

50 years
1960-2010
of excellence in cooling towers

Nihon Spindle

CUF Series

Close Circuit Cooling Tower



Our Successful History



With over 50 years of experience in the development of cooling towers, Nihon Spindle continues to lead the Asian market today through R&D and innovation. It is an ingrained part of Nihon Spindle's culture to seek continuous improvement in order to supersede existing performances and quality standards.

Uncompromising Performance



Our cooling towers are manufactured to JIS B8609 standards. This is a renowned high performance standard for cooling tower that is certified by the Japan Cooling Tower Institute. Our performance standard incorporates feature such as minimized footprint for the corresponding capacity required, super low noise performance and uncompromised energy efficiencies.

Quality Material



Nihon Spindle Cooling Towers are produced using only the highest quality components and materials. We use stainless steel 304 grade nut and bolts and hot-dipped galvanized steel for the structure and steel parts. These will ensure longer-lasting product life under exposure to water and heat. Our FRP fan blade is lighter and more durable, and consumes less power to run and start up

CTI standard Test Facility



Diesel boilers to simulate heat load.



1,100TR cooling tower CTI testing

In order to maintain the highest standards of quality, our products undergo strict annual testing according to world-renowned CTI standards. A test facility was designed and built at our manufacturing plant in Penang, Malaysia, in accordance to the specifications by a qualified and certified CTI tester. This is unique CTI test facility has a combined floor space of 15,000 sq ft and is capable of up to 1,000HRT testing. Testing is accomplished to great accuracy by 4 massive diesel-boilers and numerous sensors embedded around the vicinity of the test platform.

Our Japanese Team



Manufacturing control, Engineering Design, Quality control and R&D led by qualified Japanese team from Nihon Spindle Manufacturing Co., Ltd., Osaka Japan

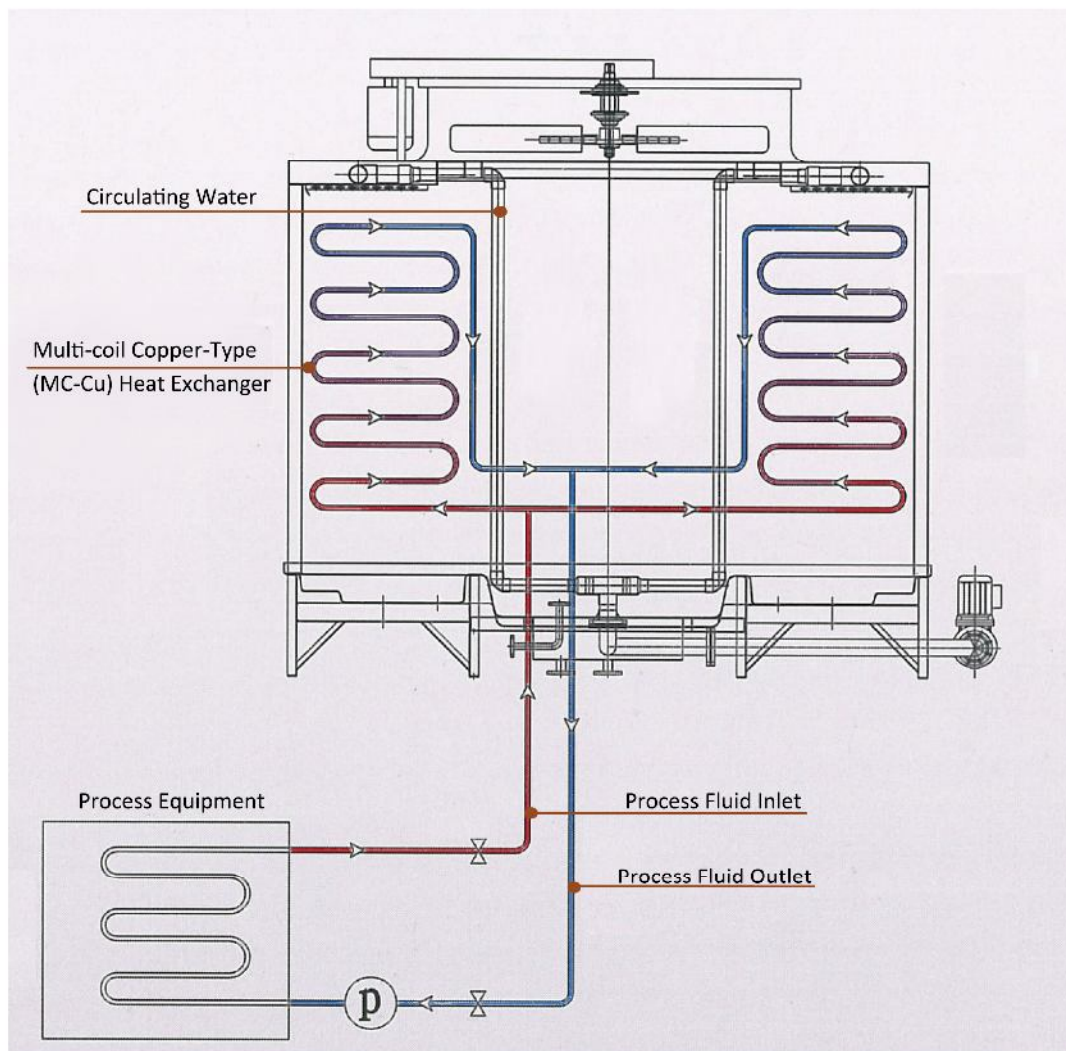
Nihon Spindle Closed Circuit Cooling Towers

