

Expansion Valve Kit Installation Sheet

KHFP26M224・330・710
KHFP26M450P (R410A)

■ This kit includes the following parts.

	Existing side (Provided piping)	Expansion valve (stop valve)	Expansion side (Provided piping)	Heat insulating material	Bolt	Tape	Others
KHFP26M224	Liquid pipe 						Installation Sheet
	Gas pipe 					(6 strips of tape)	
KHFP26M330	Liquid pipe 						Installation Sheet
	Gas pipe 				(2 bolts)	(6 strips of tape)	
KHFP26M710	Liquid pipe 						Installation Sheet
	Gas pipe 				(4 bolts)	(10 strips of tape)	
KHFP26M450P	Oil pressure equalizer 						(3 strips of tape)

1 Selection Procedure

■ Refer to the following tables and select the desired expansion valve kit.

Expansion of indoor units

Kit name	Total capacity of connectable indoor units
KHFP26M224	Less than 22.4kW
KHFP26M330	22.4kW or over and less than 33.0kW
KHFP26M710	33.0kW or over and less than 71.0kW

Expansion of outdoor units

Kit name	Connectable outdoor units
KHFP26M330 KHFP26M450P	P224 and 280
KHFP26M710 KHFP26M450P	P335, 400, and 450

CAUTION - The installation of the expansion valve kit may not be always possible due to the diameter restriction of piping. Refer to [Selection Procedure for Expansion of Indoor Units](#) and [Selection Procedure for Expansion of Outdoor Units](#) and check whether it is possible to install the expansion valve kit.
- Connection piping kits for outdoor units are required in the case of expanding outdoor units.
- Refer to appropriate technical documentation and connect the outdoor units in combination.

Selection Procedure for Expansion of Indoor Units

- Refer to the following tables and select the piping diameter according to the capacity of the indoor units to be expanded, and check whether it is possible to install the expansion valve.

Piping between adjacent refrigerant branching kits

● Select the piping from the following table according to the total capacity of the indoor units to be connected downstream. (Unit: mm)

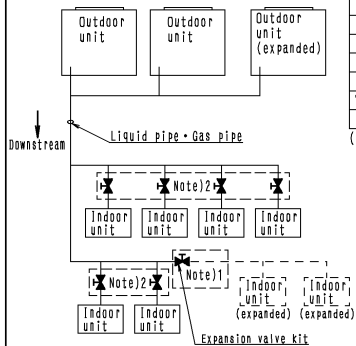
Total capacity of indoor units	Piping size (outside diameter × minimum wall thickness)		Possible installation conditions for expansion valve(※)
	Gas pipe	Liquid pipe	
Less than 22.4kW	φ15.9 × 1.0	φ9.5 × 0.8	The standard piping diameter selected from the total capacity of the indoor units after expansion.
22.4kW or over and less than 33.0kW	φ22.2 × 1.0	φ12.7 × 0.8	
33.0kW or over and less than 47.0kW	φ28.6 × 1.0	φ15.9 × 1.0	
47.0kW or over and less than 71.0kW	φ31.8 × 1.1	φ19.1 × 1.0	
71.0kW or over and less than 104.0kW	φ38.1 × 1.35	φ19.1 × 1.0	

(※) Take an appropriate measure, such as the relocation of the branching position, and select the most suitable piping again if the piping diameter exceeds the standard piping diameter.

Piping between refrigerant branching kit and indoor unit

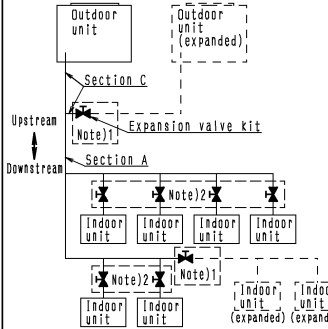
● Select the piping diameter to match the connecting piping size for the indoor units. Connecting piping size for indoor units (Unit: mm)

Capacity of indoor units	Piping size (outside diameter × minimum wall thickness)	
	Gas pipe	Liquid pipe
P22, 28, 36, 45, and 56	φ12.7 × 0.8	φ6.4 × 0.8
P71, 80, 90, 112, 140, and 160	φ15.9 × 1.0	φ9.5 × 0.8
P224	φ19.1 × 1.0	φ12.7 × 0.8
P280	φ22.2 × 1.0	φ12.7 × 0.8
P450	φ28.6 × 1.0	φ12.7 × 0.8

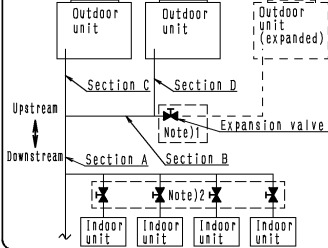


Selection Procedure for Expansion of Outdoor Units

〔 If the number of outdoor units before expansion is 1, 〕



〔 If the number of outdoor units before expansion is 2, 〕



- Refer to the following tables and select the piping diameter according to the capacity of the outdoor units to be expanded, and check whether it is possible to install the expansion valve.

