



Air conditioners

Heating & Cooling

VRV III-Q

Replacement VRV

- » **Cost effective upgrade for R-22 systems**
- » **High efficiency**
- » **Possibility to increase capacity**
- » **Limited and planned downtime**
- » **Limited and phased investment cost**



RQYQ-P
RQCEQ-P



www.daikin.eu



Includes replacement technology

VRV8-Q - Replacement VRV

The Daikin Solution to R-22 Phase Out

Due to significant developments in heat pump technology, today's air conditioning systems, running on R-410A refrigerant, offer better performances than R-22 and R-407C systems did in the past. Furthermore, R-22 will be soon unavailable in Europe. Already today, only reclaimed or recycled R-22 can be used for servicing. To upgrade R-22 and R-407C systems as cost effectively as possible, Daikin units can be installed using existing pipe work. Replacement technology is available for residential and commercial applications in the following ranges:

- > Split
- > Sky Air
- > VRV

Plan your system replacement now!

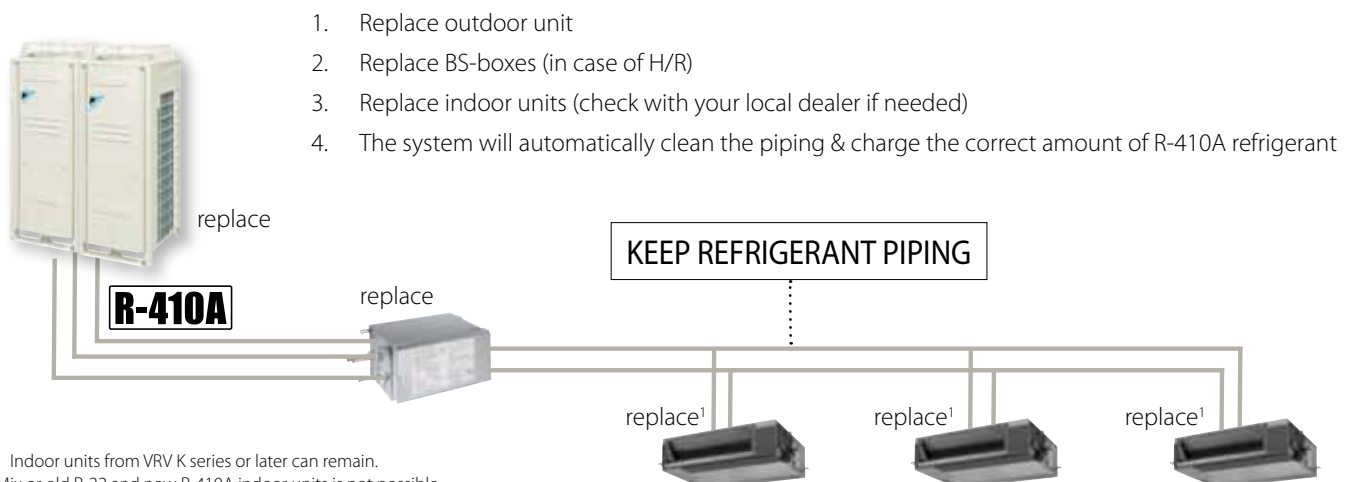
The R-22 phase-out regulation will impact on all currently operating R-22 systems, although reliable R-22 equipment does not need to be replaced immediately because maintenance can be carried out with recycled or reclaimed R-22 until January 1st, 2015. However, currently not enough R-22 is reclaimed or recycled to cover the

demand, supply shortages and price increases are expected. If there is no reclaimed or recycled R-22 available, certain repairs (for example: compressor change) are no longer possible and considerable air conditioning system downtime can occur.

It is therefore worthwhile to consider a replacement system before 2015, especially for air conditioning systems with a large impact on the daily running of the business.

Low cost refurbishment

Replace your R-22 / R-407C outdoor unit with R-410A technology, but keep your refrigerant piping and in some cases your indoor units¹. In case your indoor units can remain, works only need to be carried out at the outdoor unit and not inside your building (in case of a heat pump installation).



