



2,55 to 23,11 kW

cooling capacity

1/2" to 1"

water connections diameter

R407C

refrigerant

DESCRIPTION

The new range of OBE chillers has been designed specifically to meet industrial requirements and provide accurate control of the chilled water temperature with the absolute reliability of continuous operation (with the option of hot bypass valve). It is particularly suitable for process cooling during the moulding and extrusion of plastic, laser cutting, precision engineering, pharmaceutical and food industry etc...

The range consists of 12 models with cooling capacities from 3-25 kW and is designed for outdoor installation (OBE002 excluded and OBE003 ÷ 007 optional). All units are equipped with:

- Hermetic rotary or scroll compressors,
- Ecological refrigerant R407C;
- Microprocessor controller (electronic thermostat for OBE002);
- Atmospheric pressure tank;
- Water pump

APPLICATIONS

- Process cooling during the moulding
- Extrusion of plastic
- Laser cutting
- Precision engineering
- Pharmaceutical
- Food industry

OBE SERIES

AIR-COOLED WATER CHILLERS WITH AXIAL FANS



COOLING CIRCUIT

Manufactured from high quality materials by skilled personnel according to strict procedures of brazing, and conforms to Directive 97/23.

It comprises of:

- rotary (OBE002 ÷ 012 models) or scroll (OBE014 ÷ 025 models) compressor;
- Copper Coaxial evaporator made from AISI 316 stainless steel brazed plate;
- Micro channel condenser in aluminium with epoxy coating;
- Filter dryer;
- Flow sight glass with moisture indicator (OBE008 ÷ 025 models);
- External equalisation thermostatic expansion valve (except OBE002 model); The thermostatic expansion valve regulates the injection of liquid refrigerant into the evaporator. The injection is a response to the refrigeration requirements. The range of thermostatic valves are designed for specific applications and are connected to the circuit via bi-metal brazing
- High pressure switch with manual reset;
- Low pressure switch to semi-automatic reset (OBE008 ÷ 025 models);
- High and low pressure gauges (OBE008 ÷ 025 models);
- Pressure connections for checks and maintenance.

HYDRAULIC CIRCUIT

Composed of:

- Atmospheric pressure collection tank, thermally insulated manufactured from ABS (OBE002-007) and PVC (OBE008-25);
- Water pipes in copper and PVC
- Electric pump, thermally insulated, made with non-ferrous materials (steel, brass or plastic material, mechanical seals NBR or EPDM depending on the model);
- Calibrated water bypass (prevents incidents caused by the erroneous closure of the stop valves);
- Water differential pressure switch (OBE008 ÷ 025 models);
- Water manometer;
- Drain valve;
- Filling unit.

All models in the OBE range have, as standard, the hydraulic circuit made from non-ferrous materials, which is necessary for industrial applications.

All units in the range can be used with mixtures of water and ethylene glycol up to 30 %.



