



Pool air handling units



Cooling capacity: 92,1 to 179,9 kW
Heating capacity: 69,5 to 148,7 kW

Heating and dehumidification of covered pools

Optimized energy consumption

Electronic control

DESCRIPTION

The range of **Air Master BCP Series** are dehumidification units by cooling circuit, with total condensing heat recovery, specially designed for conventional covered pools and other dehumidification applications. These units have been designed for indoor or outdoor installations. Consult specific applications (marine atmospheres, high concentrations of salts or chemical agents, high temperatures, etc.).

RANGE

Air Master BCP: 3 cooling circuits, 3 compressors, 7 models:
• 320 / 360 / 400 / 440 / 480 / 555 / 610

OPERATING LIMITS

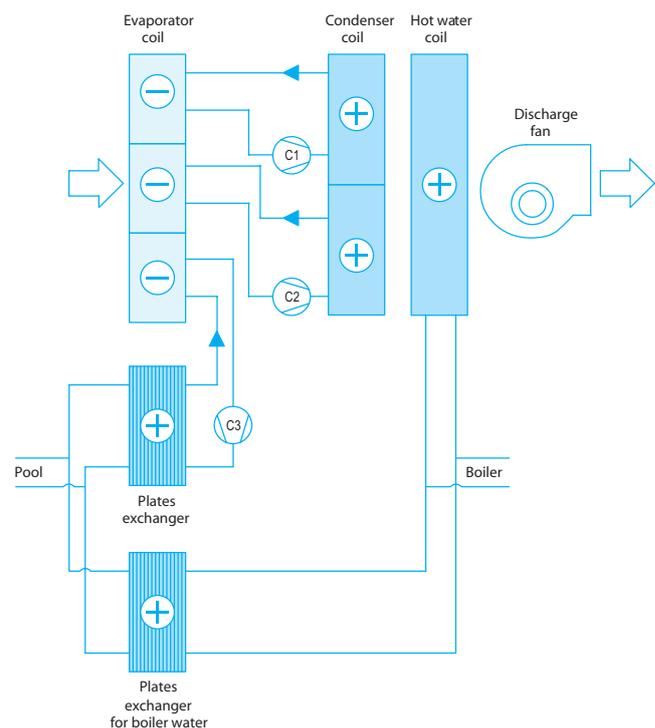
Air inlet dry temperature

Maximum: 35°C (65% RH - 29°C WB)
Minimum: 18°C (90% RH - 17°C WB)

Condenser water inlet temperature

Maximum: 50°C
Minimum: 20°C

PRINCIPLE SCHEMES



UNITS COMPOSITION

Standard equipment

- Sandwich-panel casing made up in galvanized steel plate of 1 mm covered with polyester paint outside and inside, with glass fiber insulation of 25 mm.
- Support frame and hinged doors to access to the sections of the unit.
- Panels and doors with rubber joints to ensure watertightness.
- Sheet butt-strap between modules for outdoor installation.

Internal air circuit

- G3 filter renewable mounted on frame.
- Direct expansion chiller coil with copper tubes and aluminium fins, with polyurethane coating.
- Condenser coil with copper tubes and aluminium fins, with polyurethane protection (air condenser) and of welded plates (water condenser).
- Stainless steel condensates drain pan with drainage outlet. This pan is inclined towards the drainage outlet so that the water does not stagnate in the pan, avoiding sanitary problems.
- Centrifugal fan of galvanized plate driven by belts and pulleys. Kit mounted over anti-vibratory supports and attached to the panel by means of flexible pipe.
- Air by-pass damper, with manual fit.

Cooling circuit

- Unit of three cooling circuits:
 - All circuits participate in the air dehumidification when evaporating on coil.
 - One of the circuits is condensed over a special SMO-254 welded with copper, filled with pool water, recovering part of the energy from the evaporation process.
 - The other two circuits condensate over an air coil located at the evaporator air outlet, heating the cold and dry air, before discharge over the optional hot water coil.
- Three Scroll hermetic compressors with heat insulation, motor temperature integral protection, mounted over anti-vibratory supports.
- Thermostatic expansion valve with external equalization.
- Antiacid dryer filter.

OPTIONS

- Copper tubes and copper fins coils.
- 1 or 2 stages electrical heaters with built-in control.
- Hot water coil for post-heating with three ways proportional valve, with polyurethane coating or in copper-copper.
- Plates exchanger (AISI 316L Steel) and joints (Nitrile) to reach the operating conditions and maintain the vessel temperature, by three ways proportional valve with control depending on the vessel water temperature.
 - * Optionally Titanium plates.
 - * Optionally Butilum joints.

Protections

- High and low pressure pressostats.
- Main door switch.
- Protection fuses of the compressor(s) and motorfan(s) power supply.
- Control circuit automatic switch.
- Temperature limit thermostat at the inlet of the dehumidification coil.
- Compressor anti-short-cycle timer.
- Double access door to the fan.

Electrical panel

- Complete electrical panel, totally wired.
- General ground plug.
- Compressor(s) and motorfan(s) contactors.

GESCLIMA PRO electronic control

GESCLIMA PRO electronic control by microprocessor composed by main board (CPU) and user terminal (pGD control), with the following functions:

- Dehumidification control.
- Temperature control (optional) (with hot water coil and/or plates exchanger of boiler water).
- Anti-short-cycle timings.
- Water circuit pump control.
- Selection of configuration and operating parameters.
- Failures diagnosis and general alarm.

Optional functions:

- Enthalpic free-cooling and control of external air gates minimum opening.
- Optional electrical heaters control.
- Proportional control of hot water coil.
- Control of plates exchanger of boiler water (optional).
- Air flow control.
- Fouled filters detection.
- Fire thermostat.
- Daily and weekly scheduling.
- Connection to a building management system by PC with Carel, Modbus or LonWorks communication protocol, for managing and control of up to 200 units.

- Fouled filters differential pressostat.
- High flow in discharge and return of air circuit.
- G4 and F7 filters.
- Manual damper for ext. air intake.
- Mixing box of 2 dampers, with motorized dampers
- Mixing box of 3 dampers, with motorized dampers and centrifugal return fan.
- Flexible connections of the hot water coil (except connections with flange).

TECHNICAL CHARACTERISTICS

Air Master BCP		320	360	400	440	480	555	610	
Air circuit	Dehumidification capacity ① (kg/h)	66,5	77,8	82,8	93,1	100,0	116,2	126,5	
	Heating capacity (kW)	69,5	85,5	94,0	111,9	109,7	124,2	148,7	
	Cooling capacity ② (kW)	92,1	109,8	115,0	132,2	138,4	160,0	179,9	
	Power input ③ (kW)	22,6	26,3	29,3	31,2	33,1	36,9	45,0	
	Nominal air flow (m³/h)	16.000	18.000	20.000	22.000	24.000	27.775	30.000	
	Avail. static press. (mm.W.G.)	19,1	17,5	19,7	16,6	17,2	16,5	18,8	
	Fan type/ Number	Centrifugal / 1							
	Power (kW)	5,5	5,5	7,5	7,5	7,5	7,5	11	
Air circuit of high flow (optional)	Nominal air flow (m³/h)	24.000	27.000	30.000	33.000	36.000	41.625	43.000	
	Avail. static press. (mm.W.G.)	16,9	21,9	18,9	15,8	18,2	17,4	19,4	
	Fan type/ Number	Centrifugal / 1							
	Power (kW)	7,5	11	11	11	11	15	18,5	
Water condenser	Heating capacity ④ (kW)	39,7	43,1	42,8	44,0	54,2	65,1	65,2	
	Nominal water flow(m³/h)	6,8	7,4	7,4	7,6	9,3	11,2	11,2	
	Pressure drop (m.W.G.)	0,6	0,8	0,8	0,7	0,8	0,7	0,8	
	Hydraulic connections	DN-50 Ø 1 1/2"					DN-63 Ø 2"		
Hot water coil (optional)	Heating capacity ④ (kW)	130,2	138,4	145,1	165,3	179,3	211,3	216,7	
	Nominal water flow (m³/h)	6,8	7,2	7,5	8,6	9,4	11	11,3	
	Pressure drop (m.W.G.)	1,6	1,8	1,2	1,2	1,4	1,7	1,6	
	Hydraulic connections	2"							
Plates exchanger for boiler water (optional)	Heating capacity ⑤ (kW)	200		350			500		
	Flow (17°C fall) (m³/h)	10,6		17,7			25,3		
	Pressure drop (m.W.G.) (pool side and boiler side)	0,9		0,8			0,8		
	Threaded hydraulic connections	2"		2 1/2"					
Compressors	Type	Scroll							
	Nº compressors / Nº stages	3 / 3							
	Nº air circuits/ recovery	2 / 1							
	Oil volume (l)	3,3 + 1,7 / 3,3	3,3 + 3,3 / 3,3	4,0 + 3,3 / 3,3	4,0 + 4,0 / 3,3	4,0 + 4,0 / 4,0	6,2 + 6,2 / 6,2	8,0 + 6,2 / 6,2	
Power supply	3 Hilos + Tierra + Neutro								
Maximum power input	400 V / III ph / 50 Hz (A)	87,1	99,1	102,2	102,2	102,2	120,2	144,5	
	Type	R-407c							
Refrigerant	Climate warming potential (CWP) ⑥	1652,5							
	Load (kg)	18,1	23,2	23,6	28,2	28,2	33,5	34,3	
	Length (mm)	4.640 (2.685 + 1.775)							
Dimensions	Width (mm)	2.204							
	Height (mm)	1.603		1.822			2.138		
	Weight (kg)	2.690	2.865	2.940	3.360	3.385	3.950	4.050	
Condensates draining Ø	1 1/4"								

① Unit cooling dehumidification capacity. For unit selection, it should be taken into account the dehumidification which provides fresh air of ventilation (UNE 100011).

② Cooling capacity for air inlet temperature conditions of 28°C and 65% RH

③ Total power input by compressor and motorfans under nominal conditions.

④ Heating capacity for recovery circuit water 28 / 33°C.

⑤ Water from boiler for hot water coil 82 / 65°C.

⑥ Climate warming potential of one kg of greenhouse-effect fluored gas relative to one kilogram of carbon dioxide over a period of 100 years.



RETURN FAN TECHNICAL CHARACTERISTICS (OPTIONAL)

Air Master BCP	320	360	400	440	480	555	610
Nominal flow							
Avail. static pressure (mm.W.G.)	14,7	13,9	15,7	14,4	14,4	16	14,2
Fan type / Number	Centrifugal / 1						
Power (kW)	3	4	3	3	3	4	4
High flow (optional)							
Avail. static pressure (mm.W.G.)	12,7	16,0	10,5	13,5	9,8	20,8	25,1
Fan type / Number	Centrifugal / 1						
Power (kW)	5,5	7,5	7,5	7,5	7,5	11	11

NIVEAUX SONORES dB(A)

■ Sound power level

Sound power level at the discharge of fan and at the intake of return fan (optional), to take into account for the silencer calculation:

Air Master BCP		320	360	400	440	480	555	610
Nominal flow								
Discharge fan	dB(A)	81,6	81,5	82,5	81,8	82,6	81,6	84,2
Return fan(optional)	dB(A)	86,4	89,5	79,1	76,4	78,3	77,5	78,8
High flow (optional)								
Discharge fan	dB(A)	85,3	87,8	86,4	84,4	86,3	88,4	89,4
Return fan(optional)	dB(A)	83,3	86,3	88,7	85,0	87,0	86,4	87,3

■ Sound pressure level

Measure conditions: in free field, measured at 5 meters of distance, directivity 2 and at 1,5 meters from floor.

Air Master BCP		320	360	400	440	480	555	610
Standard unit	dB(A)	70,4	70,2	72,7	72,5	72,3	72,6	74,8

NOTE: The sound pressure level depends on the installation conditions and, therefore, it is given only as an approximate guide.

MAXIMUM CURRENTS (A)

Air Master BCP		320	360	400	440	480	555	610
Compressors	400 V / III ph / 50 Hz	75	87	87	87	87	105	120
	Nominal flow	11,6	11,6	14,7	14,7	14,7	14,7	22
Discharge fan (400 V / III ph / 50 Hz)	With bags filter (optional)	14,7	14,7	14,7	22	22	22	29
	High flow (optional)	14,7	22	22	22	22	29	37
	High flow with bags filter (optional)	22	29	29	29	29	37	42
Return fan (400 V / III ph / 50 Hz)	Nominal flow (optional)	6,9	9	6,9	6,9	6,9	9	9
	With bags filter (optional)	6,9	9	6,9	6,9	6,9	9	9
	High flow (optional)	11,6	14,7	14,7	14,7	14,7	22	22
	High flow with bags filter (optional)	11,6	14,7	14,7	14,7	14,7	22	22



Pool air handling units

WEIGHTS BY MODULES (KG)

Air Master BCP		320	360	400	440	480	555	610
Nominal Flow								
<i>Standard equipment</i>	Discharge module	725	735	775	885	885	1.040	1.070
	Cooling module	1.965	2.130	2.165	2.475	2.500	2.910	2.980
<i>Optional modules</i>	Bags filter module	795	795	795	900	900	1.055	1.055
	Mixing box module 2 dampers	840	840	840	955	955	1.125	1.125
	Mixing box module 3 lateral dampers	780	780	780	875	875	1.025	1.025
	Mixing box module 3 upper dampers	945	945	945	1.070	1.070	1.250	1.250
<i>Other optionals</i>	Return fan module	810	815	855	980	985	1.160	1.160
	Plates exchanger for boiler water	220	220	220	240	240	255	255
	Hot water coils	120	120	120	130	130	150	150
High flow (optional)								
<i>Standard equipment</i>	Discharge module	774	803	824	940	940	1.089	1.213
	Cooling module	1.962	2.127	2.161	2.473	2.495	2.909	2.980
<i>Optional modules</i>	Bags filter module	795	795	795	900	900	1.055	1.055
	Mixing box module 2 dampers	840	840	840	955	955	1.125	1.125
	Mixing box module 3 lateral dampers	778	778	778	874	874	1.021	1.021
	Mixing box module 3 upper dampers	938	938	938	1.063	1.063	1.244	1.244
<i>Other optionals</i>	Return fan module	869	878	878	1.004	1.004	1.211	1.211
	Plates exchanger for boiler water	220	220	220	240	240	255	255
	Hot water coils	120	120	120	130	130	150	150

HYDRAULIC CONNECTIONS

Pipe diameter	Hot boiler water circuit			Pool water circuit	
	With hot water coil	With plates exchanger	With plates exchanger + hot water coil	With heat recovery	With heat recovery + plates exchanger
320 / 360 / 400	2 1/8" Cu threaded	2 1/8" Cu threaded	2 5/8" Cu threaded	DN-50 PVC threaded	DN-63 PVC threaded
440 / 480	2 1/8" Cu threaded	2 5/8" Cu threaded	3" St flange	DN-50 PVC threaded	DN-75 PVC threaded
555 / 610	2 1/8" Cu threaded	2 5/8" Cu threaded	3" St flange	DN-63 PVC threaded	DN-90 PVC threaded

ELECTRICAL HEATER (OPTIONAL)

Available capacities

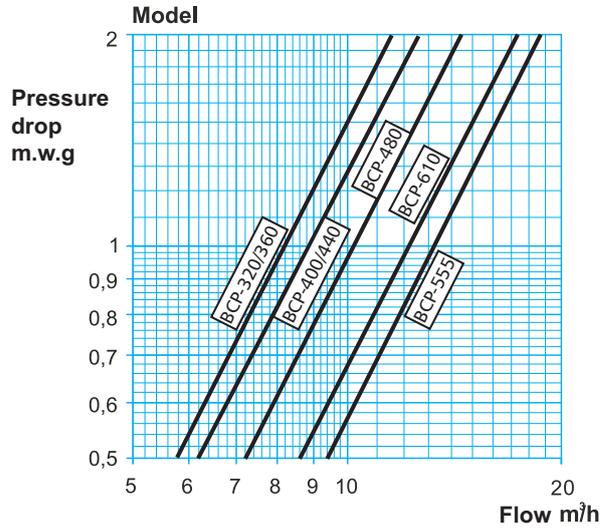
Assembly inside the unit.

Voltage	400 V / III ph / 50 Hz								
Power (kW)	6	9	12	15	18	24	27	36	54
Current (A)	8,7	13,0	17,3	21,7	26,0	34,6	39,0	52,0	78,0

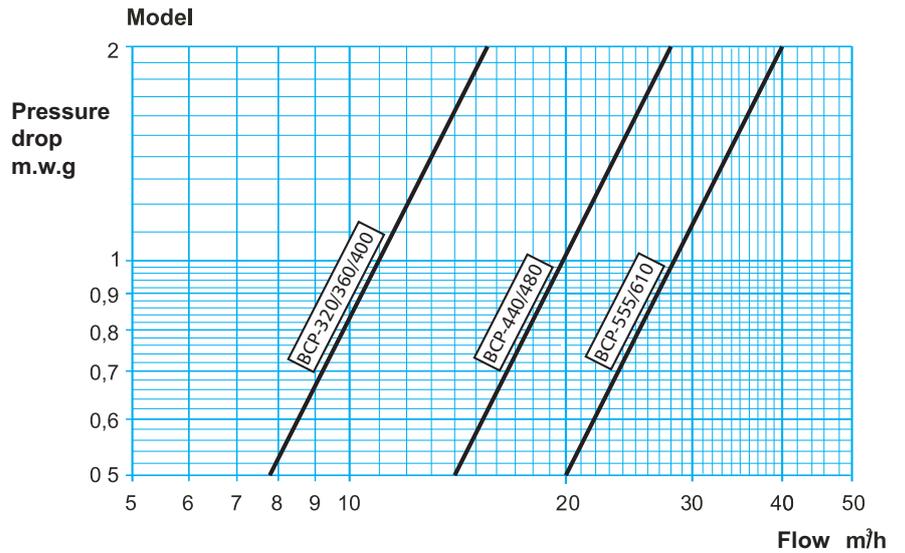


PRESSURE DROPS

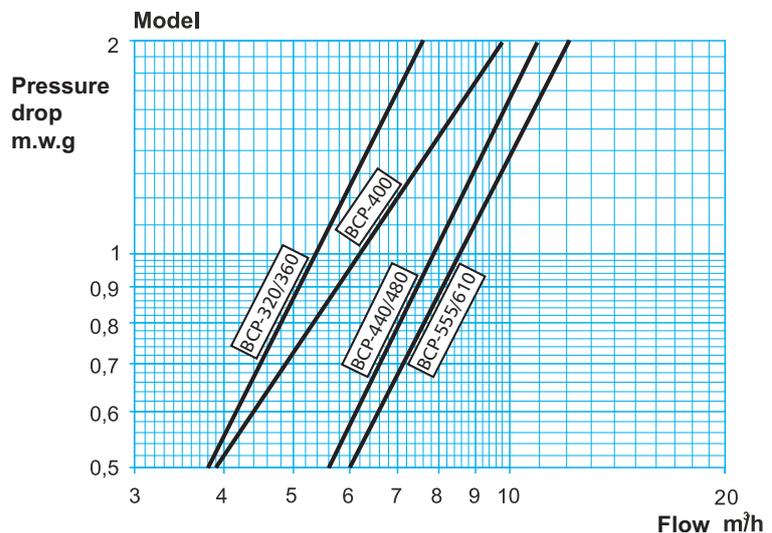
In the water condenser



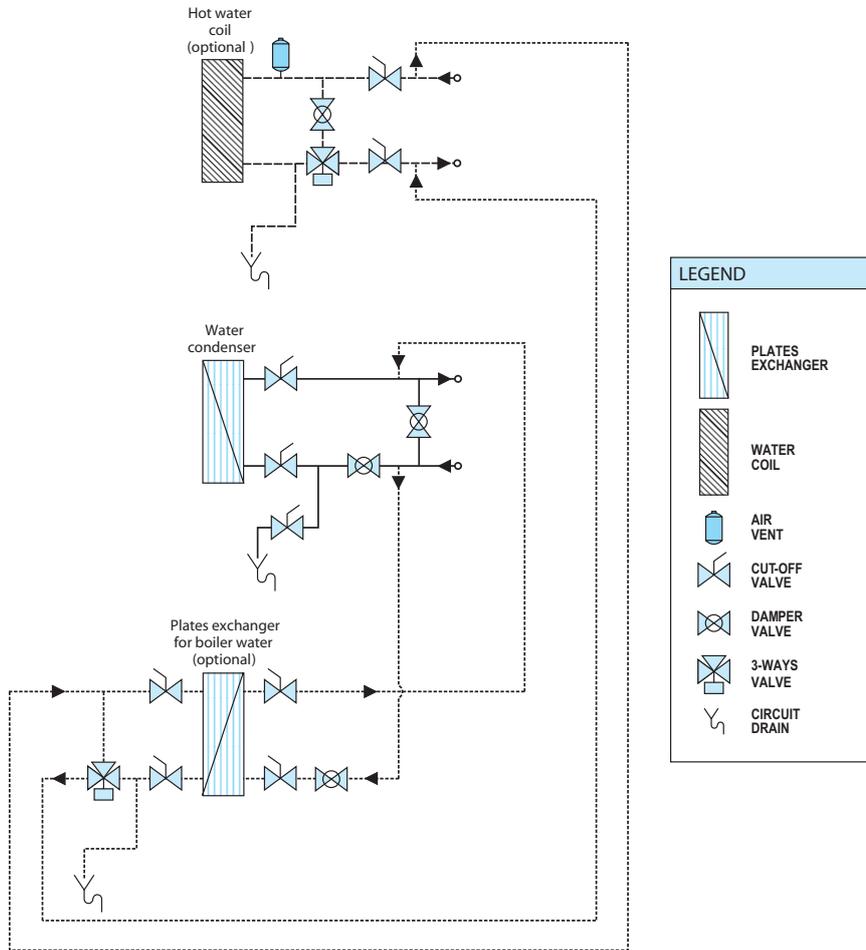
In the plates exchanger for boiler water (optional)



In the hot water coil (optional)



HYDRAULIC CIRCUIT, PRINCIPLE SCHEME



CORROSION RESISTANCE

The plates exchangers of Air Master BCP units are made up of SMO-254 stainless steel, and the material used for the plates welding is pure copper.

