CLAIMS

1. An assembly comprising a dual barrier gasket located at an interface between a first body and a second body, the dual barrier gasket comprising:

a substantially cylindrical inner surface; and

a gasket outer surface that is configured to provide an inner sealing barrier and an outer sealing barrier;

wherein the inner sealing barrier comprises a first radially outer surface and a second radially outer surface and the outer sealing barrier comprises a first radially inner surface and a second radially inner surface, and wherein each of the first and second radially outer and radially inner surfaces are conical;

wherein the first radially inner surface and the first radially outer surface contact the first body and the second radially inner surface and the second radially outer surface contact the second body;

wherein the first radially inner surface and the second radially inner surface are radially and axially offset from the first radially outer surface and the second radially outer surface;

wherein a first tangent plane to a portion of the outer sealing barrier is completely radially offset from a second tangent plane to a portion of the inner sealing barrier; and

wherein the gasket outer surface comprises a first port and a second port, wherein a first channel extends from the first port through the dual barrier gasket to the second port; and

the assembly further comprising at least one of either a second channel or a third channel;

wherein the second channel is disposed within the first body and the third channel is disposed within the second body;

wherein the second channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the first body to a first external port;

wherein the third channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the second body to a second external port;

wherein either one of the second channel or the third channel is operable to test both the inner sealing barrier and the outer sealing barrier of the dual barrier gasket;

wherein the portion of the first body that contacts the first radially outer surface of the gasket is a conical radially outer surface which corresponds to the first radially outer surface, the portion of the first body that contacts the first radially inner surface of the gasket is a conical radially inner surface which corresponds to the first radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the first member; and

wherein the portion of the second body that contacts the second radially outer surface of the gasket is a conical radially outer surface which corresponds to the second radially outer surface, the portion of the second body that contacts the second radially inner surface of the gasket is a conical radially inner surface which corresponds to the second radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the second member.

2. The assembly of claim 1, wherein one or both of the inner sealing barrier and the outer sealing barrier is configured to seal tapered surfaces.

3. The assembly of claim 1, wherein the gasket outer surface comprises a stabilization ring comprising an outermost radial surface.

4. An assembly comprising a dual barrier gasket located at an interface between a first body and a second body, the dual barrier gasket comprising:

a substantially cylindrical inner surface;

a gasket outer surface that is generally opposite the substantially cylindrical inner surface and comprises a midpoint;

a first longitudinal end abutting the substantially cylindrical inner surface;

a second longitudinal end abutting the substantially cylindrical inner surface and generally opposite the first longitudinal end;

a first sealing surface between the first longitudinal end and the midpoint; and

a second sealing surface between the first sealing surface and the midpoint;

wherein the first sealing surface comprises a first radially outer surface and a second radially outer surface and the second sealing surface comprises a first radially inner surface and a second radially inner surface, and wherein each of the first and second radially outer and radially inner surfaces are conical;

wherein the first radially inner surface and the first radially outer surface contact the first body and the second radially inner surface and the second radially outer surface contact the second body;

wherein the first radially inner surface and the second radially inner surface are radially and axially offset from the first radially outer surface and the second radially outer surface;

wherein a first tangent plane to a portion of the second sealing surface is completely radially offset from a second tangent plane to a portion of the first sealing surface;

the assembly further comprising at least one of either a first channel or a second channel;

wherein the first channel is disposed within the first body and the second channel is disposed within the second body;

wherein the first channel extends from a cavity between the first sealing surface and the second sealing surface of the dual barrier gasket and the first body to a first external port;

wherein the second channel extends from a cavity between the first sealing surface and the second sealing surface of the dual barrier gasket and the second body to a second external port;

wherein either one of the first channel or the second channel is operable to test both the first sealing surface and the second sealing surface of the dual barrier gasket;

wherein the portion of the first body that contacts the first radially outer surface of the gasket is a conical radially outer surface which corresponds to the first radially outer surface, the portion of the first body that contacts the first radially inner surface of the gasket is a conical radially inner surface which corresponds to the first radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the first member; and

wherein the portion of the second body that contacts the second radially outer surface of the gasket is a conical radially outer surface which corresponds to the second radially outer surface, the portion of the second body that contacts the second radially inner surface of the gasket is a conical radially inner surface which corresponds to the second radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the second member.

5. The assembly of claim 4, wherein the second sealing surface is further from the substantially cylindrical inner surface than the first sealing surface.

6. The assembly of claim 4, wherein the gasket outer surface comprises a first port and a second port, and wherein a third channel extends from the first port through the dual barrier gasket to second port.

7. The dual barrier gasket of claim 4, wherein one or both of the first sealing surface and the second sealing surface is configured to seal tapered surfaces.

8. The assembly of claim 4, wherein the gasket outer surface comprises a stabilization ring comprising an outermost radial surface.

