DIAGNOSTIC TEST FOR HEAT-PUMP MODULE
OPTIFLOW A++B 7kg, 8kg and 9kg
OPTIFLOW A+++B 8kg
OPTIFLOW A+++/A BIT 8kg
OPTIFLOW A+/B 7kg and 8kg

DESCRIPTION:

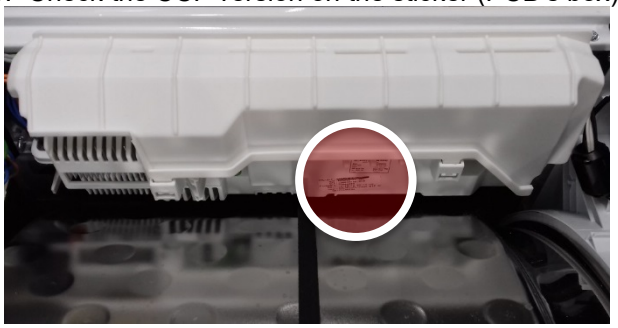
For Heat Pump Tumble Dryers when the Consumer is complaining about the drying results and / or drying time taking too long, the procedure to check the heat pump efficiency has to be carried out.

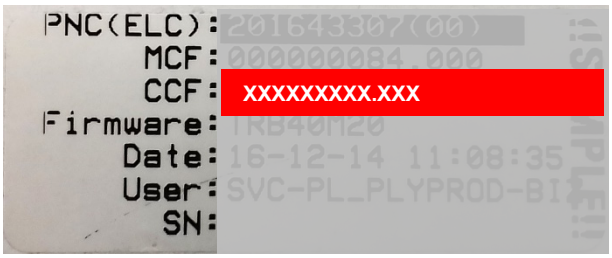
Information
"Diagnostic test for heat pump module"

- This test may be conducted only if the machine has not been used for at least 6 hours before the service visit. It means that the compressor was not in use during that period, otherwise the test might be disturbed and the result incorrect.

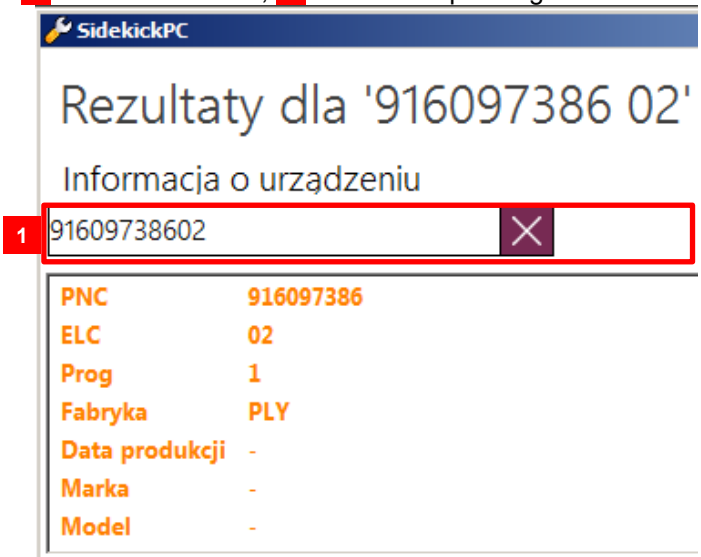
SOLUTION:

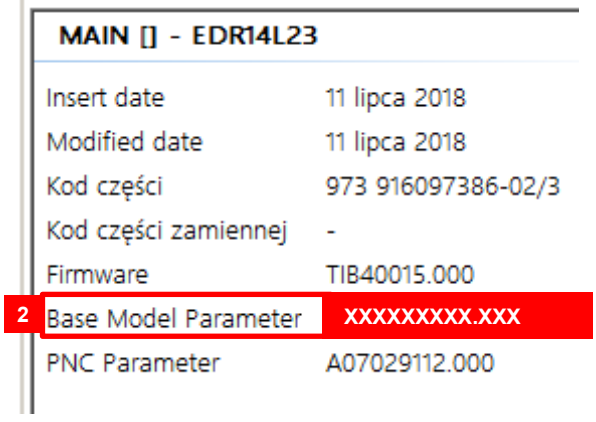
1. Check the CCF version on the sticker (PCB's box):





