

2007-08 ENGINE

Cooling System - Repair Instructions - X5

00 COOLANT CHECKING COOLER LINE

00 57 114 CHECKING AND IF NECESSARY CORRECTING OIL COOLER LINE (N52K)

IMPORTANT: Danger of scalding! Only perform this work after engine has cooled down.

Necessary preliminary tasks:

- Remove underbody protection. See 51 47 490 REMOVING AND INSTALLING / REPLACING FRONT ASSEMBLY UNDERSIDE PROTECTION

Recycling

Transmission fluid emerges when oil lines are detached from heat exchanger.

Catch and dispose of escaping transmission fluid.

Observe country-specific waste-disposal regulations.

Prescribed routing of lines.

Check hoses for ease of movement with respect to ribbed V-belt.

Pay attention to routing of lines; realign retaining clamps and hoses if necessary.

Tightening torques 17 22 2AZ & 3AZ 17 22 OIL COOLER PIPES

Add final details to vehicle.

IMPORTANT: After opening lines, check ATF level in automatic transmission.

00 57 115 CHECKING AND REPLACING OIL COOLER LINE (N52K)

IMPORTANT: Danger of scalding! Only perform this work after engine has cooled down.

Necessary preliminary tasks:

- Secure engine in installation position. See 11 00 670 SECURING ENGINE IN INSTALLATION POSITION (N62) .
- Lower front axle support. See 31 11 506 LOWERING/RAISING FRONT AXLE CARRIER (UNIVERSAL LIFTER) .

Recycling

Transmission fluid emerges when oil lines are detached from heat exchanger.

Catch and dispose of escaping transmission fluid.

Observe country-specific waste-disposal regulations.

Release pipe holder.

Unclip lines from holders.

Detach lines from transmission oil cooler and from transmission.

Tightening torques 17 22 2AZ & 3AZ **17 22 OIL COOLER PIPES**

Check hoses for ease of movement with respect to ribbed V-belt.

Pay attention to routing of lines; realign retaining clamps and hoses if necessary.

Add final details to vehicle.

IMPORTANT: After opening lines, check ATF level in automatic transmission, refer to Maintenance and General Information, Main Group 00.

Check ATF level in automatic transmission

KDS chassis/wheel alignment check. See **32 00 150 KDS CHASSIS/WHEEL ALIGNMENT CHECK WITH LOAD UP TO DESIGN POSITION**

Adjust toe-in on front axle. See **32 00 601 ADJUSTING TOE-IN ON FRONT AXLE**

17 00 ... INSTRUCTIONS FOR WORKING ON COOLING SYSTEM

WARNING: Danger of scalding! Work on the cooling system should only be carried out when the engine has cooled down.

IMPORTANT: Wear protective gloves and goggles.

IMPORTANT: *Lifetime coolant filling:*

Never reuse used coolant.

When replacing and removing components which rely on the corrosion protection effect of the coolant, it is essential to change the coolant. The cooling system must therefore be drained and refilled.

In the case of other removal work involving the draining of partial quantities of

coolant, replace these quantities which have been drained with new coolant.

IMPORTANT: Open cooling system only when it has cooled down.
Opening the cooling system while hot can result in air entering the system.
This can cause overheating with permanent damage to the engine.

IMPORTANT: When working on the oil, coolant or fuel circuit, protect the alternator against contamination.
Cover alternator with suitable materials.
Failure to comply with this procedure may result in an alternator malfunction.

IMPORTANT: Do not fill coolant expansion tank over MAX level as overfilling will cause the coolant to overflow. This may give rise to traces of residual coolant on the expansion tank or in the engine compartment and wrongly suggest possible leakages.

Recycling

Catch and dispose of drained coolant.

Observe country-specific waste-disposal regulations.

NOTE: Tightening torque, hose clamps. See 17 00 COOLANT .

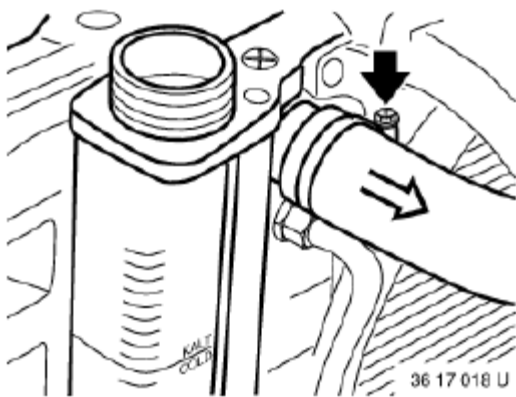


Fig. 1: Identifying Hose Clamps

Courtesy of BMW OF NORTH AMERICA, INC.

Instructions for disassembly/assembly of coolant hose fast-release couplings

Disassembly of fast-release coupling

Withdraw lock (1/2), disconnect hose.

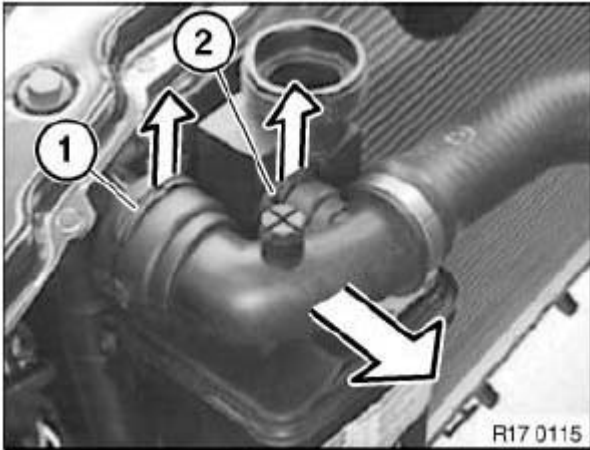


Fig. 2: Identifying Withdraw Lock

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check O-rings (1).

Do not coat O-rings (1) with antiseize agent.

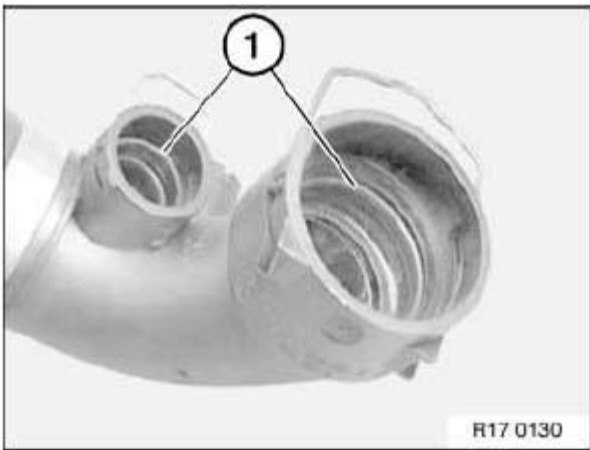


Fig. 3: Identifying O-Rings

Courtesy of BMW OF NORTH AMERICA, INC.

