

Classification:

Reference:

Date:

AT00-002a

ITB00-042a

November 27, 2002

INFINITI AUTOMATIC TRANSMISSION OIL COOLER CLEANING

This bulletin supersedes ITB94-022 and amends ITB00-042 to include additional model/model years and changes to the Claims Information section. Please discard all copies of ITB94-022 and paper copies of ITB00-042

- APPLIED VEHICLES:** All with Automatic Transmission (A/T):
- Except Q45 (G50) with Transmission filter
 - See Chart B at top of page 3 for details.

SERVICE INFORMATION

Whenever an automatic transmission (A/T) is repaired, overhauled, or replaced, **the A/T oil cooler mounted in the radiator must be inspected and cleaned.**

- Metal debris and friction material, if present, can become trapped in the A/T oil cooler and may build up as transmission fluid enters the Cooler Inlet.
- This debris can contaminate the newly serviced transmission.
- In severe cases this debris can block or restrict the flow of transmission fluid/oil. In either case, failure of the newly serviced A/T may result.

It will be necessary to back flush the cooler through the Cooler Outlet in order to flush out any built up debris.

- The location of the Cooler Inlet and Outlet Hoses described in this bulletin determines the direction of transmission fluid flow through the cooler.
- The Inlet and Outlet position varies from model to model, and you **must** identify the location of the Cooler Inlet and Outlet to successfully perform the cleaning procedure.

Refer to the **SERVICE PROCEDURE Workflow** on page 2 to determine the procedure for a particular vehicle.

- Use Charts A and B on pages 2 and 3 to establish the correct Cooler Inlet and Outlet location for the vehicle you are servicing.
- Then perform the Cleaning, Diagnosis, and Inspection as instructed.

SERVICE PROCEDURE

Workflow:

ACTION		MODELS	
		<u>All Applied Vehicles</u>	Only '97-'98 QX4 (JR50) with Air cooled Oil Cooler
1	Determine Cooler Inlet and Outlet locations (in radiator).	Use Charts A & B , pages 2 and 3.	
2	Perform Cooler Cleaning Procedure(s) (in radiator).	Cooler Cleaning (in radiator) - Pages 4-6.	
2a	Perform cleaning of Optional Air Cooled oil cooler .	N/A	Cleaning Optional Air Cooled Oil Cooler – Paged 6 and 7.
3	Perform Diagnosis Procedure (All Vehicles) .	Pages 7 and 8.	
4	Perform Inspection Procedures .	Page 9.	

Cooler Inlet And Outlet Locations:

Chart A – Front Wheel Drive (FWD) Cooler Inlet/Outlet Identification:

Model Year	Model	Cooler Inlet	Cooler Outlet *	Outlet Reference
1990 and later	All	Passenger Side	Driver Side	see Figure 1B

* **NOTE:** Always flush coolers from the Cooler Outlet Side (see Figure 1B for reference).