It is also possible to check the CCF version using SidekickPC, where **Base Model Parameter** means **CCF**
1 PNC/ELC search; 2 CCF corresponding to the searched PNC/ELC





The diagnostic test for Heat Pump module is available for the following CCF version or greater:

Table 1 Minimum CCF version required to perform diagnostic test for heat-pump module

CODE CCF VERSION	PROJECT NAME	EDR
136670820.030	HP OPTIFLOW 8kg	EDR12
136670860.016	HP OPTIFLOW 7kg	EDR12
136690235.024	HP OPTIFLOW A+/B 8kg	EDR14
136690283.011	HP OPTIFLOW A+/B 7kg	EDR14
136690363.019	HP OPTIFLOW DIAMOND A+/B 8kg	EDR14
136690373.012	HP OPTIFLOW DIAMOND A+/B 7kg	EDR14
136690240.019	HP OPTIFLOW A++/B 8kg	EDR16
136690261.040	HP OPTIFLOW A+++/B 8kg - Connectivity machine	EDR16
136690290.005	HP OPTIFLOW A++/B 7kg	EDR16
136690330.011	HP OPTIFLOW DIAMOND A++/B 8kg	EDR16
136690340.008	HP OPTIFLOW DIAMOND A++/B 7kg	EDR16
136690350.009	HP OPTIFLOW DIAMOND A+++/B 8kg	EDR16
136690380.007	HP OPTIFLOW A++/B 9kg	EDR16
136690391.018	HP OPTIFLOW DIAMOND A++/B 9kg	EDR16
136690401.021	HP OPTIFLOW A+++/A BIT 8kg	EDR16
136690420.001	HP OPTIFLOW A++/B 8kg - Gen2 Motor	EDR16
136690430.002	HP OPTIFLOW DIAMOND A++/B 8kg - Gen2 Motor	EDR16
136690460.001	HP OPTIFLOW A+++/B 8kg Gen2 - Connectivity machine	EDR16
136690470.000	HP OPTIFLOW DIAMOND A+++/B 8kg Gen2	EDR16
136690480.007	HP OPTIFLOW A+++/A BIT 8kg - Gen2 Motor	EDR16
136690490.000	HP OPTIFLOW A++/B 7kg - Gen2 Motor	EDR16
136690500.001	HP OPTIFLOW DIAMOND A++/B 7kg - Gen2 Motor	EDR16
136690710.001	HP OPTIFLOW A++/B 9kg - Gen2 Motor	EDR16
136690720.001	HP OPTIFLOW DIAMOND A++/B 9kg - Gen2 Motor	EDR16

A Step-by-Step guide to checking code CCF version required to perform HP test

Step 1. Compare the first 8 DIGITS from the appliance's code CCF version 12345678x.xxx with those listed in the table above

Example

The appliance has code CCF version **13667082**0.031 this means that the first 8 digits are: **13667082**
In the ***Table 1*** there is code CCF version: **13667082**0.030 that has exactly the same first 8 digits
Please see the summary table below

Table 2 Comparison of the first 8 DIGITS

CODE CCF VERSION	FROM	RESULT
136670820.031	*the appliance*	13667082 = 13667082 **SAME FIRST 8 DIGITS**
136670820.030	***Table 1***	

If the code CCF version from the appliance has the same first 8 digits as from ***Table 1*** go to *Step 2*, otherwise go to paragraph "*Possibility of CCF update*".

