FXV-D

Closed circuit cooling towers





Key benefits

- Star in energy efficiency
- Low maintenance and easy inspection
- Optimal performance guaranteed

FXV-D characteristics

Combined flow, axial fan, induced draft

Capacity range

up to 2290 kW

Maximum entering fluid temperature

82°C

Typical applications

- Medium to large HVAC and industrial applications such as electric arc furnaces and pharmaceutical plants.

Star in energy-efficiency

- Evaporative cooling PLUS unique combined heat transfer system for minimized system-wide energy consumption.
- **Axial fan** – half the consumption of rivals and huge single cell capacity: saving you more!
- BACross II fill factory-configured for unrivalled water/air contact and minimal air pressure drop. Guarantees **optimal cooling tower efficiency** with cooling system energy well under control.
- **High efficiency fan motors.**

Low maintenance and easy inspection

- Inspect and maintain towers with **unrivalled comfort and safely: while standing** inside.
- The FXV-D has a **spacious plenum** (internal area) and **easy inspection/maintenance access**
- **Fans** are easily accessible from the in- and outside
- Inspect internal fill and coil easily via **removable drift eliminator modules**.
- The BACross II **fill** is telescopically-supported for easy sheet by sheet inspection/cleaning and **no dismantling.**
- Self-cleaning cold water basin and fill above **sloped basin** to flush out dirt and debris.

Optimal performance guaranteed

- Unique and patented heat transfer system: featuring combined flow via heat exchange coil and fill pack, for fine temperature applications and thermal challenges.
- **Huge industry-best single cell capacity**!
- BACross II **fill** - patented sheet and **maximum air/water contact** for optimal heat transfer performance.
- Encased in **corrosion-resistant fibreglass** polyester for long service life.

Ultra silent design

- FXV-D units include **low noise axial fans** for minimal surrounding noise. To reduce noise even further, choose Whisper Quiet fans**.**
- Factory designed, tested and rated sound attenuation is available on air inlet to cut operation noise even further.
- BACross II fill guides smoothly the water all the way into the basin **without water splash noise.**

Cheap to install

- FXV-D cooling towers are factory-built and shipped in sections for larger models to reduce the overall size and weight, allowing **easy on-site section assembly** with smaller crane.

Unmatched hygiene control

- Easy-clean and easy-inspect FXV-D towers **reduce hygiene risks** from bacteria or biofilm inside.
- **Combined inlet shields** block sunlight to prevent biological growth in the tower, filter the air and stop water splashing outside.
- The **drift eliminators** to prevent droplets escaping into the air are tested and certified by Eurovent.

Interested in the FXV-D cooling tower for cooling your process fluid? Contact your local BAC representative.

Downloads

- FXV-D closed circuit cooling tower
- Operating and Maintenance FXV-D
- Rigging and Installation FXV-D

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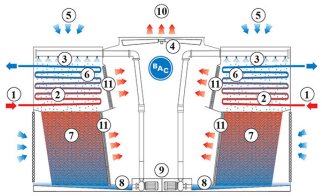
Principle of operation



The FXV-D combines the function of a cooling tower and a heat exchanger into one unit. The warm process **fluid (1)** circulates on both sides of the tower through a **heat exchanger coil (2)**, which is wetted by a **spray system (3)**. In parallel with the water spray flow, an **axial fan (4)** draws **air (5)** over the coil. The evaporation process cools the **fluid (6)** inside the coils. Because the coldest spray water and air are in the top of the tower, the process fluid travels from the bottom to the top of the coils. The spray water falls onto a **fill pack (7)** where it is cooled before falling into the **water basin (8)**. Spray **pumps (9)** recirculate the cooled water to the top of the tower. The warm saturated **air (10)** leaves the tower through the **drift eliminators (11)** which remove water droplets from the air.

Interested in the FXV-D closed circuit cooling tower? Contact your local BAC representative for more information.

