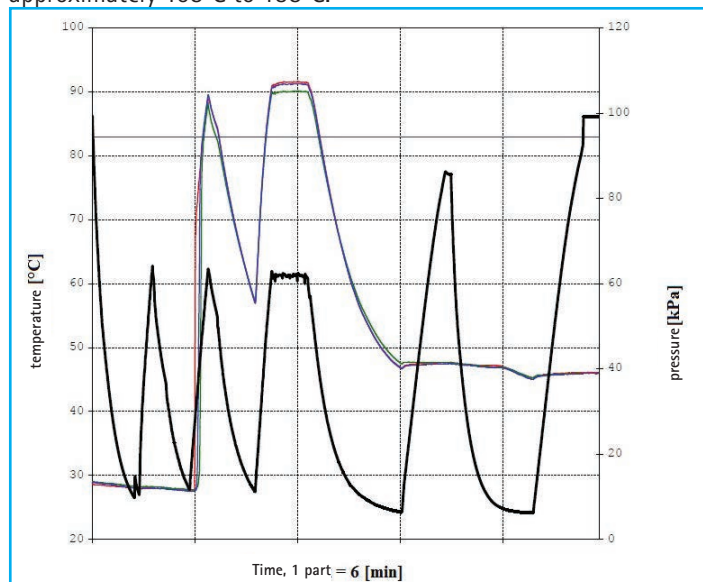


STERIVAP HP – Low-temperature Programs, Decontamination Programs with FBA

Due to repeated questions regarding this topic, we will engage in two already used options of the SPHP line sterilizers.

Low-temperature programs 75°C-105°C

The sterilization and disinfection programs used as a standard usually reach the exposition temperature within the range from approximately 105°C to 135°C.



We also use a special low-temperature program of the type "ARNOLD" with approximate temperature of 100°C. The program

uses steaming with open waste valve and so it cannot be considered an adequately controlled program.

The low-temperature adequately controlled programs around 100°C face specific problems. These include e.g. physically conditioned absence of overpressure needed for de-aeration and removal of concentrate from the chamber and shell.

It is advisable to acknowledge that programs with low exposition temperature below 100°C operate with pressure in the chamber which is below atmospheric pressure.

That is why firmware and low-temperature programs with temperature range 75°C-105°C with adequate control have been prepared for the STERIVAP HP line, using the advantages of twin-shell layout of SPHP.

The heating shell I is practically switched off with the programs and only shell II

is used for controlled sterilization steam filling into the chamber. Condensate removal from the changer is arranged by a permanently running vacuum pump, due to very low operation pressure (underpressure) in the course of exposition and some other operation phases of low-temperature programs. Due to parasite heating effect of steam, pressure air must be used for groove sealing at the lowest temperatures. For programs with exposition temperature below approximately 100°C it is necessary – during operation, with fully heated sterilizer, before proper program start – to wait with the selected low-temperature program to chamber cooling to the temperature below 100°C.