On the following table it is shown the water corrosion resistance for these materials with different compositions. Values out of these ranges can suppose corrosion problems in plates exchangers.

NOTE: The values stated are guide values which show variations under particular operating conditions.

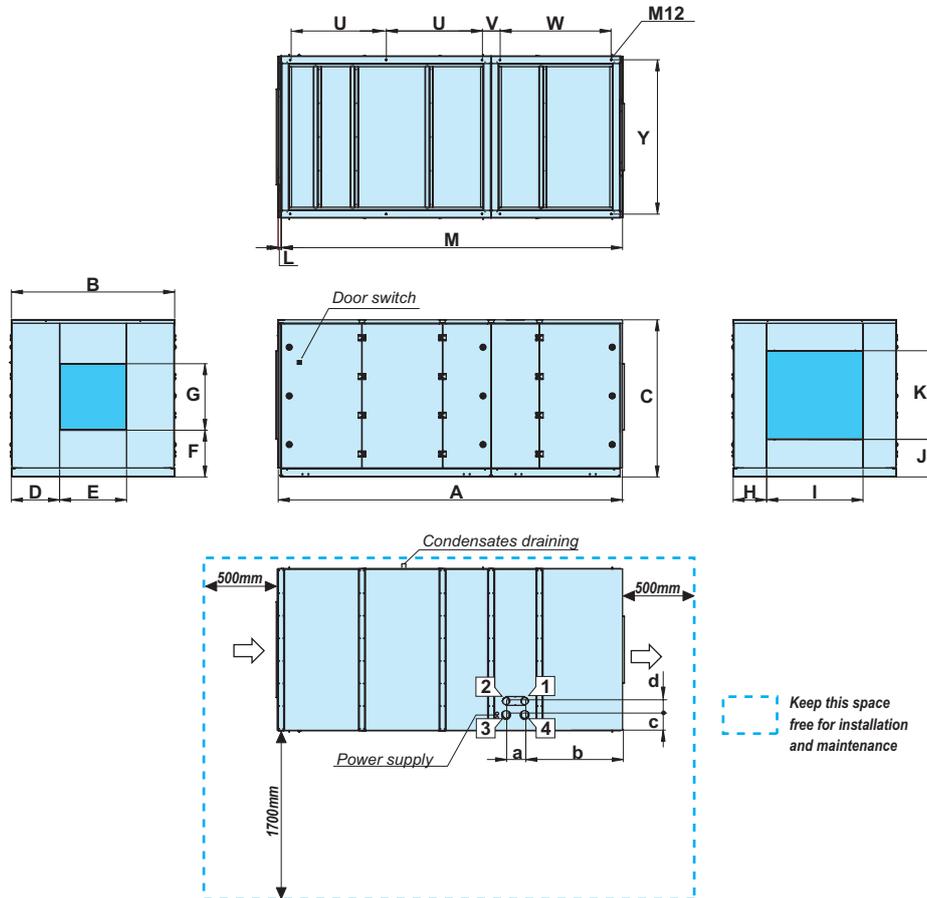
WARNING: If the pool water is introduced directly into the unit water condenser, the addition of chlorine should never be carried out before the inlet to this condenser.

NOTE: Consult Assembly Recommendations included on pag 41 of this manual.

Water contents	Units	Exchangers with copper welding
pH value		7 - 9
Saturation index SI (delta pH value)		-0,2 < 0 < +0,2
Total hardness	°dH	6 - 15
Conductivity	µS/cm	10 ... 500
Filtered substances	mg/l	< 30
Chlorides	mg/l	< 20.000 (upper values: consult)
Free chlorine	mg/l	consult
Hydrogen sulphide	mg/l	< 0,05
Ammonia	mg/l	< 2
Sulphates	mg/l	< 100
Hydrogen carbonate	mg/l	< 300
Hydrogen carbonate / Sulphates	mg/l	> 1
Sulphides	mg/l	< 1
Nitrates	mg/l	< 100
Nitrites	mg/l	< 0,1
Iron	mg/l	< 0,2
Manganese	mg/l	< 0,1
Free carbonic acid	mg/l	< 20

DIMENSIONS SCHEMES

Air Master BCP standard (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	U	V	W	Y
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Nominal flow

320 / 360	4640	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1296	243	1502	2095
400	4640	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1296	243	1502	2095
440 / 480	4640	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1296	243	1502	2095
555 / 610	4640	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1296	243	1502	2095

High flow

320 / 360	4640	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1296	243	1502	2095
400	4640	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1296	243	1502	2095
440 / 480	4640	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1296	243	1502	2095
555 / 610	4640	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1296	243	1502	2095

Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

- 1 Circuit inlet of boiler hot water
- 2 Circuit outlet of boiler hot water
- 3 Circuit inlet of pool water
- 4 Circuit outlet of pool water

Note: See pipe diameters in the hydraulic connections panel

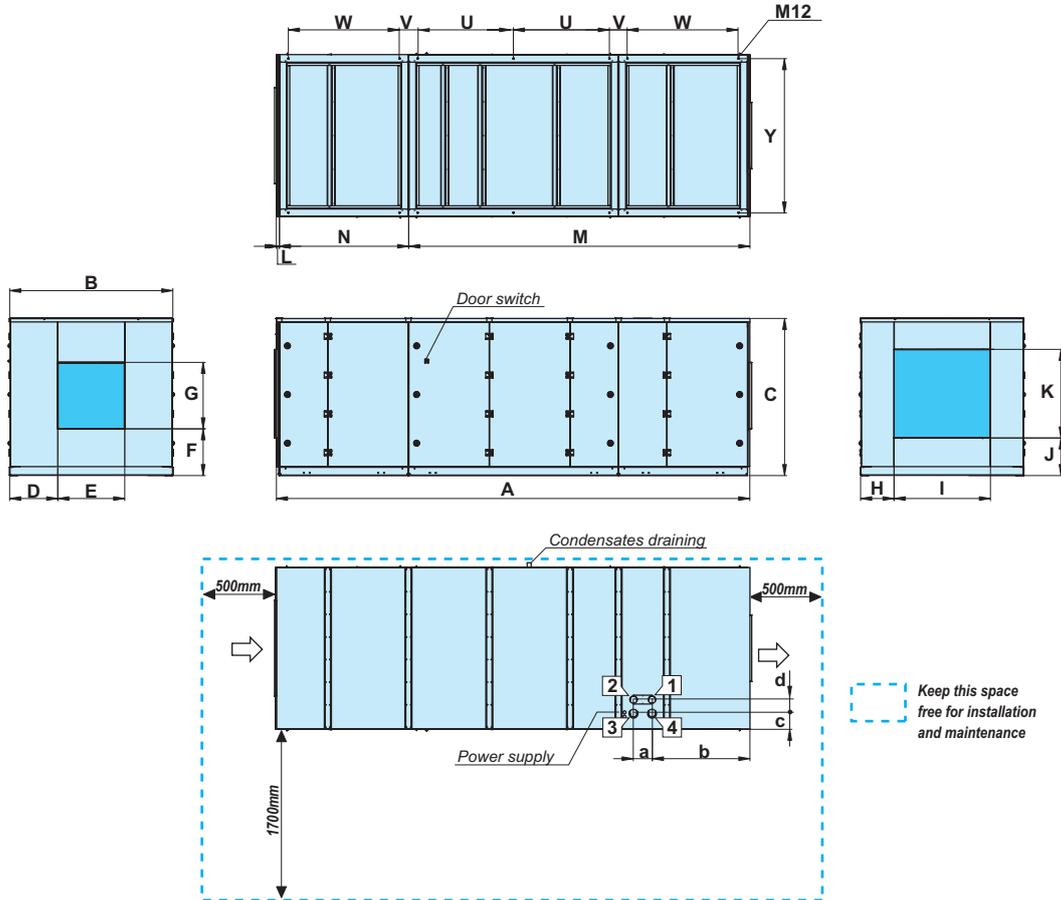
Note: All accesses are on the right, in the air flow sense

Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow



IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.

Air Master BCP with bags filter (optional) (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	U	V	W	Y	
Nominal flow																			
320 / 360	6384	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	1296	243	1502	2095	
400	6384	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	1296	243	1502	2095	
440 / 480	6384	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	1296	243	1502	2095	
555 / 610	6384	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	1296	243	1502	2095	
High flow																			
320 / 360	6384	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	1296	243	1502	2095	
400	6384	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	1296	243	1502	2095	
440 / 480	6384	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1744	1296	243	1502	2095	
555 / 610	6384	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	1296	243	1502	2095	

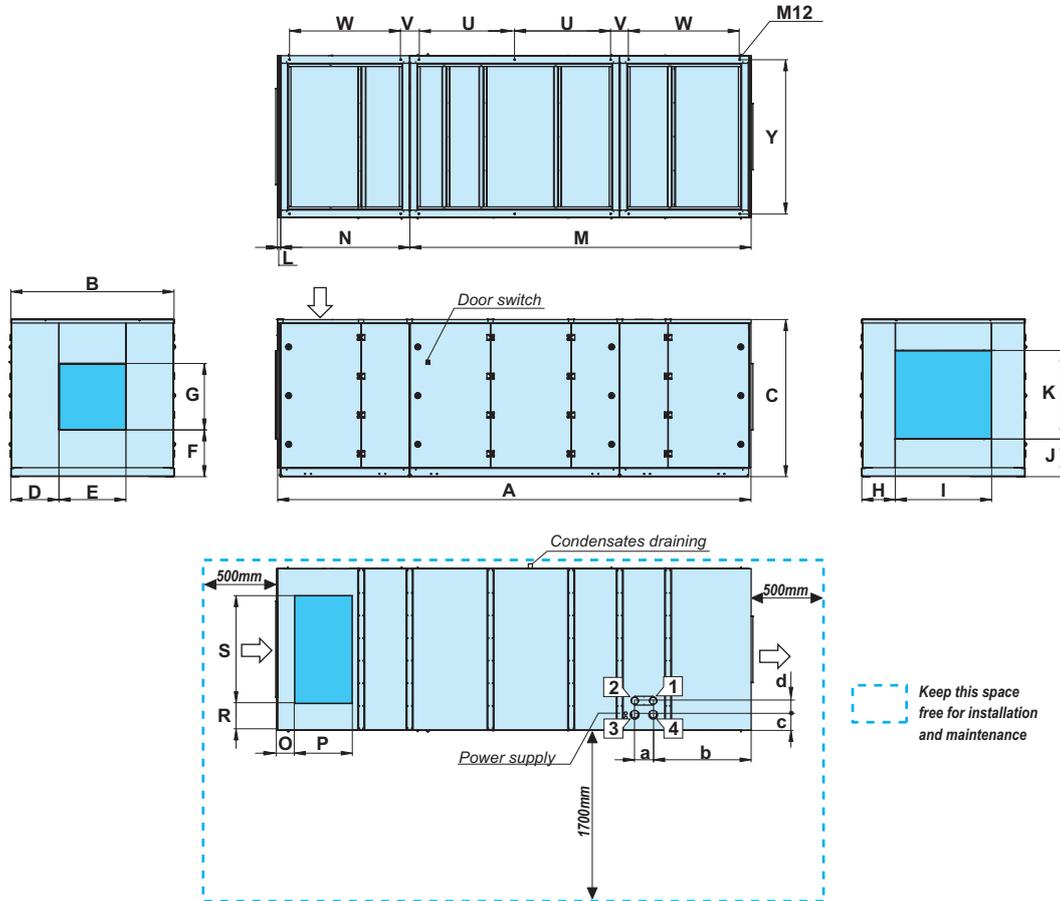
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Note: See pipe diameters in the hydraulic connections panel
 Note: All accesses are on the right, in the air flow sense
 Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow

IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.

Air Master BCP with mixing module of 2 dampers, upper fresh air damper (optional) (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R	S	U	V	W	Y
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Nominal flow

320 / 360	6384	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
400	6384	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
440 / 480	6384	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	134	863	502	1200	1296	243	1502	2095
555 / 610	6384	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	134	863	352	1500	1296	243	1502	2095

High flow

320 / 360	6384	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
400	6384	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
440 / 480	6384	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1744	134	863	502	1200	1296	243	1502	2095
555 / 610	6384	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	134	863	352	1500	1296	243	1502	2095

Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

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Note: See pipe diameters in the hydraulic connections panel

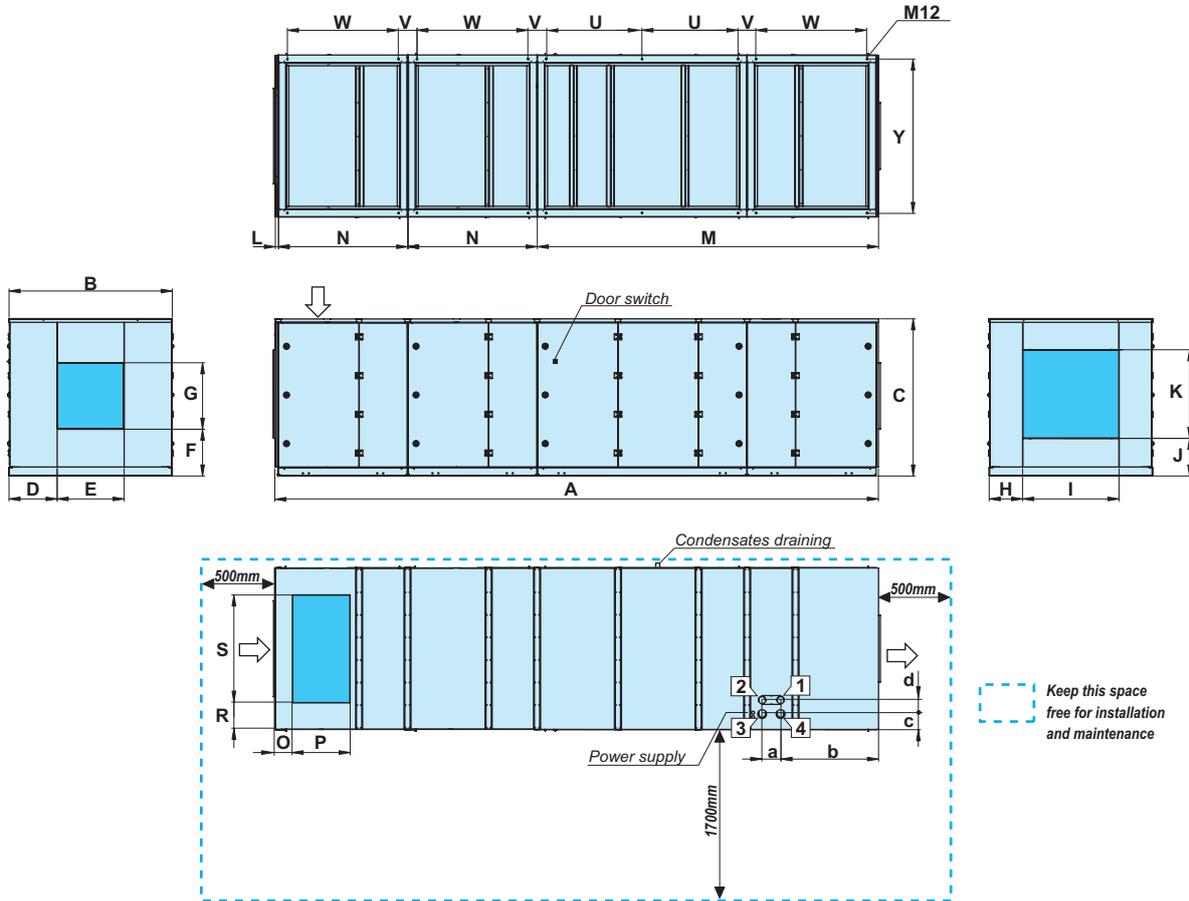
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Air Master BCP with mixing module of 2 dampers, upper fresh air damper and bags filter (optional) (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R	S	U	V	W	Y
Nominal flow																						
320 / 360	8128	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
400	8128	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
440 / 480	8128	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	134	863	502	1200	1296	243	1502	2095
555 / 610	8128	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	134	863	352	1500	1296	243	1502	2095
High flow																						
320 / 360	8128	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
400	8128	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	134	863	502	1200	1296	243	1502	2095
440 / 480	8128	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1744	134	863	502	1200	1296	243	1502	2095
555 / 610	8128	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	134	863	352	1500	1296	243	1502	2095

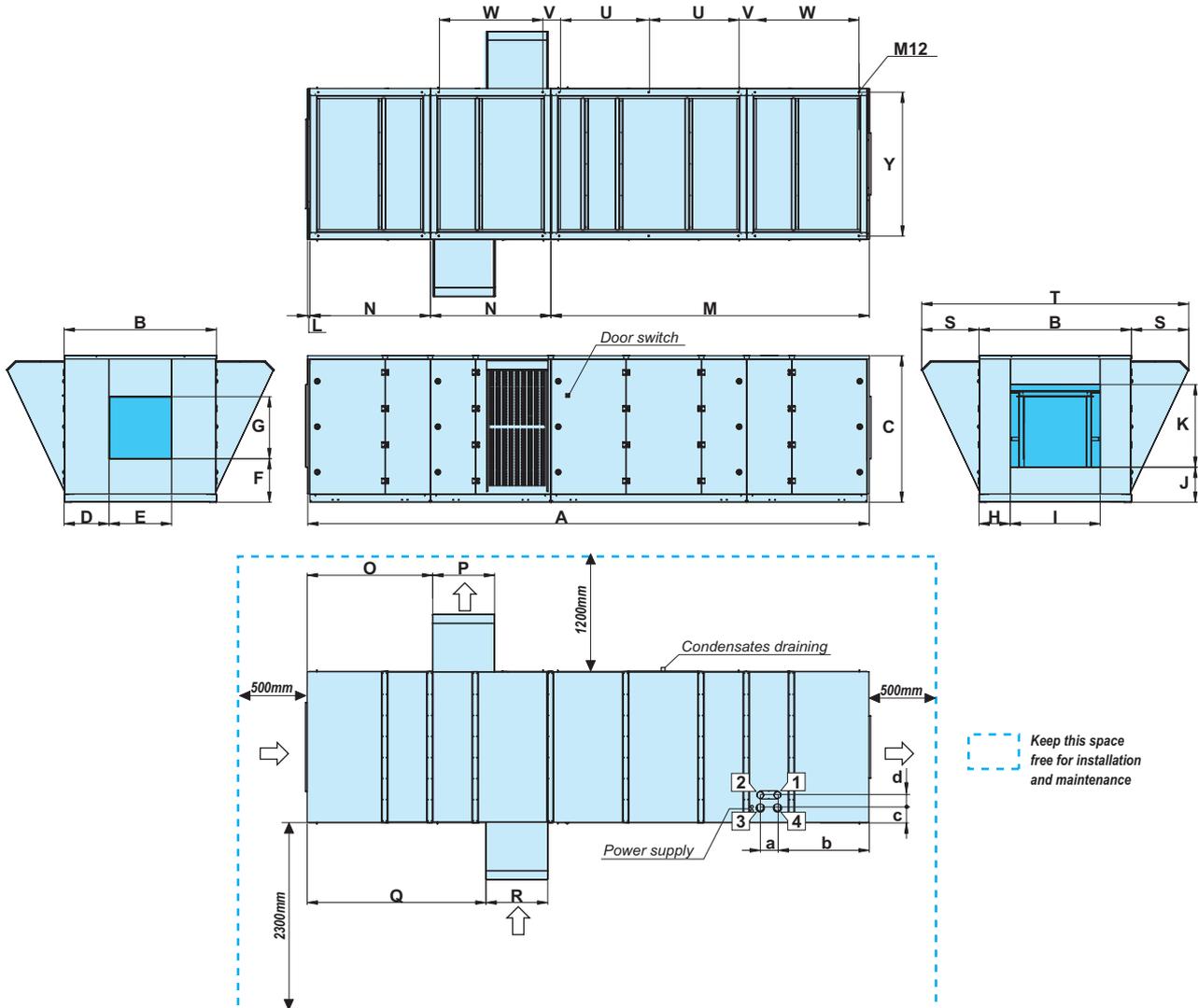
Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

- 1 Circuit inlet of boiler hot water
- 2 Circuit outlet of boiler hot water
- 3 Circuit inlet of pool water
- 4 Circuit outlet of pool water

Note: See pipe diameters in the hydraulic connections panel
 Note: All accesses are on the right, in the air flow sense
 Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow

! IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.