Model OBE		002 ⁽⁵⁾	003	004	005	006 ⁽²⁾	007 ⁽²⁾	008 ⁽⁵⁾	009 ⁽⁵⁾	012	014	020	025	005 3Ph	006 3Ph	007 3Ph
Cooling capacity ⁽¹⁾	[kW]	2,55	2,74	3,51	4,28	5,21	6,21	8,16	10,11	12,73	16,22	21,02	23,11	5,23	6,08	7,01
Compressors power input ⁽¹⁾	[kW]	0,48	0,49	0,71	0,86	1,22	1,76	1,49	2,09	2,81	2,54	3,76	4,87	1,22	1,71	2,29
Total power input ^{(1) (2)}	[kW]	0,79 ⁽⁵⁾	0,99	1,21	1,36	1,72 ⁽²⁾	2,26 ⁽²⁾	2,80 ⁽⁵⁾	3,40 ⁽⁵⁾	4,12	4,32	5,99	7,1	1,73	2,21	2,8
Total absorbed current (1) (2)	[A]	4,44 ⁽⁵⁾	5,38	6,45	7,22	9,01 ⁽²⁾	11,31 ⁽²⁾	5,97 ⁽⁵⁾	6,88 ⁽⁵⁾	8,19	8,14	10,97	12,9	5,55	6,15	7,35
EER (pump excluded) ⁽¹⁾	---	4,16	4,43	4,19	4,32	3,85	3,29	4,53	4,21	4,09	4,89	4,63	4,09	3,86	3,3	2,89
Water flow ⁽¹⁾	[l/h]	438	471	604	736	897	1068	1404	1739	2190	2790	3615	3975	900	1046	1206
Available pressure ⁽¹⁾	[kPa]	146	287	261	248	215	181	235	210	222	188	217	199	215	185	153
Maximum power input (total) ^{(2) (3)}	[kW]	1,3 ⁽⁵⁾	1,5	1,8	2	2,5 ⁽²⁾	3,0 ⁽²⁾	3,8 ⁽⁵⁾	4,9 ⁽⁵⁾	5,8	6,8	8,6	10	2,4	3	3,7
Maximum absorbed current (total) ^{(2) (3)}	[A]	6,6 ⁽⁵⁾	7,5	9,1	10,4	12,6 ⁽²⁾	14,4 ⁽²⁾	7,7 ⁽⁵⁾	9,5 ⁽⁵⁾	10,8	12,1	15,9	17,5	6,4	7,3	8,7
Starting current ^{(2) (3)}	[A]	21,3 ⁽⁵⁾	22,1	26,1	34,2	39,2 ⁽²⁾	55,2 ⁽²⁾	34,2 ⁽⁵⁾	42,2 ⁽⁵⁾	44,2	62,7	78,3	89,3	22,9	18,9	25,9
Fan power	[kW]	0,13	0,13	0,13	0,13	0,13	0,13	0,31	0,31	0,31	0,78	0,78	0,78	0,14	0,14	0,14
Fan current	[A]	0,65	0,65	0,65	0,65	0,65	0,65	1,2	1,2	1,2	1,7	1,7	1,7	0,38	0,38	0,38
Number of fans	[#]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P3 Pump power input	[kW]	0,18 ⁽⁵⁾	0,37	0,37	0,37	0,37 ⁽²⁾	0,37 ⁽²⁾	1,00 ⁽⁵⁾	1,00 ⁽⁵⁾	1	1	1,45	1,45	0,37	0,37	0,37
P3 Pump absorbed current	[A]	1,60 ⁽⁵⁾	2,5	2,5	2,5	2,50 ⁽²⁾	2,50 ⁽²⁾	2,00 ⁽⁵⁾	2,00 ⁽⁵⁾	2	2	2,6	2,6	2,5	2,5	2,5
Power supply	[V/Ph/Hz]	230/1/50						400/3/50								
IP protection class	---	IP40	IP40	IP40	IP40	IP40	IP40	IP44	IP44	IP44	IP44	IP44	IP44	IP44	IP44	IP44
Refrigerant	---	R407C														
Compressor type	---	Rotary								Screw				Reciprocating		
Evaporator type	---	Coaxial						Brazed plates						Coaxial		
Condenser type	---	Microchannel														
N° of compressors	[#]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
N° of refrigerant circuits	[#]	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Air flow	[m³/h]	2.200	2.200	2.200	2.200	2.200	2.200	4.800	4.800	5.000	5.500	5.500	5.500	2.500	2.500	2.500
Sound pressure level (4)	[dB(A)]	46	46	46	46	46	46	49	49	49	49	49	49	46	46	46
Water connections diameter	[inch]	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1"	1"	1"	1"	1"	1"	1/2"	1/2"	1/2"
Width	[mm]	718	718	718	718	718	718	1.004	1.004	1.004	1.004	1.004	1.004	718	718	718
Depth	[mm]	678	678	678	678	678	678	753	753	753	753	753	753	678	678	678
Height	[mm]	668	668	668	668	668	668	1.257	1.257	1.257	1.257	1.257	1.257	668	668	668
Weight	[kg]	82	85	88	92	95	100	235	240	245	255	255	255	92	95	100
Tank capacity - Option	[dm³]	25	25	25	25	25	25	90	90	90	90	90	90	25	25	25
P3 Input pump power- Option	[kW]							1,60	1,60	1,60	1,60	0,75	0,75			
P3 Absorbed pump current - Option	[A]							1,90	1,90	1,90	1,90	2,5	2,5			
P5 Input pump power - Option	[kW]		0,55	0,55	0,55	0,55	0,55	0,75	0,75	0,75	0,75	0,9	0,9	0,55	0,55	0,55
P5 Absorbed pump current - Option	[A]		6,2	6,2	6,2	6,2	6,2	2,5	2,5	2,5	2,5	2,6	3	6,2	6,2	6,2

(1) Data referred to following conditions: water temperature in/out: 20/15 °C - ambient air temperature: 25 °C - (2) Data referred to unit with pump P3 - (3) Data related to most heavy condition allowed by safety devices fitted on the unit - (4) Referred at 10 m and at an height of 1,5 m in free field - (5) Data referred to unit with pump P2 - (6) Maximum room temperature 45 °C - (7) Maximum inlet temperature 30 °C - (8) Minimum water outlet temperature - 10 °C (with 30 % ethylene glycol) at 5 °C according to the model. Friulair S.r.l. reserves the right to make technical changes without prior notice, errors and omissions excepted.