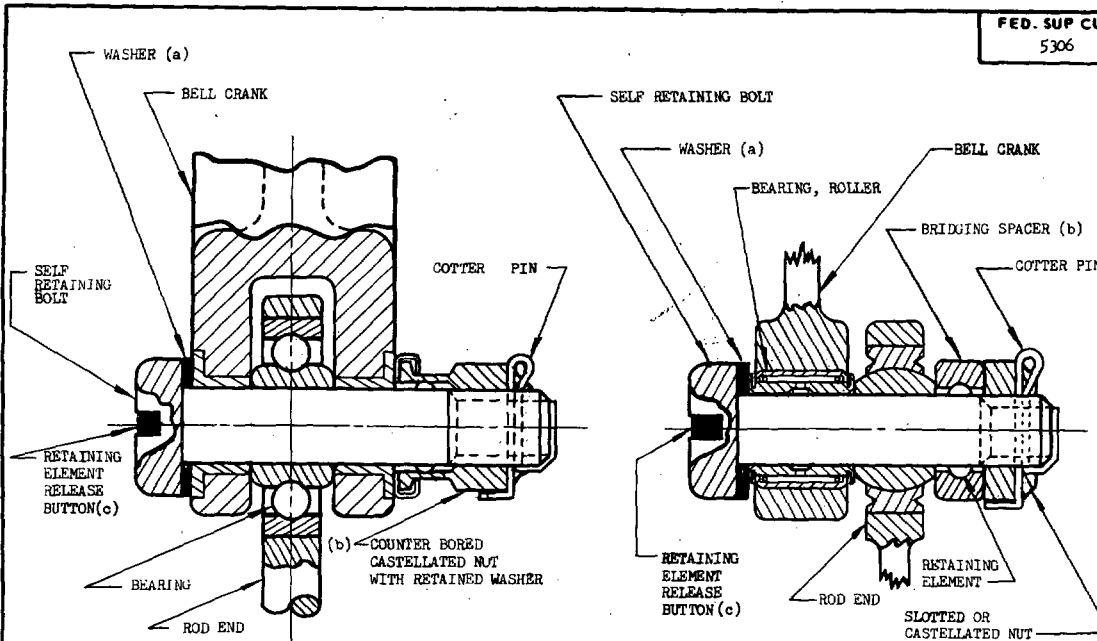


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- (a) WASHER SELECTED TO TAKE UP EXCESS BOLT GRIP LENGTH AND BUILD UP IN LENGTH DUE TO TOLERANCES.
- (b) A BRIDGING SPACER MAY BE USED, OR A SLOTTED OR CASTELLATED NUT WITH A COUNTER BORE OR RECESS FOR THE RETAINING ELEMENT MAY BE USED.
- (c) RETAINING ELEMENT RELEASE BUTTON APPLIES TO POSITIVE LOCKING BOLTS AND NOT TO IMPEDANCE TYPE BOLTS.

SELF-RETAINING BOLTS SHALL BE OF AN APPROVED TYPE AND SHALL BE USED IN ACCORDANCE WITH THE FOLLOWING DESIGN AND USAGE REQUIREMENTS:

1. SELF-RETAINING BOLTS SHALL BE USED IN CONTROL SYSTEMS (SUCH AS FLIGHT CONTROLS, FUEL CONTROLS, ENGINE AIR INDUCTION CONTROLS, TO ASSEMBLE MECHANICAL LINKAGES WITH JOINTS THAT ARE DESIGNED TO TRANSMIT MOTION PROPELLER CONTROLS, ETC.) WHICH RESULTS IN RELATIVE ROTATION BETWEEN THE COMPONENTS, THAT WILL REQUIRE FREQUENT DISASSEMBLY FOR ADJUSTMENT OR MAINTENANCE, WHERE THE BOLT SERVES AS AN AXIS OF ROTATION AND WHERE THE SEPARATION OF LINKAGE WOULD EFFECT SAFETY OF FLIGHT.
2. THE BOLTS SHALL BE ADDITIONALLY LOCKED IN POSITION BY SLOTTED OR CASTELLATED NUTS PROPERLY SECURED BY COTTER PINS.
3. WHEN SELF-RETAINED BOLTS ARE USED, THAT ARE NOT IDENTIFIED BY AN MS PART NUMBER, THE RETAINING ELEMENT AND ITS LOCKING DEVICE SHALL BE A DESIGN USED ON BOLTS THAT HAVE QUALIFICATION APPROVAL TO MIL-B-23964 FOR POSITIVE LOCKING BOLTS AND MIL-B-83050 FOR IMPEDANCE TYPE BOLTS.
4. SELF-RETAINING BOLTS THAT HAVE HAD THE RETAINING ELEMENT OR LOCKING DEVICE REWORKED OR REPROCESSED SHALL NOT BE USED.
5. BRIDGING SPACERS SHALL NOT BE USED WITH IMPEDANCE TYPE BOLTS. BRIDGING SPACERS SHALL BE SELECTED FROM MS21126 OR MS21128.
6. COUNTERBORED, CASTELLATED NUTS, WITH RETAINED WASHERS, SHALL BE SELECTED FROM MS21224.
7. CASTELLATED NUTS, SHALL BE SELECTED FROM MS17825, MS17826, MS21224, MS21244, AN310 OR AN320.

THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.  
REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID.

THIS IS A DESIGN STANDARD. NOT TO BE USED AS A PART NUMBER.

Review activities:  
NAVY - AS  
USAF - 11

This military standard is approved by the Department of the Air Force and the Naval Air Systems Command and is mandatory for use by these activities. All other military activities are required to employ this standard where suitable.

APPROVED 27 Oct 67 REVISED

P.A. NAVY - AS	TITLE	MILITARY STANDARD
Other Cust USAF - 11	BOLTS, SELF-RETAINING, AIRCRAFT RELIABILITY AND MAINTAINABILITY DESIGN AND USAGE REQUIREMENTS FOR	<b>MS33602(ASG)</b>
PROCUREMENT SPECIFICATION	SUPERSEDES:	SHEET 1 OF

DD FORM 1 SEP 57 672-1 (Limited coordination)  
ASG use only

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.  
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