

UNIT HEATERS

FOR STEAM OR HOT WATER



FEATURES

BROAD RANGE OF APPLICATION

- Hot water or steam ROSEMEX unit heaters provide economical “space comfort” for industrial, commercial and institutional applications.
- Horizontal models H and HS in 13 sizes; up to 524 MBH.
- Vertical models V and VS in 13 sizes; up to 602.5 MBH.
- Greater throw with “low outlet temperature» HS and VS units (with high pressure steam).
- Maximum flexibility of air distribution with diffuser arrangements. [Standart on horizontal and optional on vertical models](#)
- Units with special coil available on request: copper fins on copper tubes, [heresite coated coils](#) or red brass tubes.

HIGH PERFORMANCE

- More CFM for lower outlet air temperature.
- Quieter operation with lower RPM motors.
- Greater air throw and circulation.
- Top opening on V models helps recover warm air at ceiling.
- Suitable for higher temperature drops.
- HS and VS units have wider fin spacing allowing for higher CFM and higher outlet velocities for even greater throw.
- Guaranteed to be free from defects in material or workmanship for a period of one year from date of purchase.

RUGGED “LONG-LIFE” CONSTRUCTION

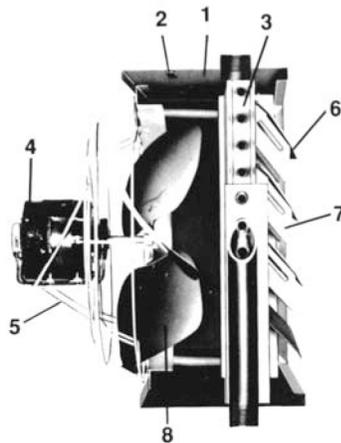
- Casing: die formed, reinforced steel.
- Finish: sheet metal chemically degreased, phosphatized and etched. Semi-gloss “grey” paint finish.
- Coil: steel pipe headers, copper tubes, ribbed aluminum [corrugated](#) fins. Is standard on all models. All coils [are](#) tested at 350 PSIG air pressure [in submerged](#) water.
- Motors: specially selected and tested; thermally protected; permanently lubricated for a minimum of 20,000 hours on all models, Motors are totally enclosed [airover](#).
- Motor mounts: rugged, corrosion resistant. All motors or supports resiliently mounted.
- Fans: aluminum blades; sturdy, balanced, efficient and quiet.

EASY MAINTENANCE

- All parts fully accessible for maintenance, service or replacement.
- Motors readily accessible on model H units, and easily removable through fan opening on model V units.

APPEARANCE

- Compact and attractive. Modern design enhanced by aluminium semi-gloss finish.



CUTAWAY VIEWS

FIGURE 1
MODEL H

1. Heavy gauge steel cabinet
2. Speed grip nut for solid easy hanging of unit
3. One-row coil with single connecting header on one side for half circuit
4. Heavy duty motor designed for longer life, permanently lubricated for a minimum of 20,000 hours
5. Rugged protective motor-mounts
6. Adjustable louvers
7. Louver fin diffusers
8. Sturdy balanced fan blade

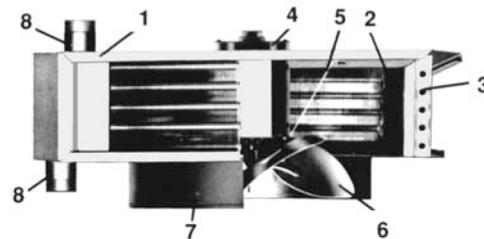


FIGURE 2
MODEL V

1. Heavy gauge steel cabinet
2. Speed grip nut for solid easy hanging of unit
3. One-row coil with full header at each end for a full circuit
4. Heavy duty motor designed for longer life, permanently lubricated for a minimum of 20,000 hours
5. Steel plate, rubber mounted motor support
6. Factory balanced quiet operating aluminum fan blades
7. Deep fan opening collar which encircles full depth of fan blade for protection against damage and also for better air distribution
8. Header brazed to copper tubes
9. [Protective fan guard grille standart issued.](#)

GENERAL SELECTION HEAT LOSSES

Should be calculated according to ASHRAE Guide [and to Rosemex Selection Prog.](#) or other reliable sources.

MODEL SELECTION

The model selected should be suitable for the type of building or area to be served. Model H units are generally used with low ceilings (see Table 2 for mounting height and spread). Model V units are recommended with high ceilings. They are particularly efficient in plants, warehouses or similar applications where they recover warm air which stratifies near ceilings (see Table 3 for mounting height and spread). Model V unit heaters with louver cone diffusers can also be used with higher ceilings.

NUMBER OF UNITS

Select required number of units to handle the heat losses, and also for proper air motion, adequate coverage of the occupied space, and operation within permissible sound levels. For instance, although one large unit may be sufficient for a certain area, two smaller units may be specified at a lower RPM for quieter operation, and to provide better heat distribution and circulation.

SPOT HEATING

It is usually more effective to discharge air across, instead of into, an open door. The throw shown in the performance tables applies to draft-free buildings with relatively stable temperatures. When heating only a small area within a cold environment, experience shows that the published throw may be reduced by as much as 50%.



MODEL H

UNIT HEATING

Unit Heaters should be spotted to aim the discharge towards the source of heat loss, but precautions should be taken to avoid blasting people with the warm air mass. Model H units should be located to achieve maximum air rotation in the same direction at the outside walls.

ECONOMY AND COMFORT

Where individual comfort is not an important factor, the prime consideration is to design the most economical system which will satisfy overall heating requirements. Larger units requiring less piping are recommended. Where the physical comfort of the occupants is important, several smaller units will provide quieter operation, better heat distribution, and more even temperatures.

PIPING

For unit heater piping connections, see AMCA Bulletin No. 15.

NOTE:

Although the cone diffuser can be mounted on Model V, it is recommended that the cone diffuser be mounted approximately four inches below the fan collar using fourbrackets (not shown) to provide optimum heat dispersion.



MODEL V

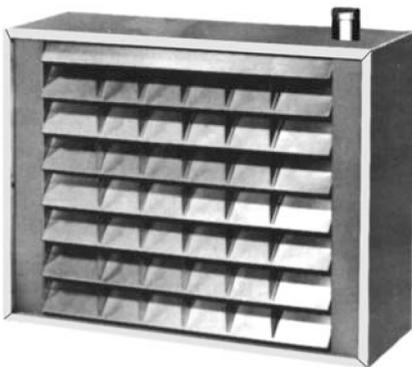
TABLE 1
STEAM UNIT HEATERS (LESS THAN 15 PSIG)

CAT NO.	STEAM - 2 PSIG ENT. AIR - 60°F				MOTOR 115V/1/60			CFM @ 60°F	OUTLET VELOCITY	SOUND CLASS	SPREAD STEAM 2 PSIG	
	EDR	COND. lb/h	MBH	FIN TEMP.	NOM. HP	NOM. RPM	NOM. AMP.				H	S
HS-25	109	27.2	26.2	113	1/20	1000	0.94	460	483	1	9	24
HS-31	130	32.3	31.2	102	1/20	1550	0.94	680	714	1	9	38
HS-39	162	40.3	38.9	121	1/20	1000	0.94	595	795	1	9	21
HS-47	193	48.0	46.4	109	1/20	1550	0.94	880	683	1	9	30
HS-43	174	43.4	41.9	114	1/12	1000	1.60	725	559	1	9	24
HS-51	213	53.0	51.2	102	1/12	1550	1.60	1120	756	2	9	41
HS-73	301	74.8	72.3	104	1/6	1075	2.60	1525	800	2	12	38
HS-95	396	98.4	95.1	109	1/6	1075	2.60	1800	442	2	14	46
HS-97	405	100.1	97.3	113	1/4	820	3.60	1685	540	2	14	43
HS-113	473	117.4	113.4	104	1/4	1100	3.60	2400	772	2	14	52
HS-117	490	121.9	117.7	113	1/4	850	3.60	2060	540	2	14	42
HS-137	572	142.0	137.2	103	1/4	1075	3.60	2930	772	2	14	50
HS-175	729	182.0	175.0	120	1/3	820	4.90	2690	467	3	15	49
HS-205	851	211.2	204.2	109	1/3	1100	4.90	3830	667	4	15	59
HS-265	1106	274.7	265.4	109	1/3	1075	6.70	5000	672	4	16	63

TABLE 2
STEAM UNIT HEATERS (LESS THAN 15 PSIG)

CAT NO.	STEAM - 2 PSIG ENT. AIR - 60°F				MOTOR 575/3/60			CFM @ 60°F	OUTLET VELOCITY	SOUND CLASS	SPREAD STEAM 2 PSIG	
	EDR	COND. lb/h	MBH	FIN TEMP.	NOM. HP	NOM. RPM	NOM. AMP.				H	S
HS-420	1660	412.3	398.4	120	1 1/2	1140	2.30	6150	775	4	16	68

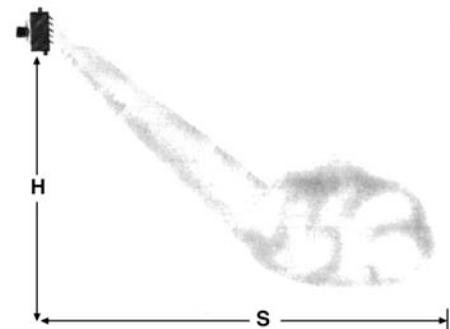
MODEL H



ALL UNITS c/w
4 WAY LOUVER FIN DIFFUSER



MOTOR MOUNT



SPREAD

A. All units with 0.035" Red Brass Tubes, 5/8" outside diameter mechanically bounded to aluminum fins.
B. Higher steam pressure units available on request.

UNIT HEATERS

STEAM CAPACITIES

VERTICAL PROJECTION



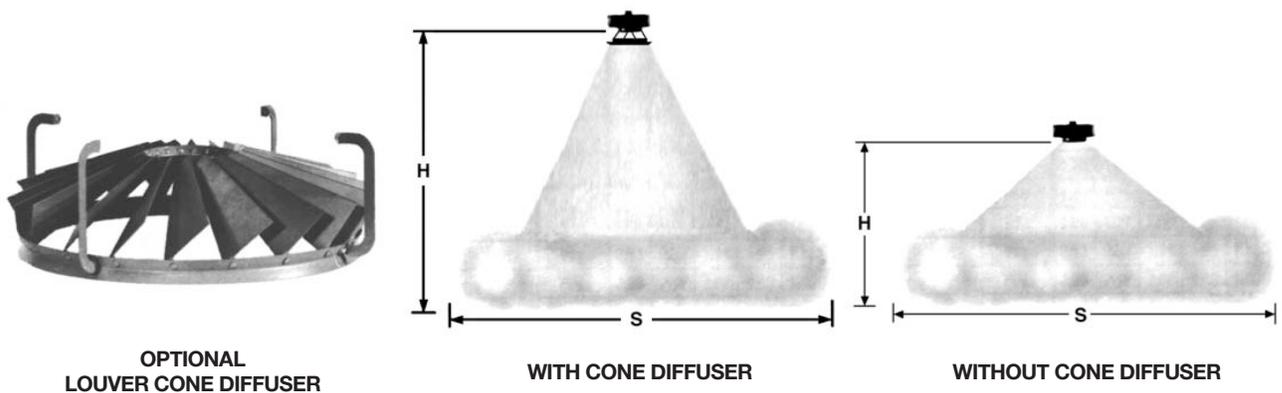
TABLE 3
STEAM UNIT HEATERS (LESS THAN 15 PSI)

