



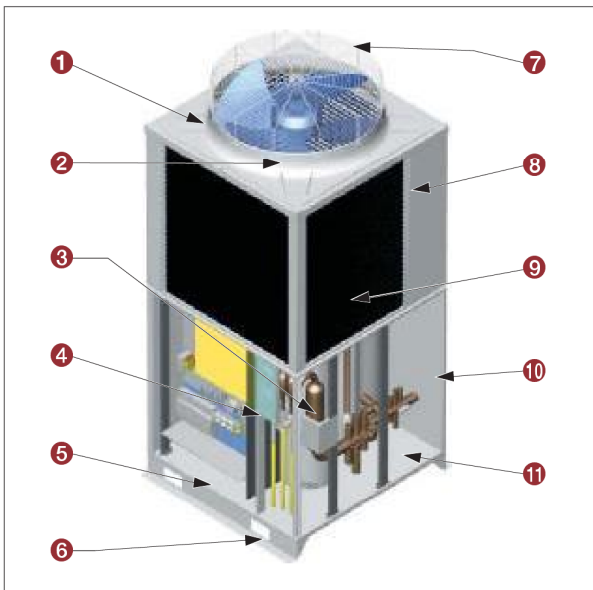
### 3 Way Outdoor Unit

Features

- DCI inverter technology
- R410 refrigerant
- Market leader in low sound levels
- 22.4 - 135 kW (\* By combination of outdoor units)
- Reverse cycle with heat reclaim
- Any indoor unit can operate in heating or cooling mode
- Power supply 415/3/50Hz
- Cooling Cop 3.78 (in 22.4 kW model)
- Heating COP 4.09 (in 22.4 kW model)
- Flexibility to connect 40 indoor units (>68 kW)
- Minimum outdoor unit operating temperature (cooling) -10 °C
- Maximum total piping length to 300m



Internals



**1 Large-diameter plastic fan**

A large resin type fan is used. This design is to offer low operation noise.

**2 DC fan motor**

By utilising conventional single-phase motor to a DC inverter control, the power consumption has been reduced by approx. 50%. By varying the rotation speed in 16 steps (conventionally 4 steps), stable refrigerant pressure control is performed according to the ambient air temperature and load variations.

**3 DC inverter compressor**

New development of twin rotary compressors for multi use. Great operation efficiency especially in the low-frequency range.

**4 Constant-speed compressor**

New development of high pressure scroll compressors for multi use. Also benefits in oil stability with overall improved COP (from MFL)

**5 Oil sensor**

Oil level control is performed for the first time in the world with proven oil sensors .

**6 Fork Lift lifting points**

This unit is designed with easy handling in mind. slots are fitted to the base to improve ease of handling by forklift.

**7 Grille with little pressure loss**

A grille with little pressure loss is used to ensure low sound output from the fan. The air flow and the strength are maintained. Combined with a DC fan motor to keep noise levels to a minimum.

**8 Hot-gas defrosting valve**

Hot-gas defrosting is utilised and the heat exchanger has been split into two for installation at each valve. This aims for reduced defrosting time.

**9 Pressure sensor**

The operation status is monitored at all times and control for optimum operation is performed. Power savings at the time of trial operation also have been considered.

**10 Heat exchanger**

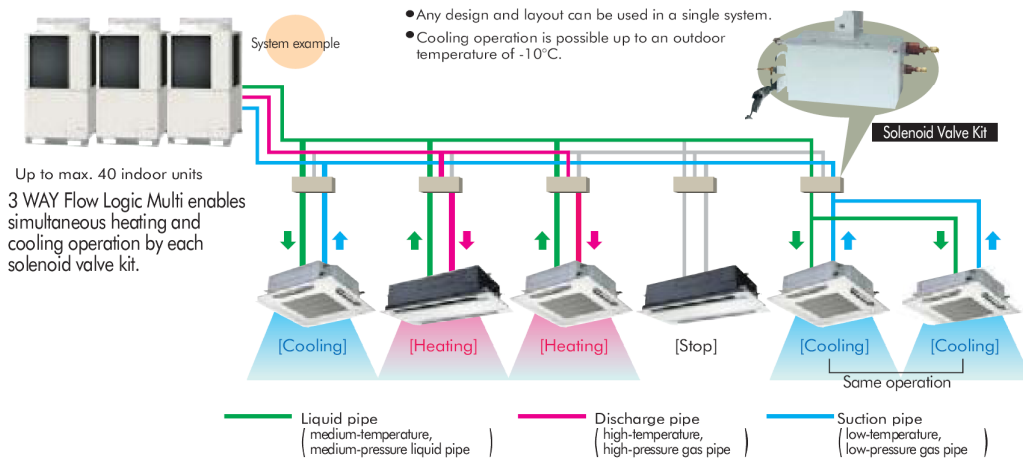
Cross-arranged heat exchangers are used for the first time in this class, aiming for load reduction at the time of cooling operation.

**11 Compressor cabinet.**

With the EFL design the use of a compressor box was utilised. This design is to reduce noise output from the compressor(s) when operating. It also allows for servicing while unit is operational.



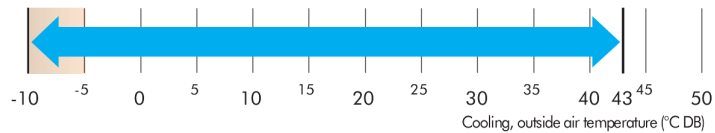
Fully-automatic simultaneous Cooling/Heating operation and heat recovery



Operating Range

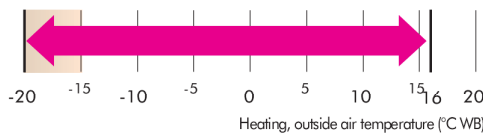
Cooling operation range:

- The cooling operation range is  $-10^{\circ}\text{C}$  by use of inverter outdoor fan.