The principle of a closed circuit cooling tower is similar to that of an open type cooling tower, with exceptions that the heat load is rejected from the process fluid into the ambient air through a heat exchanger. Heat is transferred from the process fluid via heat exchanger to the circulating water in the external open loop, subsequently rejected into the atmosphere through natural process of evaporation. Nihon Spindle CUF model is our latest innovation arising from two of our proprietary designs, namely our unique multi-coil copper-type (MC-Cu) heat exchanger and our field-proven high efficiency PVC infills.

The innovative CUF model contains two separate loops:

- 1) an internal closed loop that circulates process fluid between our MC-Cu heat exchanger and process equipment, i.e. Chillers, Machinery etc
- 2) an external open loop that circulates water-air mixture over the entire MC-Cu heat exchanger whilst the ambient air is continuously induced through the tower via a cooling fan.

When the tower is in operation, the process fluid to be cooled is contained within the MC-Cu heat exchanger and completely isolated from the outside atmosphere. This in turn effectively preserves the purity of the process fluid and ensures the process fluid is free from contamination at all times.



Key Advantages on Overall System Maintenance

The clean and contaminant-free process fluid resulting from the use of closed-circuit system help preserve a cleaner internal surface of the overall piping system, consequently provides the following benefits:

- 1) improved flow of process fluids within the system
- 2) higher efficiencies of components within the system
- 3) prolonged lifespan of the components within the system
- 4) lower system maintenance cost

Superior Resistance Against Corrosion, Bacteria Growth and Biofouling Activities



Nihon Spindle selected copper as the coil material primarily because of its superior heat dissipation capacity and corrosion resistant properties. In addition, the biostatic properties of copper acts as a natural inhibitor for bacteria growth and prevents biofouling activities (i.e. algae, plants, microorganisms etc) on wetted areas.

Each copper coil in the Nihon Spindle MC-Cu heat exchanger is sealed and secured onto a composite fitting first before connecting directly to the HDG-Zn flange of the header pipes. The composite fittings are manufactured entirely from Fiberglass Reinforced Polyester and Nylon to prevent electrochemical corrosion between the copper coils and the zinc galvanized flanges of the header pipes.

Low Noise Performance certified by Japan Cooling Institute (JCI)

The CUF model equipped with Nihon Spindle Fiberglass Reinforced Polyester (FRP) fan is certified with Low Noise Performance under Japan Cooling Institute (JCI) standards. Nihon Spindle FRP fans are proprietary designs of our establishment with its performance and reliability field-proven for over a decade, delivering satisfaction to its users worldwide.

Every Nihon Spindle FRP fans undergo both static and dynamic balancing, followed by stringent quality control protocols prior to shipment. Key advantages of FRP fans:

- 1) better overall efficiency due to higher lift-to-drag ratio
- 2) prolonged lifespan on mechanical drive systems (i.e. gearbox and bearings) due to the lower overall weight of the FRP fans compared to conventional metallic fans
- 3) lower flow noise and mechanical noise levels compared to conventional metallic fans
- 4) higher resistance against corrosion and erosion compared to conventional metallic fans



Outstanding Thermal Heat Transfer Efficiency



Copper was selected as the primary coil material in the Nihon Spindle MC-Cu heat exchanger because of its superior heat dissipation capacity. Nihon Spindle field-proven high efficiency PVC infills were designed to increase contact surface and contact time between air and water, allowing for maximum heat transfer.

The CUF model incorporates the best of both Nihon Spindle technologies, whereby our unique MC-Cu heat exchanger has been integrated with our field-proven high efficiency PVC infills. This ultimate combination provides rapid heat dissipation from the process fluid through copper coil-type heat exchanger and maximum heat transfer to the water-air mixture.

Space Saving and Light Weight properties



Conventional systems consist of an array of cooling towers and heat exchangers that are installed separately. Nihon Spindle CUF model is a revolutionary innovation that incorporates our MC-Cu heat exchanger within the cooling tower unit itself, therefore minimizing equipment footprint as compared to the conventional systems.

In addition, Nihon Spindle products are designed and manufactured to deliver equipments at minimal operating weight without compromising on structure integrity and stability. This is accomplished by selecting Fiberglass Reinforced Polyester (FRP) as the construction material for majority of large-sized components of the cooling tower, namely the cold water basin, outlet sump, fan cylinder, outer-wall etc. Hot-Dipped Galvanized

Zinc (HDG-Zn) coated steel structures remain as the construction material for all stress-loading structures to preserve the integrity and stability of the cooling tower.

Energy Saving properties

The high efficiency system of the CUF model, namely the integration of MC-Cu heat exchanger with high efficiency PVC infills, utilizes less mechanical energy to deliver any specific cooling capacity. In addition, the drift eliminators integrated within our high efficiency PVC infills further reduces drift loss, consequently minimizing replenishment cost for the water treatment system and generating savings to the end-user.

