

Double Effect Exhaust Gas Driven Absorption Machine

Performance Data

Double Effect Exhaust Gas Driven Type (50~400RT) →

Model		Unit	CHP005	CHP006	CHP007	CHP008	CHP010	CHP012	CHP015	CHP018	CHP021	CHP024	CHP028	CHP032	CHP036	CHP040							
Cooling Capacity	usRT		50	60	70	80	100	120	150	180	210	240	280	320	360	400							
	kW		176	211	246	281	351	422	527	633	738	844	984	1125	1265	1406							
Chilled Water	Inlet Temp./Outlet Temp.	°C	12 / 7																				
	Flow rate	m ³ /h	30.2	36.3	42.3	48.4	60.5	72.6	90.7	109	127	145	169	194	218	242							
	P. Drop	mAq	4.0	3.7	6.2	5.6	4.8	5.1	6.6	7.0	6.4	6.3	4.6	4.5	5.0	5.1							
	Connection	mm	80				100				125			150									
Cooling Water	Inlet Temp./Outlet Temp.	°C	32 / 37.5																				
	Flow rate	m ³ /h	50	60	70	80	100	120	150	180	210	240	280	320	360	400							
	P. Drop	mAq	7.0	6.1	10.2	9.6	11.1	11.3	11.5	11.8	11.8	12.1	11.2	10.7	11.1	10.8							
	Connection	mm	100				125			150				200									
Heating Capacity	Mcal/h		142	170	198	227	283	340	425	510	595	680	793	906	1019	1133							
	kW		165	197	230	263	329	395	494	592	691	790	922	1053	1185	1317							
Hot Water	Inlet Temp./Outlet Temp.	°C	55.3 / 60																				
	Flow rate	ton/h	30	36	42	48	60.5	72.6	90.7	109	127	145	169	194	218	242							
	P. Drop	mAq	4.0	3.7	6.2	5.6	4.8	5.1	6.6	7.0	6.4	6.3	4.6	4.5	5.0	5.1							
	Connection	mm	80				100				125			150									
Exhaust Gas	Flow rate	kg/sec	0.439	0.527	0.615	0.703	0.88	1.05	1.32	1.58	1.84	2.11	2.46	2.81	3.16	3.51							
	Temp.	Cooling	°C	450 / 165																			
		Heating	°C	450 / 125																			
	Pressure Drop	mmAq	58	58	74	71	77	82	79	92	97	113	129	131	123	131							
	Inlet Conn.	mm-mm	782*291	782*330	782*369	782*408	922*408	922*486	922*603	922*642	922*681	922*798	922*876	1376*720	1376*799								
	Outlet Conn.	mm	300				400				500				600								
	Diverter Valve	mm	300				400				500				600								
Electric	Power source	kW	3ø, 400V, 50Hz																				
	Abs. Pump	kW [A]	1.5 (5.5)				2.0 (6.4)				2.4 (6.9)				3.2 (9.0)								
	Ref. Pump	kW [A]	0.2 (1.0)				0.3 (1.2)				0.4 (1.4)												
	Purge Pump	kW [A]	0.4 (1.4)																				
	Sealing Blower	kW [A]	0.4 (2.5)																				
	Control Panel	kW [A]	0.2 (0.5)																				
	Amp.(400Vac)	A	10.8				11.9				12.6				14.7								
Size	Lenght (L)	mm	2100			2600			2,638			3,680			3,717			4,742			4,872		
	Width (W)	mm	1,683	1,722	1,761	1,800	1,857	1,935	2,052	2,091	2,194	2,194	2,310	2,349	2,349	2,349							
	Height (H)	mm	1800				2,090				2,147				2,399								
Weight	Rigging	ton	3.0	3.2	3.7	3.9	5.0	5.3	6.4	6.8	7.9	8.5	9.8	10.3	12.8	13.2							
	Operation	ton	3.2	3.5	4.0	4.3	5.4	5.8	7.0	7.4	8.6	9.3	10.7	11.3	14.0	14.6							

Note

- Working pressure of each water side is based on 1.0MPa (150psig).
- Lowest outlet temperature of chilled water is 5°C and 18°C for cooling water.
- Controllable cooling capacity range shall be 25~100% as a standard condition and 0~100% as an option.
- Each water flow can be adjusted within 50~120%.
- Fouling factor 0.0001m².h.°C/kcal for Absorber and Condenser, 0.0001m².h.°C/kcal for Evaporator and Generator.
- 79°C of hot-water temperature is possible as an option.

