

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	Terms and definitions	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