Assembly of fast-release coupling

Press in lock (1) before installing fast-release coupling.

Push on hose.

Fast-release coupling must clearly snap audibly into place.

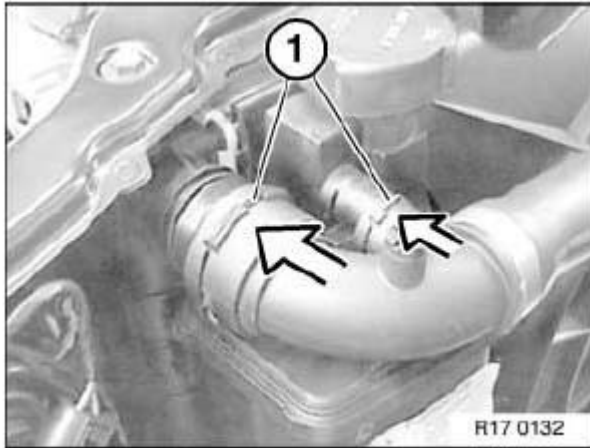


Fig. 4: Identifying Lock

Courtesy of BMW OF NORTH AMERICA, INC.

17 00 005 DRAINING AND ADDING COOLANT IN RADIATOR (N52K)

WARNING: Danger of scalding!

These tasks on the cooling system should only be carried out on an engine that has cooled down!

IMPORTANT: Wear protective gloves and goggles.

IMPORTANT: Lifetime coolant filling:

Never reuse used coolant!

When replacing and removing components which rely on the corrosion protection effect of the coolant, it is essential to change the coolant. The cooling system must therefore be drained and refilled.

In the case of other removal work involving the draining of partial quantities of coolant, replace these quantities which have been drained with new coolant.

Installation:

Use only recommended coolant.

Observe mixture ratio.

Recycling

Catch and dispose of drained coolant.

Observe country-specific waste-disposal regulations.

Necessary preliminary tasks:

- Follow instructions for working on cooling system. See **17 00 ... Instructions For Working On Cooling System**
- Remove underbody protection. See **51 47 490 REMOVING AND INSTALLING / REPLACING FRONT ASSEMBLY UNDERSIDE PROTECTION**
- Remove reinforcement plate. See **31 10 010 REMOVING AND INSTALLING/REPLACING REINFORCEMENT PLATE**

Draining coolant:

Open cap (1) on coolant expansion tank (2).

Installation:

Close cap (1) until the arrow marks line up.

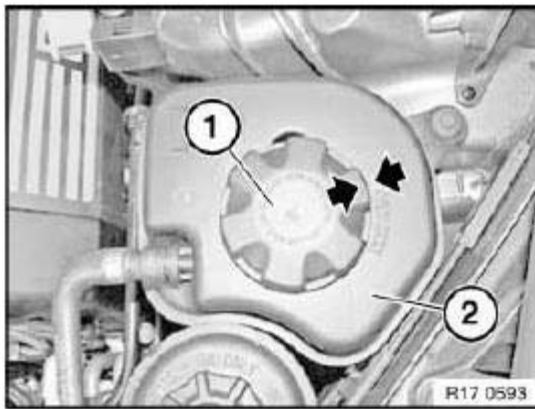


Fig. 5: Identifying Open Cap On Coolant Expansion Tank
Courtesy of BMW OF NORTH AMERICA, INC.

Open coolant drain plug (1).

Drain, catch and dispose off coolant.

Installation:

- Replace sealing ring.
- Tightening torque. See **17 11 RADIATOR AND MOUNTING PARTS**.

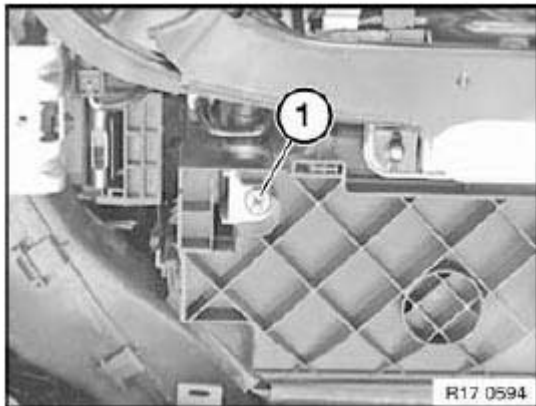


Fig. 6: Identifying Open Coolant Drain Plug
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Adding coolant:
Use only recommended coolant.
Observe mixture ratio.
Observe venting instructions without fail.
Fill and vent cooling system 17 00 039 Venting Cooling System And Checking For Water Leaks (N52K)

17 00 039 VENTING COOLING SYSTEM AND CHECKING FOR WATER LEAKS (N52K)

WARNING: Danger of scalding!
Open sealing cap only after engine has cooled down.

IMPORTANT: Electric coolant pump! Follow instructions for working on cooling system.

IMPORTANT: Lifetime coolant filling: Never reuse used coolant! When replacing and removing components which rely on the corrosion protection effect of the coolant, it is essential to change the coolant. The cooling system must therefore be drained and refilled. In the case of other removal work involving the draining of partial quantities of coolant, replace these quantities which have been drained with new coolant.

Only when refilling!

Use only recommended coolant.

Observe mixture ratio.

Perform filling operation slowly.

Adjust coolant level to MAX.

Close coolant expansion tank.

Installation:

Close cap (1) until the arrow marks line up.

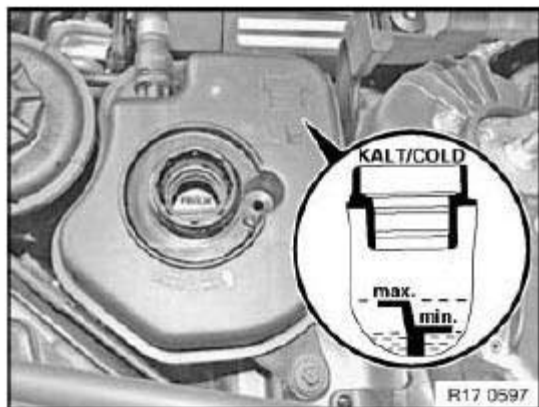


Fig. 7: Identifying Coolant Level

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: The following venting procedure is necessary e.g. when a part is replaced in the cooling system or when the cooling system is refilled.

