



RCU

AIR COOLED CHILLERS

RCU Chillers

Designed and manufactured in Great Britain.

13 models, 0.37-63kW.

Non-ferrous fluid circuits.

Copper or stainless steel large surface area evaporators.

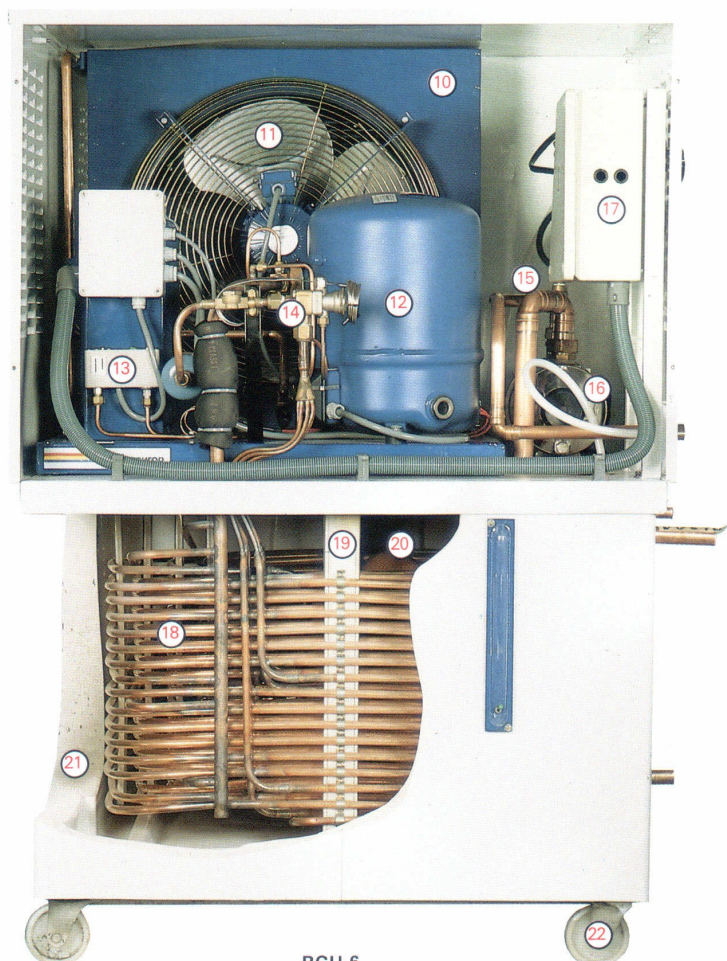
Fully insulated large volume GRP or stainless steel lined holding tanks.

Water temperatures down to 1°C without the use of antifreeze.

High or low flow rates with matching pressures easily accommodated.

No.	Description
1	On-Off control
2	Temperature gauge
3	Pressure gauge
4	Pressure regulator
5	Flow and return connector
6	Overflow
7	Mains inlet
8	Sightglass
9	Service access panel
10	Condenser
11	Fan
12	Compressor
13	HP and LP protection
14	Expansion valve
15	Pressure relief valve
16	Pump*
17	Electrical box
18	Evaporator coil
19	Stainless steel brackets
20	Ball valve
21	Insulated tank
22	Heavy duty castors

** supplied loose on models 7-10.*



RCU 6

UNIT SPECIFICATION

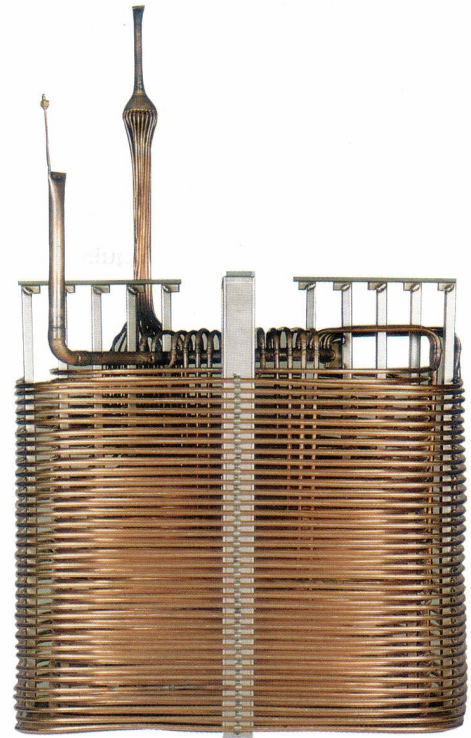
Our range of RCU chillers has been designed to fulfil a large range of cooling requirements in the industrial, commercial, food and research fields.

