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Standard Practice for Sampling a Stream of Product by Attributes Indexed by AQL¹

This standard is issued under the fixed designation E2234; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

- 1.1 This practice establishes lot or batch sampling plans and procedures for inspection by attributes using MIL-STD-105E as a basis for sampling a steady stream of lots indexed by AQL.
- 1.2 This practice provides the sampling plans of MIL-STD-105E in ASTM format for use by ASTM committees and others. It recognizes the continuing usage of MIL-STD-105E in industries supported by ASTM. Most of the original text in MIL-STD-105E is preserved in Sections 4 6 of this practice.
 - 1.3 No system of units is specified in this standard.
- 1.4 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 ASTM Standards:²

E456 Terminology Relating to Quality and Statistics E1994 Practice for Use of Process Oriented AOQL and LTPD Sampling Plans

E2586 Practice for Calculating and Using Basic Statistics

2.2 Other Standard:

MIL-STD-105E Sampling Procedures and Tables for Inspection by Attributes ³

3. Terminology

- 3.1 Definitions:
- 3.1.1 For a more extensive list of terms in E11 standards, see Terminology E456.
- ¹ This practice is under the jurisdiction of ASTM Committee E11 on Quality and Statistics and is the direct responsibility of Subcommittee E11.30 on Statistical Quality Control.
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- ² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.
- ³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

- 3.1.2 acceptance quality limit (AQL), n—quality limit that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling.
- 3.1.2.1 *Discussion*—This definition supersedes that given in MIL-STD-105E.
- 3.1.3 average outgoing quality (AOQ), n—the average percent defective of outgoing product including all accepted lots or batches after any defectives found in them are replaced by acceptable units, plus all lots or batches which are not accepted after such lots or batches have been effectively 100 % inspected and all defective units replaced by acceptable units.

E1994

- 3.1.4 average outgoing quality limit (AOQL), n—the AOQL is the maximum of the AOQ's for all possible incoming percentages defective for the process for a given acceptance sampling plan.

 E1994
- 3.1.5 *classification of defects, n*—the enumeration of possible defects of the unit of product classified according to their seriousness, that is, critical, major, or minor defect.
- 3.1.6 critical defect, n—a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product, or a defect that judgment and experience indicate is likely to prevent performance of the function of a major end item.
- 3.1.7 *defect, n*—any nonconformance of the unit of product with specified requirements.
- 3.1.8 *double sampling plan, n*—a multiple sampling plan in which up to two samplings can be taken and evaluated to accept or reject a lot.
- 3.1.9 *inspection, n*—the process of measuring, examining, testing, or otherwise comparing the unit of product with the requirements.
- 3.1.10 *inspection by attributes, n*—inspection whereby either the unit of product is classified simply as defective or non-defective, or the number of defects in the unit of product is counted, with respect to a given requirement or set of requirements.
- 3.1.11 *inspection lot*, *n*—a collection of units of product produced under conditions that are considered uniform and from which a sample is drawn and inspected.

- 3.1.12 *major defect, n*—a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.
- 3.1.13 *minor defect, n*—a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.
- 3.1.14 *multiple sampling plan, n*—a sampling plan in which successive samples from a lot are drawn and after each sample is inspected a decision is made to accept the lot, reject the lot, or to take another sample, based on quality level of the combined samples.
- 3.1.14.1 *Discussion*—When the quality is much less or much more than the AQL, the decision can be made on the first sample, which is smaller than that of a single sampling plan with equivalent acceptance quality level. For samples that are close to the AQL in quality, additional samples are required and the total sample size will be larger than the corresponding single sampling plan.
- 3.1.15 *operating characteristic, n*—probability of acceptance using a specified acceptance sampling plan, as a function of parameters describing quality of the lot.
- 3.1.16 *sample*, *n*—a group of observations, test results, taken from a large collection of observations, test results, which serves to provide information that may be used as a basis for making a decision concerning the larger collection. **E2586**
- 3.1.16.1 *Discussion*—A sample consists of one or more units of product drawn from an inspection lot, the units of the sample being selected at random without regard to their quality. The number of units of product in the sample is the sample size.
 - 3.2 Definitions of Terms Specific to This Standard:
- 3.2.1 *batch* (*in inspection*), *n*—a collection of units of product produced under conditions that are considered uniform and from which a sample is drawn and inspected, and may differ from a collection of units designated as a batch for other purposes, for example, production, shipment, etc.
- 3.2.2 batch size, n—the number of units of product in a batch.
- 3.2.3 *critical defective, n*—a unit of product which contains one or more critical defects and may also contain major and/or minor defects.
- 3.2.4 *defective*, *n*—a unit of product which contains one or more defects.
- 3.2.5 defects per hundred units, n—any given quantity of units of product is one hundred times the number of defects contained therein (one or more defects being possible in any unit of product) divided by the total number of units of product, that is:

$$Defects per hundred units = \frac{Number of defects \times 100}{Number of units inspected}$$
 (1)

- 3.2.6 *lot*, *n*—see *batch*.
- 3.2.7 lot size, n—see batch size.
- 3.2.8 *major defective*, *n*—a unit of product which contains one or more major defects, and may also contain minor defects but contains no critical defect.

- 3.2.9 *minor defective, n*—a unit of product which contains one or more minor defects but contains no critical or major defect.
- 3.2.10 *percent defective, n*—any given quantity of units of product one hundred times the number of defective units of product contained therein divided by the total number of units of product, that is:

Percent Defective =
$$\frac{\text{Number of defectives} \times 100}{\text{Number of units inspected}}$$
 (2)

- 3.2.11 process average (in inspection), n—the average percent defective or average number of defects per hundred units (whichever is applicable) of product submitted by the supplier for original inspection.
- 3.2.11.1 *Discussion*—Original inspection is the first inspection of a particular quantity of product as distinguished from the inspection of product which has been resubmitted after prior rejection.
- 3.2.12 *sample size code letter, n*—a device used along with the AQL for locating a sampling plan on a table of sampling plans.
- 3.2.13 sampling plan (in inspection), n—a plan that indicates the number of units of product from each lot or batch which are to be inspected (sample size or series of sample sizes) and the criteria for determining the acceptability of the lot or batch (acceptance and rejection numbers).
- 3.2.14 *unit of product, n*—that which is inspected in order to determine its classification as defective or non-defective or to count the number of defects.
- 3.2.14.1 *Discussion*—It may be a single article, a pair, a set, a length, an area, an operation, a volume, a component of an end product, or the end product itself. The unit of product may or may not be the same as the unit of purchase, supply, production, or shipment.

4. Significance and Use

- 4.1 *Purpose*—This publication establishes lot or batch sampling plans and procedures for inspection by attributes. This publication shall not be interpreted to supersede or conflict with any contractual requirements. The words "accept," "acceptance," "acceptable," etc, refer only to the contractor's use of the sampling plans contained in this standard and do not imply an agreement by the customer (formerly "Government" in original text) to accept any product. Determination of acceptability by the customer shall be as described in contractual documents. The sampling plans described in this standard are applicable to AQL's of 0.01 percent or higher and are therefore not suitable for applications where quality levels in the range of parts per million levels can be realized.
- 4.2 Application—Sampling plans designated in this publication are applicable, but not limited, to inspection of the following: (1) end items, (2) components and raw materials, (3) operations or services, (4) materials in process, (5) supplies in storage, (6) maintenance operations, (7) data or records, (8) administrative procedures. These plans are intended primarily to be used for a continuing series of lots or batches. The plans may also be used for the inspection of isolated lots or batches, but, in this latter case, the user is cautioned to consult the

operating characteristic curves to find a plan which will yield the desired protection (see 6.11).

5. Definitions

- 5.1 Acceptable Quality Level (AQL)—When a continuous series of lots is considered, the AQL is the quality level which, for the purposes of sampling inspection, is the limit of a satisfactory process average (see 5.19).
- 5.1.1 A sampling plan and an AQL are chosen in accordance with the risk assumed. Use of a value of AQL for a certain defect or group of defects indicates that the sampling plan will accept the great majority of the lots or batches provided the process average level of percent defective (or defects per hundred units) in these lots or batches be no greater than the designated value of AQL. Thus, the AQL is a designated value of percent defective (or defects per hundred units) for which lots will be accepted most of the time by the sampling procedure being used.
- 5.1.2 The sampling plans provided herein are so arranged that the probability of acceptance at the designated AQL value depends upon the sample size, being generally higher for large samples than for small ones, for a given AQL. The AQL alone does not identify the chances of accepting or rejecting individual lots or batches but more directly relates to what might be expected from a series of lots or batches, provided the steps indicated in this publication are taken. It is necessary to refer to the operating characteristic curve of the plan to determine the relative risks.
- 5.2 Average Outgoing Quality (AOQ)—For a particular process average, the AOQ is the average quality of outgoing product including all accepted lots or batches, plus all rejected lots or batches after the rejected lots or batches have been effectively 100 percent inspected and all defectives replaced by non-defectives.
- 5.3 Average Outgoing Quality Limit (AOQL)—The AOQL is the maximum AOQ for a given acceptance sampling plan. Factors for computing AOQL values are given in Table V-A for each of the single sampling plans for normal inspection and in Table V-B for each of the single sampling plans for tightened inspection.
- 5.4 Classification of Defects —A classification of defects is the enumeration of possible defects of the unit of product classified according to their seriousness
- 5.5 Critical Defect—A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product, or a defect that judgment and experience indicate is likely to prevent performance of the tactical function of a major end item such as a ship, aircraft, tank, missile, or space vehicle.
- 5.6 Critical Defective—A critical defective is a unit of product which contains one or more critical defects and may also contain major and/or minor defects.
- 5.7 *Defect.*—A defect is any nonconformance of the unit of product with specified requirements.

- 5.8 *Defective*—A defective is a unit of product which contains one or more defects.
- 5.9 Defects per Hundred Units—The number of defects per hundred units of any given quantity of units of product is one hundred times the number of defects contained therein (one or more defects being possible in any unit of product) divided by the total number of units of product, that is:

$$Defects \ per \ hundred \ units = \frac{\textit{Number of defects} \times 100}{\textit{Number of units inspected}}$$

- 5.10 *Inspection*—Inspection is the process of measuring, examining, testing, or otherwise comparing the unit of product with the requirements.
- 5.11 *Inspection by Attributes*—Inspection by attributes is inspection whereby either the unit of product is classified simply as defective or non-defective, or the number of defects in the unit of product is counted, with respect to a given requirement or set of requirements.
- 5.12 Lot or Batch—The term lot or batch shall mean "inspection lot" or "inspection batch", that is, a collection of units of product from which a sample is to be drawn and inspected and may differ from a collection of units designated as a lot or batch for other purposes (for example, production, shipment, etc.).
- 5.13 Lot or Batch Size—The lot or batch size is the number of units of product in a lot or batch.
- 5.14 *Major Defect*—A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.
- 5.15 *Major Defective*—A major defective is a unit of product which contains one or more major defects, and may also contain minor defects but contains no critical defect.
- 5.16 *Minor Defect*—A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.
- 5.17 *Minor Defective* A minor defective is a unit of product which contains one or more minor defects but contains no critical or major defect.
- 5.18 *Percent Defective*—The percent defective of any given quantity of units of product is one hundred times the number of defective units of product contained therein divided by the total number of units of product, that is:

$$Percent \ Defective = \frac{Number \ of \ defectives \times 100}{Number \ of \ units \ inspected}$$

- 5.19 *Process Average*.— The process average is the average percent defective or average number of defects per hundred units (whichever is applicable) of product submitted by the supplier for original inspection. Original inspection is the first inspection of a particular quantity of product as distinguished from the inspection of product which has been resubmitted after prior rejection.
- 5.20 Sample—A sample consists of one or more units of product drawn from a lot or batch, the units of the sample being

selected at random without regard to their quality. The number of units of product in the sample is the sample size.

- 5.21 Sample Size Code Letter—The sample size code letter is a device used along with the AQL for locating a sampling plan on a table of sampling plans.
- 5.22 Sampling Plan—A sampling plan indicates the number of units of product from each lot or batch which are to be inspected (sample size or series of sample sizes) and the criteria for determining the acceptability of the lot or batch (acceptance and rejection numbers).
- 5.23 Unit of Product.— The unit of product is the thing inspected in order to determine its classification as defective or non-defective or to count the number of defects. It may be a single article, a pair, a set, a length, an area, an operation, a volume, a component of an end product, or the end product itself. The unit of product may or may not be the same as the unit of purchase, supply, production, or shipment.

6. General Requirements

- 6.1 Written Procedures—Written procedures are ordinarily developed and made available for the customer's review, upon request. When the written procedures indicate use of this standard, they shall comply with the requirements of this standard and reference appropriate parts as necessary.
- 6.2 *Nonconformance*—The extent of nonconformance of product shall be expressed either in terms of percent defective or in terms of defects per hundred units.
- 6.3 Formation and Identification of Lots or Batches—The product shall be assembled into identifiable lots, sublots, batches, or in such other manner as may be prescribed. Each lot or batch shall, as far as is practicable, consist of units of product of a single type, grade, class, size, and composition, manufactured under essentially the same conditions, and at essentially the same time. The lots or batches shall be identified by the contractor and shall be kept intact in adequate and suitable storage space.

6.4 AQL:

- 6.4.1 *AQL Use*—The AQL, together with the Sample Size Code Letter, is used for indexing the sampling plans provided herein.
- 6.4.2 *Limitation*—The selection or use of an AQL shall not imply that the contractor has the right to supply any defective unit of product.
- 6.4.3 Choosing AQLs—Different AQLs may be chosen for groups of defects considered collectively, or for individual defects. An AQL for a group of defects may be chosen in addition to AQLs for individual defects, or subgroups, within that group. AQL values of 10.0 or less may be expressed either in percent defective or in defects per hundred units; those over 10.0 shall be expressed in defects per hundred units only.

6.5 Sampling.

6.5.1 Representative (Stratified) Sampling—When appropriate, the number of units in the sample shall be selected in proportion to the size of sublots or sub-batches, or parts of the lot or batch, identified by some rational criterion. When

- representative sampling is used, the units from each sublot, sub-batch or part of the lot or batch shall be selected at random.
- 6.5.2 *Time of Sampling*—A sample may be drawn after all the units comprising the lot or batch have been assembled, or sample units may be drawn during assembly of the lot or batch, in which case the size of the lot or batch will be determined before any sample units are drawn. If the sample units are drawn during assembly of the lot or batch, and if the rejection number is reached before the lot is completed, that portion of the lot already completed shall be rejected. The cause of the defective product shall be determined and corrective action taken, after which a new lot or batch shall be begun.
- 6.5.3 *Double or Multiple Sampling*—When double or multiple sampling is to be used, each sample shall be selected over the entire lot or batch.
- 6.6 Inspection Procedures—Normal inspection will be used at the start of inspection. Normal, tightened or reduced inspection shall continue unchanged for each class of defects or defectives on successive lots or batches except where the switching procedures given below require change. The switching procedures shall be applied to each class of defects or defectives independently.

6.7 Switching Procedures:

- 6.7.1 *Normal to Tightened*—When normal inspection is in effect, tightened inspection shall be instituted when 2 out of 2, 3, 4, or 5 consecutive lots or batches have been rejected on original inspection (that is, ignoring resubmitted lots or batches for this procedure).
- 6.7.2 *Tightened to Normal*—When tightened inspection is in effect, normal inspection shall be instituted when 5 consecutive lots or batches have been considered acceptable on original inspection.
- 6.7.3 *Normal to Reduced*—When normal inspection is in effect, reduced inspection shall be instituted provided that all of the following conditions are satisfied:
- 6.7.3.1 The preceding 10 lots or batches (or more, as indicated by the note to Table VIII) have been on normal inspection and all have been accepted on original inspection; and
- 6.7.3.2 The total number of defectives (or defects) in the samples from the preceding 10 lots or batches (or such other number as was used for condition "a" above) is equal to or less than the applicable number given in Table VIII. If double or multiple sampling is in use, all samples inspected should be included, not "first" samples only; and
 - 6.7.3.3 Production is at a steady rate; and
 - 6.7.3.4 Reduced inspection is considered desirable.
- 6.7.4 *Reduced to Normal*—When reduced inspection is in effect, normal inspection shall be instituted if any of the following occur on original inspection:
 - 6.7.4.1 A lot or batch is rejected; or
- 6.7.4.2 A lot or batch is considered acceptable under the procedures of 6.10.1.4, or
 - 6.7.4.3 Production becomes irregular or delayed; or
- 6.7.4.4 Other conditions warrant that normal inspection shall be instituted.

6.8 Discontinuation of Inspection—If the cumulative number of lots not accepted in a sequence of consecutive lots on original tightened inspection reaches five, the acceptance procedures of this standard shall be discontinued. Inspection under the provisions of this standard shall not be resumed until corrective action has been taken. Tightened inspection shall then be used as if 6.7.1 had been invoked.

6.9 Sampling Plans:

6.9.1 *Inspection Level*—The inspection level determines the relationship between the lot or batch size and the sample size. The inspection level to be used for any particular requirement will be as prescribed by the contractor's written procedures. Three inspection levels: I, II, and III, are given in Table I for general use (see 6.1). Normally, Inspection Level II is used. However, Inspection Level I may be used when less discrimination is needed, or Level III may be used for greater discrimination. Four additional special levels: S-1, S-2, S-3, and S-4, are given in the same table and may be used where relatively small sample sizes are necessary and large sampling risks can or must be tolerated.

6.9.1.1 In the selection of inspection levels S-1 to S-4, care must be exercised to avoid AQLs inconsistent with these inspection levels. In other words, the purpose of the special inspection levels is to keep samples sma11 when necessary. For instance, the code letters under S-1 go no further than D, equivalent to a single sample of size 8, but it is of no use to choose S-1 if the AQL is 0.10 percent for which the minimum sample is 125.

6.9.2 *Code Letters.* Sample sizes are designated by code letters. Table I shall be used to find the applicable code letter for the particular lot or batch size and the prescribed inspection level.

6.9.3 Obtaining Sampling Plan—The AQL and the code letter shall be used to obtain the sampling plan from Tables II, III, or IV. When no sampling plan is available for a given combination of AQL and code letter, the tables direct the user to a different letter. The sample size to be used is given by the new code letter, not by the original letter. If this procedure leads to different sample sizes for different classes of defects, the code letter corresponding to the largest sample size derived may be used for all classes of defects. As an alternative to a single sampling plan with an acceptance number of 0, the plan with an acceptance number of 1 with its correspondingly larger sample size for a designated AQL (where available), may be used.

6.9.4 Types of Sampling Plans—Three types of sampling plans; Single, Double, and Multiple, are given in Tables II, III, and IV, respectively. When several types of plans are available for a given AQL and code letter, any one may be used. A decision as to type of plan, either single, double, or multiple, when available for a given AQL and code letter, will usually be based upon the comparison between the administrative difficulty and the average sample sizes of the available plans. The average sample size of multiple plans is less than for double (except in the case corresponding to single acceptance number 1) and both of these are always less than a single sample size

(see Table IX). Usually the administrative difficulty for single sampling and the cost per unit of the sample are less than for double or multiple.