¹ Indoor units from VRV K series or later can remain. Mix of old R-22 and new R-410A indoor units is not possible.

Features of VRVIII-Q

Fast Installation

It is not necessary to remove the existing piping and even the indoor units can remain (depending on type of indoor unit). This means work only has to be carried out at the outdoor unit and not inside your building in case of a heat pump installation. The outdoor unit automatically charges the refrigerant and cleans the refrigerant piping. This unique Daikin feature makes the installation time even shorter.

No Limitations on System History

As a result of the combined automatic charging and refrigerant pipe cleaning function, it is possible to ensure a clean piping network, even when a compressor breakdown has previously occurred.

In this way all correct installed R-22 and R-407C VRV and competitor VRF systems can be replaced.

Limited and Planned-Downtime

As the refrigerant piping can be maintained the installation is less intrusive and less time consuming than for a completely new system. Moreover, downtime can be carefully planned: whereas if a problem occurs when not enough reclaimed R-22 is available, a long and unplanned downtime can be the result.

Limited and Phased Investment Cost

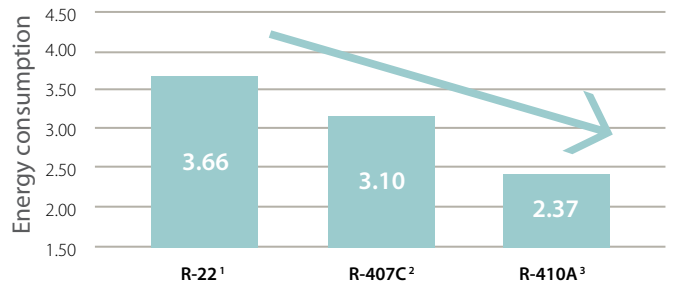
It is possible to spread the various stages of replacement over a certain period of time because the indoor units can remain in most cases. The air conditioning replacement therefore, can be incorporated in the general refurbishment schedule of the building and the investment cost can be spread. A further reduction in installation cost can be achieved by maintaining the old refrigerant copper pipe work.

High Efficiency

Upgrading an old R-22 system to a Replacement VRV system will result in increased system efficiency. Efficiency gains of more than 40% in cooling can be realized, by virtue of technological developments in current heat pump technology and the more efficient R-410A refrigerant. Increased energy efficiency equals lower energy consumption, subsequent lower energy costs and lower CO₂ emissions.

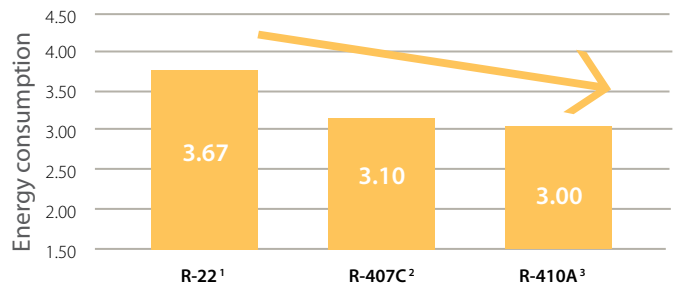
35% less consumption in cooling mode

Energy use of a 10HP system in cooling



18% less consumption in heating mode

Energy use of a 10HP system in heating



¹ R-22: RSXY-KA7
² R-407C: RSXYP-L7
³ R-410A: RQYQ-P

COP/EER comparison

System (HP)	8		10	
	EER	COP	EER	COP
RQYQ-P(R-410A)	4.27	3.89	2.37	3.00
RSXYP-L7(R-407C)	3.10	3.14	3.10	3.10
RSXY-KA7(R-22)	2.37	2.95	3.66	3.67



