Claims

[Claim 1] System (1) for capturing braking particles from a friction brake system (10), which comprises a vacuum source (20), a pneumatic circuit (30) which connects said friction brake system (10) to said vacuum source (20), and a filter (40) located on said pneumatic circuit (30) and mounted on a support (41), characterized in that said capturing system (1) comprises a control unit (60) and a detection device (50) for said filter (40) which is capable of sending at least one signal to said control unit (60), said control unit (60) being capable, on the basis of this at least one signal, of identifying the absence of said filter (40) on said pneumatic circuit (30) and of informing a user of this absence of said filter (40), wherein said detection device (50) comprises exactly one pressure sensor (51) which is located on said pneumatic circuit (30) upstream of said filter (40), said pressure sensor (51) being capable of sending in a signal to said control unit (60) a measurement of the pressure P_1 in said pneumatic circuit (30) upstream of said filter (40), said control unit (60), upon receiving said signal, being capable of comparing said measured pressure P_1 with a reference pressure P_R which is the pressure in said pneumatic circuit (30) in the absence of a filter (40) for the reference operating state E_R of said vacuum source (20) during said measurement of pressure P_1 by said pressure sensor (51), said control unit (60) being capable of informing a user of the absence of said filter (40) on said pneumatic circuit (30) when said measured pressure P_1 is substantially equal to said reference pressure P_R or is substantially equal to the atmospheric pressure.

[Claim 2] Capturing system (1) according to claim 1, wherein said detection device (50) comprises a contact detector (53) which is capable of detecting contact between said filter (40) and said support (41), said contact detector (53) being capable of sending a signal to said control unit (60) when there is no contact between said filter (40) and said support (41), said control unit (60), upon receiving said signal, being capable of informing a user of the absence of said filter (40).

[Claim 3] Capturing system (1) according to claim 1, wherein said detection device (50) comprises a contact detector (53) which is capable of detecting contact between said support (41) and said circuit (30), said contact detector (53) being capable of sending a signal to said control unit (60) when there is no contact

between said support (41) and said circuit (30), said control unit (60), upon receiving said signal, being capable of informing a user of the absence of said filter (40).

[Claim 4] Capturing system (1) according to any one of claims 1 to 3, wherein said detection device (50) comprises an identifier (42) which is carried by said filter (40) or by said support (41) and a contactless detector (54) which is fixed close to said support (41) and which is capable of detecting the presence of said identifier (42), said contactless detector (54) being capable of sending a signal to said control unit (60) when said identifier (42) is not detected by said contactless detector (43), said control unit (60), upon receiving said signal, being capable of informing a user of the absence of said filter (40).

[Claim 5] Capturing system (1) according to claim 4, wherein said identifier (42) is carried by said support (41) and said contactless detector (54) is fixed to said pneumatic circuit (30).

[Claim 6] Capturing system (1) according to claim 4, wherein said identifier (42) is carried by said filter (40) and said contactless detector (54) is fixed to said support (41).

[Claim 7] Method for detecting the absence of a filter (40) in a system (1) for capturing braking particles from a friction brake system (10), this capturing system (1) comprising a vacuum source (20), a pneumatic circuit (30) which connects said friction brake system (10) to said vacuum source (20), and a filter (40) located on said pneumatic circuit (30) and mounted on a support (41), said method being characterized in that it comprises the following steps:

(a) A control unit (60) and a detection device (50) for said filter (40) are provided, which form part of said capturing system (1), the detection device (50) comprising exactly one pressure sensor (51) which is located on said pneumatic circuit (30) upstream of said filter (40);

(b) Said pressure sensor (51) being capable of sending in a pressure signal to said control unit (60) a measurement of the pressure P_1 in said pneumatic circuit (30) upstream of said filter (40);

(c) said control unit (60), upon receiving said pressure signal, being capable of comparing said measured pressure P_1 with a reference pressure P_R which is the pressure in said pneumatic circuit (30) in the absence of a filter (40) for the reference

operating state E_R of said vacuum source (20) during said measurement of pressure P_1 by said pressure sensor (51), said control unit (60) being capable of informing a user of the absence of said filter (40) on said pneumatic circuit (30) when said measured pressure P_1 is substantially equal to said reference pressure P_R or is substantially equal to the atmospheric pressure.