

HG

**CHEMICAL INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

HG/T 20632-2009

**Covered serrated metal gaskets for use with steel pipe flanges
(Class designated)**

钢制管法兰用具有覆盖层的齿形组合垫(Class系列)
(English Translation)

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1 Scope

This standard specifies the type, dimension, technical requirements, marking and sign of combined covered serrated gasket for use with steel pipe flanges (Class designated).

This standard is applicable to the covered serrated metal gaskets for use with steel pipe flanges whose nominal pressures are from Class150 (PN20)-Class2500 (PN420) which are specified in HG/T 20615 and HG/T 20623.

2 Normative references

The following provisions contained in the following standards are turned into the provisions of this national standard by being referred in this national standard. For date reference, the subsequent amendments to (excluding amending error in the text) or revisions of, any of these publications do not apply. And parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, its latest edition referred to applies.

GB/T 912 "Hot-rolled Sheets and Strips of Carbon Structural Steels and High Strength Low Alloy Structural Steels" GB/T 4237 "Hot Rolled Stainless Steel Plate Sheet and Strip" GB/T 3280 "Cold Rolled Stainless Steel Plate Sheet and Strip" HG/T 20615 "Steel Pipe Flange

(Class Designated)" HG/T 20623 "Major Diameter Steel Pipe Flange (Class Designated)" HG/T 20635 "Specification for Selection of Steel Pipe Flange, Gaskets and Bolting (Class designated)" JB/T 7758.2 "Specifications of Flexible Graphite Sheets" QB/T 3625 "PTFE Sheet"

3.1 Type and code

The type, code name, sectional form and proper type of flange sealing surface of the gasket shall meet the requirements of Table 3.1.

Table 4-1 Dimension of the Gasket with Centring Ring Type (B type and C type) for Use with Raised Face Flange (mm)

Nominal dimension

Serrated metal ring Centring ring D1 Thickness of serrated metal ring T Thickness of integral centering ring t Thickness of moveable centering ring t1 Thickness of the cover layer S Inside diameter D3 Outside diameter D2 Nominal pressure class DN NPS 150 300 600 900 1500 2500 15 21 23.0 33.3 46.5 52.5 52.5 62.5 62.5 69.0 4.0 2.0 1.5 0.5 43 28.6 39.7 56.0 66.5 66.5 69.0 69.0 75.0 25 1 36.5 47.6 65.5 73.0 73.0 77.5 77.5 84.0 411 44.4 60.3 75.0 82.5 82.5 87.0 87.0 103.0 211 52.4 69.8 84.5 94.5 94.5 97.0 97.0 116.0 50 2 69.8 88.9 104.5 111.0 111.0 141.0 141.0 144.5 212 82.5 101.6 123.5 129.0 129.0 163.5 163.5 167.0 80 3 98.4 123.8 136.5 148.5 148.5 166.5 173.0 195.5 100 4 123.8 154.0 174.5 180.0 192.0 205.0 208.5 234.0 125 5 150.8 182.6 196.0 215.0 239.5 246.5 253.0 279.0 150 6 177.8 212.7 221.5 250.0 265.0 287.5 281.5 316.5 200 8 228.6 266.7 278.5 306.0 319.0 357.5 351.5 386.0 (Continued) (mm) Nominal dimension Serrated metal ring Centring ring D1 Thickness of serrated metal ring T Thickness of integral centering Thickness of moveable centering Thickness of the cover layer S Inside diameter D3 Outside diameter D2 Nominal pressure Class

Table 4-2 Fundamental-form (A Type) Gasket Dimension for Use with Tongued and Grooved Surface Flange and Male-female Face Flanges (mm)

Nominal dimension

Serrated metal ring (Class300-Class1500) Thickness of serrated metal ring T Inside diameter D3 Outside diameter D2 DN NPS Male-female face Tongued and grooved surface 3.0 32 411 42 48 64 40 211 44 54 73 65 212 68 86 105 80 3 84 108 127 100 4 110 132 157 125 5 137 160 186 150 6 162 191 216 200 8 213 238 270 250 10 267 286 324 300 12 318 343 381 350 14 349 375 413 400 16 400 425 470 450 18 451 489 533 500 20 502 533 584 600 24 603 641 692

Table 4-4 The Dimension of the Covered Serrated Gasket with Integral Centring Ring (C type) for Use with