Air Master BCP with return fan, mixing module with lateral dampers (optional) (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Y
Nominal flow																								
320 / 360	8128	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
400	8128	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
440 / 480	8128	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095
555 / 610	8128	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095
High flow																								
320 / 360	8128	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
400	8128	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
440 / 480	8128	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095
555 / 610	8128	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095

Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

- 1 Circuit inlet of boiler hot water
- 2 Circuit outlet of boiler hot water
- 3 Circuit inlet of pool water
- 4 Circuit outlet of pool water

Note: See pipe diameters in the hydraulic connections panel

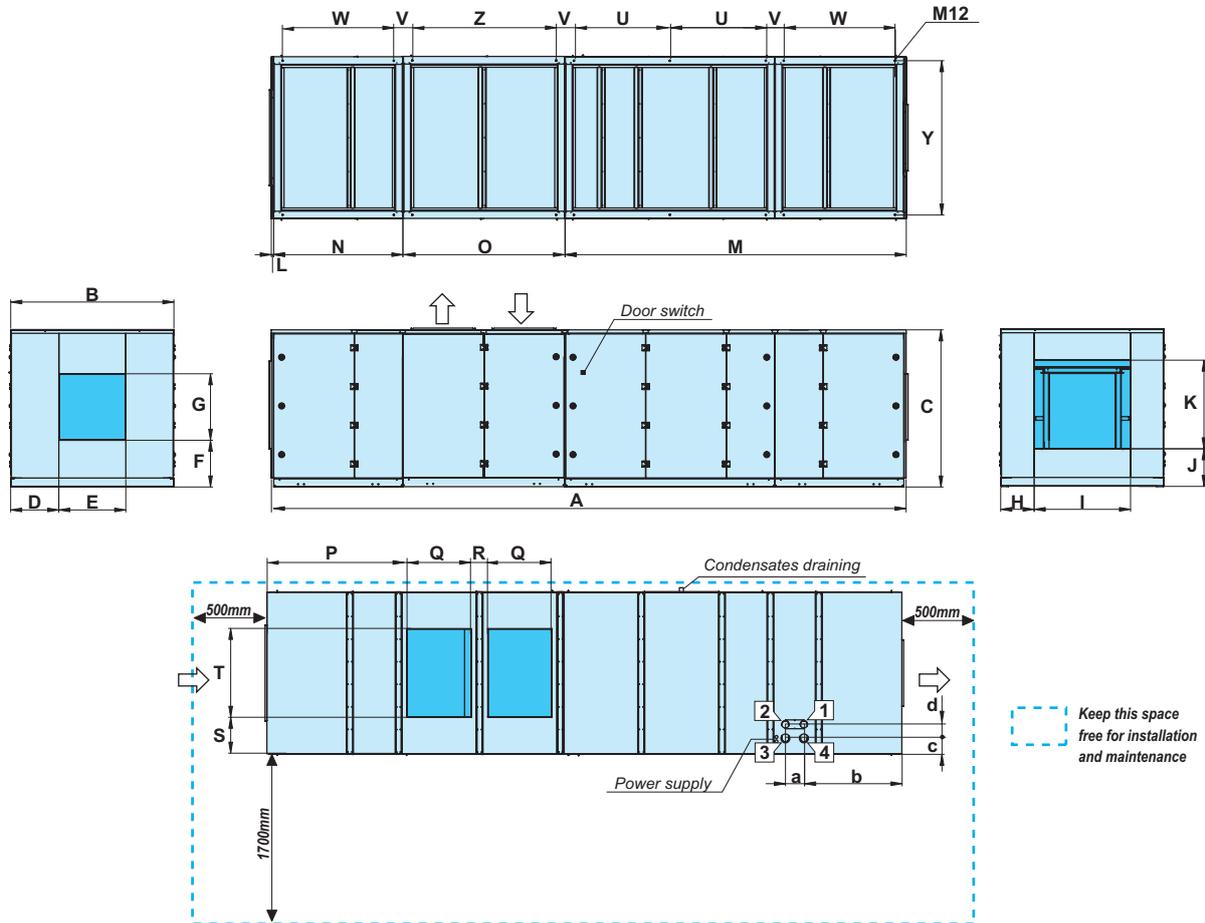
Note: All accesses are on the right, in the air flow sense

Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow



IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.

Air Master BCP with return fan, mixing module with upper dampers (optional) (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Y	Z
----------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Nominal flow

320 / 360	8562	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
400	8562	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
440 / 480	8562	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
555 / 610	8562	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	2178	1890	865	224	502	1500	1296	243	1502	2095	1938

High flow

320 / 360	8562	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
400	8562	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
440 / 480	8562	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
555 / 610	8562	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	2178	1890	865	224	502	1500	1296	243	1502	2095	1938

Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

- 1 Circuit inlet of boiler hot water
- 2 Circuit outlet of boiler hot water
- 3 Circuit inlet of pool water
- 4 Circuit outlet of pool water

Note: See pipe diameters in the hydraulic connections panel

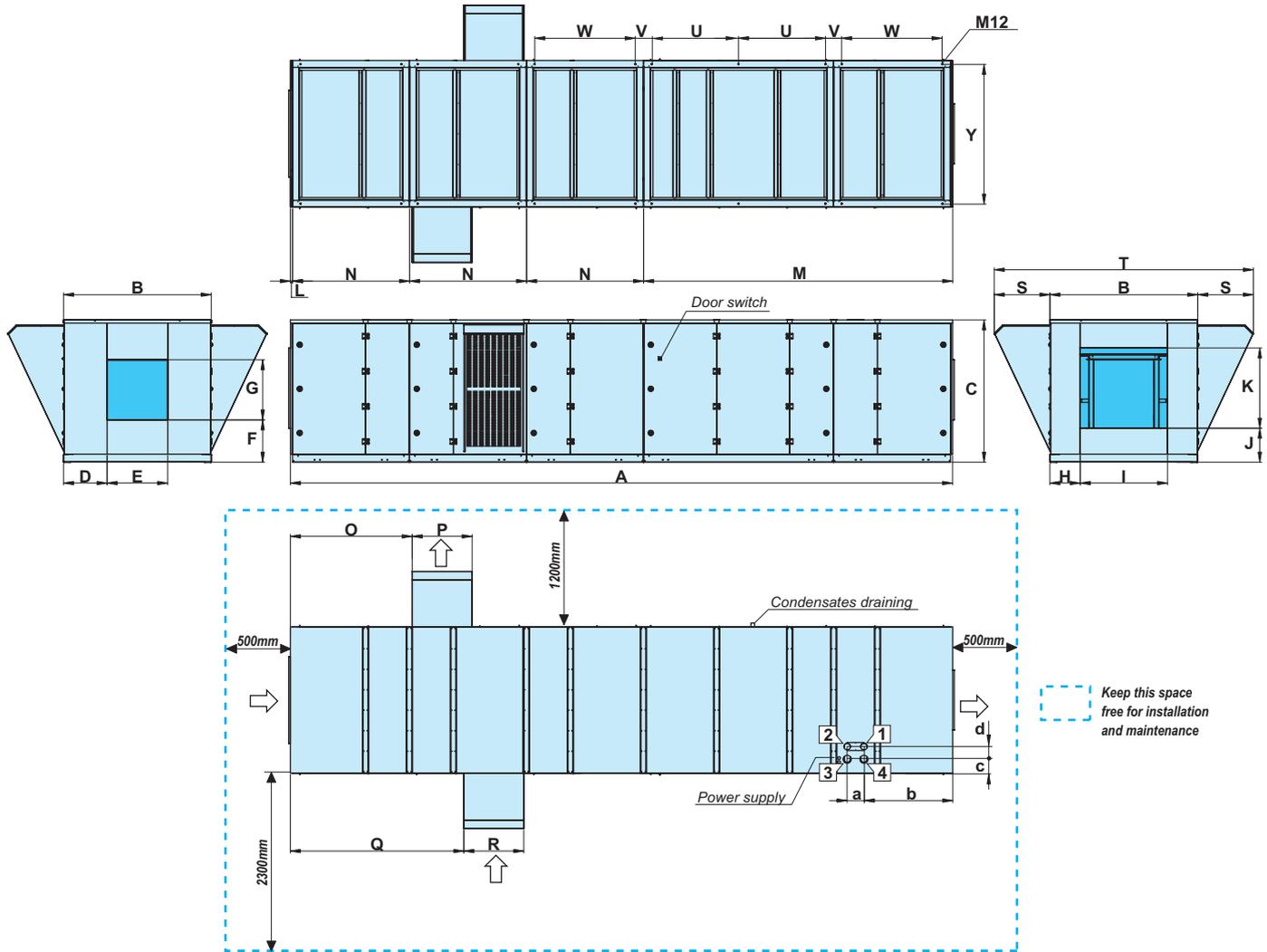
Note: All accesses are on the right, in the air flow sense

Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow



IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.

Air Master BCP, return fan, mixing module with lateral dampers and bags filter (optional) (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Y
----------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Nominal flow

320 / 360	9872	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
400	9872	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
440 / 480	9872	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095
555 / 610	9872	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095

High flow

320 / 360	9872	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
400	9872	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	1893	794	2624	794	830	3864	1296	243	1502	2095
440 / 480	9872	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095
555 / 610	9872	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	1815	894	2586	894	830	3864	1296	243	1502	2095

Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

- 1 Circuit inlet of boiler hot water
- 2 Circuit outlet of boiler hot water
- 3 Circuit inlet of pool water
- 4 Circuit outlet of pool water

Note: See pipe diameters in the hydraulic connections panel

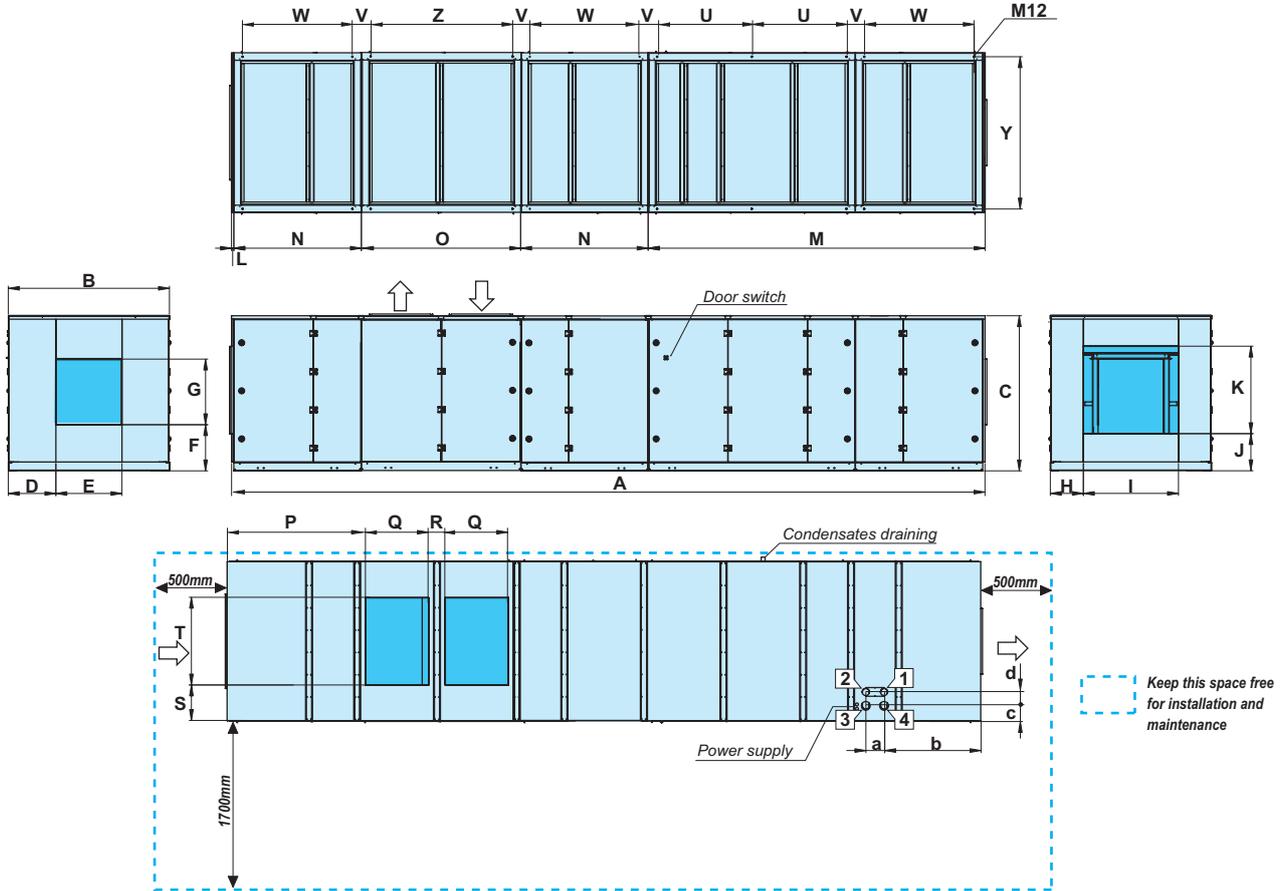
Note: All accesses are on the right, in the air flow sense

Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow



IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.

Air Master BCP with return fan, mixing module with upper dampers and bags filter (optional) (mm)



Air Master BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Y	Z
----------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Nominal flow

320 / 360	10306	2204	1603	821	564	516	483	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
400	10306	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
440 / 480	10306	2204	1822	699	808	596	806	402	1400	514	863	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
555 / 610	10306	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	2178	1890	865	224	502	1500	1296	243	1502	2095	1938

High flow

320 / 360	10306	2204	1603	742	722	557	720	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
400	10306	2204	1603	699	808	596	806	402	1400	508	732	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
440 / 480	10306	2204	1822	650	904	636	806	402	1400	514	863	32	4608	1744	2178	1890	865	224	502	1200	1296	243	1502	2095	1938
555 / 610	10306	2204	2138	650	904	636	904	302	1600	682	863	32	4608	1744	2178	1890	865	224	502	1500	1296	243	1502	2095	1938

Air Master BCP	a	b	c	d
Hydraulic connections	250	1322	212	192

- 1 Circuit inlet of boiler hot water
- 2 Circuit outlet of boiler hot water
- 3 Circuit inlet of pool water
- 4 Circuit outlet of pool water

Note: See pipe diameters in the hydraulic connections panel

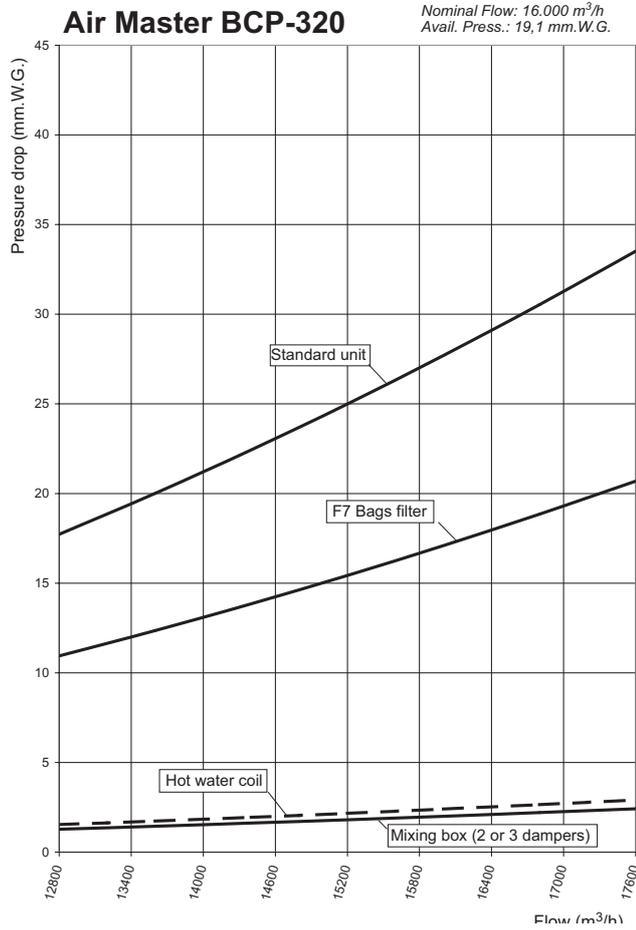
Note: All accesses are on the right, in the air flow sense

Note: It is required to leave a minimum space to access to condensates draining located on the left, in the sense of air flow

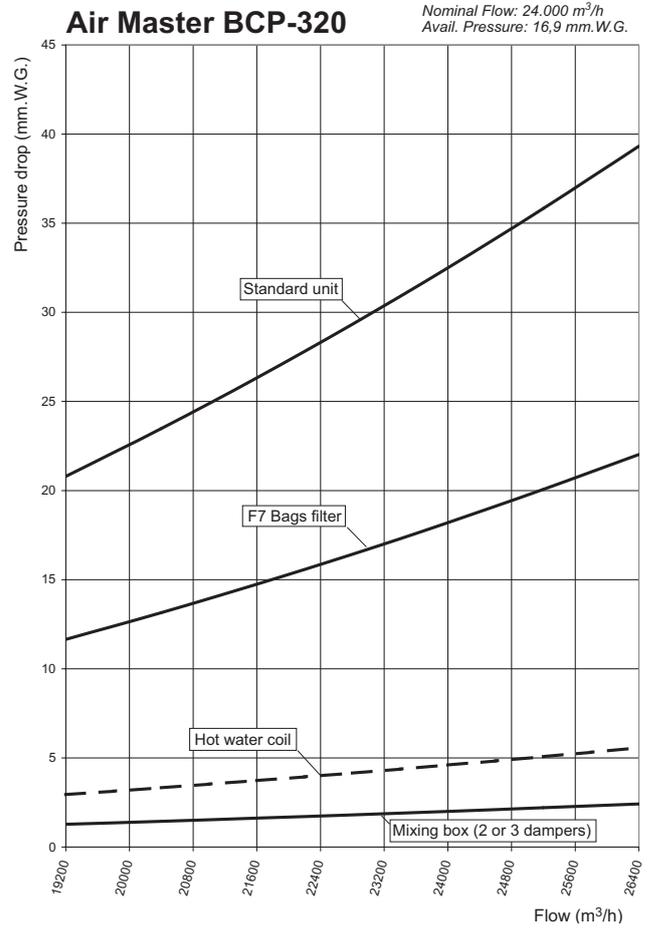
IMPORTANT: For optional assemblies which do not appear in this documentation, consult dimensions.

PRESSURE DROPS

■ Discharge with nominal flow

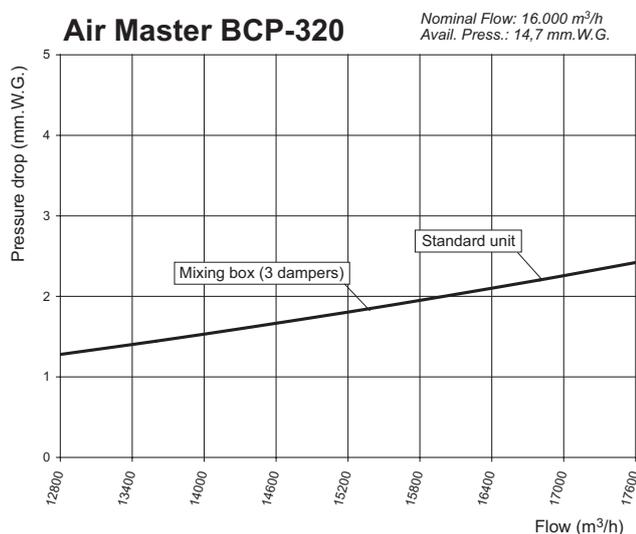


■ Discharge with high flow

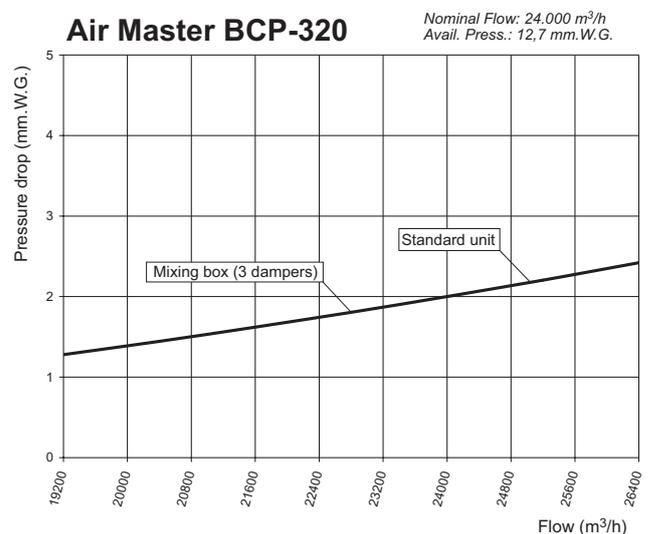


NOTE: The pressure drops in the hot water coil and in gravimetric filters have been considered as drops of the standard unit. If the unit includes some of the other optionals, its corresponding drops should be added to those of the standard unit.