CHP Series

Double Effect Exhaust Gas Driven Absorption Machine

Performance Data

Double Effect Exhaust Gas Driven Type (450~1500RT)

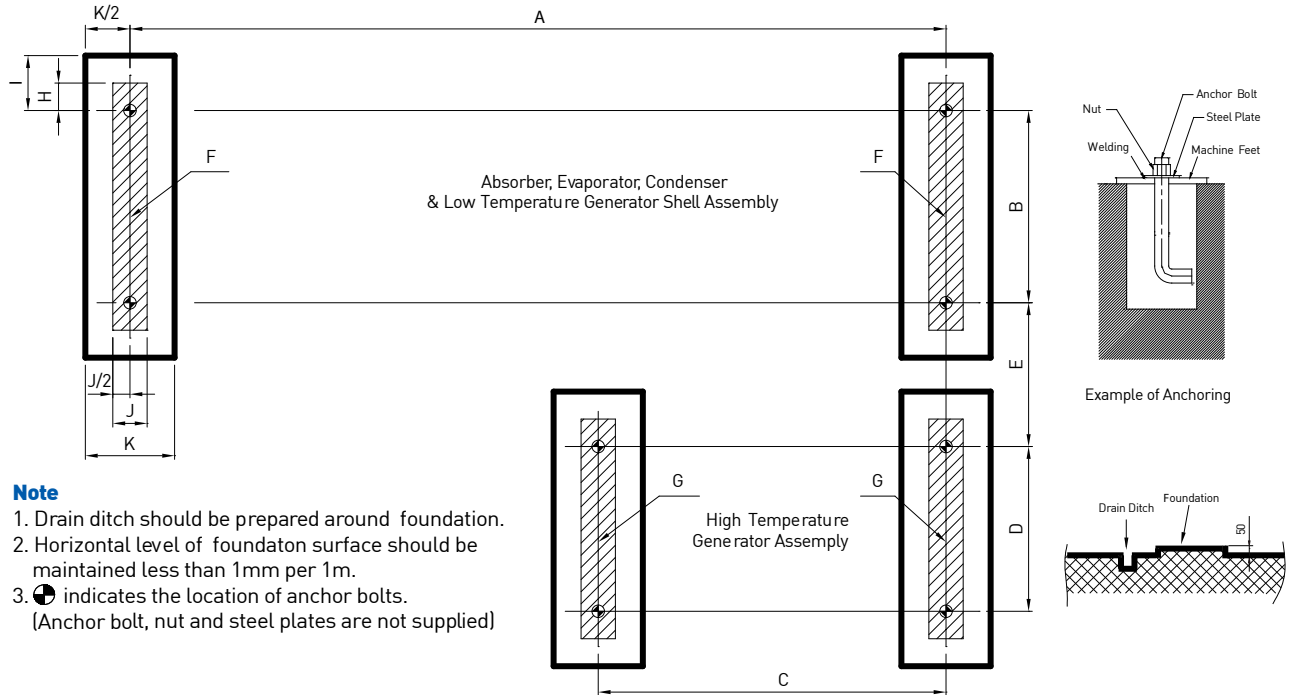
Model		Unit	CHP045	CHP050	CHP056	CHP063	CHP070	CHP080	CHP090	CHP100	CHP110	CHP120	CHP130	CHP140	CHP150	
Cooling Capacity		usRT	450	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500	
		kW	1582	1757	1968	2214	2460	2812	3163	3515	3866	4218	4569	4921	5272	
Chilled Water	Inlet Temp./Outlet Temp.	°C	12 / 7													
	Flow rate	m ³ /h	272	302	339	381	423	484	544	605	665	726	786	847	907	
	P. Drop	mAq	4.4	3.9	3.6	5.0	6.6	4.7	6.4	8.5	7.2	9.2	11.5	8.3	10.2	
	Connection	mm	200					250			300			350		
Cooling Water	Inlet Temp./Outlet Temp.	°C	32 / 37.5													
	Flow rate	m ³ /h	450	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500	
	P. Drop	mAq	10.7	10.8	7.7	10.6	14.0	8.7	11.8	15.6	3.0	3.8	4.8	4.0	4.8	
	Connection	mm	250			300			350			400				
Heating Capacity		Mcal/h	1274	1416	1586	1784	1982	2266	2549	2832	3115	3398	3682	3965	4248	
		kW	1481	1646	1843	2074	2304	2633	2962	3291	3621	3950	4279	4608	4937	
Hot Water	Inlet Temp./Outlet Temp.	°C	55.3 / 60													
	Flow rate	ton/h	272	302	339	381	423	484	544	605	665	726	786	847	907	
	P. Drop	mAq	4.4	3.9	3.6	5.0	6.6	4.7	6.4	8.5	7.2	9.2	11.5	8.3	10.2	
	Connection	mm	200					250			300			350		
Exhaust Gas	Flow rate	kg/sec	3.95	4.39	4.92	5.53	6.15	7.03	7.91	8.78	9.66	10.54	11.42	12.30	13.18	
	Temp.	Cooling	°C 450 / 165													
		Heating	°C 450 / 125													
	Pressure Drop	mmAq	133	134	143	133	146	155	153	176	213	221	212	206	184	
	Inlet Conn.	mm-mm	1376*837	1376*915	1376*1008	1376*1143	1376*1233	1376*1218	1376*1368	1376*1418	1376*1418	1376*1518	1376*1668	1376*1818	1376*2068	
	Outlet Conn.	mm	600			750					1000					
	Diverter Valve	mm	600			750					1000					
Electric	Power source	kW	3ø, 400V, 50Hz													
	Abs. Pump	kW [A]	3.2 (9.0)			5.5 (15.0)					7.5 (24.0)					
	Ref. Pump	kW [A]	0.3 (1.2)					1.5 (4.0)								
	Purge Pump	kW [A]	0.4 (1.4)					0.75 (2.2)								
	Sealing Blower	kW [A]	0.4 (2.5)													
	Control Panel	kW [A]	0.2 (0.5)													
	Amp.(400Vac)	A	14.7			20.7			23.3			33.1				
Size	Length (L)	mm	4,954		4,998	5,540	6,038	5,644	6,142	6,667	6,293	6,818	7,318	6,974	7,475	
	Width (W)	mm	2,491	2,569	2,934	3,069	3,159	3,330	3,480	3,530	4,348	4,448	4,598	4,932	5,182	
	Height (H)	mm	2,633		2,962			3,380			3,500			3,700		
Weight	Rigging	ton	15.7	16.5	21.2	23.1	24.6	31.0	33.6	35.6	41.1	43.4	46.4	50.2	54.1	
	Operation	ton	17.2	18.1	23.7	25.8	27.5	34.8	37.6	39.9	46.2	48.8	52.1	56.5	60.8	

Note

- Working pressure of each water side is based on 1.0MPa (150psig).
- Lowest outlet temperature of chilled water is 5°C and 18°C for cooling water.
- Controllable cooling capacity range shall be 25~100% as a standard condition and 0~100% as an option.
- Each water flow can be adjusted within 50~120%.
- Fouling factor 0.0001m².h.°C/kcal for Absorber and Condenser, 0.0001m².h.°C/kcal for Evaporator and Generator.
- 79°C of hot-water temperature is possible as an option.

Double Effect Exhaust Gas Driven Absorption Machine

Foundation



Note

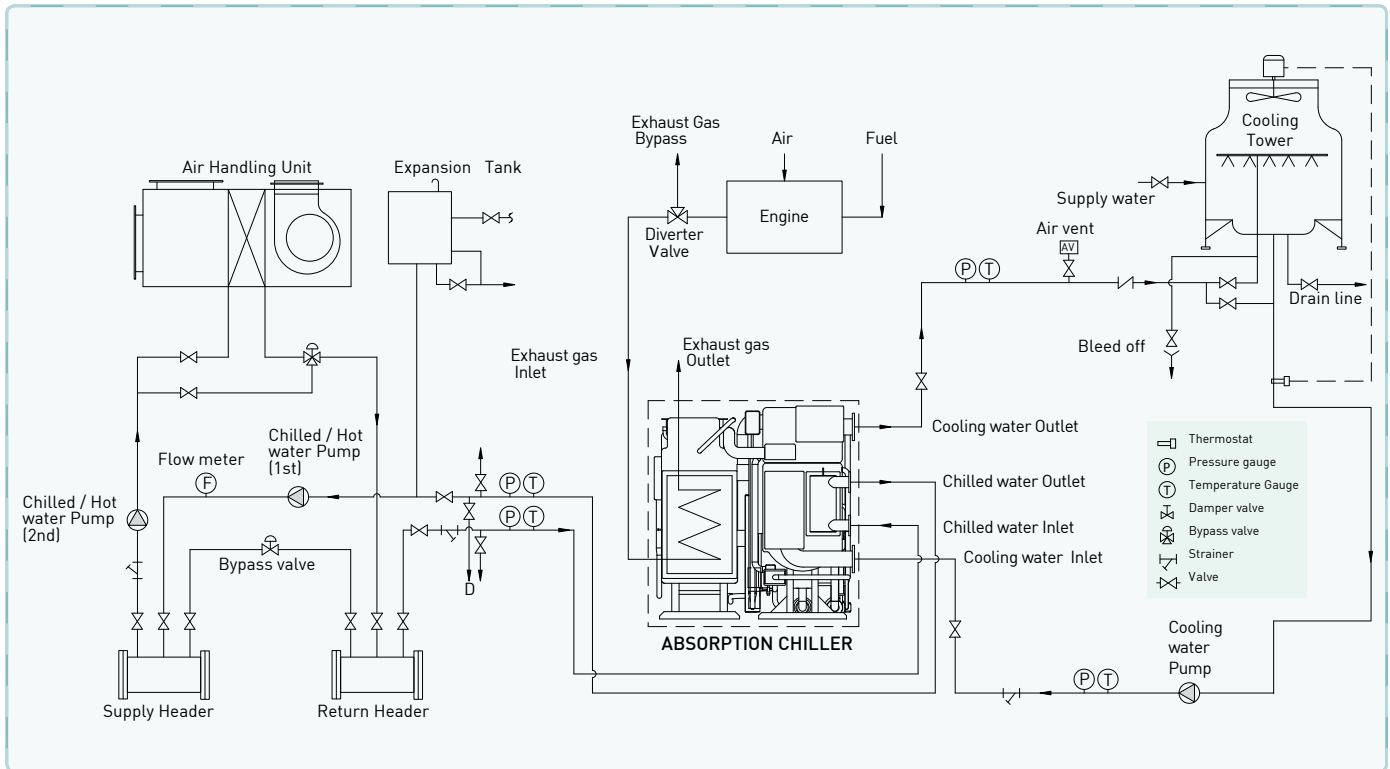
1. Drain ditch should be prepared around foundation.
2. Horizontal level of foundation surface should be maintained less than 1mm per 1m.
3. ● indicates the location of anchor bolts.
(Anchor bolt, nut and steel plates are not supplied)

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	H (mm)	I (mm)	J (mm)	K (mm)	F (ton)	G (ton)
CHP005	1,421	800	973	322	236	100	200	125	325	1.0	0.5
CHP006				322	236					1.1	0.6
CHP007	1,921		1,033	400	236	50	150			1.2	0.7
CHP008				400	236					1.3	0.8
CHP010	1,941	700	1,194	400	382	100	200	125	325	2.0	0.7
CHP012				500	371					2.1	0.8
CHP015	2,961		600	292	600	292	2.5			1.0	
CHP018			600	292		2.6	1.1				
CHP021	2,936	1,010	1,307	641	289	115	215	150	350	3.1	1.2
CHP024			1,453	641	289					3.4	1.3
CHP028	3,956		1,386	800	267	800	267			3.9	1.4
CHP032			800	287	4.1		1.5				
CHP036	3,906	900	1,404	816	342	105	205	200	400	5.1	1.9
CHP040		1,567	816	342	5.3					2.0	
CHP045		990	1,370	800	352	900	352			6.2	2.4
CHP050		6.4	2.6								
CHP056	3,856	1,150	1,600	1,000	445	105	205	300	500	8.8	3.0
CHP063	4,398			1,100	463					9.6	3.3
CHP070	4,896			1,200	458					10.3	3.5
CHP080	4,348			1,200	486					12.4	4.9
CHP090	4,846	1,210	2,400	1,400	461	105	205	300	500	13.4	5.4
CHP100	5,371			1,400	486					14.4	5.6
CHP110	4,896	1,290	2,500	1,400	1,171	105	205	300	500	17.3	5.8
CHP120	5,421			1,500	1,171					18.3	6.1
CHP130	5,921			1,700	1,146					19.4	6.6
CHP140	5,371			1,800	1,131					21.1	7.1
CHP150	5,871	1,500	2,100	1,106	22.4	8.0					