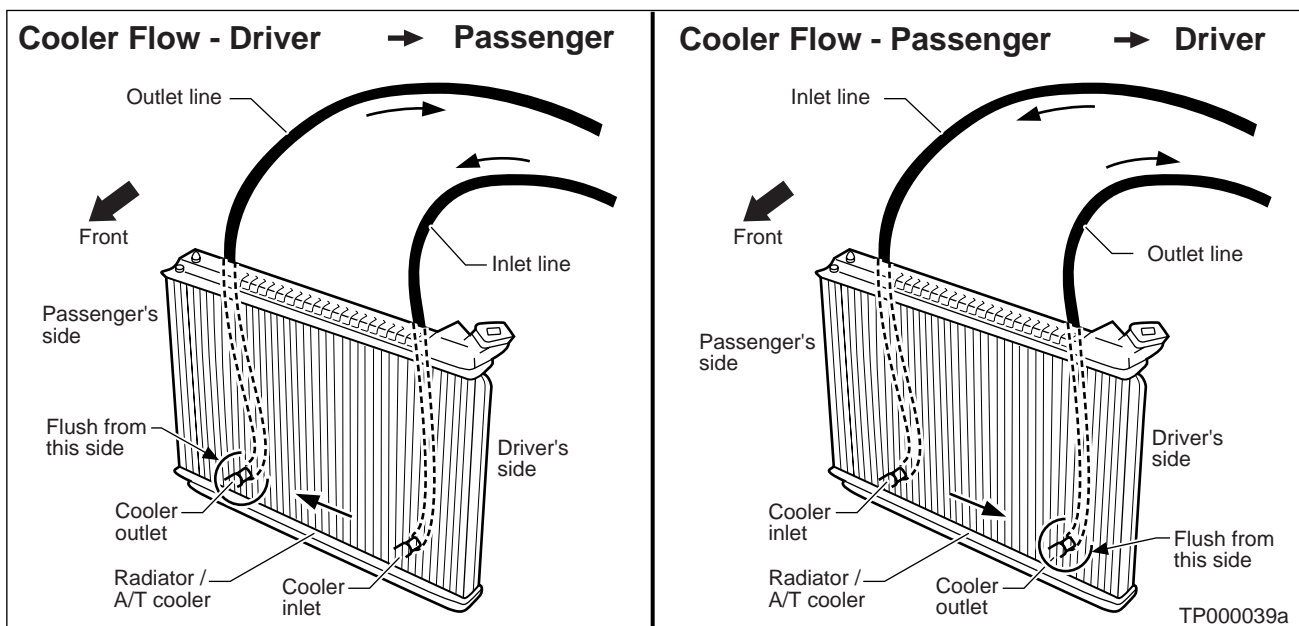


Figure 1A

Figure 1B

Chart B – Rear Wheel Drive (RWD) Cooler Inlet/Outlet Identification:

Model Year	Model	Cooler Inlet	Cooler Outlet *	Outlet Reference
1990 and later	All except those listed below	Passenger Side	Driver Side	see Figure 1B
1997 and later	QX4	Driver Side	Passenger Side	see Figure 1A
2003 and later	FX35 (4WD)	Driver Side	Passenger Side	see Figure 1A
2003 and later	FX35 (2WD)	Passenger Side	Driver Side	see Figure 1B
2003 and later	FX45 (All)	Driver Side	Passenger Side	see Figure 1A
2003 and later	M45	Driver Side	Passenger Side	see Figure 1A
2002 and later	Q45 (F50)	Driver Side	Passenger Side	see Figure 1A
Q45's (G50's)				
Year	VIN	Cooler Inlet	Cooler Outlet	Outlet Reference
1990	All	Bottom	Top	2A
1991 **	N/A	N/A	N/A	N/A
1992 **	VIN Range: JNKNG01C(*)NM200001 to 205387, up to October 1, 1991 Production Date	N/A	N/A	N/A
	After VIN JNKNG01C(*)NM205387	Bottom (Twin Cooler)	Top (Twin Cooler)	2B
1993	All	Bottom (Twin Cooler)	Top (Twin Cooler)	2B
1994-96 ***	N/A	N/A	N/A	N/A

* **NOTE:** Always flush coolers from the Cooler Outlet Side (see Figures 1A, 1B, 2A, and 2B for reference).

** **NOTE:** All 1991 Q45's/G50's (JNKNG01C(*)MM100051 to 116709) and some 1992 Q45's/G50's (JNKNG01C(*)NM200001 to 205387, up to October 1, 1991 Production Date) which **have been campaigned** under ITB95-025A - Voluntary Service Campaign 1991-92 Automatic Transmission Field Service Action **are equipped with an A/T cooler filter** as a result of this campaign.

- Transmissions equipped with a cooler filter **do not require radiator replacement or cooler cleaning**. See ITB95-025A for further details.
- If the above noted campaign **has not been applied and the filter has not been installed**, refer to ITB95-025A for campaign application.

*** **NOTE:** All 1994-96 Q45's (G50's) were manufactured with the A/T cooler filter installed at the factory. These vehicles **do not require radiator replacement or cooler cleaning**.

