

Innovative. Efficient. Dependable. Dunkirk.

Dunkirk H₂O



THE DUNKIRK H₂O SERIES

A complete line of Stainless Steel, Single and Dual Coil Indirect Water Heaters, Storage Tanks, and Hydronic Buffer Tanks.

Need An Easy Domestic Hot Water Solution With A Low Operating Cost and the Longevity Of Stainless Steel?

Dunkirk H₂O Stainless Steel Single Coil Indirect Water Heaters

Need A Hot Water Solution To Balance Input and Storage While Reducing Short Cycling?

Dunkirk H₂O Stainless Steel Storage Tanks

Need A Hot Water Solution For Use With Chillers, Heat Pumps, and Low Mass Boilers?

Dunkirk H₂O Stainless Steel Hydronic Buffer Tanks

Need A Hot Water Solution For Solar Applications Or Small Zones?

Dunkirk H₂O Stainless Steel Single & Dual Coil Solar Water Heaters

(Optional Electric Back-Up can heat the tank if solar heat is unavailable)

Stainless the direct

STANDARD FEATURES	Silva			
Capacities (Gallons)	30, 40, 40L, 50 , 60, 60L, 80, 85* & 115			
316L Stainless Steel Construction				
Top Connections (For Easy, Neat, Clean Installation)				
Welded Stainless Steel Dip Tube (Factory installed)				
Thermoplastic Jacket (Won't dent, scratch or corrode)				
Low Pressure Drop (Ideal For Low Mass Boilers)				
Magnesium Anode Rod				
T & P Valve (Factory installed except on 85 & 115XHOC)				
Aquastat and Drain Valve Provided				
2.25" EPS Insulation (Provides Less Than .5°F Per Hour Standby Loss)				
Large Diameter, Smooth Coil Heat Exchangers - Prevent Buildup (Stainless Steel Coils Are 25 to 30' Long and 1-1/8" in Diameter)				
Honeywell L4080B (Shipped Loose)	0			
Made in the USA				
WARRANTY				
Limited Lifetime Warranty (Residential), 5 Yr. (Commercial)				
15 Year Warranty (Residential)	N/A			
OPTIONS				
Low Profile	40L & 60L Capacities			
High Output	80 & 115 Capacities			
Extra High Output	85 & 115 Capacities			
Electric Back-Up	60, 80 & 115 Capacities			
Commercial Connections (For increased DHW flow)	80 & 115 Capacities (1-1/2" Dom., 1-1/4" Blr.)			
Coil	Standard			

^{*}Only offered in Extra High Output models.



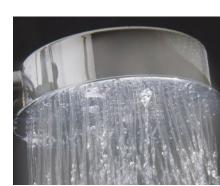


Stainless Steelink

Staintes Stanks

Stainles Steelle aters

30, 40, 60, 60L, 80 & 115	22, 40, 60, 80 & 115	60, 80 & 115
C	•	
	N/A	
N/A	N/A	N/A
C		
N/A	N/A*	
	N/A	N/A
C		
C	N/A	N/A
N/A	•	
60L Capacities	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	60, 80 & 115 Capacities
80 & 115 Capacities (1-1/2")	40, 60, 80 & 115 Capacities (1-1/4", 1-1/2", 2") 22 Capacity (1-1/4" only)	N/A
N/A	22, 40, 60, 80 & 115 Capacities	Standard