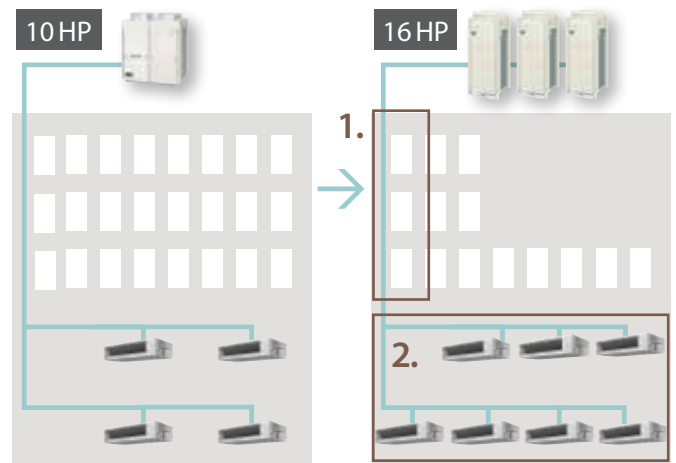
Zero ozone depleting

R-410A not only has a zero ozone depletion potential, it is also proven to be more energy efficient than R-22.

Possibility to Increase Capacity

Cooling loads often increase after to the initial installation of the air conditioning system. The Replacement VRV (VRV VIII-Q) enables system capacity to be increased without changing the refrigerant piping (depending on system characteristics).

For example: It is possible to install a 16 HP Replacement VRV on the refrigerant piping of an R-22 10 HP system.

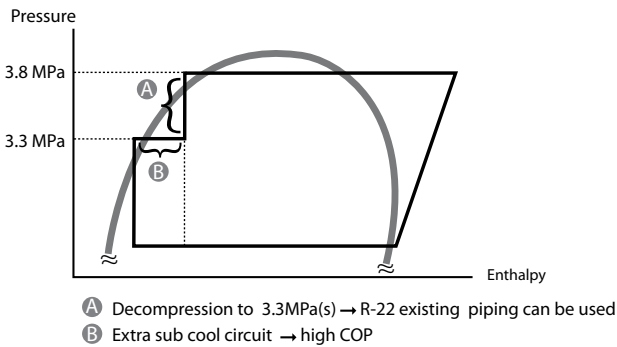


1. Keep main piping
2. Install indoor units with a higher total capacity

Technologies of VRVIII-Q

Reduced Pressure

Older R22 VRV systems work on a lower pressure than today's R-410A systems. However thanks to the sub cool circuit, VRV-Q is capable of operating at lower pressures than the standard VRV series, while still maintaining high efficiency levels.

