

GGO-R-00395(GSA-FSS)
July 27, 1966

INTERIM FEDERAL SPECIFICATION

RIVETER, BLIND, HAND AND HEADS

This Interim Federal Specification was developed by Standardisation Division, Federal Supply Service, General Services Administration, Washington, D. C. 20406, based upon currently available technical information. It is recommended that Federal agencies use it in procurement and forward recommendations for changes to the preparing activity at the address shown above.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers a lightweight, hand-operated riveter, which when used in conjunction with the appropriate pulling head shall install 1/8-, 5/32-, and 3/16-inch diameter universal or countersunk, self-plugging and hollow pull-through, serrated stem blind rivets.

1.1.1 Federal specification coverage. Federal specifications do not include all varieties of the commodity as indicated by the title of the specification, or which are commercially available, but are intended to cover only those generally used by the Federal Government.

1.2 Classification.

1.2.1 Sizes. Riveter shall be of the following sizes as specified (see 6.1):

Size 1. - 9-1/2-inch nominal length.
Size 2. - 18-1/2-inch nominal length.

1.2.2 Heads. Heads shall be of the following styles and classes as specified (see 6.1):

Style 1. - Straight.
Class 1. - Universal.
Class 2. - Countersunk.
Style 2. - Right angle.
Class 1. - Universal.
Class 2. - Countersunk.

2. APPLICABLE DOCUMENTS

2.1 Specifications and standards. The following specifications and standards, of the issues in effect on date of invitation for bids, form a part of this specification:

Federal Standards:

Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies).
Fed. Std. No. 151 - Metals, Test Methods.

Federal Specification:

GGO-P-471 - Pliers, Nippers, and Tweezers.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, Mo., Dallas, Denver, San Francisco, Los Angeles, and Seattle, Wash.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

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Military Specification:

~~MIL-H-15424~~ - Hand Tools, Packaging of.

Military Standards:

~~MIL-STD-105~~ - Sampling Procedures and Tables for Inspection by Attributes.

~~MIL-STD-129~~ - Marking for Shipment and Storage.

MS 20600 - Rivet, Blind, Structural Pull Stem, Self-Plugging, Protruding Head, Type II, Class 1.

MS 20601 - Rivet, Blind, Self-Plugging 100° Flush Head, Type II, Class 2.

MS 20604 - Rivet, Blind, Nonstructural, Universal, Class 1.

MS 20606 - Rivet, Blind, Nonstructural, Modified Truss Head, Class 3.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

National Bureau of Standards Handbook:

~~H28~~ - Screw-Thread Standards for Federal Services.

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402.)

3. REQUIREMENTS

3.1 Illustrations. The illustrations shown herein are for the convenience of identification, and are not intended to preclude the purchase of riveters or heads which are otherwise in accordance with this specification.

3.2 Design, construction, and material.

3.2.1 Design and construction. The riveter shall be designed for continuous operation, and parts shall not work loose in service or show excessive wear when tested in accordance with 4.4.2.

3.2.2 Material. All metal components used in the construction of riveters and pulling heads shall be of steel suitable for the purpose intended. All materials shall be of uniform quality and free from defects and imperfections that may affect their serviceability or durability.

