KES

Required Standard for Analyzer of Exhaust Test

KES G – B806

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1. Scope of Application

This standard shall be applicable to analyzer of exhaust test (CO, HC, NOx, CO_2) and mandatory equipment.

2. Purpose

This standard shall specify analyzer for measuring density of a hazardous substance on vehicle vapor.

3. Principle of Preparing Instrument Specification

(1) Attached content specified by this standard shall be based.

(2) Clarify the utility of instrument in the future and identify if specification specified by this standard conforms to the purpose.

(3) Comparing (1), (2), describe the required function up to small instrument clearly and revise the existing specification.

(4) Upon completing of the above process of specification revision, transfer it to instrument manufacturer or manufacturer capable to produce instrument and receive specification from manufacturer.

(5) Based on data received from manufacturer and the above data, repeat the process of (3), (4) until getting satisfied result.

4. Basic Item for Shed

(1) General Regulation

(2) Analyzer General

(3) T.HC Analyzer

(4) NO/NOx Analyzers

(5) CO_2/CO_H/CO_2 Analyzers

(6) Others

(7) Special Note

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Appendix

1. General Specification

1.1 Electrical

(1) All A.C. circuits shall use Korean power(system concept and its distribution scheme).

(2) All A.C. power, which will be used by all analyzers, recorder and controllers, etc., shall be filtered and refined by their own system and protected for unexpected occasions by as followings.

(a) AVR

(b) Individual circuit breaker

(c) Fuses

(d) Interlock functions.

(3) All benches and consoles shall have one instrument grade and one utility grade power outlet.

(4) All signal an power interconnection cable to be supplied.

(5) For all motors, motor starter be supplied.

(6) All electronic circuit boards and associated mounting racks be with gold plated edge connectors.

(7) To suppress spikes all DC inductive load (including solenoid valves and long cable runs) be with sufficient protecting system and specify.

1.2 Mechanical

(1) All fittings be swagelok fittings.

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(2) Pumps be shock mounted to isolate pump vibration from analytic components.

(3) Provide performance curves in the operating conditions form the pumps used.

(4) For all analyzer and gas bypass steams, use uniform flow meter and clarify the whole specifications.

(5) All tubing necessary to connect each analyzers, flow conditioners etc. be supplied and deburred and blown out with clean, filtered, dry air. All documentation of system cleanliness be supplied to KIA Motors.

(6) All exhaust tubing and ports be without any traps where liquid water can gather.

(7) All sample line volumes be minimized.

(8) No flow restrictions, which may cause water condensation be placed downstream of the sampling pump.

2. Analyzer

2.1 General

(1) Be fully functional with all of the side panels removed.

(2) Be fully operational with/without intercommunications with CVS system.

(3) Have automatic and manual calibration functions, including as following items which could be accomplished by the control of test stand computer be specified

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(a) Zero/Span adjustment

(b) Zero/span check

(c) Monthly curve generation using 10 point gas divider

(d) CO_2/H_2O interface check to CO analyzer

(e) Leak check

(f) Forward and back-flush

(g) NOx conversion efficiency check

(h) Hang-up check

(i) Alarm function check

(4) Warm-up time : 30min.

(5) Power : 100VAC, 60Hz .

(6) Ambient condition : RH 0-95%, Temp. 0-45℃

(7) Total operated time monitoring : Sampling pump, converter, filter

(8) Purge or flushing time be adjustable form 0 to 30 min.

(9) Alarm & antilock (Buzzer and warning lamp)

(a) FID extinction

(b) CLD converter temperature out of control range

(c) Unusual or out of control range condition of cooling and ventilation system

(d) Unusual power condition

(e) Drain system

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(f) Leak

(g) Excessive or insufficient sample pressure

(h) Detector temp. out of range

(i) Vacuum amount out of range

(j) FID fuel pressure out of range

(14) Central control panel

Item should fulfilled by the function of test stand computer be specified

(a) Interconnection with test stand computer

(b) Be functional with manual operation

(c) Sequential control of power switch (on/off)

(d) All flow system be with means to forward flush and back flush

(e) All filter which will be used just upstream of every analyzers be uniform type and dimension.

(f) All filters be located and mounted to give easy access during maintenance.

(g) All analyzer benches, consoles and rack be above floor level, cleanly labeled and easily accessible.

(h) Analysis bag selection (sample collection and analysis)

(i) Interconnection to CVS system be selectable

(j) Memory of calibration coeff.

(k) Visible indication of current status of valves and pumps.

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