
**Congratulations you have made a wise choice with the purchase of your Lennox
air conditioning unit.**

**This product has been designed, assembled and supplied in one of our world class manufacturing facilities
and we feel sure that it will meet your expectations.**

**Lennox an international organization with world wide distribution takes pride in supplying you with this
product.**

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1.- UNIT SELECTION

R-407C

1.1.- PRODUCT RANGE

COOLING ONLY UNITS

LTX INDOOR UNIT IN COMBINATION WITH AXIAL FAN OUTDOOR UNIT



MODEL	OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY W		NOMINAL CONSUMPTION kW	
				COOLING ONLY		COOLING ONLY	
TJCK 030	KJCK 030	LTX 036	230V-1Ph	8000		2,90	
TJCK 030	KJCK 030		400V-3Ph				
TJCK 036	KJCK 036	LTX 036	230V -1Ph	8800		3,27	
TJCK 036	KJCK 036		230 V - 3Ph				
TJCK 036	KJCK 036	LTX 036	400 V - 3Ph	11700		4,30	
TJCK 048	KJCK 048		230 V - 3Ph				
TJCK 048	KJCK 048	LTX 060	400 V - 3Ph	13100		5,10	
TJCK 060	KJCK 060		230 V - 3Ph				
TJCK 060	KJCK 060	LTX 060	400 V - 3Ph				
TJCK 060	KJCK 060		400 V - 3Ph				

LTX INDOOR UNIT IN COMBINATION WITH CENTRIFUGAL FAN OUTDOOR UNIT



MODEL	OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY W		NOMINAL CONSUMPTION kW	
				COOLING ONLY		COOLING ONLY	
TCKK 030	KCKK 030	LTX 036	230V-1Ph	8000		3,22	
TCKK 036	KCKK 036		230V -1Ph				
TCKK 036	KCKK 036	LTX 036	230 V - 3Ph	8700		3,70	
TCKK 036	KCKK 036		400 V - 3Ph				
TCKK 048	KCKK 048	LTX 060	230 V - 3Ph	11300		4,60	
TCKK 048	KCKK 048		400 V - 3Ph				
TCKK 060	KCKK 060	LTX 060	230 V - 3Ph	13200		5,58	
TCKK 060	KCKK 060		400 V - 3Ph				

HEAT PUMP UNITS

LTX INDOOR UNIT IN COMBINATION WITH AXIAL FAN OUTDOOR UNIT



MODEL	OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY W		NOMINAL CONSUMPTION kW	
				COOL	HEATING	COOL	HEATING
TJHK 030	KJHK 030	LTX 036	230V-1Ph	8000	7900	2,90	2,74
TJHK 036	KJHK 036		230V -1Ph				
TJHK 036	KJHK 036	LTX 036	230 V - 3Ph	8800		3,27	
TJHK 036	KJHK 036		400 V - 3Ph				
TJHK 048	KJHK 048	LTX 060	230 V - 3Ph	11700		4,30	
TJHK 048	KJHK 048		400 V - 3Ph				
TJHK 060	KJHK 060	LTX 060	230 V - 3Ph	13100		5,10	
TJHK 060	KJHK 060		400 V - 3Ph				

LTX INDOOR UNIT IN COMBINATION WITH CENTRIFUGAL FAN OUTDOOR UNIT

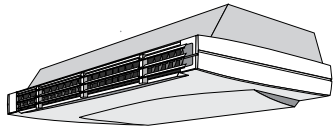


MODEL	OUTDOOR UNIT	INDOOR UNIT	V / Ph / 50 Hz	NOMINAL CAPACITY W		NOMINAL CONSUMPTION kW	
				COOL	HEATING	COOL	HEATING
TCHK 030	KCHK 030	LTX 036	230V-1Ph	8000		3,22	
TCHK 036	KCHK 036		230V -1Ph				
TCHK 036	KCHK 036	LTX 036	230 V - 3Ph	8700		3,70	
TCHK 036	KCHK 036		400 V - 3Ph				
TCHK 048	KCHK 048	LTX 060	230 V - 3Ph	11300		4,60	
TCHK 048	KCHK 048		400 V - 3Ph				
TCHK 060	KCHK 060	LTX 060	230 V - 3Ph	13200		5,58	
TCHK 060	KCHK 060		400 V - 3Ph				

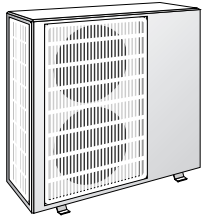
NOTE: the units at 230V-3Ph power supply are special. Ask for availability.

1.- UNIT SELECTION

1.2.- GENERAL DESCRIPTION



INDOOR
UNIT LTX



OUTDOOR UNIT
KJCK/ KJHK
(Axial fans)



OUTDOOR UNIT
KCCK/ KCHK
(Centrifugal fans)

The ceiling air conditioner SPLIT gama WING, on version cooling only and heat pump are air condensed units.

The indoor unit with direct air supply, cools, heats, dehumidifies, cleans and filters the air.

The indoor unit can be combined with outdoor units provided with axial fan (KJCK/ KJHK) for outside installation, or with outdoor units provided with centrifugal fan (KCCK/ KCHK) for installation inside buildings. A wide range of options, completed-factory assembled are also available, for easier installation.

CABINET

The outdoor unit is made on electrozinc steel with epoxy painted finish, able to work outdoors under the worst conditions. Its dimensions and features allow the unit to be positioned in almost any location. The indoor unit is finished in a decorative plastic with thermal acoustic insulation.

HEAT EXCHANGER

Made of copper pipes and aluminum fins. Coils have been designed and manufactured to ensure maximum efficiency. Their dimensions and design of the circuits have been specially worked to obtain the maximum performance of the exchanger increasing the power of the unit and reducing the consumption.

COMPRESSOR

All units are provided with scroll compressor, cooling by a suction gas with thermic protection inside the engine, so no other additional protection is required. It is mounted on anti-vibration devices both external and internal. The 400V-III units are supplied with a three phase detector which avoids the unit starts, unless the phase connections are right.

In heat pump units, the compressors are provided with a crankcase heater to heat the oil in the compressor so that a suitable lubrication can take place; this is an option for cooling only units.

FANS

The indoor units include centrifugal motor fan of three speed, with exceptional features on noise levels. Depending on outdoor unit, they include one or two axial motor fans (units KJCK/ KJHK), or one centrifugal fan (units KCCK/ KCHK), with exceptional features in noise levels and flows.

AIR FILTER

A polypropylene air filter is incorporated with high efficiency filtrate, washable and easy to install.

AIR SWEEP

The indoor unit has an automatic device to distribute horizontal air flow.

COOLING CIRCUIT

Made of welded dehydrated copper pipe with service port on the suction and liquid lines. Coupling valves on outdoor unit and flare connection on indoor unit to facilitate the refrigerant connection.

Outdoor units include the expansion system. Heat pump units include unidirectional and reversing valves of 4 pipes.

ELECTRIC CIRCUIT

The electrical panel includes a printed board, which controls the operating of the unit, defrosting timer thermostat and system of reversing on heat pump cycle. The heat pump outdoor unit includes a printed board with a defrosting timer, for safety device.

CONTROL

The indoor units are supplied with a wire less thermostat for with unit mode selection, 3 speed, and programable (see manual supplied with the thermostat for details).



Control SAR-2X

OPTIONS

INDOOR UNIT

- Heating electrical heater.

OUTDOOR UNIT TYPE KJCK/ KJHK

- ON/OFF Condensation pressure control.
- Proportional condensing pressure control.
- Compressor acoustic jacket.
- Supporting unit brackets (depends on models).

OUTDOOR UNIT TYPE KCCK/ KCHK


- ON/OFF Condensation pressure control.
- Condensing pressure control (depends on models).
- Main switch (depends on models).
- Compressor acoustic jacket.

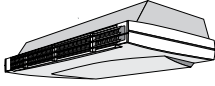
1.- UNIT SELECTION

1.3.- SPECIFICATIONS

SET WITH AXIAL FAN OUTDOOR UNIT

MODEL			TJCK 030 TJHK 030	TJCK 036 TJHK 036	TJCK 048 TJHK 048	TJCK 060 TJHK 060
Cooling capacity	(*)	W	8000	8800	11700	13100
Heating capacity TJHK	(**)	W	7900	9000	11800	13500

OUTDOOR UNIT			KJCK 030 KJHK 030	KJCK 036 KJHK 036	KJCK 048 KJHK 048	KJCK 060 KJHK 060
						
COMPRESSOR	Nr / Type		1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL
FAN	Air flow outdoor unit	m ³ /h	3100	3200	5500	5500
EXPANSION			Capillary	Restrictor	Restrictor	Restrictor
WEIGHT	Cooling only units	Kg	70	73	99	109
	Heat pump units	Kg	72	76	102	112
DIMENSIONS						
	Height	(H) mm	781	931	1239	1239
	Width	(W) mm	973	973	973	973
	Depth	(D) mm	333	333	333	333
PACKING DIMENSIONS (HxWxD)		mm	970x1072x395	1120x1072x395	1390x1072x395	
REFRIGERANT COUPLING						
	Liquid pipe		3/8"	3/8"	3/8"	3/8"
	Gas pipe		5/8"	3/4"	3/4"	3/4"

INDOOR UNIT			LTX 036	LTX 036	LTX 060	LTX 060
						
FAN	Air flow	m ³ /h				
		Max	1300	1300	2100	2100
		Min	1100	1100	1800	1800
WEIGHT		Kg	40	40	57	57
DIMENSIONS						
	Height	(H) mm	267	267	312	312
	Width	(W) mm	1409	1409	1719	1719
	Depth	(D) mm	656	656	756	756
PACKING DIMENSIONS (HxWxD)		mm	310 x 1430 x 680		352 x 1749 x 776	
REFRIGERANT COUPLING						
	Liquid pipe		3/8"	3/8"	3/8"	3/8"
	Gas pipe		3/4" (1)	3/4"	3/4"	3/4"

(*) Air entry temperature into the indoor unit 27°C DB/19 °C WB

(*) Air entry temperature into the outdoor unit 35°C DB

(**) Air entry temperature into the indoor unit 20°C DB/12 °C WB

(**) Air entry temperature into the outdoor unit 7°C DB/6°CWB

(1) Use the coupling fittings included in indoor unit for refrigerant connection with outdoor unit.

DB.- Dry Bulb


WB.- Wet Bulb

1.- UNIT SELECTION

1.3.- SPECIFICATIONS

SET WITH CENTRIFUGAL FAN OUTDOOR UNIT

MODEL			TCKK 030 TCHK 030	TCKK 036 TCHK 036	TCKK 048 TCHK 048	TCKK 060 TCHK 060
Cooling capacity	(*)	W	8000	8700	11300	13200
Heating capacity TCHK	(**)	W	8150	9100	11300	14200

OUTDOOR UNIT			KCKK 030 KCHK 030	KCKK 036 KCHK 036	KCKK 048 KCHK 048	KCKK 060 KCHK 060	
COMPRESSOR	Nr / Type		1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	
FAN	Air flow	m ³ /h	Max.	3150	3100	3400	4950
			Min.	2000	2000	2400	3750
	Available static pressure	Pa	100	100	90	120	
EXPANSION			Capillary	Restrictor	Restrictor	Restrictor	
WEIGHT	Cooling only units	Kg	87	87	135	180	
	Heat pump units	Kg	92	94	140	185	
DIMENSIONS							
Height	(H)	mm	505	505	495	595	
Width	(W)	mm	1050	1050	1250	1300	
Depth	(D)	mm	750	750	820	830	
PACKING DIMENSIONS (HxWxD)			mm	675x1140x870	625x1350x919	720x1400x929	
REFRIGERANT COUPLING							
Liquid pipe			3/8"	3/8"	3/8"	3/8"	
Gas pipe			5/8"	3/4"	3/4"	3/4"	

INDOOR UNIT			LTX 036	LTX 036	LTX 060	LTX 060	
FAN	Air flow indoor unit	m ³ /h	Max	1300	1300	2100	2100
			Min	1100	1100	1800	1800
WEIGHT			Kg	40	40	57	57
DIMENSIONS							
Height	(H)	mm	267	267	312	312	
Width	(W)	mm	1409	1409	1719	1719	
Depth	(D)	mm	656	656	756	756	
PACKING DIMENSIONS			mm	310 x 1430 x 680	352 x 1749 x 776		
REFRIGERANT COUPLING							
Liquid pipe			3/8"	3/8"	3/8"	3/8"	
Gas pipe			3/4" (1)	3/4"	3/4"	3/4"	

(*) Air entry temperature into the indoor unit 27°C DB/19 °C WB

(*) Air entry temperature into the outdoor unit 35°C DB

(**) Air entry temperature into the indoor unit 20°C DB/12 °C WB

(**) Air entry temperature into the outdoor unit 7°C DB/6°CWB

(1) Use the coupling fittings included in indoor unit for refrigerant connection with outdoor unit.

DB.- Dry Bulb

WB.- Wet Bulb

1.- UNIT SELECTION

1.4.- TECHNICAL DATA

SET WITH AXIAL FAN OUTDOOR UNIT

SOUND LEVEL			TJCK 030 TJHK 030	TJCK 036 TJHK 036	TJCK 048 TJHK 048	TJCK 060 TJHK 060
Sound pressure level (Lp)	Indoor unit (1)	dBA	41/46 (*)	41/46 (*)	43/48 (*)	43/48 (*)
	Outdoor unit (2)	dBA	43	43	46	46

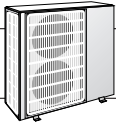
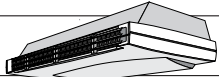
(1) Sound level measured to a distance of 2 m from the unit, normal absorption

(2) Sound level measured to a distance of 10 m from the unit, free space, directibility ± 3db.

