

[INCH-POUND]
GGG-K-494C
April 5, 1996
SUPERSEDING
GGG-K-494B
April 10, 1974

FEDERAL SPECIFICATION

KNIVES; GENERAL PURPOSE SHOP, DETACHABLE BLADE

The General Services Administration has authorized the use of this Federal Specification by all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers general purpose shop knives with detachable blades which are used for cutting cardboard, gaskets, upholstery, rubber, leather, and similar nonmetallic materials.

1.1.1 Federal specification coverage. Federal specifications do not cover all varieties of the commodity 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 Types, classes, and styles. Knives shall be as follows and as specified (see 6.1):

General Purpose Shop Knife

2. APPLICABLE DOCUMENTS

2.1 Government documents. The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specifications:

- | | | |
|----------|---|---|
| PPP-P-40 | - | Preservation and Packing of Hand Tools and Tool Accessories for Power Driven, Metal and Woodworking Machinery |
| QQ-S-700 | - | Steel Sheet and Strip, Medium and High Carbon |

Federal Standard:

- | | | |
|-------------|---|---|
| FED-STD-H28 | - | Screw-Thread Standards for Federal Services |
|-------------|---|---|

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any other data which may improve this document should be sent to: General Services Administration, Federal Supply Service, Tools and Appliances Commodity Center (6FETE-CO), Washington, DC 20406.

GGG-K-494C

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and Commercial Item Descriptions as outlined under General Information in the Index of Federal Specifications, Standards and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

(Single copies of this specification, and other Federal specifications and Commercial Item Descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Seattle, WA.)

(Federal Government activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards and Commercial Item Descriptions from established distribution points in their agencies.)

2.2 Non-Government publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

American National Standards Institute (ANSI)/American Society of Quality Control (ASQC):

ANSI/ASQC Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Application for copies should be addressed to the American Society for Quality Control, P.O. Box 3005, 611 E. Wisconsin Avenue, Milwaukee, WI 53201-4606.)

American Society for Testing and Materials (ASTM):

ASTM E 18 - Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials

(Applications for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

3. REQUIREMENTS

3.1 Illustrations. Illustrations herein are descriptive and not restrictive and are not intended to preclude the purchase of knives otherwise conforming to this specification.

3.2 Material. Material shall be as specified herein. Material not definitely specified shall be of a good commercial quality, ordinarily used for the purpose. Material shall be free from all defects and imperfections.

3.3 Marking. Each item shall be marked with the manufacturer's name or identifying symbol and the state or country of manufacture. The marking shall be engraved, etched, or stamped in such a manner that it will be permanent to the extent that it will remain clear and legible throughout the life of the item.

3.4 Handles. The handles shall be well constructed, well balanced, and provide a comfortable handgrip. Handles shall be free from burrs, sharp edges, or other defects which might cause injury or discomfort to the user. The handle design shall provide the user adequate protection for both safely retaining and positioning the cutting blade during usage of the knife. The handle shall comply with tests specified in 4.5.1.

3.4.1 Handle storage compartment. A safe and easily accessible storage compartment shall be provided in the handle for storing five blades. This storage compartment shall be designed to enclose, position, and secure the five extra blades and prevent those blades from sliding, rotating, or coming out of position during even the roughest usage of the knife.

3.5 Blade adjustment and alignment guide. The blade alignment guide shall be designed to slide in and out of the handle freely (without binding) and to position and hold the blade securely in place. A positive blade stop shall be incorporated into the blade alignment guide mechanism so that the blade can be locked securely in at least three or more separate blade positions. One position shall lock the blade in the fully extended position with at least one inch of the blade protruding out of the handle (see Figure 1); another position shall lock the blade fully within the handle (none of the blade exposed); and the other position or positions shall lock anywhere between these two extremes.