6.10 Determination of Acceptability:

6.10.1 Percent Defective Inspection—To determine acceptability of a lot or batch under percent defective inspection, the applicable sampling plan shall be used in accordance with 6.10.1.1 - 6.10.1.4.

6.10.1.1 Single Sampling Plan—The number of sample units inspected shall be equal to the sample size given by the plan. If the number of defectives found in the sample is equal to or less than the acceptance number, the lot or batch shall be considered acceptable. If the number of defectives is equal to or greater than the rejection number, the lot or batch shall be rejected.

6.10.1.2 Double Sampling Plan—A number of sample units equal to the first sample size given by the plan shall be inspected. If the number of defectives found in the first sample is equal to or less than the first acceptance number, the lot or batch shall be considered acceptable. If the number of defectives found in the first sample is equal to or greater than the first rejection number, the lot or batch shall be rejected. If the number of defectives found in the first sample is between the first acceptance and rejection numbers, a second sample of the same size shall be inspected. The number of defectives found in the first and second samples shall be accumulated. If the cumulative number of defectives is equal to or less than the second acceptance number, the lot or batch shall be considered acceptable. If the cumulative number of defectives is equal to or greater than the second rejection number, the lot or batch shall be rejected.

6.10.1.3 *Multiple Sample Plan*—Under multiple sampling, the procedure shall be similar to that specified in 6.10.1.2, except that the number of successive samples required to reach a decision may be as many as seven.

6.10.1.4 Special Procedure for Reduced Inspection—Under reduced inspection, the sampling procedure may terminate without either acceptance or rejection criteria having been met. In these circumstances, the lot or batch will be considered acceptable, but normal inspection will be reinstated starting with the next lot or batch (see 6.7.4.2).

6.10.2 Defects per Hundred Units Inspection—To determine the acceptability of a lot or batch under defects per hundred units inspection, the procedure specified for percent defective inspection above shall be used, except that the word "defects" shall be substituted for "defectives".

6.11 Limiting Quality Protection—The sampling plans and associated procedures given in this publication were designed for use where the units of product are produced in a continuing series of lots or batches over a period of time. However, if the lot or batch is of an isolated nature, it is desirable to limit the selection of sampling plans to those, associated with a designated AQL value, that provide not less than a specified limiting quality protection. Sampling plans for this purpose can be selected by choosing a Limiting Quality (LQ) and a consumer's risk to be associated with it. Tables VI and VII give values of LQ for the commonly used consumer's risks of 10 percent and 5 percent respectively. If a different value of consumer's

risk is required, the O.C. curves and their tabulated values may be used. The concept of LQ may also be useful in specifying the AQL and Inspection Levels for a series of lots or batches, thus fixing minimum sample size where there is some reason for avoiding (with more than a given consumer's risk) more than a limiting proportion of defectives (or defects) in any single lot or batch.

6.12 Curves:

6.12.1 Operating Characteristic Curves—The operating characteristic curves for normal inspection, shown in Table X, indicate the percentage of lots or batches which may be expected to be accepted under the various sampling plans for a given process quality. The curves shown are for single sampling; curves for double and multiple sampling are matched as closely as practicable. The O.C. curves shown for AQLs greater than 10.0 are based on the Poisson distribution and are applicable for defects per hundred units inspection; those for AQLs of 10.0 or less and sample sizes of 80 or less are based on the binomial distribution and are applicable for percent defective inspection; those for AQLs of 10.0 or less and sample sizes larger than 80 are based the Poisson distribution and are applicable either for defects per hundred units inspection, or for percent defective inspection (the Poisson distribution being an adequate approximation to the binomial distribution under these conditions). Tabulated values, corresponding to selected values or probabilities of acceptance (Pa, in percent) are given for each of the curves shown, and, in addition, for tightened inspection, and for defects per hundred units for AOLs of 10.0 or less and sample sizes of 80 or less.

6.12.2 Average Sample Size Curves—Average sample size curves for double and multiple sampling are in Table IX. These show the average sample sizes which may be expected to occur under the various sampling plans for given levels of process quality. The curves assume no curtailment of inspection and are approximate to the extent that they are based upon the Poisson distribution, and that the sample sizes for double and multiple sampling are assumed to be 0. 631n and 0.25n respectively, where n is the equivalent sample size.

7. Operating Procedure for Use in Sampling Inspection

7.1 Sections 4 – 6 of this practice preserve the structure of MIL-STD-105E for use in applications in which that standard is prescribed, or where its use is desirable, for example, where it is called out as part of the procedure contained in another standard. This section provides additional instruction on use of MIL-STD-105E in sampling inspection.

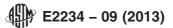
7.2 This standard is a sampling system primarily intended for use with a stream of lots where an upper limit on the process fraction defective is specified. This is the Acceptance Quality Limit (AQL). Protection against the process levels greater than the AQL is accomplished by switching among prescribed plans so that the rate of rejection of lots becomes more and more intolerable as the process average increases beyond the AQL. It is important to note that a relatively large

proportion of lots will be accepted when the process average is less than or equal to the AQL.

- 7.3 When sampling a stream of lots, the standard is employed as follows:
 - 7.3.1 Determine the lot size and set the AQL (see 6.4).
- 7.3.2 Determine the inspection level (see 6.9.1). Use Inspection Level II if none is specified.
- 7.3.3 Decide if single, double, or multiple sampling is to be used (see 6.10).
- 7.3.4 Enter Table I to determine the sample size code letter (see 6.9.2).
- 7.3.5 Enter Table II (single), Table III (double), or Table IV (multiple) with the lot size and code letter to determine a set of normal, tightened or reduced sampling plans which will be used in applying this sampling scheme.
- 7.3.6 Apply the switching rules to determine which of the three plans to apply to the next lot (see 6.6 6.8).
- 7.3.7 The switching rules must be used in application of the procedure to a stream of lots.
- 7.4 When an isolated lot, apart from a stream, the standard may be applied as follows:
- 7.4.1 Determine the AQL as above. A single lot of AQL quality will have a high probability of acceptance very often around 95 % (see 6.4).
- 7.4.2 Set a limiting quality level (LQ) that will have a low consumer's risk (risk of acceptance) of 10 % or 5 % as desired (see 6.11).
- 7.4.3 Enter Table VI or Table VII as appropriate to the consumer's risk and defect type. For a particular AQL, go down the column until a value of LQ less than or equal to the desired LQ is found. Read the corresponding code letter and AQL. Using the Normal sampling tables (Tables IIA, IIIA, or IVA) determine the sampling plan for this code letter and AQL.
 - 7.4.4 Apply the sampling plan to the isolated lot.
 - 7.5 Parameters of the sampling plans
- 7.5.1 The operating characteristic curves for individual plans are given in Table X (see 6.12).
- 7.5.2 The AOQL values for individual plans are given in Table V (see 5.2 and 5.3).
- 7.5.3 ASN curves for the double and multiple plans are given in Table IX (see 6.12.2).
- 7.5.4 Limit Numbers for Reduced Inspection used in the switching rules are given in Table VIII (see 6.10.1.4)

8. Keywords

8.1 acceptance quality level (AQL); average outgoing quality (AOQ); average outgoing quality limit (AOQL); classification of defects; critical defect; critical defective; defect; defective; defects per hundred units; inspection; inspection by attributes; lot or batch; lot or batch size; major defect; major defective; minor defect; minor defective; percent defective; process average; sample; sample size code letter; sampling plan; unit of product



ANNEX

(Mandatory Information)

A1. MASTER TABLES

See Figs. A1.1-A1.10

Table I, Sample Size Code Letters (see 6.2 and 6.3)
Table II-A, Single Sampling Plans for Normal Inspection (see 6.4 and 6.4.1)
Table II-B, Single Sampling Plans for Tightened Inspection (see 6.4 and 6.4.1)
Table II-C, Single Sampling Plans for Reduced Inspection (see 6.4 and 6.4.1)
Table III-A, Double Sampling Plans for Normal Inspection (see 6.4 and 6.4.1)
Table III-B, Double Sampling Plans for Tightened Inspection (see 6.4 and 6.4.1)
Table III-C, Double Sampling Plans for Reduced Inspection (see 6.4 and 6.4.1)
Table IV-A, Multiple Sampling Plans for Tightened Inspection (see 6.4 and 6.4.1)
Table IV-B, Multiple Sampling Plans for Tightened Inspection (see 6.4 and 6.4.1)
Table IV-C, Multiple Sampling Plans for Reduced Inspection (see 6.4 and 6.4.1)

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FIG. A1.1 Table I Sample Size Code Letters

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FIG. A1.2 Table II-A Single Sampling Plans for Normal Inspection

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FIG. A1.3 Table II-B Single Sampling Plans for Tightened Inspection

Lise first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection.

Ac = Acceptance number.

Re = Rejection number.

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FIG. A1.4 Table II-C Single Sampling Plans for Reduced Inspection

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FIG. A1.5 Table III-A Double Sampling Plans for Normal Inspection

Use first sampling plan below arrow. If sample size equals or excerts lot or batch size, do 100 percent inspection. Use first sampling plan above strow.

Acceptance number
 Rejection number
 Use corresponding single sampling plan (or alternatively, use double sampling plan below, where available).

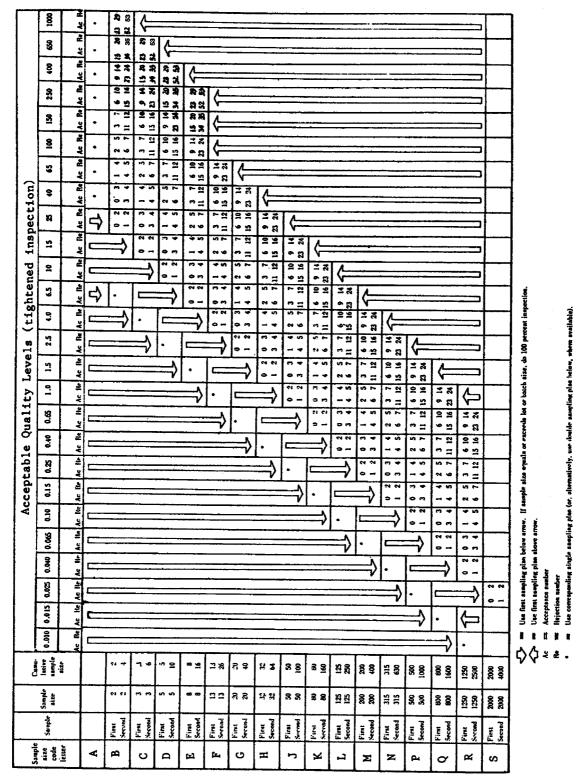


FIG. A1.6 Table III-B Double Sampling Plans for Tightened Inspection

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FIG. A1.7 Table III-C Double Sampling Plans for Reduced Inspection

Use first aempling plan above arrow. If sample size equals or exceeds lot or batch size, do 100 percent impaction.
 Acceptance number.
 Hejection number.
 Use corresponding single sampling plan for alternatively, use double aempling plan below, when available.)
 Use corresponding single sampling plan for alternatively, use double aempling plan below, when available.)
 If, after the second sample, the acceptance number has been exceeded, but the rejection number has not been reached, accept the loc, but releasate nomed inspection (see 10.1.4).

If sample aims equals or exceeds int or batch size, do 100 percent inspection

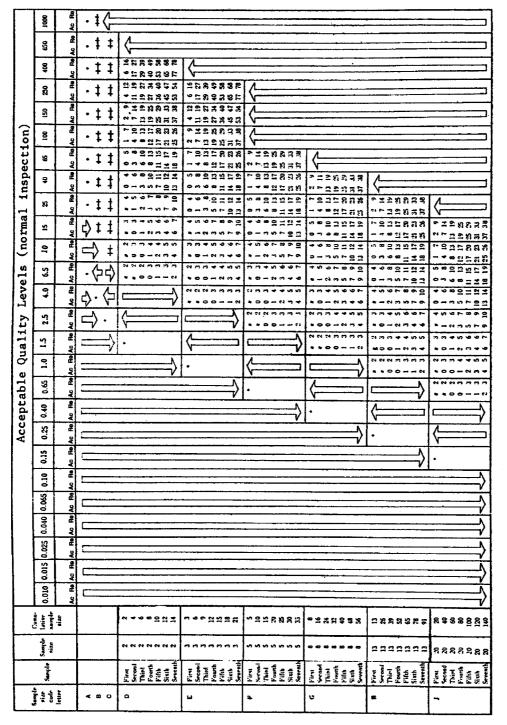


FIG. A1.8 Table IV-A Multiple Sampling Plans for Normal Inspection

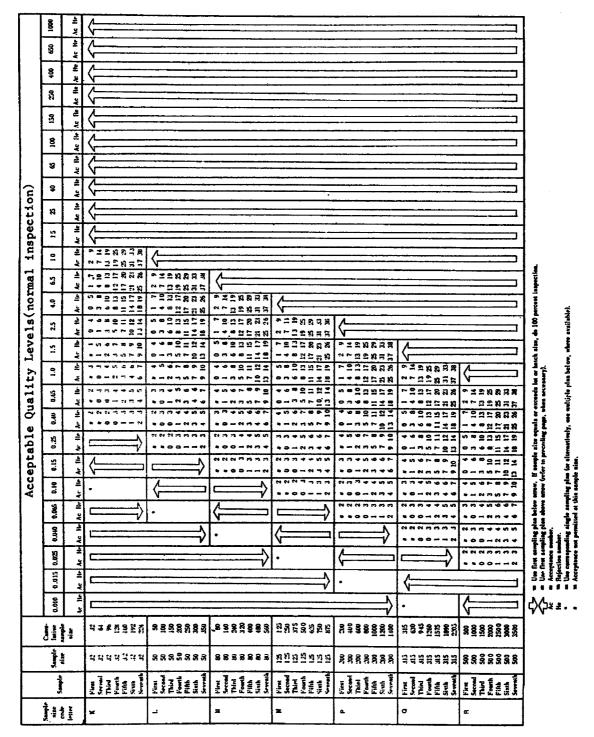
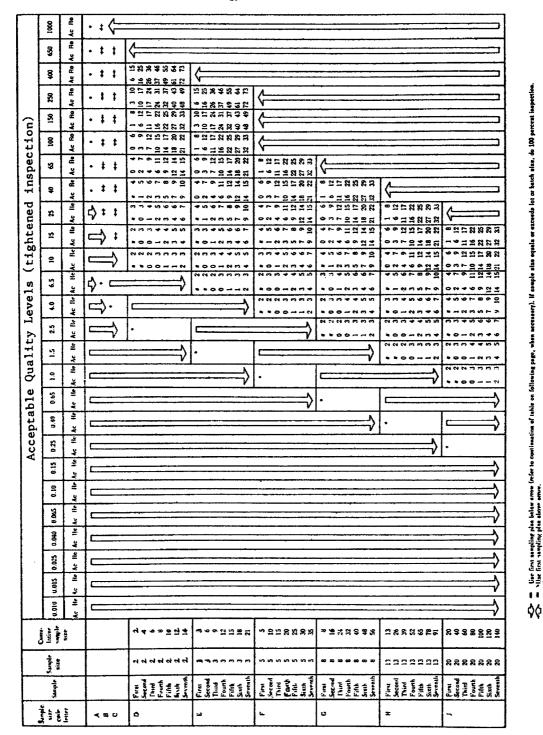


FIG. A1.8 Table IV-A Multiple Sampling Plans for Normal Inspection (continued)



single sampling plan (or alternatively, we multiple sampling plan below, where available), double sampling has loca alcematively, use multiple sampling plan below, where available), mitted at his sample size.

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FIG. A1.9 Table IV-B Multiple Sampling Plans for Tightened Inspection

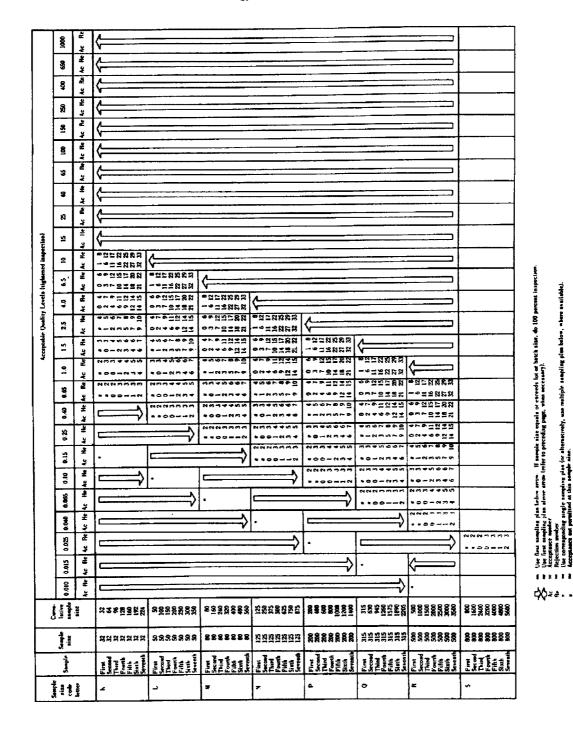


FIG. A1.9 Table IV-B Multiple Sampling Plans for Tightened Inspection (continued)

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FIG. A1.10 Table IV-C Multiple Sampling Plans for Reduced Inspection

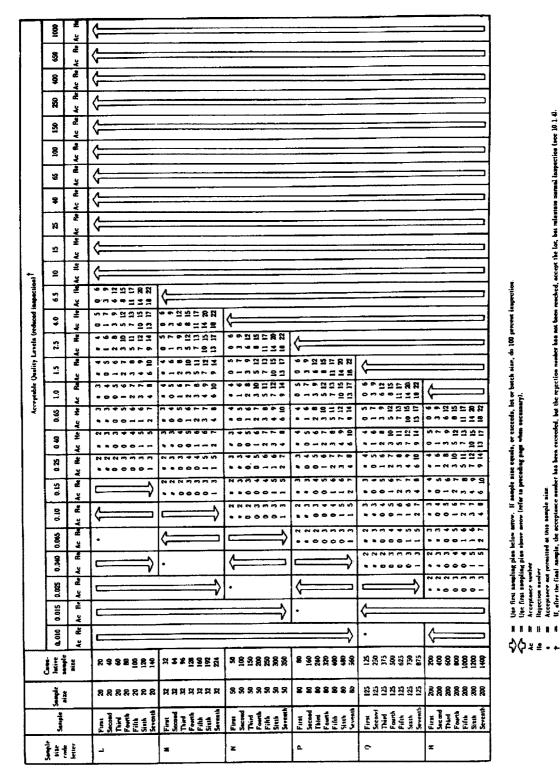


FIG. A1.10 Table IV-C Multiple Sampling Plans for Reduced Inspection (continued)



APPENDIX

(Nonmandatory Information)

X1. SUPPORTING TABLES

X1.1 Average Outgoing Quality Limit Factors

X1.1.1 Table V-A (Fig. X1.1), Average Outgoing Quality Limit Factors for Normal Inspection (Single Sampling) (see 3.1.12)

X1.1.2 Table V-B (Fig. X1.2), Average Outgoing Quality Limit Factors for Tightened Inspection (Single Sampling) (see 3.1.12)

