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PIPELINE FIXING MEMBER, VEHICLE SYSTEM, AND VEHICLE

Abstract

A pipeline fixing member includes a fixing member body. The fixing member body has a mounting portion, a flow channel, a first port, and a second port. The first port and the second port are respectively located at both ends of the flow channel. The first port is configured to be connected to a pipeline of the vehicle system. The second port is configured to be connected to a cylinder block of the vehicle system. The mounting portion is connected to the cylinder block of the vehicle system.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] This application is a continuation application of International Patent Application No. PCT/CN2023/108508, filed on Jul. 21, 2023, which is based on and claims priority and benefits of Chinese Patent Application No. 202222892105.5, filed on Oct. 31, 2022. The entire content of all of the above-referenced applications is incorporated herein by reference.

FIELD
[0002] The present disclosure relates to the field of vehicle technologies, particularly, to a pipeline fixing member, a vehicle system, and a vehicle.
BACKGROUND
[0003] In the related art, a brake fluid pipeline of a vehicle is plugged in a cylinder block, so that brake fluid may flow into the cylinder block through the brake fluid pipeline.
[0004] However, in the related art, a size of a pipeline matching a cylinder block is fixed with low adaptability. In addition, the brake fluid pipeline may rotate relative to the cylinder block. In this way, relatively poor connection reliability between the brake fluid pipeline and the cylinder block is caused.
SUMMARY
[0005] The present disclosure, at least to some extent, resolves one of technical problems in the related art.
[0006] Therefore, an aspect of the present disclosure is to provide a pipeline fixing member. The pipeline fixing member may effectively limit rotation of a pipeline relative to a cylinder block, so that connection reliability between the pipeline and the cylinder block may be improved.
[0007] Another aspect of the present disclosure is to provide a vehicle system.
[0008] Still another aspect of the present disclosure is to provide a vehicle.
[0009] The pipeline fixing member provided according to the present disclosure includes: [0010] a fixing member body. The fixing member body has a mounting portion, a flow channel, a first port, and a second port. The first port and the second port are respectively located at both ends of the flow channel. The first port is configured to be connected to a pipeline of the vehicle system. The second port is configured to be connected to a cylinder block of the vehicle system. The mounting portion is connected to the cylinder block of the vehicle system.
[0011] According to the pipeline fixing member provided in the present disclosure, with the use of the fixing member body, the pipeline is in communication with the cylinder block. In this way, connection reliability between the pipeline and the cylinder block may be effectively improved, to cause the brake fluid to stably flow into the cylinder block. With the use of the mounting portion, the fixing member body is fixedly mounted on the cylinder block. In this way, rotation of the fixing member body relative to the cylinder block may be effectively limited, so that stability and reliability of a connection between the pipeline and the cylinder block may be improved. Further, a phenomenon of rotation of the pipeline relative to the cylinder block is avoided, so that brake fluid in a fluid reservoir may be ensured to flow into the cylinder block in a relatively stable manner. In addition, an assembly manner between the pipeline fixing member and the cylinder block provided in the present disclosure is relatively simple, and the pipeline fixing member may be easily disassembled from the cylinder block and repaired. In this way, subsequent repair and replacement costs may be greatly reduced. In addition, the pipeline fixing member provided in the present disclosure further has relatively high adaptability. The pipeline fixing member may be matched with and adapted to different sizes of pipelines.