Flange (B Designated; DN >600) (mm) Nominal dimension Class150 Class300 Class600

Class900 the thickness of the serrated metal ring T the thickness of moveable centering
 ring t Serrated metal ring Outside diameter of the centering loop D1 Serrated metal ring
 Outside diameter of the centering loop D1 Serrated metal ring Outside diameter of the
 centering loop D1 Serrated metal ring Outside diameter of the centering ring D1 DN NPS
 Inside diameter D3 Outside diameter D2 Inside diameter D3 Outside diameter D2 Inside
 diameter r D3 Outside diameter r D2 Inside diameter r D3 Outside diameter r D2 650 26 673.1
 698.5 725 673.1 711.2 770 663.6 714.4 765 692.2 749.3 838 4.0 2.0 700 28 723.9 749.3
 775 723.9 762.0 824 704.9 755.7 819 743.0 800.1 902 750 30 774.7 800.1 826 774.7
 812.8 885 777.9 828.7 879 806.5 857.3 959 800 32 825.5 850.9 880 825.5 863.6 939
 831.9 882.7 932 863.6 914.4 1016 850 34 876.3 908.1 933 876.3 914.4 993 889.0 939.8
 998 920.8 971.6 1074 900 36 927.1 958.9 986 927.1 965.2 1047 939.8 990.6 1049 946.2
 997.0 1124 950 38 974.6 1009.7 1043 1009.7 1047.8 1098 - - - - - 0 40 1022.4 1063.6
 1094 1060.5 1098.6 1149 - - - - - 0 42 1079.5 1114.4 1144 1111.3 1149.4 1200 - - - - - 0
 44 1124.0 1165.2 1195 1162.1 1200.2 1250 - - - - - 0 46 1181.1 1224.0 1254 1216.0
 1254.1 1317 - - - - - 0 48 1231.9 1270.0 1305 1263.7 1311.3 1368 - - - - - 0 50 1282.7
 1325.6 1356 1317.6 1355.7 1419 - - - - - 0 52 1333.5 1376.4 1407 1368.4 1406.5 1470 - -
 - - - - 0 54 1384.3 1422.4 1, 162 1403.4 1454.2 1530 - - - - - 0 56 1444.6 1477.8 1513
 1479.6 1524.0 1595 - - - - - 0 58 1500.2 1528.8 1578 1535.1 1573.2 1657 - - - - - 0 60
 1557.3 1585.9 1629 1589.1 1630.4 1708 - - - - -

5.0.1 There shall not be such defects as bulge, crack, scratch and sticky dirt on the sealing

surface of the gasket.

5.0.2 Dimension tolerance of the gasket shall meet the requirements of Table 5.0.2.

Table 5.0.2 Gasket Dimension tolerance (mm)

Tooth socket Serrated metal ring Centring ring Pitch Tooth depth Outside diameter D2
 Inside diameter D3 Thickness Outside diameter D1 Thickness t1 <=600 >600 <=600 >600
 ±0.005 0 -0.05-0.4 ±1.6 +0.4 0 ±0.8-0.25-0.75-0.1

5.0.3 Manufacture

1 Serrated metal ring usually shall be overall structure. If weld structure is adopted, it shall meet the following requirements.

- 1) User's permission shall be gotten;
- 2) Complete penetration type shall be adopted for the weld structure. The soldered joint shall not exceed two. And stress-relief heat treatment shall be carried out after welding.
- 3) Before the cover layer is covered, serrated form and dimension at the part of the weld shall be uniform continuously with other parts.

2 The planeness of the serrated metal ring shall not be larger than 1/100 of the gasket outside diameter.

3 Cover-layer material shall be stuck firmly on the serrated metal ring to prevent it from shedding in the process of the transportation or installation. The used adhesive shall not erode the metal material. Scabbed joint shall not exceed two; and the two overlap parts shall be scabbed with beveling split joint when overlapping method is adopted. Or if butt method is adopted, the joint shall be covered with thinner cover-layer material.

4 As for the centering groove on the moveable centering ring and serrated metal ring, proper space shall be kept so that it does not impact run-free when it expands caused by the heat. Built-up weld method may be adopted for moveable centering ring.

5.0.4 Performance

Gasket performance shall be determined according to the relevant standard which is specified by the users.

6 Inspection

6.0.1

Material, dimension, appearance and manufacture of the gasket shall me...