X1.2 Limiting Quality

- X1.2.1 Table VI-AFig. X1.3 Limiting Quality (in percent nonconforming) for which $P_a = 10$ Percent (for Normal Inspection, Single Sampling) (see 6.7)
- X1.2.2 Table VI-B (Fig. X1.4), Limiting Quality (in non-conformities per hundred units) for which $P_a = 10$ Percent (for Normal Inspection, Single Sampling) (see 6.7)
- X1.2.3 Table VII-A (Fig. X1.5), Limiting Quality (in percent nonconforming) for which $P_a = 5$ Percent (for Normal Inspection, Single Sampling) (see 6.7)
- X1.2.4 Table VII-B (Fig. X1.6), Limiting Quality (in non-conformities per hundred units) for which Pa = 5 Percent (For Normal Inspection, Single Sampling) (see 6.7)
- X1.2.5 Table VIII (Fig. X1.7), Limit Numbers for Reduced Inspection (see 5.14)
- X1.2.6 Table IX (Fig. X1.8), Average Sample Size Curves for Double and Multiple Sampling (normal and tightened inspection) (see 6.7.3)

X1.3 Sampling Plans and Operating Characteristic Curves (and Data)

- X1.3.1 See Figs. X1.9-X1.25
- X1.3.2 Table X-A, Sample Size Code Letter A (Fig. X1.9)
- X1.3.3 Table X-B, Sample Size Code Letter B (Fig. X1.10)
- X1.3.4 Table X-C, Sample Size Code Letter C (Fig. X1.11)
- X1.3.5 Table X-D, Sample Size Code Letter D (Fig. X1.12)
- X1.3.6 Table X-E, Sample Size Code Letter E (Fig. X1.13)
- X1.3.7 Table X-F, Sample Size Code Letter F (Fig. X1.14)
- X1.3.8 Table X-G, Sample Size Code Letter G (Fig. X1.15)
- X1.3.9 Table X-H, Sample Size Code Letter H (Fig. X1.16)
- X1.3.10 Table X-J, Sample Size Code Letter J (Fig. X1.17)
- X1.3.11 Table X-K, Sample Size Code Letter K (Fig. X1.18)
 - X1.3.12 Table X-L, Sample Size Code Letter L (Fig. X1.19)
- X1.3.13 Table X-M, Sample Size Code Letter M (Fig. X1.20)
- X1.3.14 Table X-N, Sample Size Code Letter N (Fig. X1.21)
 - X1.3.15 Table X-P, Sample Size Code Letter P (Fig. X1.22)
- X1.3.16 Table X-Q, Sample Size Code Letter Q (Fig. X1.23)
- X1.3.17 Table X-R, Sample Size Code Letter R (Fig. X1.24)
 - X1.3.18 Table X-S, Sample Size Code Letter S (Fig. X1.25)

	100	901					
	જુ	65 5 8 65 5 8					
	Q	65 630 630	917				
	250	330 310 230	270				
	150	220 220 190	021 0 8 1				
	160	160 150 130	120 110				
	ß	97 110 98	22 22 25		*****		
	\$	\$ 8 2	% के इ	9		, ,	
	x	23 A3 E8	3 % %	8 8			
	15	8 5	22 22	21 19 18			
	10	17	17 15 16	14 13 12	12		
	6.5	81	111 1119.7	9.9 9.0 8.2	7.5		
Level	6. 0	12	6.9	6.1 6.3 5.6	5.2 4.7 4.7		
Acceptable Quality Level	2.5	7.4	4.2	4.3 3.9 4.0	3.6 3.3 3.0	2.9	
table (1.5		9.	2.6 2.7 2.4	2.5 2.2 2.1	1.9	
Accep	1.0		2.8	1.7	1.6 1.4 1.4	1.3	
	0.65		1.8	11	1.1 0.97 1.00	0.90	0.73
	07:0			1.2	0.67	0.63	0.47
	0.25			0.74	0.42	0.36	0.33
	0.15			34.	0.27	0.27	8.0
	0.10	:			6.2 81	0.17	0.16
	0.065				0.18	0.11	0.097
	0.040				0.12	0.067	0.042 0.069
	0.025					0.074	0.042
	0.010 0.015 0.025 0.040					0.046	
	0.010				,	0.029	
Sample	Size	мми	80 13 00	25 25 28 27 25 28	125 200 315	500 800 1250	2000
Sode	Letter	₹ 80 ∪	088	5 H P	XJZ	z 4 0	æ

Notes For the exact AOQL, the above values must be multiplied by (1 - Semple size)

AOQL NORMAL

FIG. X1.1 Table V-A Average Outgoing Quality Limit Factors for Normal Inspection (Single Sampling)

	1000	970 1100					;
	659	620 650 610					
	400	36.5	88.				
'	250	8 6 8	240				
	25	99 5. 99 92 5. 99	95 95 95				
	8	97 110 100	& K				
	?s	883	3 2 2				
	ŝ	328	3 2 4	86			
	ĸ	71 BB	222	សស			
	31	Ħ	72 23	16 16 16			
	01		3 3 3 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5	9.9 10 9.9	6'6		
la ve	6.5	12	6.9	6.1 6.3 6.4	6.4	,	
uedity [/	0.4	7 ′2	4.2	4.3 3.9 4.0	4.1 4.0 3.9		
Acceptable Quality Level	2.5		\$	2.6	2.5 2.6 2.5	2.5	
Acce	1.5		2.8	1.7	1.6 1.6 1.6	9:1 9:1	
	0'1		8:1	1.1	1.1 0.97 1.0	1.0 0.99 0.99	
	0.65			9	0.67 0.69 0.62	0.63 0.64 0.64	0.62
	0.40			0.74	0.42	17'0 07'0 6E'0	0.40
	0.25			0.46	0.27	0.27 0.24 0.25	0.26
	0.15				87.	0.17 0.17 0.16	0.16
	0.10				0.18	0.11 0.11	0.097
	0.065				0.12	0.067	0.069
	0.040					0.074	0.042
	0.025					0.046	0.027
						0.029	
	0.010 0.015						0.018
	Sample	01 60 VO	æ EI 82	888	125 200 315	500 800 1250	3150
	Code	₹ 80 Û	Cmr	O E L	X L X	N G	5 K

Note: For the exact AOQL, the above values must be multiplied by ($1-\frac{\text{Sample size}}{\text{Lot or Betch size}}$)

AOQL TIGHTENED

FIG. X1.2 Table V-B Average Outgoing Limit Factors for Tightened Inspection (Single Sampling)

																 -
	10		88	54	.44	2	34	83	24	ន						
	6.5	899		41	36	93	27	22	16	91	14					
	4.0	54			27	22	20	18	14	12	10	9.0				
	2.5		37			18	91	13	11	9.4	7.7	6.4	5.6			
	1.5			22			21	10	8.2	7.4	5.9	4.9	4.0	3.5		
	1.0			-	16			9.7	6.5	5.4	4.6	3.7	3.1	2.5	2.3	
-	0.65					11			4.8	4.3	3.3	2.9	2.4	1.9	1.6	1.4
ity Leve	0.40						6.9			3.1	2.7	2.1	1.9	1.5	1.2	1.0
Acceptable Quality Level	0.25					-		4.5			2.0	1.7	1.3	1.2	0.94	0.77
Accepte	0.15					-			2.8			1.2	1.1	0.84	0.74	0.59
	0.10					·····				1.8			0.78	0.67	0.53	0.46
	0.065										1.2			0.49	0.43	0.33
	0.040								•			0.73			0.31	0.27
	0.025		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										94.0			0.20
	0.015		,											0.29		
	0.010														0.18	
Sample	<u> </u>	63 65	· vs	8	13	50	32	20	8	125	200	315	200	008	1250	2000
Code		< ∞	ນິບ	۵	ы	ĵr,	ŋ	ï		ㅊ	ı	×	z	С.	<u>ې</u>	Œ

LQ (DEFECTIVES)
10.0%

FIG. X1.3 Table VI-A Limiting Quality (In percent defective) for which $P_a = 10$ Percent (for Normal Inspection, Single Sampling)

		1_	_												.		
	1000	1900	1800		·												
	920	1400	1300	1100													
	400	1000	046	770	029	****											
	250	770	670	260	984	410						********					
	150	280	510	90\$	350	88											
	100	99	330	310	23.0	220											,,,
	65	330	310	240	83	91	97										
	ð.	270	220	190	150	120	901	88					•				
	25	200	180	130	120	፳	11	ន	35								
	15		130	110	2	2	જ	2	3	8		- 41,6,4,4,3					
	10			7.8	29	2	\$	33	31	ধ্	ដ						
Level	6.5	120			46	7	83	23	24	19	22	=	•				
Acceptable Quality Level	6.4		77			8	23	21	19	15	12	2	9.0				
able Q	2.5			46			8	11	13	12	9.4	7.7	6.4	5.6			
Accept	1.5				83			21	Ξ	8.4	7.4	5.9	6.4	0.4	3.5		
	1.0					18			7.8	6.7	5.4	4.6	3.7	3.1	2.5	2.3	
	0.65						12			4.9	4.3	3.3	2.9	2.4	1.9	9:1	*:
	04.0							7.2			3.1	2.7	2.1	1.9	1.5	1.2	0.1
	0.25								4.6			2.0	1.7	1.3	1.2	0.94	72.0
	0.15						referensier in trans			2.9			1.2	1.1	0.84	0.74	0.59
	0.10										1.8			0.78	29.0	0.53	9,0
	0.065									***************************************		1.2			0.49	0.43	0.33
	0.040				-								0.73			0.31	0.27 0.33
	0.025													0.46			0.20
	0.010 0.015 0.025 0.040 0.065 0.10														0.29		
	0.010										*					0.18	
Sample	size	2	9	5	æ	13	20	32	S	80	125	200	315	200	800	1250	2000
Code	letter	¥	ф	ပ	٥	(±)	LS.	9	Ξ	7	×	J	3	z	۵	ò	=

LQ (DEFECTS)
10%

FIG. X1.4 Table VI-B Limiting Quality (In defects per hundred units) for which P_a = 10 Percent (for Normal Inspection, Single Sampling)

	10	99	60 50 46	37 32 26	24		
	6.5	78	47 41 34	30 25 20	18		
	4.0	83	32	22 23 16	14 11 9.6		
	2.5	45	ដ	18 15 13	11 8.5 7.0	6.1	
	1.5		31	14 12 9.4	8.4 6.6 5.4	4.4	i
	1.0		21	9.1	6.2 5.3 4.2	3.4 2.7 2.4	
	0.65		14	5.8	5.0 3.9 3.3	2.6 2.1 1.8	1.5
	0.40			8.9	3.8 3.2 2.5	2.1 1.6 1.4	1.1
Acceptable Quality Level	0.25			٠. ش	2.4	1.6 1.3 1.1	0.85
le Quali	0.15			3.7	1.5	1.3 0.97 0.84	0.66
Acceptab	0.10				2.4	0.95 0.79 0.62	0.53
	0.065				1.5	0.59	0.39
	0.040				0.95	0.38	0.32
	0.025					09.0	0.24
	0.015					0.38	
	0.010					0.24	
Sample	size	2 8 5	8 13 20	32 50 80	125 200 315	500 800 1250	2000
i de la companya de l	letter	v m ∪	O R R	D H	XIX	zdo	æ

LQ (DEFECTIVES)
5.0%
FIG. X1.5 Table VII-A Limiting Quality (in percent defective) for which P_a = 5 Percent (for Normal Inspection, Single Sampling)

	1000	2000 1900					
	650	1500 1400 1100					,,,
	400	1100 1000 810	710				
	250	850 730 610	510				
	150	570 540	380				
	100	530 440 340	270				
	88	390 350	210 170 150				
	40	320 260 210	091 130 110	8			
	25	240 210	05.1 05.1 28.	8 2			
	15	160	97 81	S 2 88			
	91	95	£ & £	41 34 27	24		
	6.5	150	59 48 39	28 28 28	18		
	4.0	100	37	22 22	14 11 9.6		
evel	2.5	8	\$	8 2 2	11 8.5 7.0	6.1	
Acceptable Quality Level	1.5		88	15 13 7.9	8.4 6.6 5.4	4. 8. 4. 8.	
ble Qu	1.0		ន	9.5	6.2 5.3 4.2	3.4 2.7 2.4	
ndaoo	9.65		22	5.9	5.0 3.9 3.3	2.6 2.1 1.8	3.
*	0.40			7.6	3.8	2.1 1.6 1.4	7
	0.25			6.0	2.4	1.6 1.3 1.1	0.85
	0.15			3.8	1.5	1.3 0.97 0.84	0.66
	0.10				24	0.95 0.79 0.62	0.53
	_				1.5	0.59	0.39
	0,040				0.95	0.38	0.32
).025		,			0.60	0.24
	0.015					0.38	
	0,010 0.015 0.025 0.040 0.065					0.24	
Sample		2 6 5	8 13	32 80 80	125 200 315	500 800 1250	2000
-	letter	₹ B ∪	ට හ අ	0 ± ¬	* 기호	Z 1. O	æ

LQ (DEFECTS) 5%

FIG. X1.6 Table VII-B Limiting Quality (in percent per hundred units) for which P_a = 5 Percent (for Normal Inspection, Single Sampling)

	0001	181 2‡2					
	059	115 178 301					
	9	88 252 281	762				
	82	3 23 51	181 301 471				-
	8	21 28 22	105 177 277				
	961	= 21 9	68 115 181				-
	59	≖ 23 %3	42 72 115	68 7			
	3	7~3	¥ # 8	113			
	Ю	00 F	¥ 13 3	98 EE			
	21	0 - 6	- E 22	ខ្ ខ ខ	S <u>S</u>		
	2	004	7 ~ 2	\$\$	01 18 18 18		
evel	5.5		O1 + 00	≒83	88 11 88 118 88		
Juality 1	0.4		0 4 4	∞ ± ₹	9 95 II	181	
Acceptable Quality Lovel	2.5		00%	4 ~ 3	282	116	
Acc	2			-6-	22 23 23	23 201 169	
	0.1			0 0 +	~=8	3 38 SI	181
	0.65			00%	** 8 *	X1 25 82	106 981 511
	0.40			• • •	27 4 80	21 22 04	68 1111 181
	0.28				0 7 7	7 72 75 75 75 75 75 75 75 75 75 75 75 75 75	67 67 110
	0.15				007	3 7 13	ផ្លួ
	0.10		• • •		• 0 0	444	7 2 3
	0.065				0	0 2 4	8 14 25
	0.040					7 0 0	4 88 14
	0.025						2 4
	0.010 0.015			• • •			0
	0.010						00%
Number of	sample units from last 10 lots or batches	20 - 29 30 - 49 50 - 79	80 - 129 130 - 199 200 - 319	320 - 499 50C - 799 800 - 1249	1250 - 1999 2000 - 3149 3150 - 1999	3000 - 7999 8000 - 12499 12500 - 19999	20000 - 31499 31500 - 49999 50000 & Over

LIMIT NUMBERS

FIG. X1.7 Table VIII Limit Numbers for Reduced Inspection

Denotes that the number of sample units from the last tox lots or batches is not sufficient for reduced inspection for this AQL. In this instance more than ten lots or batches may be used for the calculation, provided that the lots or batches used are the most recent ones in sequence, that they have all been on sormal inspection, and that the lots or batches used are the most recent ones in sequence, that they have all been on some inspection.

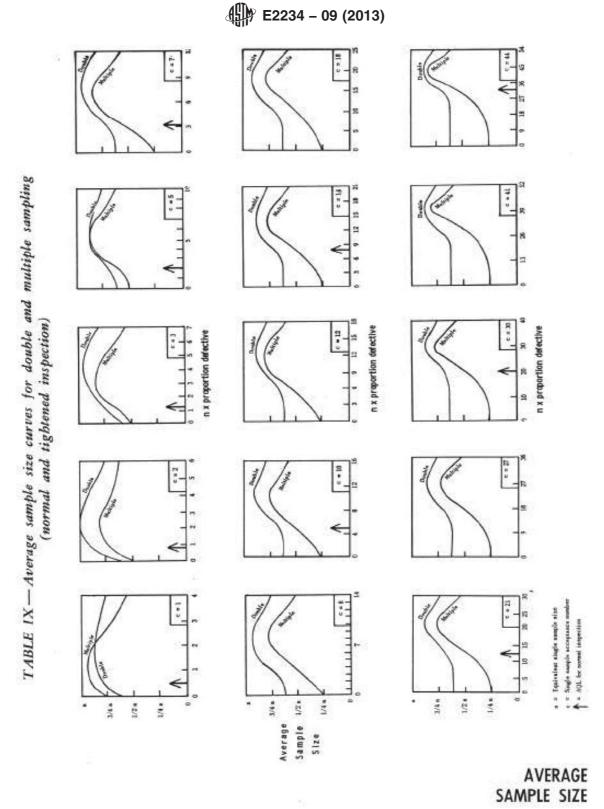


FIG. X1.8 Table IX Average Sample Size Curves for Double and Multiple Sampling (Normal and Tightened Inspection) (See6.7.3)

TABLE X.A.—Tables for sample size code letter: A

QUALITY OF SUBWITTED LOTS 49, in percent defective for AQU's \$ 10; in defects per handred units for AQU's > 10] CHART A - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS (Carren for double and multiple sampling are matched us closely as practicable)

TABLE X-A-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

					Accepta	ble Quality	Levels (no	Acceptable Quality Levels (normal inspection)	tion						
a.	6.5	5.9	ĸ	97	99	100	150	Χ	250	X	400	X	069	Χ	1000
	p lin percent defective)						94	p (in defects per handred	or handred a	units)					
0.66	0.500	0.51	59-2	21.8	41.2	88.2	145	173	617	300	37.6	517	629	659	917
95.0	2.53	2.56	17.8	6:09	68.3	131	186	235	308	385	162	622	345	968	1122
0.06	5.13	5.25	38.6	1.88	87.3	158	233	21.2	192	452	515	684	\$12	1073	1206
75.0	13.4	14.4	188	86.8	127	211	208	342	(31	521	612	282	106	1314	1354
50.0	58.3	7.2.	83.9	13	184	284	383	433	513	633	82	933	1063	1383	1533
25.0	0.08	69.3	135	961	922	37.1	484	240	159	761	970	1067	1248	1568	1738
0.01	63.4	115	361	286	334	754	685	059	077	688	9001	1236	1409	1748	1916
3.0	77.6	351	237	315	366	526	199	727	848	57.2	1600	1334	1512	1862	2005
1.0	90.0	200	332	420	2005	655	900	870	2001	1141	2121	1529	1718	2098	2200
	X	Χ	9	23	100	150	X	192	X	007	X	059	X	1000	X
					Access	able Osalit	s Lavela (ti	Acceptable Osality Lawels (tightesed laspection)	pection						

A

FIG. X1.9 Sample Size Code Letter A

Gum.	sample size		N				
	1000	Ac Be	30 31	ε	•1	X	Г
	Χ	Ac Be	22	ε	•	9001	
	959	Ac Re A	22 22	ε	1.44	X	
	Χ	Ac Re A	18 19	€		959	
	00#	Ac Re	12 12	ε	**	X	
	X	Ac Be	12 13	ε	**	\$	
3	220	Ac Re	11 01	ε	16	X	(00)
Acceptable Quality Levels (sormal inspection)	Χ	Ac Re	o. m	٤	6.415	520	d income
[masou) a	150	Ac Re	4	€	(e)	X	Accountific Duality Levels (tightness) issued in
dy Level	100	Ac Re	9	Đ	77 4 77	150	v I avela
Ale Qual	99	Ac Re	9	ε	(*)	000	de Oudi
Accepte	40	Ac Re		ε	E#8	8	Accessed
	33	Ac Re	1 2	S	<.i.1	9	
	22	Ac Re	à	10			
	10	Ac Re	2	23			
	X	Ac Be	à	1		10	
	6.5	Ac Re		3∙3	1.0	X	
	Less than 6.5	Ac Re	Þ	D	Þ	See that	
Comp	aise a		64				
Tree of	rempling John		Single	Double	Nultiple		

💟 = Une east subsequent sample size code letter for which acceptance and rejection numbers are available.

