



Energy Tanks

The Ultimate In-Direct Heat Storage





DPY Mercantile, Inc. is on the forefront of developing and implementing energy saving solutions with proven performance for commercial, industrial and residential applications.

DPY Mercantile, Inc. initially introduced the **"Smart Hot Water Concept"**, which is an integration of the latest technologies offering solutions that has the **highest system energy efficiency over lifespan, longer lifespan but maintain efficiency, minimize operation cost and able to combine energy source such as but not limited to: Heat recovery, Solar, Heat Pump, Gas, Electric or Diesel.**

DPY Mercantile, Inc. is your One-Stop Solution provider of turnkey energy efficient system solutions for diverse environments ranging from tropical and subtropical Asian climates to temperate and cold European climates. Using proactive system integration Aumada designs upgrading or replacement solutions for any type of applications and demands.

DPY Mercantile, Inc. innovation the HAASE Energy Tank has been optimized and adapted for the Asian environments. With optimized performance for utilizing renewable energy heat sources the HAASE Energy Tank has become a significant part of DPY Mercantile, Inc. steady growth throughout the Southeast Asian markets. By virtue of recognition of system performance and expertise, the expansion continues.

Haase GFK-Technik GmbH was founded in 1999 under the Haase Group for the production of GRP tanks. **Glass fiber reinforced plastic is corrosion-free, dimensionally stable and resistant to aging and any odors.**

Haase continues to be at the forefront of innovation with in-house research and development department is constantly working on innovative product variants. Haase is represented by regional partners worldwide and since 2010 DPY Mercantile, Inc. has been the appointed partner for Southeast Asia markets.



“ Energy tank - for safe hot water supply”

THE PRINCIPAL

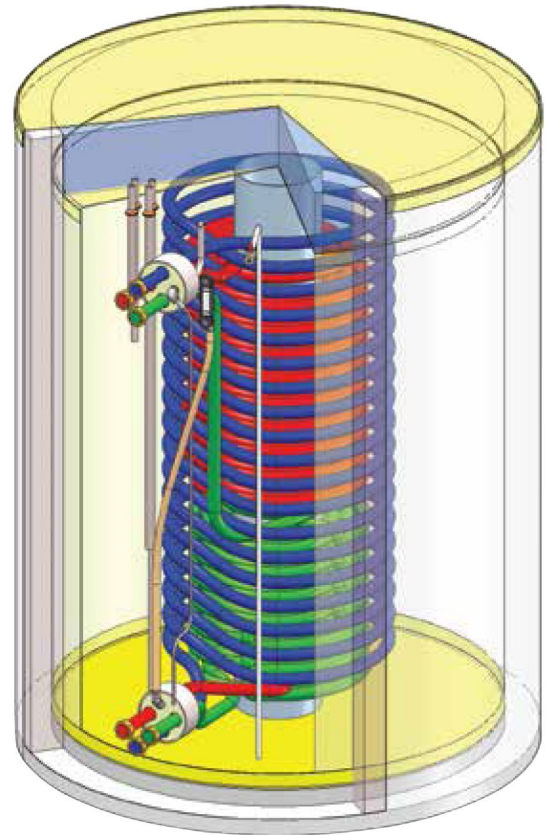
T4 Heat Accumulator Tank's unique construction method and its superior energy conservation makes it the most sensible choice for cost-effective energy creation and storage.

The T4 is using a fully indirect operating principal, where by **the primary heating circuit is pressure-free** and closed loop coupled to one or multiple heat sources.

The secondary circuit is pressurized and consists of a number of INOX coils submerged into the primary media.

The potable water is thereby heated by a flow-through heat exchange process through the submerged coils, which picks up the stored heat from the primary media.

For maximum versatility, The HAASE Energy tank is designed to work with virtually any heating system or source including: solar collectors, heat recovery, heat pumps or other type of thermal power source.



