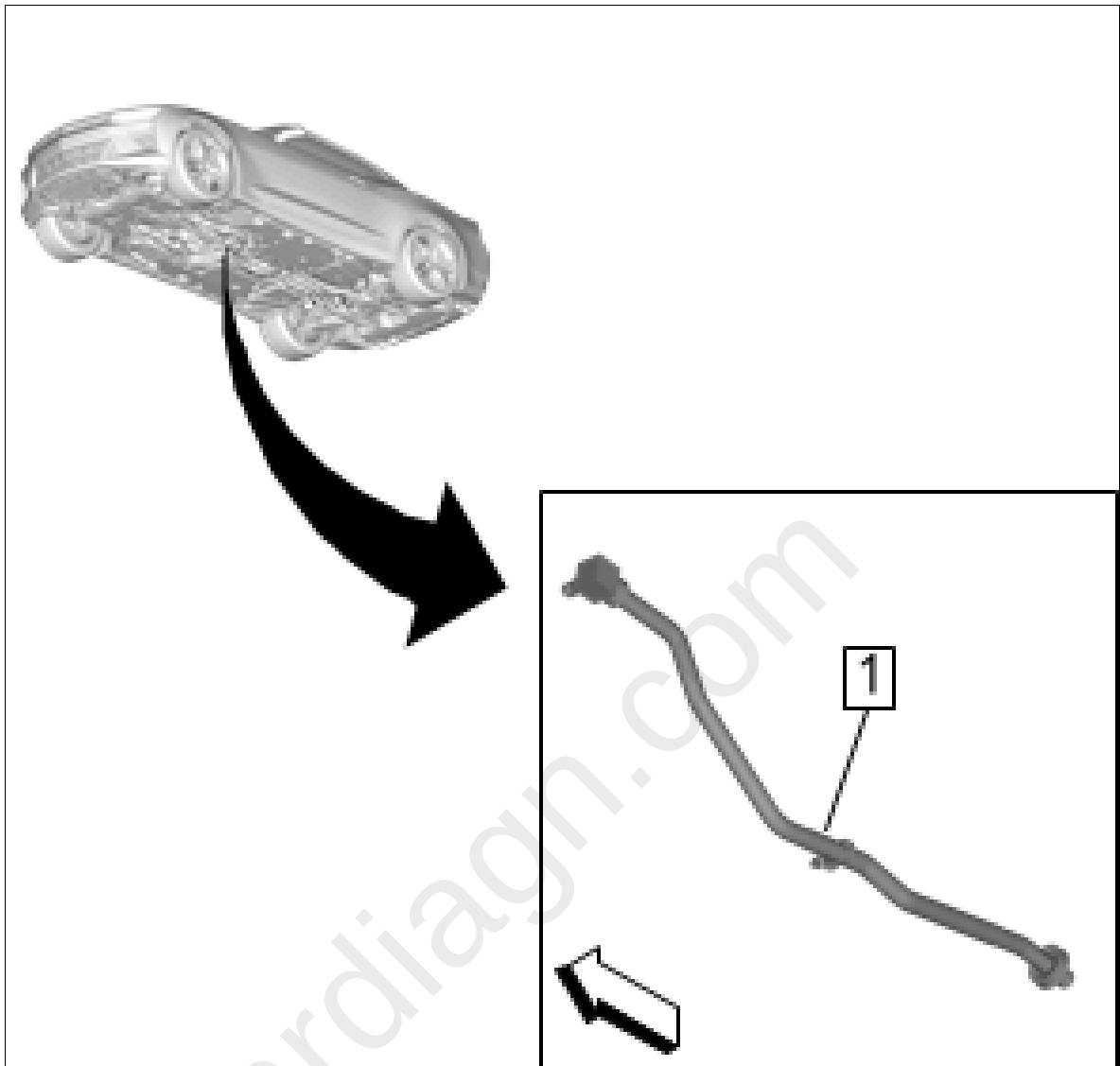
Courtesy of GENERAL MOTORS COMPANY

7. Remove Transmission Fluid Cooler Pipe (Front Jumper Left) (1)

8. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH MM6, WITH KNR, FRONT JUMPER LEFT) > INSTALLATION PROCEDURE**

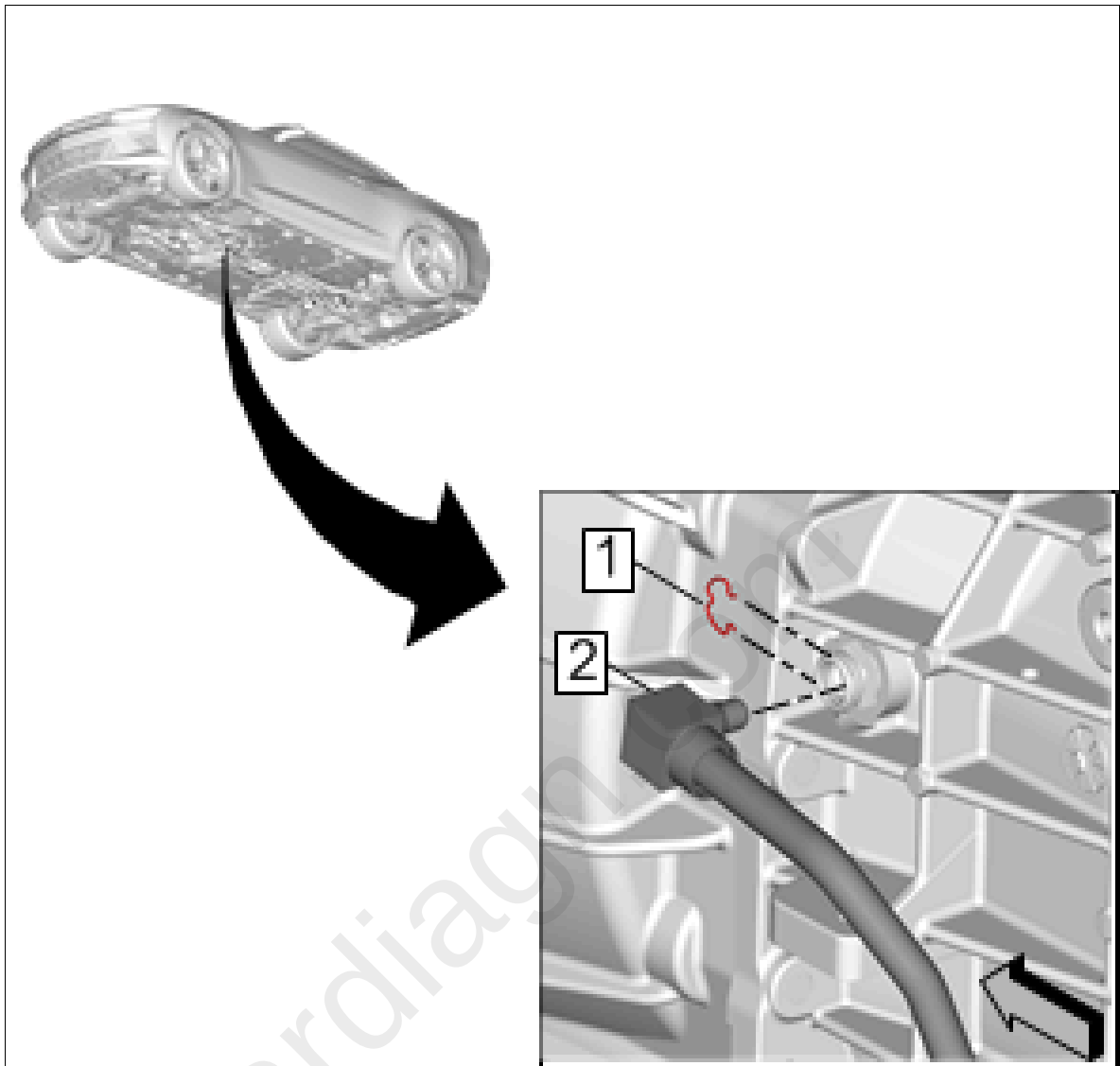
Fig 1: Transmission Fluid Cooler Pipe (Front Jumper Left)



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (Front Jumper Left) (1)

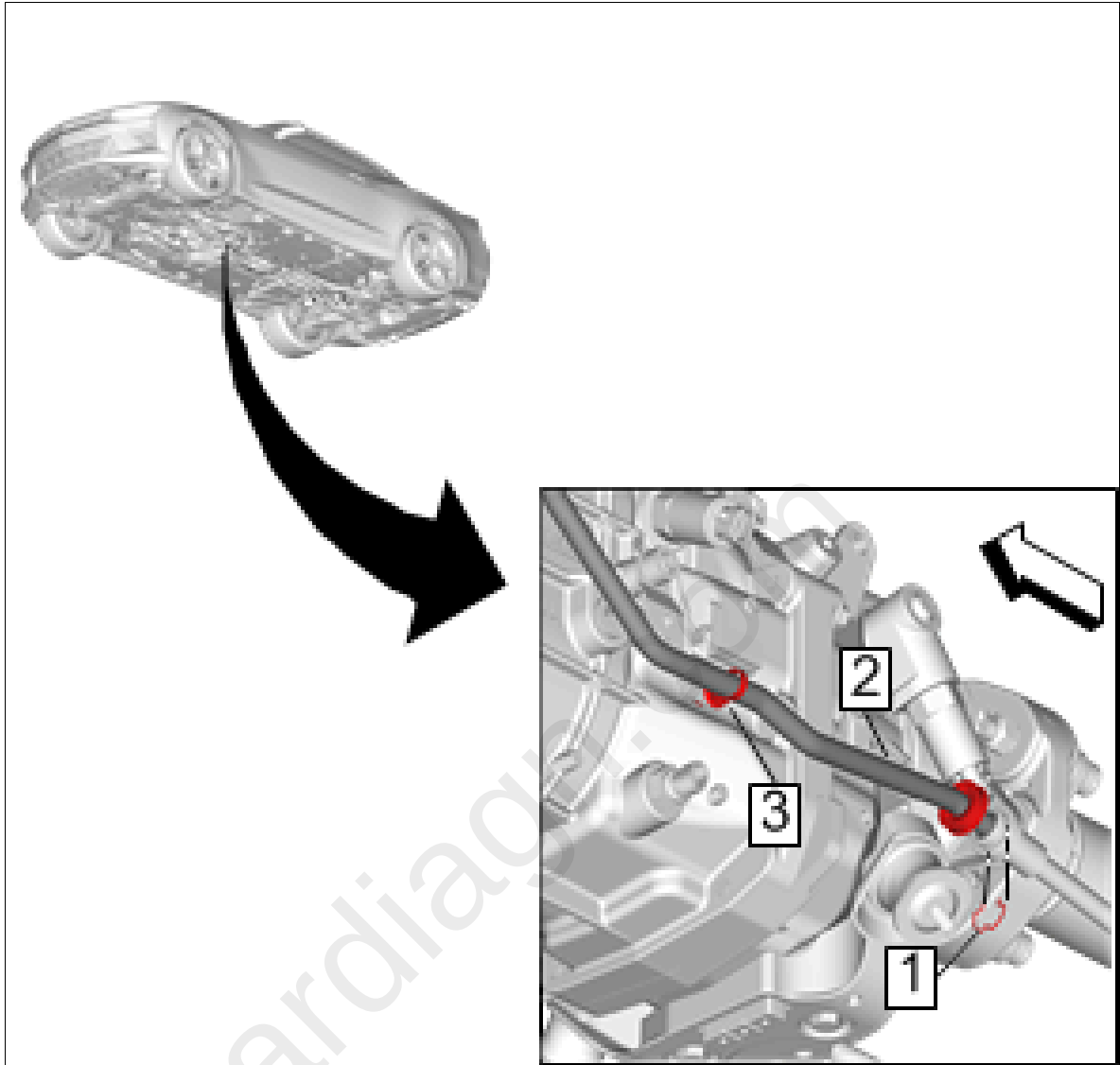
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Front Jumper Left) (2) at Transmission.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Left)



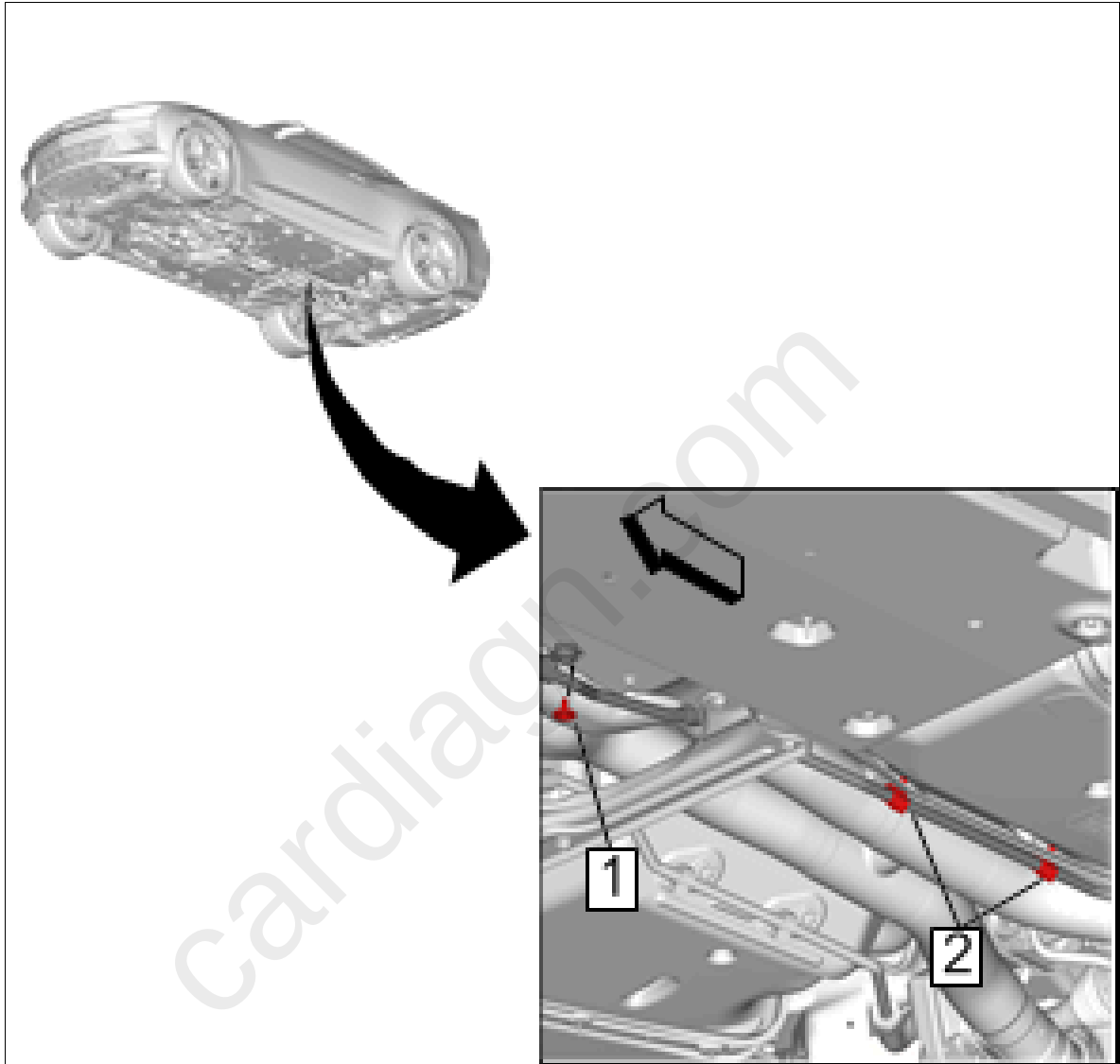
Courtesy of GENERAL MOTORS COMPANY

4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Pipe(Front Jumper Left) (2) at Transmission Fluid Cooler Pipe (Mid Line Left).
6. Install the transmission fluid cooler pipe clip (3) into the transmission bracket.
7. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)
8. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LT1 WITH MM6, WITH KNR, MID LINE LEFT) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

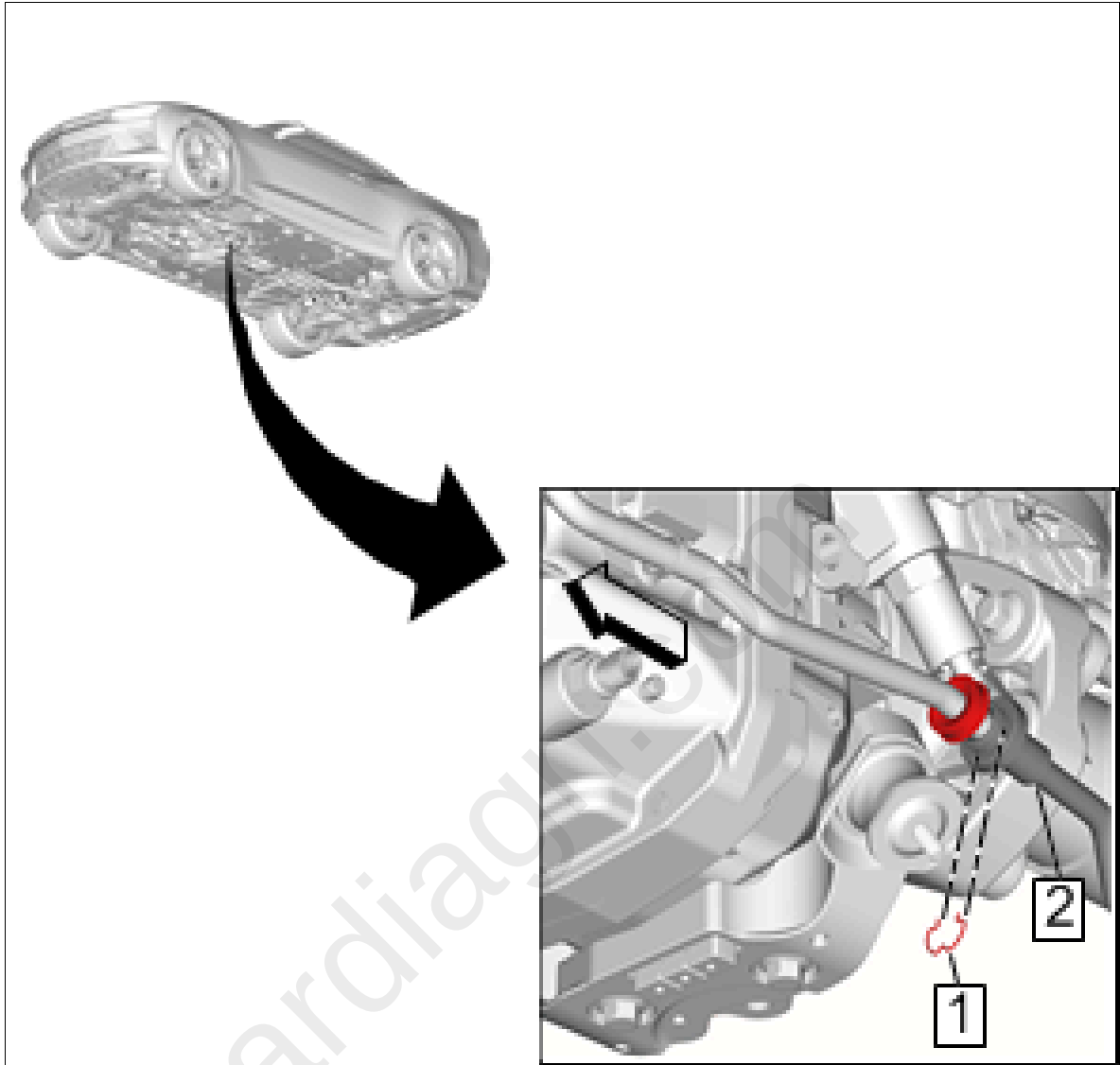
Fig 1: Left Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY

2. Remove the left side underbody front air deflector bolt (1).
3. Remove the transmission fluid cooler pipe clips (2) from the left side underbody front air deflector.

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

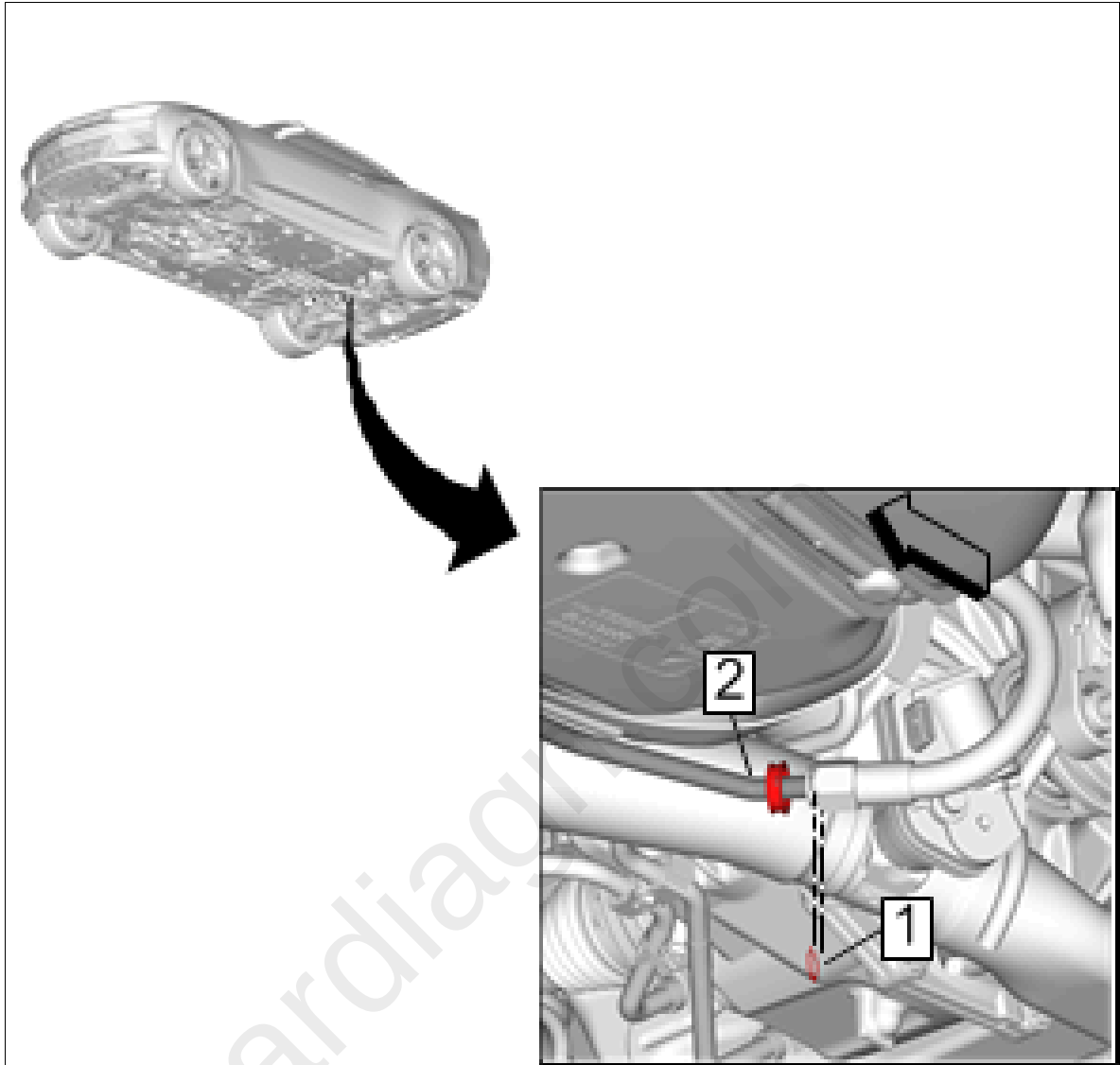
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Pipe (Front Jumper Left).

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)



Courtesy of GENERAL MOTORS COMPANY

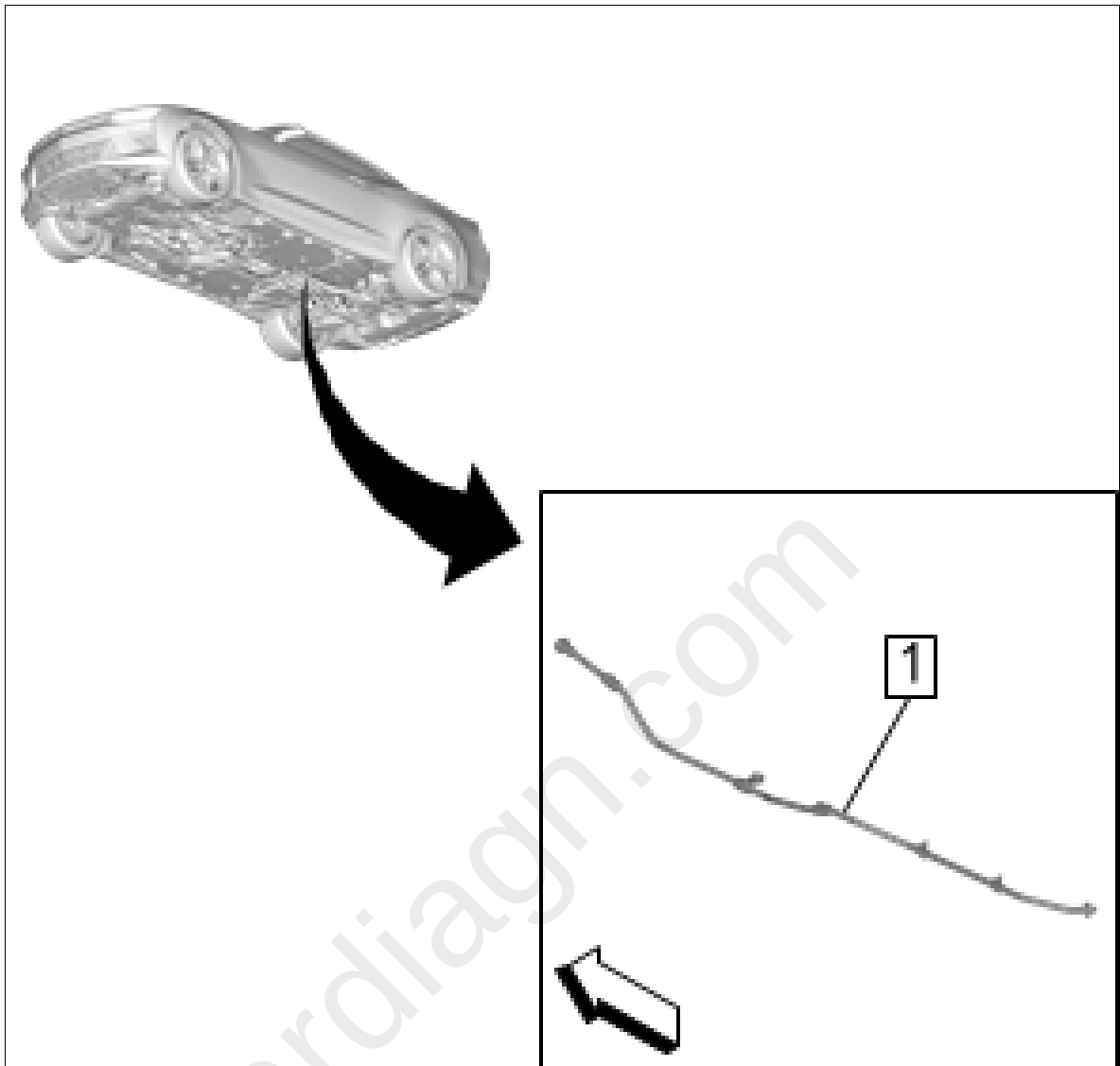
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose).

