THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. Flow directing apparatus for conveying a fluid flow comprising:

a housing forming a pressure boundary; and

a flow directing insert fit sealably within the housing for forming a pressure chamber about the insert and between the insert and the housing, the insert having an inlet end for receiving the fluid flow and a discharge end for discharging the fluid flow.

2. The flow directing apparatus of claim 1 wherein the insert is replaceable.

3. The flow directing apparatus of claim 1 or 2, wherein:

the inlet end is sealed to the housing at an inlet seal; and

the discharge end is sealed to the housing at a discharge seal.

4. The flow directing apparatus of claim 1, 2 or 3, wherein:

the fluid flow contains particulates; and

the insert is a wear resistant material resistive to erosion from the particulates.

5. The flow directing apparatus of claim 4 wherein the wear resistant material is a non-ductile material.

6. The flow directing apparatus of claim 5 wherein the wear resistant material is a ceramic.

7. The flow directing apparatus of any one of claims 1 to 6, wherein the fluid flow has a process pressure and the pressure chamber has a pad pressure.

8. The flow directing apparatus of claim 7 further comprising a pressure monitor connected to the pressure chamber for detecting a pressure change in the pad pressure being indicative of failure of the insert.

9. The flow directing apparatus of claim 7 or 8, wherein a pressure differential is maintained between the process pressure and the pad pressure.

10. The flow directing apparatus of claim 9 further comprising:

a make-up pressure source in fluid communication with the pressure chamber for maintaining the pressure differential between the process pressure and pad pressure.

11. The flow directing apparatus of claim 7, 8, or 9, further comprising:

a pad pressure maintenance system for maintaining the pad pressure relative to the process pressure.

12. The flow directing apparatus of claim 11 wherein the pad pressure maintenance system further comprises a bleed port formed in the insert for pressure maintenance, with restricted flow therethrough, between the fluid flow and the pressure chamber.

13. The flow directing apparatus of claim 11 or 12, wherein the pad pressure maintenance system further comprises a make-up pressure source and a regulator for introducing make-up pressure as necessary to maintain a differential pressure between the fluid flow and the pressure chamber.

14. The flow directing apparatus of claim 11 wherein the pressure chamber contains a fluid pad of liquid and the pad pressure maintenance system further comprises:

a make-up pressure source of gas at a make-up pressure; and

a isolation chamber forming a cylinder and having a piston movable therein, the piston intermediate the make-up pressure source and the fluid pad.

15. The flow directing apparatus of claim 14, wherein:

the chamber is stepped and the piston is stepped; and

the piston has a first smaller area in fluid communication with the process pressure and a larger second area in fluid communication with the fluid pad. for automatically maintaining the pad pressure at a pressure lower than the process pressure.

16. The flow directing apparatus of any one of claims 1 to 13, wherein the pressure chamber contains a fluid pad of liquid.

17. A flow bend in wellhead piping comprising the flow directing apparatus of any one of claims 1 to 16.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A flow directing apparatus for conveying a fluid flow comprising:

a flow directing insert having at least a first end and a second end for conveying the fluid flow therebetween; and

a housing for receiving the insert wholly within, the housing comprising:

a main body having a hollow interior for receiving the insert wholly therewithin, and at least a first, a second and a third sealable openings thereon, the first and second sealable openings in fluid communication with the hollow interior of the main body, and the third sealable opening being accessible to at least one of the first and second sealable openings through the hollow interior of the main body;

a first port body having a fourth opening thereon, the first port body securing and sealably fitting to the main body for engaging the fourth opening with the first sealable opening and for securing and sealably fitting the first end of the insert to the first sealable opening; and

a second port body having a fifth opening thereon, the second port body securing and sealably fitting to the main body for engaging the second opening with the second sealable opening and for securing and sealably fitting the second end of the insert to the second sealable opening.

2. The flow directing apparatus of claim 1 wherein said housing further comprises a third port body securing and sealably fitting to the main body for closing the third sealable opening.

3. The flow directing apparatus of claim 1 or 2 wherein:

the first sealable opening is an inlet port;

the second sealable opening is an outlet port; and

fluid flow from the inlet port flows to the first end of the insert and the outlet port receives fluid flow from the second end of the insert.

