

**SUPPLIER QUALITY ASSURANCE MANUAL  
FOR PARTS AND RAW MATERIALS**

\*\*\*\*\* QUALITY ASSURANCE FOR TRIAL PRODUCTION \*\*\*\*\*

**SECTION 19 - GAGE REPEATABILITY & REPRODUCIBILITY STUDY  
(R&R)**

**PURPOSE:** To explain the Gage Repeatability and Reproducibility Study and submission procedure.

**SCOPE:** Applies to Suppliers of production parts and raw materials when specified on the Notification of Quality Assurance Requirements

**EXPLANATION:**

The purpose of the Gage R&R (R&R) study is to identify the amount of measurement error associated with a particular gage - producing a quantitative confidence level which can be evaluated. This R&R value obtained should be the basis for decision on whether the gage should be replaced, repaired, operators trained, or no action taken. There are many methods for performing an R&R study and also many ways of evaluating the results. The method required by DENSO is the Average and Range Method with Percent of Tolerance Analysis ( Refer to AIAG Measurement System Analysis- MSA for further discussion on R&R and other measurement techniques).

**SUPPLIER RESPONSIBILITIES:**

Refer to the AIAG Measurement System Analysis (MSA) book for instructions on performing and interpreting Gage R&R studies.

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