KES

E.G.R Valve Test Standard

KES T – A101

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KIA MOTORS

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1. Purpose

This standard shall specify the performance and durability test method of E.G.R valve that controls the re-circulation amount (E.G.R)

2. Scope of Application

This standard shall be applicable for the E.G.R valve of Pride and Concord. And it shall be also applicable for the E.G.R valve of other kinds of car in case that only the characteristic specification (Initial performance) is changed to the drawing one.

3. Meaning of Terms.

E.G.R stands for Exhaust Gas Re-circulation and it makes the exhaust gas circulated again into the combustion chamber, and the combustion temperature comes to be down so that the producing amount of NOx is decreased.

4. Performance

4.1 Initial performance

When the test of 4.1.1-4.1.2 is carried out, it should satisfy the value that is in the following table. Test condition follows table1 if there is no special direction.

(1) Environment : Normal temperature(5-35℃), normal humidity(45-85%), atmospheric pressure(960-1060mb).

(2) Flow rate : The flow rate of air in the condition of 1atm, 20℃.

Table1

Item	Classification	NB-3	NB-5	Test method	Remark
EGR Flow rate	Official (L/min)	100	100	4.4.1	The specification mentioned in left are changeable according to the kinds of cars
	Characteristic	Degree-1	Degree-2	4.1.1	
Valve part leaking(L/min) (Valve seat part + Flint part : Sum		Less than 5		4.1.2(1)	

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Diaphragm compartment Leakage (Pressure change: mmHg)		Less than 5	4.1.2(2)	
High and Cold Performance	Diaphragm part temperature	-40℃-140℃guarantee		
	Flint part temperature	-40℃-140℃guarantee		
	Operation Temperature	Should be operated smoothly -35℃-120℃		

4.1.1 Measuring flow rate

As figure1, measure flow rate characteristic by using normal air as testing fluid.

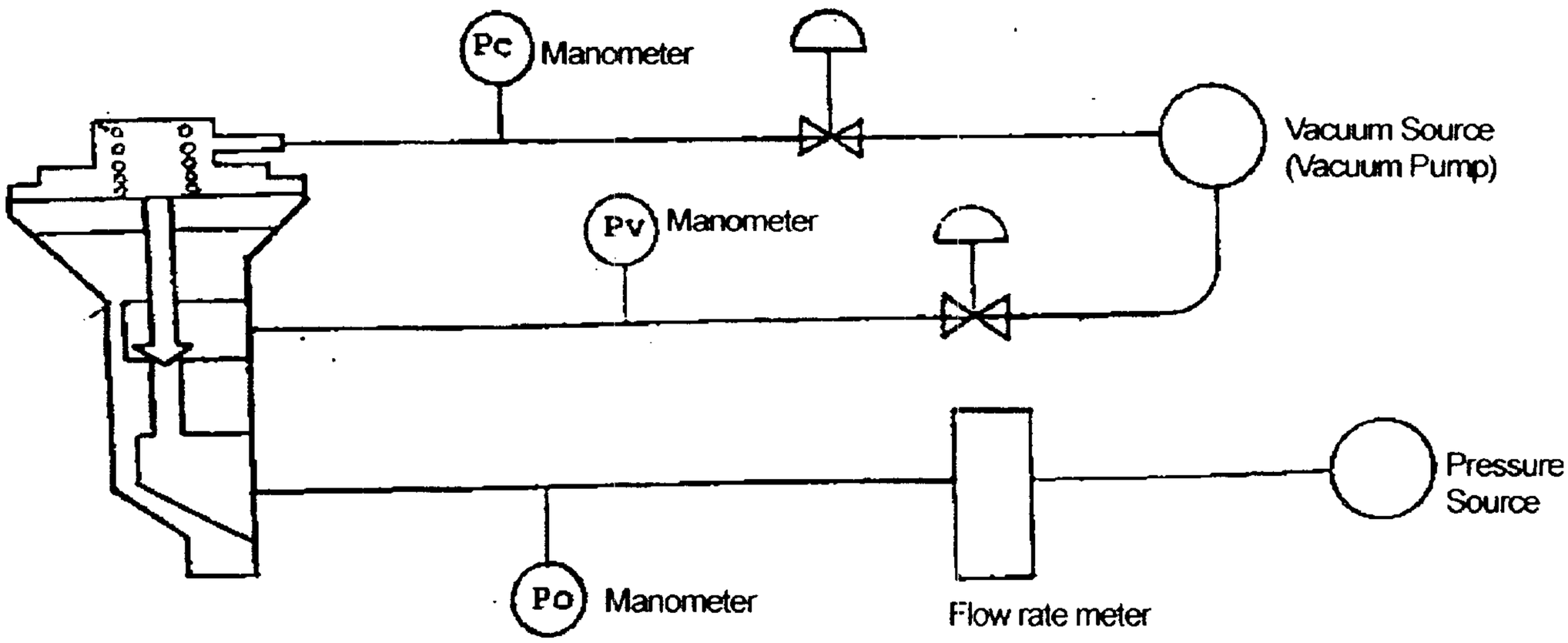

Figure1

(1) Keep the measuring condition constant at Pv-Po=△100mmHg and indicate it at 1atm. 20℃. Pc : variable

(2) The diameter of valve seat part is Ø 4.4mm.

(3) The same adapter applying to the part of intake manifold is put together to the applying part of the facing side.

(4) There is a moment that remarkable change occurs at Po according to the open and close of valve when Pc is slowly increased or decreased. The valve operation indicating the performance starts at this point.

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