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(54) OUTDOOR UNIT FOR A SPLIT TYPE AIR-CONDITIONER

AUSSENEINHEIT FÜR EINE KLIMAANLAGE MIT GETRENNTEN GERÄTEN

UNITE EXTERNE POUR DES APPAREILS DE CONDITIONNEMENT D'AIR SEPARES

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Description

Technical Field

[0001] The present invention relates to an outdoor unit for a split type air conditioner.

Background Art

[0002] FIG. 3 shows an example of a conventional split type air conditioner.

[0003] An outdoor unit 1 is installed outside a room, and an indoor unit 2 is installed in the room. Then, with a service panel 7 being removed, a liquid refrigerant pipe 3a and gas refrigerant pipe 3b, which run from the indoor unit 2, are connected to operation valves 4a and 4b, respectively, and a control signal line 5 is connected to a terminal 6, by which the outdoor unit and indoor unit are connected to each other.

[0004] In the case where two indoor units 2 are connected to one outdoor unit 1, two liquid-side operation valves 4a to each of which the liquid refrigerant pipe 3a is connected and two gas-side operation valves 4b to each of which the gas refrigerant pipe 3b is connected are fixed to an attaching surface 9a of an operation valve bracket 9 with screws 10, as shown in FIG. 2.

[0005] In the aforementioned conventional air conditioner, when the liquid refrigerant pipe 3a and gas refrigerant pipe 3b are connected to or disconnected from the liquid-side operation valve 4a and gas-side operation valve 4b, respectively, an operation nut for each valve must be turned. However, since the attaching surface 9a of the operation valve bracket 9 is flat, the distance between the operation nut 4c and the attaching surface 9a is short, so that a closed wrench cannot be used.

[0006] Therefore, a monkey wrench or spanner has been used. However, since the turning angle thereof is small, much labor and time are required.

[0007] JP-A-6 074492 discloses an outdoor unit for an air-conditioner. The casing of the outdoor unit is provided with a packed valve for connecting a refrigerant pipe running from an indoor unit. The valve is mounted on an elevated portion of the casing. This document shows the features described in the preamble of claim 1.

Disclosure of the Invention

[0008] The present invention was made to solve the above problem, and an object thereof is to provide an outdoor unit for a split type air conditioner, in which an operation valve bracket with an attaching surface is provided and operation valves to each of which a refrigerant pipe running from an indoor unit is connected are installed on this operation valve bracket, characterized in that a recess for providing a clearance between the operation valve bracket and an operation nut for the operation valve is formed in the attaching surface of the operation valve bracket.

[0009] The outdoor unit for a split type air conditioner is also characterized in that the recess is formed so as to have dimensions such that at least a closed wrench can be inserted.

Brief Description of the Drawings

[0010]

FIG. 1 shows an embodiment of the present invention; FIG. 1(A) is a front view of an operation valve bracket, and FIG. 1(B) is a sectional view taken along the line B-B of FIG. 1(A);
FIG. 2 shows a conventional operation valve bracket; FIG. 2(A) is a front view thereof, and FIG. 2(B) is a view taken in the direction of the arrows along the line B-B of FIG. 2(A); and
FIG. 3 is a perspective view of a conventional split type air conditioner.

Best Mode for Carrying Out the Invention

[0011] An embodiment of the present invention is shown in FIG. 1. FIG. 1(A) is a front view of an operation valve bracket, and FIG. 1(B) is a sectional view taken along the line B-B of FIG. 1(A).

[0012] An operation valve bracket 9 is formed with recesses 20 for providing a clearance between the operation valve bracket 9 and an operation nut 4c at portions corresponding to the operation nut 4c for each liquid-side operation valve 4a and gas-side operation valve 4b.

[0013] It is desirable that this recess 20 have dimensions such that at least a closed wrench can be inserted.

[0014] The configuration except for the recess 20 is the same as the conventional one shown in FIGS. 2 and 3. In FIG. 1, therefore, the same reference numerals are applied to the same elements as those shown in FIGS. 2 and 3, and the explanation of these elements is omitted.

[0015] When a liquid refrigerant pipe 3a and gas refrigerant pipe 3b are connected to or disconnected from the liquid-side operation valve 4a and gas-side operation valve 4b, respectively, an operation nut 4c can be turned by inserting a closed wrench, monkey wrench, spanner, or the like in the recess 20.

[0016] At this time, since the clearance between the operation nut 4c and the bottom surface of the recess 20 is large, a closed wrench can be used. Also, when a monkey wrench or spanner is used, the turning angle can be made large, so that the operation nut 4c can be turned easily and rapidly.

Industrial Applicability

[0017] According to the present invention, since the recess for providing a clearance between the operation valve bracket and the operation nut for operation valve is formed in the operation valve bracket, in the case

where the refrigerant pipe running from the indoor unit is connected to or disconnected from the operation valve, when a monkey wrench or spanner is used, the turning angle thereof can be made large, so that the operation nut can be turned easily and rapidly.

[0018] If the recess is formed so as to have dimensions such that at least a closed wrench can be used, the operation nut can be turned by using a closed wrench.

Claims

1. An outdoor unit (1) for a split type air conditioner, in which an operation valve bracket (9) with an attaching surface is provided and operation valves (4a, 4b) to each of which a refrigerant pipe (3a, 3b) running from an indoor unit (2) is connected are installed on said operation valve bracket (9), **characterized in that** recesses (20) for providing a clearance between said operation valve bracket (9) and an operation nut for each of said operation valves (4a, 4b) is formed in the attaching surface (9a) of said operation valve bracket (9).

