

EA11003EN-00812[0]

From: Non-responsive content removed

To:

CC:

Date: 11/4/2010 12:30:29 PM

Subject: Re: SK31600010

Attachments: [20101104_SK31600010HDP.xls](#)

INFORMATION Redacted PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6)

Please >

>From: Non-responsive content removed

>Sent: Thursday, November 04, 2010 12:03 PM

>To: Non-responsive content removed Reference: SK31600010

>
>Hello,
> >Here are the photographs of your [redacted] diesel pump:

>
>
>
>
>
>With best wishes

>Non-responsive content removed

>Volkswagen Aktiengesellschaft
>Non-responsive content removed >D-38436 Wolfsburg

>Non-responsive content removed

Volkswagen Aktiengesellschaft
>Domicile: Wolfsburg >Court of Registry: Amtsgericht Braunschweig/Local District Court Braunschweig

>Registry no.: 100484

>Chair of the Supervisory Board: Ferdinand Piëch

>Board of Management: Martin Winterkorn (Chairman), Francisco J. Garcia Sanz, Jochem Heizmann, Christian Klinge, Michael Macht, Horst Neumann, Hans Dieter Pötsch, Rupert Stadler Important information: The above information is automatically added to this e-mail. This addition does not constitute a representation that the content of this e-mail is legally relevant and/or is intended to be legally binding

SK31600010
approx. 50,000km
[redacted] diesel with 10ml water
03L130755F
00445B21137-01
BPT?558/000984



EA11003EN-00812[1]

SK31600010

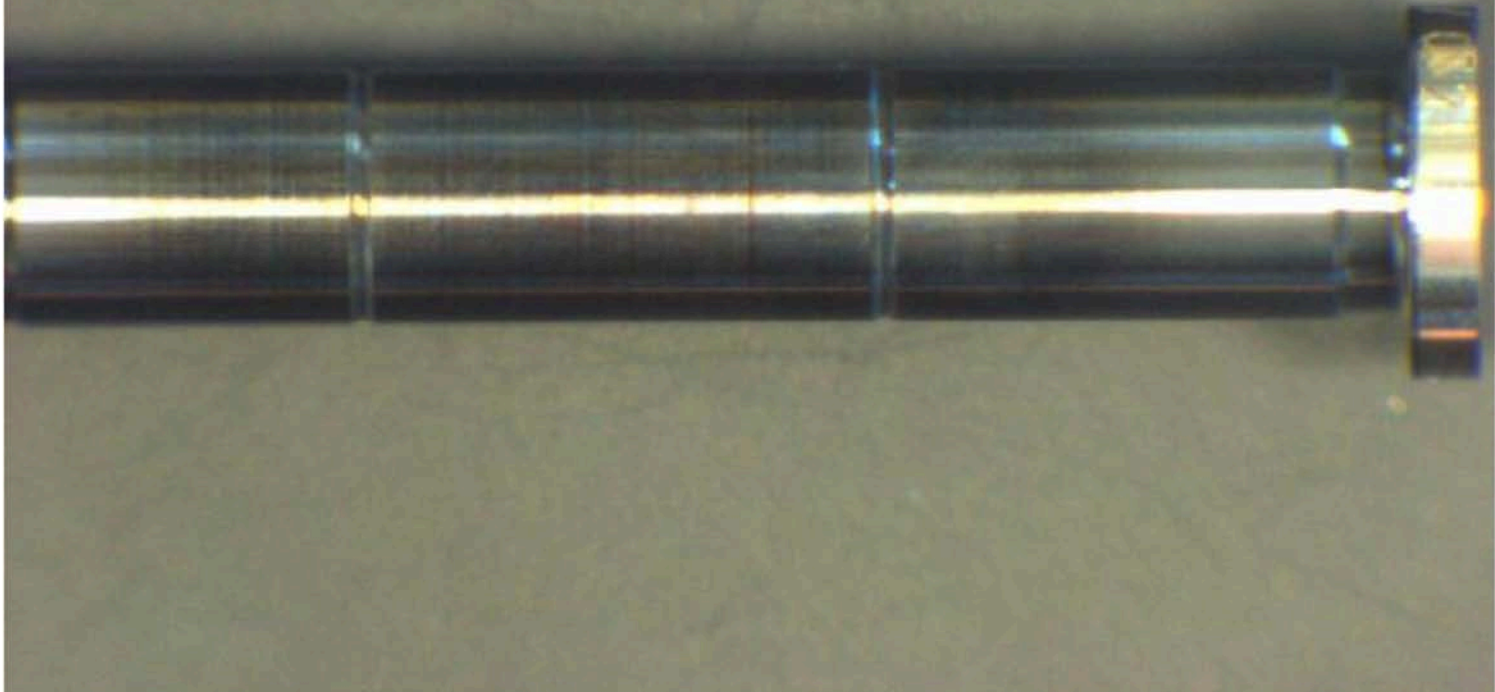
approx. 50.000 km

██████ diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



SK31600010

approx. 50,000km

██████ diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



EA11003EN-00812[2]

SK31600010

approx. 50,000 km

██████ diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



SK31600010

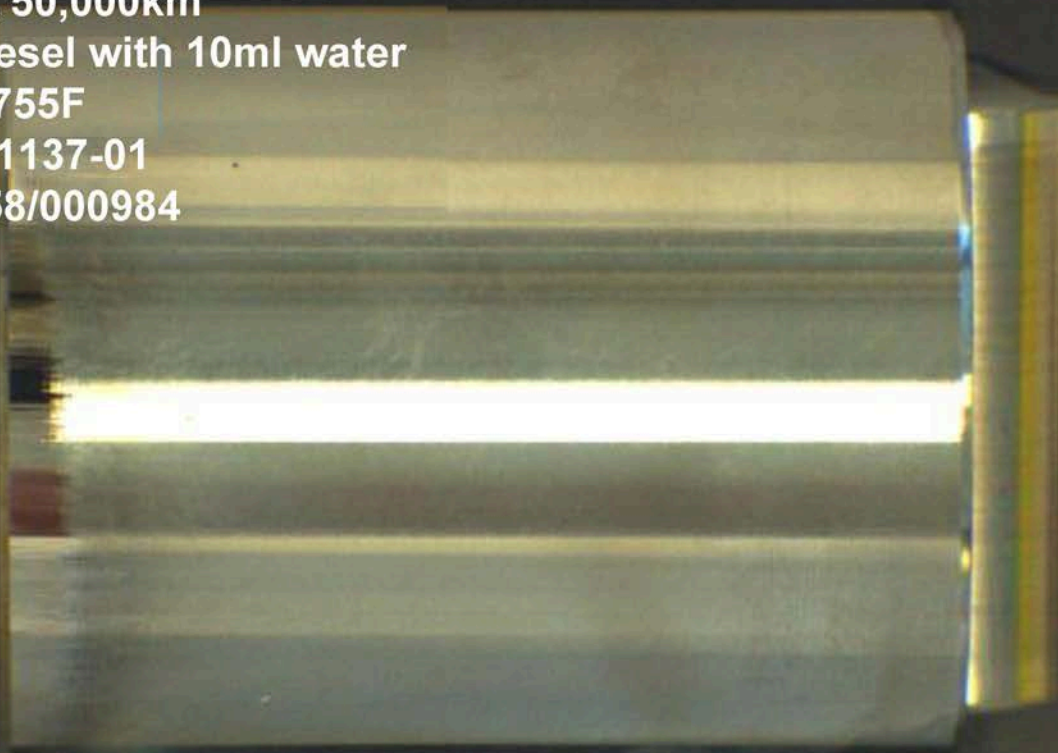
approx. 50,000km

██████ diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



EA11003EN-00812[3]

SK31600010

approx. 50,000km

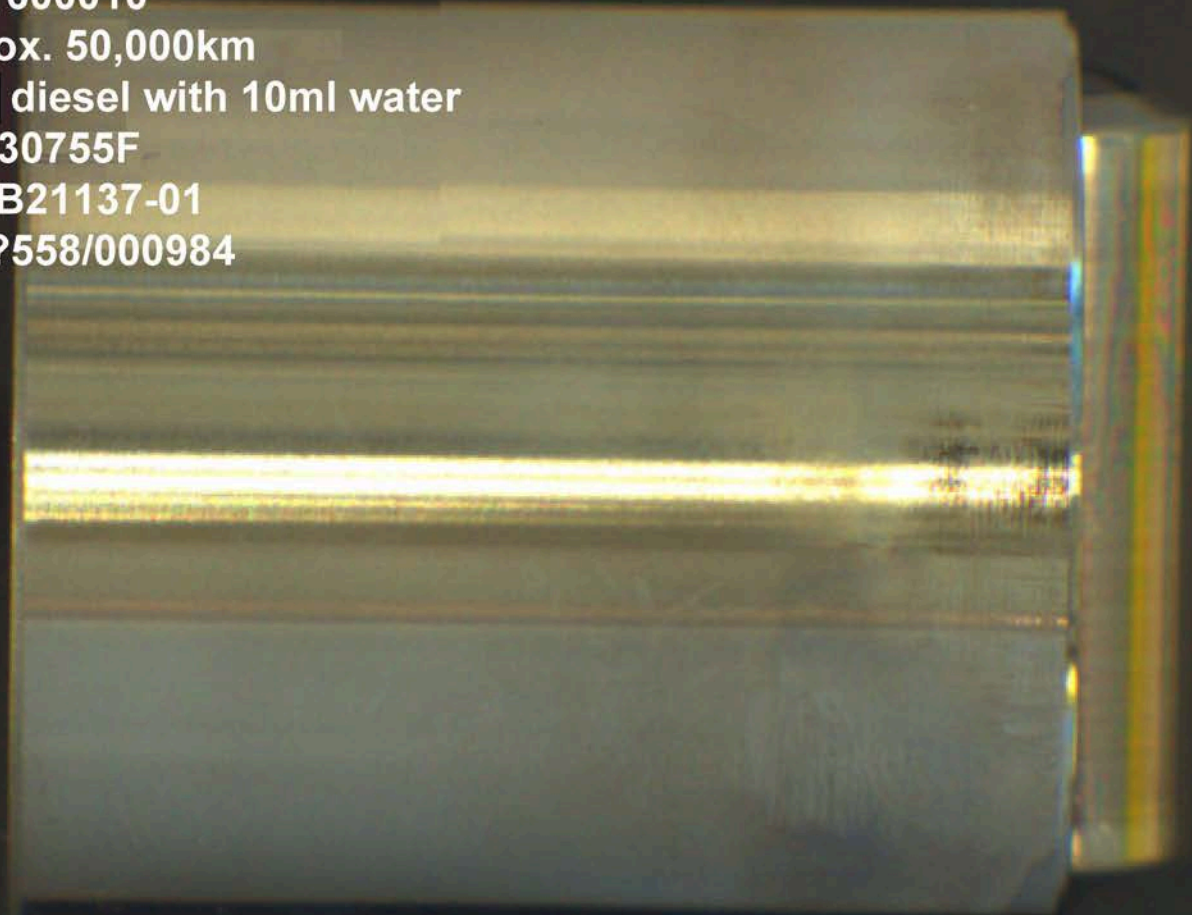
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



SK31600010

approx. 50,000km

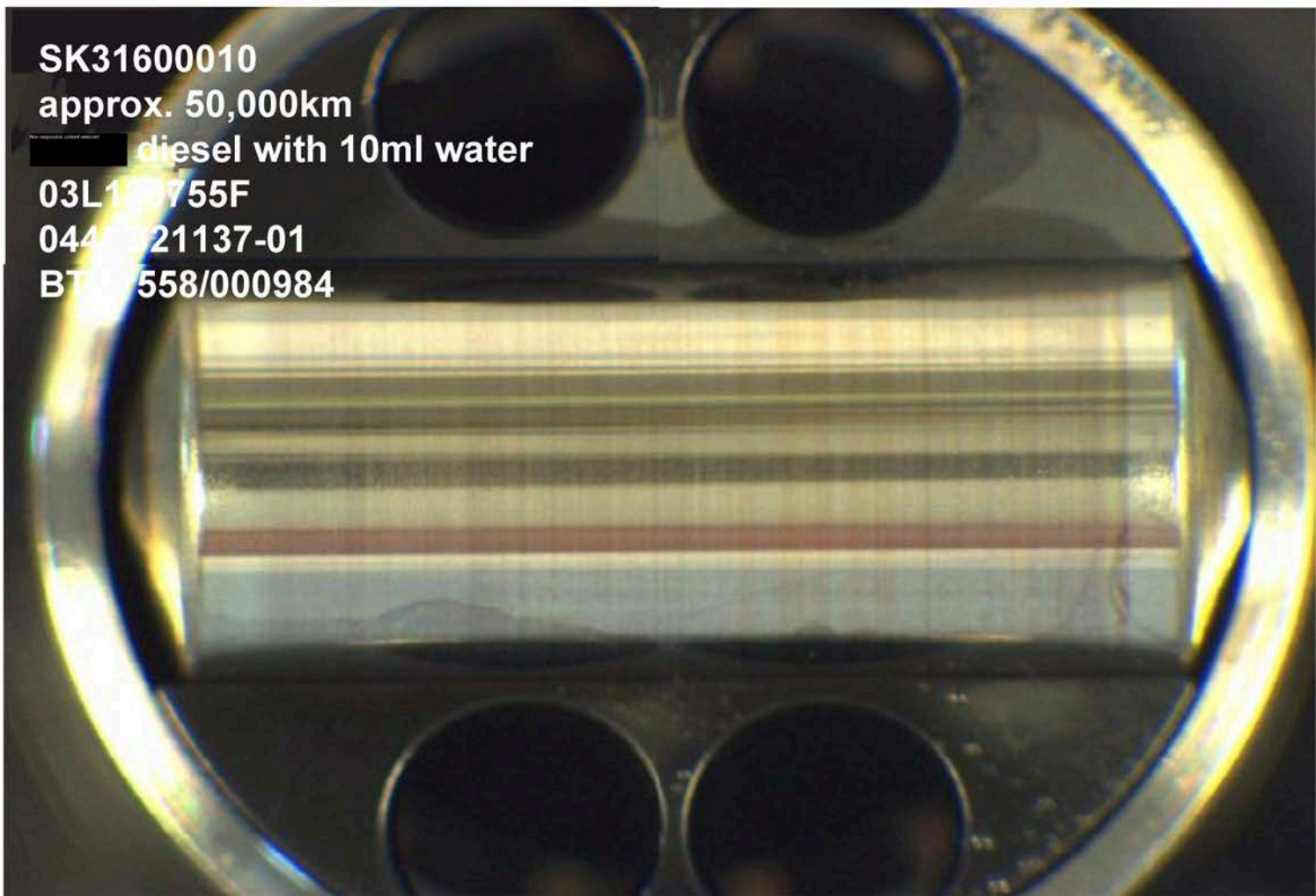
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



EA11003EN-00812[4]

SK31600010

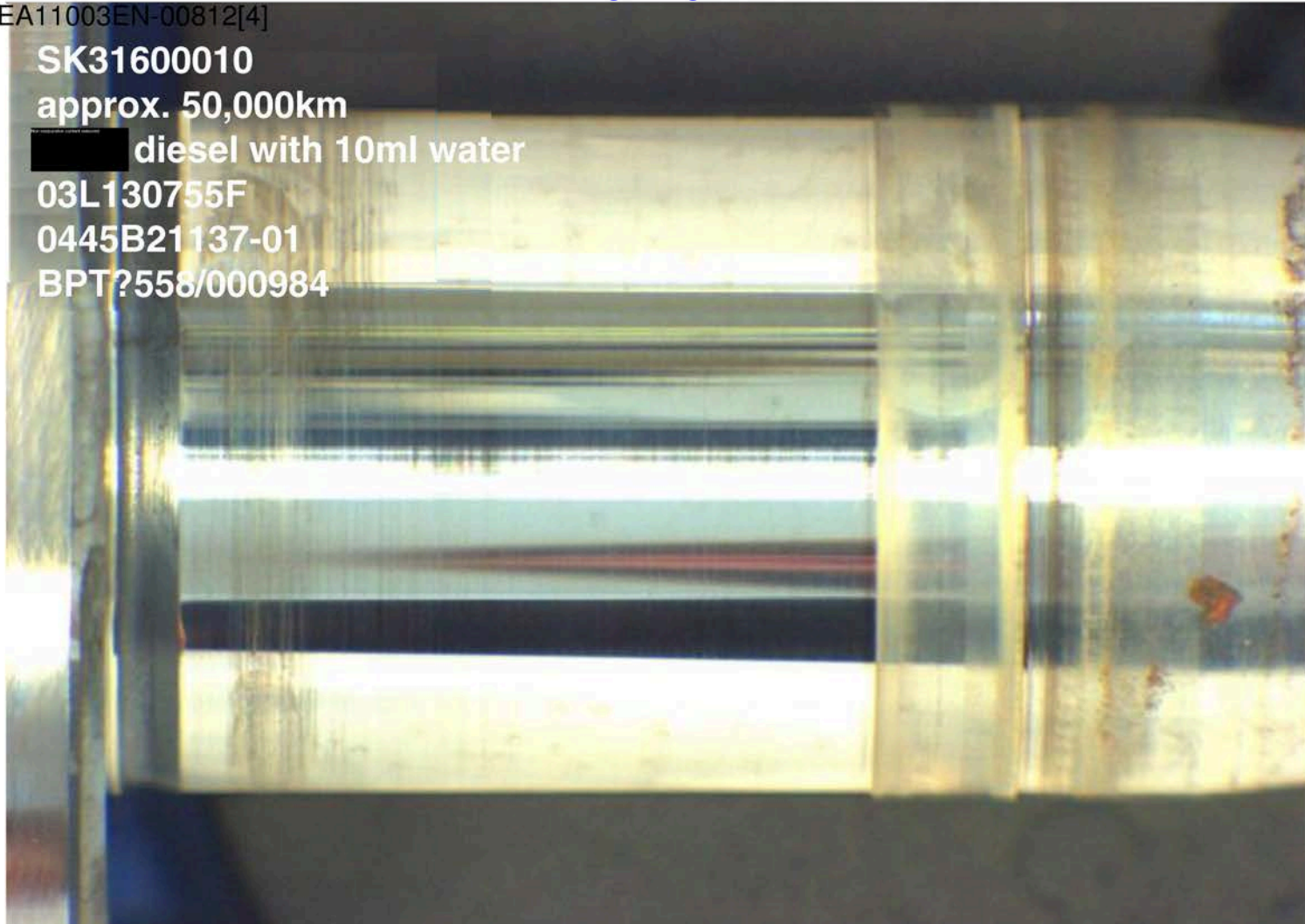
approx. 50,000km

██████ diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



SK31600010

approx. 50,000km

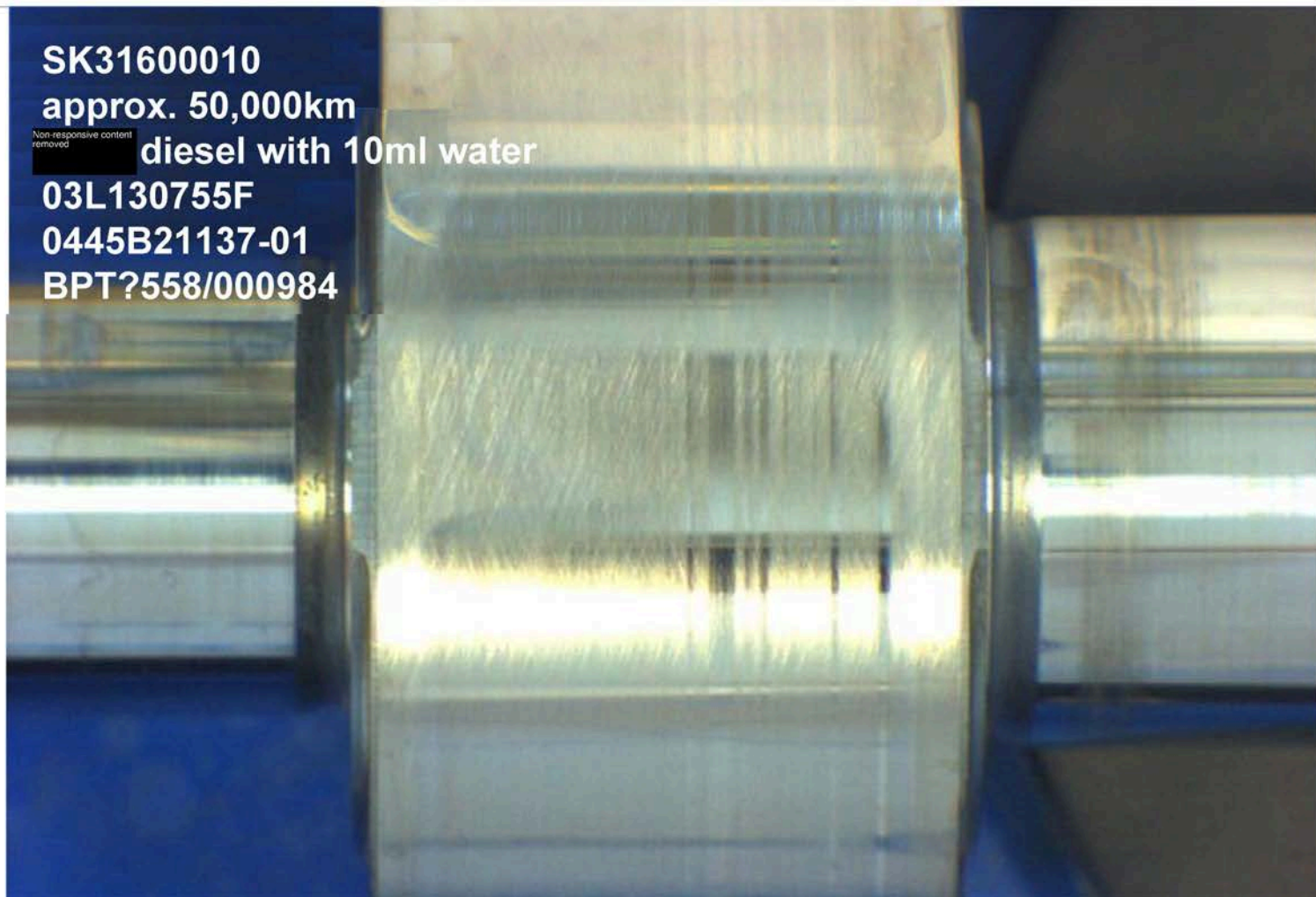
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██████ diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



EA11003EN-00812[5]

SK31600010

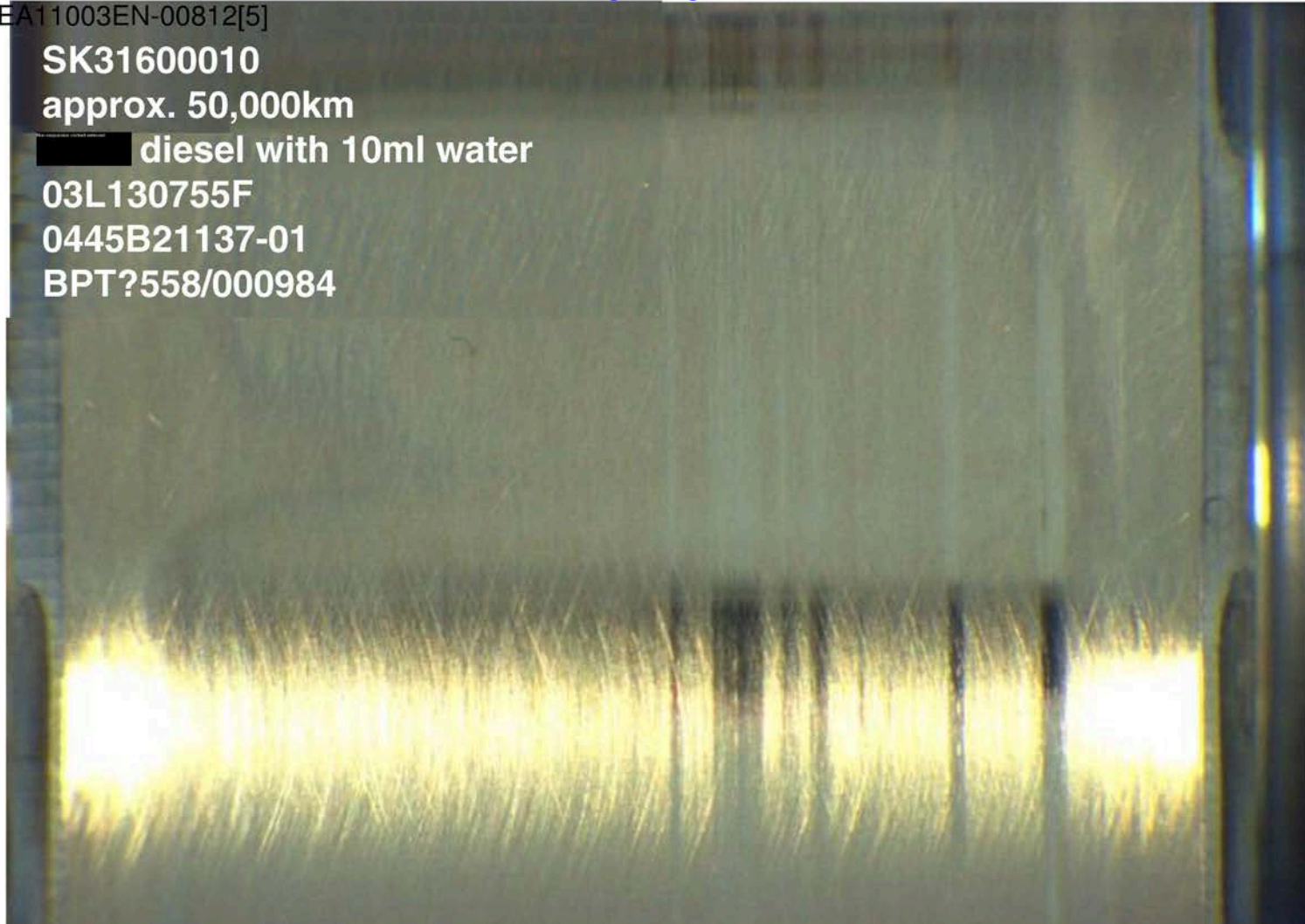
approx. 50,000km

Non-responsive content removed diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



SK31600010

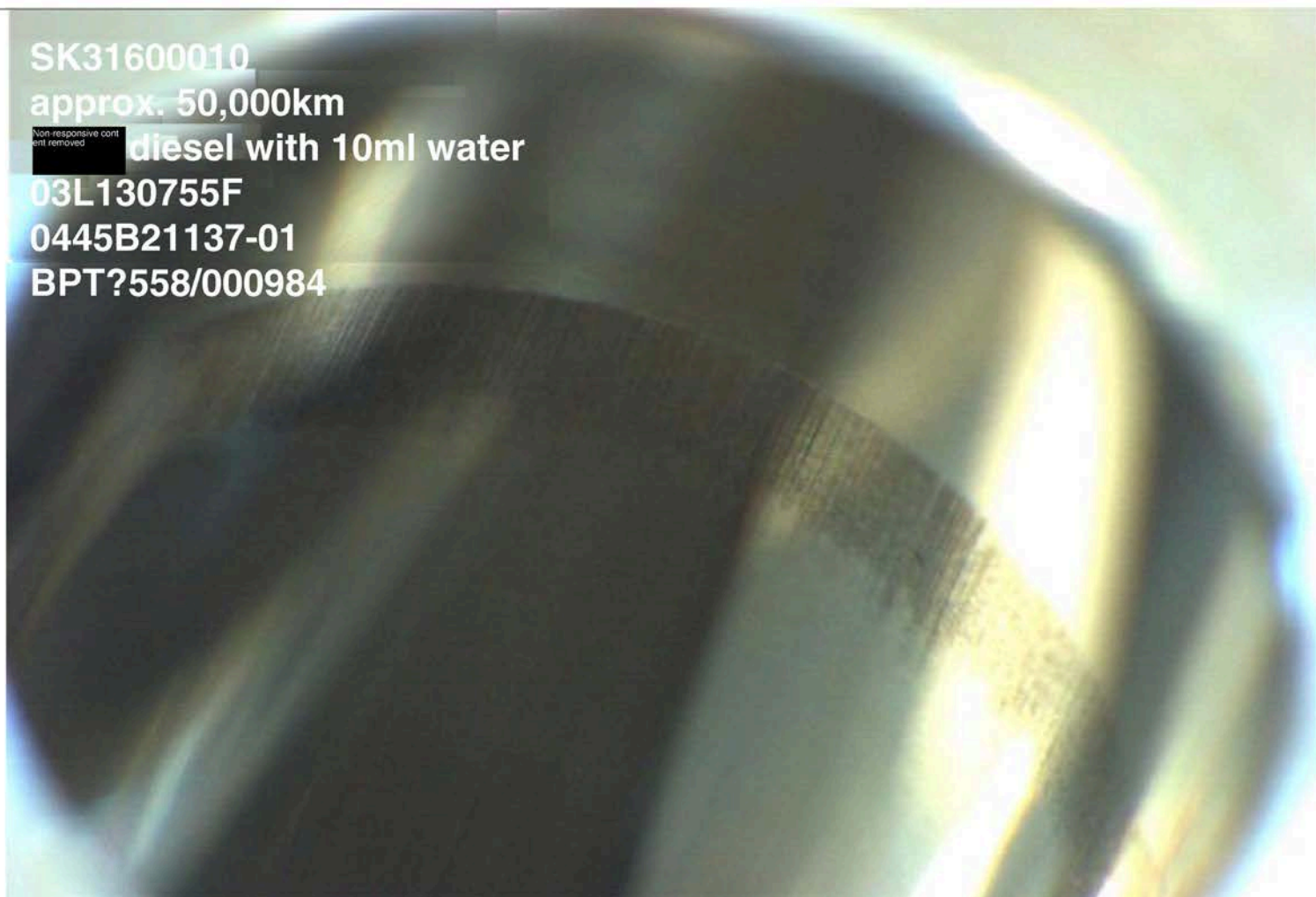
approx. 50,000km

Non-responsive content removed diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



VOLKSWAGEN



HPP - Assessment

Manufacturer	Bosch	Date	11/4/2010
Series	CP 4.1	Person in charge	Non-responsive content removed
VW - part number	03L130755F	Project	2.0l
Manufacturer part no	0445B21137-01	Engine no.	
Serial no. / DM	BPT?558/000984	Output:	
Drawing no. / pattern type		Fuel	diesel with 10ml water
Revision index	0000	Vehicle / test rig	SK31600010
Plant	011	Running time / Operating mode	approx. 50,000km
Complaints / comments			

Component	Assessment		Remark
	OK	Not OK	
Housing			
Drive shaft		X	circumferential scoring marks
Roller support	X		
Roller		X	significant running marks
Tappet hole		X	heavy running marks
HP piston	X		
Spring washer / anti-friction paint coating	X		no anti-friction coating, significant wear
Shaft seal / seal-tightness	X		
Corrosion	X		no corrosion
Bearing	X		
LP ports	X		
HP ports	X		
MU / MU hole	X		
Pressure valve / intake valve	X		
Overflow valve	X		
Dirt / chips	X		no shavings
Hydraulic function			
Delivery rate			
Injection pressure			
Drive power			
Seal-tightness under load			
Electrical function			
Plug contacts			
MU			
Remarks:			

SK31600010

approx. 50,000km

diesel with 10ml water

03L130755F

00445B21137-01

BPT?558/000984



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ENTIRE PAGE CONFIDENTIAL

SK31600010

EA11003EN-00815[0]

approx. 50,000km

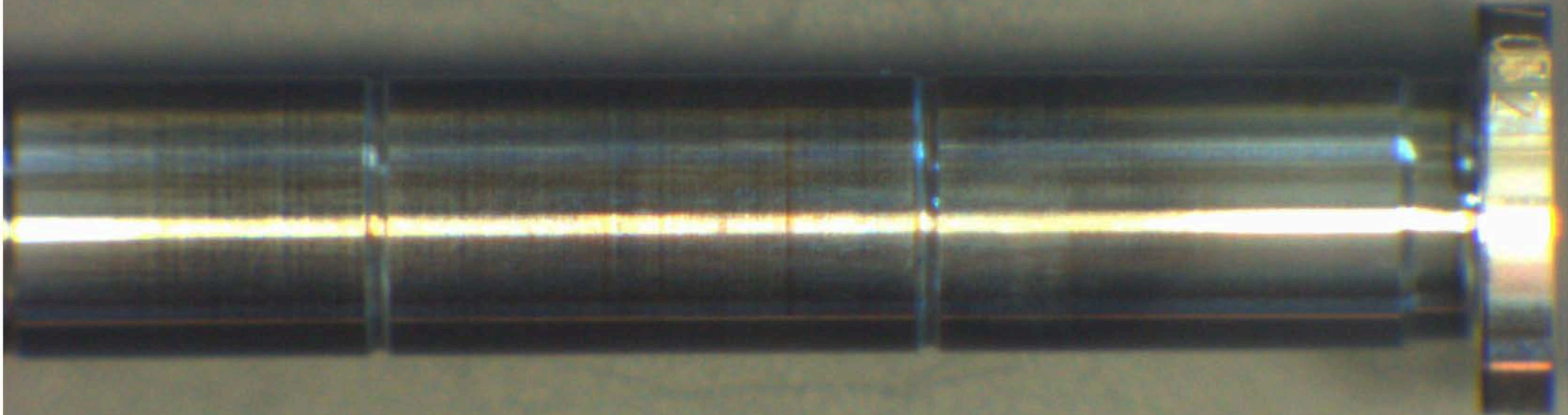
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



ENTIRE PAGE CONFIDENTIAL

SK31600010

EA11003EN-00816[0]

approx. 50,000km

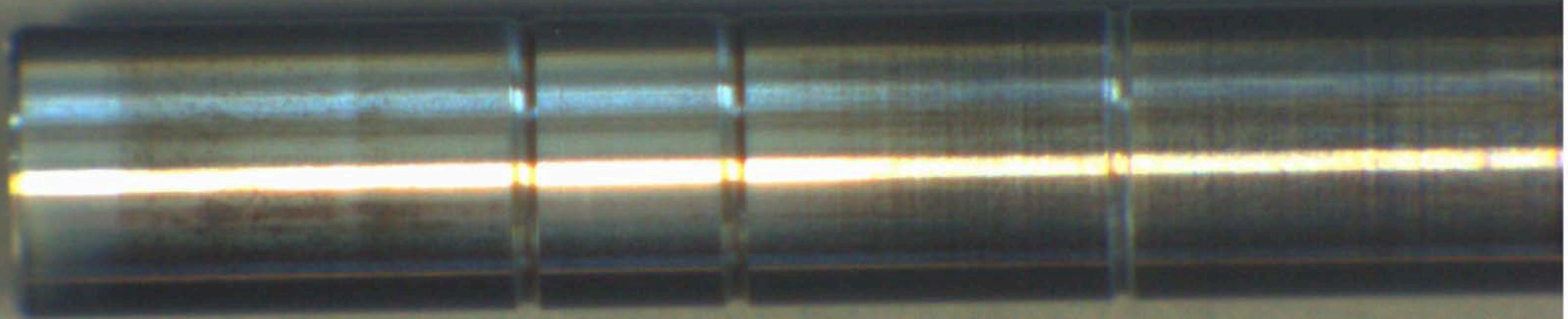
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



ENTIRE PAGE CONFIDENTIAL

SK31600010

approx. 50,000km

diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984

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EA-10056-1000010
SK31600010

approx. 50,000km

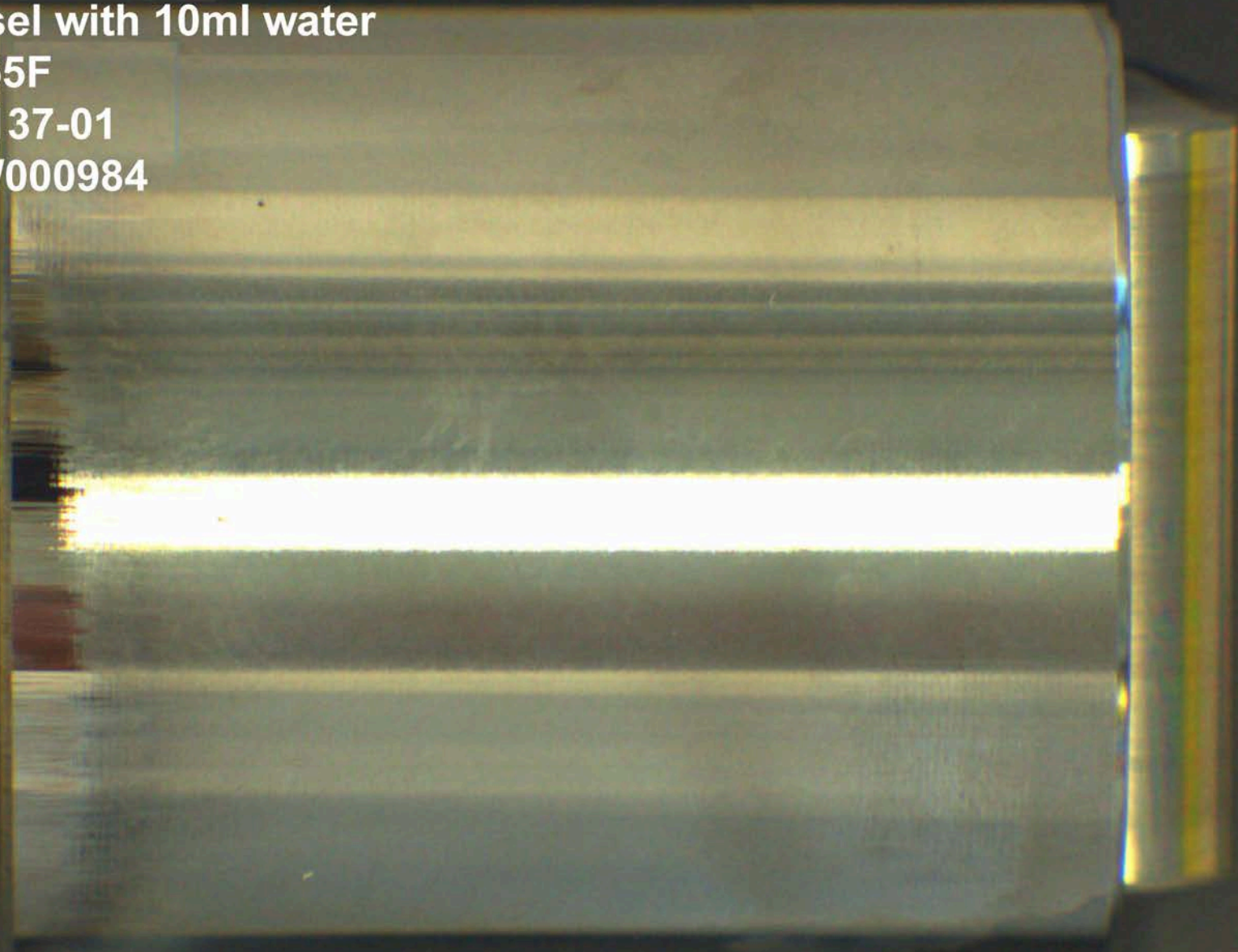
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



EA11003 EN 008 DD10

approx. 50.000km

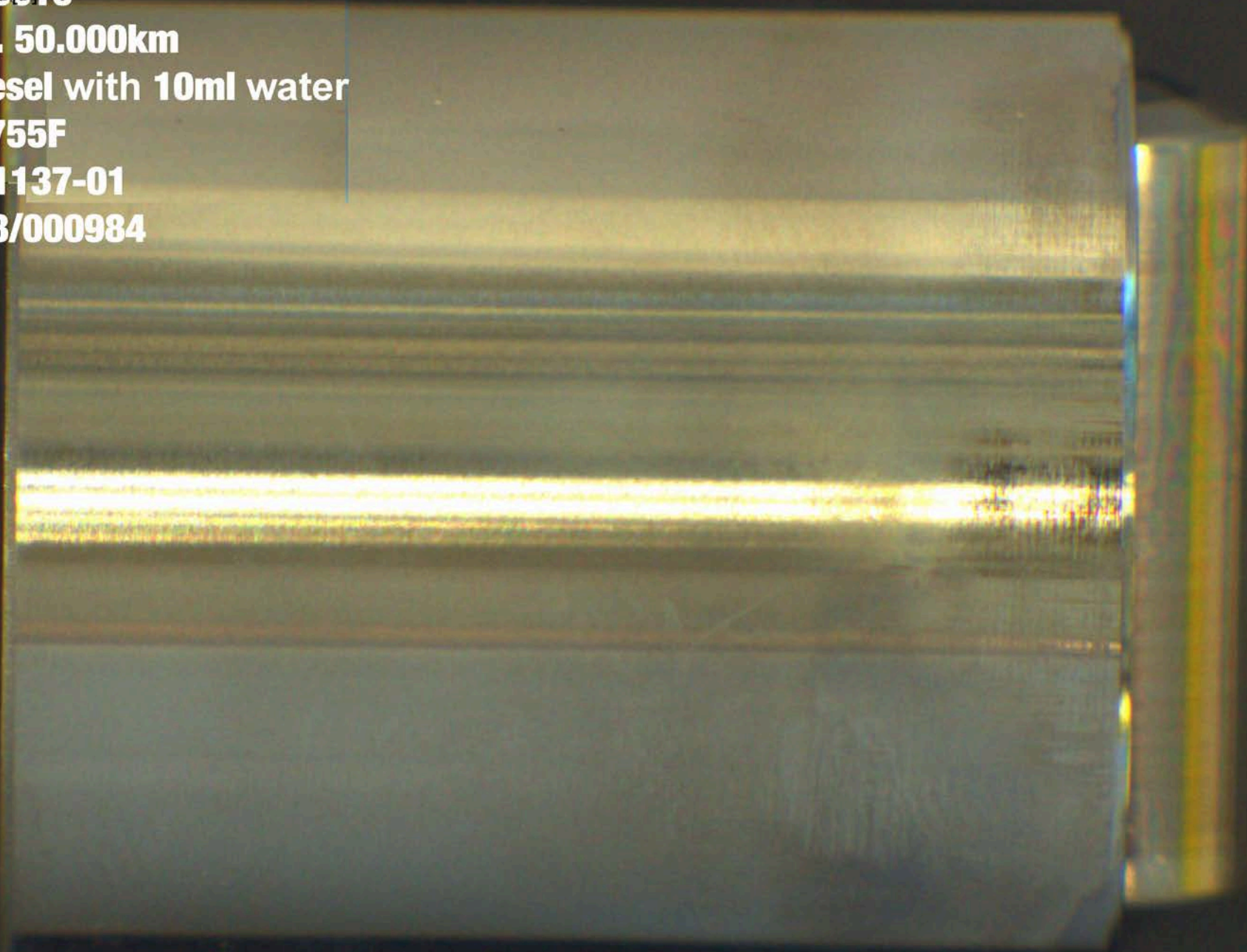
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



ENTIRE PAGE CONFIDENTIAL

SK31600010

approx. 50,000km

diesel with 10ml water

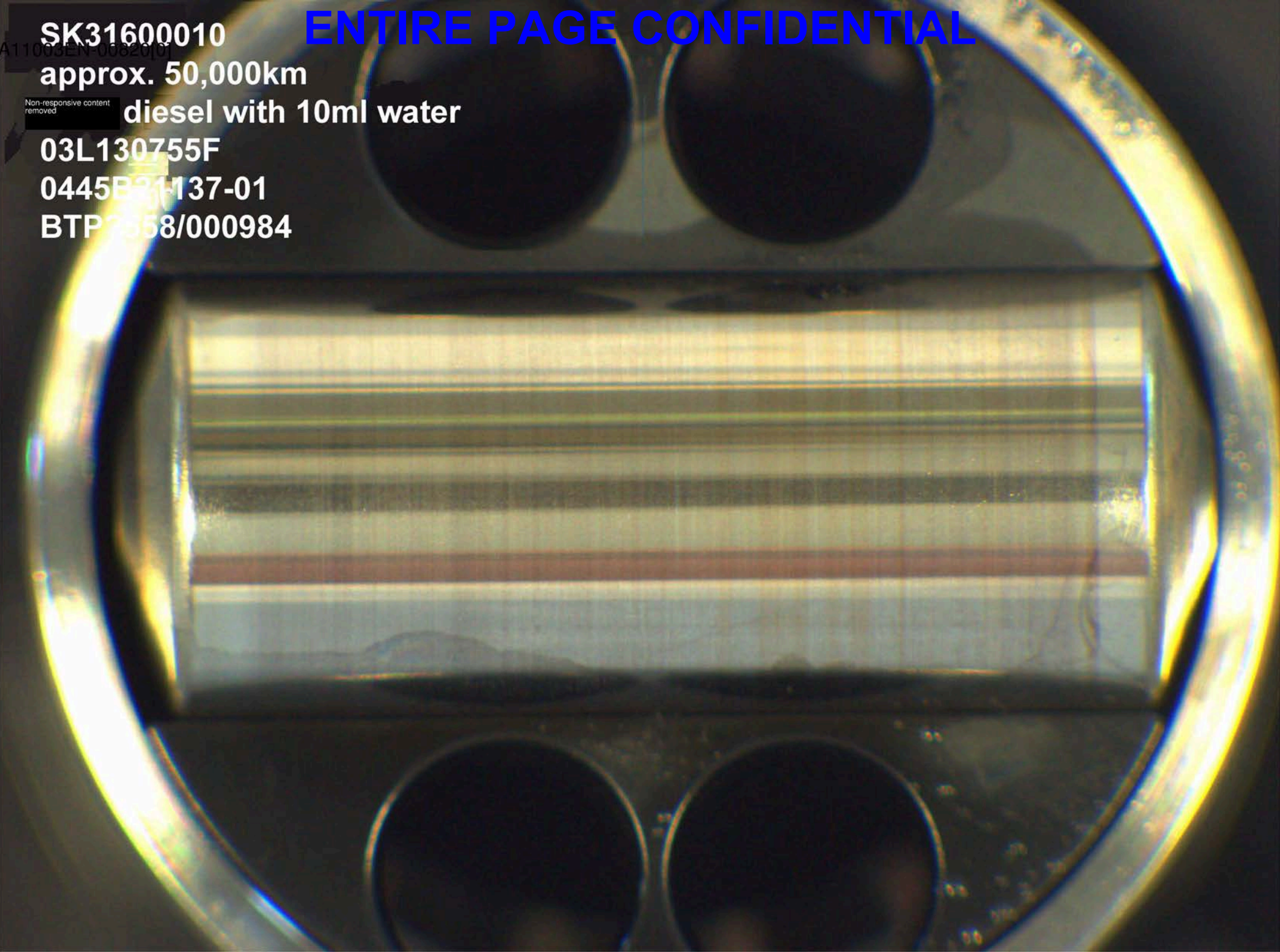
03L130755F

0445B21137-01

BTP2558/000984

EA11003EN-00820101

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ENTIRE PAGE CONFIDENTIAL

SK31600010

EA11003EN-0082110

approx. 50,000km

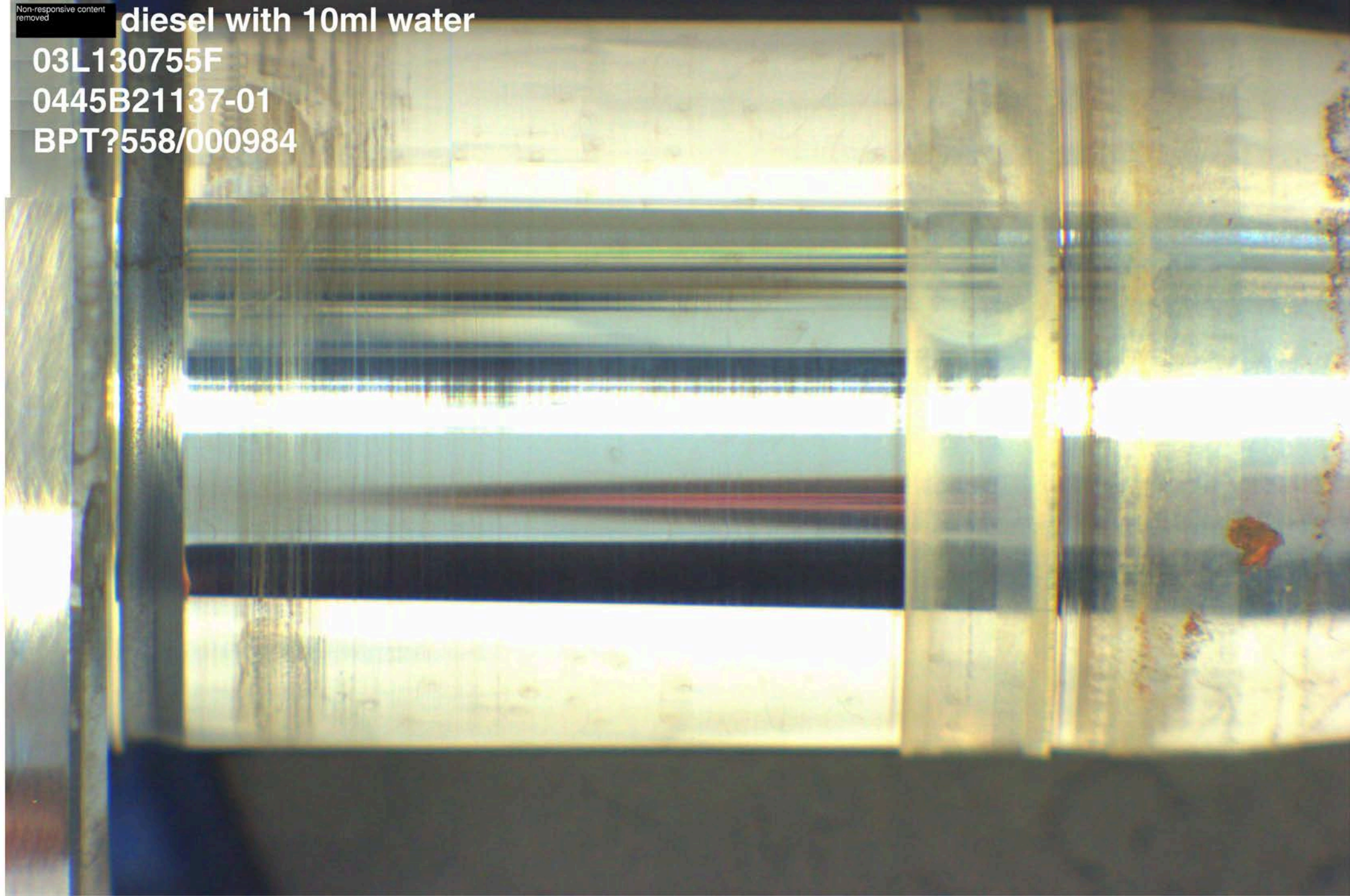
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



ENTIRE PAGE CONFIDENTIAL

SK31600010

approx. 50,000km

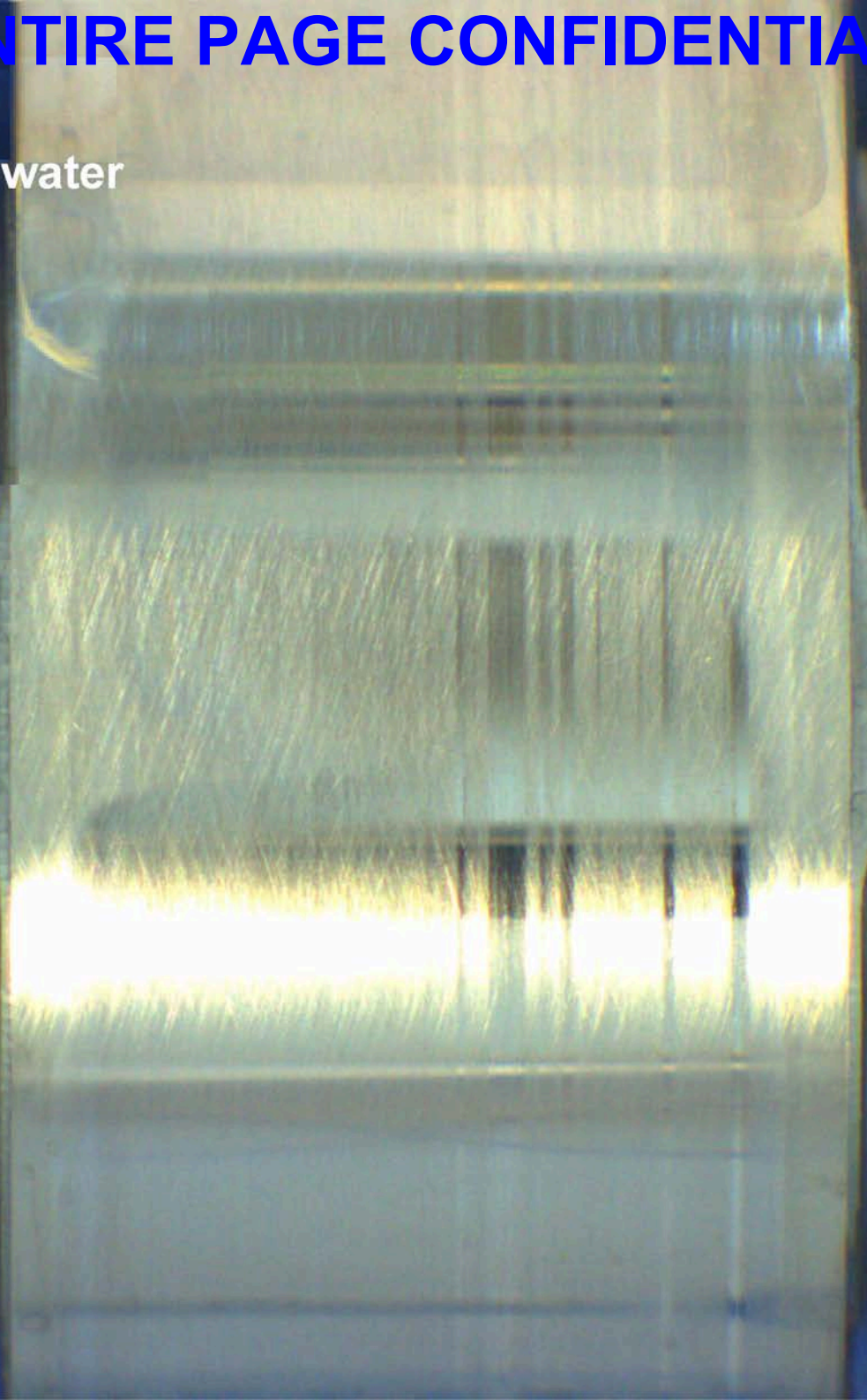
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



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SK31600010

EA11003EN-00823[0]

approx. 50,000km

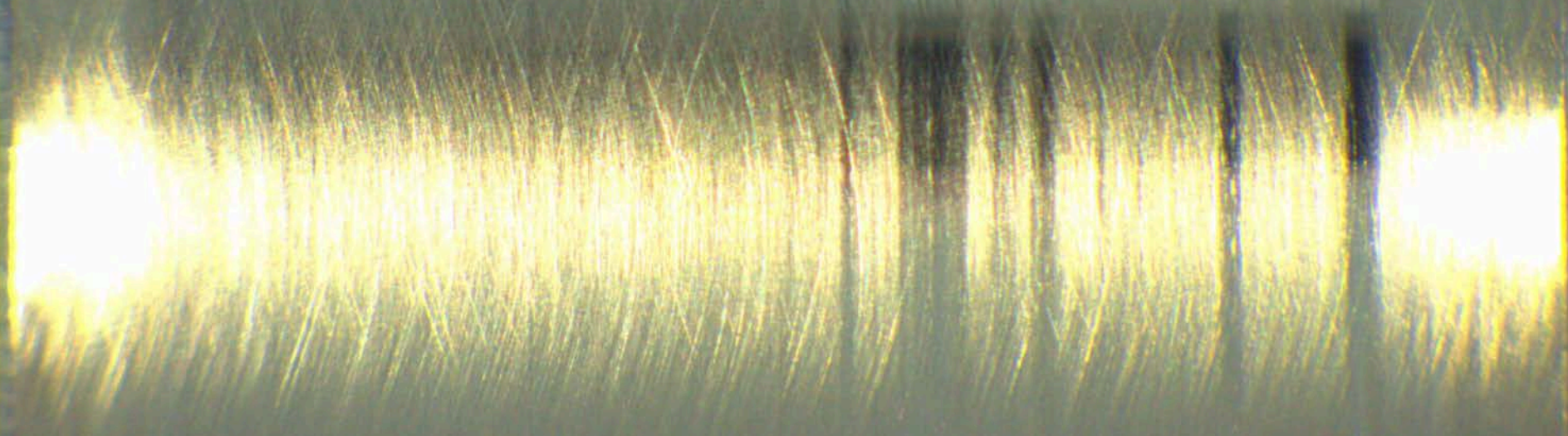
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diesel with 10ml water

03L130755F

0445B21137-01

BPT?558/000984



SK31600010
EA11003EN-00824[0]
approx. 50,000km

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diesel with 10ml water

03L130755F
0445B21137-01
BPT?558/000984



Particle analysis - CP4.1-18 (interim report for strainer contamination)

Task:

Two vehicles VW411 failed with blocked fuel pumps in the Ehra variable track for passenger cars. Particles and chips were found in the intake strainer of the pump. The following vehicles are affected:

1. VW411 1-0080 with 88,862 km
2. VW411 1-0140 with 81,538 km

The suction strainers of the affected fuel pump units were supplied and the removed particles and chips analyzed.

Result VW411 1-0080 with 88,862 km:

1. 1 Al chips of > 2 mm in length from an Al alloy with < 1%Mg.
2. Several iron chips of max. 300 µm in size, of which one chip on the inside of the strainer. It concerns a non-alloy material, whereby it was not possible to ascertain the carbon content using EDX.
3. Polymer particles partially fiber-like up to a few mm in length. They make up the greatest part of the particle contamination and were also removed in part from the inner side of the strainer.
4. Sand, however only isolated

One iron particle and several polymer particles could be removed from the inner side of the strainer. This means that these particles were able to pass through the strainer.

Result VW411 1-0140 with 88,538 km:

The strainer was less contaminated than the one investigated above. The removed particles were, without exception, polymers.



c.c.:

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Slide 1

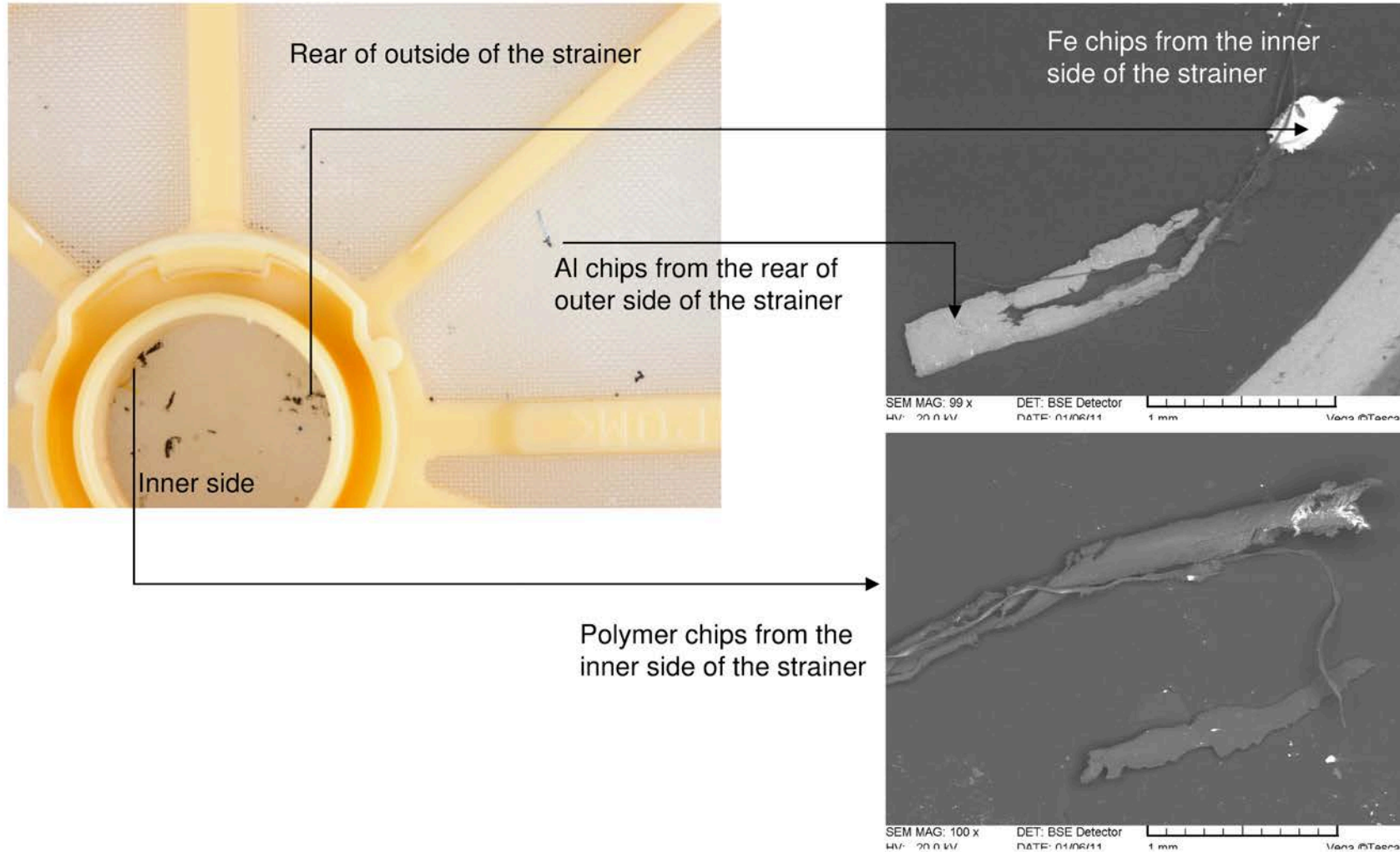
01/07/2011

Author:

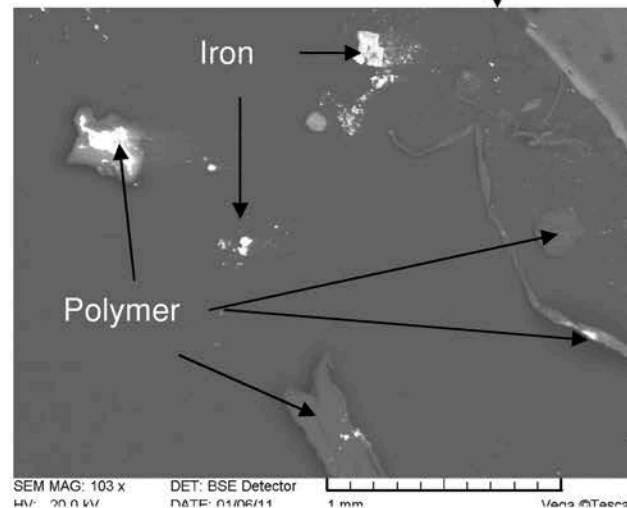
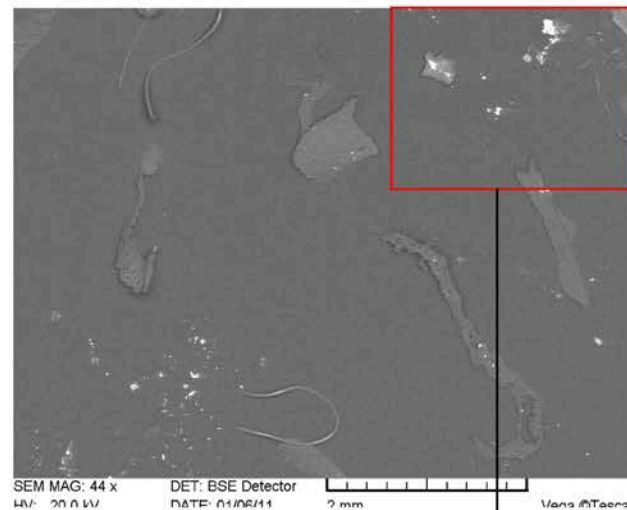
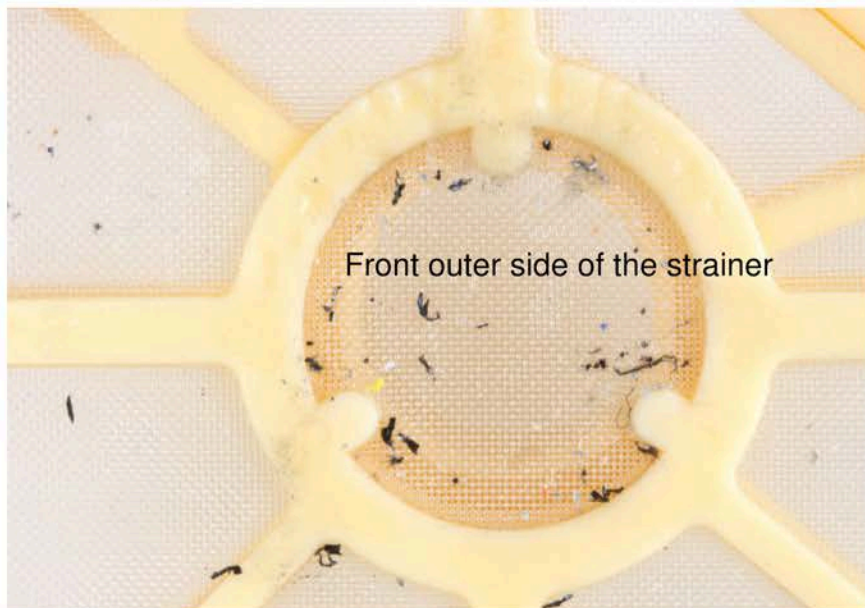
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Analysis of the chips from the strainer of vehicle VW411 1-0080

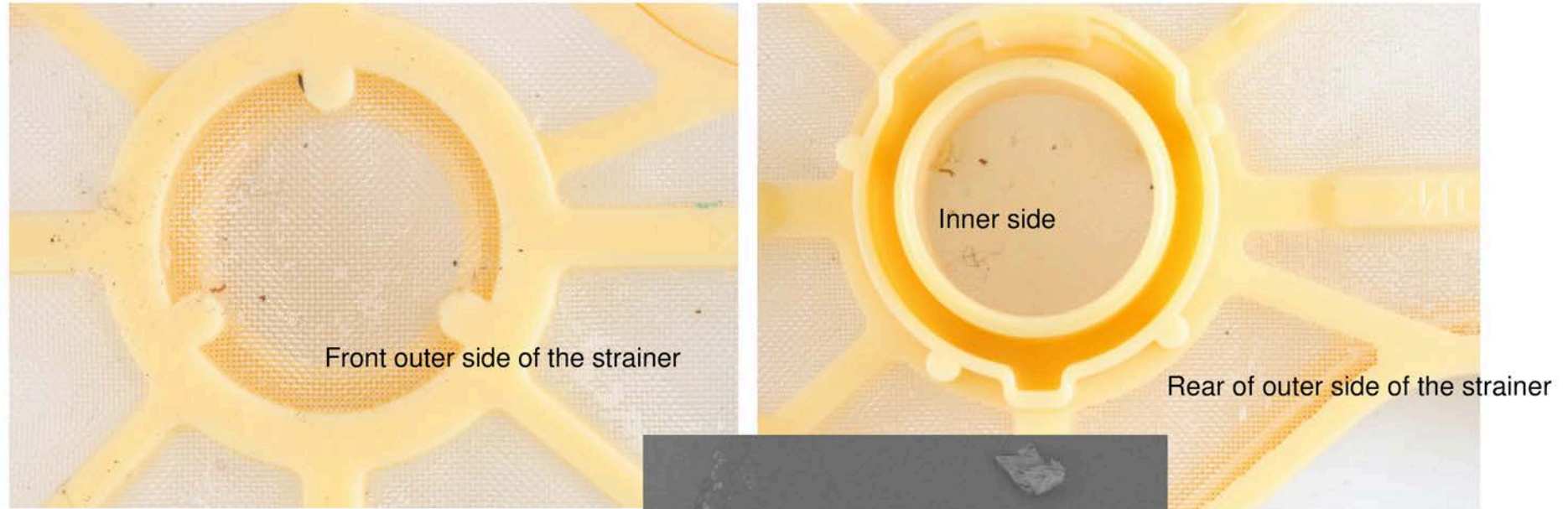


Analysis of the chips from the strainer of vehicle VW411 1-0080



Particles made of iron up to maximum 100 µm in size as well as particles and chips made of polymer on the front outer side of the strainer

Analysis of the chips from the strainer of vehicle VW411 1-0080



SEM MAG: 101 x DET: BSE Detector
HV: 20.0 kV DATE: 01/06/11 1 mm Vega ©Tescan

From: Non-responsive content removed

To:

CC:

Date: 7/18/2008, 3:03:24 PM

Subject: Re: Updating the new list of drivetrain damage

Attachments: [EHC2_0311_080718_Status_KT_Triebwerksausfälle_USA.pdf](#)

Good day

Here is the status for the KT analysis (based on the 2nd confirmed failed pump. No failure on the 3rd

pump). Further presentation in in Audi CP4 FG on 07/30/2008.

At the moment we are collecting facts (as agreed in the OPL from ZFM with the focus on the drivetrain)

We will update the KT analysis approx. every 2 - 3 days.

We do not have any results yet - we hope that the tests on the 6 replaced pumps as well as the 4th failed pump will give us some useful information / indications.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

www.bosch.com

Non-responsive content removed

Domicile: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;
Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed

Sent: Thursday, July 17, 2008, 6:36 PM

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EA110025N 01010511

Non-responsive content removed

Subject:ANS: Updating the new list of drivetrain damage

We did not see the KT analysis yesterday / day before yesterday; how will you send us the result (compressed)?

With best regards

Non-responsive content removed

From: Non-responsive content removed

Sent: Monday, July 07, 2008, 7:16 PM

Non-responsive content removed

Subject: ANS: Updating the new list of drive-train damageHello

We will present you with the results of the KT analysis on July 15. We have set up a task force for the drivetrain damage.

Mit freundlichen Grü??en / Best regards

Robert Bosch GmbH

Non-responsive content removed

www.bosch.com

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Domicile: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;
Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed

Sent: Monday, July 07, 2008, 3:31 PM

Non-responsive content removed

Subject: Updating the new list of drivetrain damage

Importance: High

Hello

Please report all cases to me.

2 Q-AL cases WK 27 = red.

2 failures from today = blue/green

As many of the failures were in export and the parts return is very thin there, please **always** provide a photograph of the pump ID plate and the vehicle data.

Please let us know if these parts for the pumps in the list are coming.

I will be monitoring via daily damage meeting minutes; I will be asking at the damage meeting for the pumps to come to me.

Hello Non-responsive content removed

Please add the missing Bosch data by the end of this week Non-responsive content removed knows the columns).

Please also deal with the analysis of the 4 x ECU (topic of rail pressure fluctuation)?

To all,
who is participating in the Q meeting drivetrain damage (ZFM) on the afternoon of 7/15 in
FeP?

Could it be the case that a vehicle that has already run (with reserve tank) by ship or plane (transport location; temperature; etc.) could have problems with restarting?

Dear Non-responsive content removed

Do we have the results of the KT analysis?

At the request of Non-responsive content removed, have we already initiated a task force (for testing / field failures)? <<Triebwerkschäden

CP4 alle KW28_08.xls>>

Yours sincerely,

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From: Non-responsive content removed
To:
CC:

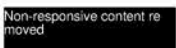


Date: 7/25/2008, 1:46:00 PM
Subject: RE: Various HPPs - Overview
Attachments: [AW CP4.2H zur Befundung.msg](#)

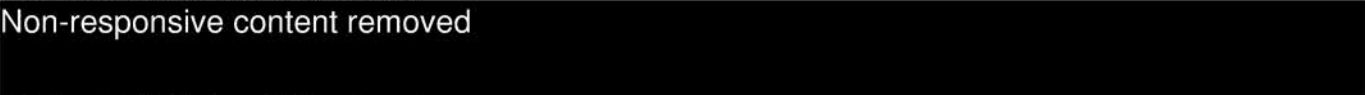
Here is the e-mail from



With best regards



From: Non-responsive content removed
Sent: Friday, July 25, 2008, 1:40 PM



Subject: RE: Various HPPs - Overview

see below

knows vehicle etc. better, but he is not here today.

From: Non-responsive content removed
Sent: Friday, July 25, 2008, 1:20 PM



Subject: RE: Various HPPs - Overview

Hi all,

To sum up:

Vehicle: Q7-EU6
Mileage: Non-responsive content removed approx. 16,000 km
Driving profile: Q-AL Yes.
DM: 11/30/2007
Complaint: Engine damage

@ Thank you for your support.

@ This is the pump that I brought to you at the beginning of the week without information.

@ Do you have all the necessary data?

Have a nice weekend.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

www.bosch.com

Non-responsive content removed

Headquarters: Stuttgart, Court of Registry: Local District Court Stuttgart Commercial Register No. 14000

Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;

Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks; Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed

Sent: Friday, July 25, 2008, 11:59 AM

Non-responsive content removed

Subject: ANS: Various HPPs - Overview

Non-responsive content removed has the BPT 627 pump and is looking for the sender for it.

Is that clear?

==> Please analyze quickly.

With best regards

Non-responsive content removed

From: Non-responsive content removed

Sent: Wednesday, July 23, 2008, 7:37 AM

Non-responsive content removed

Subject: RE: Various HPPs - Overview

Hello

Non-responsive content removed

I hope the pump does not have drivetrain damage.

The engine is probably damaged.

It could be that this engine has used a pump (suspicion has been made known in CP4 technical meeting)

that has the same DM the USA failed pumps (40,000km, 60,000 km)(DM 01/30/2007).

The pump from the EU6 engine would be of interest for comparison purposes.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

Headquarters: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;
Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed

Sent: Tuesday, July 22, 2008, 6:38 PM

Non-responsive content removed

Subject: ANS: Various HPPs - Overview

Hi

The pump from CCM302 has drivetrain damage?
Is that right? That s the pump from the EU6 engine with conrod bearings damage.

With best wishes

Non-responsive content removed

AUDI AG

Non-responsive content removed

Sitz/Domicile: Ingolstadt

Registergericht/Court of Registry: Local District Court Ingolstadt

HRB Nr./Commercial Register No.: 1

Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Drees, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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From: Non-responsive content removed

Sent: Tuesday, July 22, 2008, 4:02 PM

To: [Redacted]

Subject: Various HPPs - Overview

Hi all,

Some HPPs are in orbit somewhere between [Redacted], therefore asking again for an overview:

1. BPT 626 is from GQ040 with 40000km - 1. US breakdown
2. BPT 633 from AU716-9-8017 with 62000km 2. US breakdown
3. BPT 627 from engine CCM 302 with drivetrain damage, I don't know whose engine it is, but it should be investigated as a matter of urgency.
4. BPT 900 is from the GQ-Touareg, the 4th failed pump which [Redacted] gave [Redacted] today (with fuel sample).
5. BPT ??? is the 3rd failed pump (replacement pump for the 2nd breakdown?), which is going directly to Fe through Q.

Kind regards [Redacted]

Yours sincerely,

[Redacted]

AUDI AG

[Redacted]

PGP public key file:
<http://keyserver.audi.de>

Sitz/Domicile: Ingolstadt

Registergericht/Court of Registry: Local District Court Ingolstadt

HRB Nr./Commercial Register No.: 1

Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn

Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Dreves, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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From: Non-responsive content removed**To:****CC:****Date:** 7/22/2008, 5:40:50 PM**Subject:** ANS: CP4.2H for diagnosis

This is the pump from the Q vehicle AU71698013 V6 TDI EU6, which had engine damage.
Mileage 16,191km

With best wishes

Non-responsive content removed

AUDI AG

Non-responsive content removed

Sitz/Domicile: Ingolstadt

Registergericht/Court of Registry: Local District Court Ingolstadt

HRB Nr./Commercial Register No.: 1

Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn

Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Dreves, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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From: Non-responsive content removed**Sent:** Tuesday, July 22, 2008, 1:58 PM**To:** Non-responsive content removed**Cc:****Subject:** ANS: CP4.2H for diagnosis

Hello

Acc. engine CL CCM, that is Q7 - EU-6!

With best regards

Non-responsive content removed

AUDIAG

Non-responsive content removed

www.audi.com

Sitz/Domicile: Ingolstadt
Registergericht/Court of Registry: Local District Court Ingolstadt
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From: Non-responsive content removed
Sent: Monday, July 21, 2008, 5:06 PM
To: Non-responsive content removed
Cc: [REDACTED]
Subject: ANS: CP4.2H for diagnosis

Hello

I have been able to identify just one "sister pump".
This is the 1st USA failure with 40,000 km; same DM; series no. BPT 0626.

==> Non-responsive content removed ???

With best regards

Non-responsive content removed

From: Non-responsive content removed
Sent: Monday, July 21, 2008, 4:44 PM
To: Non-responsive content removed
Cc: [REDACTED]
Subject: CP4.2H for diagnosis

Gentlemen,

A pump for diagnosis has ended up with me - I can't assign it.

Anyone know anything about this?

Parts no.: 059 130 755 AG
DM: 11/30/2007
Serial no.: BPT 0627

Engine no. CCM 302

Removal 7/18/2008

Mit freundlichen Grüßen / Best regards

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Robert Bosch GmbH

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www.bosch.com

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Domicile: Stuttgart

Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000

Chairman of the Supervisory Board: Hermann Scholl;

Management: Franz Fehrenbach, Siegfried Dais;

Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;

Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed
To: [REDACTED]
CC: [REDACTED]
Date: 7/25/2008 9:45:34 AM
Topic: ANS: Audi CP4 pump replacement

Hello [REDACTED]

I have taken the testing point 5,000 rpm & 2,000 bar from the e-mail from [REDACTED] as it was not possible to speak to the USA.

I am considering two approaches at present:

- 1) Pump was tested under the correct operating conditions, was not OK. & [REDACTED] did not understand the operating conditions properly
- 2) Pump was tested under the incorrect operating conditions, and was therefore not OK.

I'll clarify this.

Best regards / mit freundlichen Grüßen

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Robert Bosch GmbH

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www.bosch.com

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Domicile: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;
Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed

Sent: Friday, July 25, 2008, 10:35 AM

Non-responsive content removed

Subject: ANS: Audi CP4 pump replacement

Non-responsive content removed

It is your people and your testing technology.
Please clarify by Wednesday.

Another point for Wednesday:

From the 3 fuel samples taken from the USA failure no. 3, please bring approx. half of the 3 liquids with you to [REDACTED] for our laboratory; we would also like to analyze these and compare the results.

Important: Make sure the samples are shaken / stirred well beforehand, so that the particles, contents etc. are distributed as evenly as possible in the liquid.

Now I'll let you get on in peace until then.

Have a nice weekend!

Hi Non-responsive content removed,

For the technical meeting on Wednesday (US failures topic) we require a fuel filter expert from EA-9x, who is familiar with both the fuel supply and the filtration efficiency, mesh size etc..

Please make sure you take part!

Non-responsive content removed

Please also participate in the USA + Non-responsive content removed failures.

With best regards

Non-responsive content removed

From: Non-responsive content removed

Sent: Friday, July 25, 2008, 10:12 AM

Non-responsive content removed

Subject: ANS: Audi CP4 pump replacement

Hello Non-responsive content removed

Initial measurements were taken in production & I'll get them by Wednesday.

There are most certainly some very evident differences (1-2 l/h) which can be explained by the testing technology.

I have considerable doubts that the pump function was not OK if it was tested at 5,000 rpm and 2,000 bar - engine speed projected or actually tested pump speed.

Mit freundlichen Grüßen / Best regards

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Robert Bosch GmbH

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www.bosch.com

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Domicile: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;
Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed

Sent: Friday, July 25, 2008, 10:03 AM

Non-responsive content removed

Subject: Audi CP4 pump replacement

Hello Non-responsive content removed

Initial measurements?

Included with analysis report by Wednesday.

With best regards

Non-responsive content removed

From: Non-responsive content removed

Sent: Friday, July 25, 2008, 9:29 AM

Non-responsive content removed

Subject: RE: Address for Audi CP4 Pump exchange

Please provide the vehicle number incl. the mileage of the pump replacement.

: I think this sounds like the next bomb waiting to explode if I lose significantly on flow due to mileage.

Does Bosch have a final measurement for the pump?

If yes, what does it look like?

With best regards

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AUDI AG

Non-responsive content removed

www.audi.com

Sitz/Domicile: Ingolstadt

Registergericht/Court of Registry: Local District Court Ingolstadt

HRB Nr./Commercial Register No.: 1

Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn

Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Dreves, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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Important Notice: The above information is automatically added to this e-mail. This addition does not constitute a representation that the content of this e-mail is legally relevant and/or is intended to be legally binding upon AUDI AG.

From: Non-responsive content removed

Sent: Thursday, July 24, 2008, 11:10 PM

Non-responsive content removed

Subject: FW: Address for Audi CP4 Pump exchange

Hello Non-responsive content removed

brief status for both the verification vehicles, detailed analysis report by BOSCH follows:

- both pumps were opened by Bosch employees and the Mus, tappets, rollers and cams assessed - without any striking features. BOSCH has drawn up an analysis report.

- Further, both pumps were surveyed on the test bench at BOSCH

- One pump had in the operating point 5,000 rpm and 2,000 bar a flow rate of only 99 l/h (TARGET 113 l/h, plus/minus 7 l/h according to BOSCH test regulation for new pumps), according to BOSCH possible MU defect

- Not OK, according to the consultation Non-responsive content removed as recommended by BOSCH pump replaced with a new part.

- Second pump on test bench OK, re-install in vehicle

- Both vehicles shall leave tomorrow starting at 7.00 am after repeated visual check in the direction of Auburn Hills QAL stations

In case of queries, please revert.

- Note:
1. Both vehicles showed oil sweat in the region of the boost pressure pipe on vehicle underside
 2. One vehicle with loose precatlyst Lambda probe and missing sealing ring

Images incl. data memory excerpts will be sent tomorrow.

Regards

Non-responsive content removed

Non-responsive content removed

From: Non-responsive content removed
To:
CC:



Date: 7/25/2008, 9:05:26 AM

Subject: ANS: CP4 pump replacement results

Good day [redacted]

I must contact the USA and obtain feedback concerning the testing points & measured values.
If the pump is not OK, we will detect the error &, as you have proposed, replace the MU and allow the pump to continue running.

Best regards / mit freundlichen Grüßen

Non-responsive content removed

Robert Bosch GmbH

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www.bosch.com

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Domicile: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;
Volkmar Denner, Uwe Raschke, Peter Tyrolle

From: Non-responsive content removed

Sent: Friday, July 25, 2008, 9:38 AM

Non-responsive content removed

Subject: ANS: CP4 pump replacement results

Hello [redacted]

Non-responsive content removed [and I have coordinated how to proceed:](#)

We do not want to "waste" the mileage on this pump and therefore ...

for the pump with the too low delivery rate in the FL, have the MU from the new pump built in and then test this again on the test bench.

If OK, we would like to allow the pump to run in a vehicle that is to be defined (new or already run), if not OK we will discuss matters in detail with Bosch (regarding strainer and ? or analysis of MU at Bosch in [redacted])

Discussions concerning the Bosch analysis report in the technical meeting on Wednesday.

Decision r.e. further pit stops by [redacted] / Bosch

With best regards

Non-responsive content removed

AUDIAG

Non-responsive content removed

From: [redacted]

Sent: Thursday, July 24, 2008, 11:10 PM

Non-responsive content removed

Subject:FW: Address for Audi CP4 Pump exchange

Hello [redacted]

brief status for both the verification vehicles, detailed analysis report by BOSCH follows:

- both pumps were opened by Bosch employees and the MUs, tappets, rollers and cams assessed - without any striking features. BOSCH has drawn up an analysis report.

- Further, both pumps were surveyed on the test bench at BOSCH

- One pump had in the operating point 5,000 rpm and 2,000 bar a flow rate of only 99 l/h (TARGET 113 l/h, plus/minus 7 l/h according to BOSCH test regulation for new pumps), according to BOSCH possible MU defect

- Not OK, according to the consultation [redacted] as recommended by BOSCH pump replaced with a new part.

- Second pump on test bench OK, re-install in vehicle

- Both vehicles shall leave tomorrow starting at 7.00 am after repeated visual check in the direction of Auburn Hills QAL stations

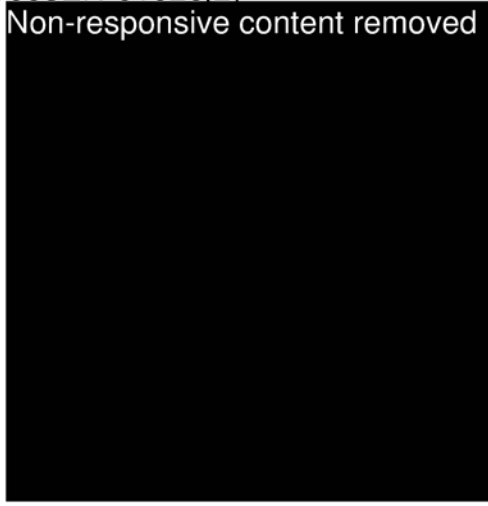
In case of queries, please revert.

Note: 1. Both vehicles showed oil sweat in the region of the boost pressure pipe on vehicle underside
2. One vehicle with loose precatlyst Lambda probe and missing sealing ring

Images incl. data memory excerpts will be sent tomorrow.

Best Regards

Non-responsive content removed



From: Non-responsive content removed
To: [Redacted]
CC: [Redacted]
Date: 10/13/2008, 11:57:00 AM
Subject: RE: Serious problem with vehicle [Redacted] (3.0l 165kW/AL750-6A), failure of high-pressure fuel pump

Yes.

With best regards

Non-responsive content removed

From: Non-responsive content removed
Sent: Monday, October 13, 2008, 12:50 PM
Subject: ANS: Serious problem with vehicle 7L69D024 (3.0l 165kW/AL750-6A), failure on high-pressure fuel pump

Hello [Redacted]

Can we supply with G2 on the roller end?

Best regards / mit freundlichen Grüßen

Non-responsive content removed

From: Non-responsive content removed
Sent: Monday, October 13, 2008, 12:29 PM

Non-responsive content removed

Subject: ANS: Serious problem with vehicle 7L69D024 (3.0l 165kW/AL750-6A), failure on high-pressure fuel pump
Importance: High

Hello [Redacted]

I'm afraid we have another failure with a Q verification vehicle from VW in the U.S. It is a repeat case involving the same Touareg that already failed once at 2,700 km. Whether this involves subsequent damage as a result of the 1st situation or a new fault

cannot be ascertained.

I have already entered the case in the latest failure list (date: today).

The date of production of the pump of 01/22/2008 of course is not the newest i.e. after measures carried out on WK 19/08.

The error memory printout is attached.

Could you please provide [redacted] with 1 x unit of the latest version of twin pistons BIN5 pump with new shaft position (059 130 755 AL)?

Hello [redacted]

Please send me the failed pump SAP!

Please supply to me or better still / faster directly to Bosch, [redacted] (see following address).

Please call me when you have the replacement pump for fitting in the USA.

Hello [redacted]

Is it correct that this engine/vehicle already contains the new W24 tension pulley (that's what it says in my list)?

Non-responsive content removed

With best regards

Non-responsive content removed

From: [redacted]

Sent: Monday, October 13, 2008, 11:25 AM

[redacted]

Subject: Re: Serious problem with vehicle 7L69D024 (3.0l 165kW/AL750-6A), failure on high-pressure fuel pump

Hi all,

For information

With best regards

Non-responsive content removed

From: Non-responsive content removed

Sent: Monday, October 13, 2008, 11:18 AM

Non-responsive content removed

Reference: Serious problem with vehicle 7L69D024 (3.0l 165kW/AL750-6A), failure on high-pressure fuel pump

Hello,

Attached please find a serious complaint from the verification run at [REDACTED] with a request for opinion!

Kind regards

Non-responsive content removed

Volkswagen AG

Non-responsive content removed

VOLKSWAGEN AG

Sitz/Domicile: Wolfsburg

Registergericht/Court of Registry: Local District Court

Braunschweig Commercial Register No.: Commercial Register No.: 100484

Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Ferdinand Piëch Vorstand/
Board of Management: Martin Winterkorn (Vorsitzender/Chairman), Francisco J. Garcia Sanz,
Jochem Heizmann, Horst Neumann, Hans Dieter Pötsch

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constitute a representation that the content of this e-mail is legally relevant and/or is intended to be
legally binding upon VOLKSWAGEN AG.

From: Non-responsive content removed

To:

CC:

Date: 10/13/2008, 12:34:00 PM

Subject: RE: Serious problem with vehicle [REDACTED] (3.0l 165kW/AL750-6A), failure on high-pressure fuel pump

Yes, it is typical drivetrain damage.

I have not sent you the file because the damage report included the entire history of the vehicle; and there is a lot of information there that is not intended for Bosch.

I will send you a few PDF excerpts:



7L69D024, 24.853 km, 10.10.2008



With best regards

Non-responsive content removed

From: Non-responsive content removed

Sent: Monday, October 13, 2008, 12:33 PM

Non-responsive content removed

Subject: ANS: Serious problem with vehicle 7L69D024 (3.0l 165kW/AL750-6A), failure of high-pressure fuel pump

Hello [REDACTED]

Do you have pictures of the MU?

In the last repeat case (Q7) the filter was blocked & but the pump was OK.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

EA11002FN 0102711

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Headquarters: Stuttgart, Court of Registry: Local District Court Stuttgart Commercial Register No. 14000
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks;
Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed

Sent: Monday, October 13, 2008, 12:29 PM

Non-responsive content removed

Subject: ANS: Serious problem with vehicle (3.0l 165kW/AL750-6A), failure of high-pressure fuel pump
Importance: High

Hello Non-responsive content removed

I'm afraid we have another failure with a Q verification vehicle from VW in the U.S.
It is a repeat case involving the same Touareg that already failed once at 2,700 km.
Whether this involves subsequent damage as a result of the 1st case or whether this is a new defect, unfortunately, cannot be determined.
I have already entered the case in the latest failure list (date: today).
With a pump date of manufacture of January 22, 2008, it is hardly the newest, without the measures from WK19/08.

The error memory printout is attached.
Can you please send 1 unit of the twin pistons BIN5 pump with the new shaft position (059 130 755 AL) at your convenience?

Hello,
Please send me the failed pump SAP!
Please address it to me, or better/faster directly to Non-responsive content removed in Non-responsive content removed (see address below).
Please call me when you have received the replacement pump for installation in the U.S.

Hello
Is it correct that this engine/vehicle already contains the new W24 tension pulley (that's what it says in my list)?

Non-responsive content removed

With best regards

Non-responsive content removed

Non-responsive content removed

From: Non-responsive content removed

Sent: Monday, October 13, 2008, 11:25 AM

Non-responsive content removed

Subject: Re: Serious problem with vehicle [REDACTED] (3.0l 165kW/AL750-6A), failure of high-pressure fuel pump

Hi all,

For information

With best regards

Non-responsive content removed

From: Non-responsive content removed

Sent: Monday, October 13, 2008, 11:18 AM

Non-responsive content removed

Subject: Serious problem with vehicle [REDACTED] (3.0l 165kW/AL750-6A), failure of high-pressure fuel pump

Hello,

Attached please find a serious complaint from the verification run at [REDACTED] with a request for opinion!

Regards,

Non-responsive content removed

Volkswagen AG

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VOLKSWAGEN AG

EA11003EN-01037[3]

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Sitz/Domicile: Wolfsburg

Registergericht/Court of Registry: Local District Court Braunschweig

HRB no./ Commercial Register No.: 100484

Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Ferdinand Piëch

Vorstand/Board of Management: Martin Winterkorn (Vorsitzender/Chairman), Francisco J. Garcia Sanz, Jochem Heizmann, Horst Neumann, Hans Dieter Pötsch

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EA11003EN-01041[0]

Serious problem in [REDACTED] verification run [REDACTED]

Complaint to team: T from station: US

Veh. class: VW756 Breakdown

Complaint	Note	Analysis (A), Measure (M), Date (T)	Status	Responsibility	Vehicle	VIN no.	Mileage / date
Considerable power loss and flashing preheat light in instrument cluster during shift drive. After stopping by the curb, the engine failed. It was not possible to restart the engine. Vehicle was brought to the station on a trailer.	1	<p>A: 5 error memory entries saved in the ECU. Three error memory entries concerning " fuel rail / system pressure too low ". See run. Detailed error memory entry attached as a PDF. Analysis: Fuel high-pressure pump faulty. Metal chips visible inside the pump, see photos. Data - Bosch HPP: (see also photo) 0 445 010 613 CR / CP4S2 / R75 / 40 059 130 755 AG</p> <p>M:</p> <p>T:</p>			<p>7L69D024 3.0l 165 kW V6 TDI SCR BIN5</p> <p>Engine no.: CAT 000338</p> <p>Gearbox No.: KRK 140508 Transmission type: AL750-6A</p>	WVGAM77L 29D [REDACTED]	39,988 km 10/10/2008

Contact [REDACTED]

[REDACTED]

[REDACTED]

Legend (Status):
0-Problem recorded, 1-Analysis carried out, 2-Measures defined,
3-Measures implemented, 4-Measures effective, 5-Measures ineffective, 6-Measures rejected

Distribution list

[REDACTED]

Non-responsive content removed

EA11003EN-01041[1]

Serious problem in [redacted] verification run

Complaint to team:

T

from station: US

Veh. class:

VW756

Breakdown

Photos

[redacted] 24,853 km, 10/10/2008



7L69D024_HPP_2

7L69D024, 24,853 km, 10/10/2008



EA11003EN-01041[2]

Serious problem in [REDACTED] verification run

Non-responsive content removed

Complaint to team:

T

from station: US

Veh. class:

VW756

Breakdown

[REDACTED] 24,853 km, 10/10/2008



EA11003EN-01041[3]

Serious problem in Non-responsive content removed verification run

Non-responsive content removed

Complaint to team: T from station: US

Veh. class: VW756 Breakdown X

Control units

Import no.	Stg no.	Stg designation	Number of faults	SW status	SW status - added	Coding
13	000001	Engine electronics	5	Z840	TKABFASAZA7W Non-responsive content removed long	
		00135 012 Fuel rail / system pressure too low				P0087 <input type="checkbox"/> Sporad.
		01029 000 Sensor for exhaust gas recirculation signal too small				P0405 <input checked="" type="checkbox"/> Sporad.
		05184 006 Valve for exhaust gas recirculation - interruption				P1440 <input checked="" type="checkbox"/> Sporad.
		00135 004 Fuel rail / system pressure too low				P0087 <input type="checkbox"/> Sporad.
		00135 003 Fuel rail / system pressure too low				P0087 <input type="checkbox"/> Sporad.
13	000002	Gearbox electronics	0	0000	30ETBT0H.MOT	4216
13	000003	Brake electronics	0	0304	ESP ALL WHEEL MK25E	6530
13	000005	Access and start authorizations	1	6850	2G Kessy	147688
		00446 000 Function restriction due to under voltage				<input checked="" type="checkbox"/> Sporad.
13	000008	Climate / heating electronics	0	4337	CLIMAtronic R/L	21030
13	000009	Electronic central electronics	0	2002	J519	Long
13	000013	Distance control	0	0382	AC201 NAR 1 031	20000
13	000015	Airbag	0	0250	J234__3A VW8T	13121
13	000016	Steering wheel electronics	0	3601	J527	11021
13	000017	Dashboard insert	1	9633	J285 INST. CLUSTER	7201
		00446 002 Function restriction due to low voltage - lower limit exceeded				<input checked="" type="checkbox"/> Sporad.
13	000019	Diagnostic interface for	0	9633	J533 GW-K-CAN TP2 long	
13	000022	All-wheel electronics	0	0126	TRANSFERCASE	
13	00002E	Media player position 3	0	0084	CU EXT.PLAYER	Long
13	000032	Block electronics	0	5023	CU differential lock	
13	000034	Level regulation	0	3125	AIR PRESSURE -CDC- 3C3	15521
13	000037	Navigation	2	0322	RNS-MID	Long
		00446 002 Function restriction due to low voltage - lower limit exceeded				<input checked="" type="checkbox"/> Sporad.

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EA11003EN-01041[4]

Serious problem in [REDACTED] verification run [REDACTED]

Complaint to team: T from station: US

Veh. class: VW756 Breakdown X

		02635 000 Tuner not enabled or activated					<input checked="" type="checkbox"/> Sporad.
13	00003C	Lane change assistant	1	0070	J0769_SWA_MasterH	10051	
		00908 004 Control unit for wiper motor - no signal/communication					<input checked="" type="checkbox"/> Sporad.
13	000046	Central module comforts	0	0601	4M HSG	85	
13	000047	Sound system	0	0020	DSP 10 channel		
13	000055	Headlight range adjustment	0	0136	AFS control unit	1292419	
13	000056	Radio	2	0322	RNS-MID	Long	
		02635 000 Tuner not enabled or activated					<input checked="" type="checkbox"/> Sporad.
		00446 002 Function restriction due to low voltage - lower limit exceeded					<input checked="" type="checkbox"/> Sporad.
13	000065	Tire pressure control	0	0006	J0502 TPC	Long	
13	000068	Wiper electronics	1	5301	J400__ Front wiper	1397	
		01520 014 Sensor for rain and light detection - G397 - faulty					<input checked="" type="checkbox"/> Sporad.
13	000069	Trailer function	0	0080	J345 Trailer	16386	
13	00006C	Rear camera	0	0033	J772__Rearview	110001	
13	00006D	Electric tailgate	0	1310	J605 TAILGATE	122110	
13	00006E	Display / operating unit	0	0401	J702 Roof display		
13	000076	Automatic parking assistant	0	1108	0L Automatic parking assistant		
13	000077	Telephone (control unit)	2	X160	FSE_2P8x H34	12077	
		01317 004 Control unit in dashboard insert-J285 no signal/communication					<input type="checkbox"/> Sporad.
		01304 004 Radio - no signal/communication					<input type="checkbox"/> Sporad.

ENTIRE PAGE CONFIDENTIAL

EA11003EN-01043[0]

Serious problem in [REDACTED] verification run

Non-responsive content removed

Complaint to team: T-Team from station: US

Veh. class: VW756 Breakdown X

Complaint	Note	Analysis (A), Measure (M), Date (T)	Status	Responsibility	Vehicle	VIN	Mileage / date
<p>Considerable engine shaking and flashing pre-heat light in estate car during shift drive. The engine then failed "suddenly"!! It was not possible to restart the engine. Vehicle was brought to the station on a trailer.</p>	1	<p>A: During analysis, it was ascertained that the high-pressure fuel pump had seized on and this had transferred to the camshaft sprocket on bank 2. The force of the HPP was so great that this resulted in engine damage. The inlet and outlet valves stood up on the pistons, the rocker arm broke off and possibly the transmission-side control chain drive was damaged. The camshaft sprocket bank 2 (in left direction of travel) did not turn when started.</p> <p>Data Bosch HPP: see also picture 0 445 010 613 CR / CP4S2 / R75 / 40 059 130 755 AG 01 080122 BPT 0898</p> <p>M:</p>			<p>7L69D025 3.0l 165 kW V6 TDI SCR BIN5</p> <p>Engine no.: CAT 000337</p> <p>Gearbox No.: KRK 140508 Transmission type: AL750-6A</p>	<p>WVGAM77L 99D [REDACTED]</p>	<p>73,531 km 10/31/2008</p>

Contact [REDACTED]

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Legend (Status):
0-Problem recorded, 1-Analysis carried out, 2-Measures defined, 3-Measures implemented, 4-Measures effective, 5-Measures ineffective, 6-Measures rejected

Distribution list

Non-responsive content removed

EA11003EN-01043[1]

Serious problem in [REDACTED] verification run

Non-responsive content removed

Complaint to team:

T-Team

from station: US

Veh. class:

VW756

Breakdown

X

Photos

7L69D025_HPP_2

7L69D025, 45,700 km, 10/31/2008



7L69D025_HPP_3

7L69D025, 45,700 km, 10/31/2008



EA11003EN-01043[2]

Serious problem in [REDACTED] verification run

Non-responsive content removed

Complaint to team:

T-Team

from station: US

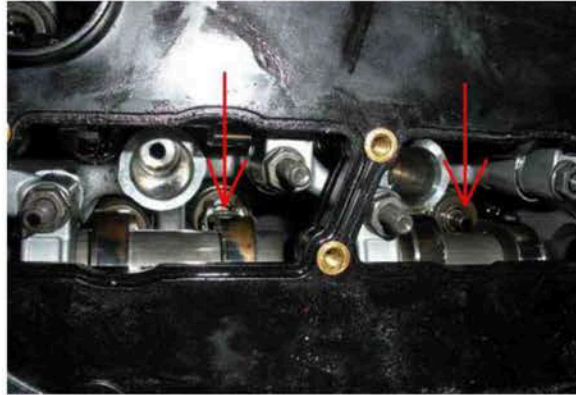
Veh. class:

VW756

Breakdown

X

[REDACTED] 45,700 km, 31.10.2008



Serious problem in [REDACTED] verification run

Non-responsive content removed

Complaint to team: T-Team from station: US

Veh. class: VW756 Breakdown X

Control units

Import no.	Stg no.	Stg designation	Number of faults	SW status	SW status - added	Coding
22	000001	Engine electronics	5	0010	3.0TDI EDC17G104A long	
		05084 004 Sensor for internal pressure cylinder 5 implausible signal				P13DC <input type="checkbox"/> Sporad.
		00135 012 Fuel rail / system pressure too low				P0087 <input checked="" type="checkbox"/> Sporad.
		00135 001 Fuel rail / system pressure too low				P0087 <input type="checkbox"/> Sporad.
		00135 005 Fuel rail / system pressure too low				P0087 <input type="checkbox"/> Sporad.
		08430 001 SCR NOx Catalytic converter bank 1 efficiency too low				P20EE <input checked="" type="checkbox"/> Sporad.
22	000002	Gearbox electronics	0	0000	30ETBT0H.MOT	4216
22	000003	Brake electronics	0	0304	ESP ALL WHEEL MK25E	4482
22	000005	Access and start authorizations	1	6850	2G Kessy	147688
		00446 000 Function restriction due to undervoltage				<input checked="" type="checkbox"/> Sporad.
22	000008	Climate / heating electronics	0	4337	CLIMAtronic R/L	21030
22	000009	Electronic central electronics	0	2002	J519	Long
22	000015	Airbag	0	0250	J234__3N VW8T	13134
22	000016	Steering wheel electronics	0	3601	J527	11011
22	000017	Dashboard insert	0	9633	J285 INST. CLUSTER	7201
22	000019	Diagnostic interface for	0	9633	J533 GW-K-CAN TP2 long	
22	000022	All-wheel electronics	0	0126	TRANSFERCASE	
22	00002E	Media player position 3	0	0084	CU EXT.PLAYER	Long
22	000034	Level control	1	3125	AIR PRESSURE -CDC- 3C3	15521
		01575 000 Control switched off				<input type="checkbox"/> Sporad.
22	000037	Navigation	0	0211	RNS-MID	Long
22	00003C	Lane change assistant	0	0070	J0769_SWA_MasterH	10051
22	000046	Central module comforts	0	0601	22 HSG	85
22	000047	Sound system	0	0020	DSP 10 channel	

EA11003EN-01043[4]

Non-responsive content removed
Serious problem in verification run
Non-responsive content removed

Complaint to team: T-Team from station: US

Veh. class: VW756 Breakdown

22	000055	Headlight range adjustment	0	0136	AFS control unit	1292419
22	000056	Radio	0	0211	RNS-MID	Long
22	000065	Tire pressure control	0	0006	J0502 RDK	Long
22	000068	Wiper electronics	0	5301	J400__ Front wiper	1397
22	000069	Trailer function	0	0080	J345 Trailer	16386
22	00006C	Rear camera	0	0033	J772__Rearview	110001
22	00006D	Electric tailgate	0	1310	J605 TAILGATE 122110	
22	00006E	Display / operating unit	0	0401	J702 Roof display	
22	000076	Automatic parking assistant	0	1108	0L Automatic parking assistant	
22	000077	Telephone (control unit)	2	X160	FSE_2P8x H34	12077

01304 004 Radio - no signal/communication

Sporad.

01317 004 Control unit in dashboard insert-J285 no signal/communication

Sporad.

ENTIRE PAGE CONFIDENTIAL

EA11003EN-01046[0]

Serious problem in [redacted] verification run

Non-responsive content removed

Complaint to team: T-Team from station: US

Veh. class: VW756 Breakdown

Complaint	Note	Analysis (A), Measure (M), Date (T)	Status	Responsibility	Vehicle	VIN	Mileage / date
<p>Considerable engine shaking and flashing pre-heat light in estate car during shift drive. The engine then failed "suddenly"!! It was not possible to restart the engine. Vehicle was brought to the station on a trailer.</p>	1	<p>A: During analysis, it was ascertained that the high-pressure fuel pump had seized on and this had transferred to the camshaft sprocket on bank 2. The force of the HPP was so great that this resulted in engine damage. The inlet and outlet valves stood up on the pistons, the rocker arm broke off and possibly the transmission-side control chain drive was damaged. The camshaft sprocket bank 2 (in left direction of travel) did not turn when started.</p> <p>Data Bosch HPP: see also picture 0 445 010 613 CR / CP4S2 / R75 / 40 059 130 755 AG 01 080122 BPT 0898</p> <p>M:</p>			<p>7L69D025 3.0l 165 kW V6 TDI SCR BIN5</p> <p>Engine no.: CAT 000337</p> <p>Gearbox No.: KRK 140508 Transmission type: AL750-6A</p>	<p>WVGAM7ZL 99D [redacted]</p>	<p>73,531 km 10/31/2008</p>

Contact [redacted]

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Legend (Status):
0-Problem recorded, 1-Analysis carried out, 2-Measures defined, 3-Measures implemented, 4-Measures effective, 5-Measures ineffective, 6-Measures rejected

Distribution list

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EA11003EN-01046[1]

Serious problem in [redacted] verification run

Non-responsive content removed

Complaint to team:

T-Team

from station: US

Veh. class:

VW756

Breakdown

X

Photos

[redacted] 45,700 km, 10/31/2008



7L69D025_HPP_3

7L69D025, 45,700 km, 10/31/2008



EA11003EN-01046[2]

Non-responsive content removed
Serious problem in verification run

Non-responsive content removed

Complaint to team:

T-Team

from station: US

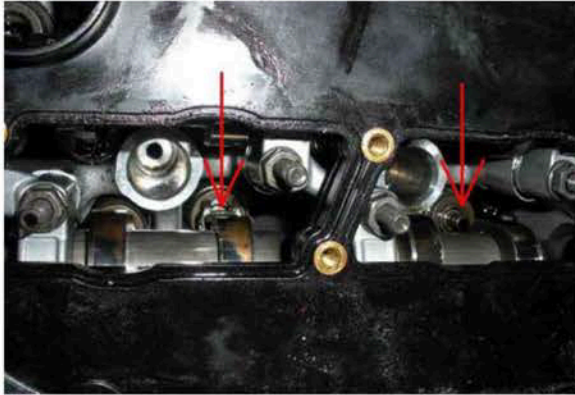
Veh. class:

VW756

Breakdown

X

45,700 km, 31.10.2008



Serious problem in [REDACTED] verification run

Non-responsive content removed

Complaint to team: T-Team from station: US

Veh. class: VW756 Breakdown X

Control units

Import no.	Stg no.	Stg designation	Number of faults	SW status	SW status - added	Coding
22	000001	Engine electronics	5	0010	3.0TDI EDC17G104A long	
		05084 004 Sensor for internal pressure cylinder 5 implausible signal				P13DC <input type="checkbox"/> Sporad.
		00135 012 Fuel rail / system pressure too low				P0087 <input checked="" type="checkbox"/> Sporad.
		00135 001 Fuel rail / system pressure too low				P0087 <input type="checkbox"/> Sporad.
		00135 005 Fuel rail / system pressure too low				P0087 <input type="checkbox"/> Sporad.
		08430 001 SCR NOx Catalytic converter bank 1 efficiency too low				P20EE <input checked="" type="checkbox"/> Sporad.
22	000002	Gearbox electronics	0	0000	30ETBT0H.MOT	4216
22	000003	Brake electronics	0	0304	ESP ALL WHEEL MK25E	4482
22	000005	Access and start authorizations	1	6850	2G Kessy	147688
		00446 000 Function restriction due to undervoltage				<input checked="" type="checkbox"/> Sporad.
22	000008	Climate / heating electronics	0	4337	CLIMAtronic R/L	21030
22	000009	Electronic central electronics	0	2002	J519	Long
22	000015	Airbag	0	0250	J234__3N VW8T	13134
22	000016	Steering wheel electronics	0	3601	J527	11011
22	000017	Dashboard insert	0	9633	J285 INST. CLUSTER	7201
22	000019	Diagnostic interface for	0	9633	J533 GW-K-CAN TP2 long	
22	000022	All-wheel electronics	0	0126	TRANSFERCASE	
22	00002E	Media player position 3	0	0084	CU EXT.PLAYER	Long
22	000034	Level control	1	3125	AIR PRESSURE -CDC- 3C3	15521
		01575 000 Control switched off				<input type="checkbox"/> Sporad.
22	000037	Navigation	0	0211	RNS-MID	Long
22	00003C	Lane change assistant	0	0070	J0769_SWA_MasterH	10051
22	000046	Central module comforts	0	0601	22 HSG	85
22	000047	Sound system	0	0020	DSP 10 channel	

EA11003EN-01046[4]

Non-responsive content removed
Serious problem in verification run

Non-responsive content removed

Complaint to team:

T-Team

from station: US

Veh. class:

VW756

Breakdown

X

22	000055	Headlight range adjustment	0	0136	AFS control unit	1292419
22	000056	Radio	0	0211	RNS-MID	Long
22	000065	Tire pressure control	0	0006	J0502 RDK	Long
22	000068	Wiper electronics	0	5301	J400__ Front wiper	1397
22	000069	Trailer function	0	0080	J345 Trailer	16386
22	00006C	Rear camera	0	0033	J772__Rearview	110001
22	00006D	Electric tailgate	0	1310	J605 TAILGATE 122110	
22	00006E	Display / operating unit	0	0401	J702 Roof display	
22	000076	Automatic parking assistant	0	1108	0L Automatic parking assistant	
22	000077	Telephone (control unit)	2	X160	FSE_2P8x H34	12077

01304 004 Radio - no signal/communication

Sporad.

01317 004 Control unit in dashboard insert-J285 no signal/communication

Sporad.

From: Non-responsive content removed

To:

CC:

Date: 12/17/2008, 10:21:58 AM

Subject: RE: complained about Audi returns

Hello Non-responsive content removed

As discussed in our phone call yesterday, here is some preliminary information from our inspection:

Result of the first findings of the two complained about Audi W19 BIN5 returns:

1) Pump "45,700mls GQ VW HPP failure"; Complaint: HPP failure

0445 010 613 080122-0898 (process 2008-CP4_0906) DNA no. 2825

- Drivetrain damage confirmed
- Adhesive wear across the entire cam track
- One RS had only medium C coating damage, tappets were finally turned by 90° (primary damage)
- Second RS completely worn, roller worn across entire circumference

Pictures: < \\bosch.com\dfsrb\dfsde\div\ds\ne5\ehp\Messdaten\Ablage1\A_Messdaten\CP4\CP4 Dauerlauf\Befundung and Analyse\06_Befundungsergebnisse\2008\2800-2849\2825-08122-0898 >

2) Pump "162,000 km US ER veh. V6TDI (W19); veh. AU716E218"; Complaint: Shavings/breakdown

0445B20169_07 782-4254 (process 2008-CP4_0897)

DNA no. 2826

- Drivetrain damage confirmed
 - Strong breakouts on cam track
 - Both RS with middle C layer damage and 90° turners
 - Deposits (suspected corrosion) on cam track (also non-worn areas) and in IV bores / on IV
- > Assumption: failed due to water in the fuel; must be further investigated

Pictures: < \\bosch.com\dfsrb\dfsde\div\ds\ne5\ehp\Messdaten\Ablage1\A_Messdaten\CP4\CP4 Dauerlauf\Befundung and Analyse\06_Befundungsergebnisse\2008\2800-2849\2826-782-4254 >

-> I will show the pictures at the next technical meeting.

Happy holidays,

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Non-responsive content removed

Headquarters: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000 Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais; Bernd Bohr, Rudolf Colm, Gerhard Kümmel, Wolfgang Malchow, Peter Marks; Volkmar Denner, Uwe Raschke, Peter Tyroller

From: Non-responsive content removed
Sent: Monday, December 08, 2008, 10:29 AM

Non-responsive content removed

Subject: complained about Audi returns

Hello

Result of the first findings of the two complained about Audi W19 BIN5 returns:

- 1) Pump "45,700mls GQ VW HPP failure"; Complaint: HPP failure 0445 010
613 080122-0898 (process 2008-CP4_0906) DNA no. 2825
- Drivetrain damage confirmed
 - Adhesive wear across the entire cam track
 - One RS had only middle C coating damage, tappets were finally turned by 90° (primary damage)
 - Second RS completely worn, roller worn across entire circumference

Pictures: <\\bosch.com\dfsrb\dfsde\div\ds\ne5\ehp\Messdaten\Ablage1\A_Messdaten\CP4\CP4 Dauerlauf\Befundung and Analyse\06_Befundungsergebnisse\2008\2800-2849\2825-08122-0898>

- 2) Pump "162,000 km US ER veh. V6TDI (W19); veh. AU716E218"; Complaint: Shavings/breakdown 0445B20169_07
782-4254 (process 2008-CP4_0897)
DNA no. 2826
- Drivetrain damage confirmed
 - Strong breakouts on cam track
 - Both RS with middle C layer damage and 90° turners
 - Deposits (suspected corrosion) on cam track (also non-worn areas) and in IV bores / on IV ---> Assumption: failed due to water in the fuel; must be further investigated

Pictures: <\\bosch.com\dfsrb\dfsde\div\ds\ne5\ehp\Messdaten\Ablage1\A_Messdaten\CP4\CP4 Dauerlauf\Befundung and Analyse\06_Befundungsergebnisse\2008\2800-2849\2826-782-4254>

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

From: Non-responsive content removed
To:
CC:

Date: 1/15/2009, 1:43:40 PM
Subject: RE: complained about Audi returns
Attachments: [Kraftstoffanalyse \[redacted\] 08 - 84.483,1-6.pdf](#)

Hello

Non-responsive content removed

First of all, the overview concerning the E218:

Non-responsive content removed 58 tkm NK6 ER
The attached fuel analyses are located 32 tkm from here (water: 30 - 40 mg/kg)
8 tkm crossing
65 tkm up until HPP failure, fuel analyses being procured

On account of the HPP failure related valve timing adjustment, the engine was so damaged that the ER had to be ended.

Engine was analyzed in [redacted]. Still waiting on the analysis of the fuel filter / content

Fuel analysis attached:

- 1.) ultralow <15 S, [redacted] AK 5.05.08
- 2.) ultralow <15 S, Non-responsive content removed date?
- 3.) ultralow <15 S, [redacted] 06.05.08
- 4.) max. 500 ppm S, [redacted] 09.05.05
- 5.) max. 500 ppm S, [redacted] 25.04.08
- 6.) max. 500 ppm S, Non-responsive content removed 22.04.08

Comments:

- **The cetane numbers**

are still to come

- **Striking features**

less density,

fewer total aromatic compounds,

flash point is obviously low,

low-boiling solvents present (there is higher-boiling gasoline in the DF),

With best regards

Non-responsive content removed

AUDI AG

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Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn
Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Dreves, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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From: Non-responsive content removed

Sent: Thursday, January 15, 2009, 12:10 PM

Non-responsive content removed

Subject: RE: complained about Audi returns

Hello Non-responsive content removed

Thank you.

Do you know when you'll have the fuel analyses?

I can imagine that there is more condensation in the tank & fuel system in Non-responsive content removed

Your opinion?

Mit freundlichen Grü??en / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

Domcile: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000;
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed

Sent: Thursday, January 15, 2009, 9:31 AM

Non-responsive content removed

Subject: RE: complained about Audi returns

Hello Non-responsive content removed

The fuel filter and contents will be analyzed.

Vehicle E218 is already in [REDACTED]

Vehicle D025 will be supplied by [REDACTED]

There is no "tank map" for this.

Vehicle E218 (second vehicle) was last moved in [REDACTED]

With best regards

Non-responsive content removed

AUDIAG

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Sitz/Domicile: Ingolstadt

Registergericht/Court of Registry: Local District Court Ingolstadt

HRB Nr./Commercial Register No.: 1

Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn

Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Dreves, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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From: Non-responsive content removed

Sent: Wednesday, January 14, 2009, 5:20 PM

Non-responsive content removed

Subject: RE: complained about Audi returns

Hello

Non-responsive content removed

Was the fuel / fuel filter analyzed in the failed USA vehicles (**7L69D025; AU716E218**)?

Was any water found in the water separator?

Was the water separator checked when maintaining the vehicles (especially the AU716E218)?

Were the vehicles filled up at different gas stations (particularly the last 10,000 km)?

Was a tank map drawn up - at least partially for the last 10 fillings?

Background:

The second pump (162,000 km) was corroded which would indicate free water.

<<Bilder_2009-0018.pdf>> <<CR_ARA_2009-0018_Deckblatt.pdf>>

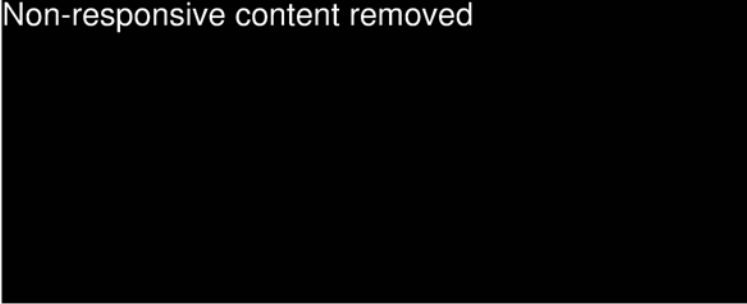
Thank you.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed



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Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed
To:
CC:

Date: 1/22/2009, 1:54:00 PM

Subject: ANS: USA failures (second batch USA

Attachments: [EHC_0458_V2_ \[REDACTED\].Audi_CP4_Sondermaßnahmen USA Serienanlauf.24-10-2008.ppt](#)

Dear [REDACTED]

I just want to be sure for the 613 pump USA that there are **no "elevations" on the roller or the roller support** and that C2.1 coated rollers will be fitted (if Bosch is sure that that will help us and won't just lower costs).

i.e.:

100% special test on the roller support (similar to straightedge test and visual)

100% special test on the roller after the friction coefficient check (visual)

Ensure C2.1 coating on roller

Audi is aiming to full fuel with "the best possible German" fuel (introduction in the field)

I will check out the logistics situation as soon as possible.

With best regards

[REDACTED]

From: [REDACTED]

Sent: Thursday, January 22, 2009, 1:07 PM

[REDACTED]

Subject: ANS: USA failures (second batch USA

Hello [REDACTED]

We had proposed for the batch the measures listed in the slide -> however a much reduced quantity of 150 pumps in the first batch vs > 1000 pumps in the second batch)

But:

-> The roller support with an opt. coating system has since been released & and therefore in series production.

-> We have Güntert rollers with C2.1 in series production (& fitted to first batch still via change order / special approval.

We will discuss / propose / authorize the testing point on Monday - if you / Audi require this - however first **"only"** for 611 pump & only for the February (~10,000 units). Then we will assess to see how practical this is.

In any case, the additional point will cost us 25 s timing -> if the test point becomes long-term, we will have to compensate

for this -> i.e. omit other test points (starting point, ...).

(I must initiate a special approval process for the additional test point)

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

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Peter Tyroller; Uwe Raschke

From: Non-responsive content removed
Sent: Thursday, January 22, 2009, 12:18 PM
To: Non-responsive content removed
Subject: ANS: USA failures (second batch USA)

Hello Non-responsive content removed

What would you consider to be special measures?
Try just to act as if there was no deadline.

With best regards

Non-responsive content removed

From: Non-responsive content removed
Sent: Thursday, January 22, 2009, 12:10 PM

Non-responsive content removed

Subject: ANS: USA failures (second batch USA)

Hello Non-responsive content removed

Thank you.

We also consider the filter to be surprisingly clean.

Comment regarding USA batch:

No special measures were built into the first batch.

If the engines were already fitted in WK 6 & and pumps would have to be available, we would not use any special measures in the second batch (especially for > 1,000 pumps)

-> i.e. the second batch is analog to the first one!

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

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Peter Tyroller; Uwe Raschke

From: Non-responsive content removed

Sent: Thursday, January 22, 2009, 11:14 AM

Non-responsive content removed

Subject: ANS: USA failures (second batch USA)

Hello Non-responsive content removed

Water separator:

There is a space beneath the paper filter insert in the filter housing in which water accumulates.

When replacing, the paper filter is dismantled and the remaining volume of fuel / (water) drained out, and then a new filter is inserted.

This system works

(See striking features due to frozen water during the winter testing the USA)
and is also in use in Europe.

Differences in the USA: Replacement interval is 30 tkm (in EU for EN590 60tkm)

In the E218, the filter had not been changed over 160 tkm before the HPP failed!
The filter and fuel are visually surprisingly clean!

Regarding the second batch:

Decision will be reached tomorrow:

A total of just under 1,000 Q7 + Touareg were built as of WK 06.

Non-responsive content removed is verifying the pumps.

We are assuming that the same measures were used as with the first batch.

Please provide information if there are any problems with this!

With best regards

Non-responsive content removed

Non-responsive content removed

Sitz/Domicile: Ingolstadt
Registergericht/Court of Registry: Local District Court Ingolstadt
HRB Nr./Commercial Register No.: 1
Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn
Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Dreves, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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From: Non-responsive content removed

Sent: Wednesday, January 21, 2009, 1:08 PM

Non-responsive content removed

Subject: ANS: USA failures (second batch USA)

Hello Non-responsive content removed

Thank you

So how does the water separator work?

Has water been found in this type of filter before or checked to see if the water is being separated?

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

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Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed

Sent: Wednesday, January 21, 2009, 12:17 PM

Non-responsive content removed

Subject:ANS: USA failures (second batch USA)

Hello 

We now have the fuel sample from the Q7 **E218**:

**No striking features: Filter clean, fuel visually clean without water ... see attachment
We will send you a sample.**

The Touareg is on its way to 

Regarding the fuel samples:
Further analysis has been requested including a sample for Bosch. Deadline still to be decided

With best regards

Non-responsive content removed

Sitz/Domicile: Ingolstadt
Registergericht/Court of Registry: Local District Court Ingolstadt
HRB Nr./Commercial Register No.: 1
Vorsitzender des Aufsichtsrats/Chairman of the Supervisory Board: Martin Winterkorn
Vorstand/Board of Management: Rupert Stadler (Vorsitzender/Chairman), Ulf Berkenhagen, Michael Dick, Frank Dreves, Peter Schwarzenbauer, Axel Strotbek, Werner Widuckel

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From 
Sent: Tuesday, January 20, 2009, 8:48 AM

Subject: USA failures (second batch USA)

Hello 

When will we have the results for the viscosity of the Alaska fuel?
Were you already able to see if water was in the filters (water separator)?

 indicated yesterday that a second batch was set up for the USA.

How big is this second batch (units) & by when do you require the pumps to fit in the engines?

Background:
Assess to see if special measures are required for installation - which were intended for the first batch.

Thank you.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

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Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed

Sent: Thursday, January 15, 2009, 2:00 PM

Non-responsive content removed

Subject: ANS: Analysis report 2009-0018 CP4.2HS customer returns from Audi with unusual deposit on the intake valve

Hello

Non-responsive content removed

Here is the complete set of slides.

<<EHC_0545_V2_ [redacted], Audi, CP4 Triebwerkschaden, 15-01-2009.pdf>>

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

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Domicile: Stuttgart, Court of Registry: Local District Court Stuttgart, Commercial Register No. 14000;
Chairman of the Supervisory Board: Hermann Scholl; Management: Franz Fehrenbach, Siegfried Dais;
Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed

Sent: Thursday, January 15, 2009, 1:55 PM

Non-responsive content removed

Subject: ANS: Analysis report 2009-0018 CP4.2HS customer returns from Audi with unusual deposit on the intake valve

Hello Non-responsive content removed

Here is an update on the 2 x drivetrain damage.

< File: EHC_0545_V2, Non-responsive content removed Audi, CP4 Triebwerkschaden, 15-01-2009.pdf >>

To underpin the hypotheses, the analysis of the fuels as well as information as to whether any water was found in the filter (water separator) would be helpful.

I have asked Non-responsive content removed for this information.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

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Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed

Sent: Wednesday, January 14, 2009, 5:24 PM

Non-responsive content removed

Subject: Re: Analysis report 2009-0018 CP4.2HS customer returns from Audi with unusual deposit on the intake valve

Importance: High

Hello Non-responsive content removed

Here is the current status slide concerning the two USA failures.

< File: EHC_0545_ Non-responsive content removed Audi, CP4 Triebwerkschaden, 13-01-2009.pdf >>

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

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Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed
Sent: Wednesday, January 14, 2009, 4:44 PM

Non-responsive content removed

Subject: Re: Analysis report 2009-0018 CP4.2HS customer returns from Audi with unusual deposit on the intake valve
Importance: High

Hello Non-responsive content removed

The red-colored coverings are actually corrosion!

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

Robert Bosch GmbH

Non-responsive content removed

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Bernd Bohr, Rudolf Colm, Volkmar Denner, Gerhard Kümmel, Wolfgang Malchow, Peter Marks,
Peter Tyroller; Uwe Raschke

From: Non-responsive content removed
Sent: Wednesday, January 14, 2009, 4:30 PM

Non-responsive content removed

Subject: Analysis report 2009-0018 CP4.2HS customer returns from Audi with unusual deposit on the intake valve
Importance: High

Dear Non-responsive content removed


Here is the interim report concerning the analyses (SEM, EDS and FTIR).

< File: CR_ARA_2009-0018_1 Seite.pdf >>

< File: Bilder_2009-0018.pdf >>

Mit freundlichen Grüßen / Best regards

Non-responsive content removed



Audi CP4.2 start-up in the U.S.

Audi requests special measures for 150 0 445 010 613 pumps for the U.S. start-up

Special approval for 240 pumps

Measures

- RS from optimized C coating plant
- RS & roller cleaning with hydrocarbons
-> Objective: avoid impact of washing residues on friction coefficient test
- Friction coefficient test for components with BDF650
-> Tightened friction coefficient test (selection of lowest friction values...)
- Objective: Visual inspection RS with microscope before press-in process (availability of visual inspection bench)
-> Tightened visual inspection
- Selection/installation of tappet assembly with pressing-in force in upper range
- Photographic documentation of roller after friction coefficient test of tappet assembly & evaluation in accordance with visual inspection catalog -> Additional visual inspection
- Reduce inspection speed (800rpm@2,000 bar, additional testing point)
-> Increased load
- 100% Güntert roller with C2.1 on the roller end



Trial of measures on 10 pumps with subsequent diagnosis.



From: Non-responsive content removed
To: [REDACTED]

CC: [REDACTED]
Date: 07.26.2011 4:47:14 PM
Subject:

Attachments: [2011-CP4_0508_Bericht_gez_31514.pdf](#)
[2011-CP4_0505_Bericht_gez_31512.pdf](#)
[2011-CP4_0507_Bericht_gez_31513.pdf](#)
[Pages from 1903_EHC1_La 117. PG VW R4.pdf](#)

Hello Mr. [REDACTED]

Please find attached the reports and additional page from the presentation in the project meeting as requested. The result, in my view, is positive.

Please also provide info on part disposition. Do you want the pumps in WOB or should we scrap them as standard?

Mit freundlichen Grüßen / Best regards

Non-responsive content removed
[REDACTED]

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Stefan Asenkerschbaumer, Bernd Bohr, Rudolf Colm, Volkmar Denner, Wolfgang Malchow, Peter Marks, Uwe Raschke, Wolf-Henning Scheider,
Peter Tyroller



From: Non-responsive content removed
Sent: Friday, July 22, 2011, 3:25 PM
To: Non-responsive content removed
Cc: [REDACTED]
Subject: ANS: HPP from endurance run on the findings

Hello Mr. [REDACTED]

Here is the story of the MNS HPP (Q verification run failure at 31,874 km)

During yesterday's shift run traveling on the freeway at approx. 120 km/h, there was a performance dropout of the engine.

No fuel intake possible, preheat light started flashing in the station wagon, when the vehicle came to a standstill the engine stopped.

The vehicle could not be restarted and had to be towed to the station.

3 static error memory entries in CU01:

"P0087 Fuel rail / system pressure too low

0110 0001 upper limit value exceeded"

Diagram readout of the MWB engine and transmission attached.

**A fuel sample was taken from the vehicle and examined with the "fuel identification device DMP 02". (Unfortunately this device only outputs information about the type of fuel, not the quality.)
Result: 100% diesel (see attached photo "diesel sample")**

The analysis approached used was to examine the HPP, in which some shavings were found (see photos).

HPP parts data:

805 010 511 0, Bosch 1000, 1027, 02/53R/1S4PC/RC, A557 031 L30, 01 21 80 80, 1540TPB.

Crafter and RPU HPP supply with [Non-responsive content removed] test fuel. Low pressure circuits with both series.

We will try to complete the additional information (questionnaire) you requested soon and, if successful, would pass this onto you in a findings meeting.

Please send the results of the [Non-responsive content removed] HPP analysis to me and [Non-responsive content removed] in advance. I will not be able to find out the result in PM 117 because of plant holiday.

Thank you

Best regards

Non-responsive content removed

From: [Non-responsive content removed]

Sent: Friday, July 22, 2011, 1:57 PM

To: [Non-responsive content removed]

Subject: Re: HPP from endurance run on the findings

Hello [Non-responsive content removed]

Here are the questions from [Non-responsive content removed]

With best wishes

Non-responsive content removed

From: [Non-responsive content removed]

Sent: Thursday, July 21, 2011, 4:53 PM

To: [Non-responsive content removed]

Subject: Re: HPP from endurance run on the findings

Hi all,

If I am reading it right, are the bottom two the failures? Please answer my questions as far as you can, thank you. Would be very helpful in the findings. Thank you.

Mit freundlichen Grüßen / Best regards

Non-responsive content removed

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Stefan Asenkerschbaumer, Bernd Bohr, Rudolf Colm, Volkmar Denner, Wolfgang Malchow, Peter Marks, Uwe Raschke, Wolf-Henning Scheider,

Peter Ty-roller

Description:
cid:b28ce4b8-b627-448e-aecd-19b7a229ed22

From: Non-responsive content removed
Sent: Thursday, July 21, 2011, 3:16 PM
To: Non-responsive content removed
Cc: Non-responsive content removed
Subject: HPP from endurance run on the findings

Hello Non-responsive content removed

I have received the three high-pressure fuel pumps. They will go to Stuttgart tomorrow on an application vehicle.

We have received the following info on the HPPs:

1. 03L 130 755 A no info on the HPP ;-(
08 081210
BPT 0451
2. 03L 130 755 AB from VN 817 1 0360 with 89,297km
02 211010
BPT 0249
2. 03L 130 755 AB from VN 831 9 0143 with 143,821km (EWP)
08 100810
BPT 0022

Can you please send us the missing info about HPP no. 1!

Non-responsive content removed, please enter the HPPs in the findings list. The HPPs are in the Passat (NMS) that is going from BS to Fe tomorrow.

Please take the parts out of the trunk on Monday and give them to Mr. Non-responsive content removed

Thanks for your efforts!

Non-responsive content removed

www.bosch.com



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Stefan Asenkerschbaumer, Bernd Bohr, Rudolf Colm, Volkmar Denner, Wolfgang Malchow, Peter Marks, Uwe Raschke, Wolf-Henning Scheider,
Peter Tyroller

< OLE object: Picture (Enhanced Metafile) >>

From: Non-responsive content removed
To:
CC:

Date: 2/4/2009 2:31:00 PM
Subject: ANS: New testing point
Attachments: [FEA_035_2009_01_26_Neuer Prüfpunkt_0445010611_Audi_V2.pdf](#)
[EHC_0569_ \[REDACTED\], Druck vs. Drehzahl mit Sonderprüfpunkt, 28-01-2009.ppt](#)

Hello [REDACTED]

Sometimes I allow myself the luxury of having lunch from 12-12:45 PM; that's why you didn't reach me at 12:07 PM.
;-)
But all joking aside!

I insist that the intensified testing point be presented on Tuesday!

If there is a residual risk here, we have to point it out directly to the attendees, who have to (help) decide whether it will be introduced.

[REDACTED] **and I don't make the decisions ourselves in any case!**

We and our bosses have a great deal of experience with such processes and can assess the risk very well when we have the facts.

Proposal for obtaining additional facts:

Audi immediately donates 143 finished pumps (from empties returns) for a second major trial (at the weekend, for example).

And Bosch assesses these pumps by 02/10/09.

That would be a fast measure on Bosch's behalf that would show that they are continuing to work intensively on the drivetrain damage topic, and could result in a rapid decision (for example, major trial 1 month = 10,000 units).

Please prepare the changed test program with +23 sec., so we can start the major trial together on 10/02/09, if applicable.

Do you agree !?

P.S.: Please add in the overheads (attachment 1) the permissible pressure speed diagram from a drivetrain like that from a 2000 bar pump, not from an 1800 bar pump (attachment 2). Then the testing point will no longer be so far from the borderline. It would also be good to work in the staged crash program somewhere, 500 bar with 4,000 rpm, up to 2,200 bar with 4,000 rpm.

Best regards

[REDACTED]

From: [REDACTED]
Sent: Wednesday, February 04, 2009 12:13 PM
[REDACTED]

Non-responsive content removed

Subject:New testing point

Hello Non-responsive content removed

Please find attached the overheads presented by Non-responsive content removed during the last drivetrain conference call.

<<FEA_035_2009_01_26_Neuer Prüfpunkt_0445010611_Audi_V2.pdf>>

Hello

Unfortunately, I was unable to reach you by phone today.

During the internal meeting yesterday, there were different opinions as to whether this new testing point can be presented as a possible measure during Non-responsive content removed visit, or whether it would be better to deal with this subject the next day at the CP4 TM.

Thank you.

Best regards

Non-responsive content removed

Robert Bosch GmbH

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Peter Tyroller; Uwe Raschke



Cause/analysis

Production slippage at Bosch (microgeometry) leads to stiff roller and to a failure of the pump drivetrain in conjunction with special fuel properties in certain markets.

Actions implemented:

- Straightedge test on eyeglass cloth WK19 / 2008
- Roller from new second supplier WK20 / 2008
- Optimized C layer on roller support (approx. 80% effectiveness with regard to faults) WK23 / 2008
- Further optimization of roller support C layer (>95%) WK16 / 2009

Further procedure:

- Additional fueling ex works for all Audi diesel vehicles with high-lubricity first filling fuel (16 l and 30 l, respectively) for Non-responsive content removed 06/15/2009
- C2 instead of C3 layer on roller end (red. of metal spatters) soon
- Camera system to optimize display (and initial subjective identification) of elevations / metal spatters on the roller support; partial implementation from June 2009 (?)
- Intensified inspection point in CP4.2 final inspection to select "borderline not OK drivetrains" through failure (1st partial major trial 1,000 units without internal failure in 04/2009; 2nd partial major trial 10,000 units 3rd quarter 2009
- Topic "Robust design of CP4 drivetrain" with regard to fuels outside fuel standards at Bosch/Audi reliability Board meeting date TBA



QUASI field information

Status 04/09-16.05.09 04:07
 User [redacted]

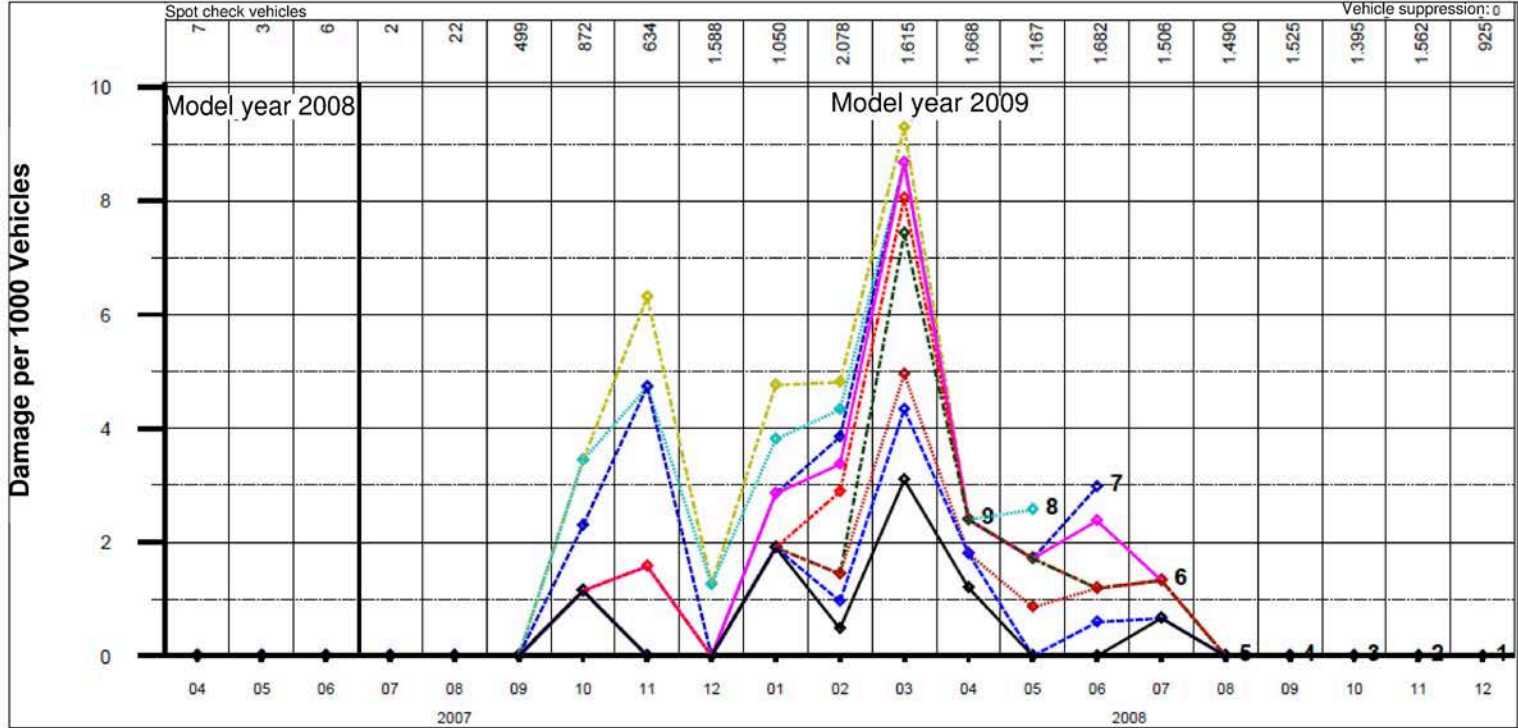
AUDI, Audi A4(B8), A5 Coupe*, market: [redacted]

Confidential

PR no. without PR numbers
 CNR [redacted]

MARKET
 MY 2008-2009, offset: all (max. 3)
 High-pressure fuel pump
 6 cylinder diesel 2.7l

MY	MIS 1	MIS 2	MIS 3	MIS 4	MIS 5	MIS 6	MIS 7	MIS 8	MIS 9	MY	Exchange	BD	SA 10	SA 18	SA 17	SA 50
2008	1,0	1,4	1,6	2,2	2,6	2,9	3,3	3,8	4,2	2008	96,6 %	51,7 %	77,6 %		10,3 %	8,6 %
2009	0,1	0,2	0,5	0,5	0,5	1,1	1,6	1,6		2009	100,0 %	25,0 %	62,5 %	25 %	12,5 %	
Diff%	-90,89	-85,39	-71,93	-78,95	-82,58	-63,37	-50,45	-57,55					MEC ERR	MINOR	MAJOR	LEAK



Vehicle: 14.913+17.907=32.820; Sold:14.726+15.961=30.707; Random sample:11.066+12.925=23.991 MY: 2008+2009=Total CP4 B8 2,7 Europa Grafik

Note: Large drop in failure numbers due to measures at Bosch.
 Lack of robustness with fuels outside the standard still present.



QUASI field information

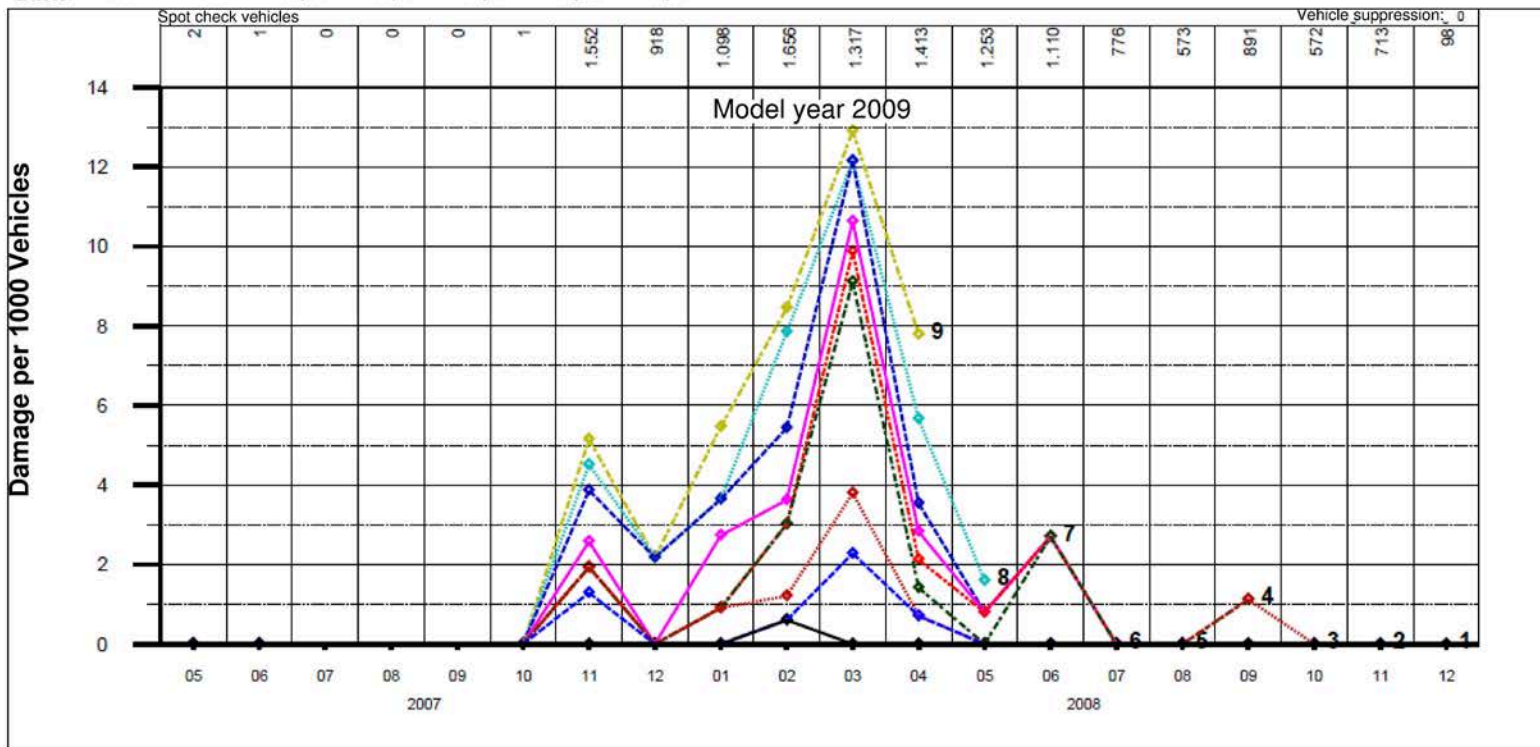
Status 04/09-16.05.09 04:08
User [redacted]

AUDI, Audi Q7, market: [redacted] MARKET
MY 2008-2009, offset: all (max. 3)
High-pressure fuel pump
CASA

Confidential

PR no. without PR numbers
CNR [redacted]

MY	MIS 1	MIS 2	MIS 3	MIS 4	MIS 5	MIS 6	MIS 7	MIS 8	MIS 9	MY	Exchange	BD	SA 10	SA 17	SA 18	SA 50	
2008	0,1	0,8	1,3	2,6	2,9	3,6	4,8	5,7	6,7	2008	97,6 %	61,4 %	67,5 %	14,5 %	3,6 %	12,0 %	
2009	0,0	0,0	0,2	1,1	1,1	1,1	1,1			2009	90,0 %	40,0 %	50 %	40 %	10 %		
Diff%	-100	-100	-82,31	-58,71	-63,47	-70,32	-77,91						MEC	ERR	MAJOR	MINOR	LEAK



Vehicle: 13.096+10.524=23.620 Sold: 12.894+9.308=22.202 Random sample: 8.950+5.919=14.869; MY: 2008+2009=Total

CP4 Q7 Europa Grafik

Note: Large drop in failure numbers due to measures at Bosch.
Lack of robustness with fuels outside the standard still present.



