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STANDARDS & GUIDANCE BRIEF · UNITED STATES · INDUSTRY REFERENCE MANUAL

AIAG MSA

Measurement Systems Analysis reference manual

DOCUMENT	QES-WP-128, Rev B	DATE	November 7, 2026
ISSUED BY	Automotive Industry Action Group (AIAG)	PREPARED BY	Conner Davidson
EDITION	4th edition (2010)	STATUS CHECKED	October 24, 2026
INDUSTRIES	Automotive, Laboratories & Calibration	ONLINE	qesisbest.com/standard-aiag-msa.html

CURRENT EDITION The AIAG & VDA SPC manual of 2026 now expects measurement systems to pass MSA before capability is studied.

What It Covers

How to judge whether a measurement system is good enough for its job: bias, linearity, stability, repeatability and reproducibility, and attribute agreement.

Who It Applies To

Any organization whose product decisions rely on measurements, and every gauge named in an automotive control plan.

Key Requirements

- Gauge repeatability and reproducibility (Gauge R&R) studies by the average-and-range or ANOVA method.
- Typical guidance: %GRR under 10 percent generally acceptable; 10 to 30 percent may be acceptable depending on the application; over 30 percent unacceptable.
- Number of distinct categories (ndc) of 5 or more, so the gauge can resolve the process variation.
- Bias, linearity and stability studies, and attribute agreement analysis for go/no-go decisions.

What an Auditor Asks to See

- The MSA plan for the control plan gauges, and the studies behind it.
- A study that failed, and what was done about it.
- How a new or repaired gauge is re-studied before use.

Where Systems Fall Short

- Studies run with parts that do not span the process range, which flatters the result.
- Attribute inspections never studied at all.

How QES helps. MSA programs designed around the control plan, with studies run and interpreted alongside your own people. See the gap assessment: qesisbest.com/services.html#gap-assessment · +1 (401) 246-3204 · mweeden@qesisbest.com

Sources, checked October 24, 2026. AIAG — Automotive Industry Action Group publications — www.aiag.org.

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