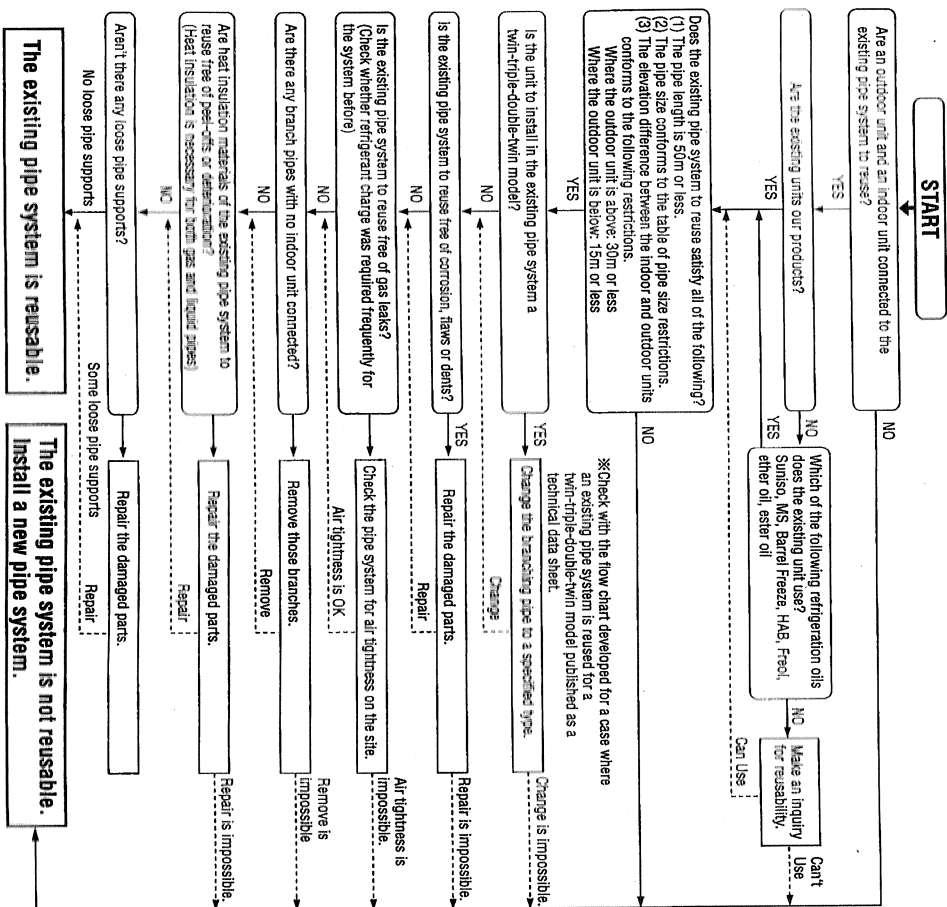


6. UTILIZATION OF EXISTING PIPING.

Check whether an existing pipe system is reusable or not by using the following flow chart.



WARNING <Where the existing unit can be run for a cooling operation.>

Carry out the following steps with the existing unit (in the order of (1), (2), (3) and (4))

- Run the unit for 30 minutes for a cooling operation.
 - Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)
 - Close the liquid side operation valve of the outdoor unit and pump down (refrigerant recovery)
 - Blow with nitrogen gas. * If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.
 - For the flare nut, do not use the old one, but use the one supplied with the outdoor unit.
 - Process a flare to the dimensions specified for R410A.
- Turn on-site setting switch SW5-1 to the ON position. (Where the gas pipe size is φ19.05)

<Where the existing unit cannot be run for a cooling operation.>

- Wash the pipe system or install a new pipe system.
- If you choose to wash the pipe system, contact our distributor in the area.

<Table of pipe size restrictions>

◎:Standard pipe size ○:Usable △:Restricted to shorter pipe length limits
 Cool ↓ : Cooling capacity drop ×:Not usable

Pipe size	Additional charge volume per meter of pipe		
	0.06kg/m	0.12kg/m	0.2kg/m
Liquid pipe	φ9.52 (φ9.52) φ12.7 (φ12.7) φ15.88 (φ15.88)		
Gas pipe	φ22.22 (φ25.4) φ22.22 (φ25.4) φ28.6 (φ28.6) φ22.22 (φ25.4) φ28.6		
200V	Usability	Cool ↓ ◎ (△) Cool ↓ △ *3	△ *3 △ *3 ×
	Maximum one-way pipe length	35 70 35 70 70 24 24 ×	
	Length covered without additional charge	30 30 15 15 15 9 9 ×	
250V	Usability	× × × Cool ↓ ◎	Cool ↓ △ *3 △ *3
	Maximum one-way pipe length	× × × 35 70 70 35 40 40	
	Length covered without additional charge	× × × 30 30 25 18 18 13	

*1 Because of its insufficient pressure resistance, turn the dip switch SW5-1 provided on the outdoor unit board to the ON position for φ19.05 × 11.0.