Heating operation range:

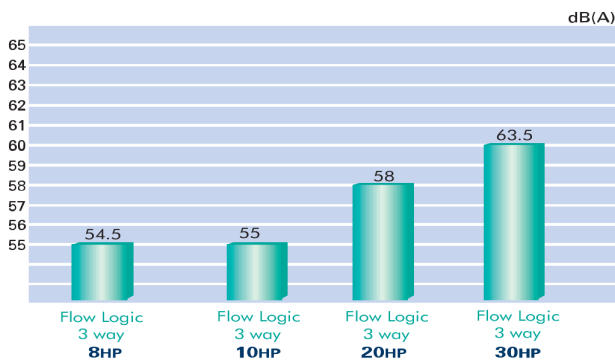
- Stable heating operation even with an outside air temperature of  $-20^{\circ}\text{C}$



- Wide temperature setting range

[Wired remote control heating temperature setting range  $16-30^{\circ}\text{C}$ ]

Low Sound Levels



First criteria was to design the quietest outdoor unit on the market.

Airwell presents - Flow Logic. Unashamedly a market leader

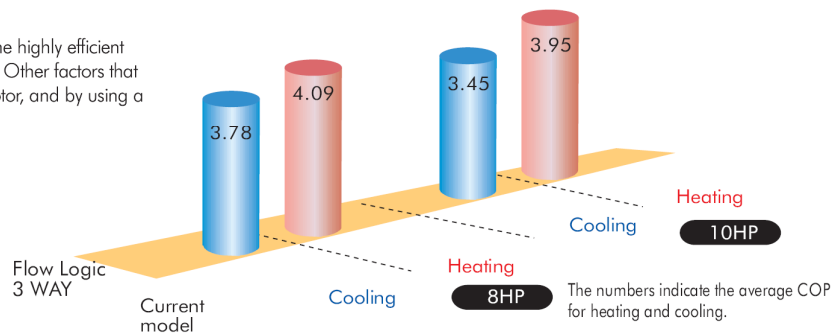
A silent function has been provided, making a further reduction by 5 dB (A) possible.

The outdoor fan speed can be saved and switching to silent mode can be done from the outdoor remote control unit.

\* The rated capacity cannot be performed in silent mode.

Efficiency

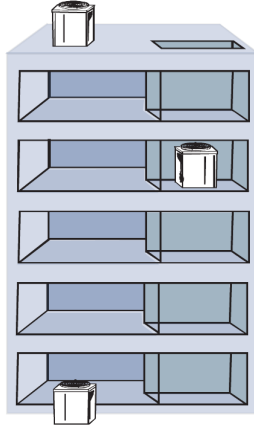
The operation efficiency has been obtained by using the highly efficient new refrigerant R410A and a DC inverter compressor. Other factors that increase the efficiency was the adoption of DC fan motor, and by using a low-loss wire guard for the fan guard.



#### VRF R410A



#### ● Size & Installation



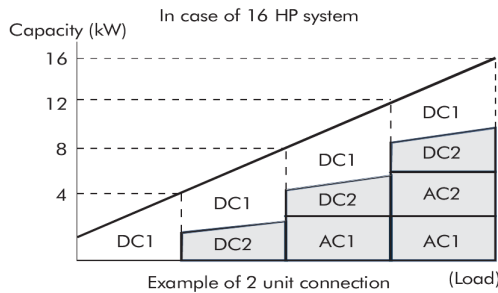
All units can be loaded in an elevator for installation in a multi level building. Especially convenient for replacement or upgrading of an existing building.



The standard models are designed for free discharge to outside, but in instances where the outdoor unit needs to be mounted indoors the standard model can be field configured to accommodate 14.7 Pa to 29.4 Pa.

Above are some examples of field manufactured fan discharge ducts.

#### ● Capacity Control



Priority selection is included for pairs of DC units (DC1 and DC2).  
Priority selection is included for pairs of AC units (AC1 and AC2).

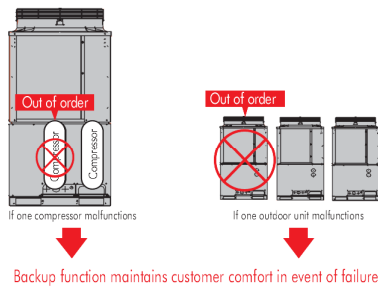
#### Harmonics suppressed to a minimum

By combination of a DC inverter compressor with a constant-speed compressor, the high harmonics generated by the DC inverter are suppressed to a minimum.

#### Smooth capacity control

For the EFL a DC inverter and a constant-speed compressor(s) both are installed. Correspondence to capacity control, which is difficult with a constant-speed compressor, is possible smoothly with a DC inverter. The performance difference at the time of start of a constant-speed compressor also is eliminated.

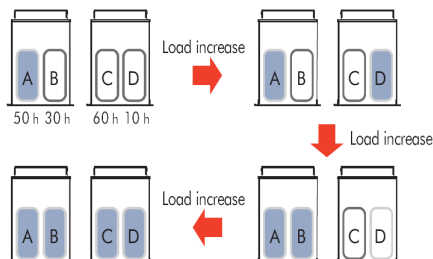
#### ● Backup Function



If one of the two compressors in a system of less than 12HP malfunctions, another compressor provide's emergency backup operation. Also, if one outdoor unit malfunctions in a system of more than 14 HP, other outdoor units provide emergency backup operation.

#### ● Lead lag operation

Example System A, C: DC inverter compressor  
B, D: Constant speed compressor



The total operation time of the compressors is monitored by a microcomputer, so that there is no unbalance for the operation times of all compressors in the same refrigerant system, and compressors with a shorter operation time are operated with preference. When several sub units are installed, the operation of the outdoor units is rotated automatically in order to make balanced operating time of compressors.

• Energy savings with Flow Logic

Example: in case of 3 WAY Flow Logic MULTI: 10 HP outdoor unit x 1 -- 2 HP indoor unit x 5,  
Single system: 2 HP outdoor unit x 5 -- 2 HP indoor unit x 5.