■ Return with nominal flow (optional)



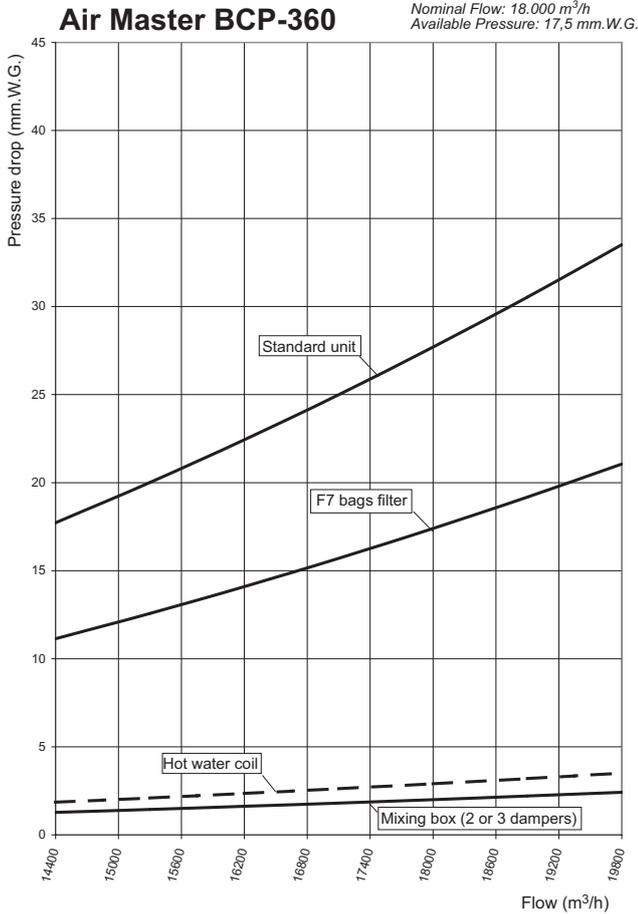
■ Return with high flow (optional)



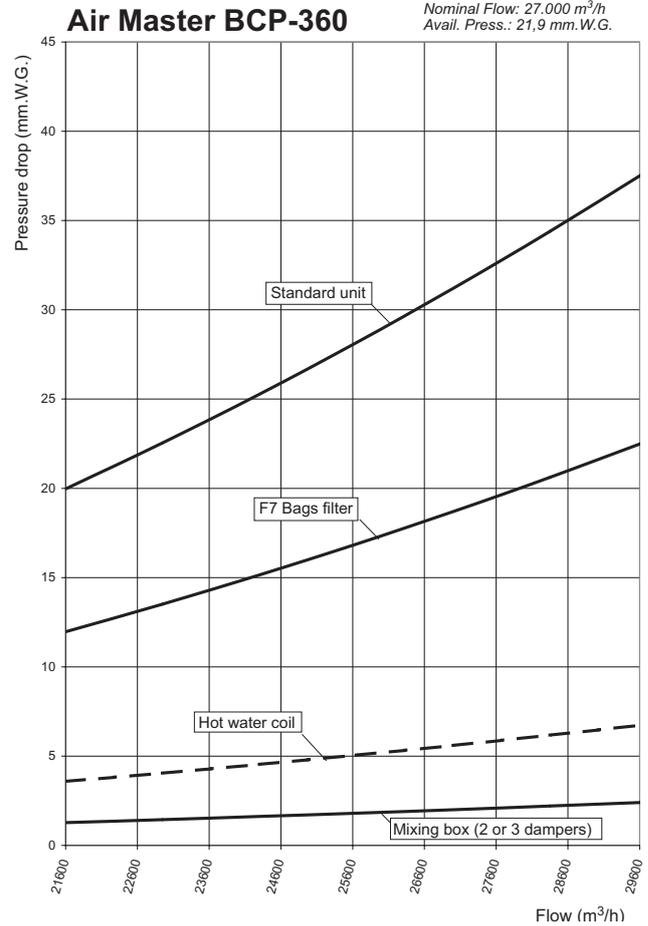


Pool air handling units

■ Discharge with nominal flow

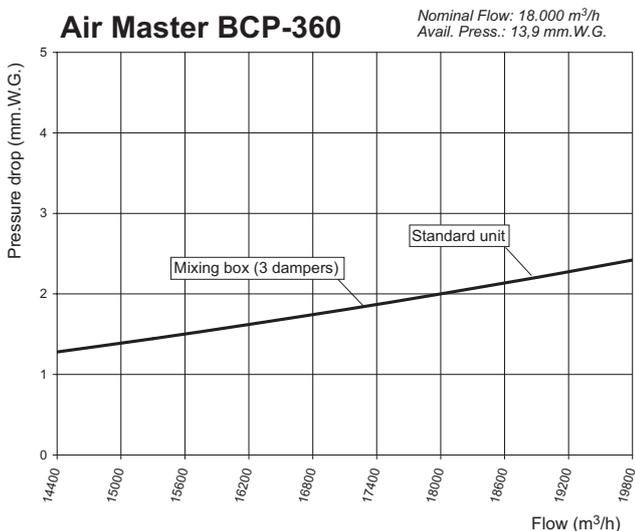


■ Discharge with high flow

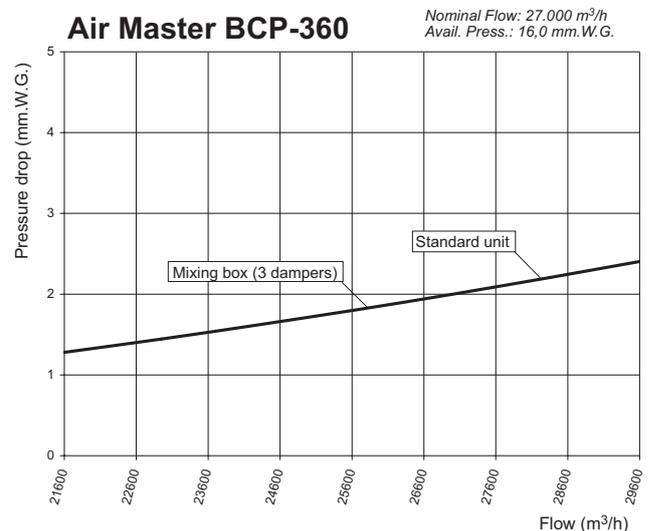


NOTE: The pressure drops in the hot water coil and in gravimetric filters have been considered as drops of the standard unit. If the unit includes some of the other optionals, its corresponding drops should be added to those of the standard unit.

■ Return with nominal flow (optional)

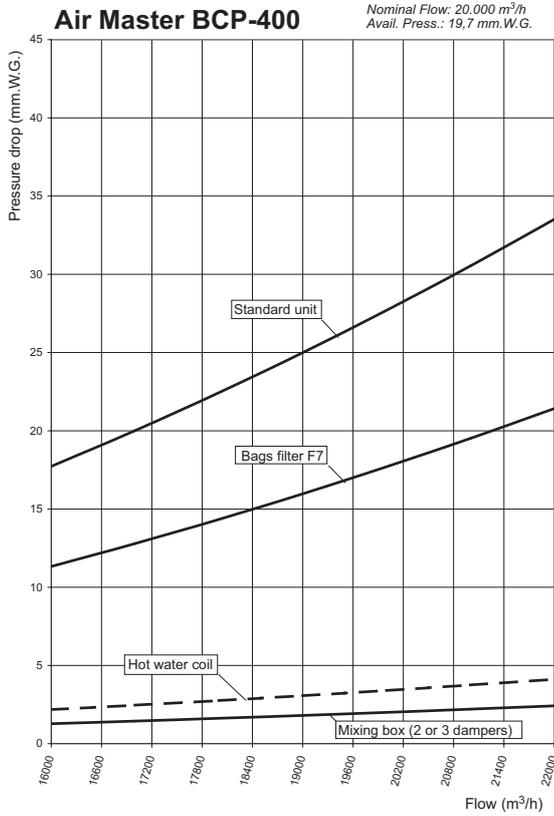


■ Return with high flow (optional)

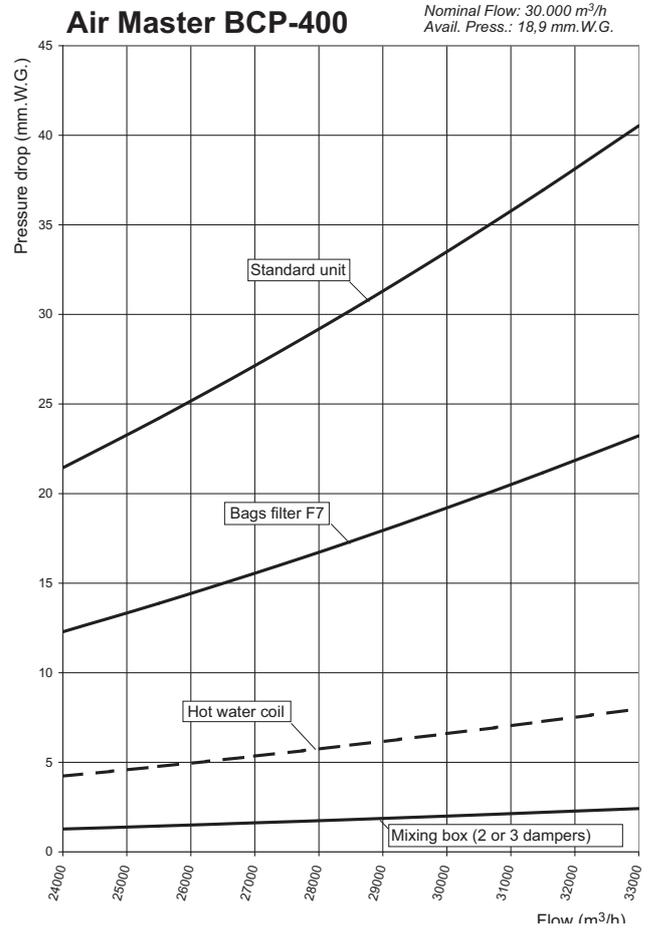




■ Discharge with nominal flow

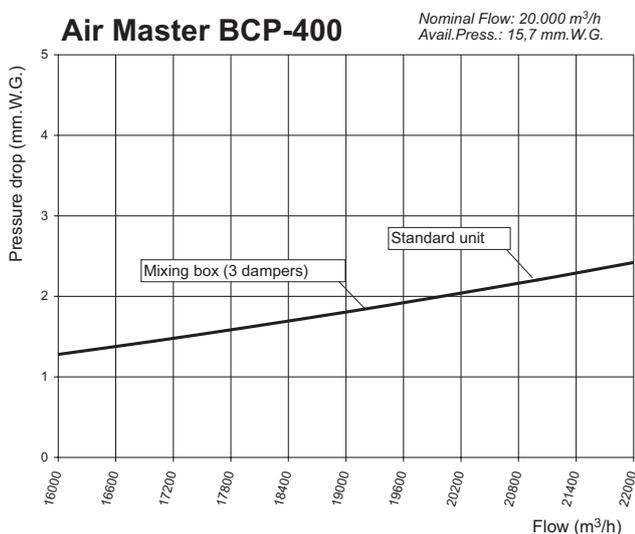


■ Discharge with high flow

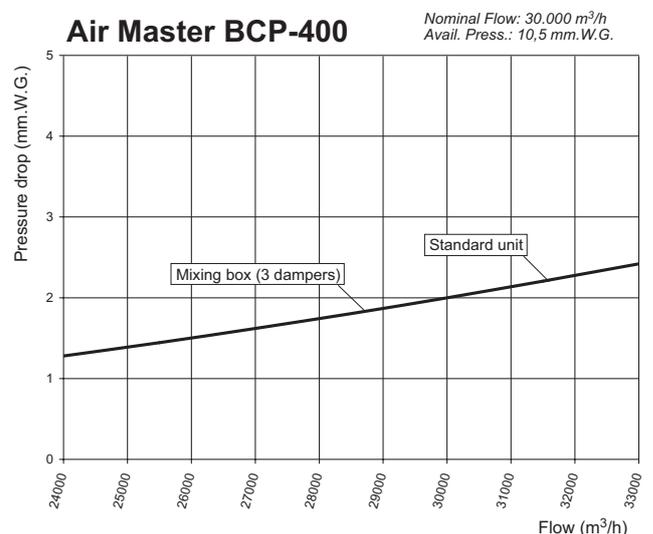


NOTE: The pressure drops in the hot water coil and in gravimetric filters have been considered as drops of the standard unit. If the unit includes some of the other optionals, its corresponding drops should be added to those of the standard unit.

■ Return with nominal flow (optional)



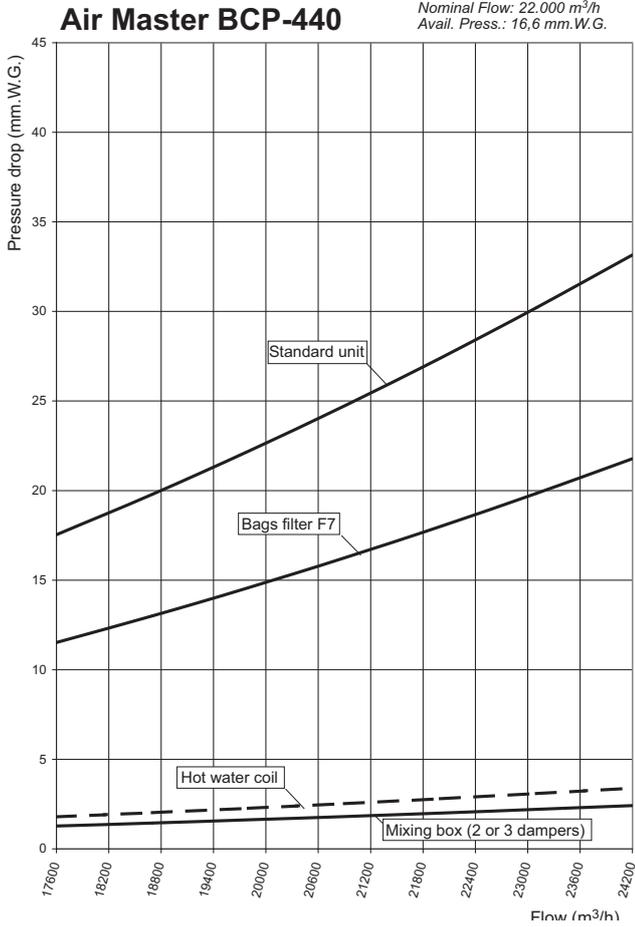
■ Return with high flow (optional)



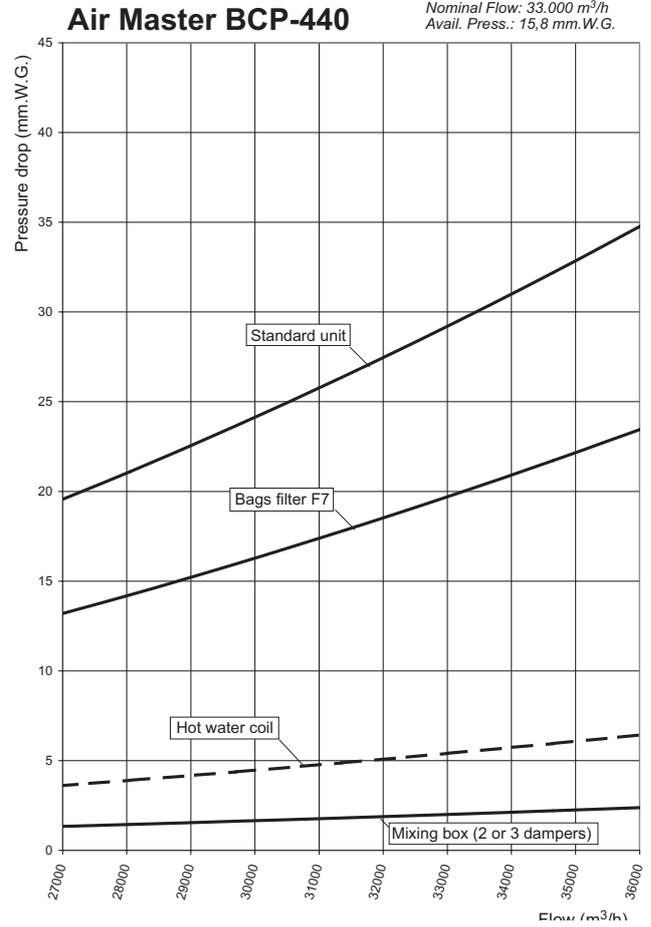


Pool air handling units

■ Discharge with nominal flow

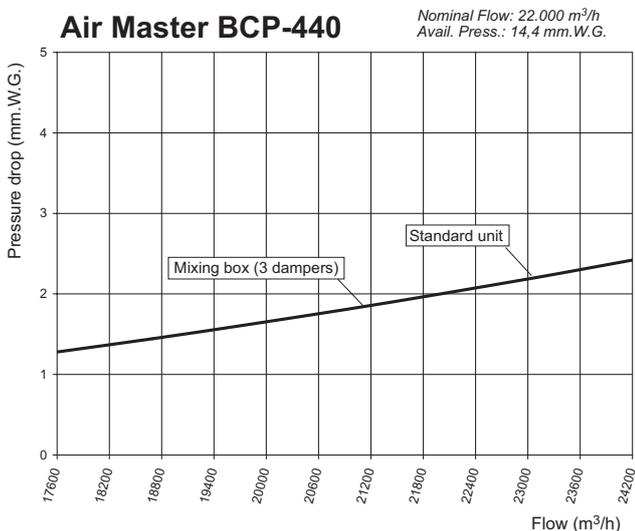


■ Discharge with high flow

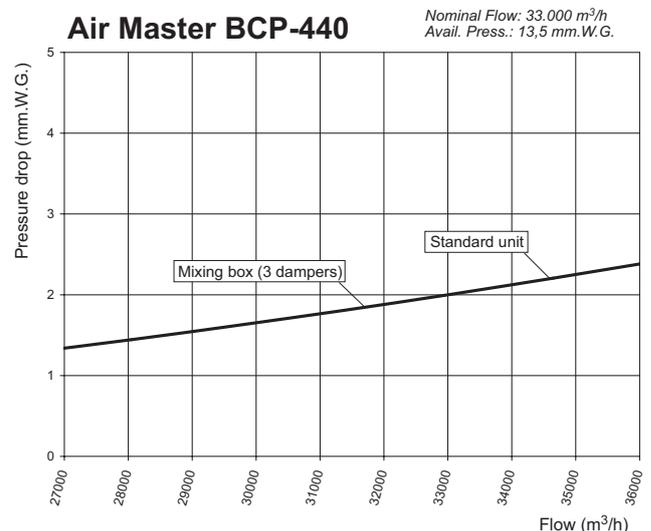


NOTE: The pressure drops in the hot water coil and in gravimetric filters have been considered as drops of the standard unit. If the unit includes some of the other optionals, its corresponding drops should be added to those of the standard unit.

