



INDUSTRIAL CHILLERS
3-50kW of Cooling



Contact details

45 BRYANT RD
PADSTOW NSW 2211
AUSTRALIA

www.stareast.com.au

Phone – (02) 9792 5788

Email sales@stareast.com.au

Stareast International Pty Ltd (SEI) chillers are designed supply chilled water to heat developing processes. The unit are manufactured in Australia to suit local condition and give our customer the solutions they need

SEI can be installed indoors or outdoors and can be configured to supply chilled water for

- Potable water applications
- Process cooling from an internal buffer tank
- Process cooling to an external buffer tank

About Us

Stareast International Pty Ltd (SEI) is Australia's leading supplier of specialized equipment to the HVAC industry. The technical team at SEI have over 50 years experience in the Australian chiller industry – no other company can offer this level of engineering support for our customers critical applications.

With specifying chillers, experience counts and no other company has the experience to offer the advice and solutions the market requires.

SEI has dedicated itself to providing locally specified and manufactured chillers. Australian built for Australian conditions. Our components are sourced from the industry's leading suppliers.

As the Australian market grows and diversifies, Stareast can offer expert advice on chillers, heat pumps, variable speed high efficiency scroll chillers, air handling and more.

Stareast International Pty Ltd is back by a nationwide team of service technicians who are trained in the operation and maintenance of Stareast refrigeration products

Chiller Applications

Industrial process chillers are designed to circulate water to a heat producing process via a water pump. The water brings the heat back to the chiller where the compression cycle cools the water before it is returned to the heat process.



Laboratories



Food preparation



Medical Apps



Process cooling



Distilling

Features

The chillers are supplied with – as standard

- An internal 80L buffer tank to protect the compressor from excessive start, close temperature tolerance, reduces thermal spikes and allows for vented design with no need for hydraulics kit
- Suitable for indoor or outdoor installation
- Rugged galvanized steel construction
- Components sourced from the industry's leading suppliers
- R134a refrigerant for high ambient temperature operation and the lowest GWP of all contemporary refrigerants
- Integrated circulation pump
- Comprehensive 12 months warranty on all parts and labour
- Precision electronic controller
- 316SS plate heat exchanger evaporator
- Comprehensive factory testing before dispatch
- Evaporator protection on all models





Technical data

Model		TC03	TC04	TC05	TC07
System type	Chiller	Heat rejection		Air	
Capacity ASHRAE COND	kW	3.5	4.6	5.4	6.5
Total power input	kW	2.41	2.75	3.01	3.27
Total running current	Amps	8.5	9.2	9.8	10.2
Motor size	HP	1.5	2.3	3.0	3.5
Chilled water flow rate	l/s	0.1	0.2	0.25	0.3
Water connections	mm	1" FBSP			
Shipping weight - dry	Kg	170	175	180	185
Buffer Tank	Litres	80			

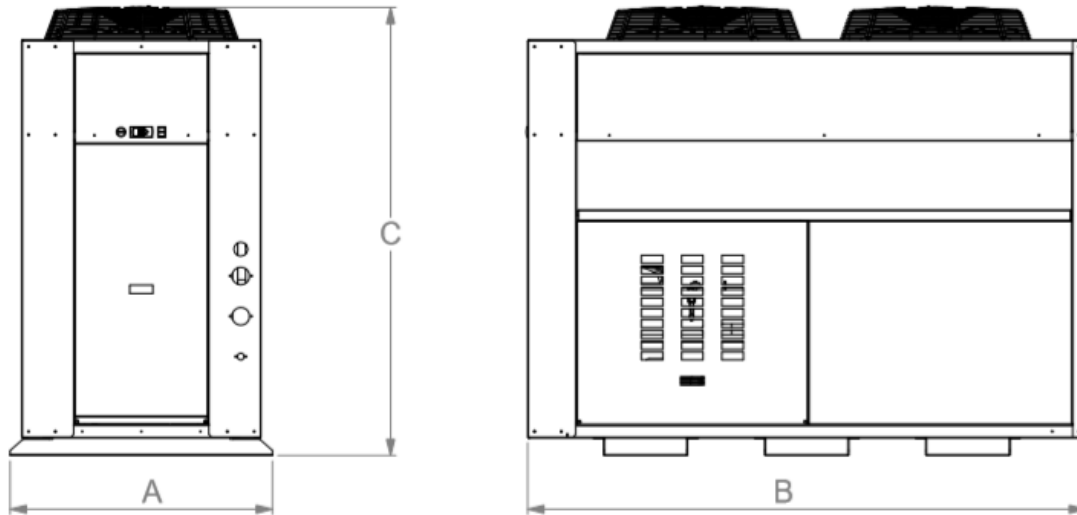
Model		TC8	TC10	TC12
System type	Chiller	Heat rejection		Air
Capacity ASHRAE COND	kW	7.6	8.3	11.4
Total power input	kW	3.7	3.9	4.8
Total running current	Amps	11.0	12.0	13.0
Motor size	HP	4.0	4.5	6.0
Chilled water flow rate	l/s	0.3	0.4	0.6
Water connections	mm	1" FBSP		
Shipping weight - dry	Kg	185	190	200
Buffer Tank	Litres	80	90	

