

# Airwell

*Just feel well*

## Service Manual

AIRFLOW2020

R32

*English*



**IMPORTANT NOTE:**

Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

20.AW.AIRFLOW2020.R32.SM.EN.18.11



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# 1 GENERAL TECHNICAL DATE

## CPAN-YIN SIZE 2

Supply airflow	l/s	35	42	58	75	89
Supply airflow	m <sup>3</sup> /h	125	150	210	270	320
<b>A7</b>						
Heating capacity	kW	1,42	1,55	1,86	2,05	2,49
Total power input	kW	0,46	0,42	0,45	0,42	0,54
COP (EN 14511:2018)	-	3,09	3,69	4,13	4,93	4,61
<b>A-5</b>						
Heating capacity	kW	1,97	2,10	2,21	2,37	2,45
Total power input	kW	0,40	0,52	0,47	0,37	0,32
COP (EN 14511:2018)	-	4,93	4,04	4,70	6,50	7,66
<b>A30</b>						
Cooling capacity	kW	0,92	1,38	1,47	1,72	2,07
Total power input	kW	0,36	0,52	0,48	0,54	0,81
COP (EN 14511:2018)	-	2,56	2,65	3,06	3,21	2,56
<b>A35</b>						
Cooling capacity	kW	1,57	1,64	1,73	1,92	2,23
Total power input	kW	0,36	0,52	0,53	0,55	0,81
EER (EN 14511:2018)	-	4,34	3,15	3,26	3,50	2,77
Rated static pressure supply fan	Pa	50	50	50	50	50
Max. static pressure supply fan	Pa	120	120	120	120	120
Standard power supply	V	220-240~/~/50	220-240~/~/50	220-240~/~/50	220-240~/~/50	220-240~/~/50
Min. entering air temperature (D.B.)	(2) °C	-15	-15	-15	-15	-15
Sound pressure level	(1) dB(A)	34	35	37	41	45

Indicative data subject to being updated.

Refer to the current Technical Bulletin.

# 1 GENERAL TECHNICAL DATE

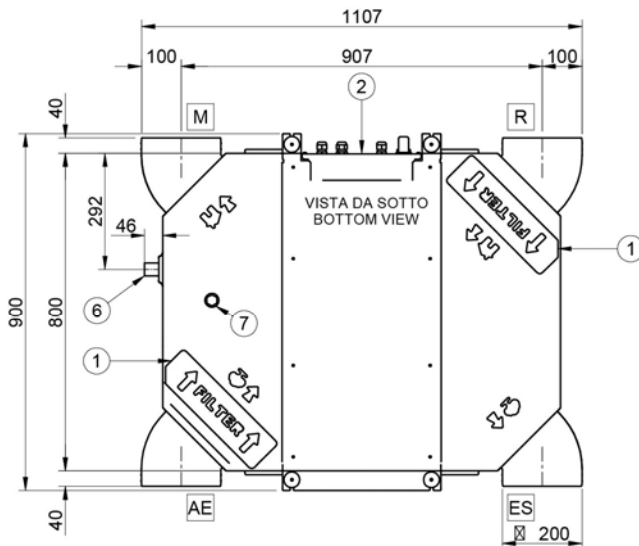
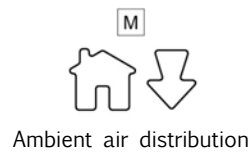
<b>Compressor</b>			
Type of compressors	(1)	-	ROT
Refrigerant			R32
No. of compressors		Nr	1
Gradini capacità (ST)		%	20-100
Oil charge		[l]	0,017
Refrigerant charge		[kg]	0,3
Refrigerant circuits		[Nr]	1
<b>Treatment Area Fans (Supply)</b>			
Type of fans	(2)		CFG
No. of fans			1
Fan diameter		[mm]	140
Type of motor	(3)		EC
Airflow		[mc/h]	125-320
<b>Treatment Area Fans (Return)</b>			
Type of fans	(2)		CFG
No. of fans			1
Fan diameter		[mm]	140
Type of motor	(3)		EC
Airflow		[mc/h]	125-400
<b>Connections</b>			
Condensate drain	(4)	[mm]	32
<b>Electircal data</b>			
F.L.A. Compressor 1	(5)	[A]	4,1
F.L.A. Single supply fan	(5)	[A]	0,62
F.L.A. Single exhaust air fan	(5)	[A]	0,62
F.L.A. Total	(5)	[A]	5,45
F.L.I. Compressor 1	(5)	[kW]	0,91
F.L.I. Single supply fan	(5)	[kW]	0,08
F.L.I. Single exhaust air fan	(5)	[kW]	0,08
F.L.I. Total	(5)	[kW]	1,08

Indicative data subject to being updated.

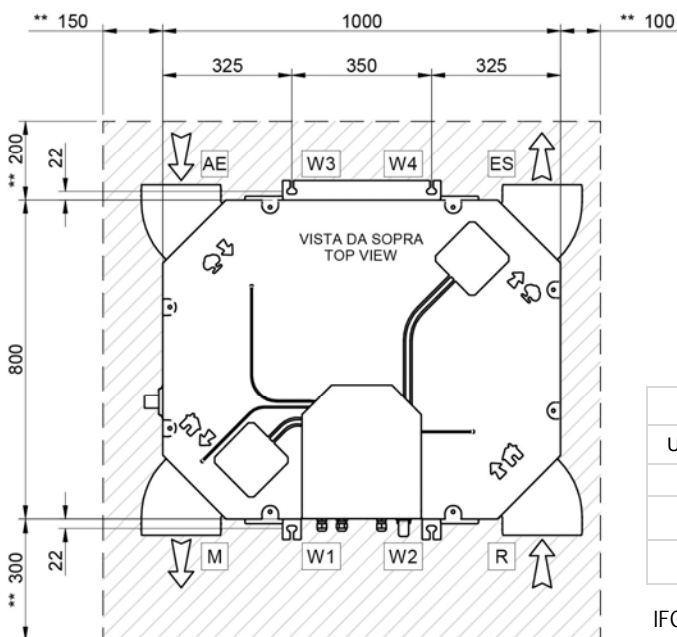
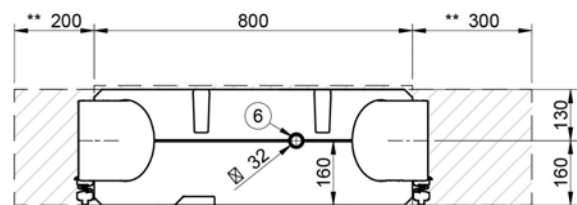
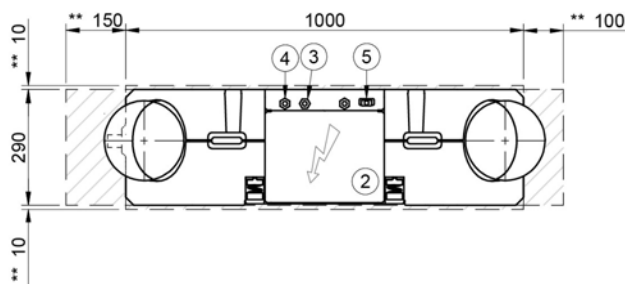
Refer to the current Technical Bulletin.

## 2 DIMENSIONS

### DIMENSIONS



1	Removable panel for bottom access to the air filter
2	Electrical panel
3	Power input
4	keyboard connection
5	Auxiliary connection
6	Condensate drain connection
7	Emergency drain
W1-W2	Hanging brackets
W3-W4	Hanging brackets
AE	Fresh air intake
ES	Air exhaust
M	Ambient air distribution
R	Ambient air return



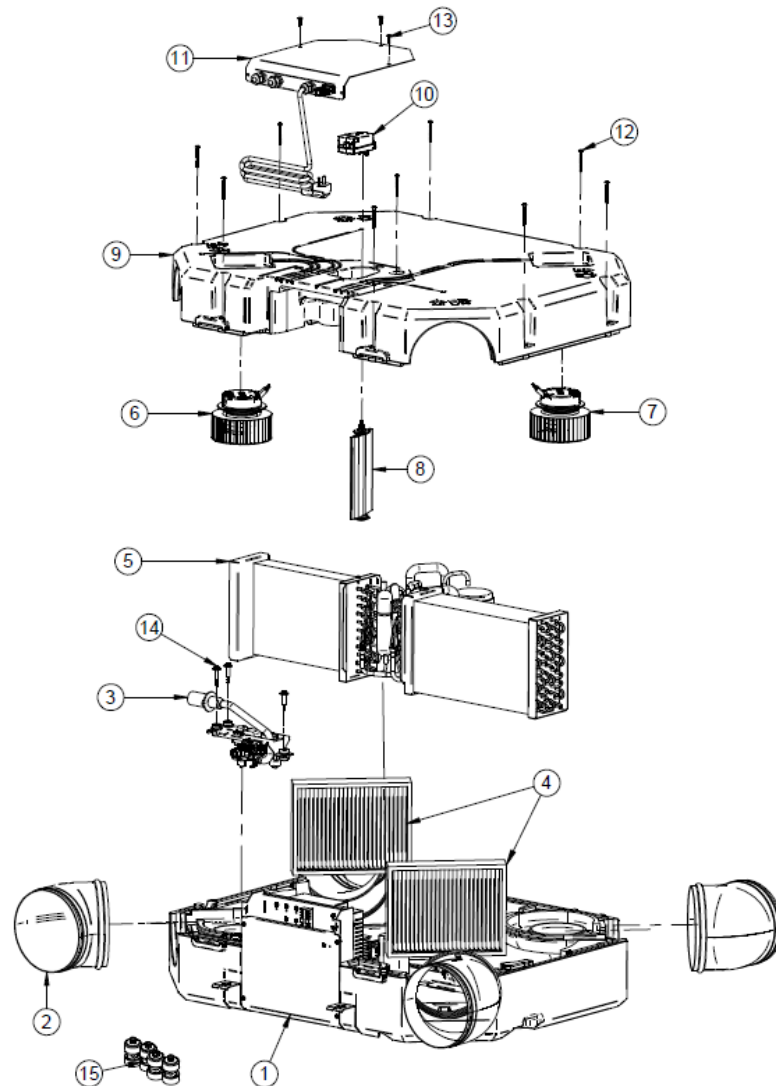
\*\* MINIMUM SERVICE CLEARANCE

Unit configuration	Weight distribution	
	Shipping weight	Operating weight
	kg	kg
IFC	73	44
EI	89	60

IFC = false-ceiling installation

EI = in-view installation

### 3 MAIN COMPONENTS



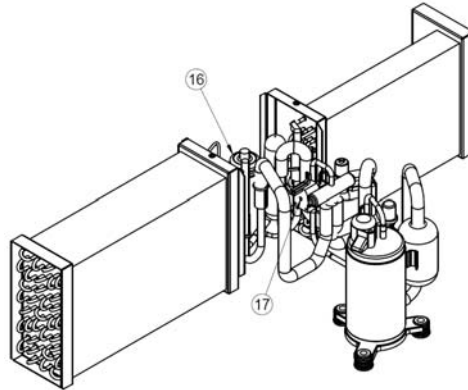
Pos.	Description	Qty
1	Midea Electrical Panel 17226100001428 CPAN-YIN Size 2	1
2	TUBE D. 200 mm 45° MATERIAL ABS COLOR BLACK FOR ElfoFresh3	1
3	Assembled Condensate Discharge Pump	1
4	Air filter 280x220x50 CL M5	3
5	Assembled Refrigerator Circuit	1
6	EC delivery centrifugal fan SC140F2-055-003-001 WITHOUT SCROLL	1
7	EC recovery centrifugal fan SC140F2-055-003-002 WITHOUT SCROLL	1
8	PCV PS100.PVC0 L197 shutter damper complete with pins and bushings	1
9	Structure Elfofresh3 S2 - Expanded polypropylene (EPP) gr/lt 60	1
10	Cable wiring in the Belimo actuator C50310024 ElfoFresh3	1
11	Electrical cabinet -CPAN-YIN S2	1
12	Galvanized screw PT L50 Ø5 torx for plastic	9
13	Galvanized screw PT L18 Ø5 torx for plastic	13
14	Screw with integrated spacer Ø8.2 L26 - Thread Ø5 L15 30° for plastic	3
15	Anti-vibration kit MNFP9Zb2 K1.0 Kg / mm (4 anti vibration + 8 nuts + 4 washers)	1

The codes are subject to being updated. / Check with Airwell before placing any orders.

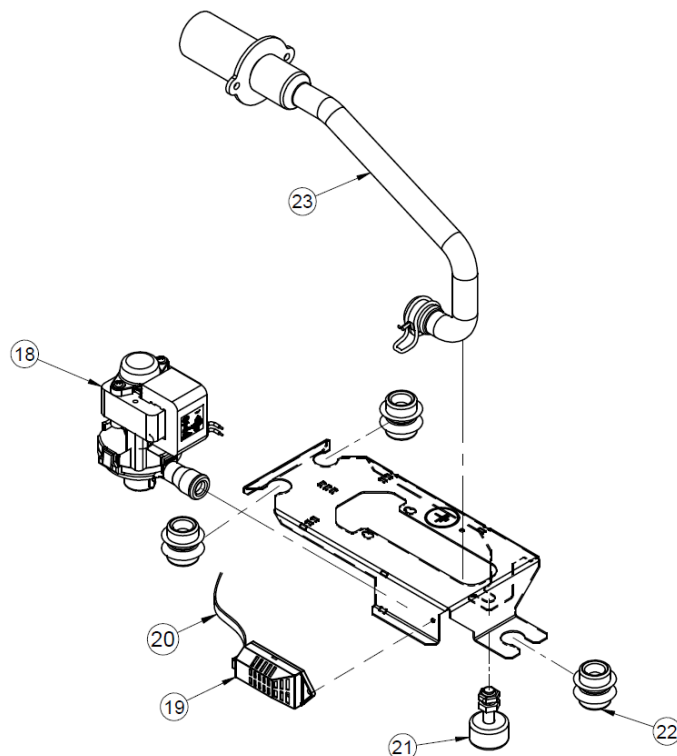


### 3 MAIN COMPONENTS

Pos.	Description	Qty
16	COIL FOR ELECTRONIC EXPANSION VALVE QA(Q)12-MD-15(L=900)(17400302000007)	1
17	COIL FOR 4-WAY VALVE STF-0101G(MD)9187 + (STF-01AJ) (15500216001723)	1



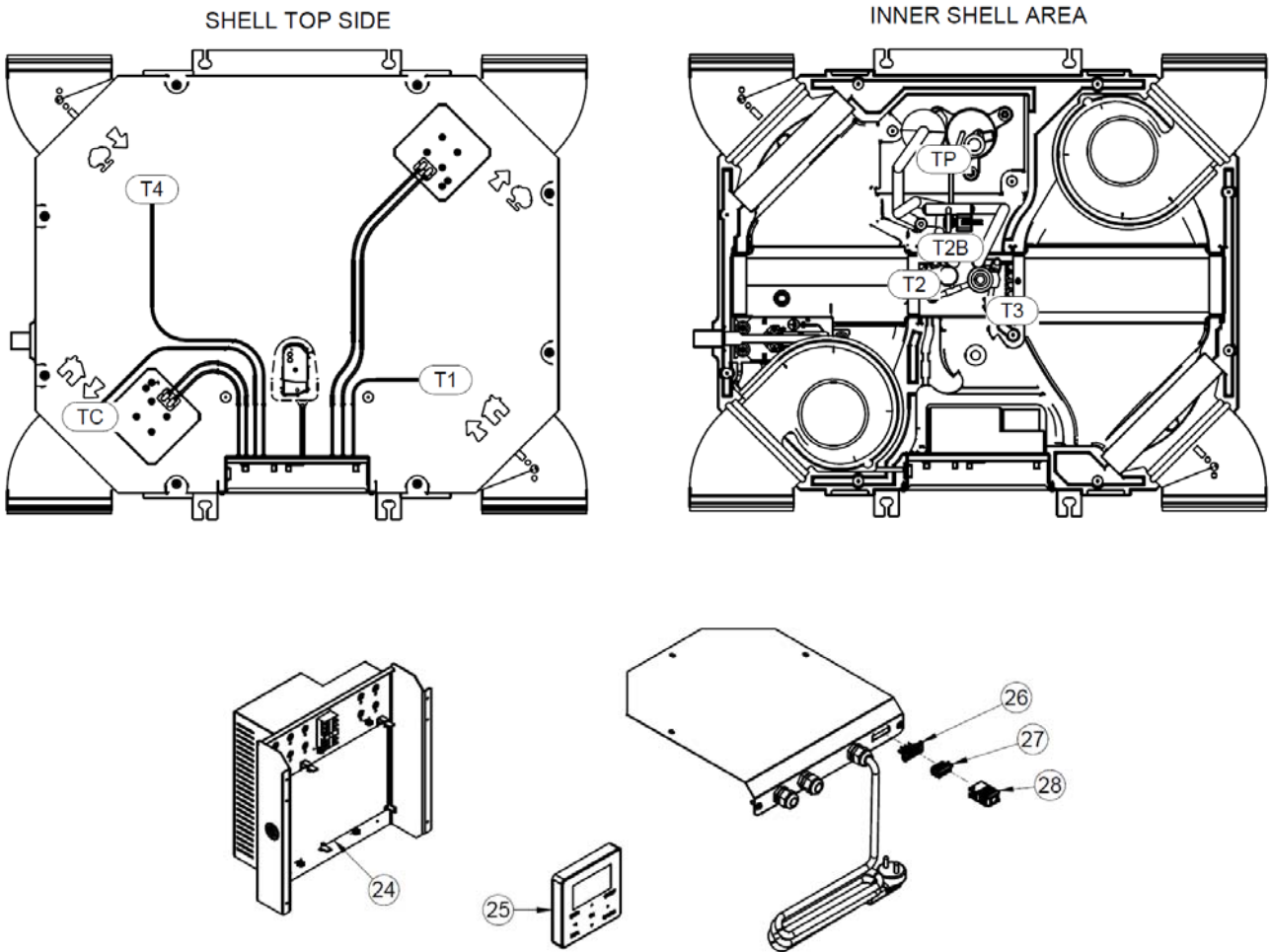
SG5Q00002 Assembled Condensate Discharge Pump		
Pos.	Description	Qty
18	Condensate drain pump PSB-12A CL-1 10135027701	1
19	humidity sensor HU-10S (11201011000027)	1
20	Multipolar Cable 4 X 0.25 mm <sup>2</sup> Not Resistant UV Shielded Not Twisted T Max: -C T Min: -°C (COD MIDEA 17401204011545)	1
21	WATER LEVEL SENSOR YKG-60YL-3(DA VERIFICARE)	1
22	Anti-vibration bearing for condensate drain pump - KFR-71Q / Y.5-6A (12600401001935 )	3
23	Condensate drain pipe with terminal (15125200004032)	1