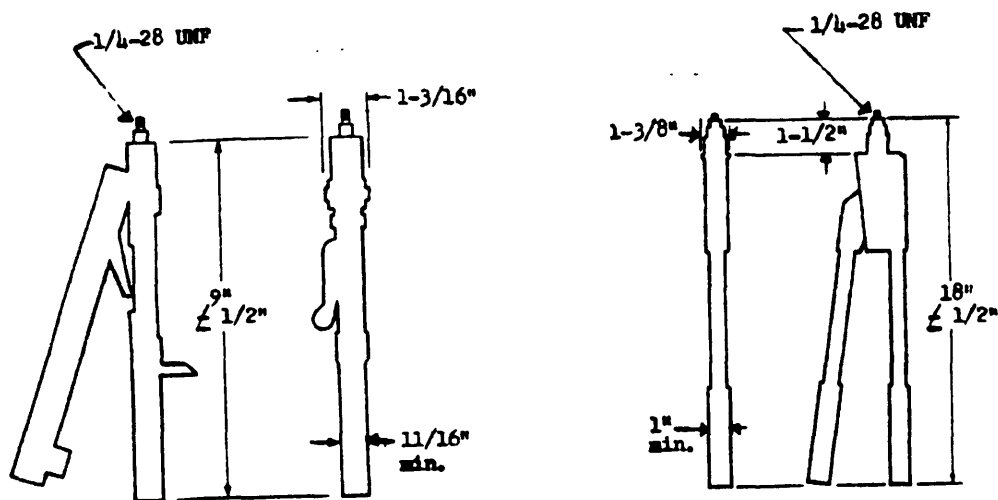
3.3 Threads. All threaded parts shall conform to NBS Handbook H28.

3.4 Component parts. The riveter shall consist essentially of a body and a compound lever assembly. When specified (see 6.1), pulling heads shall be furnished with each riveter.

3.5 Size 1 riveter.

3.5.1 Body assembly. Size 1 riveter body assembly shall be a seamless steel housing, internally threaded 5/8-27 NS at the working end. Within the housing there shall be a removable steel spring and gear rack assembly. The rack shall have a threaded spindle end and a hardness of not less than 41 nor more than 51 on the Rockwell C scale. There shall be a removable pawl spring and latch assembly attached to the body to engage the pawl with the rack. Tool shall be suitable for one-hand operation, and of the dimensions specified on figure 1.

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Size 1.

Size 2.

Tolerance = $\pm 1/64$ " unless
otherwise specified.

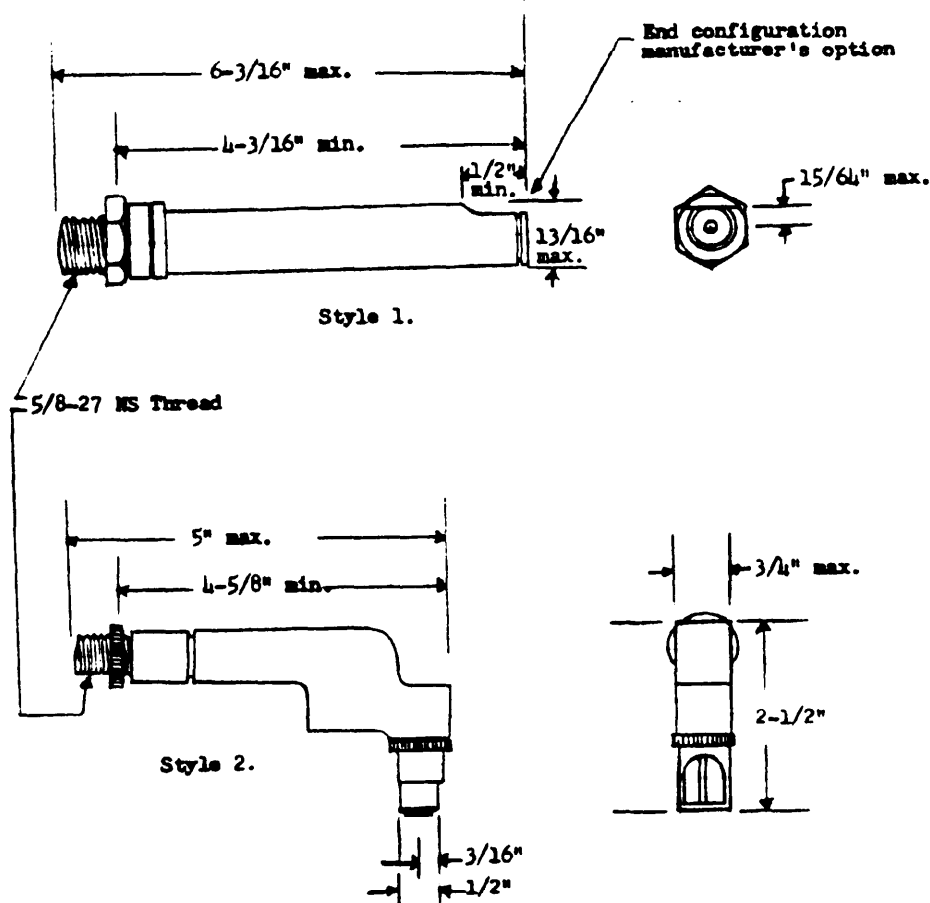
Figure 1. Riveter.

