Title (en)

TUBULAR HEAT EXCHANGER FOR CONTROLLING A WIDE PERFORMANCE RANGE

Title (de)

ROHRBÜNDEL-WÄRMETAUSCHER ZUR REGELUNG EINES BREITEN LEISTUNGSBEREICHES

Title (fr)

ÉCHANGEUR DE CHALEUR À FAISCEAU TUBULAIRE DESTINÉ À LA RÉGULATION D'UNE LARGE PLAGE DE PUISSANCE

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2010034292A2] The invention relates to a tubular heat exchanger comprising heating surface pipes (2), the ends of which are held in pipe plates (3, 4), and a pressure shell (6) surrounding the heating surface pipes (2) and forming a shell space (5), wherein a cooling medium flow (8) for cooling a first medium flow (7) conducted through the heating surface pipes (2) can be conducted through the shell space (5), further comprising at least one pipe inlet chamber (9) from which the first medium flow (7) is introduced into the individual heating surface pipes (2), and at least one pipe outlet chamber (10) in which the first medium flow (7) conducted through the heating surface pipes (2) is collected and removed, further comprising two connectors (11, 12) for the inflow and outflow of the cooling medium flow (8) which are disposed at the rear end (15) of the pressure shell (6) adjoining the pipe outlet chamber (10), comprising two connectors (13, 14) for the inflow and outflow of the cooling medium flow (8) which are disposed at the front end (16) of the pressure shell (6) adjoining the pipe inlet chamber (9), further comprising a feed line (17) and a first three-way valve (19) which is disposed thereon and from which a first bypass line (21a) is connected to the first connector (11) at the rear end (15) of the pressure shell (6) and a second bypass line (21b) is connected to the first connector (13) at the front end (16) of the pressure shell (6), and comprising a discharge line (18) and a second three-way valve (20) which is disposed thereon and from which a third bypass line (22a) is connected to the second connector (14) at the front end (16) of the pressure shell (6) and a fourth bypass line (22b) is connected to the second connector (12) at the rear end (15) of the pressure shell (6), wherein one of the two three-way valves (19, 20) is designed so it can be controlled and it conducts the cooling medium flow m0 (8) through the shell space (5), or as controlled partial mass flows m1, m2 of the cooling medium flow m0 (8) through the shell space (5) and through the bypass line(s) (21a, 21b, 22a, 22b) and wherein by means of the further three-way valve (19, 20) the cooling medium flow (8) can be conducted through the shell space (5) in a co-current flow or reverse flow with respect to the first medium flow (7).

IPC 8 full level

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