globalwater solutions

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LIQUID COOLING WATER SYSTEM APPLICATIONS EXPANSION TANK SOLUTIONS

Supercomputing Centers • Computing Power Centers • Data Centers



Where Water Gets Better

Leading Brand in Fluid Application Solutions

Global Water Solutions Ltd. (GWS) is a world-leading supplier of fluid equipment and application solutions, committed to providing global customers with a wide range of high-quality, high-performance, and reliable products. Currently, our products are sold in more than 100 countries and regions worldwide. With outstanding manufacturing quality and professional technical support, GWS has earned strong recognition from numerous fluid equipment manufacturers and distributors, becoming a trusted brand in the global fluid application industry.

Our mission is to focus on cutting-edge technology research and development, create innovative products, optimize fluid dynamic performance, and improve system operating efficiency and energy efficiency. We not only provide customers with superior products and globally responsive technical services, but also strive to build an efficient and collaborative supply chain system to create comprehensive value beyond expectations.

With a broad product portfolio, continuous technological innovation capabilities, and experienced technical, sales, and engineering teams, GWS can provide customized and highly reliable solutions for various application scenarios. Core products include pressure tanks for booster systems, expansion tanks and water hammer arrestors for HVAC, thermal power, and solar systems. In addition, GWS also provides a full range of fluid treatment products, including various filtration media, ultrafiltration (UF) systems, reverse osmosis (RO) systems, and anti-scaling systems, suitable for multiple purification and separation applications.

Strategic Focus on Green Energy and Data Center Cooling Applications

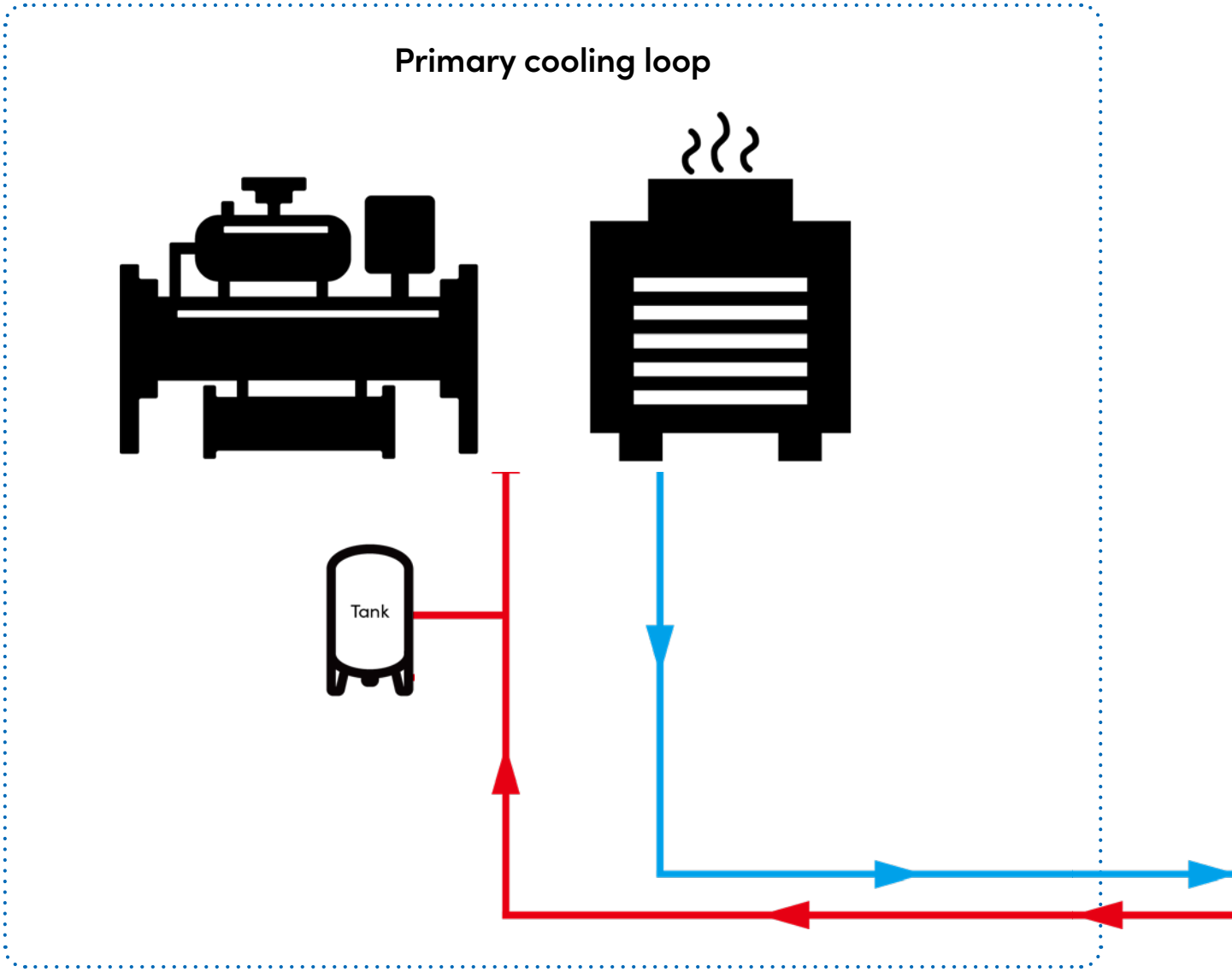
Looking ahead, GWS regards green energy business as a strategic development priority, especially focusing on efficient fluid management for data center cooling systems, providing one-stop complete solutions covering both primary-side and secondary-side cooling systems.

As computing power density continues to increase and IT equipment power consumption keeps rising, the thermal load of data centers is growing exponentially, placing unprecedented demands on cooling system stability, energy efficiency, and environmental sustainability. Traditional air-cooling solutions are reaching their limits in high-density scenarios, while liquid cooling technology, with its superior heat dissipation capability and energy efficiency performance, has become the mainstream direction for data center cooling development.

Leveraging years of core expertise in fluid control and thermal management, GWS provides efficient, reliable, and low-energy cooling fluid circulation equipment and system-level support for data centers. GWS can provide product solutions compliant with the three major international standards systems: Chinese Standard (GB150), European Standard (PED), and American Standard (ASME), meeting technical specification requirements across different global regions and application scenarios, providing solid and reliable support for multinational projects and standardized procurement.