Pattern example	3 WAY Flow Logic MULTI system outline (examples)	Comparison between 3 WAY Flow Logic system and single system	Outdoor unit (load: HP)		
			System comparison	Compressor power load	Heat exchanger radiation/ endothermic load
<p>Cooling load (HP) : Heating load (HP)</p> <p>Indoor unit total load (HP)</p>	<p>10 HP outdoor unit</p> <p>2 HP 2 HP 2 HP 2 HP 2 HP Indoor unit</p> <p>Solenoid Valve Kit</p>				
<p><b>Only cooling</b></p> <p>Cooling load 10 HP</p> <p>Indoor unit total load 10 HP</p>	<p>Outdoor unit</p> <p>Indoor unit</p>	<p>Load (%)</p> <p>100</p> <p>0</p> <p>10 HP 10 HP 10 HP</p> <p>Indoor load (required HP) Single system 3 WAY Flow Logic MULTI</p>	10	10	100%
<p><b>Cooling &gt; Heating</b></p> <p>Cooling load 4 HP &gt; Heating load 2 HP</p> <p>Indoor unit total load 6 HP</p>	<p>Outdoor unit</p> <p>Indoor unit</p>	<p>Load (%)</p> <p>100</p> <p>0</p> <p>6 HP 6 HP 4 HP</p> <p>Indoor load (required HP) Single system 3 WAY Flow Logic MULTI</p>	4	2	67%
<p><b>Cooling &lt; Heating</b></p> <p>Cooling load 2 HP &lt; Heating load 8 HP</p> <p>Indoor unit total load 10 HP</p>	<p>Outdoor unit</p> <p>Indoor unit</p>	<p>Load (%)</p> <p>100</p> <p>0</p> <p>10 HP 10 HP 8 HP</p> <p>Indoor load (required HP) Single system 3 WAY Flow Logic MULTI</p>	8	6	80%
<p><b>Cooling = Heating</b></p> <p>Cooling load 4 HP = Heating load 4 HP</p> <p>Indoor unit total load 8 HP</p>	<p>Outdoor unit</p> <p>Indoor unit</p>	<p>Load (%)</p> <p>100</p> <p>0</p> <p>8 HP 8 HP 4 HP</p> <p>Indoor load (required HP) Single system 3 WAY Flow Logic MULTI</p>	4	0	50%

\*\* Compressor AC: Constant-speed compressor, DC: DC inverter compressor

### Specifications

HP			8	10	12	14	16
Model name (SPW-)			EFL80-3R	EFL100-3R	EFL120-3R	EFL140-3R	EFL160-3R
Power supply			380/400/415V-3 phase/50Hz				
Capacity	Cooling	(kW)	22.4	28.0	33.5	40.0	45.0
		(BTU/h)	76,400	95,500	114,300	136,500	153,600
	Heating	(kW)	25.0	31.5	37.5	45.0	50.0
		(BTU/h)	85,300	107,500	128,000	153,600	170,600
COP	Cooling	(W/W)	3.78	3.45	3.41	3.45	3.38
	Heating	(W/W)	4.09	3.95	3.81	3.91	3.79
Dimensions(HxWxD)	(mm)		1,887 x 890 x 890 (+60)				
Net weight	(kg)		290	290	290	350	350
Electrical rating	Cooling	Running amperes (A)	10.0/9.5/9.2	13.7/13.0/12.6	16.6/15.7/15.2	20.0/19.0/18.3	23.0/21.8/21.0
		Power input (kW)	5.93	8.12	9.82	11.6	13.3
	Heating	Running amperes (A)	10.3/9.8/9.4	13.5/12.8/12.3	16.6/15.8/15.2	19.9/18.9/18.2	22.8/21.6/20.9
		Power input (kW)	6.11	7.97	9.84	11.5	13.2
	Starting amperes (A)		59/62/64	66/69/72	69/72/75	68/71/73	78/80/82
Air circulation	(m <sup>3</sup> /min)		150	160	180	200	220
Refrigerant amount at shipment	(kg)		12.0	12.0	12.0	15.0	15.0
Piping connection	Suction pipe	(mm)	ø19.05	ø22.22	ø25.4	ø25.4	ø28.58
	Discharge pipe	(mm)	ø15.88	ø19.05	ø19.05	ø22.22	ø22.22
	Liquid pipe	(mm)	ø9.52	ø9.52	ø12.7	ø12.7	ø12.7
	Balance pipe	(mm)	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52
Ambient temperature operating range			Cooling/dry: -10°C~ +43°C (DB), Heating: -20°C~ +15°C (WB) Simultaneous operation: -10°C~+43°C (DB)				
Operating sound	Normal mode	dB (A)	54.5	55	56	60	61
	Silent mode	dB (A)	51.5	52	53	57	58

Data subject to change without notice.

\* The values for performance and electric characteristics apply under the following test conditions.

At the time of cooling: Indoor suction air temperature 27°C DB, 19°C WB, outdoor suction air temperature 35°C DB

At the time of heating: Indoor suction air temperature 20°C DB, outdoor suction air temperature 7°C DB, 6°C WB

\* The operating sound has been measured in an anechoic chamber, and it is the value one meter in front of the outdoor unit at a height of 1.5 m. With actual installation, the indication value normally differs widely according to the surrounding noise and reverberations.

\* For mixed heating and cooling operation with an outdoor temperature in excess of 24°C DB, please use 50% or more of the horsepower of the outdoor unit for cooling operation.

### Solenoid Valve Kits

The following parts must be installed for each Flow Logic 3 way multi indoor unit.

#### Solenoid valve kit

- NK3V718  
(For 7 to 18 indoor unit)
- NK3V2548  
(For 24 to 60 indoor unit\*)



\* When 8 or 10 HP indoor units are used, connect two solenoid valve kits in parallel.

●8 HP and 10 HP indoor unit: NK3V2548 x 2

\* For conference rooms and other locations where low noise is required, pay attention to locate the solenoid valve kit not above the space i.e. locate in a corridor etc.

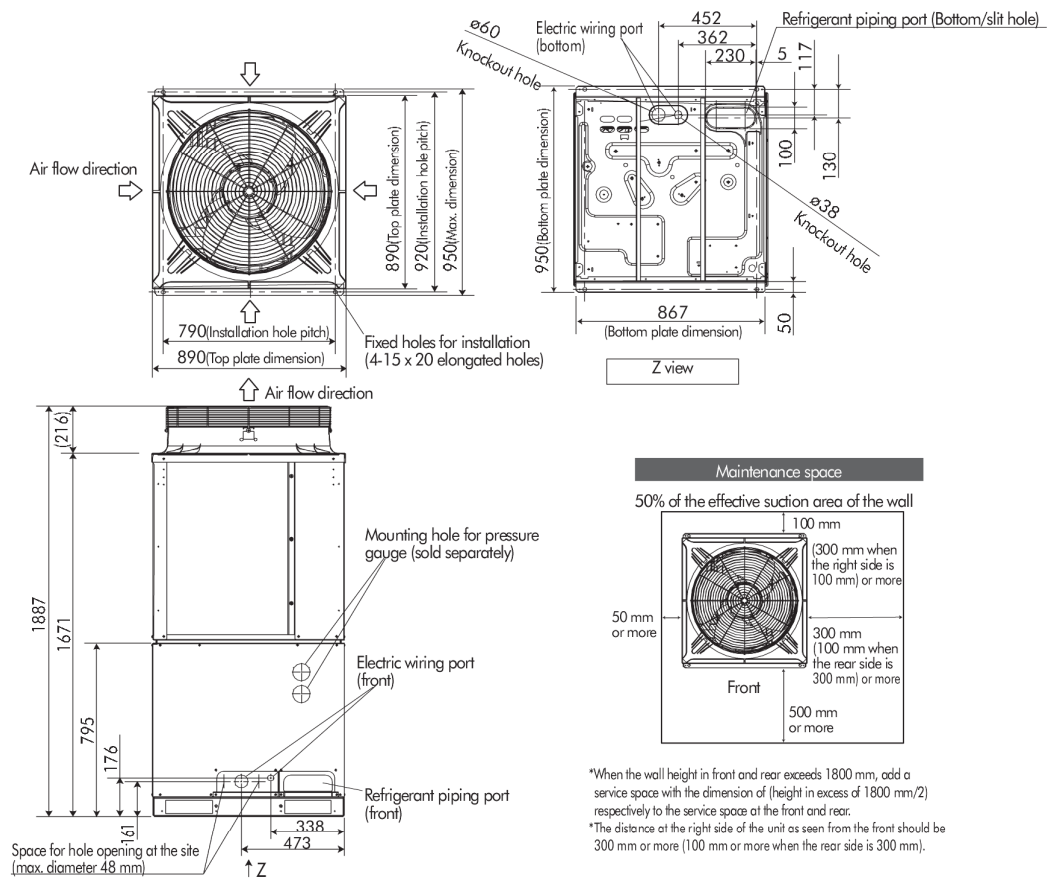
#### Solenoid valve controller

- NK3V-FL

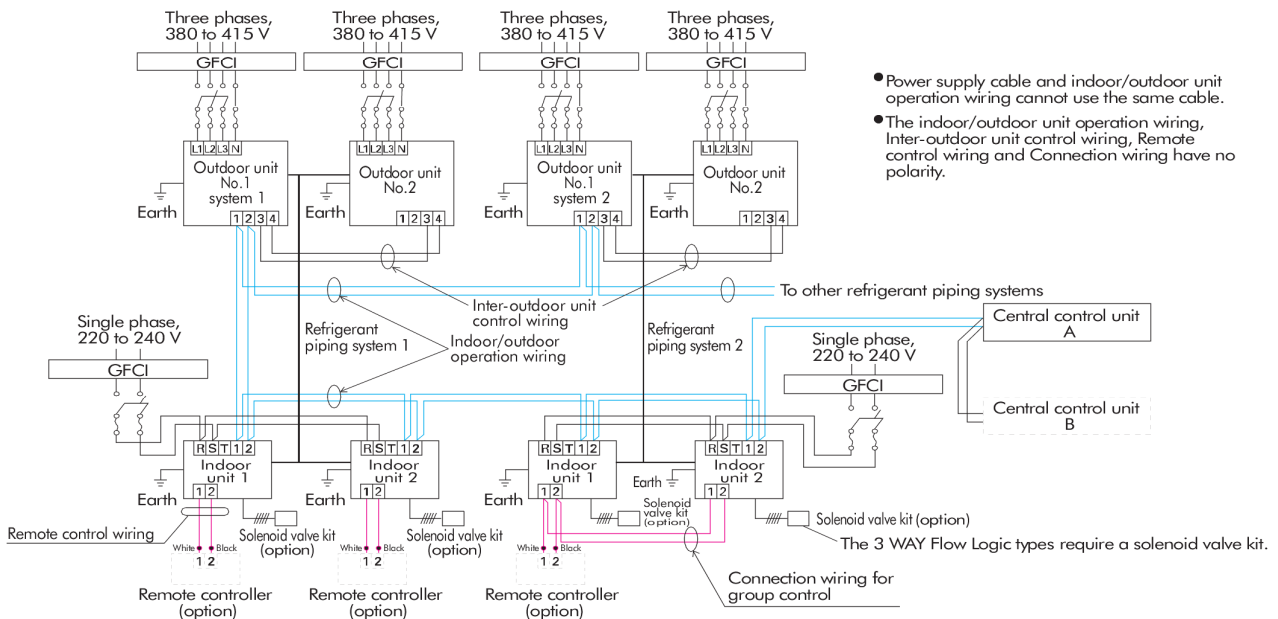


This controls the rap valve kit and the solenoid valve kit.

