

C-49-20

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.
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AERONAUTICAL RECOMMENDED PRACTICE

ARP 581

UNIVERSAL HORIZONTAL FIELD MAINTENANCE STAND FOR 10,000 LB. WEIGHT CLASS
PROPULSION UNITS (48" AND 30" RAIL GAGE)

Issued 3-1-60
Revised

1. **PURPOSE:** To provide a recommended practice for the design of a horizontal field maintenance stand which will be adaptable to all engines of the specified classes.
2. **SCOPE:** This recommended practice covers a rail concept stand that may be used for horizontal disassembly and reassembly, and maintenance, incorporating certain design features which are defined herein. These features include the rail dimensions and width, length and height of stand to insure compatibility with rail concept type transport and positioning trailers.
3. **GENERAL REQUIREMENTS:**
 - 3.1 **Reference Standards:** The following Military and Federal Standards may be applicable and provide useful information.

Fed. Std. No. 245	MIL-P-6906	MIL-S-8512
		MIL-D-8513
 - 3.2 **Material and Workmanship:**
 - 3.2.1 **Material** specified for use in fabrication shall be of best commercial quality and suitable for the purpose.
 - 3.2.2 **Workmanship:** All details of workmanship specified on the drawings shall be in accordance with high-grade commercial practices. Instructions shall provide that the article produced shall be free of defects which might affect its serviceability.
4. **DETAIL REQUIREMENTS:**
 - 4.1 **Design configuration** shall consist of two main rails and necessary support structure.
 - 4.1.1 **Rails:**
 - 4.1.1.1 The width of the upper rail surface shall be 3.33 in. as specified in Table 1h, Fed. Std. 245, with the top flange configuration as defined by the solid lined portion of Figure 1 conforming to the Steel Products Manual, published by the American Iron and Steel Institute, and/or Fed. Std. 245.
 - 4.1.1.2 The remaining rail configuration and attaching hardware shall not exceed the envelope indicated by the phantom lined portion of Figure 1 to depth shown.
 - 4.1.1.3 The flatness, squareness and surface finish shall be in accordance with the intended application.

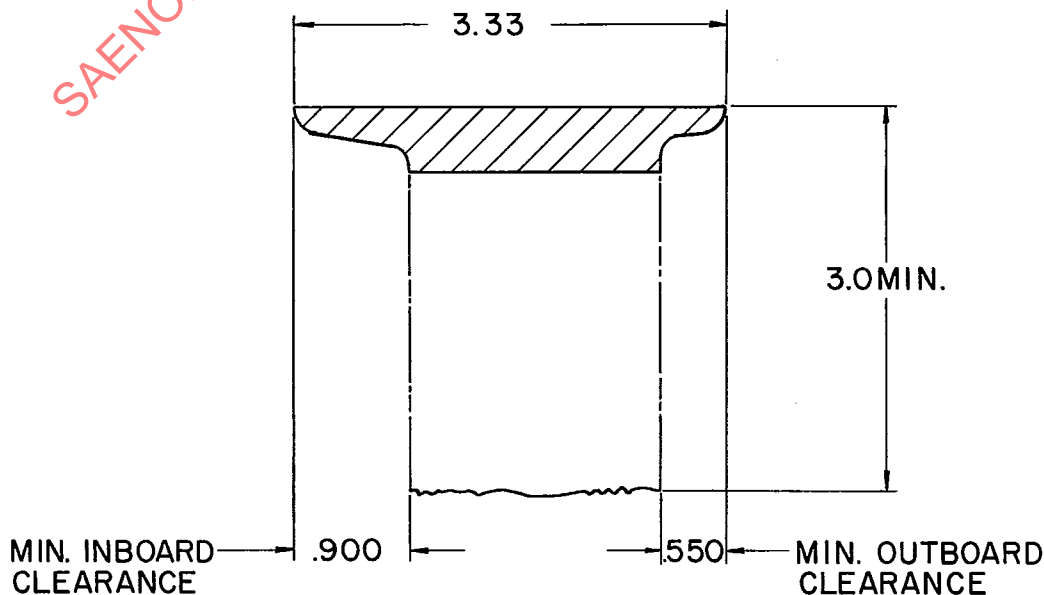


Figure 1

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CLASS PROPULSION UNITS (48" AND 30" RAIL GAGE)

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4.1.1.4 Each rail of the two shall support a load of 5,000 lbs. with a design safety factor of 3:1 based on the yield strength of the material. The load shall be applied at the most critical condition on the top surface through a single line roller contact across the rail. The maximum allowable deflection under the 5,000 lb. load shall not exceed .150 in.

