



SURFACE VEHICLE RECOMMENDED PRACTICE	J1864™	JAN2021
	Issued 1987-04 Reaffirmed 1996-03 Stabilized 2021-01	
Superseding J1864 MAR1996		
Method for Evaluating Material Separation in Automotive Sealers Under Pressure in Static Conditions		

RATIONALE

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Foreword—This reaffirmed document has been changed only to reflect the new SAE Technical Standards Board format.

1. **Scope**—This SAE Recommended Practice sets forth a method for measuring pressure-induced separation in automotive sealers and determining the likelihood of equipment failure due to this separation, also known as "caking."
- 1.1 **Background**—Sealers in automotive plants are generally transported and applied via airless pumping equipment whose internal pressures may exceed 20.7 MPa (3000 psi). Some sealers have a tendency to separate when exposed to pressures of this magnitude which results in varying degrees of system blockage.

This pressure-induced "caking," or blockage of the pump and transport lines, reduces sealer delivery rates and can completely shut down the system.

Separation tests run on sealers at 20.7 MPa (3000 psi), 25 °C (77 °F) for 72 h with measured separation volumes of over 6 mL have been known to cause "caking" problems in production pumping equipment whereas sealers with measured separation volumes of 3 mL or less have not caused this type of problem.

2. **References**—There are no referenced publications specified herein.
3. **Principle of Methods**—This document involves injecting automotive sealant into a pressure cup assembly equipped with a moveable piston cap (see Figure 1). The sealant is then subjected to a static pressure by applying a force to the pressure cup assembly via the piston cap. This force is supplied by means of a multipower air cylinder for a specified time, after which the pressure is removed, the cylinder is disassembled, and any separated material present is then measured.

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4. **Equipment**

- a. Johnstone Sep-Check part no. 110-085-1 or equivalent (see Figure 2)
- b. Sealer to be tested; two 350 mL (12 oz) tubes, air free
- c. 50 mL graduated cylinder
- d. 25 mL graduated cylinder
- e. Spatula
- f. Cleaner (recommended by sealant manufacturer)
- g. Air compressor

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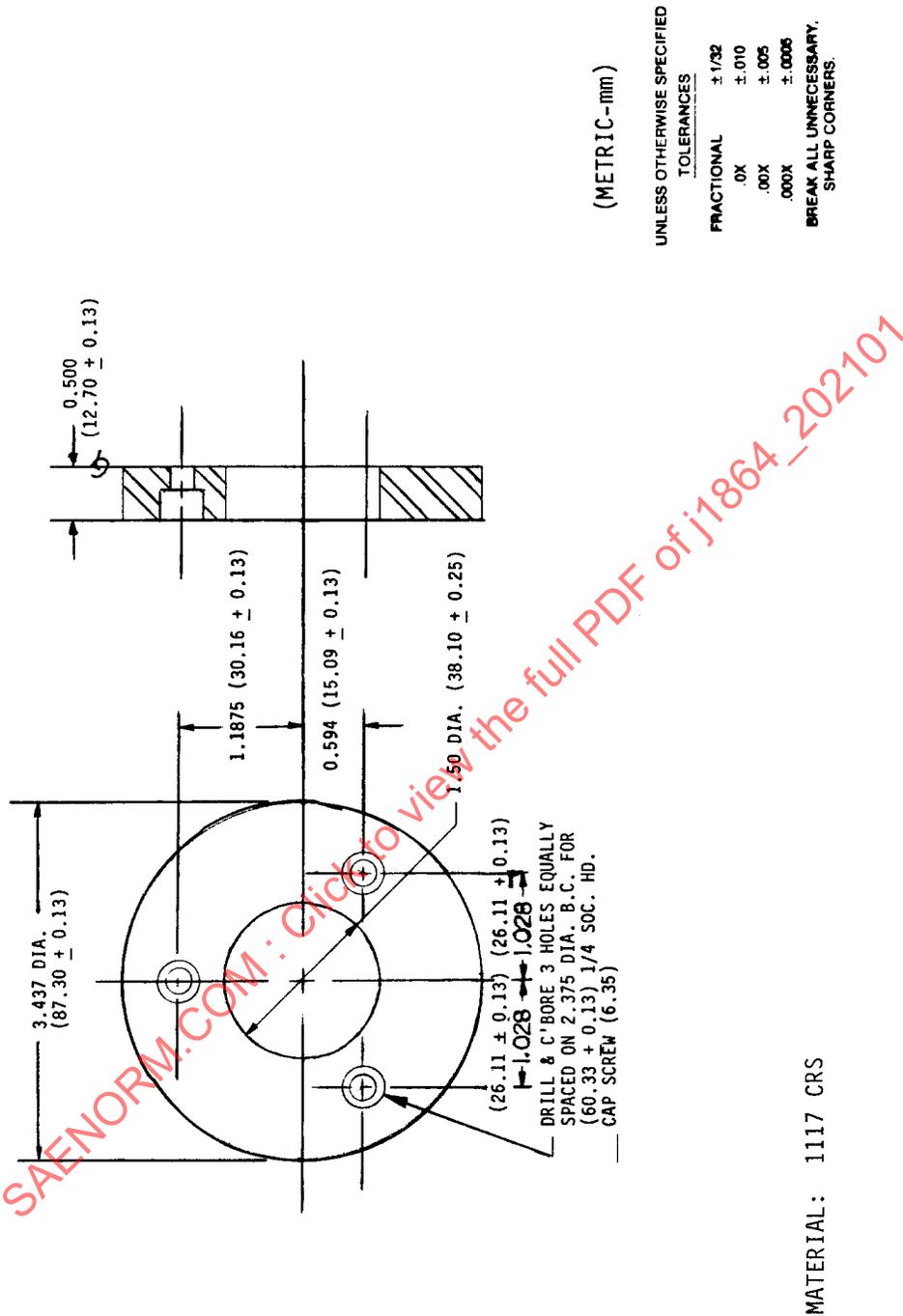