Fig 4: Transmission Fluid Cooler Pipe (Mid Line Left)

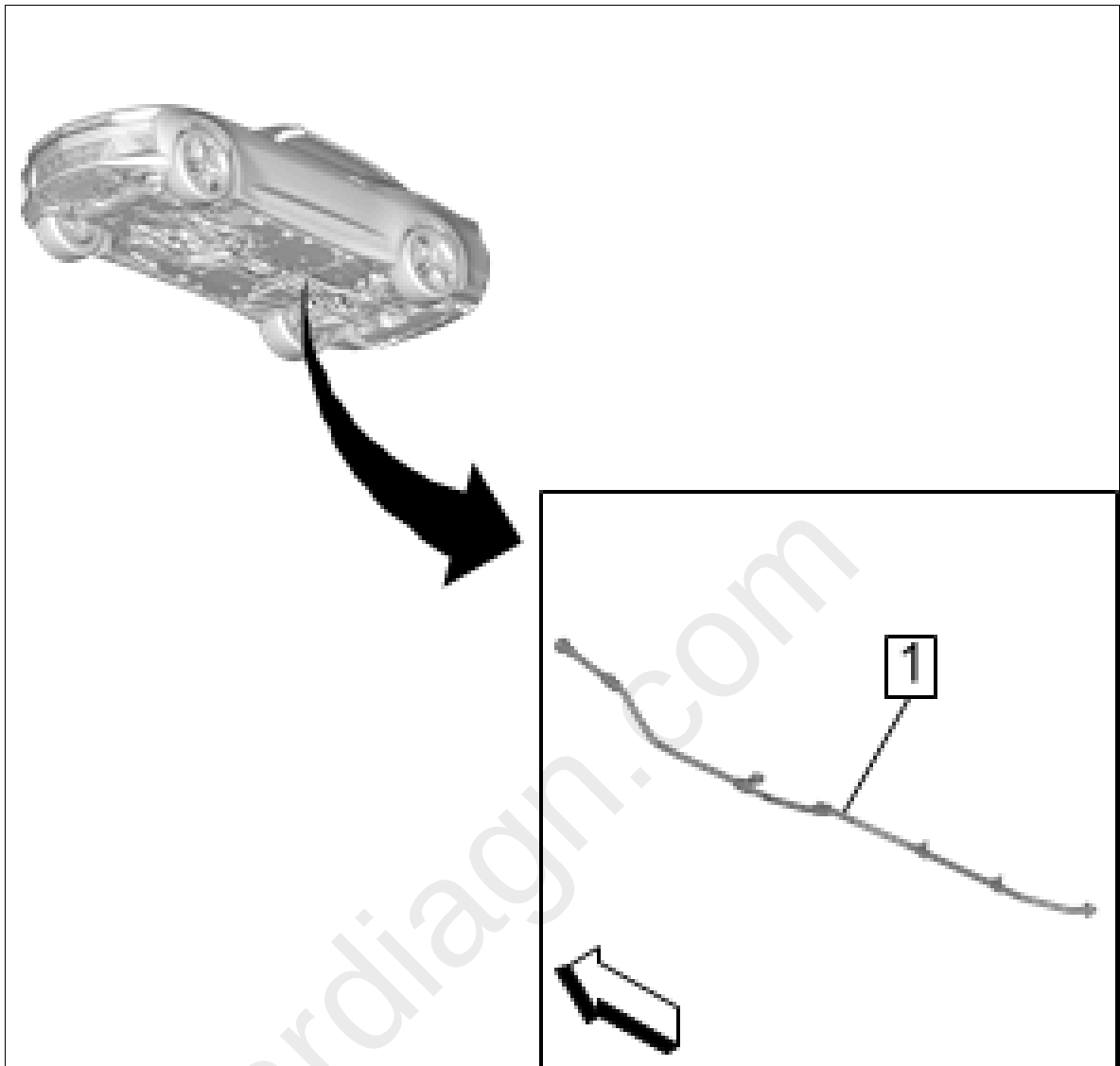


Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe (Mid Line Left) (1)
9. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH MM6, WITH KNR, MID LINE LEFT) > INSTALLATION PROCEDURE**

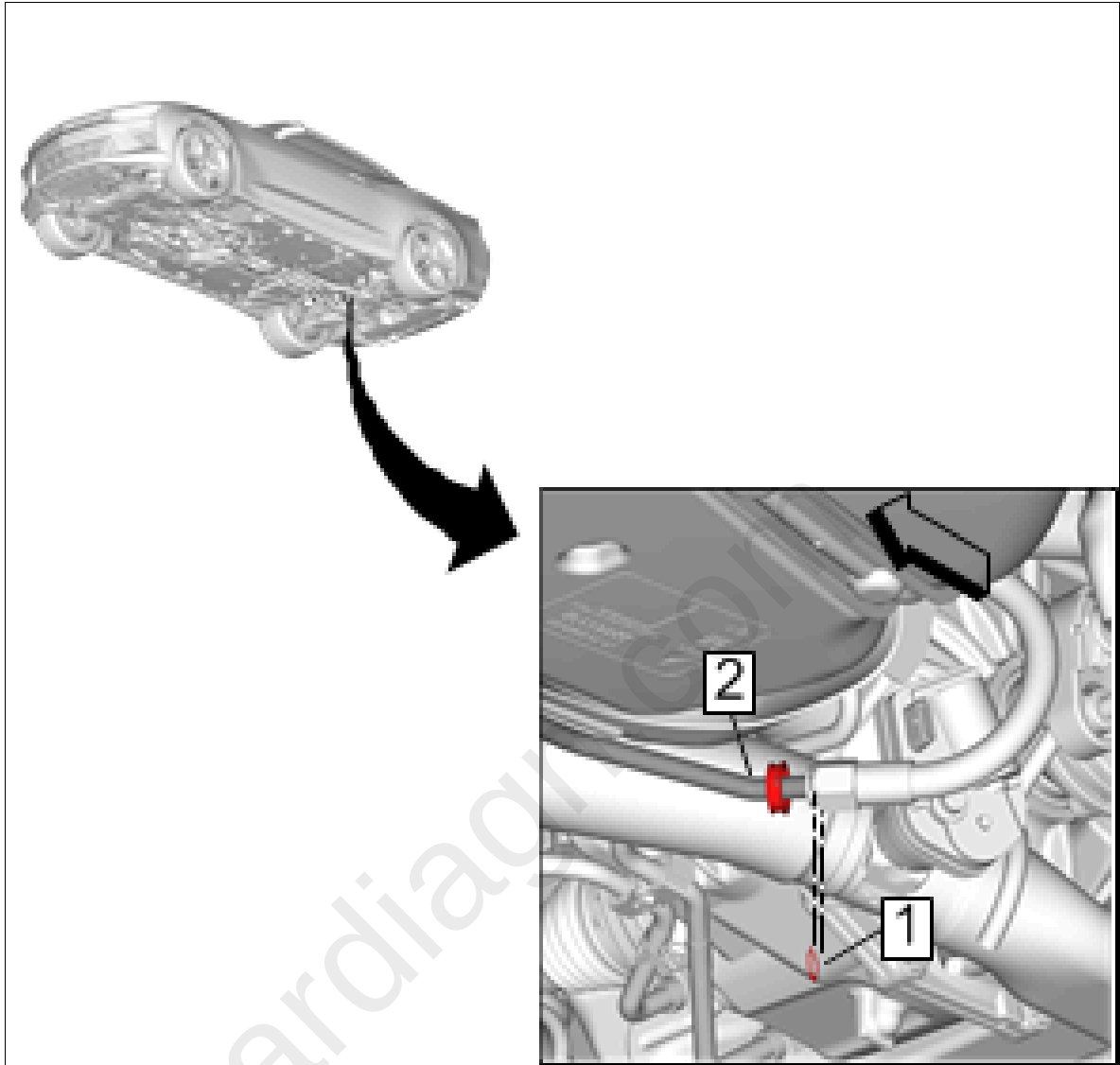
Fig 1: Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (Mid Line Left) (1)

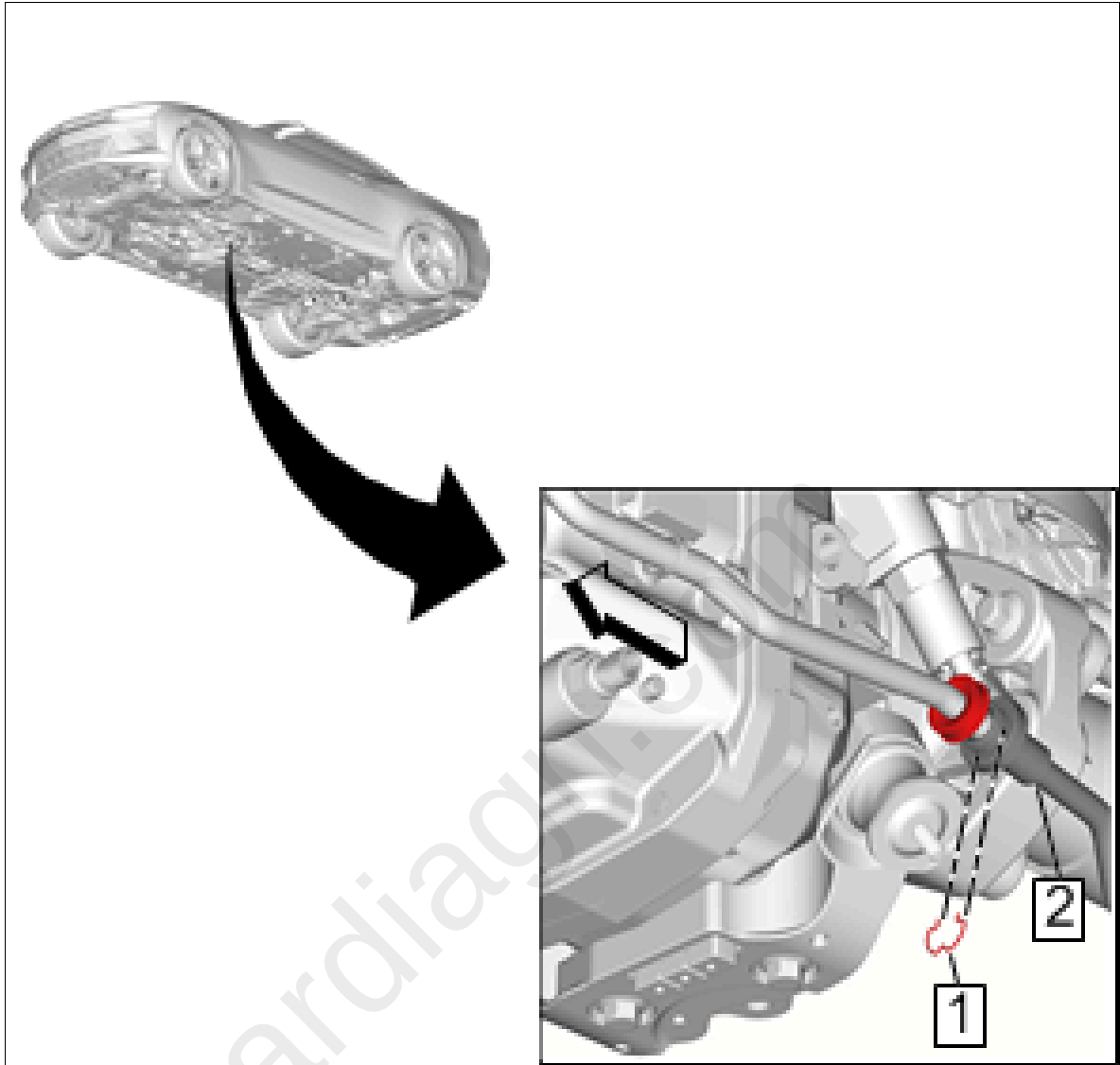
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose).

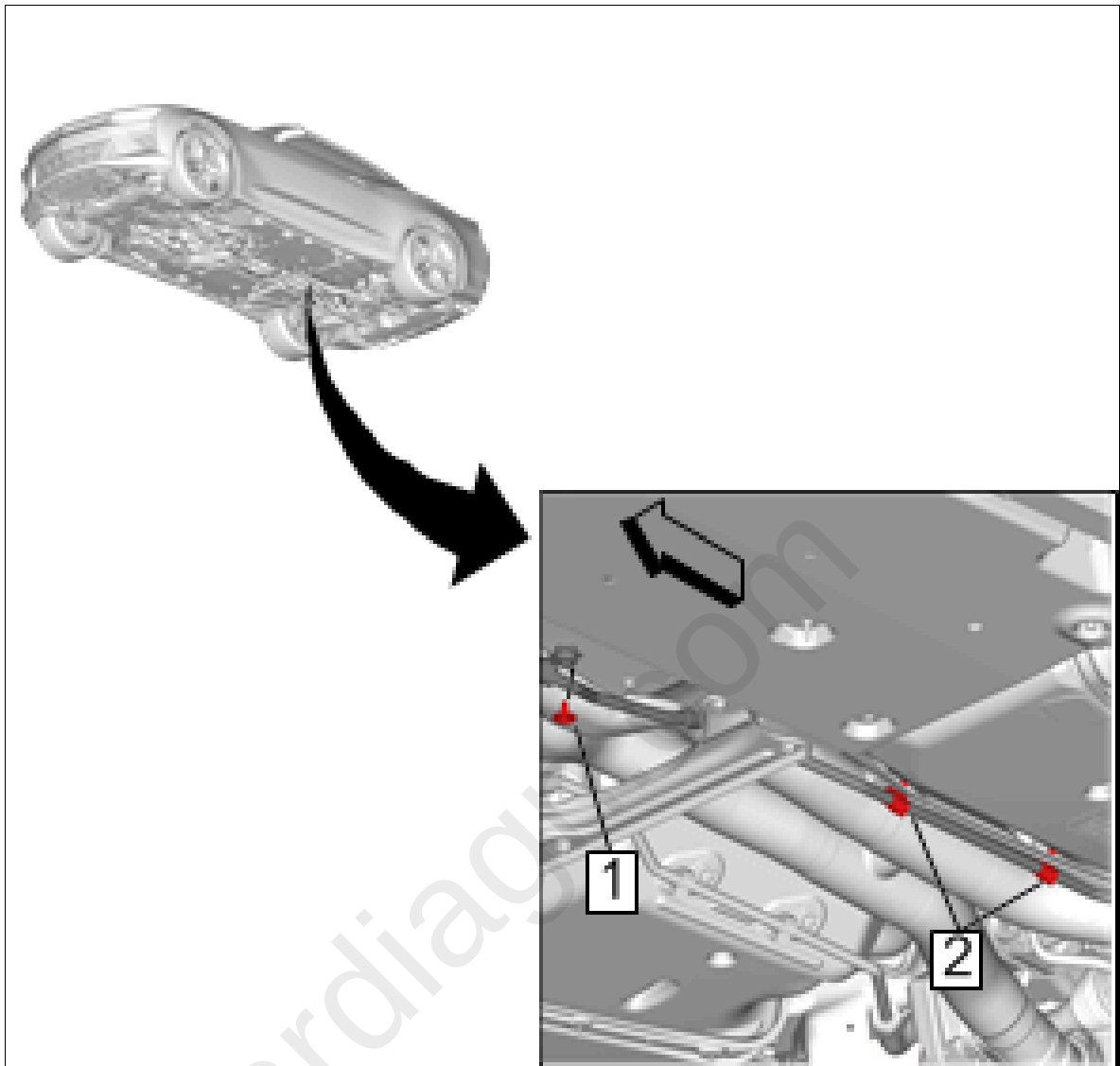
Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Pipe (Front Jumper Left).

Fig 4: Left Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY



CAUTION:

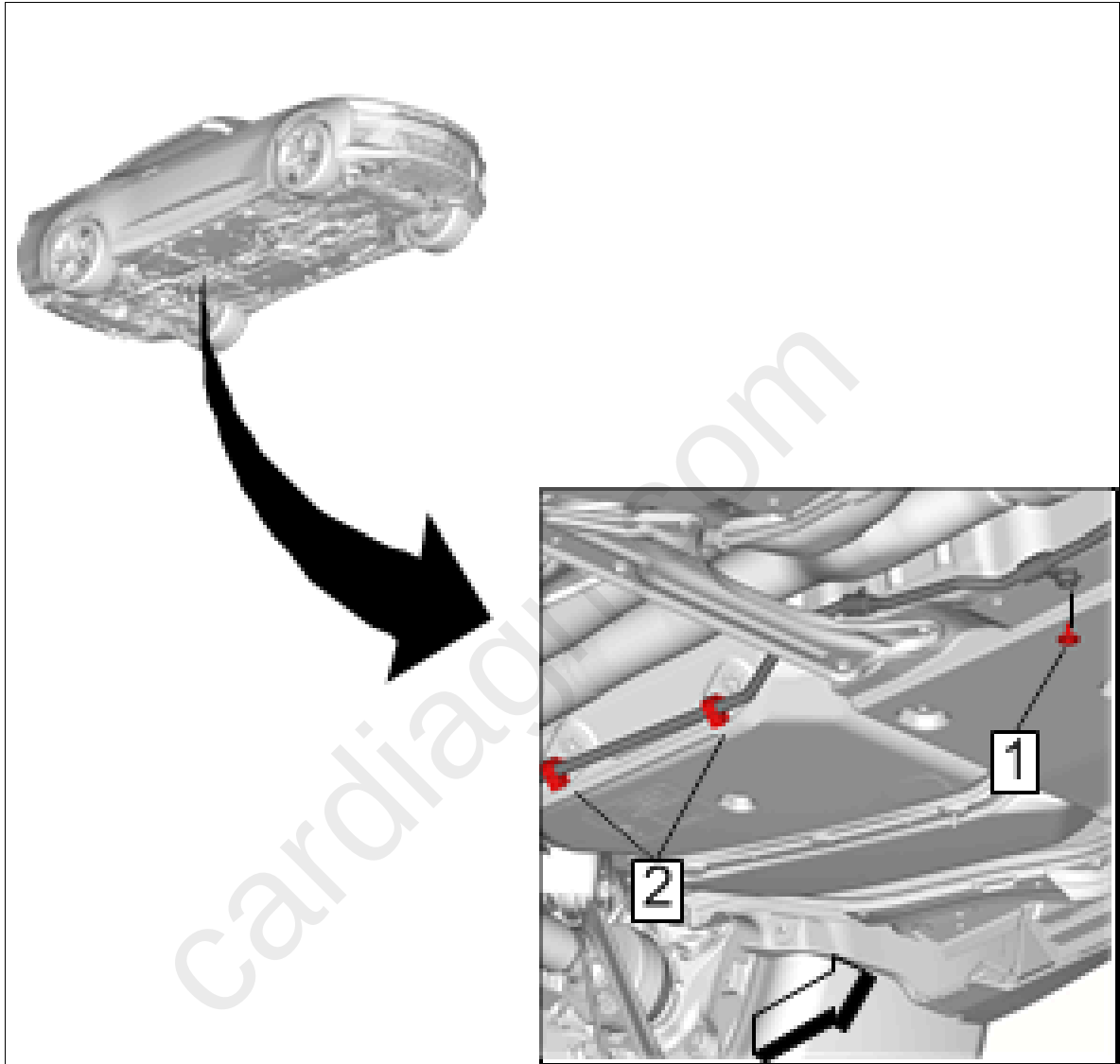
Refer to Fastener Caution .

6. Install the left side underbody front air deflector bolt (1) and tighten to 9 N.m (80 lb in).
7. Install the transmission fluid cooler pipe clips (2) in the left side underbody front air deflector.
8. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)
9. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LT1 WITH MM6, WITH KNR, MID LINE RIGHT) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

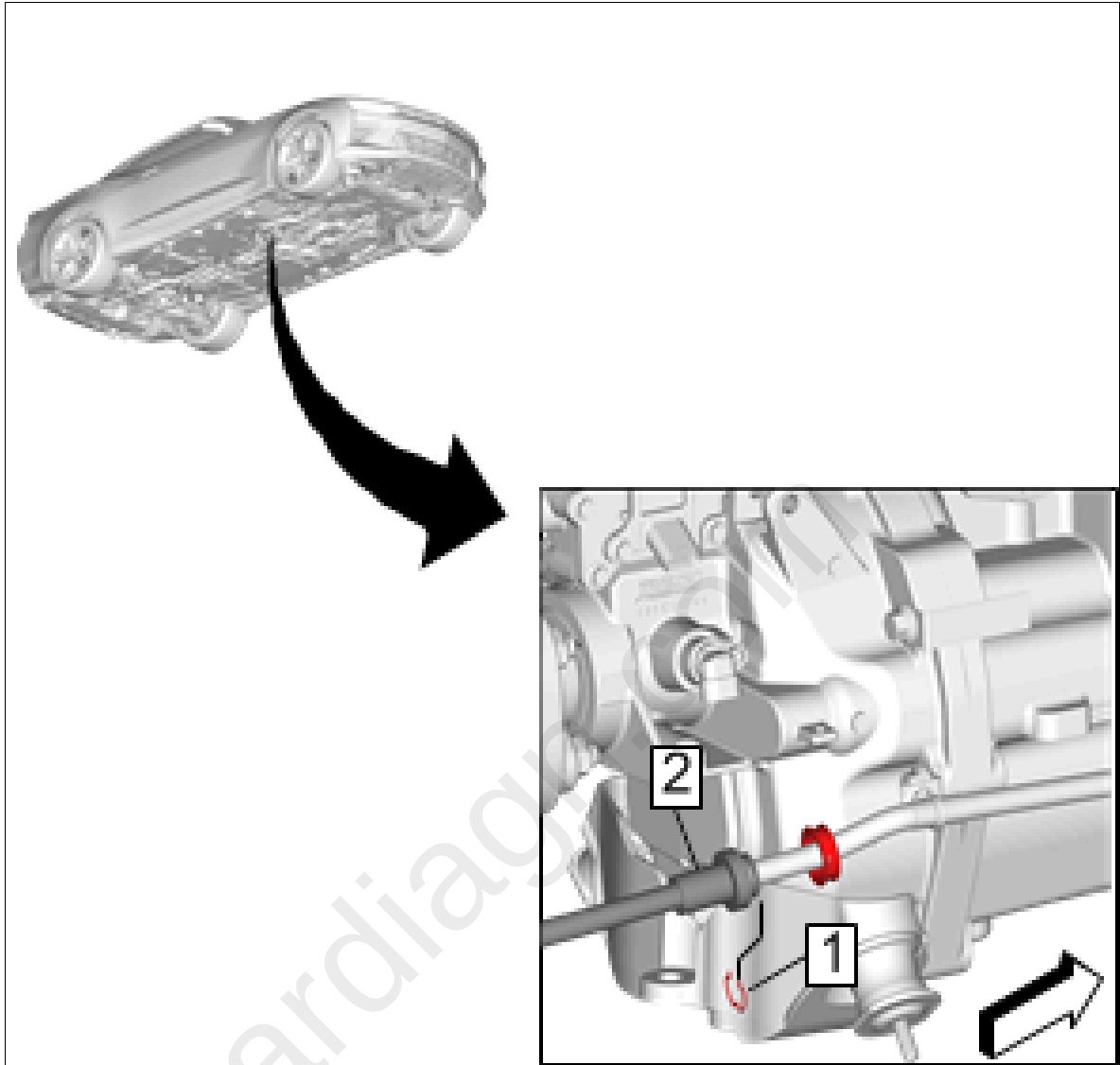
Fig 1: Right Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY

2. Remove the right side underbody front air deflector bolt (1).
3. Remove the transmission fluid cooler pipe clips (2) from the right side underbody front air deflector.