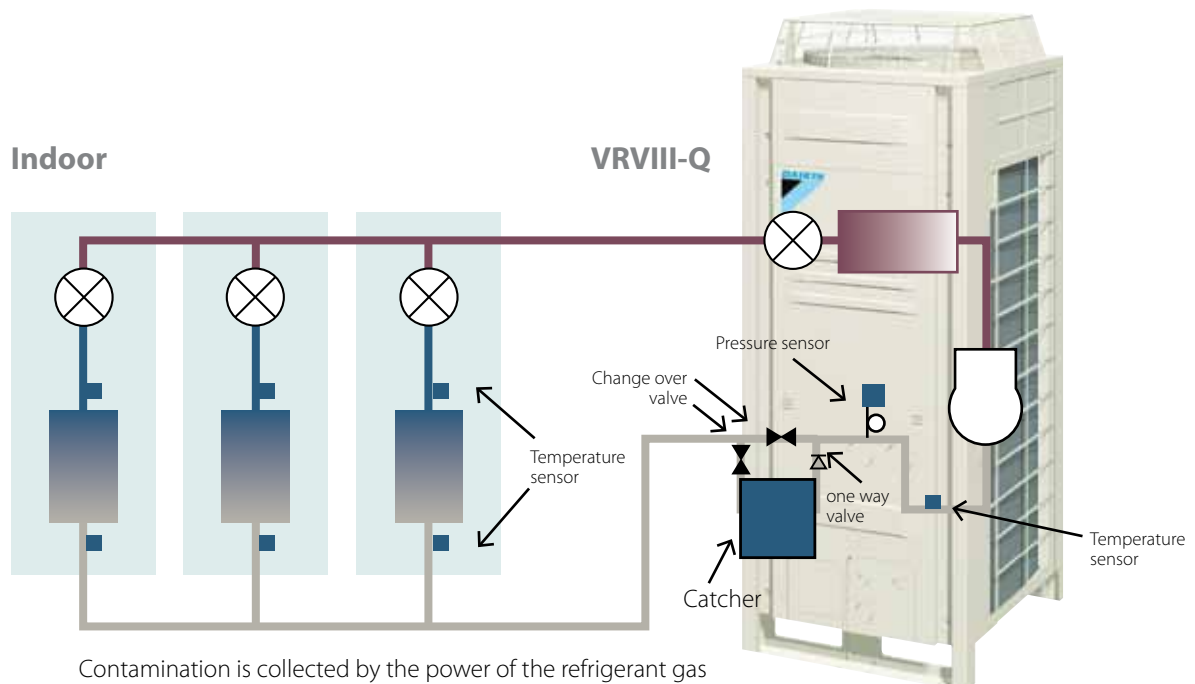


Refrigerant Pipe Cleaning

When replacing an air conditioning system, the piping is normally replaced as well since traces of old refrigerant and oil mixed with the oil and refrigerant of the new system can cause the equipment to malfunction.

In order to allow re-use of existing R-22 piping with an R-410A system Daikin developed a technology to capture and retain the contamination left in the refrigerant piping. During the charging of the system, R-410A refrigerant starts circulating through the copper piping collecting the contamination left in the refrigerant piping.

The refrigerant including the remaining oil from the R-22 system is filtered in the outdoor unit and the contamination is deposited in the outdoor unit. This process is executed only once and takes about 1 hour (depending on system characteristics). Daikin is the first manufacturer in the industry to develop this combination of automatic charging and refrigerant pipe cleaning function.



Heating & Cooling

OUTDOOR UNIT				RQYQ140P	RQYQ8P	RQYQ10P	RQYQ12P	RQYQ14P	RQYQ16P
Capacity range			HP	5	8	10	12	14	16
Cooling capacity	Nom.		kW	14.0	22.4	28.0	33.5	40.0	45.0
Heating capacity	Nom.		kW	16.0	25.0	31.5	37.5	45.0	50.0
Power input - 50Hz	Cooling	Nom.	kW	3.36	5.24	7.64	10.10	11.6	13.6
	Heating	Nom.	kW	3.91	6.42	8.59	10.20	12.2	13.6
EER				4.17	4.27	3.66	3.32	3.45	3.31
COP				4.09	3.89	3.67	3.68	3.69	3.68
Maximum number of connectable indoor units				10	17	21	26	30	34
Indoor index connection	Min.			62.5	100	125	150	175	200
	Nom.			125	200	250	300	350	400
	Max.			162.5	260	325	390	455	520
Dimensions	Unit	HeightxWidthxDepth	mm	1,680x635x765			1,680x930x765		
Weight	Unit		kg	175	230	284		381	
Sound pressure level	Cooling	Nom.		dBA	54.0	57.0	58.0		60.0
Operation range	Cooling	Min.~Max.		°CDB	-5~43				
	Heating	Min.~Max.		°CWB	-20~15.5				
Refrigerant	Type			R-410A					
Piping connections	Liquid	OD		mm	9.52			12.7	
	Gas	OD		mm	15.9	19.1	22.2	28.6	
	Piping length	OU - IU	Max.	m	150				
	Total piping length	System	Actual	m	300				
	Level difference	OU - IU		m	50 (outdoor unit in highest position) / 40 (indoor unit in highest position)				
Power supply	Phase/Frequency/Voltage			Hz/V 3~/50/380-415					
Current - 50Hz	Maximum fuse amps (MFA)			A	15	25		35	

