



**Worthington
Creyssensac**



**REFRIGERATION
AIR DRYERS DW**

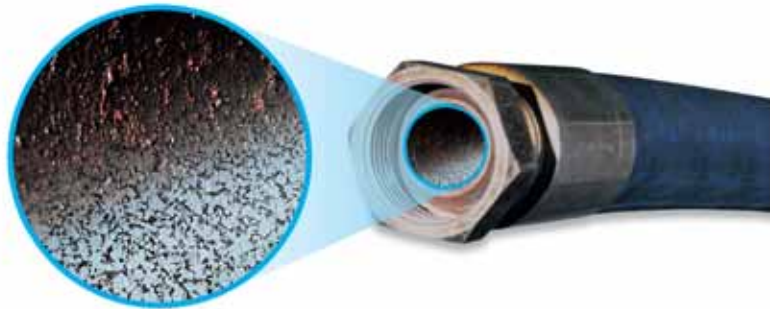
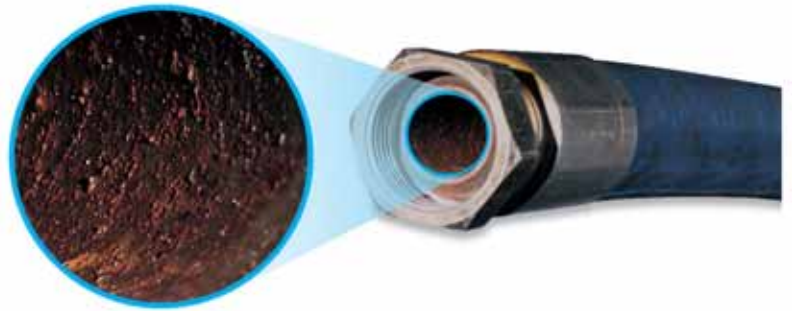
DW 2-420

COMPRESSED AIR WATER CONTAMINATION

Atmospheric air contains water in vapour form in different volumes according to the ambient conditions. Under compression, this water is drawn in along with the air. After compression, the air and water are then discharged to the distribution system, with some of the water content normally being removed by a compressed air after-cooler and then discharged.

However, a large proportion of the water vapour content remains in the compressed air, moving in the pipe distribution system as the air is consumed.

Compressed air may undergo further cooling in the piping, as a result of the ambient temperature and/or due to expansion, resulting in liquid water lying in the pipe distribution system, receivers and pneumatic equipment.



As time passes, the condensate can cause serious damage to pipes and applications, resulting in production downtime and higher maintenance costs. During processes, where compressed air comes into contact with the final product, it can even damage the product itself.

DW Refrigerant dryers are machines designed for treating compressed air. By using the refrigerant characteristics of certain fluids, these dryers lower the temperature of the compressed air, causing water vapour to condense and discharge prior to it entering any distribution system.



WATER CONTAMINATION RISKS

- Corrosion in the network:

Increasing pressure drop due to the deterioration of the air network with increasing pipe scale and rust. Damage to joints will cause air leaks, significantly increasing the cost of air production.

- Malfunction of the pneumatic equipment:

Malfunction of equipment and instrumentation, reduction of component life, increase in production losses and manufacturing costs.

- Product contamination:

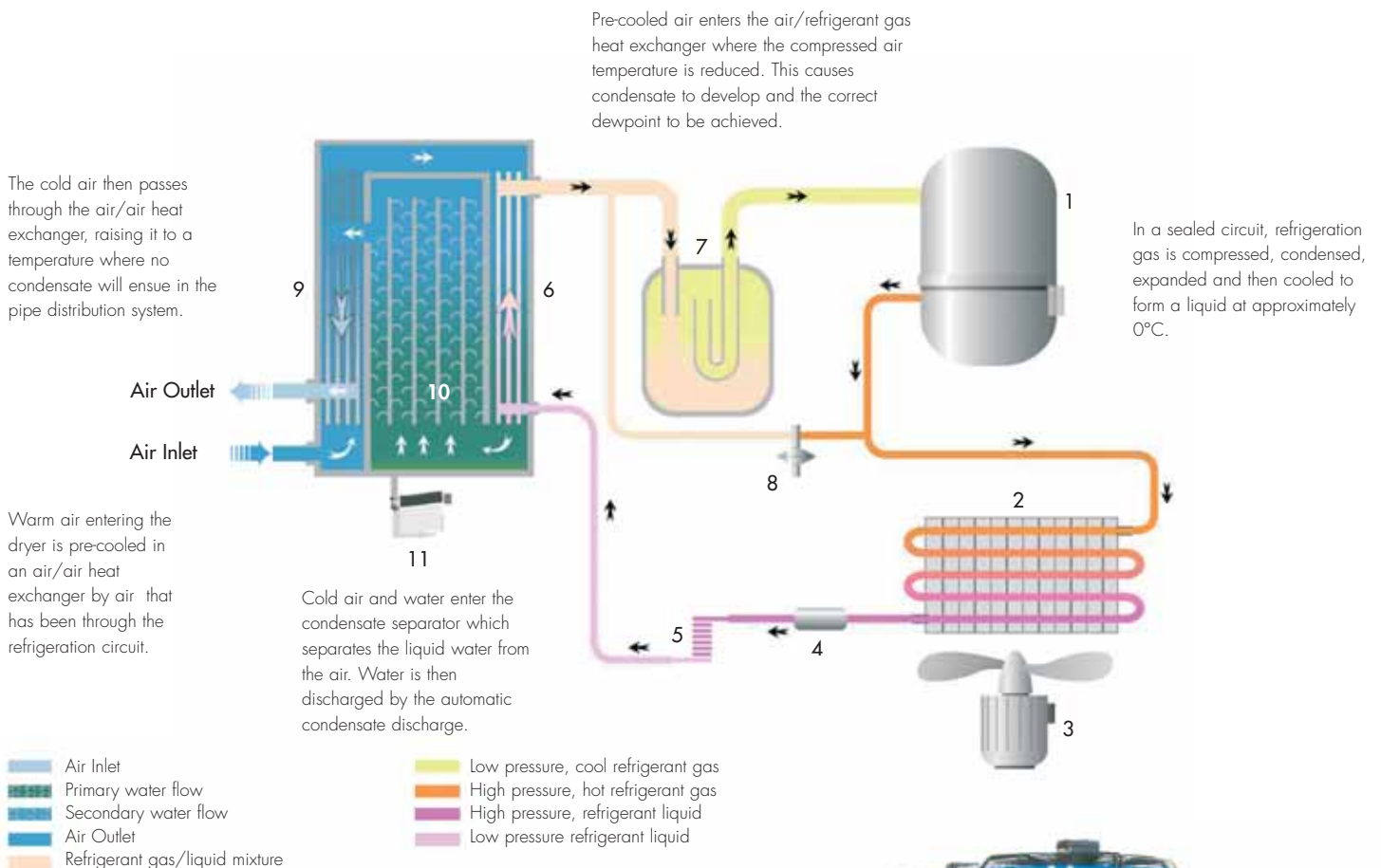
The efficiency of the production process can reduce product spoilage caused by product contamination: fitting moisture separators improves air quality. During spray painting, condensate causes imperfections on the finished product creating future corrosion areas. In pharmaceutical and electronic applications, condensate product contamination can be harmful and/or extremely expensive.

DW DRYERS AIR PURITY

For many companies in today's competitive global market, the treatment of compressed air is not an option, but a necessity to reduce operating costs and increase production efficiency.

Being an efficient and simple technology, refrigeration dryers represent the preferred solution for the majority of these applications.

The Worthington Creyssensac DW dryers have been developed to supply dry compressed air for your production process, with a minimum power requirement and low pressure drop for optimum efficiency.



- 1 Refrigerant compressor
- 2 Refrigerant condenser
- 3 Fan
- 4 Refrigerant filter
- 5 Capillary tube
- 6 Air/refrigerant heat exchanger
- 7 Liquid separator
- 8 Hot gas by-pass valve
- 9 Air/air heat exchanger
- 10 Condensate separator
- 11 Automatic condensate discharge



TECHNICAL SPECIFICATIONS

Types		DW2	DW3	DW5	DW7	DW10	DW13	DW17	DW21	DW25	DW31	DW39	DW46	DW60	DW72	DW90	DW108	DW144	DW180	DW210	DW300	DW420	
Flow treated according to temperature of compressed air input	35 °C	21	36	51	72	110	141	180	216	246	312	390	462	600	720	900	1080	1440	1800	2100	3000	4200	
	Cfm	12,4	21,2	30,0	42,4	64,4	83,0	106	127	145	184	230	272	353	424	530	636	848	1060	1237	1766	2472	
	40 °C	17,2	29,5	41,8	59,0	90,2	116	148	177	202	256	320	379	492	590	738	886	1181	1476	1722	2460	3444	
	Cfm	10,2	17,4	24,6	34,8	52,8	68	87	104	119	151	189	223	289	348	435	522	695	869	1014	1448	2.027	
	45 °C	14,5	24,8	35,2	49,7	75,9	97	124	149	170	215	269	319	414	497	621	745	994	1242	1449	2070	2898	
	Cfm	8,6	14,6	20,7	29,3	44,4	57,27	73	88	100	127	159	188	244	293	366	439	585	731	854	1219	1706	
Nominal electrical power ①	kW	0,13	0,16	0,19	0,27	0,28	0,61	0,67	0,79	0,87	1,07	1,19	1,45	1,82	2,01	2,64	3,57	3,90	4,46	5,55	6,80	10,20	
Power supply voltage	V/Hz/Ph	230/50/1										400/50/3											
Max. operating pressure	bar	16	16	16	16	16	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
Refrigerant gases		R134a										R404A											
Air connections	gas/DN	3/4" M	3/4" M	3/4" M	3/4" M	3/4" M	1" F	1" F	1 1/2" F	1 1/2" F	1 1/2" F	1 1/2" F	1 1/2" F	2" F	2" F	2" F	2" F	3" F	3" F	3" F	3" F	DN125	DN125
Weight	Kg.	19	19	20	25	27	44	44	53	60	65	80	80	128	146	158	165	325	335	350	550	600	

NOTES:

① Reference conditions:

- Operating pressure: : 7 bar (100 psi)
- Operating temperature : 35 °C
- Room temperature: : 25 °C
- Pressure dew point: : +3 °C +/- 1
- Available in different voltages and frequency values

Limit conditions:

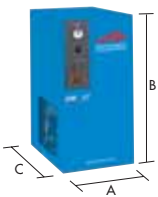
- Working pressure : 16 bar (232 psi) (DW 2 up to 10)
- : 13 bar (188 psi) (DW 13 up to 420)
- Operating temperature : 55 °C
- Min/Max room temperature : +5 °C; +45 °C

CORRECTION FACTOR FOR CONDITIONS DIFFERING FROM THE PROJECT $K = A \times B \times C$

Room temperature	°C	25	30	35	40	45	Operating temperature	°C	30	35	40	45	50	55
A	1,00	0,92	0,84	0,80	0,74	(DW 2 up to 46)	B	1,24	1,00	0,82	0,69	0,58	0,45	(DW 2 up to 46)
	1,00	0,91	0,81	0,72	0,62	(DW 60 up to 420)		1,00	1,00	0,82	0,69	0,58	0,49	(DW 60 up to 420)
Operation pressure	bar	5	6	7	8	9	10	11	12	13	14	15	16	
	C	0,90	0,96	1,00	1,03	1,06	1,08	1,10	1,12	1,13	1,15	1,16	1,17	(DW 2 up to 46)
		0,90	0,97	1,00	1,03	1,05	1,07	1,09	1,11	1,12				(DW 60 up to 420)

The new flow rate value can be obtained by dividing the current or real flow rate by the correction factor related to the real operation conditions.

DIMENSIONS

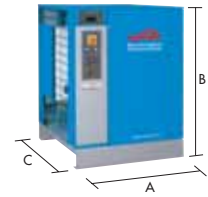


	A	B	C
DW2 to DW10	350	450	500
DW13 to DW17	370	764	500
DW21 to DW31	460	789	560
DW39 to DW46	580	899	590

Dimensions in mm

	A	B	C
DW60 to DW108	735	962	898
DW144 to DW210	1.020	1.535	1.082
DW300 to DW420	1.020	1.535	2.099

Dimensions in mm



COMPACT INSTALLATION



Unique, light, and compact design makes dryer handling easy. The installation of the DW dryer is simple and requires no special equipment or foundation work.

To ensure operational reliability of the DW dryer range, it is recommended to install a Worthington Creyssensac pre-filter upstream of the dryer and a high efficiency oil removal filter downstream of the dryer to protect the air system against particle and oil contamination.

DW DRYERS

STANDARD FEATURES FOR DW60 UP TO DW420



- Digital dew point display
- Remote start/stop contact
- Remote free contacts for a:
 - General alarm
 - Drain alarm only for DW144 up to DW420

AUTOMATIC DISCHARGER OF CONDENSATE



All models are equipped with a smart condensate discharger. Carefully sized for each model, it assures exceptional reliability and efficiency in discharging water, without compressed air. In case of malfunction, an alarm signal is displayed.

- It discharges only water, NOT compressed air
- Silent, eliminating noise pollution.

OPTIONS FOR DW 2 UP TO DW 10

BY – PASS VALVE + FILTER SUPPORT



In case of dryer non-operation, a manual bypass allows a continued compressed air supply whilst maintaining air filtration.

PS: Filters are not included in the option.

FILTER SUPPORT



This option has allows two filters to be installed on the rear side of the dryer, reducing overall dimensions and installation costs.

ENVIRONMENTALLY FRIENDLY

Manufacturing machines showing an increasingly low environmental impact is one of our industrial goals. With our DW series dryers, we have achieved results that were unachievable just a few years ago.



- No compressed air wastage during the condensate discharge phase.
- Noiseless condensate discharge operation.
- Environmentally friendly thanks to the use of R 134a and R404A gas.
- No impact on the ozone layer.
- High energy savings due to low pressure drops throughout the system.
- Cleaner compressed air distribution network for higher quality air supply applications.

SHARING OUR VALUES



PARTNERSHIPS

Close working partnerships form the foundation of our corporate culture. This identity has grown from our strength in developing long term partnerships with our distribution and sales networks that have local knowledge and experience to provide a total compressed air solution service, tailored specifically to our customers' requirements.

Our business approach has earned us a reputation of trust and loyalty committed to achieving success through partnership.

COMPETENCE

Personnel skill development is a vital part of our success: by a continuous improvement process we improve the ability of our personnel to maintain and improve the service to our customers.

We carry this process through to our partner distributors to ensure that we create a motivated and enthusiastic team working together for the benefit of our customers.

EVOLUTION

Our strategy in product and service development is based on continuous improvement of our products and services in order to meet the requirement of the market and our customers. Continued investment in the design of new products and the use of innovating technologies keep our compressed air solutions amongst the most competitive in the industry. This is our mission to guarantee the satisfaction and trust of our customers.

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