



16DNP Absorption Chiller and Diverter Valve

Spare Parts List

(UL certification)

Carrier Korea Operations

1. PUMPS

No	CKO Part No.	CARRIER Part No.	MAKER Model No.	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE ⁽¹⁾ (USD)/ DELIVERY
P1 ⁽²⁾	PPM02BF0010		1.5x3LC	SOLUTION PUMP	BUFFALO PUMPS (US)	BUFFALO PUMPS	120 LPM/ 13.5m, 460V*3PH*60Hz, 3HP	1	
P2	2x3-5LC		2x3-5LC	REFRIGERANT PUMP	BUFFALO PUMPS (US)	BUFFALO PUMPS	100 LPM/ 2m, 460V*3PH*60Hz, 0.5HP	1	
P3	PPM01TE0040		GRP-180F-UL	VACUUM PUMP	HAMDOK VACUUM (KOR)	CKO	460V*3PH*60Hz, 0.4KW	1	810.00/ 6wks
P4	PPM01TE0050		A-30	V-BELT for VACUUM PUMP	HANDOK VACUUM (KOR)	CKO	W12.5(mm), H9.0(mm), Angle 40 deg	1	5.00/ 2wks
P5	PPM01TE0060		MR-200	OIL for VACUUM PUMP		RCD	1. Kinematic Viscosity, at 104[F] : 95.50 [cSt] 2. Pour Point : max. 5 [F] 3. Flash Point : min. 471 [F] 4. Specific Gravity at 59/39[F] : 0.876 5. Color : Lighter 0.5 (ASTM Color) 6. Appearance : Clear and Bright 7. Odour : Mild	2.5 L	

Note 1 : US dollar per each (1.00 USD=1.120 KRW.)

Note 2 : Items marked in blue are inventory items.

2. VALVES

No	CKO Part No.	CARRIER Part No.	MAKER Model No.	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE (USD)/ DELIVERY
V1	EC33BC032		KCV032A00	SWING CHECK VALVE	KIKWANG (KOR)	CKO	DIA=1-1/4"	1	31.00/ 3wks
V2	EC33BC040		KCV040A00	SWING CHECK VALVE	KIKWANG (KOR)	CKO	DIA=1-1/2"	1	32.00/ 3wks
V3	C01PP-60812		KDV20A00	DIAPHRAGM VALVE	KIKWANG (KOR)	CKO	DIA=3/4"	4	57.00/ 3wks
V4	C01PP-61812		KDV20A02	DIAPHRAGM VALVE	KIKWANG (KOR)	CKO	DIA=3/4", Butyl Rubber	4	21.00/ 3wks
V5	C01PP-54785		KAV040A00	ANGLE VALVE	KIKWANG (KOR)	CKO	DIA=1-1/2"	2	102.00/ 3wks
V6	C01PP-54786		KAV050A00	ANGLE VALVE	KIKWANG (KOR)	CKO	DIA=2"	1	113.00/ 3wks
V7	C01PP-54788		KAV080A00	ANGLE VALVE	KIKWANG (KOR)	CKO	DIA=3"	2	153.00/ 3wks
V8	C01PP-54789		KAV100A00	ANGLE VALVE	KIKWANG (KOR)	CKO	DIA=4"	1	164.00/ 3wks
V9	16DN033-300410		BSV010S00	SERVICE VALVE	BUMJIN (KOR)	CKO	DIA=3/8", short	6	15.00/ 3wks
V10	16DN033-300420		BSV010L00	SERVICE VALVE	BUMJIN (KOR)	CKO	DIA=3/8", long	1	15.00/ 3wks

3. WATER BOX

No	CKO Part No.	CARRIER Part No.	MAKER Model No.	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE (USD)/ DELIVERY
G1	2223040001			GASKET for ALL W/B	HANYANG CHEMICAL (KOR)	CKO	EPDM	2m	4,00/ 3wks
G2	16DNP012-39290			GASKET for A	HANYANG CHEMICAL (KOR)	CKO	EPDM, T3*374*654	2	10,00/ 3wks
G3	16DNP018-38935			GASKET for C	HANYANG CHEMICAL (KOR)	CKO	EPDM, T3*363*294	2	13,00/ 3wks
G4	16DN012-39282			GASKET for E	HANYANG CHEMICAL (KOR)	CKO	EPDM, T3*572*334	2	9,00/ 3wks

4. SIGHT GLASS/ PALLADIUM CELL/ FUSIBLE PLUG/ SOLUTION

No	CKO Part No.	CARRIER Part No.	MAKER Model No.	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE (USD)/ DELIVERY
O1	16DN033-391690			COATING GLASS, S/G	WORLD REF. Co. (KOR)	CKO	TEMPERED PYREC T10*DIA88	2	10,00/ 3wks
O2	16DN033-391700			GASKET, S/G	WORLD REF. Co. (KOR)	CKO	VITON, T3*DIA88	2	11,00/ 3wks
O3	16DN018-399820			Pd CELL ASSY	CKO	CKO		1	325.00/3wks (10wks) ⁽¹⁾
O4	16DNP012-394410		C5160	PALLADIUM HEATER	VULCAN ELECTRIC	CKO	240V, 120W	1	50.00/ 8wks
O5	CSP-N0102			FUSIBLE PLUG	NAITE (KOR)	CKO	LIMIT TEMP : 139 C	1	12.00/ 2wks
O6	2282010101			SOLUTION	HANCHANG INDUSTRY (KOR) or US maker	RCD	RW01-22, 55% LiBr, Inhibitor : Li2MoO4 300ppm, Alkalinity 0.6 ~ 0.7N ⁽²⁾	1250 kg	
O7	2282020101			REFRIGERANT	HANCHANG INDUSTRY (KOR) or US maker	RCD	DE-IONIZED WATER	280 kg	
O8	C01PP-5586			OCTYL ALCOHOL	INSUNG (KOR) or US maker	RCD	2-ETHYLHEXANOL, Purity 99%	5 L	

Note 1 : Delivery of O3 depends on whether CKO has PD heater (O4) in stock or not, which will be either 3wks or 10wks.

Note 2 : Refer to the Material specification (Doc # : RW01-22)

5. SENSORS/ SWITCHES

No	CKO Part No.	CARRIER Part No.	MAKER Model No.	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE (USD)/ DELIVERY
S1	HH79NZ047	HH79NZ047		TEMP. SENSOR	ATP (US)	RCD	5K Ohm	10	
S2	HH79NZ070	HH79NZ070		TEMP. SENSOR	ATP (US)	RCD	100K Ohm	3	
S3	HH79N072	HH79N072		CABLE ASSY	ATP (US)	RCD		13	
S4	PSC03CU001			ELECTRODE	WORLD REF. Co.	CKO	Length : 300mm	3	26.00/ 3wks
S5	HK06ZC033	HK06ZC033	24-013H2012	DIFF. PRESSURE S/W	UNITED ELECTRIC CONTROLS Co. (US)	RCD	Setpoint ⁽¹⁾ : 2.0 psid on rise	1	
S6	C01PP-57492			TEMPERATURE SWITCH	E.G.O. (Germany)	EBARA	Setpoint : - 330F (G1 sol high temp) - 550F (Flue gas high temp)	2	
S7	P70CA-4C	16DF040-90070	P70CA-4C	PRESSURE SWITCH	JOHNSON CONTROLS	RCD	Setpoint : 14.7 psi	1	
S8	CSP-M07431	16JT810-6656	TNS-2C114Y	TEMPERATURE SWITCH	SAGINOMIYA (JAP)	RCD	Setpoint : 39 F	1	
S9	PGE01VJ0010			COMPOUND GAGE	KONICS (KOR)	CKO	Range : -76cmHgG ~ 2.0 kgf/cm ² , Syphone : SUS 304	1	36.00/ 4wks
S10	PSC01VP0020			RTD TEMP. SENSOR	WOOJIN INC. (KOR)	CKO	1K Ohm, B-class	1	93.00/ 4wks

Note 1 : Setpoint of cutout switches must be checked and adjusted.

6. CONTROL PANEL

No	CKO Part No.	CARRIER Part No.	MAKER Model No.	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE (USD)/ DELIVERY
C1	CEPL130445-02			ICVC Module	UTEC (US)	UTEC		1	
C1 ⁽¹⁾	16DNP012-530010			ICVC Module with software downloaded	UTEC (US) and Carrier Electronics	CKO		1	1764.00/ 2wks (10wks) ⁽²⁾
C2	CEPL130260-02			CCM Module ⁽³⁾	UTEC (US)	UTEC		3	
C3	ADM1005-E		ADM1005-E-CS-WCOOS	VFD ⁽⁴⁾	PARKER HANNIFIN CORPORATION	PARKER HANNIFIN CORPORATION	5HP, 380/480V± 10%	1	
C4	16DNP012-398500		4AM5742-8DD40-0FA0	Control Transformer (460-115V)	SIEMENS (GER)	SIEMENS	1kVA	1	
C5	16DNP012-398510		4AM4042-4KN00-0FA0	Control Transformer (115-24V)	SIEMENS (GER)	SIEMENS	250VA	1	
C6	16DNP012-398520		4AM4042-8DN00-0EA0	Control Transformer (460-24V)	SIEMENS (GER)	SIEMENS	250VA	1	
C7	16DNP012-398600		SZR-MY4-N1	Control Relay	HONEYWELL (US)	HONEYWELL	24V, 4a4b	15	
C8	16DNP012-398610		SMF-14NT	Control Relay Socket	HONEYWELL (US)	HONEYWELL	4a4b	15	
C9	16DNP012-398650		3RT1016-1AB01	Magnetic Contactor	SIEMENS (GER)	SIEMENS	24V	1	
C10	16DNP012-398700		3RV1011-1BA10	Circuit Breaker (Ref. 3 pole)	SIEMENS (GER)	SIEMENS	1.4 ~ 2.0A	1	
C11	16DNP012-398710		3RV1011-0KA10	Circuit Breaker (Vac. 3 pole)	SIEMENS (GER)	SIEMENS	0.9 ~ 1.25A	1	
C12	16DNP012-398720		3RV1021-4CA10	Circuit Breaker (Sol inv. 3 pole)	SIEMENS (GER)	SIEMENS	17.0 ~ 22.0A	1	
C13	16DNP012-398730		3RV1011-1HA10	Circuit Breaker (Blower. 3 pole)	SIEMENS (GER)	SIEMENS	4.5 ~ 6.3A	1	
C14	16DNP012-398740		3RV1421-1CA10	Circuit Breaker (TR1, 3 pole)	SIEMENS (GER)	SIEMENS	1.8 ~ 2.5A	1	
C15	16DNP012-398750		3RV1421-0GA10	Circuit Breaker (TR3, 3pole)	SIEMENS (GER)	SIEMENS	0.45~0.63A	1	
C16	16DNP012-398760		5SX2 102-7	Circuit Breaker (control circuit, 1 pole)	SIEMENS (GER)	SIEMENS	2.0A	7	
C17	16DNP012-398770		3RV1915-1B	Busbar for Circuit Breaker (9 poles)	SIEMENS (GER)	SIEMENS		1	

No	CKO Part No.	CARRIER Part No.	MAKER Model No.	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE (USD)/ DELIVERY
C18	16DNP012-398780		3RV1915-1A	Busbar for Circuit Breaker (6 poles)	SIEMENS (GER)	SIEMENS		1	
C19	16DNP012-398800		3RV1915-5A	Terminal for Circuit Breaker	SIEMENS (GER)	SIEMENS		2	
C20	16DNP012-398810		3RV1901-1E	Aux. Contact for Circuit Breaker	SIEMENS (GER)	SIEMENS		1	
C21	16DNP012-398820		C26 A324-600 M280VE V840G	Disconnect Switch	KRAUS & NAIMER (GER)	KRAUS & NAIMER ⁽⁵⁾	32A	1	
C22	16DNP012-398830		FN258-16-29	Noize Filter	SCHAFFNER	SCHAFFNER ⁽⁶⁾		1	
C23	16DNP012-398840		DFA3CO	Level Control Relay	GEMS SENSORS (US)	GEMS SENSORS ⁽⁷⁾		1	
C24	16DNP012-398850		3SB3244-6AA40	Lamp(Green)	SIEMENS (GER)	SIEMENS	24V	4	
C25	16DNP012-398870		3SB3246-0AA21	Push Button S/W (Red)	SIEMENS (GER)	SIEMENS	24V	1	
C26	16DNP012-398880		3SB3245-0AA41	Push Button S/W (Green)	SIEMENS (GER)	SIEMENS	24V	1	

Note 1 : C1 is blank ICVC module without software downloaded and C1* is the ICVC module with software downloaded.

Note 2 : Delivery of C1* depends on whether CKO has a blank ICVC module (C1) in stock or not, which will be either 2wks or 10wks.

Note 3 : Three CCM module has a different address. Dip switch should be adjusted before installation.

(For the dip switch, see the Fig.3-14, Fig.3-16 and Fig.3-17 of 16DNP IOM manual).

Note 4 : Software should be downloaded into new VFD. CKO will supply the software and downloading procedure. <http://www.mtsautomation.com>

[Note 5 : http://www.finsol.fi/0/main.htm](http://www.finsol.fi/0/main.htm)

[Note 6 : http://www3.schaffner.com/components/emc_filters/three_phase.htm](http://www3.schaffner.com/components/emc_filters/three_phase.htm)

[Note 7 : http://gemssensors.com](http://gemssensors.com)

7. DIVERTER VALVE

No	CKO Part No.	CARRIER Part No.	MAKER No.	Model	PART NAME	MAKER	DISTRIBUTOR	SPECIFICATION	Q'TY	PRICE (USD)/ DELIVERY
D1	16DNP012-398400		116637M		BLOWER	AMETEK (US)	AMETEK	5.7" BLDC Bypass, 240W, 120V	1	
D2	16DNP012-398410		GCA156.1U		ACTUATOR	SIEMENS (GER)	SIEMENS	16 N-m torque, 24VAC/DC spring return	1	
D3	16DNP012-309120				CHECK VALVE ASSY	WORLD REF. Co. (KOR)	CKO		1	119,00/3wks
D4	16DNP012-399300		MUCP207FD		BEARING	ASAHI	CKO or ASAHI ⁽¹⁾	-20 ~ +120 C	4	117,00/2wks

Note 1 : <http://www.asahiseiko.co.jp>

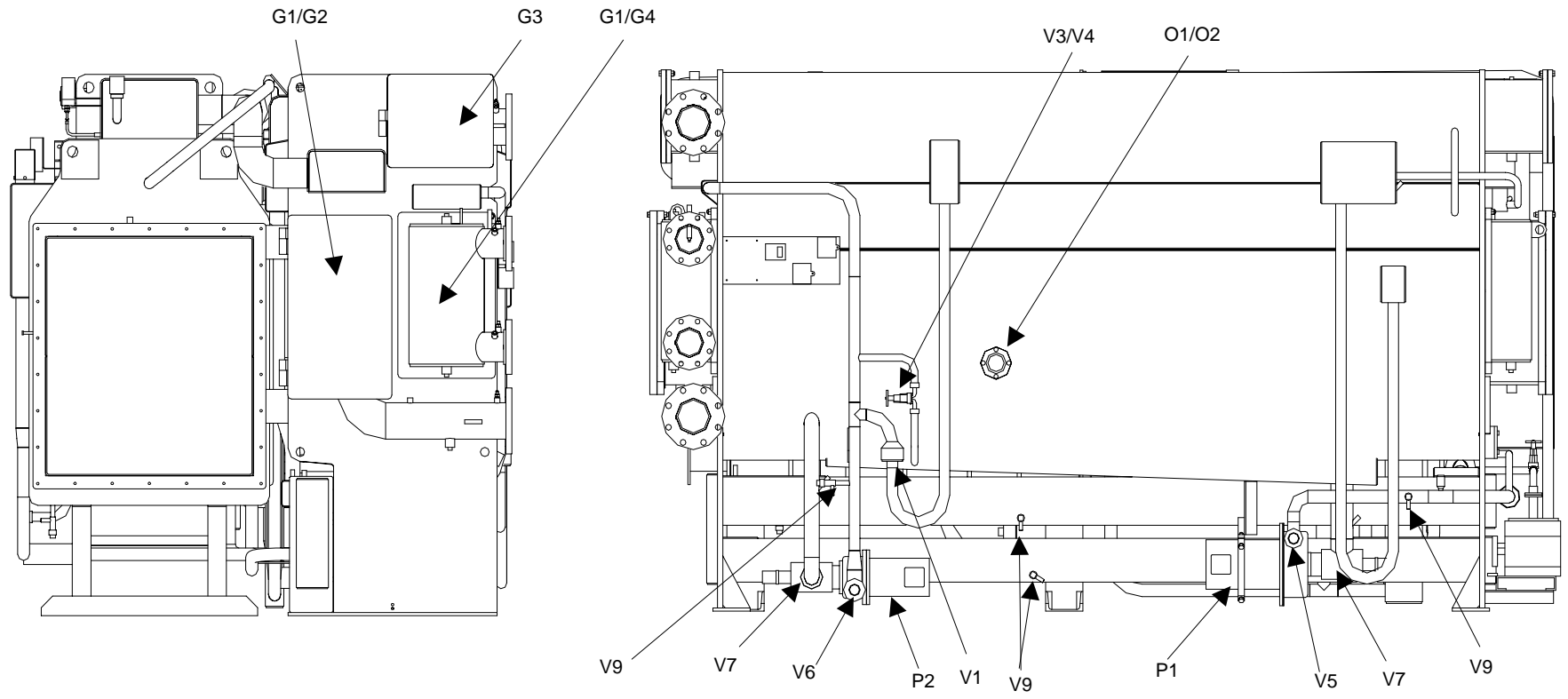


Fig. 1 Valve and Components Location, Rear and Side Views (16DNP018 Liquid tube type chiller)

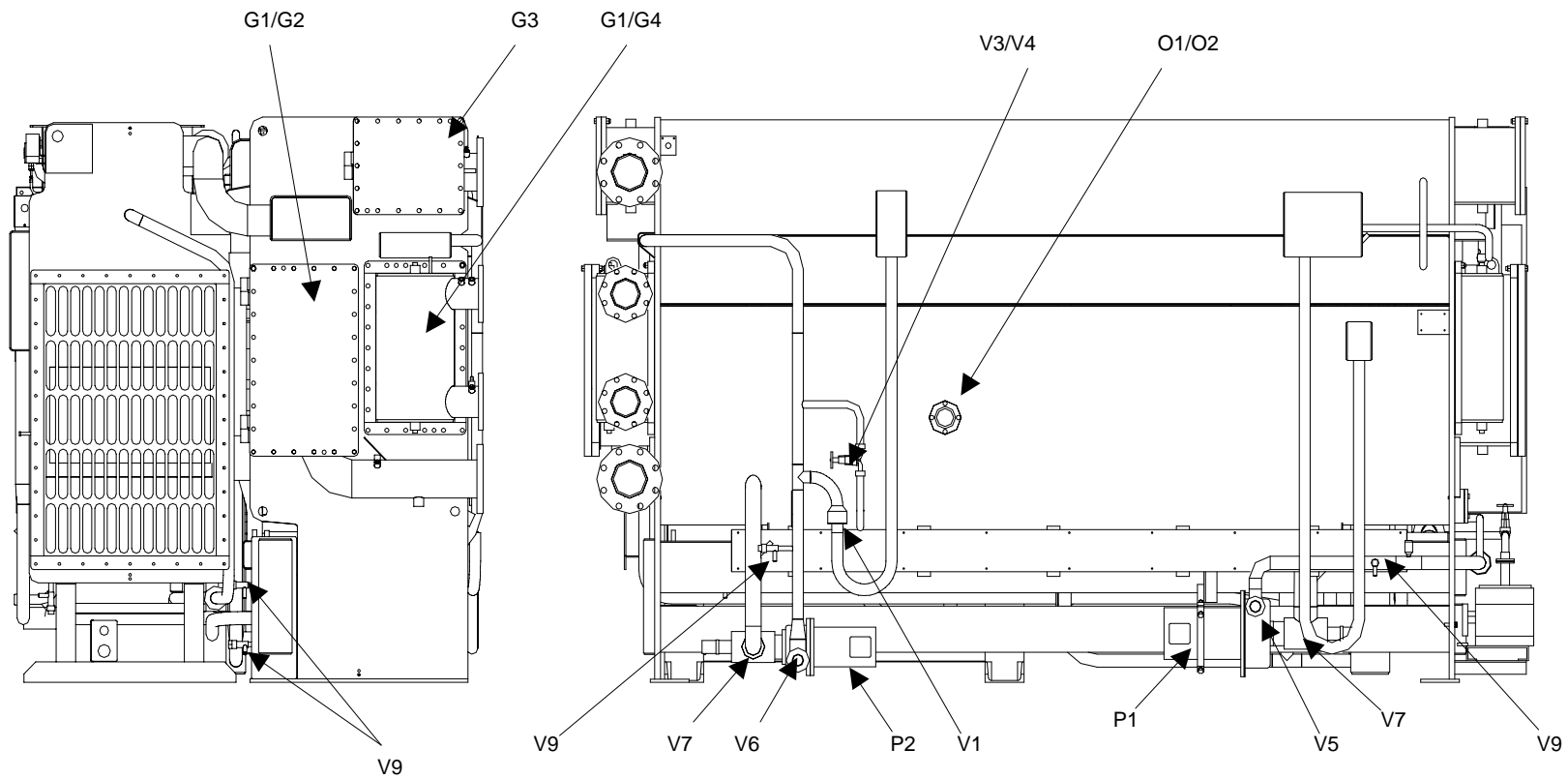


Fig. 1-1 Valve and Components Location, Rear and Side Views (16DNP012 Smoke tube type chiller)

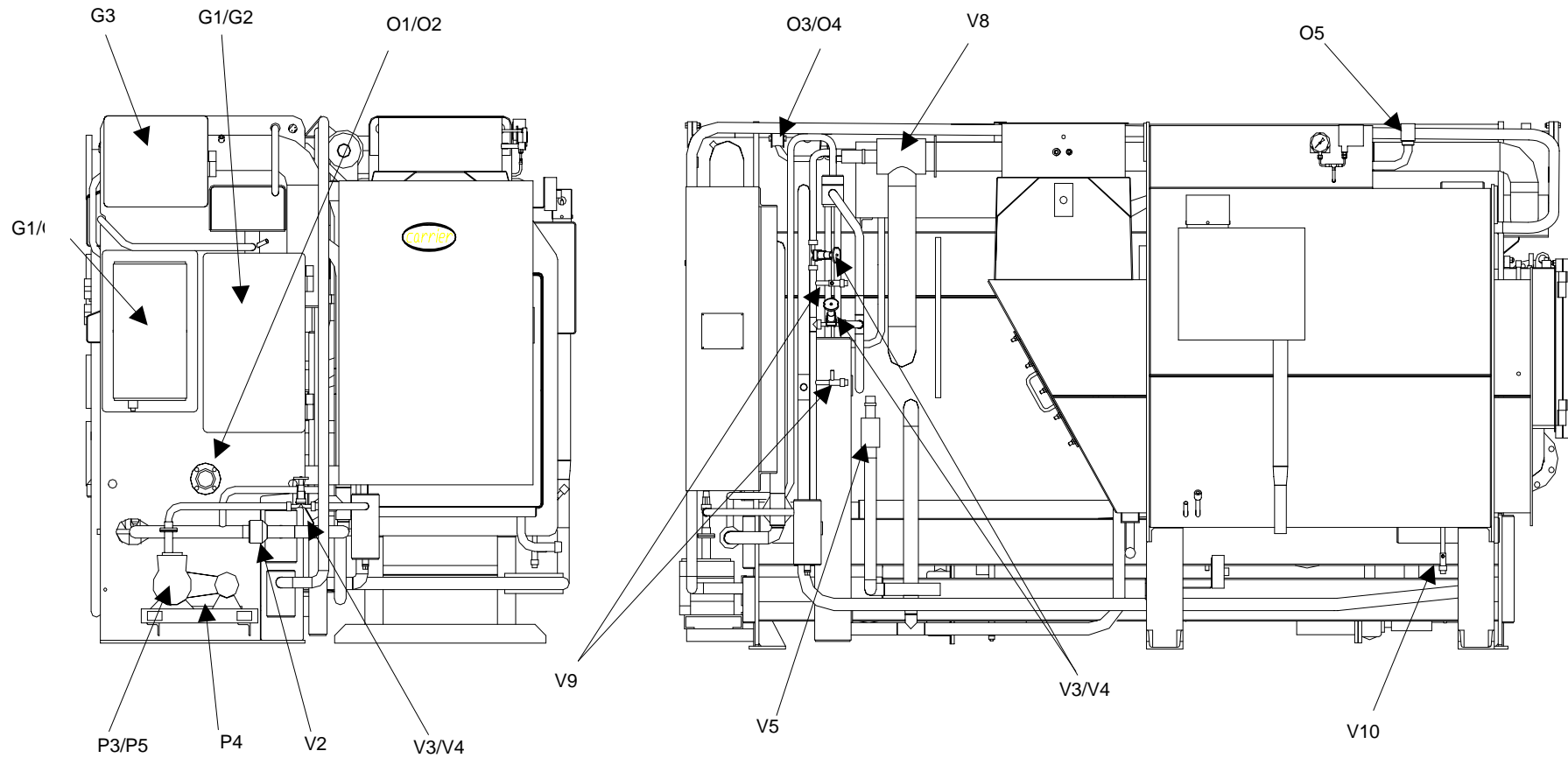


Fig. 2 Valve and Components Location, Front and Side Views (16DNP018 Liquid tube type chiller)

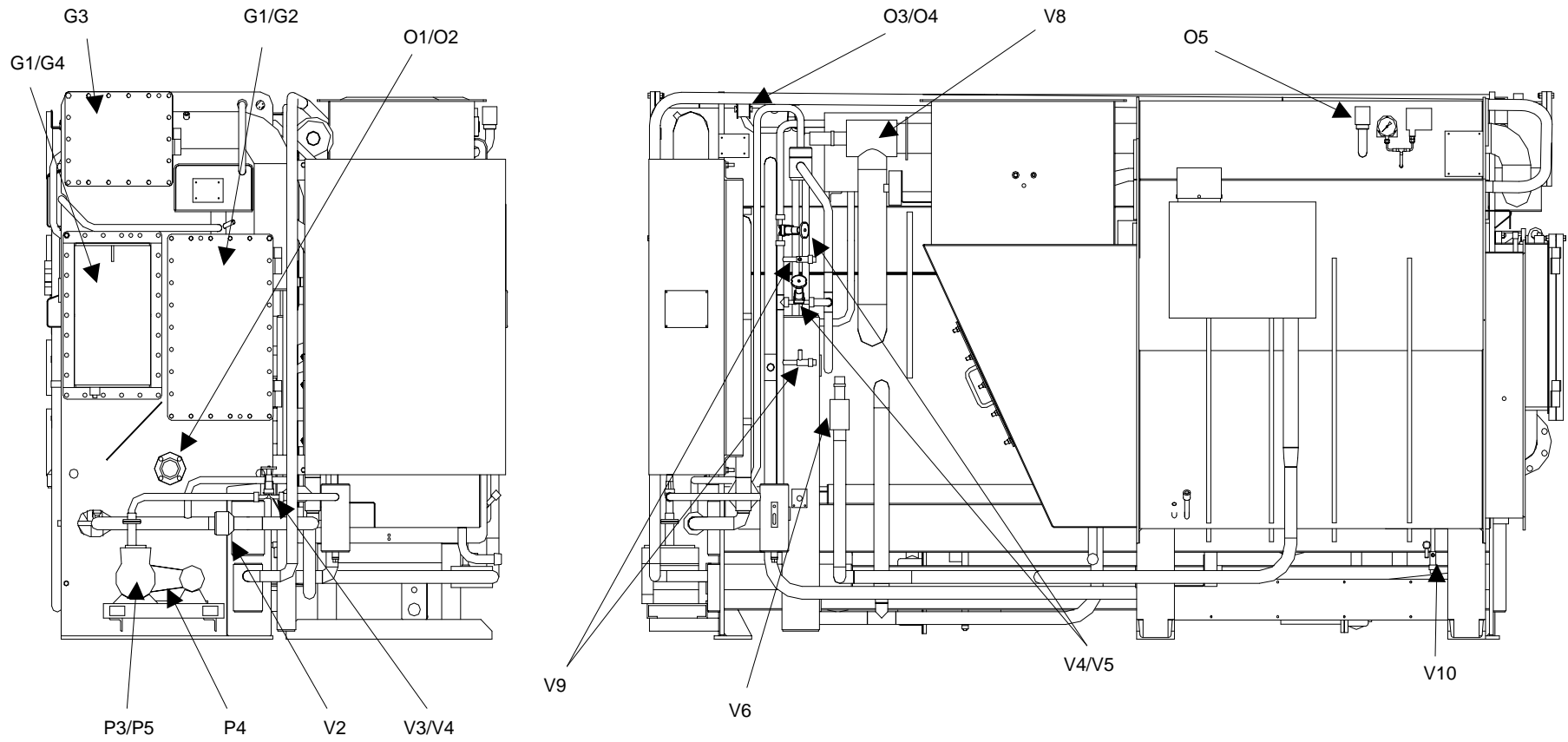


Fig. 2-1 Valve and Components Location, Front and Side Views (16DNP012 Smoke tube type chiller)

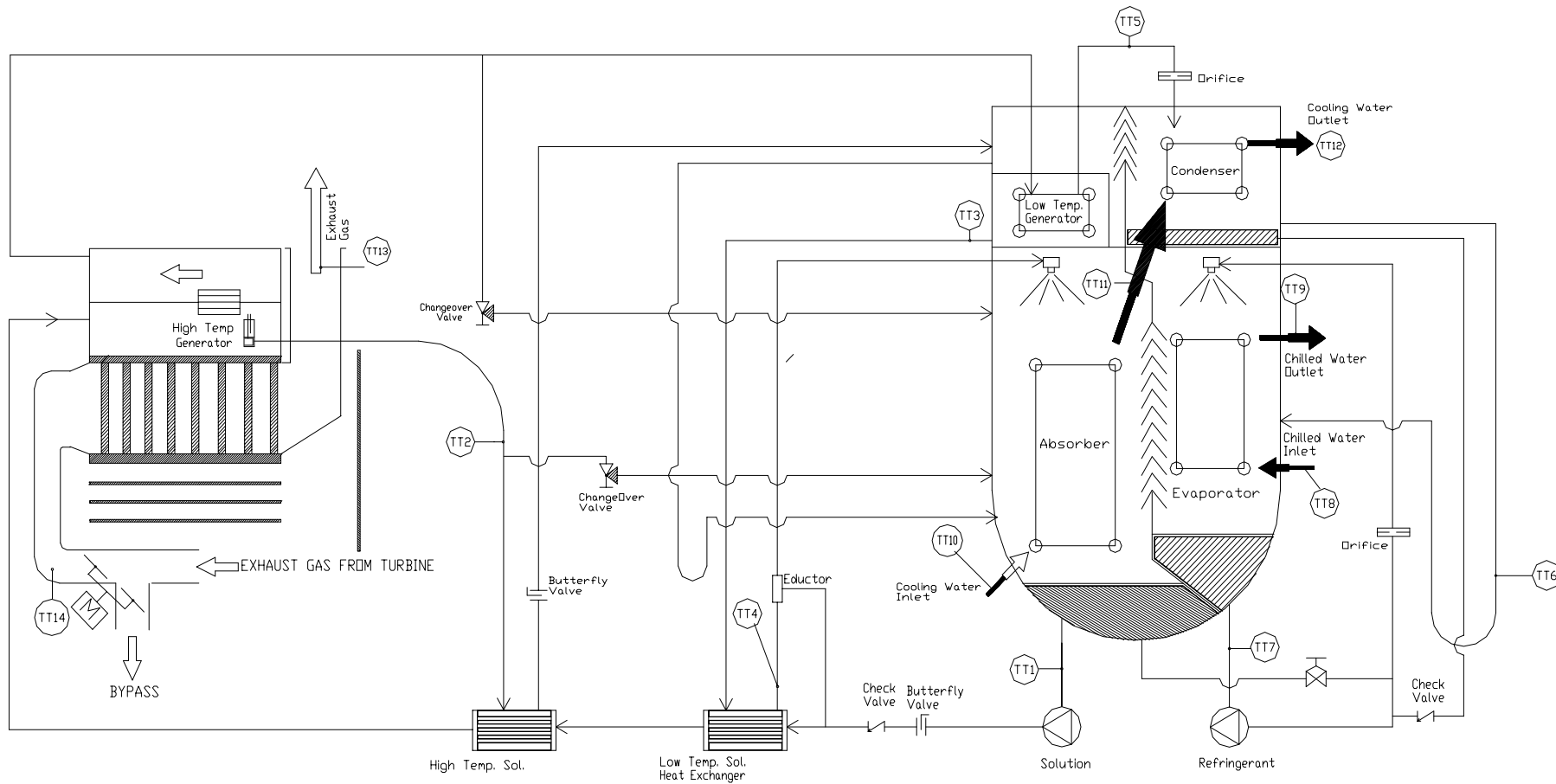


Fig. 3 Temperature Sensor Location

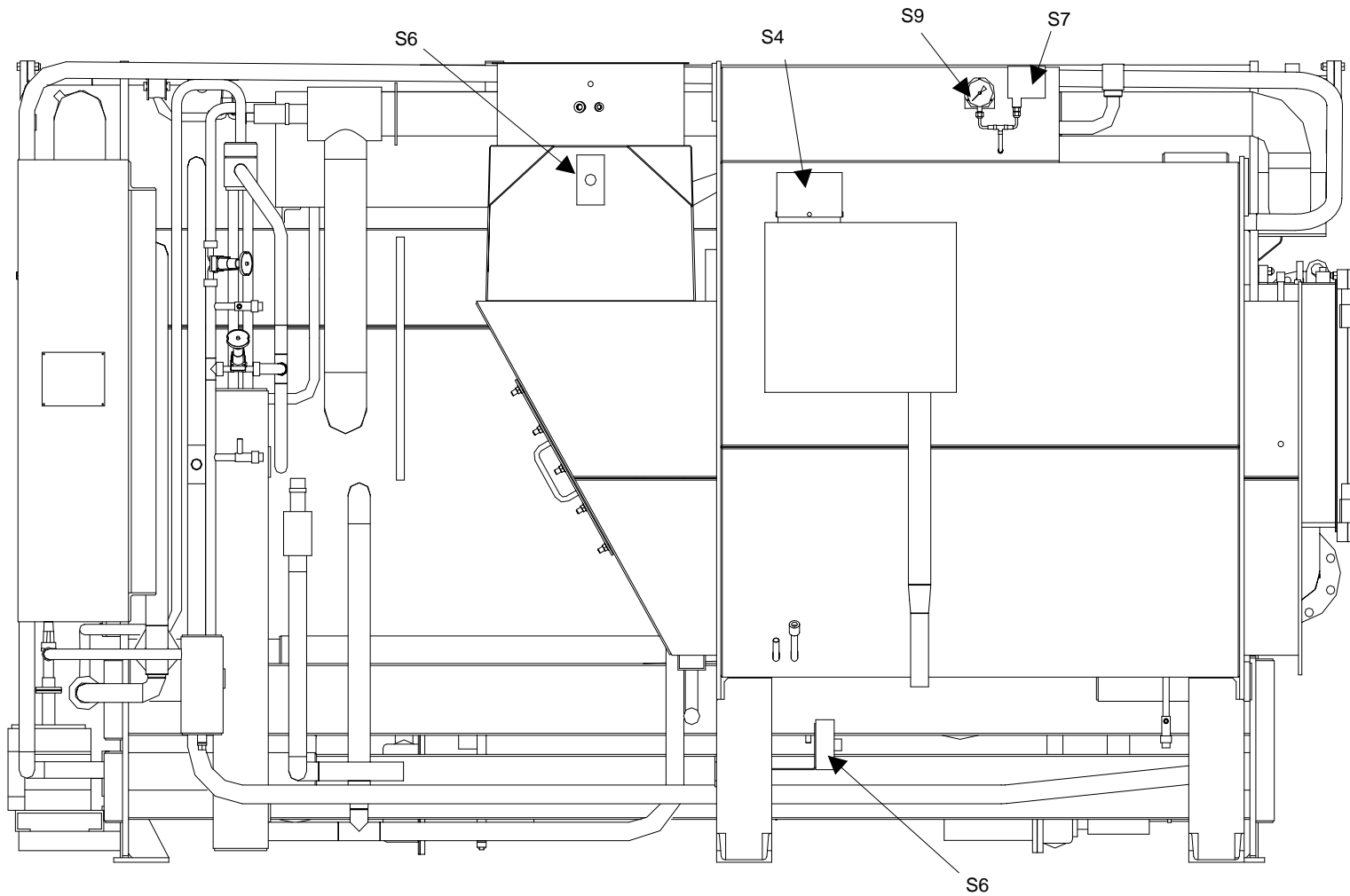


Fig. 4 Switches Location, Side View (16DNP018 Liquid tube type chiller)

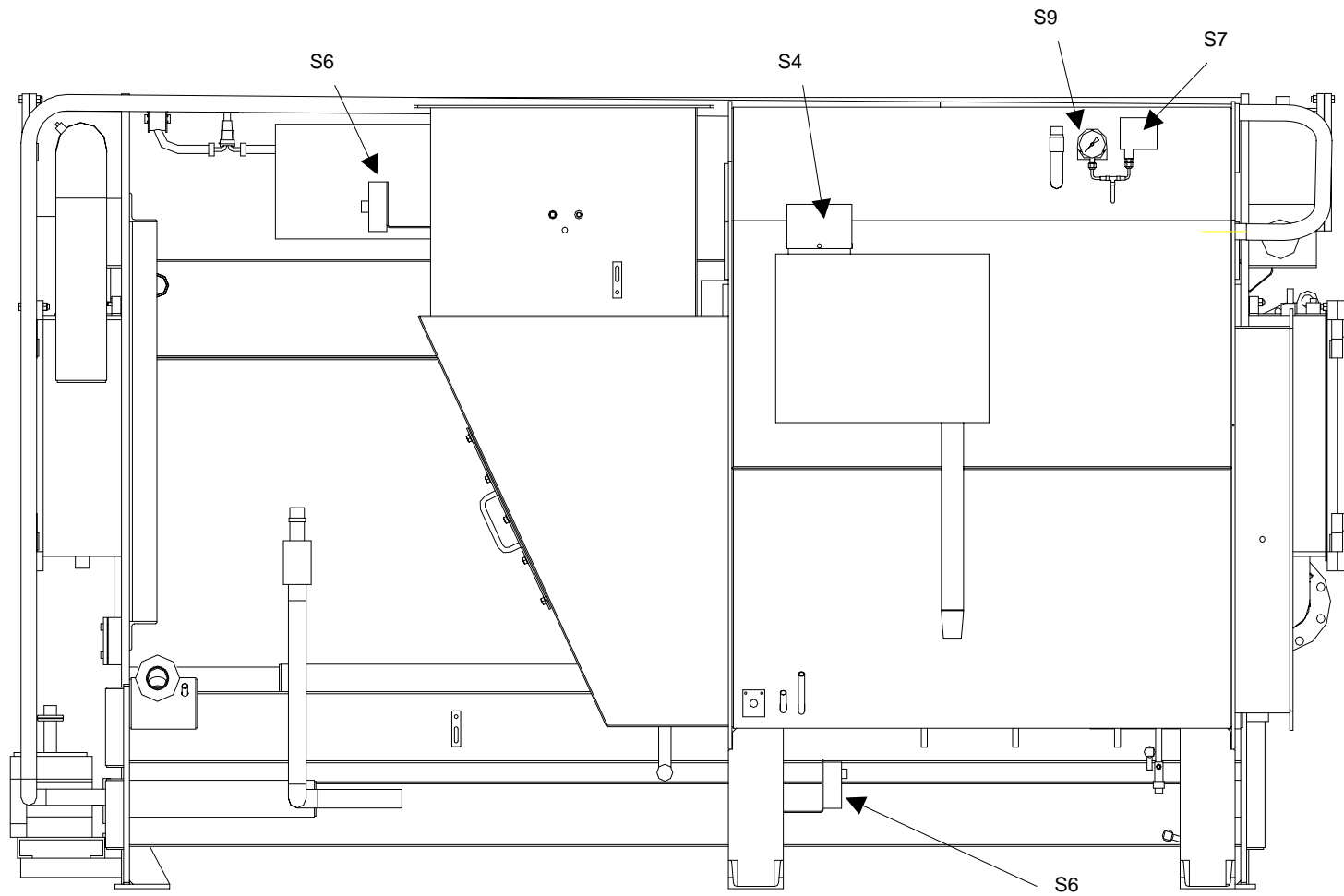


Fig. 4-1 Switches Location, Side View (16DNP012 Smoke tube type chiller)

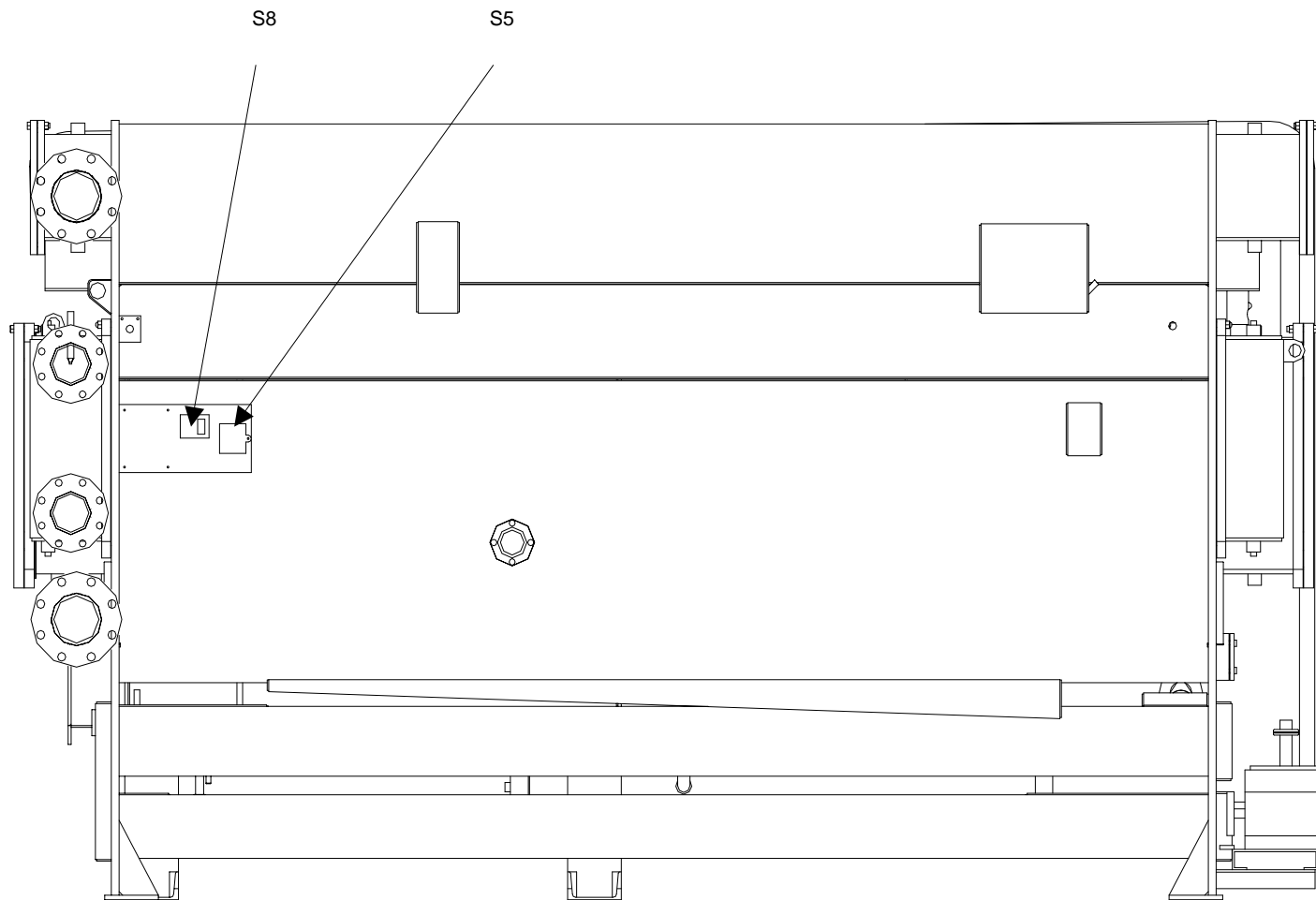


Fig. 5 Switches Location, Side View

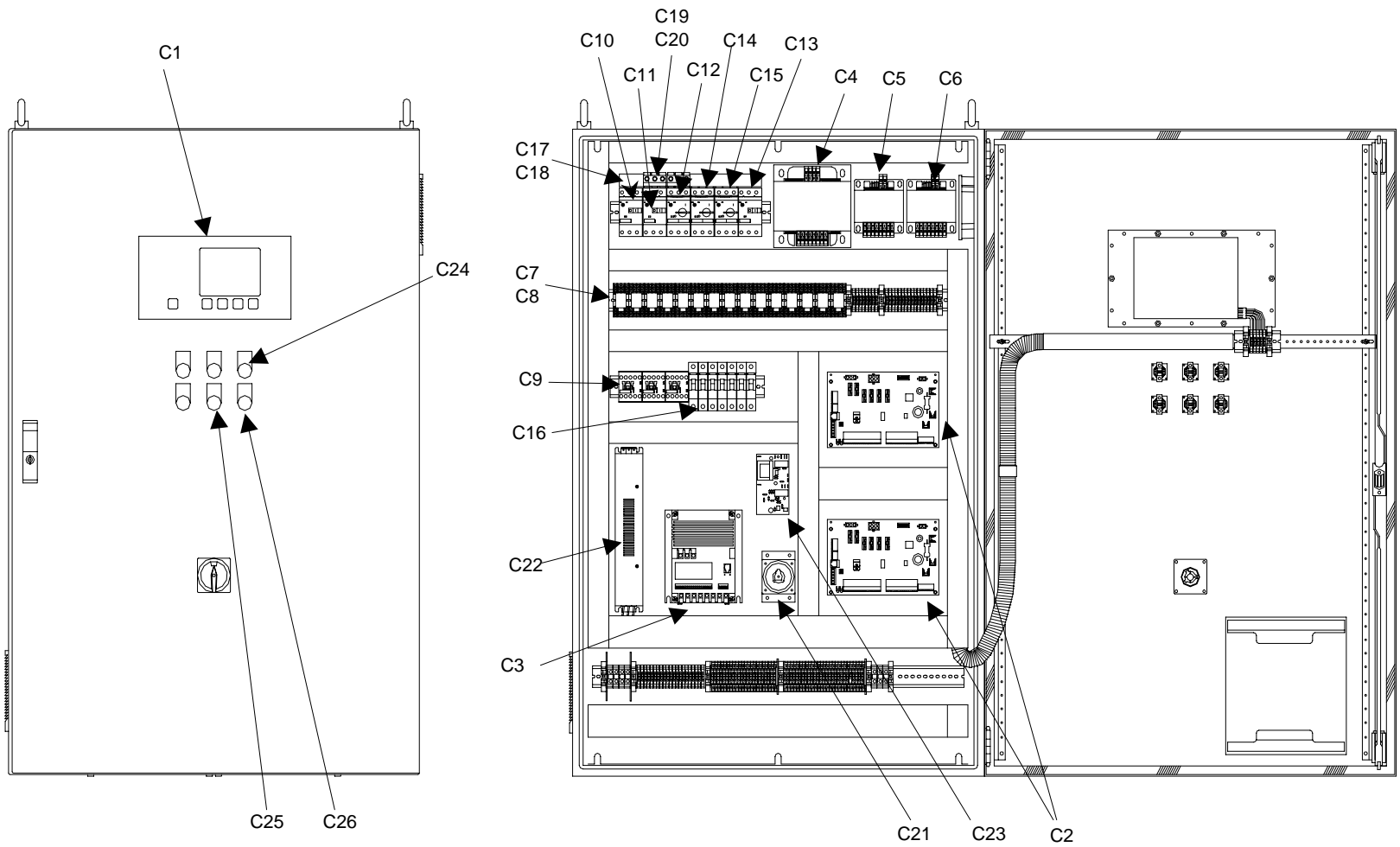


Fig. 6 Control Panel, Front View

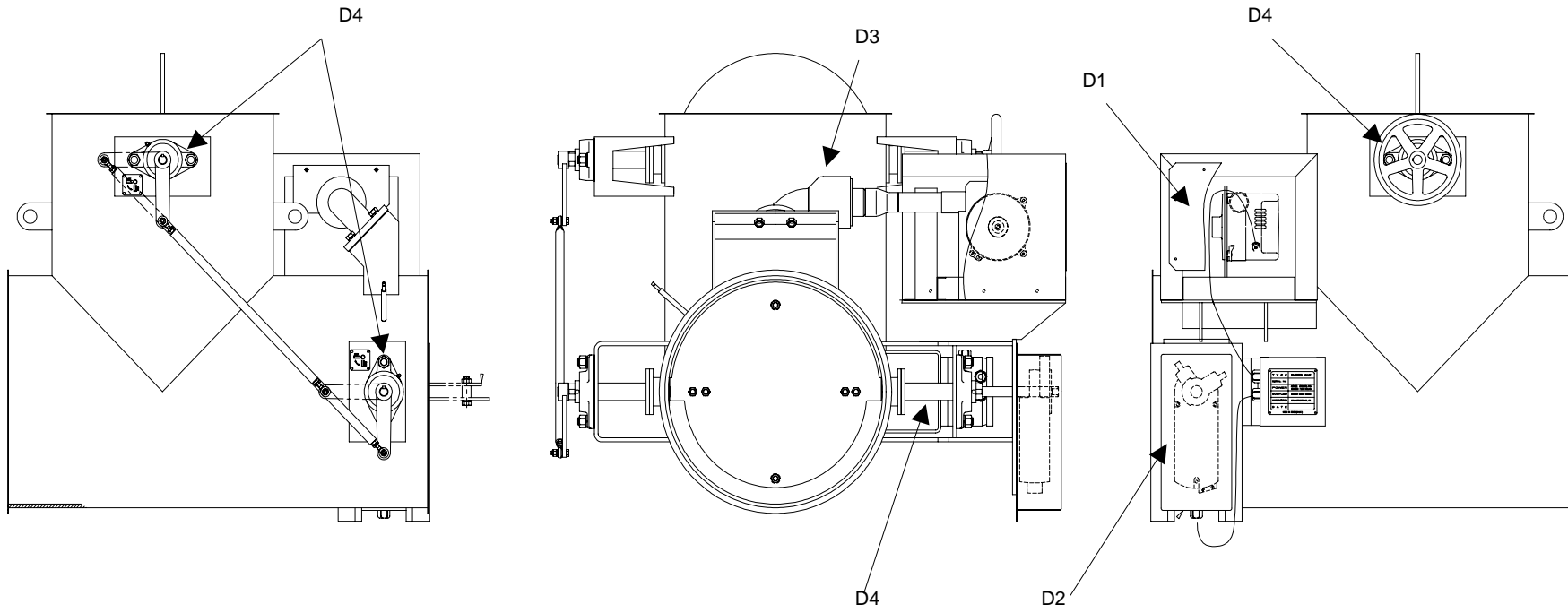


Fig. 7 Diverter Valve, Rear, Left and Front Views