

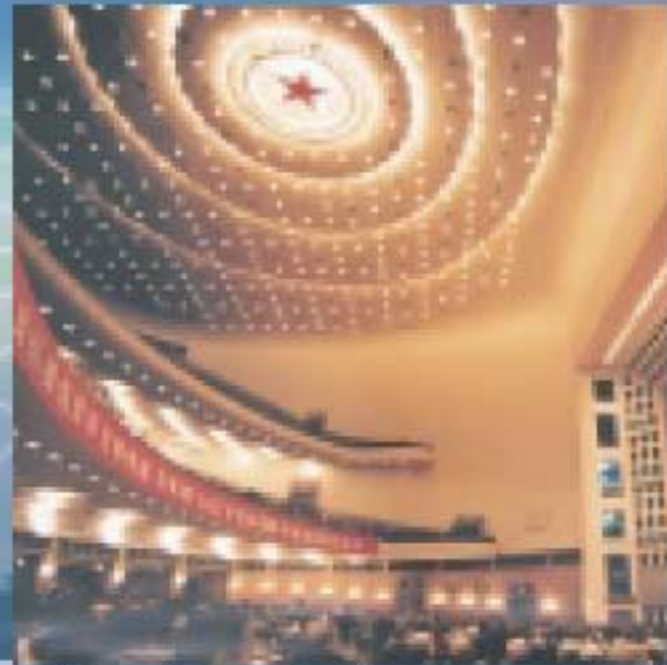
16JL (STEAM TYPE)

16JLR (HOT WATER TYPE)

SINGLE EFFECT ABSORPTION CHILLER

16JL/16JLR

Carrier makes the world a better place to live by creating a comfortable, productive and healthy environment regardless of climate. It is our mission is to be customer's first choice for air conditioning, heating and refrigeration solutions everywhere around the world.



Great Hall of the People,
Beijing, China



Kremlin, Moscow, Russia



White House, Washington, USA



Imperial Palace, Tokyo, Japan

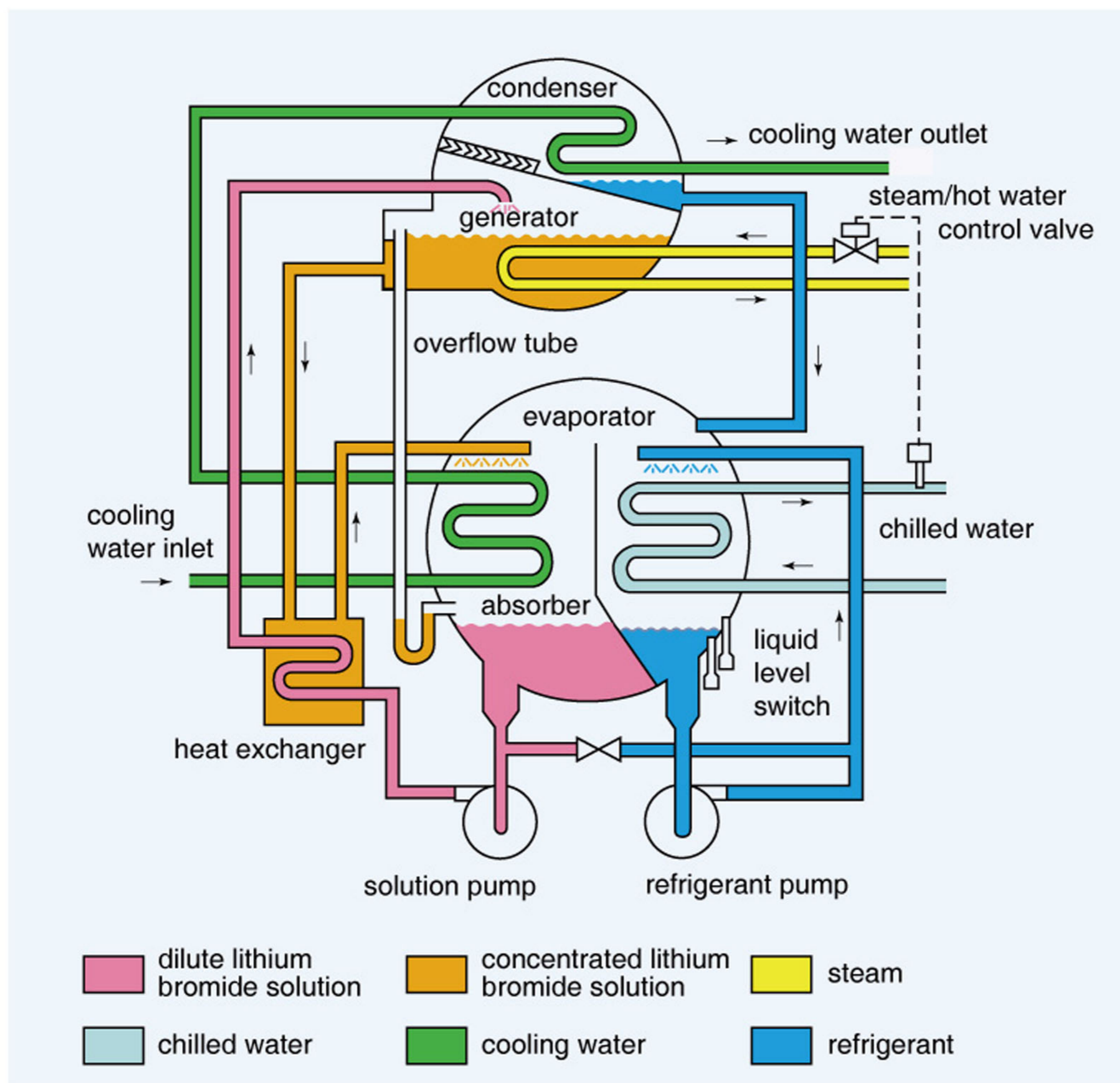
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Features & Benefits

- **Environmentally Friendly Chiller**
Using water and lithium bromide which are natural as refrigerant medium, no CFCs;
Few moving parts enable quiet and vibration-free operation.
- **Cost-effective cooling alternative-energy chiller**
The 16JL/JLR offers an alternative to avoid the high operating costs associated with electric-driven chillers. Fired by low pressure steam or hot water or waste heat, the 16JL/JLR not only reduces or eliminates electric demand and/or reduce charges, but also allows the owner to take advantage of rebates and incentive programs offered by many utility companies.
- **Superior part load, low cooling water temperature (15°C) operation**
The standard concentration control system allows stable part load operation at cooling water temperatures as low as 15°C without a cooling tower bypass with Carrier unique refrigerant management system (US patent: US6,260,364-B1), it has a continuous operating range from 100% to 10% of machine capacity.
- **Advanced control system**
Human friendly touch screen.
Excellent algorithms provide precise capacity control and optimize chiller operation.
Powerful self-diagnosis function enable convenient and reliable operation.
Be able to communicate with central control system and telecommunicate with telephone network.
- **Automatic purge system extends machine life, ensures optimum efficiency and performance**
The Carrier purge system protects against the potential hazards caused by non-condensable gas produced continuously during machine operation, ensures long machine life and efficient operation.
- **Anti-crystallization controls maintain proper solution concentration**
The 16JL/JLR automatically limits solution concentration in several ways to avoid both crystallization and over-dilution to provide dependable, trouble-free operation.
- **Leak-proof hermetic pumps cut maintenance costs**
Carrier's proven solution and refrigerant pumps are leak-proof, completely self-contained, and hermetically sealed. The hermetic design eliminates the need for a separate, complicated, and possibly leak-prone seal water system, while providing leak tightness and longer machine life.
- **Superior corrosion protection**
The 16JL/JLR incorporates a highly effective corrosion inhibitor to provide an extra margin of protection against internal corrosion.
- **Rugged machine construction**
Non-clogging, corrosion-proof spray nozzles ensure against both corrosion and possible blockage for continuous, reliable operation. The 16JL/JLR is built to withstand the most rigorous duty, whether it is used for comfort cooling or light process applications.