OUTDOOR SYSTEM				RQYQ18P	RQYQ20P	RQYQ22P	RQYQ24P	RQYQ26P	RQYQ28P	RQYQ30P	RQYQ32P
System	Outdoor unit module 1			RQYQ8P		RQYQ10P	RQYQ12P	RQYQ10P	RQYQ12P	RQYQ14P	RQYQ16P
	Outdoor unit module 2			RQYQ10P	RQYQ12P		RQYQ16P				
Capacity range			HP	18	20	22	24	26	28	30	32
Cooling capacity	Nom.		kW	50.4	55.9	61.5	67.0	73.0	78.5	85.0	90.0
Heating capacity	Nom.		kW	56.5	62.5	69.0	75.0	81.5	87.5	95.0	100
Power input - 50Hz	Cooling	Nom.	kW	12.9	15.4	17.8	20.2	21.3	23.7	25.2	27.2
	Heating	Nom.	kW	15.1	16.7	18.8	20.4	22.2	23.8	25.8	27.2
EER				3.91	3.63	3.46	3.32	3.43	3.31	3.37	3.31
COP				3.74		3.67	3.68	3.67	3.68		
Maximum number of connectable indoor units				39	43	47	52	56	60	64	
Sound pressure level	Cooling	Nom.		dBA	61	62	63		64		
Piping connections	Liquid	OD		mm	15.9			19.1			
	Gas	OD		mm	28.6		34.9				
	Piping length	OU - IU	Max.	m	150						
	Total piping length	System	Actual	m	300						
	Level difference	OU - IU		m	50 (outdoor unit in highest position) / 40 (indoor unit in highest position)						
Current - 50Hz	Maximum fuse amps (MFA)			A	45	50		60	70		

OUTDOOR SYSTEM				RQYQ34P	RQYQ36P	RQYQ38P	RQYQ40P	RQYQ42P	RQYQ44P	RQYQ46P	RQYQ48P
System	Outdoor unit module 1			RQYQ10P		RQYQ12P	RQYQ10P	RQYQ12P	RQYQ14P	RQYQ16P	
	Outdoor unit module 2			RQYQ10P		RQYQ12P		RQYQ16P			
	Outdoor unit module 3			RQYQ14P	RQYQ16P						
Capacity range			HP	34	36	38	40	42	44	46	48
Cooling capacity	Nom.		kW	96.0	101	107	112	118	124	130	135
Heating capacity	Nom.		kW	108	113	119	125	132	138	145	150
Power input - 50Hz	Cooling	Nom.	kW	26.9	28.9	31.4	33.8	34.9	35.3	38.8	40.8
	Heating	Nom.	kW	29.4	30.8	32.4	34.0	35.8	36.0	39.4	40.8
EER				3.57	3.49	3.41	3.31	3.38	3.51	3.35	3.31
COP				3.67		3.68	3.69	3.83	3.68		
Maximum number of connectable indoor units				64			64				
Sound pressure level	Cooling	Nom.		dBA	64		65				
Piping connections	Liquid	OD		mm	19.1						
	Gas	OD		mm	34.9	41.3					
	Piping length	OU - IU	Max.	m	150						
	Total piping length	System	Actual	m	300						
	Level difference	OU - IU		m	50 (outdoor unit in highest position) / 40 (indoor unit in highest position)						
Current - 50Hz	Maximum fuse amps (MFA)			A	90		100		110		

Accessories

	RQYQ 140	RQYQ 8~12	RQYQ 14~16	2-module systems	3-module systems
Multi-module connection kit (obligatory) Connects multiple modules into a single refrigerant system	-	-	-	BHFQ22P1007	BHFQ22P1517
Central drain pan kit Installs onto the underside of the outdoor unit and collects drain water from all bottom plate outlets into a single outlet. In cold areas should be heated by a field-supplied heater to prevent drain water from freezing in the drain pan.	KWC26B160	KWC26B280	KWC26B450	1 kit per module	1 kit per module
External control adaptor for outdoor unit Allows to activate Low Noise Operation and three levels of Demand Limiting via external dry contacts. Connects to the F1/F2 communication line and requires power supply from an indoor unit*, BSVQ box, or VRV-WIII outdoor unit.	DTA104A53/61/62				
BHGP26A1 Digital pressure gauge kit – displays current condensing and evaporating pressures in the system as standard, or expansion valve positions and temperature sensor data in a special service mode. Connect to the outdoor unit PCB, for installation in the outdoor unit.	✓	✓	✓	1 kit per system	1 kit per system
KRC19-26 Mechanical cool/heat selector – allows to switch an entire Heat Pump system, or one BS-box of a Heat Recovery system between cooling, heating and fan only. Connects to the A-B-C terminals of the outdoor unit / BS-box.	✓	✓	✓	1 kit per system	1 kit per system
KJB111A Installation box for remote cool/heat selector KRC19-26	✓	✓	✓	1 kit per system	1 kit per system