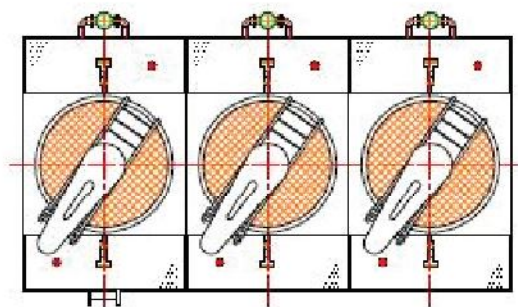
Maintenance-friendly products



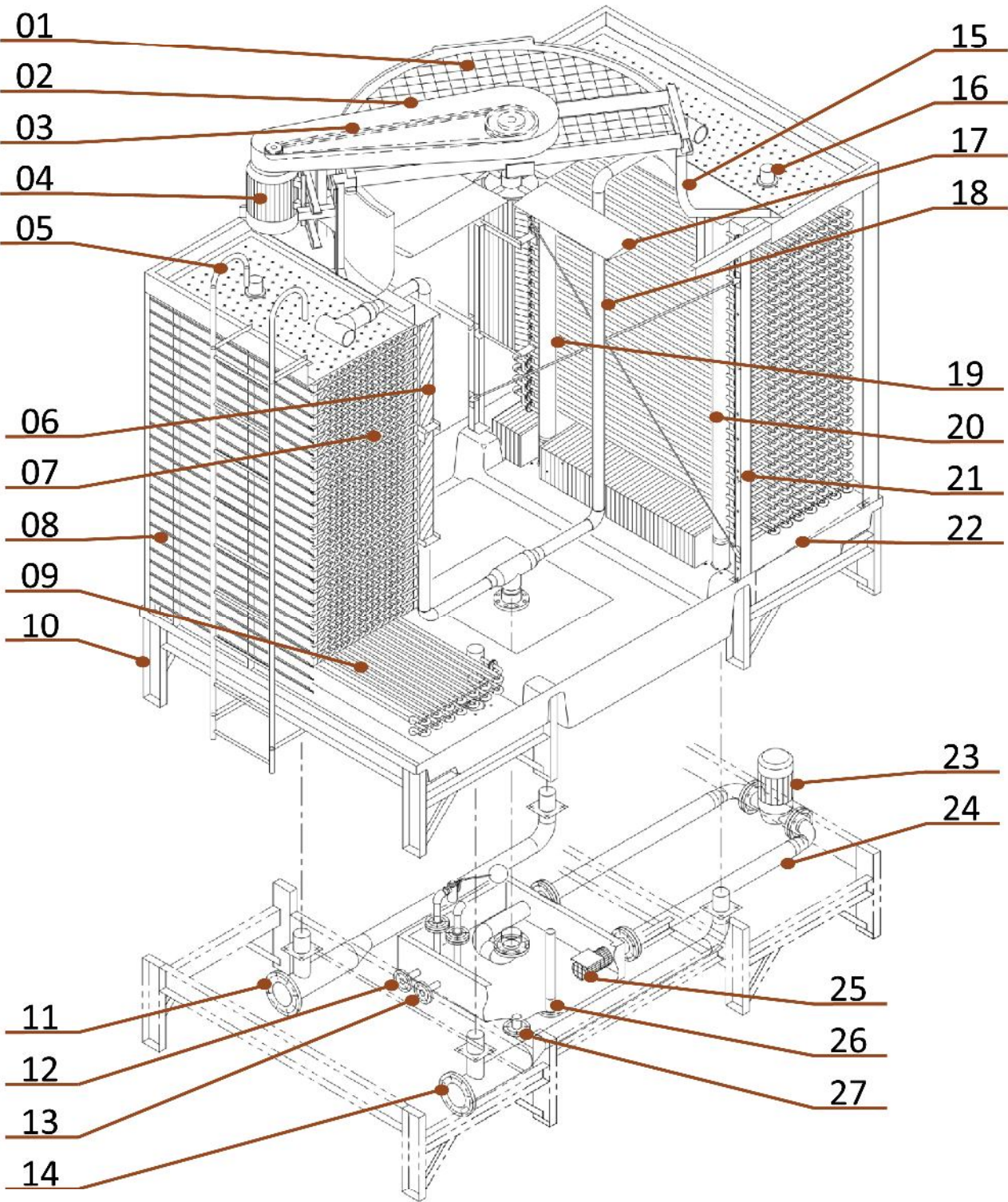
The key advantage of a crossflow-type cooling tower is the easy accessibility to the internal chambers which houses all critical components of the cooling towers. Nihon Spindle CUF model is designed on a crossflow platform to allow maintenance personnel's to walk inside the cooling tower and safely conduct inspection and maintenance procedures from within the internal chambers. Accessibility into the internal chambers is as simple as opening the lockable access doors and walking straight into the cooling tower along the built-in hot-dipped galvanized zinc coated (HDG-Zn) steel walkway. Easy accessibility encourages maintenance activities to be carried out regularly and regular maintenance delivers uninhibited performance of the cooling tower, consequently preserves the high-efficiency status of the cooling tower at all times.

Multiple Cell Configurations

Nihon Spindle products are designed for multiple cell configuration to allow for greater flexibility in terms of tower selection to our respective end-users. In brief, for any specific capacity required by the system, the end-user may select either a single cell type configuration or multiple cell type configurations, i.e. 2-cell type, 6 cell type, 10-cell type and many more.