■ Return with nominal flow (optional)

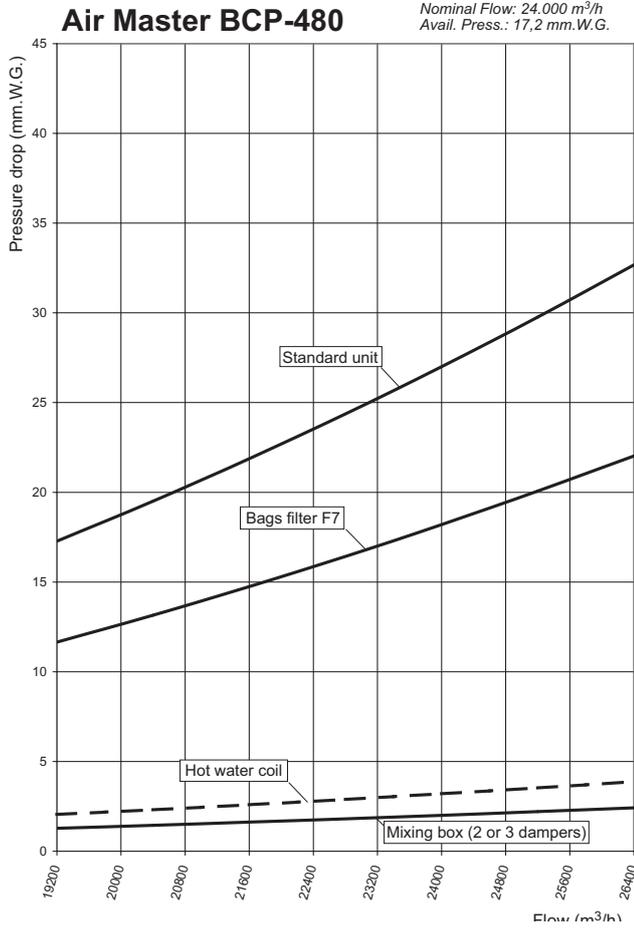


■ Return with high flow (optional)

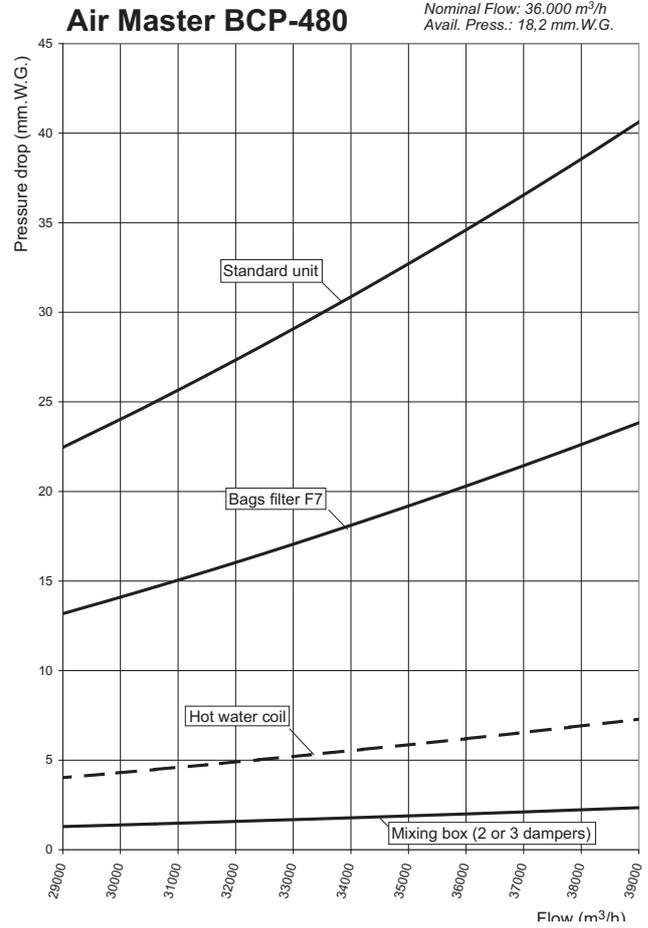




■ Discharge with nominal flow

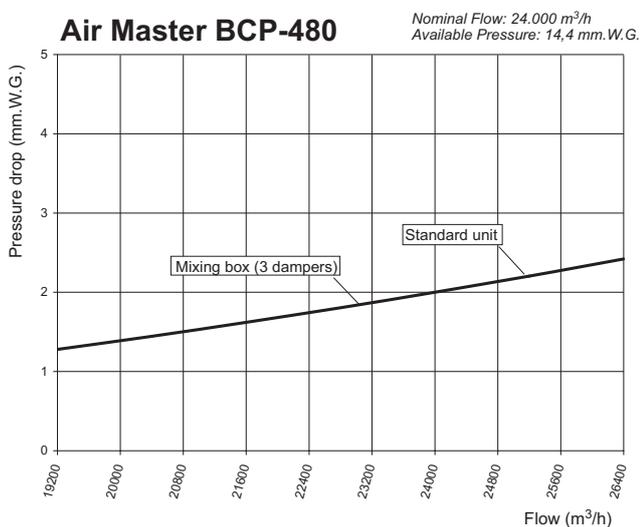


■ Discharge with high flow

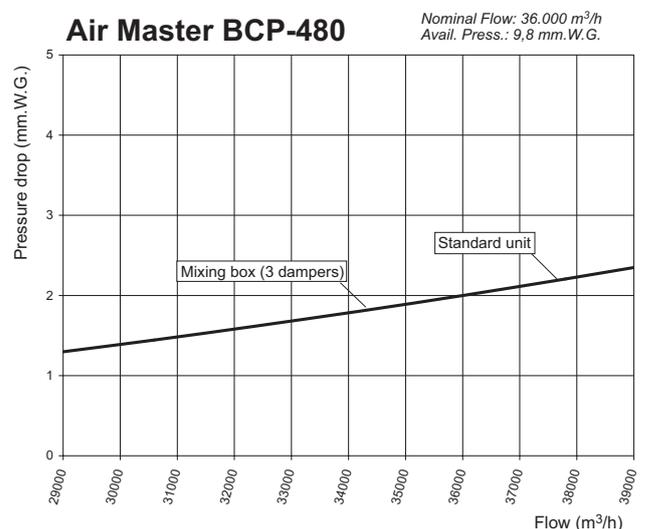


NOTE: The pressure drops in the hot water coil and in gravimetric filters have been considered as drops of the standard unit. If the unit includes some of the other optionals, its corresponding drops should be added to those of the standard unit.

■ Return with nominal flow (optional)



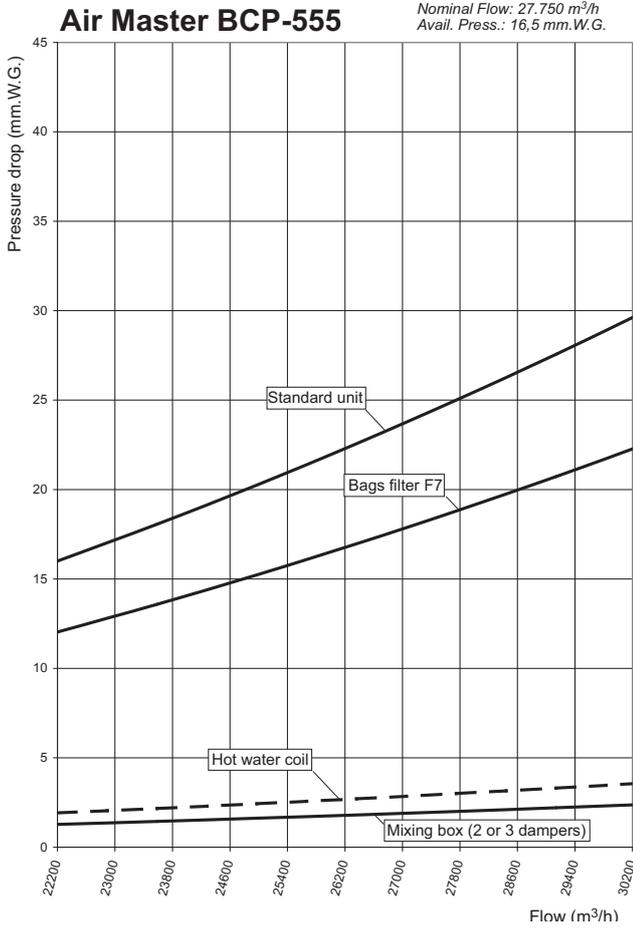
■ Return with high flow (optional)



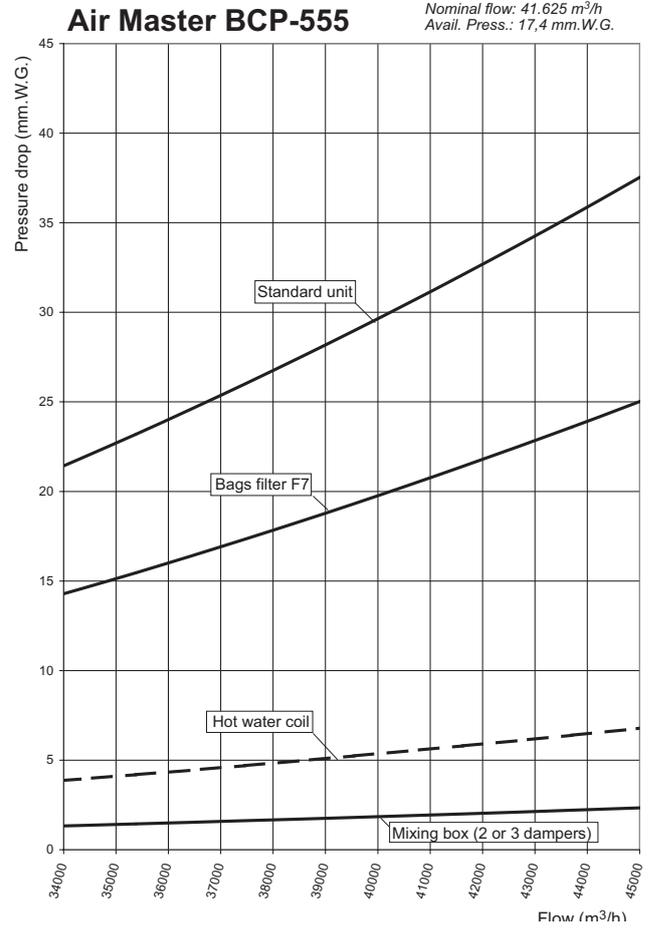


Pool air handling units

■ Discharge with nominal flow

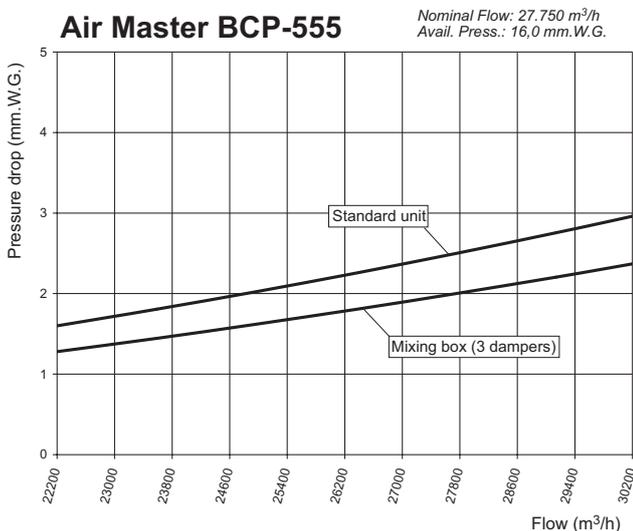


■ Discharge with high flow

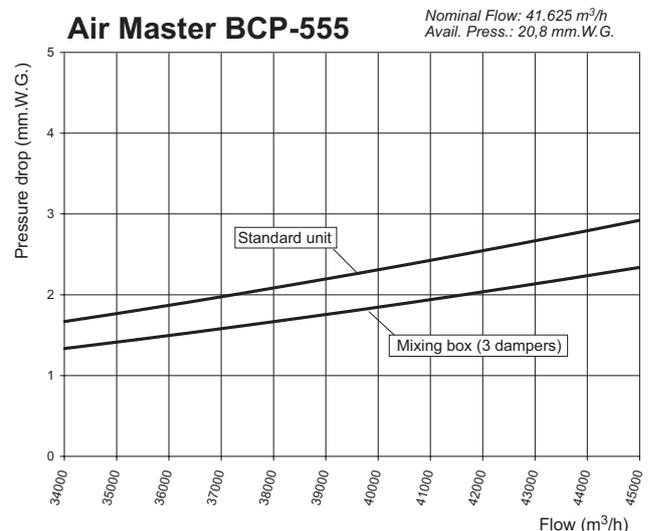


NOTE: The pressure drops in the hot water coil and in gravimetric filters have been considered as drops of the standard unit. If the unit includes some of the other optionals, its corresponding drops should be added to those of the standard unit.

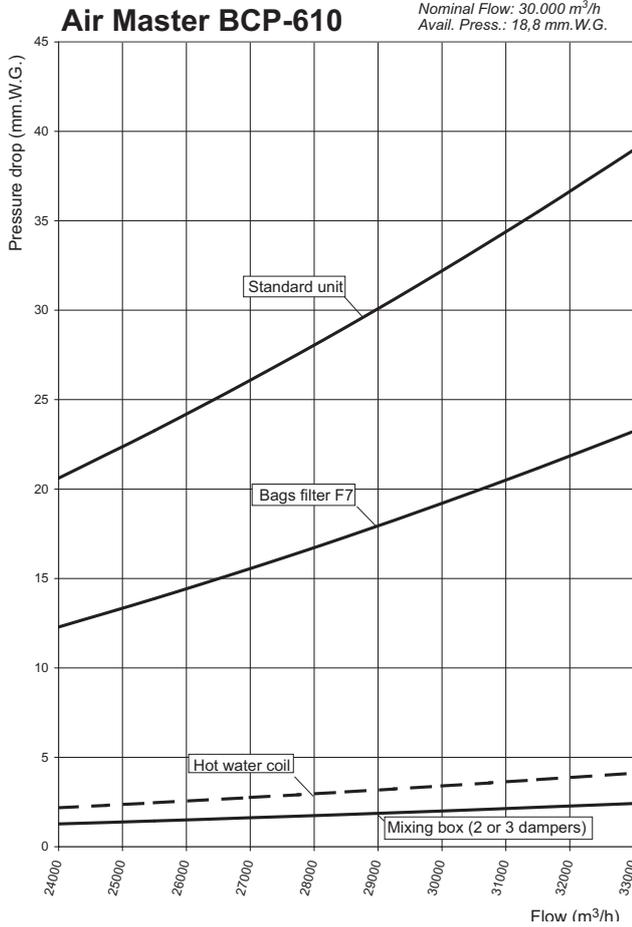
■ Return with nominal flow (optional)



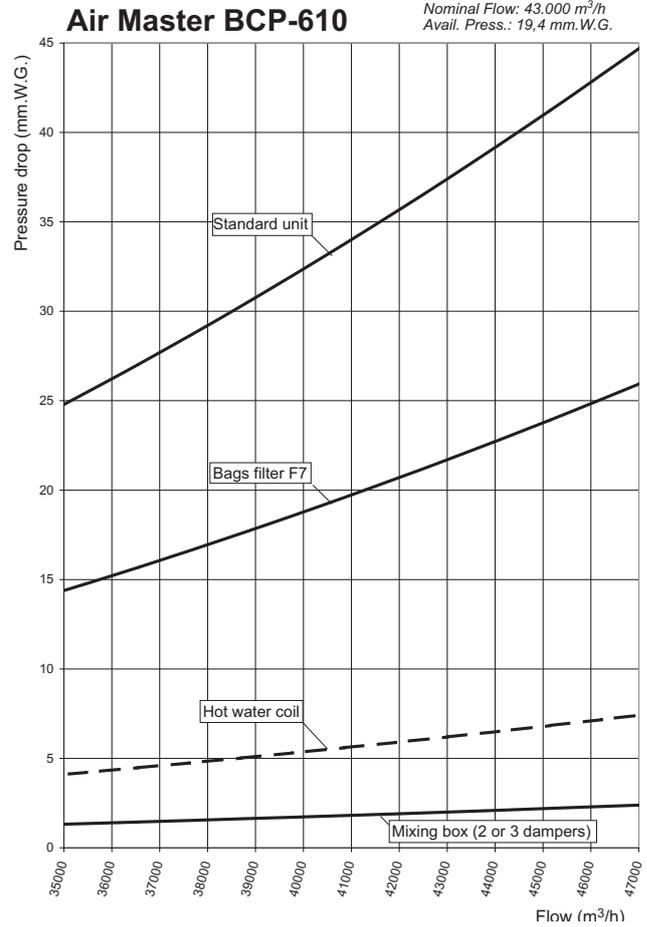
■ Return with high flow (optional)



■ Discharge with nominal flow

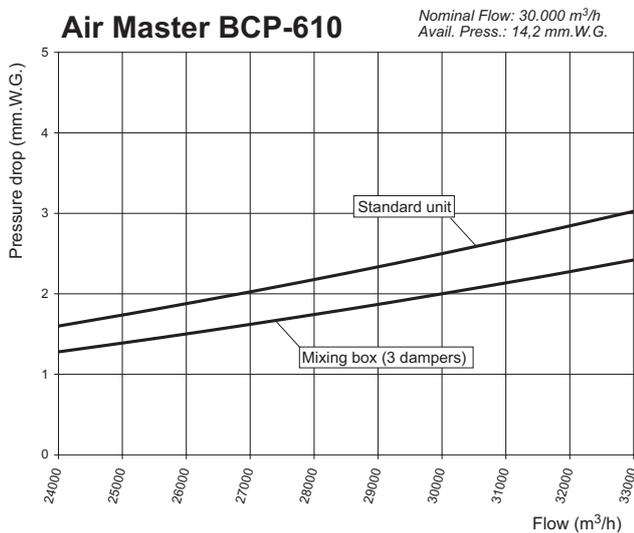


■ Discharge with high flow

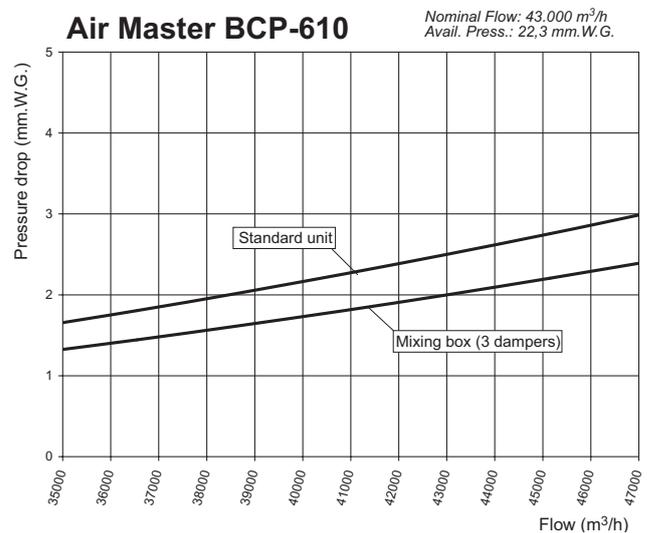


NOTE: The pressure drops in the hot water coil and in gravimetric filters have been considered as drops of the standard unit. If the unit includes some of the other optionals, its corresponding drops should be added to those of the standard unit.

