NISSAN

PRODUCT INFORMATION BULLETIN

Nissan – Group of AMIEO

DATE:	November 2024
PIB:	PIB-NES-EX-24-001
TITLE:	D23 EGR SYSTEM ENGINE DIAGNOSIS
TO:	Service Manager
MODEL:	D23 NAVARA
COUNTRIES:	EUROPE
VERSION:	1.0

1) DESCRIPTION

This bulletin has the intention to provide a simple and clear guideline for diagnosing vehicles affected by a potential engine failure linked with Exhaust Gas Recirculation (EGR) system and the potential impact to the engine (overheat damage) on a customer complaint basis only.
The diagnosis is valid for D23 Navara with YS23DDTT engine (Euro6D TEMP specification only).

2) BACKGROUND

The D23 Navara has a complex engine design, resulting in difficult diagnosis and an increase in engine replacements as a fix. This bulletin aims to assist in diagnosing specific issue with the engine and reduce the workload and the number of unsuccessful repairs.

Customers may experience engine running concern such as a reduction of power and/or engine malfunction indicator light ON in the Combimeter.
If DTC or DTCs recorded is any of the following: **P1028, P2002, P253F, P0400.** If there is more than one DTC applicable, please follow the order of the bulletin.

If the concern is not related to any of the previous failure modes or DTCs, please follow ESM or search for other applicable bulletins.

