



TSU-C/D

Ice thermal storage



Key benefits

- Reliability: constant water supply temperature (1 to 2°C)
- Lowest first cost
- Energy saving

TSU-C/D characteristics

- External ice melt
- Direct refrigerant or glycol feed

Capacity range

325 - 5060 kWh

Typical applications

- Food processing
- Breweries
- Dairies



Other benefits are:

- Minimum maintenance
- Environmentally friendly
- Proven technology

Read more about the [TSU benefits](#).

Interested in TSU-C/D ice thermal storage tanks for your cooling project? Contact your local [BAC representative](#) for more information.

Downloads

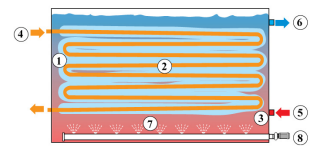
- [Operating and Maintenance TSU C/D](#)
- [Rigging and installation TSU C/D](#)
- [TSU-C/D compilation](#)

Principle of operation

Ice thermal storage

Principle of operation

The TSU-C/D is an external melt system that produces and builds **ice (1)** around a **coil (2)** submerged in **water (3)**. A **refrigerant or cold glycol (4)** circulates through this, while ice accumulates on the outside. The ice is melted by circulating **warm water (5)** from the load over the coil, which **cools the water (6)**. Low pressure **air (7)** from an **air pump (8)** is distributed below the coil for water agitation.



Want to use the TSU-C/D ice storage system? Contact your local [BAC representative](#) for more information.

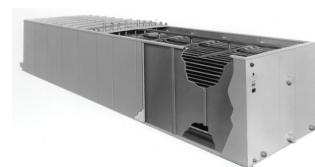
Construction details

Ice thermal storage

Construction details

1. Material options

- **Tank** is constructed of heavy-gauge hot-dip **galvanized steel** for unit steel panels and structural elements, all with welded seams. Tank includes high quality **insulation**.
- Insulated watertight tank covers and exterior tank panels featuring [Baltibond hybrid coating](#) .



2. Coil

- The coil is constructed of continuous length of **prime surface steel**, hot-dip galvanized after fabrication. Designed for maximum 10 bar (glycol) or 22 bar (ammonia) operating pressure according to PED.
- Coils are delivered with BAC's **Internal Coil Corrosion Protection**, to ensure an optimal internal corrosion protection and guaranteed quality.

3. Construction

- Factory assembled construction (except air pump).
- **Air distribution system** consists of multiple **perforated PVC pipes** and **air pump**.
- **Ice logic ice thickness controller (option)**: sensor on coil for deactivation of refrigerant compressor at full ice build.

Like to know more about the TSU-C/D construction details? Contact your [local BAC representative](#).



TSU-C/D

Ice thermal storage 95-115-120-145-170-200-225

Engineering data

REMARK: Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without notice.

General notes

1. All dimensions are in mm. Weights are in kg.
2. Unit should be continuously supported on a flat level surface.
3. H_1 = installed height. Coils connections are closed and filled with inert gas for shipping and storage. Add 130 mm for shipping height.
4. Refrigerant charge listed is operating charge for pump recirculated bottom feed. For other feed systems, consult your BAC representative.

Last update: 01/07/2024

TSU-C/D 95-115-120-145-170-200-225



1. Coil connections; 2. Make up ND50; 3. Overflow ND50; 4. Water out; 5. Water in; 6. Drain ND50; 7. ICE LOGIC®.



Model	Approx. Ship. Weight (kg)	Approx. Oper. Weight (kg)	Air Pump (kW)	Water Volume (l)	Pull Down Volume (l)	Coil Volume (L)	R717 charge (kg)	Water Conn. In ND (mm)	Water Conn. Out ND (mm)	H	H1	L	W
TSU-95C	2620	9440	1,1	6520	165	297	128	80+2 x40	80	2160	2311	3073	1308
TSU-115C	2860	10640	1,1	7440	208	340	147	80+2 x40	80	2160	2311	3683	1308
TSU-120C	2935	11055	1,1	7760	227	368	159	80+2 x40	80	2160	2311	3073	1600
TSU-145C	3355	13155	1,1	9390	265	453	196	80+2 x40	80	2160	2311	3683	1600
TSU-170C	3955	15335	1,1	11020	303	510	220	80+2 x40	80	2160	2311	4293	1600
TSU-200C	4330	17565	1,1	12640	341	566	244	100+2x50	100	2160	2311	4877	1600
TSU-225C	4745	19660	1,1	14270	379	657	281	100+2x50	100	2160	2311	5486	1600



TSU-C/D 185-230-270-310-350

Ice thermal storage

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Last update: 01/07/2024

TSU-C/D 185-230-270-310-350



1. Coil connections; 2. Make up ND50; 3. Overflow ND50; 4. Water out; 5. Water in; 6. Drain ND50; 7. ICE LOGIC®.



Model	Approx. Ship. Weight (kg)	Approx. Oper. Weight (kg)	Air Pump (kW)	Water Volume (l)	Pull Down Volume (l)	Coil Volume (L)	R717 charge (kg)	Water Conn. In ND (mm)	Water Conn. Out ND (mm)	H	H1	L	W
TSU-185C	4130	17020	1,1	12270	341	595	257	100+2x50	100	2160	2360	3073	2400
TSU-230C	4730	20300	1,1	14880	416	680	294	100+2x50	100	2160	2360	3683	2400
TSU-270C	5285	23580	1,1	17450	454	821	354	100+2x50	100	2160	2360	4293	2400
TSU-310C	6065	27085	1,1	20020	530	906	391	100+2x50	100	2160	2360	4877	2400
TSU-350C	6620	30365	1,5	22640	606	1020	440	150+2x80	150	2160	2360	5486	2400



TSU-C/D 290-340-400-450

Ice thermal storage

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4. Refrigerant charge listed is operating charge for pump recirculated bottom feed. For other feed systems, consult your BAC representative.