FIGURE 2—TEST SET-UP

5. Pressure Cup Assembly¹—See Figure 3.

1. Test cylinder shall be 44.45 mm (1.75 in) ID x 76.2 mm (3.0 in) in length with equidistant 0.0254 mm (0.001 in) gap between the cylinder wall and piston edge.

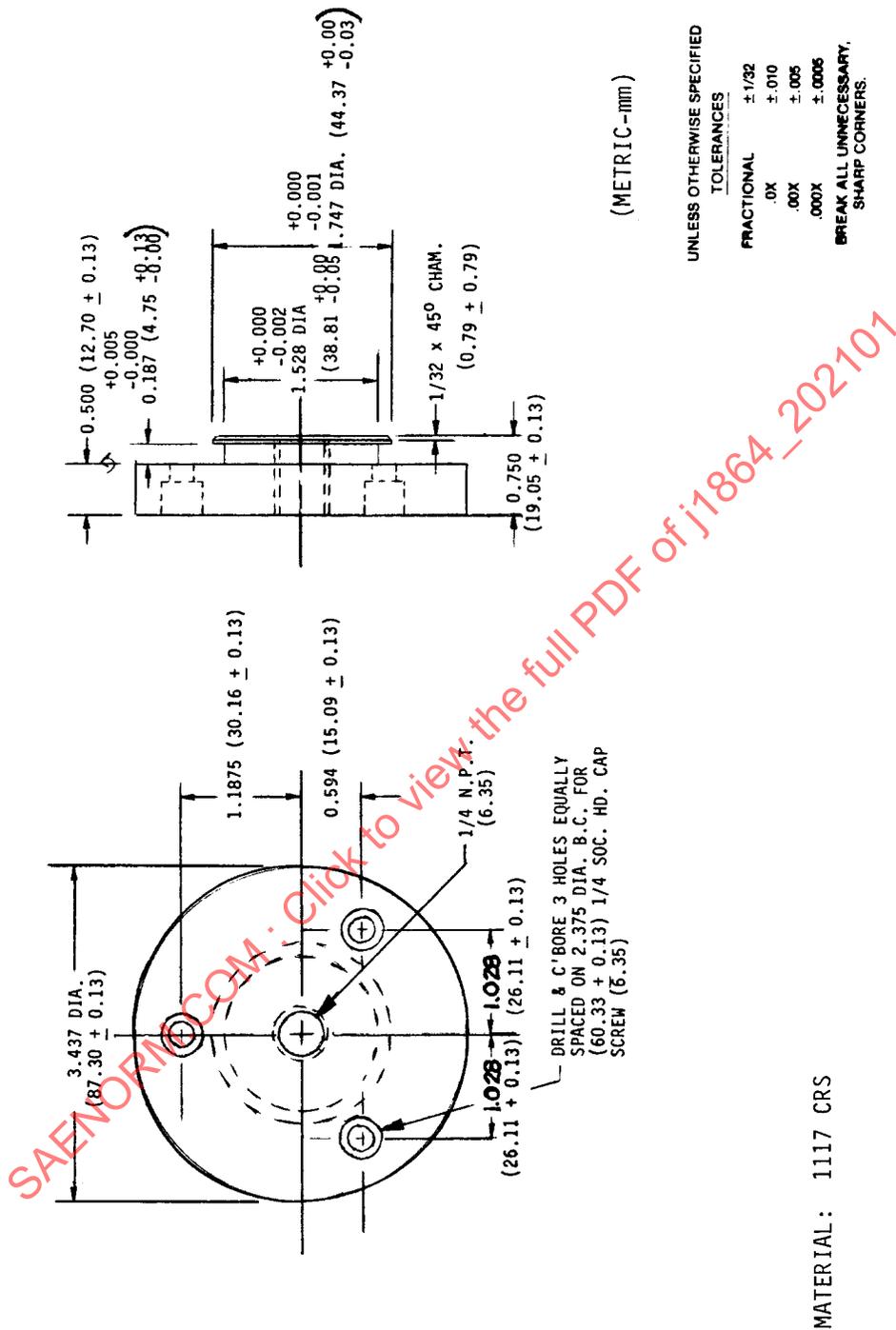


FIGURE 3—PRESSURE CUP ASSEMBLY

- To assemble pressure cup (see Figure 4), attach three socket screws to piston retainer (see Figure 5) cap and tighten.