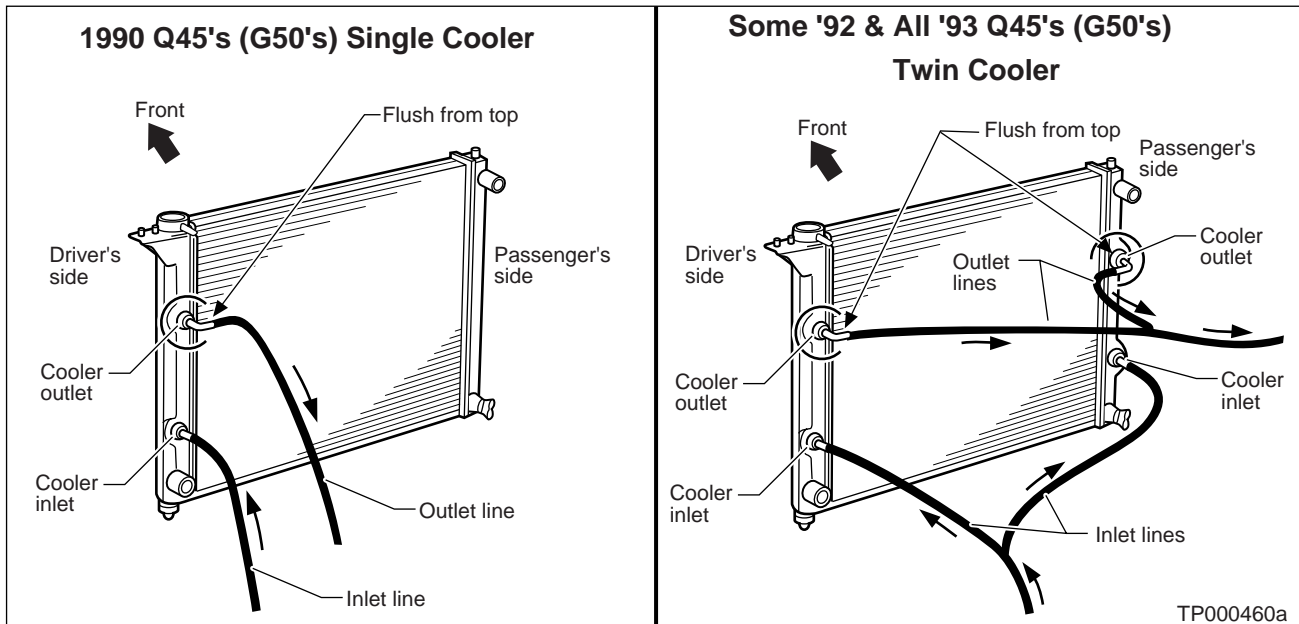


Figure 2A

Figure 2B

Cooler Cleaning (in radiator) Procedure

CAUTION: You must refer to **Charts A and B on pages 2 and 3** to determine the location of the Cooler Inlet and Outlet hoses for the vehicle you're working on.

If these hoses are not identified correctly, debris may be left in the cooler and transmission damage may occur.

NOTE: 1992 Q45's/G50's after VIN JNKN01C(*)NM205387 and all 1993 Q45's/G50's are equipped with a twin oil cooler system. You must perform the following **Cooler Cleaning (in radiator) Procedure** on both coolers.

1. Place an oil drain pan under the automatic transmission's Inlet and Outlet cooler hoses.
2. Identify the Inlet and Outlet oil cooler hoses (refer to Charts A and B on pages 2 and 3).
3. Disconnect the Oil Cooler Inlet and Outlet rubber hoses from the steel cooler tubes (see Figure 3).

NOTE: If rubber material from a cooler hose remains on the tube fitting, replace the hose.

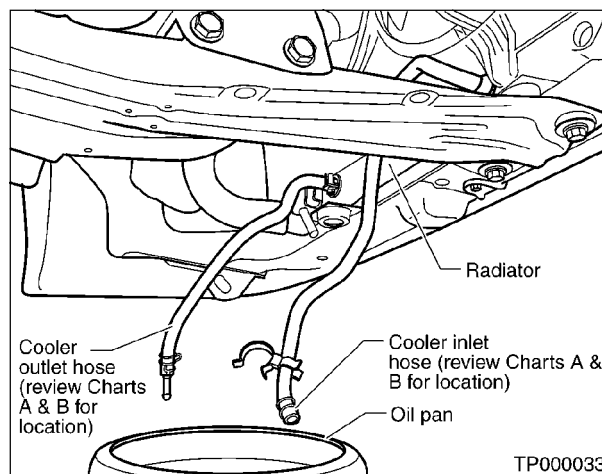


Figure 3

4. Allow any transmission fluid that remains in the Cooler hoses to drain into the oil pan.

5. Insert the "extension adapter hose" from a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the Cooler Outlet hose (see Figure 4).

