

CLAIMS

1. A modular system (S) for heat exchange between fluids, comprising two end plates (2) wherein at least one end plate (2) is configured with inlets (15, 16) and outlets (17, 18) for fluids, the modular system (S) comprising a number of heat exchanger elements (1) and a number of guiding elements (12), characterised in that each heat exchanger element (1) comprises a folded sheet material (2) comprising a plurality of slits (7) extending in a longitudinal direction of the folded sheet material (2), which longitudinal extending slits (7) form the fluids flow paths, the folded sheet material (2) being cast in one piece in an outer casing (3) provided with a central throughgoing opening (4), where two through holes (5) forming the inlets and outlets for each fluid is provided on opposite sides of the central throughgoing opening (4) of the housing (3), the throughgoing central opening (4) exposing a frontside and a backside of the folded sheet material (2), each guiding element (12) comprises two inlets (15, 16) and two outlets (17, 18) for fluids, and a bead or edge (20), provided on one side, forming an enclosure around the inlet (15) and outlet (16) for a first fluid, and a bead or edge (21) on an opposite side, forming an enclosure around the inlet (17) and outlet (18) for a second fluid, which heat exchanger elements (1) and guiding elements (12) are arranged successively following each other, the heat exchanger elements (1) being arranged that two adjacent heat exchanger elements (1) on sides facing each other carry the same fluid.
2. The modular system (S) according to claim 1, characterised in that the sheet material (2) is made of titanium.
3. The modular system (S) according to claim 1, characterised in that a ratio between a slit width and slit depth of a slit (7) is less than 0.15.
4. The modular system (S) according to any one of the preceding claims, characterised in walls of the slits (7) in the folded sheet material (2) are configured as planar faces, part circles or arcs.
5. The modular system (S) according to claim 1, characterized in that the guiding element (12) further comprises at least a filter (19) provided on either end of the guiding element (12).
6. The modular system (S) according to any of the preceding claims, characterized in that the guiding element (12) further comprises guiding elements (22).
7. The modular system (S) according to claim 1, characterised in that at least one end plate (11) comprises an inlet and outlet (15, 16; 17, 18) for each of the fluids to be heat exchanged.

- 5 8. The modular system (S) according to claim 1 or 7, characterized in that the end plates (11) are provided with a plurality of recesses (13) around a circumference of the end plate (11), where a corresponding number of locking elements (14) cooperate with the plurality of recesses (13) to assemble and fasten the end plates (11), guiding elements (12) and heat exchanger elements (1).
- 10 9. A method for manufacturing of a heat exchanger element (1) for heat exchange between fluids, the heat exchanger element (1) comprising a sheet material (2) and an outer casing (3), characterized in that the method comprises the following steps:
- folding the sheet material (2) into a plurality of slits (7) extending in a longitudinal direction of the sheet material (2),
 - placing the folded sheet material (2) into a mould (not shown), and
 - 15 -adding a material into the mould (not shown) to cast the folded sheet material (2) and the outer casing (3) in one piece, the outer casing (3) covering an outer circumference of the folded sheet material (2), thereby providing a central opening (4) in the heat exchanger element (1) exposing opposite sides of the folded sheet material (2).
- 20 10. The method according to claim 9, the method comprising the further step of:
- adding a plurality of handles (6) into the mould.

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