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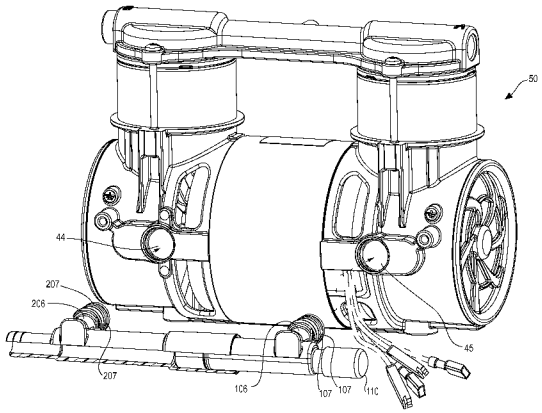
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(54) **Title:** FLUID INTAKE AND EXHAUST FITTINGS FOR A COMPRESSOR OR PUMP



(57) **Abstract:** We provide a compressor or vacuum pump fluid intake manifold having a fluid intake and a pair of ports provided by male and female fittings that are slidably engaged to one another. The male fitting has a portion which forms a hollow plug which fits within a respective fluid intake of the compressor housing. The plug portion, or plug, is integrally molded with a longitudinal section of the male fitting member. In similar fashion, the female fitting includes a plug portion which interfaces with a fluid intake in the compressor housing. The plug portion is integrally molded with a longitudinal portion of the female fitting. In one embodiment, each of the plugs includes three extending flanges forming an integral portion of the plug. Two of the three flanges are furtherest away from the plug. These two flanges provide a contact pressure seal with portions of the compressor housing that define the fluid intakes which receive the plugs. The other plug serves to prevent the plugs from slipping out of the fluid intakes during normal use of the fluid intake manifold. Further, instead, each of the plugs can have a raised insert surface defining a groove with an O-ring and a flange integral with and extending from a surface of the plug. The O-ring provides a contact pressure seal with portions of the housing defining the compressor intake. The radially extending flange serves to inhibit the removal of the plug from the compressor intakes during normal use of the fluid manifold.

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AMENDED CLAIMS

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1. A gas or air manifold of a compressor or vacuum pump wherein said manifold comprises:

a first member, wherein a portion of said first member forms a first coupling, a portion of said first member forms a first longitudinal section, and a portion of said first member forms a first fluid port wherein said first member is a single unitary integral piece;

said first coupling lias an opening which opens through an external surface of said first coupling,

said first longitudinal section has a fluid passage formed therein, said first coupling opening at said fluid passage of said longitudinal section;

said portion forming said first fluid port forming an internal orifice, said portion forming said first fluid port having an external opening which opens at said internal orifice, said first longitudinal section having an opening which opens into said orifice, said passage formed by said longitudinal section in fluid communication with said orifice through said first longitudinal section opening which opens at said orifice;

said portion forming said first coupling and said portion forming said first fluid port being integral with said first longitudinal section;

a second member, wherein a portion of said second member forms a second coupling, a portion of said second member forms a second longitudinal section, and a portion of said second member forms a second fluid port wherein said first member is a single unitary integral piece;

said second coupling has an opening which opens through an external surface of said second coupling,

said second longitudinal section has a fluid passage formed therein, said second coupling opening at said fluid passage of said second longitudinal section;

said portion forming said second fluid port forming an internal orifice, said portion forming said second fluid port having an external opening which opens at said internal orifice of said second port, said second longitudinal section having an opening which opens into said second port orifice, said passage formed by said second longitudinal section in fluid

communication with said orifice through said second longitudinal section opening which opens at said second port orifice;

said portion forming said second coupling and said portion forming said second fluid port being integral with said second longitudinal section;

a first fluid coupling formed by a portion of said manifold; and wherein

said first member and said second member are adjustably engageable with each other, said adjustable engagement being along a longitudinal axis of said fluid intake manifold.

2. The manifold of Claim 1 wherein said portion of said first member forming said first port is a first plug, said portion of said second member forming said second port is a second plug,

3. The manifold of Claim 3 wherein said first and second plugs each have a first extending flange and a second extending flange, said first and second extending flanges of said first plug integral with and extending from a surface of said first plug, said first and second flanges of said second plug integral with and extending from a surface of said second plug, wherein

said first extending flange of each of said plugs provides an abutment to a ledge or backstop of a compressor or pump housing when said plugs are each inserted into a respective orifice of said pump or compressor housing; and wherein

each of said second extending flanges provide a pressure contact seal against said pump or compressor housing when said plugs are each inserted into said respective orifice of said pump or compressor housing.