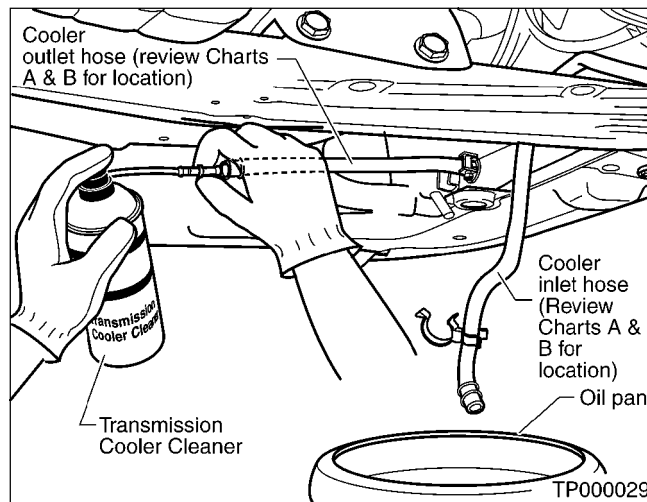


Figure 4

CAUTION:

- Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.
- Spray Cooler Cleaner only with adequate ventilation.
- Avoid contact with eyes and skin.
- Do not breath the vapors or mist from spray.

6. Hold the hose and can as high as possible. Spray Transmission Cooler Cleaner in a continuous stream into the Cooler Outlet hose until fluid flows out of the Cooler Inlet hose for 5 seconds.
7. Insert the tip of an air gun into the end of the Cooler Outlet hose (see Figure 5).
8. Wrap a shop rag around the air gun tip and end of the Cooler Outlet hose (see Figure 5).

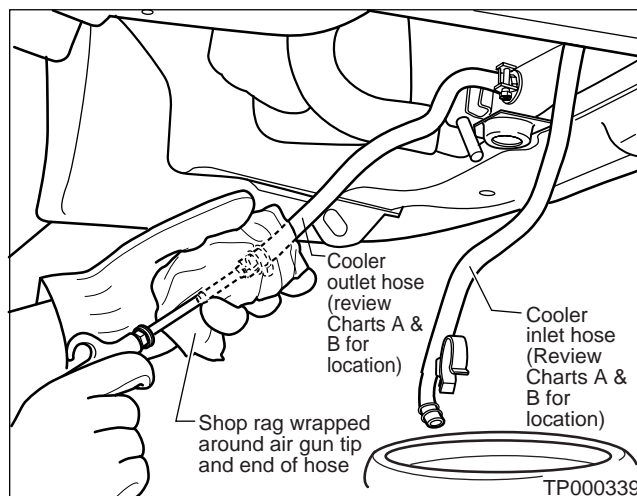


Figure 5

9. Blow compressed air regulated to 5-9 kg/cm² (70 – 130 PSI) through the Cooler Outlet hose for 10 seconds to force out any remaining fluid.
10. Repeat steps 5 through 9 three additional times.

11. Place an oil drain pan under the banjo bolts that connect the oil cooler steel lines to the transmission.
12. Remove the “banjo” bolts at the transmission, and pull the line fittings away from the transmission
13. Flush each steel line from the cooler side back toward the transmission by spraying Transmission Cooler Cleaner in a continuous stream for 5 seconds.
14. Blow compressed air regulated to 5-9 kg/cm² (70 – 130 PSI) through each steel line from the cooler side back toward the transmission for 10 seconds to force out any remaining fluid.
15. Ensure all debris is removed from the steel cooler lines.
16. Ensure all debris is removed from the banjo bolts and fittings.
17. Go to the **Workflow** chart on page 2 for next step.

Cleaning Optional Air Cooled Oil-Cooler (1997-98 QX4 (JR50) only)

1. Place an oil drain pan under the A/T Air Cooler Inlet and Outlet hoses (see Points A and B, Figure 6).
2. Disconnect the Air Cooler Inlet and Outlet hoses from the Air Cooler (see Points A and B, Figure 6).