■ Return with nominal flow (optional)



■ Return with high flow (optional)

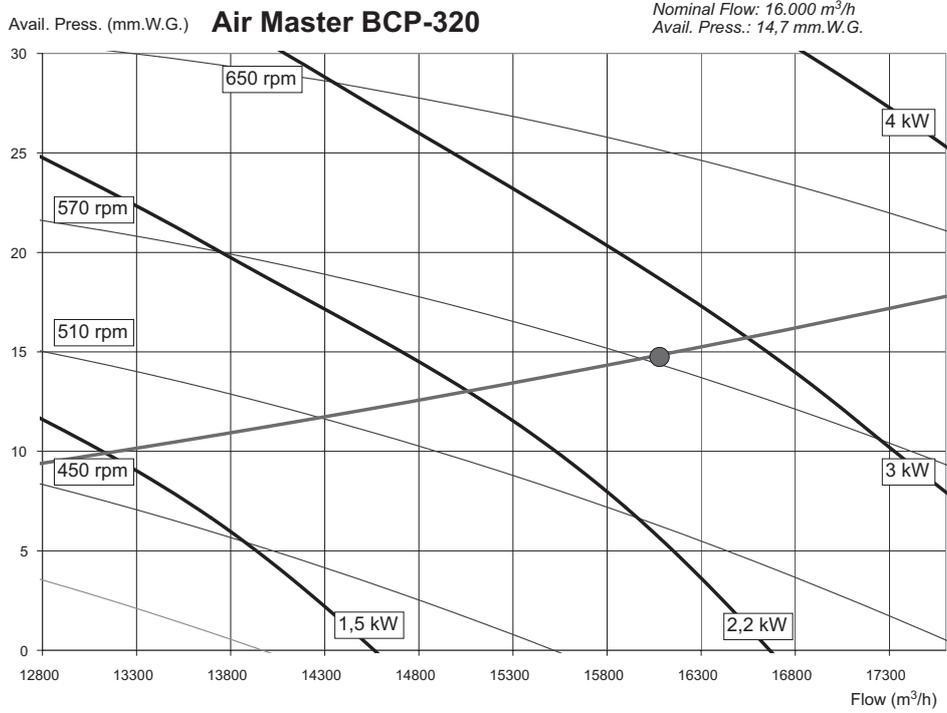




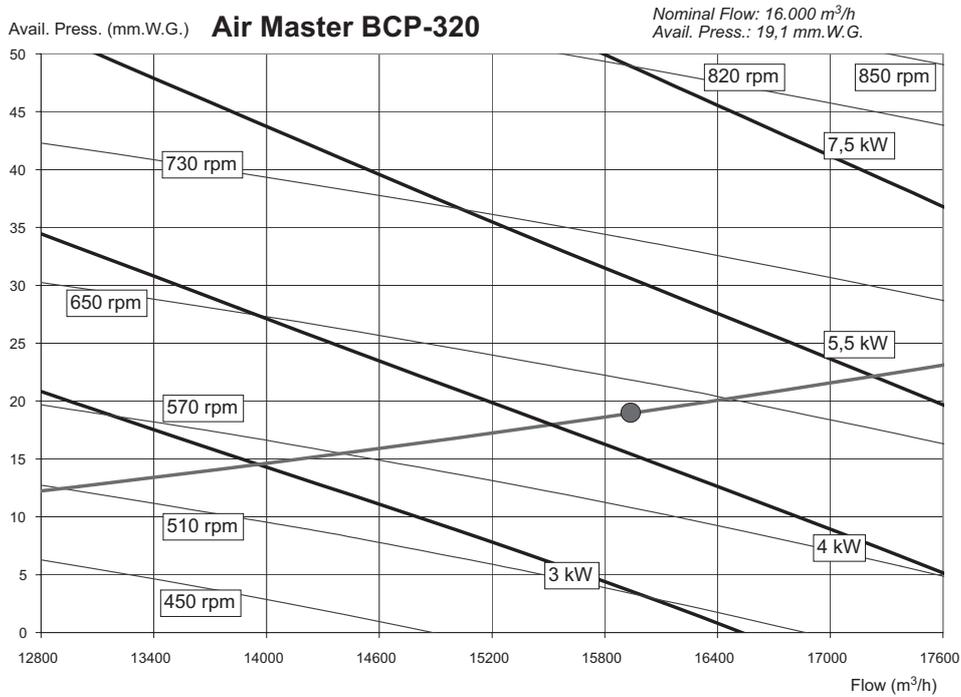
Pool air handling units

FANS CHARACTERISTICS

Discharge fan with nominal flow



Return fan with nominal flow (optional)



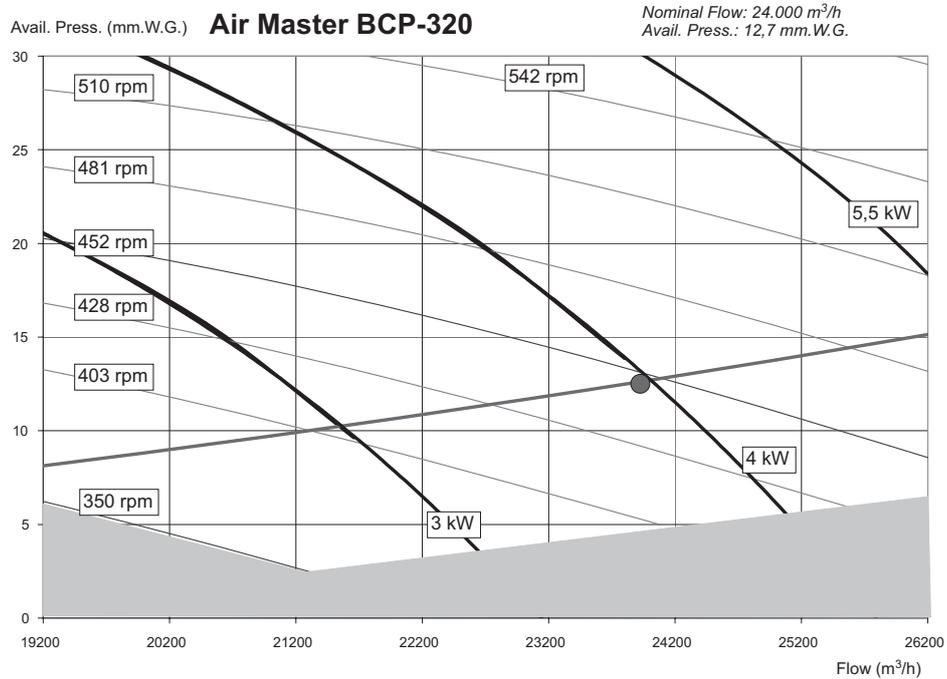
NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

The motor to select is that whose curve is above the operating point.

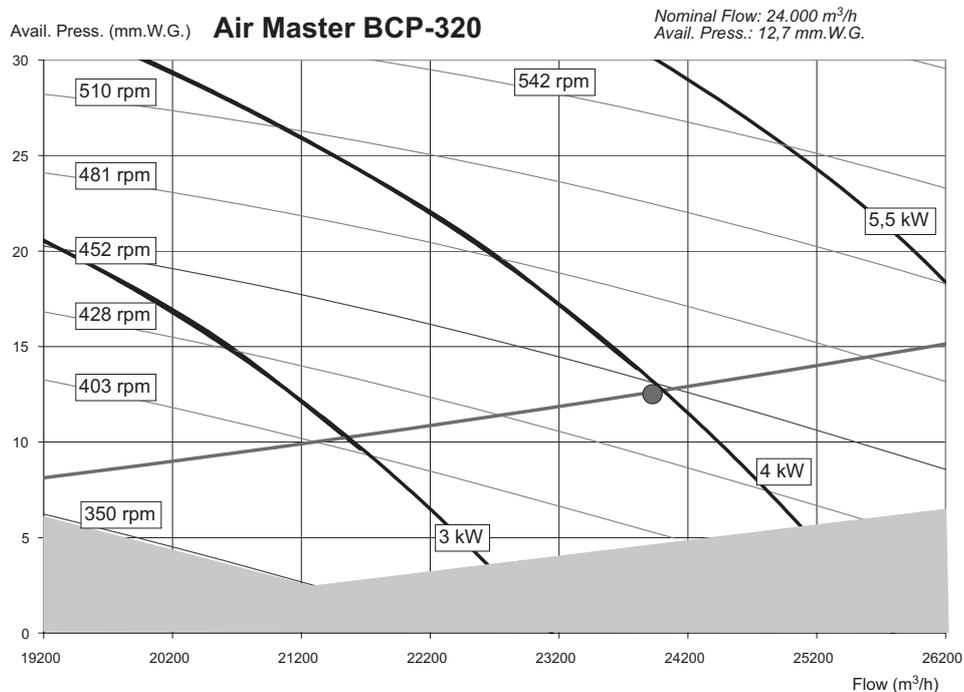
If there is a motor change, consult the price supplement.



■ Discharge fan with high flow



■ Return fan with high flow (optional)



NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

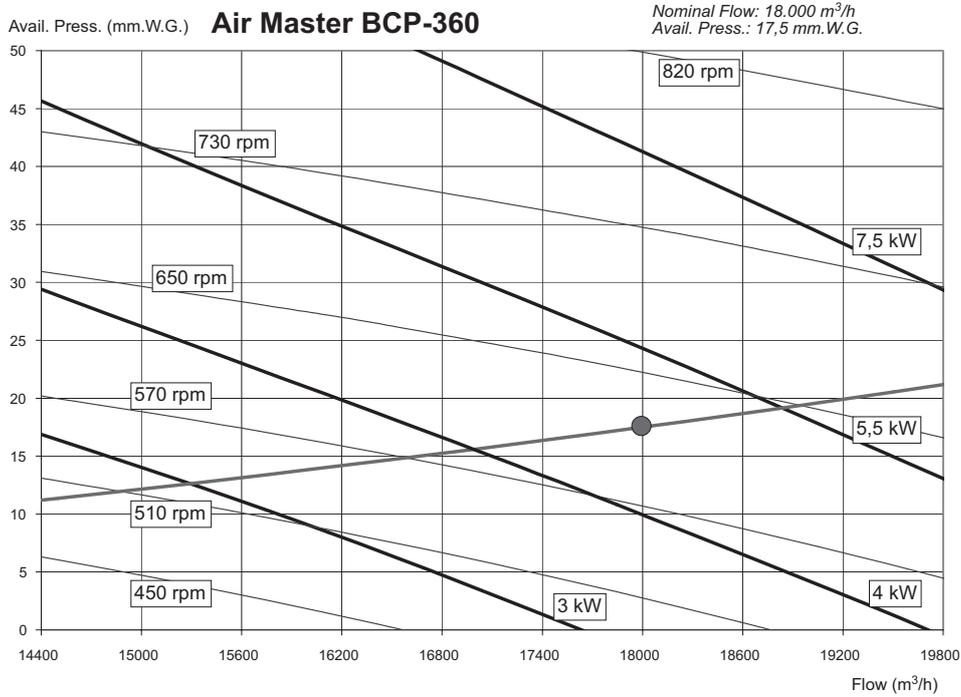
The motor to select is that whose curve is above the operating point.

If there is a motor change, consult the price supplement.

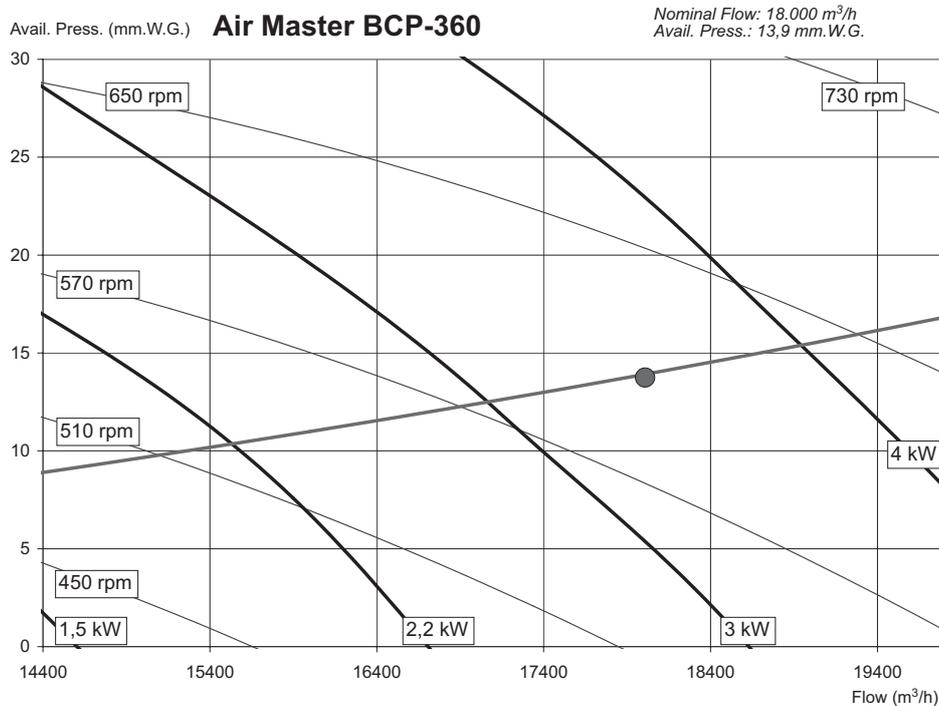


Pool air handling units

■ Discharge fan with nominal flow



■ Return fan with nominal flow (optional)



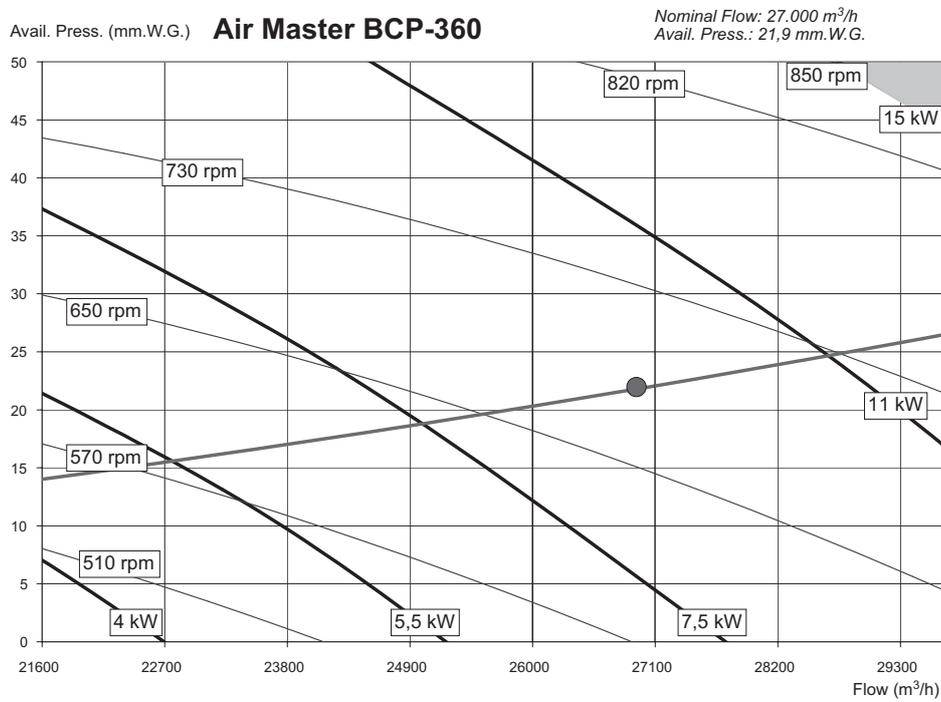
NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

The motor to select is that whose curve is above the operating point.

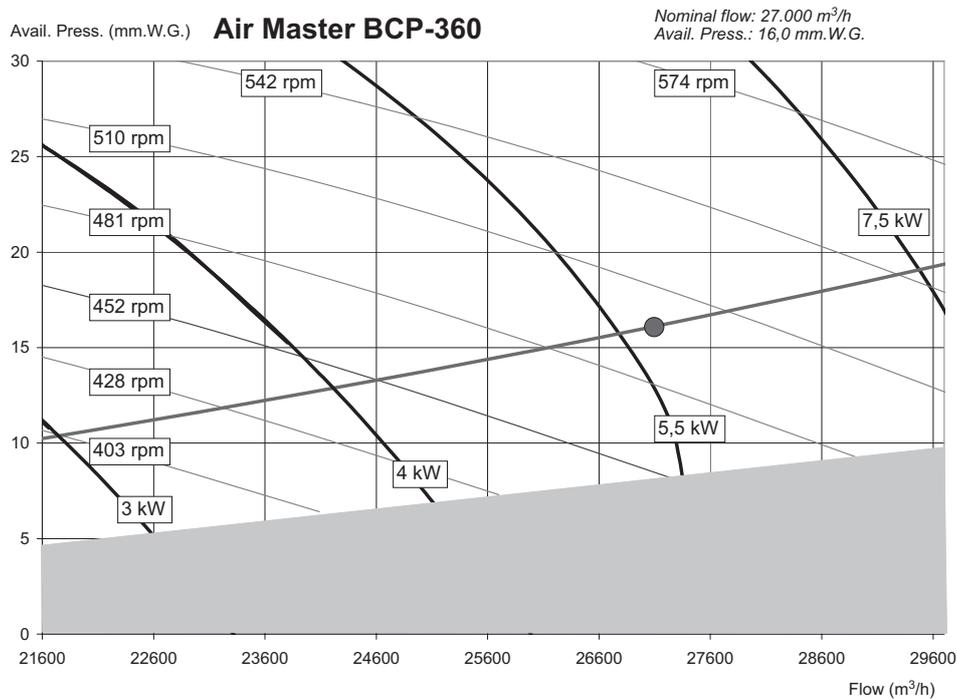
If there is a motor change, consult the price supplement.



■ Discharge fan with high flow



■ Return fan with high flow (optional)



NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

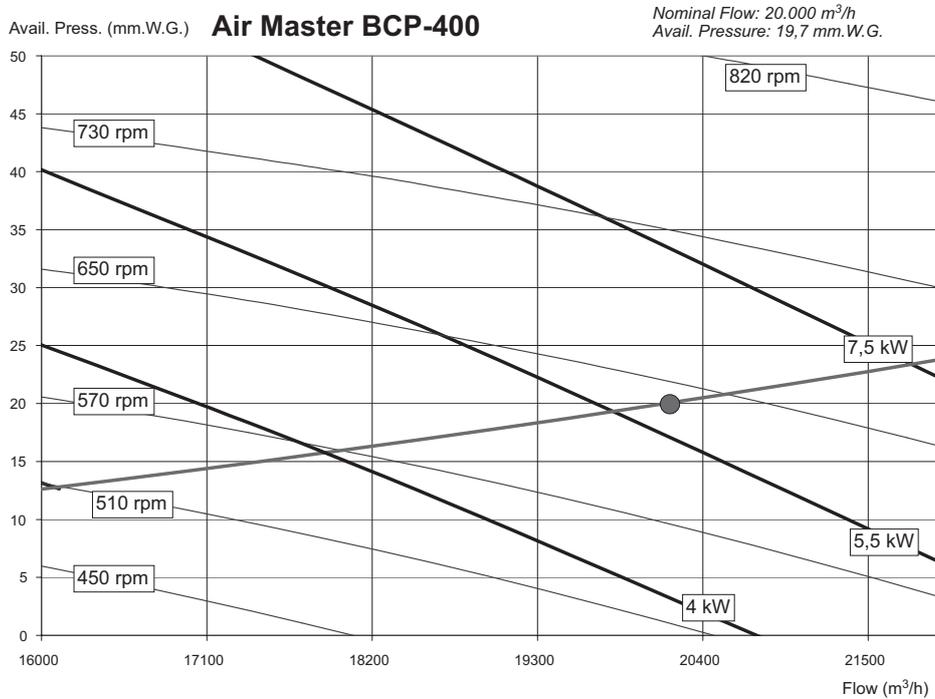
The motor to select is that whose curve is above the operating point.

If there is a motor change, consult the price supplement.

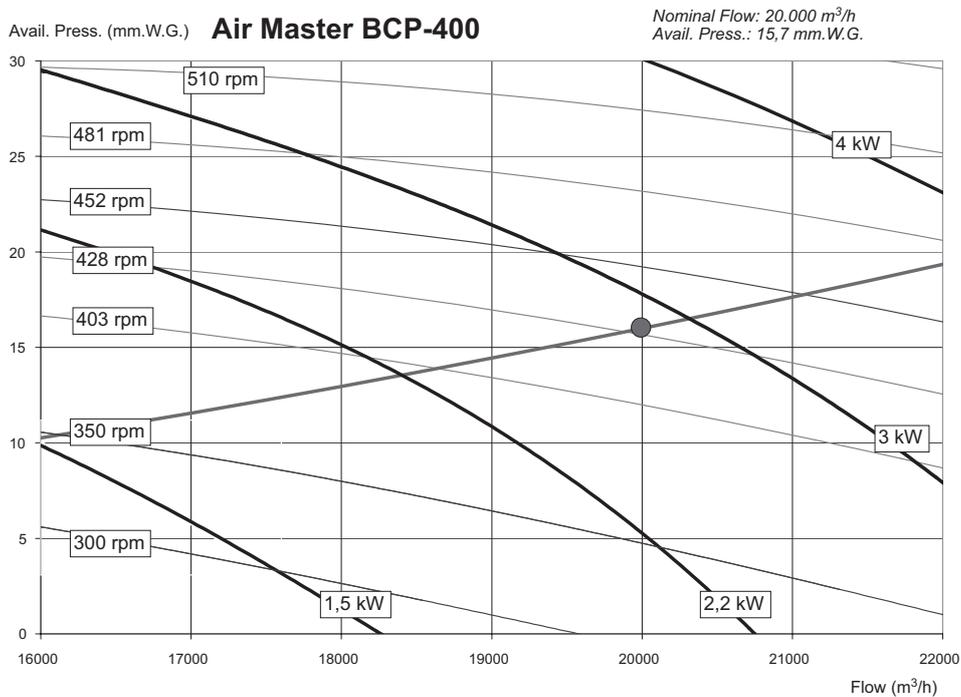


Pool air handling units

■ Discharge fan with nominal flow



■ Return fan with nominal flow (optional)



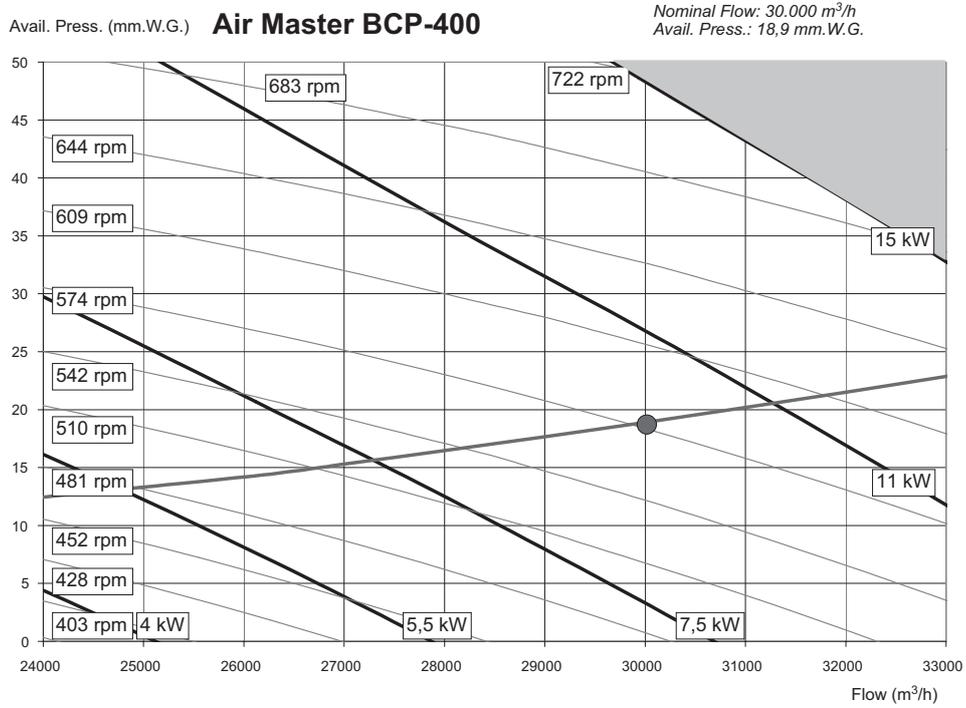
NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

The motor to select is that whose curve is above the operating point.