Adding coolant:

Fill expansion tank slowly with recommended coolant up to lower edge until fill level stops dropping.

Observe mixture ratio.

Venting cooling system:

NOTE: Do not leave the coolant expansion tank cap open during the venting procedure.

1. Connect battery charger.
2. Switch on ignition.
3. Set heater to maximum temperature and turn fan down to lowest speed.
4. Press accelerator pedal for 10 seconds to floor. Engine must not be started.
5. The venting procedure is started when the accelerator pedal is pressed and takes approx. 12 minutes. (Electric coolant pump was activated and shuts down automatically after approx. 12 minutes).
6. Then top up fill level in coolant expansion tank using measuring container with 300 ml above max.
7. Check cooling system for leaks.
8. If venting has to be carried out again (e.g. if cooling system is leaking), allow DME to fall completely

(leave ignition key removed for approx. 3 minutes), then repeat from Point 2.

Close coolant expansion tank.

Installation:

Close cap (1) until the arrow marks line up. See 17 00 009 Checking Cooling System For Water Leaks

10 RADIATOR, EXPANSION TANK

17 00 009 CHECKING COOLING SYSTEM FOR WATER LEAKS

Special tools required:

- 17 0 101 17 0 100 TESTER
- 17 0 113 17 0 100 TESTER
- 17 0 114 17 0 100 TESTER

WARNING: Danger of scalding!

Only perform this work after engine has cooled down.

Checking pressure drop in cooling system:

Open cap on coolant expansion tank. Fit special tools 17 0 101 / 17 0 113. 17 0 100 TESTER

Build up gauge pressure, wait approx. 2 minutes.

Cooling system is impervious to leaks if pressure drop is max. 0.1 bar.

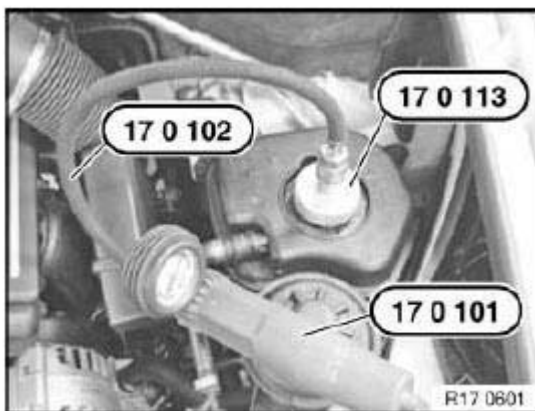


Fig. 8: Identifying Special Tools (17 0 101) And (17 0 113)

Courtesy of BMW OF NORTH AMERICA, INC.

Checking pressure relief valve in cap:

NOTE: While the vehicle is driven at high outside temperatures, the design may cause the pressure relief valve in the cap to open slightly and air together with dissolved coolant to escape. This coolant vapor condenses on the surface of the expansion tank and leaves traces when the vehicle has cooled down. These traces do not indicate whether the cap is defective or not. When the vehicle has been parked up for an extended period of time, the residual escaping coolant can cause the pressure relief valve in the cap to stick; therefore check the cap again 2 to 3 times.

Replace the cap only after you have checked three times and there is an incorrect opening pressure.

Checking pressure relief valve in cap:

Screw cap (1) onto special tool 17 0 114 **17 0 100 TESTER**.

Build up pressure with special tool (hand pump) 17 0 101 **17 0 100 TESTER**; observe pressure gauge to ascertain when opening pressure is achieved.

Compare opening pressure of pressure relief valve.

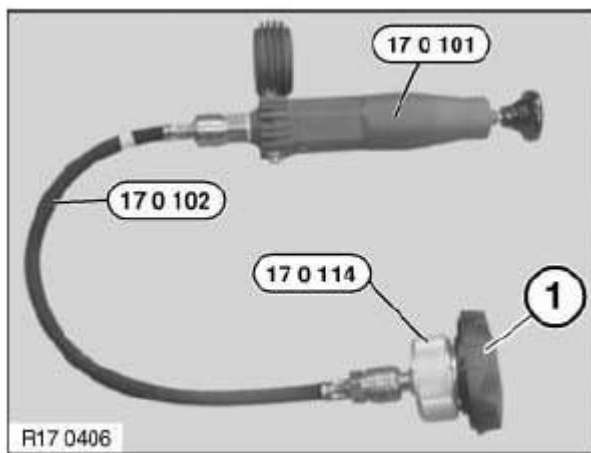


Fig. 9: Identifying Screw Cap On Special Tool (17 0 114)

Courtesy of BMW OF NORTH AMERICA, INC.

11 ENGINE RADIATOR

17 11 000 REMOVING AND INSTALLING RADIATOR (N52K)

WARNING: Danger of scalding!

Only perform this work after engine has cooled down.

IMPORTANT: Wear protective goggles and gloves.

Necessary preliminary tasks:

- Follow instructions for working on cooling system **17 00 ... Instructions For Working On Cooling System.**
- Remove fan cowl. See **17 11 035 Removing and Installing/Replacing Fan Cowl With Electric Fan (N52K).**
- Drain coolant. See **17 00 005 Draining and Adding Coolant In Radiator (N52K).**
- Unlock coolant hoses and detach.

Release screws.

Remove cover (1).

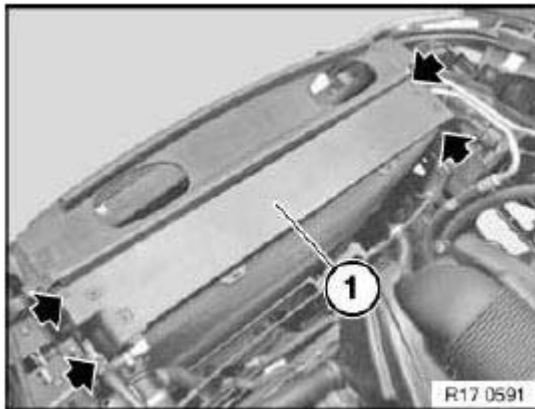


Fig. 10: Identifying Screws And Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Remove radiator (1) towards top.