(*) High speed / Low speed

1.5.- ELECTRICAL DATA

SET WITH AXIAL FAN OUTDOOR UNIT

			TJCK 030 TJHK 030	TJCK 036 TJHK 036	TJCK 048 TJHK 048	TJCK 060 TJHK 060
Voltage	V/f (50 Hz)		230V / 1 Ph			
			400V / 3 Ph (3)	230V-400V / 3 Ph		
Nominal total input power cooling capacity	Kw		2,90	3,27	4,30	5,10
Nominal total input power heat pump TJHK	Kw		2,74	3,32	4,00	4,90
Current max.	A		18,84	20,26		
			7,74	18,36 8,86	21,99 11,39	22,59 14,19
Starting current max.	A		76	95		
			40	91 / 46	98 / 50	133 / 66
OUTDOOR UNIT			KJCK 030 KJHK 030	KJCK 036 KJHK 036	KJCK 048 KJHK 048	KJCK 060 KJHK 060
Voltage	V/f (50 Hz)		230V / 1 Ph			
			400V / 3 Ph (3)	230V-400V / 3 Ph		
Nominal total input power cooling capacity	Kw		2,72	3,09	4,05	4,85
Nominal total input power heat pump KJHK	Kw		2,56	3,14	3,75	4,65
Current max.	A		18,02	19,44		
			6,92	17,54 8,04	20,85 10,25	21,45 13,05
Starting current max.	A		76	95		
			40	91 / 46	98 / 50	133 / 66
INDOOR UNIT			LTX 036	LTX 036	LTX 060	LTX 060
Voltage	V/f (50 Hz)		230V / 1 Ph			
Nominal total input power cooling capacity	Kw		0,18	0,18	0,25	0,25
Nominal total input power heat pump	Kw		0,18	0,18	0,25	0,25
Current max.	A		0,82	0,82	1,14	1,14
Starting current max.	A		3,28	3,28	4,56	4,56

(3) Voltaje únicamente para unidad sólo frío TJCK

1.- UNIT SELECTION

1.4.- TECHNICAL DATA

SET WITH CENTRIFUGAL FAN OUTDOOR UNIT


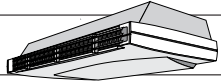
SOUND LEVEL			TCKK 030 TCHK 030	TCKK 036 TCHK 036	TCKK 048 TCHK 048	TCKK 048 TCHK 048
Sound pressure (Lp) level	Indoor unit (1)	dBA	41/46 (*)	41/46 (*)	43/48 (*)	43/48 (*)
	Outdoor unit (2)	dBA	41	41	43	45

(1) Sound level measured to a distance of 2 m from the unit, normal absorption.

(2) Sound level measured to a distance of 10 m from the unit, with discharge and inlet duct installed.

1.5.- ELECTRICAL DATA

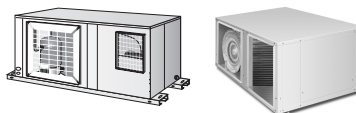
SET WITH CENTRIFUGAL FAN OUTDOOR UNIT

			TCKK 030 TCHK 030	TCKK 036 TCHK 036	TCKK 048 TCHK 048	TCKK 060 TCHK 060
Voltage	V/f (50 Hz)		230V / 1 Ph			
				230V-400V / 3 Ph		
Nominal total input power cooling capacity	Kw		3,22	3,70	4,60	5,58
Nominal total input power heat pump TCHK	Kw		3,05	3,50	3,90	5,52
Current max.	A		21,22	22,52		
				20,62 11,12	23,54 12,94	25,84 15,44
Starting current max.	A		76	95		
				91 / 46	98 / 50	133 / 66
OUTDOOR UNIT			KCKK 030 KCHK 030	KCKK 036 KCHK 036	KCKK 048 KCHK 048	KCKK 060 KCHK 060
Voltage	V/f (50 Hz)		230V / 1 Ph			
				230V-400V / 3 Ph		
Nominal total input power cooling capacity	Kw		3,04	3,52	4,35	5,33
Nominal total input power heat pump KCHK	Kw		2,87	3,32	3,65	5,27
Current max.	A		20,40	21,70		
				19,80 10,30	22,40 11,80	24,70 14,30
Starting current max.	A		76	95		
				91 / 46	98 / 50	133 / 66
INDOOR UNIT			LTX 036	LTX 036	LTX 060	LTX 060
Voltage	V/f (50 Hz)		230V / 1 Ph			
Nominal total input power cooling capacity	Kw		0,18	0,18	0,25	0,25
Nominal total input power heat pump	Kw		0,18	0,18	0,25	0,25
Current max.	A		0,82	0,82	1,14	1,14
Starting current max.	A		3,28	3,28	4,56	4,56

1.- UNIT SELECTION

1.6.- OUTDOOR MOTOR FAN CHARACTERISTICS

OUTDOOR UNIT WITH CENTRIFUGAL FAN



MODELS		AIR FLOW m ³ /h			
		KCCK 030 KCHK 030	KCCK 036 KCHK 036	KCCK 048 KCHK 048	KCCK 060 KCHK 060
AVAILABLE STATIC PRESSURE Pa	0	3150	3100	3400	4950
	10	3000	2900	3325	4850
	20	2825	2800	3160	4750
	30	2700	2700	3075	4625
	40	2600	2600	2980	4525
	50	2525	2500	2890	4425
	60	2450	2400	2790	4325
	70	2350	2300	2690	4225
	80	2250	2200	2580	4125
	90	2125	2100	2400	4040
	100	2000	2000	---	3940
	110	---	---	---	3840
120	---	---	---	3750	

NOMINAL FLOW

1.7.- OPERATING LIMITS

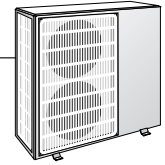
OPERATING LIMITS FOR (COOLING ONLY) UNITS

		MAXIMUM TEMPERATURES	MINIMUM TEMPERATURES
COOLING CYCLE OPERATION	INDOOR TEMPERATURE	32° C DB / 23° C WB	21° C DB / 15° C WB
	OUTDOOR TEMPERATURE	DEPENDING ON MODEL (see Tables for cooling capacities)	+ 19° C STANDARD UNIT +15° C WITH MINIMUM INDOOR TEMPERATURES 24° C DB/ 18° C WB 0° C WITH OPTIONAL ON/OFF CPC -10° C WITH OPTIONAL PROPORT. CPC

OPERATING LIMITS FOR (HEATING PUMP) UNITS

		MAXIMUM TEMPERATURES	MINIMUM TEMPERATURES
COOLING CYCLE OPERATION	INDOOR TEMPERATURE	32° C DB / 23° C WB	21° C DB / 15° C WB
	OUTDOOR TEMPERATURE	DEPENDING ON MODEL (see Tables for cooling capacities)	+ 19° C STANDARD UNIT +15° C WITH MINIMUM INDOOR TEMPERATURES 24° C DB/ 18° C WB 0° C WITH OPTIONAL ON/OFF CPC -10° C WITH OPTIONAL PROPORT. CPC
HEATING CYCLE OPERATION	INDOOR TEMPERATURE	27° C DB	15° C DB
	OUTDOOR TEMPERATURE	DEPENDING ON MODEL (see Tables for heating capacities)	-10° C DB / -11° C WB

DB.- Dry Bulb Temperature
WB.- Wet Bulb Temperature



1.- UNIT SELECTION

1.7.- COOLING CAPACITIES

SET WITH AXIAL FAN OUTDOOR UNIT

TJCK / TJHK 030

TJCK / TJHK 036

AIR INLET TEMPERATURE INDOOR UNIT	CAPACITY POWER INPUT IN KW		AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB					AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB				
			25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL CAPACITY		7,48	7,22	6,94	6,62	6,28	8,17	7,91	7,62	7,31	6,96
15°C WB	SENSIBLE CAP.		5,40	5,27	5,12	4,97	4,80	5,76	5,62	5,47	5,31	5,13
	POWER INPUT		2,31	2,55	2,83	3,16	3,55	2,56	2,85	3,18	3,54	3,95
24°C DB	TOTAL CAPACITY		8,02	7,74	7,44	7,11	6,74	8,77	8,49	8,19	7,85	7,47
17°C WB	SENSIBLE CAP.		5,75	5,61	5,47	5,31	5,14	6,12	5,98	5,83	5,67	5,48
	POWER INPUT		2,34	2,58	2,87	3,20	3,59	2,60	2,89	3,22	3,59	4,00
27°C DB	TOTAL CAPACITY		8,60	8,30	8,00	7,62	7,23	9,41	9,12	8,80	8,43	8,01
19°C WB	SENSIBLE CAP.		6,08	5,94	5,80	5,64	5,47	6,46	6,32	6,20	6,00	5,82
	POWER INPUT		2,37	2,62	2,90	3,25	3,64	2,64	2,94	3,27	3,64	4,06
29°C DB	TOTAL CAPACITY		9,22	8,90	8,55	8,17	7,75	10,11	9,79	9,44	9,05	8,59
21°C WB	SENSIBLE CAP.		6,07	5,94	5,79	5,63	5,46	6,46	6,32	6,17	6,00	5,81
	POWER INPUT		2,40	2,66	2,95	3,30	3,70	2,68	2,98	3,32	3,70	4,12
32°C DB	TOTAL CAPACITY		9,89	9,54	9,17	8,76	—	10,84	10,50	10,12	9,70	—
23°C WB	SENSIBLE CAP.		6,39	6,25	6,10	5,94	—	6,78	6,64	6,48	6,31	—
	POWER INPUT		2,44	2,70	3,00	3,35	—	2,73	3,04	3,38	3,76	—

TJCK / TJHK 048

TJCK / TJHK 060

AIR INLET TEMPERATURE INDOOR UNIT	CAPACITY POWER INPUT IN KW		AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB					AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB				
			25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL CAPACITY		10,91	10,56	10,18	9,77	9,31	12,11	11,70	11,28	10,83	10,35
15°C WB	SENSIBLE CAP.		8,41	8,24	8,06	7,86	7,64	9,00	8,79	8,58	8,37	8,13
	POWER INPUT		3,57	3,88	4,23	4,62	5,07	4,08	4,48	4,92	5,41	5,94
24°C DB	TOTAL CAPACITY		11,70	11,33	10,93	10,49	10,00	13,01	12,58	12,13	11,65	11,13
17°C WB	SENSIBLE CAP.		9,01	8,84	8,66	8,46	8,24	9,62	9,42	9,21	8,98	8,75
	POWER INPUT		3,59	3,91	4,26	4,66	5,12	4,15	4,56	5,01	5,50	6,05
27°C DB	TOTAL CAPACITY		12,56	12,16	11,70	11,27	10,74	13,99	13,53	13,10	12,53	11,97
19°C WB	SENSIBLE CAP.		9,59	9,42	9,20	9,04	8,82	10,22	10,02	9,80	9,58	9,34
	POWER INPUT		3,61	3,93	4,30	4,70	5,16	4,23	4,64	5,10	5,61	6,16
29°C DB	TOTAL CAPACITY		13,48	13,06	12,60	12,10	11,53	15,04	14,55	14,03	13,47	12,87
21°C WB	SENSIBLE CAP.		9,58	9,41	9,23	9,03	8,80	10,22	10,01	9,80	9,57	9,33
	POWER INPUT		3,63	3,96	4,33	4,74	5,22	4,31	4,73	5,20	5,71	6,28
32°C DB	TOTAL CAPACITY		14,46	14,01	13,52	12,98	12,37	16,15	15,63	15,08	14,48	—
23°C WB	SENSIBLE CAP.		10,14	9,97	9,78	9,58	9,36	10,79	10,58	10,37	10,14	—
	POWER INPUT		3,66	3,99	4,36	4,79	5,27	4,40	4,83	5,30	5,83	—

Nominal capacities

DB - Dry bulb
WB - Wet bulb

CALCULATION OF COOLING CAPACITY DEPENDING ON AIR FLOW

Data based on the following nominal indoor fan air flow:

MODELS	036	060
INDOOR AIR FLOW M ³ /H	1300	2100

Data based on the following nominal outdoor fan air flow:

MODELS	030	036	048	060
OUTDOOR AIR FLOW M ³ /H	3100	3200	5500	5500

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT INDOOR AIR FLOW

	% NOMINAL AIR FLOW			
	70%	80%	90%	100%
Total capacity	0,96	0,97	0,98	1
Sensible capacity	0,9	0,93	0,96	1
Power input	0,98	0,99	1	1

1.- UNIT SELECTION



1.7.- COOLING CAPACITIES

SET WITH CENTRIFUGAL OUTDOOR UNIT

TCKK / TCHK 030

TCKK / TCHK 036

AIR INLET TEMPERATURE INDOOR UNIT	CAPACITY POWER INPUT IN KW	AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB					AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL CAPACITY	7,51	7,25	6,97	6,66	6,31	8,09	7,83	7,53	7,21	6,85
	SENSIBLE CAP.	5,42	5,28	5,14	4,99	4,82	5,72	5,58	5,43	5,26	5,08
15°C WB	POWER INPUT	2,64	2,87	3,14	3,46	3,84	2,98	3,27	3,60	3,97	4,38
	TOTAL CAPACITY	8,06	7,77	7,47	7,14	6,78	8,69	8,40	8,09	7,74	7,34
24°C DB	SENSIBLE CAP.	5,76	5,63	5,48	5,33	5,16	6,08	5,93	5,78	5,61	5,42
	POWER INPUT	2,66	2,90	3,18	3,50	3,88	3,02	3,32	3,65	4,03	4,44
17°C WB	TOTAL CAPACITY	8,64	8,34	8,00	7,66	7,27	9,32	9,01	8,70	8,30	7,87
	SENSIBLE CAP.	6,10	5,96	5,80	5,66	5,49	6,42	6,27	6,10	5,95	5,75
27°C DB	POWER INPUT	2,69	2,94	3,22	3,54	3,93	3,06	3,37	3,70	4,09	4,50
	TOTAL CAPACITY	9,26	8,94	8,59	8,22	7,80	10,00	9,67	9,31	8,90	—
29°C DB	SENSIBLE CAP.	6,09	5,95	5,81	5,65	5,48	6,41	6,27	6,11	5,94	—
	POWER INPUT	2,72	2,97	3,26	3,59	3,98	3,12	3,42	3,77	4,15	—
21°C WB	TOTAL CAPACITY	9,92	9,58	9,21	8,80	8,35	10,72	10,37	9,97	9,53	—
	SENSIBLE CAP.	6,40	6,27	6,12	5,96	—	6,73	6,58	6,42	6,24	—
32°C DB	POWER INPUT	2,76	3,01	3,30	3,64	—	3,17	3,48	3,83	4,22	—
	TOTAL CAPACITY	—	—	—	—	—	—	—	—	—	—
23°C WB	SENSIBLE CAP.	—	—	—	—	—	—	—	—	—	—
	POWER INPUT	—	—	—	—	—	—	—	—	—	—