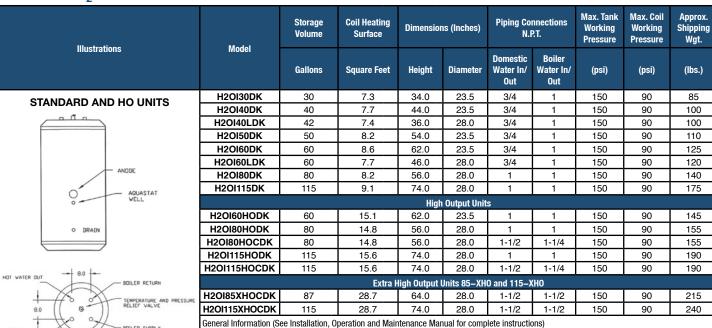




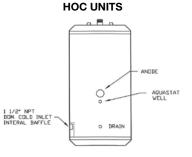


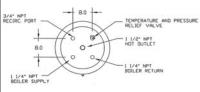


Dunkirk H₂O Stainless Steel Single Coil Indirect Water Heaters

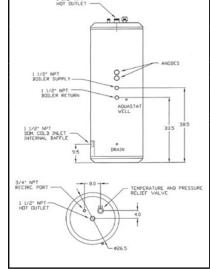


COLD WATER INLE





XHOC EXTRA HIGH OUTPUT UNITS



Pres- sure Drop Through Coil (Ft. Water)										
(Ft. Water)										
(Ft. Water)										
5.3										
5.7										
5.3										
6.0										
6.2										
5.7										
6.0										
6.6										
10.1										
9.9										
10.5										
15.8										
16.7										
Extra High Output Units 85–XHO and 115–XHO										
13.0										
13.0										

Note: All ratings are based on 200° F boiler water supply and 50° F cold water inlet. See installation manual for ratings at different temperatures and flow rates.

Specifications subject to change without notice.

Certification/

Decoding

Smooth stainless steel coil, magnesium anode rod, factory installed stainless steel aquastat well, T & P and drain valve, Standard welded stainless steel cold water dip tube factory installed and pressure tested, Honeywell L4080B aquastat shipped loose **Equipment** for field installation. (L) Low profile models for applications with low clearances. (C) Commercial models with larger tappings for higher flow rates

Options (HO) High Output models available to meet greater demand.

(XHO) Extra High Output models.





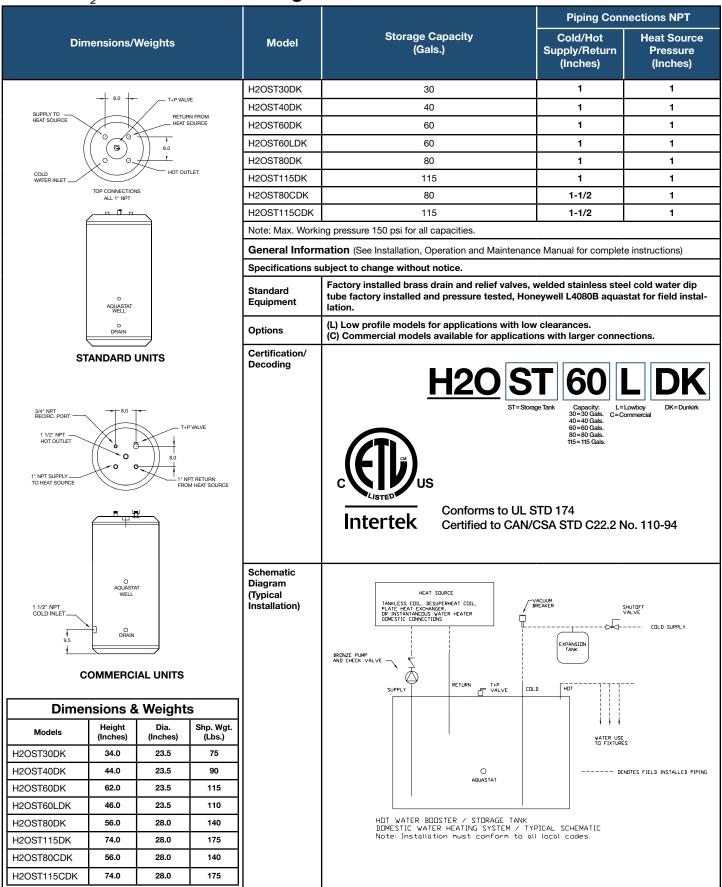




40=40 Gals. HO=High Output 50=50 Gals. HOC=High Output 60=60 Gals. Commercial 80=80 Gals. KHO = Extra High 0utput

