

REFRIGERATION DRYER

RDHP 20 - 4750

(High pressure non-cycling refrigeration dryer)



DESCRIPTION

RDHP dryers are designed for high pressure. They efficiently provide dry compressed air up to 45 bar_g at pressure dew point 3 °C. Drying is achieved on the principle of cooling, which takes place inside a highly efficient and ultra-compact 3 stage stainless steel heat exchanger. This series has evolved from our existing RDP line. They share most of the components, ensuring high quality and reliability achieved through vast experience and market feedback. Excellent performance with low pressure drop and constant pressure dew point is standard on this series. Robustness, simple and ergonomic component layout guarantees functionality and efficiency.

DRYER RATING ACCORDING TO ISO 8573-1

Solid particles ⁽¹⁾	Water ^{(1),(2)}	Oil ⁽¹⁾
/	4	/

⁽¹⁾ Standard configuration of dryer does not include filters. Prefilter (3 µm) has to be installed upstream of the dryer.

⁽²⁾ Pressure dew point also depends on specific operating conditions.

TECHNICAL SPECIFICATIONS

Max. operating pressure	45 bar _g
Max. inlet air temperature	55 °C (for temperature ≠ 35 °C apply correction factor)
Operating ambient temperature	1 °C to 45 °C (for temperature > 25 °C apply correction factor)
Storage conditions	1 °C to 65 °C, <90 % relative humidity
Pressure dew point	+ 3 °C
Filter requirement (inlet)	Prefilter 3 µm
Communication	MODBUS
Digital input	Remote ON/OFF
Digital output	Alarm
Condenser type	Air cooled
Max. noise level at 1m	< 65 dbA
Compressor operation	Non-cycling
Condensate drain	Timer controlled (Automatic optional)
Refrigerant	R513A
Protection class (controller front)	IP 65

MATERIALS

Casing	Carbon steel
Casing corrosion protection	Epoxy powder paint
Evaporator	Brazed plate stainless steel
Evaporator insulation	Flexible elastomeric foam
Condenser	Aluminium fin and copper tube
Compressor	Carbon steel
Refrigerant piping	Copper
Controller enclosure	Plastic