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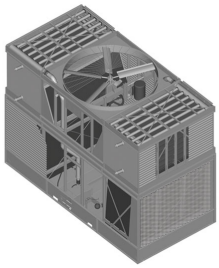
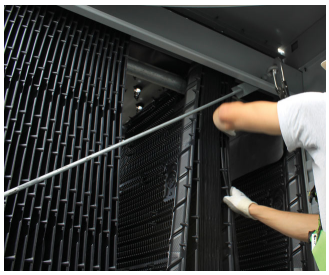
Construction details

1. Material options



- Heavy-gauge hot-dip galvanized steel is used for external unit steel panels and structural elements featuring **Baltiplus 800™ Corrosion Protection**. For casing panels we use UV resistant **fiberglass** reinforced polyester.
- The **Baltiplus 810™ coating** is an optional extra. A hybrid polymer coating for longer service life, applied pre-assembly to all hot-dip galvanized steel components of the unit.
- **Optional stainless steel** panels and structural elements of type 304 or 316 for extreme applications.
- Or the economical alternative: a **water-contact stainless steel cold water basin**. Its key components and the basin itself are stainless steel.

2. Heat transfer media



Unique and patented heat transfer system: featuring combined flow via heat exchange coil and fill pack.

Coil

- Our heat transfer media is a **cooling coil**. The coil is constructed of continuous length of prime surface steel, hot-dip galvanized after fabrication. Sloping tubes for fee drainage of fluid. Designed for maximum 10 bar operating pressure according to PER.

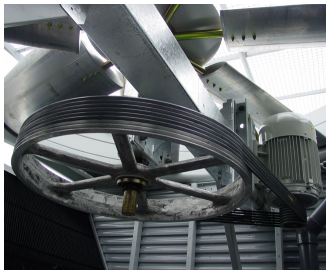
- **Optional stainless steel coils** are in type 304L or 316L.

- Maximum temperature 82°C.

Fill

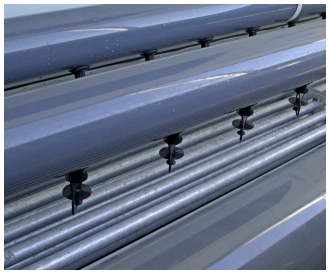
- Patented **BACross II fill** with integrated **drift eliminators**. Thermal cooling tower performance was shown in comprehensive **lab thermal performance tests**, and offers you unrivalled system efficiency. The fill pack includes individual **sheets and a telescopic fill support.** Sheets are easy to inspect and clean inside the tower without dismantling, eliminating the need for frequent fill replacement.
- In self-extinguishing **plastic**, which will not rot, decay or decompose.

3. Air movement system



- FXV-D **fan system** features two corrosion resistant sheaves, belt and motor. Together with the heavy duty fan shaft bearings and the BAC **Impervix** motor, this guarantees optimal and year-round operational efficiency.
- **Low kW and noise axial fan(s)** in corrosion resistant aluminum, encased in fan cylinder with removable fan guard. To reduce noise even further, choose for a Whisper Quiet fan with minimal impact on thermal performance.
- Our **drift eliminators** in the coil section come in UV-resistant plastic, which will not rot, decay or decompose and their performance is tested and **certified by Eurovent .**They are assembled in **easily handled and removable sections**, for optimal coil access.
- Easy removable UV-resistant plastic **combined inlet shields** at air inlet, block sunlight to prevent biological growth in tower, filter air and stop water splash-out.

4. Water distribution system



These consist of:

- **Spray branches** with wide non-clog, plastic, 360° distribution nozzles secured in grommets. Overlapping spray pattern for complete coil wetting. A **sloped cold water basin** with:
  - large hinged and inward swinging **access** door
  - anti-vortexing **strainers** and **make up** both easily accessible from inside the unit.
- Close coupled, bronze fitted centrifugal **spray pump** with totally enclosed fan cooled (TEFC) motor**.** Bleed line with metering valve installed from pump discharge to overflow.

Need more information? Contact your local BAC representative.

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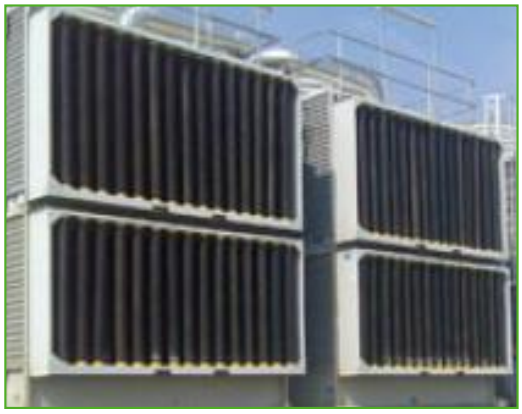
Options and accessories

Below is a listing of the main FXV-D options and accessories. If your required option or accessory is not listed, look no further than your local BAC representative.



Sound attenuation

Reducing noise at air **intake and discharge points** brings us closer to silent cooling equipment.

Whisper Quiet fan

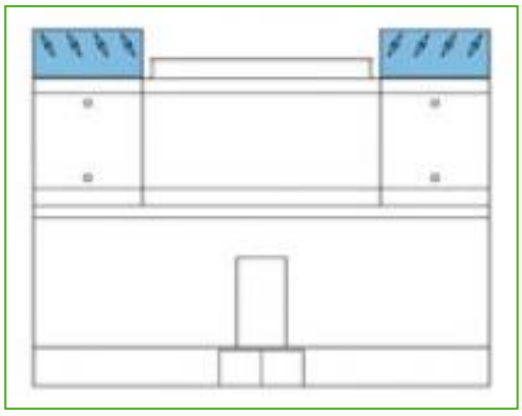
Reduce fan noise even more with **very low sound factory-tested fans**.

Gear drive system with close coupled motor

A close-coupled gear box for **more efficiency** and **less maintenance.**

Gear drive system with externally mounted motor

A gear box with an external motor outside the air stream helps **improve efficiency** and **ease of maintenance.**



Positive closure dampers

Use positive closure dampers (PCD) **to minimize the heatloss due to convection** by preventing air flow through equipment that is shut down.

Internal service platform

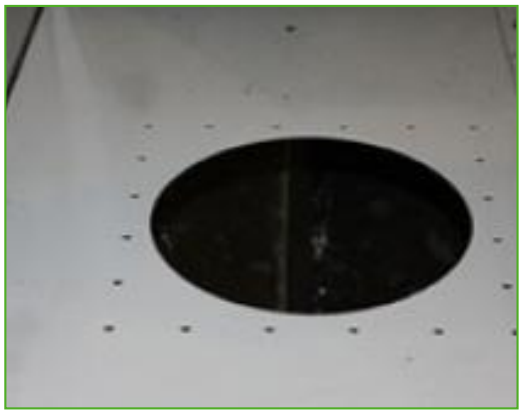
An internal platform helping you **access the unit top inside** and safely inspect your cooling towers.

External service platform

An external platform helping you **access the external unit top** and safely inspect your cooling towers.

Basin heater package

Thanks to our factory-installed heaters, the water stays at 4°C and **never freezes** , even during equipments downtime and however cold it gets outside.



Remote sump connection

The best way to **prevent a sump freezing** is to use the auxiliary remote variety within a heated area. Shutting off the circulating pump allows all the water in the water distribution, as well as that in suspension and the sump to drain freely to the auxiliary sump.

Nitrogen filling of coil

Charge the cooling coil with nitrogen for **anti-corrosion protection** during long shipment periods (ocean freight) or on-site storage.

Extended lubrication lines

Extended lubrication lines with easily accessible grease fittings can be used **to lubricate** fan shaft bearings.

Electric water level control package

For perfectly precise water level control, replace the standard mechanical valve with our electrical water level controller.

Mechanical equipment removal system

This **helps** you **remove or install** fan motors or gearboxes.

Vibration cut out switch

When excessive vibration occurs, this switch shuts down the fan, ensuring your cooling equipment **operates safely**.

Water treatment equipment

Devices to control water treatment are needed to ensure proper **cooling tower water care**. Not only does this help protect the components and fill pack, controlling corrosion, scaling and fouling, it also avoids the proliferation of harmful bacteria, including **legionella**, in the recirculating water.