Full-Chain Liquid Cooling System Solutions





Primary cooling loop

- **Application:** Refrigeration / Heat Dissipation
- **Capacity:** 100 L – 10,000 L
- **Material:** Carbon Steel
- **Series:** SuperFlow™



Primary Cooling Loop

- **Application:** Refrigeration / Heat Dissipation
- **Capacity:** 100 L – 3,000 L
- **Material:** Stainless Steel
- **Series:** InoxFlow™



Fire Protection System

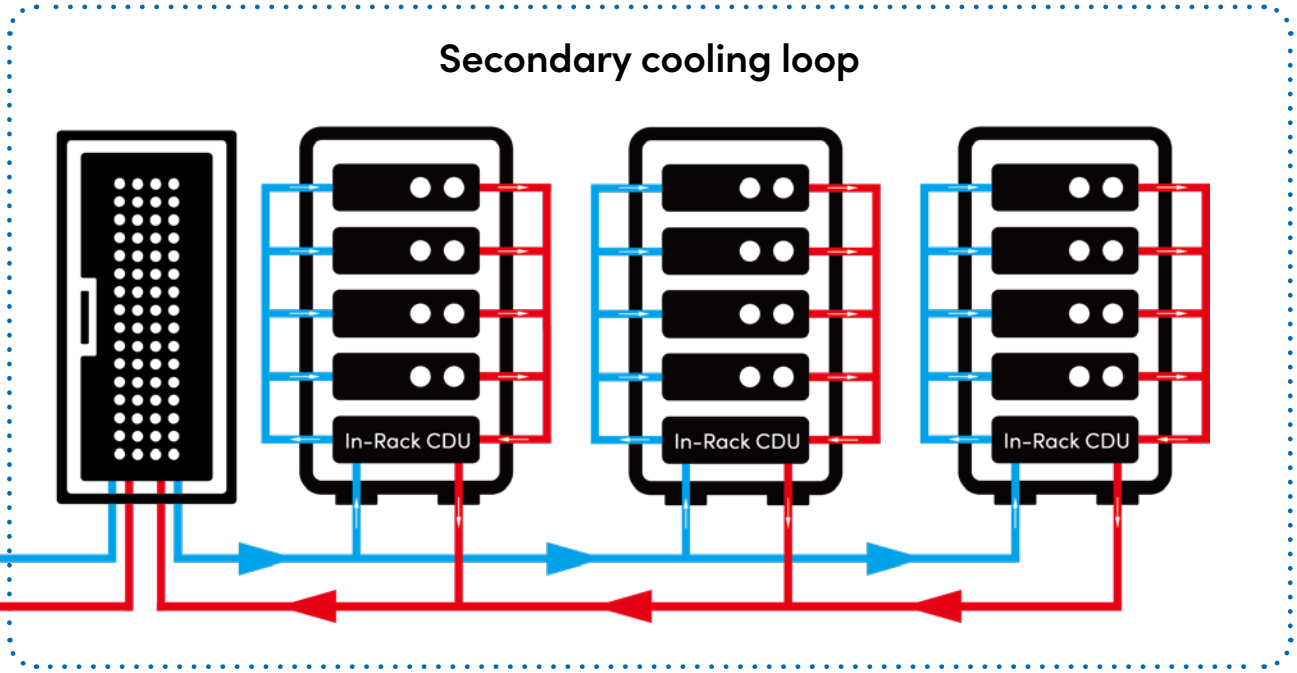
- **Application:** Fire Protection / Pressure Stabilization
- **Capacity:** 750 L – 2,000 L
- **Material: Carbon Steel** (Stainless Steel Optional)
- **Series:** FireFlow™

The Indispensable **Expansion Tank: The Pressure-Regulating Heart** of Liquid-Cooling Systems

In data centre liquid cooling systems, expansion tanks are not merely optional accessories, but rather one of the core components ensuring the long-term stable, safe and efficient operation of the system; they are indispensable devices for pressure stabilisation, pressure regulation and compensation in both the primary and secondary cooling loops.

Expansion tanks play the following key roles in liquid cooling systems:

- **Pressure stabilisation:** Absorbing pressure fluctuations caused by pump start-up and shutdown, valve operation or temperature changes, thereby preventing water hammer or pressure surges in the system;
- **Flow compensation:** Rapidly replenishing coolant during low-load conditions or moments of low flow demand, thereby preventing insufficient flow or the risk of dry running;
- **Pressure regulation:** Maintaining the system within the set pressure range to protect vulnerable components such as cooling distribution units (CDUs), cold plates, piping and fittings;
- **Buffering and energy storage:** Working in conjunction with circulation pumps and expansion valves to enhance the liquid cooling system's dynamic response and operational stability.





Secondary Cooling Loop

- **Application:** In-row CDU
- **Capacity:** 2 L – 150 L
- **Material:** Carbon Steel / Stainless Steel Optional
- **Series:** PressureWave™ / M-Inox™ / All-Weather™



Secondary Cooling Loop

- **Application:** Rack CDU
- **Capacity:** 0.16 L – 4 L
- **Material:** Carbon Steel / Stainless Steel Optional
- **Series:** HydroGuard™



Stagnation-control

- **Application:** Ultra-pure Water / Deionized Water, etc.
- **Capacity:** 2 L – 35 L (Adapter Compatible) 60 L – 450 L (Tank)
- **Series:** Flow-Thru™

Expansion tank specifically designed for the Secondary cooling loop systems

Diaphragm design, imported from Taiwan, leak-proof and maintenance-free; the preferred choice for Secondary cooling loop CDU systems



HydroGuard™ Series

- Diaphragm design, zero air leakage, maintenance-free
- 10 bar design working pressure
- Virgin polypropylene liner, high-grade butyl rubber diaphragm, 304 stainless steel water connection
- Leak-proof O-ring sealed air valve cap
- Comprehensive factory testing
- Carbon steel / stainless steel optional, capacity 0.16 L ~ 4 L

Rack CDU



PressureWave™ Series

- Diaphragm design, zero air leakage, maintenance-free
- 10 bar design working pressure (16/25 bar optional)
- Virgin polypropylene liner, high-grade butyl rubber diaphragm, 304 stainless steel water connection
- Leak-proof O-ring sealed air valve cap
- Comprehensive factory testing
- Carbon steel tank body, capacity 2 L ~ 150 L

Rack CDU In-Row CDU



M-Inox™ Series

- Diaphragm design, zero air leakage, maintenance-free
- 10 bar design working pressure
- Virgin polypropylene liner, high-grade butyl rubber diaphragm, 304 stainless steel water connection
- Leak-proof O-ring sealed air valve cap
- Comprehensive factory testing
- Stainless steel tank body, capacities 8 L, 18 L, 24 L

In-Row CDU



All-Weather™ Series

- Diaphragm design, zero air leakage, maintenance-free
- 10 bar design working pressure
- Virgin polypropylene liner, high-grade butyl rubber diaphragm, 304 stainless steel water connection
- Leak-proof O-ring sealed air valve cap
- Comprehensive factory testing
- Plastic-coated steel tank body, capacities 18 L, 24 L

In-Row CDU

A CDU (Coolant Distribution Unit) is a key hub device in data center liquid cooling systems. According to deployment location and coverage scope, CDUs are mainly divided into Rack CDUs (installed inside a single cabinet) and In-Row CDUs (installed between cabinet rows to cool a single cabinet row).

Although these CDU types differ in form and application scenarios, their internal secondary-side circulation loops all face common challenges such as pressure fluctuations, thermal expansion, extremely limited space, frequent thermal load changes, and water hammer impacts — precisely where GWS expansion tanks deliver their core value.

Space Adaptability

- For Rack CDU systems with extremely limited space, GWS provides dedicated compact expansion tanks from 0.16L to 4L, supporting side-mounted or embedded installation without occupying critical server space.
- For in-row CDU systems, GWS provides expansion tanks up to 150L, including inline, vertical, and horizontal installation types, balancing capacity and space utilization for precise CDU adaptation.

Performance Response

GWS expansion tanks are fully compatible with both cold plate liquid cooling and immersion liquid cooling technologies, covering all CDU application scenarios. As core components in Secondary cooling loop, they mainly provide pressure buffering and system pressure stabilization.

Thanks to unique sealing structures and advanced manufacturing processes, GWS diaphragm expansion tanks feature zero air leakage and maintenance-free operation. Under normal operating conditions, no regular air replenishment or maintenance is required, fundamentally eliminating coolant leakage risks while significantly reducing data center maintenance workload.

Media Compatibility

GWS Secondary cooling loop CDU dedicated diaphragm expansion tanks use high-grade butyl rubber diaphragms together with virgin polypropylene liners and stainless steel connections, suitable for ultra-wide temperature ranges from -10 °C to 90 °C and compatible with multiple cooling media such as pure water and propylene glycol.

- Note: When coolant (ethylene glycol, propylene glycol, etc.) is mixed with water, the recommended volume ratio should not exceed 50%.

Service Support

- Technical Selection Support: Accurately matching expansion tank models according to CDU type, flow rate, pressure, and temperature parameters.
- Customization Capability: Supports customized connection specifications, pre-charge pressure, and appearance labeling.
- Global Supply Network: Rapid response to global data center project delivery requirements.

GWS Diaphragm Expansion Tank Structure

1. Leak-proof O-ring sealed air valve cap
2. High-grade butyl rubber diaphragm
3. Double-layer polyurethane and epoxy premium coating (carbon steel tanks only)
4. Reinforced engineering thermoplastic pump bracket and feet
5. Virgin polypropylene liner
6. Stainless steel connection
7. Carbon steel tank body (stainless steel and plastic-coated steel optional)



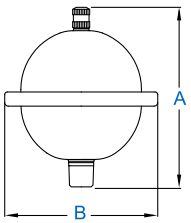
HydroGuard™ Series Specification

Model	Tank Material	Connection Material	Nominal Volume		Connection Size	Dimensions (mm)		Packing Qty (pcs)	Shipping Weight (kg)
			(L)	(Gal)		A	B		
HGNSA-0.16LX-C0.25	Stainless Steel	Stainless Steel	0.16	0.04	¼" NPT(M)	102	85	24	7.0
HGNSA-0.16LX-C0.50	Stainless Steel	Stainless Steel	0.16	0.04	½" NPT(M)	102	85	24	8.2
HGBSC-0.3LX-C0.50	Carbon Steel	Modified PPO + Stainless Steel Insert	0.3	0.08	½" BSPP(M)	104	97	40	16.0
HGBSC-0.5LX-C0.50	Carbon Steel	Modified PPO + Stainless Steel Insert	0.5	0.13	½" BSPP(M)	135	113	24	15.4
HGBSH-0.6LX-C0.50	Carbon Steel	Modified PPO + Stainless Steel Insert	0.6	0.16	½" BSPP(M)	159	97	20	11.4
HGPSB-1LX-C0.50	Stainless Steel	Modified PPO + Stainless Steel Insert	1	0.26	½" PF	144	136	15	11.9
HGPSE-1LX-C0.50	Carbon Steel	Modified PPO + Stainless Steel Insert	1	0.26	½" PF	197	120	20	17.6
HGPSR-1LX-C0.50	Carbon Steel	Nylon + Stainless Steel Insert	1	0.26	½" PF	197	120	20	17.4
HGBPA-2LX *	Carbon Steel	Stainless Steel	2	0.5	1" BSPT(M)	208	126	12	13.8 **
HGBPA-3LX *	Carbon Steel	Stainless Steel	3	0.8	1" BSPT(M)	243	143	6	9.1 **
HGBPA-4LX *	Carbon Steel	Stainless Steel	4	1.1	1" BSPT(M)	261	162	1	1.7

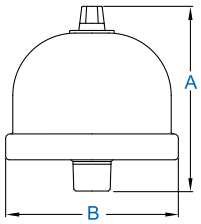
* HGBPA-2LX, HGBPA-3LX, and HGBPA-4LX are available in standard white color versions.

** HGBPA-2LX: 12 pcs/carton; HGBPA-3LX: 6 pcs/carton.

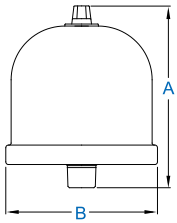
Note: Dimensions or specifications may have minor deviations.



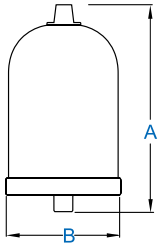
HGNSA-0.16LX



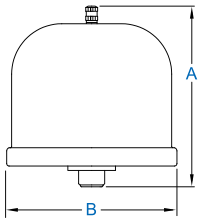
HGBSC-0.3LX



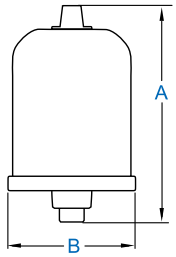
HGBSC-0.5LX



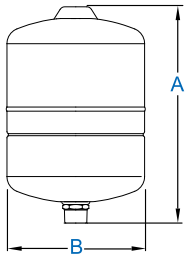
HGBSH-0.6LX



HGPSB-1LX



HGPSR-1LX
HGPSE-1LX



HGBPA-2LX/HGBPA-3LX/HGBPA-4LX

Expansion Tanks for Secondary cooling loop CDUs

Tank Material	Carbon Steel / 304 Stainless Steel / Plastic-Coated Steel
Diaphragm	High-grade Butyl Rubber
Inner Liner	Virgin Polypropylene Liner (liner plate on some models)
Capacity Range	0.16 ~ 150 L
Max. Working Pressure	10 bar (16/25 bar optional)
Max. Working Temperature	90 °C
Min. Working Temperature	-10 °C (avoid freezing)
Factory Pre-charge Pressure	According to specification
Connection Sizes	¼", ½", 1"
Connection Material	304 Stainless Steel
Country of Origin	China → Taiwan
Warranty Period	Five Years

Note: Certifications apply to all or selected models listed above. Please consult your GWS sales representative for details.

M-Inox™ Series Specification

Model	Nominal Volume		Connection Size	Shipping Weight (kg)	Dimensions (mm)		
	(L)	(Gal)			A	B	C
Inline Type							
MIB-8LX	8	2.1	1" BSPT(M)	2.6	314	202	-
MIB-18LX	18	4.7	1" BSPT(M)	4.4	383	279	-
MIB-24LX	24	6.3	1" BSPT(M)	5.4	466	290	-
Horizontal Type							
MIB-18LH	18	4.7	1" BSPP(F)	4.8	385	309	155

All-Weather™ Series Specification

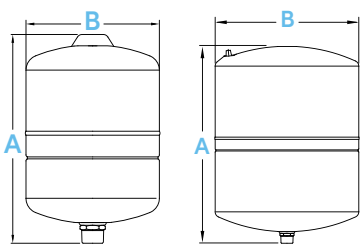
Model	Nominal Volume		Connection Size	Shipping Weight (kg)	Dimensions (mm)	
	(L)	(Gal)			A	B
AWB-18LX	18	4.7	1" BSPT(M)	5.1	422	276
AWB-24LX	24	6.3	1" BSPT(M)	6.2	451	301

PressureWave™ Series Specification

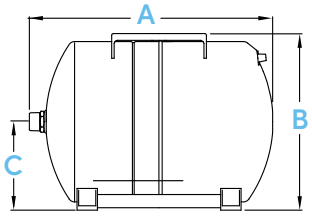
Model	Nominal Volume		Connection Size	Shipping Weight (kg)	Dimensions (mm)		
	(L)	(Gal)			A	B	C
Inline Type							
PWB-2LX	2	0.5	1" BSPT(M)	13.8*	208	126	-
PWB-3LX	3	0.8	1" BSPT(M)	9.1*	243	143	-
PWB-4LX	4	1.1	1" BSPT(M)	1.8	261	162	-
PWB-6LX	6	1.6	1" BSPT(M)	8.1*	290	178	-
PWB-8LX	8	2.1	1" BSPT(M)	2.5	314	202	-
PWB-12LX	12	3.2	1" BSPT(M)	3.3	367	230	-
PWB-18LX	18	4.8	1" BSPT(M)	4.2	367	279	-
PWB-24LX	24	6.3	1" BSPT(M)	5.6	447	290	-
PWB-35LX	35	9.2	1" BSPT(M)	7.4	483	318	-
Horizontal Type							
PWB-8LH	8	2.1	1" BSPT(M)	2.9	312	231	115
PWB-12LH	12	3.2	1" BSPT(M)	3.6	376	260	133
PWB-20LH	20	4.8	1" BSPT(M)	5.1	447	292	145
PWB-24LH	24	6.3	1" BSPT(M)	6.1	447	321	161
PWB-35LH	35	9.2	1" BSPT(M)	8.0	481	353	179
PWB-60LH	60	15.8	1" BSPT(M)	11.7	530	423	214
PWB-80LH	80	21.1	1" BSPT(M)	16.5	726	424	214
PWB-100LH	100	26.4	1" BSPT(M)	20.2	720	475	245
Vertical Type (with base)							
PWB-35LV	35	9.2	1" BSPP(F)	7.9	556	318	65
PWB-60LV	60	15.8	1" BSPP(F)	11.5	619	389	63
PWB-80LV	80	21.1	1" BSPP(F)	16.6	815	389	63
PWB-100LV	100	26.4	1" BSPP(F)	20.1	805	430	59
PWB-130LV	130	34.3	1" BSPP(F)	27.2	1073	430	60
PWB-150LV	150	39.6	1" BSPP(F)	35.3	938	530	66

* PWB-2LX: 12 pcs/carton; PWB-3LX: 6 pcs/carton; PWB-6LX: 4 pcs/carton.

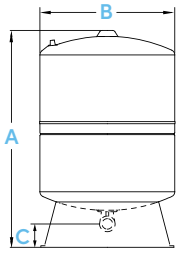
Note: Dimensions or specifications may have minor deviations.



Inline Type: 2L ~ 35L



Horizontal Type: 8L ~ 100L



Vertical Type: 35L ~ 150L

Expansion Tanks for Primary Cooling Loop Systems

Replaceable membrane design, wide-range coverage, preferred solution for primary cooling loop systems



SuperFlow™ Series

- Capacities available from 100 ~ 10,000 liters
- Replaceable membrane design
- 10 bar design working pressure (16/25 bar optional)
- Carbon steel tank body with weather-resistant coating
- Stainless steel connection
- Leak-proof O-ring sealed air valve cap
- Chinese Standard (GB150), European Standard (PED), American Standard (ASME) optional
- Comprehensive factory testing