[0012] The vehicle system provided according to the present disclosure includes: [0013] a cylinder block, where the cylinder block is the cylinder block of the foregoing vehicle system, and the cylinder block has an assembly hole; [0014] a sealing sleeve, where the sealing sleeve is mounted in the assembly hole; and [0015] a pipeline and a pipeline fixing member, where the pipeline fixing member is the foregoing pipeline fixing member. The sealing sleeve is sleeved over the pipeline fixing member to connect the pipeline fixing member to the cylinder block. The pipeline is the pipeline according to the foregoing vehicle system. The pipeline is mounted on the pipeline fixing member to configure the pipeline fixing member to be in communication with the cylinder block and the pipeline.
[0016] A vehicle provided according to the present disclosure includes the foregoing vehicle system.
[0017] Additional aspects and advantages of the present disclosure will be partly given in the following description, some of which will become apparent from the following description or may be learned from practices of the present disclosure.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
[0018] FIG. **1** is a schematic structural diagram of a pipeline fixing member according to an embodiment of the present disclosure;
[0019] FIG. **2** is a front view of a pipeline fixing member according to an embodiment of the present disclosure;
[0020] FIG. **3** is a cross-sectional view along a direction A-A in FIG. **2**;
[0021] FIG. **4** is a schematic structural diagram of a vehicle system according to an embodiment of the present disclosure; and
[0022] FIG. **5** is a partial cross-sectional view of a vehicle system according to an embodiment of the present disclosure.
DETAILED DESCRIPTION
[0023] In order to make objectives, technical solutions, and advantages of embodiments of the present disclosure clearer, the technical solutions in the embodiments of the present disclosure will be clearly and completely described in the following with reference to accompanying drawings in the embodiments of the present disclosure. Apparently, the embodiments to be described are only a part rather than all of the embodiments of the present disclosure. All other embodiments obtained by a person of ordinary skill in the art based on the embodiments of the present disclosure without creative efforts shall fall within the protection scope of the present disclosure.
[0024] In description of the present disclosure, it should be understood that an orientation or position relationship indicated by terms such as “center”, “longitudinal”, “transverse”, “length”, “width”, “thickness”, “above/over/on”, “below/under/beneath”, “front”, “rear”, “left”, “right”, “vertical”, “horizontal”, “top”, “bottom”, “inner”, “outer”, “clockwise”, “anticlockwise”, “axial”, “radial”, and “circumferential” is an orientation or position relationship based on what is shown in the accompanying drawings. The terms are merely for ease of describing the present disclosure and simplifying the description, but does not indicate or imply that the indicated apparatus or component needs to have an orientation, and is constructed and operated in the orientation, and therefore cannot be understood as a limitation to the present disclosure. In addition, a feature defined to be “first” or “second” may explicitly or implicitly include one or more features. In the description of the present disclosure, unless otherwise specified, “a number of/a plurality of” means two or more.
[0025] In the description of the present disclosure, it should be noted that, unless otherwise clearly specified and defined, terms “mount”, “in communication with”, and “connect” should be

understood in a broad sense. For example, the term “connect” may be “fixedly connected”, “detachably connected”, or “integrally connected”. Alternatively, the term “connect” may be “mechanically connected”, or “electrically connected”. The term “in communication with” may be “in direct communication with”, “in indirect communication with” through an intermediate medium, or “in internal communication with” between two components. A person of ordinary skill in the art may understand meanings of the foregoing terms in the present disclosure in cases.

[0026] The following describes the embodiments of the present disclosure in detail. Examples of the embodiments are shown in the accompanying drawings, and same or similar labels all along in all the accompanying drawings indicate same or similar components or components having same or similar functions. The following embodiments that are described by referring to the accompany drawings are examples, and are only used to interpret the present disclosure, and cannot be understood as a limitation to the present disclosure.

[0027] FIG. **1** is a schematic structural diagram of a pipeline fixing member **10** according to an embodiment of the present disclosure. FIG. **2** is a front view of a pipeline fixing member **10** according to an embodiment of the present disclosure. FIG. **3** is a cross-sectional view along a direction A-A in FIG. **2**. FIG. **4** is a schematic structural diagram of a vehicle system **1** according to an embodiment of the present disclosure. FIG. **5** is a partial cross-sectional view of a vehicle system **1** according to an embodiment of the present disclosure. The following describes the pipeline fixing member **10** according to an embodiment of the present disclosure with reference to FIG. **1** to FIG. **5**. The pipeline fixing member **10** includes a fixing member body **100**. The fixing member body **100** has a flow channel **110** and a first port and a second port located at both ends of the flow channel **110**, respectively. The first port is adapted/configured to be fixedly connected to a pipeline **30** of the vehicle system **1**. The second port is adapted to be in communication with a cylinder block **20** of the vehicle system **1**. The fixing member body **100** has a mounting portion **120** fixedly connected to the cylinder block **20** of the vehicle system **1**.