Suitable as standard for indoor siting, they can also be located externally with only minor modifications and can cope with widely varying conditions of ambient, flow temperature and humidity.

COMPRESSOR

All compressors are selected for their availability, reliability and low running costs and the choice ranges from fully to semi-hermetic type, depending on application.

Models 2-11 are fitted with pressure relief devices to maintain constant set pressures to suit requirements. This valve also protects the pump in the event of a downstream valve closure. All fluid circuit are in non-ferrous materials.



RCU 10 Evaporator.

CONDENSER

Standard units have air cooled condensers constructed from copper coils with aluminium fins. Water cooled condensers are available on request. Air cooled units can be designed for operation in ambient temperatures up to 48°C.

CHILLER EVAPORATOR

Evaporators are of copper tube with stainless steel supports. Immersed in the bulk holding tank, they have the advantage of enabling water temperatures down to +1°C to be reached without the addition of antifreeze. Their simple design also enables high or low water flow rates to be achieved, with corresponding pressure and temperature differentials to suit individual applications.

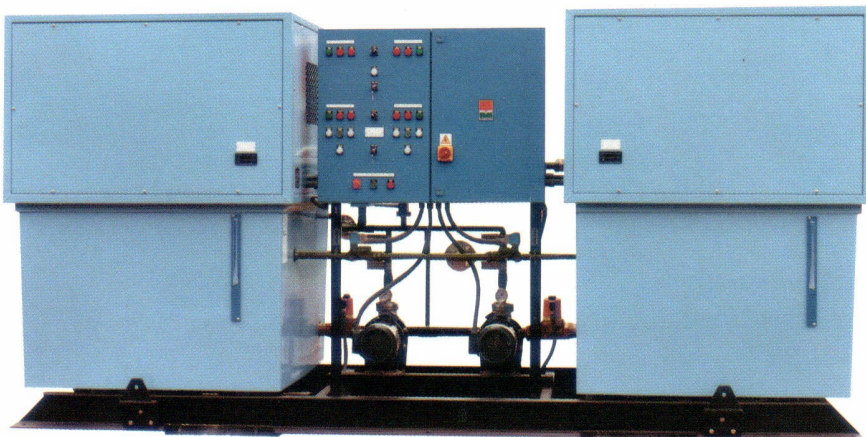
PUMP

All units are supplied with non-ferrous pumps (loose on models 7-10).

Due to the large water reservoir it is possible to maintain stabilised fluid temperatures of $\pm 1^\circ\text{C}$, which will not fluctuate to any great extent, even when process demand exceeds unit capacity for short periods.

SERVICE

All products are fully tested before leaving the works and customers' own Engineers are welcome at this time in order that they may familiarise themselves with the equipment. Once on-site we can arrange for post commissioning and on site training. For maintenance, emergencies and long term contracts our own Service Engineers are at your disposal.



RCU 8 Twin Water Cooled model, complete with pump set.

POTABLE/BAKERY CHILLERS

RCU PB RANGE

The ten models in our PB range are designed for use in food manufacturing processes where a temperature controlled supply of potable water is required at temperature down to 1°C. PB coolers will cope with water demands from 125-3200 litres per hour when cooling from 18°C to 5°C, with high discharge rates up to 210 litres per minute. Features include a level switch to operate a water make up solenoid valve and in units operating down to 1°C an agitator is fitted to maintain turbulence in the bulk tank.

Standard units have a non-ferrous water circuit with GRP holding tanks and copper cooling coils. Stainless steel lined tanks and cooling coils are available if required.



RCU 8-PB supplying chilled water at 1°C to control dough temperature at mixing stage.

PB SELECTION CHART

Based on water entering chiller at 18°C, cooling to 5°C in an ambient of 28°C.