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

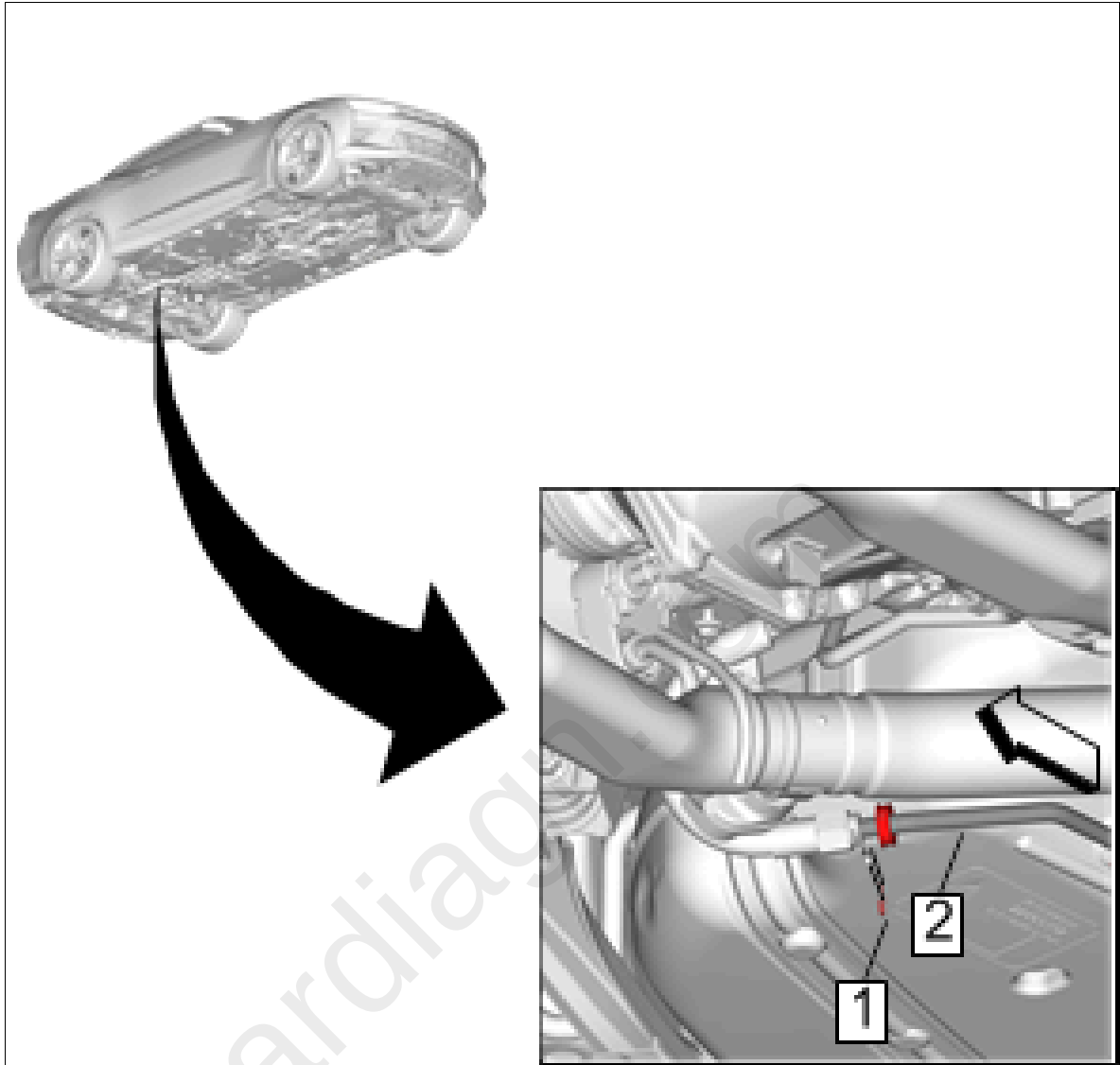
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)



Courtesy of GENERAL MOTORS COMPANY

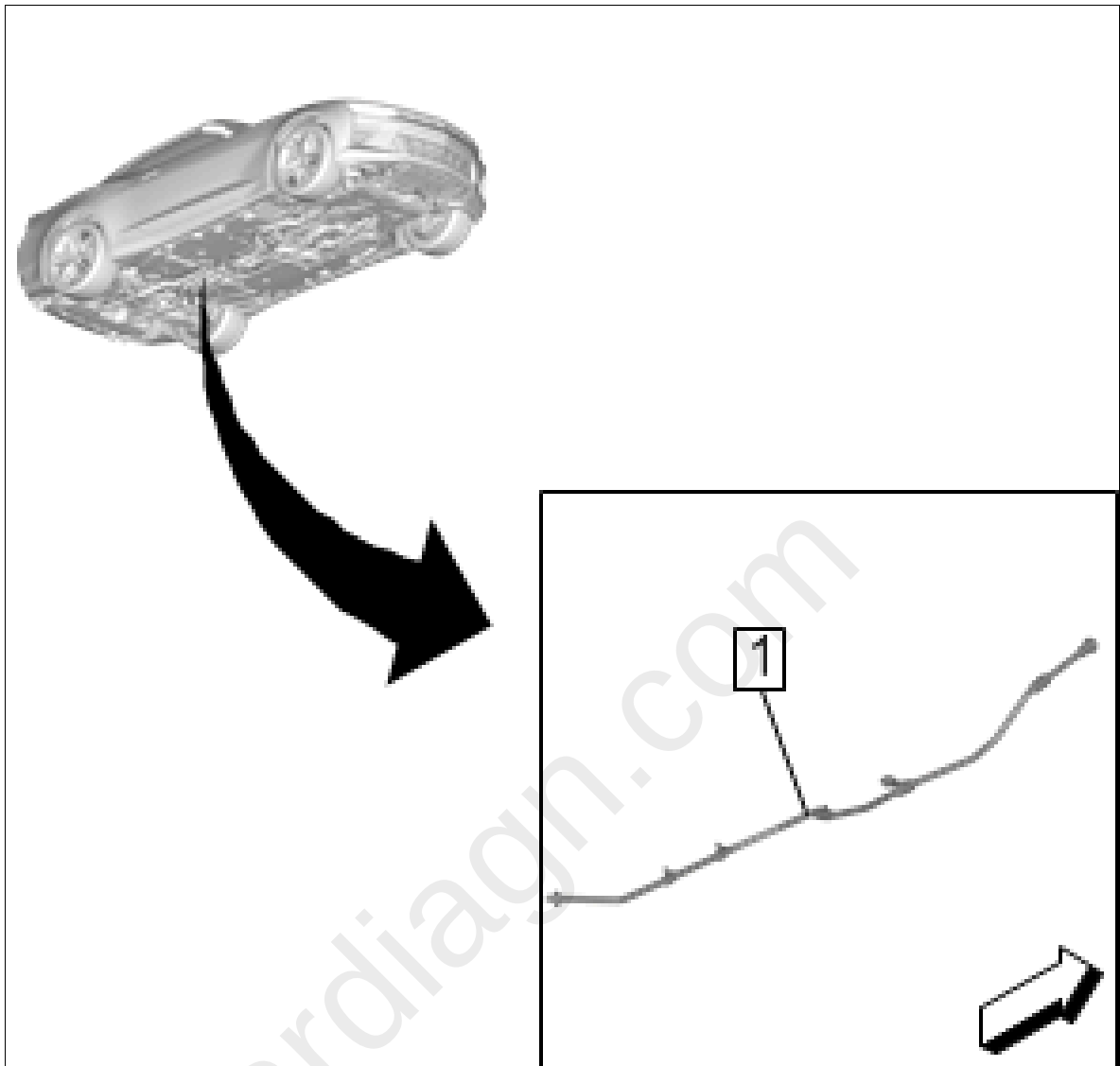
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Pipe(Mid Line Right) (2) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose).

Fig 4: Transmission Fluid Cooler Pipe (Mid Line Right)

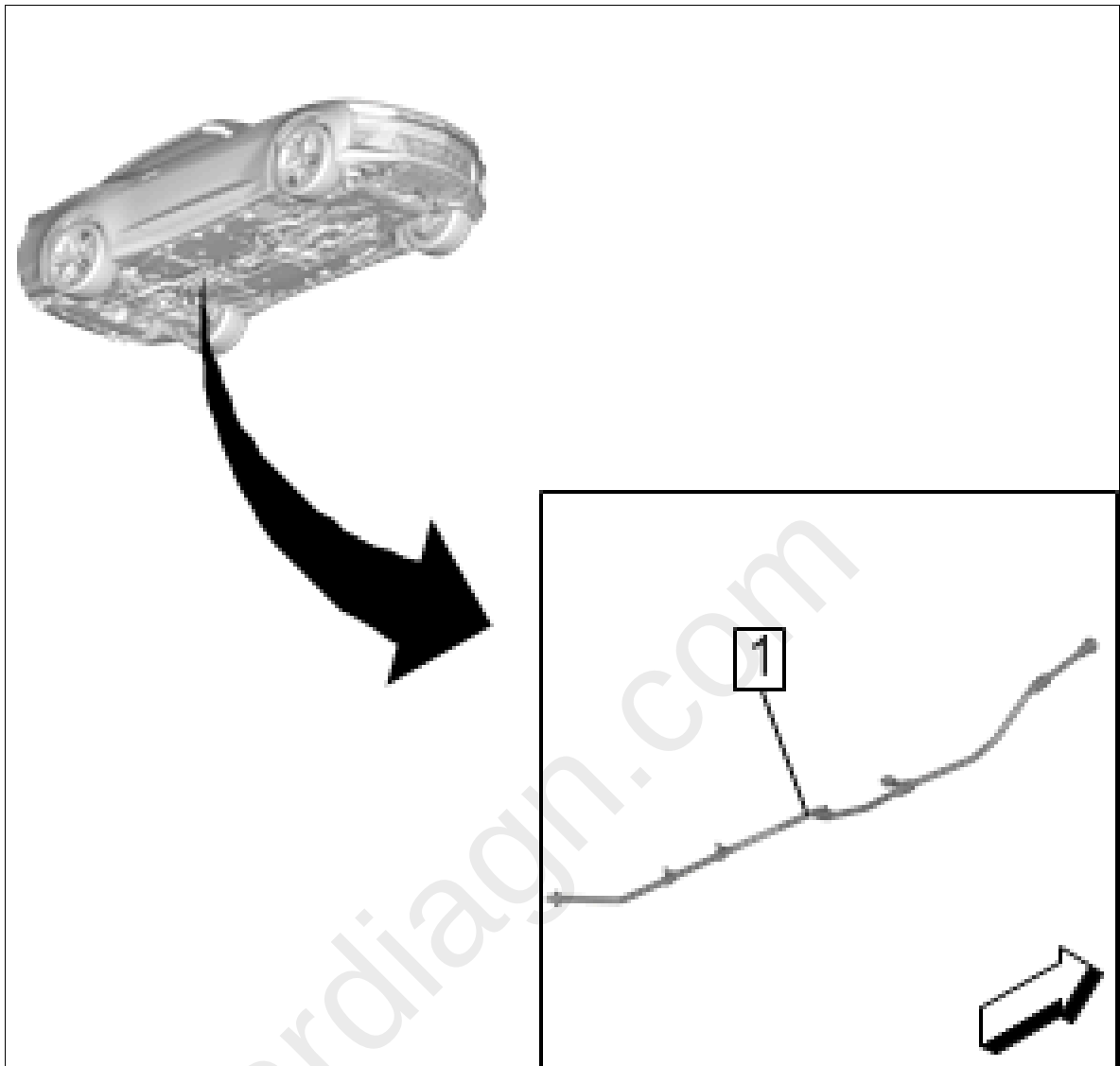


Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe (Mid Line Right) (1)
9. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH MM6, WITH KNR, MID LINE RIGHT) > INSTALLATION PROCEDURE**

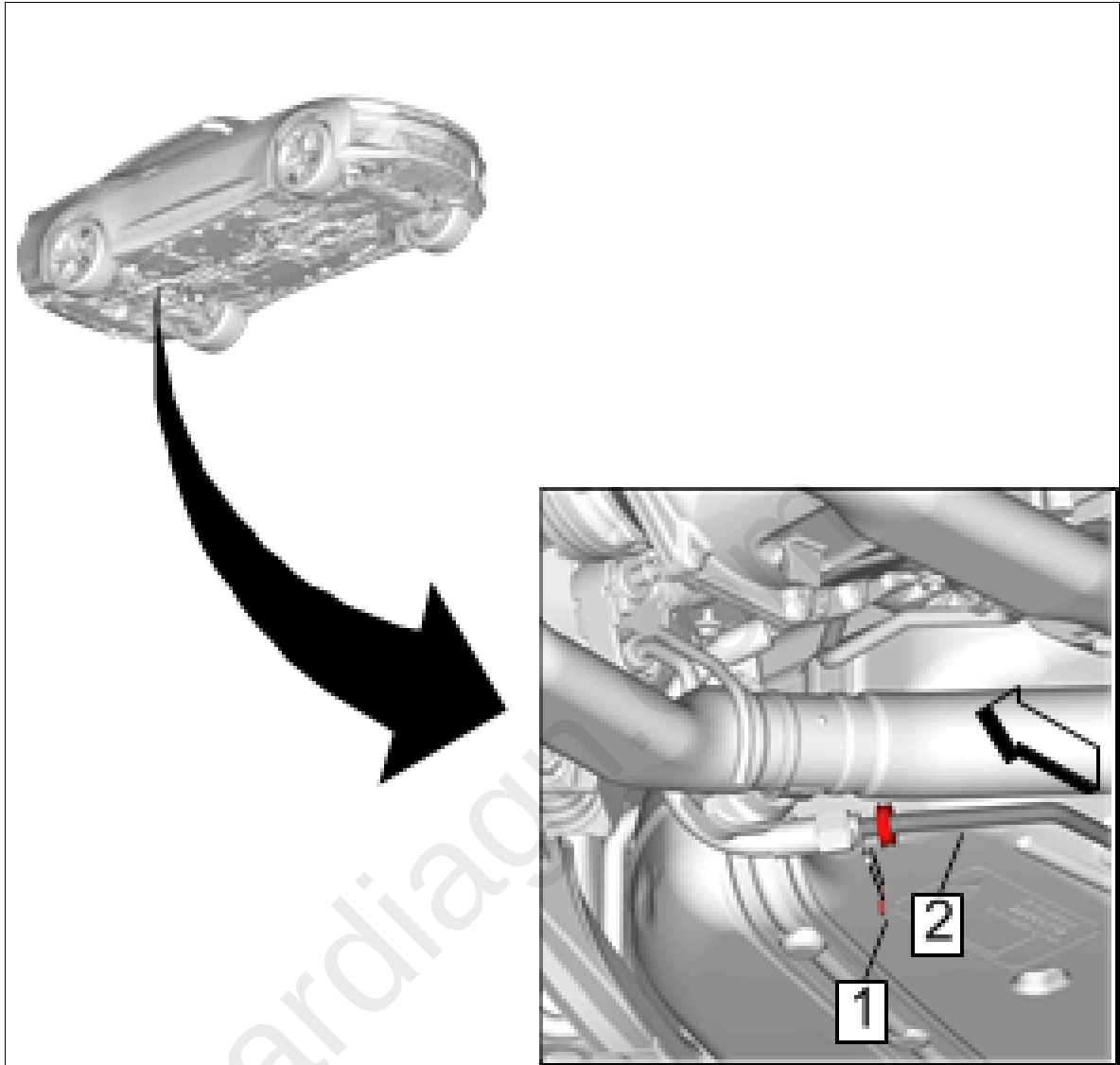
Fig 1: Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (Mid Line Right) (1)

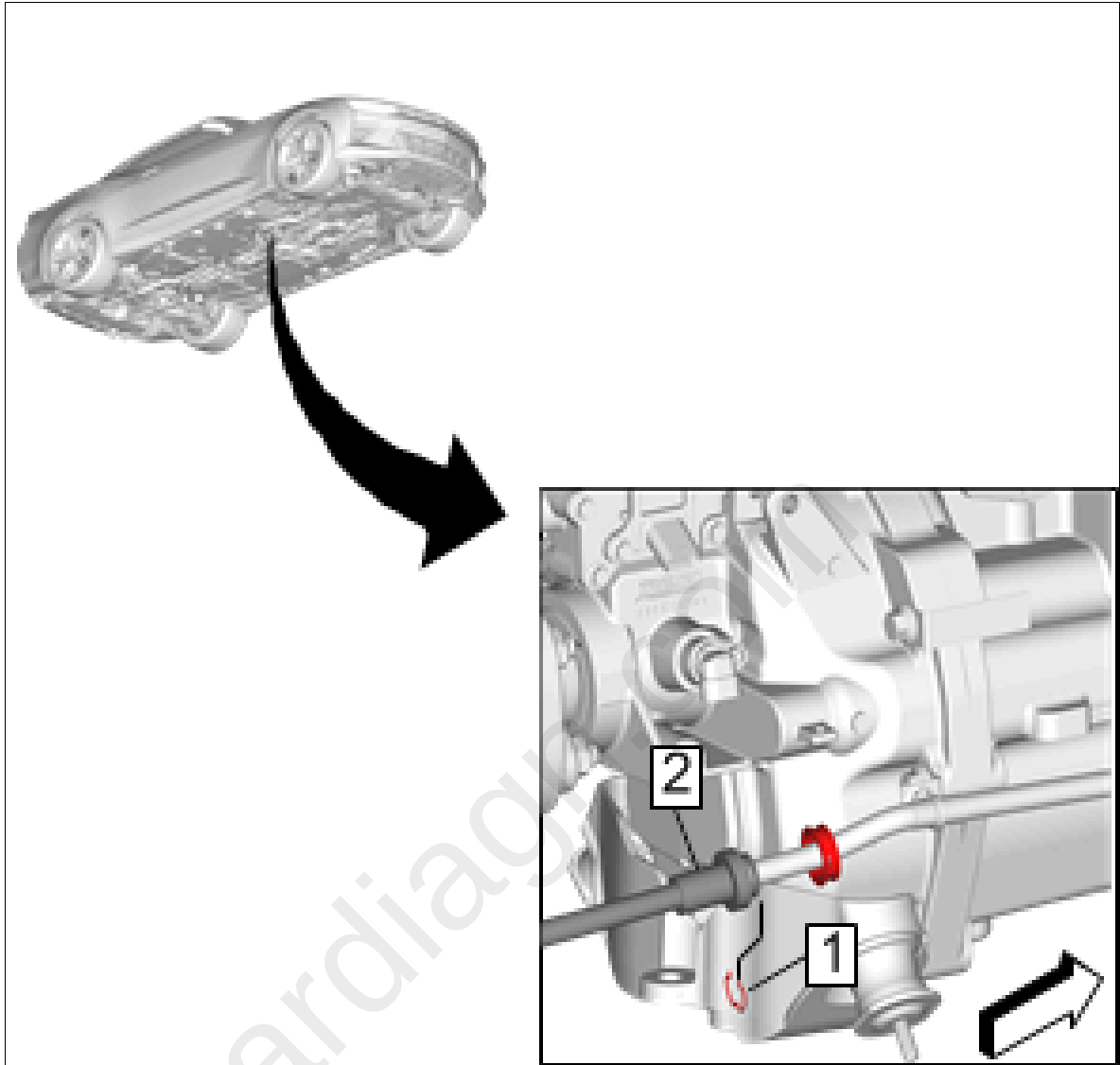
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose).

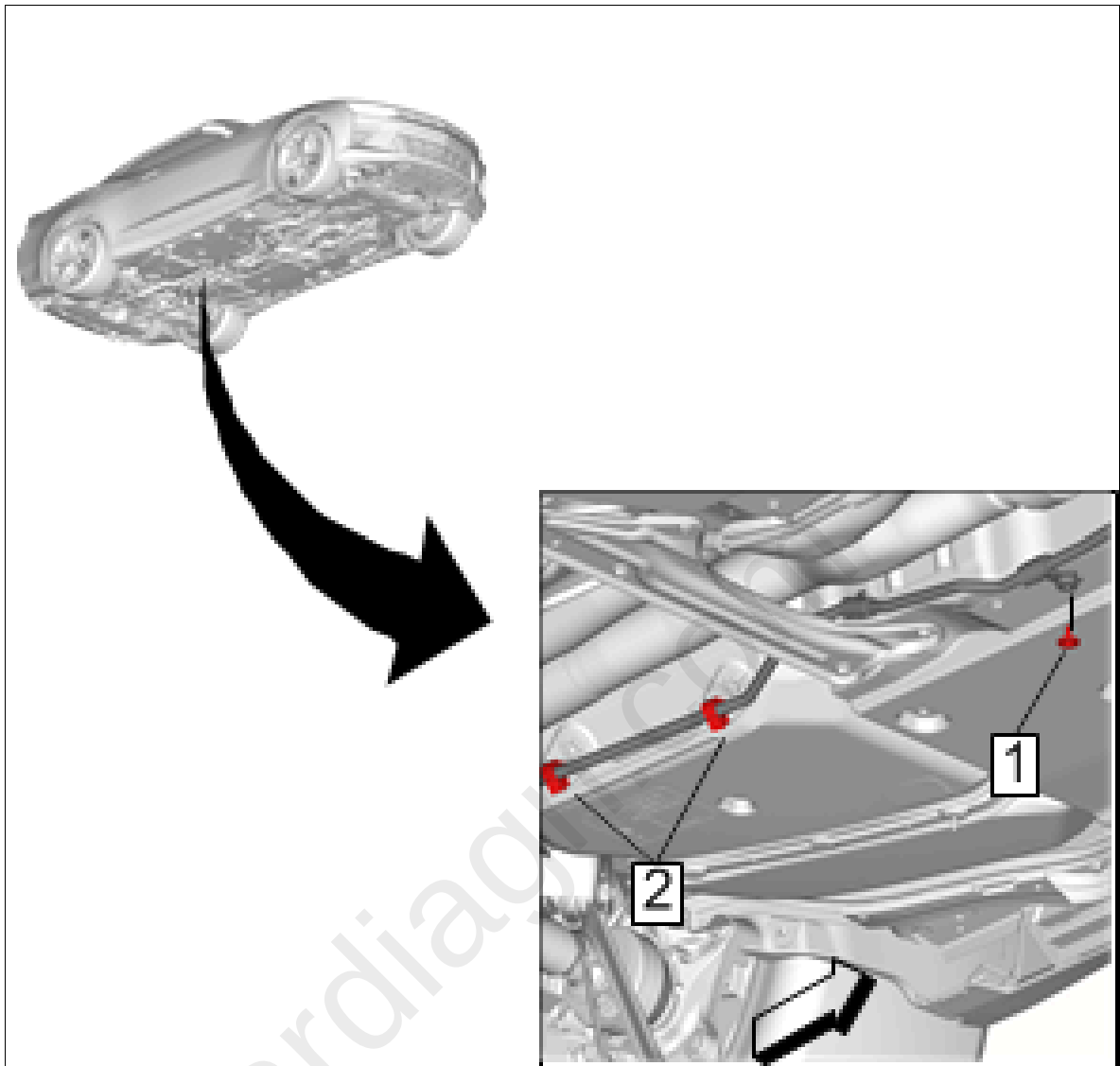
Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 4: Right Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY



CAUTION:

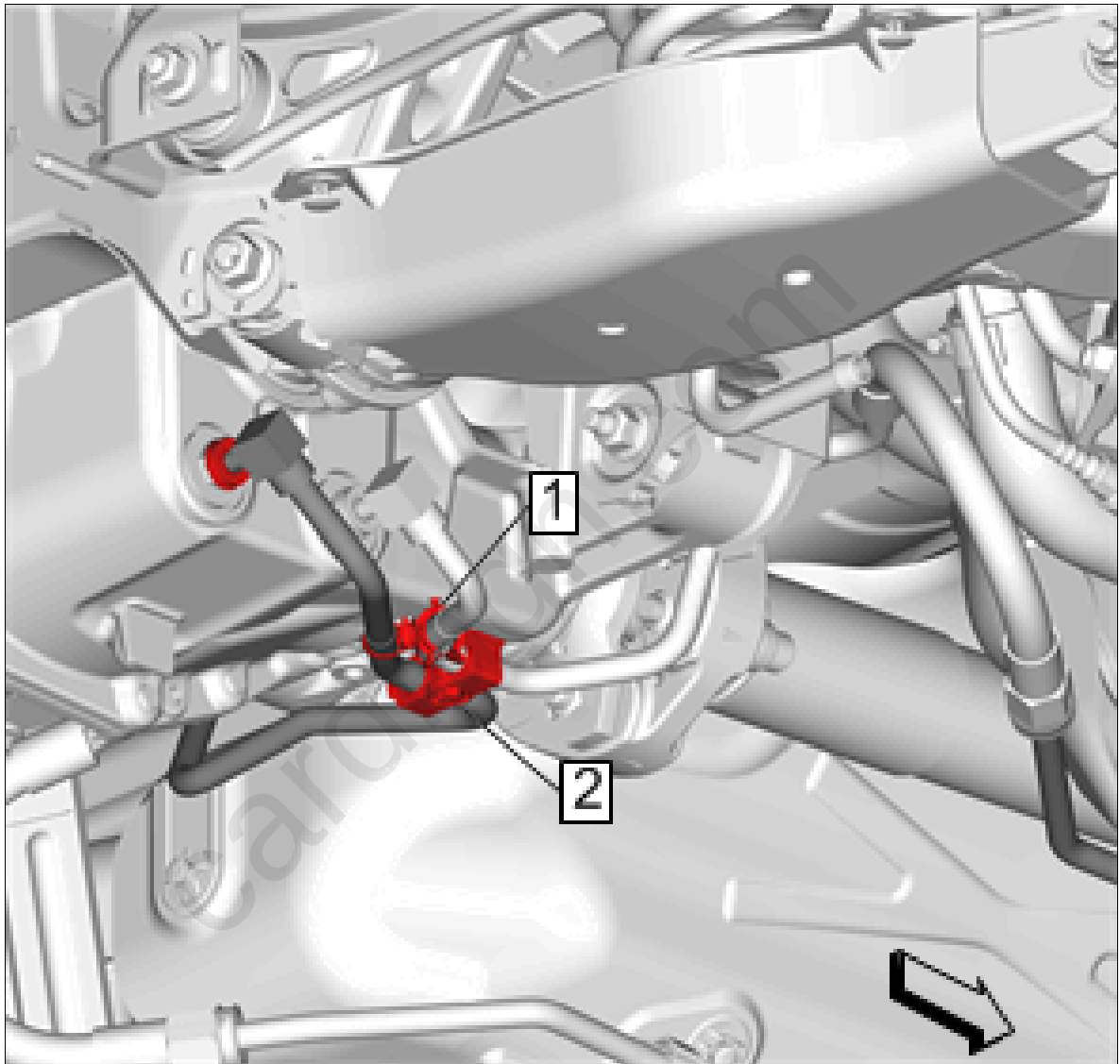
Refer to Fastener Caution .