[0028] In an embodiment, the vehicle system **1** may be understood as a brake system of a vehicle. The cylinder block **20** of the vehicle system **1** may be understood as a hydraulic brake cylinder in the brake system. For example, the cylinder block **20** may be a mechanical brake cylinder connected to a pedal for mechanical braking, or a drive-by-wire brake cylinder with a piston pump for drive-by-wire braking. The cylinder block **20** is a pressure conversion component in the vehicle system **1**. The cylinder block **20** may convert mechanical power transmitted from a brake pedal of the vehicle into hydraulic pressure, and then transmit the hydraulic pressure to brake wheel cylinders of four wheels of the vehicle through the pipeline **30**. The brake wheel cylinders convert the hydraulic energy into mechanical energy. Finally, resistance is generated by means of friction between a brake pad and a brake disc, to force the wheels to decelerate or stop the vehicle. The cylinder block **20** needs to be in communication with a fluid reservoir (not shown in the figure) that stores brake fluid in the vehicle, so that the brake fluid may flow from the fluid reservoir into the cylinder block **20**. The fixing member body **100** may be connected to the cylinder block **20** in a detachable manner. In an embodiment, a connection manner may be threaded connection.

[0029] The fixing member body **100** is adapted to be mounted on the cylinder block **20** of the vehicle system **1**. The fixing member body **100** is configured for mounting the pipeline **30** (the pipeline **30** of the vehicle system **1**) to cause/configure the cylinder block **20** to be in communication with the pipeline **30**. The fixing member body **100** has the mounting portion **120** that limits rotation of the pipeline **30**. The mounting portion **120** is adapted to be connected to the cylinder block **20**. One end of the fixing member body **100** may be in communication with the cylinder block **20**, and the other end of the fixing member body **100** may be in communication with the pipeline **30** of the fluid reservoir. With such an arrangement/configuration, the pipeline **30** can be in communication with the cylinder block **20** through the pipeline fixing member **10**, so that the brake fluid may flow into the cylinder block **20** through the pipeline **30** and the pipeline fixing member **10**.

[0030] In an embodiment, the flow channel **110** may run through opposite ends of the fixing member body **100** along an axial direction of the fixing member body **100**. One end of the flow channel **110** may be in communication with the pipeline **30**, and the other end of the flow channel **110** may be in communication with the cylinder block **20**. With such an arrangement, the brake fluid can flow from the pipeline **30** to the flow channel **110**, and flow into the cylinder block **20** through the flow channel **110**.

[0031] Further, the mounting portion **120** may be fixedly connected to the fixing member body **100** through integral formation. The mounting portion **120** may be fixedly connected to the cylinder block **20** through threaded connection, so that the mounting portion **120** can be relatively fixedly mounted on the cylinder block **20**. With such an arrangement, rotation of the fixing member body **100** relative to the cylinder block **20** may be effectively limited by the mounting portion **120**. In this way, stability and reliability may be improved when the pipeline **30** is connected to the cylinder block **20**. Further, a phenomenon of rotation of the pipeline **30** relative to the cylinder block **20** is avoided, so that the brake fluid in the fluid reservoir may be ensured to flow into the cylinder block **20** in a relatively stable manner. In addition, an assembly manner between the mounting portion **120** and the cylinder block **20** provided in this embodiment of the present disclosure is relatively simple, and the mounting portion **120** and the cylinder block **20** may be easily disassembled from each other for repairing. In this way, subsequent repair and replacement costs may be greatly reduced.

[0032] In an embodiment, the pipeline fixing member **10** may be integrally formed through injection molding by using engineering plastics that is resistant to the brake fluid. A material such as nylon, PPS, or PPT may be selected as the engineering plastics, which is not defined in this embodiment of the present disclosure. With such an arrangement, manufacturing efficiency of the pipeline fixing member **10** can be effectively improved, production costs of the pipeline fixing member **10** can be reduced, and weight of the pipeline fixing member **10** can be effectively reduced.