(In the case of a twin-triple-double-twin model, this also applies to the case where φ19.05 × 11.0 is used in a pipe system after the first branching point.)

*2 When the main pipe length exceeds 40m, a significant capacity drop may be experienced due to pressure loss in the liquid pipe system. Use φ12.7 for the liquid main.

*3 Keep the total pipe length, not one-way pipe length, below the specified maximum pipe length.

● When refrigerant piping is shorter than 3m, reduce refrigerant by 1kg from factory charged volume and dust to 4.4kg (Model 200V) or 6.2kg (Model 250V).

● Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

<Pipe system after the branching pipe> ◎:Standard pipe size ○:Usable ×:Not usable — : Outside of an object

Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

	Liquid pipe		Gas pipe	
	First branch	Second branch	First branch	Second branch
200V	φ9.52 (φ9.52) φ12.7 (φ15.88) φ15.88 (φ15.88)	φ9.52 (φ9.52) φ12.7 (φ15.88) φ15.88 (φ15.88)	φ12.7 (φ15.88) φ15.88 (φ15.88)	φ12.7 (φ15.88) φ15.88 (φ15.88)
250V	Triple	○ *1	○ *1	○ *1
	W-Twin	×	○ *1	○ *1
250V	Twin	×	○ *1	○ *1
	W-Twin	×	○ *1	○ *1

<The model types of existing units of which branching pipes are reusable>

- Models later than Type 8.
- FDC * * * 8 □ □ □
- FDC P * * * 8 □ □ □

The branching pipes used with models other than those listed above are not reusable because of their insufficient pressure resistance. Please use our genuine branching pipes for R410A.

* * * are numbers representing horsepower. □ □ □ is an alphanumeric letter.

Formula to calculate additional charge volume

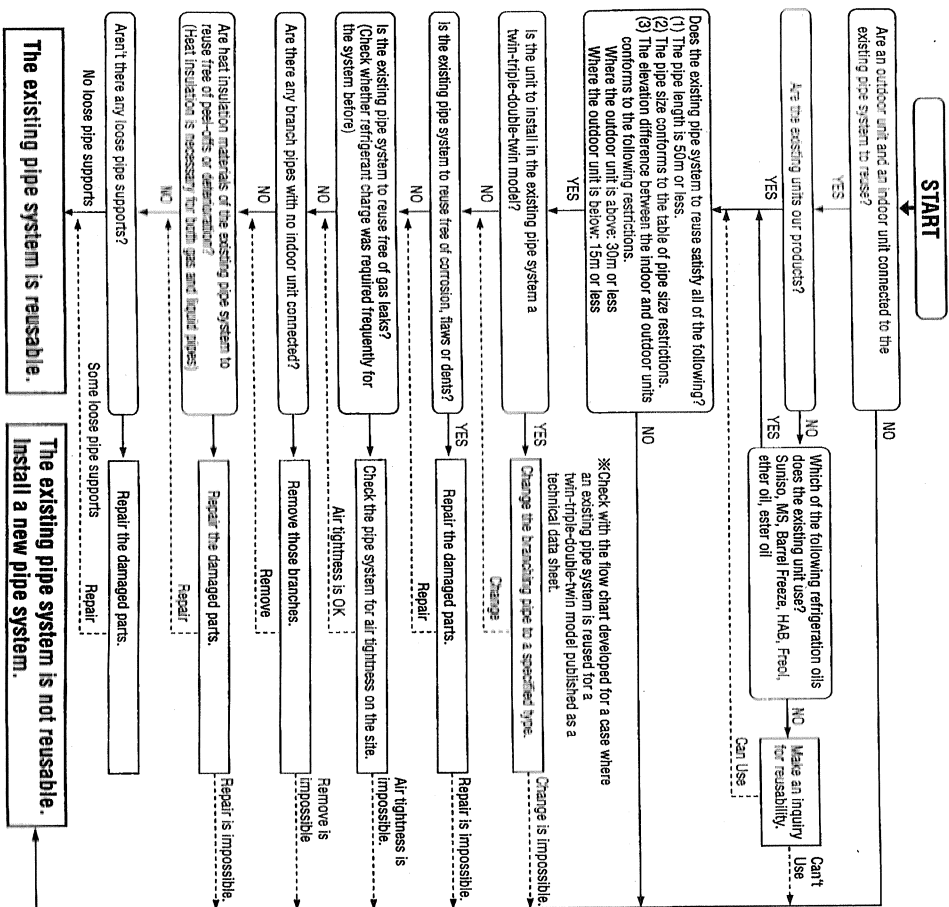
Additional charge volume (kg) = (Main pipe length (m) - Length covered without additional charge shown in the table (m)) × Additional charge volume per meter of pipe shown in the table (kg/m) + Total length of branch pipes (m) × Additional charge volume per meter of pipe shown in the table (kg/m)

* If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged.