BENEFITS

- **Healthy water – NO bacterial growth**
- **Corrosion Free**
- **Low Heat Loss**
- **Indirect = Long Life**
- **Non-metallic inner and outer cylinder**
- **Non-pressurized primary media**
- **INOX Corrugated heat exchanger**
- **No Internal Support Required**
- **Homogeneous Pressure on Sides**
- **Up to 95°C**
- **No Thermal Pockets**
- **Optimal Stratification**
- **Built on site – easy through every door**
- **Higher delivery capacity**
- **Optimised for renewable energy**
- **50 years engineering lifespan**



*Bai Hotel
Cebu, Philippines*



*Discovery Primea,
Makati City, Philippines*



*Dusit Thani, Manila,
Philippines*



*Philippine Heart Center
Quezon City, Philippines*



HYGIENICALLY OPTIMIZED CLEAN WATER

The fully indirect heating principal where the domestic water only flows through the **INOX heat exchanger coils eliminates the deposit of sludge, rust and other sediments.** This first-in, first-out principal of the hot water supply with INOX coils effectively eliminates the growth of bacteria. Facts which are supported by independent tests carried out by European Institutes of Hygiene. Furthermore the unique heating principal and optimized stratification results in uniform hot water supply with minimal temperature differences.

The first in, first out principle on the hot water supply is used, which effectively eliminates bacterial growth. These facts are supported by independent tests carried out by European Institutes of Hygiene.

THE CONSTRUCTION

The T4 Energy Tank is a pressure-free tank with internal heat exchangers made from high-grade 316L stainless steel corrugated pipe. The tank's inner and outer walls are prefabricated glass reinforced polyester (GRP).

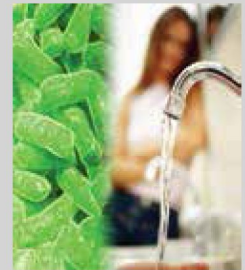
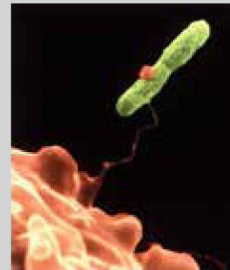
The GRP for the outer wall and the outer cover is white and the GRP for the inner wall and inner cover is natural.

LEGIONELLA

There are approximately 35 types of legionella. At least 17 of these are pathogenic. Pontiac fever symptoms, similar to influenza fade away after a few days. Legionnaires disease strong bacterial inflammation of the lungs. **The fatality rate is approximately 15-20% of the infected people due to this disease.**

Legionella occurs naturally in aquatic environments. These conditions include warm water temperatures (between 25°C and 45°C) and the presence of biofilm.

Risks also increase if an aerosol is produced. For example, such conditions can be found in cooling towers; evaporative condensers, spa baths, showers and fountains. Consequently, it is essential that measures are taken to prevent the proliferation of Legionella for example through using an effective biocide treatment and reducing exposure to aerosols.



*Makati Medical Center
Makati, Philippines*



Holiday Inn Express, Singapore



*Hatten Terminal Pahlawan,
Melaka, Malaysia*

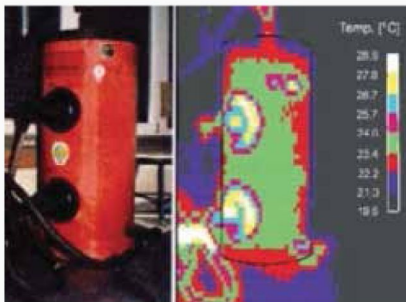


*Kuching Waterfront Hotel,
Plaza Merdeka, Kuching,
Sarawak, Malaysia*

“Energy tank - for the maximum utilization of space”

ENERGY EFFICIENCY

When comparing this method to the traditional performance of the steel pressure tank, a much higher storage efficiency is achieved. **According to information provided by ASHRAE, the estimated efficiency of the steel pressure tank is 70% so when comparing this with the 93% of the GFK tank an increase of efficiency of nealry 25% is achieved.**



Radiation picture
Steel tank



Radiation picture
Haase tank



Grandis Hotel, Kota Kinabalu, Sabah, Malaysia



Cititel Express, Ipoh, Malaysia

EASY THROUGH EVERY DOOR

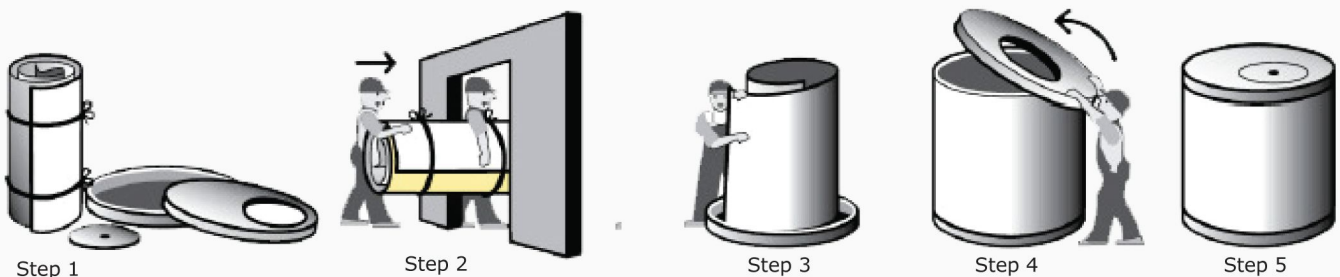
The HAASE Energy Tank decrease the use of fossil fuels and save money, it also boasts an accommodating installation.

The T4 Energy Tank fits through most small spaces and can be assembled on site by approved installers.

Other tanks or calorifiers result in extensive building renovations, more installation time, and very often too small of a tank.

A confined corridor, a steep staircase or a narrow doorway poses no problems for the HAASE Energy Tank and offers a wide choice of tank sizes from 1,100 to 41,000 litres. Delivered to site in individual sections, the flexible design allows for large tanks to be installed in areas not normally accessible, ensuring optimum usage of available space to increase cost efficiencies.

The onsite assembling of the HAASE Energy tank sections is done with GFR glass-mats impregnated with resin.



Step 1

Step 2

Step 3

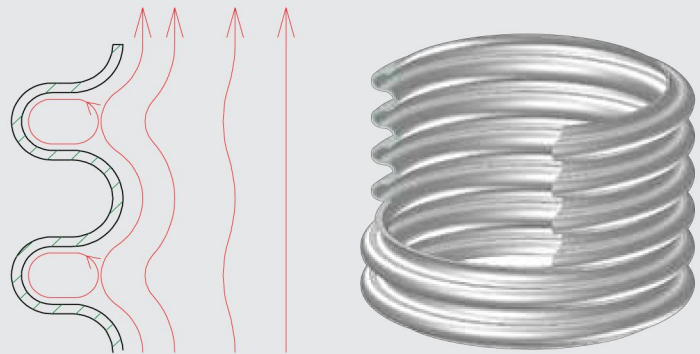
Step 4

Step 5



THE HEAT EXCHANGERS

Performance characteristics of internal high grade stainless steel 316L heat exchangers and advantages of corrugated pipe in contrast to smoothbore tubes:



- **More than 50% larger surface area, with similar length and diameter - this improves the heat transfer.**
- **The corrugated pipe induces a turbulent flow of water even at low flow rates, this prevents or impedes a calcification of the wall surface.**
- **The turbulent flow in corrugated pipes causes a better heat transfer than the laminar flow in smoothbore tubes.**

- **The better heat transfer from larger surface and turbulent flow allows the use of smaller heat exchangers (with same performance) and thus a higher volume of storage medium.**
- **The flexibility of the corrugated pipes reduces stress on the heat exchanger, which is generated by thermal expansion.**

Thermal conductivity of used materials

Material	Usage	Thermal conductivity in [W/(m*K)]
Mineral wool	Cover- and jacket insulation	0,040
Styrodur	Bottom insulation	0,034
Glass fibre reinforced plastics	Tank material	0,197
For Comparison: steel	Tank material (other producers)	48 to 58



“ Energy tank - for storage efficiency of 93%”

