

# MARINE AIR CONDITIONING SYSTEMS

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## Ultimate Climate Control Technology for MotorYachts and Sailing Boats



## SELF-CONTAINED AIR CONDITIONING SYSTEMS

### COMPACT 7-SC - THE NEW SUPER COMPACT UNIT

In order to have a solution even when the spaces are minimal, Uflex introduces the Compact 7-SC, the super-compact air conditioning self contained unit that in just 43cm in length and 26cm in width develops 7000 BTU of cooling power. Differently from the other Compact units, this 7000 BTU model is built with a stainless steel tray and a fan body. The fan can not be rotated like the sister units, but it offers the possibility to connect directly up to 3 air hoses.

#### Advantages:

- Unit extremely compact in dimensions
- Brushless fan with high efficiency and low noise
- Max electrical power absorbed 550 W (in cooling)
- Wireless remote control included

#### Easy to install:

With its compact dimensions and low weight, the Compact 7-SC can be installed on all types of boats. The Compact 7-SC can be installed with 2 or 3 air output grilles without the need to use any T or Y additional dividers.



### TECHNICAL SPECIFICATIONS

MODEL	Compact 7	Compact 13	Compact 18
Part No.	20379 U	21371 G	21372 J
Cooling capacity	7000 BTU/h	13000 BTU/h	18000 BTU/h
Power supply voltage	230 V - 50 Hz	230 V - 50 Hz	230 V - 50 Hz
Cooling power consumption	2,1 - 3,0 A	3,1 - 4,0 A	4,3 - 4,9 A
Protection	10 A	10 A	10 A
Wire size (minimum)	2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>
Maximum air flow	350 m <sup>3</sup> /h	500 m <sup>3</sup> /h	700 m <sup>3</sup> /h
Flange diameter	120 mm	150 mm	150 mm
Minimum opening for return air grill	360 cm <sup>2</sup>	640 cm <sup>2</sup>	800 cm <sup>2</sup>
Minimum opening for supply air grill (rec.)	150 cm <sup>2</sup>	300 cm <sup>2</sup>	400 cm <sup>2</sup>
Seawater minimum flow rate	8 l/m	12 l/m	16 l/m
Dimensions mm (") W x H x D	430 x 260 x 285 (16.9 x 10.2 x 11.2)	443 x 290 x 360 (17.4 x 11.4 x 14.2)	500 x 290 x 400 (19.7 x 11.4 x 15.8)
Weight kg (lbs)	23 (50.7)	29 (63.9)	34 (75)

Uflex self-contained air conditioners represent a light and solid solution to conditionate small and medium boats. They are made of high quality materials (stainless steel and aluminium) and with a design that follows our inverter models one (see the following pages).

This allows, in the case of serial production, to prepare a unique air and water distribution layout and decides at the last moment whether to install a conventional unit (ON / OFF compressor) or to go for an inverter driven variable speed unit (VSD), leaving the customer the final choice of the unit version. Or later on, in the case of upgrading or retrofitting, the units without and with inverter are for perfectly interchangeable for the layout point of view.

R410A refrigerant (CE marked), small rotary compressor and multi-injection heat exchanger guarantee highest efficiency and reduced energy consumption. Thanks to their features, they can be powered by small generators or directly by DC-AC converter from the battery pack. The units have, as standard, the reverse cycle option that converts the A/C machine into a heat pump, able to warm up a boat during cold months drawing the heat from seawater.

**new**



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### CONTROL PANEL

The units are supplied with a wall-mounted control digital panel, easy to install because, being very thin, it can be applied on the wall itself, without the classic rectangular cut. A simple round hole is enough to pass the data cable.



### CONTROL BOX

The units are extremely easy to install thanks to the prewired electrical box with a cable bundle that allows the optimal positioning around the machine itself.

Unlocking the four screws, it's possible to access directly to the terminal block where to connect the power supply and the sea water pump.

### WIFI: REMOTE CONTROL VIA SMARTPHONE

New feature 2018. A Wi-Fi module has been introduced in the panel. This function allows to pair your mobile phone with the air conditioning unit.