CAT NO.	STEAM - 2 PSIG ENT. AIR - 60°F				MOTOR 115V/1/60			CFM @ 60°F	OUTLET VELOCITY	SOUND CLASS	THROW STEAM 2 PSIG			
	EDR	COND. lb/h	MBH	FIN TEMP.	NOM. HP	NOM. RPM	NOM. AMP.				NO CONE		LOUVER CONE	
											H	S	H	S
VS-47	193	48.0	46.4	136	1/30	1000	1.15	565	715	1	12	24	15	16
VS-55	230	57.1	55.2	122	1/30	1550	1.15	830	1050	2	15	36	18	21
VS-57	238	59.1	57.1	121	1/12	1000	1.60	865	809	1	15	36	18	21
VS-67	283	70.4	68.0	109	1/12	1550	1.60	1275	1190	2	17	45	22	25
VS-89	274	93.0	89.9	116	1/6	820	2.60	1490	1068	2	19	45	26	29
VS-103	427	106.0	102.5	107	1/6	1100	2.60	2000	1433	2	23	65	30	44
VS-137	571	141.8	137.0	108	1/4	850	3.60	2640	1490	2	23	52	36	38
VS-157	653	161.9	156.4	101	1/4	1075	3.60	3550	2000	4	29	79	41	44
VS-171	715	177.8	171.9	120	3/4	820	10.30	2640	840	1	20	37	26	27
VS-197	816	202.3	196.0	111	3/4	1100	10.30	3550	1130	2	22	39	30	30
VS-247	1029	255.8	246.9	106	1	820	14.00	4960	1580	2	27	56	41	41
VS-279	1159	288.0	278.5	99	1	1075	14.00	6660	2120	4	35	71	50	56
VS-361	1501	372.9	360.1	113	1	820	14.00	6260	1273	2	37	75	54	51
VS-413	1719	425.5	412.5	105	1	1075	14.00	8430	1716	3	48	97	66	70

TABLE 4
STEAM UNIT HEATERS (LESS THAN 15 PSI)

CAT NO.	STEAM - 2 PSIG ENT. AIR - 60°F				MOTOR 575/3/60			CFM @ 60°F	OUTLET VELOCITY	SOUND CLASS	SPREAD STEAM 2 PSIG			
	EDR	COND. lb/h	MBH	FIN TEMP.	NOM. HP	NOM. RPM	NOM. AMP.				NO CONE		LOUVER CONE	
											H	S	H	S
VS-595	2484	616.0	595.5	110	2	1100	2.8	11900	2420	4	64	118	80	95

MODEL V



- A. All units with 0.035" Red Brass Tubes, 5/8" outside diameter mechanically bounded to aluminum fins.
- B. Higher steam pressure units available on request.

DESIGN CONDITIONS

- Heating load = 139 MBH
- Entering air temperature (EAT) = 70°F
- Steam pressure = 10 PSIG
- Mounting height = 30 feet
- Standard vertical projection steam unit required (Model VS).

SELECTION PROCEDURE

1. Calculate equivalent capacity at conditions of Table 4.

$$\begin{aligned} \text{Equivalent capacity} &= \frac{\text{Capacity required}}{\text{Factor (Table 5)}} \\ &= \frac{139}{1.04} = 134 \text{ MBH} \end{aligned}$$

From Table 4, select Cat. No. VS-137 unit heater.

2. Calculate unit capacity at actual conditions.

$$\begin{aligned} \text{Actual capacity} &= \text{MBH (Table 4)} \times \text{Factor (Table 5)} \\ &= 137 \times 1.04 = 142.4 \text{ MBH} \end{aligned}$$

3. Calculate weight of condensate in pounds per hour.

$$\begin{aligned} \text{Pounds of condensate} &= \frac{\text{Actual BTUH}}{\text{Latent heat (Table 5)}} \\ &= \frac{142,400}{953} = 149 \text{ lb/hr} \end{aligned}$$

4. Calculate final air temperature (FAT).

$$\begin{aligned} \text{FAT} &= \text{EAT} + \frac{\text{Actual BTUH}}{\text{CFM} \times 1.08} \\ &= 70 + \frac{142,400}{2640 \times 1.08} = 119^\circ\text{F} \end{aligned}$$

5. Determine air mounting height at actual conditions.

At Table 4 conditions, mounting height of VS-137 is 23 feet without diffuser and 36 feet with louver cone diffuser.

At actual conditions (10 PSIG and 70°F EAT).

$$\begin{aligned} \text{Height} &= 23 \times 0.98 \text{ (Table 6)} = 22.5 \text{ feet (without diffuser)} \\ &= 36 \times 0.98 \text{ (Table 6)} = 35.3 \text{ feet (with louver cone diffuser)} \end{aligned}$$

Louver cone diffuser shall be used.

NOTE: See "GENERAL SELECTION" for application details (page XX), and Table 7 for noise level.

TABLE 5
BTU CORRECTION FACTORS

STEAM PSIG	LATENT HEAT BTUH/lb	MODELS H & HS HORIZONTAL PROJECTION													MODELS V & VS HORIZONTAL PROJECTION																
		ENTERING AIR TEMPERATURE °F															ENTERING AIR TEMPERATURE °F														
		-10	0	10	20	30	40	50	60	70	80	90	100	-10	0	10	20	30	40	50	60	70	80	90	100						
0	970	1.54	1.45	1.37	1.27	1.19	1.11	1.03	0.96	0.88	0.81	0.74	0.67	1.48	1.41	1.33	1.25	1.18	1.11	1.03	0.96	0.89	0.82	0.75	0.69						
2	966	1.59	1.50	1.41	1.32	1.24	1.16	1.08	1.00	0.93	0.85	0.78	0.71	1.52	1.44	1.36	1.29	1.22	1.14	1.07	1.00	0.93	0.86	0.79	0.73						
5	961	1.64	1.55	1.46	1.37	1.29	1.21	1.13	1.05	0.97	0.90	0.83	0.76	1.57	1.49	1.41	1.33	1.26	1.19	1.11	1.05	0.98	0.91	0.84	0.77						
10	953	1.73	1.64	1.55	1.46	1.38	1.29	1.21	1.13	1.06	0.98	0.91	0.84	1.64	1.56	1.48	1.40	1.33	1.25	1.18	1.11	1.04	0.97	0.90	0.84						
15	945	1.80	1.71	1.61	1.53	1.44	1.34	1.28	1.19	1.12	1.04	0.97	0.90	1.69	1.61	1.53	1.46	1.38	1.31	1.24	1.17	1.10	1.03	0.96	0.90						
20*	939	1.86	1.77	1.68	1.58	1.50	1.42	1.33	1.25	1.17	1.10	1.02	0.95	1.73	1.65	1.57	1.50	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.94						
50*	911	2.13	2.04	1.94	1.85	1.76	1.67	1.58	1.50	1.42	1.34	1.26	1.19	1.93	1.85	1.77	1.70	1.63	1.55	1.48	1.42	1.35	1.28	1.21	1.27						
75*	894	2.28	2.18	2.09	1.99	1.90	1.81	1.72	1.64	1.55	1.47	1.40	1.32	2.04	1.97	1.90	1.82	1.75	1.68	1.61	1.54	1.47	1.40	1.33	1.27						
100*	880	2.41	2.31	2.20	2.11	2.02	1.93	1.84	1.75	1.66	1.58	1.50	1.42	2.15	2.07	1.99	1.92	1.85	1.77	1.70	1.63	1.56	1.49	1.43	1.36						

* Special high pressure steam unit on request over 15 psig.

UNIT HEATERS

AIR DISTRIBUTION CORRECTION FACTORS



TABLE 6

ENT. WATER TEMP. °F	180	200	220	240	260	270	280	290	300	315	345	370	385	
STEAM PRESS. PSIG	-	-	-	-	2	5	10	15	20*	30*	50*	75*	100*	
ENT. AIR TEMP. °F	40	1.18	1.10	1.03	0.98	0.93	0.91	0.88	0.86	0.84	0.82	0.77	0.74	0.72
	50	1.23	1.14	1.07	1.01	0.96	0.95	0.92	0.89	0.87	0.84	0.80	0.76	0.73
	60	1.29	1.19	1.11	1.05	1.00	0.98	0.94	0.92	0.90	0.87	0.82	0.78	0.75
	70	1.35	1.24	1.15	1.08	1.04	1.02	0.98	0.95	0.93	0.89	0.84	0.80	0.77
	80	1.43	1.30	1.20	1.13	1.08	1.06	1.02	0.99	0.97	0.93	0.87	0.83	0.80

GRAPH 1
AIR DENSITY RATIO

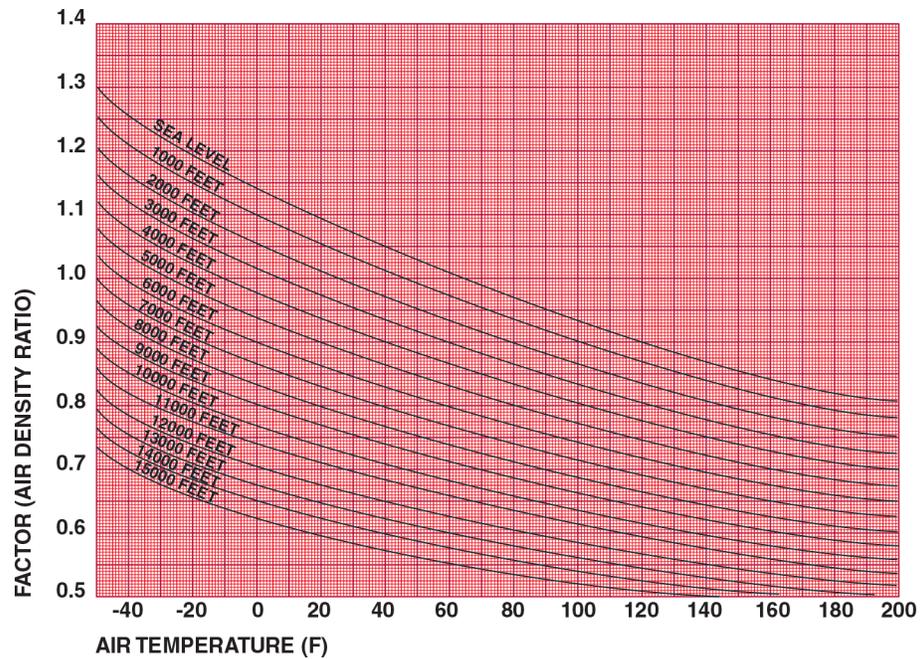


TABLE 7
NOISE LEVEL CLASSES

CLASSES	TYPE OF AREA
1	Movie-theatres — Coliseums — Ballrooms — Banquet rooms — Supervisor's office — Reception rooms — Public libraries — Museums — Court rooms
2	Lobbies — Laboratories — Recreation halls — Waiting rooms — Restaurants — Night clubs — Department stores (upper floors) — Bowling alleys — Gymnasiums — Lounges — General open offices — Drafting rooms
3	Kitchens — Washrooms and toilets — Cafeterias — Department stores (main floors) — Supermarkets — Swimming pools — Garages — Laundries — Foreman's office — Halls and corridors
4	Factories — Mills — Heavy machinery maintenance — Foundries