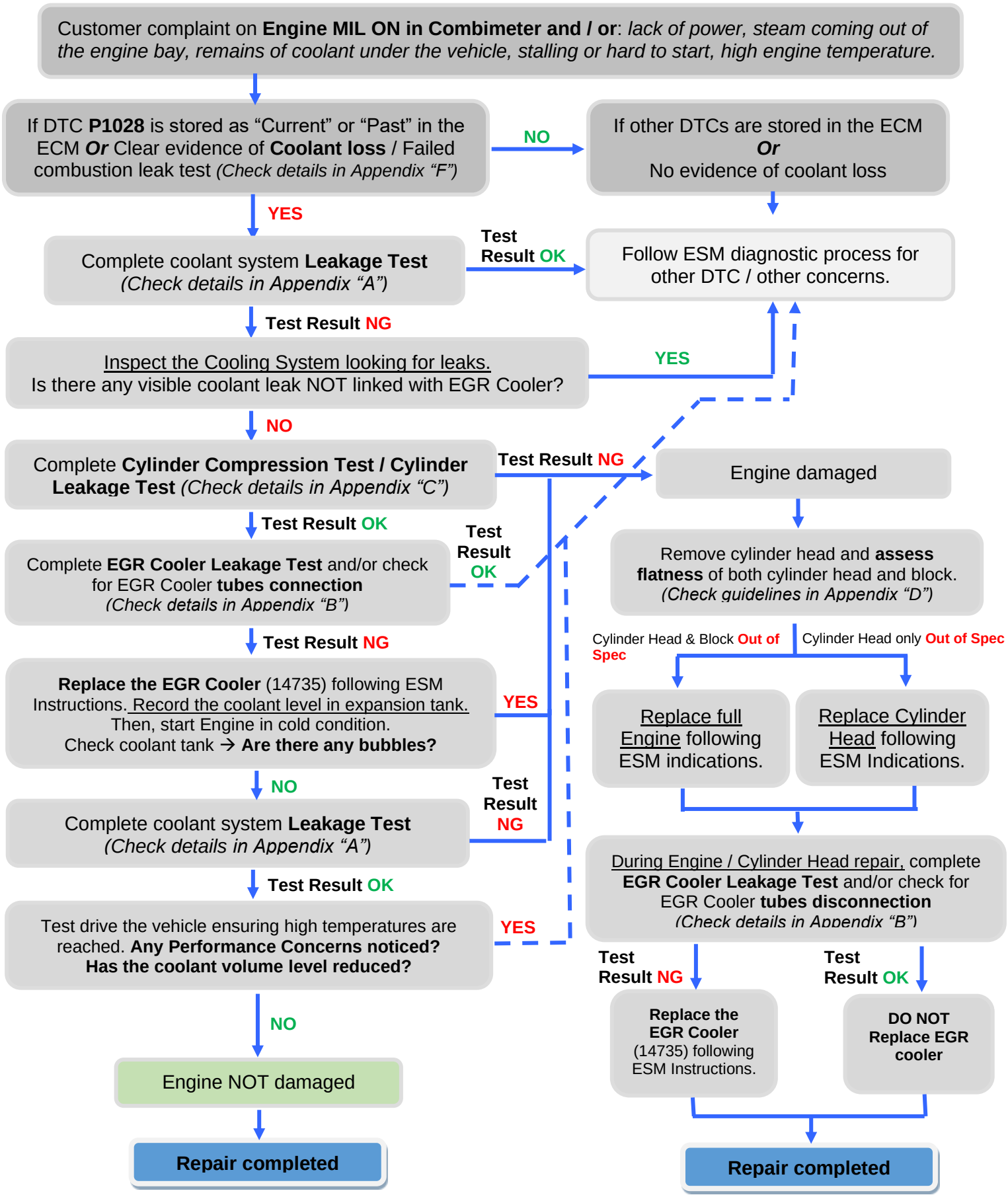
3) VEHICLES AFFECTED

	From VIN	To VIN
	VSK***D23U0129209	VSK***D23U999999
Prod Date	05/2019	12/2021

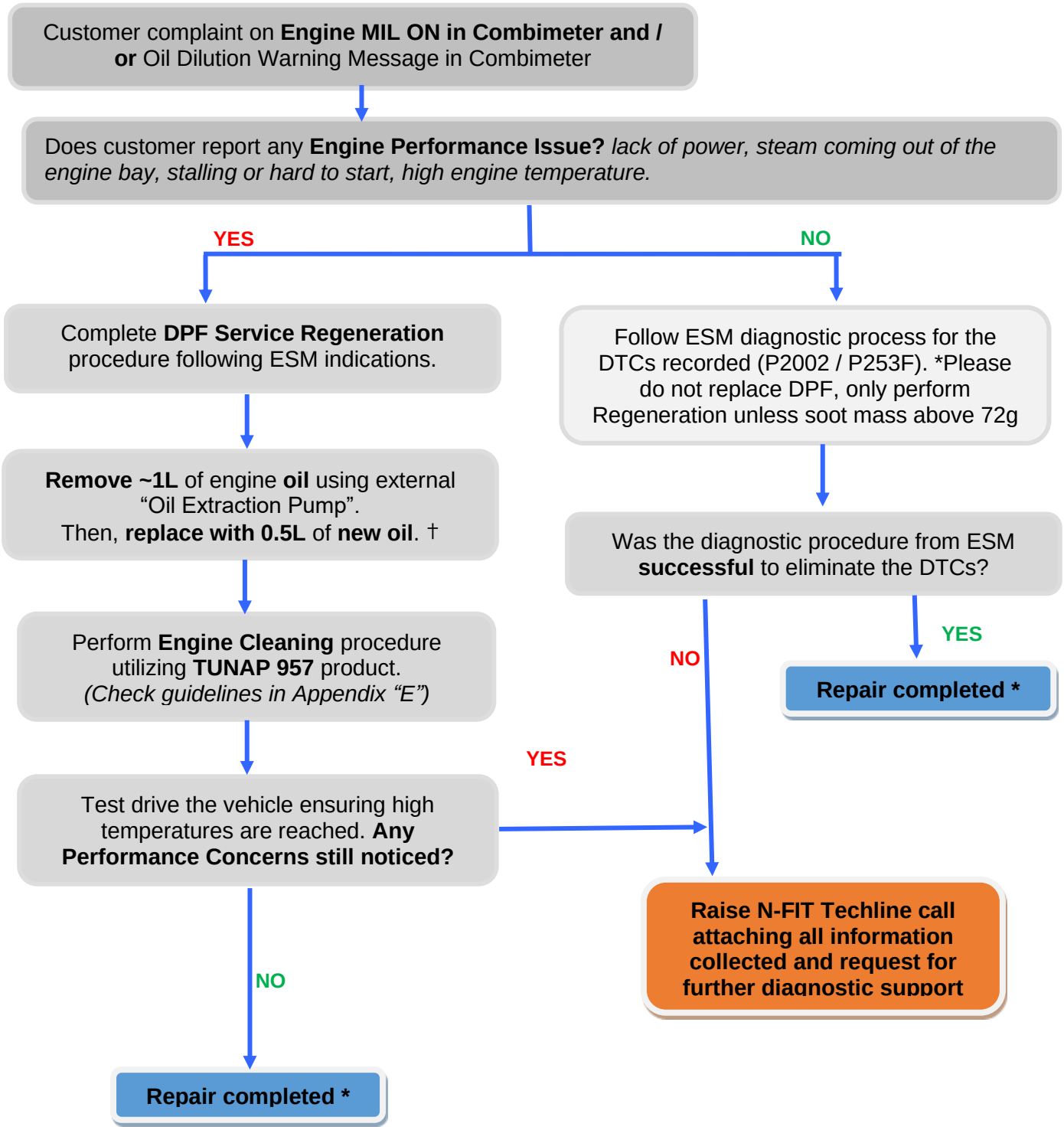
4) SERVICE PROCEDURE

Please follow one of the **three below procedures** to help diagnose engine issues **based on the main DTC/fault recorded**:

DIAGNOSIS #1: **DTC P1028**. *If present with P0217, please proceed with checks for P0217 as priority. After P0217 has been resolved, if P1028 is still present, continue with the below procedure:*


Customer complaint on **Engine MIL ON in Combimeter and / or**: *lack of power, steam coming out of the engine bay, remains of coolant under the vehicle, stalling or hard to start, high engine temperature.*
If DTC **P1028** is stored as "Current" or "Past" in the ECM ***Or*** Clear evidence of **Coolant loss** / Failed combustion leak test *(Check details in Appendix "F")*
NO
If other DTCs are stored in the ECM ***Or*** No evidence of coolant loss
YES
Complete coolant system **Leakage Test** *(Check details in Appendix "A")*
Test Result OK
Follow ESM diagnostic process for other DTC / other concerns.
Test Result NG
Inspect the Cooling System looking for leaks. Is there any visible coolant leak NOT linked with EGR Cooler?
YES
NO