9. An assembly configured to be sealed with a dual barrier gasket, the assembly comprising:

a first body;

a second body; and

a dual barrier gasket configured to seal an interface between the first body and the second body, the dual barrier gasket comprising:

a substantially cylindrical inner surface; and

a gasket outer surface that is configured to provide an inner sealing barrier and an outer sealing barrier;

wherein the inner sealing barrier comprises a first radially outer surface and a second radially outer surface and the outer sealing barrier comprises a first radially inner surface and a second radially inner surface, and wherein each of the first and second radially outer and radially inner surfaces are conical;

wherein the first radially inner surface and the first radially outer surface contact the first body and the second radially inner surface and the second radially outer surface contact the second body;

wherein the first radially inner surface and the second radially inner surface are radially and axially offset from the first radially outer surface and the second radially outer surface;

wherein a first tangent plane to a portion of the outer sealing barrier is completely radially offset from a second tangent plane to a portion of the inner sealing barrier;

the assembly further comprising at least one of either a first channel or a second channel;

wherein the first channel is disposed within the first body and the second channel is disposed within the second body;

wherein the first channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the first body to a first external port;

wherein the second channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the second body to a second external port; and

wherein either one of the first channel or the second channel is operable to test both the inner sealing barrier and the outer sealing barrier of the dual barrier gasket;

wherein the portion of the first body that contacts the first radially outer surface of the gasket is a conical radially outer surface which corresponds to the first radially outer surface, the portion of the first body that contacts the first radially inner surface of the gasket is a conical radially inner surface which corresponds to the first radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the first member; and

wherein the portion of the second body that contacts the second radially outer surface of the gasket is a conical radially outer surface which corresponds to the second radially outer surface, the portion of the second body that contacts the second radially inner surface of the gasket is a conical radially inner surface which corresponds to the second radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the second member.

10. The assembly of claim 9, wherein the gasket outer surface and the second body define a first cavity, wherein the gasket outer surface and the first body define a second cavity, and wherein the dual barrier gasket comprises a third channel extending therethrough and connecting the first cavity and the second cavity.

11. The assembly of claim 9, wherein one or both of the inner sealing barrier and the outer sealing barrier is configured to seal tapered surfaces.

12. The assembly of claim 9, wherein the gasket outer surface comprises a stabilization ring comprising an outermost radial surface.

CLAIMS

1. An assembly comprising a dual barrier gasket located at an interface between a first body and a second body, the dual barrier gasket comprising:

a substantially cylindrical inner surface; and

a gasket outer surface that is configured to provide an inner sealing barrier and an outer sealing barrier;

wherein the inner sealing barrier comprises a first radially outer surface and a second radially outer surface and the outer sealing barrier comprises a first radially inner surface and a second radially inner surface, and wherein each of the first and second radially inner surfaces are conical;

wherein the first radially inner surface and the first radially outer surface contact the first body and the second radially inner surface and the second radially outer surface contact the second body;

wherein the first radially inner surface and the second radially inner surface are radially and axially offset from the first radially outer surface and the second radially outer surface;

wherein a first tangent plane to a portion of the outer sealing barrier is completely radially offset from a second tangent plane to a portion of the inner sealing barrier;

wherein the gasket outer surface comprises a first port and a second port, and wherein a first channel extends from the first port through the dual barrier gasket to the second port; and

the assembly further comprising at least one of either a second channel or a third channel;

wherein the second channel is disposed within the first body and the third channel is disposed within the second body;

wherein the second channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the first body to a first external port;

wherein the third channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the second body to a second external port;

wherein either one of the second channel or the third channel is operable to test both the inner sealing barrier and the outer sealing barrier of the dual barrier gasket;

wherein the portion of the first body that contacts the first radially outer surface of the gasket is a conical radially outer surface which corresponds to the first radially outer surface, the portion of the first body that contacts the first radially inner surface of the gasket is a conical radially inner surface which corresponds to the first radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the first member; and

wherein the portion of the second body that contacts the second radially outer surface of the gasket is a conical radially outer surface which corresponds to the second radially outer surface, the portion of the second body that contacts the

second radially inner surface of the gasket is a conical radially inner surface which corresponds to the second radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the second member.

2. The assembly of claim 1, wherein one or both of the inner sealing barrier and the outer sealing barrier is configured to seal tapered surfaces.

3. The assembly of claim 1, wherein the gasket outer surface comprises a stabilization ring comprising an outermost radial surface.