Problem: CP4 drivetrain damage particularly in some export markets and frequently with the V6-TDI.
Error cause unknown.

Hypothesis: Drivetrain damage due to a combination of stiff roller (production slip at Bosch) + country-specific peculiarities (fuel, transport, commissioning etc.).

Note: So far no failure worldwide after production day pump 05/07/2008 (use of straightedge testing).
Considerably declining failures inland (no influence of fuel - only production faults at Bosch)

Measures to analyze the fault (focus on the [REDACTED] market):

- Transport chain to the customer in [REDACTED] Non-responsive content removed
- Fuel analyses on failed pumps (incl. filter residue) – suspicious r.e. portion of biodiesel in Brazil
- Fuel analyses at fuel stations in [REDACTED] (4 refineries) relating to the map of failures
- Analysis of the failure situation EFP (no presupply -> pump damage?)
- Analysis of failure figures (comparison VW-Audi, vehicle plants, engine plants, pump plants, pump type etc.)
- Tests / endurance runs at Bosch with water content, kerosene content ([REDACTED]), air in the system (transparent pump)
- Influence of vibrations in the belt drive V6-TDI (min.- / max. voltage; shaft position; Md measurement etc.)
- Load spectrum rail pressure V6-TDI vs. R4-TDI
- Analysis of fuel quantities in pumps (found: rust, fuel aging, traces of chlorine? + Si oxide?)
- DISS- / QUASI FI comparisons etc.
- etc.



Further measures to reduce the production faults at Bosch:

1. Metal splashes

1.1. Prevention of metalization

Graphite / boron nitride covers for brackets in the C coating system

- Testing new system as of WK 36
- If test successful, planned introduction as of WK 42

1.2. Detection of metalization

- Feasibility study for objective measurement processes
- Decision about series launch WK 38

2. Avoid C coating spreading

- New washing / transport frameworks
- First 100 completed changeovers WK 40

3. Avoid “material fusing”

Test new brackets in C coating with spring centering for better contacting

- Sample, test, modify and if necessary manufacture again
- Objective: Series launch if testing positive in WK 48

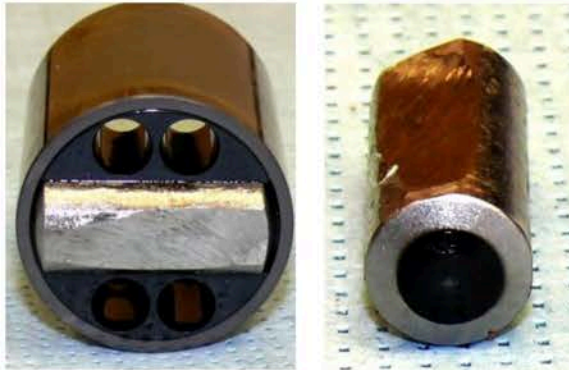
4. Structural change

- Change to the coating for on the roller end from C3 to C2 (testing W24 D4, VW package 3, BIN5 Mv10)
- Improve secure fit for the roller support / tappet bodies press assembly (Bosch testing up to WK 43)

EA189 2.0l CR Field Complaints**-High-Pressure Fuel Pump – U.S. Field Failures**

Problem: Drivetrain damage HPP

Causes: Increased friction between roller and roller support results in damage to cam, roller and roller support, as well as in turned tappets.



Measures: 100% straightedge test to detect irregularities

on the roller

Implementation: [04/07/08](#)

Optimization of C coating of roller support to

avoid coating spatters.

Implementation: [5/5/2008](#)



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Status: 10/16/2008 - 1



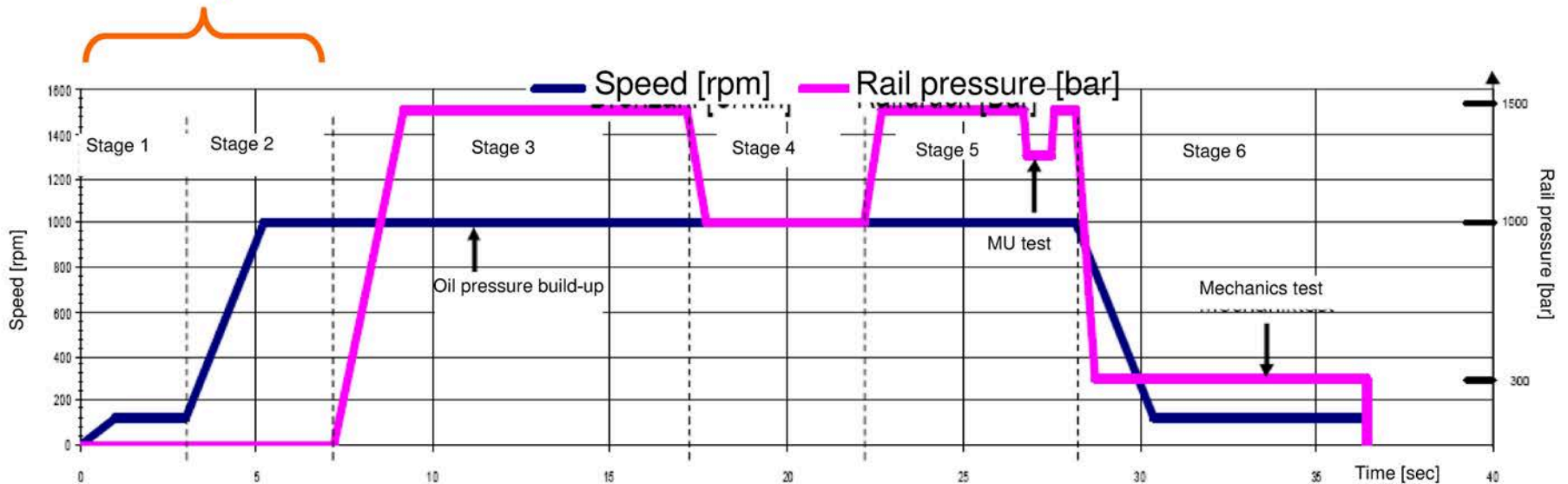
R4 CR TDI

High-pressure fuel pump seized, noisy

Detection of fault in the cold test curves

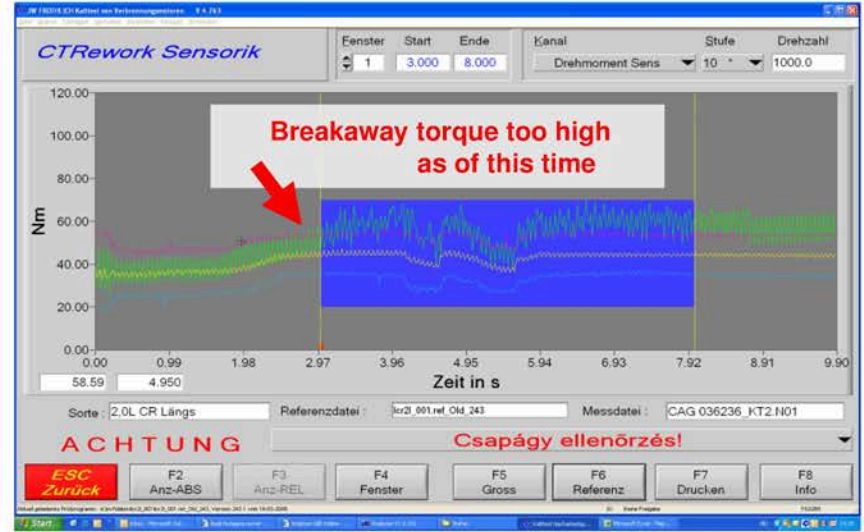
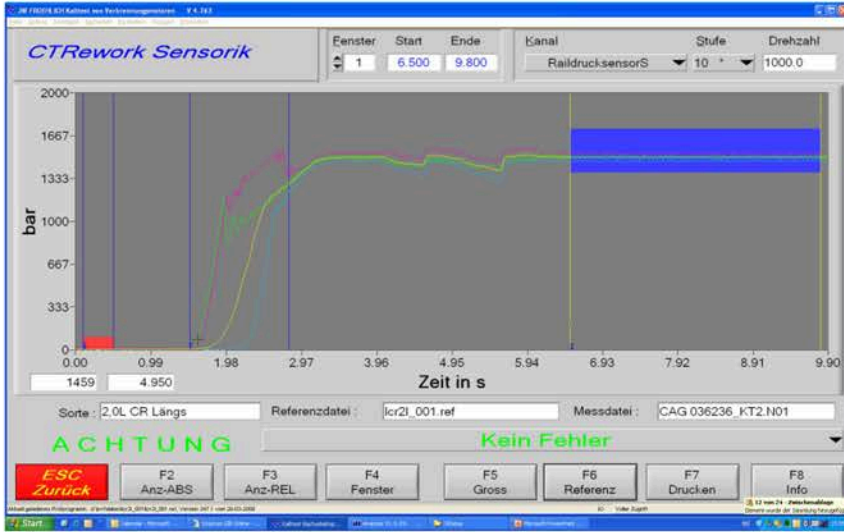
(e.g. on the engine Motor CAG 036236, but it manifests in the same manner in the other two failures)

No striking features

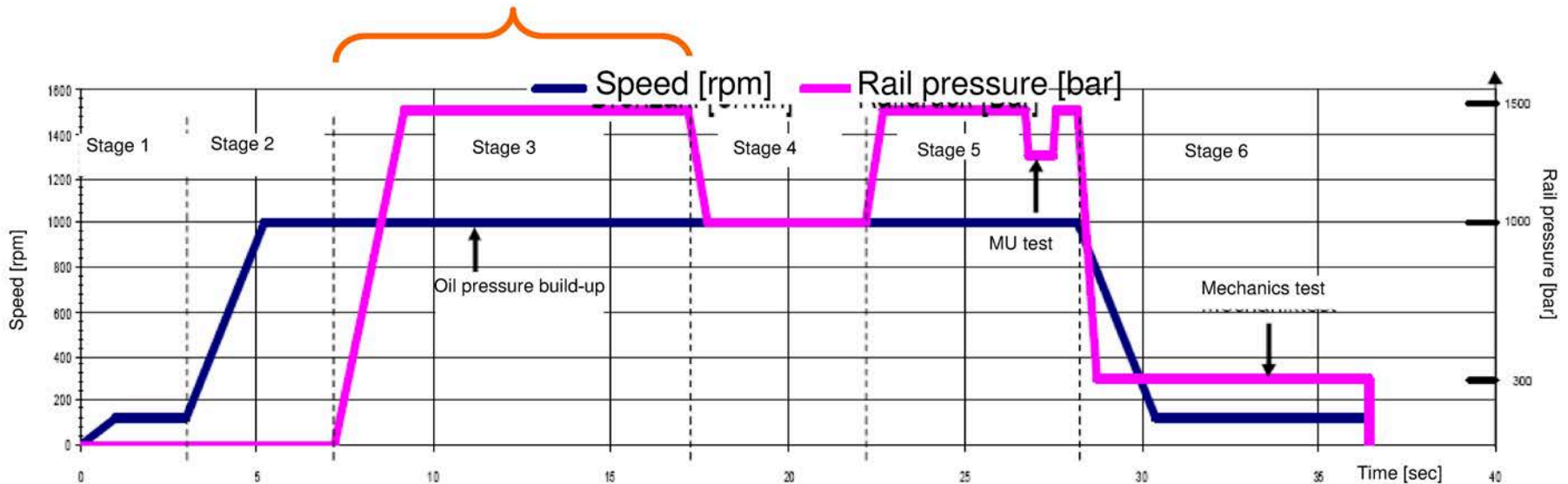


ACTUAL rail pressure

ACTUAL breakaway torque of the engine

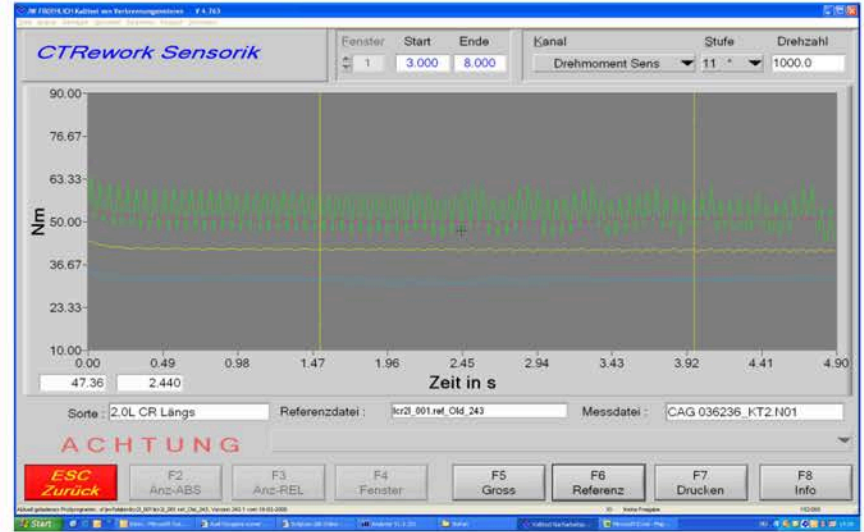
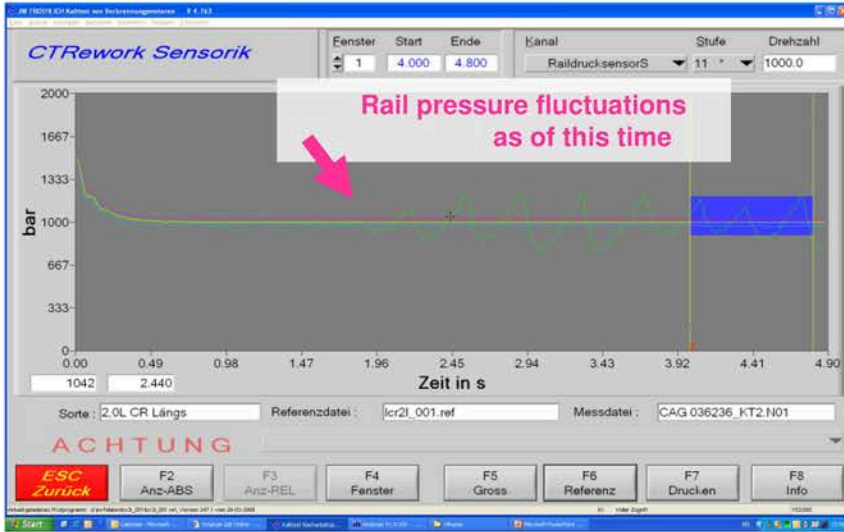


Rail pressure build-up and kept stable, but the torque curve has run up since approx. the second third to a level that is greater than the reference curves

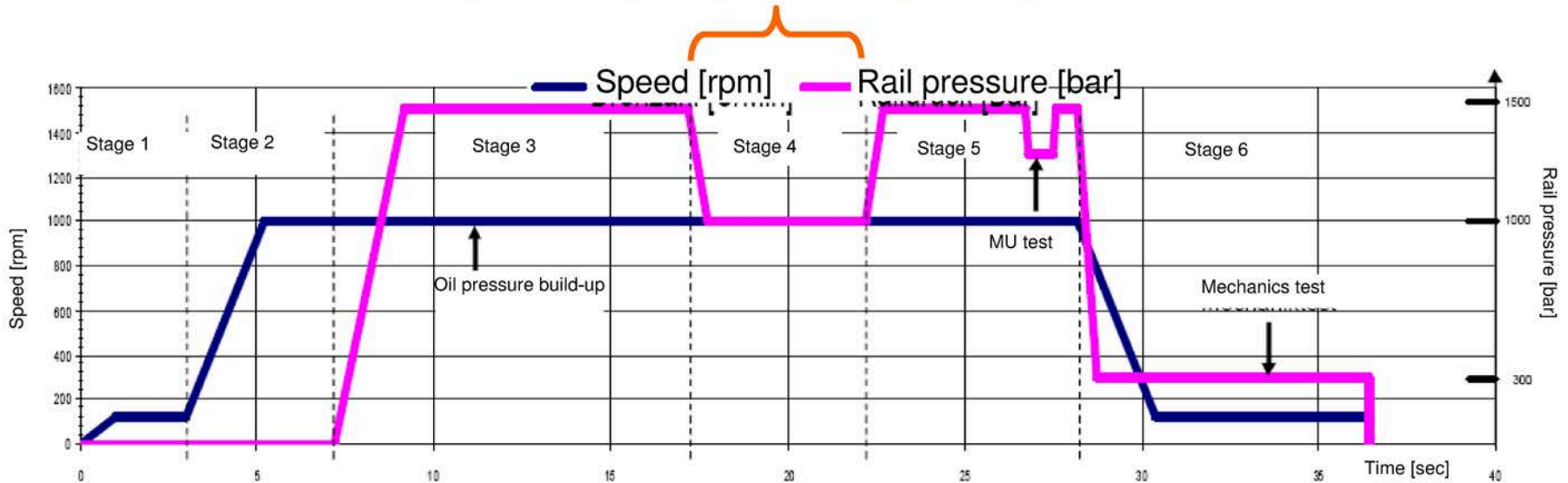


ACTUAL rail pressure

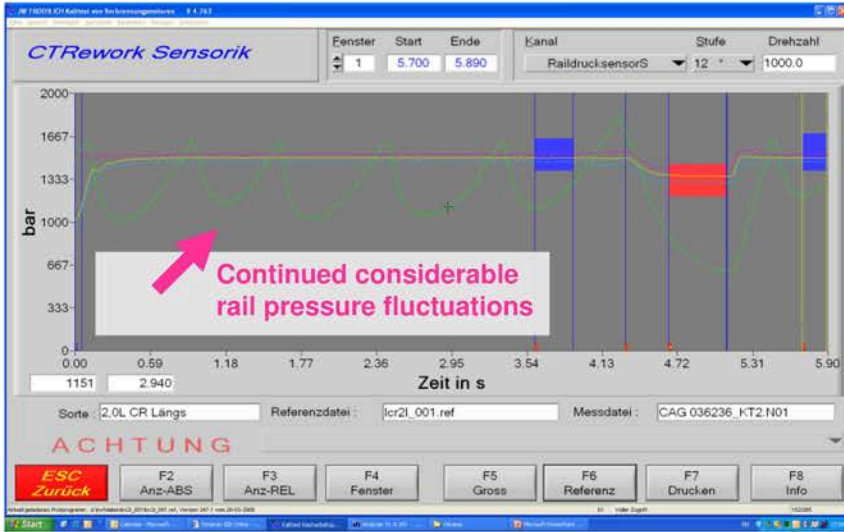
ACTUAL breakaway torque of the engine



Within a few minutes, considerable rail pressure fluctuations occurred, breakaway torque remaining too high



ACTUAL rail pressure



Rail pressure in the further phases of the testing were always unstable, engine not OK