Example) When an 250V (twin installation) is installed in a 40m long existing pipe system
 (Main pipe length 30m, liquid φ15.88, gas φ25.4, pipe length after branching pipe 5m × 2, liquid φ9.52, gas φ15.88),
 the quantity of refrigerant to charge additionally should be (30m-18m) × 0.2kg/m + 5m × 2 × 0.06kg/m = 3.0 kg.

6. UTILIZATION OF EXISTING PIPING.

Check whether an existing pipe system is reusable or not by using the following flow chart.



WARNING

<Where the existing unit can be run for a cooling operation.>

- Carry out the following steps with the existing unit (in the order of (1), (2), (3) and (4))
- Run the unit for 30 minutes for a cooling operation.
 - Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)
 - Close the liquid side operation valve of the outdoor unit and pump down (refrigerant recovery)
 - Blow with nitrogen gas. * If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.
 - For the flare nut, do not use the old one, but use the one supplied with the outdoor unit.
 - Process a flare to the dimensions specified for R410A.
- Turn on-site setting switch SW5-1 to the ON position. (Where the gas pipe size is φ19.05)

<Where the existing unit cannot be run for a cooling operation.>

- Wash the pipe system or install a new pipe system.
- If you choose to wash the pipe system, contact our distributor in the area.

<Table of pipe size restrictions>

◎:Standard pipe size ○:Usable △:Restricted to shorter pipe length limits
Cool ↑ : Cooling capacity drop ×:Not usable

Pipe size	Additional charge volume per meter of pipe		
	0.06kg/m	0.12kg/m	0.2kg/m
Liquid pipe	φ9.52 φ9.52 φ12.7 φ12.7 φ15.88 φ15.88 φ15.88		
Gas pipe	φ22.22 φ25.4 φ22.22 φ25.4 φ28.6 φ22.22 φ25.4 φ28.6		
200V	Usability	Cool ↑ ◎△※3	△※3 △※3 ×
	Maximum one-way pipe length	35 70 35 70 70 24 24 ×	
250V	Usability	× × ×	◎ Cool ↓ △※3 △※3
	Maximum one-way pipe length	× × ×	35 70 70 35 40 40
Length covered without additional charge		× × ×	30 30 25 18 18 13

*1 Because of its insufficient pressure resistance, turn the dip switch SW5-1 provided on the outdoor unit board to the ON position for φ19.05 × 11.0.

(In the case of a twin-triple-double-twin model, this also applies to the case where φ19.05 × 11.0 is used in a pipe system after the first branching point.

*2 When the main pipe length exceeds 40m, a significant capacity drop may be experienced due to pressure loss in the liquid pipe system. Use φ12.7 for the liquid main.

*3 Keep the total pipe length, not one-way pipe length, below the specified maximum pipe length.

● When refrigerant piping is shorter than 3m, reduce refrigerant by 1kg from factory charged volume and dust to 4.4kg(Model 200V) or 6.2kg(Model 250V).

● Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

<Pipe system after the branching pipe> ◎:Standard pipe size ○:Usable ×:Not usable — : Outside of an object table or marked with × in the table are not usable.

	Additional charge volume per meter of pipe	
	First branch	Second branch
Liquid pipe	φ9.52 φ9.52 φ9.52 φ9.52 φ9.52 φ9.52	φ12.7 φ15.88 φ12.7 φ15.88 φ15.88 φ15.88
	Gas pipe	φ12.7 φ15.88 φ9.05 φ12.7 φ15.88 φ19.05
200V	Twin	× ◎ ○※1 — — —
	Triple	× ◎ ○※1 — — —
250V	W-Twin	× ◎ ○※1 — — —
	W-Twin	× ◎ ○※1 — — —
250V	W-Twin	× ◎ ○※1 — — —
	W-Twin	× ◎ ○※1 — — —

<The model types of existing units of which branching pipes are reusable>

- Models later than Type 8
- FDC * * * 8 □ □ □
 - FDC P * * * 8 □ □ □
- * * * are numbers representing horsepower. □ □ □ is an alphanumeric letter.
- The branching pipes used with models other than those listed above are not reusable because of their insufficient pressure resistance. Please use our genuine branching pipes for R410A.

Formula to calculate additional charge volume

Additional charge volume (kg) = (Main pipe length (m) - Length covered without additional charge shown in the table (m)) × Additional charge volume per meter of pipe shown in the table (kg/m) + Total length of branch pipes (m) × Additional charge volume per meter of pipe shown in the table (kg/m)

* If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged.

Example) When an 250V (twin installation) is installed in a 40m long existing pipe system (main pipe length 30m, liquid φ15.88, gas φ25.4, pipe length after branching pipe 5m x 2, liquid φ9.52, gas φ15.88), the quantity of refrigerant to charge additionally should be (30m-18m) × 0.2kg/m + 5m x 2 x 0.06kg/m = 3.0 kg.