Heat Recovery

OUTDOOR SYSTEM				RQCEQ280P	RQCEQ360P	RQCEQ460P	RQCEQ500P	RQCEQ540P	RQCEQ636P	RQCEQ712P	RQCEQ744P	RQCEQ816P	RQCEQ848P	
System	Outdoor unit module 1			RQEQ140P	RQEQ180P	RQEQ140P		RQEQ180P	RQEQ212P	RQEQ140P		RQEQ180P	RQEQ212P	
	Outdoor unit module 2			RQEQ140P	RQEQ180P	RQEQ140P	RQEQ180P		RQEQ212P	RQEQ180P		RQEQ212P		
	Outdoor unit module 3			RQEQ180P					RQEQ212P	RQEQ180P	RQEQ212P			
	Outdoor unit module 4			RQEQ212P										
Capacity range		HP	10	13	16	18	20	22	24	26	28	30		
Cooling capacity	Nom.	kW	28.0	36.0	45.0	50.0	54.0	63.6	71.2	74.4	81.6	84.8		
Heating capacity	Nom.	kW	32.0	40.0	52.0	56.0	60.0	67.2	78.4	80.8	87.2	89.6		
Power input - 50Hz	Cooling	Nom.	kW	7.04	10.3	12.2	13.9	15.5	21.9	21.2	23.3	27.1	29.2	
	Heating	Nom.	kW	8.00	10.7	13.4	14.7	16.1	17.7	20.7	21.2	23.1	23.6	
EER			3.98	3.48	3.77	3.61	3.48	2.90	3.36	3.19	3.01	2.90		
COP			4.00	3.72	3.89	3.80	3.72	3.79	3.80	3.81	3.77	3.79		
Maximum number of connectable indoor units			21	28	34	39	43	47	52	56	60	64		
Sound pressure level	Cooling	Nom.	dB(A)	57	61		62	63	64	63	64	65	66	
	Liquid	OD	mm	9.52	12.7			15.9			19.1			
Piping connections	Gas	OD	mm	22.2	25.4	28.6			34.9					
	Discharge gas	OD	mm	19.1		22.2			25.4			28.6		
	Piping length	OU - IU	Max.	120										
	Total piping length	System	Actual	300										
	Level difference	OU - IU	m	50 (outdoor unit in highest position)										
	Current - 50Hz	Maximum fuse amps (MFA)		A	30	40	50	60	70	80	90			

OUTDOOR UNIT MODULE				RQEQ140P			RQEQ180P			RQEQ212P		
Dimensions	Unit	HeightxWidthxDepth	mm	1,680x635x765								
Weight	Unit		kg	175						179		
Sound pressure level	Cooling	Nom.	dB(A)	54			58			60		
Operation range	Cooling	Min.-Max.	°CDB	-5~43								
	Heating	Min.-Max.	°CWB	-20~15								
Refrigerant	Type			R-410A								
Power supply	Phase/Frequency/Voltage		Hz/V	3~/50/380-415								

Accessories

	RQEQ 140~212	2-module systems	3-module systems	4-module systems
Multi-module connection kit (obligatory) Connects multiple modules into a single refrigerant system	-	BHFP26P36C	BHFP26P63C	BHFP26P84C
Central drain pan kit Installs onto the underside of the outdoor unit and collects drain water from all bottom plate outlets into a single outlet. In cold areas should be heated by a field-supplied heater to prevent drain water from freezing in the drain pan.	KWC26B160	1 kit per module	1 kit per module	1 kit per module
External control adaptor for outdoor unit Allows to activate Low Noise Operation and three levels of Demand Limiting via external dry contacts. Connects to the F1/F2 communication line and requires power supply from an indoor unit*, BSVQ box, or VRV-WIII outdoor unit.	DTA104A53/61/62			
	For installation into an indoor unit: exact adaptor type depends on type of indoor unit.			
	See Options & Accessories of indoor units			
BHGP26A1 Digital pressure gauge kit – displays current condensing and evaporating pressures in the system as standard, or expansion valve positions and temperature sensor data in a special service mode. Connect to the outdoor unit PCB, for installation in the outdoor unit.	✓	1 kit per system	1 kit per system	1 kit per system