Model		TC15	TC18	TC20	TC25	TC27
System type	Chiller	Heat rejection		Air		
Capacity ASHRAE COND	kW	15.1	17.0	19.8	22.5	24.6
Total power input	kW	6.25	6.85	7.75	9.37	9.37
Total running current	Amps	17.5	18.7	19.3	17.8	19.9
Motor size	HP	8.0	9.0	10.0	12.0	13.0
Chilled water flow rate	l/s	0.8	0.9	1.0	1.1	1.2
Water connections	mm	1" FBSP				
Shipping weight - dry	Kg	215	225	232	245	260
Buffer Tank	Litres	175				

Model		TC30A3	TC40A3	TC50A3
System type	Chiller	Heat rejection		Air
Capacity ASHRAE CONDITIONS	kW	29.5	39.0	48.9
Total power input	kW	12.56	16.5	19.66
Total running current	Amps	27.73	31.43	37.13
Motor size	HP	15	20	26
Chilled water flow rate	l/s	1.5	1.9	2.4
Water connections	mm	1 ½" FBSP		
Shipping weight - dry	Kg	550	600	650
Buffer Tank	Litres	500		

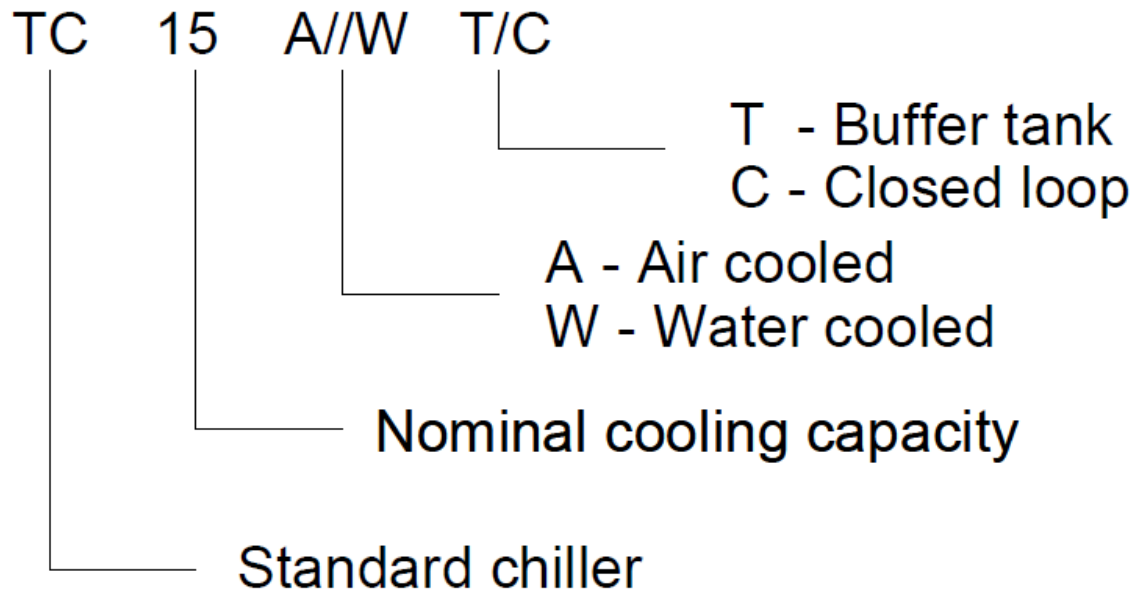


Dimensions



Model	A	B	C
TC03-TC07	680	1100	1100
TC08-TC12	735	1303	1175
TC15 to TC27	780	1520	1490
TC30 to TC50	980	2080	1670

Selecting the chiller



Pump performance

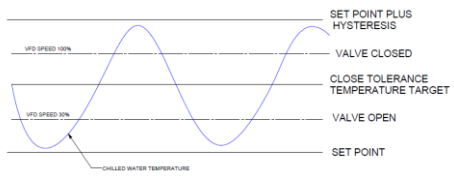
The unit will usually be supplied with a primary circulating pump as standard.