Primary Cooling Loop

Prefabricated System



InoxFlow™ Series

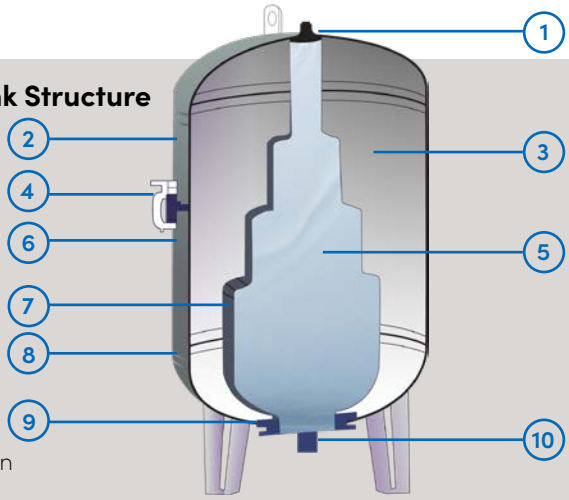
- Capacities available from 100 ~ 3,000 liters
- Replaceable membrane design
- 10 bar design working pressure (16/25 bar optional)
- Stainless steel tank body (304/316L optional)
- Stainless steel connections (304/316L optional)
- Leak-proof O-ring sealed air valve cap
- Chinese Standard (GB150), European Standard (PED), American Standard (ASME) optional
- Comprehensive factory testing

Primary Cooling Loop

Prefabricated System

GWS Replaceable Membrane Expansion Tank Structure

1. Membrane Hanger (flange type for selected models)
2. Carbon steel tank with weather-resistant coating; stainless steel tank optional (304/316L available)
3. Pre-charged compressed air
4. Built-in pressure gauge
5. Water storage chamber
6. Air valve
7. High-grade butyl rubber membrane
8. High-precision welding seams
9. Flange with stainless steel liner plate, bolted fixation
10. Stainless steel connection (304/316L optional)

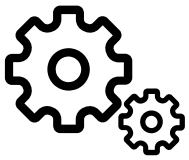


In the primary cooling loop, cooling fluid prepared by the cooling source (such as chillers, dry coolers, cooling towers, or plate heat exchangers) is delivered by circulation pumps to the primary-side inlet of each CDU (Coolant Distribution Unit). After heat exchange, the fluid returns to the cooling source for recooling. The primary-side loop usually covers the entire data center or multiple cabinet rows, featuring long piping networks, large flow rates, numerous devices, and wide operational load fluctuations.

Compared with the secondary-side loop, the primary-side loop faces more complex pressure management challenges, including uneven flow distribution caused by multiple CDUs operating in parallel, thermal expansion volume changes due to temperature differences between the cooling source side and the load side, and water hammer impacts generated by the startup and shutdown of large circulation pumps. These challenges place higher requirements on pressure stabilization, constant-pressure control, and buffering equipment within the primary-side loop.

Typical Application Scenarios & Solutions

	Requirement	GWS Solution
Primary circuits in large data centres	Large total volume of coolant, resulting in significant thermal expansion	Large-capacity expansion tanks (100 litres to 10,000 litres), effectively accommodating volume changes
Primary distribution systems for multiple CDU parallel configurations	Uneven flow distribution and complex pressure fluctuations	The expansion tank acts as the system's pressure-regulating point, balancing pressure differences across multiple parallel circuits.
Chiller-side systems	Frequent start-up and shutdown of the chiller, leading to pronounced water hammer effects	Airbag-style structure, effectively absorbing the impact of starting and stopping
Projects requiring industrial-grade high reliability	Strict requirements regarding equipment lifespan and maintainability	• Strict requirements for equipment lifespan and maintainability • Better quality: precision manufacturing and strict quality control processes eliminate leakage risks • Longer lifespan: replaceable high-grade butyl rubber membrane design greatly extends service life • Lower maintenance: reduces downtime and maintenance frequency, lowering long-term operating costs • Lower cost: significantly reduces total cost of ownership (TCO) and delivers higher return on investment
Global data centre projects	Must comply with various certifications, including Chinese, European and American standards	The entire range is certified to multiple standards, enabling rapid adaptation to projects worldwide



Requirement Alignment

GWS offers a comprehensive range of products certified to multiple standards, including Chinese (GB150), European (PED) and American (ASME) standards, with capacities ranging from 100 to 10,000 litres (larger capacities available upon request), and available in either carbon steel or stainless steel. The products are fully compatible with various technical approaches, including cold plate liquid cooling and immersion liquid cooling, making them a reliable choice for building safe, stable and efficient primary-side cooling infrastructure to meet a wide range of application requirements.



Performance Responsiveness

The GWS replaceable membrane-type expansion tank is specifically designed for primary cooling circuits in data centre liquid cooling systems. With key advantages such as high-capacity coverage, a replaceable membrane structure and zero risk of fluid leakage, it effectively addresses critical issues including pressure fluctuations, thermal expansion accumulation, water hammer impacts and leakage compensation. The entire range utilises high-grade butyl rubber membranes, which not only extend the service life of the entire vessel but also significantly reduce lifecycle operational and maintenance costs, making them the ideal choice for primary cooling circuits in data centres.



Media Compatibility

The GWS replaceable membrane-type expansion tank features a high-grade butyl rubber membrane and stainless steel fittings. It is suitable for an ultra-wide temperature range of -10 °C to 90 °C and is compatible with various coolants, including pure water and propylene glycol.

- Note: When mixing coolant (such as ethylene glycol or propylene glycol) with water, it is recommended that the coolant's volume proportion does not exceed 50%



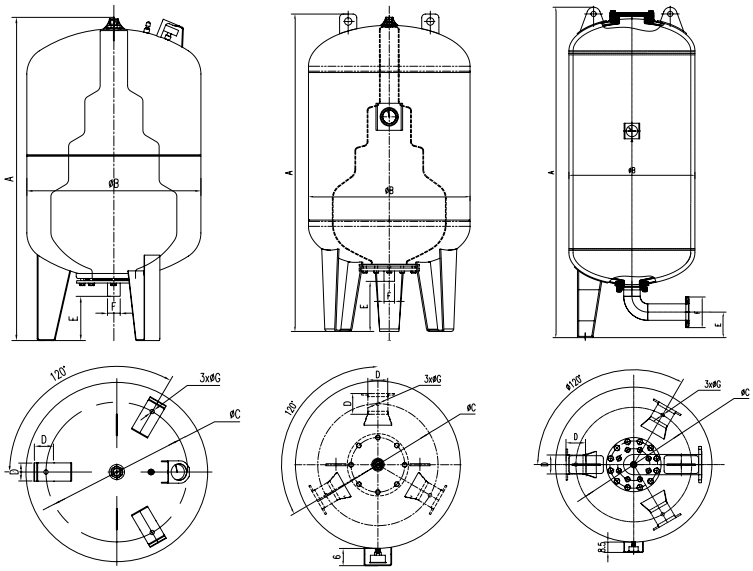
Service Support

- Technical selection support: Precise matching of expansion tank models based on CDU type, flow rate, pressure and temperature parameters;
- Customisation capabilities: Support for bespoke customisation of interface specifications, pre-charge pressure, external markings and more;
- Global supply network: Rapid response to delivery requirements for global data centre projects

