



Operating manual - Low-loss headers

SHE nieocieplone		1" do 40kW	5/4" do 70kW	6/4" do 100kW	2" do 115kW	2" do 156kW	2,5" do 225kW	3" do 420kW	4" do 435kW	4" do 700kW	5" do 750kW
SHE-OC ocieplone	1" do 28kW	1" do 40kW	5/4" do 70kW	6/4" do 100kW	2" do 115kW	2" do 156kW	2,5" do 225kW	3" do 420kW	4" do 435kW	4" do 700kW	5" do 750kW
SHE-CD z magnešem		1" do 55kW	5/4" do 90kW	6/4" do 135kW	2" do 150kW	2" do 210kW	2,5" do 300kW	3" do 560kW			
SHE-SM z magnešem		1" do 40kW	5/4" do 70kW	6/4" do 100kW	2" do 115kW	2" do 156kW					
SHE-CDI nierdzewne		1" do 55kW	5/4" do 65kW								

Operating and installation manual

APPLICATION

Low-loss header (hydraulic balancer) separates boiler cycle from the heating cycle. LLHs are usually applied in medium or high power rating heating systems (practically, from 25 kW upwards), comprised of one or more boilers, particularly those comprised of several heating cycles (e.g. floor heating cycle + radiator heating cycle + hot utility water heating cycle). Application of a hydraulic unit in these types of cycles eliminates the necessity to balance pump flows – hydraulic balancer enables independent operation of individual cycles and uninterrupted pump performance (no pump interference). Another important feature of hydraulic balancers is their desilting and venting capability. LLH also protects the boiler against excessively low temperature of the return water (low temperature corrosion).

OPERATION

Low-loss header separates boiler cycle from the heating cycle. Three basic coupling operating principles may be distinguished:

- ✓ Heat demand of the heating system is equal to the amount of heat the boiler produces. In this situation, the amount of heating medium generated by the boiler is equal to the amount collected by the heating cycle.
- ✓ Heat demand of the heating system is lower than the amount of heat produced by the boiler (thermostatic valves on the radiators are "half closed"). In this situation, part of the heating medium is returned through the hydraulic balancer directly to the boiler, which signals the boiler automatic control system to reduce boiler power or switch the boiler off.
- ✓ Heat demand of the heating system is higher than the amount of heat produced by the boiler. In this situation, heating system pumps force part of the heating medium flow through the coupling, which signals the boiler automatic control system to increase boiler power.

Hydraulic balancer operation is fully automatic and requires no adjustments. The boiler is started up with a closed heating cycle, which protects the boiler against excessive low temperature of the return water (low temperature corrosion).

INSTALLATION

Low-loss header has to be installed vertically (automatic vent must be positioned vertically in the upper section of the balancer) with the use of pipe unions (coupling with threaded stub pipes) or flanges (bolts – coupling with the flanged stub pipes). Stub pipes with larger gauge (H1) are used for boiler cycle connection (boiler or boilers) – the upper one is marked with a red arrow "to the balancer" and needs to be installed on the boiler supply line; whereas the lower one is marked with a blue arrow "from the balancer" and needs to be installed on the water return line to the boiler. Stub pipes for the connection of heating cycle are of smaller gauge (H2). The upper one is marked with a red arrow "from the coupling" and needs to be installed on the heating cycle supply line; whereas the lower one is marked with a blue arrow "to the balancer" and needs to be installed on the water return line from the heating cycle. Once the system is flushed and the pumps are off, wait several minutes and slowly open the drain valve to release silt, sand and other deposits from the system.

MAINTENANCE

Low-loss header needs to be periodically cleaned off silt and other deposits (we recommend yearly cleaning procedures after the heating season is over). Automatic vent ensures automatic balancer venting. Keep the balancer clean, away of moisture, avoid leaks at connection points. Use only for boiler or heating systems with: power rating, heating medium flow, maximum temperature and maximum pressure within the admissible limit values provided in the relevant catalogue sheet for the given coupling.

WARRANTY

- ✓ The manufacturer gives warranty for faultless operation of hydraulic balancer type SHE for a period of 2 years (24 months) of the date of sale.
- ✓ Warranty repairs are made by the manufacturer or authorised representative of the same.
- ✓ Warranty expires if any alterations are made to the product without the manufacturer's consent, or if the product covered by the warranty is used against its intended purpose, in which cases the manufacturer shall not be held liable for any negative effects of such product use.
- ✓ The user is responsible for strict adherence to the operating and installation manual for the hydraulic coupling, paying particular attention to the maximum admissible technical parameters provided in the relevant catalogue sheet.
- ✓ Failure to adhere to the above renders the warranty void.
- ✓ Incomplete warranty is invalid.
- ✓ Specific cases not covered by this warranty are regulated by the Civil Code.

Producer seal	Date of sale	Seller seal and signature

Declaration of conformity EN2/2017

Elterm M.M. Kaszuba Sp.J., ul. Przemysłowa 5, 86-200 Chełmno

We herewith declare, under our sole responsibility, that the following products:

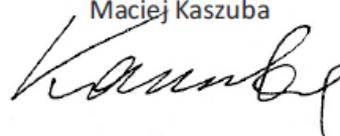
- **SHE-** SHE40 25/65, SHE70 32/80, SHE100 40/100, SHE115 50/100, SHE 156 50/125, SHE225 65/150, SHE420 80/200, SHE435 100/200, SHE700 100/250, SHE 750 125/250
- **SHE-OC** SHE28-OC 25/50, SHE40-OC 25/65, SHE70-OC 32/80, SHE100-OC 40/100, SHE115-OC 50/100, SHE156-OC 50/125, SHE225-OC 65/150, SHE420-OC 80/200, SHE435-OC 100/200, SHE700-OC 100/250, SHE750-OC 125/250
- **SHE-CD** SHE55-CD 25/65, SHE90-CD 32/80, SHE135-CD 40/100, SHE150-CD 50/100, SHE210-CD 50/125
- **SHE-SM** SHE40-SM 25/65, SHE70-SM 32/80, SHE100-SM 40/100, SHE115-SM 50/100, SHE156-SM 50/125
- **SHE-SP** SHE25-SP 25/65, SHE40-SP 32/80, SHE60-SP 40/100, SHE70-SP 50/100, SHE140-SP 65/150, SHE209-SP 80/200

Manufactured by ELTERM conform to the pressure equipment directive 2014/68/UE; [EN 13445 "Unfired pressure vessels" as amended - UNM](#) and to the ordinance by the Minister of Economy of 11.02.2015 on the absolute requirements concerning pressure equipment and pressure equipment units (Journal of Laws Dz.U.2015 pos. 244).

Relevant conformity assessment procedure: Internal production control – module A (in accordance with 2014/68/UE – equipment up to category I). Usable for water with $T < 110^{\circ}\text{C}$, for the remaining maximum admissible operating parameters and dimensions see the relevant manual or catalogue sheets available at www.elterm.pl

March 22nd, 2017

Chełmno, March 22nd, 2017

Maciej Kaszuba


Chełmno,