

CLAIMS

1. A separation system (120) for separating a liquid mixture comprising a
5 centrifugal separator (100), wherein the centrifugal separator (100) comprises
a stationary frame (30),
a rotatable assembly (101) and a drive unit (34) for rotating the rotatable
assembly (101) relative the frame (30) around an axis of rotation (X);
a feed inlet (20) for receiving a liquid mixture to be separated,
10 a first liquid outlet (21) for discharge of a separated liquid light phase and a
second liquid outlet (22) for discharge of a liquid heavy phase having a density that
is higher than said liquid light phase;
wherein the rotatable assembly (101) comprises a rotor casing (2) enclosing
a separation space (17) in which a stack (19) of separation discs is arranged to
15 rotate around said axis of rotation (X), wherein the separation space (17) is arranged
for receiving liquid mixture from said feed inlet (20),
and further wherein the separation system (120) comprises
a container (60) arranged downstream of said first and/or second liquid outlet
(21,22) of the centrifugal separator (100) and arranged for receiving discharged
20 liquid phase, and
a scale (61) for measuring a weight of discharged liquid phase contained in
said container (60).
2. A separation system (120) according to any previous claim, further
25 comprising a tank (205) for receiving liquid phase being emptied from the container
(60).
3. A separation system (120) according to any previous claim, wherein
said container (60) comprises a container inlet (60a) for receiving said discharged
30 liquid phase and a container outlet (60b) for emptying the liquid phase from the
container (60); and wherein the separation system (120) further comprises valve
means (50, 52b) for regulating the flow of liquid phase being emptied from the
container (60).

4. A separation system (120) according to any previous claim, further comprising a control unit (53) configured for determining the weight increase of said container (60) as a function of time.

5 5. A separation system (120) according to claim 4, wherein the control unit (53) is further configured for determining a flow rate of discharged liquid phase based on the measured weight increase of said container (60) as a function of time.

6. A separation system (120) according to claim 3 and any one of claims
10 4 or 5, wherein the control unit (53) is further configured to control said valve means (50, 52b), and further configured to close said valve means (50, 52b) during said determining of the weight increase of said container (60) as a function of time.

7. A separation system (120) according to claim 6, wherein the control
15 unit (53) is further configured to open said valve means (50, 52b) such that an outlet flow of liquid phase from said container (60) is higher than an inlet flow of liquid phase to said container (60); thereby emptying said container (60).

8. A separation system (120) according to claim 7, wherein the control
20 unit (53) is configured to switch between closing the valve means (50, 52b) and opening the valve means (50, 52b) such that said container (60) is filled and emptied in cycles.

9. A separation system (120) according to any previous claim, wherein
25 the container (60) is arranged downstream of the first liquid outlet (21).

10. A separation system (120) according to any previous claim, wherein
the separation system (120) is free of any additional flow sensor (51) arranged
downstream of a liquid outlet (21,22) at which said container (60) is arranged.

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11. A method for determining a flow rate of a liquid phase being
discharged from a centrifugal separator (100), comprising the steps of
a) providing a separation system (120) according to any one of claims 1-10;
b) supplying feed to said feed inlet (20) and discharging a separated liquid
35 light phase from said first liquid outlet (21) and discharging a separated
liquid heavy phase from said second liquid outlet (22);

- c) measuring a weight increase of said container (60) as a function of time;
and
- d) determining a flow rate of said liquid phase being discharged to said container (60) based on the measured weight increase of step c).

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12. A method according to claim 11, wherein step c) further comprises step c1) of stopping a flow of separated liquid phase out from said container (60) during said measuring of the weight increase of said container (60) as a function of time.

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13. A method according to claim 12, wherein step c) further comprises step c2) of starting the flow of separated liquid phase out from said container (60), thereby emptying said container after said measuring of the weight increase of said container (60) as a function of time.

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14. A method according to claim 13, wherein step c) comprises repeating steps c1) and c2).

15. A method according to any one of claims 11-14; further comprising
20 adjusting a flow sensor (51) arranged downstream of the same liquid outlet at which said container (60) is arranged based on the determined flow of said liquid phase in step d).