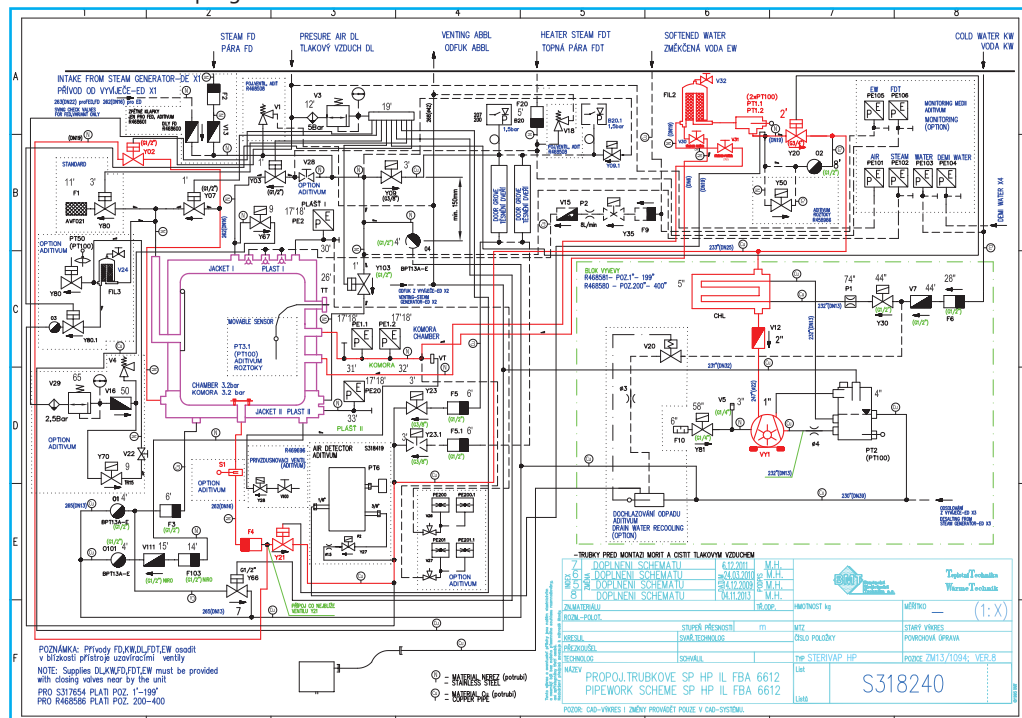
Just for illustration, there is presented a sample recording of pressure and temperature sensed inside the large-volume tea package. It is worth to notice the temperature at the second evacuation when the steam gets even to the centre of the package.

Decontamination with FBA

Devices in this version are equipped with sterilizable bacteriological filter at the chamber outlet and a relevant program preventing from leakage of contaminated (infectious) waste. The fraction de-aeration of chamber before the sterilization exposition is performed via the bacteriological filter (double in some versions). The condensate remains in the device. The condensate is safely sterilized and then drained off.

Brief function description from the point of view of tube connection scheme 010458541(S318240).

The sterilization chamber is pre-heated using shell I. The steam pressure in shell I is controlled by pressure sensor PE2. With bacteriological filter function (FBA) activated, the air is sucked in the de-aeration phase off the sterilization chamber via the valve V31, bacteriological filter FIL2, temperature sensors PT1.1, PT1.2, valve Y20, cooler CHL, reverse valve V12 and vacuum pump VY1. Condensate from the filter FIL2 is taken through the valve V30 back



to the sterilization chamber. Reaching the sterilization condition in filter FIL2 is controlled by temperature sensors PT1.1, PT1.2 located behind the filter FIL2. The waste route from the lower section of the sterilization chamber via the condensate sensor S1, filter F4, valve Y21 is closed. For the time of preparatory stages and sterilization exposition, the condensate remains in the sterilizer chamber and it is sterilized together with the sterilization chamber. Steam is filled into the chamber via the valve Y103, shell II, valve Y07. Pressure in the shell II is controlled by the pressure sensor PE20. In the course of the heating and sterilization exposition stages, steam is filled into the chamber via the valve Y02, filter F4, condensate sensor S1, so as to fully guarantee the sterilization conditions even for the condensate sterilization. It is possible to say that the filled steam literally "bubbles" through the accumulated condensate. In this case, the chamber entry is protected with a cover. The sterilization temperature is sensed by temperature sensors PT1.1, PT1.2 in the point with the lowest temperature, behind the bacteriological filter FIL2. Before start of sterilization exposition, there is usually checked the corresponding pressure (by pressure sensors PE1.1, PE1.2) and temperature by temperature sensors PT1.1, PT1.2) in the sterilization chamber. After sterilization exposition, the sterile condensate is released from the chamber on controlled basis via the condensate sensor S1 (option), filter F4, valve Y21, cooler CHL, reverse valve V12 and vacuum pump VY1.

The sterilization cycle is fully controlled and checked by the device automatics. In the sterilizer menu it is possible to activate / deactivate the mode with the bacteriological filter (FBA) for individual sterilization programs. It is favourable to use the activated FBA only for programs where the function is required. The bacteriological filter activation (FBA) is indicated at relevant sterilization program on the screen of the sterilizer and at the device printer printout.