When you are on board, the smartphone will speak directly with the unit. When away from the boat, the communication will take place through internet, therefore a wi-fi network in the marina or a router on board is required. This allows to turn on the air conditioning or heat pump in advance, in order to arrive on board finding the cabins at a comfortable temperature and humidity level. A free app is available for IOS and Android







# INVERTER DRIVEN SELF-CONTAINED AIR CONDITIONING SYSTEMS 230V-50/60HZ VARIABLE SPEED DRIVE - REVERSE CYCLE FUNCTION



## VARIABLE SPEED DRIVE



Self-contained-VSD air conditioners provides the best of the existing technology: - compressor with brushless DC motor and inverter that constantly controls speed and cooling power delivered (Variable Speed Drive); - reverse blade brushless fan: - electronic expansion valve; - R410A refrigerant .

Three sizes available: 10.000, 16.000 and 27.000 BTU/h  
The inverter technology, already used in residential air-conditioning, offers the following **benefits** in marine applications:

- No current peaks during start-up
- Highest energy efficiency: overall reduction of electricity consumption (-40%)
- Perfectly running with small generators or battery powered
- Compressor noise and vibrations almost zero
- Constant temperature of the air flow
- Wi-fi connection for smartphone available from January 2018

The compressor continuously changes its running speed depending from ambient and set temperature. The compressor operates at maximum power to cool rapidly the cabins, but reaching the set temperature, it reduces the power and electricity consumption. In this way it maintains the optimal comfort level with the minimum consumption. The inverter works between 20 and 100 Hz.

Self-contained-VSD Uflex units meet EMC 2004/108/EC directives.

Also available the version for the american market: 115V 50/60Hz

### TECHNICAL SPECIFICATIONS

MODEL	Compact i10 VSD	Compact i16 VSD	Compact i27 VSD
Part No.	69752 P	69750 K	69751 M
Cooling capacity range	3000 - 10000 BTU/h	4000 - 16000 BTU/h	9000 - 27000 BTU/h
Power supply voltage	230V – 50/60 Hz	230V – 50/60 Hz	230V – 50/60 Hz
Power consumption cooling (max) @ 230V	3,1 A	4,5 A	7,7 A
Protection	10 A	10 A	10 A
Cable size (min)	2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>	4 mm <sup>2</sup>
Max air flow	400 m <sup>3</sup> /h	550 m <sup>3</sup> /h	900 m <sup>3</sup> /h
Flange diameter	2 x 125 mm	2 x 150 mm	4 x 150 mm
Minimum opening for return air grill	400 cm <sup>2</sup>	600 cm <sup>2</sup>	1000 cm <sup>2</sup>
Minimum opening for supply air grill (recommended)	250 cm <sup>2</sup>	300 cm <sup>2</sup>	500 cm <sup>2</sup>
Minimum seawater flow rate	12 l/min	17 l/min	23 l/min
Dimensions WxDxH	519x292x319 mm	576x292x346 mm	779x340x471 mm
Weight	27 kg	30 kg	44 kg



Compact i27 VSD



Compact i10 VSD



### VARIABLE SPEED DRIVE



This inverter driven chiller line provides the best of the existing technology: brushless DC motor with inverter that constantly control speed and power delivered by the compressor (Variable Speed Drive). They also use R410A eco-friendly refrigerant. Two sizes available: 42.000 e 62.000 BTU/h with modular combination to obtain systems with higher cooling power

**Benefits** in marine applications:

- No current peaks during start-up phase
- Highest energy efficiency: Overall reduction of electricity consumption (-45%)
- It can operate with small generators
- Compressor noise and vibrations almost zero
- Small dimensions and weights compared to the cooling capacity
- Temperature stability at fancoil air outlet

**Comfort:** The compressor continuously changes the running speed and consequently its cooling power. In this way, the chiller water loop temperature remains constant, regardless of power drawn by the fancoils. This guarantees the maximum comfort - thanks to the temperature stability of air- and the best efficiency, adapting continuously the cooling power to the real need. As result, the compressor will operate at maximum power to cool rapidly the rooms, but coming closer to the set temperature, it will reduce the power and, as well, the electricity consumption.

