



REFRIGERATED AIR DRYERS

CAPS CDRP SERIES

ENERGY SAVINGS UP TO 99%.



ENERGY SAVING AIR DRYERS - CDRP SERIES

THE ULTIMATE SOLUTION PROVIDING PERFECT DEHYDRATION

This CDRP technology harnesses the latent heat occurs when PCM material converts solid to liquid or liquid to solid, which automatically triggers the refrigeration compressor to switch ON or OFF according to varying compressed air heat loads.

APPROPRIATELY SIZED. FIT FOR PURPOSE.

Reduction of energy consumption has been a mission for most countries in order to curb our global warming and increasing energy cost problem. CAPS is now offering a revolutionary energy saving refrigerated compressed air dryer that uses Phase Change Material (PCM) which saves up to 99% of energy.

UNIQUE PRODUCT DESIGN

Adopted Phase Change Material PCM (Patented)

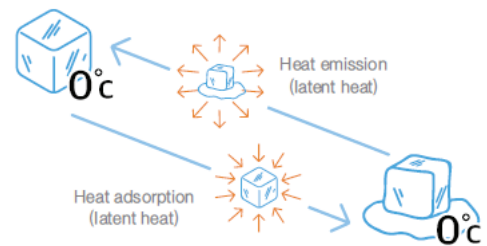
- Stainless steel brazed plate heat exchanger with PCM filled in
- Automatically triggers refrigeration compressor to switch ON or OFF according to varying compressed air heat loads

GREAT ENERGY EFFICIENCY

- Up to 99% energy saving with the lowest cost
- Shortest period of return of investment

LATENT HEAT

Latent heat is energy released or absorbed by a body or a thermodynamic system, during a constant temperature process that is specified in some way. For instance, when ice melts into water, it absorbs heat from its surroundings. Vice versa, when water freezes into ice, the same volume of the heat is released. As such, when heat flows in and out at constant temperature, we call this heat as latent heat.



WHY PHASE CHANGE MATERIAL?

PCM is a substance with high latent heat which melts or solidifies at a certain temperature, thus being able to absorb or release large amounts of energy. Taking advantage of the magnitude of Latent Heat (at change of phase) which is a multitude of times higher than Sensible Heat (at change of temperature), by adopting PCM technology, substantial amount of latent heat in the refrigerated dryer can be saved.

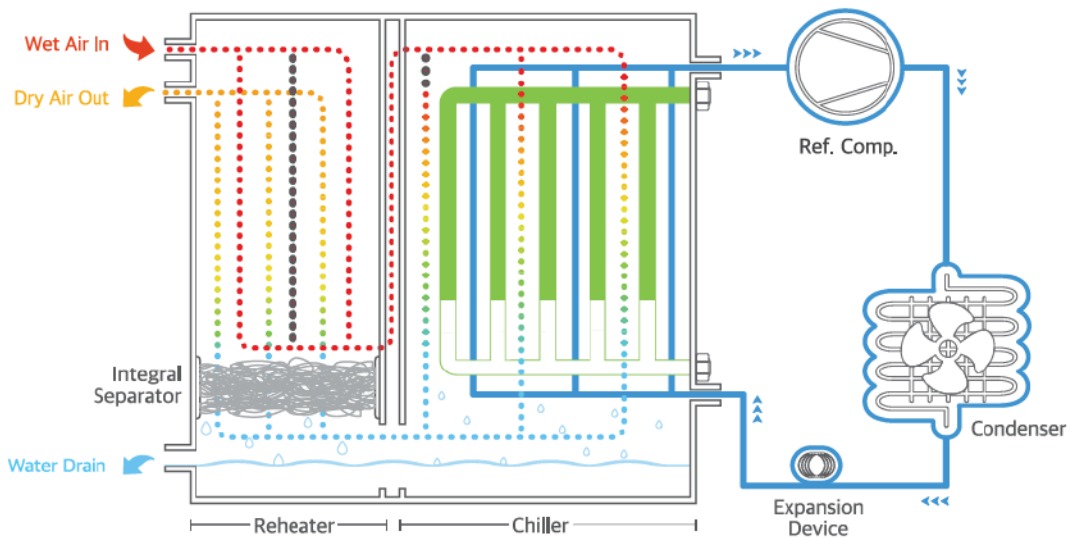
In other words, the CDRP dryer provides sufficient cold storage with only a small amount of phase change material, resulting in simple engineering design, compared to existing "Thermal Mass" dryers which are available in the market. Hence by being able to lower the manufacturing cost through streamlining and replacing redundant components with cutting edge technology.



CDRP

HOW IT WORKS

- 1** The CDRP Series utilises a phase change (PCM) heat transfer medium between the refrigeration and compressed air circuits that serves as a reservoir for thermal storage.
- 2** The thermal reservoir is comprised of a patent pending heat exchanger filled with a PCM that efficiently transfers heat energy through a "change of state".
- 3** The refrigeration circuit operates to cool down the PCM until it forms into a solid at which time the refrigeration system cycles off.
- 4** As the compressed air enters the PCM to air section of the heat exchanger, the PCM media absorbs heat from the airstream and begins to melt the PCM media at a constant temperature.
- 5** When most of the PCM media has turned to liquid the refrigeration system cycles on to again cool down the PCM media turning it back into a solid.
- 6** This cycle repeats as required to meet the corresponding compressed air load on the CDRP dryer.



NON-CYCLING VS PCM REFRIGERATED AIR DRYER

Hot Gas Bypass Valve is adopted. Refrigeration compressor in continuous operation regardless of the levels of loading of compressed air.

- Low material cost but high running cost
- Simple engineering design
- Unstable dew point

Phase Change Material (PCM) which freezes or melts at specific temperature is adopted. Refrigeration compressor is activated when necessary according to the loading of the air compressor.

- Maximising energy saving effect
- Stable dew point
- Simple design, ease of maintenance



FEATURES

UNIQUE PRODUCT DESIGN

- Minimalist design but unparalleled energy savings

INTEGRAL STAINLESS STEEL BRAZED PLATE HEAT EXCHANGER

- Streamlined design with minimum components, dispense with glycol tank, pump, pipe, etc
- High efficiency, performance, and stable dew point
- Anti-corrosive stainless steel material
- Helium leak tested (below 0.3g/year)

STORAGE, RE-HEATER, CHILLER AND SEPARATOR COMBINED INTO 4 IN 1 MODULE

- Low pressure drop reduces operating costs
- Compact design saves floor space
- Simple structure, ease of maintenance

HIGH EFFICIENCY CONDENSING UNIT

- Optimised efficiency and durability with brazed aluminum material
- Up-flow design of condenser exhaust vent, saves installation space

ECO-FRIENDLY REFRIGERANT R-407C

ADVANCED OPTI-ECHO CONTROL PANEL

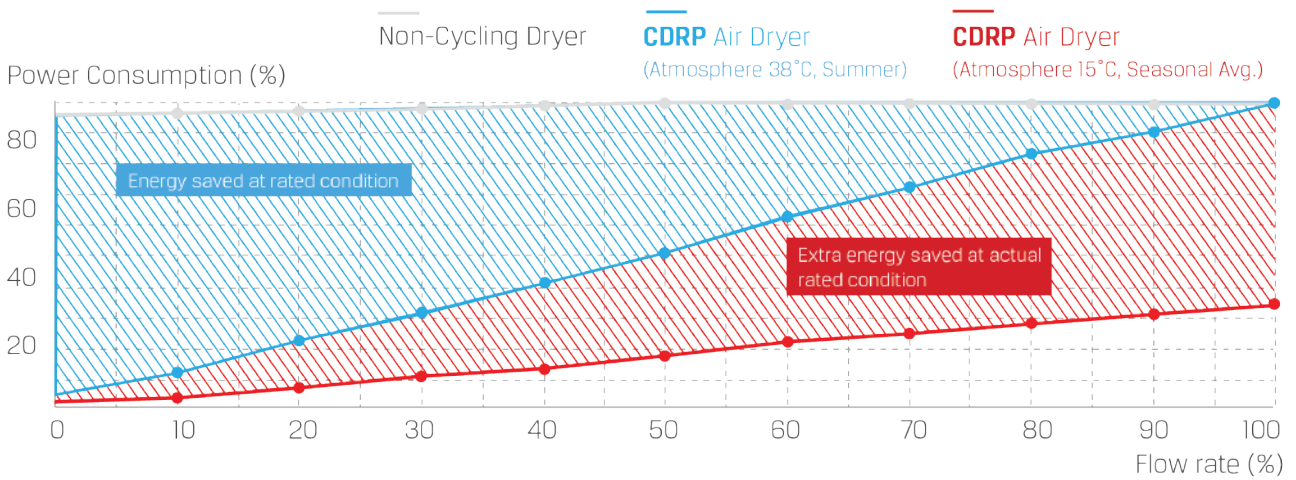
- Energy saving and dew point level display
- Dryer/Ref. compressors operating hours display
- Dry contact for common alarm



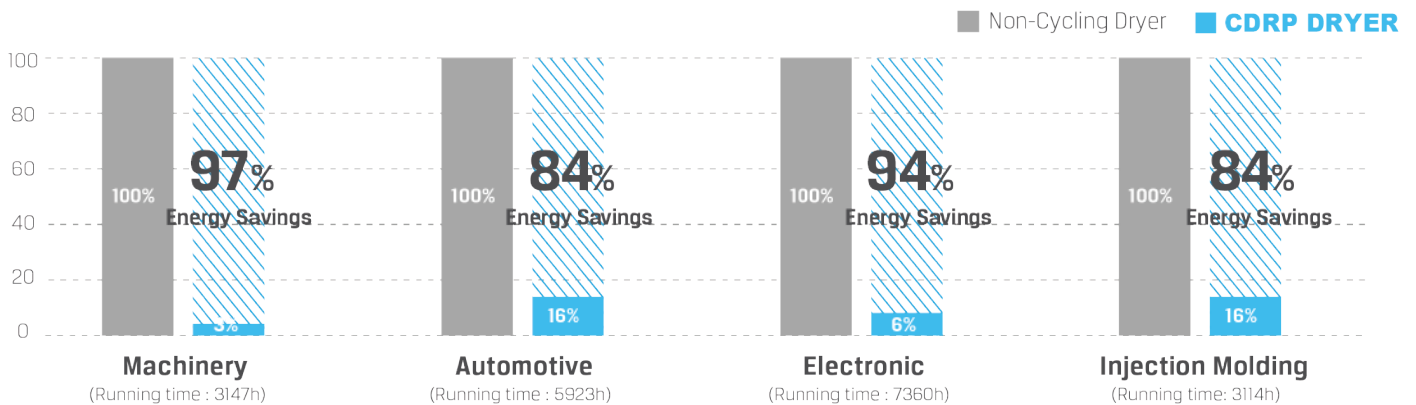


NEW STANDARD IN COMPRESSED AIR TREATMENT.

ENERGY SAVING COMPARISON (AGAINST NON-CYCLING AIR DRYER)



INSTALLATION EXAMPLES



PRODUCT SPECIFICATIONS.

Model	Flow Capacity		Nominal Power	Power Supply (V/Ph/Hz)	Inlet/Outlet Connections	Approx Weight	Dimensions (mm)			Refrigerant
	M3/min	CFM	kW		(Inches)		Height	Width	Depth	
CDRP120	3.4	120	0.68	220-240/1/50	1"	72	711	363	781	R407C
CDRP180	5.4	190	1.16		2"	98	761	443	961	
CDRP290	8.8	310	1.90			147	911	494	1111	
CDRP540	16.5	582	3.70	380-415/3/50		190	1032	494	1203	
CDRP640	19.3	682	3.90		211	1032	544	1303		

CAPACITY CORRECTION FACTORS

Pressure Correction									
[Bar g]	6	7	8	9	10	11	12	13	16
Correction Factor	0.92	1.00	1.03	1.07	1.09	1.10	1.12	1.18	1.23

Inlet Air Temperature Correction							
[°C]	35	40	45	50	55	60	65
Correction Factor	1.00	1.00	0.94	0.87	0.72	0.61	0.52

Ambient Air Temperature Correction						
[°C]	25	30	35	40	43	50
Correction Factor	1.00	0.88	0.83	0.63	0.50	0.38

Standard Rated Conditions: 35°C inlet air temp, 7.0BarG inlet pressure, 100% relative humidity, 25°C ambient air temp.
 Max. / Min. Inlet Pressure: 16 BarG / 3 BarG.
 Max. / Min. Inlet Air Temp : 65°C / 4°C, Max. / Min. Ambient Air Temp: 50°C / 4°C

GET IN TOUCH.

24/7 SUPPORT: 1800 800 878

WEBSITE: CAPS.COM.AU

SHOP: CAPSSHOP.COM.AU

EMAIL: INFO@CAPS.COM.AU

BRANCH LOCATIONS

PERTH (HEAD OFFICE) | KALGOORLIE | MELBOURNE | SYDNEY
NEWCASTLE | ADELAIDE | BRISBANE | MACKAY | DARWIN

SOLVING YOUR AIR AND POWER CHALLENGES.