FIG. X1.9 Sample Size Code Letter A (continued)

A

TABLE X-B-Tables for sample size code letter: B

CHART B - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS (Curves for double and statistiple amounting are statished as clearly as practicable)

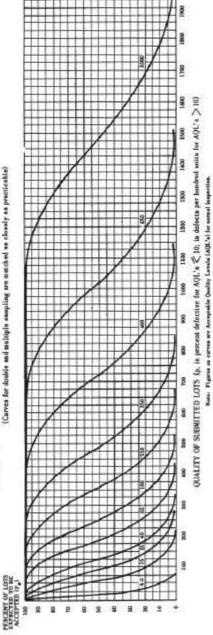


TABLE X-B-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

_						Acce	ptable Qua.	lity Level.	Acceptable Quality Levels (normal inspection)	nspection)							
Pa .	4.0	0.4	12	М	0#	59	100	X	150.	Χ	250	Χ	00#	Χ	959	Χ	1000
4	p die percent defective)				1 10		200	p (in	p (in defects per hundred units)	hundred o	mits)	3					
0.00	0.33	0.34	463	14.5	27.4	59.5	6.96	117	159	203	249	315	419	573	159	246	1029
0.26	1.3	171	11.8	27.3	45.5	87.1	133	157	200	957	308	415	968	693	748	1065	1152
0.06	3.45	3.50	17.7	36.7	28.2	106	155	181	234	288	343	456	32	716	804	1131	1222
75.0	9.14	9.60	32.0	97.75	84.5	141	189	228	287	347	80#	\$30	623	808	903	1249	1344
0.02	20.6	23.1	6.55	1.69	122	189	356	289	326	ដ្ឋ	689	622	722	922	1022	1389	1489
25.0	37.0	46.2	8,68	131	0,11	247	323	360	151	202	280	123	132	1046	1152	1539	1644
10.0	53.6	76.8	130	171	223	300	392	433	514	503	17.9	823	(6)	1165	1277	1683	1793
5.0	63.2	6.66	158	210	228	380	438	481	595	849	730	890	1008	1241	1356	1773	1886
1.0	78.4	154	221	280	335	437	533	280	219	192	848	1019	1145	1392	1513	1921	3069
	6.5	6.5	25	3	53	100	X	150	X	250	X	001	X	059	Χ	1000	X
_						Acc	ceptable Os	ality Levi	Acceptable Osality Lawels (tacktoond inspection)	nd inspect	(sos)						

B

FIG. X1.10 Sample Size Code Letter B

Cumir	lative	size	m	и 4					
	1000	Fe Fe	1 45	25 31	‡	X			
	X	Be Ac	24	8 8	‡	1000			
	100	2 2	31 41	38 22 23					
	650	9	8		#	X			
	X	Ac ReAc ReAc	88	8 8	‡	959			
	1	- A	12	27 34 27		8			
	8	ic Re	N		‡	IX1			
	V	Re Ac	19 21	24 27		0			
8	Λ	3	18	0 23	‡	909			
Acceptable Quality Levels (acrmal inspection)	250	Re Ac Be	14 15	11. 7. 11. 19. 19.	‡	X	tion)		
	V	Re	13 14	01 91			take.		
E C	Λ	¥	12	9 10	‡	8	- in		
ds (e	150	8	=	6 23	‡	X	Acceptable Quality Levels (tightered inspection)		
ž.	-	ReAc	9	12 12 5		$ \wedge$	(6)		
Bit	X	2		8 11	#	8	-		
å		ReAc	100	r- 00		1/	.5		
appe	100	BeAc	1	15 00	‡	IX.	1		
dago	65	Be .		M F	‡	901	le O		
*	The state of	Re Ac	4	4 10			eptal		
	8		m		‡	8	Acc		
		Re Ac	6	m +					
	М	Re Ac	64	0 60	‡	8			
	12		64	64 64	‡	1/3			
	-70	ReAc	-	0 1	t				
	10	E B	3	22					
ı	Χ	Be Ac							
	Λ	Re Ac		3 8 0		00			
	6.5	Ac Re	127	Letter Letter		X			
	4.0	문	7		•	9.5			
		*	0	- 58					
	Less thes 4.0	Ac Re	٥	D	\triangleright	Less than 6.5			
Chemin	lative		ы	n •					
_	Type of sampling	-	Single	Double	Waltiple				

FIG. X1.10 Sample Size Code Letter B (continued)

B

Use single nampling plan above for alternatively use letter E.). Use double sampling plan above for alternatively use letter D.,

Use next subsequent sample size code letter for which acceptance and rejection numbers are available.

Acceptance number

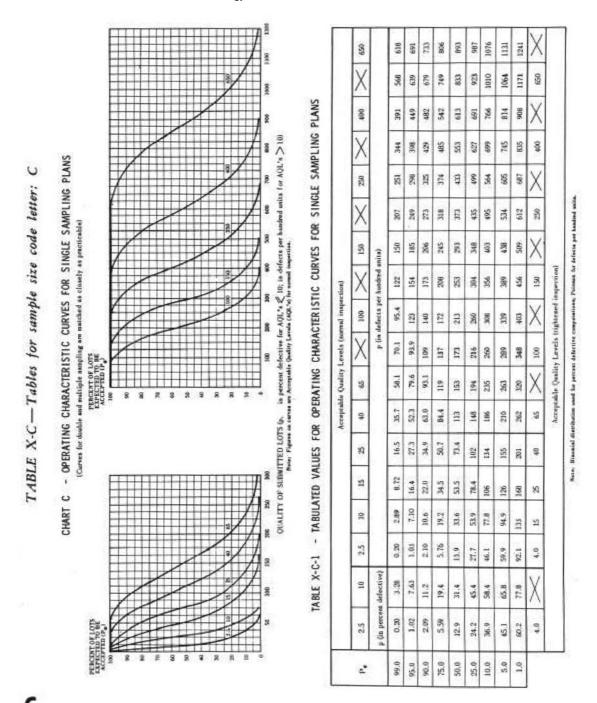


FIG. X1.11 Sample Size Code Letter C

Comp- lative sample size	5	es 0		
1000 Ac Re		Use B		1000
650 Ji	4 45	25 25 26 25	‡	X
V 2	41 42	8 2	‡	053
80 80 A	30 31	37 36 52	‡	X
X all a	23	34 35 30	ŧ	9
250 280 X	21 22	3 12 25	‡	X
X B X	18 19	1 2 2	‡	28
9 2	14 15	11 7 11 8 19	‡	X
X %	12 13	5 16 10	‡	8
8 2	=======================================	5 9	‡	X
A Be No	8 9 10	3 7	ŧ	88
10 E	7 8	E 80	‡	X
40 &	9	S 1-	‡	8 8 X X X X X X X X X X X X X X X X X X
25 A	60	1 4 4 8	‡	\$
15 As Re	64	0 g	‡	80
10 Ac Re	1 2	1 2	‡	81
6.5 Ac Re		Lener o		9
Find Ac Re		1 1 w		55
5 4.0 Be Ac. Be		Letter Use		X
ri y	0		• ,	6.5
Less than 2.5 As Be	\triangleright	D	\triangleright	Chass then
Carro- Jestive pample size	w	E 6		
Type of sampling plan	Single	Double	Multiple	

FIG. X1.11 Sample Size Code Letter C (continued)

Use next subsequent sample size code letter for which acceptance and rejection numbers are available. D # E . ‡

Use single sampling plan above (or alternatively use letter F). Use double sampling plan above (or afternatively use letter D).

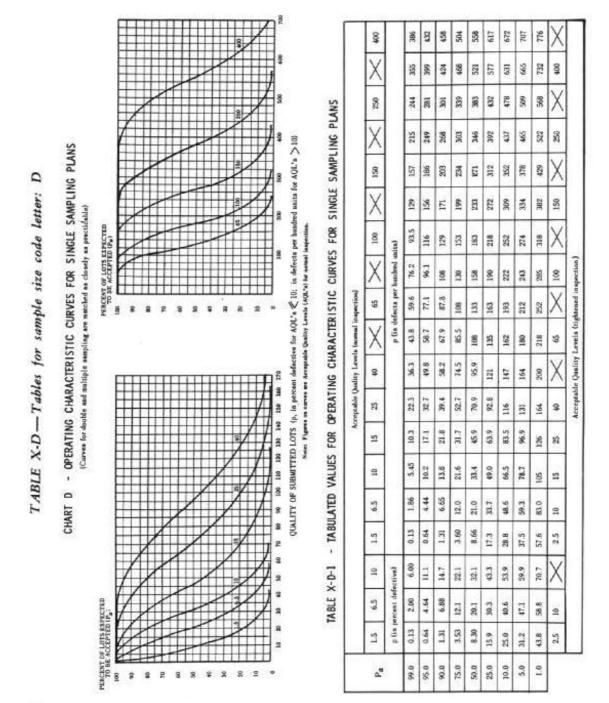


FIG. X1.12 Sample Size Code Letter D

	Curre- lative sample	Size	89	5 01	64	•	9		10	12	±		
Ī	Higher than 400	lc Re	۵	٥	٥							Higher than 400	
	001	ReAc	-3	E 5		12	39	0.	33	8	78	V	1
	3	\$	3	初路	va .	2	83	3	23	9	E	1	
	V	nº	42	& B	E 1 29452	10	8	3	123	4	73	8	
	1	*	=	22 23		916	27 26	38	40	47.61	54 72		1
	8	8	31	和 第	Sc Turk							I X	
	· /	2	8	2 2	-	17 11	24 19	31 27	37 36	3	49 53	/ /	
	ΙXΙ	2	88	8 8	5250							য়	
	/1	2	27	2 2	100	2	11 61	25	24	9	# #	17	1
	150	Ac Re	22	1 16 27	3 350	7 14	13.1	19 25	23	31 33	37 38	I X	
	1/	B.	62	24 25		22	-	13	13	23	2	1	1
	ΙXΙ	Ac F	92	• 8	1	9	=	91	23	17	25	8	
	/ /	Re	- 12	19 11	_	10	13	17	8	23	36	M	-
8	8	Ac B	2	7 18	2011	4			1	2	52	IX	Cao
activ	V	F.	13	91 91	COLUMN TO THE PARTY OF THE PART	0	22	15 12	17	8	83	-	200
de	X	Ac F	==	- 10	2011	19	r-	9	=	8	7	100	100
=		2	=	0 10	30	100	2	2	12	드	61	V	Per
100	18	Per l	2	10 14	0	175	10	100	=	±	90	X	dite
18.0	1/	£	Р.	P 19	+	-	0	=	12	7	10		3
eve.	X	Ac		6 =	0	.04	+	10	р.	12	ž	23	100
141		B		r- 0		10	100	2	=	n	=	V	-5
Acceptable Quality Levels (nomal inspection)	\$	Ac E	-	m w	. 0	-	175	10	-	9	13	IX	Acceptable Quality Levels (tightened inspection)
9e 0	7	F.	•	10 Pr	-	60	10	1-	100	0.	10	-	3
ptab	12	Ae.	100	N 10		-	N	100	100	1	0	3	able
900	5.2	å	-	→ w	193	m	-	No.		10	*	52	100
٠.	SI	No.	m	- +		0	-	14	m			-62	*
	23	8	199	m er	EN	rri.	m	*	4	17	419	15	
	2	Ac.	64	0 11		0	0	+	64	m	+	-	
	10	2	64	24 24	64	64	64	m	on.	-	17	9	
	6.5	36	-	0 -			0	0	-	н	64	-	
	6.0	Ac Re	1	Letter	ы							6.5	
ľ	V	Be	2	fer .	ъ.							0.4	
	1	Ac.	-		TO A.	_	_	_	_	-	_	11/	
	2.5	8	3	Letter	U							I X	
		Ac.			Tiester .		_	_	_	_		//	
	57	Be .	70									5.5	
		Ac	0										
	Less than 1.5	Ac Re	D	\triangleright	D							Less than 2.5	
	lative sample	_	æ	5 10	23	•	0		10	12	71		
	Type of sampling ples		Single	Double				Nultiple					

Use next preceding sample size code letter for which acceptance and rejection numbers are available.
 Lhe next subsequent sample size code letter for which acceptance and rejection numbers are available.

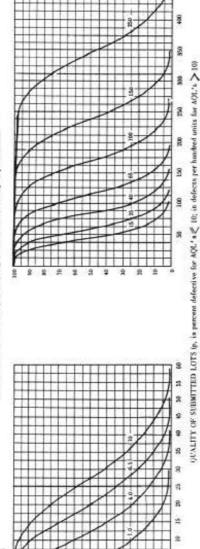
Use single sampling plan above (or alternatively use letter G).

Acceptance not permitted at this sample size.

FIG. X1.12 Sample Size Code Letter D (continued)

TABLE X-E-Tables for sample size code letter: E

CHART E - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS (Curves for shutte and multiple sampling are natched as closely as practicable)*



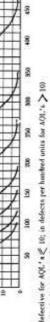


TABLE X-E-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

1.0 4.0 6.5 10 1.0 4.0 6.5 10 15 25 7 40 7 40 7 40 7 7 100 7 150									Acceptab	Acceptable Quality	Levels t	Levels (normal inspection	(bection)								
0.037 1.19 3.63 1.13 3.24 2.74 3.64 facts a per handred units) γ (is deficient per handred units) 0.037 1.19 3.63 1.00 0.078 1.13 3.23 1.24 27.0 36.7 46.9 57.5 79.6 16.7 17.0 96.7 132 15.9 17.0 20.0 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 96.7 17.0 <th>۵,</th> <th>1.0</th> <th>4:0</th> <th>6.5</th> <th>10</th> <th>1.0</th> <th>4.0</th> <th>6.5</th> <th>10</th> <th>15</th> <th>1/3</th> <th>X</th> <th>3</th> <th>Χ</th> <th>33</th> <th>X</th> <th>100</th> <th>X</th> <th>150</th> <th>X</th> <th>250</th>	۵,	1.0	4:0	6.5	10	1.0	4.0	6.5	10	15	1/3	X	3	Χ	33	X	100	X	150	X	250
0.037 1.19 3.65 7.00 0.078 1.15 3.35 6.33 13.7 22.4 27.0 36.7 46.9 57.5 79.6 96.7 13.2 15.0 15.0 10.39 13.3 13.5	2	Ga.	(in percen		le)			1				b (is	defects	r hundred							
1.394 2.81 6.64 11.3 0.395 2.73 6.29 10.5 20.1 30.6 30.1 67.5 59.2 71.1 56.7 115 153 173 179 246 1.31 13.4 19.9 2.22 7.39 13.3 19.5 32.5 45.8 52.0 66.3 80.2 79.2 106 125 165 185 281 1.31 13.4 19.9 2.22 7.39 13.3 19.5 32.5 45.8 52.0 66.3 80.2 94.1 122 144 1367 208 208 1.31 13.4 13.4 13.7 50.2 30.2 30.3 57.1 74.5 80.1 100 117 134 155 19.2 217 269 255 2.56 26.8 36.0 44.4 17.7 29.9 40.9 51.4 71.3 90.5 100 117 134 155 19.9 217 269 285 388 2.58 41.5 50.6 53.8 13.4 50.7 77.3 101 123 13.4 156 176 176 176 205 205 203 204 409 1.5 6.5 10 X 15 65.7 10 15 64.7 77.3 101 123 13.4 156 176 176 176 176 205 205 205 205 205 205 205 205 205 205	0.66	6.077	1.19	3.63	7.00	82970	1.15	3.35	6.33	13.7	22.4	27.0	36.7	6'91	57.5	29.62	7.96	132	150	219	238
0.807 4.16 8.80 14.2 0.086 4.09 8.48 13.4 24.2 35.6 41.6 54.0 66.3 79.2 105 125 165 185 281 219 219 212 213 19.5 22.5 43.6 54.5 66.3 80.2 94.1 12.2 144 187 218 218 218 218 219	95.0	0.394	2.81	6.63	11.3	0.395	£.	623	10.5	20.1	30.6	36.1	47.5	59.2	11.1	58.7	115	153	173	316	266
2.19	0.06	0.807	4.16	8.80	14.2	0.908	4.09	8.48	13.4	24.2	35.8	41.8	54.0	599	79.2	100	125	165	185	261	282
5.19 12.6 20.0 27.5 5.33 12.9 20.0 28.2 43.6 59.0 66.7 82.1 97.5 113 144 168 213 236 231 231 231 231 232 231 232	75.0	2.19	7.41	13.4	19.9	2.22	7.39	13.3	19.5	32.5	45.8	52.6	66.3	80.2	3	12	#	187	208	288	310
10.1 19.4 26.0 36.2 10.7 20.7 30.2 39.3 57.1 74.5 60.1 100 117 134 167 192 241 266 355 256 26.8 26	50.0	5.19	12.6	20.0	27.5	5.33	12.9	20.6	28.2	43.6	59.0	2.99	22.1	97.5	113	144	168	EIIS	236	321	344
16.2 26.8 36.0 44.4 17.7 29.9 40.9 51.4 71.3 90.5 100 119 137 155 190 217 26.9 285 388 28.8 31.6 41.8 40.5 28.8 31.8 4	25.0	10.1	161	28.0	36.2	10.7	20.7	30.2	39.3	57.1	74.5	88.1	100	117	134	167	192	243	366	355	379
28.6 31.6 41.0 69.5 23.0 36.5 48.4 59.6 80.9 101 111 130 150 166 233 28.6 313 409 28.8 41.5 58.6 58.7 35.4 51.1 64.7 77.3 101 123 134 156 176 186 235 254 321 349 450 1.5 6.5 10 X 1.5 6.5 10 15 25 X 40 X 65 X 100 X 150 X 250 254 Accretable Quality Levels (hightened inspection)	10,01	16.2	26.8	36.0	44.4	17.7	6.62	6'00	51.4	71.3	506	100	119	137	155	193	217	569	392	388	414
25.8 41.5 50.6 50.7 35.4 51.1 64.7 77.3 101 123 134 156 176 176 255 254 321 319 450 125 10 X 15 5.5 10	5.0	20.6	31.6	41.0	49.5	23.0	365	48.4	9.65	6.08	101	III	061	150	169	306	233	286	383	409	435
6.3 10 X 15 6.5 10 15 25 X 40 X 66 X 100 X 150 X 250 X Acceptable Quality Levels (tighteened inspection)	1.0	8'62	41.5	50.6	58.7	35.4	51.1	64.7	77.3	101	123	134	150	176	136	235	胡	321	349	450	477
Acceptable Quality Levels (tightened inspection)		27	6.5	10	X	1.5	6.5	10	15	25	X	3	X	58	X	100	X	150	X	250	X
									Acces	table Ous	diry Level	In (tighter	ed inspec	tion)							