Single Effect Cooling Cycle



The 16JL/JLR consists of evaporator, absorber, condenser, generator, solution heat exchanger, solution pump, refrigerant pump, control system and other auxiliary system, etc. The operating principle of the chiller is: In highly vacuum state, refrigerant water evaporate at a low temperature (4.4°C), which cool down chilled water circulating in evaporator tube.

Refrigerant vapor generated in evaporator is absorbed by lithium bromide solution in absorber, which makes the solution become dilute. Such dilute solution is fed into heat exchanger by solution pump, where the temperature rises. After that, it enters generator, in which it is further heated and concentrated by steam or hot water. The concentrated solution returns to the absorber after passing through heat exchanger for repeated use. In absorber and evaporator, lithium bromide solution and refrigerant water spray onto tubes of the heat exchangers to enhance heat exchange effect.

Heat Source

Operating steam: gauge pressure $0.04\sim 0.098\text{MPa}$
(pressure after steam valve).

Operating hot water: Max. temperature 130°C ,
Min. temperature 85°C .

Physical & Performance Data

Steam pressure: 0.1MPa

Model	16JL	011	013	015	018	021	024	027	030	034	038	047	052	080	100	
Capacity	USRt	150	180	210	240	280	330	360	400	450	500	600	660	800	1000	
	10 ⁴ kcal/h	45	54	64	73	85	100	109	121	136	151	181	200	242	302	
	kW	527	633	738	844	984	1160	1266	1406	1582	1758	2110	2321	2813	3516	
Chilled Water	Inlet/Outlet Temp	°C	12/7													
	Flow Rate	m ³ /h	91	109	127	145	169	200	218	242	272	302	363	399	484	605
	Pressure Drop	mH ₂ O	8.7	9.4	8.9	9.1	6.0	6.3	6.3	6.4	6.3	6.3	7.2	9.3	7.4	12.9
		kPa	85.3	92.1	87.3	88.7	59.0	61.6	61.6	62.4	61.4	61.8	70.3	90.8	72.8	126.9
	Connection Size	A(mm)	100	100	125	125	150	150	150	150	200	200	200	200	250	250
	Pass No.		3	3	3	3	2	2	2	2	2	2	2	2	2	2
Cooling Water	Inlet/Outlet Temp	°C	32/40													
	Flow Rate	m ³ /h	136	163	190	217	253	299	326	362	407	453	543	597	724	905
	Pressure Drop	mH ₂ O	6.3	7.2	5.1	5.7	7.8	8.2	9.1	9.5	8.4	8.7	7.1	9.1	6.9	12.0
		kPa	61.4	70.2	49.9	55.4	76.2	80.6	88.9	93.3	82.2	85.0	69.2	89.0	67.8	117.2
	Connection Size	A(mm)	125	125	150	150	200	200	200	200	250	250	300	300	350	350
	Pass No.	Abs		2	2	2	2	2	2	2	2	2	2	2	2	2
Cond			1	1	1	1	1	1	1	1	1	1	1	1	1	
Steam	Inlet Pressure	Mpa	0.1													
	Consumption	kg/h	1146	1375	1604	1834	2139	2521	2750	3056	3438	3820	4584	5042	6112	7640
	Steam Pipe Size	A(mm)	125	125	125	125	150	150	150	150	200	200	200	200	250	250
	Drain Pipe Size	A(mm)	40	40	40	40	50	50	50	50	65	65	65	65	80	80
Electric	Power Supply	V	3Ø-380V-50Hz													
	Refrigerant Pump	kW	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8	0.8	0.8	1.5	1.5	1.5	1.5
	Solution Pump	kW	2.6	2.6	2.6	2.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	5.5	5.5
	Auxiliary Pump	kW	-	-	-	-	-	-	-	-	-	-	-	-	3.7	3.7
	Capacity	kVA	9.5	9.5	9.5	9.5	10.4	10.4	10.4	10.4	12.8	12.8	14.8	14.8	29.6	29.6
Dimension	Length	mm	3713	3713	3779	3779	4774	4774	4854	4854	4928	4928	5643	6142	6244	7259
	Width	mm	1356	1356	1456	1456	1542	1542	1629	1629	1762	1762	1962	2004	2183	2183
	Height	mm	2374	2374	2634	2634	2639	2639	2983	2983	3178	3178	3494	3494	3815	3815
Weight	Net Weight	ton	4.9	5.0	6.2	6.6	8.2	8.4	9.0	9.3	10.2	10.5	16.2	17.2	18.0	20.7
	Operating Weight	ton	6.1	6.4	7.6	8.0	9.7	10.0	11.4	11.7	13.1	13.4	19.8	21.0	26.2	30.1

- 1.The above cooling capacity is based on the following conditions: inlet/outlet temperature of chilled water: 12°C/7°C , cooling water:32°C/40°C , steam pressure: 0.1Mpa, fouling factor (both chilled water and cooling water): 0.086m²·°C/kW.
- 2.Maximum waterside pressure of chilled water and cooling: 1.0MPa.
- 3.For the performance data under non-standard condition, please contact Carrier.

Physical & Performance Data

Hot water temp: 125°C/105°C

Model	16JLR	011	013	015	018	021	024	027	030	034	038	047	052	080	100	
Capacity	USRt	150	180	210	240	280	330	360	400	450	500	600	660	800	1000	
	10 ⁴ kcal/h	45	54	64	73	85	100	109	121	136	151	181	200	242	302	
	kW	527	633	738	844	984	1160	1266	1406	1582	1758	2110	2321	2813	3516	
Chilled Water	Inlet/Outlet Temp	°C	12/7													
	Flow Rate	m ³ /h	91	109	127	145	169	200	218	242	272	302	363	399	484	605
	Pressure Drop	mH ₂ O	8.7	9.4	8.9	9.1	6.0	6.3	6.3	6.4	6.3	6.3	7.2	9.3	7.4	12.9
		kPa	85.3	92.1	87.3	88.7	59.0	61.6	61.6	62.4	61.4	61.8	70.3	90.8	72.8	126.9
	Connection Size	A(mm)	100	100	125	125	150	150	150	150	200	200	200	200	250	250
	Pass No.		3	3	3	3	2	2	2	2	2	2	2	2	2	2
Cooling Water	Inlet/Outlet Temp	°C	32/40													
	Flow Rate	m ³ /h	136	163	190	217	253	299	326	362	407	453	543	597	724	905
	Pressure Drop	mH ₂ O	6.3	7.2	5.1	5.7	7.8	8.2	9.1	9.5	8.4	8.7	7.1	9.1	6.9	12.0
		kPa	61.4	70.2	49.9	55.4	76.2	80.6	88.9	93.3	82.2	85.0	69.2	89.0	67.8	117.2
	Connection Size	A(mm)	125	125	150	150	200	200	200	200	250	250	300	300	350	350
	Pass No.	Abs		2	2	2	2	2	2	2	2	2	2	2	2	2
Cond			1	1	1	1	1	1	1	1	1	1	1	1	1	
Hot Water	Inlet/Outlet Temp	°C	125/105													
	Flow Rate	m ³ /h	32	38	44	50	59	69	76	84	95	105	126	139	168	210
	Pressure Drop	mH ₂ O	1.1	1.2	5.9	5.9	5.0	5.7	5.8	5.8	5.7	5.6	5.0	6.5	2.6	4.4
		kPa	10.5	11.8	57.5	57.8	49.4	55.8	56.9	57.1	55.9	55.0	49.3	63.5	25.4	43.5
	Connection Size	A(mm)	80	80	80	80	100	100	100	100	125	125	125	125	200	200
	Pass No.		2	2	4	4	3	3	3	3	3	3	3	3	2	2
Electric	Power Supply	V	3Ø-380V-50Hz													
	Refrigerant Pump	kW	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8	0.8	0.8	1.5	1.5	1.5	1.5
	Solution Pump	kW	2.6	2.6	2.6	2.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	5.5	5.5
	Auxiliary Pump	kW	-	-	-	-	-	-	-	-	-	-	-	-	3.7	3.7
Capacity	kVA	9.5	9.5	9.5	9.5	10.4	10.4	10.4	10.4	12.8	12.8	14.8	14.8	29.6	29.6	
Dimension	Length	mm	3713	3713	3734	3734	4774	4774	4854	4854	4958	4958	5669	6142	6244	7259
	Width	mm	1356	1356	1456	1456	1542	1542	1606	1606	1762	1762	1962	2004	2183	2183
	Height	mm	2374	2374	2634	2634	2639	2639	2983	2983	3178	3178	3494	3494	3815	3815
Weight	Net Weight	ton	4.9	5.0	6.2	6.6	8.2	8.4	9.0	9.3	10.2	10.5	16.2	17.2	18.0	20.7
	Operating Weight	ton	6.1	6.4	7.6	8.0	9.7	10.0	11.4	11.7	13.1	13.4	19.8	21.0	26.2	30.1

1.The above cooling capacity is based on the following conditions: inlet/outlet temperature of chilled water: 12°C/7°C , cooling water: 32°C /40°C , hot water:125°C/105°C, fouling factor (both chilled water and cooling water): 0.086m²·°C/kW.

2.Maximum waterside pressure of chilled water and cooling: 1.0MPa.

3.For the performance data under non-standard condition, please contact Carrier.

Physical & Performance Data

Hot water temp: 95°C/80°C

Model		16JLR	011A	013A	015A	018A	021A	024A	027A	030A	034A	038A	047A	052A	080A	100A
Capacity	USRt	110	130	150	180	210	240	270	300	340	380	470	520	600	750	
	10 ⁴ kcal/h	33	39	45	54	64	73	82	91	103	115	142	157	181	227	
	kW	388	457	527	633	738	844	949	1055	1195	1336	1653	1828	2110	2637	
Chilled Water	Inlet/Outlet Temp	°C	15/10													
	Flow Rate	m ³ /h	67	79	91	109	127	145	163	181	206	230	284	314	363	454
	Pressure Drop	mH ₂ O	4.9	5.1	4.8	5.3	3.5	3.5	3.7	3.7	3.7	3.8	4.6	6.0	4.4	7.6
		kPa	48.0	50.3	46.9	52.0	34.7	34.2	36.1	36.5	36.5	37.1	45.1	58.8	42.8	74.7
	Connection Size	A(mm)	100	100	125	125	150	150	150	150	200	200	200	200	250	250
Pass No.		3	3	3	3	2	2	2	2	2	2	2	2	2	2	
Cooling Water	Inlet/Outlet Temp	°C	32/38													
	Flow Rate	m ³ /h	133	156	180	216	252	288	324	360	409	457	565	625	721	901
	Pressure Drop	mH ₂ O	6.1	6.8	4.9	5.7	7.9	7.9	9.2	9.7	8.6	9.0	7.7	10.0	7.0	12.2
		kPa	59.8	66.3	47.8	56.3	77.4	77.3	90.3	94.8	84.7	88.6	75.0	98.0	68.9	119.1
	Connection Size	A(mm)	125	125	150	150	200	200	200	200	250	250	300	300	350	350
Pass No.	Abs		2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Cond		1	1	1	1	1	1	1	1	1	1	2	2	1	1
Hot Water	Inlet/Outlet Temp	°C	95/80													
	Flow Rate	m ³ /h	31	36	42	50	59	67	75	84	95	106	131	145	167	209
	Pressure Drop	mH ₂ O	2.4	2.4	2.5	2.9	1.8	2.0	2.3	2.4	2.1	2.1	2.0	2.6	2.4	4.1
		kPa	23.2	23.8	24.4	28.0	17.7	19.3	22.1	23.4	20.1	20.9	19.8	25.1	23.4	40.0
	Connection Size	A(mm)	100	100	100	100	125	125	125	125	150	150	200	200	200	200
Pass No.		3	3	3	3	2	2	2	2	2	2	2	2	2	2	
Electric	Power Supply	V	3Ø-380V-50Hz													
	Refrigerant Pump	kW	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8	0.8	0.8	1.5	1.5	1.5	1.5
	Solution Pump	kW	2.6	2.6	2.6	2.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	5.5	5.5
	Auxiliary Pump	kW	-	-	-	-	-	-	-	-	-	-	-	-	3.7	3.7
	Capacity	kVA	9.5	9.5	9.5	9.5	10.4	10.4	10.4	10.4	12.8	12.8	14.8	14.8	22.5	22.5
Dimension	Length	mm	3713	3713	3734	3734	4772	4772	4854	4854	4958	4958	5669	6142	6244	7259
	Width	mm	1356	1356	1456	1456	1487	1487	1606	1606	1762	1762	1962	2004	2183	2183
	Height	mm	2374	2374	2634	2634	2651	2651	2983	2983	3178	3178	3494	3494	3815	3815
Weight	Net Weight	ton	4.9	5.0	6.2	6.6	8.2	8.4	9.0	9.3	10.2	10.5	16.2	17.2	18.9	21.6
	Operating Weight	ton	6.1	6.4	7.6	8.0	9.7	10.0	11.4	11.7	13.1	13.4	19.8	21.0	27.8	31.9

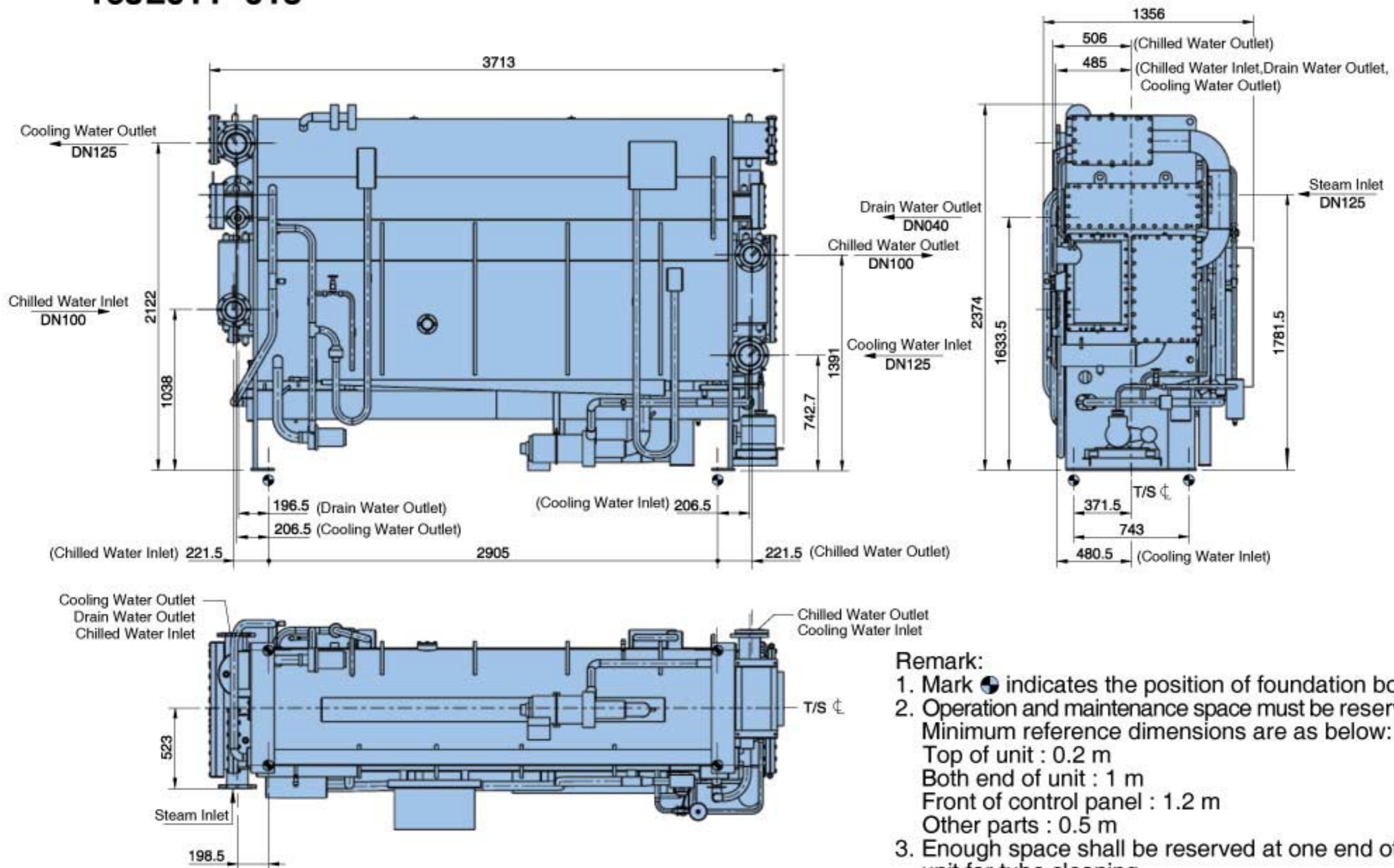
1. The above cooling capacity is based on the following conditions: inlet/outlet temperature of chilled water: 12°C/7°C, cooling water: 32°C/38°C, hot water: 95°C/80°C, fouling factor (both chilled water and cooling water): 0.086m²·°C/kW.

2. Maximum waterside pressure of chilled water and cooling: 1.0MPa.

3. For the performance data under non-standard condition, please contact Carrier.

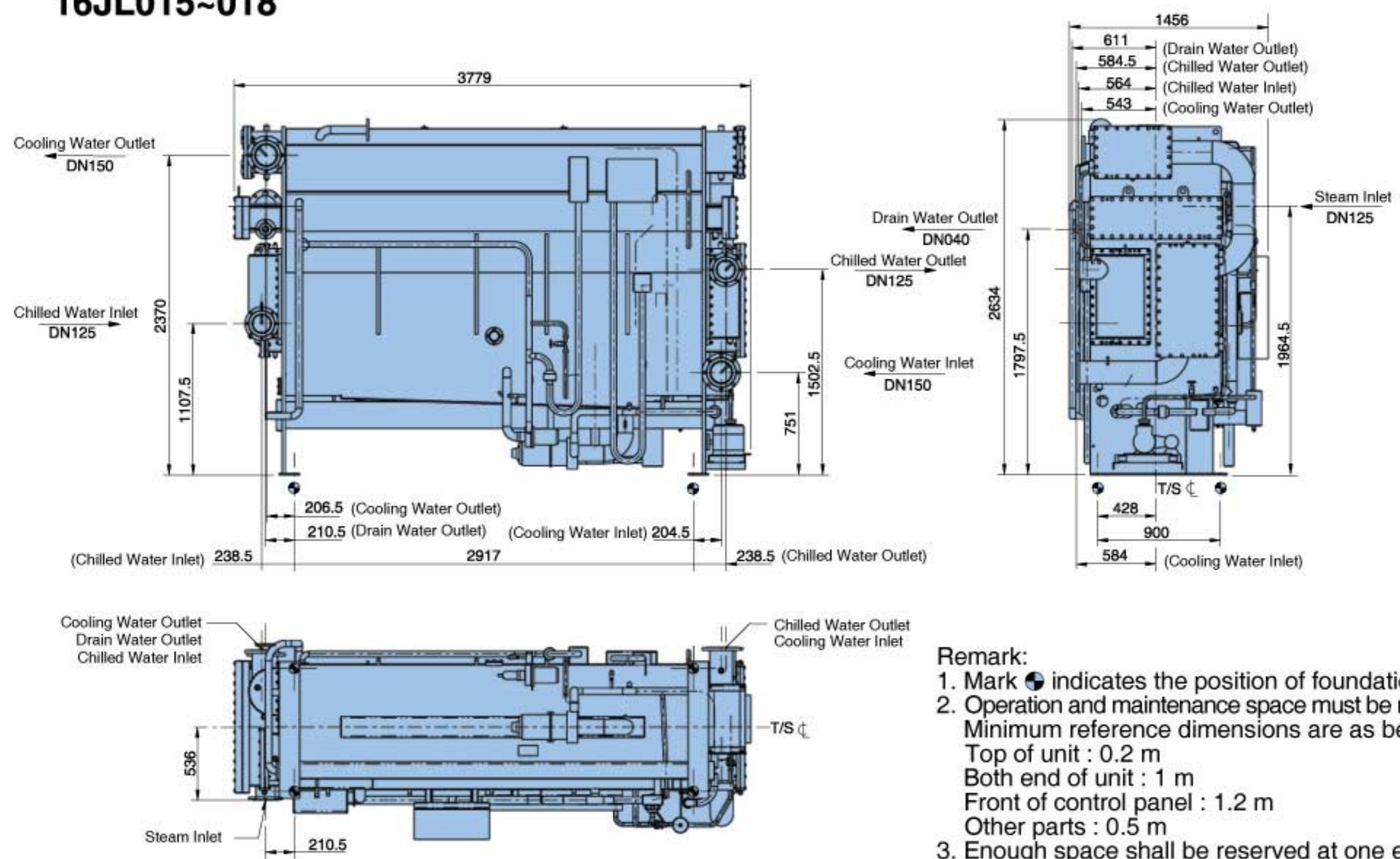
Overall Dimension

16JL011~013



- Remark:**
1. Mark ● indicates the position of foundation bolts.
 2. Operation and maintenance space must be reserved.
Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
 3. Enough space shall be reserved at one end of the unit for tube cleaning.
 4. The height does not include packing skid, the height of skid is 200mm.

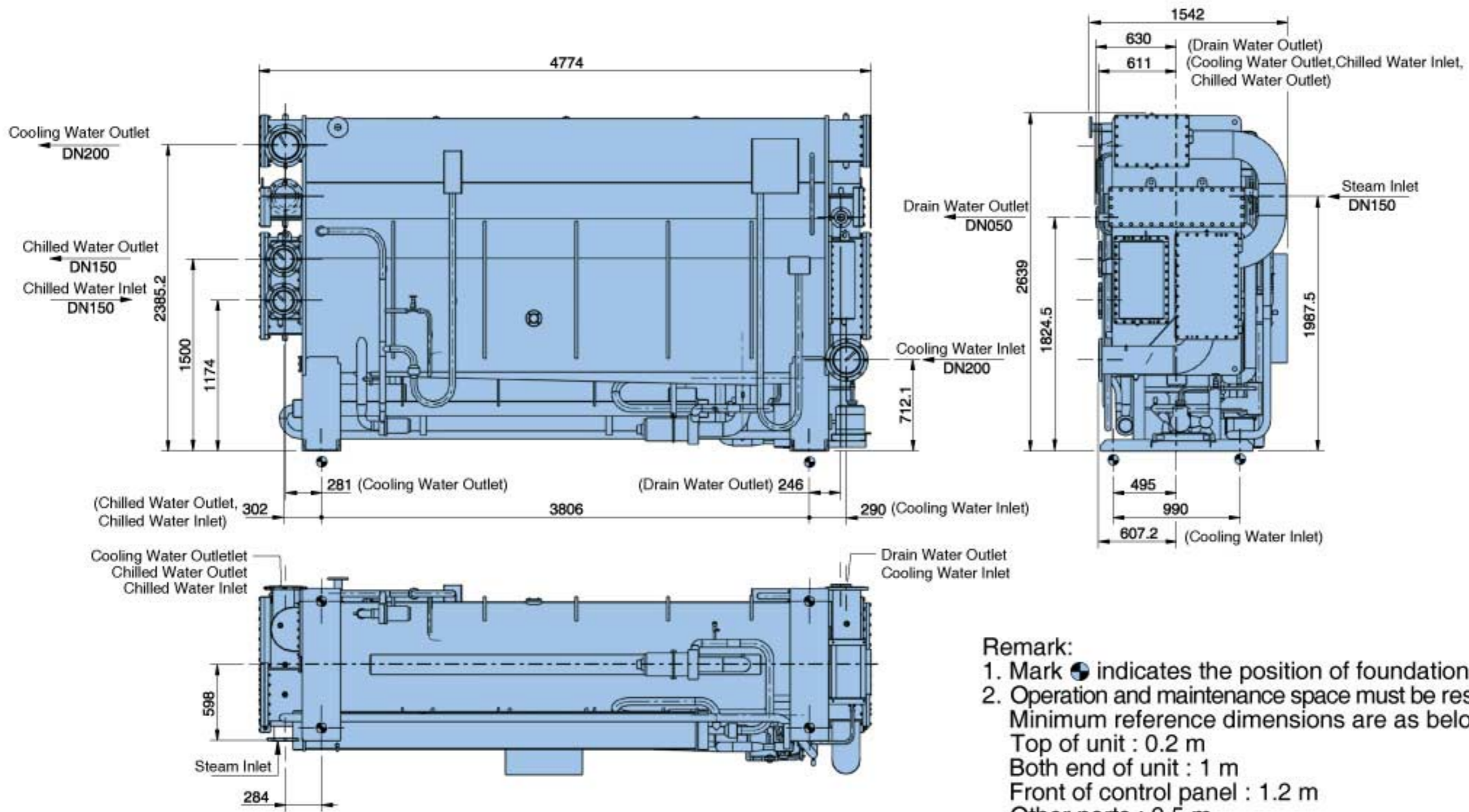
16JL015~018




- Remark:**
1. Mark ● indicates the position of foundation bolts.
 2. Operation and maintenance space must be reserved.
Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
 3. Enough space shall be reserved at one end of the unit for tube cleaning.
 4. The height does not include packing skid, the height of skid is 200mm.

Overall Dimension

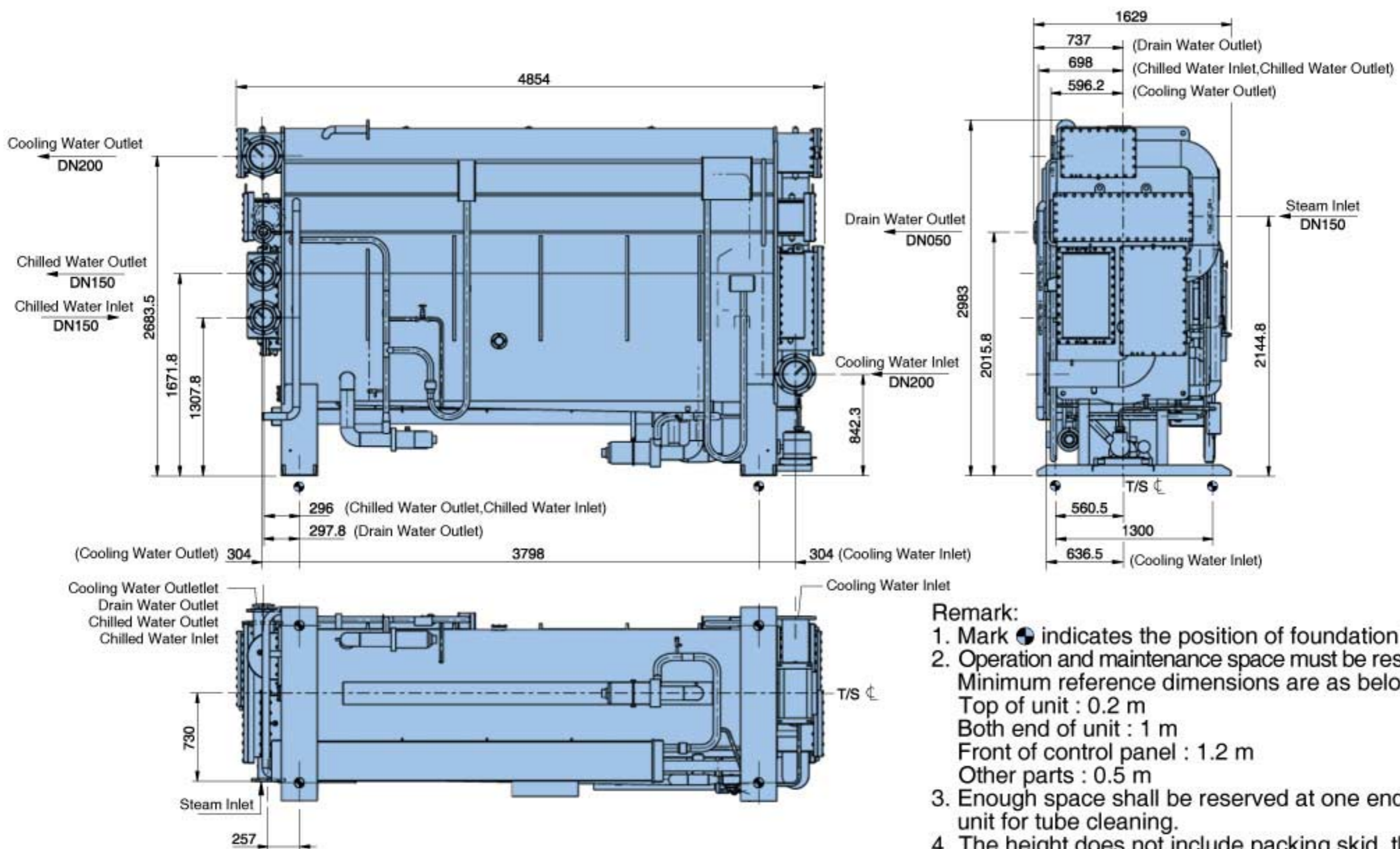
16JL021~024




Remark:

1. Mark  indicates the position of foundation bolts.
2. Operation and maintenance space must be reserved. Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
3. Enough space shall be reserved at one end of the unit for tube cleaning.
4. The height does not include packing skid, the height of skid is 200mm.

