

Management System: [Quality](#)

Subject Area: [Suspect/Counterfeit Items and Defective Items](#)

Issue Date: 05/05/04

Guideline: □ General Screening Criteria and Special Detection Features

This guideline provides assistance in identifying suspect/counterfeit items. The practice of using suspect/counterfeit items for ANY application (i.e., Grade 5 bolts in Grade 2 bolt applications) is not allowed under any circumstances.

Detection from Visual Clues

Items may be substandard or fraudulent when any of the following visual clues are seen:

1. The item appears old when a new item was ordered.
2. Manufacturer/model/serial numbers are partly worn or have been altered.
3. Nameplates, labels, or tags have been altered, photocopied, painted over, are not secured well, show incomplete data, or are missing (e.g., pre-printed labels will normally show typed entries).
4. Obvious attempts at beautification have been made: excess painting or wire brushing, evidence of hand painting (touch-up), stainless steel is painted.
5. handmade parts are evident, gaskets are rough cut, shims and thin metal part edges show evidence of cutting or dressing by hand tools (filing, hacksaw marking, use of tin snips or nippers).
6. Hand tool marks on fasteners or other assembly parts (upset metal exists on screw or bolt heads) or dissimilar parts are evident (e.g., seven or eight bolts are of the same material and one is a different material).
7. Poor fit between assembled items.
8. Configuration is not consistent with other items from the same supplier or varies from that indicated in supplier literature or drawings.
9. Unusual boxing or packaging of component or item.
10. The supplier is not a factory-authorized distributor.
11. Dimensions of the item are inconsistent with the specifications requested on the purchase order and/or those provided by the supplier at the time of shipment.
12. Multiple items of identical types appear different (e.g., paint colors are slightly different, surface textures are slightly different, forms are slightly different).

Detection from Document Irregularity Clues

Document irregularities may indicate suspect/counterfeit items when any of the following clues are found:

1. The use of correction fluid or correction tape is evident. Font type or pitch changes are evident.
2. The document is not signed or initialed when required, is excessively faded or unclear (indicating multiple, sequential copying) or data are missing.
3. The name or title of the document approver cannot be determined.
4. Technical data is inconsistent (e.g., chemical analysis indicates one material and physical tests indicate another).
5. Certification or test results are identical between items when normal variations should be

expected.

6. Document traceability is not clear. The document should be traceable to the item(s).
7. Technical data are not consistent with Code or Standard requirements (e.g., no impact test results provided when impact testing is required or Certified Material Test Report physical test data indicate no heat treatment when heat treatment is required).
8. Documentation is not delivered as required by the purchase order or is in an unusual format.
9. Line on forms are bent, broken, or interrupted indicating data has been deleted or exchanged (cut and paste).
10. Handwritten entries of data are on the same document where typed or preprinted data exists.
11. Data on a single line located at different heights indicate the possibility of retyping.
12. Price is significantly less than that of the competition.

Special detection features are described below for

1. [Fasteners](#)
2. [Electrical devices](#)
3. [Rotating machinery and valve internal parts](#)
4. [Valves.](#)

Fasteners

1. Head markings are marred, missing, or appear to have been altered.
2. Threads show evidence of dressing or wear (threads should be of uniform color and finish).
3. Head markings are inconsistent with a heat lot.
4. Head markings match one of those on [DOE's Headmark List for Stainless Steel Fasteners](#) or [DOE's Suspect Bolt Headmark List](#). **Note:** Only manufacturers listed on [DOE's Headmark List for Stainless Steel Fasteners](#) or [DOE's Suspect Bolt Headmark List](#) are known to produce sub-standard graded fasteners. If graded fasteners are discovered with head marks matching those on [DOE's Headmark List for Stainless Steel Fasteners](#) or [DOE's Suspect Bolt Headmark List](#) they are considered to be defective without further testing, unless traceable manufacturer's certifications are received that provide documented evidence that the fasteners were not produced by the manufacturer listed on the [DOE's Headmark List for Stainless Steel Fasteners](#) or [DOE's Suspect Bolt Headmark List](#). □ New counterfeit bolts or fasteners have roughly the same physical strength of their graded counterparts, but lack the chemical composition and heat treatment specified in consensus standards. Simple tensile strength tests cannot and should not be relied on in determining acceptability for use. Laboratories that have been evaluated and accepted to perform the proper testing can be identified by contacting the ORNL S/CI Program Coordinator.

Electrical Devices

1. Connections show evidence of previous attachment (metal upset or marring).
2. Connections show arcing or discoloration.
3. Fasteners are loose, missing, or show metal upset.
4. Molded case circuit breakers are not consistent with manufacturer-provided checklists for detecting substandard or fraudulent breakers.

5. Missing or photocopied Underwriters Laboratories (UL) Labels on products requiring such.
6. Number indicating current rating is not raised or depressed (stamped) on the end of the switch handle. (Counterfeiting is usually indicated by grinding off the rating and painting on a different rating.)
7. Breaker exhibits are high gloss appearance with wear marks underneath coating. (Past counterfeiting practice is to apply a lacquer finish to used breakers to make them appear "new.")

Rotating Machinery and Valve Internal Parts

1. Shows marring, top impressions, wear marks, traces of prussian blue or lapping compound, or other evidence of previous attempts at fit-up or assembly.
2. Heat discoloration is evident.
3. Evidence of erosion, corrosion, wire-drawing or "dimples" (inverted cone-shaped impressions) on valve discs, seats, or pump impellers.

Valves Paint

1. Valve appears to be freshly painted and valve stem has paint on it.
2. Wear marks on any painted surface.
3. Valve stem is protected, but protection has paint on it.
4. Paint does not match standard Original Equipment Manufacturer (OEM) color.

Valve Tags

1. Tags are attached with screws instead of rivets.
2. Tags are attached in a different location than normal.
3. Tags appear to be worn or old.
4. Tags have paint on them.
5. Tags look newer than the valve.
6. Tags have no part numbers.
7. Tags have irregular stamping.

Handwheels

1. Old-looking handwheels are on new-looking valves.
2. Handwheels look sand-blasted or newer than the valve.
3. Different types of handwheels are on valves of the same manufacturer.

Bolts & Nuts

1. Bolts/nuts have a used appearance (excessive wrench marks on flats).
2. Improper bolt/nut material is used (e.g., a bronze nut on a stainless stem).

Valve Body

1. Ground-off casting marks with other markings stamped in the area (OEM markings are nearly always raised, not stamped).
2. Signs of weld repairs.

3. Incorrect dimensions.
4. Freshly sandblasted appearance, including eye bolts, grease fittings, stem, etc.
5. Evidence of previous bolt head scoring on backside of flanges, or evidence that this area has been ground to remove such marks.
6. On a stainless valve, a finish that is unusually shiny indicated bead-blasting. A finish that is unusually dull indicated sand-blasting. The finish on a new valve is in-between.

Manufacturer's Logo

1. Missing
2. Logo plate looks newer than the valve
3. Logo plate shows signs of discoloration from previous use.

Other

1. Foreign material inside the valve (e.g., metal shavings).
2. Valve stem packing that shows all the adjustments have been run out.
3. In gate valves, a gate that is off-center when checked through the open end of the valve.
4. Obvious differences between valves in the same shipment.