

# Method for Determining Breakage Allowances for Sheet Steel -SAE J424 OCT81

SAE Recommended Practice  
Completely Revised October 1981

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## METHOD FOR DETERMINING BREAKAGE

### ALLOWANCES FOR SHEET STEEL—SAE J424 OCT81 SAE Recommended Practice

Report of the Iron and Steel Technical Committee, approved October 1959, completely revised October 1981.

**1. Scope**—This method is recommended for establishing breakage allowances for parts fabricated from cut lengths or blanks, or from coils processed directly into a progressive-die pressline, and is equitable to both the sheet producer and the fabricator.

**2. Definition**—Breakage, for the purpose of this proposal, is defined as unrepairable parts, broken during forming and classed as scrap. Parts showing laminations, resulting from pipe, should be excluded provided they are separately identified. Broken parts which can be salvaged are not covered in this proposed method.

**3. Method**—This procedure is intended to establish a breakage allowance without the need for re-inspection of each broken stamping. It will apply to overall breakage on a given part (as calculated by the method outlined below) in excess of 1% up to and including 8%. Inherent variations in steel sheet and normal variables in the stamping operation normally preclude 100% satisfactory performance. Therefore, it is generally accepted that practical perfection is attained when 99% of the stampings are produced without breakage. When the overall breakage is in excess of 8%, it is considered to be the result of abnormal forming conditions, and this method does not apply.

**3. Two or More Suppliers**—When there are two or more suppliers, the recommended procedure for determining a breakage allowance for an identified part is based on the average percentage of breakage of AT LEAST 50% OF THE BLANKS RUN on that part, on one set of dies, during at least one month (3000 piece minimum for the total of all suppliers). The total production of all suppliers used to obtain this 50% minimum is to be included in the calculation starting with the best performance. The average breakage thus determined shall be considered the allowance for the part.

Example:

Vendor	Parts Produced	Parts Scrap	% Scrap
A	32,466	630	1.94
B	27,856	579	2.08
C	67,120	1477	2.20
D	56,200	1349	2.40
E	40,900	1125	2.75
F	850	60	7.05
Total	225,392	Total 5220	Avg. 2.32

50% of 225 392 equals 112 696; therefore it is necessary to include the total production of vendors A, B, and C since the total of A and B is only 60 322 which is less than 50% of the total. Total production of 127 442 parts (A + B + C) with 2686 parts being rejected, results in a percentage allowance of 2.11%. On this basis, vendors C, D, E, and F exceed the allowance.

**3.2 One Supplier**—When there is only one supplier in any one month, the recommended procedure for determining a breakage allowance for an identified part is based on the average percentage of breakage on that part, on one set of dies, during at least two consecutive production months (5000 piece minimum). This applies whether the supplier in the two consecutive production months is the same or a different one. The average breakage thus determined shall be considered the allowance for the part. If less than 5000 pieces are run in one month when only one supplier is used, the performance data for that supplier for that month shall be added to that supplier's data for the next month in which that supplier participates.

**3.3 Exceptions**—Individual lifts or coils which exhibit unreasonably high or unusually variable breakage will not be considered in determining the allowance. Such material should be set aside and the supplier notified.