## General Arrangement





## Wiring



## Combination of Outdoor Units

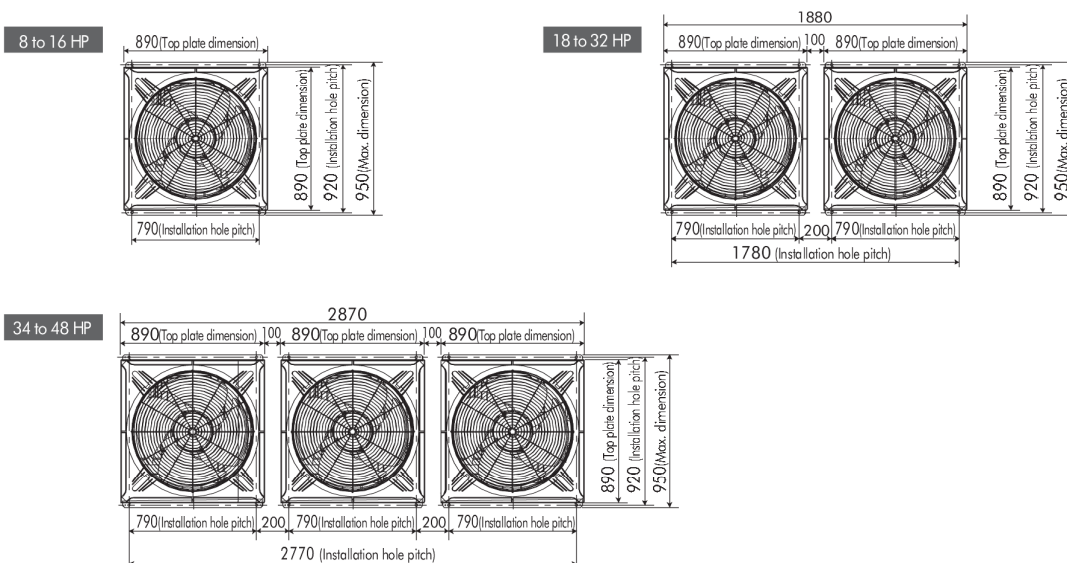
### Combination Outdoor Unit Specifications



Appearance											
HP		8	10	12	14	16	18	20	22	24	
Model name		EFL80-3R	EFL100-3R	EFL120-3R	EFL140-3R	EFL160-3R	EFL80-3R EFL100-3R	EFL100-3R EFL100-3R	EFL100-3R EFL120-3R	EFL100-3R EFL140-3R	
Power supply		380/400/415V-3phase/50Hz									
Capacity	Cooling	(kW)	22.4	28.0	33.5	40.0	45.0	50.4	56.0	61.5	68.0
		(BTU/h)	76,400	95,500	114,300	136,500	153,600	172,000	191,100	219,900	232,000
COP	Heating	(kW)	25.0	31.5	37.5	45.0	50.0	56.5	63.0	69.0	76.5
		(BTU/h)	85,300	107,500	128,000	153,600	170,600	192,800	215,000	235,500	261,100
COP	Cooling	(W/W)	3.78	3.45	3.41	3.45	3.38	3.57	3.46	3.44	3.45
	Heating	(W/W)	4.09	3.95	3.81	3.91	3.79	4.01	3.96	3.88	3.92
Dimensions (HxWxD)	(mm)	1,887 x 890 x 890 (+60)									
Net weight	(kg)	290	290	290	350	350	580	580	580	640	
Electrical ratings	Cooling	Running amperes (A)	10.0/9.5/9.2	13.7/13.0/12.6	16.6/15.7/15.2	20.0/19.0/18.3	23.0/21.8/21.0	23.8/22.6/21.8	27.3/26.0/25.0	30.2/28.7/27.7	33.6/31.9/30.8
		Power input (kW)	5.93	8.12	9.82	11.6	13.3	14.1	16.2	17.9	19.7
	Heating	Running amperes (A)	10.3/9.8/9.4	13.5/12.8/12.3	16.6/15.8/15.2	19.9/18.9/18.2	22.8/21.6/20.9	23.8/22.6/21.8	26.8/25.5/24.6	30.0/28.5/27.5	33.3/31.6/30.5
		Power input (kW)	6.11	7.97	9.84	11.5	13.2	14.1	15.9	17.8	19.5
Air circulation	(m <sup>3</sup> /min)	150	160	180	200	220	150+160	160+160	160+180	160+200	
Refrigerant amount at shipment	(kg)	12.0	12.0	12.0	15.0	15.0	24.0	24.0	24.0	27.0	
Piping connections	Suction pipe (mm)	ø19.05	ø22.22	ø25.4	ø25.4	ø28.58	ø28.58	ø28.58	ø28.58	ø28.58	
	Discharge pipe (mm)	ø15.88	ø19.05	ø19.05	ø22.22	ø22.22	ø22.22	ø22.22	ø25.4	ø25.4	
	Liquid pipe (mm)	ø9.52	ø9.52	ø12.7	ø12.7	ø12.7	ø15.88	ø15.88	ø15.88	ø15.88	
	Balance pipe (mm)	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	
Ambient temperature operating range		Cooling/Dry: -10°C~+43°C (DB), Heating: -20°C~+15°C (WB) Simultaneous operation: -10°C~+43°C (DB)									
Operating sound	Normal mode (dB (A))	54.5	55	56	60	61	58	58	58.5	61.5	
	Silent mode (dB (A))	51.5	52	53	57	58	55	55	55.5	58.5	

Note: Rated conditions Cooling: indoor air temperature 27°C CB/19°C WB, outdoor air temperature 35°C DB  
 Heating: indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

\* For mixed heating and cooling operation with an outdoor temperature in excess of 24°C DB, please use 50% or more of the horsepower of the outdoor unit for cooling operation.

