Diacom

HYDRAULIC SEPARATOR WITH ADDITIONAL FUNCTION OF AIR AND DEPOSIT SEPARATOR

USE

Heating / cooling plants.

FEATURES

The purpose of the **Diacom** hydraulic compensator is to hydraulically separate the generating circuit and the utilization circuit, when they have different water flow needs. In general, the application is the interface between the primary and secondary system, when the utilization circuit flow is variable and delivers values which are not compatible with the generator needs. Moreover, it has to be used when an anti-condensation function is needed, because it raises the return flow temperature before it gets to the boiler inlet, mixing the outlet and the return flows. Moreover, the **Diacom** compensator has an additional function: in fact it creates a slow vertical path aimed at helping the upflow air separation and the accumulation of dirt and sludge in the lower part, for an easier discharge to sewers. **The connection position has been carefully designed in order to ease the above mentioned functions.**

PECULIARITY

The outlet temperature to the user's units should be equal to the temperature of the flow coming out of the generator: therefore, it is necessary that the G1 flow in the primary circuit is higher than the G2 flow (see diagrams below) in any condition of use. Otherwise, the outlet temperature to the user's units would be lower than the temperature of the flow coming out of the generator.

Diacom TECHNICAL FEATURES

- Maximum fluid temperature: 90°C
- Minimum fluid temperature: 5°C
- Maximum fluid pressure: 5 bar
- Material: carbon steel EN10255
- Paint: water-based primer, red.

INSULATION TECHNICAL FEATURES

THREADED COMPENSATORS (1"÷ 2")

- Material: polypropylene (EPP) (density 30 Kg/m^3)
- Type: Snap-in shell.

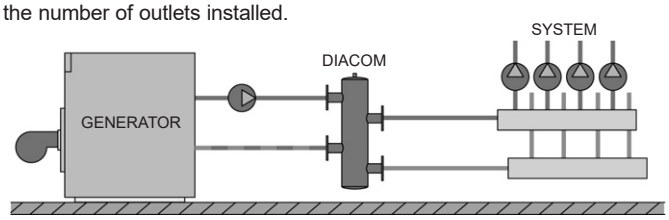
FLANGED COMPENSATORS (DN65"÷ DN100")

- Material: fire-retardant polypropylene (B2) (density 70÷80 Kg/m^3)
- Type: shell-type, complete with sealing tape.

APPLICATION EXAMPLES

The circuit below ensures that the flow recommended by the manufacturer gets to the production circuit for a proper functioning.

On the other hand, there will be variable flows in the utilization circuit, according to the number of outlets installed.



CALCULATION OF THE TEMPERATURE DIFFERENCE

The temperature difference on the primary and secondary circuits are calculated as follows:

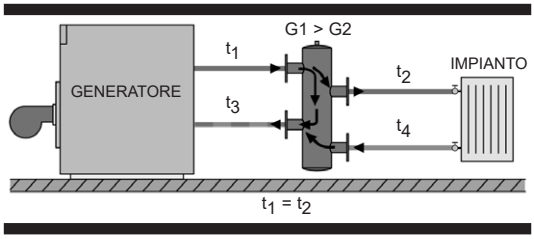
$\Delta t_1 = (ta_1 - tr_1) = Q_1 \cdot 0{,}86/G_1$ $\Delta t_2 = (ta_2 - tr_2) = Q_2 \cdot 0{,}86/G_2$

where:

Q_1	[W]	is the useful thermal power of the generator;
G_1	[kg/h]	is the water flow in the primary circuit;
Q_2	[W]	is the thermal power exchanged by the utilization circuit;
G_2	[kg/h]	is the water flow in the utilization circuit;
ta	[°C]	is the outlet temperature;
tr	[°C]	is the return temperature.

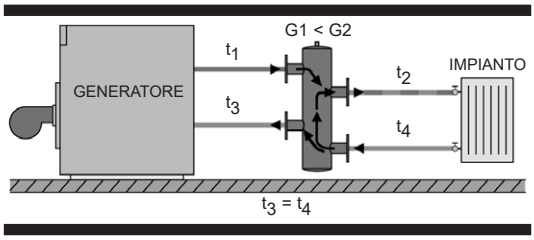
COMMON APPLICATION

Raising the return temperature from the user's units in order to avoid any condensation in the generator.



SPECIFIC APPLICATION

Lowering the flow temperature towards the users' units.



