Technical Datasheet: BORA

High pressure refrigeration compressed air dryers for volume flows from 25 to 2000 m³/h

The compressed air is being fed into the dryer and being pre-cooled in the air-to-air heat exchanger by the outgoing cold compressed air.The pre-cooled air then passes through the refrigerant-to-air heat exchanger where it is being further cooled down to the required pressure dew point. The moisture in the compressed air condenses out and gathers and discharges automatically. Finally, the cold discharged air is being reheated by the incoming compressed air. This saves energy and prevents any moisture forming beyond the dryer in the compressed air system.
The cooling capacity of the refrigeration cycle is being controlled by a hot gas bypass which assures the dryer functionabilty for partial loads, too.

type	volume flow*	volume flow*	pressure drop	power supply	power consumption	cooling air requirement	air connection	weight
	m³/h	m³/min	bar	V/Ph/Hz	kW	m³/h	BSP	kg
DHP 0025 AB	25	0,42	0,25	230/1/50-60	0,15	200	3/8“	28
DHP 0045 AB	45	0,80	0,24	230/1/50-60	0,20	300	3/8“	29
DHP 0075 AB	72	1,20	0,25	230/1/50-60	0,22	300	3/8“	32
DHP 0090 AB	90	1,50	0,23	230/1/50-60	0,30	300	1/2"	36
DHP 0130 AB	135	2,25	0,23	230/1/50	0,46	300	1/2"	37
DHP 0185 AB	180	3,00	0,24	230/1/50	0,64	380	3/4"	54
DHP 0250 AB	240	4,00	0,24	230/1/50	0,69	380	3/4“	59
DHP 0320 AB	315	5,25	0,20	230/1/50	0,87	450	1“	84
DHP 0450 AB	450	7,50	0,22	230/1/50	0,92	1600	1“	87
DHP 0620 AB	615	10,25	0,22	230/1/50	1,05	1900	1“	109
DHP 0800 AB	810	13,50	0,23	230/1/50	1,15	1900	1 1/2“	133
DHP 1000 AB	1008	16,80	0,22	400/1/50	2,05	3400	1 1/2“	140
DHP 1200 AB	1200	20,00	0,22	400/1/50	2,90	4900	2“	232
DHP 1650 AB	1620	27,00	0,23	400/1/50	3,90	7800	2“	238
DHP 2000 AB	2010	33,50	0,22	400/1/50	4,10	7800	2“	260

* according to ISO 7183 @ 40 bar g

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Subject to change 04/2010

DHP 0025 AB - DHP 2000 AB

Features of Bora dryer DHP 0025 AB - DHP 2000 AB	Benefits
Stainless steel heat exchanger	Designed for high operation pressure
High overload capacity to a pressure dew point of approx.+20 °C	In case of overload, the dryer will only switch off at a dew point above than appr. +20 °C
All dryer in metal cabinet construction	Optimum protection against mechanical damage and against dirt
Lightweight & compact design	Minimum space requirement (on stock, for transport and for the installation in the compressed air network)

Product descritption
Complete compressed air drying system with electronic level controlled condensate drain, dew point indicator, metal housing, power plug, all units air cooled

Refrigerant:
DHP 0025 AB - DHP 0130 AB : R134a
DHP 0185 AB - DHP 2000 AB : R404A

Noise level:
DHP 0025 AB - DHP 1000 AB : < 70 dB (A)
DHP 1200 AB - DHP 2000 AB : < 75 dB (A)

Operating pressure:
max. 50 bar (g)

Protection class:
IP 20

Medium temperature:
max. +65 °C

Declaration of conformity:
acc. to 2006/42/EC Annex II A

Medium:
Compressed air

Ambient temperature:
min. +2 °C / max. +50 °C

Sizing

Comp. air inlet temp.	°C	25	30	35	40	45	50	55	60	65
Factor	f_{te}	1,27	1,12	1,00	0,88	0,78	0,70	0,62	0,55	0,49