**Reliability:** "Brushless DC" compressors, together with variable capacity operation, eliminate the typical ON/OFF function of the traditional systems. This allows a much longer lifetime to all the electrical and mechanical components than non-inverter models.

**Silence:** Thanks to its function and its sound proofing cover, the compressor has minimal sound levels. This is appreciated especially during night operation.

**NIGHT mode:** It is possible to limit the maximum output power to a preselected value (factory 40%) simply pressing a button. This means the possibility to limit the max current requested, with no risk to break down the shore power if weak and, in double genset applications, it is possible to use the small and quiet generator during the night.

**Modular:** A number of units can be combined together in order to obtain the maximum power needed: for example, to get 250.000 BTU/h as max power, it is enough to install 4 units of 62.000 BTU/h in parallel. The units will regulate automatically in order to guarantee always the pre-determined value temperature with the lowest energy consumption.

**Inverter-VSD Uflex chillers units meet EMC 2004/108/EC directives.**





# INVERTER DRIVEN CHILLERS WITH CONTINUOUS MODULATION

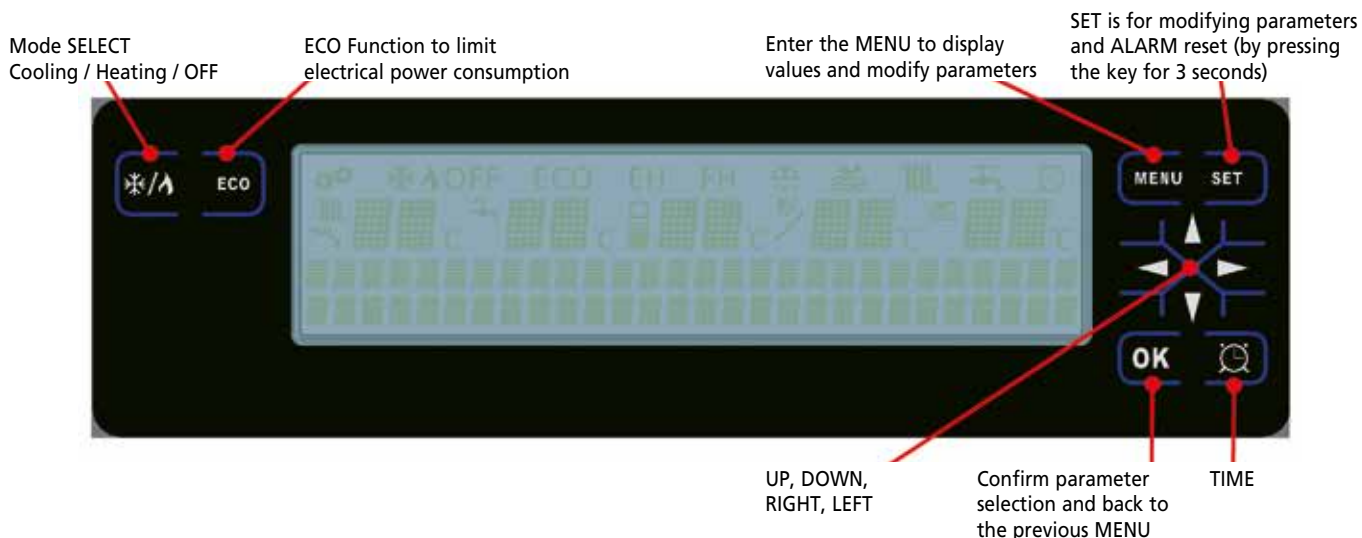
## VARIABLE SPEED DRIVE – REVERSE CYCLE FUNCTION

### TECHNICAL SPECIFICATIONS (for single unit):

MODEL	Chiller i42 VSD	Chiller i62 VSD
Part No.	69338 D	69339 F
Cooling capacity range	18000 - 42000 BTU/h	30000 - 62000 BTU/h
Power supply voltage	230V – 50/60 Hz	230V – 50/60 Hz
Power consumption cooling (max)	10,5 A	16 A
Power consumption cooling (max) with "NIGHT MODE"activated	4,5 A	6,1 A
Min water flow rate chiller circuit	35 l/min	45 l/min
Chiller loop pipe diameter	25 mm	25 mm
Min seawater flow rate	30 l/min	40 l/min
Seawater loop pipe diameter	20 mm	25 mm
Dimensions WxDxH	331x476x436 mm	431x476x436 mm
Weight	48 kg	64 kg

The digital control panel can be placed on the chiller or remoted in a control room.