<i>Water usage required litres/hour</i>	<i>Unit type</i>	<i>Maximum discharge rate litres/min</i>	<i>Heat extraction per hour</i>		
			<i>K.Cals</i>	<i>BTU</i>	<i>Watt</i>
125	RCU 3 PB	10	1625	6448	1890
170	RCU 3A PB	10	2210	8769	2570
230	RCU 4 PB	35	3000	11903	3489
385	RCU 5 PB	45	5000	19840	5815
615	RCU 6 PB	45	8000	31746	9305
950	RCU 7 PB	80	12350	49007	14364
1280	RCU 8 PB	80	16650	66070	19365
1900	RCU 9 PB	210	24700	98010	28727
2485	RCU 10 PB	210	32300	128171	37567
3200	RCU 11 PB	210	41660	165312	48453

Figures shown are for standard units. For duties outside those shown please contact us.

EXTRACTION RATES

Capacities (28°C ambient)

Chilled Water Temperature (Water only)

		RCU													
		Model	0	1	2	3	3A	4	5	6	7	8	9	10	11
20°C	Kcals	413	625	1450	3000	3990	5400	7500	12500	22500	28500	42000	56000	72000	
	BTU	1639	2480	5754	11904	15832	21427	29760	49600	89280	113088	222208	222208	285696	
	Watts	480	727	1686	3489	4640	6280	8722	14537	26167	33145	65128	65128	83736	
15°C	Kcals	375	625	1250	2500	3325	5000	7500	12500	18750	25000	50000	50000	64000	
	BTU	1488	2480	4960	9920	13194	19840	29760	49600	74400	99200	198400	198400	253952	
	Watts	436	727	1454	2907	3867	5815	8722	14537	21806	29075	58150	58150	74432	
10°C	Kcals	320	500	1050	2125	2825	3800	6180	10290	15700	21250	42000	42000	54000	
	BTU	1270	1984	4166	8432	11209	15078	24522	40830	62297	84320	166656	166656	214272	
	Watts	372	582	1221	2471	3285	4419	7187	11967	18259	24714	48846	48846	62802	
5°C*	Kcals	250	420	860	1750	2325	3135	5110	8525	13000	17500	34000	34000	44000	
	BTU	992	1667	3412	6944	9225	12440	20276	33827	51584	69440	134912	134912	174592	
	Watts	290	488	1000	2035	2704	3646	5943	9915	15119	20352	39542	39542	51172	
0°C*	Kcals	210	320	750	1500	1995	2565	4180	7000	11000	14000	28000	28000	36000	
	BTU	833	1270	2976	5952	7916	10178	16586	27776	43848	55552	111104	111104	142848	
	Watts	244	372	872	1744	2320	2983	4861	8141	12793	16282	32564	32564	41868	
-5°C*	Kcals	160	290	625	1190	1575	2000	3401	5715	8750	11500	21500	21500	27000	
	BTU	635	1150	2480	4722	6250	7936	13495	22677	34720	45632	85312	85312	107136	
	Watts	186	337	727	1384	1832	2326	3955	6647	10176	13374	25004	25004	31401	

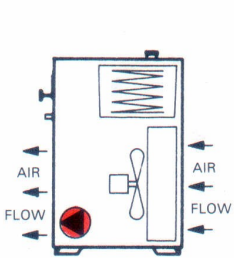
* Standard Units – for temperatures below 5°C antifreeze must be added.
PB Units – suitable for temperatures down to 1°C without antifreeze.

PHYSICAL AND ELECTRICAL DATA

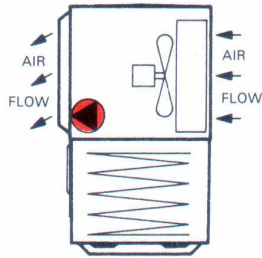
		RCU													
		Model	0	1	2	3	3A	4	5	6	7	8	9	10	11
Nominal duty at 10°C LWT-28°C Ambient	KW	0.37	0.58	1.22	2.47	3.28	4.42	7.19	12	19	25	37	49	62.8	
Nominal flow EWT 15°C. LWT 10°C	Litres/min	1.06	1.67	3.5	7.08	9.41	12.7	20.6	34.3	52.3	70.8	106	140	180	
Water tank volume	Litres	18	18	50	50	80	80	320	320	680	680	1350	1350	1600	
Pump	Watts	18	18	600	600	600	750	550	550	750	750	1500	1500	2200	
Water flow 5°C C T	Litres/min	1.06	1.67	3.5	7.08	9.41	12.7	20.6	34.3	52.3	70.8	106	140	180	
Pressure	Bar	0.2	0.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.8	2.7	4.0	
Evaporator pressure drop	Bar	0	0	0	0	0	0	0	0	0	0	0	0	0	
Compressor nominal	KW	0.18	0.24	0.55	0.90	1.1	1.5	2.2	3.7	5.5	7.5	11.0	18.5	26.0	
Air flow	M3/sec	0.09	0.09	0.39	1	1	1	1.39	1.46	3.22	4.25	5.5	6.61	9.86	
Number of fans		1	1	1	1	1	1	1	1	1	1	1	1	1	
Fan (each)	Watts	7	7	25	120	120	180	450	450	1100	1100	1500	2200	4000	
Starting current	Amp	1ph	19	25	63	81	37	40	54	77	109	121	123	189	300
		3ph	-	-	-	33									
Full load current	Amp	1ph	4.0	4.8	12.6	16.3	7.5	6.5	12.7	17.7	24	27.5	32.7	41.1	61.7
		3ph	-	-	-	6.4									
Noise level at one metre	dBA	53	53	66	69	74	70	70	69	66	79	77	78	85	