16JL027~030

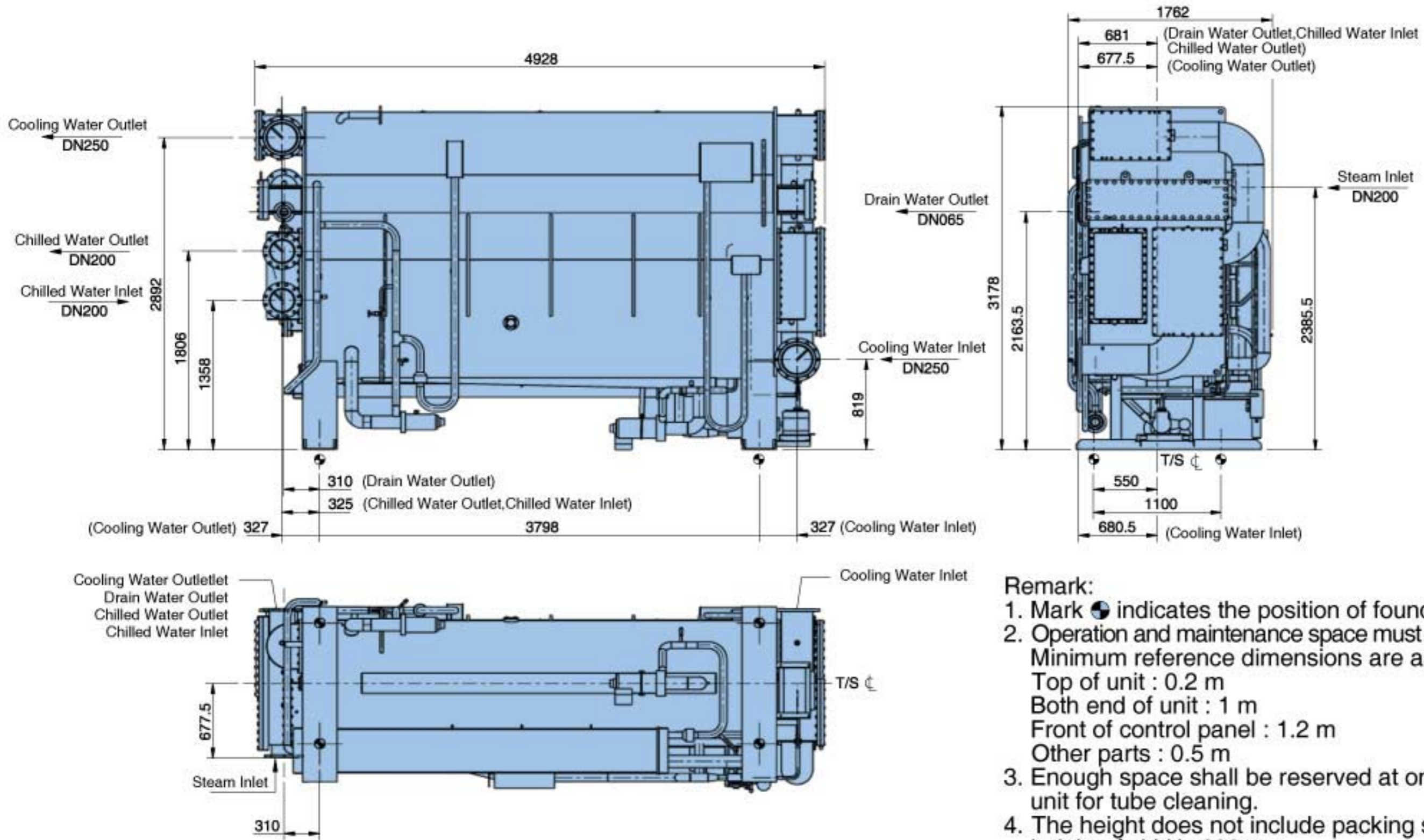


Remark:

1. Mark  indicates the position of foundation bolts.
2. Operation and maintenance space must be reserved. Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
3. Enough space shall be reserved at one end of the unit for tube cleaning.
4. The height does not include packing skid, the height of skid is 200mm.

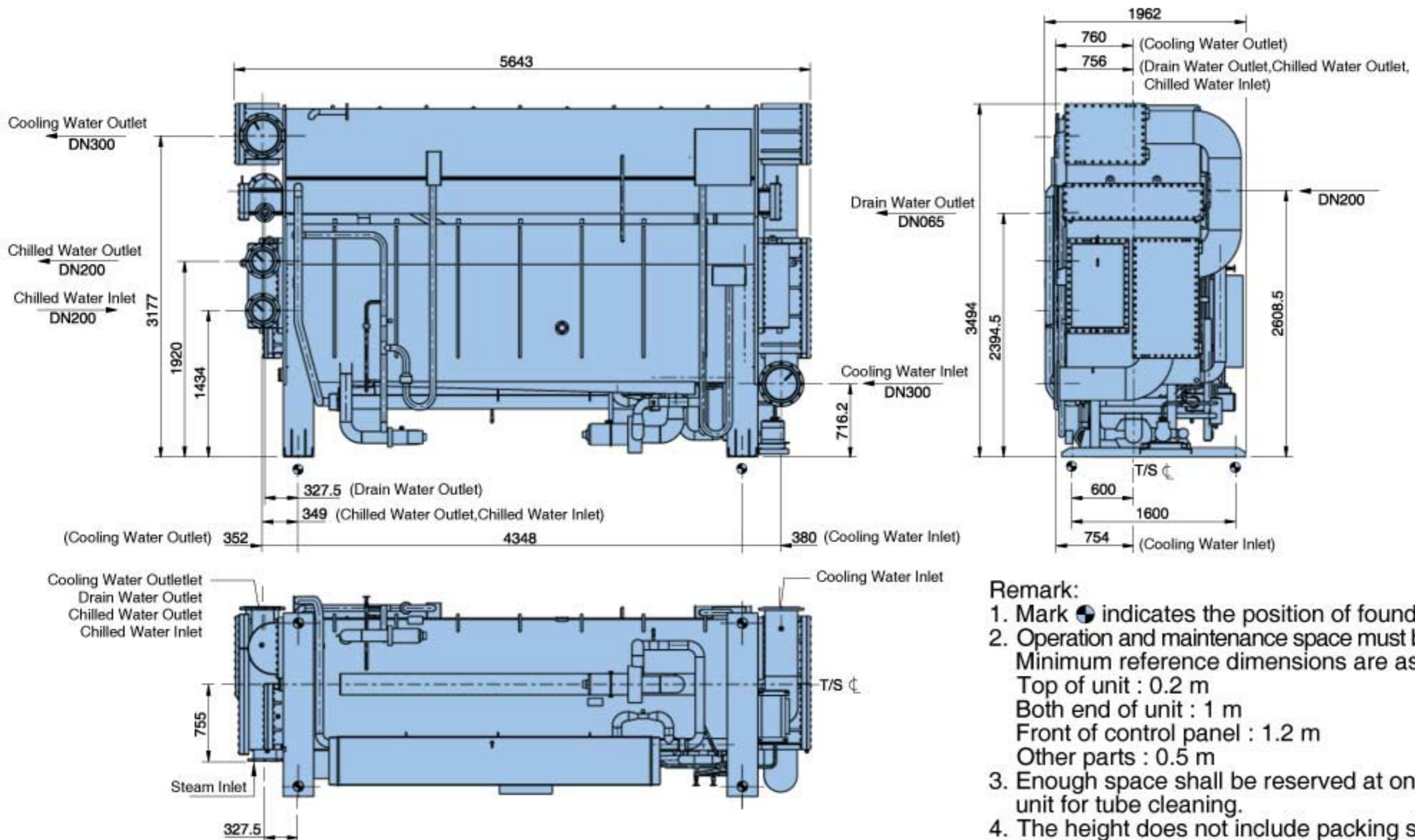
Overall Dimension

16JL034~038



- Remark:**
1. Mark ● indicates the position of foundation bolts.
 2. Operation and maintenance space must be reserved. Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
 3. Enough space shall be reserved at one end of the unit for tube cleaning.
 4. The height does not include packing skid, the height of skid is 200mm.

