



## REQUEST FOR TENDER

### Oceanside Place Energy Upgrades & Chiller Replacement Project

#### **Addendum No. 1**

**Issued:** February 4, 2019

**13 pages**

**Closing Date & Time:** not later than 3:00 PM (15:00 hrs) PST on February 19, 2019

This addendum shall be read in conjunction with and considered as an integral part of the Request for Tender. Revisions supersede the information contained in the original Tender or previously issued Addendum. No consideration will be allowed for any extras due to any Proponent not being familiar with the contents of this Addendum. All other terms and conditions remain the same.

#### **1. Updated Specifications**

Addition of a solenoid valve to be installed on the snow melt pit condenser to ensure all the ammonia condensed in the snow melt pit condenser remains there when the system is pumped down.

#### **2. Non-Mandatory Site Visit Attendee List**

Attendee list from the non-mandatory site visit held on January 29, 2019 @ 10:00 am.

#### **Attachments:**

- Updated Specifications from Accent Refrigeration dated February 1<sup>st</sup>, 2019. (11 pages)
- Site Visit Attendee List (1 page)

End of Addendum No. 1

<b>Project</b>	Oceanside Place
<b>Description</b>	Chiller Replacement Design Update
<b>Date</b>	Jan 31 2019

**Document Purpose**

To update the design of the chiller replacement at Oceanside Place to allow for proper brine filtration and snow melt pit liquid ammonia return.

Please see revision one on drawings S and M1 of the attached drawing package. These drawings detail the valves and piping required to complete this work.

The Big Bubba filtration system is to be installing in parallel with the chiller. To ensure proper flow through the filtration system a 5 psi pressure drop should be read across the inlet and outlet gauges. Per the attached specification sheets, this will allow for 60 GPM to flow through the filtration system. At startup, this can be accomplished by operating all three brine pumps at 60 Hz and closing the filter inlet valve until there is a 5 psi drop across the filter. If this is not done, a large amount of brine will bypass the chiller decreasing the effectiveness of the chiller.

To allow for low condensing the float draining the snow melt pit condenser shall be replaced by a float with a larger orifice. Furthermore, as part of the system pump down, a solenoid valve shall be placed below the float to ensure ammonia cannot migrate from the snow melt pit condenser back to chiller. For more information on these valves please see revision one of the drawings S and M1.

For clarification on the items above please contact Ian Welle at Accent Refrigeration.

Accent Refrigeration  
Ian Welle  
P.Eng  
250-478-8885



## BBH150 Big Bubba® Non-Metallic Filter Housings for High Flow

With optional activated carbon cartridge to remove Chlorine, bad tastes, foul odors and sediment.

### Rugged Construction

Filter housings are made of rugged, glass-reinforced polypropylene so they will not chip, rust or dent. And because all wetted surfaces are non-metallic, they are ideal when chemical compatibility is an issue and for sea water applications.

### Low Cost

Filters are an economical replacement for stainless steel filtration equipment because of their non-metallic construction and today's high cost of stainless steel!

### Applications

Big Bubba® Cartridge Filters are ideal for a wide range of applications, including:

- Whole house filtration
- Commercial filtration
- Industrial filtration
- Pre-filtration for reverse osmosis equipment
- Community water systems
- Sea water applications due to their non-corrosive construction
- Replacement for bag filters more filter area
- Replacement for multiple cartridge filters for greater convenience
- Water for livestock and poultry

### Proprietary Cartridges

The replacement cartridge for the Watts whole house filter is totally proprietary, so you may enjoy the replacement cartridge business over the life of the equipment

### Conserves Water!

Watts whole house filters with our proprietary pleated activated carbon cartridge conserves water because back-washing is not required, making them 100% efficient.



Model: BBH-150

### E-Z Change-Out

Cartridge replacement is easy as 1-2-3:

1. Remove swing bolts.
2. Remove lid.
3. Rotate cartridge 1/4 turn and pull-up.



### Parallel installation

Parallel installations are recommended to achieve high flow rates, by installing filters on a common manifold, feeding all filters installed in a row.

### Series installation

Series installations are recommended for applications such as surface water filtration, where cartridges having different micron ratings are used.

## Big Bubba® Cartridge Housing (p/n: for no gauge port use part # BBH-150-NP)

SPECIFICATIONS	DATA
Body (all wetted surfaces)	Glass reinforced PP
Cartridge end caps	Glass reinforced PP
Swing bolts	304 stainless steel
O-rings (cartridges)	EPDM (Viton optional)
O-ring (lid)	EPDM (Viton optional)
Pipe fittings	2" slip
Overall height	40"
Width (vessel OD)	12"

### Low Pressure Drop

Big Bubba® Cartridge Filters housings are designed to minimize pressure drop, by using 2" pipe fittings and large diameter center tubes. (See chart at right for pressure drop data using pleated cartridges.)

## Big Bubba® Cartridge Filter Specifications

	PLEATED	DEPTH	ACTIVATED CARBON
Media	PP	PP	Activated carbon
End caps	PP + FG	PP + FG	PP
Center tubes	PP	PP	PP
Maximum flow rate (GPM)	150	100	15
Maximum temperature	125°F (52°C)	125°F (52°C)	125°F (52°C)
Maximum ΔP (psi)	30	40	30
Chemical resistance	Excellent	Excellent	Not a factor (for water)
Length (media)	26-1/4"	26-1/4"	26-1/4"
O-rings (dual)	EPDM	EPDM	EPDM
Shipping weight (lbs.)	5	5	7
Carton dimensions	7" x 7" x 31"	7" x 7" x 31"	7" x 7" x 31"
Micron ratings	1A, 1, 5, 20, 50, 150	1, 5, 20, 50	5

Note: Flow rates are based on each specific application, micron rating, solids content and a number of other factors. End user should consider these factors when selecting the filter housing (or number of filter housings) needed for their particular requirement.

### Pleated Cartridges

Ideal for more critical applications, offering greater efficiency, more surface area for greater throughput and reduced cost.

MODEL NO.	MEDIA TYPE	MICRON RATING	PER CASE
BBC-150-P1A	PP	1 Absolute	1
BBC-150-P1	PP	1	1
BBC-150-P5	PP	5	1
BBC-150-P20	PE	20	1
BBC-150-P50	PE	50	1
BBC-150-PM150	Mesh	150	1

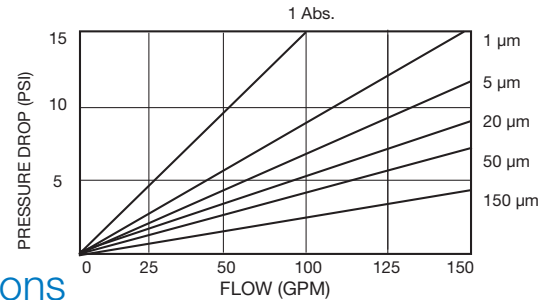
Note: 5, 20, 50 and 150 micron cartridges are cleanable and reusable to reduce costs.

## Big Bubba® Cartridges

SPECIFICATIONS	DATA
Maximum flow rate	150 GPM* (36 M3/hr.)
Maximum flow (carbon)	15 GPM
Maximum flow (1 Absolute)	50 GPM
Maximum temperature	125°F (52°C) @ 80 psi
Maximum working pressure	125 psi (8.75 bar)
Burst test	300 psi
Cycle test	100,000

\* Highly dependent on micron rating, solids content and other factors. Please see pressure drop chart below.

Note: housing number BBH-150 has a wetted brass gauge port for the inlet pressure gauge.



### Depth Cartridges

Melt blown Polypropylene cartridges are recommended when depth filtration is necessary for gelatinous substances and when chemical resistance may be a requirement.

MODEL NO.	MEDIA TYPE	MICRON RATING	PER CASE
BBC-150-D1	PP	1	1
BBC-150-D5	PP	5	1
BBC-150-D20	PP	20	1
BBC-150-D50	PP	50	1

### Activated Carbon

Ideal for whole house filtration to reduce chlorine, taste, odors and sediment.

MODEL NO.	MAX. FLOW	CAPACITY	CHLORINE REDUCTION
BBC-150-ACP	15 GPM	140,000 Gals.	90%

Note: We build filtration systems, or they may be installed on site.



A Watts Water Technologies Company

USA: Tel. (800) 659-8400 • www.watts.com

Canada: Tel. (888) 208-8927 • www.watts.ca

# LIQUID DRAINERS

## WLD1800/1800R Series

### Guided Float Type Liquid Drain Trap

Model	<b>WLD1800, WLD1800R</b>
Sizes	<b>1/2", 3/4"</b>
Connections	<b>NPT</b>
Body Material	<b>Stainless Steel</b>
PMO Max. Operating Pressure	<b>400 PSIG</b>
TMO Max. Operating Temperature	<b>500°F</b>
PMA Max. Allowable Pressure	<b>400 PSIG @ 500°F</b>
TMA Max. Allowable Temperature	<b>500°F @ 400 PSIG</b>



**WLD1800**  
(Non-Repairable)



**WLD1800R**  
(Repairable)

#### TYPICAL APPLICATIONS

The **WLD1800/1800R Series** are used on industrial air and gas applications for drainage of liquid from systems.

#### HOW IT WORKS

This liquid drainer has a float-operated valve that gives the trap a modulating flow characteristic. The amount of liquid flowing into the drainer is sensed by the float which positions the main valve to discharge the liquid at the same rate as it is received.

#### FEATURES

- **Stainless steel body**
- **All stainless steel internals for longer service life**
- **Guided float ensures proper valve seating on every cycle**
- **Repairable unit available (WLD1800R)**

#### SAMPLE SPECIFICATION

The liquid drain trap shall have a guided-float operation with a tamper proof seal welded stainless steel body and all stainless steel internals. The unit shall be available with an in-line repairable version. All units to be equipped with FNPT threaded end connections.

#### INSTALLATION

The installation should include isolation valves to facilitate maintenance and an in-line strainer. The trap must be level and upright for the float mechanism to operate. Trap must be sized and properly located in the system.

#### MAINTENANCE

Close isolation valves prior to any maintenance. The WLD1800 is non-repairable unit. With the WLD1800R all working components can be replaced. Repair kits include float, lever & seat assembly, and gaskets. For full maintenance details see Installation and Maintenance Manual.

#### MATERIALS

Body	Stainless Steel, AISI 304
Inlet & Outlet Fittings	Stainless Steel, AISI 304
Float Assembly	Stainless Steel, AISI 304
Valve & Lever Assembly	Stainless Steel, AISI 303
Seat	Hardened Stainless Steel
*Gasket (Repairable only)	Grafoil
Washer, Seat	302 Stainless Steel
*Bolt, Hex, HD	Stainless Steel, AISI 316
*Nut, Jam	Stainless Steel, 18-8

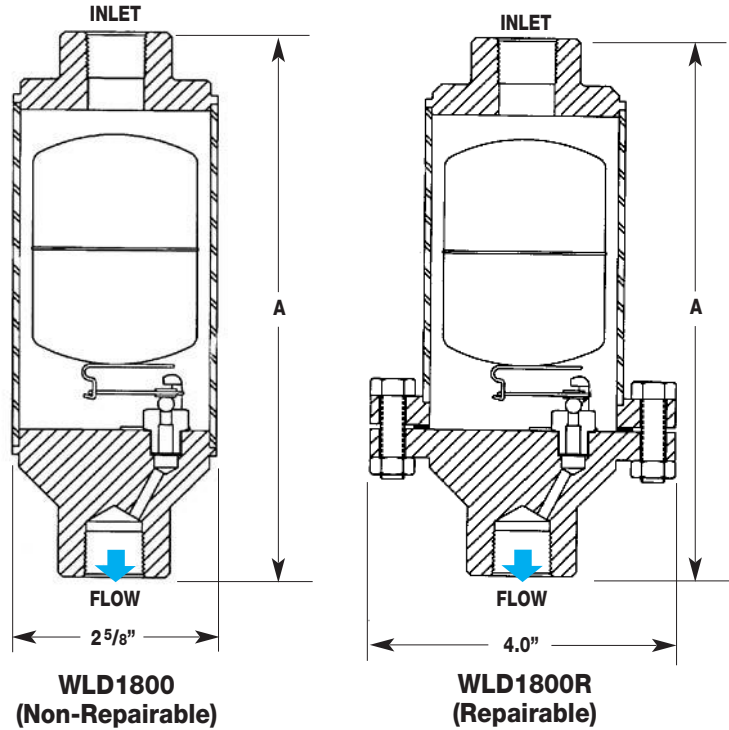
\* WLD1800R repairable models only.

# LIQUID DRAINERS

## WLD1800/1800R Series

Guided Float Type Liquid Drain Trap

DIMENSIONS — inches / pounds				
Model	Orifice Size	Size (Inlet x Outlet)	Height A	Weight (lbs)
WLD1811	.078"	3/4" x 1/2"	7.5	4
WLD1811R			7.9	5
WLD1812		3/4" x 3/4"	7.5	4
WLD1812R			7.9	5
WLD1813		1/2" x 1/2"	7.5	4
WLD1813R			7.9	5
WLD1821	.101"	3/4" x 1/2"	7.5	4
WLD1821R			7.9	5
WLD1822		3/4" x 3/4"	7.5	4
WLD1822R			7.9	5
WLD1823		1/2" x 1/2"	7.5	4
WLD1823R			7.9	5
WLD1831	.125"	3/4" x 1/2"	7.5	4
WLD1831R			7.9	5
WLD1832		3/4" x 3/4"	7.5	4
WLD1832R			7.9	5
WLD1833		1/2" x 1/2"	7.5	4
WLD1833R			7.9	5



LIQUID DRAINERS

CAPACITIES — Cold Water (lbs/hr)																			
Series	PMO* (PSIG)	Orifice Size	Differential Pressure (PSI)																
			1	2	5	10	15	20	30	50	100	150	175	200	250	275	300	350	400
WLD1810	400	.078"	60	80	120	130	180	260	315	400	570	700	750	800	900	940	1050	1050	1120
WLD1820	255	.101"	90	120	175	195	275	385	470	610	860	1050	1125	1200	1350	1425			
WLD1830	175	.125"	160	230	325	365	510	730	790	1150	1630	2000	2150						

\* PMO based on a liquid with a specific gravity of 1.0. Consult factory for the PMO of a liquid with specific gravity less than 1.0.