Complete **Cylinder Compression Test / Cylinder Leakage Test** *(Check details in Appendix "C")*
Test Result NG
Engine damaged
Test Result OK
Test Result OK
Complete **EGR Cooler Leakage Test** and/or check for EGR Cooler **tubes connection** *(Check details in Appendix "B")*
Remove cylinder head and **assess flatness** of both cylinder head and block. *(Check guidelines in Appendix "D")*
Test Result NG
Cylinder Head & Block Out of Spec
Cylinder Head only Out of Spec
Replace the EGR Cooler (14735) following ESM Instructions. Record the coolant level in expansion tank. Then, start Engine in cold condition. Check coolant tank → **Are there any bubbles?**
YES
Replace full Engine following ESM indications.
Replace Cylinder Head following ESM Indications.
NO
Test Result NG
Complete coolant system **Leakage Test** *(Check details in Appendix "A")*
During Engine / Cylinder Head repair, complete **EGR Cooler Leakage Test** and/or check for EGR Cooler **tubes disconnection** *(Check details in Appendix "B")*
Test Result OK
Test drive the vehicle ensuring high temperatures are reached. **Any Performance Concerns noticed? Has the coolant volume level reduced?**
YES
Test Result NG
Test Result OK
NO
Replace the EGR Cooler (14735) following ESM Instructions.
DO NOT Replace EGR cooler
Engine NOT damaged
Repair completed
Repair completed