4.1.2 Couplings:

4.1.2.1 The ends of the rails are to have a coupling feature to permit attachment of a series of stands. Couplings are to be attached to the rails so that stands and trailers can be joined together at either end. The center lines of the male and female coupling shall be central within .015 in. of the center line of the flange. Locate male coupler and guide on right rail, and female coupler and guide on left rail when facing rail ends. (See Figures 2 and 3)

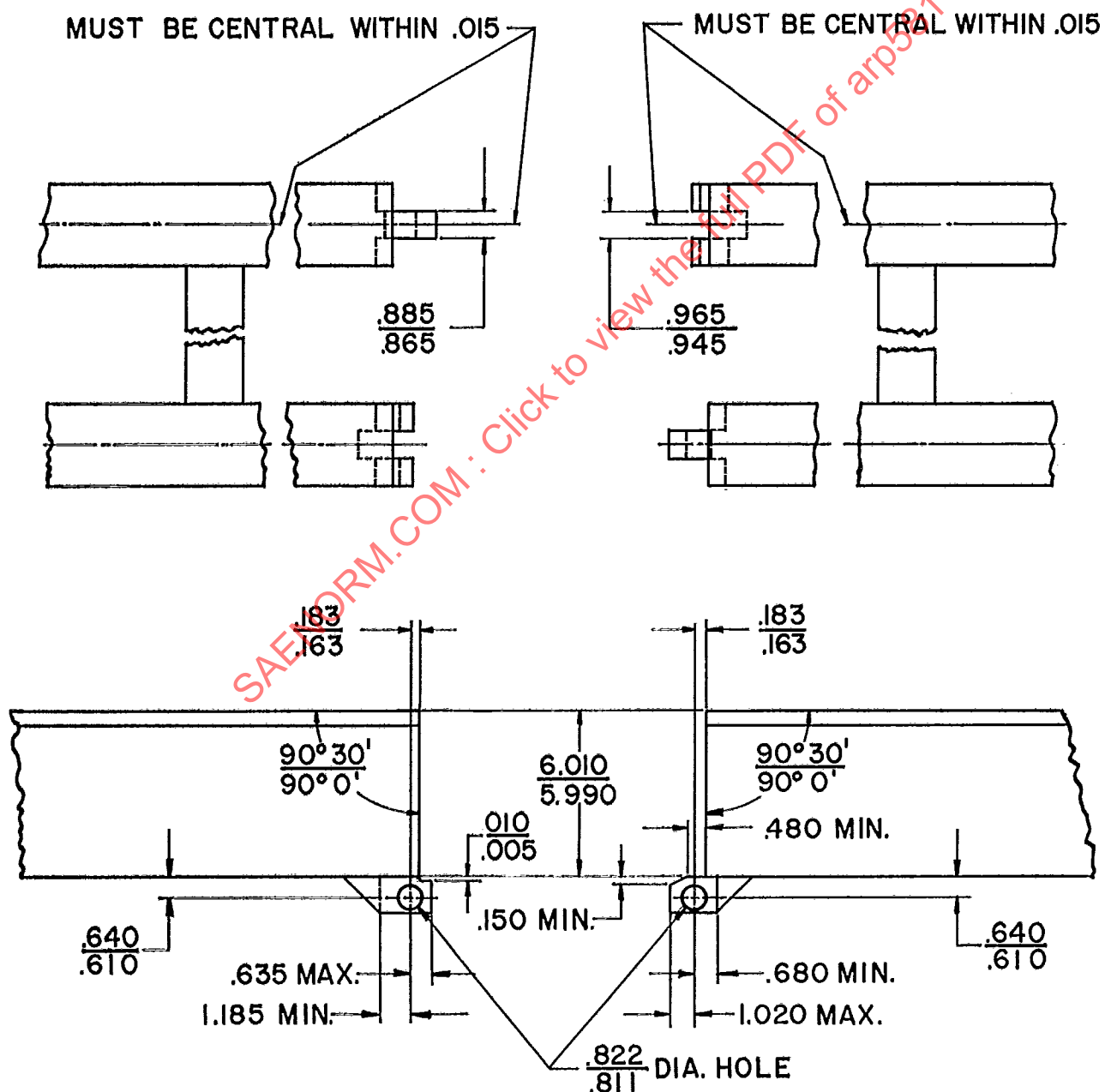


Figure 2

UNIVERSAL HORIZONTAL FIELD MAINTENANCE STAND FOR 10,000 LB. WEIGHT
GLASS PROPULSION UNITS (48" AND 30" RAIL GAGE)

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4.1.2.2 The ends of rail shall be square with the top surface as indicated in Figure 2.

