



REC PRO 90

High efficiency heat recovery units
Non residential applications



Comply with ErP Directive 125/2009/CE and EU Regulation 1253/2014.

Classification: Non Residential Ventilation Unit (NRVU). Bidirectional Ventilation Unit (BVU).

- 6 sizes
- Airflow from 450 to max 4.100 m³/h
- Vertical and Horizontal models

ELECTRONIC CONTROL

The control is already mounted and wired to the unit, complete with electronic controller, remote user interface with built-in temperature sensor, 4 NTC sensors and protection fuses.

Functions:

- Manual or automatic fan speed control
- Heating/cooling 3-point valves control (or on/off electric heater)
- Free-cooling management
- Water coil antifreeze management
- Recovery defrost management
- Humidifier and water cooler management
- Alarm management
- Weekly clock setting
- BMS by Modbus - RS485 connection



DESCRIPTION

The heat recovery units of the **REC PRO 90** series are designed to match the need to equip the buildings with ventilation systems which can combine low energy consumption, high aerodynamic performance and high indoor air quality.

In accordance with the new EU 1253/2014 norm, they are equipped with a high efficiency counter-flow plate heat recovery unit (in dry conditions, superior to the minimum efficiency prescribed by the law of 67%), with filters with extremely low pressure drops (F7 on fresh air and M5 on room air exhaust, efficiency calculated according to EN 779:2012) and with backward-curved blades fans, directly coupled with EC motors, guaranteeing power absorptions well below the limits indicated by the norm.

They can easily be integrated with conventional heating and air-conditioning systems and their construction is optimized for a ducted installation in false ceilings and for an all-seasons operation.

The series is available in both vertical and horizontal configuration and in 6 sizes with performances ranking from 450 to max 4.100 m³/h

CONSTRUCTION

- Casing with double skin panels in galvanized metal sheet, 42mm thick.
- External panels in prepainted galvanized steel RAL 9002.
- Internally insulated with thermo-acoustic fire-proof rockwool insulation.
- Extremely high efficiency heat recovery unit (>90%) in counter-flow aluminium plates.
- Integrated by-pass system with actuator, for free-cooling operations.
- M5 efficiency class filters on exhaust and F7 on intake, efficiency calculated according to EN 779:2012.
- Backward curved blades directly coupled with EC motors.
- Integrated control board with electronic control of all the functions: ventilation and temperature control, monitoring of the status of the filters, week programming, defrost management and anti-freeze device, fire alarm and Modbus interface.

UPON REQUEST

The units can be configured with the following function components, supplied assembled and wired on board, to be requested in phase of order:

- **PSTD** - Filters differential pressure switch.
- **DPS** - Differential pressure sensor.
- **AQS** - Ductable CO₂ probe.

RANGE

HORIZONTAL VERSIONS

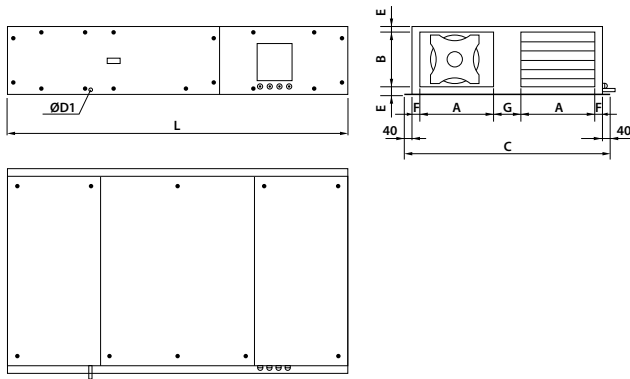
CODE	MODEL
1RC9000	REC PRO 90-450
1RC9001	REC PRO 90-800
1RC9002	REC PRO 90-1250
1RC9003	REC PRO 90-1900
1RC9004	REC PRO 90-2800
1RC9005	REC PRO 90-3800

VERTICAL VERSIONS

CODE	MODEL
1RC9006	REC/V PRO 90-450
1RC9007	REC/V PRO 90-800
1RC9008	REC/V PRO 90-1250
1RC9009	REC/V PRO 90-1900
1RC9010	REC/V PRO 90-2800
1RC9011	REC/V PRO 90-3800

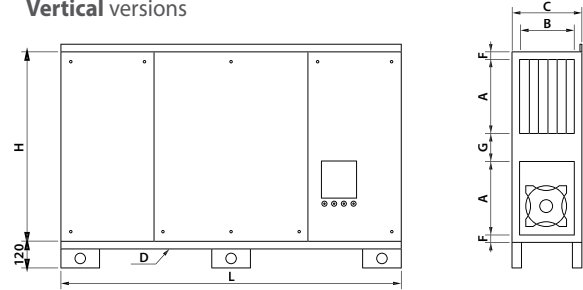
DIMENSIONS (mm)

Horizontal versions



CODE	MODEL	A	B	C	D	E	F	G	L	KG
1RC9000	REC PRO 90-450	230	225	760	1/2"M	52,5	46	128	1350	86
1RC9001	REC PRO 90-800	300	265	900	1/2"M	52,5	46	130	1470	106
1RC9002	REC PRO 90-1250	390	350	1110	1/2"M	52,5	46	158	1850	181
1RC9003	REC PRO 90-1900	600	350	1540	1/2"M	52,5	46	170	1850	236
1RC9004	REC PRO 90-2800	590	485	1540	1/2"M	52,5	55	170	2150	297
1RC9005	REC PRO 90-3800	780	485	1920	1/2"M	52,5	55	170	2150	367

Vertical versions

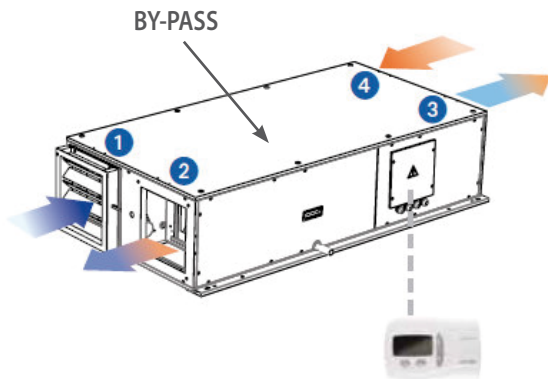


CODE	MODEL	A	C	D	F	G	H	L	KG
1RC9006	REC/V PRO 90-450	230	225	1/2"M	46	128	680	1350	86
1RC9007	REC/V PRO 90-800	300	265	1/2"M	46	130	820	1470	106
1RC9008	REC/V PRO 90-1250	390	350	1/2"M	46	158	1030	1850	181
1RC9009	REC/V PRO 90-1900	600	350	1/2"M	46	170	1460	1850	236
1RC9010	REC/V PRO 90-2800	590	485	1/2"M	55	170	1460	2150	297
1RC9011	REC/V PRO 90-3800	780	485	1/2"M	55	170	1840	2150	367