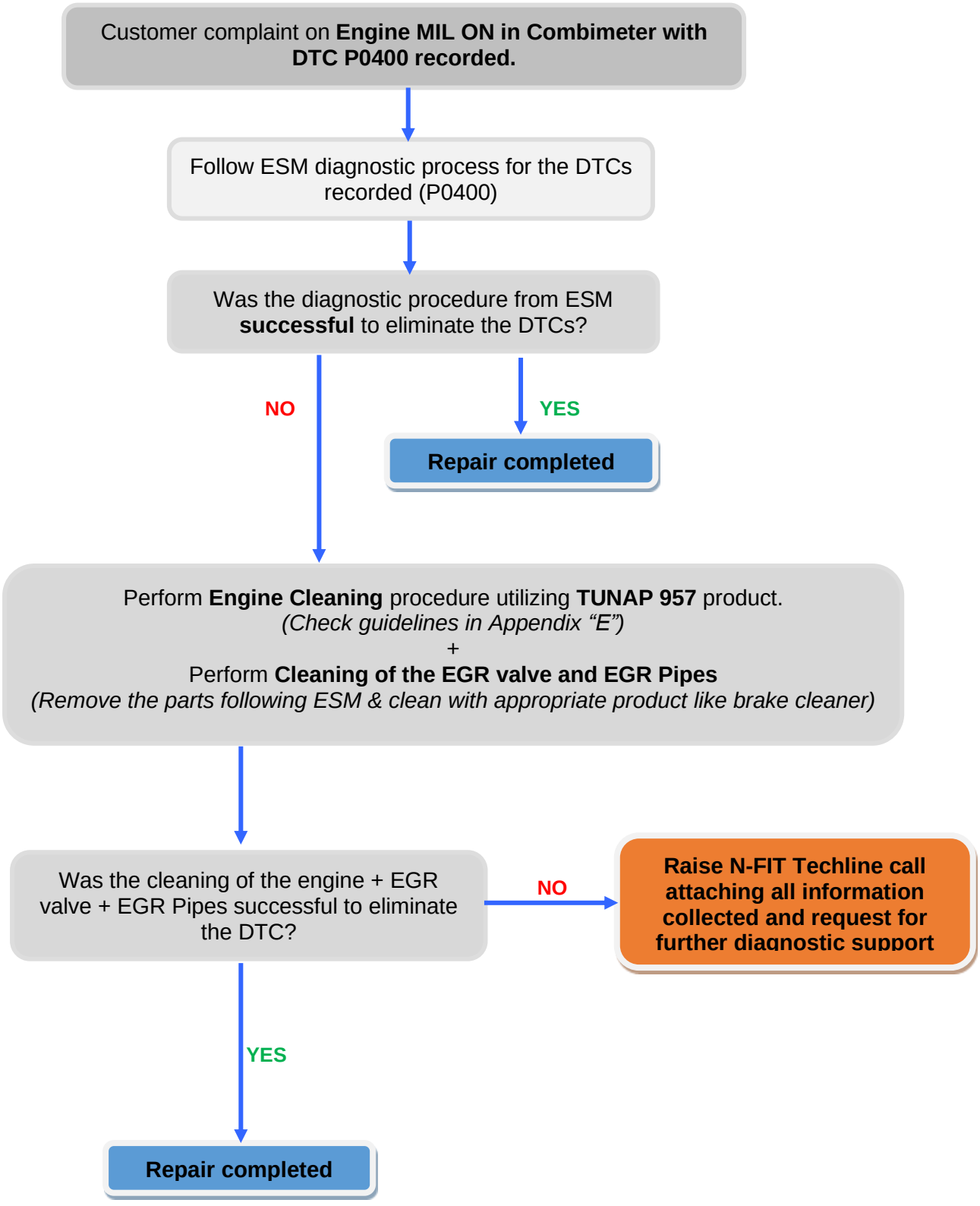
DIAGNOSIS #2: DTC P2002 / P253F (recurrence at <15K km since last report)



* Once repair is completed, please explain to the customer the need of driving occasionally (dependant on driving routine) at high speed to trigger the automatic engine catalytic converter regeneration. For it, warm the engine to running temperature then as safely possible, drive the vehicle at a high speed (more than approximately 80 km/h (50 MPH)) for at least 15 minutes.

† Removal of 1 litre of oil is to ensure the correct oil dilution levels before using the engine flush product. Doing this will keep the level of oil dilution and oil volume within the safe parameters for the engine.

