ISO 21441:2019-10 (E)

Road vehicles - Engine EGR cooler - Heat dissipation test methods

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Test items 2

5 Test setup 3
5.1 Test conditions 3
5.2 Test equipment 4
5.2.1 General test equipment 4
5.2.2 Test gas circuit equipment 6
5.2.3 Cooling liquid circuit equipment 6
5.3 Measuring instruments 7

6 Test and measurement methods 7
6.1 Test methods 7
6.1.1 Test with heat dissipation 7
6.1.2 Test without heat dissipation 8
6.2 Measurement method 8
6.2.1 Flow rate measurement 9
6.2.2 Temperature measurement 9
6.2.3 Pressure measurement 9

7 Calculation method 10
7.1 Items to be calculated 10
7.1.1 EGR cooler heat dissipation amount 10
7.1.2 EGR gas temperature effectiveness 10
7.2 Calculation formula 11
7.2.1 Mass flow rate 11
7.2.2 EGR gas and EGR cooler heat dissipation amounts 11
7.2.3 EGR gas temperature effectiveness 13
7.2.4 EGR gas pressure loss 13
7.2.5 Cooling liquid pressure loss 14

8 Test report preparation 16