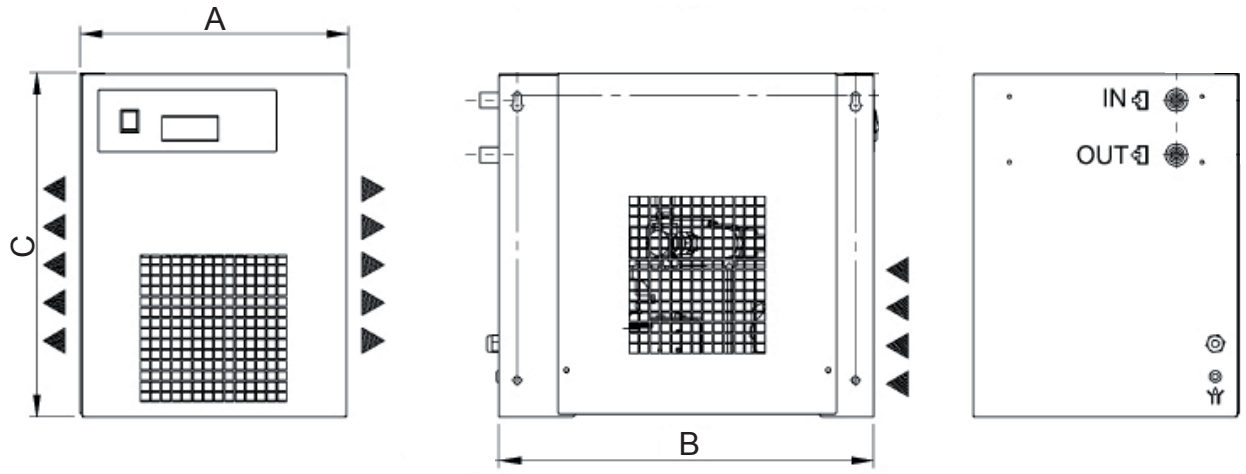
Pressure dew point	°C	3	5	7	10
Factor	f_{tpd}	1	1,09	1,19	1,37

Working overpressure	bar (g)	15	20	25	30	35	40	45	50
Factor	f_{pg}	0,74	0,82	0,87	0,92	0,96	1,00	1,03	1,06

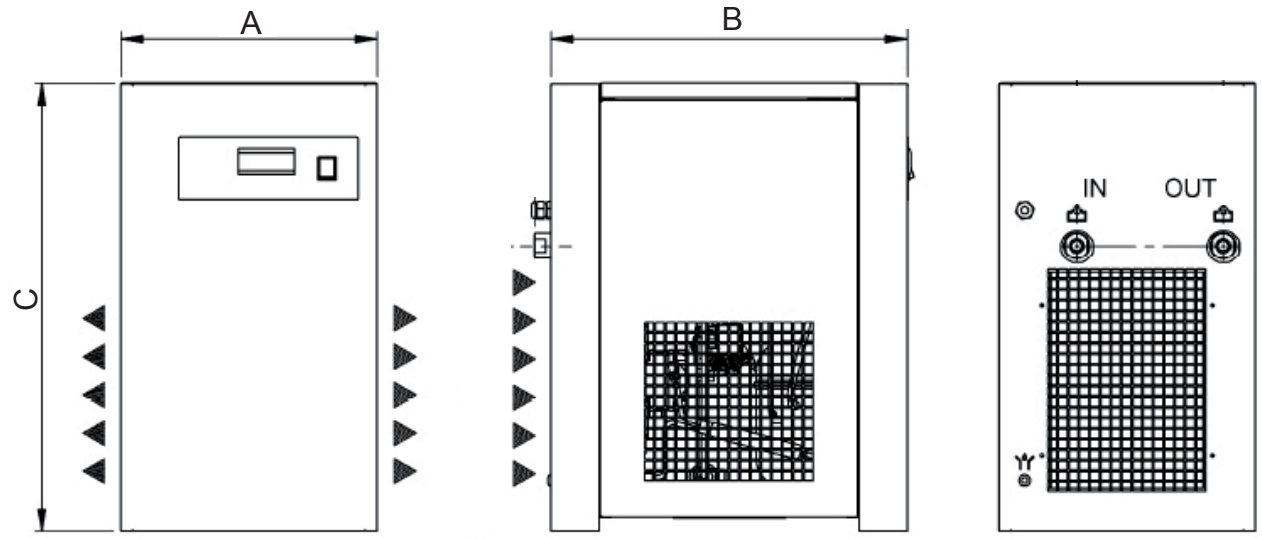
Temperature of cooling air	°C	25	30	35	40	45	50
Factor	f_{tu}	1,00	0,99	0,97	0,93	0,88	0,81