6. Install the right side underbody front air deflector bolt (1) and tighten to 9 N.m (80 lb in).
7. Install the transmission fluid cooler pipe clips (2) into the right side underbody front air deflector.
8. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)
9. Inspect for transmission fluid leaks.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH M5U OR MM6, WITH KNR, REAR DIFFERENTIAL INLET HOSE) >
REMOVAL PROCEDURE**

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

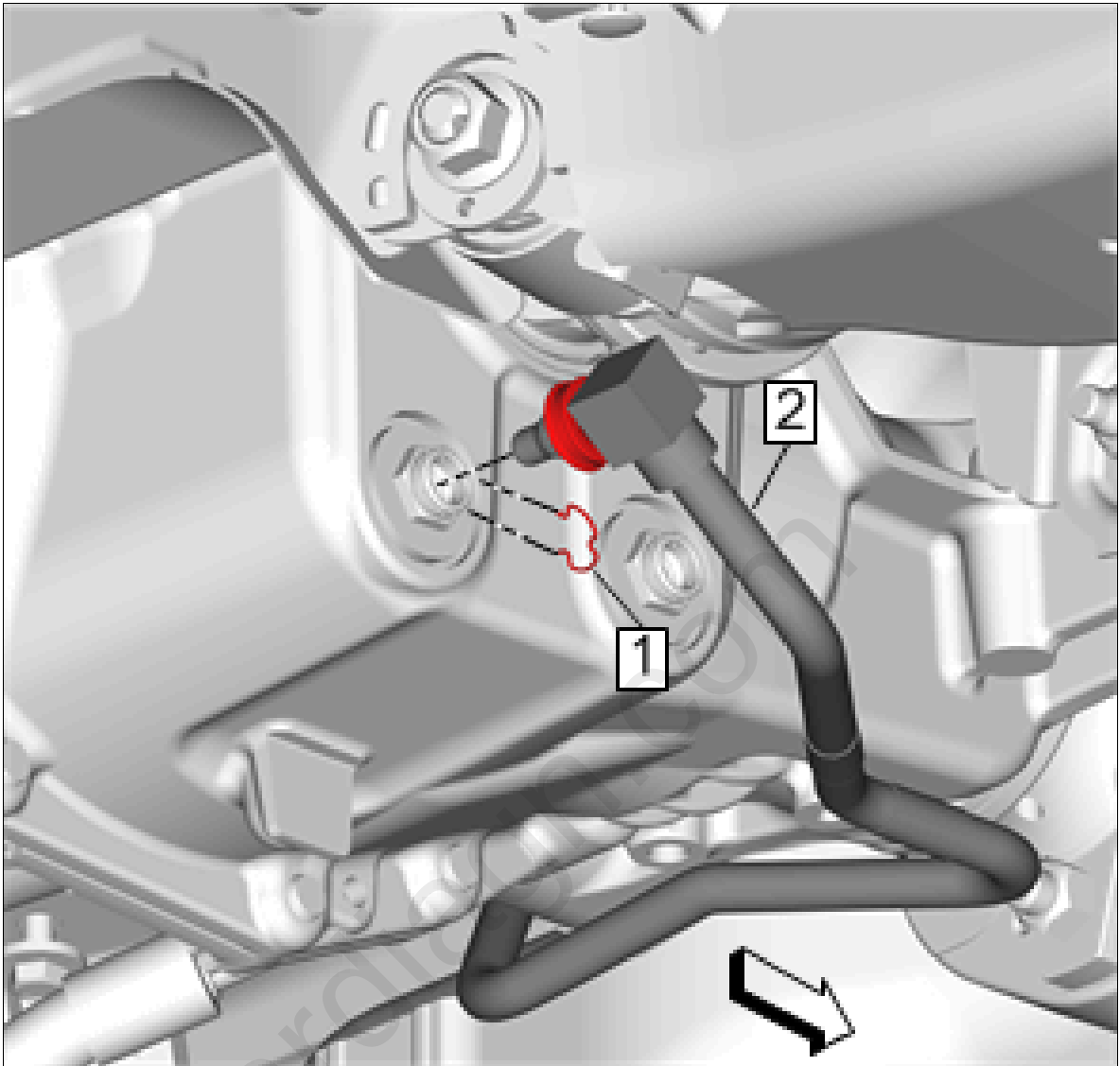
Fig 1: Transmission Fluid Cooler Pipe Tie Strap From Rear Differential Outlet Hose



Courtesy of GENERAL MOTORS COMPANY

2. Separate the transmission fluid cooler pipe tie strap (1) from the rear differential outlet hose.
3. Remove the transmission fluid cooler pipe bracket bolt (2) and remove the rear differential hoses from the bracket.

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Rear Axle



Courtesy of GENERAL MOTORS COMPANY

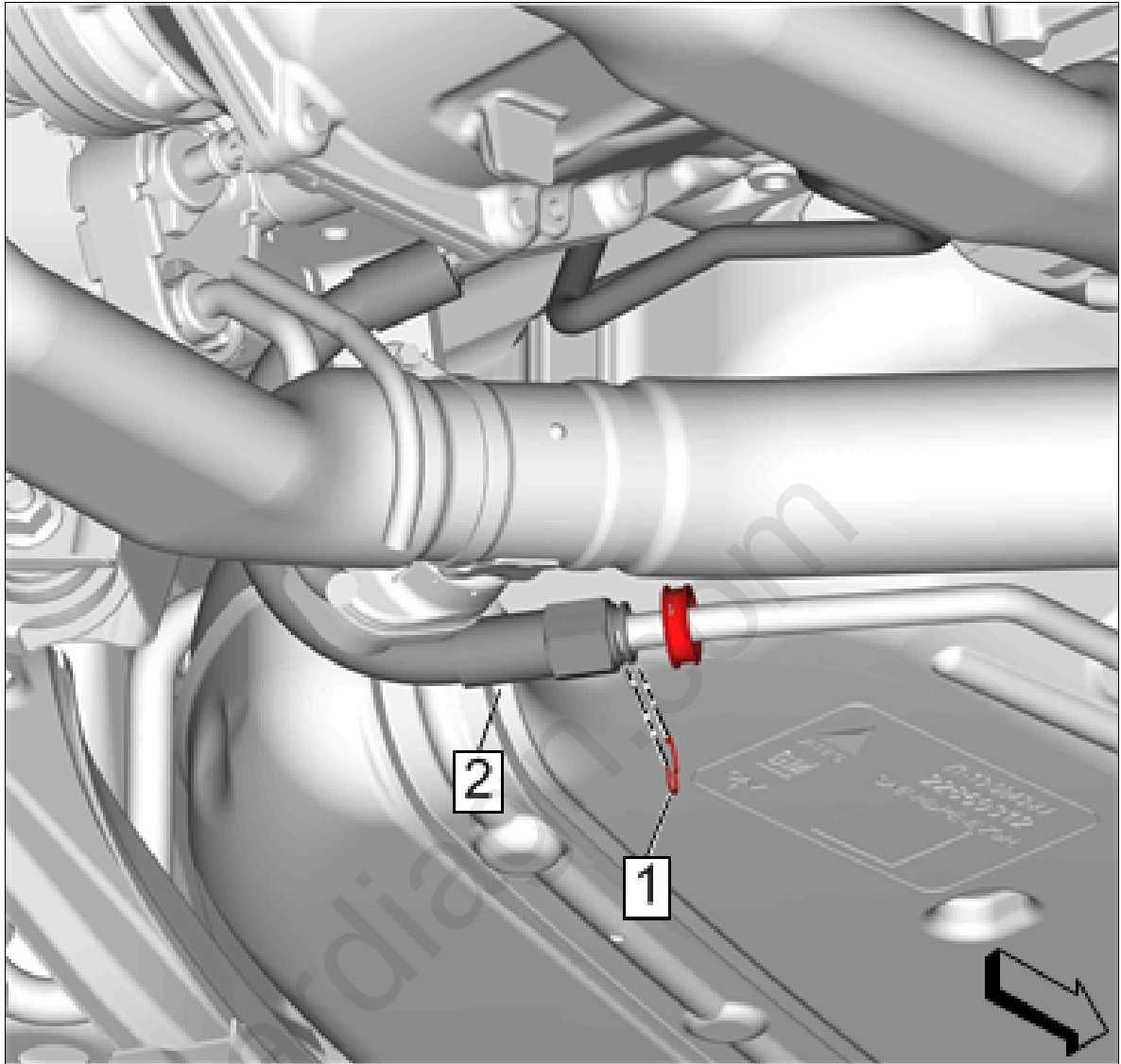
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Rear Axle - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) (2) at Rear Axle.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)



Courtesy of GENERAL MOTORS COMPANY

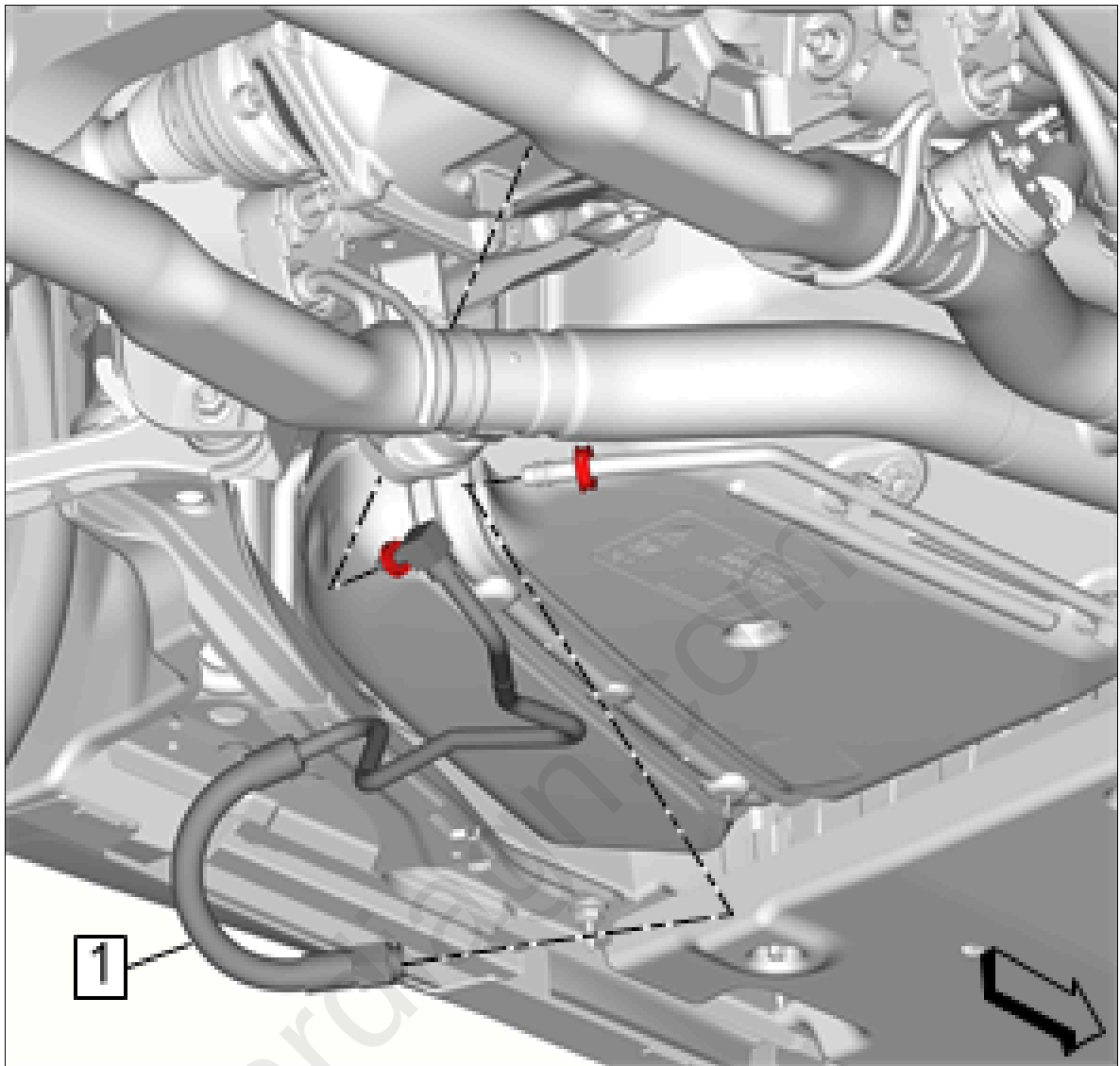
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) (2) at Transmission Fluid Cooler Pipe (Mid Line Left).

Fig 4: Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)

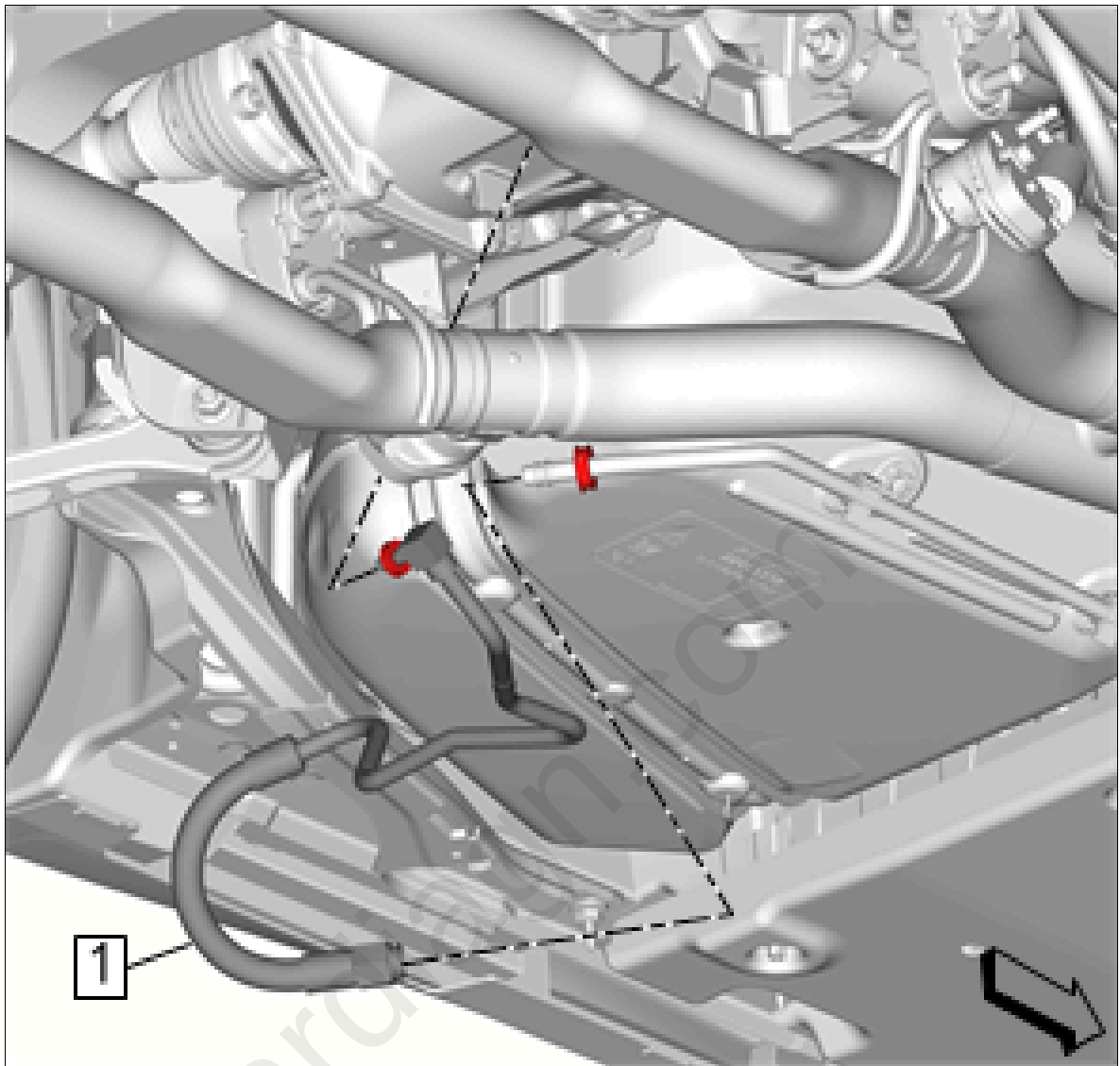


Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) (1)
9. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH M5U OR MM6, WITH KNR, REAR DIFFERENTIAL INLET HOSE) >
INSTALLATION PROCEDURE**

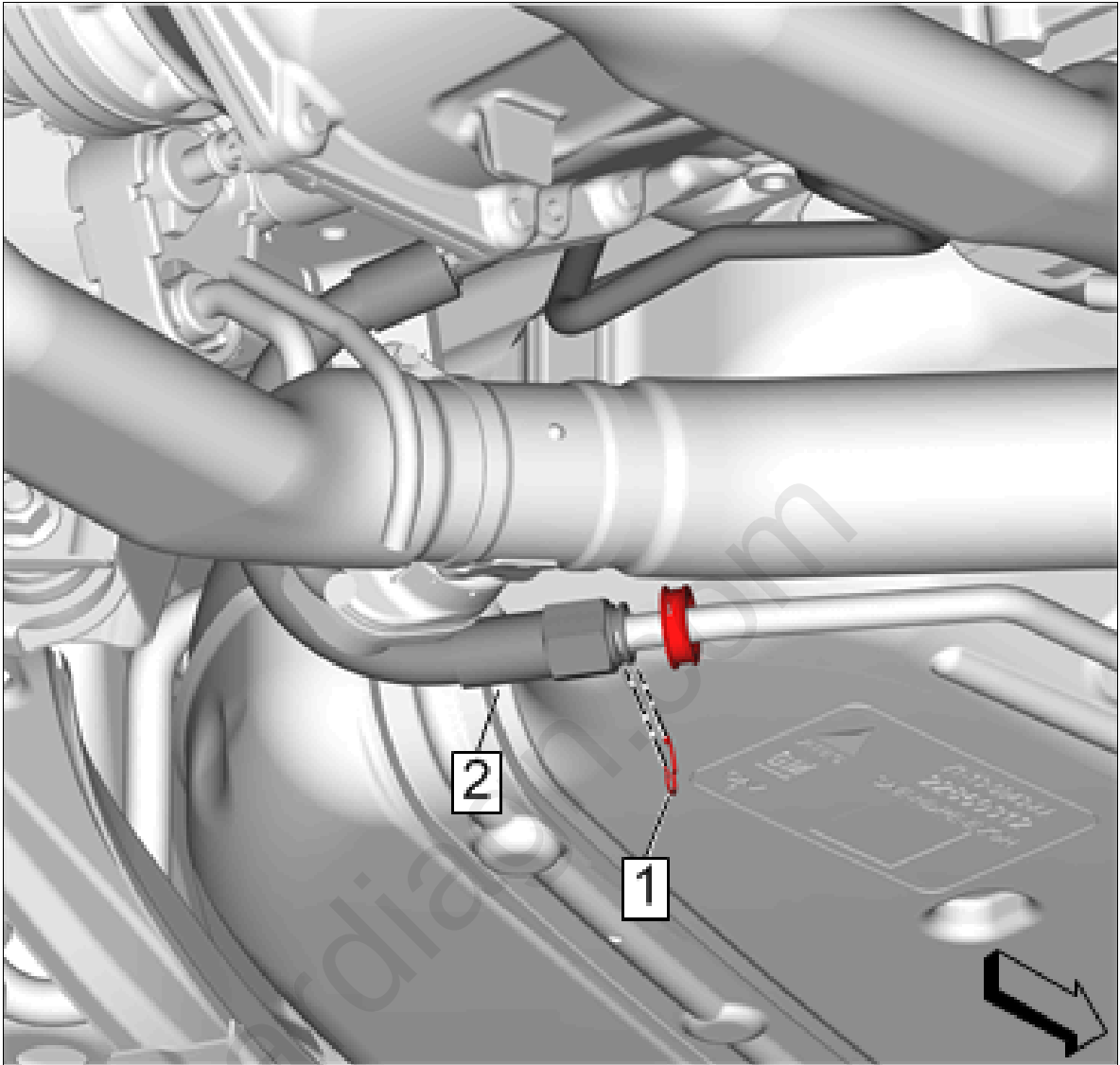
Fig 1: Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) (1)

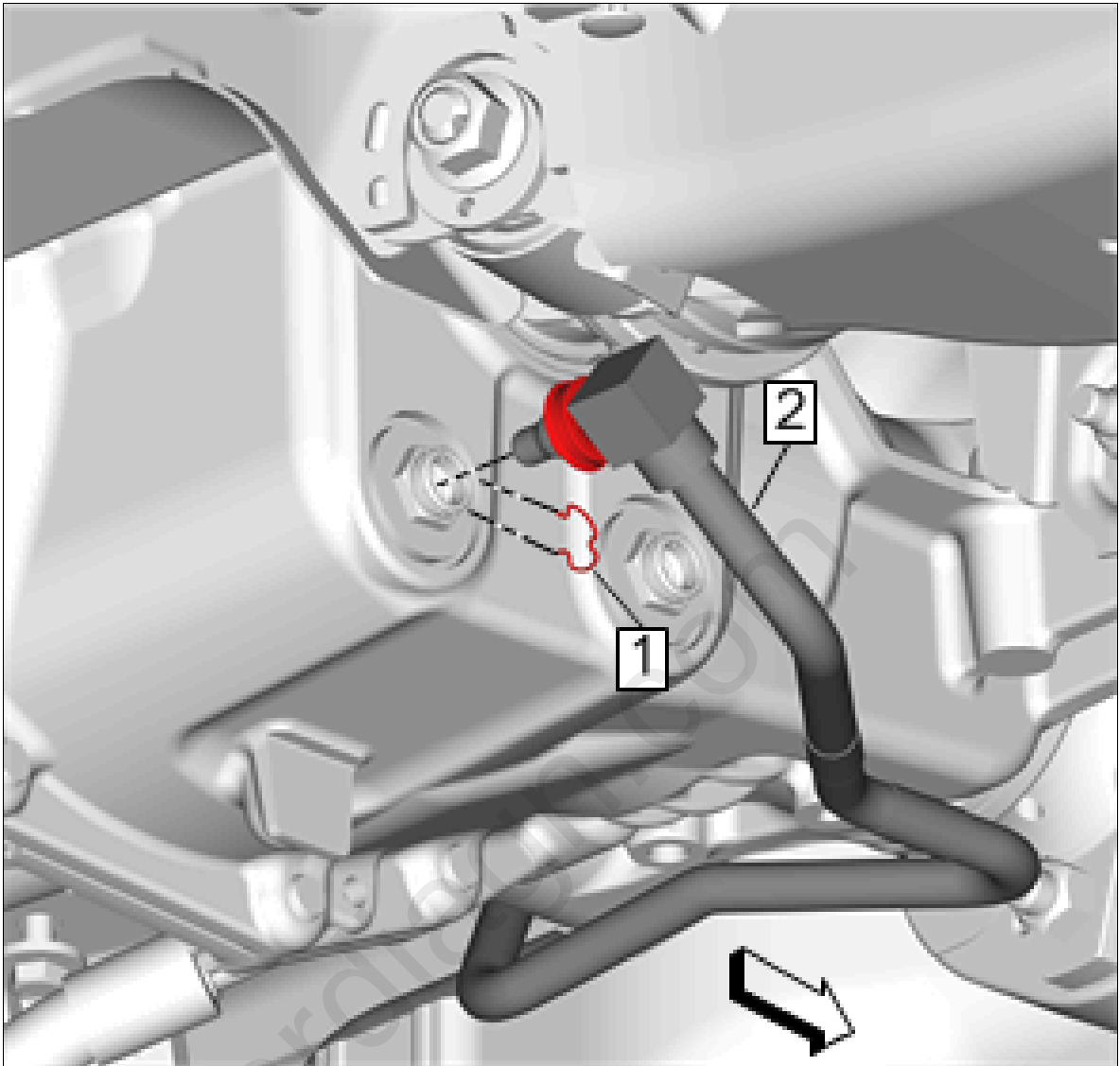
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) (2) at Transmission Fluid Cooler Pipe (Mid Line Left).

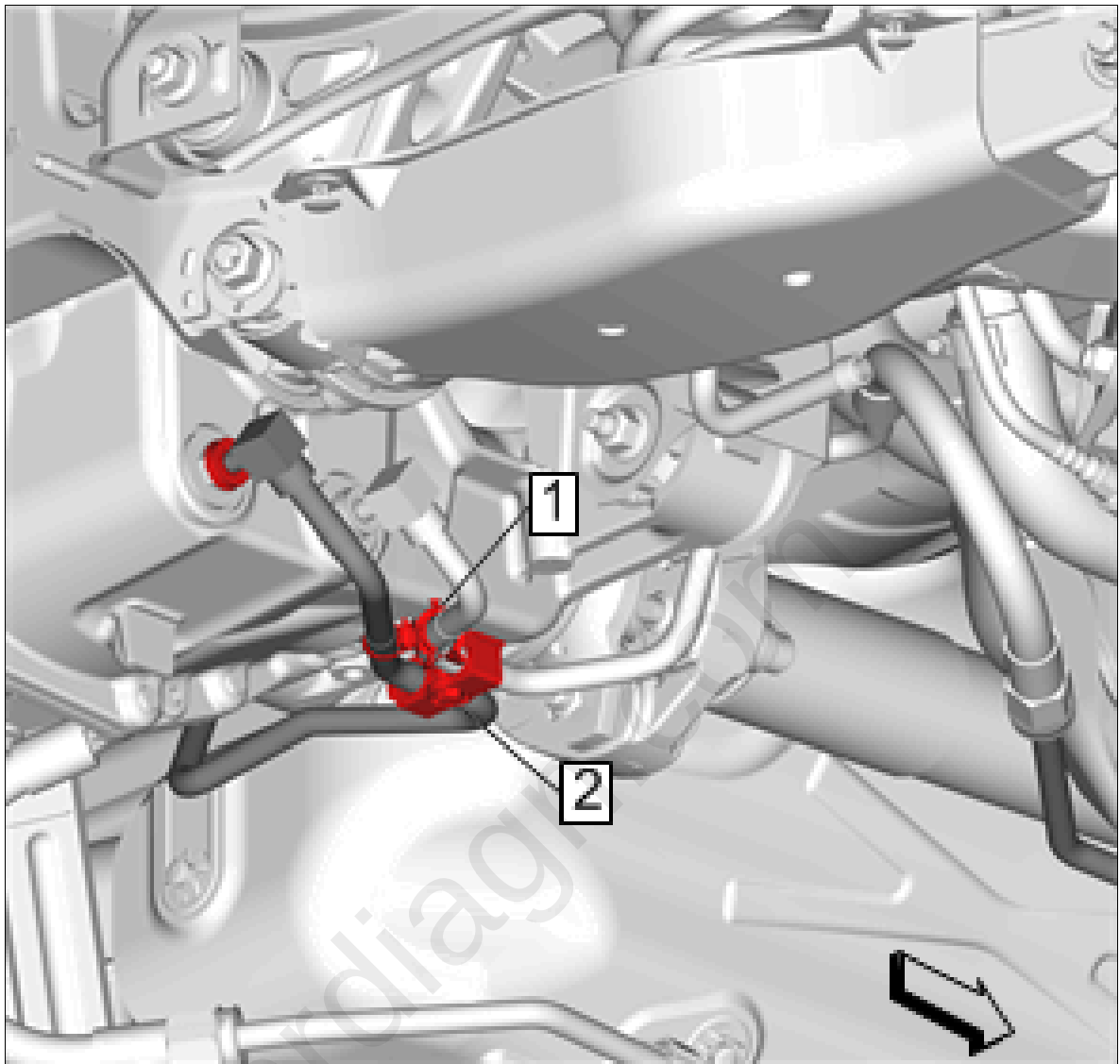
Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Rear Axle



Courtesy of GENERAL MOTORS COMPANY

4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Rear Axle - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) (2) at Rear Axle.

Fig 4: Transmission Fluid Cooler Pipe Tie Strap To Rear Differential Outlet Hose



Courtesy of GENERAL MOTORS COMPANY



CAUTION:

Refer to Fastener Caution .

