



**CONNECTION
TECHNOLOGY
PRODUCT
SPECIFICATION**

SECTION	II	
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SUBJECT: DEFINITION OF TERMS

BLUNT THREAD START: A thread with removal of the incomplete thread at the starting end.

BOX CONNECTOR: A female thread connector or internally threaded end of a pipe or accessory. (See Figure 1).

BURR: A localized point of roughness, thin ridge, or protrusion, produced by mechanical damage or by machining.

CHATTER: A wavy surface caused by vibration during machining, perpendicular to the machining process

CLUSTER: Five (5) or more individual imperfection indications in an area 0.250" by 0.250".

CONNECTION: The mated male and female connectors of a particular thread design. (See Figure 2).

CONTINUITY OF SEAL SURFACE: The phonograph seal surface is considered continuous if there are no imperfections that are longitudinally longer than 1/8". No more than two (2) imperfections of maximum or near maximum length may be closer than 0.250" circumferentially or be aligned in such manner that a longitudinal or diagonal leak path may be created.

CRACK: A stress-induced separation of the metal.

CUT: A sharp gouge or distortion in two or more thread crests in a line longitudinal to the pipe axis or at an angle across the threads.

DENT: A depression that is without metal loss and is caused by striking, or being struck by, other objects.

DING: A flattened area or indentation caused by mechanical impact.

ECCENTRICITY: A condition of tubular products in which the O.D. and I.D. axis do not coincide, resulting in wall thickness variations around the circumference at a given section or plane.

FIRST ARTICLE INSPECTION: First production part that satisfies all specified manufacturing tolerance and inspection criteria, which are as close to specified nominal tolerance as can be practically obtained and vary no more than one-half (1/2) of the specified tolerance and further adjustment will not be necessary.

The first article inspection shall be performed at the following frequency: at the start of production and following any change to equipment. When any manufacturing or inspection personnel is changed, 100% inspection is required at full manufacturing tolerance.

FREQUENCY OF INSPECTION: The interval at which the parts shall be inspected or gaged during the manufacturing process.

A. **100% Frequency** - All listed elements or items shall be inspected or gaged on each part. Part shall be defined as each pin and/or each coupling with both ends inspected or gaged.

B. **10% Frequency** - All listed elements or items shall be inspected or gaged on every tenth (10th) part. Part shall be defined as each pin connector and/or each coupling with both ends inspected or gaged.

GALLING: Surface damage caused by localized cold welding of high spot or foreign material.

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GL: Glass Liner. (See Figure 1).

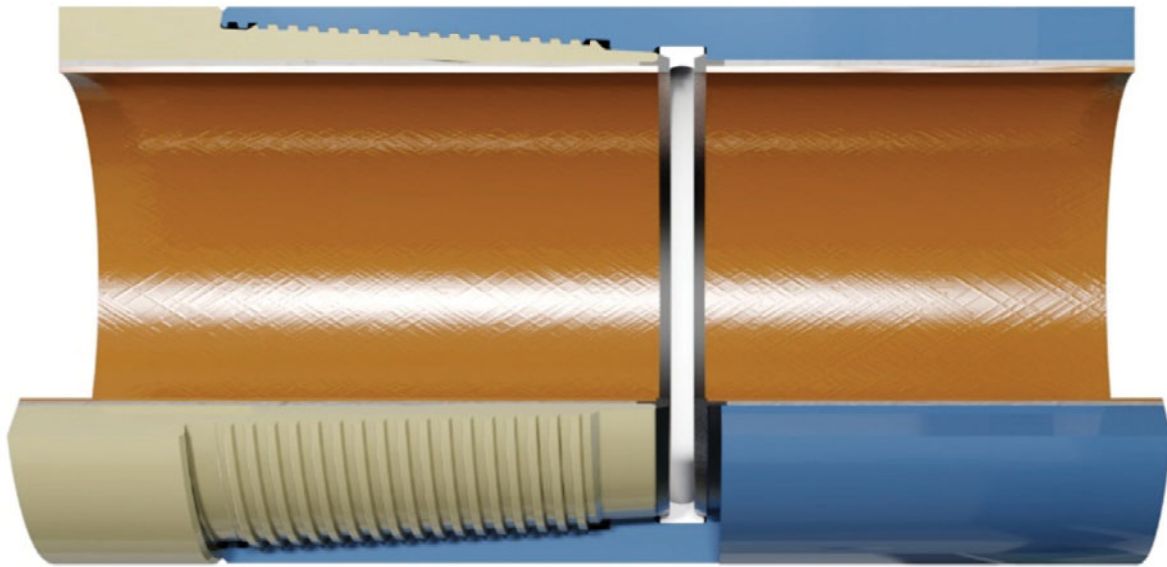


Figure 1. Glass Liner

GOUGE: Elongated grooves or cavities caused by mechanical removal of metal.

HANDLING DAMAGE: Cuts, gouges, dents, etc., that occurred during handling.

IMPERFECT THREAD: A thread on which the load flank is not fully formed, has insufficient thread height, and may or may not have a black crest.

INCLUSION: Foreign material or non-metallic particles entrapped within the metal during solidification.

LAP: Fold of metal which has been rolled or otherwise worked against the surface but not fused into a solid metal.

LAMINATION: An internal metal separation creating layers generally parallel to the surface.

LAST ARTICLE INSPECTION: The last production part on each piece of equipment manufacturing a given product. The last article's dimensions shall meet all tolerances specified for that product. A last article inspection shall be performed at the following frequency: A) equipment tool holder change, B) major equipment adjustment, C) equipment crash, D) shutdown, E) at the completion of the manufacturing of a product order.

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MDG / MRP: Mechanical Diameter Gauge. (equivalent to MRP). (See Figure 2).

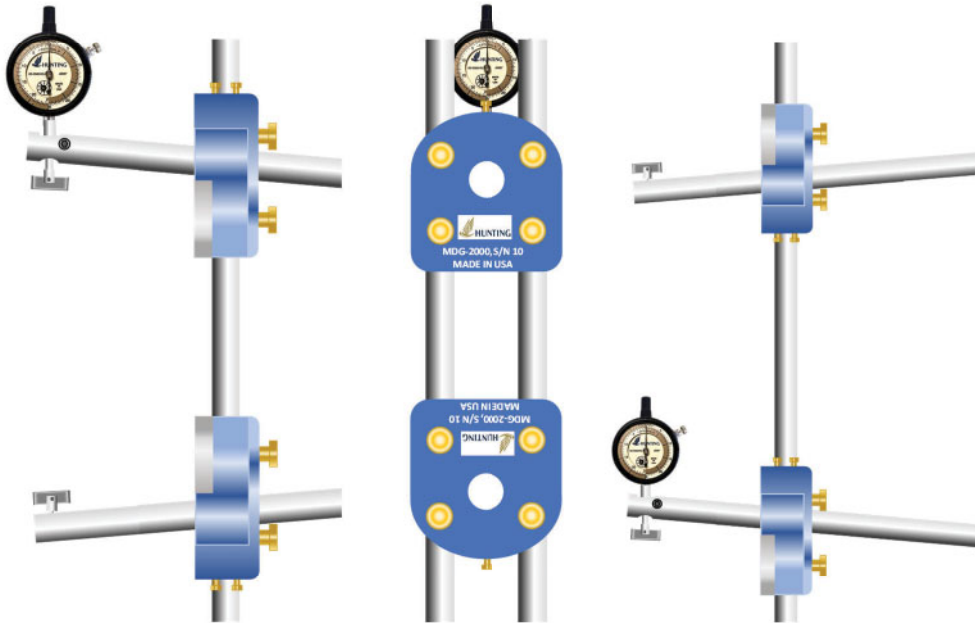


Figure 2. Mechanical Diameter Gauge.

MINOR THREAD DAMAGE: No absolute blanket acceptance/rejection criteria concerning thread damage can be specified due to factors such as actual full form thread length, depth, and location of the damage. Impact type damage that is 0.125" or less in circumferential length and 0.003" or less in depth may be repaired by removing all protrusions on the load flank and thread crests by light filing. All repaired areas on the box connectors shall be covered with a dry film lubricant such as molybdenum disulfide.

NOMINAL: To specified dimensions or theoretical size.

PIN CONNECTOR: A male thread connector or externally threaded end of a pipe or accessory. (See Figure 5).

PIT: A depression or cavity caused by inclusions or porosity exposed after machining or by corrosive attack during storage.

PLUG SCORES: Longitudinal I.D. grooves occurring in seamless pipe, usually caused by hard pieces of metal adhering to the high mill plug.

PROPRIETARY: A product that is protected by secrecy, patent, or copyright against free competition.

SC: Special Clearance.

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SEAM: Crevice in rolled metal which has been closed by rolling or other work but has not been fused into solid metal.

SLIVER: An extremely thin elongated piece of metal that has been rolled into the surface of the parent metal to which it is attached usually by only one end.

STEP: An improper thread form that exhibits an abrupt machining deviation above or below the expected thread profile. (Figure No. 3)



Figure 3. Step or Mismatch

TORN THREAD: Thread surfaces which have portions that are chipped, rough, or ragged.

TORQUE: A rotational force expressed in foot pounds used to assemble connections.

A. **Minimum Torque:** The smallest acceptable rotational force required to bring a connection to the specified power tight position.

B. **Optimum Torque:** A percentage of a safety margin above minimum the make-up torque, to account for any torque losses to environment or equipment.



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C. **Maximum Torque:** The largest acceptable rotational force required to bring a connection to the specified power-tight position.

D. **Yield Torque:** The rotational force at which the material or connection yields plastically.

VISUAL INSPECTION: As seen with the unaided eye (i.e. without the use of magnification or non-destructive testing methods). Visual inspection incorporates physical feeling for burrs, slivers, feather edges, tears, or other surface roughness discontinuities.