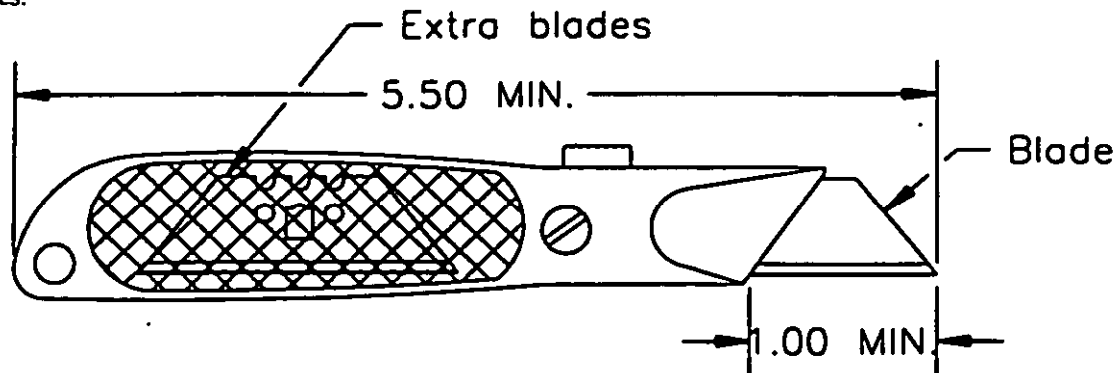
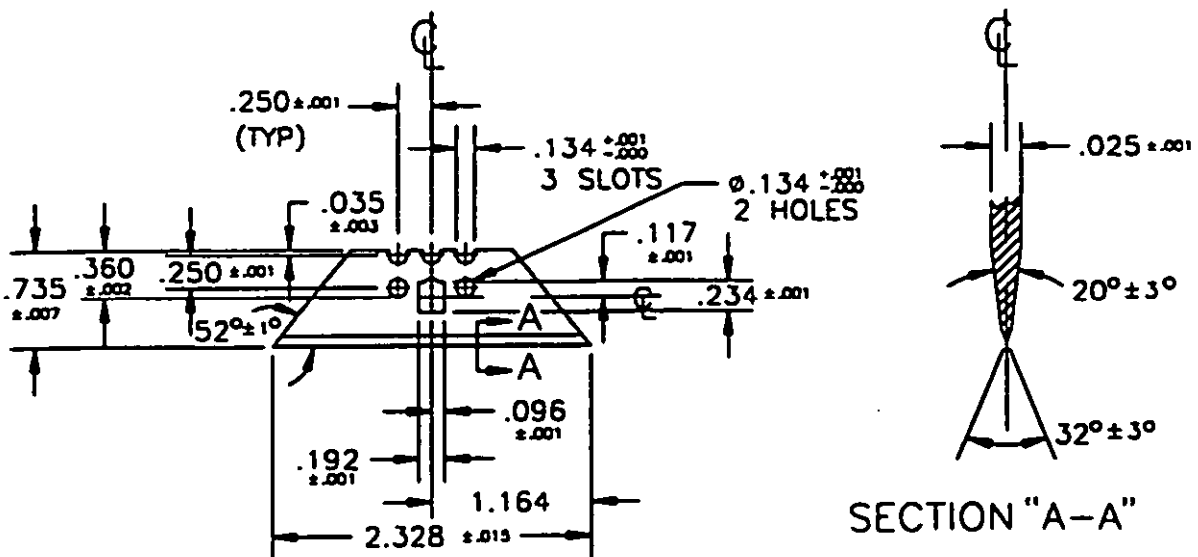


Figure 1. General purpose shop knife.

3.6 Blades. The blades shall be of high carbon steel conforming to QQ-S-700 steel number SAE 1095. The blades shall be hardened, tempered, and ground. The hardness of the blades shall be 57 to 64 when tested on the Rockwell C scale as specified in 4.5.2. Five blades shall be furnished with each knife, and these five, plus all replacement blades, shall conform to the standard configuration and dimensions of Figure 2.



Note: Unless otherwise specified, tolerances $\pm .005$ inch.

Note: Blade edge shall be ground smooth and sharp.

Figure 2. Standard blade.

GGG-K-494C

3.7 Finish.

3.7.1 Handles. The handles shall be plated or painted in accordance with the manufacturer's standard practice. All plated or painted surfaces shall be free from unplated spots, unpainted spots, blisters, or other defects which might affect the serviceability of the knives.

3.7.2 Blades. The blades shall be provided with a protective petroleum coating to prevent rusting.

3.8 Screw threads. All threads shall conform to FED-STD-H28 as to shape and form of threads. The head of the screw that joins the two halves of the handle together shall be countersunk below the surface of the handle half, and shall engage at least four full threads in the other handle half. Self-tapping screws are not acceptable.