TCKK / TCHK 048

TCKK / TCHK 060

AIR INLET TEMPERATURE INDOOR UNIT	CAPACITY POWER INPUT IN KW	AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB					AIR INLET TEMPERATURE OUTDOOR UNIT °C DRY BULB				
		25°C	30°C	35°C	40°C	45°C	25°C	30°C	35°C	40°C	45°C
21°C DB	TOTAL CAPACITY	10,62	10,25	9,85	9,40	8,90	12,21	11,81	11,39	10,94	10,47
	SENSIBLE CAP.	8,27	8,09	7,90	7,69	7,45	9,05	8,85	8,64	8,42	8,19
15°C WB	POWER INPUT	3,77	4,10	4,47	4,90	5,39	4,62	5,00	5,43	5,89	6,41
	TOTAL CAPACITY	11,38	10,99	10,56	10,08	9,53	13,13	12,70	12,26	11,78	11,27
24°C DB	SENSIBLE CAP.	8,86	8,68	8,49	8,28	8,04	9,67	9,47	9,26	9,04	8,81
	POWER INPUT	3,81	4,14	4,52	4,96	5,47	4,68	5,07	5,50	5,98	6,50
17°C WB	TOTAL CAPACITY	12,20	11,77	11,30	10,80	—	14,12	13,67	13,20	12,68	12,13
	SENSIBLE CAP.	9,44	9,26	9,10	8,85	—	10,28	10,08	9,90	9,65	9,41
27°C DB	POWER INPUT	3,85	4,19	4,60	5,03	—	4,75	5,14	5,58	6,07	6,60
	TOTAL CAPACITY	13,07	12,62	12,12	11,56	—	15,18	14,70	14,19	13,65	13,05
29°C DB	SENSIBLE CAP.	9,41	9,23	9,03	8,82	—	10,28	10,08	9,87	9,65	9,41
	POWER INPUT	3,90	4,25	4,65	5,11	—	4,83	5,22	5,67	6,16	6,70
21°C WB	TOTAL CAPACITY	14,00	13,51	12,97	12,37	—	16,32	15,81	15,26	14,68	—
	SENSIBLE CAP.	9,96	9,78	9,58	9,36	—	10,85	10,65	10,44	10,22	—
32°C DB	POWER INPUT	3,94	4,31	4,72	5,19	—	4,91	5,31	5,76	6,26	—
	TOTAL CAPACITY	—	—	—	—	—	—	—	—	—	—
23°C WB	SENSIBLE CAP.	—	—	—	—	—	—	—	—	—	—
	POWER INPUT	—	—	—	—	—	—	—	—	—	—

Nominal capacities

DB - Dry bulb
WB - Wet bulb

CALCULATION OF COOLING CAPACITY DEPENDING ON AIR FLOW

Data based on the following nominal indoor fan air flow:

MODELS	036	060
INDOOR AIR FLOW M ³ /H	1300	2100

Data based on the following nominal outdoor fan air flow:

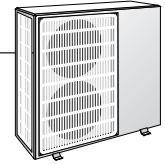
MODELS	030	036	048	060
OUTDOOR AIR FLOW M ³ /H	2525	2500	2890	4425

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT INDOOR AIR FLOW

	% NOMINAL AIR FLOW			
	70%	80%	90%	100%
Total capacity	0,96	0,97	0,98	1
Sensible capacity	0,9	0,93	0,96	1
Power input	0,98	0,99	1	1

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT OUTDOOR AIR FLOW

	% NOMINAL AIR FLOW		
	80%	90%	100%
Total capacity	0,97	0,98	1
Sensible capacity	0,93	0,96	1
Power input	0,99	1	1



1.- UNIT SELECTION

1.7.- HEATING CAPACITIES

SET WITH AXIAL FAN OUTDOOR UNIT

TJHK 030

TJHK 036

AIR INLET TEMPERATURE INDOOR UNIT	Kw	AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB							AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB						
		-10°C	-5°C	0°C	6°C	10°C	14°C	18°C	-10°C	-5°C	0°C	6°C	10°C	14°C	18°C
15°C DB	TOTAL CAPACITY	5,19	5,92	6,76	7,93	8,83	9,83	10,93	5,84	6,66	7,63	9,01	10,06	11,20	12,42
	POWER INPUT	2,09	2,19	2,30	2,48	2,63	2,81	3,02	2,36	2,51	2,69	2,97	3,20	3,46	3,76
18°C DB	TOTAL CAPACITY	5,20	5,92	6,75	7,90	8,79	9,77	10,85	5,85	6,67	7,63	8,99	10,02	11,14	12,30
	POWER INPUT	2,21	2,32	2,44	2,63	2,79	2,98	3,21	2,52	2,68	2,87	3,17	3,40	3,68	3,98
20°C DB	TOTAL CAPACITY	5,21	5,92	6,74	7,90	8,76	9,73	10,79	5,87	6,69	7,64	9,00	10,00	11,09	—
	POWER INPUT	2,30	2,41	2,54	2,74	2,91	3,11	3,35	2,63	2,80	3,00	3,32	3,55	3,83	—
24°C DB	TOTAL CAPACITY	5,24	5,94	6,74	7,87	8,72	9,66	10,69	5,92	6,72	7,66	8,97	9,95	—	—
	POWER INPUT	2,50	2,62	2,77	2,99	3,17	3,39	3,65	2,87	3,05	3,27	3,60	3,85	—	—
27°C DB	TOTAL CAPACITY	5,27	5,96	6,76	7,86	8,69	9,61	—	5,97	6,76	7,69	8,97	9,90	—	—
	POWER INPUT	2,67	2,80	2,96	3,20	3,39	3,63	—	3,07	3,27	3,50	3,83	4,09	—	—

TJHK 048

TJHK 060

AIR INLET TEMPERATURE INDOOR UNIT	Kw	AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB							AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB						
		-10°C	-5°C	0°C	6°C	10°C	14°C	18°C	-10°C	-5°C	0°C	6°C	10°C	14°C	18°C
15°C DB	TOTAL CAPACITY	7,77	8,89	10,17	11,93	13,28	14,78	16,44	8,60	9,90	11,41	13,52	15,15	16,95	18,92
	POWER INPUT	3,13	3,27	3,43	3,64	3,81	4,00	4,22	3,55	3,77	4,04	4,43	4,75	5,13	5,58
18°C DB	TOTAL CAPACITY	7,77	8,88	10,13	11,87	13,20	14,67	16,29	8,59	9,89	11,39	13,48	15,08	16,85	18,77
	POWER INPUT	3,30	3,45	3,61	3,83	4,01	4,21	4,45	3,75	3,98	4,26	4,68	5,01	5,41	5,87
20°C DB	TOTAL CAPACITY	7,76	8,87	10,11	11,80	13,15	14,60	16,20	8,60	9,89	11,38	13,50	15,03	16,78	—
	POWER INPUT	3,41	3,56	3,73	4,00	4,15	4,36	4,61	3,88	4,13	4,42	4,90	5,19	5,60	—
24°C DB	TOTAL CAPACITY	7,76	8,85	10,07	11,76	13,04	14,45	15,99	8,64	9,91	11,37	13,40	14,95	16,64	—
	POWER INPUT	3,66	3,82	3,99	4,25	4,45	4,68	4,96	4,16	4,43	4,74	5,20	5,57	—	—
27°C DB	TOTAL CAPACITY	7,77	8,84	10,05	11,71	12,96	14,34	—	8,69	9,94	11,38	13,38	14,89	—	—
	POWER INPUT	3,85	4,02	4,21	4,48	4,70	4,95	—	4,38	4,66	5,00	5,49	5,88	—	—

Nominal capacities

DB - Dry bulb
WB - Wet bulb

CALCULATION OF HEATING CAPACITY DEPENDING ON AIR FLOW

Data based on the following nominal indoor fan air flow:

MODELS	036	060
INDOOR AIR FLOW M ³ /H	1300	2100

Data based on the following nominal outdoor fan air flow:

MODELS	030	036	048	060
OUTDOOR AIR FLOW M ³ /H	3100	3200	5500	5500

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT INDOOR AIR FLOW

	% NOMINAL AIR FLOW			
	70%	80%	90%	100%
Total capacity	0,96	0,97	0,98	1
Sensible capacity	0,9	0,93	0,96	1
Power input	0,98	0,99	1	1



1.- UNIT SELECTION

1.7.- HEATING CAPACITIES

SET WITH CENTRIFUGAL FAN OUTDOOR UNIT

TCHK 030

TCHK 036

AIR INLET TEMPERATURE INDOOR UNIT	Kw	AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB							AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB						
		-10°C	-5°C	0°C	6°C	10°C	14°C	18°C	-10°C	-5°C	0°C	6°C	10°C	14°C	18°C
15°C DB	TOTAL CAPACITY	5,35	6,11	6,97	8,18	9,10	10,13	11,26	5,86	6,68	7,64	9,02	10,08	11,24	12,48
	POWER INPUT	2,43	2,52	2,64	2,81	2,96	3,13	3,34	2,66	2,80	2,96	3,22	3,44	3,69	3,97
18°C DB	TOTAL CAPACITY	5,36	6,11	6,96	8,15	9,06	10,07	11,17	5,88	6,69	7,65	9,01	10,05	11,18	12,37
	POWER INPUT	2,55	2,65	2,77	2,96	3,11	3,30	3,53	2,81	2,95	3,14	3,41	3,63	3,89	4,18
20°C DB	TOTAL CAPACITY	5,37	6,11	6,95	8,15	9,03	10,03	11,12	5,90	6,71	7,66	9,10	10,03	11,14	—
	POWER INPUT	2,63	2,74	2,87	3,05	3,23	3,42	3,66	2,91	3,07	3,26	3,50	3,77	4,03	—
24°C DB	TOTAL CAPACITY	5,39	6,12	6,95	8,11	8,98	9,95	11,00	5,95	6,75	7,69	9,01	9,99	11,04	—
	POWER INPUT	2,82	2,94	3,09	3,30	3,48	3,70	3,95	3,14	3,31	3,52	3,82	4,06	4,33	—
27°C DB	TOTAL CAPACITY	5,42	6,14	6,96	8,09	8,95	9,90	—	6,00	6,80	7,72	9,01	9,96	—	—
	POWER INPUT	2,99	3,11	3,27	3,50	3,70	3,92	—	3,34	3,51	3,73	4,05	4,29	—	—

TCHK 048

TCHK 060

AIR INLET TEMPERATURE INDOOR UNIT	Kw	AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB							AIR INLET TEMPERATURE OUTDOOR UNIT °C WET BULB						
		-10°C	-5°C	0°C	6°C	10°C	14°C	18°C	-10°C	-5°C	0°C	6°C	10°C	14°C	18°C
15°C DB	TOTAL CAPACITY	7,42	8,48	9,69	11,37	12,67	14,12	15,73	9,07	10,46	12,07	14,30	16,01	17,88	19,92
	POWER INPUT	3,15	3,28	3,42	3,61	3,76	3,93	4,13	4,24	4,46	4,72	5,12	5,44	5,82	6,25
18°C DB	TOTAL CAPACITY	7,43	8,48	9,67	11,33	12,61	14,03	15,61	9,06	10,45	12,03	14,24	15,92	17,76	19,74
	POWER INPUT	3,31	3,44	3,59	3,79	3,94	4,13	4,34	4,43	4,66	4,94	5,35	5,69	6,08	6,53
20°C DB	TOTAL CAPACITY	7,44	8,48	9,66	11,30	12,57	13,97	15,53	9,06	10,44	12,01	14,20	15,86	17,67	19,62
	POWER INPUT	3,42	3,55	3,70	3,90	4,07	4,26	4,49	4,56	4,80	5,09	5,52	5,86	6,26	6,72
24°C DB	TOTAL CAPACITY	7,45	8,48	9,64	11,26	12,49	13,86	15,37	9,09	10,44	11,99	14,13	15,74	17,50	—
	POWER INPUT	3,65	3,79	3,95	4,17	4,35	4,56	4,81	4,82	5,09	5,40	5,86	6,23	6,65	—
27°C DB	TOTAL CAPACITY	7,47	8,49	9,63	11,22	12,43	13,78	15,24	9,13	10,46	11,98	14,08	15,66	—	—
	POWER INPUT	3,83	3,98	4,15	4,39	4,58	4,81	5,08	5,03	5,32	5,65	6,14	6,52	—	—

Nominal capacities

DB - Dry bulb
WB - Wet bulb

CALCULATION OF HEATING CAPACITY DEPENDING ON AIR FLOW

Data based on the following nominal indoor fan air flow:

MODELS	036	060
INDOOR AIR FLOW M ³ /H	1300	2100

Data based on the following nominal outdoor fan air flow:

MODELS	030	036	048	060
OUTDOOR AIR FLOW M ³ /H	2525	2500	2890	4425

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT INDOOR AIR FLOW

	% NOMINAL AIR FLOW			
	70%	80%	90%	100%
Total capacity	0,96	0,97	0,98	1
Sensible capacity	0,9	0,93	0,96	1
Power input	0,98	0,99	1	1

CORRECTION COEFFICIENT TO FIX TO THE CAPACITY OF DIFFERENT OUTDOOR AIR FLOW

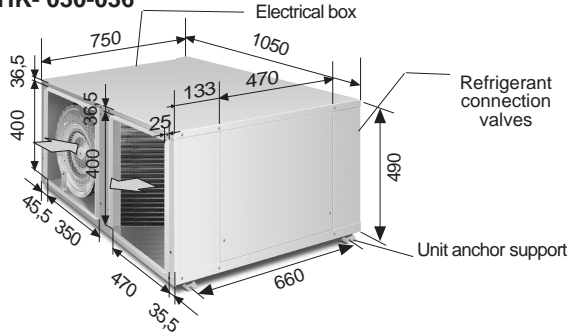
	% NOMINAL AIR FLOW		
	80%	90%	100%
Total capacity	0,97	0,98	1
Sensible capacity	0,93	0,96	1
Power input	0,99	1	1

1.- UNIT SELECTION

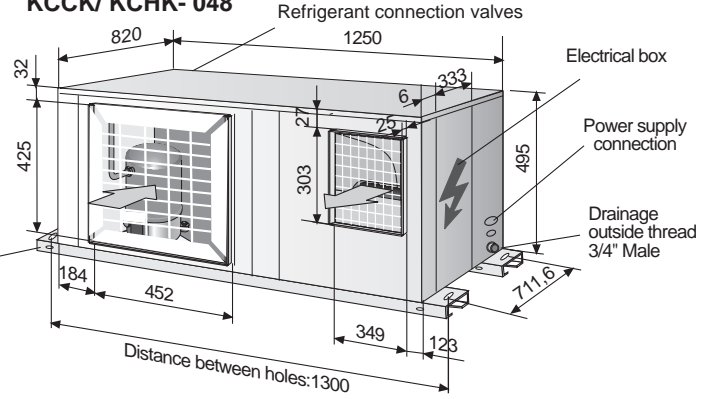
1.9.- UNIT DIMENSIONS (mm)