4. The flow directing apparatus of any one of claims 1 to 3 wherein the first end of the insert is secured and sealably fit to the first port body.

5. The flow directing apparatus of claim 4 wherein the first end of the insert further comprises a flange for securing and sealably fitting to the first port body.

6. The flow directing apparatus of claim 5 wherein the flange of the first end of the insert is sealably secured to the first port body using a ring seal and a retainer ring.

7. The flow directing apparatus of claim 6 wherein said retainer ring comprises two or more sectional pieces for arrangement about the insert.

8. The flow directing apparatus of any one of claims 4 to 7 wherein: the second end of the insert is secured and sealably fit to the second port body.

9. The flow directing apparatus of claim 8 wherein the second end of the insert further comprises a flange for securing and sealably fitting to the second port body.

10. The flow directing apparatus of claim 9 wherein the flange of the second end of the insert is sealably secured to the second port body using a ring seal and a retainer ring.

11. The flow directing apparatus of any one of claims 1 to 10 wherein said first port body further comprises a first interface for fitting the fourth opening thereof to the first sealable opening of the main body, and a second interface for fitting the fourth opening thereof to an opening of a wellpipe.

12. A method for assembling a flow directing apparatus, said apparatus comprising a housing and a flow directing insert, the housing having a

hollow interior, and at least a first, a second and a third sealable openings thereon, the insert having a first and a second ends, the method comprising:

inserting said insert into the housing, such that the first end of the insert is positioned at the first sealable opening and the second end of the insert is positioned at the second sealable opening;

sealably securing the first end of the insert to the first sealable opening;

sealably securing the second end of the insert to the second sealable opening for directing fluid flow through the insert between the first and second body openings; and

accessing the third sealable opening for at least one of sealably securing the first end of the insert to the first sealable opening and sealably securing the second end of the insert to the second sealable opening.

13. The method of claim 12 wherein said sealably securing the first end of the insert to the first sealable opening comprising:

accessing the third sealable opening and sealably securing the first end of the insert to a first port body, the first port body having a fourth opening thereon; and

sealably securing the first port body to the first sealable opening.

14. The method of claim 13 wherein the first end of the insert comprises a first flange, and wherein said sealably securing the first end of the insert to a first port body comprising:

securing and sealably fitting the first flange to the first port body.

15. The method of claim 14 wherein securing and sealably fitting the first flange to the first port body comprising:

securing and sealably fitting the first flange to the first port body using a ring seal and a retainer ring.

16. The method of any one of claims 13 to 15 wherein said sealably securing the second end of the insert to the second opening comprising:

accessing the third sealable opening and sealably securing the second end of the insert to a second port body, the second port body having a fifth opening thereon; and

sealably securing the second port body to the second sealable opening for directing fluid flow through the insert between the first and second port openings.

17. The method of claim 16 wherein the second end of the insert comprises a second flange, and wherein said sealably securing the second end of the insert to a second port body comprising:

securing and sealably fitting the second flange to the second port body.

18. The method of claim 17 wherein securing and sealably fitting the second flange to the second port body comprising:

securing and sealably fitting the second flange to the second port body using a ring seal and a retainer ring.

19. A method for replacing a flow directing apparatus coupled to a wellpipe, said apparatus comprising a housing and a first flow directing insert to be replaced, the housing having a hollow interior, and at least a first, a second and a third sealable openings thereon, the first insert having a first and a second ends, said first end of the first insert being coupled to the wellpipe through the first sealable opening, the method comprising:

removing said first insert from said flow directing apparatus;

inserting a second insert into the housing, such that the first end of the second insert is positioned at the first sealable opening and the second end of the second insert is positioned at the second sealable opening;

sealably securing the first end of the second insert to the first sealable opening;

sealably securing the second end of the second insert to the second sealable opening; and

coupling the first sealable opening to the wellpipe for directing fluid flow from the wellpipe through the first end of the second insert to the second end of the second insert; wherein at least one of said sealably securing the first end of the second insert to the first sealable opening and said sealably securing the second end of the

second insert to the second sealable opening is conducted through accessing the third sealable opening.