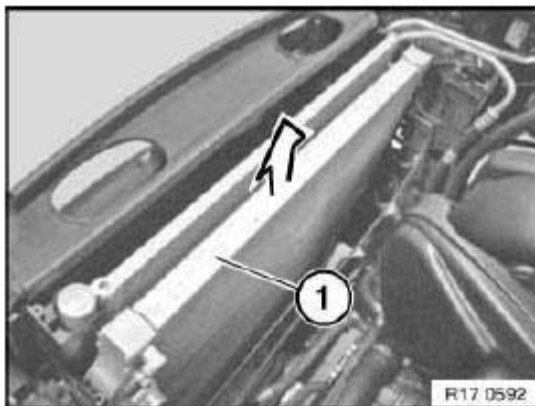
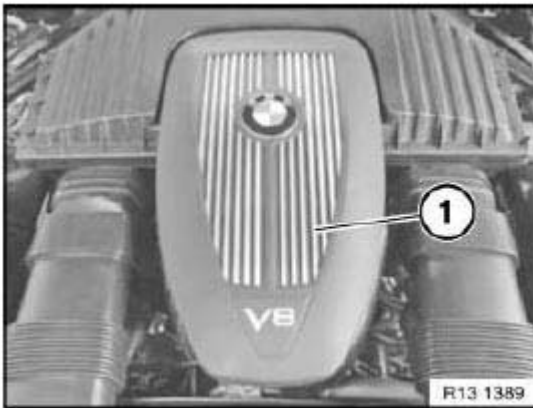


Fig. 11: Identifying Radiator
Courtesy of BMW OF NORTH AMERICA, INC.

17 11 035 REMOVING AND INSTALLING/REPLACING FAN COWL WITH ELECTRIC FAN (N52K)**Necessary preliminary tasks:**

- Read out fault memory of DME control unit
- Switch off ignition

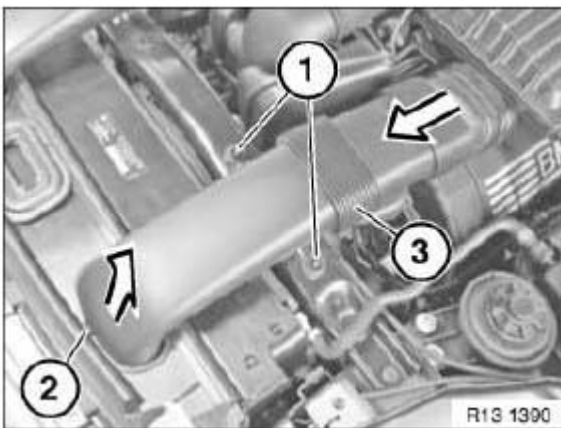
**Fig. 12: Identifying Cover**

Courtesy of BMW OF NORTH AMERICA, INC.

Lever out expansion rivets (1).

Press lock (2) and raise intake duct (3).

Detach intake duct (3) from air filter housing and remove.

**Fig. 13: Identifying Expansion Rivets, Lock And Intake Duct**

Courtesy of BMW OF NORTH AMERICA, INC.

Release screws on left and right sides. Tightening torque. See ENGINE - TIGHTENING TORQUES .

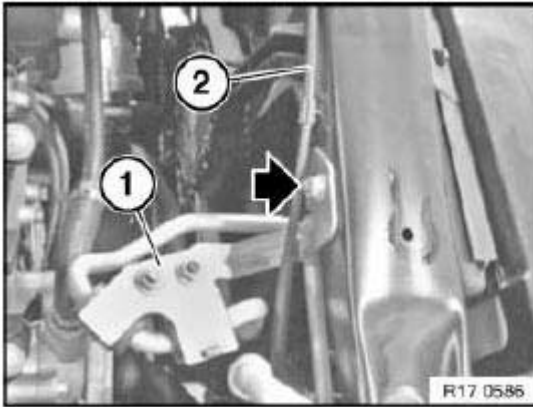


Fig. 14: Identifying Nut, Bracket And Pull Cable
Courtesy of BMW OF NORTH AMERICA, INC.

Remove cross-brace (1).

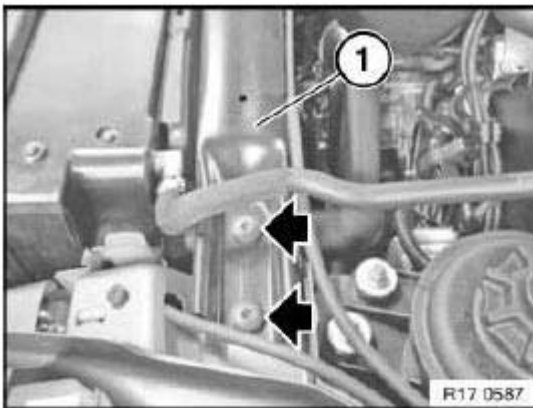


Fig. 15: Locating Screws On Left And Right Sides
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock plug (1) and remove.

NOTE: For reasons of clarity, illustration and text show A/C system refrigerant lines removed.

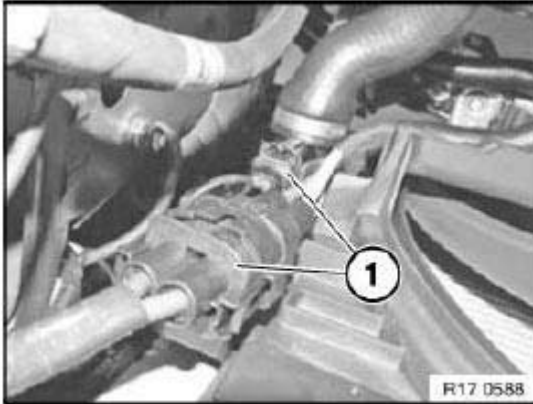


Fig. 16: Identifying Plug

Courtesy of BMW OF NORTH AMERICA, INC.

Press lock (1).

Raise fan cowl (2) until holder (3) can be brought into assembly position.

NOTE: For reasons of clarity, illustration and text show coolant hose removed.

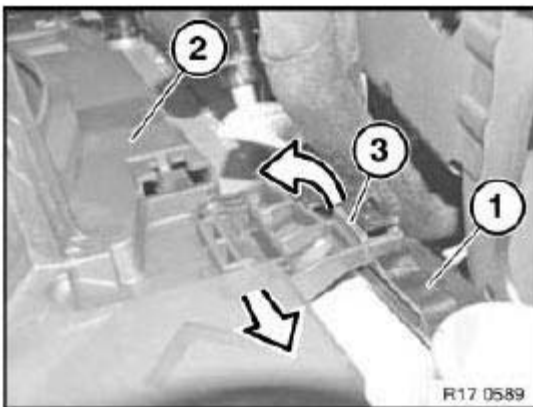


Fig. 17: Identifying Lock, Fan Cowl And Holder

Courtesy of BMW OF NORTH AMERICA, INC.

Press lock (1).

Feed out fan cowl (2) towards top and remove.

