

APPLICATION GUIDE



AIR TREATMENT UNIT **FIX/FIC/FIH**

10 - 28 kW

FIC/FIH/FIX-AGU-1801-E



www.lennoxemea.com

FIX/FIC/FIH

APPLICATION GUIDE

Ref : FIC/FIH/FIX-AGU-1801-E

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Product designed and manufactured under quality management systems certified ISO 9001 and ISO 14001.



Our company's products comply with European standards.

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GENERAL DESCRIPTION

CASING

Galvanized steel sheet casing, highly corrosion-resistant.
 Metal profiles allowing ceiling installation.
 Panels are easily inter exchangeable, allowing several supply and return configurations.
 An insulation (fire class M1) is used in indoor section, certifying that the material is auto-extinguishable.

AIR FILTER

Washable air filter; M1 classification self-extinguishing material, high efficiency G2 filtration.
 It can be removed through the upper part and from the sides.

FAN

Centrifugal fan with an assembled motor, mechanically balancing, with a low noise level.
 This fan is put on stands and on antivibratiles mounts to avoid vibrations.

EXCHANGER

Made of copper pipes and aluminium fins, designed to provide a high heat transfer.
 The dimensions and design of the refrigerant circuit allow the heat exchanger to provide maximum performance, while reducing the energy consumption.



FIC/FIH/FIX units are designed for false ceiling mounting, to be installed exclusively indoor. For outdoor mounting, a shelter or roof structure has to be installed, to avoid direct water entry in the sensible parts of the unit (electrical board, joints between air treatment unit and thermodynamic units).

CONTROL

CLIMATIC 40 - CLIMATIC 60

FIC/FIH/FIX units may be equipped with two different controls :

- The basic CLIMATIC 40 platform, including one terminal in the unit and another DC40 remote
- The advanced CLIMATIC 60 platform including one terminal in the unit, and 3 optional remote displays (DC, DS, DM) (Non Standard Request)

CLIMATIC 60 controller intelligently improves efficiency and helps commissioning and service operations to guarantee long lasting performance.

OPTIMIZED OPERATION AND SETUP SAVES ENERGY

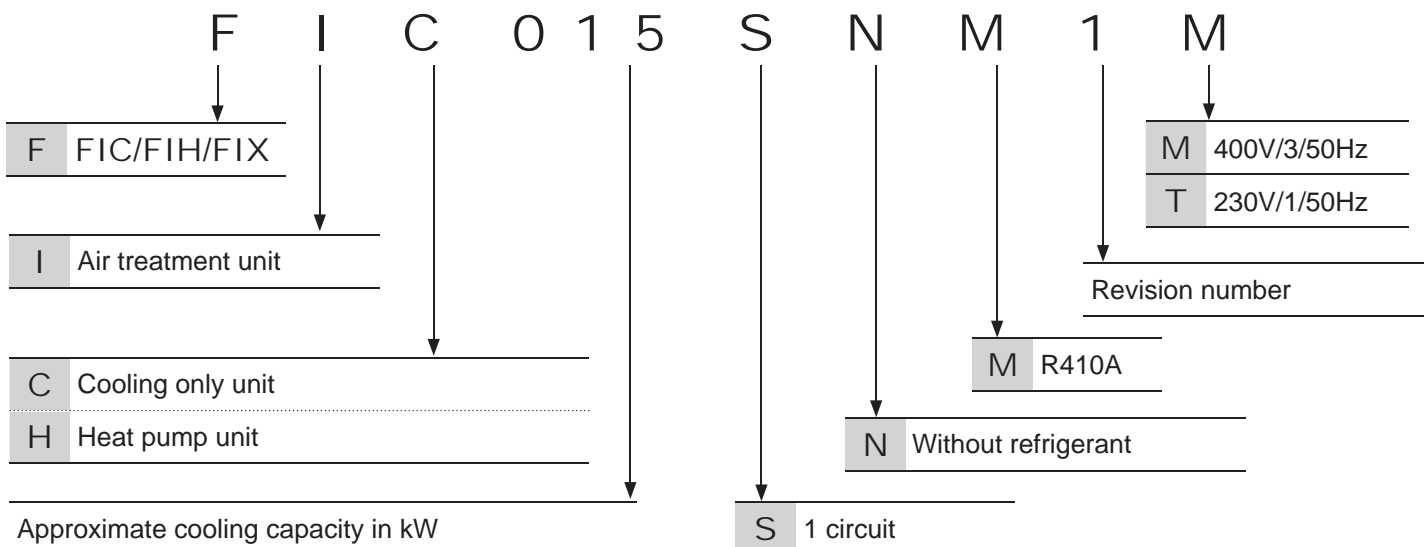
CLIMATIC™ 60 is designed to provide the best energy efficiency throughout unit's life cycle while ensuring reliable and consistent operation with user friendly interfaces.
 This new controller constantly monitors more machine parameters than ever to improve units operation and maximize efficiency and reliability.

OPTIONS

FIC/FIH/FIX units can be equipped with the following options:

- **DC60** Customer display (CLIMATIC 60 version only)
- **DS60** Service display (CLIMATIC 60 version only)
- Remote duct sensor in return
- Ambient remote sensor
- Thermostatic freecooling
- Enthalpic freecooling (CLIMATIC 60 version only)
- Economizer 1 and 2 baffle(s)
- Different return and supply airflow configurations
- BMS communication interface (CLIMATIC 40 as standard and CLIMATIC 60 as an option)
- LonWorks communication interface (CLIMATIC 60 version only)
- Bacnet communication interface (CLIMATIC 60 version only)

2 - MODEL NUMBER DESCRIPTION



FIX/FIC/FIH		10	10	12	15	20	25	30
Cooling mode								
Net cooling capacity ⁽¹⁾	kW	9,7		12,1	15,0	19,5	23,5	27,0
Heating mode								
Net heating capacity ⁽²⁾	kW	10,0		12,5	15,5	20,5	25,0	27,9
Air treatment section								
Minimum airflow rate	m ³ /h	1500		1650	2410	3090	3455	3695
Minimum airflow rate		2140		2040	3170	4500	5470	5060
Maximum airflow rate		2350		2300	3575	4850	5750	5500
Maximum available static pressure	Pa	120		110	160	200	240	180
Auxiliary heating (option)								
Electric heater capacity (S/M/H) ⁽³⁾	kW	3/6/-	3/6/9	4,5/6/9			7,5/9/12	
Acoustic data								
Global sound power level ⁽⁴⁾	dB(A)	72		76	80	84	83	

(1) : Ambient air temperature : 27 °C DB, 19 °C WB - Outdoor air temperature : 35 °C DB, 24 °C WB.

(2) : Ambient air temperature : 20°C DB, 12°C WB - Outdoor air temperature : 7°C DB, 6°C WB.

(3) : S = Standard capacity - M = Average capacity - H = High capacity

(4) : EUROVENT conditions.

DIMENSIONS

FIX/FIC/FIH		10	12	15	20	25	30
Length	mm	1250		1300	1450	1500	
Depth		430	500	620	775		
Height		500	595	595	645		

WEIGHTS

FIX/FIC/FIH		10	12	15	20	25	30
Cooling only and heat pump units							
Indoor unit (FIX/FIC)	kg	58	58	85	109	121	131
Options - to be added to indoor units weights							
Electrical heater	kg	7	7	7	7	8	8
1 damper free-cooling		12	12	12	14	15	15
2 dampers free-cooling		24	24	24	28	30	30

AIR TREATMENT UNITS		Airflow rate (m ³ /h)					
		10	12	15	20	25	30
Available static pressure (Pa)	0	2350	2300	3575	4850	5750	5500
	10	2275	2250	3495	4785	5730	5455
	20	2240	2200	3410	4715	5705	5405
	30	2190	2150	3330	4645	5670	5350
	40	2140	2100	3250	4575	5630	5285
	50	2080	2040	3170	4500	5580	5220
	60	2025	1975	3095	4425	5530	5140
	70	1975	1925	3020	4345	5470	5060
	80	1925	1860	2945	4260	5405	4965
	90	1840	1800	2875	4175	5330	4870
	100	1775	1730	2800	4090	5250	4765
	110	1625	1650	2735	4000	5165	4655
	120	1500	----	2665	3910	5075	4640
	130	---	---	2600	3815	4975	4415
	140	---	---	2535	3720	4870	4285
	150	---	---	2470	3620	4755	4150
	160	---	---	2410	3520	4640	4005
	170	---	---	---	3415	4515	3855
	180	---	---	---	3310	4380	3695
	190	---	---	---	3200	4245	---
	200	---	---	---	3090	4100	---
	210	---	---	---	---	3945	---
	220	---	---	---	---	3790	---
	230	---	---	---	---	3625	---
240	---	---	---	---	3455	---	

CORRECTION COEFICIENTS - AIRFLOW RATES

	Sizes 10-12-15-20			Sizes 25-30		
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
Calculation of cooling capacity depending airflow rate						
Cooling capacity	x 0.97	x 1.00	x 1.01	x 0.98	x 1.00	x 1.01
Sensible capacity	x 0.90	x 1.00	x 1.03	x 0.95	x 1.00	x 1.02
Calculation of heating power depending on airflow rate						
Cooling capacity	x 0.98	x 1.00	x 1.01	x 0.91	x 1.00	x 1.03
Sensible capacity	x 0.98	x 1.00	x 1.01	x 0.98	x 1.00	x 1.01

Size	Hz	dB(A)						Lw dB(A)	
		125	250	500	1000	2000	4000		8000
10		71	67	67	67.4	64.9	64.1	58.3	72
12		71	67	67	67.4	64.9	64.1	58.3	72
15		74	69	72	71.3	69.1	66.0	59.7	76
20		77	71	75	75.8	73.4	70.7	65.7	80
25		79	73	79	80.2	77.4	74.5	74.3	84
30		78	72	77	78.4	75.7	72.9	68.4	83

With compressor jacket, estimated reduction of 2 dB(A)

6 - ELECTRICAL DATA

UNITS WITHOUT ELECTRICAL HEATER (STANDARD UNITS)

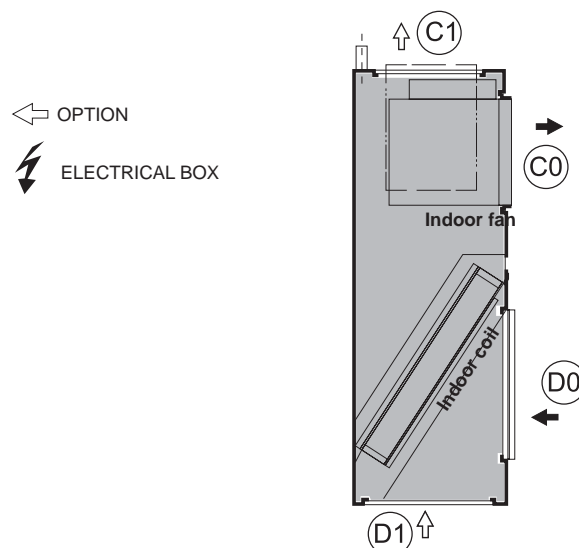
FIX/FIC/FIH	10-230 I	10	12	15	20	25	30
Maximum power (KW)	0,4	0,4	0,4	0,8	1,0	1,3	1,3
Maximum current (A)	2,6	2,6	2,6	2,8	4,3	4,3	4,3
Starting current (A)	1,7	1,7	1,7	1,8	2,8	2,8	2,8
Locked rotor current (A)	2,6	2,6	2,6	2,8	4,3	4,3	4,3