Corrected dryer capacity =
Standard dryer capacity x f_{te} x f_{tpd} x f_{pg} x f_{tu}

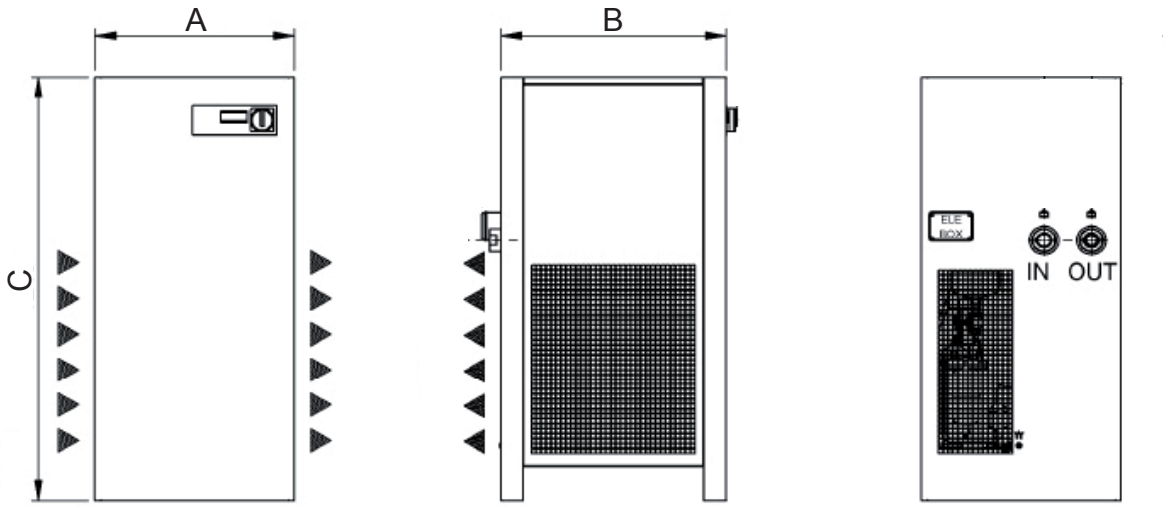
Size 1: DHP 0025 AB - DHP 0075 AB



Size 2: DHP 0090 / 0130 AB, Size 3: DHP 0185 / 0250 AB, Size 4: DHP 0320 / 0450 / 0620 AB

