Updated November 23, 2012

# Heaters compatibility with high altitude kits

| | | 22.1000.33.2200 High Altitude Sensor | 20.2900.70.0007 High Altitude Compensator | 24.0222.00.0000 High Altitude Pump Kit |
|---|---|---|---|---|
| Airtronic D2 12V&24V | H-Kit | Recommended | Not Recommended | Yes |
| | Non H-Kit | No | Yes | |
| Airtronic D4 | H-Kit | Recommended | Not Recommended | Yes |
| | Non H-Kit | No | Yes | |
| Airtronic B4 | H-Kit | Recommended | Not Recommended | No |
| | Non H-Kit | No | Yes | |
| Airtronic 5 | H-Kit | Recommended | Not Recommended | No |
| | Non H-Kit | No | Yes | |
| Hydronic 5 12V | H-Kit | Recommended | No | No |
| | Non H-Kit | No | Yes | |
| Hydronic 5 24V | | No | Yes | No |
| Hydronic II-5E | H-Kit | Recommended | No | No |
| Hydronic 10/M | | No | Yes | No |
| Hydronic MII-8 | | No | Yes* | No |
| Hydronic MII-10 | | Nothing Required/Automatic Adjustment | | |
| Hydronic MII-12 | | | | |
| Hydronic L | | No | | |

* - Requires additional resistor to operate. Refer to compensator manual for instructions.

# H-kit heaters

Starting from the season of 2008/2009, ESPAR offers heaters of Airtronic family, equipped with a new control unit.

**2009 generation of control units for heaters Airtronic/Airtronic M/Airtronic L include the following innovations:**

► Least heating power level is **900 watt** !

The least power level for the operation have been reduced to 900 watts at Airtronic D4 heaters.

Effect: **- low operating noise**
**- low current consumption**

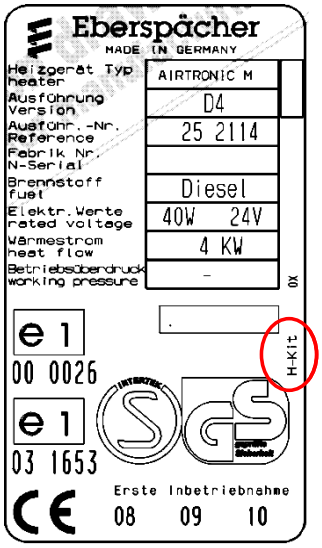
Note: the least power level of the Airtronic D2 is 850 watt. Those of the Airtronic B4, 1300 watt

► **Automatic adjustment to the altitude with an optional height kit.**

All heaters with the new control unit are prepared for operation in higher regions > 1400 metres (4600'). ~~With~~ the optional height kit an operation of the heater in regions up from 1400m (4600') until 3000m (9850') are possible. After starting the heater the height sensor which is enclosed with the kit measures the atmospheric pressure and communicate it to the control unit. The control unit adjusts then the frequency of the metering pump. Because of this the heating power in height operation will be reduced by approx. 9% per 1000 m (3280'). In regions below 1400m (4600') the heater works in normal operation with the full heating power.
Example: at the Airtronic D4 (4000 watt max. heating power) the heating power will be reduced by 360 watt per 1000 metres above 1400 meters.

***Order data height kit:* 22 1000 33 22 00** The height kit should be considered for every Airtronic heater frequently used at elevations above 1400 meters (4600') for extended period of time.

**Compatibility**:




If you intend an upgrade of an existing heater installation with the height kit, please check at first if the control unit of the heater is prepared for an height operation. There are 3 possibilities to do that:

**1.** At the right side of the type plate of the heater you will find the information **H-Kit.** If this information is placed, the heater is prepared for the automatic adjustment to the altitude.

This would only be for sure if the heater had its original ECU / Control Unit in it. Also, this does not apply to the Heater Models that come with TriPacs. Model Numbers 25 2440 05 and 25 2441 05 must be checked via the below method by looking at the ECU / Control Unit itself.

**2.** On the package of the heater (box) is a label on which the order no. of the heater is placed. The last two digits of this number (e.g. 0N) informs about the status (revision) of the heater. In the table of the next page you will find the information up from which heater status a compatibility with the height kit is given.

*Pict.: Label on heater ECU – Information about the heater status*


*Table: Compatibility of heater versions with the height kit up from status:*

| Type: | Heater no: | up from status: |
|---|---|---|
| D2 12V | 25.2069.05.0000 | **.0P** |
| D2 24V | 25.2070.05.0000 | **.0O** |
| B4 12V | 20.1812.05.0000 | **.0D** |
| D4 12V | 25.2113.05.0000 | **.0P** |
| D4 24V | 25.2114.05.0000 | **.0O** |
| B5 12V | 20.1859.05.0000 | **.0F** |
| D5 12V | 25.2361.05.0000 | **.0G** |
| D5 24V | 25.2362.05.0000 | **.0G** |

**3. If ECU on a heater was replaced after repair or upgrade and on some OEM (i.e. TriPac heaters) it may be necessary to check compatibility of the currently installed ECU.**

Please use the ID method below to guarantee that the ECU is compatible with the new High Altitude Sensor (the height kit) with Espar Part Number 22 1000 33 2200. Please Refer to white label on the Control Unit after Removing the Heater Cover.

