

## Title (en)

Valve assembly for metering small quantities of media, in particular small quantity metering device and application device for applying application medium to a mobile sheet of material

## Title (de)

Ventilanordnung zur Dosierung von Kleinstmengen von Medien, insbesondere Kleinstmengendosiereinrichtung und Auftragseinrichtung zum Auftrag von Auftragsmedium auf eine bewegbare Materialbahn

## Title (fr)

Agencement de soupape pour le dosage de quantités minimales de milieux, notamment dispositif de dosage de quantités minimales et dispositif d'application pour l'application de milieux d'application sur une bande de matériau mobile

## Publication

**EP 2186937 A1 20100519 (DE)**

## Application

**EP 09174327 A 20091028**

## Priority

DE 102008043659 A 20081112

## Abstract (en)

The valve assembly (1) comprises an inlet (3), an outlet (4) connectable with a consumer, a valve device (5) arranged between the inlet and the outlet for controlling the volume flow (V) of the medium, a housing (17), and a pulsation damper. The valve device is downstream to a flow divider (6) for dividing the volume flow of the medium into two partial volume flows. The flow divider is designed, so that a first partial volume flow is guided to the outlet and a second partial volume flow is guided into the bypass to the outlet, and comprises an inflow and two outflows. The valve assembly (1) comprises an inlet (3), an outlet (4) connectable with a consumer, a valve device (5) arranged between the inlet and the outlet for controlling the volume flow (V) of the medium, a housing (17), and a pulsation damper. The valve device is downstream to a flow divider (6) for dividing the volume flow of the medium into two partial volume flows. The flow divider is designed, so that a first partial volume flow is guided to the outlet and a second partial volume flow is guided into the bypass to the outlet, and comprises an inflow and two outflows, which are coupled with one another under the formation of two flow paths. The division of the volume flow of the medium into two partial volume flows is describable as function of the formation and dimension of the assigned flow paths. The valve device has an inflow forming the inlet of the valve assembly or connectable with the inlet of the valve assembly, an outflow connectable with the flow divider, and a unit for controlling the volume flow. The valve device and the flow divider are formed by separate construction units, where the outflow of the valve device is connected with the inflow of the flow divider. The valve device and the flow divider are spatially separately arranged from each other and the outflow of the valve device is coupled with the inflow of the flow divider over a connection line. The valve device and the flow divider are arranged to each other in a flange-mounted manner, and are implemented as integral construction unit. The inlet of the valve assembly is formed from the inflow of the valve device, the inflow of the flow divider is formed from the outflow of the valve device and the outlet of the valve assembly is formed from a first outflow of the flow divider. The housing comprises a blind bore opening at the outer periphery, a first through-opening opening from the outer periphery into the blind bore and forming the inlet of the valve assembly, a second through-opening opening from the outer periphery into the blind bore, subordinated in a flow direction of the first through-opening and forming the outlet of the valve assembly, and a controllable piston of the valve device forming a valve seat with the through-opening. The two outflows of the flow divider are connectable with an external pipeline and a flow media supply device, and connected with the inlet of the valve assembly over a return flow, which is integrated in the housing of the flow divider and optionally in the housing of the valve device. The individual flow paths are equally or variably dimensioned between the inflow and the outflows of the flow divider. A diameter ratio between the individual outflows and the inflow of the flow divider is 1:4. The first outflow of the flow divider is dimensioned smaller than the second outflow of the flow divider. The valve device is implemented as a needle valve, a clocked 2/2-way valve or a directional valve. The flow divider forms a constructional unit with a nozzle coupled with the first outflow. An independent claim is included for a device for applying a liquid or pasty application medium on a movable fibrous material web.

## Abstract (de)

Die Erfindung betrifft eine Ventilanordnung (1, 1.1 - 1.n) zur Dosierung von Kleinstmengen von Medien, umfassend zumindest einen Zulauf (3) und einen, mit einem Verbraucher verbindbaren Ablauf (4, 4.1, 4.2) und zumindest eine zwischen Zu- und Ablauf (3, 4, 4.1, 4.2) angeordnete Ventileinrichtung (5) zur Steuerung des Volumenstromes des jeweiligen Mediums. Die Erfindung ist dadurch gekennzeichnet, dass der Ventileinrichtung (5) ein Stromteiler (6) zur Aufteilung des Volumenstromes (V) des Mediums in zumindest zwei Teilvolumenströme (TS1, TS2) nachgeschaltet ist, der derart aufgebaut ist, dass ein erster Teilvolumenstrom (TS1) zum Ablauf (4, 4.1, 4.2) und der zweite Teilvolumenstrom (TS2) im Bypass zum Ablauf (4) geführt ist. Die Erfindung betrifft ferner Verwendungen der Ventilanordnung (1, 1.1 - 1.n).

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- [A] WO 03035271 A1 20030501 - ABB INC [CA]
- [A] US 3595482 A 19710727 - JEFFERSON-LOVEDAY JOHN ALEXAND

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