[0033] According to the pipeline fixing member **10** provided in this embodiment of the present disclosure, the pipeline **30** is in communication with the cylinder block **20** through the fixing member body **100**. In this way, connection reliability between the pipeline **30** and the cylinder block **20** can be effectively improved, to cause the brake fluid to stably flow into the cylinder block **20**. With the arrangement of the mounting portion **120** on the fixing member body **100**, rotation of the fixing member body **100** relative to the cylinder block **20** may be effectively limited, so that the stability and the reliability may be improved when the pipeline **30** is connected to the cylinder block **20**. Further, the phenomenon of rotation of the pipeline **30** relative to the cylinder block **20** is avoided, so that the brake fluid in the fluid reservoir may be ensured to flow into the cylinder block **20** in a relatively stable manner. In addition, the assembly manner between the mounting portion **120** and the cylinder block **20** provided in this embodiment of the present disclosure is relatively simple, and the mounting portion **120** and the cylinder block **20** may be easily disassembled from each other for repairing. In this way, the subsequent repair and replacement costs may be greatly reduced. In addition, the pipeline fixing member **10** provided in the present disclosure further has relatively high adaptability. The pipeline fixing member **10** may be matched with and adapted to different sizes of pipelines **30**.

[0034] Still referring to FIG. **1** to FIG. **3**, in an embodiment of the present disclosure, the mounting portion **120** is arranged/disposed on an outer peripheral wall of the fixing member body **100**. The mounting portion **120** may be arranged along a circumferential direction of the fixing member body **100**. The mounting portion **120** may extend along a radial direction of the fixing member body **100** toward a direction far from the fixing member body **100**. The fixing member body **100** may be fixedly connected to the cylinder block **20** through the mounting portion **120**. With such an arrangement, rotation of the fixing member body **100** relative to the cylinder block **20** may be limited through the mounting portion **120**, so that rotation of the pipeline **30** relative to the cylinder

block **20** is further limited.
[0035] Still referring to FIG. **1** and FIG. **2**, in an embodiment of the present disclosure, a cross section of the mounting portion **120** is configured as an elliptic cross section. In an embodiment, the mounting portion **120** may be fixedly connected to one end of the fixing member body **100** through integral formation. The cross section of the mounting portion **120** may be understood as a section of the mounting portion **120** along a radial direction of one end of the fixing member body **100** fixedly connected to the mounting portion **120**. The cross section of the mounting portion **120** may be elliptic or approximately elliptic. With such an arrangement, positioning precision of the fixing member body **100** mounted on the cylinder block **20** can be effectively improved. In addition, a contact area between the fixing member body **100** and the cylinder block **20** may be effectively increased, so that connection strength and sealing property between the fixing member body **100** and the cylinder block **20** are improved.
[0036] Still referring to FIG. **1** to FIG. **3**, in an embodiment of the present disclosure, a first port is configured as a hollow plug-in portion that is in plug-and-fit engagement with the pipeline **30** of the vehicle system **1**, such that the hollow plug-in portion is plugged in and fitted with the pipeline. With such an arrangement, the pipeline **30** of the vehicle system **1** can be fixedly mounted on one end of the fixing member body **100** through the hollow plug-in portion.
[0037] Still referring to FIG. **1** to FIG. **3**, in some embodiments of the present disclosure, the hollow plug-in portion is a first hollow shaft section **130**. An outer wall of the first hollow shaft section **130** is configured to connect to an inner wall of the pipeline **30** of the vehicle system **1**. In an embodiment, one end of the first hollow shaft section **130** may be inserted into the pipeline **30**. With such an arrangement, the pipeline **30** of the vehicle system **1** can tightly sleeve over the end of the first hollow shaft section **130**, so that connection strength between the pipeline **30** and the first hollow shaft section **130** may further be effectively improved.
[0038] Still referring to FIG. **1** to FIG. **3**, in a possible implementation of the present disclosure, one end (e.g., a first end) of the first hollow shaft section **130** far from the mounting portion **120** has a limiting flange **131** matched with the pipeline **30** of the vehicle system **1**.
[0039] In an embodiment, the end of the first hollow shaft section **130** away from the mounting portion **120** may be configured for mounting the pipeline **30** and in communication with the pipeline **30**. The limiting flange **131** may be arranged at the end of the first hollow shaft section **130** away from the mounting portion **120**. With such an arrangement, the pipeline **30** can be clamped with, fixedly connected to, and in communication with the fixing member body **100** through the limiting flange **131**.
[0040] Still referring to FIG. **1** to FIG. **3**, in some embodiments of the present disclosure, an outer surface of the limiting flange **131** is configured as an inclined surface, and in a direction from an end of the first hollow shaft section **130** far from the mounting portion **120** to an end (e.g., a second end) of the first hollow shaft section **130** close to the mounting portion **120**, the outer surface of the limiting flange **131** slopes toward an axial direction of the first hollow shaft section **130**.
[0041] In an embodiment, the limiting flange **131** may have a tapered structure. Any two opposite beveled edges of the limiting flange **131** is obliquely arranged, and an angle α shown in FIG. **2** is formed between the two edges. In addition, the angle α may range from 8 degrees to 12 degrees. In an embodiment, the angle α may be 10 degrees. With such an arrangement, the pipeline **30** can be relatively securely mounted on an end of the fixing member body **100**. In this way, sealing performance between the pipeline **30** and the fixing member body **100** may be greatly improved.
[0042] Still referring to FIG. **1**, FIG. **3**, and FIG. **5**, in an embodiment of the present disclosure, the fixing body member **100** has a second hollow shaft section **140**. The second hollow shaft section **140** is configured as a second port. The first hollow shaft section **130** is in communication with the second hollow shaft section **140**. The second hollow shaft section **140** is adapted to be in plug-and-fit engagement with the cylinder block **20** of the vehicle system **1**.
[0043] In an embodiment, the first hollow shaft section **130** and the second hollow shaft section