Sump sweeper piping

Sump sweeper piping **prevents sediment collecting in the cold water basin** of the unit. A complete piping system, including nozzles, are installed in the basin of the tower **for connection to side stream filtration** equipment.

Filter

Separators and media filters efficiently **remove suspended solids** in the recirculating water, reducing system cleaning costs and optimizing water treatment results. Filtration helps you keep the recirculating water clean.

Flanges

Flanges facilitate **piping connections** on-site.

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Engineering data

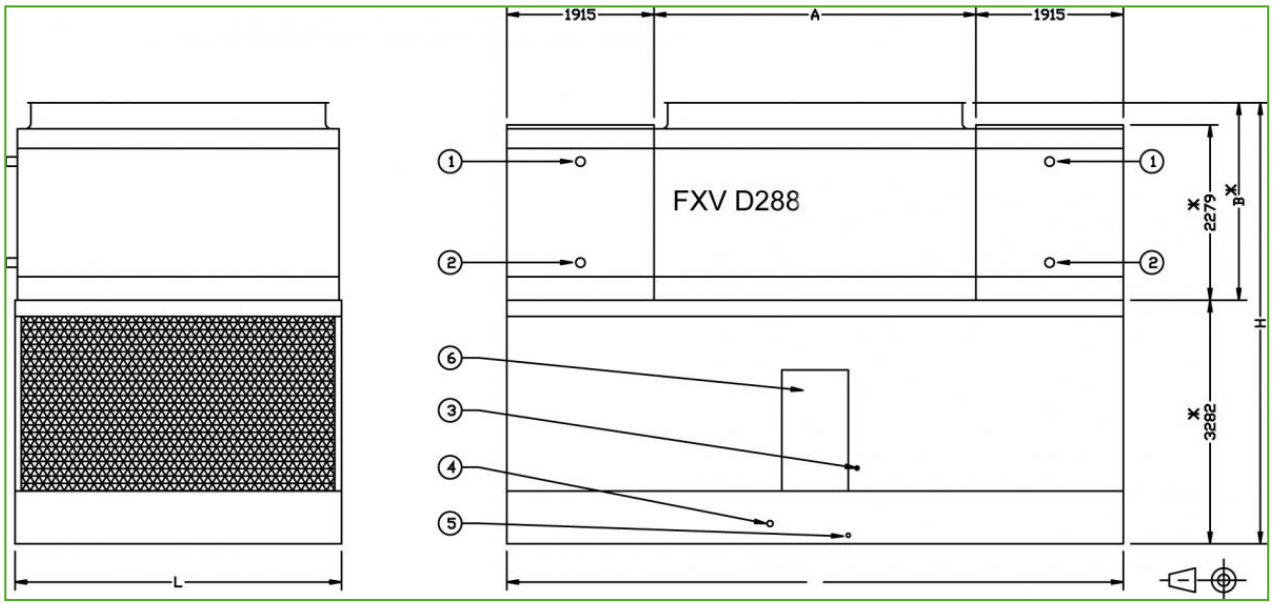
REMARK: Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at the time of publication, which should be reconfirmed at the time of purchase. In the interest of product improvement, specifications, weights and dimensions are subject to change without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

General notes

1. Operating weight is for the tower with the water level in the cold water basin at the overflow.
2. The actual size and number of inlet and outlet connections may vary with the design flow rate. Consult unit print for dimensions.
3. Inlet and outlet connections are beveled for welding.
4. Standard make up, drain and overflow connections are located at the bottom of the unit.
5. Models shipped with an optional gear drive may have heights up to 130 mm greater than shown. Models with fan motor up to 22 kW are belt driven only; models with motor between 22 kW and 45 kW have standard belt drive but gear drive as an option; models with 55 kW motor have gear drive only. Motor size for specific model is indicated by a letter "x" at the end of the model name. Fan type is indicated by an additional letter "y" at the end of the model name. "L" refers to the standard Low Noise Fan; "W" refers to the Whisper Quiet fan.
6. FXV-D models will be shipped in four sections: 1 x lower, 1 x fan and 2 x coil sections. Weight is shown for one coil section.