Conforms to UL STD 174 Certified to CAN/CSA STD C22.2 No. 110-94

Dunkirk H₂O Stainless Steel Storage Tanks



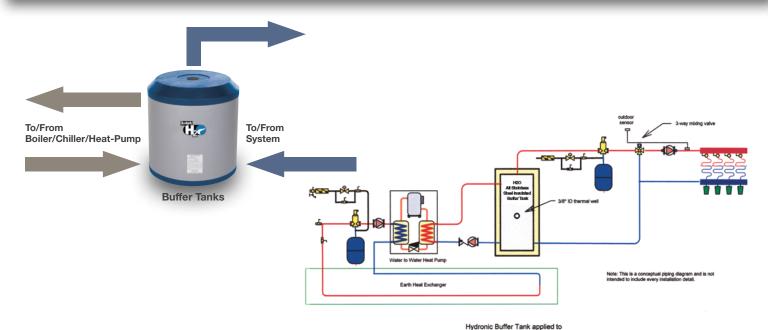
Dunkirk H₂O Stainless Steel Buffer Tanks

Dimensions/Weights				Model	Storage Capacity (Gals.)	Piping Connections NPT (Inches)					
					H2OBT22114DK	22	1-1/4				
					H2OBT40114DK		1-1/4				
					H2OBT40112DK	40	1-1/2				
					H2OBT402DK		2				
				H2OBT60114DK		1-1/4					
					H2OBT60112DK	60	1-1/2				
					H2OBT602DK		2				
					H2OBT80112DK		1-1/4				
- n				H2OBT80114DK	80	1-1/2					
					H2OBT802DK		2				
	1				H2OBT115114DK		1-1/4				
					H2OBT115112DK	115	1-1/2				
-3-					H2OBT1152DK		2				
					H2OBT40114WCDK		1-1/4				
А					H2OBT40112WCDK	40	1-1/2				
В	3/8' ID HERMAL WELL		4 CONNE	CTIONS GHT SIDE	H2OBT402WCDK		2				
			2 DN F	FT SIDE	H2OBT60114WCDK		1-1/4				
	O	-	1 ON TO	Р	H2OBT60112WCDK	60	1-1/2				
C	VALVE				H2OBT602WCDK		2				
1					H2OBT80114WCDK		1-1/4				
			H2OBT80112WCDK	80	1-1/2						
			H2OBT802WCDK		2						
			H2OBT115114WCDK		1-1/4						
			H2OBT115112WCDK	115	1-1/2						
					H2OBT1152WCDK		2				
					Note: Max. Working pressure 60 psi for all capacities.						
					General Information (See Installation, Operation and Maintenance Manual for complete instructions)						
					Specifications subject to change without notice.						
					Standard Equipment Factory installed brass drain and relief valves, welded stainless steel cold water dip tube factory installed and pressure tested, Honeywell L4080B aquastat for field installation.						
<u> </u>		0.14/	• • • •		Options	ns (WC) With Coil					
Dim		s & We	ignts	1	Certification/						
Model	Height A (Inches)	B (Inches)	C (Inches)	Shp. Wgt. (Lbs.)	Decoding	H2O BT 40	114 WC DK It4=1-1/4"NPT WC=With Coll DK=Dunkirk				
H2O22BT114DK	24.5	15.0	8.0	35 (45 WC)		BT=Buffer Tank Capacity. 22=22 Gals. 40=40 Gals. 60=60 Gals. 80=90 Gals.	14=1-1/4 NPT WC=WIRT COIL DR=DURKIN 112=1-1/2"NPT 2=2"NPT				
H2O40BT114DK				87							
H2O40BT112DK	42.0	29.0	9.0	(97 WC)							
H2O40BT2DK											
H2O60BT114DK				115		(/Ti)					
H2O60BT112DK	42.0	29.5	9.5	(125 WC)							
H2O60BT2DK						c Us					
H2O80BT114DK	F0.0	20.5	\	125		LISTED					
H2O80BT112DK	52.0	39.5	9.5	(135 WC)		Intertek Conforms to					
H2O80BT2DK						Certified to C	CAN/CSA STD C22.2 No. 110-94				
H2O115BT114DK	72.0	59.5	9.5	160							
-	12.0	29.5	9.5	(170 WC)							
H2O115BT2DK	<u> </u>	<u> </u>	<u> </u>								