SuperFlow™ Series Specification

Model	Nominal Volume		Connection Size	Dimensions (mm)		Installation Dimensions (mm)				Shipping Weight (kg)
	(L)	(Gal)	F	A	B	C	D	E	G	
SFB-INT-100LV	100	26.42	1" BSPT (M)	897	480	350	60*60	170	14	20.0
SFB-INT-150LV	150	39.63	1" BSPT (M)	933	590	460	60*60	150	14	24.9
SFB-INT-200LV	200	52.83	1¼"BSPT(M)	1073	590	460	60*60	150	14	39.7
SFB-INT-300LV	300	79.25	1¼"BSPT(M)	1238	680	480	60*70	217	14	50.5
SFB-INT-500LV	500	132.09	1¼"BSPT(M)	1561	756	530	80*80	195	14	99.0
SFB-INT-750LV	750	198.13	2" BSPT (M)	1834	756	530	80*80	190	14	121.0
SFB-INT-850LV	850	224.55	2" BSPT (M)	1976	806	590	100*100	280	20	134.0
SFB-INT-1000LV	1000	264.17	2" BSPT (M)	2376	806	590	100*100	280	20	169.0
SFB-INT-1500LV	1500	396.26	2" BSPT (M)	2435	958	690	100*100	270	20	258.0
SFB-INT-2000LV	2000	528.34	2" BSPT (M)	2505	1110	760	100*100	270	20	363.0
SFB-INT-3000LV	3000	792.52	DN150	3175	1210	900	150*150	230	24	630.0
SFB-INT-4000LV	4000	1056.69	DN150	3378	1410	1050	150*150	230	24	747.0
SFB-INT-5000LV	5000	1320.86	DN150	3778	1410	1050	150*150	230	24	838.0
SFB-INT-6000LV	6000	1585.03	DN150	4578	1410	1050	150*150	230	24	978.0
SFB-INT-10000LV	10000	2641.72	DN150	5840	1610	1100	150*150	210	24	1380.0

Note: Dimensions or specifications may have minor deviations.



100L~300L　500L~2000L　3000L~10000L

Primary cooling loop Expansion Tanks

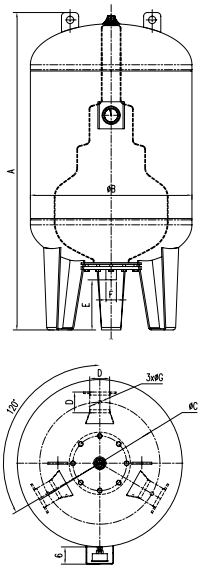
Tank Material	Carbon steel tank High-grade butyl rubber membrane Weather-resistant coating
Capacity Range	100 ~ 10,000 L
Max. Working Pressure	10 bar (16/25 bar optional)
Max. Working Temperature	90 °C
Min. Working Temperature	-10 °C (avoid freezing)
Factory Pre-charge Pressure	4.0 bar
Connection Sizes	1", 1¼", 2", DN150
Connection Material	Stainless steel
Manufacturing Standard	European PED standard (GB150 and ASME standards available as options)
Country of Origin	Qingdao, China
Warranty Period	Three Years

Note: The above certifications apply to all or selected models listed. Please consult your GWS sales representative for detailed information.

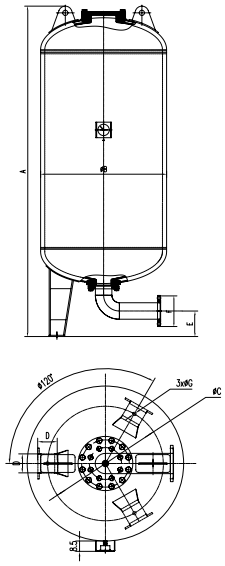
InoxFlow™ Series Specification

Model	Nominal Volume		Connection Size	Dimensions (mm)		Installation Dimensions (mm)				Shipping Weight (kg)
	(L)	(Gal)	F	A	B	C	D	E	G	
IFB-100LV	100	26.42	1" BSPT(M)	983	456	350	60*60	130	14	35.9
IFB-150LV	150	39.63	1" BSPT(M)	1056	506	400	60*60	125	14	42.5
IFB-200LV	200	52.83	1¼" BSPT(M)	1103	606	460	60*60	115	14	57.6
IFB-300LV	300	79.25	1¼" BSPT(M)	1286	656	480	80*80	190	14	73.1
IFB-500LV	500	132.09	1¼" BSPT(M)	1561	756	530	80*80	190	14	100.5
IFB-750LV	750	198.13	2" BSPT(M)	1834	756	530	80*80	190	14	119.8
IFB-850LV	850	224.55	2" BSPT(M)	1976	808	590	100*100	280	20	169.5
IFB-1000LV	1000	264.17	2" BSPT(M)	2376	806	590	100*100	280	20	212.0
IFB-1500LV	1500	396.26	2" BSPT(M)	2435	958	690	100*100	270	20	255.7
IFB-2000LV	2000	528.34	2" BSPT(M)	2505	1110	760	100*100	270	20	363.4
IFB-3000LV	3000	792.52	DN150	3181	1210	900	150*150	240	24	635.0

Note: Dimensions or specifications may have minor deviations.



500L~2000L



3000L~10000L

Primary cooling loop Expansion Tanks

Tank Material	Stainless steel tank High-grade butyl rubber membrane
Capacity Range	100 ~ 3,000 L
Max. Working Pressure	10 bar (16/25 bar optional)
Max. Working Temperature	90 °C
Min. Working Temperature	-10 °C (avoid freezing)
Factory Pre-charge Pressure	4.0 bar
Connection Sizes	1", 1¼", 2", DN150
Connection Material	Stainless steel
Manufacturing Standard	European PED standard (GB150 and ASME standards also available)
Country of Origin	Qingdao, China
Warranty Period	Three Years

Note: The above certifications apply to all or selected models listed. Please consult your GWS sales representative for detailed information.

