RWC RANGE
Industrial Fluid Chillers

The RWC range of Refrigerated Fluid Chillers have been designed to cater with the rigors of Industrial sites. The range includes eight (8) models with cooling capacities 19kW to over 214kW. The systems are individually controlled and monitored by a microprocessor based temperature control system.

The RWC range of Refrigerated Fluid Chillers are a one-piece package design, which eliminates the need for ancillary equipment to make them fully functional. Each unit contains a large fluid storage/buffer tank, integral circulation pump and all piping components ready to go.

To start up and operate the RWC range simply:

1. Connect your process supply and return lines.
2. Connect a three phase, neutral and earth electric supply
3. Follow the start up instructions in the manual.

And operate the Chiller as necessary.

QUALITY FEATURES

- Fully factory load and functional test before dispatch.
- Robust panel construction
- Three stage Powder coat finish.
- Integral stainless steel Fluid Buffer Tank
- All copper Evaporator (cooling) Heat Exchanger
- Fully hermetic Scroll or Accessible Hermetic compressor, depending on model, with suction cooled electric motor and high "flood back" tolerance.
- Large Fluid volume, multi-stage, Circulation Pump with stainless wetted parts and discharge pressure gauge.
- Modulating by-pass valve between the pump discharge and the water tank to maintain a constant maximum water supply pressure to your process regardless of your process water demand.
- Remote start/stop facility and remote fault/function signals
- Mains power isolator with lockable door clutch.
- Microprocessor for unit control with LCD digital display for temperature and set point indication and other functions such as compressor minimum off time to prevent short cycling.
- A wide range of operating conditions to suit many process requirements.
- Australian designed and assembled for Australian conditions.
- 24vac Control Circuit.
- Wide fin spacing on condenser coil to minimize blocking.

HEUCH PTY LTD
Process Cooling & Refrigeration Engineers
17 Friars Road, Moorabbin 3189
Ph 61 3 9555 7755 Fax 61 3 9555 5451
cool@heuch.com.au www.heuch.com.au

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OPERATING ENVELOPE

- Ambient temperatures from –10°C to 50°C.
- Chilled water supply temperatures between +5°C and +20°C.
- Chilled fluid supply temperatures as low as –10°C using specified Ethylene/Propylene Glycol mixtures.
- Indoor or outdoor installation.

The **RWC range** has a small footprint with inlet air drawn from either side (RWC19 – 80A) with the air inlet panel fitted to either side The RWC97 and larger require air inlet to both sides. In all cases the warm exhaust air is directed vertically away from the equipment.

EASE OF INSTALLATION AND MAINTENANCE

- Simple lift off side panels for unencumbered access to internal components.
- Separate electrical control cubicle with hinged lockable door for access to all electric's.
- Bolt on condenser fan for quick servicing.
- Accessible Stainless Steel Buffer Tank for ease of cleaning, maintenance and inspection.

MAJOR COMPONENTS

COMPRESSORS – *HEAVY DUTY*

Robust hermetic scroll type on the RWC19 to 49&97A units and Accessible Hermetic type on the RWC64,80,127 to 214A units all with internal thermal sensing protection plus external high and low pressure safety cut out switches.

CONDENSER – *EXTENDED SURFACE*

A common coil block manufactured from copper tubes expanded into aluminium fining with galvanized steel supports and copper headers. Special corrosion protection treatment and dust pre-filters available as options.

FAN/S – *HIGH EFFICIENCY – LOW NOISE*

Aluminium propeller low noise fan with permanent lubrication and supplied with a safety wire mesh guard and inbuilt thermal safety switch.

EVAPORATOR – *CLEANABLE*

An extended surface, copper fin/copper tube, heat exchanger, that is fully immersed in the stainless steel buffer tank for maximum efficiency.

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BUFFER TANK – *ACCESSIBLE*

The large fluid holding tank is manufactured from #304 stainless steel and contains the evaporator. The tank and its top cover are externally insulated to prevent the ingress of heat and to prevent external condensation. The tank has enough fluid to prevent the compressor from cycling off too quickly.

REFRIGERATION CIRCUIT – *HERMETICALLY SEALED*

The refrigeration circuit includes a liquid receiver, filter/drier, thermostatic expansion valve and sight glass. All pipework is manufactured from refrigeration grade copper and insulated where necessary. RWC97 – 214A chillers have identical dual refrigeration circuits.