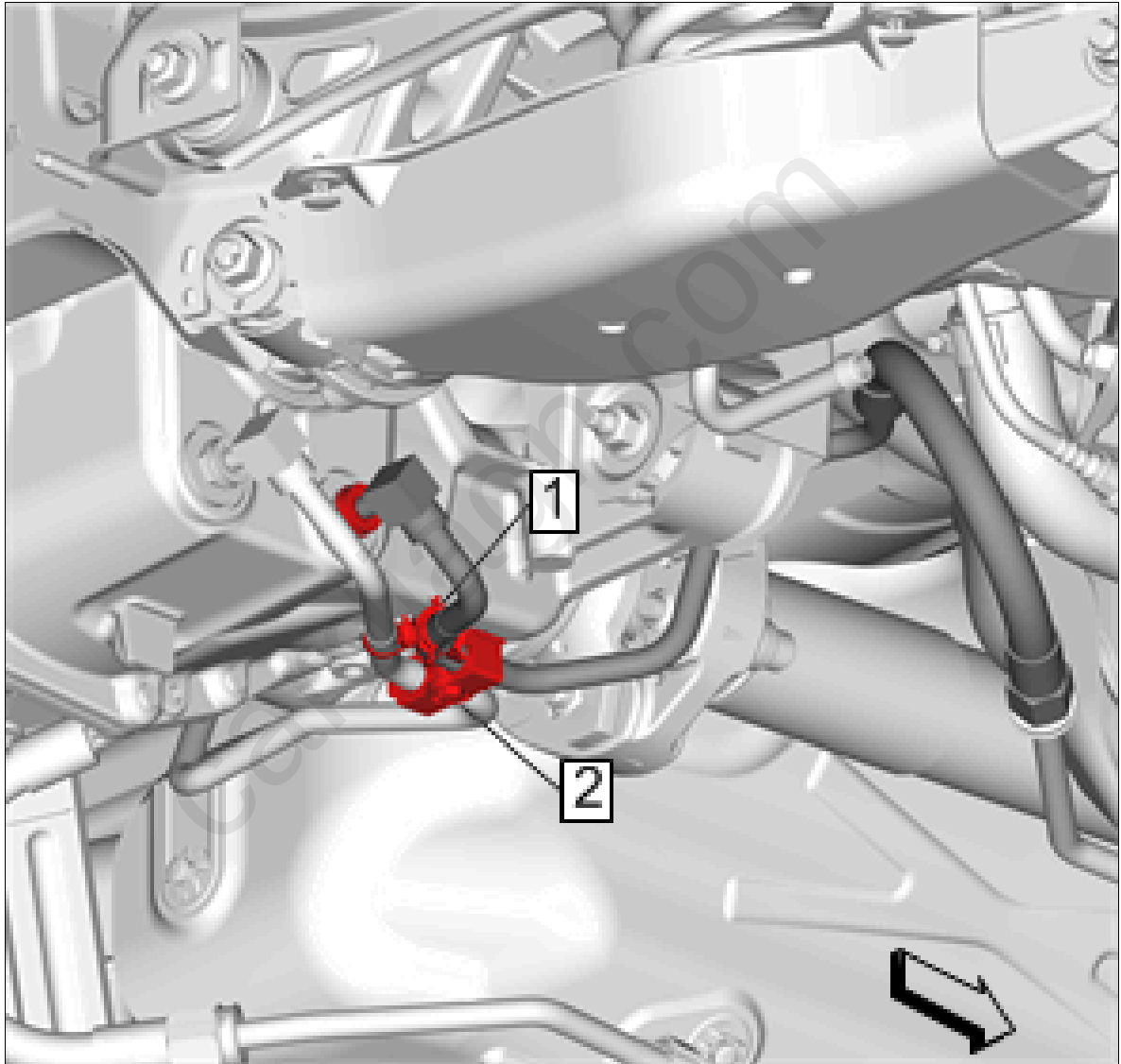
6. Install the rear differential hoses in the transmission fluid cooler pipe bracket and tighten the bolt (2) to 9 N.m (80 lb in).
7. Attach the transmission fluid cooler pipe tie strap (1) to the rear differential outlet hose.
8. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
9. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)

10. Inspect for transmission fluid leaks.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH M5U OR MM6, WITH KNR, REAR DIFFERENTIAL OUTLET HOSE) >
REMOVAL PROCEDURE**

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

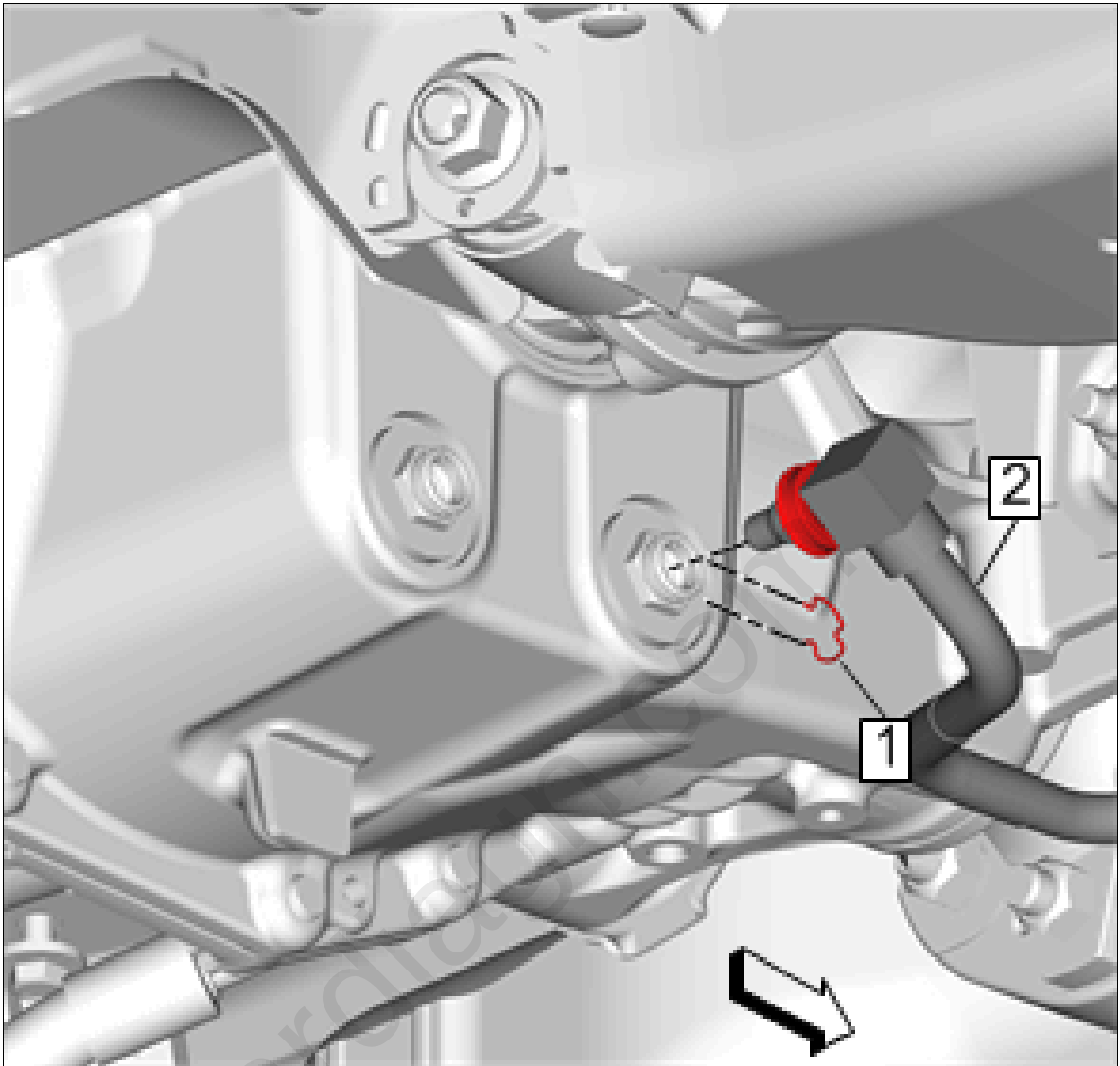
Fig 1: Transmission Fluid Cooler Pipe Tie Strap To Rear Differential Outlet Hose



Courtesy of GENERAL MOTORS COMPANY

2. Separate the transmission fluid cooler pipe tie strap (1) from the rear differential outlet hose.
3. Remove the transmission fluid cooler pipe bracket bolt (2) and remove the rear differential hoses from the bracket.

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Rear Axle



Courtesy of GENERAL MOTORS COMPANY

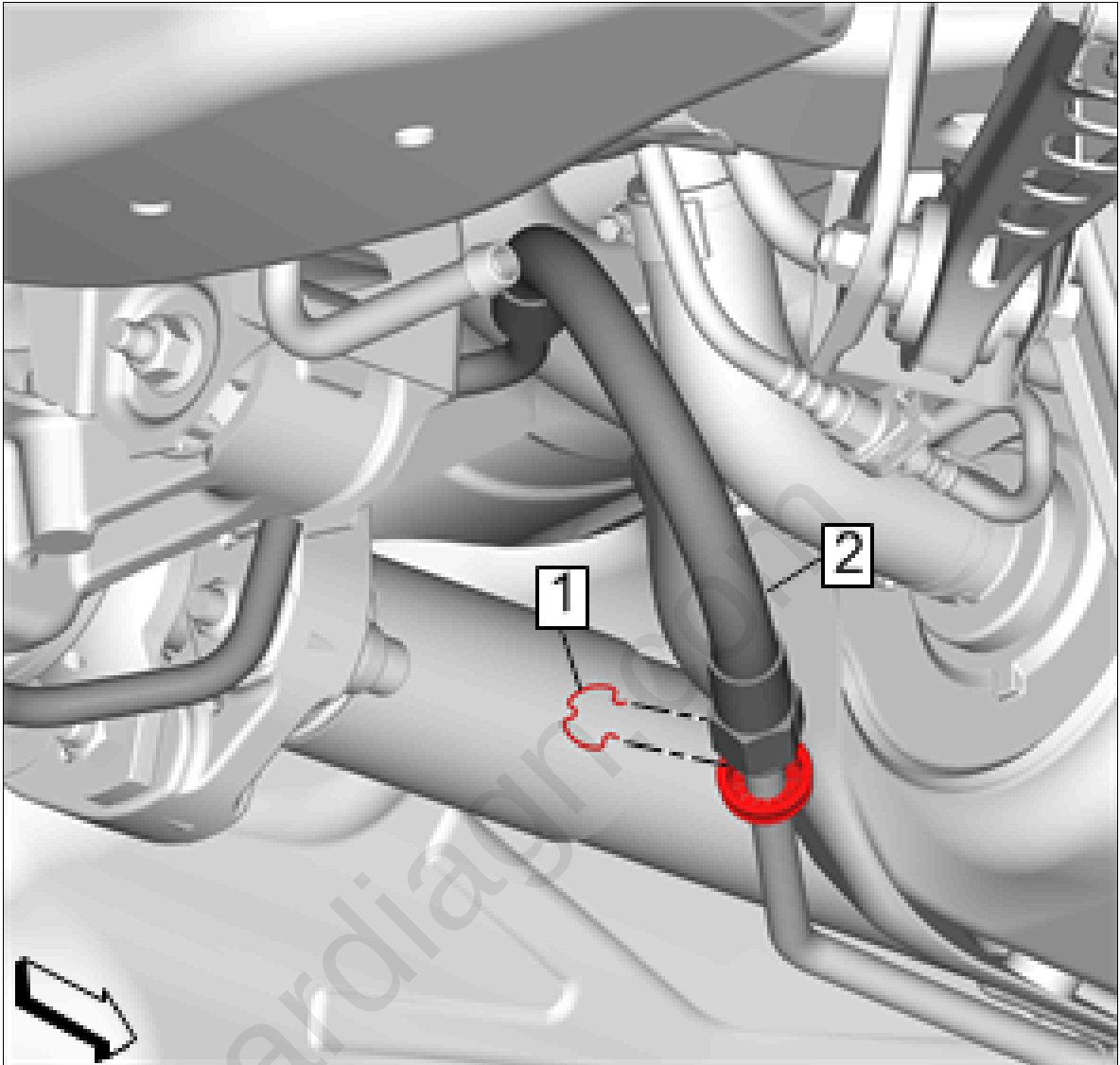
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Rear Axle - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) (2) at Rear Axle.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)



Courtesy of GENERAL MOTORS COMPANY

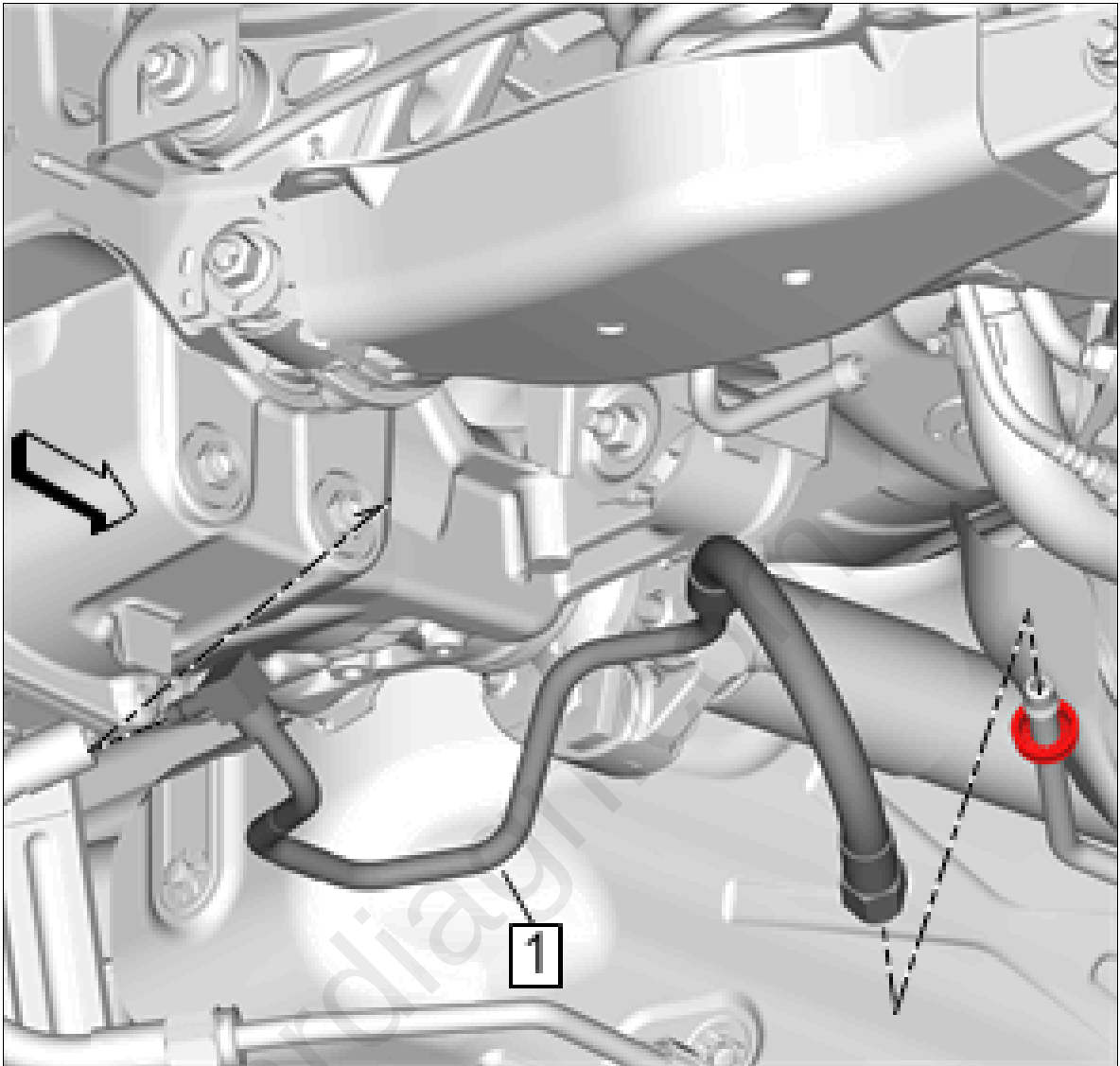
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Pipe (Mid Side Right) (2) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose).

Fig 4: Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)

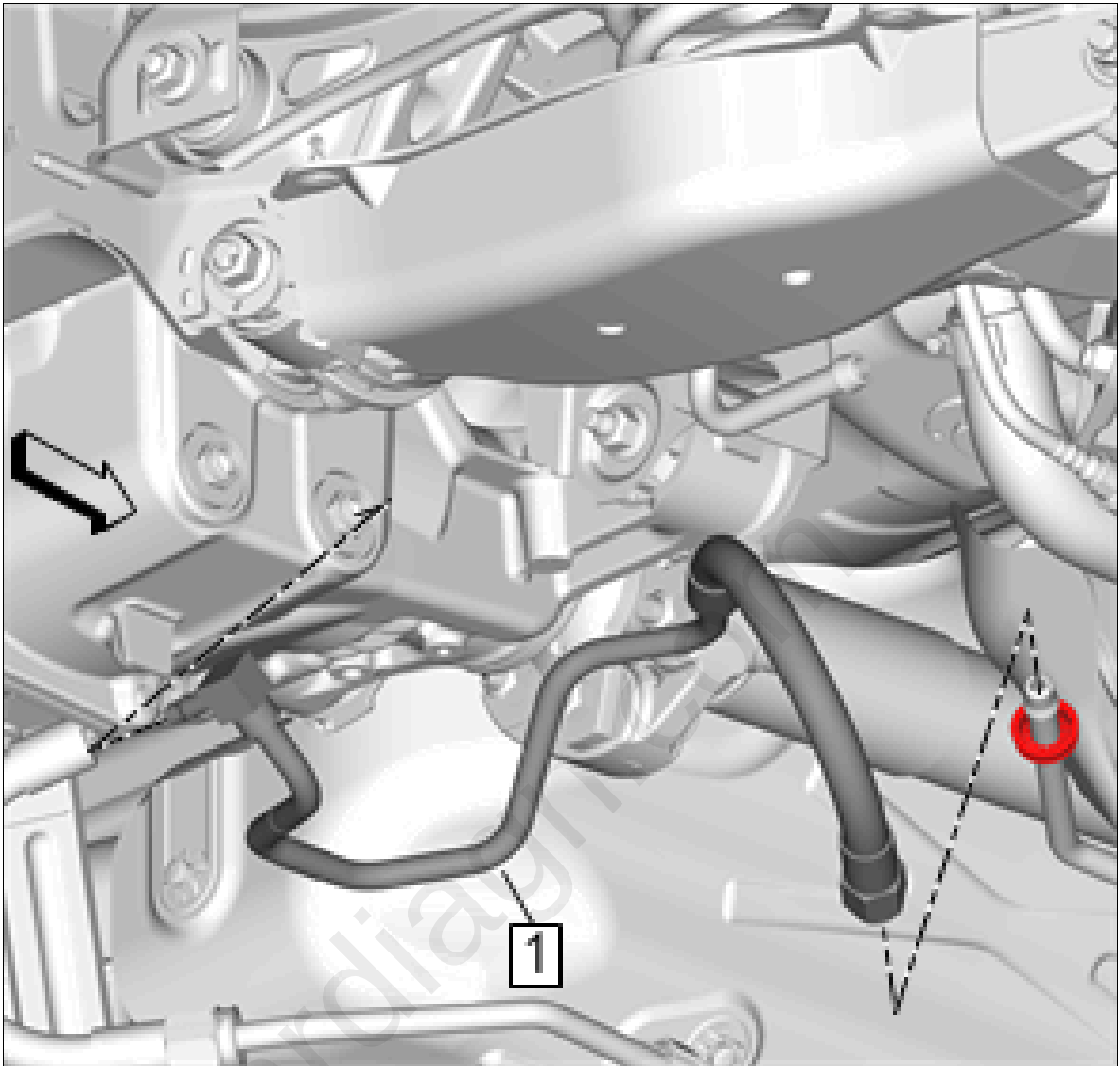


Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) (1)
9. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH M5U OR MM6, WITH KNR, REAR DIFFERENTIAL OUTLET HOSE) >
INSTALLATION PROCEDURE**

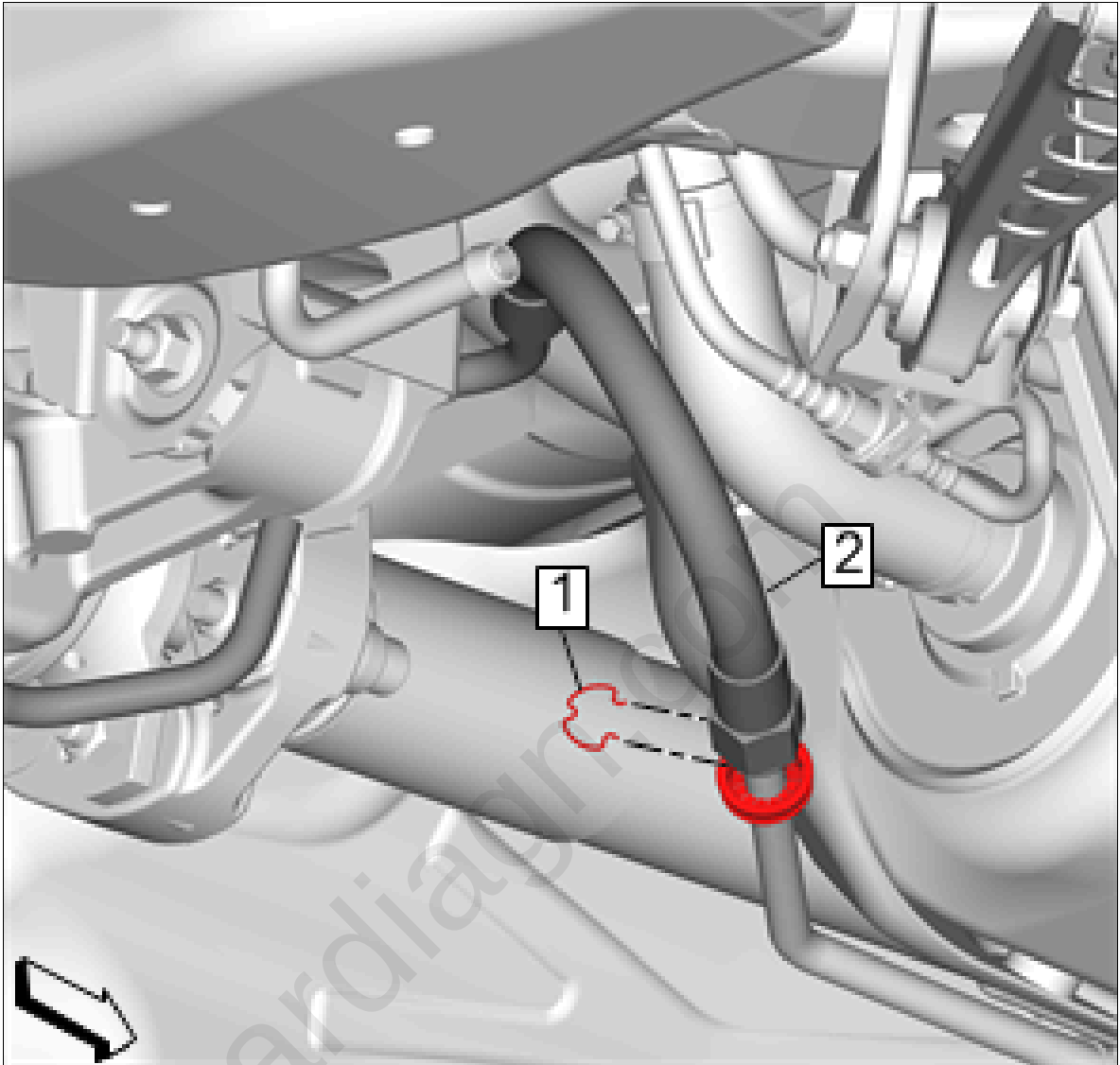
Fig 1: Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) (1)

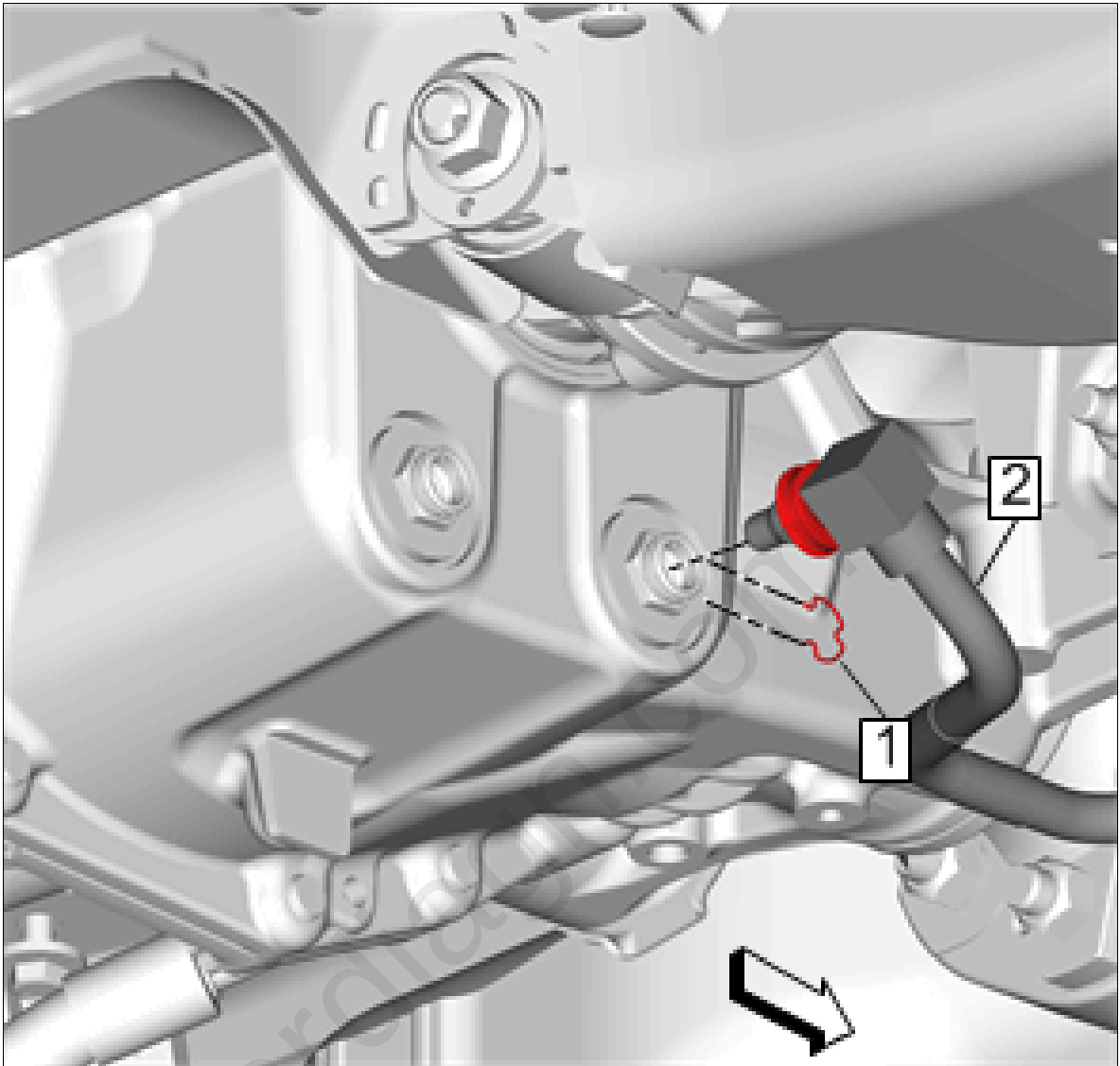
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Mid Side Right) (2) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose).

