

## Title (en)

Control method of the purging of nitrogen oxides in a catalytic converter for exhaust gases of an internal combustion engine

## Title (de)

Steuerverfahren zum entfernen von Stickstoffoxide von einem Abgaskatalysator eines Verbrennungsmotors

## Title (fr)

Procédé de commande de purge en oxydes d'azote d'un pot catalytique de traitement des gaz d'échappement d'un moteur à combustion interne

## Publication

**EP 1006270 A1 20000607 (FR)**

## Application

**EP 99402945 A 19991126**

## Priority

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## Abstract (en)

While the purge is being stopped in a process to purge nitrogen oxides from an engine exhaust, the air/fuel richness ratio is brought to a level (R2) between initial value R0 and purge value R1 and the angle is changed to a third set value (  $\alpha$  3) before being increased to a fourth value (  $\alpha$  4) as the air flow increases. The three variables are returned to their initial values (R0, D0,  $\alpha$  0) In a process to purge nitrogen oxides (NOx) from an internal combustion engine exhaust, a catalytic pot adsorbs the nitrous oxides when the motor operates with a fuel/air mixture poor in fuel. The purge is controlled by the temporary increase in richness of the fuel/air mixture by progressively reducing the air flow (D) into the engine so as to optimize the fuel consumption at the set richness. The angle of spark (  $\alpha$  ) is abruptly reduced to a set value (  $\alpha$  1) to maintain the torque generated by the engine. The angle is then increased to a second value (  $\alpha$  2) optimizing the fuel consumption of the engine as a function of the richness (R1) and the air flow (D1) fixed during the purge. The purge is stopped by returning the values of the richness (R), the air flow and the angle to their initial values. The intermediate value R1 matches a stoichiometric air/fuel ratio. While the purge is being stopped, the air/fuel richness ratio is brought to a level (R2) between initial value R0 and purge value R1 and the angle is changed to a third set value (  $\alpha$  3) before being increased to a fourth value (  $\alpha$  4) as the air flow increases. The three variables are returned to their initial values (R0, D0,  $\alpha$  0). The purge is started and stopped under the control of a system which measures the NOx load in the catalytic pot.

## Abstract (fr)

On déclenche une purge du pot en commandant un accroissement de la richesse (R) en carburant du mélange. Suivant ce procédé, a) à l'instant (t1) de l'accroissement de richesse, on réduit le débit d'air (D) entrant dans le moteur, et on réduit brusquement l'angle (  $\alpha$  ) d'avance à l'allumage du mélange air/carburant à une valeur (  $\alpha$  1), et b) on arrête la purge en abaissant d'abord la richesse à une valeur (R2), avec remontée progressive du débit d'air (D) et remontée brusque de l'angle (  $\alpha$  ) à une valeur (  $\alpha$  3), en asservissant ensuite une décroissance de l'angle (  $\alpha$  ) jusqu'à la valeur (  $\alpha$  4) et en rétablissant enfin la richesse (R), le débit (D) et l'angle (  $\alpha$  ) aux valeurs (R0,D0, $\alpha$ 0) antérieures à la purge. <IMAGE>

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## Citation (search report)

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