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### 3 MAIN COMPONENTS

#### ELECTRIC COMPONENTS

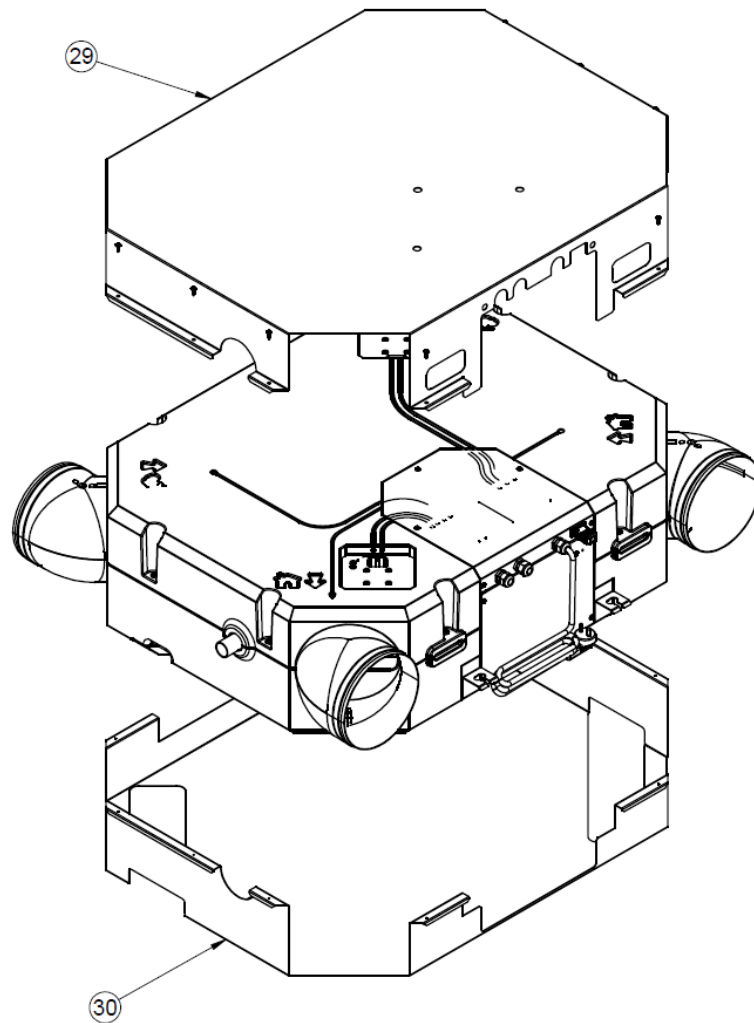


Pos.	Description	Qty
24	Base Card R32 CKD 17126100000109	1
25	Wired Controller 17317100004095	1
26	Phoenix connector - DFK-MC 1,5/ 5-GF-3,81 - 1829374	1
27	Phoenix connector MC 1,5/ 6-STF-3,81 - 1827745	1
28	Phoenix cover MC 1,5/ 6-STF-3,81 - 1834385	1
T1	Room temperature control with probes with built-in probe	1
T2	Coil temperature probe	1
T2B	Refrigerant temperature probe	1
T3	Coil temperature probe	1
T4	Outdoor air temperature probe	1
TC	Outlet air temperature probe	1
TP	Compressor discharge temperature probe	1

The codes are subject to being updated. / Check with Airwell before placing any orders.

### 3 MAIN COMPONENTS

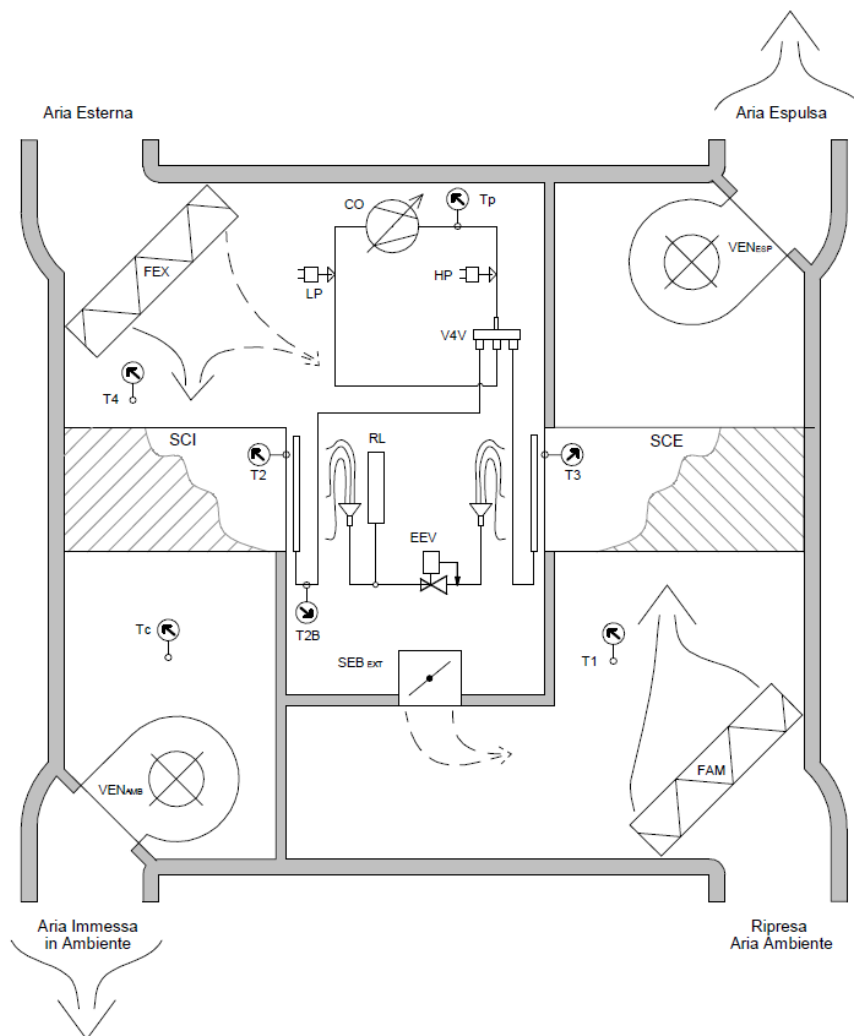
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Pos.	Description	Qty
29	Shell base RAL9005	1
30	Shell base RAL9005	1

The codes are subject to being updated. / Check with Airwell before placing any orders.

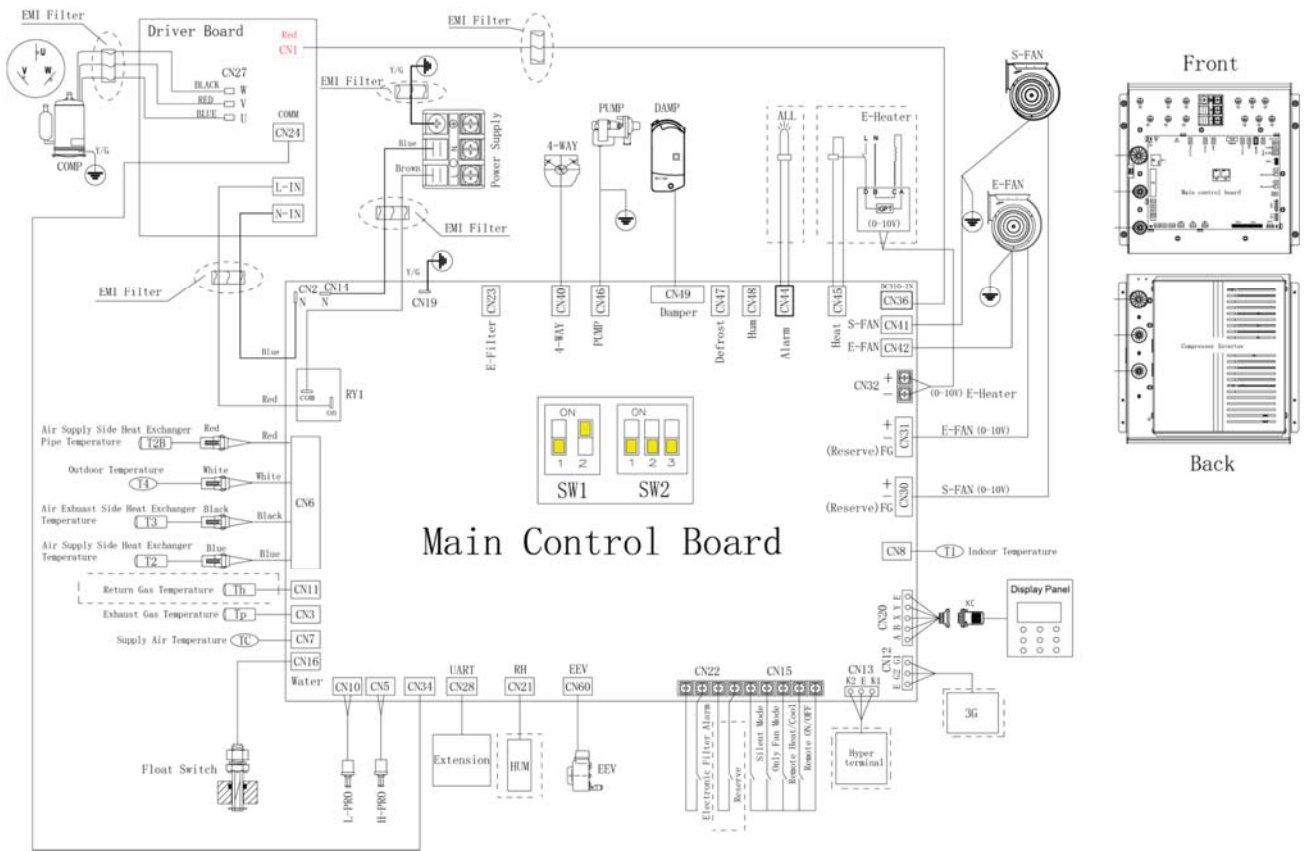
## 4 COOLING CIRCUIT



LEGENDA / LEGEND			
T1	Sonda temperatura aria ripresa / Return air temperature probe	RL	Ricevitore di liquido / Liquid receiver
T2	Sonda temperatura scambiatore interno / Internal exchanger temperature probe	SCI	Scambiatore interno / Indoor exchanger
T2B	Sonda temperatura uscita scambiatore interno / Internal exchanger outlet temperature probe	SCE	Scambiatore esterno / Outdoor exchanger
T3	Sonda temperatura scambiatore esterno / External exchanger temperature probe	SEB	Serranda by pass aria esterna / By pass dumper
T4	Sonda temperatura aria esterna / External air temperature probe	EEV	Valvola Termostatica / Thermostatic valve
Tc	Sonda temperatura aria mandata / Supply air temperature probe	V4V	Valvola a 4 vie / 4-way valve
Tp	Sonda temperatura mandata compressore / Compressor temperature probe	VEN	Ventilatore / Fan
CO	Compressore / Compressor		
FAM	Filtro aria pieghettato M5 mandata / Pleated supply air filter M5		
FEX	Filtro aria pieghettato M5 ripresa / Pleated return air filter M5		
HP	Pressostato di alta pressione / High pressure switch	—	unita' standard / standard unit
LP	Pressostato di bassa pressione / Low pressure switch	- - -	accessori opzionali / optional accessories

The dashed boxes contain the optional components

# 5 ELECTRICAL PANEL LAYOUT

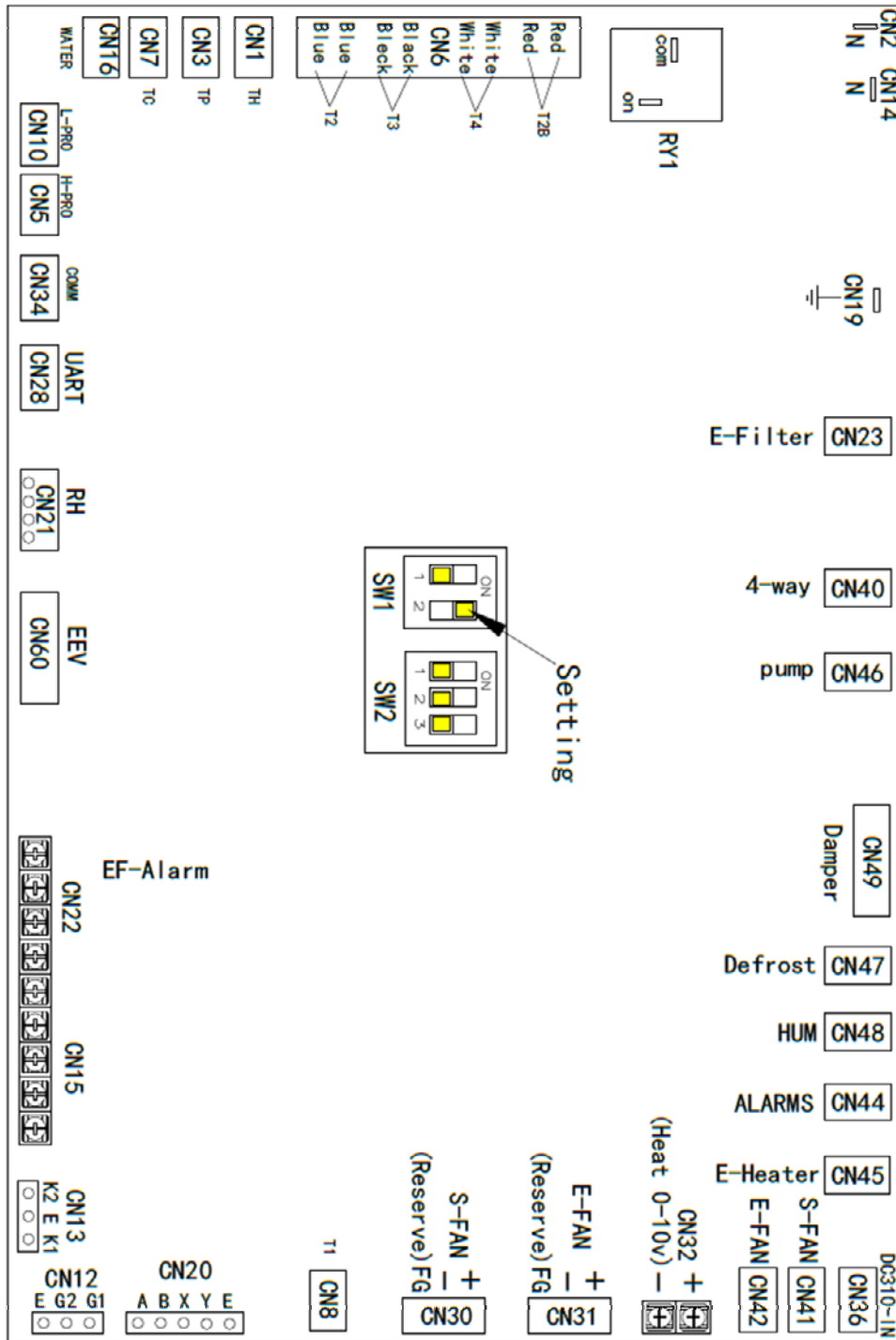


<b>E-Heater</b>	Electric Heater/ Currently not available
<b>L-PRO</b>	Low Pressure Switch Protection
<b>H-PRO</b>	High Pressure Switch Protection
<b>Extension</b>	Expansion Board
<b>3G</b>	3G Module
<b>ALL</b>	Cumulative Alarm
<b>HUM</b>	Humidity Sensor
<b>PUMP</b>	Condensate Drain Pump

<b>DAMP</b>	Damper
<b>4-WAY</b>	Four Way Valve
<b>S-FAN</b>	Supply Fan
<b>E-FAN</b>	Exhaust Fan
<b>COMP</b>	Compressor
<b>EEV</b>	Electronic Expansion Valve
<b>SW1 SW2</b>	DIP Switch