CUF Series Construction Details

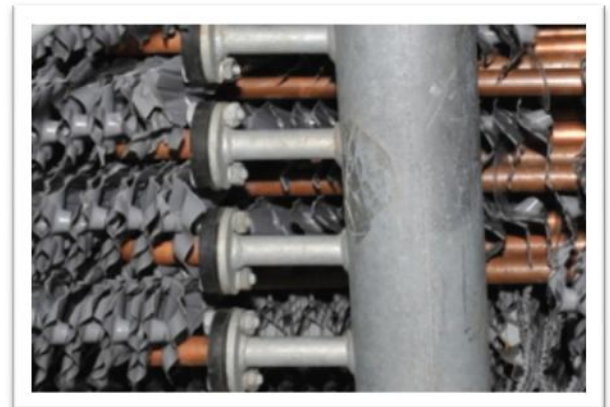


CUF Series Materials of Construction

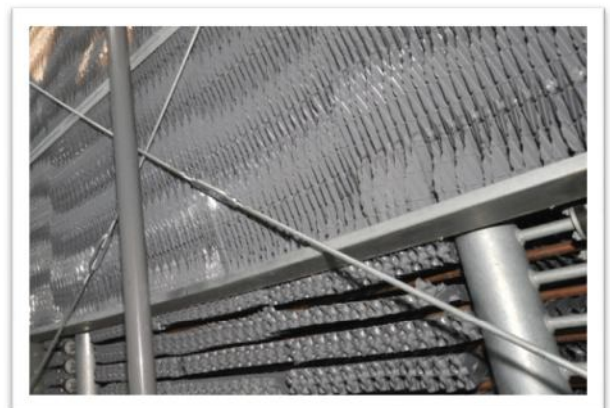
	PART	MATERIALS
1	Fan guard	Hot dip galvanized steel
2	Belt & pulley cover	Fiberglass reinforced polyester
3	Fan belt	Wedge belt
4	Motor	TEFC, IP55
5	Ladder	Hot dip galvanized steel
6	Drift eliminator	UPVC
7	Infill	UPVC
8	Louver	Fiberglass reinforced polyester
9	Heat exchanger	Copper coil
10	Bottom basin frame	Hot dip galvanized steel
11	Hot w ater inlet piping	Hot dip galvanized steel
12	Auto make-up piping	Hot dip galvanized steel
13	Manual make-up piping	Hot dip galvanized steel
14	Cold w ater outlet piping	Hot dip galvanized steel
15	Fan stack	Fiberglass reinforced polyester
16	Overflow piping at hot w ater basin	UPVC
17	Fan blade	Fiberglass reinforced polyester
18	Cooling w ater piping	UPVC
19	Hot w ater inlet header piping	Hot dip galvanized steel
20	Cold w ater outlet header piping	Hot dip galvanized steel
21	Structure frame	Hot dip galvanized steel
22	Water basin	Fiberglass reinforced polyester
23	Cooling w ater pump	
24	Cooling w ater piping	GI Steel
25	Strainer	Stainless steel
26	Overflow piping	Hot dip galvanized steel
27	Drain piping	Hot dip galvanized steel
28	Casing (w all)	UPVC
29	Access door	Fiberglass reinforced polyester