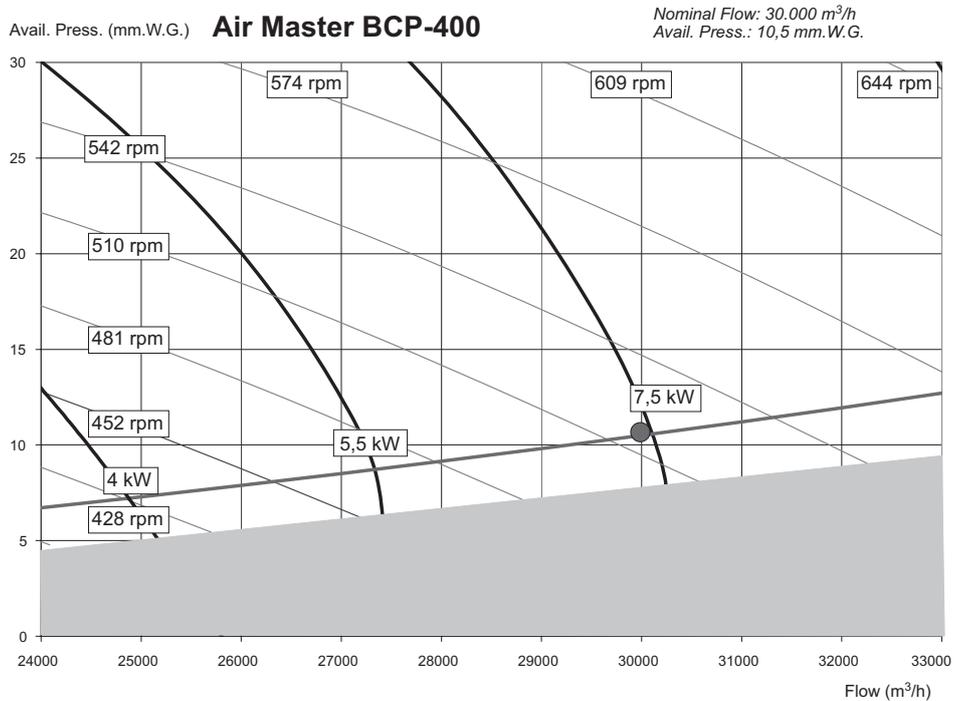
If there is a motor change, consult the price supplement.



■ Discharge fan with high flow



■ Return fan with high flow (optional)



NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

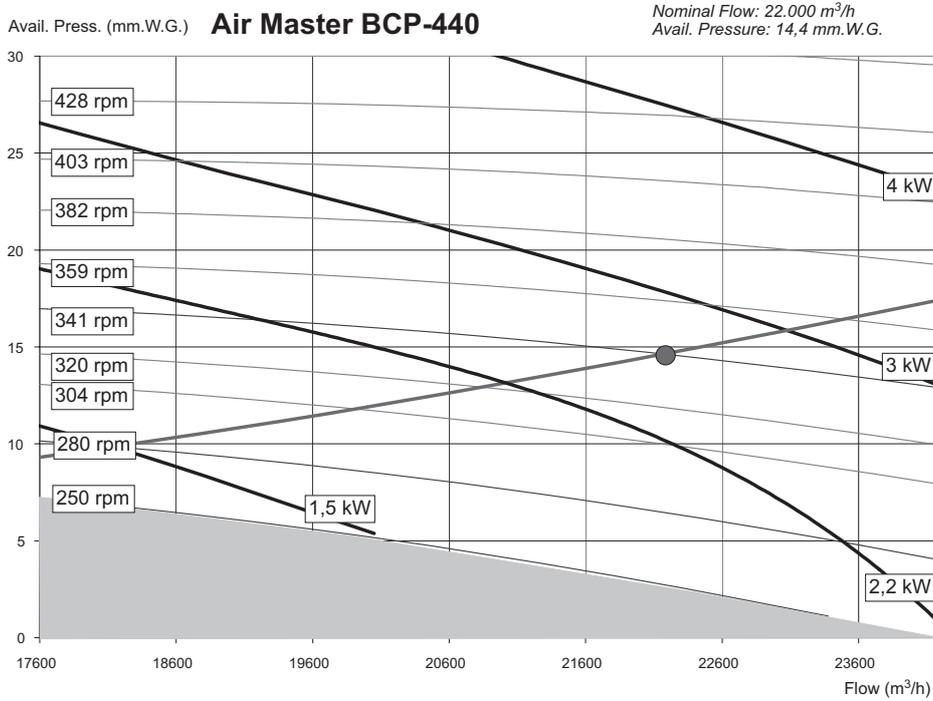
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If there is a motor change, consult the price supplement.

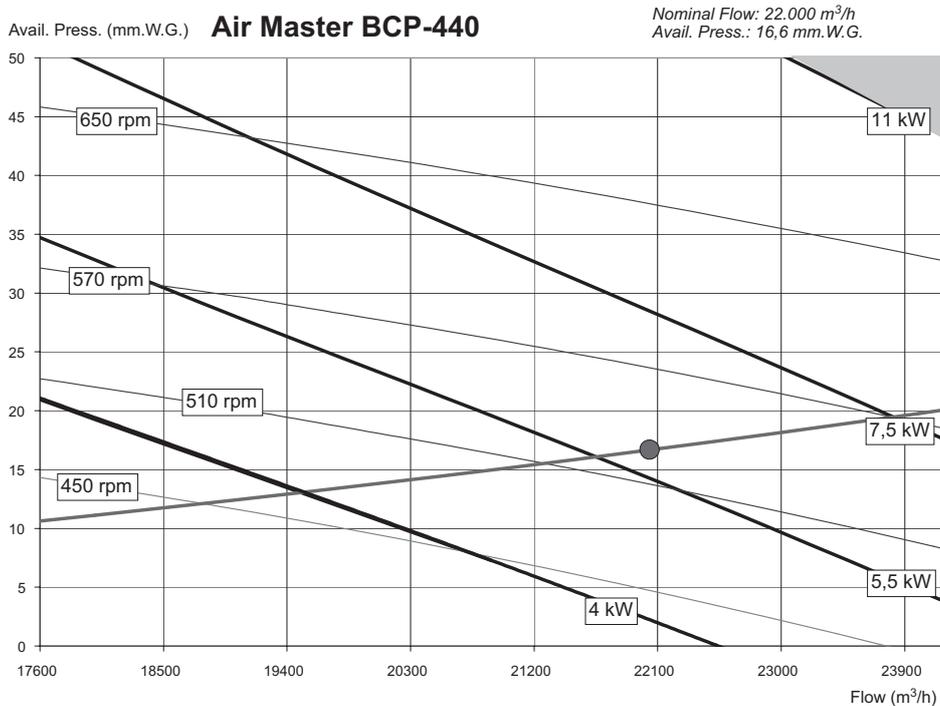


Pool air handling units

■ Discharge fan with nominal flow



■ Return fan with nominal flow (optional)



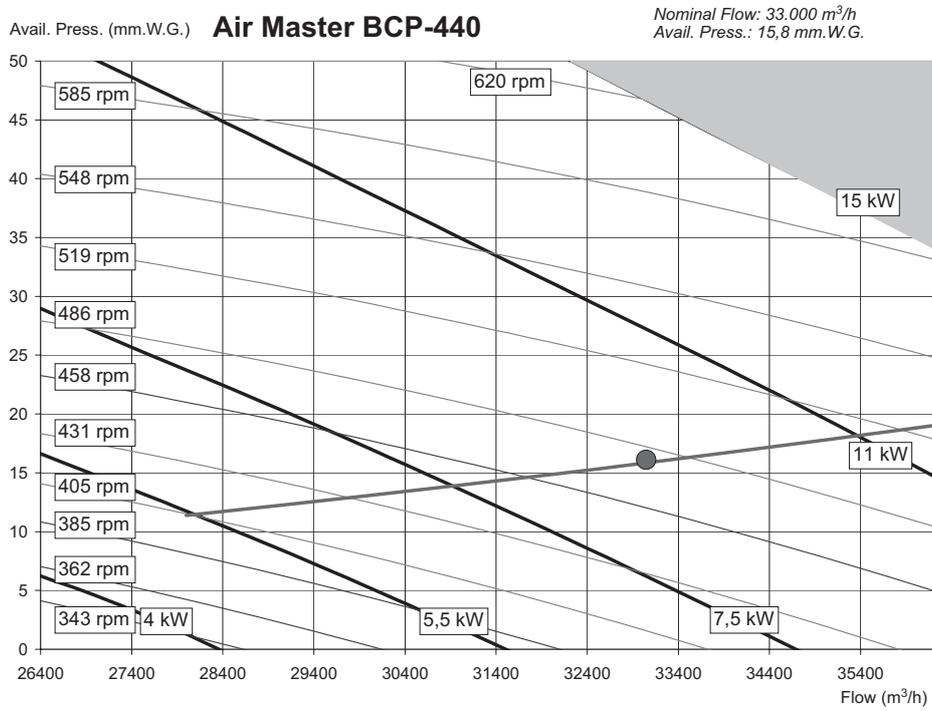
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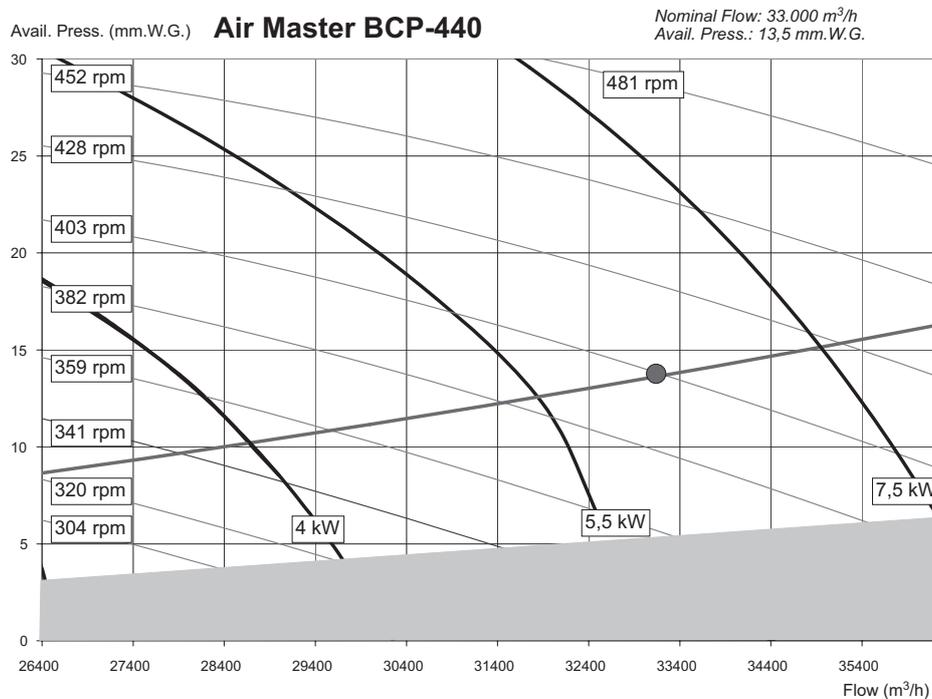
If there is a motor change, consult the price supplement.



■ Discharge fan with high flow



■ Return fan with high flow (optional)



NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

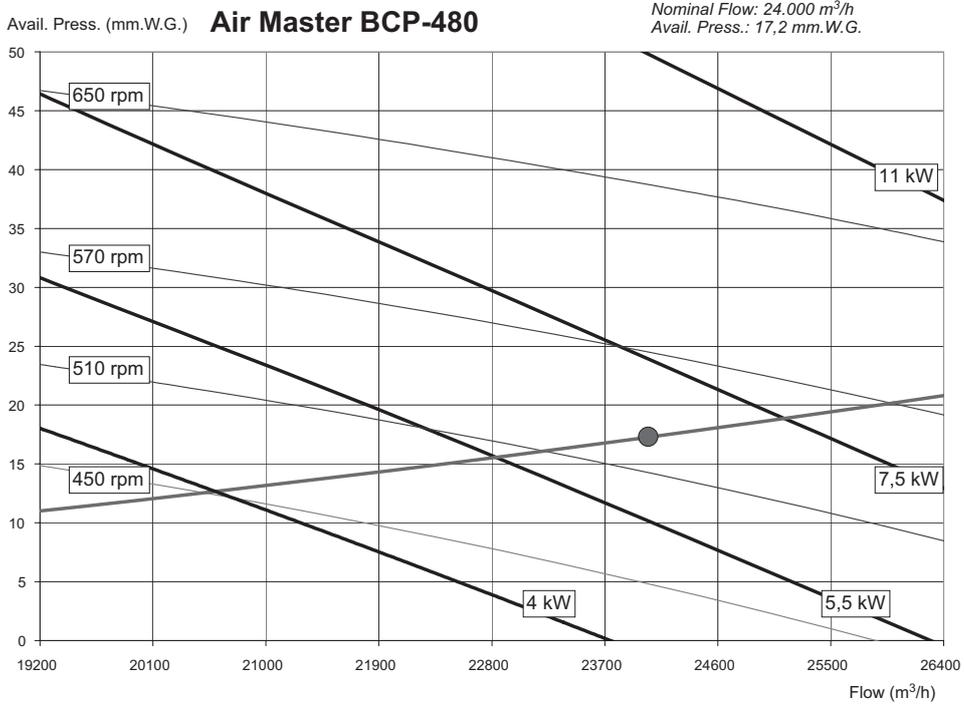
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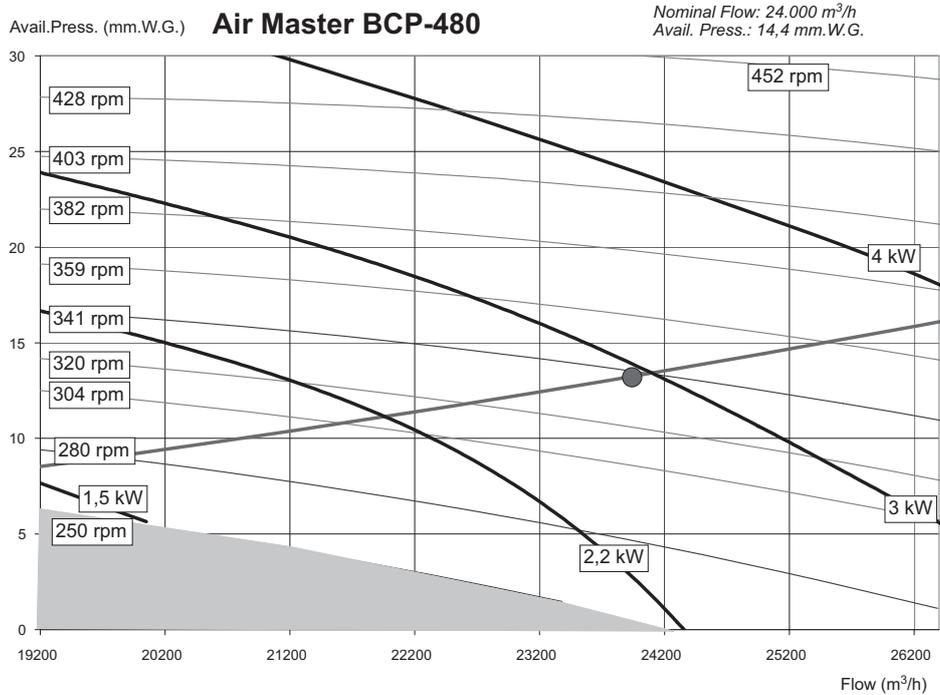


Pool air handling units

■ Discharge fan with nominal flow



■ Return fan with nominal flow (optional)



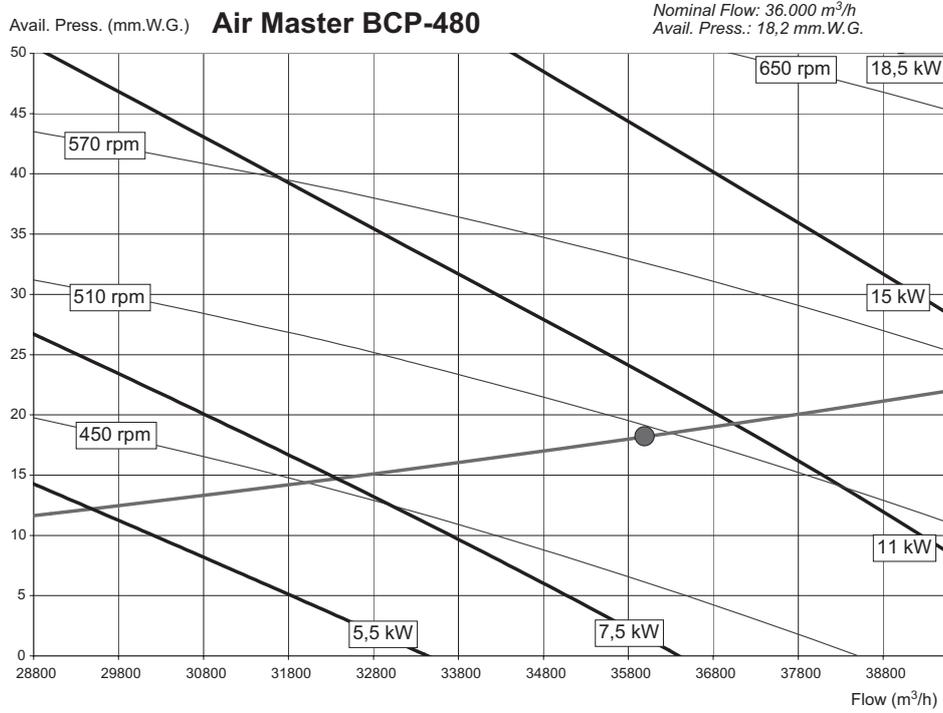
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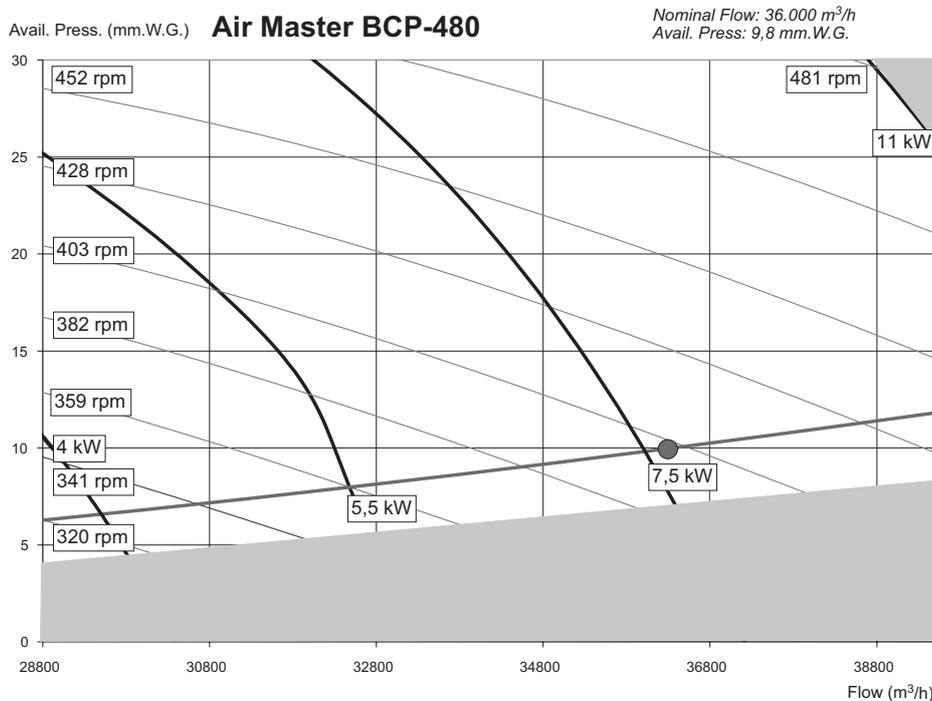
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■ Discharge fan with high flow