CHP Series

Double Effect Exhaust Gas Driven Absorption Machine

System Pippings

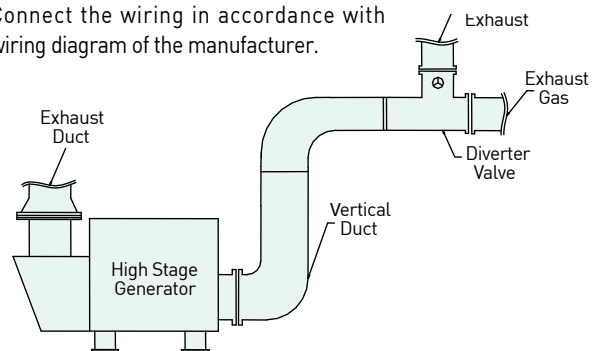


- 1) All external equipment out of dotted line is scope of customer's.
- 2) Refer to outline drawing and specification data sheet for the external dimensions of the machine, the location & the diameter of water pipe connection and the dimensions & the size of Exhaust gas line connections.
- 3) The locations of chilled water pumps, cooling water pumps and expansion tanks shall be determined in consideration of the hydrostatic head of pumps and the height of building. And the Machine shall not be subject to a pressure higher than the designed pressure at any water header.
- 4) For cooling water quality control, it is recommended to install cooling water bleed-off device on the inlet pipe line of cooling towers.
- 5) Around 10 meshes of strainers are recommended to be installed in the cooling water line.
- 6) For the maintenance and the inspection of the Machine, the following equipment shall be installed on each chilled water and cooling water inlet/outlet lines as well as stop valve.
 - Thermometers and pressure gauges shall be installed at chilled and cooling water inlet/outlet.
 - Air relief valves shall be installed on each chilled and cooling water lines at higher points than each water headers.
 - Drain valves shall be installed at the lowest position between the stop valves of chilled and cooling water and the Machine and the drain valve shall be piped to the drain ditch.
- 7) There shall be a sufficient clearance for access to the absorber, evaporator, condenser, and generator to facilitate inspection and cleaning work.

Divterter Valve & Exhaust Gas Duct

For Divterter Valve;

- 1) Install the divterter valve at the exhaust gas duct end of gas turbine or reciprocating engine and level the divterter valve horizontally by using the level gauge.
- 2) Install the transient duct between high-stage generator and divterter valve.
- 3) Connect the wiring in accordance with wiring diagram of the manufacturer.







For Exhaust Gas Duct;

- 1) Sharp bend and restrictions should be avoided to allow smooth gas flow.
- 2) The exhaust gas duct outlet should be arranged to prevent the rain water from entering into the machine and the drain connection should be provided to remove the condensate from the exhaust gas outlet side.



Double Effect Exhaust Gas Driven Absorption Machine

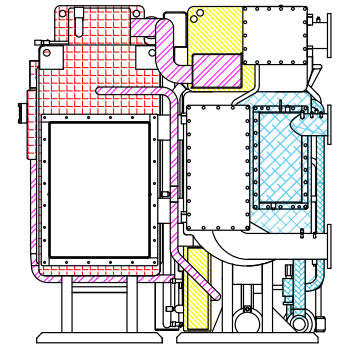
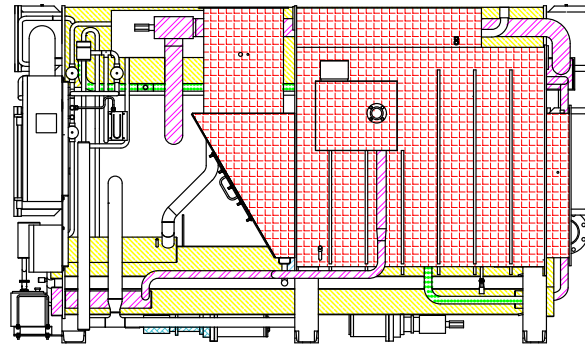
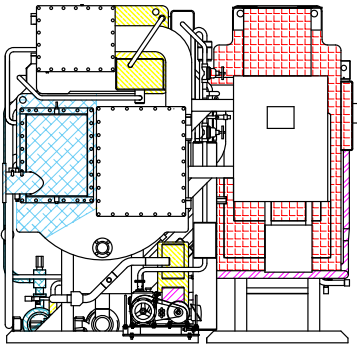
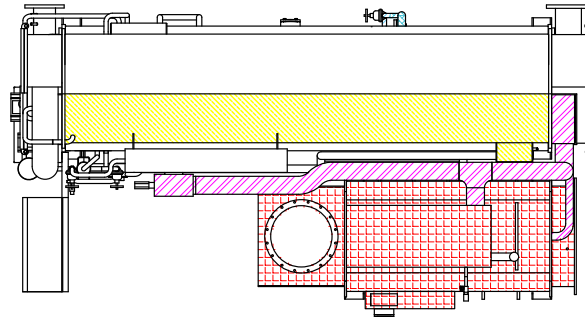
Thermal Insulation

