KES

Calculation Standard of Performance for Automatic Transmission

KES M – J003A

(EST.) 1989 – 09 – 30
(REV.) 1991 – 09 – 01

Contents

1. Scope of Application

2. Purpose

3. Definition of Terminology

4. Symbol Explanation

5. Quoted Material

6. Calculation Method and Procedure

KIA MOTORS

Full document details: KIA KES M-J003A 1991

Documents
Document Sharing Hub

1. Scope of Application

This shall regulate power performance calculation method for car using automatic transmission using torque converter.

2. Purpose

This shall be for calculating data for driving performance and shift map by standardizing power performance calculation method of automatic transmission car.

3. Definition of Terminology

(1) Torque converter

A type of fluid power driving and power transmission having torque converting power and torque ration changes according to rotating speed.

(2) Torque ratio

Output torque divided by input torque

(3) Speed ratio

Output rpm divided by input rpm

(4) Torque factor or c factor

Input torque divided by input rpm square.

(5) K factor

Input rpm divided by square root of input torque. The relation equation between K factor and C factor shall be as follows.

$$K \alpha \sqrt{\frac{1}{C}}$$

Full document details: KIA KES M-J003A 1991

Documents
Document Sharing Hub

(6) Slip

Difference between input and output rpm. this shall be indicated by % to input rpm. Slip shall happen because torque converter shall transmit power by fluid. Fuel economy shall increase by rernoving slip with lock up clutch.

(7) Stall condition

The condition that output rpm is 0 and car speed is 0 when stepping pedal fully.

(8) Stall torque ratio

Torque ratio at stall condition

(9) Stall rpm

Input rpm at stall condition. i.e. engine rpm at stall .

(10) Driving force(Fw)

Force rotating tire and driving car.

(11) Driving resistance(Fr)

Several resistance when car is driving. rolling, air, climbing, acceleration (or inertial) resistance shall be included.

(12) Residual driving force (Fw-Fr)

When driving at a speed, driving force minus driving force.

(13) Climbing power

Maximum slope car can climb with maximum driving force.

(14) Climbing limit

The slope that tire starts to slip.

Full document details: KIA KES M-J003A 1991

Documents
Document Sharing Hub