

# Refrigeration Dryers

HHD | HHDS SERIES

## BENEFITS AND FEATURES

- Lower energy consumption
- Corrosion-free air circuit, made of copper and stainless steel
- Powder-coated housing
- Unique heat-exchanger technology



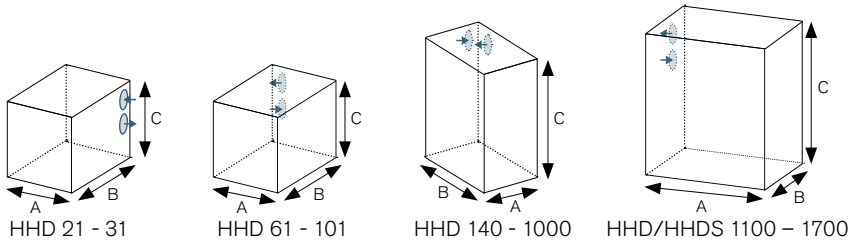
Technical Data	HHD 21 – 101	HHD 140 – 1000	HHD 1100 – 1700	HHDS 1100 – 1700
Inlet / Outlet	Back	Right (inlet), rear (outlet)	Left	
Bypass	○			
Air cooling	Standard			
Water cooling	–			
Heat Exchanger	Copper piping	Stainless steel plates (copper welded)		
IP rating	IP23			
Dew point indication	Analogue gauge			Digital LED, with alarm lamp
Potential free alarm contact	–	○		
Time-controlled condensate drain	●	–		
Electronic level controlled drain	○	●		
Digital Scroll Varying load controls	–			●

	HHD 21 – HHD 160	HHD 240 – HHD 1000	HHD/ HHDS 1100 – 1300	HHD/HHDS 1700
Refrigerant	R 134a	R 407C	R 134a	R 404A

General Data	
Medium	Compressed Air
Housing	Steel
Colour - Top Panel	RAL 5015 (blue), powder-coated
Colour - Housing	Grey, powder-coated
Location	Indoors

Model	Flow Rate*	Connection	Dimensions			Weight	el. Connection	Power Consumption
			A	B	C			
	<b>m³/h</b>		<b>mm</b>			<b>kg</b>	<b>V/Ph/Hz</b>	<b>kW</b>
HHD 21	20	R 3/8"	344	320	390	15	230/1/50	0.24
HHD 31	30					19		
HHD 61	60					29		
HHD 81	80	R 3/4"	368	419	575	29	230/1/60	0.42
HHD 101	100					41		
HHD 140	140	R 1"	393	891	601	50	230/1/50	0.58
HHD 160	160					53		
HHD 240	240					58		
HHD 315	315	R 2"	483	1.011	761	72	230/1/50	1.10
HHD 360	360					78		
HHD 470	470					86		
HHD 580	580	R 2"	533	1.191	811	100	400/3/50	1.90
HHD 680	680					112		
HHD 820	820					134		
HHD 1000	1,000		583	1.361		155	460/3/60	2.70
HHD 1100	1,100	R 2 1/2"	1.129	857	1.510	314	400/3/50	2.55
HHD 1300	1,300					327		
HHD 1700	1,700	R 3"	1.131			354	460/3/60	5.70
HHDS 1100	1,100	R 2 1/2"	1.129	857	1.510	266	400/3/50	1.80
HHDS 1300	1,300					285		
HHDS 1700	1,700	R 3"	1.131			335	460/3/60	2.80

\* ISO 7183, based on the intake volume of the compressor at +20°C and 1 bar (a), operating pressure 7 bar (g), inlet temperature +35°C, ambient or cooling water temperature +25°C, pressure dew point +3°C | Technical data and specification are subject to change without prior notice



Design Data*		Min.	Nom.	Max.
Operating pressure		2 bar (g)	7 bar (g)	16 bar (g)
Inlet temperature		+4 °C	+35 °C	+49 °C
Ambient temperature	HHD 21 – 101	+4.4 °C	+25 °C	+43 °C
	HHD 140 – 1000	+7 °C		
	HHD/HHDS 1100 – 1700	+3 °C		

\* The following correction factors need to be used to select the correct unit for other operating conditions. Hankison® refrigerant compressed air dryers are best used with a Hankison® SF pre-filter and a HF after-filter.

Correction factors for different operating pressures in bar (g) (F <sub>1</sub> )															
bar (g)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HHD 21 – 101	-	0.84	0.90	0.93	0.97	1.00	1.02	1.04	1.06	1.07	1.08	1.09	1.10	1.10	1.11
HHD 140 – 1000	-	0.79	0.87	0.92	0.96	1.00	1.03	1.07	1.10	1.13	1.16	1.18	1.21	1.22	1.24
HHD/HHDS 1100 – 1700	0.68					1.00								1.24	1.27

Correction factors for different inlet temperatures in °C (F <sub>2</sub> )				
°C	+35	+40	+45	+49
HHD 21 – 101	1.00	0.86	0.75	0.63
HHD 140 – 1000	1.00			
HHD/HHDS 1100 – 1700	1.00	0.85	0.71	0.63

Correction factors for different ambient temperatures in °C (F <sub>3</sub> )				
°C	+25	+30	+35	+40
HHD 21 – 101	1.00	1.00	1.00	1.00
HHD 140 – 1000	1.00	0.92	0.85	0.80
HHD/HHDS 1100 – 1700	1.00	0.94	0.89	0.83

Selection example		Calculation
Compressor capacity (V <sub>1</sub> )	550 m³/h	$V_2 = \frac{V_1}{F_1 \cdot F_2 \cdot F_3} = \frac{550}{1.1 \cdot 0.71 \cdot 0.92} = 756 \text{ m}^3/\text{h}$
Operating pressure (F <sub>1</sub> )	10 bar (g)	
Inlet temperature (F <sub>2</sub> )	+45 °C	
Ambient temperature (F <sub>3</sub> )	+30 °C	
V <sub>2</sub>	Required dryer capacity	



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