

Hose Clamps

— SAE J536b

SAE Standard

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SOCIETY OF AUTOMOTIVE ENGINEERS, INC.
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NOTICE: When reaffirmation, amendment, revision or cancellation of this standard is initially proposed, the industry group responsible for this standard shall inform the military coordinating activity of the proposed change and request their participation.

Report of Parts and Fittings Committee approved May 1958, revised May 1959, and last revised by Fasteners Committee March 1971.

GENERAL SPECIFICATIONS

General—Types A, B, C, and D clamps shall be supplied in open position with the nut retained on the screw by staking or other means agreeable to user. Where so specified by purchaser, Types B and D clamps shall have provision to retain nut in base leg when axial pressure is applied to screw. Types A, B, C, D, and F clamps shall open over or close tight upon round mandrels of the sizes indicated in the respective open and closed diameter columns. All clamps shall be free from burrs, seams, laps, loose scale, or any other defects that may affect their serviceability.

Material

Types A, B, C, and D—SAE 1010 steel or equivalent. Band on Type C clamps in size numbers 13 through 21, 22S, 23, 24S, 25 and 26S is corrosion resistant steel.

Type E—SAE 1065-1080 heat treated to a minimum Rockwell hardness of 53 C to meet the performance and ductility requirements specified hereinafter.

Type F—Bands—corrosion resistant steel, standard with manufacturer. Saddle housings—corrosion resistant steel or carbon steel, standard with manufacturer as required by user. Screws—corrosion resistant steel or low carbon steel, standard with manufacturer as required by user.

Finish—Carbon steel components of clamps are normally supplied with rust proof finish as specified by purchaser. It is recommended that a reasonable latitude be allowed in the inspection of finish on parts fabricated from pre-coated steel and the over-lapping areas on clamps treated after assembly of component parts.

Threads

Types A, B, C, and D—Unified Standard Class 2A external and Class 2B internal threads shall apply.

Type F—Modified buttress thread standard with manufacturer.

Screws—Shall conform to the section on Machine Screws in SAE J478, except for special head and point details specified herein or unspecified detail specifically left to manufacturers option.

Type A—10-24 hexagon washer head slotted or round head slotted machine screws, unless otherwise specified.

Type B—10-24 hexagon washer head slotted, 10-24 fillister head slotted, 10-24 fillister washer head slotted, 12-24 fillister head slotted or 12-24 round head cross recess screws, as specified.

Type C—6-32 Hexagon head slotted machine screws; and 10-24 or 12-24 upset hexagon head slotted machine screws; or 10-24 or 12-24 fillister head slotted machine screws; with flat or pilot point; as specified.

Type D—10-24 hexagon washer head slotted or fillister washer head slotted machine screws.

Type F—Conform to Styles 1, 2, 3, or 4 (Table 6) shown with unspecified details standard with manufacturer.

Nuts shall be square or rectangular as indicated, of a size to suit clamp design, except Type A which may have a flat trunnion nut standard with manufacturer.

Identification—Type C clamps shall be marked with SAE size number or fractional equivalent thereof. Type E clamps shall be identified by SAE size number die stamped on top of the ring or on one tang. Also, Type E clamps

shall be color coded as noted in Table 5. Type F clamps shall be identified by size number stamped on the band. At manufacturers option, manufacturers' marks may appear adjacent to size identifications.

Type B Clamps—Normally manufactured with one slot in sizes up to and including No. 40; two slots in sizes No. 42 through No. 96 and three slots in sizes No. 100 and larger. Widths of slots and tongues shall not be greater than 40% of band width and not less than 30% of band width. Slots shall be centered in the band width.

Type E Clamps—Performance and Acceptance—Acceptability of clamps will be determined by the following tests and inspections:

EXPANSION AND PERMANENT SET—Expansion and permanent set of clamps shall be inspected by subjecting the clamps to the following tests and inspections in sequence:

1. Expand clamp to fit diameter A of gage. When so expanded, the span across the outside edges of the tips of the tangs measured in a plane perpendicular to the axis of the gage shall be between the tabulated limits for dimension X. NOTE: Care should be taken to avoid overexpansion during this operation.

2. Clamp shall be fitted respectively to gage diameters B and C. When clamps are so fitted, a wire of Z diameter shall not pass between the gage and the clamp when inserted in a direction parallel to the axis of the gage.

BRITTLENESS—Clamps subjected to corrosion preventative treatment which might produce hydrogen embrittlement shall be baked or otherwise treated to obviate such embrittlement and shall be capable of being expanded on a nominal diameter plug for a continuous 24 hr period without signs of breaking or cracking.

DUCTILITY—Ductility of clamps shall be inspected by subjecting the clamps to the following tests:

1. The clamp shall be gripped in a vise in a manner such that the gripping edge of the vise will coincide with the clamp axis which bisects the angle between tangs as illustrated in Fig. 1. Clamp shall be expanded by moving the free tang as shown in Fig. 1 to a point where the free tang will pass around the stationary tang. There shall be no evidence of fracture during or after this test.

2. When clamp is expanded by movement of the free tang beyond the stationary tang to where the clamp fractures, the structure at the point of fracture shall show a fine grain and the clamp up to the instant of fracture shall deliver a tough springy reaction.

ASSEMBLY TOOLS—Settings of assembly tools should be governed by tabulated dimension W (max) at maximum opening of tool and dimension X (min) at minimum closure of tool.

Type F Clamps

Band Ductility—When subjected to 180 deg bend around a 0.188 in. diameter mandrel and then restrengthened, the band shall at no time show breaking, cracks, or other indications of failure.

Durability—Screw threads and slots in the band shall show no evidence of deformation or excessive wear when clamps are tightened once on a steel mandrel to an applied screw torque of 50 lb-in. for carbon steel screws and 60 lb-in. for stainless steel screws.

TYPE A HOSE CLAMPS