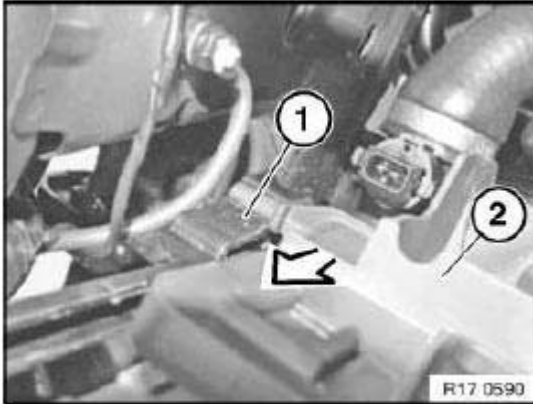


Fig. 18: Identifying Lock And Fan Cowl
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Insert retaining tab (1) at bottom on module carrier.

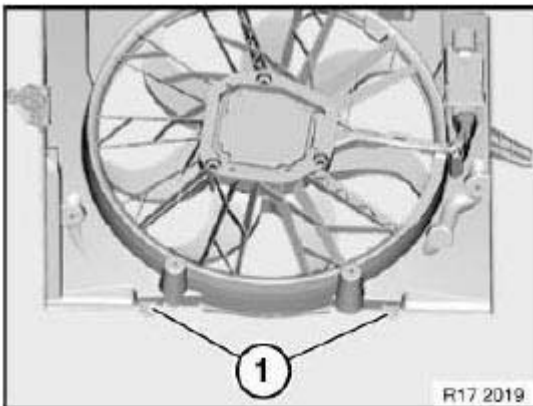


Fig. 19: Identifying Retaining Tab On Module Carrier
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check stored fault messages.
Now clear the fault memory.

**17 11 040 REMOVING AND INSTALLING/REPLACING THERMOSTAT CARTRIDGE
(N62TU/N52K)**

IMPORTANT: Danger of scalding!
Only perform this work after engine has cooled down.

Necessary preliminary tasks:

- Follow instructions for working on cooling system. See **17 00 ... Instructions For Working On Cooling System**
- Draining coolant. See **17 00 005 Draining and Adding Coolant In Radiator (N52K)**
- Remove fan cowl. See **17 11 035 Removing and Installing/Replacing Fan Cowl With Electric Fan (N52K)**

Unlock and detach coolant hose (1).

Release nuts and remove thermostat cartridge (2).

Installation:

- Clean contact faces.
- Check seals and replace if necessary.

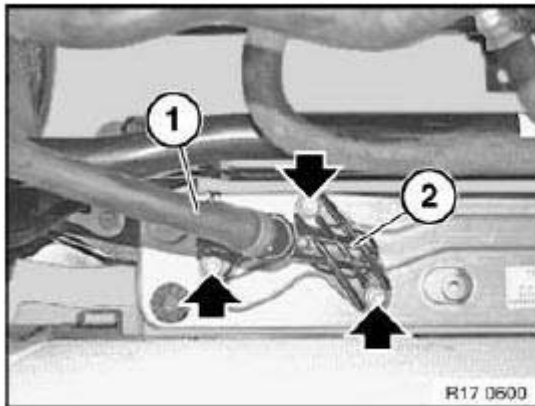


Fig. 20: Identifying Coolant Hose And Thermostat Cartridge
Courtesy of BMW OF NORTH AMERICA, INC.

17 11 046 REMOVING AND INSTALLING/REPLACING MODULE CARRIER (N52K)

Necessary preliminary tasks:

- Remove fan cowl with electric fan. See **17 11 035 Removing and Installing/Replacing Fan Cowl With Electric Fan (N52K)**
- Draining coolant. See **17 00 005 Draining and Adding Coolant In Radiator (N52K)**
- Remove coolant radiator. See **17 11 000 Removing and Installing Radiator (N52K)**
- Draw off fluid from power steering

Installation:

Bleed power steering unit. See **32 13 006 BLEEDING POWER STEERING UNIT**

- Unlock hydraulic lines on cooling loop and disconnect

- Secure A/C condenser against damage and against falling down.

Press lock (1) and remove holder (2) downwards.

Illustration shows the left holder: The same procedure applies to the opposite side.

Installation:

Rubber mounts fall out easily, ensure correct installation position.

Remove module carrier (1) towards bottom.

When replacing module carrier:

Convert power steering cooling loop. See **17 11 370 Removing and Installing/Replacing Power Steering Cooling Coil (N62TU/N52K/M57T2)**.

Add final details to vehicle.

Check system for leaks.

17 11 100 REMOVING AND INSTALLING/REPLACING COOLANT EXPANSION TANK (N62TU/N52K)

IMPORTANT: Danger of scalding!

Only perform this work after engine has cooled down.

Necessary preliminary tasks:

- Follow instructions for working on cooling system. See **17 00 ... Instructions For Working On Cooling System**.
- Drain coolant. See **17 00 005 Draining and Adding Coolant In Radiator (N52K)** from radiator down to lower edge on expansion tank.

Unlock and detach coolant hose (1).

Release screws.

Raise coolant expansion tank (2) until plug for coolant level switch and lower coolant hose are accessible.

Installation:

- Make sure expansion tank is in correct installation position.
- Tightening torque 17 10 2AZ. See **17 10 RADIATOR, EXPANSION TANK, LINES (N62TU, N52K, M57T2)** .

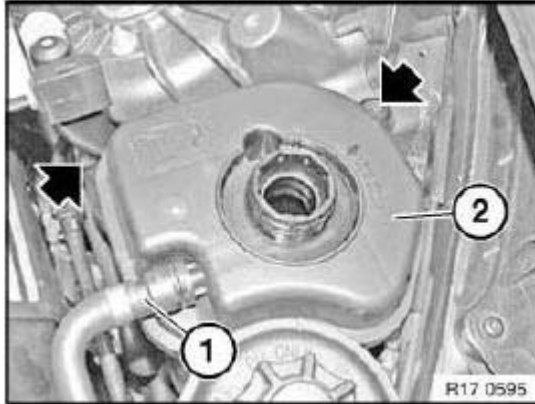


Fig. 21: Identifying Coolant Hose And Expansion Tank
Courtesy of BMW OF NORTH AMERICA, INC.

Unlock plug (1) and remove.

Unlock and detach lower coolant hose (2).

Remove expansion tank (3).