Copper tube mixed with infills



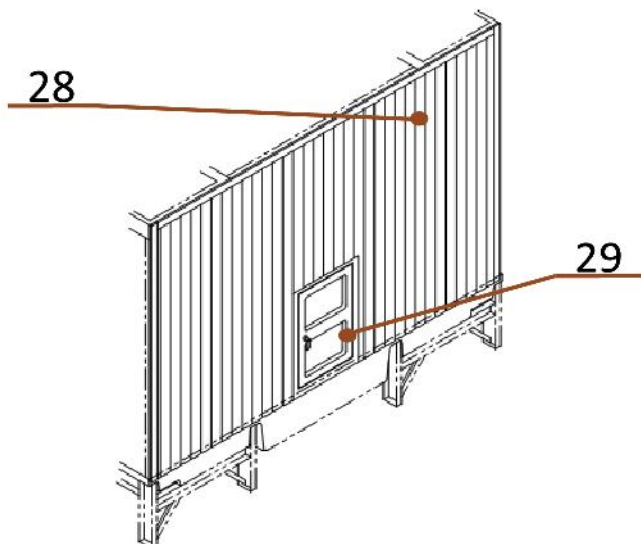
Flange type FRP Nylon connection



Drift Eliminator

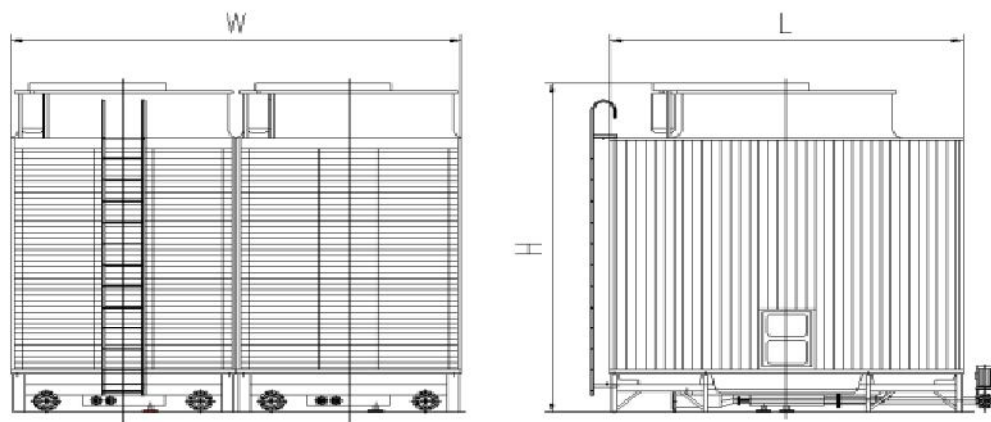


FRP Fan Blade



CUF Series Specification

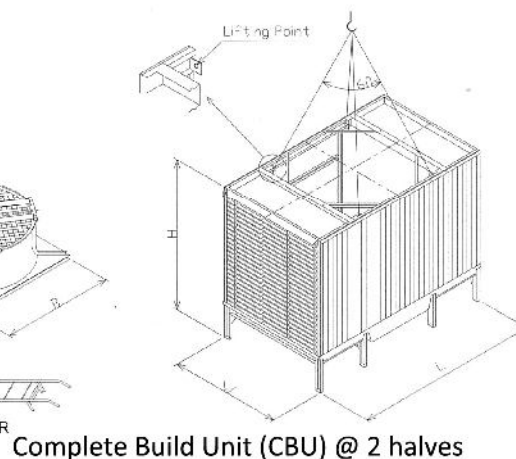
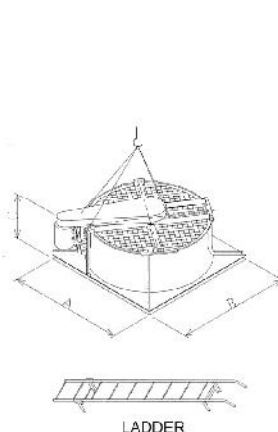
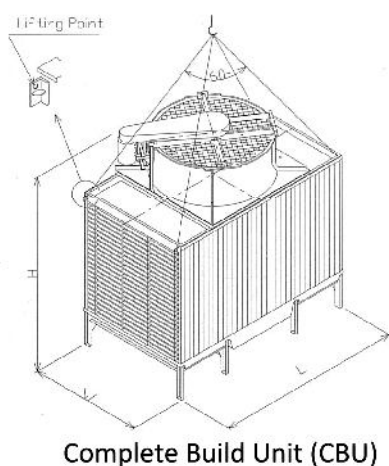
Model	Overall Dimension			Fan		Pump	Common Piping Detail				Coil Head Loss kPa	Weight	
	W mm	L mm	H mm	Diameter mm	Motor kW	kW	Inlet	Outlet	Auto & Manual Make-up	Overflow & Drain		Dry kg	Operating kg
CUF-M0CB1	2050	3550	2472	1500×1	4.0×1	1.5×1	100×1	100×1	25×2	40×2	102	1,220	2,280
CUF-M1DB1	2050	3550	2772	1600×1	5.5×1	1.5×1	100×1	100×1	25×2	40×2	99	1,340	2,480
CUF-M2DB1	2050	3550	2982	1700×1	5.5×1	1.5×1	125×1	125×1	25×2	40×2	97	1,450	2,690
CUF-M3DB1	2050	3550	3262	1700×1	5.5×1	1.5×1	125×1	125×1	25×2	40×2	88	1,550	2,910
CUF-M4EB1	2050	3550	3402	1700×1	7.5×1	1.5×1	125×1	125×1	25×2	40×2	93	1,600	3,010
CUF-L5EB1	2400	3850	3552	1850×1	7.5×1	1.5×1	125×1	125×1	25×2	40×2	100	1,880	3,560
CUF-L6EB1	2400	3850	3822	2000×1	7.5×1	1.5×1	125×1	125×1	25×2	40×2	101	2,040	3,850
CUF-L7FB1	2400	3850	4312	2000×1	11×1	1.5×1	125×1	125×1	25×2	40×2	99	2,140	4,040
CUF-L8FB1	2400	3850	4622	2200×1	11×1	1.5×1	150×1	150×1	25×2	40×2	100	2,310	4,340
CUF-L9FB1	2400	3850	4832	2200×1	11×1	1.5×1	150×1	150×1	25×2	40×2	99	2,410	4,540
CUF-M3DB2	4100	3550	3262	1700×2	5.5×2	1.5×2	125×2	125×2	25×4	40×4	88	3,020	5,730
CUF-M4EB2	4100	3550	3402	1700×2	7.5×2	1.5×2	125×2	125×2	25×4	40×4	93	3,110	5,930
CUF-L5EB2	4800	3850	3552	1850×2	7.5×2	1.5×2	125×2	125×2	25×4	40×4	100	3,610	6,980
CUF-L6EB2	4800	3850	3822	2000×2	7.5×2	1.5×2	125×2	125×2	25×4	40×4	101	3,960	7,580
CUF-L7FB2	4800	3850	4312	2000×2	11×2	1.5×2	125×2	125×2	25×4	40×4	99	4,150	7,960
CUF-L8FB2	4800	3850	4622	2200×2	11×2	1.5×2	150×2	150×2	25×4	40×4	100	4,480	8,550
CUF-L9FB2	4800	3850	4832	2200×2	11×2	1.5×2	150×2	150×2	25×4	40×4	99	4,680	8,940
CUF-L6EB3	7200	3850	3822	2000×3	7.5×3	1.5×3	125×3	125×3	25×6	40×6	101	5,890	11,320
CUF-L7FB3	7200	3850	4312	2000×3	11×3	1.5×3	125×3	125×3	25×6	40×6	99	6,170	11,880
CUF-L8FB3	7200	3850	4622	2200×3	11×3	1.5×3	150×3	150×3	25×6	40×6	100	6,660	12,760
CUF-L9FB3	7200	3850	4832	2200×3	11×3	1.5×3	150×3	150×3	25×6	40×6	99	6,950	13,340
CUF-L6EB4	9600	3850	3822	2000×4	7.5×4	1.5×4	125×4	125×4	25×8	40×8	101	7,810	15,060
CUF-L7FB4	9600	3850	4312	2000×4	11×4	1.5×4	125×4	125×4	25×8	40×8	99	8,190	15,800
CUF-L8FB4	9600	3850	4622	2200×4	11×4	1.5×4	150×4	150×4	25×8	40×8	100	8,840	16,970
CUF-L9FB4	9600	3850	4832	2200×4	11×4	1.5×4	150×4	150×4	25×8	40×8	99	9,220	17,740
CUF-L7FB5	12000	3850	4312	2000×5	11×5	1.5×5	125×5	125×5	25×10	40×10	99	10,200	19,720
CUF-L8FB5	12000	3850	4622	2200×5	11×5	1.5×5	150×5	150×5	25×10	40×10	100	11,010	21,180
CUF-L9FB5	12000	3850	4832	2200×5	11×5	1.5×5	150×5	150×5	25×10	40×10	99	11,490	22,140
CUF-L8FB6	14400	3850	4622	2200×6	11×6	1.5×6	150×6	150×6	25×12	40×12	100	13,190	25,390
CUF-L9FB6	14400	3850	4832	2200×6	11×6	1.5×6	150×6	150×6	25×12	40×12	99	13,830	26,600