E

FIG. X1.13 Sample Size Code Letter E

Į	with a		2		16	m	9	6	12	15	81	ಷ		
	E So	Ac Re	۵	٥		۵							Higher Son SSO	
	0	æ	3	m m	53	29	12	8	\$	58	3	22	V	1
	ğ	ReAc	3	N	38	140	2	8	3	S	18	12	1	
	IXI		2	84	S	5	83	36	3	13	2	73	Sã	0.0
	//	ReAc	7	ES ES	8	vc N	97	8	23	\$	2	22	84	1
	8	. 335	33	1,285	8	27	19	27	#	8	-	Z,	IX	
		Re Ac	8	=	33	-	=	6	18	38	5	3	1	1
	ΙXΙ		22	28	¥	3 10	10 17	17.24	24 31	32 37	5 63	48	8	
	, ,	Re Ac	81	1 2	Fi .	91	=	- 6	10	R	M	- 22	17	1
	8		12	155	8	24	~	m	1.777	83	Ħ	55	IX	
	V	BeiAc	25	1 1	表	100	22	1713	22	153	83	8	10000	1
	X	Ye	22	01	n	-	9	=	2	13	13	33	8	
_	10	ž	12	=	2	-	2	22	11	8	ន	8	V	
Acceptable Quality Levels (normal inspection)	18	Ac.	13.14	P=	18	-	•	00	2	17 17	12	22	A	(goa)
-	V	E		9	92		0	=	N	17	R	23	2	Acceptable Quality Levels (tightened inspection)
=	X	ReAc	12	40	12	0	123	~	2	*	8	2		i i
Ē	\$		=	O.	n	wa	00	2	13	23	17	61	Y	8
5	-	ReAc	9	NO.	22	0	m			=	*	22	1	1
E.	X	2.00		-	12	-	P4	0	=	12	*	55	3	-6
À	17	ReAc	60	m	=		64	*	9	0	17	-	100	3
1	12	37.3		150 State	•	1			9	=	12	*	X	4
Per Per	2.8	Re-Ac	7	m	-		2	9	r-	P-	9 6	10 13	1//	å
ě.	22	1000		w		1.	-		m	× 1			S2	育
Age .		Re Ac	A	61	10	m	E .	*	1/2	9	9	O1.		8
	8		m	10000			70740		14	m			12	¥
		Be Ac	m	-	-	- C4	3	3	+	-	10	- 2	- NO	
	65	1000	64		69				-	64	67	-	2	
Ÿ		ReAc	64	64	64	64	64	64	62	173	67	m		
- 0	3	a Ac			-			0	0	-	-	**	6.5	
	2.5	e Redac		8	lelle.								6.0	
i	X	Be Ac		š	k	0							10	
	1.5	ReAc		š	6	Ω							Y	
ė		- P					_		-	_				
8	2	2	0		•		_	_	_	_			1.5	
	Par S	Ve Ve	D	D		D							Less thus 1.5	
Į	lative	2	13		16		9	6	22	5	18	ជ		
	Type of sampling plan	$\overline{}$	Single		Deable				Wuhlinle					

FIG. X1.13 Sample Size Code Letter E (continued)

ddage..

Use single sampling plan above (or alternatively use letter Hi. Acceptance not permitted at this sample site.

Use next preceding sample size code letter for which acceptance and rejection numbers are available. Use next subsequent sample size code letter for which acceptance and rejection numbers are available.

CHART F - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS TABLE X-F-Tables for sample size code letter: F QUALLITY OF SUBUTTIED LOTS 19, is percent defective for AQL's <10, in defects per handred

TABLE X-F-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

							Accep	antile Qualit	Acceptable Quality Levels (normal inspection)	normal inspe	ection)	1000					
100	0.65	2.5	4.0	6.5	10	59'0	2.5	4.0	6.5	10	15	Χ	Ю	Χ	40	Χ	65
		p Cin p	p (in percent defective)	crive)	1					p (i	n defects pe	p (in defects per hundred units)	(siis)				
	0.050	0.75	2.25	4.31	9.75	150.0	0.75	2.18	4.12	8.92	14.5	17.5	23.9	30.5	37.4	51.7	67.9
-	0.236	1.80	4.22	7.13	14.0	0.257	1.78	60.4	6.83	13.1	6.61	23.5	30.8	38.5	46.2	62.2	74.5
	0.525	2.69	5.64	9.03	16.6	0.527	2.66	5.51	8.73	15.8	23.3	27.2	35.1	43.2	51.5	4.89	81.2
-	1.43	4.81	8.70	12.8	21.6	1.66	4.81	8978	12.7	21.1	29.8	34.2	43.1	52.1	61.2	79.5	93.4
-	3.41	8.25	13.1	181	27.9	3.47	8.39	13.4	18.4	28.4	38.3	43.3	53.3	63.3	73.3	93.3	108
	6.70	12.9	18.7	24.2	34.8	6.93	13.5	19.6	25.5	37.1	48.4	54.0	66.1	76.1	87.0	109	135
100	6.01	18.1	24.5	30.4	41.5	11.5	19.5	26.6	33.4	46.4	58.9	65.0	77.0	6.88	101	124	141
-	13.9	21.6	28.3	34.4	45.6	15.0	23.7	31.5	38.8	52.6	65.7	72.2	84.8	97.2	109	133	151
	30.6	28.9	35.6	42.0	\$3.4	23.0	33.2	42.0	50.2	65.5	90.0	87.0	101	1114	127	153	172
	1.0	4.0	6.5	10	X	1.0	0.4	6.5	10	22	Χ	23	X	99	X	159	X
			7				Acos	ptable Qua	Acceptable Quality Levels (tightened inspection)	(tightened	inspection						

F

FIG. X1.14 Sample Size Code Letter F

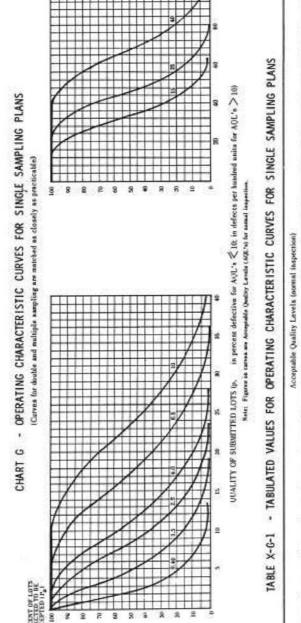
Camo	lative		8	13	S	ıń	01	12	20	23	30	8		
	Higher then 65	Ac Be	٥	٥		٥							Higher than	
	59	£	Ħ	35	2	tr.	Ξ	19	10	8	R	R	V	
		2	23	=	98	44	٠	m	61	80	13	S	1	
	V	ě	19	14	2	æ	22	12	Ħ	13	53	33	L	
	X	Ac	60		a	-		=	91	22	170	20	8	0
i		7	52	=	51		10	1	1	2	23	â	V	
	40	yc.	*	~	90	-	-	00	54	12	22	23	X	
	V	ě	13	10	16	9	0	12	12	1	8	8		
	X	Ar.	23	40	TIS.		12		10	2	18	F	8	
	va	Be.	E	6	11	10	100	10	E	12	12	16	V	
	23	No.	2	10	12	0	m	9	600	Ξ	*	10	X	
2	V	2	6	1	12		-	0	=	12	#	5	NG.	Accessed to Confirm I made (classical increasion)
ection	X	2	100	m	=		64	*	9	0	12	=	84	-
Acceptable Quality Levels (normal inspection)	, a	Re	80	-	6	~	9	8	10	Ξ	53	#	V	3
Till I	15	2	1		100	0	+	m	in		2	13	X	labra
is (n	01	æ	9	101	7	*	M			60	0	10	2	100
1	-	Ye.	n	re-	9		2	64	m	w	1-	0.	-	
dity	in	E E	*	*	NO.	62	100	+	60	•	w	f=	-	owline.
Š	6	Αc		-	+		0	-	F4	m	+	40	10	0 = 0
ptah	0.4	ů	m	n	*	64	67	177	*	+	1/5	vā	17	1
Acce	*	Ae .	**		m		0	9	_	64	3		46	Acres
	10	2	64	64	6.6	. 64	.24	54	m	ent	(4)	2	4.0	
	2.5	Ne Ne	***	0	-			0	0	-	-	ce	*	
	1.5	Ac Re	y I	8 D									10 01	
	Χ	Ac Re		a	·	e							1.5	
	1.0	Ac Re	*	Use		ú					1.5		Χ	
1	10	2		1 30		1996								
	0.65	¥	0	•									1.0	
	Less O.65	Ac Re	D	D		D							thee 1.0	-
Cump	sample sample		8	13	8	40	10	22	8	ĸ	8	M		
	Type of nempling plan		Single	3	Louble				Nohigle					

Lier nest subsequent sample size code letter for which acceptance and rejection numbers are available. Use next preceding sample aire code letter for which acceptance and rejection numbers are available. 11 я QD # # . .

u

Use single nampling plan above (or alternatively use letter J). Acceptance out permitted at this sample aims.

FIG. X1.14 Sample Size Code Letter F (continued)



	365						Vol	O approprie ()	Acceptable Quality Levels (normal inspection)	els (norma	Inspection	uş.						
4	0.40	1.5	2.5	4.0	6.5	10	0.40	1.5	2.5	4.0	6.5	10	X	15	Χ	83	X	40
		ď	p (in percent defective)	defective.							p tin	p lin defects per handred units)	r hundred u	nits)				
0'66	0.032	0.475	1.38	2.63	5.94	87.6	0.032	0.466	1.36	2.57	5.57	9.08	11.0	14.9	19.1	23.4	32.3	39.3
95.0	0.161	1.13	2.59	4.39	8.50	13.1	0.160	1.10	2.55	4.26	8,16	12.4	14.7	19.3	24.0	28.9	38.9	46.5
90.0	0.329	297	3.50	5.56	10.2	15.1	0.328	1.66	3.44	5.45	9.85	14.6	17.0	21.9	27.0	32.2	42.7	50.8
75.0	0.895	3.01	5.42	7.98	13,4	19.0	0.900	3.00	\$.39	7.92	13.2	18.6	21.4	26.9	32.6	38.2	19.7	58.4
50.0	2.14	5.19	8.27	411.4	17.5	23.7	2.16	5.24	8.35	11.5	17.7	24.0	27.1	33.3	39.6	45.8	58.3	1.79
25.0	4.23	8.19	9.11.9	15.4	22.3	29.0	4.33	8.41	12.3	16.0	23.2	30.3	33.8	40.7	47.6	54.4	67.9	78.0
9701	6.94	9711	15.8	19.7	27.1	34.1	7.19	12.2	16.6	30.9	29.0	36.8	40.6	48.1	35.6	65.9	77.4	88.1
5.0	8.94	14.0	18.4	72.5	30.1	37.2	9.36	14.8	19.7	24.2	32.9	41.1	45.1	53.0	6.0.8	68.4	83.4	94.5
1.0	13.5	19.0	23.7	28.0	35.9	43.3	14.4	20.7	26.3	31.4	41.0	50.0	54.4	63.0	71.3	79.5	95.6	101
	9.65	2.5	0.9	6.5	10	Χ	99'0	2.5	4.0	6.5	10	X	15	X	ы	X	09	X
-								Acceptable	Acceptable Deality Levels Orghered inspection	evels (tig	brened ins	pection)						

G

TABLE X-G-Tables for sample size code letter: G

FIG. X1.15 Sample Size Code Letter G

Curra	lative sample alze		22	30	40	9	16	君	32	40	2	95		
	Higher than	Ac Re	٥	٥		۵							Higher than 40	1000
		£	81	99	Ħ	0.	*	5	Ю	R	2	8	X	
	\$	Ac.	12	=	8	.63	P	2	2	53	35	12	Λ	
	V	是	19	2	7	00	12	2	Ħ	£3	53	33	8	
	Λ	2	22	0.	53	-	9	=	2	য়	150	8	-	
	13	E.	2	=	16	7	9	2	11	8	n	326	IX	
	**	¥c.	±	Pe .	20	-	4	60	2	E	Ħ	N	11	
	IXI	ě	23	01	9	9	6	22	15	17	8	13	153	
	/ \	¥c.	22	0.	10	0	6	-	9	2	90	22	391	
	22	2	Ħ		13	S	60	10	=	22	17	16	X	
9	4.00	Ac	9	va.	2	0	m	9	8	=	=	00 100	11	ê
ectio	IXI	2	•	-	12	-	-	6	=	24	=	15	22	ectio
ill in	Λ	¥	10		=	0	14	*	10	6	2	7	-	insg
1	9	H	10	8-		-	49		2	=	24	=	X	1
s (no		Ac	-	6		0	-	175	10	5-	10	13	1	tight
Acceptable Quality Levels (normal inspection)	6.5	Be	•	un.	•		40	•		**	•	10	2	Acceptable Quality Levels (tighteant inspection)
ity	-	¥c.	in	N	40	•	-	54		un	-	0		Les
8	0.4	å	•	*	wn	w	m		ın	9	•	-	55	Alin
apple	-	Ac	in	-	*		0	7	24	m	-		-	000
dec	2	£	-	m	•	64		М	4	*	20	CO.	0.4	desp
A.		7	61	0	112		0	0	-	44	E.3	*		Acce
	1.5	2	27	04	6.6	24	64	511	in	141	100	m	22	1522
	7	Y	7	0	-	*		0	0	-	-	64	15.50	5
	23	Ac Re		en .	= E								1.5	
	V	2		8	to to								1.0	
	Λ	¥		\$;	T- Teller	-						- 1	-	
	0.65	£		ag .									X	
	-	\$, ,	٥ ,		_			_	_	_	/\	
	970	c Re	0	- 5	.	•							0.65	
	1,500,000	Re		-		-				_	_		1	900
	Less than 0.40	Ac F	٥	D		٥		À.,					Leas thus 0.65	
Cama	lative sample size		32	a	\$		9	25	æ	\$	#	28		
	Type of sampling plan		Single	15	Double				Multiple					

Use next subsequent sample size code letter for which acceptance and rejection numbers are available, Use single sampling plan above (or alternotively use letter E). Acceptance not permitted at this sample size. **◇◇☆☆**.

Use next preceding sample size code letter for which acceptance and rejection numbers are available.

FIG. X1.15 Sample Size Code Letter G (continued)

G

TABLE X-H-Tables for sample size code letter: H

CHART H - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as precticable)

(Curves for double and multiple sampling are matched as closely as precticable)

(Curves for double and multiple sampling are matched as closely as precticable)

TABLE X-H1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

Note: Pigares on curves are Acceptable Quality Levels CAGL'st for normal inspession

QUALITY OF SUBMITTED LOTS 4p, in perc

1.5 1.5 1.5 1.5 2.5 4.0 6.5 1.0 0.25 1.0 1.5 2.5 4.0 6.5 1.0 1.5 2.5 4.0 6.5 1.0 1.5									Acce	ptable Ou	uality Lev	Acceptable Quality Levels (normal inspection)	d inspects	(wo	T.			200		200	
Poince P	ď	0.25	1.0	1.5	2.5	4.0	\$ 9	X	10	0.25	1.0	1.5	2.5	4.0	6.5	X	10	X	15	Χ	23
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				4	(in percen	w defectiv	9							4	(in defect	any sad s	dred anits			2 1	
0.103 0.712 1.66 2.77 5.34 8.29 9.74 12.9 0.103 0.710 1.64 2.73 5.23 7.96 9.39 12.3 15.4 18.5 24.9 0.210 1.07 2.23 3.54 6.42 9.53 11.2 14.5 0.210 1.06 2.20 3.49 6.30 9.31 10.9 14.0 17.3 20.6 27.3 1.38 3.34 5.35 7.30 11.3 15.2 17.2 21.2 1.39 3.36 5.35 7.34 11.3 15.3 17.3 20.6 27.3 37.3 2.74 5.39 7.70 10.0 14.5 18.8 21.0 25.2 27.7 5.39 7.34 11.3 15.3 17.3 17.5 20.6 20.9 37.4 2.74 5.39 7.30 10.3 12.9 17.8 22.4 24.7 29.1 4.61 7.78 10.6 13.4 18.6 23.5 20.0 30.8 35.6 40.3 40.5 2.85 9.13 12.1 14.8 19.9 24.7 27.0 31.6 5.99 94.0 12.6 15.2 21.0 26.3 20.9 34.8 40.3 40.5 2.86 12.5 12.5 13.8 23.3 23.3 23.4 23.5 23.5 23.5 23.5 23.5 2.89 12.5 12.5 13.8 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 2.89 13.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 2.89 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 2.89 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 2.89 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 23.5 2.89 23.5	0.6	0.020	0.308	0.888	-	3.66	90.9	7.41	11.1	0.020	0.298	0.872	1.65	3.57	5.81	7.01	9.54	12.2	15.0	20.7	ž
1.07 223 354 642 953 11.2 145 0.210 1.06 2.20 349 6.30 931 10.9 140 17.3 20.6 27.3 1.8 1.9 1.0 1.0 17.3 20.6 27.3 1.8 1.8 1.2 1.2 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	95.0	0.103	0.712	1.66	2.77	5.34	8.20	9.74	12.9	0.103	0.710	1.64	2.73	5.23	7.96	9.39	12.3	15.4	18.5	24.9	29.8
1.24 1.52 3.46 5.09 8.51 12.0 13.8 17.5 0.576 1.22 3.45 5.07 8.44 11.9 13.7 17.2 20.8 24.5 37.8 33.8 33.8 13.3 15.3 17.3 21.6 25.3 27.3 27.3 27.4 23.0 23.4 23.5 23.4 13.3 13.8 13.3 13.8 23.5 23.4 23.5 23.4 23.5 23.4 23.5 23.4 23.5 23.4 23.5 23.4 23.5	0.0	0.210	1.07	2.23	3.54	6.42	9.53	11.2	14.5	0.210	1.06	2.20	3.49	6.30	9.31	10.9	14.0	17.3	20.6	27.3	32.5
1.28 3.3 5.31 7.30 11.3 15.2 17.2 21.2 1.39 3.36 5.35 7.34 11.3 15.3 17.3 21.6 55.3 29.3 57.3 57.3 4.3 5.30 7.30 10.0 14.5 18.8 21.0 25.2 2.77 5.39 7.84 10.2 14.8 19.4 21.6 56.0 30.4 34.8 63.5 57.3 57.3 57.5 10.3 12.9 17.8 22.4 24.7 29.1 4.61 7.78 10.6 13.4 18.6 23.5 26.0 30.8 35.6 40.3 69.5 55.2 57.1 5.30 12.5 15.9 13.8 29.2 31.7 36.3 9.21 13.3 16.8 20.1 26.3 22.0 34.8 40.3 45.5 59.9 61.1 50.0 15.5 2.5 4.0 6.5 \times 10.0 34.8 40.3 45.6 59.9 61.1 \times 10.0 0.0 15. 2.5 4.0 6.5 \times 10.0 34.8 40.3 45.6 59.9 61.1 \times 10.0 0.0 15. 2.5 4.0 6.5 \times 10.0 15. 15.0 15.0 15.0 15.0 15.0 15.0	5.0	0.574	1.52	3.46	5.09	8.51	12.0	13.8	17.5	0.576	1 92	3.45	5.07	8.44	11.9	13.7	17.2	30.8	24.5	31.8	37.4
2.74 5.30 7.70 10.0 14.5 18.8 21.0 25.2 2.77 5.39 7.84 10.2 14.8 19.4 21.6 26.0 30.4 34.8 43.5 43.5 43.6 43.8 43.5 43.6 43.8 43.5 43.6 43.8 43.8 43.5 43.6 43.8 43.8 43.8 43.8 43.8 43.8 43.8 43.8	0.0	1.38	3.33	5.31	7.30	11.3	15.2	17.2	211.2	1.39	3.36	12,5	7.34	11.3	15.3	17.3	23.6	233	83.3	37.3	43.3
4.50 7.56 10.3 12.9 17.8 22.4 24.7 29.1 6.61 77.8 10.6 13.4 18.6 25.5 26.0 30.8 35.6 40.3 40.5 40.5 5.8 5.8 5.1 40.5 5.8 5.1 5.1 5.8 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1	5.0	2.74	5.30	7.70	10.0	14.5	18.8	21.0	25.2	2,77	5.39	7.84	10.2	14.8	19.4	21.6	26.0	30.4	34.8	43.5	6.69
5.82 9.13 12.1 14.8 19.9 24.7 27.0 31.6 5.99 94.0 12.6 15.5 21.0 26.3 28.9 38.9 38.9 61.8 53.4 18.8 12.8 18.8 24.3 29.2 31.7 36.3 921 13.3 16.8 20.1 26.2 32.0 34.8 40.3 45.6 50.9 61.1 1 1 1 2 2 2 4.0 6.5	0.0	4.50	2.56	10.3	12.9	17.8	22.4	24.7	29.1	4.61	7.78	10.6	13.4	9'81	23.5	26.0	30.8	35.6	40.3	69.5	56.4
8.80 125 159 188 24.3 29.2 31.7 36.3 9.21 13.3 16.8 20.1 36.8 40 6.5 \$10 34.8 40.3 45.6 50.9 61.1 0.00 1.5 2.5 4.0 6.5 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$10	5.0	5.82	9.13	12.1	14.8	19.9	24.7	27.0	31.6	5.99	9.49	12.6	15.5	21.0	26.3	28.9	33.9	38.9	43.8	53.4	50.5
1.5 2.5 4.0 6.5 X 10 X 0.40 1.5 2.5 4.0 6.5 X 10 X 13 X 25 A Cocyptable Quality Levels (sightconed imagescine)	0.1	8.80	12.5	15.9	18.8	24.3	29.5	31.7	36.3	9.21	13.3	16.8	20.1	292	32.0	34.8	40.3	45.6	50.9	61.1	58.7
Acceptable Quality Levels (tighteened impection)		0.40	1.5	2.5	4.0	6.5	X	10	X	0.40	13	2.5	4.0	6.5	X	01	X	15	X	10	X
					8				Aco	eptable 0	usility Le	outs (tight	ened insp	oction)			- 0				

and the state of the second state of the second second second second second second second second second second

H

FIG. X1.16 Sample Size Code Letter H

					_							_	
di.	atemple size		8	8 2	12	18	339	ži.	3	10	16		
	Higher Shan as	Ac Re	۵	٥	۵							Higher than	
		æ	8	91	6	2	10	13	8	33	8	V	
	1/3	¥	22	11 25	.04	17	2	2	13	품	23	Α	
d	V	문	6	± 8		27	11	H	13	8	Ħ	12	
	X	Ac	8	e 8	-	6	=	20	য়	23	æ	10.00	
	15	æ	15	1 8	-	10	2	17	20	ជ	38	X	
		*	Z	1- 8	-	*		12	7	전	Ю	1	
10	X	m	n	01 91		01	2	12	=	20	23	121	
Ц	11	A.	22	. ii	. 0	m	-	10	13	80	N .	1997	
	2	4	=	9 23	NO.	000	8	M	10	=	2	X	7
	- 01	2	01 6	F 61	•	-	9 6	-	12 11	14 14	15 18	11	Acceptable Outliv Levels (tielsteard januarios)
Acceptance quality Larent teamer respectively	X	B	32		1			11 9	7 6			2	
-	/\	y v	160	7 1 6	0	100	1 8		-	22 22	=		-
	10	Be Be	F-	m a		-	m	5 10	7 11	10 1	11 11	IXI	200
	100	Re Ac	10	In t-	-	10	up.	1-	00	6	9	1,,	ala t
2014	6.0		301	10000000000000000000000000000000000000	1000			H	in	100	0	5.5	1
5		Re Ac	**	45 10	m	8	.01	M2	9	9	P-	10000	- Interest
	45	Ac B	277	1967-1761	2000						9	0	0 4
No.		F A	9	- 4	64	9	3	4	e	in.	ND.	2000	- Park
e kin	1.5	Ac I	C4	0 10		0			re	3	*	25	Acres
2		He A	64	19 19	**	14	-	177	Lis.	m	m	1	
	1.0	Ac.	2	0 -			0		-	4	23	1.5	
	970	S.	10		-							1.0	1
	-	*	-			_		_	_	_			
	X	Ac Re	1	Letter	*							0.65	
	35.0	墨	į.	letter 1	ن							X	
		Re Ac	-	- 1					_			/ /	
	0.23	Ac B										0.40	
	0.25	å	٥	D	٥	3						ess than 0.40	
	-	ş	2362			_		_		_	_	5	
Cama.	lative sample size		20	27 75	13	36	8	25	8	200	6		
ANSWER .	Type of sampling plan		Single	Double				Multiple					

△ = Use next preceding hangle size code letter for which acceptance and rejection numbers are available.
 ◇ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
 Acceptance number
 * = Hejection number
 * = Use single sampling plan above for alternatively use letter U.
 * = Acceptance and parmitted at this parentle size.

FIG. X1.16 Sample Size Code Letter H (continued)

TABLE X-J-Tables for sample size code letter: J

CHART J - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS (Carves for double and multiple sampling are matched as closely as practicable)

TABLE X-J-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

0.013 0	0.65							App	eptable	Quality L	avels (n	Acceptable Quality Levels (nomal inspection	pection)								
0.064 0	1	1.0	1.5	2.5	0.0	X	6.5	X	10	0.15	0.65	1.0	1.5	2.5	4.0	X	6.5	X	10	X	22
0.064 0			p (i)	Ga percest	defective	(au								p (in de	p (in defects per hundred	hundred	units)				
0.064	188	0.550	1.05	2.30	3.72	650	6.13	7.88	9.75	0.013	0.186	0.545	1.03	2.23	3.63	4.38	5.96	7.62	9.35	12.9	15.7
0.110	0.444	1.03	1.73	3.32	5.06	2.98	16'L	68'6	11.9	0.064	0.444	1.02	171	3.27	86.9	5,87	17.71	19.6	9711	15.6	18.6
N 0.132 UN	0.666	1.38	2.20	3.98	5.91	16.9	8.95	11.0	13.2	0.131	0.665	1.38	2.18	3.94	5.85	6.79	87.8	10.8	12.9	17.1	20.3
75.0 0.359 1.3	202	2.16	3.18	5.30	7.50	8.62	10.9	13.2	15.5	0.360	1.20	2.16	3.17	5.27	7.45	8.55	10.8	13.0	15.3	19.9	23.4
0 0.863 2.0	2.09	3.33	4.5T	7.06	9.55	10.8	13.3	15.8	18.3	0.866	2.10	3.34	4.59	7.09	65.6	10.8	13.3	15.8	18.3	23.3	27.1
25.0 1.72 3.	3.33 4	4.84	16.31	9.14	11.9	13.3	16.0	18.6	21.3	1.73	3.37	06.4	6.39	9.28	12.1	13.5	16.3	19.0	21.8	27.2	31.2
10.0 2.84 4	4.78 6	6.52	91.8	113	14.2	15.7	18.6	31.4	24.2	2.88	4.86	6.65	8.35	11.6	14.7	16.2	19.3	22.2	25.2	30.9	22.2
5.0 3.68 5.1	5.80 7	1.66	6.99	12.7	15.8	17.3	20.3	23.2	26.0	3.75	5.93	7.87	69.6	13.1	16.4	18.0	21.2	24.3	27.4	33.4	37.8
1.0 5.59 8.0	01 00.8	10.1	12.0	15.6	6.81	20.5	23.6	28.5	29.5	5.76	8.30	10.5	12.6	16.4	20.0	21.8	28.2	28.5	31.8	38.2	42.9
0.25 1.0		1.5	2.5	4.0	X	6.5	X	91	X	0.25	1.0	1.5	2.5	6.0	X	6.5	X	10	X	15	X
								Acce	O other	of wiles	vels (tie	Acceptable Osality Levels (tightness ingrection	Repetion								

FIG. X1.17 Sample Size Code Letter J

	į							-	ccept	Acceptable Quality Levels (normal inspection)	Mality	y Le	els (n	остра	insp	ection												Cump
Type of numpling plac	lative sample	Less than 0.15	0.15	A	0.25	X	0,40	0.65	5	1.0	Н	1.5	2.5	-	6.0	$^{\wedge}$	V	6.5	10	IXI		10	\wedge	V	115	Higher than 15	1	lative sample
	arise	Ac Re	Ac R	Re Ac	Re A	Ac Be	Ac Re	Ş	Re A	Ac Re	¥	Re	Ac	Re Ac	Be Be	Ş	2	Ve Ve	Be.	Ac 8	Re Ac	P.	¥	Re	Ne.	Be Ac	æ	916
	8	٥	0 1	-				-	64		en.	•	107	10			6	9	7	23	13	15	22	19	11	η D	_	8
Double	8	Þ	•	= <u>5</u>	Use	Use Letter	E F	۰ .	0 0	m -		+ u	e4 4	10 h	r- 0	m =	- 5	m g	6 5	· ·	7 01 21	11 0	e 2	11 12	= *	21 16	1	8 8
	8 18	Þ		-	=	۵	×		4 64	30		o m										2000				4	-	8
	\$			_					re .	0 3	0	m	+	10	-	64	+	n	60	.	•		9 01	12	-	7		\$
	99							0	64	9	-	4	74	9	9	*	*	90	2	r-	11		13	11	13	19		8
Multiple	98			-				0	m	1.	64	ws	m	-	5 10	9	=		=	10	15 12		17 16	13	6	£		8
	100			-				-	10		en.	.0	un.		7 11	5	12	==	22	*	17 17		20 22	83	53	83		100
	120							-	100		*	0	-	6	10 12	22	=	*	=	18	20 21		23	8	31	H		120
	3							44	m		9	2	0.	9	13 14	=	72	118	6	2	81		25	8	31	28		3
		Less than 0.25	0.25	1	X	0.40	9.0	1.0		1.5		2.5	4.0		IX	100	6.0	1	V	10	,	IX		15	X		Higher than	
								A	CPBEA	Acceptable Quality Levels (tightened laspertion)	wality	Lev	als (ti	chico	Po H	pects	8											

FIG. X1.17 Sample Size Code Letter J (continued)

Use next subsequent sample size code fetter for which acceptance and rejection numbers are available. Use next preceding sample size code letter for which acceptance and rejection sambers are available.

Use single sampling plan shove (or alternatively use letter N)

Acceptance not permitted at this sample size. D & E . .

TABLE X-K-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS AALITY OF SUBMITTED LATE. Ip, in percent defective for AQL's < 10; in defects per handred units for AQL's > 100 TABLE X-K-Tables for sample size code letter: K - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS (Curves for double and autitule empting are matched as closely as practicalis) Notes: Piggless as curves are Acceptable Quality Levels (AQL's) for assust has CHART K

8 2 5

24.2 14.9 17.3 20.0 22.5 27.5 9 12.7 14.9 17.4 19.8 23.4 24.5 10.9 2 7.40 8.24 9.79 13.9 17.5 92 117 20.4 16.1 6.15 6.92 8.34 4.88 E4 14.2 15.6 53 10.1 18.3 6.90 8.53 Acceptable Quality Levels (tightened impection) 1.94 2.62 3.82 10.4 12.3 13.6 1.91 3 Acceptable Quality Levels (normal inspection) 4.35 5.47 6.9 8.54 10.4 11.5 18.3 4.0 3.73 6.14 7.15 9.42 4.11 10.5 12.8 2.5 2.09 2 52 5.94 7.42 1,43 3.38 37 8.41 1.5 10.5 12.5 0.658 1.40 1.09 2.03 2.94 5.35 8.3 8.04 1.0 4.09 57 (string) defective or defects per handred 0.654 0.882 1,382 0.65 2.14 3.14 5.04 4.26 9 0.436 0.769 0.284 3 2.15 3.11 970 3.80 5.31 p (in percent 0.0410 0.0840 0.0081 0.230 0.554 0.10 2.40 3.68 0.15 11.11 1.8 0.0% 0.00 75.0 50.0 28.0 10.0 5.0 3.0 90.0 a.*

Nater All values given in above table based on Potasses distribution se en approximation to the Minessial

K

FIG. X1.18 Sample Size Code Letter K

Came-	lative sample		125	8	160	Ħ	3	96	128	160	261	នី		
	Higher than 10	Ac Re	٥	٥		۵							Higher than 10	
	-	B.	22	16	22	0.	#	16	25	8	33	R	V	
	10	¥	52	Ξ	×	5%	r-	13	19	83	500	H	X	
	V	æ	9	16	28	8	12	17	22	KI	23	R	10	
	Λ	34	95		23	77	*	=	16	21	22	25	25,000	
	6.5	2	43	=	19	1	9	13	=	8	23	A	X	
		Ac	2	-	18		4	8 8	12 12	17 17	20 21	EI N	11	i.
	X	E.	12	10	9	100		12					40	
	11	4	2	6	12	9	60	10	13 10	15 14	17 18	6	220	4
	0.4	Re	Ξ		13							aspensor.	IXI	
		3	9	in	23		E-	9	60	7	14 14	100	1.1	188
100	X	He.			21	7			=	12		15	9	Acceptable Quality Levels (tightened inspection
pect	//	ş	100	m	=	0	54	80	9	6	12 12	#	-	ins
=	2.5	Re		-	0	1	4		10	=		*1	X	pass
Acceptable Quality Levels (nomal inspection)	64	*	-	10	8	٥	-	9	5	10	9 10	<u>n</u>	11	(Light
12	1.5	8		.5		-	in	Ψ		w	-	10	10	-
5		×	50	64	.0		+	29	м	NO.	1-	9	100000	5
lity	1.0	Re	•	*	40	65	63	7	10	9	40	-	1.5	ality
å	100	2		-	-		0	7	24	m	+	0	120	6
table l	8	F.	**	m	*	64	(4)	67	*	*	50	10	0.1	ptab
COS	0	Ac	ei	0	m	- 34	9	0	-	64	10	4		Acce
•	0.40	墨	-64	64	2-6	84	64	e,	E)	100	m	10	9.65	
	0	Ac.	-		-		*	0	0	ant:	-	7	-	
	0.25	B.		Use	retter.								0 40	
	0	Ac			799						_			
	X	3		O.S.	-	×							52	
	Λ	Ac	10					_				_		
	0.15	Be.		e n	-	-							X	
8	0	Ac.		-	2	_	_		_		_		1000	
	01.0	Re	-										0.15	
		Ye.	0	1 3		-	_							
	eas then 0.10	ů.	7	D		D							Less thin 0.15	
	Less 0.	Vo.	D	1		-							Less	
-	Sample	N N N N N N N N N N N N N N N N N N N	81	8	160	88	3	8	128	091	192	NZ		13
				33	<u>4</u>				4				1	
1	Type of sampling ples		Single	8	Deuble				Waltiple					

x Use next preceding sample size code letter for which acceptance and rejection numbers are available.
x Use next subacquent sample size code letter for which acceptance and rejection numbers are available.

Use single sampling plan above (or alternatively use letter N). Acceptance not permitted at this sangle size.

FIG. X1.18 Sample Size Code Letter K (continued)

2.45 9.34 10.8 12.5 14.1 15.1 6.22 9.33 6.84 7.95 10.9 12.4 13.3 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS QUALITY OF SUBMITIED LUTS (p. in percent defective for AQL's < 10; in defects per hundred units for AQL's > 10) 4.62 6.12 7.33 8,70 5.15 10.1 10.9 12.7 CHART L - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS TABLE X-L-Tables for sample size code letter: L 6.13 3.06 3.85 4.32 5.21 197 8.89 9.72 11.4 9 (Carves for double and autifule sampling are matched as closely as practicable) 4.31 5.33 6.51 7.70 8.48 Acceptable Quality Levels (tightened inspection) 3.09 239 3.51 10.1 6.50 8.70 2.35 2.72 3.42 4.33 3.6 1.45 8 2.33 2.98 3.84 4.84 5.89 6.57 8.00 8 2.11 5.26 6.55 131 2.84 3.71 100 1.0 2 0.873 0.412 0.683 0.65 1.27 3.88 1.84 2.56 3.34 5.02 10 defective or defects per hundred 0.409 0,218 0.551 0.864 2.66 3.15 4.30 1.34 0.65 1.96 0.178 0.839 0.075 0.266 0.483 135 1.95 TABLE X-L-1 2,37 3.32 0.0256 0.0525 0.065 0.0051 0.144 0.347 0.693 1.15 8 2.30 0.10 50.0 25.0 10.0 5.0 95.0 90 75.0 0.66

Monet. All values given in above cable based on Poleson distribution on an approximation to the Binomial

FIG. X1.19 Sample Size Code Letter L

Carra-	sample size		200	23 E	S	81	8	200	230	300	330		
	Higher than 6.5	Ac Re	٥	٥	۵							Higher than 6.5	
	10	윤	81	27	-	2	6	KJ	8	Ħ	29	V	
	6.5	Vc	23	= %	éa		Ė	9	10	两	S	1	
	V	2	6	± 5	80	54	100	23	13	8	8	3	
	Λ	¥c	93	- N	-	۰	=	92	81	52	83	-	
- 2	4.0	ď.	12	II 61	-	2	2	-	20	23	32	IX	
	4	¥c.	*	7 81	-	4	00	2	-	Ħ	1/3	1	
	V	盏	E	9 9	0	6	12	2	=	8	Ħ	4.0	
	$ \Lambda $	Ac	22	· 2	0	m	-	10	=	=	ಸ	*	
	S	#	=	9 8	vs.	60	10	13	12	Ħ	5	IVI	
	2	No.	9	12 CI	0	n	ø	100	=	2	80	X	Û
0	V	2	an .	- 4	*	*	e-	Ξ	24	=	15	2.5	Acceptable Quality Levels (tightened inspection)
ction	A	No.	60	r: =	0	N	+	9	0	12	#	2	nse
usbe	10	£	-	t- D	4	40	80	10	Ξ	124	Ξ	V	- Page
ī		Ac.	-	en ac	0	-	63	47	-	2	=	$ \wedge $	dah
Acceptable Quality Levels (normal inspection)		ž.	9	w	+	W	9	P	00	Ø.	10	1.5	100
vels	1.0	Ac	L/S	N 0		-	64	m	NO.	r-	on.	+	3
y Le	59	E.	-	4 10		m	+	N)	0	0	7	0 1	ality
haeli	0.6	2	m	- +	24	0	-	64	m	*	0	-	8
ble 0	8	2	173	m -	6.0	10	m		4	NO.	ro.	0.65	tabl
epta	0	Ac.	64	0 0		0	0	-	64	100	*		900
Acc	0.25	æ	64	C4 F4	"	14	64	m	-	m	m	0.40	1
	0	Ac	-	0 1	*	*	0	0	-	-	64	0	
	0.15	Ac Re		Use Letter	=							0.25	
	X	Ac Re		Letter Letter	z							0.15	
	0.10	Ac Re	-	Use Letter	×							X	
	0.065	Ac Re	0 3									0.10	
	Less thus 0.065	Ac Re	D	D	D							Lers than 0.10	
Come	lative sample size		200	22 22	- 95	100	55	200	250	300	320		
	Type of sampling plan		Single	Dooble				Mediple					

FIG. X1.19 Sample Size Code Letter L (continued)

△ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
 ◇ = Use next subsequent sample size code letter for which acceptance and mjection numbers are available.
 Ac = Acceptance number.
 He = Rejection number.
 * = Use single sampling plan above for alternatively use letter P).

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TABLE X-M-Tables for sample size code letter: M

CHART M - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

Curves for double and multiple are matched as closely as precicable)

Curves for double and multiple are matched as closely as precicable)

Curves for double and multiple are matched as closely as precicable)

Curves for double and multiple are matched as closely as precicable)

Curves for double and multiple are matched as closely as precicable)

Curves for double and multiple are matched as closely as precise.

TABLE X-M-1 - TABULATED VALUES FOR OPERATING CHARACTERSTIC CURVES FOR SINGLE SAMPLING PLANS

0.040 0.15 0.25 0.40 0.00 0.00 0.00 0.00 0.00 0.00 0.0		0.00				Acceptable Ou	ality Levels (as	Acceptable Quality Levels (normal impection)				1000	
p. (la percent defective or is dejecté per hundred units) 0.0632 0.043 0.261 0.566 0.022 1.11 1.51 1.94 2.75 2.74 2.74 2.74 2.74 2.74 3.31 4.02 2.05 2.41 2.75 3.39 4.02 2.15 2.43 4.03 </th <th>, b</th> <th>0,040</th> <th>0.15</th> <th>87.0</th> <th>0,40</th> <th>970</th> <th>1.0</th> <th>Χ</th> <th>1.5</th> <th>Χ</th> <th>2.5</th> <th>Χ</th> <th>4.0</th>	, b	0,040	0.15	87.0	0,40	970	1.0	Χ	1.5	Χ	2.5	Χ	4.0
0,0032 0,047 0,138 0,261 0,566 0,922 1,11 1,51 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 1,94 2,14 1,94 1,94 2,14 1,94 1,94 2,14 2,14 1,96 2,14 2,17 2,13 2,14 2,13 2,14 2,13 2,14 2,13 2,13 2,14 2,13 2,13 2,14 2,13 2,14		p (in percent	defective or is	dejects per hun	dred units)								
0.0165 0.112 0.259 0.433 0.889 1.26 1.49 1.96 2.44 0.033 0.168 0.349 0.533 1.00 1.48 1.72 2.23 2.75 0.0914 0.202 0.549 0.533 1.00 1.48 1.72 2.23 2.75 0.220 0.512 0.549 1.17 1.80 2.17 2.73 4.13 4.62 0.440 0.854 1.24 1.62 2.36 3.74 4.13 4.83 4.63 0.731 1.23 1.60 2.46 3.34 4.13 4.89 5.66 0.951 1.51 2.00 2.46 3.34 4.17 4.56 5.38 6.17 1.46 2.11 2.67 3.19 4.16 5.08 5.38 6.17 1.46 2.11 2.67 3.19 4.16 5.08 5.38 6.40 7.25 0.055 0.055 0.40 0.65 1.	0.00	0,0032	0.047	0.138	0.261	995'0	0.922	131	1.51	1.94	2.38	3.28	3.99
0,0333 0,168 0,349 0,533 1,00 1,48 1,72 2,23 2,75 0,0914 0,305 0,548 0,804 1,34 1,89 2,17 2,74 3,31 0,220 0,520 0,548 0,844 1,17 1,89 2,17 2,74 3,31 0,440 0,854 1,24 1,62 2,36 3,74 4,13 4,83 4,67 0,731 1,29 1,69 2,12 2,94 3,74 4,13 4,99 5,65 0,951 1,51 2,00 2,46 3,34 4,17 4,58 5,38 6,17 1,46 2,11 2,67 3,19 4,18 5,08 5,38 6,17 0,065 0,25 0,40 0,65 1,0 7 1,5 7 2,5 2,5	0.26	0.0163	0.112	0.259	0.433	0.829	1.26	1.69	1.96	2.44	2.94	3.95	4.73
0.0914 0.308 0.548 0.804 1.34 1.89 2.17 2.74 3.31 0.220 0.532 0.048 1.17 1.80 2.43 2.75 3.39 4.02 0.440 0.854 1.17 1.80 2.16 2.16 3.07 3.43 4.13 4.83 0.731 1.20 2.12 2.54 3.74 4.13 4.83 5.65 0.951 1.51 2.00 2.46 3.34 4.17 4.58 5.38 6.17 1.46 2.11 2.67 3.19 4.16 5.08 5.53 6.40 7.25 0.065 0.25 0.40 0.65 1.0 7 1.5 7 2.5 2.5	0.00	0.0333	0.168	0.349	0.533	1.00	1.48	1,12	2.23	2.75	3.27	25.	5.16
0,220 0,532 0,544 1.17 1,80 2,43 2,75 3.39 4,02 0,440 0,854 1,24 1,62 2.36 1,07 3,43 4,13 4,83 0,731 1,23 1,69 2,12 2,54 3,74 4,13 4,89 5,65 0,951 1,51 2,00 2,46 3,34 4,17 4,58 5,38 6,17 1,46 2,11 2,67 3,19 4,16 5,08 5,53 6,40 7,25 0,065 0,25 0,40 0,65 1,0 7,5 2,5 2,5	5.0	0.0914	0.305	0.548	0.804	¥.	1.89	2.17	2.74	3.31	3.89	2.06	5.93
0,440 0,854 1,24 1,62 236 3,07 3,43 4,13 4,83 0,731 1,23 1,46 2,12 294 3,74 6,13 4,89 5,66 0,951 1,51 2,00 2,46 3,34 4,17 4,56 5,38 6,17 1,46 2,11 2,67 3,19 4,14 5,08 5,38 6,17 0,065 0,25 0,40 0,65 1,0 7 1,5 7 2,5	0.08	0.220	0.532	0.848	1.17	1.80	2.43	27.75	3.39	4.02	991	5,93	6.88
0,731 1.23 1.60 2.12 2.94 3.74 4.13 4.89 5.65 0,951 1.51 2.00 2.46 3.34 4.17 4.56 5.38 6.17 1.46 2.11 2.67 3.19 4.16 5.08 5.53 6.40 7.25 0.065 0.25 0.40 0.65 1.0 X 1.5 X 2.5 2.5	65.0	0,440	0.854	1.24	1.62	236	3.07	3.03	4.13	4.83	5.52	06.90	7.92
0,951 151 200 246 134 4.17 4.58 5.38 6.17 1.46 1.46 5.08 5.53 6.40 7.25 0.065 0.25 0.40 0.65 1.0 X 1.5 X 2.5	0.01	0,731	1.23	1.69	2.12	2.94	3.74	6.13	4.89	5.65	6.39	7.86	8.8
1.46 2.11 2-67 3.19 4.16 5.08 5.53 6.40 7.25 0.06 0.05 1.0 \times 1.5 \times 2.5	5.0	0.951	121	2.00	2.46	3.34	4.17	4.58	5.38	5.17	98.90	8.47	9.60
0.25 0.40 0.65 1.0 X 1.5 X 2.5	1.0	1.46	2.11	191	3.19	91.1	5.08	5.53	6.40	7.35	8.08	9.71	10.9
		0.065	0.25	0.40	970	1.0	Χ	1.5	Χ	2.5	Χ	4.0	X
Acceptants (Analist Levels (Tibeles)						Accepted	de Quality Leve	da (tightened ins	pection)				

M

FIG. X1.20 Sample Size Code Letter M

Į	lative		315	200	009	2	160	240	330	400	069	280		265
	Higher than 4.0	Ac Re	۵	٥		٥							Higher than 4.0	
	97	78	n	91	27	.01	=	16	KI	R	23	×	V	
	7	Ac.	22	=	8	64	r-	13	61	13	175	37	X	
	X	e E	19	2	র	. 00	12	11	Ħ	1/3	22	B	9	
	//	He Ac	15 18	0.	n		9 01	13 11	17 16	22	22	32		
	2.5	ASSESS.		=	61	11.355500	10.75%	1 8					X	
	1	Re Ac	22	7 01	91	9	*	27	15 12	11 11	8	EZ EZ		
	X	Ac.	12	9	15 1		m	-	0	4	189	2	2	
		2	=	0.	-	vs.	100	9	2	22	12	6	V	
ê	1.5	Ac	9	10	27	0	m	9	80	=	#	81	X	2
ectio	V	2	0.	-	2	-	-	6	=	12 11	7	15	1.5	ction
irsp	Λ	No.	60	100	=	0	ev	+	•	on	12 12	3	7	inspe
Acceptable Quality Lavels (normal inspection)	0.1	#		,	6	-	9	60	9	=	12	77	X	Acceptable Quality Levels (tightened inspection)
la Ga	-	¥	9	-	60 P-		-	**	un.	-	01	2		light
5	9.65	Re		15		-		9	1	40	9	9	1.0	1
dity	100	A Ac	50	2	10	•	7	N	m	Ŋ	7	0	1-1	Ę
0	0.40	2					0 3	•	2 5	3 6	4 6	7 9	97'0	wellst
ptabl	- (0)	Be Ac	m	m	*	04	9	- e	*	-	ın.	9		Sie O
Acce	6.25	Ar B	ou		m		0	0	-	P4	m	+	0.40	Septe
	15	R ×	64	64	64	24	2	64	63	m	173	ю	5	Ace
	0.15	Ac	-	0	-			0	0	-	-	P4	0.25	
	0.10	Ac Be		Letter	3	z							0.15	
	Χ	Ac Be	1			-							0.10	
	0.065	Ac Be	1	1 1		د							X	
	0,040	Ac Be	0 1										0.065	
	Chan than 0.040	Ac Re	٥	D		٥							thus 0.065	
į	lative	2210	315	300	400	08	91	240	320	400	690	280		
	Type of sampling plan		Single		Countrie				Multiple					

Use next subsequent sample at ze code letter for which acceptance and rejection numbers are available, Use next preceding sample size code letter for which acceptance and rejection numbers are available.

Use single sampling plan above (or alternatively use letter Q), Acceptance not permitted at this sample size. **△▷≥≥..**

FIG. X1.20 Sample Size Code Letter M (continued)

CHART N - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS TABLE X-N-Tables for sample size code letter: N WALLTY OF SUBMITTED LOTS

TABLE X-N-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

					Acceptab	de Quality Leve	Acceptable Quality Levels (normal inspection)	ction)				
, d	0.025	0.10	0.15	0.25	0.40	9.65	Χ	1.0	Χ	1.5	Χ	2.5
	p (in percent	I defective or is	p (in percent defective or is defects per bandred units.)	ndred unital								
0.66	0.0020	0.030	19970	0.165	0.357	0.581	0.701	0.954	1.22	1.50	2.07	2.51
95.0	0.0103	0.071	0.164	0.273	0.523	0.796	6660	1.23	35.1	1.85	2.49	2.98
90.06	0.0210	901.0	0.220	0.349	0.630	0.931	1.09	1.40	1.73	2.06	2.73	3.25
35.0	9750.0	0.192	0.345	205:0	0.844	1.19	1.37	1.72	2.08	2.45	3.16	3.74
50.0	0.139	0.336	90536	0.734	1.13	1.53	1.73	2.13	2.53	2.93	3.73	4.33
25.0	0.277	0.539	0.784	1.02	1.48	1.2	2.16	2.60	3.04	3.48	4.35	4.99
10.0	0.461	0.778	1.06	1.34	1.95	2.35	2.60	3.08	3.56	4.03	4.95	5.64
5.0	0.599	696.0	1.26	1.55	2.10	2.63	2.89	3.39	3.89	4.38	5.34	6.05
1.0	1260	1.328	1.68	2.01	2.62	3.20	3.48	4.03	4.56	5.09	6.12	6.87
	0.040	0.15	0.25	0:40	0.65	Χ	1.0	Χ	1.5	Χ	2.5	X
					Accep	table Quality Le	Acceptable Quality Levels (tightened inspection)	inspection	100			

N

FIG. X1.21 Sample Size Code Letter N

Como	lative sample size		98	315	630	123	8	375	8	53	52	875		
	Higher 155	Ac Re	٥	۵		٥							Higher than 2.5	
	N.	-B	Ħ	16	ŧi	•	=	19	10	23	23	萬	X	
15	2.5	¥c.	14		8	64	r-	13	19	13	품	H	/\	
	V	e.	16	2	ã	40	12	11	SI	N	82	×	2	
	Λ	¥	=		£	-	9	=	25	22	23	32		
1	1.5	2	22	=	6	-	00	13	11	8	133	5 26	IΧ	
		Re Ac	13	1 0	91	9	0	6 2	15 12	17 17	20 21	23	1/8	
	X	1000		223	200								5	
	/\	¥ e	22		13	0 9	6	7 01	13 10	15 14	11 18	19	10	
	1.0	2	=	No.		0	00	9	80		*	1 81	IX	_
		Pe Ac	9	r-	12 12	-	-	0.	=	12	=	12		Acceptable Quality Levels (tightened inspection)
(m)	IXI		66	n	=		.04	+	10	on.	12	*	1.0	整
pect	/ \	Re Ac	-	-		+	•	140	4	=	12	7	11/	A
1	99.0	170	+	-			_	m	13	b -	0	E3	IX	the
Į.		ReAc	•	V7	F=	*	173	40	P-	00	6	101	100	B III 8
Acceptable Quality Levels (normal inspection.)	0.40	Ac	v	14	9			64	6.0	sn.	-	on.	0.65	PAG
Les	10	B.			un nu	m	n		47	9	9	H	1.	lity
Į,	0.25	4	100	_			0	-	64			9	0.40	8
e 0	1.50	2	100	m		64	m	m	+	+	10	us.	20	- ige
ptab	0.15	Ac.	64		m		0	0	4	64	en.		0.25	6400
York		B.	64		*	64	24	64	ю	m		ю	13	*
	0.10	Ac	-		-				0	_	-	**	0.	
	0.065	Ac Re		E E									0.10	
	X	Ac Re		Letter Use	Q	y							9700	
	0.040	Ac Re		Letter	2	t							X	
	0.025	å.	-										0.040	
		Y	۰			- In-							10000	
	artive Lens than	Ac Be	٥	D		٥							Less thes 0.040	
Cume	lative sample	8	900	315	630	125	92	375	905	529	750	878		
	Type of searpling ples	1 2 db 2 d	Single	Dosble					Multiple					

Use sext subsequent sample size code letter for which acceptance and rejection numbers are available. Use next preceding sample size code letter for which acceptance and rejection numbers are available.

Rejection number

Use single sampling plan above (or alternatively use letter R).

Acceptance sot permitted at this sample size.

FIG. X1.21 Sample Size Code Letter N (continued)

TABLE X-P - Tables for sample size code letter: P

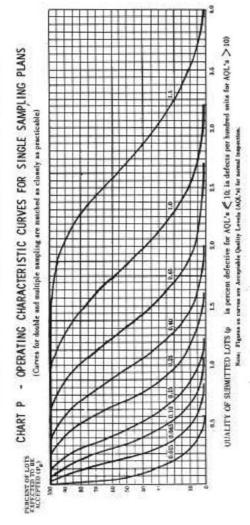


TABLE X-P-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

Pa 0.015 0.065 0.10 0.15 0.23 0.40 X 0.65 X 1.0 X 1.5 90.0 0.0154 0.156 0.253 0.263 0.438 0.596 0.762 0.935 1.37 1.57 90.0 0.0013 0.0166 0.166 0.111 0.282 0.438 0.537 0.498 0.587 0.771 0.966 1.16 1.16 1.16 1.56 1.86 1.86 1.86 1.87 1.71 2.03 90.0 0.0131 0.026 0.130 0.282 0.582 0.679 0.878 1.06 1.29 1.71 2.03 90.0 0.0131 0.026 0.130 0.282 0.679 0.878 1.06 1.39 1.23 1.71 2.03 50.0 0.0366 0.130 0.234 0.582 0.748 0.679 0.878 1.06 1.33 1.59 1.33 1.34 1.79 1.79 1.79 1						Acceptable	t Quality Level	Acceptable Quality Levels (normal inapection)	tion)				
polito percenti effective or defecta per handrad unita) 0.0013 0.0186 0.055 0.180 0.233 0.383 0.438 0.596 0.772 0.935 1.29 0.0014 0.0186 0.171 0.527 0.498 0.537 0.171 0.966 1.16 1.16 1.15 1.59 0.0131 0.0266 0.138 0.218 0.394 0.582 0.679 0.679 1.06 1.29 1.71 0.0360 0.120 0.218 0.317 0.527 0.745 0.679 0.679 1.06 1.33 1.59 1.71 0.0360 0.120 0.218 0.379 0.529 1.06 1.33 1.59 1.33 1.59 1.33 1.59 1.33 1.59 1.33 1.59 1.33 1.59 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.34 2.52 3.69 2.16 2.16 2.16 2.16 2.13 2.43 2.14	•	510.0	0.065	0.10	0.15	0.25	0.40	Χ	0.65	Χ	1.0	Χ	1.5
0.0013 0.0166 0.055 0.100 0.223 0.343 0.438 0.536 0.702 0.935 1.29 0.0064 0.0444 0.182 0.171 0.327 0.498 0.587 0.771 0.961 1.16 1.56 0.0131 0.0665 0.138 0.218 0.394 0.582 0.679 0.679 0.679 1.06 1.29 1.71 0.0360 0.120 0.216 0.317 0.527 0.745 0.685 1.08 1.30 1.53 1.59 0.0132 0.130 0.489 0.489 0.489 0.489 1.21 1.47 1.62 1.93 1.59 1.83 1.39 0.173 0.337 0.490 0.639 0.928 1.21 1.47 1.62 1.93 2.22 2.52 3.09 0.256 0.500 1.05 0.269 1.31 1.64 1.80 2.12 2.43 2.74 3.34 0.256 0.500 1.05 0.25 0.40 \times 0.66 \times \times 0.66 \times \time		ptin percent d	efective or defer	cts per husdred	unita)								
0.0064 0.0444 0.100 0.121 0.327 0.498 0.397 0.771 0.961 1.16 1.16 1.56 0.0131 0.0665 0.138 0.218 0.394 0.582 0.679 0.878 1.06 1.37 1.71 0.0350 0.120 0.216 0.317 0.527 0.750 0.659 1.08 1.33 1.58 1.83 1.39 1.39 0.0350 0.120 0.216 0.439 0.527 0.750 0.659 1.08 1.33 1.58 1.83 1.39 1.39 0.173 0.345 0.490 0.639 0.928 1.21 1.47 1.62 1.63 1.50 2.12 2.43 2.74 3.34 0.375 0.490 0.639 0.928 1.31 1.64 1.40 2.12 2.43 2.74 3.34 0.375 0.450 0.15 0.25 0.40 \times 0.65 \times 0.45 \times 0.65 \times 0.45 \times	0.66	0.0013	0.0186	990'0	0.163	0.223	0.363	0.438	965.0	0.762	0.935	1.29	1.57
0.0131 0.0665 0.138 0.218 0.394 0.582 0.679 0.6878 1.06 1.29 1.71 0.0360 0.120 0.216 0.317 0.527 0.745 0.465 1.08 1.30 1.53 1.99 0.0360 0.120 0.234 0.459 0.709 0.659 1.08 1.33 1.58 1.83 2.33 0.173 0.337 0.490 0.639 0.528 1.21 1.45 1.62 1.63 1.50 2.22 2.52 3.09 0.286 0.486 0.663 0.683 1.31 1.64 1.80 2.12 2.43 2.74 3.34 0.375 0.490 0.105 1.64 2.00 2.18 2.52 2.45 3.18 3.82 0.025 0.10 0.15 0.25 0.40 \times \tim	95.0	9900'0	0.0444	0,102	0.171	0.327	0.498	0.587	0.771	196'0	1.16	1.56	1.86
0.0350 0.120 0.216 0.317 0.527 0.745 0.0855 1.08 1.30 1.53 1.99 0.0656 0.210 0.234 0.459 0.709 0.659 1.08 1.33 1.58 1.83 2.33 0.173 0.377 0.490 0.639 0.526 1.21 1.35 1.60 2.18 2.72 2.82 3.74 3.34 0.276 0.486 0.685 0.685 1.31 1.64 1.80 2.12 2.43 2.74 3.34 0.576 0.680 1.05 1.54 1.80 2.12 2.43 2.74 3.34 0.025 0.10 0.15 0.25 0.40 2.06 2.18 2.52 2.85 3.18 3.82 0.025 0.10 0.15 0.25 0.40 2.18 2.52 2.85 3.18 3.82 0.025 0.10 0.15 0.25 0.40 2.18 2.52 2.85 3.18	90.0	0.0131	0.0665	0.138	0.218	0.394	0.582	629'0	0.878	1.06	1.39	17.11	2.03
0.0866 0.210 0.334 0.459 0.709 0.959 1.08 1.33 1.58 1.83 2.33 0.173 0.337 0.490 0.629 0.928 1.21 1.35 1.63 1.90 2.18 2.72 0.288 0.486 0.665 0.683 1.31 1.64 1.80 2.12 2.43 2.74 3.34 0.376 0.680 1.03 1.64 1.80 2.12 2.43 2.74 3.34 0.576 0.680 1.05 1.64 2.00 2.18 2.52 2.85 3.18 3.82 0.025 0.10 0.15 0.25 0.40 X 0.66 X 1.5 1.5 1.5 0.025 0.10 0.15 0.25 0.40 X 0.66 X 1.6 X 1.5 1.5	75.0	0.0360	0.120	0.216	0.317	0.527	0.745	0.855	1.08	1.30	1.53	1.99	2.34
0.173 0.337 0.490 0.639 0.928 1.21 1.15 1.63 1.50 2.16 2.72 0.288 0.486 0.665 0.685 1.16 1.47 1.62 1.90 2.22 2.52 3.09 0.375 0.496 1.31 1.64 1.80 2.12 2.43 2.74 3.34 0.576 0.630 1.08 2.12 2.00 2.18 2.52 2.85 3.18 3.82 0.025 0.10 0.15 0.25 0.40 3.6 3.6 3.18 3.82 1.5 Accordable Quality Levels (tighteneti inspection)	50.0	0.0866	0.210	0.334	0.459	0.709	656.0	1.08	1.33	1.58	1.83	2.33	2.71
0.286 0.486 0.665 0.885 1.16 1.47 1.62 1.93 2.22 2.52 3.09 0.375 0.493 0.787 0.969 1.31 1.64 1.80 2.12 2.43 2.74 3.34 0.576 0.490 1.05 1.64 2.00 2.18 2.52 2.85 3.18 3.82 0.025 0.10 0.15 0.25 0.40 X 0.66 X 1.0 X 1.5 7 Accordable Quality Levels (tightenet) inspection)	25.0	0.173	0.337	0.490	6.639	0.928	1.21	1.35	1.63	1.50	2.18	2.72	3.12
0.375 0.593 0.787 0.969 1.31 1.64 1.80 2.12 2.43 2.74 3.34 3.65 0.556 0.800 1.05 1.26 1.54 2.00 2.18 2.52 2.85 3.18 3.82 0.025 0.10 0.15 0.25 0.40	10.0	0.288	0.486	0,665	0.835	1.16	1.47	1.62	1.93	2.22	2.52	3.09	3.52
0.576 0.830 1.05 1.26 1.64 2.00 2.18 2.52 2.85 3.18 3.82 0.025 0.10 0.15 0.25 0.40 X 0.65 X 1.0 X 1.5 X 1.5 X 0.55 X 0.40 X 0.65 X 0.65 X 1.0 X 1.5 X 0.55 X 0.65 X	5.0	0.375	0.593	0.787	696'0	1.31	1.64	1.80	2.12	243	2.74	3.34	15. E.
0.10 0.15 0.25 0.40 X 0.66 X 1.0 X 1.5 X 1.5	1.0	0.576	0.830	1.05	-	1.64	2.00	2.18	2.52	2.85	3.18	3.82	4.39
Acceptable Quality Levels (tightened teaperction)		0.025	0.10	0.15	0.25	0,40	X	97.0	Χ	1.0	Χ	1.5	X
						Acces	stable Quality I	evels (tightened	inspection)				

P

FIG. X1.22 Sample Size Code Letter P

į	Higher lative than nample 1.5 size	E.	900	900 200	1000	Δ 200	400	009	008	1000	1200	1400	Higher than	
	E="	2	334			0	_	0	10	0.	m	- 00	==	1
	5.	B.	23	91 1	22	64	7 14	3 19	N	8	33	R	IX	l
		Ac.	19 21	= =	8	60		13	19	53	3	37	11	1
	IXI	200		6	ಸ		12	11	Ħ	K	82	33	5	
	/^\	Be Ac	15		19 23	-	10 6	13 11	17 16	20 22	22	32	-	
	61	7.1	7	7 11	6.00							18	IΧ	
		\$	18.3		81	1 9	9	12 8	15 12	71 71	23	N	1,,	
	IXI	£	13	9	16								1.0	
	1	Ας.	12	6	13 15	9	. m	10	13 10	15 14	17 18	19	-	
	99	a Be	1 01	LO .	12		m	9		- 11			X	
_		Re Ac	6	-	12	*	-	04	=	12	14 14	15	-	
ction	X	Ac B	60	m	=	0	24	4		9 1	12 1	=	0.65	
adeu		R.	100	P	0.	-	9	100	0	=	12	*	.,	1
Ē	0.40	Ac B		69			-	m	ın	-	01	2	X	
lion)		- A	- 9	NO.	-	+	47	9	P-	80	6	9	7.00	
vels	83	Ac B	10	2.0			_	-	m	LO.			0.40	
2		£	•	-	ın	173	177	C-5	w	•		9	-	
Acceptable Quality Levels (normal inspection)	0.15	Ac B		-	1,000				24		-		12	1
ole Q	\vdash	E ×	8	3	7		3 0	3	*	£	1/2	w		
P. P.	0.10	-0.0	7		m				_	D4	m		0.15	X
Acc		He Ac	64	64	es.	F4	eu	01	m	m	m	m	750	
	90.0	No.	_					0	0	_	_	04	0.10	
	\rightarrow	B.	- 7	-	_		_	_		-			10	
	0,040	¥		* <u>!</u>	5	,							0.065	
	X	Ac Be		ne i	8	:							0.040	
	0.025	墨		an l									V	
	\vdash	Re Ac	-		3								^	
	0.015	Ac B	0 1		ic.	•							0.025	
	9	2											5	
	0.010	2	D	D		D							Lens than 0.025	
Come	lative aumple size		900	200	1000	200	000	009	800	1000	1300	1400		
10000000	Type of sampling plan		Single	Double					Multiple					

FIG. X1.22 Sample Size Code Letter P (continued)

∆ = Use sext preceding sample size code letter for which acceptance and rejection numbers are available.
 ∀ = Use next subsequent sample size code, letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number.
 Re = Rejection number.

P

Use single sampling plan above. Acceptance not permitted at this sample size.

CHART Q - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS TABLE X-Q - Tables for sample size code letter: Q (Curves for double and multiple sampling are matched as closely as practicable), QUALITY OF SUBVITTED LOTS Is, in percent defective for AQL's < 10, in defects per handred

TABLE X-Q-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

					Acceptab	de Quality Levi	Acceptable Quality Levels (normal inspection)	ection)				
P.	0.010	0.040	0.065	0.10	0.15	0.25	Χ	0.40	Χ	0.65	Χ	0.1
	р (пп регоев	s defective or de	p (in percent defective or defects per hundred units	ed units								
0.66	0.00081	6110.0	0.0349	9590:0	0.143	0.232	0.281	0.382	0.488	0.598	0.628	1.01
0.56	0.00410	0.0284	0.0654	0.109	6.208	0.318	0.376	0.494	0.615	0.740	966.0	1.19
0.06	0.00840	0.0426	0.0882	0.140	0.252	0.372	0.435	0.562	0.692	0.824	1.09	1.30
15.0	0.0230	6920:0	0.138	0.203	0.338	0.476	0.547	0.690	0.834	626.0	1.27	1.49
50.0	0.0554	0.134	0.214	0.294	0.454	0.614	9690	0.853	10.1	1.17	1.49	1.73
25.0	0.111	0.215	0.314	0.409	0.594	0.775	0.864	1.04	1.22	1.39	1.74	2.00
10.0	0.184	0.310	0.426	0.534	0.742	0.942	1.04	1.23	1.42	1971	1.98	2.25
5.0	0.240	0.380	0.504	0.620	0.841	1.05	1.15	1.36	1.56	1.75	2.14	2.42
0.1	0.368	0.531	0.672	0.804	1.66	L.28	1.83	1971	1.83	2.04	2.45	2.75
	0.015	0.065	0.10	0.15	0.25	Χ	0.40	X	0.65	Χ	1.0	Χ
					Accept	able Quality Le	Acceptable Quality Levels (tightened inspection)	inspection				

t of sea given is above table based on Polesco distribution as an above table to

0

FIG. X1.23 Sample Size Code Letter Q

Camir	lative sample stre		1250	900	315	630	88	12980	5751	1890	2206]	
	Higher then 1.0	Ac Re	٩	۵	٥							Higher than 1.0	
	2	B.	N	2 17	0.	*	19	13	53	2	×	V	
	-	¥	Ħ	= 8	64	t+	2	21	N3	E	Ħ	Λ	
	V	Æ	13	11 12	100	2	17	22	প্র	54	33	1.0	
	X	2	3	o 8	-	•	=	2	Ħ	ħ	8	-	
	99'0	æ	22	1 2	-	2	=	17	8	Ħ	23	X	
	0	¥	3	r- 6	-	*	100	22	Ħ	a	K	V	
	IVI	쿒	2	2 2	10	0	12	12	11	8	B	2	
	X	Ac.	12	0 2	0	m	-	01	3	13	2	6	
	0.40	8	=	9 5	4	9	9	n	22	=	0	V	
		¥	2	5 5		m	40	100	=	1	20	V	(30
700	V	윤	6	7 21	*	1	D	=	22	2	70	0.40	T,
2	\wedge	2		P I		N	*	•	0	22	*		in
Ĭ	N	2		- 6	7		10	9	=	12	1	V	1
1	ő	*	-	m =	0	+	m	17	P-	92	m	V	dig.
a (teo	0.15	2	٥	in 1-	*	NO.		p		0	10	N	*
1	9	4	**	N 40		-	N	0	10	+	•	0	5
U.L	0	2		w 10	m	m	+	43	4	10	10	un.	diry
Neg.	0.10	¥c.	n			0	-	64	m	+	9	0.15	å
Acceptable Quality Levels (normal inspection)	13	æ			**	173	m	*		vi	49		Acceptable Quality Levels (tighteeed inspection)
epte	0.065	γc	N	0 0	*	0		-	60	m	4	0.10	dag
Acc	2	2	64	O 0	64	14	N	6	m	м		100	~
	0.040	Ve Ve	_	0				0	-	-	64	0.065	
	12	2			•				-				
	0.003	A.c.		Letter	=							0.040	
	1/	2			-3					-	_	-	
	X	3		Letter Use	w							0.005	
	20	2		. 2		_						V	
	0.015	2		Zeller Letter	<u>п</u>							ΙXΙ	
	-	2			1							100	
	0.010	No.	0		7.							0.015	1
		#			1	_	_			_		-	
	X	Ne.		Leuce Ge	œ							0.010	
Cump	Sample Star	_	1250	909	315	63	3	1286	1575	1890	202		
Twee of	sempling plen		Stagle	Double				Multiple					

Re = Reject

FIG. X1.23 Sample Size Code Letter Q (continued)

0

Use next preceding sample size code letter for which acceptance and rejection numbers are available.

59

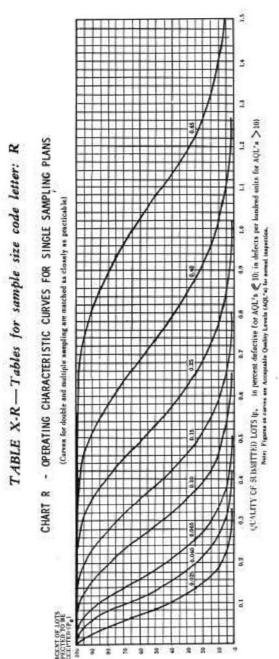


TABLE X-R-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

	t			Accept	able Oudity Lev	Acceptable Quality Levels (normal inspection)	ction)				
P.	0.025	0,040	0.065	0.10	0.15	Χ	0.25	Χ	0,40	Χ	0.46
	p (in percent d	lefective or defec	p (in percent defective or defects per hundred units)	(43)				4			
0.66	0.0074	6.0218	0.0412	0.0892	0.145	0.175	0.239	0.305	0.374	0.517	0.629
95.0	87100	0.0409	0.0683	0.131	0.199	0.235	0.309	0,385	0.462	0.622	0.745
90.06	9970'0	0.0551	0.0873	0.158	0.233	0.272	0.351	0.432	0.515	0.684	0.812
5.0	0.0481	0.0968	0.127	0.211	962'0	0.342	0.431	0.521	0.612	0.795	0.934
50.0	0.0839	0.134	0.184	0.284	0.384	0.433	0.533	6.633	0.733	0.933	1.08
25.0	0.135	0,196	0.256	0.371	0.484	0.540	0.651	192.0	0.870	1.09	£.1
10.0	0.195	0.266	0.334	0.464	0.589	0,650	0.770	0.889	10.1	1.24	1.41
5.0	0.237	0.315	0.388	0.525	0.657	0.722	0.848	0.972	1.09	1.33	1.51
1.0	0.332	0.420	0.502	0.655	0,800	0.870	1.02	1.14	1.27	1.53	1.72
	0.040	0.065	0,10	0.15	Χ	0.25	Χ	040	Χ	0.65	X
					Acceptable Osali	Acceptable Quality Levels (tightered inspection)	ned inspection)				

. All ratees given in above table based as Poisson distribution us an approximation to

R

FIG. X1.24 Sample Size Code Letter R

Cump	lative sample	1	2000	1250	300	1000	1500	2000	2500	3000	3300		
	Higher thes 0.65	Ac Re	٥	۵	4							Higher than 0.65	
	99'0	E.	Ħ	16	0	11	19	\$3	23	E	38	X	
	0	2	12	= %	24	+	2	19	N	E	37	1/1	
- 1	V	F.	61	* ×		12	11	81	M	8	23	0.65	
	X	2	82	e 8	-	۰	=	9	Ħ	22	32	0	
	07.0	ě	15	= 8	1	10	13	11	20	13	98	V	
	0.	Vo.	7	r =	-	*	60	12	17	R	23	X	
- 1	V	2	13	10	40	0	54	15	17	8	23	0.40	
- 8	V	Se Se	22	~ 12	٥	ю	۴-	10	2	99	53	0	
	ю	2	Ξ	9 13	M	00	10	13	15	17	9	X	
8	6.25	34	10	** 12	۰	*	٠		=	2	82	\ \	(na)
pect	M	2	•	F 22	-	7	0.	=	54	M	15	102	pect
1	X	Ae.	60	e =		49	4		Б.	77	=	0.23	an in
Borm	\vdash	2		r- a	-	9		9	Ξ	12	2	V	htene
100	0.15	Ac	P-	rs 60	0	400	m	in.	-	10	27	X	Acceptable Quality Levels (tightened inspection)
Ē		He.	10	10 Fr	+	in.	9	P-	80	6	9	10	evels
H I	0.10	ą.	10	N 90		-	54	m	V3	1	6	0.15	liy L
Acceptable Quality Levels (across inspection)	-	- S	₩.	+ 10	m	m	•	10	40	-0	~	+	Open
apta	0.065	100		12.70				64	-		9	6.10	able
Acc		Re Ac	8	- 4	04	9	m	-		10	10	1	dada
	0.040	-			12				11			0.065	4
- 2	17/2	24	64	3 0	- 10	9	2 0	3	63	100	en en	-	
	0.025	Ac B	_	0 -			0			-	64	0.040	
- 1	37	ě			_							10	Ŷ.
- 8	IXI	. y	- 4	Use Letter	92							0.025	
	22.22	F.					-				-7.	11	ş
Ì	0.015	Ne.	-	8 1	Δ.							X	
		- E			-							L/S	
	0.019	Ve Ve		Elle G	0							0.015	
	11	Æ	- 4		T							910	
	X	Ąc		•				•				0.01	
į	all the		2000	1250	98	1000	1500	2000	2500	3000	3500		
	Type of ampling	-	Single	Double				Multiple					

FIG. X1.24 Sample Size Code Letter R (continued)

a. Use rest preceding sample size code letter for which acceptance and rejection numbers are available,
 c. a. Acceptance number.

4 4 4 . .

	Cumu-	Acceptable Quality Level (normal inspection)	ble Quality Le inspection)
Type of sampling plan	lative	/\	Χ
	size	γc	Re
Single	3150	-	2
:	2000	0	2
Double	4000	1	64
	800	•	84
	1600	•	2
	2400	0	2
Multiple	3200	0	8
	4000	•	ю
	4800	-	m
	2600	2	8
		ó	0.025
		Acceptable Quality La	Acceptable Quality Level

Ac = Acceptance number

Re = Rejection number

= Acceptance not permitted at this sample size.

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FIG. X1.25 Sample Size Code Letter S

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