Hot Surface

-  75mm : High Temp. Generator
-  50mm : High Heat Exchanger Box with High Temperature Piping, Steam box
-  19mm : Heat Exchanger Body with Low Temperature Box, Low temperature Generator Body with Outlet Box
-  10mm : Low temperature Piping

Cold Surface

-  19mm : Evaporator Body with Water Box
-  10mm : Inlet and Outlet Piping of Refrigerant Pump



Note

1. Use only Non-inflammable or Incombustible insulation materials.
2. Do not insulate motor of refrigerant pump.
3. Total insulation area includes piping.
4. Do not cover components such as service valves, dampers, diaphragm valves, sight glass, control valves or thermometers or sensor wells.
5. The standard Material and Thickness as the recommendation :

HOT Surface insulation

- Material of insulation : Glass wool, Thermal Conductivity 0.04kcal/m·h·°C
- Thickness of insulation : 50mm (2 inch), 75mm (3 inch)
- Material of insulation : Closed cell type Non-inflammable polymer sponge
- Thickness of insulation : 10mm (3/8inch), 19mm (3/4inch)

COLD Surface insulation

- Material of insulation : Closed cell type Non-inflammable polymer sponge
- Thickness of insulation : 10mm (3/8 inch), 19mm (3/4 inch)

Wrapping Material when Glass wool is used.

- Insulated parts on body : Colored galvanized steel with 0.45mm thickness or over
- Insulated parts on pipes : Colored galvanized steel with 0.30mm thickness or over

6. For insulation area for each model, please refer to the picture below.
7. The water box sections should be worked to be disassembled for the repair.
8. If necessary, please perform the finish painting in the field after completing the insulation work.

Model (mm)	Hot Surface (m ²)				Cold Surface (m ²)	
	75mm	50mm	19mm	10mm	19mm	10mm
CHP005	8.2	0.9	3.9	0.4	2.6	0.3
CHP006	8.2	0.9	3.9	0.4	2.6	0.3
CHP007	8.2	0.9	3.9	0.4	2.6	0.3
CHP008	8.2	1.1	4.2	0.3	2.6	0.3
CHP010	9.5	1.8	5.1	0.7	3.6	0.3
CHP012	10.4	1.8	5.2	0.7	3.6	0.3
CHP015	11.2	2.2	7.5	0.7	4.8	0.3
CHP018	11.4	2.2	7.5	0.7	4.8	0.3
CHP021	12.8	2.2	8.5	0.7	5.8	0.3
CHP024	13.6	22.2	8.5	0.9	5.8	0.4
CHP028	14.1	2.5	10.2	1.1	7.1	0.4
CHP032	18.2	2.5	10.2	1.1	7.1	0.4
CHP036	18.4	3.0	11.3	1.2	7.9	0.4
CHP040	18.4	3.0	11.3	1.2	7.9	0.4

Model (mm)	Hot Surface (m ²)				Cold Surface (m ²)	
	75mm	50mm	19mm	10mm	19mm	10mm
CHP045	20.6	3.1	12.4	1.2	7.9	0.4
CHP050	21.3	3.1	12.4	1.2	11	0.4
CHP056	23.4	7.5	9.5	1.4	13.5	0.6
CHP063	24.7	8.3	9.5	1.4	15	0.7
CHP070	25.3	9.2	9.5	1.5	16	0.7
CHP080	32.1	10.5	11.0	1.6	17	1.1
CHP090	33.7	11.5	11.4	1.6	18.5	1.2
CHP100	34.2	13.0	11.8	1.7	20	1.2
CHP110	36.5	15.5	13.7	1.7	22.5	1.4
CHP120	37.6	16.8	14.0	1.7	22.2	1.4
CHP130	39.3	18.2	14.3	1.8	23.4	1.4
CHP140	41.1	18.1	14.6	1.8	26.6	1.5
CHP150	43.9	19.6	15.1	1.8	27.6	1.5

CHP Series

Double Effect Exhaust Gas Driven Absorption Machine

Start-up Sequence

