Unbaked, Ungrooved Bolted Vacuum Connection Flanges, Nominal Sizes 4 in. to 24 in.*

1. SCOPE

This standard relates to dimensionally compatible flanges for use on the ends of pipes or tubes, or on components, in unbaked vacuum systems. The flanges are intended for use with metallic or elastomer gaskets. Specifically omitted are material specifications, design of pipe to flange attachment, gasket design, and bolt or cap screw selection.

This standard indirectly governs the drilling, tapping and facing pattern of the flange-compatible connection surfaces of vacuum components

2. DEFINITIONS

A bolted vacuum connection flange is an external rim about the ends of a pipe or tube, or about a connection opening of a vacuum system component, which serves as a means by which bolts or cap screws can be used to draw mating sealing faces together.

3. FLANGE DESIGN

Flanges shall conform in bolt hole drilling pattern, bolt hole size, and flange outside diameter to Table 3.1.

TABLE 3.1.

Nominal pipe size (in.)	Flange o.d. (in.)	Bolt circle diam. (in.)	Bolt hole size (in.)	No. of bolts
4	9	7½	¾	8
6	11	9½	¾	8
8	13½	11¾	¾	8
10	16	14¼	1	12
12	19	17	1	12
14	21	18¾	1⅛	12
16	23½	21¼	1⅛	16
18	25	22¾	1¼	16
20	27½	25	1¼	20
24	32	29½	1⅜	20

Flange faces shall be flat and ungrooved, and shall be turned, or ground with concentric or fine spiral tool mark or grinding wheel pattern on the sealing surfaces. The surface roughness of the sealing surface shall not exceed 63 μin. rms measured concentrically with the grinding or turning pattern.

Specifically unrestricted by this standard are flange thickness inside diameter of the flat sealing face, and inside diameter of the pipe.

Bolt holes shall straddle center lines (as in Ts and valves).

Draft approved by Standards Committee, American Vacuum Society, Inc., 4 June 1965

*Additional copies of this Standard are available at $1 each from the secretary of the AVS, 335 East 45th St., New York, N.Y. 10017