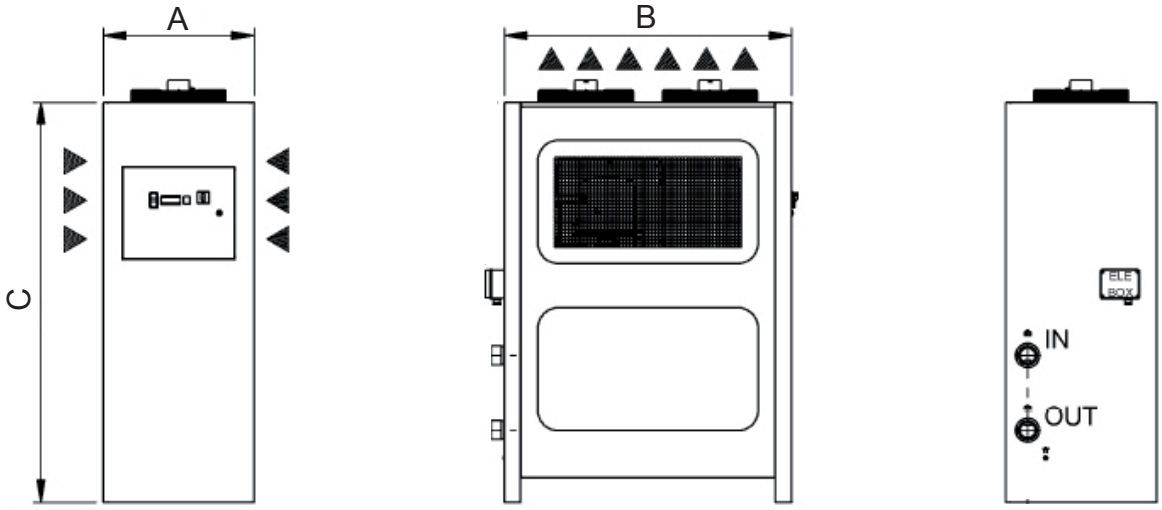


Size 5: DHP 0800 AB - DHP 1000 AB



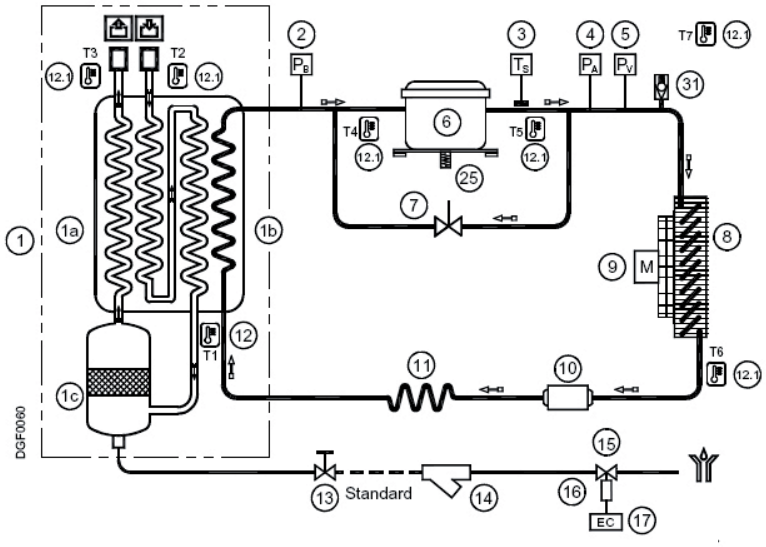
DHP 0025 AB - DHP 2000 AB

Size 6: DHP 1200 AB - DHP 2000 AB



Size	A	B	C
	mm	mm	mm
1	369	515	472
2	350	486	610
3	510	624	830
4	558	724	870
5	580	656	1240
6	607	1156	1706

Function diagram (exemplary)



Technical Datasheet: BORA

High pressure refrigeration compressed air dryers for volume flows from 2700 to 5000 m³/h

The compressed air is being fed into the dryer and being pre-cooled in the air-to-air heat exchanger by the outgoing cold compressed air.The pre-cooled air then passes through the refrigerant-to-air heat exchanger where it is being further cooled down to the required pressure dew point. The moisture in the compressed air condenses out and gathers and discharges automatically. Finally, the cold discharged air is being reheated by the incoming compressed air. This saves energy and prevents any moisture forming beyond the dryer in the compressed air system.
The cooling capacity of the refrigeration cycle is being controlled by a hot gas bypass which assures the dryer functionabilty for partial loads, too.

type	volume flow*	volume flow*	pressure drop	power supply	power consumption	cooling water requirement	air connection	weight
	m³/h	m³/min	bar	V/Ph/Hz	kW	m³/h	BSP	kg
DHP 2700 W	2700	45.00	0.36	400/3/50	2.40	0.7	DN 80	430
DHP 3500 W	3500	58.33	0.30	400/3/50	4.70	1.31	DN 80	455
DHP 4200 W	4200	70.00	0.38	400/3/50	4.90	1.37	DN 80	615
HPD 5000 W	5000	83.33	0.35	400/3/50	5.10	1.42	DN 80	680
* according to ISO 7183 @ 40 bar g								