140 may be fixedly connected through integral formation. One end of the first hollow shaft section **130** away from the second hollow shaft section **140** may be configured for mounting the pipeline **30**, to cause the first hollow shaft section **130** to be in communication with the pipeline **30**. A mounting portion **120** may be arranged at one end of the second hollow shaft section **140** away from the first hollow shaft section **130**. The second hollow shaft section **140** is connected to and in communication with the cylinder block **20** through the mounting portion **120**. With such an arrangement, the pipeline **30** can be in communication with the cylinder block **20** by means of mutual cooperation of the first hollow shaft section **130** and the second hollow shaft section **140**.

[0044] Still referring to FIG. **3**, in a further embodiment of the present disclosure, an included angle is formed between an axis of the first hollow shaft section **130** and an axis of the second hollow shaft section **140**. The axis of the first hollow shaft section **130** is perpendicular to the axis of the second hollow shaft section **140**.

[0045] In an embodiment, an included angle between a central axis of the first hollow shaft section **130** and a central axis of the second hollow shaft section **140** may be 90 degrees. In other words, the first hollow shaft section **130** and the second hollow shaft section **140** may be perpendicular to each other. With such an arrangement, an axial length of the fixing member body **100** can be effectively reduced, thereby avoiding occupying excessive working space by the fixing member body **100**.

[0046] Still referring to FIG. **1** and FIG. **2**, in an embodiment of the present disclosure, the mounting portion **120** is arranged on the second hollow shaft section **140** and is integrally formed with the second hollow shaft section **140**.

[0047] In an embodiment, the mounting portion **120** may be arranged through integral formation at one end of the second hollow shaft section **140** away from the first hollow shaft section **130**. With such an arrangement, production and manufacturing efficiency of the second hollow shaft section **140** can be effectively improved.

[0048] Still referring to FIG. **1** and FIG. **2**, in an embodiment of the present disclosure, the mounting portion **120** is arranged on an outer peripheral wall of the second hollow shaft section **140**. The mounting portion **120** has a plurality of mounting holes **121**. The plurality of mounting holes **121** are configured for assembling of the cylinder block **20**. The plurality of mounting holes **121** are symmetrical with respect to the central axis of the second hollow shaft section **140**.

[0049] In an embodiment, the mounting portion **120** may be provided with the plurality of mounting holes **121**, for example, two, three, four, or the like, which is not defined in this embodiment of the present disclosure. The following embodiment is described by using two mounting holes **121** as an example. The mounting hole **121** may be circular in shape. An axial direction of the mounting hole **121** may be parallel to an axial direction of the second hollow shaft section **140**. The mounting hole **121** may be a through hole or a threaded hole that extends through the mounting portion **120**. The two mounting holes **121** may be distributed on both sides of the mounting portion **120** in a centrosymmetric manner, and a center of symmetry of the two mounting holes **121** may coincide with the central axis of the second hollow shaft section **140**. The mounting portion **120** may be fixedly mounted on the cylinder block **20** through a bolt (not shown in the figure) passing through the mounting hole **121**. With such an arrangement, the second hollow shaft section **140** can be stably connected to the cylinder block **20**, and circumferential sealing performance between the second hollow shaft section **140** and the cylinder block **20** can be relatively high.