PUMP

An industrial quality multi-stage centrifugal pump with stainless steel wetted parts is fitted. An automatic by-pass system is incorporated to provide the required system flow whilst ensuring a constant full flow over the evaporator regardless of the system requirements. Variations in your system flow requirements will not affect the chiller. The pump also has a supply water pressure gauge to assist with system maintenance.

SAFETY DEVICES

The unit is fitted as standard with high and low refrigerant pressure switches and condenser fan head pressure control.

ELECTRICAL PANEL – *WEATHERPROOF – LOCKABLE*

The electrical panel is a sheet metal enclosure which houses the body of the door interlocked isolator, miniature circuit breakers for pump, compressor(s) condenser fan(s) and controls. Pump and compressor contractors and terminal connections are also housed in this enclosure. The microprocessor controller is fitted in the door of the cubicle behind a weatherproof Perspex cover.

MICROPROCESSOR – *TEMPERATURE CONTROL*

The microprocessor-based control offers great flexibility and a multitude of important features whilst remaining very user friendly. The LED normally displays the actual supply water temperature. When switched on the pump will run continuously and the compressor(s) will start/stop dependant upon the demand for cooling. An integral timer prevents short cycling of the refrigeration compressor.

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OPTIONAL FEATURES

- Alternate pump duties to suit special process conditions.
- Various electrical IP ratings to suit special conditions.
- Condenser coil alternative protection for various corrosive environments;
  - Epoxy coated
  - Passivated aluminium fin/copper tube/Galva bond or stainless steel housing.
  - Copper fin/copper tube/stainless steel housing.
- Refrigeration Pressure Gauges/Indicators/Transmitters
- Pump pressure Indicators and or transmitters
- Marinised construction of total chiller.
- Hazardous area construction of total chiller.
- Water-cooled construction in lieu of air cooled with optional condenser builds (shell and tube, tube in tube, plate, marine).
- R407c and R404a amongst other refrigerants.
- Alternate Voltage systems, i.e. 60 Hz and other.
- Closed circuit extensions.
- Alternate paint colours

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HEUCH - RWC SERIES FLUID CHILLERS - EQUIPMENT DATA SHEET											Issue A 09-06	
Model		**RWC19A**	**RWC28A**	**RWC40A**	**RWC49A**	**RWC64A**	**RWC80A**	**RWC97A**	**RWC127A**	**RWC159A**	**RWC214A**	Units
OVERALL UNIT												
Nominal duty	[1]	18.7	27.9	40.0	48.5	63.5	79.5	97.0	127.0	159.0	213.6	kW
Electrical power supply		380 to 420 volt AC / Three phase plus neutral and earth / 50 hertz										
Unit maximum full load absorbed power		8.8	13.8	18.6	22.1	28.3	35.1	43.9	58.1	69.6	87.3	kW
Unit maximum full load current	[2]	18.1	27.0	34.0	40.3	53.2	65.2	79.2	102.1	122.1	153.7	Amp
Unit maximum locked rotor current		80.0	130.0	174.0	206.3	238.2	287.2	245.2	287.1	344.1	354.7	Amp
Max. water flow (at factory set supply pressure)		1.49 (290)	2.22 (340)	3.18 (275)	3.86 (290)	5.06 (360)	6.33 (340)	7.22(290)	10.12(360)	13.66(360)	17.01(375)	l/sec (kpa)
Available min. flow (at max. pressure)		0.64 (425)	1.66 (375)	1.66 (375)	2.4 (325)	2.4 (480)	2.4 (650)	4.17(390)	4.17(760)	6.67(500)	6.67(625)	l/sec (kpa)
Available max. flow (at min. pressure)		2.22 (120)	3.9 (200)	3.9 (200)	6.77 (150)	6.77 (220)	6.77 (280)	10.83(140)	10.83(270)	20.0(170)	20(230)	l/sec (kpa)
Maximum Working Pressure water side piping		8.0										kpa
Water tank volume		258	349	335	441	708	691	888	1215	1111	1438	Liters
Width		1780	2080	2280	2880	2480	2880	2280	2680	3080	3780	mm
Depth		700				1030		2000				mm
Height		1960						2100				mm
Weight - dry		592	651	765	959	1100	1400	1550	1800	2200	2500	kg
Weight - operating		850	1000	1100	1400	1808	2091	2438	3015	3311	3938	kg
Water In/Out Connection type		BSP (M)			Table E Flange							
Water In/Out Connection size		32NS	40NS		50 NS	64 NS		80 NS	100 NS			
Overflow Connection		20						25				BSP (M)
Water Fill Connection		15						25				BSP (M)
Maximum ambient operating temperature		50										°C
Minimum ambient operating temperature		-10										°C
Refrigerant-Standard/Optional		R22/R407C										-
Refrigerant Charge		5.8	8.6	12.4	15.0	19.6	24.6	30	39.2	49.2	66.0	kg
Max. Pressure-Refrigeration High Side		28.5										bar
Max. Pressure-Refrigeration Low Side		19.0										bar
H.P. Switch Cut Out		28.3										bar
L.P. Switch Cut Out		2.4										bar
COMPRESSOR												
Compressor Model		ZR72KCE-TFD	ZR11M3E-TWD	ZR16M3E-TWD	ZR19KCE-TFD	HGX5/830-4S	HGX6/1080-4S	ZR19KCE-TFD	HGX5/830-4S	HGX6/1080-4S	6H-35.2-40P	
No of compressors		1	1	1	1	1	1	2	2	2	2	
Oil Type-Standard/Optional		Mineral/POE										-
Compressor Oil Charge		1.65	4.1	4.1	4.1	4.7	6.3	8.2	9.4	12.6	9.5	liters
Electrical power supply		380 to 415 volt AC / Three phase plus neutral and earth / 50 hertz										
Compressor Motor Power		7.0	11.5	15.5	18.4	23.0	28.8	36.8	46.0	57.5	70.2	kW
Compressor full load current		12.1	20.0	27.0	32.0	40.0	50.0	64.0	80.0	100.0	122	Amp
Compressor motor start current		74.0	123.0	167.0	198.0	225.0	272.0	230	265	322	323	Amp
Maximum high pressure		28.5										bar