Kcals = Watts x 0.8598. BTUs = Watt x 3.4118.

DIMENSIONS

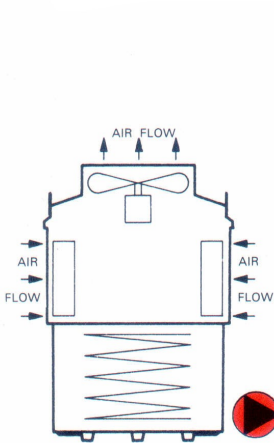


Models 0, 1, 2, 3, 3A, 4.

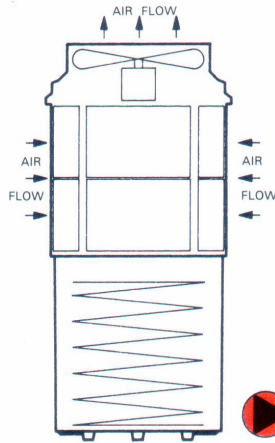


Models 5, 6.

Model	Length mm	Width mm	Height mm	Weight Kg		Process connections
				dry	operating	
0	535	390	617	50	68	3/8" BSP
1	535	390	617	63	81	3/8" BSP
2	800	605	845	102	152	æ" BSP
3	800	605	845	140	190	æ" BSP
3A	917	760	1040	200	288	æ" BSP
4	917	760	1040	203	291	æ" BSP
5	1100	930	1447	385	700	æ" BSP/28mm
6	1100	930	1447	385	710	æ" BSP/28mm



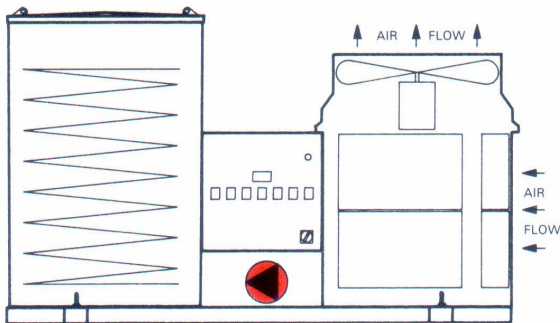
Models 7, 8.



Models 9, 10.

Model	Length mm	Width mm	Height mm	Weight Kg		Process connections
				dry	operating	
7	1313	1313	1871	670	1350	22 / 42 mm
8	1313	1313	1871	780	1460	22 / 42 mm
9	1386	1313	2839	1030	2390	35 / 54 mm
10	1386	1313	2839	1330	2690	35 / 54 mm

NOTE: Pumps can be supplied loose or integral on these models.



Models 10, 11 Low Profile.

Model	Length mm	Width mm	Height Mm	Weight Kg		Process connection
				dry	operating	
10 LP	1313	3300	2250	1660	3020	35 / 54 mm
11 LP	1313	3300	2250	2000	4000	35 / 54 mm



F&R Products

Richards Close, Wellington, Somerset, TA21 0BD,
England

Telephone: 0044 (0) 1823 663281

Facsimile: 0044 (0) 1823 664378

E-mail: colin.frproducts@btinternet.com

Web: www.fandrproducts.co.uk

We reserve the right to alter the specifications detailed in this brochure without prior notice.

RCU

AIR COOLED CHILLERS