60°F ENTERING AIR TEMPERATURE

TABLE 8
HIGH SPEED

LOW SPEED

CAT NO.	WATER TEMP. DROP °F	ENTERING WATER TEMPERATURE								MAXIMUM PROJECTION		FAN SIZE	MAXIMUM PROJECTION		CAT NO.	WATER TEMP. DROP °F	ENTERING WATER TEMPERATURE							
		180°F				200°F				HEIGHT	SPREAD		HEIGHT	SPREAD			180°F				200°F			
		MBH	USGPM	WPD	FAT	MBH	USGPM	WPD	FAT								MBH	USGPM	WPD	FAT	MBH	USGPM	WPD	FAT
H-24 CFM 680 RPM 1550 HP 1/20	15	23.5	3.20	2.70	90	28.4	3.90	3.60	98	9	31	10" 0	9	19	H-18 CFM 460 RPM 1000 HP 1/20	15	19.2	2.60	1.90	98	23.2	3.2	2.6	106
	20	22.1	2.30	1.50	90	27.0	2.70	2.00	96							20	18.1	1.90	1.00	96	22.1	2.3	1.4	104
	30	19.3	1.30	0.60	86	24.3	1.70	0.9	93							30	15.9	1.10	0.40	92	19.9	1.4	0.6	100
	40	16.7	0.90	0.30	83	21.6	1.10	0.40	98							40	13.8	0.70	0.20	88	17.8	0.9	0.3	96
H-36 CFM 880 RPM 1550 HP 1/20	20	33.0	3.30	4.10	94	39.9	4.10	5.60	102	9	26	14" 0	9	20	H-26 CFM 595 HP 1/20	20	26.7	2.70	2.80	101	32.3	3.3	3.9	110
	30	29.7	2.00	1.70	91	36.7	2.50	2.40	98							30	24.1	1.60	1.20	97	29.7	2.0	1.7	106
	40	26.5	1.40	0.90	88	33.5	1.70	1.30	95							40	21.5	1.10	0.60	94	27.2	1.4	0.9	102
H-40 CFM 1120 RPM 1550 HP 1/12	20	37.1	3.80	5.00	90	45.0	4.60	6.90	97	9	32	14" 0	9	19	H-32 CFM 725 HP 1/12	20	29.8	3.10	3.40	98	35.9	3.70	4.70	106
	30	33.4	2.30	2.10	97	41.3	2.80	3.00	94							30	26.8	1.80	1.40	94	33.0	2.30	2.00	102
	40	29.8	1.50	1.10	84	37.7	1.90	1.60	91							40	23.9	1.20	0.70	90	30.2	1.60	1.10	98
H-58 CFM 1435 RPM 1550 HP 1/12	15	52.5	7.00	0.85	93	63.0	8.37	1.17	100	11	30	14" 0	9	19	H-44 CFM 925 RPM 1000 HP 1/12	15	40.4	5.39	0.51	100	49.7	6.62	0.75	110
	20	46.6	4.66	0.40	90	57.7	5.77	0.58	97							20	34.6	3.46	0.21	95	44.1	4.41	0.36	104
	25	37.8	3.10	0.19	84	50.4	4.00	0.30	92							30	27.0	2.12	0.09	87	38.1	3.00	0.28	98
	30					42.0	2.75	0.15	87							40					29.7	2.00	0.08	90
H-60 CFM 1525 RPM 1075 HP 1/6	10	58.8	11.76	2.20	104	70.0	14.00	3.05	102	11	31	16" 0	10	24	H-50 CFM 1250 RPM 820 HP 1/6	10	50.2	10.40	0.43	97	61.7	12.70	0.52	106
	15	54.0	7.20	0.88	93	65.8	8.88	1.29	100							15	45.5	6.20	0.19	94	56.5	7.80	0.23	102
	20	48.0	4.80	0.42	89	60.2	6.02	0.64	96							20	40.6	4.20	0.12	90	51.6	5.30	0.15	98
	30	33.0	2.25	0.10	80	45.5	3.00	0.17	88							30					42.5	2.90	0.03	91
H-82 CFM 1800 RPM 1075 HP 1/6	15	73.8	9.90	1.70	98	84.0	11.25	2.20	103	12	35	16" 0	11	27	H-70 CFM 1475 RPM 820 HP 1/6	15	61.7	8.40	0.24	99	75.9	10.40	0.38	107
	20	69.6	6.96	0.89	96	82.5	8.25	1.23	102							20	56.0	5.70	0.15	95	70.3	7.20	0.22	104
	30	54.0	3.50	0.25	88	70.0	4.62	0.42	96							30	45.4	3.10	0.07	88	59.6	4.10	0.19	97
	40					61.3	3.10	0.16	91							40					62.5	3.20	0.12	99
H-98 CFM 2400 RPM 1100 HP 1/4	15	85.4	11.39	2.22	93	101.5	13.50	3.08	99	13	51	18" 0	13	27	H-80 CFM 1685 RPM 820 HP 1/4	15	72.0	9.62	1.61	99	82.3	11.00	2.10	105
	20	81.6	8.16	1.21	91	98.0	9.80	1.68	98							20	66.0	6.60	0.82	96	80.5	8.05	1.20	104
	30	69.0	4.62	0.42	87	87.5	5.88	0.63	94							30	51.0	3.37	0.23	88	66.5	4.37	0.37	96
	40	52.4	2.65	0.15	80	71.7	3.62	0.26	88							40					52.5	2.62	0.15	89
H-114 CFM 2470 RPM 1075 HP 1/6	15	99.0	13.20	2.13	97	117.2	15.62	2.90	104	13	53	20" 0	13	39	H-96 CFM 2025 RPM 820 HP 1/6	15	84.3	11.50	0.34	98	103.3	14.20	0.53	107
	20	96.0	9.60	1.18	96	114.1	11.41	1.62	103							20	77.2	7.90	0.22	95	96.2	9.90	0.31	104
	30	84.0	5.60	0.44	91	103.6	6.90	0.64	99							30	63.7	4.30	0.11	89	82.7	5.70	0.15	98
	40	70.2	3.50	0.18	86	91.0	4.50	0.30	94							40					70.0	3.60	0.07	92
H-122 CFM 2930 RPM 1075 HP 1/4	15	105.0	14.00	2.37	93	124.3	16.62	3.25	99	14	54	20" 0	14	47	H-102 CFM 2060 RPM 820 HP 1/4	15	90.0	12.00	1.80	100	105.0	14.00	2.37	107
	20	103.2	10.32	1.36	92	121.1	12.11	1.82	98							20	85.4	8.54	0.95	98	103.2	10.32	1.87	106
	30	93.0	6.20	0.52	89	114.1	7.62	0.76	96							30	72.0	4.75	0.32	92	91.7	6.12	0.52	101
	40	78.0	3.95	0.22	85	100.1	5.00	0.36	92							40	52.4	2.65	0.11	83	75.3	3.75	0.21	94
H-166 CFM 3520 RPM 1100 HP 1/4	15	145.4	19.39	2.55	98	172.9	23.00	3.43	105	14	52	20" 0	14	44	H-136 CFM 2470 RPM 850 HP 1/4	15	120.0	16.00	1.80	105	145.2	19.37	2.55	114
	20	135.0	13.50	1.30	95	164.5	16.45	1.85	103							20	111.0	11.10	0.91	102	135.5	13.55	1.31	111
	30	117.0	7.75	0.47	91	145.2	9.70	0.71	98							30	92.4	6.15	0.41	95	117.8	7.85	0.47	104
	40	99.0	5.00	0.21	86	127.7	6.37	0.33	93							40	70.9	3.50	0.11	86	98.0	4.88	0.20	96
H-174 CFM 3830 RPM 1100 HP 1/3	15	151.4	20.19	2.80	97	176.7	23.50	3.60	105	14	56	24" 0	14	45	H-144 CFM 2690 RPM 820 HP 1/3	15	125.2	16.70	1.95	103	152.3	20.00	2.80	112
	20	143.3	14.34	1.48	95	173.2	17.32	2.09	102							20	117.0	11.70	0.98	100	143.5	14.35	1.45	109
	30	123.0	8.15	0.52	90	154.0	10.25	0.79	97							30	93.3	6.50	0.34	92	122.5	8.25	0.53	102
	40	104.4	5.25	0.23	85	133.0	6.62	0.35	92							40	78.0	3.88	0.13	87	103.2	5.15	0.22	95
H-234 CFM 4605 RPM 1100 HP 1/3	20	195.6	19.56	2.85	99	234.5	23.45	3.95	107	15	58	26" 0	15	51	H-194 CFM 3235 HP 1/3	20	162.0	16.20	2.05	106	193.2	19.32	2.85	115
	30	174.4	11.52	1.09	95	215.2	14.37	1.63	103							30	138.0	9.15	0.70	99	173.3	11.55	1.08	110
	40	153.0	7.62	0.50	90	192.5	9.62	0.77	99							40								
H-250 CFM 5000 RPM 1075 HP 1/2	20	207.0	20.70	3.15	98	247.8	24.78	4.45	105	16	60	26" 0	For MBH at EWT other than those indicated in the tables, use 200°F MBH and multiply by factor in table 10. MBH obtained will be at USGPM of 200°F MBH used.											
	30	183.6	12.25	1.21	94	226.8	15.12	1.83	102															
	40	159.6	8.00	0.55	89	201.2	10.00	0.82	97															
H-400 CFM 6150 RPM 1140 HP 1 1/2*	20	372.6	38.20	5.40	116	448.3	46.30	7.60	127	16	65	26" 0												
	30	339.2	23.20	3.90	111	415.7	28.60	5.80	122															
	40	306.2	15.60	3.20	106	338.3	19.70	5.10	117															

UNIT HEATERS

HOT WATER CAPACITIES

HORIZONTAL PROJECTION



TABLE 8

60°F ENTERING AIR TEMPERATURE

HIGH SPEED

LOW SPEED

CAT NO.	WATER TEMP. DROP °F	ENTERING WATER TEMPERATURE								MAXIMUM PROJECTION		FAN SIZE	MAXIMUM PROJECTION		CAT NO.	WATER TEMP. DROP °F	ENTERING WATER TEMPERATURE							
		220°F				240°F				HEIGHT	SPREAD		HEIGHT	SPREAD			220°F				240°F			
		MBH	USGPM	WPD	FAT	MBH	USGPM	WPD	FAT								MBH	USGPM	WPD	FAT	MBH	USGPM	WPD	FAT
H-24 CFM 680 RPM 1550 HP 1/20	20	31.9	3.30	2.70	103	36.7	3.70	3.40	110	9	31	10" 0	9	19	H-18 CFM 460 RPM 1000 HP 1/20	20	26.1	2.70	1.90	112	29.9	3.00	2.40	120
	30	29.2	2.00	1.20	100	34.2	2.40	1.50	106							30	23.9	1.70	0.80	108	27.9	1.90	1.10	116
	40	26.6	1.40	0.60	96	31.6	1.60	0.80	103							40	21.8	1.10	0.40	104	25.9	1.30	0.60	112
H-36 CFM 880 RPM 1550 HP 1/20	20	46.7	4.90	7.30	109	53.6	5.60	9.20	116	9	26	14" 0	9	20	H-26 CFM 595 RPM 1000 HP 1/200	20	37.8	3.90	5.10	119	43.3	4.50	6.40	127
	30	43.5	3.00	3.30	106	50.5	3.50	4.20	113							30	35.3	2.40	2.30	115	40.9	2.80	2.90	123
	40	40.5	2.10	1.80	102	47.4	2.50	2.30	110							40	32.8	1.70	1.20	111	38.4	2.00	1.60	119
H-40 CFM 1120 RPM 1550 HP 1/12	20	52.8	5.50	9.00	103	60.5	6.30	11.3	110	9	32	14" 0	9	19	H-32 CFM 725 RPM 1000 HP 1/12	20	42.1	4.40	6.10	113	48.3	5.00	7.70	121
	30	49.1	3.40	4.00	100	57.0	4.00	5.10	107							30	39.3	2.70	2.70	110	45.5	3.20	3.50	118
	40	45.6*	2.40	2.20	97	53.5	2.80	2.80	104							40	36.5	1.90	1.50	106	42.8	2.20	1.90	114
H-58 CFM 1435 RPM 1550 HP 1/12	10	75.2	15.00	3.45	108	88.2	17.50	4.60	117	11	30	14" 0	9	19	H-44 CFM 925 RPM 1000 HP 1/12	10	65.9	13.12	2.75	126	74.7	15.00	3.45	135
	15	73.6	9.75	1.55	107	80.1	10.68	1.81	112							15	60.0	8.00	1.10	120	68.4	9.12	1.38	128
	20	70.0	7.00	0.84	105	78.7	7.87	1.03	111							20	53.9	5.39	0.51	114	63.9	6.39	0.70	124
	25	64.0	5.12	0.47	101	74.7	6.05	0.66	108							25	48.0	3.88	0.26	108	58.5	4.70	0.40	118
	30	56.0	3.75	0.25	96	69.8	4.66	0.39	105							30	41.9	2.85	0.16	102	51.8	3.46	0.23	112
H-60 CFM 1525 RPM 1075 HP 1/6	10	84.4	16.00	3.85	111	92.2	18.35	5.00	116	11	31	16" 0	10	24	H-50 CFM 1250 RPM 820 HP 1/6	10	72.8	15.10	0.74	114	83.9	17.40	0.96	122
	15	76.0	10.10	1.70	106	88.2	11.76	2.17	113							15	67.7	9.30	0.31	110	79.0	10.90	0.43	118
	20	72.0	7.20	0.88	104	83.7	8.37	1.16	111							20	62.9	6.50	0.22	107	74.3	7.70	0.25	115
	30	61.6	4.00	0.30	97	72.0	4.80	0.42	103							30	53.8	3.70	0.11	100	65.4	4.50	0.13	108
	40	44.0	2.25	0.10	87	56.3	2.88	0.16	94							40	51.2	2.60	0.07	98	56.9	2.90	0.09	102
H-82 CFM 1800 RPM 1075 HP 1/6	10	100.0	13.25	3.00	111	119.2	16.00	4.22	121	12	35	16" 0	11	27	H-70 CFM 1475 RPM 820 HP 1/6	10	96.0	19.90	1.02	120	110.3	22.90	1.23	129
	15	98.4	9.84	1.70	110	116.0	11.60	4.00	119							15	90.2	12.40	0.49	116	104.7	14.50	0.52	126
	20	85.9	5.75	0.62	104	104.4	6.96	0.89	114							20	84.7	8.80	0.24	113	99.3	10.30	0.31	122
	30	72.0*	3.50	0.25	97	87.8	4.30	0.37	105							30	74.2	5.10	0.12	106	89.0	6.10	0.15	116
	40															40	64.2	3.30	0.06	100	79.1	4.10	0.11	109
H-98 CFM 2400 RPM 1100 HP 1/4	15	116.0	15.25	3.88	105	128.2	12.82	2.79	109	13	51	18" 0	13	27	H-80 CFM 1685 RPM 820 HP 1/4	15	97.9	13.00	2.85	114	116.1	15.75	4.10	124
	20	113.9	11.39	2.22	104	122.4	8.16	1.21	107							20	96.2	9.62	1.61	113	112.5	15.00	3.80	122
	30	140.8	7.05	0.93	104	116.0	5.62	0.60	104							30	84.0	5.62	0.60	106	99.0	6.60	0.82	114
	40	92.0	4.62	0.42	95											40	68.0	3.37	0.23	97	85.5	4.30	0.37	107
H-114 CFM 2470 RPM 1075 HP 1/6	15	137.6	18.00	3.80	111	149.9	14.94	2.68	116	13	53	20" 0	13	39	H-96 CFM 2025 RPM 820 HP 1/6	15	122.5	16.90	0.62	116	141.7	19.60	0.84	125
	20	132.0	13.20	2.13	109	144.0	9.60	1.18	114							20	115.5	11.90	0.35	113	134.9	14.00	0.42	121
	30	124.5	8.37	0.92	107	132.7	6.62	0.59	110							30	102.2	7.00	0.15	106	121.9	8.40	0.24	116
	40	112.0	5.60	0.44	102											40	89.5	4.60	0.07	101	109.3	5.70	0.12	110
H-122 CFM 2930 RPM 1075 HP 1/4	15	143.2	18.75	4.00	105	159.3	15.93	3.00	110	14	54	20" 0	14	47	H-102 CFM 2060 RPM 820 HP 1/4	15	121.9	16.00	3.00	115	135.0	13.50	2.24	121
	20	140.0	14.00	2.37	104	154.8	10.32	1.36	109							20	120.0	12.00	1.00	114	128.2	8.54	0.95	118
	30	135.2	9.05	1.07	103	146.2	7.37	0.72	106							30	110.4	7.40	0.73	109	117.0	5.88	0.58	113
	40	124.0	6.20	0.52	99											40	96.0	4.75	0.32	103				
H-166 CFM 3520 RPM 1100 HP 1/4	15	193.9	19.39	2.55	111	222.7	22.27	3.30	118	14	52	20" 0	14	44	H-136 CFM 2470 RPM 850 HP 1/4	15	169.9	22.50	3.35	124	185.0	18.50	2.35	129
	20	175.2	11.75	0.98	106	202.5	13.50	1.30	113							20	160.0	16.00	1.80	120	166.5	11.10	0.91	122
	30	156.0	7.75	0.47	101	184.5	9.25	0.65	108							30	142.1	9.50	0.69	113	146.7	7.35	0.43	115
	40															40	123.2	6.15	0.41	106				
H-174 CFM 3830 RPM 1100 HP 1/3	15	201.9	20.19	2.80	109	229.5	22.95	3.35	115	14	56	24" 0	14	45	H-144 CFM 2690 RPM 820 HP 1/3	15	176.0	23.37	3.60	120	192.5	19.25	2.55	126
	20	185.6	12.50	1.15	105	215.1	14.34	1.48	112							20	167.0	16.70	1.95	117	175.5	11.70	0.98	120
	30	164.0	8.15	0.52	100	195.8	9.88	0.72	107							30	149.6	10.00	0.75	111	155.2	7.75	0.47	113
	40															40	124.4	6.50	0.34	103				
H-234 CFM 4605 RPM 1100 HP 1/3	20	272.0	27.20	5.20	115	306.0	30.60	6.40	121	15	58	26" 0	15	51	H-194 CFM 3235 HP 1/3	20	224.0	22.40	3.65	124	252.0	25.20	4.55	132
	30	256.0	17.12	2.25	111	293.4	19.56	2.85	119							30	208.0	14.00	1.56	119	243.0	16.20	2.05	129
	40	232.8	11.52	1.09	107	274.5	13.80	1.48	115							40	184.0	9.15	0.70	113	220.5	11.12	1.02	123
H-250 CFM 5000 RPM 1075 HP 1/2	20	286.1	28.61	5.70	113	324.0	32.40	7.15	120	16	60	26" 0												
	30	269.6	18.00	2.45	110	310.5	20.70	3.15	117															
	40	244.8	12.25	1.21	105	288.0	14.50	1.65	113															
H-400 CFM 6150 RPM 1140 HP 1 1/2*	20	524.0	52.40	10.1	138	599.5	59.9	13.0	150	16	65	26" 0												
	30	492.1	32.80	8.10	133	568.2	37.8	5.60	145															
	40	460.3	23.01	4.10	129	537.1	26.8	4.52	140															

For MBH at EWT other than those indicated in the tables, use 200°F MBH and multiply by factor in table 10. MBH obtained will be at USGPM of 200°F MBH used.

* No cone diffuser (standard unit).

60°F ENTERING AIR TEMPERATURE

TABLE 9
HIGH SPEED

LOW SPEED

CAT NO.	WATER TEMP. DROP °F	ENTERING WATER TEMPERATURE								MAXIMUM PROJECTION		FAN SIZE	MAXIMUM PROJECTION		CAT NO.	WATER TEMP. DROP °F	ENTERING WATER TEMPERATURE							
		180°F				200°F				HEIGHT	SPREAD		HEIGHT	SPREAD			180°F				200°F			
		MBH	USGPM	WPD	FAT	MBH	USGPM	WPD	FAT								MBH	USGPM	WPD	FAT	MBH	USGPM	WPD	FAT
V-40 CFM 750 RPM 1550 HP 1/30	10	39.4	8.00	1.00	109	47.2	9.50	1.40	118	12	28	12" 0	12	22	V-30 CFM 510 RPM 1000 HP 1/30	10	33.0	6.65	0.52	120	40.0	7.80	0.95	132
	15	34.8	4.75	0.38	103	42.7	5.70	0.54	113							15	27.6	3.75	0.25	110	34.3	4.50	0.35	122
	20	32.5	3.25	0.19	100	39.9	3.99	0.28	109							20	23.0	2.30	0.10	102	29.4	2.94	0.16	113
	25	27.0	2.25	0.10	93	34.3	2.75	0.14	102							25	18.0	1.50	0.05	93	24.5	2.00	0.08	104
	30	24.0	1.65	0.05	90	30.1	2.00	0.08	97							30	16.4	1.00	0.02	90	21.0	1.30	0.04	98
V-48 CFM 1150 RPM 1550 HP 1/12	10	43.4	9.00	1.20	95	53.2	10.50	1.70	103	14	35	14" 0	12	29	V-38 CFM 780 RPM 1000 HP 1/12	10	36.6	7.45	0.85	103	43.4	8.55	1.10	111
	15	43.2	5.90	0.56	94	50.7	6.70	0.70	101							15	33.6	4.55	0.35	100	40.3	5.25	0.65	108
	20	40.0	4.00	0.28	92	49.0	4.90	0.40	99							20	32.5	3.25	0.19	98	38.8	3.88	0.26	106
	25	37.2	3.00	0.17	90	45.5	3.70	0.24	97							25	27.0	2.25	0.09	92	34.3	2.75	0.14	100
	30	34.2	2.30	0.10	87	42.0	2.75	0.14	94							30	24.0	1.65	0.06	88	30.1	2.00	0.08	96
V-66 CFM 1500 RPM 1725 HP 1/4	10	60.0	12.00	2.10	97	71.7	14.25	3.00	104	15	46	14" 0	14	40	V-50 CFM 955 RPM 1075 HP 1/4	10	48.0	9.50	1.40	106	57.4	11.40	2.05	115
	15	54.0	7.25	0.85	93	64.7	8.50	1.20	100							15	42.0	5.50	0.70	100	50.7	6.75	0.73	108
	20	47.5	4.75	0.38	89	58.8	5.88	0.56	96							20	36.0	3.60	0.23	94	48.8	4.88	0.40	107
	30	39.0	2.70	0.14	84	47.3	3.20	0.19	89							30	31.4	2.50	0.12	90	33.6	2.40	0.11	92
	40	33.0	1.75	0.06	80	40.3	2.00	0.08	85							40	24.0	1.20	0.03	83	31.5	1.50	0.05	90
V-84 CFM 1435 RPM 1100 HP 1/6	10	76.4	15.40	2.10	99	91.3	18.25	2.90	107	18	58	16" 0	15	35	V-70 CFM 1340 RPM 820 HP 1/6	10	66.0	13.25	1.50	106	78.7	15.70	2.10	114
	15	72.0	9.70	0.85	97	85.7	11.25	1.10	104							15	61.4	8.25	0.60	102	73.5	9.85	1.90	111
	20	67.5	6.75	0.42	95	82.0	8.20	0.62	102							20	57.5	5.75	0.30	100	70.0	7.00	0.45	108
	30	58.6	4.00	0.16	90	71.7	4.75	0.22	97							30	48.0	3.25	0.10	93	59.5	4.00	0.16	101
	40	54.0	2.50	0.06	87	63.0	3.05	0.10	92							40	42.0	2.00	0.04	89	52.5	2.55	0.07	96
V-96 CFM 2425 RPM 1725 HP 1/4	10	90.9	18.25	2.50	95	108.5	21.50	4.00	101	18	58	16" 0	17	54	V-80 CFM 1545 RPM 1075 HP 1/4	10	73.2	14.60	1.90	103	86.8	17.25	2.60	111
	15	85.2	11.30	1.15	92	100.8	13.25	1.30	98							15	69.0	9.25	0.80	101	81.9	10.75	1.10	108
	20	82.0	8.20	0.63	91	95.2	9.52	0.70	96							20	65.0	6.50	0.40	98	79.0	7.90	0.58	107
	30	72.0	4.75	0.21	87	87.2	5.90	0.34	93							30	54.0	3.60	0.13	92	68.3	4.50	0.20	100
	40	63.0	3.25	0.10	84	77.0	3.80	0.14	89							40	49.2	2.50	0.06	89	59.5	3.00	0.09	95
V-106 CFM 2400 RPM 1075 HP 1/4	10	108.2	22.30	2.60	102	129.5	26.70	3.50	110	20	55	18" 0	17	44	V-90 CFM 1790 RPM 850 HP 1/4	10	84.0	16.90	2.60	103	100.0	20.00	3.70	112
	15	102.7	14.00	1.20	99	123.5	17.00	1.60	108							15	79.2	10.60	1.10	101	94.5	12.45	1.50	109
	20	96.8	9.90	0.65	97	117.8	12.10	0.90	105							20	70.0	7.00	0.50	96	87.5	8.75	0.75	105
	30	85.6	5.80	0.32	93	106.7	7.30	0.38	101							30	54.0	3.70	0.15	88	68.3	4.50	0.21	95
	40	74.6	3.80	0.09	89	95.7	4.90	0.20	97							40	42.0	2.20	0.06	81	54.6	2.75	0.09	88
V-130 CFM 3200 RPM 1075 HP 1/4	10	117.5	23.50	5.40	94	138.3	27.70	7.00	100	18	60	18" 0	15	46	V-108 CFM 2380 RPM 850 HP 1/4	10	108.2	22.20	2.60	102	128.9	26.60	3.50	110
	15	109.4	14.60	2.00	92	131.2	17.25	2.70	98							15	102.2	14.00	1.20	100	123.0	16.90	1.60	108
	20	103.0	10.30	1.00	90	124.5	12.45	1.50	96							20	96.4	9.90	0.65	97	117.3	12.10	0.90	105
	30	89.4	6.00	0.38	86	110.3	7.30	0.54	92							30	85.2	5.80	0.32	93	106.2	7.30	0.38	101
	40	75.0	3.75	0.15	82	95.9	4.75	0.23	88							40	74.3	3.80	0.09	89	95.3	4.90	0.23	97
V-140 CFM 3660 RPM 1100 HP 3/4	15	129.0	19.25	2.20	93	152.6	20.20	2.50	99	20	55	20" 0	17	44	V-124 CFM 2730 RPM 820 HP 3/4	10	109.4	14.60	1.35	97	129.5	17.00	1.80	103
	20	123.0	12.30	1.00	91	147.5	14.75	1.40	97							15	104.0	10.40	0.70	95	124.5	12.45	1.00	102
	25	115.8	9.40	0.58	89	141.7	11.50	0.85	96							20	94.8	7.75	0.40	92	119.0	9.50	0.60	100
	30	108.0	7.25	0.35	87	133.0	8.85	0.50	94							30	87.0	6.00	0.25	89	110.3	7.30	0.36	97
	40	93.0	4.70	0.15	84	117.2	5.75	0.22	90							40	73.4	3.75	0.10	85	95.9	4.75	0.15	92
V-180 CFM 3200 RPM 1100 HP 3/4	15	148.2	19.75	2.80	103	173.2	22.75	3.60	110	14	31	20" 0	12	31	V-144 CFM 2380 RPM 820 HP 3/4	10	127.2	17.00	2.10	111	148.7	19.75	2.80	119
	20	145.0	14.50	1.50	102	170.0	17.00	2.10	109							15	123.6	12.36	1.15	109	145.2	14.52	1.50	118
	25	141.0	11.25	0.95	101	168.0	13.50	1.35	109							20	114.0	9.25	0.65	105	138.6	11.25	0.95	115
	30	133.4	9.00	0.60	99	162.7	10.75	0.85	107							30	105.0	7.10	0.40	102	130.2	8.70	0.58	112
	40	114.0	5.75	0.25	93	144.9	7.25	0.42	102							40	88.4	4.50	0.16	95	112.7	5.60	0.24	105
V-200 CFM 4250 RPM 1100 HP 3/4	15	171.0	22.75	3.60	97	203.0	26.75	5.00	104	18	35	24" 0	18	31	V-170 CFM 3160 RPM 820 HP 3/4	15	145.4	19.30	2.60	102	172.2	22.75	3.60	110
	20	165.0	16.50	2.00	96	195.0	19.50	2.60	102							20	140.0	14.00	1.45	101	167.5	16.75	2.10	109
	25	159.0	12.80	1.20	95	189.0	15.25	1.70	101							25	135.0	10.75	0.85	99	161.0	13.00	1.30	107
	30	154.5	10.25	0.80	94	185.5	12.25	1.10	100							30	127.2	8.50	0.55	97	155.4	10.25	0.80	105
	40	138.0	7.00	0.38	90	171.5	8.50	0.54	97							40	110.4	5.50	0.24	92	145.2	7.25	0.40	102
V-252 CFM 6000 RPM 1075 HP 1	20	200.0	20.00	2.80	91	238.0	23.80	3.80	96	26	69	24" 0	22	45	V-204 CFM 4470 RPM 820 HP 1	20	171.0	17.10	2.10	96	202.5	20.25	2.70	103
	25	192.0	16.00	1.80	89	232.7	18.75	2.50	96							25	166.6	13.50	1.30	95	197.7	16.00	1.80	102
	30	190.6	12.75	1.20	89	228.2	15.25	1.60	95							30	160.4	10.75	0.85	94	192.5	12.75	1.20	101
	40	175.4	8.75	0.56	87	215.0	10.75	0.85	93							40	150.0	7.50	0.42	92	178.5	8.80	0.44	98
	20	294.0	29.40	3.60	96	350.0	35.00	5.20	103							20	247.5	24.75	2.60	101	297.5	29.75	4.00	110
V-370 CFM 7600 RPM 1075 HP 1	25	282.0	22.50	2.00	94	340.2	27.50	3.20	101	35	68	30" 0	25	51	V-300 CFM 5660 RPM 820 HP 1	25	232.4	18.75	1.50	99	285.2	23.00	2.30	108
	30	265.4	17.75																					

UNIT HEATERS

HOT WATER CAPACITIES

HORIZONTAL PROJECTION



TABLE 9

60°F ENTERING AIR TEMPERATURE

HIGH SPEED

LOW SPEED

CAT NO.	WATER TEMP DROP °F	ENTERING WATER TEMPERATURE								MAXIMUM PROJECTION		FAN SIZE	MAXIMUM PROJECTION		CAT NO.	WATER TEMP DROP °F	ENTERING WATER TEMPERATURE							
		220°F				240°F				HEIGHT	SPREAD		220°F											
		MBH	USGPM	WPD	FAT	MBH	USGPM	WPD	FAT				HEIGHT	SPREAD			MBH	USGPM	WPD	FAT				
V-40 CFM 750 RPM 1550 HP 1/30	10	54.1	10.00	1.50	127	63.0	11.50	2.80	137	12	28	12" 0	12	22	V-30 CFM 510 RPM 1000 HP 1/30	10	45.6	8.25	1.05	143	57.6	9.50	1.40	164
	15	52.8	6.75	0.65	125	60.0	8.00	1.00	134							15	41.9	5.50	0.50	136	49.9	6.65	0.52	150
	20	47.5	4.75	0.38	118	55.0	5.50	0.70	128							20	37.5	3.75	0.25	128	44.0	4.40	0.34	140
	25	41.9	3.30	0.20	112	52.5	4.00	0.28	124							25	30.4	2.40	0.10	115	38.2	3.00	0.17	129
	30	37.9	2.50	0.12	107	49.0	3.25	0.19	120							30	27.2	1.75	0.06	109	34.5	2.30	0.10	123
V-48 CFM 1150 RPM 1550 HP 1/12	10	62.1	11.00	1.80	110	70.2	12.60	2.30	116	14	35	14" 0	12	29	V-38 CFM 780 RPM 1000 HP 1/12	10	49.9	9.00	1.30	119	57.6	10.25	1.60	128
	15	60.0	7.75	0.95	108	67.5	9.00	1.20	114							15	48.0	6.25	0.62	117	55.9	7.45	0.85	126
	20	59.0	5.90	0.80	107	65.0	6.50	0.70	112							20	45.5	4.55	0.36	114	51.5	5.15	0.48	121
	25	53.9	4.25	0.32	103	63.0	5.00	0.42	110							25	41.9	3.30	0.20	109	49.5	4.00	0.28	119
	30	52.0	3.50	0.22	102	60.0	4.00	0.28	108							30	37.9	2.50	0.15	105	48.7	3.25	0.19	118
V-66 CFM 1500 RPM 1725 HP 1/4	10	81.9	15.00	3.20	110	96.3	17.30	4.20	119	15	46	14" 0	14	40	V-50 CFM 955 RPM 1075 HP 1/4	10	42.0	5.50	0.70	100	50.7	6.75	0.73	108
	15	78.1	10.25	1.60	108	90.0	12.00	2.10	115							15	61.6	8.00	1.00	119	72.0	9.50	1.40	129
	20	72.5	7.25	0.85	105	82.5	8.25	1.00	111							20	55.0	5.50	0.70	113	67.0	6.70	0.70	124
	30	58.4	4.00	0.28	96	71.2	4.75	0.38	104							30	44.0	3.10	0.18	102	54.0	3.60	0.23	112
	40	52.0	2.70	0.14	92	61.2	3.10	0.19	97							40	41.9	2.50	0.12	100	46.8	2.25	0.10	105
V-84 CFM 1435 RPM 1100 HP 1/6	10	105.9	19.15	3.00	114	121.5	22.00	4.20	122	18	58	16" 0	15	35	V-70 CFM 1340 RPM 820 HP 1/6	10	89.9	16.25	2.20	122	103.5	18.75	3.00	131
	15	100.0	13.25	1.50	111	115.5	15.40	2.10	120							15	85.9	11.40	1.15	119	99.4	13.25	1.50	127
	20	97.0	9.70	0.85	110	110.0	11.00	1.20	117							20	82.5	8.25	0.60	117	94.5	9.45	0.80	125
	30	85.9	5.75	0.32	104	101.2	6.75	0.42	112							30	72.0	4.80	0.22	110	86.2	5.75	0.30	119
	40	78.1	4.00	0.16	100	92.2	4.65	0.21	107							40	64.0	3.25	0.10	104	76.5	3.80	0.14	113
V-96 CFM 2425 RPM 1725 HP 1/4	10	125.6	22.60	4.20	108	144.0	26.00	5.40	116	18	58	16" 0	17	54	V-80 CFM 1545 RPM 1075 HP 1/4	10	100.0	18.25	2.50	2.50	114.6	21.00	3.80	128
	15	118.4	15.70	2.20	105	136.9	18.25	2.50	112							15	96.0	12.70	1.40	1.40	109.8	14.60	1.90	125
	20	113.0	11.30	1.15	103	130.0	13.00	1.50	110							20	92.0	9.25	0.80	0.80	105.0	10.50	1.00	122
	30	104.0	7.00	0.45	100	123.0	8.20	0.63	107							30	81.9	5.50	0.30	0.30	97.5	6.50	0.40	118
	40	96.0	4.75	0.21	97	112.5	5.75	0.32	103							40	72.0	3.60	0.13	0.13	87.3	4.50	0.20	111
V-106 CFM 2400 RPM 1075 HP 1/4	10	134.4	24.40	5.40	112	153.9	28.00	7.00	120	20	55	18" 0	17	44	V-90 CFM 1790 RPM 850 HP 1/4	10	116.0	20.90	4.00	120	132.3	24.00	5.00	128
	15	129.9	17.25	2.80	110	150.0	20.00	3.80	118							15	110.1	14.50	2.00	117	126.7	16.90	2.60	125
	20	125.0	12.50	1.50	108	141.0	14.10	1.90	114							20	106.0	10.60	1.10	115	120.0	12.00	1.40	122
	30	108.8	7.25	0.54	102	131.2	8.75	0.75	111							30	85.9	5.75	0.34	104	105.0	7.00	0.50	114
	40	89.9	4.50	0.22	95	110.2	5.50	0.30	102							40	72.0	3.70	0.15	97	87.8	4.50	0.22	105
V-130 CFM 3200 RPM 1075 HP 1/4	10	159.2	28.75	7.10	106	180.9	33.00	9.50	112	18	60	18" 0	15	46	V-108 CFM 2380 RPM 850 HP 1/4	10	134.4	24.40	5.40	112	153.9	28.00	7.00	120
	15	153.9	20.30	3.70	105	176.2	23.50	5.40	111							15	129.9	17.25	2.80	110	150.0	20.00	3.80	118
	20	146.0	14.60	2.00	102	167.5	16.75	2.60	108							20	125.0	12.50	1.50	108	141.0	14.10	1.90	114
	30	132.0	8.75	0.75	98	154.5	10.30	1.00	105							30	108.8	7.25	0.54	102	131.2	8.75	0.75	111
	40	119.2	6.00	0.38	94	141.8	6.10	0.40	101							40	89.9	4.50	0.22	95	110.2	5.50	0.30	102
V-140 CFM 3660 RPM 1100 HP 3/4	15	180.0	23.50	3.60	106	203.4	27.00	4.40	111	20	55	20" 0	17	44	V-124 CFM 2730 RPM 820 HP 3/4	10	152.0	20.00	2.50	111	173.2	23.00	3.20	118
	20	172.5	17.25	1.90	104	196.2	19.62	2.40	110							15	146.0	14.60	1.35	109	165.0	16.50	1.70	115
	25	165.6	13.25	1.10	102	191.2	15.25	1.50	108							20	140.0	11.25	0.85	107	162.0	12.90	1.10	114
	30	160.0	10.75	0.75	100	184.5	12.30	1.00	107							30	132.0	8.75	0.50	104	156.0	10.40	0.70	112
	40	144.0	7.25	0.34	96	171.0	8.50	0.48	103							40	116.0	6.00	0.25	99	138.6	7.00	0.32	106
V-180 CFM 3200 RPM 1100 HP 3/4	15	200.0	26.50	5.00	118	229.5	30.50	6.00	126	14	31	20" 0	12	31	V-144 CFM 2380 RPM 820 HP 3/4	10	172.0	22.75	3.60	131	196.2	26.00	4.80	138
	20	197.5	19.75	2.80	117	220.0	22.00	3.40	124							15	170.0	17.00	2.10	128	191.5	19.15	2.70	136
	25	193.9	15.50	1.70	116	218.5	17.50	2.20	123							20	164.0	13.25	1.30	125	189.0	15.00	1.60	135
	30	190.4	12.75	1.20	115	217.5	14.50	1.50	122							30	156.0	10.50	0.85	122	185.4	12.36	1.15	134
	40	177.9	9.00	0.60	111	207.0	10.50	0.85	120							40	140.0	7.10	0.40	116	166.5	8.30	0.52	126
V-200 CFM 4250 RPM 1100 HP 3/4	15	236.0	31.50	6.50	111					18	35	24" 0	18	31	V-170 CFM 3160 RPM 820 HP 3/4	15	201.9	26.75	5.00	119	232.2	30.75	7.00	128
	20	227.5	22.75	3.60	110	260.0	26.00	5.00	117							20	193.0	19.30	2.60	116	220.0	22.00	3.40	124
	25	220.0	17.70	2.20	108	252.0	20.25	3.00	115							25	188.0	15.00	1.60	115	214.2	17.25	2.20	123
	30	216.0	14.50	1.50	107	247.5	16.50	2.00	114							30	182.4	12.25	1.10	113	210.0	14.00	1.40	121
	40	206.0	10.25	0.80	105	237.6	12.00	1.10	112							40	169.6	8.50	0.55	110	198.0	10.00	0.75	118
V-252 CFM 6000 RPM 1075 HP 1	20	275.0	27.50	5.40	102	315.0	31.50	7.00	108	26	69	24" 0	22	45	V-204 CFM 4470 RPM 820 HP 1	20	236.0	23.60	4.00	110	267.5	26.75	5.00	117
	25	269.9	21.55	3.40	101	307.8	24.60	4.20	107							25	229.6	18.35	2.50	109	261.9	21.00	3.20	116
	30	264.0	17.70	2.30	100	300.0	20.00	2.80	106							30	225.6	15.00	1.60	108	256.7	17.10	2.10	114
	40	254.1	12.75	1.20	99	292.5	14.75	1.50	105							40	213.8	10.75	0.85	105	245.7	12.40	1.20	112
	20	402.5	40.25	6.50	109																			
V-370 CFM 7600 RPM 1075 HP 1	25	396.0	31.70	4.60	108	468.0	36.00	5.80	117	35	68	30" 0												

DESIGN CONDITIONS

- Heating load = 138 MBH
- Entering air temperature (EAT) = 70°F
- Entering water temperature (EWT)* = 220°F
- Water temperature drop (WTD) = 20°F
- Mounting height = 12 feet
- Spread required = 30 feet
- Standard horizontal projection unit required (model H).

SELECTION PROCEDURE

1. Calculate equivalent capacity at conditions of Table 4.

$$\begin{aligned} \text{Equivalent capacity} &= \frac{\text{Capacity required}}{\text{Factor (Table 10)}} \\ &= \frac{138}{1.06} = 130 \text{ MBH} \end{aligned}$$

From Table 8, choose the unit heater with this output, at the condition 200°F EWT and 20°F WTD.
We select Cat. No. H-136 unit heater.

2. Calculate unit capacity at actual conditions.

$$\begin{aligned} \text{Actual capacity} &= \text{MBH (Table 8)} \times \text{Factor (Table 10)} \\ &= 135.5 \times 1.06 = 143.63 \text{ MBH} \end{aligned}$$

3. Calculate coil water flow (USGPM)

$$\text{Waterflow} = \frac{\text{Actual BTUH}}{500 \times \text{WTD}} = \frac{143,630}{500 \times 20} = 14.36 \text{ USGPM}$$

4. Calculate coil water pressure drop (WPD).

$$\begin{aligned} \text{WPD} &= \text{WPD (Table 8)} \times \left(\frac{\text{USGPM (Actual)}}{\text{USGPM (Table 8)}} \right)^2 \\ &= 1.31 \times \left(\frac{14.36}{13.55} \right)^2 = 1.47 \text{ feet of water} \end{aligned}$$

5. Calculate final air temperature (FAT).

$$\begin{aligned} \text{FAT} &= \text{EAT} + \frac{\text{Actual BTUH}}{\text{CFM} \times 1.08} \\ &= 70 + \frac{143,630}{2470 \times 1.08} = 123.84^\circ\text{F} \end{aligned}$$

6. Determine mounting height and throw at actual conditions

At Table 2 conditions (220°F EWT and 70°F EAT)
Mounting height = 14' x 1.15 (Table 6) = 16.1 feet
Throw = 44' x 1.15 = 50.6 feet

We can use this unit heater.

NOTE: See "GENERAL SELECTION" for application details (page XX), and Table 7 for noise level.

TABLE 10
HOT WATER CORRECTION FACTORS

ENTERING AIR TEMP. °F	ENTERING AIR TEMPERATURE °F																								
	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400
30	0.96	1.04	1.11	1.18	1.26	1.33	1.41	1.48	1.55	1.63	1.70	1.78	1.85	1.93	2.00	2.07	2.14	2.22	2.30	2.37	2.44	2.52	2.59	2.66	2.74
40	0.88	0.95	1.02	1.10	1.17	1.25	1.32	1.39	1.47	1.54	1.61	1.69	1.76	1.83	1.91	1.98	2.05	2.12	2.19	2.27	2.35	2.42	2.49	2.56	2.63
50	0.80	0.87	0.94	1.01	1.09	1.16	1.23	1.30	1.37	1.45	1.52	1.59	1.66	1.74	1.81	1.88	1.95	2.02	2.10	2.17	2.24	2.31	2.39	2.46	2.53
60	0.73	0.79	0.86	0.93	1.00	1.07	1.14	1.22	1.29	1.36	1.43	1.50	1.57	1.64	1.72	1.79	1.86	1.93	2.00	2.07	2.14	2.23	2.29	2.36	2.43
70	0.65	0.70	0.77	0.85	0.92	0.99	1.06	1.13	1.20	1.27	1.34	1.41	1.48	1.55	1.62	1.69	1.76	1.84	1.91	1.98	2.05	2.12	2.19	2.26	2.33
80	0.57	0.63	0.70	0.77	0.84	0.91	0.98	1.05	1.12	1.19	1.26	1.33	1.40	1.47	1.54	1.60	1.67	1.74	1.82	1.88	1.95	2.02	2.09	2.16	2.23
90	0.48	0.55	0.62	0.69	0.76	0.83	0.90	0.97	1.04	1.11	1.17	1.24	1.31	1.38	1.45	1.52	1.59	1.66	1.72	1.80	1.86	1.93	2.00	2.07	2.14
100	0.42	0.48	0.55	0.62	0.68	0.75	0.82	0.89	.96	1.03	1.10	1.16	1.23	1.30	1.37	1.43	1.50	1.57	1.64	1.71	1.78	1.84	1.91	1.98	2.05

* For MBH at EWT other than those indicated in the tables, use 200°F MBH and multiply by factor in table 10. MBH obtained will be at USGPM of 200°F MBH used.

UNIT HEATERS

UNIT HEATER MOTOR SPEEDS & SWITCHES



TABLE 11

HORIZONTAL UNIT		VERTICAL UNIT		MOTOR (115/1/60)		
				HP	A	NOMINAL RPM
		V-30, V-40	VS-47, VS-55	1/30	1.15	1550
H-18, H-24 H-26, H-36	HS-25, HS-31 HS-39, HS-47			1/20	0.94	1550
H-32, H-40 H-44, H-58	HS-43, HS-51	V-38, V-48	VS-57, VS-67	1/12	1.60	1550
H-50, H-60, H-70, H-82	HS-73, HS-95	V-70, V-84*	VS-89, VS-103*	1/6	2.60	1075
H-80, H-98*	HS-97, HS-113*			1/4	3.60	1100
H-96, H-114 H-102, H-122* H-136, H-166	HS-117, HS-137*	V-50*, V-80* V-90, V-106* V-108, V-130* V-66*, V-96*	VS-137, VS-157*	1/4	3.60	1075
H-144, H-174* H-194, H-234*	HS-175, HS-205*			1/4	3.40	1725
H-250	HS-265			1/3	4.90	1100
				0.6	6.70	1075
		V-124, V-140* V-144, V-180* V-170, V-200*	VS-171, VS-197*	3/4	10.30	1100
		V-204, V-252 V-300, V-370	VS-247, VS-279 VS-361, VS-413	1	14.00	1075
		V-520	VS-595	2**		
H-400	HS-400			1 1/2***		1140

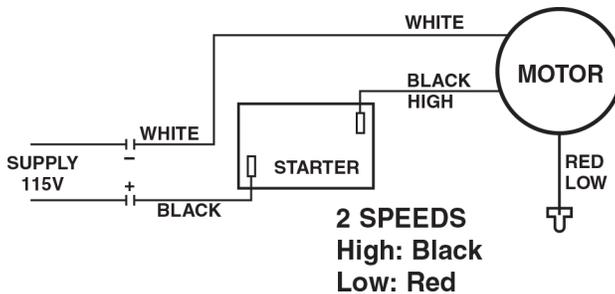
* Available with "Explosion Proof" motor.

** 575/3/60

*** 460/200-230/3/60

NOTE: Applies to Standard Motors only, when Special Motors are needed (TEFC, Explosion Proof...) Please contact our Engineering Department.

FIGURE 3
TYPICAL WIRING DIAGRAM



Note: Refer to unit for current wiring diagram.

TABLE 12
MOTOR CHARACTERISTICS

UNIT	MOTOR														
		HP	1/30	1/20	1/12	1/6	1/4	1/4	1/3	0.6	3/4	1	2		
MODEL H	VOLTS		115	115	115		115		115	115					
	AMP.		0.94	1.6	2.60		3.6		4.9	6.7					
	RPM		1000 1550	1000 1550	820 1075		820 1075		820 1100	1075					
MODEL V	VOLTS	120		115	115		115	115				115	115	575	
	AMP.	1.15		1.6	2.60		3.6	3.4				10.3	14.0	2.7	
	RPM	1000 1300 1550		1000	820		820	1725				820	820	1100	

All motors operate on 60 cycles. 1Ø, except 2 HP motors 575/3/60.

The mechanical contractor shall supply and install Rosemex unit heaters in models and sizes as shown on plans and described in specifications.

CASING

Shall be of high quality, die formed, cold rolled steel, degreased, phosphatized, etched and finished in aluminium semigloss finish.

COIL

Shall consist of aluminum corrugated fins on mechanically expanded copper tubes, welded to steel headers and tested with 350 PSIG air pressure in submerged water.

SPECIFICATIONS

Shall specify:

- Cat. No.
- Volts
- Phase
- Optional
 - louver cone diffusers
 - Protective grille standart on all vertical units
 - Motor speed

Controls and optional motors are supplied at additional cost (contact factory).

For information about your nearest branch or agent, contact Head Office or our website at www.rosemex.com

MOTORS

With permanent split capacitor and shall be thermally protected and permanently lubricated for a minimum of 20,000 hours. They shall be totally enclosed on H and HS models. Motors or supports shall be resiliently mounted. Motors on H and HS units shall be mounted on formed, welded and plated heavy gauge wire support. On V and VS units, motors and blades shall be removable through fan opening.

FANS

Fan blades shall be aluminum and balanced for quietness.

DIFFUSERS

Louver fin (model H) and louver cone (model V) diffusers shall have individually adjustable blades for maximum air distribution flexibility.

In the interest of product improvement, we reserve the right to make product and specification changes without notice.

HORIZONTAL PROJECTION – MODEL H

FIGURE 4

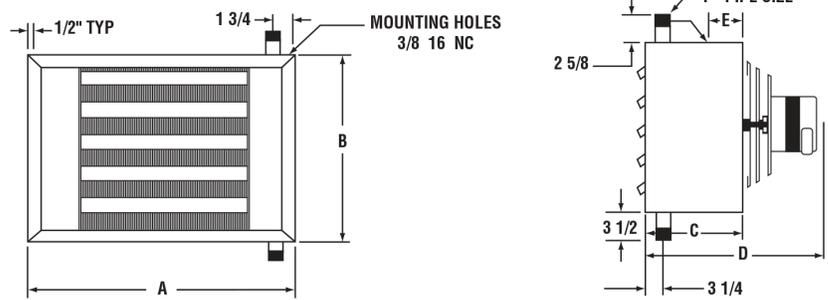


TABLE 13

CATALOGUE NO.		FAN DIAM.	A	B	C	D	E	F	WEIGHT
STANDARD	LOW OUT TEMP.								
H-18, H-24	HS-25, HS-31	10	19	12 3/4	9	17	3	1 1/4	39
H-26, H-36	HS-39, HS-47	14	22	15 3/4	9	16 1/2	3	1 1/4	53
H-32, H-40	HS-43, HS-51	14	22	15 3/4	9	17 1/2	3	1 1/4	53
H-44, H-58		14	25	18 3/4	9	16 1/2	3	1 1/4	64
H-50, H-60	HS-73	16	25	18 3/4	9	16 1/2	3	1 1/4	64
H-70, H-82	HS-95	16	29	21 3/4	9	16 1/2	3	1 1/2	82
H-80, H-98	HS-97, HS-113	18	29	21 3/4	9	18	3	1 1/2	82
H-96, H-114		20	32	24 3/4	12	19 1/2	4 1/8	1 1/2	122
H-102, H-122	HS-117, HS-137	20	32	24 3/4	12	21	4 1/8	1 1/2	122
H-136, H-166		20	37	30 3/4	12	21	4 1/8	1 1/2	166
H-144, H-174	HS-175, HS-205	24	37	30 3/4	12	23 1/2	4 1/8	1 1/2	166
H-194, H-234		26	46	30 3/4	12	23 1/2	4 1/8	1 1/2	184
H-250	HS-265	26	46	30 3/4	12	23 1/2	4 1/8	1 1/2	184
H-400	HS-420	26	55	30 3/4	12	26	4 1/8	1 1/2	230

VERTICAL PROJECTION – MODEL V

FIGURE 5

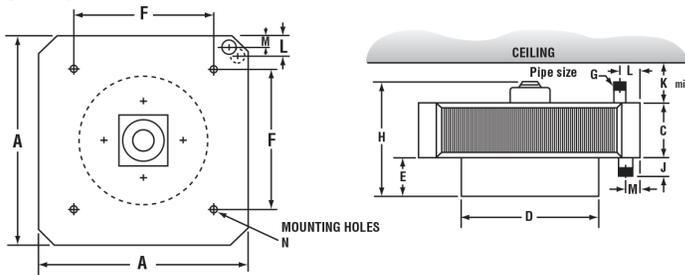


FIGURE 6

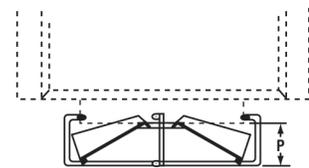


TABLE 14

CATALOGUE NO.		FAN DIAM.	A	C	D	E	F	G	H	J	K	L	M	N	P	WEIGHT
STANDARD	LOW OUT TEMP.															
V-30, 40		12			12 3/8	2 1/2			8 1/2							30
V-38, 48	VS-47, 55	14	21	6	14 7/16	4	11	1 1/2	12	2 3/4	6	3 1/16	1 3/4	3/8 -16 NC	4 1/4	36
V-50, 66	VS-57,67	14			14 7/16	4			13 1/2							36
V-70, 84	VS-89, 103	16	26 1/2	6	16 7/16	4	16	1 1/2	12	2 3/4	6	3 1/16	1 3/4	3/8 -16 NC	5	64
V-90, 106	VS-137, 157	18	34 1/4	6	18 1/2	4	22	2	12	2 3/4	7	5 5/16	2 1/4	1/2 -13 NC	5 3/4	72
V-108, 130																89
V-124, 140		20	34 1/4	7 1/2	20 1/2	4	22	2	16 1/2	2 3/4	7	5 5/16	2 1/4	1/2 -13 NC	5 3/4	98
V-144, 180	VS-171, 197								15 1/2							98
V-170, 200		24	37 3/4	7 1/2	24 5/8	5	24	2	16 1/2	2 3/4	7	5 5/16	2 1/4	1/2 -13 NC	6 3/4	106
V-204, 252	VS-247-279								17 1/2							125
V-300, 370	VS-361, 413	30	43 5/8	9	30 3/4	6	30	2 1/2	18	3	8	4 5/16	2 1/4	1/2 -13 NC	8	162
V-520	VS-595	30	43 5/8	13 1/2	30 3/4	6	30	2 1/2	19 1/2	3	8	4 5/16	2 1/4	1/2 -13 NC	8	250

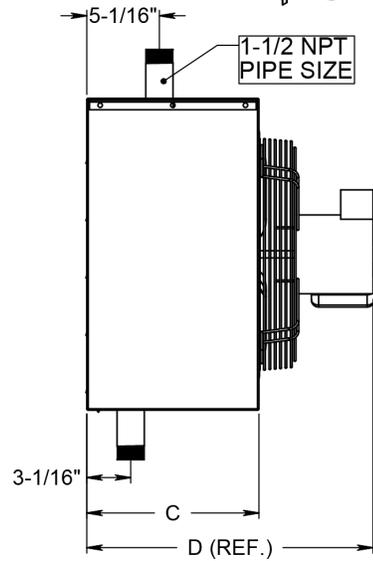
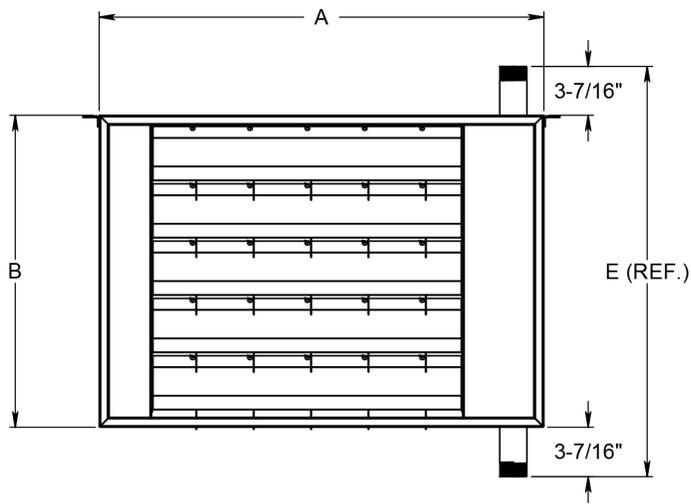
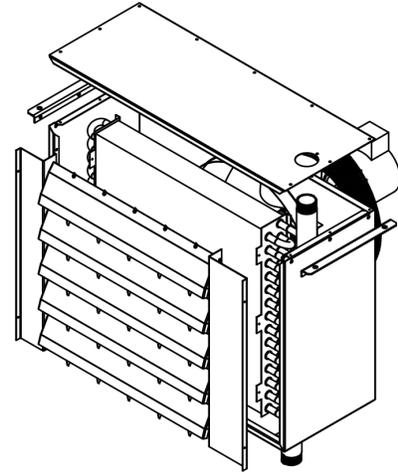
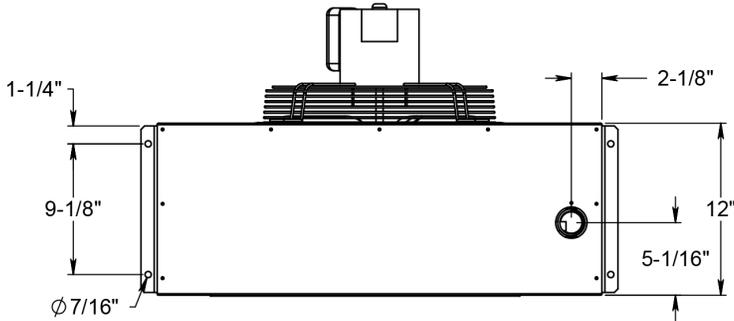


TABLE 15

CATALOGUE NO.		FAN DIAM.	A	B	C	D	E	PIPE SIZE
H-18-2R	H-24-2R	10	21	12 3/4	12	17 3/4	19 5/8	1 1/2
H-26-2R	H-36-2R	14	24	15 3/4	12	17 3/4	22 5/8	1 1/2
H-32-2R	H-40-2R	14	24	15 3/4	12	18 5/8	22 5/8	1 1/2
H-44-2R	H-56-2R	14	27	18 3/4	12	18 5/8	25 5/8	1 1/2
H-50-2R	H-60-2R	16	27	18 3/4	12	18 5/8	25 5/8	1 1/2
H-70-2R	H-82-2R	16	31	21 3/4	12	20	28 5/8	1 1/2
H-80-2R	H-98-2R	18	31	21 3/4	12	21 1/4	28 5/8	1 1/2
H-96-2R	H-114-2R	20	34	24 3/4	12	21 1/4	31 5/8	1 1/2
H-102-2R	H-122-2R	20	34	24 3/4	12	21 1/4	31 5/8	1 1/2
H-136-2R	H-166-2R	20	39	30 3/4	12	21 1/4	37 5/8	1 1/2
H-144-2R	H-174-2R	24	39	30 3/4	12	21 1/2	37 5/8	1 1/2
H-194-2R	H-234-2R	26	48	30 3/4	12	21 1/2	37 5/8	1 1/2
H-250-2R		26	48	30 3/4	12	21 1/2	37 5/8	1 1/2
H-400-2R		26	57	30 3/4	12	21 1/2	37 5/8	1 1/2

UNIT HEATERS

HORIZONTAL UNIT HEATERS 3R

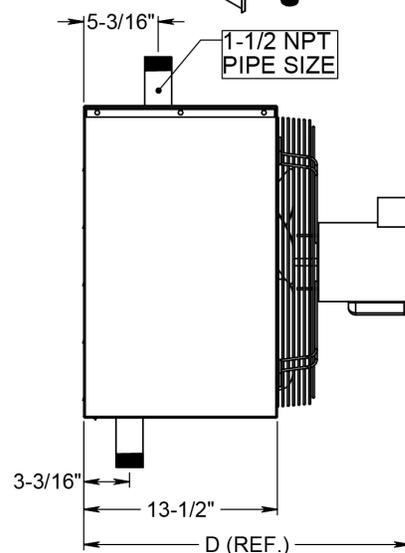
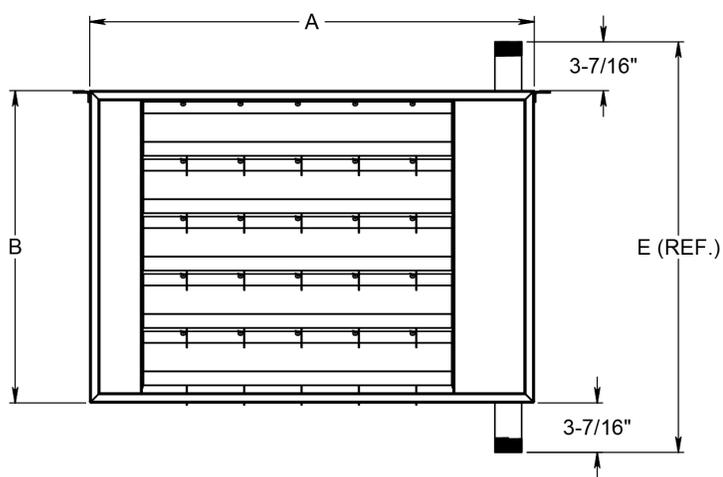
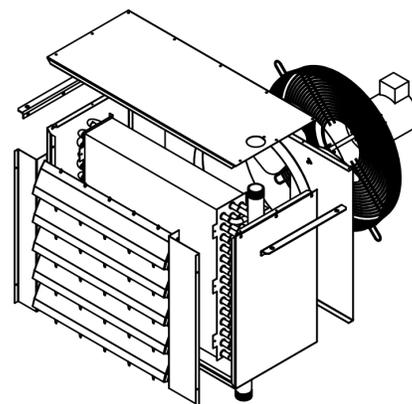
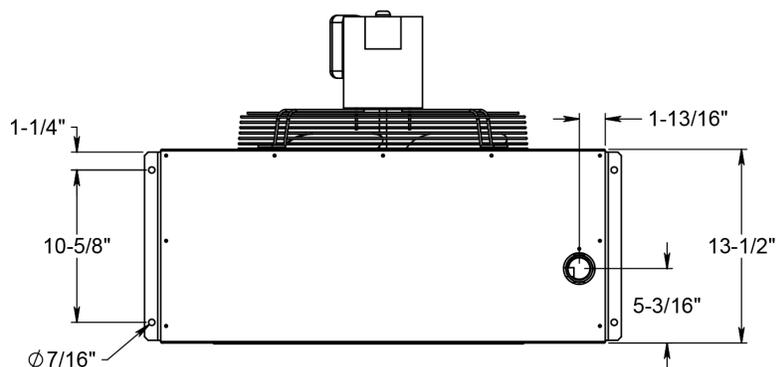


TABLE 16

CATALOGUE NO.		FAN DIAM.	A	B	C	D	E	PIPE SIZE
H-18-3R	H-24-3R	10	21	12 3/4	13 1/2	19 1/4	19 5/8	1 1/2
H-26-3R	H-36-3R	14	24	15 3/4	13 1/2	19 1/4	22 5/8	1 1/2
H-32-3R	H-40-3R	14	24	15 3/4	13 1/2	20 1/8	22 5/8	1 1/2
H-44-3R	H-56-3R	14	27	18 3/4	13 1/2	20 1/8	25 5/8	1 1/2
H-50-3R	H-60-3R	16	27	18 3/4	13 1/2	20 1/8	25 5/8	1 1/2
H-70-3R	H-82-3R	16	31	21 3/4	13 1/2	21 1/2	28 5/8	1 1/2
H-80-3R	H-98-3R	18	31	21 3/4	13 1/2	22 3/4	28 5/8	1 1/2
H-96-3R	H-114-3R	20	34	24 3/4	13 1/2	22 3/4	31 5/8	1 1/2
H-102-3R	H-122-3R	20	34	24 3/4	13 1/2	22 3/4	31 5/8	1 1/2
H-136-3R	H-166-3R	20	39	30 3/4	13 1/2	22 3/4	37 5/8	1 1/2
H-144-3R	H-174-3R	24	39	30 3/4	13 1/2	23	37 5/8	1 1/2
H-194-3R	H-234-3R	26	48	30 3/4	13 1/2	23	37 5/8	1 1/2
H-250-3R		26	48	30 3/4	13 1/2	23	37 5/8	1 1/2
H-400-3R		26	57	30 3/4	13 1/2	23	37 5/8	1 1/2

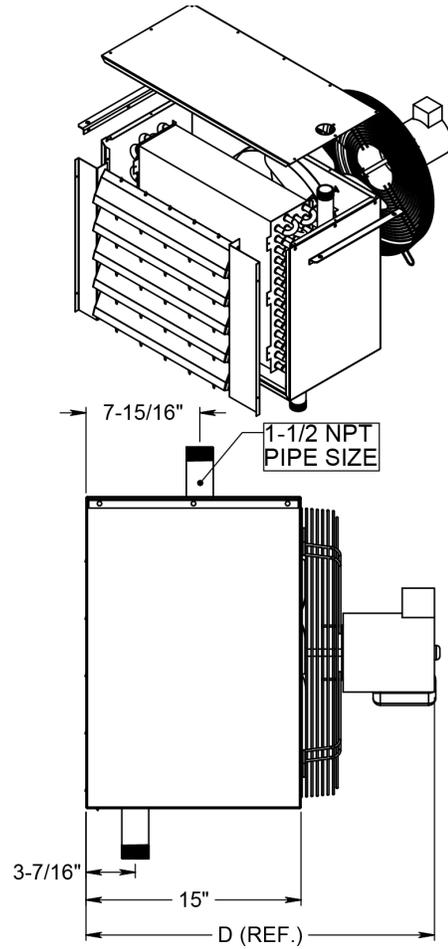
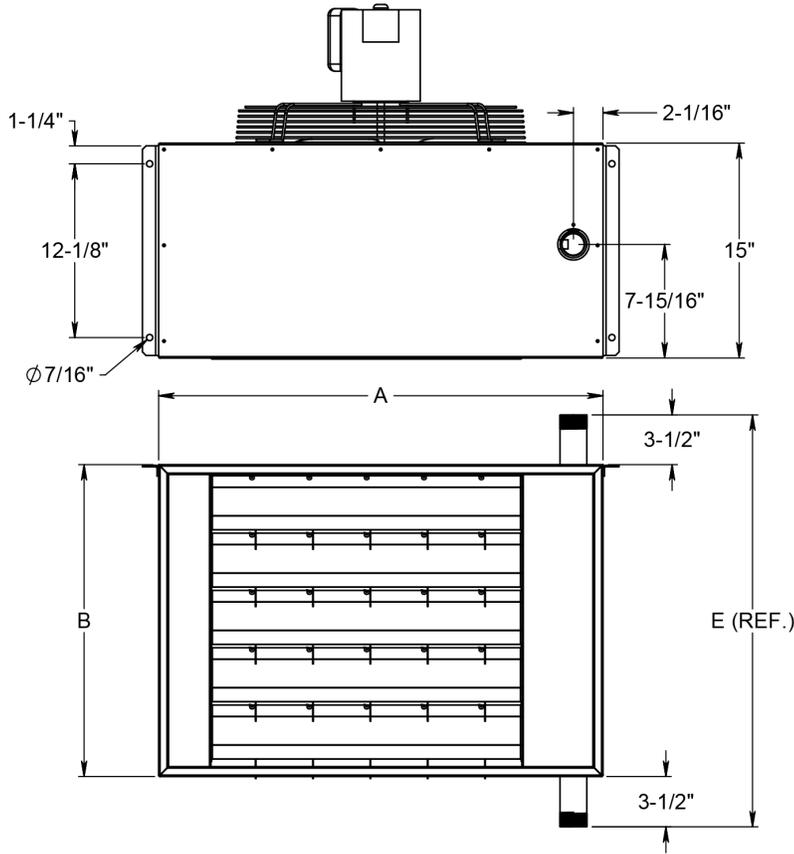


TABLE 17

CATALOGUE NO.		FAN DIAM.	A	B	C	D	E	PIPE SIZE
H-18-4R	H-24-4R	10	21	12 3/4	15	20 3/4	19 5/8	1 1/2
H-26-4R	H-36-4R	14	24	15 3/4	15	20 3/4	22 5/8	1 1/2
H-32-4R	H-40-4R	14	24	15 3/4	15	21 5/8	22 5/8	1 1/2
H-44-4R	H-56-4R	14	27	18 3/4	15	21 5/8	25 5/8	1 1/2
H-50-4R	H-60-4R	16	27	18 3/4	15	21 5/8	25 5/8	1 1/2
H-70-4R	H-82-4R	16	31	21 3/4	15	23	28 5/8	1 1/2
H-80-4R	H-98-4R	18	31	21 3/4	15	24 1/4	28 5/8	1 1/2
H-96-4R	H-114-4R	20	34	24 3/4	15	24 1/4	31 5/8	1 1/2
H-102-4R	H-122-4R	20	34	24 3/4	15	24 1/4	31 5/8	1 1/2
H-136-4R	H-166-4R	20	39	30 3/4	15	24 1/4	37 5/8	1 1/2
H-144-4R	H-174-4R	24	39	30 3/4	15	25 1/2	37 5/8	1 1/2
H-194-4R	H-234-4R	26	48	30 3/4	15	25 1/2	37 5/8	1 1/2
H-250-4R		26	48	30 3/4	15	25 1/2	37 5/8	1 1/2
H-400-4R		26	57	30 3/4	15	25 1/2	37 5/8	1 1/2

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