

FED. SUPPLY CLASS

5355

1. SCOPE

- 1.1 Scope. This specification covers the general requirements for manually operated control knobs and associated knob locks for use with electronic, communications, and allied equipment.

2. APPLICABLE DOCUMENTS

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

SPECIFICATIONS

FEDERAL

~~TT-P-54~~ ~~Paint, Phosphorescent, Ready-mixed (non-radioactive)~~
~~PPP-T-60~~ ~~Tape; Pressure Sensitive Adhesive, Waterproof for Packaging and Sealing~~
~~FF-S-200~~ ~~Setscrews: Hexagon Socket and Spline Socket, Headless~~
~~GGG-K-275~~ ~~Key, Socket Head Screw and Key Sets Socket Head (Wrench, Hexagon, Spline, and Square)~~

MILITARY

MIL-STD-2073-1 Standard Practice for Military Packaging
MIL-L-3891 Luminescent Material and Equipment (nonradioactive)
MIL-STD-7179 Finishes, Coatings, and Sealants, for the Protection of Aerospace Weapons Systems
MIL-DTL-7788 Panels, Information, Integrally Illuminated
MIL-E-17555 Electronic and Electrical Equipment, Accessories, and Provisioned Items (Repair Parts): Packaging of
MIL-DTL-18240 Fastener Element, Self-locking, Threaded Fastener, 250 °F Maximum
MIL-C-45662 Calibration System Requirements

INDUSTRY

ASTM D 5486/D 5486M Pressure Sensitive Tape for Packaging, Box Closure, and Sealing
A-A-2925 Key, Spline Socket Head Screw and Key Sets Socket Head
A-A-2927 Screwdriver Handle and Hexagon Bit, Nonreplaceable, Adjustable Bit
A-A-2932 Key, Hexagon Socket Head Screw and Key Sets Socket Head
A-A-3059 Paint: Photoluminescent, Nonradioactive, Interior
NASM3926/1 Knobs, Control, Ball
NASM3926/2 Knobs, Control, Oval Tapered
NASM3926/3 Knobs, Control, Tapered
NASM3926/4 Knobs, Control, Round, Edge Lighted and Non-Edge Lighted
AS18012 Markings for Aircrew Station Displays, Design and Configuration of

① COMPLETELY REVISED

THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MIL-K-3926, REVISION B.

THIRD ANGLE PROJECTION	CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 1
PROCUREMENT SPECIFICATION NONE	TITLE KNOBS, CONTROL (FOR USE WITH ELECTRONIC, COMMUNICATIONS, AND ALLIED EQUIPMENT)	CLASSIFICATION SPECIFICATION NASM3926 SHEET 1 OF 13

USE OF OR REFERENCE TO THIS DOCUMENT OR ANY NATIONAL AEROSPACE STANDARD IS ENTIRELY VOLUNTARY. AIA DOES NOT QUALIFY SUPPLIERS OR CERTIFY PRODUCTS OR SERVICES PRODUCED UNDER NATIONAL AEROSPACE STANDARD. AIA MAKES NO REPRESENTATION OR CLAIM RESPECTING (1) THE SUITABILITY OF THE DOCUMENT FOR ANY PARTICULAR APPLICATION OR (2) THE EXISTENCE OF OR APPLICABILITY OF THE DOCUMENT TO ANY PARTICULAR APPLICATION. Licensee: www.sepana.ir/5991803002, User: sam, albert. Not for Resale, 01/04/2016 22:37:22 MST TRADEMARKS RIGHTS.

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1000 WILSON BLVD.
ARLINGTON, VA 22209

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST REVISION DATE.

FORM 09-01

REVISION DATE: APRIL 29, 2011

ISSUE DATE: DECEMBER 2001

STANDARDS

FEDERAL

FED-STD-595
FED-STD-H28/2

Colors Used in Government Procurement
Screw-Thread Standards for Federal Services, Section 2, Unified Inch Screw
Threads, UN and UNR Thread Forms

MILITARY

MIL-STD-1916
MIL-STD-130
MIL-STD-202
MIL-STD-810
MIL-STD-1285

DoD Preferred Methods for Acceptance of Product
Identification Marking of U.S. Military Property
Test Method Standard, Electronic and Electrical Component Parts
Environmental Engineering Considerations and Laboratory Tests
Marking of Electrical and Electronic Parts

INDUSTRY

NASM90120
NASM91522
NASM91523
NASM91524
NASM91525
NASM91528
NASM91531

Knob, Control, Bar, Plastic
Knob, Control, Crank, Metal
Knob, Control, Lever, Metal
Knob, Control, Short Bar, Metal and Plastic
Knob, Control, Bar, Metal and Plastic
Knob, Control, Plastic, (Round, Concentric, Pointer, Spinner, Spinner Slip-Clutch,
and Knob Locks)
Knob, Control, Round, Plastic (with Fluted Grip)

(Copies of specifications, standards, drawings and publications required by suppliers in connection with
specific procurement functions should be obtained from the procuring activity or as directed by the
contracting officer).

3. REQUIREMENTS

3.1

Specification sheets and NASM sheets. The individual item requirements shall be as specified herein and in
accordance with the applicable specification sheets and NASM sheets. In the event of any conflict between
requirements of the specification and the applicable specification sheets or NASM sheets, the latter shall
govern.

3.3

Material. The material for each part shall be as specified (see 3.1). However, when a definite material is
not specified, a material shall be used which will enable the knobs to meet the requirements of this
specification. Acceptance or approval of any constituent material shall not be construed as a guarantee of
the acceptance of the finished product.

3.3.1

Fluorescent. Unless otherwise specified (see 3.1), fluorescent material used for calibration marking for
black lighted conditions shall conform to Type F, green of MIL-L-3891.

3.3.2

Phosphorescent. Unless otherwise specified (see 3.1), phosphorescent material used for calibration
marking shall conform to Type P, green to yellowish green of MIL-L-3891 or Type I of A-A-3059 ~~FF-P-54~~.

3.4

Design and construction.

3.4.1

Form and dimensions. Knobs shall be made in the form and within the dimensions specified (see 3.1).

3.4.1.1

Concentricity and perpendicularity. The periphery of the knob shall be concentric to the rotation axis within
0.025-inch full indicator movement (FIM). The back plane of the knob shall be perpendicular within ± 3
degrees to the rotational axis of the knob.

3.4.1.2

Threads. All threads shall be right hand and in accordance with FED-STD-H28/2.

① COMPLETELY REVISED

REVISION

1

NASM3926
SHEET 2



Document Sharing Hub

USE OF OR RELIANCE UPON THIS DOCUMENT OR ANY NATIONAL AEROSPACE STANDARD IS ENTIRELY VOLUNTARY. AIA DOES NOT QUALIFY SUPPLIERS OR CERTIFY

Copyright Aerospace Industries Association of America Inc. ALL RIGHTS RESERVED. AIA MAKES NO REPRESENTATION OR CLAIM RESPECTING (1) THE SUITABILITY OF
Provided by IHS under license with AIA/NAS. ANY PARTIAL OR APPLICATION OR (2) THE EXISTENCE OF OR APPLICABLE LICENSEE: www.sepana.ir/5991803002, User=sam, albert
No reproduction or networking permitted without license from IHS. Not for Resale, 01/04/2016 22:37:22 MST TRADEMARKS RIGHTS.

Full document details: AIA NASM3926 2011

- 3.4.2 Insert. The insert shall be a non-rotatable, metallic, full cylinder, completely forming the shaft hole. The insert shall be molded in the center of the knob body. It shall be provided with two UNC-3B threaded holes for setscrews as specified in 3.4.3. A 45 degree chamfer of $1/32 \pm 1/64$ inch shall be provided in the insert end which admits the shaft. A reducing bushing may be pressed into the molded-in bushing as required for 1/8 inch shaft hole types and special configurations.
- 3.4.2.1 Slip-clutch (insert). The outer portion of the slip-clutch insert shall be non-rotatable, metallic, and molded in the center of the knob body. The inner portion shall be a rotatable metallic insert incorporating the shaft hole in the center, and two UNC-3B threaded holes of a minimum of three threads. A 45 degree chamfer of $1/32 \pm 1/64$ inch shall be provided in the shaft hole.
- 3.4.3 Setscrews. Unless otherwise specified (see 3.1), setscrews shall conform to Type I, Style 4 of FF-S-200. Self-locking setscrews shall pass the tests specified in 4.7.2.1. Two No. 4-40 UNC-3A setscrews shall be provided in all 1/8 inch shaft hole diameter knobs and for knobs having a base diameter of 3/4 inch or less. Two No. 8-32 UNC-3A setscrews shall be provided in all other knobs. Two setscrews shall be used in each knob, and unless otherwise specified (see 3.1), they shall be placed between nominal limits of 90 and 125 degrees apart. When an insert for a "D" flat shaft is provided unless otherwise specified (see 3.1), one of the setscrews shall be perpendicular ± 3 degrees to the flat portion of the insert and opposite any indicator mark on the knob or dial (see 3.4.6). The length of each setscrew shall be such that when the setscrew is set firmly against the shaft, its head shall not be less than 0.015 inch and not more than 0.240 inch below the external surface of the knob adjacent to the setscrew hole. The setscrew holes within the plastic knob body up to the metal insert must be counterbored to the minimum major diameter of the setscrew.
- 3.4.4 Color. The color of the knobs shall be as specified (see 3.1) in accordance with FED-STD-595. Letters, numbers, or calibration markings shall be as specified for color (see 3.1) in accordance with FED-STD-595. Except in the case of letters, numbers, calibration markings, and trans-illuminated knobs, the color of plastic knobs shall not be applied by coating or painting but shall be incorporated in the material. At the option of the supplier, the finish may be obtained by means of a secondary operation.
- 3.4.5. Transillumination. Transilluminated part of the knobs shall meet the requirements of MIL-DTL-7788 ~~MIL-P-7788~~ except for materials, thickness, and back coating. Color shall be as specified (see 3.1 and 3.4.4). Letters, numbers, and calibration markings shall be in accordance with AS18012 ~~MIL-C-18012~~ or as specified (see 3.1).
- 3.4.6 Indicator mark. If the cap or the top part of the knob has a configuration which might be construed as a pointer or indicator, any required orientation or calibration mark, such as an arrow, line, or dot shall be in line with or on such configuration. Unless otherwise specified (see 3.1) the indicator mark shall be located within ± 3 degrees of the center line axis of the setscrew that is diametrically opposite the mark and/or within ± 3 degrees of a line perpendicular to the flat portion of an insert for a "D" flat shaft.
- 3.5 Resistance to environmental conditions. When knobs are conditioned as specified in 4.7.3 through 4.7.6 and 4.7.8 through 4.7.10, there shall be no visible deterioration during and after completion of conditioning. Any of the following shall be considered as deterioration:
- Cracking
 - Chipping
 - Spalling
 - Crazing
 - Peeling
 - Illegibility of Marking. (Marking indicates the identification markings (see 3.10) and calibration or indicator marking by various methods of engraving and filling or hot die stamping. In either case, if after testing the marked characters or figures are discernible the sample shall be acceptable.)
 - Change in color or luster beyond the specified limits.
 - Destructive corrosion. (Any type of corrosion which will prevent the setscrews, spinner or slip-clutch mechanism from being turned with the customary amount of torque, or which will not allow the knob to be readily removed from or inserted onto the shaft).

① COMPLETELY REVISED

REVISION

1

NASM3926
SHEET 3



Document Sharing Hub

USE OF OR RELIANCE UPON THIS DOCUMENT OR ANY NATIONAL AEROSPACE STANDARD IS ENTIRELY VOLUNTARY. AIA DOES NOT QUALIFY SUPPLIERS OR CERTIFY

Copyright Aerospace Industries Association of America, Inc. ALL RIGHTS RESERVED. AIA MAKES NO REPRESENTATION OR CLAIM RESPECTING (1) THE SUITABILITY OF
Produced by IHS under license with AIA/NAS. Licensee= www.sepana.ir/5991803002, User=sam, albert
No reproduction or networking permitted without license from IHS. Not for Resale, 01/04/2016 22:37:22 MST. TRADEMARK RIGHTS.

Full document details: AIA NASM3926 2011

- 3.6 Torque, tensile, and bending moment tests.
- 3.6.1 Setscrews. When knobs are tested as specified in 4.7.2.1, 4.7.3.2.1, Table V, and Figure 1, there shall be no failure of the self-locking element thread in the insert of the knob, setscrew threads, or setscrew socket heads. Insert or setscrew threads and sockets that are stripped, broken, or deformed shall be considered as failure of the thread.
- 3.6.2 Insert. When knobs are tested as specified in 4.7.2.2 and 4.7.3.1.1, there shall be no movement of the insert, cracking, or other failure.
- 3.6.3 Spinner and tactile spinner. When spinner-type knobs are tested as specified in 4.7.2.3 and 4.7.3, there shall be no evidence of cracking, or of movement of the insert or any other member within the knob, or other failure. Spinner shall turn freely in the spinner knob with no evidence of binding so as to prevent its rotation when the knob is held stationary.
- 3.6.4 Spinner-knob balance. When spinner-type knobs are tested as specified in 4.7.2.4, the maximum torque shall not exceed 1 ounce-inch.
- 3.6.5 Caps. When knobs with caps attached and not molded integrally with the knob body are tested as specified in 4.7.2.5 and 4.7.3.2.2, there shall be no evidence of cracking, looseness, movement or separation of the cap in relation to the body.
- 3.6.6 Tactile caps. When knobs with tactile caps are tested in accordance with 4.7.2.6 and 4.7.3.2.3, there shall be no evidence of cracking, looseness, movement or separation of the cap in relation to the body.
- 3.6.7 Dial skirts or plates. When knobs with dial skirts or plates that are attached to the body of a knob are tested as specified in 4.7.2.7, Table VI, and 4.7.3.2.4, there shall be no evidence of cracking, looseness, movement, or separation of the skirt in relation to the body.
- 3.6.8 Slip-clutch (insert). When knobs are tested as specified in 4.7.2.8 and 4.7.3.2.5, there shall be no movement of the outer portion of the insert within the molded knob, cracking of the knob or other failures. The slip-clutch shall function in the normal manner with no evidence of binding. The overriding torques shall meet the requirement indicated on the respective military standard.
- 3.6.9 Threaded shaft-hole knobs. When threaded shaft-hole knobs with or without insert are tested as specified in 4.7.2.9 and 4.7.3.2.6, there shall be no movement of the insert (if applicable), cracking or other failures.
- 3.7 Finish. When knobs are tested as specified in 4.7.4, there shall be no peeling of the lusterless-producing finish (see 3.1, 3.4.4, and 3.4.5).
- 3.8 Flammability. When knobs are tested as specified in 4.7.7, they shall not support visible flame or combustion for more than 30 seconds after removal of the flame.
- 3.10 Marking. The following information shall be marked on the knobs in accordance with MIL-STD-130:
- MS or specification sheet part number.
 - Supplier's name or code symbol and date code in accordance with MIL-STD-1285 ~~MIL-STD-456~~.
 - The MS or specification sheet part number, the supplier's name or code symbol shall be sunken or raised characters, or stamped in contrasting color ink and shall be placed on a flat surface in a position not noticeable to the operator under normal operating conditions. When space does not permit the marking as specified above, the marking shall be applied or stamped on tape or label affixed to the knob.
- 3.11 Workmanship. Knobs shall be processed in such a manner as to be uniform in quality and shall be free from pits, cracks, chips, and other defects that will affect serviceability or appearance.

① COMPLETELY REVISED

REVISION
1
NASM3926
SHEET 4



Document Sharing Hub