Claims

1. A metal gasket for providing a sealing connection between first and second tubular members, each tubular member having an end face comprising an annular recess for receiving the gasket, each recess comprising tapered side walls, the gasket comprising:

   two opposing side surfaces, each side surface comprising an annular recess for receiving a sealing member;

   an outer circumferential surface comprising an annular rib portion;

   an inner circumferential surface comprising a channel;

   wherein the gasket further comprises:

   a first pair of annular tapered surfaces between the side surface and the outer circumferential surface; and

   a second pair of annular tapered surfaces between the side surface and the inner circumferential surface; and

   wherein:

   each of the first annular tapered surfaces is sloped at a first angle relative to a line that is parallel to a central bore axis of the gasket,

   each of the second annular tapered surfaces is sloped at a second angle relative to a line that is parallel to the central bore axis of the gasket, and

   the first angle is smaller than the second angle.

2. A metal gasket as claimed in claim 1 comprising an axis extending radially between the inner circumferential surface and the outer circumferential surface, wherein a first distance measured along a direction parallel to the radial axis from a base of the channel to a first edge of at least one of the annular recesses is smaller than a second distance measured along the direction parallel to the radial axis from the outer circumferential surface to a second edge of the at least one of the annular recesses.

3. A metal gasket as claimed in claim 1 or claim 2 wherein the channel has a depth of from 5mm to 10mm.

4. A metal gasket as claimed in any one of claims 1 to 3 wherein the annular rib portion has a height of from 3mm to 10mm.

5. A metal gasket as claimed in any one of claims 1 to 4 wherein the second angle is from about 60° to about 75°.

6. A metal gasket as claimed in any one of claims 1 to 5 wherein the second angle is from about 68° to about 68.5°.

7. A metal gasket as claimed in any one of claims 1 to 6 wherein the first angle is from about 20° to about 35°.

8. A metal gasket as claimed in any one of claims 1 to 7 wherein the first angle is from about 27.5° to about 28.5°.

9. A metal gasket as claimed in claim 2 wherein the first distance is about 10-30% of a third distance measured along the direction parallel to the radial axis from the base of the channel to the outer circumferential surface.

10. A sealing assembly for providing a sealing connection between first and second tubular members, each tubular member having an end face comprising an annular recess for receiving a gasket, the annular recess comprising tapered side walls, the sealing assembly comprising:

    a metal gasket having:

    two opposing side surfaces, each side surface comprising an annular recess for receiving an annular sealing member;

    an outer circumferential surface comprising an rib portion;

    an inner circumferential surface comprising a channel;

    the gasket further comprising a first pair of annular tapered surfaces between the side surfaces and the outer circumferential surface; and

    a second pair of annular tapered surfaces between the side surfaces and the inner circumferential surface;

    an annular seal plate for retaining the metal gasket coaxially to the seal plate, the seal plate comprising an annular recess located in its inner surface for retaining the rib of the metal gasket; and

annular sealing members for mounting into the respective annular recesses of the side surfaces of the gasket.

11. A sealing assembly as claimed in claim 10 wherein the annular sealing members are elastomeric sealing members.

12. A sealing assembly as claimed in claim 10 or 11 wherein the annular seal plate comprises an outer plate and an inner plate, wherein the inner plate has a smaller diameter than the outer plate; and is mounted coaxially with the outer seal plate to define the annular recess thereinbetween.

13. A sealing assembly as claimed in any one of claims 10 to 12 wherein the metal gasket is defined as in any one of claims 1 to 9.