DIAGNOSIS #3: DTC P0400



DIAGNOSIS "1") PARTS – DTC P1028

Scenario	Part Number	Description
Engine NOT Damaged	14735-00Q0F	COOLER ASSY-EGR
Engine Damaged*	10102-01Q4F or 11041-00Q3E	ENGINE ASSY-BARE or HEAD ASSY-CYLINDER
Coolant as required. Nuts, Bolts and Gaskets as required per ESM indication. *If full engine is replaced, please follow ESM indications on auxiliary parts that might need replacement		

DIAGNOSIS "1") CLAIMING CONDITIONS – DTC P1028

SUBJECT	YS23DDTT – EGR Cooler Leak
AFFECTED MODEL	D23
CLASS CODE	0 – New Vehicle Warranty (unless previously claimed)
PFP	14735* (Please select exact PFP as per EPC indications)
CS	ZQ - WATER/COOLANT LEAKING/ENTERING
CT	32 - INTERNAL FAILURE
OPERATIONS FOR SCENARIO ENGINE NOT DAMAGED	
CW57A3	Diagnostic for DTC P1028
EA44A3	EGR COOLER – R&I / RP
OPERATIONS FOR SCENARIO ENGINE DAMAGED	
CW57A3	Diagnostic for DTC P1028
EA44A3	EGR COOLER - R&I / RP
AM12A3 **or** AM12R3 (4WD)	CYLINDER HEAD ASSY RP
AA20A3 **or** AA20R3 (4WD)	BARE ENGINE RP
This repair may be subject to pre-authorization / claim review and parts inspection. The repair cannot be split into more than one claim.	
All queries / claims submitted must include a full copy of dealer job card to confirm the detailed customer complaint, photos of the EGR Cooler Leakage Test or Pipe Disconnection, printout of compression test [Compression test should include cylinder leakage results in percentage] and photos and measurements of the cylinder-head and cylinder-block.	

DIAGNOSIS "2") PARTS – DTC P2002 / P253F

Scenario	Part Number	Description
	TUNAP 957 15209-00Q0M	Engine Cleaner from Tunap Company OIL FILTER ASSY
Engine Oil as required. Nuts, Bolts and Gaskets as required per ESM indication.		

DIAGNOSIS "2") CLAIMING CONDITIONS – DTC P2002 / P253F

SUBJECT	YS23DDTT – DPF MIL ON in Combimeter
AFFECTED MODEL	D23
CLASS CODE	0 – New Vehicle Warranty (unless previously claimed)
PFP	23701D23PI
CS	HC - WARNING LIGHT ON
CT	32 - INTERNAL FAILURE
OPERATIONS	
EV86A3 **or** ER90A3	Diagnostic for DTC P2002 **or** Diagnostic for DTC P253F
AX61A3	ENGINE CLEANING USING TUNAP
SUBLET CODE	
199	OTHER LOCAL PART/MATERIAL (for TUNAP 957)
This repair may be subject to pre-authorization / claim review and parts inspection. The repair cannot be split into more than one claim.	
All queries / claims submitted must include a full copy of dealer job card to confirm the detailed customer complaint and DTC printout with the amount of soot and oil dilution % before and after the service regeneration.	

DIAGNOSIS "3") PARTS – DTC P0400

Scenario	Part Number	Description
	TUNAP 957 15209-00Q0M	Engine Cleaner from Tunap Company OIL FILTER ASSY
Engine Oil as required. Nuts, Bolts and Gaskets as required per ESM indication.		

DIAGNOSIS "3") CLAIMING CONDITIONS – DTC P0400

SUBJECT	YS23DDTT – Engine MIL ON in Combimeter
AFFECTED MODEL	D23
CLASS CODE	0 – New Vehicle Warranty (unless previously claimed)
PFP	23701D23PI
CS	HC - WARNING LIGHT ON
CT	32 - INTERNAL FAILURE
OPERATIONS	
EU74A3	Diagnostic for DTC P0400
AX61A3	ENGINE CLEANING USING TUNAP
AX59A3	INTAKE SYSTEM DIS-& REASSEMBLE
AX60A3	CLEANING COMPONENTS
SUBLET CODE	
199	OTHER LOCAL PART/MATERIAL (for TUNAP 957)

This repair may be subject to pre-authorization / claim review and parts inspection. The repair cannot be split into more than one claim.
All queries / claims submitted must include a full copy of dealer job card to confirm the detailed customer complaint and DTC printout.