CUF Series Performance Selection Data

deg F	Inlet	95.0	95.0	96.0	97.0	97.0	97.5	98.0	98.6	98.6	100.0	100.0	101.0	103.0	103.0
	Outlet	85.1	85.1	86.0	87.0	87.0	90.0	88.0	89.6	89.6	90.0	90.0	89.0	93.0	93.0
	WB	81.0	81.5	82.0	81.0	82.0	83.0	82.0	80.6	82.4	82.0	83.0	84.0	85.0	86.0
deg C	Inlet	35.0	35.0	35.6	36.1	36.1	36.4	36.7	37.0	37.0	37.8	37.8	38.3	39.4	39.4
	Outlet	29.5	29.5	30.0	30.6	30.6	32.2	31.1	32.0	32.0	32.2	32.2	31.7	33.9	33.9
	WB	27.2	27.5	27.8	27.2	27.8	28.3	27.8	27.0	28.0	27.8	28.3	28.9	29.4	30.0
Model		Circulation Water Flowrate (m ³ /H)													
CUF-M0CB1		27.3	23.4	27.2	43.9	36.9	69.3	45.4	71.6	60.0	60.5	54.6	34.5	66.9	60.4
CUF-M1DB1		31.9	27.4	31.7	51.2	43.0	80.8	53.0	83.5	70.0	70.6	63.7	40.3	78.0	70.5
CUF-M2DB1		36.5	31.3	36.3	58.5	49.1	92.4	60.5	95.4	80.0	80.7	72.8	46.0	89.2	80.5
CUF-M3DB1		41.0	35.2	40.8	65.9	55.3	103.9	68.1	107.3	90.0	90.8	81.9	51.8	100.3	90.6
CUF-M4EB1		45.6	39.1	45.3	73.2	61.4	115.5	75.7	119.3	100.0	100.9	91.0	57.6	111.5	100.7
CUF-L5EB1		50.1	43.0	49.8	80.5	67.6	127.0	83.2	131.2	110.0	111.0	100.1	63.3	122.6	110.8
CUF-L6EB1		57.0	48.9	56.6	91.5	76.8	144.4	94.6	149.1	125.0	126.1	113.8	71.9	139.4	125.9
CUF-L7FB1		61.5	52.8	61.2	98.8	82.9	155.9	102.1	161.0	135.0	136.2	122.9	77.7	150.5	135.9
CUF-L8FB1		68.4	58.6	68.0	109.8	92.1	173.2	113.5	178.9	150.0	151.3	136.5	86.3	167.2	151.0
CUF-L9FB1		72.9	62.5	72.5	117.1	98.3	184.8	121.1	190.8	160.0	161.4	145.6	92.1	178.4	161.1
CUF-M3DB2		82.0	70.3	81.6	131.7	110.6	207.9	136.2	214.7	180.0	181.6	163.8	103.6	200.7	181.2
CUF-M4EB2		91.1	78.2	90.6	146.3	122.8	231.0	151.3	238.5	200.0	201.8	182.0	115.1	223.0	201.4
CUF-L5EB2		100.3	86.0	99.7	161.0	135.1	254.1	166.5	262.4	220.0	221.9	200.3	126.6	245.3	221.5
CUF-L6EB2		113.9	97.7	113.3	182.9	153.6	288.7	189.2	298.1	250.0	252.2	227.6	143.9	278.7	251.7
CUF-L7FB2		123.0	105.5	122.4	197.6	165.8	311.8	204.3	322.0	270.0	272.4	245.8	155.4	301.0	271.8
CUF-L8FB2		136.7	117.2	136.0	219.5	184.3	346.5	227.0	357.8	300.0	302.7	273.1	172.7	334.5	302.1
CUF-L9FB2		145.8	125.1	145.0	234.1	196.5	369.6	242.1	381.6	320.0	322.8	291.3	184.2	356.8	322.2
CUF-L6EB3		170.9	146.6	169.9	274.4	230.3	433.1	283.7	447.2	375.0	378.3	341.3	215.8	418.1	377.6
CUF-L7FB3		184.6	158.3	183.5	296.3	248.8	467.7	306.4	483.0	405.0	408.6	368.6	233.1	451.6	407.8
CUF-L8FB3		205.1	175.9	203.9	329.3	276.4	519.7	340.5	536.6	450.0	454.0	409.6	259.0	501.7	453.1
CUF-L9FB3		218.8	187.6	217.5	351.2	294.8	554.3	363.2	572.4	480.0	484.3	436.9	276.2	535.2	483.3
CUF-L6EB4		227.9	195.4	226.6	365.8	307.1	577.4	378.3	596.3	500.0	504.4	455.1	287.8	557.5	503.4
CUF-L7FB4		246.1	211.0	244.7	395.1	331.7	623.6	408.6	644.0	540.0	544.8	491.5	310.8	602.1	543.7