Piping between outdoor unit and refrigerant branching kit (section A)

● Select the piping diameter to match the connecting piping size for the outdoor units. (Unit: mm)

Capacity of outdoor unit	Piping size (outside diameter × minimum wall thickness)		Possible installation conditions for expansion valve
	Gas pipe	Liquid pipe	
P224	φ19.1 × 1.0	φ9.5 × 0.8	The expansion valve can be installed on the condition that neither the liquid pipe diameter nor the gas pipe diameter is more than a size larger than the corresponding standard piping diameter selected from the capacity of the outdoor units before expansion.
P280	φ22.2 × 1.0	φ9.5 × 0.8	
P335・400	φ25.4 × 1.0	φ12.7 × 0.8	
P450	φ28.6 × 1.0	φ15.9 × 1.0	
P504-680	φ28.6 × 1.0	φ15.9 × 1.0	
P730-960	φ31.8 × 1.1	φ19.1 × 1.0	
P1010-1350	φ38.1 × 1.35	φ19.1 × 1.0	

Piping between outdoor branching positions (section B) (Only if the number of outdoor units before expansion is 2.)

● Select the piping from the following table according to the total capacity of the outdoor units to be connected upstream. (Unit: mm)

Total capacity of outdoor unit	Piping size (outside diameter × minimum wall thickness)		Possible installation conditions for expansion valve
	Gas pipe	Liquid pipe	
Less than 71.0kW	φ28.6 × 1.0	φ15.9 × 1.0	The expansion valve can be installed on the condition that the liquid pipe diameter and the gas pipe diameter are within the limits specified below based on the standard diameters for section D. Gas pipe: A size larger (※1) Liquid pipe: A size larger (※2)
71.0kW or over and less than 104.0kW	φ31.8 × 1.1	φ19.1 × 1.0	
104.0kW or over	φ38.1 × 1.35	φ19.1 × 1.0	

(※1) If the gas pipe size is more than a size larger, refrigerant oil will be retained in the gas pipe and a malfunction may result.
(※2) The liquid pipe size can be two sizes larger if the piping length (actually measured piping length) between adjacent outdoor units is not in excess of 3m before expansion. (Liquid pipe only)

Piping between outdoor branching positions and outdoor units (section C and D) (Unit: mm)

Capacity of outdoor unit	Piping size (outside diameter × minimum wall thickness)	
	Gas pipe	Liquid pipe
P224	φ19.1 × 1.0	φ9.5 × 0.8
P280	φ22.2 × 1.0	φ9.5 × 0.8
P335・400	φ25.4 × 1.0	φ12.7 × 0.8
P450	φ28.6 × 1.0	φ12.7 × 0.8

Oil pressure equalizer (Unit: mm)
Piping size (outside diameter × minimum wall thickness) φ6.4 × 0.8

2 Installation Procedure

1 To existing side from expansion valve (stop valve)

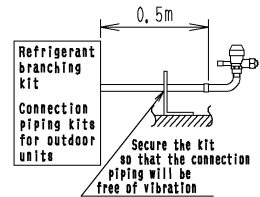
● Perform the brazing of the connection piping determined in Selection Procedure to the stop valve. (If the connection piping and the stop valve are different from each other in size, use the provided reducer (for the existing side).)

2 To expansion side from expansion valve (stop valve)

● Stop valve of flare nut type
● Perform the flare connection of the connection piping determined in Selection Procedure to the stop valve. (If the connection piping and the stop valve are different from each other in size, use the provided piping (for the expansion side).) (Do not use a pipe cutter to cut the provided piping. Instead, remove the brazing part to use the piping.)

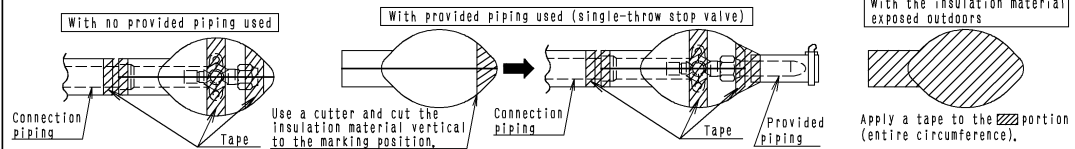
● Stop valve of flange type
● Disconnect the joining flange from the stop valve, connect the provided piping (for the expansion side), and perform the brazing of the connection piping determined in Selection Procedure to the provided piping. (Do not use a pipe cutter to cut the provided piping. Instead, remove the brazing part to use the piping.)

(Note, 1) In the case of using this kit for expansion use, be sure to install the kit within 0.5 m of the refrigerant branching kit and connection piping kits for outdoor units, that the kit is located at the root of the piping route for the indoor and outdoor units to be expanded, and that the stop valve is always closed. If the distance from the refrigerant branching kit and connection piping kits for outdoor units to this kit is more than 0.5 m, refrigerant oil will be retained in the piping, the compressor will run short of oil, and a compressor malfunction may result.
(Note, 2) In the case of using this kit for the installation of indoor units, be sure to install the kit within 0.5 m of the refrigerant branching kit, that the kit is located at the root of the piping route for the indoor units, and that the stop valve is always opened. (A leak test and vacuum drawing on the indoor unit side can be conducted with ease.)



Heat insulation of stop valve and connection piping

● Perform the heat insulation of the stop valve and provided piping. (Perform the heat insulation of the above after completion of piping connections.)
● Attach heat insulation materials to fit the shape of the stop valve. (Heat insulation materials vary in shape according to each stop valve.)
● Apply the provided tape from the center so that there will be no clearance between the mating surfaces of the heat insulation material.
● Apply the provided tape to the seam of heat insulation materials (for the on-site piping).



Precaution - In the case of opening or closing the stop valve after the heat insulation materials are attached, use a cutter and cut the tape along the seam of the heat insulation materials and remove the heat insulation materials. (Attach heat insulation materials with a tape prepared on-site) to restore the original condition after completion of the above work.)