Diacom

HYDRAULIC SEPARATOR WITH ADDITIONAL FUNCTION OF AIR AND DEPOSIT SEPARATOR

THE HYDRAULIC COMPENSATOR IS NECESSARY IN THE FOLLOWING CASES:

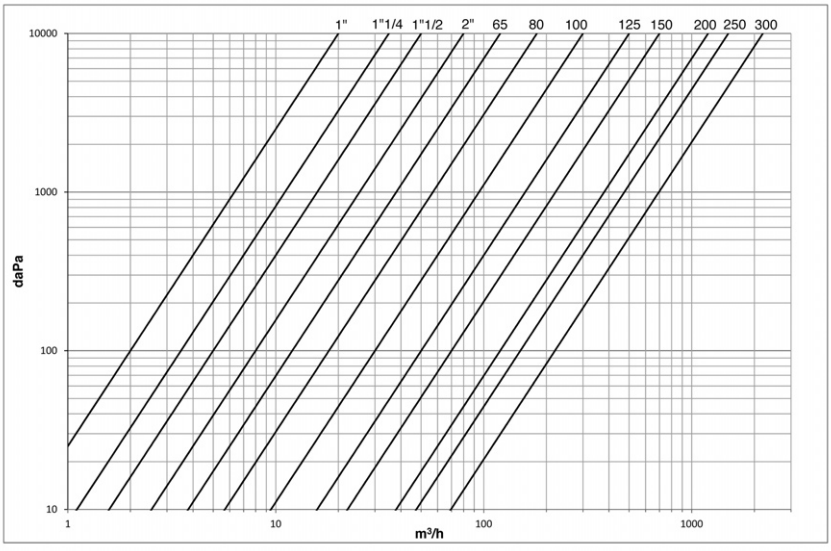
Type of generator	Compensator	
	YES	**NO**
NORMAL GENERATORS HIGH EFFICIENCY **GENERATOR SLIDING TEMPERATURE**	It is necessary in order to preserve the system and in particular if the system flow and the return temperature reach too low values, which are not compliant with the type of generator (because of thermal exchange needs on the water side or in order to avoid any condensation on the fumes side).	If the system flow is constant and compliant with the type of generator (installation recommended).
CONDENSING BOILER	It is necessary in order to preserve the system and in particular if the generator cannot operate at low flows (please note that in this case the generator is protected but there will be a loss of performance).	If the generator can operate with low flows or no flow at all and therefore with cold returns (in condensating generators, the lower the return temperature, the higher the performance).

VERSIONS

THREADED MALE	CONNECTIONS			
	1"	**1"1/4**	**1"1/2**	**2"**
Separator code	C001	C114	C112	C002
Insulation code	CBC001	CBC114	CBC112	CBC002

FLANGED	CONNECTIONS							
	DN65	**DN80**	**DN100**	**DN125**	**DN150**	**DN200**	**DN250**	**DN300**
Separator code	C212	C003	C004	C005	C006	C008	C010	C012
Insulation code	CBC212	CBC003	CBC004	–	–	–	–	–

FLUID-DYNAMIC FEATURES • (calculate the losses in primary and secondary circuits separately)



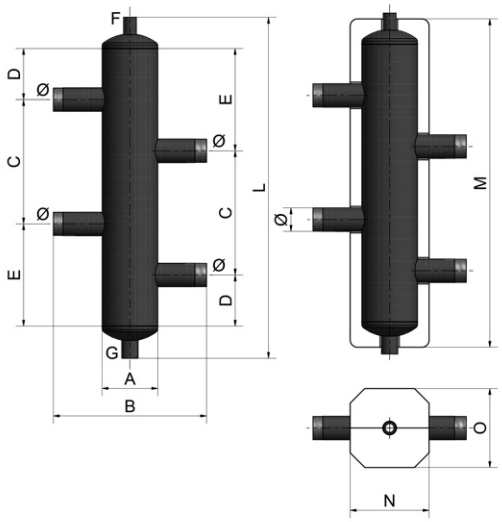
Kv and INDICATIVE FLOW RATES			
THREADED			
Ø	**Kv**	**Q**	**Q**
1"	20	2 m³/h	2,8 m³/h
1"1/4	35	3,5 m³/h	5 m³/h
1"1/2	50	5 m³/h	7,1 m³/h
2"	80	8 m³/h	11,3 m³/h
		Δp = **100 daPa**	Δp = **200 daPa**
FLANGED			
DN	**Kv**	**Q**	**Q**
DN 65	120	12 m³/h	17 m³/h
DN 80	180	18 m³/h	25,5 m³/h
DN 100	300	30 m³/h	42,5 m³/h
DN 125	500	50 m³/h	70,5 m³/h
DN 150	700	70 m³/h	99 m³/h
DN 200	1200	120 m³/h	170 m³/h
DN 250	1500	150 m³/h	212 m³/h
DN 300	2200	220 m³/h	311 m³/h
		Δp = **100 daPa**	Δp = **200 daPa**