CUF-L8FB4		273.4	234.5	271.9	439.0	368.5	692.9	454.0	715.5	600.0	605.3	546.1	345.3	669.0	604.1
CUF-L9FB4		291.7	250.1	290.0	468.3	393.1	739.1	484.3	763.2	640.0	645.7	582.6	368.3	713.6	644.4
CUF-L7FB5		307.6	263.8	305.9	493.9	414.6	779.5	510.7	804.9	675.0	681.0	614.4	388.5	752.6	679.6
CUF-L8FB5		341.8	293.1	339.9	548.8	460.7	866.2	567.5	894.4	750.0	756.6	682.7	431.6	836.2	755.1
CUF-L9FB5		364.6	312.7	362.5	585.3	491.4	923.9	605.3	954.0	800.0	807.1	728.2	460.4	892.0	805.5
CUF-L8FB6		410.2	351.7	407.9	658.5	552.8	1039.4	681.0	1073.3	900.0	908.0	819.2	518.0	1003.4	906.2
CUF-L9FB6		437.5	375.2	435.1	702.4	589.6	1108.7	726.4	1144.8	960.0	968.5	873.8	552.5	1070.3	966.6

CUF Series Delivery and Hoisting type



CUF Series Sound Data

MODEL	Measuring Direction	1	2	3	4	5
		2m	5m	10m	20m	45° Upper Dfm
CUF-M0CB1	W	67.5	65.0	60.0	54.5	73.0
	L	63.5	61.0	55.5	50.0	
CUF-M1DB1	W	68.0	66.0	61.0	55.5	74.0
	L	64.0	62.0	57.0	51.0	
CUF-M2DB1	W	68.5	66.5	61.5	56.0	74.5
	L	64.5	62.5	57.5	52.0	
CUF-M3DB1	W	69.5	67.5	62.5	57.0	75.5
	L	65.5	63.5	58.5	53.0	
CUF-M4EB1	W	71.0	69.0	64.0	58.5	77.0
	L	66.0	65.0	60.0	54.5	
CUF-L5EB1	W	71.0	69.0	64.0	58.5	77.0
	L	66.0	65.0	60.0	54.5	
CUF-L6EB1	W	71.0	69.0	64.5	58.5	77.0
	L	66.0	65.0	60.0	55.0	
CUF-L7FB1	W	71.5	69.5	65.0	59.0	77.5
	L	66.5	65.5	60.5	55.5	
CUF-L8FB1	W	71.5	69.5	65.0	59.5	77.5
	L	66.5	65.5	61.0	55.5	
CUF-L9FB1	W	72.0	70.0	65.5	60.0	78.0
	L	67.0	66.0	61.5	56.0	
CUF-M3DB2	W	74.5	70.5	65.5	60.0	78.5
	L	66.5	64.5	59.5	54.0	
CUF-M4EB2	W	76.0	72.0	67.0	61.5	80.0
	L	67.0	66.0	61.0	55.5	
CUF-L5EB2	W	75.5	72.0	67.0	61.5	80.0
	L	67.0	66.0	61.0	55.5	
CUF-L6EB2	W	75.5	72.0	67.5	61.5	80.0
	L	67.0	66.0	61.0	56.0	
CUF-L7FB2	W	76.0	72.0	68.0	62.0	80.5
	L	67.5	66.5	61.5	56.5	
CUF-L8FB2	W	76.0	72.5	68.0	62.5	80.5
	L	67.5	66.5	62.0	56.5	
CUF-L9FB2	W	76.5	73.0	68.5	63.0	81.0
	L	68.0	67.0	62.5	57.0	
CUF-L6EB3	W	77.0	73.5	69.0	63.5	81.5
	L	69.0	67.5	62.5	57.5	
CUF-L7FB3	W	77.5	74.0	69.5	64.0	82.0
	L	69.5	68.0	63.0	58.0	
CUF-L8FB3	W	77.5	74.0	69.5	64.0	82.0
	L	69.5	68.5	63.5	58.0	
CUF-L9FB3	W	77.5	74.5	70.0	64.5	82.5
	L	70.0	68.5	64.0	58.5	
CUF-L6EB4	W	78.0	74.5	70.0	64.5	82.5
	L	69.5	68.5	63.5	58.5	
CUF-L7FB4	W	78.0	75.0	70.5	65.0	83.0
	L	70.0	69.0	64.0	59.0	
CUF-L8FB4	W	78.0	75.0	71.0	65.5	83.0
	L	70.0	69.0	64.5	59.0	
CUF-L9FB4	W	78.5	75.5	71.5	66.0	83.5
	L	70.5	69.5	65.0	59.5	
CUF-L7FB5	W	78.5	75.5	71.5	66.0	83.5
	L	70.0	69.0	64.0	59.0	
CUF-L8FB5	W	78.5	75.5	71.5	66.5	83.5
	L	70.0	69.0	64.5	59.0	
CUF-L9FB5	W	79.0	76.0	72.0	67.0	84.0
	L	70.5	69.5	65.0	59.5	
CUF-L8FB6	W	79.0	76.0	72.5	67.0	84.0
	L	70.5	69.5	65.0	59.5	
CUF-L9FB6	W	79.5	76.5	73.0	67.5	84.5
	L	71.0	70.0	65.5	60.0	

