



AEROSPACE STANDARD	AS6018™	REV. A
	Issued	2013-05
	Revised	2021-07
Superseding AS6018		
Wrench, Spanner		

RATIONALE

The update of AS6018 is to incorporate improvements compiled from customer feedback.

1. SCOPE

This SAE Aerospace Standard (AS) covers adjustable and non-adjustable spanner wrenches generally used for aerospace machinery maintenance and for tightening and loosening hose couplings and hydrant caps.

Inclusion of dimensional data in this document is not intended to imply all of the products described therein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

1.1 Classification

Spanner wrenches covered by this standard shall be of the following types, classes, and styles:

Type I - Adjustable hook

Class 1 - Fixed pivot point

Class 2 - Variable pivot point, heavy duty

Type II - Pin

Class 1 - Non-adjustable

Class 2 - Adjustable

Type III - Face

Class 1 - Non-adjustable

Class 2 - Adjustable

Type IV - Combination hydrant and spanner

Type V - Universal hose coupling wrench

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Documents
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2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AS478 Identification Marking Methods

AS4984 Coating Requirements for Aerospace Hand Tools

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM E18 Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials, Standard Test Methods for

2.3 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME B46.1 Surface Texture

3. TECHNICAL REQUIREMENTS

3.1 Illustrations

The illustrations shown herein are descriptive and not restrictive and are included for the convenience of requisitioning and purchasing officers and manufacturers and are not intended to preclude the purchase of handles and attachments, which are otherwise in accordance with this document.

3.2 Materials

Type I through Type IV spanner wrenches shall be made of steel. The chemical composition and heat treatment of which shall be such as to produce tools conforming to the physical requirements specified herein.

For Type V wrenches, malleable cast iron or aluminum alloys are permitted.

3.3 Marking

Marking shall be in accordance with AS478.

3.4 Manufacture and Design

The wrenches shall be suitable for the purpose intended. Handles shall have a comfortable grip. Surfaces shall be smooth and corners shall be broken to approximately a 1/32 inch radius. Fillets having a radius of at least 1/32 inch shall be provided.

3.4.1 Coating

Wrenches shall be protected with one of the following three types as specified within AS4984:

Type I - Nickel chromium coating

Type II - Black oxide or black phosphate or other black finish coatings

Type III - Alternate coating (used in lieu of nickel chromium plating)

3.4.2 Surface Condition and Finish Requirements

All external surfaces shall be free from pits, nodules, forge/cast flash, burrs, cracks, and other detrimental defects. The external flash shall blend smoothly with adjacent surfaces.

Except for knurled handles, all external surfaces shall have a maximum Ra roughness height value of 250 μin . Microinch measurements shall be made with a surface-measuring instrument using a 0.030 inch (0.76 mm) roughness width cutoff. Definitions and nomenclature used herein can be found in ASME B46.1.

3.5 Tolerance

Dimensions referred to herein as approximate shall be interpreted as allowing a plus or minus tolerance of 15% of the nominal dimension.

3.6 Hardness

Unless otherwise specified herein, and with the exception of the pin used on Type II and Type III wrenches, spanner wrenches shall be hardened throughout to a Rockwell hardness of not less than 37 nor more than 45 on the "C" scale (HRC). Hardness definitions, nomenclature, and procedures used herein can be found in ASTM E18. When grinding is necessary to prepare the test surface, the amount removed must not exceed 0.007 inch on the surface contacted by the indenter. Type V wrenches are excluded from the hardness requirement. See 3.13.

3.7 Test Loads

The items covered herein shall withstand the test load specified in the applicable tables without failure or permanent deformation which might affect durability or serviceability of the tools. Adequate safeguards for personnel and property shall be employed in conducting all tests. Approved eye protection shall be worn at all times and equipment safety shields shall be in place when tests are in progress.

3.8 Type I, Class 1 - Adjustable Hook, Fixed Pivot Point Spanner Wrenches

Type I, Class 1 wrenches shall be forged with a plain or solid web in the handle. Clearance between the jaw and the handle clevis shall be sufficient to allow for free pivoting of the jaw without excessive looseness. The steel hinge pin shall be peened or otherwise well secured. Wrenches shall be similar to Figure 1 and shall conform to Table 1 for the capacity specified.