2. An outdoor unit for a split type air conditioner according to claim 1, wherein each recess (20) is formed so as to have dimensions such that at least a closed wrench can be inserted.

Patentansprüche

1. Außeneinheit (1) für eine Klimaanlage des geteilten Typs, bei der ein Betätigungsventil-Träger (9) mit einer Befestigungsfläche vorgesehen ist und Betätigungsventile (4a, 4b) auf diesem Betätigungsventil-Träger (9) installiert sind, wobei jedes mit einem Kältemittelrohr (3a, 3b) verbunden ist, das von einer Inneneinheit (2) ausgeht, **dadurch gekennzeichnet, dass** Vertiefungen (20) in der Befestigungsfläche (9a) des Betätigungsventil-Trägers (9) ausgebildet sind, um einen Abstand zwischen dem Betätigungsventil-Träger (9) und einer Betätigungsmutter für jedes der Betätigungsventile (4a, 4b) bereitzustellen.

2. Außeneinheit einer Klimaanlage des geteilten Typs gemäß Anspruch 1, wobei jede Vertiefung (20) so ausgebildet ist, dass sie Ausdehnungen hat, so dass zumindest ein geschlossener Schraubenschlüssel eingeführt werden kann.

Revendications

1. Une unité extérieur (1) pour un climatiseur du type bi-bloc, dans lequel un support (9) de valve de fonctionnement présentant une surface de fixation est prévue et des valves de fonctionnement (4a, 4b) à chacune desquelles est reliée respectivement un tuyau (3a, 3b) du mélange frigorifique venant d'une unité intérieure (2) sont installées sur ledit support (9) de valve de fonctionnement, **caractérisée en ce que** des évidements (20) destinés à créer un dégagement entre ledit support (9) de valve de fonctionnement et un écrou de fonctionnement (9) pour lesdites valves de fonctionnement (4a, 4b) est formé dans la surface de fixation (9a) dudit support de valve de fonctionnement (9).

2. Une unité extérieure pour un climatiseur bi-bloc selon la revendication 1, dans lequel chaque évidement (20) est formé de façon à présenter des dimensions permettant au moins l'insertion d'une clé de serrage fermée.

FIG. 1A

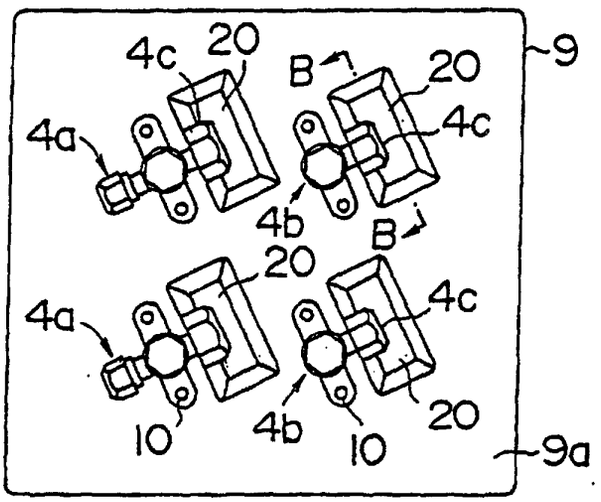


FIG. 1B

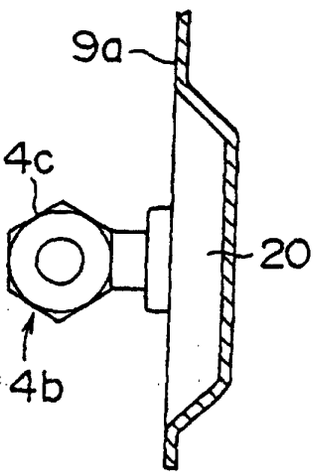


FIG. 2A

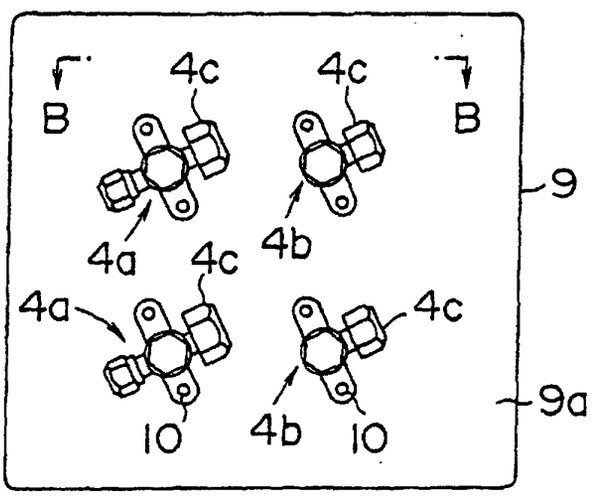


FIG. 2B

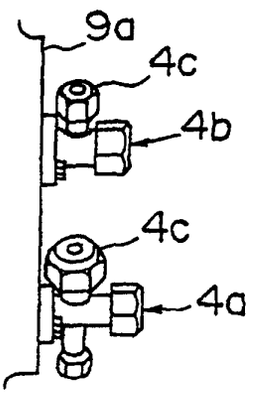


FIG. 3