$\Delta p = (Q / Kv)^2$ • Δp : pressure drop in **[bar]** • Q : flow rate in **[m³/h]**

Diacom

HYDRAULIC SEPARATOR WITH ADDITIONAL FUNCTION OF AIR AND DEPOSIT SEPARATOR

OVERALL SIZE



THREADED SEPARATOR SIZES - GAS (UNI EN 10226-1)

Ø	A	B	C	D	E	F	G	L
R1"	DN 80	289	150	65	125	Rp1/2" F	Rp3/4" F	450
R1"1/4	DN 100	314	220	90	180	Rp1/2" F	Rp3/4" F	625
R1"1/2	DN 100	314	255	105	210	Rp1/2" F	Rp3/4" F	705
R2"	DN 125	341	320	135	270	Rp1/2" F	Rp1" F	875

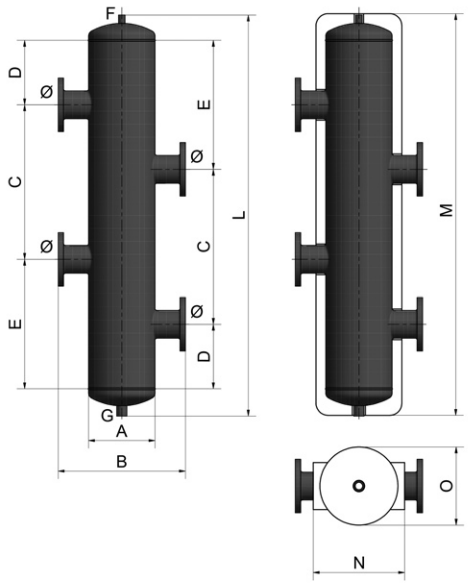
VOLUME AND WEIGHT

Ø	volume [l]	weight [kg]
1"	2,2	5
1"1/4	5	8
1"1/2	6	9
2"	12	13

INSULATION SIZE

Ø	M	N	O
1"	433	135	135
1"1/4	594	162	162
1"1/2	674	162	162
2"	854	186	186

THE CONNECTIONS ARRANGEMENT HELPS AIR SEPARATION AND DEPOSIT OF DEBRIS/SLUDGE



FLANGED SEPARATOR SIZES

Ø	A	B	C	D	E	F	G	L
DN 65	DN 150	418	415	175	350	Rp1/2" F	Rp1" F	1090
DN 80	DN 200	469	485	205	410	Rp1/2" F	Rp1" F	1280
DN 100	DN 250	523	635	265	530	Rp1/2" F	Rp1" F	1610
DN 125	DN 300	625	750	310	650	Rp3/4" F	Rp1" F	1900
DN 150	DN 400	708	900	380	780	Rp3/4" F	Rp1" F	2360
DN 200	DN 500	850	1250	425	935	Rp3/4" F	Rp1" F	2940

FLANGE TYPE

Ø	flange	No. of holes
DN 65	PN10-16	4
DN 80	PN10-16	8
DN 100	PN10-16	8
DN 125	PN10-16	8
DN 150	PN10-16	8
DN 200	PN10	8

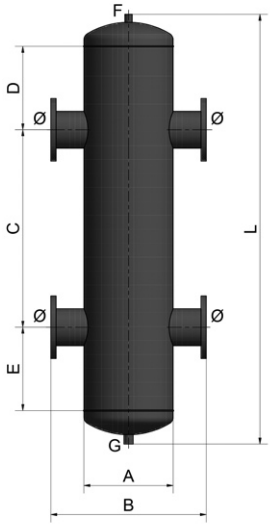
VOLUME AND WEIGHT

Ø	volume [l]	weight [kg]
DN 65	21	35
DN 80	42	48
DN 100	84	84
DN 125	146	137
DN 150	260	188
DN 200	555	290