The main functions can be controlled from any centralised on-board control system by three simple switches.

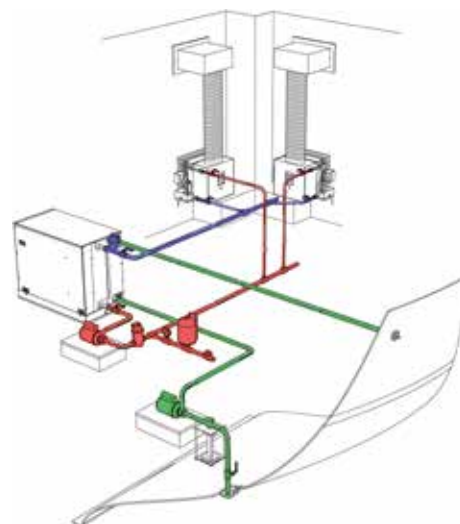


### ACCESSORIES

For a complete installation the following accessories are needed:

- Fancoils (see next page)
- Seawater pump
- Water pump for chilled loop
- Seawater loop components (sea water intake, water outlet, strainer, safety valve and pipeline)
- Chilled water loop components (insulated pipes, fittings, valves, bleeders, accumulator tank and glycols)
- Air ducting parts (insulated pipe, dividers, transition box, air grills)

Please contact our Technical Service for a correct choice of required accessories.





### U721 – U722 – U724 FANCOILS

Fancoil with tangential fan unit, air output not ductable – 3500, 5500 and 7500 BTU/h.

Perfect solution for sleeping cabin.

Silent, to be placed directly behind the grill, without air hoses.

Made in white alloy body



### U727 - U728 FANCOILS

Fancoil with centrifugal fan - 4000 e 5000 BTU/h

Air hose connection Ø 100 mm

Air outlet can be vertical or horizontal

Made in white alloy body



### U742 VERTICAL FANCOIL

Fancoil for high and narrow applications, air output canalization up to 1,5m - 6000 BTU/h

Air hose connection Ø 125 mm

Air outlet can be vertical or horizontal

Made in white alloy body



### U746 - U744 – U745 FANCOILS

Fancoil with centrifugal fan - 8000, 10000 and 12000 BTU/h

Air hose connection Ø 125 mm

Air outlet can be vertical or horizontal

Made in white alloy body



### U747 FANCOIL

Fancoil with centrifugal fan - 15000 BTU/h

Air hose connection Ø 125 mm

Air outlet can be vertical or horizontal

Made in white alloy body



### U748 FANCOIL

Fancoil with dual ductable centrifugal fan - 24000 BTU/h

Air hose connection 2x Ø125 mm

Dual air outlet can be vertical or horizontal

Made in white alloy body





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## TECHNICAL SPECIFICATIONS

MODEL	U721	U722	U724	U742	U727	U728	U746	U744	U745	U747	U748
Part No.	69340 P	69341 S	69342 U	69343 W	69344 Y	69345 A	69346 C	69347 E	69348 G	69349 J	69629 R
Cooling capacity (BTU/h)	3600	5400	7760	6000	4000	5000	8000	10000	12000	15000	24000
Power supply	230V - 50Hz										
Width (mm)	400	510	610	410	420	420	410	460	460	640	850
Height (mm)	210	240	240	365	200	200	370	270	270	275	275
Depth (mm)	190	220	240	170	240	240	270	310	310	330	330
Weight (kg)	4	5	7	6	6	6	8	9	9	10	18
N° Speed	2	2	2	3	3	3	3	3	3	3	3
Air flow (m³/h)	140	250	310	330	140	255	370	370	470	470	940