CAPACITY CORRECTION FACTORS																		
Specific Gravity	1	.98	.96	.94	.92	.90	.88	.86	.84	.82	.80	.75	.70	.65	.60	.55	.50	
Correction Factor	1	.99	.98	.97	.959	.949	.938	.927	.917	.906	.894	.886	.873	.860	.847	.834	.821	.807

Note: To obtain capacity with a liquid other than water, multiply water capacity by correction factor.

### HOW TO SIZE/ORDER

Determine differential pressure and capacity (lbs/hr) required. Locate differential pressure on capacity chart; move down column to capacity required. Make sure to select the correct model based on the required inlet pressure. Example:

Application: 1,000 lbs/hr at 250 PSIG working pressure and 200 PSI differential pressure

Size/Model: 3/4" x 3/4" **WLD1822** @ 1,200 lbs/hr (non-repairable) or 3/4" x 3/4" **WLD1822R** @ 1,200 lbs/hr (repairable)



Data sheet

# Solenoid valves

## EVRA and EVRAT



EVRA is a direct or servo operated solenoid valve for liquid, suction and hot gas lines with ammonia or fluorinated refrigerants.

EVRA valves are supplied complete or as separate components, i.e. valve body, coil and flanges can be ordered separately.

EVRAT is an assisted lift, servo operated solenoid valve for liquid, suction and hot gas lines with ammonia and fluorinated refrigerants.

EVRAT is specially designed to open - and stay open - at a pressure drop of 0 bar. The EVRAT solenoid valve is thus suitable for use in all plant where the required opening differential pressure is 0 bar.

EVRAT is available as components, i.e. valve body, flanges and coil must be ordered separately.

EVRAT 10, 15 and 20 all have spindle for manual operation.

### Technical data

- Refrigerants:  
Applicable to HCFC, HFC and R717 (Ammonia).
- Temperature of medium  
-40°C – +105°C.  
Max. 130°C during defrosting.
- Ambient temperature and enclosure for coil See "Coils for solenoid valves", DKRCC.PD.BS0.F.
- Classification: DNV, CRN, BV, EAC etc.  
To get an updated list of certification on the products please contact your local Danfoss Sales Company.

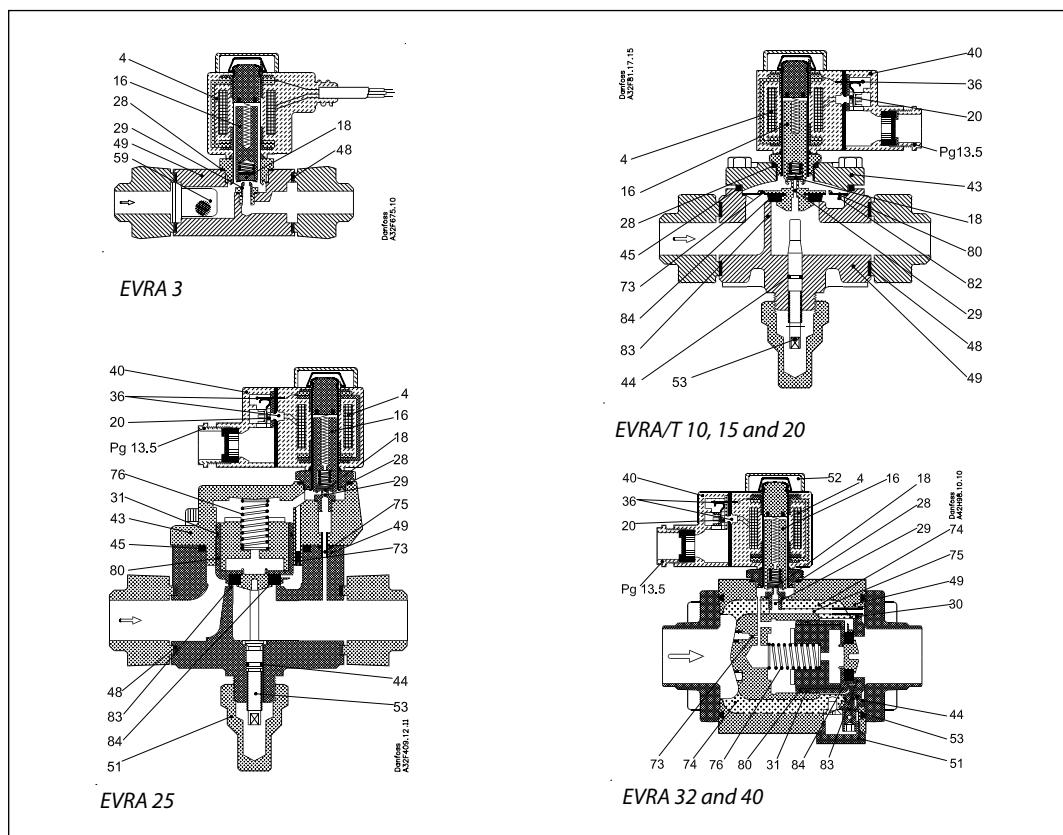
Type	Opening differential pressure with standard coil ( $\Delta p$ bar)				Temperature of medium °C	Max. working pressure PB bar	$k_v$ -value <sup>1)</sup> m <sup>3</sup> /h
	Max. (= MOPD) liquid <sup>2)</sup>						
	Min.	10 W a.c.	12 W a.c.	20 W d.c.			
EVRA 3	0.00	21	25	14	-40 → 105	42	0.23
EVRA 10	0.05	21	25	18	-40 → 105	42	1.5
EVRAT 10	0.00	14	21	16	-40 → 105	42	1.5
EVRA 15	0.05	21	25	18	-40 → 105	42	2.7
EVRAT 15	0.00	14	21	16	-40 → 105	42	2.7
EVRA 20 with a.c. coil	0.05	21	25	13	-40 → 105	42	4.5
EVRA 20 with d.c. coil	0.05	19	21	16	-40 → 105	42	4.5
EVRAT 20	0.00	14	21	13	-40 → 105	42	4.5
EVRA 25	0.20	21	25	14	-40 → 105	42	10.0
EVRA 32	0.20	21	25	14	-40 → 105	42	16.0
EVRA 40	0.20	21	25	14	-40 → 105	42	25.0

<sup>1)</sup> The  $k_v$  value is the water flow in m<sup>3</sup>/h at a pressure drop across valve of 1 bar,  $\rho = 1000 \text{ kg/m}^3$ .

<sup>2)</sup> MOPD for media in gas form is approx. 1 bar greater.

**Design  
Function**

- 4. Coil
- 16. Armature
- 18. Valve plate / Pilot valve plate
- 20. Earth terminal
- 24. Connection for flexible steel hose
- 28. Gasket
- 29. Pilot orifice
- 30. O-ring
- 31. Piston ring
- 36. DIN plug
- 40. Terminal box
- 43. Valve cover
- 44. O-ring
- 45. Valve cover gasket
- 48. Flange gasket
- 49. Valve body
- 51. Cover / Threaded plug
- 53. Manual operation spindle
- 59. Strainer
- 73. Equalization hole
- 74. Main channel
- 75. Pilot channel
- 76. Compression spring
- 80. Diaphragm/Servo piston
- 82. Support washer
- 83. Valve seat
- 84. Main valve plate



EVRA solenoid valves are designed on two different principles:

1. Direct operation
2. Servo operation

*1. Direct operation*

EVRA 3 is direct operated. The valve opens direct for full flow when the armature (16) moves up into the magnetic field of the coil. This means that the valve operates with a min. differential pressure of 0 bar.

The teflon valve plate (18) is fitted direct on the armature (16).

Inlet pressure acts from above on the armature and the valve plate. Thus, inlet pressure, spring force and the weight of the armature act to close the valve when the coil is currentless.

*2. Servo operation*

EVRA/T 10 → 20 are servo operated with a “floating” diaphragm (80). The pilot orifice (29) of stainless steel is placed in the centre of the diaphragm. The teflon pilot valve plate (18) is fitted direct to the armature (16).

When the coil is currentless, the main orifice and pilot orifice are closed. The pilot orifice and main orifice are held closed by the weight of the armature, the armature spring force and the differential pressure between inlet and outlet sides.

When current is applied to the coil the armature is drawn up into the magnetic field and opens the pilot orifice. This relieves the pressure above the diaphragm, i.e. the space above the diaphragm becomes connected to the outlet side of the valve.

The differential pressure between inlet and outlet sides then presses the diaphragm away from the main orifice and opens it for full flow. Therefore a certain minimum differential pressure is necessary to open the EVRA valve and keep it open. For differential pressure 0 bar use EVRAT valves.

For EVRA 10 → 20 valves this differential pressure is 0.05 bar.

When current is switched off, the pilot orifice closes. Via the equalization holes (73) in the diaphragm, the pressure above the diaphragm then rises to the same value as the inlet pressure and the diaphragm closes the main orifice.

EVRA 25, 32 and 40 are servo operated piston valves. The valves are closed with currentless coil.

The servo piston (80) with main valve plate (84) closes against the valve seat (83) by means of the differential pressure between inlet and outlet side of the valve, the force of the compression spring (76) and possibly the piston weight.

When current to the coil is switched on, the pilot orifice (29) opens. This relieves the pressure on the piston spring side of the valve. The differential pressure will then open the valve.

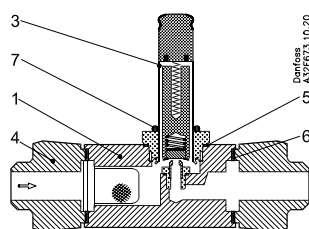
The minimum differential pressure needed for full opening of the valves is 0.2 bar.



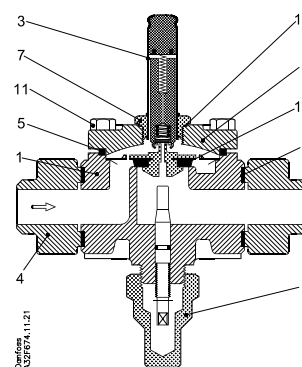
## Data sheet | Solenoid valves type EVRA and EVRAT

### Material specification

EVRA 3

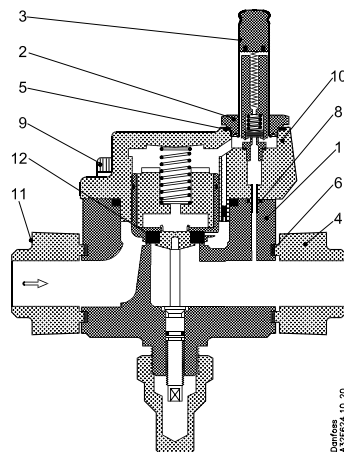


EVRA/T  
10/15/20

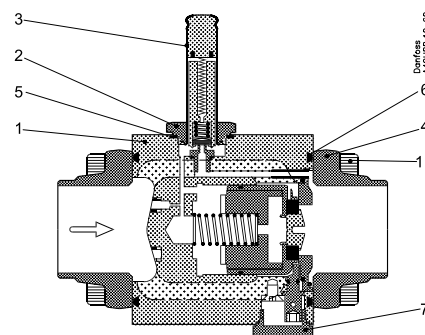


No.	Description	Solenoid valves	Material	Analysis	Mat.no.	W.no.	ISO	EN
1	Valve body	EVRA 3	Free-cutting steel	11MnPb30				10277-3
1	Valve body	EVRA/T 10/15/20	Cast-iron	GJS-400-18-LT				1563
3	Armature tube	EVRA 3/10/15/20	Stainless steel	X2CrNi19-11				10088
4	Flange	EVRA/T 3/10/15/20	Steel	S235JRG2				10025
5	Gasket	EVRA 3	Aluminium	Al 99.5				10210
5	Gasket	EVRA/T 10/15/20	Rubber	Cr				
6	Gasket	EVRA/T 3/10/15/20	asbestos-free					
7	Armature tube nut	EVRA/T 3/10/15/20	Stainless steel	X8CrNiS18-9				10088
8	Cover	EVRA/T 10/15/20	Cast-iron	GJS-400-18-LT				1563
9	Cover/ thread plug	EVRA/T 10/15/20	Free-cutting steel	11SMnPb30				10277-3
10	Gasket	EVRA/T 10/15/20	Aluminium	Al 99.5				10210
11	Bolts	EVRA/T 10/15/20	Stainless steel	A2-70			3506	
12	Valve seat	EVRA/T 10/15/20	Teflon (PTFE)					

EVRA 25

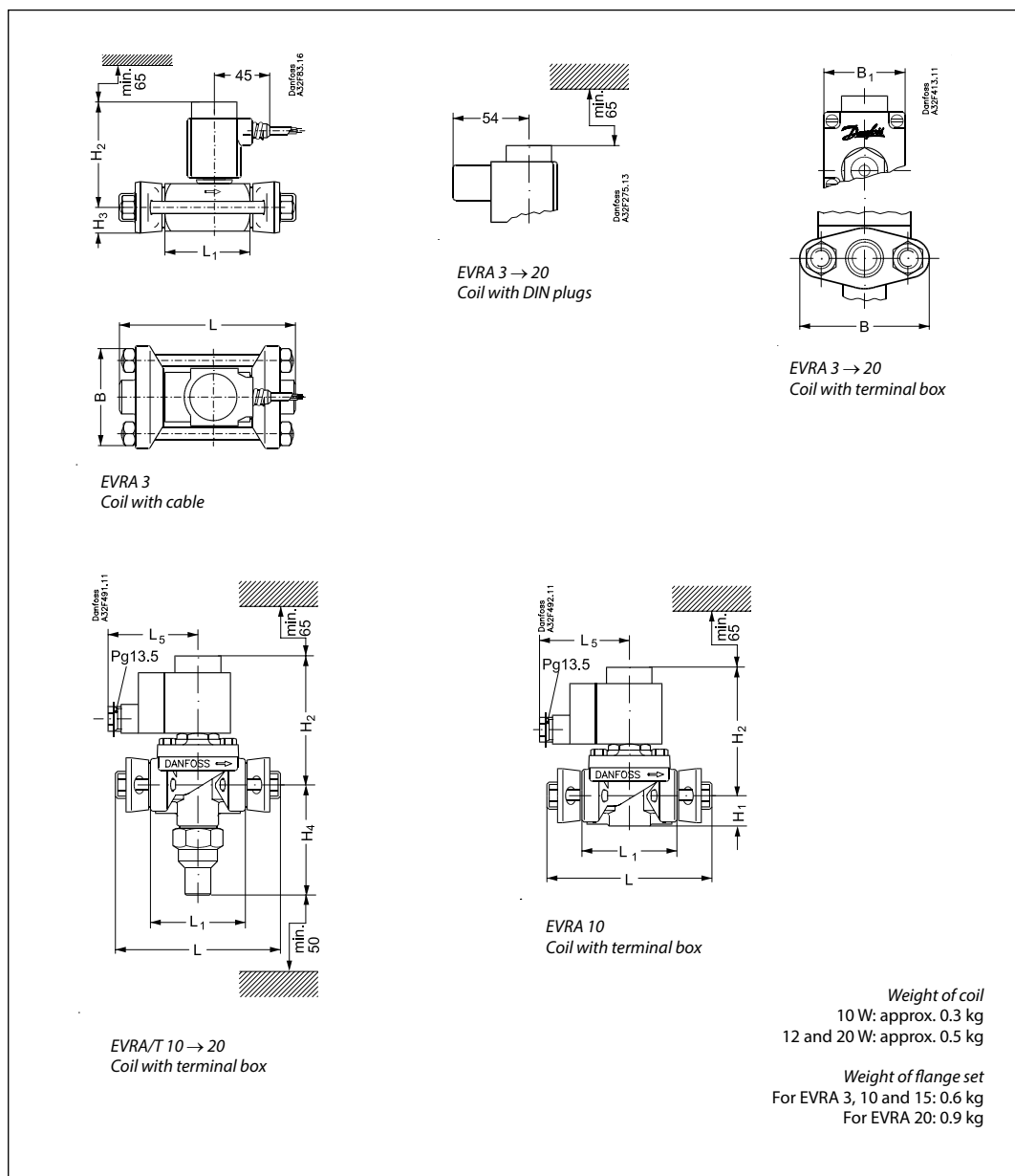


EVRA 32/40



No.	Description	Solenoid valves	Material	Analysis	Mat.no.	W.no.	ISO	EN
1	Valve body	EVRA 25/32/40	Cast-iron	GJS-400-18-LT				1563
2	Armature tube nut	EVRA 25/32/40	Stainless steel	X8CrNiS 18-9				10088
3	Armature tube	EVRA 25/32/40	Stainless steel	X2CrNi19-11				10088
4	Flange	EVRA 25	Steel	S235JRG2				10025
4	Flange	EVRA 32/40	Steel	P285QH				10222-4
5	Gasket	EVRA 25/32/40	Aluminium	Al 99.5				10210
6	Gasket	EVRA 25	asbestos-free					
6	Gasket	EVRA 32/40	Rubber	Cr				
7	Cover/thread plug	EVRA 25	Free-cutting steel	11SMnPb30				10277-3
7	Cover/thread plug	EVRA 32/40	Stainless steel	X5CrNi17-10				10088
8	Gasket	EVRA 25	Rubber	CR				
9	Bolts	EVRA 25	Stainless steel	A2-70			3506	
10	Cover	EVRA 25	Cast-iron	GJS-400-18-LT				1563
11	Bolts	EVRA 25/32/40	Stainless steel	A2-70			3506	
12	Valve seat	EVRA 25	Teflon (PTFE)					