[0050] Further, a plurality of threaded counterbore holes (not shown in the figure) may be provided on the cylinder block **20**, and the plurality of threaded counterbore holes may be respectively provided in a one-to-one correspondence with the plurality of mounting holes **121**. The bolt (not shown in the figure) may pass through the mounting holes **121** and are screwed in the threaded counterbore holes, so that the second hollow shaft section **140** may be fixedly connected to the cylinder block **20** through bolted connection.

[0051] Still referring to FIG. **3**, in some embodiments of the present disclosure, the outer peripheral wall of the second hollow shaft section **140** has an annular step structure **141**, and the annular step structure **141** is arranged close to the first hollow shaft section **130**, so that a step surface on the outer peripheral wall of the second hollow shaft section **140** is formed.
[0052] In an embodiment, a central axis of the annular step structure **141** may coincide with the central axis of the second hollow shaft section **140**. Along an axial direction of the second hollow shaft section **140**, an outer diameter size of the annular step structure **141** changes. In other words, the outer diameter size of the annular step structure **141** at one end of the second hollow shaft section **140** close to the first hollow shaft section **130** is greater than the outer diameter size of the annular step structure **141** at the other end of the second hollow shaft section **140** away from the first hollow shaft section **130**. With such an arrangement, the annular step structure **141** forms an annular step surface **142** extending along a radial direction of the second hollow shaft section **140**. The annular step surface **142** may be configured to improve axial sealing performance between the fixing member body **100** and the cylinder block **20**.
[0053] Still referring to FIG. **4** and FIG. **5**, a vehicle system **1** provided according to an embodiment of the present disclosure includes: a cylinder block **20**, where the cylinder block **20** is the cylinder block **20** of the vehicle system **1** in the foregoing embodiments, and the cylinder block **20** defines an assembly hole **21**; a sealing sleeve **40**, where the sealing sleeve is mounted in the assembly hole **21**; and a pipeline **30** and a pipeline fixing member **10**, where the pipeline fixing member **10** is the pipeline fixing member **10** in the foregoing embodiments. The sealing sleeve **40** is sleeved over the pipeline fixing member **10** to hermetically connect the cylinder block **20** to the pipeline fixing member **10**. The pipeline **30** is the pipeline **30** of the vehicle system **1** in the foregoing embodiment. The pipeline **30** is mounted on the pipeline fixing member **10**, to cause the pipeline fixing member **10** to be in communication with the cylinder block **20** and the pipeline **30**. A structure and working principles of the pipeline fixing member **10** are already explained and described in detail in the foregoing embodiments, and details are not described herein again.
[0054] In an embodiment, the cylinder block **20** may be the cylinder block **20** of the vehicle system **1** in the foregoing embodiments. The cylinder block **20** has an assembly hole **21** in communication with the interior of the cylinder block **20**. The assembly hole **21** may be configured to mount the pipeline fixing member **10**. The sealing sleeve **40** may be an annular sealing member. The sealing sleeve **40** may be sheathed in the assembly hole **21** through interference fit. One end of the pipeline fixing member **10** may be sheathed in the assembly hole **21**, and in addition, the sealing sleeve **40** may sleeve over an outer side wall of the pipeline fixing member **10**. With such an arrangement, axial and radial sealing performance between the pipeline fixing member **10** and the assembly hole **21** can be greatly improved through joint cooperation of the sealing sleeve **40** and the annular step structure **141**, so that a phenomenon of leakage of air or brake fluid from a clearance between the pipeline fixing member **10** and the assembly hole **21** is avoided.
[0055] Further, the pipeline **30** may be mounted on the other end of the pipeline fixing member **10** away from the cylinder block **20**, and the pipeline **30**, the pipeline fixing member **10**, and the assembly hole **21** are in communication in sequence. With such an arrangement, the brake fluid contained in the fluid reservoir can flow into the cylinder block **20** through the pipeline **30** and the pipeline fixing member **10**.
[0056] A vehicle provided according to an embodiment of the present disclosure includes the vehicle system **1** in the foregoing embodiments. The structure and working principles of the vehicle system **1** are already explained and described in detail in the foregoing embodiments, and details are not described herein again.
[0057] In the description of the present disclosure, it should be understood that an orientation or position relationship indicated by terms such as “center”, “longitudinal”, “transverse”, “length”, “width”, “thickness”, “above/over/on”, “below/under/beneath”, “front”, “rear”, “left”, “right”, “vertical”, “horizontal”, “top”, “bottom”, “inner”, “outer”, “clockwise”, “anticlockwise”, “axial”,