5) REVISION HISTORY

No.	Author	Page	Revised contents	Reason
1	M. Little	12	Newly established	D23 EGR System Engine diagnosis guidelines

Unless specified otherwise, the information in this bulletin should not be interpreted as the basis for warranty claims

APPENDIX "A": Guidelines for Coolant System Leakage Test

To check for leakage, please follow the below steps:

Picture	Step Instructions
 	**Step 1:** Use coolant system pressure test kit and ensure the engine is cold.
	**Step 2:** Remove Coolant expansion tank filler cap
	**Step 3:** Attach appropriate pressure test kit adapter to the expansion tank
	**Step 4:** Attach the pump and pressurise the system to 1Bar (15PSI)
	**Step 5:** Hold the pressure for 5 minute and observe for any change in pressure
	**Step 6:** Carefully release pressure and securely replace coolant expansion tank cap.

APPENDIX "B": Guidelines for EGR Cooler Inspection (Leakage Test + Pipes)

To check for internal leakage of the EGR Cooler, please follow the below steps:

Picture	Step Instructions
	**Step 1:** Remove High Pressure EGR cooler and prepare MITYVAC with flexi-pipe, adapter, and cap. NOTE: Check MITYVAC operation is normal before use.
	**Step 2:** Place cap on one coolant tube and insert adapter end of MITYVAC tube to the other EGR Cooler coolant tube. Ensure a tight fit and no air can enter the coolant tubes.
	**Step 3:** Apply a vacuum pressure of 15 PSI / 1 bar and hold it for 30 seconds. Note any air leakage/reduction in vacuum pressure. After 30 seconds, release pressure and remove MITYVAC and cap from EGR cooler.

In some cases, coolant loss is linked with High Pressure EGR Cooler pipes disconnection. Please see below examples. Check manually that the pipes are secured to the EGR Cooler Body. If loose, part needs replacement.



APPENDIX "C": Guidelines for Compression Test

Please perform compression test following ESM instructions.

ESM Chapter: DIAGNOSIS - ENGINE - ENGINE MECHANICAL - BASIC INSPECTION - ENGINE MECHANICAL SYSTEM - COMPRESSION PRESSURE INSPECTION

NOTE: Ensure the tool is calibrated and in good conditions.

To judge compression test results, please utilize the below table:

Vehicle Mileage Range (KM)	Minimum Compression Pressure Threshold	Difference Limit Between Cylinders
0-25000 km	23 bar (333.5 PSI)	2 bar (29 PSI)
25001 – 50000 km	21 bar (305 PSI)	
50000 – 100000 km	19 bar (277 PSI)	
> 100001 km	18 bar (262 PSI)	

Vehicle Mileage Range (miles)	Minimum Compression Pressure Threshold	Difference Limit Between Cylinders
0-15500 Miles	23 bar (333.5 PSI)	2 bar (29 PSI)
15500 – 31000 Miles	21 bar (305 PSI)	
31000 – 62150 Miles	19 bar (277 PSI)	
> 62150 Miles	18 bar (262 PSI)	

Maximum cylinder leakage should be **no more than 30% in any given Cylinder.**

APPENDIX "D": Guidelines for Engine Flatness Assessment

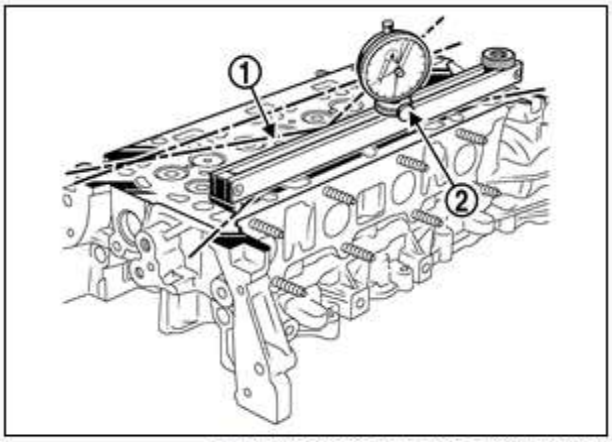
To measure flatness / distortion caused by overheat please use appropriate filler gauges.
It is required to measure both cylinder head and cylinder block and record measurements with pictures.