Dimensions and weight



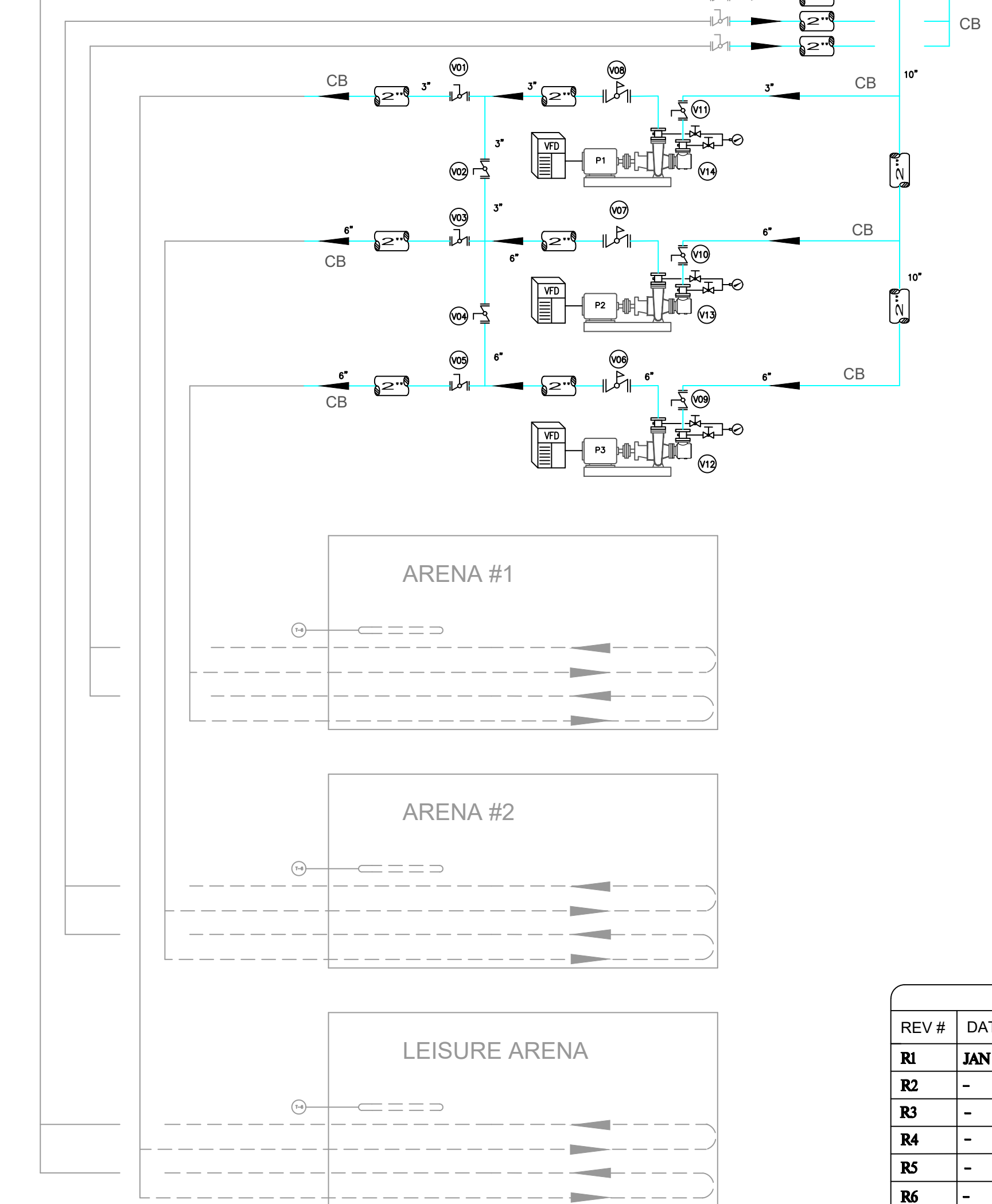
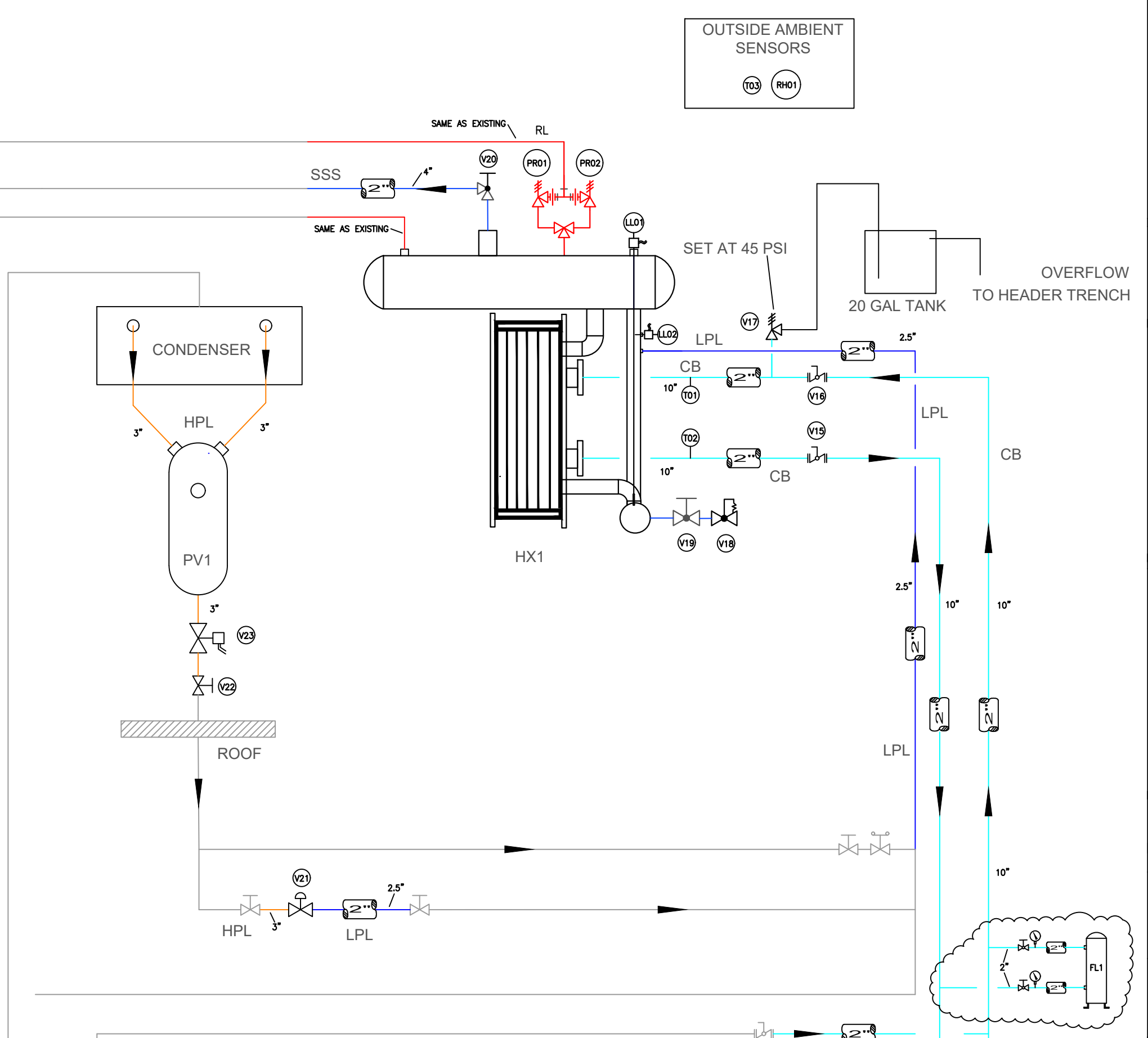
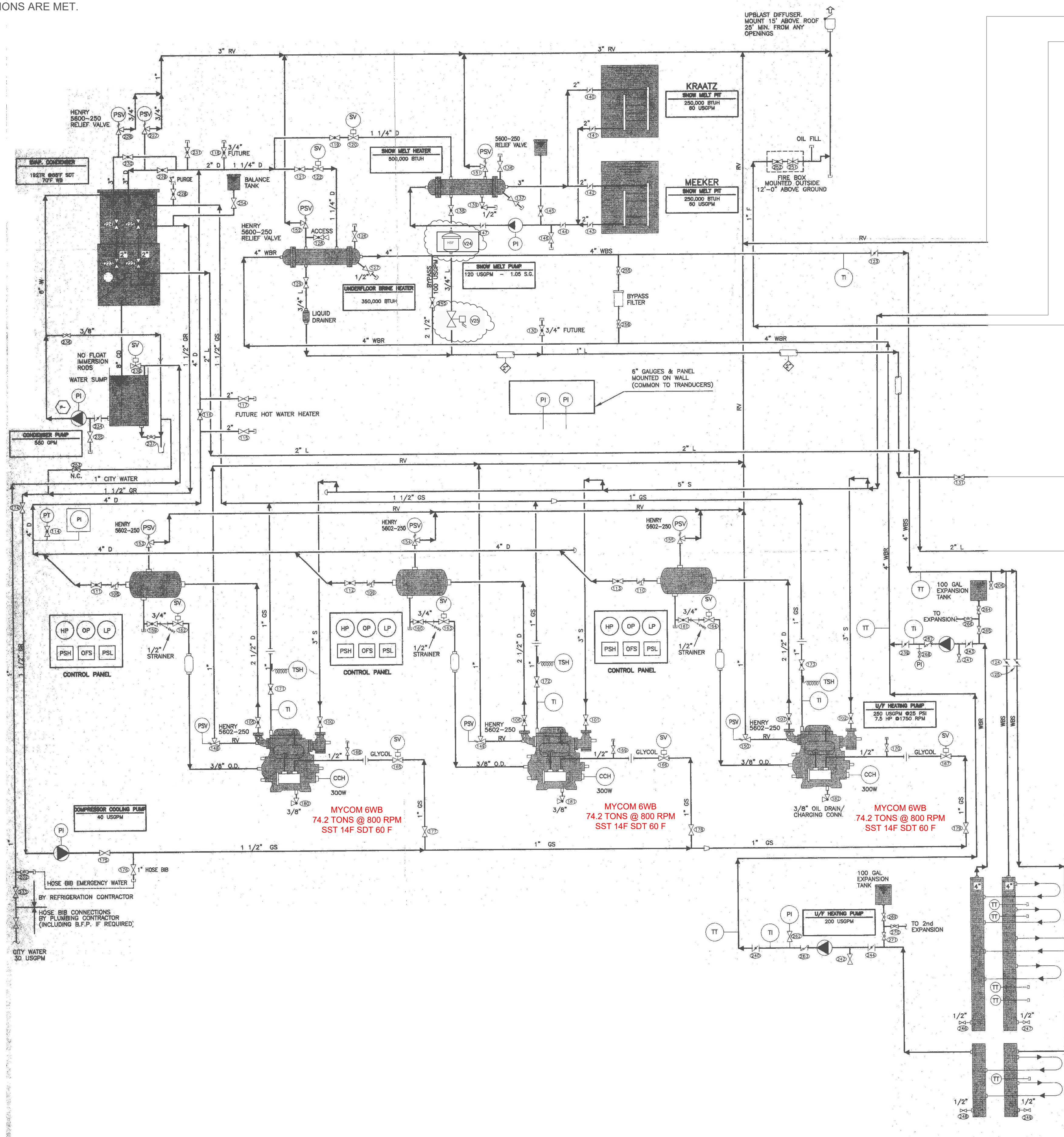
Type	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	L	L <sub>1</sub>	L <sub>3</sub> max.		B	B <sub>1</sub> max.	Weight <sup>1)</sup>
							10 W	12 W 20 W			
							mm	mm			
EVRA 3		84	19		124	65	75	85	80	68	1.2
EVRA/T 10	22	100		81	130	68			80	68	1.7
EVRA/T 15		100		81	130	68			80	68	1.8
EVRA/T 20		110		77	155	85			96	68	2.7