### U626A - 69350 T - Room temperature control digital panel



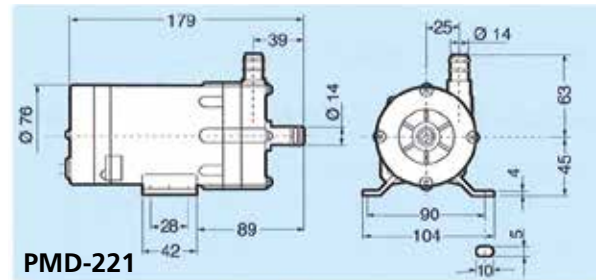
- Illuminated display with auto switch off
- Easy and intuitive to use.
- Automatic or manual fancoil speed control.
- Summer and winter function mode
- Double temperature probe (internal/external)
- Wireless remote control (optional)
- Support for standard cover (Bticino, Vimar, Legrand, Siemens).
- Power box. Drive up to four fancoils parallel connected to external power box.
- ModBUS connection for domotic systems. (U626C - 69371 B)



## 230V - 50/60Hz SEAWATER PUMPS

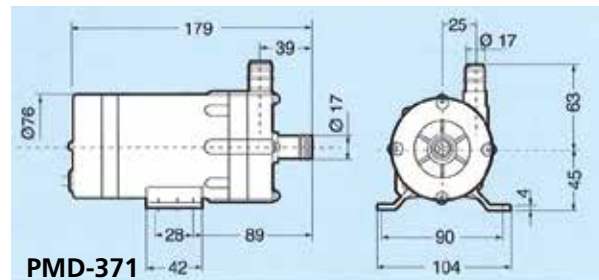
### PMD-221 – 69886 M

- Seawater centrifugal Pump
- Flow rate: 15 l/min (4.0 GPM)
- Input power: 31 W
- Max Head: 2,6 m (8.5')
- M3/4" connection
- Weight: 1,7 kg (3.75 lbs)



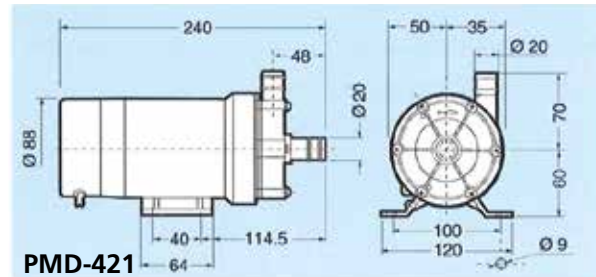
### PMD-371 – 63570 A

- Seawater centrifugal Pump
- Flow rate: 25 l/min (5.5 GPM)
- Input power: 43 W
- Max Head: 3,1 m (10.2')
- 17 mm (0.67") connection
- Weight: 1,7 kg (3.75 lbs)



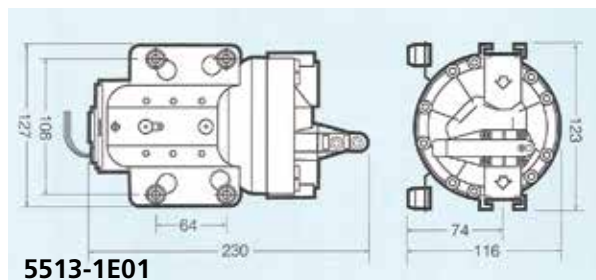
### PMD-421 – 69696 G

- Seawater Centrifugal Pump
- Flow rate: 35 l/min (9.2 GPM)
- Input power: 75 W
- Max Head: 4,0 m (13.1')
- M3/4" connection
- Weight: 3,4 kg (7.5 lbs)



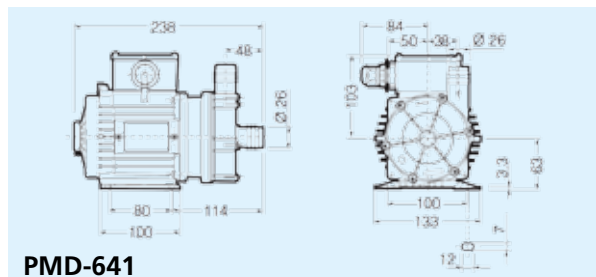
### 5513-1E01 – 63799 K

- Self priming diaphragm seawater Pump
- Flow rate: 5 - 20 l/min (1.3 – 9.0 GPM)
- Input power: 50-200 W
- Self priming up to 3,0 m (9.8')
- F1/2" connection
- Weight: 3,6 kg (7.9 lbs)