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Rear Axle



Courtesy of GENERAL MOTORS COMPANY

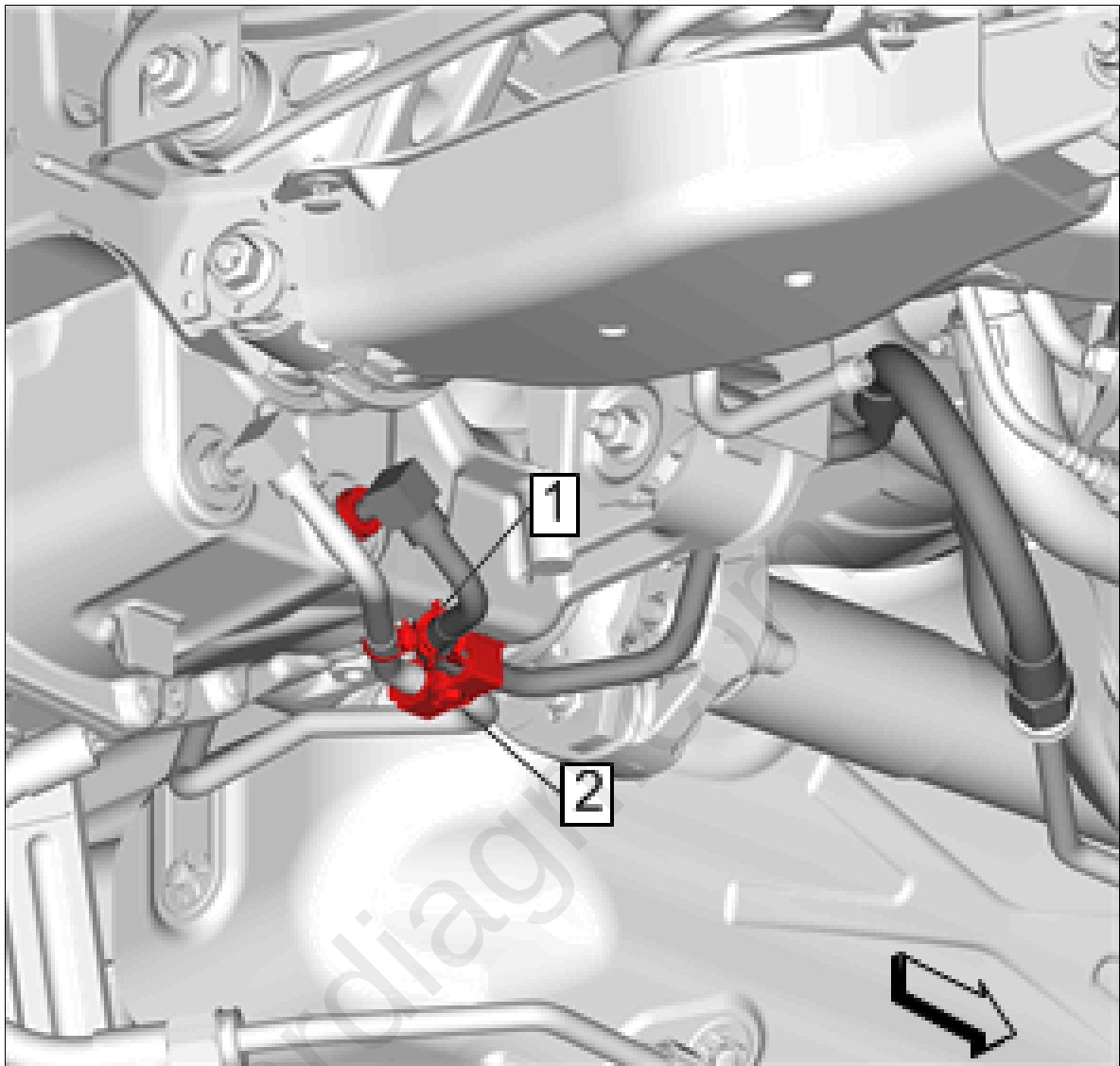
4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Rear Axle - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Install Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) (2) at Rear Axle.

Fig 4: Transmission Fluid Cooler Pipe Tie Strap To Rear Differential Outlet Hose



Courtesy of GENERAL MOTORS COMPANY



CAUTION:

Refer to Fastener Caution .

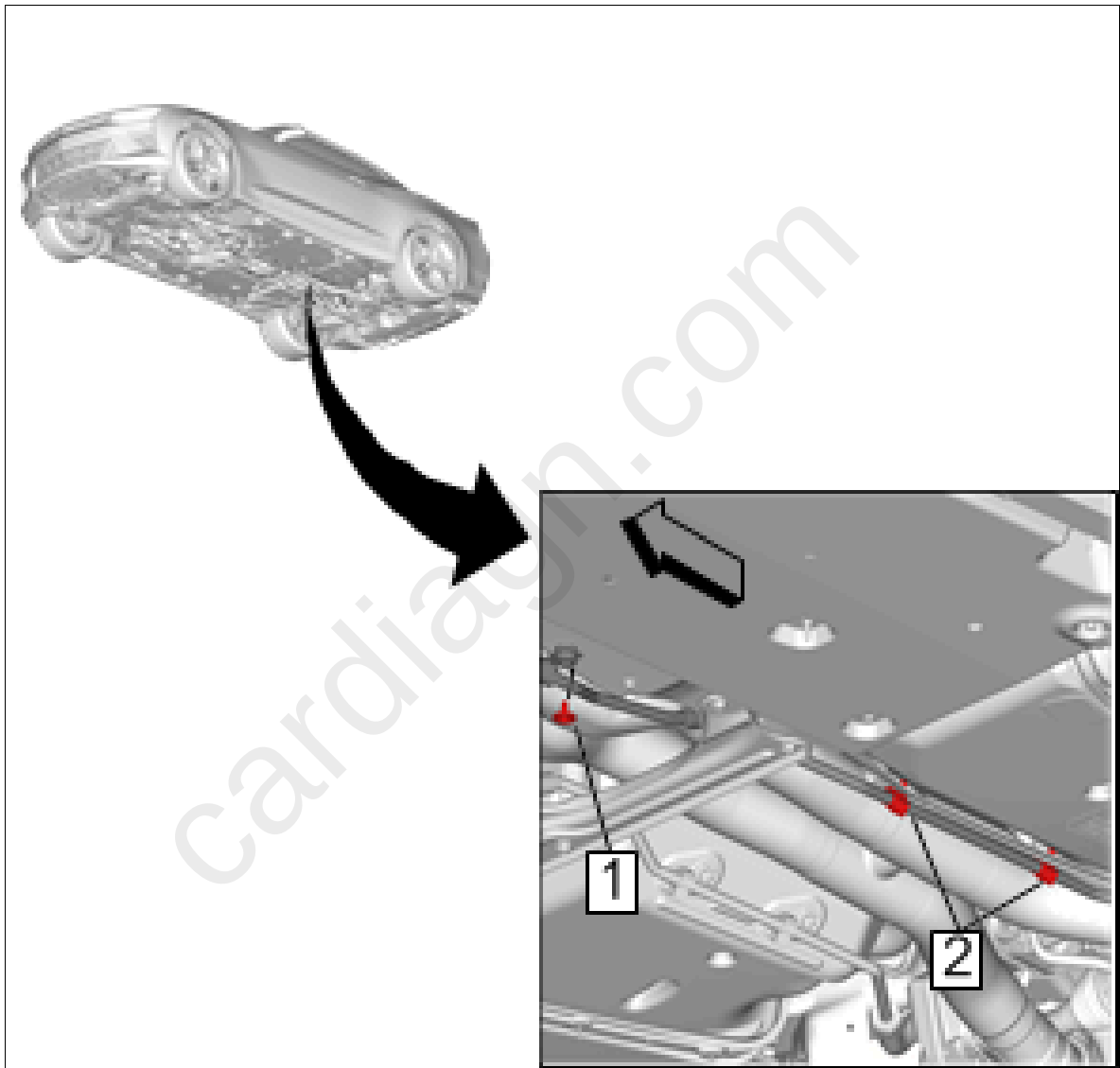
6. Install the rear differential hoses in the transmission fluid cooler pipe bracket and tighten the bolt (2) to 9 N.m (80 lb in).
7. Attach the transmission fluid cooler pipe tie strap (1) to the rear differential outlet hose.
8. <p01>Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
9. <p01>Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level Inspection (MM6)Transmission Fluid Level Inspection (M13 Without Y4Q)

10. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LT1 WITH M5U, WITH KNR, MID LINE LEFT) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

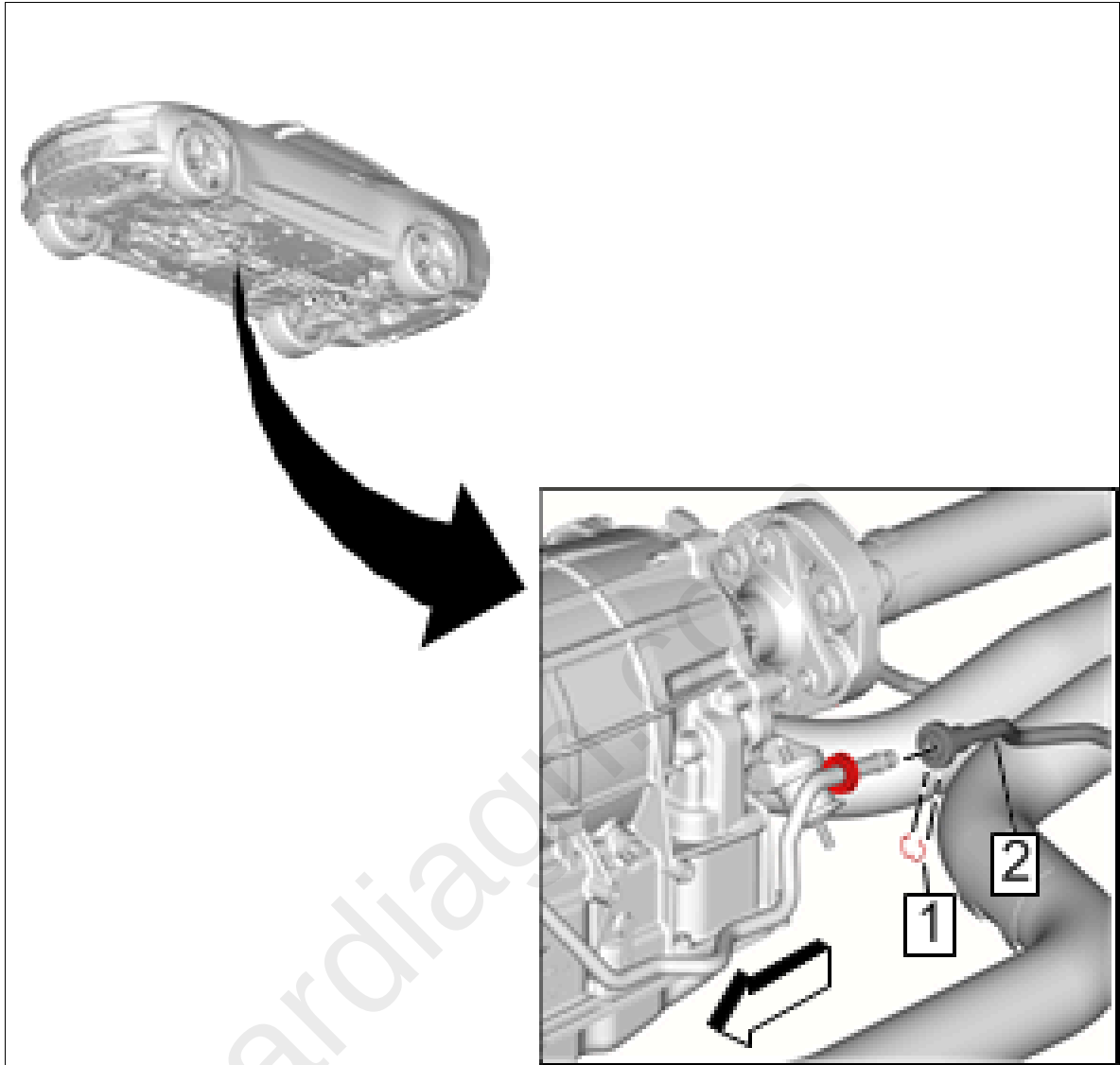
Fig 1: Left Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY

2. Remove the left side underbody front air deflector bolt (1).
3. Remove the transmission fluid cooler pipe clips (2) from the left side underbody front air deflector.

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

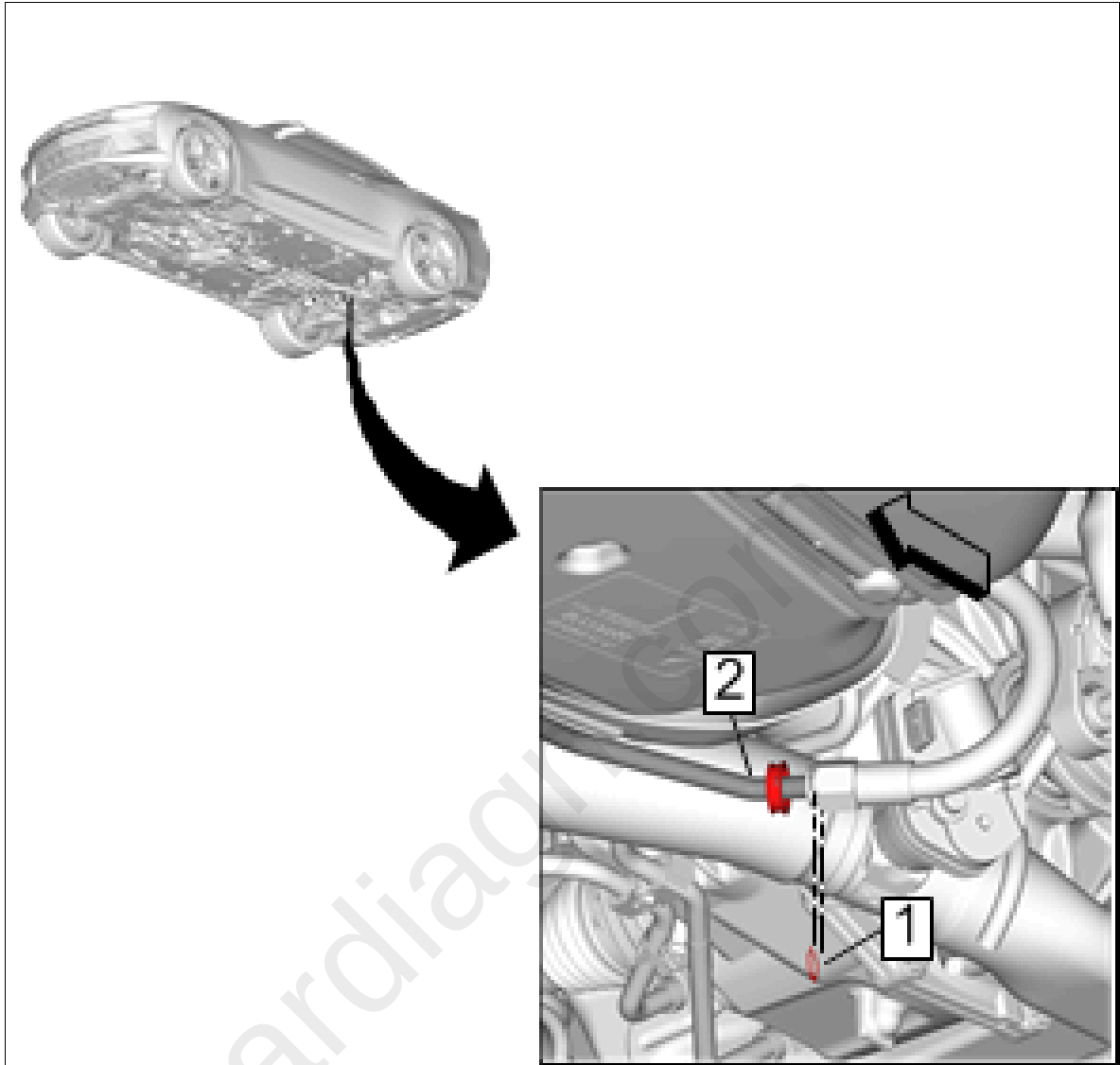
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)



Courtesy of GENERAL MOTORS COMPANY

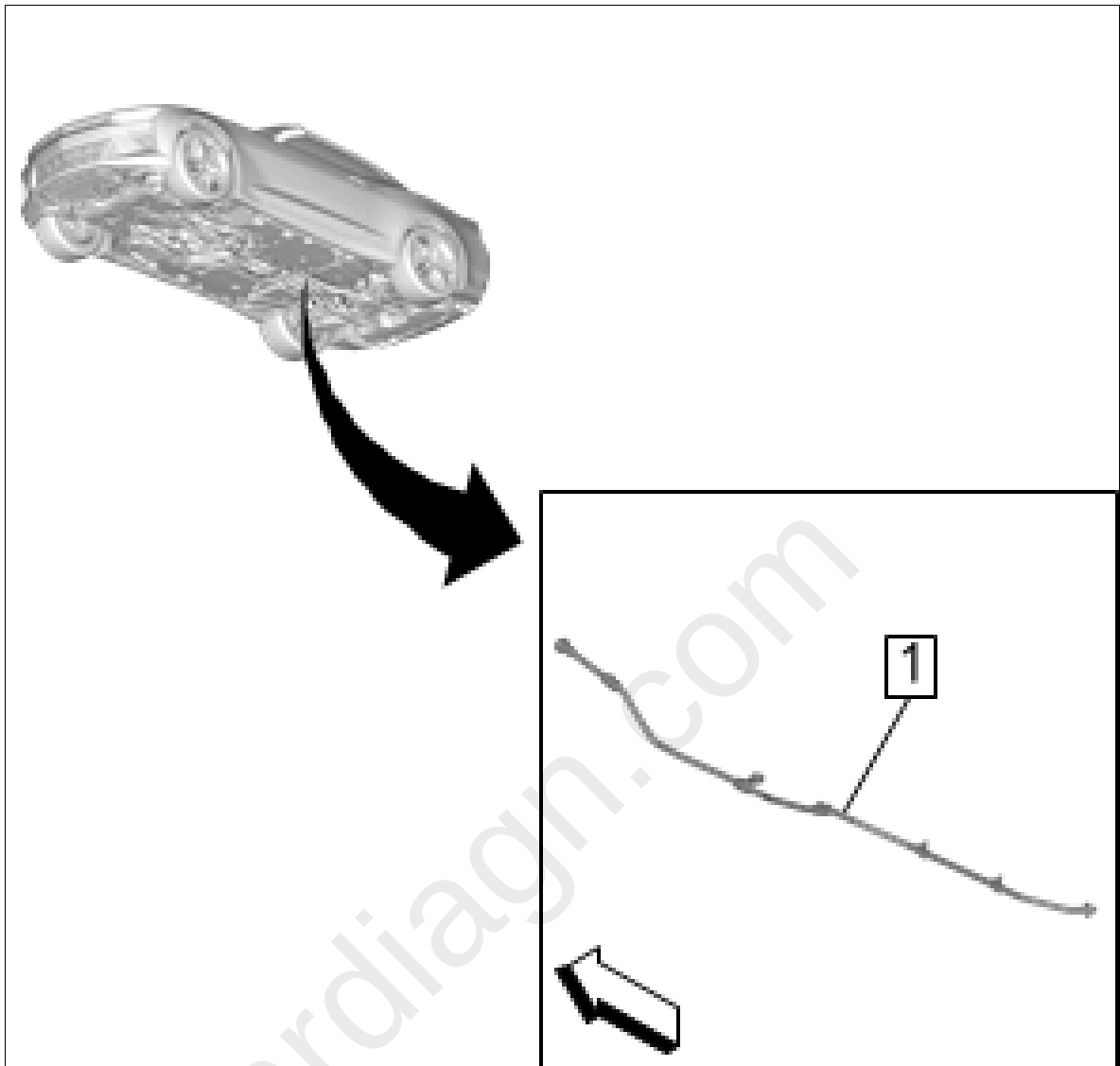
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose).

Fig 4: Transmission Fluid Cooler Pipe (Mid Line Left)

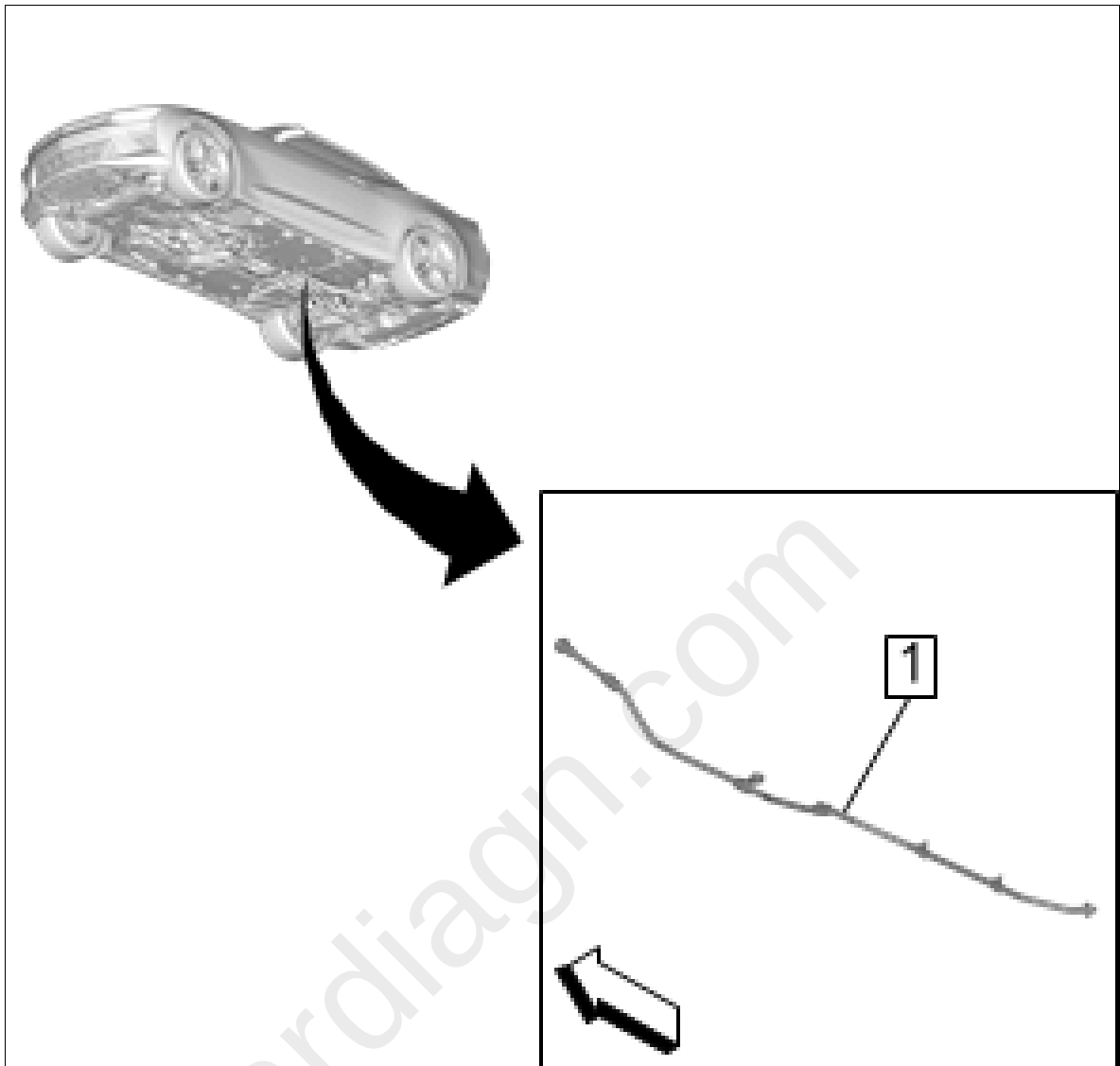


Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe (Mid Line Left) (1)
9. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH M5U, WITH KNR, MID LINE LEFT) > INSTALLATION PROCEDURE**

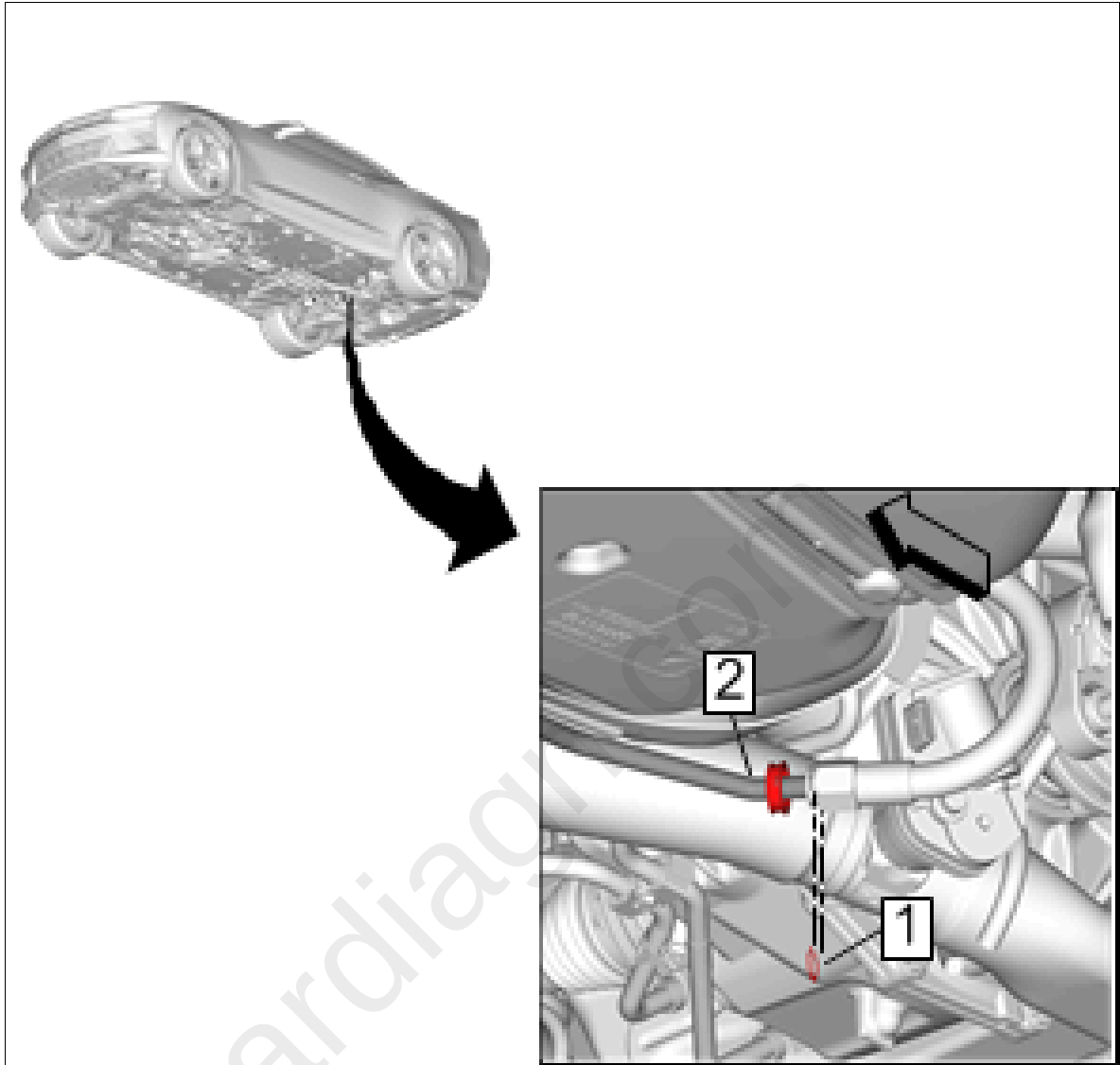
Fig 1: Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (Mid Line Left) (1)