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PUMP												
Pump model (standard)		SV405	SV803	SV803	SV1602	SV1603	SV1604	SV3002	SV3004	SV6003	SV6004	
Electrical power supply		380 to 415 volt AC / Three phase plus neutral and earth / 50 hertz										
Pump Motor Power		1.1	1.5	1.5	2.2	3.0	4.0	4.0	7.5	7.5	11.0	kW
Pump Motor full load current		2.6	3.6	3.6	4.9	6.4	8.4	8.4	15.3	15.3	21.5	Amp
Pump Motor start current		16.5	23.8	23.8	33.3	44.2	63.0	63.0	107.5	107.5	149.4	Amp
CONDENSER FAN												
Condenser Fan Model		FE050-4EQ.41.5										
Number of Condenser Fans fitted		1	1	2	2	3	3	4	6	6	8	
Condenser Airflow		5334	8129	11272	14013	18115	22893	27649	36230	45786	63212	m³/hr
Condenser Fan 1 Cut In		16.1	16.1	16.1	16.1	16.1	16.1					bar
Condenser Fan 1 Cut Out		13.8	13.8	13.8	13.8	13.8	13.8					bar
Condenser Fan 2 Cut In				17.7	17.7	17.7	17.7	Controller cycles all fans between 16bar and 13.5bar and equalizes run time				bar
Condenser Fan 2 Cut Out				15.3	15.3	15.3	15.3					bar
Condenser Fan 3 Cut In			[3]			[4]						
Condenser Fan 3 Cut Out												
Electrical power supply		380 to 415 Volt AC / Three phase plus neutral and earth / 50 hertz										
Condenser Fan Motor Power		0.78										kW
Condenser Fan Motor full load current		1.35										Amp
Condenser Fan locked rotor current		4.70										Amp
Condenser Fan motor (total) power		0.78	0.78	1.56	1.56	2.34	2.34	3.12	4.68	4.68	6.24	kW
Condenser Fan motor (total) full load current/phase		1.35	1.35	2.7	2.7	4.05	4.05	5.4	8.1	8.1	10.8	Amp
Condenser Fan motor (total) start current/phase		4.70	4.70	7.40	7.40	6.05	6.05	4.70	6.05	6.05	7.40	Amp
DRAWINGS												
GA drawing		A3-11655				A3-11656		A3-11657				
Flow diagram general		A3-11961										
Flow diagram Specific						A3-11905						
Wiring diagram 3 phase		A3-11941										
Wiring diagram 1 phase		A3-11942										

NOTES:
[1] Rated cooling capacity at 15°C supply water temperature in a 32°C ambient temperature.
[2] Sum of Pump, Compressor, Condenser fan(s) and control circuit full load current (use for mains conductor sizing).
[3] These fans not fitted to these models
[4] These fans run with compressor

RATING FACTOR					
Supply water temperature	15°C	5.0°C	0.0°C	-5.0°C	-10.0°C
Capacity multiplier	1.0	0.67	0.57	0.49	0.39