3.9 General purpose shop knife. General purpose shop knives shall be in accordance with the dimensions of, and similar to Figure 1, with the blade in a fully extended position. Knives shall be provided with a push-button or other quick means of manual adjustment for extending and locking the cutting blade and retracting the blade completely into the handle without disassembly of the handle or the use of tools.

3.10 Sheath (holster). When specified (see 6.1), a sheath (holster) shall be furnished with each knife. The sheath shall be designed for carrying the knife on the user's belt. The sheath material shall be suitable for the purpose intended and be formulated from either leather or plastic at the option of the manufacturer.

3.11 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within the tolerances specified and all other requirements of this document are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch-pound units, a request should be made to the specification preparing activity for change to this document.

3.12 Workmanship. Details of workmanship shall be in accordance with the best commercial standards and practices. Paints, coatings, platings, and finishes shall be smooth, dry, adherent, continuous, and not stained or discolored. Fasteners shall be firmly secured and show no evidence of deformation, cross threading, or hazardous burrs. Adhesives and lubricants adequate for their intended purpose shall be properly and neatly applied. Adhesives shall be adequately cured. Wires and cables shall be neatly dressed and shall not be frayed or in contact with sharp edges. Wire and cable insulation shall show no evidence of burns, abrading, or pinch marks. There shall be no interference, binding, or galling of parts. External and bearing surfaces shall be free of tool and gouge marks, nicks, or other surface imperfections. The item shall be clean and free of corrosion and debris (e.g., chips, shavings, slivers) or other foreign material. The item shall be free from manufacturing workmanship defects (e.g., loose, missing, binding or misaligned parts, sharp or rough external edges, corners, or surfaces) and material workmanship defects (e.g., pits, rips, fins, burrs, tears, nodules, cracks, blisters) which may adversely impact the item's serviceability, durability, safety, or appearance.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by 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 Component and material inspection. In accordance with 4.1 above, the supplier is responsible for insuring that components and materials used were manufactured, tested, and inspected in accordance with the requirements of referenced subsidiary specification and standards to the extent specified, or, if none, in accordance with this specification.

4.2 Sampling procedures. Unless otherwise specified, sampling for inspection shall be performed in accordance with ANSI/ASQC Z1.4.

4.3 Inspection. Each of the sample knives shall be selected in accordance with 4.2.2 and visually and dimensionally examined to determine compliance with this specification. One or more defects in any knife shall cause rejection of that knife, and if the number of defective knives in any sample lot exceeds the acceptance number for the sample, the lot shall be rejected.

4.4 Acceptance tests. A sample knife shall be selected in accordance with 4.2.3 and tested in accordance with 4.5 to verify compliance with this specification. Any knife in the sample which does not meet the requirements for any of these tests, and if the number of nonconforming knives exceeds the acceptance number for that sample, the lot represented by the sample shall be cause for rejection.

4.5 Tests.

4.5.1 Drop test. The complete knife with the five blades in the storage compartment shall be dropped on concrete at least three times from a height of at least 6 feet. There shall be no evidence of any handle separation, cracks, breaks, or malfunctioning parts. The screw holding the handle halves together shall be removed, and the five blades in the storage compartment shall be examined. If any of the five blades is missing or out of position (not completely confined within the storage compartment), the knife shall have failed this test.

4.5.2 Hardness Test. The blade of each knife selected in accordance with 4.2.3 shall be tested in accordance with ASTM E 18 for determination of compliance with 3.6. Testing shall be as close as practicable to the cutting edge.

4.5.3 Blade and handle pressure test. Holding the knife handle at a 45° angle (see Figure 3) and the blade locked in the fully extended position, apply 50 pounds of downward pressure on the tip of the blade for at least 5 seconds. During this test, the two halves of the handle (at the blade end) shall not show any visible signs of spreading apart, nor shall the blade break or show any signs of either slipping or pivoting out of the locked position. The test is not applicable when furnishing only the blade.