SIZES

Model	Compressed air			Electrical connection		Ambient air		Refrigerant		Dimensions & Mass	
	⁽³⁾ Flow	Connection	Pressure drop	Power supply	⁽⁴⁾ Power/Consumption	Cooling flow	Heat rejec.	Type	Mass	W x L x H	Net
	m ³ /h		bar	Ph~V-Hz	kW	m ³ /h	kW		kg	mm	kg
RDHP 20	20	G 3/8" BSP-F	<0,3	1~230-50*	0,170 / 0,135	350	0,12	R513A	0,20	352 x 485 x 499	24
RDHP 35	35	G 3/8" BSP-F	<0,3	1~230-50*	0,170 / 0,135	350	0,21	R513A	0,23	352 x 485 x 499	24
RDHP 50	50	G 3/8" BSP-F	<0,3	1~230-50*	0,170 / 0,135	350	0,30	R513A	0,34	352 x 485 x 499	25
RDHP 75	75	G 3/8" BSP-F	<0,3	1~230-50/230-60	0,40 / 0,25	350	0,47	R513A	0,38	352 x 485 x 499	26
RDHP 100	100	G 3/8" BSP-F	<0,3	1~230-50/230-60	0,40 / 0,25	350	0,62	R513A	0,58	352 x 485 x 499	31
RDHP 140	140	G 1/2" BSP-F	<0,3	1~230-50/230-60	0,50 / 0,38	700	0,83	R513A	0,61	356 x 552 x 684	44
RDHP 180	180	G 1/2" BSP-F	<0,3	1~230-50/230-60	0,60 / 0,45	700	1,05	R513A	0,65	356 x 552 x 684	49
RDHP 235	235	G 1/2" BSP-F	<0,3	1~230-50/230-60	0,60 / 0,45	700	1,37	R513A	0,73	356 x 552 x 684	53
RDHP 300	300	G 3/4" BSP-F	<0,3	230V, 50 Hz*	0,73 / 0,60	700	1,32	R513A	0,90	356 x 552 x 684	62
RDHP 380	380	G 3/4" BSP-F	<0,3	230V, 50 Hz*	0,73 / 0,60	700	1,67	R513A	0,95	356 x 552 x 684	65
RDHP 480	480	G 1" BSP-F	<0,3	1~230-50/230-60	1,15 / 0,90	1100	2,10	R513A	1,10	495 x 589 x 827	88
RDHP 600	600	G 1" BSP-F	<0,3	1~230-50/230-60	1,15 / 0,90	1100	2,64	R513A	1,20	495 x 589 x 827	91
RDHP 750	750	G 1" BSP-F	<0,3	1~230-50/230-60	1,2 / 1,0	1100	3,23	R513A	1,40	491 x 708 x 973	105
RDHP 950	950	G 1" BSP-F	<0,3	1~230-50/230-60	1,3 / 1,1	2200	4,09	R513A	1,60	491 x 708 x 973	111
RDHP 1500	1500	G 2" BSP-F	<0,3	3~400-50/440-60	2,4 / 1,9	2200	7,70	R513A	2,90	720 x 1337 x 1047	210
RDHP 1900	1900	G 2" BSP-F	<0,3	3~400-50/440-60	2,4 / 2,0	1900	9,4	R513A	3,90	720 x 1337 x 1047	275
RDHP 2250	2250	G 2" BSP-F	<0,3	3~400-50/440-60	2,7 / 2,4	4600	12,3	R513A	5,40	855 x 1394 x 1187	286
RDHP 2850	2850	DN 80	<0,3	3~400-50/440-60	3,8 / 3,4	3800	16,2	R513A	5,80	855 x 1394 x 1187	320
RDHP 3800	3800	DN 80	<0,3	3~400-50/440-60	8,0 / 3,6	4000	16,5	R513A	10,6	1162 x 1439 x 1493	390
RDHP 4750	4750	DN 80	<0,3	3~400-50/440-60	9,0 / 4,4	4000	20,7	R513A	13,0	1268 x 1544 x 1237	410

↓ Larger sizes available upon request ↓

⁽³⁾ Nominal condition: inlet flow 20 °C at 1 bar_a, ambient 25 °C, dryer inlet 35 °C at 40 bar_g, 3 °C pressure dew point (-36,6 °C atmospheric).

⁽⁴⁾ For 60 Hz 20 % more than stated. Consumption at nominal conditions.

*Special 60 Hz version available.

STANDARD PARAMETERS AND CORRECTION FACTORS

STANDARD PARAMETERS

Ambient temperature	25 °C / 77 °F	Inlet pressure	40 bar / 580 psig
Inlet relative humidity	100 %	Inlet temperature	35 °C / 95 °F

To calculate the correct capacity of a given dryer based on actual operating conditions, multiply the nominal inlet flow by the appropriate correction factor(s). CORRECTED CAPACITY = NOMINAL FLOW CAPACITY x C_{OP} x C_{DP} x C_{IN} x C_{AT}

OPERATING PRESSURE

[bar]	15	20	25	30	35	40	45
[psi]	218	290	363	435	508	580	652
C _{OP}	0,57	0,7	0,8	0,88	0,94	1	1,05

DEW POINT

°C	3	5	7	10
°F	37,4	41	44,6	50
C _{DP}	1	1,09	1,19	1,37

INLET TEMPERATURE

°C	≤25	30	35	40	45	50	55
°F	77	86	95	104	113	122	131
C _{IN}	1,2	1,12	1,00	0,83	0,69	0,59	0,50

AMBIENT TEMPERATURE

°C	≤25	30	35	40	45
°F	77	86	95	104	113
C _{AT}	1	0,96	0,9	0,82	0,72

MAINTENANCE

For maintenance, please follow the operating manual.