OUTDOOR UNIT WITH CENTRIFUGAL FAN

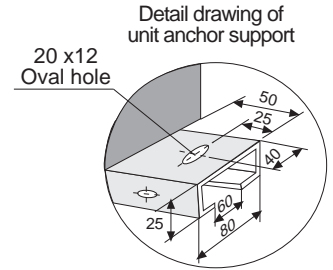
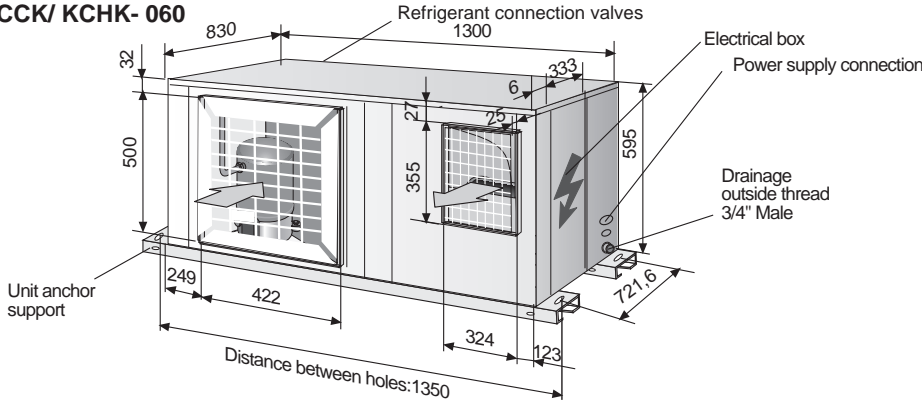
MODELS
KCCK- 030-036
KCHK- 030-036



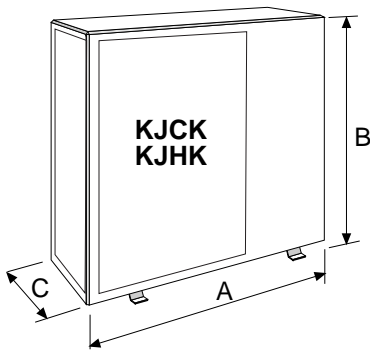
MODELS
KCCK/ KCHK- 048



MODELS
KCCK/ KCHK- 060

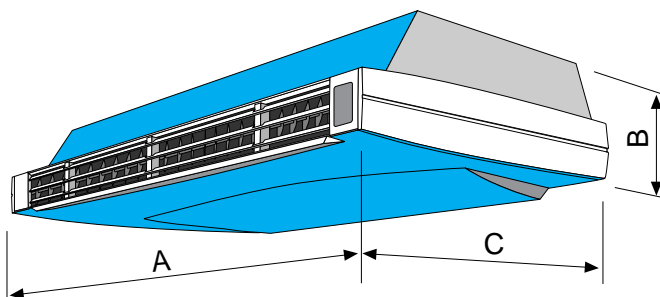


OUTDOOR UNIT WITH AXIAL FAN



	KJCK 030	KJCK 036	KJCK 048	KJCK 060
	KJHK 030	KJHK 036	KJHK 048	KJHK 060
A	973	973	973	973
B	781	931	1239	1239
C	333	333	333	333

INDOOR UNIT LTX

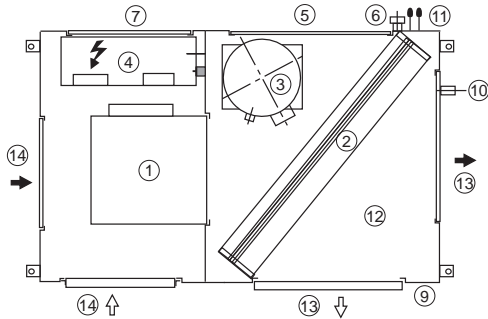


	LTX 036	LTX 060
A	1409	1719
B	223	268
C	656	756

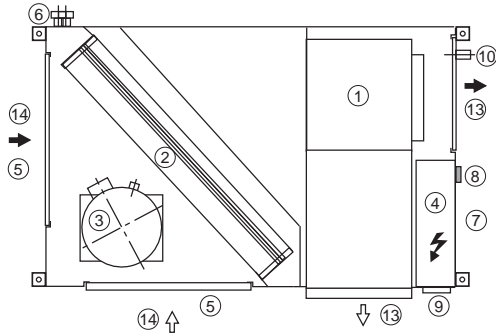
1.- UNIT SELECTION

1.10.- UNIT DESCRIPTION

OUTDOOR UNITS KCCK/ KCHK 030-036

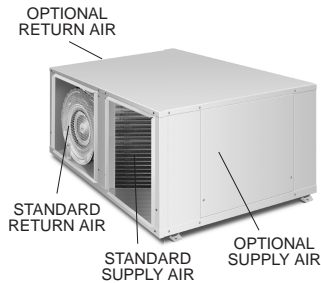
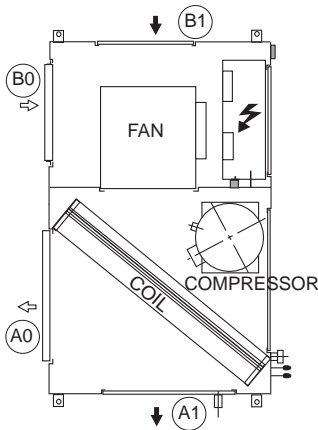


OUTDOOR UNITS KCCK/ KCHK 048-060

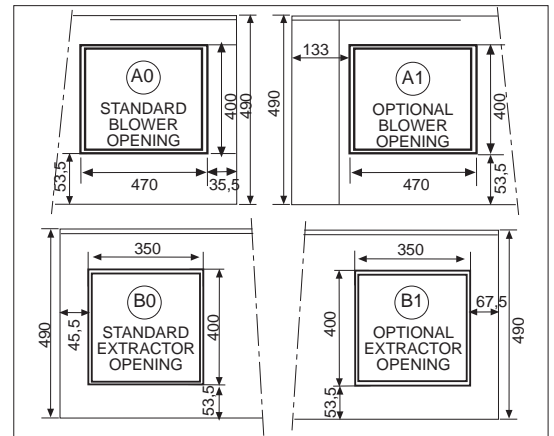


- ① FAN
- ② EXCHANGER
- ③ COMPRESSOR
- ④ ELECTRICAL BOX
- ⑤ ACCESS PANEL TO COMPRESSOR AND PIPE COMPONENTS
- ⑥ CONNECTION PIPE
- ⑦ ACCESS PANEL TO ELECTRICAL BOX
- ⑧ MAIN SWITCH (OPTIONAL, depending on model)
- ⑨ POWER SUPPLY ENTRY
- ⑩ DRAINAGE Models 030 - 036: Ø16 EXTERNAL
Models 048 - 060: OUTSIDE THREAD 3/4" MALE
- ⑪ INTAKE PRESSURE (MOD.030-036)
- ⑫ CONDENSATE PUMP
- ⑬ AIR OUT
 - ⇨ STANDARD POSITION (factory setting)
 - ➡ OPTIONAL POSITION (factory setting)
- ⑭ AIR IN
 - ⇨ STANDARD POSITION (factory setting)
 - ➡ OPTIONAL POSITION (factory setting)

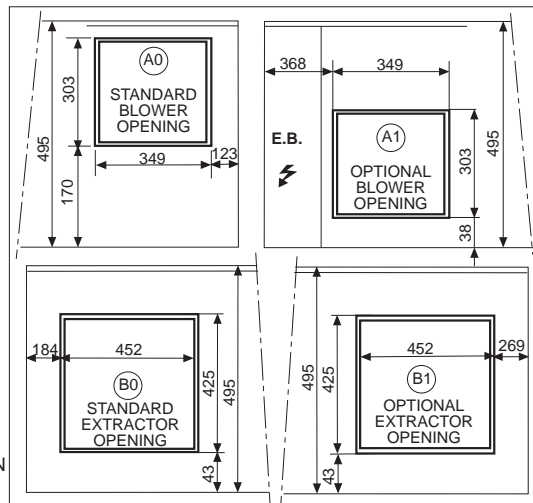
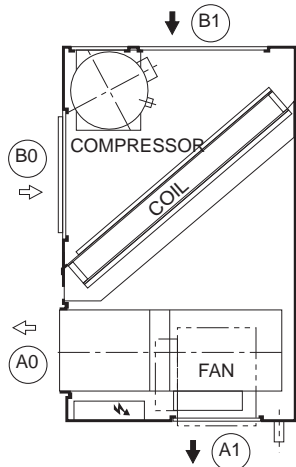
1.11.- ENTRANCE STANDARD/ OPTIONAL OUTDOOR UNIT KCCK/ KCHK



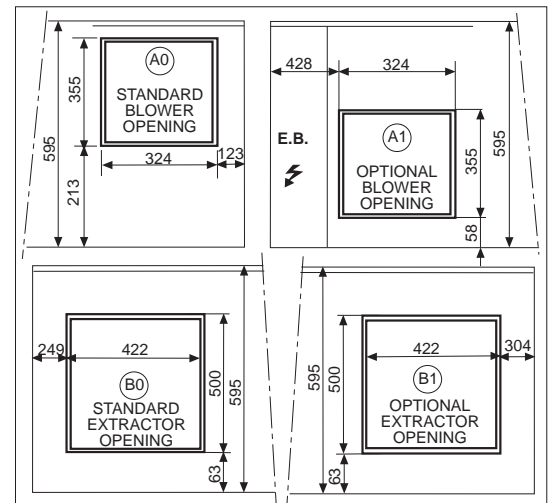
MODELS 030-036



MODELS 048



MODELS 060



- ⇨ STANDARD CONFIGURATION
- ➡ OPTIONAL CONFIGURATION
- ⚡ ELECTRICAL BOX

1.- UNIT SELECTION

1.12.- OPTIONS

OUTDOOR UNIT OPTIONS

ON/OFF CONDENSATION PRESSURE CONTROL

The condensation pressure control consists of one pressure switch, which starts and stops the outdoor fan, regulating the condensation temperature; thus the unit will be able to operate in the cooling cycle when the outdoor temperature is below 19°C (until 0°C).

It includes crankcase heater for cooling only units. The purpose of the heater is to keep the oil in the compressor at the correct temperature while the compressor is stopped, so that it can be properly lubricated when starts again.

When the unit is operating at low outdoor temperatures (below 19°C), it is advisable to fit a crankcase heater.

PROPORTIONAL CONDENSING PRESSURE CONTROL (not available for MODELS 060 with centrifugal fan)

It is an element that regulates outdoor fan speed, in order to control condensation temperature. Thus, the unit will be able to operate in the cooling cycles when the outdoor temperature is below 19°C. This kit includes crankcase heater for cooling only units.

MAIN SWITCH (only MODELS 048-060 with centrifugal fan)

The main switch is located on the access panel to the electrical box, in such a way that the unit is disconnected when the panel is opened, for the models KCCK / KCHK.

COMPRESSOR ACOUSTIC JACKET

Each compressor is fitted with a compressor acoustic jacket this provides attenuation of the compressor noise that radiates from the unit when in operation.

INDOOR UNIT OPTIONS

MOUNTING INSTRUCTION FOR ELECTRICAL HEATER KIT FOR UNITS LTX

BEFORE ATTEMPTING TO PERFORM ANY SERVICE OR MAINTENANCE, TURN OFF THE ELECTRICAL POWER, AND CHECK THAT THE FAN HAS STOPPED

- To remove the casing, slide them over the rolling sides and remove horizontally.
- Remove the filters.
- Remove drain pan.
- Introduce the electrical heater kit rods in the holes of one side of the coil and fix with screws on the other.
- Fix the contactor to the fan deck, see FIG.1
- Follow electrical diagram to connect electrical heater.

ELECTRICAL HEATERS. TECHNICAL DATA

SET/ INDOOR UNIT		LTX 036	LTX 060
Only Cooling / Heat Pump		C/H.Pump	C/H.Pump
230V 1Ph-50Hz	Power (kW)	4,5 / 4,5	--- / ---
400V 3Ph-50Hz	Power (kW)	4,5 / 4,5	6 / 6

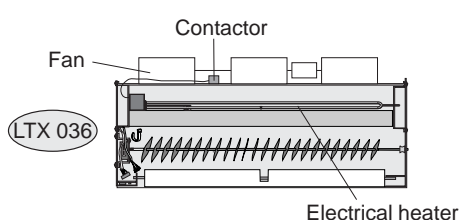
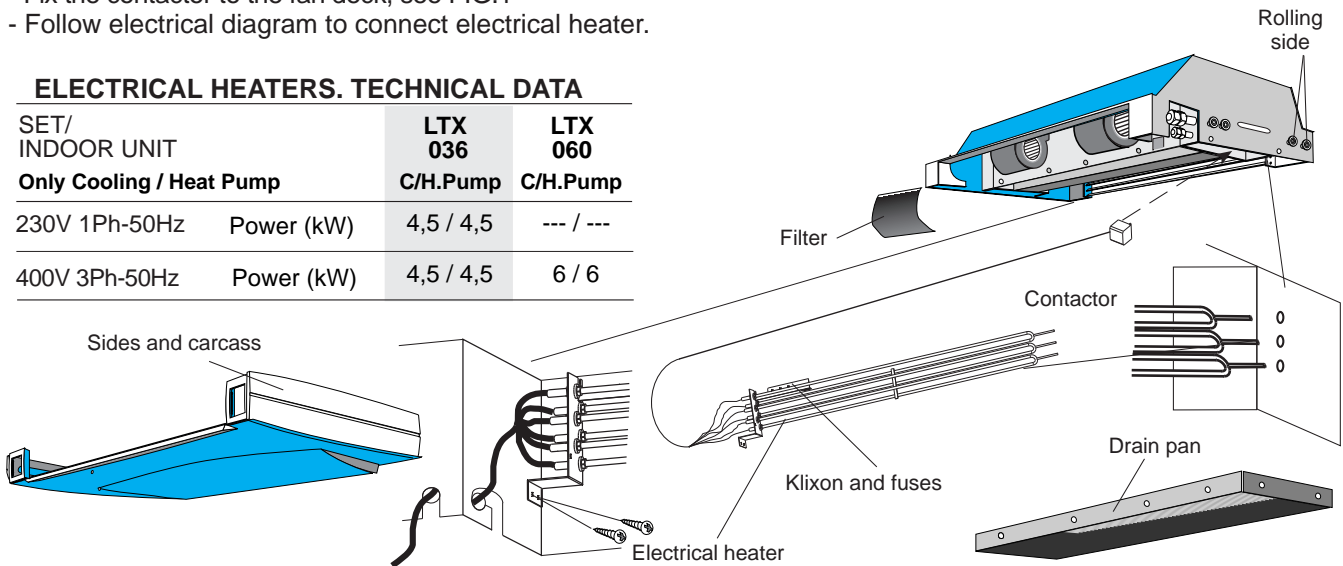
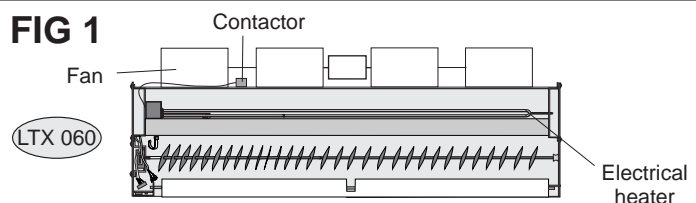


FIG 1



NOTE: The safety thermostat must always be at the top of the electrical heater.

2.- INSTALLATION

2.1.- POINTS TO KEEP IN MIND

DANGER AND WARNING SIGNS



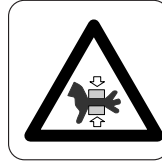
Abrasive surfaces



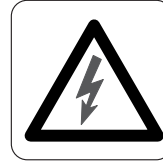
Low temperatures



High temperatures



Risk of injury with moving objects



Electrical voltage



Risk of injury with rotating objects

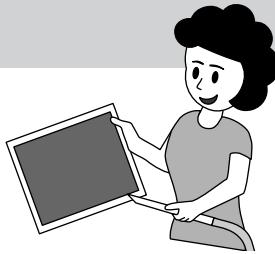
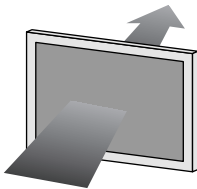
WARNING

Electric shock hazard can cause injury or death. Before attempting to perform any service or maintenance on the unit, turn OFF the electrical power, and check that the fan has stopped.

The air filter cleaning operations do not require technical service; however when an electrical or mechanical operation is required call an Engineer.

FILTER CLEANING

Check the air filter and make sure it is not blocked with dust or dirt.



If the filter is dirty, wash it in a bowl with neutral soap and water, drying it in the shade before inserting it in the unit.

Standard Guidelines to Lennox equipment

All technical data contained in these operating instructions including the diagrams and technical description remains the property of Lennox and may not be used (except for the purpose of familiarizing the user with the equipment), reproduced, photocopied, transferred or transmitted to third parties without prior written authorization from Lennox.

The data published in the operating instructions is based on the latest information available. We reserve the right to make modifications without notice.

We reserve the right to modify our products without notice without obligation to modify previously supplied goods.

These operating instructions contain useful and important information for the smooth operation and maintenance of your equipment.

The instructions also include guidelines on how to avoid accidents and serious damage before commissioning the equipment and during its operation and how to ensure smooth and fault-free operation. Read the operating instructions carefully before starting the equipment, familiarize yourself with the equipment and handling of the installation and carefully follow the instructions. It is very important to be properly trained in handling the equipment. These operating instructions must be kept in a safe place near the equipment.

Like most equipment, the unit requires regular maintenance. This section concerns the maintenance personnel and management.

If you have any queries or would like to receive further information on any aspect relating to your equipment, do not hesitate to contact us.

2.- INSTALLATION

2.2.- INSTALLATION GUIDELINES



All INSTALLATION, SERVICE and MAINTENANCE operations must be carried out by QUALIFIED PERSONNEL.

The unit must be transported in a HORIZONTAL POSITION; any other position may cause serious damage to the machine.

When the unit is received, it should be checked to assure that there are no bumps or other damage, following the instructions on the packaging. If there is damage, the unit may be rejected by notifying the LENNOX Distribution Department and reporting why the machine is unacceptable on the transport agent's delivery notice. Any later complaint or claim made to the LENNOX Distribution Department, for this type of anomaly, cannot be considered under the Guarantee.

Sufficient space must be allowed to facilitate placement of the unit.



When positioning the unit, be sure that the Rating Plate will always be visible since this data will be necessary to assure proper maintenance.

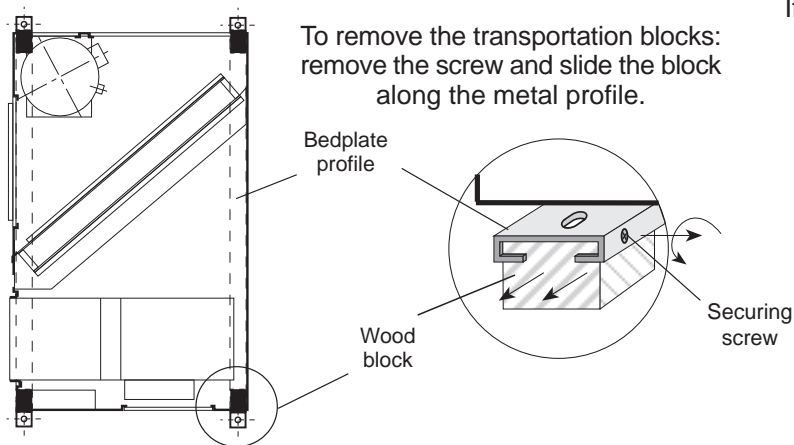
The indoor and outdoor units KCCK-KCHK are designed to be installed with ducts, calculated by qualified technical staff. The joints to be used between ducts and the openings to the unit should be Elastic Joints. Avoid the use of BYPASS joints between the extraction air and input air. The structure where the unit is placed must be able to support the weight of the unit during operation.

2.3.- UNIT RECEPTION

The KCCK-KCHK 048-060 units have Metal Bedplate Profiles and Wooden Blocks for transportation.

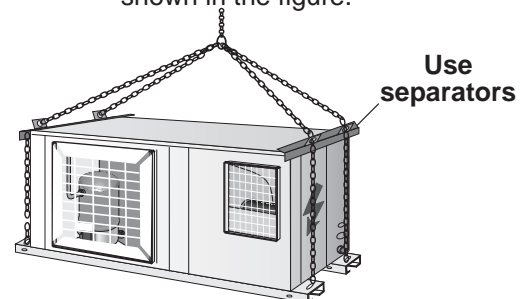
These wooden blocks must be removed when positioning the unit in its final position.

PLACEMENT OF THE BEDPLATE AND TRANSPORTATION BLOCKS



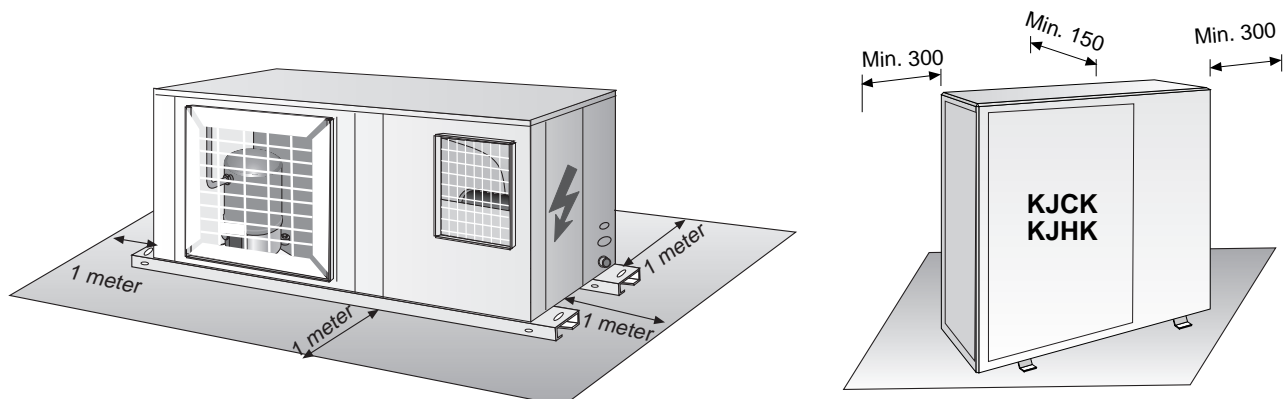
How to hoist the unit

If unloading and placement require the use of a crane, then secure the suspension cables as shown in the figure.



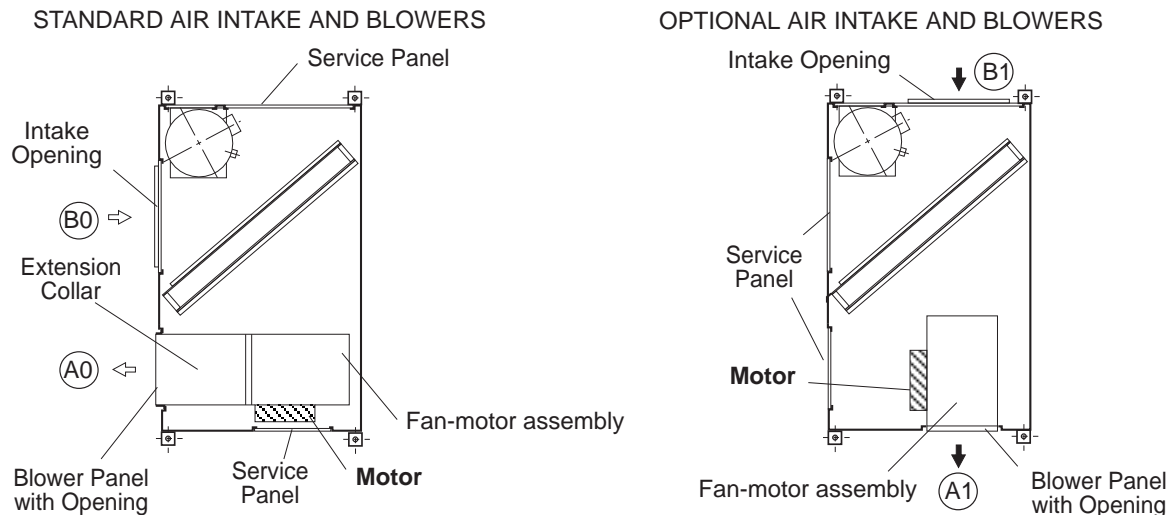
2.4.- INSTALLATION CLEARANCES

Clearance around the unit for service and maintenance.



2.- INSTALLATION

2.5.- OPTIONAL OPERATIONS PRIOR TO UNIT INSTALLATION: CHANGING THE POSITION OF BLOWERS AND AIR INTAKE FOR OUTDOOR UNITS **KCCK-KCHK 048-060**



BLOWER:

From the position (A0) to the position (A1)

- 1) Remove the ceiling of the unit, the Blower Panel with Opening and the Service Panel.
- 2) Remove the motor-fan assembly from the unit unscrewing the supports from the base, and throwing away the extension collar, if there is one.
- 3) Unscrew the supports that have been left on the fan-motor assembly.
- 4) Turn the fan-motor assembly to its new position 90° horizontally and 180° on its shaft. The motor should now be accessible from the Service Panel in this new position.
- 5) Screw down the fan-motor assembly in its new position using the supports.
- 6) Assemble the Blower Panel with Opening and the Service Panel in its new position, taking special care with the weather striping.

INLET:

From the position (B0) to the position (B1)

- 1) Remove the Intake Opening and the Service Panel.
- 2) Switch the position of the Opening and Service Panels.



SEE LOCATIONS AND SIZES FOR THE OPENINGS IN THEIR STANDARD AND OPTIONAL POSITIONS ON THE GENERAL MEASUREMENT DRAWINGS.

2.6.- DUCT INSTALLATION



Duct calculation and design must be effected by a qualified technician.

The ductwork dimensions should be determined in accordance with the air flow circulating through it and with the available static pressure of the unit. This data appears in the corresponding Technical Documentation.

Various suggestions are made here below, regarding the layout and design of the said ductwork:

- 1- Whatever type of duct is used, it should not be made of materials which are flammable, or which give off toxic gases in the event of a fire. The internal surfaces should be smooth, and not contaminate the air which passes through. It is advisable to use isolated sheet metal duct in order to avoid condensations and thermic charges.
- 2- At the points where the duct joins with the unit, it is advisable to use a flexible connection which absorbs vibration and prevents the transmission of noise inside the ductwork and allow unit access.
- 3- Bends should be avoided as much as possible near the unit outlet. If unavoidable, they should be as slight as possible, and internal deflectors should be used when the duct is of large dimensions.

2.- INSTALLATION

2.7.- DRAINS

GENERAL RECOMMENDATIONS:

For drain piping, it is advisable to use PVC copper and steel tube.

For drain tube, use a sealing material. Do not make any drill on the unit base: the drip tray could be damage.

Slightly tip the unit toward the drainage side as the picture shows.

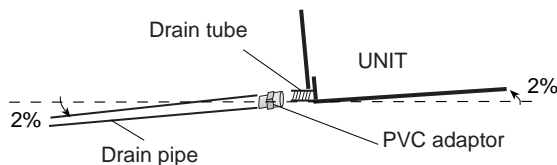


If heat pump outdoor unit is going to be installed for working with outdoor temperatures below 0°C, an electrical heater must be installed around the drain pipe in order to avoid ice formed and not get obstructed.

INDOOR UNITS LTX:

They are provided with a steel 16mm outdoor diameter drain tube welded to the unit base; for this application a siphon is not necessary.

UNITS LTX 030-036-048-060



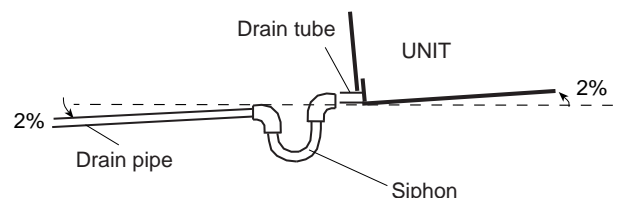
It is not necessary to install a siphon to evacuate water from the unit, but it is advisable to install it to avoid offensive odor.

Slightly tip the units (2%) toward the drainage tube and check that the drip tray is clean and free from dirt and other debris from the works, and that the water drains correctly.

HEAT PUMP OUTDOOR UNITS WITH AXIAL FAN KJHK:

Unit models 030-036-048-060 are provided with a steel 16mm outdoor diameter drain tube welded to the unit base; for this application a siphon must be installed.

Connect the siphon to the drain pipe of the unit, and mount the drain pipe with at least a 2% incline from the siphon. Slightly tip the unit (2%) toward the drainage tube and check that the drip tray is clean and free from dirt and other debris from the works, and that the water drains correctly.

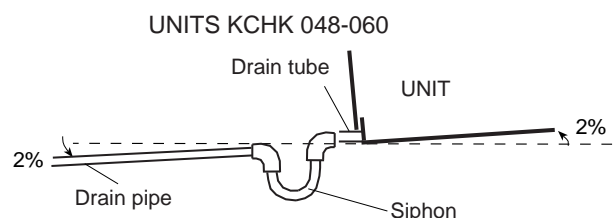
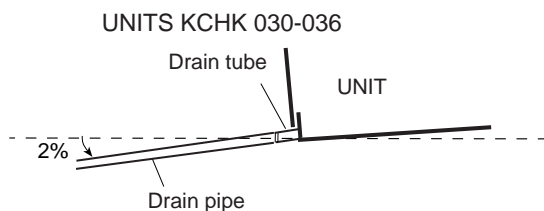


HEAT PUMP OUTDOOR UNITS WITH CENTRIFUGAL FAN KCHK:

Unit models 030-036 are provided with a steel 16mm outdoor diameter drain tube welded to the unit base; for this application a siphon is not necessary.

Unit models 048-060 are provided with a 3/4" male steel threaded welded to the drip tray; for this application a siphon must be installed. Connect the siphon to the drain pipe of the unit, and mount the drain pipe with at least a 2% incline from the siphon.

Slightly tip the unit (2%) toward the drainage tube and check that the drip tray is clean and free from dirt and other debris from the works, and that the water drains correctly.



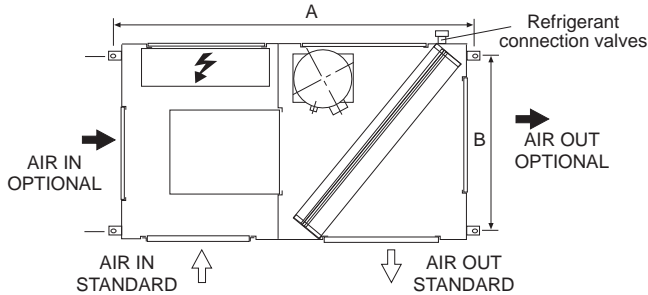
It is not necessary to install siphon to evacuate water from the unit, but it is advisable to install it to avoid offensive odor.

2.- INSTALLATION

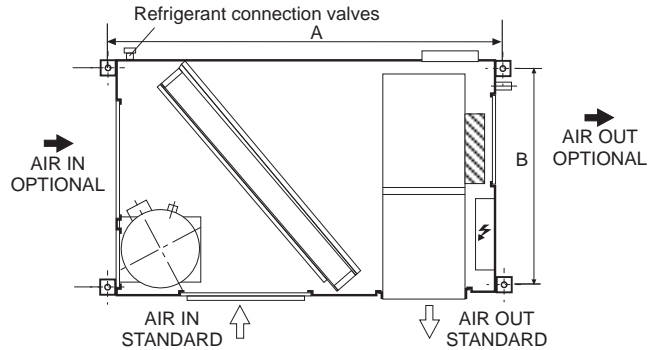
2.8.- SETTING UP TEMPLATES OF OUTDOOR UNIT

OUTDOOR UNIT WITH CENTRIFUGAL FAN (mm)

SETTING UP TEMPLATE UNITS 030-036



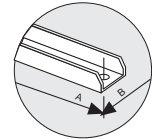
SETTING UP TEMPLATE UNITS 048-060



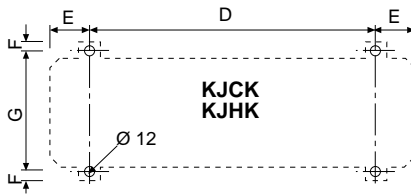
Use 4 rod of a diameter of 10mm if the unit is fixed in the roof, or screw M.10 if the unit is fixed on the ground.

	KCCK 030-036 KCHK 030-036	KCCK 048 KCHK 048	KCCK 060 KCHK 060
A	1064	1300	1350
B	660	711,6	721,6

Dimensions recommended on point A and B are referred to the hole of support of the unit.



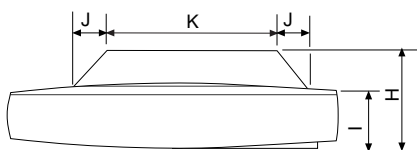
OUTDOOR UNIT WITH AXIAL FAN (mm)



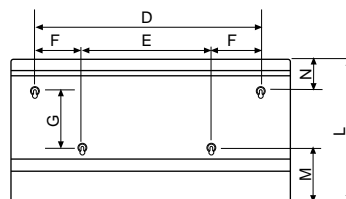
	KJCK KJHK 030	KJCK KJHK 036	KJCK KJHK 048	KJCK KJHK 060
D	620	620	620	620
E	176,4	176,4	176,4	176,4
F	10	10	10	10
G	343,5	343,5	343,5	343,5

2.9.- SETTING UP TEMPLATES OF INDOOR UNIT LTX (mm)

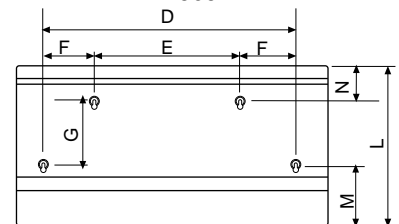
SETTING UP TEMPLATE



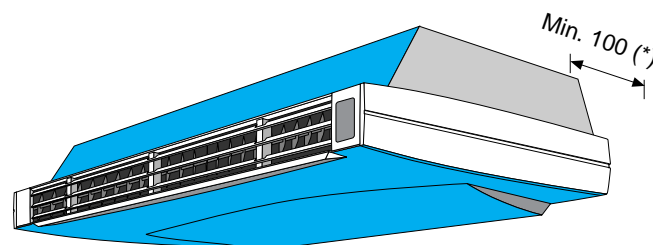
LTX 036



LTX 060



	LTX 036	LTX 060
D	1104	1330
E	1076	807
F	14	261,5
G	359,5	383
H	267,5	312,5
I	177,5	177,5
J	52	78
K	460	508
L	653	753
M	162,5	213
N	131	157



(*) Clearance around the unit for service and maintenance.

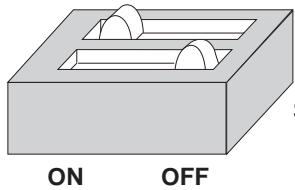
2.- INSTALLATION

2.10.- SYSTEM CONFIGURATION (INDOOR UNIT)

IMPORTANT

Prior of making the electrical connections, set the switch for heat pump unit or for cooling only unit.

This unit is valid for operating as a cooling only or heat pump application. The unit should be configured prior to making the electrical connections, by setting the configuration switch located on indoor unit PCB as follows:



Switch 2

Switch 1

Check page 23 for more information about the situation of this switch.

MODEL	SWITCH	
	1	2
COOLING ONLY (*)	OFF	ON
HEAT PUMP	ON	ON

(*) Configuration from factory.

NOTE:

If errors are made during the configuration of the system, switch off the main power supply, set configuration switch in the correct position and then switch the power on.

2.11.- UNIT LOCATION OF INDOOR UNIT LTX

The unit is able to work in normal radioelectronic conditions for commercial and residential installations. For any other conditions please consult.

Install the unit in a way that the discharge air would not be direct to persons, differences of temperature can create disturbs.

Keep in mind in the installation of the unit, some ambient can supply electromagnetic radiation that can affect the good function of the unit, follow then the instructions recommended in this document.

A

To remove the casing, slide them over the rolling sides and remove horizontally (See picture A).

B

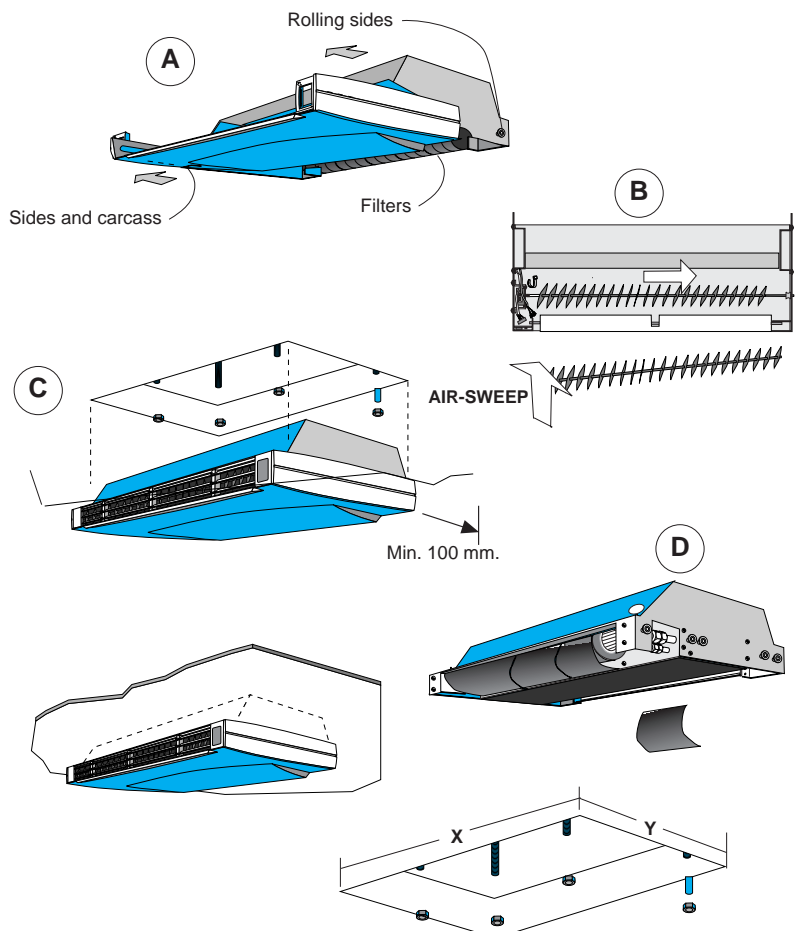
Remove the AIR SWEEP by moving them in the opposite direction of the air sweep motor until they come out, then release the central fixing clip, so that the AIR SWEEP is removed giving better access to the top of the unit (See picture B).

C

Install the unit with the M-8 screws, always use washers. Fix the screws following the pattern. Check the strength of the screws to avoid movement of the indoor unit when removing the side and cover panel. (See picture C).

D

Always install the filters. If the unit operates without filters there is a risk of damage in the indoor unit from dust..



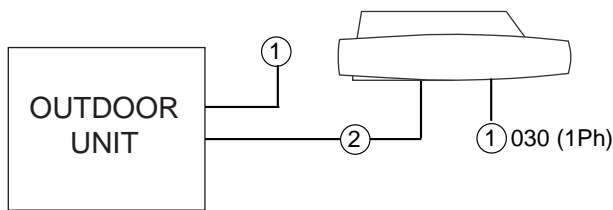
OPENING IN FALSE CEILING

	LTX 036	LTX 060
X	1321 mm	1630 mm
Y	562 mm	670 mm

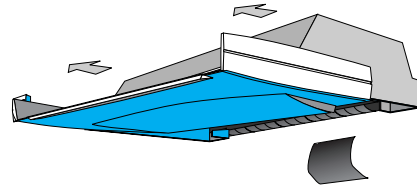
2.- INSTALLATION

2.12.- ELECTRICAL CONNECTIONS

MODELS 030-036-048-060



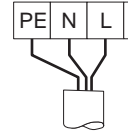
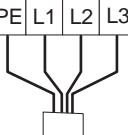
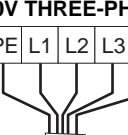
- ① Power supply
- ② Connection indoor unit with outdoor unit



1° Remove the front details at the corners and unit cover panel.

2° Remove the filters.

See picture above

VOLTAGE	MODEL	NUMBER OF WIRES X SECTION			
		COOLING ONLY		HEAT PUMP	
		①	②	①	②
POWER SUPPLY 230V SINGLE PHASE UNITS  X1 1N ~ 230V - 50 Hz + PE	030	3x2,5 mm ²	4x2,5 mm ²	3x2,5 mm ²	6x2,5 mm ²
	036	3x2,5 mm ²	4x1,5 mm ²	3x2,5 mm ²	6x1,5 mm ²
POWER SUPPLY 230V THREE-PHASE UNITS  X1 3 ~ 230V - 50 Hz + PE	036	4x2,5 mm ²	4x1,5 mm ²	4x2,5 mm ²	6x1,5 mm ²
	048 060	4x4 mm ²	4x1,5 mm ²	4x4 mm ²	6x1,5 mm ²
POWER SUPPLY 400V THREE-PHASE UNITS  X1 3N ~ 400V - 50 Hz + PE	030 036	5x1,5 mm ²	4x1,5 mm ²	5x1,5 mm ²	6x1,5 mm ²
	048 060	5x2,5 mm ²	4x1,5 mm ²	5x2,5 mm ²	6x1,5 mm ²

NOTE: The sections have been calculated for a distance no longer than 35m, and a voltage drop of 10V. The wiring must comply with the regulations in force. Make sure the earth cable connection is correct.



IN ORDER TO CARRY OUT THE ELECTRICAL CONNECTIONS, FOLLOW THE ELECTRICAL DIAGRAM SUPPLIED WITH THE UNIT.



REMEMBER THAT THE COMPRESSOR IS A SCROLL TYPE COMPRESSOR

Scroll type compressors only compress in one direction of the rotation. Single phase models are always started up in the proper direction; however, the three phase models, turn in either direction depending on the order of the power supply phases. Therefore, it is essential that the phase connection for scroll-type three-phase compressors be carried out correctly, that is why these three-phase compressors are supplied as standard with a three-phase detector, which avoids the unit starts unless the connections are made on the right way. The direction of the rotation is right when an indicator-light turns ON. If the connection is wrong, this indicator will not light and the rotation will be reversed. If this occurs, the solution is to disconnect, switch the wires between two of the phases and connect again.

2.- INSTALLATION

2.12.- ELECTRICAL CONNECTIONS AND INDOOR UNIT CONFIGURATION (LTX)

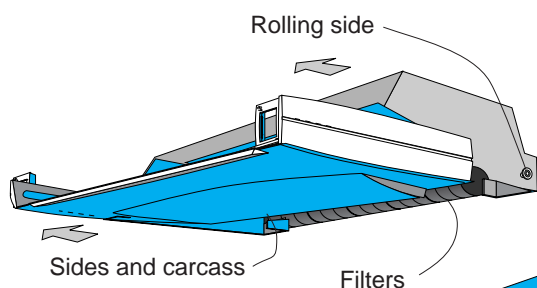
IMPORTANT

Prior of making the electrical connections, set the switch for heat pump unit or for cooling only unit.

This unit is valid for operating as a cooling only or heat pump application. The unit should be configured prior to making the electrical connections, by setting the configuration switch located on indoor unit PCB as follows:

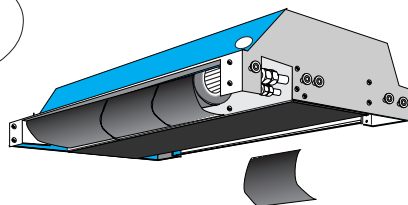
1

To remove the casing, slide them over the rolling sides and remove horizontally.



2

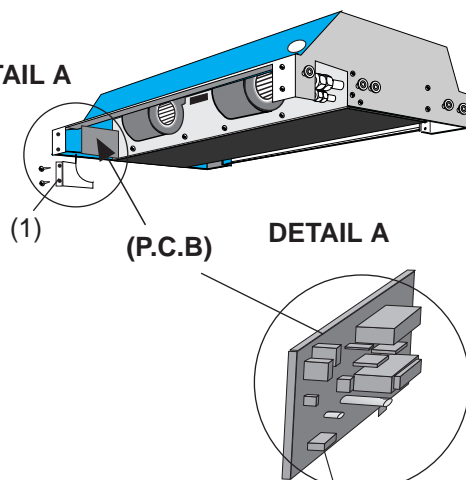
Remove the filters



3

Remove plate (1) as picture shows, removing the screws.

DETAIL A



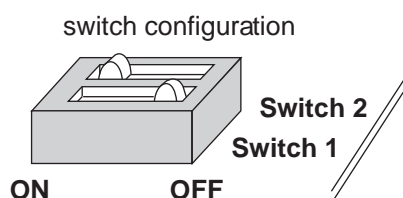
DETAIL A

switch configuration

NOTE: THE UNIT LEAVES FACTORY CONFIGURED ON COOLING MODE

MODEL	SWITCH CONFIGURATION	
	1	2
COOLING ONLY (*)	OFF	ON
HEAT PUMP	ON	ON

(*) Configuration from factory.



NOTE:

If errors are made during the configuration of the system, switch off the main power supply, set configuration switch in the correct position and then switch the power on.

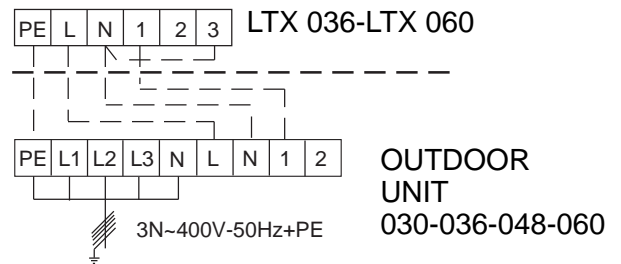
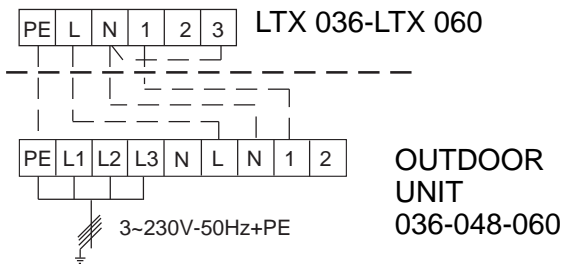
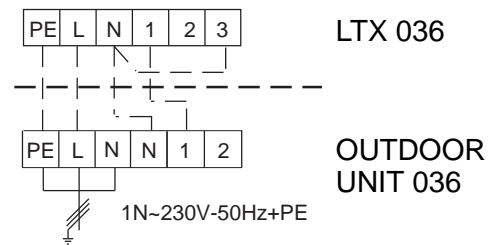
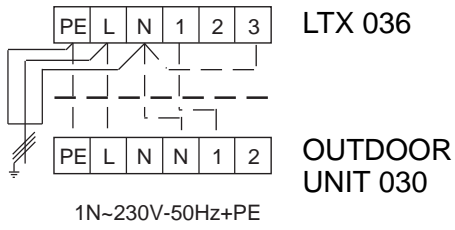
VOLTAGE OPERATING LIMITS

MODEL	VOLTAGE	LIMIT
030-036	230 V-1Ph-50Hz	198-264 V -1Ph- 50Hz
030-036-048-060	230 V-3Ph-50Hz	180-242 V -3Ph- 50Hz
	400 V-3Ph-50Hz	342-462 V -3Ph- 50Hz

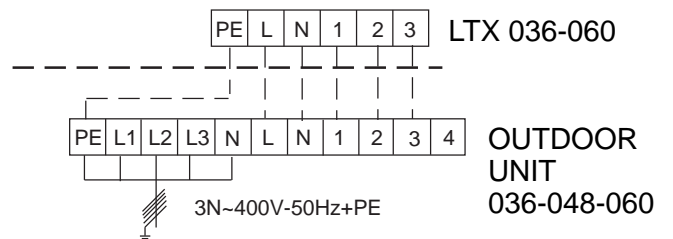
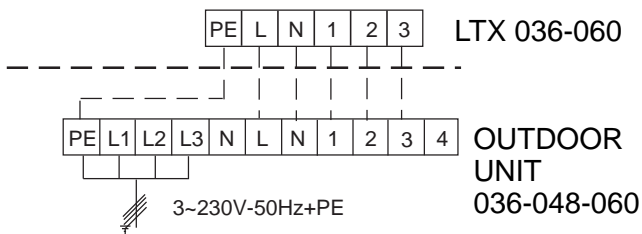
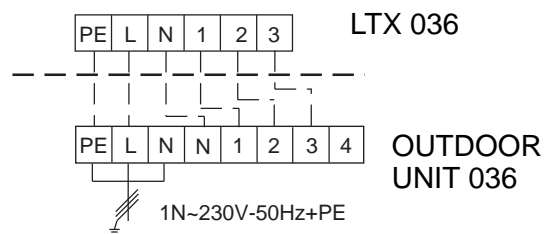
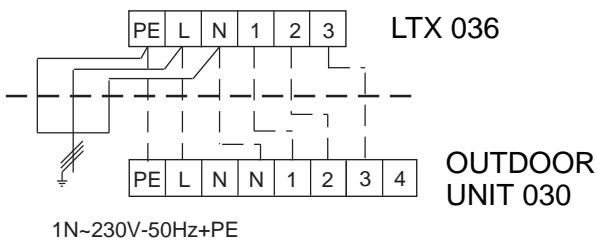
2.- INSTALLATION

2.12.- ELECTRICAL CONNECTIONS

COOLING ONLY

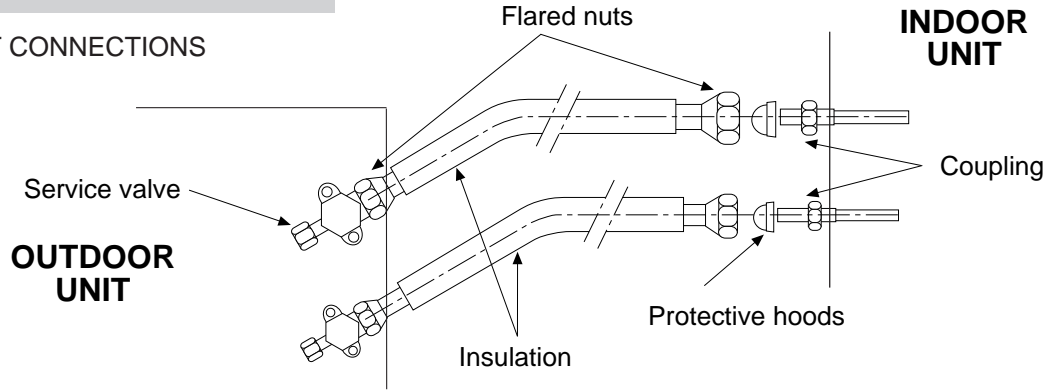


HEAT PUMP



2.- INSTALLATION

2.13.- REFRIGERANT CONNECTIONS

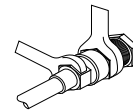


REFRIGERANT CONNECTION FOR UNITS WITH COUPLINGS AND SERVICE VALVES

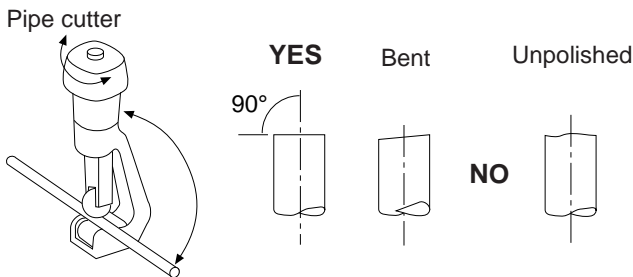
NOTE: BOTH GAS AND LIQUID REFRIGERANT LINES MUST BE INSULATED.

Make the refrigerant connections between the outdoor and indoor unit, as follows:

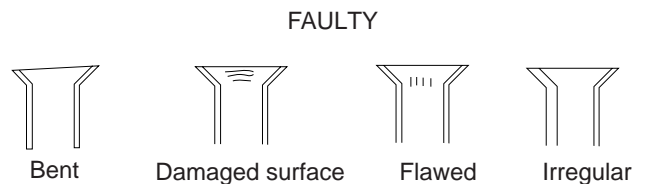
- With the valves closed on outdoor unit, unscrew the flare nuts, removing all the protective hoods.
- Unscrew the flare nuts and the coupling on indoor unit, removing the protecting hoods.
- Introduce the flare nuts in the corresponding union tubes, previously isolated.
- Make the thread union of the tubes in valves and coupling using the keys, as shown in the picture.
- To do vacuum, first close the valves on outdoor unit, second connect the plug of the vacuum pump to the suction valves service port 1/4", do vacuum to get an absolute pressure of 0.5 mm Hg. This way the vacuum will be created in indoor unit and union pipes.
- Remove the plugs and open the valves of outdoor unit.
- Verify leakage in couplings.
- Insulate pipes and service ports.



CUT THE PIPE PROPERLY

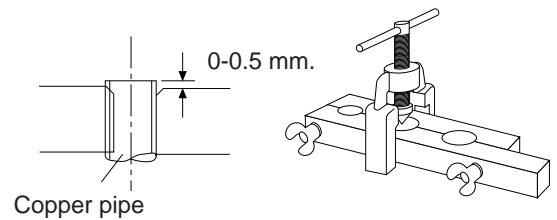
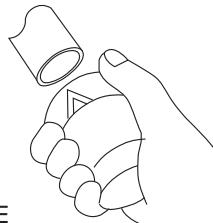


MAKE A CORRECT FLARE

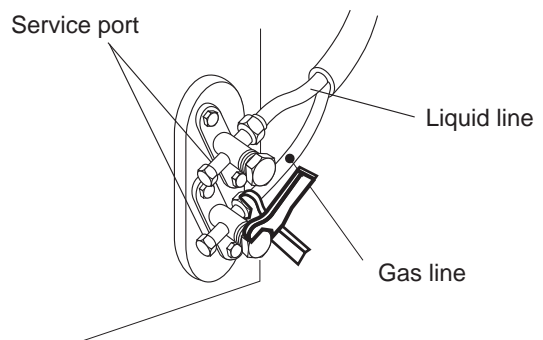


AVOID FROM METALLIC DUST ENTERING INTO THE PIPE

CLEAN THE BURRS



OUTDOOR UNIT



TIGHTENING TORQUE

Apply the tightening torque shown in the table. Insufficient tightening torque could cause refrigerant leak, excessive tightening torque will damage pipe flare.

Pipe diameter	Tightening torque
1/4"	15-20 Nm
3/8"	31-35 Nm
5/8"	50-55 Nm
3/4"	65-70 Nm

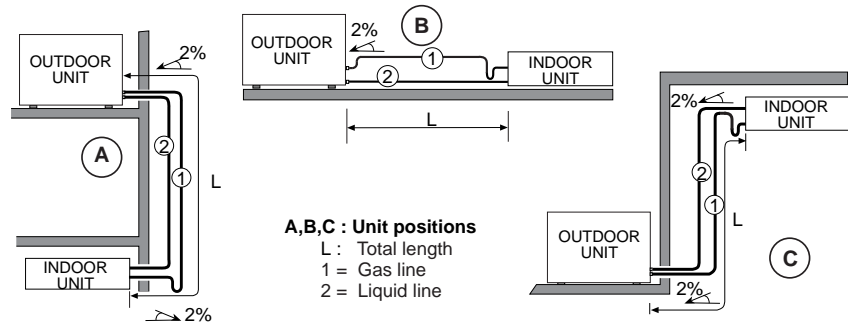
2.- INSTALLATION

2.13.- REFRIGERANT CONNECTIONS

DISTANCES BETWEEN UNITS

To locate the outdoor and the indoor units, refer to the following information:

SYPHONS: Install syphons on the installation as the picture shows, on the upper and lower position of the suction line. No other syphons are necessary. The indoor units LNXO 070-080 are supplied with welded connections.



REFRIGERANT LINES SELECTION

REFRIGERANT LINES		UNIT - MODEL			
		030	036	048	060
Unit connections	Ø Liquid	3/8"	3/8"	3/8"	3/8"
	Ø Gas	5/8"	3/4"	3/4"	3/4"
Maximum vertical line length (m)		15	15	15	15
Maximum vertical line length + horizontal (m)		25	25	25	25
Maximum number of bends		12	12	12	12

NOTE: BOTH GAS AND LIQUID REFRIGERANT LINES MUST BE INSULATED.



For other positions and longer distances, consult the Lennox Technical Support Department for application assistance.
 The following data will be obtained from that estimation:
 pipe dimensions, suction traps, isolation, refrigerant charge.

REFRIGERANT CHARGE

The outdoor unit is supplied with refrigerant R-407C factory precharged, for the set indoor+outdoor unit and for a line of 7 meter long. When the line length exceeds 7m, add the following amount of refrigerant per meter line:

COOLING ONLY UNITS

MODEL	030	036	048	060
Refrigerant charge R-407C per meter (gr.)	20	20	20	20

HEAT PUMP UNITS

MODEL	030	036	048	060
Refrigerant charge R-407C per meter (gr.)	45	45	45	45

3.- COMMISSIONING AND OPERATION

3.1.- DATA PAGE FOR UNIT COMMISSIONING

UNIT: _____ SERIAL No.: _____

CONTROL PANEL IDENTIFICATION CODE _____

INSTALLATION ADDRESS: _____

INSTALLER: _____ INSTALLER TEL.: _____

INSTALLER ADDRESS: _____

DATE OF COMMISSIONING: _____

CHECKS:

SUPPLY VOLTAGE: _____ RATED VOLTAGE OF THE UNIT: _____

	YES	NO
UNIT ON SHOCK ABSORBERS	<input type="checkbox"/>	<input type="checkbox"/>
DRAINAGE WITH TRAP	<input type="checkbox"/>	<input type="checkbox"/>
GENERAL POWER SUPPLY CONNECTION	<input type="checkbox"/>	<input type="checkbox"/>
CONTROL PANEL CONNECTION	<input type="checkbox"/>	<input type="checkbox"/>
COMPRESSOR OIL LEVEL INDICATOR	<input type="checkbox"/>	<input type="checkbox"/>

DATA INPUT:

COOLING CYCLE

Air Intake Temperature to the coil: _____ °C

Air Output Temperature to the Coil: _____ °C

High Pressure: _____

Low Pressure: _____

HEATING CYCLE

Air Intake Temperature to the coil: _____ °C

Air Output Temperature to the Coil: _____ °C

High Pressure: _____

Low Pressure: _____

ELECTRIC POWER CONSUMPTION (Amps)

Compressor _____ / _____ / _____

Fan _____ / _____ / _____

Compressor _____ / _____ / _____

Fan _____ / _____ / _____

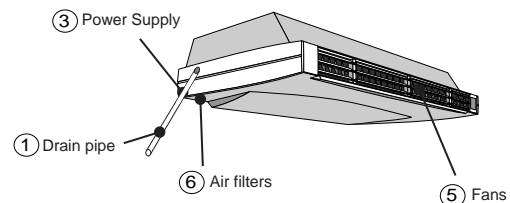
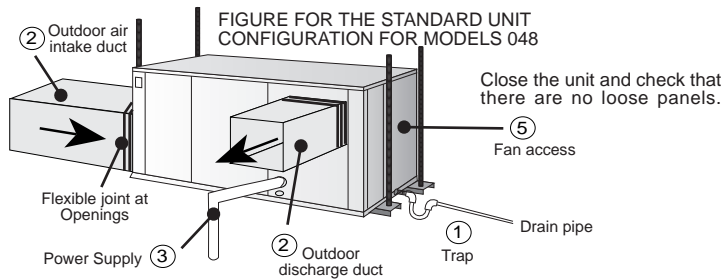
Options Installed: _____

Comments: _____

3.- COMMISSIONING AND OPERATION

3.2.- PRELIMINARY CHECKS

- ① Check that drain pipe connections and their fixtures are secure and that the level of the unit is tipped toward the drain.
- ② Inspect the state of the ducts and grilles (clean and open grilles, no breaks in the duct, etc.).
- ③ Check that the power supply is the same as stated on the Rating Plate which is in agreement with the electrical diagram for the unit and that cable sizes are correct.
Check that tightness of the electrical connections to their terminals and to ground.
- ④ Check indoor - outdoor unit connection.
- ⑤ Check **with your hand** that the fans turn freely.
- ⑥ Check the air filter is installed.