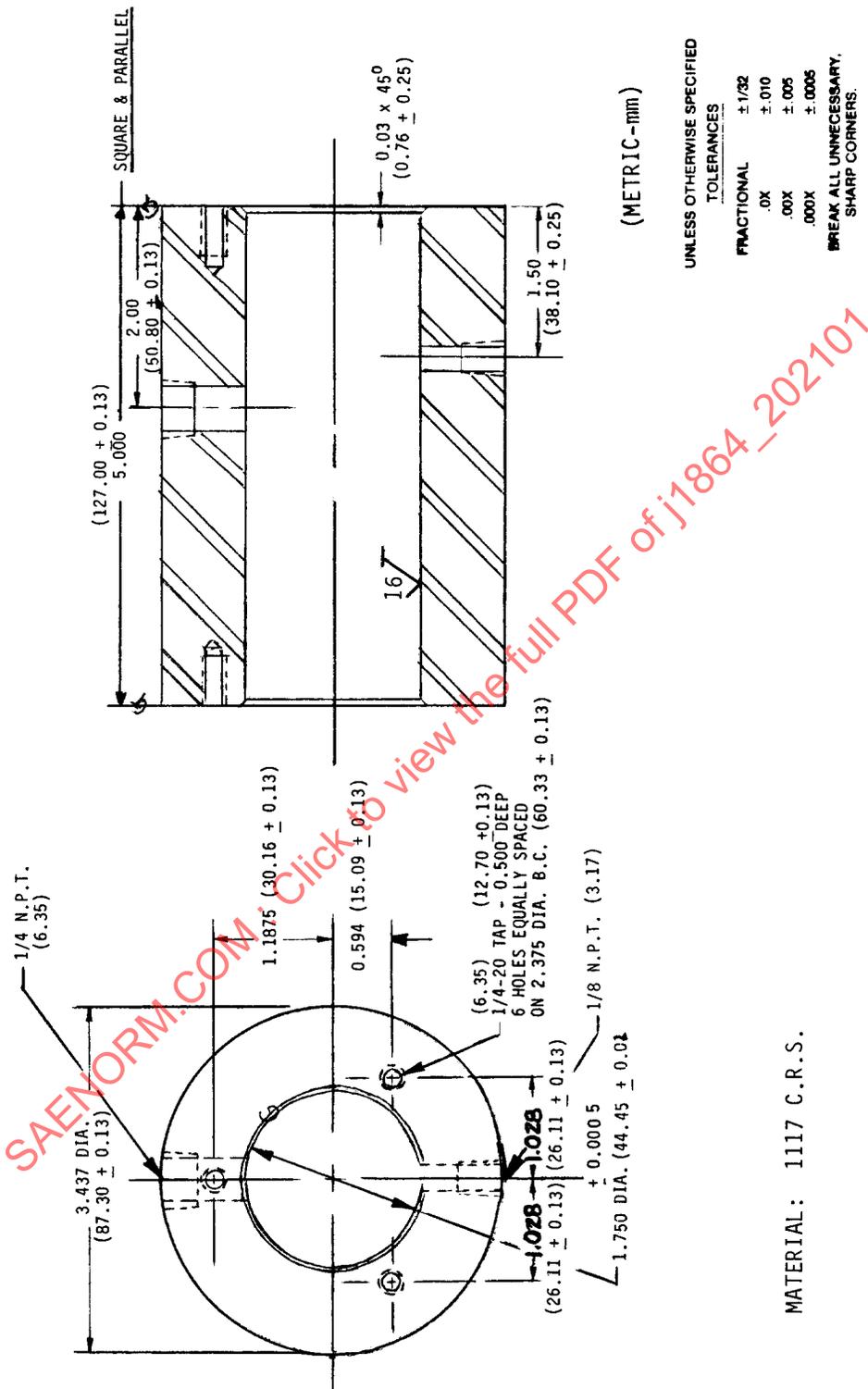


FIGURE 4—PRESSURE CUP

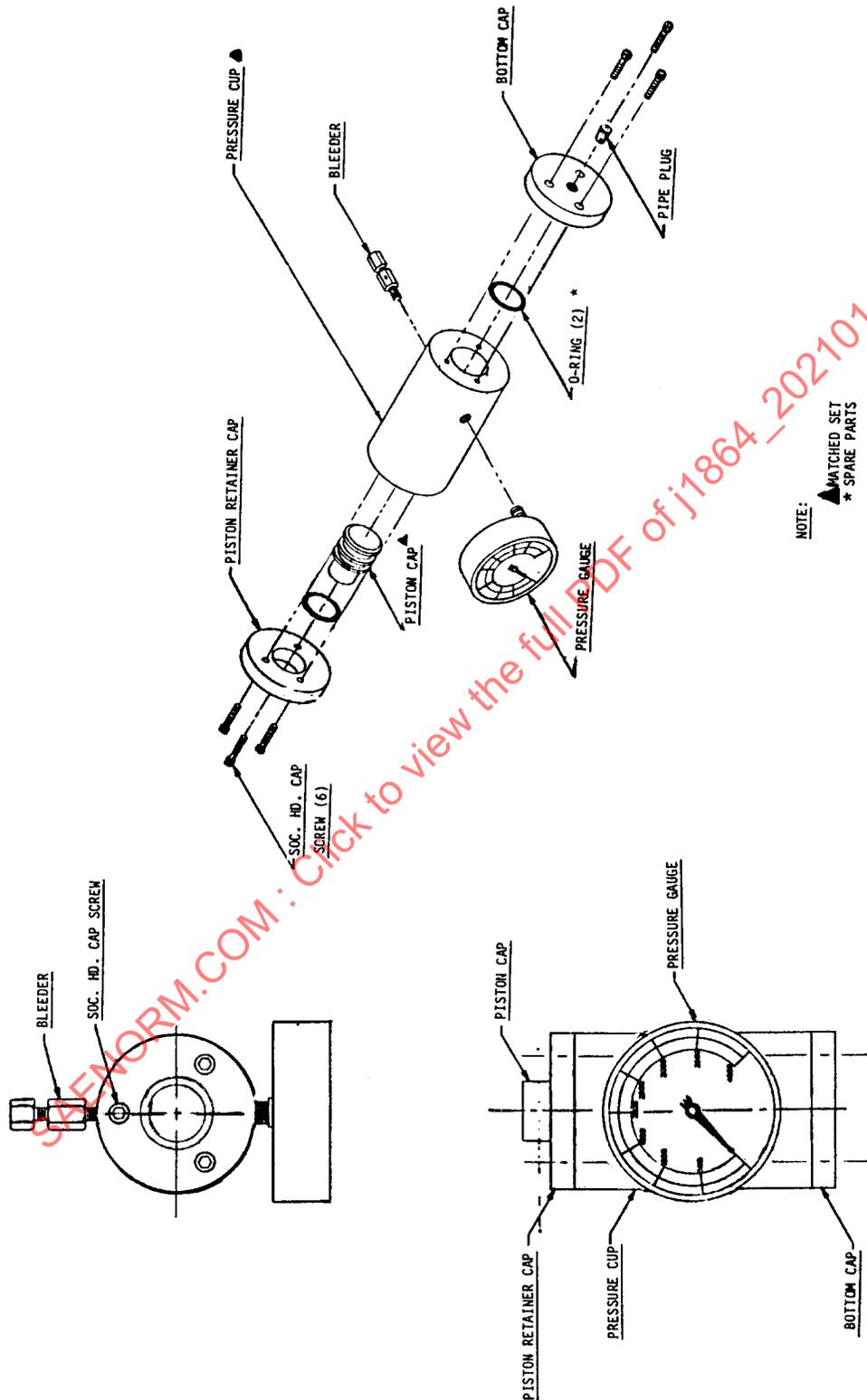


FIGURE 5—PISTON RETAINER CAP

- 5.2 Carefully insert piston through bottom of pressure cup so no damage is done to "O" ring.
- 5.3 Attach three socket screws to pressure cup bottom cap (see Figure 6) and tighten carefully so no damage is done to "O" ring; make sure bottom cap is flush with bottom of pressure cup.

