

EDS

Engineering
GM DAEWOO Auto & Technology
Standards

AT-QUALITY CHECK OF HEAT EXCHANGER

EDS-T-2242

ISSUED DATE: 1996. 07. 10

REVISED DATE: 2006. 06. 19

VERSION: 2

1. PURPOSE

Quality Check

2. EQUIPMENT

Heat Exchanger - Test Stand

Cooling substance: water

1.0. Cooling water circulation at least 80 ℓ /min

1.1. Infinitely variable control of water temperature +20 ~ +80 °C

1.2. Temperature indications for water input and output ... + 85 °C

1.3. Water quantity indication 50 ~ 80 ℓ /min

1.4. Pressure indication for water input ... 120 kPa

Substance to be cooled: Automatic - Transmission - Fluid (ATF)

Specific density $\rho = 0.86 \sim 0.90 \text{ kg/dm}^3$ at +20 °C

Temperature °C	Kinematics Viscosity	Specific Heat "c _m "	
		kJ.(kg K)	kcal/(kg °C)
0		1.800	0.43
+ 20	80 ... 95 mm ² /s	1.905	0.45
+ 50	22 ... 29 mm ² /s	2.052	0.49
+ 100	5.8 ... 8 mm ² /s	2.261	0.54
+ 160		2.470	0.59

2.0. ATF - circulation, at least 8 l/min

2.1. Infinitely variable control of ATF - temperature ... 120 °C

2.2. Temperature indications of STF input and - output ... 120 °C

2.3. ATF - quantity - indication ... 8 ℓ /min.

2.4. Pressure indication of ATF - input and - output ... 500 kPa

3.0. Heat exchanger - test tube $\Phi 53$, length: 500

3. TEST PROCEDURE

1.0. Test Performance

After installation of the heat exchanger to be tested in the test tube, the following test conditions are to be obtained and stabilized for at least 5 minutes before test data recordings:

1.1. Operate heat exchanger in countercurrent flow

1.2. Cooling water flow 80 ℓ /min.

1.3. Cooling water input temperature 80 °C

1.4. Cooling water input pressure 100 kPa.

1.5. ATF - circulation variable, 5 -8 ℓ /min.

Specification on drafting 3453920 valid using 5 ℓ /min only.