# 6 CIRCUIT BOARD LAYOUT

## LAYOUT MAIN CONTROL BOARD LAYOUT MAIN CONTROL BOARD

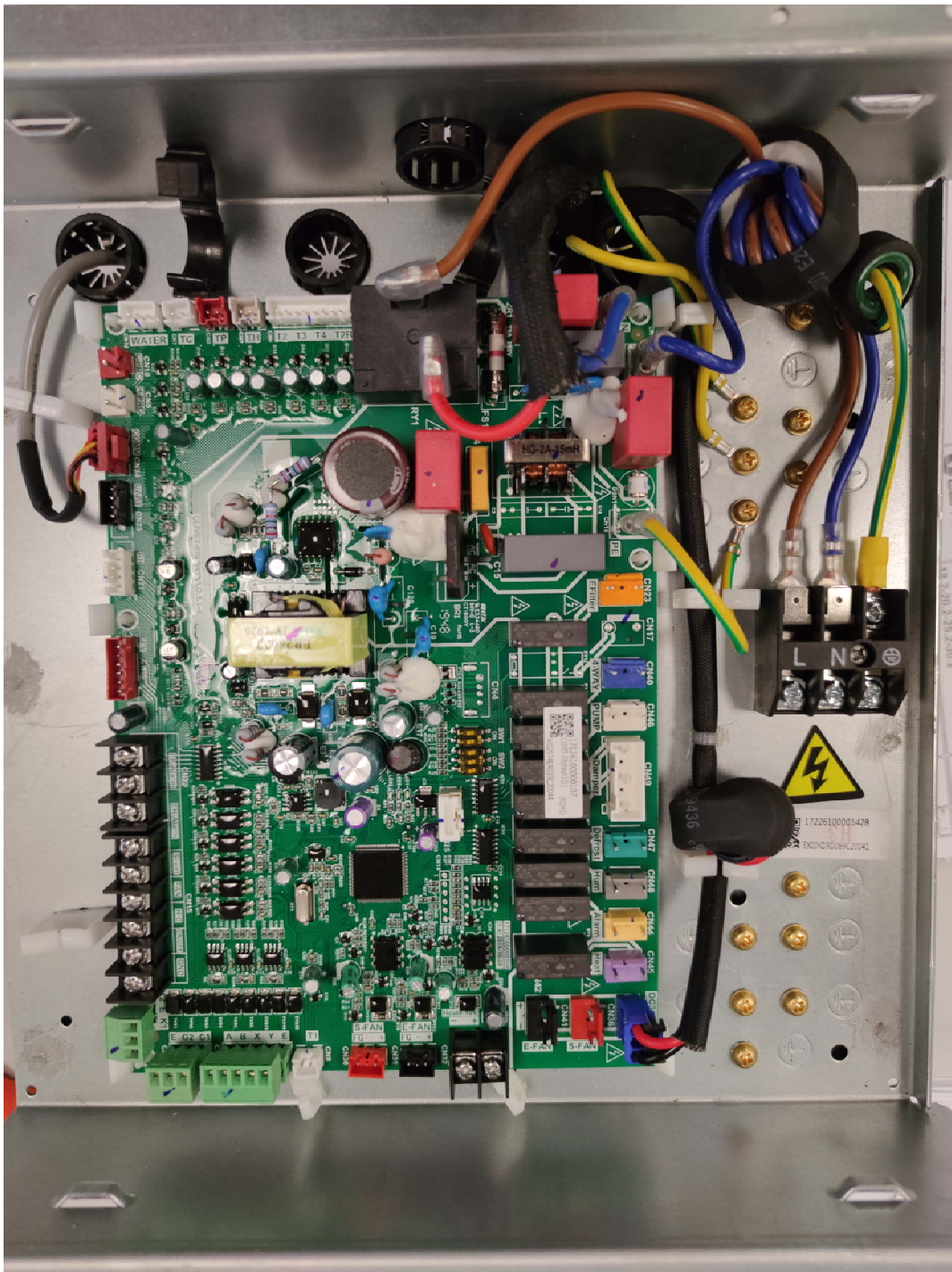


Codice	C95710158	SCHEDA BASE R32 CKD 17126100000109
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The code is subject to being updated.  
 Check with Airwell before placing any orders.

## 6 CIRCUIT BOARD LAYOUT

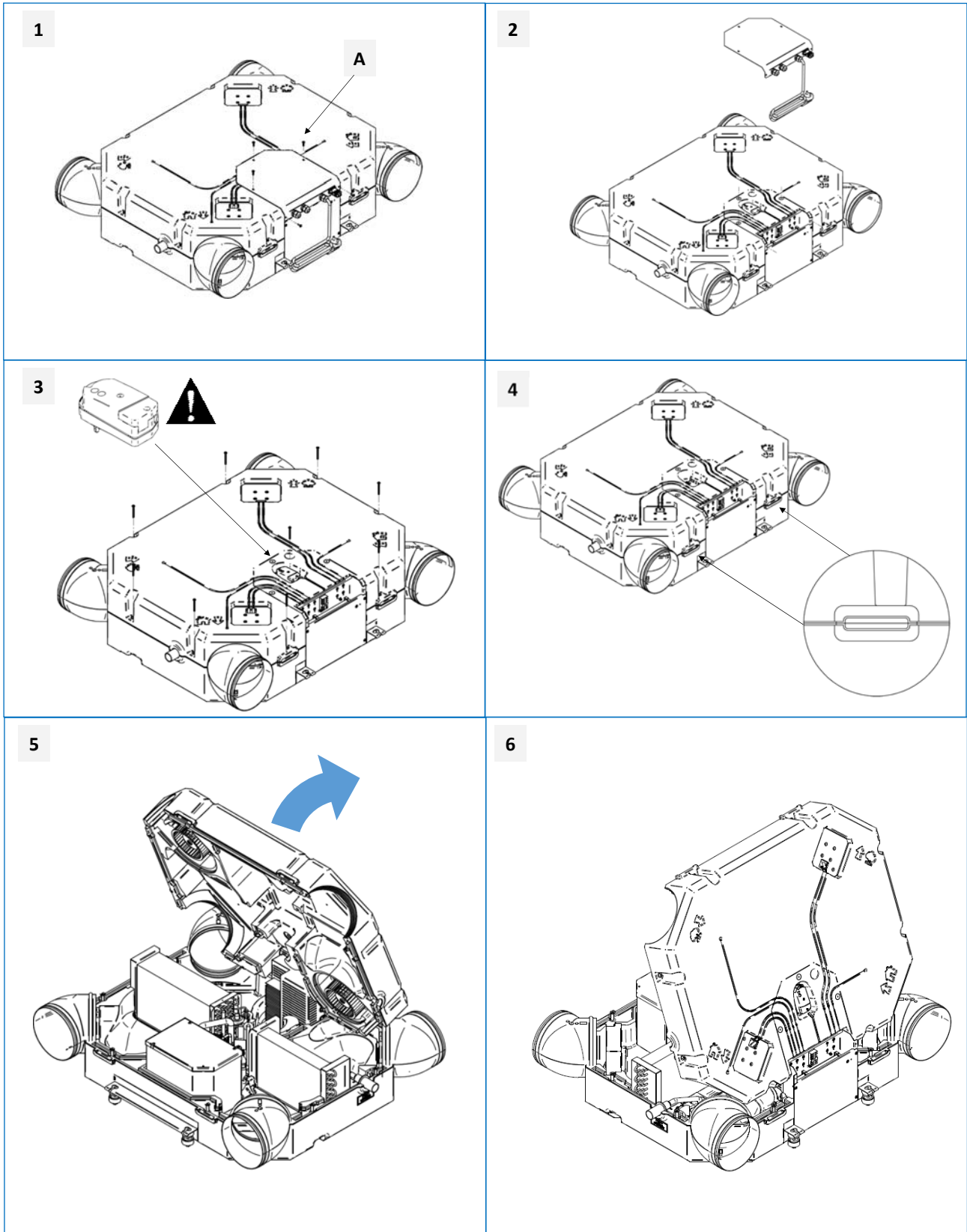
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## 7 DISASSEMBLY OF MAIN COMPONENTS

### Access to the unit

- 1 Undo the screws in the electrical panel (A)
- 2 Remove the cover of the electrical panel and wiring
- 3 Undo the 9 screws / remove the actuator of the damper
- 4 Slot for opening

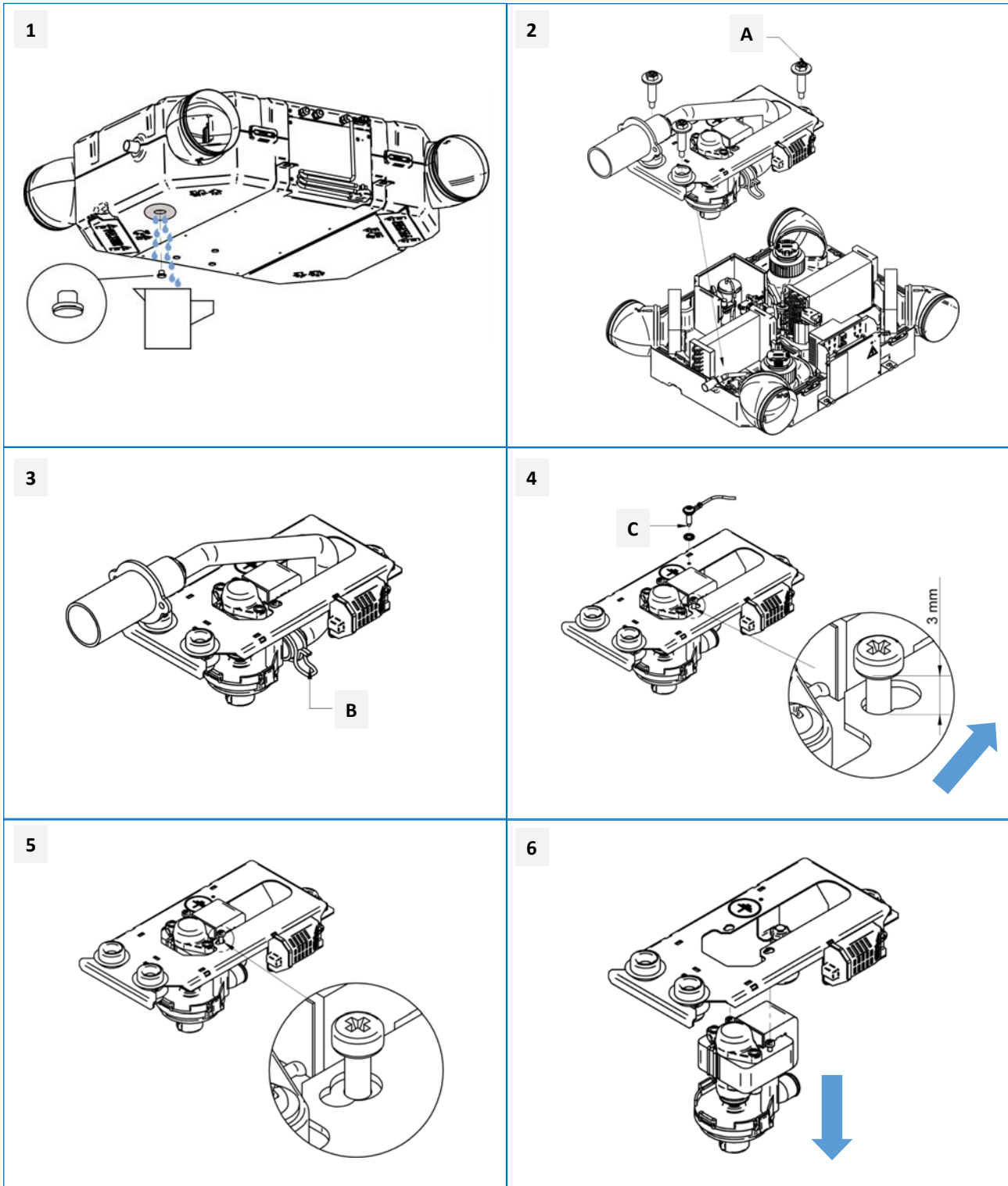




## 7 DISASSEMBLY OF MAIN COMPONENTS

### Replacing the condensate drain pump

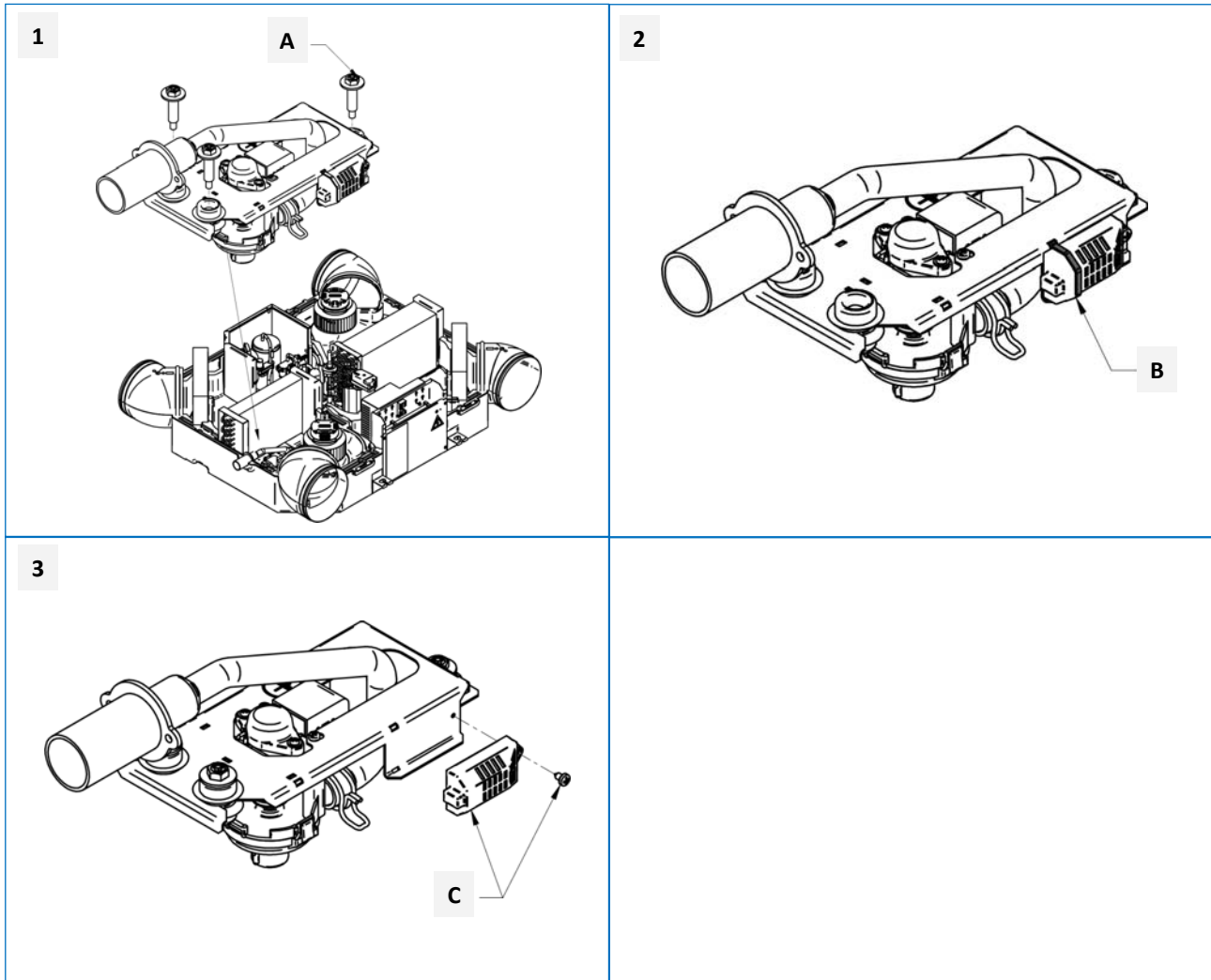
- 1 Remove the drain safety plug
- 2 Remove the screws (A)
- 3 Remove the fastener (B) and tube
- 4 Remove the earth and undo the screw (C)
- 5 Align the screw with the large hole



## 7 DISASSEMBLY OF MAIN COMPONENTS

### Replacing the humidity sensor

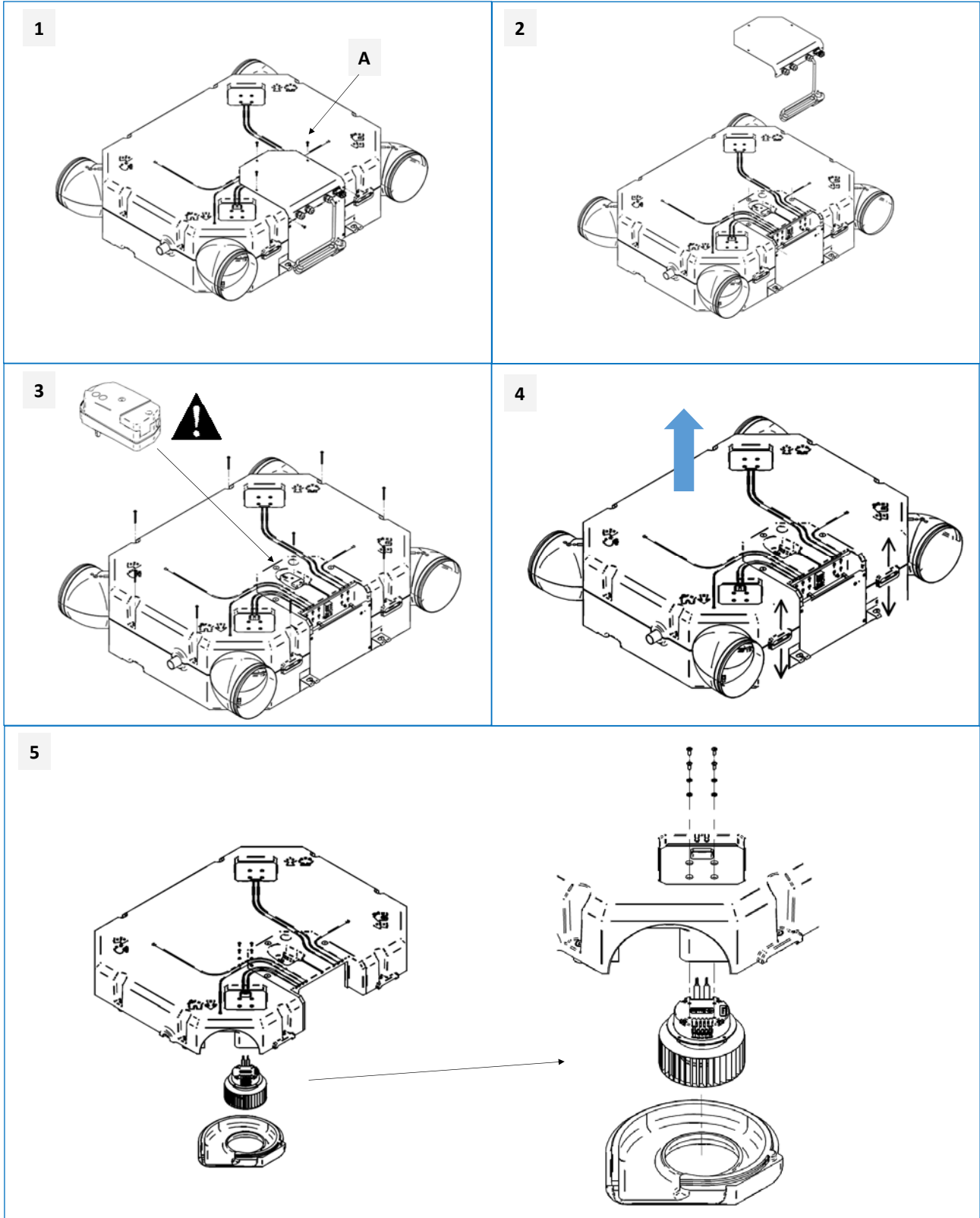
- 1 Remove the screws (A)
- 2 Remove the fastener (B)
- 3 Remove the screw and sensor (C)