Last update: 01/07/2024

TSU-C/D 290-340-400-450



1. Coil connections; 2. Make up ND50; 3. Overflow ND50; 4. Water out; 5. Water in; 6. Drain ND50; 7. ICE LOGIC®.



Model	Approx. Ship. Weight (kg)	Approx. Oper. Weight (kg)	Air Pump (kW)	Water Volume (l)	Pull Down Volume (l)	Coil Volume (L)	R717 charge (kg)	Water Conn. In ND (mm)	Water Conn. Out ND (mm)	H	H1	L	W
TSU-290C	5600	25210	1,5	18700	492	878	379	150+2x80	150	2160	2360	3683	2982
TSU-340C	6245	29260	1,5	21960	606	1020	440	150+2x80	150	2160	2360	4293	2982
TSU-400C	7210	33630	1,5	25120	681	1161	501	150+2x80	150	2160	2360	4877	2982
TSU-450C	7900	37680	1,5	28470	757	1275	550	150+2x80	150	2160	2360	5486	2982



TSU-C/D 480 - 910

Ice thermal storage

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3. H_1 = installed height. Coils connections are closed and filled with inert gas for shipping and storage. Add 130 mm for shipping height.
4. Refrigerant charge listed is operating charge for pump recirculated bottom feed. For other feed systems, consult your BAC representative.

Last update: 01/07/2024

TSU-C/D 480 - 910



1. Coil connections; 2. Make up ND50; 3. Overflow ND50; 4. Water out; 5. Water in; 6. Drain ND50; 7. ICE LOGIC®.



Model	Approx. Ship. Weight (kg)	Approx. Oper. Weight (kg)	Air Pump (kW)	Water Volume (l)	Pull Down Volume (l)	Coil Volume (L)	R717 charge (kg)	Water Conn. In ND (mm)	Water Conn. Out ND (mm)	H	H1	L	W
TSU-480C	9090	42325	1,5	31610	833	1529	660	150+2x80	150	2160	2360	6096	2982
TSU-590C	10515	50420	2,5	38000	1022	1784	770	150+2x80	150	2160	2360	7290	2982
TSU-700C	11850	58630	2,5	44670	1173	2067	892	150+2x80	150	2160	2360	8509	2982
TSU-800C	13820	67395	2,5	51140	1363	2322	1002	200+2x80	200	2160	2360	9703	2982
TSU-910C	15205	75585	2,5	57610	1514	2605	1125	200+2x80	200	2160	2360	10922	2982



TSU-C/D 1050

Ice thermal storage

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Last update: 01/07/2024

TSU-C/D 1050



1. Coil connections; 2. Make up ND50; 3. Overflow ND50; 4. Water out; 5. Water in; 6. Drain ND50; 7. ICE LOGIC®.



Model	Approx. Ship. Weight (kg)	Approx. Oper. Weight (kg)	Air Pump (kW)	Water Volume (l)	Pull Down Volume (l)	Coil Volume (L)	R717 charge (kg)	Water Conn. In ND (mm)	Water Conn. Out ND (mm)	H	H1	L	W
TSU-1050 C	17455	88050	2,5	67300	1779	3115	1345	200+2x80	200	2160	2360	12725	2982



TSU-C/D

Ice thermal storage

790D-1440D

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Last update: 01/07/2024

TSU-C/D 790D-1440D



1. Coil connections; 2. Make up ND50; 3. Overflow ND50; 4. Water out; 5. Water in; 6. Drain ND50; 7. ICE LOGIC®.



Model	Approx. Ship. Weight (kg)	Approx. Oper. Weight (kg)	Air Pump (kW)	Water Volume (l)	Pull Down Volume (l)	Coil Volume (L)	R717 charge (kg)	Water Conn. In ND (mm)	Water Conn. Out ND (mm)	H	H1	L	W
TSU-790D	13975	68635	2,5	51860	1510	2750	1187	200+2x80	200	2415	2575	7290	3582
TSU-940D	15680	79590	2,5	60570	1630	3115	1345	200+2x80	200	2415	2575	8509	3582
TSU-1080D	18150	91500	2,5	69650	1780	3455	1492	200+2x80	200	2415	2575	9703	3582
TSU-1220D	19800	103220	4,0	78360	1890	3795	1638	200+2x80	200	2415	2575	10922	3582
TSU-1440D	22370	119220	4,0	91230	2230	4330	1869	200+2x80	200	2415	2575	12725	3582