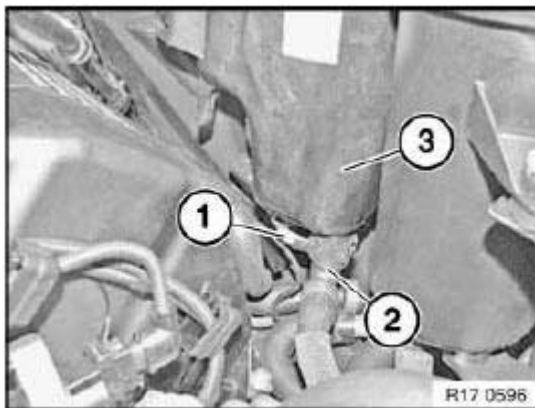


Fig. 22: Identifying Plug, Lower Coolant Hose, Expansion Tank
Courtesy of BMW OF NORTH AMERICA, INC.

17 11 370 REMOVING AND INSTALLING/REPLACING POWER STEERING COOLING COIL (N62TU/N52K/M57T2)

Special tools required:

- 17 0 030 17 0 030 PLIERS

WARNING: Danger of scalding!

Only perform this work after engine has cooled down.

IMPORTANT: When working on the oil, coolant or fuel circuit, you must protect the alternator against contamination.

Cover alternator with suitable materials.

Failure to comply with this procedure may result in an alternator malfunction.

Necessary preliminary tasks:

- Remove radiator air duct. See **51 71 099 REMOVING AND INSTALLING/REPLACING RADIATOR AIR GUIDE**
- Remove fan cowl. See **17 11 035 Removing and Installing/Replacing Fan Cowl With Electric Fan (N52K)**
- After completing this operation, check fluid level in tank of power steering system. See **32 13 006 BLEEDING POWER STEERING (VERSION WITH DYNAMIC DRIVE)** .

Press lines (1) in direction of cooling coil (2). Pull locking ring towards rear and keep pressed.

Detach lines (1) from cooling coil (2).

If necessary, use special tool **17 0 030 PLIERS** .

IMPORTANT: Catch and dispose of emerging fluid.

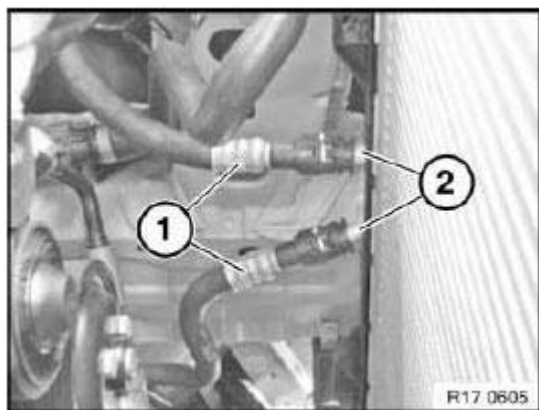


Fig. 23: Identifying Lines And Cooling Coil
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws and detach side holder (1).

Tightening torque. See **17 10 RADIATOR, EXPANSION TANK, LINES (N62TU, N52K, M57T2)** .

Feed out cooling coil (2) towards front and remove

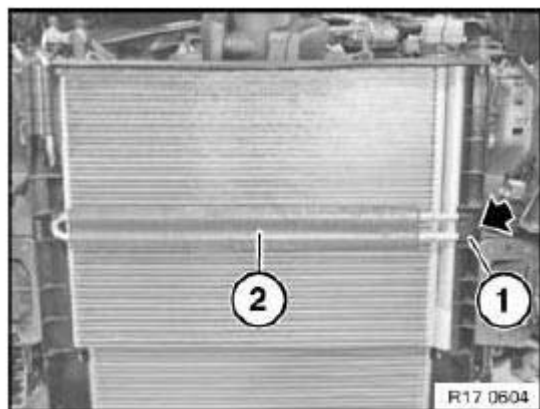


Fig. 24: Identifying Screws, Holder And Cooling Coil
Courtesy of BMW OF NORTH AMERICA, INC.

21 OIL COOLER

17 21 500 FLUSHING OIL COOLER WITH LINES (AUTOMATIC TRANSMISSION)

Special tools required:

- 17 2 018 17 2 010 SET OF ADAPTERS
- 17 2 019 17 2 010 SET OF ADAPTERS

NOTE: Carry out the work steps listed when:
Fitting a new or replacement transmission
Flushing can only be carried out with the automatic transmission removed.

Procedure:

Automatic transmission removed.

Connect appropriate adapters (see description below) to oil lines exiting from automatic transmission.

Connect the connecting line 17 2 019. See 17 2 010 SET OF ADAPTERS from the oil collection unit with the quick-release coupling.

Connect drain line 17 2 018. See 17 2 010 SET OF ADAPTERS using quick-release coupling.

Feed open end of drain line into a suitable collection container.

Using oil collection unit, flush approx. 1 liter of transmission fluid (refer to BMW Service Operating Fluids) through oil lines and oil cooler.

Reposition quick-release couplings.

Flush oil lines/oil cooler in opposite direction with approx. 1 liter of transmission fluid (refer to BMW Service Operating Fluids).

Disconnect quick-release couplings, remove adapters.

NOTE: **Dispose of flushing oil properly; do not under any circumstances reuse it.**

Arrangement of flushing device for transmissions A5S 310Z, A5S 560Z, A5S 360R/390R, A4S 200R, A5S 325Z, GA6HP26Z

1. Transmission-oil cooler with lines
2. Oil collection unit
3. Oil drip tray

17 2 011 Adapter for connecting transmission-side oil cooler lines (1)

17 2 015 Connection for oil collection unit (2), manufacturer: Deutsche Tecalemit or