WATER MOVEMENT

Flow-Thru™ Series

Diaphragm design, imported from the USA, airtight and maintenance-free, specifically designed to prevent stagnant water



Features

- Diaphragm design
- 8.6 bar design working pressure
- Virgin polypropylene liner
- 304 stainless steel water connection
- Dedicated for variable frequency systems
- Leak-proof O-ring sealed air valve cap
- Comprehensive factory testing
- Zero air leakage and maintenance-free

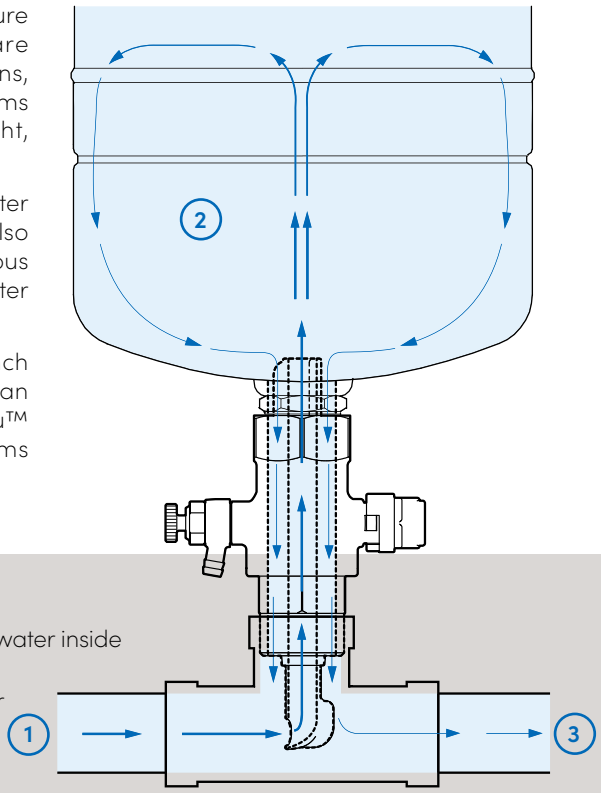
Note: The above certifications apply to all or selected models in this series. Please consult your GWS sales representative for details.

Flow-Thru™ technology is a newly launched revolutionary technology upgrade from Global Water Solutions, specially designed to prevent stagnant water and completely eliminate dead water zones at the bottom of the tank, ensuring optimal water quality.

The Flow-Thru™ product line is available in two types: pressure tanks and adapter fittings. Flow-Thru™ pressure tanks are offered in both carbon steel and composite material options, all equipped with high-grade CAD-2 butyl rubber diaphragms and anti-air-leak sealed air valve caps to ensure airtight, maintenance-free operation.

The integrated Flow-Thru™ adapter fitting allows water to enter the tank while the pump is operating and, more importantly, also discharges water from the tank at the same time. This continuous flushing function eliminates the possibility of dead water or water stagnation commonly found in conventional systems.

Flow-Thru™ fittings are universally compatible with all 1-inch inline (2L~35L) products from Global Water Solutions and can withstand pressures up to 25 bar. This means Flow-Thru™ technology can be widely applied in anti-stagnation systems ranging from 2L to 450L.



Flow-Thru™ Concept

Flow-Thru™ technology ensures complete recirculation of water inside the tank!

1. The Flow-Thru™ inlet redirects water into the interior of the tank
2. Water flows and mixes thoroughly inside the tank, eliminating the possibility of stagnant or standing water
3. Fully mixed water flows out of the tank

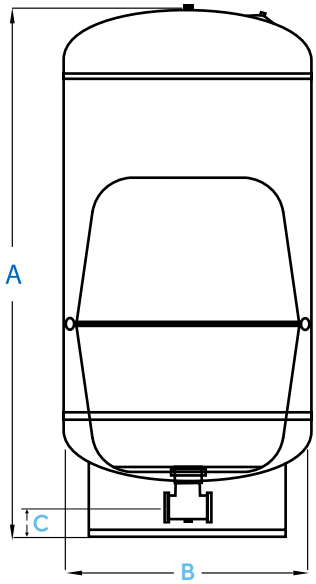
Flow-Thru™ Series Specification

Model	Nominal Volume		Connection Size	Shipping Weight(kg)	Dimensions (mm)		
	(L)	(Gal)			A	B	C
Carbon Steel Type							
GFU-80LV	80	21.1	1¼" BSPP(F)	20.0	736	407	51
GFU-170LV	170	44.9	1¼" BSPP(F)	30.9	943	533	65
GFU-325LV	325	85.8	1¼" BSPP(F)	55.4	1149	660	61
GFU-450LV	450	118.8	1¼" BSPP(F)	69.9	1537	660	75
Composite Type							
CFB-60LV	60	15.8	1¼" BSPP(F)	8.6	650	421	45
CFB-80LV	80	21.1	1¼" BSPP(F)	10.9	865	421	45
CFB-150LV	150	39.6	1¼" BSPP(F)	15.9	775	617	57
CFB-200LV	200	52.8	1¼" BSPP(F)	20.2	1099	546	58

Note: Dimensions or specifications may have minor deviations.

Specifications

Material	Carbon steel/fibreglass tank High-grade butyl rubber diaphragm Natural polypropylene lining
Capacity Range	60 ~ 450 L
Max. Working Pressure	8.6 bar
Max. Working Temperature	Carbon Steel: 90 °C | Fiberglass: 49 °C
Factory Pre-charge Pressure	1.4 bar
Connection Sizes	1¼"
Connection Material	304 Stainless Steel / Reinforced Plastic
Country of Origin	USA
Warranty Period	Five Years





Separate Flow-Thru™ Adapter Fittings

Model	Connection Size (L)	Maximum Working Pressure	Length (mm)	Width (mm)	Height (mm)	Shipping Weight (kg)
Flow-Thru™ Inline Adapter Plus						
IFP-75B	3/4" BSP	25 bar / 362 psi	45	103	141	0.6
IFP-100B	1" BSP	25 bar / 362 psi	45	103	141	0.6

FireFlow™ Series

For use in fire-fighting water supply systems



Features

- Replaceable membrane design
- PED approved
- 10 / 16 / 25 bar pressure ratings
- Built-in pressure gauge
- Leak-proof O-ring sealed air valve cap
- Comprehensive factory testing

Note: The above certifications apply to all or selected models in this series. Please consult your GWS sales representative for details.