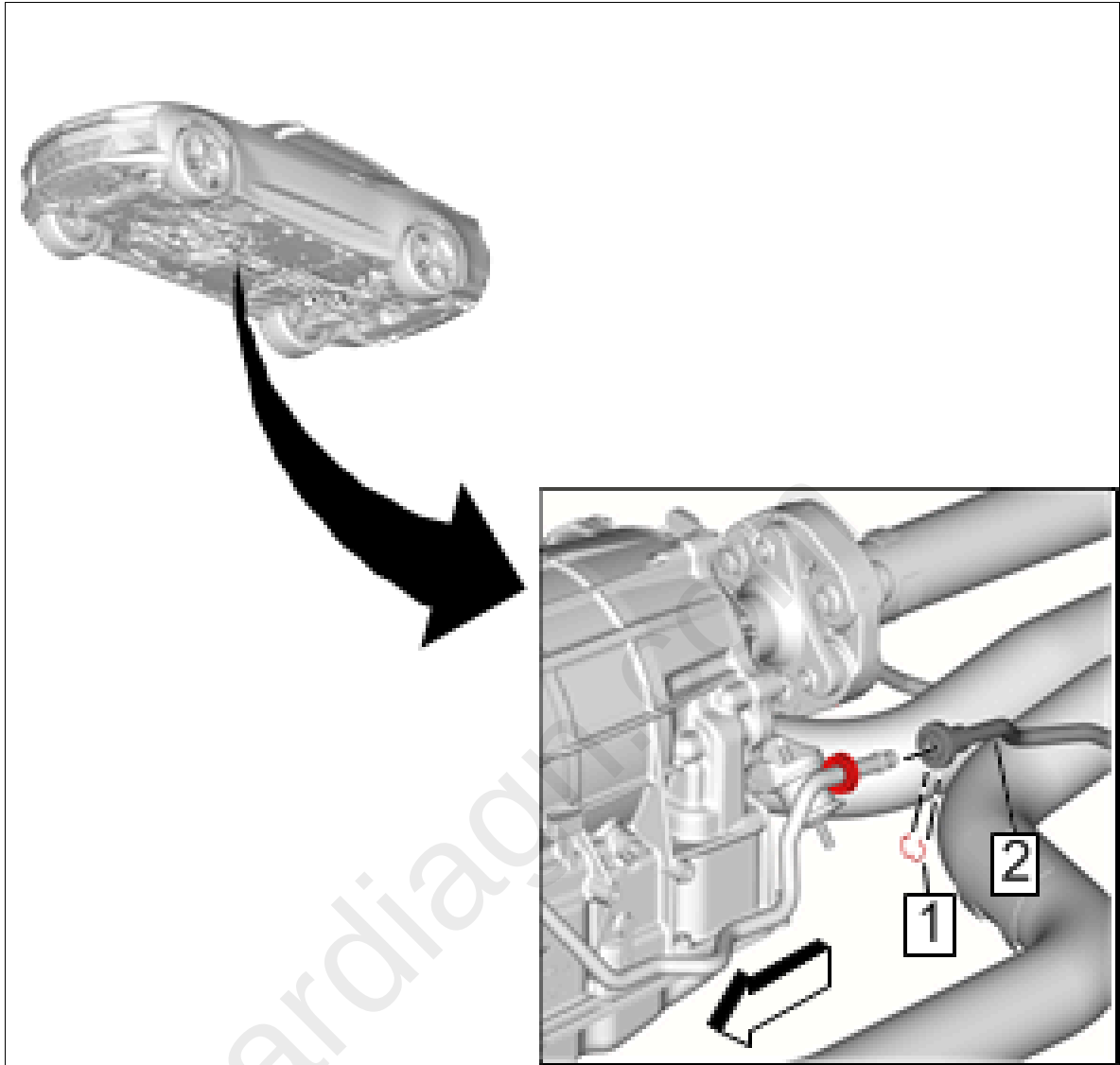
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Pipe (Rear Differential Inlet Hose).

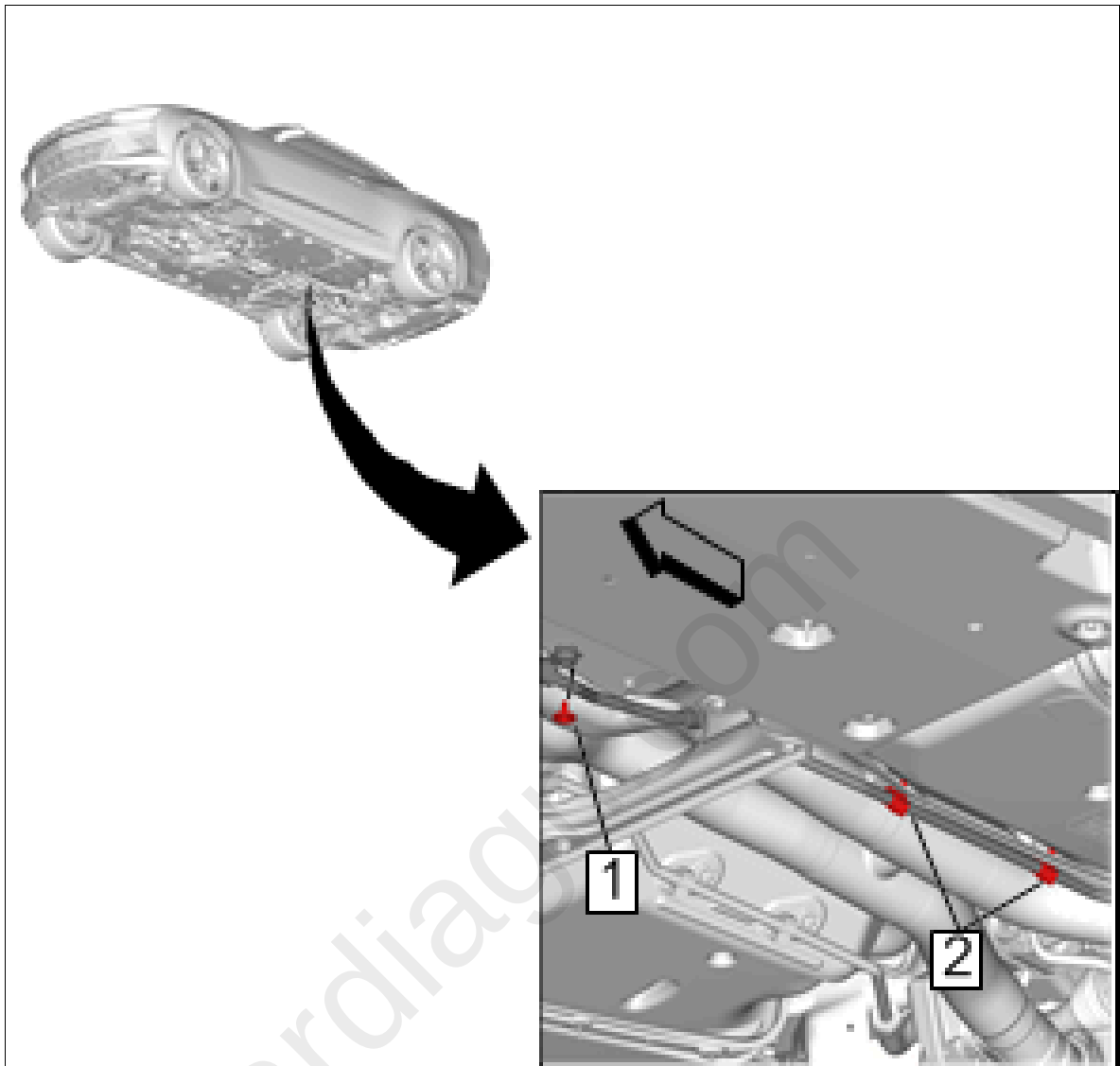
Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Left)



Courtesy of GENERAL MOTORS COMPANY

4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Left) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Pipe (Mid Line Left) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 4: Left Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY



CAUTION:

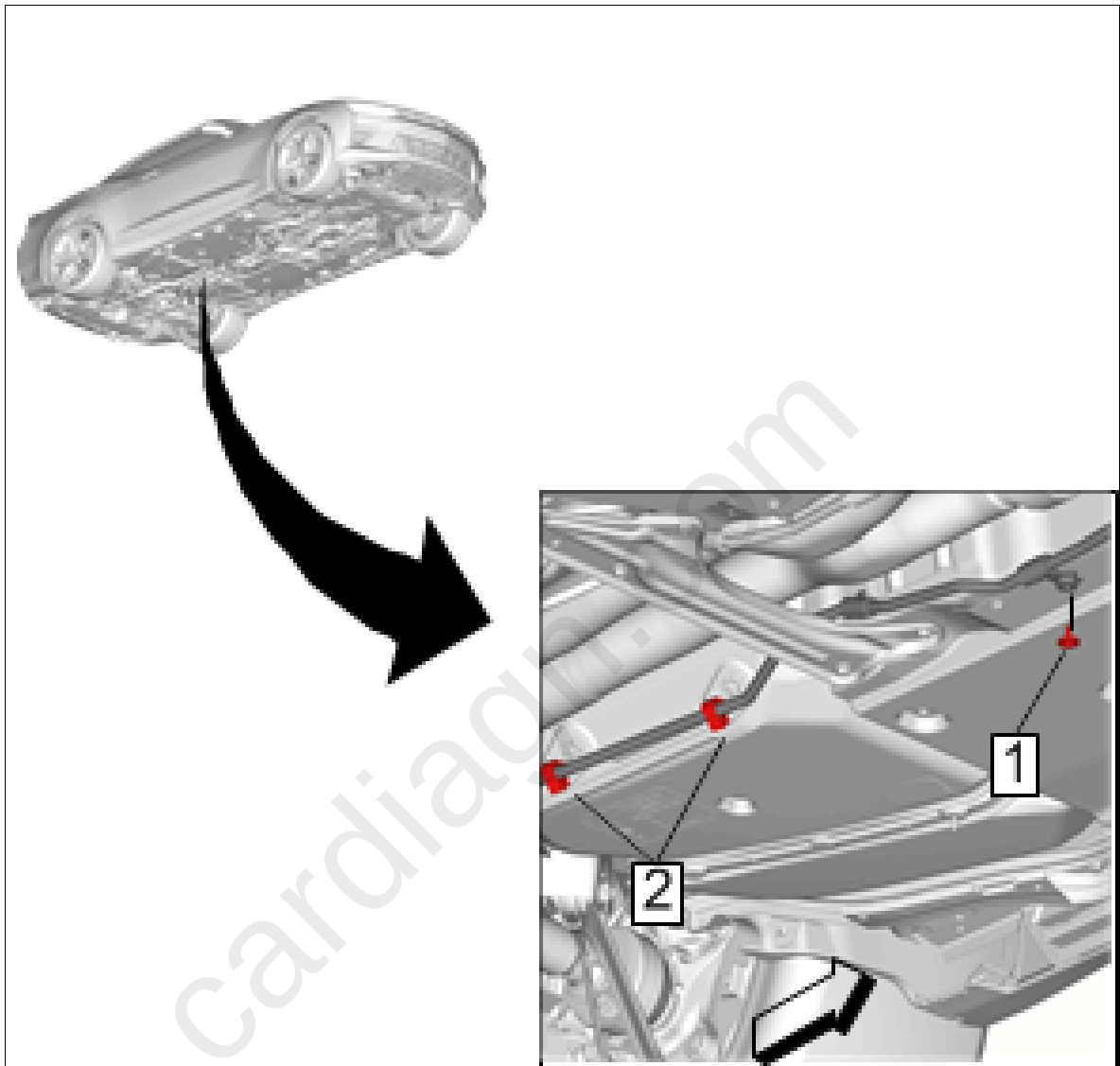
Refer to Fastener Caution .

6. Install the left side underbody front air deflector bolt (1) and tighten to 9 N.m (80 lb in).
7. Install the transmission fluid cooler pipe clips (2) in the left side underbody front air deflector.
8. Check the transmission fluid level. Transmission Fluid Level and Condition Check
9. Inspect for transmission fluid leaks.

(LT1 WITH M5U, WITH KNR, MID LINE RIGHT) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

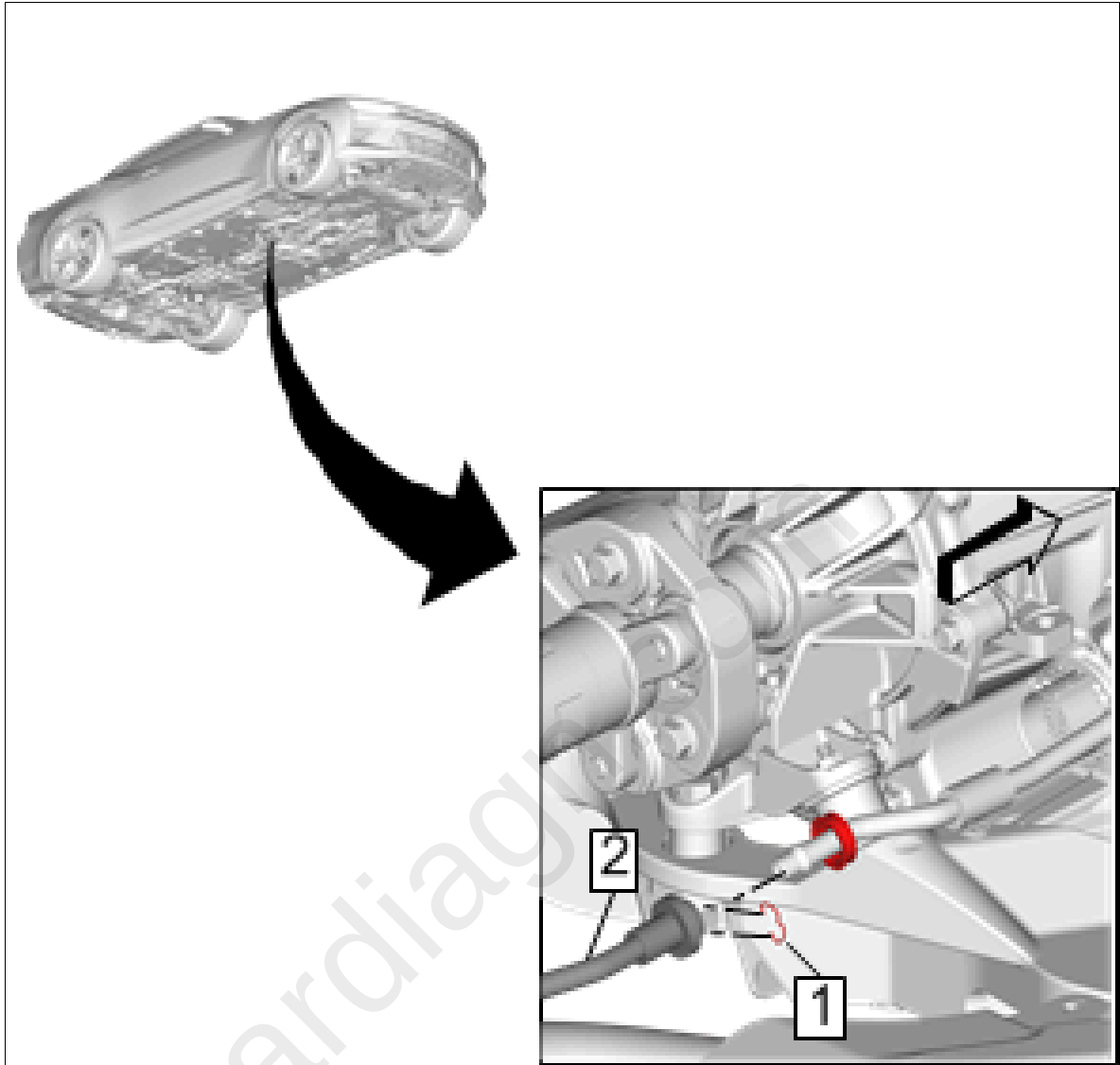
Fig 1: Right Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY

2. Remove the right side underbody front air deflector bolt (1).
3. Remove the transmission fluid cooler pipe clips (2) from the right side underbody front air deflector.

Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

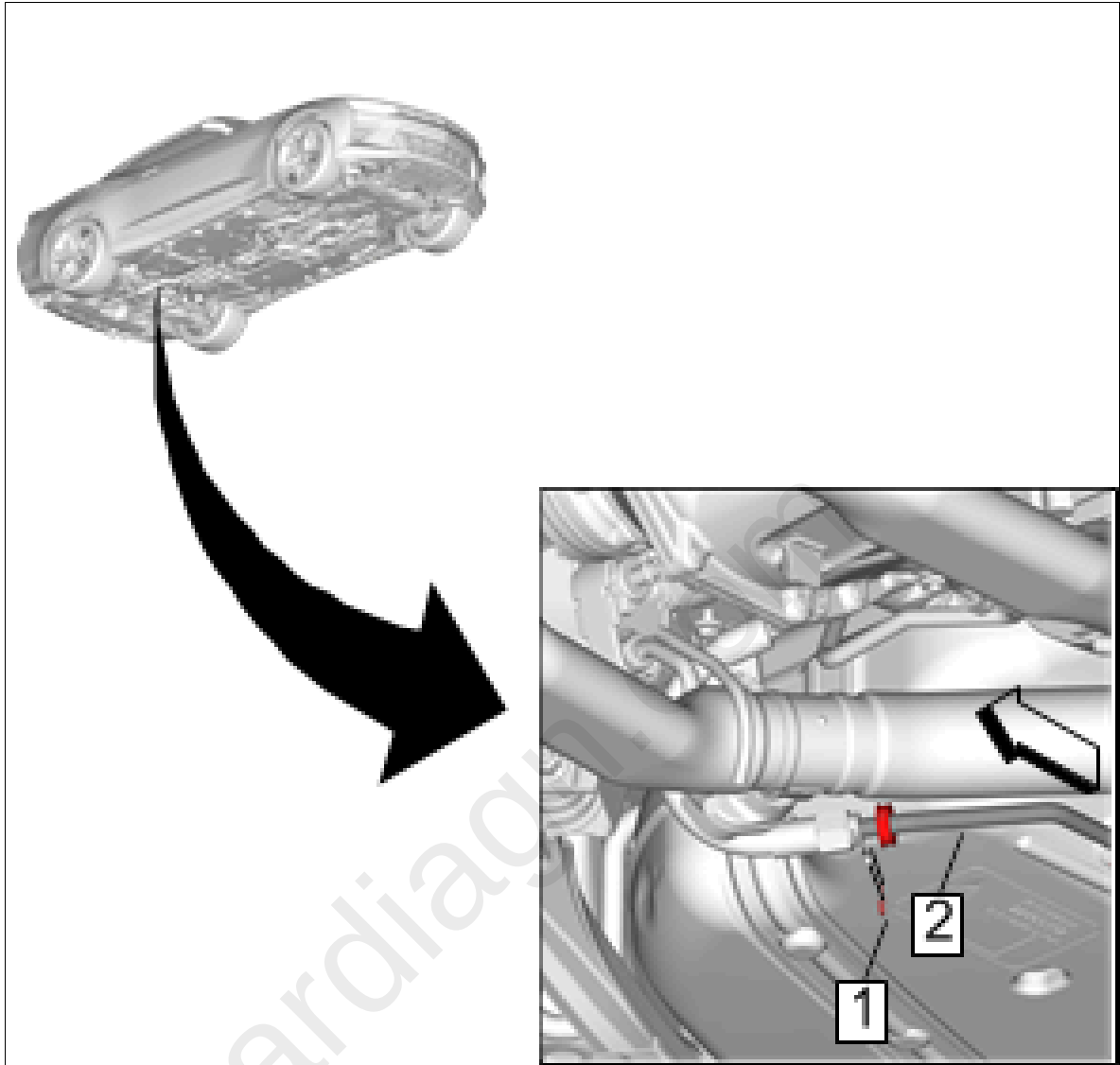
4. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)



Courtesy of GENERAL MOTORS COMPANY

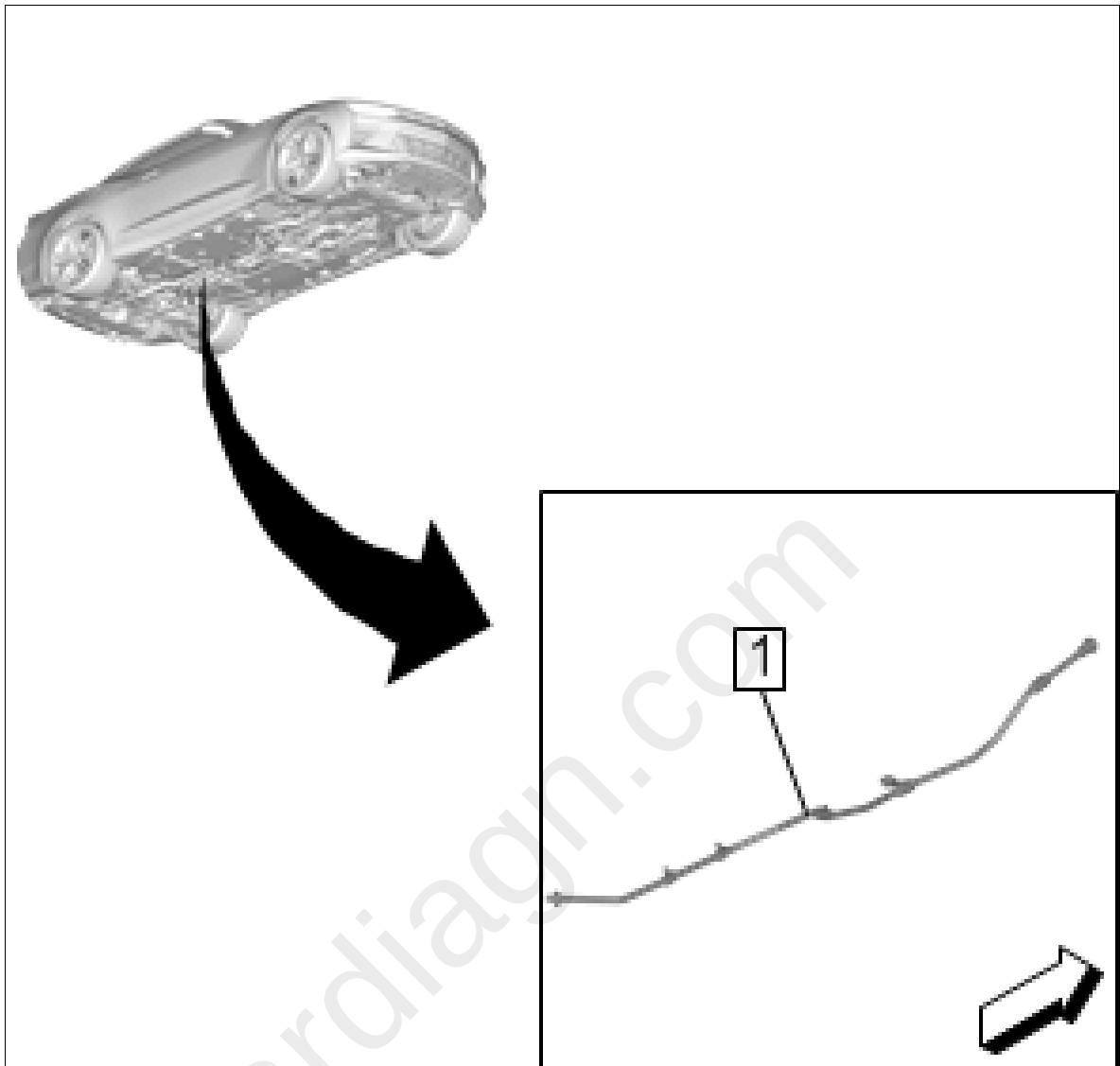
6. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

7. Remove Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose).

Fig 4: Transmission Fluid Cooler Pipe (Mid Line Right)