“radial”, and “circumferential” is an orientation or position relationship based on what is shown in the accompanying drawings, and is merely for ease of describing the present disclosure and simplifying the description, but does not indicate or imply that the indicated apparatus or component needs to have an orientation, and is constructed and operated in the orientation, and therefore cannot be understood as a limitation to the present disclosure.

[0058] In addition, terms “first” and “second” are for a purpose of description only, and cannot be understood as indicating or implying relative importance or implicitly indicating a number of indicated technical features. In view of this, a feature defined to be “first” or “second” may explicitly or implicitly include one or more features. In the description of the present disclosure, unless otherwise explicitly and defined, “a plurality of/a number of” means more than two.

[0059] In the present disclosure, unless otherwise clearly specified and defined, terms such as “mount”, “in communication with”, “connect”, and “fix” should be understood in a broad sense. For example, the term “connect” may be fixedly connected, detachably connected, or integrally connected. Alternatively, the term “connect” may be mechanically connected, or electrically connected. The term “in communication with” may be in direct communication with, in indirect communication with through an intermediate medium, in internal communication with between interiors of two components, or two components in mutual communication with each other. A person of ordinary skill in the art may understand the meanings of the foregoing terms in the present disclosure according to situations.

[0060] In the present disclosure, unless otherwise clearly specified and defined, that a first feature being “above” or “below” a second feature may be that the first feature and the second feature are in direct contact, or the first feature and the second feature are in indirect contact by an intermediate medium. In addition, the first feature is “above”, “over”, and “on” the second feature may be that the first feature is directly above/over/on or obliquely above/over/on the second feature, or may merely indicate that a horizontal position of the first feature is higher than the horizontal position of the second feature. The first feature is “below”, “under”, and “beneath” the second feature may be that the first feature is directly below/under/beneath or obliquely below/under/beneath the second feature, or may merely indicate that the horizontal position of the first feature is lower than the horizontal position of the second feature.

[0061] In description of this specification, description of reference terms such as “one embodiment”, “some embodiments”, “example”, “specific example” or “some examples” indicates including features, structures, materials, or features described in the embodiment or example in at least one embodiment or example of the present disclosure. In this specification, schematic representations of the foregoing terms are not necessarily directed to the same embodiments or examples. Further, the features, the structures, the materials, or the characteristics that are described may be combined in proper manners in any one or more embodiments or examples. In addition, a person skilled in the art may integrate or combine different embodiments or examples described in this specification and features of the different embodiments or examples provided that they are not contradictory to each other.

[0062] Although the embodiments of the present disclosure are shown and described above, it may be understood that, the foregoing embodiments are examples, and cannot be construed as a limitation to the present disclosure. Within the scope of the present disclosure, a person of ordinary skill in the art may make changes, modifications, replacement, and variations to the foregoing embodiments.

Claims

1. A pipeline fixing member, comprising: a fixing member body having a mounting portion, a flow channel, a first port, and a second port, the first port and the second port respectively located at both ends of the flow channel, the first port configured to be connected to a pipeline of a vehicle

system, the second port configured to be in communication with a cylinder block of the vehicle system, and the mounting portion connected to the cylinder block.

2. The pipeline fixing member according to claim 1, wherein the first port is configured as a hollow plug-in portion that is plugged in and fitted with the pipeline.

3. The pipeline fixing member according to claim 2, wherein the hollow plug-in portion is a first hollow shaft section, and an outer wall of the first hollow shaft section is configured to be connected to an inner wall of the pipeline.

4. The pipeline fixing member according to claim 3, wherein a first end of the first hollow shaft section far from the mounting portion has a limiting flange matched with the pipeline.