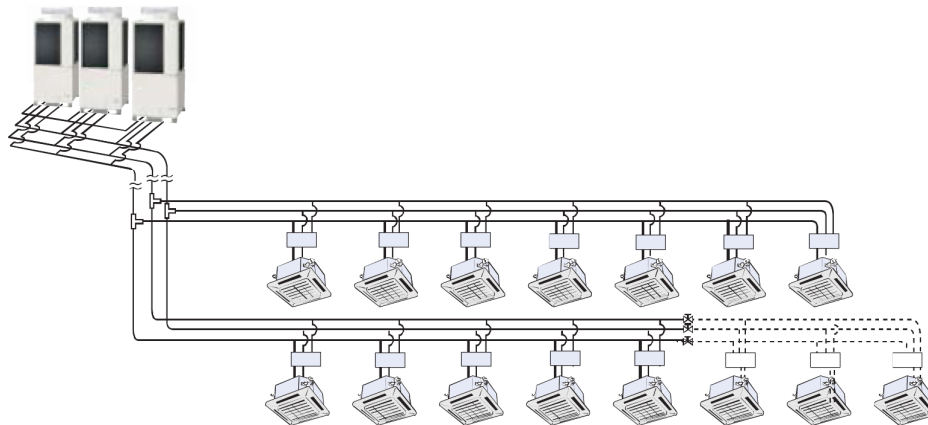
### Layout Example



											
26	28	30	32	34	36	38	40	42	44	46	48
EFL100-3R EFL160-3R	EFL120-3R EFL160-3R	EFL140-3R EFL160-3R	EFL160-3R EFL160-3R	EFL100-3R EFL100-3R EFL140-3R	EFL100-3R EFL100-3R EFL160-3R	EFL100-3R EFL120-3R EFL160-3R	EFL100-3R EFL140-3R EFL160-3R	EFL100-3R EFL160-3R EFL160-3R	EFL120-3R EFL160-3R EFL160-3R	EFL140-3R EFL160-3R EFL160-3R	EFL160-3R EFL160-3R EFL160-3R
380/400/415V-3phase/50Hz											
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
249,100	267,900	290,100	307,100	327,600	344,700	363,400	385,600	402,700	421,400	443,600	460,700
81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
278,100	300,300	324,200	343,000	368,500	385,600	407,800	431,700	450,400	470,900	494,800	511,900
3.41	3.40	3.41	3.38	3.45	3.41	3.42	3.42	3.40	3.41	3.40	3.38
3.84	3.80	3.85	3.79	3.93	3.88	3.84	3.88	3.84	3.81	3.83	3.79
1,887 x 1,880 x 890 (+60)				1,887 x 2,870 x 890 (+60)							
640	640	700	700	930	930	930	990	990	990	1,050	1,050
36.5/34.7/33.5	39.4/37.5/36.1	43.0/40.8/39.4	45.9/43.6/42.1	47.5/45.1/43.5	50.5/48.0/46.3	53.0/51.0/49.0	57.0/54.0/52.0	60.0/57.0/55.0	63.0/60.0/58.0	66.0/63.0/60.0	69.0/65.0/63.0
21.4	23.1	24.9	26.6	27.8	29.6	31.3	33.0	34.7	36.4	38.2	39.9
36.2/34.4/33.1	39.3/37.3/36.0	42.6/40.5/39.0	45.6/43.3/41.7	46.9/44.6/43.0	49.7/47.2/45.5	53.0/50.0/48.0	56.0/54.0/52.0	59.0/56.0/54.0	63.0/59.0/57.0	65.0/62.0/60.0	68.0/65.0/63.0
21.2	23.0	24.7	26.4	27.5	29.1	31.0	32.7	34.4	36.2	37.9	39.6
160+220	180+220	200+220	220+220	160+160+200	160+160+220	160+180+220	160+200+220	160+220+220	180+220+220	200+220+220	220+220+220
27.0	27.0	30.0	30.0	39.0	39.0	39.0	42.0	42.0	42.0	45.0	45.0
ø31.75	ø31.75	ø31.75	ø31.75	ø31.75	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1
ø25.4	ø28.58	ø28.58	ø28.58	ø28.58	ø28.58	ø31.75	ø31.75	ø31.75	ø31.75	ø31.75	ø31.75
ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05
ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52
Cooling/Dry: -10°C~+43°C (DB), Heating: -20°C~+15°C (WB) Simultaneous operation: -10°C~+24°C (DB)											
62	62.5	63.5	64	62.5	63	63	64.5	64.5	65	65.5	66
59	59.5	60.5	61	59.5	60	60	61.5	61.5	62	62.5	63

Data subject to change without notice.

