

WABCO TWIN CHAMBER AIR DRYER APPLICATION RECOMMENDATIONS

TECHNICAL BULLETIN

WABCO







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1 General Information

Symbols used in this document

DANGER

Description of an immediate situation which will result in irreversible injury or death if the warning is ignored.

WARNING

Description of a possible situation which may result in irreversible injury or death if the warning is ignored.

CAUTION

Description of a possible situation which may result in irreversible injury if the warning is ignored.

NOTICE

Description of a possible situation which may result in material damage if the warning is ignored.



Important information, notes and/or tips



Reference to information on the internet

1. Action step

- Action step
- ⇒ Consequence of an action

■ List

- List

Note on the use of a tool/WABCO tool

How to Obtain Additional Maintenance, Service and Product Information

If you have any questions about the material covered in this bulletin, or for information about the WABCO product line, please contact the WABCO Customer Care Center at 855-228-3203 or visit our website: wabco-na.com.

General Information

WABCO Academy



<https://www.wabco-academy.com/home/>

WABCO Online product catalog



<http://inform.wabco-auto.com/>

Your direct contact to WABCO

**WABCO North America
WABCO USA LLC
1220 Pacific Drive
Auburn Hills, MI 48326
Customer Care Center: (855) 228-3203
www.wabco-na.com**

2 Safety Information

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

WARNING

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

WARNING

When you work on an electrical system, the possibility of electrical shock exists, and sparks can ignite flammable substances. You must always disconnect the battery ground cable before you work on an electrical system to prevent serious personal injury and damage to components.

WARNING

Do not use battery chargers that exceed normal system voltage range. Serious personal injury and damage to components can result.

3 General Information

WABCO has identified certain application limitations related to the WABCO twin chamber air dryer (see WABCO Twin Chamber Air Dryer Part Numbers table for part numbers). We have received a small number of reports of product failures due to overheating or melting when these units are operated for extended periods in high-temperature environments [above 149°F (65°C)] or if they are subjected to overvoltage or load dump.

Because our records indicate that you have been supplied this product, we are writing to advise you so that you may take appropriate steps.

4 Description of the Issue

The timer element of the twin chamber air dryer (Figure 1) responsible for switching cyclically between the two cartridges may overheat and melt if the following specified operation conditions are exceeded:

- Thermal and voltage limitations:
 - Continuous thermal range of application: -40°F to +149°F (-40°C to +65°C)
 - In combination with 24V application (specified range 21.6V - 29.4V)
 - In combination with 12V application (specified range 10.8V - 14.7V)

Description of the Issue

- Load Dump Resistance:

- The device is NOT protected against overvoltage, voltage peaks and load dump (Test A and Test B acc. to ISO 16750-2:2012; §4.6.4)

Fig. 1



Twin Chamber Air Dryer with Indicated Timer Element

Under these out-of-specification operating conditions, a switching transistor of the integrated ECU can fail. This leads to insufficient air-drying performance, as the timer element would no longer be capable of switching between the two cartridges.

If the integrated ECU fails in "ON" mode, a permanent current through the solenoid of the timer module could overheat the integrated ECU and, in combination with high ambient temperatures, lead to a melting or burning of the timer element.

5 Recommendations

We recommend that you inform all customers who are using the twin chamber air dryers about the risk of operating these units outside the specified limits set forth above.

5.1 Thermal Limitations

When operating the twin chamber air dryer in hot regions or hot applications, WABCO recommends crosschecking the ambient temperature at the timer element. This can be accomplished by using an infra-red heat gun to measure the temperature of the solenoid after operating the vehicle in severe conditions. If the unit will be operating above the specified limit of +149°F (+65°C), WABCO recommends replacing the timer element after every 2 years in service.

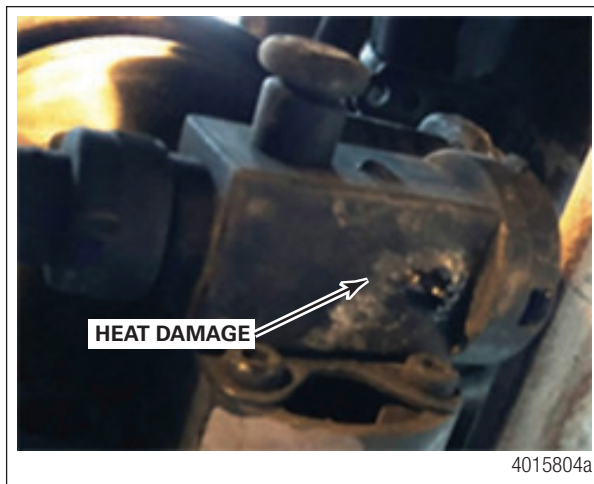
WABCO has proactively started development of a variant of the timer element which is able to run in above +149°F (+65°C) application. Implementation details will be provided soon.

5.2 Visual Inspection During Routine Maintenance

Periodically verify that system voltage is not higher than voltage listed in Section 5.1.

During routine preventive maintenance, visually inspect the solenoid for signs of heat damage. If damage is found (Figure 2), replace the solenoid using the appropriate replacement kit listed below. Measure the temperature per the instructions in Section 5.1. If the temperature exceeds allowable maximum, shield solenoid from heat sources and retest until an acceptable temperature is obtained.

Fig. 2



- Solenoid Replacement Kits
 - R955045 – 24V Kit
 - R955058 – 12V Kit

WABCO TWIN CHAMBER AIR DRYER PART NUMBERS

Part Number	Part Number	Part Number	Part Number
400 850 070 0	432 431 019 0	432 433 008 0	432 433 036 0
432 431 002 0	432 431 020 0	432 433 008 R	432 433 037 0
432 431 003 0	432 431 021 0	432 433 009 0	432 433 038 0
432 431 004 0	432 431 022 0	432 433 010 0	432 433 039 0
432 431 005 0	432 431 025 0	432 433 010 R	432 433 040 0
432 431 006 0	432 431 027 0	432 433 011 0	432 433 041 0
432 431 007 0	432 431 028 0	432 433 011 R	432 433 042 0
432 431 012 0	432 431 029 0	432 433 012 0	432 433 043 0
432 431 013 0	432 431 199 0	432 433 013 0	432 433 048 0
432 431 014 0	432 432 024 0	432 433 018 0	432 433 050 0
432 431 015 0	432 433 006 0	432 433 020 0	432 433 052 0
432 431 016 0	432 433 006 R	432 433 022 0	432 433 053 0
432 431 017 0	432 433 007 0	432 433 023 0	432 433 209 0

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About WABCO

WABCO (NYSE: WBC) is the leading global supplier of braking control systems and other advanced technologies that improve the safety, efficiency and connectivity of commercial vehicles. Originating from the Westinghouse Air Brake Company founded nearly 150 years ago, WABCO is powerfully “Mobilizing Vehicle Intelligence” to support the increasingly autonomous, connected and electric future of the commercial vehicle industry. WABCO continues to pioneer innovations to address key technology milestones in autonomous mobility and apply its extensive expertise to integrate the complex control and fail-safe systems required to efficiently and safely govern vehicle dynamics at every stage of a vehicle’s journey – on the highway, in the city and at the depot. Today, leading truck, bus and trailer brands worldwide rely on WABCO’s differentiating technologies. Powered by its vision for accident-free driving and greener transportation solutions, WABCO is also at the forefront of advanced fleet management systems and digital services that contribute to commercial fleet efficiency. In 2018, WABCO reported sales of over \$3.8 billion and has more than 16,000 employees in 40 countries. For more information, visit www.wabco-na.com.

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