<sup>1)</sup> With coil, without flanges



**GENERAL NOTES:**

- ITEMS IN GRAY ARE EXISTING
- APPROXIMATE LOCATIONS OF PIPING SHOW SITE INSPECTION REQUIRED FOR APPROVAL.
- IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE ALL CODES AND REGULATIONS ARE MET.



**ACCENT**  
REFRIGERATION  
SYSTEMS

(250) 478 8885  
206 - 1097 LANGFORD PARKWAY,  
VICTORIA BC, CANADA V9B 0A5

**REGIONAL DISTRICT OF NANAIMO**

(250) 248-2252  
830 ISLAND HWY W, PARKSVILLE BC V9P 2X4

- DESIGN STANDARDS**
- CSA B52 CANADIAN REFRIGERATION CODE
  - ASME B31 PRESSURE PIPING CODE
  - ASHRAE CHAPTER 44 CURLING CLUB REFRIGERATION DESIGN
  - NEC CANADIAN ELECTRICAL CODE

**DRAWN BY** IW      **DATE** DEC 5 2018  
**APPROVED BY** AS      **DATE** DEC 6 2018

**PROJECT TITLE**

OCEANSIDE PLACE CHILLER UPGRADE

**SHEET TITLE**

DESIGN P&ID

REVISIONS		
REV #	DATE	DESCRIPTION
R1	JAN 31 2019	ADDED BRINE FILTER AND LIQUID DRAIN
R2	-	-
R3	-	-
R4	-	-
R5	-	-
R6	-	-
R7	-	-
R8	-	-
R9	-	-



"HX" HEAT EXCHANGER SCHEDULE													
ITEM #	MANUFACTURE	DESCRIPTION	CAPACITY [TONS]	HOT SIDE					COLD SDE				
				FLUID	INLET [F]	OUTLET [F]	PRESSURE [PSI]	PRESSURE DROP [PSI]	FLUID	INLET [F]	OUTLET [F]	PRESSURE [PSI]	PRESSURE DROP [PSI]
HX1	ALFA LAVAL	TB20BW-FD	190	CACL2	20.5	17.5	25	9.87	NH3	14	14	42.1	.374

PV - PRESSURE VESSEL					
ITEM #	DIMENSIONS	MOP [PSI]	INLET	OUTLET	DRAIN
PV1	36" x 18"	300	2 x 3"	3"	0.75"

PRV - PRESSURE RELIEF VALVE @ 250 PSI		
ITEM	MANUFACTURER	MINIMUM [LBS/HR]
PR01	HANSEN	H5600A
PR02	HANSEN	H5600A

"P" PUMP SCHEDULE									
ITEM #	MANUFACTURER	MODEL	FLUID	FLOW [GPM]	HEAD [PSI]	SPEED [RPM]	MOTOR HP	POWER	NOTES
P1	ARMSTRONG	4030 - 3x1.5x10	CACL2	150	47	1800	10	575 V / 3 PH / 60 HZ	INSTALL WITH FLOW-TREX VALVE AND SUCTION GUIDE
P2	ARMSTRONG	4030 - 5x4x10	CACL2	800	28	1800	20	575 V / 3 PH / 60 HZ	INSTALL WITH FLOW-TREX VALVE AND SUCTION GUIDE
P3	ARMSTRONG	4030 - 5x4x10	CACL2	800	28	1800	20	575 V / 3 PH / 60 HZ	INSTALL WITH FLOW-TREX VALVE AND SUCTION GUIDE

PIPING COMPONENTS			
ITEM	MANUFACTURER	VALVE	NOTES
V01		3"	BUTTERFLY VALVE
V02		3"	BUTTERFLY VALVE
V03		6"	BUTTERFLY VALVE
V04		6"	BUTTERFLY VALVE
V05		6"	BUTTERFLY VALVE
V06	ARMSTRONG	FTV-6FA	FLOW-TREX VALVE
V07	ARMSTRONG	FTV-6FA	FLOW-TREX VALVE
V08	ARMSTRONG	FTV-3FS	FLOW-TREX VALVE
V09		6"	BUTTERFLY VALVE
V10		6"	BUTTERFLY VALVE
V11		3"	BUTTERFLY VALVE
V12	ARMSTRONG	SG-65	SUCTION GUIDE
V13	ARMSTRONG	SG-65	SUCTION GUIDE
V14	ARMSTRONG	SG-33	SUCTION GUIDE
V15		10"	BUTTERFLY VALVE
V16		10"	BUTTERFLY VALVE
V17		1"	CARBON STEEL PRV
V18		0.75"	DEADMAN VALVE
V19	DANFOSS	0.75"	GLOBE VALVE
V20	DANFOSS	4"	GLOBE VALVE
V21	DANFOSS	0.75"	ICM-20-B WITH 4-20 mA CONTROLLER
V22	DANFOSS	3"	GLOBE VALVE
V23	DANFOSS	1.5"	ICS 40 SOLENOID VALVE WITH GREEN PILOT LIGHT
V24	WASTON	WLD1832R	
V25	DANFOSS	0.75"	EVRAT 20 SOLENOID VALVE WITH GREEN PILOT LIGHT AND 12 W AC COIL.