3.5.2 Lever assembly. The lever assembly shall consist essentially of a steel lever latch, removable pawl assembly, and a neoprene stop cushion. The pawl shall have a hardness of not less than 43 nor more than 53 on the Rockwell C scale. The lever assembly shall be affixed to the body by a clamp, pivot pin, or other components.

3.6 Size 2 riveter.

3.6.1 Body assembly. Body assembly for size 2 riveter shall be similar to size 1 except tool shall have long handles, and be designed for two-hand operation. Riveter shall be of the dimensions specified on figure 1.

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Tolerance = $\pm 1/64$ " unless otherwise specified.

Figure 2. Pulling heads, straight and right angle.

3.7 Pulling heads. When required, and as specified (see 6.1), pulling heads shall be furnished for installing universal or countersunk, self-plugging and hollow pull through serrated stem rivets of 1/8-, 5/32-, or 3/16-inch diameter in accordance with MS 20600, MS 60601, MS 20604, and MS 20606. Heads shall be of the straight or right angle style as specified (see 6.1).

3.7.1 Style 1, straight. Style 1 pulling head shall be similar to, and of the dimensions specified on Figure 2. Head shall consist essentially of a side-slotted outer tube, male threaded on one end, and furnished with a lock nut. Within the outer tube there shall be a drawbolt assembly, internally threaded 1/4-28 UNF on the same end as the outer tube thread, and shall contain a 3-jaw serrated chuck and collet on the opposite end.

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3.7.1.1 Chuck and collet. The chuck shall be serrated to a depth sufficient to adequately engage the rivet stem to effect proper installation. The 3-jaw chuck shall be case hardened to a depth of not less than 0.003 inch nor more than 0.005 inch, or through hardened to not less than 51 nor more than 58 on the Rockwell C scale (superficial hardness test). The inside diameter of the chuck and collet shall be of sufficient size to allow passage of the rivet stem for ejection through the slotted outer tube. Thread lengths shall be of adequate length to effectively engage the riveter. Chuck jaws shall not bind on the rivet stem nor cause stripping of the serrations of rivet pintail when tested in accordance with 4.4. Threads shall show no evidence of deformation. Means shall be provided to assure that the drawbolt ejection passage is aligned with the slotted outer tube to prevent jamming of the ejected rivet stem. When the pulling head is detached from the riveter and held in any position, the outer tube shall be capable of retaining the drawbolt.

3.7.2 Style 2, right angle. Style 2, right angle pulling head shall be similar to, and of the dimensions specified on figure 2. It shall consist essentially of a steel housing containing a ratchet and spring mechanism with chuck, collet, and drawbolt arrangement for installing blind rivets at right angles to the drawbolt axis. The pulling head shall be male threaded on one end and furnished with a lock nut for attachment to the riveter.

3.7.2.1 Chuck and collet. Chuck and collet shall be as specified in 3.7.1.1.

3.8 Performance.

3.8.1 Sizes 1 and 2. Sizes 1 and 2 assembled riveters and pulling heads shall, by compression of the lever against the riveter body, install the rivet and break the stem at its predetermined location. Provision shall be made for quick return of the rack and drawbolt into position for the next installation. The minimum total stroke of the rack shall be 1-3/16 inches. When tested in accordance with 4.4, no component of either the riveter or pulling head shall indicate any evidence of fracture, chipping, or deformation that would affect the serviceability of the tool. Design shall permit insertion of the rivet into the nose with normal hand force.

3.9 Identification marking. The riveter and the pulling head shall be marked in a legible and permanent manner with the manufacturer's name or with a trademark of such known character that the source of manufacture may be readily determined. In addition, the pulling head shall be marked with the size of the rivet accommodated.

3.10 Finish and coating. All components shall be free from sharp edges or burrs, and all surfaces shall be coated, or otherwise treated to prevent rust.

3.11 Repair parts. All parts having the same manufacturer's part number shall be interchangeable (see 6.2).

3.12 Carrying case. When specified (see 6.1), a sturdily constructed metal case with handle shall be furnished for holding the riveter and heads; or riveter, heads, and accessories for storage and transporting. All edges of the case shall be smooth to prevent injury while handling. The case shall be of corrosion-resisting material or have a painted finish.

3.13 Accessories. When specified (see 6.1), accessories as indicated in 3.13.1 and 3.13.2 shall be furnished with each riveter.

3.13.1 Plier. Plier in accordance with type H, class 2 of GOG-F-471, except the handles shall be offset a minimum of 15° away from the cutting side of the jaws. Plier shall have a nominal overall length of 7 inches, and withstand the test specified in 4.4.4.

3.13.2 Selector gage. Selector gage shall be of corrosion-resistant, lightweight metal. Gage shall be marked in increments of 1/16 inch, and shall be suitable for measuring universal and countersunk rivet diameters, material thickness, and grip lengths.

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3.14 Workmanship. Workmanship shall be of first class quality in every respect, and in accordance with good commercial practice.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Inspection of materials and components. In accordance with 4.1, the supplier is responsible for insuring that materials and components used were manufactured, tested and inspected in accordance with the requirements of referenced subsidiary specifications and standards to the extent specified herein, or, if none, in accordance with this specification.

4.2 Sampling procedures. Sampling procedures shall be in accordance with MIL-STD-105, except where indicated in 4.4.2 and 4.4.3. Data for sampling shall be as stated in table I.

Table I. Sampling data.

Category	Sample Unit	Inspection Level	Acceptable Quality Level	AQL Expressed In Terms Of	Reference
Visual examination	1 ea.	II	4.0	Defects per hundred units	Paragraph 4.3.1
Dimensional examination	1 ea.	S-4	1.5	Defects per hundred units	Paragraph 4.3.2
Testing	1 ea.	S-4	1.0	Defects per hundred units	Paragraph 4.4
Packaging and Preservation	1 ea.	S-2	4.0	Defects per hundred units	Paragraph 4.5

Note: A sample unit shall be any component (either riveter or pulling head(s), or a complete assembly (riveter and pulling head(s), as specified in 6.1.

4.3 Examination.

4.3.1 Visual examination. Each sample unit shall be examined for any nonconformance in design, material, finish, coating, construction, workmanship, and marking.

4.3.2 Dimensional examination. Each sample unit shall be examined for any nonconformance with dimensional requirements.

4.4 Testing. Each sample unit shall be tested in accordance with 4.4.1, 4.4.2, 4.4.3, and 4.4.4.

4.4.1 Hardness test. Applicable components of each sample unit shall be tested for hardness in accordance with Fed. Test Method Std. No. 151 to determine compliance with the ratings specified in 3.5.1, 3.5.2, and 3.7.1.1. Any hardness reading not within the specified range shall constitute a defect.

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4.4.2 Rivet installation test - sizes 1 and 2. Two sample units from each sample size shall be tested as indicated herein. The test shall consist of threading the pulling head to the riveter and successfully installing to a test plate (by continuous operation), 25 rivets (MS 20600, MS 20601, MS 20604, and MS 20606) for each size pulling head specified. Upon completion of the test, the riveter and the pulling head shall be disengaged; the riveter rack, pawl, spring, threads, and the pulling head serrated jaws and threads shall be inspected for any deformation or damage that would either affect the serviceability of either component or prevent the proper installation of the rivet. When the specified item is the riveter only, a pulling head similar to figure 2, size 3/16 inch, shall be utilized for test purposes.

4.4.2.1 Heads - styles 1 and 2. When the specified item is a pulling head(s), styles 1 or 2 only, a riveter similar to figure 1 shall be utilized for test purposes. The test shall be conducted as specified in 4.4.2.

4.4.3 Performance test.

4.4.3.1 Size 1. One riveter shall be selected from the sample size and placed in a test fixture similar to that illustrated in figure 3. The tool shall complete 1000 continuous cycles using a force applied through the lever assembly and body (to duplicate actual tool function) such that the rack is subjected to a resultant 1000-pound load during each cycle. The testing device shall be capable of performing approximately 10 complete cycles per minute. Upon completion of the test, the riveter shall be dismantled and all parts inspected. Any part that is found to be distorted, worn, cracked, or broken shall be cause for rejection of the entire lot represented by the sample.

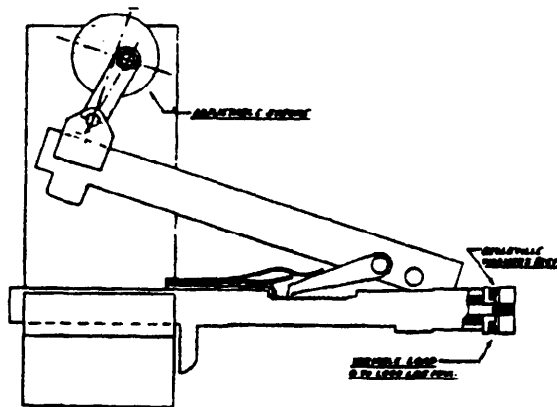


Figure 3 - Load Cycling Test.

4.4.4 Plier test. When the plier is furnished as an accessory, it shall be tested as specified for type H, class 2 of GGG-P-471.

4.5 Inspection of preparation for delivery requirements. An inspection shall be made to determine that the preservation, packaging, packing, and marking shall comply with the requirements in section 5 of this specification. Defects shall be scored in accordance with table II. For examination of interior packaging the sample unit shall be one shipping container fully prepared for delivery, selected at random just prior to the closing operations. Defects of closure listed shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lot, (see table I).

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Table II. Classification of preparation for delivery defects.

Examine	Defects
Markings (exterior and interior)	Omitted; incorrect; illegible; improper size, location, sequence, or method of application.
Materials	Any component missing, or damaged.
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose strapping, inadequate stapling. Distortion of container.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, and packing. Unless otherwise specified (see 6.1), the riveter shall be preserved, packaged and packed in accordance with MIL-H-15424. The level of preservation and packaging shall be A or C and the level of packing A, B, or C as specified (see 6.1).

5.1.1 As part of the requirements section 5 of this specification table III is considered as part of table I of MIL-H-15424.

Table III

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6
Riveter:					
Blind, hand	P-2, P-9	I	1		12
Heads	P-2, P-9	I	1		36

5.2 Marking.

5.2.1 Civil agencies. In addition to markings required by the contract or order, the interior packages and shipping containers shall be marked in accordance with Fed. Std. No. 123.

5.2.2 Military activities. In addition to markings required by the contract or order, the interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Ordering data. Purchasers should select the preferred options permitted herein, and include the following in procurement documents:

- (a) Title, number and date of this specification.
- (b) Size, style, and class required (see 1.2.1 and 1.2.2).
- (c) Pulling heads, if required with riveter (see 3.4 and 3.7).
- (d) Designate straight or right angle heads and sizes and classes as required (see 3.7, 3.7.1, and 3.7.2).
- (e) Carrying case, if required (see 3.12).
- (f) Accessories as required (see 3.13, 3.13.1 and 3.13.2).
- (g) Selection of level of preservation, packaging, and packing required (see 5.1).

6.2 When ordering repair parts, specify the following:

- (a) The manufacturer's name or trademark of riveter or pulling head for which the parts are required.
- (b) Name of the part.
- (c) Quantity of each part to be procured.

6.3 Civil agency packaging. When level B packaging is required for civil agency procurement, the requirements in 5.1.1, level A packaging shall apply.