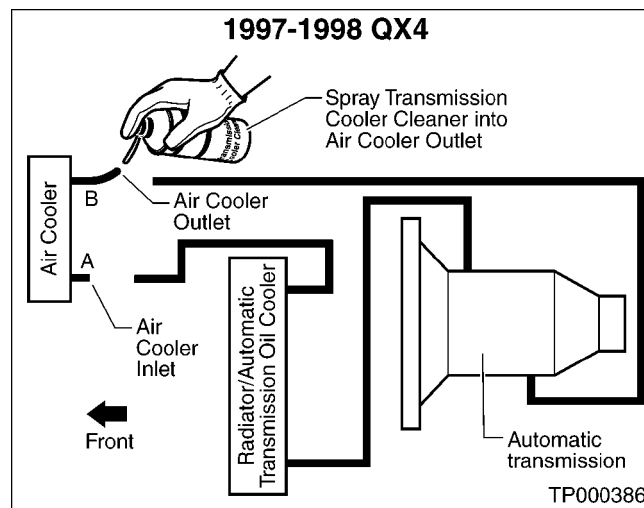


Figure 6

3. Insert the “extension adapter hose” from a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the Air Cooler Outlet hose (see Point B, Figure 6).

CAUTION:

- **Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.**
 - **Spray Cooler Cleaner only with adequate ventilation.**
 - **Avoid contact with eyes and skin.**
 - **Do not breath the vapors or mist from spray.**
4. Hold the hose and can as high as possible. Spray Transmission Cooler Cleaner in a continuous stream into the Air Cooler Outlet hose until fluid flows out of the Air Cooler Inlet hose (Point A, Figure 6) for 5 seconds.

5. Insert the tip of an air gun into the end of the Air Cooler Outlet hose (see Point B, Figure 7).

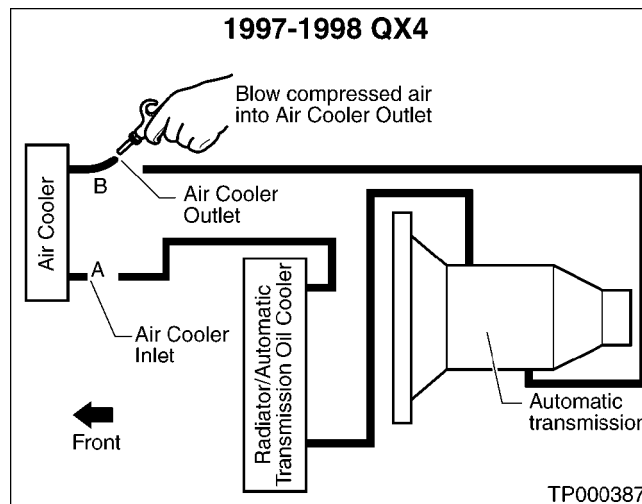


Figure 7

6. Wrap a shop rag around the air gun tip and end of the Air Cooler Outlet hose.
7. Blow compressed air regulated to 5-9 kg/cm² (70 – 130 PSI) through the Air Cooler Outlet hose to force any remaining ATF and cleaner through the Air/Oil Cooler and out of the Air Cooler Inlet hose (see Point A, Figure 7).
8. Proceed with **Diagnosis Procedure (All Vehicles)**, below .

Diagnosis Procedure (All Vehicles)

You will be taking a sample of the debris to determine if the radiator/oil cooler must be replaced.

CAUTION: You must refer to **Charts A and B on pages 2 and 3** to determine the location of the Outlet and Inlet hoses for the oil cooler in the radiator of the vehicle you are working on.

If not identified correctly, debris may be left in the in radiator cooler and transmission damage may occur.

NOTE: Failure to clean the cooler Inlet hose exterior properly may lead to inaccurate debris identification.

NOTE: 1992 Q45's/G50's after VIN JNKN01C(*)NM205387 and all 1993 Q45's/G50's are equipped with a twin oil cooler system in the radiator. You must perform the "**All Vehicles**" **Diagnosis Procedure** on both coolers.