DUNKIRK H₂O STAINLESS STEEL BUFFER TANKS

- Reduces chiller or boiler short cycling
 (Short cycling results in reduced operating efficiency and shorter equipment life)
- Used in systems having several low BTU cooling or heating loads calling at different times
- Full size tappings on buffer tank for peak performance (1-1/4", 1-1/2", and 2")
- · Used in systems operating below the design load condition, which is most of the time.

H₂O HYDRAULICALLY DECOUPLED



Water source heat pump application

Buffer Tank Sizing - Calculating Capacity

Dunkirk H₂O buffer tanks are a simple, cost effective way to improve overall system efficiency by reducing unnecessary equipment short cycling. The recommended capacity or volume of a buffer tank is based on four variables.

- 1) The duration of the heating or cooling source "on time" (minutes). The desired length of "on time" for each run cycle depends on the type of equipment used. Heat pump and chiller manufacturers typically recommend a minimum of 5 to 10 minutes on time, and boiler manufacturers may recommend a minimum of 10 minutes "on time". Check with your equipment manufacturer. Generally, the longer the "on time", the higher the overall operating efficiency.
- 2) The minimum rate of heat input (BTU/HR). This is based on the heat pump or chiller output, or the boiler output at the minimum firing rate if the boiler has a variable input system that ramps input down as the demand decreases.
- 3) The minimum system load (BTU/HR). This is the demand placed on the system with the smallest zone calling for heat.
- 4) The allowable tank temperature rise (deg. F). This varies depending on the type of heating or cooling system used, and on the design of the distribution system. Chillers may require a tight, (6 deg. F), differential to assure good dehumidification and prevent freezing, heat pumps may require a (10 deg. F) differential to maintain a high COP, and boilers with hydronic heating distribution systems may require a differential anywhere between 10 to 40 deg. F depending on the application.

The following formula determines the tank volume:

 $V = \frac{T \times (Q \text{ heat input - } Q \text{ min. heat load})}{T \text{ank temp. rise } \times 500}$

V = Buffer tank volume (gallons) Q heat source = heat source output (BTU/HR) Tank temp rise (deg. F) T = desired heat source "on cycle" (min.)
Q min. heat load = heat output to minimum load

Water to Water Heat Pump Example:

Town and Country Mechanical wants a minimum heat pump on time of 10 minutes. The heat pump output is 46,500 BTU/HR. The smallest zone is a 7,000 BTU/HR bathroom. The allowable temperature differential is 90 to 100 deg. F for the radiant heat zones

 $V = \frac{10 \times (46,500 - 7,000)}{(100-90) \times 500} = 79.0 \text{ Gallons minimum volume. Choose the H2O80BT buffer tank.}$

Dunkirk H₂O Stainless Steel Dual and Single Coil Solar Water Heaters

Dimensions/We	ights	Model	Storage Capacity (Gals.)				Heatin	o Coil g Surface q. Ft.	Bottom Coil Heating Surface Sq. Ft.	Piping Connections NPT (Inches)	
			SINGLE COIL								
TOP COIL SUPPLY	H2OI60EDK	60				ı	N/A	8.3	1		
COLD O O O O O O O O O O O O O O O O O O	H2OI80EDK	80				ı	N/A	8.0	1		
	H2OI115EDK	115				ı	N/A	8.9	1		
BOTTOM SOLAR— COIL RETURN			DUAL COIL								
	H2OI60DDK		6	60			7.4 8.3 1				
	H2OI80DDK	80				7.4		8.0	1		
1 1 1 1 1	IERMAL WELL	H2OI115DDK	115				7.4		8.9	1	
0 1/2" NPT F RETURN F		H2OI60DEDK	60					7.4	8.3	1	
TOP HEAT FOR BACK	TING COIL KUP	H2OI80DEDK	80					7.4	8.0	1	
	COIL IERMAL WELL	H2OI115DEDK		1.	15			7.4	8.9	1	
3/8" D THI	IEHMAL WELL	Note: Max. Wor	king press	ure 150 ps	i for all ca	oacities.					
BOTTOM HEA FOR SOLAR	ATING COIL			· ·			l Maintenanc	e Manual for c	omplete instruction	ne)	
DUAL COIL UNITS		Model	Max. First Hour Rating Gal./Hr. @		Continuous Rating Gal./Hr. @		Max. Rec. Top Coil	Max. Rec. Bottom Coil	Min. Boiler Water Flow Through Coil	Pressure Drop Through Coil	
			140° E	115° E	140° E	115° E		(Cal /Hr)		(Et Water)	
			140° F 115° F 140° F 115° F (Gal./Hr.) (Gal./Hr.) (Gal./Min.) (Ft. Water)								
		H2OI60EDK	SINGLE COIL H2OI60EDK 45.9 52.0 15.9 22.0 N/A 214 10.0 3.5								
1.5	H2OI80EDK	45.9	62.0	15.9 15.9		N/A	214		3.5		
		55.9			22.0	N/A	214	10.0	3.6		
	H2OI115EDK	H2OI115EDK 73.9 80.0 15.9 22.0 N/A 214 10.0 3.9									
4	LIBOURDELL	DUAL COIL									
	H2OI60DDK	45.9	52.0	15.9	22.0	185	214	10.0	3.5		
	H2OI80DDK	55.9	62.0	15.9	22.0	180	214	10.0	3.6		
3/8	H2OI115DDK	73.9	80.0	15.9	22.0	190	214	10.0	3.9		
	ERMAL WELL RAIN VALVE	H2OI60DEDK	45.9	52.0	15.9	22.0	185	214	10.0	3.5	
	H2OI80DEDK	55.9	62.0	15.9	22.0	180	214	10.0	3.6		
	H2OI115DEDK	73.9	80.0	15.9	22.0	190	214	10.0	3.9		
ELECTRIC BACKUP		Note: All ratings are based on 180° F boiler water supply and 50° F cold water inlet. For Dual Coil units, continuous ratings shown are for the lower coil only. Specifications subject to change without notice.									
Dimensions & V	Standard Equipment										
Models Height (Inches) (I	Dia. Shp. Wgt.		heating element, thermostat, and hi-limit. All electric back-up units provided with 240 volt AC 3500 watt element.							vith 240 volt AC,	
SINGLE COIL	(Lbs.	Options	(E) Elect	ric Back-	Up model	s for supp	olemental he	eating.			
H2OI60EDK 62.0	23.5 135	Certification/									
H2OI80EDK 56.0	28.0 145	Decoding				H2	7(7)	I∐6N	IIDIF		
H2OI115EDK 74.0	-	_			- 12						
H2OI60DDK 62.0	-		/TI	1		I=Inc	direct Capacity: 60=60 Gals. 80=80 Gals.	D=Dual Coil E=Electr Back u (3500 Wa	ip.		
H2OI80DDK 56.0	23.5 165 28.0 175	Ⅎ ┃	((CM			115=115 Gals.	(3300 Wa	шој	
H2OI115DDK 74.0	28.0 205	∃	c \		US						
H2OI60DEDK 62.0	23.5 175]	_	LISTED	_	_					
H2OI80DEDK 56.0	28.0 185	41	Conforms to UL STD 174 Certified to CAN/CSA STD C22.2 No. 110-94					4			
H2OI115DEDK 74.0	28.0 215	11	111	ICI IC	-I - (Sertified	I IO CAN/C	20 O O O O	∠.∠ No. 110-94	+	

PN 240009330 Rev. 8/16



