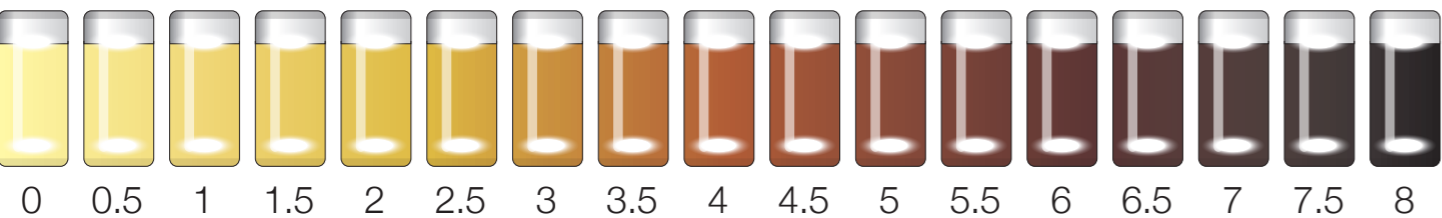


- Check the oil condition – if the oil contains dirt, wash the existing pipes.
- Check the colour of the oil – after pump down, use a cotton bud to wipe the oil from the existing pipe. If the colour is higher than ASTM3, use a new pipe as re-use of old piping is not allowed.



Oil colour scale for utilising exiting pipework for domestic/ Etherea range (table 1).

- Check pipe thickness – make sure that the pipe is more than 0.8mm. If the thickness is less than 0.8mm, use new pipe.
- Rework the flare for R140A connection. Do not reuse old flare nuts.

- Make sure to use the new flare nuts attached to R410A system.

*\*NOTE: If the existing piping size is 1/4" (6.5mm) and 1/2" (12.7mm), and the new R410a system is 1/4" and 3/8" (9.52mm), use a pipe reducer connected at indoor and outdoor unit.*