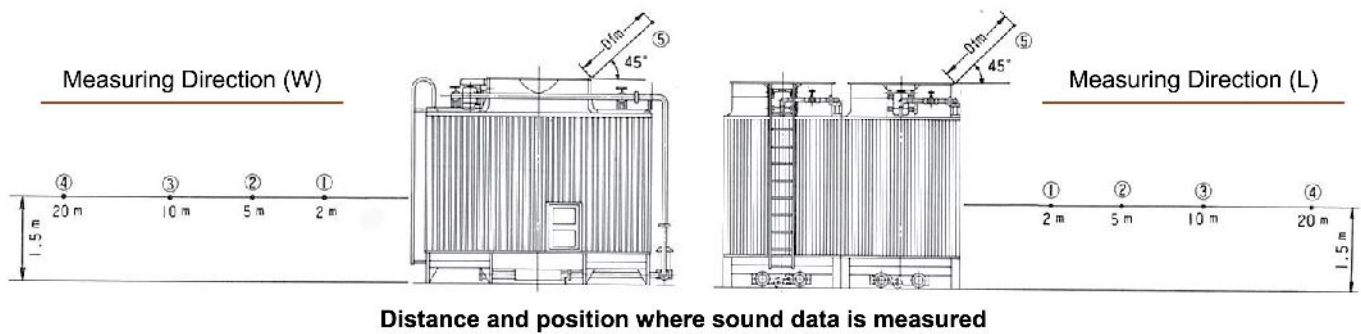
* All units are measured in dB. ± 3 dB tolerance is applicable in comparison with standard levels.

1. The noise levels are measured in conformity with JIS B8609 (Performance test for forced draft cooling towers)

2. Noise levels are based on normal operating conditions, other factors are excluded.

3. Noise levels are measured based on A scale.

Sound Measurement Point



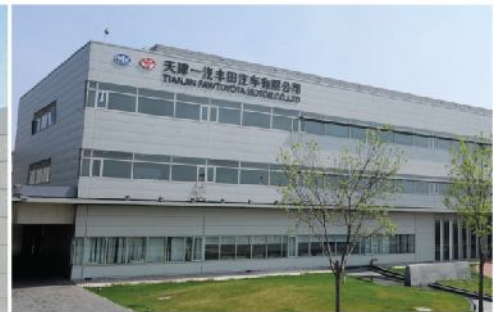
Our Past Project Portfolio



Beijing Mobile Tower



Foxconn



Tianjin Faw Toyota Motor Co., LTD.



Sumitomo Metal (SMI)
Electronics Devices (M) Sdn Bhd



Tianjin Ting Yuan Food Co., LTD.



North China Grid Co., LTD.



BMCC Panasonic Co., LTD.



Conrad Hotel & Resorts

www.spindle.com.my



NIHON SPINDLE COOLING TOWER SDN BHD (784210-D)
(formerly known as NS Cooling Towers Sdn Bhd)

Head Office:

20 B, Jalan Perusahaan, Prai Industrial Estate 4,
13600 Prai, Penang, Malaysia.
T: +604 501 3322 F: +604 508 3355
www.spindle.com.my

Sales Office:

B-03-28, Merchant Square, Jalan Tropicana Selatan 1,
PJU 3, 47410 Selangor, Malaysia
T: +603 7885 0788 F: +603 7885 0787