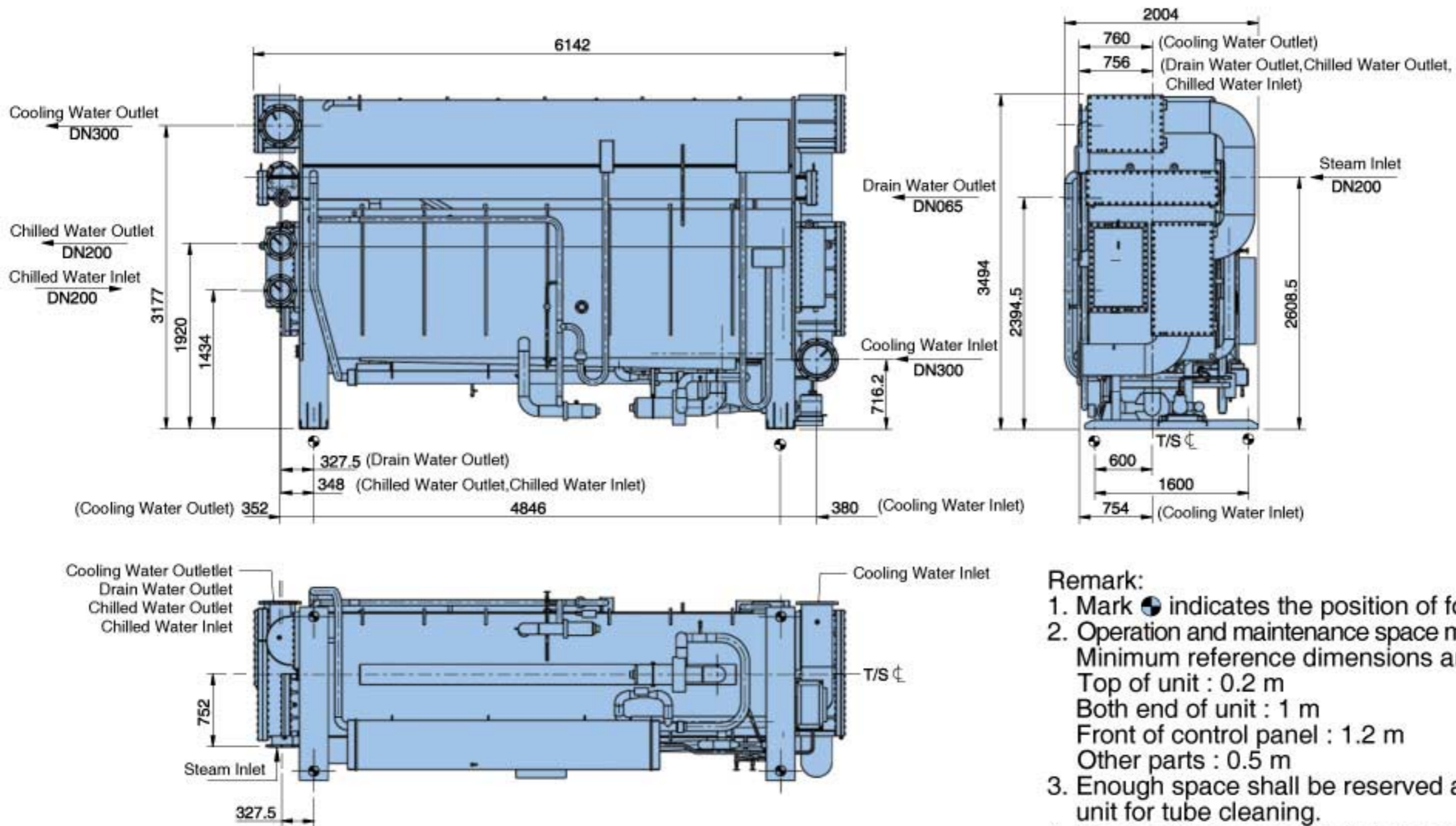
16JL047




- Remark:**
1. Mark ● indicates the position of foundation bolts.
 2. Operation and maintenance space must be reserved. Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
 3. Enough space shall be reserved at one end of the unit for tube cleaning.
 4. The height does not include packing skid, the height of skid is 200mm.

Overall Dimension

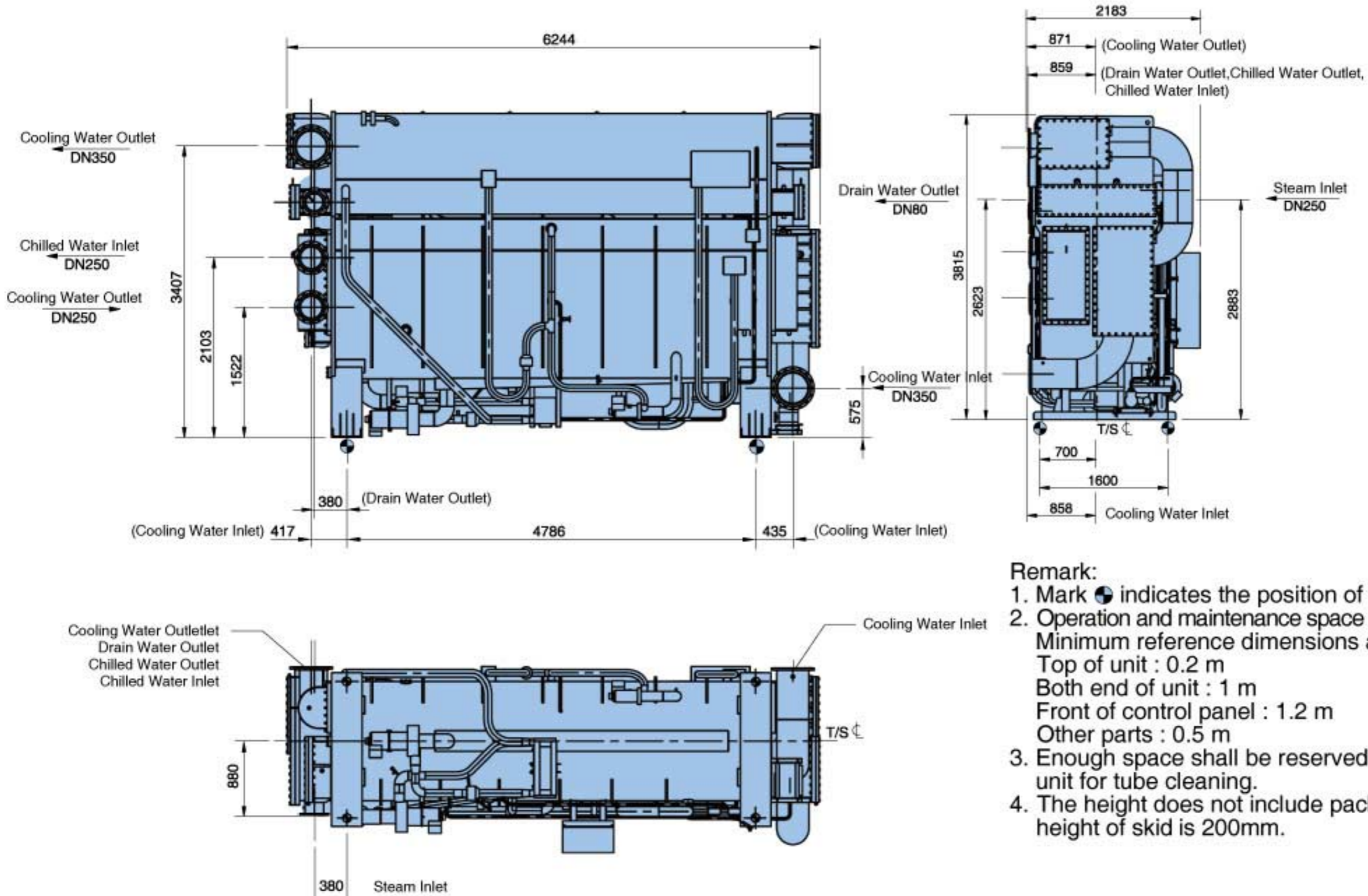
16JL052



Remark:

1. Mark  indicates the position of foundation bolts.
2. Operation and maintenance space must be reserved.
Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
3. Enough space shall be reserved at one end of the unit for tube cleaning.
4. The height does not include packing skid, the height of skid is 200mm.

