

## R22 Renewal. Why renewal?

# Unique R22 Renewal from Panasonic: Fast, easy to install and Cost effective

- Panasonic refrigerant oil doesn't react to the most common oil types used in air-conditioning systems. This ensures the mix of oil does not damage the units. Therefore installations are easier.
- All Panasonic PACi units can be installed in R22 pipings, no specific models are available.
- Up to 33 Bar! When there is any doubt about the strength of the piping, the maximum working pressure can be reduced to 33 Bar with a setting in the software of the outdoor unit.

#### An important drive to further reduce the potential damage to our ozone

It is often said that legislation is ruling our lives but sometimes it is there to help save lives. R22 phase out can be described as one of these and from Jan 1st 2010 the use of Virgin (new) R22 refrigerant was banned within the European Community.

## Panasonic are doing our part

We at Panasonic are also doing our part – recognising that all finances are under pressure at the moment. Panasonic has developed a clean and cost effective solution to enable this latest legislation to be introduced with as minimum an effect on businesses and cash reserves as possible.

The Panasonic renewal system allows good quality existing R22 pipe work to be re-used whilst installing new high efficiency R410A systems.

By bringing a simple solution to the problem Panasonic can renew all Split Systems and PACi systems; and depending upon certain restrictions we don't even limit the manufacturer's equipment we are replacing.

By installing a new high efficiency Panasonic R410A system you can benefit from around 30% running cost saving compared to the R22 system.

### Yes...

- 1. Check the capacity of the system you wish to replace
- Select from the Panasonic range the best system to replace it with
  Follow the procedure detailed in the brochure and technical data
  Simple...

## Reuse of existing piping (Renewal Design & Installation)

#### Notes on reuse of existing refrigerant piping

It is possible for each series of PE1 type and PEY1 type outdoor unit to reuse the existing refrigerant piping without cleaning when obtained under certain conditions.. Make sure that the requirements under the section "Notes on reuse of existing refrigerant piping", "Measurement procedure for renewal" and "Refrigerant piping size and allowable piping length" will be satisfied in order to carry out.

Also, check the items with regard to section "Safety" and "Cleaning".

#### 1. Prerequisite

- If the refrigerant used for the existing unit is other than R22, R407C and R410A, the existing refrigerant piping cannot be used.
- If the existing unit has another use than air conditioning, then existing refrigerant piping cannot be used.

#### 2. Safety

- If there is a hollow, crack or corrosion on the piping, make sure to install new piping.
- If the existing piping is other than capable of reuse of piping as shown in the flowchart, make sure to install new piping.
- In case of multiple operation type, use our genuine branch piping for refrigerant R410A.

A local supplier shall assume responsibility for the defects and hollows on the reuse of existing piping surface and recognition of reliability of the piping strength. There is no guarantee that we take responsibility for such damages. The operational pressure of the refrigerant R410A becomes higher compared to R22. In the worst case, a lack of compressive strength may lead to piping explosion.

#### 3. Cleaning

• When the refrigerant oil used for the existing unit is other than the listed below, make sure to install new piping or wash it thoroughly before reusing it. [Mineral Oil] SUNISO, FIORE S, MS

[Synthesized oil] alkyl benzene oil (HAB, parallel freeze), ester oil, ether oil (PVE only)

If the existing unit is GHP type, it is necessary to wash the piping thoroughly.

- If the existing pipes in the outdoor and indoor units remain disconnected, make sure to install a new piping or wash it thoroughly before reusing it.
- If the discoloured oil or residue remains in the existing piping, make sure to install a new piping or wash it thoroughly before reusing it. See "Deterioration Criteria for Refrigerant Oil" in table 3.
- If the compressor of the existing air conditioner has a failure history, make sure to install a new piping or wash it through thoroughly before reusing it.

When reusing the existing piping as it is without removing dirt and dust, inadequate piping could result a renewal appliance in failure.

R22 - The reduction of Chlorine critical for a cleaner future

## Notes on renewal for simultaneous operation of multiple units

Only main pipe is applicable for using the different diameter size. In case of different diameter size for the branch pipes, a new installation work for a standard size is necessary.

Be sure to use our genuine branch piping for refrigerant R410A.



Notes on Renewal for Simultaneous Operation of Multiple Units							
Capacity class	Standard liquid pipe size	Standard gas pipe size					
Туре 50	Ø 6,35	Ø 12,7					
Type from 60 to 140	Ø 9,52	Ø 15,88					
Туре 200	Ø 9,52	Ø 25,4					
Туре 250	Ø 12,7						

- Only the main pipe L can be used among different diameter's existing piping.
- Installation work as a standard size is capable for L1, L2, L1 L4 piping.
- Be sure to use our genuine branch piping for refrigerant R410A.