3.3.- STEPS TO FOLLOW FOR COMMISSIONING THE UNITS

- On heat pump units, the compressor has a single phase electric heating element to assure a separation between the refrigerant and the oil in the housing. This heater is activated when the compressor is off and stops working when the compressor is on. About eight hours before start up or after a long shutdown period, voltage should be supplied to the unit so that this heater will be activated.
- To start the unit, follow the instructions given in the Control Panel Manual supplied with the unit (requesting operation in any of the modes, cooling, heating, or automatic). After a time lapse, the unit will start.
- With unit operating, check that the fans are turning freely and in the proper direction.



REMEMBER THAT THE COMPRESSOR IS A SCROLL TYPE COMPRESSOR:

Scroll type compressors only compress in one direction of the rotation. Single phase models are always started up in the proper direction; however, the three phase models, turn in either direction depending on the order of the power supply phases. Therefore, it is essential that the phase connection for scroll-type three-phase compressors be carried out correctly, that is why these three-phase compressors are supplied as standard with a three-phase detector, which avoids the unit starts unless the connections are made on the right way. The direction of the rotation is right when an indicator-light turns ON. If the connection is wrong, this indicator will not light and the rotation will be reversed. If this occurs, the solution is to disconnect, switch the wires between two of the phases and connect again.

- Connect high and low pressure gauges and check that operating pressure values are normal.
- Measure electrical consumption for the unit and check that it is near what is indicated on the Rating Plate.
- Check the electrical consumption of the compressor and the fans with what is specified in the physical data sheets.
- In the case of a Heat Pump unit, make a cycle change on the Control Panel checking that the 4-way valves make the change correctly. Check the pressure values in the new cycle.

- UNIT PROTECTIONS:

1.- Electrical protections:

- ◇ Compressor start temporize 3 minutes. Avoid continued compressor starts.
- ◇ Thermal compressor protection (three phase models). Protects from a high compressor absorbed power.
To reset this protection, push the thermal protection button (located at the outdoor unit electrical box).
- ◇ Three phase detector (three phase models). Explained before.
- ◇ Protection fuses outdoor-indoor unit connection.

2.- Refrigerant protections:

- ◇ Pressostats:

DESCRIPTION	UNITS	RATED (kg/cm ²)		EFFECT	RESET
		OFF	ON		
Low pressure (LP)	030 to 080	0,5	1,5	Unit stops	Automatic/ Manual (electric) (1)
High pressure (HP)	030 to 080	27,5	22	Unit stops on cooling mode	Manual (electric)
Low ambient control (HPC)	Heat pump units	26,5	22	Outdoor fan stops on heating mode	Automatic

- (1) For heat pump units, when the unit is working during an hour, the 2 first resets are automatic, the third one is manual (electric). For cooling only units, the reset is always manual (electric). For electrical resets, disconnect power supply from the unit.

Indication for pressostat alarms:

For heat pump units, the PCB (located at the outdoor unit electrical box) has 2 indicators, HP and LP, which are low pressure and high pressure indicators. If any of those are lighted, indicates that the protection is activated; if any indicator is flashed, indicates that the protection has been reset, and it is waiting for disconnecting power supply.

◇ Probes:

- Anti-freeze protection: it comes on through the indoor unit coil probe (ID), avoids ice forms on cooling mode when temperature measures 0°C, the unit stops. This protection has an automatic reset.
- Overload heating mode protection: it comes on through the indoor unit coil probe (ID), avoids the unit works on heating mode with high condenser temperatures, when temperature measures 63°C, the unit stops. This protection has an automatic reset.

3.- Defrost cycle:

For heat pump units during the heating mode, it is possible the unit goes on to the defrost cycle. During this cycle, it is necessary to melt the ice on the outdoor coil, for that the unit will start working on cooling mode, and outdoor and indoor fans will stop.

Function: the defrost cycle is controlled through the PCB (outdoor unit) and the temperature probe (TS) located on the outdoor coil. The defrost cycle begins when TS < -2°C during 45 min. (not necessary on and on). This period can be changed through jumpers JMP5 and JMP6 from PCB. The defrost cycle ends when TS > +18°C or because the defrost cycle has exceeded 12 min.

Time needed for defrost	JMP5	JMP6
30 min	○ ○	○ ○
45 min (2)	○ ○	⊗ ⊗
60 min	⊗ ⊗	○ ○
75 min	⊗ ⊗	⊗ ⊗

(2) Factory setting

4.- MAINTENANCE

4.1.- PREVENTIVE MAINTENANCE



IMPORTANT: MAKE SURE THE UNIT IS COMPLETELY DISCONNECTED FROM THE POWER SUPPLY WHEN CARRYING OUT ANY TYPE OF WORK ON THE MACHINE. ALL MAINTENANCE SERVICE ON THE UNIT MUST BE CARRIED OUT BY QUALIFIED PEOPLE. ONLY COIL CLEANING AND FILTER REPLACEMENT CAN BE DONE BY NON-QUALIFIED PEOPLE.

PREVENTIVE MAINTENANCE PREVENTS COSTLY REPAIRS. BECAUSE OF THIS, PERIODIC INSPECTIONS ARE REQUIRED:

-GENERAL STATE OF THE CASING :

Furniture, paint, deterioration due to bumps, rust spots, leveling and supporting, state of the shock absorbers, if installed, screwed panels, etc.

- ELECTRICAL CONNECTIONS :

State of hoses, tightness of screws, grounding, current draw of the compressor and fans and checking that the unit is receiving the correct voltage.

- COOLING CIRCUIT :

Check that pressure values are correct and that there are no leaks. Check that there is no damage to the pipe insulation, that the state of the batteries is correct and that there are no chips or clogs retained by the air flow, etc.

- COMPRESSOR :

Inspect the oil level, if sight glass is present. Inspect the state of the silent block fixtures.

- DRAINS :

Check that water drains correctly and that the drain trays are clean.

- FANS :

Check that fans turn freely and in the correct direction without excessive noises.

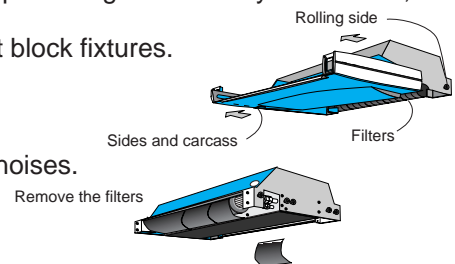
- CONTROL :

Check Set Points and normal operation.

- AIR FILTERS:

Push air filter up and pull it out, as shown in the picture. The filter should be cleaned with a vacuum cleaner or washed in soapy water.

The frequency for cleaning or changing the air filters will depend on the quality air in the area (fumes, vapors, suspended dust particles, etc.).



4.2.- CORRECTIVE MAINTENANCE

If some component in the cooling circuit must be replaced, follow these recommendations:

- Always use original replacement parts.

- Remove the entire refrigerant charge from the unit from through the schrader valves located in the outdoor section. Create a slight vacuum as a safety measure.

- Regulation prohibits the release on the refrigerant into the atmosphere.

- If cuts must be made in the pipework, use pipe cutters. Do not use saws or any other tools that produce filings.

- All brazing must be carried out in a nitrogen atmosphere to prevent corrosion from forming.

- Use silver alloy brazing rod.

- Take special care that the flame from the torch is aimed in the opposite direction from the component to be welded and is covered with a wet rag in order to avoid overheating.

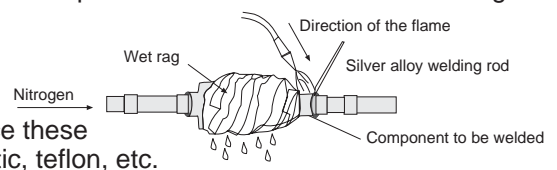
- Take very special care if 4-way check valves are to be replaced since these have internal components that are very heat-sensitive such as plastic, teflon, etc.

- If a compressor must be replaced, disconnect it electrically and un-braze the suction and discharge lines. Remove the securing screws and replace the old compressor with the new one. Check that the new compressor has the correct oil charge, screw it to the base and connect the lines and electrical connections.

- Carry out the vacuum above and below through the schrader valves of the outdoor unit until -750 mm Hg is reached. Once this level of vacuum has been reached, keep the pump in operation for at least one hour.

DO NOT USE THE COMPRESSOR AS A VACUUM PUMP.

- Charge the unit with refrigerant according to the data on the Rating Plate for the unit and **check that there are no leaks.**



PRECAUTIONS TO BE TAKEN IN THE USE OF R-407C Refrigerant:

R-407C Refrigerant is used in the unit; therefore, the following precautions characteristic of this gas should be taken:

- The Vacuum Pump must have a Check Valve or Solenoid Valve.

- Pressure Gauges and Hoses for the exclusive use with R-407C Refrigerant should be used.

- The charge should be carried out in the Liquid Phase.

- Always use scales to weight-in charge - Use the Leak Detector exclusive for R-407C Refrigerant.

- Do not use mineral oil, only synthetic oil to ream, expand or make connections.

- Keep pipes closed before using them and be very thorough about any possible dirt (dust, filings, burrs, etc.).

- When there is a leak, gather what is left of the charge, create a vacuum in the unit and completely recharge with new R-407C Refrigerant.

- Brazing should always be carried out in a nitrogen atmosphere.

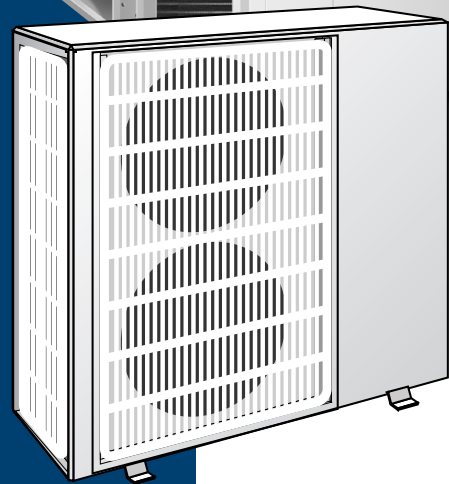
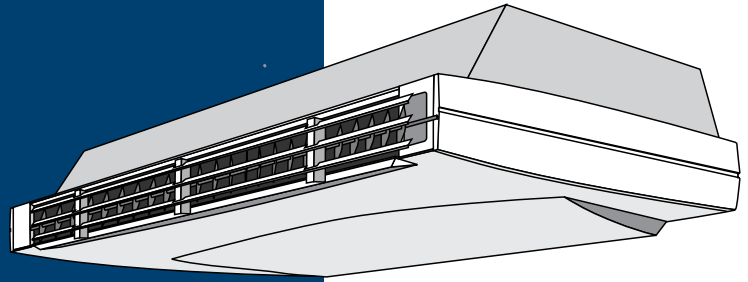
- Reamers should always be well sharpened.

4.- MAINTENANCE

4.3.- FAILURE DIAGNOSIS

PROBLEM	SOLUTION
1.- Unit does not work.	<ul style="list-style-type: none"> • Check electrical supply of the unit. • Check electrical connection. • Check that remote controller and its parameters work correctly.
2.- The fan of the unit works too fast without any change on speed.	<ul style="list-style-type: none"> • Check that the filter of the unit is clean. • Check electrical connection. • If the problem persists, check the function of the motor.
3.- Noise on pipe system. NOTE: Some noises are normal when unit stops and starts.	<ul style="list-style-type: none"> • Check refrigerant charge is correct. • ¿was the vacuum made correctly? • Check internal temperature; it could be quite low.
4.- Excess of condensation in indoor unit.	<ul style="list-style-type: none"> • Check possible obstructions in the condensate pan, and also out of the pan. • Check correct level of the unit. • Check drainage pipe.
5.- The indoor coil freezes continuously.	<ul style="list-style-type: none"> • Check the air filter of the indoor unit. • Check the level of refrigerant. • Check strangulation air flow or recirculation. • If the freeze persists, the expansion can be obstructed. • ¿Is the temperature below 21 °C? • Check indoor temperature sensor.
6.- Unit works perfectly on cooling mode, but does not produce heat on heat pump mode.	<ul style="list-style-type: none"> • Check if you have configured correctly the function mode of the unit. • Check inverter valve of the outdoor unit. • Check the plate PCB to the solenoid inverted valve.
7.- External fan stops.	<ul style="list-style-type: none"> • Check that terminal connections are slack. • Check the motor. • Check the condenser situation. • Check that the unit is not on defrost cycle (heat pump units).
8.- Excessive pressure of condensation (working on cooling mode).	<ul style="list-style-type: none"> • Check that the external exchanger is not dirty and obstructed. • Check that there is no condensable gas and air in the refrigerant circuit. • Check that the external fan works correctly. • Check that the refrigerant charge is correct.
9.- Low pressure condensation (working on cooling mode).	<ul style="list-style-type: none"> • Check that the refrigerant charge is correct. • Check possible obstruction on the expansion system of the outdoor unit, liquid pipe or exchanger. • Check that air filter is not dirty or wrong function of indoor fan.
10.- Excessive pressure on return air (working on heat pump mode).	<ul style="list-style-type: none"> • Check that the refrigerant charge is correct. • Check the situation of inverter valve. • Check retention valve situation.
11.- Low pressure on return air (working on heat pump mode).	<ul style="list-style-type: none"> • Check that the refrigerant charge is correct. • Check possible obstruction on the expansion system of the outdoor unit. • Check that the external fan works correctly. • Check the correct function of the defrost control.

OPERATION, SERVICE
AND INSTALLATION MANUAL



PROVIDING GLOBAL SYSTEM SOLUTIONS

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TCCK / TCHK

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