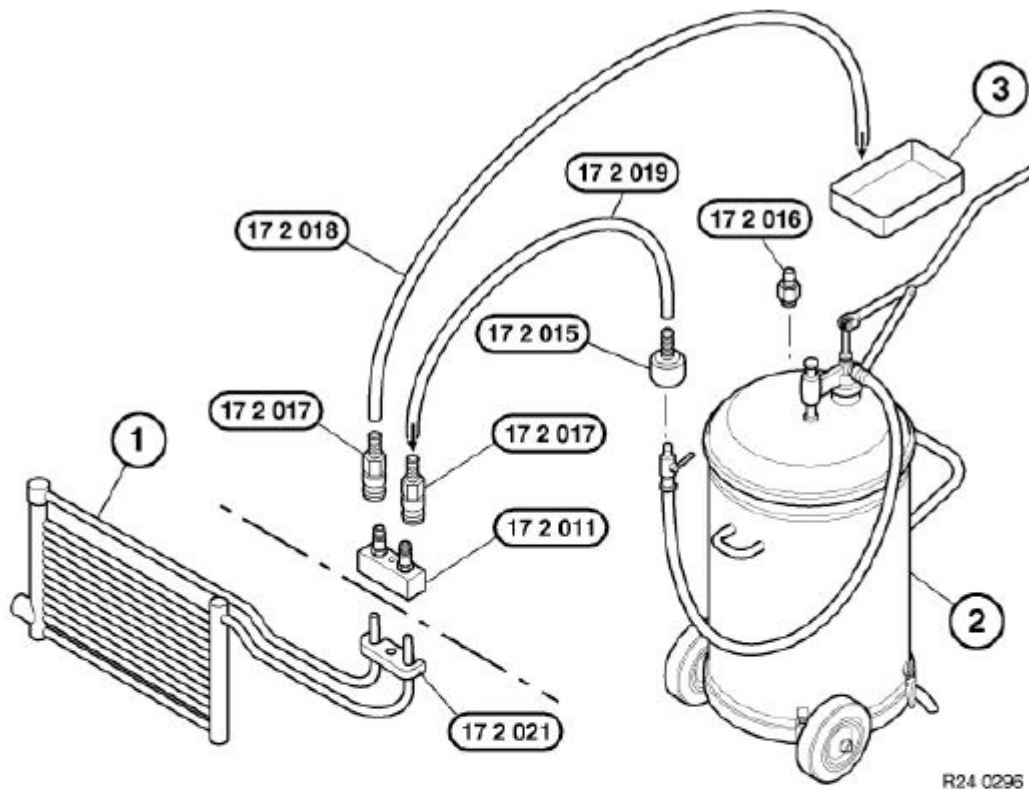
17 2 016 Connection for oil collection unit (2), manufacturer: Horn

17 2 017 Quick-release coupling (2 pieces)

17 2 018 Hose to oil drip tray (3)

17 2 019 Hose to oil collection unit (2)

17 2 021 Mounting plate for adapter 17 2 011 for transmissions A5S 325Z, GA6HP26Z



R24 0295

- 1) Transmission-oil cooler with lines
- 2) Oil collection unit
- 3) Oil drip tray

17 2 011 Adapter for connecting transmission-side oil cooler lines (1)

17 2 015 Connection for oil collection unit (2), manufacturer: Deutsche Tecalemit or

17 2 016 Connection for oil collection unit (2), manufacturer: Horn

17 2 017 Quick-release coupling (2 pieces)

17 2 018 Hose to oil drip tray (3)

17 2 019 Hose to oil collection unit (2)

17 2 021 Mounting plate for adapter 17 2 011 for transmissions A5S 325Z, GA6HP26Z

Fig. 25: Arrangement Of Flushing Device For Transmissions (A5S 310Z)
 Courtesy of BMW OF NORTH AMERICA, INC.

Arrangement of flushing device for transmission A4S 310R

1. Transmission-oil cooler with lines
2. Oil collection unit
3. Oil drip tray

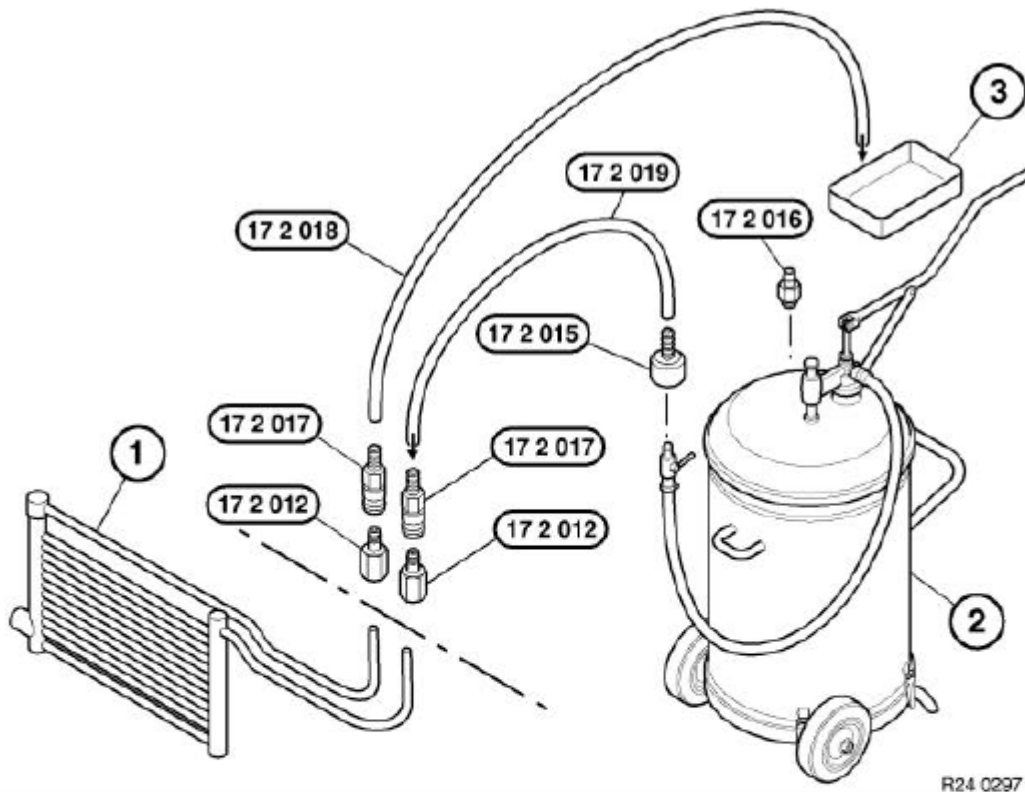
17 2 015 Connection for oil collection unit (2), manufacturer: Deutsche Tecalemit or

17 2 016 Connection for oil collection unit (2), manufacturer: Horn

17 2 017 Quick-release coupling (2 pieces)

17 2 018 Hose to oil drip tray (3)

17 2 019 Hose to oil collection unit (2)



1) Transmission-oil cooler with lines

2) Oil collection unit

3) Oil drip tray

17 2 012 Adapters (2 x) for connecting transmission-side oil cooler lines (1)

17 2 015 Connection for oil collection unit (2), manufacturer: Deutsche Tecalemit or

17 2 016 Connection for oil collection unit (2), manufacturer: Horn

17 2 017 Quick-release coupling (2 pieces)

17 2 018 Hose to oil drip tray (3)

17 2 019 Hose to oil collection unit (2)

Fig. 26: Arrangement Of Flushing Device For Transmission (A4S 310R)

Courtesy of BMW OF NORTH AMERICA, INC.