1. Place an oil drain pan under the Inlet and Outlet hoses of the A/T oil cooler in the radiator.
2. Clean the exterior and tip of the Cooler Inlet hose.
3. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the Cooler Outlet hose (see Figure 4 on page 5).

CAUTION:

- **Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.**
 - **Spray Cooler Cleaner only with adequate ventilation.**
 - **Avoid contact with eyes and skin.**
 - **Do not breath the vapors or mist from spary.**
4. Hold the hose and can as high as possible. Spray Transmission Cooler Cleaner in a continuous stream into the Cooler Outlet hose until fluid flows out of the Cooler Inlet hose for 5 seconds.

5. Tie a common white, basket-type coffee filter to the end of the Cooler Inlet hose (see Figure 8).

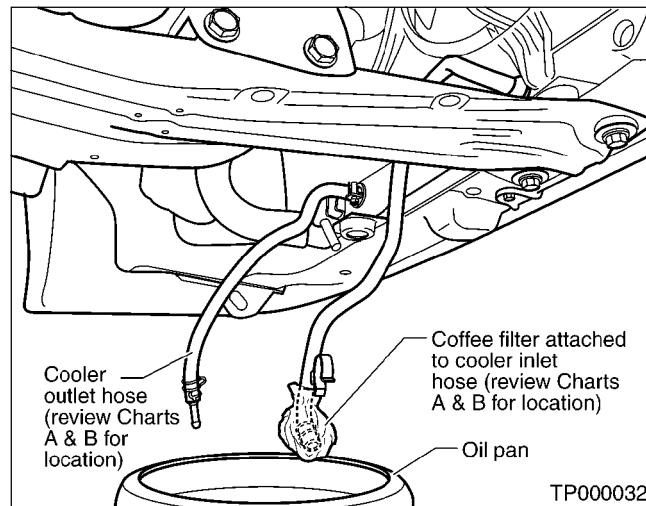


Figure 8

6. Insert the tip of an air gun into the end of the Cooler Outlet hose (see Figure 9).
7. Wrap a shop rag around the air gun tip and end of the Cooler Outlet hose (see Figure 9).

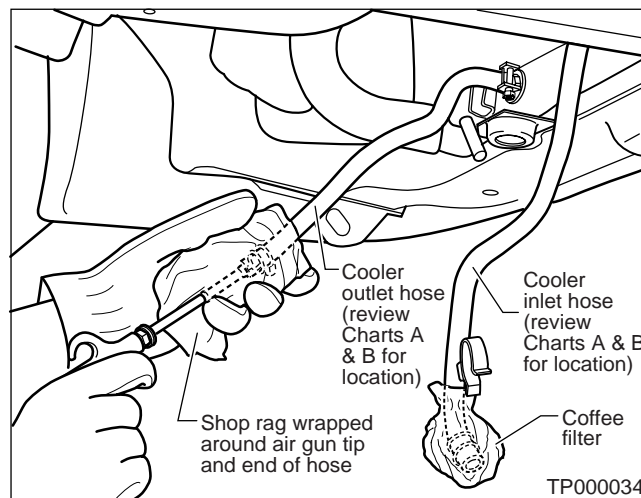


Figure 9

8. Blow compressed air regulated to 5-9 kg/cm² (70 – 130 PSI) through the Cooler Outlet hose to force any remaining ATF into the coffee filter (see Figure 9).
9. Remove the coffee filter from the end of the Cooler Inlet hose.
10. Proceed with **Inspection Procedure** on page 9.

Inspection Procedure

NOTE: 1992 Q45's/G50's after VIN JNKN01C(*)NM205387 and all 1993 Q45's/G50's are equipped with a twin oil cooler system in the radiator. For these vehicles, you must perform the **Inspection Procedure** on each of the two coffee filters removed from the cooler inlet hoses in step 9 of the **Diagnosis Procedure**.