Step 2. Check the last 4 DIGITS from the appliance's CCF version xxxxxxxx1.234 with the one from *Step 1*

Example

The appliance has code CCF version 13667082**0.031** this means that the last 4 digits are: **0.031**
In the ***Table 1*** there is code CCF version: 13667082**0.030** that has the last 4 digits: **0.030**
We can observe that 0.031 > 0.030 is a greater value, which means that appliance, has a newer code CCF version and the HP test is available.

Please see the summary table below

Table 3 Comparison of the last 4 DIGITS

CODE CCF VERSION	FROM	RESULT
136670820.031	*the appliance*	0.031 > 0.030 **NEWER** CCF version **HP TEST AVAILABLE**
136670820.030	***Table 1***	

Example of all possible situations when comparing code CCF version with the same first 8 digits

Table 4 Appliance's code CCF Version compared to ***Table 1***

CCF	FROM	COMPARISON	RESULT
□□□□□□□□0.030	***Table 1***	-	-
□□□□□□□□0.009	*the appliance*	0.009 < 0.030 **0.000 ÷ 0.029 < 0.030**	**OLDER CCF** **NO HP TEST**
□□□□□□□□0.030	*the appliance*	0.030 = 0.030	**SAME CCF** **HP TEST AVAILABLE**
□□□□□□□□8.009	*the appliance*	8.009 > 0.030 **0.031 ÷ 9.999 > 0.030**	**NEWER CCF** **HP TEST AVAILABLE**

Possibility of CCF update

Information
"Software update"

- Update Sidekick database before performing any software update action in order to have the latest CCF version available
- Software update that enables Diagnostic Test for Heat-Pump basement is possible only for PNC/ELCs listed in the attached ***Table 5***

There might be a possibility to perform the test for appliances where the required CCF version is not present in the ***Table 1***.
Check if the PNC/ELC of the appliance is present in the attached "**List of PNC/ELC for update**" (***Table 5***). Based on the outcome follow the instructions below:

- **YES** - Update Sidekick and carry out the software update (diagnostic test for heat-pump module will be available in the appliance), then proceed to ***DIAGNOSTIC TEST FOR HEAT-PUMP MODULE PROCEDURE***.
- **NO** - do the test according to old local methods if available

Example

Table 5 List of PNC/ELC

PNC/ELC	CCF
91609763700	136670860.016

The ***Table 5*** in attachment consists of PNC/ELC, which can be updated in order to have HP test. When the update is performed the appliance will get the new CCF with HP test functionality. Minimal required version that will be installed is shown in the table. However, the appliance might get a newer CCF version than shown in a column. This is normal procedure and it will also have HP test available.

Information
"Longer Time To End (**TTE**)"

- When the CCF update is done on EDR12 boards, it might happen that the **TTE** is longer. This is the normal dryer behaviour driven by a new algorithm.
- For more information please see the Service Buletin No. 599821111

DIAGNOSTIC TEST FOR HEAT-PUMP MODULE PROCEDURE

Routine appliance check

Before starting the procedure, perform a routine appliance check in order to make sure that problems not related to the heat pump module itself do not exist or are fixed. This may include activities like checking if there is a fluff clogged in the basement, pump functioning, drum rotation and other available in the diagnose mode.

Information
"Routine appliance check"

- During the inspection refrain from starting / using the compressor. If the compressor has worked, the following procedure will fail to diagnose problems concerning the refrigerant charge level.
- Do not run the C06 test from Diagnostic Mode

Capacitor check

Information
"Capacitor check"

- Before starting the procedure check the capacity of the compressor's capacitor.

It should be within a tolerance provided on the capacitor's rating plate.

- If the capacitor's capacity is out to the tolerance, then replace it with a new one.