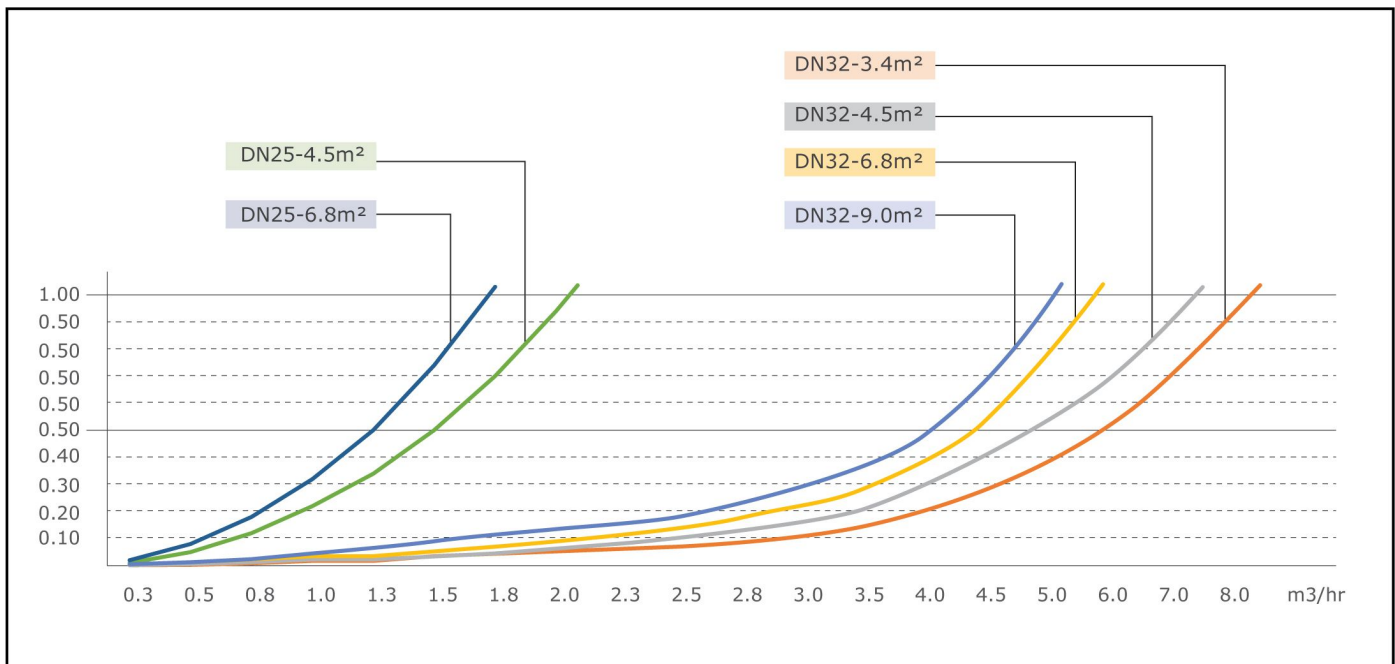
AVAILABLE CAPACITIES

STANDARD RANGE 1,000 - 40,000 LITER
SPECIAL UP TO 100,000 LITER

**Based on 3 inox heat exchanger coils.*

COMMON SIZES						
MODEL	CAPACITY	DIAMETER	HEIGHT	*WEIGHT FULL	*LOADING	
	LITER	MM	MM	KG	KG/M ²	
T4-13-22	2050	1500	1950	2360	1340	
T4-15-31	3080	1700	2150	3440	1520	
T4-15-36	3680	1700	2500	4080	1800	
T4-17-40	3960	1920	2150	4370	1510	
T4-17-48	4740	1920	2500	5180	1790	
T4-17-55	5410	1920	2800	5870	2030	
T4-19-58	6060	2200	2500	6530	1720	
T4-19-67	6920	2200	2800	7410	1950	
T4-22-77	7980	2500	2500	8480	1730	
T4-22-87	9100	2500	2800	9640	1970	
T4-22-105	10980	2500	3300	11570	2360	

PRESSURE DROP PER INOX COIL



“ Energy tank - is indirect heating for long life”



Gleneagles Medical Centre, Kota Kinabalu, Sabah, Malaysia



Kerjaya Hotel, Melaka, Malaysia



Jazz Hotel, Penang, Malaysia



Ancasa Royale Pekan, Pahang, Malaysia

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DPY MERCANTILE, INC.

No.1 Energy Saving Solutions Provider

Authorized Dealer