4. The manifold of Claim 3 wherein said first plug and second plug each have a third extending flange, each of said third extending flanges providing a pressure contact seal when said first and second plugs are each inserted into said respective orifice of said pump or compressor housing.

5. The manifold of Claim 2 wherein

said first plug has a first flange and a groove formed in a surface of said first plug, said first flange integral with and extending from a surface of said first plug, said second plug having a first flange and a groove formed in a surface of said second plug, said first flange of said second plug formed integral with and extending from a surface of said second plug; wherein

an o-ring is disposed over each of said grooves; wherein

each of said o-rings forms a pressure contact seal with a pump or compressor housing when each of said first and second plugs is inserted into a respective orifice of said pump or compressor housing; and wherein

each of said first extending flanges forms an abutment to a backstop or ledge formed in said pump or compressor housing when each of said first and second plugs is inserted into said respective orifice.

6. The manifold of Claim 1 wherein said first coupling is a female coupling and said second coupling is a male coupling, said first and second members adjustably engageable at said female and male coupling.

7. The manifold of Claim 1 wherein said first and second longitudinal sections, and said first and second couplings, all have oval cross sections,

8. A port fitting for a compressor or pump inlet or outlet, said port fitting comprising:

a plug portion fluidly coupled with a coupling portion;

a hollow formed by said coupling portion, said hollow forms a fluid passage having an opening through an external end of said coupling portion;

an opening formed in an external end of said plug portion, wherein, said opening in said plug portion is in fluid communication with said opening in said coupling portion;

an o-ring receiving groove formed in a surface of said plug portion;

a flange integral with and extending from a surface of said plug portion;

an o-ring disposed over said groove in said plug portion; and wherein

said o-ring forms a pressure contact seal with said pump or compressor housing when said plug portion is inserted into an orifice of said pump or compressor housing; and wherein

said flange forms an internal abutment to a backstop or ledge formed in said pump or compressor housing when said plug is inserted into said orifice of said pump or compressor housing,

9. A port fitting for a compressor or pump outlet or inlet, said port fitting comprising:

a plug portion fluidly coupled with a coupling portion;

a hollow formed by said coupling portion, said hollow forms a fluid passage having an opening through an external end of said coupling portion;

an opening formed in an external end of said plug portion, wherein said opening in said plug portion is in fluid communication with said opening in said coupling portion;

said plug portion has a first extending flange and a second extending flange, said first and second extending flanges are integral with and extend from a surface of said plug portion; wherein

said first extending flange provides an internal abutment to a ledge or backstop of a compressor or pump housing when said plug portion is inserted into an orifice of said pump or compressor housing; and wherein

said second extending flange provides a pressure contact seal against said pump or compressor housing when said plug is inserted into said orifice of said pump or compressor housing.

10. The port fitting of claim 9 further comprising:

a third extending flange, said third extending flange providing a pressure contact seal with said pump or compressor housing when said plug portion is inserted into said orifice of said pump or compressor housing,

11. A plug portion of a port fitting for a compressor or pump inlet or outlet said plug portion comprising:

a hollow formed by said plug portion, said hollow forming a fluid passage;

an external end, wherein an opening is formed in said external end;

a first o-ring receiving groove formed by a portion of said plug portion;

a second o-ring receiving groove formed by a portion of said plug portion.

Statement of Under Article 19(1) (Rule 46.4)

The International Bureau of WIPO
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1211 Geneva 20
Switzerland

Applicant under Article 19 amended claims 1, 8 and 9,

Claim 1 has been amended to clarify the first and second members are each single unitary integral pieces. Gannaway U.S. Patent No. 5,022,146 discloses an accumulator 136 that has a central portion 138, a top end portion 140 and a bottom end portion 142. The three portions are hermetically secured together by welding or bronzing. Attached to top end portion 140 is tube 154, Attached to bottom end portion 152 is tube 156.

Claims 8 and 9 have been amended to recite that the flange forming an abutment forms an "internal abutment". Spix US 6,782,878 discloses a flange 48 external to mounting face 20.

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