■ Return fan with high flow (optional)



NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

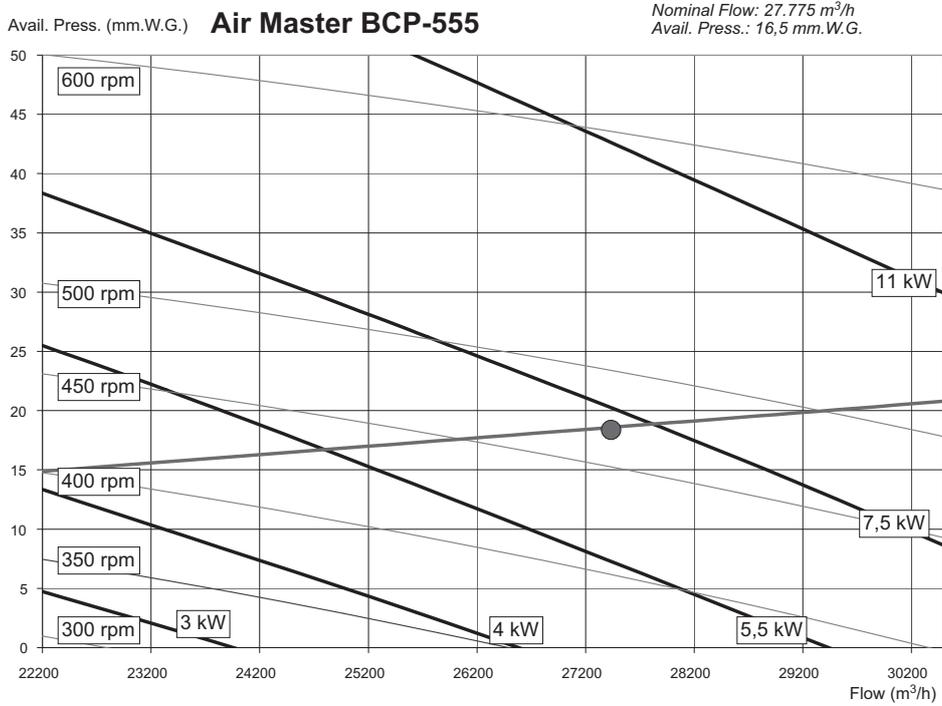
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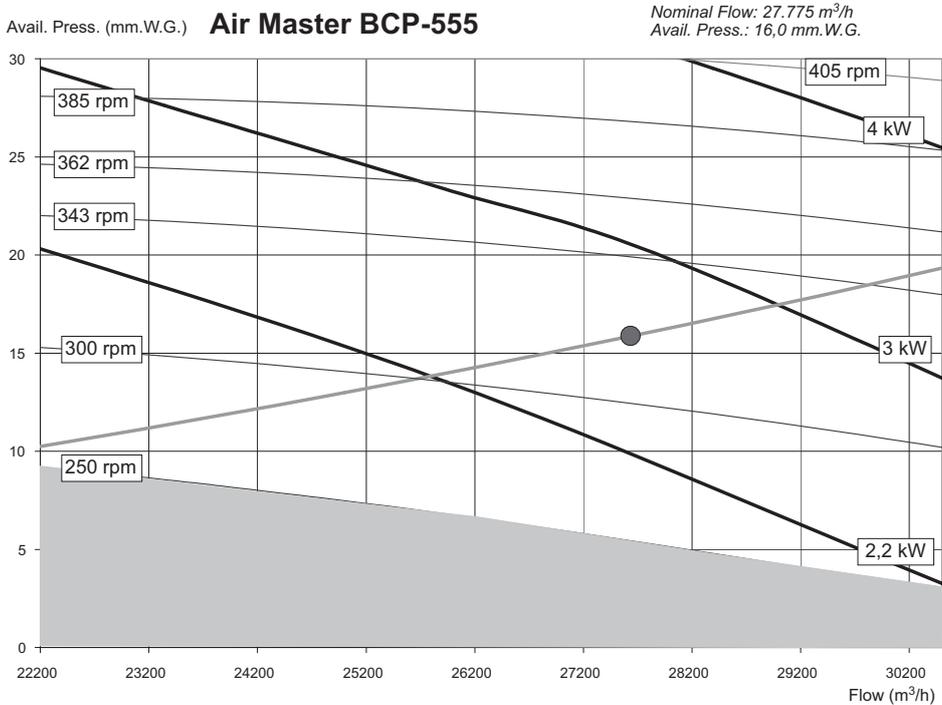


Pool air handling units

Discharge fan with nominal flow



Return fan with nominal flow (optional)



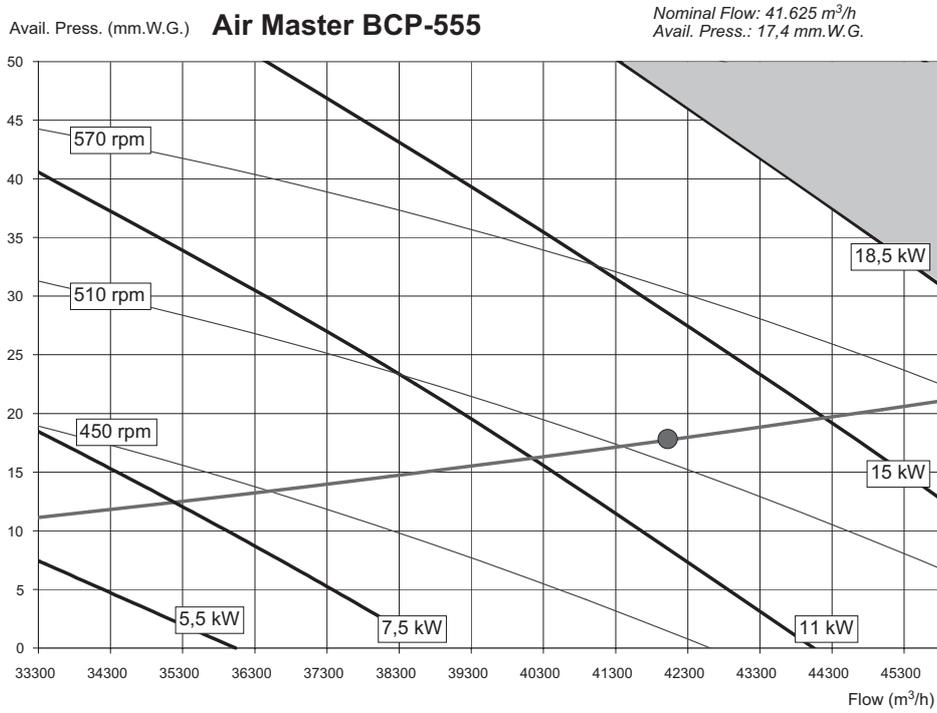
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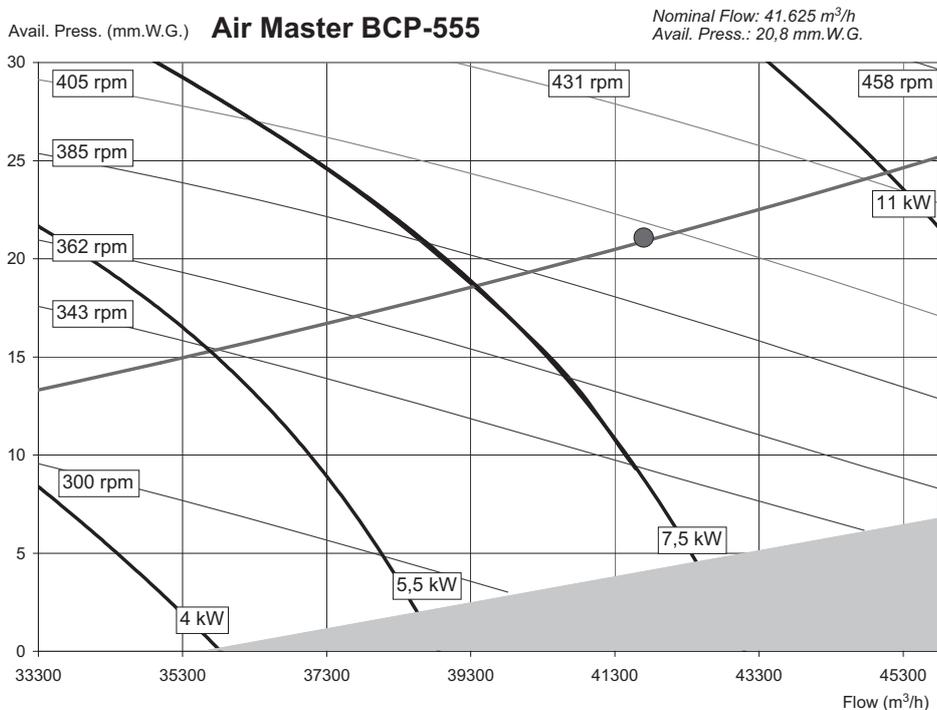
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■ Discharge fan with high flow



■ Return fan with high flow (optional)



NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

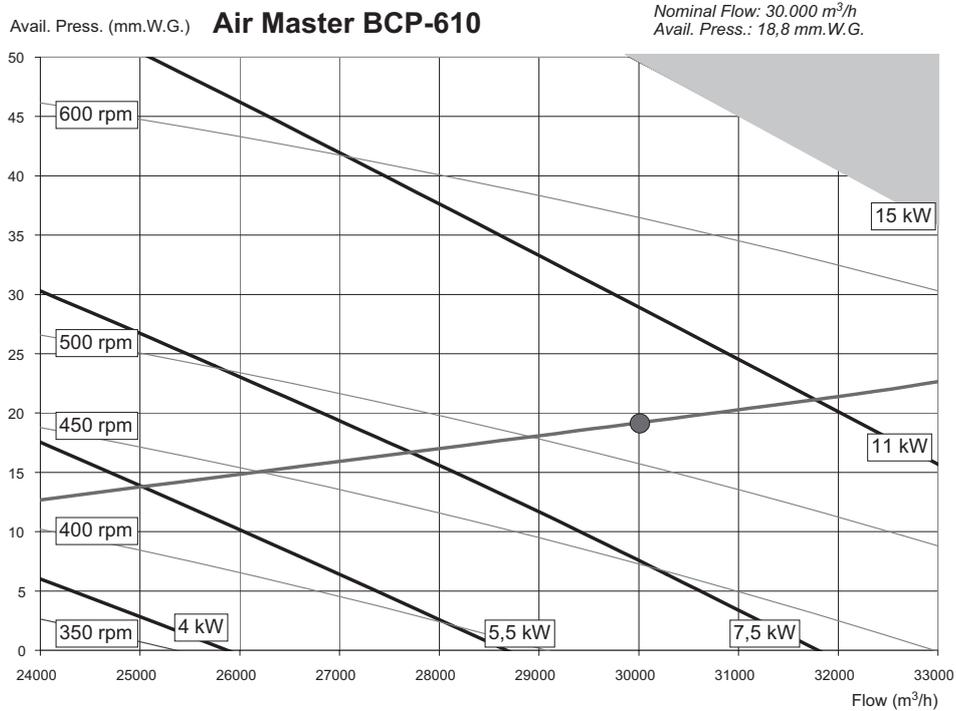
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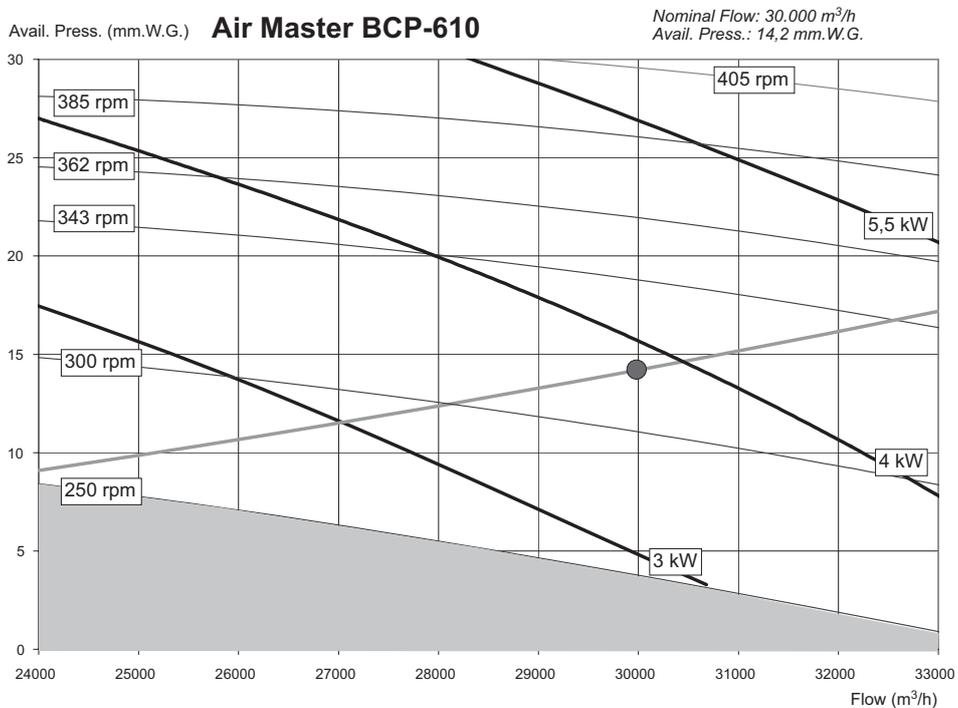


Pool air handling units

■ Discharge fan with nominal flow



■ Return fan with nominal flow (optional)



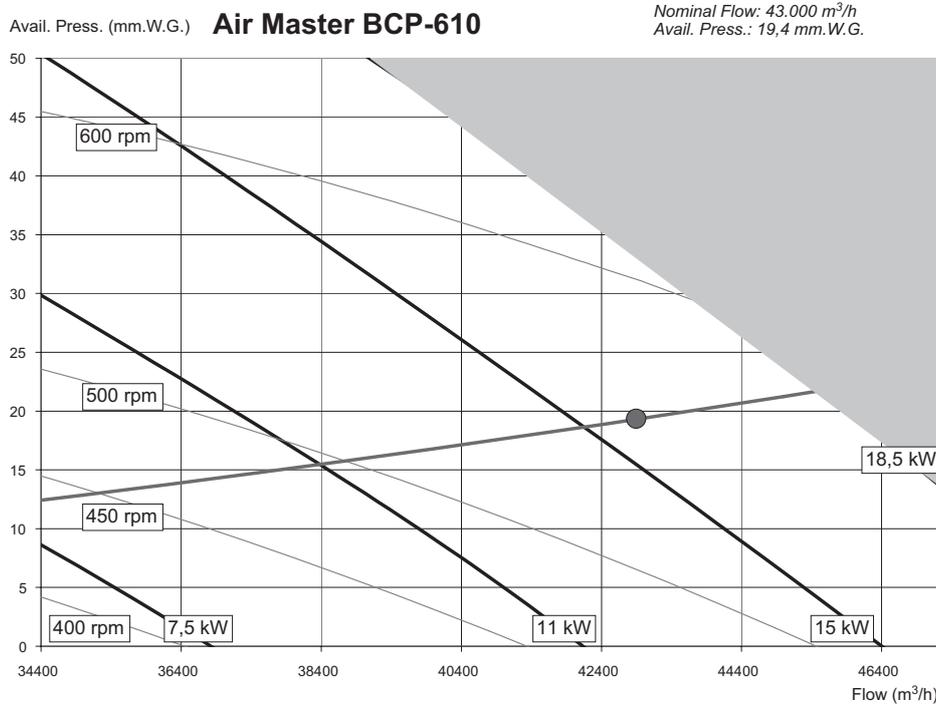
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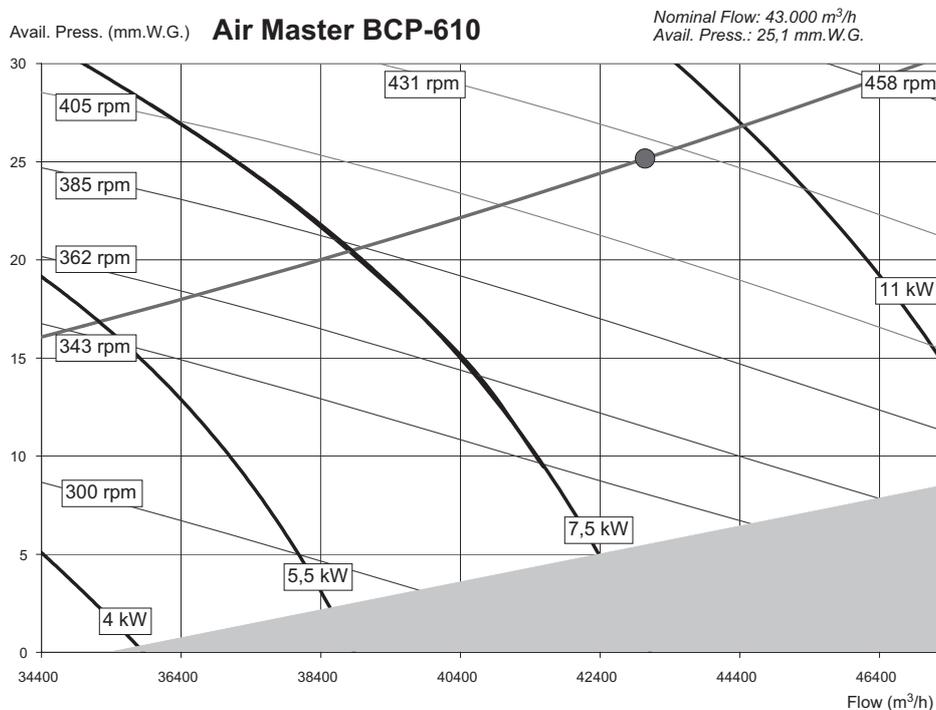
If there is a motor change, consult the price supplement.



■ Discharge fan with high flow



■ Return fan with high flow (optional)



NOTE: The graphic point shows the operating nominal point. The curve that passes through this point is the nominal installation curve (this curve shows the aspect of other possible curves of installation).

The motor to select is that whose curve is above the operating point.

If there is a motor change, consult the price supplement.



ASSEMBLY RECOMMENDATIONS

Location

Air handling units **Air Master BCP Series** are indoor or outdoor units (optional).

A free space all around the unit should be kept (consult dimensions schemes), for maintenance and normal operation.

Mind special care on the location of the unit, selecting a suitable place according to the environment requirements (place, noise projection, etc.) and only accessible for authorized persons.

Avoid specially the location of units in those places frequented by under 14 years old people. If needed a barrier should be placed in order to protect the equipment from unauthorized personnel.

All the units are tested when manufactured and have complete refrigerant load.

Hydraulic connections

Provide the accessories necessary on each hydraulic circuit (expansion vessel, air vents, safety valves, shut-off valves next to components which need maintenance, etc.).

Flexible couplings are recommended between the unit for connecting pipework to the unit, in order to avoid possible transmission of vibrations or stress in the unit and the lines. These couplings are compulsory when the unit is mounted on a frame or on antivibratory supports.

Respect the water flow direction mentioned on the unit or on dimensions schemes.

A water mesh filter is compulsory to be placed at the inlet of pool pump (for particles of $\varnothing > 1$ mm), in order to avoid the soiling of the unit hydraulic circuit. A good maintenance of this filter will avoid corrosion problems in the plates exchanger, and it will improve the heat efficiency of the unit. Not fulfill this recommendation could make useless the plates exchanger of the unit.

After a long shutdown of the unit, it is recommended to fill up the hydraulic circuit of the exchanger completely with distilled water. **Leave the exchanger filled with no flow water or empty may cause corrosion problems in the plates of the exchanger.**

Electrical connections

Required electrical connections are indicated in the electrical diagram included within the unit.

These connections follow the current regulations. The equipment has a complete electrical panel, only the main power supply should be installed (protections should be provided by the installer: main switch, differential, etc.).

Check that the power supply corresponds to the voltage listed on the name plate and that it keeps constant.

Start-up

Some problems can appear when starting-up the units, many of them due to the starting-up conditions:

- Insufficient water flow. Too high temperature differences between water inlet and outlet, due to:
 - Insufficient trap.
 - Small water circulation pump or function on the wrong direction.
 - Other situations that block the right water flow.
- Recirculation of air caused by any obstacle in the intake or in the discharge of this.

Before starting-up the unit, to avoid these problems, check the electrical and hydraulic connections, verify the right operation of the pool water circulation pump, the filling and purging of hydraulic circuit, etc.