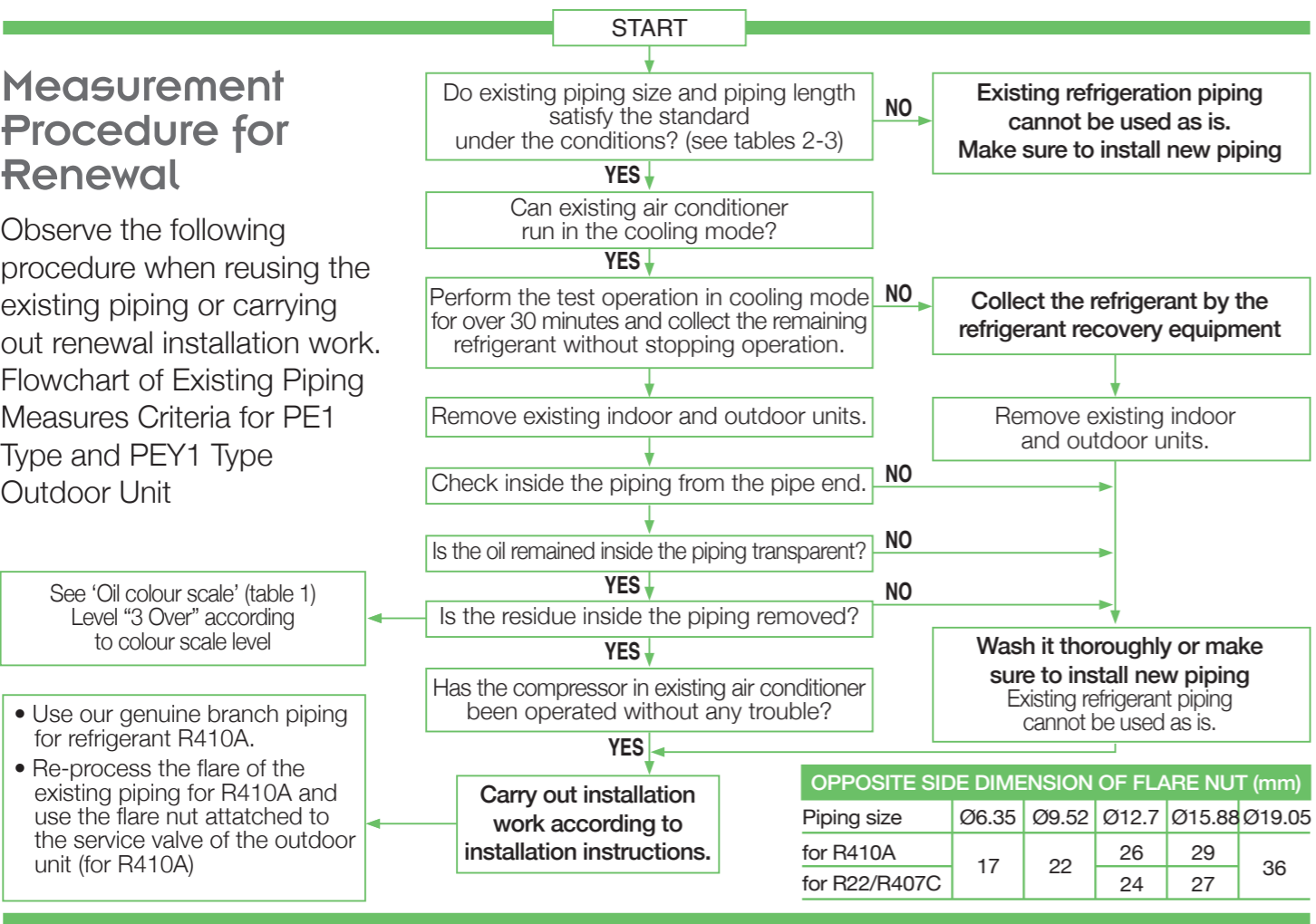
### 3. Applicable Model

Panasonic single split room air conditioner from CU/CU-RE/VE/YE/XE/CE/NE/E\*NKE and PKE series onwards.

Panasonic multi split room air conditioner from CU-2E/3E/4E/5PBE series onwards.

## 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



- Use our genuine branch piping for refrigerant R410A.
- Re-process the flare of the existing piping for R410A and use the flare nut attached to the service valve of the outdoor unit (for R410A)

### OPPOSITE SIDE DIMENSION OF FLARE NUT (mm)

Piping size	Ø6.35	Ø9.52	Ø12.7	Ø15.88	Ø19.05
for R410A			26	29	
for R22/R407C	17	22	24	27	36

# LOGICCOOL

Specialist Air Conditioning Distributor

This document has been prepared by Logicoool Air Conditioning Distribution Limited and is based on the following information

- Existing Panasonic recommendations for re-using existing R22 or R407C pipework when replacing with a replacement R410a system.
- Pipe size limitations when installing onto existing systems
- Standard industry guidelines for retrofits.

*(Please note that this document details separate guidance for both Domestic and Commercial systems and care should be taken to ensure that the correct guidance is followed).*



# PAC-i STANDARD PAC-i ELITE Technical Bulletin

**Panasonic**  
heating and cooling systems

Possible to use on R22 pipings R22 RENEWAL

## COMMERCIAL (PAC-i) RANGE GUIDANCE

New Panasonic PAC-i commercial condensing units launched 2013 with improved SEER's and greater system flexibility can also be used with different pipe sizes to those advertised.

If utilising existing pipe-work, the recommendations and notes below should be observed.

The new commercial PAC-i Elite and PAC-i Standard systems are compatible with those installations that have been operating with R22 or R407C. Re-using existing pipework will not affect warranty but guidelines and good industry practice must be followed.

This allows installing the commercial Panasonic Elite/Standard Outdoor Units, which operate with R410A, without having to change the piping installation.

The existing pipe-work needs to be clean, devoid of any contaminants and have traces of mineral oil lower than 3% of previous system capacity. Ensure that the system is run in test cooling for one hour to recover as much oil from the indoor unit and pipework as possible. It is also advised that the system is pressure tested to manufacturers' recommendations and a triple vacuum.

Please use the charts listed on the reverse of this leaflet to ensure that the pipe sizes and pipe lengths you are using are allowable for your project.

