Summary

According to a first aspect of the present invention, there is provided a fitting, said fitting comprising:

a conduit having an inlet and an outlet connected to one another via a bore extending therebetween, said conduit comprising a surface surrounding and defining said bore;

a first portion of said surface positioned proximate to said outlet comprising threads extending along said bore;

a second portion of said surface positioned between said first portion and said inlet, said second portion of said surface defining a truncated cone, a base of said cone being positioned proximate to said inlet, said cone defining a redirection space within said bore;

a shoulder surface positioned at said inlet and projecting into said bore, said shoulder surface facing said outlet and oriented transversely and non-perpendicularly with respect to an axis arranged coaxially with said bore.

According to a second aspect of the present invention, there is provided a fitting, said fitting comprising:

a conduit having an inlet and an outlet connected to one another via a bore extending therebetween, said conduit comprising a surface surrounding and defining said bore;

a first portion of said surface positioned proximate to said outlet comprising threads extending along said bore;

a second portion of said surface positioned between said first portion and said inlet defining a cylindrical shape;

a shoulder surface positioned at said inlet and projecting into said bore, said shoulder surface facing said outlet

and oriented transversely and non-perpendicularly with respect to an axis arranged coaxially with said bore;

a gasket positioned within said bore between said first portion of said surface and said shoulder surface, said gasket comprising an outer surface facing away from said axis and an inner surface facing said axis,

wherein, in an uncompressed state, said inner surface of said gasket comprises a first land positioned proximate to said first portion of said surface, said first land being angularly oriented with respect to said axis such that an inner diameter of said gasket is greater at a point proximate to said first portion of said surface than a point distal thereto. The invention concerns a fitting. An example fitting may comprise a reducer fitting, an elbow fitting, a tee fitting or a cross fitting. In an example embodiment the fitting comprises a conduit having an inlet and an outlet connected to one another via a bore extending therebetween. The conduit comprises a surface surrounding and defining the bore. A first portion of the surface is positioned proximate to the outlet. The first portion comprises threads extending along the bore. The threads may comprise straight threads, and the straight threads may comprise NPSL threads for example. In another example the threads may comprise tapered threads. A second portion of the surface is positioned between the first portion and the inlet. The second portion defines a truncated cone. A base of the cone is positioned proximate to the inlet. The cone defines a redirection space within the bore. A shoulder surface is positioned at the inlet. The shoulder surface projects into the bore. The shoulder surface faces the outlet and is oriented transversely and non-

perpendicularly with respect to an axis arranged coaxially with the bore.

In a further example the fitting comprises a third portion of the surface positioned between the first and second portions thereof. The third portion defines a cylindrical shape.

In an example the fitting further comprises a gasket positioned within the bore between the first and second portions of the surface. The gasket comprises an outer surface facing away from the axis and an inner surface facing the axis. The outer surface of the gasket may have a length greater than a length of

What is claimed is:

1. A fitting, said fitting comprising:

a conduit having an inlet and an outlet connected to one another via a bore extending therebetween, said conduit comprising a surface surrounding and defining said bore;

a first portion of said surface positioned proximate to said outlet comprising threads extending along said bore;

a second portion of said surface positioned between said first portion and said inlet, said second portion of said surface defining a truncated cone, a base of said cone being positioned proximate to said inlet, said cone defining a redirection space within said bore;

a shoulder surface positioned at said inlet and projecting into said bore, said shoulder surface facing said outlet and oriented transversely and non-perpendicularly with respect to an axis arranged coaxially with said bore.

2. The fitting according to claim 1, further comprising a third portion of said surface positioned between said first and second portions thereof, said third portion defining a cylindrical shape.

3. The fitting according to claim 1, wherein said threads comprise straight threads.

4. The Fitting according to claim 3, wherein said straight threads comprise NPSL threads.

5. The fitting according to claim 1, wherein said threads comprise tapered threads.

6. The fitting according to claim 1, further comprising a gasket positioned within said bore between said first portion of said surface and said shoulder surface, said gasket comprising an outer surface facing away from said axis and an inner surface facing said axis.

7. The fitting according to claim 6, wherein said outer surface of said gasket has a cylindrical shape.

8. The fitting according to claim 6, wherein said inner surface of said gasket comprises a first land positioned proximate to said first portion of said surface, said first land being angularly oriented with respect to said axis such that an inner diameter of said gasket is greater at a point proximate to said first portion of said surface than a point distal thereto.

9. The fitting according to claim 8, wherein said inner surface of said gasket further comprises a second land positioned proximate to said second portion of said surface, said second land being angularly oriented with respect to said axis such that an inner diameter of said gasket is greater at a point proximate to said inlet than a point distal thereto.

10. The fitting according to claim 9, wherein said second land has a surface area greater than a surface area of said first land.