Subject to change 04/2010

DHP 2700 W - HPD 5000 W

Features of Bora dryer DHP 2700 W - HPD 5000 W	Benefits
Stainless steel heat exchanger	Designed for high operation pressure
High overload capacity to a pressure dew point of approx.+20 °C	In case of overload, the dryer will only switch off at a dew point above than appr. +20 °C
All dryer in metal cabinet construction	Optimum protection against mechanical damage and against dirt
Lightweight & compact design	Minimum space requirement (on stock, for transport and for the installation in the compressed air network)
Options: air cooling, special color, type plate made of brass, non-halogen lines, external operating voltage transformer, air cooling	Flexibility in application and customized solutions for economical operation and safe system installation in the compressed air network

Product descritption
Complete compressed air drying system with electronic level controlled condensate drain, dew point indicator, metal housing, power plug, dry contacts for operation and alarm signals, water cooled

Refrigerant:
R134a

Noise level:
< 80 dB (A)

Operating pressure:
max. 50 bar (g)

Protection class:
IP 54

Medium temperature:
max. +60 °C

Declaration of conformity:
acc. to 2006/42/EC Annex II A

Medium:
Compressed air

Ambient temperature:
min. +2 °C / max. +50 °C

Sizing

Comp. air inlet temp.	°C	30	35	40	45	50	55	60
Factor	f_{te}	1.20	1.00	0.83	0.75	0.55	0.45	0.35

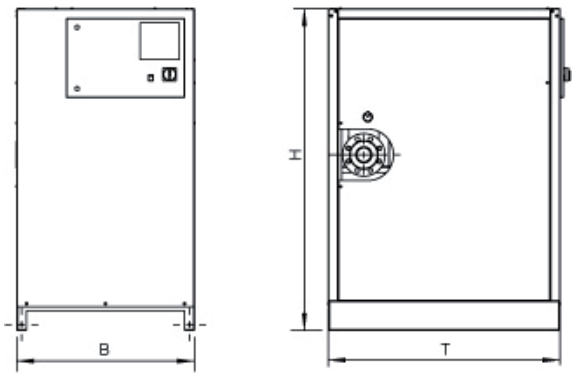
Pressure dew point	°C	3	5	7	10	15
Factor	f_{tpd}	1.00	1.07	1.14	1.22	1.35

Working overpressure	bar (g)	15	20	25	30	35	40	45	50
Factor	f_{pg}	0.43	0.55	0.72	0.81	0.90	1.00	1.05	1.10

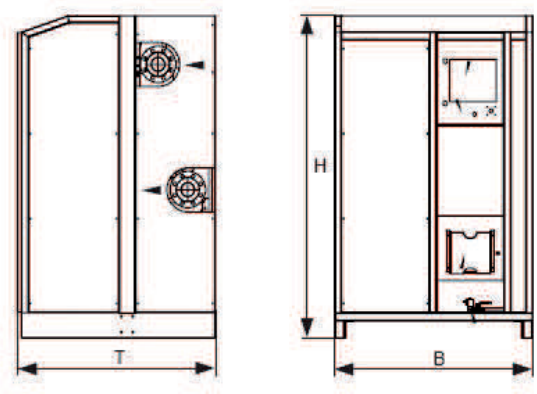
Temperature of cooling water	°C	25	30	35	40	45	50
Factor	f_{tu}	1.00	0.97	0.94	0.87	0.75	0.50

Corrected dryer capacity =
Standard dryer capacity x f_{te} x f_{tpd} x f_{pg} x f_{tu}

DHP 2700 W - HPD 5000 W



DHP 2700 W - DHP4200 W



HPD5000 W

Size	B	H	T
	mm	mm	mm
DHP 2700 W - DHP 4200 W	900	1624	1174
HPD 5000 W	1200	1900	1200

Function diagram (exemplary)