SENSORS			
ITEM	MANUFACTURER	SENSOR	NOTES
T1		BRINE IN	TEMP RANGE -50C TO 50C
T2		BRINE OUT	TEMP RANGE -50C TO 50C
LL01	HB PRODUCTS	HBLT-WIRE-2	LIQUID LEVEL CONTROLLER
LL02	HB PRODUCTS	HBSR-PNP/NO-2	LIQUID LEVEL SENSOR

FL - FILTERS					
ITEM #	MANUFACTURE	FILTER	INLET	OUTLET	DRAIN
FL1	BIG BUBBA BHH150	20 MICRO METERS	2"	2"	0.75"

PRIMARY REFRIGERATION PIPING SPECIFICATION										
PIPING - SHALL BEAR THE MILL TEST #										
NOTE: COPY OF THE MILL TEST CERTIFICATES TO BE INCLUDED IN MANUAL										
UP TO 2" IPS:										
> SCH. 80 A106 GR. B SEAMLESS										
> IPS: SCHE 80 A106 GR. B SEAMLESS WITH SOCKET WELD OR BUTT WELD CONNECTIONS.										
2 1/2" IPS & OVER:										
> SCH. 40 A53 GR. B ERW										
> A106 GR. B SEAMLESS										
> A333 GRADE 1 OR 6 TYPE E OR S (BELOW -20°F/-29°C).										
FITTINGS - SHALL BEAR THE MANUFACTURER'S IDENTIFICATION.										
UP TO 1 1/2" IPS:										
> FORGED STEEL SOCKET WELD ASTM A105 GR. 2. CLASS 3000.										
> THREADED CONNECTIONS WITH SAME SPECIFICATIONS, ONLY IF LOCATION APPROVED BY REFRIGERATION CONSULTANT.										
2" IPS & UP:										
> CARBON STEEL BUTT WELD ASTM A234B, OR A105 OR A420 (BELOW -20°F/-29°C).										
> COMPATIBLE WITH THE WALL THICKNESS OF THE PIPE										
TUBING - STAINLESS STEEL, 0.035" THK. WALL IN 1/4" O.D. & 3/8" O.D SIZES.										
FITTINGS: PARKER-HANNIFIN CB CARBON STEEL COMPRESSION TYPE.										
FLANGES: ANSI RAISED FACE, ASTM A105 GR. 1 OR A181 GR. 1 A105, A707 (BELOW -20°F/-29°C) RATING TO MATCH PIPE.										
UNIONS: FORGED STEEL ASTM 105 GR. 2 300# WOG, STEEL TO STEEL GROUND JOINT, SOCKET WELD CONNECTIONS.										

SECONDARY REFRIGERATION PIPING SPECIFICATION										
ALL PIPING, FITTINGS AND VALVES SHALL COMPLY WITH ALL MUNICIPAL STANDARDS AND SHALL BE SUBJECT TO APPROVAL BY THE CITY'S BUILDING DEPARTMENT.										
SECONDARY PIPING, AND VALVES CONTAIN CACL2 SO ALL COMPONENTS MUST BE CARBON STEEL, STAINLESS STEEL OR HDPE, OR PVC. BRASS OR COPPER CANNOT BE USED IN THE SECONDARY SYSTEM.										
OPERATING CONDITIONS: CLOSED LOOP @ 25 PSI										
SECONDARY FLUID: 21% CACL2										
EXPANSION TANK: BLADDER TYPE 45 PSI SET										
PIPING										
UP TO 2" IPS:										
> SS 316L SCH 40										
> A53 B SCH 40										
> HDPE - SR11 OR SCH 80 PVC										
2 1/2" IPS & OVER:										
> SCH. 40 A53 GR. B ERW										
> HDPE - SR11 OR SCH 80 PVC										
FITTINGS - SHALL BEAR THE MANUFACTURER'S IDENTIFICATION.										
UP TO 1 1/2" IPS:										
> MALLEABLE IRON 150 # RATED										
> HDPE FUSION OR GLUED SCH 80 PVC										
> LIGHTWALL 316 SS THREADED										
2" IPS & UP:										
> CARBON STEEL BUTT WELD ASTM A234B, OR A105 OR A420 (BELOW -20°F/-29°C).										
> COMPATIBLE WITH THE WALL THICKNESS OF THE PIPE										
> HDPE FUSION OR SCH 80 PVC										



(250) 478 8885  
206 - 1097 LANGFORD PARKWAY.  
VICTORIA BC, CANADA V9B 0A5



(250) 249-3252  
830 ISLAND HWY. W. PARKSVILLE  
BC V9P 2J4

DESIGN STANDARDS

CSA B52 CANADIAN REFRIGERATION CODE

ASME B31 PRESSURE PIPING CODE

ASHRAE CHAPTER 44 CURLING CLUB REFRIGERATION DESIGN

NEC CANADIAN ELECTRICAL CODE

DRAWN BY IW DATE DEC 5 2018

APPROVED BY AS DATE DEC 6 2018

PROJECT TITLE

OCEANSIDE PLACE CHILLER UPGRADE

SHEET TITLE

SCHEDULE

REVISIONS			
REV #	DATE	DESCRIPTION	
R1	JAN 31 2019	ADDED FILTER AND S.M.P FLOAT	
R2	-	-	
R3	-	-	
R4	-	-	
R5	-	-	
R6	-	-	
R7	-	-	
R8	-	-	
R9	-	-	
SHEET SIZE	DRAWING #	DRAWING REV #	SHEET #
D	ACCENT 1045	REV 1	8



## **SITE VISIT ATTENDEE LIST**

**Tender No. 19-001**

**Oceanside Place Energy Upgrades and Chiller Replacement Project**

**Site Visit Date & Time:**

Non-mandatory site visit held on January 29, 2019 at 10:00 am at Oceanside Place, 830 Island Highway, Parksville, B.C.

**Tender Closing Date & Time:**

on or before 3:00 PM (15:00 hrs) PST on February 19, 2019

Below is the list of Companies that attended the non-mandatory site visit.

**COMPANY NAMES:**

1. Georgia Straight Refrigeration

End of Site Visit Attendee List