● Maximum number of indoor units



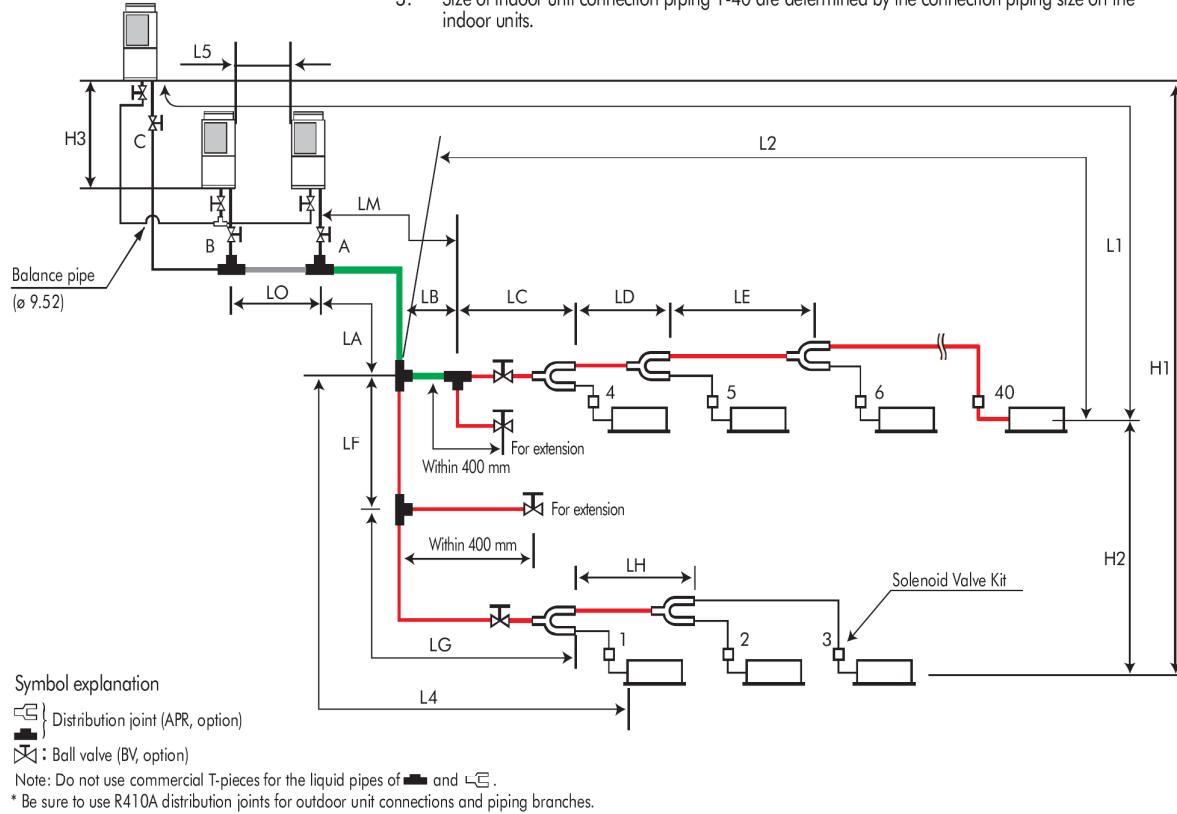
System (HP)	8	10	12	14	16	18	20	22	24-48
Connectable indoor units	13	16	19	23	26	29	33	36	40



## Piping

### Refrigerant Piping

1. **Main piping length  $LM = LA + LB \leq 80$  m**
2. **Main distribution pipes LC-LH are selected according to the capacity after the distribution joint.**
3. **Size of indoor unit connection piping 1-40 are determined by the connection piping size on the indoor units.**



### Ranges that apply to refrigerant piping lengths and to differences in installation heights

Items	Marks	Contents	Length (m)
Allowable piping length	L1	Max. piping length	≤150
		Equivalent piping length	≤175
	$\Delta L (L2 - L4)$	Difference between the max. length and the min. length from the No.1 distribution joint	≤40
	LM	Max. length of main piping (at max. diameter)	≤80
	1, 2 ~ 40	Max. length of each distribution	≤30
Allowable elevation difference	$L1 + 1 + 2 + \sim 40 + A + B + LF + LG + LH$	Total max. piping length including length of each distribution (only narrow tubing)	≤300
	L5	Distance between PC and AD unit	≤10
	H1	When outdoor unit is installed higher than indoor unit	≤50
	H2	When outdoor unit is installed lower than indoor unit	≤40
	H3	Max. difference between indoor units	≤15
	H3	Max. difference between outdoor units	≤4

Note 1: The outdoor connection main piping (LO part) depends on the total capacity of the outdoor units connected to the end.

Note 2: When the main piping length (L1) (equivalent length) exceeds 90 m, increase the size of both the gas and liquid main piping (LM) by 1 step.

### Distribution joint kits

Remarks	Model name	Cooling capacity after distribution
For outdoor unit	1. NRFO-3DL68	68.0 kW or less
	2. NRFO-3D68135	135.0 kW or less
For indoor unit	3. NRF-DL22	22.4 kW or less
	4. NRF-D2268	68.0 kW or less
	5. NRF-D68135	135.0 kW or less

### System limitations

Max. number of combined outdoor units	3
Max. HP of combined outdoor units	135 kW (48 hp)
Max. number of connectable indoor units	40
Indoor/outdoor unit capacity ratio	50-130%

### Additional refrigerant charge

Liquid piping size	Amount of refrigerant charge/m (g/m)
ø6.35	26
ø9.52	56
ø12.7	128
ø15.88	185
ø19.05	259
ø22.22	366

### Refrigerant piping

Piping size (mm)			
O material		1/2 H, H material	
Outer diameter	Wall thickness	Outer diameter	Wall thickness
ø 6.35	† 0.8	ø 25.4	† 1.0
ø 9.52	† 0.8	ø 28.58	† 1.0
ø 12.7	† 0.8	ø 31.75	† 1.1
ø 15.88	† 1.0	ø 38.1	† 1.15
ø 19.05	† 1.0	ø 41.28	† 1.20
ø 22.22	† 1.15		

Note: When pipe bending is to be performed, the bending radius shall be at least 4 times the outer diameter. Also, take sufficient care to prevent pipe collapse and damage at the time of bending.

## ● Pipe Sizing

### ● Main pipe sizes (LA)

HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	
Combined outdoor units	8	10	12	14	16	10 8	10 10	12 10	14 10	16 10	16 12	16 14	16 16	14 10	16 10	16 12	16 14	16 16	16 16	16 16	16 16	16 16
Suction pipe (mm)	ø19.05	ø22.22	ø25.4		ø28.58				ø31.75				ø38.1									
Discharge pipe (mm)	ø15.88	ø19.05		ø22.22				ø25.4				ø28.58				ø31.75						
Liquid pipe (mm)	ø9.52		ø12.7		ø15.88				ø19.05				ø25.4									

Note 1: When future expansion is planned, select the piping diameter according to the total HP after expansion.