**STOP PRESS**  
Manufacturers are now starting to phase out all R22 spares  
**SEE INSIDE FOR DETAILS**

Panasonic PAC-I Standard (Commercial) Inverter Models *(table 2)*

Model	Liquid Gas	1/4"				3/8"				1/2"			
		3/8"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	7/8"	5/8"	3/4"	7/8"	1 1/8"
U-60PEY1E5			10	10		30	50						
U-71PEY1E5			10	10		30	50			25			
U-100PEY1E5							50	50		25	25		
U-125PEY1E5							50	50		25	25		
U-140PEY1E5							50	50		25	25		
U-100PEY1E8							50	50		25	25		
U-125PEY1E8							50	50		25	25		
U-140PEY1E8							50	50		25	25		

(area in bold is nominal pipe sizing)

Key

- Cooling capacity reduced
- Additional refrigerant charge of 20g/m if pipe run is over 30 metres
- Additional refrigerant charge of 40g/m if pipe run is over 15 metres
- Additional refrigerant charge of 50g/m if pipe run is over 30 metres
- Additional refrigerant charge of 40g/m if pipe run is over 20 metres
- Additional refrigerant charge of 80g/m if pipe run is over 10 metres
- Additional refrigerant charge of 80g/m if pipe run is over 15 metres

Additional Notes

- Remove P-Traps from existing pipework.
- Do not re-use existing pipework if there is evidence of previous compressor changes or burnt out driers present.
- Do not use Solvent based cleaners if flushing the system
- For twin and triple systems only the main pipe can be re-used and an official distribution pipe should be installed. Please contact Logicool to check the criteria.

Panasonic PAC-I Elite (Commercial) Inverter Models *(table 3)*

Model	Liquid Gas	1/4"				3/8"					1/2"				5/8"	
		3/8"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	7/8"	1 1/8"	5/8"	3/4"	7/8"	1 1/8"	7/8"	1 1/8"
U-50PEY1E5			40	40		20	20									
U-60PEY1E5			10	10		30	50									
U-71PEY1E/8			10	10		30	50				25					
U-100PEY1E/8							75	75			35	35				
U-125PEY1E/8							75	75			35	35				
U-140PEY1E/8							75	75			35	35				
U-200PEY1E8									80	100			50	50		
U-250PEY1E8													80	100	65	65

(area in bold is nominal pipe sizing)

DOMESTIC (RAC) RANGE  
GUIDANCE

REPLACING R22

Panasonic has developed a clean and cost effective solution to enable this latest legislation to be introduced with as minimum 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 domestic systems; 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 savings compared to the R22 system.

- 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 steps below and technical data.

Guidance on re-using of existing R22 piping for a new R410A installation

1. Precaution

The R22 piping can be re-used for a R410A system installation if the following conditions are met and the piping are finally verified to be:

- Dry (no moisture remaining in the piping)
- Clean (no dust remaining in the piping)
- Tight (no refrigerant leak at the joining and piping)

2. Conditions

- Recover the refrigerant and oil
- Operate "Force Cooling" according to the recommended operation time, regardless of the piping length. (Single Split 10min / Multi Split 30min.)
- After that, carry out "Pump Down" to recover the refrigerant and oil from the existing R22 system.

\*NOTE: If pump down operation is not possible due to the malfunction of the system, flush and wash the existing piping to collect back the oil and dirt from the system.

STOP PRESS

Manufacturers are now starting to phase out all R22 spares. At the time of writing, many manufacturers still offer critical spares but we have been advised that production of these items is likely to cease in 2014. This particularly applies to compressors. Once a replacement compressor has been made unavailable then the existing system becomes irreparable,

Most importantly, these compressors are designed for use with R22, not for a "drop in" refrigerant. Therefore the use of any "drop-in" negates any compressor warranty. This will have a significant impact in January 2015 as it will be expected that any R22 replacement compressor sold into the market as of this date will be used with a refrigerant other than R22 and therefore will carry no warranty. There are thousands of systems still running on R22. Logicool staff expect replacement systems rather than repairs to be a significant subject of discussion in early 2016 as many end-users have not prepared for the HFC phase out. Please contact Logicool if you need any help or advice as we have many calculation and marketing tools that will help you assist your customer with an unexpected and expensive purchase.