Last update: 23/07/2019

FXV-D 288-3 288-4 288-Q



1. Fluid out; 2. Fluid in; 3. Make up ND40; 4. Overflow ND80; 5. Drain ND50; 6. Access door.

Model	Weights (kg)			Dimensions (mm)			Air Flow (m^3/s)	Fan Motor (kW)	Water Flow (l/s)	Pump Motor (kW)	Coil Volume (L)
	Oper. Weight (kg)	Ship. Weight(kg)	Heaviest Section (kg)	L	W	H					
FXV-D 288-3ML	20140	12675	3650	3632	7328	5665	69.5	(1x) 15.0	100.0	(2x) 5.5	(2x) 1082
FXV-D 288-3NL	20155	12690	3650	3632	7328	5665	74.8	(1x) 18.5	100.0	(2x) 5.5	(2x) 1082
FXV-D 288-3OL	20175	12710	3650	3632	7328	5665	79.4	(1x) 22.0	100.0	(2x) 5.5	(2x) 1082
FXV-D 288-3PL	20250	12785	3650	3632	7328	5665	87.6	(1x) 30.0	100.0	(2x) 5.5	(2x) 1082
FXV-D 288-3QL	20255	12790	3650	3632	7328	5665	94.6	(1x) 37.0	100.0	(2x) 5.5	(2x) 1082
FXV-D 288-3RL	20355	12890	3650	3632	7328	5665	100.7	(1x) 45.0	100.0	(2x) 5.5	(2x) 1082
FXV-D 288-4ML	21815	13930	4280	3632	7328	5665	68.6	(1x) 15.0	100.0	(2x) 5.5	(2x) 1294
FXV-D 288-4NL	21830	13940	4280	3632	7328	5665	73.9	(1x) 18.5	100.0	(2x) 5.5	(2x) 1294
FXV-D 288-4OL	21850	13965	4280	3632	7328	5665	78.5	(1x) 22.0	100.0	(2x) 5.5	(2x) 1294
FXV-D 288-4PL	21925	14045	4280	3632	7328	5665	86.6	(1x) 30.0	100.0	(2x) 5.5	(2x) 1294
FXV-D 288-4QL	21930	14050	4280	3632	7328	5665	93.5	(1x) 37.0	100.0	(2x) 5.5	(2x) 1294
FXV-D 288-4RL	22030	14150	4280	3632	7328	5665	99.5	(1x) 45.0	100.0	(2x) 5.5	(2x) 1294
FXV-D 288-QML	21815	13930	4280	3632	7328	5665	68.5	(1x) 15.0	100.0	(2x) 5.5	(2x) 1283
FXV-D 288-QNL	21830	13940	4280	3632	7328	5665	73.7	(1x) 18.5	100.0	(2x) 5.5	(2x) 1283
FXV-D 288-QOL	21850	13965	4280	3632	7328	5665	78.4	(1x) 22.0	100.0	(2x) 5.5	(2x) 1283
FXV-D 288-QPL	21925	14035	4280	3632	7328	5665	86.5	(1x) 30.0	100.0	(2x) 5.5	(2x) 1283
FXV-D 288-QQL	21930	14040	4280	3632	7328	5665	93.4	(1x) 37.0	100.0	(2x) 5.5	(2x) 1283
FXV-D 288-QRL	22030	14150	4280	3632	7328	5665	99.4	(1x) 45.0	100.0	(2x) 5.5	(2x) 1283