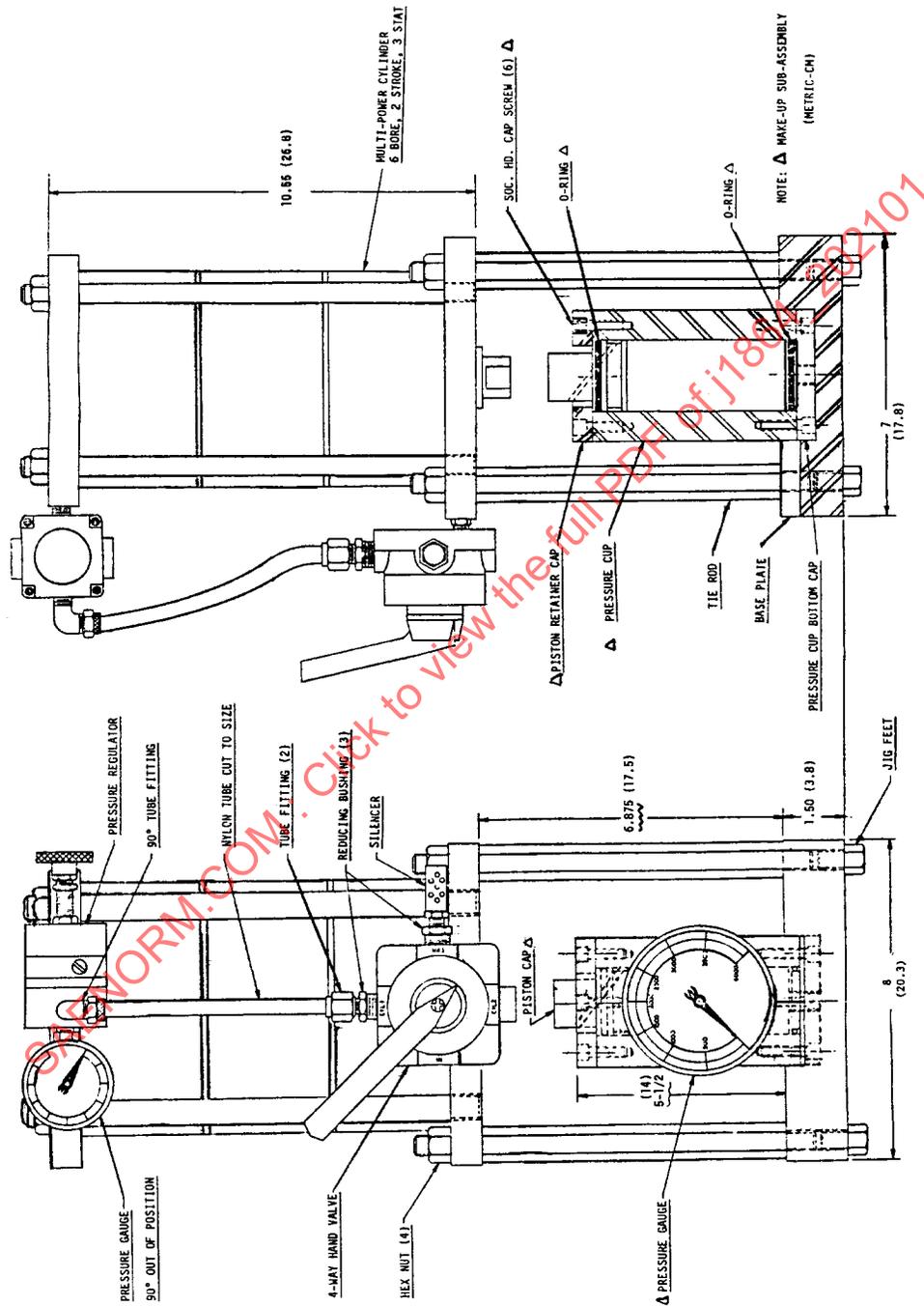


FIGURE 6—PRESSURE CUP BOTTOM CAP