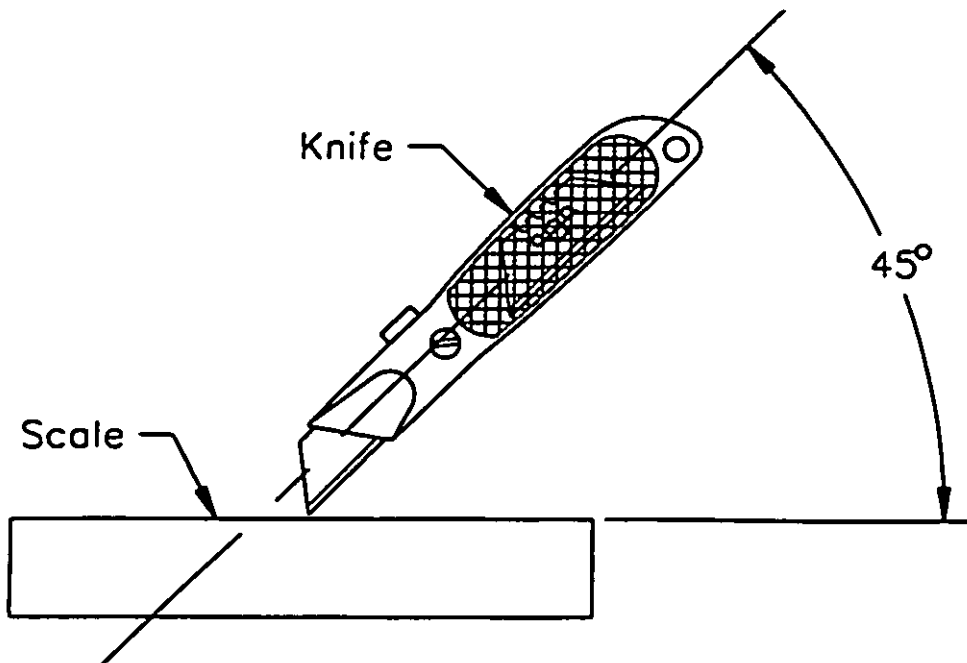


Figure 3. Blade and handle pressure test.

4.5.4 Cutting test. The knife blades shall be subjected to a cutting test on hard woods such as knots found in seasoned black spruce or yellow pine. Sufficient cuts shall be made with the knife blades to indicate that the cutting edge will not chip, dull, or deform under normal service conditions.

GGG-K-494C

4.5.5 Adjustment guide test. With the blade locked first in the number 2 and then number 3 positions, hold the knife handle perpendicular to a scale surface and apply 50 pounds (minimum) of force downward on the tip of the blade for at least 5 seconds. During this test, the blade adjustment guide shall not release from its locked position, nor shall the blade break or slip out of the adjustment guide.

4.5.6 Blade brittleness test. With the knife handle mounted in a vise or similar clamping device and the blade fully extended, apply 20 pounds of force at the tip of the blade in a direction perpendicular to the flat of the blade. During this test, the blade shall not break or take a permanent set.

4.6 Inspection of preparation for delivery. Unless otherwise specified, inspection to determine compliance with preparation for delivery requirements shall be accomplished in accordance with PPP-P-40. Inspection level shall be level II with an acceptance quality level (AQL) of 2.5 percent defective.

TABLE I. Classification of preparation for delivery defects

Examine	Defect
Marking (exterior and interior)	Omitted; incorrect; illegible; improper size, location, sequence, or method of application
Materials	Any component missing, damaged, or not as specified
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose strapping, inadequate stapling Distortion of container
Contents	Number per container is more or less than required Net weight exceeds requirements

4.7 Tests. All tests in this specification are applicable to the knife blade except 4.5.1, 4.5.3, and 4.5.5.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, packing, and marking. Preservation, packaging, packing, and marking shall be in accordance with PPP-P-40. The level of preservation, packaging, and packing shall be A, B, or Commercial, as specified (see 6.1).

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful but is not mandatory.)

6.1 Acquisition requirements. Acquisition documents must specify the following:

- Title, number, and date of this specification.
- A sheath (holster) if required (see 3.10).
- Level of preservation, packaging, and packing required (see 5.1).
- Marking, if other than specified.

MILITARY INTERESTS:

DOD has waived coordination on revisions and amendments to this Federal Specification until further notice.

PREPARING ACTIVITY

GSA-FSS