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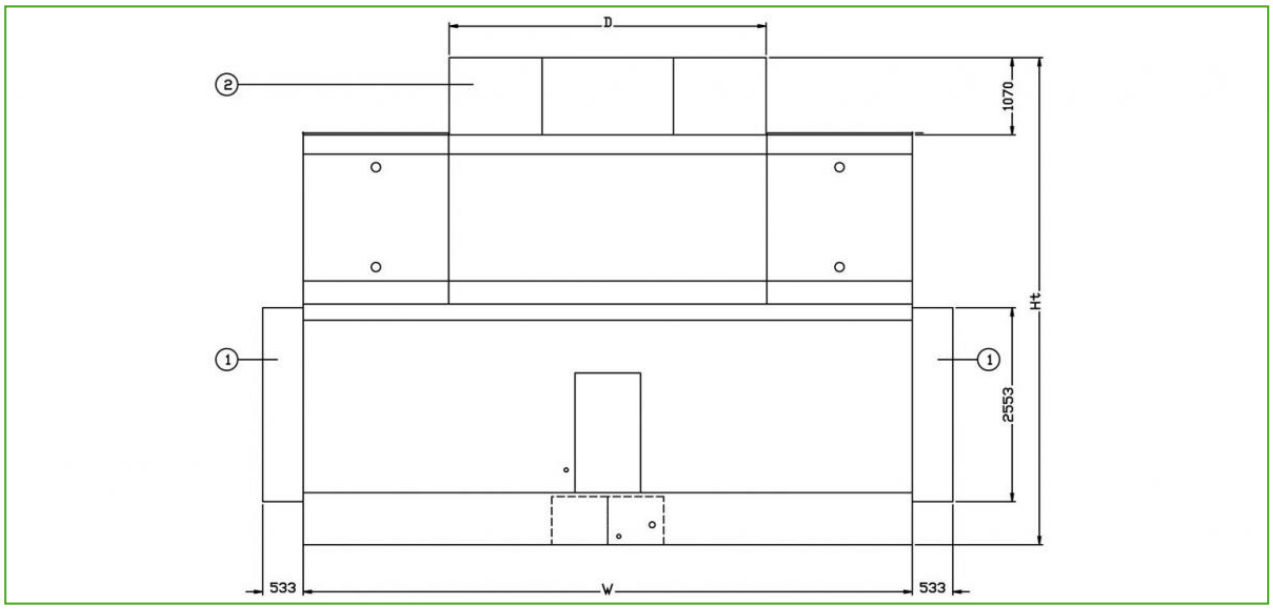
Sound attenuation



1. Inlet attenuator; 2. Discharge attenuator.

Model	Dimensions (mm)		Weights (kg)	
	D	Ht	Intake	Discharge
FXV-D 288-3ML	3500	5665	685	477
FXV-D 288-3NL	3500	5665	685	477
FXV-D 288-3OL	3500	5665	685	477
FXV-D 288-3PL	3500	5665	685	477
FXV-D 288-3QL	3500	5665	685	477
FXV-D 288-3RL	3500	5665	685	477
FXV-D 288-4ML	3500	5665	685	477
FXV-D 288-4NL	3500	5665	685	477
FXV-D 288-4OL	3500	5665	685	477
FXV-D 288-4PL	3500	5665	685	477
FXV-D 288-4QL	3500	5665	685	477
FXV-D 288-4RL	3500	5665	685	477
FXV-D 288-QML	3500	5665	685	477
FXV-D 288-QNL	3500	5665	685	477
FXV-D 288-QOL	3500	5665	685	477
FXV-D 288-QPL	3500	5665	685	477
FXV-D 288-QQL	3500	5665	685	477
FXV-D 288-QRL	3500	5665	685	477
FXV-D 364-3NL	4185	5665	808	563
FXV-D 364-3OL	4185	5665	808	563
FXV-D 364-3PL	4185	5665	808	563
FXV-D 364-3QL	4185	5665	808	563
FXV-D 364-3RL	4185	5665	808	563
FXV-D 364-3SL	4185	5665	808	563
FXV-D 364-4NL	4185	5665	808	563
FXV-D 364-4OL	4185	5665	808	563
FXV-D 364-4PL	4185	5665	808	563
FXV-D 364-4QL	4185	5665	808	563
FXV-D 364-4RL	4185	5665	808	563
FXV-D 364-4SL	4185	5665	808	563
FXV-D 364-QNL	4185	5665	808	563
FXV-D 364-QOL	4185	5665	808	563
FXV-D 364-QPL	4185	5665	808	563
FXV-D 364-QQL	4185	5665	808	563
FXV-D 364-QRL	4185	5665	808	563
FXV-D 364-QSL	4185	5665	808	563