## 7 DISASSEMBLY OF MAIN COMPONENTS

### Replacing the fan

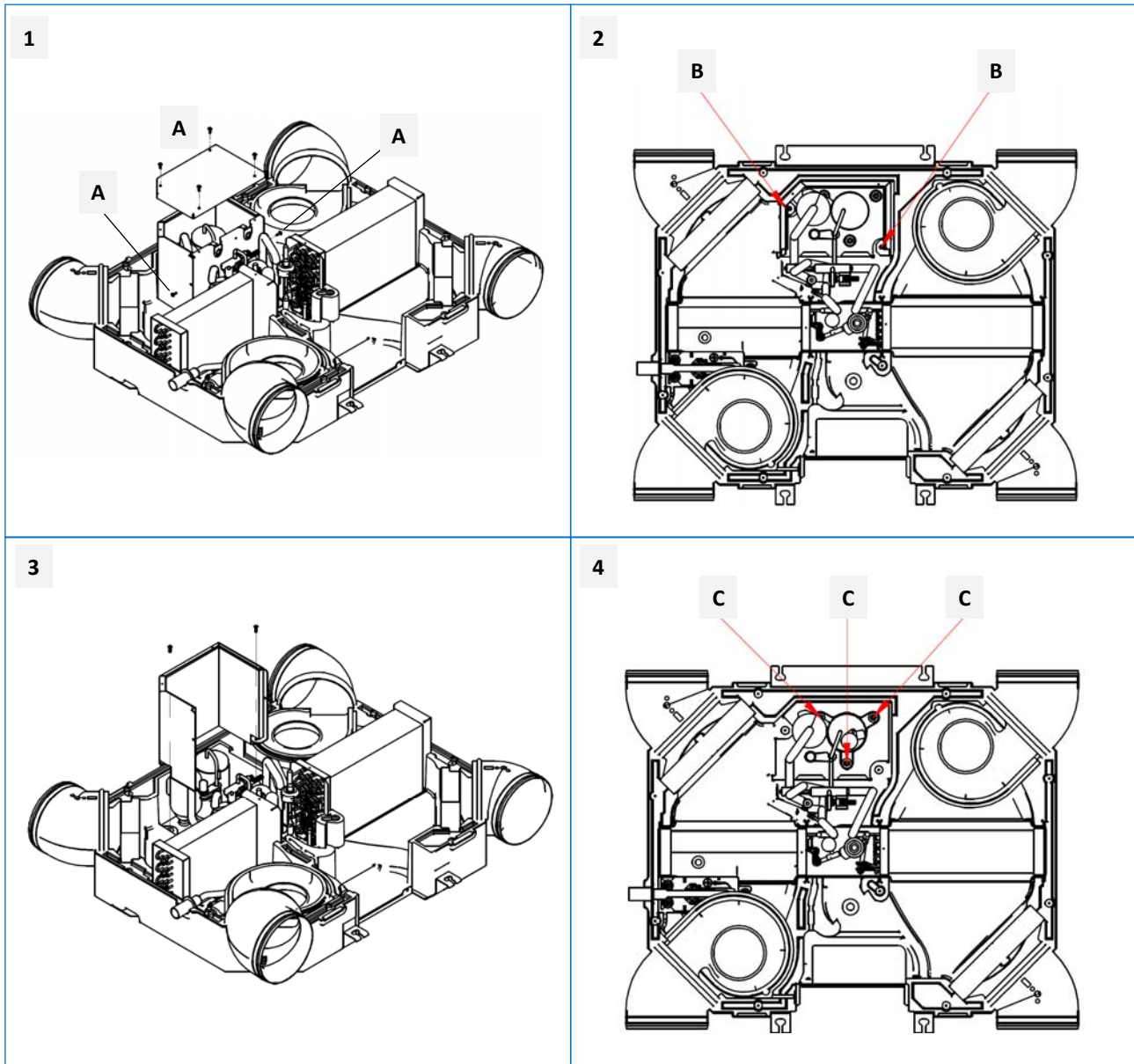
- 1 Undo the screws in the electrical panel (A)
- 2 Remove the cover of the electrical panel and wiring
- 3 Undo the 9 screws / remove the actuator of the damper
- 4 Remove the upper shell
- 5 Remove the screws of the fan and wiring



## 7 DISASSEMBLY OF MAIN COMPONENTS

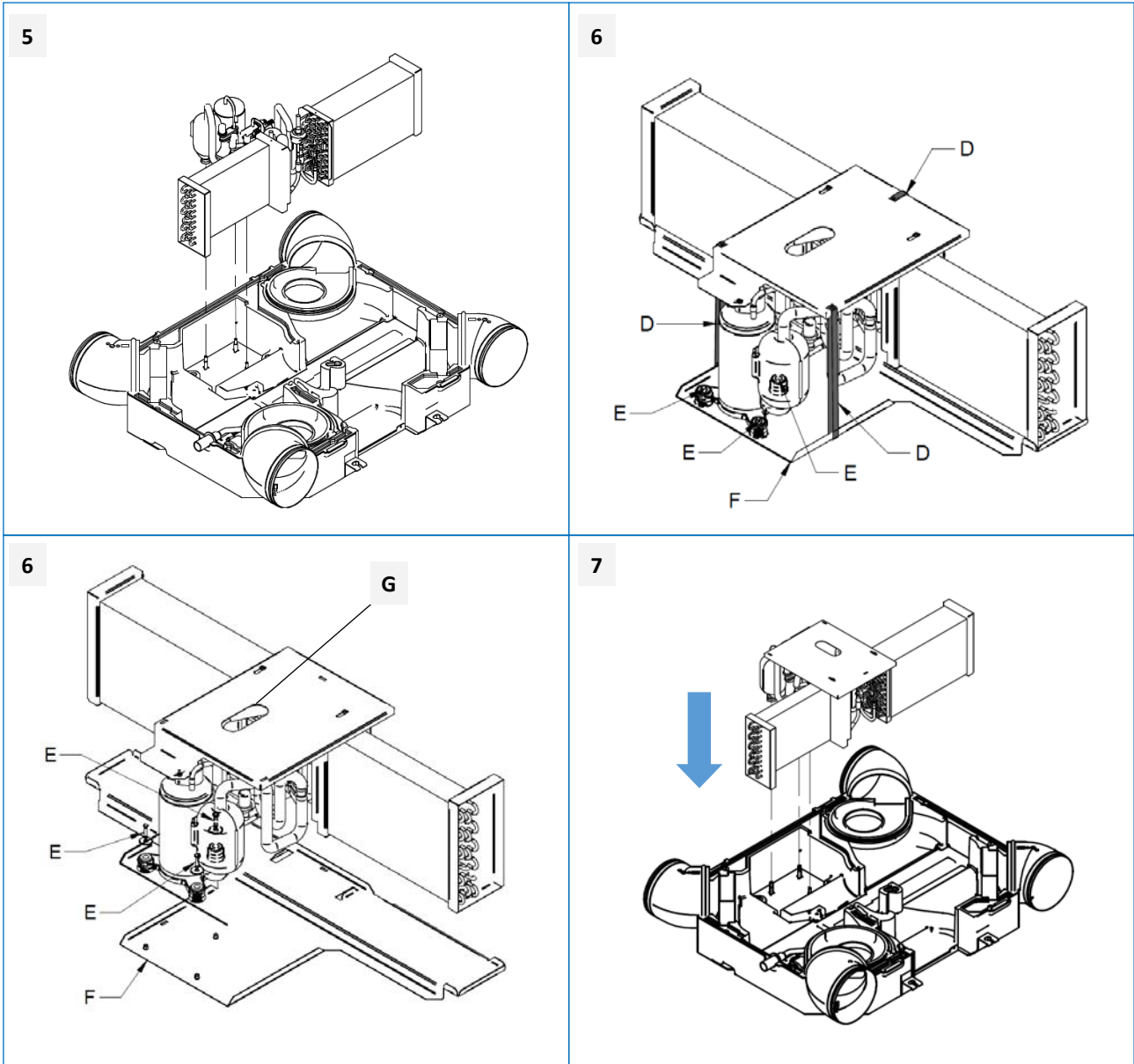
### Replacing the cooling circuit

- 1 Remove the 6 screws (A) / remove the cover
- 2 Remove the screws (B)
- 3 Remove the protection
- 4 Remove the bolts and washers (C)



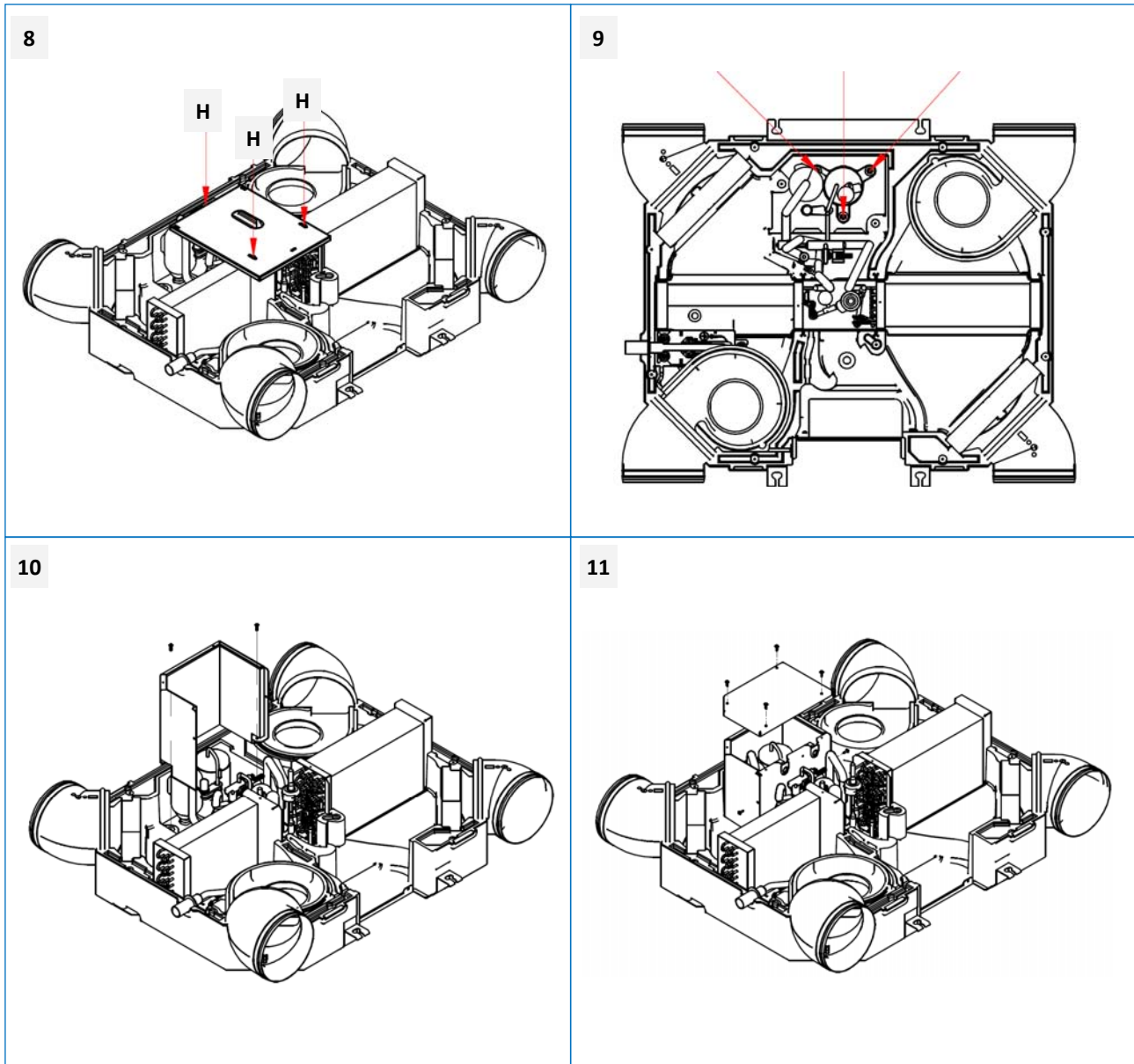
## 7 DISASSEMBLY OF MAIN COMPONENTS

- 5 Remove the cooling circuit
- 6 Cut the fasteners (D)  
Remove the screws and washers of the compressor (E)  
Remove the plate (F)  
Plate for lifting (G)



## 7 DISASSEMBLY OF MAIN COMPONENTS

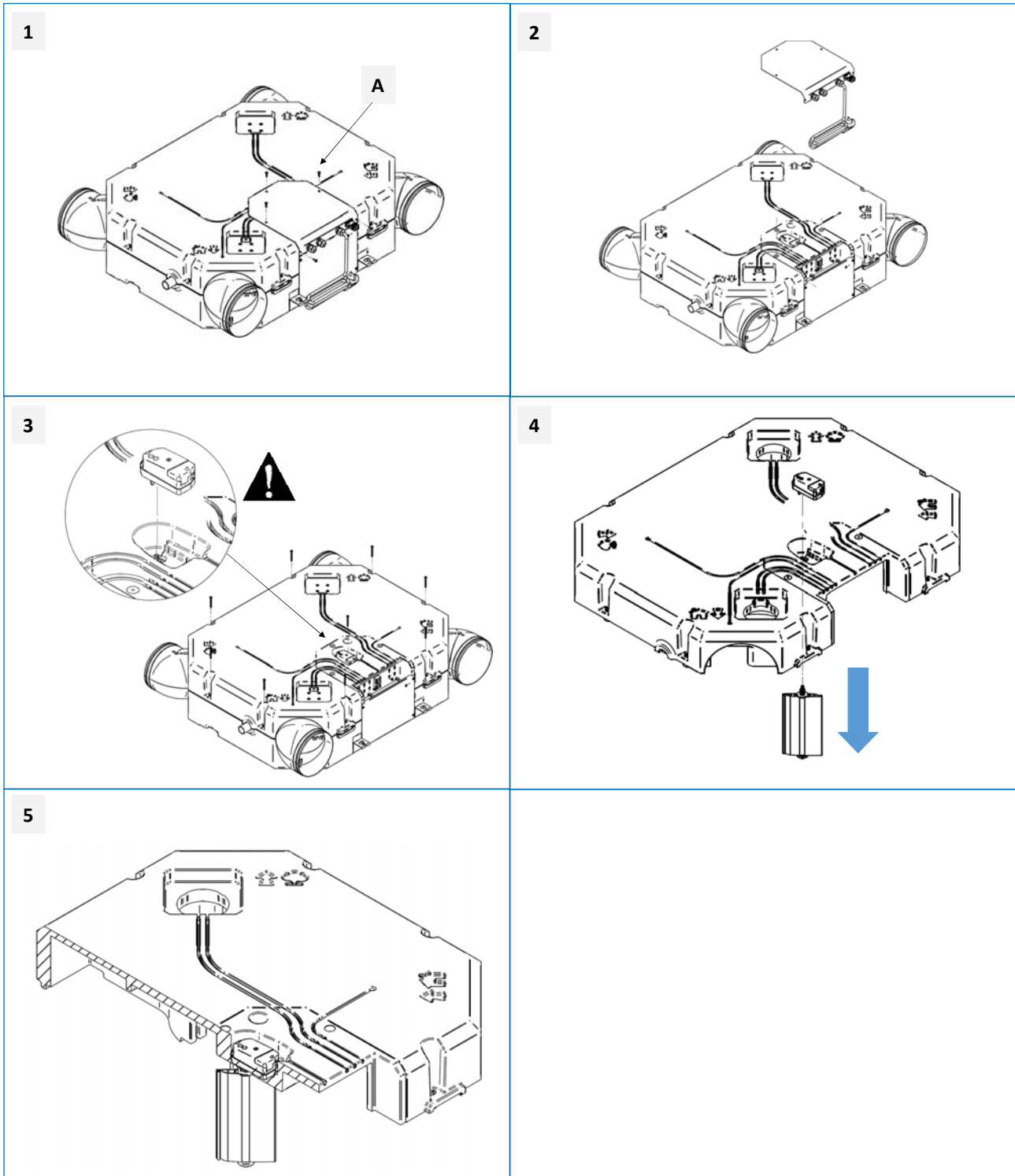
- 8 Remove the screws (H) and plate
- 9 Fasten the bolts (see step 4)
- 10 Insert the protection (see step 2-3)
- 11 Insert the cover (see step 1)



## 7 DISASSEMBLY OF MAIN COMPONENTS

### Replacing the bypass damper

- 1 Undo the screws in the electrical panel (A)
- 2 Remove the cover of the electrical panel and wiring
- 3 Undo the 9 screws / remove the actuator of the damper
- 4 Remove the damper
- 5 Insert the new damper

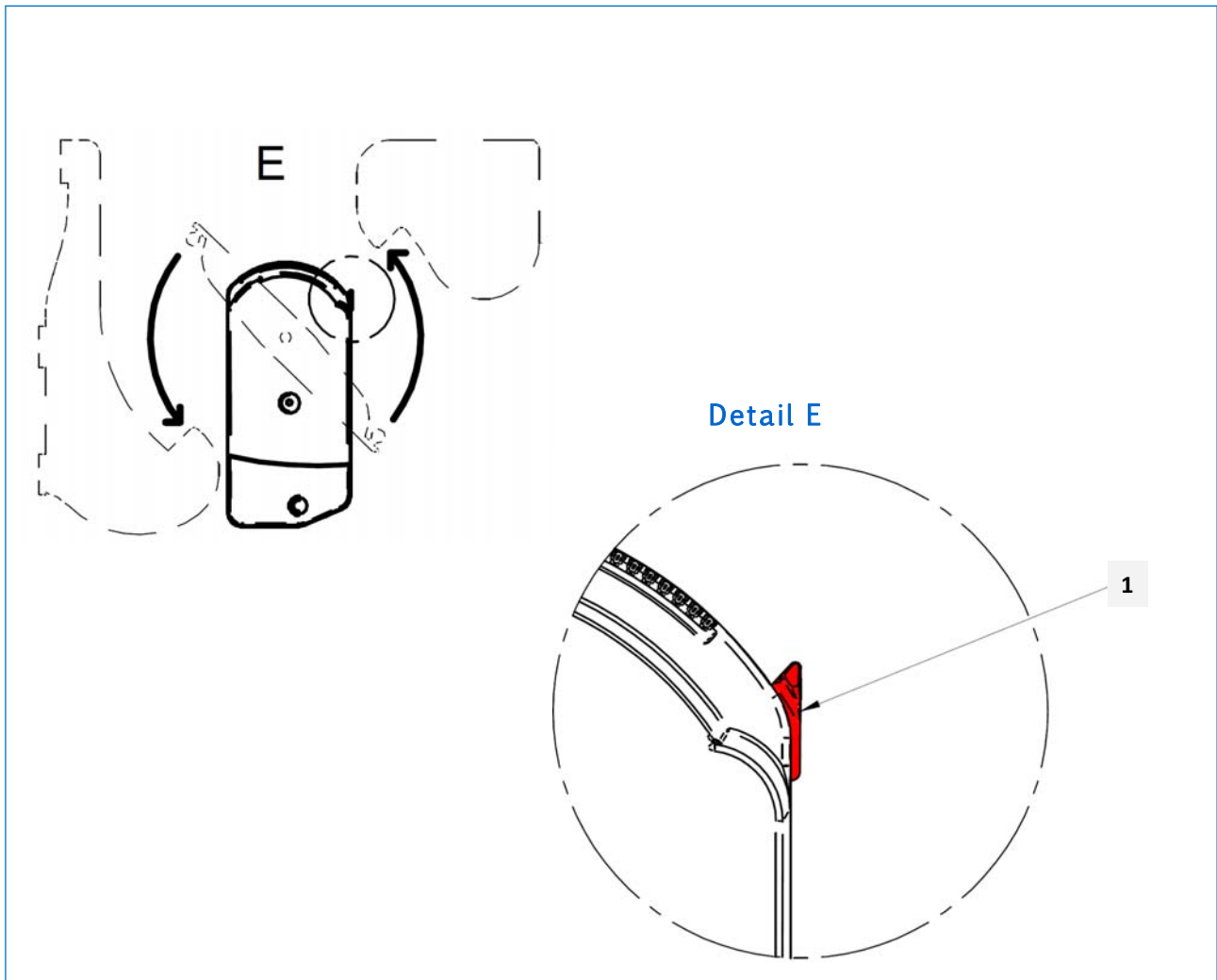


## 7 DISASSEMBLY OF MAIN COMPONENTS

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### Position of the bypass damper

- 1 Position at far right = blade open



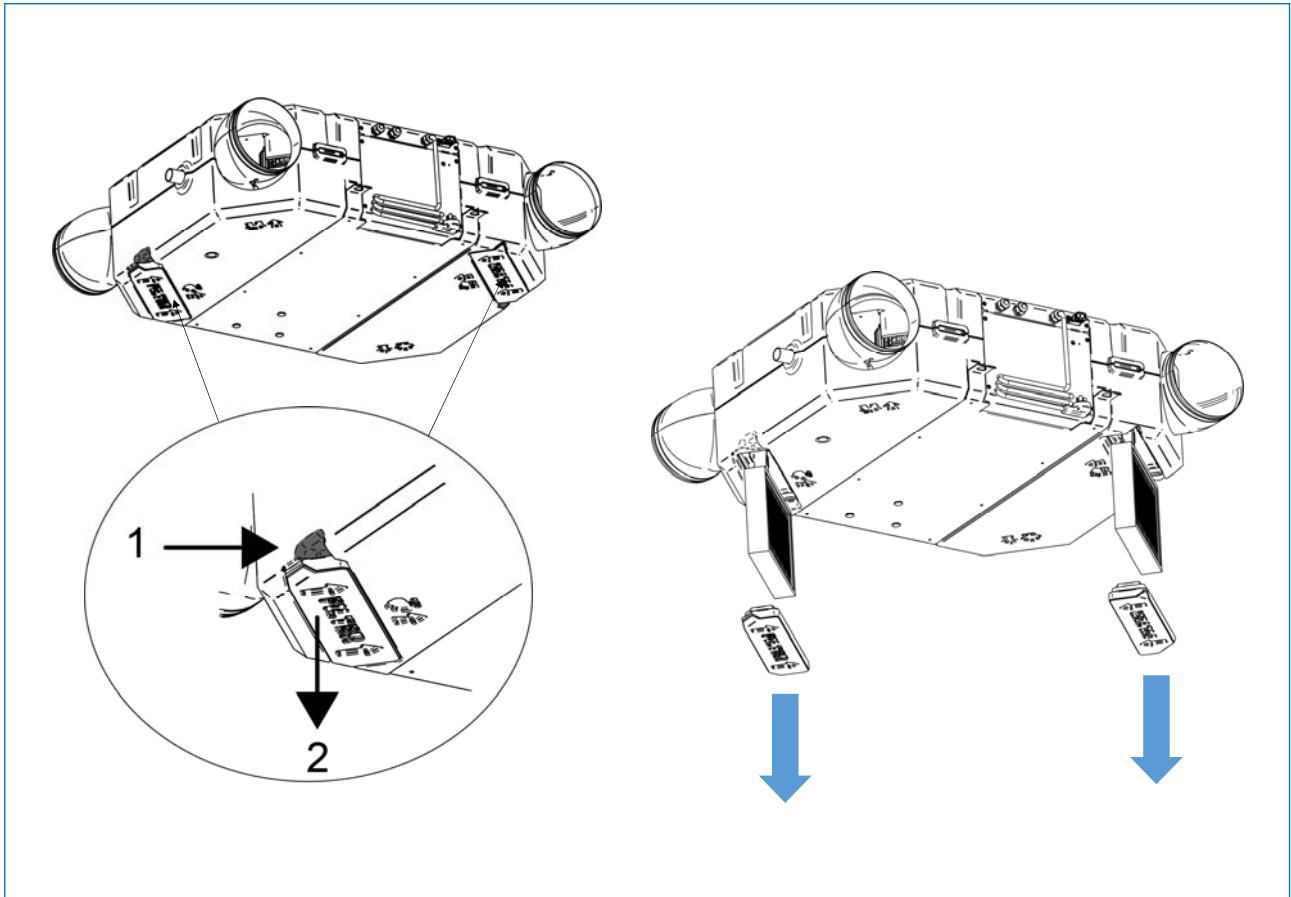


## 7 DISASSEMBLY OF MAIN COMPONENTS

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### Access to air filters

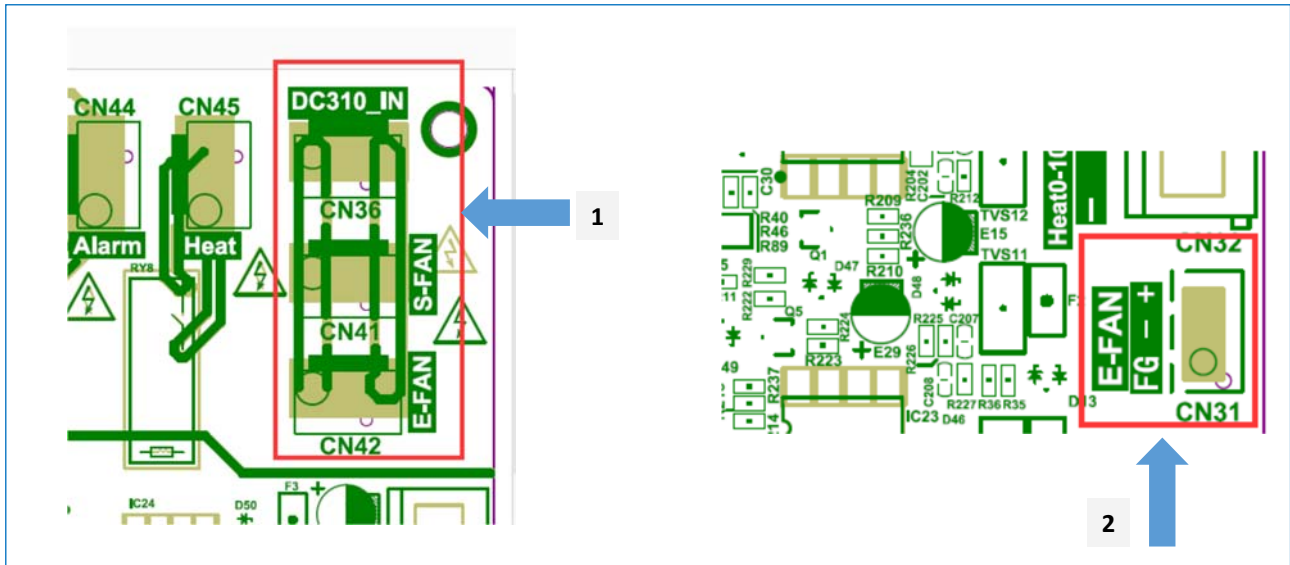
- 1 Access for inspection
- 2 Remove the covers



## 8 FAN CHECK / COMPRESSOR

### Issues with the supply or exhaust air fans

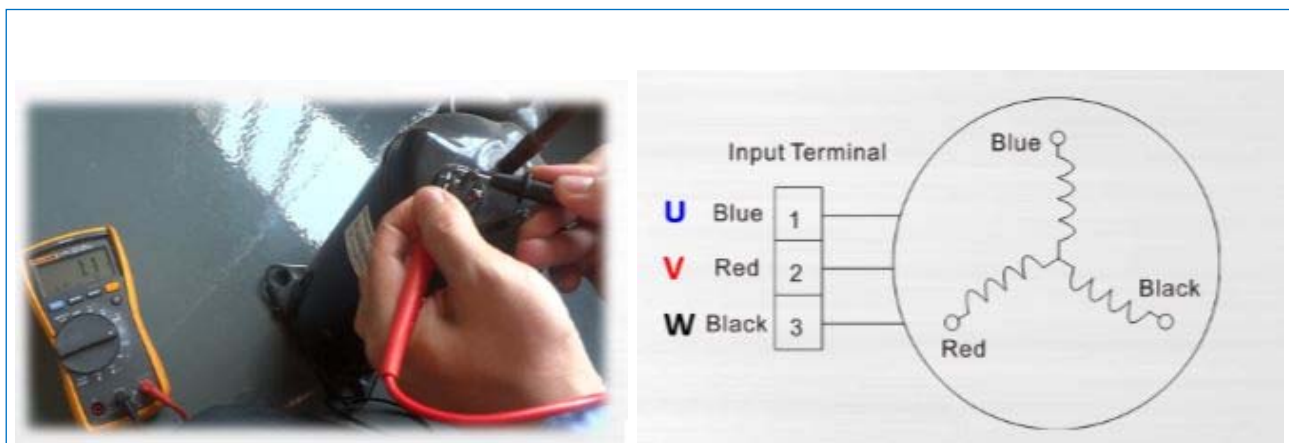
- 1 Check that power is supplied to the input of the DC310\_IN board
- 2 Check that there is a signal at the 0-10V input of the E-FAN or S-FAN signal between the + and - terminals



### Compressor Check

PO (IPM over-strong current protection)

Disconnect the compressor and check the resistance between U-V, V-W and U-W, and all 3 values should be equal. If not, the compressor is faulty and should be replaced.



	Resistance value reference	
Compressor model	KSK89D29UEZD	
U - V	1.99Ω (20°C)	1.77Ω (20°C)
V - W		
U - W		

## 9 PROBE VALUES TABLE

Resistance characteristics of the return (T1), external (T4) and supply (Tc) air temperature sensors, and of the heat exchanger (T2, T2B, T3) refrigerant inlet/outlet (liquid/gas tube) temperature sensors.

Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)
-20	115.3	20	12.64	60	2.358	100	0.6297
-19	108.1	21	12.06	61	2.272	101	0.6115
-18	101.5	22	11.50	62	2.191	102	0.5939
-17	96.34	23	10.97	63	2.112	103	0.5768
-16	89.59	24	10.47	64	2.037	104	0.5604
-15	84.22	25	10.00	65	1.965	105	0.5445
-14	79.31	26	9.551	66	1.896	106	0.5291
-13	74.54	27	9.124	67	1.830	107	0.5143
-12	70.17	28	8.720	68	1.766	108	0.4999
-11	66.09	29	8.336	69	1.705	109	0.4860
-10	62.28	30	7.971	70	1.647	110	0.4726
-9	58.71	31	7.624	71	1.591	111	0.4596
-8	56.37	32	7.295	72	1.537	112	0.4470
-7	52.24	33	6.981	73	1.485	113	0.4348
-6	49.32	34	6.684	74	1.435	114	0.4230
-5	46.57	35	6.400	75	1.387	115	0.4116
-4	44.00	36	6.131	76	1.341	116	0.4006
-3	41.59	37	5.874	77	1.291	117	0.3899
-2	39.82	38	5.630	78	1.254	118	0.3796
-1	37.20	39	5.397	79	1.2133	119	0.3695
0	35.20	40	5.175	80	1.174	120	0.3598
1	33.33	41	4.964	81	1.136	121	0.3504
2	31.56	42	4.763	82	1.100	122	0.3413
3	29.91	43	4.571	83	1.064	123	0.3325
4	28.35	44	4.387	84	1.031	124	0.3239
5	26.88	45	4.213	85	0.9982	125	0.3156
6	25.50	46	4.046	86	0.9668	126	0.3075
7	24.19	47	3.887	87	0.9366	127	0.2997
8	22.57	48	3.735	88	0.9075	128	0.2922
9	21.81	49	3.590	89	0.8795	129	0.2848
10	20.72	50	3.451	90	0.8525	130	0.2777
11	19.69	51	3.318	91	0.8264	131	0.2708
12	18.72	52	3.192	92	0.8013	132	0.2641
13	17.80	53	3.071	93	0.7771	133	0.2576
14	16.93	54	2.959	94	0.7537	134	0.2513
15	16.12	55	2.844	95	0.7312	135	0.2451
16	15.34	56	2.738	96	0.7094	136	0.2392
17	14.62	57	2.637	97	0.6884	137	0.2334
18	13.92	58	2.540	98	0.6682	138	0.2278
19	13.26	59	2.447	99	0.6486	139	0.2223

## 9 PROBE VALUES TABLE

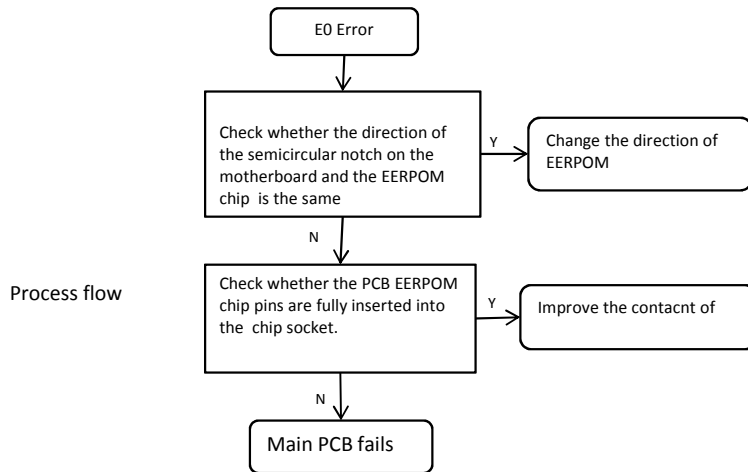
Resistance characteristics of the compressor's drain pipe temperature sensor

Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)
-20	542.7	20	68.66	60	13.59	100	3.702
-19	511.9	21	65.62	61	13.11	101	3.595
-18	483.0	22	62.73	62	12.65	102	3.492
-17	455.9	23	59.98	63	12.21	103	3.392
-16	430.5	24	57.37	64	11.79	104	3.296
-15	406.7	25	54.89	65	11.38	105	3.203
-14	384.3	26	52.53	66	10.99	106	3.113
-13	363.3	27	50.28	67	10.61	107	3.025
-12	343.6	28	48.14	68	10.25	108	2.941
-11	325.1	29	46.11	69	9.902	109	2.860
-10	307.7	30	44.17	70	9.569	110	2.781
-9	291.3	31	42.33	71	9.248	111	2.704
-8	275.9	32	40.57	72	8.940	112	2.630
-7	261.4	33	38.89	73	8.643	113	2.559
-6	247.8	34	37.30	74	8.358	114	2.489
-5	234.9	35	35.78	75	8.084	115	2.422
-4	222.8	36	34.32	76	7.820	116	2.357
-3	211.4	37	32.94	77	7.566	117	2.294
-2	200.7	38	31.62	78	7.321	118	2.233
-1	190.5	39	30.36	79	7.086	119	2.174
0	180.9	40	29.15	80	6.859	120	2.117
1	171.9	41	28.00	81	6.641	121	2.061
2	163.3	42	26.90	82	6.430	122	2.007
3	155.2	43	25.86	83	6.228	123	1.955
4	147.6	44	24.85	84	6.033	124	1.905
5	140.4	45	23.89	85	5.844	125	1.856
6	133.5	46	22.89	86	5.663	126	1.808
7	127.1	47	22.10	87	5.488	127	1.762
8	121.0	48	21.26	88	5.320	128	1.717
9	115.2	49	20.46	89	5.157	129	1.674
10	109.8	50	19.69	90	5.000	130	1.632
11	104.6	51	18.96	91	4.849		
12	99.69	52	18.26	92	4.703		
13	95.05	53	17.58	93	4.562		
14	90.66	54	16.94	94	4.426		
15	86.49	55	16.32	95	4.294		
16	82.54	56	15.73	96	4.167		
17	78.79	57	15.16	97	4.045		
18	75.24	58	14.62	98	3.927		
19	71.86	59	14.09	99	3.812		

# 10 TROUBLESHOOTING

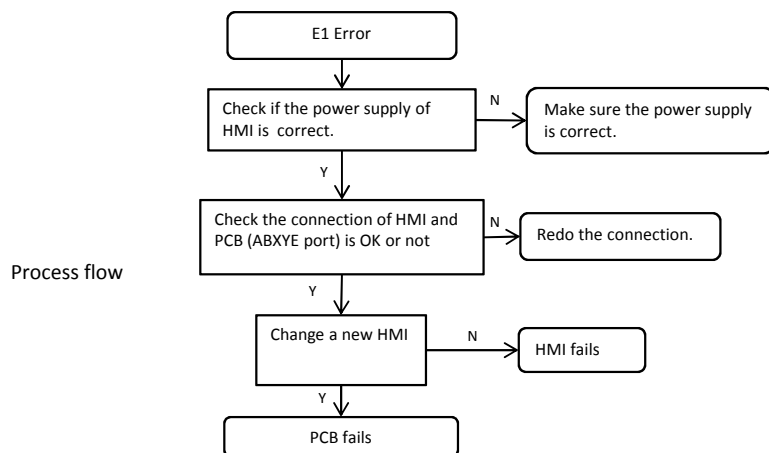
## 1. E0 Eprom failure

- Error meaning** Main chip cannot read the initial information from the EERPOM
- Error reason** 1, Poor contact between EERPOM chip pins and sockets  
2, Reversed insert of EERPOM chip.  
3, PCB board fails.



## 2. E1 Error

- Error meaning** Communication error between main PCB and HMI
- Error reason** 1, Bad connection of HMI and wiring port.  
2, Abnormal HMI power supply  
3, HMI fails  
4, Main PCB fails



# 10 TROUBLESHOOTING

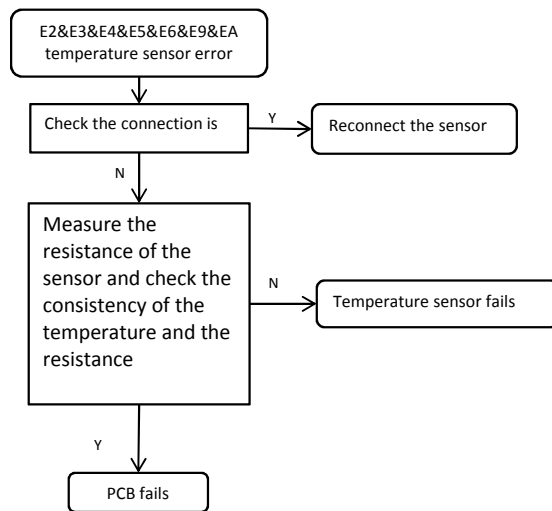
## 3. E2&E3&E4&E5&E6&E9&EA Error

### T2&TC&T3&T1&T4&T2B&Tp sensor error

Error meaning PCB detects the sensor circuit is open or short ( detected voltage is higher than 4,95V or lower than 0,05V. )

- Error reason
- 1, Temperature sensor has a bad connection with the PCB.
  - 2, Temperature sensor fails.
  - 3, Main PCB fails.

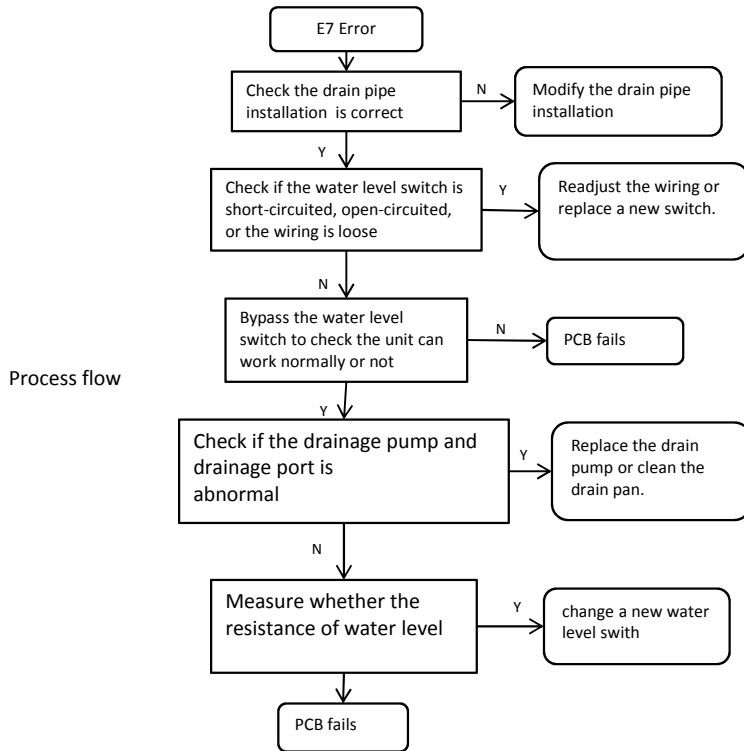
Process flow



# 10 TROUBLESHOOTING

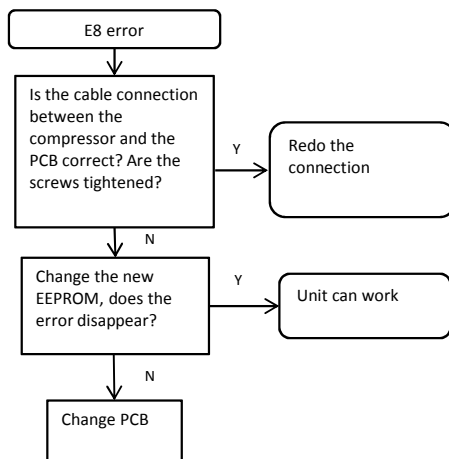
## 4. E7 Error

- Error meaning** Water level switch error
- Error reason**
- 1, Water level switch connection is loose
  - 2, Water level switch is stuck
  - 3, Bad unit drain pipe installation or water pump broken
  - 4, PCB fails



## 5. E8 error

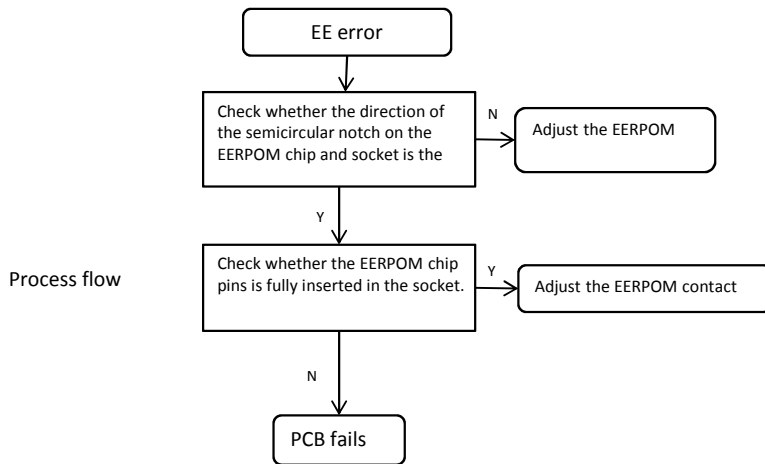
- Error meaning** Inverter PCB chip can not read intial information from EEPROM.
- Error reason**
- 1, Bad contact between EEPROM and inverter PCB.
  - 2, Inverter PCB fails.
- process flow**



# 10 TROUBLESHOOTING

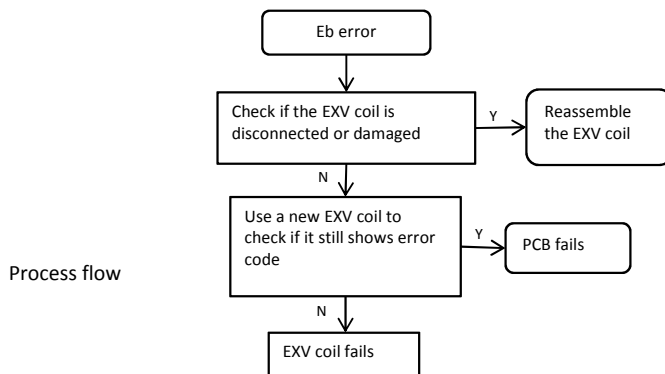
## 6. EE error

Error meaning Inverter PCB can not read initial information from EEPROM  
Error reason 1, Poor contact between EERPOM chip pins and socket.  
2, EEPROM is reversed inserted.  
3, PCB fails.



## 7. Eb error

Error meaning EXV error  
Error reason 1, EXV coil is disconnected,  
2, EXV coil wiring is broken  
3, PCB fails.

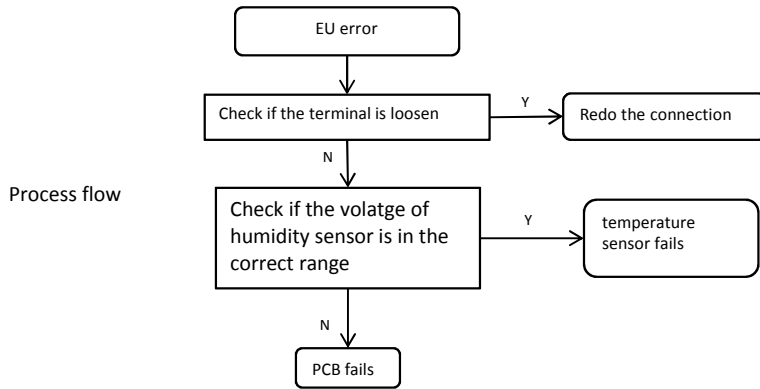




# 10 TROUBLESHOOTING

## 8. EU error

error meaning    Supply air humidity sensor fails  
 1, poor contact of humidity sensor and PCB  
 Error reason    2, humidity sensor fails  
 3, PCB fails

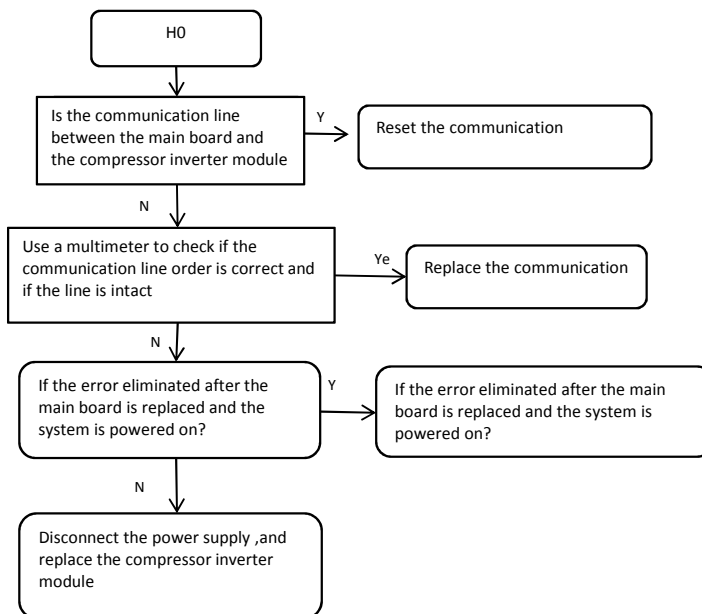


## 9. H0: IPM module communication failure

Symptom: Communication between the main control board and the inverter fails.

Possible cause:

- The address of the compressor inverter board is duplicated or incorrect.
- The communication wire between the main board and the inverter board is loose.
- The communication wire is damaged.
- The main control board, filter board, or fan bridge rectifier is faulty.
- The compressor inverter board is damaged.

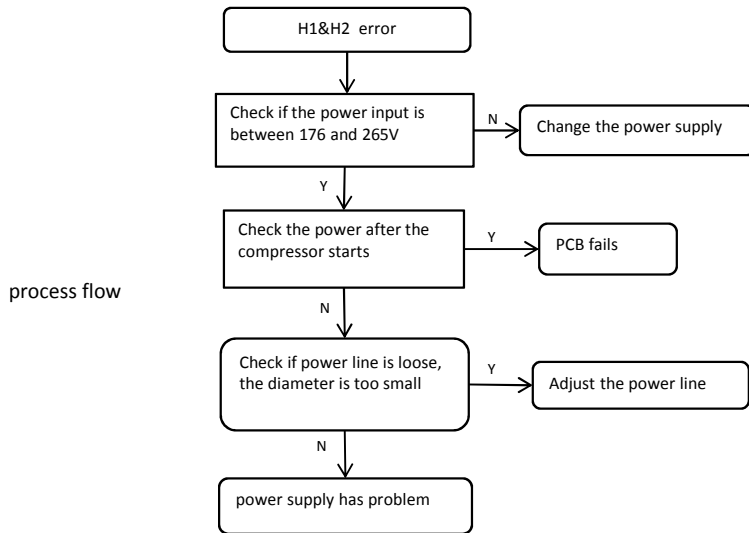


# 10 TROUBLESHOOTING

## 10. H1&H2 error

**error meaning** Power supply protection. If AC is higher than 275V, show H2 error, if AC is less than 176V, show H1 error.

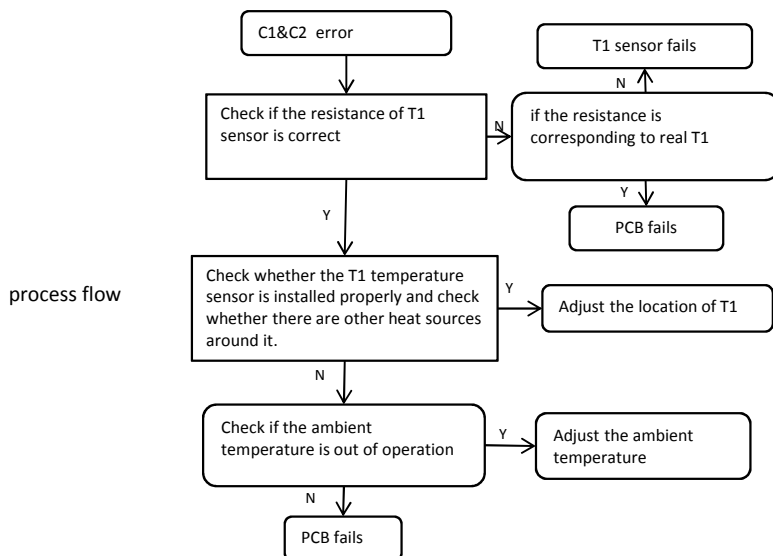
**Error reason**  
 1, Unit power cord is too small,  
 2, Poor switch contact,  
 3, Power supply is not good  
 4, PCB fails



## 11. C1&C2 error code

**Error meaning** in cooling mode, if indoor ambient is higher than 38, unit shows C1 error, in heating mode, if indoor ambient is lower than 5, unit shows C2 error.

**error reason**  
 1, Indoor ambient temperature is out of operation range,  
 2, sensor fails  
 3, Unit is affected by other heat source  
 4, PCB fails

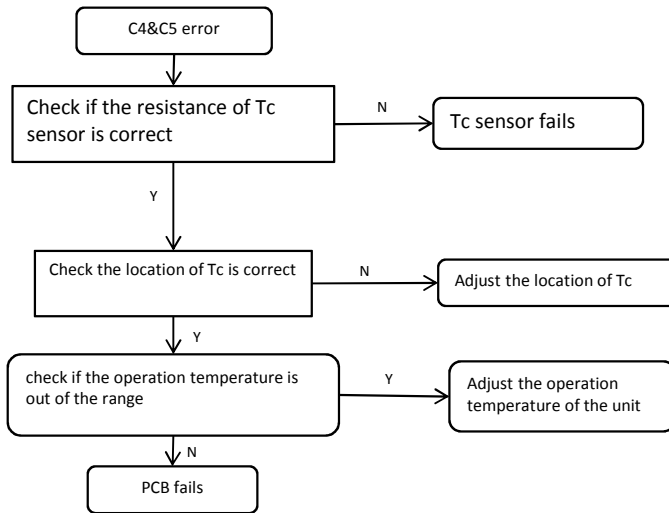


# 10 TROUBLESHOOTING

## 12. C4&C5 error

**Error meaning** If supply air T is too high show C4 error, if supply air T is too low show C5 error. Supply air is too high means supply is over 45 degree in heating mode and  $T_s+8$  in cooling mode, too low means lower than 5 in heating mode and 8 in cooling mode

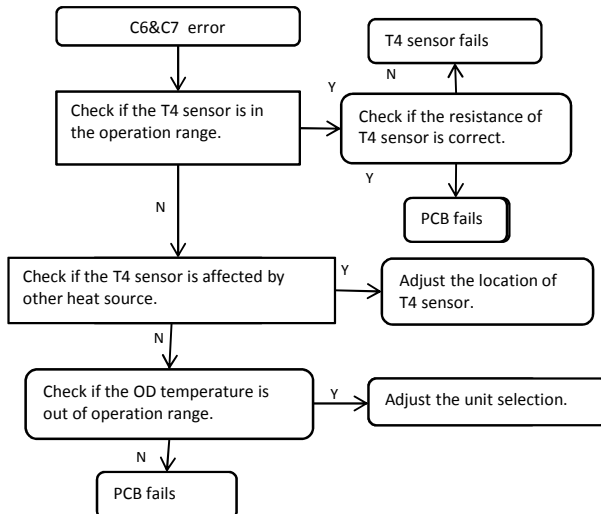
**Error reason**  
 1, Temperature sensor fails  
 2, Temperature sensor is affected by other heat source.  
 3, four way valve fails  
 4, PCB fails



## 13. C6&C7 error

**error meaning** Outdoor temperature is too high or too low. T4 is higher than 48 in cooling mode and higher than 30 in fan mode, unit shows C6 error. T4 is lower than -15 in heating mode and lower than 5 degree in fan mode, unit shows C7 mode.

**error reason**  
 1, Unit is out of operation range,  
 2, Temperature sensor fails,  
 3, Temperature sensor is affected by other heat source  
 4, PCB fails

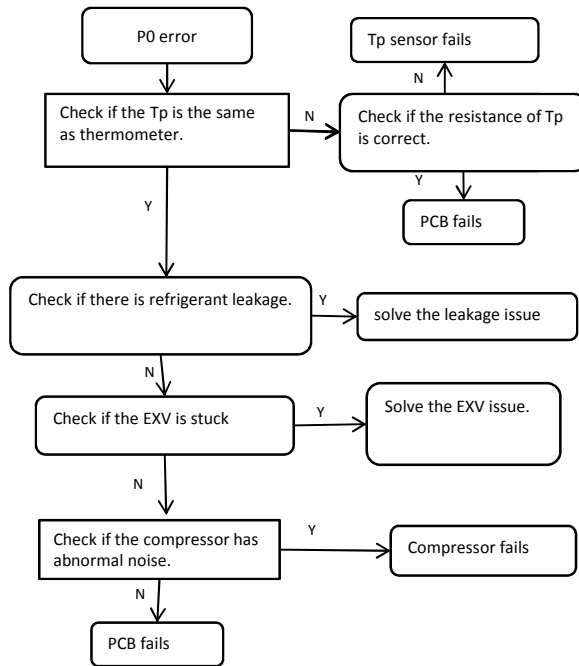


# 10 TROUBLESHOOTING

## 14. P0 error

**error meaning** If Tp is over 110, unit shows P0 error.

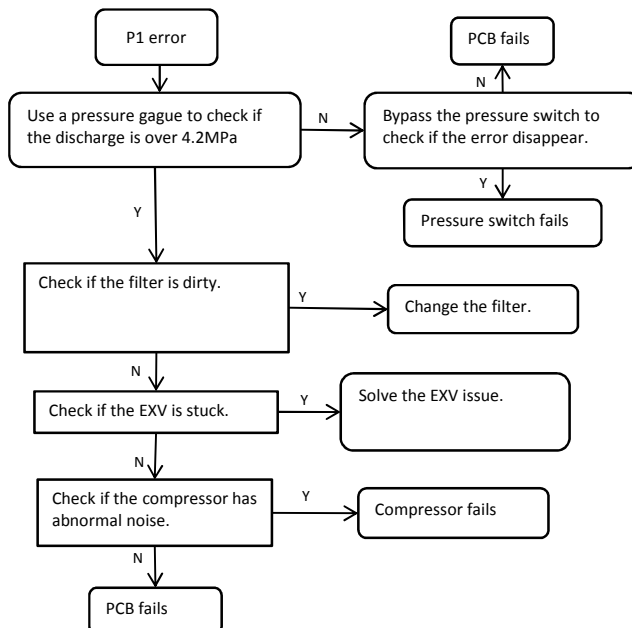
- error reason**
- 1, Discharge temperature is too high due to lack of refrigerant.
  - 2, Temperature sensor fails,
  - 3, EXV is stuck,
  - 4, Compressor fails,
  - 5, PCB fails.



## 15. P1 error

**Error meaning** If the discharge pressure is over 4,2MPa, unit shows P1 error.

- Error reason**
- 1, Too much refrigerant.
  - 2, Poor heat exchanger efficiency due to filter dirty.
  - 3, EXV is stuck.
  - 4, Pressure switch fails,
  - 5, Compressor fails
  - 6, PCB fails

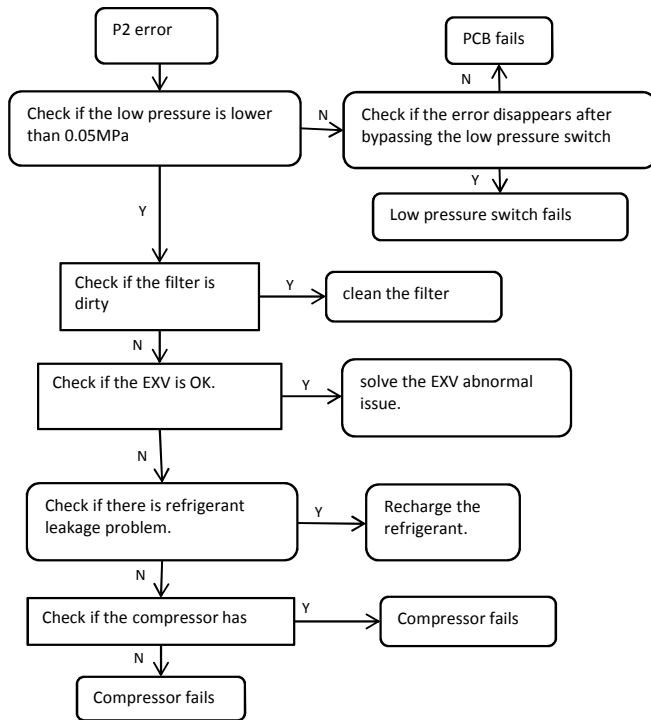


# 10 TROUBLESHOOTING

## 16. P2 (H5)

Error meaning    The low pressure switch is open.

- Error reason
- 1, Lack of refrigerant,
  - 2, Filter is too dirty,
  - 3, EXV is blocked,
  - 4, Low pressure switch fails,
  - 5, Compressor fails,
  - 6, PCB fails



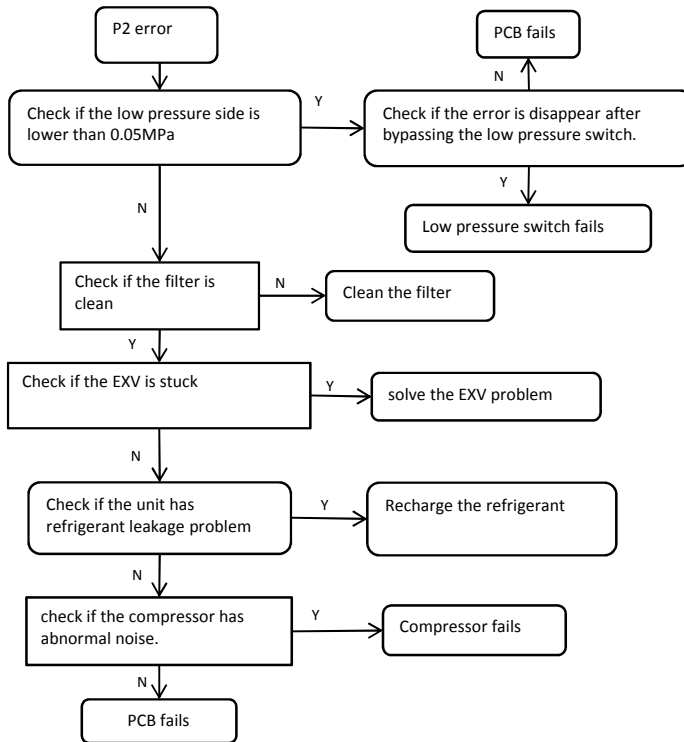
# 10 TROUBLESHOOTING

## 17. P4 error

Error meaning Compressor current is over the limit

- 1, Filter is too dirty or fan stop running,
- 2, EXV stuck,

- error reason
- 3, Low pressure switch fails,
  - 4, Compressor fails,
  - 5, PCB fails

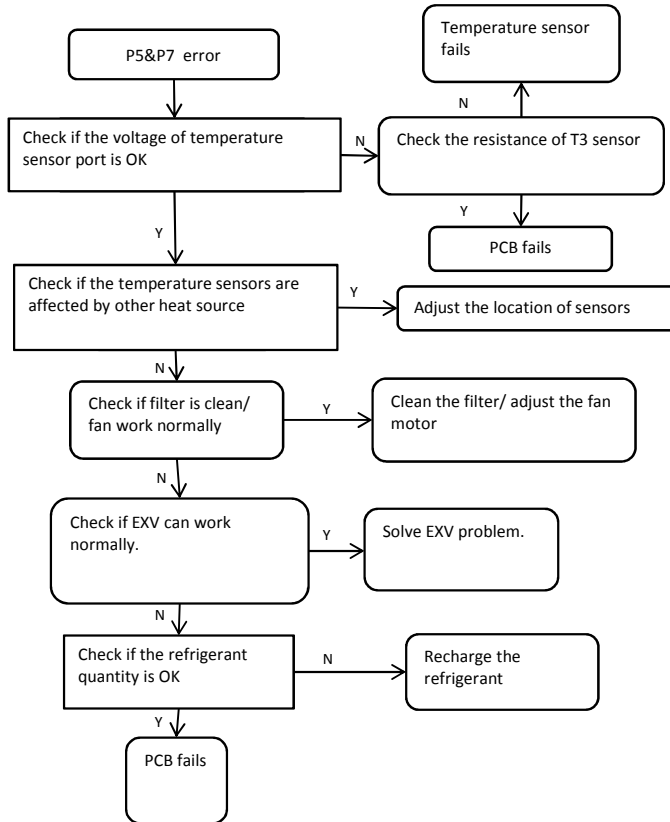


# 10 TROUBLESHOOTING

## 18. P5&P7 error

**Error meaning** If T3 is higher than X degree in cooling mode, unit shows P5 error.  
If T2 is higher than Y degree in heating mode, unit shows P7 error.

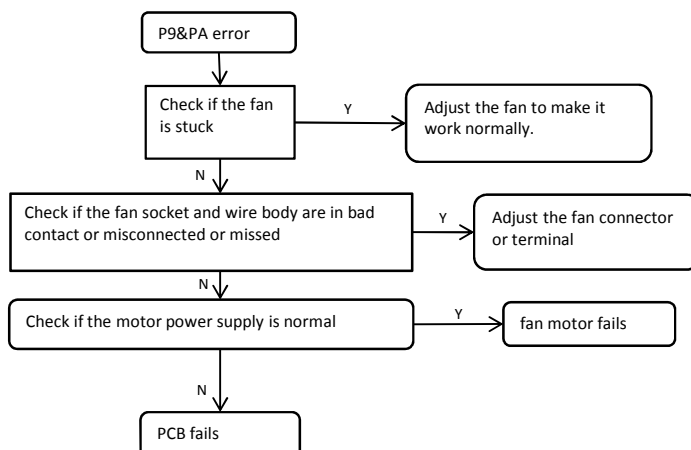
**Error reason** 1, Refrigerant temperature is too high,  
2, Temperature sensor fails,  
3, Filter is too dirty or fan stops,  
4, Temperature sensors are affected by other heat source,  
5, PCB fails



## 19. P9 (H9) &PA (HA) error

**Error meaning** The supply/exhaust fan has no speed feedback or the real and required RPM difference is over the tolerance.

**Error reason** 1, Poor contact of fan terminal,  
2, fan motor fails  
3, fan stuck  
4, Supply and exhaust fan are reversed connected  
5, PCB fails

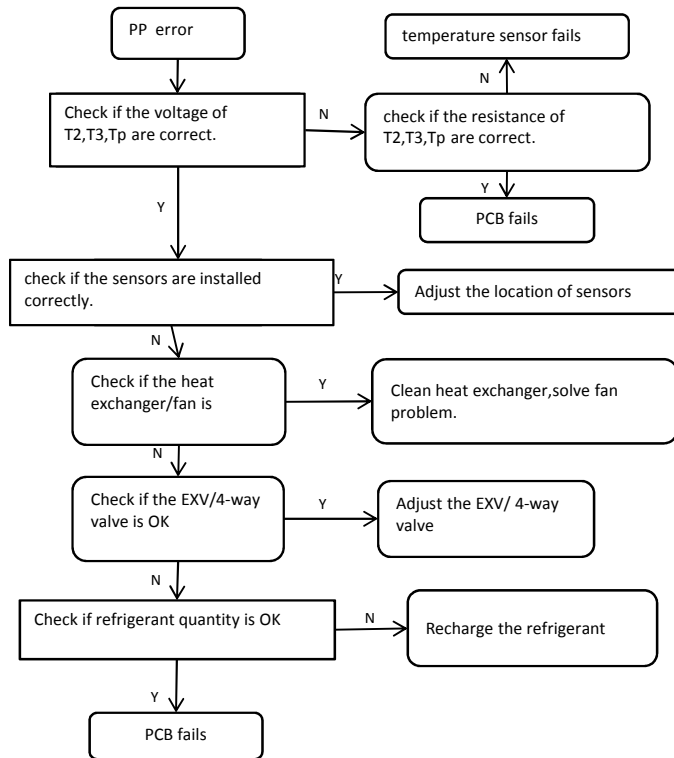


# 10 TROUBLESHOOTING

## 20. PP error

**error meaning** Compressor discharge superheat is not enough.  
 If (  $T_p - T_3$  ) is less than X in cooling mode or (  $T_p - T_2$  ) is less than Y in heating mode for tem mins, unit show PP error.

**error reason**  
 1, too much refrigerant inside,  
 2,  $T_p$ ,  $T_2$ ,  $T_3$  sensor fails  
 3,  $T_p$ ,  $T_2$ ,  $T_3$  are affected by other heat source,  
 4, EXV work abnormally  
 5, fan error or coil is too dirty  
 6, PCB fails



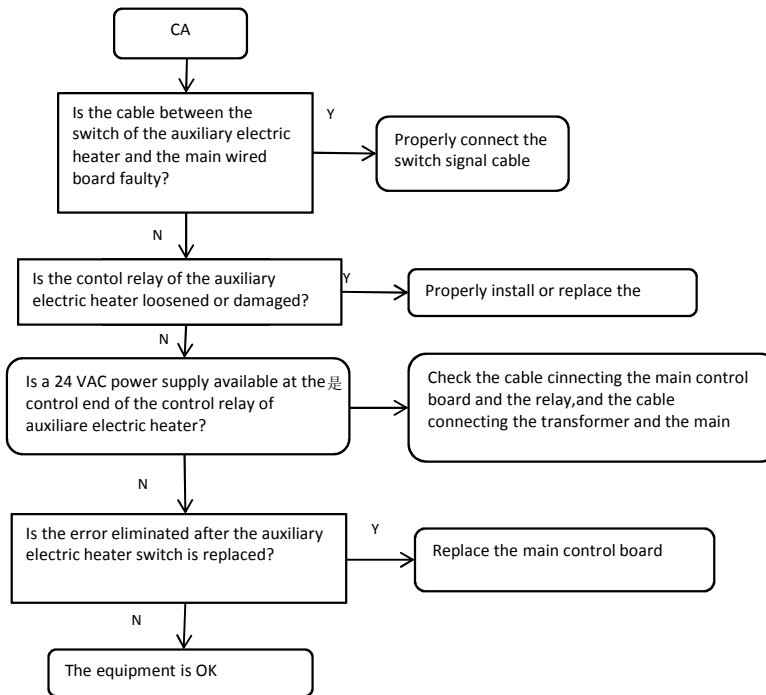


# 10 TROUBLESHOOTING

## 21. CA error

error reason

- The switch of the auxiliary electric heater is not properly connected with the main board.
- The switch of the auxiliary electric heater is damaged.
- The control relay of auxiliary electric heater is not properly connected or is damaged.
- The main control board is damaged

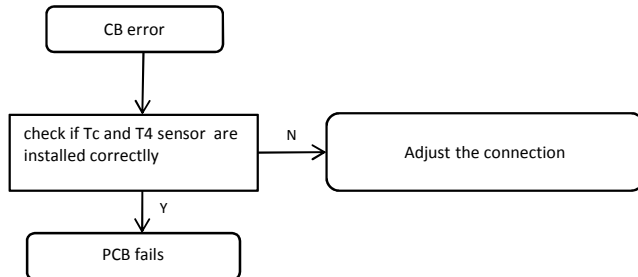


# 10 TROUBLESHOOTING

## 22. CB error

**Error meaning** Tc and T4 temperature sensor are reversed inserted.

**Error reason** 1, Tc and T4 temperature sensor are reversed inserted.  
2, PCB fails



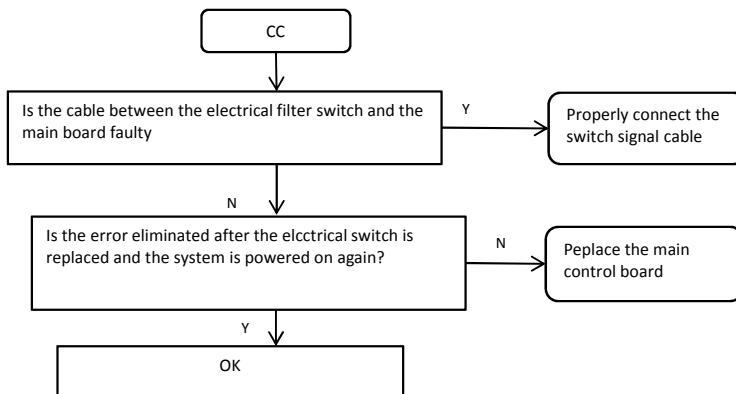
## 23. CC error

**error meaning** If the electrical filter feedback signal is 0V , unit shows CC error.

**Symptom:** The Electrical filter switch is faulty.

**Possible cause:**

- error reason**
- The Electrical filter switch is not properly connected with the main board.
  - The Electrical filter switch is damaged.
  - The main control board is damaged.

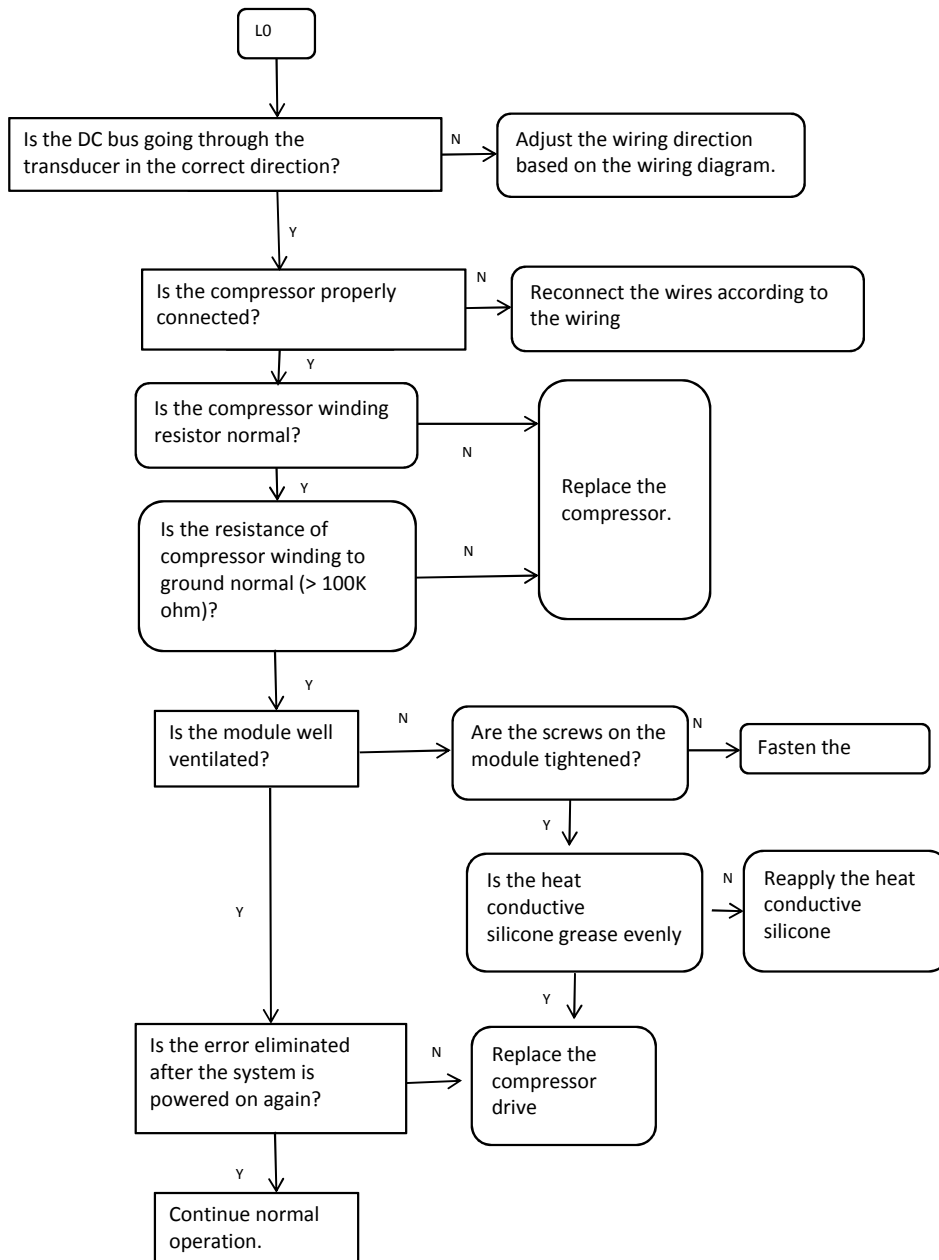


# 10 TROUBLESHOOTING

## 24. L0 is generated upon compressor start-up.

Possible cause:

- Module over-temperature protection is triggered due to abnormality in heat dissipation of inverter module.
  - The input voltage is abnormal, for example, low voltage and input phase loss.
- error reason
- Compressor UVW lines are not correctly connected.
  - The compressor module is abnormal.
  - The compressor is damaged.
  - The system is faulty.



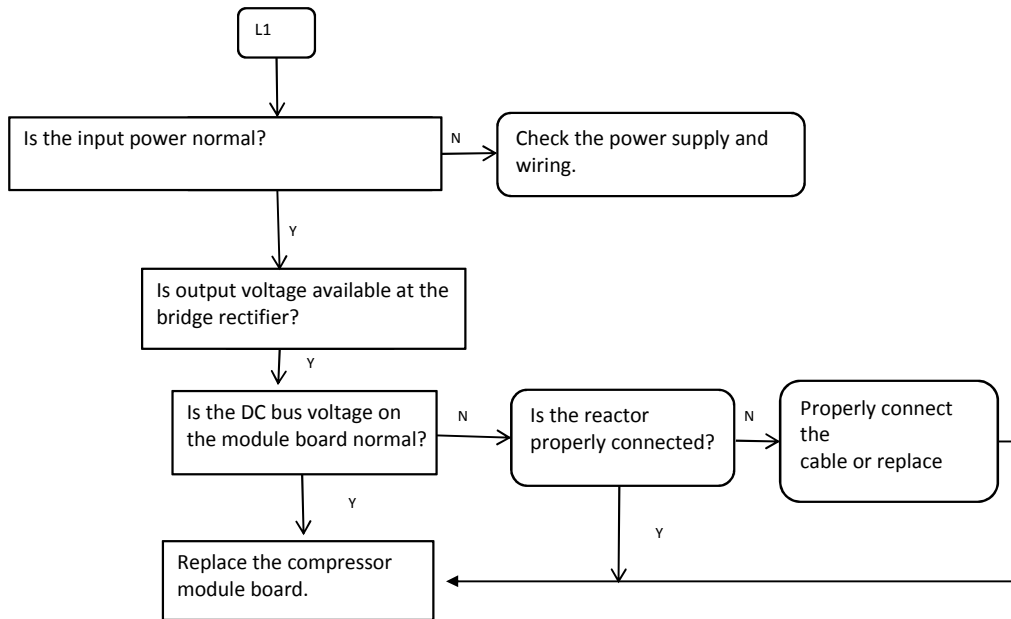
# 10 TROUBLESHOOTING

## 25、 L1: Low voltage protection

Symptom: The bus voltage is lower than 300 V DC.

Possible cause:

- error reason
- The power supply is abnormal; for example, low voltage or input phase loss.
  - The cable between the power supply and the filter board or between the filter board and the compressor module is not properly connected.
  - The bridge rectifier is damaged.
  - The compressor module is damaged.

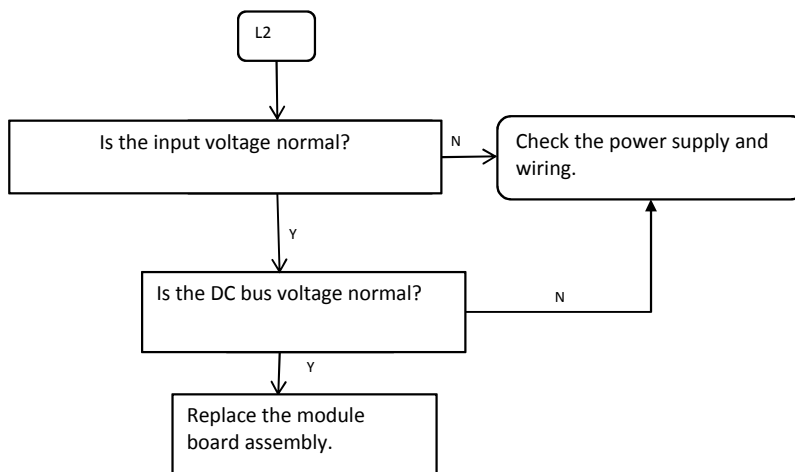


## 26、 L2: High voltage protection

Symptom: The bus voltage is greater than 800 V DC.

Possible cause:

- error reason
- The power supply is abnormal; for example, high voltage.
  - The compressor module is damaged.



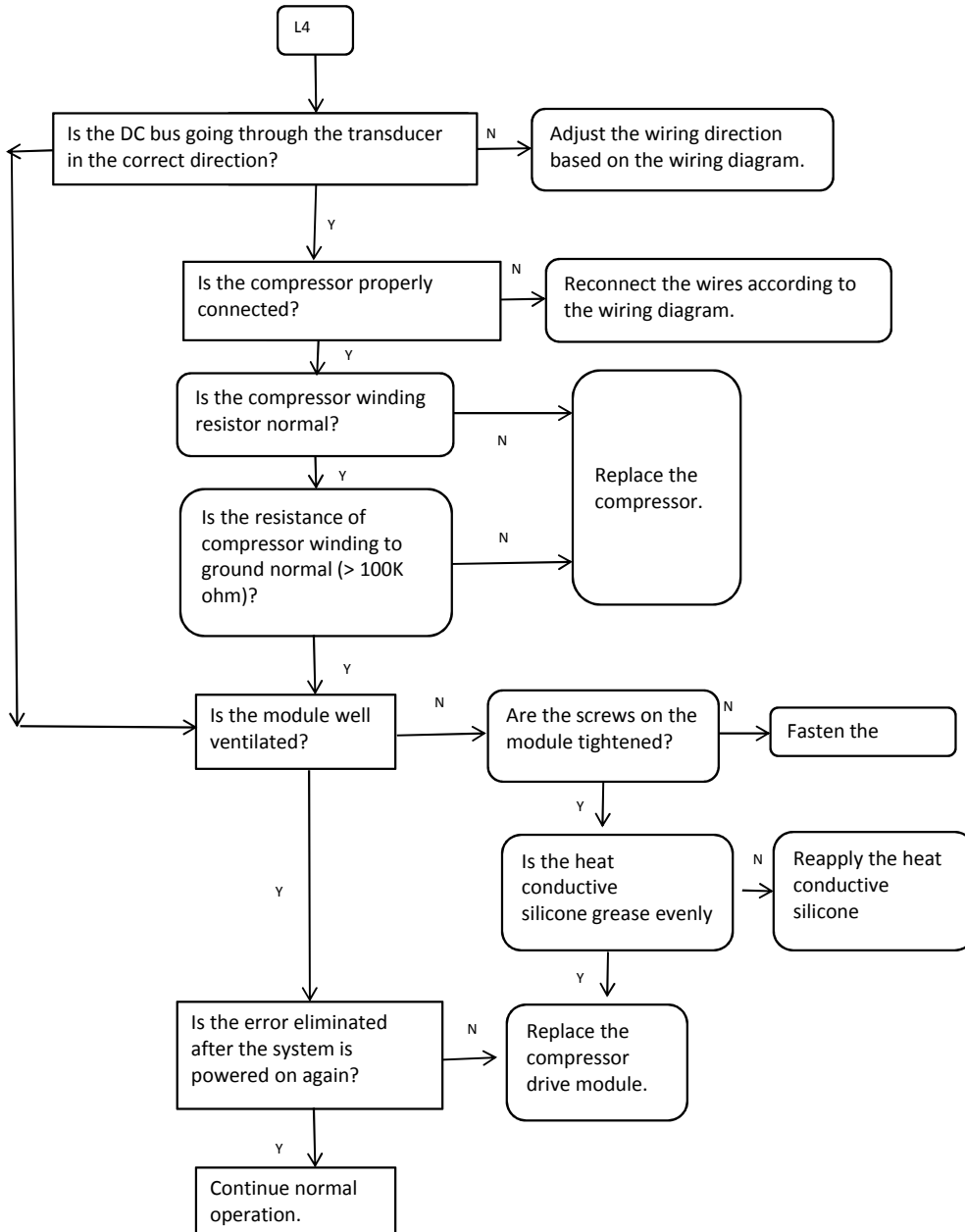
# 10 TROUBLESHOOTING

## 27、L4: MCE fault

Possible cause:

error reason

- The DC bus is incorrectly connected.
- There is an abnormality in heat dissipation of the inverter module.
- The input voltage is abnormal, for example, low voltage and input phase loss.
- Compressor UVW lines are not correctly connected.
- The compressor module is abnormal.
- The compressor is damaged.
- The system is faulty.



# 10 TROUBLESHOOTING

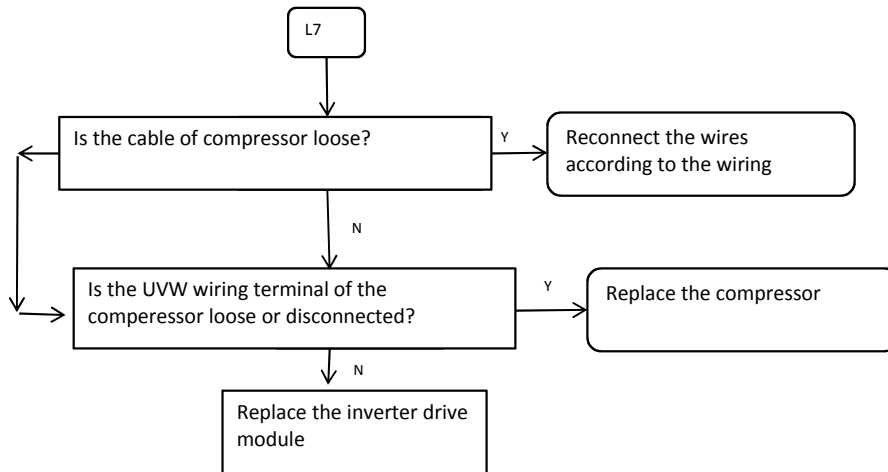
## 28、 L7:Phase loss

Symptom: Phase loss is detected during module board test.

Possible cause:

error reason

- The cable between the compressor and the module board is abnormal.
- The UVW wiring terminal of the compressor is loose or disconnected.
- The compressor is damaged.
- The inverter compressor drive module is damaged.



## 29、 L8: Frequency change over 15 Hz

Symptom: The change in frequency exceeds 15 Hz.

Possible cause:

Error reason

- The compressor is not properly connected.
- The UVW wiring terminal of the compressor is loose or disconnected.
- The compressor is damaged.
- The inverter compressor drive module is damaged.
- The system is faulty.

# 10 TROUBLESHOOTING

## 30、 L9: Frequency difference of 15 Hz

Symptom: The frequency difference is 15 Hz.

Possible cause:

- The compressor is not properly connected.

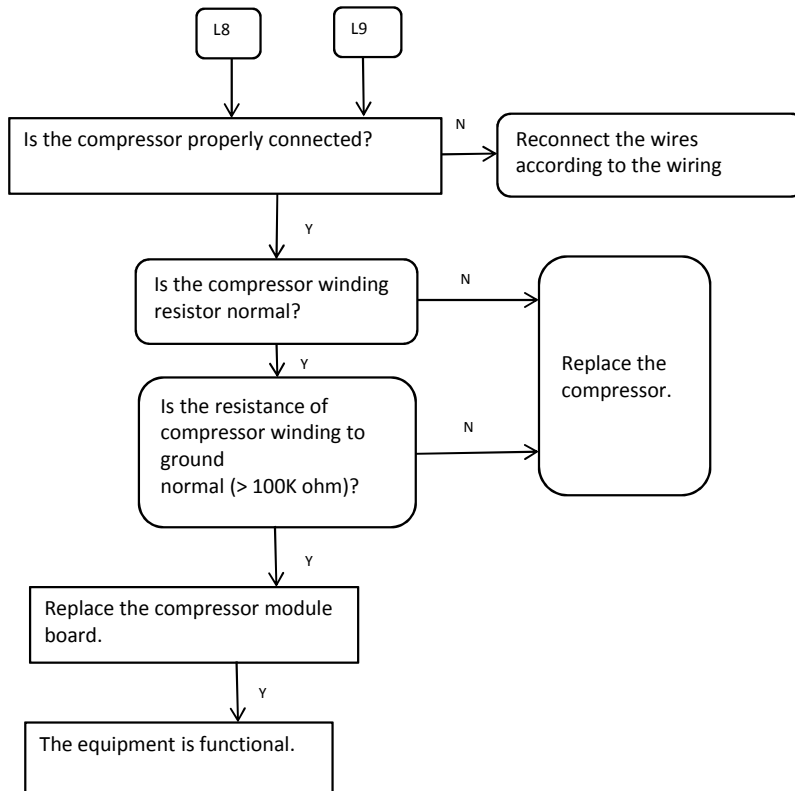
Error reason

- The UVW wiring terminal of the compressor is loose or disconnected.

- The compressor is damaged.

- The inverter compressor drive module is damaged.

- The system is faulty.



# Airwell

*Just feel well*

**WARNING :**

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details.

**ATTENTION :**

Le design et les données techniques sont donnés à titre indicatif et peuvent être modifiés sans préavis.



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