### PMD 641 – 20349 J

- Self priming seawater Pump
- Flow rate: 55 l/min @2m (20 l/min @8m)
- Input power: 155 W
- Max Head: 5,0 m (16.4')
- M1" connection
- Weight: 4,8 kg (10.6 lbs)



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- Technical drawing of the PMD-1521 GPG2 pump. The drawing includes two views: a front view (left) and a side view (right). Dimensions are provided in millimeters.
- Front View Dimensions:**
- Total height: 132
  - Total width: 272
  - Base width: 90
  - Base to center distance: 123.5
  - Center to center distance: 133
  - Flange width: 40
  - Flange thickness: 20
  - Flange to base distance: 21
  - Flange to center distance: 71
- Side View Dimensions:**
- Total width: 112
  - Base width: 90
  - Base to center distance: 26
  - Center to center distance: 85
  - Flange width: 66
  - Flange thickness: 20
  - Flange to base distance: 71
  - Flange to center distance: 48
  - Flange to center distance (inner): 34
  - Flange to center distance (outer): 10

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## PMD 2571/11 – 20472 H

- UB-CE 16-M – 67960 L

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- UB-CE 16-M

## UB-CE 20-M – 67964 V

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- Technical drawing of the UB-CE 20-M pump. The drawing includes two views: a side view on the left and a front view on the right. The side view shows the pump's profile with a horizontal dimension line labeled 'A' indicating the total length. The front view shows the pump's circular base with a vertical dimension line labeled 'C' indicating the total height and a horizontal dimension line labeled 'B' indicating the base width. The pump features a motor housing with cooling fins and a mounting bracket on top.

## UB-CE 22-M – 67967 B

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- Technical drawing of the UR-CE 22-M pump. The drawing includes two views: a front view on the left and a side view on the right. The front view shows the pump's profile with a horizontal dimension line labeled 'A' indicating the total width. The side view shows the pump's depth with a horizontal dimension line labeled 'B' and a vertical dimension line labeled 'C' indicating the total height. The pump features a cylindrical body, a motor housing, and a vertical outlet pipe.

## MULTI-UNITS PUMP SWITCH

- Pump Relay 62200 J - 2-6 PRP from two to six units 230V 1 phase

## AIR DUCTING ACCESSORIES

### AIR DIVIDERS T AND Y (HOSE TO HOSE DIVIDERS)

Ø IN mm (")	Ø OUT/OUT mm (")	PART No.
100 (4)	100/100 (4/4)	62225 B
125 (5)	100/100 (4/4)	62226 D
125 (5)	125/100 (5/4)	63904 D
125 (5)	125/125 (5/5)	63905 F
150 (6)	100/100 (4/4)	63107 A
150 (6)	125/100 (5/4)	63906 H
150 (6)	125/125 (5/5)	62227 F
150 (6)	150/125 (6/5)	63907 K
150 (6)	150/150 (6/6)	63908 M

Ø IN mm (")	Ø OUT/OUT mm (")	PART No.
100 (4)	100/100 (4/4)	62876 W
125 (5)	100/100 (4/4)	62220 R
125 (5)	125/100 (5/4)	62221 T
125 (5)	125/125 (5/5)	63910 Y
150 (6)	100/100 (4/4)	62222 V
150 (6)	125/100 (5/4)	62223 X
150 (6)	125/125 (5/5)	62224 Z
150 (6)	150/100 (6/4)	61344 O

Ø HOSE mm (")	ROUND HOSE RING	OVAL HOSE RING
80 (3)	61651 P	-
100 (4)	62204 T	62206 X
125 (5)	62205 V	62207 Z
150 (6)	63912 C	62208 B
200 (8)	-	61319 P

### TRANSITION BOXES (WITHOUT FITTINGS)

Transition boxes (without fittings)	
62216 A	TB-06x04 mm 150x100
62217 C	TB-08x04 mm 200x100
62531 J	TB-08x06 mm 200x150
62555 Z	TB-08x08 mm 200x200
62218 E	TB-10x04 mm 250x100
62576 H	TB-10x06 mm 250x150
62219 G	TB-10x08 mm 250x200
61331 J	TB-12x04 mm 300x100