The servicing of FBA activation / deactivation function is described in instruction for use of the SPHP IL sterilizer.

Electromagnetic Valve of Steam Generator

A hard-to-detect fault of electromagnetic valves may appear at steam generators. These are the valves by Danfoss used at the generator entry and mainly at the generator outlet – steam injection to the chamber. It is marked as pos. 67 and 68 in service instructions for Climacell and as pos. F at Climacell EVO. The fault may prove by the following error messages announcement: B2V error 25, EVO–error 28 – no water filling to generator. If the device is re-started and the program starts again, Climacell may work for several hours or days without any fault again. Even generator tests do not have to reveal the fault. Even our designers spent some time to find the cause. In some cases, the Danfoss valves used do not resist the temperature loads according to their technical sheets and they stop to work reliably just at lower heating. Unfortunately, the most serious problem from the point of view of service and cause finding is based on the fact that after cooling-down, the valves start to work again for some time. From the point of view of our devices reliability, we test new valves from another supplier and we are planning their use in production in the nearest future. But the change will require also a small construction adjustment of generators. In the course of replacement it is necessary to return the used screens and seals to the original location and not to change the size of screens. It is also necessary to pay attention to use of ideally demi water without any impurities and admixtures.

News in the Field of Temperature Equipment Packaging

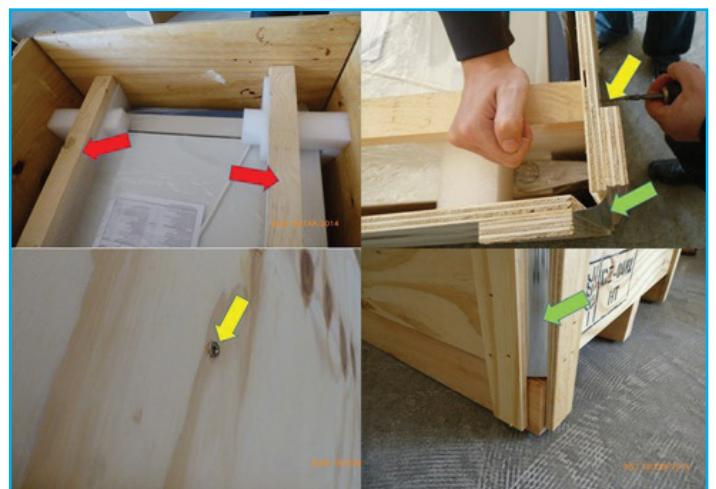
– due to frequent damage of TT devices in the course of transport to remote destinations we decided to use more resistant packages. They are introduced gradually, that is why TT devices will be supplied partially in new packages and partially in old packages for some time.



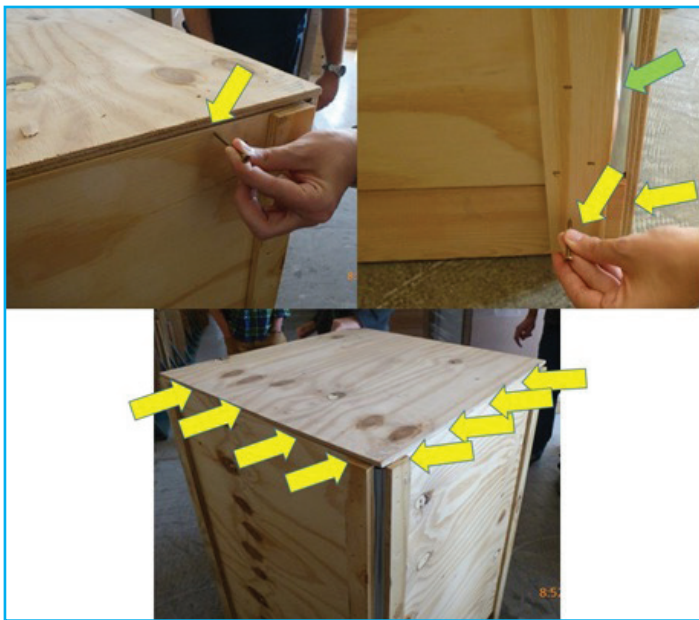
From the client's and dealer's point of view, the new package is much more resistant, it protects the devices from all the sides in a better way, it is more resistant to weather conditions and it can be re-used, e.g. for transport to the client after device testing at the dealer.

