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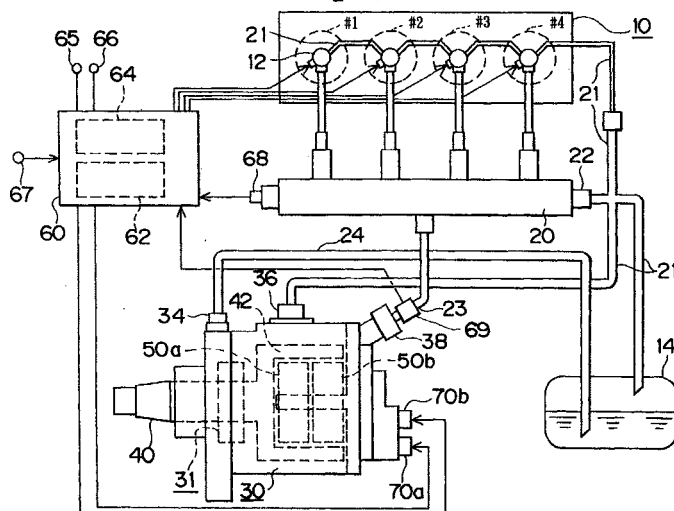
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(54) **Method and determining abnormality in high-pressure fuel injection system**

(57) The present invention proposes a method of abnormality determination for a high-pressure fuel injection system, which is capable of enlarging a range where a fuel force-feed timing or a fuel injection timing can be changed, and of determining occurrence of an abnormality with high precision. An electronic control unit (ECU)(60) detects a change in fuel pressure in a common rail (20) (rail pressure change amount), estimates a change in rail pressure based on an injection command value, a force-feed command value and the like,

and makes a first abnormality determination based on the detected value and the estimated value. If occurrence of an abnormality is confirmed in the first abnormality determination, the ECU (60) restricts a timing for starting force-feeding of fuel such that only fuel injection is carried out in a second determination period. The ECU (60) then compares a detected value of a change in rail pressure with a value of a change in rail pressure estimated based on the injection command value and the like, and additionally makes a second abnormality determination.

**FIG. 1**





European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 00 10 5642

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Place of search <b>MUNICH</b>		Date of completion of the search <b>20 January 2003</b>	Examiner <b>Aign, T</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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