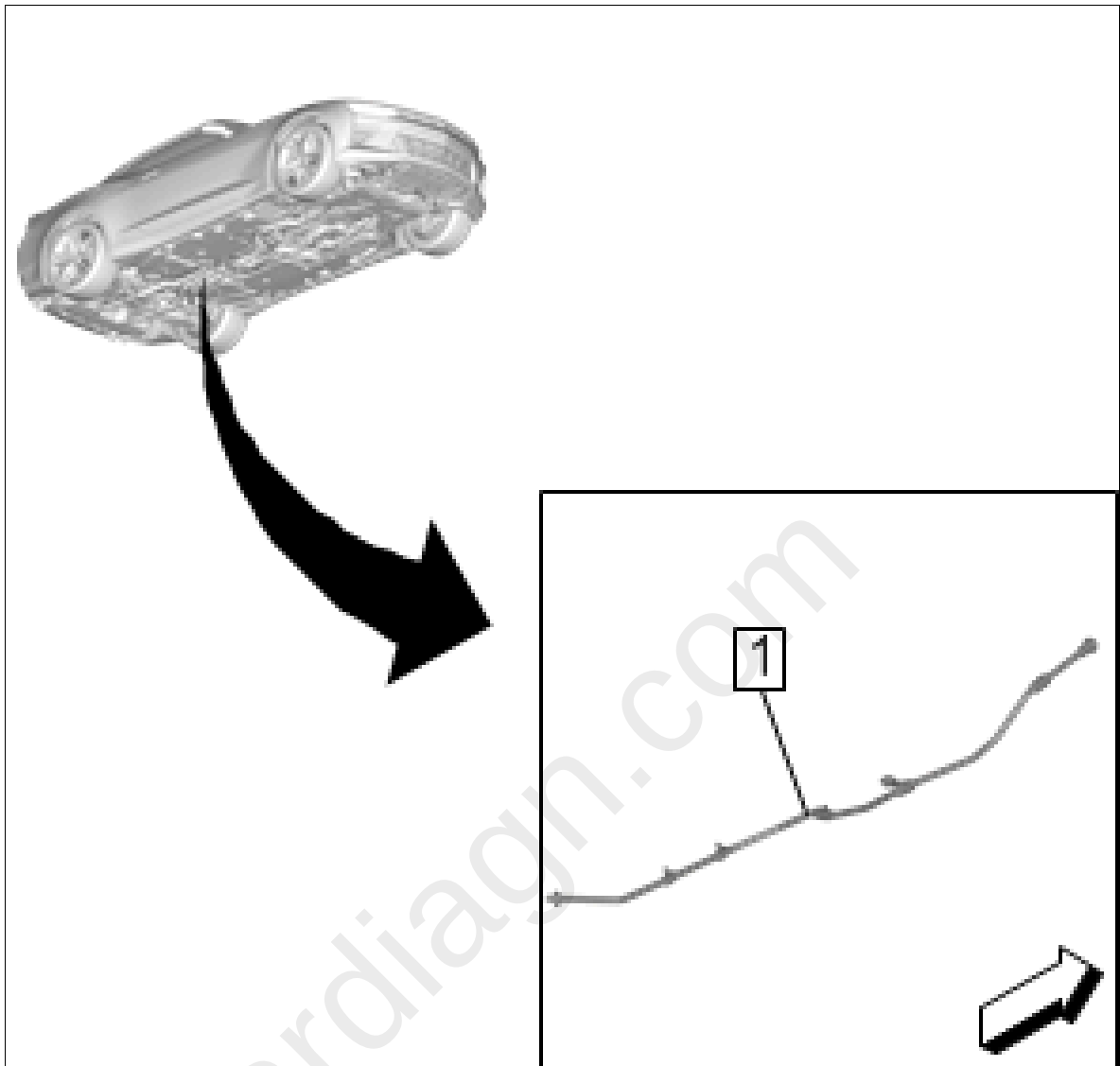


Courtesy of GENERAL MOTORS COMPANY

8. Remove Transmission Fluid Cooler Pipe (Mid Line Right) (1)
9. Transfer components as necessary.

**REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT
(LT1 WITH M5U, WITH KNR, MID LINE RIGHT) > INSTALLATION PROCEDURE**

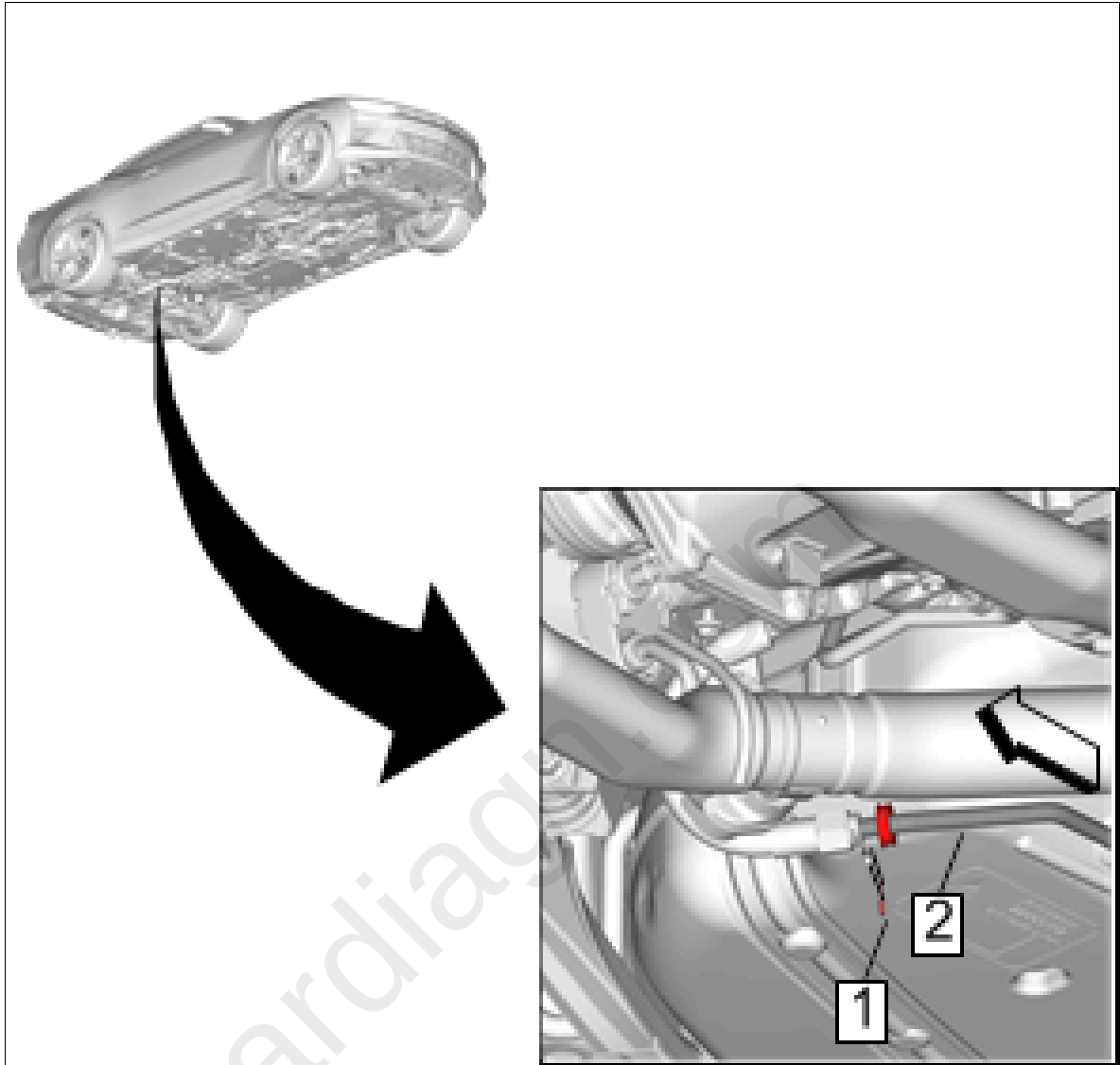
Fig 1: Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

1. Install Transmission Fluid Cooler Pipe (Mid Line Right) (1)

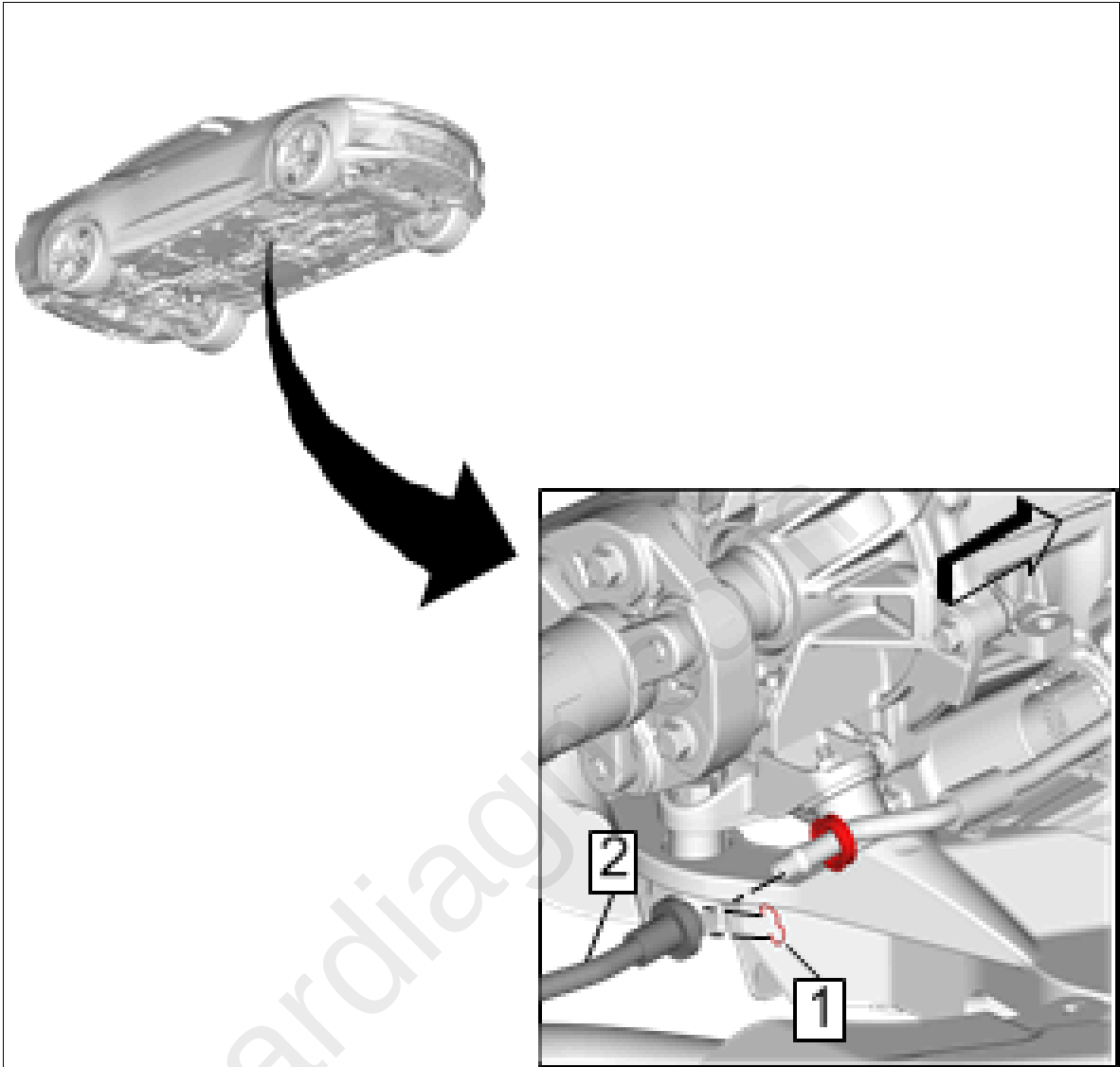
Fig 2: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose)



Courtesy of GENERAL MOTORS COMPANY

2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Pipe (Rear Differential Outlet Hose).

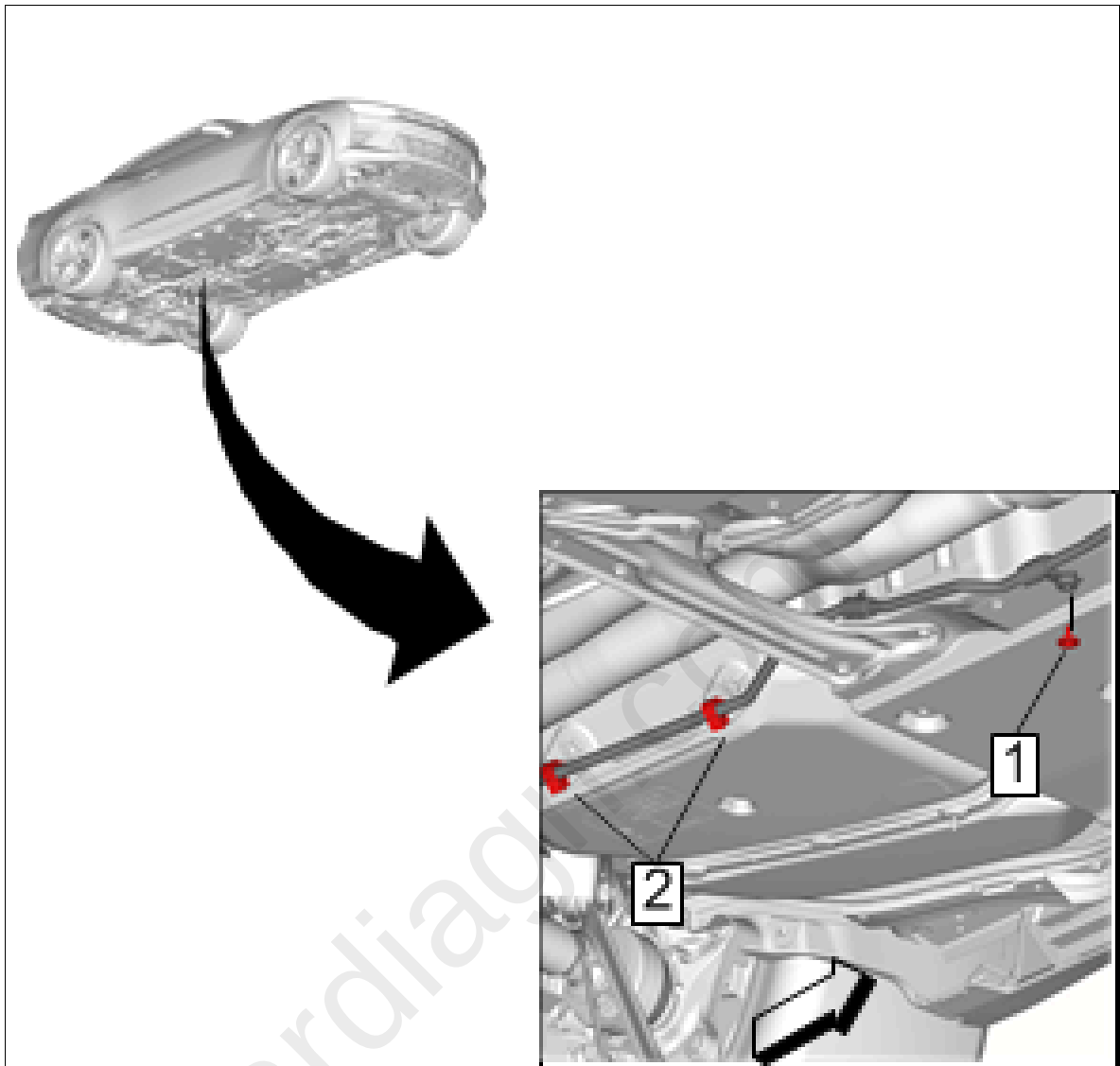
Fig 3: Transmission Fluid Cooler Pipe Fitting Retainer At Transmission Fluid Cooler Pipe (Mid Line Right)



Courtesy of GENERAL MOTORS COMPANY

4. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Transmission Fluid Cooler Pipe (Mid Line Right) - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
5. Install Transmission Fluid Cooler Pipe (Mid Line Right) (2) at Transmission Fluid Cooler Inlet and Outlet Pipe.

Fig 4: Right Side Underbody Front Air Deflector Bolt



Courtesy of GENERAL MOTORS COMPANY



CAUTION:

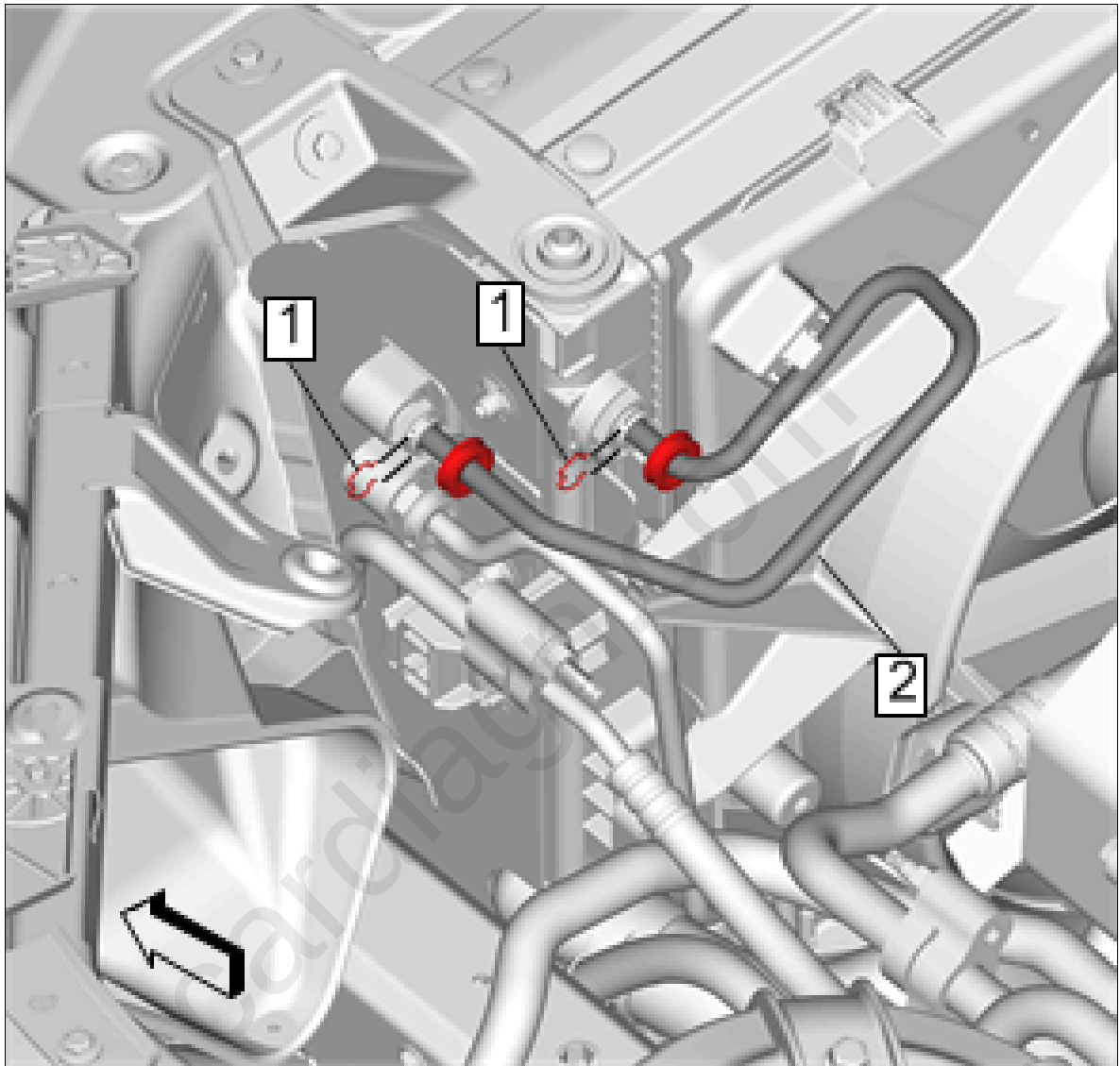
Refer to Fastener Caution .

6. Install the right side underbody front air deflector bolt (1) and tighten to 9 N.m (80 lb in).
7. Install the transmission fluid cooler pipe clips (2) into the right side underbody front air deflector.
8. Check the transmission fluid level. Transmission Fluid Level and Condition Check
9. Inspect for transmission fluid leaks.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LTG WITH M5T, WITH V03) > REMOVAL PROCEDURE

1. Remove Air Cleaner Assembly Replacement

Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

2. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Remove Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

 NOTE:

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

4. Remove Transmission Fluid Cooler Pipe (2) at Radiator.

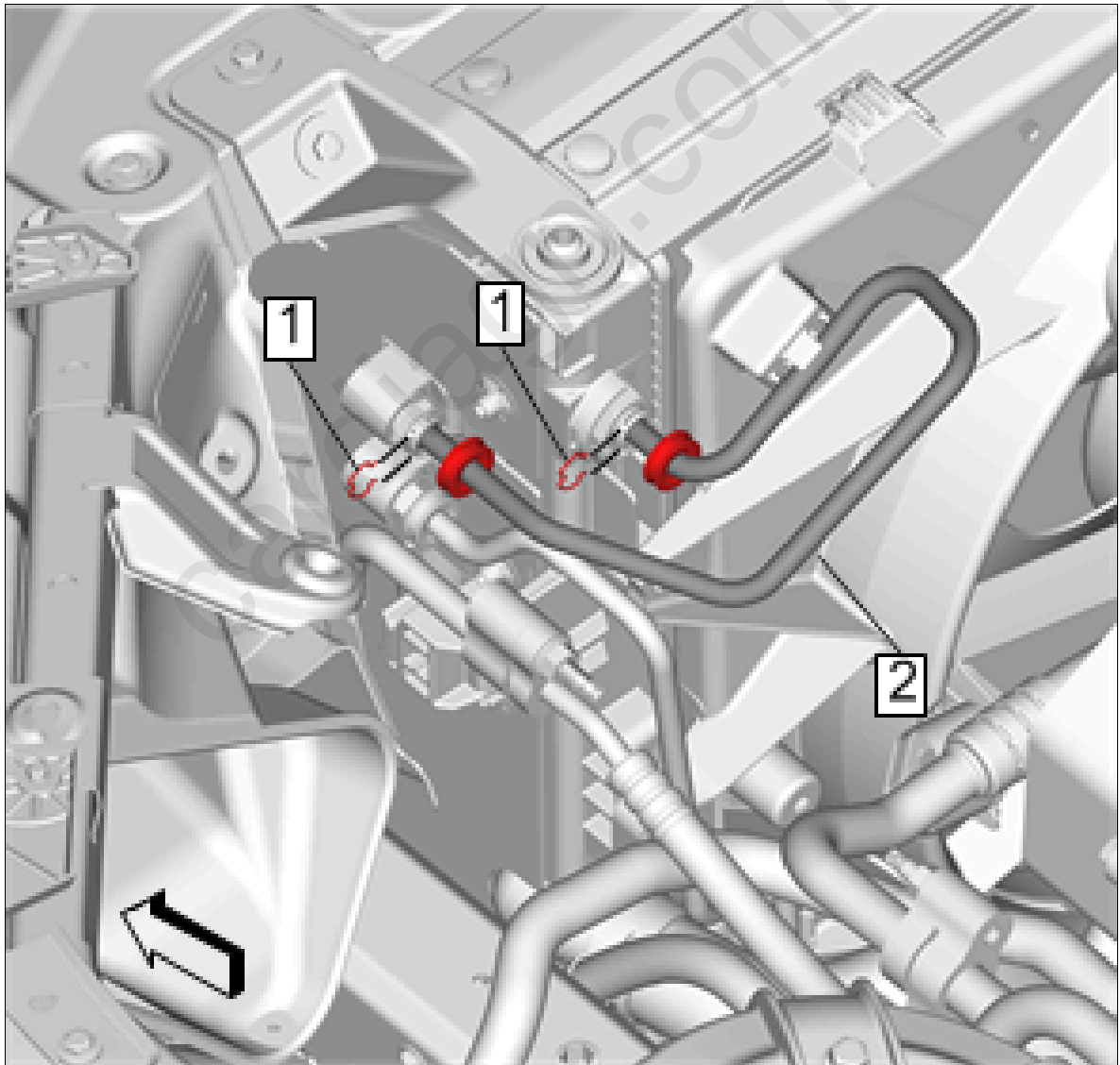
 **NOTE:**

Cover or plug all open transmission fluid cooler pipe connection points to help avoid any accidental contamination.

5. Remove Transmission Fluid Cooler Pipe (2) at Air Conditioning Condenser.

REPAIR INSTRUCTIONS > TRANSMISSION FLUID COOLER PIPE REPLACEMENT (LTG WITH M5T, WITH V03) > INSTALLATION PROCEDURE

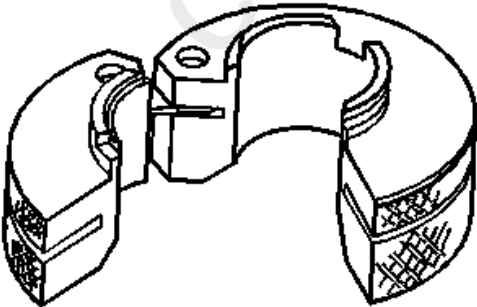
Fig 1: Transmission Fluid Cooler Pipe Fitting Retainer At Radiator



Courtesy of GENERAL MOTORS COMPANY

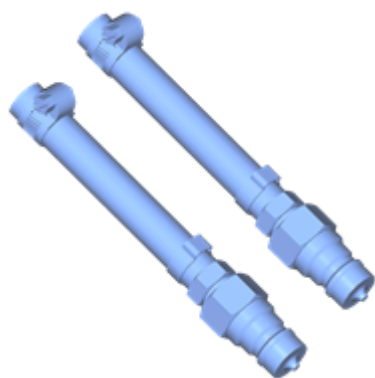
1. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Radiator - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
2. Install Transmission Fluid Cooler Pipe Fitting Retainer (1) at Air Conditioning Condenser - Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection
3. Install Transmission Fluid Cooler Pipe (2) at Radiator.
4. Install Transmission Fluid Cooler Pipe (2) at Air Conditioning Condenser.
5. Install Air Cleaner Assembly Replacement
6. Fill the transmission to the proper level with NEW transmission fluid. Transmission Fluid Level and Condition Check
7. Inspect for transmission fluid leaks.

SPECIAL TOOLS AND EQUIPMENT > SPECIAL TOOLS

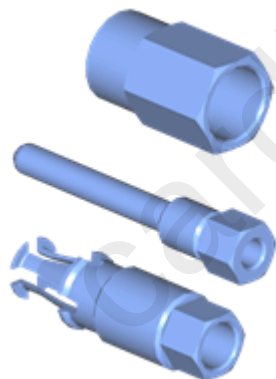
Illustration	Tool Number/ Description
	DT-28585 J-28585 Snap Ring Remover
	DT-41623-B J-41623-B Transmission Cooler Line Disconnect



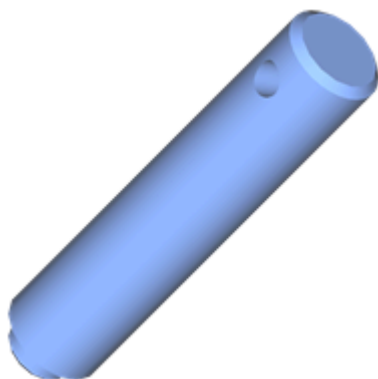
DT-45096
J-45096
Transmission Cooler Flusher



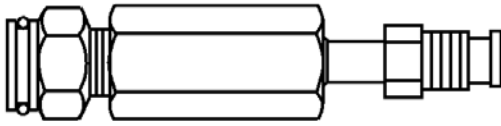
DT-45096-30
J-45096-30
Cooler Line Flush Adapters



DT-45201
J-45201
Cooler Line Seal Remover



DT-47770
Seal Installer



J-35944-200/200-A
Cooler Flushing Adapter

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