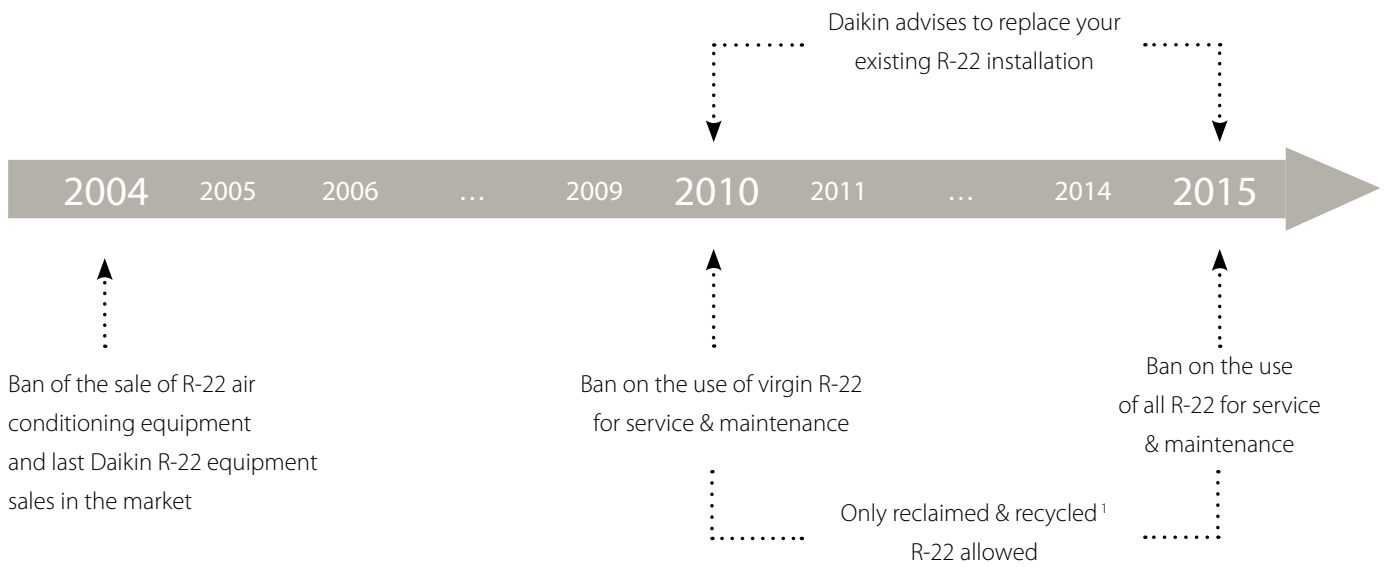
R-22 an ozone depleting refrigerant

R-22 is a hydrochlorofluorocarbon (HCFC) which was commonly used in air conditioning systems. When R-22 is released into the air, the ultraviolet rays of the sun cause it to decompose and chlorine is released in the stratosphere. Chlorine reacts with ozone, reducing the amount of the ozone.

Due to ozone layer depletion, harmful ultraviolet rays reach the surface of the earth giving rise to a number of health and environmental issues. The international community therefore, signed the Montreal Protocol to phase out ozone depletion materials by 2030. The European Union however, decided to ban R-22 already in 2015.

Daikin advises to replace your existing installation already today.

When will R-22 be banned in Europe?



¹ Recycled: re-use of R-22 following a basic cleaning process. Recycled R-22 must be re-used by the same company that carried out the recovery (can be done by installer)
Reclaimed: reprocessed R-22 in order to meet the equivalent performance of virgin R-22 (by specialized company)



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

VRV products are not within the scope of the Eurovent certification programme.



The present leaflet is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V.. Daikin Europe N.V. has compiled the content of this leaflet to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this leaflet. All content is copyrighted by Daikin Europe N.V.



Daikin products are distributed by: