



Hazloc Heaters™

Safe heat when you need it!



HUH

Hydronic Unit Heater

CRN: 0H6665.2

Industrial Grade
Heat-Exchanger Unit Heaters

www.HazlocHeaters.com



Hazloc Heaters™ is a manufacturer of industrial-grade unit heaters suitable for hazardous and severe-duty locations.



The **Hydronic Unit Heater (HUH)** series of heat-exchanger unit heaters were specifically designed to meet the demanding requirements of the oil & gas industry. The operating conditions of this industry require heating equipment that is safe, reliable, dependable, and available when you need it. The rugged design features of the **HUH** series also makes it ideal for use in other heavy-duty



industries that include pulp & paper, power generation, mining, steel mills, foundries, water and wastewater treatment plants, chemical plants, and hazardous material storage facilities.

Designed for operating pressures up to 400 PSIG (2758 kPa)!

All **Hazloc Heaters™ HUH** models are **designed to ASME requirements** for applications with **maximum operating pressures up to 400 PSIG (2758 kPa)**. The five sizes of **HUH** heaters are available in both single-pass and multi-pass configurations providing you with **16 model choices** to meet your specific requirements.



HUH heaters are suitable for a wide variety of heating fluids and are **perfect for steam, hot water, or glycol applications**. They are also used with other non-lethal or non-poisonous fluids (as defined by ASME) for both space heating and liquid cooling applications that include but are not limited to hot-oil heaters, lube-oil coolers, product process coolers, pump-seal coolers, etc.

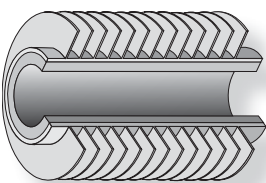
Rugged design, but easily maintained!

All **HUH** heaters are designed for industrial applications with all features being heavy-duty to meet your most demanding environments and long-life expectations. Even with heavy-gauge steel construction used throughout the heater it does not inhibit the easy maintenance of the product, since all parts are easily removed. Furthermore, the heater core can be removed without disturbing the heater mounting arrangement or electrical connections.

Interchangeable with other brands of heaters!

Hazloc Heaters™ HUH series are designed with cabinet dimensions and mounting holes equivalent to a major competitor's heaters making them easily interchangeable. Furthermore, our rugged and superior **HUH** replacement cores are also designed to slide into equivalent sizes of their heaters. An added benefit is our 18-month heater warranty!

Maximum durability... rugged fin tubes and headers!



All **HUH** heat-exchanger cores are constructed using rugged 16-gauge (0.065 in.) carbon-steel tubes with tension-wound aluminum fins and carbon-steel headers for **maximum durability, resistance to corrosion, and longer life** in your demanding applications.

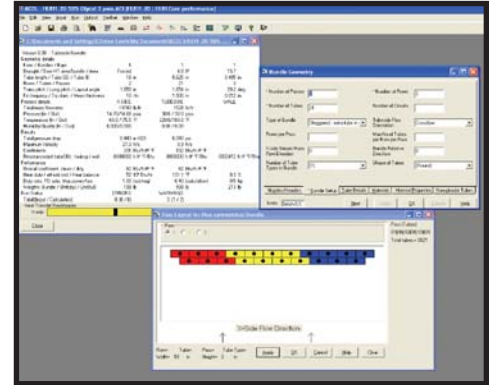
“Safe heat when you need it!”

Take advantage of our *HTFS™ ACOL* thermal performance analysis software!

If your input conditions or fluid type are not listed in pages 6 through 10, then please contact us for assistance on calculating heating capacities for all sizes of **Hazloc Heaters™ HUH** heat-exchanger unit heaters. **Our ACOL thermal software service computes performance parameters under a diverse range of operating conditions.**

Hazloc Heaters™ ACOL thermal performance analysis software is capable of rating heaters for steam, or for fluids based on either the flow-rate or temperature-drop sizing methods. **Our software is also pre-programmed with the following fluid types for quick and easy analysis.**

- | | |
|-------------------------|--------------------------|
| Steam | Triethylene Glycol/Water |
| Water | Dowtherm A |
| Ethylene Glycol/Water | Dowtherm G |
| Diethylene Glycol/Water | and others... |
| Therminol 66 | |



Just provide us with the following input data!

- Type of fluid used
- Operating pressure
- Inlet fluid temperature (liquid applications only)
- Outlet fluid temperature, or available fluid flow rate
- Altitude above sea level (ASL)
- Entering air temperature

If your fluid isn't listed above, we can still help!

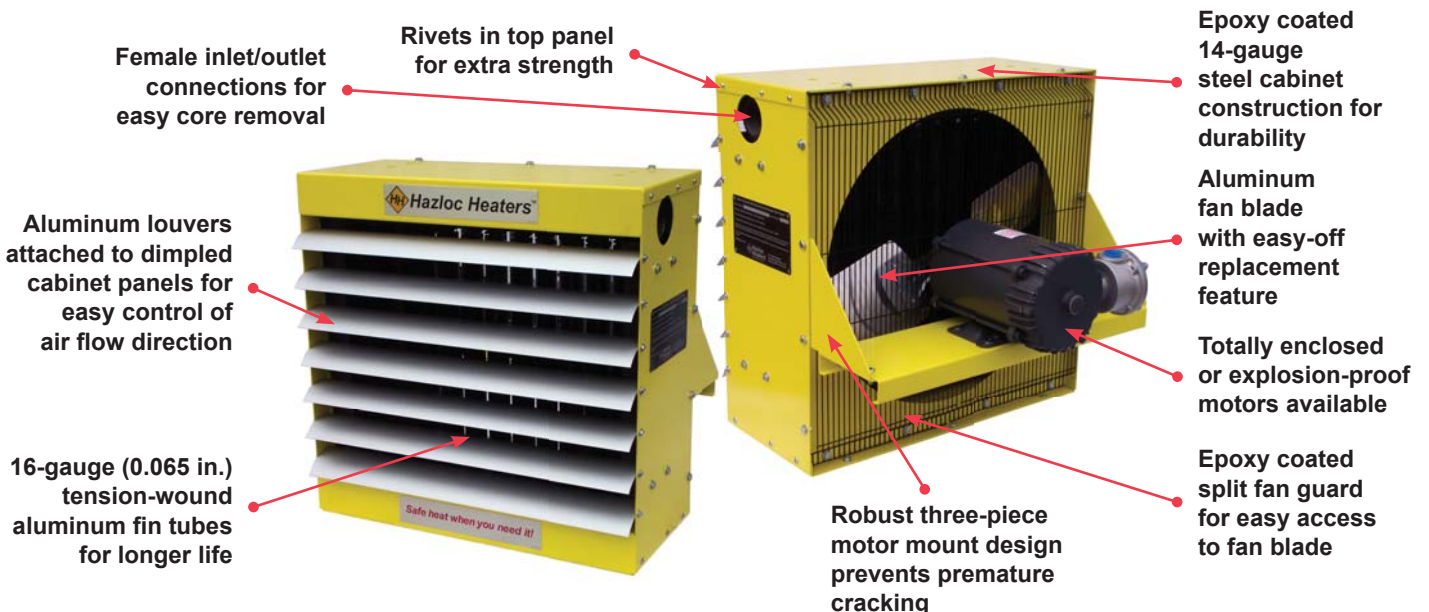
We can also provide you with performance characteristics on other fluids not listed above by **manually inputting the following fluid physical properties: Temperature, Density, Specific Heat, Thermal Conductivity, and Viscosity** at two reference points.

This brochure was produced using Imperial units of measure. If required we can provide you with data in Metric units.



Hazloc Heaters™

“Safe heat when you need it!”



HUH Model Coding

Model Code Sequence Required for Ordering

Factory Assigned



HUH1 - 12 - C - 1 - 230 1 60 - T - S - A

Model Series

Generation

For major revisions

Fan Size	
12 Inches	12
16 Inches	16
20 Inches	20
24 Inches	24
30 Inches	30

Approvals	
CRN	C

Tube Passes	
1 Pass	1
3 Pass	3
5 Pass	5
7 Pass	7

Steam units are 1 Pass only
 Not available on 12 in. fan size
 Available on 24 in. & 30 in. fan size only

Product Revision No.

For minor revisions

Special Items	
S	Standard product
C	Custom product

Motor Enclosure	
T	Totally enclosed
E	Explosion proof

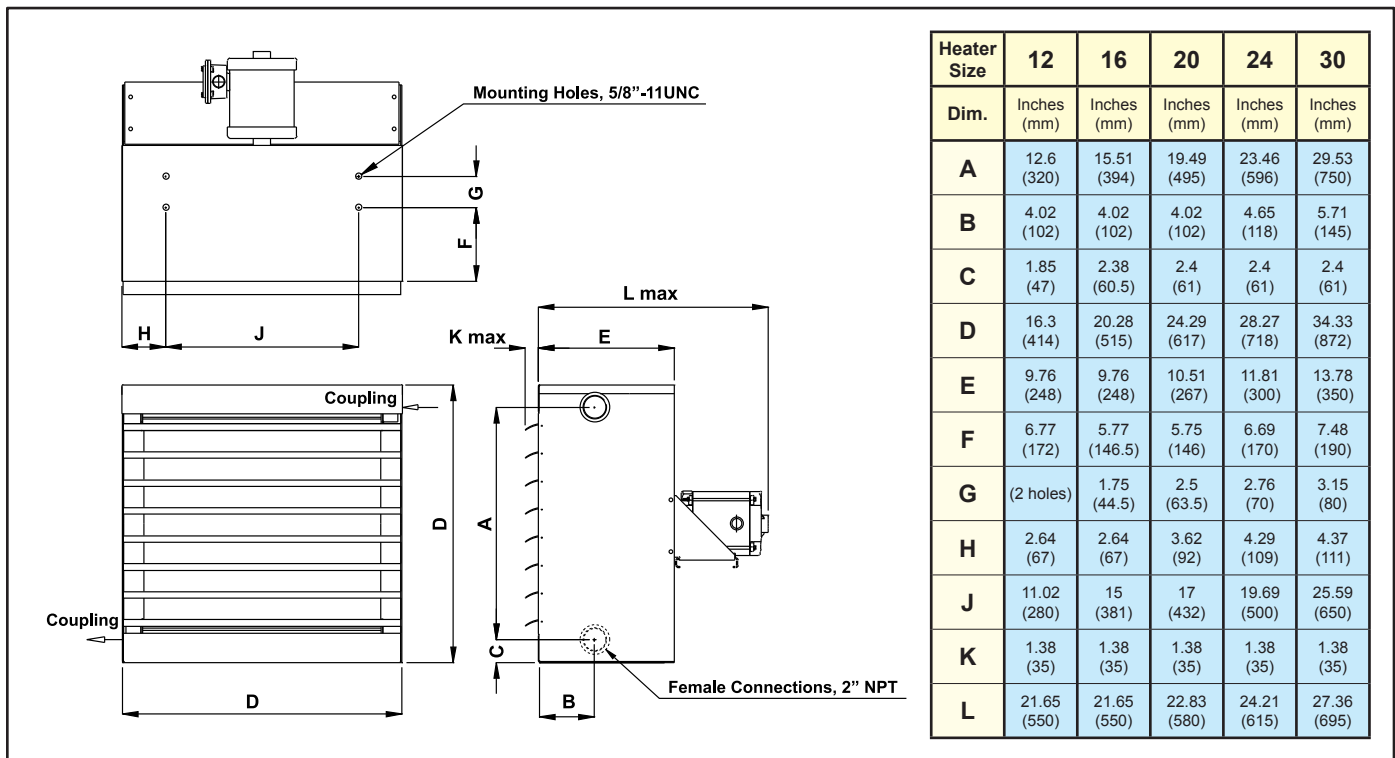
Frequency	
50	50 Hertz
60	60 Hertz

Phase	
1	1 Phase
3	3 Phase

Motor Voltage*	
115	115 Volts
208	208 Volts
230	230 Volts
460	460 Volts
575	575 Volts

- * Other voltages available upon request. Longer lead times may apply. Contact factory.
- Motors are designed to be operated at rated voltage with tolerances of $\pm 15\%$.
- If ordering explosion-proof motor, ensure equipment meets the requirements of your hazardous area rating.

HUH Physical Dimensions



HUH Specifications by Model Size

Model		HUH1-12	HUH1-16	HUH1-20	HUH1-24	HUH1-30
Fan diameter	in. (mm)	12 (304.8)	16 (406.4)	20 (508.0)	24 (609.6)	30 (762.0)
Air delivery*	cfm (m ³ /hr)	1090 (1852)	1650 (2803)	3000 (5097)	3800 (6456)	5500 (9344)
Approx. air velocity*	fpm (m/s)	1305 (6.6)	1111 (5.6)	1309 (6.6)	1138 (5.8)	1066 (5.4)
Air throw* @ 15 psi steam	ft (m)	45 (13.7)	65 (19.8)	70 (21.3)	80 (24.4)	85 (25.9)
Motor power	hp (watts)	¼ (186) or ⅓ (248)		½ (373)	½ (373)	1 (746)
Rec. min. mounting height	ft (m)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)
Net weight	lbs (kg)	78 (35.4)	97 (44.0)	132 (59.9)	206 (93.4)	264 (119.7)
Approx. shipping weight	lbs (kg)	138 (62.6)	157 (71.2)	207 (93.9)	281 (127.4)	354 (160.6)

* At 70°F (21°C), 60 Hz and sea level.

HUH General Specifications

Approval	CRN: 0H6665.2 - steam or fluids (not for use with lethal fluids as defined by ASME, Section VIII, Div. 1, A03, UW-2).
Maximum pressure rating	400 psig (2758 kPa).
Maximum temperature rating	550 °F (288°C).
Cabinet material	14-gauge (0.075 in.) (1.9 mm) steel. Yellow epoxy/polyester powder coated with five-stage pretreatment, including iron phosphate.
Louver blades	Anodized extruded aluminum.
Fan	Multi-blade aluminum, steel spider and hub with 5/8 in. bore.
Fan guard	Split design with close wire spacing. A 3/8 in. (9.5 mm) diameter probe will not enter.
Motor type	Thermally protected CSA or UL Listed 1725 RPM permanently lubricated ball bearing type with 56 frame. See page 4 for ordering requirements.
Mounting holes	5/8 in. - 11 UNC – 4 holes at top of heater (2 holes, HUH1-12).
Fluid connections	2 in. NPT female inlet and outlet.
Header material	Carbon steel conforming to ASME requirements.
Finned tubes	5/8 in. (15.9 mm) outside diameter [16-gauge, 0.065 in. (1.6 mm) wall thickness] carbon steel tubes with 1-1/2 in. (38.1 mm) outside diameter copper-free, L-foot, tension-wound aluminum fins @ 10 fins per in.

How to Order

When ordering please follow the “**Model Code Sequence Required for Ordering**” format on page 4 to specify base model, motor voltage, phase, frequency and motor enclosure type. If ordering explosion-proof motors also specify motor hazardous location area rating required.

Example Model Code: HUH1-16-C-1-A-230160-E (suitable for Class I, Div.1, Group D, T3B)

Nomenclature

10³ – 1000

BTU – British Thermal Unit

Cond. – Condensate Flow Rate

EAT – Entering Air Temperature

ΔT – Fluid Temperature Drop

FAT – Final Air Temperature

PSIG – Pounds Per Square Inch Gauge Pressure

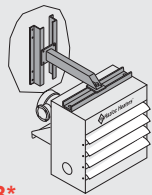
CFM – Cubic Feet Per Minute

USGPM – U.S. Gallons Per Minute

ΔP – Fluid Pressure Drop



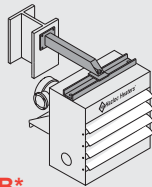
Accessories - Mounting Brackets



WMB*

Wall Mounting Bracket

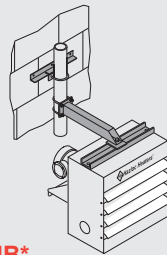
For use in buildings that have substantial walls. The Z sections provide additional support where necessary.



BMB*

Basic Mounting Bracket

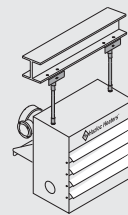
For applications where the support arm can be bolted or welded directly to structural steel or concrete.



PMB*

Pipe Mounting Bracket

For buildings with insufficient strength to use other types of mounting brackets. Requires 3 in. pipe (3.5 in. O.D., min. Sch. 40, not supplied).



HMB

Hanging Mounting Bracket

Ideal and economical if adequate overhead structure exists. Requires 1/2 in. pipe, cut and threaded (min. Sch. 40 not supplied).

Note: When ordering mounting brackets, please specify the type of bracket preferred and the basic model code of the heater to be mounted. Example, **PMB-HUH1-16**.

Mounting kits are made of steel with a black enamel paint finish. Structural support of heater and bracket during transit is required.

* Not suitable for model HUH1-30

Thermostats

ET5STS (SPST)

Line-Voltage Thermostat

22 Amps Resistive Load, 277 VAC Max

3/4 HP@125 VAC; 1-1/2 HP@ 250/277 VAC

Ship wt - 0.6 lbs (0.28 kg)



TBX1 (SPDT)

Explosion-proof Thermostat -

Class I, Groups C&D, Class II, Groups E, F & G

Temperature range: 40°F to 80°F (5°C to 27°C),

3/4" - NPT conduit opening on top and bottom.

22 Amps Resistive Load, 277 VAC Max; 3/4 HP@125 VAC; 1-1/2 HP@ 250/277 VAC

Overall dimensions - 6.4 in (16.2 cm) W x 5.6 in (14.3 cm) H x 4.4 in (11.1 cm) D

Ship wt - 5.3 lbs (2.4 kg)



Steam Performance Tables

HUH1-12 @60 Hz

			Entering Air Temperature								
PSIG	°F	Performance	-10	0	10	20	30	40	50	60	70
2	219	Output (10 ³ btu/hr)	71	67	63	60	56	53	50	46	43
		Cond. (lbs/hr)	73	69	66	62	58	55	51	48	45
		FAT (°F)	40.9	49.4	57.7	66.1	74.3	82.5	90.6	98.6	106.7
50	298	Output (10 ³ btu/hr)	95	92	88	84	81	77	73	70	66
		Cond. (lbs/hr)	104	100	96	92	88	84	80	77	73
		FAT (°F)	58.8	67.5	76.2	84.7	93.2	101.6	109.9	118.2	126.4
100	338	Output (10 ³ btu/hr)	108	105	101	97	93	89	86	82	79
		Cond. (lbs/hr)	123	118	114	110	105	101	97	93	89
		FAT (°F)	68.1	76.9	85.7	94.4	103.0	111.6	120.0	128.4	136.7
150	366	Output (10 ³ btu/hr)	117	113	109	105	101	98	94	90	87
		Cond. (lbs/hr)	136	131	127	122	118	114	109	105	101
		FAT (°F)	74.3	83.2	92.1	100.9	109.6	118.2	126.8	135.3	143.7
200	387	Output (10 ³ btu/hr)	124	120	116	112	108	104	101	97	93
		Cond. (lbs/hr)	147	142	138	133	129	124	120	115	111
		FAT (°F)	79.1	88.1	97.0	105.9	114.7	123.4	132.0	140.6	149.1
300	421	Output (10 ³ btu/hr)	134	130	126	122	118	114	110	107	103
		Cond. (lbs/hr)	166	161	156	151	146	141	137	132	128
		FAT (°F)	86.5	95.6	104.6	113.6	122.5	131.3	140.0	148.7	157.3

If using 50 Hz power supply, derate output values by 6%. Above figures are based on calculations at sea level.

Steam Performance Tables

HUH1-16 @60 Hz

			Entering Air Temperature								
PSIG	°F	Performance	-10	0	10	20	30	40	50	60	70
2	219	Output (10 ³ btu/hr)	112	106	101	95	89	84	79	74	69
		Cond. (lbs/hr)	116	110	104	98	92	87	82	76	71
		FAT (°F)	43.4	51.8	60.1	68.3	76.4	84.5	92.6	100.5	108.4
50	298	Output (10 ³ btu/hr)	152	146	140	134	128	122	117	111	106
		Cond. (lbs/hr)	166	160	153	146	140	134	128	122	116
		FAT (°F)	62.4	71.0	79.5	88.0	96.4	104.7	112.9	121.1	129.2
100	338	Output (10 ³ btu/hr)	173	166	160	154	148	142	136	130	125
		Cond. (lbs/hr)	195	188	181	174	168	161	154	148	141
		FAT (°F)	72.2	81.0	89.6	98.2	106.7	115.1	123.5	131.8	140.0
150	366	Output (10 ³ btu/hr)	186	180	174	168	161	155	150	144	138
		Cond. (lbs/hr)	217	209	202	195	188	181	174	167	160
		FAT (°F)	78.8	87.6	96.4	105.1	113.7	122.2	130.6	139.0	147.3
200	387	Output (10 ³ btu/hr)	197	191	184	178	172	166	160	154	148
		Cond. (lbs/hr)	235	227	219	212	205	197	190	183	176
		FAT (°F)	83.9	92.8	101.6	110.4	119.1	127.7	136.2	144.7	153.1
300	421	Output (10 ³ btu/hr)	214	207	201	194	188	182	176	170	164
		Cond. (lbs/hr)	265	256	248	241	233	225	218	210	203
		FAT (°F)	91.7	100.7	109.7	118.6	127.3	136.1	144.7	153.3	161.8

If using 50 Hz power supply, derate output values by 6%. Above figures are based on calculations at sea level.

HUH1-20 @60 Hz

			Entering Air Temperature								
PSIG	°F	Performance	-10	0	10	20	30	40	50	60	70
2	219	Output (10 ³ btu/hr)	190	180	170	161	151	142	133	125	116
		Cond. (lbs/hr)	196	186	176	166	157	147	138	129	120
		FAT (°F)	39.8	48.1	56.5	64.9	73.2	81.4	89.6	97.7	105.8
50	298	Output (10 ³ btu/hr)	260	250	239	229	220	210	200	191	181
		Cond. (lbs/hr)	285	274	262	251	240	230	219	209	198
		FAT (°F)	58.2	66.9	75.5	84.1	92.6	101.0	109.3	117.7	125.9
100	338	Output (10 ³ btu/hr)	296	285	274	264	254	243	234	224	214
		Cond. (lbs/hr)	335	323	311	299	287	276	265	254	243
		FAT (°F)	67.4	76.3	85.0	93.7	102.3	110.8	119.3	127.7	136.0
150	366	Output (10 ³ btu/hr)	319	308	297	287	276	266	256	246	237
		Cond. (lbs/hr)	371	359	346	334	322	310	298	287	275
		FAT (°F)	73.6	82.5	91.4	100.2	108.9	117.5	126.0	134.5	142.9
200	387	Output (10 ³ btu/hr)	337	326	316	305	295	284	274	264	254
		Cond. (lbs/hr)	402	389	376	363	351	338	326	314	302
		FAT (°F)	78.4	87.4	96.3	105.2	113.9	122.3	131.3	139.8	148.3
300	421	Output (10 ³ btu/hr)	366	354	343	332	322	311	301	291	281
		Cond. (lbs/hr)	453	439	425	412	399	386	373	360	348
		FAT (°F)	85.7	94.8	103.9	112.8	121.7	130.5	139.2	147.9	156.5

If using 50 Hz power supply, derate output values by 6%. Above figures are based on calculations at sea level.

Steam Performance Tables

HUH1-24 @60 Hz

		Entering Air Temperature									
PSIG	°F	Performance	-10	0	10	20	30	40	50	60	70
2	219	Output (10 ³ btu/hr)	388	367	347	327	308	289	270	252	234
		Cond. (lbs/hr)	400	379	358	338	318	298	279	260	241
		FAT (°F)	70.1	77.5	84.8	92.1	99.2	106.2	113.2	120.1	126.8
50	298	Output (10 ³ btu/hr)	540	518	495	474	452	431	410	390	370
		Cond. (lbs/hr)	591	566	542	518	495	472	449	427	405
		FAT (°F)	101.7	109.4	116.9	124.4	131.7	138.9	146.1	153.1	160.1
100	338	Output (10 ³ btu/hr)	614	591	568	545	523	501	480	459	439
		Cond. (lbs/hr)	696	669	643	618	593	568	544	520	497
		FAT (°F)	117.1	124.9	132.7	140.3	147.8	155.1	162.4	169.6	176.7
150	366	Output (10 ³ btu/hr)	665	641	618	594	572	550	528	506	486
		Cond. (lbs/hr)	773	745	718	691	665	639	614	589	565
		FAT (°F)	127.4	135.4	143.2	151.0	158.5	166.1	173.5	180.8	188.0
200	387	Output (10 ³ btu/hr)	703	679	656	632	609	587	565	543	522
		Cond. (lbs/hr)	838	809	781	753	725	699	672	647	621
		FAT (°F)	135.5	143.6	151.5	159.3	167.0	174.7	182.2	189.5	196.8
300	421	Output (10 ³ btu/hr)	763	739	714	691	667	644	622	600	578
		Cond. (lbs/hr)	956	915	885	855	826	798	770	743	716
		FAT (°F)	147.8	156.0	164.1	172.1	180.0	187.8	195.4	203.0	210.4

If using 50 Hz power supply, derate output values by 6%. Above figures are based on calculations at sea level.

HUH1-30 @60 Hz

		Entering Air Temperature									
PSIG	°F	Performance	-10	0	10	20	30	40	50	60	70
2	219	Output (10 ³ btu/hr)	601	569	537	506	475	446	417	388	360
		Cond. (lbs/hr)	621	587	554	522	491	461	431	401	372
		FAT (°F)	75.8	83.0	90.0	97.0	103.9	110.7	117.4	124.0	130.5
50	298	Output (10 ³ btu/hr)	818	783	749	715	683	650	619	589	559
		Cond. (lbs/hr)	894	856	819	782	747	712	677	644	611
		FAT (°F)	106.7	114.2	121.6	128.9	136.1	143.2	150.2	157.1	163.9
100	338	Output (10 ³ btu/hr)	930	894	859	824	790	757	725	693	661
		Cond. (lbs/hr)	1054	1013	973	933	895	857	821	785	749
		FAT (°F)	122.9	130.6	138.1	145.5	152.9	160.1	167.2	174.2	181.2
150	366	Output (10 ³ btu/hr)	1007	970	934	899	864	830	797	765	732
		Cond. (lbs/hr)	1171	1128	1086	1045	1005	966	927	889	852
		FAT (°F)	133.7	141.5	149.2	156.8	164.3	171.6	178.8	185.9	193.0
200	387	Output (10 ³ btu/hr)	1066	1029	992	956	921	887	854	820	787
		Cond. (lbs/hr)	1269	1224	1181	1138	1097	1056	1016	976	938
		FAT (°F)	142.2	150.1	157.9	165.6	173.2	180.6	187.9	195.1	202.3
300	421	Output (10 ³ btu/hr)	1156	1119	1081	1045	1009	974	939	905	872
		Cond. (lbs/hr)	1433	1385	1339	1294	1250	1207	1164	1122	1081
		FAT (°F)	155.1	163.1	171.1	179.0	186.7	194.4	201.9	209.3	216.6

If using 50 Hz power supply, derate output values by 6%. Above figures are based on calculations at sea level.

Glycol Performance Tables - 50% Ethylene Glycol[†], 60°F EAT @ 60 Hz

Model		Entering Glycol Temperature															
		180°F				200°F				220°F				240°F			
		ΔT °F	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F	ΔP PSI	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F	ΔP PSI	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F	ΔP PSI	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F
HUH1-12-C-1*	10	12	2.93	70.2	0.01	15	3.63	72.8	0.01	19	4.47	76.0	0.01	27	6.22	82.5	0.01
	20	11	1.31	69.1	0.00	14	1.64	71.6	0.00	17	2.00	74.3	0.00	21	2.38	77.2	0.00
	40	9	0.54	67.6	0.00	12	0.70	69.9	0.00	15	0.88	72.5	0.00	18	1.06	75.2	0.00
HUH1-12-C-3	10	24	5.71	79.9	0.26	31	7.40	86.1	0.41	39	9.05	92.3	0.60	46	10.7	98.4	0.81
	20	12	1.43	70	0.02	19	2.22	75.5	0.04	27	3.10	82.0	0.08	34	3.97	88.5	0.12
	40	10	0.57	67.9	0.00	13	0.74	70.4	0.01	16	0.92	73.0	0.01	19	1.11	75.8	0.01
HUH1-16-C-1*	10	20	4.81	71.1	0.01	29	6.75	75.8	0.01	41	9.56	82.6	0.02	54	12.3	89.5	0.03
	20	18	2.15	69.9	0.04	23	2.71	72.6	0.00	28	3.29	75.5	0.01	34	3.87	78.5	0.01
	40	15	0.90	68.3	0.00	20	1.17	70.8	0.00	25	1.44	73.6	0.00	30	1.72	76.4	0.00
HUH1-16-C-3	10	42	10.1	83.3	0.49	54	12.7	89.7	0.74	65	15.2	96.0	1.04	77	17.6	102.3	1.38
	20	26	3.05	74.0	0.05	38	4.43	80.7	0.10	50	5.84	87.3	0.17	62	7.11	94.0	0.24
	40	16	0.95	68.7	0.01	21	1.23	71.3	0.01	26	1.51	74.2	0.02	33	1.90	77.9	0.02
HUH1-16-C-5	10	48	11.5	86.7	2.85	60	14.0	92.9	4.12	71	16.4	99.0	5.58	82	18.8	105.2	7.24
	20	36	4.35	80.1	0.45	48	5.66	86.6	0.73	60	6.95	93.0	1.07	71	8.20	99.4	1.46
	40	17	1.00	69.3	0.03	25	1.47	73.9	0.06	38	2.23	81.2	0.13	50	2.91	88.0	0.21
HUH1-20-C-1*	10	43	10.1	72.9	0.02	64	14.9	79.2	0.03	85	19.7	85.6	0.05	106	24.2	91.9	0.08
	20	30	3.57	69.1	0.00	38	4.49	71.5	0.00	47	5.47	74.2	0.00	57	6.53	77.1	0.01
	40	25	1.49	67.5	0.00	33	1.94	69.9	0.00	41	2.40	72.4	0.00	50	2.90	75.2	0.00
HUH1-20-C-3	10	79	18.7	83.8	1.20	98	23.1	89.7	1.78	118	27.3	95.5	2.4	137	31.5	101.4	3.13
	20	54	6.49	76.4	0.17	75	8.80	82.5	0.29	95	8.78	87.3	0.44	115	13.3	94.8	0.60
	40	26	1.58	67.9	0.14	35	2.07	70.5	0.02	52	3.02	75.5	0.04	73	4.22	82.0	0.07
HUH1-20-C-5	10	87	20.7	86.3	6.28	106	24.9	92.1	8.90	125	29.1	97.8	11.9	144	33.1	103.5	15.23
	20	70	8.29	80.9	1.12	89	10.5	86.9	1.72	109	12.7	92.8	2.43	129	14.8	98.8	3.23
	40	31	1.88	69.3	0.08	57	3.36	77.0	0.21	77	4.54	83.2	0.35	98	5.69	89.5	0.53
HUH1-24-C-1*	10	110	26.1	86.2	0.09	152	35.7	96.2	0.12	194	45.1	106.3	0.14	236	54.2	116.3	0.18
	20	65	7.75	75.5	0.06	83	9.73	79.7	0.06	107	12.6	85.7	0.07	152	17.5	96.4	0.07
	40	54	3.24	72.9	0.06	71	4.20	76.9	0.06	89	5.22	81.3	0.06	108	6.28	85.9	0.06
HUH1-24-C-3	10	170	40.4	100.6	2.09	209	49.2	110.0	2.85	249	57.8	119.3	3.73	288	66.1	128.7	4.70
	20	128	15.3	90.5	0.60	169	19.9	100.3	0.78	210	24.5	110.1	0.99	251	28.9	119.8	1.23
	40	57	3.44	73.7	0.33	82	4.86	79.5	0.35	134	7.86	91.9	0.40	177	10.3	102.3	0.45
HUH1-24-C-5	10	186	44.3	99.6	9.97	226	53.1	107.9	13.9	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model				
	20	155	18.4	92.7	1.90	195	23.0	101.3	2.84	236	27.4	109.9	3.91	276	31.8	118.5	5.12
	40	92	5.52	79.2	0.21	135	8.03	88.4	0.41	178	9.74	97.4	0.64	221	12.8	106.4	0.91
HUH1-24-C-7	10	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model				
	20	167	19.9	95.3	5.5	207	24.4	103.8	8.02	247	28.8	112.3	10.9	287	33.0	120.7	14.0
	40	116	6.92	84.1	0.79	107	4.24	82.0	0.32	199	11.7	101.8	1.97	240	13.9	110.6	2.72
HUH1-30-C-1*	10	195	46.5	92.2	0.42	257	60.5	102.4	0.47	319	74.1	112.6	0.52	380	87.3	122.7	0.58
	20	101	12.1	76.7	0.35	144	16.9	83.7	0.36	214	25.0	95.4	0.38	280	32.2	106.1	0.39
	40	85	5.08	74.0	0.35	111	6.56	78.3	0.35	139	8.13	82.9	0.35	168	9.74	87.7	0.36
HUH1-30-C-3	10	267	63.4	104.0	3.64	325	76.4	113.6	4.90	383	89.0	123.2	6.32	441	101.3	132.8	7.84
	20	214	25.5	95.3	1.07	274	32.3	105.3	1.37	334	38.9	115.2	1.72	394	45.4	125.1	2.10
	40	90	5.37	74.8	0.52	175	10.4	88.9	0.60	238	13.9	99.4	0.68	302	17.5	109.9	0.77
HUH1-30-C-5	10	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model				
	20	243	29.0	100.2	3.67	302	35.6	109.9	5.10	361	42.1	119.6	6.71	419	48.3	129.2	8.47
	40	166	9.93	87.4	0.94	227	13.5	97.6	1.25	288	16.9	107.7	1.63	349	20.2	117.8	2.05
HUH1-30-C-7	10	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model	ΔP > 15 PSI, use a 3 pass model				
	20	256	30.6	102.2	10.0	315	37.1	111.8	14.2	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model	ΔP > 15 PSI, use a 5 pass model				
	40	190	11.4	91.1	1.63	250	14.8	101.1	2.57	310	18.2	111.0	3.68	370	21.4	120.9	4.93

- Notes:**
- * HUH single-pass heaters are not recommended for liquid service. In most cases, a smaller multi-pass heater would be more economical.
 - If using 50 Hz power supply, derate output values by 6%.
 - The above figures are based on calculations at sea level.
 - Refer to page 4 for model coding.
 - † Mixing ratio of ethylene glycol with water is by weight.



Water Performance Tables - 60°F EAT @ 60 Hz

Model		Entering Water Temperature															
		180°F				200°F				220°F				240°F			
		ΔT °F	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F	ΔP PSI	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F	ΔP PSI	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F	ΔP PSI	Output 10 ³ Btu/Hr	FLOW USGPM	FAT °F
HUH1-12-C-1*	10	20	4.10	76.5	0.01	27	5.49	82.1	0.01	33	6.89	87.8	0.01	40	8.32	93.5	0.02
	20	15	1.60	72.9	0.00	19	1.99	76.0	0.00	23	2.39	79.3	0.00	27	2.80	82.5	0.00
	40	13	0.69	71.0	0.00	17	0.87	74.0	0.00	21	1.07	77.2	0.00	25	1.27	80.5	0.00
HUH1-12-C-3	10	30	6.30	85.2	0.27	37	7.69	90.9	0.40	44	9.09	96.6	0.55	51	10.5	102.3	0.73
	20	23	2.38	78.9	0.04	30	3.08	84.6	0.07	37	3.77	90.3	0.10	43	4.49	96.0	0.14
	40	14	0.71	71.2	0.00	18	0.90	74.4	0.01	23	1.19	79.1	0.01	30	1.55	84.8	0.02
HUH1-16-C-1*	10	37	7.62	80.2	0.01	47	9.80	86.1	0.02	58	11.9	92.0	0.02	69	14.2	98.0	0.03
	20	25	2.62	73.9	0.00	31	3.24	77.3	0.00	39	4.00	81.3	0.00	50	5.11	87.2	0.01
	40	22	1.12	71.8	0.00	28	1.42	75.1	0.00	34	1.75	78.6	0.00	40	2.07	82.0	0.00
HUH1-16-C-3	10	50	10.39	87.7	0.45	61	12.57	93.6	0.66	72	14.8	99.5	0.89	82	17.0	105.4	1.18
	20	40	4.17	82.2	0.08	51	5.26	88.1	0.12	62	6.36	94.1	0.18	72	7.48	100.0	0.24
	40	23	1.17	72.6	0.01	33	1.70	78.3	0.02	44	2.25	84.2	0.03	54	2.81	90.2	0.04
HUH1-16-C-5	10	53	11.12	89.5	2.37	64	13.20	95.3	3.35	75	15.5	101.2	4.52	86	17.7	107.1	5.91
	20	46	4.75	85.3	0.46	56	5.84	91.2	0.69	67	6.94	97.1	0.96	78	8.05	103.0	1.28
	40	32	1.64	77.6	0.06	42	2.19	83.5	0.11	53	2.74	89.5	0.16	64	3.30	95.4	0.23
HUH1-20-C-1*	10	71	14.65	81.3	0.03	89	18.39	86.9	0.04	107	22.1	92.5	0.06	126	26.1	98.1	0.08
	20	43	4.41	72.8	0.00	61	6.29	78.4	0.00	79	8.17	83.9	0.01	98	10.1	89.6	0.01
	40	36	1.87	70.9	0.00	46	2.38	73.9	0.00	56	2.92	77.1	0.00	67	3.46	80.3	0.00
HUH1-20-C-3	10	89	18.49	87.0	1.03	108	22.24	92.6	1.46	126	26.1	98.1	1.98	145	29.8	103.7	2.59
	20	74	7.72	82.5	0.19	93	9.60	88.0	0.29	111	11.5	93.6	0.41	130	13.4	99.2	0.55
	40	47	2.48	74.2	0.02	66	3.40	79.7	0.04	84	4.34	85.3	0.06	103	5.30	90.9	0.09
HUH1-20-C-5	10	94	19.53	88.4	4.99	112	23.27	93.9	7.01	131	27.0	99.5	9.40	149	30.8	105.0	12.19
	20	83	8.55	84.8	1.02	101	10.39	90.4	1.45	119	12.3	96.0	2.05	138	14.2	101.5	2.71
	40	61	3.15	78.2	0.15	79	4.10	83.8	0.25	98	5.05	89.4	0.37	116	6.01	95.0	0.52
HUH1-24-C-1*	10	161	33.15	98.6	0.04	196	40.31	106.7	0.06	235	52.8	116.1	0.16	273	61.8	125.1	0.20
	20	119	12.26	88.5	0.01	152	15.69	96.3	0.07	189	20.3	105.1	0.08	228	25.8	114.3	0.09
	40	42	2.15	70.00	0.00	58	3.01	74.0	0.06	115	6.05	87.5	0.06	152	8.41	96.3	0.06
HUH1-24-C-3	10	189	38.96	105.1	1.52	225	46.44	113.8	2.10	264	59.2	123.0	3.31	302	68.5	132.0	4.34
	20	165	16.94	99.3	0.38	200	20.68	107.8	0.51	237	25.6	116.6	0.72	275	29.9	125.7	1.20
	40	121	6.27	88.9	0.13	156	8.03	97.1	0.15	191	10.1	105.5	0.19	229	12.7	114.6	0.25
HUH1-24-C-5	10	199	41.04	102.3	7.66	237	48.73	110.2	10.7	274	56.5	118.3	14.3	ΔP > 15 PSI, use a 3 pass model			
	20	179	18.39	97.8	1.65	216	22.24	105.6	2.36	253	26.2	113.6	3.22	291	30.1	121.8	4.25
	40	141	7.29	89.6	0.31	177	9.14	97.3	0.45	212	11.0	104.7	0.64	251	13.0	112.9	0.86
HUH1-24-C-7	10	ΔP > 15 PSI, use a 5 pass model				ΔP > 15 PSI, use a 5 pass model				ΔP > 15 PSI, use a 5 pass model				ΔP > 15 PSI, use a 5 pass model			
	20	183	19.0	98.8	4.45	222	2.86	106.9	6.35	260	26.8	115.0	8.62	298	30.9	123.1	11.3
	40	147	7.63	90.8	0.81	185	9.60	98.9	1.23	224	11.5	107.1	1.74	262	13.6	115.3	2.34
HUH1-30-C-1*	10	249	51.6	101.1	0.31	305	63.17	110.4	0.34	362	74.8	119.7	0.39	419	86.6	129.1	0.44
	20	187	19.4	90.8	0.24	243	25.14	100.1	0.25	299	31.0	109.4	0.27	357	36.9	118.9	0.28
	40	120	6.22	79.8	0.23	153	7.92	85.2	0.23	188	9.75	91.1	0.24	244	12.6	100.3	0.24
HUH1-30-C-3	10	288	59.6	107.5	2.77	344	70.97	116.7	3.92	399	82.5	125.9	5.07	456	94.1	135.2	6.39
	20	253	26.2	101.7	1.02	309	32.00	111.0	1.26	365	37.7	120.3	1.53	421	43.5	129.6	1.86
	40	186	9.68	90.9	0.59	243	12.57	100.2	0.64	300	15.5	109.5	0.71	357	18.4	118.9	0.78
HUH1-30-C-5	10	297	61.5	109.0	12.1	ΔP > 15 PSI, use a 3 pass model				ΔP > 15 PSI, use a 3 pass model				ΔP > 15 PSI, use a 3 pass model			
	20	268	27.8	104.4	3.05	324	33.56	113.6	4.13	380	39.4	122.8	5.40	437	45.2	132.1	6.90
	40	214	11.1	95.4	0.96	270	14.03	104.7	1.20	327	16.9	114.1	1.49	384	19.8	123.4	1.84
HUH1-30-C-7	10	ΔP > 15 PSI, use a 5 pass model				ΔP > 15 PSI, use a 3 pass model				ΔP > 15 PSI, use a 3 pass model				ΔP > 15 PSI, use a 3 pass model			
	20	276	28.6	105.4	7.71	332	34.29	114.6	10.89	ΔP > 15 PSI, use a 5 pass model				ΔP > 15 PSI, use a 5 pass model			
	40	227	11.7	97.3	1.44	283	14.65	106.6	2.17	340	17.6	115.9	3.03	396	20.5	125.2	4.06

- Notes:**
- * HUH single-pass heaters are not recommended for liquid service. In most cases, a smaller multi-pass heater would be more economical.
 - If using 50 Hz power supply, derate output values by 6%.
 - The above figures are based on calculations at sea level.
 - Refer to page 4 for model coding.

HHU Engineering Specifications

1.0 General

- 1.1 Heat-exchanger unit heater(s) shall be supplied and installed in accordance with the plans and specifications and shall be Hazloc Heaters' HUH series.
- 1.2 The unit heater(s) shall be (select one)
- suitable for steam applications operating @ _____ psi, producing _____ MBH @ entering air temperature of _____ °F and @ an altitude of _____ feet.
 - suitable for _____ (type of fluid) producing _____ MBH @ entering fluid temperature of _____ °F, exiting fluid temperature of _____ °F, entering air temperature of _____ °F and @ an altitude of _____ feet.

2.0 Heat Exchanger

- 2.1 The heat exchanger shall be constructed of carbon-steel headers conforming to ASME requirements with 5/8 in. (15.9 mm) outside diameter [16-gauge, 0.065 in. (1.6 mm) wall thickness] carbon-steel tubes with 1-1/2 in. (38.1 mm) outside diameter copper-free, L-foot, tension-wound aluminum fins @ 10 fins per in.
- 2.2 Inlet and outlet connections shall be 2" NPT female extra heavy-duty steel type.
- 2.3 The heat exchanger shall be suitable for pressures up to 400 psi (2758 kPa) and an operating temperature of 550°F (288°C).

3.0 Cabinet Assembly

- 3.1 The cabinet assembly shall be of a rivet and bolt together design using 14 gauge, 0.075 in. (1.9 mm) steel with a yellow baked epoxy/polyester powder coating.
- 3.2 Louver blades shall be individually adjustable and made of anodized extruded aluminum.

4.0 Fan and Motor Assembly

- 4.1 The fan shall be an accurately balanced propeller design with aluminum blades riveted to a steel hub, driven directly by the motor.
- 4.2 The fan shall be shielded with a heavy-duty steel wire, epoxy-coated guard. To provide easy maintenance and cleaning of the fan and motor, the fan guard shall be of a two piece construction. The guard shall not allow a 3/8 in. (9.5 mm) probe to enter.
- 4.3 The motor shall be heavy-duty industrial type with permanently lubricated ball bearings, and be UL Listed and/or CSA Certified.

The motor shall be (select one)

- Totally enclosed and rated for _____ volt, _____ phase, _____ hertz service.
- Explosion-proof and rated for _____ volt, _____ phase, _____ hertz service, Class _____, Div. (Zone) _____, Group(s) _____. Temp. Code _____.



Additional Products Available



SRH

The SRH series of heat-exchanger unit heaters is designed for steam applications on drilling rigs and is designed for pressures up to 100 psi. Meets ASME requirements with a CRN.



HHP

The HHP high performance series of heat-exchanger unit heaters is designed for steam, hot water, glycol or other fluid circulating heating systems. Suitable for pressures and temperatures up to 450 psi and 550 °F respectively. Meets ASME requirements with a CRN.



XEU1

The XEU1 series of explosion-proof electric air heaters are designed to meet U.S. and Canadian certification standards. The three sizes of XEU1 heaters are available in 27 model choices of voltage and heat output combinations to meet your specific requirements.

Hazloc Heaters™ *“Safe heat when you need it!”*

Hazloc Heaters™ is committed to a high standard of quality and on-time delivery performance. Upon acceptance of your order you can be assured your heater will ship when promised.

That is our commitment to you!

Limited 18-Month Warranty

Hazloc Heaters™ warrants all **HUH** series of explosion-proof electric heaters against defects in materials and workmanship under normal conditions of use for a period of eighteen (18) months from date of purchase based on the following terms:

1. The heater must not be modified in any way.
2. The heater must be stored, installed and used only in accordance with the owner's manual and attached data plate information.
3. Replacement parts will be provided free of charge as necessary to restore any unit to normal operating condition, provided that the defective parts be returned to us freight prepaid and that the replacement parts be accepted freight collect.
4. The complete heater may be returned to our manufacturing plant for repair or replacement (at our discretion), freight charges prepaid.
5. Contamination by dirt, dust, etc. or corrosion will not be considered as defects.
6. This warranty shall be limited to the actual equipment involved and, under no circumstances, shall include or extend to installation or removal costs, or to consequential damages or losses.



Hazloc Heaters™

Safe heat when you need it!

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