#### 1. In case of single unit

It is not necessary to charge with additional refrigerant until the chargeless pipe length in the table 2.

If the pipe length is exceeding the charge less pipe length, charge with additional refrigerant amount per 1 m according to the equivalent length.

#### 2. In case of simultaneous operation of multiple units

Calculate the refrigerant charging amount according to the calculating method of the standard piping diameter.

As to the additional refrigerant charging amount per 1 m, refer to the additional amount in the table 2.

## **Measurement Procedure for Renewal**

Observe the following procedure when reusing the existing piping or carrying out renewal installation work. Flowchart of Existing Piping Measures Criteria for PE1 Type and PEY1 Type Outdoor Unit



# R22 Renewal

## Refrigerant piping size and allowable piping length

Check if reuse of existing refrigerant piping is possible based on the following chart.

The standards other than this one (difference of elevation, etc.) are identical to the requirements of ordinary refrigerant piping.

Table 1 Reusable existing piping (mm)									
Material	0				1/2 H, H*				
External diameter	Ø 6.35	Ø 9.52	Ø 12.7	Ø 15.88	Ø 19.05	Ø 22.22	Ø 25.4	Ø 28.58	
Thickness	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	

\* It is impossible to reuse the size of Ø 19.05, Ø 22.22, Ø 25.4 and Ø 28.58 for material O. Change to material 1/2H or material H.

Table 2 - 1 Refi	rigerant piping size:	3.6 - 14.0 kW typ	e (mm)							
Liquid pipe Ø 6.35			Ø 9.52		Ø 12.7	Ø 12.7				
Gas pipe		Ø 9.52	Ø 12.7	Ø 15.88	Ø 12.7	Ø 15.88	Ø 19.05	Ø 15.88	Ø 19.05	
PE	Type 50	×	Standard 40 m (30 m)	© 40 m (30 m)	□ 20 m (15 m)	□ 20 m (15 m)	×	×	×	
PEY	Туре 60 Туре 71	×	∨ 10 m (10 m)	10 m (10 m)	∑ 30 m (20 m)	Standard 50 m (20 m)	×	25 m (10 m)	×	
Additional refrigerant charging amount per 1 m		20 g/m			40 g/m	40 g/m			80 g/m	
PE	Туре 60 Туре 71	×	∇ 10 m (10 m)	□ 10 m (10 m)	∑ 30 m (30 m)	Standard 50 m (30 m)	×	□ 25 m (15 m)	×	
	Type 100 Type 125 Type 140	×	×	×	×	Standard 75 m (30 m)	⊘ 75 m (30 m)	□ 35 m (15 m)	□ 35 m (15 m)	
PEY	Type 100 Type 125 Type 140	×	×	×	×	Standard 50 m (30 m)	© 50 m (30 m)	□ 25 m (15 m)	□ 25 m (15 m)	
Additional refrigerant charging amount per 1 m		20 g/m			50 g/m	50 g/m			80 g/m	

How to see table definition (example):

In case of type 71, standard size is liquid pipe Ø 9.52 / gas pipe Ø 15.88.

There is a limitation to liquid pipe  $\emptyset$  9.52 / gas pipe  $\emptyset$  12.7and to liquid pipe  $\emptyset$  12.7 / gas pipe  $\emptyset$  15.88.

However, they are applicable for different diameter's pipes.

Table 2 - 2 Refrige	erant piping size: 2	0.0 - 25.0 kW type (r	nm)							
Liquid pipe		Ø 9.52			Ø 12.7			Ø 15.88		
Gas pipe		Ø 22.22	Ø 25.4	Ø 28.58	Ø 22.22	Ø 25.4	Ø 28.58	Ø 22.22	Ø 25.4	Ø 28.58
PE	Type 200	∇ 80 m (30 m)	Standard 100 m (30 m)	© 100 m (30 m)	▽ 50 m (15 m)	50 m (15 m)	50 m (15 m)	×	×	×
	Туре 250	×	×	×	∇ 80 m (30 m)	Standard 100 m (30 m)	© 100 m (30 m)	∇ 65 m (20 m)	65 m (20 m)	65 m (20 m)
Additional refrigerant charging amount per 1 m		40 g/m			80 g/m			120 g/m		

O Allowable

✓ Cooling capacity down

Limited piping length

× Unallowable

50 m Maximum piping length

(50 m) Charge less piping length in a single connection

#### Table 3 Deterioration Criteria for Refrigerant Oil