UNITS WITH ELECTRICAL HEATER

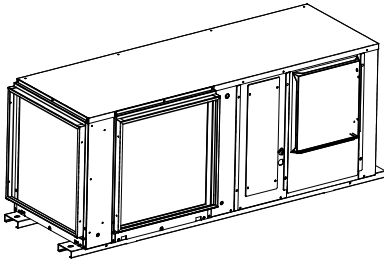
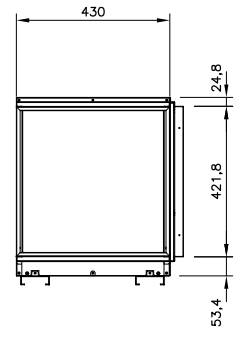
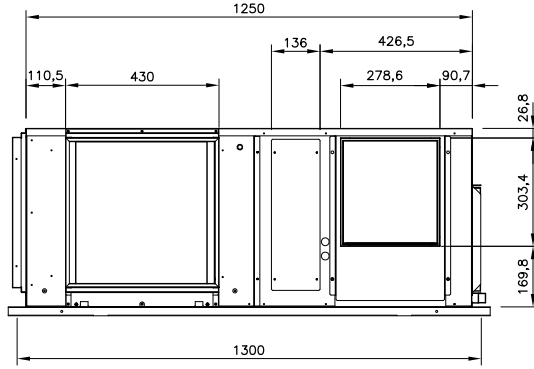
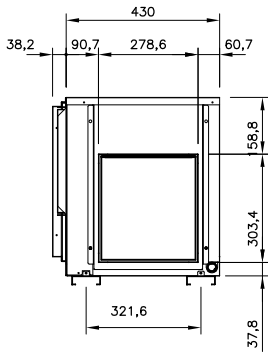
(add the following consumption for heat pump units)

FIX/FIC/FIH	10-230 I	10	12	15	20	25	30
Power input (kW)	3	3	4,5		7,5		
	6	6	6		9		
		9	9		12		
Maximum current (A)	13,0	7,5	11,3		18,8		
	26,1	15	15		22,5		
	-	22,5	22,5		30		

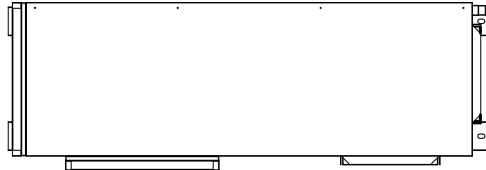
7 - DUCT POSITION



FIX 10-12



DI ⇨



CI ⇨

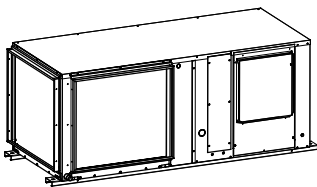
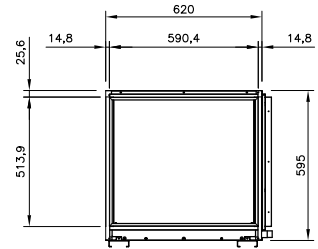
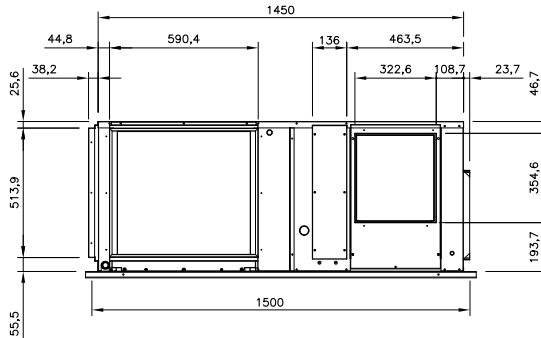
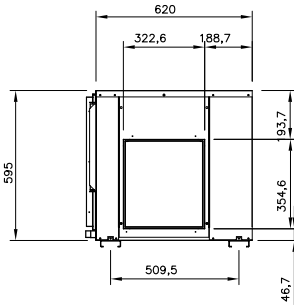
⇨ STD
⇨ OPCIONAL



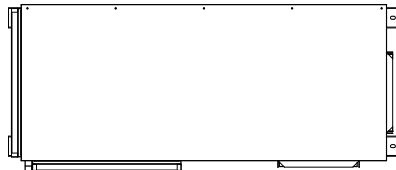
DO

CO

FIC / FIH 20



DI ⇨



CI ⇨

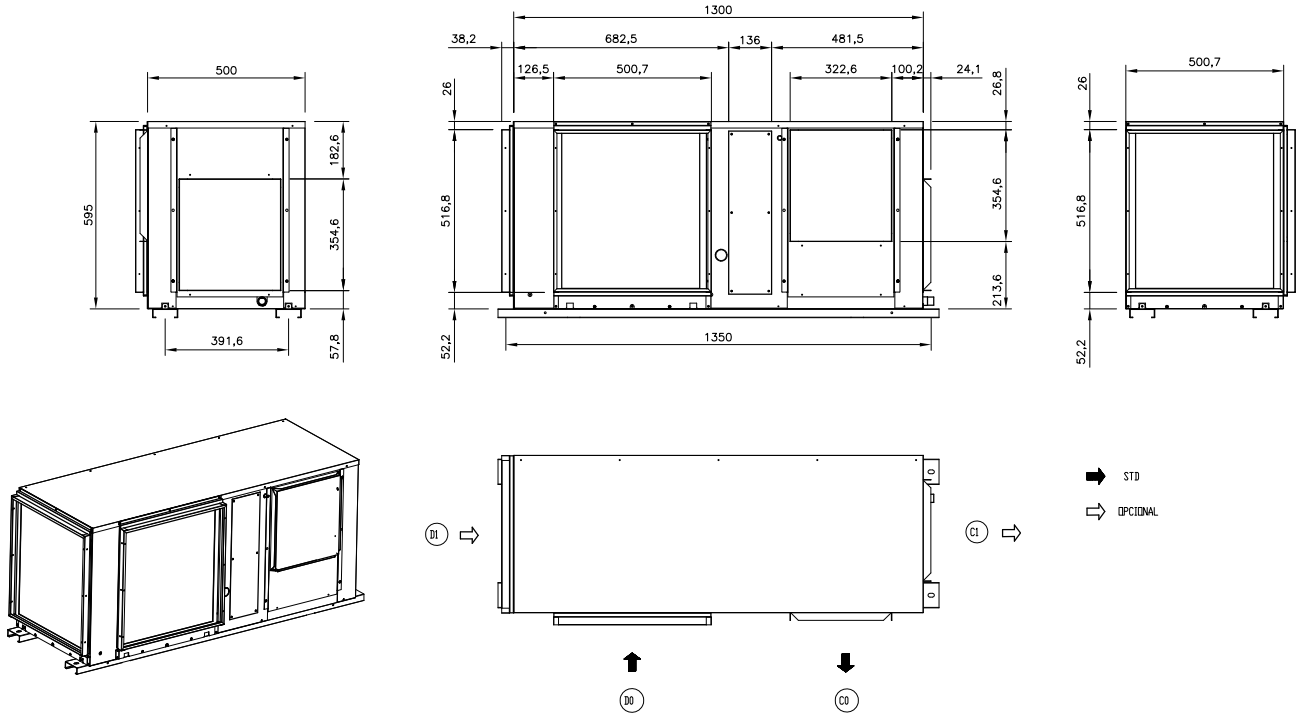
⇨ STD
⇨ OPCIONAL



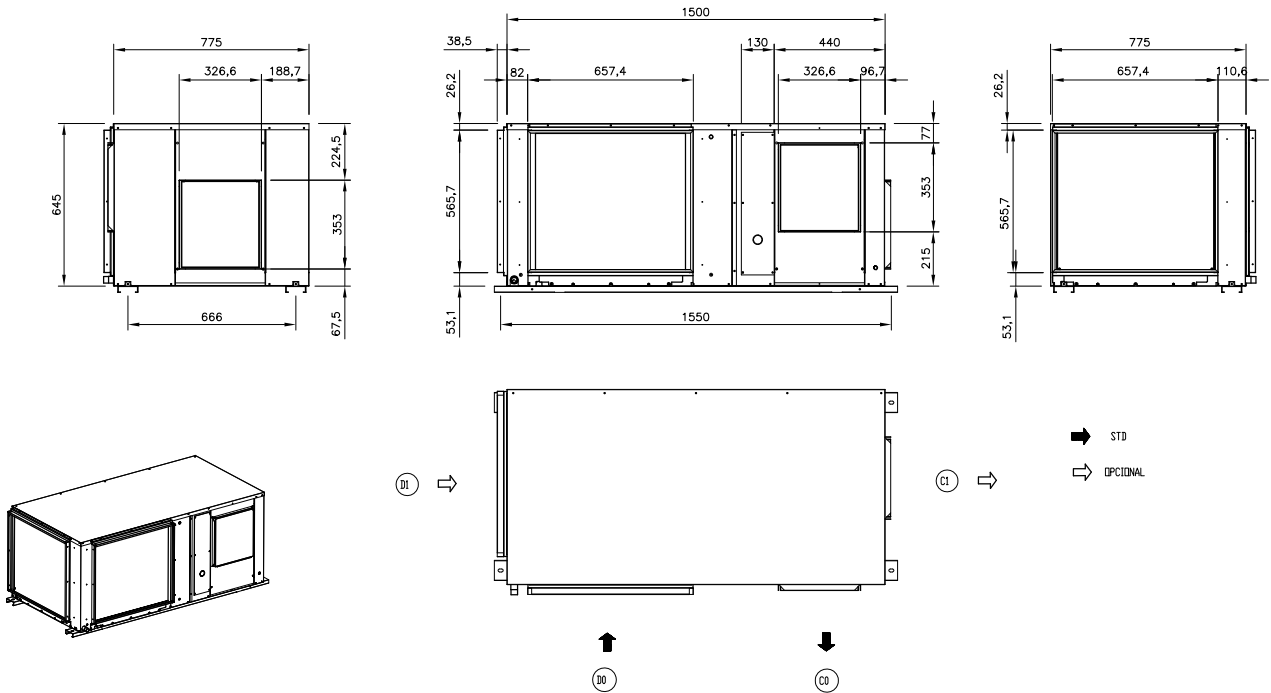
DO

CO

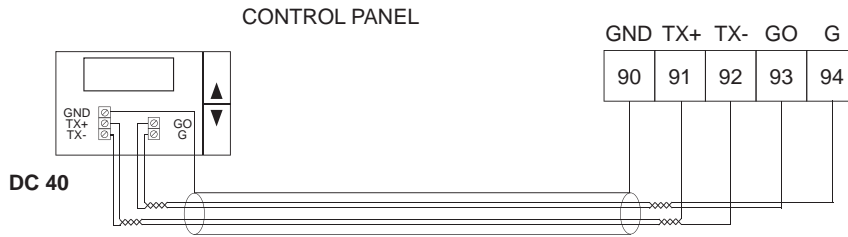
FIX 15



FIC / FIH 25-30



DC 40 DISPLAY, ELECTRICAL CONNECTION



2 x Shielded twisted pairs AWG 20. 100 m maximum.
 1x Shielded twisted pair AWG20 + 2 x 1,5 mm. 200m maximum.



IMPORTANT

THE SHIELDED CONNECTING CABLE BETWEEN THE CONTROL PANEL AND THE UNIT MUST BE SEPARATED FROM ANY OTHER TYPE OF ELECTRICAL WIRING. CONNECT IT TO THE ELECTRIC PANEL LOCATED IN THE THERMODYNAMIC UNIT.

NOTES:

- For securing and connecting the electrical devices, please consult the electrical drawing and the control manual supplied with the unit.
- Connection between the DC40 and the unit must be made using shielded twisted pair cables (where the screens are connected to the control panel and the unit Electrical box).
- The Tx+ and Tx- polarity must strictly comply with the electrical diagram supplied with the unit.

8 - OPTIONS

ELECTRIC HEATER

As an option, these units can contain shielded element electric heating batteries assembled in factory. The electric heater must get its power from the unit's electrical box.

FIC/FIH/FIX	10 1Ph	10 3Ph	12	15	20	25	30
Standard capacity (kw)	3		4,5			7,5	
Medium capacity (kw)	6					9	
High capacity (kW)	-	9				12	

REMOTE ROOM TEMPERATURE SENSOR, REMOTE DUCT SENSOR

These sensors may be used with remote controller, allowing the controller to be mounted in a room away from the conditioned space.

- **REMOTE DUCT SENSOR** : The sensor will be located in the return air duct, detecting the air temperature of the air being air conditioned.
- **REMOTE ROOM TEMPERATURE SENSOR** : The sensor will be placed in the area to be air conditioned.

ONE DAMPER FREECOOLING

Fresh air damper regulated by the control, to introduce fresh air if the temperature conditions are favourable.

TWO DAMPERS FREECOOLING

Second damper for the freecooling, to regulate the return air regarding the % of fresh air introduced in the room. This option is only valid with the option FREECOOLING ONE DAMPER.

AIRFLOW CONFIGURATIONS

These units have different configurations to manage the air flow.

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Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency

FIC/FIH/FIX-AGU-1801-E



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