Note 2: The balance piping size is ø9.52.

Note 3: Max. length for the main pipe (LM); when the length exceeds 50 m, the size of the suction pipe and the discharge pipe shall be increased by one size from the main pipe size up to 50 m. (For lengths in excess of 50 m, select from the above main pipes size table.)

### ● Main piping size between outdoor units (LO)

Select the piping size between outdoor units according to the main pipe size (LA) of the above table.

### ● Main tubing size after distribution (LB, LC, ...)

Total capacity after distribution	Below kW	7.1	16.0	26.2	30.0	36.4	42.0	47.6	58.8	70.0	75.6	98.0	103.6	—
	Over kW	—	7.1	16.0	26.2	30.0	36.4	42.0	47.6	58.8	70.0	75.6	98.0	103.6
Piping size	Suction pipe (mm)	ø 15.88	ø 19.05	ø 19.05	ø 22.22	ø 25.4	ø 25.4	ø 28.58	ø 28.58	ø 28.58	ø 31.75	ø 31.75	ø 38.1	ø 38.1
	Discharge pipe (mm)	ø 12.7	ø 15.88	ø 15.88	ø 19.05	ø 19.05	ø 22.22	ø 22.22	ø 22.22	ø 25.4	ø 25.4	ø 28.58	ø 28.58	ø 31.75
	Liquid pipe (mm)	ø 9.52	ø 9.52	ø 9.52	ø 9.52	ø 12.7	ø 12.7	ø 12.7	ø 15.88	ø 15.88	ø 19.05	ø 19.05	ø 19.05	ø 19.05

Note 1: The outdoor unit connection main pipe (LO part) depends on the total capacity of the outdoor units connected to the end. Select the piping size from the table for the main pipe size after distribution.

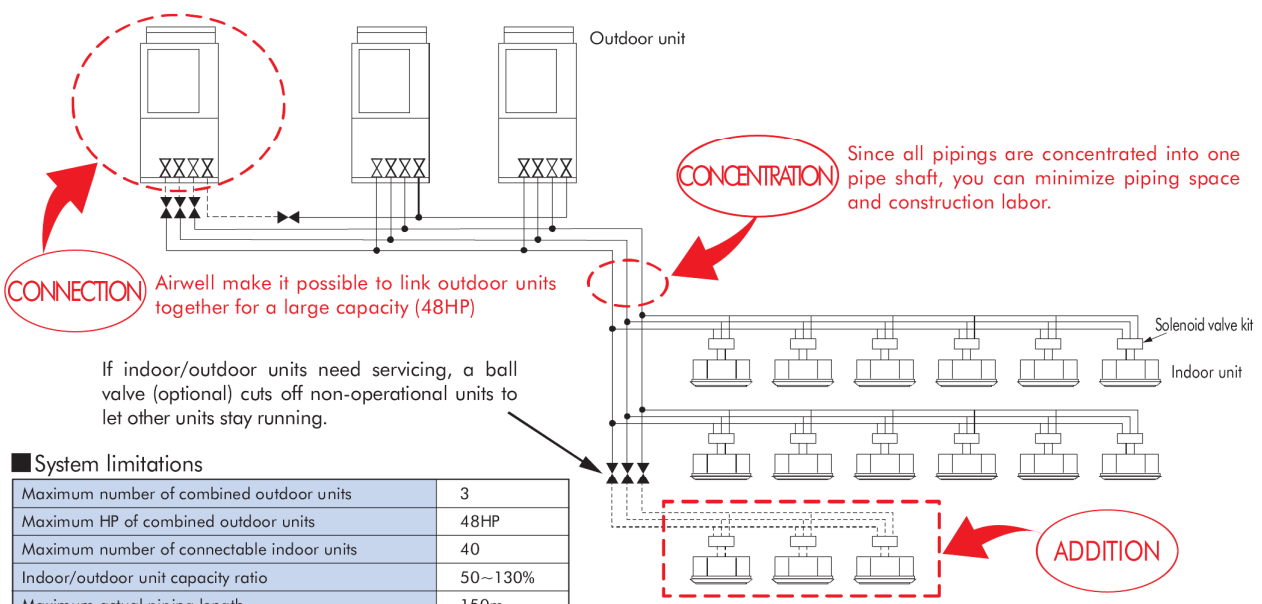
Note 2: When the total capacity of the indoor units connected to the end differs from the total capacity of the outdoor units, select the main pipe size according to the total capacity of the outdoor units. (Especially the main pipe part of LA, LB, LF, etc.)

### ● Indoor unit connection piping (1 to 40)

Indoor unit type	7 type	9 type	12 type	16 type	18 type	24 type	36 type	48 type	60 type	76 type*1	96 type*1	
Equivalent HP	0.8	1	1.3	1.6	2	2.5	4	5	6	8	10	
Piping between distribution and solenoid valve kit	Suction pipe (mm)	ø 15.88									ø 19.05	ø 22.22
	Discharge pipe (mm)	ø 12.7									ø 15.88	ø 19.05
	Liquid pipe (mm)	ø 9.52										
Piping between solenoid valve kit and indoor connection piping	Gas pipe (mm)	ø 12.7				ø 15.88				ø 19.05	ø 22.22	
	Liquid pipe (mm)	ø 6.35				ø 9.52						

\*1 When an indoor unit of type 76 or 96 is used, use the type NK3V2548 solenoid valve kit in parallel specification and branch the piping before/after the solenoid valve kit.

## ● Example System



### ■ System limitations

Maximum number of combined outdoor units	3
Maximum HP of combined outdoor units	48HP
Maximum number of connectable indoor units	40
Indoor/outdoor unit capacity ratio	50~130%
Maximum actual piping length	150m
Maximum level difference (When outdoor unit is lower)	50(40)m
Maximum total piping length	300m

\*If the additional installment of outdoor and indoor units are expected, the size of refrigerant piping should be decided according to the total capacity after the addition.

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