20645 N - Bend 90°  
outlet - 125 mm



## FLOW TRANSITION BOXES (WITH HOSE CONNECTIONS)

### Ring back (straight)

69534 D	Plen1010 mm 100x100 c/ racc. back mm 100
64253 T	TB-06x04-04OB mm 150x100 c/ racc. back mm 100
64254 V	TB-08x04-04OB mm 200x100 c/ racc. back mm 100
64255 X	TB-08x04-05OB mm 200x100 c/ racc. back mm 125
64256 Z	TB-10x04-05OB mm 250x100 c/ racc. back mm 125



### Ring side (long side)

64257 B	TB-08x04-04OS mm 200x100 c/ racc. long side mm 100
64258 D	TB-08x04-05OS mm 200x100 c/ racc. long side mm 125
64259 F	TB-10x04-04OS mm 250x100 c/ racc. long side mm 100
64260 P	TB-10x04-05OS mm 250x100 c/ racc. long side mm 125



### Ring end (short side)

64261 S	TB-08x04-04RE mm 100x100 c/ racc. short side mm 100
64262 U	TB-06x04-04RE mm 150x100 c/ racc. short side mm 100
64263 W	TB-08x04-04RE mm 200x100 c/ racc. short side mm 100
64264 Y	TB-10x04-04RE mm 250x100 c/ racc. short side mm 100
64265 A	TB-10x06-05RE mm 250x150 c/ racc. short side mm 125



### Insulated, flexible duct

67112 P	Air hose Ø int. mm 100
69139 X	Air hose Ø int. mm 125
67113 S	Air hose Ø int. mm 150
20471 F	mm 50 reinforced aluminium tape



## ROUND GRILLS

### Round plastic supply grills

62209 D	mm 100 (4") round damper vent, black
62210 M	mm 100 (4") round damper vent, white
69615 D	mm 75 (3") round damper vent, white
69428 E	mm 100 (4") round grill, white (not closeable)
69616 F	mm 100/75 (4"/3") round adapter
20648 V	mm 125/F100 (5"/F4") round adapter





## RETURN AIR GRILLS

Anodized aluminium return air grills	
69490 K	mm 250x150
69422 S	mm 300x200
69423 U	mm 400x250
66706 R	mm 600x150



Teak return air grills (with air filter)	
69494 U	mm 250x150
69497 A	mm 300x200
69498 C	mm 400x250



White aluminium return air grills (with air filter)	
20864 B	mm 250x150
69605 A	mm 300x200
20865 D	mm 400x250

Black aluminium models are also available



Anodized aluminium supply air grills	
20653 M	mm 165x55
20652 K	mm 297x53
20651 H	mm 475x55
69466 N	mm 100x100
69022 Z	mm 150x100
69023 B	mm 200x100
69021 X	mm 250x100
69421 P	mm 250x150



Teak supply air grills	
64195 F	mm 100x100
64534 B	mm 150x100
64535 D	mm 200x100
61652 S	mm 250x100
61653 U	mm 250x150
64361 W	mm 250x250





#### Teak supply damper vents (closeable)

69492 P	mm 100x100
69493 S	mm 200x100
69910 F	mm 250x100
69506 Y	mm 250x150



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#### White aluminium supply air grills

69914 P	mm 100x100
69915 S	mm 200x100
69916 U	mm 250x100



#### Black aluminium supply air grills

20881 B	mm 200x100
69630 Z	mm 250x100
69631 B	mm 400x100



#### White aluminium supply damper vents (closeable)

69533 B	mm 100x100
69917 W	mm 200x100
69918 Y	mm 250x100



#### Seawater circuit kit (nickel plated brass)

*Seacock, on/off valve, water strainer, hose fittings, through hull included*

69475 P	1/2" through hull kit
69488 Z	1" through hull kit
69532 Z	Ø int. 16 mm transparent reinforced hose - per meter
69645 N	Ø int. 20 mm transparent reinforced hose - per meter
20346 C	3 outlet manifold 3/4"M x 3/4"F with valve - 1/2"M connectors - Ø int. 16 mm