■ Important notification for the first meeting with the new package.

The device unpacking must be performed by gradual unscrewing of all the cross-head screws. For small cases, there is used a package with special vertical edges from steel sheet (green arrow on the figure below). For large devices, there is used a package screwed even along the vertical edges. It is always placed on a palette. So the unpacking must start with box cover dismantling – the screws are located horizontally along the cover circumference. The screws are marked with yellow arrows in the figures. In some cases, the TT device is fixed with additional balks or boards inside the box – red arrows. In such cases it is necessary to unscrew the screws placed on side walls of the box. In the lower part of the box, there are some screws passing through to the palette (in case of a small box 2 pieces in each corner, in case of a large box for large devices again along the circumference of the palette).



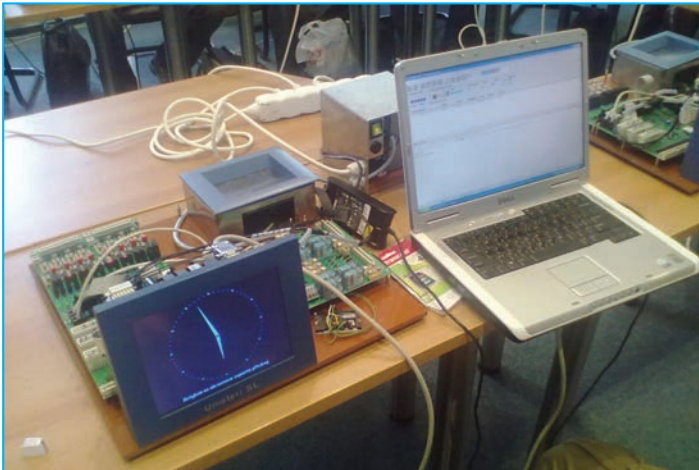
After removal of balks (if any) and all the screws it is possible to move the outer walls upside in case of small devices. In case of large devices, the package is dismantled to individual side walls that are removed. The device is moved from the palette in the same way as before.



We hope that there will be positive reactions to new packages and we expect significant reduction of TT devices damages during transport. We would be glad to receive any comments regarding the new packages at igor.oplatek@bmt.cz. By this step, we would like to support higher satisfaction of clients and hopefully also reduce the number of claims and problems related to supplies of products of the MMM Group.

Terms of Service Training for BMT Medical Technology s.r.o. Products for Daughter Companies in 2015

Due to time reserve needed for visa obtaining and for in-time planning of events program, we herewith announce terms of service training for the BMT Medical Technology s.r.o. products for daughter companies in 2015. The training will always be held for



the whole week. The Monday and Tuesday program will include temperature engineering and laboratory incubators. Wednesday to Friday program will aim at large-volume steam sterilization, i.e. Unisteri HP/SL and Sterivap HP/Selectomat SL. Based on sufficient number of interested participants there will also be held a training for washers – always on Monday and Tuesday of the second training week. Based on agreement with merchants, even BMT partners may register. Their training is subject to a fee. It is necessary to register



for the training by 15th day of the month preceding the month of the training. The training will be held in English or in Russian. The obligatory equipment of a service technician for the training includes IT equipment used for his work in the field, notebook with software and other accessories for PC connection to the device.

- **9.-13. 2. 2015 + washers 16.-17. 2. 2015 (RUS)** (term of registration by 15. 1. 2015)
- **8.-12. 6. 2015 + washers 15.-16. 6. 2015 (EN)** (term of registration by 15. 5. 2015)
- **17.-21. 8. 2015 + washers 24.-25. 8. 2015 (RUS)** (term of registration by 15. 7. 2015)
- **9.-13. 11. 2015 (EN)** (term of registration by 15. 10. 2015)