11. In combination, the fitting according to claim 8, and a threaded body threadedly received within said bore at said outlet,

wherein said threaded body is configured to receive fluid from said outlet, and wherein an end of said threaded body engages said first land.

12. The combination according to claim 11, wherein said threaded body comprises straight threads.

13. The combination according to claim 12, wherein said straight threads comprise NPSL threads.

14. The combination according to claim 11, wherein said threaded body comprises tapered threads.

15. The combination according to claim 11, wherein said threaded body is a sprinkler, wherein said end of said sprinkler comprises a chamfer, said chamfer having an angular orientation the same as that of said first land.

16. The combination according to claim 11, wherein said threaded body is a sprinkler, wherein engagement between said sprinkler and said first land compresses said gasket against said shoulder surface.

17. The fitting according to claim 2, further comprising a gasket positioned within said bore between said first portion of said surface and said shoulder surface, said gasket comprising an outer surface facing away from said axis and an inner surface facing said axis.

18. The fitting according to claim 17, wherein said outer surface of said gasket has a cylindrical shape.

19. The fitting according to claim 18, wherein said outer surface of said gasket has a length greater than a length of said third portion of said surface.

20. The fitting according to claim 1, wherein said fitting comprises a reducer fitting, an elbow fitting, a tee fitting or a cross fitting.

21. A fitting, said fitting comprising:

a conduit having an inlet and an outlet connected to one another via a bore extending therebetween, said conduit comprising a surface surrounding and defining said bore;

a first portion of said surface positioned proximate to said outlet comprising threads extending along said bore;

a second portion of said surface positioned between said first portion and said inlet defining a cylindrical shape;

a shoulder surface positioned at said inlet and projecting into said bore, said shoulder surface facing said outlet and oriented transversely and non-perpendicularly with respect to an axis arranged coaxially with said bore;

a gasket positioned within said bore between said first portion of said surface and said shoulder surface, said gasket comprising an outer surface facing away from said axis and an inner surface facing said axis,

wherein, in an uncompressed state, said inner surface of said gasket comprises a first land positioned proximate to said first portion of said surface, said first land being angularly

oriented with respect to said axis such that an inner diameter of said gasket is greater at a point proximate to said first portion of said surface than a point distal thereto.

22. The fitting according to claim 21, wherein said threads comprise tapered threads.

23. The fitting according to claim 21, wherein said threads comprise straight threads.

24. The fitting according to claim 23, wherein said straight threads comprise NPSL threads.

25. The fitting according to claim 21, wherein said outer surface of said gasket has a cylindrical shape.

26. The fitting according to claim 21, wherein said inner surface of said gasket further comprises a second land positioned proximate to said second portion of said surface, said second land being angularly oriented with respect to said axis such that an inner diameter of said gasket is greater at a point proximate to said inlet than a point distal thereto.

27. The fitting according to claim 26, wherein said second land has a surface area greater than a surface area of said first land.

28. In combination, the fitting according to claim 21, and a threaded body threadedly received within said bore at said outlet, wherein said threaded body is configured to receive fluid from

said outlet, and wherein an end of said threaded body engaging said first land.

29. The combination according to claim 28, wherein said threaded body comprises straight threads.

30. The combination according to claim 29, wherein said straight threads comprise NPSL threads.

31. The combination according to claim 28, wherein said threaded body comprises tapered threads.

32. The combination according to claim 28, wherein said threaded body is a sprinkler, wherein said end of said sprinkler comprises a chamfer, said chamfer having an angular orientation the same as that of said first land.

33. The combination according to claim 28, wherein said threaded body is a sprinkler, wherein engagement between said sprinkler and said first land compresses said gasket against said shoulder surface.

34. The fitting according to claim 21, wherein said fitting comprises a reducer fitting.

35. The fitting according to claim 34, further comprising an escutcheon positioned at said outlet of said fitting.

36. The fitting according to claim 1, wherein a first end of said shoulder surface is positioned closer to said axis than a second end of said shoulder surface is to said axis; and said first end of said shoulder surface is positioned closer to said outlet than said second end of said shoulder surface is to said outlet.

37. The fitting according to claim 1, further comprising a gasket positionable within said bore between said first portion of said surface and said shoulder surface, said gasket comprising an outer surface facing away from said axis and an inner surface facing said axis, wherein said shoulder surface and said truncated cone define a gasket redirection space configured to deform said gasket.

38. The fitting according to claim 37, wherein, when the gasket is in an uncompressed state, a minimum diameter of said inner surface of said gasket is less than a minimum diameter of said bore at a cross section take perpendicularly to said axis at a point between said second portion and said outlet.

39. The fitting according to claim 37, wherein, prior to deformation of said gasket within said gasket redirection space, a minimum diameter of said inner surface of said gasket is less than a minimum diameter of said bore at a cross section taken perpendicularly to said axis at a point between said second portion and said outlet.

40. The fitting according to claim 21, wherein said gasket comprises said first land prior to deformation.