4.1.2.3 Joining of rails shall be accomplished by use of .750 in. quick disconnect pins attached to each female coupler.

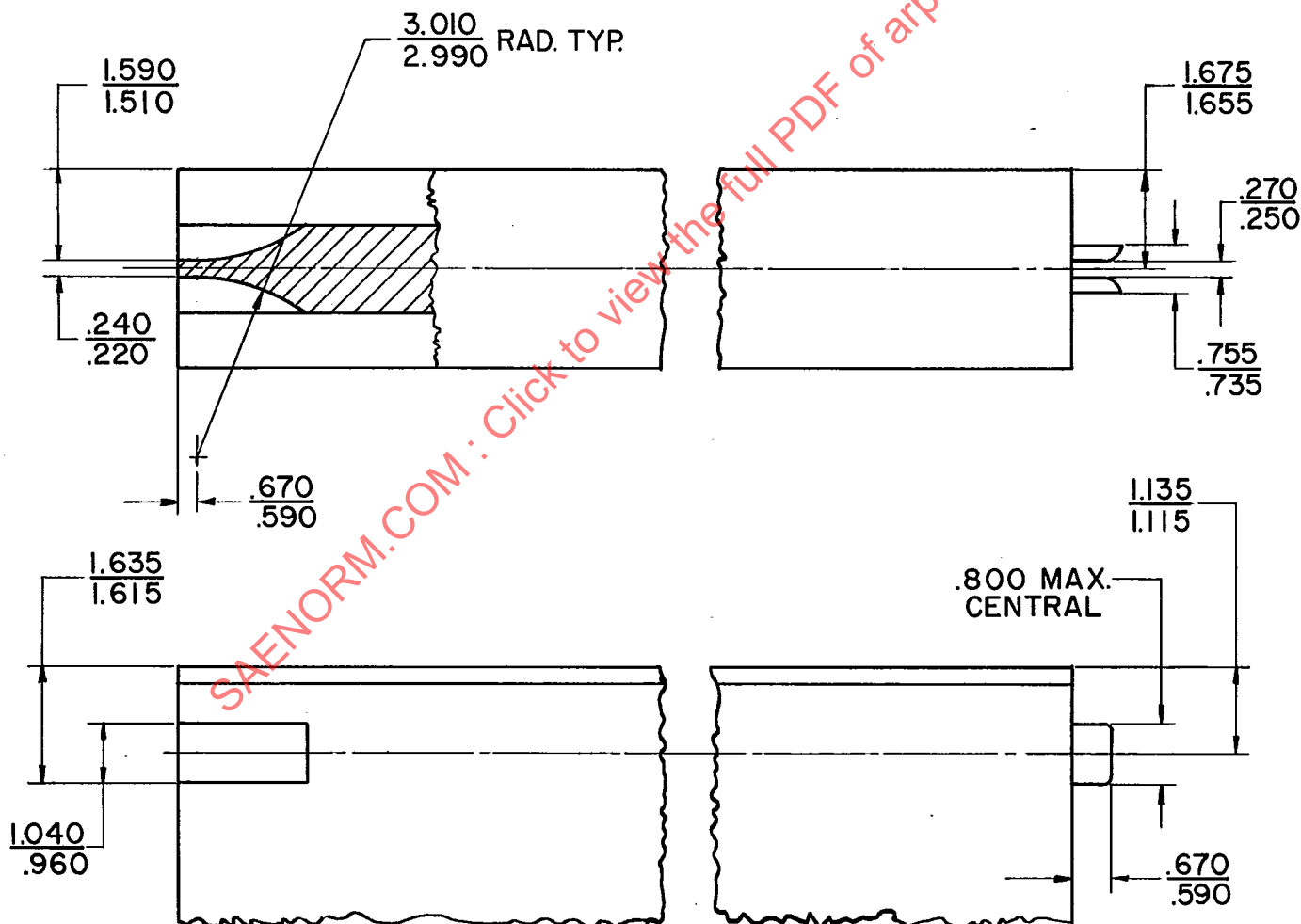


Figure 3