STAREAST can customize the pump for particular applications and these should be specified at the time of order – the standard pump supplied with the chiller is sized to produce 350kPa of pressure external to the chiller at the required flow rate

The unit has an internal water bypass designed to protect the heat exchanger – it should not be closed under any circumstances

Pump model	Current draw – Ph	Motor rating – kW	Model	Power
P1	3.1	0.5	TC03	1 Phase
P2	3.1	0.5	TC05 to TC12	1 Phase
P4	4.0	0.85	TC15	1 Phase
P5	5.2	1.2	TC18	1 Phase
P6	4.6	2.2	TC20 – TC30	3 Phase
P7	4.8	2.2	TC40-TC50	3 Phase
RPM	2900			
Approvals	CE, WRAS, ACS, TR, EAC			
Housing	Cast iron			
Impeller	Stainless steel 316			

Options

Close tolerance (CT)	<p>The chiller can be manufactured with either a hot gas bypass valve or a VFD on the compressor for close temperature tolerance. Standard tolerance achievable is $\pm 0.5\text{C}$ depending on load conditions</p> <p>The valve acts as to unload the refrigeration effect to the evaporator as the chilled water temperature approaches set point.</p> <p>If the compressor is fitted with a VFD this will slow the compressor down as water temperature approaches set point and speeds it up as it approached set point plus hysteresis. The software has a PID loop to ensure maximum efficiency and maintain temperature control.</p> 
BMS Connectivity	<p>The chiller can be connected to the high or low level BMS</p> <p>Low level connectivity will be dry contact for</p> <ul style="list-style-type: none"> - Master run - Master fault <p>High level connectivity is Modbus, SNMP and Bacnet over Ethernet without the need for a gate way</p>
Tandem/ N+1 (T)	<p>Multiple chillers can be wired if they are to be installed in a N+1 arrangement so the lead chiller manages the duty cycling of the chillers and controls the chillers if a fault should develop in one of the chillers</p>
Potable water supply (I)	<p>The chiller can be manufactured to deliver water for potable water application. A typical installation requires the chiller to be connected to the main water and the pressure from the main is used to supply the process.</p> <p>The chiller will have a heat exchanger installed which will cool the mains water to the supply temperature in a single pass</p> <p>If the process does not require water the chillers operation is unaffected</p> <p>This method of construction also allows the chiller to be used to cool water temperatures above 25C</p>
Remote Condensers (R)	<p>The chiller can be manufactured as a split system. For example the evaporator can be installed in a indoor plant room and the condenser can be installed outdoors.</p> <p>Typically, the maximum distance between the 2 halves of the chiller is 20 meters – for longer runs contact Stareast International Pty Ltd engineering staff</p>

Options

<p>High corrosive environments</p>	<p>If the chiller is to be installed in an environment where corrosive elements are present the SEI chiller can be manufactured in such a way to extend the life of the unit</p> <p>These environments can be</p> <ul style="list-style-type: none"> - Coastal which high levels of salt spray present - Mining with Sulphur present <p>The coils on the units can be coated to extend their life – the coil will lose efficiency if the bond between the copper and the aluminum starts to break down</p> <p>The units can be constructed with stainless steel cabinets</p> <p>The electrical enclosures are weather-proof. If an enclosure is required with a high IP rating this can be offered</p> <p>An Ex or ATEX rated unit maybe required where flammable gas is present</p>
<p>Soft starters</p>	<p>Soft starters can be supplied on the compressors to limit the in-rush current on compressor start up. This can be useful where power supply is not robust</p>
<p>Redundant pumps</p>	<p>The units can be supplied with 2 pumps that duty cycle to share the wear and tear. The software can also start the pump sitting in redundancy if the duty pump develops a fault</p>
<p>Pump UPS (U)</p>	<p>The electrical box can be supplied with a separate set of terminals to allow an uninterruptable power supply to be wired so the pump will run continuously – this allows the chiller to keep pumping cold water to the process in the event the 3 phase supply develops an issue and allows the process to shut down in a managed way</p>
<p>Castors</p>	<p>The chiller can be supplied on wheels for ease of re-location</p>
<p>High Ambient</p>	<p>For installations such as mine sites, especially in remote areas where the temperatures are extreme the chiller can be constructed to be able to handle these extreme temperatures</p>

All operational cooling capacity, power consumption and current draw data shown above is based on the chiller operating at the limit of its design and is intended to be an indication only.

Each chiller will be individually designed to customer requirements and a detailed product specification will be supplied at time of order including installation instructions and dimensions.

The power consumed by the unit and the current it will draw vary depending on how the chiller is constructed. The chillers performance may also vary slightly from the figures above again based on customer requirements.

STAREAST's product range is subject to change without notice

Warranty

- STAREAST warrants all its products for 12 months from the agreed commissioning date – no later than 30 days from invoicing date.
- The warranty is to the first purchaser of the unit
- The warranty covers all parts and labour to rectify the unit where SEI is commissioned to supply and install the unit
- Warranty is subject to STAREAST full terms and conditions which will be provided at the time of order

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