Arrangement of flushing device for transmission A4S 300J

1. Transmission-oil cooler with lines
2. Oil collection unit
3. Oil drip tray

17 2 012 Adapters (2 x) for connecting transmission-side oil cooler lines (1)

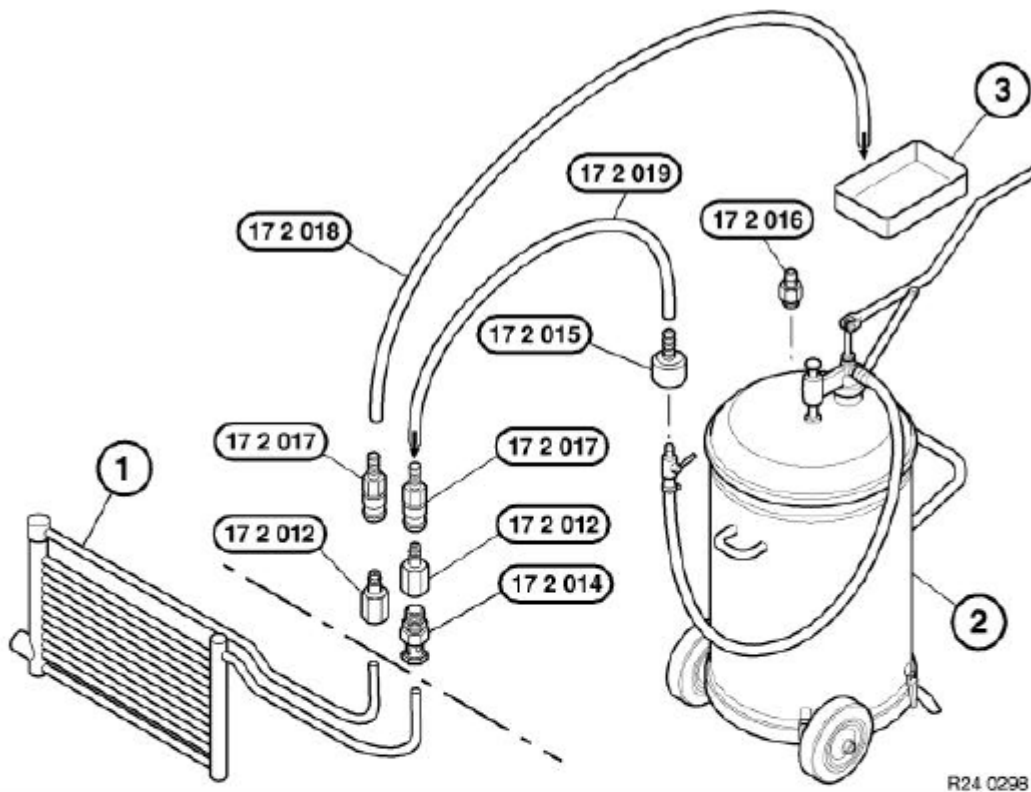
17 2 015 Connection for oil collection unit (2), manufacturer: Deutsche Tecalemit or

17 2 016 Connection for oil collection unit (2), manufacturer: Horn

17 2 017 Quick-release coupling (2 pieces)

17 2 018 Hose to oil drip tray (3)

17 2 019 Hose to oil collection unit (2)



R24 0298

- 1) Transmission-oil cooler with lines
- 2) Oil collection unit
- 3) Oil drip tray

17 2 012 Adapters (2 x) for connecting transmission-side oil cooler lines (1)

17 2 014 Banjo bolt for connecting transmission-side oil cooler lines (1)

17 2 015 Connection for oil collection unit (2), manufacturer: Deutsche Tecalemit or

17 2 016 Connection for oil collection unit (2), manufacturer: Horn

17 2 017 Quick-release coupling (2 pieces)

17 2 018 Hose to oil drip tray (3)

17 2 019 Hose to oil collection unit (2)

Fig. 27: Arrangement Of Flushing Device For Transmission (A4S 300J)

Courtesy of BMW OF NORTH AMERICA, INC.

Arrangement of flushing device for transmission A5S 440Z

1. Transmission-oil cooler with lines
2. Oil collection unit
3. Oil drip tray

17 2 015 Connection for oil collection unit (2), manufacturer: Deutsche Tecalemit or

17 2 016 Connection for oil collection unit (2), manufacturer: Horn

17 2 017 Quick-release coupling (2 pieces)

17 2 018 Hose to oil drip tray (3)

17 2 019 Hose to oil collection unit (2)

22 OIL COOLER LINES

17 22 010 REMOVING AND INSTALLING/REPLACING HEAT EXCHANGER FOR AUTOMATIC TRANSMISSION (N52K)

IMPORTANT: Danger of scalding!

Only perform this work after engine has cooled down.

Necessary preliminary tasks:

- Follow instructions for working on cooling system. See 17 00 ... Instructions For Working On Cooling System.
- Drain coolant. See 17 00 005 Draining and Adding Coolant In Radiator (N52K)
- Remove fan cowl. See 17 11 035 Removing and Installing/Replacing Fan Cowl With Electric Fan (N52K)

Recycling

Catch and dispose of drained coolant.

Transmission fluid emerges when oil lines are detached from heat exchanger.

Catch and dispose of escaping transmission fluid.

Observe country-specific waste-disposal regulations.

Release and disconnect coolant hoses (1).

Release screw and remove lines (2).

Installation:

- Replace sealing rings.
- Tightening torque. See 17 22 ENGINE OIL COOLER AND LINES.

Release screws (4) and remove heat exchanger (5).

Installation:

- Tightening torque. See **17 22 ENGINE OIL COOLER AND LINES** .

When installing hoses, ensure ease of movement with respect to ribbed V-belt.

Pay attention to routing of lines; realign retaining clamps if necessary.

Tightening torques. See **17 22 ENGINE OIL COOLER AND LINES** Add final details to vehicle.

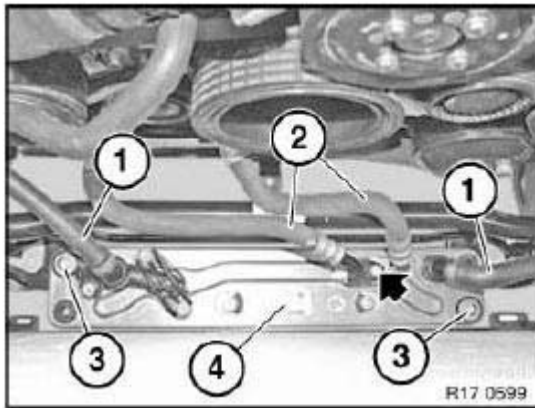


Fig. 28: Identifying Screws And Exchanger

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Check fluid level in automatic transmission.
Refer to **MAINTENANCE AND GENERAL INFORMATION** .