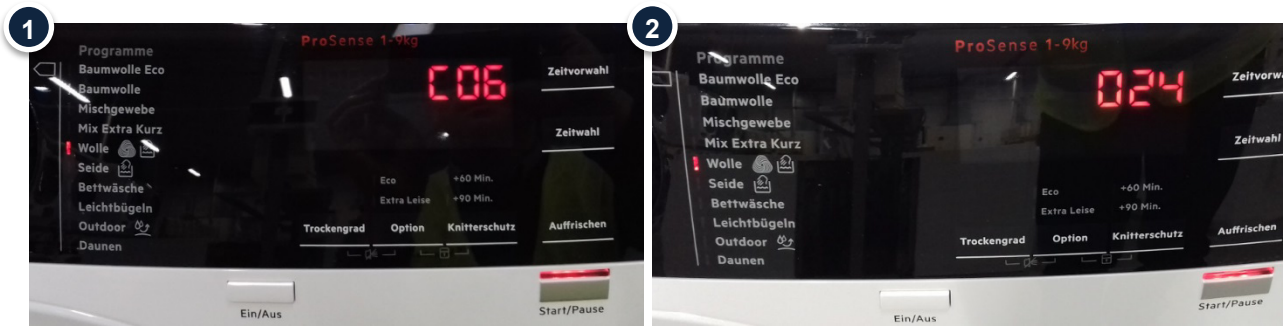
Information
"Diagnostic test for heat pump module requirements"

- Make sure that the applinace meets the necessary conditions:
  - the dryer is in equilibrium with the ambient temperature
    i.e during past 6 hours drying cycles were not performed
  - the drum is empty
  - the filter and the area in front of the air dehumidifier is clean
    if there is any fluff, carefully remove it from the components and clear the area
  - the door is closed

1. Make sure that the **door is closed**

2. **Switch ON** the machine and then **switch OFF** the machine.

3. **Switch ON** the machine, **enter the Diagnostic Mode and go directly to position C06**.
   The "Diagnostic Test for Heat-Pump Basement" starts automatically.



1 The Diagnostic Test for Heat-Pump basement is selected in the Service Mode, position C06
2 The test is being performed and the User Interface shows the temperature in °C. At the beginning of the test it should be similar to the ambient temperature in the room where the appliance is installed

4. Wait until the test is completed and read the appliance's feedback.
   The Heat Pump test takes about 19min and later on once it is finished the following feedback on the screen is visible.

Table 6 Heat pump test results

	The circuit is full	The circuit is empty
	Digits are shown	**ED5** alarm code is shown
User Interface	User Interface shows digits (not Ed5)	

QES CODE:

During the intervention please use work codes:

Table 7 QES work codes

Component	G45 451 Compressor
Defect	G45 12 Leak inaccessible

In the section for Tech. Comments, depending of the test result start the description with the following:

- HPC06 / ED5 appeared, efficiency of HP unit NOK
- HPC06 / no alarm at the end of the test

After that, please describe the problem and solution.

MODELS INVOLVED:

Tumble Dryer based on the platforms:

- **OPTIFLOW A++B 7kg, 8kg and 9kg**
- **OPTIFLOW A+++B 8kg**
- **OPTIFLOW A+++/A BIT 8kg**
- **OPTIFLOW A+/B 7kg and 8kg**

REVISION:

Revision	Date	Description	Author	Approved by - on
00	10/2017	Document Creation	Marcin Pluta	Marek Kapustka Alessandro Vian 03.11.2017
01	12/2017	Added CCF codes for EDR12 and EDR16	Marcin Pluta	Marek Kapustka Alessandro Vian 21.12.2017
02	03/2018	Added CCF codes for EDR12 and EDR16; Changed QES technical comment	Marcin Pluta	Marek Kapustka 26.03.2018
03	10/2018	Added information about software update; Added information about CCF version checking; Changed QES code and technical comment; Added Optiflow A++B 9kg Added Optiflow A+++B 8kg Added Optiflow A+++/A BIT 8kg Added PNC/ELC list as attachment	Marcin Pluta	Marek Kapustka 12.12.2018
04	03/2019	Added Optiflow A+/B 7kg Added Optiflow A+/B 8kg	Marcin Pluta	Marek Kapustka 28.03.2019
05	06/2019	Added Capacitor check	Marcin Pluta	Marek Kapustka 06.05.2019

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