16JL080

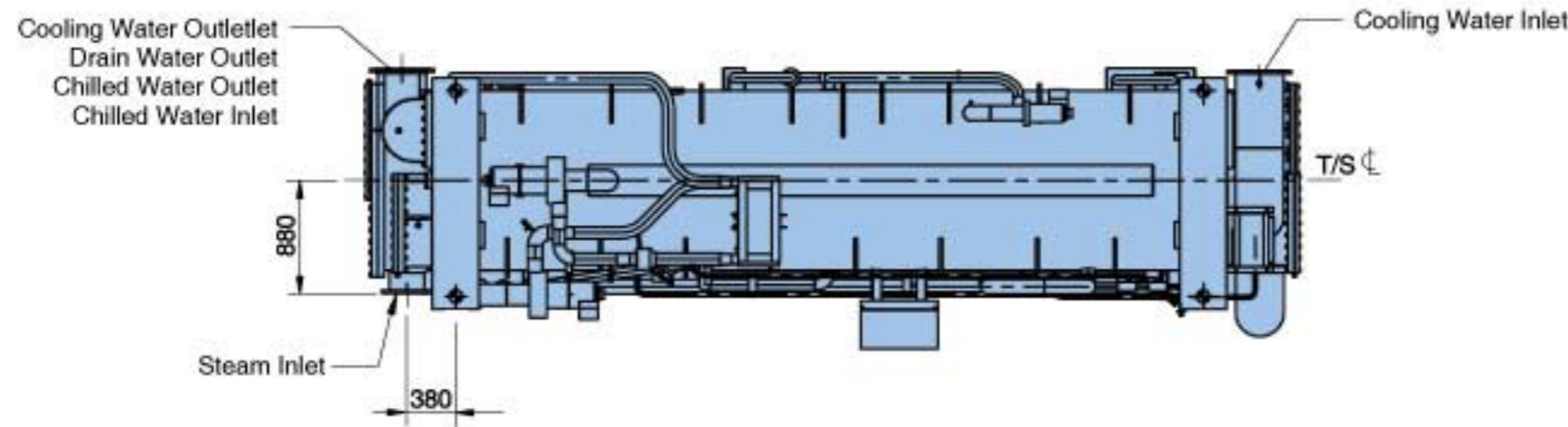
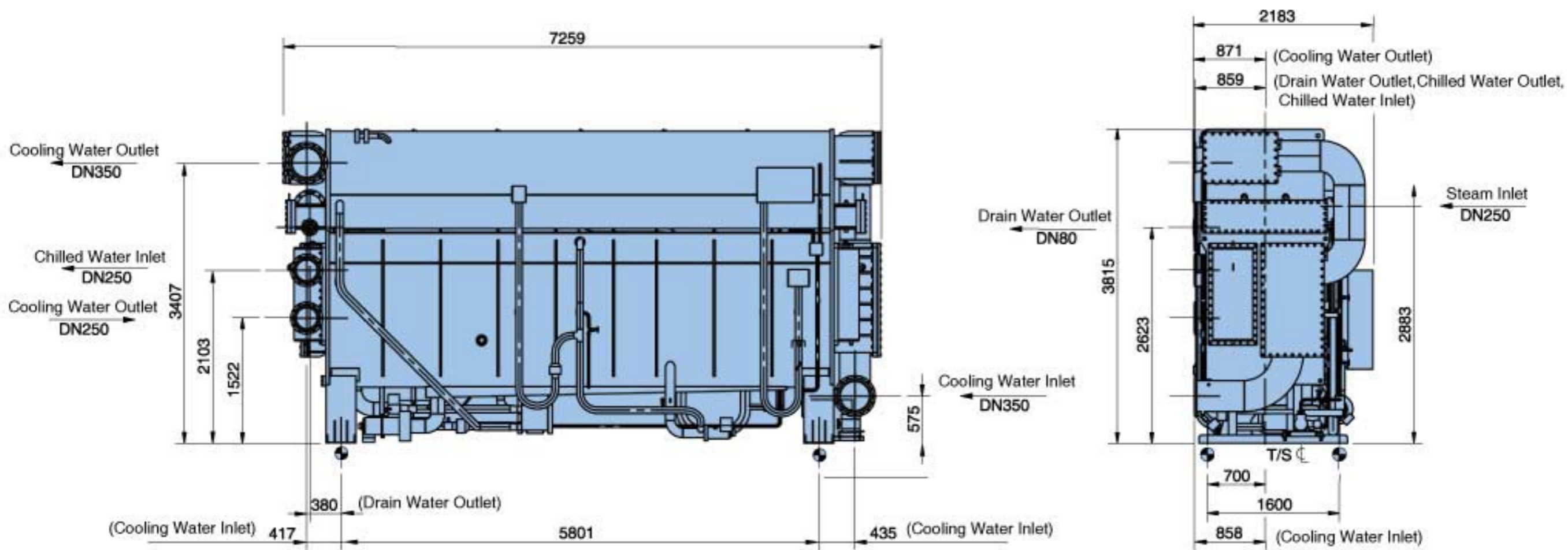


Remark:

1. Mark  indicates the position of foundation bolts.
2. Operation and maintenance space must be reserved.
Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
3. Enough space shall be reserved at one end of the unit for tube cleaning.
4. The height does not include packing skid, the height of skid is 200mm.

Overall Dimension

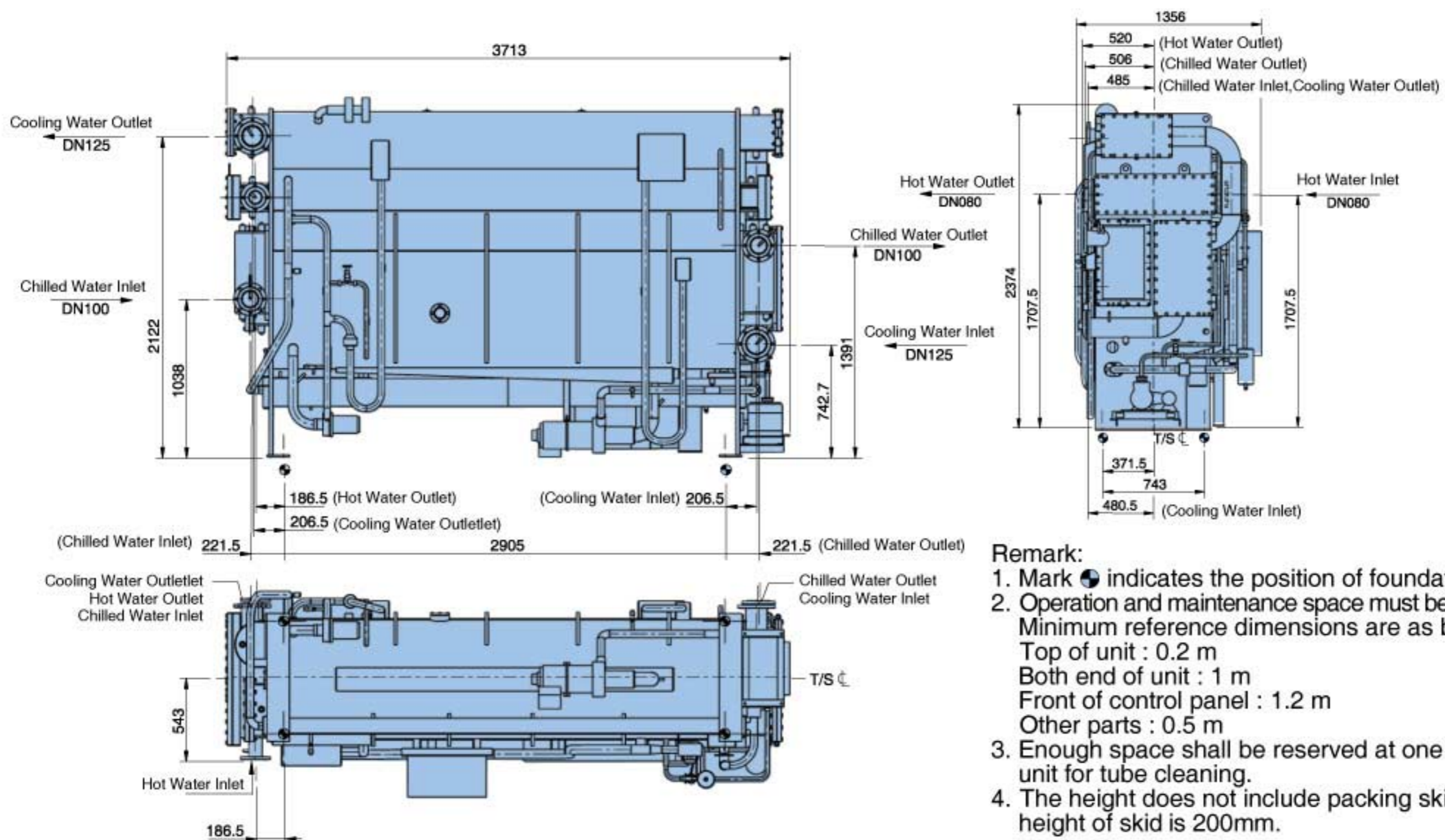
16JL100



Remark:

1. Mark ● indicates the position of foundation bolts.
2. Operation and maintenance space must be reserved. Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
3. Enough space shall be reserved at one end of the unit for tube cleaning.
4. The height does not include packing skid, the height of skid is 200mm.

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Remark:

1. Mark ● indicates the position of foundation bolts.
2. Operation and maintenance space must be reserved. Minimum reference dimensions are as below:
Top of unit : 0.2 m
Both end of unit : 1 m
Front of control panel : 1.2 m
Other parts : 0.5 m
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