4. An assembly comprising a dual barrier gasket located at an interface between a first body and a second body, the dual barrier gasket comprising:

a substantially cylindrical inner surface;

a gasket outer surface that is generally opposite the substantially cylindrical inner surface and comprises a midpoint;

a first longitudinal end abutting the substantially cylindrical inner surface;

a second longitudinal end abutting the substantially cylindrical inner surface and generally opposite the first longitudinal end;

a first sealing surface between the first longitudinal end and the midpoint; and

a second sealing surface between the first sealing surface and the midpoint;

wherein the first sealing surface comprises a first radially outer surface and a second radially outer surface and the second sealing surface comprises a first radially inner surface and a second radially inner surface, and wherein each of the first and second radially outer and radially inner surfaces are conical;

wherein the first radially inner surface and the first radially outer surface contact the first body and the second radially inner surface and the second radially outer surface contact the second body;

wherein the first radially inner surface and the second radially inner surface are radially and axially offset from the first radially outer surface and the second radially outer surface;

wherein a first tangent plane to a portion of the second sealing surface is completely radially offset from a second tangent plane to a portion of the first sealing surface;

the assembly further comprising at least one of either a first channel or a second channel;

wherein the first channel is disposed within the first body and the second channel is disposed within the second body;

wherein the first channel extends from a cavity between the first sealing surface and the second sealing surface of the dual barrier gasket and the first body to a first external port;

wherein the second channel extends from a cavity between the first sealing surface and the second sealing surface of the dual barrier gasket and the second body to a second external port;

wherein either one of the first channel or the second channel is operable to test both the first sealing surface and the second sealing surface of the dual barrier gasket;

wherein the portion of the first body that contacts the first radially outer surface of the gasket is a conical radially outer surface which corresponds to the first radially outer surface, the portion of the first body that contacts the first radially inner surface of the gasket is a conical radially inner surface which corresponds to the first radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the first member; and

wherein the portion of the second body that contacts the second radially outer surface of the gasket is a conical radially outer surface which corresponds to the second radially outer surface, the portion of the second body that contacts the second radially inner surface of the gasket is a conical radially inner surface which corresponds to the second radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the second member.

5. The assembly of claim 4, wherein the second sealing surface is further from the substantially cylindrical inner surface than the first sealing surface.

6. The assembly of claim 4, wherein the gasket outer surface comprises a first port and a second port, and wherein a third channel extends from the first port through the dual barrier gasket to second port.

7. The dual barrier gasket of claim 4, wherein one or both of the first sealing surface and the second sealing surface is configured to seal tapered surfaces.

8. The assembly of claim 5, wherein the gasket outer surface comprises a stabilization ring comprising an outermost radial surface.

9. An assembly configured to be sealed with a dual barrier gasket, the assembly comprising:

a first body;

a second body; and

a dual barrier gasket configured to seal an interface between the first body and the second body, the dual barrier gasket comprising:

a substantially cylindrical inner surface; and

a gasket outer surface that is configured to provide an inner sealing barrier and an outer sealing barrier;

wherein the inner sealing barrier comprises a first radially outer surface and a second radially outer surface and the outer sealing barrier comprises a first radially inner surface and a second radially inner surface, and wherein each of the first and second radially outer and radially inner surfaces are conical;

wherein the first radially inner surface and the first radially outer surface contact the first body and the second radially inner surface and the second radially outer surface contact the second body;

wherein the first radially inner surface and the second radially inner surface are radially and axially offset from the first radially outer surface and the second radially outer surface;

wherein a first tangent plane to a portion of the outer sealing barrier is completely radially offset from a second tangent plane to a portion of the inner sealing barrier;

the assembly further comprising at least one of either a first channel or a second channel;

wherein the first channel is disposed within the first body and the second channel is disposed within the second body;

wherein the first channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the first body to a first external port;

wherein the second channel extends from a cavity between the inner sealing barrier and the outer sealing barrier of the dual barrier gasket and the second body to a second external port; and

wherein either one of the first channel or the second channel is operable to test both the inner sealing barrier and the outer sealing barrier of the dual barrier gasket;

wherein the portion of the first body that contacts the first radially outer surface of the gasket is a conical radially outer surface which corresponds to the first radially outer surface, the portion of the first body that contacts the first radially inner surface of the gasket is a conical radially inner surface which corresponds to the first radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the first member; and

wherein the portion of the second body that contacts the second radially outer surface of the gasket is a conical radially outer surface which corresponds to the second radially outer surface, the portion of the second body that contacts the second radially inner surface of the gasket is a conical radially inner surface which corresponds to the second radially inner surface, and wherein an axial surface directly connects the conical radially outer surface with the conical radially inner surface of the second member.

10. The assembly of claim 9, wherein the gasket outer surface and the second body define a first cavity, wherein the gasket outer surface and the first body define a second cavity, and wherein the dual barrier gasket comprises a third channel extending therethrough and connecting the first cavity and the second cavity.

11. The assembly of claim 9, wherein one or both of the inner sealing barrier and the outer sealing barrier is configured to seal tapered surfaces.

12. The assembly of claim 9, wherein the gasket outer surface comprises a stabilization ring comprising an outermost radial surface.