1. Inspect the coffee filter for debris (see Figure 10).

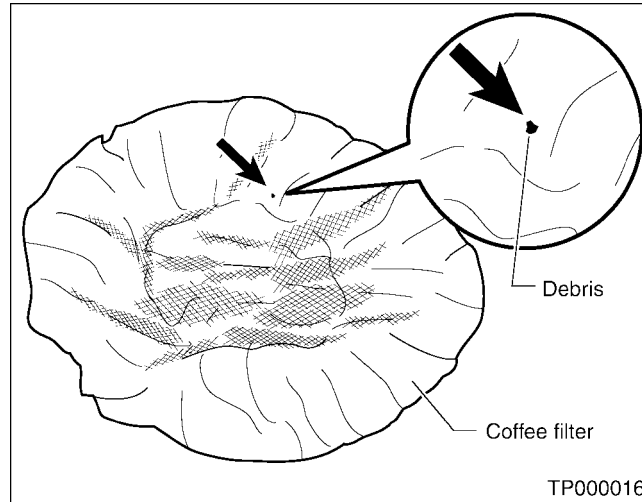


Figure 10

- A. If small metal debris less than 1 mm (0.040 inch) in size or metal powder is found in the coffee filter, this is normal. If normal debris is found, the radiator/oil cooler can be re-used.
- B. If **one or more pieces** of debris are found that are over 1 mm in size (see Figure 11) and/or peeled clutch facing material is found in the coffee filter, the oil-cooler is not serviceable. The radiator/oil cooler must be replaced.

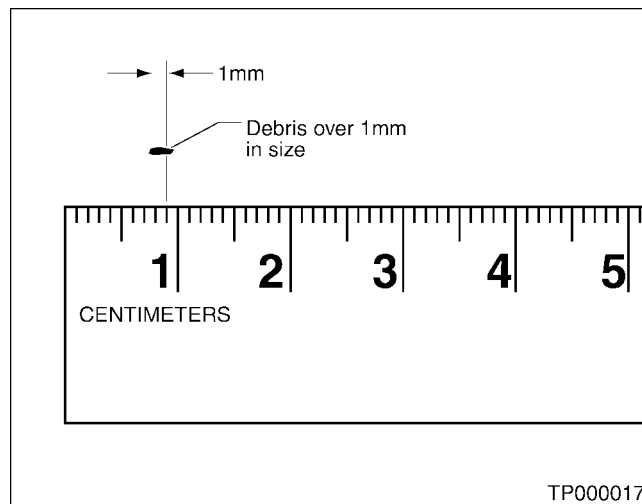


Figure 11

Final Inspection

After performing all procedures, ensure that all remaining oil is cleaned from all components.

PARTS INFORMATION

DESCRIPTION	PART #	QUANTITY
Transmission Cooler Cleaner *	999MP-AM006	As Needed

Nissan Transmission Cooler Cleaner and all chemicals are ordered through the Nissan Direct Ship Chemical Care Product Program: Phone 1.800.811.0502, Fax1.904.389.8279, Website www.NissanChemicals.com.

* Material Safety Data Sheets for this product are attached (Attachment A) or ASIST users click [here](#).

CLAIMS INFORMATION

Use the following "Combination" Op Codes as indicated with the appropriate Section "JA" or "JC" coding that best represents the A/T R&R and repair/replacement performed:

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Combination: Water-cooled A/T oil cooler cleaning and inspection		JA011A (2)			(1)

1. Reference the current Infiniti Warranty Flat Rate Manual and use the indicated FRT.
2. Note: This Op Code does not apply to all G50 vehicles. Please refer to Infiniti Technical Bulletin "ITB95-025A" for complete details. The 1991, 1992, and 1994-96 vehicles defined in Chart B on page 3 {"Q45's (G50's)}, do not require the A/T cooler cleaning procedure. For those applicable vehicles that have not been campaigned according to the referenced ITB (i.e., do NOT yet have the oil cooler kit installed), please do so.

OR

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Combination: Water-cooled plus air-cooled A/T oil cooler cleaning and inspection (for certain '97-'98 JR50s fitted with <u>both</u> types of A/T coolers)		JA012A			(1)

1. Reference the current Infiniti Warranty Flat Rate Manual and use the indicated FRT.

OR

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Combination: Twin/dual water-cooled A/T oil coolers cleaning and inspection (for certain '92-'93 G50's)		JA013A			(1)

1. Reference the current Infiniti Warranty Flat Rate Manual and use the indicated FRT.

OR

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Combination: Water-cooled A/T oil cooler cleaning and inspection		JC011A			(1)

1. Reference the current Infiniti Warranty Flat Rate Manual and use the indicated FRT