INSULATION SIZE

DN	M	N	O
DN 65	1124	245	240
DN 80	1286	326	305
DN 100	1640	378	355

THE CONNECTIONS ARRANGEMENT HELPS AIR SEPARATION AND DEPOSIT OF DEBRIS/SLUDGE



FLANGED SEPARATOR SIZES WITH COAXIAL CONNECTIONS - FLANGES PN10

Ø	A	B	C	D	E	F	G	L
DN 250	DN 800	1200	1550	700	700	Rp3/4" F	Rp1" F	3326
DN 300	DN 950	1350	1850	800	800	Rp1" F	Rp1"1/2 F	3904

FLANGE TYPE

Ø	flange	No. of holes
DN 250	PN10	12
DN 300	PN10	12

VOLUME AND WEIGHT

Ø	volume [l]	weight [kg]
DN 250	1483	431
DN 300	2446	575

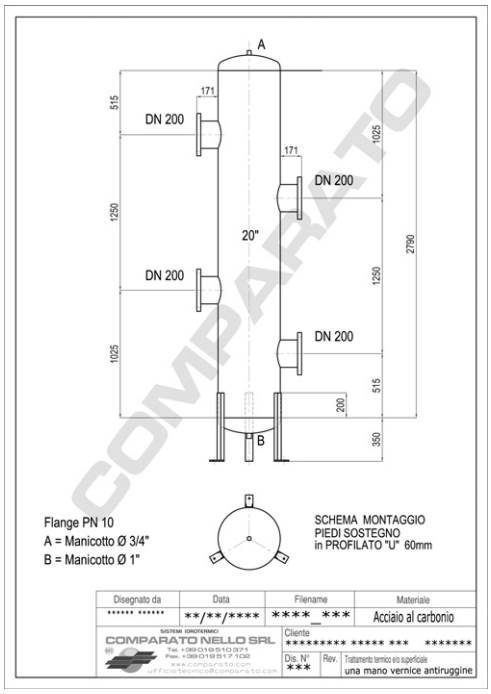
Diacom

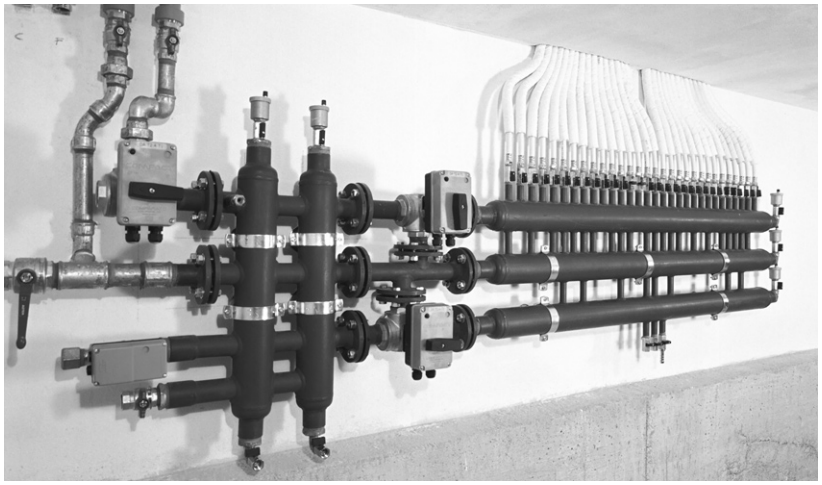
HYDRAULIC SEPARATOR WITH ADDITIONAL FUNCTION OF AIR AND DEPOSIT SEPARATOR

CUSTOM SEPARATORS

Iron and stainless steel separators are available on request with non-standard sizes, according to the customer's drawings.

Examples:





EXAMPLE OF SPECIFICATIONS

DIACOM HYDRAULIC SEPARATOR for thermal power station, with extra air separation and deposit separator function, 2" M threaded connections, 1/2" F vent valve sleeve, 1" F exhaust valve sleeve, maximum temperature 90°C, minimum temperature 5°C, maximum pressure 5 bar, EN10255 carbon steel, red water-based primer coating.

Brand: **COMPARATO**
Code: **C002**

BIM BUILDING INFORMATION MODELING

UPDATED DATA SHEETS AVAILABLE AT www.comparato.com