Specifications:
YS23DDTT

Head surface distortion Limit = 0.05 mm
Cylinder block top surface distortion Limit = 0.05 mm

CHECK FLATNESS OF THE CYLINDER HEAD

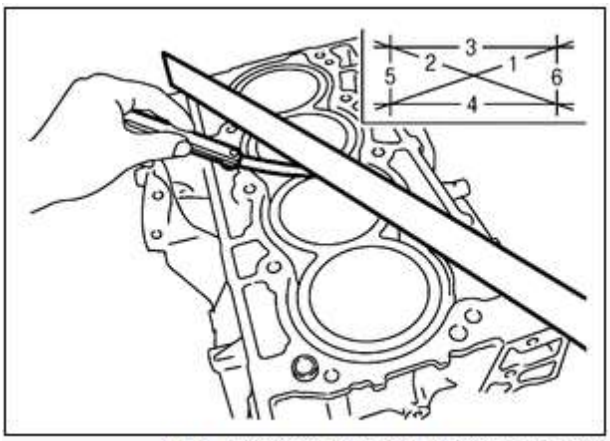
Using a ruler (1) and a dial gauge - support assembly (2) or a cylinder head rule and a set of feeler gauges, check the flatness of the cylinder head gasket face:



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CHECK CYLINDER BLOCK TOP SURFACE DISTORTION

Check the joint face deformation using a cylinder head rule and a set of feeler gauges.

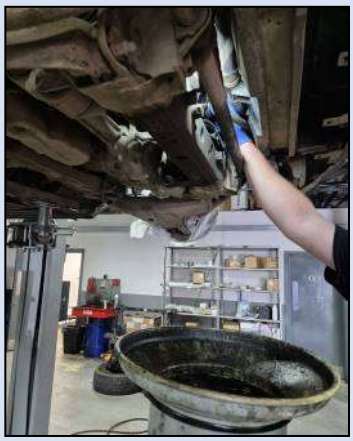
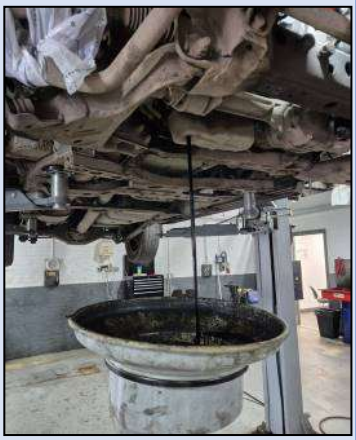


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NOTE: If during inspection, something abnormal is found that justifies an engine replacement, please document it appropiately in the claim.
Joint face of head or block could be damaged/eroded (by escaping combustion gas) but flatness might still be OK.
A new head gasket might not seal correctly on a surface that has been damaged/eroded.

APPENDIX "E": Guidelines for Engine Cleaning with TUNAP 957

To conduct engine chemical cleaning, please follow the below steps:

Picture	Step Instructions
	**Step 1:** Warm engine by running for 1-2 minutes on idle
 	**Step 2:** Remove oil filler cap and pour TUNAP 957 400ml Bottle into engine. **Step 3:** Replace oil filler cap. **Step 4:** Run vehicle on Idle for 15 minutes. **Do not exceed 20 minutes as per TUNAP 957 instructions.** **Step 5:** Turn off engine immediately after. Do not drive vehicle until step 6 is complete
 	**Step 6:** Complete Oil and Oil filter change as per ESM indications

APPENDIX "F": Failed Coolant combustion leak test

Please see examples of the coolant combustion leak test that can be used:



