



## SPLIT TYPE MARINE AIR CONDITIONER

### INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Brand Name: COOLMAR

MODEL NO

MAS 008

MAS 010

MAS 012

MAS 015

MAS 018

MAS 020

MAS 022

MAS 024



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## 1. PREFACE

This manual has prepared to give general information about the description, operation, installation and service of COOLMAR SPLIT TYPE MARINE AIR CONDITIONERS. Our group manufactures COOLMAR Split Type Marine Air Conditioners at Karabağlar İzmir facility by İzmir Klima Sanayi İnşaat Taahhüt Turizm ve Ticaret Ltd. Şti. and having sales office in Yenişehir, Turkey by Pratikel Dış Ticaret Ltd. Şti.

İzmir Klima Sanayi Ltd. Şti. was established at 2002 by the combination of three ideas developed since the beginning of 90's and which has undertaken the responsibility of serving innovative demands with know how, experience and creativity. In 2005, Coolmar branded marine air conditioning systems are approved by TÜV Germany and our group started export activities by own commercial company Pratikel Dış Ticaret Ltd. Şti.

The approaching tourism market and which is one of the needs of this market; marine self contained and split type air conditioners, water chillers, fan coils and refrigerators which are all manufactured of chrome-nickel stainless steel sheet metal resistant to sea water, equipped with digital remote control with display of room temperature and failure codes, high and low pressure switches with micro control, silent fan motors and rotary type compressors. The air conditioners are remarkable with compact dimensions and this feature solves the problem of installation place.

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**You must read throughout this manual carefully before operating your unit and please keep it in a place where the service personal can easily reach.**

## 2. PRODUCT DESCRIPTION

COOLMAR Split Type Marine Air Conditioners are water cooled units designed for air conditioning. Thanks to the heat pump function the unit can heat in winter and cool in summer time. Condenser is made of 90/10 Copper/Nickel composition material and can be cooled with sea water. The casing is made of chrome, which prevents noise emission of compressor and protects the mechanical and electrical equipment against the outer effects. Including the couplings, both components on the unit

are made of chrome. The fan body can turn between 0 – 90 for the convenience during the air duct installation.

### 3. TECHNICAL SPECIFICATIONS TABLE

SPECIFICATIONS		Model / Unit	MAS 008	MAS 010	MAS 012	MAS 015	MAS 018	MAS 020	MAS 022	MAS 024
<b>Cooling Capacity</b>		Btu/h	7.500	9.500	12.200	15.000	18.200	20.000	22.100	24.600
<b>Heating Capacity</b>		Btu/h	7.600	9.700	12.600	15.800	18.700	20.300	22.600	25.000
<b>Power Consumption</b>		W	680	900	1.270	1.600	2.000	2.200	2.400	2.630
<b>Current</b>	<b>Indoor Unit</b>	A	0,3	0,4	0,5	0,6	0,6	0,7	0,7	0,7
	<b>Outdoor Unit</b>	A	3,0	3,7	5,3	6,6	8,7	10,1	10,5	11,3
<b>Indoor Unit</b>	<b>Length</b>	mm	290	290	320	450	450	450	450	450
	<b>Width</b>	mm	270	270	270	320	320	320	320	320
	<b>Height</b>	mm	320	320	320	350	350	350	350	350
	<b>Net Weight</b>	kg	12	12	14	18	19	19	20	22
	<b>Air Flow</b>	m <sup>3</sup> /h	275	320	520	650	780	950	1.100	1.250
	<b>Fan Motor Power</b>	W	60	70	100	110	110	115	120	120
<b>Outdoor Unit</b>	<b>Length</b>	mm	330	330	330	330	330	330	330	330
	<b>Width</b>	mm	270	270	270	320	320	320	320	320
	<b>Height</b>	mm	320	320	340	370	370	370	400	400
	<b>Net Weight</b>	kg	17	18	19	25	27	27	29	32
<b>Suction Pipe</b>		Inch	3/8"	3/8"	3/8"	1/2"	1/2"	1/2"	1/2"	1/2"
<b>Discharge Pipe</b>		Inch	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"
<b>Condenser Pipe</b>		Inch	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
<b>Drain Pipe</b>		Inch	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
<b>Duct Diameter</b>		mm	100	100	125	125	2x125	150	150	150
<b>Proposed Fuse for the System</b>		A	C 16	C 16	C 16	C 20	C 20	C 25	C 25	C 25
<b>Max Pump Current That can be Connected to the Unit Electrical Box</b>		A	4	4	4	4	4	4	4	4
<b>Condenser water flow</b>		l/m	9	11	13	13	16	19	19	20
<b>Voltage</b>		V	230							
<b>Frequency</b>		Hz	50							
<b>IP Class</b>			IP 22							
<b>Feeding Cable Cross Section /Type</b>			3 x 2,5 / Tin Coated							

\*Not: The manufacturer preserves the right to change the electrical, cooling and control equipment with the equivalent.

Nominal Capacity Conditions;

Cooling	Air Inlet Temp.: 19°C / 27°C (YT/KT)	Water Inlet Temp.: 35°C
Heating	Air Inlet Temp.: 16°C / 22°C (YT/KT)	Water Inlet Temp.: 5°C

#### 4. UNIT WORKING CONDITIONS

The unit has designed to work indoor; it's not suitable for outdoor use.

Min sea water temperature in heating mode	: 5°C
Max sea water temperature in cooling mode	: 35°C
Max working pressure of sea water cooling system	: 2 bar
Max working environment temperature	: 38°C

#### 5. TRANSPORTATION AND STORAGE

##### 5.1. Transportation

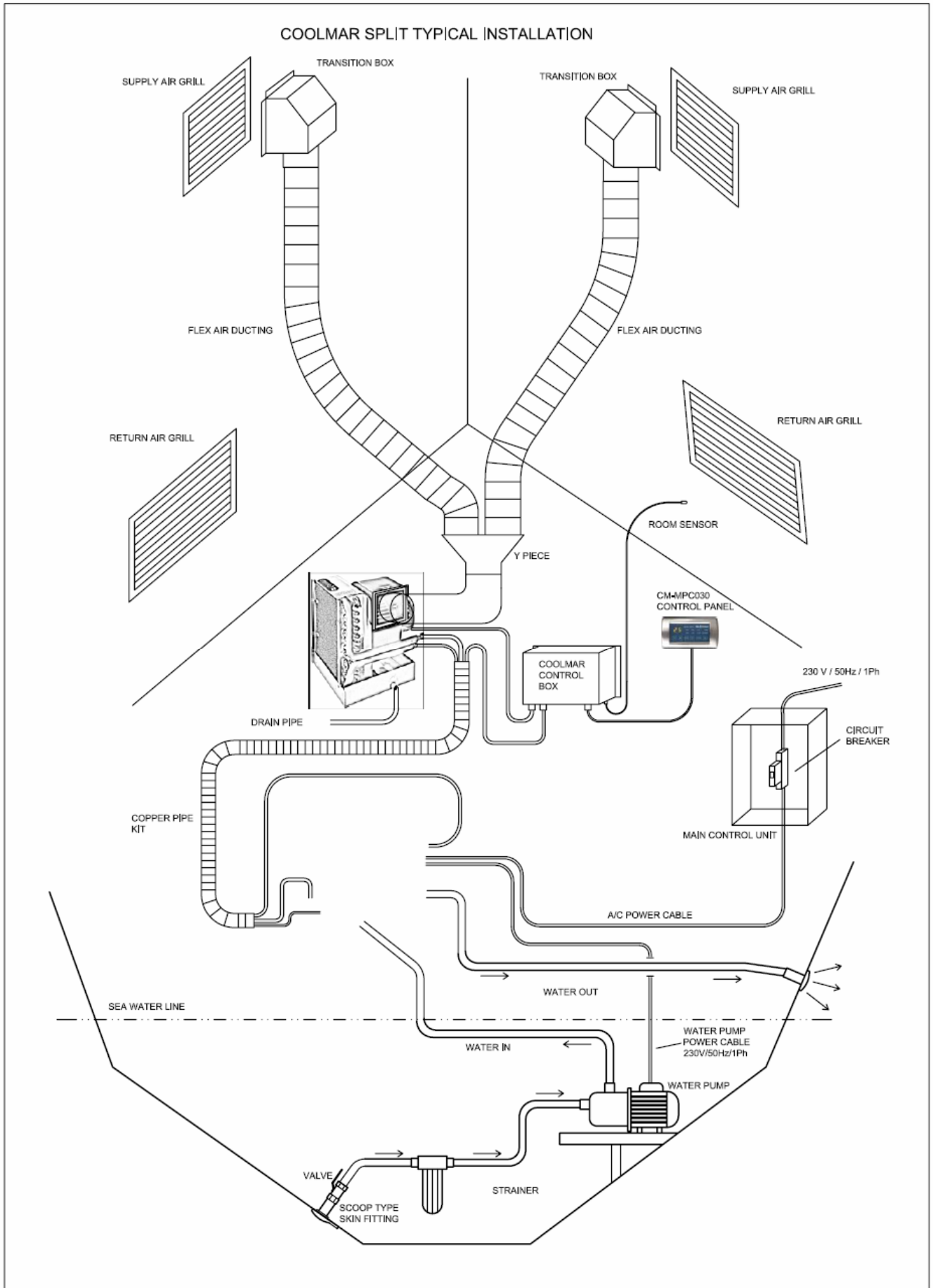
1. The unit can be carried with or without the palette.
2. Lift and carry the unit balanced.
3. **Do not forget that the compressor side is heavier.**
4. Do not lean on the unit a side during transportation and do not lean on any side more than 15°.
5. During putting on the unit on floor do not leave from a high level. Do not make pressure and impact on the unit.
6. If the weight of the unit is not suitable for carrying with man power you must use a vehicle.
7. If it's necessary to change the place of the unit obey the rules listed above.
8. Do not lift the unit by handling from the fan body.

##### 5.2. Storage

If you need to store the units after buying or changing the place until the operating time obey the rules listed below.

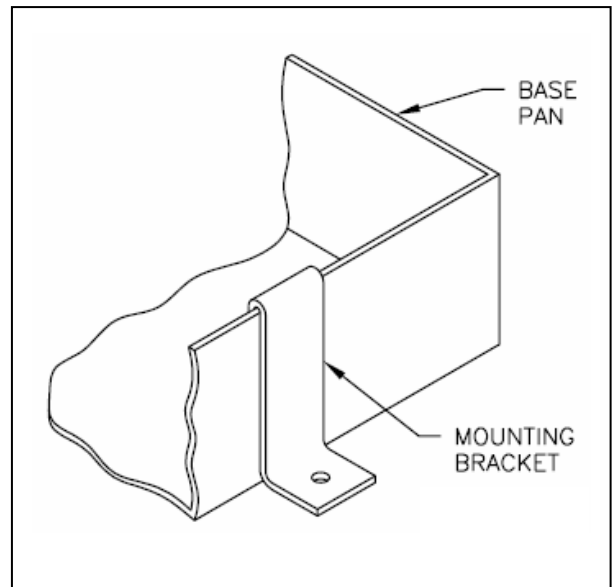
1. Store the unit in a closed area away from moisture and dust.
2. Store the unit in plastic packaging that will prevent your unit's electrical, cooling and metal equipment from wearing out and damaging.
3. Obey the rules listed at 5.1. during transportation.
4. The temperature at the storage area should be between -5°/+38°C.

## 6. LOCATION AND INSTALLATION



## 6.1. Unit's Location

1. Before locating the unit and beginning the installation read this manual carefully.
2. Remove the package and destroy the packaging waste obeying the rules at your area's waste instructions without damaging the environment.
3. Take preventive actions not to be reached by children to the plastic, paper, styrofoam and wood package materials.
4. Place the unit on a flat surface after removing the package.
5. **Do not ever lean the unit on parallel to the floor or upside down.**
6. Make sure that the surface that the unit will be placed is balanced and free from height differences.
7. Place the unit at a closed area away from excessive air circulation, heat source like radiator or direct sun light.
8. Do not place the unit in the bilge or engine room and insure that the selected location is sealed from direct access to bilge and/or engine room vapors.
9. Do not install in spaces containing gasoline engine, tanks, LPG cylinders, regulators, valves or fuel line fittings.
10. For easy servicing and maintenance 30cm distance should be left at the electric box and condenser piping side.
11. To fix the unit, unit mounting brackets should be placed on the base pan as it was shown on the drawing and fix at the installation place by using screws.
12. Install the room sensor to the most suitable place away from a heat source like radiator, oven etc, direct sun light and that will be possible to sense the unit return air temperature directly and it's own cable length will permit (do not make any adding to the sensor cable).
13. Make sure that the coil sensor has fixed on the evaporator's kurve. If not fix it.



## 6.2. Ducting

The fan body can turn between  $0^{\circ}$  –  $90^{\circ}$  for the convenience during the air duct installation. During ducting do not forget that the air flow is critical for the system performance. The ducting should run as straight, smooth, taut and without turns as possible. If the turn or bend is necessary at the ducting, we recommend that the turns not to be sharp and bend to be installed with  $90^{\circ}$  apparatus.

1. Turn the fan body and position through the outlet grill as to maintain the straight air circulation.

2. Loosen the collar screw to turn the fan body and after positioning the fan tighten the collar screw.
3. Fix a flexible duct with collar which has enough length between the fan outlet and the air grill. Make sure that the duct is isolated.
4. Install the supply air grille as high as possible in a location that will provide uniform air distribution throughout the cabin, grille louvers should be directed to the position that does not cause inconvenience.
5. The unit will make free aspiration, that's why install the return air grill should be placed as close as possible to the unit.
6. The return air grille should be installed as low and close to the a/c unit as possible to insure direct uninterrupted airflow to the evaporator. The return air grille should have a minimum 10mm of clearance in front of it.
7. In no instance should a supply air discharge be directed towards a return air grille, as this will cause the system to air short cycle.

### **6.3. Refrigerant Piping**

As your unit is split type refrigerant gas piping should be made between indoor and outdoor units.

1. Lay the piping which complies with the suction and discharge pipe diameters listed on the Technical Specifications Table between indoor and outdoor units and fix the bushing carefully.
2. Make sure that there are no sharp edges, extra bending and excessive length on the pipe line and break and/or cross section area reduction on the copper pipe.
3. Individually isolate every pipe and fix the connection points with tape. Make sure that there are no open copper pipe surface has left.
4. Make sure that the suction and discharge pipe lines have the same length and take special care to the countersinking process.
5. Make sure that the vacuum and leakage control has done before turning on the refrigerant gas valves and than turn on the valves.

### **6.4. Drain System**

The drain piping should be done for removing the condensate water.

1. Fix a 5/8" hose to the drain outlet with a collar.
2. Install the condensate drain hose downhill from the unit an appropriate slope and neither a cross section shrinking nor a height should be.
3. For installation on sailboats that heel over 15° position the unit so that the drain pan drain port and starboard teed together.
4. After finishing the piping check the water flow by pouring water to the drain pan.



**Do not terminate condensate drain line within 1m of any outlet of engine or generator exhaust systems, nor in a compartment housing an engine or generator, nor in a bilge. Smoke and vapors can cause danger by running through the drain system in to the cabin.**

## **6.5. Condenser System**

The condenser is sea water cooled. That's why a pump and piping should be added to the system to carry the sea water to the unit.

1. Install a pump with the related piping that will not exceed the limits listed on the Technical Specifications Table.
2. Fix ¾" hoses with collars for the piping between the pump and unit's condenser.
3. Make sure that a water filter has installed in front of the sea water pump.

## **6.6. Electrical Connections**

1. The unit's feeding voltage is 230V / 1pH / 50Hz.
2. Make sure that the electrical system that the unit will be connected has made by competent and experienced personnel only complying with EN 60204-1.
3. If it's necessary ask for our company's service.
4. During the service use the electrical wiring diagram and the document about remote control attached to this manual.
5. Connect the electric line, fuse with min 3mm contact opening, 30mA RCD and phase cut off switch for each unit.
6. The electrical connections should be made to the terminals in the unit's electrical box. The terminals have labeled for the correct connection of electrical feeding, grounding and pump connections.
7. Make the pump electrical connections. The max current value of the pump that can be connected to the unit's electrical box has listed on the Technical Specifications Table. Do not exceed this value.
8. Make the remote control electrical connections.
9. All the connections should be made complying the wiring diagrams attached with this manual and electrical box.
10. The feeding cable should be 3x2,5 tin coated.
11. The grounding of the unit should be connected to the ship's grounding system.
12. The electrical box has fixed with 4 screws on the unit. If it's necessary the electrical box can be removed and fixed to an other surface.

13. The cable between the unit and electrical box is 1.1m long. Do not bend or extend the cable during the installation.

## 7. SAFETY

### 7.1. Warnings and Precautions



All the safety precautions on this unit have already been taken. If the rules described in this manual and listed below will be obeyed the unit will not cause any risk for user, service personnel and the environment.

1. Protect the unit against every kind of outer effect.
2. Before the cleaning and maintenance processes turn off the unit's phase cut off switch and main electrical switch off the system.
3. Make sure that the energy has cut off before touching the live parts.
4. Do not touch the unit with dry hands or cotton while it's running.
5. Do not touch any part of the unit with the purpose of service and maintenance while it's running.

### 7.2. Warning Signs

The unit has labeled with this safety signs. Please comply with the instructions.



Fan is working



Electrical shock risk



Warning

## 8. PRELIMINARY CONTROLS BEFORE START UP

**Make the checks listed below before running the unit:**

1. Read this manual throughout carefully.
2. Make sure that the electrical feeding is 230V / 1Ph / 50Hz.
3. Make sure that the grounding connections have made and the electrical connections complies with the standard EN 60204-1.

4. Make sure that electrical line equipped with fuse with the contact opening min 3mm, 30mA RCD and phase cut off switch.
5. Make sure that the duct, drainage, electrical and the condenser system connections have made complying with the instructions listed at 6.
6. Make sure that the unit's cut off switch and the main switch turned off and check by hand and visually taking care of the moving and rotating parts.
7. Clean the foreign materials (dust, wood shavings etc) that can clog the evaporator, air filter and drain from the unit surrounding.
8. Check the CONDENSER water flow from the condenser water outlet, complies with the "condenser water flow" listed on the Technical Specifications Table.

## 9. OPERATION



### 9.1. Warnings;

1. The unit should be installed by the competent service personnel only.
2. The unit's working voltage is 230V. Make sure that the generator's voltage within the  $230V \pm 10V$  range.
3. Make sure that the duct, drainage, electrical and the condenser system connections have made in a right way.
4. Make sure that the temperature set value is right.
5. Make sure that the air flow has not been terminated in front of the supply and return grills.

### 9.2. Running the Unit

1. Turn on the cut off switch.
2. Push the on/off button on the remote control and turn on the unit.
3. Push the MODE button on the remote control and chose heat, cool or fan mode. The lamp near the selected mode will light.
4. Push the FAN button on the remote control and chose the fan speed. The lamp near the selected speed will light.

## **9.2.1. Remote Control Functions**

### **9.2.1.1. The Features That Can be Controlled by the User**

1. On/Off
2. Fan Speed: 3 fan speeds can be selected (high, medium and low). The AUTO fan mode can also be selected as the fan speed. This mode will drive the fan speed from high to medium and low according to the difference between the room temperature set value and the real value.
3. Temperature Set: The room temperature can be set to any value between 15°C – 30°C.
4. Auto Start / Auto Stop: This mode will turn on the unit till 15 hour if it's not running and turn off if it's running.
5. Room Temperature Display: The digital display shows the real room temperature.
6. Mode Selection: Unit can run at 3 different modes; cooling, heating and fan.
7. Sleep Mode: This mode will rise the set temperature value 1°C while the unit is running at cooling mode and reduce 1°C while the unit is running at heating mode with the aim of comfort and energy saving. This function will be put into use automatically when the SLEEP button pushed.

### **9.2.1.2. The Features That Can Not be Controlled by the User**

1. Observer: There is a circuit for observing the microprocessor's running in the system.
2. Compressor Delay Protection: The putting into use of the compressor will be delayed because of the safety reasons after it has turned on again.
3. Compressor Least Protection: The compressor will keep on running 24sec more after it has put into use even if it has been turned off by the user.
4. Compressor State: The compressor's state can be watched from the lighted LED display on the remote control.
5. Recorded Memory (auto): After the energy cut off, the remote control will restart the unit with the previous set values.
6. Preheating: In the cold weather and at the start, the running of the fan will be protected till the outlet air temperature value reach to a certain level.
7. Freezing Function: The compressor will automatically cut off when the evaporator coil temperature reaches below the 0°C.
8. Heat / Cool Changing Protection: To protect the system, when the heat / cool mode changed the unit's putting into use has delayed.

## 10. MAINTENANCE and CLEANING

### 10.1. Cleaning



**Do not use sharp, corrosive and chemical materials during the cleaning process.**

1. Before beginning cleaning process turn the unit's cut off switch and the main switch off.
2. Take out the filter by pulling up after loosening the nails on the coil.
3. Place the filter on a clean, dry and flat surface and remove the accumulated dust with a vacuum cleaner.
4. Wash the filter with water and detergent. (no solvents)
5. Leave the filter to dry in a ventilated place in the sun.
6. Replace the filter and tighten the nails when it's perfectly dry. It's recommended to repeat this process in every 15 days.
7. Check the drain connections. If there will be any blockage because of accumulated dirt, the condensate water can run over to the out of the drain pan.

### 10.2. Maintenance

There isn't any maintenance work that can be done by the user on the unit. Ask for our service for the maintenance.

#### 10.2.1. Annual Maintenance

This maintenance work should be done by the service personnel.

1. Check the electrical motors and the fans. Measure the absorbed current.
2. Check the electrical connections. Tighten if there is looseness. Replace if there is crack or broken piece on the terminal block. Replace if there is oxidized cable end sleeve.
3. Check the refrigerant system. Recharge gas if there is leakage. Research the reason of leakage and make the necessary.
4. Check the safety and control equipment functions and settings.
5. Check the temperature displays with a calibrated thermometer. If there is deflection more than 1°C replace the display.
6. Check the sea water filter, clean or replace if clogged.

## **11. SERVICE**

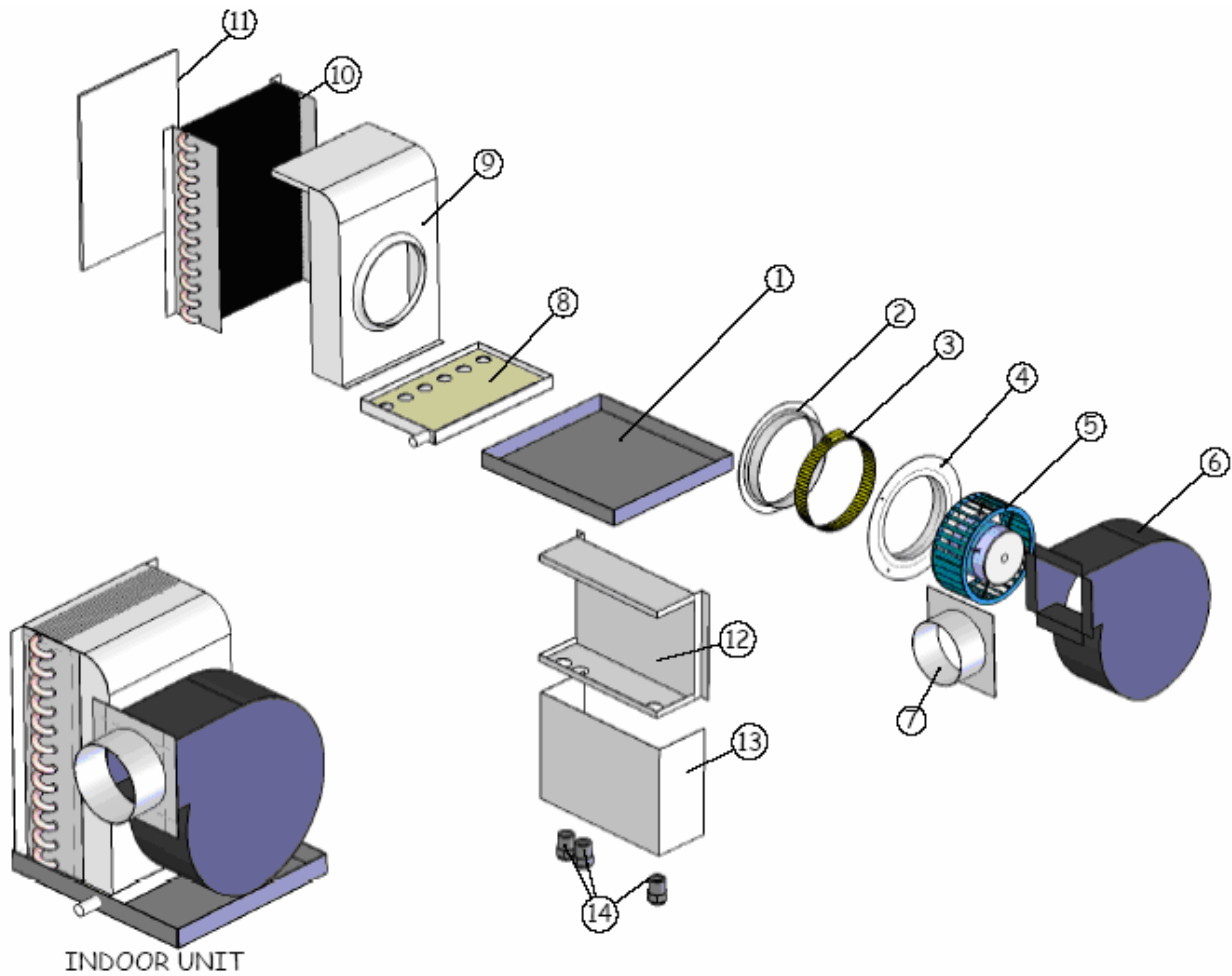
### **11.1. After Sales Service**

There isn't any equipment replacement or maintenance work on this unit except the cleaning and visual check by the user. The user should ask for the authorized service determined by the manufacturer for the malfunction. The service personnel will follow the instructions listed below.

1. The gas type used in this unit has listed on the unit's name plate. Use the same gas if recharge is necessary.
2. Do not leave the gas to the atmosphere during recharge. Follow the environment instructions of the area.
3. Repair the leakage by welding.
4. Make leakage test at 25bar with dry nitrogen during the welding process. Leave the system under pressure at least 1 hour. Measure the pressure with a calibrated manometer and check for any leakage.
5. After this process vacuum until -30 Bar. Charge the amount of gas listed on the Technical Specifications Table and check the cooling/heating.
6. Contact with the manufacturer for the continual and unsolved malfunctions. Give detailed information about the company name, your name, unit model and malfunction. Use the recommended brand and model or the equivalent by the manufacturer if replacement of a component is necessary. The manufacturer is not responsible of the interventions that will be done by the service personnel except the ones, determined by the manufacturer and the manufacturer him self.

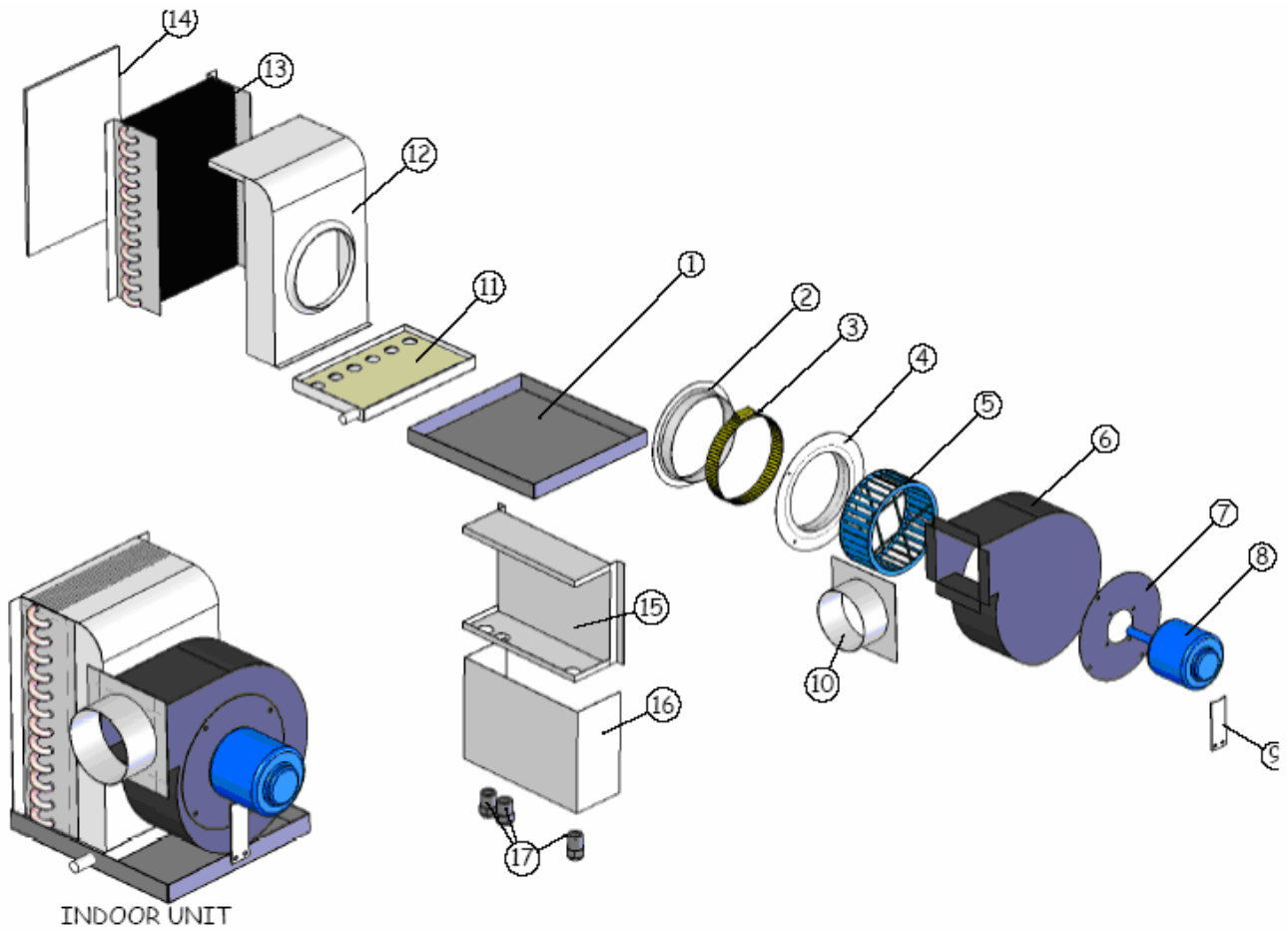
## 11.2. Spare Parts List

### 11.2.1. MAS 008, MAS 010 Indoor Unit



PART NO	PART CODE	PART DESCRIPTION
1	SP008010-01	BASE PAN
2	SP008010-02	MALE NECK
3	SP008010-03	NECK COLLAR
4	SP008010-04	FEMALE NECK
5	SP008010-05	FAN MOTOR BLOWER
6	SP008010-06	BLOWER BODY
7	SP008010-07	DUCT CONNECTION ADAPTOR
8	SP008010-08	DRAIN PAN
9	SP008010-09	DUMP
10	SP008010-10	EVAPORATOR 8000 BTU/H
10	SP008010-11	EVAPORATOR 10000 BTU/H
11	SP008010-12	FILTER
12	SP008010-13	ELECTRICAL BOX
13	SP008010-14	ELECTRICAL BOX COVER
14	SP008010-15	CABLE SLEEVES
15	SP008010-16	UNIT MOUNTING BRACKET

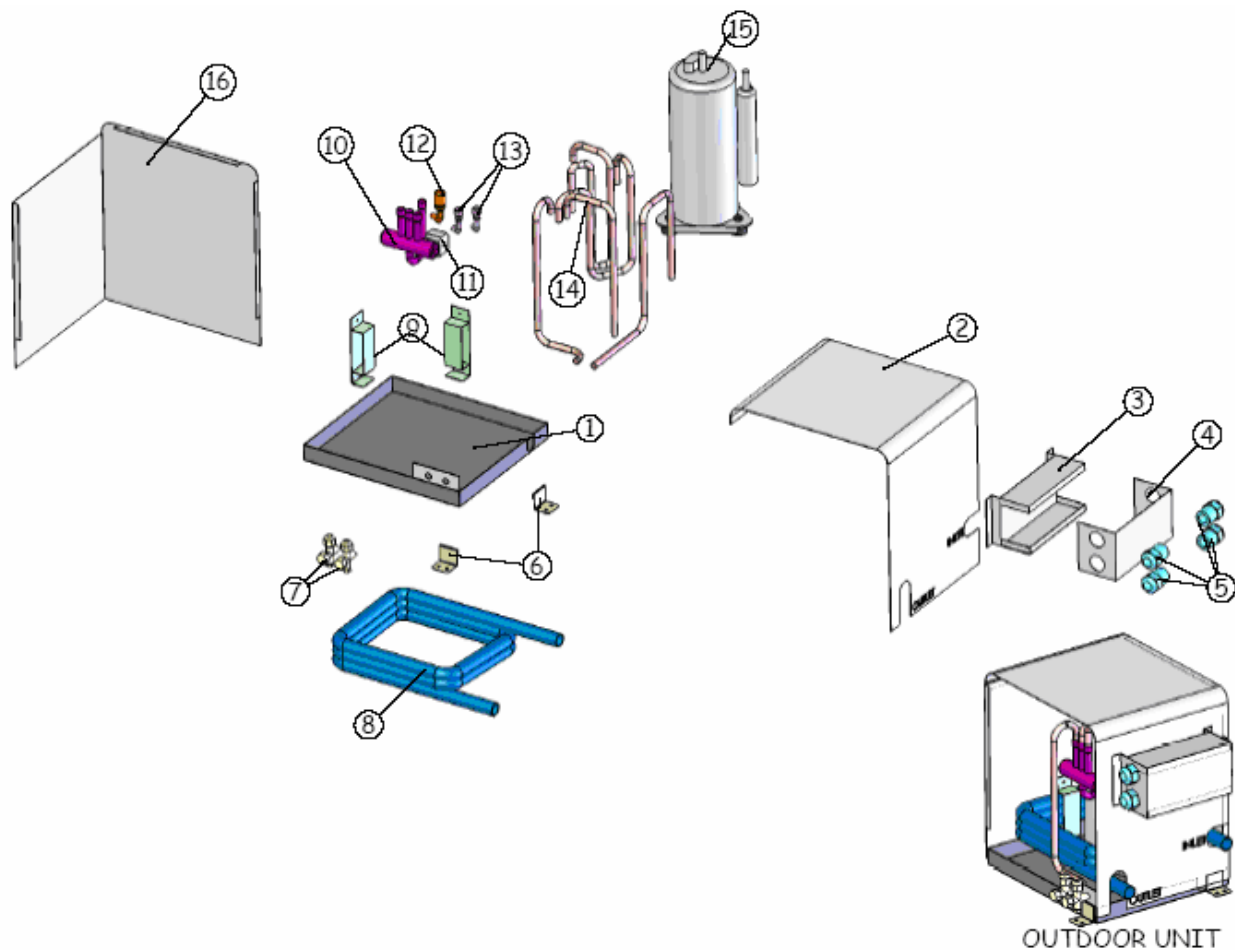
**11.2.2. MAS 012, MAS 015, MAS 018, MAS 020, MAS 022, MAS 024 Indoor Unit**



PART NO	PART CODE	PART DESCRIPTION
1	SP012014-01	BASE PAN 012
1	SP012014-02	BASE PAN 015 024
2	SP012014-03	MALE NECK 012
2	SP012014-04	MALE NECK 015 024
3	SP012014-05	NECK COLLAR 012
3	SP012014-06	NECK COLLAR 015 024
4	SP012014-07	FEMALE NECK 012
4	SP012014-08	FEMALE NECK 015 024
5	SP012014-09	BLOWER 012
5	SP012014-10	BLOWER 015 018
5	SP012014-11	BLOWER 024
6	SP012014-12	BLOWER BODY 012
6	SP012014-13	BLOWER BODY 015 18
6	SP012014-14	BLOWER BODY 024
7	SP012014-15	MOTOR MOUNTING PLATE 012
7	SP012014-16	MOTOR MOUNTING PLATE 015 018
7	SP012014-17	MOTOR MOUNTING PLATE 024
8	SP012014-18	MOTOR 1/6
8	SP012014-19	MOTOR 1/4
9	SP012014-20	MOTOR SUPPLY1/6

PART NO	PART CODE	PART DESCRIPTION
9	SP012014-21	MOTOR SUPPLY1/4
10	SP012014-22	DUCT CONNECTION ADAPTOR 012
10	SP012014-23	DUCT CONNECTION ADAPTOR 015 18
10	SP012014-24	DUCT CONNECTION ADAPTOR 024
11	SP012014-25	DRAIN PAN 012
11	SP012014-26	DRAIN PAN 015 024
12	SP012014-27	DUMP 012
12	SP012014-28	DUMP 015 018
12	SP012014-29	DUMP 024
13	SP012014-30	EVAPORATOR 12000 BTU/H
13	SP012014-31	EVAPORATOR 15000 BTU/H
13	SP012014-32	EVAPORATOR 18000 BTU/H
13	SP012014-33	EVAPORATOR 24000 BTU/H
14	SP012014-34	FILTER 012
14	SP012014-35	FILTER 015
14	SP012014-36	FILTER 018 024
15	SP012014-37	ELECTRICAL BOX
16	SP012014-38	ELECTRICAL BOX COVER
17	SP012014-39	CABLE SLEEVES
18	SP012014-40	UNIT MOUNTING BRACKET

### 11.2.3. Outdoor Unit



PART NO	PART CODE	PART DESCRIPTION
1	SPD-01	BASE PAN 008 012
1	SPD-02	BASE PAN 015 24
2	SPD-03	CABINET CASING COVER 008 010
2	SPD-04	CABINET CASING COVER 012
2	SPD-05	CABINET CASING COVER 015- 18
2	SPD-06	CABINET CASING COVER 024
3	SPD-07	ELECTRICAL BOX
4	SPD-08	ELECTRICAL BOX COVER
5	SPD-09	CABLE SLEEVES
6	SPD-10	UNIT MOUNTING BRACKET
7	SPD-11	VALVES
8	SPD-12	CONDENSER 008 012
8	SPD-13	CONDENSER 015 018
8	SPD-14	CONDENSER 024
9	SPD-15	CONDENSER MOUNTING PLATE 008 012
9	SPD-16	CONDENSER MOUNTING PLATE 015 018
9	SPD-17	CONDENSER MOUNTING PLATE 024
10	SPD-18	REVERSING VALVE 008 012
10	SPD-19	REVERSING VALVE 015 024

PART NO	PART CODE	PART DESCRIPTION
11	SPD-20	REVERSING VALVE BOBBIN
12	SPD-21	HIGH PRESSURE SWITCH
13	SPD-22	GAS SERVICE TAPS
14	SPD-23	CU PIPING KIT008 012
14	SPD-24	CU PIPING KIT015 018
14	SPD-25	CU PIPING KIT024
15	SPD-26	COMPRESSOR 008
15	SPD-27	COMPRESSOR 010
15	SPD-28	COMPRESSOR 012
15	SPD-29	COMPRESSOR 015
15	SPD-30	COMPRESSOR 018
15	SPD-31	COMPRESSOR 020
15	SPD-32	COMPRESSOR 022
15	SPD-33	COMPRESSOR 024
16	SPD-34	CABINET CASING 008 010
16	SPD-35	CABINET CASING 012
16	SPD-36	CABINET CASING 015-018
16	SPD-37	CABINET CASING 024

### 11.3. Trouble Shooting and Correction Tables

<b>Fault</b>	<b>Possible Reason</b>	<b>Correction</b>
Unit is not running.	No energy.	The fuse on the generator or on the electrical box might have cut the energy. If the fuse is at the normal position contact with the authorized service.
Cooling/Heating is not sufficient.	If the air filter has clogged the capacity or the functions of the unit will decrease.	Clean the filter.
	The thermostat set value may be too high at cooling or too low at heating.	Set the appropriate value by the remote control.
	The unit may not be blowing the air in to the room.	Check the duct connections and/or move the materials in front of the supply grill, obstructing the air flow.
No cooling/heating.	Unit might have been set at the wrong mode.	Reverse the set mode (Cool/Heat) on the remote control.
	The thermostat set value may be too high at cooling or too low at heating.	Set the appropriate value by the remote control.
	If the air filter has clogged the capacity or the functions of the unit will decrease.	Clean the filter.
	The water pump is out of work.	Repair the pump by complying the pump manufacturer's instructions.
Bad smell diffusion.	As the unit circulates the room air, the materials like smoke or dust will dirty the unit by the time.	Contact with the authorized service.
Loud voice.	There may be a mechanical damage on the unit.	If you hear an abnormal sound from the unit shut it off and contact with the authorized service.
The unit makes the fuse blow out.	The fuse may be out of order.	Make the fuse changed by the competent personnel. If the problem continues contact with the authorized service.
	The size of the fuse may differ from the one recommended on the Technical Specifications Table.	Make the fuse changed by the competent personnel. If the problem continues contact with the authorized service.



If the problem still continues after all these steps contact with the authorized service.

#### 11.4. Communication

Please contact to the address below for the for service or the questions.

##### **Our group of companies:**

##### **Exporter**

Pratikel Dış Ticaret Ltd. Sti.

1203 Sok. No:8 Eminhan is merkezi D:102 Yenisehir 35110 Izmir/TURKEY

Tel: +90 232 459 85 54 Fax: +90 232 459 85 94

e-mail: info@pratikel.com web: www.coolmar-ac.com

##### **Manufacturer**

Izmir Klima Sanayi Tic. Ltd. Sti.

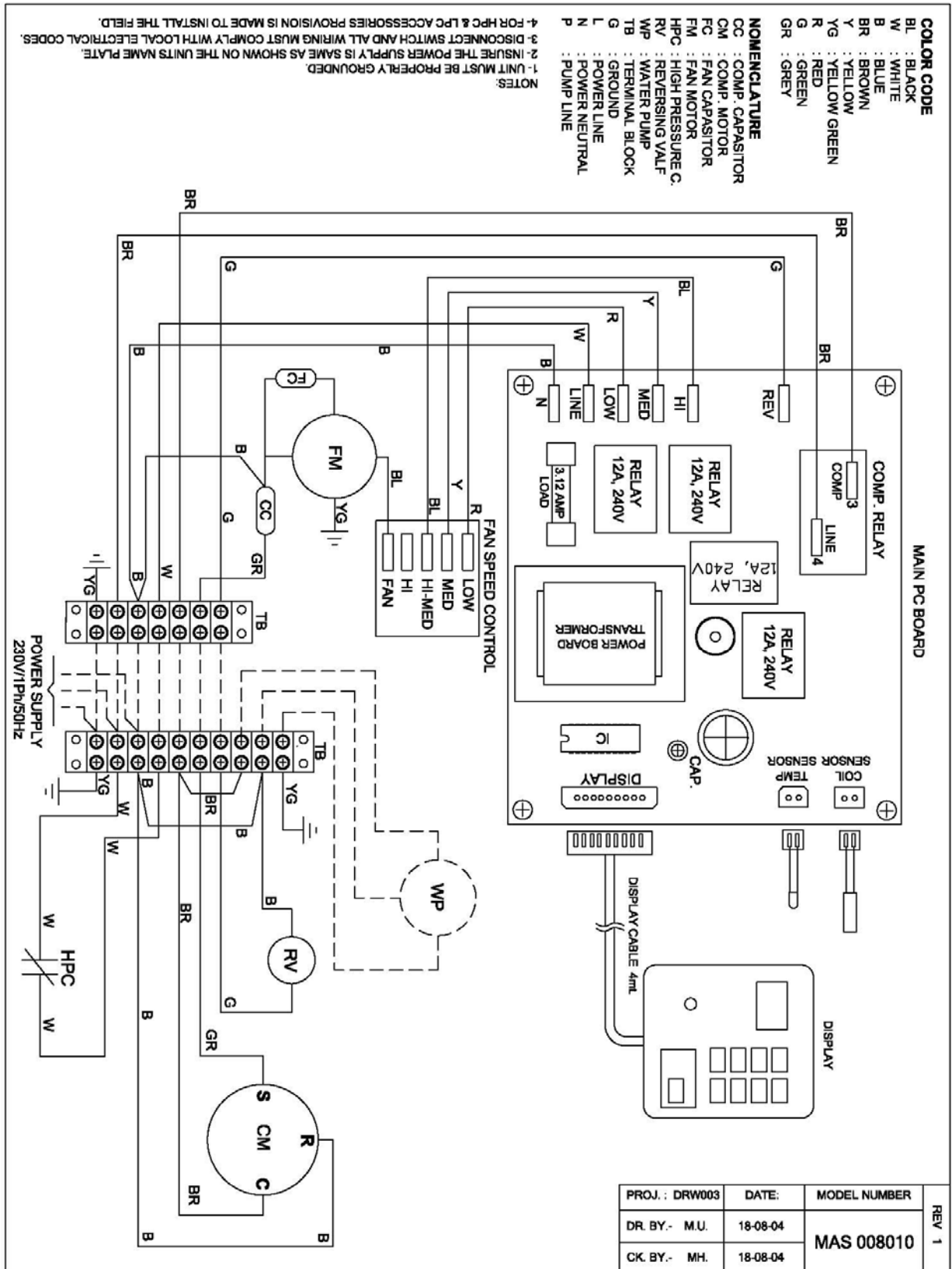
5821/1 Sok. No: 25 Karabaglar/Izmir/TURKEY

Tel: +90 232 253 77 80 Fax: +90 232 253 77 95

e-mail: info@coolmar-ac.com web: www.coolmar-ac.com

#### 12. ANNEX

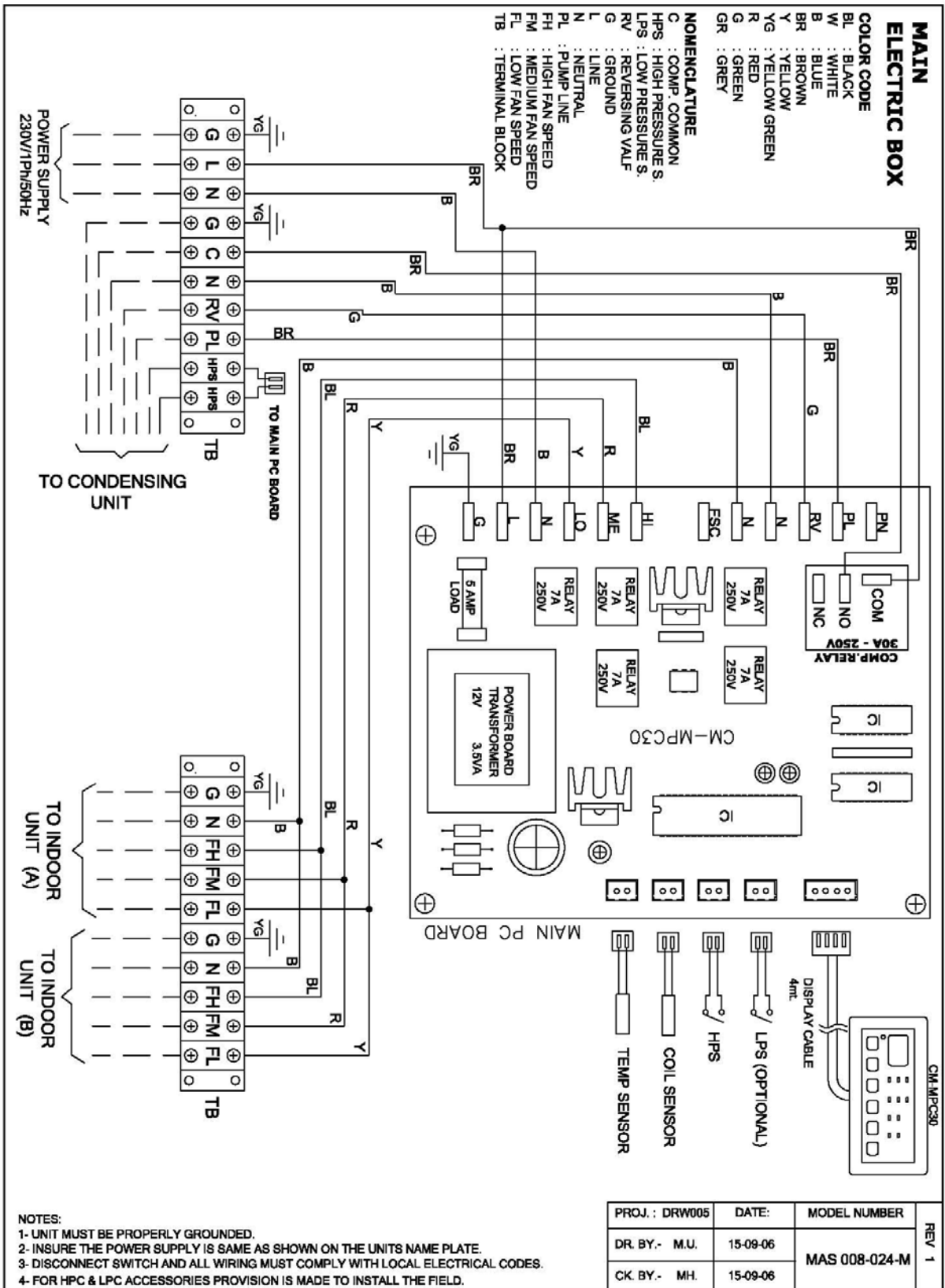
ANNEX 1 : WIRING DIAGRAM



PROJ. : DRW003	DATE: 18-08-04	MODEL NUMBER	REV 1
DR. BY.- MU.	18-08-04	MAS 008010	
CK. BY.- MH.	18-08-04		



**MAIN DIAGRAM CM-MPC30**



- NOTES:**
- 1- UNIT MUST BE PROPERLY GROUNDED.
  - 2- INSURE THE POWER SUPPLY IS SAME AS SHOWN ON THE UNITS NAME PLATE.
  - 3- DISCONNECT SWITCH AND ALL WIRING MUST COMPLY WITH LOCAL ELECTRICAL CODES.
  - 4- FOR HPC & LPC ACCESSORIES PROVISION IS MADE TO INSTALL THE FIELD.

PROJ. : DRW005	DATE: 15-09-06	MODEL NUMBER	REV 1
DR. BY.- M.U.	15-09-06	MAS 008-024-M	
CK. BY.- MH.	15-09-06		



DIAGRAM OF THE INDOOR UNIT