CONFIGURATIONS

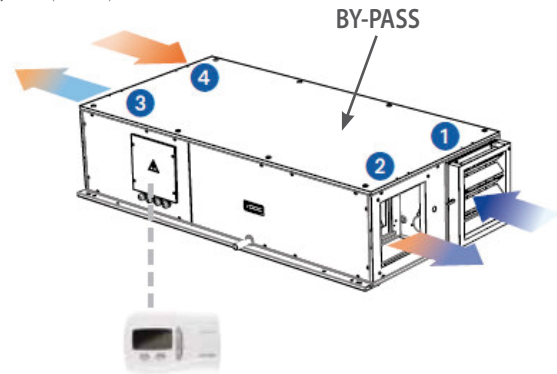
HORIZONTAL EXECUTION - TYPE A ORIENTATION

- (1) External air (F7 filter)
- (2) Output fan
- (3) Input fan
- (4) Intake (M5 Filter)



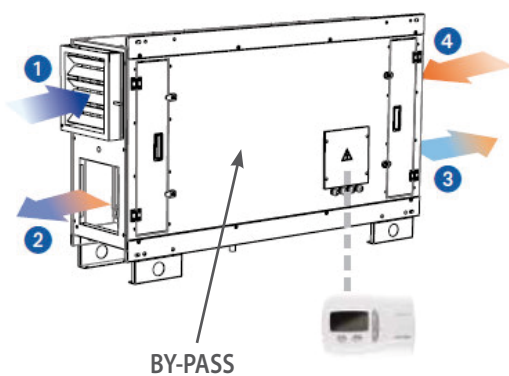
HORIZONTAL EXECUTION - TYPE B ORIENTATION

- (1) External air (F7 filter)
- (2) Output fan
- (3) Input fan
- (4) Intake (M5 Filter)



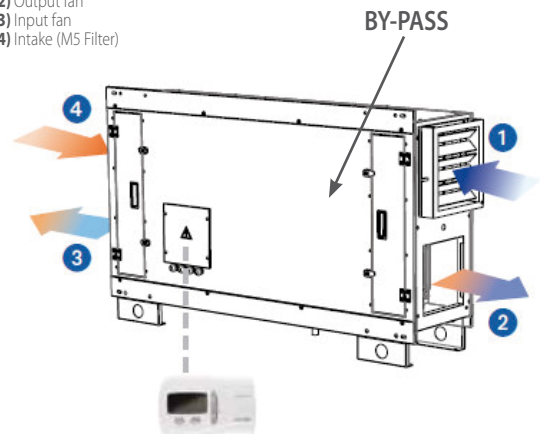
VERTICAL EXECUTION - TYPE C ORIENTATION

- (1) External air (F7 filter)
- (2) Output fan
- (3) Input fan
- (4) Intake (M5 Filter)



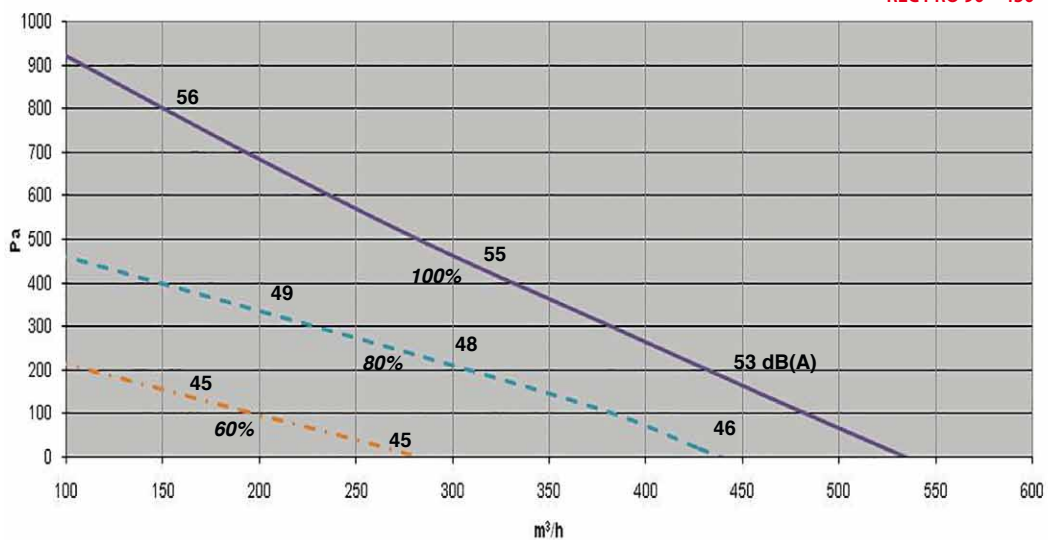
VERTICAL EXECUTION - TYPE D ORIENTATION

- (1) External air (F7 filter)
- (2) Output fan
- (3) Input fan
- (4) Intake (M5 Filter)

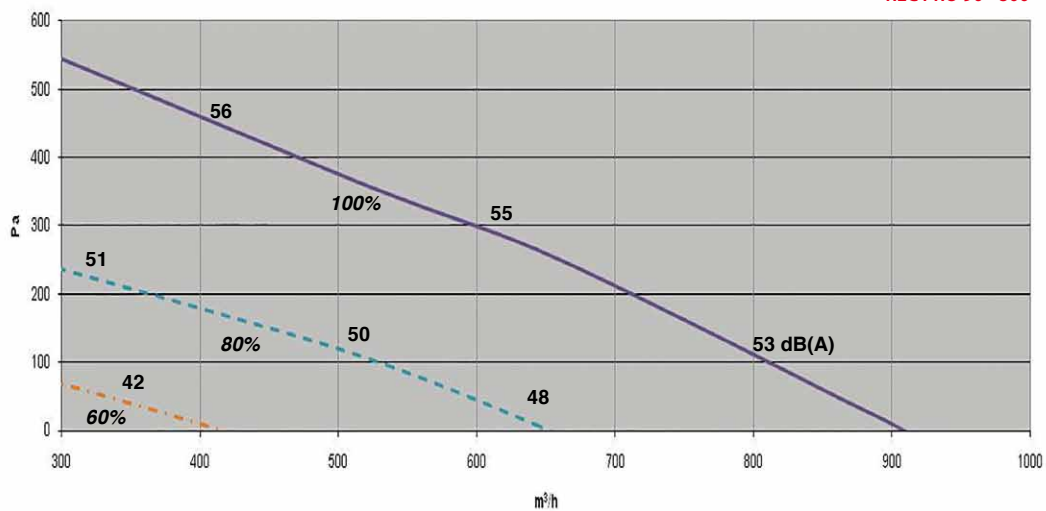


PERFORMANCE

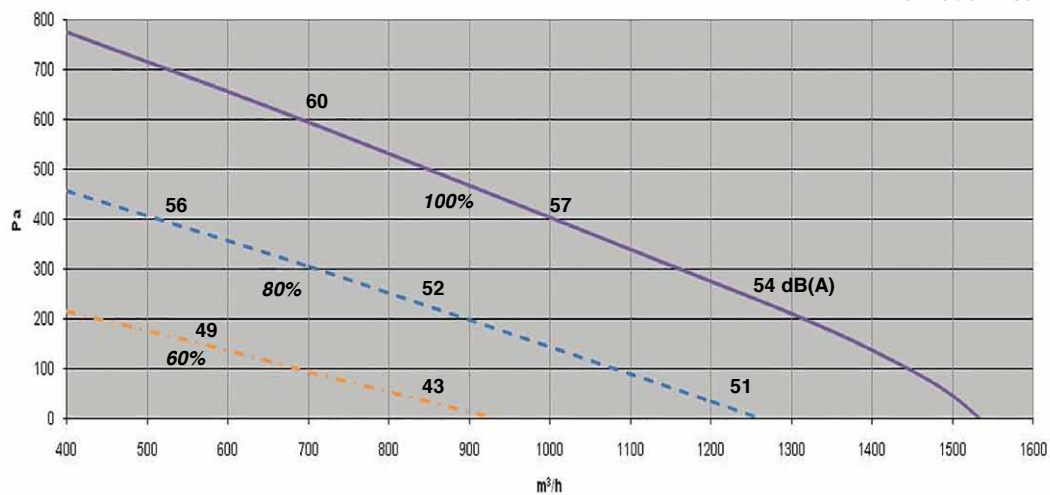
REC PRO 90 - 450



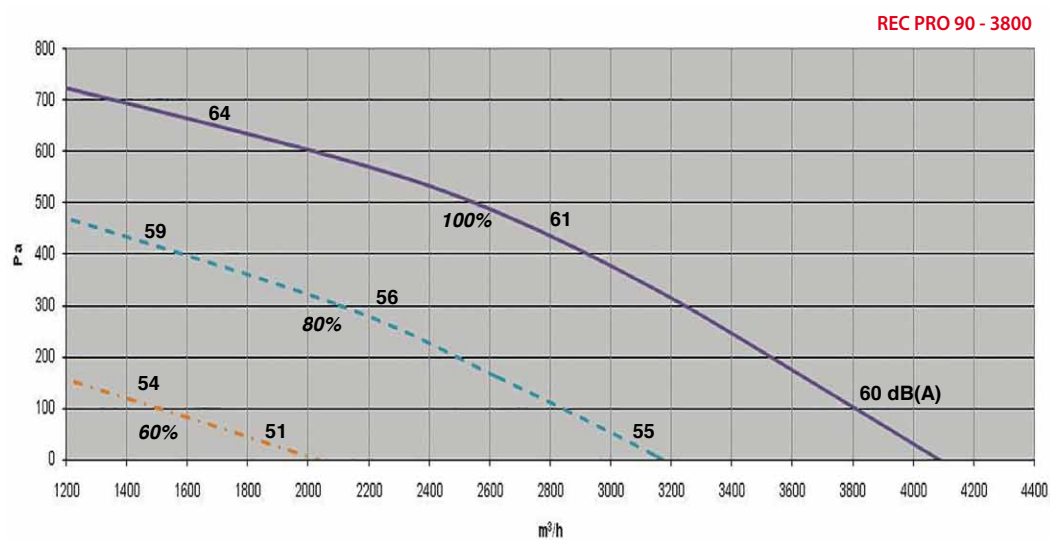
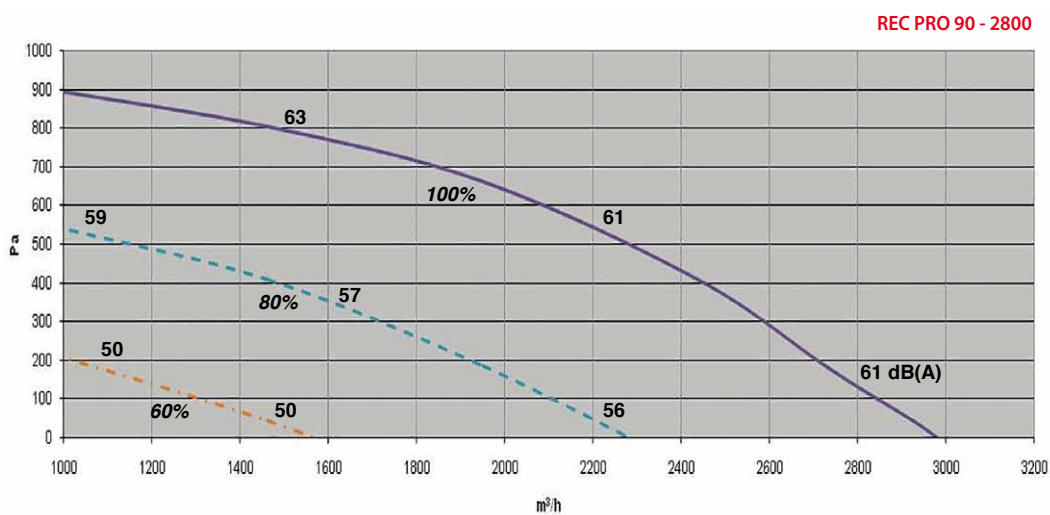
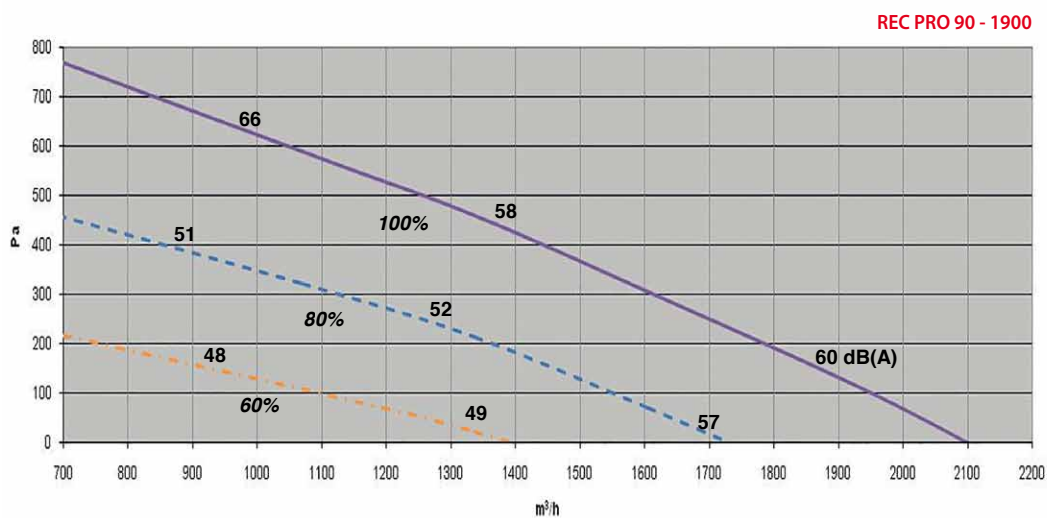
REC PRO 90 - 800



REC PRO 90 - 1250



PERFORMANCE



PERFORMANCE AND ErP CONFORMITY

EU Regulation 1253/2014

VENTILATION			90-450	90-800	90-1250	90-1900	90-2800	90-3800	
Airflow rate	Nom	m³/h	450	800	1300	1900	2800	3800	
		m³/s	0,125	0,222	0,347	0,528	0,778	1,056	
	Max	m³/h	540	900	1530	2100	3000	4100	
External static pressure (1)	Nom	Pa	175	110	250	130	140	105	
Sound pressure level 1m	Nom	dB(A)	53	53	54	60	61	60	
Overall power input	Nom	W	330	340	920	930	1820	1920	
	Max		340	340	920	930	2000	2000	
Overall input current total	Nom	A	2,7	2,9	6,0	6,0	3,2	3,4	
	Max		2,8	2,9	6,0	6,0	3,4	3,5	
Power supply	V-Ph-Hz		230-1-50				400-3+N-50		
Fan speed control			0÷10 V						
External leakage			max 3,5% @ -400 Pa (EN 13141-7)						
Internal leakage			max 5,5% @ +250 Pa (EN 13141-7)						
Yearly filter energy consumption (5)	kWh		476	719	1281	2065	2482	3259	
HEAT RECOVERY (2)			90-450	90-800	90-1250	90-1900	90-2800	90-3800	
Recovery efficiency	%		91,6	91,4	90,7	90,5	90,3	90,4	
Recovery capacity	W		4020	7330	11400	17280	25410	34520	
Supply temperature	°C		17,5	17,4	17,2	17,2	17,1	17,1	
CONFORMITY TO EU 1253/2014			90-450	90-800	90-1250	90-1900	90-2800	90-3800	
Recovery efficiency (3)	%		83,2	80	80,5	80	82,5	82,3	
Efficiency bonus	W/m³/s		486	390	405	390	465	459	
Filter correction factor	-		0	0	0	0	0	0	
SFP int-lim	W/m³/s		1667	1556	1552	1510	1548	1500	
Total internal air pressure drop (3)	Pa		788	826	743	690	855	873	
Overall fan static efficiency (4)	%		47,3	55,6	48,1	46,0	56,4	58,3	
SFP int	W/m³/s		1666	1485	1545	1500	1516	1498	
OPERATION LIMITS			90-450	90-800	90-1250	90-1900	90-2800	90-3800	
Air temperature	°C		-20 ÷ 45						
Air Relative Humidity	%		10 ÷ 95						
Working environment	-		Not explosive, not corrosive, not chlorinated, not saline						

(1) Fresh air supply / supply air circuit.

(2) At wet conditions: outside air temperature -7°C 80%RH., room air temperature 20°C 55% RH.

(3) At dry conditions: outside air temperature 5°C, room air temperature 25°C.

(4) Including motor and speed controller efficiency.

SOUND LEVELS

With reference to the nominal operating conditions, the following table reports the sound power values (SWL) in octave band and total; it also reports, for comparative purposes, the sound pressure level (SPL) at 1m, 5m and 10m in output, input and outside the unit, in conditions of ducted units.

MODEL	Hz	63	125	250	500	1000	2000	4000	8000	TOT	Output			Input			Outside		
											1 m	5 m	10 m	1 m	5 m	10 m	1 m	5 m	10 m
											dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
90-450	Lw dB(A)	62	59	65	65	63	63	62	53	72	61	47	41	53	39	33	44	30	24
	Lp dB(A) 6mt	35	32	38	38	36	36	35	26	45									
90-800	Lw dB(A)	61	58	64	64	62	62	61	53	71	60	47	41	53	39	33	44	30	24
	Lp dB(A) 6mt	34	31	37	37	35	35	34	26	44									
90-1250	Lw dB(A)	60	59	65	65	63	63	63	55	72	61	48	42	54	40	32	45	31	25
	Lp dB(A) 6mt	33	32	38	38	36	36	36	28	45									
90-1900	Lw dB(A)	66	64	74	73	69	68	68	67	79	68	54	48	60	46	40	51	37	31
	Lp dB(A) 6mt	39	37	47	46	42	41	41	40	52									
90-2800	Lw dB(A)	69	66	74	76	72	71	67	67	81	69	55	49	61	47	41	52	38	32
	Lp dB(A) 6mt	42	39	47	49	45	44	40	40	54									
90-3800	Lw dB(A)	68	68	72	73	69	70	66	65	79	68	54	48	60	46	40	51	37	31
	Lp dB(A) 6mt	41	41	45	46	42	43	39	38	52									

REC PRO 90 ACCESSORIES

SKE	Electric heater
CCS-H / CCS-V	External module with water coil
V33	Modulating 3-way valve with actuator
CDX-H / CDX-V	External module of heating / cooling with R410A direct expansion coil
PLM	Plenum with multiple connections
SKR1 / SKR2	Adjusting damper - SKR 1: Front / upper - lower (with plenum) air damper - SKR 2: side (with plenum) air damper
SSE	On/Off damper actuator (supplied assembled and connected to the SKR if requested)
GAT1 / GAT2	Flexible connection - GAT 1: Front / upper - lower (with plenum) flexible connection - GAT 2: Side flexible connection (with plenum)
BCC1 / BCC2	Round adaptor - BCC 1: Front / upper - lower (with plenum) round adaptor for circular ducts - BCC 2: Side round adaptor for circular ducts (with plenum)
TPR-H / TPR-V	Roof cover

Code	Models	SKE	CCS-H	CCS-V	V33	CDX-H	CDX-V	PLM	SKR1 (1)	SKR2 (1)	SSE (2)	GAT1	GAT2	BCC1	BCC2	TPR-H	TPR-CH	TPR-V	TPR-CV
REC PRO 90 - Horizontal versions																			
1RC9000	REC PRO 90-450	SBT0070	SBT0106	NA	SBT0088	SBT0131	NA	SPL0076	SSE0070	SSE0082	Supplied with SKR1/2	SSU0070	SSU0082	SBC0070	SBC0082	STE0244	STE0250	NA	NA
1RC9001	REC PRO 90-800	SBT0071	SBT0107	NA	SBT0089	SBT0132	NA	SPL0077	SSE0071	SSE0083	Supplied with SKR1/2	SSU0071	SSU0083	SBC0071	SBC0083	STE0245	STE0251	NA	NA
1RC9002	REC PRO 90-1250	SBT0072	SBT0108	NA	SBT0090	SBT0133	NA	SPL0078	SSE0072	SSE0084	Supplied with SKR1/2	SSU0072	SSU0084	SBC0072	SBC0084	STE0246	STE0252	NA	NA
1RC9003	REC PRO 90-1900	SBT0073	SBT0109	NA	SBT0091	SBT0134	NA	SPL0079	SSE0073	SSE0085	Supplied with SKR1/2	SSU0073	SSU0085	SBC0073	SBC0085	STE0247	STE0253	NA	NA
1RC9004	REC PRO 90-2800	SBT0074	SBT0110	NA	SBT0092	SBT0135	NA	SPL0080	SSE0074	SSE0086	Supplied with SKR1/2	SSU0074	SSU0086	SBC0074	SBC0086	STE0248	STE0254	NA	NA
1RC9005	REC PRO 90-3800	SBT0075	SBT0111	NA	SBT0093	SBT0136	NA	SPL0081	SSE0075	SSE0087	Supplied with SKR1/2	SSU0075	SSU0087	SBC0075	SBC0087	STE0249	STE0255	NA	NA
REC PRO 90 - Vertical versions																			
1RC9006	REC/V PRO 90-450	SBT0070	NA	SBT0112	SBT0088	NA	SBT0137	SPL0076	SSE0070	SSE0082	Supplied with SKR1/2	SSU0070	SSU0082	SBC0070	SBC0082	NA	NA	STE0256	STE0262
1RC9007	REC/V PRO 90-800	SBT0071	NA	SBT0113	SBT0089	NA	SBT0138	SPL0077	SSE0071	SSE0083	Supplied with SKR1/2	SSU0071	SSU0083	SBC0071	SBC0083	NA	NA	STE0257	STE0263
1RC9008	REC/V PRO 90-1250	SBT0072	NA	SBT0114	SBT0090	NA	SBT0139	SPL0078	SSE0072	SSE0084	Supplied with SKR1/2	SSU0072	SSU0084	SBC0072	SBC0084	NA	NA	STE0258	STE0264
1RC9009	REC/V PRO 90-1900	SBT0073	NA	SBT0115	SBT0091	NA	SBT0140	SPL0079	SSE0073	SSE0085	Supplied with SKR1/2	SSU0073	SSU0085	SBC0073	SBC0085	NA	NA	STE0259	STE0265
1RC9010	REC/V PRO 90-2800	SBT0074	NA	SBT0116	SBT0092	NA	SBT0141	SPL0080	SSE0074	SSE0086	Supplied with SKR1/2	SSU0074	SSU0086	SBC0074	SBC0086	NA	NA	STE0260	STE0266
1RC9011	REC/V PRO 90-3800	SBT0075	NA	SBT0117	SBT0093	NA	SBT0142	SPL0081	SSE0075	SSE0087	Supplied with SKR1/2	SSU0075	SSU0087	SBC0075	SBC0087	NA	NA	STE0261	STE0267

NA = Not Applicable

(1) The dampers are supplied without actuator. SSE actuator can be assembled if requested in phase of order.

(2) The actuator is not supplied separately but assembled on the dampers SKR1 and SKR2, if requested.

SKE - Electric heater

The type of heater is with filament elements, made in galvanized steel frame inserted in the unit with function of pre and / or post-heating and equipped with a safety thermostat with automatic and manual reset

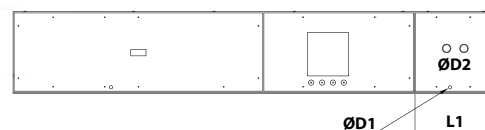
CODE		SBT0070	SBT0071	SBT0072	SBT0073	SBT0074	SBT0075
SKE MODEL		SKE -450	SKE -800	SKE -1250	SKE -1900	SKE -2800	SKE -3800
Power	kW	1,5	2,5	4,0	5,0	7,5	10,5
ΔT (1)	°C	9,8	9,2	9,0	7,7	7,9	8,1
Pressure loss air intake side (1)	Pa	5	6	10	10	11	12
Power supply	V-ph-Hz	230-1-50				400-3-50	

(1) at nominal airflow

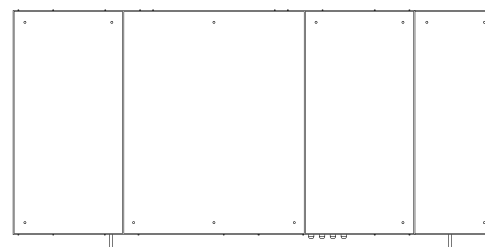
CCS-H / CCS-V - External module with water coil

External module with water coil (CCS-H: for horizontal version units, CCS-V: for vertical version units) that interfaces directly to the inlet/extract side.

The 3 rows water coil includes a condensate collection tray in aluminum and is suitable for the treatment of both heating and cooling.



MODEL	D1	D2	L1	KG
90-450	½" M	¾" M	385	28
90-800	½" M	¾" M	435	31
90-1250	½" M	¾" M	435	35
90-1900	½" M	¾" M	435	42
90-2800	½" M	1" M	537	52
90-3800	½" M	1" M	537	58



MODEL		90-450	90-800	90-1250	90-1900	90-2800	90-3800
Code CCS-H		SBT0106	SBT0107	SBT0108	SBT0109	SBT0110	SBT0111
Code CCS-V		SBT0112	SBT0113	SBT0114	SBT0115	SBT0116	SBT0117
Cooling capacity (1)	total	2,46	4,47	6,65	10,62	16,14	20,68
	sensible	1,35	2,41	3,66	5,84	8,72	11,37
Thermal capacity (2)	kW	3,30	5,86	9,08	14,03	20,83	27,50
Water flow (1)	l/h	432	756	1152	1836	2772	3564
Pressure loss air intake side (1)	kPa	12	18	9	13	19	15
Pressure loss air intake side (1)	Pa	51	53	51	50	50	55

(1) air intake 28,0°C 60% RH; water in/out 7°/12°C

(2) air intake 13°C; water in/out 45°/40°

REC PRO 90 ACCESSORIES

V33 - Modulating 3-way valve with actuator

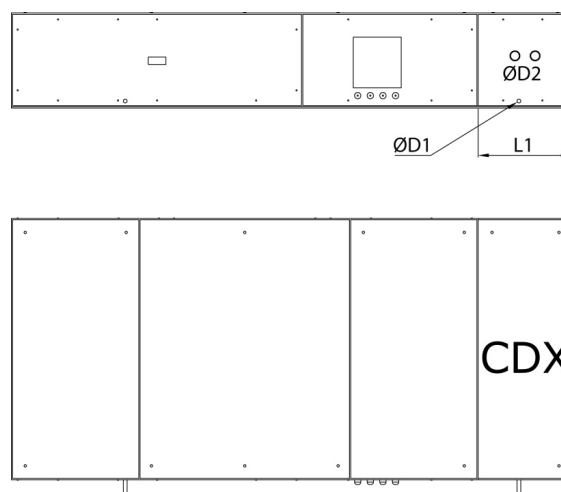
The kit includes a 3-way valve to regulate the water flow, combinable with the external module CCS, and a modulating electric actuator. The connection fittings are not supplied (to be supplied by the installer).

CODE		5BT0088	5BT0089	5BT0090	5BT0091	5BT0092	5BT0093
MODEL		V33 -450	V33 -800	V33 -1250	V33 -1900	V33 -2800	V33 -3800
Nominal pressure	-	PN16 (ISO7286/EN1333)					
Stroke	mm	2,5				5,5	
Hydraulic connection	GAS	3/4" F		3/4" F		1" F	
Kvs	m ³ /h	2,5		4,0		10,0	
Fluid temperature	°C	+2 ÷ +95 (glic. max 40%)					
Power supply	V - Hz	24cc - 50/60					
Regulation signal	V	0 ÷ 10					

CDX-H / CDX-V - External module of heating / cooling with R410A direct expansion coil

External module (CDX-H: for horizontal version units, CDX-V: for vertical version units) that interfaces directly to the inlet/extract side. It includes a 3 row DX coil provided with a condensate collection tray in aluminum (suitable for R410A), suitable to the treatment of both heating and cooling, and tub of aluminum condensate collection.

MODEL	D1	D2	L1	KG
90-450	½" M	¾" M	385	28
90-800	½" M	¾" M	435	31
90-1250	½" M	¾" M	435	35
90-1900	½" M	¾" M	435	42
90-2800	½" M	1" M	537	52
90-3800	½" M	1" M	537	58



REC MODEL		90-450	90-800	90-1250	90-1900	90-2800	90-3800
CODE CDX-H		5BT0131	5BT0132	5BT0133	5BT0134	5BT0135	5BT0136
CODE CDX-V		5BT0137	5BT0138	5BT0139	5BT0140	5BT0141	5BT0142
Cooling power (1)	totale	2,51	4,36	6,96	10,94	16,11	21,22
	sensibile	1,41	2,44	3,90	6,13	9,02	11,88
Heating power (2)	kW	3,33	5,71	9,01	13,90	20,36	26,50
Pressure load from the air side (1)	Pa	51	53	51	50	50	55
Connections to be welded	mm	8/8	12/16	12/16	12/16	16/22	22/28

(1) air intake 28,0°C 60% RH; evaporation temperature 8°C

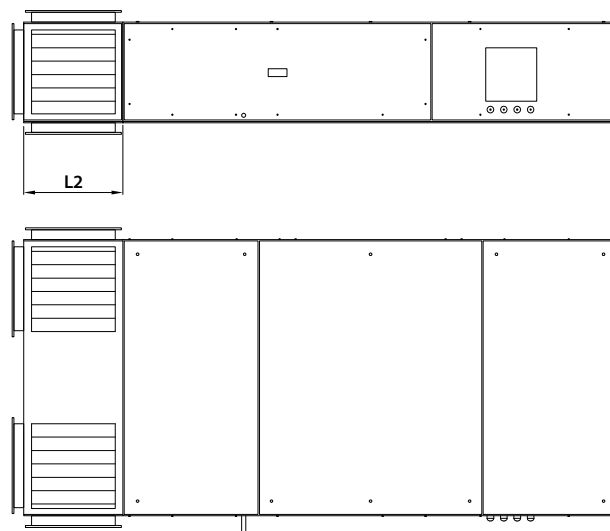
(2) air intake 13°C; condensation temperature 45°C

REC PRO 90 ACCESSORIES

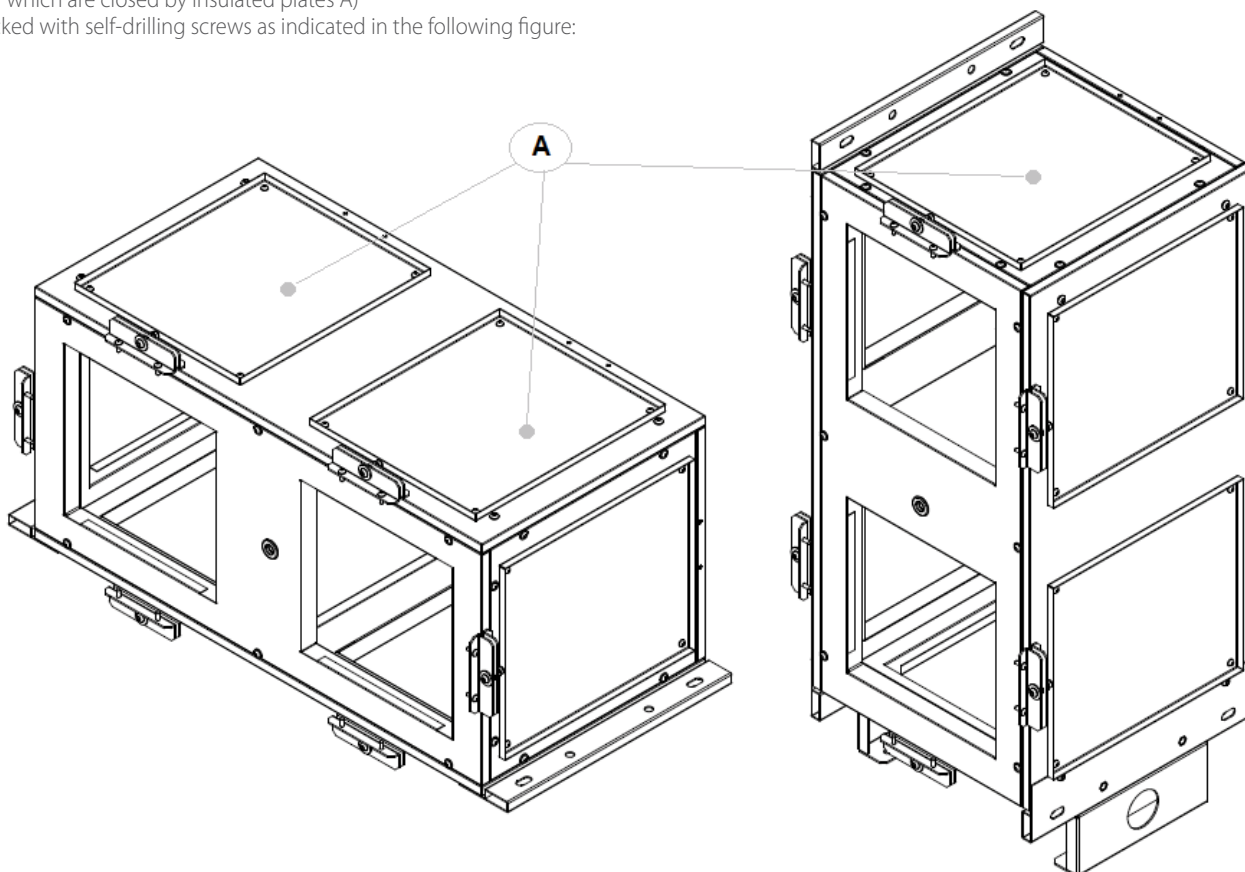
PLM - Plenum with multiple connections

External module which can interface on both sides of the unit (either in a horizontal or vertical configuration), allowing the air inlet or outlet on all sides. It can be completed with the SKR1 type dampers and / or SKR2 and their electrical actuators SSE.

CODE	TYPE	L2	KG	NOMINAL PRESSURE LOSS (CURVE AT 90°) PA
5PL0076	90-450	375	21	6
5PL0077	90-800	415	23	9
5PL0078	90-1250	495	26	19
5PL0079	90-1900	495	30	14
5PL0080	90-2800	615	39	8
5PL0081	90-3800	615	44	14

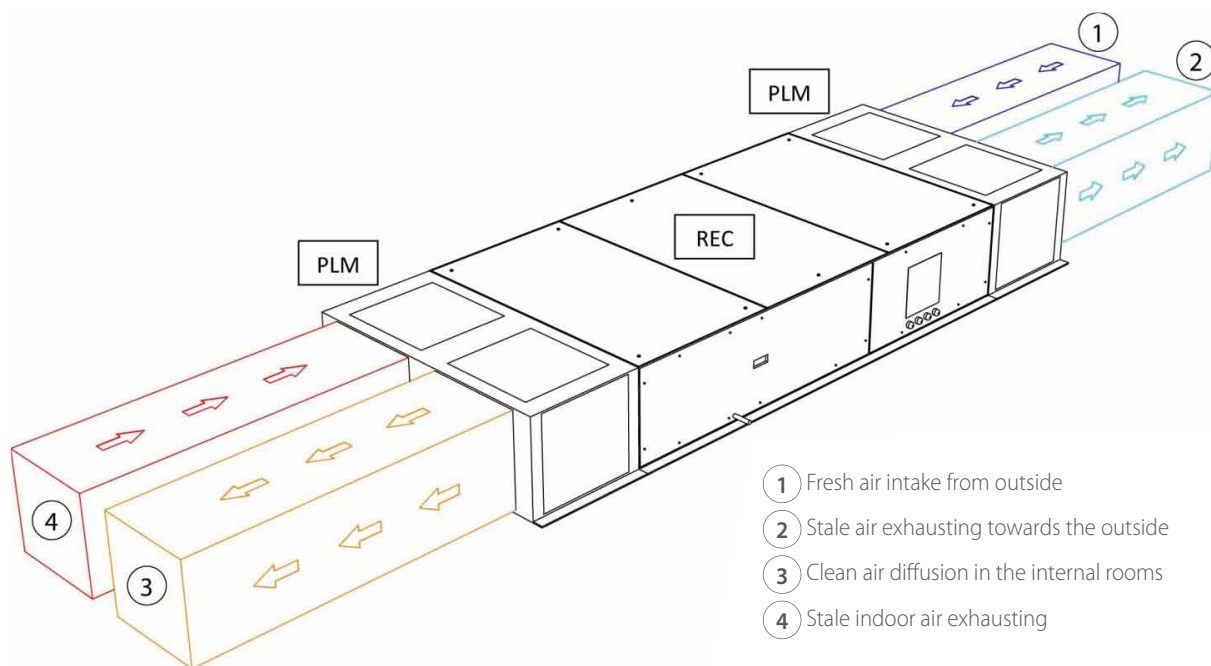


The plenum is provided with 10 possible aeraulic connections (6 of which are closed by insulated plates A) blocked with self-drilling screws as indicated in the following figure:

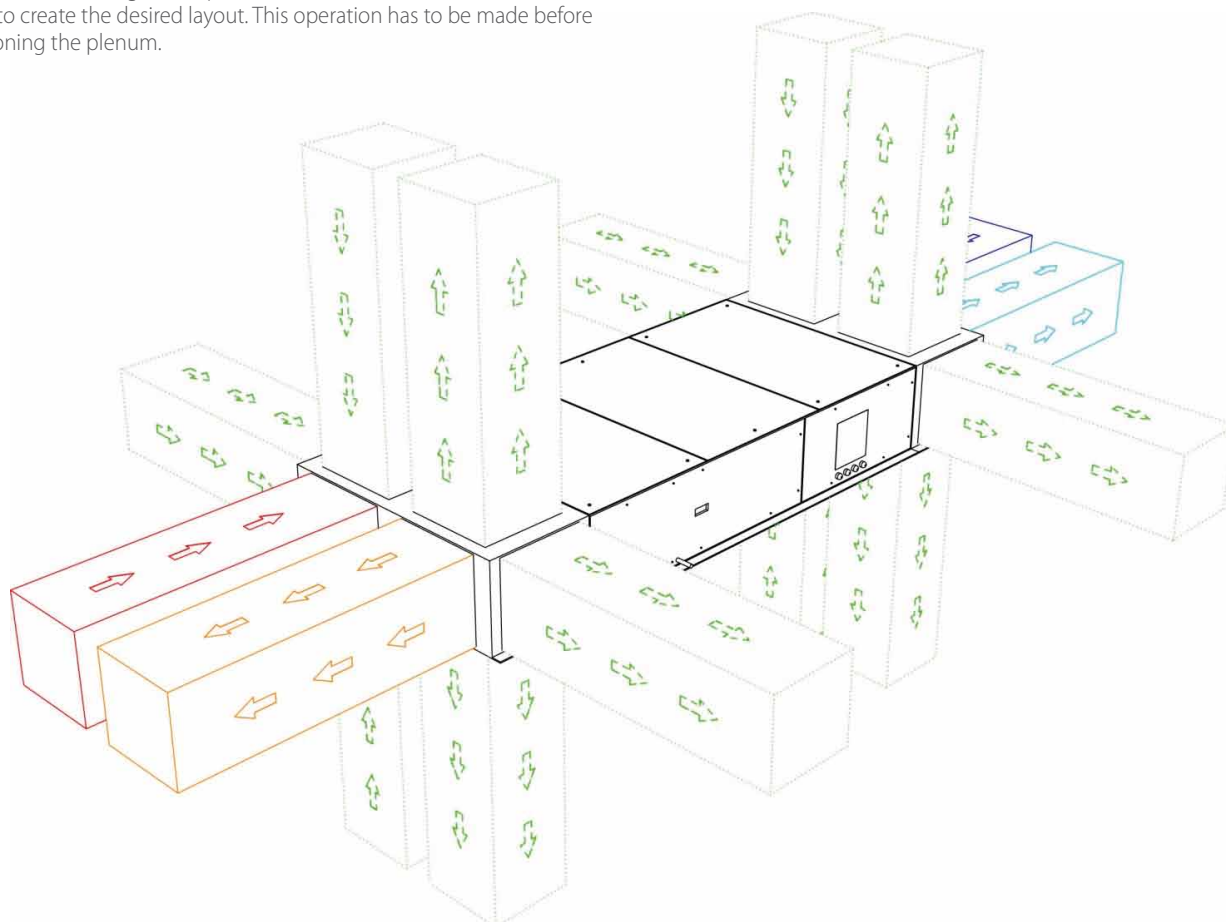


REC PRO 90 ACCESSORIES

Example of installation:



Remove and block again the plates on the unused connections in order to create the desired layout. This operation has to be made before positioning the plenum.



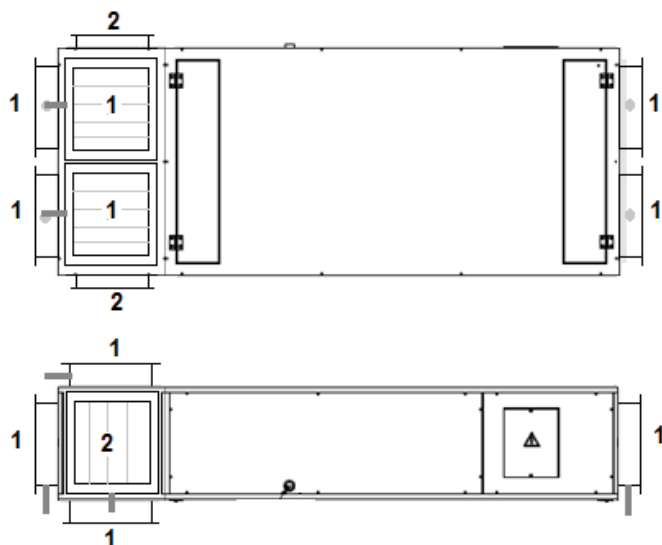
REC PRO 90 ACCESSORIES

SKR1 (Front) / SKR2 (Lateral) - Adjusting Dampers

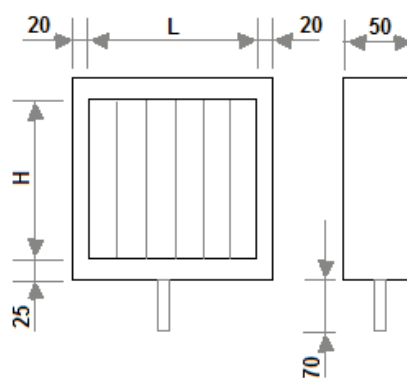
Made of the frame and opposing aluminum fins, with pin for coupling to the electrical actuator. It can be installed directly on each unit air inlets, in those of the plenum (PLM) or CCS / CDX modules.

SKR 1: Front / upper - lower (with plenum) air damper. SKR 2: side air damper (with plenum).

The dampers are supplied without actuator. If requested SSE actuator can be supplied assembled on the dampers.



1=SKR1
2=SKR2



CODE	TYPE 1	AIR PASSAGE L X H	KG
5SE0070	SKR1 90-450	250x230	1.6
5SE0071	SKR1 90-800	290x270	2.1
5SE0072	SKR1 90-1250	370x355	2.6
5SE0073	SKR1 90-1900	610x355	3.7
5SE0074	SKR1 90-2800	610x490	4.3
5SE0075	SKR1 90-3800	770x490	6.2

CODE	TYPE 2	AIR PASSAGE L X H	KG
5SE0082	SKR2 90-450	250x230	1.6
5SE0083	SKR2 90-800	290x270	2.0
5SE0084	SKR2 90-1250	370x355	2.6
5SE0085	SKR2 90-1900	370x355	2.9
5SE0086	SKR2 90-2800	490x490	4.0
5SE0087	SKR2 90-3800	490x490	4.0

SSE - Damper actuator

On/off type - 230V-50Hz, 1,5 W.

The actuator is not available separately if requested, it is supplied assembled on the damper SKR1 / SKR2.



GAT1 (Front) GAT2 (Lateral)

Flexible connection

It allows a flexible connection between the base unit or its external modules and the air ducts, in order to prevent the transmission of vibrations to the latter. The dimensions coincide with the corresponding dampers SKR1 / SKR2.

GAT 1: Front / upper - lower (with plenum) flexible connection

GAT 2: Side flexible connection (with plenum)

GAT1		GAT2	
5SU0070	Front connection 450	5SU0082	Lateral connection 450
5SU0071	Front connection 800	5SU0083	Lateral connection 800
5SU0072	Front connection 1300	5SU0084	Lateral connection 1300
5SU0073	Front connection 1900	5SU0085	Lateral connection 1900
5SU0074	Front connection 2800	5SU0086	Lateral connection 2800
5SU0075	Front connection 3800	5SU0087	Lateral connection 3800

REC PRO 90 ACCESSORIES

BCC1 (Front) / BCC2 (Lateral) - Round adaptor for circular ducts

It allows the connection between the base unit or between its external modules and circular ducts.

Made of galvanized steel and provided with coupling plate (suitable for SKR1 / SKR2 and GAT1 / GAT2).

BCC 1: Front / upper - lower (with plenum) round adaptor for circular ducts - **BCC 2:** Side round adaptor for circular ducts (with plenum)

REC MODEL		90-450	90-800	90-1250	90-1900	90-2800	90-3800
Code BCC1		5BO0070	5BO0071	5BO0072	5BO0073	5BO0074	5BO0075
Code BCC2		5BO0082	5BO0083	5BO0084	5BO0085	5BO0086	5BO0087
Nominal Ø of the connection	mm	250	315	315	400	500	500
Connection thickness	mm	100	100	100	100	100	100
Nominal pressure loss	Pa	7	7	16	10	9	16

TPR-H / TPR-V / TPR-CH / TPR-CV - Roof cover

TPR-H: Horizontal unit - **TPR-V:** Vertical unit - **TPR-CH:** Horizontal unit with external module - **TPR-CV:** Vertical unit with external module

The roof cover, in pre-painted steel, is necessary whenever the units are outdoor installed and could be exposed to bad weather.

CODE	MODEL	CODE	MODEL	CODE	MODEL	CODE	MODEL
5TE0244	TPR-H 450	5TE0250	TPR-CH 450	5TE0256	TPR-V 450	5TE0262	TPR-CV 450
5TE0245	TPR-H 800	5TE0251	TPR-CH 800	5TE0257	TPR-V 800	5TE0263	TPR-CV 800
5TE0246	TPR-H 1300	5TE0252	TPR-CH 1300	5TE0258	TPR-V 1300	5TE0264	TPR-CV 1300
5TE0247	TPR-H 1900	5TE0253	TPR-CH 1900	5TE0259	TPR-V 1900	5TE0265	TPR-CV 1900
5TE0248	TPR-H 2800	5TE0254	TPR-CH 2800	5TE0260	TPR-V 2800	5TE0266	TPR-CV 2800
5TE0249	TPR-H 3800	5TE0255	TPR-CH 3800	5TE0261	TPR-V 3800	5TE0267	TPR-CV 3800