5. The pipeline fixing member according to claim 4, wherein an outer surface of the limiting flange is configured as an inclined surface, and in a direction from the first end of the first hollow shaft section to a second end of the first hollow shaft section close to the mounting portion, the outer surface of the limiting flange slopes toward an axial direction of the first hollow shaft section.

6. The pipeline fixing member according to claim 3, wherein the fixing member body has a second hollow shaft section configured as the second port, the first hollow shaft section is in communication with the second hollow shaft section, and the second hollow shaft section is configured to be plugged in and fitted with the cylinder block.

7. The pipeline fixing member according to claim 6, wherein an included angle is formed between an axis of the first hollow shaft section and an axis of the second hollow shaft section.

8. The pipeline fixing member according to claim 7, wherein the axis of the first hollow shaft section is perpendicular to the axis of the second hollow shaft section.

9. The pipeline fixing member according to claim 6, wherein the mounting portion is disposed in the second hollow shaft section and is integrally formed with the second hollow shaft section.

10. The pipeline fixing member according to claim 9, wherein the mounting portion is disposed on an outer peripheral wall of the second hollow shaft section, the mounting portion has a plurality of mounting holes, and the mounting holes are symmetrical with respect to a central axis of the second hollow shaft section.

11. The pipeline fixing member according to claim 10, wherein the outer peripheral wall of the second hollow shaft section has an annular step structure, and the annular step structure is disposed close to the first hollow shaft section, to form a step surface on the outer peripheral wall of the second hollow shaft section.

12. A vehicle system, comprising: a cylinder block having an assembly hole; a sealing sleeve mounted in the assembly hole; and a pipeline and a pipeline fixing member, the sealing sleeve sleeved over the pipeline fixing member to connect the cylinder block to the pipeline fixing member, and the pipeline mounted to the pipeline fixing member to configure the pipeline fixing member to be in communication with the cylinder block and the pipeline (**30**), wherein the pipeline fixing member comprises: a fixing member body having a mounting portion, a flow channel, a first port, and a second port, the first port and the second port respectively located at both ends of the flow channel, the first port configured to be connected to the pipeline, the second port configured to be in communication with the cylinder block, and the mounting portion connected to the cylinder block.

13. The vehicle system according to claim 12, wherein the first port is configured as a hollow plug-in portion that is plugged in and fitted with the pipeline.

14. The vehicle system according to claim 13, wherein the hollow plug-in portion is a first hollow shaft section, and an outer wall of the first hollow shaft section is configured to be connected to an inner wall of the pipeline.

15. The vehicle system according to claim 14, wherein a first end of the first hollow shaft section far from the mounting portion has a limiting flange matched with the pipeline.

16. The vehicle system according to claim 15, wherein an outer surface of the limiting flange is configured as an inclined surface, and in a direction from the first end of the first hollow shaft

section to a second end of the first hollow shaft section close to the mounting portion, the outer surface of the limiting flange slopes toward an axial direction of the first hollow shaft section.

17. The vehicle system according to claim 14, wherein the fixing member body has a second hollow shaft section configured as the second port, the first hollow shaft section is in communication with the second hollow shaft section, and the second hollow shaft section is configured to be plugged in and fitted with the cylinder block.

18. The vehicle system according to claim 17, wherein an included angle is formed between an axis of the first hollow shaft section and an axis of the second hollow shaft section.

19. The vehicle system according to claim 12, wherein the cylinder block is a cylinder block of a hydraulic brake cylinder.

20. A vehicle, comprising a vehicle system, the vehicle system comprising: a cylinder block having an assembly hole; a sealing sleeve mounted in the assembly hole; and a pipeline and a pipeline fixing member, the sealing sleeve sleeved over the pipeline fixing member to connect the cylinder block to the pipeline fixing member, and the pipeline mounted to the pipeline fixing member to configure the pipeline fixing member to be in communication with the cylinder block and the pipeline (**30**), wherein the pipeline fixing member comprises: a fixing member body having a mounting portion, a flow channel, a first port, and a second port, the first port and the second port respectively located at both ends of the flow channel, the first port configured to be connected to the pipeline, the second port configured to be in communication with the cylinder block, and the mounting portion connected to the cylinder block.