If the bottom white Label on the ECU has the “0C”, “0D” or a later status (revision) code at the end of the 14 digit number it is the new style ECU and is compatible with the sensor.  This method of ID will work for all Airtronic Heaters with TriPac or in the aftermarket under model numbers D2 Airtronic 25 2069 05 and D4 Airtronic 25 2113 05. This will guarantee it is compatible.


## High Altitude options for Airtronic heaters of previous generations

1. Airtronic D2, D4 and D5 heaters of previous generations may be equipped with the high altitude kit part # 20 2900 70 00 07, which includes High Altitude Compensator module. This module automatically adjusts fuel quantity providing by existing pump for altitudes of up to 3000 meters (9840’).

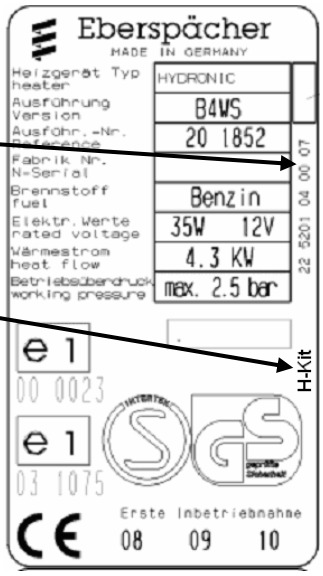
2. As an alternative Airtronic D2 and D4 heaters of any generation may be equipped with the high altitude pump kit p/n 24 0222 00 00 00. This kit contains extra pump used on high altitudes, manual switch and necessary wiring/piping parts. Can be used on altitudes of up to 3000 meters (9840’).

3. Heater can be upgraded to High Altitude version by replacing ECU with the current version accordingly to heater’s model. Current versions of ECUs are fully backward compatible. Then the height kit **22 1000 33 22 00** can be used.

## New control unit for water heaters Hydronic

Starting from the season of 2008/2009, ESPAR offers heaters of Hydronic 4/5 family, equipped with a new control unit. The control units now have new part numbers. The spare parts list will be updated also.

**A: Identification of heateres with new control unit**:
Below are some possibilities to find out whether a Hydronic - heater is equipped with a new control unit:




**1.** At the right side of the type plate of the heater the **number of the control unit** is placed (e.g. *22 5201 04 00 07).* Is that number equal to the order no. of the control unit in the table at the next page (column: ***Order-No. control unit***) the heater is equipped with a new control unit.

Note: to make the identification easier, up from end of October 2008 the type plates of heaters with a new control unit will have the note "**H-Kit**" at the right side of the plate.

**2.** On the package of the heater there is a label with the drawing number on it. The last two digits of this number (**e.g. 0F**) defines the status (revision) of the heater. In the table of the backside you can look up from which heater-status the new control units are integrated.

*Pic.: Label at heater package – drawing no. with status*


*Table: new control units with current heater-status:*

| ***Heater type*** | ***Part Number*** | ***up from revision:*** | ***Order no. control unit*** |
|---|---|---|---|
| Hydronic B5 S - 12V | 20 1819 05 00 00 | .0G | 22 5201 04 00 01 |
| Hydronic D5 S -12V | 25 2217 05 00 00 | .0E | 22 5201 04 00 11 |
| Hydronic B4 SC - 12V | 20 1824 05 00 00 | .0G | 22 5201 04 00 07 |
| Hydronic D4 SC - 12V | 25 2257 05 00 00 | .0E | 22 5201 04 00 06 |
| Hydronic B5 SC - 12V | 20 1820 05 00 00 | .0F | 22 5201 04 00 01 |
| Hydronic D5 SC - 12V | 25 2219 05 00 00 | .0E | 22 5201 04 00 11 |

**B: The update of the control unit software essentially causes the following innovation:**

**Automatic adjustment to the altitude with optional height kit:**
Similar to the Airtonic the heaters with the new control unit are prepared for operation in higher regions (> 1400 metres). With the optional height kit operation of the heater in regions up from 1400 until 3000 metres are possible. After starting the heater the height sensor which is enclosed with the kit measures the atmospheric pressure and communicates it to the control unit. The control unit adjusts the frequency of the metering pump. Because of this the heating power in height operation will be reduced by approx. 9% per 1000 metres. In regions below 1400 metres the heater works in normal operation with the full heating power.

Example: at the Hydronic D5WSC (5000 watt max. heating power) the heating power will be reduced by 450 watt per 1000 metres.

*High Altitude sensor:*
*Part number*

| |
|---|
| 22 1000 33 22 00 |

**Note in case of spare parts:** it is possible to use previous control units with heaters that have been delivered with a new control unit (if you still have some stock of it). However, you should inform your customer then that the “old” control units do not have “automatic adjustment to the altitude” function.

## High Altitude options for Hydronic 4/5 heaters of previous generations and for 24 Volt models

1. Hydronic 4 and 5 heaters of previous generations may be equipped with the high altitude kit part # 20 2900 70 00 07, which includes High Altitude Compensator module. This module automatically adjusts fuel quantity providing by existing pump for altitudes of up to 3000 meters (9840’).

2. 12 Volt heaters can be upgraded to High Altitude version by replacing ECU with the current versi accordingly to heater’s model. Current versions of ECUs are fully backward compatible. Then the height kit **22 1000 33 22 00** can be used.