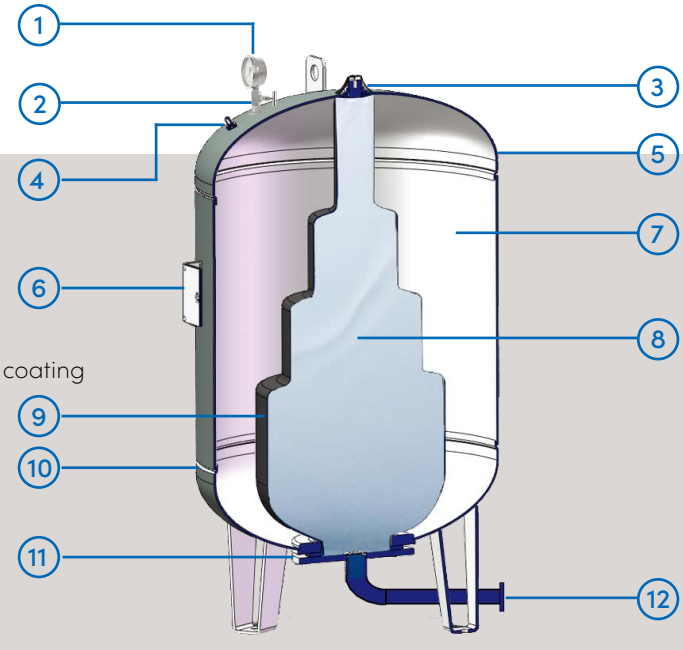
The FireFlow™ fire protection tank series is a high-quality replaceable membrane-type pressure tank manufactured by the Global Water Solutions factory in Qingdao, China. It is widely used in fire water supply systems for multi-story and high-rise residential, office, research, commercial, hotel, hospital, theater, and sports complex buildings.

At the same time, this product series is also suitable for high-reliability fire protection water supply applications in environments with densely deployed high-value equipment, such as data centers. The products fully comply with fire protection system certification requirements, ensuring immediate system response and stable output under extreme conditions.

The FireFlow™ fire protection tank series is available in capacities ranging from 750L to 2000L. Its replaceable membrane design allows the internal rubber membrane to be replaced at any time. All products are equipped with built-in pressure gauges, enabling easy monitoring of system pressure. Users only need to check the pre-charge pressure once every 3–6 months.

FireFlow™ Series Structure

1. Pressure Gauge
2. Needle Valve
3. Membrane suspension fixing device
4. Air valve
5. Carbon steel tank with weather-resistant coating
6. Product nameplate
7. Pre-charged compressed air
8. Water storage chamber
9. High-grade butyl rubber membrane
10. High-precision weld seams
11. Flange with stainless steel liner plate and bolted fastening
12. Water connection

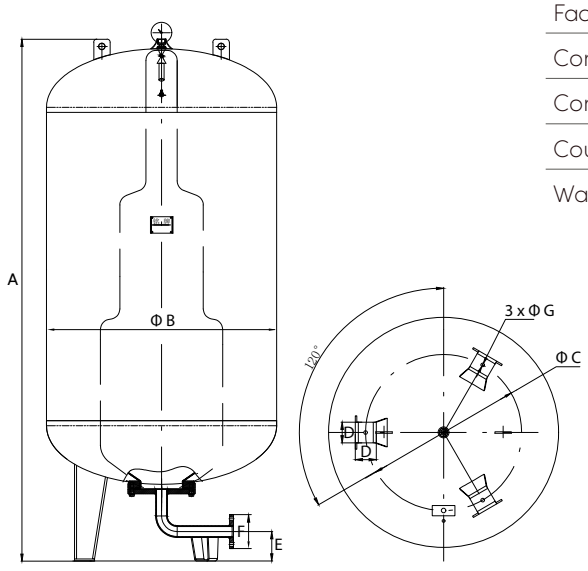


FireFlow™ Series Specification

Model	Nominal Volume		Connection Size	Dimensions (mm)		Dimensions (mm)				Shipping Weight (kg)
	(L)	(Gal)	F	A	B	C	D	E	G	
10 bar / 1.0 MPa										
FFB-INT-750LV	750	198.13	DN50	1834	756	530	80*80	108	14	122.0
FFB-INT-850LV	850	224.55	DN50	1976	806	590	100*100	108	20	138.0
FFB-INT-1000LV	1000	264.17	DN50	2376	806	590	100*100	108	20	170.0
FFB-INT-1500LV	1500	396.26	DN50	2435	958	690	100*100	108	20	282.0
FFB-INT-2000LV	2000	528.34	DN50	2505	1110	760	100*100	108	20	371.0
16 bar / 1.6 MPa										
FMB-INT-750LV	750	198.13	DN50	1838	760	530	80*80	108	14	194.0
FMB-INT-850LV	850	224.55	DN50	1980	810	590	100*100	108	20	206.0
FMB-INT-1000LV	1000	264.17	DN50	2380	810	590	100*100	108	20	258.0
FMB-INT-1500LV	1500	396.26	DN50	2439	962	690	100*100	108	20	362.0
FMB-INT-2000LV	2000	528.34	DN50	2511	1116	760	100*100	108	20	577.0
25 bar / 2.5 MPa										
FUB-INT-750LV	750	198.13	DN50	1844	766	530	80*80	108	14	291.0
FUB-INT-850LV	850	224.55	DN50	1986	816	590	100*100	108	20	333.0
FUB-INT-1000LV	1000	264.17	DN50	2386	816	590	100*100	108	20	409.0
FUB-INT-1500LV	1500	396.26	DN50	2447	970	690	100*100	108	20	587.0
FUB-INT-2000LV	2000	528.34	DN50	2519	1124	760	100*100	108	20	820.0

* Customization is available for this product series. For special requirements, please contact your local GWS sales representative.

Note: Dimensions or specifications may have minor deviations.



Specifications

Material	Carbon steel tank (for pressure vessels) Weather-resistant coating, high-grade butyl rubber membrane, stainless steel flange, lining plate
Capacity Range	750 ~ 2000 L (Customizable)
Max. Working Pressure	10 / 16 / 25 bar
Max. Working Temperature	90 °C
Factory Pre-charge Pressure	4.0 bar
Connection Sizes	DN50 (Customizable)
Connection Material	304 Stainless Steel
Country of Origin	China
Warranty Period	Three Years

Notes

Notes

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